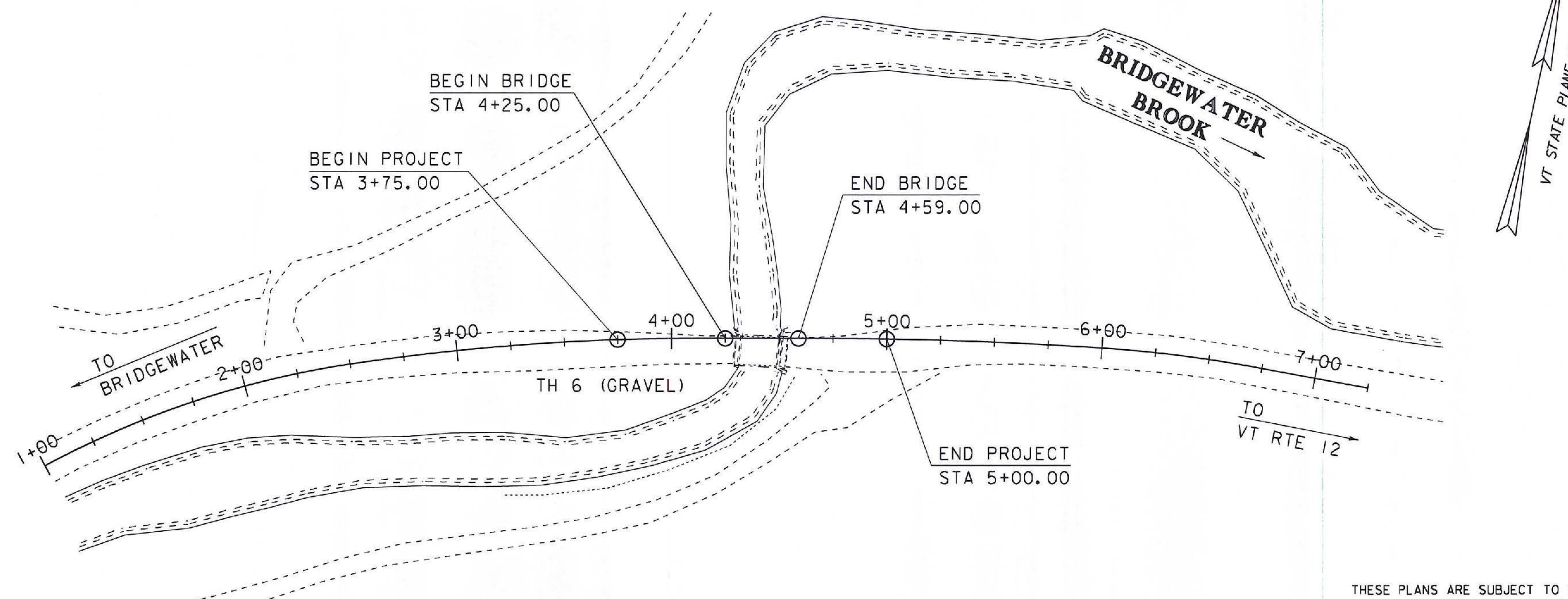


TOWN OF WOODSTOCK
COUNTY OF WINDSOR

PROJECT LOCATION: APPROXIMATELY 0.54 MILES WEST OF THE INTERSECTION OF VT 12 AND TH 6 (N. BRIDGEWATER ROAD) AND EXTENDING EASTERLY ALONG TH 6 FOR 125 FEET.

PROJECT DESCRIPTION: REPLACEMENT OF EXISTING BRIDGE WITH A PRECAST CONCRETE STRUCTURE
ALONG WITH RELATED ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE: 34.00 FEET
LENGTH OF ROADWAY: 91.00 FEET
LENGTH OF PROJECT: 125.00 FEET



40 0 40

SCALE: 1" = 40' - 0"

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 Richard T. Tetreault DATE 2-13-13

PROJECT MANAGER : K.M. HIGGINS

PROJECT NAME : WOODSTOCK
PROJECT NUMBER : BRO 1444 (55)

SHEET 1 OF 28 SHEETS

RECORD PLANS

CONTRACTOR:	B.U.R. CONSTRUCTION, LLC, CLAREMONT, NH
RESIDENT ENGINEER:	RYAN DARLING
CONSTRUCTION BEGAN:	JUNE 25, 2013
CONSTRUCTION COMPLETE:	AUGUST 30, 2013
RECORD PLANS BY:	RYAN DARLING & KEVIN KING

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

BY *Ryan Darling* RESIDENT ENGINEER

DATE 1/9/2014

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.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

LRFD

Version 09.02.03

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01-03-2000

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BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING

05-24-2012

S-367B

GUARDRAIL APPROACH SECTION, GALVANIZED HD STEEL BEAM

05-24-2012

STRUCTURES DETAILS

SD-501.00

CONCRETE DETAILS AND NOTES

04-07-2010

SD-502.00

CONCRETE DETAILS AND NOTES

05-04-2010

AS BUILT "REBAR" DETAIL

LEVEL I

LEVEL II

LEVEL III

TYPE:

TYPE:

TYPE:

GRADE:

GRADE:

GRADE:

TRAFFIC DATA

YEAR

ADT

DHV

% D

% T

ADTT

2014

230

55

58

7.1

15

2034

260

60

58

8.7

20

20 year ESAL for flexible pavement from 2014 to 2034 : 54000

40 year ESAL for flexible pavement from 2014 to 2054 : 110600

Design Speed : 35 mph

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: Jan. 2013

DRAINAGE AREA : 4.3 sq. mi.

CHARACTER OF TERRAIN : Hilly to mountaious, mostly forested with some open areas

STREAM CHARACTERISTICS : Sinuous, alluvial and probably incised

NATURE OF STREAMBED : Mostly gravel and cobbles with some sand and boulders

PEAK FLOW DATA

Q 2.33 = 240 cfs

Q 50 = 910 cfs

Q 10 = 540 cfs

Q 100 = 1100 cfs

Q 25 = 730 cfs

Q 500 = 1500 cfs

DATE OF FLOOD OF RECORD : Unknown

ESTIMATED DISCHARGE: Unknown

WATER SURFACE ELEV.: Unknown

NATURAL STREAM VELOCITY : @ Q25 = 9.0 fps

ICE CONDITIONS : Moderate

DEBRIS: Moderate

DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Yes

IS ORDINARY RISE RAPID? Yes

IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No

IF YES, DESCRIBE:

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

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single span steel beam bridge with timber deck

YEAR BUILT: 1939

CLEAR SPAN(NORMAL TO STREAM): 18'

VERTICAL CLEARANCE ABOVE STREAMBED: 6.5'

WATERWAY OF FULL OPENING: 108 sq. ft.

DISPOSITION OF STRUCTURE: Remove and replace

TYPE OF MATERIAL UNDER SUBSTRUCTURE: Unknown

WATER SURFACE ELEVATIONS AT:

Q2 33 = 961.3'

Q10 = 963.5'

Q25 = 964.3'

Q50 = 965.8'

Q100 = 966.5'

VELOCITY = 7.3 fps

10.1 fps

11.0 fps

8.4 fps

8.5 fps

LONG TERM STREAMBED CHANGES: Unknown

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes

FREQUENCY: Between Q25 and Q50

RELIEF ELEVATION: 965.5'

DISCHARGE OVER ROAD @Q100: 110 cfs

UPSTREAM STRUCTURE

TOWN: Woodstock

DISTANCE: 2500'

HIGHWAY # : TH 19

STRUCTURE #: 24

CLEAR SPAN: 23'

CLEAR HEIGHT: 7.0'

YEAR BUILT: 1914

FULL WATERWAY:

STRUCTURE TYPE: Single span bridge with steel beams and timber deck

DOWNSTREAM STRUCTURE

TOWN: Woodstock

DISTANCE: 1200'

HIGHWAY # : TH 18

STRUCTURE #: 22

CLEAR SPAN: 35'

CLEAR HEIGHT: 10'

YEAR BUILT: 1980

FULL WATERWAY:

STRUCTURE TYPE: Concrete slab bridge

LRFR LOAD RATING FACTORS

LOADING LEVELS

H-20

HL-93

SS2

6 AXLE

3A. STR.

4A. STR.

5A. SEMI

TONNAGE

20

36

36

66

30

34.5

38

INVENTORY

POSTING

OPERATING

COMMENTS:

PROPOSED STRUCTURE

STRUCTURE TYPE: Precast concrete structure*

CLEAR SPAN(NORMAL TO STREAM): 32' minimum, on pedestal walls

VERTICAL CLEARANCE ABOVE STREAMBED: 7.0'

WATERWAY OF FULL OPENING: 145 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2 33 = 961.0'

Q10 = 962.0'

Q25 = 962.6'

Q50 = 963.1'

Q100 = 963.8'

VELOCITY= 6.9 fps

8.6 fps

9.4 fps

9.9 fps

10.1 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No

FREQUENCY: Above Q100

RELIEF ELEVATION: 965.5'

DISCHARGE OVER ROAD @Q100: None

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 964.6'

VERTICAL CLEARANCE: @ Q25 = 2.0'

SCOUR: Contraction and long term scour = 2' at Q100 and 3' at Q500.

REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV

PERMIT INFORMATION

AVERAGE DAILY FLOW: 9 cfs

DEPTH OR ELEVATION: 964.6'

ORDINARY LOW WATER: 4 cfs

Depth = 0.5'

ORDINARY HIGH WATER: 100 cfs

Depth = 2.0'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: No temporary bridge required. The road will be closed.

CLEAR SPAN (NORMAL TO STREAM):

VERTICAL CLEARANCE ABOVE STREAMBED:

WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

* This final hydraulics is based on a precast concrete arch. The contractor may choose to construct a precast concrete bridge or rigid frame with an equal or larger waterway opening than the arch listed above. If so, water surface elevations at high flows may be slightly lower.

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

d p: ---

3. DESIGN SPAN

L: 32.00 FT

4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)

Δ: ---

5. PRESTRESSING STRAND

f y: ---

6. PRESTRESSED CONCRETE STRENGTH

f 'c: ---

7. PRESTRESSED CONCRETE RELEASE STRENGTH

f 'cl: ---

8. CONCRETE, HIGH PERFORMANCE CLASS AA

f 'c: 4.0 KSI

9. CONCRETE, HIGH PERFORMANCE CLASS A

f 'c: 4.0 KSI

10. CONCRETE, HIGH PERFORMANCE CLASS B

f 'c: 3.5 KSI

11. CONCRETE, CLASS C

f 'c: 3.0 KSI

12. REINFORCING STEEL

f y: 60 KSI

13. STRUCTURAL STEEL AASHTO M270

f y: ---

14. SOIL UNIT WEIGHT

γ: 0.140 KCF

15. NOMINAL BEARING RESISTANCE OF SOIL

q n: SEE SHEET 3

16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)

φ: 0.45

17. NOMINAL BEARING RESISTANCE OF ROCK

q n: ---

18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)

φ: ---

19. NOMINAL AXIAL PILE RESISTANCE

q p: ---

20. PILE YIELD STRENGTH ASTM A572

f y: ---

21. PILE SIZE

22. EST. PILE LENGTH

L p: ---

23. PILE RESISTANCE FACTOR

φ: ---

24. LATERAL PILE DEFLECTION

Δ: ---

25. BASIC WIND SPEED

V 3s: ---

26. MINIMUM GROUND SNOW LOAD

p g: ---

27. SEISMIC DATA

PGA: --- S s: --- S 1: ---

PROJECT NAME: WOODSTOCK

PROJECT NUMBER: BRO 1444(55)

FILE NAME: s95j294pi.dgn

PLOT DATE: 2/13/2013

PROJECT LEADER: K.M. HIGGINS

DRAWN BY: J. SALVATORI

DESIGNED BY: J. SALVATORI

CHECKED BY: W. LAMMER

PRELIMINARY INFORMATION SHEET

SHEET 2 OF 28

GENERAL

1. THE CONTRACTOR WILL BE ALLOWED TO CLOSE THE ROAD TO TRAFFIC FOR A MAXIMUM OF 21 CONSECUTIVE DAYS FOR INSTALLATION OF THE NEW STRUCTURE.
2. 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 2012, AND ITS LATEST REVISIONS, AND THE VTRANS STRUCTURES DESIGN MANUAL.
3. ALL PRECAST CONCRETE COMPONENTS INCLUDING THE FOOTINGS, PEDESTAL WALLS, RIGID FRAME OR ARCH, HEADWALLS, WINGWALLS AND ALL CONNECTIONS BETWEEN THESE COMPONENTS SHALL BE DESIGNED BY THE PRECAST FABRICATOR. THE SOIL PROPERTIES AND DESIGN PARAMETERS USED FOR THIS PROJECT ARE AS INDICATED BELOW.

4. DESIGN CRITERIA:

DESIGN LIVE LOAD: FILL OVER THE STRUCTURE:	HL - 93 6 INCHES MINIMUM
FOUNDATION SOIL PARAMETERS	
UNIT WEIGHT:	125 PCF
FRICTION ANGLE:	36 DEGREES
COEFFICIENT OF FRICTION FORMED CONCRETE AGAINST SOIL:	0.35
RETAINED SOIL PARAMETERS	
UNIT WEIGHT:	140 PCF
FRICTION ANGLE:	35 DEGREES
COEFFICIENT OF FRICTION CONCRETE CAST AGAINST SOIL:	0.55
FORMED AGAINST SOIL:	0.45
NOMINAL BEARING RESISTANCE:	10 KSF FOR FOOTING WIDTHS > 6' F

3. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
6. ITEM 529.15 "REMOVAL OF STRUCTURE" SHALL BE USED FOR REMOVAL OF THE EXISTING BRIDGE SUPERSTRUCTURE AND THE ABUTMENTS AND WINGWALLS, INCLUDING THE EXISTING RETAINING WALL AS DETAILED IN THE PLANS.
7. DEWATERING SHALL BE INCLUDED IN ITEM 208.40, "COFFERDAM".
8. THE DESIGN SHALL INCLUDE THE EFFECTS OF ALL LOADS, NOT LIMITED TO LIVE LOAD, EARTH SURCHARGE AND HYDROSTATIC PRESSURE.
9. THE FABRICATOR SHALL BE RESPONSIBLE FOR SUPPLYING THE STATE WITH THE LRFR LOAD RATING FACTORS TO COMPLETE THE CHART SHOWN ON THE PRELIMINARY INFORMATION SHEET.

CONCRETE

10. THE RIGID FRAME OR ARCH, HEADWALLS AND WINGWALLS SHALL BE PRECAST CONCRETE CONFORMING TO SECTION 540 OF THE SPECIFICATIONS AND SHALL MEET THE DIMENSIONS INDICATED IN THE PLANS. ALL PRECAST COMPONENTS OF THE STRUCTURE WILL BE PAID FOR UNDER ITEM 541.10 "PRECAST CONCRETE STRUCTURE (34'-0" x 7'-0" x 25'-4" FRAME OR ARCH TYPE).
11. ALL ELEMENTS OF THE PRECAST STRUCTURE(S) SHALL BE DESIGNED BY THE PRECAST SUPPLIER, INCLUDING THE ANCHORAGE AND CONNECTIONS BETWEEN ELEMENTS. ALL ELEMENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE FABRICATORS RECOMMENDATIONS. THE CONTRACTOR SHALL SUBMIT FABRICATION DRAWINGS FOR THE PRECAST RIGID FRAME OR ARCH IN ACCORDANCE WITH SECTION 105. IN ADDITION TO FABRICATION DRAWINGS, THE FABRICATOR SHALL PROVIDE A LOAD RATING AND SUPPORTING CALCULATIONS IN ACCORDANCE WITH THE AASHTO SPECIFICATIONS REFERENCED IN GENERAL NOTE 1 AND THE VTRANS STRUCTURES DESIGN MANUAL, 2010 WHICH PROVIDES SPECIFIC LOAD RATING INSTRUCTIONS. THE RATING AND SUPPORTING CALCULATIONS SHALL BE SIGNED, STAMPED AND DATED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE ENGINEERING IN THE STATE OF VERMONT. NOTE THAT THE FABRICATOR ASSUMES ALL LIABILITY FOR THE ADEQUACY AND ACCURACY OF THE RIGID FRAME OR ARCH DESIGN AND LOAD RATING.
12. WATER REPELLENT, SILANE SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 514 AND SHALL BE SHOP APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDE OF THE STRUCTURE BETWEEN THE DRIP NOTCHES. ALL WORK IS INCIDENTAL TO THE BID ITEM 540.10 "PRECAST CONCRETE STRUCTURE (34'-0" x 7'-0" x 25'-4" FRAME OR ARCH TYPE).
13. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" x 1".
14. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:
SPACING: +/- 1 INCH
CLEARANCE: +/- 1/4 INCH
15. PRECAST TOLERANCES:
HEIGHT/WIDTH: +/- 1/4 INCH
LENGTH: +/- 1/2 INCH
16. ALL REINFORCING STEEL IN THE PRECAST PEDESTAL WALLS AND FOOTINGS SHALL BE LEVEL I.
17. ALL REINFORCING STEEL IN THE PRECAST RIGID FRAME OR ARCH, WINGWALLS AND HEADWALLS SHALL BE LEVEL II.

18. THE PROPOSED STRUCTURE SHALL BE A THREE-SIDED RIGID FRAME OR ARCH WITH A MINIMUM CLEAR SPAN OF 32'. THE LUMP SUM COST FOR ITEM 540.10 "PRECAST CONCRETE STRUCTURE (34'-0" x 7'-0" x 25'-4" FRAME OR ARCH TYPE) SHALL INCLUDE THE PRECAST RIGID FRAME OR ARCH, WINGWALLS AND MECHANICAL CONNECTIONS.

19. THE PRECAST STRUCTURE DETAILS ARE SHOWN FOR REFERENCE ONLY. THE ACTUAL DIMENSIONS AND CONFIGURATION WILL BE DEPENDENT ON THE FABRICATOR. THE INSIDE CLEAR DIMENSION SHALL BE 32' - 0" AND THE RISE SHALL BE 8' - 0".

20. NO HOLES SHALL BE DRILLED IN THE RIGID FRAME OR ARCH WITH OUT THE APPROVAL OF THE FABRICATOR AND THE AGENCY.

21. THE USE OF EQUIPMENT AND THE METHOD OF BACKFILLING AROUND THE BURIED STRUCTURE SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. CARE SHALL BE TAKEN WHEN BACKFILLING AGAINST JOINT SEALING MATERIALS.

22. JOINTS BETWEEN ALL ABUTTING PRECAST UNITS SHALL BE WATERTIGHT AND MECHANICALLY CONNECTED.

TRAFFIC CONTROL

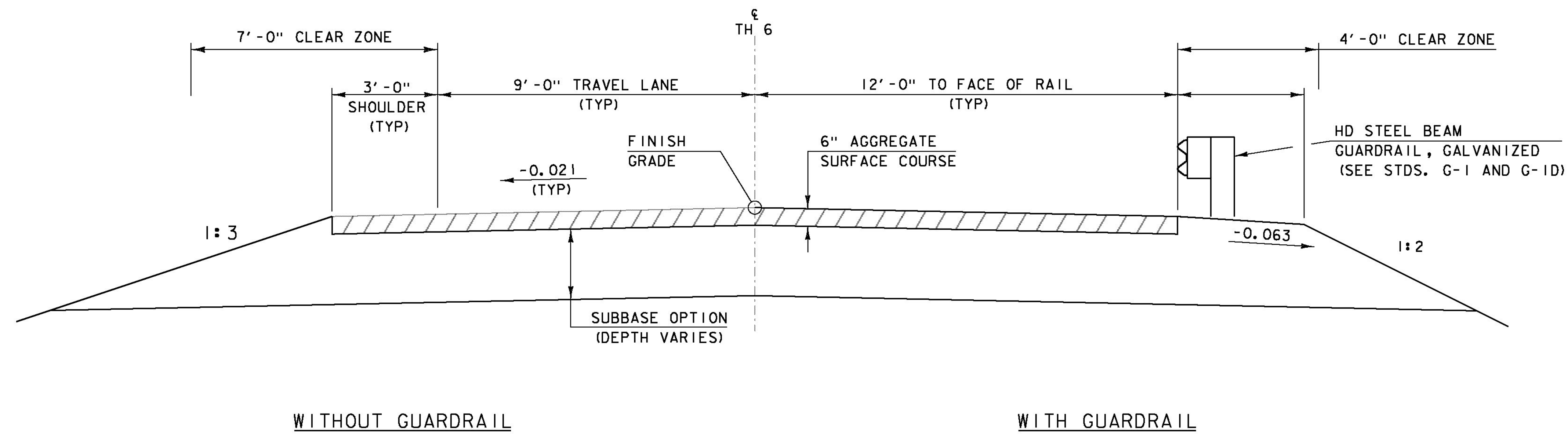
23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF A SITE SPECIFIC TRAFFIC CONTROL PLAN FOR ALL STAGES OF CONSTRUCTION. THE PLAN SHALL CLEARLY DETAIL HOW TRAFFIC WILL BE MAINTAINED PRIOR TO, DURING AND AFTER THE CLOSURE PERIOD AND SHALL INCLUDE ALTERNATING ONE-WAY TRAFFIC THROUGH THE PROJECT WITH APPROPRIATE SIGNAGE. THE CONTRACTOR SHALL SUBMIT DETAILED TRAFFIC CONTROL PLANS TO THE RESIDENT ENGINEER FOR APPROVAL PER SUBSECTION 105.03. ALL COSTS SHALL BE INCLUDED IN ITEM 900.645 SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE).

STATE OF VERMONT AGENCY OF TRANSPORTATION														QUANTITY SHEET 1									
SUMMARY OF ESTIMATED QUANTITIES												TOTALS		DESCRIPTIONS						DETAILED SUMMARY OF QUANTITIES			
								ROADWAY	EROSION CONTROL	FULL C.E. ITEMS	BRIDGE	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS			
								1				1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				EARTHWORK SUMMARY			
								400				400		CY	COMMON EXCAVATION	203.15		400	CY	COMMON EXCAVATION (400 x 1.0)			
											100	100		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27		75	CY	CHANNEL EXCAVATION (100 x 0.75)			
											300	300		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30		420	CY	COFFERDAM EXCAVATION (560 x 0.75)			
											560	560		CY	COFFERDAM EXCAVATION, EARTH	208.30		895	CY	SUB TOTAL			
											1	1		LS	COFFERDAM (ABUTMENT #1)	208.40		5	CY	ROUND			
											1	1		LS	COFFERDAM (ABUTMENT #2)	208.40		900	CY	TOTAL FILL AVAILABLE			
															BEGIN OPTION AA			60	CY	TOTAL FILL REQUIRED			
								500				500		CY	SUBBASE OF GRAVEL	301.15		840	CY	TOTAL WASTE			
								500				500		CY	SUBBASE OF CRUSHED GRAVEL, COARSE GRADED	301.25							
								500				500		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35							
															END OPTION AA								
								140				140		CY	AGGREGATE SURFACE COURSE	401.10							
											96	96		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20							
											1	1		EACH	REMOVAL OF STRUCTURE (350 SF - EST.)	529.15							
											1	1		LS	PRECAST CONCRETE STRUCTURE (34'-0" x 7'-0" x 25'-4" FRAME OR ARCH TYPE)	540.10							
											1	1		LS	PRECAST CONCRETE STRUCTURE (PEDESTAL WALL ABUTMENT #1)	540.10							
											1	1		LS	PRECAST CONCRETE STRUCTURE (PEDESTAL WALL ABUTMENT #2)	540.10							
															BEGIN OPTION BB								
								12				12		LF	18" CAAP .060 (2-2/3 X 1/2)	601.0215							
								12				12		LF	18" PCCSP .064 (2-2/3 X 1/2)	601.0415							
								12				12		LF	18" CPEP(SL)	601.2615							
															END OPTION BB								
									1			1		TON	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	609.15							
								5				5		CY	STONE FILL, TYPE I	613.10							
											170	170		CY	STONE FILL, TYPE IV	613.13							
								106				106		LF	HD STEEL BEAM GUARDRAIL, GALVANIZED	621.21							
								4				4		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60							
								4				4		EACH	GUARDRAIL APPROACH SECTION, GALV HD STEEL BEAM	621.737							
								50				50		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80							
								200				200		HR	FLAGGERS	630.15							
										1		1		LS	FIELD OFFICE, ENGINEERS	631.10							
										3000		3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26							
								1				1		LS	MOBILIZATION/DEMOBILIZATION	635.11							
											130	130		SY	GEOTEXTILE UNDER STONE FILL	649.31							
									150			150		SY	GEOTEXTILE FOR SILT FENCE	649.51							
									75			75		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61							
									5			5		LB	SEED	651.15							
									40			40		LB	FERTILIZER	651.18							
									1			1		TON	AGRICULTURAL LIMESTONE	651.20							
																		PROJECT NAME: WOODSTOCK					
																		PROJECT NUMBER: BRO 1444(55)					
																		FILE NAME: s95J294qs.dgn					
																		PROJECT LEADER: K. HIGGINS					
																		DESIGNED BY: J. SALVATORI					
																		PLOT DATE: 13-FEB-2013					
																		DRAWN BY: J. SALVATORI					
																		CHECKED BY: W. LAMMER					
																		QUANTITY SHEET 1					
																		SHEET 4 OF 28					

QUANTITY SHEET 2

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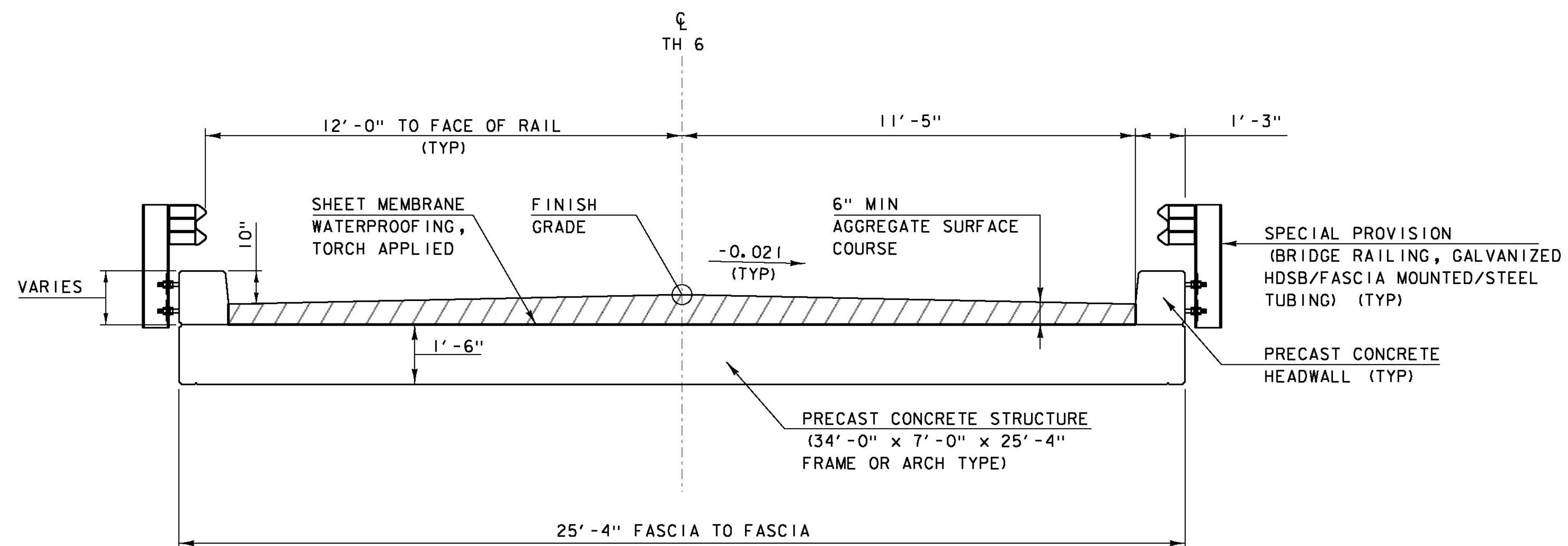
PROJECT NAME: WOODSTOCK	
PROJECT NUMBER: BRO 1444(55)	
FILE NAME: s95j294qs.dgn	PLOT DATE: 13-FEB-2013
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
QUANTITY SHEET 2	SHEET 5 OF 28



ROADWAY TYPICAL SECTION

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

MATERIAL TOLERANCES (IF USED ON PROJECT)	
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"
SAND BORROWS	+/- 1"



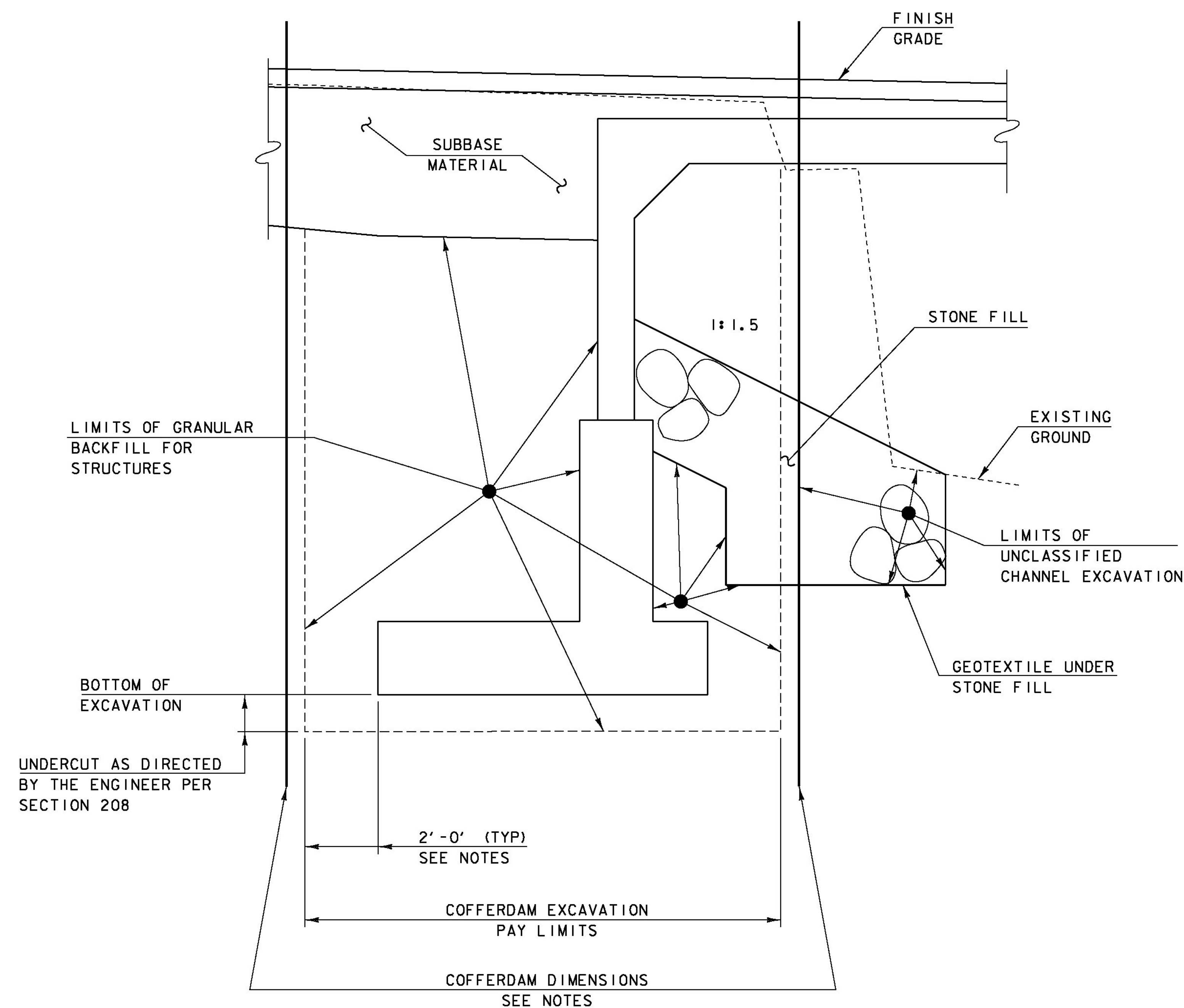
BRIDGE TYPICAL SECTION

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

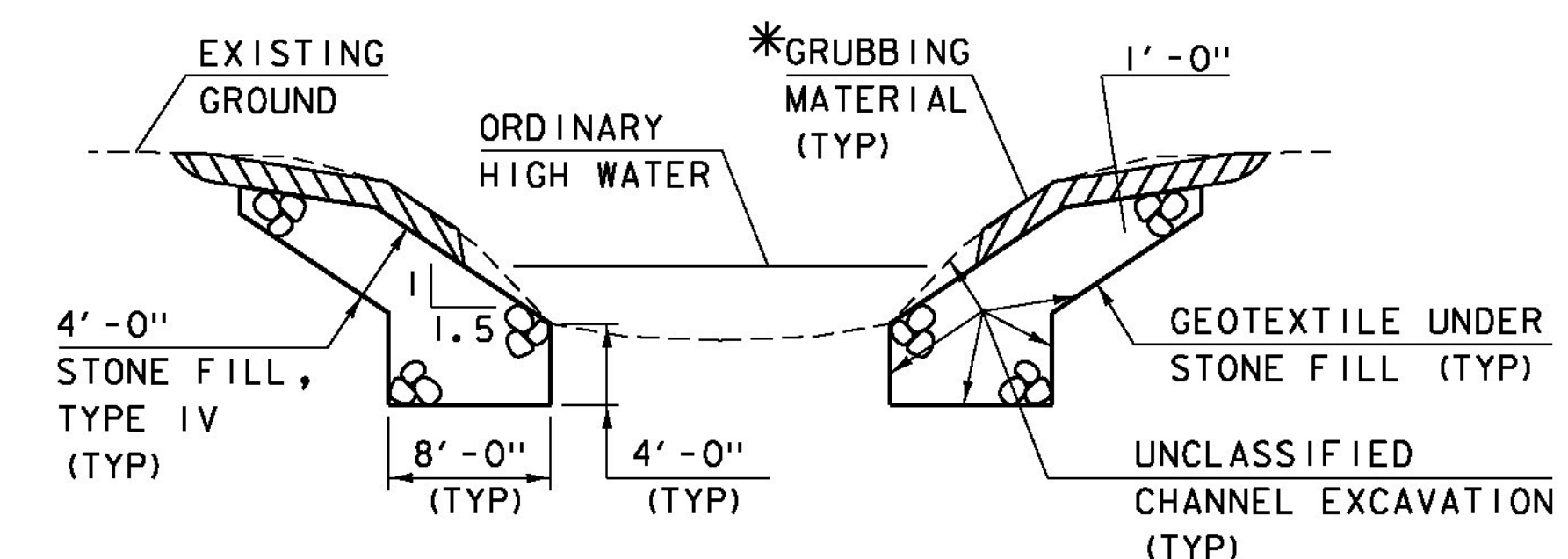
PROJECT NAME: WOODSTOCK
PROJECT NUMBER: BRO 1444(55)

FILE NAME: s95j2941yp.dgn
PROJECT LEADER: K.M. HIGGINS
DESIGNED BY: J. SALVATORI
TYPICAL SECTIONS I

PLOT DATE: 13-FEB-2013
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 6 OF 28



COFFERDAM AND EARTHWORK SECTION
NOT TO SCALE



TYPICAL CHANNEL SECTION
(NOT TO SCALE)

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

COFFERDAM NOTES

1. COFFERDAM DIMENSIONS TO BE DETERMINED BY THE CONTRACTOR.
2. THE PAY LIMITS OF EITHER "COFFERDAM EXCAVATION, EARTH" OR "COFFERDAM EXCAVATION, ROCK" SHALL BE 2'-0" OUTSIDE THE PERIMETER OF THE FOOTING AND FROM BOTTOM OF EXCAVATION UP TO THE EXISTING GROUND OR BOTTOM OF SUBBASE, WHICHEVER IS LOWER.
3. IF A COFFERDAM IS CONSTRUCTED WHICH IS LARGER THAN THE INDICATED COFFERDAM EXCAVATION PAY LIMITS, PAYMENT FOR ALL UNCLASSIFIED CHANNEL EXCAVATION, INCLUDING THAT PORTION WHICH IS INSIDE THE COFFERDAM BUT OUTSIDE THE COFFERDAM PAY LIMITS, WILL BE MADE AT THE CONTRACT UNIT PRICE FOR UNCLASSIFIED CHANNEL EXCAVATION. NO MEASUREMENT AND PAYMENT WILL BE MADE FOR COFFERDAM EXCAVATION AND GRANULAR BACKFILL FOR STRUCTURES OUTSIDE THE PAY LIMITS DEFINED IN NOTE 2.

PROJECT NAME: WOODSTOCK
PROJECT NUMBER: BRO 1444(55)

FILE NAME: s95j2941yp.dgn
PROJECT LEADER: K.M. HIGGINS
DESIGNED BY: J. SALVATORI
TYPICAL SECTIONS 2

PLOT DATE: 13-FEB-2013
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 7 OF 28

GPS CONTROL POINTS

HVCTRL #1

206 VT 102
NORTH = 420974.099
EAST = 1623008.667
ELEV. = 865.451

DESCRIBED BY VERMONT GEODETIC SURVEY 1997 (DJM) GENERAL LOCATION WOODSTOCK, VT. 0.2 MI (0.3 KM) SOUTH OF THE WOODSTOCK/POMFRET TOWN LINE. MARK IS AN APPALACHIAN NATIONAL SCENIC TRAIL SURVEY MARKER. TO REACH FROM THE INTERSECTION OF U.S. ROUTE 4 AND VT ROUTE 12 IN THE CENTER OF WOODSTOCK VILLAGE, PROCEED NORTH ON VT ROUTE 12 FOR 3.9 MI (6.3 KM) TO THE MARK ON THE RIGHT. THE MARK IS 12 M (39.4 FT) SOUTHEAST OF THE INTERSECTION OF VT ROUTE 12 AND A GRAVEL DRIVE, 10 M (32.8 FT) EAST NORTHEAST OF AND .8 M (2.6 FT) LOWER IN ELEVATION THAN THE CENTERLINE OF VT ROUTE 12, AND .2 METERS (0.7 FT) WEST SOUTHWEST OF A FIBERGLASS WITNESS AND A METAL APPALACHIAN TRAIL WITNESS.

