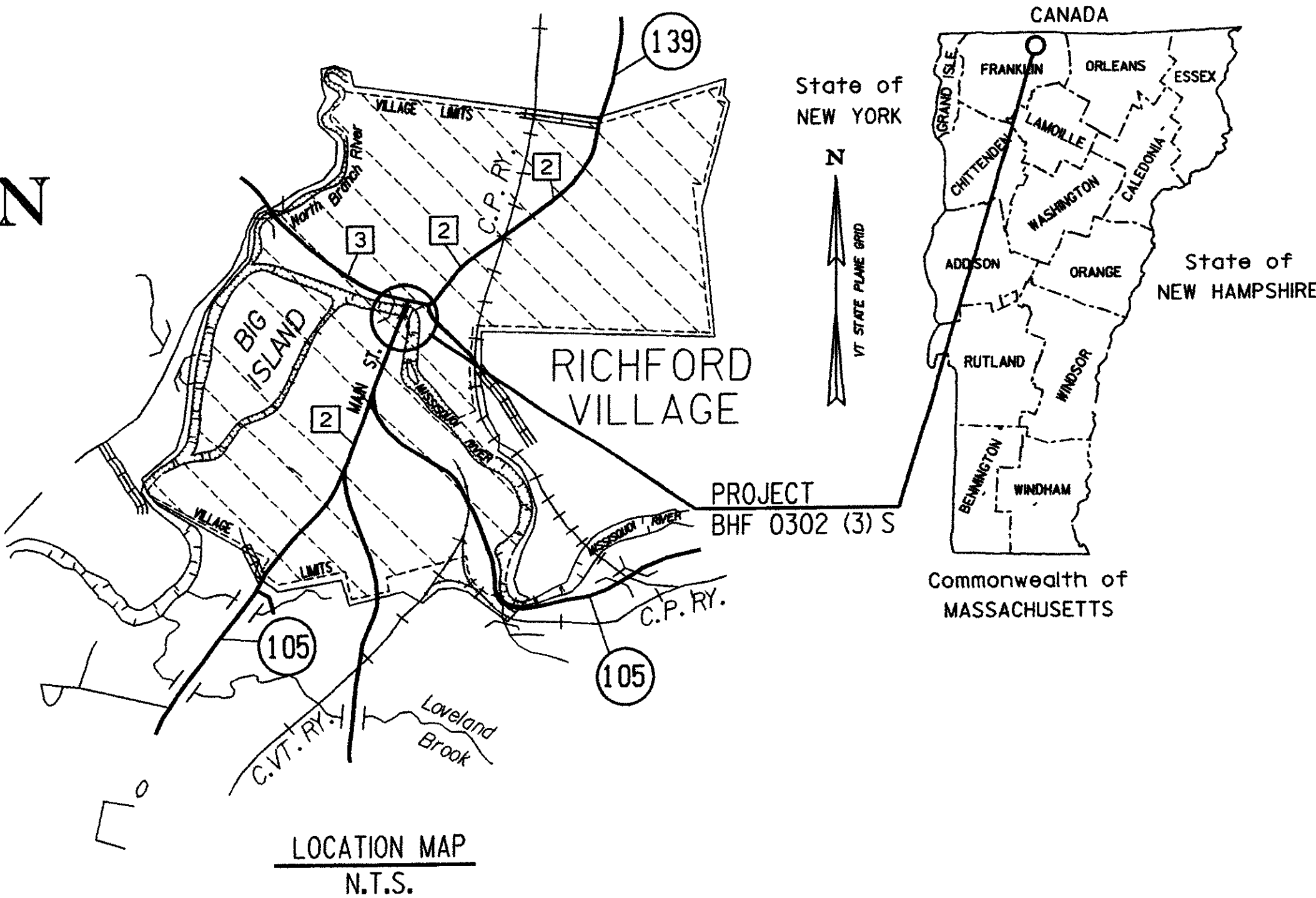


SEE SHEET 2 FOR THE
INDEX OF SHEETS AND
THE LIST OF STANDARDS

STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF RICHFORD
COUNTY OF FRANKLIN
BRIDGE NO.41 ON TOWN HIGHWAY NO.2



PROJECT LOCATION: MAIN STREET, APPROXIMATELY 0.25 MILES NORTH OF THE INTERSECTION OF VERMONT ROUTE 105 AND MAIN STREET (T.H.2) IN THE VILLAGE OF RICHFORD.

PROJECT DESCRIPTION: THIS PROJECT INVOLVES THE REMOVAL OF THE EXISTING BRIDGE DECK, REMOVAL OF EXISTING STEEL MEMBERS, REPAIR OF THE EXISTING STEEL FRAMING, MINOR REPAIR OF EXISTING ABUTMENTS, NEW STEEL FRAMING, CONSTRUCTION OF A NEW BRIDGE DECK, PAINTING THE EXISTING STEEL SUPERSTRUCTURE, MINOR APPROACH RECONSTRUCTION AND CONSTRUCTION OF A TEMPORARY BRIDGE AND DETOUR.
LENGTH OF STRUCTURE: 129.84 FEET (0.024 MILES)
LENGTH OF ROADWAY: 51.50 FEET (0.010 MILES)
LENGTH OF PROJECT: 181.34 FEET (0.034 MILES)

RECORD PLANS	
CONTRACTOR	BLOW & COTE - MORRISVILLE, VT
RESIDENT ENGINEER	CARL GLEASON
CONSTRUCTION BEGAN	MARCH 7, 2008
CONSTRUCTION COMPLETE	MAY 5, 2009
RECORD PLANS BY	CARL GLEASON

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

BY *Carl W. Gleason* RESIDENT ENGINEER
DATE *6/14/10*

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

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROJECT DEVELOPMENT.

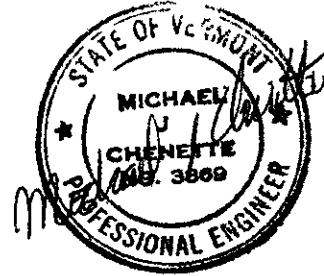
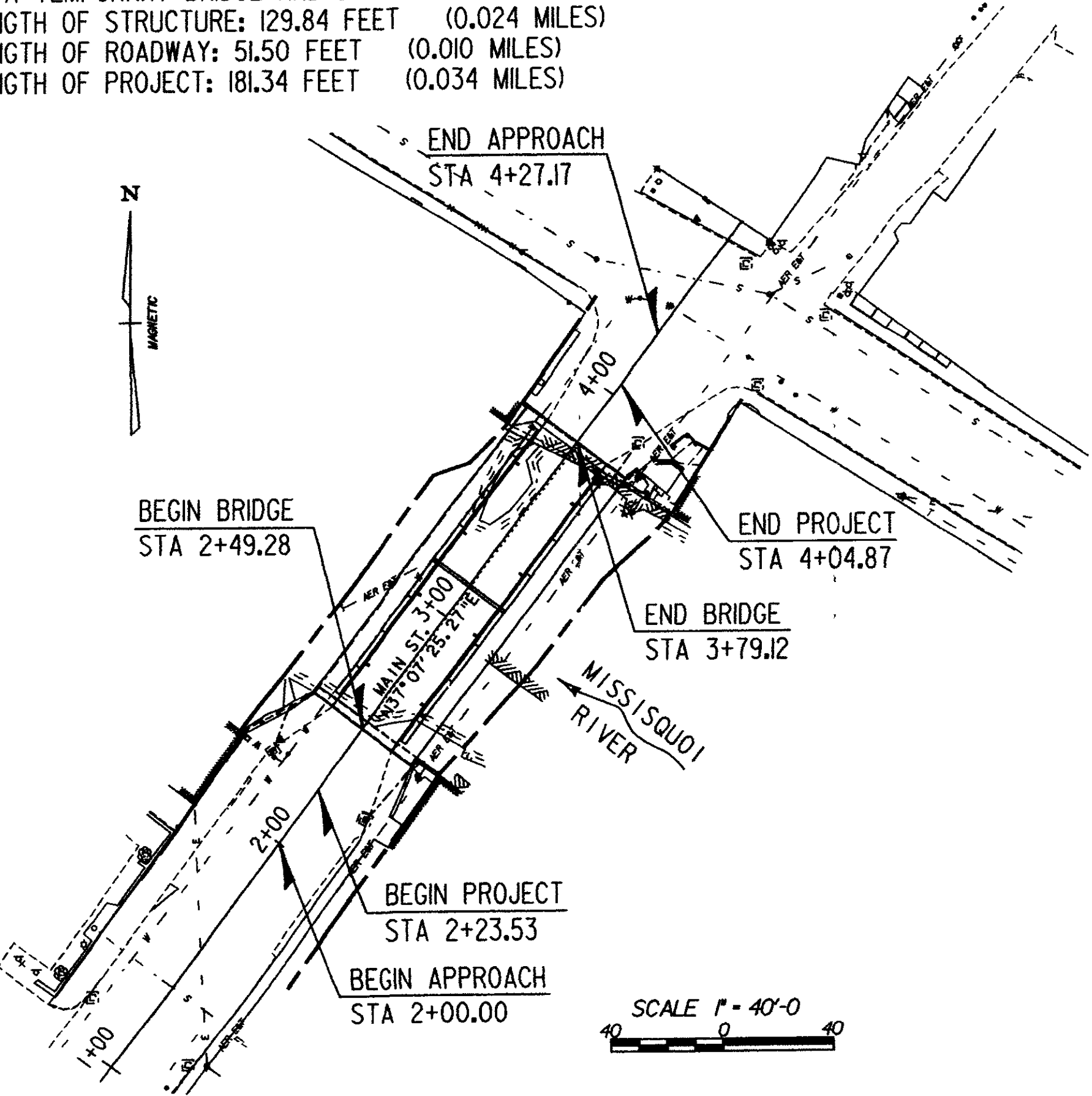
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2006, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JUNE 15, 2006 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

DIRECTOR OF PROGRAM DEVELOPMENT	
APPROVED <i>Richard Tripp</i>	DATE <i>12/16/11</i>
PROJECT MANAGER : WARREN TRIPP	
PROJECT NAME : RICHFORD	
PROJECT NUMBER : BHF 0302 (3) S	
SHEET 1 OF 41 SHEETS	

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

SURVEYED BY : VTRANS
SURVEYED DATE : JUNE 2007

DATUM
VERTICAL NGVD 1988
HORIZONTAL MAGNETIC 1999



INDEX OF SHEETS

1.

TITLE SHEET
2.

PRELIMINARY INFORMATION SHEET
3.

TYPICAL BRIDGE SECTIONS
4.

TYPICAL ROADWAY SECTIONS
- 5.-6.

QUANTITY SHEETS
7.

TIE SHEET
8.

SITE PLAN AND ELEVATION
9.

EPSC NARRATIVE
10.

EPSC EXISTING CONDITIONS SITE PLAN
11.

EPSC CONSTRUCTION SITE PLAN
12.

EPSC FINAL CONDITIONS SITE PLAN
- 13.-15.

EPSC DETAIL SHEETS
16.

TRAFFIC CONTROL PLAN
17.

BRIDGE AND DETOUR PROFILE
18.

SIDEWALK MODIFICATIONS
19.

TEMPORARY TRAFFIC SIGNAL PLAN
20.

DETOUR SIGN SHEET
21.

PROJECT NOTES
22.

FRAMING PLAN
- 23.-24.

STEEL DETAIL SHEETS
25.

TYPICAL DECK SECTION & DETAILS
26.

DECK REINFORCING PLAN
27.

SCUPPER AND MISC. DETAILS
28.

EXPANSION JOINT PLAN
29.

EXPANSION JOINT DETAILS
30.

DOWNSPOUT DETAILS
31.

ABUTMENT NO.1 PLAN & ELEVATION
32.

ABUTMENT NO.2 PLAN & ELEVATION
33.

ABUTMENT SECTIONS
34.

BRIDGE RAIL DETAILS
35.

RAILING REPLACEMENT DETAILS
36.

PAVEMENT MARKINGS PLAN
37.

REINFORCING SCHEDULE
38.

ROADWAY CROSS SECTIONS
- 39.-41.

DETOUR CROSS SECTIONS

VAOT STANDARDS

C-1	01/03/00
C-2A	10/14/05
D-8	01/03/00
D-9	06/01/94
D-15	06/01/94
E-100	01/02/04
E-100A	01/02/04
E-101	05/30/03
E-102	06/30/03
E-102A	05/01/04
E-106	03/01/04
E-107	06/30/03
E-107A	08/08/95
E-121	08/08/95
E-140	08/30/96
E-142	09/20/95
E-170	11/04/99
E-171A	08/09/95
E-171B	08/09/95
E-171C	08/09/95
E-172	08/09/95
E-175	11/17/93
E-191	02/01/99
E-192	10/12/00
E-193	08/18/95
G-1b	06/01/94
SB-R6-82	01/06/95

FINAL HYDRAULICS REPORT

HYDROLOGIC DATA

DRAINAGE AREA= 393.4 square miles

CHARACTER OF TERRAIN:

CHARACTER & TYPE OF STREAM:

NATURE OF STREAMBED:

Q2.33= 8,300 cfs

Q50= 18,000 cfs

Q10= 13,300 cfs

Q100= 20,000 cfs

Q25= 15,600 cfs

Q500= 25,500 cfs

DATE OF FLOOD OF RECORD:

WATER SURFACE ELEV.: ESTIMATED DISCHARGE:

NATURAL STREAM VELOCITY @ Q25 =

ICE CONDITIONS:

DEBRIS:

DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY?

IS ORDINARY RISE RAPID?

IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS?

IF YES, DESCRIBE.

WATERSHED STORAGE

HEADWATERS

UNIFORM THROUGHOUT WATERSHED

IMMEDIATELY ABOVE SITE

EXISTING STRUCTURE

STRUCTURE TYPE: STEEL PONY TRUSS BRIDGE

YEAR BUILT: 1934

CLEAR SPAN (NORMAL TO STREAM): 119 feet

VERTICAL CLEARANCE ABOVE STREAMBED:

WATERWAY OF FULL OPENING:

DISPOSITION OF STRUCTURE: Rehabilitation

TYPE OF MATERIAL UNDER SUBSTRUCTURE: Ledge

WATER SURFACE ELEV. @ Q2.33= 435.5 ft

VELOCITY=

Q10= 442.6 ft

Q25= 444.0 ft

Q50= 445.4 ft

Q100= 446.6 ft

LONG TERM STREAM BED CHANGES:

IS THE ROADWAY OVERTOPPED BELOW THE Q100?

FREQUENCY:

RELIEF ELEVATION:

DISCHARGE OVER ROAD @ Q100:

UPSTREAM STRUCTURE: TOWN:

DISTANCE:

HIGHWAY NO.:

STRUCTURE NO.:

STRUCTURE TYPE:

CLEAR SPAN:

CLEAR HEIGHT:

YEAR BUILT:

FULL WATERWAY:

DOWNSTREAM STRUCTURE: TOWN:

DISTANCE:

HIGHWAY NO.:

STRUCTURE NO.:

STRUCTURE TYPE:

CLEAR SPAN:

CLEAR HEIGHT:

YEAR BUILT:

FULL WATERWAY:

PROPOSED STRUCTURE

STRUCTURE TYPE: N/A

CLEAR SPAN (NORMAL TO STREAM):

VERTICAL CLEARANCE ABOVE STREAMBED:

WATERWAY OF FULL OPENING:

WATER SURFACE ELEV. @ Q2.33=

VELOCITY=

Q10=

Q25=

Q50=

Q100=

IS THE ROADWAY OVERTOPPED BELOW THE Q100?

FREQUENCY:

RELIEF ELEVATION:

DISCHARGE OVER ROAD @ Q100:

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE:

VERTICAL CLEARANCE:

SCOUR:

REQUIRED CHANNEL PROTECTION:

PERMIT INFORMATION

AVERAGE DAILY FLOW: 800 cfs

ORDINARY LOW WATER: 350 cfs

DEPTH: EL. 427'

ORDINARY HIGH WATER: 3,600 cfs

DEPTH: EL. 431'

*200' MINIMUM

ALONG DETOUR ALIGNMENT

MINIMUM STEEL

ELEV. = 446.0'

Q10=442.6

Q100=431

* - CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING A SINGLE SPAN OR TWO SPAN TEMPORARY BRIDGE. MAXIMUM PIER WIDTH SHALL BE 3 FEET.

TEMPORARY BRIDGE REQUIREMENTS

NTS

DESIGN CRITERIA:

1. DESIGN LIVE LOAD AASHTO HS-20

2. DESIGN SPAN 125'

3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A ON LEDGE N/A

4. ALLOWABLE LOAD FOR PILING TYPE ESTIMATED LENGTH

5. STRUCTURAL STEEL AASHTO GRADE SEE PROJECT GENERAL NOTES

6. REINFORCING STEEL GRADE 60

CONCRETE, HIGH PERFORMANCE CLASS A f'c : 4000 PSI f'c=1600 psi

CONCRETE, HIGH PERFORMANCE CLASS B f'c : 3500 PSI f'c=1400 psi

TRAFFIC MAINTENANCE:

1. IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE NO OR ON TEMPORARY BRIDGE YES

2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY TWO WAY TRAFFIC CONTROL SIGNALS REQUIRED YES

MINIMUM CLEAR SPAN (NORMAL TO STREAM) 200 feet

MINIMUM WATERWAY AREA

MINIMUM CLEAR HEIGHT SEE TEMPORARY BRIDGE SKETCH

ARE SIDEWALKS REQUIRED? YES IF SO, ON WHAT SIDE? UPSTREAM

STRUCTURE TYPE

LOAD FACTOR LOAD RATING (TONS)

LOADING LEVELS (LOAD FACTOR)

H

HS

3S2

6 AXLE

3A. STR.

4A. STR.

5A. SEMI

INVENTORY

A=2.17; B=1.00

35

39

60

51

53

56

POSTED

A=1.55; B=1.40

48

55

72

61

63

OPERATING

A=1.30; B=1.67

66

72

79

61

63

TRAFFIC DATA

YEAR

AADT

DHV

% D

% T

ADTT

2008

4900

550

52

2.1

220

2028

6000

680

52

3.2

410

20 year ESAL for flexible pavement 2008 to 2028 : 2,079,000

40 year ESAL for flexible pavement 2008 to 2048 : 5,391,000

Design speed: 25 mph

TRUSS TOP CHORD OF BAY #2 & #7 ARE THE CONTROLLING MEMBER

STRENGTH RF= $\frac{0.85 M_N - 1.3 M_{DL}}{A \times M_{LL+I}}$

PROJECT NAME: RICHFORD

PROJECT NUMBER: BHF 0302 (3) S

FILE NAME: ... Structures\Design\rich-pl.d

DATE: 12/19/2007

PROJECT LEADER: MJC

DRAWN BY: JTS

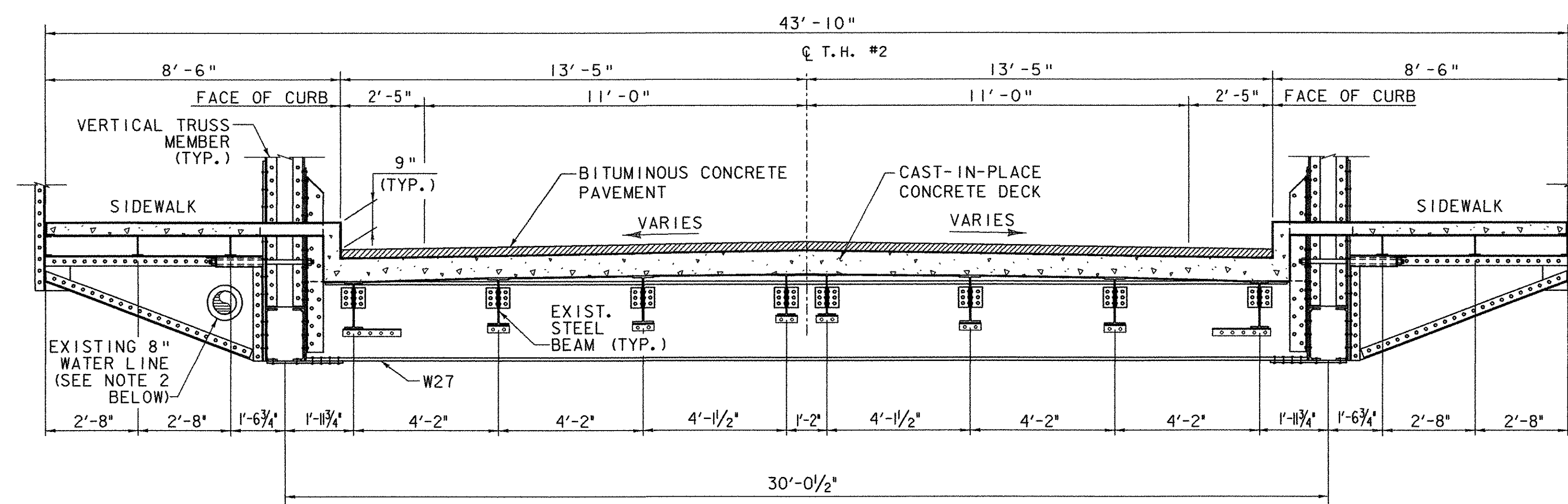
DESIGNED BY: SEB

CHECKED BY: MJC

PRELIMINARY INFORMATION SHEET

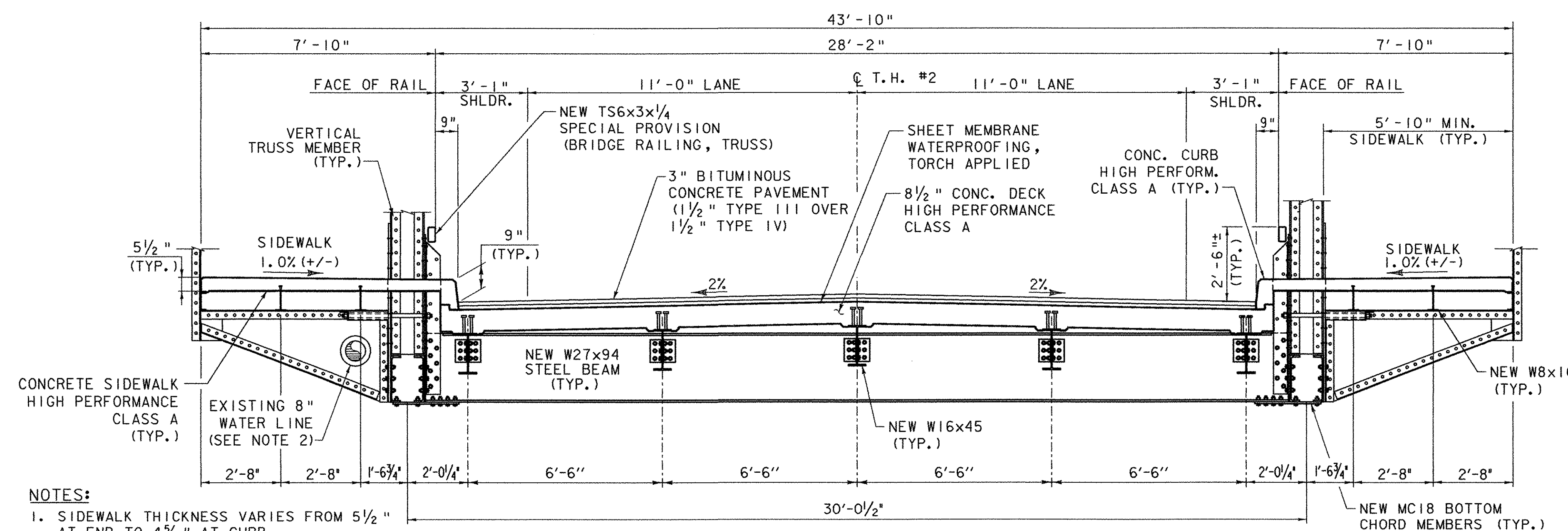
SHEET 2 OF 41

Stantec



EXISTING BRIDGE TYPICAL SECTION

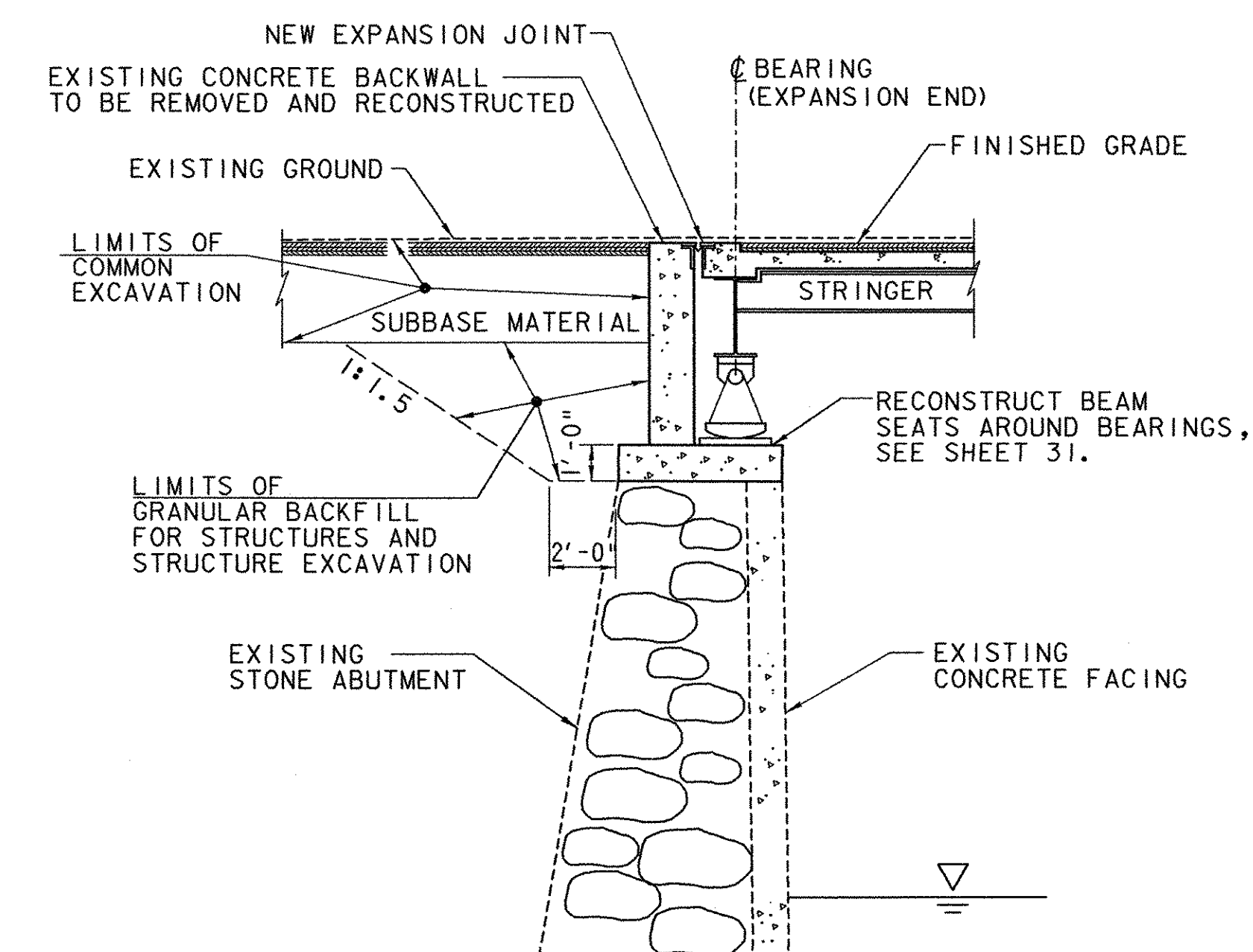
SCALE 3/8" = 1'-0"
1 0 1 2 3 4



NOTE: ANY MEMBERS THAT ARE NOT OTHERWISE NOTED AS NEW, SHALL BE RETAINED.

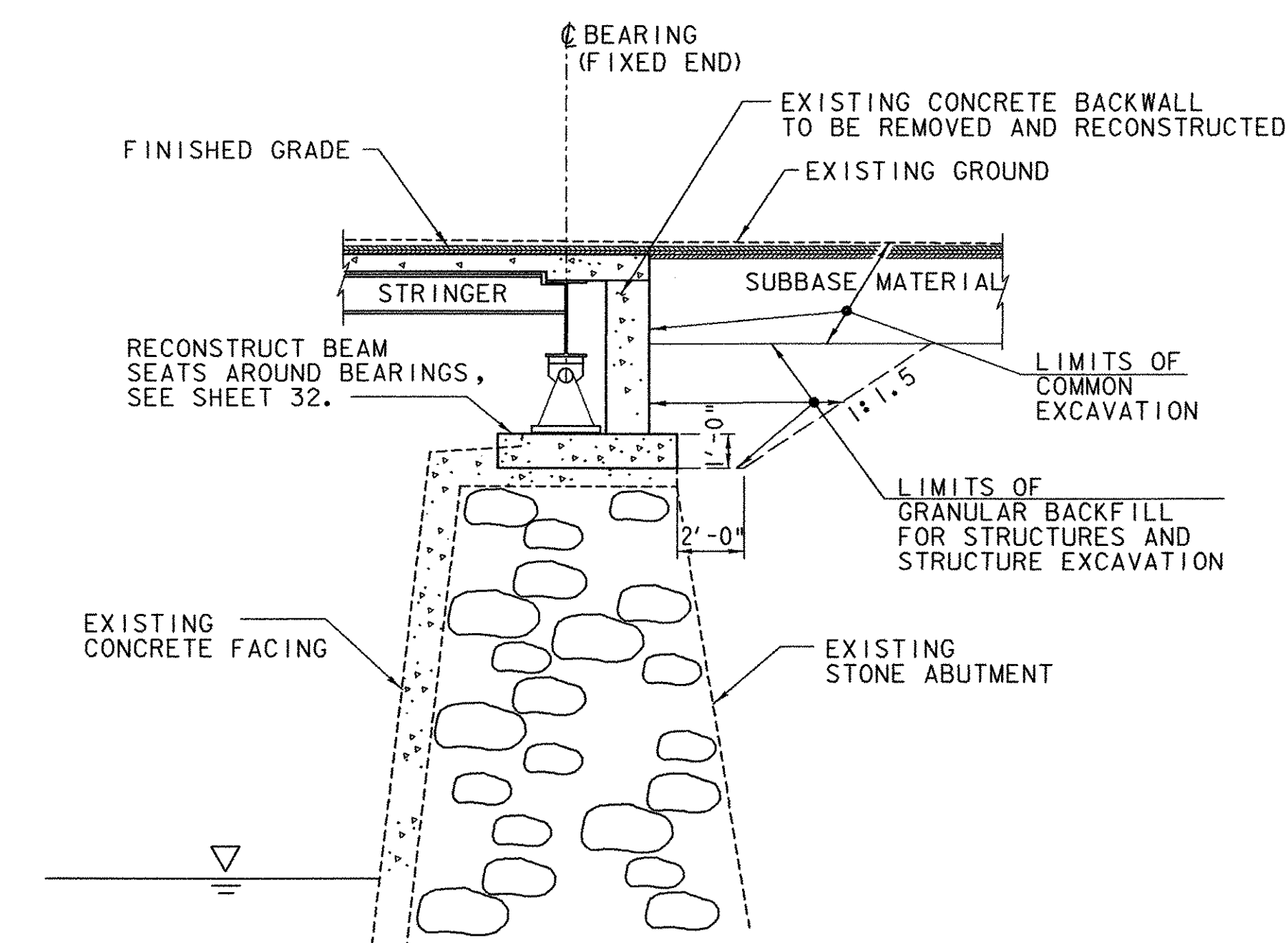
REHABILITATED BRIDGE TYPICAL SECTION

SCALE 3/8" = 1'-0"
1 0 1 2 3 4



**ABUTMENT NO. 1
EARTHWORK TYPICAL SECTION**

SCALE 1/4" = 1'-0"
1 0 2 4 6

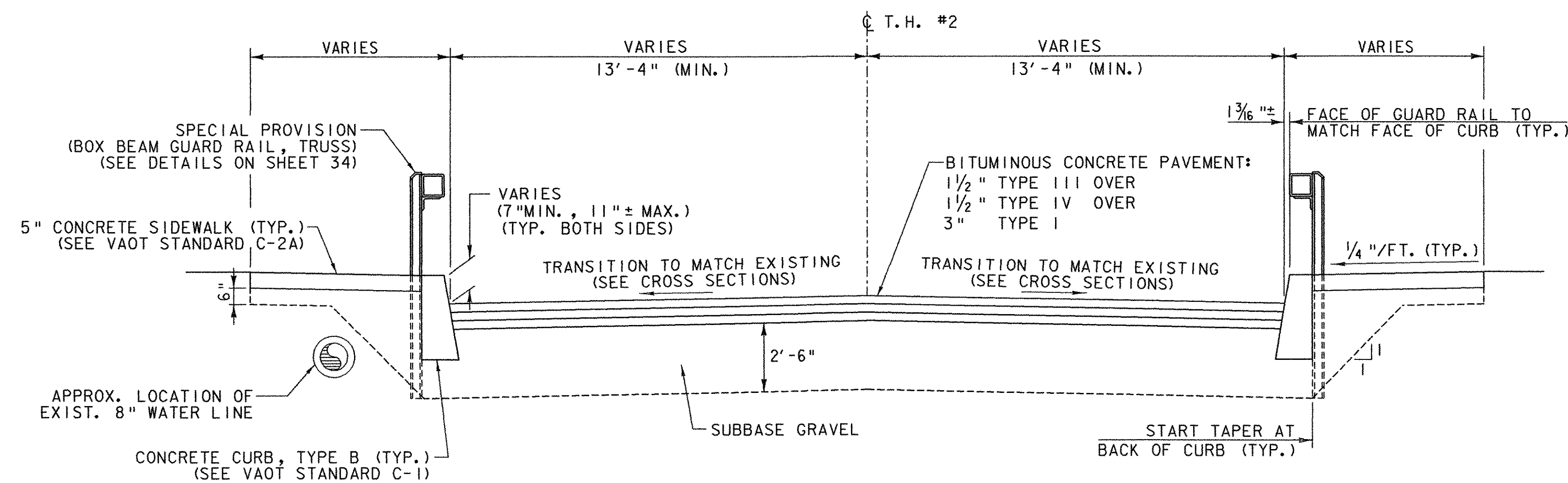


**ABUTMENT NO. 2
EARTHWORK TYPICAL SECTION**

SCALE 1/4" = 1'-0"
1 0 2 4 6

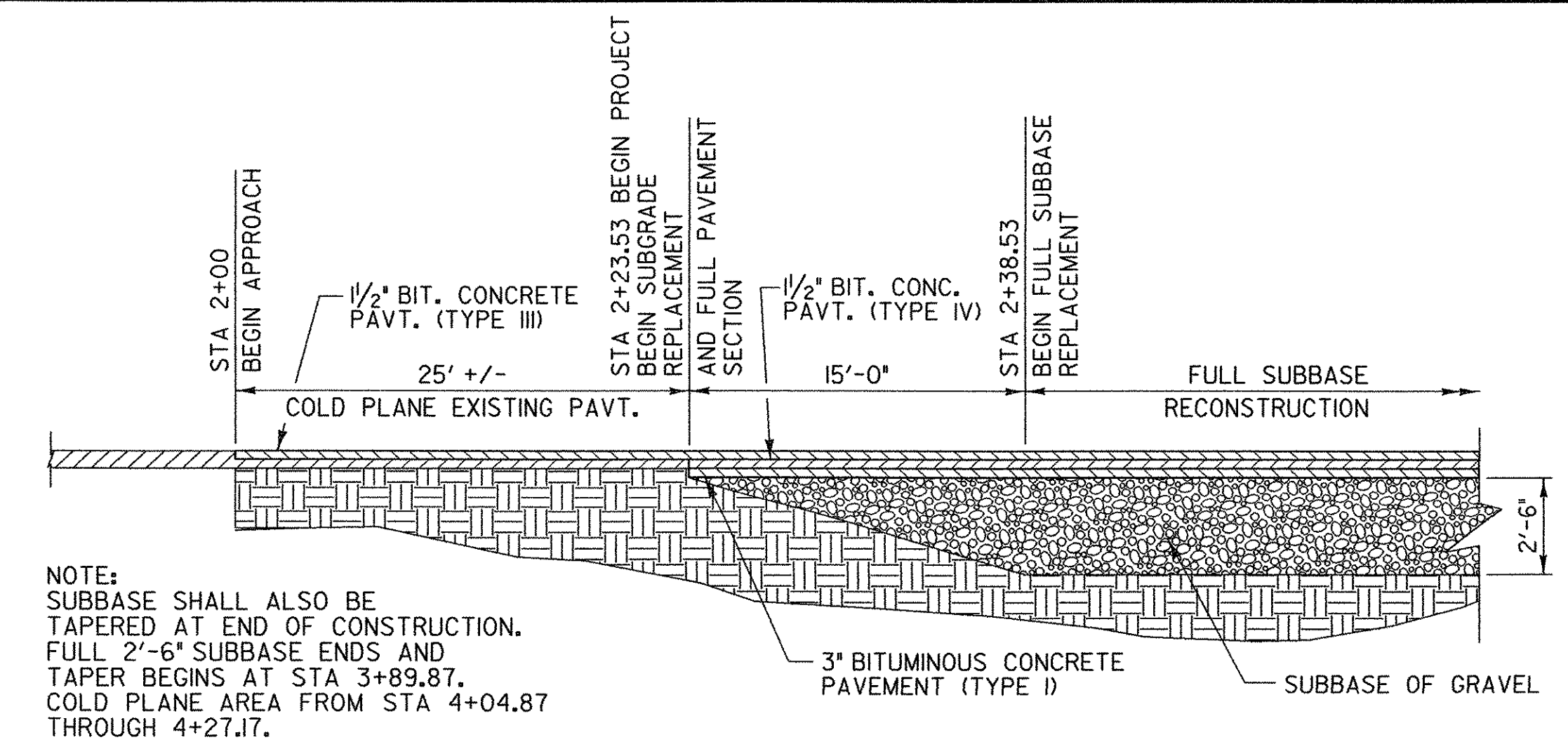


PROJECT NAME: RICHFORD
PROJECT NUMBER: BHF 0302 (3) S
FILE NAME: ...Design\Rich-brsect.dgn
PROJECT LEADER: MJC
DESIGNED BY: SEB
TYPICAL BRIDGE SECTIONS
PLOT DATE: 12/19/2007
DRAWN BY: AET
CHECKED BY: MJC
SHEET 3 OF 41



ROADWAY TYPICAL SECTION

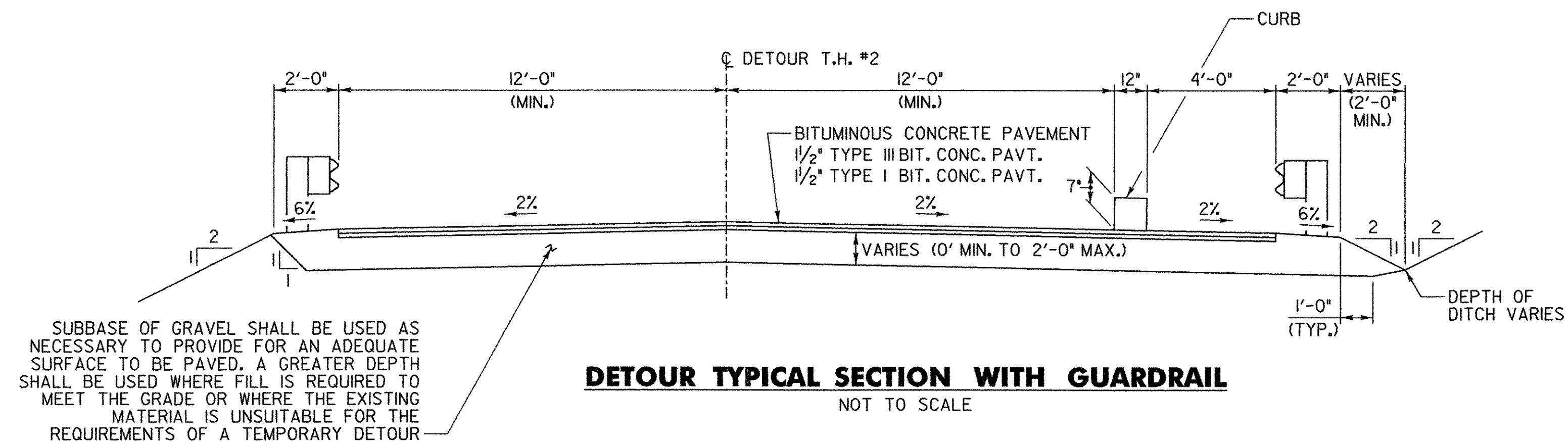
NOT TO SCALE



NOTE:
SUBBASE SHALL ALSO BE
TAPERED AT END OF CONSTRUCTION.
FULL 2'-6" SUBBASE ENDS AND
TAPER BEGINS AT STA 3+89.87.
COLD PLANE AREA FROM STA 4+04.87
THROUGH 4+27.17.

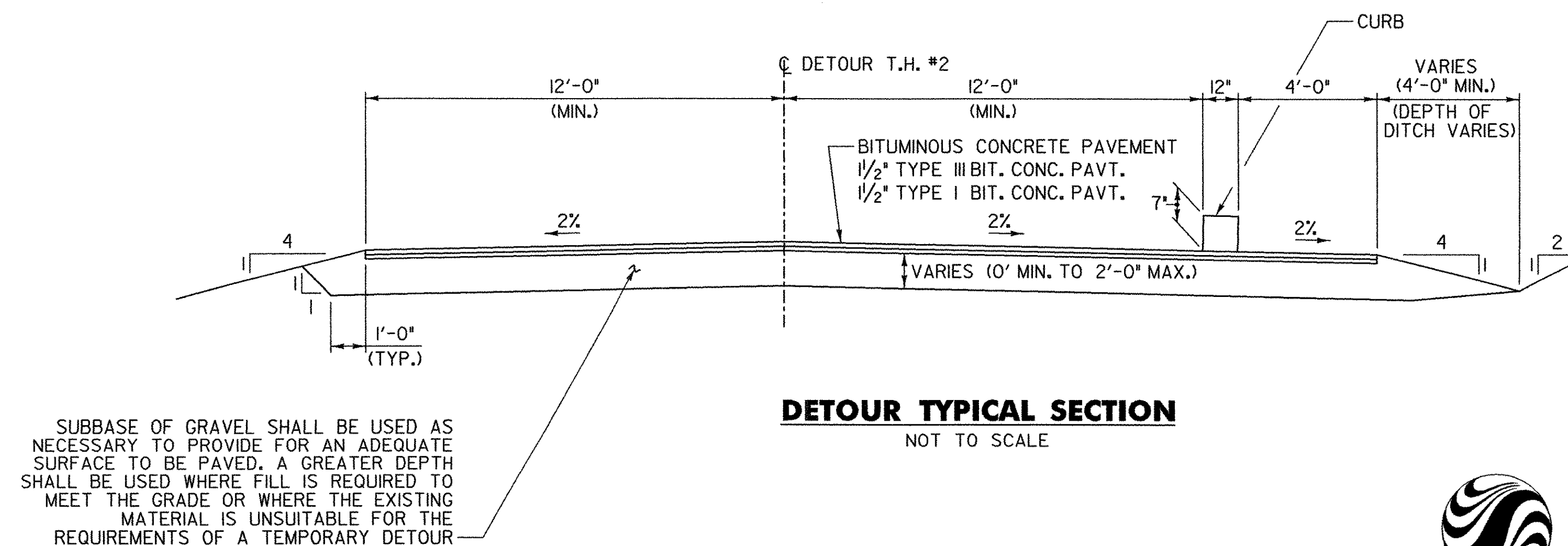
TYPICAL APPROACH SECTION

NOT TO SCALE



DETOUR TYPICAL SECTION WITH GUARDRAIL

NOT TO SCALE



DETOUR TYPICAL SECTION

NOT TO SCALE



PROJECT NAME: RICHFORD
PROJECT NUMBER: BHF 0302 (3) S

FILE NAME: ...Design\Rich-rdwysect.dgn PLOT DATE: 12/19/2007
PROJECT LEADER: MJC DRAWN BY: AET
DESIGNED BY: SEB CHECKED BY: MJC
TYPICAL ROADWAY SECTIONS SHEET 4 OF 41

STATE OF VERMONT AGENCY OF TRANSPORTATION										QUANTITY SHEET #1									
SUMMARY OF ESTIMATED QUANTITIES										TOTALS				DESCRIPTIONS			DETAILED SUMMARY OF QUANTITIES		
			TRAINING	FULLICE ITEMS	ROADWAY	EROSION CONTROL	ABUTMENT No. 1	ABUTMENT No. 2	DECK	BRIDGE QUANTITY	ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS
					180							180		CY	COMMON EXCAVATION	203.15			
					22							22		CY	SOLID ROCK EXCAVATION	203.16			
					90							90		CY	TRENCH EXCAVATION OF EARTH	204.20			
					1							1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.1.)	204.22			
							30	30		60		60		CY	STRUCTURE EXCAVATION	204.25			
							30	30		60		60		CY	GRAMMAR BACKFILL FOR STRUCTURES	204.30			
					253							253		SY	COLD PLANKS, BITUMINOUS PAVEMENT	210.10			
					150				1	1		150		CV	SUBBASE OF GRAVEL	301.15			
					1				64	64		2		DWT	EMULSIFIED ASPHALT	404.06			
					182							228		TON	MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT (PG 58-34)	406.37			
							6		138	144		144		CV	CONCRETE, HIGH PERFORMANCE CLASS A (FPG)	501.33			
					1		11	12		23		24		CV	CONCRETE, HIGH PERFORMANCE CLASS B	501.34			
							2		1	1		1		LS	SHORING SUPERSTRUCTURE	502.10			
								2		2		2		EA	SHORING SUPERSTRUCTURE BEARINGS (STA. 3+41.70)	502.11			
								2		2		2		EA	SHORING SUPERSTRUCTURE BEARINGS (STA. 3+74.70)	502.11			
									87510	87510		87510		LB	STRUCTURAL STEEL, ROLLED BEAM	506.90			
									1400	1400		1400		LB	STRUCTURAL STEEL	506.90			
							1070	1716		2785		2785		LB	REINFORCING STEEL	507.15			
							223	178		401		401		LF	DRILLING AND GROUTING DOWELS	507.16			
							1150		24385	25535		25545		LB	EPOXY COATED REINFORCING STEEL	507.17			
									1	1		1		LS	SHEAR CONNECTORS (284 - 1/2" X 1 3/4")	508.15			
									1	1		1		LS	SHEAR CONNECTORS (285 - 7/8" X 1 7/8")	508.15			
									1	1		1		LS	STRUCTURAL PAINTING, SHOP APPLIED (44 TONS)	513.25			
									1	1		1		LS	STRUCTURAL PAINTING, FIELD APPLIED (30 TONS)	513.30			
									1	1		1		LS	CONTAINMENT & ENVIRONMENTAL PROTECTION, SHOP	513.35			
									1	1		1		LS	CONTAINMENT & ENVIRONMENTAL PROTECTION, FIELD	513.36			
									1	1		1		LS	SURFACE PREPARATION, SHOP (44 TONS)	513.40			
									1	1		1		LS	SURFACE PREPARATION, FIELD (30 TONS)	513.41			
							5	5	15	25		25		GAL	WATER REPELLENT, SLANE	514.10			
									27	27		27		LF	BRIDGE EXPANSION JOINT, VERMONT	518.11			
									380	380		380		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20			
					31					31		31		LF	REMOVAL OF EXISTING RAILING	525.10			
					1					1		1		LS	TWO-WAY TEMPORARY BRIDGE (8000 SF, EST.)	528.11			
									388	388		388		SY	REMOVAL OF BRIDGE PAVEMENT	529.10			
									1	1		1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20			
							4	2		6		6		CV	REMOVAL OF CONCRETE OR MASONRY	529.25			
							5	15		20		20		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	580.13			
							2	8		10		10		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	580.14			
					110							110		LF	1" CRP (SL)	601.2015			
							3			3		3		SY	STONE MASONRY FACING	602.25			
					1							1		EACH	PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE	604.15			
					242							242		LF	CAST-IN-PLACE CONCRETE CURB, TYPE B	615.28			
					215							215		LF	REMOVAL OF EXISTING CURB	615.41			
					154							154		SY	PORTLAND CEMENT CONCRETE SIDEWALK, 6 INCH	618.10			
																PROJECT NAME: RICHFORD PROJECT NUMBER: BHF 0302 (3) S FILE NAME: rich-quant.xls PROJECT LEADER: MJC DESIGNED BY: SEB QUANTITY SHEET #1			
																PLOT DATE: 1/8/2008 DRAWN BY: AET CHECKED BY: MJC SHEET 5 OF 41			

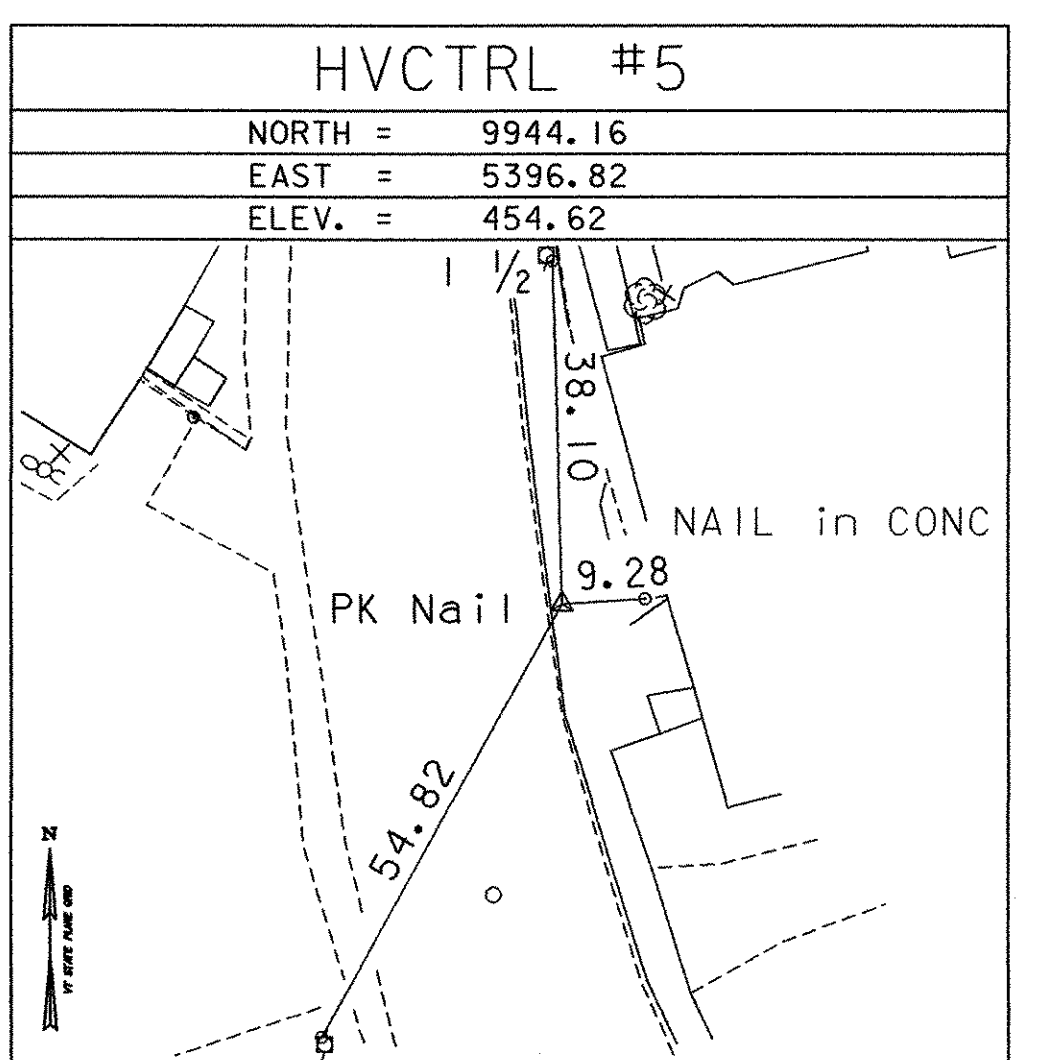
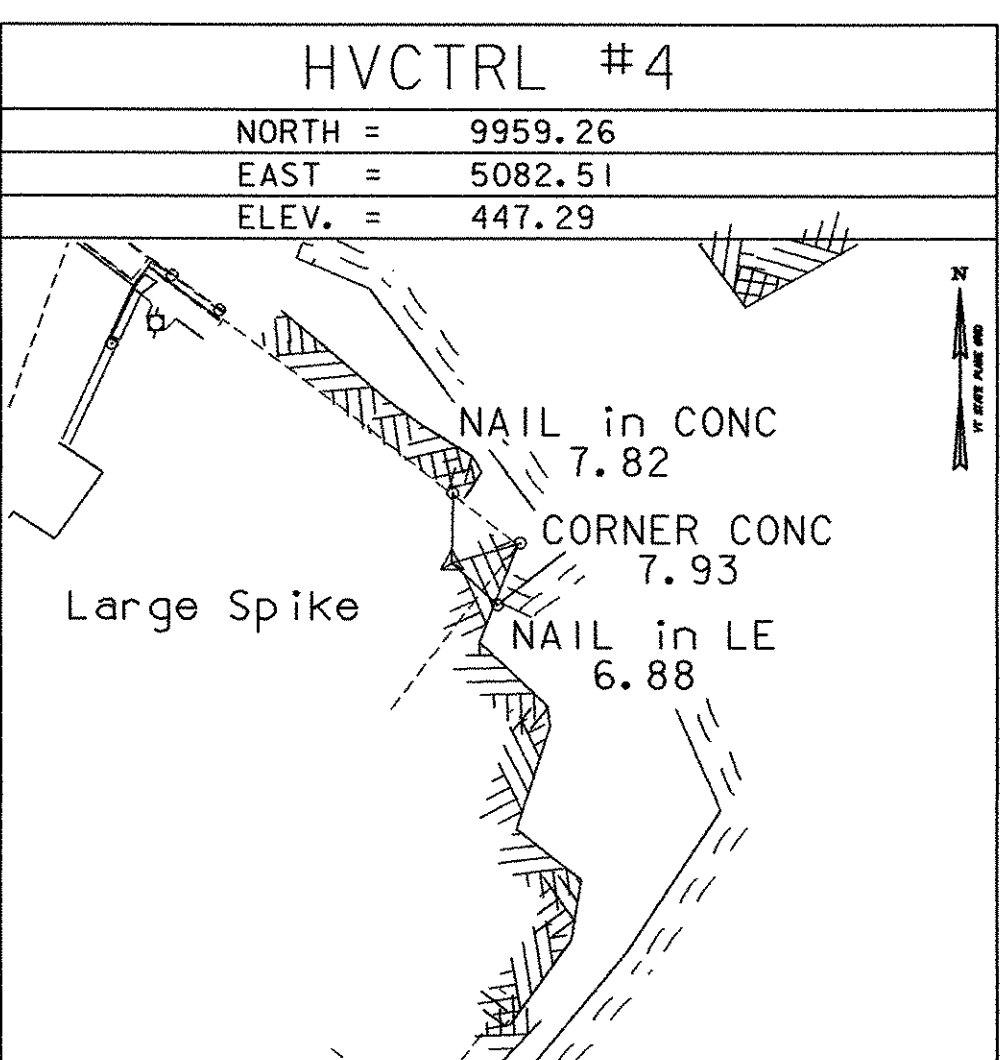
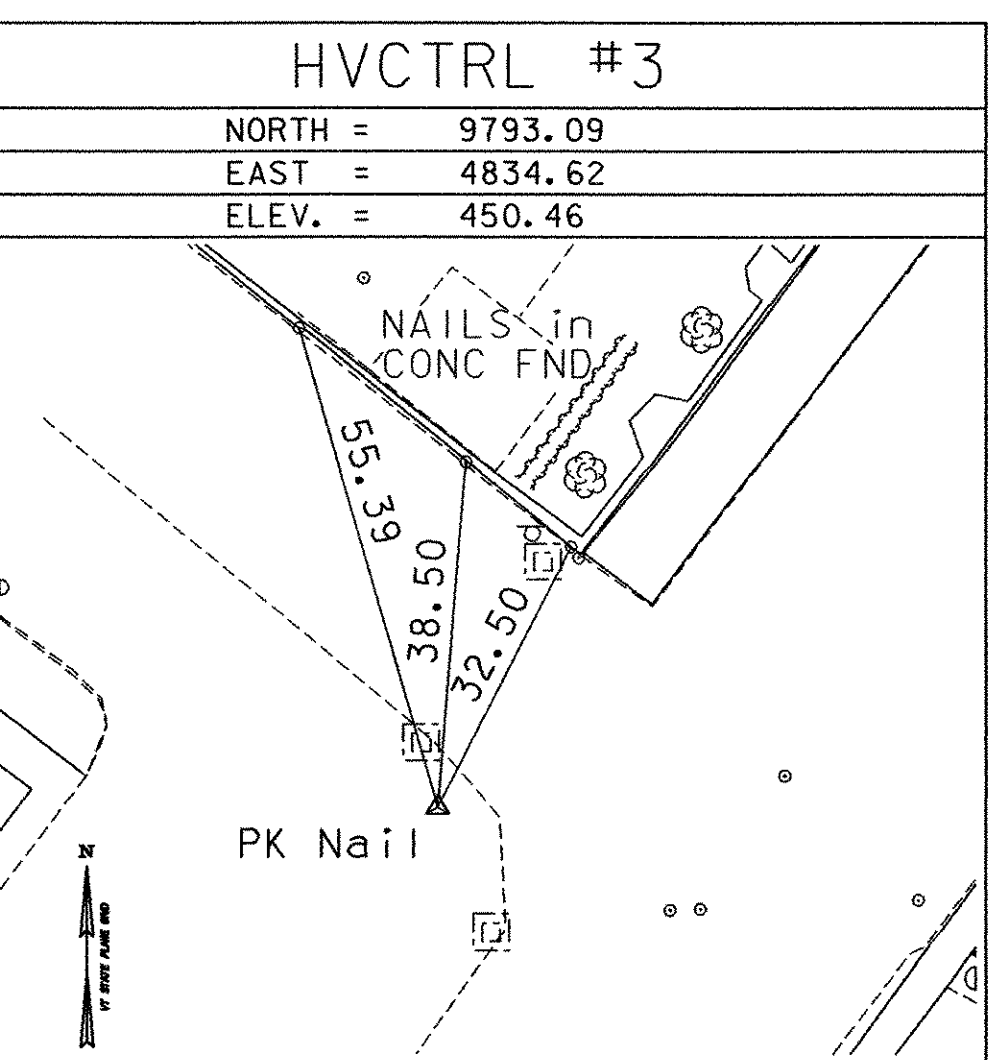
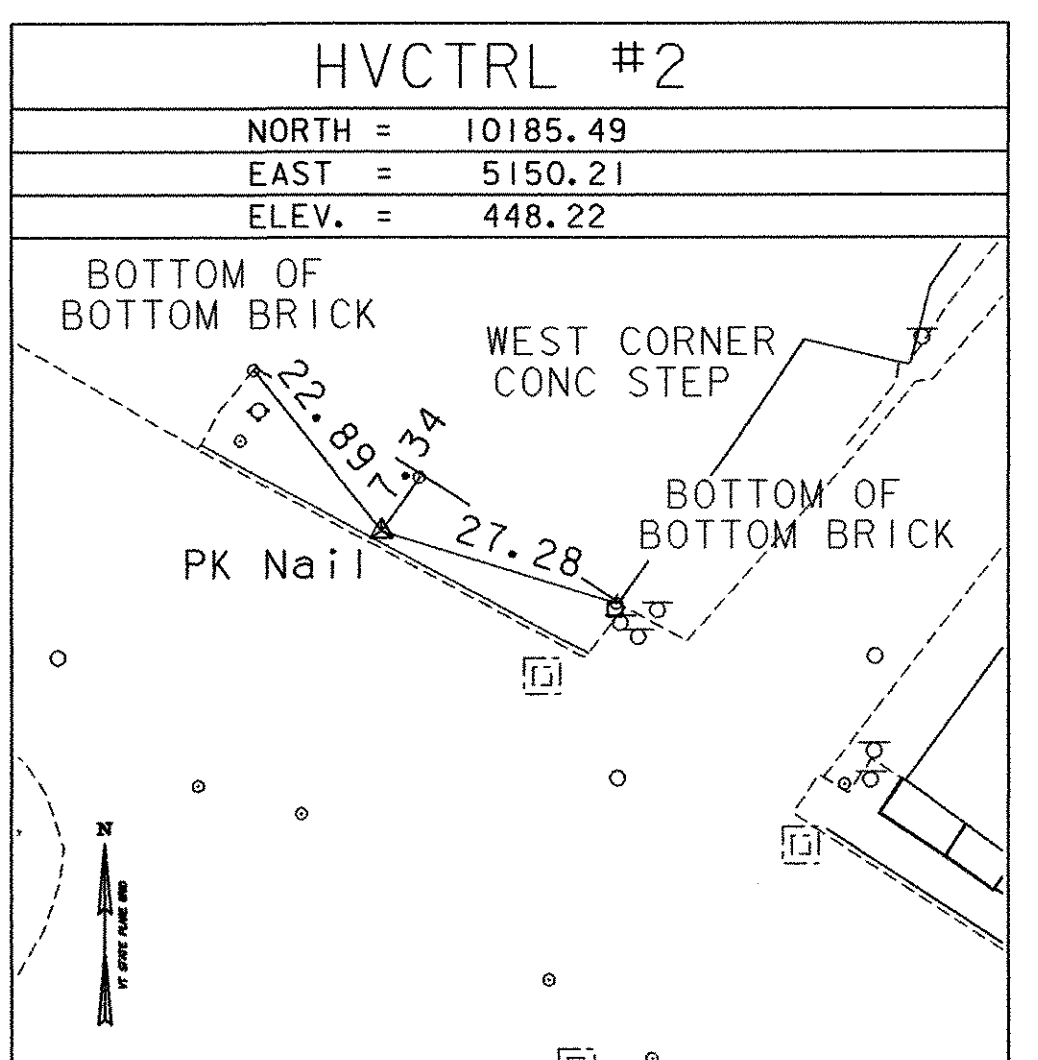
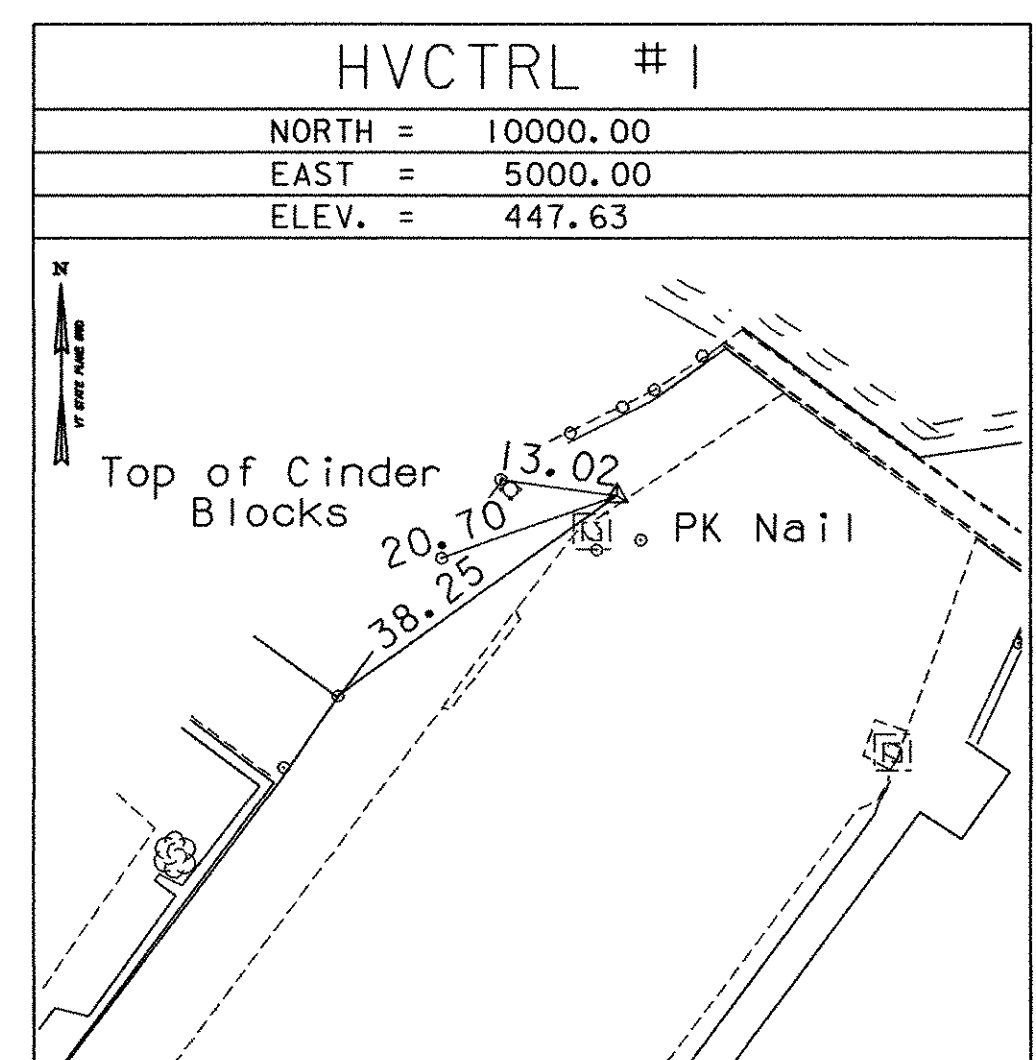
STATE OF VERMONT AGENCY OF TRANSPORTATION										QUANTITY SHEET #2									
SUMMARY OF ESTIMATED QUANTITIES										TOTALS			DESCRIPTIONS			DETAILED SUMMARY OF QUANTITIES			
			TRAINING	FULL C&E ITEMS	ROADWAY	EROSION CONTROL	ABUTMENT NO. 1	ABUTMENT NO. 2	DECK	BRIDGE QUANTITY	ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS
					10						70	70		SF	DETECTABLE WARNING SURFACE	518.90			
					60						80	80		LF	TEMPORARY TRAFFIC BARRIER	521.90			
				1								1		LS	FIELD OFFICE, ENGINEERS	631.10			
				1								1		LS	TESTING EQUIPMENT, CONCRETE	631.16			
				1								1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17			
				1								1		LU	FIELD OFFICE TELEPHONE (NAB-1)	631.25			
		580									500	500		HR	EMPLOYEE TRAINERSHIP	634.10			
				1								1		LS	MOBILIZATION/DEMOLITION	635.11			
				1								1		LS	TRAFFIC CONTROL	641.10			
					350					200	200	610		LF	DURABLE 4 INCH WHITE LINE	646.400			
					690					200	200	950		LF	DURABLE 4 INCH YELLOW LINE	646.410			
					30							30		LF	DURABLE 6 INCH WHITE LINE	646.420			
					95							95		LF	DURABLE CROSSWALK MARKING	646.500			
					102							102		LF	TEMPORARY 6 INCH WHITE LINE	646.540			
					54							54		LF	TEMPORARY 24 INCH STOP BAR	646.690			
					4							4		EACH	TEMPORARY LETTER OR SYMBOL	646.690			
					146							146		LF	PAINTED CURB	646.81			
					215							215		SF	REMOVAL OF EXISTING PAVEMENT MARKINGS	646.85			
						60						60		SY	GEOTEXTILE FOR Silt FENCE	649.61			
						220						220		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61			
					10							10		LB	SEED	651.15			
					1							2		TON	HAY/ALFALFA	651.25			
						1						1		LS	EPSC PLAN	652.10			
						80						80		HR	MONITORING EPSC PLAN	652.20			
						1						1		LU	MAINTENANCE OF EPSC PLAN (N.A.B-1)	652.30			
						430						430		SY	TEMPORARY EROSION MATTING	653.20			
						2						2		CY	TEMPORARY STONE CHECK DAM TYPE I	653.25			
						40						40		CY	VEHICLE TRACKING PAD	653.35			
						1						1		EACH	INLET PROTECTION DEVICE, TYPE I	653.40			
						1						1		EACH	FILTER BAG	653.45			
						180						180		LF	BARRIER FENCE	653.50			
						540						540		LF	PROJECT DEMARCATION FENCE	653.55			
						1						1		EACH	TRANSPLANTING SHRUBS (2')	655.50			
						2						2		EACH	REMOVING SIGNS	675.50			
						2						2		EACH	ERECTING SALVAGED SIGNS	675.60			
						1						1		EACH	SETTING SALVAGED POSTS	675.61			
						1						1		EACH	TEMPORARY TRAFFIC SIGNAL SYSTEM	678.40			
						3						3		EACH	TEMPORARY DETECTOR	678.42			
						1						1		EACH	SPECIAL PROVISION (GRASS OUTLET SEDIMENT TRAP)	900.620			
						50						50		EACH	SPECIAL PROVISION (GRAVEL BAGS)	900.630			
						80						80		LF	SPECIAL PROVISION (BOX BEAM GUARD RAIL TRUSS)	900.640			
						222						222		LF	SPECIAL PROVISION (BRIDGE RAILING TRUSS)	900.645			
						31						31		LF	SPECIAL PROVISION (METAL HAND RAILING)	900.650			
																PROJECT NAME: RICHFORD PROJECT NUMBER: BHF 0302 (3) S FILE NAME: rich-quant.xls PROJECT LEADER: MJC DESIGNED BY: SEB QUANTITY SHEET #2			
																PLOT DATE: 1/9/2008 DRAWN BY: AET CHECKED BY: MJC SHEET 6 OF 41			

GPS CONTROL POINTS

BM #8
C2 = P14 RESET
ELEV. = 465.82

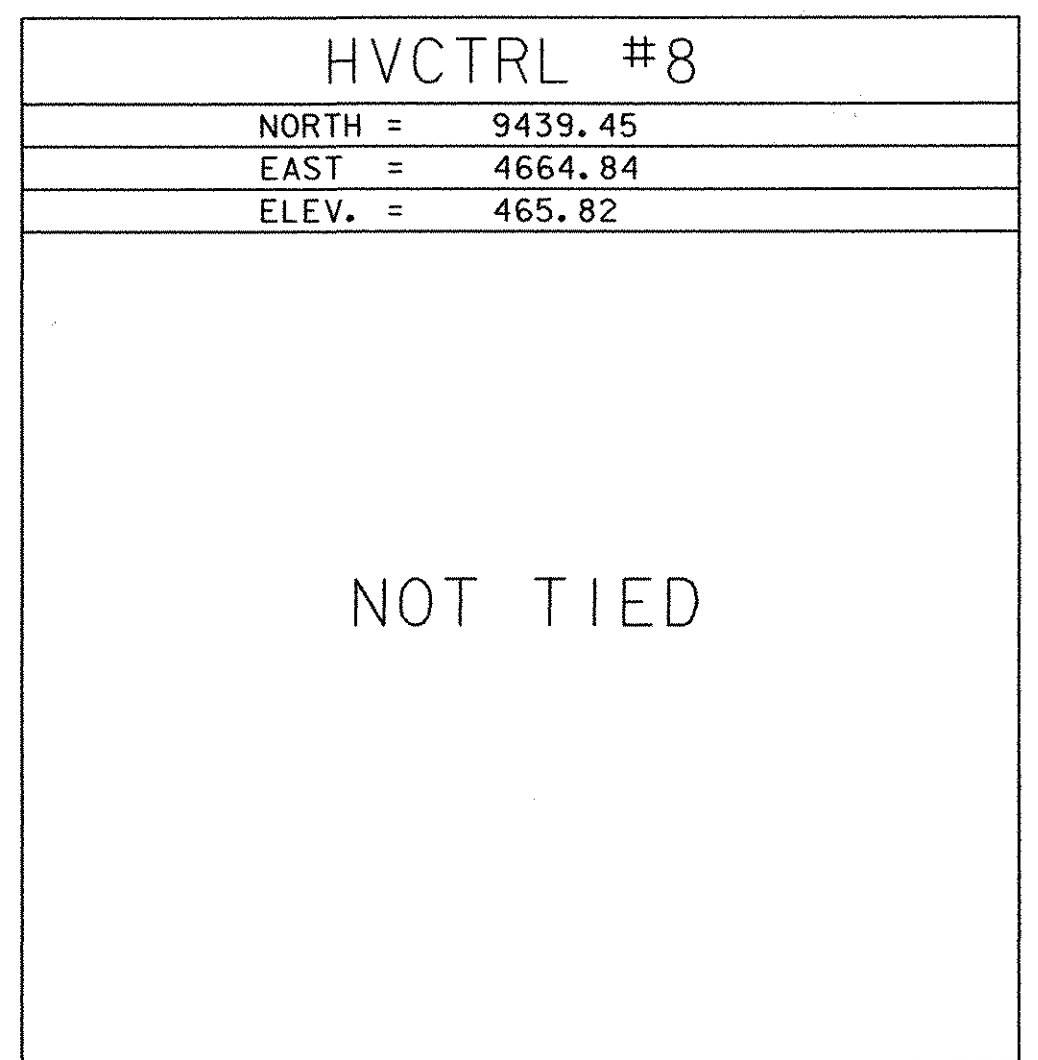
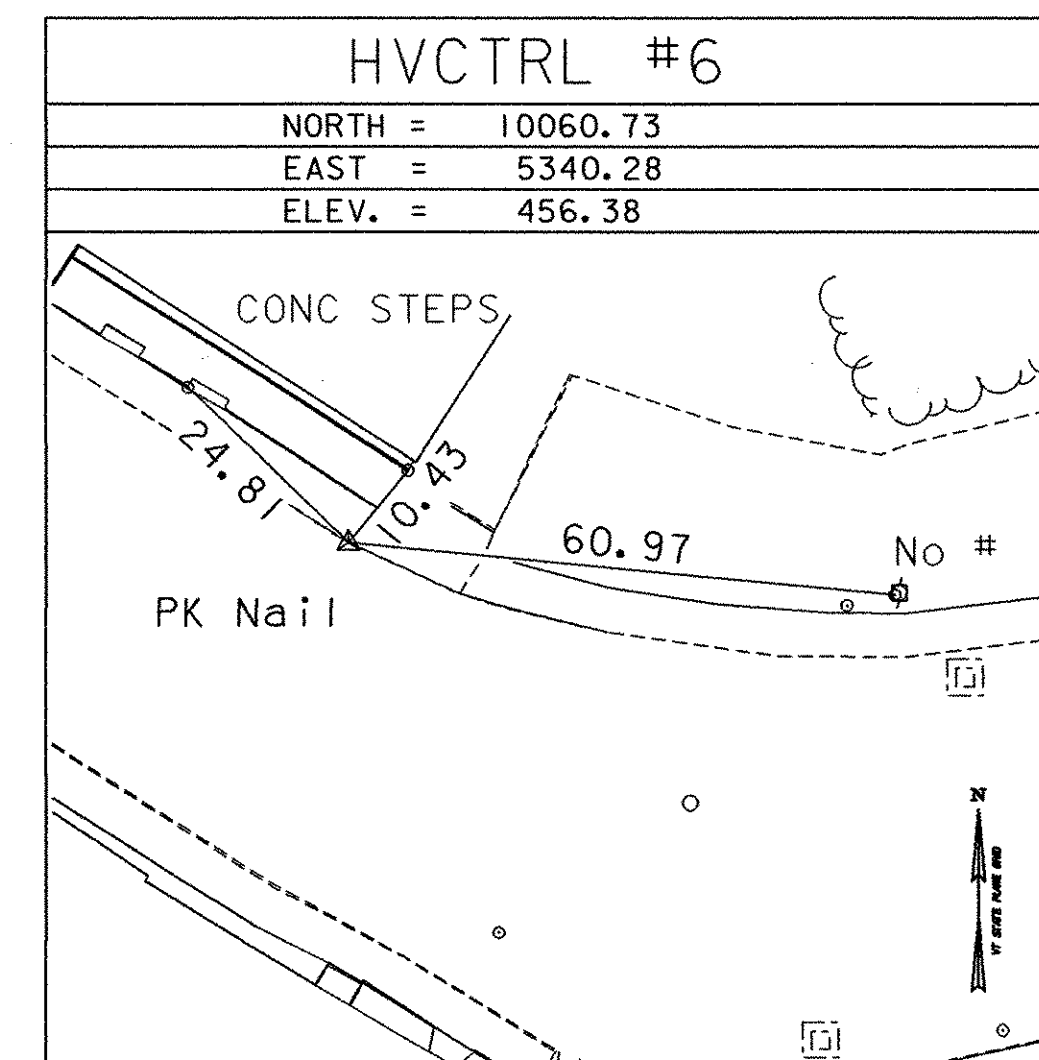
DESCRIBED BY VERMONT AGENCY OF TRANSPORTATION 1995 (CHR) GENERAL LOCATION RICHFORD VERMONT. ABOUT 23.5 MI (37.8 KM) NORTHEAST OF ST. ALBANS, ABOUT 25.5 MI (41.0 KM) WEST OF NEWPORT AND ABOUT 1.5 MI (2.4 KM) SOUTH OF THE US/CANADA BORDER. TO REACH FROM THE INTERSECTION OF VERMONT ROUTES 105 AND 139 (MAIN STREET), GO NORTHEAST ON VT ROUTE 139 FOR 0.1 MI (0.2 KM) TO THE MARK ON THE RIGHT, SET IN THE EAST CORNER OF THE 1.7 M (5.6 FT) SQUARE GRANITE BASE OF THE RICHFORD VETERANS MEMORIAL. THE MARK IS 12.5 M (41.0 FT) SOUTHEAST OF AND ABOUT 1 M (3.3 FT) HIGHER THAN THE CENTERLINE OF ROUTE 139, 8.5 M (27.9 FT) NORTHEAST OF THE NORTH CORNER OF THE FRANKLIN-LAMOILLE BANK, 3.7 M (12.1 FT) SOUTHWEST OF A FLAGPOLE, AND 8.2 M (26.9 FT) NORTHEAST OF A FIBERGLASS WITNESS POST.