HVCTRL #2

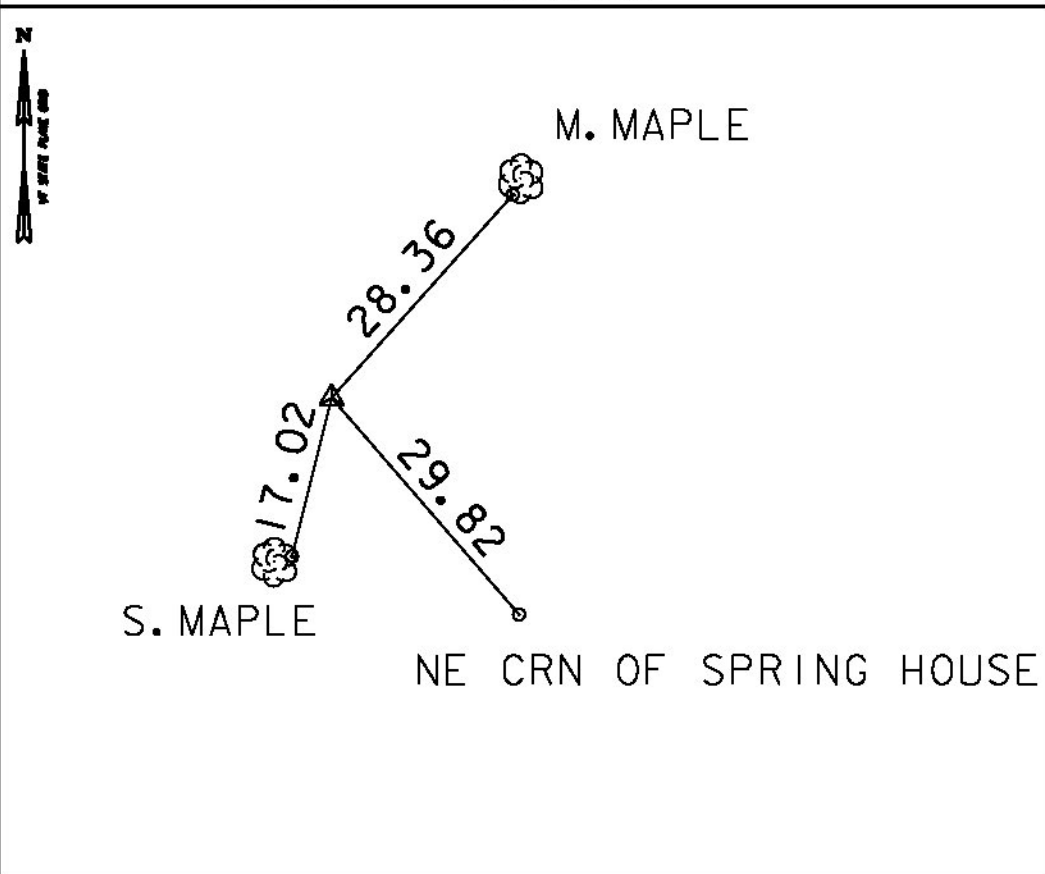
206 VT 102 AZ MK
NORTH = 419871.687
EAST = 1623743.819
ELEV. = 859.546

MARK WAS DESTROYED

TRAVERSE TIES

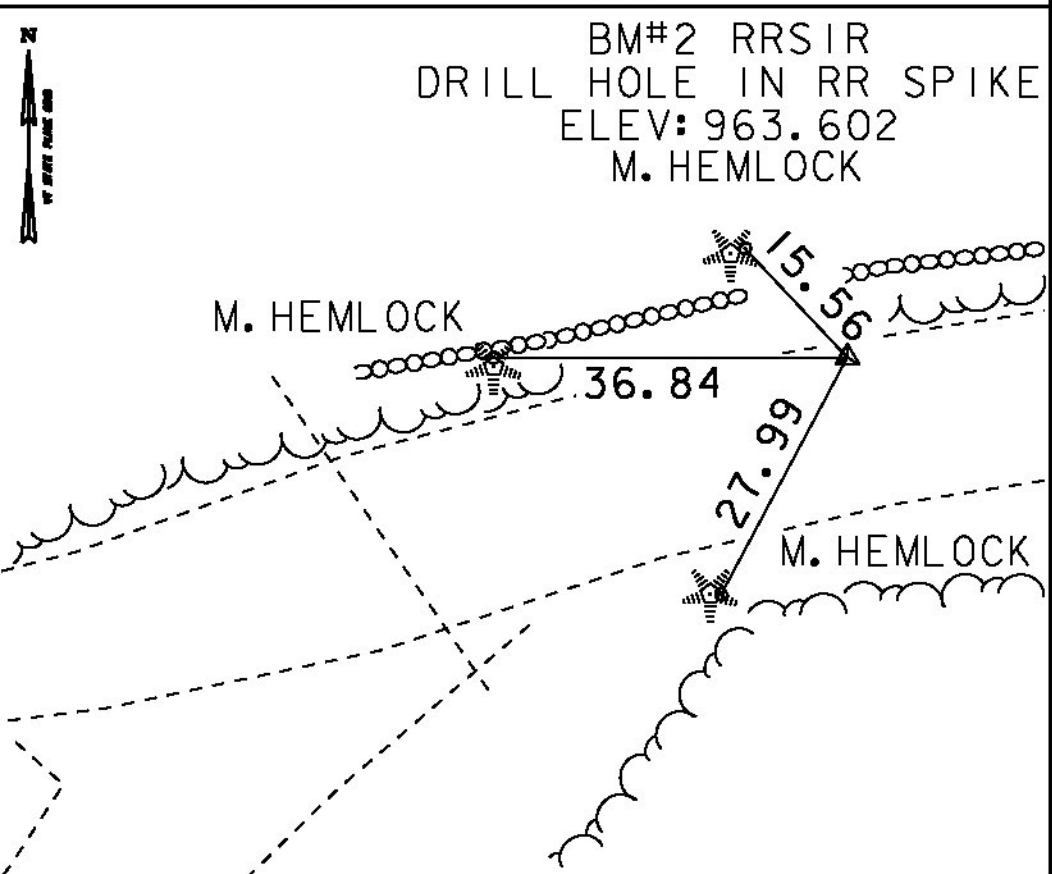
HVCTRL #6

NORTH = 418136.936
EAST = 1622613.067
ELEV. = 939.355



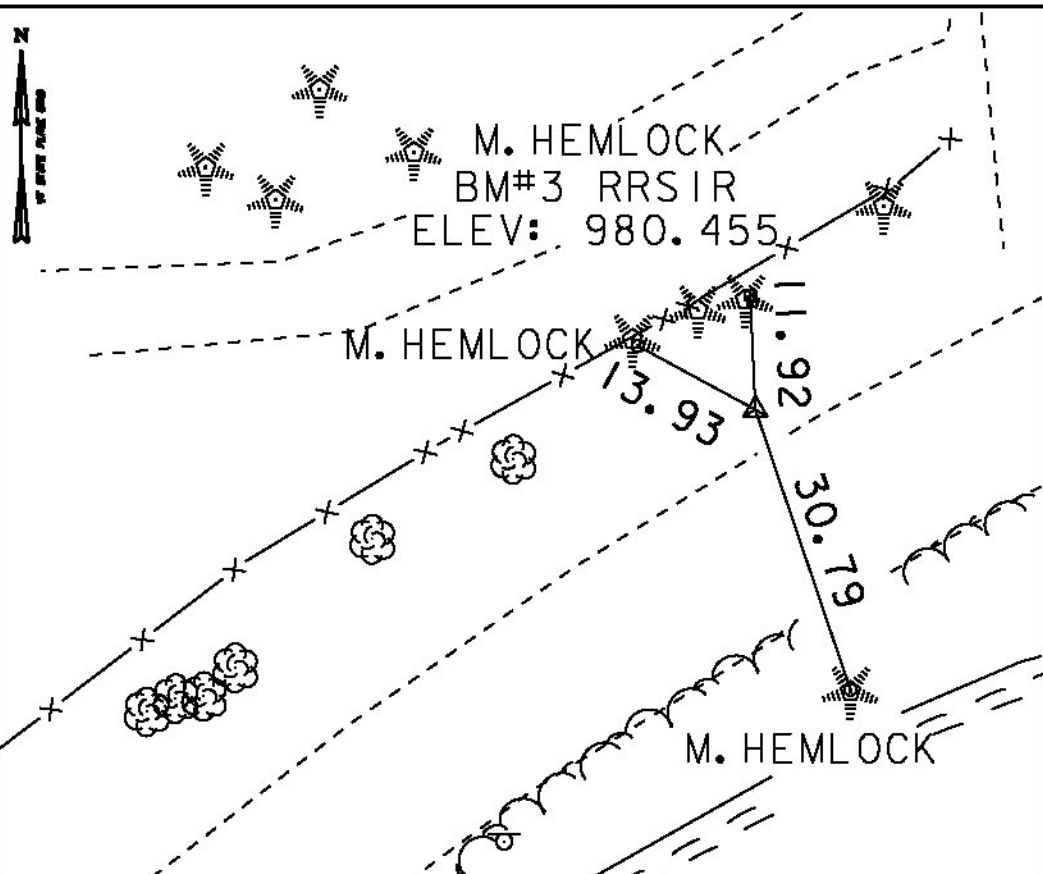
HVCTRL #7

NORTH = 418137.048
EAST = 1622101.434
ELEV. = 962.616



HVCTRL #8

NORTH = 418038.961
EAST = 1621732.705
ELEV. = 976.497



*MAIN TRAVERSE COMPLETED 11/05/1996 BY R. BULLOCK P.C. & T. MORSE

ALIGNMENT COORD

Project Name: 95J294
Description: Woodstock BRO 1444(55)
Horizontal Alignment Name: TH 6 PROPOSED

		STATION	NORTHING	EASTING
Element: Circular	PC (12)	1+00.00	417980.3391	1621670.7717
	PI ()	1+75.77	418029.5356	1621728.3979
	CC (13)		417653.3059	1621949.9657
	PCC (3)	2+50.00	418056.0721	1621799.3690
	Radius:	430.00		
Delta: 19°59'12.84" Right				
Degree of Curvature(Arc): 13°19'28.56"				
Length: 150.00				
Tangent: 75.77				
Chord: 149.24				
Middle Ordinate: 6.52				
External: 6.62				
Tangent Direction: N 49°30'43.28" E				
Radial Direction: S 40°29'16.72" E				
Chord Direction: N 59°30'19.70" E				
Radial Direction: S 20°30'03.88" E				
Tangent Direction: N 69°29'56.12" E				
Element: Circular	PCC (3)	2+50.00	418056.0721	1621799.3690
	PI ()	3+31.23	418084.5225	1621875.4585
	CC (4)		417025.7400	1622184.6165
	PT (5)	4+12.17	418101.4868	1621954.9018
	Radius:	1100.00		
Delta: 8°26'49.89" Right				
Degree of Curvature(Arc): 5°12'31.35"				
Length: 162.17				
Tangent: 81.23				
Chord: 162.03				
Middle Ordinate: 2.99				
External: 3.00				
Tangent Direction: N 69°29'56.12" E				
Radial Direction: S 20°30'03.88" E				
Chord Direction: N 73°43'21.07" E				
Radial Direction: S 12°03'13.99" E				
Tangent Direction: N 77°56'46.01" E				
Element: Linear	PT (5)	4+12.17	418101.4868	1621954.9018
	PC (6)	4+66.51	418128.3334	1622008.0378
	Tangent Direction:	N 77°56'46.01" E		
	Tangent Length:	54.33		

STATION NORTHING EASTING

Element: Circular	PC (6)	4+66.51	418128.3334	1622008.0378
	PI ()	5+33.86	418126.8991	1622073.9068
	CC (7)		416156.9302	1622425.7009
	PCC (8)	6+01.17	418136.5013	1622140.5729
	Radius:	2000.00		
Delta: 3°51'27.52" Right				
Degree of Curvature(Arc): 2°51'53.24"				
Length: 134.66				
Tangent: 67.35				
Chord: 134.63				
Middle Ordinate: 1.13				
External: 1.13				
Tangent Direction: N 77°56'46.01" E				
Radial Direction: S 12°03'13.99" E				
Chord Direction: N 79°52'29.77" E				
Radial Direction: S 8°11'46.47" E				
Tangent Direction: N 81°48'13.53" E				
Element: Circular	PCC (8)	6+01.17	418136.5013	1622140.5729
	PI ()	6+36.79	418141.5807	1622175.8374
	CC (14)		417532.7321	1622227.5369
	PT (15)	6+72.34	418142.5201	1622211.4535
	Radius:	610.00		
Delta: 6°41'07.40" Right				
Degree of Curvature(Arc): 9°23'33.90"				
Length: 71.18				
Tangent: 35.63				
Chord: 71.14				
Middle Ordinate: 1.04				
External: 1.04				
Tangent Direction: N 81°48'13.53" E				
Radial Direction: S 8°11'46.47" E				
Chord Direction: N 85°08'47.23" E				
Radial Direction: S 1°30'39.07" E				
Tangent Direction: N 88°29'20.93" E				
Element: Linear	PT (10)	6+72.34	418142.5522	1622211.4526
	POE (16)	7+25.00	418143.9881	1622264.0911
	Tangent Direction:	N 88°26'14.79" E		
Tangent Length: 52.66				

Project Name: 95J294
Description: Woodstock BRO 1444(55)
Horizontal Alignment Name: CHANNEL

		STATION	NORTHING	EASTING
Element: Linear	POB (23)	9+25.00	418032.91	1621992.89
	POE (24)	10+75.00	418179.60	1621961.56
	Tangent Direction:	N 12°03'14" W		
	Tangent Length:	150.00		

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83(92)
ADJUSTMENT	COMPASS

PROJECT NAME: WOODSTOCK
PROJECT NUMBER: BRO 1444 (55)

FILE NAME: survey\95J294\1.dgn
PROJECT LEADER: K. HIGGINS
DESIGNED BY: J. SALVATORI
TIE SHEET

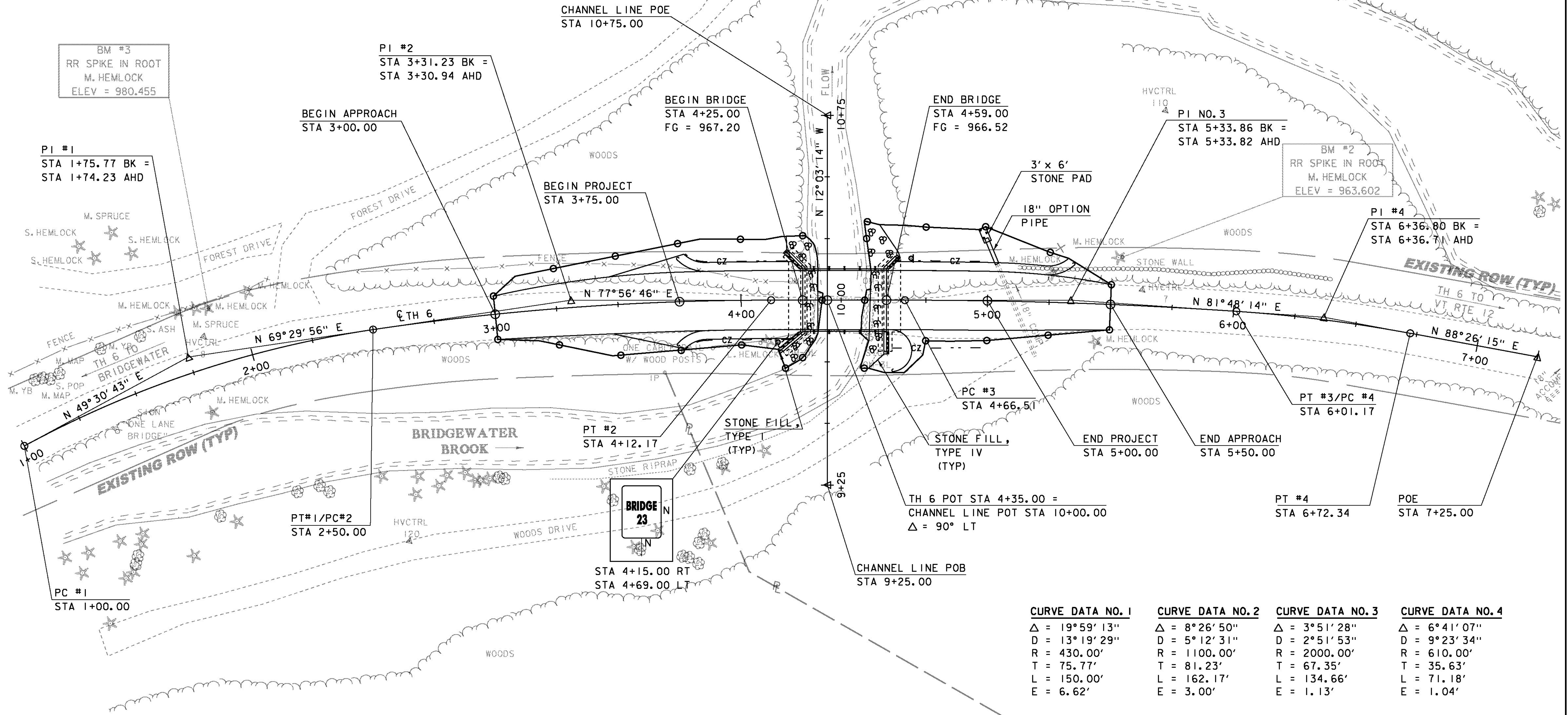
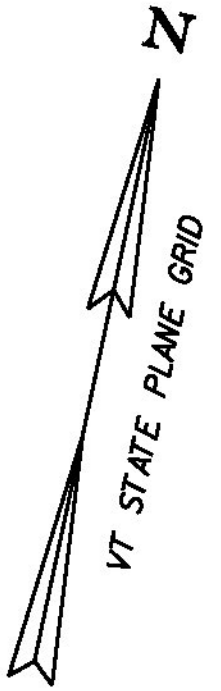
PLOT DATE: 01-23-2013
DRAWN BY: S. DONOVAN
CHECKED BY: J. SALVATORI
SHEET 8 OF 28

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS		NEW SIGN "A"	EXIST POST SIZES "B"	NO. OF POSTS	NEW SIGN POSTS						REMARKS	SIGN DETAIL					
		WIDTH (in)	HEIGHT (in)				SQUARE STEEL (in)				A C H R	S H E E T		P R E C I S I O N	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER			
							L75	2.0	2.5	L88							16/11	2.42	3.35
4+15.00 RT		6	8	0.33		1	8					X		VD-701		E-134			
4+69.00 LT		6	8	0.33		1	8					X		VD-701		E-134			
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE VTRANS "SIGN POST DESIGN GUIDELINE."																			
		TOTALS		SF	0.66		FT 16							EA					
SHS = STANDARD HIGHWAY SIGNS (MUTCD)																			

SIGN LEGEND	
N	= NEW
R	= RETAIN

REMOVAL AND DISPOSAL OF GUARDRAIL
STA 3+87.50 - 4+28.00 RT
REMOVING SIGNS
STA 1+37.00 RT
STA 4+25.00 LT
STA 4+25.00 RT
STA 4+55.00 LT
STA 4+55.00 RT

18" OPTION PIPE
STA 5+03.60 - 4+99.00 LT
TRAFFIC SIGNS, TYPE A
STA 4+15.00 RT
STA 4+69.00 LT



EXISTING BRIDGE DATA
WOOD DECK ON STEEL BEAMS
CONCRETE ABUTMENTS
OVERALL LENGTH = 25'
OVERALL WIDTH = 14'

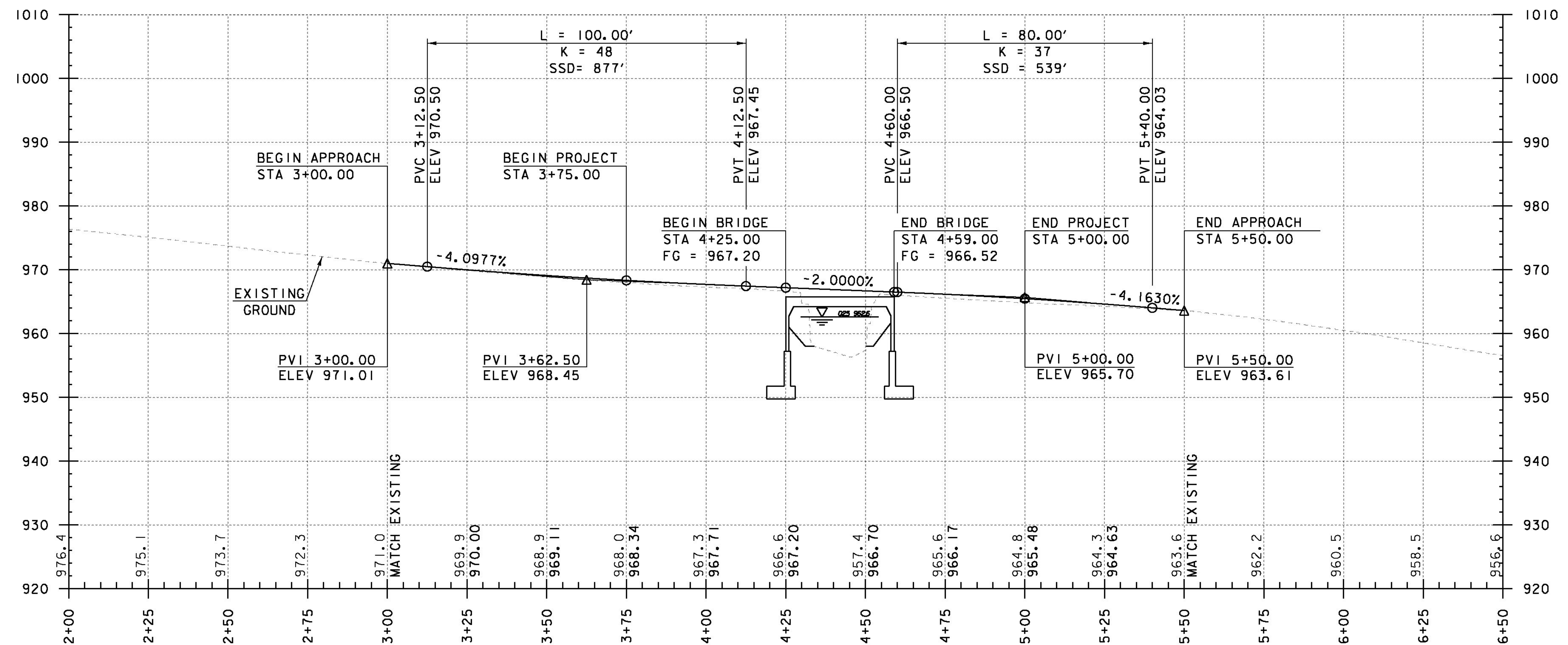
LAYOUT SHEET
SCALE 1" = 20' - 0
20 0 20

CURVE DATA NO. 1	CURVE DATA NO. 2	CURVE DATA NO. 3	CURVE DATA NO. 4
$\Delta = 19^\circ 59' 13''$ $D = 13^\circ 19' 29''$ $R = 430.00'$ $T = 75.77'$ $L = 150.00'$ $E = 6.62'$	$\Delta = 8^\circ 26' 50''$ $D = 5^\circ 12' 31''$ $R = 1100.00'$ $T = 81.23'$ $L = 162.17'$ $E = 3.00'$	$\Delta = 3^\circ 51' 28''$ $D = 2^\circ 51' 53''$ $R = 2000.00'$ $T = 67.35'$ $L = 134.66'$ $E = 1.13'$	$\Delta = 6^\circ 41' 07''$ $D = 9^\circ 23' 34''$ $R = 610.00'$ $T = 35.63'$ $L = 71.18'$ $E = 1.04'$

PROJECT NAME: WOODSTOCK
PROJECT NUMBER: BRO 1444(55)

FILE NAME: s95j294bdr.dgn
PROJECT LEADER: K.M. HIGGINS
DESIGNED BY: J. SALVATORI
LAYOUT SHEET

PLOT DATE: 13-FEB-2013
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 9 OF 28



MAINLINE PROFILE

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

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

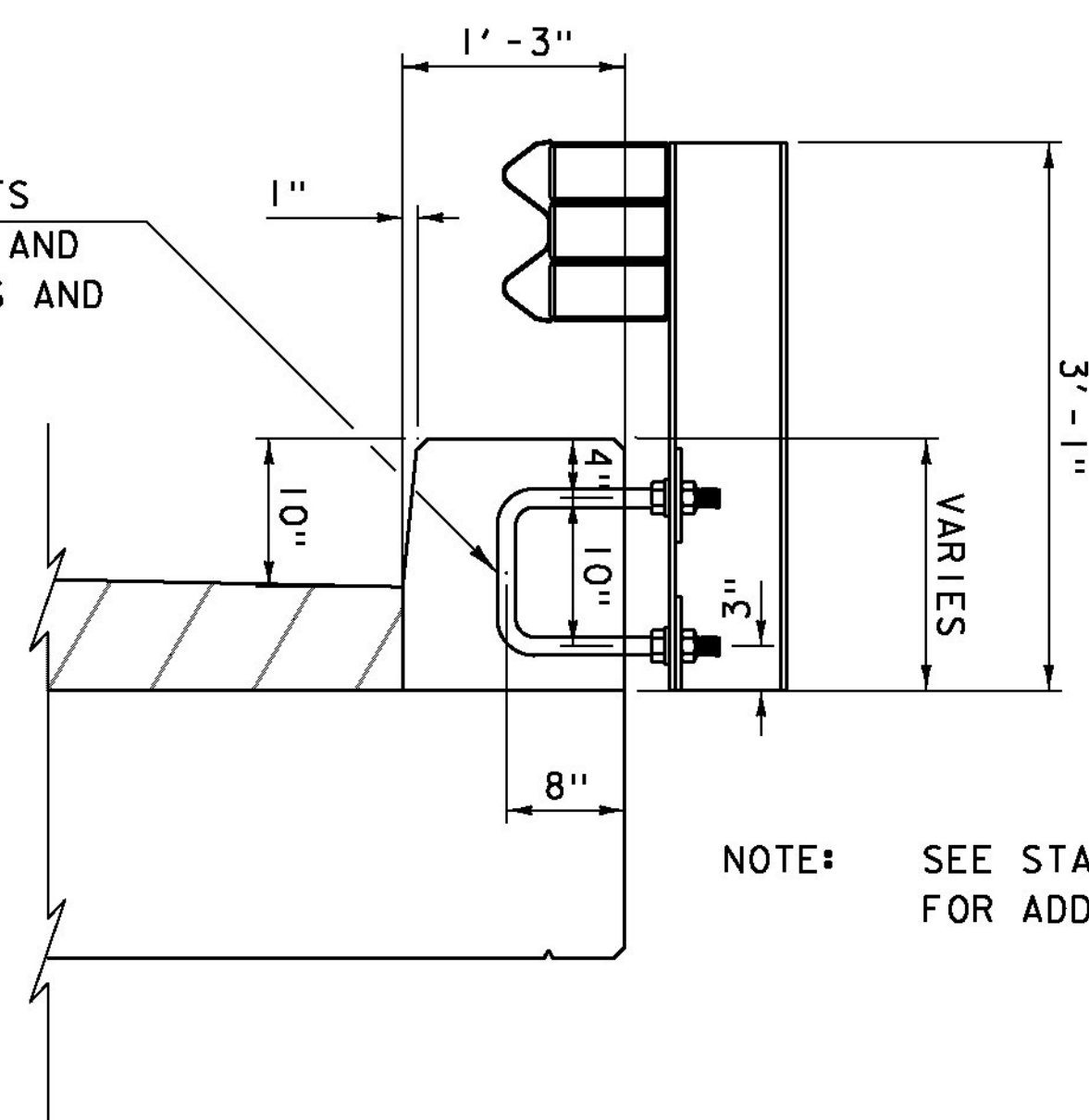
THE GRADES SHOWN TO THE NEAREST HUNDREDTH ARE THE FINISH GRADES ALONG THE PROPOSED ALIGNMENT.

PROJECT NAME: WOODSTOCK
PROJECT NUMBER: BRO 1444(55)

FILE NAME: s95j294pro.dgn
PROJECT LEADER: K.M. HIGGINS
DESIGNED BY: J. SALVATORI
MAINLINE PROFILE

PLOT DATE: 13-FEB-2013
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 10 OF 28

2 - 1" DIA ANCHOR "U" BOLTS
PER POST EACH WITH 4 NUTS AND
4 WASHERS (2 PLATE WASHERS AND
2 STANDARD WASHERS)



NOTE: SEE STANDARD S-367A
FOR ADDITIONAL DETAILS.

FASCIA MOUNTED RAIL DETAIL
NOT TO SCALE

BEGIN BRIDGE
STA 4+25.00

END BRIDGE
STA 4+59.00

25'-0" PAY LIMIT
GUARDRAIL APPROACH SECTION,
GALV HD STEEL BEAM
(TYP)

6'-3" MAX SPACING

1'-9" TO FIRST POST
OFF BRIDGE (TYP)

52'-0" PAY LIMIT

HD STEEL BEAM GUARDRAIL,
GALVANIZED

R 16'-0"
(TYP)

4+00

5+00

3+00

27'-0" PAY LIMIT
HD STEEL BEAM GUARDRAIL,
GALVANIZED (TYP)

4'-6" TO FIRST POST
ON BRIDGE (TYP)

27'-0" PAY LIMIT
GUARDRAIL APPROACH SECTION,
GALV HD STEEL BEAM

R 8'-6"

37'-6" PAY LIMIT
SPECIAL PROVISION
(BRIDGE RAILING, GALVANIZED
HDSB/FASCIA MOUNTED/STEEL TUBING)
(TYP)

ANCHORS FOR STEEL BEAM RAIL

STA 3+85.50 RT
STA 3+86.00 LT
STA 4+69.25 RT
STA 5+23.00 LT

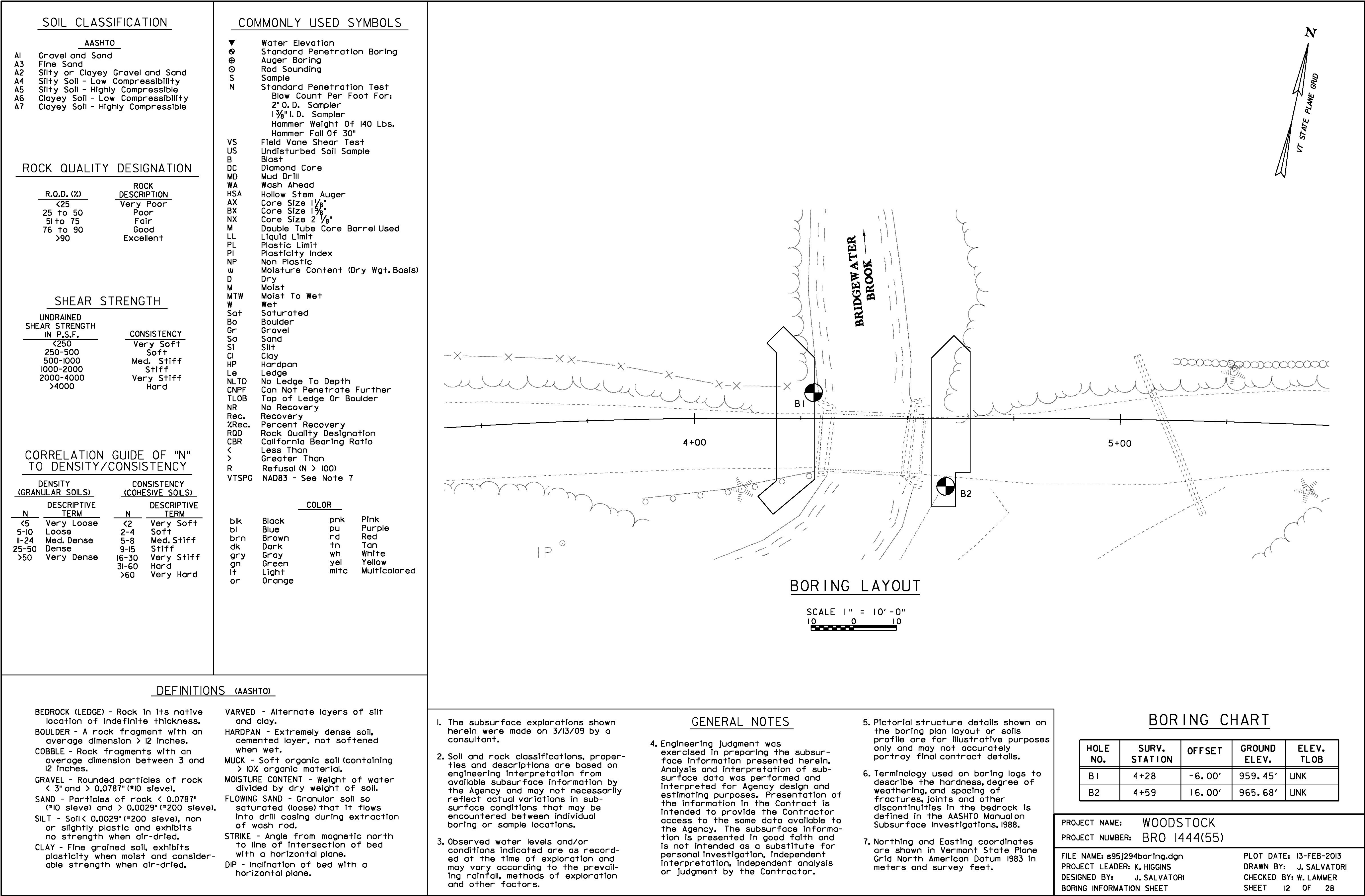
RAIL LAYOUT SHEET

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

PROJECT NAME: WOODSTOCK
PROJECT NUMBER: BRO 1444(55)

FILE NAME: s95j294rail.dgn
PROJECT LEADER: K.M. HIGGINS
DESIGNED BY: J. SALVATORI
RAIL LAYOUT SHEET

PLOT DATE: 13-FEB-2013
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 11 OF 28



MIKE'S BORING & CORING

PO Box 75 ° East Barre, Vermont 05649 ° 802 476-5073

TO: David Frothingham DeWolfe Engineering Associates, Inc. P.O. Box 1576 Montpelier, VT 05602	PROJECT NAME:	N. Bridgewater Road Bridge	SHEET:	1
	LOCATION:	Woodstock, VT	DATE:	3-13-09
	MBC JOB #:	09017	HOLE #:	B-1
			LINE & STA.	
			OFFSET:	

Ground Water Observations none at _0_ hours	Augers-Size I.D.	3.25"	Surface Elevation: Date Started: 3-13-09 Date Completed: 3-13-09 Boring Foreman: Mike McGinley Inspector: David Frothingham Soils Engineer:
	Split Spoon	2"	
	Hammer Wt.	140#	
	Hammer Fall	30"	

LOCATION OF BORING: NORTH WEST CORNER OF BRIDGE

Sample Depths From/To (Feet)	Type of Samp le	Blows per 6" on Sampler	Moisture Density or Consist.	Strata Change Elev.	Soil Identification	Sample		
						No.	Pen. Inches	Rec. Inches
5'-7'	Dry	54/36/18/22	Dry	7'	Medium gravel with large stone fragments into weathered ledge	1	24	19
10'-12'	Dry	13/16/18/21	Dry		Gray silty very fine sand with stones	2	24	20
15'-17'	Dry	44/33/36/42	Damp		Gray silty very fine sand with stones –spoon broke bad recovery	3	24	3
20'-22'	Dry	13/38/48/72	-		No recovery	4	24	0

Ground Surface to 20' Used 3.25" augers: Then S.S. to 22'

Earth Borings 22'
Rock Coring
Samples: 4
HOLE NUMBER B-1

MIKE'S BORING & CORING

PO Box 75 ° East Barre, Vermont 05649 ° 802 476-5073

TO: David Frothingham DeWolfe Engineering Associates, Inc. P.O. Box 1576 Montpelier, VT 05602	PROJECT NAME:	N. Bridgewater Road Bridge	SHEET:	2
	LOCATION:	Woodstock, VT	DATE:	3-13-09
	MBC JOB #:	09017	HOLE #:	B-2
			LINE & STA.	
			OFFSET:	

Ground Water Observations none at _0_ hours	Augers-Size I.D.	3.25"	Surface Elevation: Date Started: 3-13-09 Date Completed: 3-13-09 Boring Foreman: Mike McGinley Inspector: David Frothingham Soils Engineer:
	Split Spoon	2"	
	Hammer Wt.	140#	
	Hammer Fall	30"	

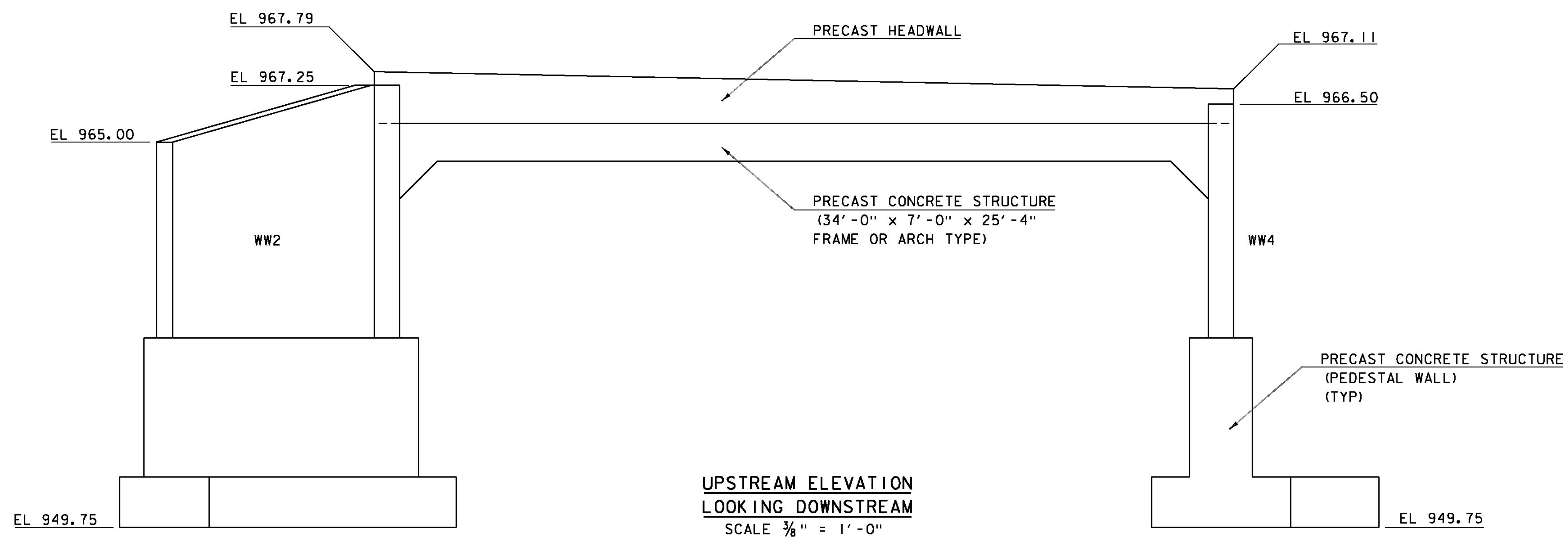
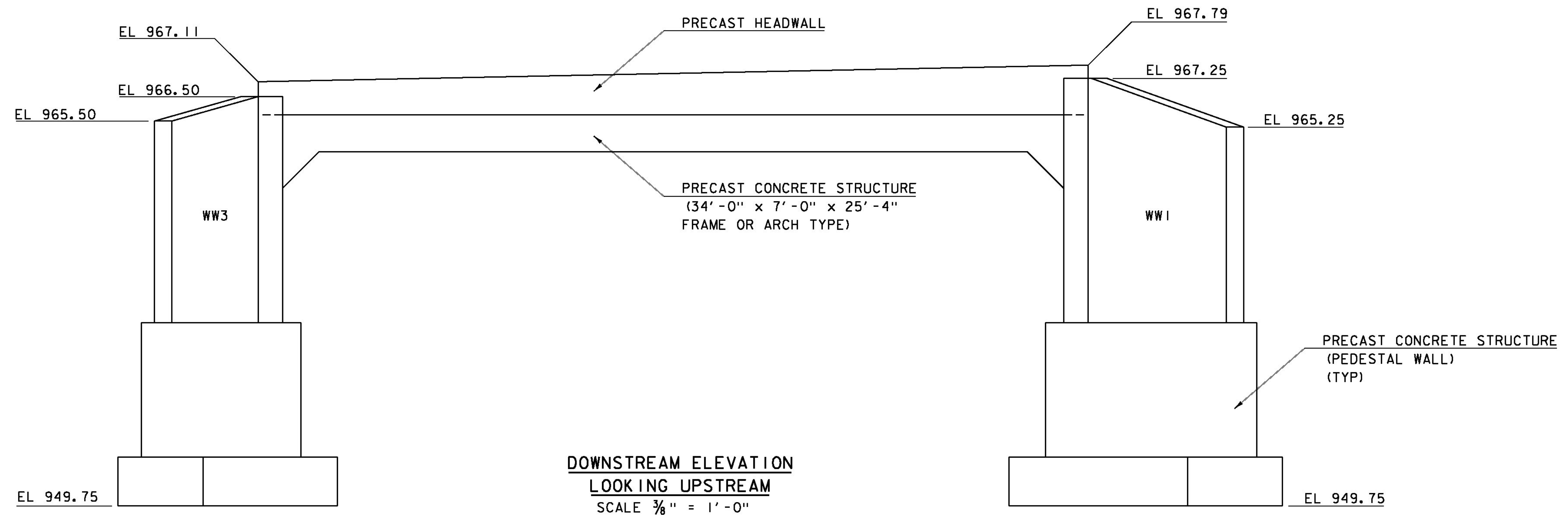
LOCATION OF BORING: SOUTH EAST CORNER OF BRIDGE

Sample Depths From/To (Feet)	Type of Samp le	Blows per 6" on Sampler	Moisture Density or Consist.	Strata Change Elev.	Soil Identification	Sample		
						No.	Pen. Inches	Rec. Inches
5'-7'	Dry	4/14/12/18	Dry	6.5'	Brown fine sand with silt into a medium sand and small stones with some organics (roots, wood)	1	24	20
10'-10'10"	Dry	30/100 for 4'	Dry		Brown medium sand with fractured rock into a gray silty very fine sand	2	10	8
15'-17'	Dry	39/39/49/60	Dry		Gray very hard packed silty sand and stones (hardpan)	3	24	14
					Auger refusal at 17'			
					100 blows for ¼" No recovery			

Ground Surface to 17' Used 3.25" augers: Then S.S. to refusal

Earth Borings 17'
Rock Coring
Samples: 3
HOLE NUMBER B-2

PROJECT NAME: WOODSTOCK	
PROJECT NUMBER: BRO 1444(55)	
FILE NAME: s95j294boring.dgn	PLOT DATE: 18-FEB-2013
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
BORING LOGS	SHEET 13 OF 28



PROJECT NAME: WOODSTOCK
PROJECT NUMBER: BRO 1444(55)

FILE NAME: s95j294sub.dgn	PLOT DATE: 13-FEB-2013
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
RIGID FRAME ELEVATION	SHEET 15 OF 28

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REMOVAL OF BRIDGE 23. BRIDGE 23 WILL BE REPLACED WITH A WIDER PRECAST CONCRETE STRUCTURE WITH A 7 FOOT RISE, SPANNING 32 FEET OVER BRIDGEWATER BROOK, ON NEW FOOTINGS ALONG THE SAME ALIGNMENT. BRIDGE 23 IS LOCATED IN THE TOWN OF WOODSTOCK, ON TOWN HIGHWAY 6, APPROXIMATELY ONE HALF MILE FROM THE INTERSECTIONS OF VT ROUTE 12 AND TOWN HIGHWAY 6. TH6 WILL BE CLOSED TO TRAFFICE WHILE THE EXISTING STRUCTURE IS REPLACED.

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 0.33 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 LOW ROLLING HILLS, THAT IS MOSTLY FIRMLY ESTABLISHED FOREST WITH NEARBY FARM FIELDS. TH 6 (N. BRIDGEWATER STREET) AND A NUMBER OF WOOD DRIVES LIE WITHIN THE PROJECT SITE.

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

THE BRIDGEWATER BROOK IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE BROOK IS CLASSIFIED AS SINJOUS, ALLUVIAL AND PROBABLY INCISED, AT THE SITE. THE STREAM BED CONSISTS OF MOSTLY GRAVEL AND COBBLES WITH SOME SAND AND BOULDERS. THE TRIBUTARY AREA AT THE CULVERT CROSSING IS 4.3 MILES². 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 HARDWOOD TREES AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY THE TEMPORARY BRIDGE AND REPLACEMENT OF THE EXISTING BRIDGE. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE IV AS SPECIFIED ON THE PLANS.DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF WINDSOR, VERMONT. SOILS ON THE PROJECT SITE ARE BUCKLAND LOAM, 15% TO 35% SLOPES, “K FACTOR” = 0.43. THE SOIL IS CONSIDERED HIGHLY ERODIBLE DUE TO MODERATE SLOPES AND A HIGH “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: YES, THE BROOK IS CRITICAL FISH HABITAT
HISTORICAL OR ARCHEOLOGICAL AREAS: NO
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: BRIDGEWATER BROOK
WETLANDS: NO

1.3 RISK EVALUATION

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

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

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

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

1.4.1 MARK SITE BOUNDARIES

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

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES.

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

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

1.4.3 SITE ENTRANCE/EXIT STABILIZATION
TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MNIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTOR'S PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

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

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

PIPE INLET PROTECTION SHALL BE USED AS SHOWN ON THE PLANS, AT A MINIMUM .

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 CONSTRUCITON SITE.

THE PROJECT AREA IS REALTIVELY FLAT. THEREFORE IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL 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.

THE PROJECT AREA IS REALTIVELY FLAT. THEREFORE IT IS NOT ANTICIPATED THAT CHECK STRUCTURES WILL BE NECESSARY.

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

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.

TREATMENT OF DEWATERING COFFERDAMS IS ANTICIPATED. A FILTER BAG LOCATION FOR TREATMENT HAS BEEN PROPOSED AND IS SHOWN ON THE PLANS. HOWEVER THE SPECIFIC MEANS FOR TREATMENT OF DISCHARGE SHALL BE PROVIDED BY THE CONTRACTOR.