TRAVERSE TIES

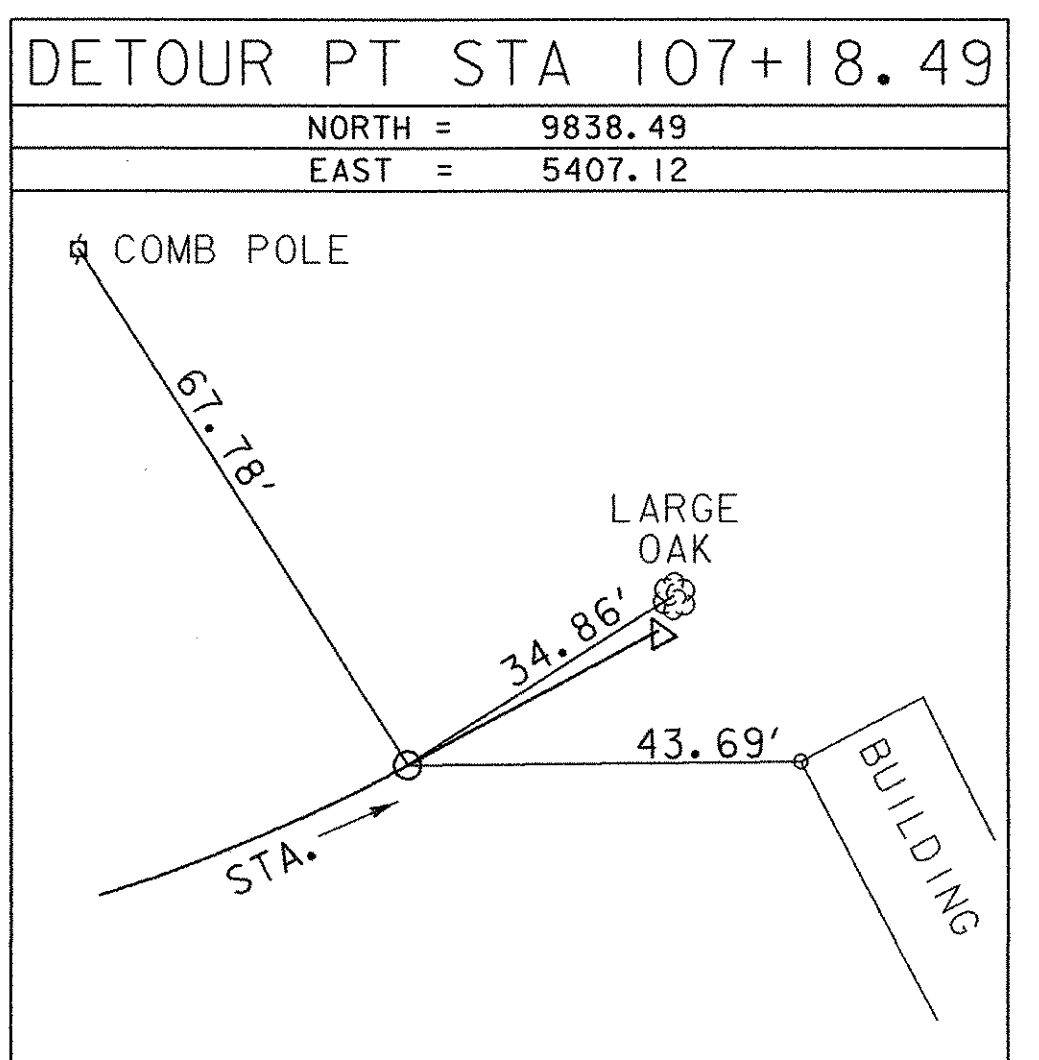
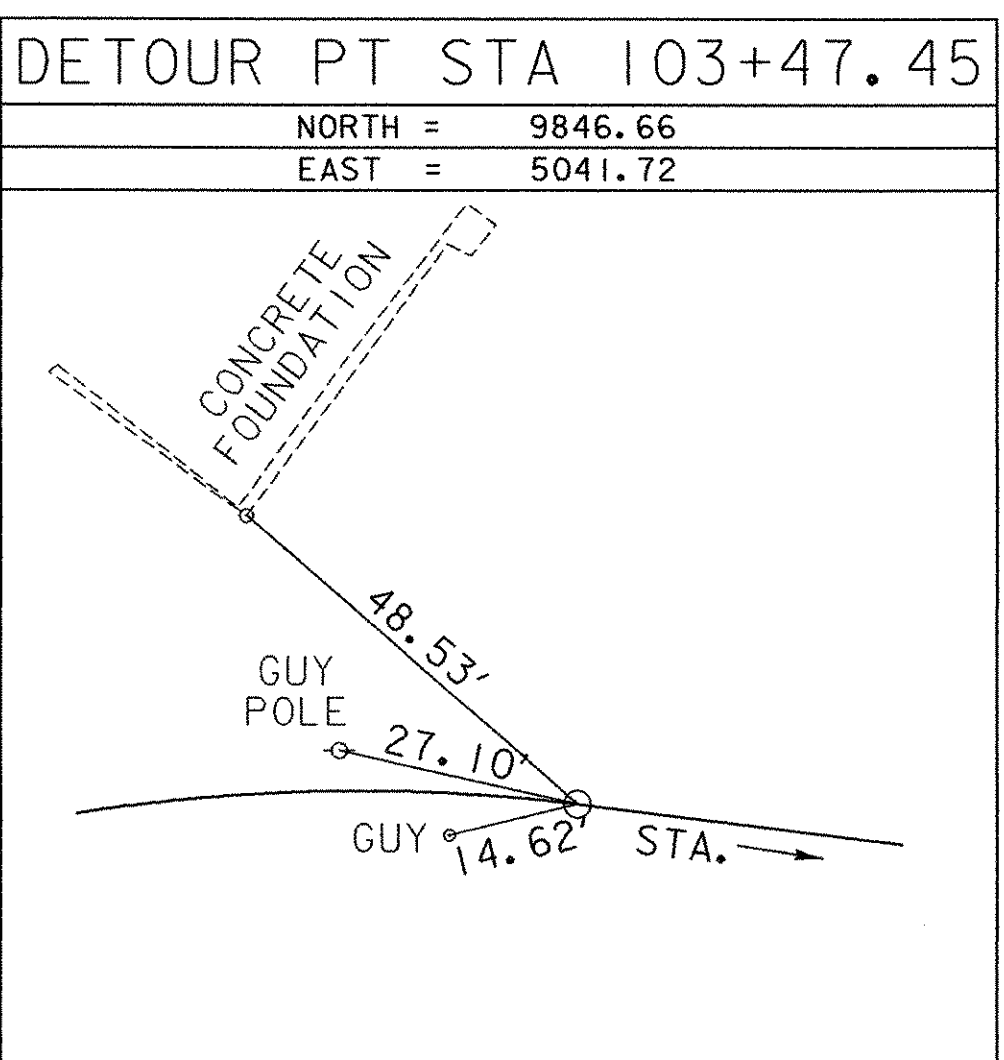
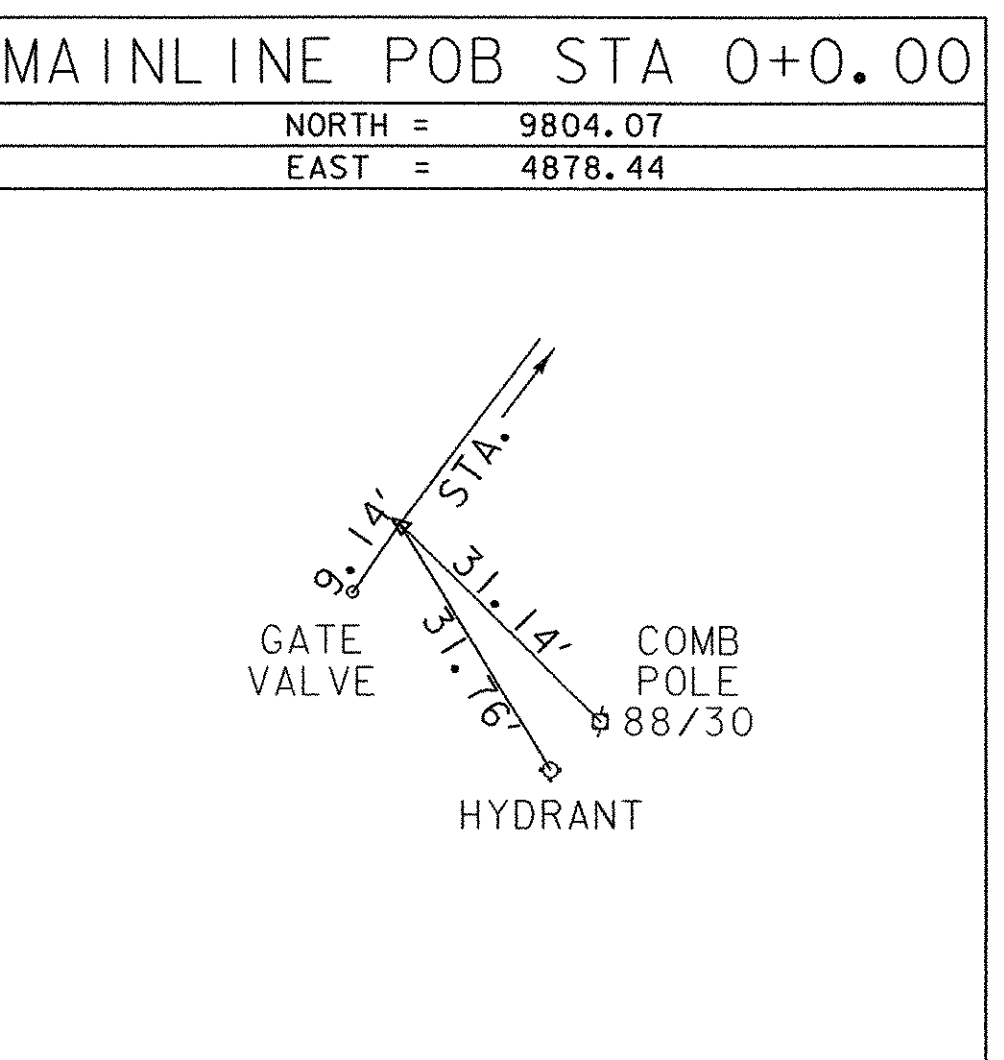


* Main Traverse Completed 6/11/07 by R. Bullock P.C. & T. Parker

TRAVERSE TIES

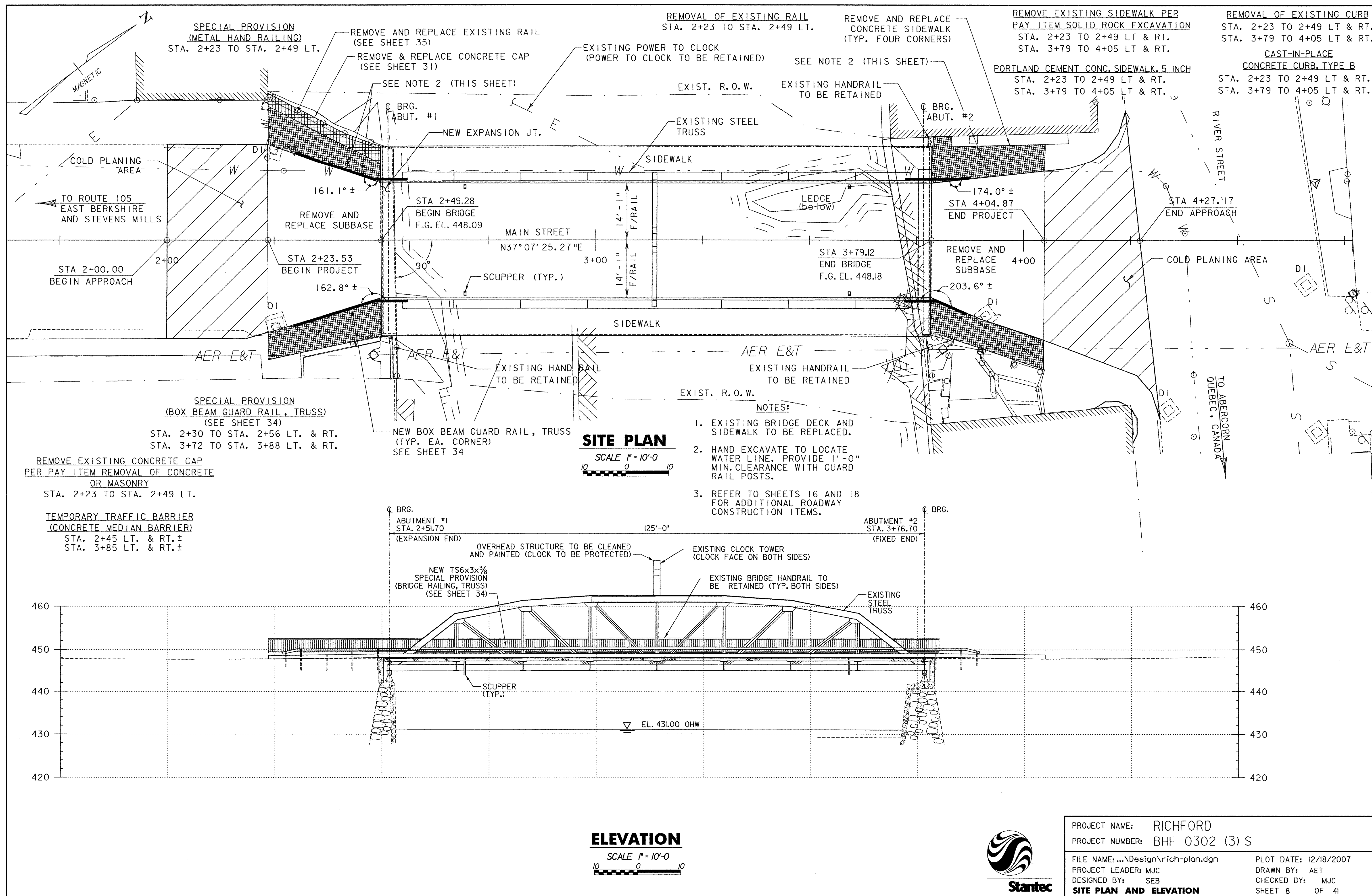


ALIGNMENT TIES



DATUM	
VERTICAL	NAVD 88
HORIZONTAL	ASSUMED
ADJUSTMENT	COMPASS

PROJECT NAME:	Richford	FILE NAME:	99J242\survey\94J242.tldgn	PLOT DATE:	12/18/2007
PROJECT NUMBER:	BHF 0302(3)S	PROJECT LEADER:	MJC	DRAWN BY:	R. Bullock
		DESIGNED BY:	VTRANS/STANTEC	CHECKED BY:	VTRANS/STANTEC
		TIE SHEET			SHEET 7 OF 41



EROSION CONTROL NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT IS LOCATED IN THE VILLAGE OF RICHFORD, ON MAIN STREET (T.H. #2) OVER THE MISSISQUOI RIVER, APPROXIMATELY 0.25 MILES NORTH OF THE INTERSECTION OF VT ROUTE 105 AND MAIN STREET (T.H. #2).

THIS PROJECT INVOLVES THE REMOVAL AND REPLACEMENT OF; THE BRIDGE DECK, THE TRUSS' BOTTOM CHORD AND THE TRUSS' FLOOR BEAMS AND STRINGERS. THE REPAIR AND PAINTING OF THE TRUSS' EXISTING STEEL, MINOR REPAIR OF THE EXISTING ABUTMENTS AND MINOR APPROACH RECONSTRUCTION. A DETOUR WITH A TEMPORARY BRIDGE WILL BE CONSTRUCTED TO THE SOUTHEAST OF THE EXISTING BRIDGE. THE ROADWAY ALIGNMENT WILL REMAIN THE SAME EXCEPT FOR A SLIGHT INCREASE (2.5') IN THE VERTICAL ALIGNMENT DUE TO THE INCREASE OF THE CROSS SLOPE ON THE BRIDGE TO 2% OR NORMAL CROWN.

NOTE: AREA OF DISTURBANCE SHALL INCLUDE LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA INCLUDING ANY WASTE, STAGING, AND BORROW AREAS WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS.

TOTAL AREA OF DISTURBANCE IS APPROXIMATELY 0.5 ACRES.

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

1.2 SITE INVENTORY AND ANALYSIS

1.2.1 OFF SITE DRAINAGE CHARACTERISTICS (UP AND DOWN -GRADIENT)

THE AREA SURROUNDING THE PROJECT IS LOCATED IN AN URBAN AREA WITH MINIMAL GRASSY AREAS, AND SEVERAL ADJOINING GRAVEL OR PAVED PARKING LOTS. CONCRETE SIDEWALKS AND CURBS ARE LOCATED ON BOTH SIDES OF MAIN, RIVER AND PROVIDENCE STREETS WHICH ARE PAVED. THE APPROACHES ARE RELATIVELY FLAT WITH AN INCREASE IN GRADE AS YOU TRAVEL FURTHER NORTH OR SOUTH OF THE PROJECT, BEFORE FLATTENING OUT AGAIN. DIS ARE LOCATED ALONG THE CURB LINES OF ALL THE STREETS ON EACH SIDE OF THE RIVER. STORMWATER IS COLLECTED IN THESE DIS AND DISCHARGED INTO THE MISSISQUOI RIVER ON EITHER SIDE OF THE RIVER.

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

THE MISSISQUOIRIVER GOES DIRECTLY THROUGH THE PROJECT SITE AND IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE MISSISQUOIRIVER IS FLANKED BY BRICK OR STONE BUILDINGS CONSTRUCTED ON STONE RETAINING WALLS WHICH ALSO FORM THE BRIDGE'S ABUTMENTS. THESE RETAINING WALLS AND ABUTMENTS FORM THE RIVER'S BANKS. WHERE THERE ARE NO BUILDINGS OR RETAINING WALLS THE RIVER'S BANKS CONSIST OF STEEP LEDGE OR STEEP SLOPES COVERED WITH FLAT STONES FOR STABILIZATION. TREES ARE LOCATED AT THE TOP OF THE RIVER BANKS WHERE THERE ARE NO BUILDINGS.

1.2.3 TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES

THE TOPOGRAPHY OF THE AREA IS A SMALL RIVER VALLEY WITH GRADUAL SLOPES DESCENDING TOWARDS THE RIVER, WITH STEEP SLOPES AT THE RIVERS EDGE. PAVED VILLAGE STREETS (MAIN, RIVER AND PROVIDENCE) WITH CONCRETE CURBS AND SIDEWALKS ARE LOCATED ABOVE THE RIVER IN THE VALLEY AREA. BRICK AND WOODEN BUILDINGS ARE LOCATED ALONG THE STREETS WITH SEVERAL GRAVEL OR PAVED PARKING LOTS NEXT TO THE BUILDINGS AND THE RIVER. THERE ARE SEWER AND WATERLINES BURIED UNDER THE STREETS (THE WATERLINE CROSSES THE RIVER UNDER THE BRIDGE). THERE ARE OVERHEAD UTILITIES ALONG ALL THE ROADS AND THEY CROSS THE RIVER TO THE EAST OF THE BRIDGE.

1.2.4 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF GRASS LAWNS AND HARDWOOD TREES AND UNDERGROWTH ON THE TOPS OF THE RIVER BANKS, WHERE NO BUILDINGS ARE LOCATED. THE IMPACT TO THE VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY THE CONSTRUCTION OF THE DETOUR AND THE REPLACEMENT OF THE SIDEWALKS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.5 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 VARY BY LOCATION.

1.2.5 SOILS (CONTINUED)

THE HIGHLY ERODIBLE SOILS ARE ONDAWA VARINAT SILT LOAM, SLOPES ARE NOT LISTED, "K FACTOR" = 0.37, EAST SIDE OF THE RIVER, RUMNEY VARIANT SILT LOAM, SLOPES ARE NOT LISTED, "K FACTOR" = 0.37, SOUTHEAST SIDE OF THE RIVER AND MUNSON SILT LOAM, 3% TO 8% SLOPES, "K FACTOR" = 0.49, NORTH SIDE OF THE RIVER. THE LOW ERODIBLE SOILS ARE DEERFIELD LOAMY FINE SAND, 0% TO 8%, "K FACTOR" = 0.17, EAST SIDE OF THE RIVER, WINDSOR LOAMY FINE SAND, 8% TO 15% SLOPES, "K FACTOR" = 0.17, EAST SIDE OF THE RIVER AND EXISTING GRAVEL AND SAND PLACED DURING THE CONSTRUCTION OF THE EXISTING ROADWAY, EXISTING GRAVEL PARKING LOT AND BRIDGE, SLOPES UNKNOWN, "K FACTOR" = 0.23 AND LESS.

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

1.2.6 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS - NO, HISTORICAL - THE EXISTING TRUSS BIRDGE IS A HISTORIC STRUCTURE, ARCHEOLOGICAL - THERE IS A KNOWN ARCHEOLOGICALLY SENSITIVE SITE OFF EASTERN AVENUE, SOUTH OF THE MUNICIPAL PARKING LOT (OUTSIDE OF PROJECT LIMITS), PRIME AGRICULTURAL LAND - NO, THREATENED AND ENDANGERED SPECIES - NO, WATER RESOURCE - MISSISQUOIRIVER - TEMPORARY PIER (APPROXIMATELY 300 SF IMPACT), WETLANDS - NO.

1.3 RISK EVALUATION

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF CONSTRUCTION GENERAL PERMIT 3-9020 BASED ON THE PROJECT IMPACT AREA. 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 THEN THE SELECTED CONTRACTOR WILL BE RESPONSIBLE FOR ADDITIONAL PERMITTING WITH VANR VIA FILING OF THE APPROPRIATE NOTICE OF INTENT UNDER THE CONSTRUCTION GENERAL PERMIT PROCESS.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE WORK OUTLINED IN THIS NARRATIVE CONSISTS OF APPLYING MEASURES THROUGHOUT THE LIFE OF THE PROJECT MINIMIZING SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION CONTROLS.

PREVENTING INITIAL SOIL EROSION IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS, OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHERE EVER POSSIBLE.

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

(REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR EACH PRACTICE REQUIRED ON THE PROJECT TO INCLUDE BUT NOT LIMITED TO THE FOLLOWING):

1.4.1 MARK SITE BOUNDARIES

PROJECT DEMARCATION FENCING, DENOTED -PDF- ON THE PLANS, IS USED TO DELINEATE THE LIMITS THE CONTRACTOR CAN ACCESS WITH CONSTRUCTION EQUIPMENT. THIS MEASURE LIMITS THE AREA THAT CAN BE DISTURBED AND EXPOSED TO EROSION.

1.4.2 LIMIT DISTURBANCE AREA

EMPLOY TEMPORARY STABILIZATION PRACTICES IN INCREMENTAL STAGES (PHASING) AS CONSTRUCTION PROCEEDS. ADDITIONAL MEASURES MAY BE NEEDED DUE TO THE PHASING OF THE PROJECT AND AS DIRECTED BY THE ENGINEER.

1.4.3 STABILIZED CONSTRUCTION ENTRANCE

STABILIZED CONSTRUCTION ENTRANCE SHALL BE UTILIZED AS NECESSARY.

1.4.4 INSTALL SILT FENCE

SILT FENCE SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK AS SHOWN ON THE PLANS OR AS NECESSARY.

1.4.5 DIVERT UPLAND RUNOFF

INSTALL A NEW PERMANENT DI, PRIOR TO THE DETOUR EXITING MAIN STREET, TO COLLECT ALL UPLAND STORMWATER RUNOFF. USE GRAVEL BAGS TO DIRECT AND/OR DIVERT OFF-SITE RUNOFF FROM ENTERING THE DISTURBED AREAS.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK DAMS SHALL BE UTILIZED AS NECESSARY.

1.4.7 CONSTRUCT PERMANENT CONTROLS

SEED AND MULCH
NEW DRAINAGE INLET AND PIPING

1.4.8 STABILIZE EXPOSED SOILS

SEED AND MULCH
EROSION MATTING

TRACKING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, WILL BE UTILIZED ON A REGULAR BASIS. SLOPES SHALL BE STABILIZED WITHIN 48 HOURS OF FORECASTED RAIN. SEEDING, MULCHING AND BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3. THESE SLOPES SHALL BE STABILIZED WITHIN 48 HOURS OF REACHING INTERMITTENT PHASES OF CONSTRUCTION.

1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER (SEE LOW RISK HANDBOOK)

1.4.10 STABILIZE SOIL AT FINAL GRADE

SEED AND MULCH
EROSION MATTING

SEEDING, MULCHING AND BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3. THESE SLOPES SHALL BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

1.4.11 DE-WATERING ACTIVITIES

A FILTER BAG WILL BE USED IN THE EVENT THAT IT IS NECESSARY TO DEWATER BEHIND THE ABUTMENTS. A SEDIMENT BASIN SHALL BE USED FOR THE TEMPORARY PIER WORK AS NECESSARY.

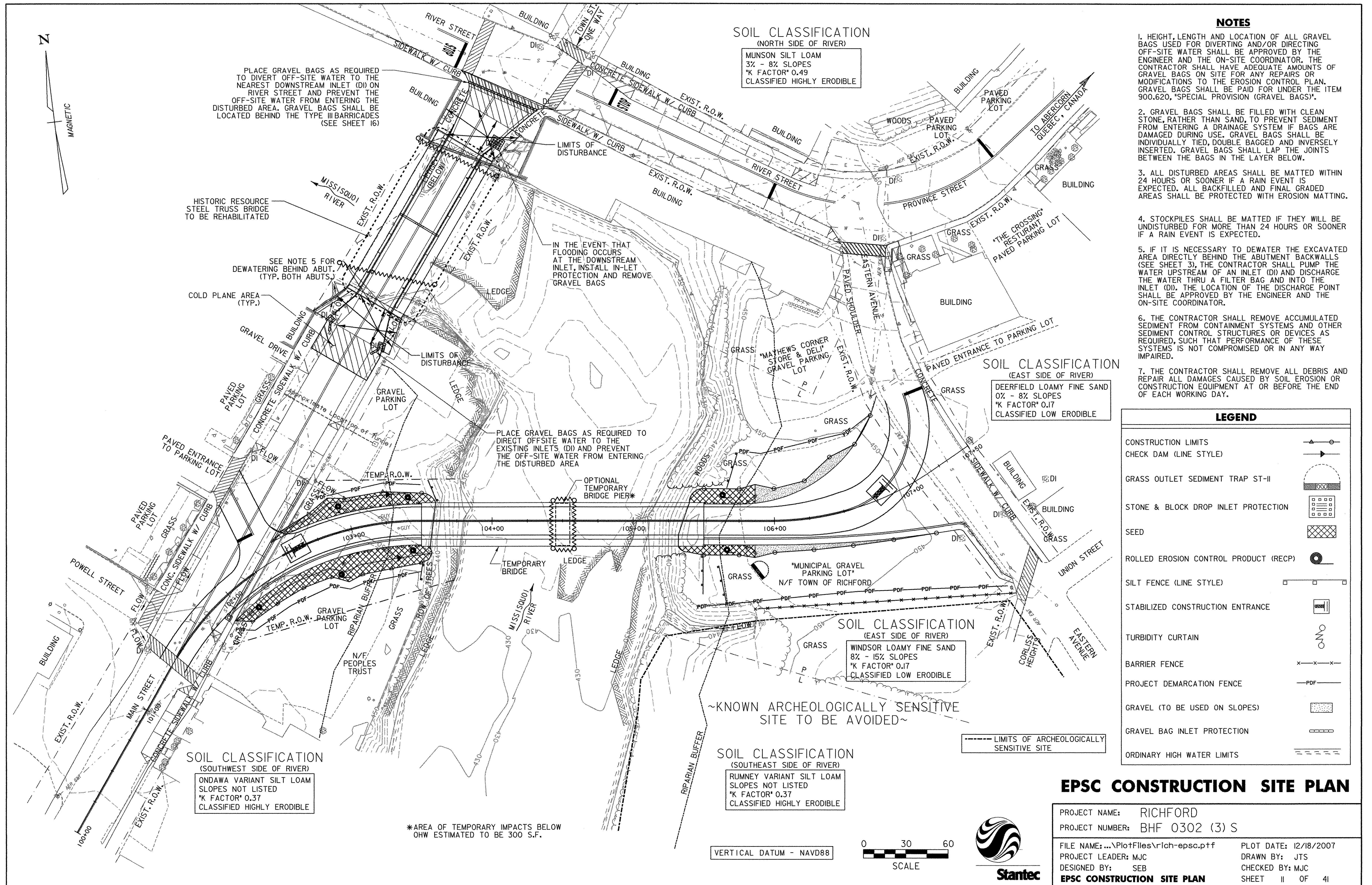
1.4.12 INSPECT YOUR SITE

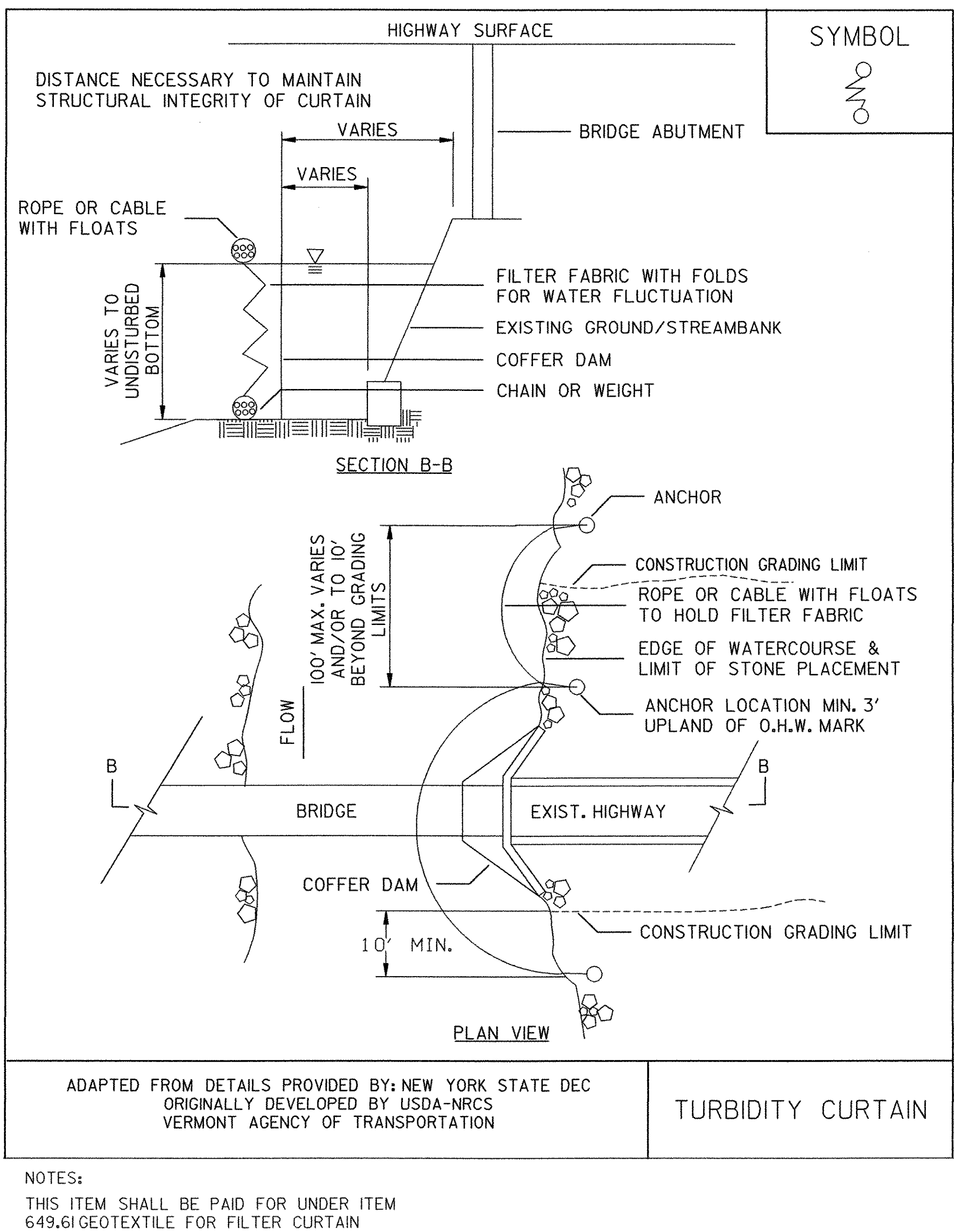
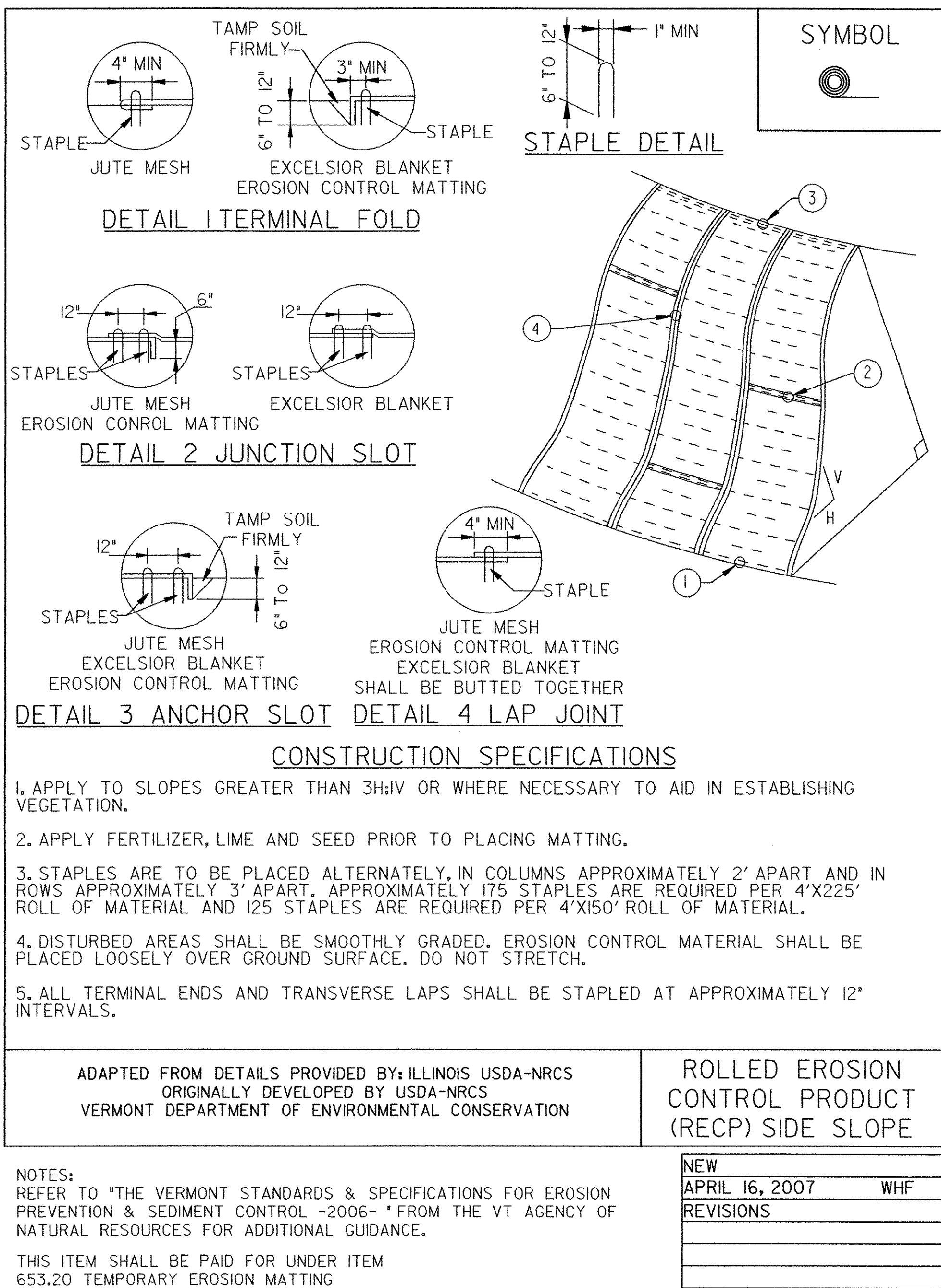
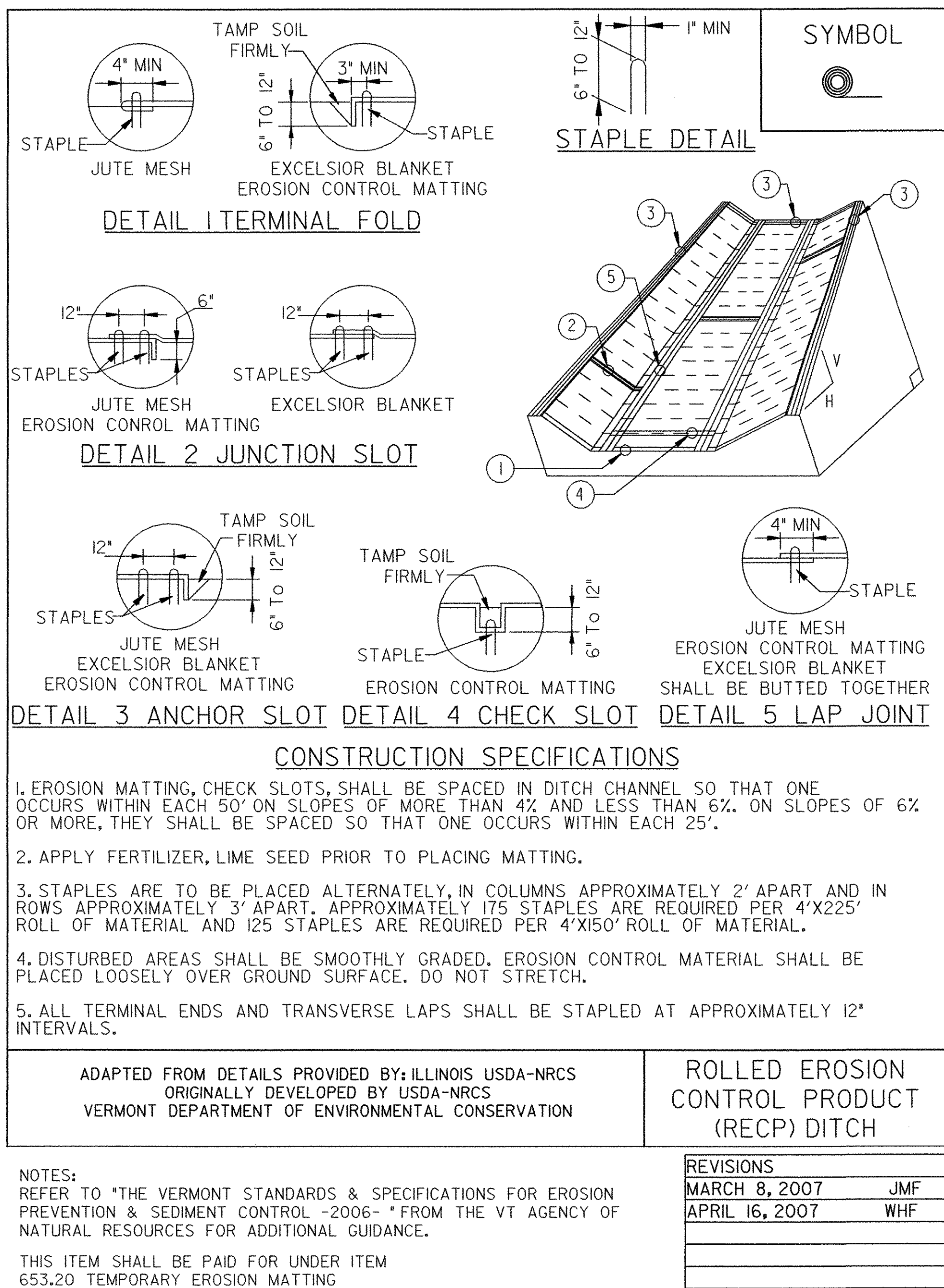
INSPECT SITE BASED ON PERMIT AUTHORIZATION OR SPECIAL PROVISION REQUIREMENTS.



EPSC NARRATIVE

PROJECT NAME: RICHFORD	
PROJECT NUMBER: BHF 0302 (3) S	
FILE NAME: ...\\Design\\rich-eronar.dgn	PLOT DATE: 12/18/2007
PROJECT LEADER: MJC	DRAWN BY: JTS
DESIGNED BY: SEB	CHECKED BY: MJC
EPSC NARRATIVE	SHEET 9 OF 41

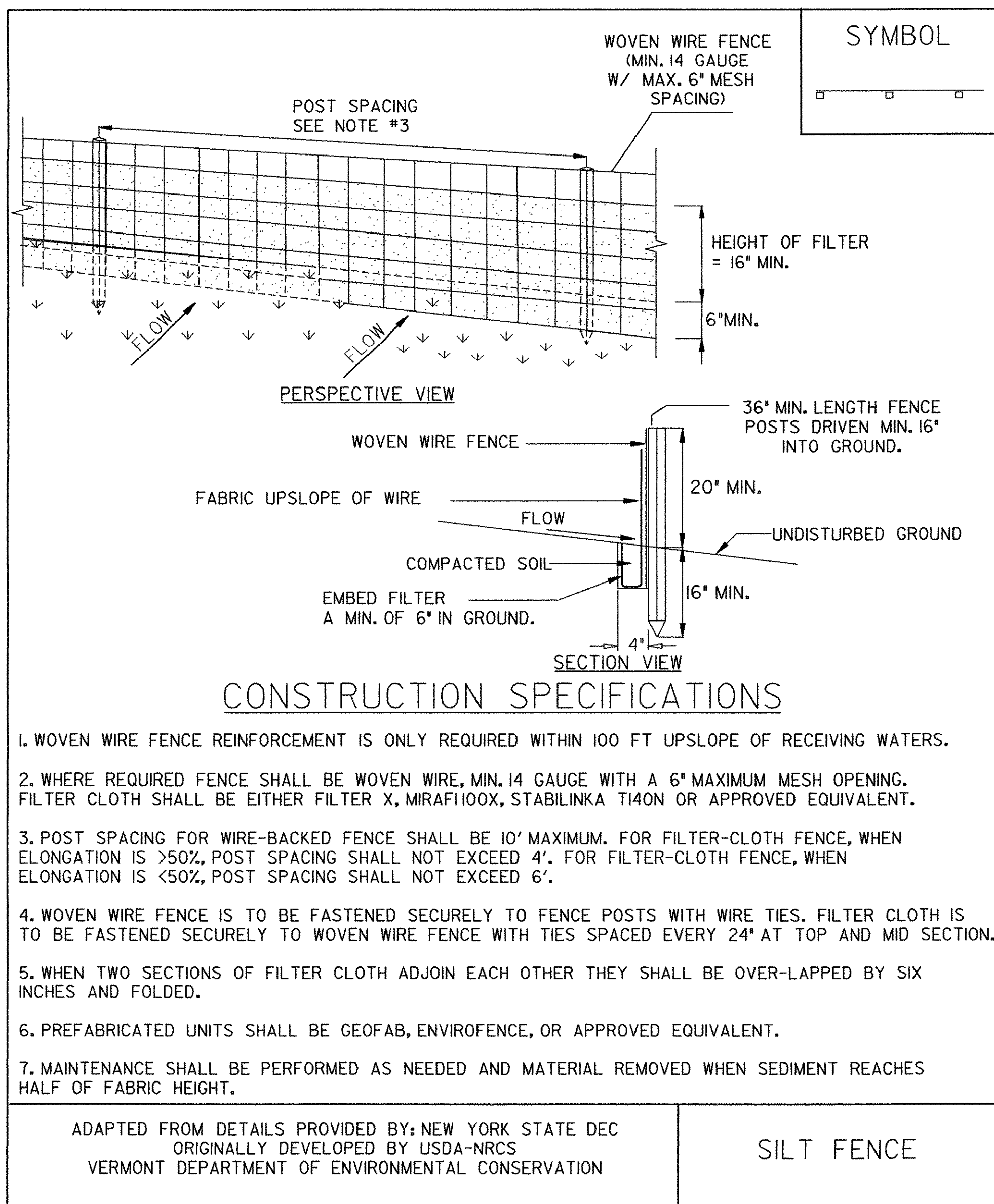




EPSC DETAIL SHEETS

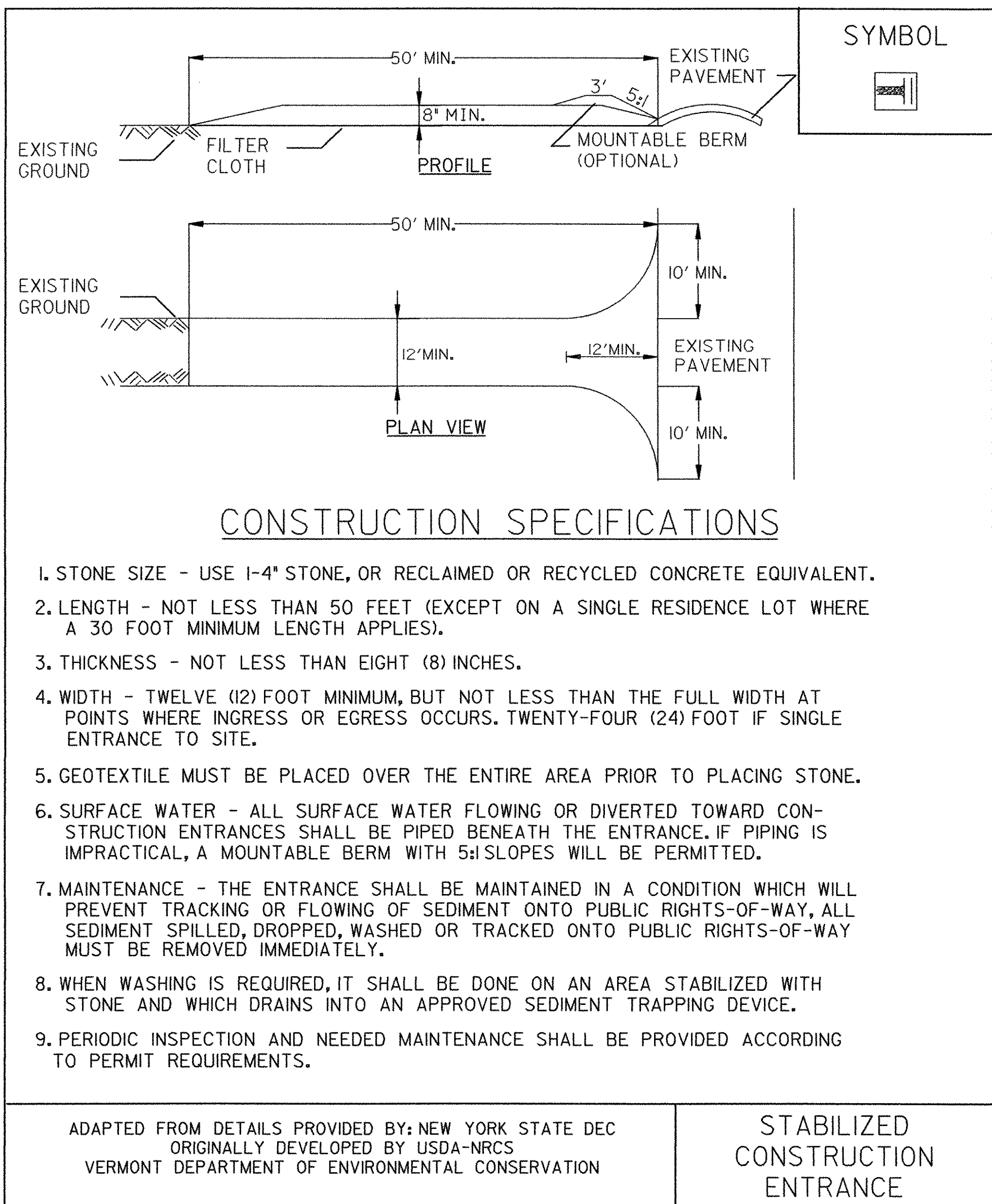


PROJECT NAME:	RICHFORD
PROJECT NUMBER:	BHF 0302 (3) S
FILE NAME: ...Design\Rich-erodet.dgn	PLOT DATE: 12/18/2007
PROJECT LEADER: MJC	DRAWN BY: JTS
DESIGNED BY: SEB	CHECKED BY: MJC
EPSC DETAILS SHEET 1	SHEET 13 OF 41



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

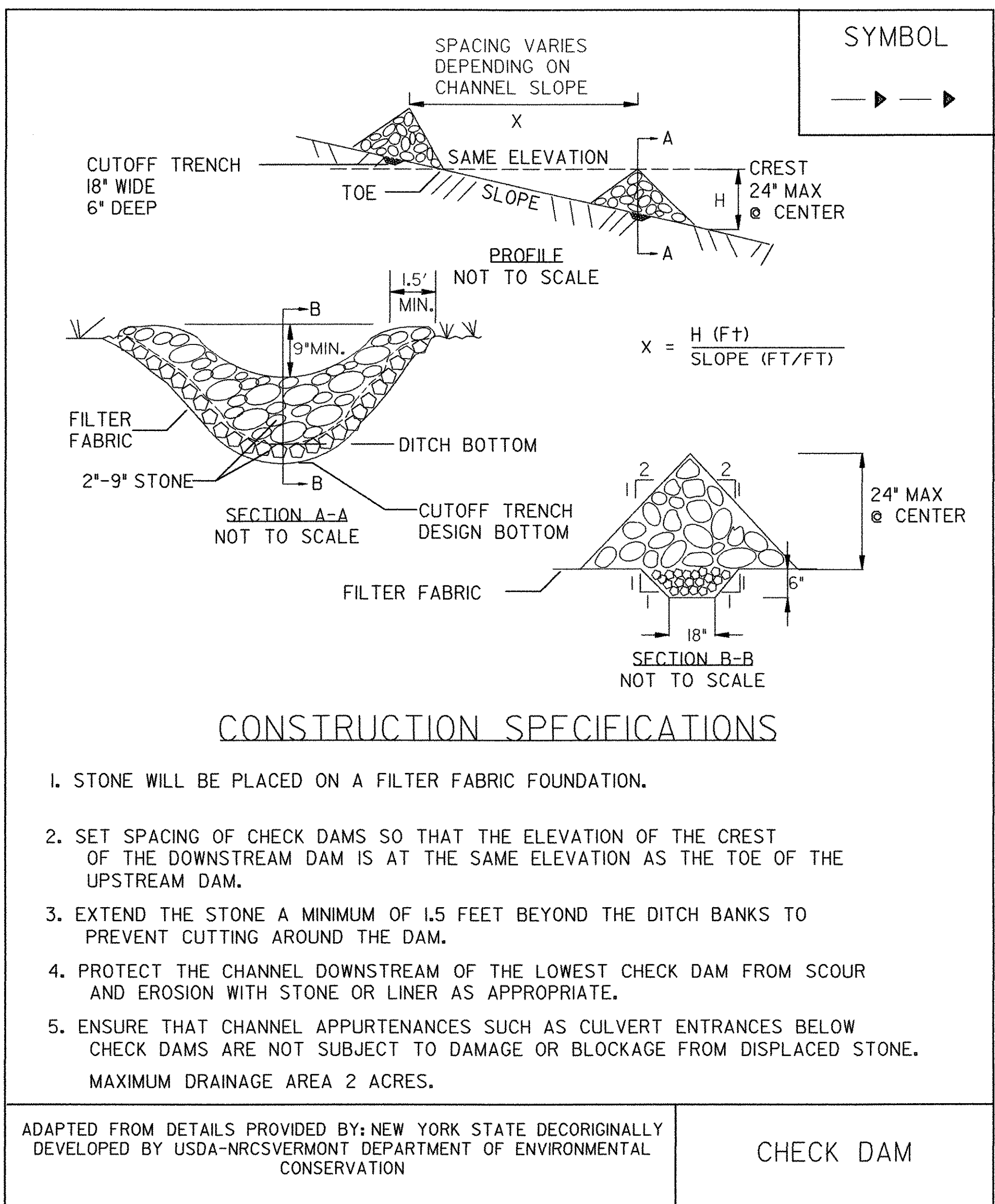
THIS ITEM SHALL BE PAID FOR UNDER ITEM
649.51 GEOTEXTILE FOR SILT FENCE



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

THIS ITEM SHALL BE PAID FOR UNDER ITEM
653.35 VEHICLE TRACKING PAD

REVISIONS		
FEBRUARY 9, 2007	WHF	
MARCH 8, 2007	JMF	



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

THIS ITEM SHALL BE PAID FOR UNDER ITEM
653.25 TEMPORARY STONE CHECK DAM, TYPE I

REVISIONS		
MARCH 8, 2007	JMF	

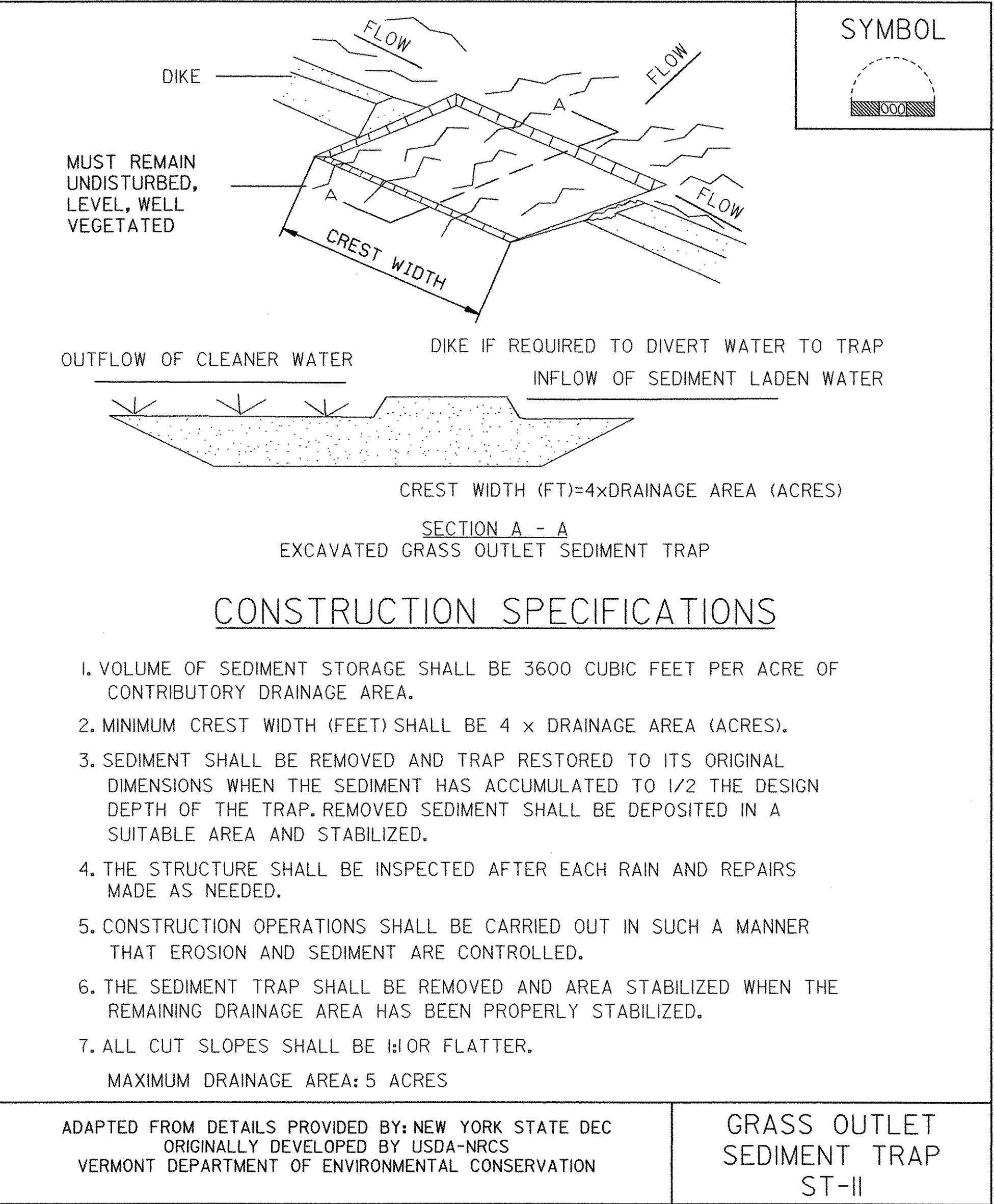


EPSC DETAIL SHEETS

PROJECT NAME: RICHFORD
PROJECT NUMBER: BHF 0302 (3) S

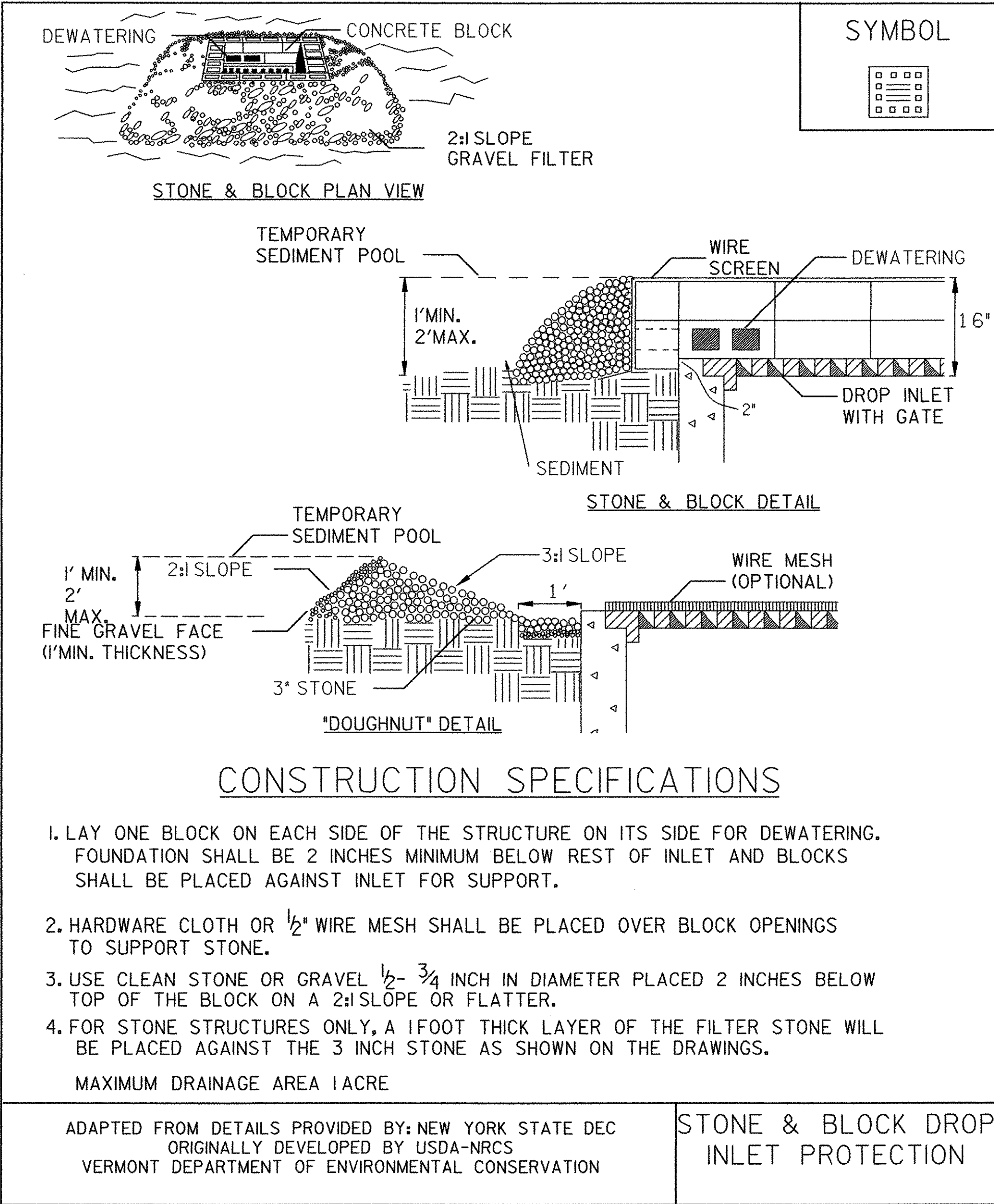
FILE NAME: ...Design\rich-erodet.dgn
PROJECT LEADER: MJC
DESIGNED BY: SEB
PLOT DATE: 12/18/2007
DRAWN BY: JTS
CHECKED BY: MJC
SHEET 14 OF 41

EPSC DETAILS SHEET 2



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

THIS ITEM SHALL BE PAID FOR UNDER ITEM 900.620 SPECIAL PROVISION (GRASS OUTLET SEDIMENT TRAP)



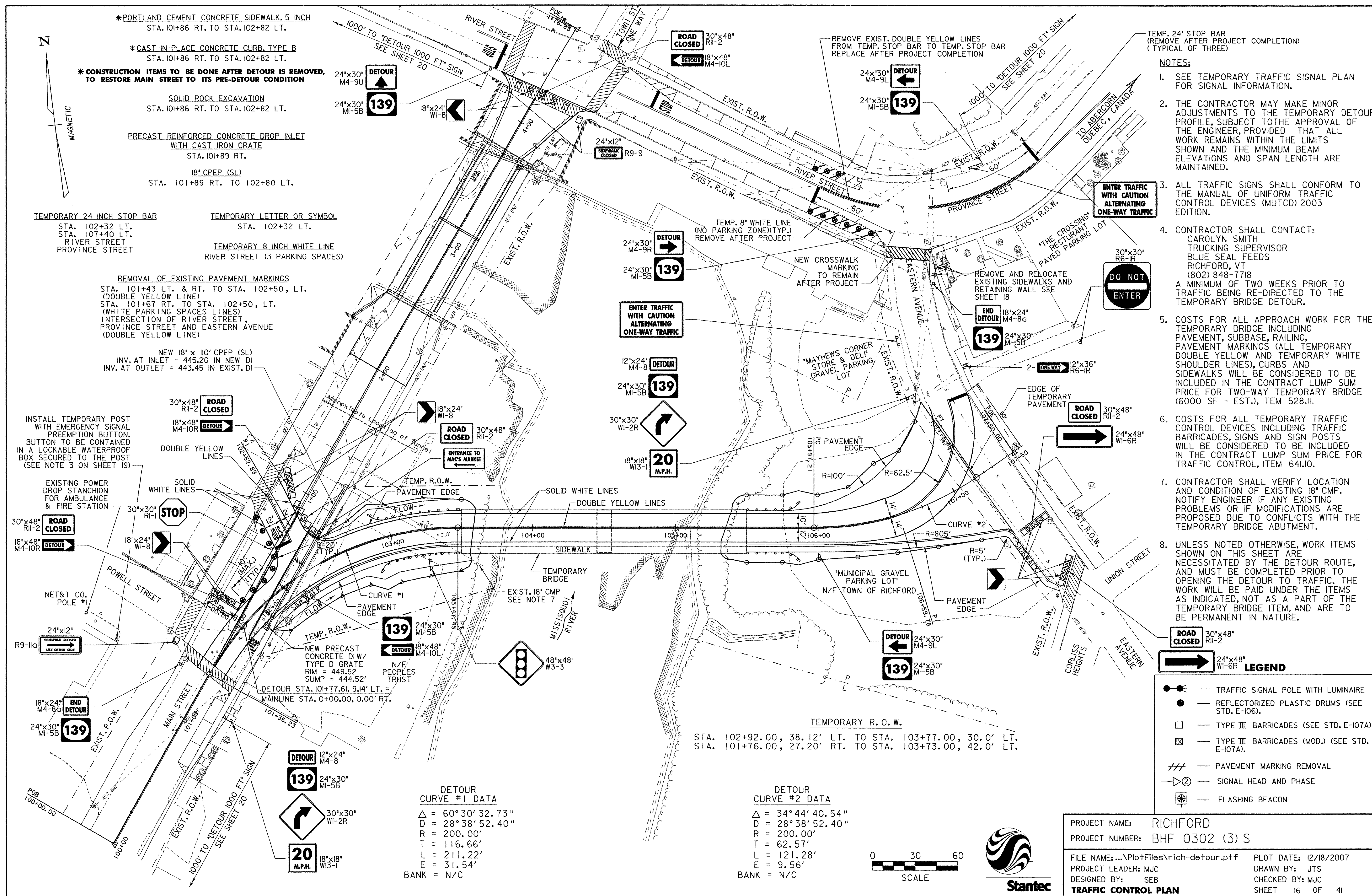
NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

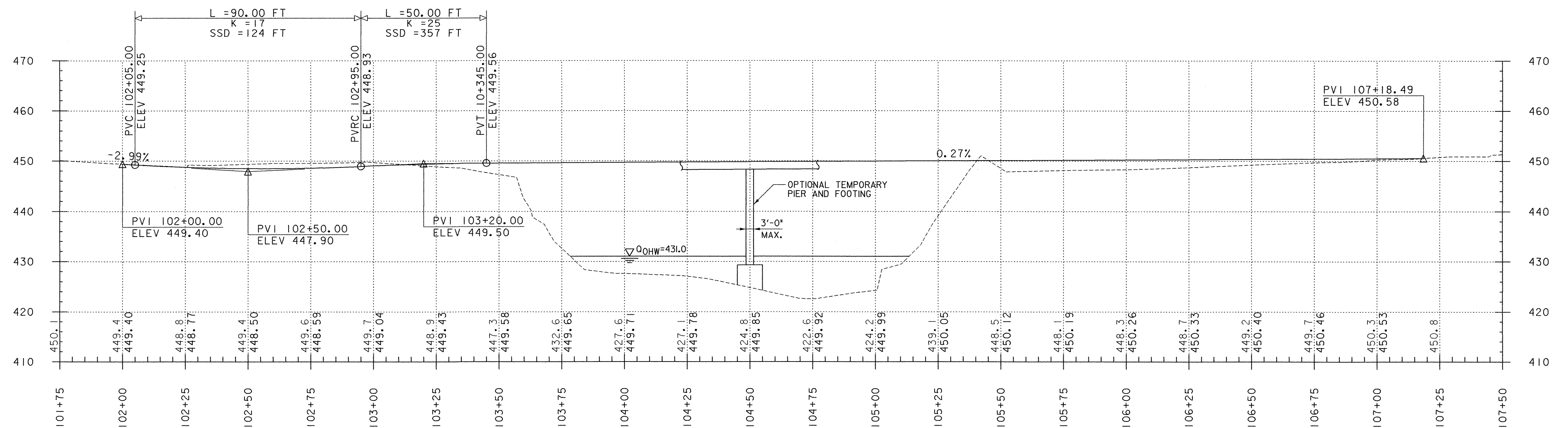
THIS ITEM SHALL BE PAID FOR UNDER ITEM 653.40 INLET PROTECTION DEVICE, TYPE I



EPSC DETAIL SHEETS

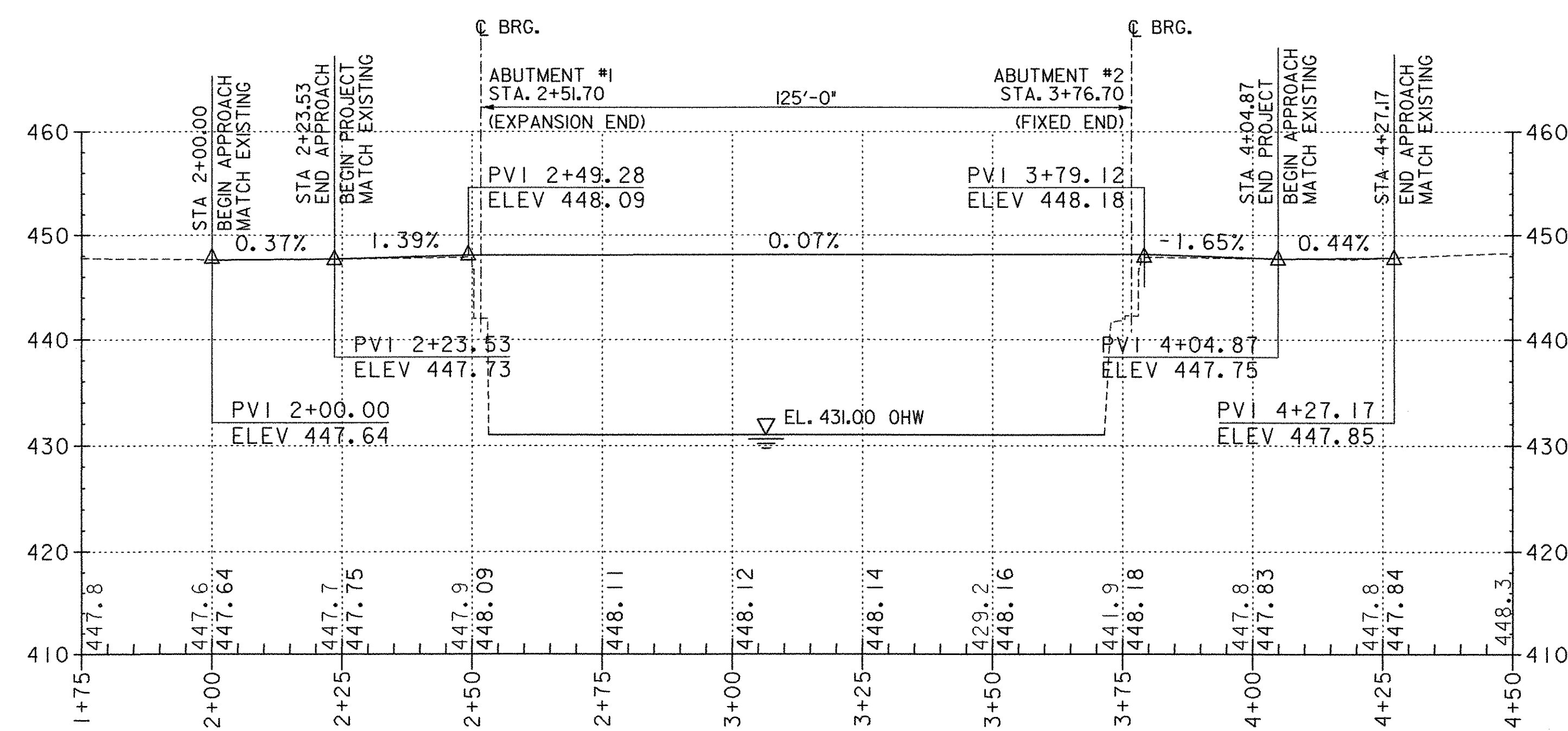
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PROJECT NUMBER:	BHF 0302 (3) S
FILE NAME: ...Design\Rich-erodet.dgn	PLOT DATE: 12/18/2007
PROJECT LEADER: MJC	DRAWN BY: JTS
DESIGNED BY: SEB	CHECKED BY: MJC
EPSC DETAILS SHEET 3	SHEET 15 OF 41





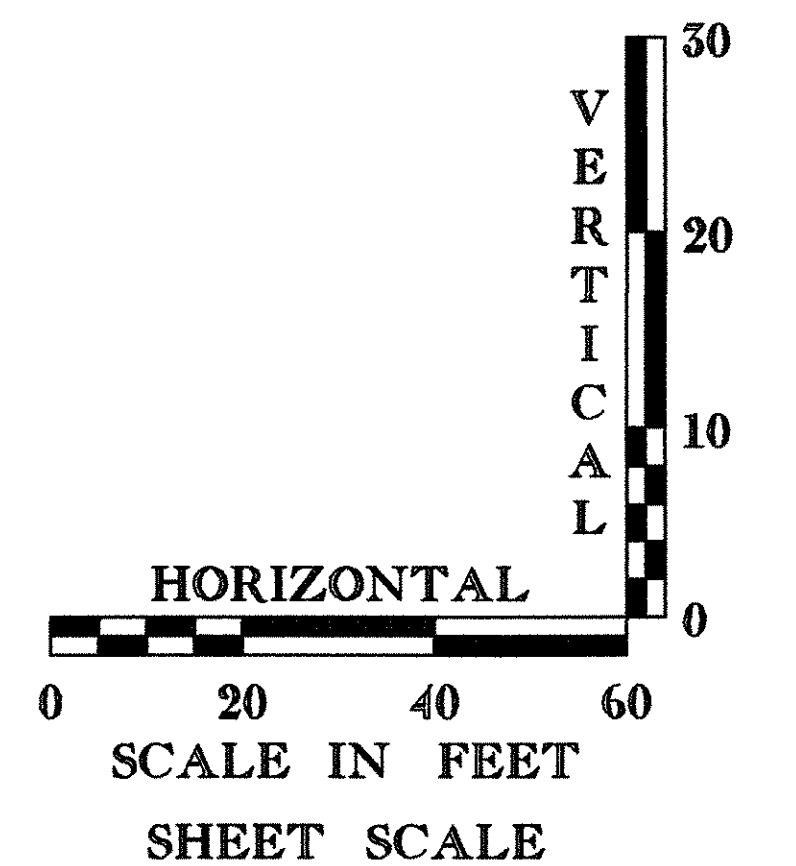
NOTE: ELEVATIONS SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG CENTERLINE.
ELEVATIONS SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG CENTERLINE.