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

1.5 SEQUENCE AND STAGING

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

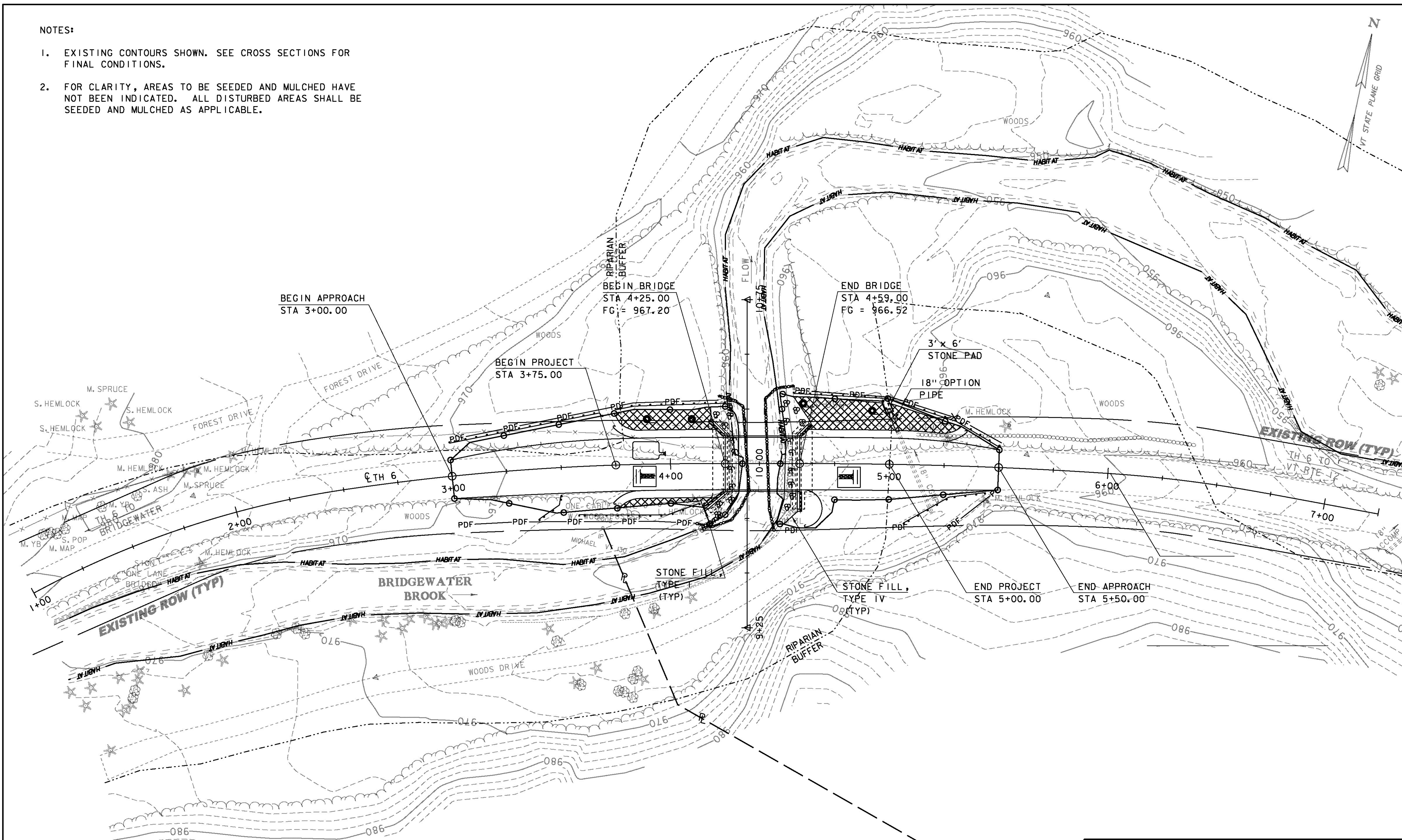
1.5.1 CONSTRUCTION SEQUENCE

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

PROJECT NAME: WOODSTOCK	
PROJECT NUMBER: BRO 1444(55)	
FILE NAME: s95j294EPSC_Narrative.dgn	PLOT DATE: 13-FEB-2013
PROJECT LEADER: K.M. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
EPSC NARRATIVE	SHEET 16 OF 28

NOTES:

1. EXISTING CONTOURS SHOWN. SEE CROSS SECTIONS FOR FINAL CONDITIONS.
2. FOR CLARITY, AREAS TO BE SEEDED AND MULCHED HAVE NOT BEEN INDICATED. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED AS APPLICABLE.



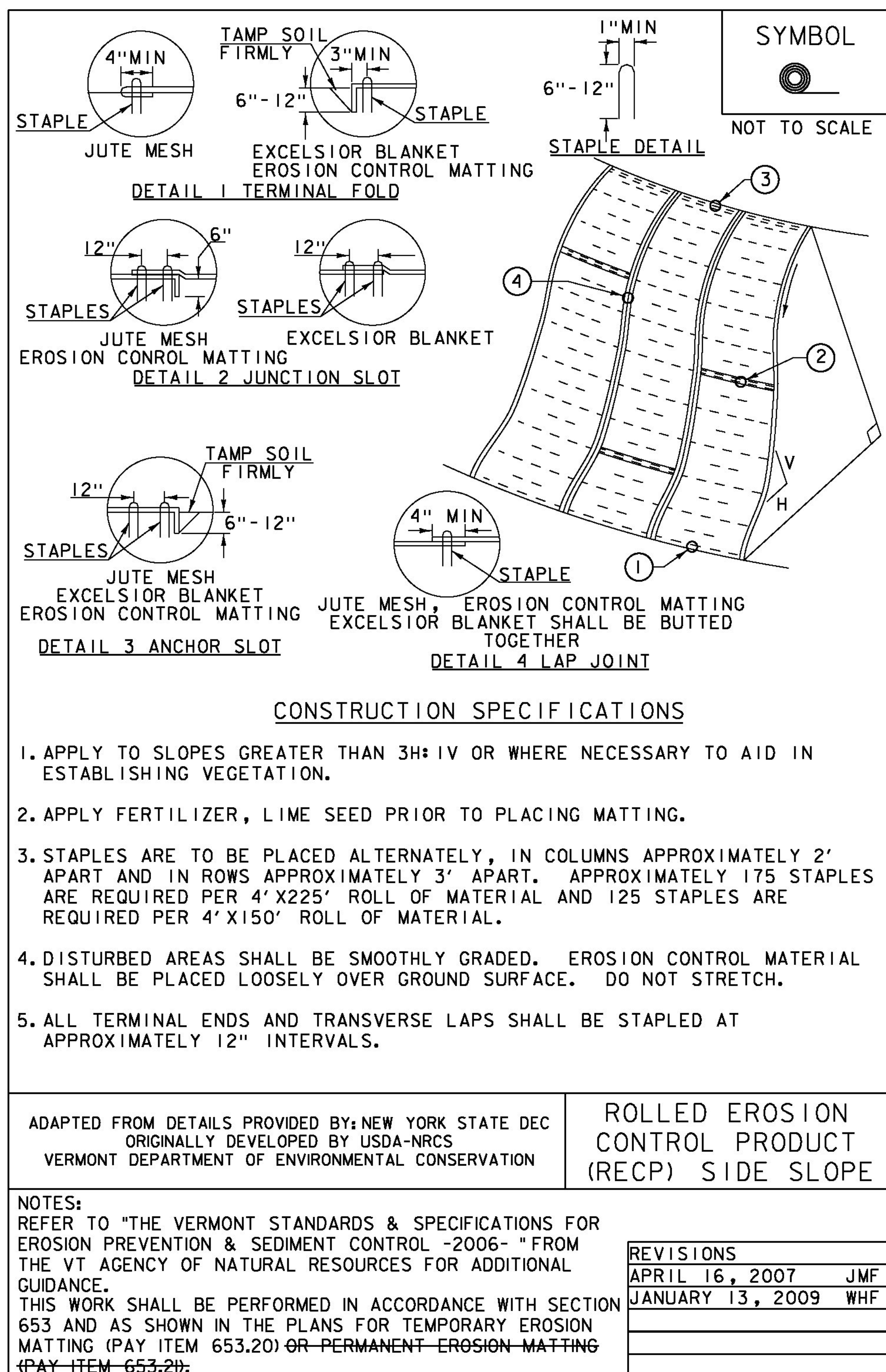
EPSC PLAN

SCALE 1" = 20' - 0
20 0 20

PROJECT NAME: WOODSTOCK
PROJECT NUMBER: BRO 1444(55)

FILE NAME: s95j294bdr_ero.dgn
PROJECT LEADER: K.M. HIGGINS
DESIGNED BY: J. SALVATORI
EPSC PLAN

PLOT DATE: 13-FEB-2013
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 17 OF 28



VAOT RURAL AREA MIX					
	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
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					
	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
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	<i>FOLLOW</i>	PELLETIZED	<i>FOLLOW</i>
500 LBS/AC	MANUFACTURER	2 TONS/AC	MANUFACTURER

CONSTRUCTION GUIDANCE

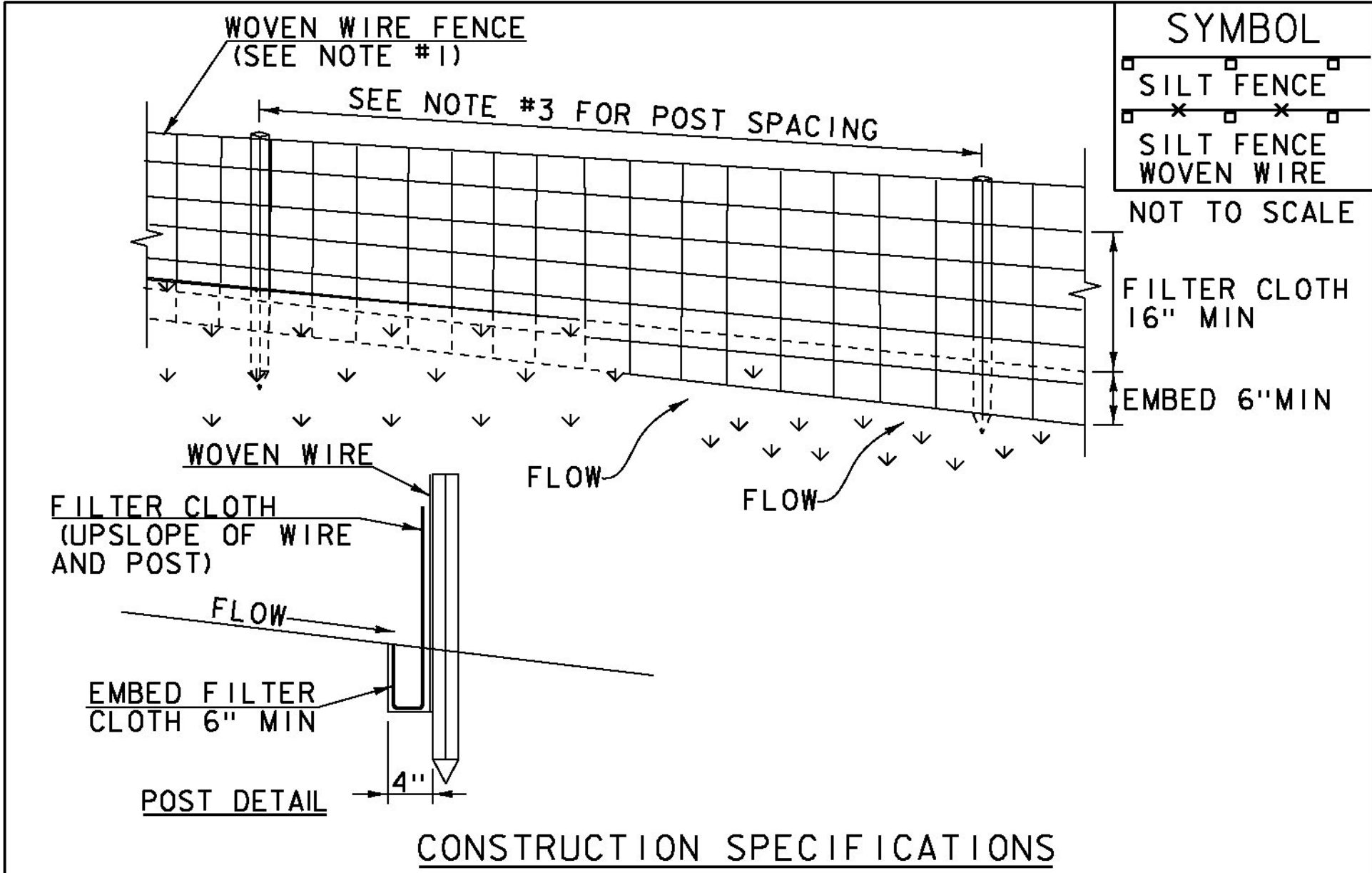
1. RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
2. URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING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

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES		TURF ESTABLISHMENT
		REVISIONS
		JUNE 23, 2009 WHF
		JANUARY 15, 2010 WHF
		FEBRUARY 16, 2011 WHF

EPSC LAYOUT PLAN SYMBOLOGY LEGEND

PROJECT BOUNDARY FENCE		ENVIRONMENTAL RESOURCES		ARCHEOLOGICAL & HISTORIC		CONSTRUCTION FEATURES	
PDF ——— PDF	PROJECT DEMARCATION FENCE	WETLAND BOUNDARY		— · —	ARCHEOLOGICAL BOUNDARY	○ —▲— ○	TOE OF SLOPE CUT OR FILL
BF —x—x— BF	BARRIER FENCE	·····	RIPARIAN BUFFER ZONE	— · —	HISTORIC DISTRICT BOUNDARY	⊗ ⊗ ⊗ ⊗	STONE FILL, TYPE III
		-----	SOIL TYPE BOUNDARY	— · —	HISTORIC AREA	⊗ ⊗ ⊗ ⊗	STONE FILL, TYPE II
		—— · ——	THREATENED & ENDANGERED SPECIES	(H)	HISTORIC STRUCTURE	⊗ ⊗ ⊗ ⊗	STONE FILL, TYPE I
EPSC MEASURES		HAZ ——— HAZ	HAZARDOUS WASTE AREA	UTILITY SYMBOLOGY			
ONNOONNOONNO	FILTER CURTAIN	—— · ——	AGRICULTURAL LAND	— AER E&T —	AREAL ELECTRIC & TELEPHONE		
—————	SILT FENCE	—— · ——	FISH & WILDLIFE HABITAT	— E — · ·	AREAL ELECTRIC		
—x—x—x—x—x—	SILT FENCE WOVEN WIRE	—— · ——	FLOOD PLAIN	— UE — · · ·	UNDERGROUND ELECTRIC		
▶——▶——▶	CHECK DAM	— · —	STORM WATER	— UT — · · ·	UNDERGROUND TELEPHONE		
[Pattern]	DISTURBED AREAS REQUIRING RE-VEGETATION	— ◆ — ◆ — ◆	USDA FOREST SERVICE LANDS	— UC — · · ·	UNDER GROUND TV		
[Pattern]	EROSION MATTING	— · · — · ·	WILDLIFE HABITAT SUIT/CONN	— G — · · ·	GAS LINE		
				— W — · · ·	WATER LINE		

PROJECT NAME: WOODSTOCK	
PROJECT NUMBER: BRO 1444(55)	
FILE NAME: s95j294ero_details.dgn	PLOT DATE: 13-FEB-2013
PROJECT LEADER: K.M. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
EPSC DETAILS I	SHEET 18 OF 28



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

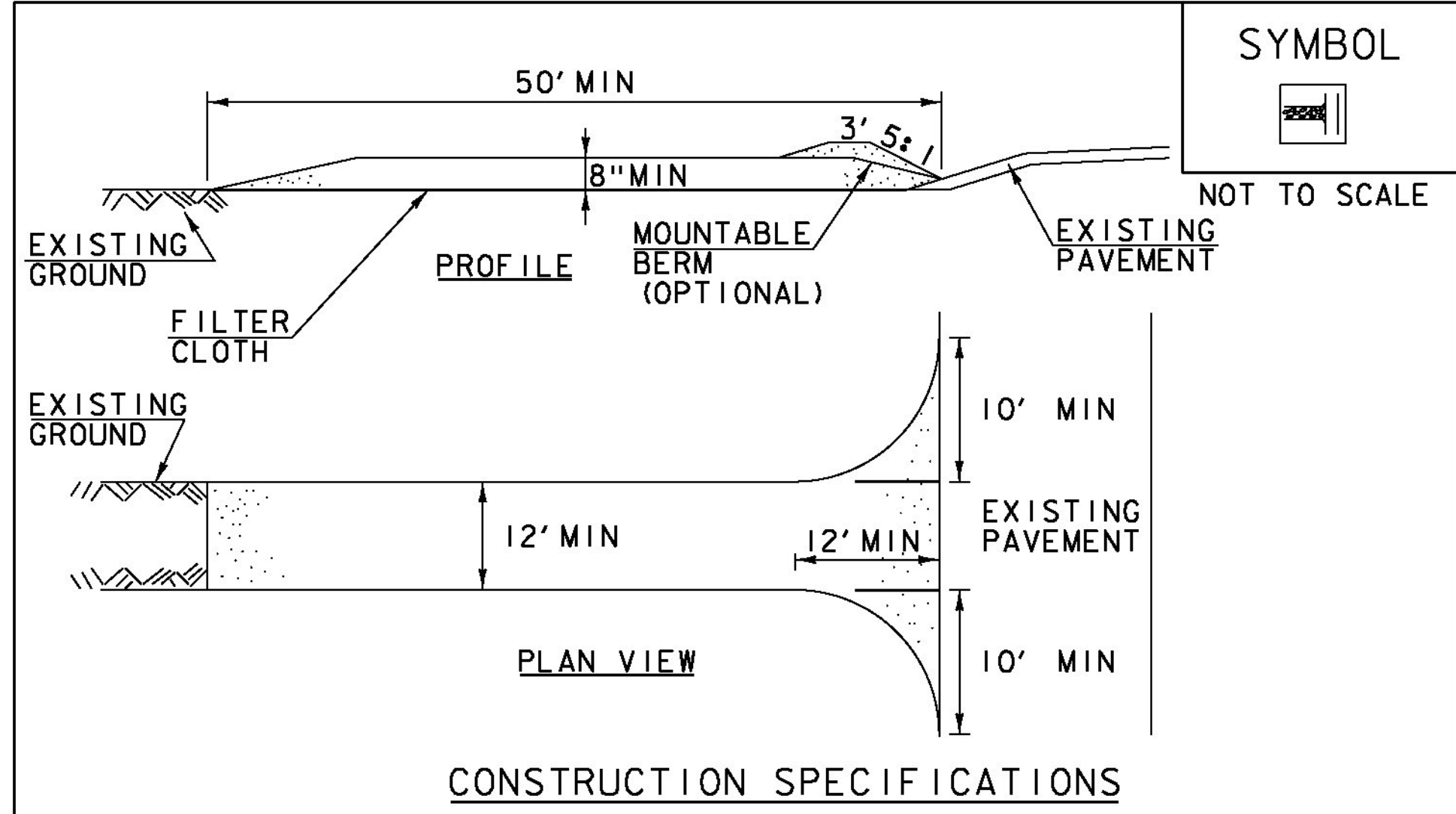
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

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

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

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



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

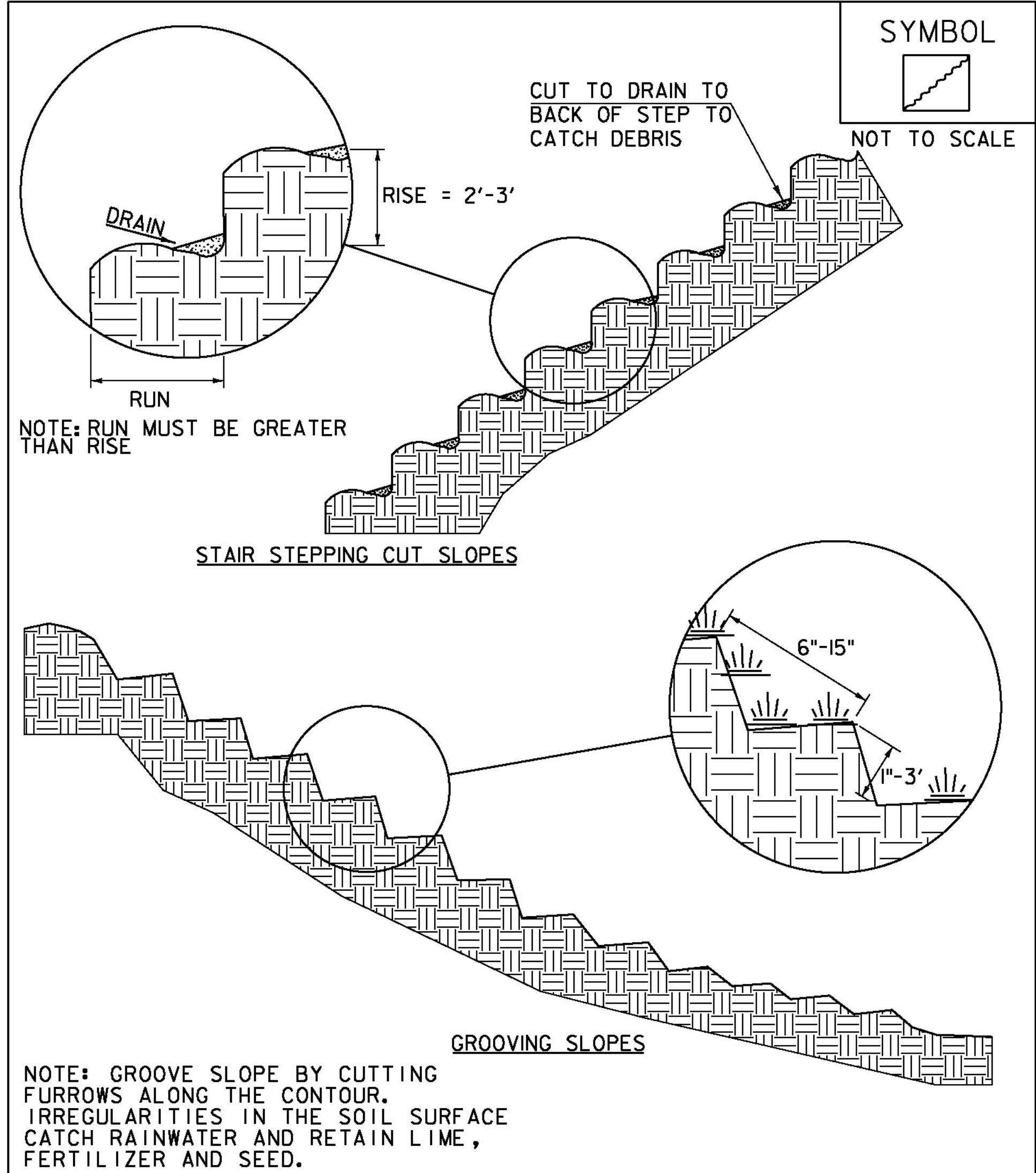
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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



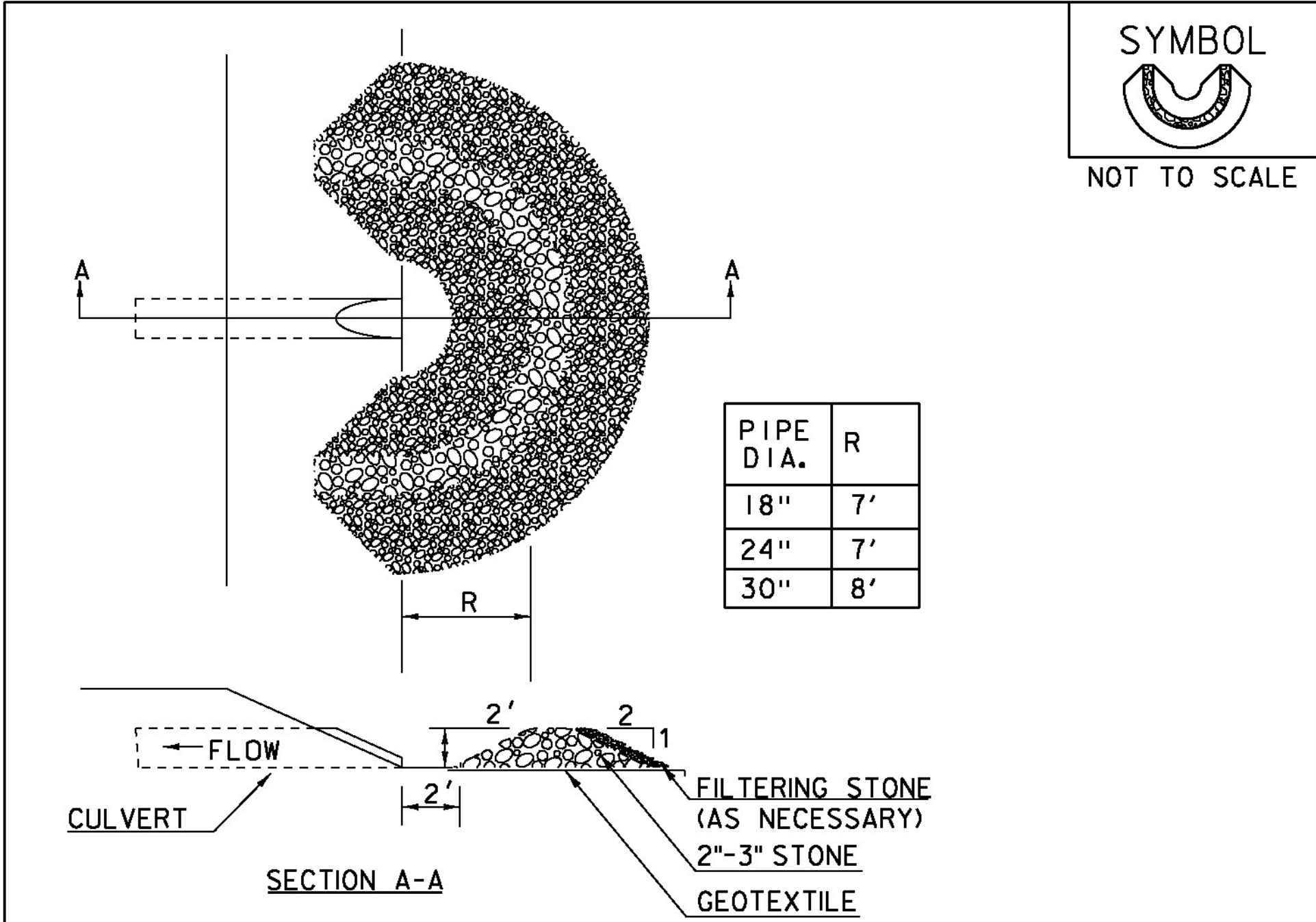
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SURFACE ROUGHENING

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

THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT

REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF



PIPE DIA.	R
18"	7'
24"	7'
30"	8'

CONSTRUCTION SPECIFICATIONS

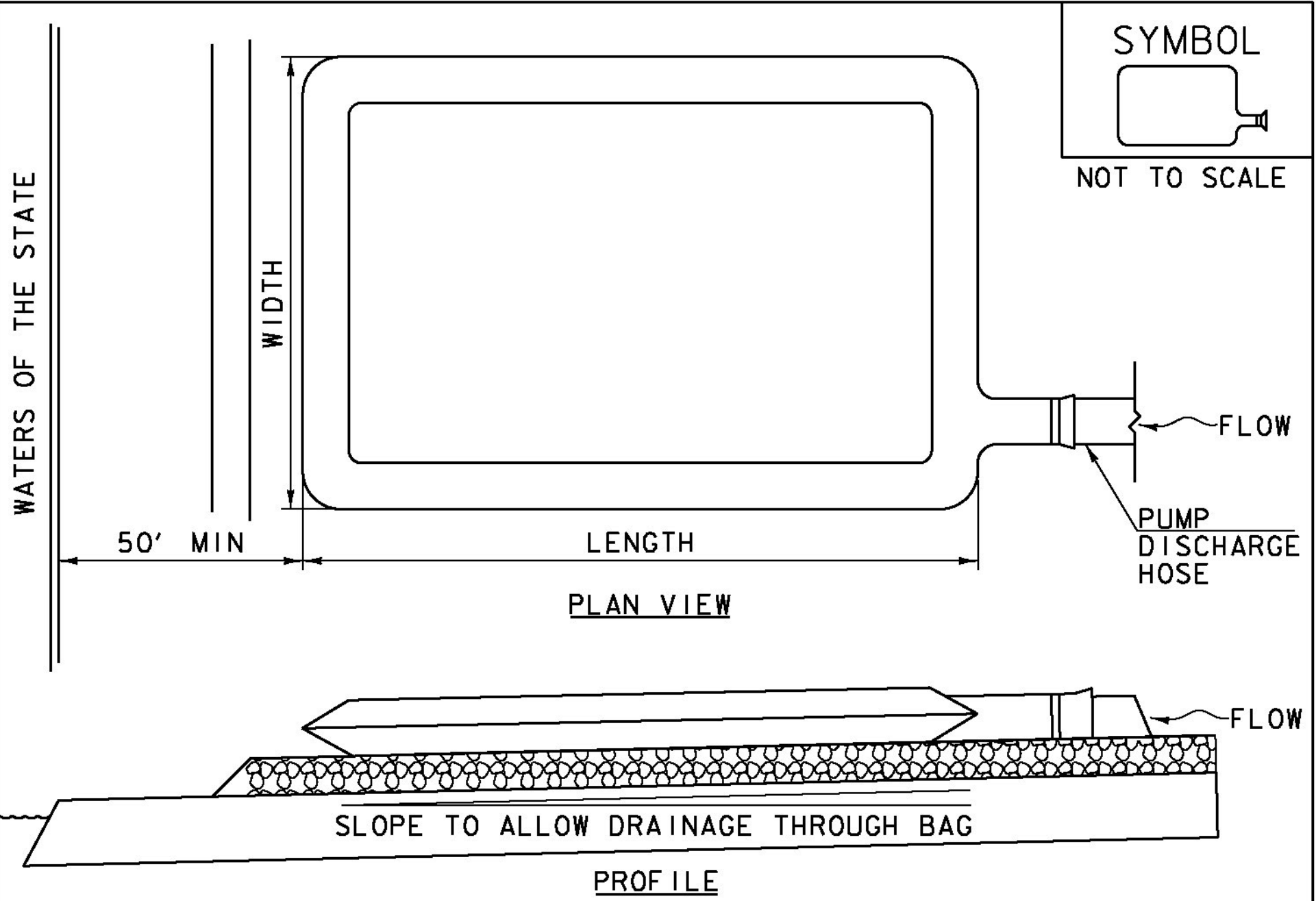
1. USE 2" TO 3" STONE. FILTERING STONE SHALL BE 3/4".
2. PLACE STONE OVER GEOTEXTILE.
3. ONCE THE AREAS UPSTREAM FROM THE CHECK DAM ARE STABILIZED WITH VEGETATION, THE SEDIMENT TRAPPED BEHIND THE DAM SHALL BE DISPOSED OF IN AN APPROVED WASTE AREA.
4. THE CHECK DAM(S) SHALL BE FLATTENED AND GRADED IN A MANNER WHICH PROTECTS THE AREA FROM EROSION AND CHANNEL BLOCKAGE . (GEOTEXTILE MUST BE REMOVED).
5. THE GEOTEXTILE MUST BE DISPOSED OF APPROPRIATELY.
6. THE AREA CONTRIBUTING TO THE CHECK DAM SHALL NOT EXCEED 4 ACRES.

ADAPTED FROM DETAILS PROVIDED BY: ILLINOIS USDA-NRCS
ORIGINALLY DEVELOPED BY USDA-NRCS

PIPE INLET
PROTECTION

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH
SECTION 653 FOR INLET PROTECTION DEVICE, TYPE I (PAY
ITEM 653.40).

REVISIONS	
MARCH 6, 2008	WHF
JANUARY 13, 2009	WHF



CONSTRUCTION SPECIFICATIONS

1. THE PRIMARY PURPOSE OF FILTER BAG IS TO RETAIN SILT, SAND, AND FINES DURING DEWATERING OPERATIONS.
2. FILTER BAGS SHALL BE INSTALLED ON A VEGETATED SLOPE GRADED TO ALLOW INCOMING WATER TO FLOW THROUGH THE BAG.
3. FILTER BAGS MAY ALSO BE PLACED ON COARSE AGGREGATE, STONE, OR HAYBALES TO INCREASE FILTRATION EFFICIENCY.
4. FILTER BAGS SHALL BE LOCATED A MINIMUM OF 50' FROM WATERS OF THE STATE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. THE NECK OF THE FILTER BAG SHALL BE STRAPPED TIGHTLY TO THE DISCHARGE HOSE.
6. A FILTER BAG IS FULL WHEN IT NO LONGER CAN EFFICIENTLY FILTER SEDIMENT OR ALLOW WATER TO PASS AT A REASONABLE RATE.
7. FILTER BAG SHALL BE DISPOSED OF AS APPROVED IN THE EPSC PLAN OR AS DIRECTED BY THE ENGINEER.

FILTER BAG

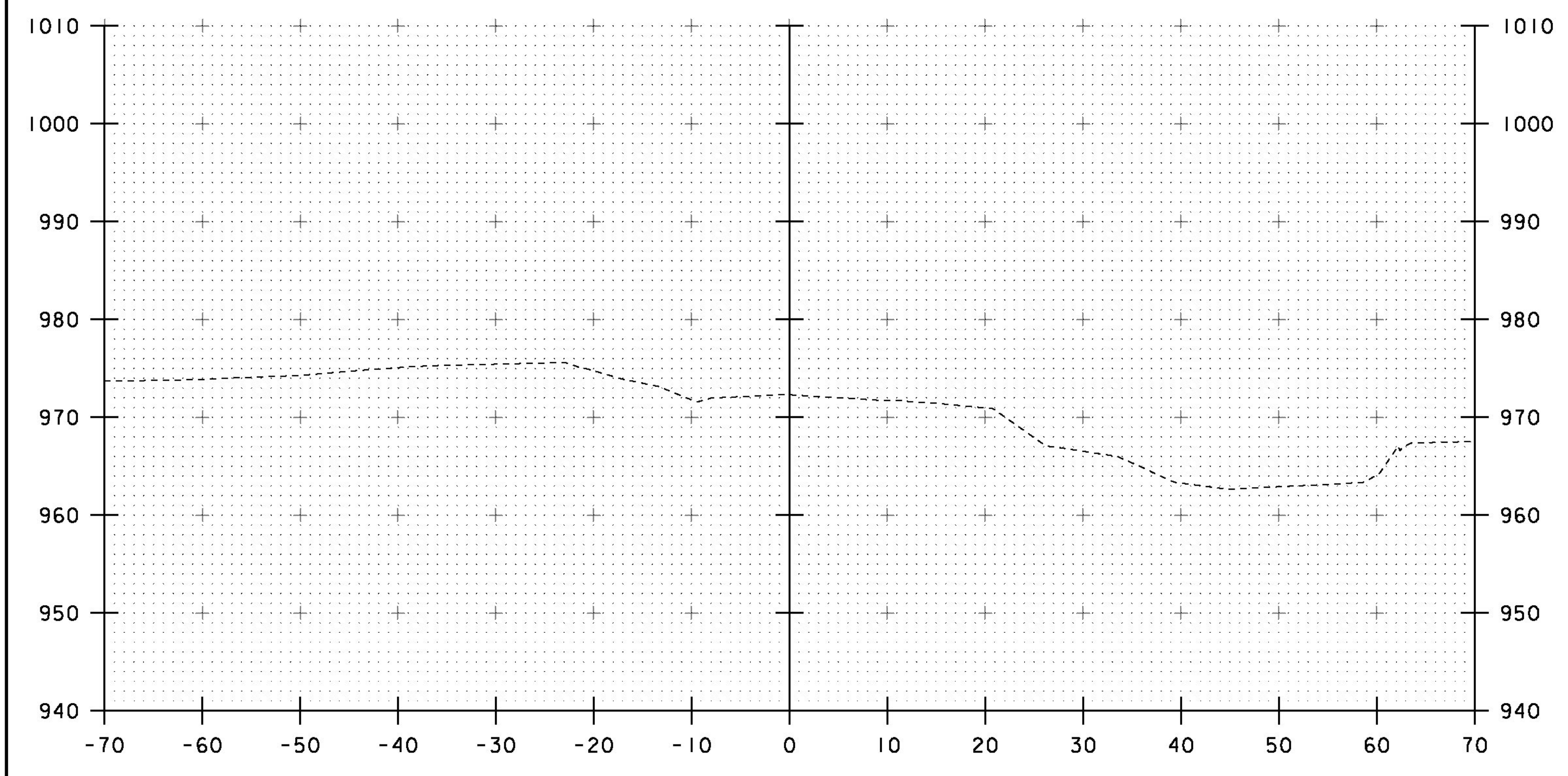
NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR
EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM
THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL
GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH
SECTION 653 FOR FILTER BAG (PAY ITEM 653.45) AND AS
SPECIFIED IN THE CONTRACT.

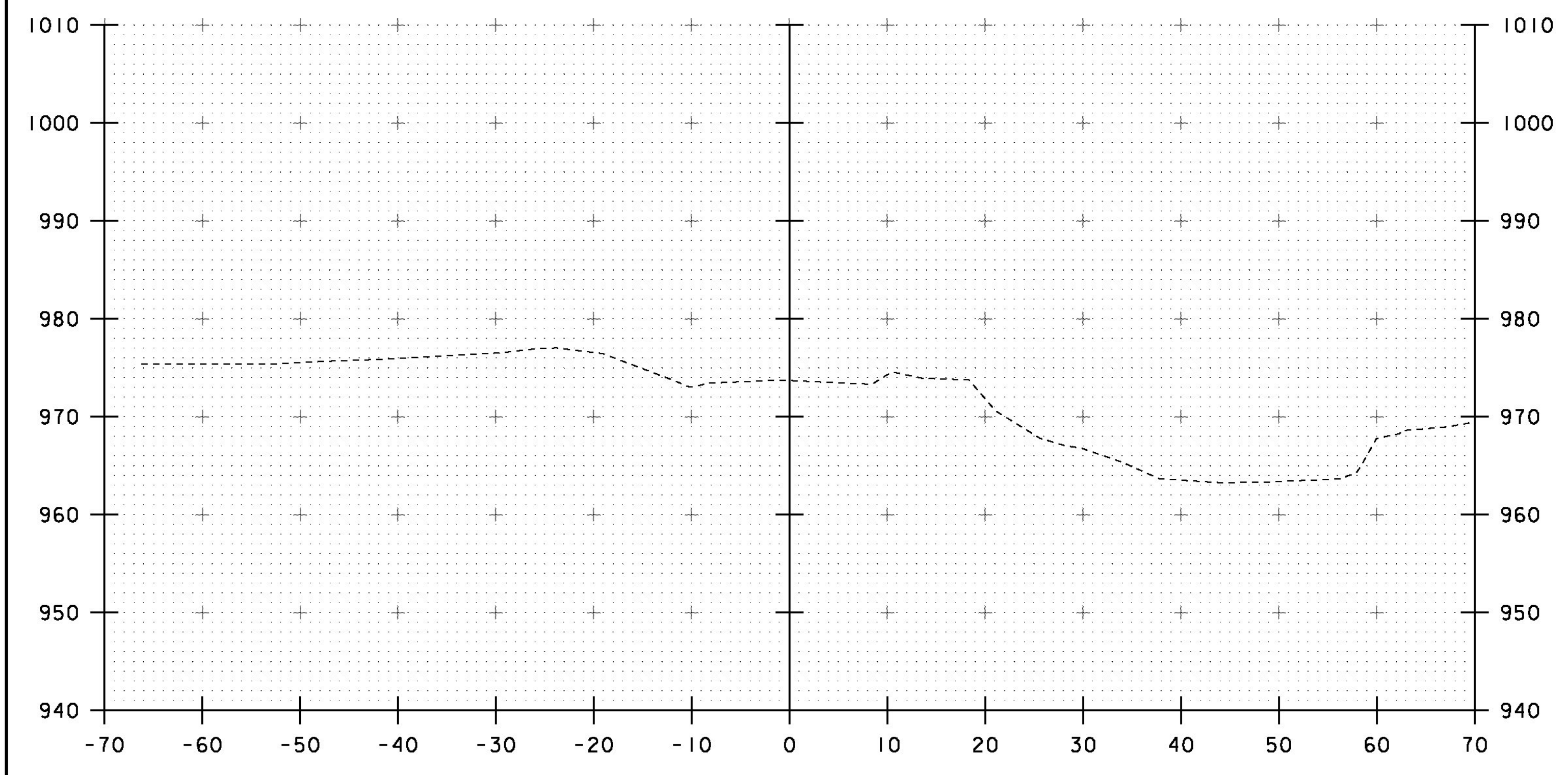
REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

PROJECT NAME: WOODSTOCK
PROJECT NUMBER: BRO 1444(55)

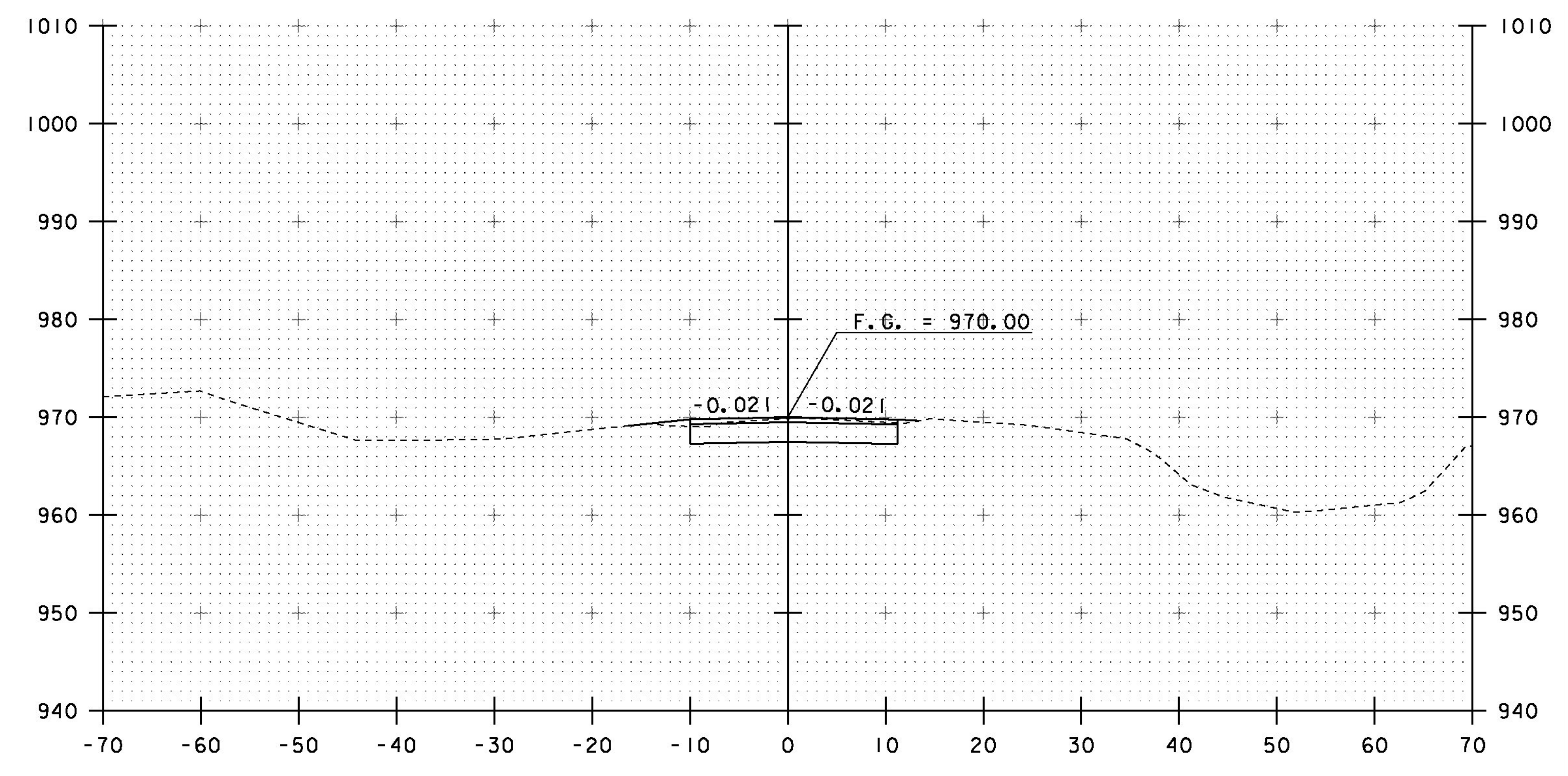
FILE NAME: s95j294ero_details.dgn
PROJECT LEADER: K.M. HIGGINS
DESIGNED BY: J. SALVATORI
EPSC DETAILS 3
PLOT DATE: 13-FEB-2013
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 20 OF 28