DETOUR PROFILE



NOTE: ELEVATIONS SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG CENTERLINE.
ELEVATIONS SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG CENTERLINE.

BRIDGE PROFILE



PROJECT NAME: RICHFORD
PROJECT NUMBER: BHO 0302 (3) S
FILE NAME: ...Design\Rich-prof.dgn
PROJECT LEADER: MJC
DESIGNED BY: SEB
BRIDGE AND DETOUR PROFILE
PLOT DATE: 12/18/2007
DRAWN BY: SEB
CHECKED BY: MJC
SHEET 17 OF 41

DURABLE CROSSWALK MARKING
35 LF (SEE DETAIL ON SHEET 36)

REMOVING SIGNS
2 EA

ERECTING SALVAGED SIGNS
2 EA

SETTING SALVAGED POSTS
1EA

TRANSPLANTING SHRUBS (2")
1EA

SOLID ROCK
EXCAVATION
3 CY

DETECTABLE WARNING
SURFACE
10 SF

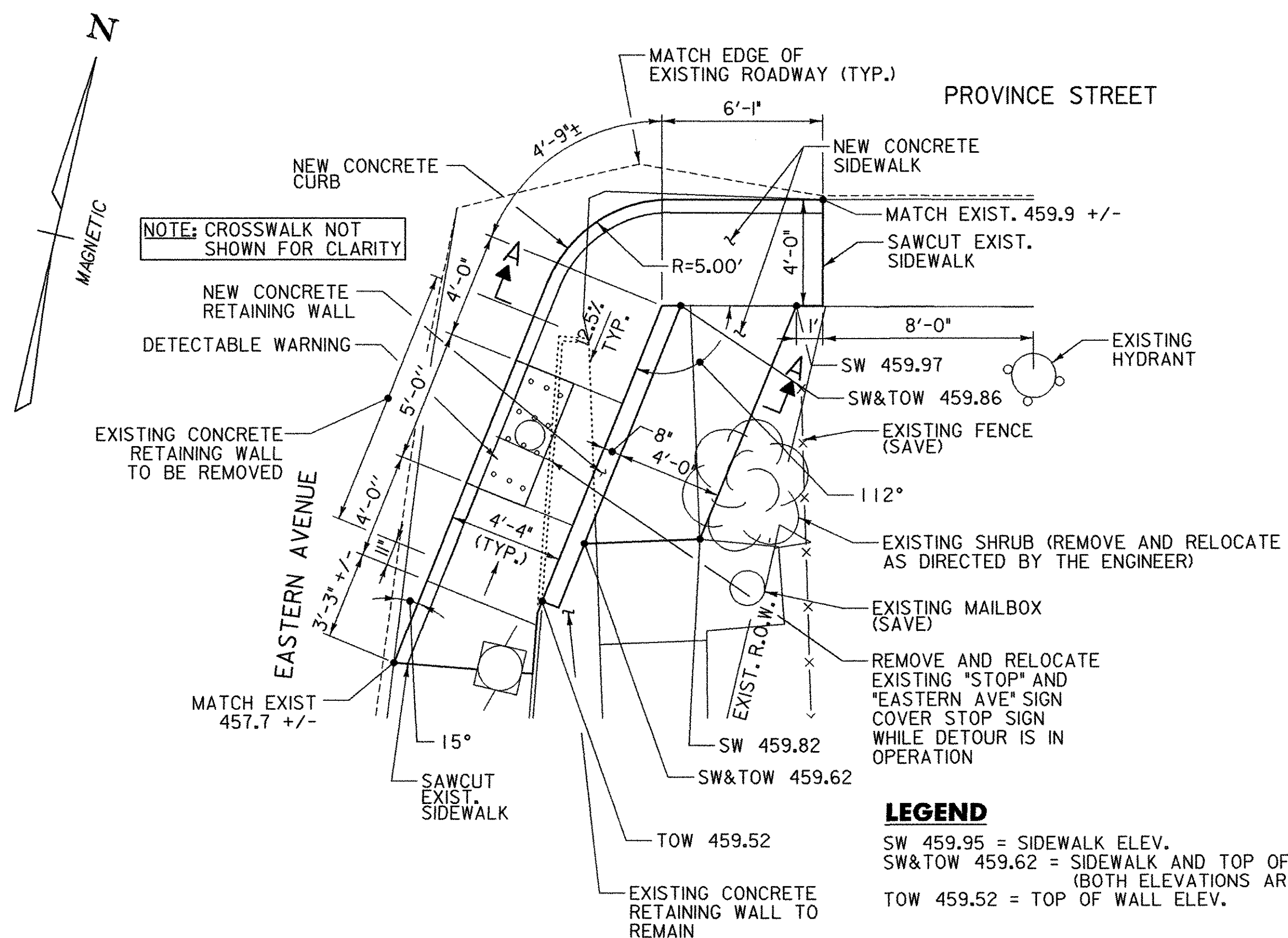
SUBBASE OF GRAVEL
11 CY

PORTLAND CEMENT
CONCRETE SIDEWALK, 5 INCH
18 SY

CONCRETE, HIGH
PERFORMANCE CLASS B
1 CY

COMMON EXCAVATION
12 CY

CAST-IN-PLACE
CONCRETE CURB, TYPE B
28 LF



RELOCATED SIDEWALK PLAN AT THE INTERSECTION OF EASTERN AVENUE AND PROVINCE STREET

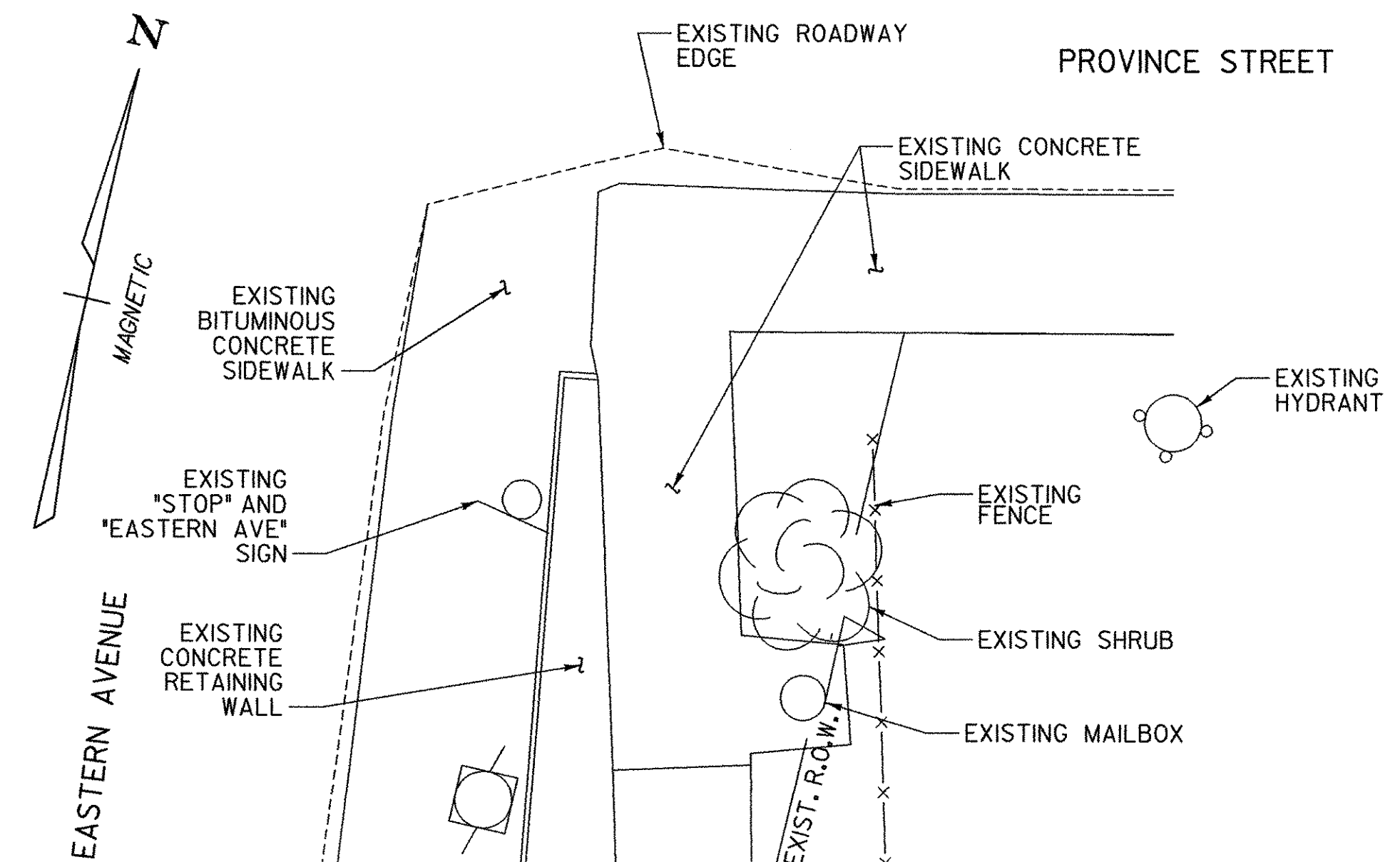
SCALE 1/4" = 1'-0"
1 0 2 4 6

LEGEND

SW 459.95 = SIDEWALK ELEV.
SW&TOW 459.62 = SIDEWALK AND TOP OF WALL ELEV.
(BOTH ELEVATIONS ARE THE SAME)
TOW 459.52 = TOP OF WALL ELEV.

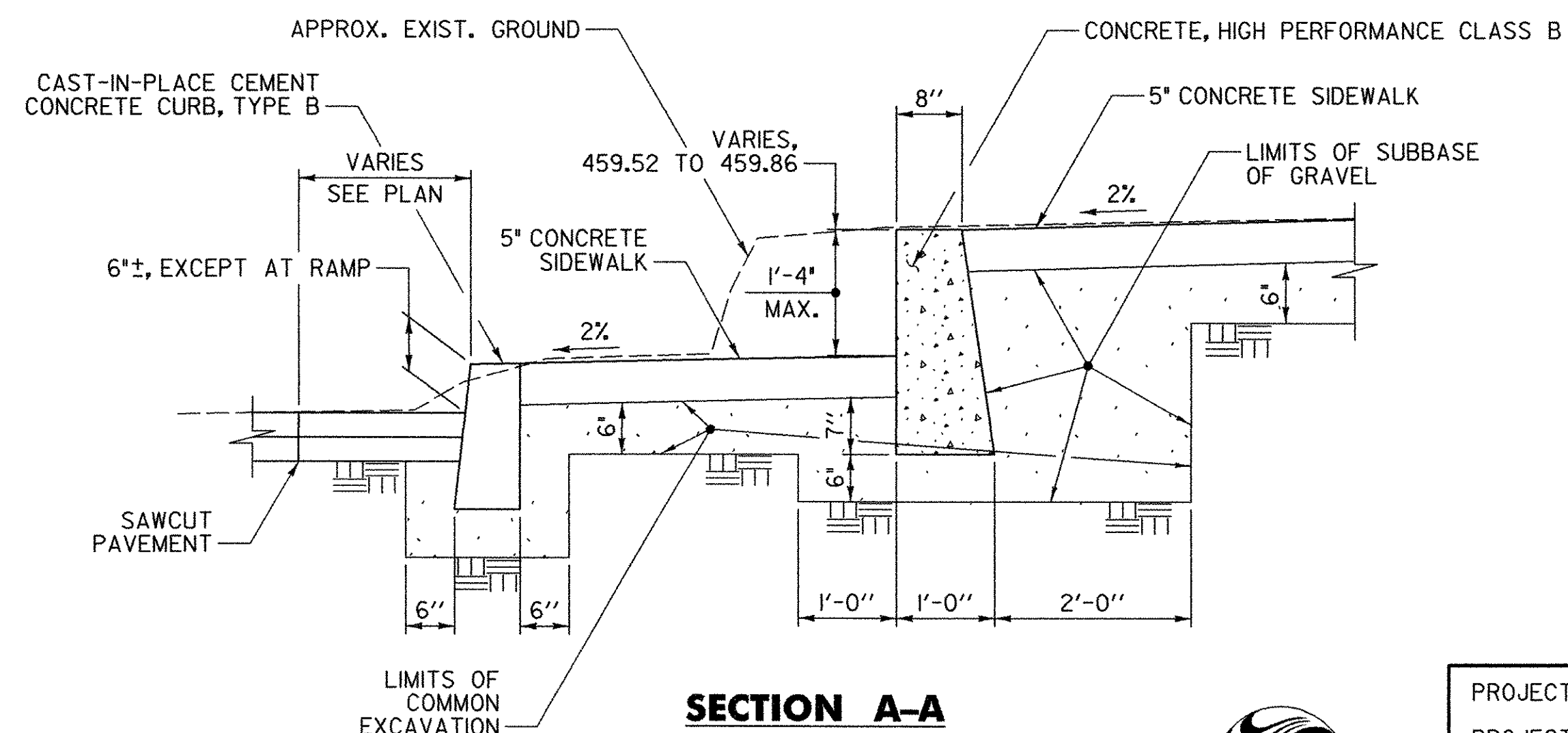
NOTE:

SAW CUTTING AND REMOVAL OF EXISTING
PAVEMENT AND/OR CONCRETE SHALL BE
INCIDENTAL TO SOLID ROCK EXCAVATION.



EXISTING SIDEWALK PLAN AT THE INTERSECTION OF EASTERN AVENUE AND PROVINCE STREET

SCALE 1/4" = 1'-0"
1 0 2 4 6



SECTION A-A

SCALE 3/4" = 1'-0"
0 1 2

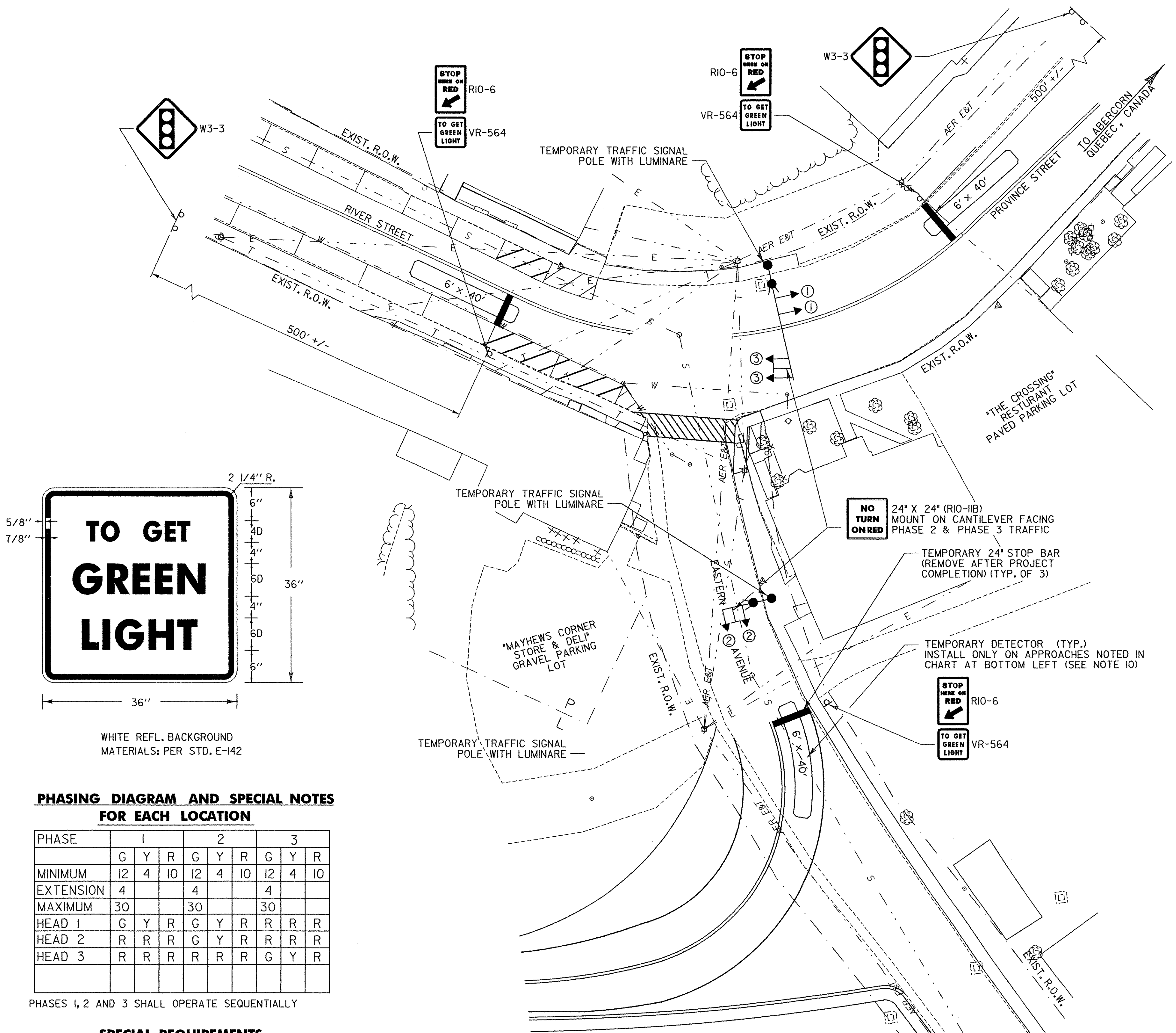


PROJECT NAME: RICHFORD
PROJECT NUMBER: BHF 0302 (3) S

FILE NAME: ...Design\rich-sdwk mod.dgn PLOT DATE: 12/18/2007
PROJECT LEADER: MJC DRAWN BY: SEB
DESIGNED BY: SEB CHECKED BY: MJC
SIDEWALK MODIFICATIONS SHEET 18 OF 41

GENERAL TEMPORARY TRAFFIC SIGNAL NOTES

1. DESIGN OF THE SIGNAL SUPPORT(S) AND ANY REQUIRED GUYING IS THE RESPONSIBILITY OF THE CONTRACTOR.
2. SIGNAL TIMING/TIMING ADJUSTMENTS REQUESTED BY THE ENGINEER SHALL BE ACCOMPLISHED WITHIN A 48 HOUR PERIOD AND PAYMENT SHALL BE INCIDENTAL TO THE TRAFFIC SIGNAL ITEM. THE ALL-RED CLEARANCE INTERVAL IS BASED ON AN ASSUMED SPEED OF 10-20 MPH, THE ENGINEER SHALL MAKE SEVERAL TRIAL RUNS TO DETERMINE THE PROPER ALL-RED CLEARANCE INTERVAL.
3. THE SIGNAL SYSTEM SHALL INCLUDE "HARD WIRED" PREEMPTION. A MANUALLY OPERATED BUTTON LOCATED AS INDICATED ON THE PLANS (SEE SHEET 16) SHALL ACTIVATE THE SYSTEM. THE CONTRACTOR SHALL COORDINATE WITH RESIDENT ENGINEER, TOWN FIRE, AMBULANCE, POLICE AND ANY OTHER APPROPRIATE DEPARTMENTS TO DETERMINE THE PROPER TIMING REQUIRED FOR EMERGENCY VEHICLES TO CLEAR THE PROJECT AREA ONCE PREEMPTION IS ACTIVATED. SEVERAL TRIAL RUNS SHALL BE MADE. PAYMENT SHALL BE INCIDENTAL TO ITEM 678.40, TEMPORARY TRAFFIC SIGNAL SYSTEM.
4. SIGNAL FACES SHALL CONSIST OF 12" LENSES. (RED, YELLOW, AND GREEN)
5. THE BOTTOM OF THE HOUSING OF A SIGNAL FACE SUSPENDED OVER A ROADWAY SHALL NOT BE LESS THAN 16.5 FEET NOR MORE THAN 19 FEET ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY. THE BOTTOM OF A SIGNAL FACE NOT MOUNTED OVER A ROADWAY, SHALL NOT BE LESS THAN 8 FEET NOR MORE THAN 15 FEET ABOVE THE GROUND. CAUTION SHOULD BE USED TO INSURE COMPLIANCE WITH THE HEIGHT REQUIREMENTS IN THE EVENT THE NEW APPROACH GRADES DIFFER SIGNIFICANTLY FROM THE OLD ROAD GRADE.
6. SIGNAL FACES FOR ANY ONE APPROACH SHALL NOT BE LESS THAN 8 FEET APART MEASURED HORIZONTALLY BETWEEN CENTER FACES.
7. SIGNAL HEADS MAY BE HUNG ON A SPAN WIRE OR ON A CANTILEVER MAST ARM. AT LEAST ONE SIGNAL HEAD SHALL BE UNMISTAKABLY IN LINE WITH THE CENTER OF APPROACHING TRAFFIC AT ALL TIMES. THE SECOND SIGNAL HEAD MAY BE POST MOUNTED, LOCATED AT A DISTANCE NO GREATER THAN 14.5 FEET FROM THE CENTER OF THE APPROACH LANE WHEN THE STOP BAR IS 40 FEET FROM THE SIGNAL HEAD. CONSULT THE M.U.T.C.D. 2003 EDITION FOR ADDITIONAL INFORMATION CONCERNING SIGNAL PLACEMENT.
8. SIGNAL HEAD PLACEMENT IS CRITICAL. HEADS SHALL BE ADJUSTED TO REFLECT LANE LOCATION CHANGES.
9. THE SIGNAL SYSTEM SHALL CONSIST OF POLES, SIGNS AND POSTS, WARNING SIGN, LUMINARIES, SIGNAL EQUIPMENT, CONTROLLER AND CABINET AND WIRING TO DETECTORS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. IT ALSO INCLUDES PERMITS AND COSTS ASSOCIATED WITH PROVIDING ELECTRICAL POWER.
10. THE CONTRACTOR SHALL PROVIDE AN ACTUATED CONTROLLER. THE APPROACHES NOTED SHALL HAVE A TEMPORARY DETECTOR. THE TYPE OF DETECTION SHALL BE AT THE OPTION OF THE CONTRACTOR. LOOPS ARE SHOWN FOR PLACEMENT PURPOSES ONLY. THE CONTROLLER, DETECTOR AND ALL OTHER SIGNAL EQUIPMENT SHALL MEET OR EXCEED ALL NEMA STANDARDS.
11. WHEN USED, TEMPORARY DETECTOR SHALL BE 6' X 40' FOR PRESENCE DETECTION AT THE STOP BAR WITH THE NEAR PORTION LOCATED 5 FEET BEYOND THE STOP BAR.
12. INTERVAL TIMING SHOWN IN SECONDS.
13. INSTALL WIRING BETWEEN SIGNAL POLES BY WHATEVER MEANS POSSIBLE OR CONVENIENT TO PROVIDE FOR A SAFE INSTALLATION. ATTACHMENT TO UTILITY POLES TO BE COORDINATED BY THE CONTRACTOR WITH UTILITY COMPANY.
14. PLACE TEMPORARY POLES BEHIND GUARDRAIL WHERE POSSIBLE.
15. POLES SUPPORTING SPAN WIRES AND/OR MAST ARMS SHALL BE ADEQUATELY BRACED OR GUYED AND SHALL NOT BE PLACED SO AS TO CREATE A HAZARD TO THE TRAVELLING PUBLIC.
16. ALL TEMPORARY SIGNAL EQUIPMENT, SIGNS, TYPE III BARRICADES, ETC., SHALL BELONG TO THE CONTRACTOR AT THE END OF THE PROJECT AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR REMOVAL, INCLUDING ANY TEMPORARY PAVEMENT MARKINGS, UTILITY POLES, WIRES, ETC.
17. A 250 WATT MER/150 WATT HPS LUMINAIRE AND MAST ARM SHALL BE PROVIDED ON A POLE ON EACH APPROACH AT A MOUNTING HEIGHT OF 30 FEET ABOVE ROADWAY CENTERLINE. THE INTENT IS TO LIGHT UP THE AREA AROUND THE SIGNAL HEADS AND STOP BAR FOR INCREASED VISIBILITY. THE ENGINEER SHALL DETERMINE THE ADEQUACY OF THE LIGHTING AND DIRECT CHANGES IF THE LIGHTING IS INSUFFICIENT.
18. SIGNAL HEAD SHALL BE LOCATED A MINIMUM OF 40' AND A MAXIMUM OF 120' FROM THE NEAREST STOP BAR.
19. PAYMENT FOR THE TEMPORARY DETECTORS SHALL BE FOR EACH UNIT INSTALLED.
20. POSTS AS SHOWN ON THIS SHEET AND NOTED BELOW ARE INCIDENTAL TO THE TRAFFIC CONTROL SIGNAL ITEMS ("STOP HERE ON RED", "SIGNAL AHEAD", "NO PASSING ZONE", "NO TURN ON RED", AND "TO GET GREEN LIGHT", ETC.) THE TEMPORARY STOP BARS WILL BE PAID FOR UNDER THE TEMPORARY 24" STOP BAR ITEM.
21. SEE STD. E-140 FOR "STOP HERE ON RED" AND "NO TURN ON RED" SIGN DETAIL. E-101 FOR "SIGNAL AHEAD" SYMBOL SIGN AND CHEVRON SYMBOL SIGN. SEE STANDARD E-102A FOR "ROAD CLOSED" SIGN. SEE STANDARD E-121 FOR SIGN PLACEMENT. SEE STANDARD E-171A AND E-172 FOR ADDITIONAL INFORMATION ON SIGNALS AND DETECTORS.
22. ALL ELECTRICAL WORK SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND STATE INSPECTOR.
23. ALL STOP SIGNS AND ANY TRAFFIC SIGNS MADE IRRELEVANT DUE TO THE TEMPORARY SIGNAL SHALL BE COVERED WITH A NON TRANSLUCENT WEATHER RESISTANT MATERIAL. THESE SIGNS SHOULD ONLY BE COVERED DURING THE OPERATION OF THE TEMPORARY SIGNAL OR AT THE DISCRETION OF THE ENGINEER. THE COSTS OF COVERING AND UNCOVERING THESE SIGNS SHALL BE INCLUDED IN THE PAYMENT FOR CONTRACT ITEM 678.40.
24. CONSTRUCTION APPROACH SIGNS SHALL BE PROVIDED ON EACH APPROACH PER STANDARD E-100. ADDITIONAL CONSTRUCTION APPROACH SIGNS SHALL BE INSTALLED AS REQUIRED BY THE ENGINEER PER STANDARD E-100A, E-101, E-102 AND E-102A. PAYMENT FOR THESE SIGNS, THE REFLECTORIZED PLASTIC DRUMS, ETC., SHALL BE PAID AS A PART OF CONTRACT ITEM 641.10.



PHASING DIAGRAM AND SPECIAL NOTES FOR EACH LOCATION

PHASE	1			2			3		
	G	Y	R	G	Y	R	G	Y	R
MINIMUM	12	4	10	12	4	10	12	4	10
EXTENSION	4			4			4		
MAXIMUM	30			30			30		
HEAD 1	G	Y	R	G	Y	R	R	R	R
HEAD 2	R	R	R	G	Y	R	R	R	R
HEAD 3	R	R	R	R	R	R	G	Y	R

PHASES 1, 2 AND 3 SHALL OPERATE SEQUENTIALLY

SPECIAL REQUIREMENTS

APPROACH	TEMPORARY DETECTOR	FLASHING BEACON ON ADVANCED WARNING SIGN
1	✓	
2	✓	
3	✓	

ENTER CHECK MARK IN APPROPRIATE BOX WHEN REQUIRED ON THIS PROJECT

LEGEND

- — TRAFFIC SIGNAL POLE WITH LUMINAIRE
- ⊲ — SIGNAL HEAD AND PHASE
- ⊛ — FLASHING BEACON



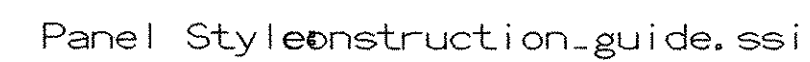
STANDARDS REQUIRED:	E-100, E-100A, E-101, E-102, E-102A, E-106, E-107, E-107A, E-121, E-140, E-142, E-170, E-171A, E-171B, E-171C, E-172, E-175
PROJECT NAME:	RICHFORD
PROJECT NUMBER:	BHF 0302 (3) S
FILE NAME:	...Design\Rich-signal.dgn
PLOT DATE:	12/18/2007
PROJECT LEADER:	MJC
DRAWN BY:	JTS
DESIGNED BY:	SEB
CHECKED BY:	MJC
SHEET	19 OF 41

TEMPORARY TRAFFIC SIGNAL PLAN



NOT TO SCALE

1: 20



Dimensions are inches, tenths

Letter locations are panel edge to lower left corner

[illegible]

DRAWN BY: SEB
CHECKED BY: MJC
SHEET 20 OF 41

PROJECT NOTES

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION, 2006 STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 2002, AND ITS LATEST REVISIONS.
2. ALL WORK ON THIS PROJECT SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LIMITS, EXCEPT FOR WORK ASSOCIATED WITH THE TEMPORARY BRIDGE. NO ADDITIONAL PERMANENT R.O.W. RIGHTS ARE ANTICIPATED FOR THIS PROJECT.
3. NO EQUIPMENT SHALL BE PLACED IN THE WATERCOURSE. MATERIALS SHALL NOT BE PLACED IN THE WATERCOURSE, EXCEPT FOR CONSTRUCTION OF THE TEMPORARY BRIDGE PIER. AREA OF MATERIAL IMPACT FOR THE TEMPORARY PIER SHALL BE LIMITED TO 300 SF AND SHALL BE COMPLETELY REMOVED AT THE END OF CONSTRUCTION.
4. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AT 68 DEGREES FAHRENHEIT.
5. PLANS FOR THE EXISTING BRIDGE ARE NOT AVAILABLE. DIMENSIONS SHOWN ON EXISTING DETAILS ARE TAKEN FROM FIELD MEASUREMENTS MADE BY THE DESIGN ENGINEER AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE AND VERIFY ALL DIMENSIONS AND EXISTING DETAILS NECESSARY FOR THE COMPLETION OF ALL WORK BY FIELD MEASUREMENT AND SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY AND ACCURACY THEREOF, AND SHALL NOT ORDER ANY MATERIAL OR COMMENCE ANY FABRICATION UNTIL THEY HAVE MADE THE REQUIRED MEASUREMENTS ON THE EXISTING STRUCTURE.
6. THE ITEMS 502.II, "SHORING SUPERSTRUCTURE BEARINGS (STA. 2+51.70) AND 502.II, "SHORING SUPERSTRUCTURE BEARINGS (STA. 3+76.70) SHALL BE PAYMENT FOR SUPPORTING THE SUPERSTRUCTURE WHILE THE SUBSTRUCTURES AND BEARINGS ARE BEING REPAIRED. THE BEARINGS AT ABUTMENTS NO. 1 AND NO. 2 SHALL BE JACKED SIMULTANEOUSLY ABOVE THE EXISTING TOP OF THE BEAM SEAT. ITEM 502.IO, "SHORING SUPERSTRUCTURE" SHALL BE PAYMENT FOR SUPPORTING THE SUPERSTRUCTURE IN PLACE DURING REPAIRS OR REMOVAL OFF-SITE FOR REPAIRS, AT THE DISCRETION OF THE CONTRACTOR.
7. THE FOLLOWING SHALL BE PAID FOR UNDER ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE"; REMOVAL AND DISPOSAL OF THE EXISTING CONCRETE BRIDGE DECK, BRIDGE CURBS, BRIDGE SIDEWALKS, BACKWALLS, AND ALL STEEL MEMBERS THAT ARE TO BE REPLACED AS DETAILED IN THE CONTRACT PLANS OR AS DIRECTED BY THE ENGINEER. REMOVAL OF BRIDGE PAVEMENT SHALL BE PAID FOR UNDER ITEM 529.IO, "REMOVAL OF BRIDGE PAVEMENT". 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. TEN DAYS PRIOR TO COMMENCING WORK WHICH INVOLVES THE HANDLING OR DISTURBANCE OF PAINTED COMPONENTS, THE CONTRACTOR SHALL PROVIDE DOCUMENTS TO THE ENGINEER, AS REFERENCED IN SECTION 513 OF THE SPECIFICATIONS.

CONCRETE AND REINFORCING STEEL

8. CONCRETE FOR THE DECK, EXPANSION JOINT BLOCKOUT AND CURBS SHALL BE HIGH PERFORMANCE CLASS A AND WILL BE PAID FOR UNDER ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A (FPO)". ALL OTHER CONCRETE SHALL BE HIGH PERFORMANCE CLASS B AND WILL BE PAID FOR UNDER ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B" UNLESS OTHERWISE NOTED.
9. WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES.
10. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1".

11. CONCRETE CONSTRUCTION JOINTS SHALL BE CONSTRUCTED AS SHOWN ON SHEET 25 OF THE PLANS OR AS DIRECTED BY THE ENGINEER.
12. ALL SUPERSTRUCTURE REINFORCING STEEL SHALL BE EPOXY COATED AND PAID FOR UNDER ITEM 507.I7, "EPOXY COATED REINFORCING STEEL" UNLESS NOTED OTHERWISE. WHEN EPOXY COATED REINFORCING STEEL IS TO BE CUT, THE UNCOATED ENDS SHALL BE REPAIRED WITH MATERIALS AND PROCEDURES APPROVED BY THE COATING MANUFACTURER. FLAME CUTTING OF EPOXY COATED REINFORCING STEEL WILL NOT BE PERMITTED.
13. ALL SUBSTRUCTURE REINFORCING STEEL SHALL BE PAID FOR UNDER ITEM 507.I5, "REINFORCING STEEL".
14. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH AND APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE."
15. MINIMUM COVER FOR REINFORCING STEEL IN THE SUBSTRUCTURES SHALL BE TWO INCHES ALONG WALL FACES AGAINST EARTH, AND THREE INCHES ELSEWHERE UNLESS DETAILED OTHERWISE.
16. REINFORCING PLACEMENT TOLERANCES SHALL BE:
SPACING +/- 1"
CLEARANCE +/- 1/4"
17. SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL. THE BRIDGE SEAT SURFACE SHALL BE GIVEN A STEEL TROWEL FINISH.

STRUCTURAL STEEL

18. ALL STRUCTURAL COMPONENTS OF THE BRIDGE SHALL BE INSPECTED BY THE CONTRACTOR AND THE ENGINEER FOR ADDITIONAL AREAS IN NEED OF REPAIR NOT SHOWN ON THE CONTRACT DOCUMENTS. SOME OF THE AREAS INDICATED ON THESE PLANS AS REQUIRING PATCHES MAY HAVE BEEN PATCHED SUBSEQUENT TO DEVELOPMENT OF THESE PLANS, AND ADDITIONAL AREAS OF PATCHING ARE ANTICIPATED. ANY ADDITIONAL REPAIRS SHALL BE MADE AT THE DISCRETION OF THE ENGINEER AND SHALL BE APPROVED BY THE ENGINEER. THE PLATES USED FOR PATCHING SHALL BE 3/8" THICK AND CUT TO THE REQUIRED SIZE BASED ON FIELD MEASUREMENTS. ADDITIONAL REPAIRS SHALL BE PAID FOR UNDER CONTRACT ITEM 506.60.
19. ALL NEW STEEL BEAMS, CHANNELS, CONNECTION ANGLES, PLATES, WASHER PLATES AND BOLTS SHALL BE PAID FOR UNDER ITEM 506.50, "STRUCTURAL STEEL, ROLLED BEAM". ALL 3/8" PATCHING PLATES, SCUPPERS AND DOWNSPOUTS SHALL BE PAID FOR UNDER ITEM 506.60, "STRUCTURAL STEEL".
20. ALL STRUCTURAL STEEL PAID UNDER THE ITEM 506.50, "STRUCTURAL STEEL, ROLLED BEAM" SHALL CONFORM TO AASHTO M 270M/M 270 GRADE 50 UNLESS NOTED OTHERWISE ON THE PLANS. ALL STRUCTURAL STEEL PAID UNDER THE ITEM 506.60, "STRUCTURAL STEEL" SHALL CONFORM TO AASHTO M 270M/M 270 GRADE 36 OR HIGHER UNLESS NOTED OTHERWISE ON THE PLANS. EXCEPT ALL STRUCTURAL TUBING SHALL CONFORM TO SUBSECTIONS 714.II OR 732.03, AS NOTED ON THE PLANS.
21. ANY EXISTING RIVETS THAT ARE MISSING OR REMOVED FOR REPAIRS AS DETAILED ON THE PLANS OR AS ORDERED BY THE ENGINEER SHALL BE REPLACED WITH 7/8" DIAMETER HIGH STRENGTH BOLTS MEETING THE REQUIREMENTS OF NOTE 22 AND 23. WHERE RIVET HEADS ARE IN DIRECT CONTACT WITH MEMBERS TO BE RETAINED, TORCHES AND/OR THE USE OF FLAME CUTTING WILL NOT BE PERMITTED FOR ANY PORTION OF THE RIVET REMOVAL. THE CONTRACTOR SHALL VERIFY THAT THE EXISTING HOLE DIAMETER IS 1 5/16 " AND BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ENGINEER. THE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.I9 OF THE STANDARD SPECIFICATIONS.

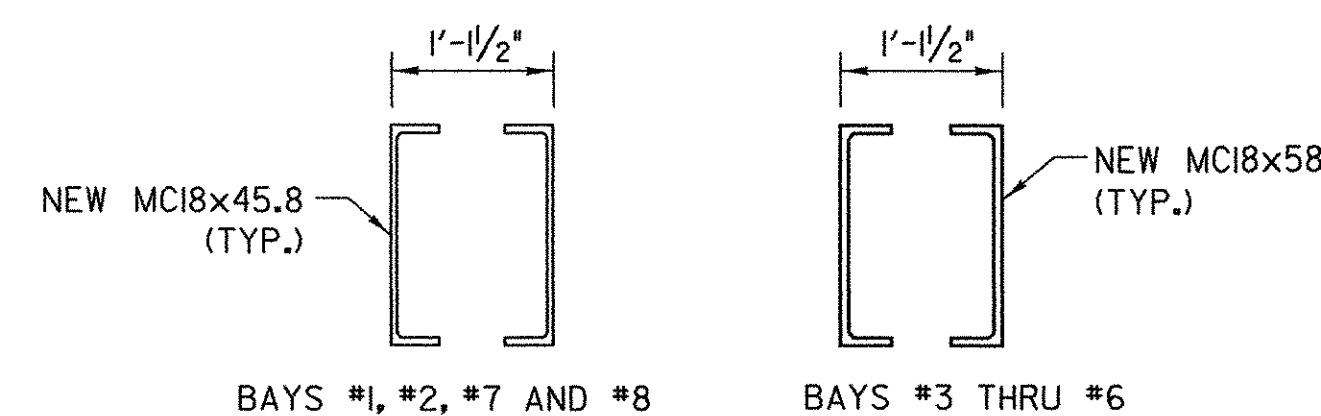
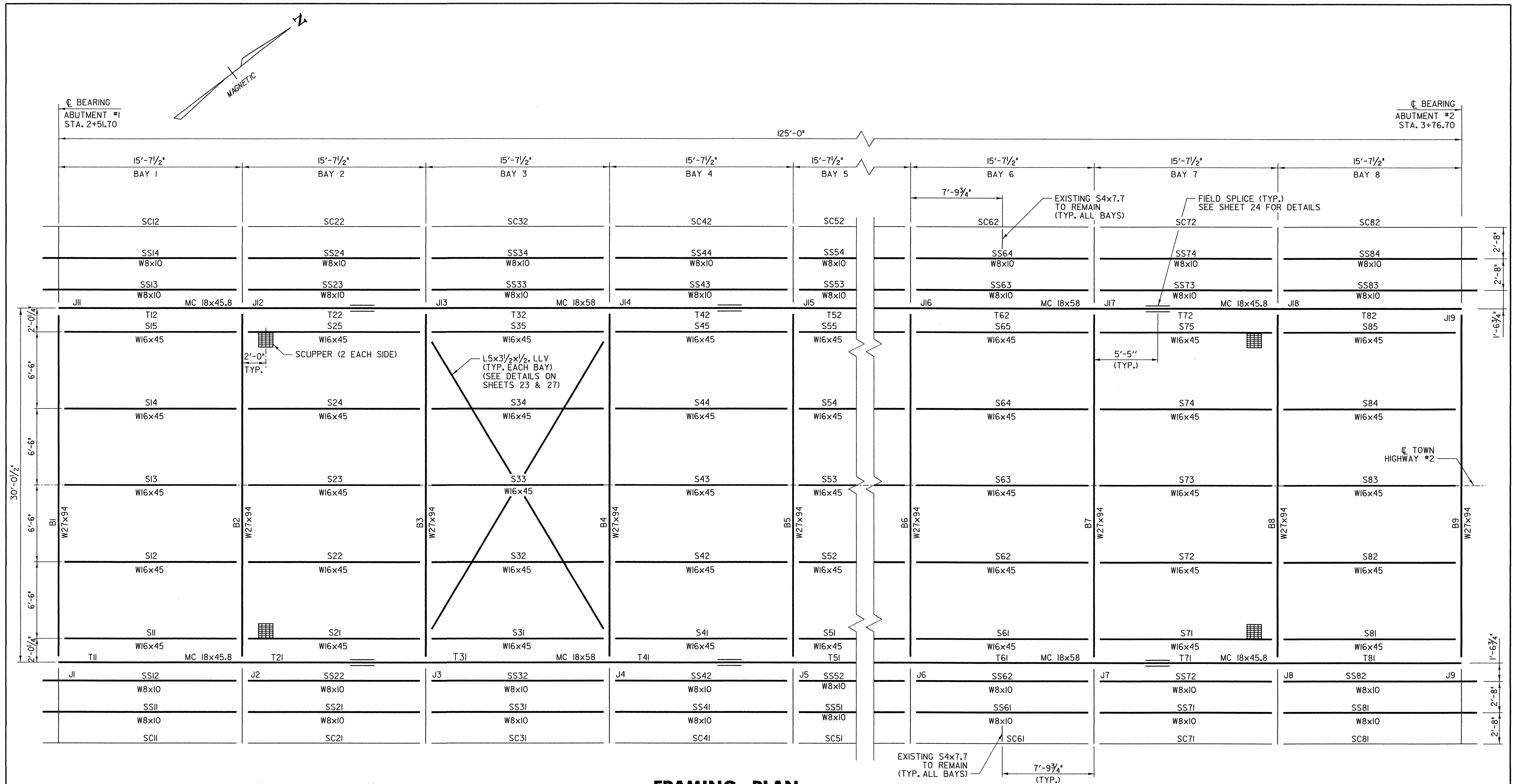
22. ALL NEW CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH STRENGTH BOLTS, MEETING AASHTO M-164 TYPE I. ALL BOLTS SHALL BE FULL DIAMETER BODY ROUND HEAD BOLTS MEETING ANSI/ASME B 18.5 REQUIREMENTS. EXCEPT BOLTS FOR THE NEW BRIDGE RAILING AND SIDEWALK STRINGERS SHALL BE 3/4" DIAMETER MEETING THE REQUIREMENTS ABOVE. CONNECTIONS NOT DESIGNATED SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL.
23. ALL BOLTS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M-298. BOLTS SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCIDENTAL TO ITEM 506.50, "STRUCTURAL STEEL, ROLLED BEAMS". THE FASTENERS SHALL RECEIVE INTERMEDIATE AND FINAL COATS OF THE PAINT SYSTEM AFTER INSTALLATION.
24. THE SURFACE PREPARATION OF THE EXISTING STEEL SHALL INCLUDE 100% REMOVAL OF THE EXISTING PAINT SYSTEM.
25. THE COLOR OF THE FINAL COAT OF PAINT SHALL BE GREEN CONFORMING TO SUBSECTION 708.03.
26. THE EXISTING HANDRAIL TO BE RETAINED SHALL HAVE THE EXISTING PAINT REMOVED AND BE PAINTED USING THE SAME PAINT SYSTEM AS THE BRIDGE STEEL. THE REMOVAL OF EXISTING PAINT AND PAINTING OF THE RETAINED HANDRAIL SHALL BE INCIDENTAL TO ITEMS 513.41, "SURFACE PREPARATION, FIELD (30 TONS)", 513.36, "CONTAINMENT & ENVIRONMENTAL PROTECTION, FIELD", AND 513.30, "STRUCTURAL PAINTING, FIELD APPLIED (30 TONS)".
27. ALL NEW STEEL ELEMENTS PROVIDED UNDER THE ITEMS 506.50, "STRUCTURAL STEEL, ROLLED BEAMS", 900.640, "SPECIAL PROVISIONS (BOX BEAM GUARD RAIL, TRUSS)" AND 900.640, "SPECIAL PROVISION (BRIDGE RAILLING, TRUSS)" SHALL BE GIVEN A SHOP APPLIED PRIMER, INTERMEDIATE AND TOP COATING OF PAINT PER SECTION 513. THE PRIMER SYSTEM USED IN THE SHOP SHALL BE THE SAME SYSTEM AS THAT EMPLOYED FOR THE FIELD APPLIED PAINT SYSTEM.
28. AFTER THE FINAL COAT OF FIELD APPLIED PAINT HAS BEEN APPLIED AND THOROUGHLY CURED, BUT PRIOR TO THE REMOVAL OF THE ENVIRONMENTAL PROTECTION, THE FOLLOWING STRUCTURAL STEEL SHALL BE GREASED PER SECTION 513; ENTIRE BRIDGE FLOOR SYSTEM, EXCEPT THE UNDERSIDE OF THE DECK. ALL TRUSS COMPONENTS BELOW THE TOP OF THE CURB, AND THE BEARINGS. PAYMENT FOR THE GREASE SHALL BE INCIDENTAL TO THE ITEM 513.30 "STRUCTURAL PAINTING, FIELD APPLIED (30 TONS)". THE COLOR OF THE GREASE SHALL BE GREEN.

EROSION CONTROL

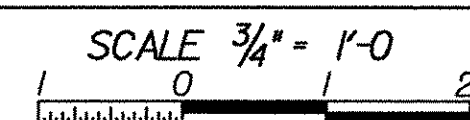
29. APPROPRIATE EROSION CONTROL MEASURES SHALL BE UTILIZED THROUGHOUT THE DURATION OF THE CONSTRUCTION AS INDICATED ON THE PLANS AND AS DIRECTED BY THE ENGINEER.



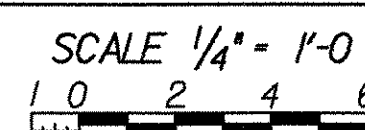
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PROJECT NUMBER: BHF 0302 (3) S	
FILE NAME: ...\\Design\\rich-notes.dgn	PLOT DATE: 12/18/2007
PROJECT LEADER: MJC	DRAWN BY: AET
DESIGNED BY: SEB	CHECKED BY: MJC
PROJECT NOTES	SHEET 21 OF 41



BOTTOM CHORD SECTIONS



FRAMING PLAN

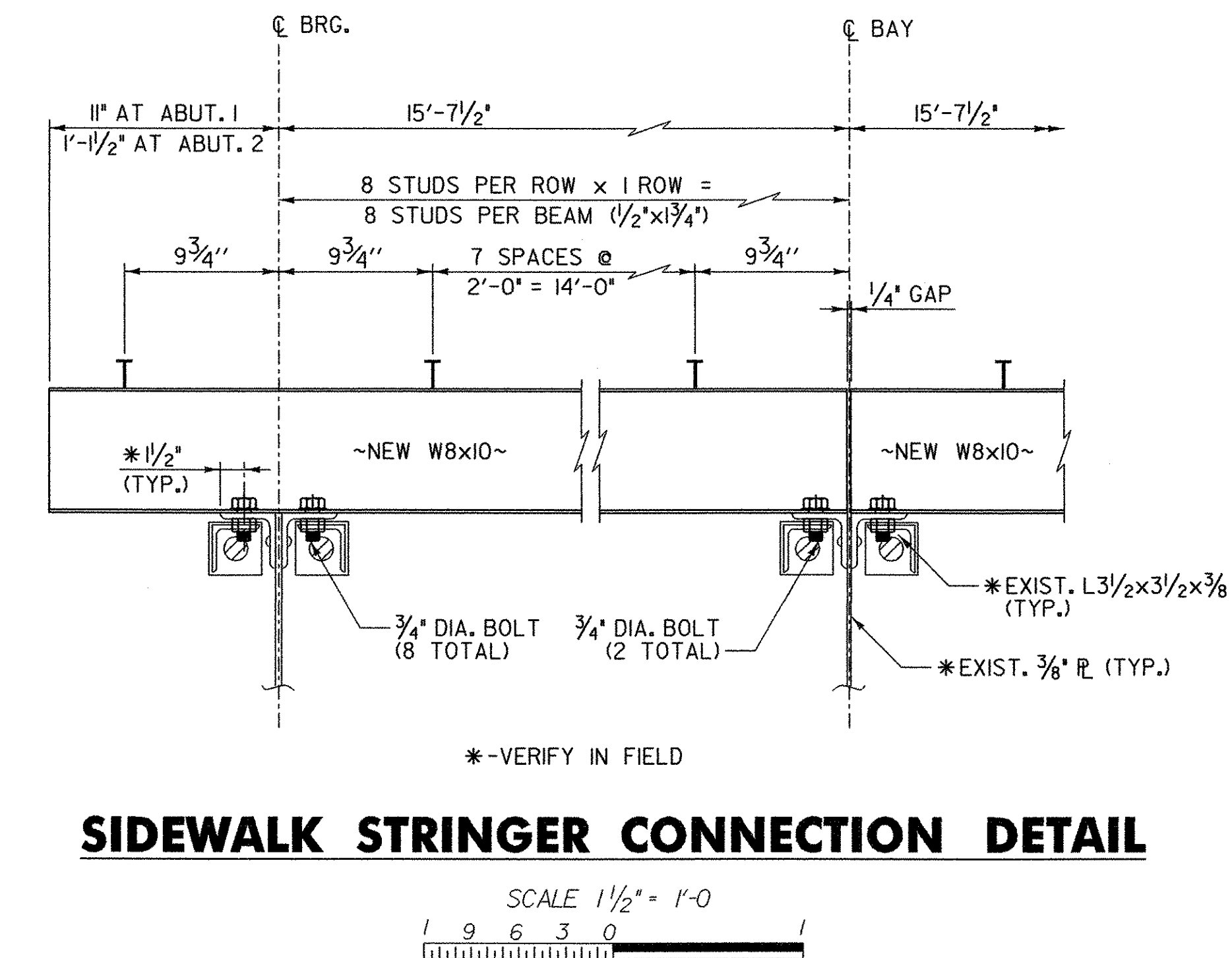
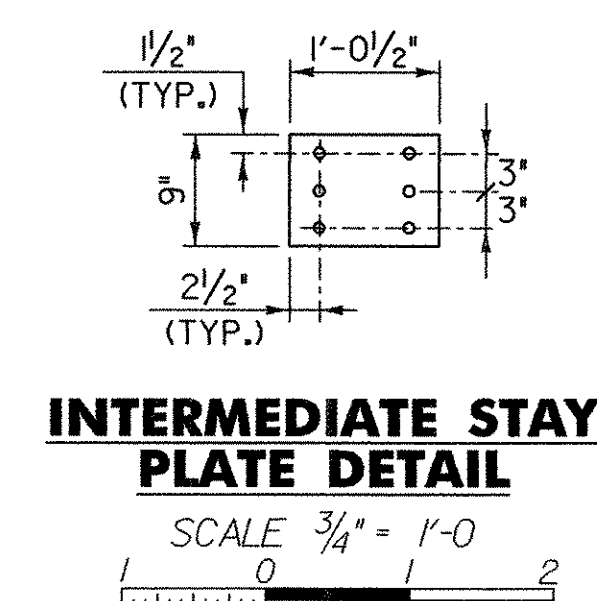
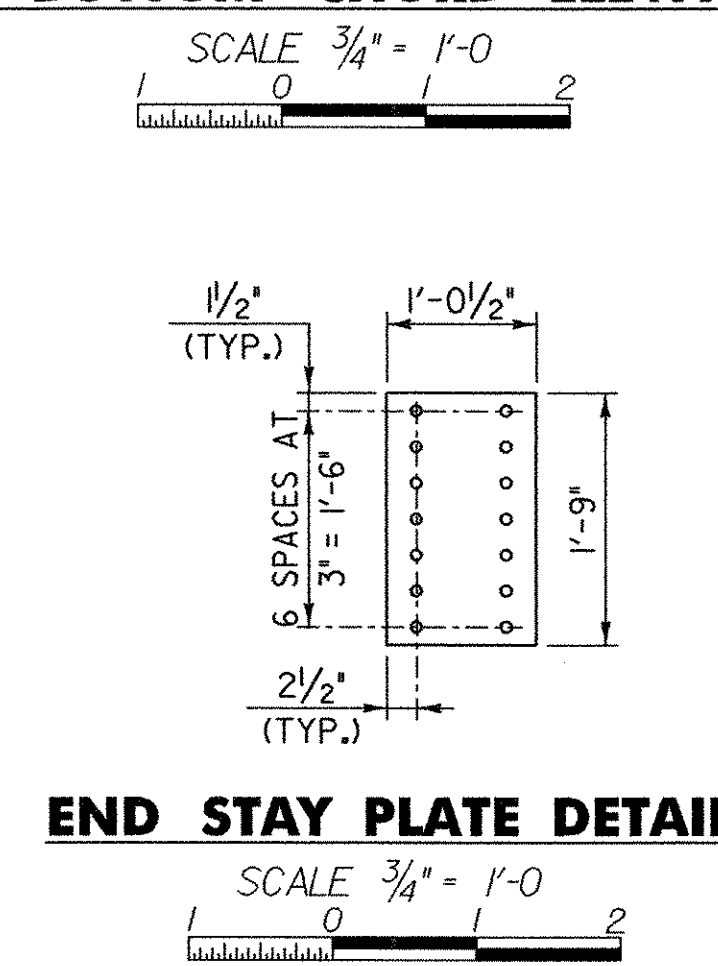
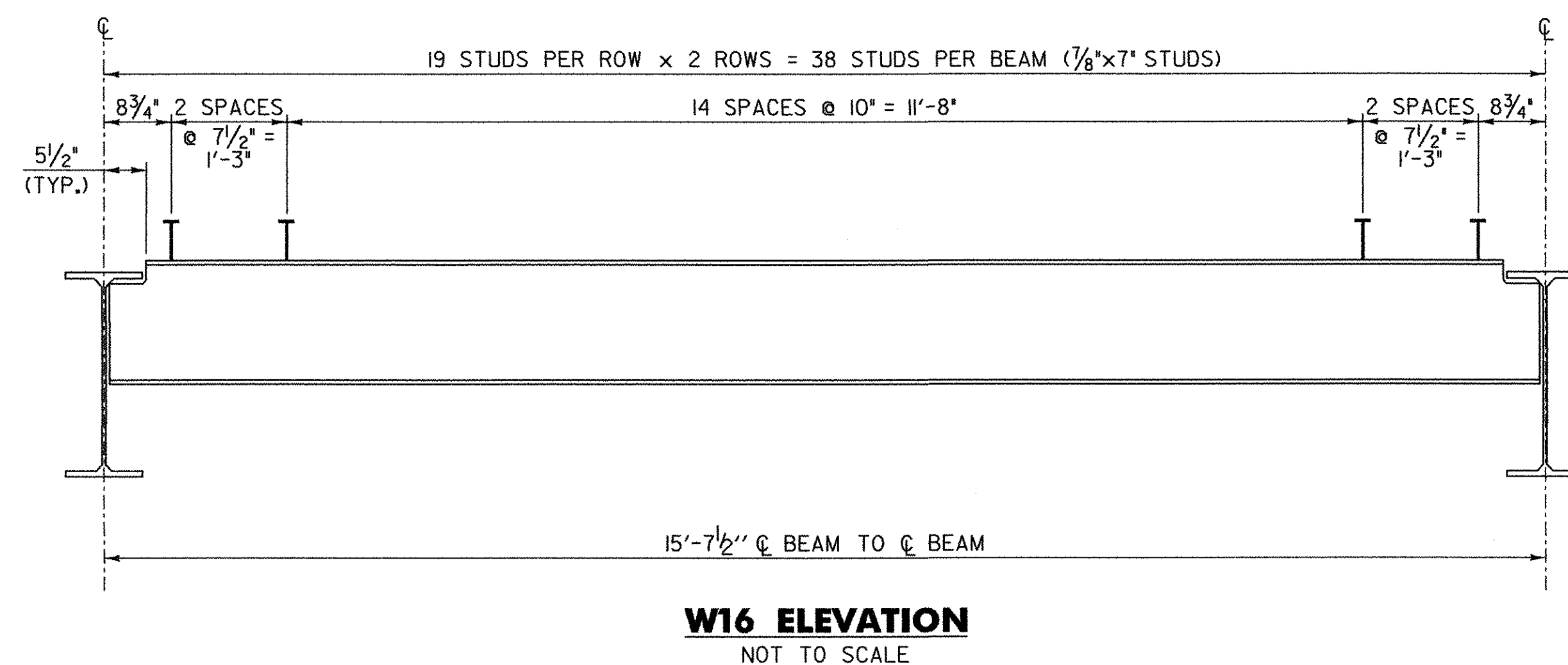
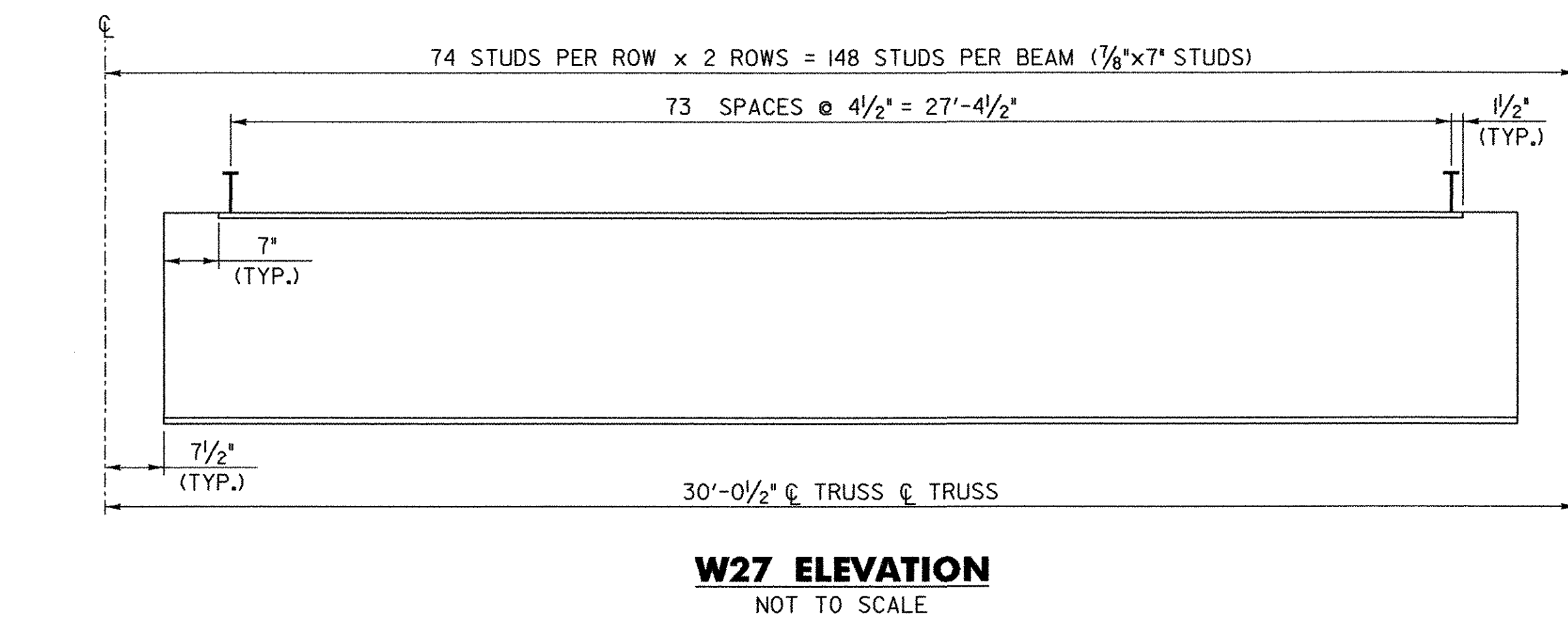
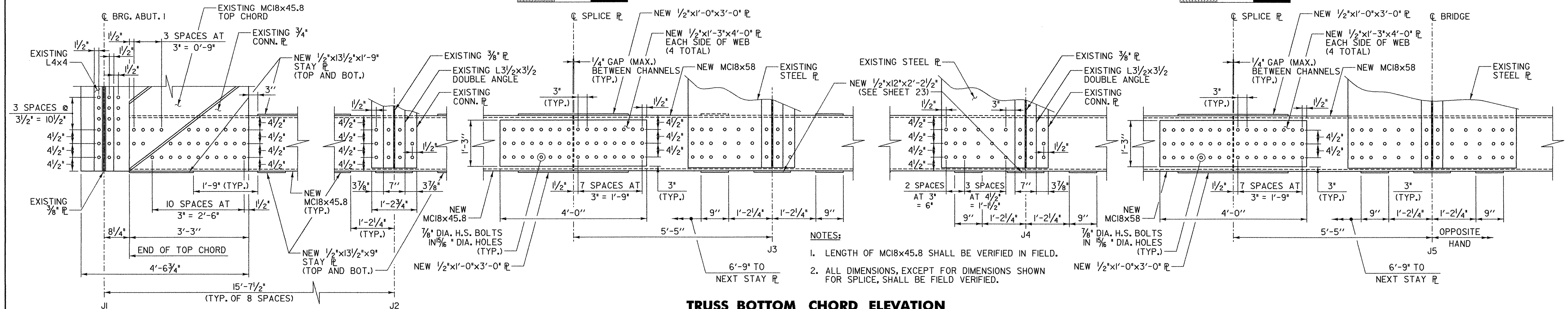
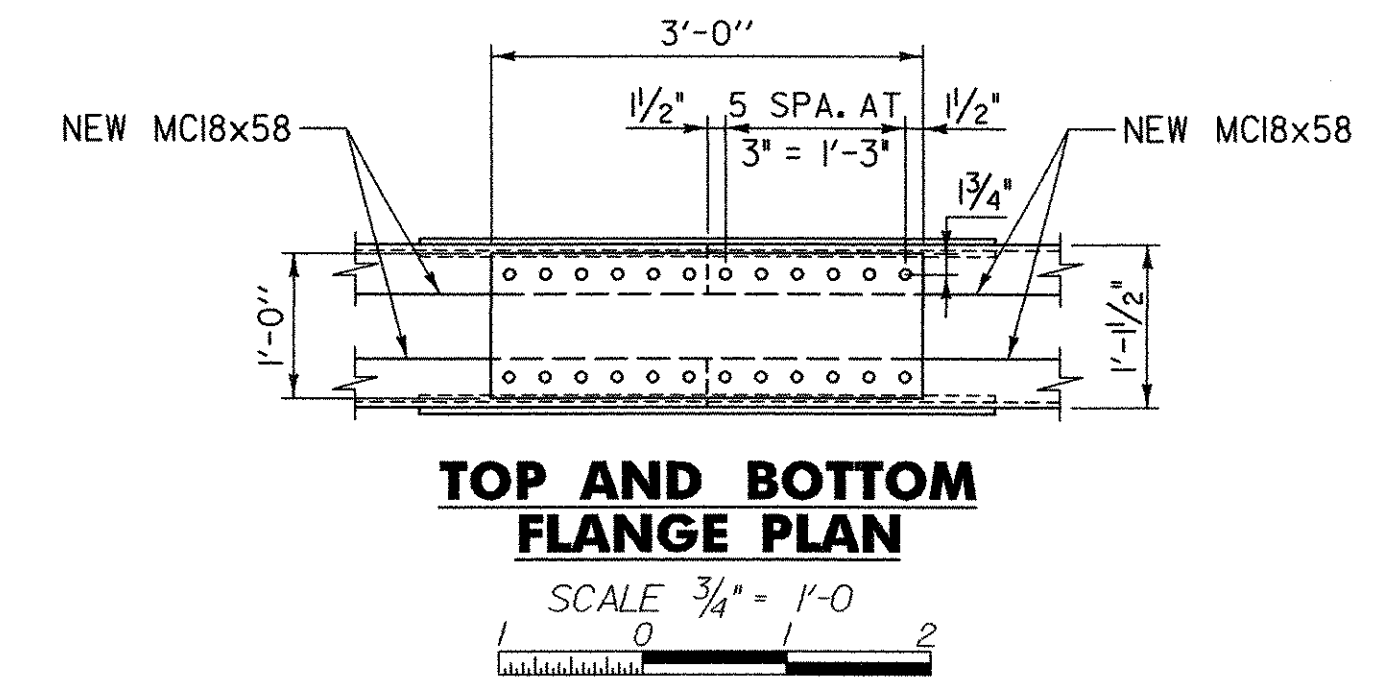
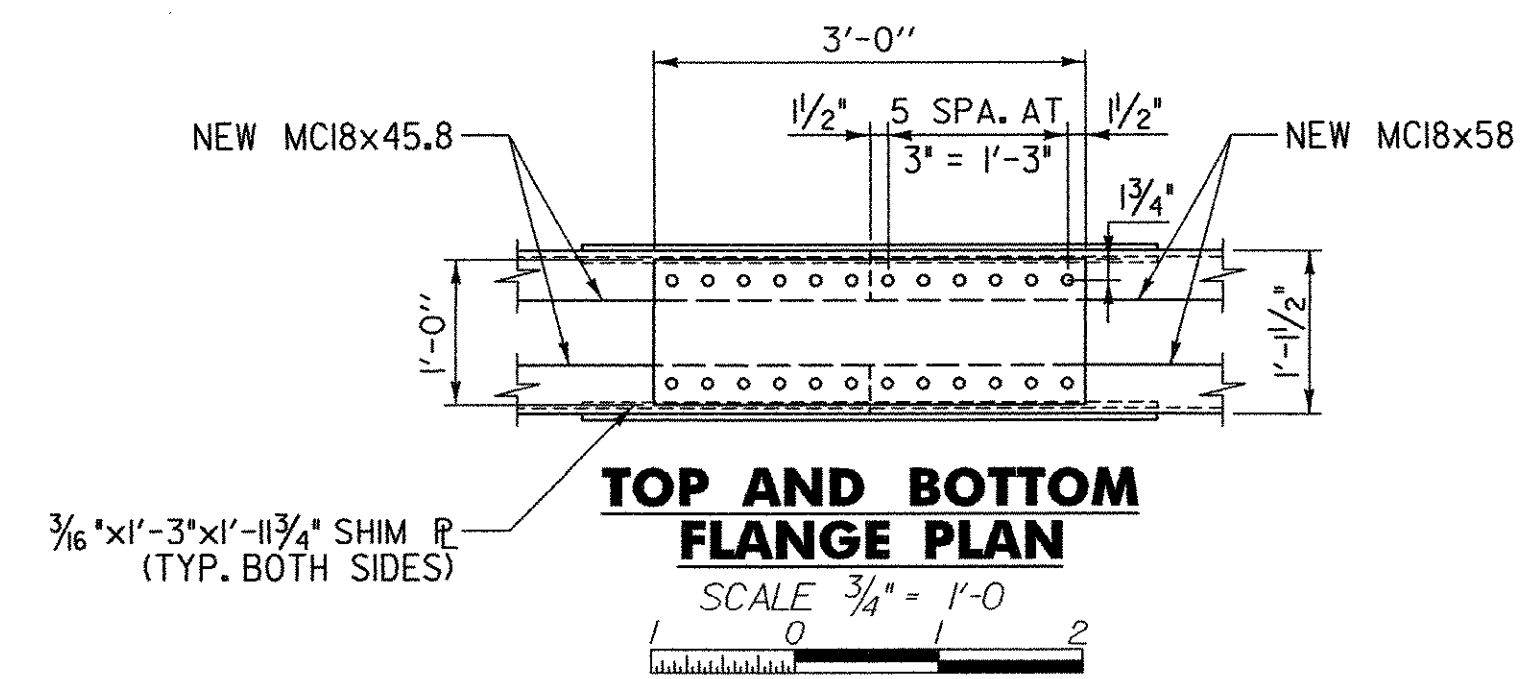