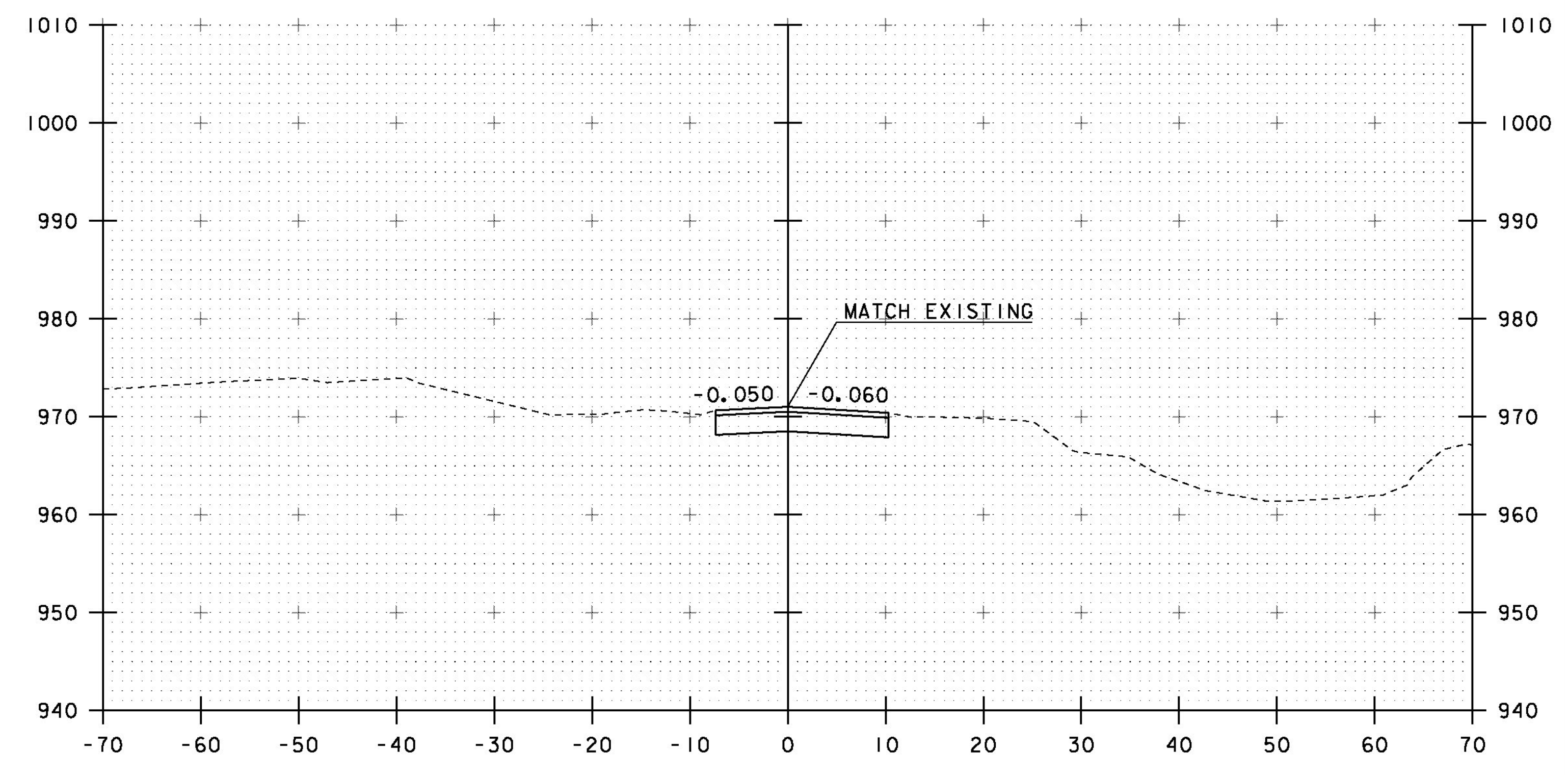
2+75



2+50



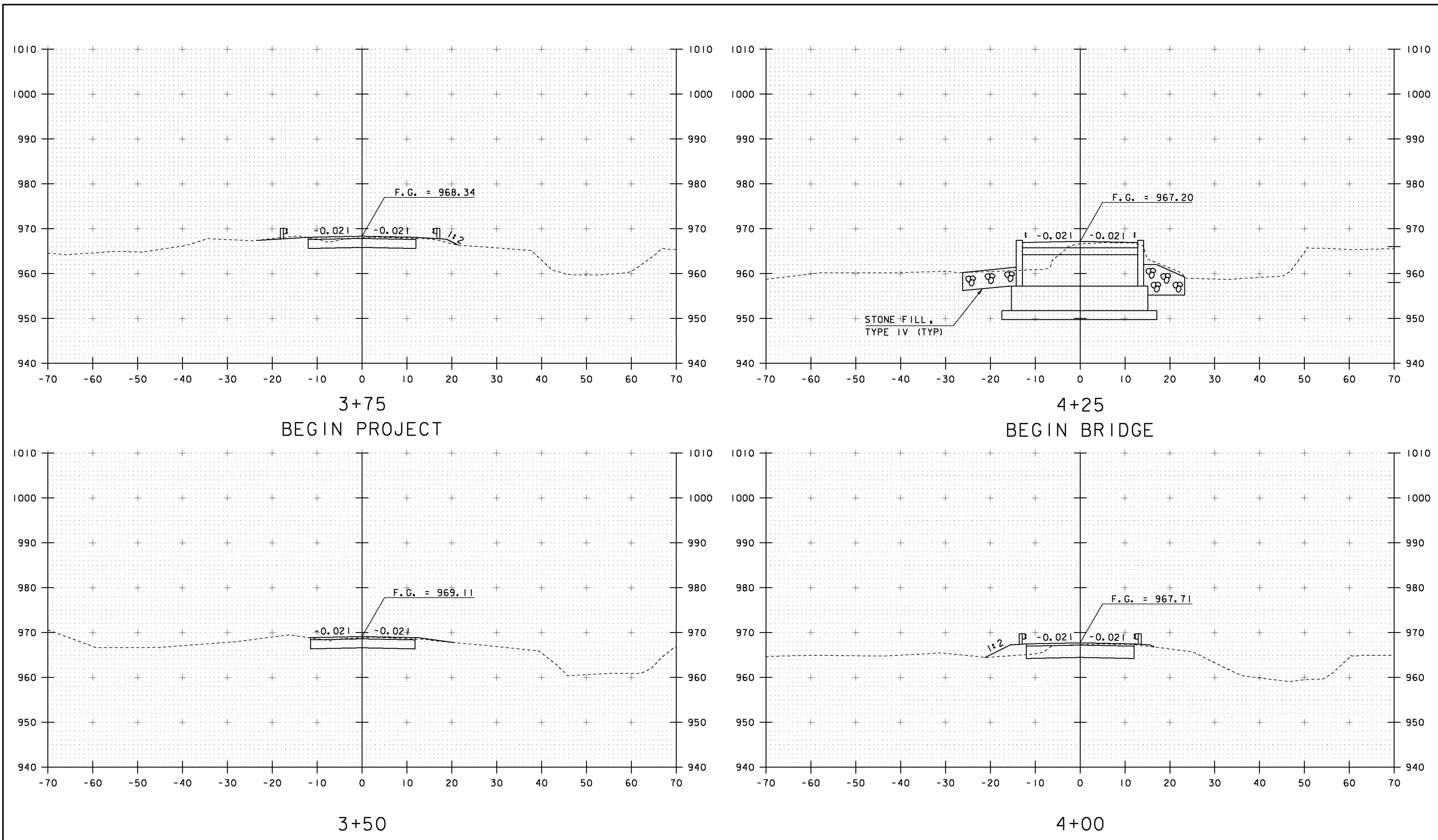
3+25



3+00
BEGIN APPROACH

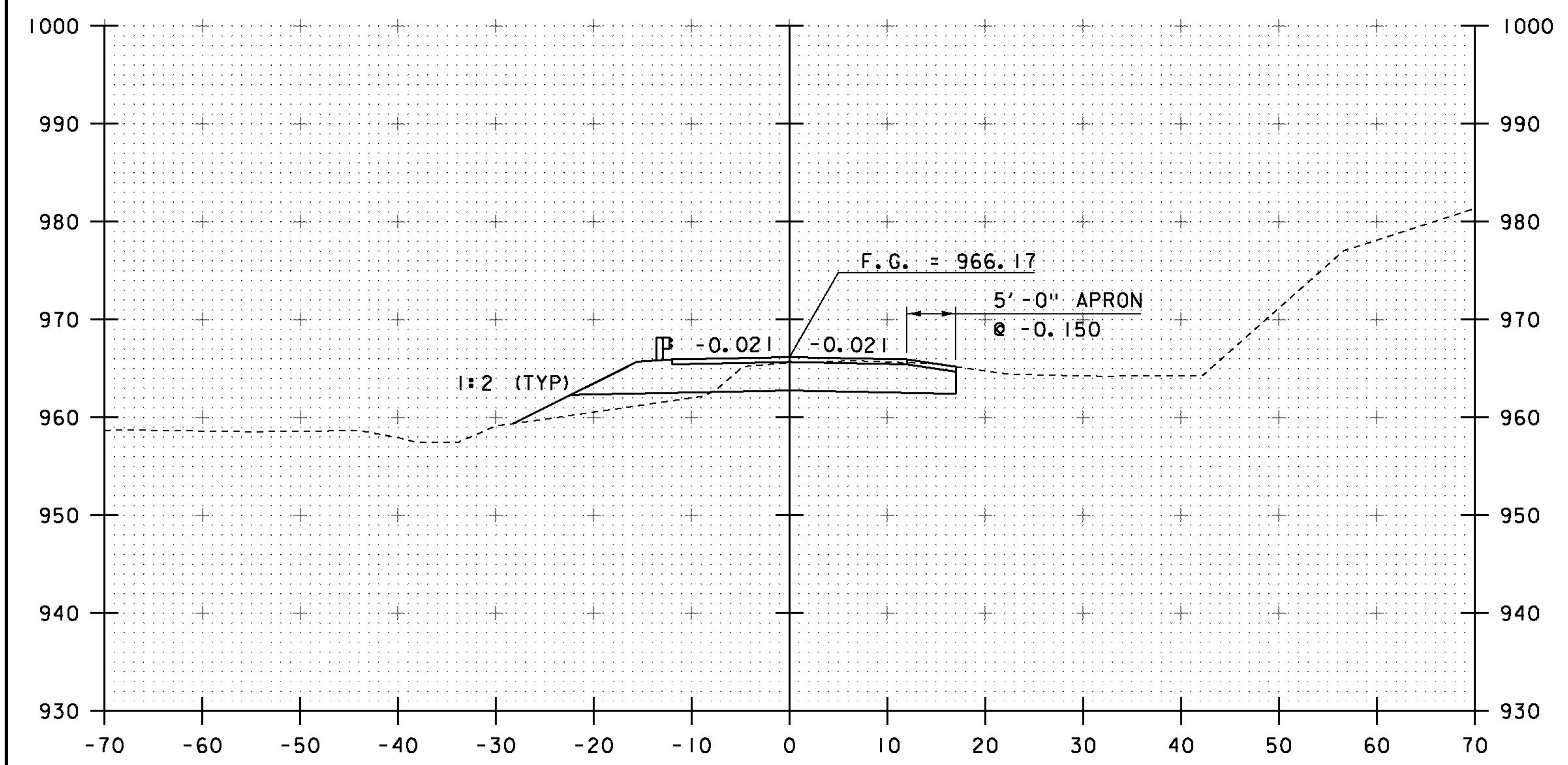
STA. 2+50 TO STA. 3+25

PROJECT NAME: WOODSTOCK	
PROJECT NUMBER: BRO 1444(55)	
FILE NAME: s95j294xsl.dgn	PLOT DATE: 13-FEB-2013
PROJECT LEADER: K.M. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
MAINLINE SECTIONS 1	SHEET 21 OF 28

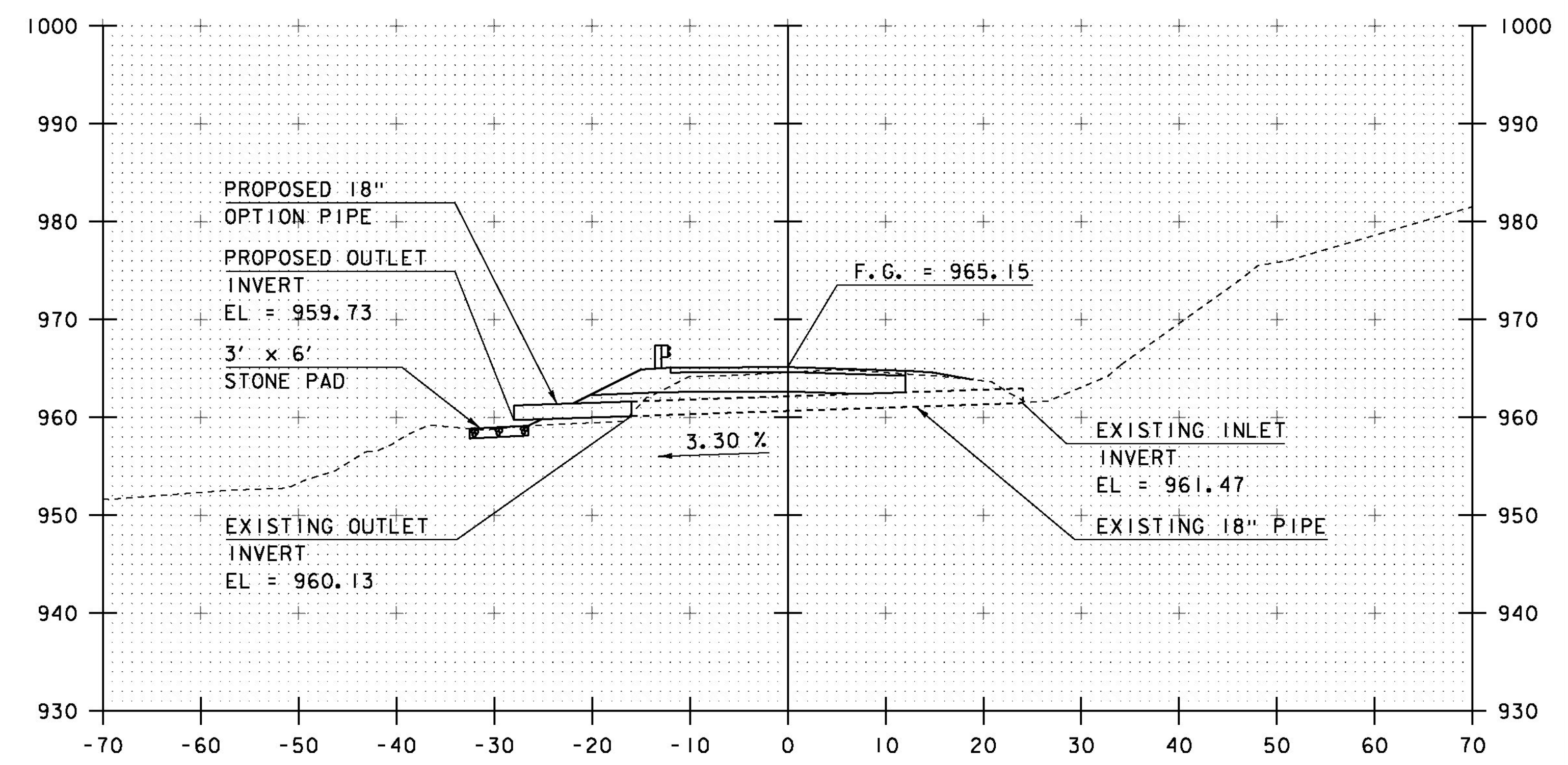


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PROJECT NUMBER: BRO 1444(55)	
FILE NAME: s95j294xsl.dgn	PLOT DATE: 13-FEB-2013
PROJECT LEADER: K.M. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
MAINLINE SECTIONS 2	SHEET 22 OF 28

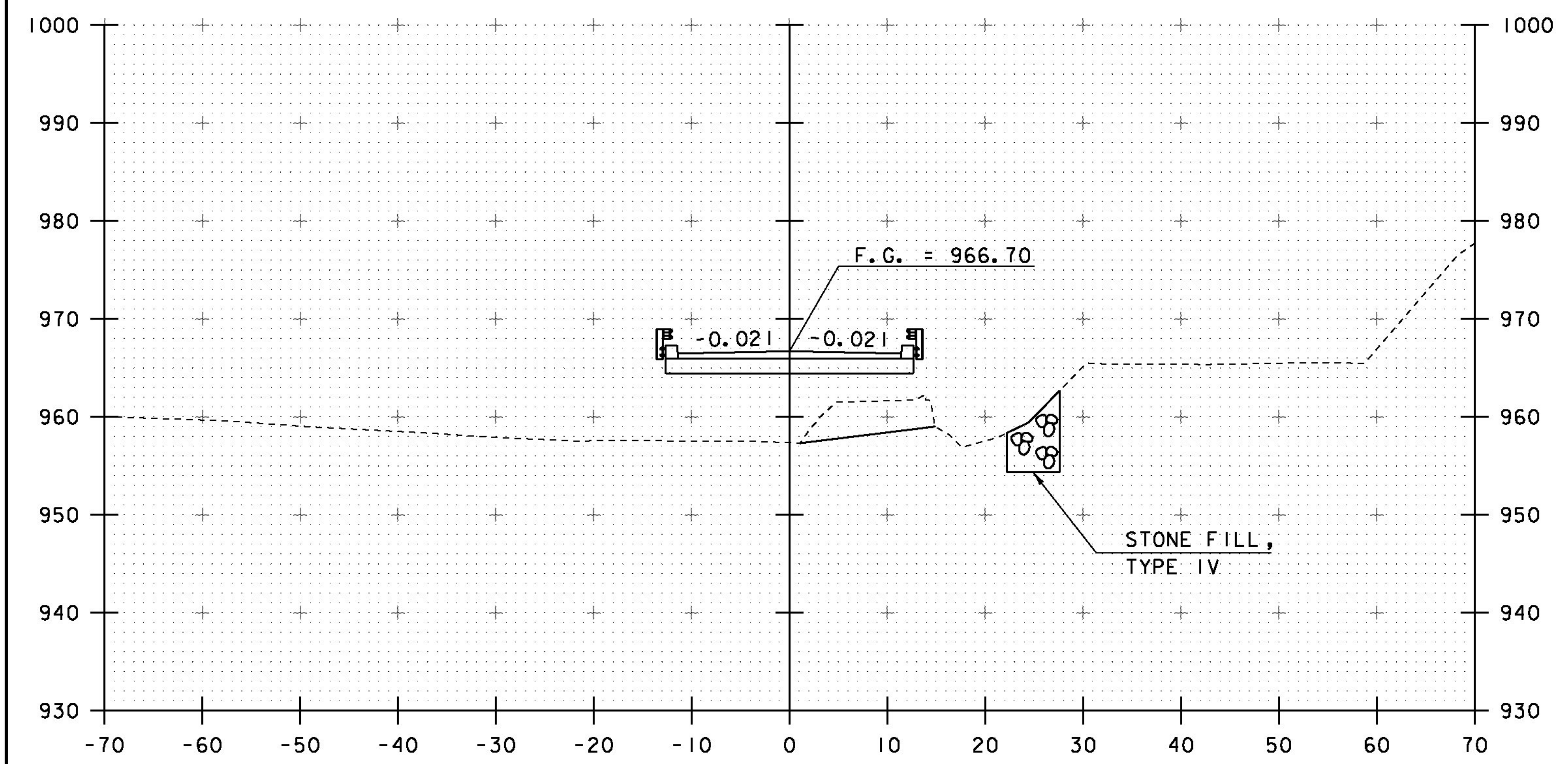
STA. 3+50 TO STA. 4+25



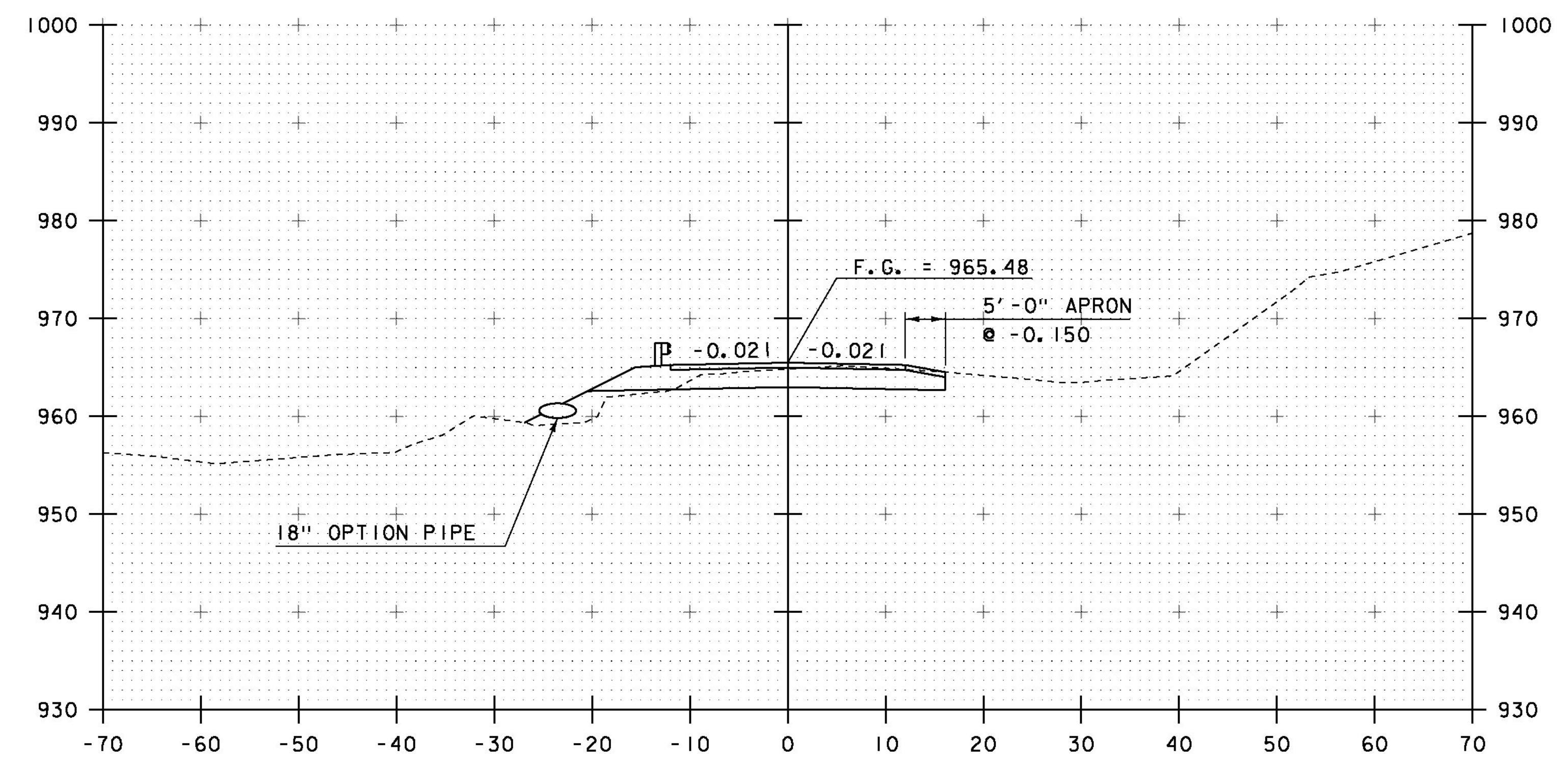
4+75



5+10
SKEWED @ 24°



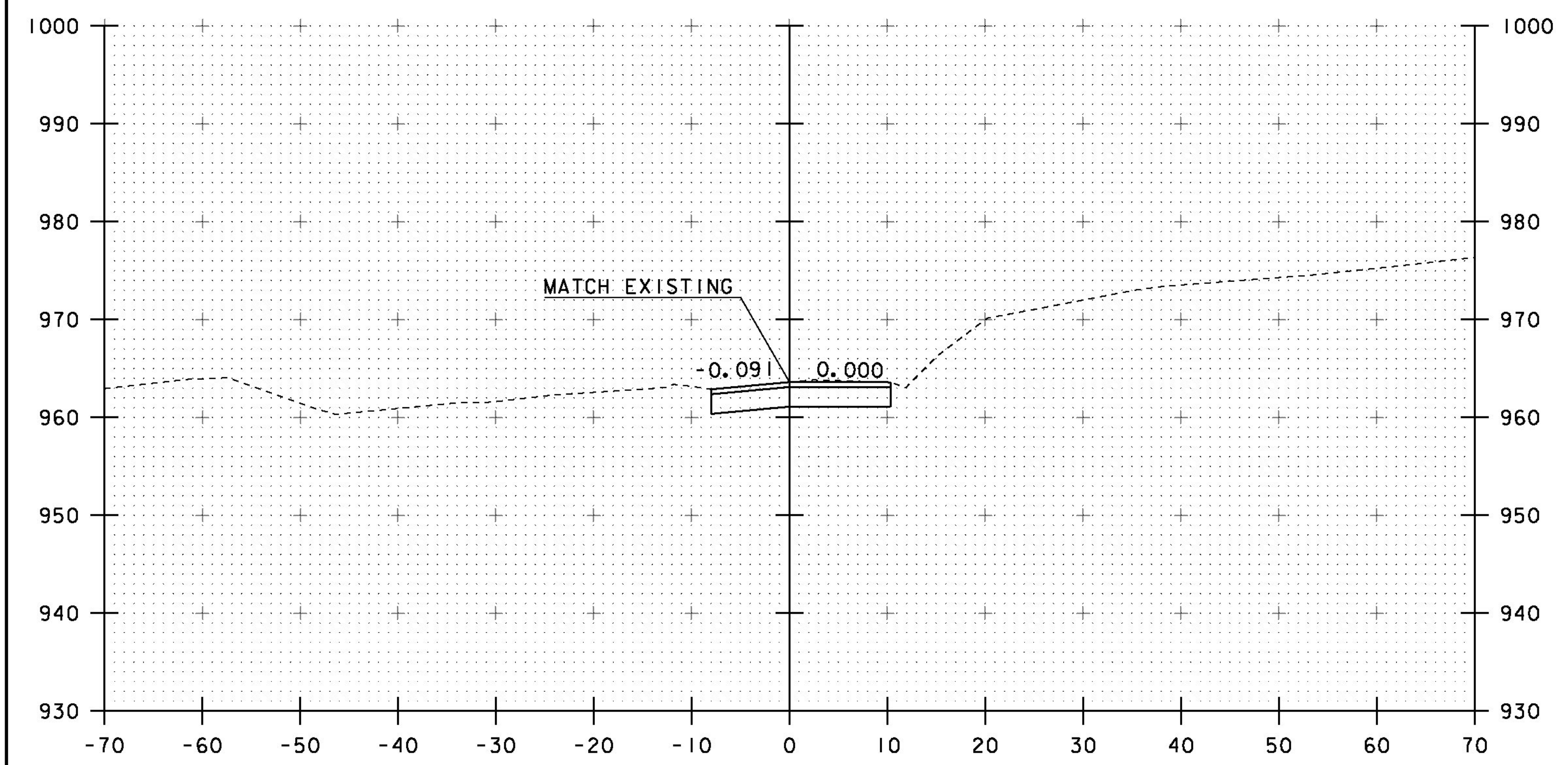
4+50
END BRIDGE STA 4+59



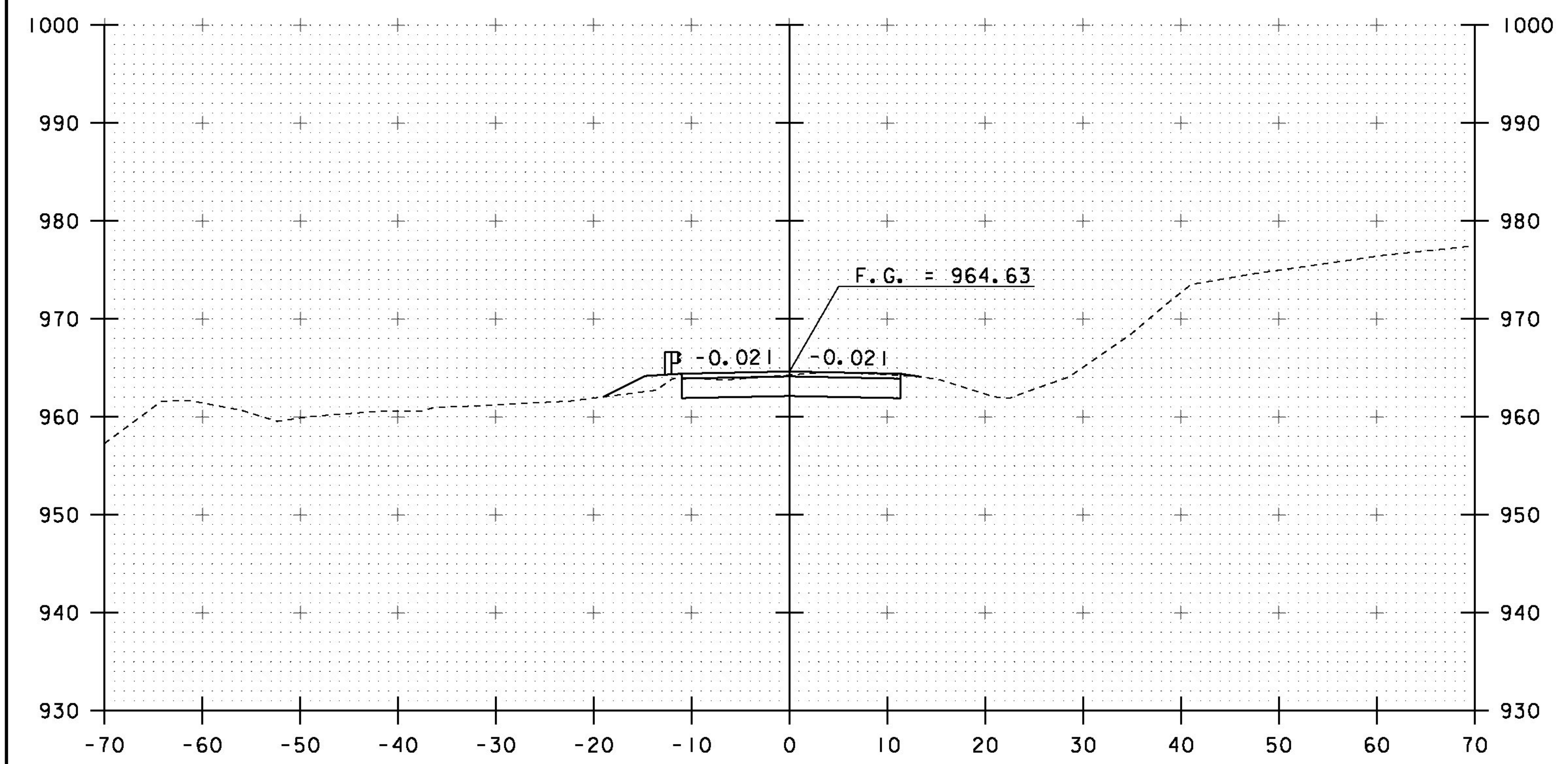
5+00
END PROJECT

PROJECT NAME: WOODSTOCK	
PROJECT NUMBER: BRO 1444(55)	
FILE NAME: s95j294xsl.dgn	PLOT DATE: 20-FEB-2013
PROJECT LEADER: K.M. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
MAINLINE SECTIONS 3	SHEET 23 OF 28

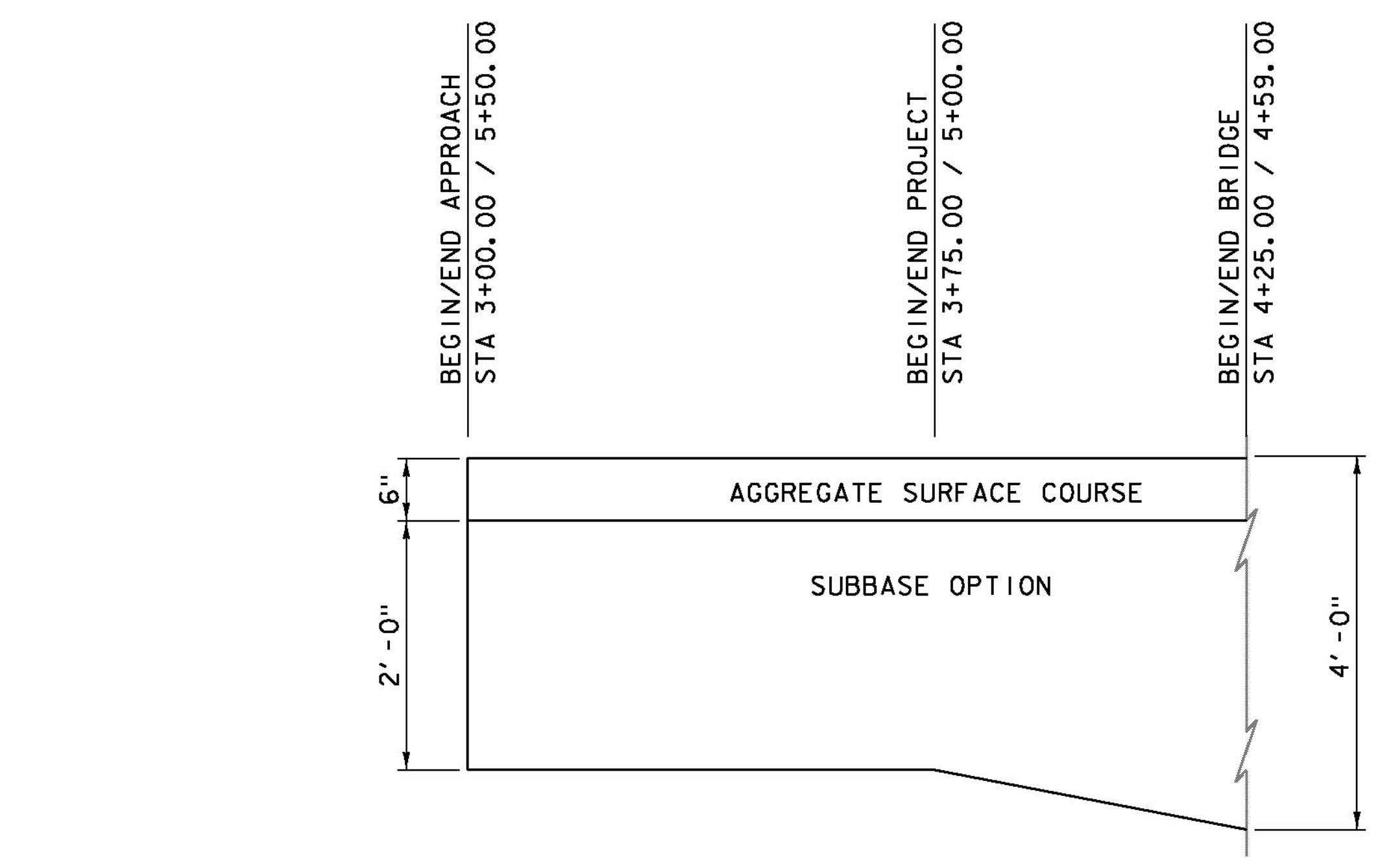
STA. 4+50 TO STA. 5+10



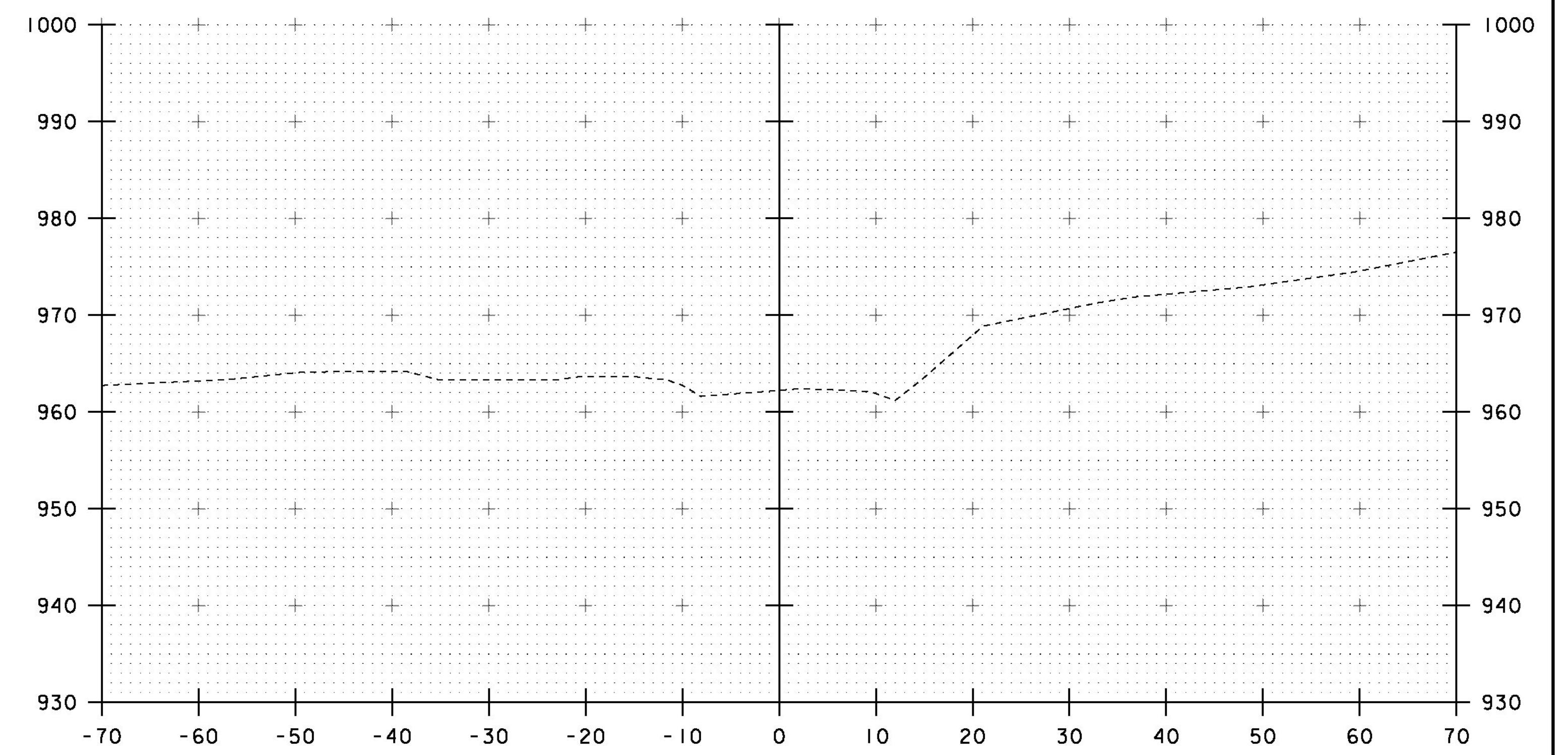
5+50
END APPROACH



5+25



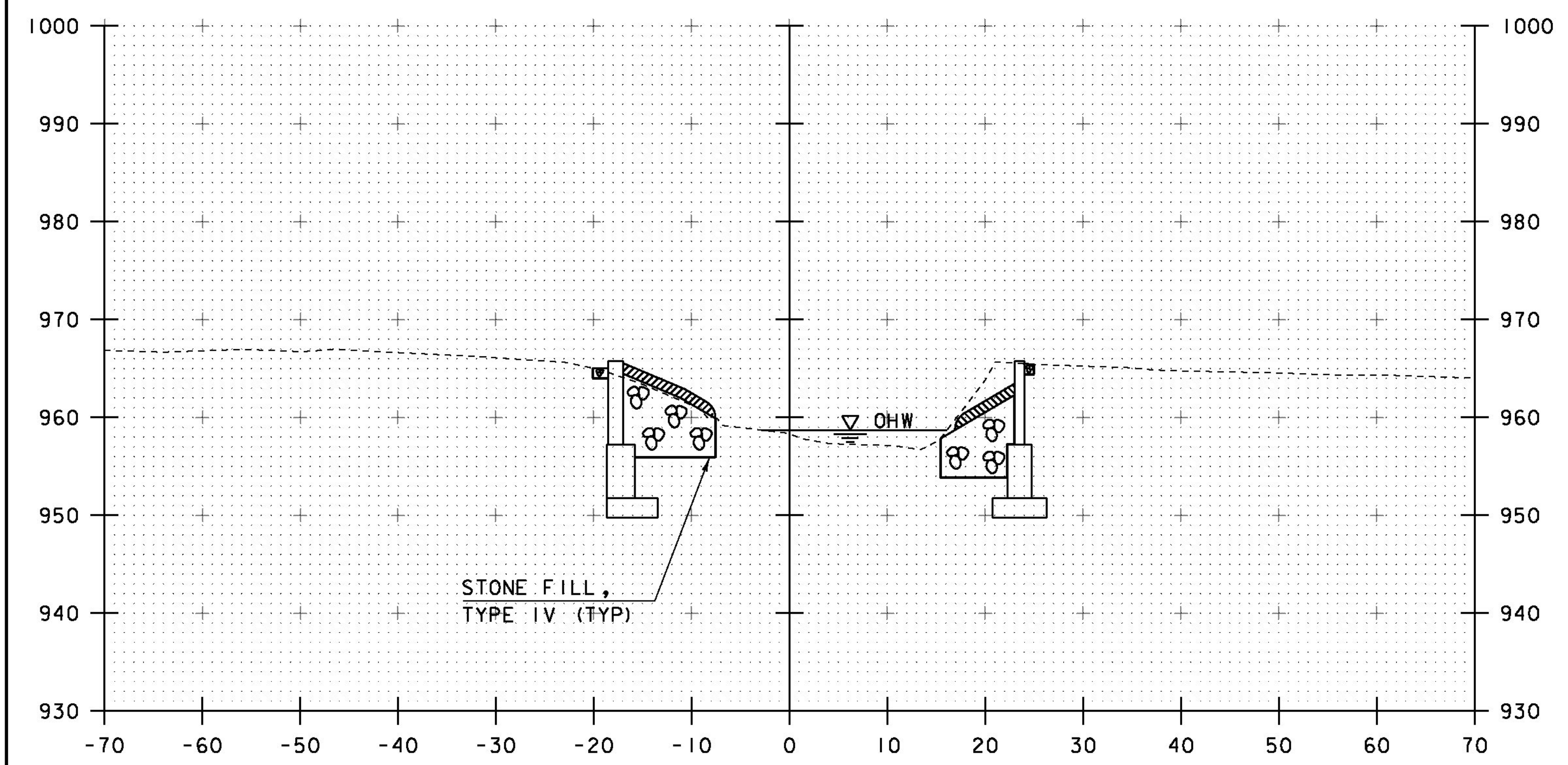
MATERIAL TRANSITION
NOT TO SCALE



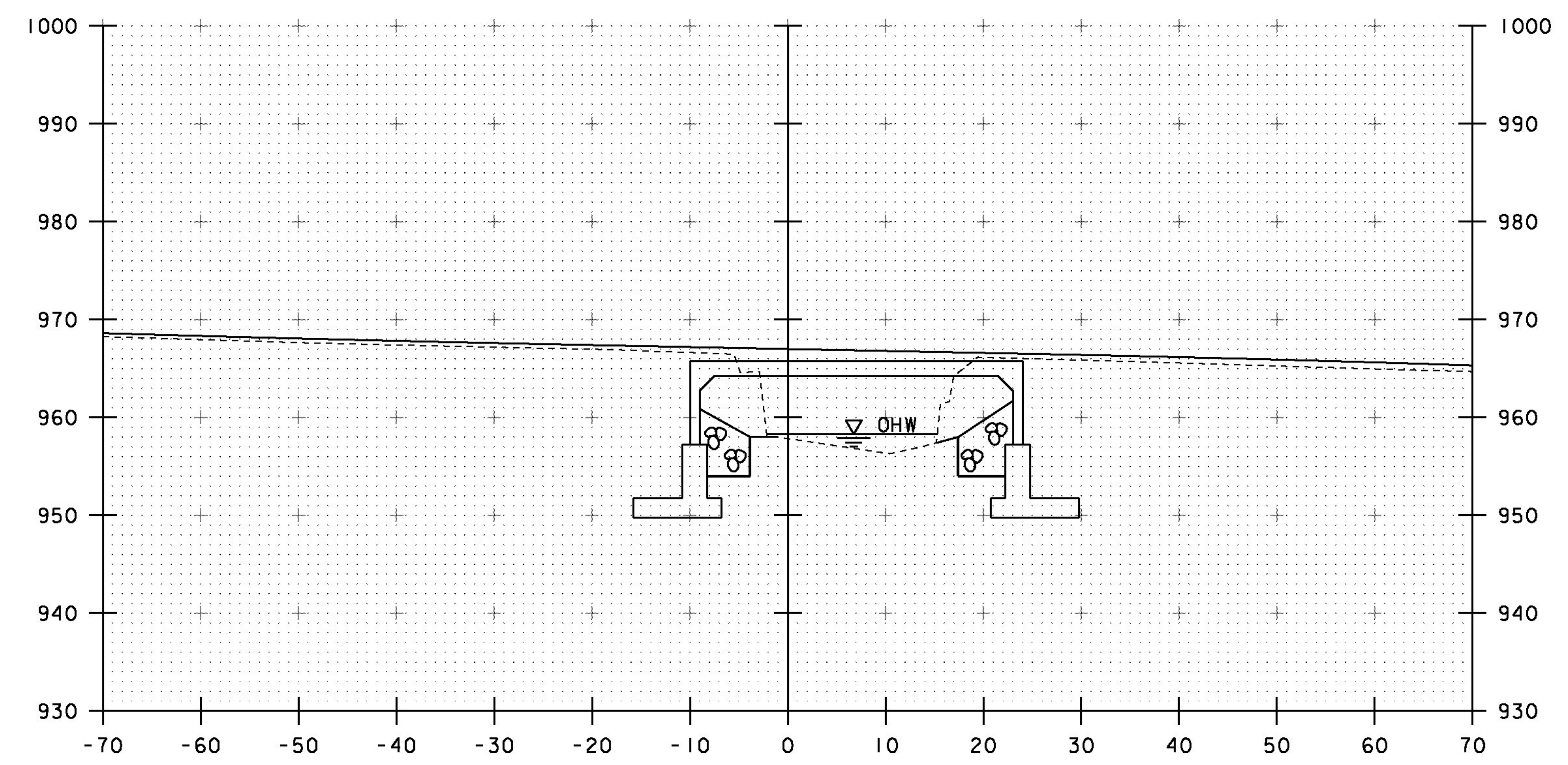
5+75

STA. 5+25 TO STA. 5+75

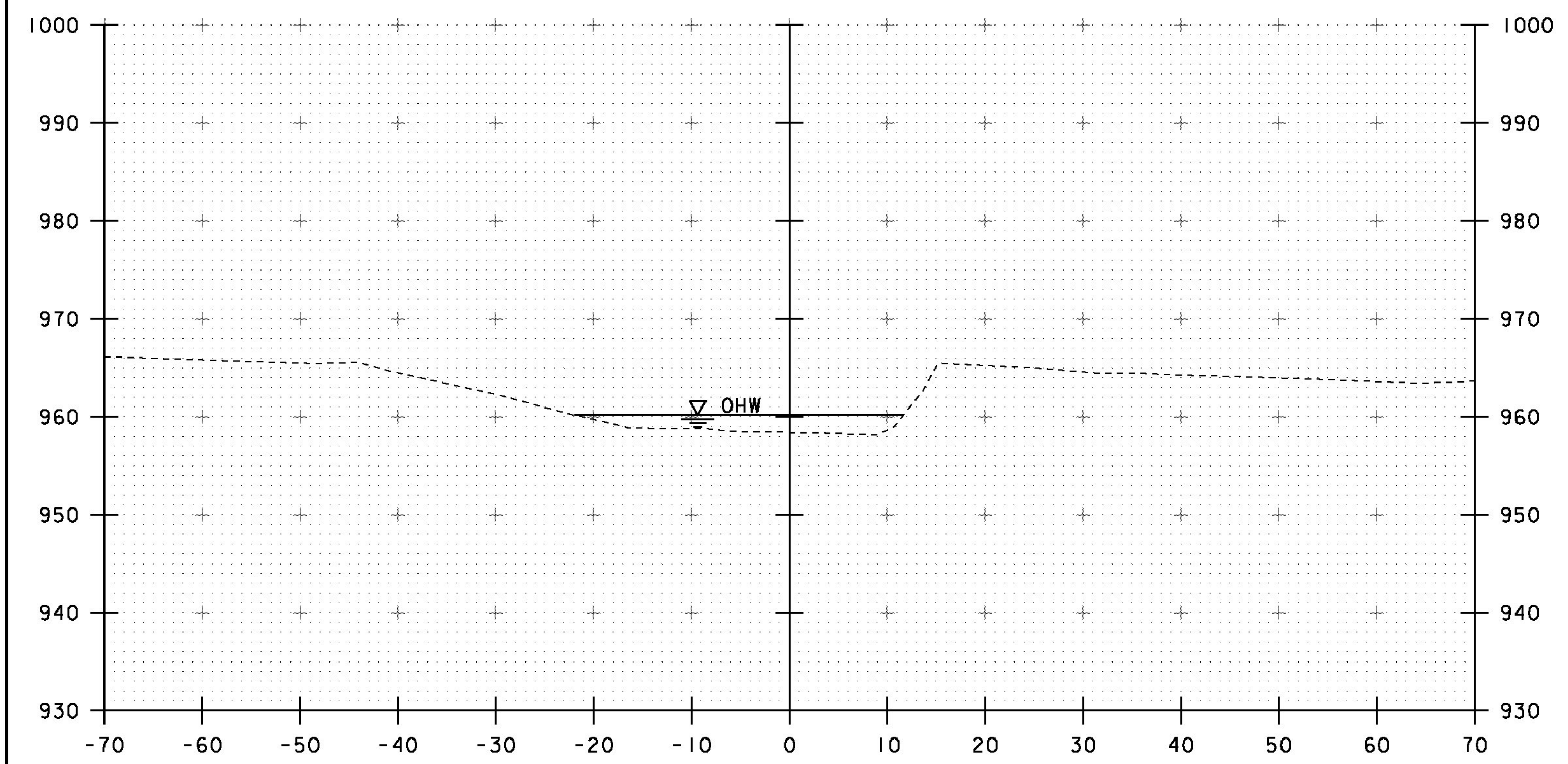
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PROJECT NUMBER: BRO 1444(55)	
FILE NAME: s95j294xsl.dgn	PLOT DATE: 18-FEB-2013
PROJECT LEADER: K.M. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
MAINLINE SECTIONS 4	SHEET 24 OF 28



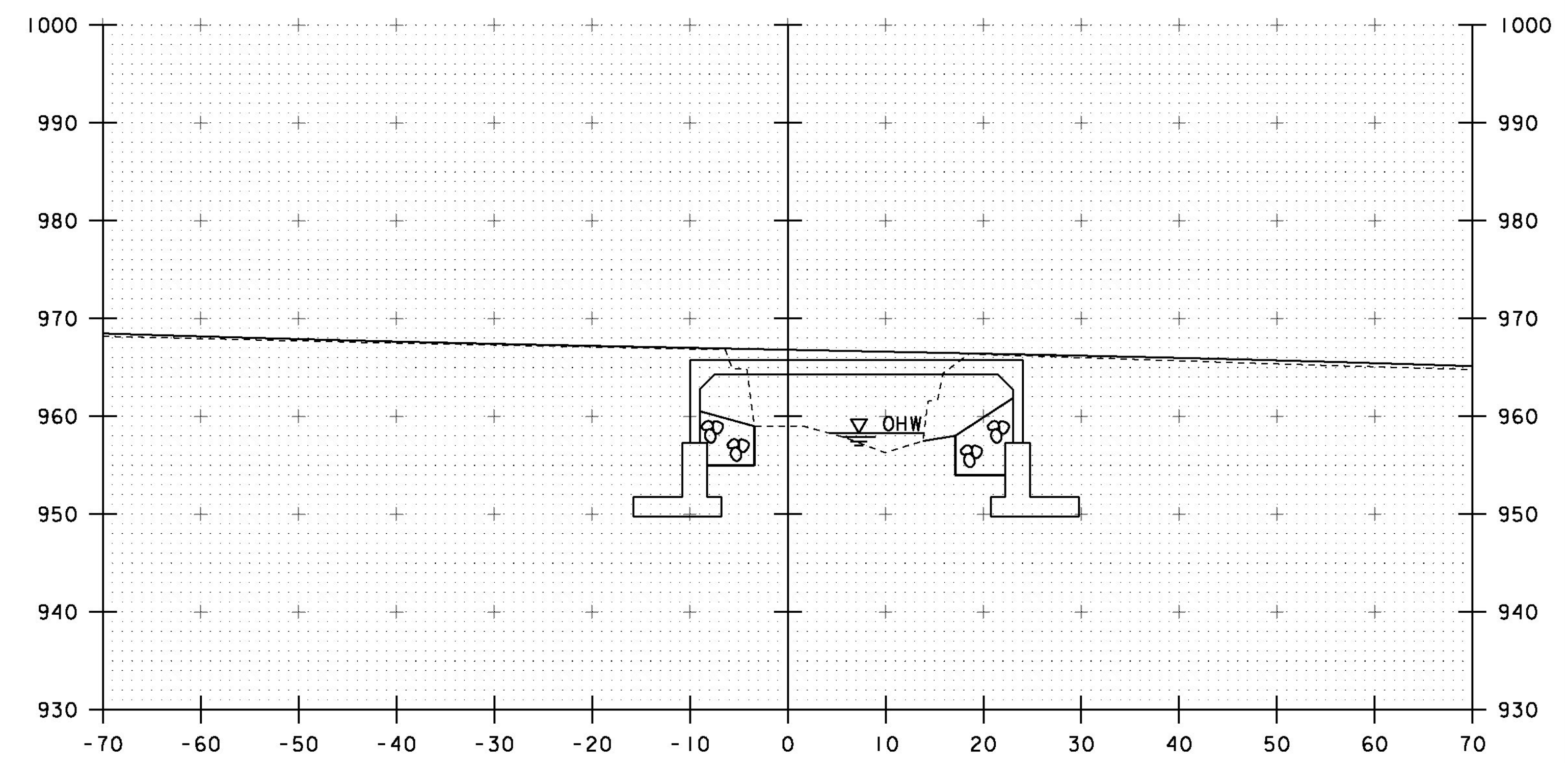
9+80



10+00



9+70



9+90

STA 9+72.40 LT
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
GRUBBING MATERIAL
STONE FILL, TYPE IV
GEOTEXTILE UNDER STONE FILL

STA 9+72.40 RT
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
GRUBBING MATERIAL
STONE FILL, TYPE IV
GEOTEXTILE UNDER STONE FILL

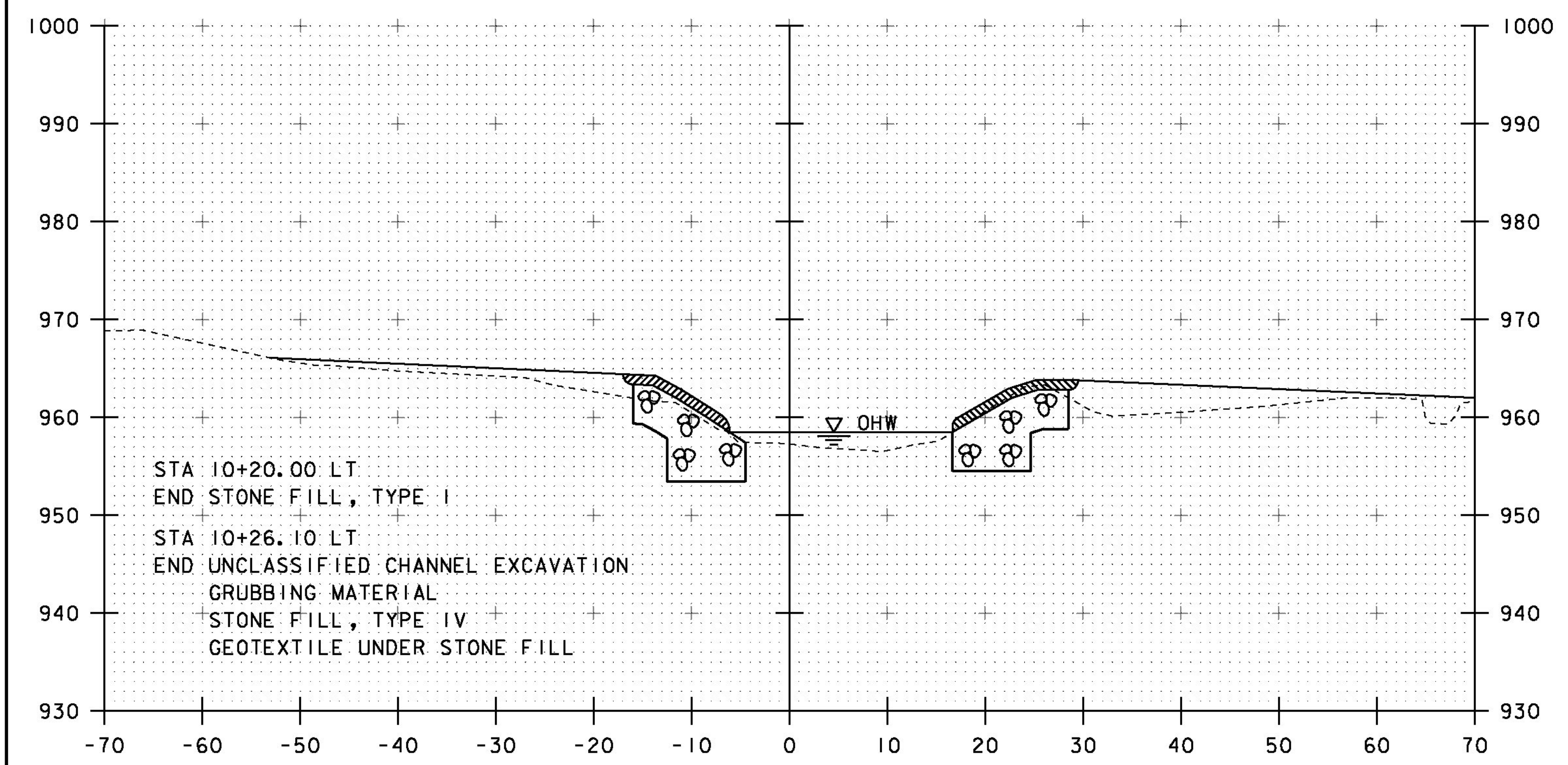
STA 9+78.00 LT
BEGIN STONE FILL, TYPE I

STA 9+78.17 RT
BEGIN STONE FILL, TYPE I

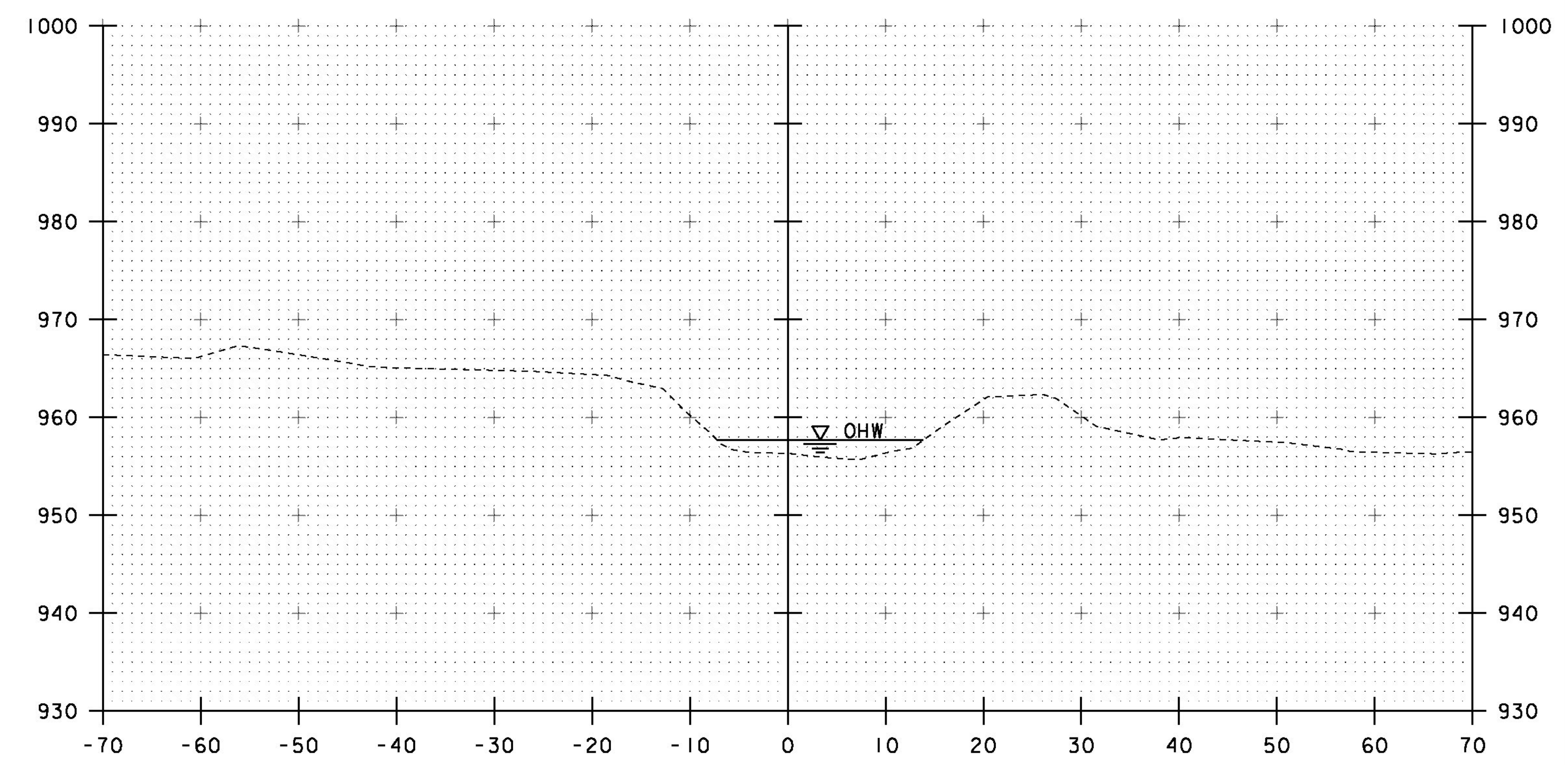
STA 9+87.17
END GRUBBING MATERIAL
STONE FILL, TYPE I

STA. 9+70 TO STA. 10+00

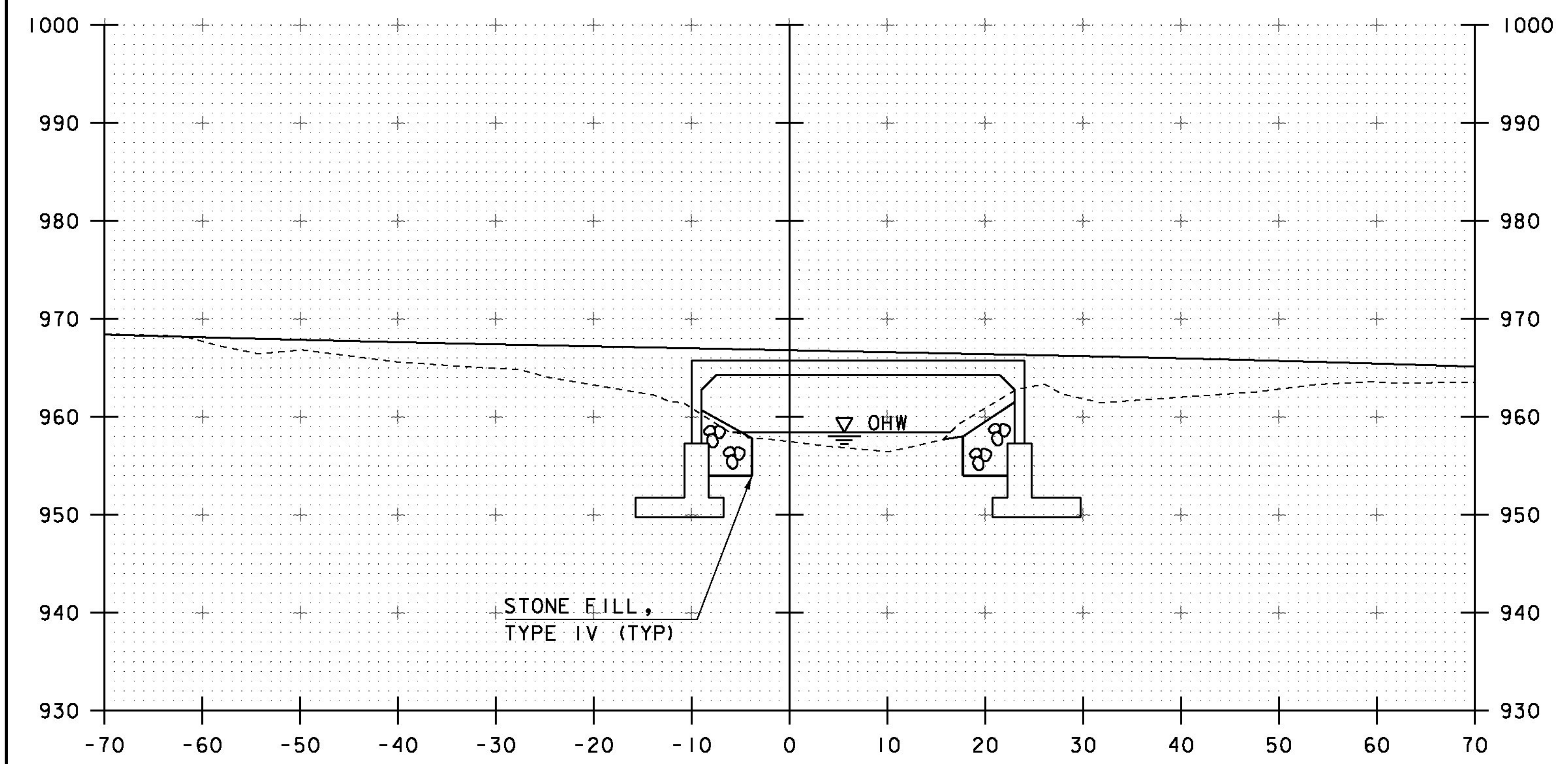
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PROJECT NUMBER: BRO 1444(55)	
FILE NAME: s95j294xsl.dgn	PLOT DATE: 13-FEB-2013
PROJECT LEADER: K.M. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
CHANNEL SECTIONS 1	SHEET 25 OF 28



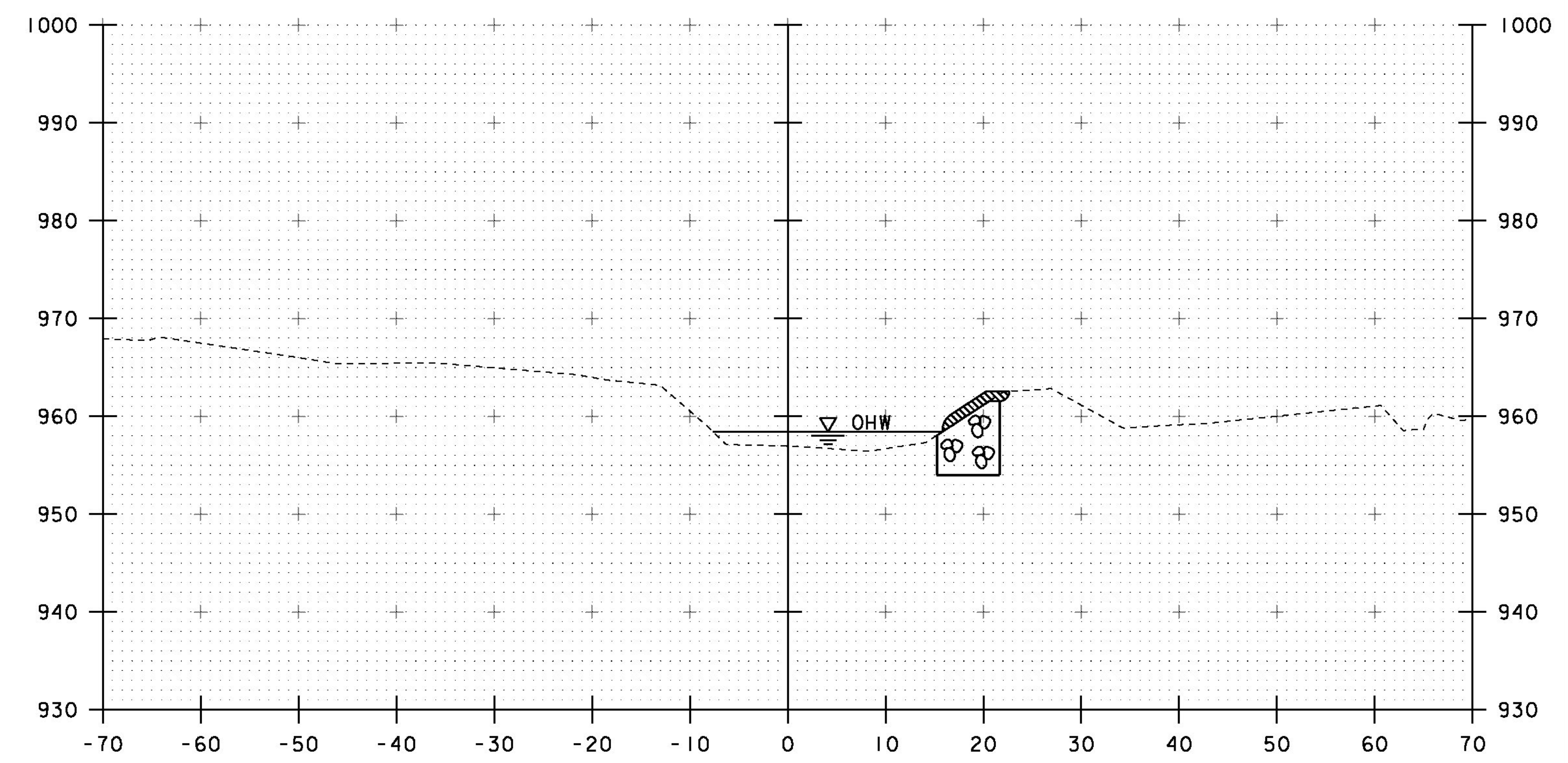
10+20



10+40



10+10



10+30

STA 10+12.83
 BEGIN GRUBBING MATERIAL
 STONE FILL, TYPE I

STA 10+18.37 RT
 END STONE FILL, TYPE I

STA 10+32.15 RT
 END UNCLASSIFIED CHANNEL EXCAVATION
 GRUBBING MATERIAL
 STONE FILL, TYPE IV
 GEOTEXTILE UNDER STONE FILL

STA. 10+10 TO STA. 10+40

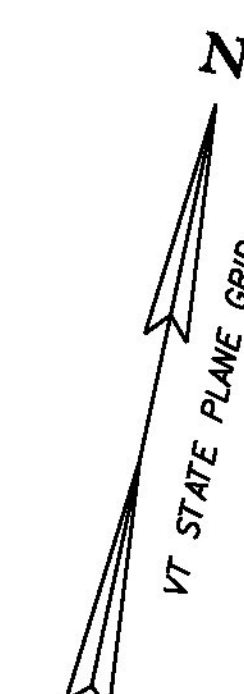
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PROJECT NUMBER: BRO 1444(55)	
FILE NAME: s95j294xsl.dgn	PLOT DATE: 13-FEB-2013
PROJECT LEADER: K.M. HIGGINS	DRAWN BY: J. SALVATORI
DESIGNED BY: J. SALVATORI	CHECKED BY: W. LAMMER
CHANNEL SECTIONS 2	SHEET 26 OF 28

RIGHT - OF - WAY DETAIL SHEET

[illegible]

EC	-EROSION CONTROL
(P)	-PERMANENT
(T)	-TEMPORARY
DR.	-DRAINAGE RIGHT
DIT.	-DITCHING RIGHT
CH.	-CHANNEL RIGHT
DRIVE	-DRIVE RIGHT
CUL.	-CULVERT RIGHT
C&T	-CLEARING & TRIMMING RIGHT
SR	-SLOPE RIGHT
UE	-UTILITY EASEMENT

PLOT DATE:
DRAWN BY: MR
CHECKED BY: BF
SHEET **27** OF **28**



**BEGIN R.O.W. PROJECT
BRO 1444(55)
STA. 3+41 21' LT.**

**KNEZ, BRIAN J. & DEBRA S.
JOINED BY VERMONT LAND TRUST, INC.**

**END R.O.W. PROJECT
BRO 1444(55)
STA. 5+29
22' LT.**

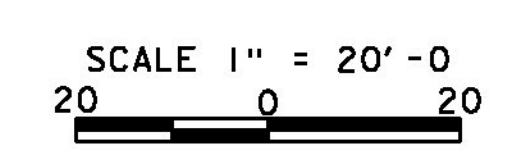
**KNEZ, BRIAN J. & DEBRA S.
JOINED BY VERMONT LAND TRUST, INC.**

**KNEZ, BRIAN J. & DEBRA S.
JOINED BY VERMONT LAND TRUST, INC.**

**N/F
GAGNON, RICHARD J.
& CLARA W.**

EXISTING BRIDGE DATA
WOOD DECK ON STEEL BEAMS
CONCRETE ABUTMENTS
OVERALL LENGTH = 25'
OVERALL WIDTH = 14'

LINE SHOWN ON THIS PLAN AS EXISTING
PROPERTY LINES P/L ARE BELIEVED TO
BE ACCURATE BUT SHOULD NOT BE RELIED
UPON FOR PURPOSES UNRELATED TO THE
TOWN OF WOODSTOCK AQUISITION OF LAND
AND RIGHTS FOR THIS PROJECT.



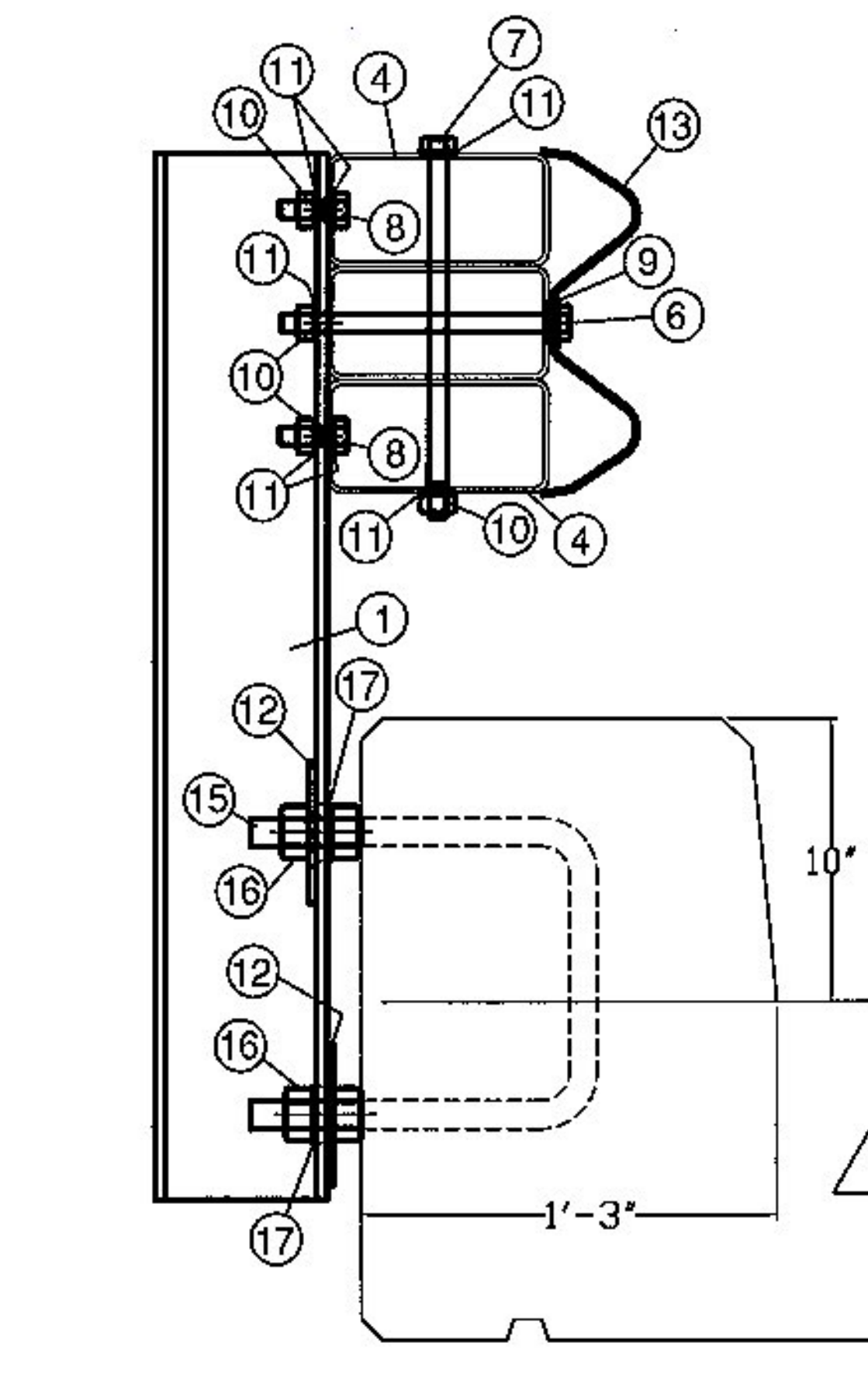
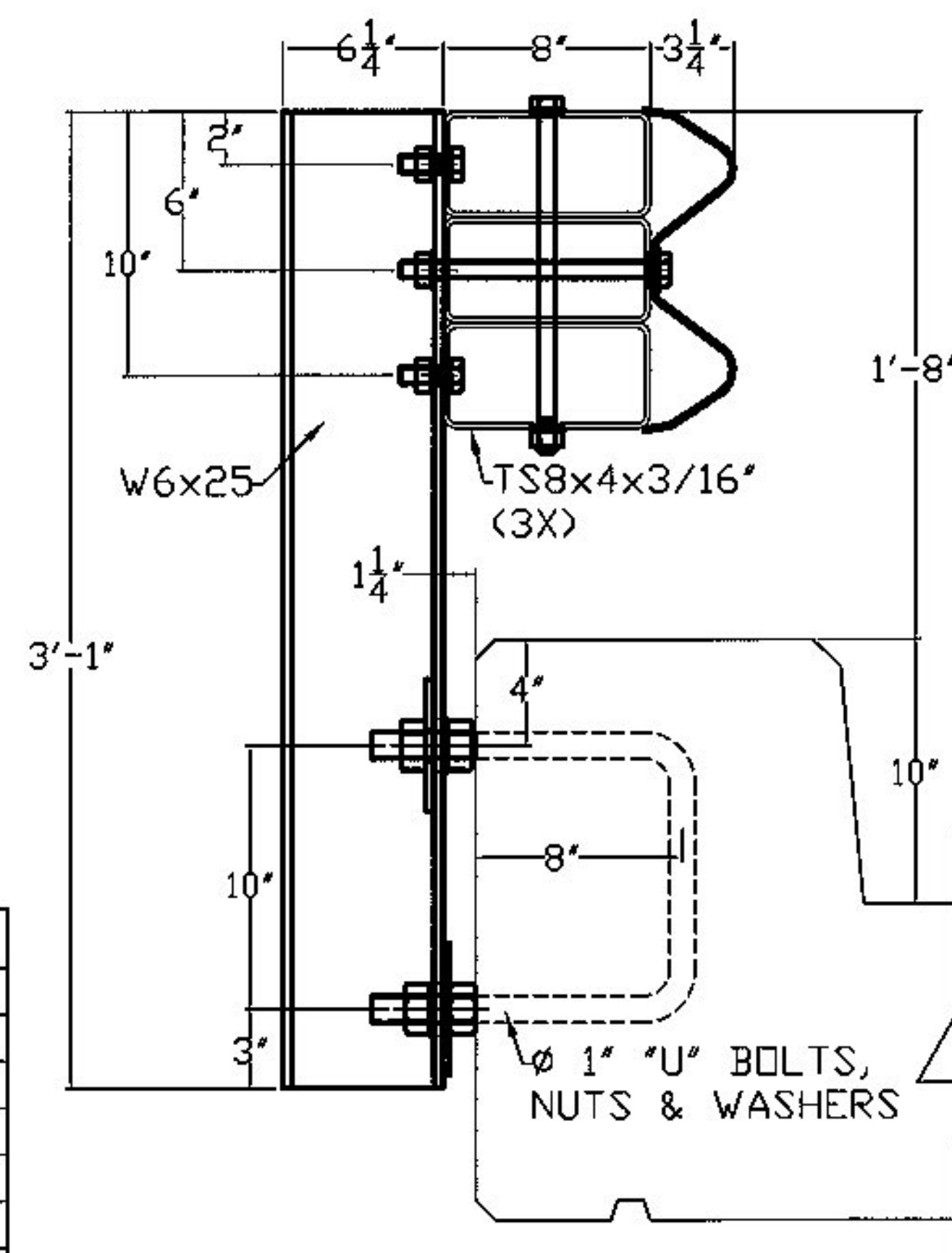
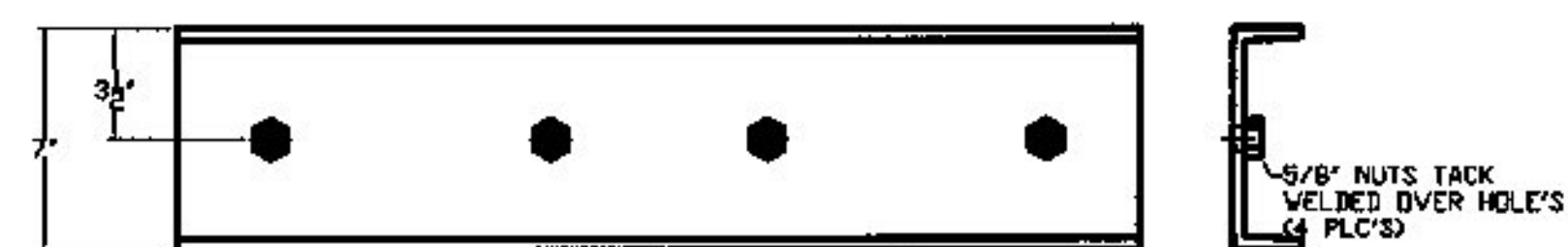
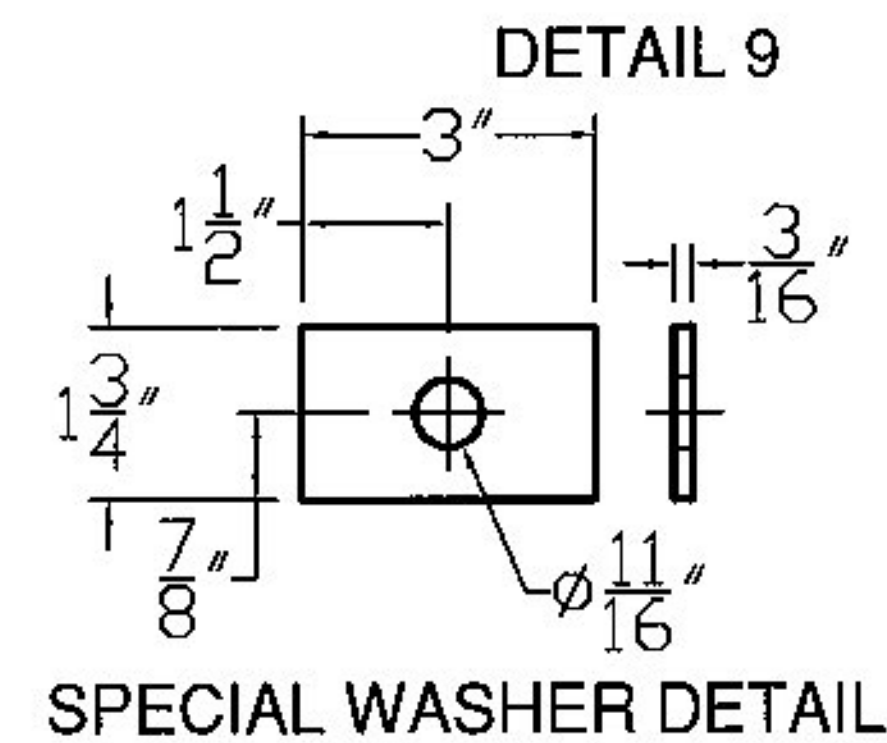
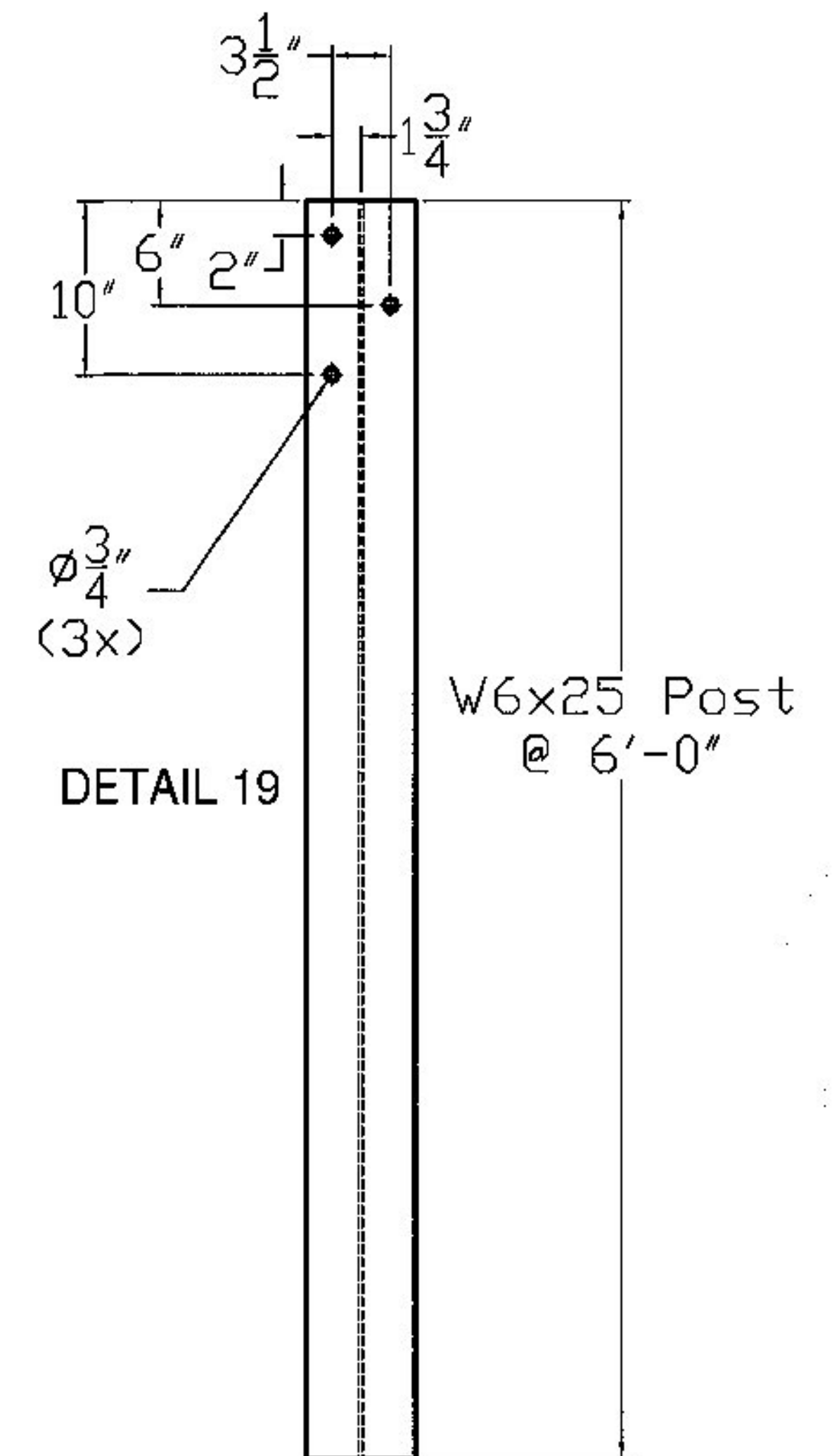
CURVE DATA NO. 1	CURVE DATA NO. 2	CURVE DATA NO. 3	CURVE DATA NO. 4
$\Delta = 19^{\circ}59'13''$	$\Delta = 8^{\circ}26'50''$	$\Delta = 3^{\circ}51'28''$	$\Delta = 6^{\circ}41'07''$
$D = 13^{\circ}19'29''$	$D = 5^{\circ}12'31''$	$D = 2^{\circ}51'53''$	$D = 9^{\circ}23'34''$
$R = 430.00'$	$R = 1100.00'$	$R = 2000.00'$	$R = 610.00'$
$T = 75.77'$	$T = 81.23'$	$T = 67.35'$	$T = 35.63'$
$L = 150.00'$	$L = 162.17'$	$L = 134.66'$	$L = 71.18'$
$E = 6.62'$	$E = 3.00'$	$E = 1.13'$	$E = 1.04'$