LEGEND

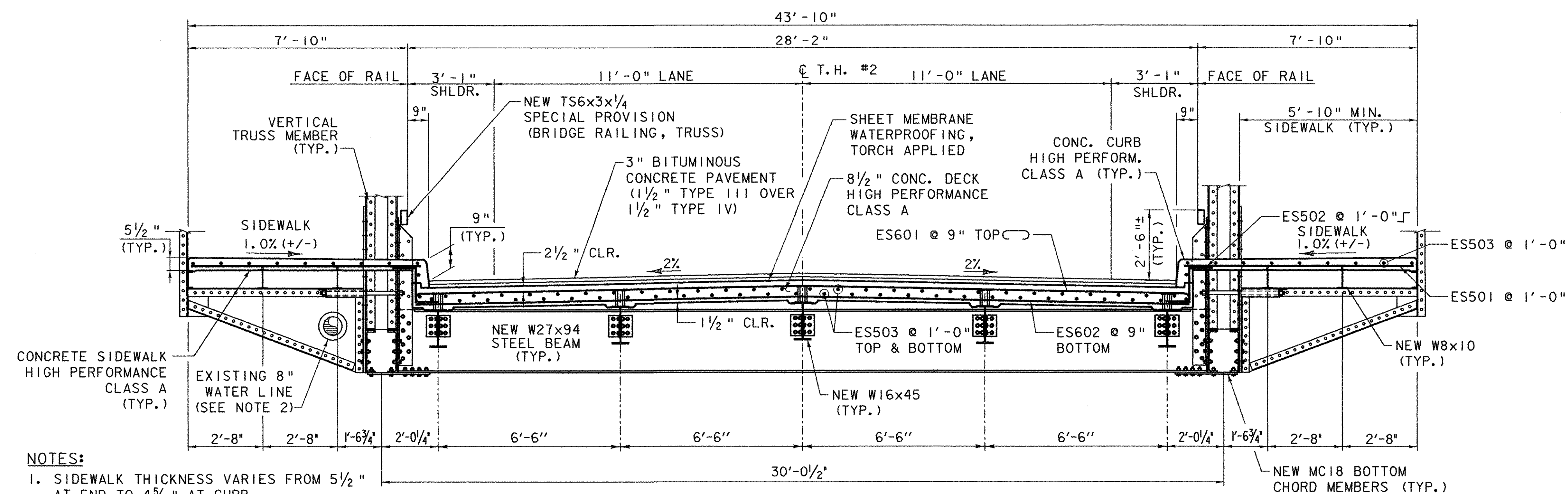
- J = JOINT
- S = FLOOR STRINGER (NEW W16x45)
- B = BEAM (NEW W27x94)
- T = TRUSS BOTTOM CHORD (SEE SECTIONS AT LEFT)
- SS = SIDEWALK STRINGER (NEW W8x10)
- SC = EXISTING SIDEWALK CHANNEL (C7)
- = NEW FRAMING MEMBER
- = EXISTING FRAMING MEMBER TO BE RETAINED



PROJECT NAME:	RICHFORD	PLOT DATE:	12/18/2007
PROJECT NUMBER:	BHF 0302 (3) S	DRAWN BY:	JJS
FILE NAME:	...Design\Rich-frame.dgn	CHECKED BY:	MJC
PROJECT LEADER:	MJC	SHEET	22 OF 41
DESIGNED BY:	SEB		
FRAMING PLAN			

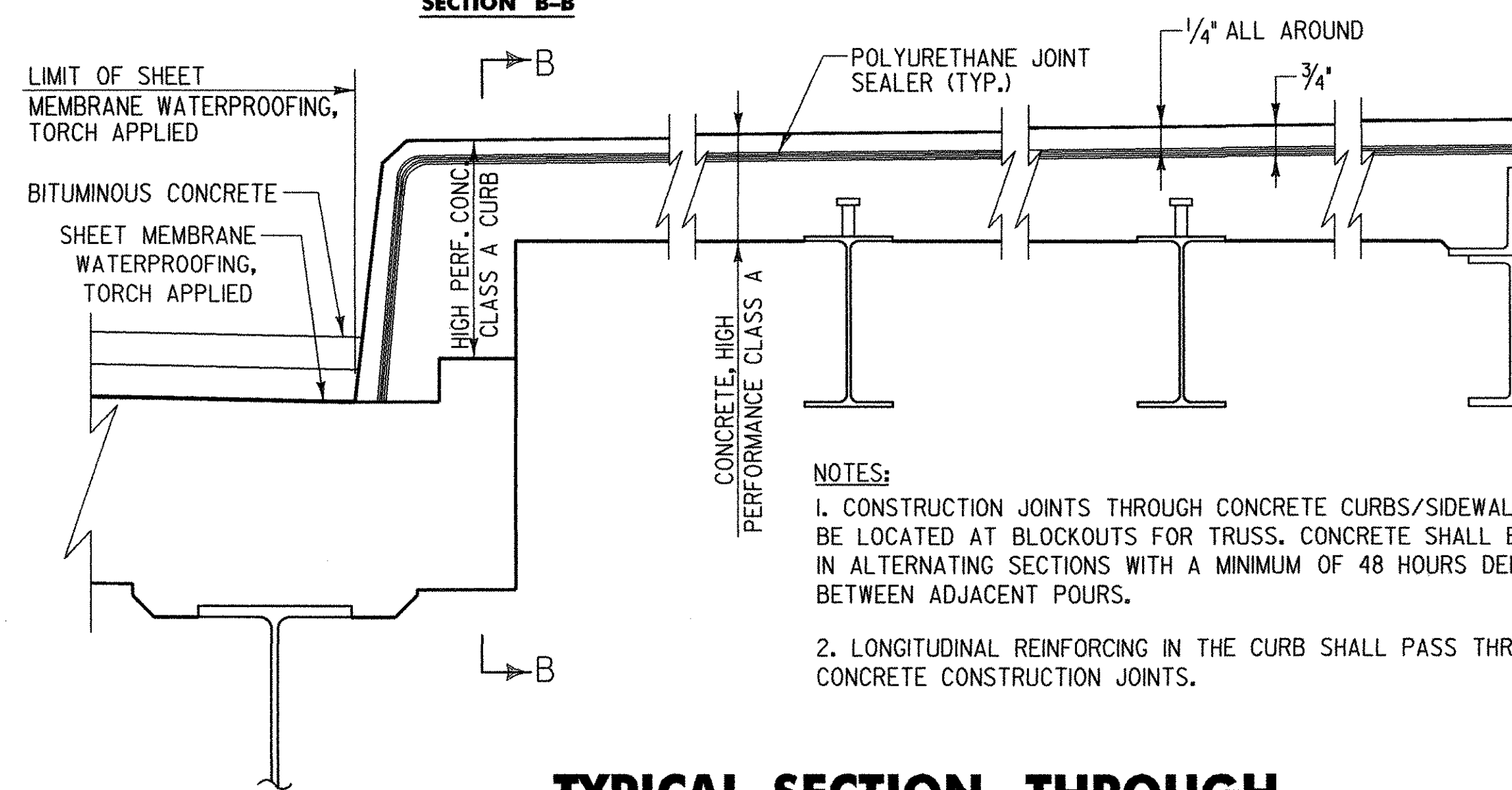
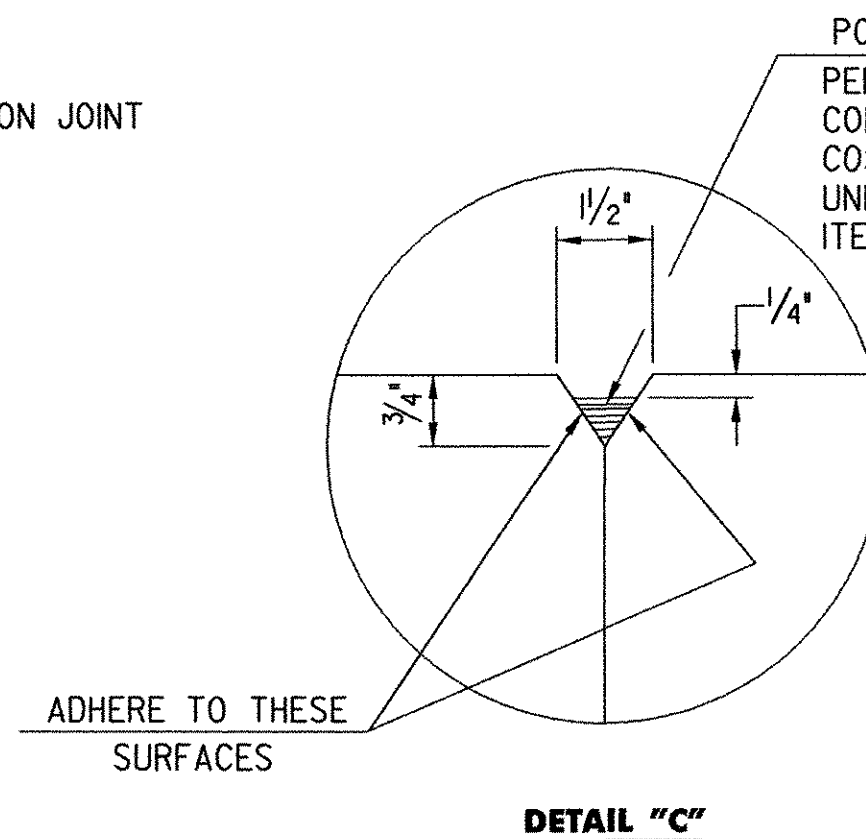
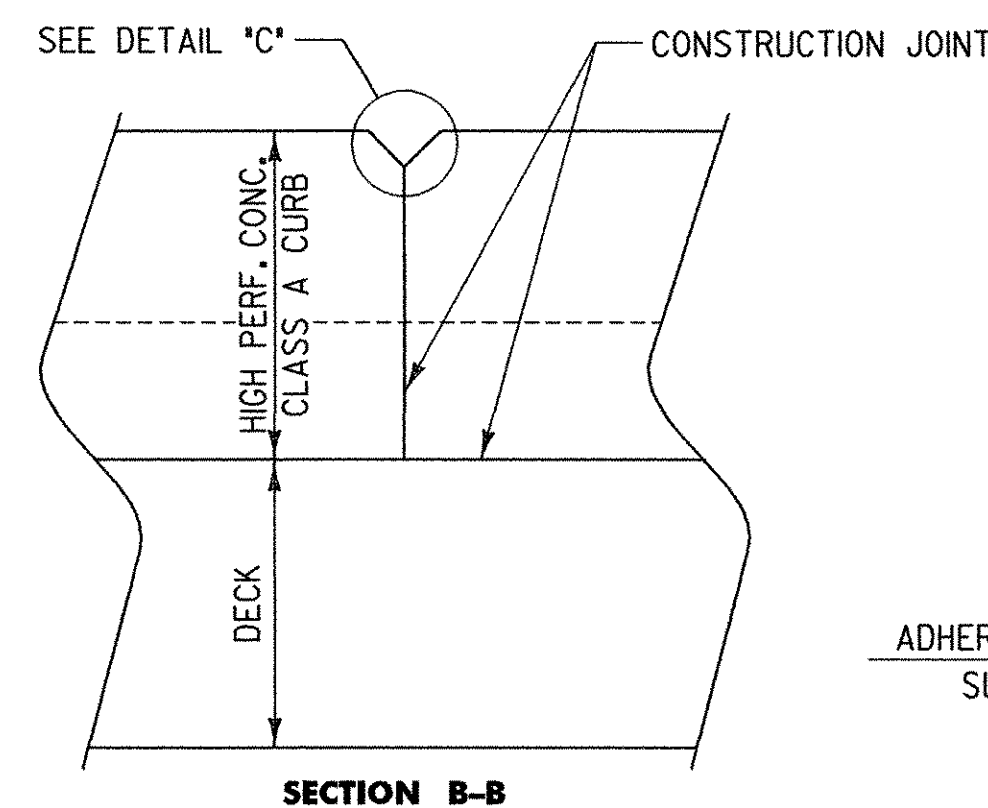


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		DESIGNED BY:	SEB	CHECKED BY:	MJC
		STEEL DETAILS SHEET 2		SHEET	24 OF 41



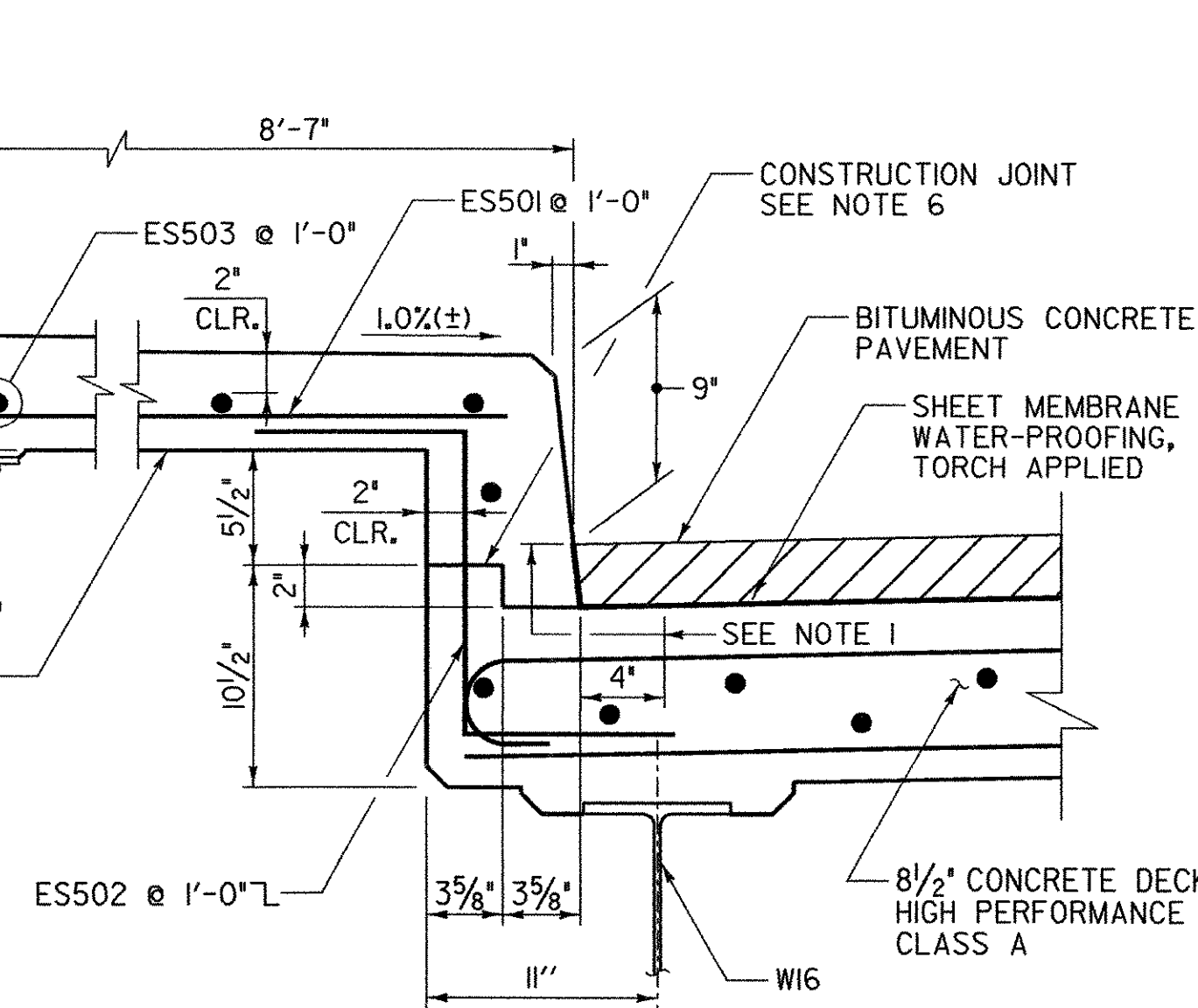
TYPICAL DECK SECTION

SCALE 3/8" = 1'-0"



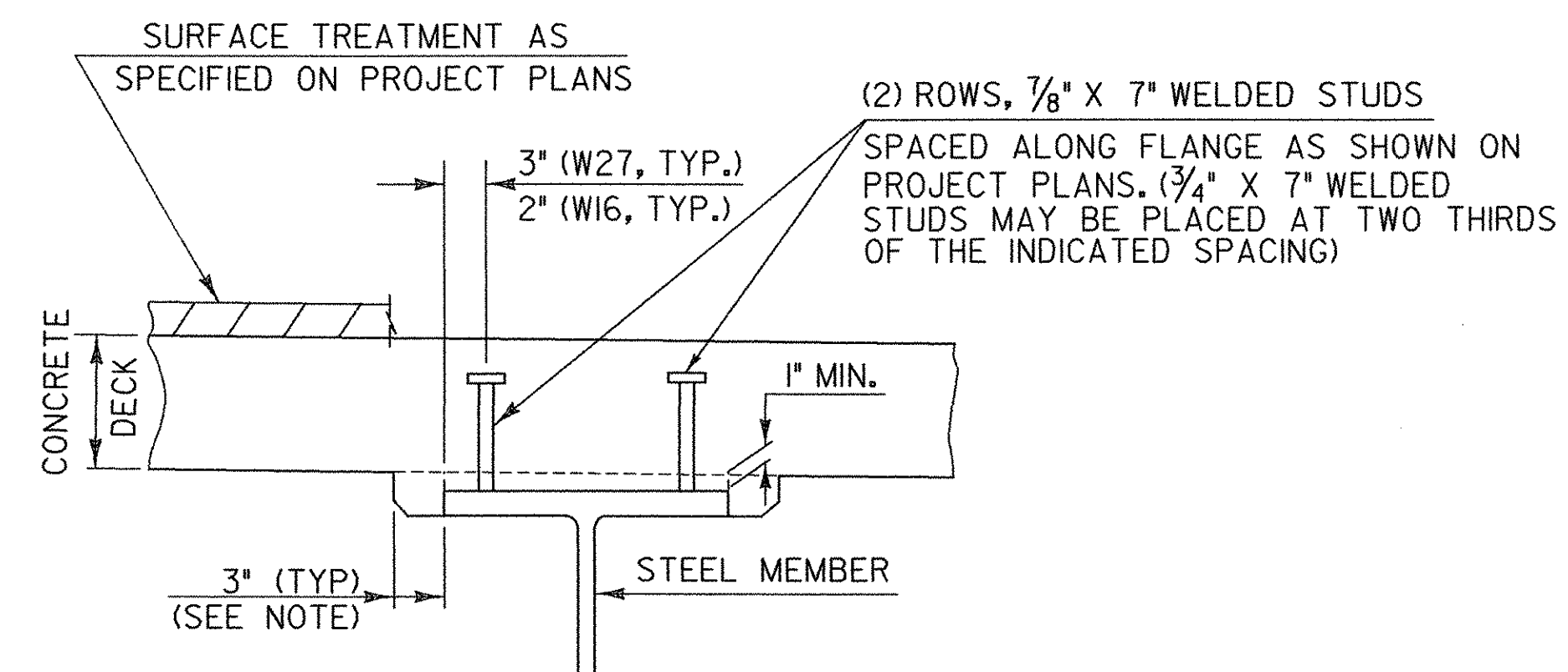
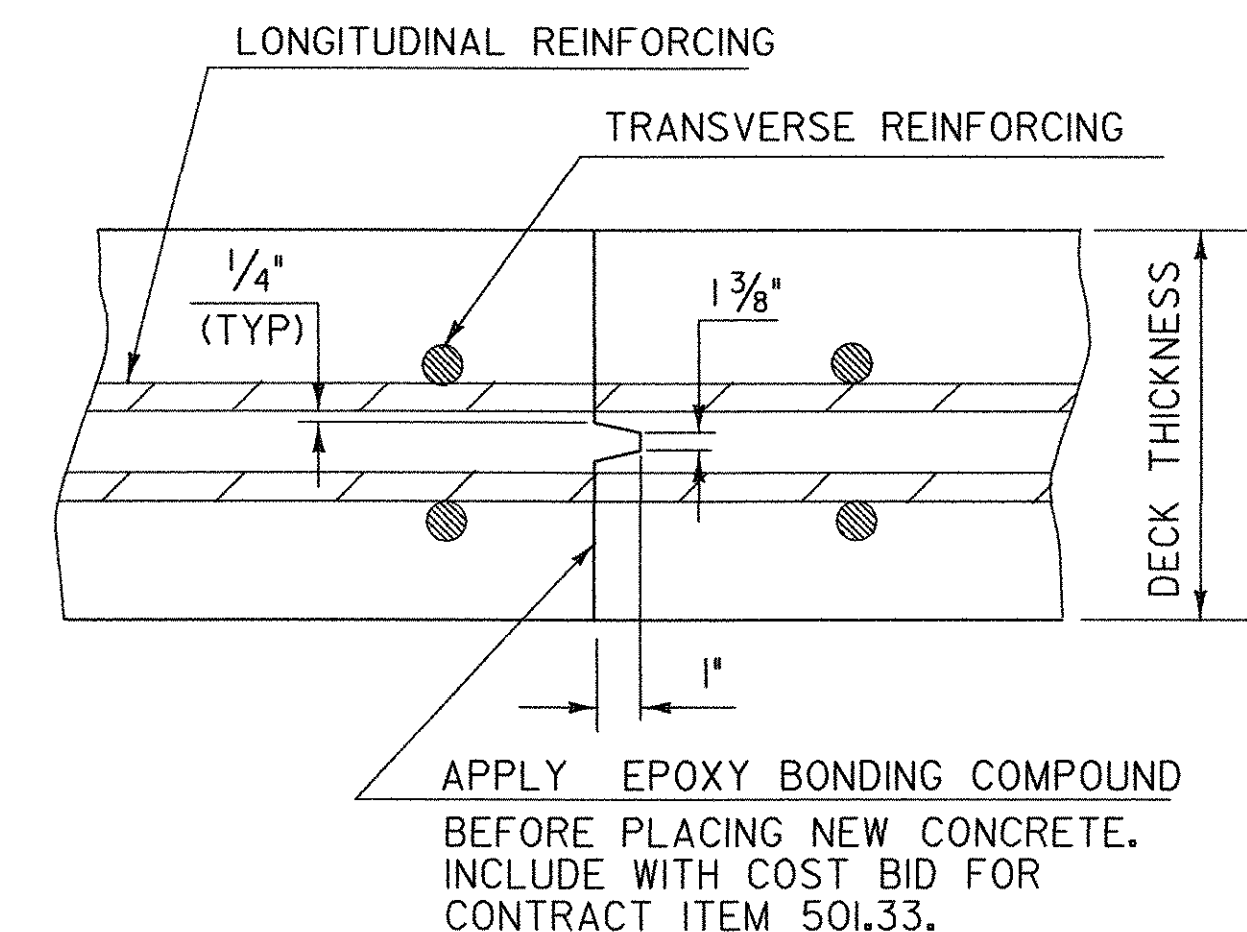
TYPICAL SECTION THROUGH CONCRETE CURB / SIDEWALK CONSTRUCTION JOINT

NOT TO SCALE



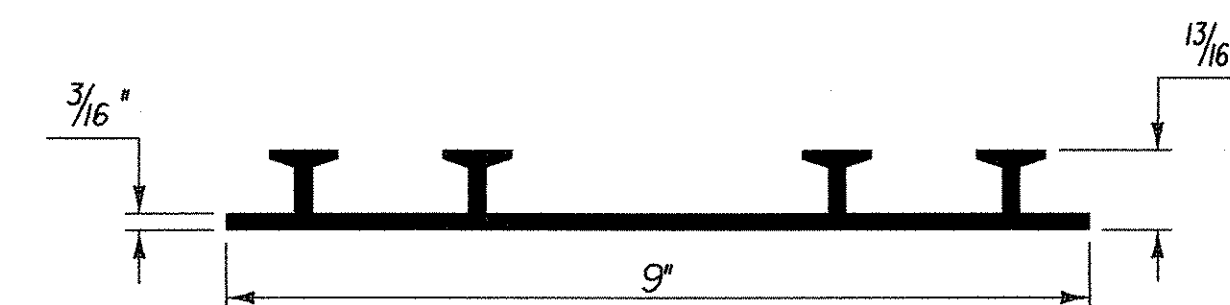
CONCRETE CURB AND SIDEWALK DETAIL

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



HAUNCH AND SHEAR CONNECTOR DETAILS

NOT TO SCALE

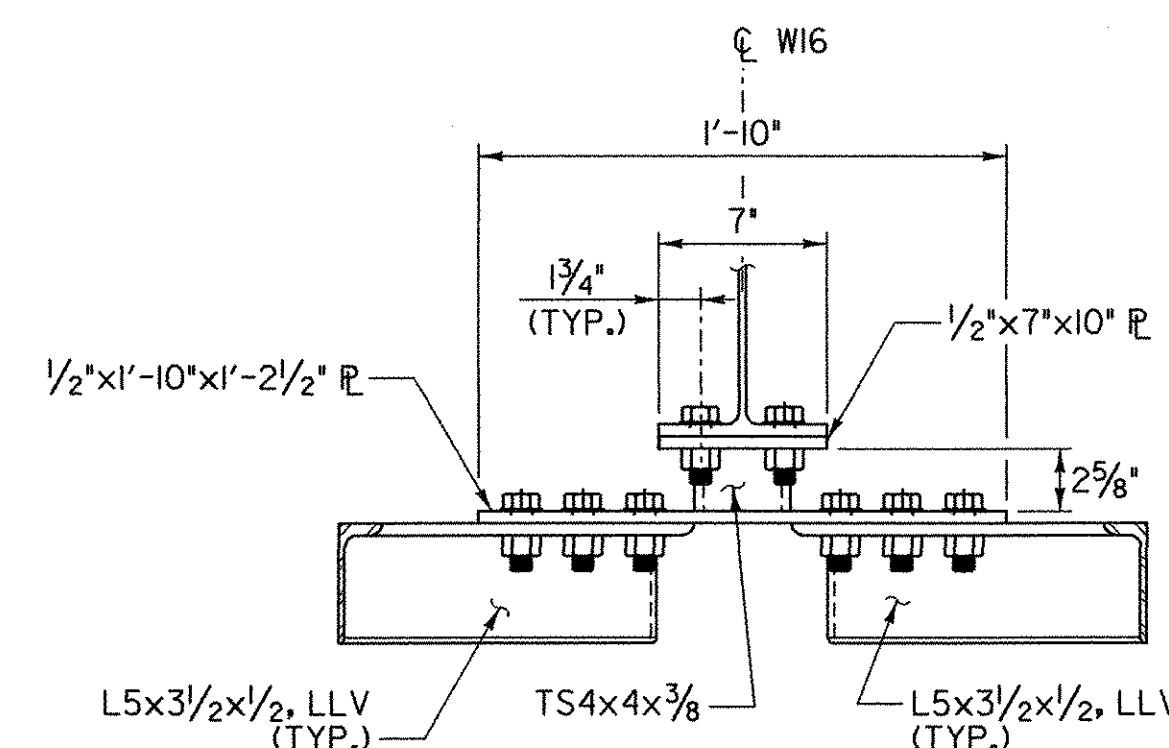
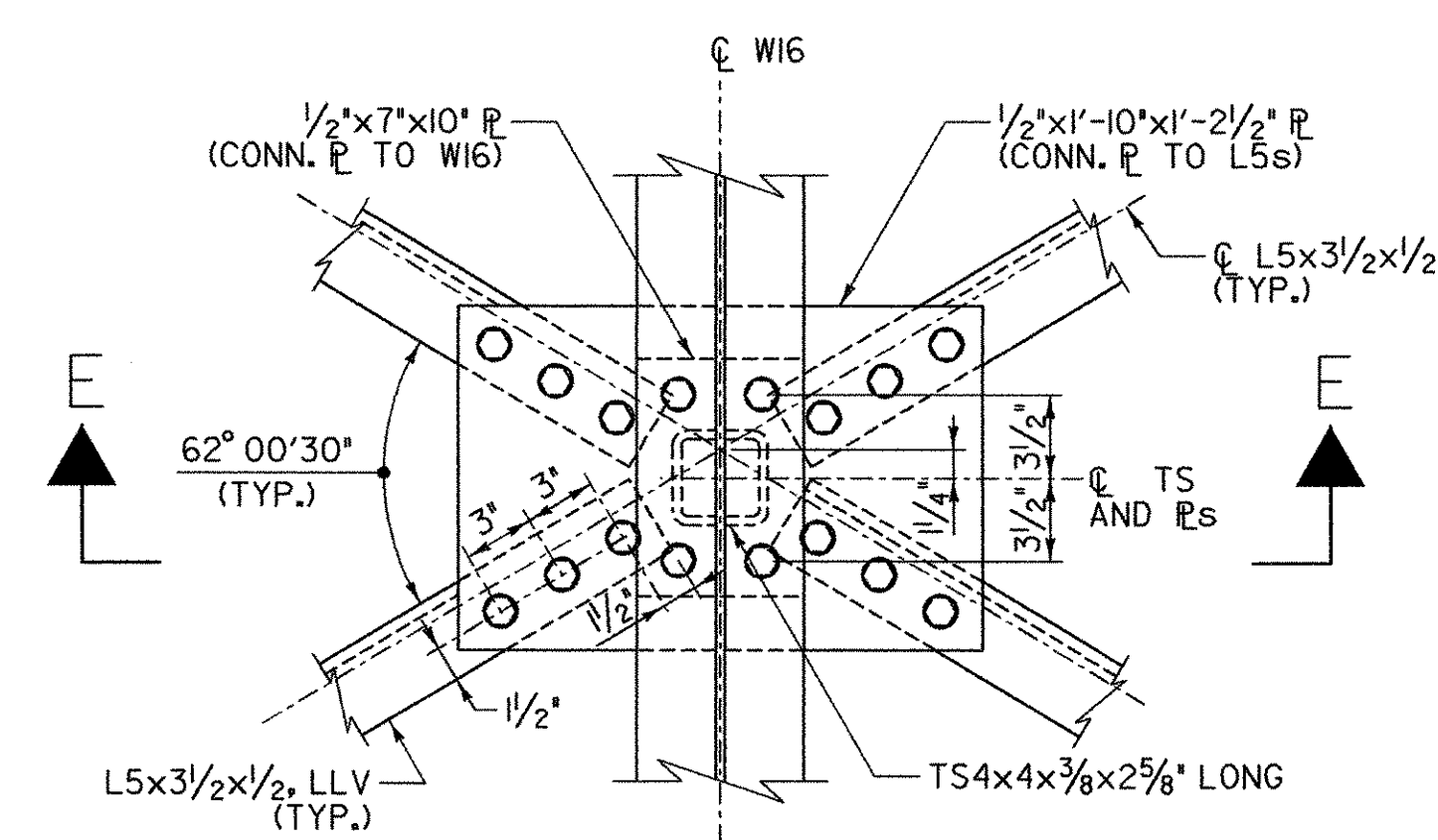
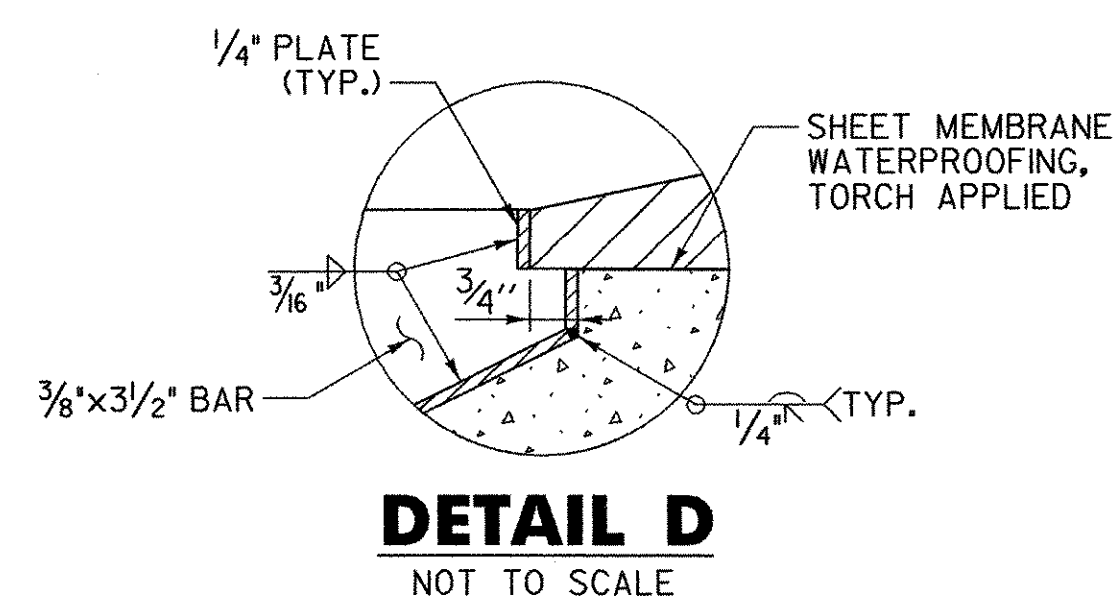
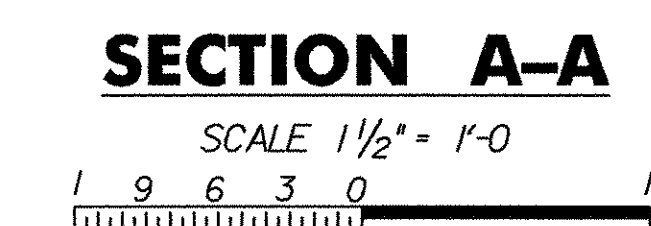
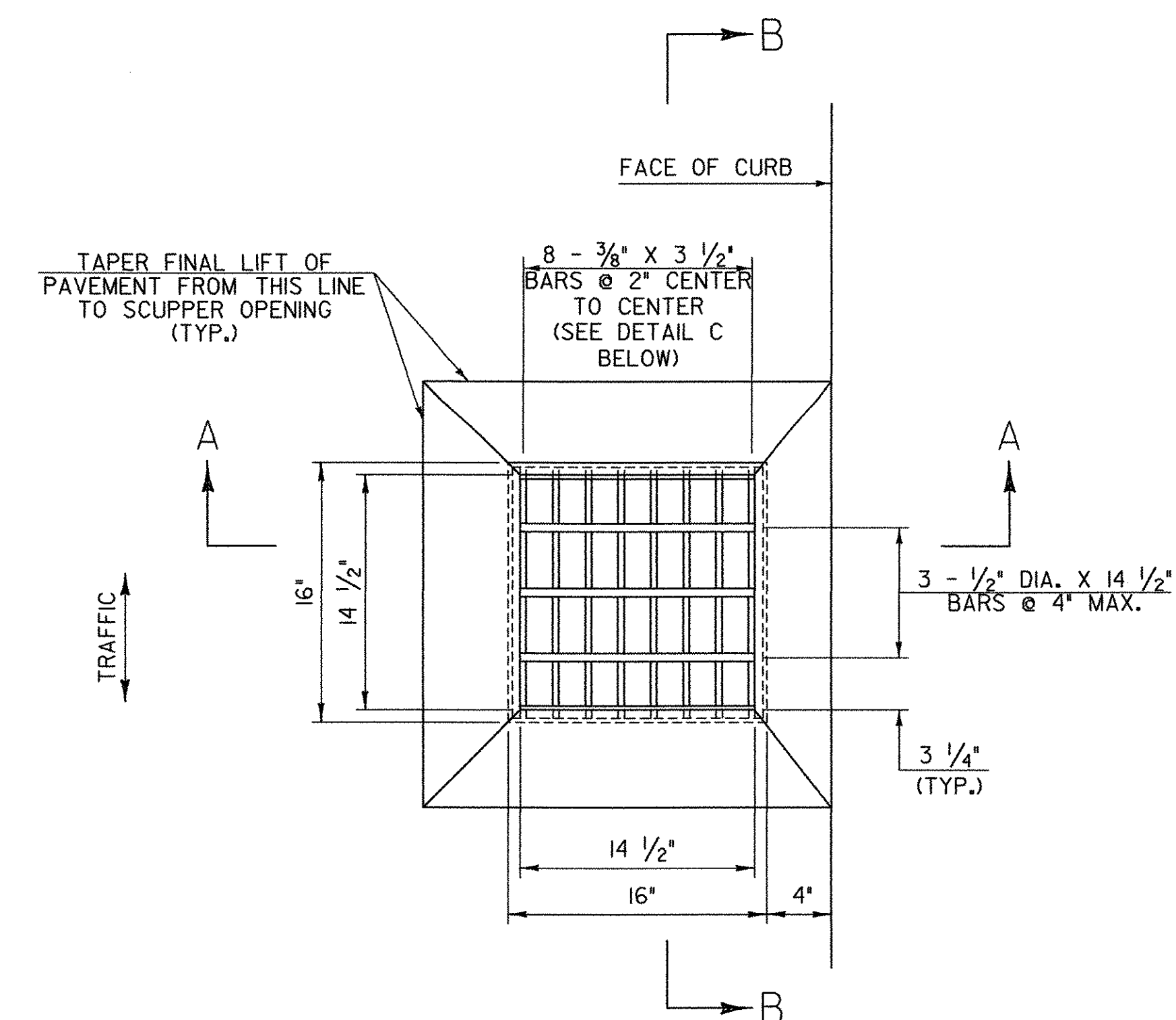
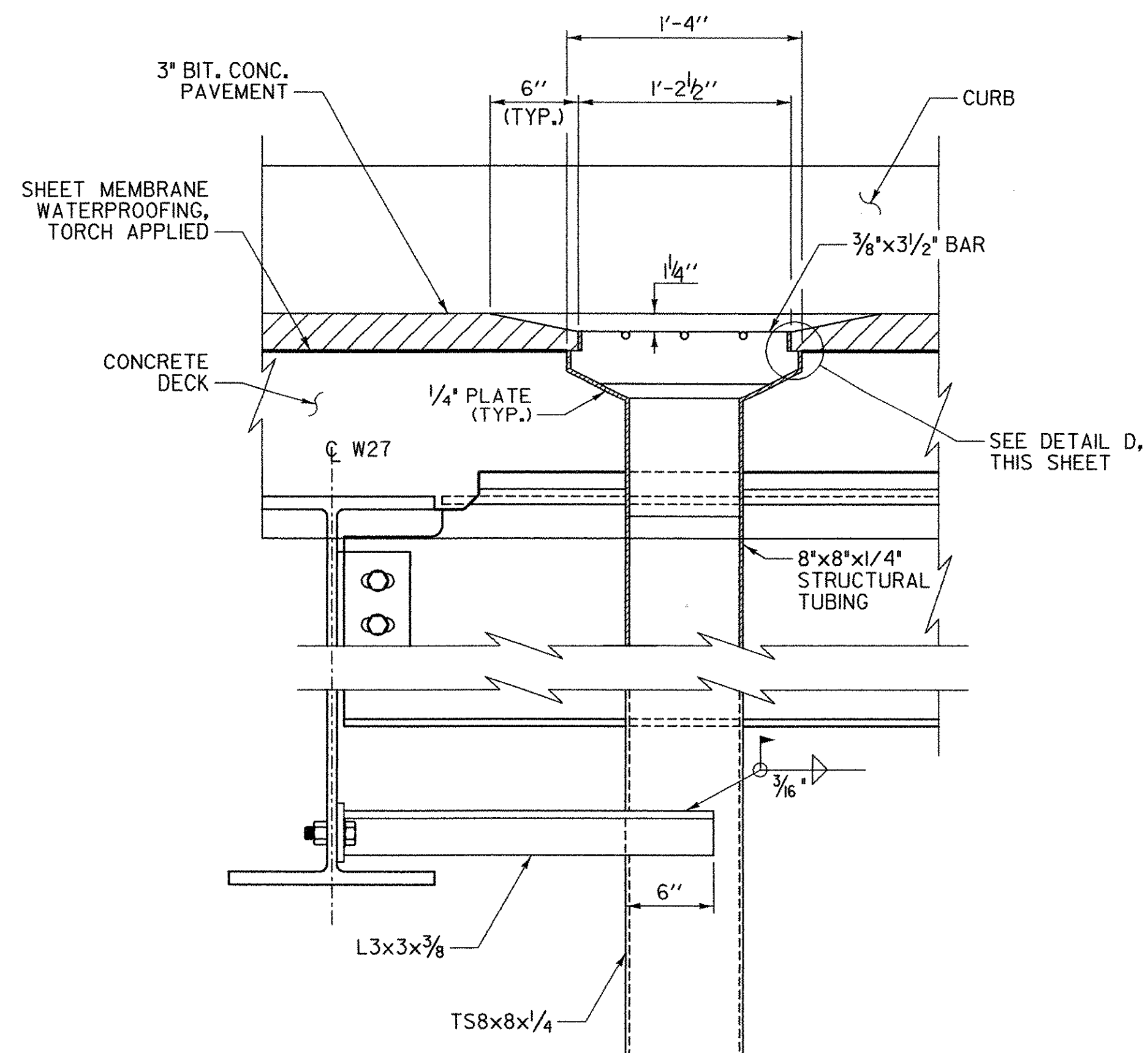
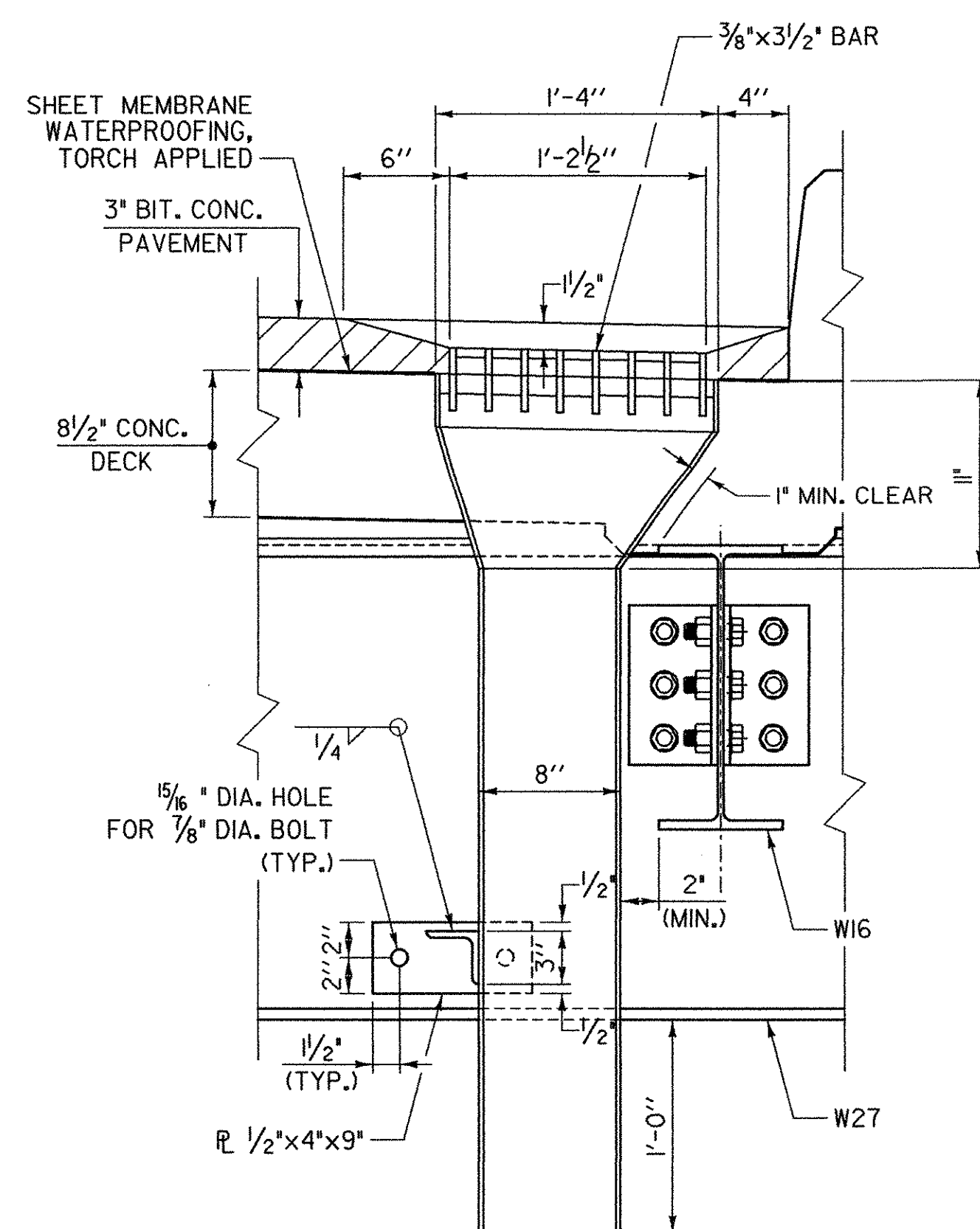


P. V. C. WATERSTOP FOR CONSTRUCTION JOINTS

THE COSTS FOR P. V. C. WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 501.34. OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL OF THE ENGINEER.



PROJECT NAME:	RICHFORD
PROJECT NUMBER:	BHF 0302 (3) S
FILE NAME:	...Design\Rich-decksect.dgn
PROJECT LEADER:	MJC
DESIGNED BY:	SEB
TYPICAL DECK SECTION AND DETAILS	
PLOT DATE:	12/18/2007
DRAWN BY:	AET
CHECKED BY:	MJC
SHEET	25 OF 41



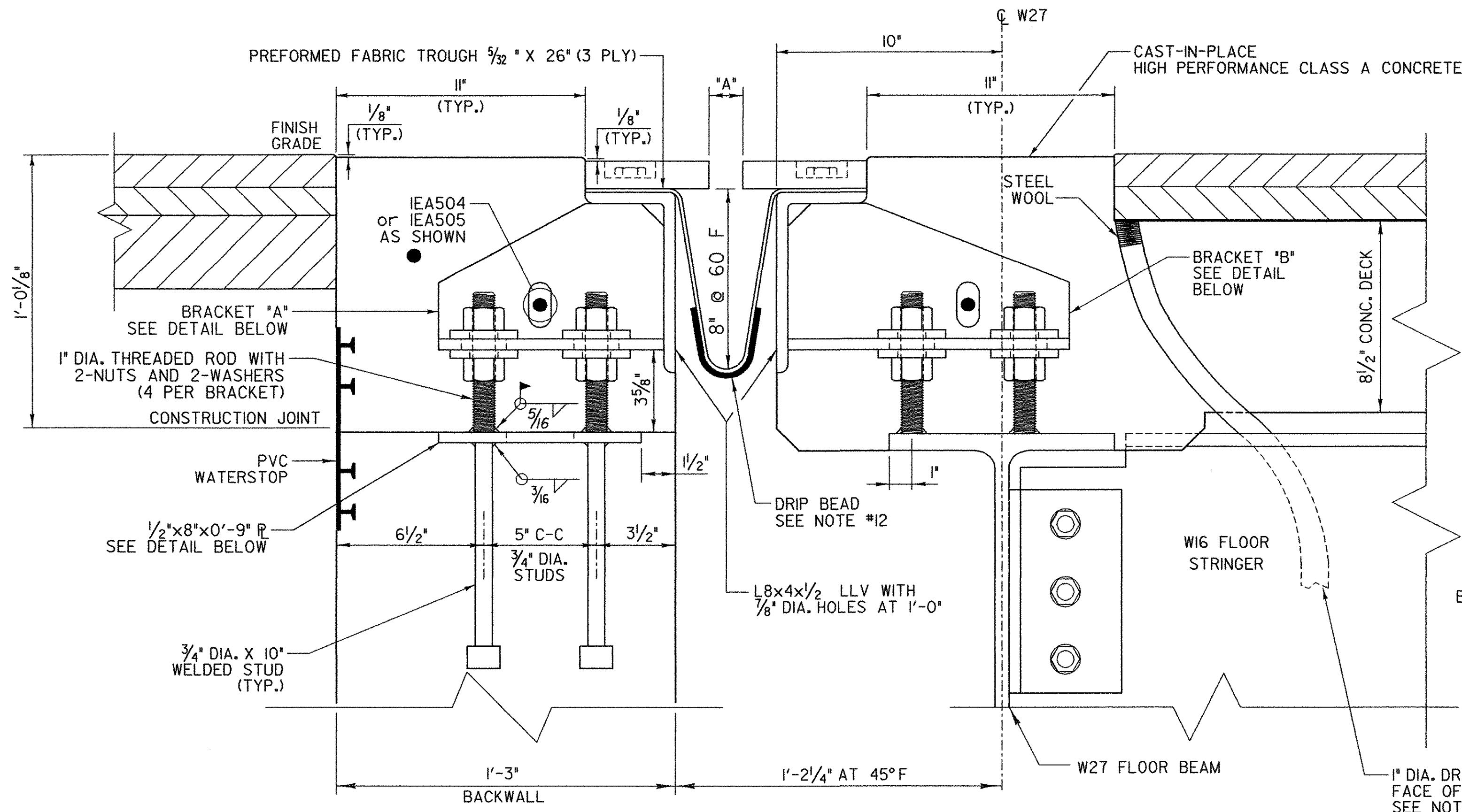
SCUPPER NOTES

1. HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO SUBSECTION 714.11.
2. ALL PLATES, BARS, AND ANGLES SHALL CONFORM TO SUBSECTION 714.03.
3. ALL SCUPPERS, INCLUDING SUPPORT ANGLES, SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH SUBSECTION 506.15, PART (a).
4. THE TOP SURFACE OF THE SCUPPER SHALL BE SLOPED TO MATCH ROADWAY SLOPE AND GRADE.
5. ANY PLACE WHERE THE GALVANIZING HAS BEEN REMOVED FROM THE SCUPPER EITHER BY CUTTING, BURNING, WELDING, PLACING, OR ANY OTHER MEANS, SHALL BE REPAIRED PER SECTION 513.
6. SCUPPERS SHALL BE PAID FOR UNDER ITEM 506.60, "STRUCTURAL STEEL"

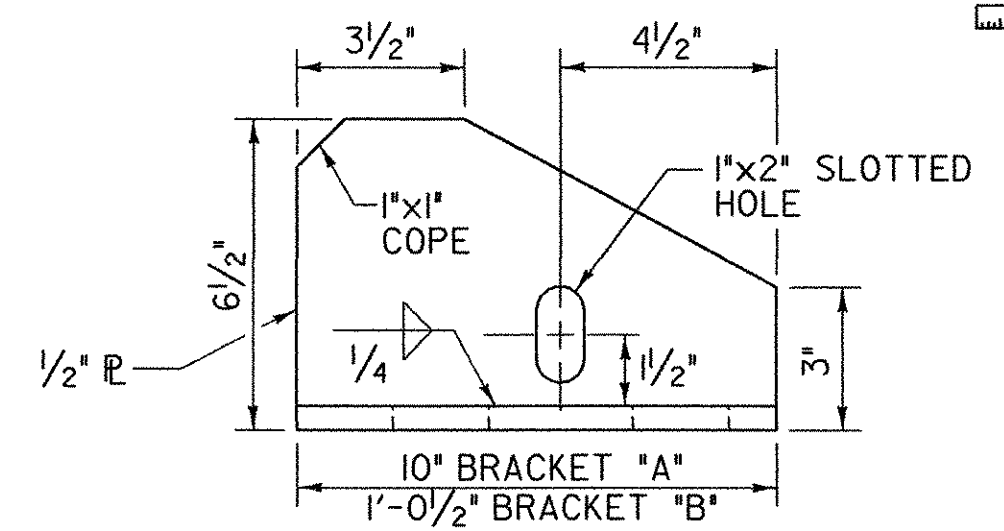
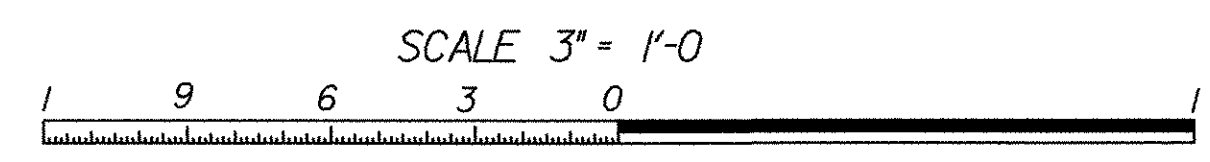


PROJECT NAME: RICHFORD
PROJECT NUMBER: BHF 0302 (3) S

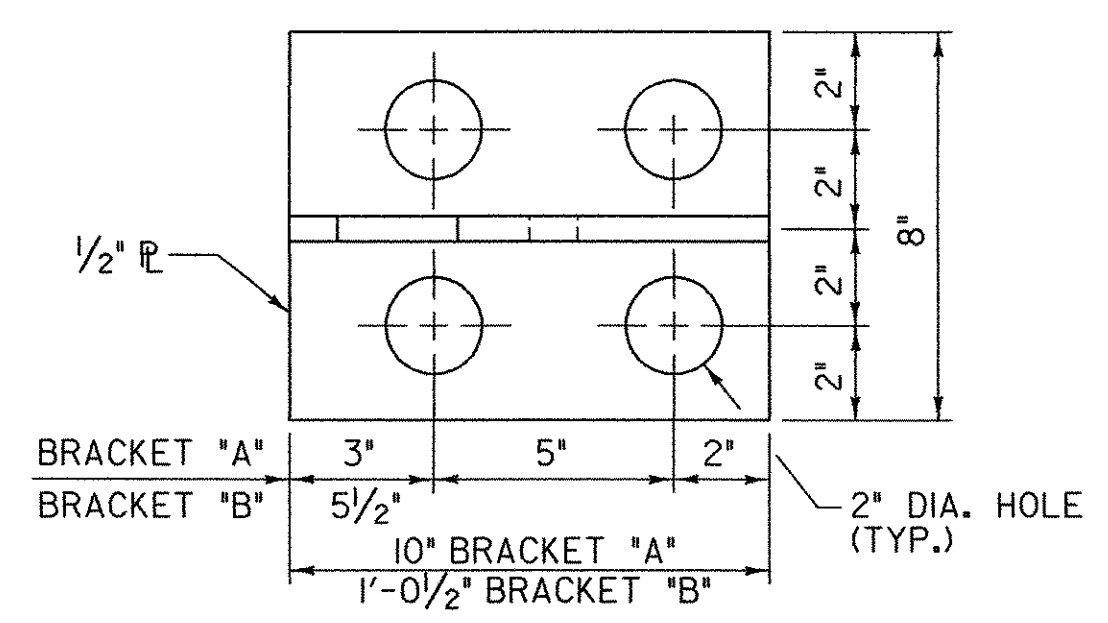
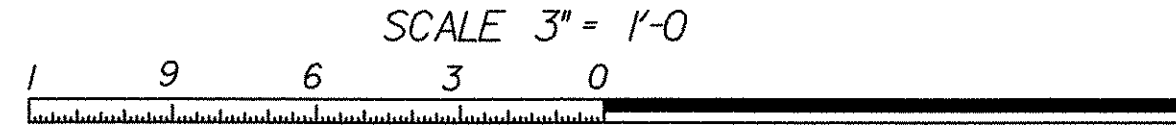
FILE NAME: ...\\Design\\rich-scupper.dgn	PLOT DATE: 12/18/2007
PROJECT LEADER: MJC	DRAWN BY: TEK
DESIGNED BY: SEB	CHECKED BY: MJC
SCUPPER AND MISC. DETAILS	SHEET 27 OF 41



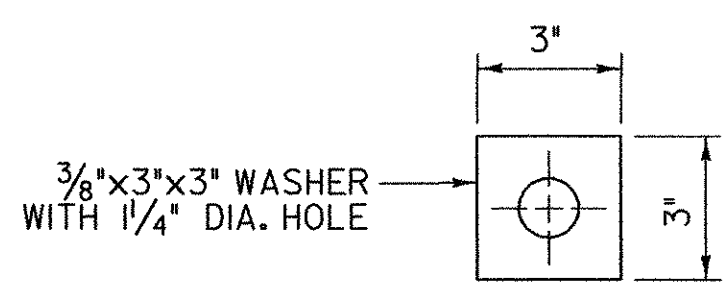
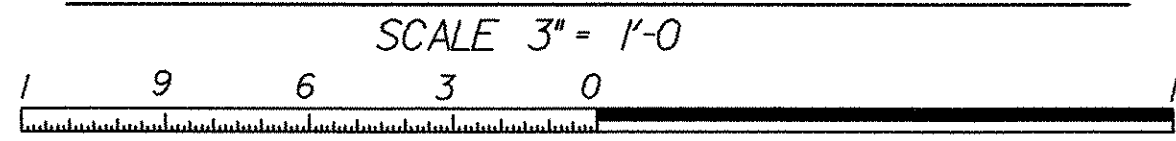
TYPICAL SECTION AT BRACKETS



BRACKET "A" AND "B" ELEVATION



BRACKET "A" AND "B" PLAN



WASHER FOR BRACKET

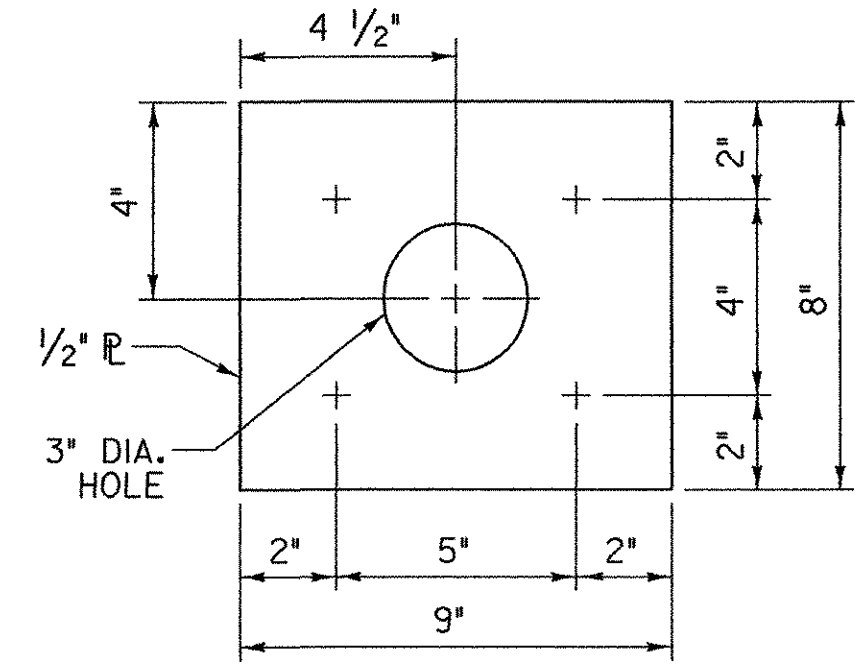
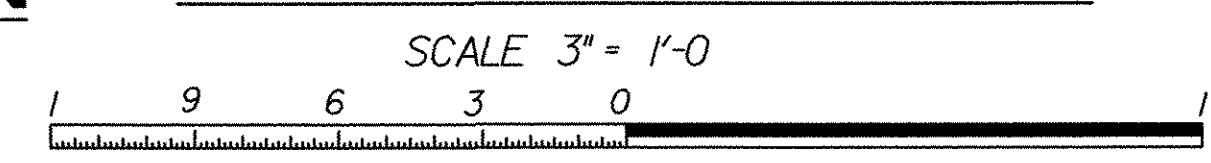
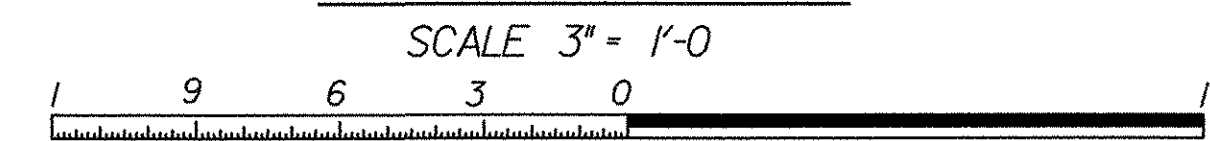
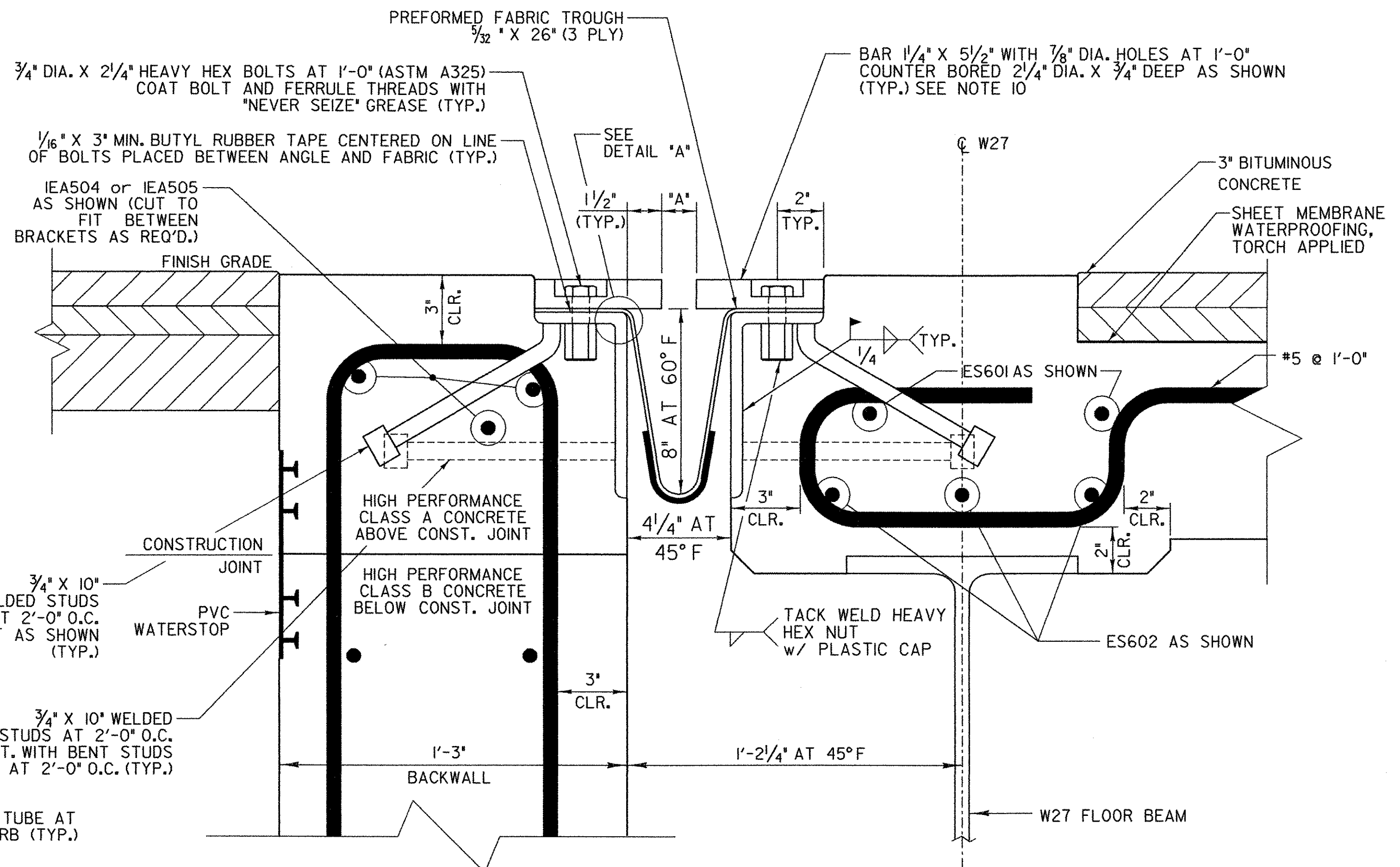


PLATE PLAN

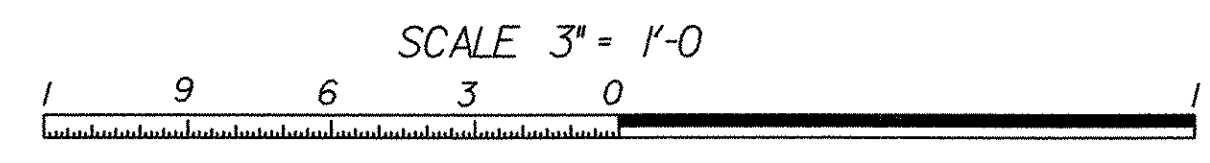


TEMP	"A" DIST.
0° F	1 1/16"
15° F	1 1/2"
30° F	1 3/8"
45° F	1 1/4"
60° F	1 1/6"
75° F	1 5/16"
90° F	1 3/8"
105° F	1 5/8"
120° F	1 1/2"

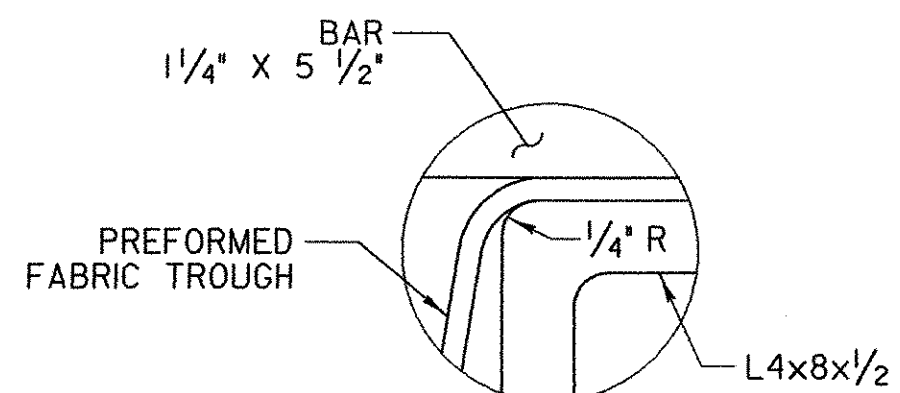
"A" IS THE SETTING DISTANCE WHEN DEAD LOADS ARE IN PLACE.



TYPICAL SECTION BETWEEN BRACKETS



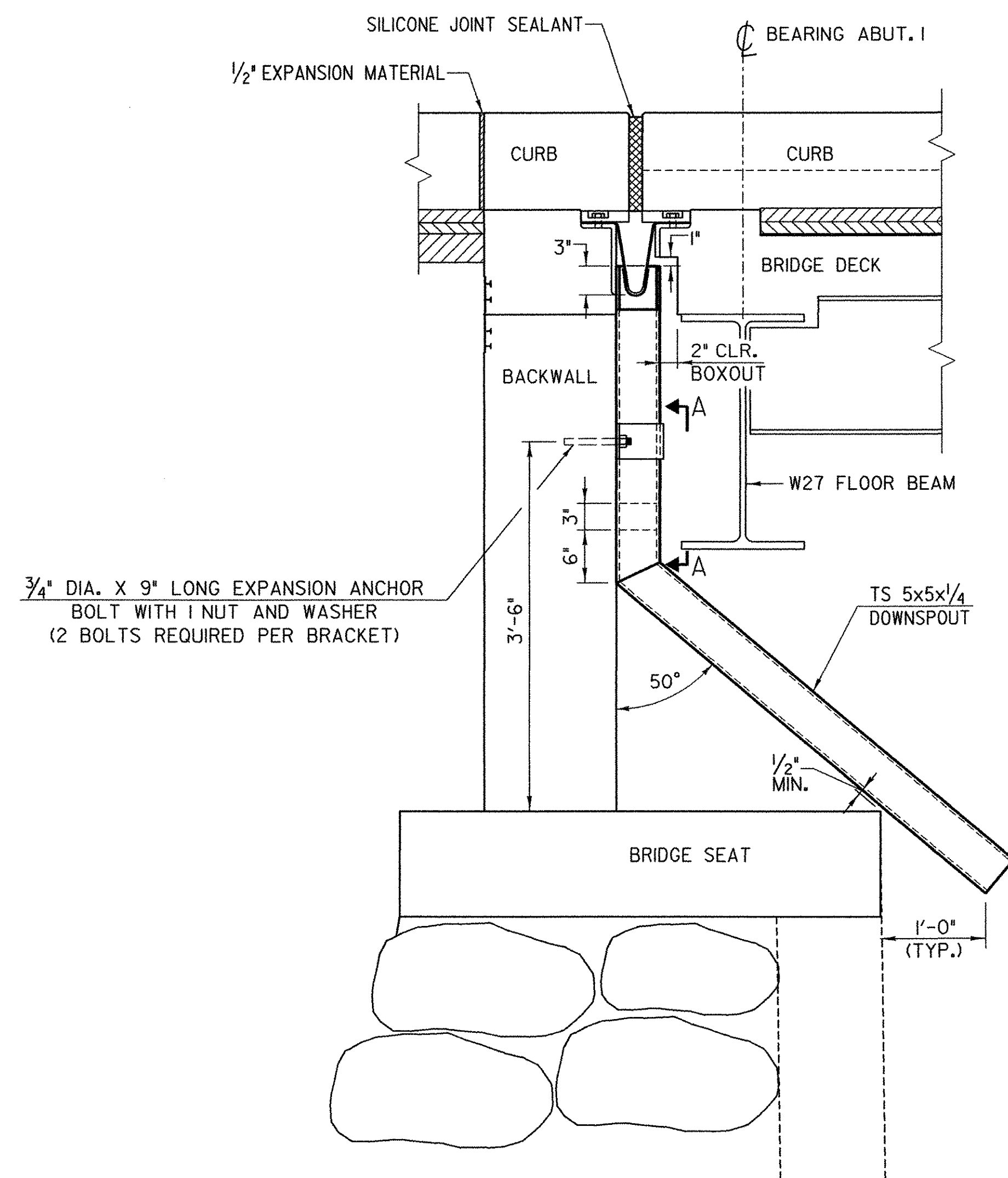
1. DETAILS ON THIS SHEET ARE FOR ITEM 516.11, "BRIDGE EXPANSION JOINT, VERMONT".
2. THE PREFORMED FABRIC MATERIAL SHALL BE CONTINUOUS AND INSTALLED ONLY AFTER THE BRIDGE DECK IS COMPLETED. THE PREFORMED FABRIC MATERIAL SHALL CONFORM TO SUBSECTION 707.07.
3. BUTYL RUBBER TAPE SHALL CONFORM TO SUBSECTION 707.12.
4. THE FINAL FINISH OF THE EXPANSION DEVICE SHALL BE COVERED DURING THE PLACING OF BRIDGE DECK CONCRETE.
5. ALL STEEL COMPONENTS SHALL BE AASHTO M 270M/M 270 GRADE 36 GALVANIZED OR METALIZED AS PER SUBSECTION 506.15, UNLESS OTHERWISE SPECIFIED. THREADED RODS SHALL CONFORM TO ASTM A307, GRADE C. THE NUTS FOR THE THREADED RODS SHALL BE ASTM A563.
6. THE ITEM 516.11, "BRIDGE EXPANSION JOINT, VERMONT" SHALL INCLUDE THE FABRICATION AND ERECTION OF THE COMPLETE JOINT ASSEMBLY INCLUDING ALL STEEL PLATES, BRACKETS, ANGLES, WELDED STUDS OR RODS, PREFORMED FABRIC DRAIN TROUGH MATERIAL AND PLASTIC DRAIN TUBES, BUTYL RUBBER TAPE AND ANY OTHER MISCELLANEOUS MATERIAL NECESSARY TO INSTALL JOINT.
7. THE 8"x4"x1/2" ANGLES SHALL BE FURNISHED AS ONE CONTINUOUS PIECE. THE 1/4" X 5 1/2" BARS EACH SIDE OF THE JOINT SHALL BE PROVIDED IN FOUR EQUAL LENGTHS.
8. COAT CONCRETE CONTACT SURFACES WITH EPOXY BONDING COMPOUND MEETING THE REQUIREMENTS OF SUBSECTION 719.02. PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 516.11 "BRIDGE EXPANSION JOINT, VERMONT".
9. A 1" DIAMETER PLASTIC DRAIN TUBE (PER STD. SPEC. 740.01) SHALL BE INSTALLED AS SHOWN AT THE FACE OF CURB. THE UPPER END IS TO BE PLUGGED WITH STEEL WOOL AND THE LOWER END IS TO EXTEND BELOW THE BOTTOM OF THE W27 BEAM. THE DRAIN TUBES SHALL BE FASTENED TO THE BEAMS AND STRINGERS USING A METHOD APPROVED BY THE ENGINEER.
10. FILL COUNTER BORED HOLES WITH HOT POURED JOINT SEALER AFTER BOLT INSTALLATION. PAYMENT FOR THE WORK SHALL BE INCIDENTAL TO ITEM 516.11.
11. PAYMENT FOR WATERSTOP SHALL BE INCIDENTAL TO CONTRACT ITEM 501.34.
12. A DRIP BEAD OF 1/4" X 7" STRIP OF PREFORMED MATERIAL SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH USING AN ADHESIVE APPROVED BY THE MANUFACTURER. THE DRIP BEAD SHALL BE APPLIED 1" FROM THE DOWNSPOUT END OF THE TROUGH.
13. FABRIC TROUGH SHALL BE THOROUGHLY CLEANED AND FLUSHED AFTER PAVING OPERATION.
14. THE EXPANSION JOINT SHALL BE SHOP ASSEMBLED AND SHIPPED AS ONE UNIT.