ROW SHEET 3 OF 9

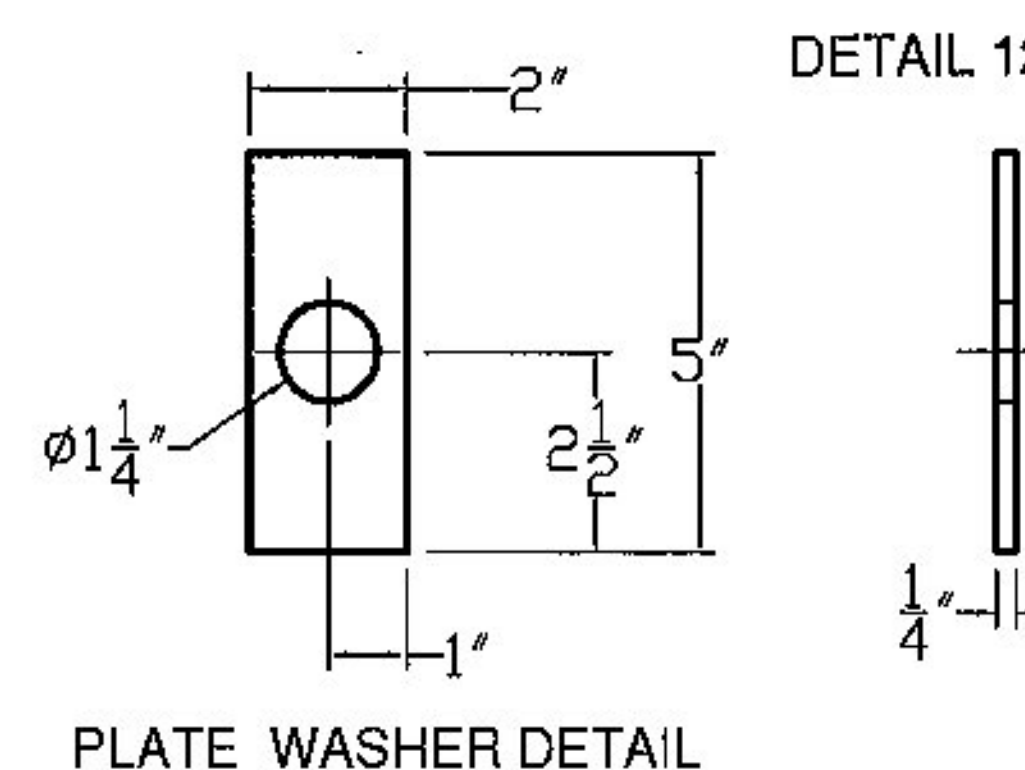
PROJECT NAME: WOODSTOCK
PROJECT NUMBER: BRO 1444(55)

FILE NAME: s95j294bdr.dgn
PROJECT LEADER: K.M. HIGGINS
DESIGNED BY: J. SALVATORI
ROW LAYOUT SHEET

PLOT DATE: 13-FEB-2013
DRAWN BY: J. SALVATORI
CHECKED BY: W. LAMMER
SHEET 28 OF 28



BILL OF MATERIALS			
DET. #	QTY	DESCRIPTION	MATERIAL
1	10	W6x25 FASCIA MOUNTED POST @ 3' 1"	ASTM A572 Gr. 50
2	2	TS8x4x3/16" TUBING @ 20'-7" w/Cap	ASTM A500 Gr. B
3	2	TS8x4x3/16" TUBING @ 17'6-1/2" w/Cap	ASTM A500 Gr. B
4	20	TS8x4x3/16" TUBING @ 6"	ASTM A500 Gr. B
5	2	C7x9.8 CHANNEL @ 2' 7" (SPLICE)	ASTM A572 Gr. 50
6	14	5/8"x10" HEX BOLT	ASTM A325
7	14	5/8"x13" HEX BOLT	ASTM A325
8	36	5/8"x1-3/4" HEX BOLT	ASTM A325
9	14	3/16"x1-3/4"x3" SPECIAL WASHER	ASTM A572 Gr. 50
10	64	5/8" HEX NUT	ASTM A563
11	98	5/8" FLAT WASHER	ASTM A436
12	40	1/4"x2"x5" PLATE WASHER	ASTM A572 Gr. 50
13	6	10 GAUGE "W" BEAM @ 12' 6"	AASHTO M180-CI B, TYPE II
14	64	5/8"x1-1/4" SPLICE ROUND HEAD BOLT	ASTM A307
14a	64	5/8" RECESSED NUT for PANEL SPLICE	ASTM A307
15	20	"U" ANCHOR BOLTS	ASTM A449
16	80	1" HEX NUT	ASTM A563
17	80	1" FLAT WASHER	ASTM F436
18	4	DELINEATOR	ALUMINUM



TYP. CONNECTION FOR RAILING TO POST
CURB & RAIL SECTION

SHEET 1 OF 2

Special Provision Fascia Mounted Steel Bridge Rail
Town of Woodstock County of Windsor Bridge No. 13

RECEIVED

CK'D BY JTS OK'D BY _____

July 15, 2013

July 10, 2015

RESUBMIT NO **Approv**

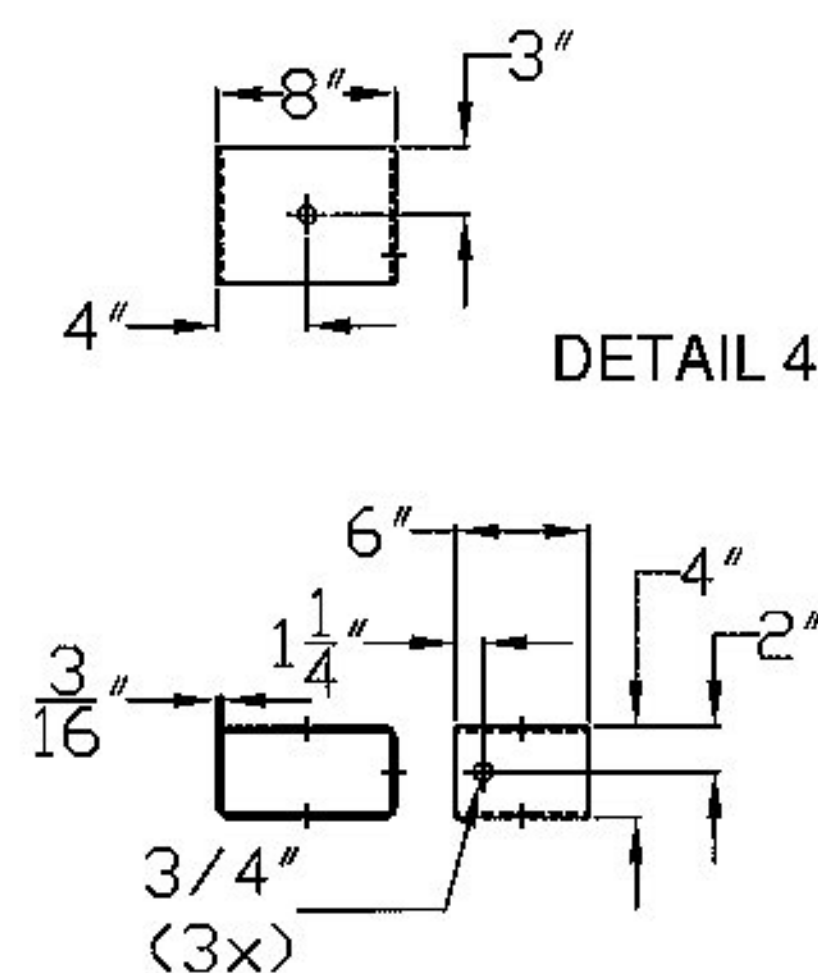
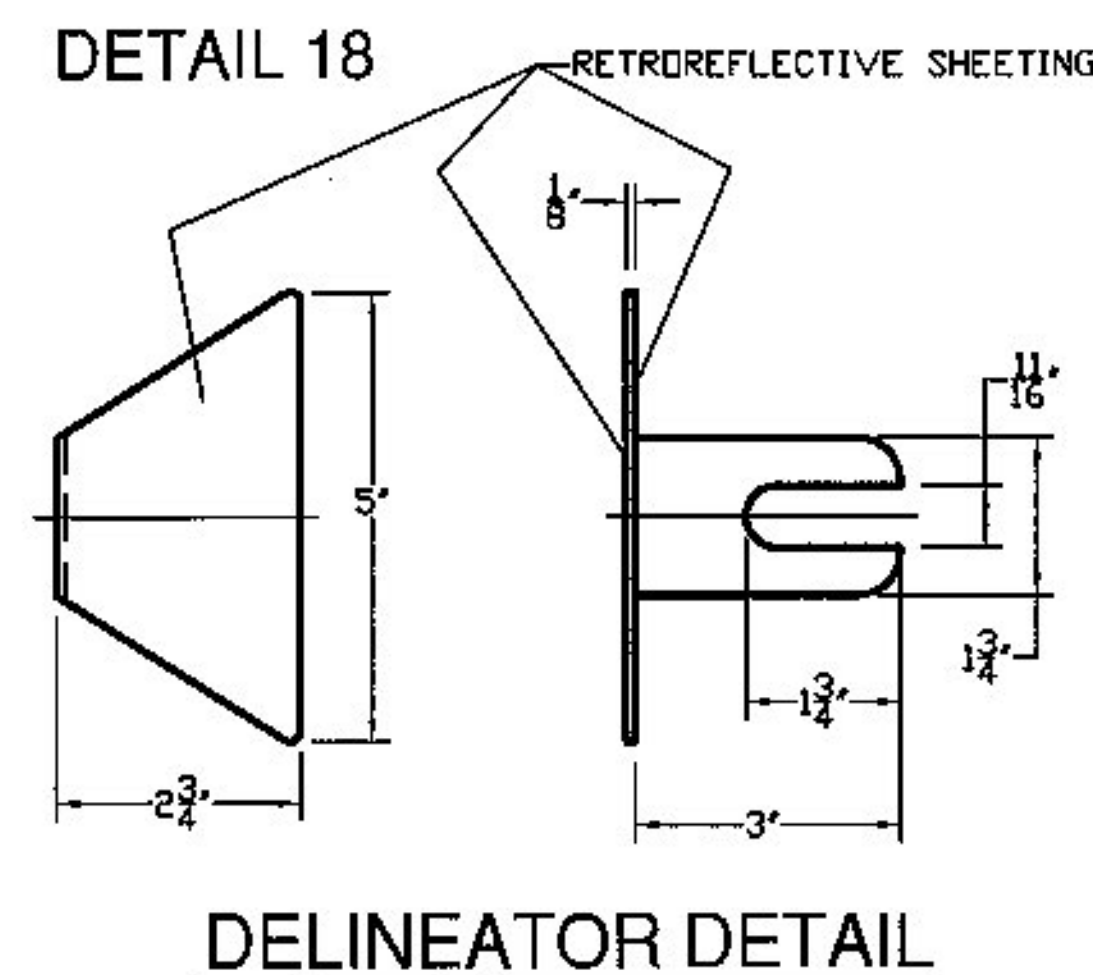
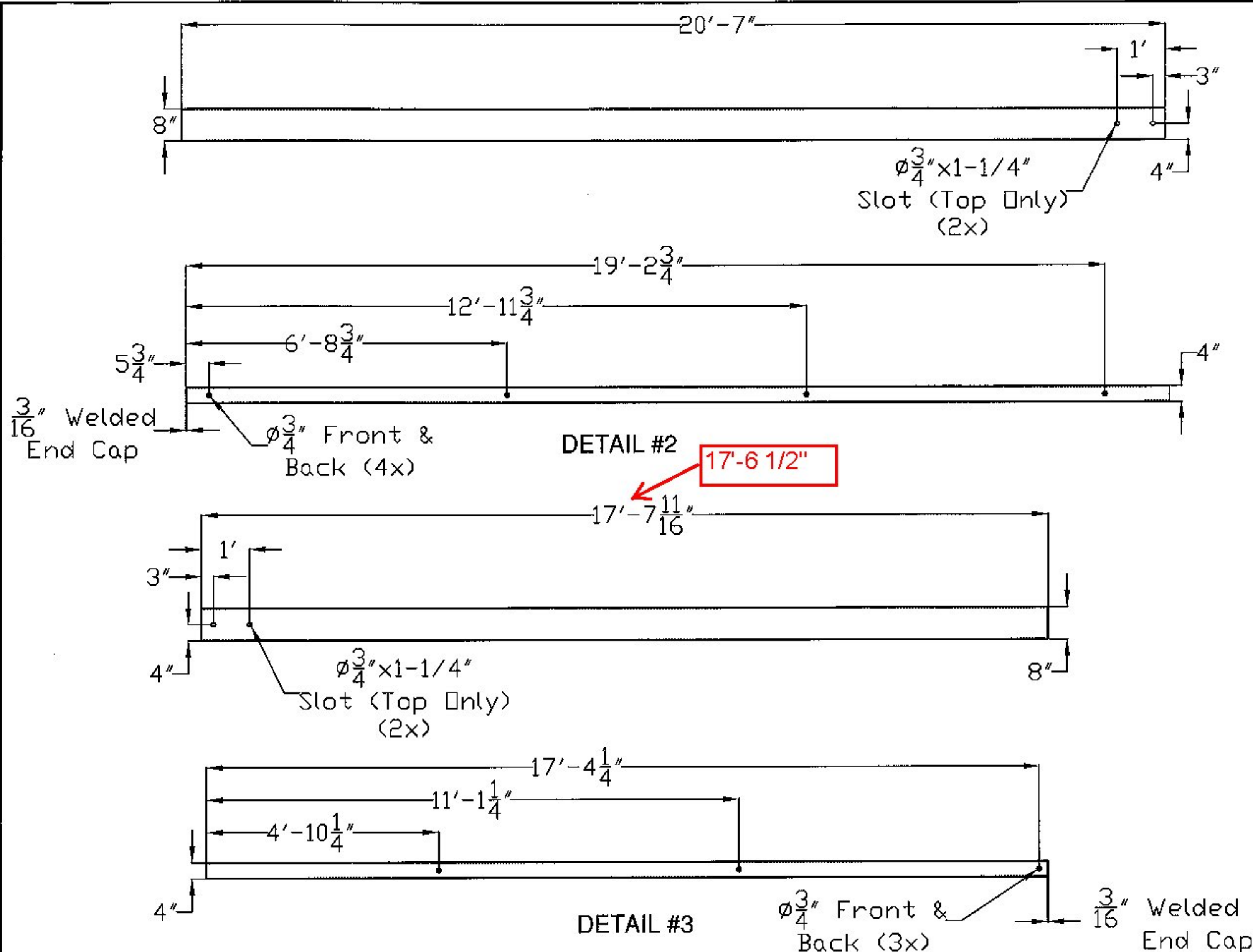
R	NO.	DATE	DESCRIPTION	BY	R	NO.	DATE	DESCRIPTION	BY
E	1	5/28/13	Added 4ea. W6x25 Post @ 6'-0", one for Each Corner	D.L.	E				
V	2	7/2/13	Implemented Findings are 1C on June 27, 2013	D.L.	V				

1	2	1/3/13	UNPUBLISHED REVIEWS	ON 2-3 OF JUNE 23, 2013	D.L.	Y			
 ELDERLEE, INC. OAKS CORNERS, NEW YORK 14518				DRAWN	D.L.	5/20/13			
				CHECKED	E.P.	5/20/13			

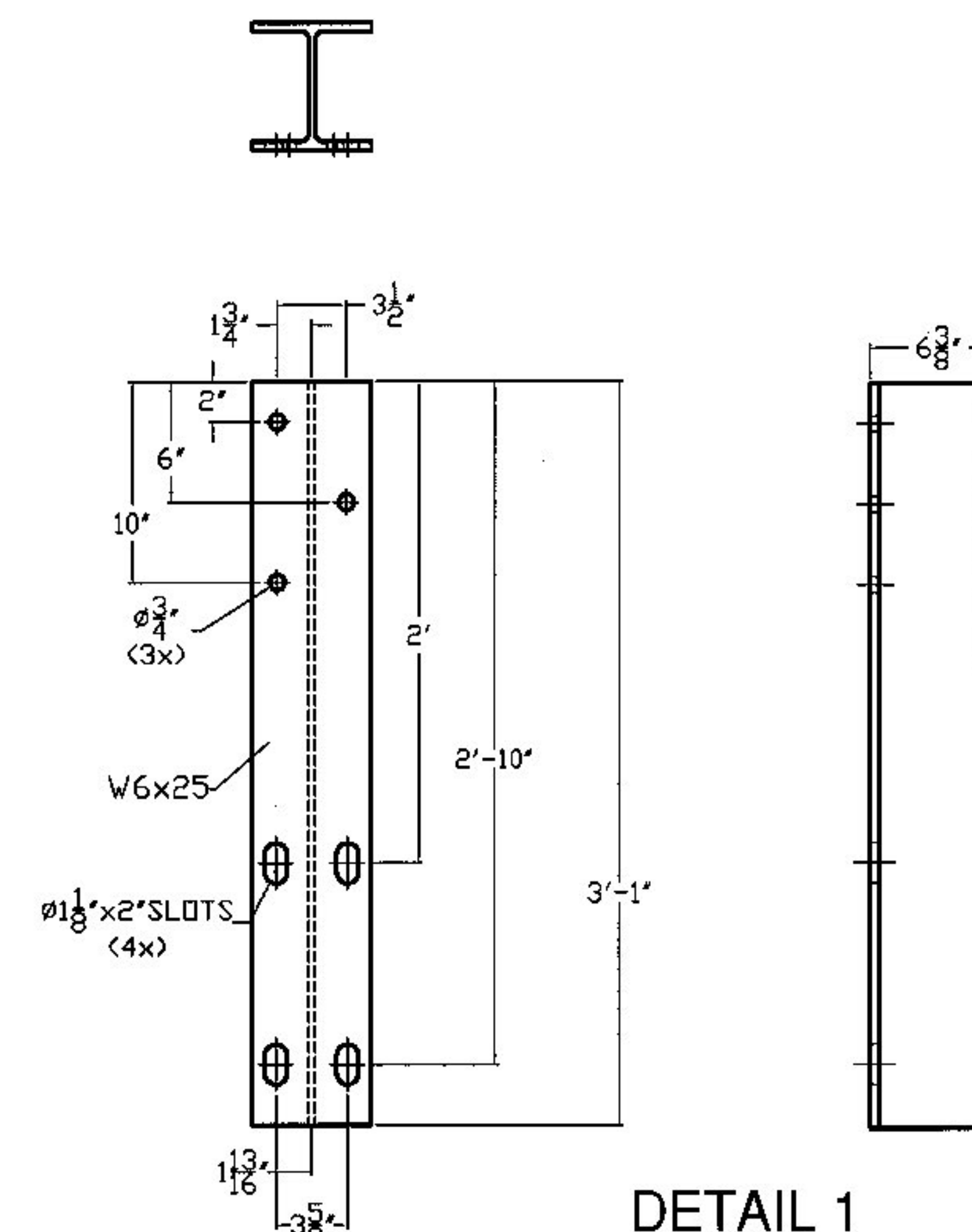

 CARE COURTESY, NEW YORK 14518
 E-Mail: dlong@elderlaw.com

 APPROVED
 ACTIVE MEMBER
 SCALE SCHEMATIC

Tel: 315-789-6670 Fax: 315-789-6615

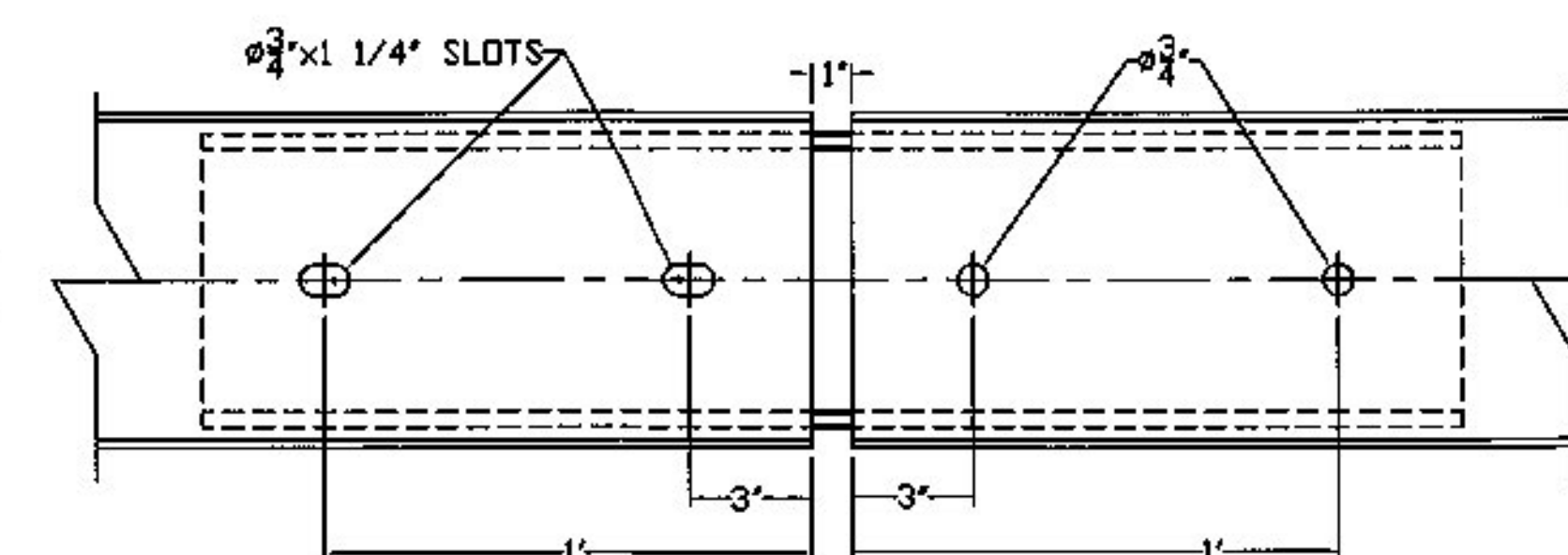


BLOCK OUT DETAIL



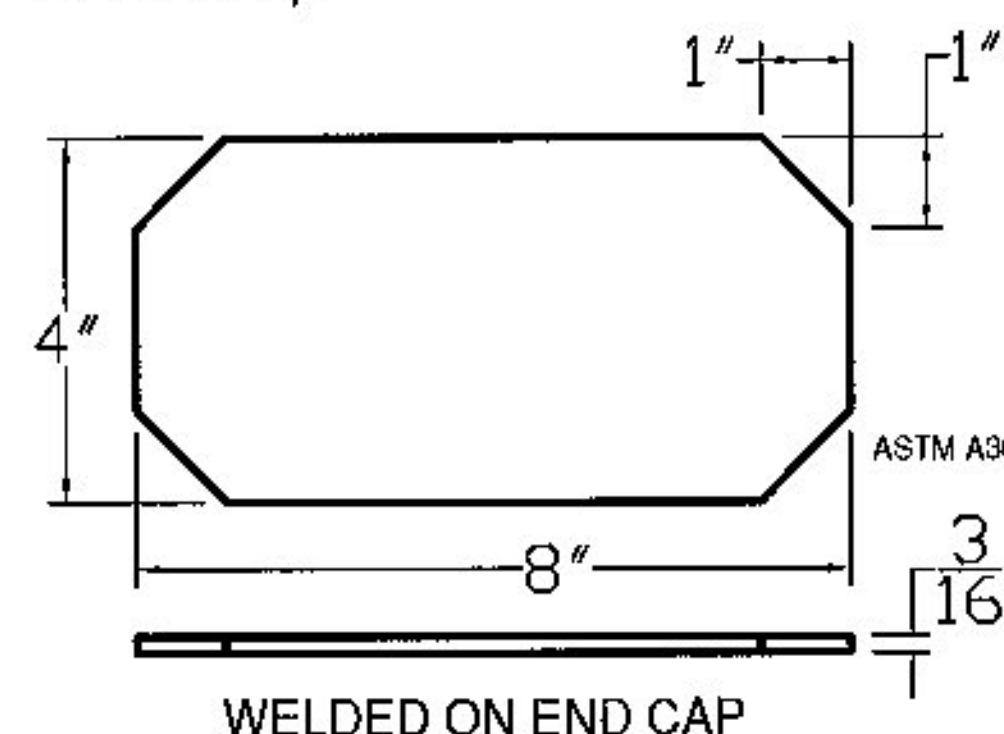
DETAIL 1

RAIL SPLICE HOLES
(HARDWARE NOT SHOWN FOR CLARITY)



NOTES:

1. - ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525.
2. - PRIOR TO GALVANIZING THE ASSEMBLED POST, GRIND ALL EDGES TO A MINIMUM RADIUS OF 1/16".
3. - ALL POSTS SHALL BE SET NORMAL TO GRADE.
4. - SPLICES FOR THE STEEL BEAM GUARDRAIL SHALL LAP IN THE DIRECTION OF TRAFFIC.
5. - A RAILING JOINT SPLICE SHALL BE PROVIDED IN ANY RAIL BAY SPANNING THE END OF THE INTEGRAL ABUTMENT BRIDGE AND AT ALL SUPERSTRUCTURE EXPANSION JOINTS.
6. - SEE STANDARD DRAWING G-1 FOR DETAILS OF DELINEATORS. A DELINEATOR SHALL BE INSTALLED AT 30 FOOT SPACING OR 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.
7. - THE 1/2" EXPANSION JOINT SHOWN IN THE RAILING ELEVATION IS DESIGNED FOR THE BRIDGE LENGTHS UP TO 80 FEET, ANY LONGER SPANS WILL HAVE TO BE MODIFIED TO ACCOUNT FOR THEIR MOVEMENT.
8. - FOR RADII LESS THAN 950 FEET, HSS8x4 TUBES SHALL BE SHOP BENT TO FIT THE APPLICABLE CURVE.
9. - THIS RAILING MEETS THE REQUIREMENTS FOR A TL-2 SERVICE LEVEL.



ITEM #: 900.640

APPROVED BY:

Vermont Agency of Transportation

RECEIVED

CK'D BY JTS

OK'D BY

July 15, 2013

RESUBMIT NO

Approved As Noted

BY KMH

DATE 7-16-2013

CONTRACTOR: F R LaFayette - 27795

SHEET 2 OF 2

Special Provision Fascia Mounted Steel Bridge Rail
Town of Woodstock County of Windsor Bridge No. 13

R NO.	DATE	DESCRIPTION	BY	R NO.	DATE	DESCRIPTION	BY
1	5/28/13	Added 4x W6x25 Post @ 6'-0", one for Each Corner	D.L.	1	5/20/13		
2	7/3/13	Implemented Revisions per I.S. on June 23, 2013	D.L.	2	5/20/13		

ELDERLEE, INC.
OAKS CORNERS, NEW YORK 14518
E-Mail: dlong@elderlee.com
Tel: 315-789-6670 Fax: 315-789-6615

DRAWN	D.L.	5/20/13
CHECKED	E.P.	5/20/13
APPROVED		
SCALE	SCHMATIC	
DRAWING NO.	F R LAFAYETTE EM13-054R	

Proposed Bridge Improvement Project

Woodstock - BRO 1444 (55)

Bridge #23 Over Bridgewater Brook

Concrete:

Required Strengths:

1. Mix Design - 6000 PSI
2. Striping Strength - 4500 PSI
3. Handling Strength - 4500 PSI
4. Shipping Strength - 4500 PSI
5. Placement Strength - 6000 PSI

Fabrication Tolerances:

1. Width $\pm 1/4"$
2. Height $\pm 1/4"$
3. Length $\pm 1/2"$
4. Rebar Cover 2" Min. (Unless Noted Otherwise)
5. Rebar Spacing $\pm 1"$
6. Rebar Clearance $\pm 1/4"$
7. Insert Placement $\pm 1/4"$

Design Notes:

1. Design is in accordance w/ ASTM C1433, PCI MNL135, VAOT540 & AASHTO 2010 LRFD Bridge Design Specs Fifth Edition
2. Any conflict between tolerances listed above shall result in the usage of the stricter tolerance
3. Design Live Load = AASHTO HL-93
4. Rails: TL-3
5. Materials and Manufacturing shall conform to ASTM C1433

Coating Units:

1. Water repellant; Silane shall be applied to all the exposed concrete surfaces except the under side of the rigid frame with sprayer.

Installation:

1. Sub Base for footing to be compacted and level
2. Precast footers to be installed and bolted together
3. Bearing Pad/Shim packs to be used for leveling and elevating of rigid frame within groove/pocket provided in footers
4. Bolt rigid frame units together w/ provided hardware
5. Clean granular fill used for backfill for footers and rigid frame units so water can reach weep holes if applicable
6. Fill all lifting holes, bolt pockets, foting/rigid frame grooves and seams w/ non-shrink grout

Reinforcing:

General Notes:

1. Reinforcing Steel - ASTM A615, Grade 60 (Unless Noted Otherwise)
 - a. Precast Pedestal Walls and Footings shall be Level I
 - b. Precast Frame, Wingwalls & Headwalls shall be Level II
2. Materials and Manufacturing shall conform to ASTM C1433
3. Bar Spacing 12" or Greater Tied at Every Intersection

Tolerances:

1. Spacing $\pm 1"$
2. Clearance $\pm 1/4"$

Lap Lengths:

1. Per AASHTO 5.11.2.1.1 & 5.11.5.3.1
Lap Length for Level I (Plain):
#4 Bar=12" #6 Bar=23"
#5 Bar=17" #7 Bar=31"
#8 Bar=41"
Lap Lengths for Level II:
#4 Bar=17" #6 Bar=39"
#5 Bar=27" #7 Bar=53"
#8 Bar=69"

Joint Treatment:

Vertical Seams:

Per VTrans Approved Product List 780.02
Overhead & Vertical Concrete Repair Mortar

Horizontal Seams / Grout:

Per VTrans Approved Product List 707.03
Mortar, Type IV

Waterproofing:

1. Membrane waterproofing will be specified by the Bridge Preservation Company in a seperate attachment.
2. Silane 40 shall be applied on all exposed concrete surfaces.

Miscellaneous:

1. All exposed hardware to be galvanized.
2. All Exposed Threaded Bar, Couplers & Hardware for dead men is to be Galvanized and Coated After Install w/ Bituminous Coating
3. All bolts & threaded rods to be ASTM F1554 Grade 105 Unless Noted Otherwise
4. Guardrail spacing has been coordinated with these shop drawings. Any interference in the field is to be adjusted as needed in the field

5. All Exposed Edges of Concrete Shall be Chamfered 1"x1"

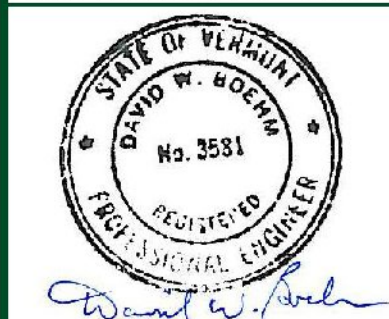
Legend:

- (A) Starcon 20T-19³/₄" Lift Anchor
- (B) Mechanical Bolt Pocket (A.L. Patterson w/ 1"Ø Galv. Rod)
- (C) Oxford A750-7 Lifting Device
- (D) 1¹/₂"x3¹/₂" Continuous Keyway
- (E) ⁵/₈" Zinc Insert (P.A. Insert Corp.)
- (F) Solid Lines Indicate 1" Chamfered Edge (Isometrics)
- (G) 1¹/₄" Galvanized Threaded Insert (Meadow Burke CX-51) 7¹/₂" Long
- (H) 8"x8"x3" Pocket w/ 2" Ø PVC Sleeve
- (I) 1¹/₂"x5¹/₂" Continuous Keyway

LRFR Load Rating Factors:

Loading Levels	Truck						
	H-20	HL-93	3S2	6 Axle	3A Str.	4A Str.	5A Semi
Tonnage	20	36	36	66	30	34.5	38
Inventory	29.0	41.8	54.4	96.4	49.2	68.3	71.4
Posting							
Operating	37.6	54.4	70.2	125.4	63.9	88.7	92.3

CONTRACTORS VTSPF:



06/24/13 - Modified Per State Review

Vermont Agency of Transportation

RECEIVED

CK'D BY RMK

OK'D BY

June 25, 2013

RESUBMIT

NO

Approved

BY JTS

DATE 6-26-2013

PRECAST CONCRETE RIGID FRAME SHOP DRAWINGS (SDI JOB# 13429)

SUPERVISOR: M. WHEELER

DETAILER: C. DUPLANTIS

CHECKER: M. WHEELER

ENGINEER: ENGINEERING VENTURES

PROJECT NAME: WOODSTOCK

PROJECT #: BRO 1444 (55)

LOCATION: WOODSTOCK, VT

BRIDGE: #23 ON TOWN HWY 6

CONTRACTOR:

B.U.R. CONSTRUCTION

CLAREMONT, NH 03743

Ph: (603) 542-2801

05/30/13

FABRICATOR:

193 INDUSTRIAL AVE.

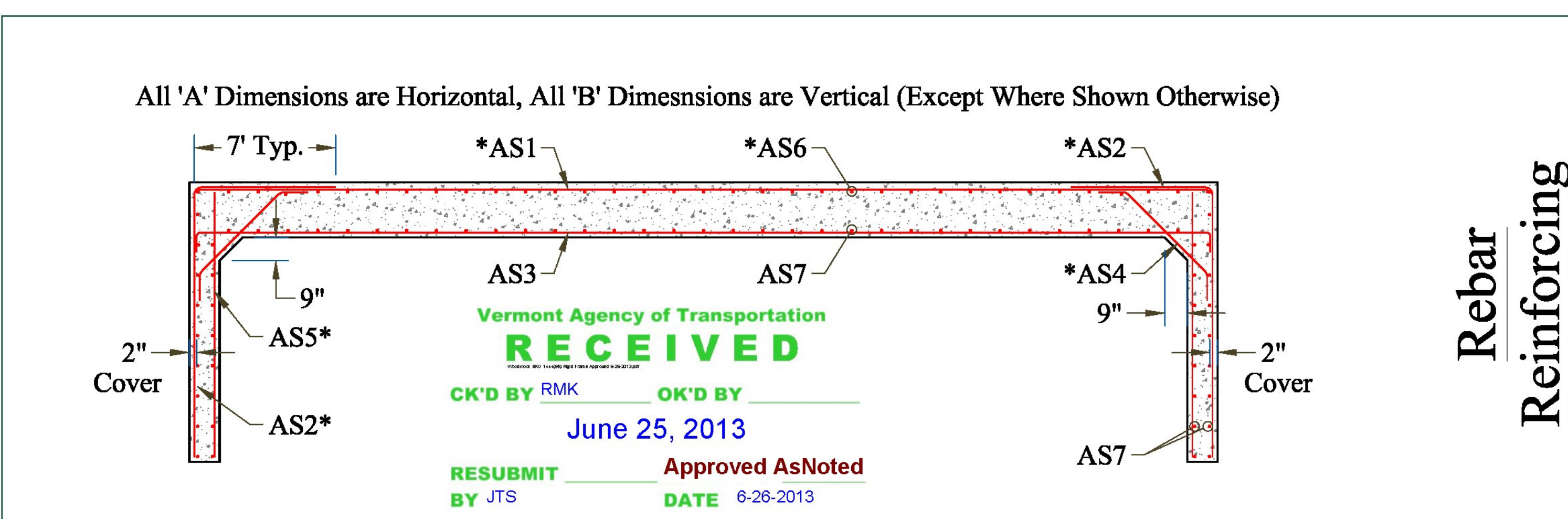
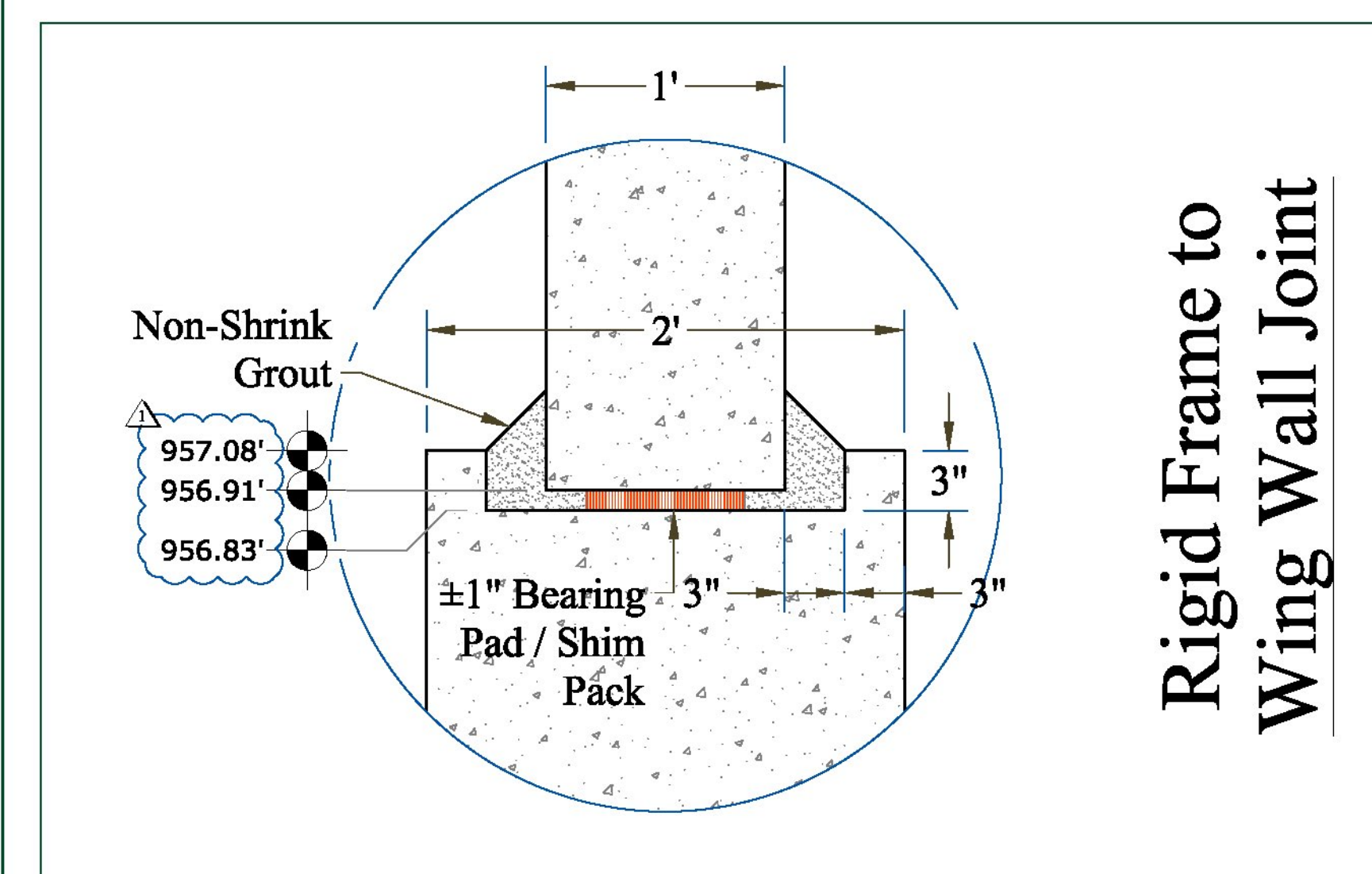
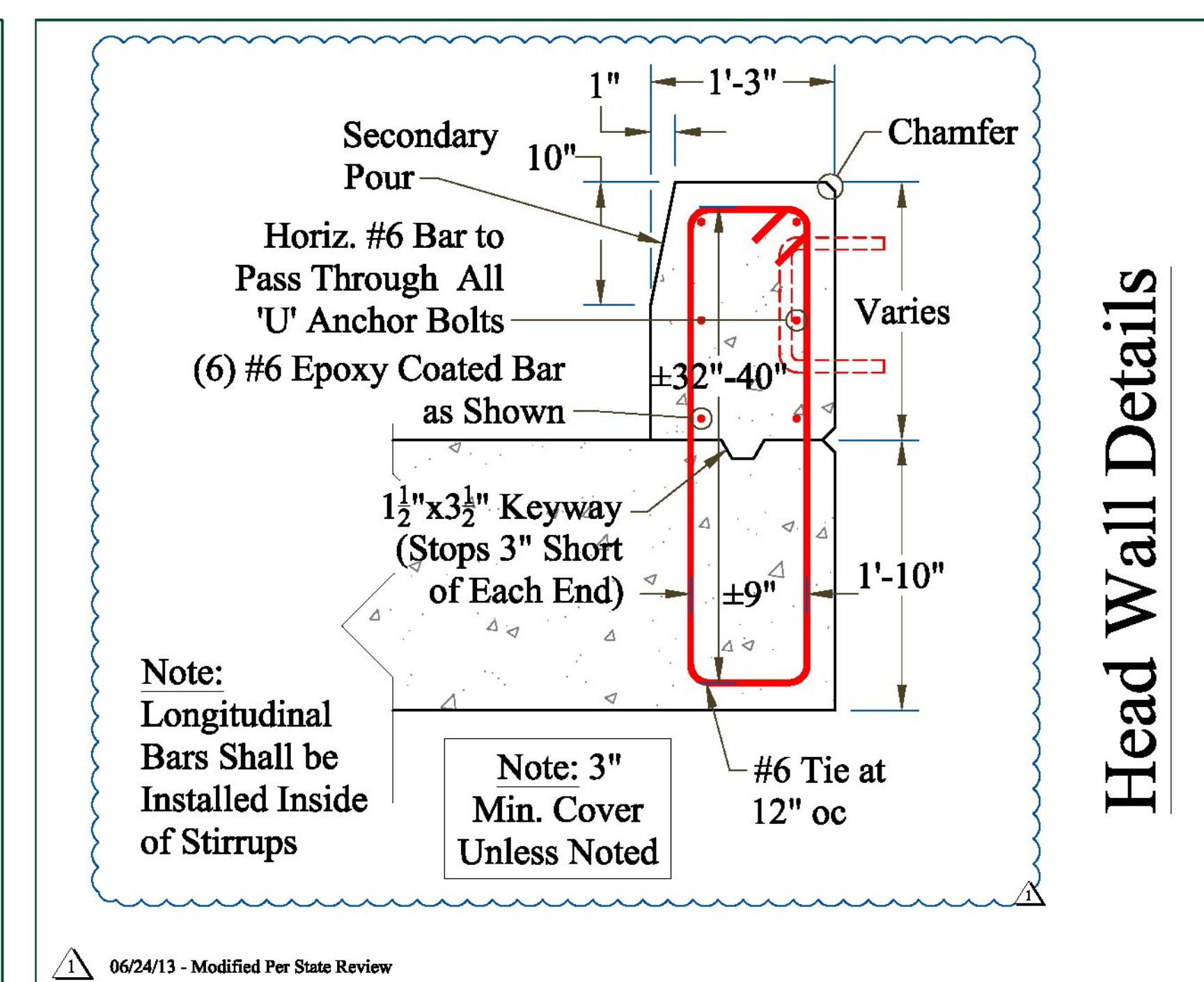
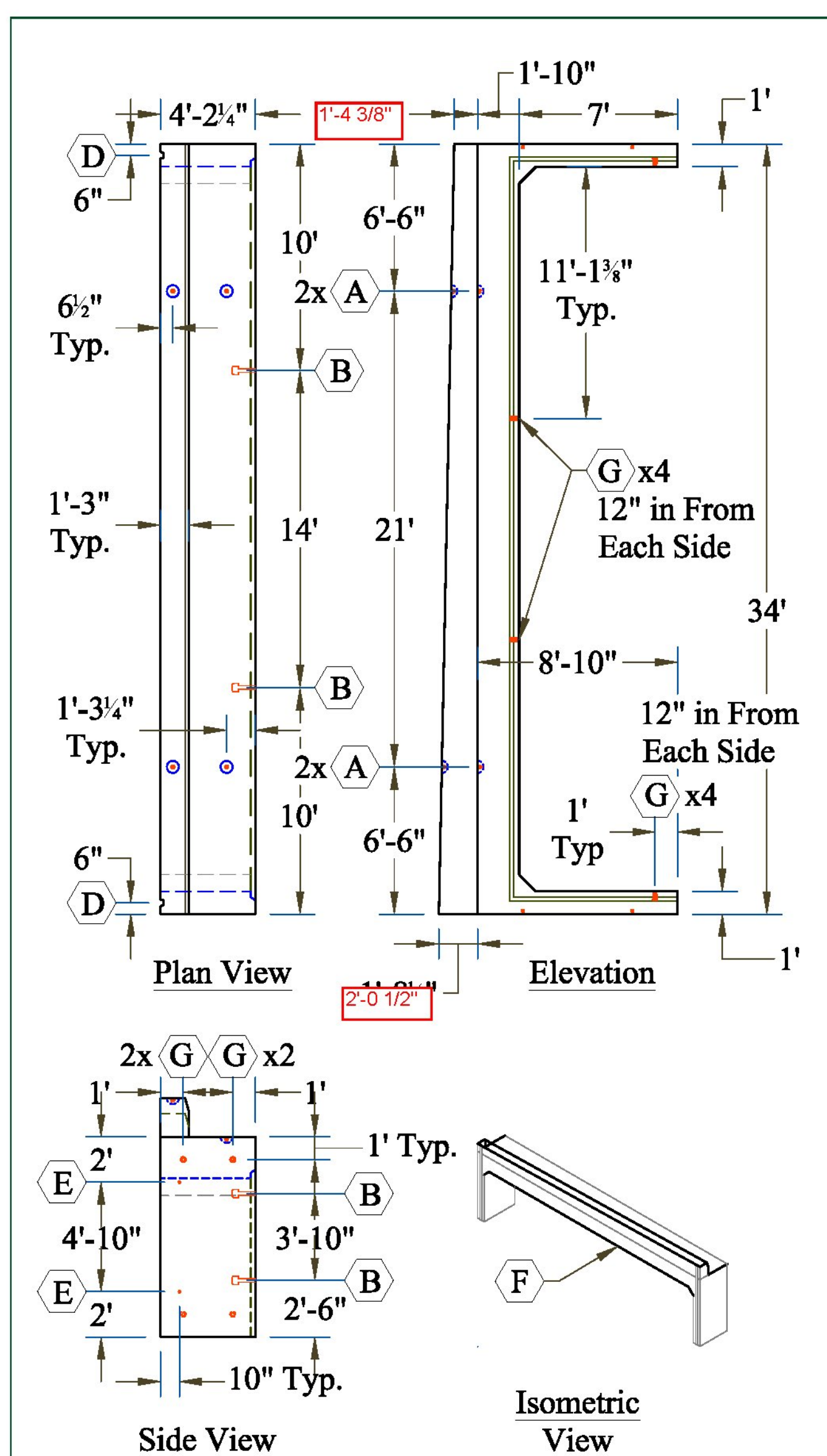
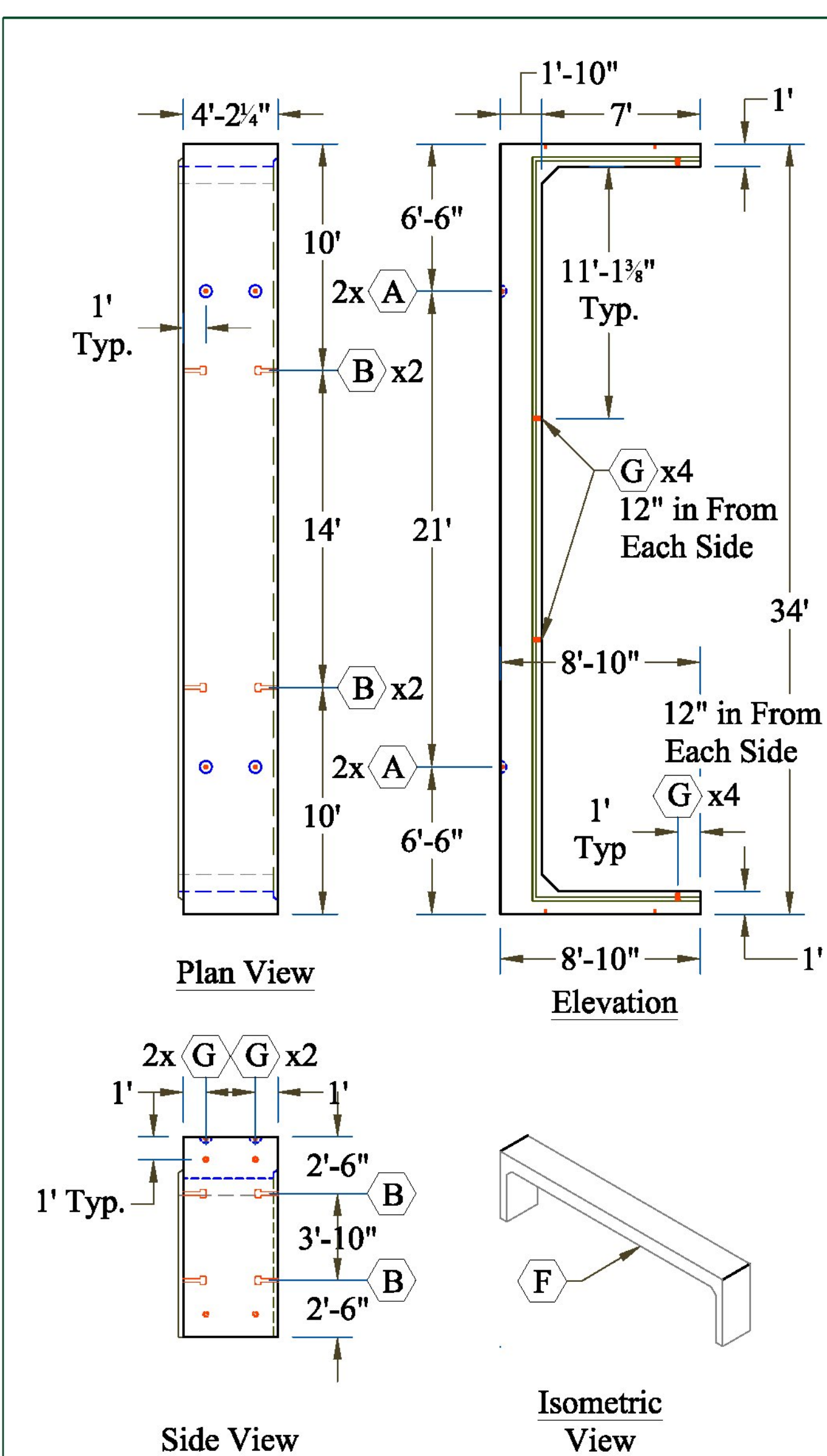
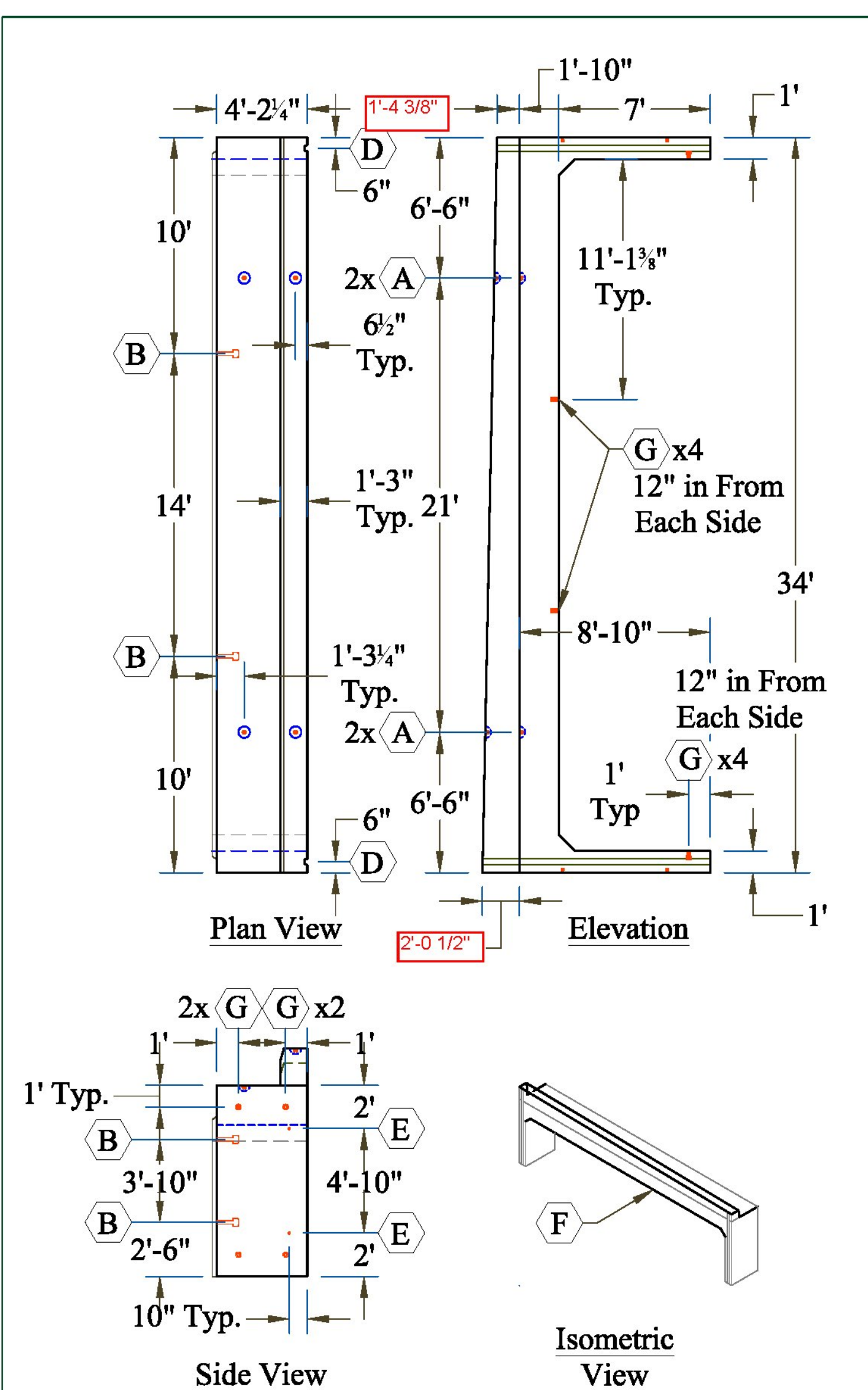
WILLISTON, VT 05495

Ph: (802) 658-0201

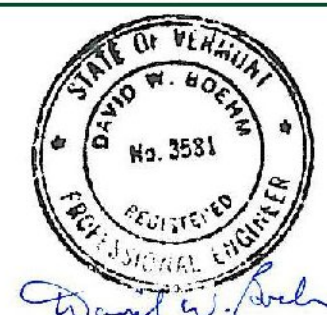
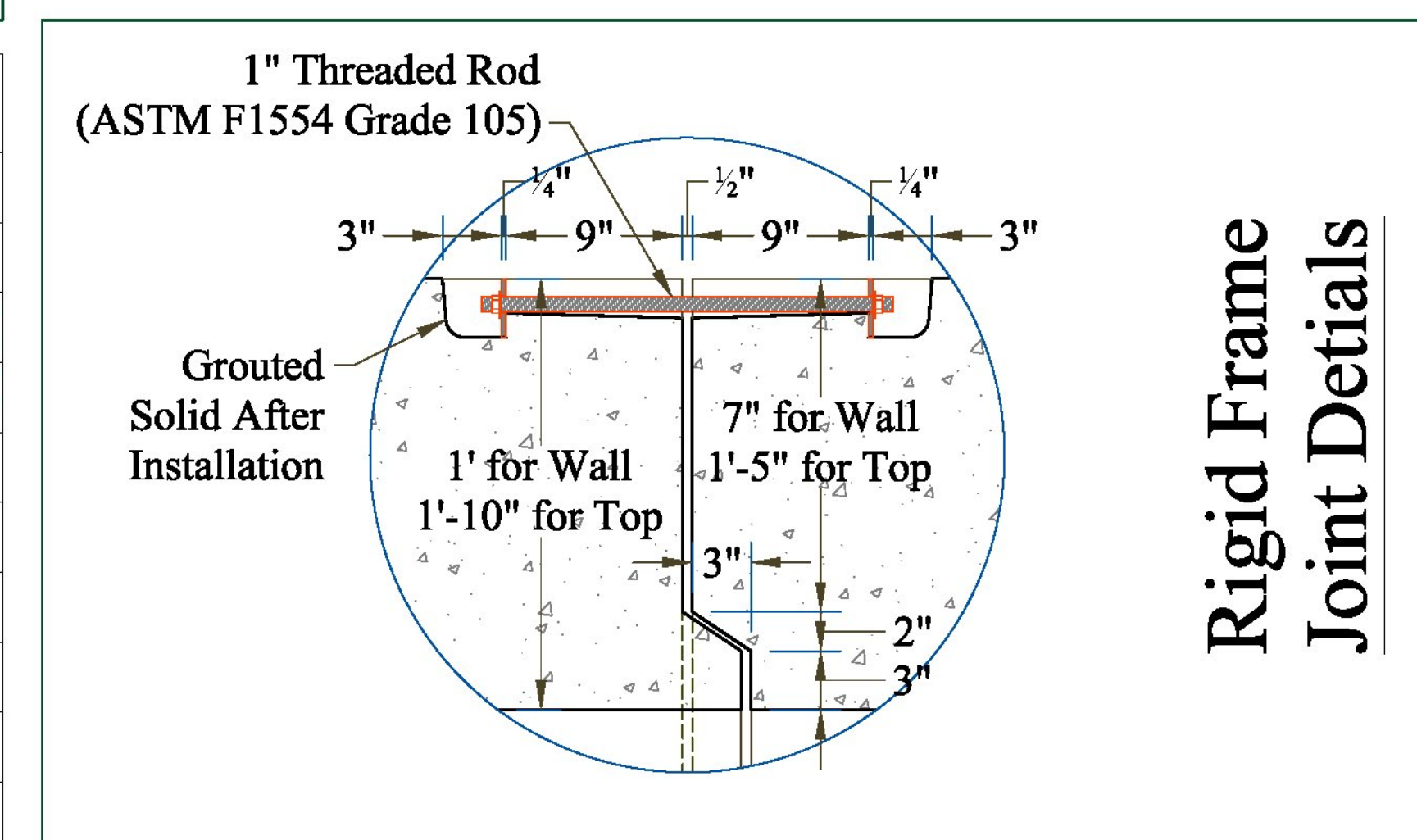
PRECAST NOTES, SPECIFICATIONS AND LEGEND

1 OF 6





Mark	Size	Max Spacing	Length	Type	A	B
*As1	#4	10"	33'-8"	Straight	404"	
*As2	#8	5"	15'-6"	L-Bar	84"	102"
As3	#8	5"	36'-4"	Hook End	404"	16'
*As4	#5	10"	8'-8"	Hook End	50"	27'
*As5	#5	10"	8'-6"	Straight	102"	
*As6	#4	18"	3'-10 $\frac{1}{4}$ "	Straight	46 $\frac{1}{4}$ "	
As7	#4	18"	3'-10 $\frac{1}{4}$ "	Straight	46 $\frac{1}{4}$ "	



* - Rebar to be Epoxy Coated

**Note: 2" Min.
Cover Typ. Unless
Noted Otherwise**

Note: All Rigid Frame & Headwall Reinforcing Shall be Level II

PRECAST CONCRETE RIGID FRAME SHOP DRAWINGS (SDI JOB# 13429)

SUPERVISOR: M. WHEELER
 DETAILER: C. DUPLANTIS
 CHECKER: M. WHEELER
 ENGINEER: ENGINEERING VENTURES

PROJECT NAME: WOODSTOCK
PROJECT #: BRO 1444 (55)
LOCATION: WOODSTOCK, VT
BRIDGE: #23 ON TOWN HWY 6

CONTRACTOR:
B.U.R. CONSTRUCTION
CLAREMONT, NH 03743
Ph: (603) 542-2801

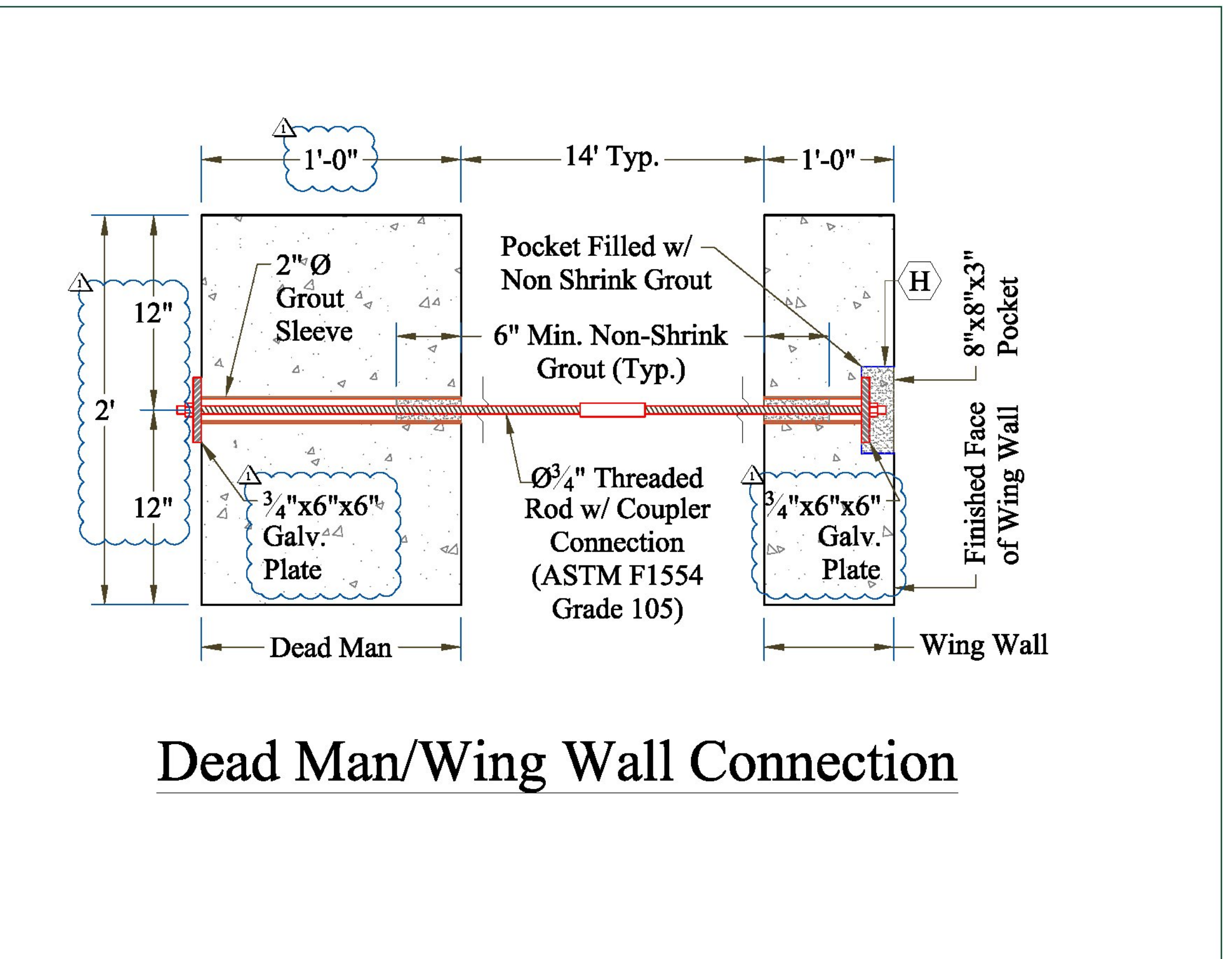
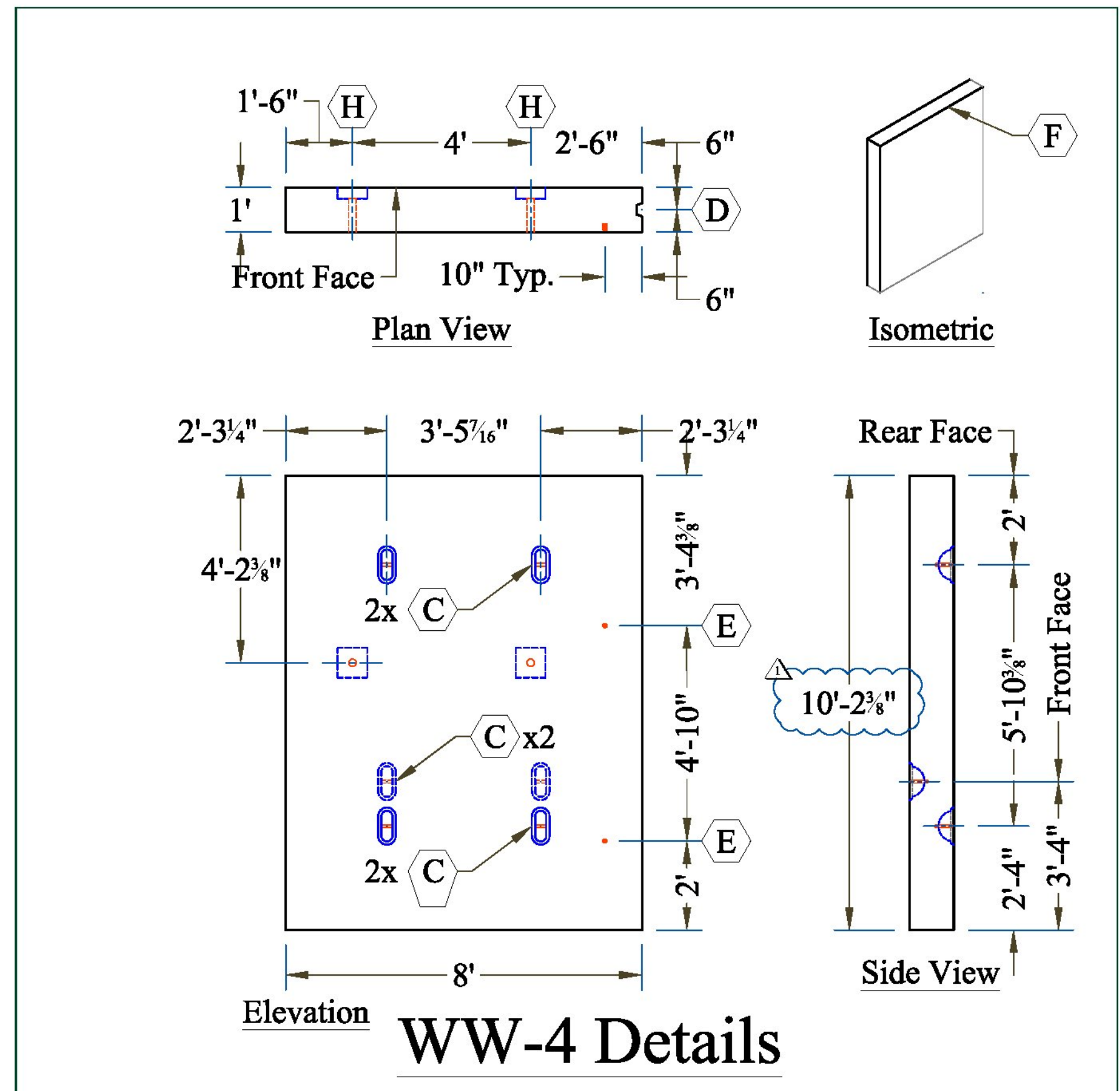
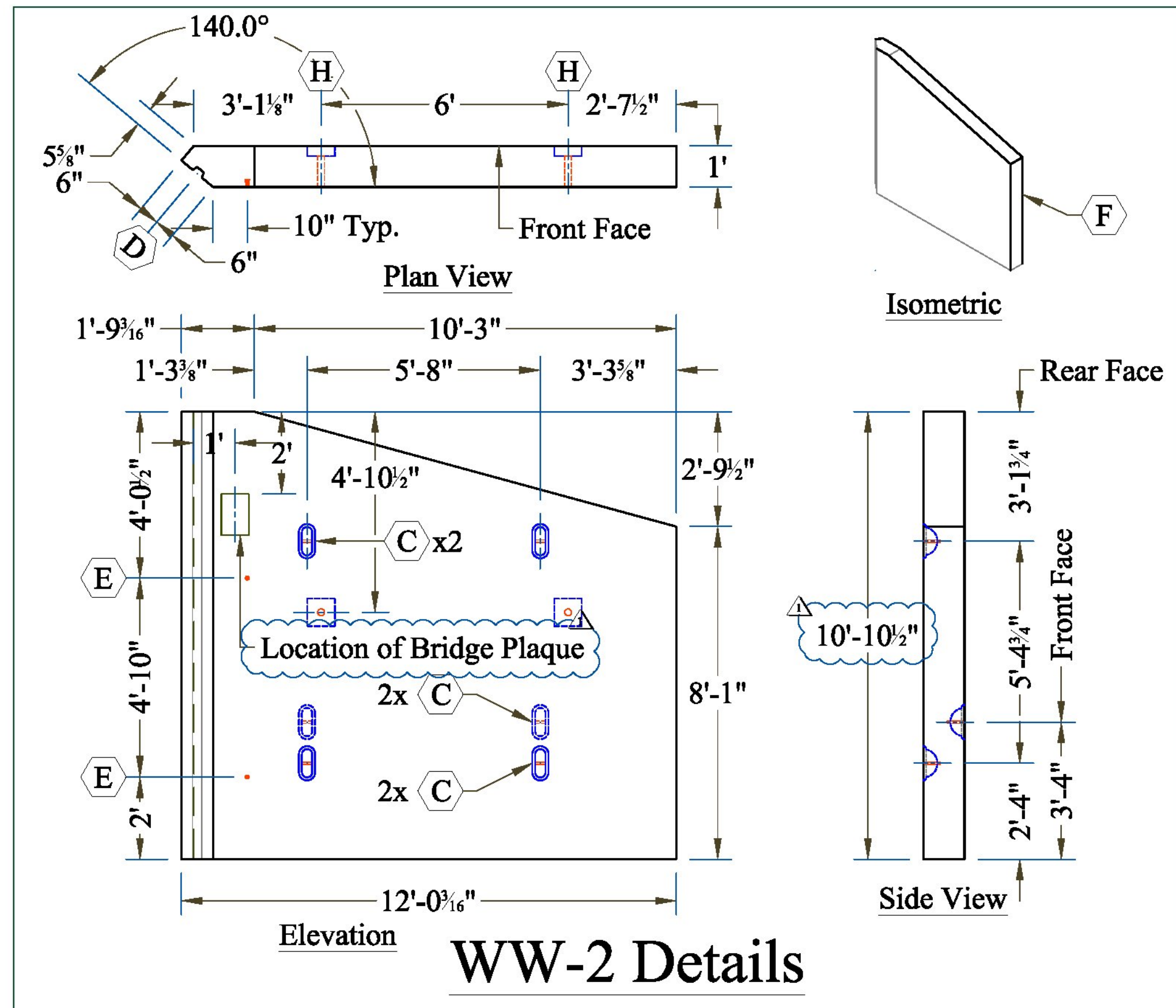
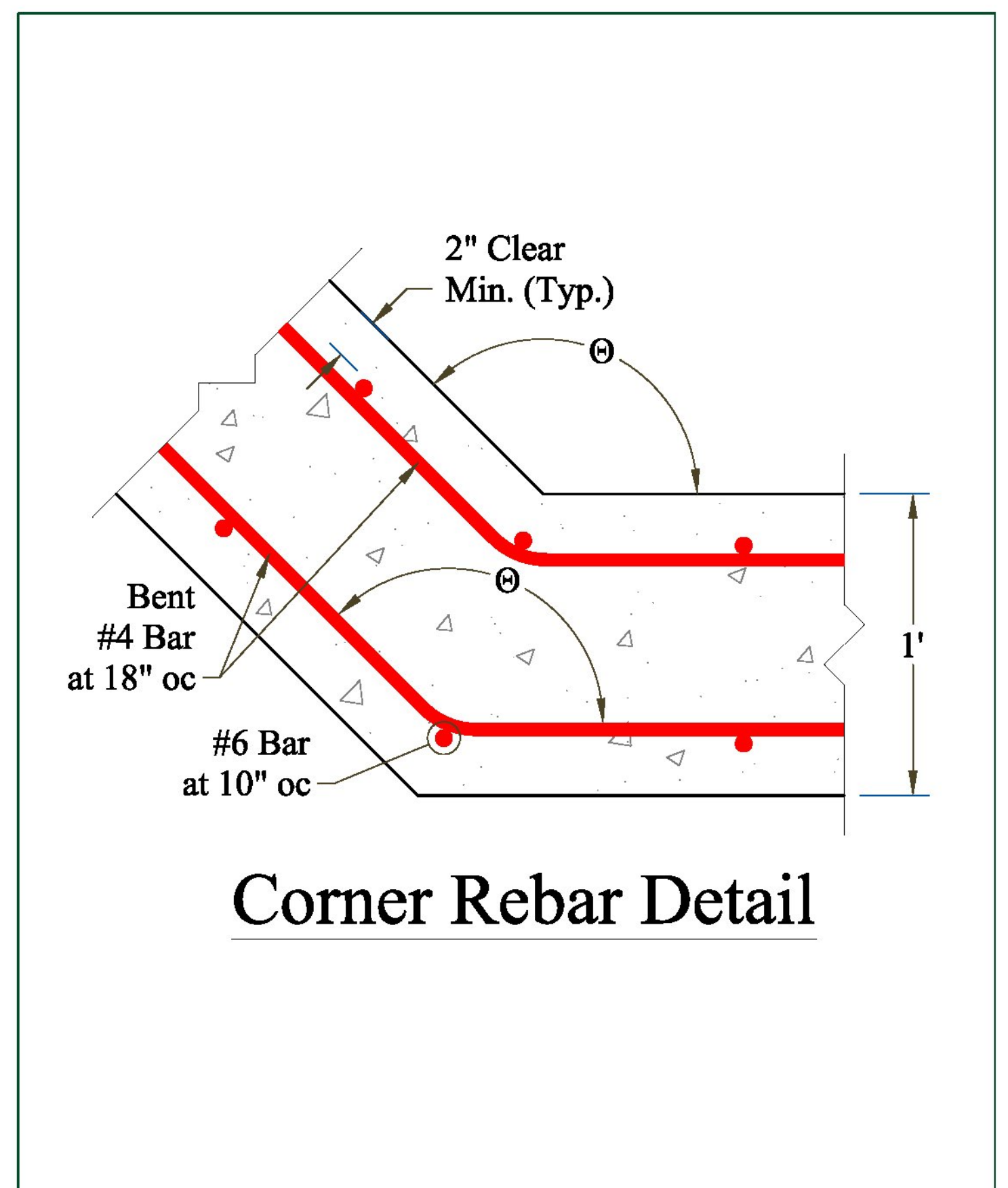
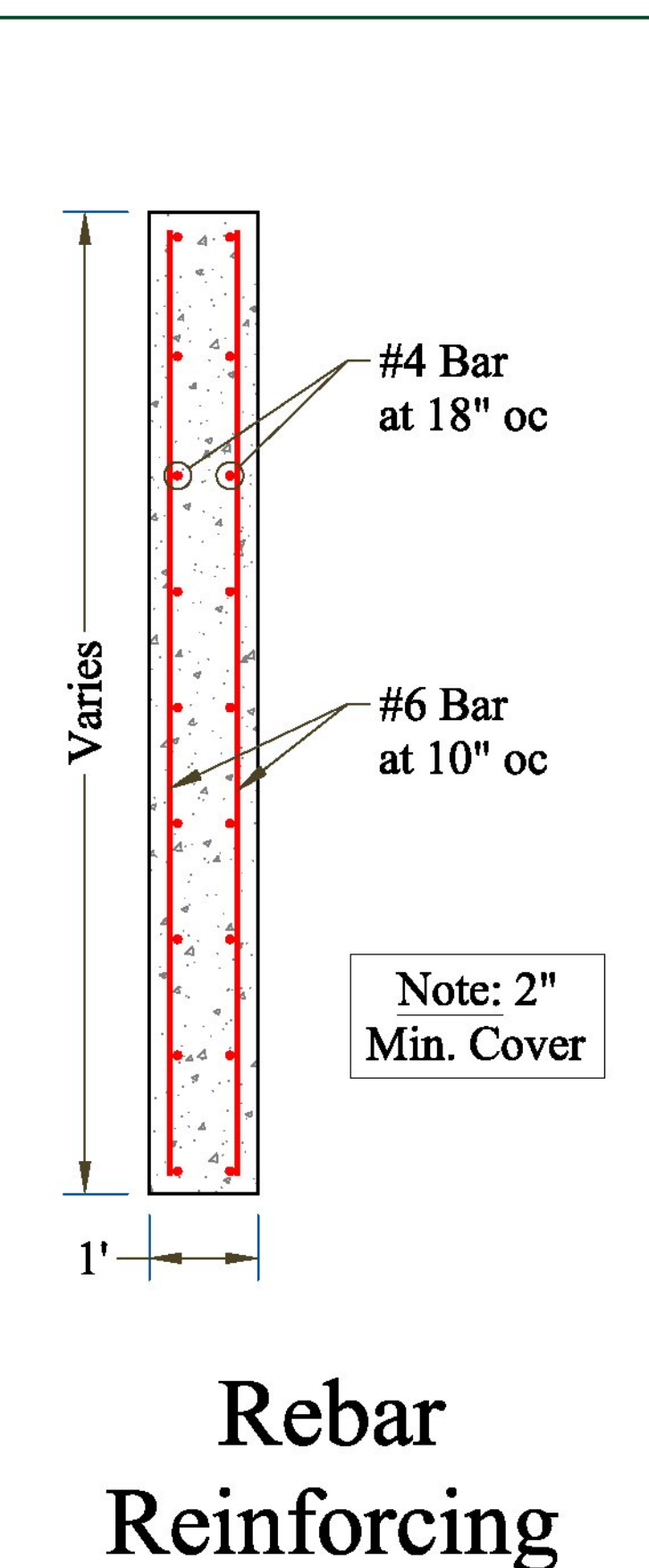
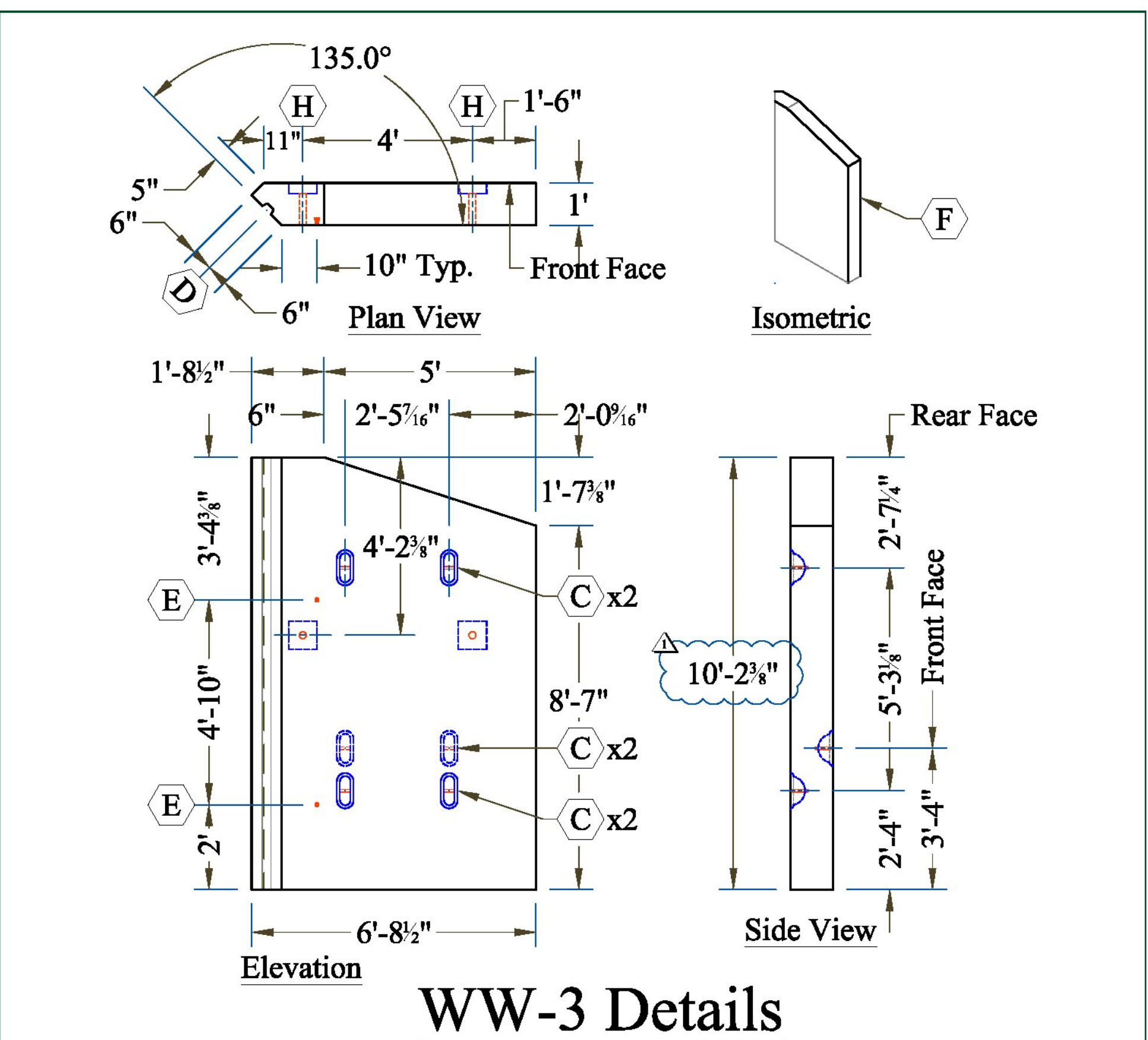
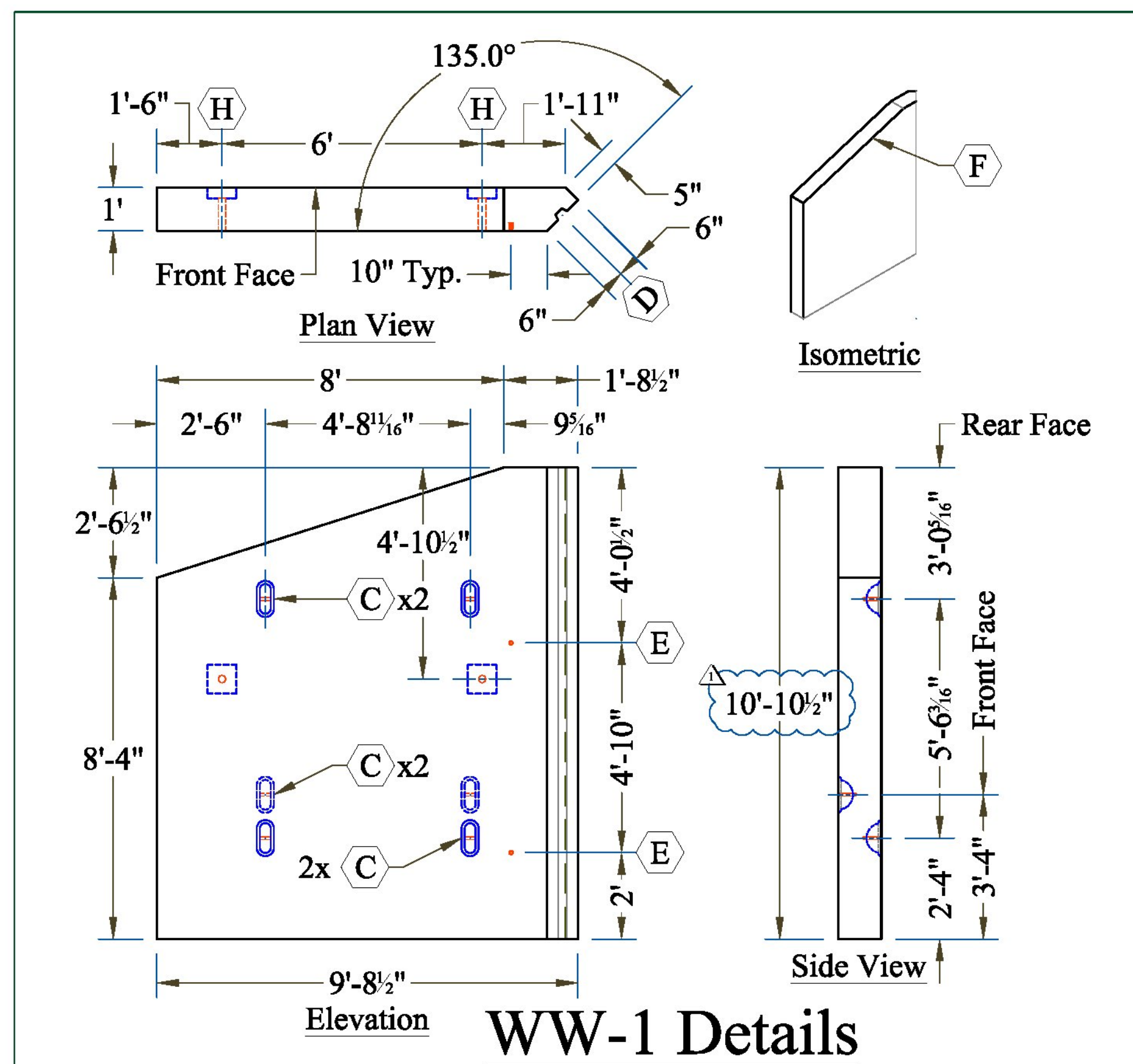
FABRICATOR:
193 INDUSTRIAL AVE.
WILLISTON, VT 05495
Ph: (802) 658-0201