DETAIL "A"
NOT TO SCALE



PROJECT NAME:	RICHFORD
PROJECT NUMBER:	BHF 0302 (3) S
FILE NAME:	...Design\Rich-expj+2.dgn
PROJECT LEADER:	MJC
DESIGNED BY:	SEB
EXPANSION JOINT DETAILS	
PLOT DATE:	12/18/2007
DRAWN BY:	SEB
CHECKED BY:	MJC
SHEET	29 OF 41

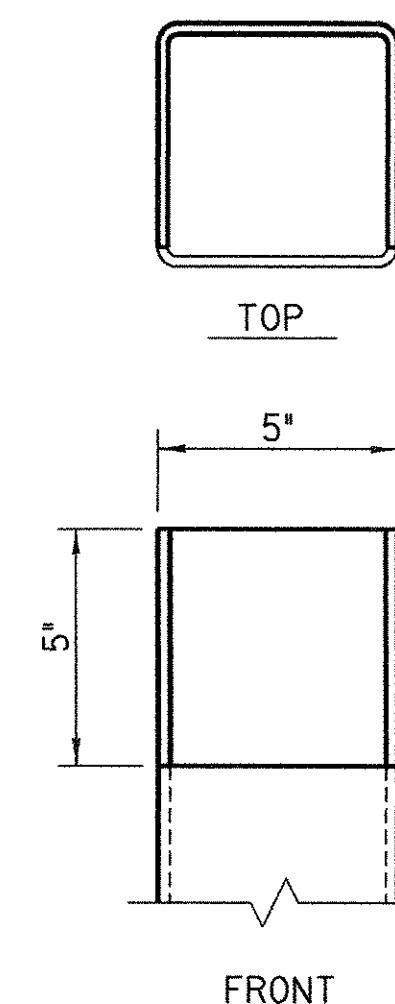


DOWNSPOUT ELEVATION

SCALE 1" = 1'-0"

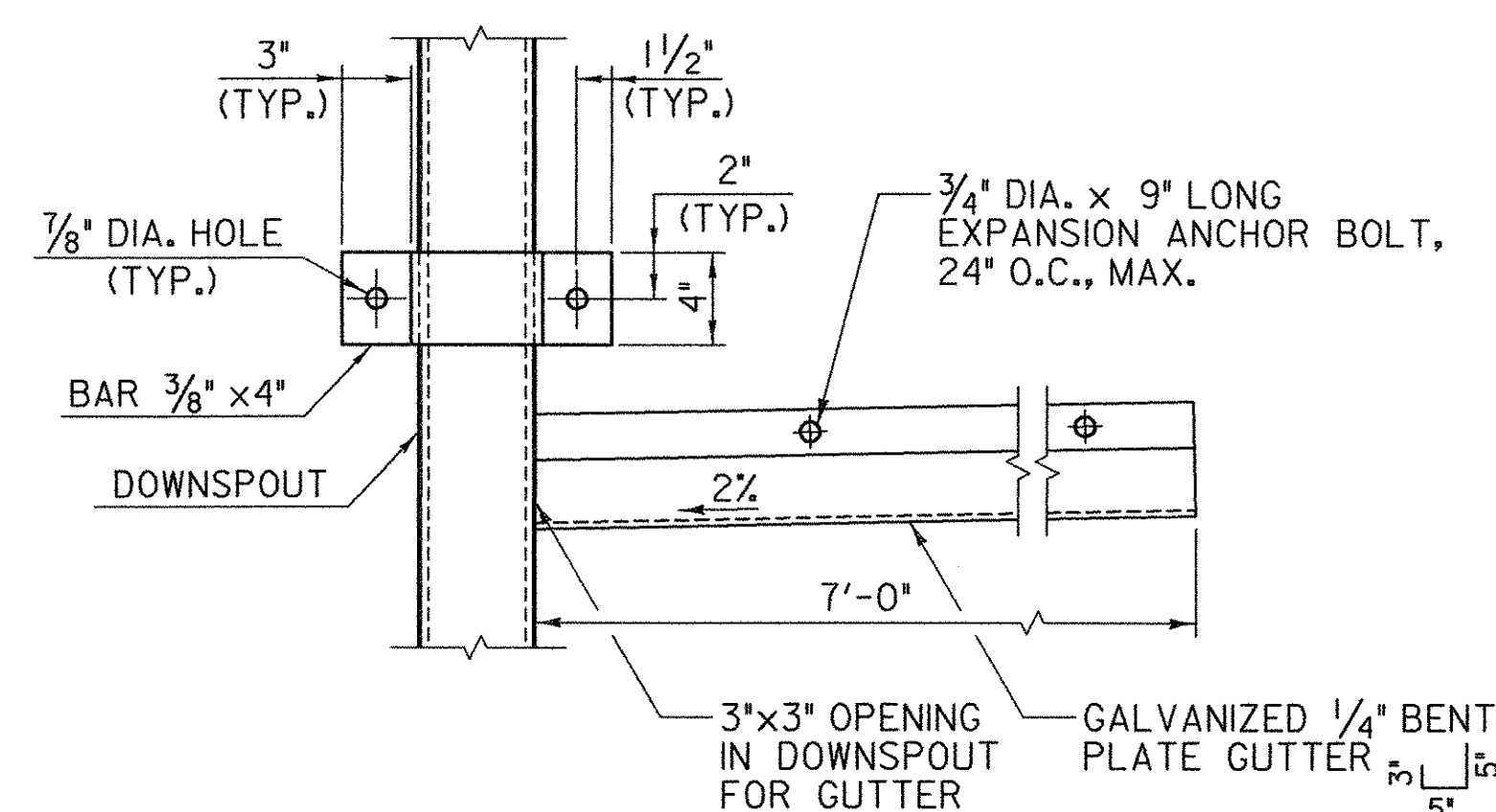
DOWNSPOUT NOTES

1. HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO SUBSECTION 714.11.
2. ALL PLATES, BARS, AND ANGLES SHALL CONFORM TO SUBSECTION 714.03.
3. DOWNSPOUT SHALL BE GALVANIZED IN ACCORDANCE WITH SUBSECTION 506.15, PART (a).
4. ALL BOLTS AND RELATED HARDWARE SHALL CONFORM TO SUBSECTION 714.04 AND SHALL BE GALVANIZED IN ACCORDANCE WITH SUBSECTION 506.15, PART (a).
5. ANY PLACE WHERE THE GALVANIZING HAS BEEN REMOVED FROM THE DOWNSPOUT EITHER BY CUTTING, BURNING, WELDING, PLACING, OR ANY OTHER MEANS, SHALL BE REPAIRED PER SECTION 513.
6. DOWNSPOUT AND ALL ANCHOR BOLTS WITH RELATED HARDWARE SHALL BE PAID FOR UNDER THE ITEM 506.60, "STRUCTURAL STEEL".



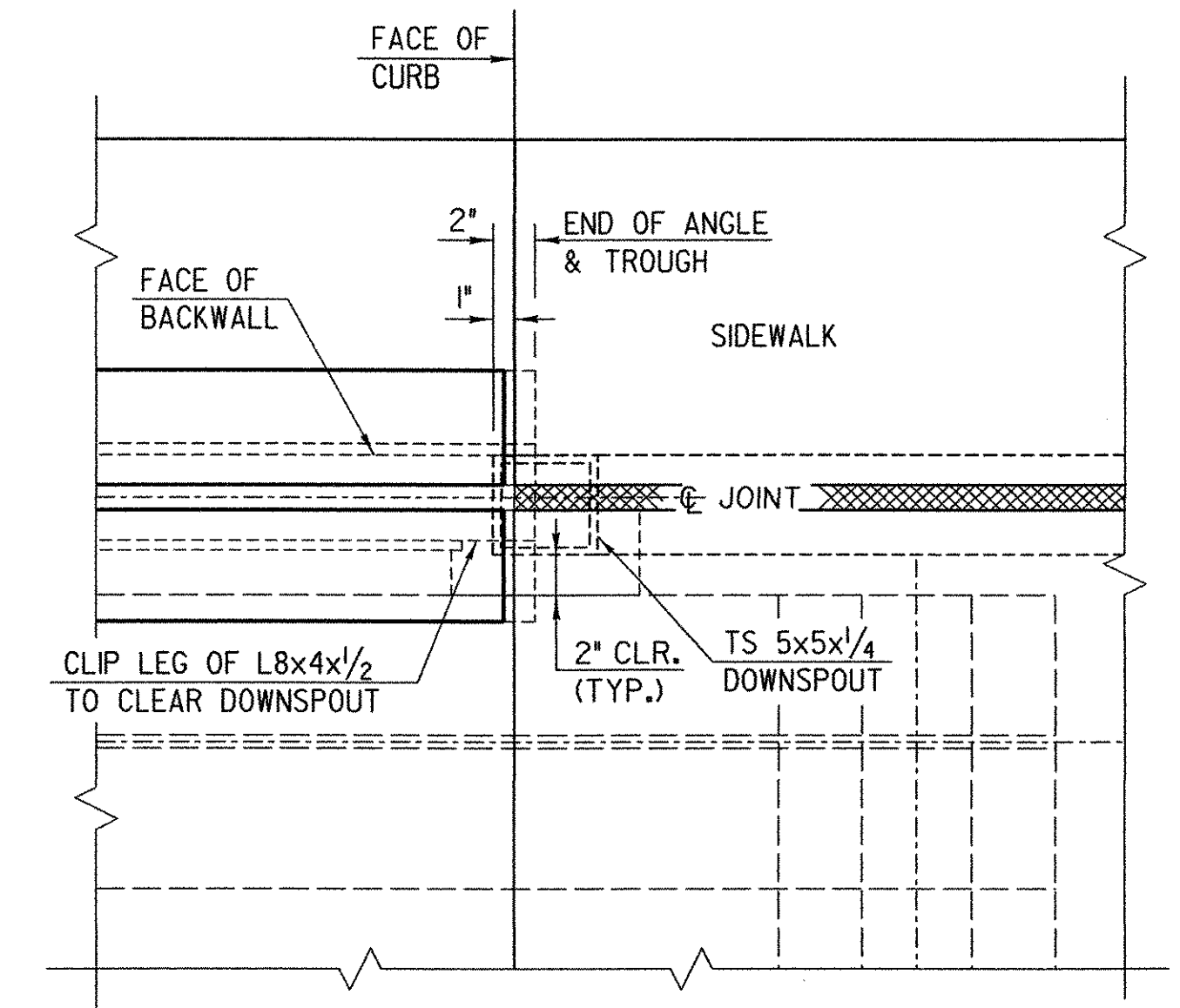
DOWNSPOUT CUTOUT FOR TROUGH

SCALE 3" = 1'-0"



SECTION A-A

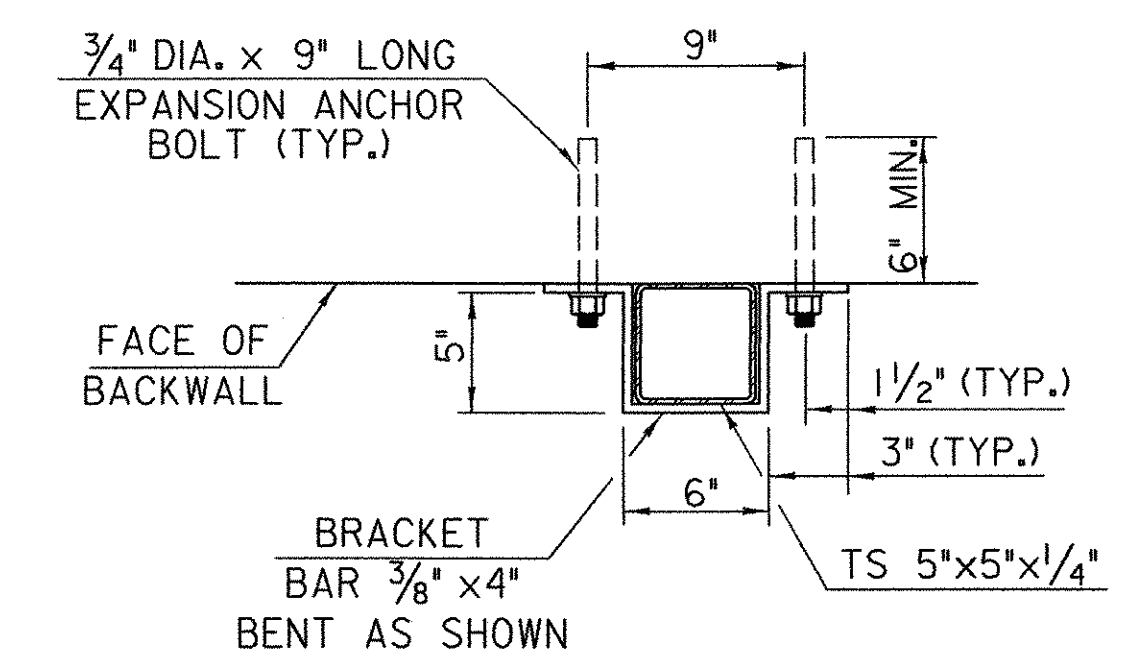
SCALE 1 1/2" = 1'-0"



BOTTOM OF DECK TO BE BOXED OUT AS SHOWN TO ALLOW DOWNSPOUT TO COME UP UNDERNEATH THE DRAIN TROUGH.

PLAN VIEW OF DOWNSPOUT

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

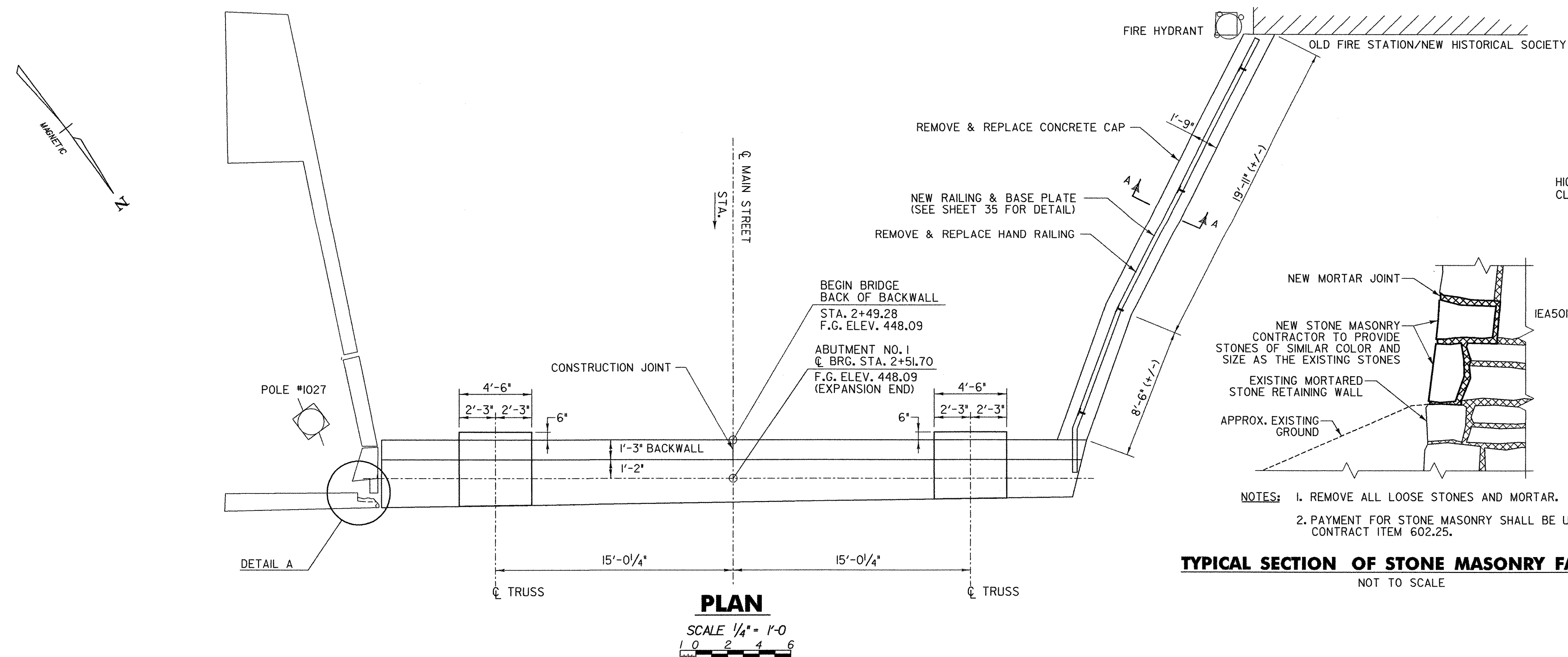


DETAILS FOR ATTACHING DOWNSPOUT TO ABUTMENT

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

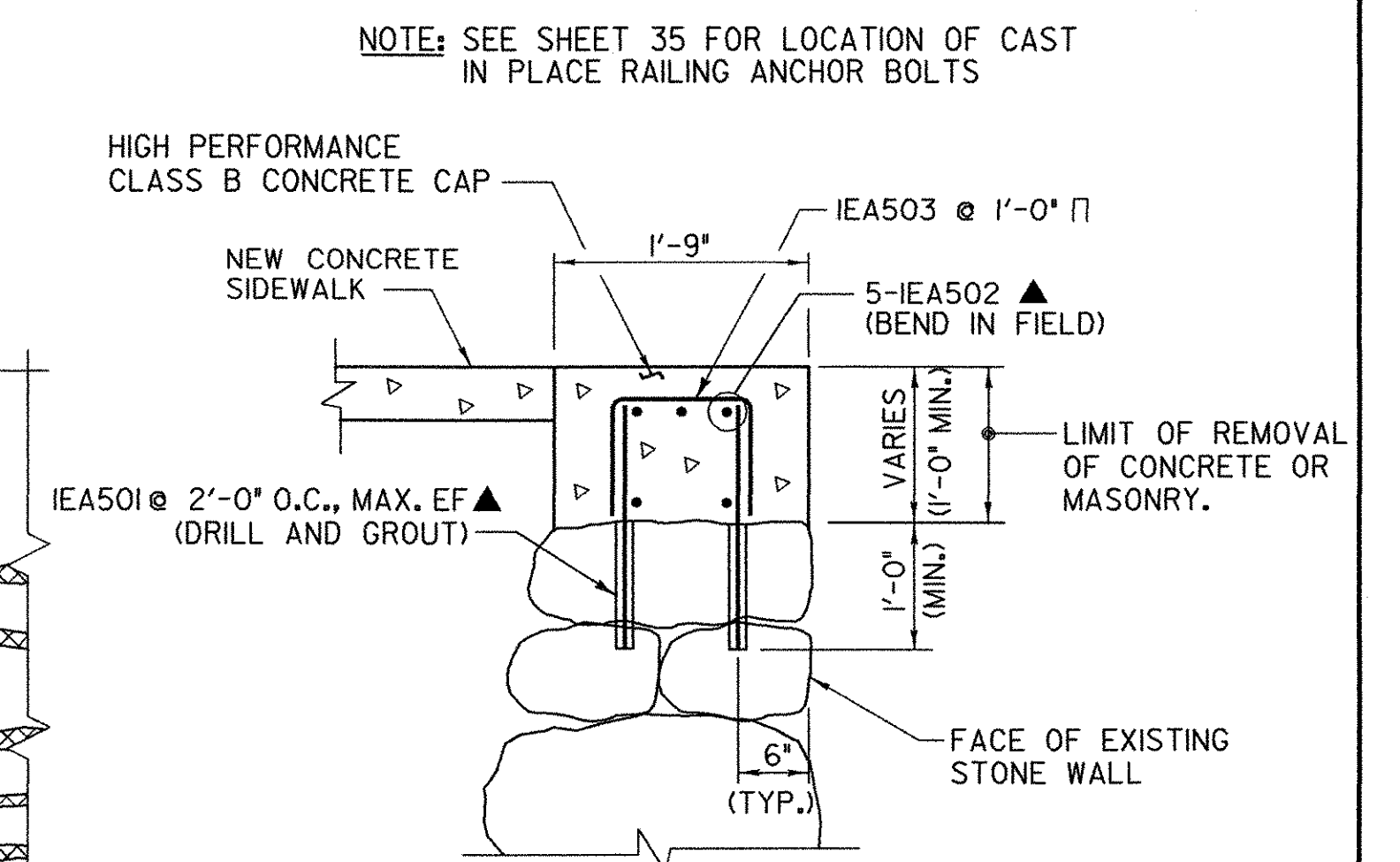


PROJECT NAME:	RICHFORD	PLOT DATE:	12/18/2007
PROJECT NUMBER:	BHF 0302 (3) S	DRAWN BY:	AET
FILE NAME:	...\\Design\\rich-dspout.dgn	CHECKED BY:	MJC
PROJECT LEADER:	MJC	SHEET	30 OF 41
DESIGNED BY:	SEB		
DOWNSPOUT DETAILS			



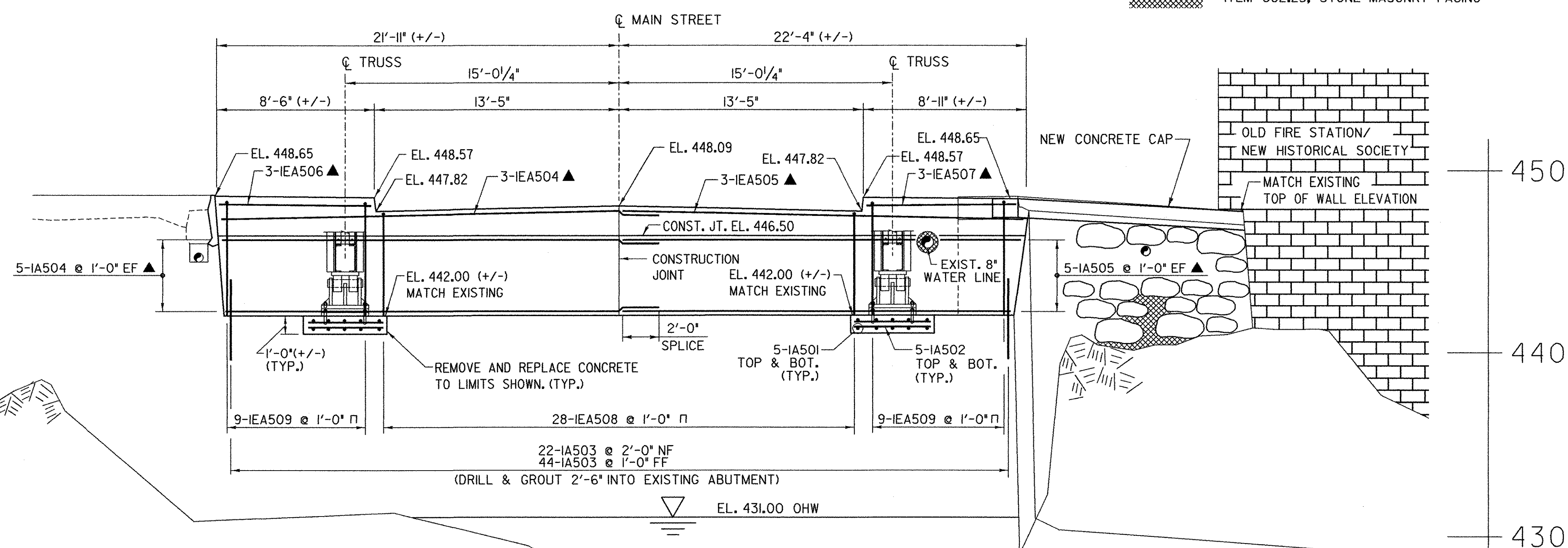
TYPICAL SECTION OF STONE MASONRY FACING
NOT TO SCALE

- NOTES: 1. REMOVE ALL LOOSE STONES AND MORTAR.
2. PAYMENT FOR STONE MASONRY SHALL BE UNDER CONTRACT ITEM 602.25.



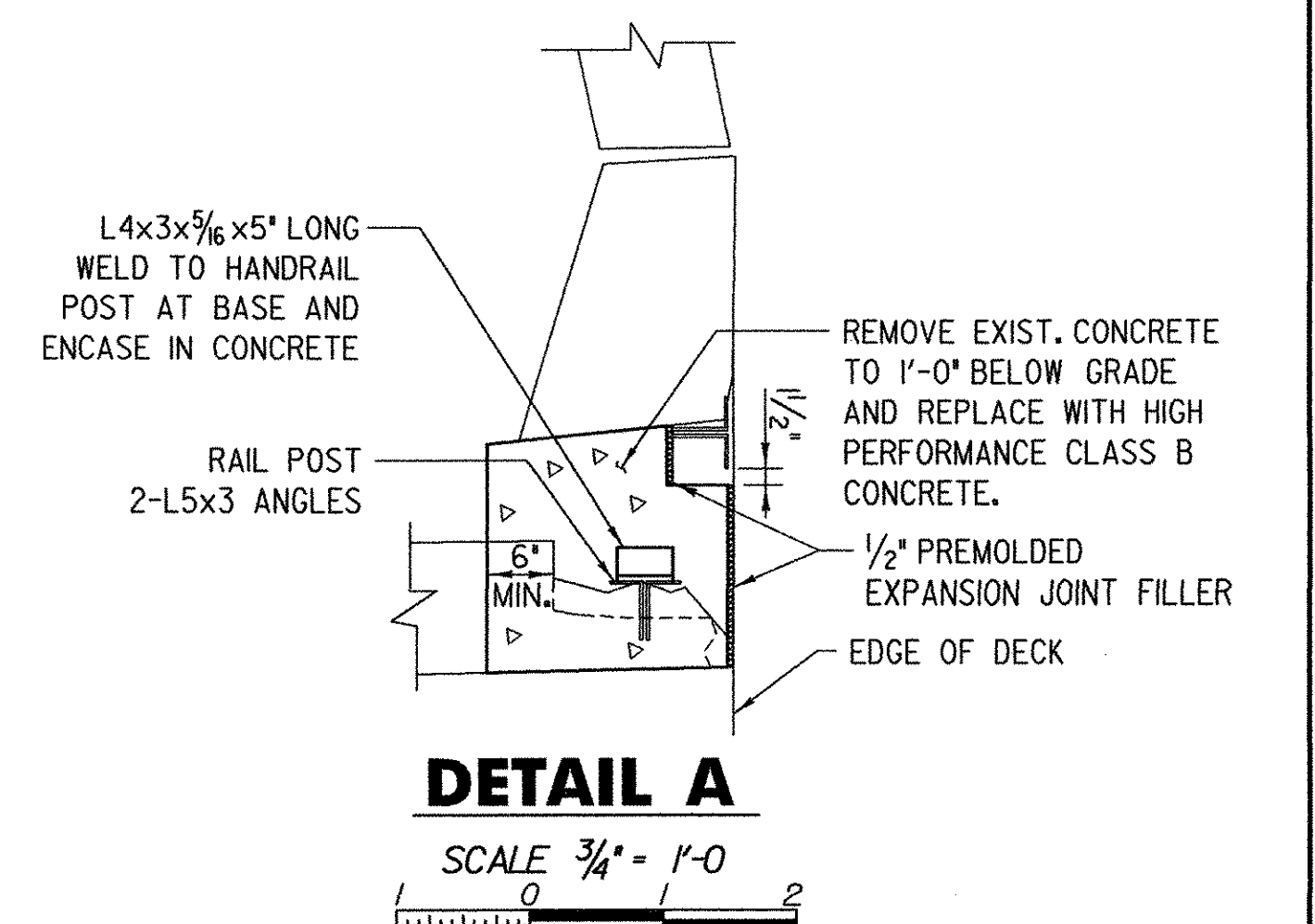
LEGEND FOR CONCRETE REPAIR

- ITEM 602.25, "STONE MASONRY FACING"



NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

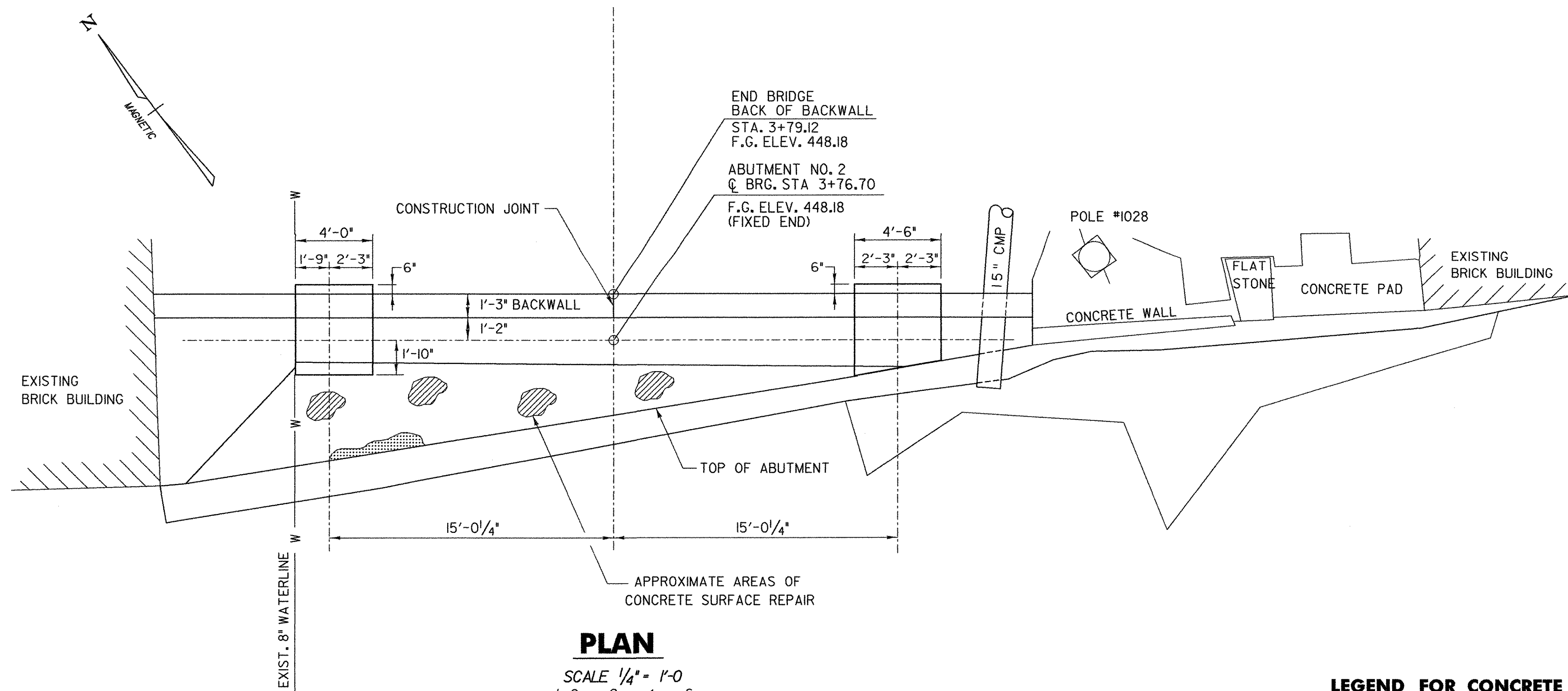


- NOTES:
1. SEE SHEET 33 FOR ABUTMENT SECTIONS.
2. AREAS OF CONCRETE SURFACE REPAIR ON EXISTING ABUTMENTS TO BE DETERMINED IN THE FIELD BY THE ENGINEER AND PAID FOR UNDER ITEM 580.13 "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS I OR 580.14 "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS II.



PROJECT NAME: RICHFORD
PROJECT NUMBER: BHF 0302 (3) S

FILE NAME: ...Design\Rich-abut1.dgn PLOT DATE: 12/18/2007
PROJECT LEADER: MJC DRAWN BY: AET
DESIGNED BY: SEB CHECKED BY: MJC
ABUTMENT NO. 1 PLAN & ELEVATION SHEET 31 OF 41

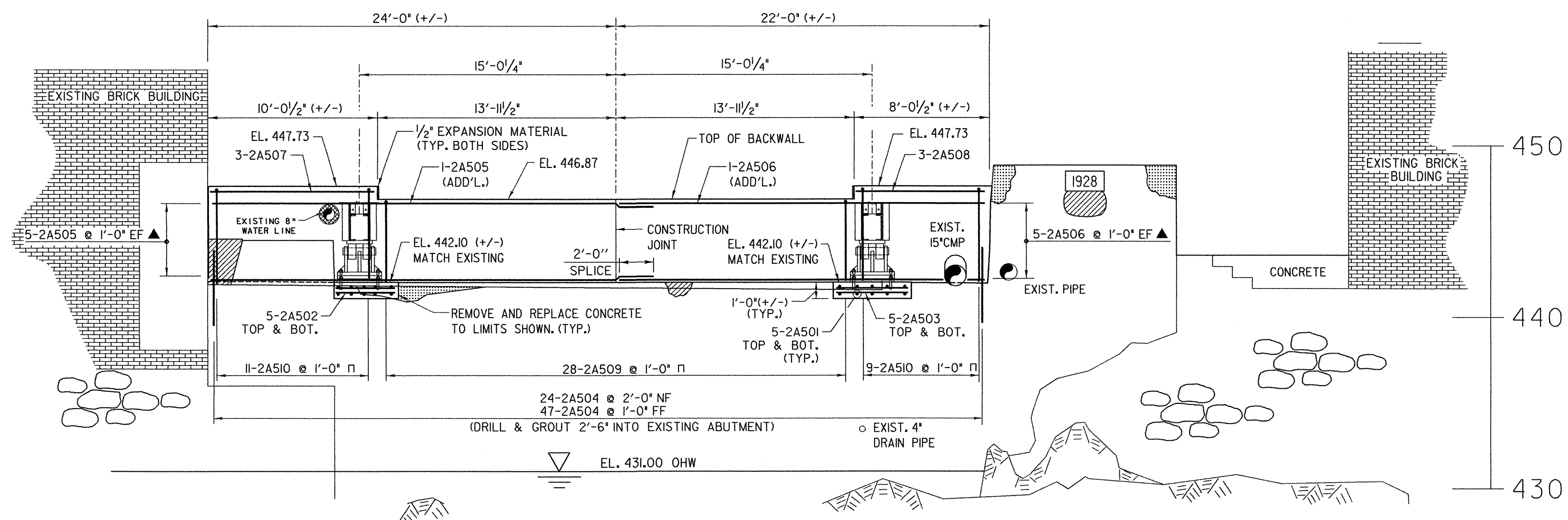


LEGEND FOR CONCRETE REPAIR

- ITEM 580.13, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS I"
- ITEM 580.14, "REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS II"

NOTES:

1. SEE SHEET 33 FOR ABUTMENT SECTIONS.
2. AREAS OF CONCRETE SURFACE REPAIR ON EXISTING ABUTMENTS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.



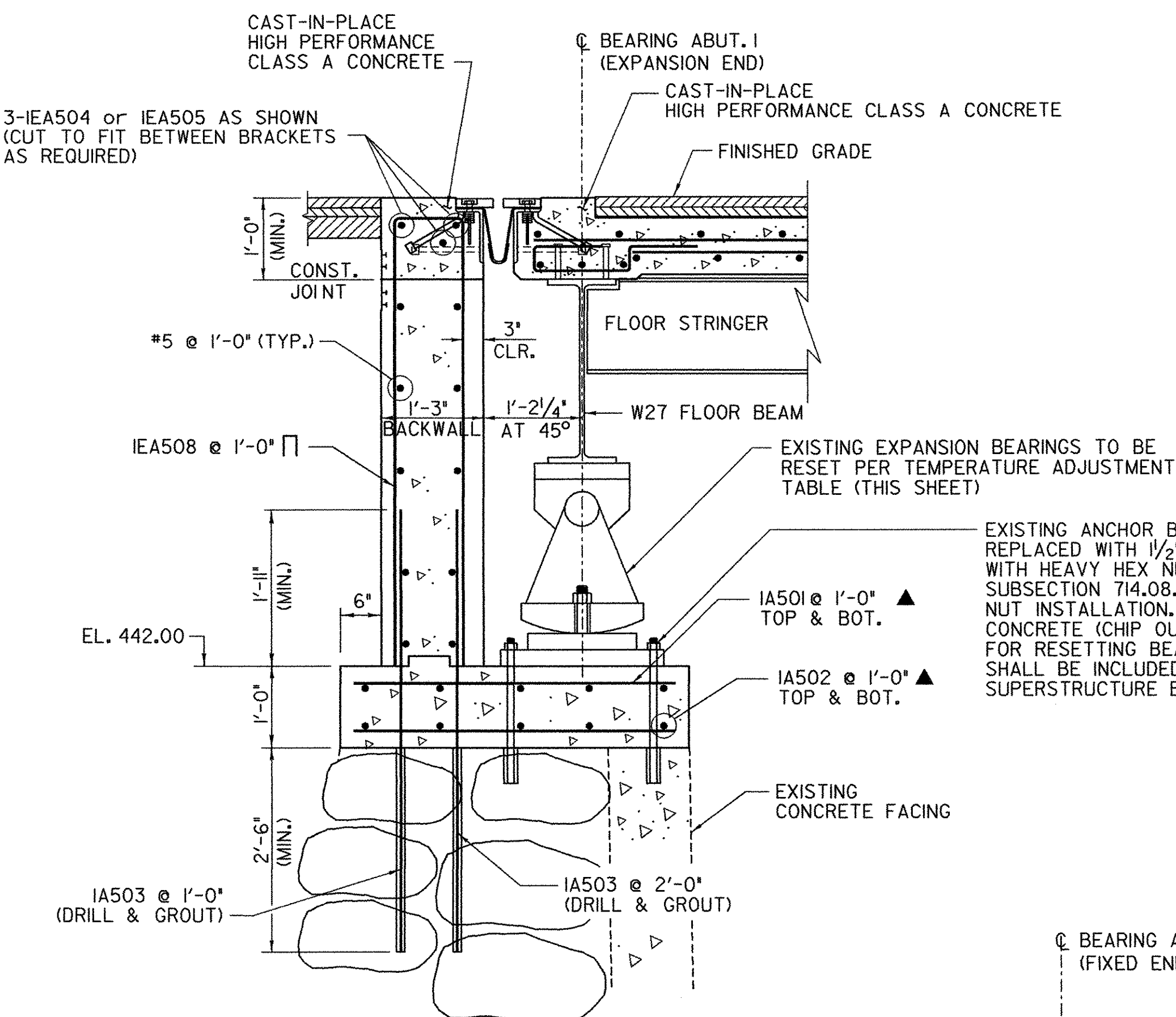
NOTE:

- NF = NEAR FACE
- FF = FAR FACE
- EF = EACH FACE
- ▲ = CUT TO FIT IN FIELD



PROJECT NAME: RICHFORD
PROJECT NUMBER: BHF 0302 (3) S

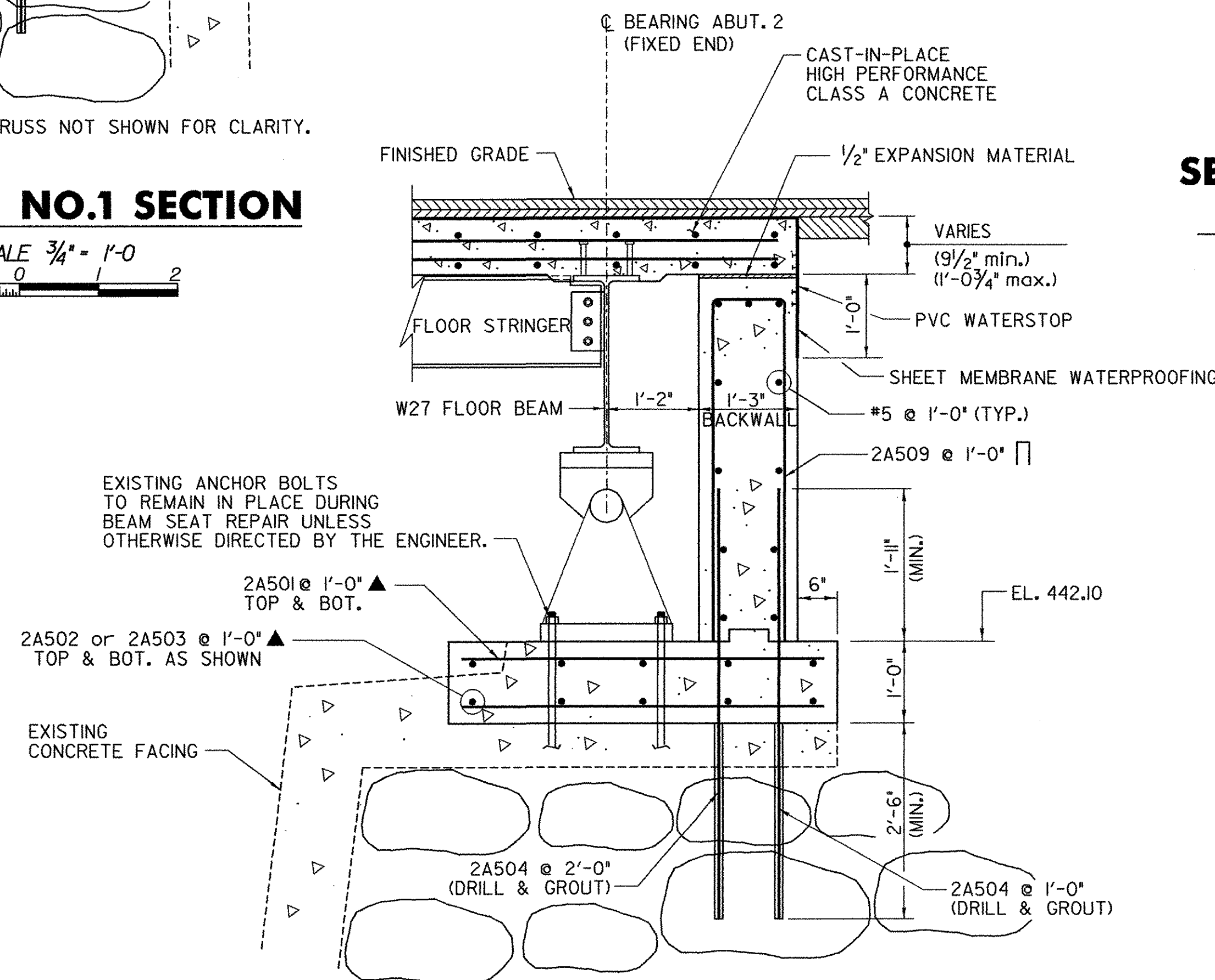
FILE NAME: ...Design\rich-abut2.dgn PLOT DATE: 12/18/2007
PROJECT LEADER: MJC DRAWN BY: AET
DESIGNED BY: SEB CHECKED BY: MJC
ABUTMENT NO. 2 PLAN & ELEVATION SHEET 32 OF 41



NOTE: BOTTOM CHORD AT TRUSS NOT SHOWN FOR CLARITY.

ABUTMENT NO.1 SECTION

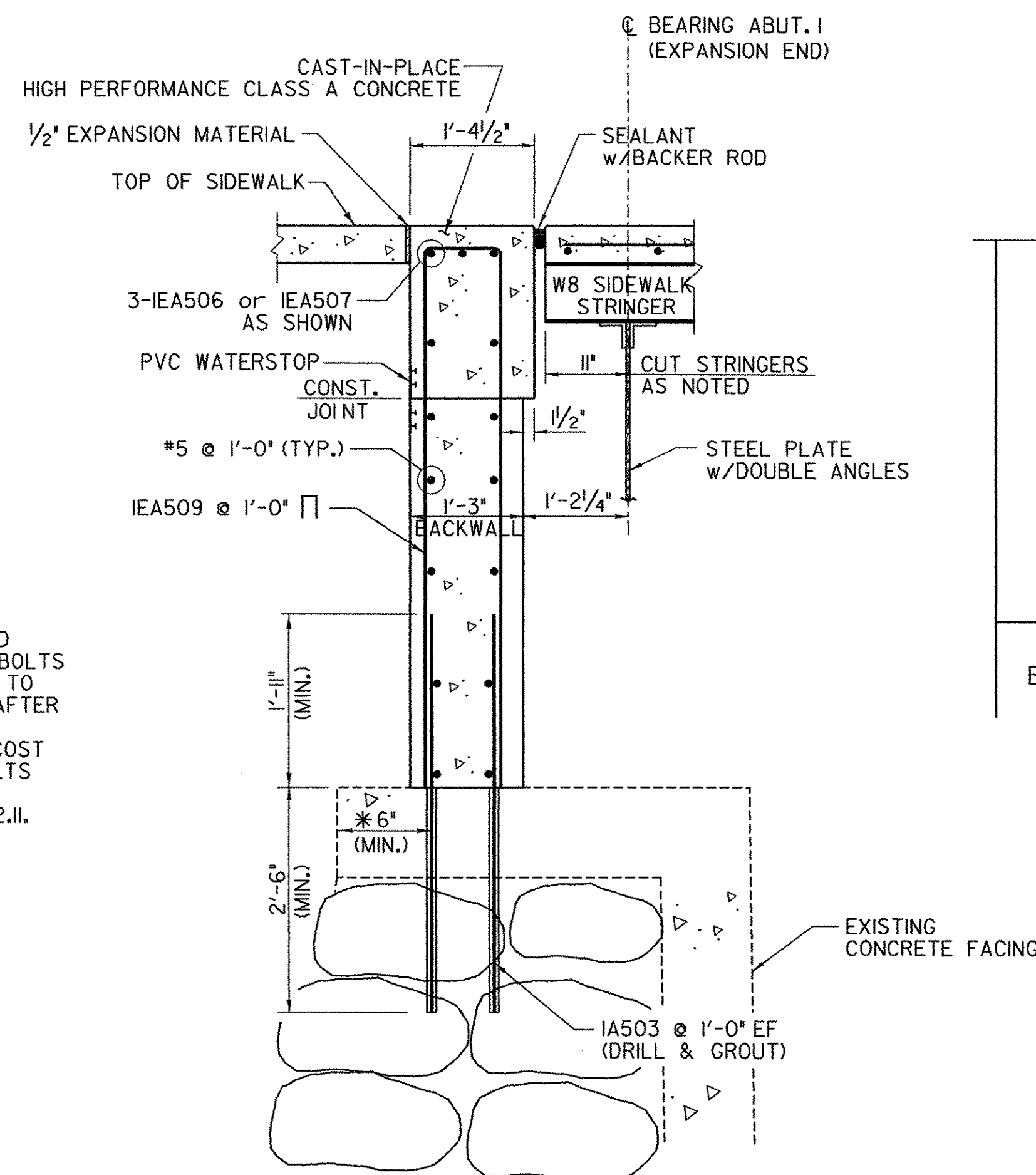
SCALE 3/4" = 1'-0"



NOTE: NOTIFY ENGINEER IF WIDTH OF EXISTING BEAM SEAT IS LESS THAN SHOWN.

ABUTMENT NO.2 SECTION

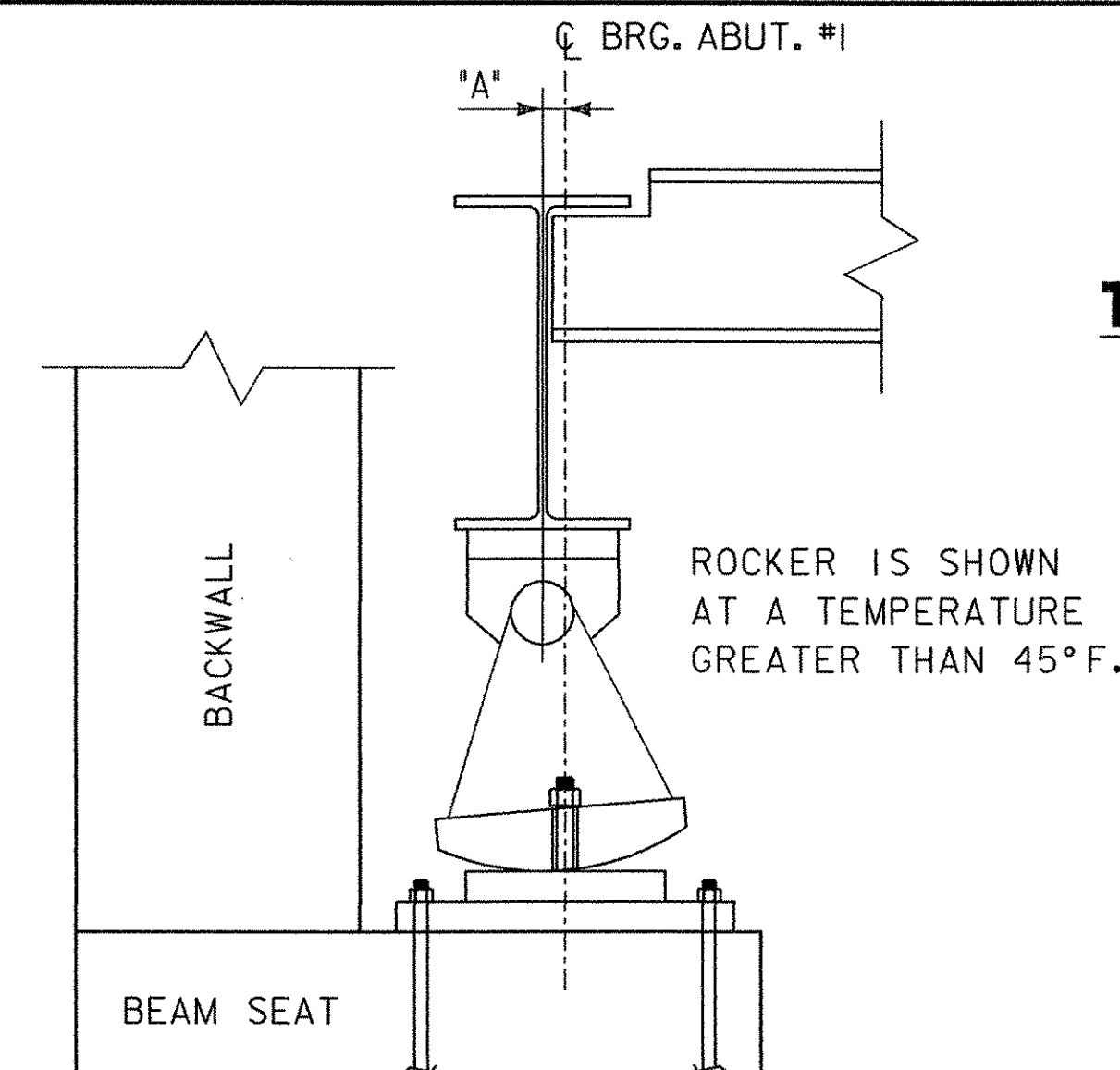
SCALE 3/4" = 1'-0"



SECTION THRU SIDEWALK AT ABUTMENT NO. 1

SCALE 3/4" = 1'-0"

* - CONTRACTOR TO VERIFY THAT A MINIMUM EDGE DISTANCE OF 6" IS PROVIDED.

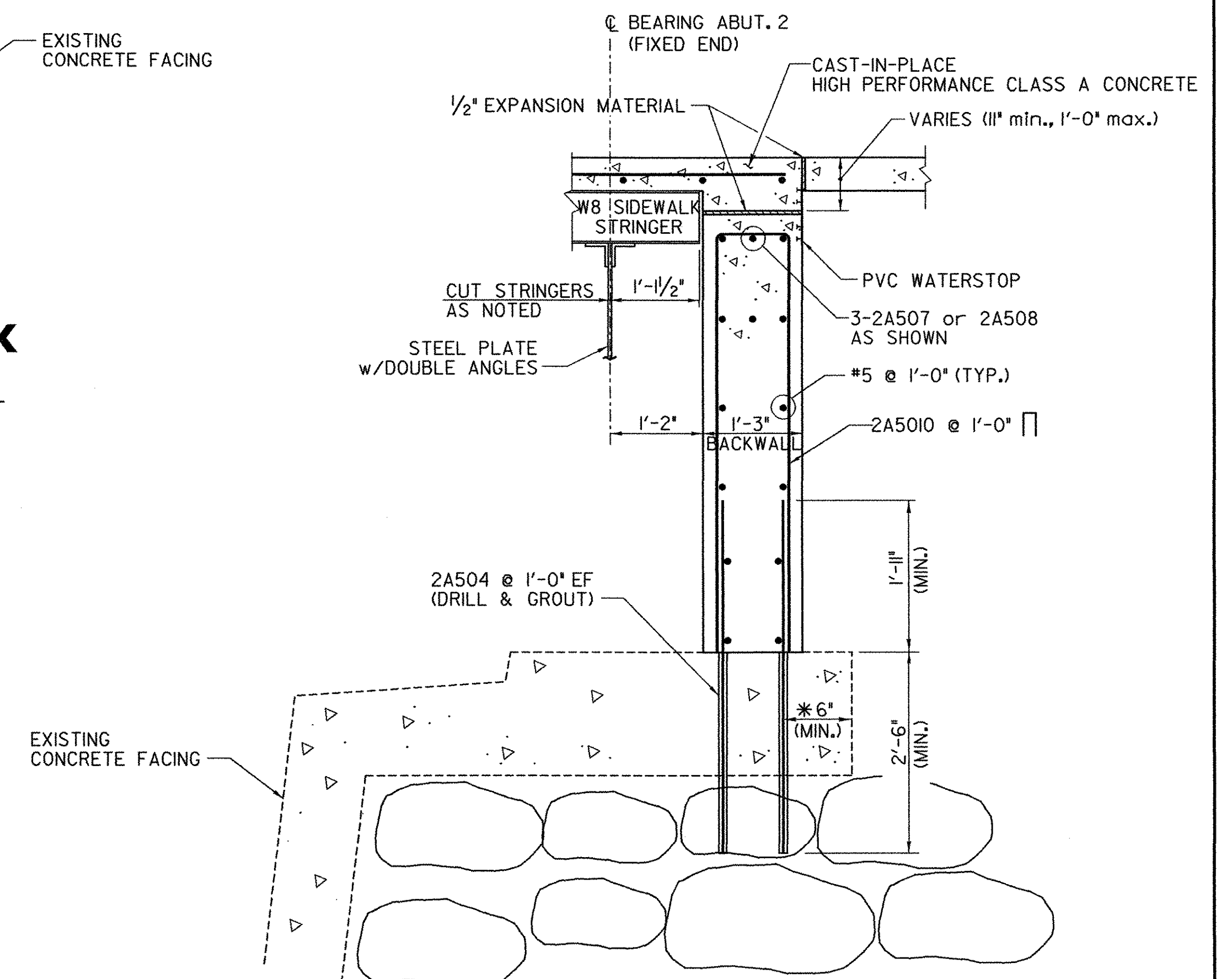


EXISTING ROCKER ABUT. #1

NOT TO SCALE

TEMPERATURE ADJUSTMENT TABLE FOR ROCKER

ABUTMENT NO. 1	
TEMP.	DIM. "A"
0°F	-7/16"
15°F	-5/16"
30°F	-1/8"
45°F	0"
60°F	1/8"
75°F	5/16"
90°F	7/16"
105°F	9/16"



SECTION THRU SIDEWALK AT ABUTMENT NO. 2

SCALE 3/4" = 1'-0"

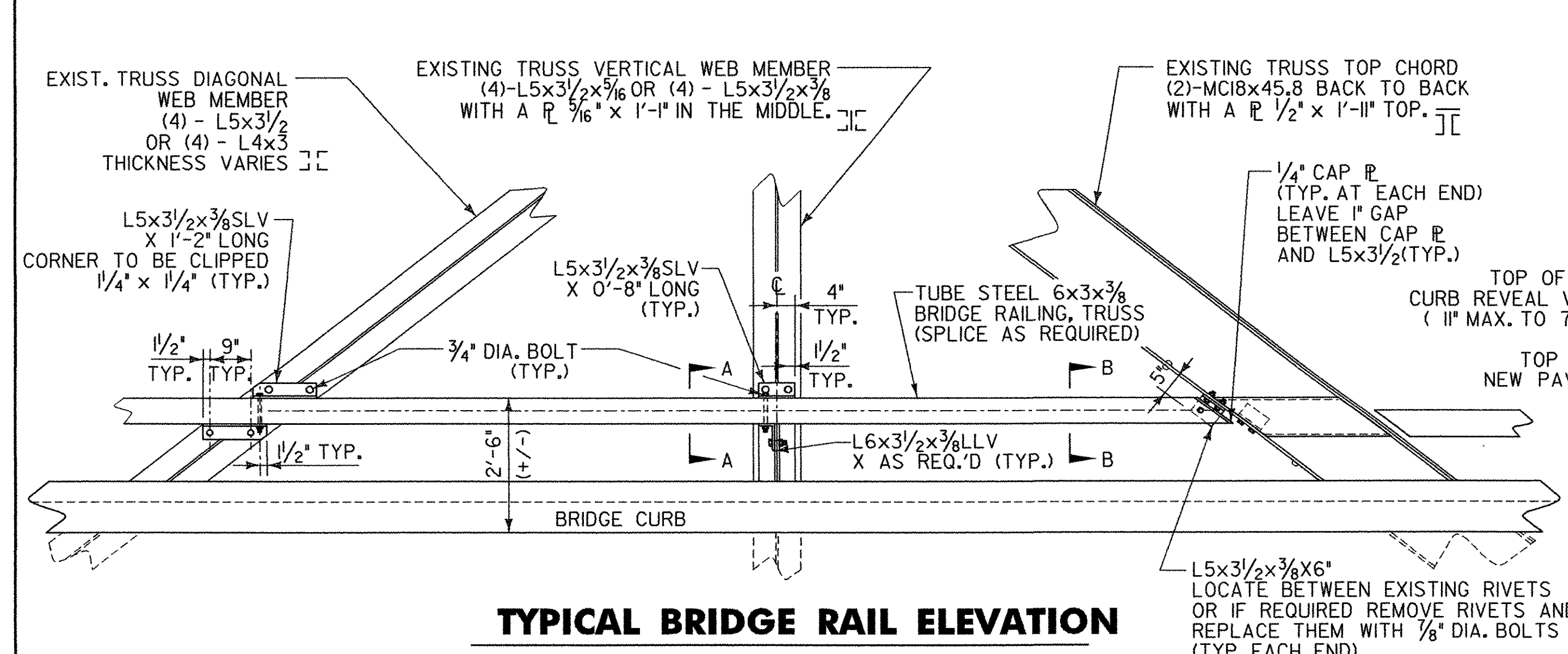
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.



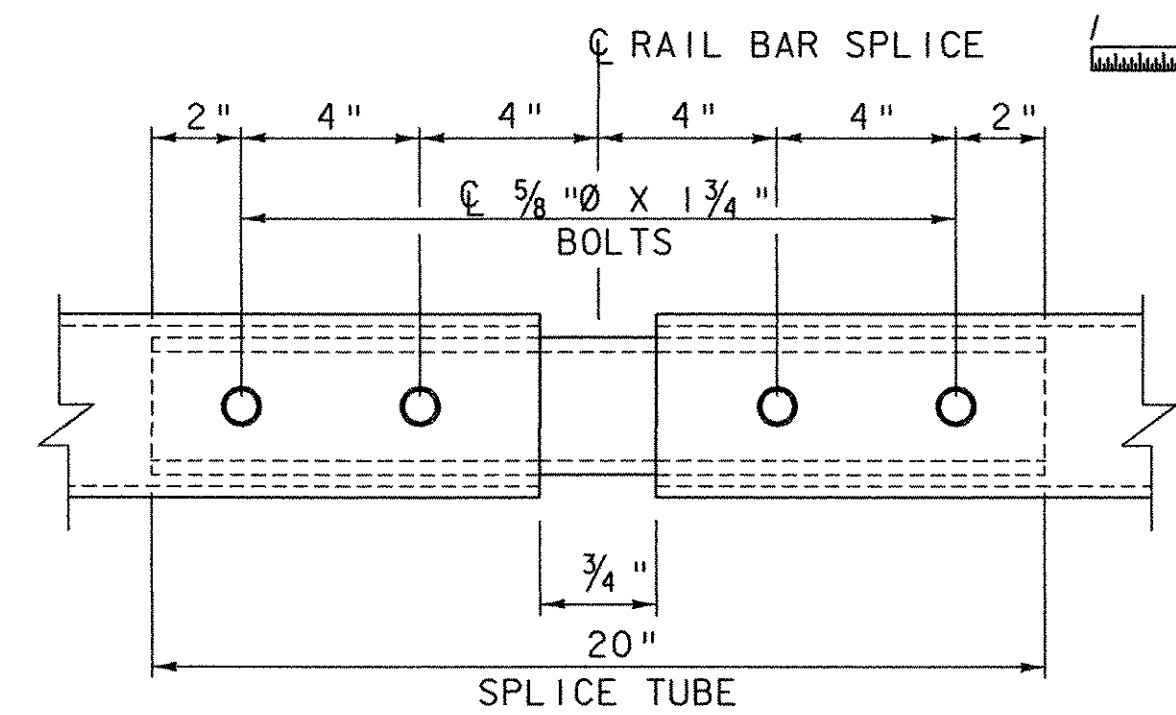
PROJECT NAME: RICHFORD
PROJECT NUMBER: BHF 0302 (3) S

FILE NAME: ...Design\rich-abutsects.dgn PLOT DATE: 12/18/2007
PROJECT LEADER BY: MJC DRAWN BY: AET
DESIGNED BY: SEB CHECKED BY: MJC
ABUTMENT SECTIONS SHEET 33 OF 41



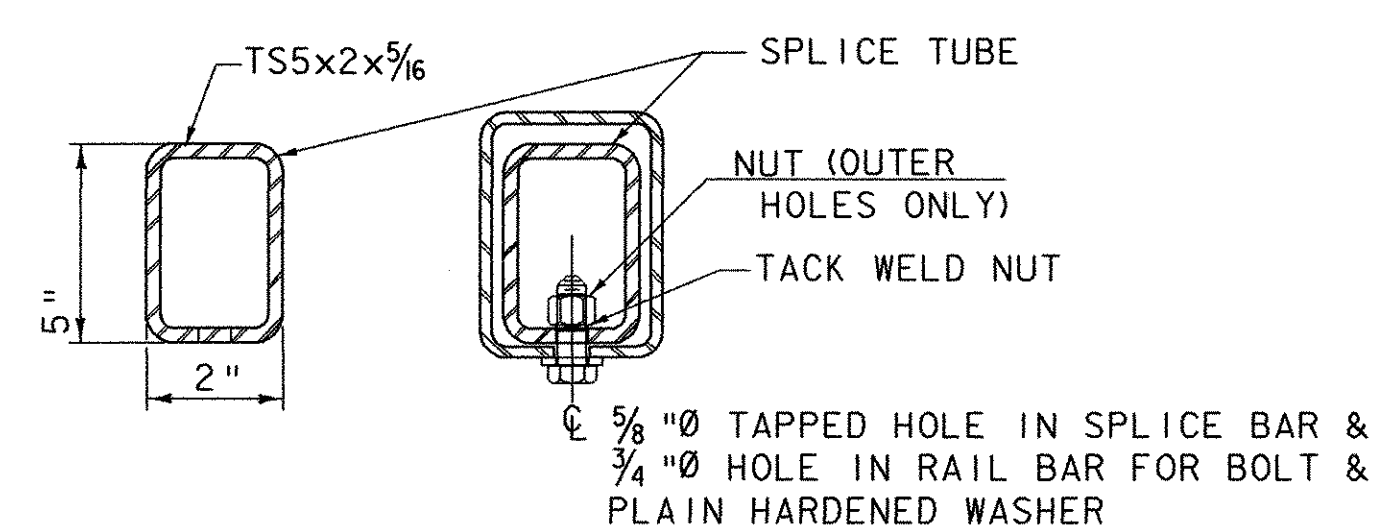
TYPICAL BRIDGE RAIL ELEVATION

SCALE 1/2" = 1'-0"



BRIDGE RAIL BAR SPLICE DETAIL

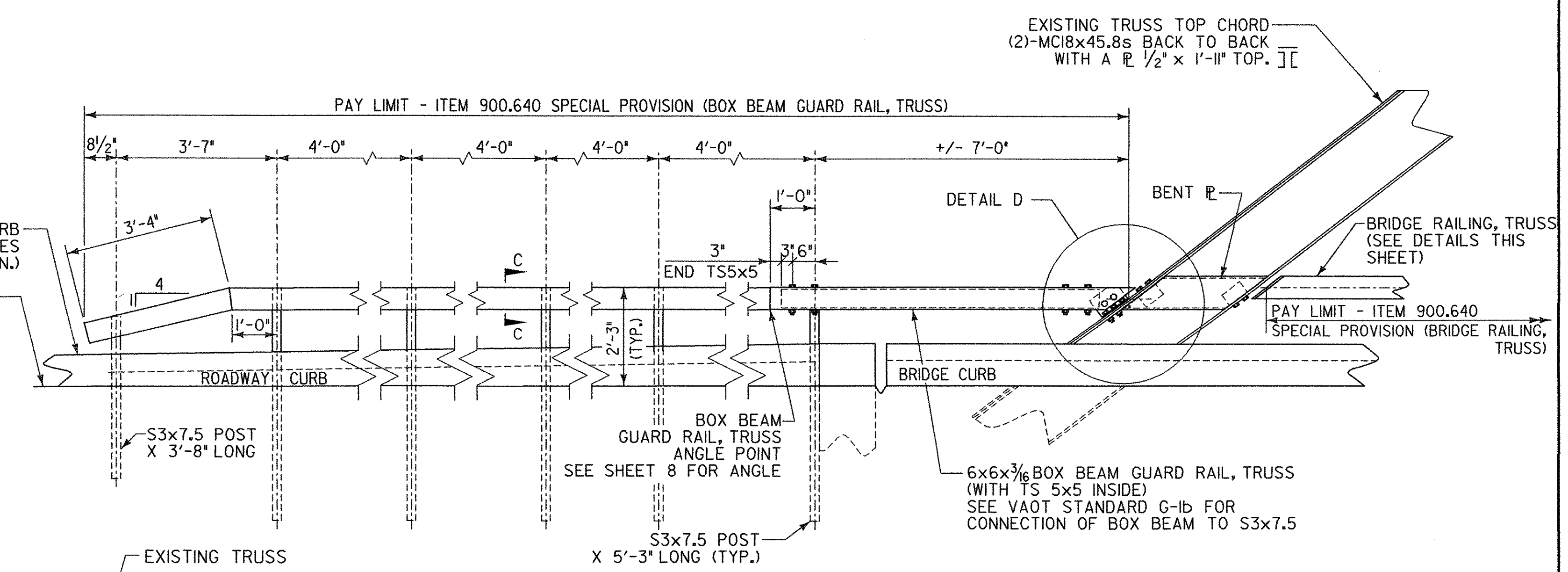
[BOTTOM VIEW NOT TO SCALE]



BRIDGE RAIL BAR SPLICE SECTION

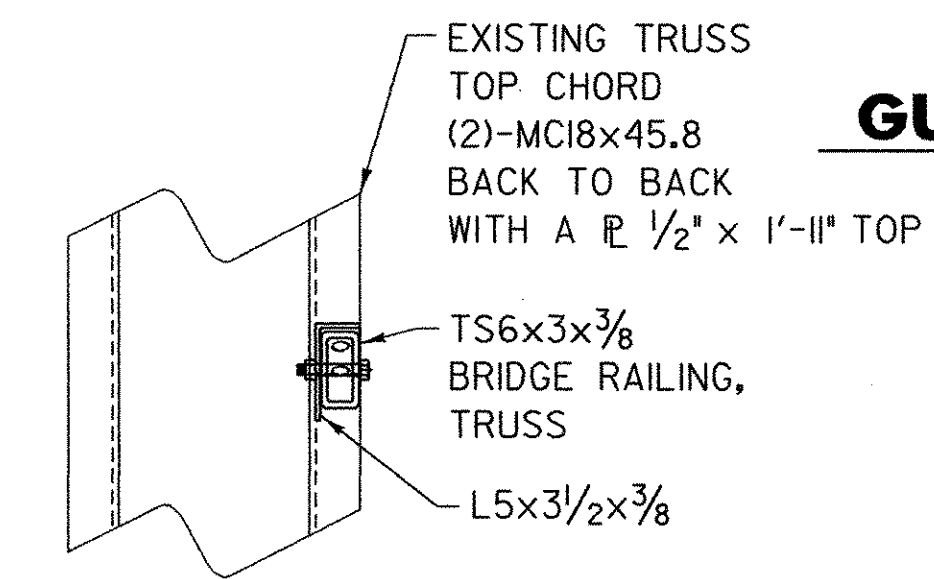
NOT TO SCALE

- BRIDGE RAIL AND APPROACH RAIL NOTES**
- ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525.
 - ALL BRIDGE RAIL CONNECTION HARDWARE SHALL BE INCIDENTAL TO ITEM 900.640 SPECIAL PROVISION (BRIDGE RAILING, TRUSS).
 - TUBING SHALL MEET THE REQUIREMENTS OF SUBSECTION 732.03. ALL OTHER SHAPES AND PLATES SHALL BE AASHTO M 270M/M 270 GRADE 36. BOLTS SHALL CONFORM TO NOTE 22 OF THE PROJECT NOTES.
 - ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 1/16" RADIUS AND BE FREE OF BURRS.
- SECTIONS OF BRIDGE RAIL SHALL BE ATTACHED TO
- A MINIMUM OF TWO (2) TRUSS MEMBERS.
- ALL PARTS SHALL BE PAINTED ACCORDING
- TO NOTES 26 AND 27 OF THE PROJECT NOTES.
- ANY BENDING OF BRIDGE RAIL SHALL BE BY SHOP
- PROCEDURE ONLY.



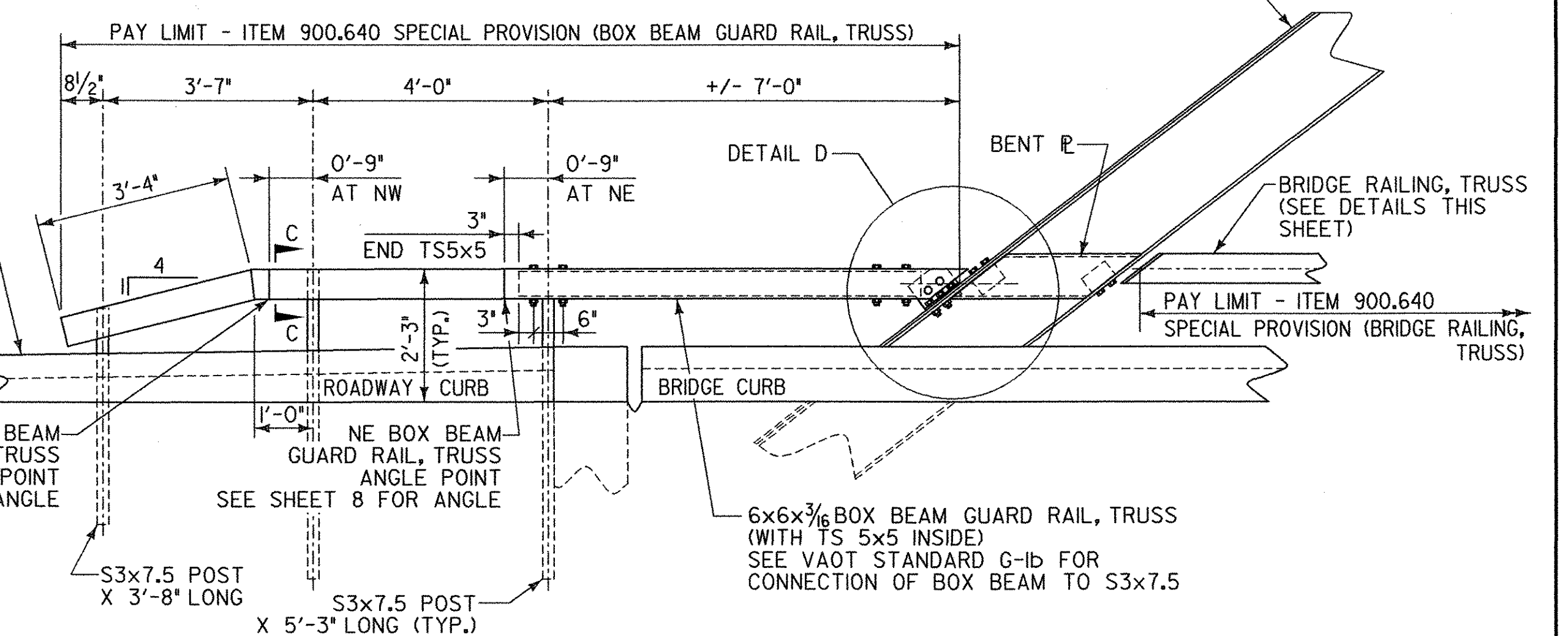
GUARD RAIL APPROACH ELEVATION AT SE & SW CORNER

SCALE 1/2" = 1'-0"



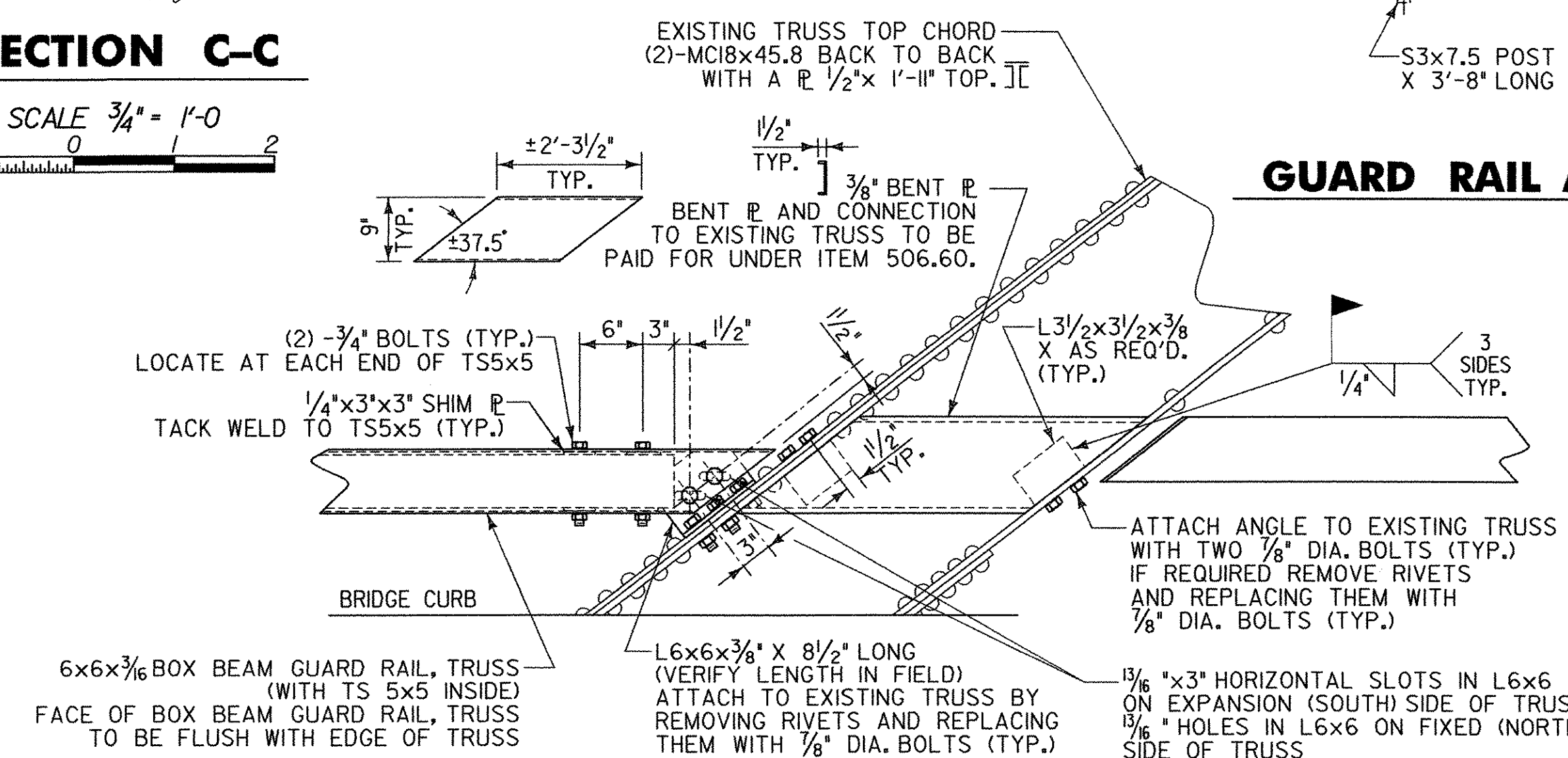
SECTION B-B

SCALE 3/4" = 1'-0"



GUARD RAIL APPROACH ELEVATION AT NW & NE CORNERS

SCALE 1/2" = 1'-0"



DETAIL D

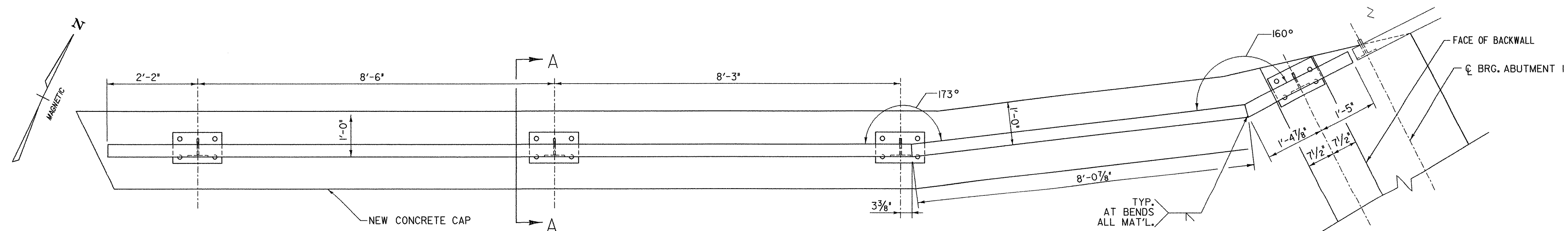
SCALE 1" = 1'-0"

NOTE:

SLV = SHORT LEG VERTICAL
LLV = LONG LEG VERTICAL

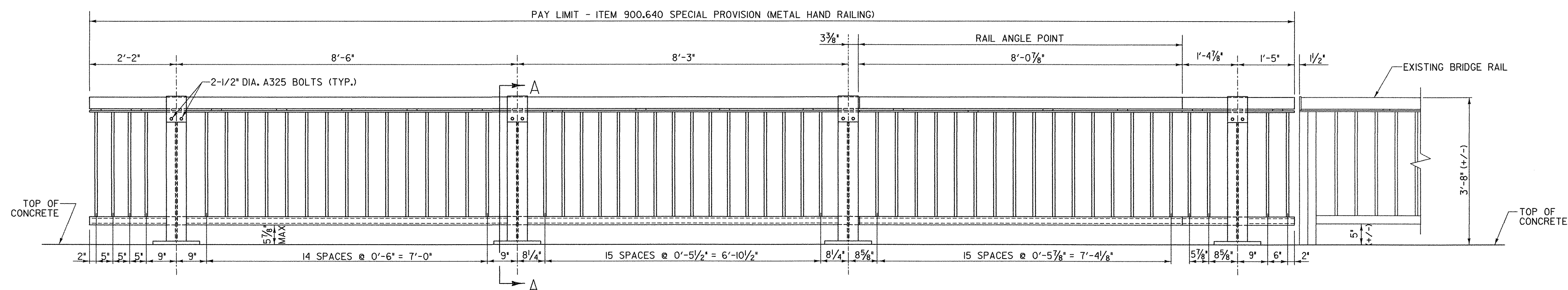


PROJECT NAME:	RICHFORD
PROJECT NUMBER:	BHF 0302 (3) S
FILE NAME:	...Design\Rich-brrail\dets.dgn
PROJECT LEADER:	MJC
DESIGNED BY:	SEB
BRIDGE RAIL DETAILS	
PLOT DATE:	12/18/2007
DRAWN BY:	SEB
CHECKED BY:	MJC
SHEET	34 OF 41



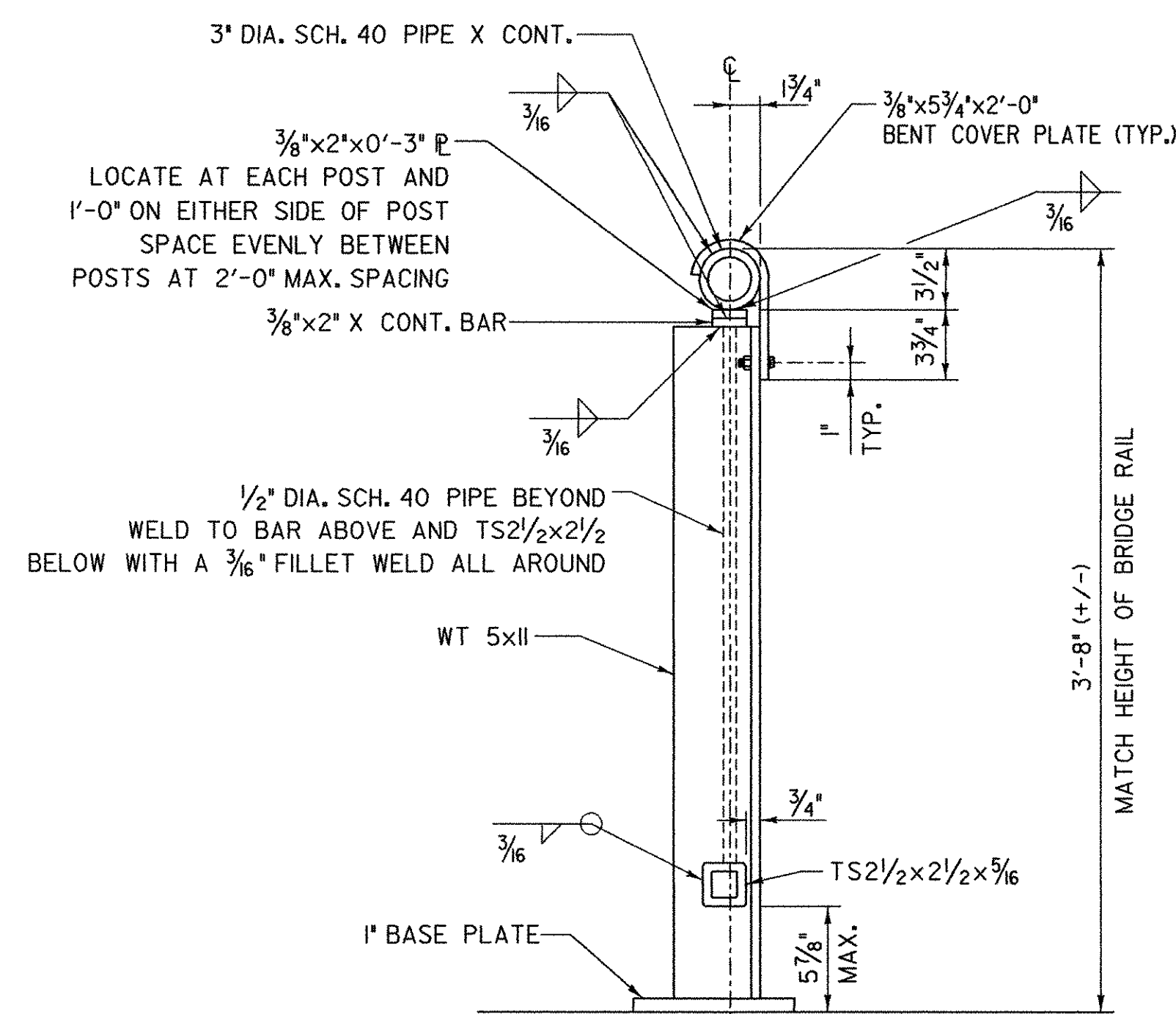
RAIL POST LAYOUT - SOUTHWEST WINGWALL

SCALE $\frac{3}{4}" = 1'-0"$



RAIL ELEVATION

SCALE $\frac{3}{4}" = 1'-0"$

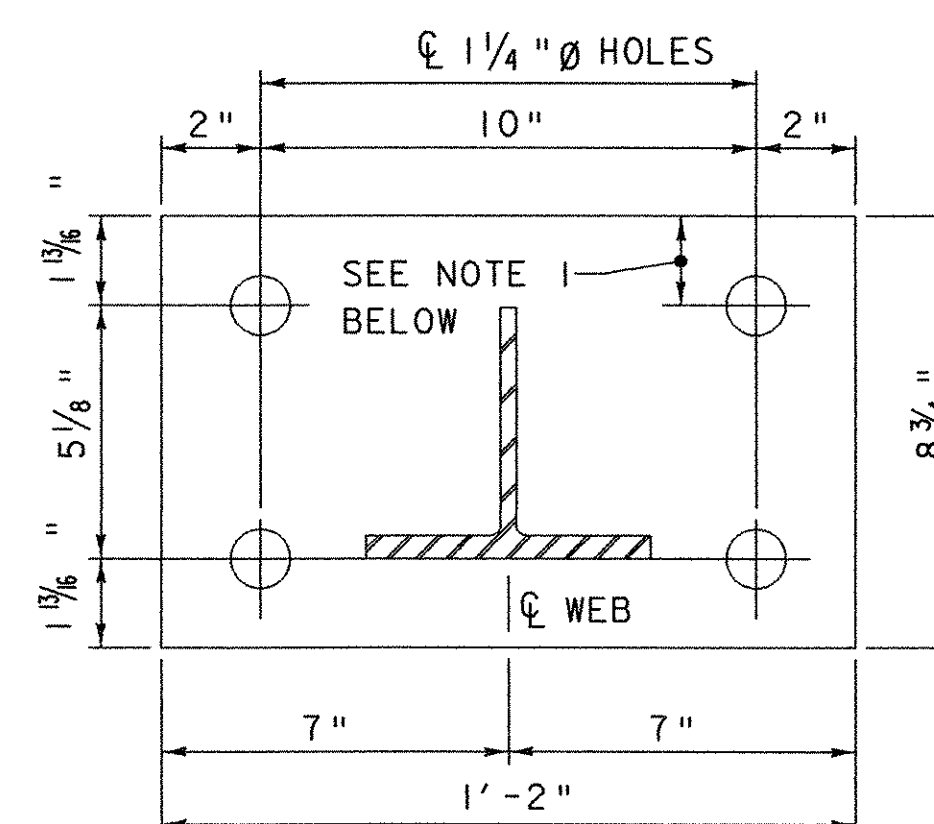


SECTION A-A

SCALE $1\frac{1}{2}" = 1'-0"$

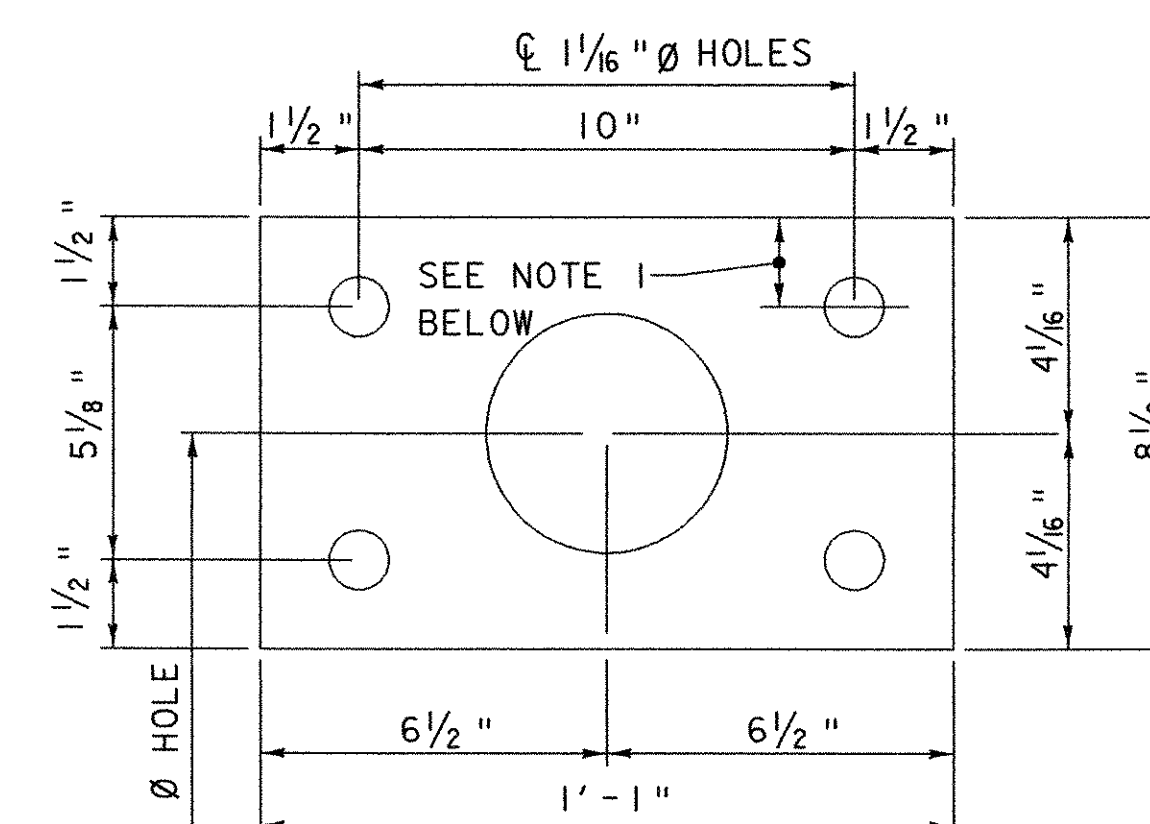
BASE WELD DETAIL

NOT TO SCALE



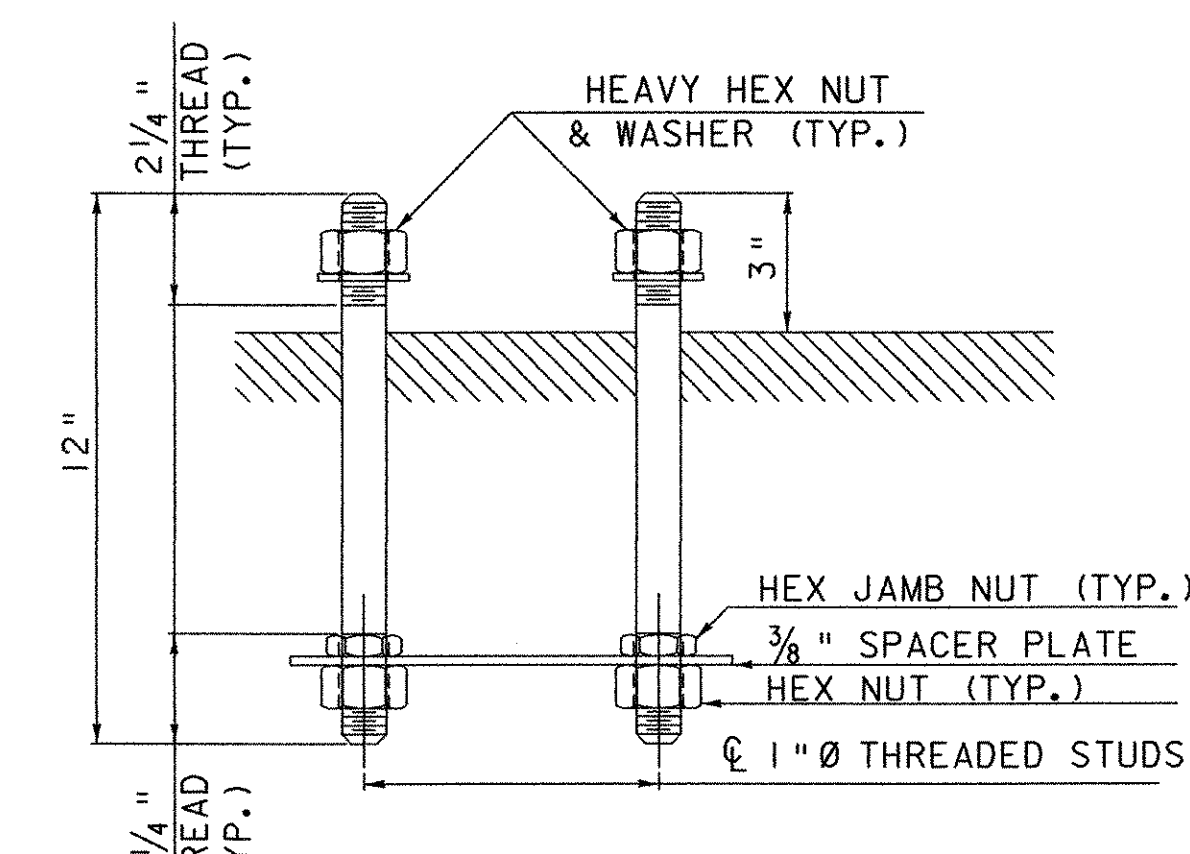
POST & BASE PLATE

NOT TO SCALE



SPACER PLATE

NOT TO SCALE



RAIL POST ANCHORAGE

NOT TO SCALE

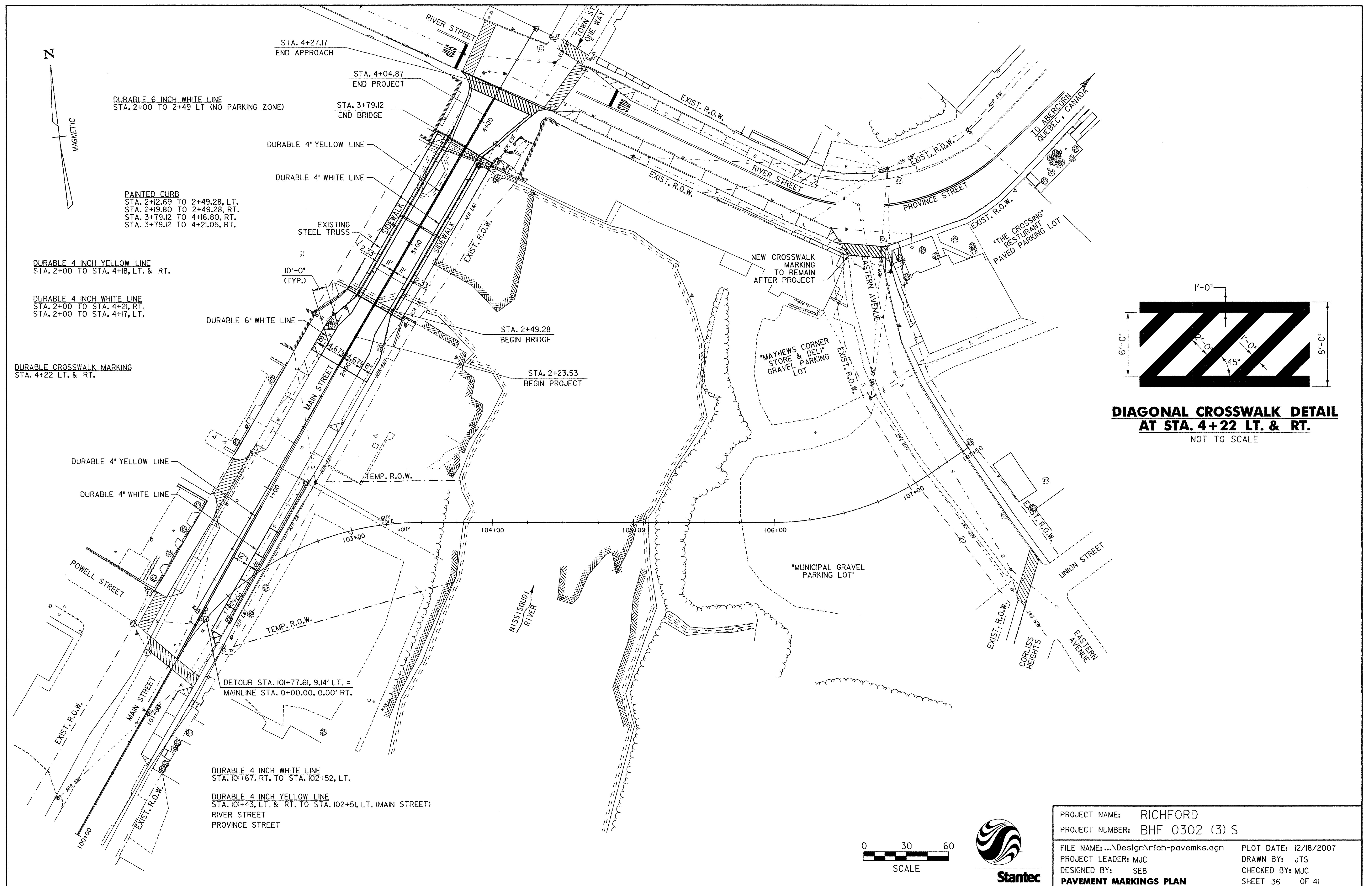
HAND RAIL NOTES:

1. BASE P. CLOSEST TO BRIDGE SHALL HAVE UPPER RIGHT HOLE LOCATED $\frac{3}{8}"$ DOWN INSTEAD OF $1\frac{1}{8}"$. 2" DIMENSION FROM THE SIDE SHALL REMAIN THE SAME.
2. HAND RAIL TO RECEIVE SAME PAINT SYSTEM AS BRIDGE.
3. ALL STEEL FOR RAILING ASSEMBLY SHALL CONFORM TO AASHTO M 270M/M 270 GRADE 36 UNLESS OTHERWISE NOTED. STEEL PIPE SHALL CONFORM TO ASTM A53 GRADE B, SCHEDULE 40. STRUCTURAL TUBING SHALL MEET THE REQUIREMENTS OF NOTE 20 ON THE PROJECT NOTES.
4. ANCHOR STUDS SHALL MEET THE REQUIREMENTS OF ASTM A449.



PROJECT NAME: RICHFORD
PROJECT NUMBER: BHF 0302 (3) S

FILE NAME: ...Design\Rich-handrail.dgn PLOT DATE: 12/18/2007
PROJECT LEADER: MJC DRAWN BY: JTS
DESIGNED BY: SEB CHECKED BY: MJC
RAILING REPLACEMENT DETAILS SHEET 35 OF 41



REINFORCING STEEL SCHEDULE

~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-S1). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. * DENOTES BARS TO BE CUT IN FIELD.
9. ♦ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. ⊙ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. "E" IN PREFIX DENOTES EPOXY COATED REINFORCING STEEL.

ASTM STANDARD REINFORCING BARS				
BAR SIZE DESIGNA- TION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER INCHES	AREA INCHES ²	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.044	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.142
#9	3.400	1.128	1.00	3.544
#10	4.303	1.270	1.27	3.990
#11	5.313	1.410	1.56	4.430
#14	7.65	1.693	2.25	5.32
#18	13.60	2.257	4.00	7.09

PROJECT NAME: **RICHFORD**
PROJECT NUMBER: **BHF 0302 (3) S**

FILE NAME: **rich-reinf.xls**
PROJECT LEADER: **MJC**
DESIGNED BY: **SEB**
REINFORCING SCHEDULE

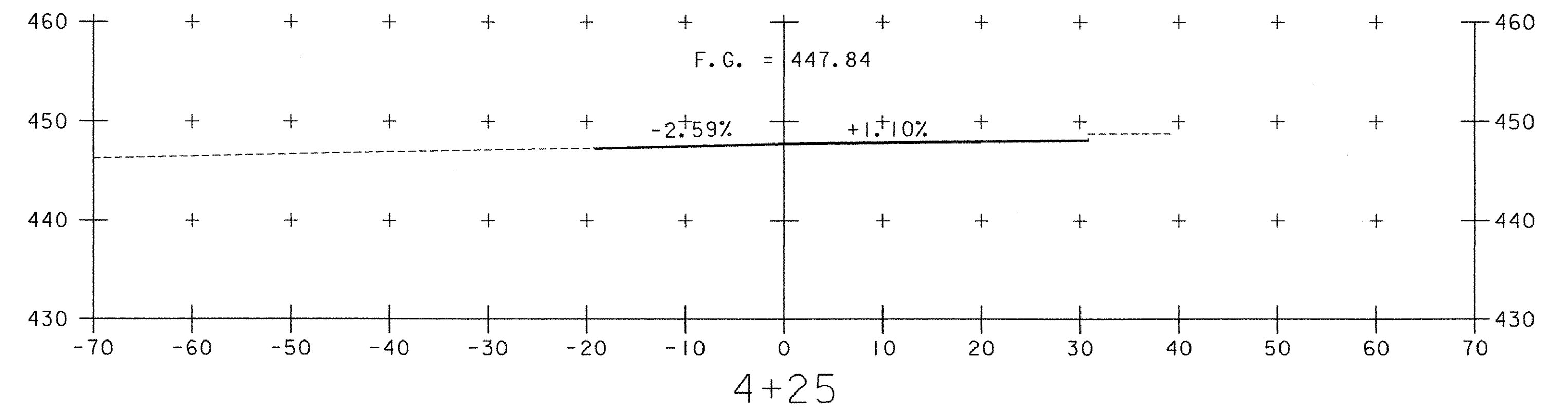
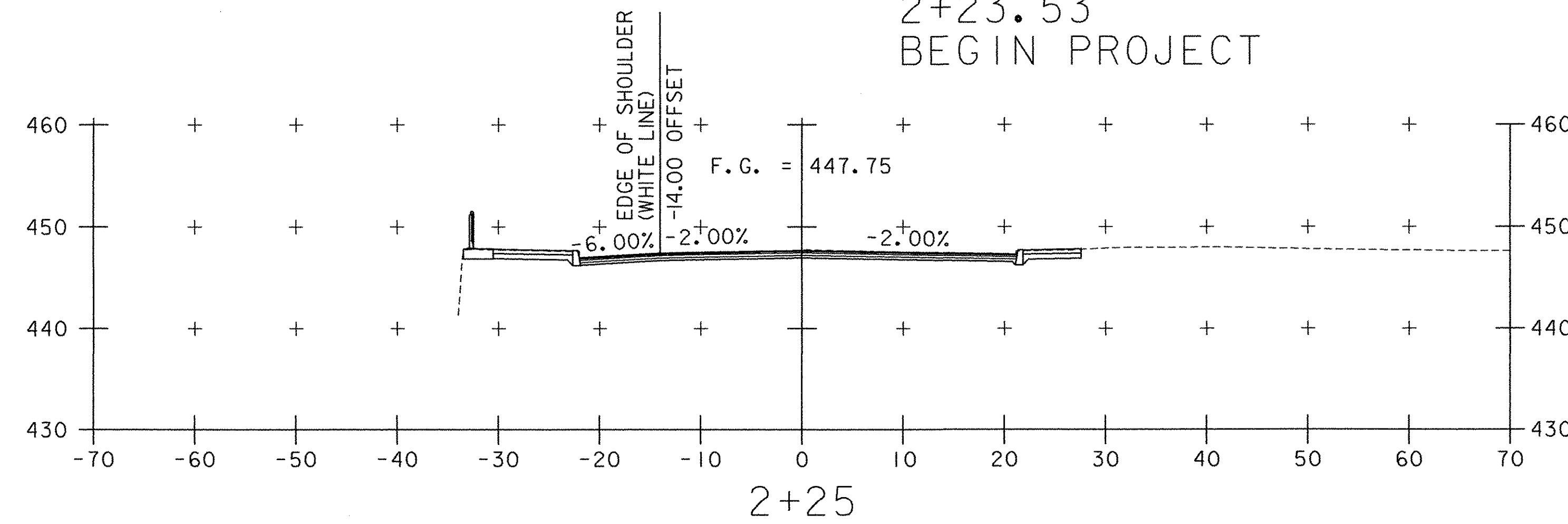
PLOT DATE: **9/26/2007**
DRAWN BY: **AET**
CHECKED BY: **MJC**
SHEET **37** OF **41**

PROJECT NAME: RICHFORD	
PROJECT NUMBER: BHF 0302 (3) S	
FILE NAME: rich-reinf.xls	PLOT DATE: 9/26/2007
PROJECT LEADER: MJC	DRAWN BY: AET
DESIGNED BY: SEB	CHECKED BY: MJC
REINFORCING SCHEDULE	SHEET 37 OF 41

2+49.28
BEGIN BRIDGE

2+23.53
BEGIN PROJECT

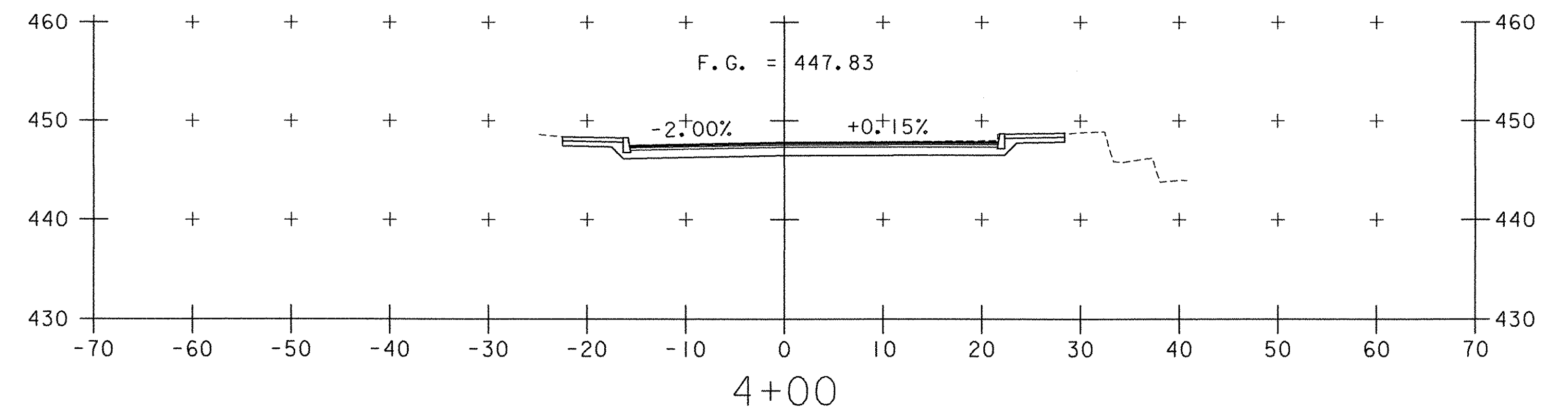
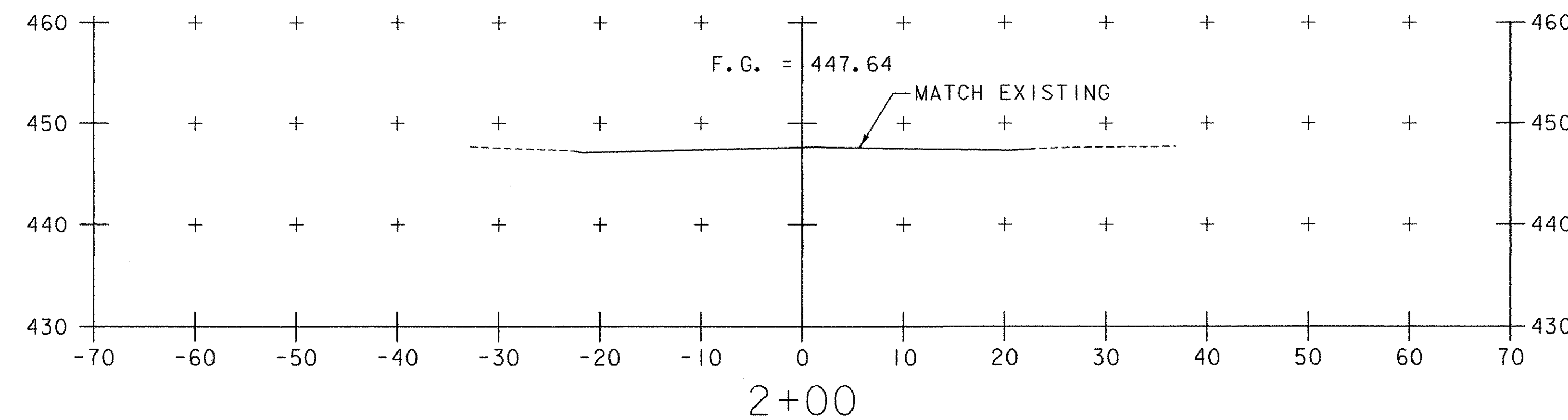
4+27.17
END APPROACH
MATCH EXISTING



2+00
BEGIN APPROACH

4+04.87
END PROJECT

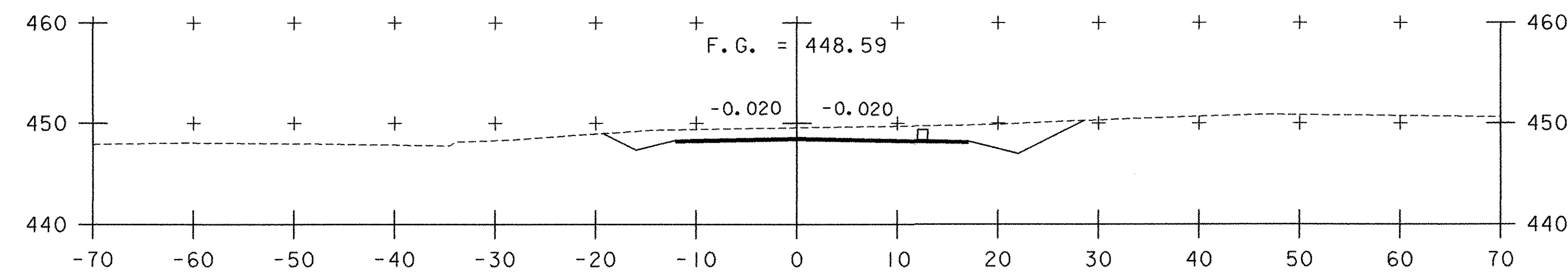
3+79.12
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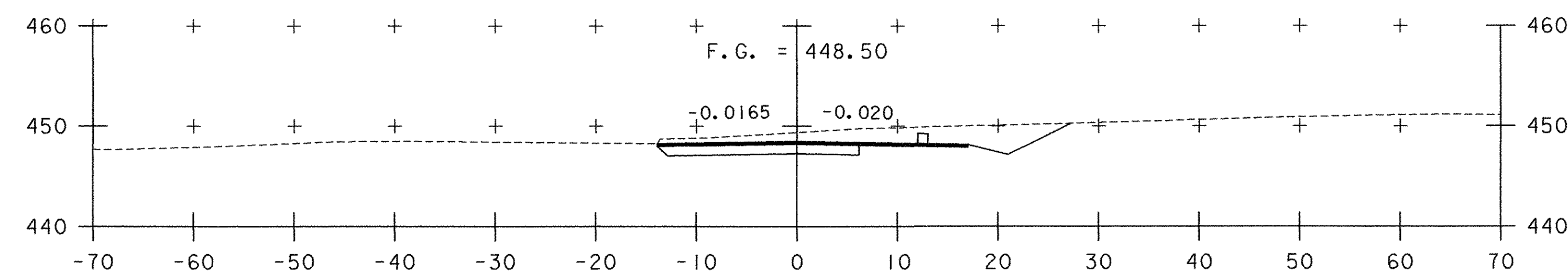
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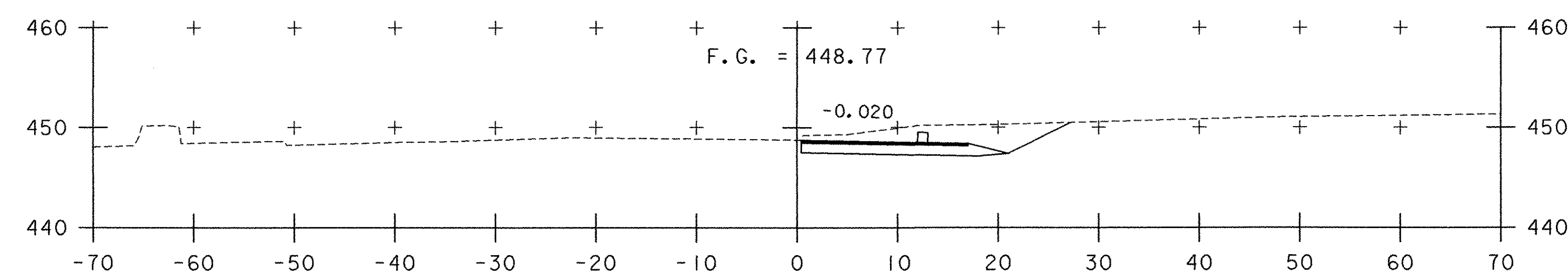
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PROJECT NUMBER:	BHF 0302 (3) S
FILE NAME:	...Structures\Design\Rich-xsl.dwg
PROJECT LEADER:	MJC
DESIGNED BY:	SEB
ROADWAY CROSS SECTIONS	
DATE:	12/18/2007
DRAWN BY:	
CHECKED BY:	MJC
SHEET	38 OF 41



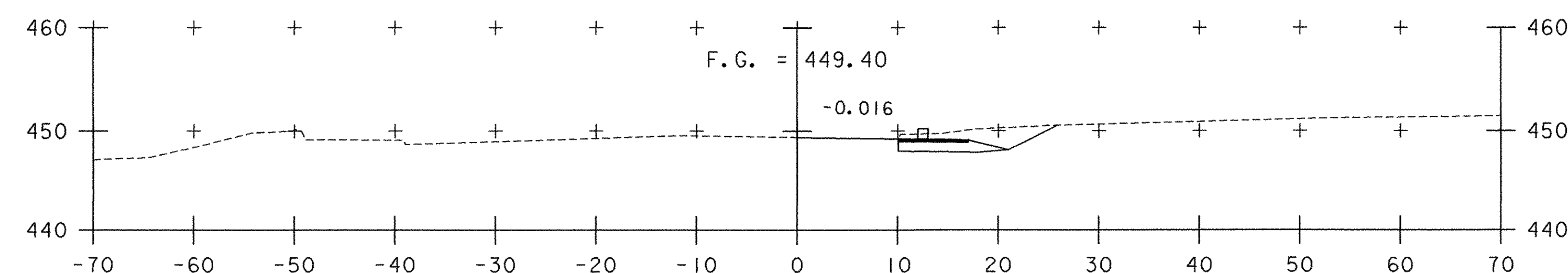
102+75



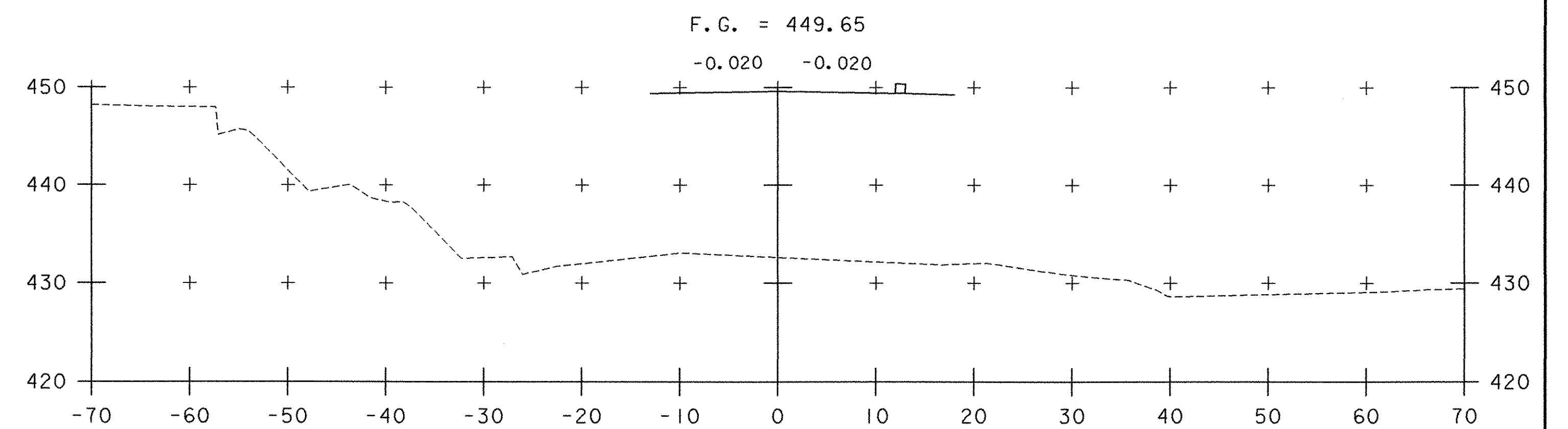
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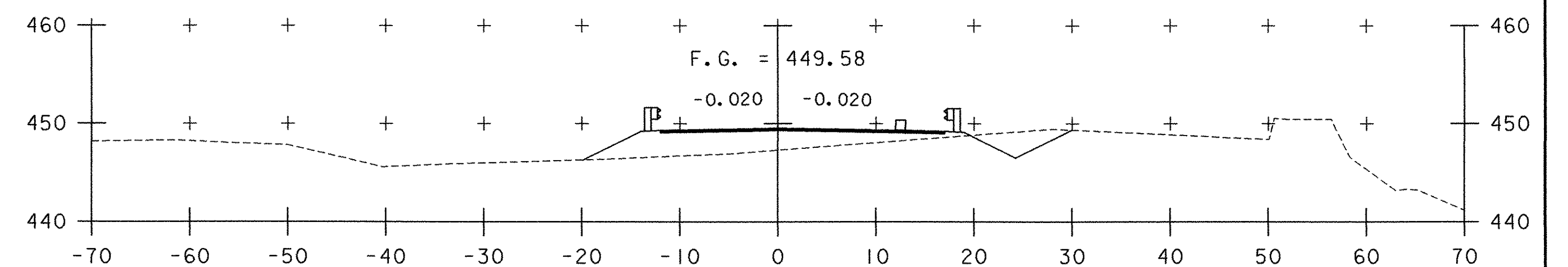
102+25



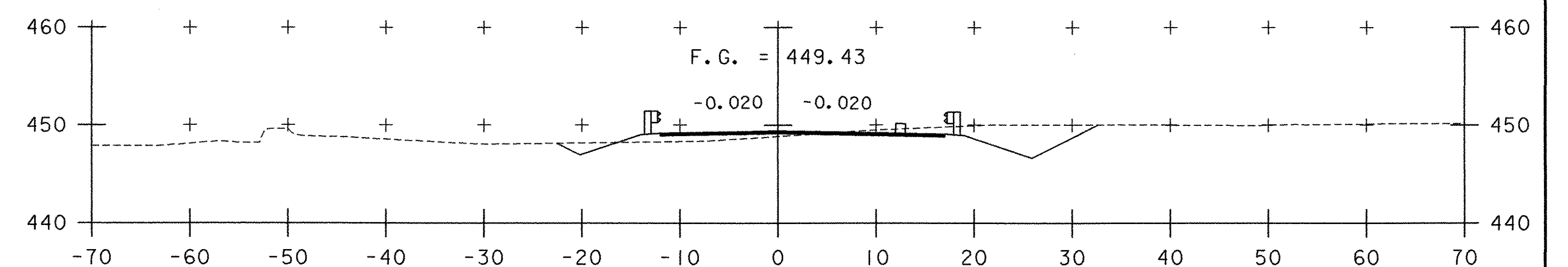
102+00



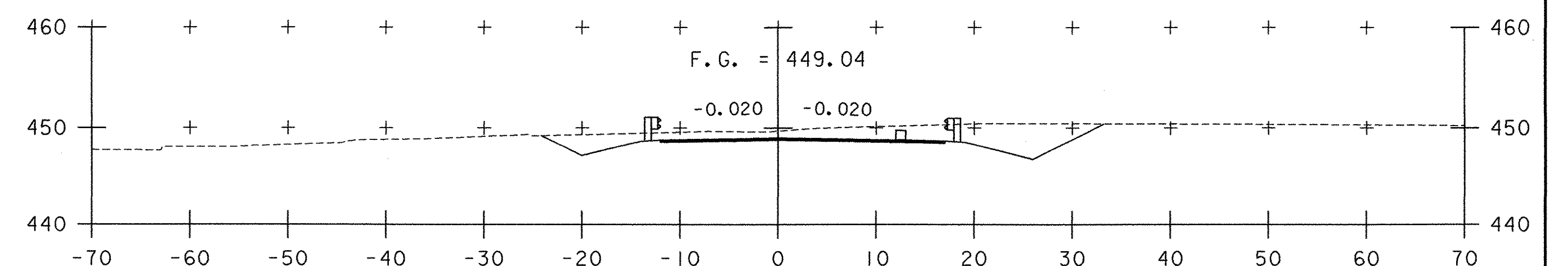
103+75



103+50



103+25

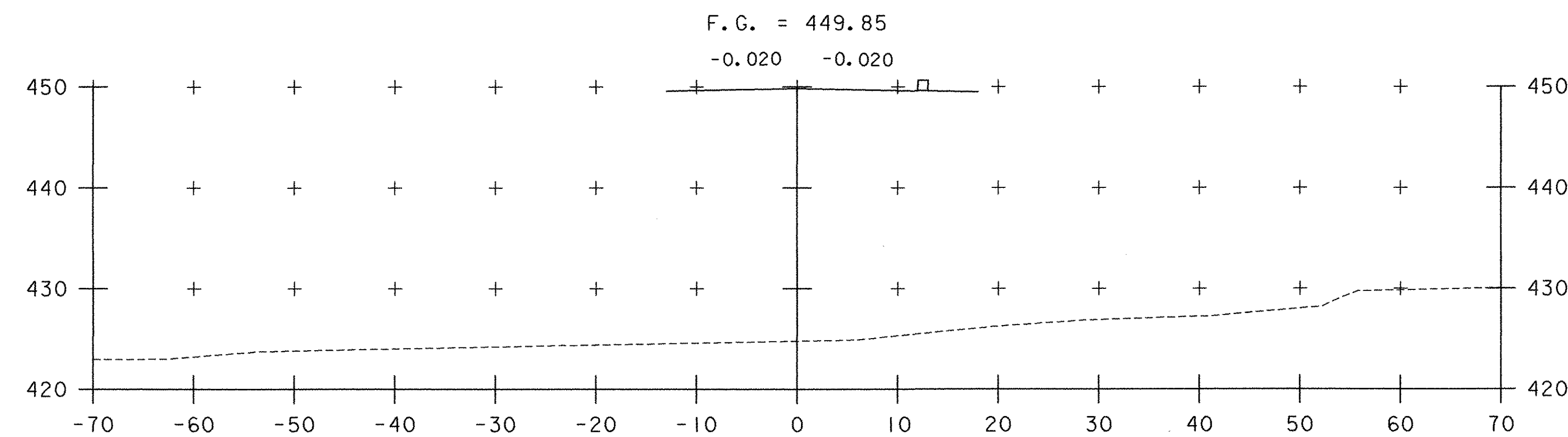


103+00

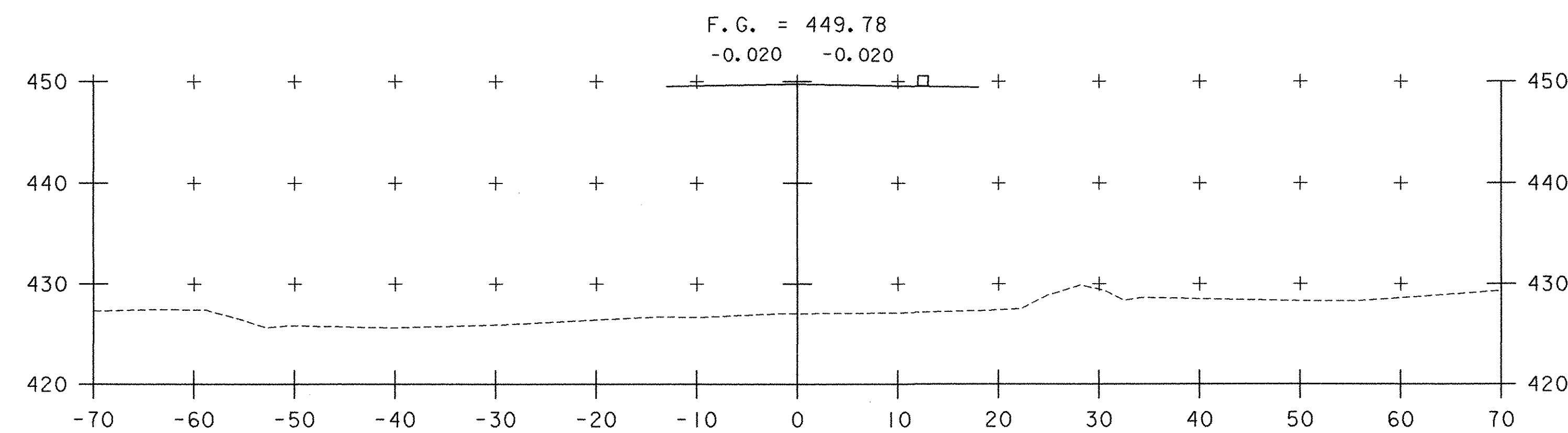


PROJECT NAME:	RICHFORD
PROJECT NUMBER:	BHF 0302 (3) S
FILE NAME:	...Structures\Design\Rich-xsl.dgn
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DESIGNED BY:	SEB
DETOUR CROSS SECTIONS - 1	
PRINT DATE:	12/18/2007
DRAWN BY:	
CHECKED BY:	MJC
SHEET	39 OF 41

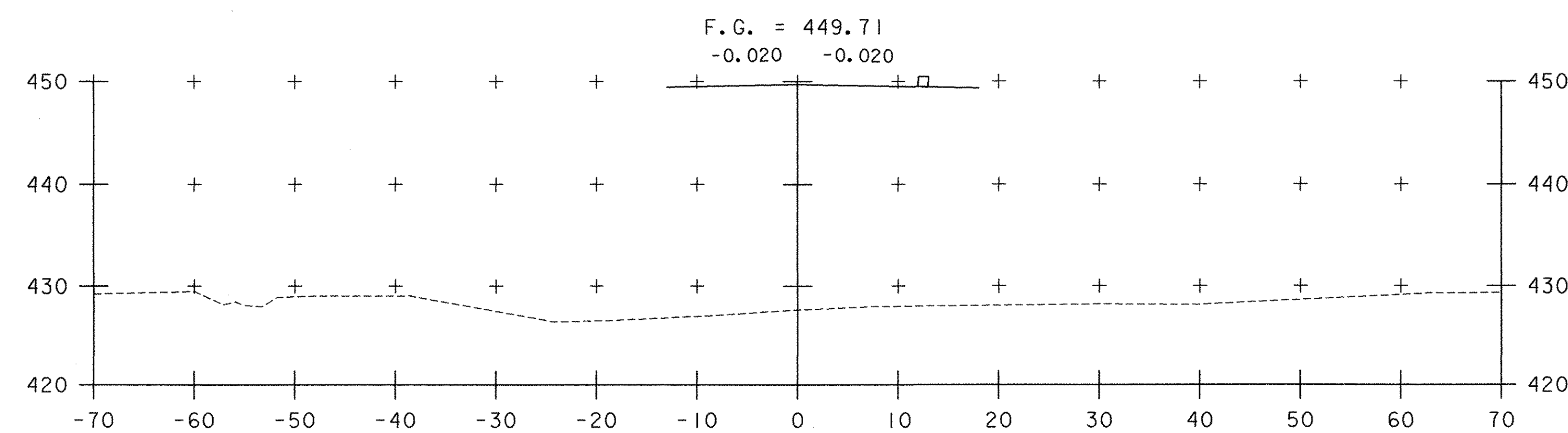
STA. 102+00 TO STA. 103+75



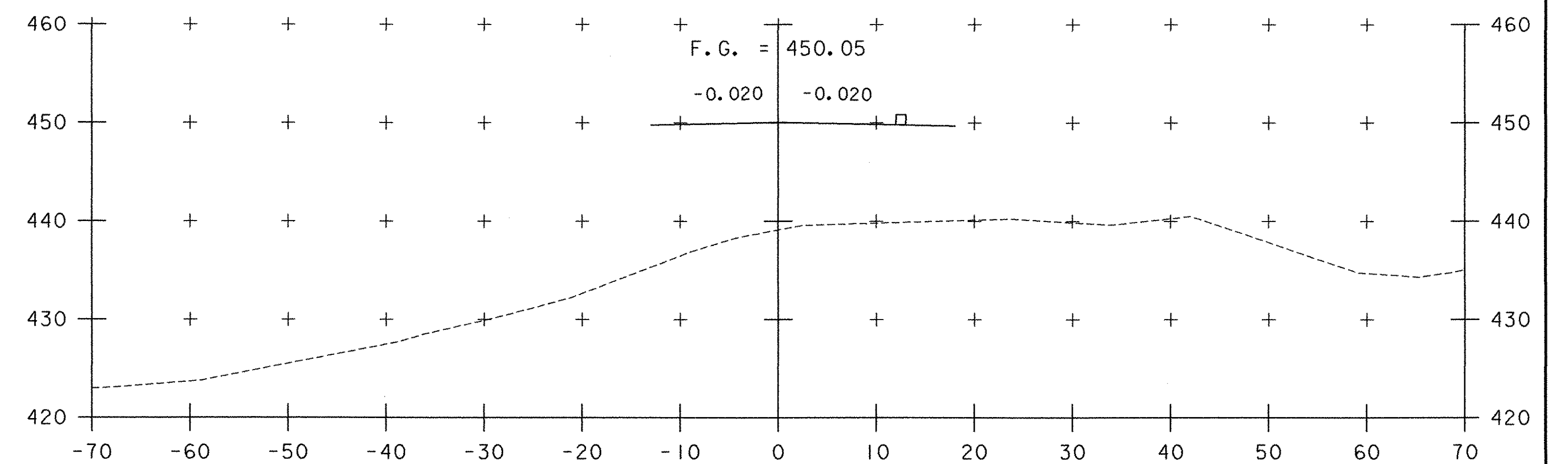
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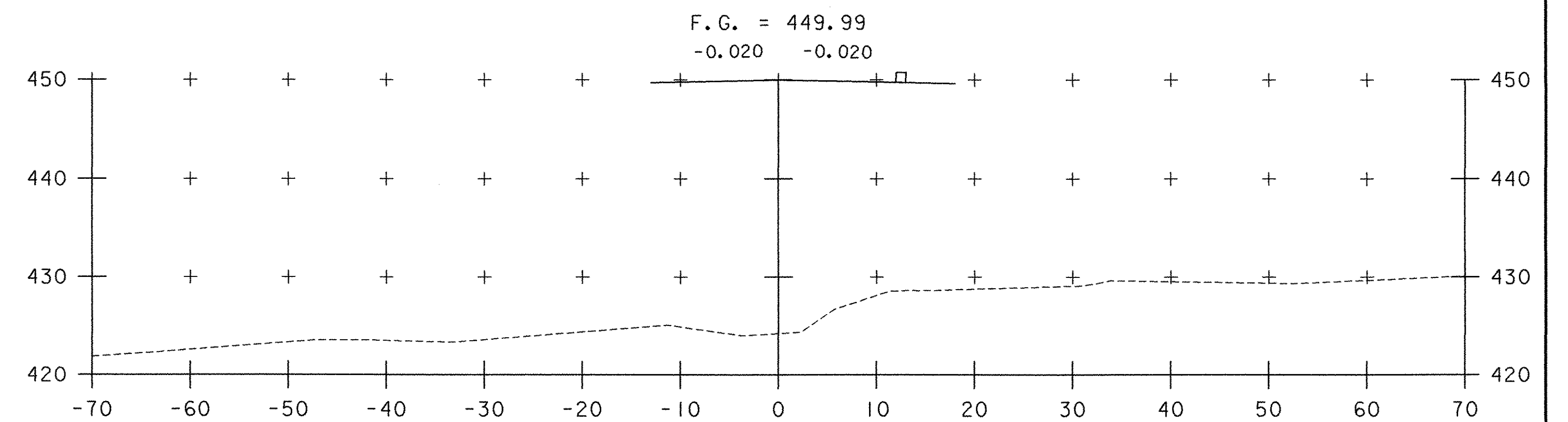
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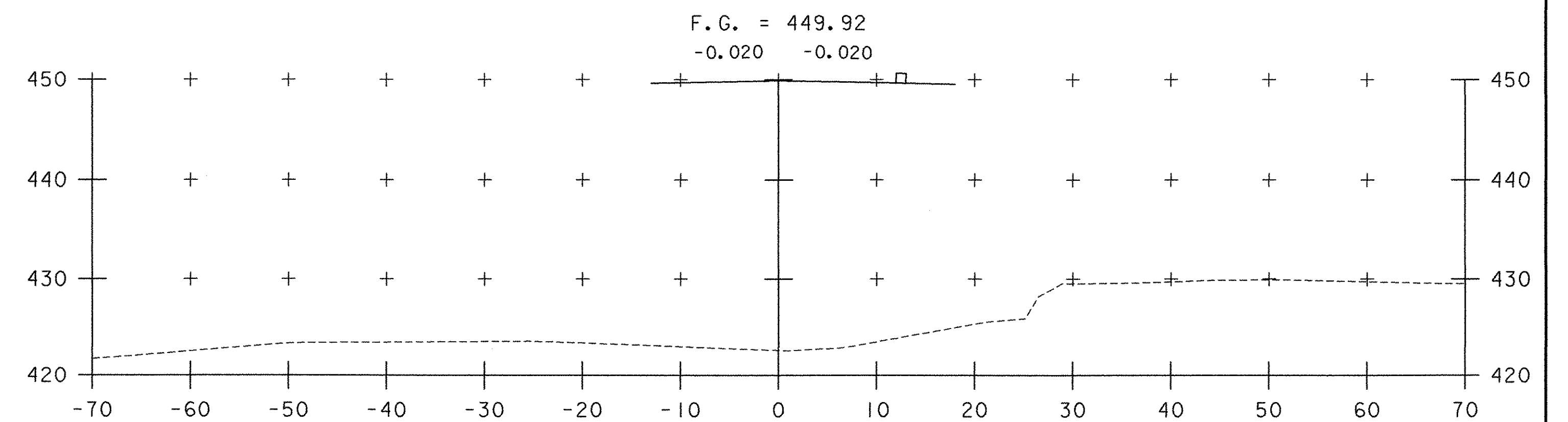
104+00



105+25



105+00

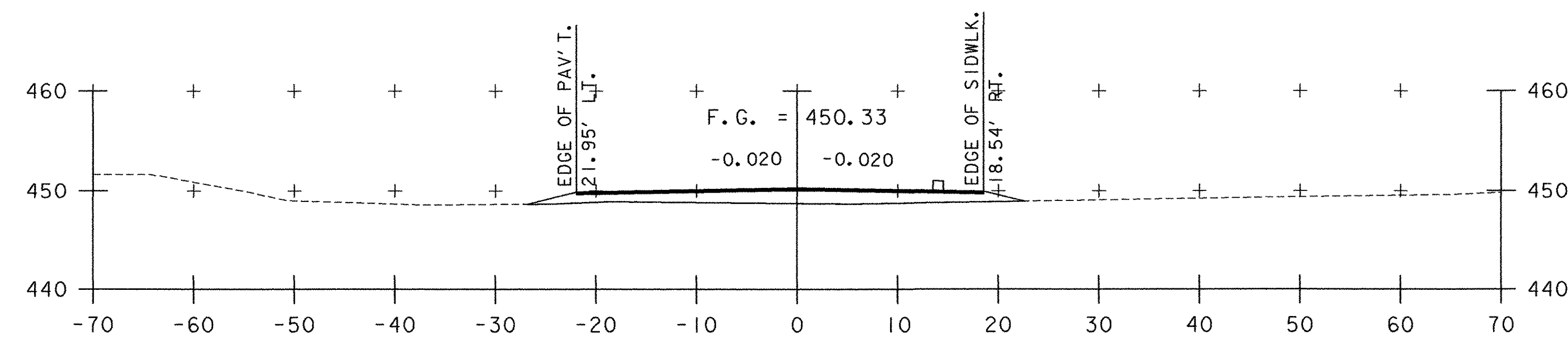


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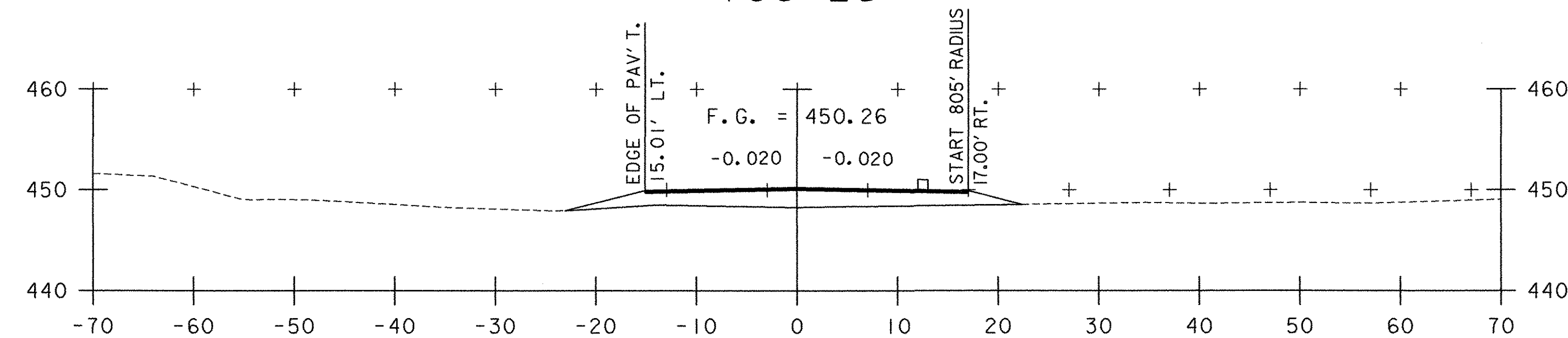
STA. 104+00 TO STA. 105+25



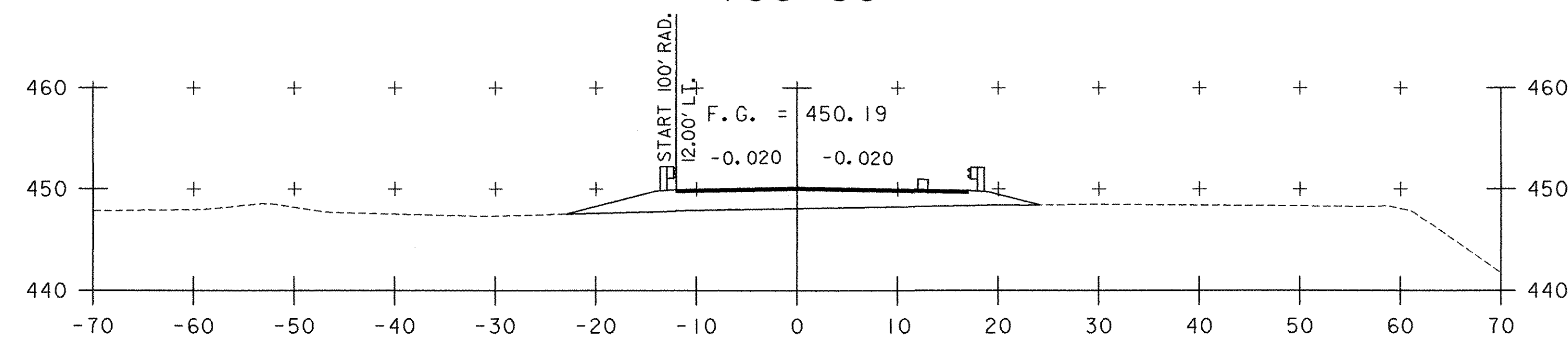
PROJECT NAME:	RICHFORD
PROJECT NUMBER:	BHF 0302 (3) S
FILE NAME:	...Structures\Design\Rich-xsl.dwg
PROJECT LEADER:	MJC
DESIGNED BY:	SEB
DETOUR CROSS SECTIONS - 2	
PRINT DATE:	12/18/2007
DRAWN BY:	
CHECKED BY:	MJC
SHEET	40 OF 41



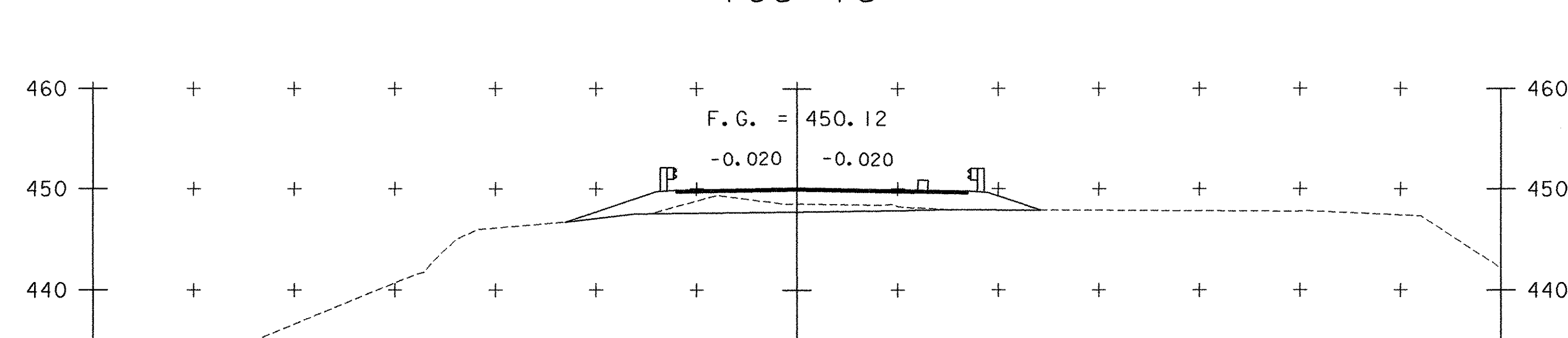
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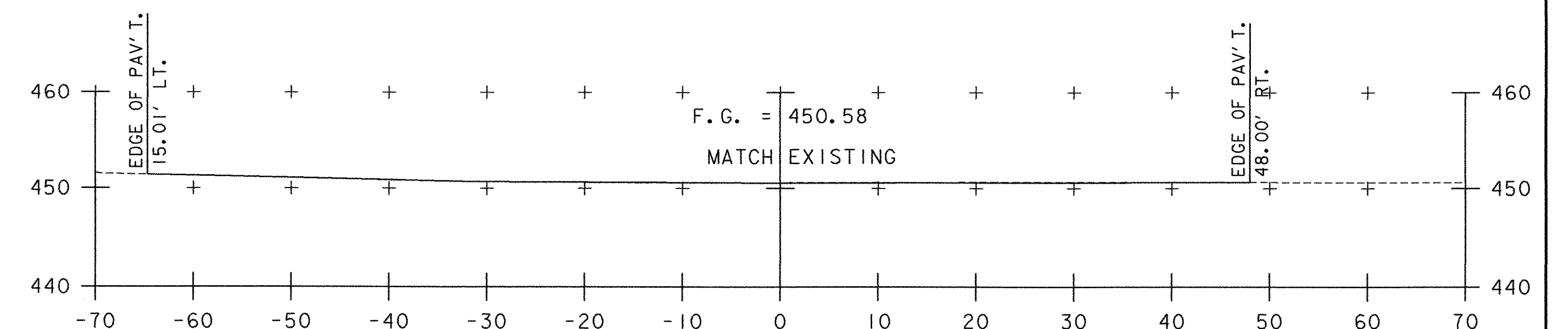
106+00



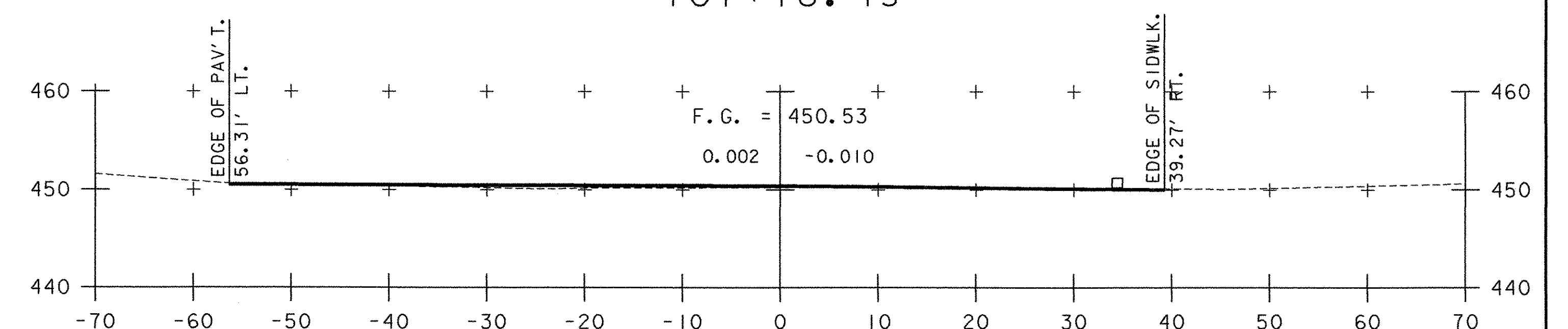
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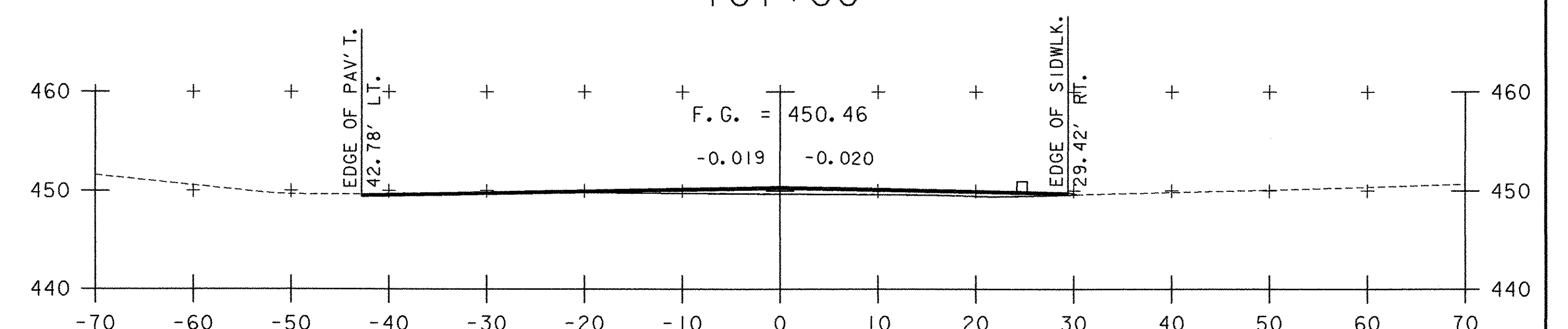
105+50