05/30/13

PRECAST RIGID FRAME DETAILS & SECTIONS

3 of 6



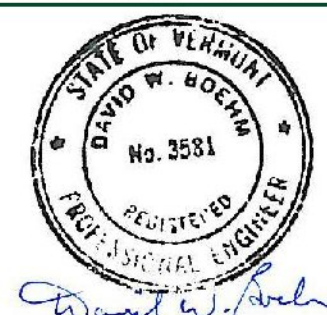
HW-1 Details

HW-2 Details

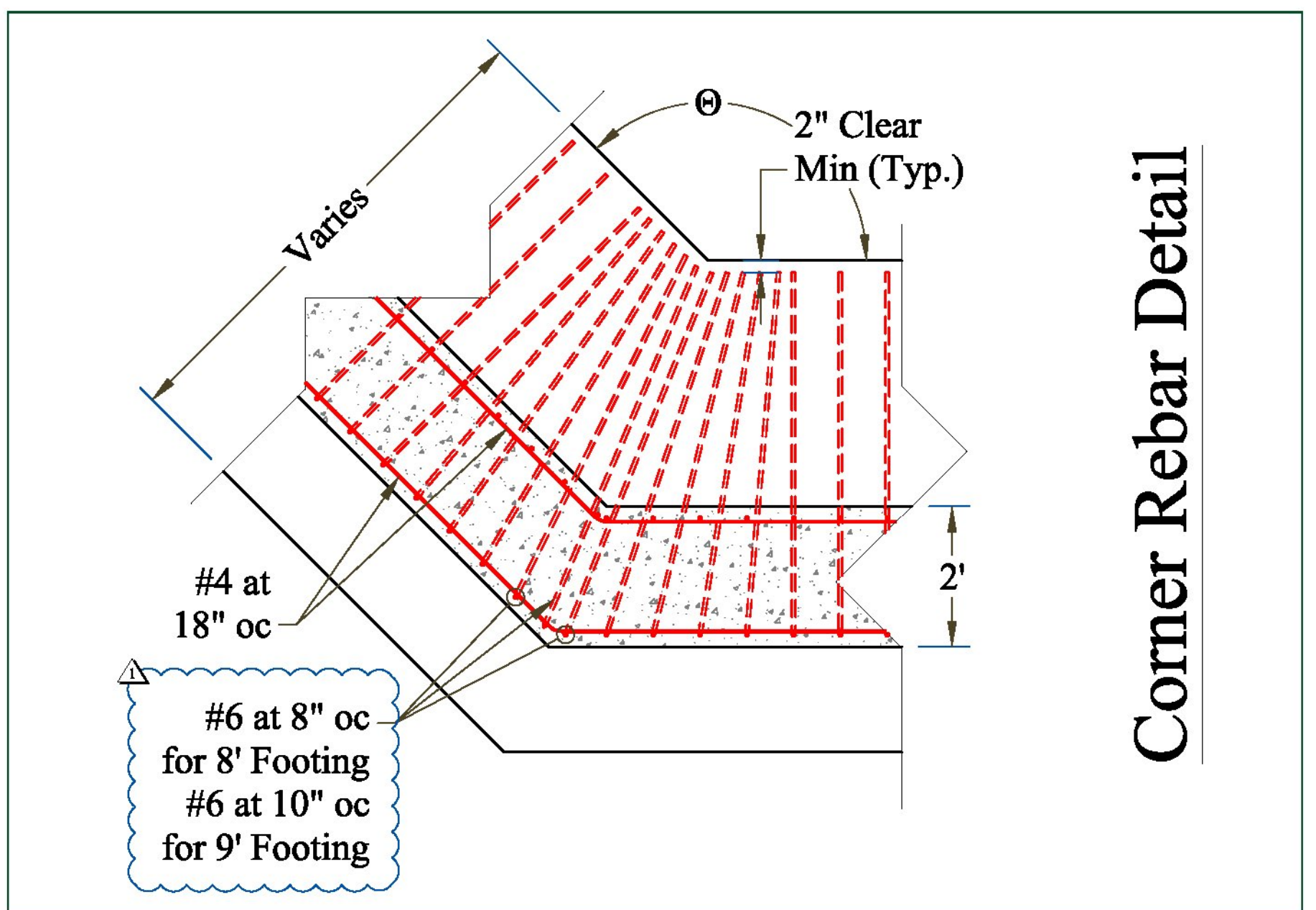
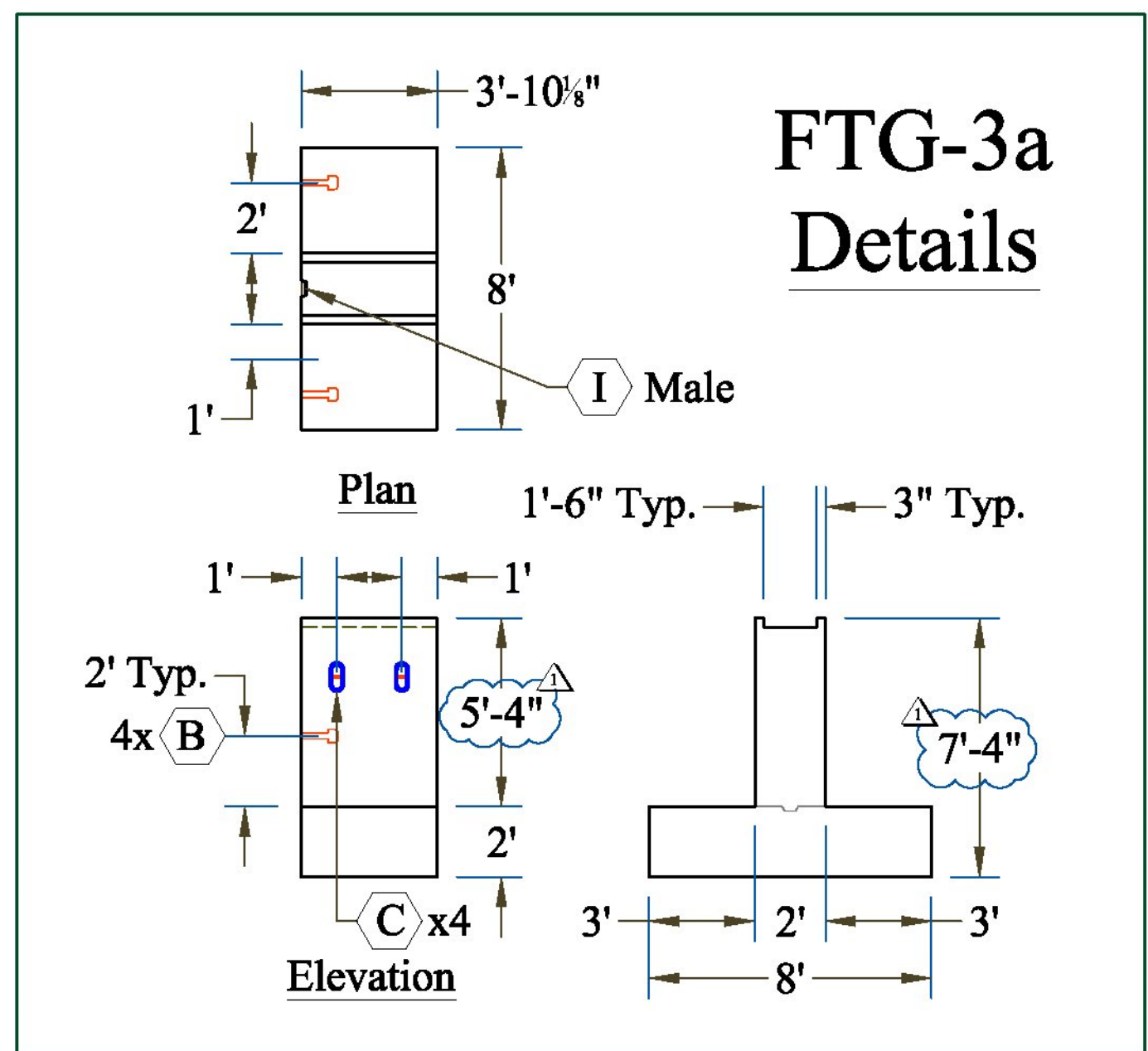
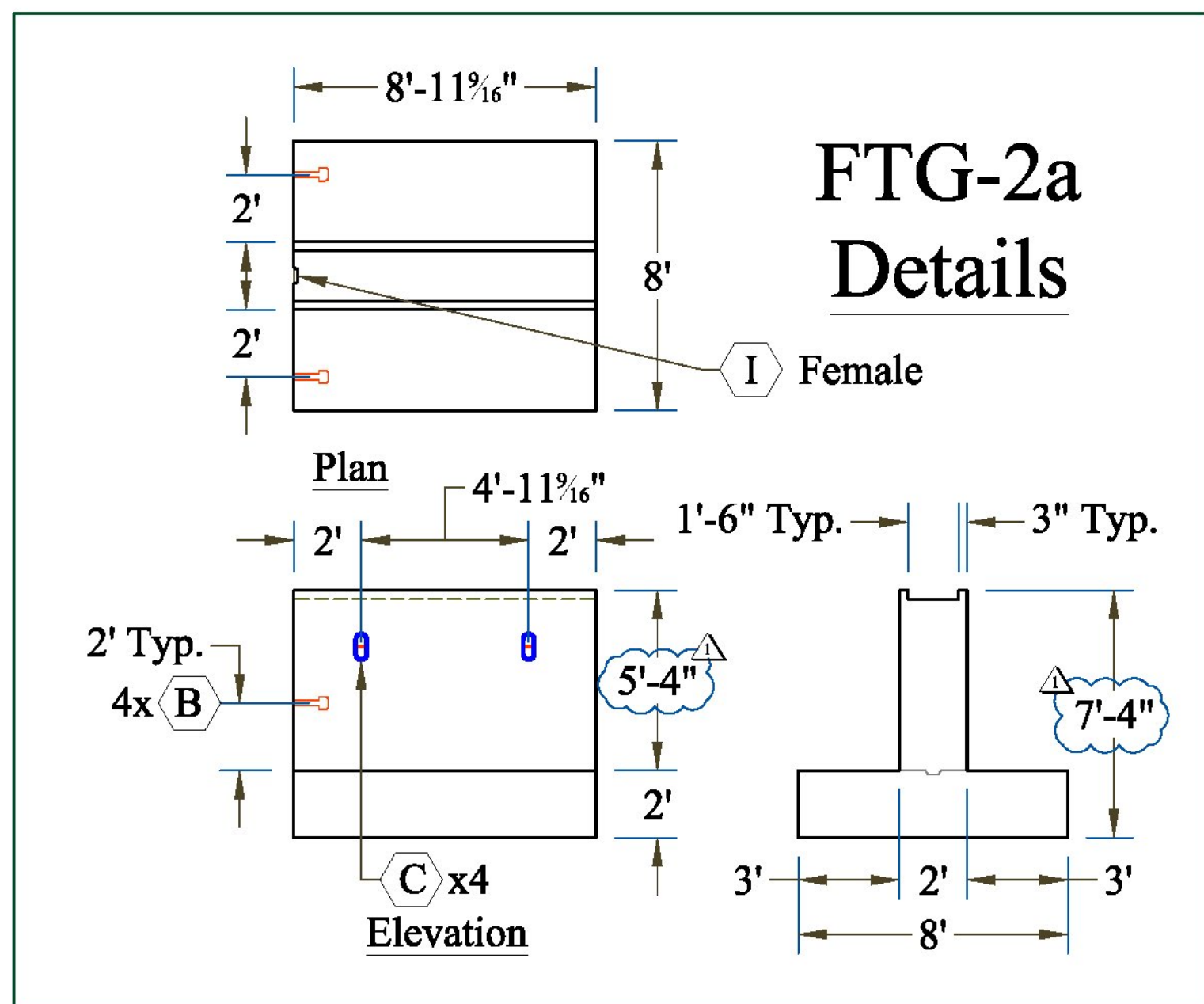
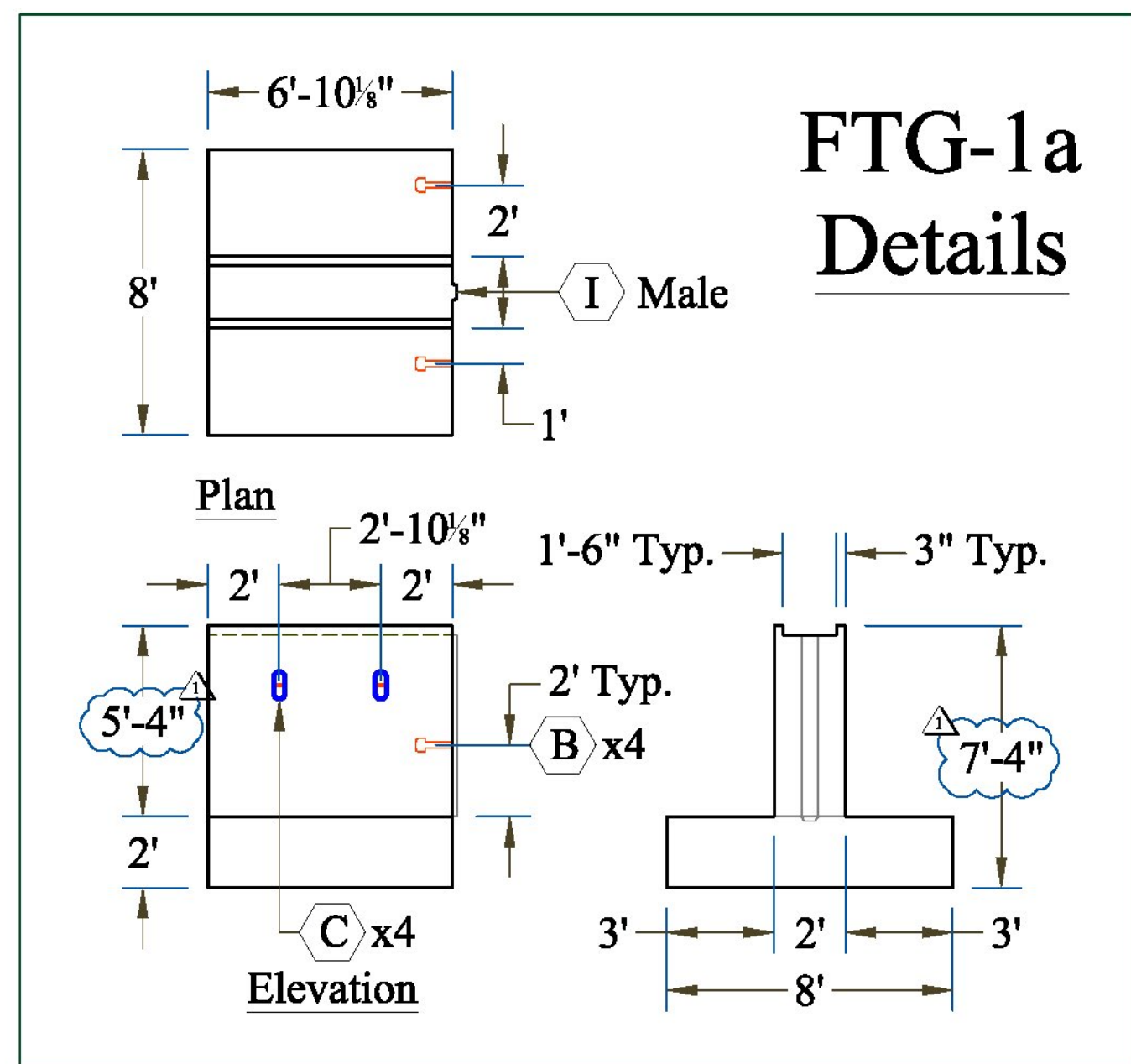
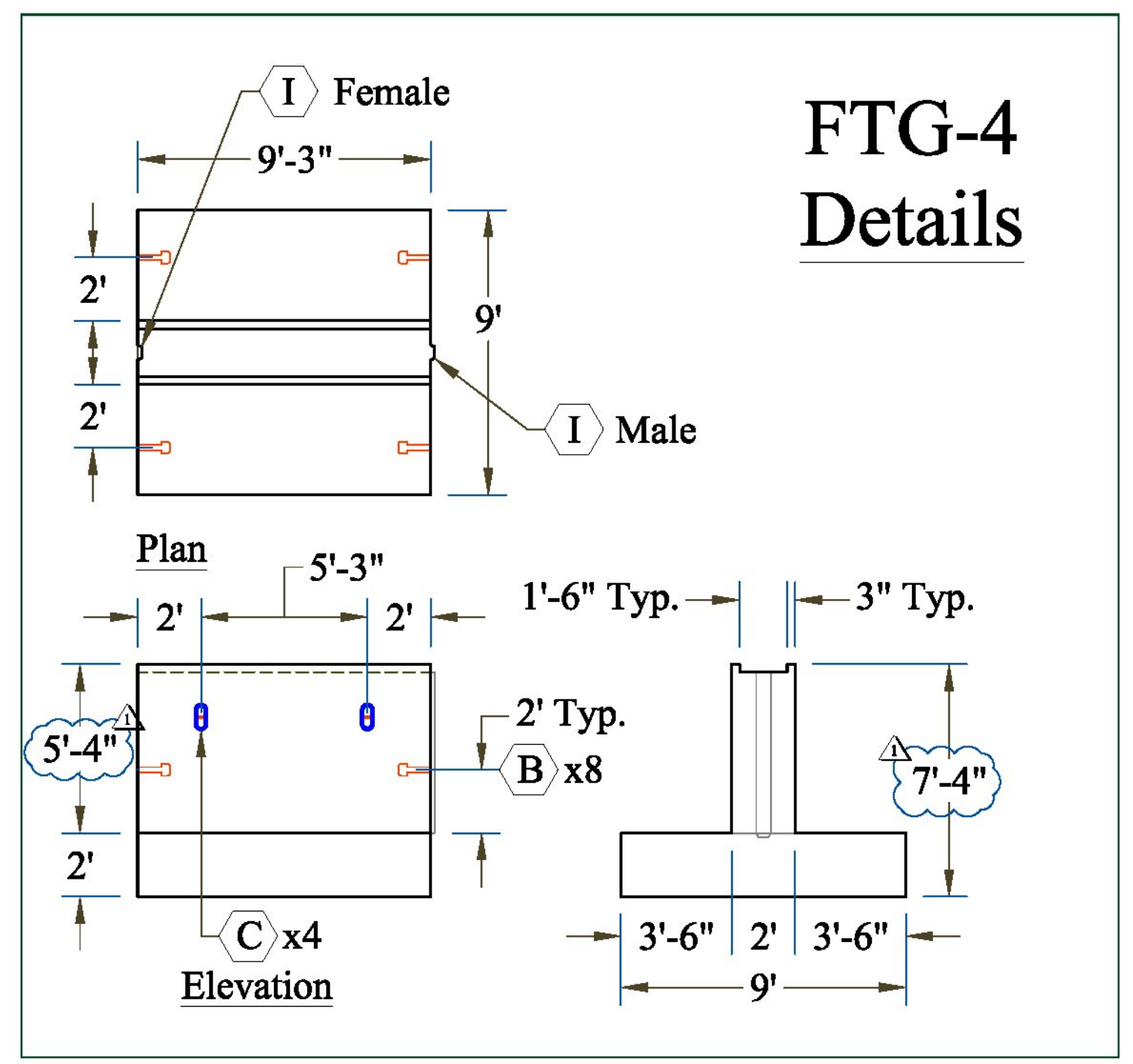
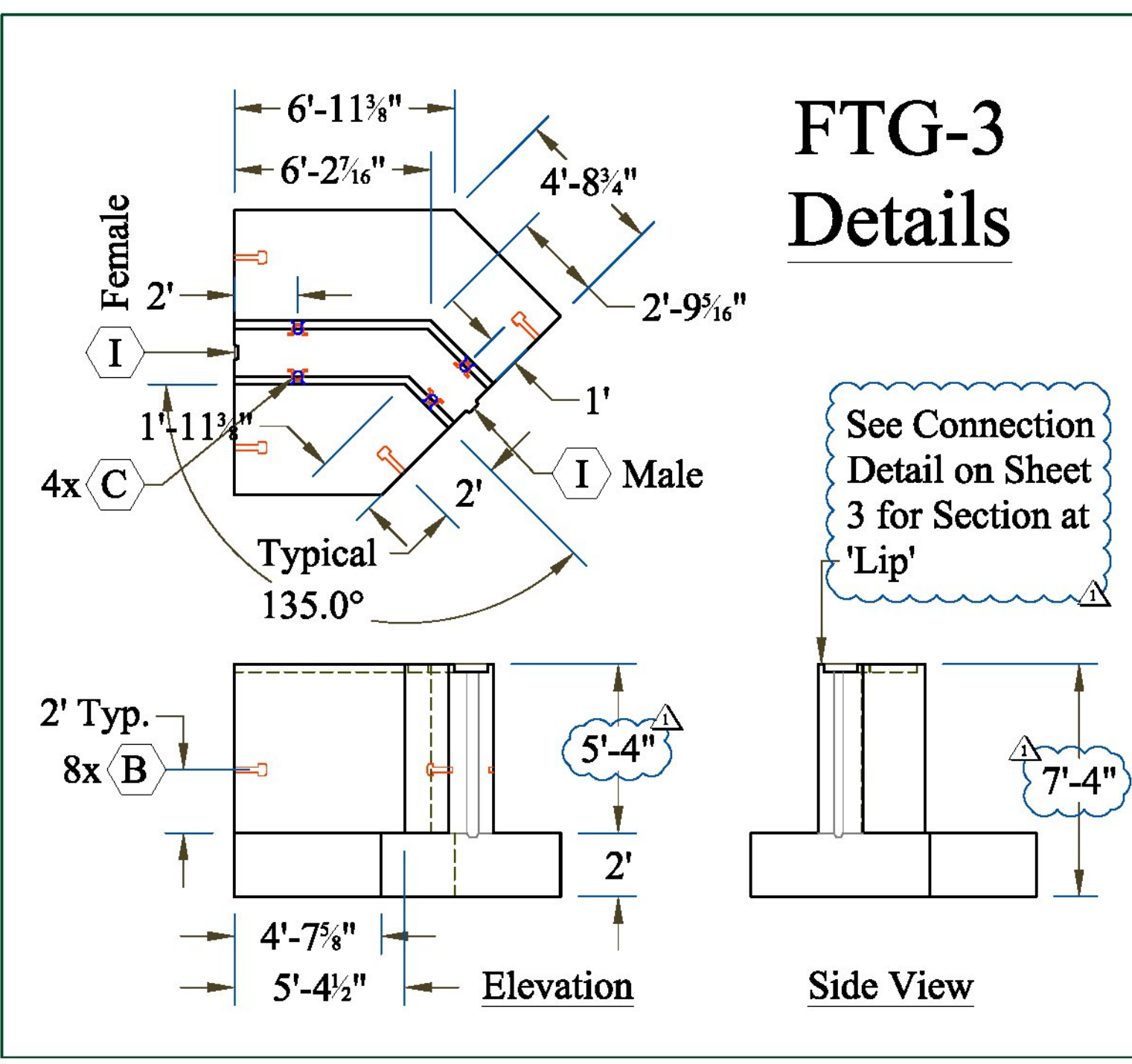
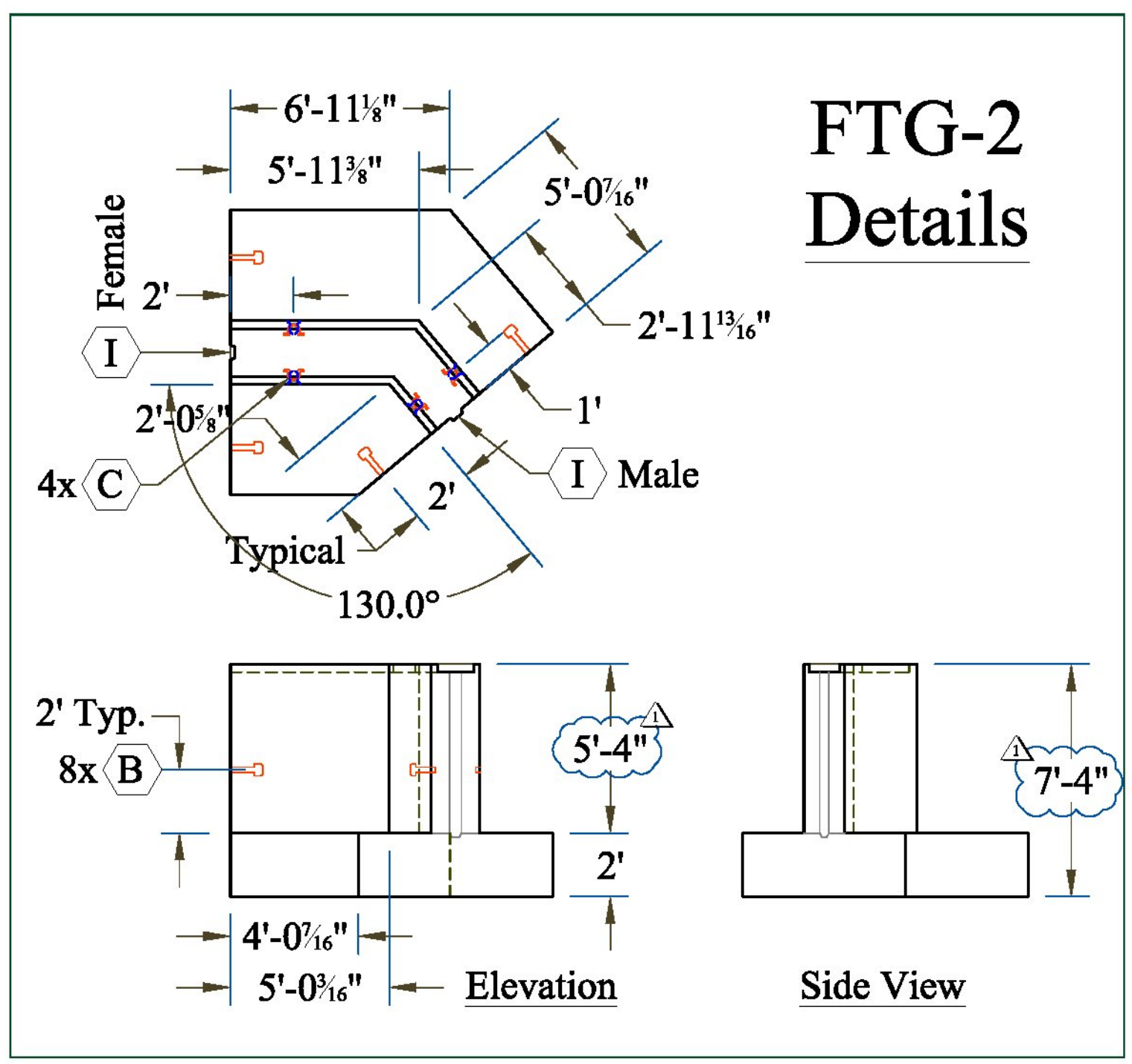
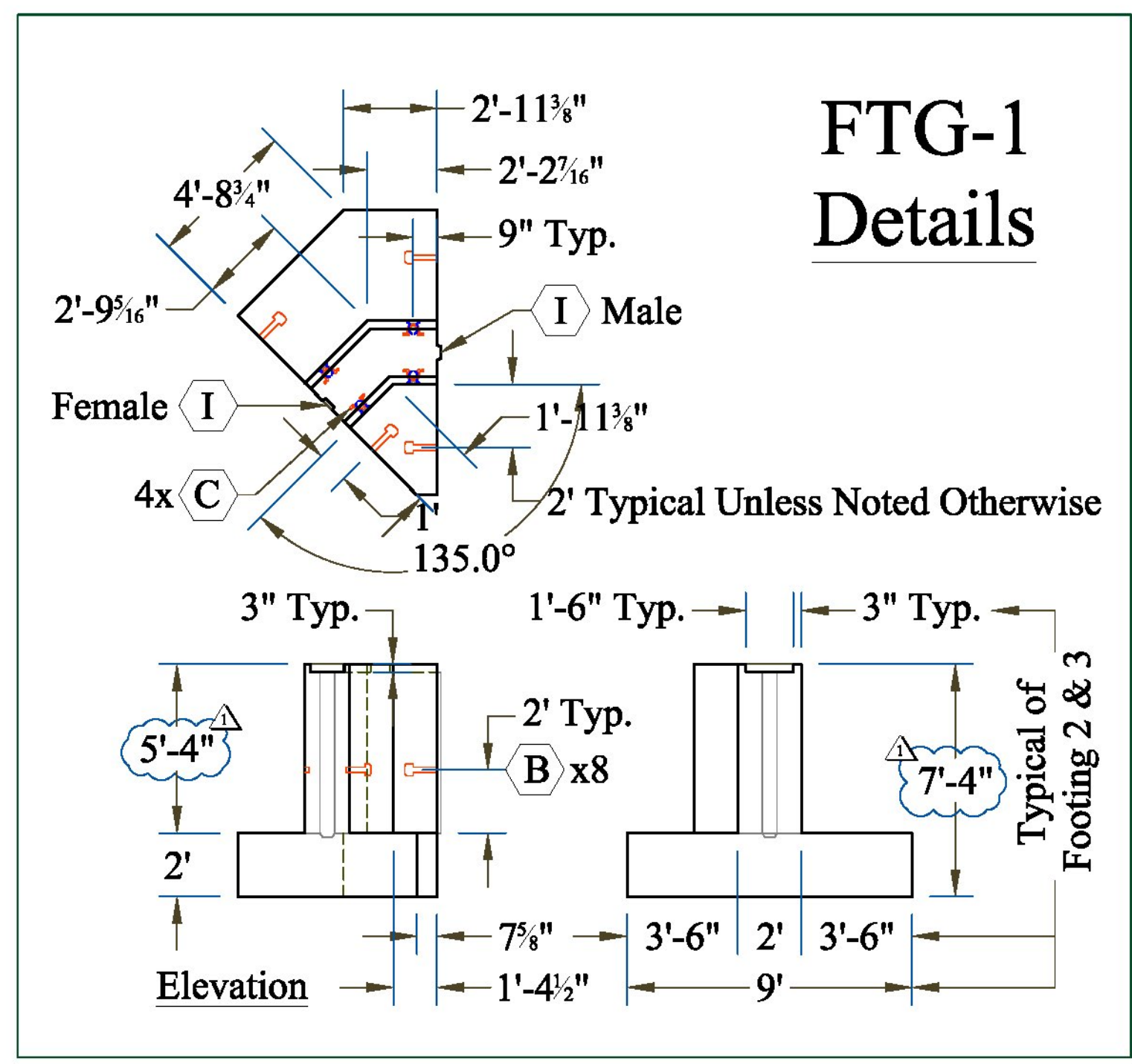
Head Wall Rail Anchors

Dead Man Plan View

Dead Man Rebar

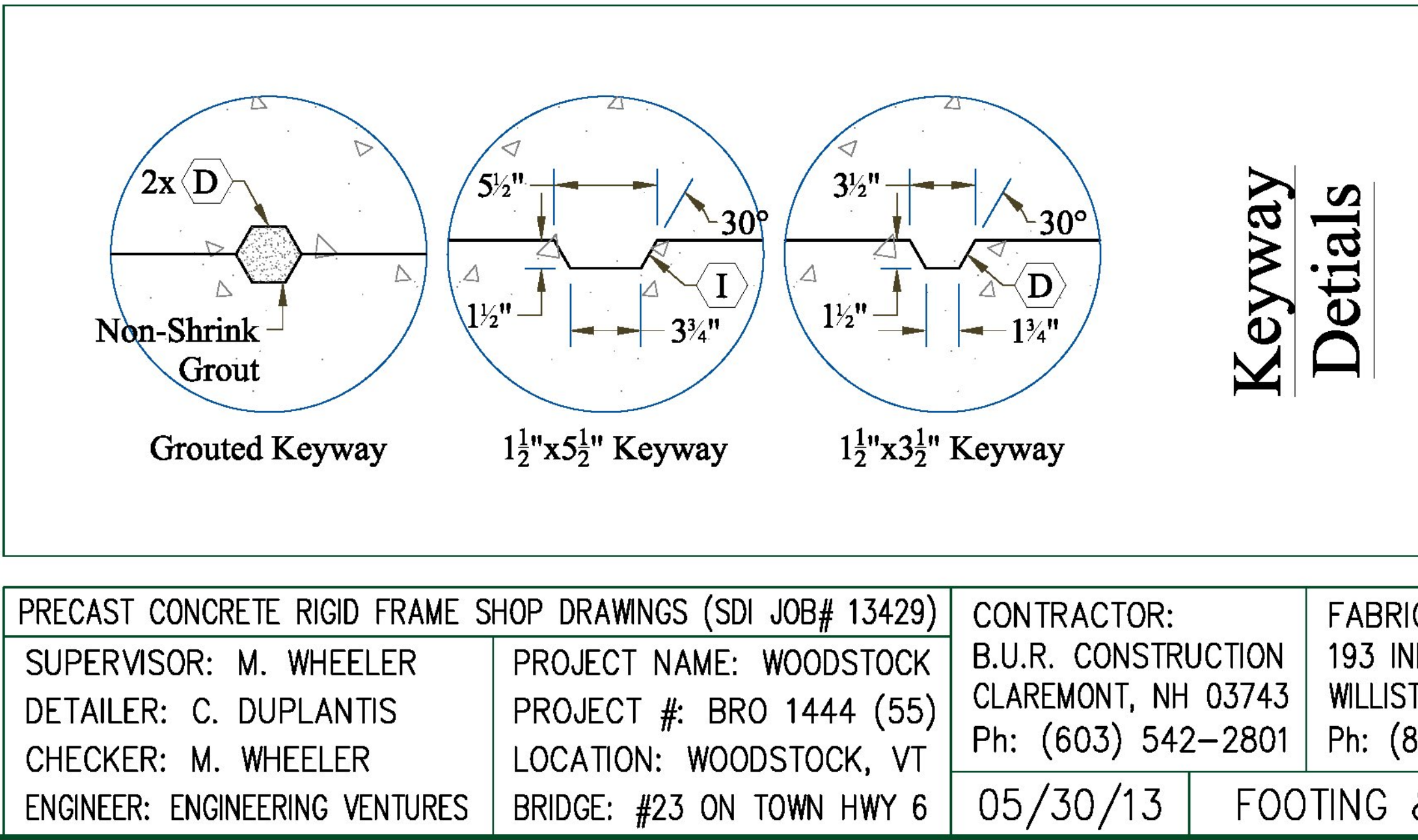
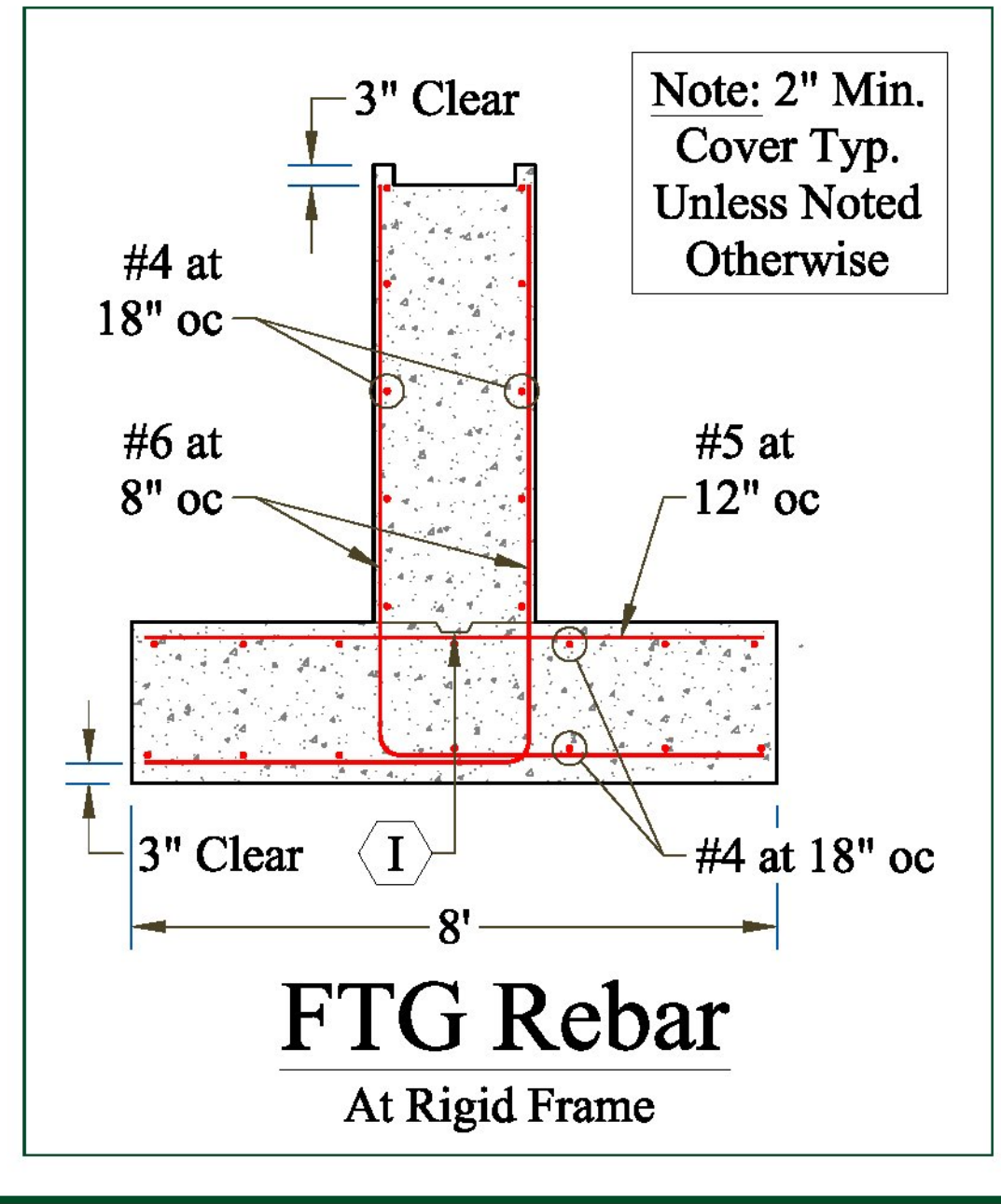
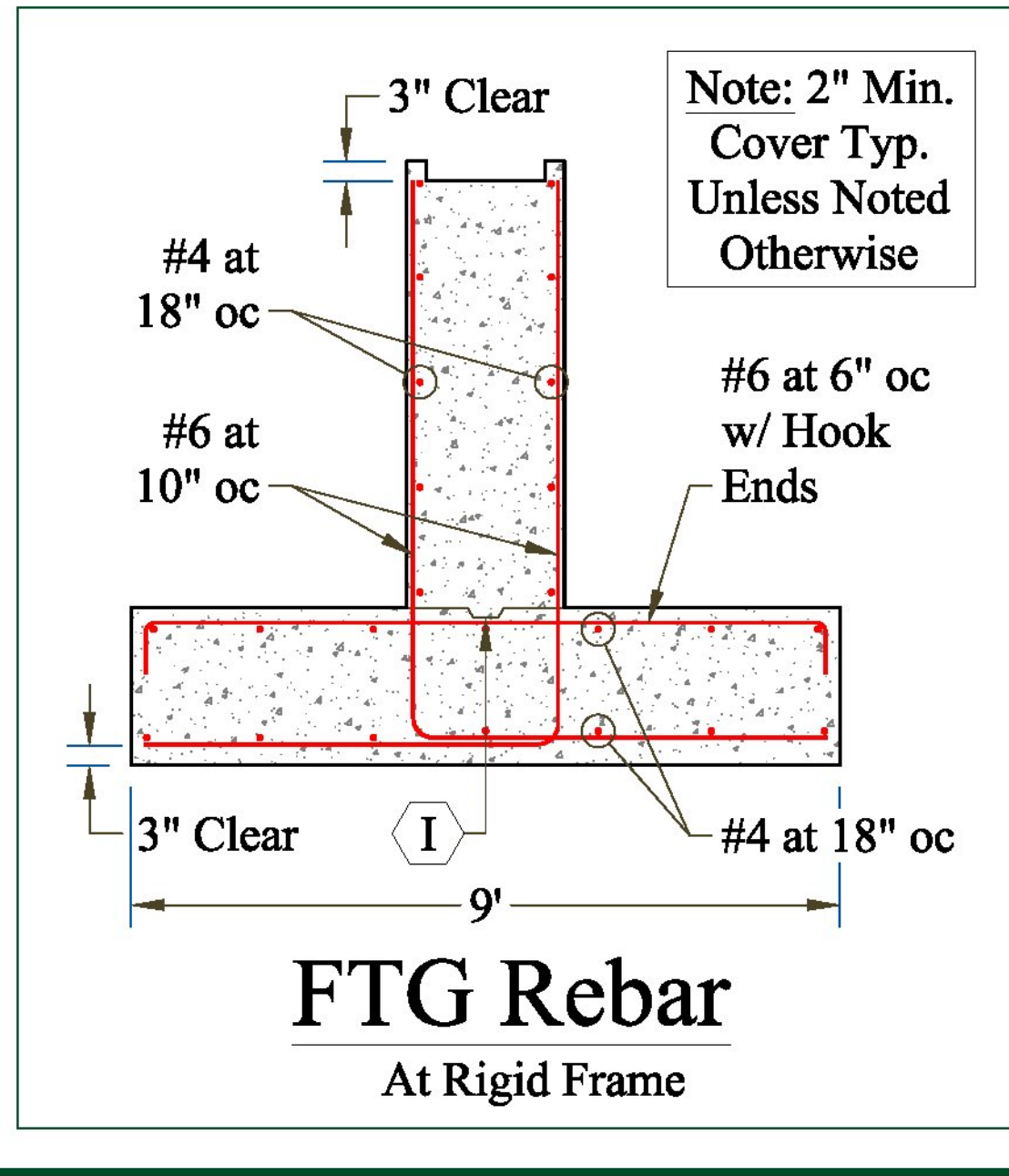


05/30/13	HEAD WALL DETAILS, REINFORCING & SECTIONS	5 of 6
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Note: All Footing Lifting Devices Located in the Vertical Wall 2' Down From the Top of Footing (3'-8" Up From Top of Toe/Heel)

CONTRACTORS VTSPCE:



Vermont Agency of Transportation
RECEIVED
 CK'D BY RMK OK'D BY
 June 25, 2013
 RESUBMIT NO Approved
 BY JTS DATE 6-26-2013

06/24/13 - Modified Per State Review

SD Ireland
 Precast Division