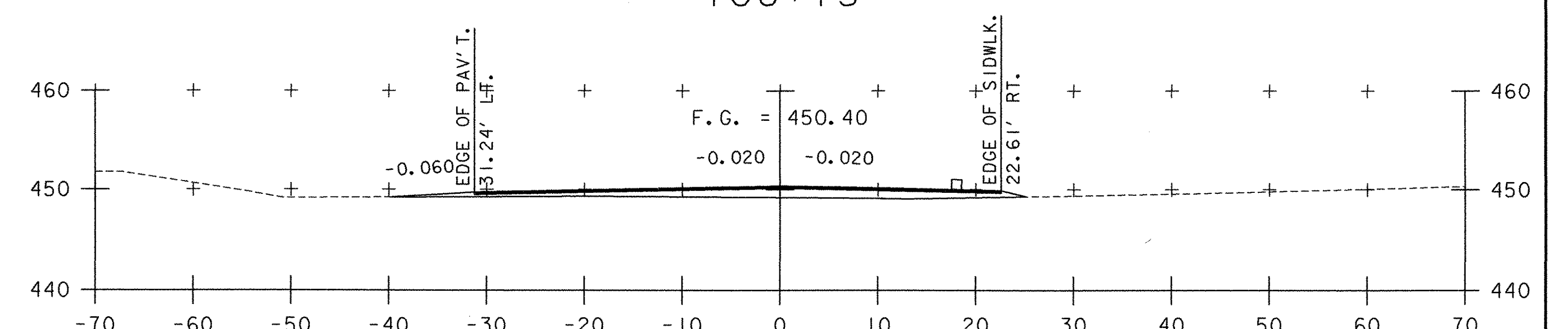
107+18.49



107+00



106+75

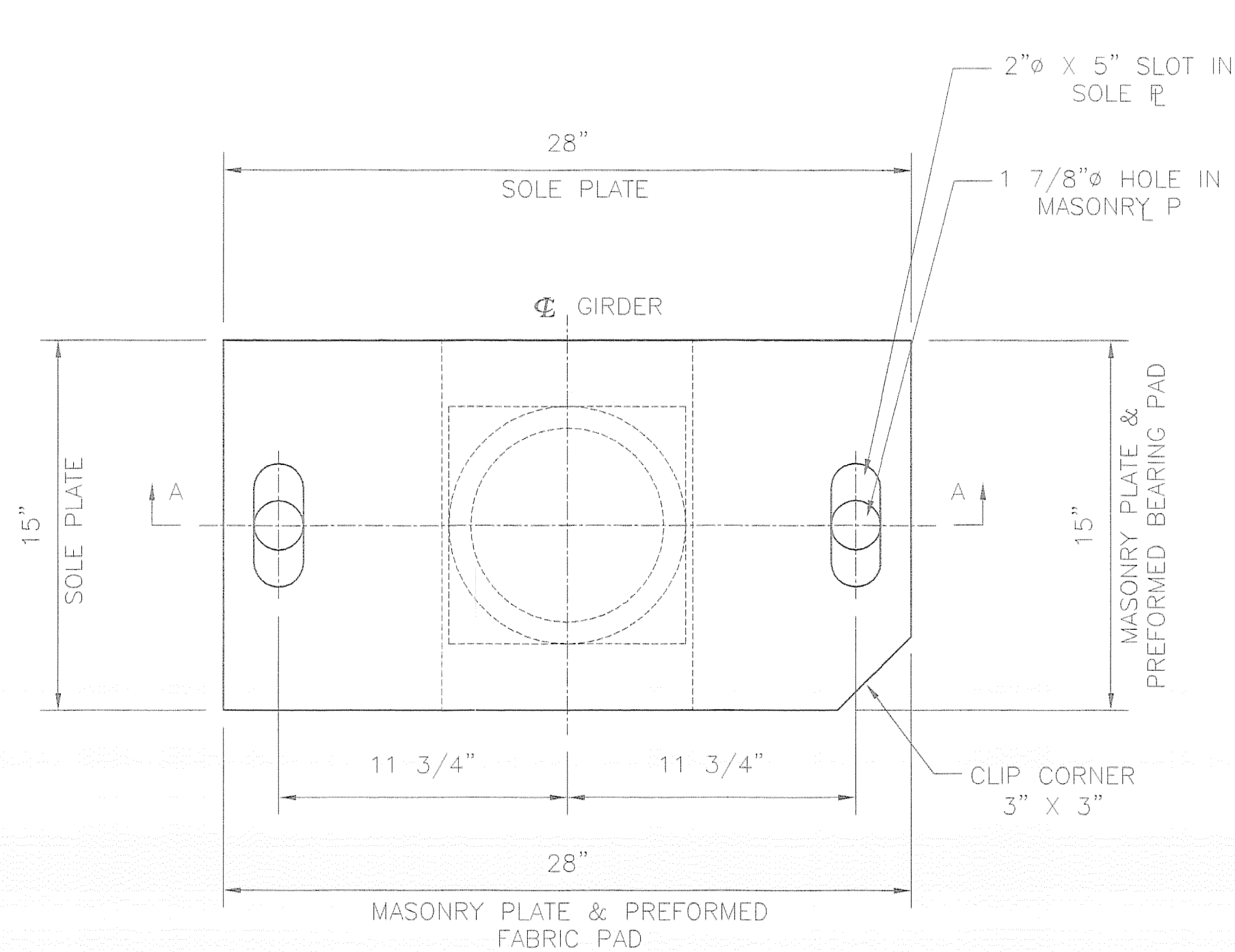


106+50

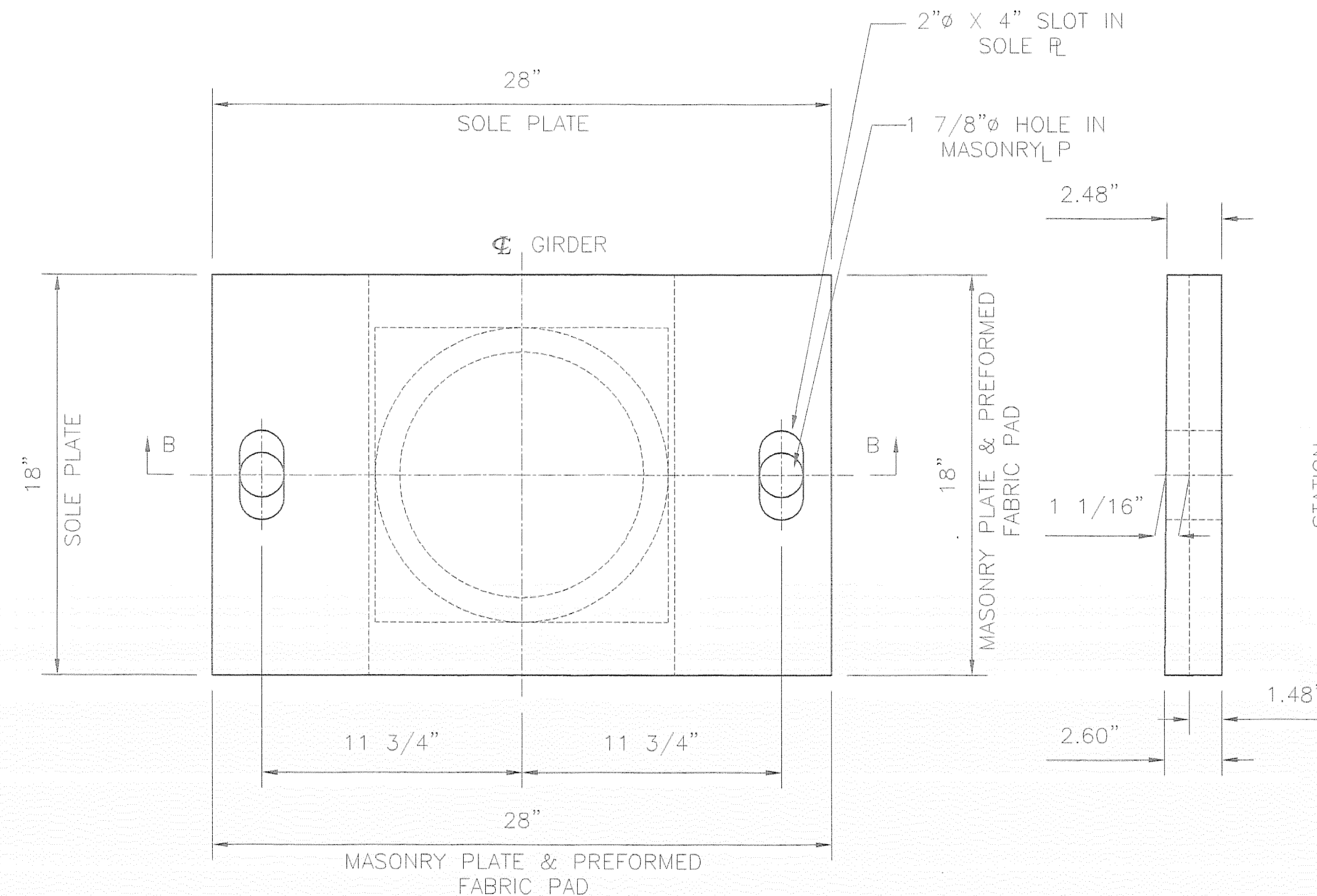


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PROJECT NUMBER:	BHF 0302 (3) S
FILE NAME:	...Structures\Design\Rich-xsl.dgn
PROJECT LEADER:	MJC
DESIGNED BY:	SEB
DETOUR CROSS SECTIONS - 3	
DATE:	12/18/2007
DRAWN BY:	
CHECKED BY:	MJC
SHEET	41 OF 41

STA. 105+50 TO STA. 107+18.49

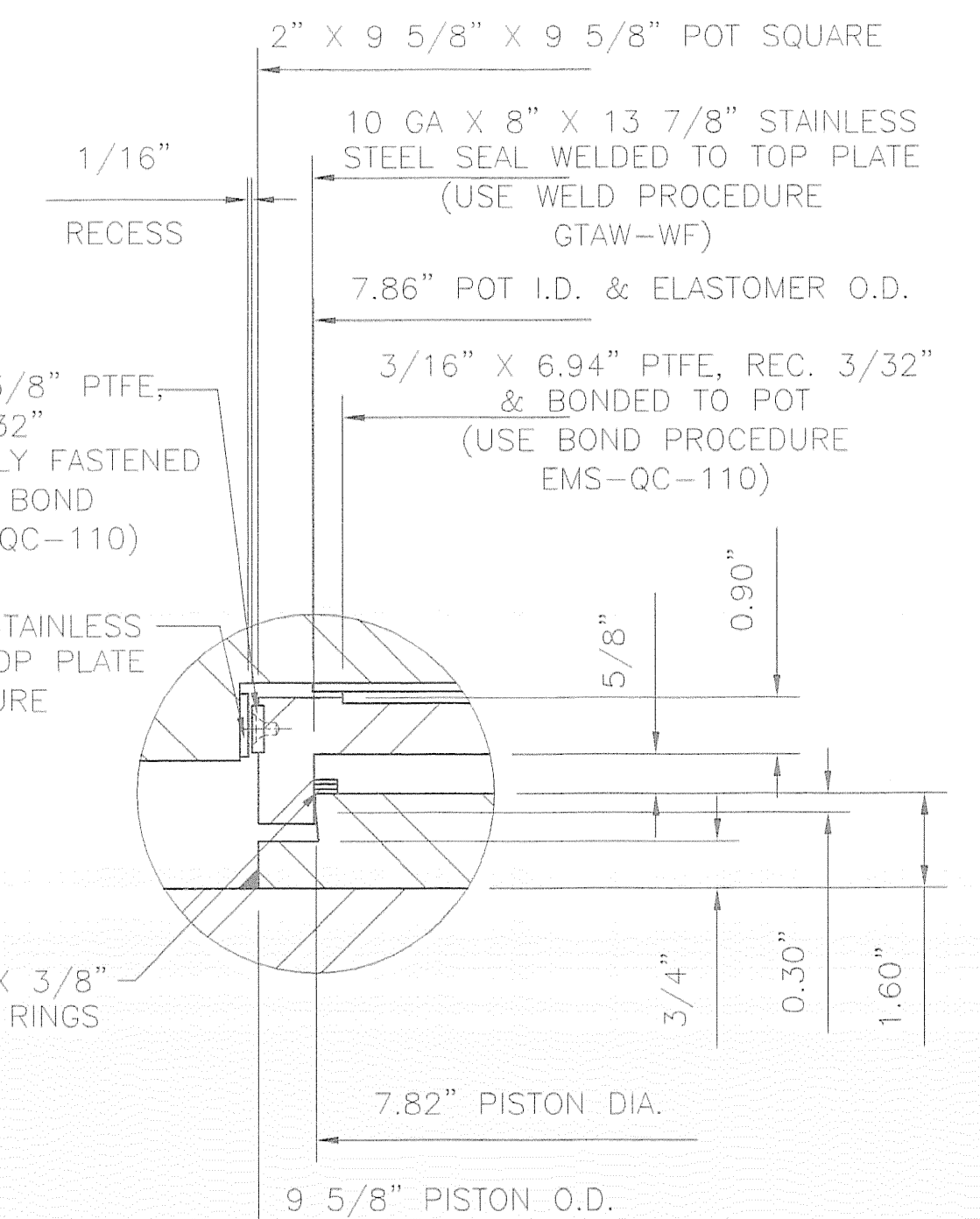


PLAN

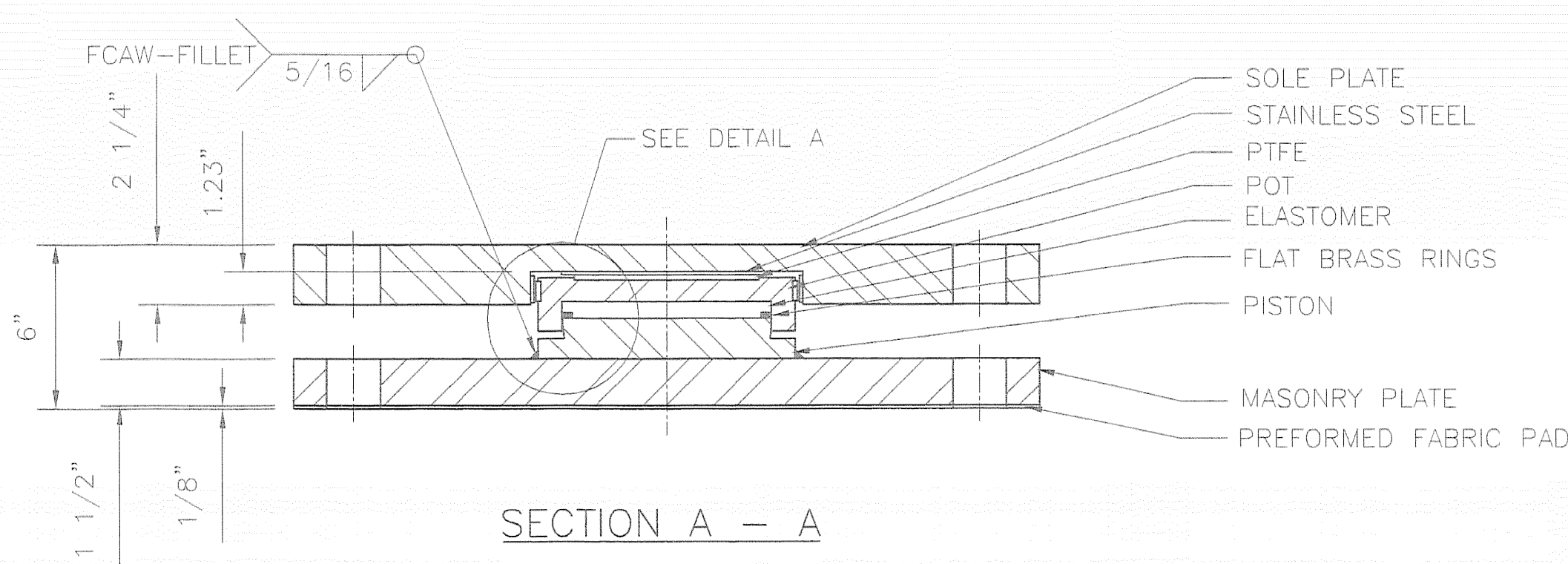


PLAN

SIDE ELEVATION



DETAIL A
N.T.S.



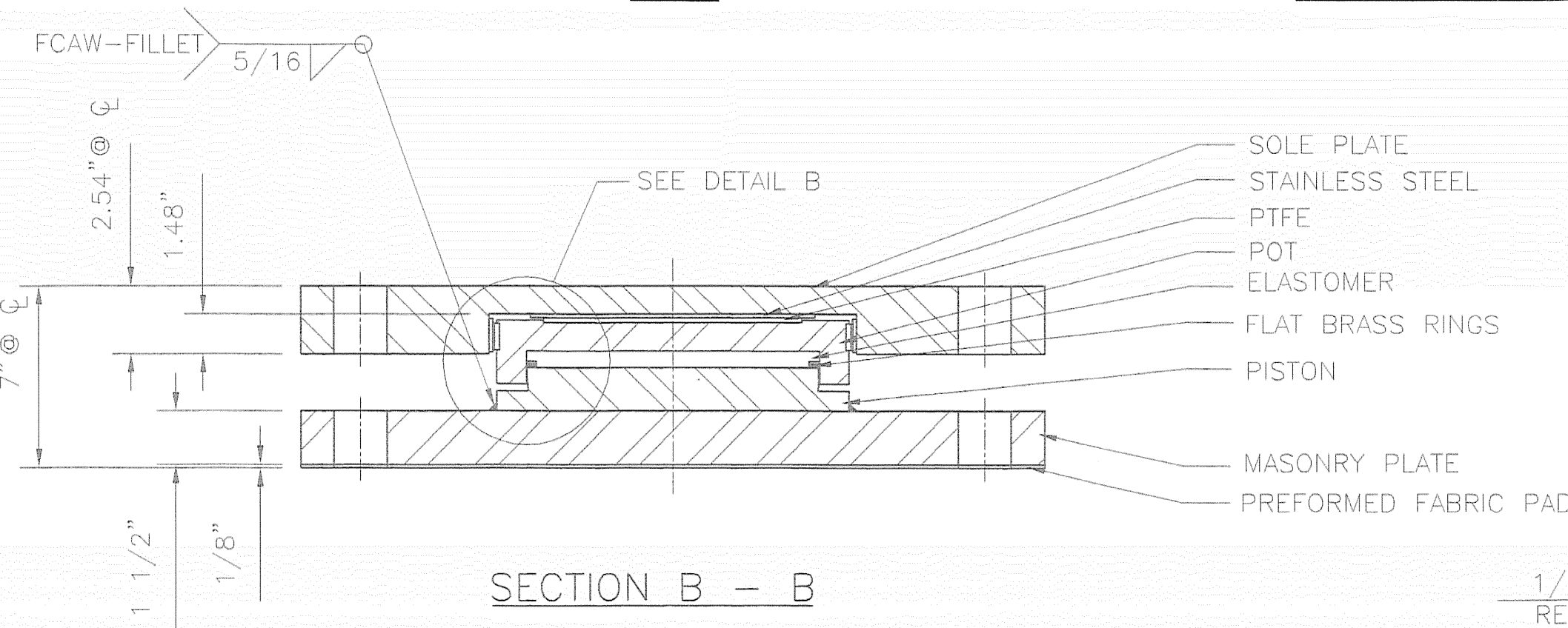
SECTION A - A

COSMEC GUIDED EXPANSION POT BEARING

QUANTITY: 2
LOCATION: ABUTMENT 1, GIRDERS 2 & 3
VERTICAL LOAD CAPACITY: 170 KIPS
TRANSVERSE LOAD CAPACITY: 34 KIPS
LONGITUDINAL LOAD CAPACITY: N/A
MOVEMENT CAPACITY: 2 1/2"
ROTATION CAPACITY: .020 RADIAN

BEARING NOTES

- ALL MATERIALS USED IN THE FABRICATION OF THESE BEARINGS SHALL BE MADE IN THE U.S.A.
- BEARINGS ARE TO BE SHIPPED AS COMPLETE UNITS, STEEL BANDED, AND SHALL BE WRAPPED TO PROTECT FROM MOISTURE AND DIRT DURING TRANSIT AND STORAGE.
- LOCATION OF FABRICATION PLANT - 70 SOUTH STREET WALPOLE, MA 02081
- COSMEC, INC. REPRESENTATIVE - MR. MATT McANDREWS (508) 668-6600
- BEARINGS SHALL BE STORED IN A CLEAN, DRY, LEVEL UPRIGHT POSITION.
- BEARINGS MUST NOT BE DISASSEMBLED
- PROTECT PTFE & S.S. SURFACES FROM DIRT, WELD SPATTER, & ANY OTHER FOREIGN SUBSTANCES.



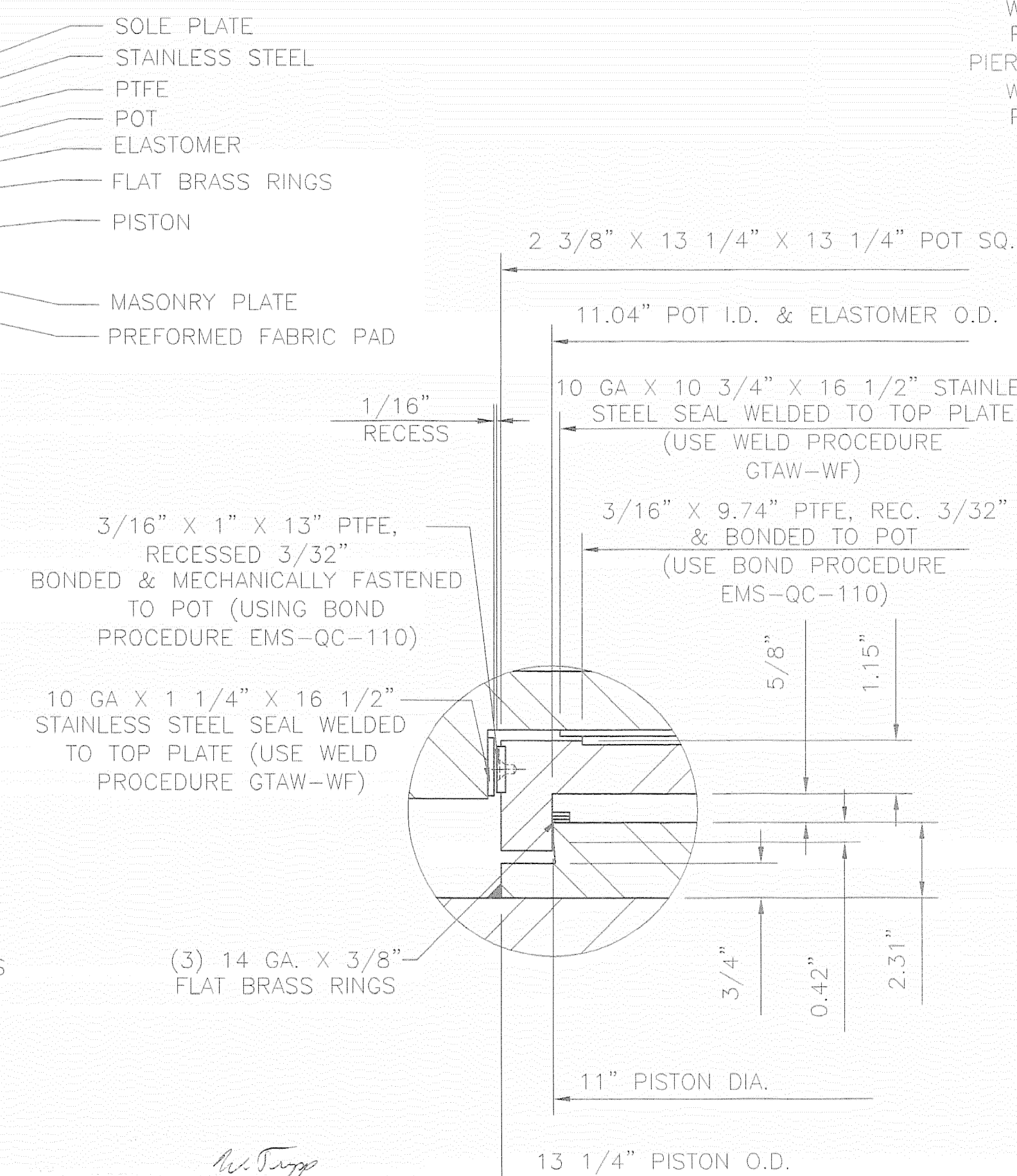
SECTION B - B

COSMEC GUIDED EXPANSION POT BEARING

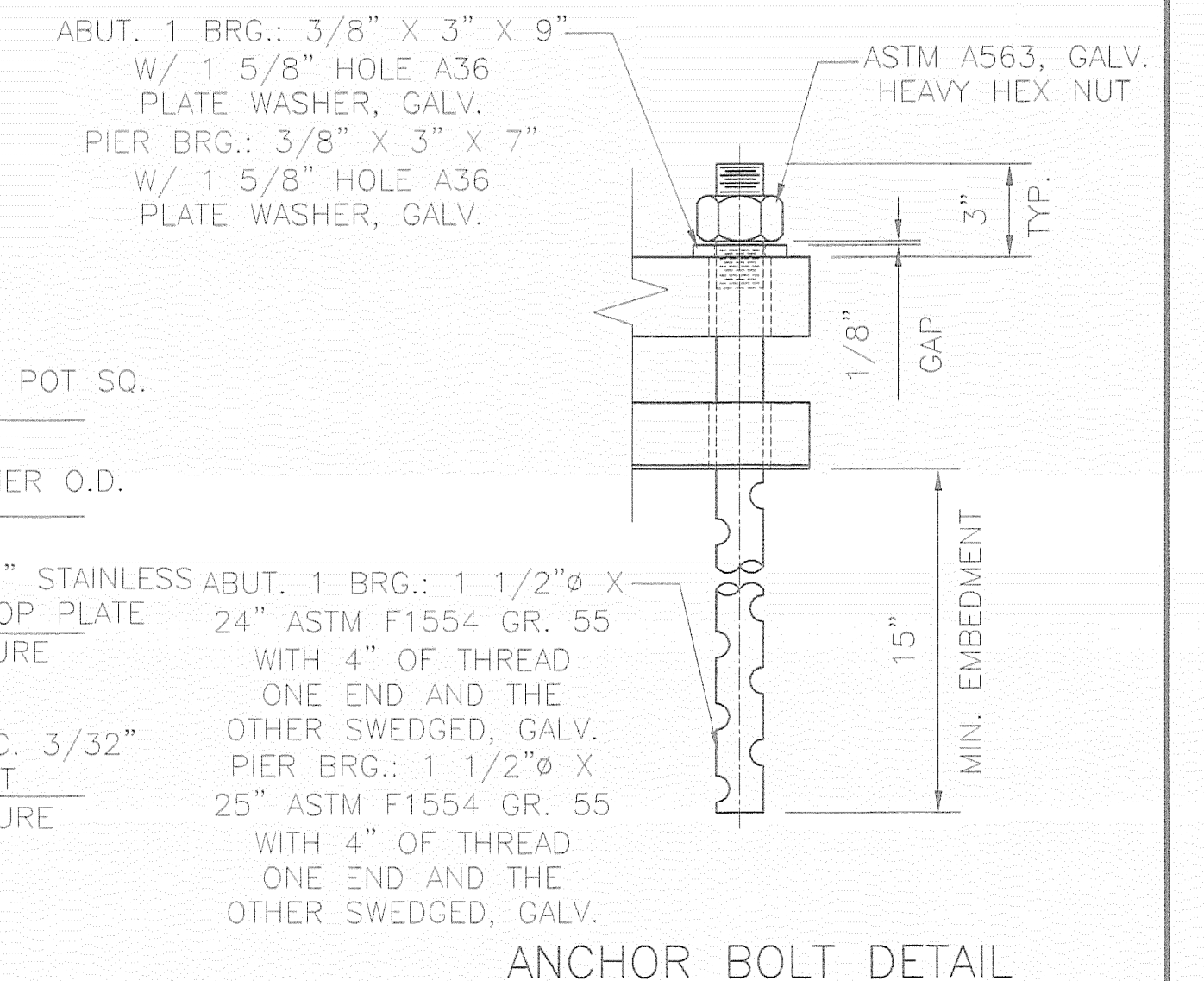
QUANTITY: 2
LOCATION: PIER, GIRDERS 2 & 3
VERTICAL LOAD CAPACITY: 335 KIPS
TRANSVERSE LOAD CAPACITY: 67 KIPS
LONGITUDINAL LOAD CAPACITY: N/A
MOVEMENT CAPACITY: 1 1/2"
ROTATION CAPACITY: .015 RADIAN

MATERIALS

STEEL - ASTM A709 GRADE 36, ZINC METALLIZED
STAINLESS STEEL - ASTM A240 TYPE 304, WITH 10 RMS FINISH OR LESS
PREFORMED FABRIC PAD - AASHTO DIV. II SPEC. 18.4.9.1
ANCHOR BOLTS - SEE ANCHOR BOLT DETAIL
PTFE - ASTM D.4894 VIRGIN UNFILLED
ELASTOMER - AASHTO SHORE A DUROMETER 50 ± 5 DUROMETER
BRASS SEALING RINGS - ASTM B.36 HALF HARD

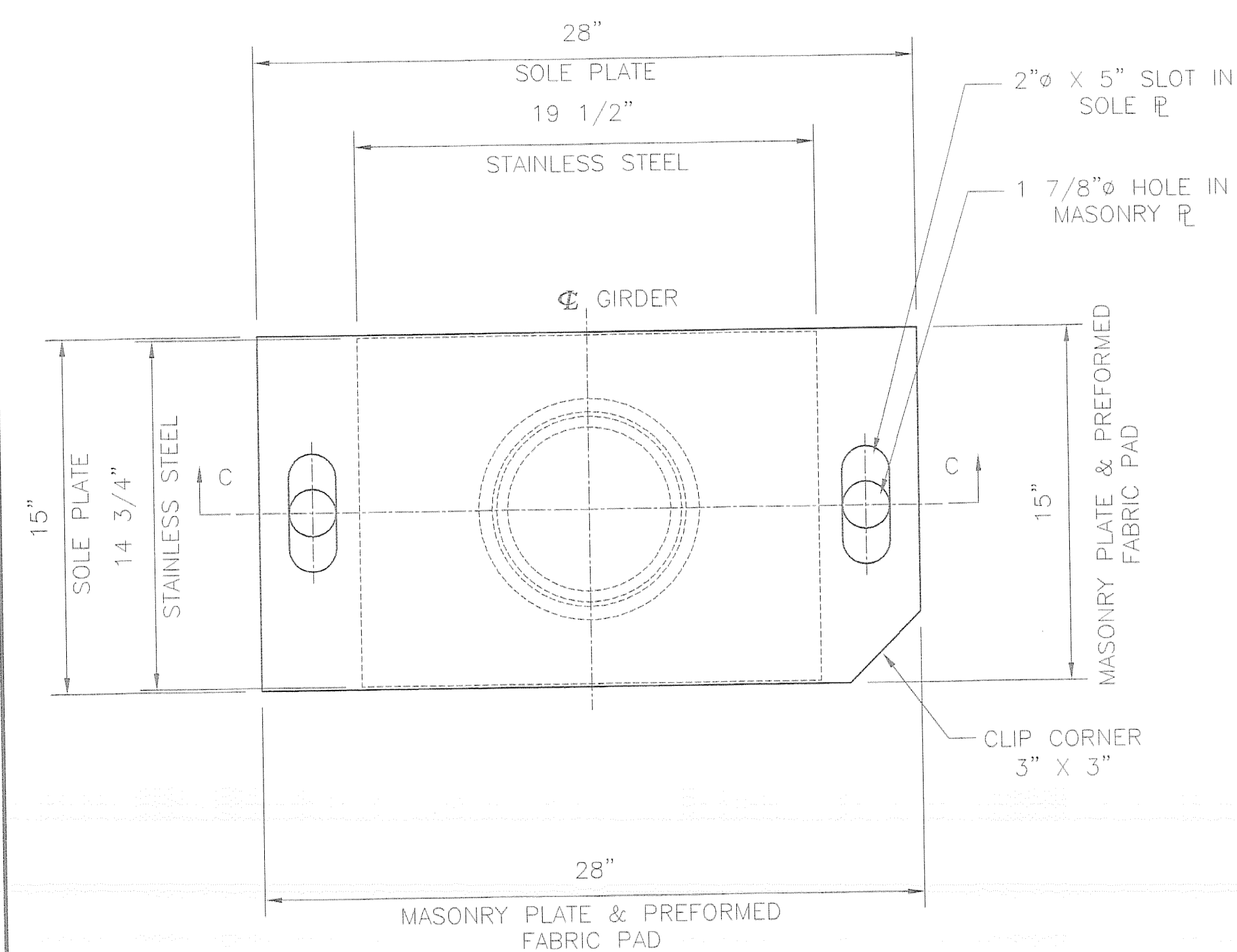


DETAIL B
N.T.S.

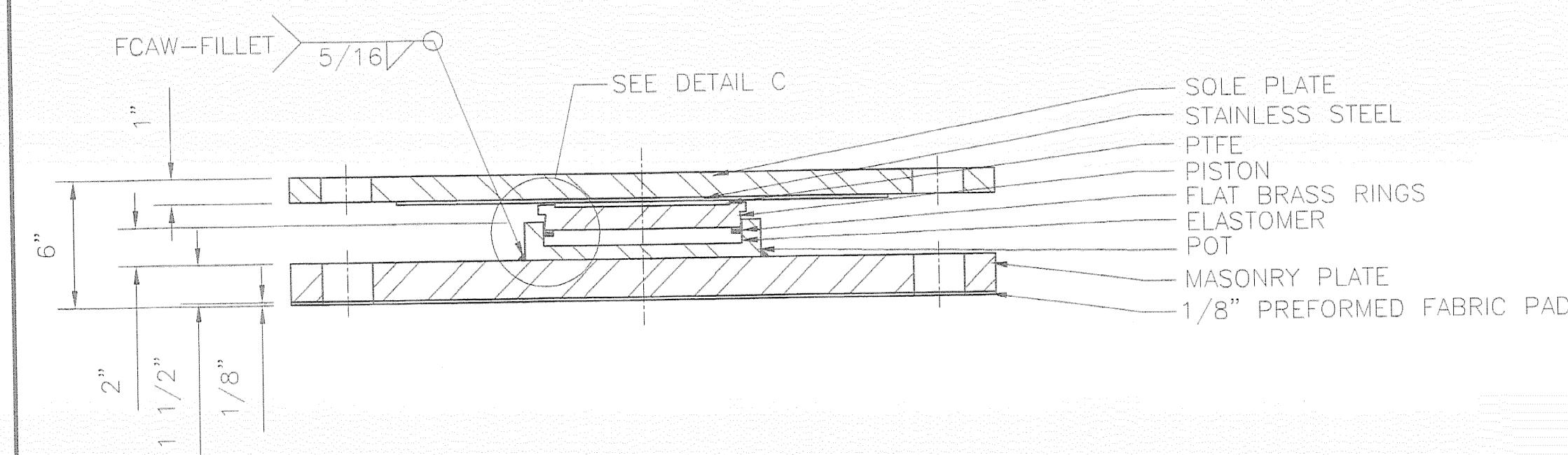


ANCHOR BOLT DETAIL

VERMONT AGENCY OF TRANSPORTATION HUNTINGTON PROJECT BRO 1445(29) EAST STREET (T.H.#4) OVER HUNTINGTON RIVER BRIDGE NO. 42			
COSMEC, INC.			
SCALE: 3/16"=1"	DRAWN BY: MRR	CHECKED BY: MCM	70 SOUTH STREET WALPOLE, MA 02081
DATE: 11/16/06	DATE: 11/16/06	DATE: 12/8/06	
COSMEC POT BEARINGS			
CUSTOMER PARENT CONSTRUCTION INC.	S.O. NUMBER 60630	DRAWING NUMBER 5057	REV.



PLAN



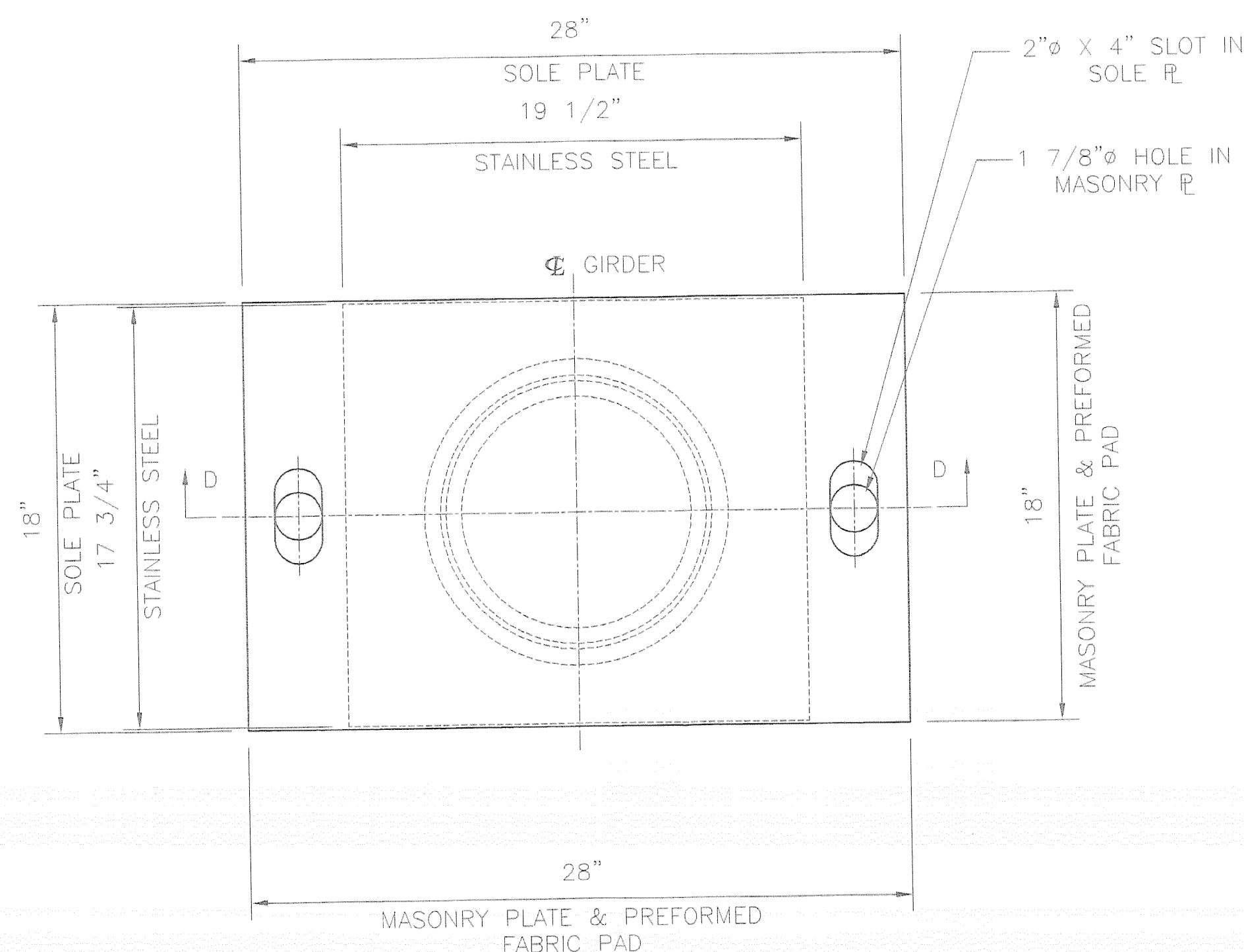
SECTION C - C

COSMEC NON-GUIDED EXPANSION POT BEARING

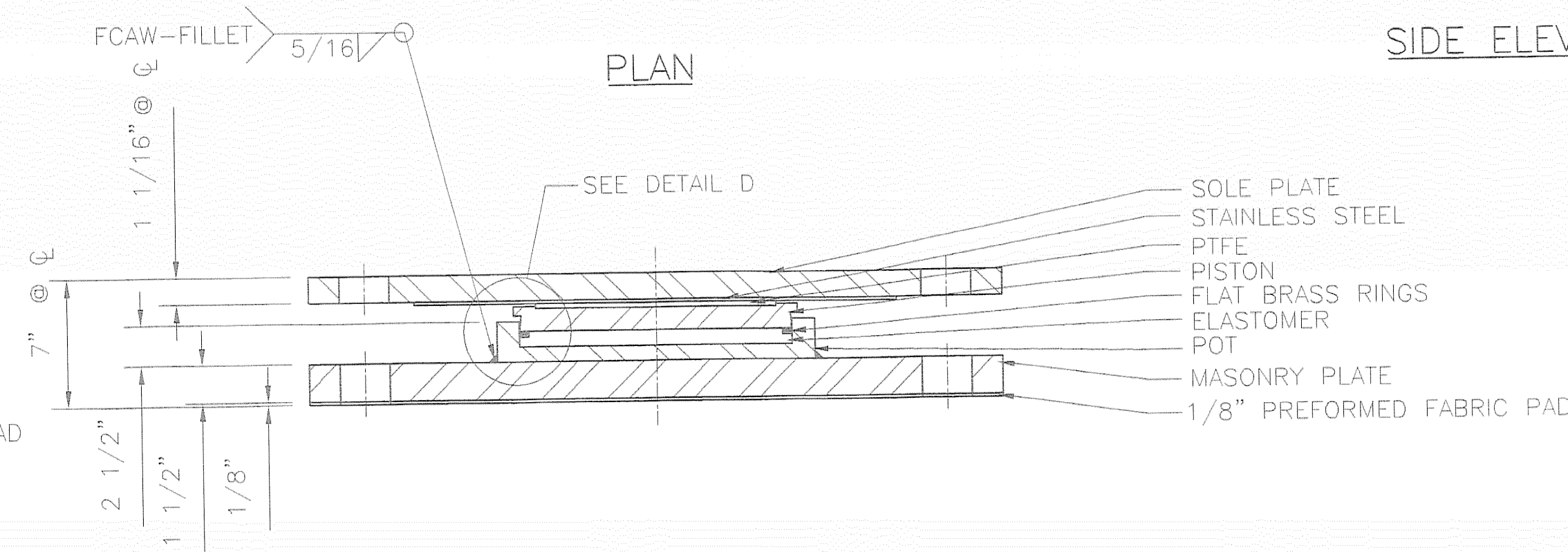
QUANTITY: 2
LOCATION: ABUTMENT 1, GIRDERS 1 & 4
VERTICAL LOAD CAPACITY: 170 KIPS
TRANSVERSE LOAD CAPACITY: N/A
LONGITUDINAL LOAD CAPACITY: N/A
MOVEMENT CAPACITY: 2 1/2"
ROTATION CAPACITY: .020 RADIAN

BEARING NOTES

- ALL MATERIALS USED IN THE FABRICATION OF THESE BEARINGS SHALL BE MADE IN THE U.S.A.
- BEARINGS ARE TO BE SHIPPED AS COMPLETE UNITS, STEEL Banded, AND SHALL BE WRAPPED TO PROTECT FROM MOISTURE AND DIRT DURING TRANSIT AND STORAGE.
- LOCATION OF FABRICATION PLANT - 70 SOUTH STREET WALPOLE, MA 02081
- COSMEC, INC. REPRESENTATIVE - MR. MATT McANDREWS (508) 668-6600
- BEARINGS SHALL BE STORED IN A CLEAN, DRY, LEVEL UPRIGHT POSITION.
- BEARINGS MUST NOT BE DISASSEMBLED
- PROTECT PTFE & S.S. SURFACES FROM DIRT, WELD SPATTER, & ANY OTHER FOREIGN SUBSTANCES.



PLAN



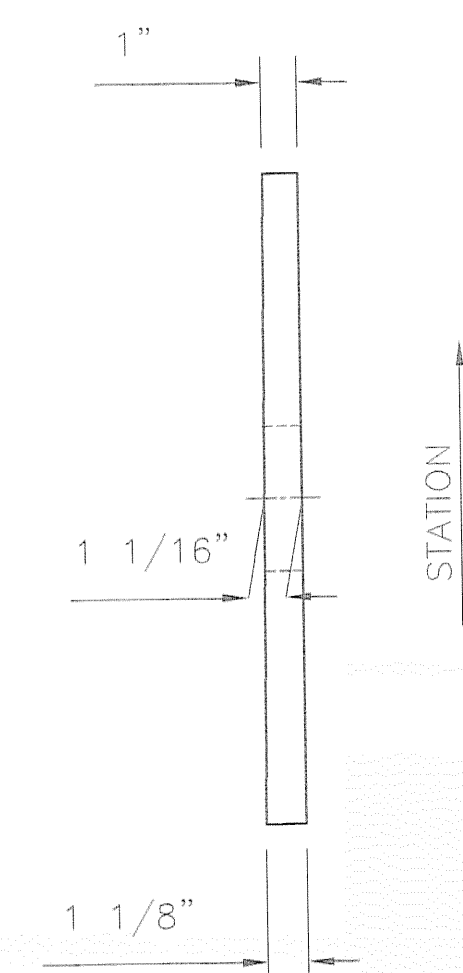
SECTION D - D

COSMEC NON-GUIDED EXPANSION POT BEARING

QUANTITY: 2
LOCATION: PIER, GIRDERS 1 & 4
VERTICAL LOAD CAPACITY: 335 KIPS
TRANSVERSE LOAD CAPACITY: N/A
LONGITUDINAL LOAD CAPACITY: N/A
MOVEMENT CAPACITY: 1 1/2"
ROTATION CAPACITY: .015 RADIAN

MATERIALS

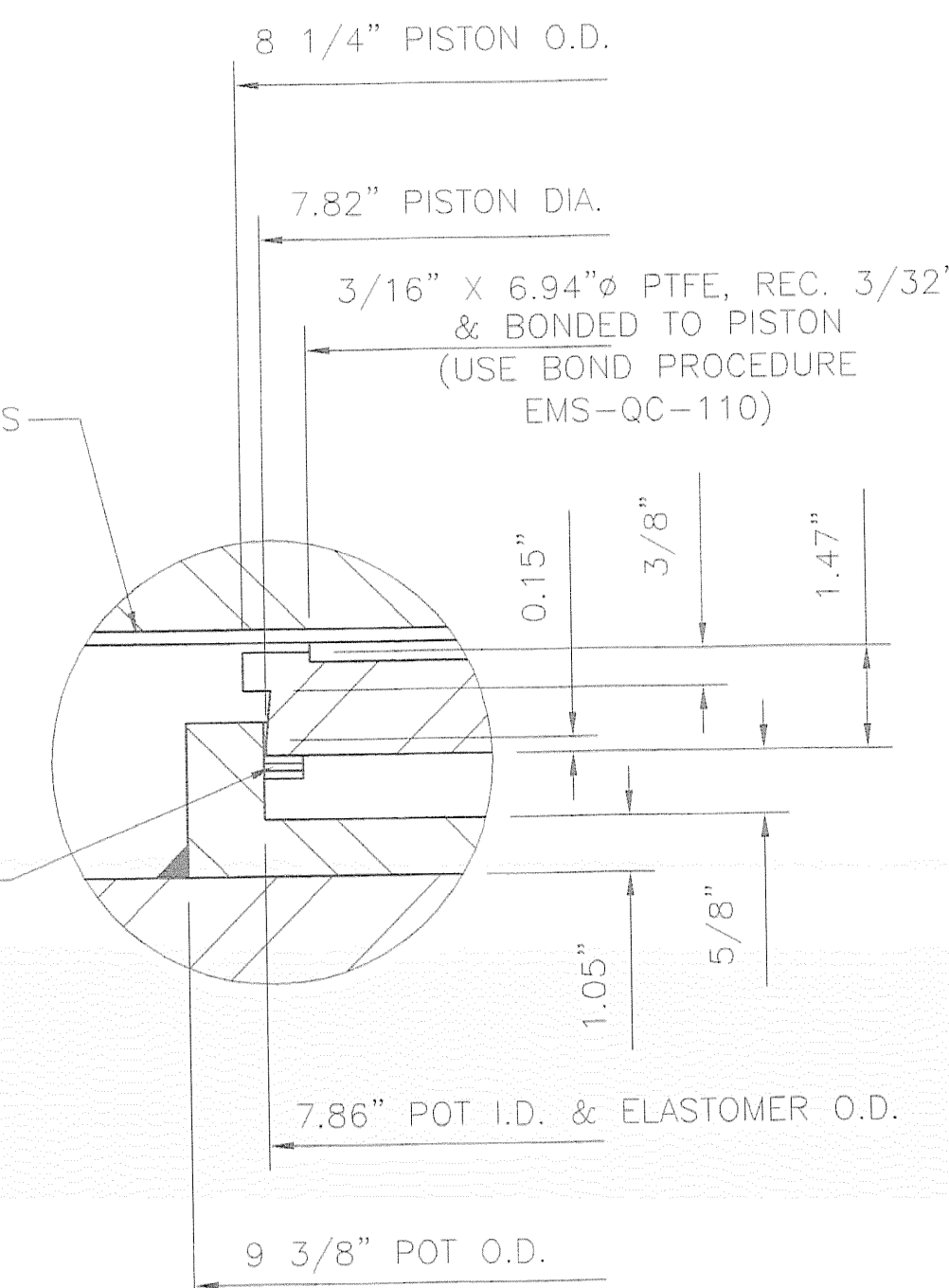
STEEL - ASTM A709 GRADE 36, ZINC METALLIZED
STAINLESS STEEL - ASTM A240 TYPE 304, WITH 20 RMS FINISH OR LESS
PREFORMED FABRIC PAD - AASHTO DIV. II SPEC. 18.4.9.1
ANCHOR BOLTS - SEE ANCHOR BOLT DETAIL
PTFE - ASTM D.4894 VIRGIN UNFILLED
ELASTOMER - AASHTO SHORE A DUROMETER 50 ± 5 DUROMETER
BRASS SEALING RINGS - ASTM B.36 HALF HARD



SIDE ELEVATION

10 GA X 14 3/4" X 19 1/2" STAINLESS
STEEL SEAL WELDED TO SOLE PLATE
(USE WELD PROCEDURE
GTAW-WF)

(3) 14 GA. X 3/8"
FLAT BRASS RINGS



DETAIL C
N.T.S.

ABUT. 1 BRG.: 3/8" X 3" X 9"
W/ 1 5/8" HOLE A36
PLATE WASHER, GALV.
PIER BRG.: 3/8" X 3" X 7"
W/ 1 5/8" HOLE A36
PLATE WASHER, GALV.

ASTM A563, GALV.
HEAVY HEX NUT

ABUT. 1 BRG.: 1 1/2" X 24"
ASTM F1554 GR. 55
WITH 4" OF THREAD
ONE END AND THE
OTHER SWEDGED, GALV.
PIER BRG.: 1 1/2" X 25"
ASTM F1554 GR. 55
WITH 4" OF THREAD
ONE END AND THE
OTHER SWEDGED, GALV.

ANCHOR BOLT DETAIL

VERMONT
AGENCY OF TRANSPORTATION
HUNTINGTON
PROJECT BRO 1445(29)
EAST STREET (T.H.#4) OVER
HUNTINGTON RIVER
BRIDGE NO. 42

COSMEC, INC.

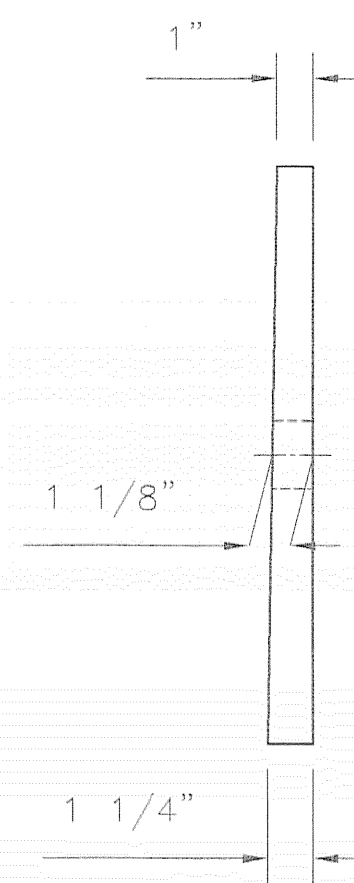
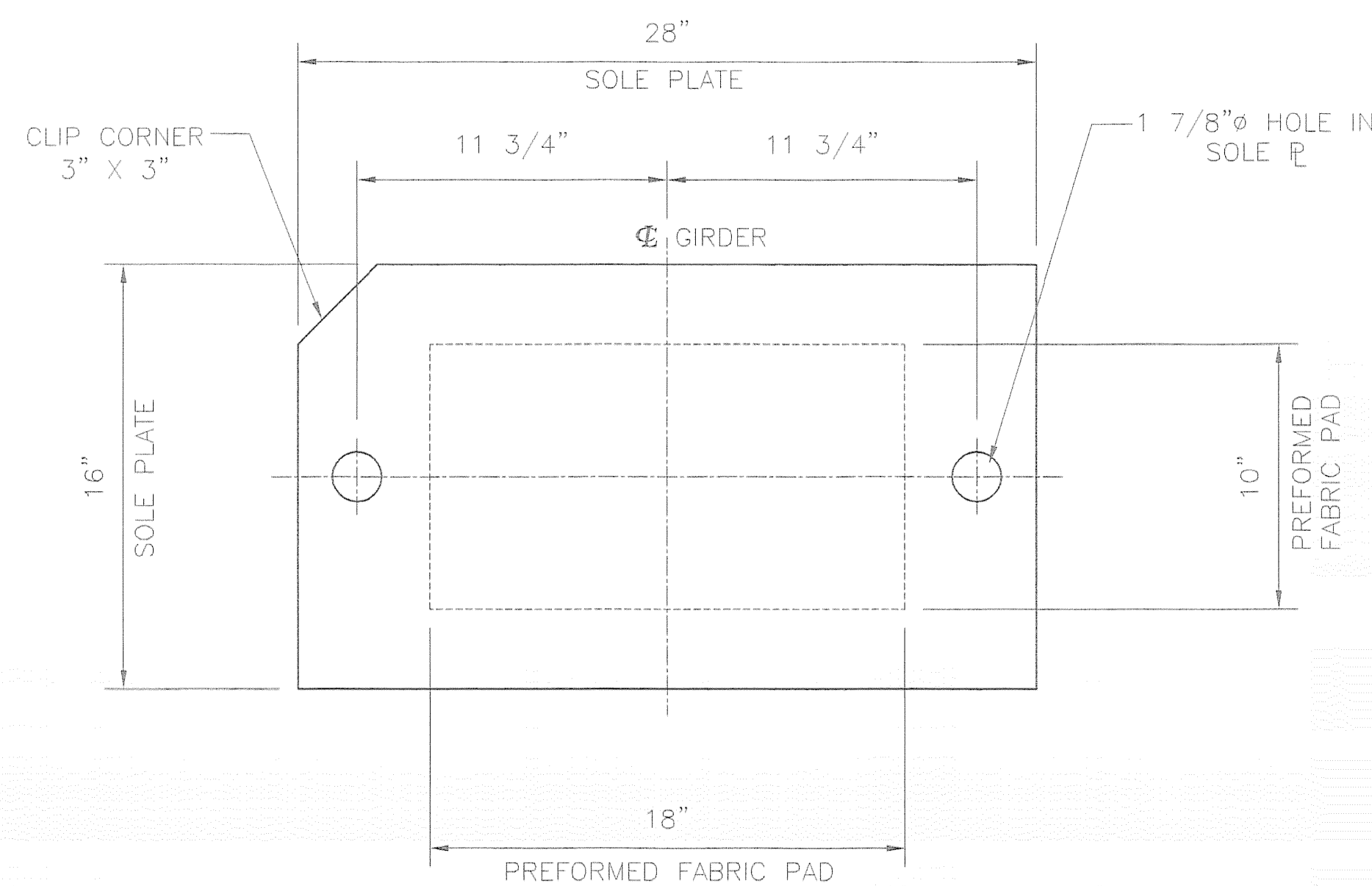
70 SOUTH STREET
WALPOLE, MA 02081

SCALE: 3/16"=1" DRAWN BY: MRR CHECKED BY: MCM
DATE: 11/16/06 DATE: 12/8/06

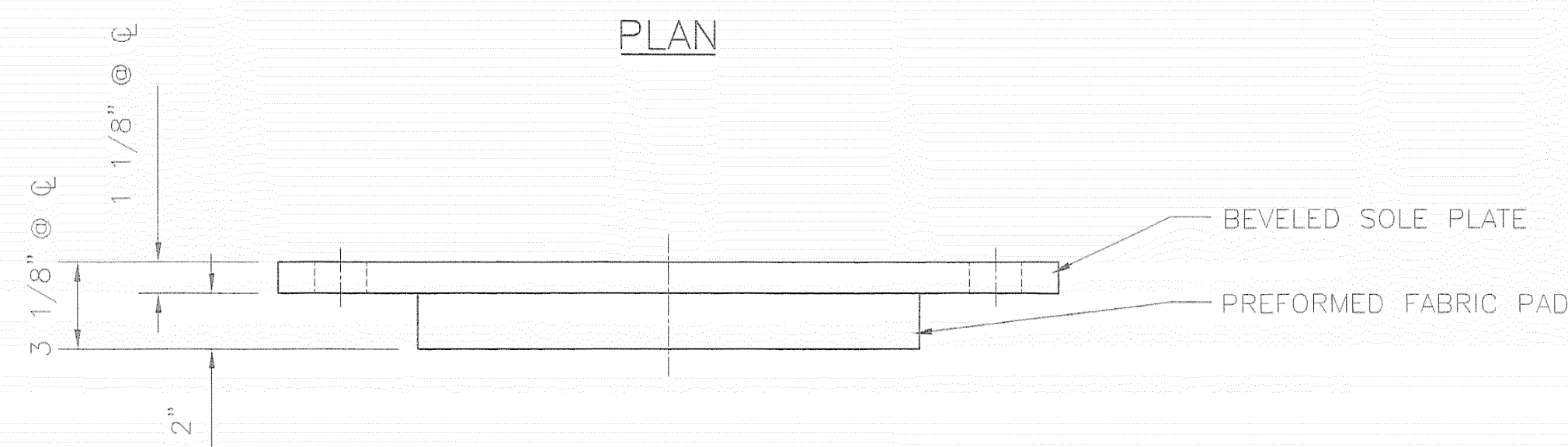
COSMEC POT BEARINGS

CUSTOMER: PARENT CONSTRUCTION INC. S.O. NUMBER: 60630 DRAWING NUMBER: 5058 REV.

REV. BY DATE CK'D DATE



SIDE ELEVATION



FRONT ELEVATION

COSMEC FIXED FABRIC PAD BEARING

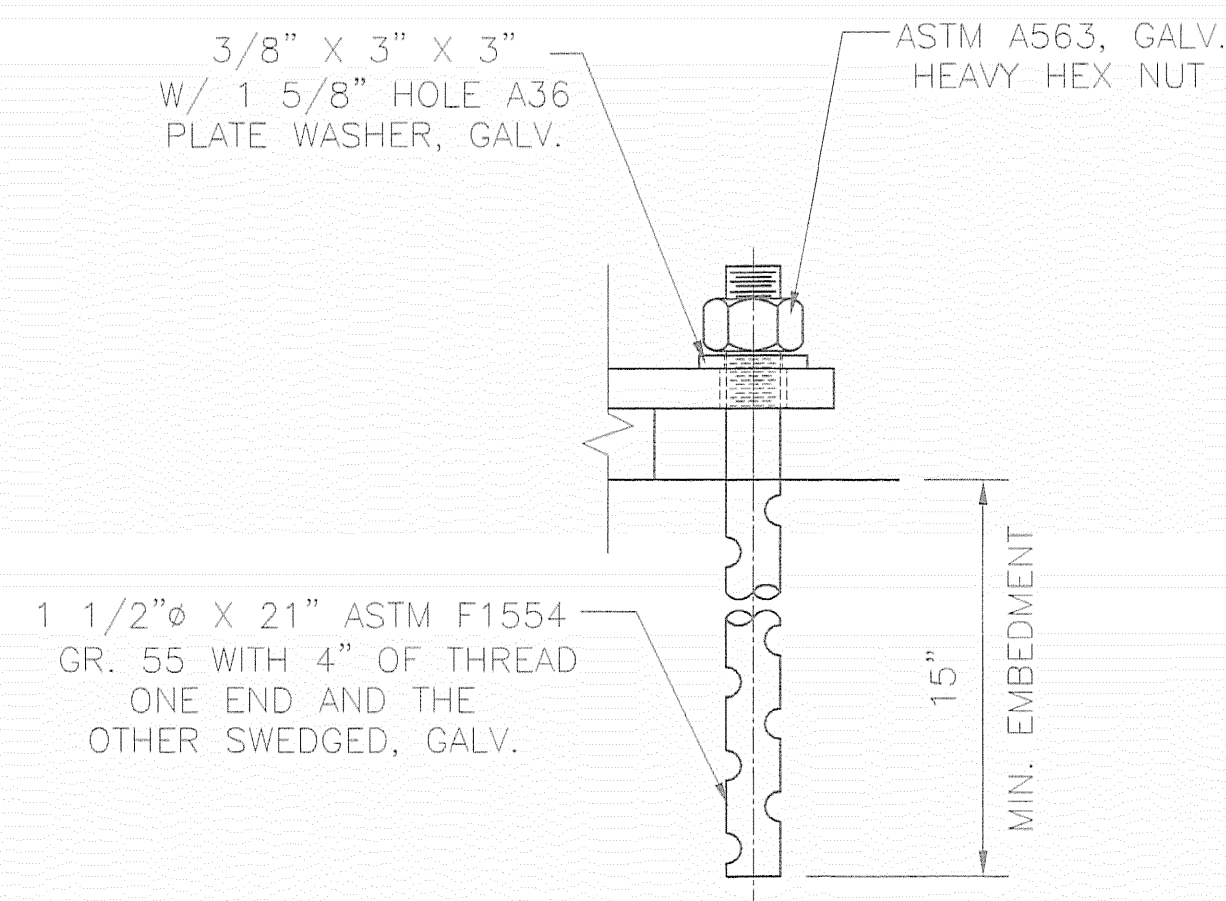
QUANTITY: 4
LOCATION: ABUTMENT 2, GIRDERS 1-4
VERTICAL LOAD CAPACITY: 150 KIPS
TRANSVERSE LOAD CAPACITY: 15 KIPS
LONGITUDINAL LOAD CAPACITY: 15 KIPS
MOVEMENT CAPACITY: 0"
ROTATION CAPACITY: .016 RADIAN

BEARING NOTES

- ALL MATERIALS USED IN THE FABRICATION OF THESE BEARINGS SHALL BE MADE IN THE U.S.A.
- BEARINGS SHALL BE STORED IN A CLEAN, DRY, LEVEL UPRIGHT POSITION.
- LOCATION OF FABRICATION PLANT - 70 SOUTH STREET
WALPOLE, MA 02081
- COSMEC, INC. REPRESENTATIVE - MR. MATT McANDREWS (508) 668-6600

MATERIALS

STEEL - ASTM A709 GRADE 36, ZINC METALLIZED
PREFORMED FABRIC PAD - AASHTO DIV. II SPEC. 18.4.9.1
ANCHOR BOLTS - SEE ANCHOR BOLT DETAIL



VERMONT
AGENCY OF TRANSPORTATION
HUNTINGTON
PROJECT BRO 1445(29)
EAST STREET (T.H.#4) OVER
HUNTINGTON RIVER
BRIDGE NO. 42

COSMEC, INC. 70 SOUTH STREET
WALPOLE, MA. 02081

SCALE: 3/16"=1" DRAWN BY: MRR CHECKED BY: MCM
DATE: 11/16/06 DATE: 12/8/06

COSMEC FABRIC PAD BEARING

CUSTOMER: PARENT CONSTRUCTION INC. S.O. NUMBER: 60630 DRAWING NUMBER: 5059 REV.

REV.	BY	DATE	CHK'D	DATE

Per Terry 12/27/06

VERMONT
AGENCY OF TRANSPORTATION
HUNTINGTON
PROJECT BRO 1445 (29)

COSMEC INC.

WELDING PROCEDURE SPECIFICATION

SPECIFICATIONS AND CODE: AASHTO-AWS D1.5
MATERIAL SPECIFICATION ASTM A709 GR 50W, GR 50, GR 36
WELDING PROCESS-----FCAW-G
MANUAL OR MACHINE-----SEMI-AUTOMATIC
POSITION OF WELDING-----1F & 2F
FILLER METAL SPECIFICATION AWS 5.20
MANUFACTURER: LINCOLN ELECTRIC
FLUX-----INTERNAL
SHIELDING GAS-----CO2
SINGLE OR MULTIPLE PAS S MULTIPLE
SINGLE OR MULTIPLE ARC SINGLE
WELDING CURRENT-----DC
POLARITY: REVERSE (EP)
WELDING PROGRESSION-----
ROOT TREATMENT-----CLEANED & PREPARED BRIGHT METAL
PREHEAT AND INTERPASS TEMPERATURE-----SEE BELOW
POSTHEAT TEMPERATURE N/A
HEAT INPUT MIN.-----MAX.-----

CLASSIFICATION: E71T
TRADE NAME: E71T OUTERSHIELD
FLOW RATE 45 CFH

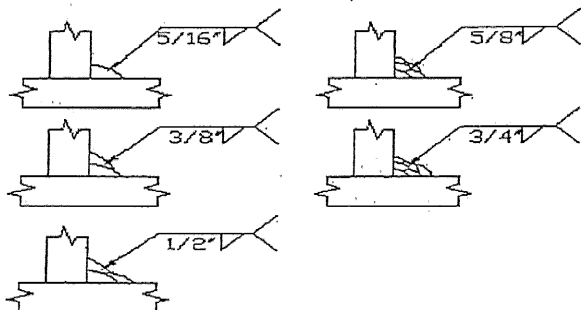
WELDING PROCEDURE

PASS NO.	ELECTRODE SIZE	WELDING CURRENT AMPERES	TRAVEL SPEED VOLTS	JOINT DETAIL
ALL	0.045	190-230	27-29	8-9

PREHEAT TEMPS.

THICKNESS 1 TEMP.
UP TO 3/4" 50 DEG. F
OVER 3/4" TO 1 1/2" 70 DEG. F
OVER 1 1/2" TO 2 1/2" 150 DEG. F
OVER 2 1/2" 225 DEG. F

INTERPASS TEMP: 400 DEG. F



THIS PROCEDURE MAY VARY DUE TO FABRICATION SEQUENCE, FIT-UP, PASS SIZE, ETC.
WITHIN THE LIMITATION OF VARIABLES GIVEN IN SECTION 5.

PROCEDURE NO. FCAW-FILLET
SUPPORTING PQR: FCAW-1.0-05
REVISION NO.

CONTRACTOR: COSMEC INC.
AUTHORIZED BY: DONALD E. VOSE



DATE: 1/31/2005

VTRANS

RECEIVED BY: JWC

DATE: 12-18-06

VERMONT
AGENCY OF TRANSPORTATION
HUNTINGTON
PROJECT BEO 1445(29)

COSMEC INC.

WELDING PROCEDURE SPECIFICATION

SPECIFICATIONS AND CODE: D1.6
MATERIAL SPECIFICATION ASTM A240 TYPE 304 TO ASTM A709 GR 50W
WELDING PROCESS GTAW
MANUAL OR MACHINE MANUAL
POSITION OF WELDING 1F & 2F
FILLER METAL SPECIFICATION ER309L CLASSIFICATION: A5.9
MANUFACTURER: HARRIS WELCO TRADENAME:
FLUX INTERNAL FLOW RATE 45 CFH
SHIELDING GAS ARGON
SINGLE OR MULTIPLE PASS SINGLE
SINGLE OR MULTIPLE ARC SINGLE
WELDING CURRENT DC
POLARITY: REVERSE (EN)
WELDING PROGRESSION
ROOT TREATMENT CLEANED & PREPARED BRIGHT METAL
PREHEAT AND INTERPASS TEMPERATURE SEE BELOW
POSTHEAT TEMPERATURE N/A
HEAT INPUT MIN. MAX.

WELDING PROCEDURE

PASS NO.	ELECTRODE SIZE	WELDING CURRENT AMPERES	TRAVEL SPEED VOLTS	JOINT DETAIL
ALL	3/32"	130-155	14-17	LAP JOINT
16 GA THRU 10 GA BM THICKNESS				

PREHEAT TEMPS.	THICKNESS	TEMP.
UP TO 3/4"	100 DEG.	
OVER 3/4" TO 1 1/2"	100 DEG.	
OVER 1 1/2" TO 2 1/2"	100 DEG.	
OVER 2 1/2"	100 DEG.	

THIS PROCEDURE MAY VARY DUE TO FABRICATION SEQUENCE, FIT-UP, PASS SIZE, ETC.
WITHIN THE LIMITATION OF VARIABLES GIVEN IN SECTION 5.
SUPPORTING POR: GTAW-WF-05
PROCEDURE NO. GTAW-WF

REVISION NO. 1

CONTRACTOR: COSMEC INC.
AUTHORIZED BY: DONALD VOSE
CW# 01100651

DATE: 2/1/2005

VT TRANS
RECEIVED
DATE: 12-18-06
BY: JWC



VERMONT
AGENCY OF TRANSPORTATION
HUNTINGTON
PROJECT BRO. 1445 (29)

EMS-QC-110

COSMEC, INC.
70 SOUTH STREET
WALPOLE, MA 02081
PH# 508-668-6600
FAX# 508-660-1022

VTRANS
DESIGNED BY JWC
CHECKED BY
APPROVED BY
DATE 12-19-06

ENGINEERING AND MANUFACTURING STANDARD
PTFE FACING AND STEEL
OR PREFORMED FABRIC SUBSTRATE
SURFACE PREPARATION AND ADHESIVE PROCEDURE

The PTFE facing shall be prepared for bonding to a substrate material by chemically etching the face to be bonded using the sodium ammonia process.

The mating surface of the substrate shall be prepared for bonding using a three-step process as follows:

1. preliminary degrease using methyl ethyl ketone.
2. mechanically roughen to approx. 125 RMS and thoroughly brush and clean for final degreasing.
3. final degrease using methyl ethyl ketone

The PTFE and substrate mating surfaces shall be clean and dry with final degreasing performed within 30 minutes of bonding. Adhesive shall consist of a two-part epoxy adhesive system conforming to Military Specification MMM-A-134

The adhesive shall be applied to the full area of the contact surface in an even manner so as to establish a glue line not less than .002 inch nor more than .010 inch thick. Surfaces being bonded are to be assembled immediately with open assembly time not to exceed 20 minutes.

The PTFE material shall be greater in width and length than the substrate material by at least ½ inch when bonded. The PTFE shall be applied with contact starting at one edge and with contact progressing across entire bonded surface to eliminate air entrapment. The PTFE is to be in full contact with the steel or preformed fabric substrate. Curing of the bond shall be done under pressure of approx. 2-100 psi for 10-12 hours at approx. 70°F or other schedules as established by the manufacturer of the adhesive.

The PTFE shall be carefully trimmed to the same size as the substrate after bond curing and all bonds shall be visually inspected for bond retention.

Gleason, Carl

From: Tripp, Warren
Sent: Monday, May 05, 2008 12:44 PM
To: Gleason, Carl
Subject: FW: Intermediate Stay Plates on Richford

As noted at the end of the following e-mail, will you please confirm or correct the number of stay plates needed, based on the number on the existing trusses? As soon as we are in agreement, I will forward the information to Casco Bay so that the shop drawings can be revised. Thanks.

-----Original Message-----

From: Burbank, Scott [mailto:scott.burbank@stantec.com]
Sent: Thursday, May 01, 2008 4:14 PM
To: Tripp, Warren
Cc: mchenette@stantec.com
Subject: Intermediate Stay Plates on Richford

Warren,

I have review the steel shop drawings concerning the missing stay plates and have found the following:

Piece Marks T11, T12, T81, and T82 (Left & Right) - Add an additional intermediate stay plate top and bottom between the top end stay plate and the first intermediate plate stay plates (top & bottom) at 10'-0". Add an additional stay plate top and bottom between the intermediate stay plate located at 19'-4 1/2" and the splice. Please note that this missing intermediate stay plate is located at a clear distance of 6'-9" from the intermediate stay plate located 1'-2 1/4" from the truss joint. These dimensions are shown on the Truss Bottom Chord Elevation, located on sheet 24 of the contract drawings.

Piece Marks T31, T32, T61 and T62 (Left & Right) - Add an additional intermediate stay plate top and bottom between the intermediate stay plate located at 26'-1" (please verify this location, it is greater than 3.125 feet from the stay plate at 22'-4 1/8") and the splice. This missing intermediate stay plate is also located 6'-9" from the intermediate stay plate between the splice and the joint.

Piece marks T51 and T52 have the correct number of intermediate stay plates.

Adding these stay plates will provide three top and four bottom intermediate stay plates in bays 1 and 8. There will now be four intermediate stay plates top and bottom in bays 2 and 7. And four intermediate stay plates in bays 4 and 5. Bays 3 and 6 will still have 5 intermediate stay plates as shown on the shop drawings.

Warren could you please ask the resident to verify if the number of intermediate stay plates on the existing trusses matches the numbers above.

If you or the resident engineer of any comments or questions please call or email me.

Sincerely

Scott Burbank, P.E.
Project Engineer
Stantec
Ph: (802) 864-0223 Ext. 137
Fx: (802) 864-0165
scott.burbank@stantec.com
stantec.com



State of Vermont
PDD/Structures Design Section
National Life Building – Drawer 33
Montpelier, VT 05633-3001
www.aot.state.vt.us

[phone] 802-828-2621
[fax] 802-828-3566
[tel] 800-253-0191

Agency of Transportation

April 24, 2008

Casco Bay Steel Structures, Inc.
75 Spring Hill Road
Saco, ME 04072

Project Name: Richford Project #: BHF 0302(3)S

Structure Identification: TH #2, BR. #41 over Missisquoi River

The following Structural Steel details [Item # 506.50, Structural Steel, Rolled Beam] for the above project (Vendor's Job # 361) transmitted with your letter dated 4/17/08 have been reviewed and are being returned herewith.

Sheets E1, S1, S2, S3, S4, and S5 are approved. Upon submitting extended weights for our approval, please submit one set of white prints for our use in the record plans for this project.

You must provide notice to our fabrication inspector, Jeff Clark, as to the date fabrication represented by these drawings will begin. That notice must be received and acknowledged at least seven days prior to that date, as per Specification 506.03. Jeff may be contacted by phone at (802)828-0044 or email at jeff.clark@state.vt.us. Any material fabricated prior to the notification date is subject to rejection without further cause.

Sincerely,

Warren Tripp, Project Manager

Attachments

- cc: [X] Resident Engineer Carl Gleason, w/prints
[X] Shop Inspector Jeff Clark, w/prints
[X] Contractor Blow & Cote, Inc., w/prints
[X] Construction Divison – letter only
[X] Materials & Research Section (C&IA Unit) – letter only
[X] Files (Structures & Central)





State of Vermont

PDD/Structures Design Section

National Life Building – Drawer 33
Montpelier, VT 05633-5001
www.aot.state.vt.us

Agency of Transportation

[phone] 802-828-2621
[fax] 802-828-3566
[ttd] 800-253-0191

April 21, 2008

Casco Bay Steel Structures, Inc.
75 Spring Hill Road
Saco, Me 04072

Project Name: Richford Project #: BHF 0302(3)S
Structure Identification: TH #2, BR #41 over Missisquoi River

The following shop drawings and welding procedures for the above project (Vendor's Job # 361) transmitted with your letter dated March 28, 2008, have been reviewed and are being returned herewith:

Item 506.60, Structural Steel, Sheets M 1 and M 2. These sheets are “**approved as noted**”. Upon submitting extended weights for our approval, please make appropriate changes as indicated on these “as noted” drawings and submit one set of white prints for our use in the record plans for this project.

Item 516.11, Bridge Expansion Joint, Vermont, Sheet J 1. This sheet is “**approved as noted**”. Upon receipt of this “as noted” drawing, please make appropriate changes and submit one white print for our use in the record plans for this project.

Welding procedures. Sheets #1 SW, 104, 101, 105, and 401 are “**approved**”.

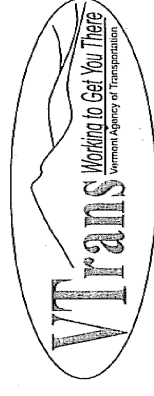
You must provide notice to our fabrication inspector, Jeff Clark, as to the date fabrication represented by these drawings will begin. That notice must be received and acknowledged at least seven days prior to that date, as per Specification 506.03. Jeff may be contacted by phone at (802) 828-0044 or email at jeff.clark@state.vt.us. Any material fabricated prior to the notification date is subject to rejection without further cause.

Sincerely,

Warren Tripp, Project Manager

Attachments

cc: [X] Resident Engineer: Carl Gleason w/prints
[X] Shop Inspector: Jeff Clark w/prints
[X] Contractor: Blow & Cote, Inc. w/prints
[X] Construction Division – letter only
[X] Materials & Research Section (C&IA Unit) – letter only
[X] Files



Casco Bay Steel Structures, Inc.

75 Spring Hill Road
Saco, Maine 04072

Phone: (207) 282-7360

Fax: (207) 282-1179

WELDING PROCEDURE SPECIFICATION

Material specification ASTM A709/A709M - Gr 36-50-50W (250-345-345W)
Welding process STUD WELDER (S.W.)
Manual or machine MACHINE VTRANS
Position of welding FLAT RECEIVED
Filler metal specification NA BY JWC
Filler metal classification NA
Flux NA Flow rate NA
Shielding gas NA
Single or multiple pass SINGLE
Single or multiple arc SINGLE
Welding current DCE 4/19/08
Polarity DCE
Welding progression Clean surface to be welded
Post treatment Heat to 250-350°F over 2 1/2" - 225°F
Preheat and interpass temperature 34-50°F to 1/2" - 70°F
Postheat temperature NA
Heat input Min NA Max NA

Rich Ford, VT
Br No. 41 - Proj No BHF-0302(G)S
CBS 361

WELDING PROCEDURE

Pass no.	Electrode size	Welding current		Travel speed	AWS D1-1 Joint detail	AWS D1-5
		Amperes	Volts			
	STUD SIZE		Weld Time			
	1/2	350	35"			
	5/8	350	35"	NA		
	3/4	550	40"			
	7/8	650	1.10"			

NOTE:
This procedure is only a guide To Setup.

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable A.W.S. codes or contract specifications

Procedure no. #1 S.W.
Revision no. _____
Form III-2

Contractor Casco Bay Steel
Authorized By [Signature]
Date May 3-1998



Casco Bay Steel Structures, Inc.

5 Industry Road
South Portland, Maine 04106

Phone: (207) 772-2533

Fax: (207) 772-0580

WELDING PROCEDURE SPECIFICATION

Material specification A36-A572-A588 (ASTM 702 Gr 36-50-50w)
Welding process Flux Cored Arc welding (FCAW)
Manual or machine SEMI-AUTO
Position of welding FLAT-1G
Filler metal specification AWS A5-20
Filler metal classification E71T-1
Flux NA
Shielding gas 75% AR 25% CO₂ Flow rate 40 SS
Single or multiple pass Both Electrode stick out 3/4 ± 1/4
Single or multiple arc Single
Welding current Direct current
Polarity Reverse Electrode positive
Welding progression see detail
Root treatment weld side + 1 back pass side + 2 grind - then weld
Preheat and interpass temperature To 3/4" 50° (18-10°) 3/4" to 1 1/2" 70° (18 to 38-20°)
Postheat temperature NA
Heat input Min NA Max NA
RICH FUND VT
B740.41- Proj NO BHF-0302(3)S
C655361

WELDING PROCEDURE

Pass no.	Electrode size	Welding current		Travel speed	Joint detail
		Amperes	Volts		
	1/16	25 ± 28	25 ± 11.7	11 ± 1.1	 AWS D1.5 Joint detail BU2-F T1 - UNLIMITED P - 0 to 1/8 / 0 to 3.2mm R - 0 to 1/8 / 0 to 3.2mm 1-grind as required
	1/6	25 ± 28	25 ± 11.7	280 ± 28	

TRANS RECEIVED
JUC
DATE 7/17/08

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable A.W.S. codes or contract specifications

Procedure no. 104
Revision no. AWS-QC1
Form III-2 Paul E. Goodale
68100201
C.W.I.

Contractor Casco Bay Steel
Authorized By Paul E. Goodale
Date 2/2/99

Casco Bay Steel Structures, Inc.

75 Spring Hill Road
Saco, Maine 04072

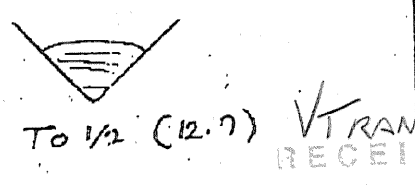
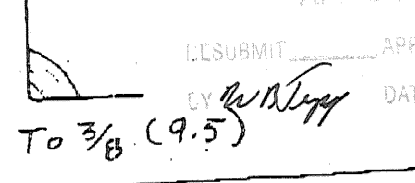
Phone: (207) 282-7360

Fax: (207) 282-1179

WELDING PROCEDURE SPECIFICATION

Material specification ASTM A709/A709M - Grade 36 (50) 50 (45) 50 W (345 W)
Welding process Flux Cored Arc Welding (FCAW)
Manual or machine SEMI AUTO
Position of welding FLAT (1F) Horiz Lat (2F)
Filler metal specification AWS A5.20
Filler metal classification E71T-1
Flux NA Flow rate 40 CFH ± 5
Shielding gas 75% AR 25% CO₂
Single or multiple pass SINGLE and MULTIPLE - Electrode Extension 9/8 (50) ± 6.35
Single or multiple arc SINGLE
Welding current DC
Polarity Reverse
Welding progression NA
Root treatment TO meet AWS SPECIFICATION
Preheat and interpass temperature TO 3/4 (19) 50 (10) 34 (10) TO 1/2 (68) 70 (20) TO 3/4 (3) 150 (65)
Postheat temperature NA EXCEPT 2 1/2 (63) ± 225 (110)
Heat input Min NA Max NA RICH FORD, VT
B.R.M.C. 41 - Proj. No. BHF-0302(3)S
C.B.S.S. 361

WELDING PROCEDURE

Pass no.	Electrode size	Welding current		Travel speed	Joint detail
		Amperes	Volts		
1/16	205 247.5 TO 302.5	28.8 26.8 TO 30.8	11.6 10.4 TO 12.8	1F	
1/8	205 247.5 TO 302.5	28.8 26.8 TO 30.8	294.6 264.2 TO 325.12	2F	

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable A.W.S. codes or contract specifications

Procedure no. 101
Revision no. 1
Form III-2

Contractor Casco Bay Steel
Authorized By R.C. Goodale
Date 3/23/08

Casco Bay Steel Structures, Inc.

5 Industry Road
South Portland, Maine 04106

Phone: (207) 772-2533

Fax: (207) 772-0580

WELDING PROCEDURE SPECIFICATION

Material specification A36-A572-A588 (ASTM 709 Cx36-50-50w)
Welding process Flux Cored Arc welding (FCAW)
Manual or machine Semi-AUTO
Position of welding Flat
Filler metal specification ER70T-1
Filler metal classification ER70T-1
Flux EA
Shielding gas 75% Ar 25% CO₂ Flow rate 40 F5
Single or multiple pass Single Electrode stick out 3/4" & V
Single or multiple arc Single
Welding current Direct Current
Polarity Reverse Electrode Positive
Welding progression see Detail
Root treatment None AWS see 14 from one side only
Preheat and interpass temperature 225-375°F (110-200°C)
Postheat temperature None
Heat input Min None Max None

RICH Ford, VT
B.N.C. 41- Proj No BHF-0302(3)5
C 855 361

WELDING PROCEDURE

Pass no.	Electrode size	Welding current		Travel speed	AWS D1.5
		Amperes	Volts		
1/16	280	25	1.7	17 IPm ± 1.7	Filler Square groove joint detail BUTT
1.6	280	25	1.7	432 ± 43.2	

TRANS RECEIVED
JWC
4/17/02

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable A.W.S. codes or contract specifications

Procedure no. 105
Revision no. None

Contractor Casco Bay Steel
Authorized By Rich Ford

Casco Bay Steel Structures, Inc.

5 Industry Road
South Portland, Maine 04106

Fax: (207) 772-0580

Casco Bay Steel Structures, Inc.

5 Industry Road
South Portland, Maine 04106

Fax: (207) 772-0580

hone: (207) 772-2533

WELDING PROCEDURE SPECIFICATION

Material specification ASTM A109 Gr 36-50W (250-345W)
Welding process Shielded Metal Arc Welding (SMAW)
Manual or machine Manual
Position of welding Flat (PF) Horizontal (HF)
Filler metal specification AWS/AWS A5.1 - A5.5
Filler metal classification E7018 - R018 C/C2 - 7028
Flux NA
Shielding gas NA
Single or multiple pass Single and multiple
Single or multiple arc Single
Welding current AC/DC
Polarity Straight / Reverse
Welding progression See AWS Specification
Root treatment See AWS Specification
Preheat and interpass temperature See AWS Specification
Postheat temperature See AWS Specification
Heat input Min NA Max NA

WELDING PROCEDURE

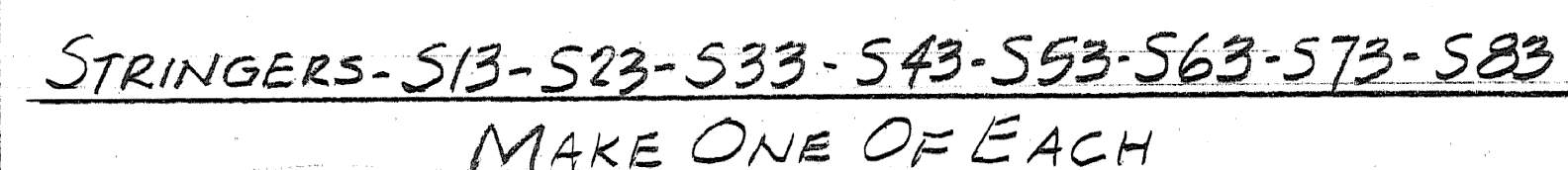
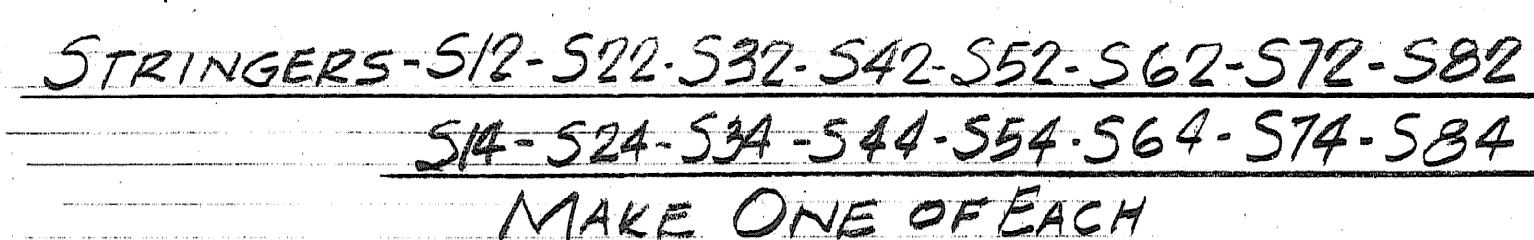
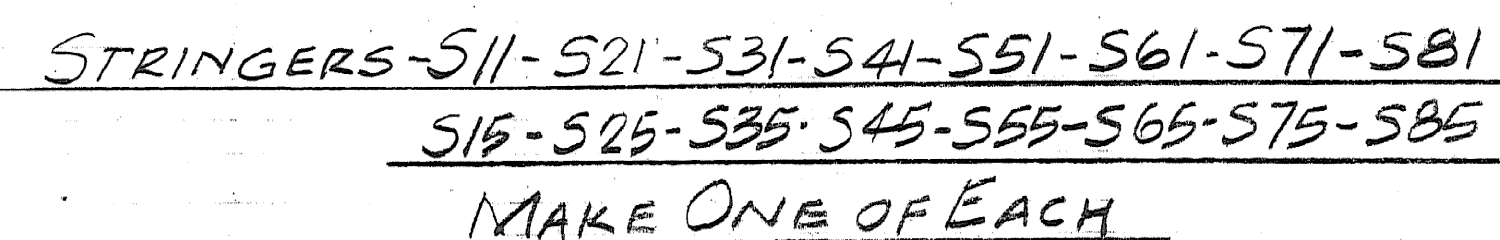
Rich Ford, VT
By AWS, 41 - Proj No. BHF-0302(3)S
CBS 361

Pass no.		Welding current		Travel speed	AWS D1.5 Joint detail
		Electrode size	Amperes		
AS	7018	1/8	70-170	22-26	1F
	1/8	(3.2)	120-225	22-26	AS
	5/32	(3.9)	170-300	24-27	3/16 to 3/8
	3/16	(4.8)	180-290	24-27	3/8 to 1/2
REQ	7018	1/8	90-160	22-26	1/2 to 5/8
	1/8	(3.2)	120-225	22-26	5/8 to 1
	5/32	(3.9)	170-300	24-27	1 to 1 1/2
	3/16	(4.8)	180-290	24-27	1 1/2 to 2
REQ	7018	1/8	90-160	22-26	2F
	1/8	(3.2)	120-225	22-26	3/16 to 3/8
	5/32	(3.9)	170-300	24-27	3/8 to 1
	3/16	(4.8)	180-290	24-27	1 to 1 1/2

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable codes or contract specifications

Procedure no. 401
Revision no. 1
Contractor Casco Bay Steel
Authorized By Paul E. Hordale
Date 3/2/00



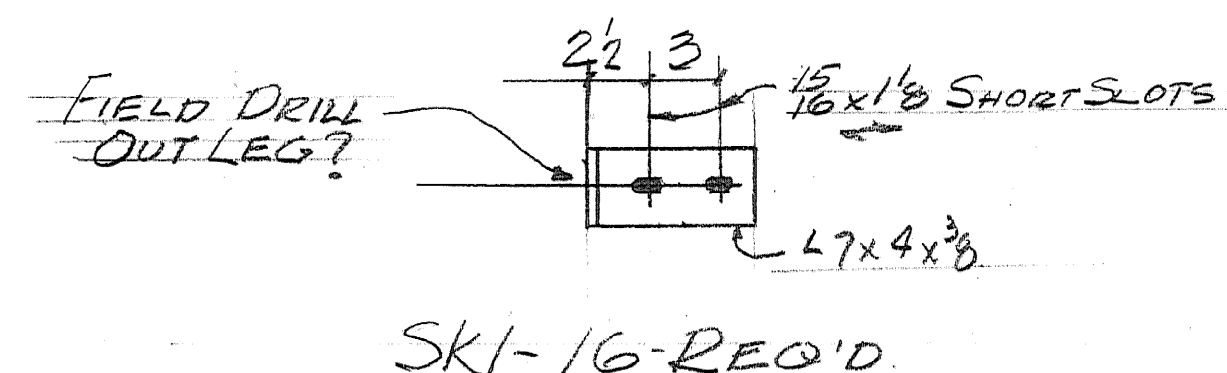
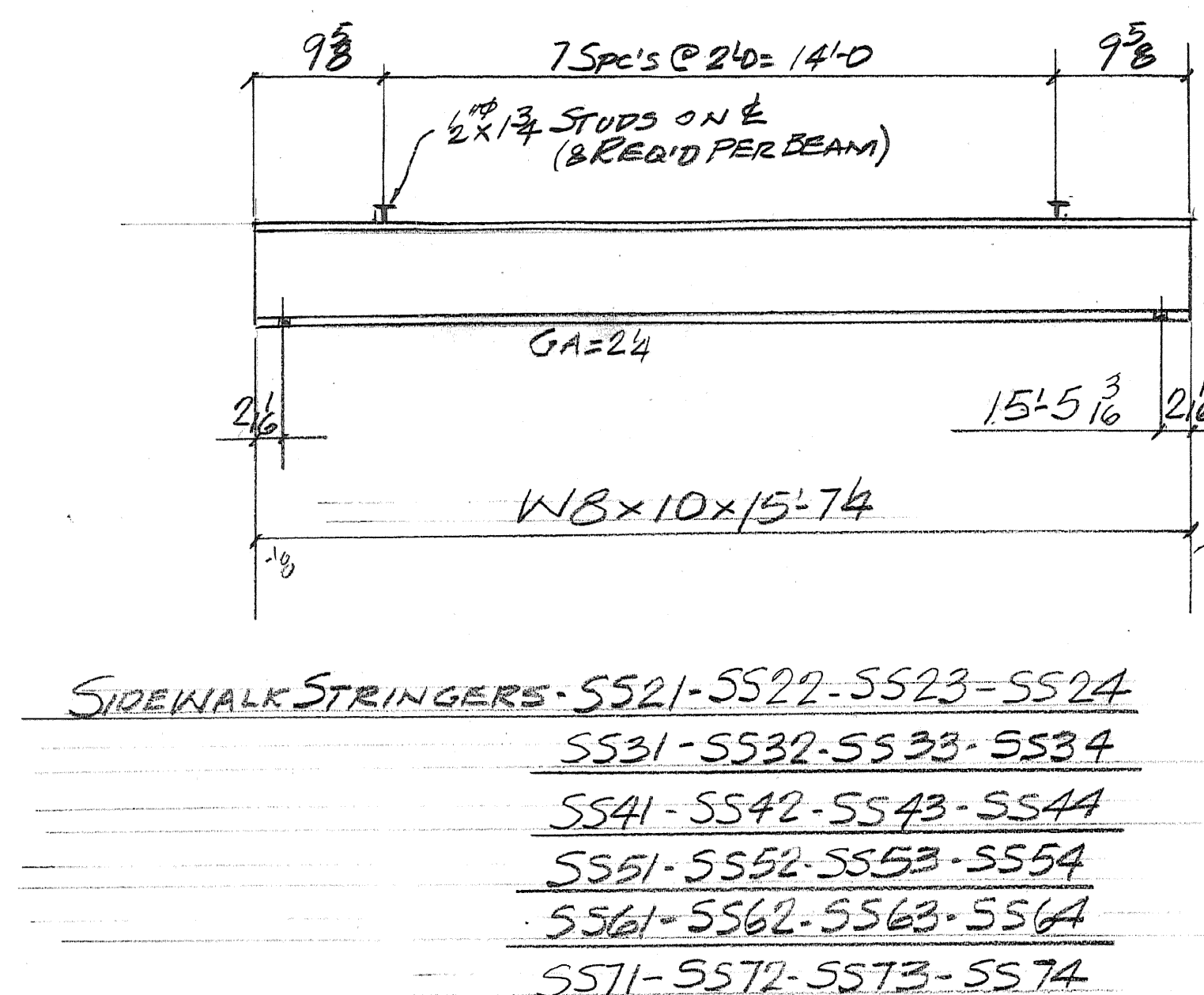


Per Blow & Cote, Inc., all circled dimensions have been verified and they have released to fabricate using these dimensions. If all verification of existing holes for W27 and existing plates and angles can be verified prior to fabrication Casco Bay Steel Structures will shop drill. If not, Blow & Cote will field drill these holes.

CUSTOMER: <u>BLOW & COTE INC.</u>		QA	
CASCO BAY STEEL STRUCTURES, INC.		JOB NO.	DRG. NO.
75: SPRING HILL ROAD	SACO, MAINE 04072	361	S3
PHONE (207) 282-7360	FAX (207) 282-1179		REV. 1

CASCO BAY STEEL STRUCTURES, INC.		JOB NO.	DRG. NO.
75 SPRING HILL ROAD		361	53
SACO, MAINE 04072	FAX. (207) 282-1179	REV.	1

OUT FOR APPROVAL	3/19/06																		
OUT FOR APPROVAL	7/17/03																		
ISSUED TO SHOP																			
FIELD & OFFICE																			
1	ADDED STUDS	4-1500	JPF																
REV. REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER									
PROJECT NO. BHF - 0302(3) S		STATE PROJECT NO.																	
MATERIAL: ^{1/4" X 10} 1/2" X 6-50		ELECTRODES: —		HOLES: ^{1 3/16" HP} 1 1/2" UN.		SHOP BOLTS: —													
SURFACE PREP. & PAINT:																			
SHERWIN WILLIAMS - COROTHANE / GALVAPAC																			
ONE PACK ZINC PRIMER 3.5 TO 4 MILS DFT																			
DESCRIPTION: SIDEWALK STRINGERS												DRAWN BY				DATE			
JOB: <u>IMPROVEMENTS</u> <u>BRIDGE No. 41 ON TH No. 2</u> <u>RICHFORD, VT.</u>												JPF				3-00			
												CHKD BY							
												APPROV BY							
												Q.A.							
CUSTOMER: BLOW & COTE INC.																			
CASCO BAY STEEL STRUCTURES, INC.												JOB NO.				DRG. NO.			
75 SPRING HILL ROAD												SACO, MAINE				04072			
PHONE (207) 282-7360												FAX. (207) 282-1179				361 54			
												REV.				1			



Per Blow & Cote, Inc., all circled dimensions have been verified and they have released to fabricate using these dimensions. If all verification of existing holes for W27 and existing plates and angles can be verified prior to fabrication Casco Bay Steel Structures will shop drill. If not, Blow & Cote will field drill these holes.

C.C. TO VERIFY ALL HOLE LOCATIONS

CASCO BAY STEEL STRUCTURES, INC.

75 SPRING HILL ROAD SACO, MAINE 04072
PHONE (207) 282-7360 FAX. (207) 282-1179



SHOP DRAWINGS ARE REVIEWED UNLESS NOTED OTHERWISE	
NO EXCEPTION TAKEN	☒
REVISE AS NOTED RESUBMISSION NOT REQUIRED	☐
REVISE AS NOTED RESUBMISSION REQUIRED	☐
REJECTED	☐
DATE <u>4/23/08</u> SIGNATURE <u>Michael Christ</u>	
REVIEW BY <u> </u> FOR <u> </u> PURPOSE OF ASCERTAINING <u> </u> CONFORMITY WITH DESIGN CONTRACT <u> </u> RESPONSIBLE FOR DIMENSIONS FABRICATE <u> </u> U CONSTRUCTION METHODS COORDINATION OF SUB-TRADE DETAIL DESIGN OF COMPONENTS AND ERROR OR OMISSIONS ON SHOP DRAWINGS	

[illegible]

Casco Bay Steel Structures, Inc.

75 Spring Hill Road
Saco, Maine 04072

Phone: (207) 282-7360

Fax: (207) 282-1179

WELDING PROCEDURE SPECIFICATION

Material specification ASTM-A709/A709M-Gr36-50-50W(250-345-345W)
Welding process STUD WELDER (S.W.)
Manual or machine MACHINE ☒ RAUS
Position of welding FLAT ☒ RECEIVED
Filler metal specification NA
Filler metal classification NA
Flux NA
Shielding gas NA Flow rate NA
Single or multiple pass SINGLE
Single or multiple arc SINGLE
Welding current D.C. EN
Polarity NA
Welding progression NA
Root treatment Clean Surface To be welded
Preheat and interpass temperature 25-50°F to 1 1/2" to 10" 1 1/2" to 2 1/2" 150°F over 2 1/2" 225°F
Postheat temperature NA
Heat input Min NA Max NA

RICH FORD, VT
Br. NO. 41-Br. No. BHF-0302(3)S
C 855 36

WELDING PROCEDURE

Pass no.	Electrode size	Welding current		Travel speed	Joint detail
		Amps	Volts		
	STUD SIZE		Weld TIME		
	1/2	350	35±		
	5/8	350	35±	NA	
	3/4	550	40±		
	7/8	650	1.0±		

Height
Varies

Note:
This Procedure is only a
guide To Setup.

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable A.W.S. codes or contract specifications

Procedure no. # I S.W.

Revision no.

Form III-2

Contractor Casco Bay Steel
Authorized By [Signature]
Date May 3-1998



WELDING PROCEDURE SPECIFICATION

Material specification A36-A572-A578 (ASTM A36-A572-A578)
Welding process Flux Cored Arc welding (FCAW)
Manual or machine Semi-Auto
Position of welding Flat
Filler metal specification AWS A5-20
Filler metal classification E71T-1
Flux NA
Shielding gas 75% Ar 25% CO₂ Flow rate 40-50
Single or multiple pass Both Electrode stick out 3/4-1 1/4
Single or multiple arc Single
Welding current Direct current
Polarity Reverse Electrode positive
Welding progression See Detail
Root treatment Acid Side 1, Backside 2 - grind - then weld
Preheat and interpass temperature To 54-50° (13-10°) * 3/4 to 1 1/2 in (19 to 38-20°)
Postheat temperature NA
Heat Input Min NA Max NA

RICHARD UT
Bryon, HI - Proj No BHF-0302(G)S
C855361

Pass no.	Electrode size	Welding current		Travel speed	Joint detail
		Amperes	Volts		
	1/16	280 ±28	25 ±1.7	11 ±1.1	60° 4 T1 R T T1 - UNLIMITED P - 0 to 1/8 / 0 to 3.2mm R - 0 to 1/8 / 0 to 3.2mm 1 - Grind as required
	1/6	280 ±28	25 ±1.7	280 ±28	

TRANS RECEIVED

APPROVED

DATE 4/11/00

Casco Bay Steel Structures, Inc.

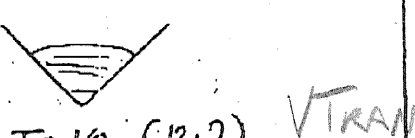
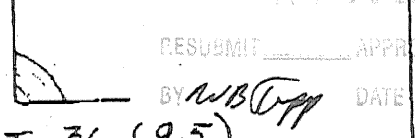
75 Spring Hill Road
Saco, Maine 04072

Phone: (207) 282-7360

Fax: (207) 282-1179

WELDING PROCEDURE SPECIFICATION

Material specification ASTM A709/A709M - Grade 36 (50) 50 (45) 50 W (346W)
Welding process Flux Cored Arc Welding
Manual or machine SEMI AUTO
Position of welding Flat (1F) Horizontal (2F)
Filler metal specification AWS A5.20
Filler metal classification E71T-1
Flux NA 75% AR 25% CO2 Flow rate 40 CFH ± 3
Shielding gas Single and Multiple - Electrode Extension 9/16" (15.8) ± 6.35
Single or multiple pass Single
Welding current DC
Polarity Reverse
Welding progression AWS specification
Root treatment IG metal
Preheat and interpass temperature to 3/4" (19.5) (10) - 3/4" (19) to 1/2" (12.7) to 1/4" (6.3) to 1/8" (3.18) (150) (65)
Postheat temperature NA over 2 1/2" (63) - 225 (110)
Heat input Min NA Max NA RICH Ford, VT
Br MC 41 - Proj No BHF-0302(3)S
C 855 36

(METRIC)					
Pass no.	Electrode size	Welding current		Travel speed	Joint detail
		Amperes	Volts		
	1/16	205	28.8	11.6	1F 
		247.5	26.8	10.4	
		To	To	To	
		302.5	30.8	12.8	
	1/8	205	28.8	294.6	2F 
		247.5	26.8	264.2	
		To	To	To	
		302.5	30.8	325.12	

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable A.W.S. codes or contract specifications

Procedure no. 101

Contractor Casco Bay Steel

Revision no.

Authorized By Paul E. Goodale

Form III-2

Date 3/23/08

Casco Bay Steel Structures, Inc.

5 Industry Road
South Portland, Maine 04106

Phone: (207) 772-2533

Fax: (207) 772-0580

WELDING PROCEDURE SPECIFICATION

Material specification A36-A572-A588 (ASTM 709 Gr 36-50-50w)
Welding process Flux Cored Arc welding (FCAW)
Manual or machine Semi-Auto
Position of welding Flat
Filler metal specification AWS 5.20
Filler metal classification E71T-1
Flux NA
Shielding gas 75% AR 25% CO₂ Flow rate 40 F5
Single or multiple pass Single Electrode stick out 3/4" ± 1/4"
Single or multiple arc Single
Welding current Direct Current
Polarity Reverse Electrode Positive
Welding progression see Detail
Root treatment not AWS Weld from one side only
Preheat and interpass temperature 2 to 3/4-50° (19-10°) + 3/4 to 1 1/2-20° (19 to 38-20°)
Postheat temperature NA
Heat Input Min NA Max NA

Rich Ford, VT
Br. No. 41 - Proj No BHF-0302(3)S
CBS 361

WELDING PROCEDURE

Pass no.	Electrode size	Welding current		Travel speed	AWS D1.5	Joint detail
		Amperes	Volts			
	1/16	280 ± 28	25 ± 1.7	175 in/min ± 1.7		File
	1/6	280 ± 28	25 ± 1.7	432 ± 43.2		Butt

TRANS RECEIVED
JUL
APPROVED
4/17/00

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable A.W.S. codes or contract specifications.

Procedure no. 125 Contractor Casco Bay Steel
Revision no. 1 Authorized By Joe P. Model

Casco Bay Steel Structures, Inc.

5 Industry Road
South Portland, Maine 04106

Fax: (207) 772-0580

hones: (201) 112-4533

WELDING PROCEDURE SPECIFICATION

ASTM A109 Gr 36-50-50W (250-345-345W)

Shielded Metal Arc Welding (SMAW)

Manual or machine Manual

Position of welding Flat (F)

Filler metal specification AWS A5.1 - A5.5

Filler metal classification E7018 - E7018 C63 - T02B

Flow rate NA

Shielding gas NA

Single or multiple pass Single and multiple

Single or multiple arc Single

Welding current AC / DC

Polarity Straight / Reverse

Welding progression

Root treatment meet AWS specification

Preheat and interpass temperature 70 (160) to 140 (280) over 140 (280) 225 (425)

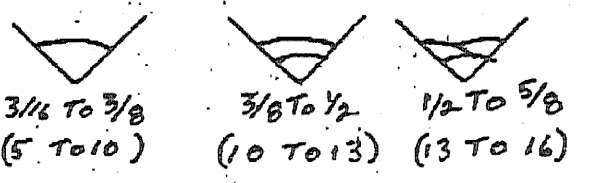
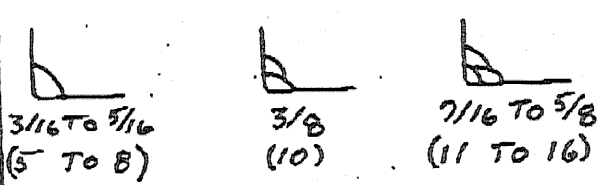
Postheat temperature NA

Heat input Min NA Max NA

RICH FORD, VT
B.V.C. 41 - Proj No. BHF-0302(3)S
C.B.S.S. 361

WELDING PROCEDURE

(Metric)

Pass no.	Electrode size	Welding current		Travel speed	Joint detail
		Amperes	Volts		
AS. REQ.	2018 1/8 (3.2)	70-170	22-26	AS REQ	IF
	5/32 (3.9)	120-225	22-26		
	3/16 (4.8)	170-300	24-27		
	2018 1/8 (3.2)	90-160	22-26		
	5/32 (3.9)	120-225	22-26		
	3/16 (4.8)	180-290	24-27		
	2018 5/32 (3.9)	170-270	22-26	2F	
	3/16 (4.8)	210-330	24-27		
	2018 5/32 (3.9)	170-270	22-26		
	3/16 (4.8)	210-330	24-27		
	2018 5/32 (3.9)	170-270	22-26		
	3/16 (4.8)	210-330	24-27		

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable codes or contract specifications

Procedure no. 401

Revision no.

Form 11-2

Contractor Casco Bay Steel

Authorized By Paul E. Hordale

Date 3/2/00

RECEIVED

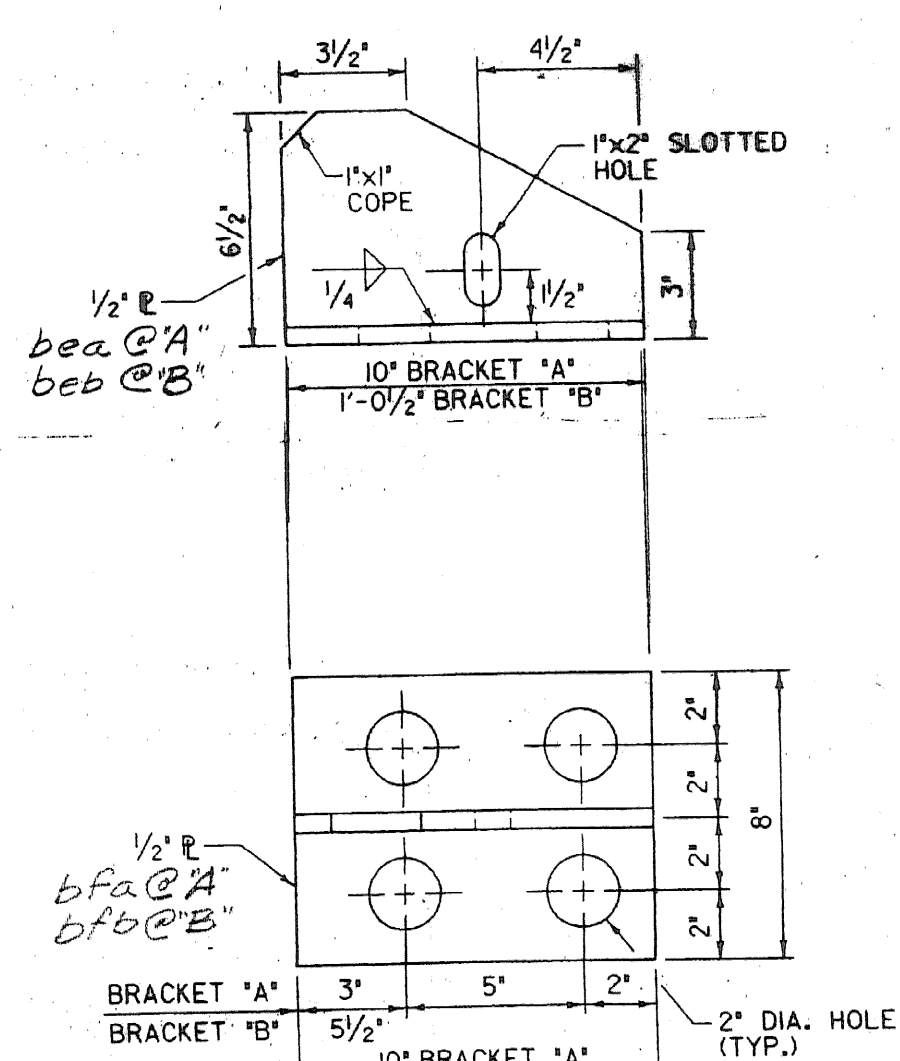
CKD BY

RESUBMIT

BY WBO/jp

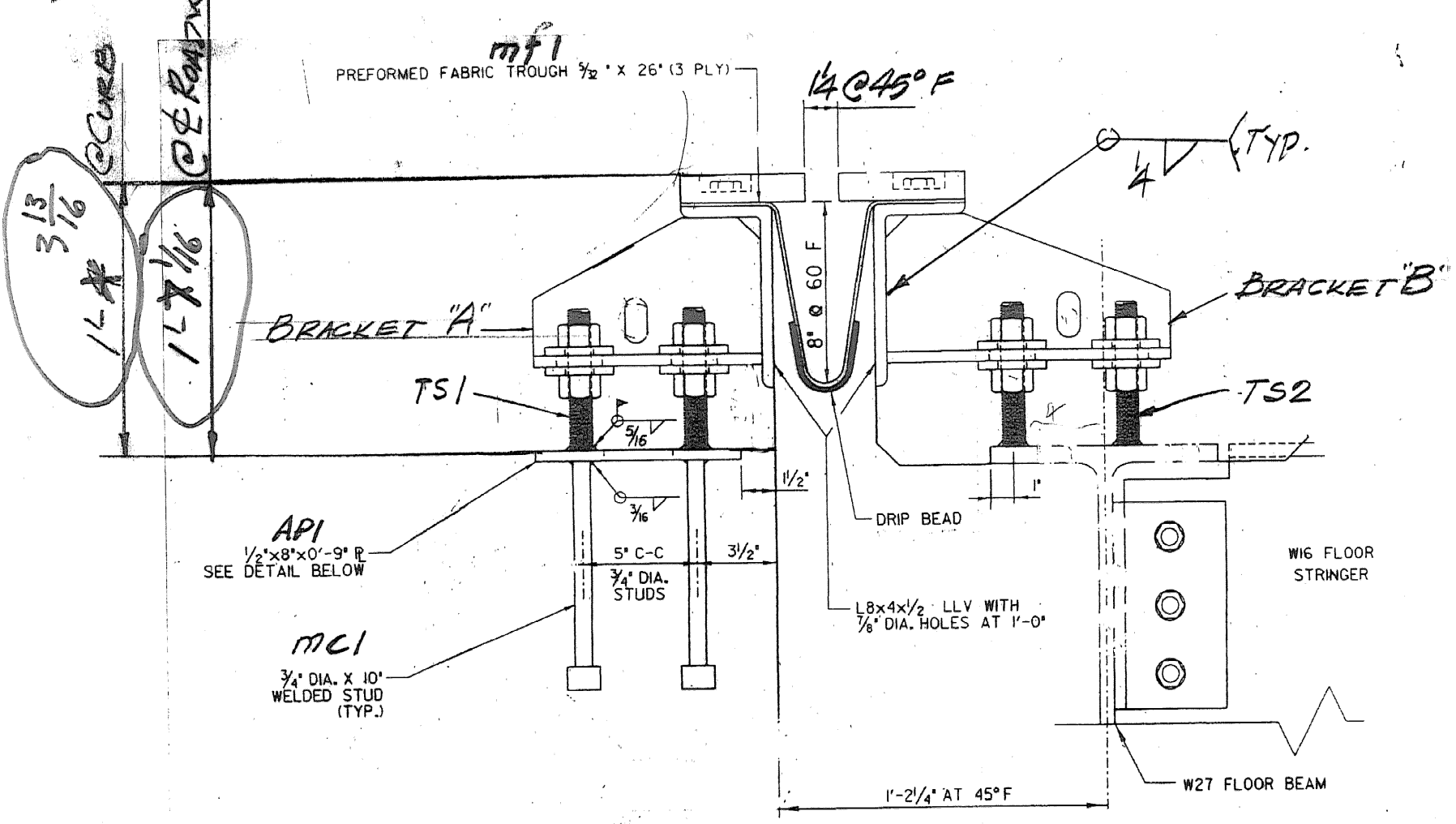
DATE 4/17/08

2647

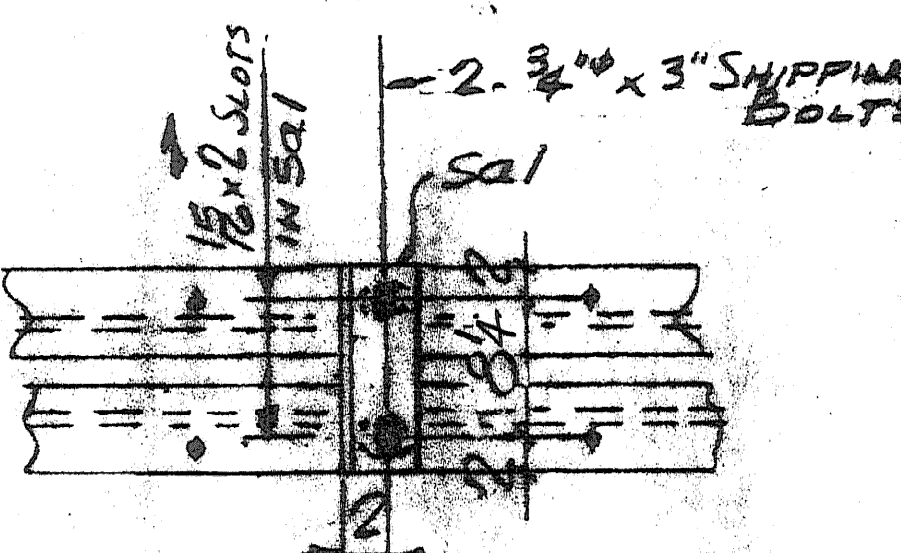


BRACKET "A" AND "B"

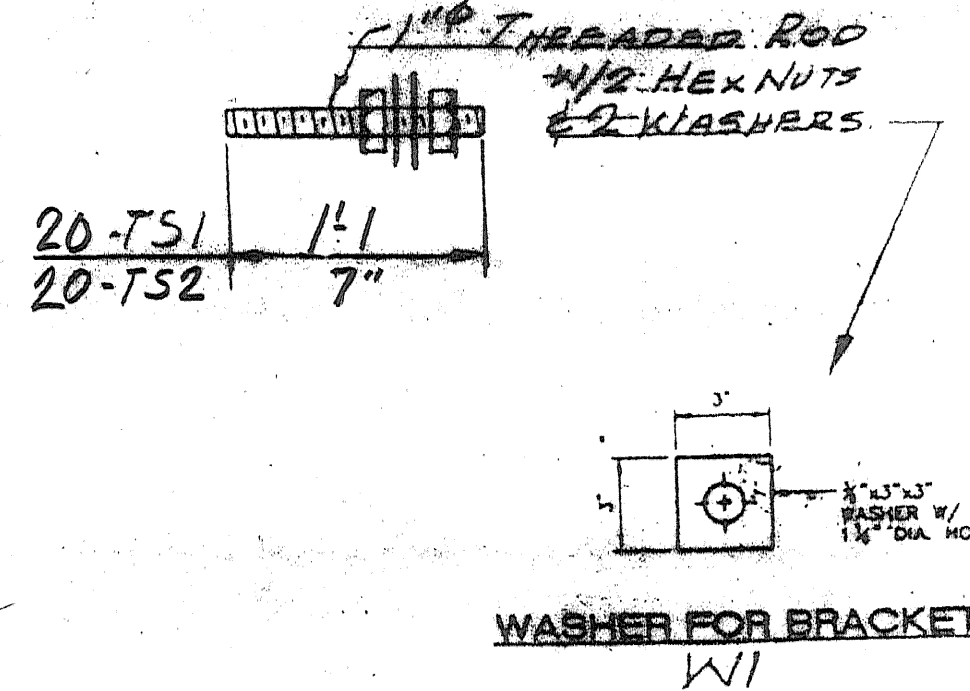
EJI-ONEREO'D (@ABUT.#1)



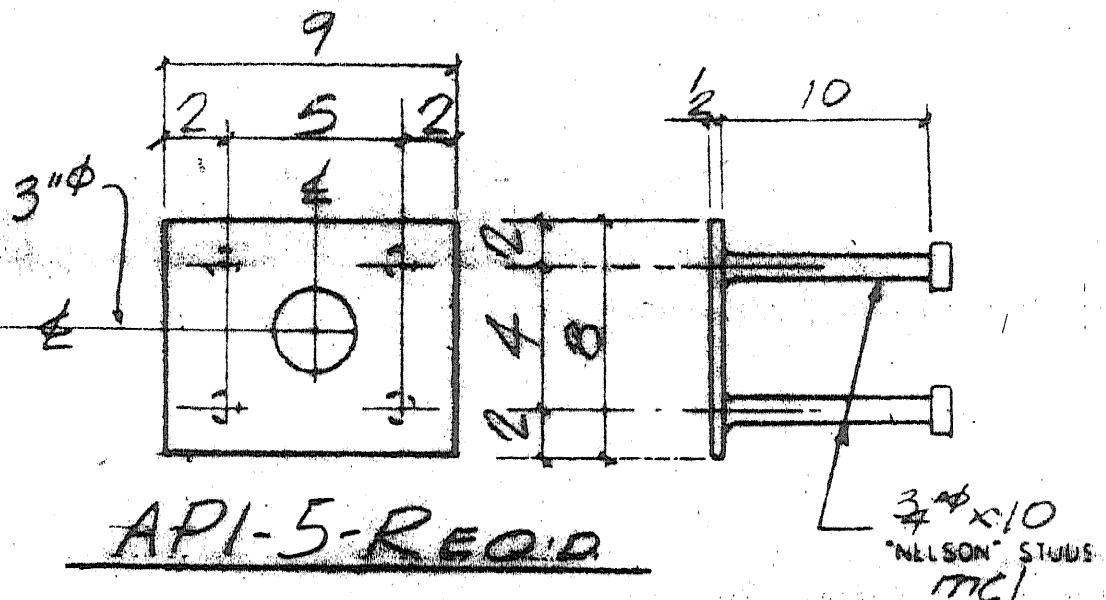
TYPICAL SECTION AT BRACKETS



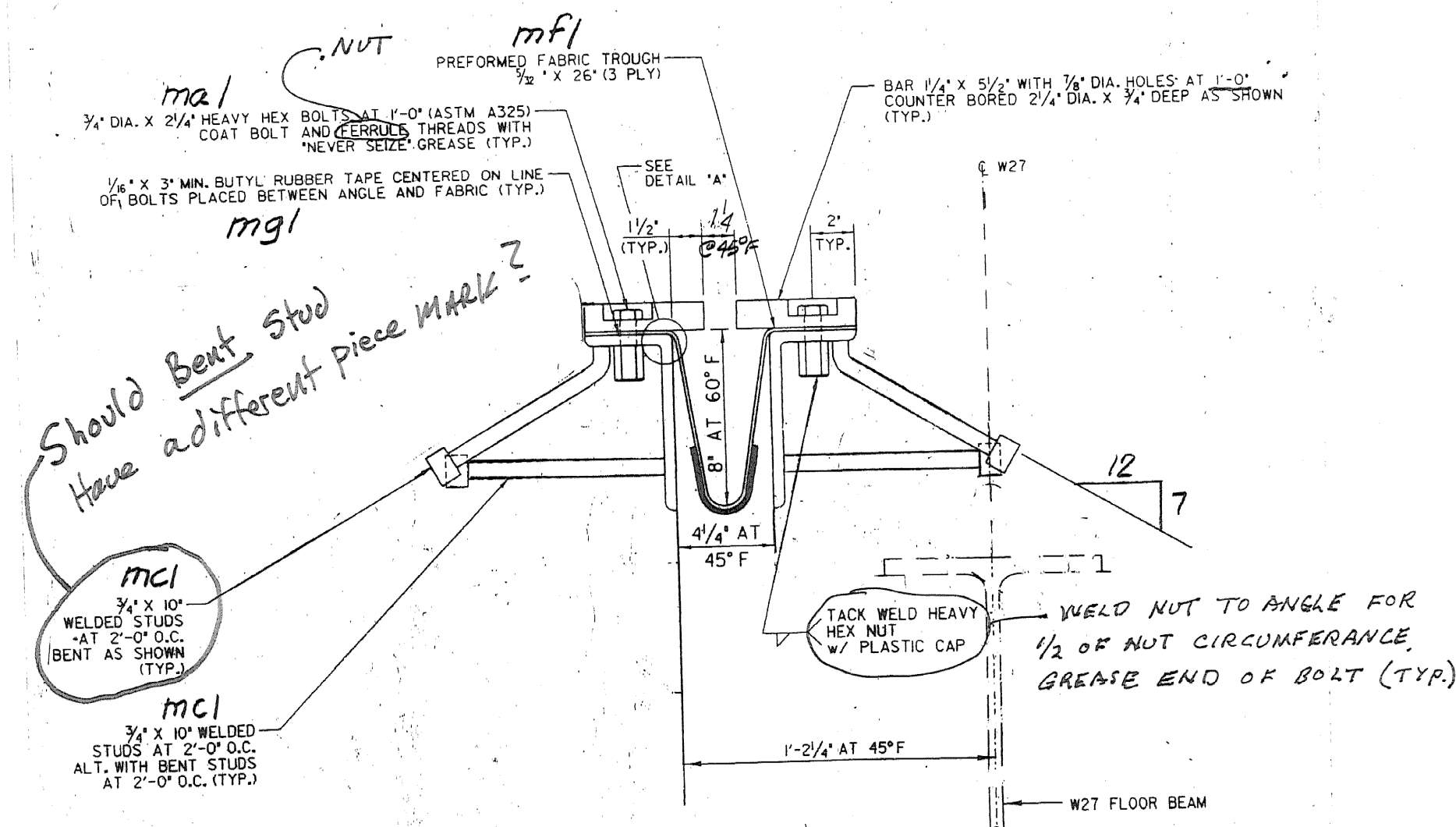
SHIPPING DEVICE
SPACED 5" O.C. MAX.



WASHER FOR BRACKET
W1



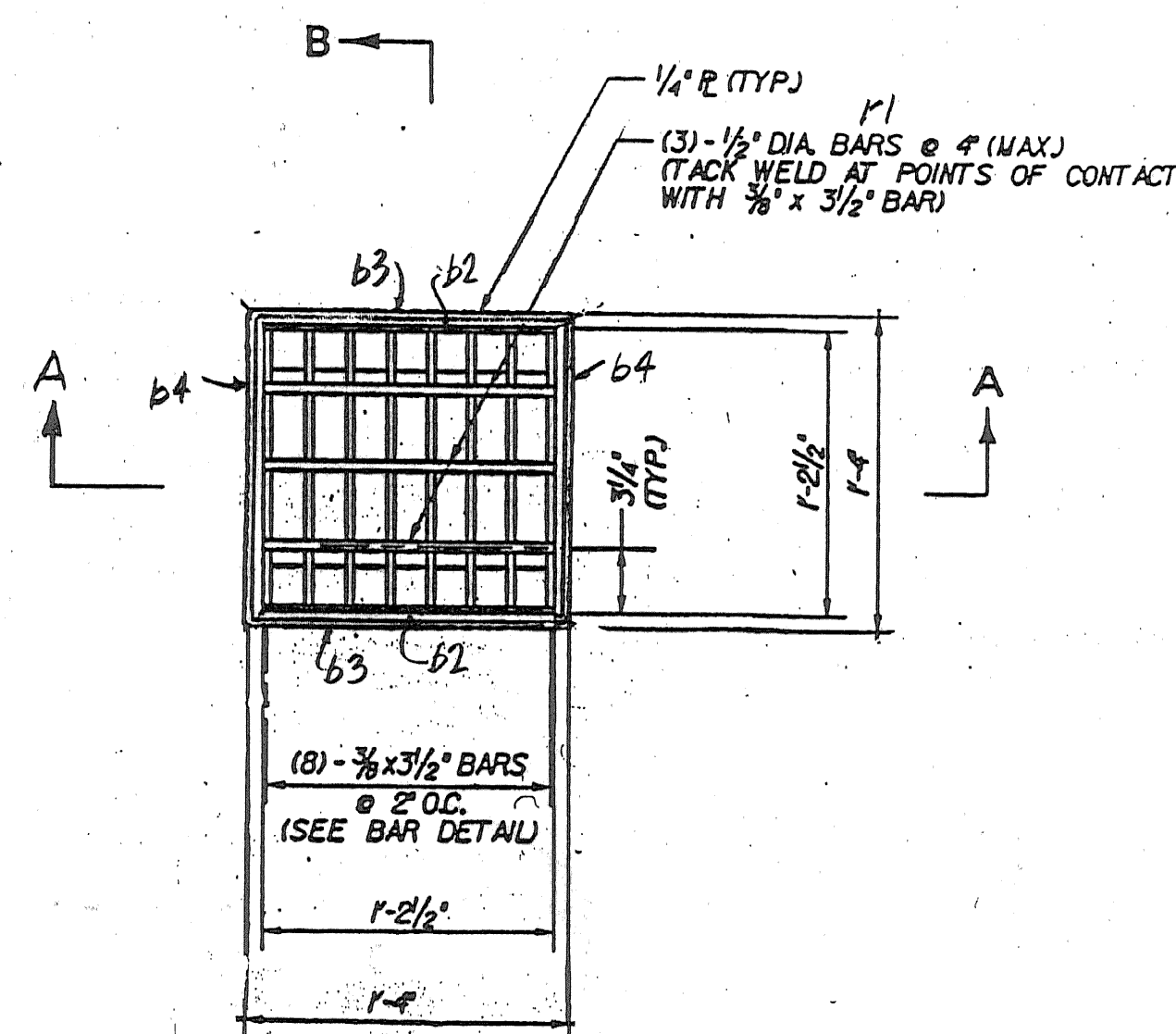
API-5-REQ.D

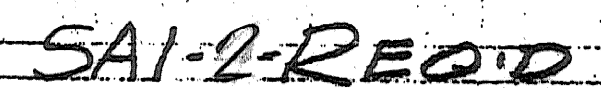
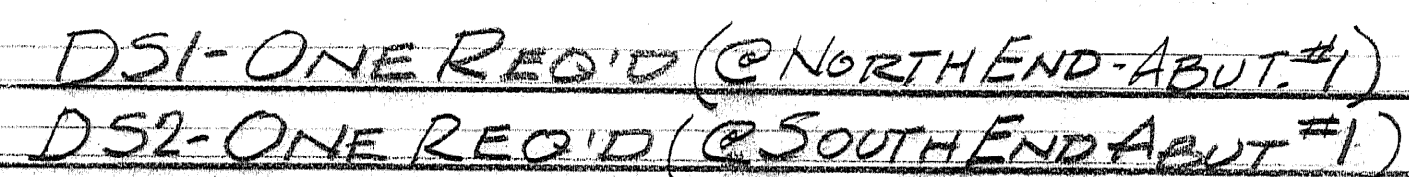


TYPICAL SECTION BETWEEN BRACKETS

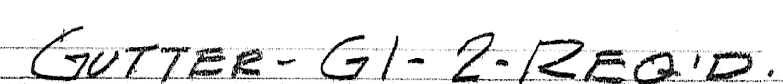
ABM INFO		SHOP BILL				JOB NO. 351	DRG. NO. J1		
PAGE	LINE	NO.	DESCRIPTION	FT	IN	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		1	EXP JOINT	26	10 1/2		ED1		—
		1	4x4x1/2	13	5	aa1			
		1	DO	13	5	ab1			
		1	DO	13	5	ac2			
		1	DO	13	5	ad2			
		2	BAR 5/2x1/4	13	3 1/2	b1a		FURNISH 4 EQUAL LENGTHS	
		2	DO	13	3 1/2	b2a		DO	
		5	R 1/2x6		10	bca			
		5	DO		1	obc			
		5	R 1/2x8		10	b1a			
		5	DO		1	obc			
		56	3/4" HEX BOLTS	2 1/2	mcl			W/ MANY HEX NUTS & PLASTIC CAPS	
		48	3/4" ANG STUDS	10	mcl				
		1	REFORMED FIBER 3/32x2 1/2	27	0 1/4	mf		SPAY PER SUBSET 707.07	
		2	BUTYL RUBBER TAPE 1/2x5	27	0 1/4	mg		PER SUBSET 707.12	
		20	1" THREADED RODS	1	1	TS1		A307	
		20	DO		7	TS2		A307	
		80	1" HEX NUTS			FIELD			
		80	R 3/8x3		3	W1		R. WASH	
		5	R 1/2x8		9	ADI			
		20	3/4" ANG STUDS	10	mcl				
		6	4x4x1/2	1	0 1/4	sa1			
		12	3/4" BOLTS		3	SHOP			
PAY ITEM: 516.11									

[illegible]





INCLUDE
4 - 3/4" x 9" Exp. Bolts



INCLUDE
8-3/4" x 9 EXP. BOLTS

SHOP DRAWINGS ARE REVIEWED UNLESS NOTED OTHERWISE	
NO EXCEPTION TAKEN	
REVISE AS NOTED	
RESUBMISSION NOT REQUIRED	
REVISE AS NOTED	
RESUBMISSION REQUIRED	
REJECTED	

DATE 4/17/08

SIGNATURE Scott Brink

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.

ABM INFO		SHOP BILL				JOB NO. 351		DRG. NO. M2	
PAGE	LINE	NO.	DESCRIPTION	FT	IN	ASSEM. MARK	SHIPPING MARK	REMARKS	WEIGHT
		1	DOWNSPOUT	8	0±		DS1		
		1	DO	8	0±		DS2		
		2	755X5X4	8	0	+1		Per Subject 14.11	
		2	BAR 4x3 ¹³	1	9±		SA1	BEND	
		2	R 4x12	7	0		G1	BEND	
		12	3/4" Φ EXP. BOLTS	9			FIELD	w/4x4.	

OUT FOR APPROVAL	3/20/00																		
OUT FOR APPROVAL																			
ISSUED TO SHOP																			
FIELD & OFFICE																			
REV. REMARKS	DATE	DWN	CHK	APP	Q.A.	NO.	DIA.	LGT	TYPE	WASHER									
PROJECT NO. <u>BHF-0302(3) S</u> STATE PROJECT NO.																			
MATERIAL ^{ASSTD} <u>M270-6024</u>		ELECTRODES: <u>SEE</u>		HOLES: <u>1/5" P</u>		SHOP BOLTS: <u>—</u>													
SURFACE PREP. & PAINT:																			
<u>GALVANIZE PER SUBJECT, 506.15-PART (a)</u>																			
DESCRIPTION: <u>DOWNSPOUTS</u>												DRAWN BY		DATE					
JOB:												<u>JPF</u>		<u>3-08</u>					
												<u>CHKD BY</u>							
												<u>CR</u>							
												<u>APPROV BY</u>							
												<u>Q.A.</u>							
CUSTOMER: <u>BLOW & COTE INC.</u>																			
CASCO BAY STEEL STRUCTURES, INC.												JOB NO.		DRG. NO.					
75 SPRING HILL ROAD												<u>361</u>		<u>M2.</u>					
PHONE (207) 282-7360																			
SACO, MAINE 04072																			
FAX. (207) 282-1179																			
												REV.		<u>1</u>					



State of Vermont
PDD/Structures Design Section
National Life Building – Drawer 33
Montpelier, VT 05633-5001
www.aot.state.vt.us

[phone] 802-828-2621
[fax] 802-828-3566
[ttd] 800-353-0191

Agency of Transportation

DATE: October 17, 2008

Highway Safety Corp.
239 Commerce Street
P. O. Box 358
Glastonbury, CT 06033

Project Name: Richford Project #: BHF 0302(3)S

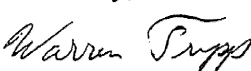
Structure Identification: TH #2, Br. #41 over Missisquoi River

The following bridge railing details [Item # 900.640, Special Provision (Box Beam Guard Rail, Truss) and Item # 900.640, Special Provision (Bridge Railing, Truss)] for the above project (Vendor's Job No 1660) transmitted to us with a letter from F. R. Lafayette dated October 15, 2008 have been reviewed and are being returned herewith.

Sheets 1 through 4 of 4 **are approved or approved “as noted”**. Upon receipt of these drawings please make appropriate changes and submit white prints for our use in the record plans for this project.

Copies of the previously approved Welding Procedures W-1658A, W 1658B, and W 1660A are enclosed.

You must provide notice to our fabrication inspector, Jeff Clark, as to the date fabrication represented by these drawings will begin. That notice must be received and acknowledged at least seven days prior to that date, as per Specification 506.03. Jeff may be contacted by phone at (802)828-0044 or email at jeff.clark@state.vt.us. Any material fabricated prior to the notification date is subject to rejection without further cause.

Sincerely,

Warren Tripp

Attachments
cc: [X] Resident Engineer Carl Gleason w/prints
[X] Shop Inspector Jeff Clark w/prints
[X] Contractor: Blow & Cote, Inc. w/prints
[X] Subcontractor: F. R. Lafayette, Inc. w/prints
[X] Construction Divison – letter only
[X] Materials & Research Section (C&LA Unit) – letter only
[X] Wayne Symonds
[X] Files



Highway Safety Corporation
Glastonbury, CT

Welding Procedure Specification

Material specification ASTM A36, A572 gr 50, A709 Gr 36, ASTM A709 Gr 50, A500 gr B

Welding process Gas Metal Arc Welding (GMAW)

Manual, semi-automatic, or automatic Semi-Automatic

Position of welding Horizontal (2F)

Filler metal specification AWS A5.18

Filler metal classification ER70S-3

Electrode and manufacturer Lincoln Electric Lincoln Weld L-50

Flux and manufacturer N/A

Shielding gas 85% Argon / 15% CO2 Flow rate 19-27 L / min

Single or multiple pass Single

Single or multiple arc Single

Welding current DC

Polarity Reverse

Welding progression Stringers

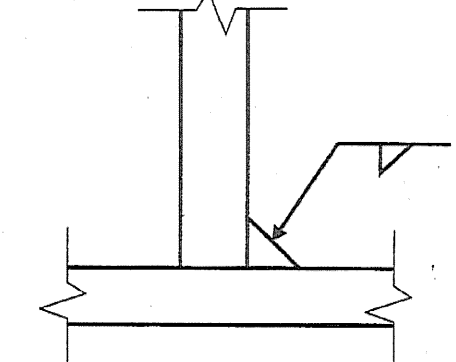
Root treatment None

Preheat and interpass temperature Base Metal up to 3/4" (50°F) ; over 3/4-1 1/2" (70°F)

Postheat treatment None

Electrode extension 3/4" ± 1/4"

WELDING PROCEDURE

Weld size	Pass no.	Electrode size	Welding parameters		Travel speed	Joint detail
			Amperes	Volts		
1/8"	1	0.045"	300 A ± 30	29 V ± 2	28 ipm ± 2	TYPICAL ALL FILLET WELDS 
3/16"	1	0.045"	300 A ± 30	29 V ± 2	28 ipm ± 2	
5/16"	1	0.062"	275 A ± 25	25 V ± 2	8-10 ipm	
VT TRANS RECEIVED OK'D BY _____ OK'D BY JWC SEP 4 2008 RESUBMITTED _____ APPROVED _____ BY _____ DATE 9/8/08						

This procedure may vary due to fabrication sequence, fit-up, pass size, etc. within the limitation of variables given in section 5 of latest edition AWS D1.5

WPS no. W-1658A Fabricator Highway Safety Corporation

Revision no. 0 Authorized by Paul Radice

Supporting POR no. Pre-qualified Date 7/28/08

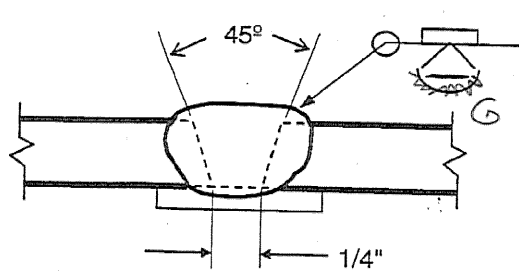
Project Name Richford, VT Project Number BHF 0302(3)S

Highway Safety Corporation
Glastonbury, CT

Welding Procedure Specification

Material specification ASTM A600 Gr B
Welding process Gas Metal Arc Welding (GMAW)
Manual, semi-automatic, or automatic Semi-Automatic
Position of welding Horizontal (2F)
Filler metal specification AWS A5.18
Filler metal classification ER70S-3
Electrode and manufacturer Lincoln Electric Lincoln Weld L-50
Flux and manufacturer N/A
Shielding gas 85% Argon / 15% CO2 Flow rate 19-27 L / min
Single or multiple pass Single
Single or multiple arc Single
Welding current DC
Polarity Reverse
Welding progression Stringers
Root treatment None
Preheat and interpass temperature Base Metal up to 3/4" (50°F) ; over 3/4-1 1/2" (70°F)
Postheat treatment None
Electrode extension 3/4" ± 1/4"

WELDING PROCEDURE

Weld size	Pass no.	Electrode size	Welding parameters		Travel speed	Joint detail
			Amperes	Volts		
	1	0.045"	300 A ± 30	29 V ± 2	14 ipm ± 2	full penetration groove weld with permanent backing bar 
VIEW RECEIVED						
CHECKED BY: DATE: 9/4/08						
APPROVED BY: DATE: 9/8/08						

This procedure may vary due to fabrication sequence, fit-up, pass size, etc. within the limitation of variables given in section 5 of latest edition AWS D1.5

WPS no. W-1658B
Revision no. 0
Supporting PQR no. Pre-qualified
Project Name Richford, VT
Fabricator Highway Safety Corporation
Authorized by Paul Radice
Date 7/29/08
Project Number BHF 0302(3)S

Highway Safety Corporation

Glastonbury, CT

Welding Procedure Specification

Material specification

ASTM A36, A709 Gr 36

Welding process

Gas Metal Arc Welding (GMAW)

Manual, semi-automatic, or automatic

Semi-Automatic

Position of welding

Horizontal

Filler metal specification

AWS A5.18

Filler metal classification

ER70S-3

Electrode and manufacturer

Lincoln Electric Lincoln Weld L-50

Flux and manufacturer

N/A

Shielding gas

85% Argon / 15% CO2

Flow rate

19-27 L / min

Single or multiple pass

Single

Single or multiple arc

Single

Welding current

DC

Polarity

Reverse

Welding progression

Stringers

Root treatment

None

Preheat and interpass temperature

Base Metal up to 3/4" (50°F) ; over 3/4-1 1/2" (70°F)

Postheat treatment

None

Electrode extension

3/4" ± 1/4"

WELDING PROCEDURE

Weld size	Pass no.	Electrode size	Welding parameters		Travel speed	Joint detail
			Amperes	Volts		
3/16"	1	0.045"	300 A ± 30	29 V ± 2	28 ipm ± 2	BTC - PH - GF $R = 0 + \frac{1}{8} - \frac{1}{16}$ $f = \frac{1}{8} \times \frac{1}{16}$

TRANS RECEIVED

OK'D BY JWC

SEP 08 2008

APPROVED

DATE 9/8/08

This procedure may vary due to fabrication sequence, fit-up, pass size, etc. within the limitation of variables given in section 5 of latest edition AWS D1.1 and D1.5.

WPS no.

W-1660A

Fabricator

Highway Safety Corporation

Revision no.

0

Authorized by

Paul Radice

Supporting PQR no.

Pre-qualified

Date

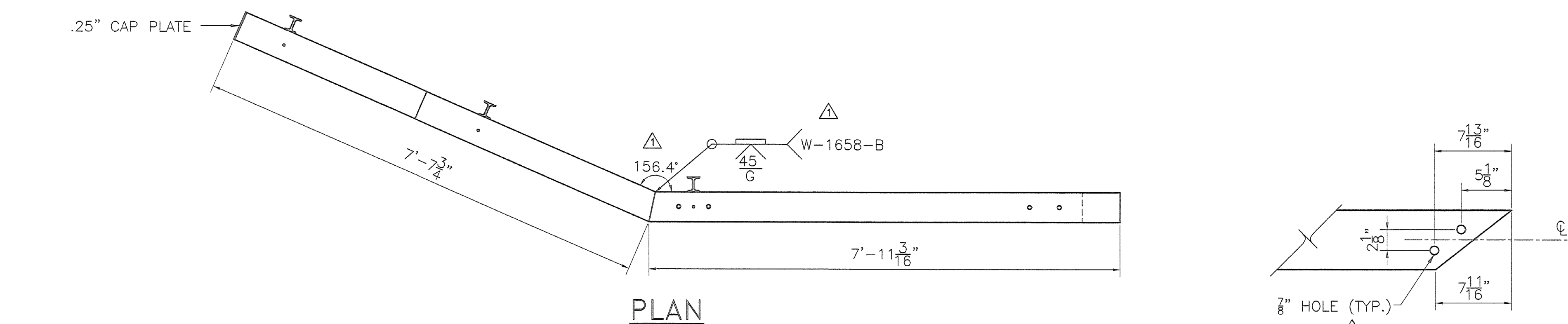
9/9/08

Project Name

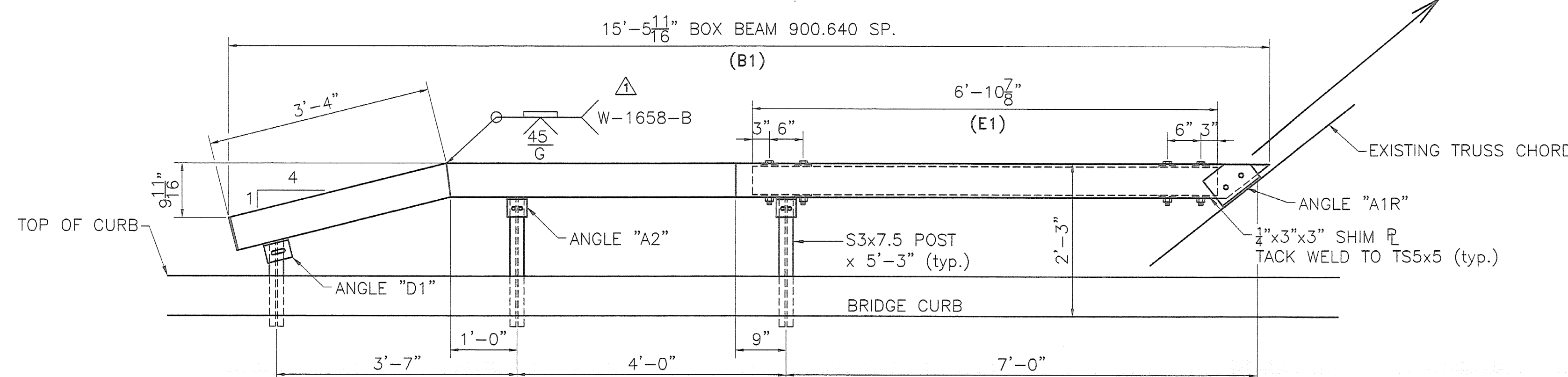
Richford, VT

Project Number

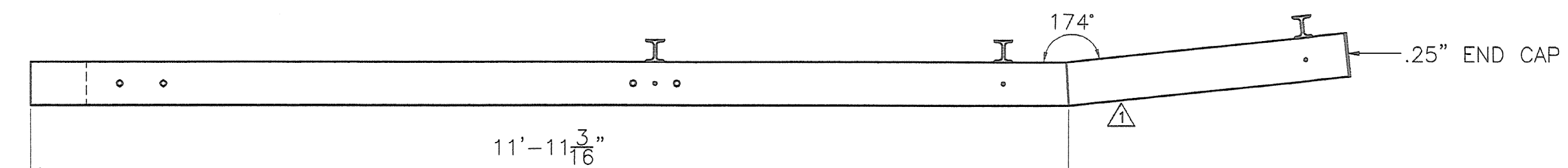
BHF 0302(3)S



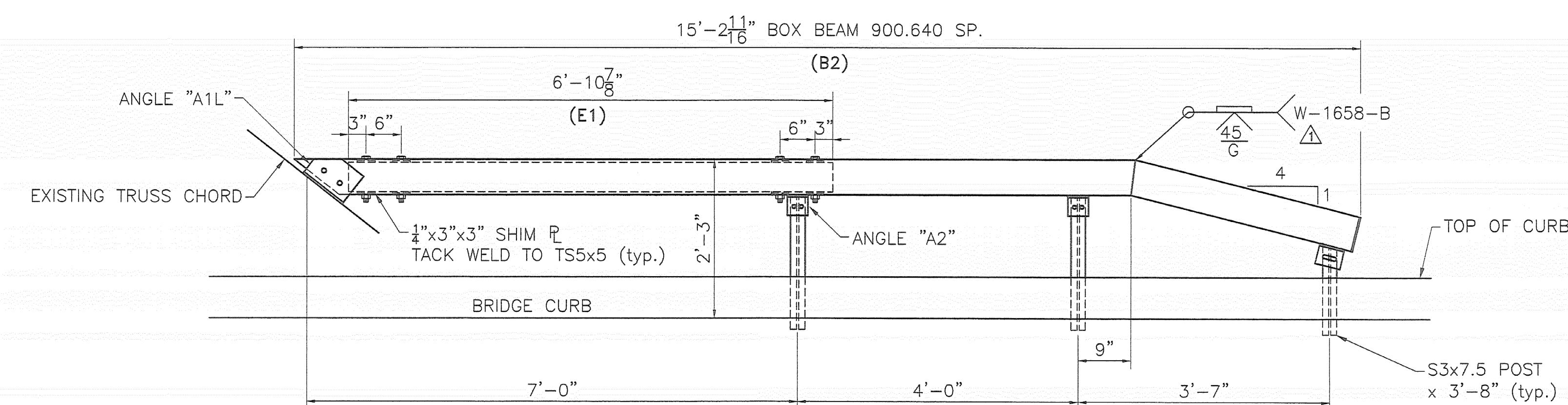
PLAN



NE CORNER



PLAN



NW CORNER

BILL OF MATERIAL					
Mk.	Qty.	Description	Size/Shape	Length/Qty. per unit	Material
	4	DRIVEN POST	S3x7.5	5'-3"	M270 Gr. 36
	2	DRIVEN POST	S3x7.5	3'-8"	M270 Gr. 36
A1R	1	CONNECTION ANGLE	L6x6x.375	8.5"	M270 Gr. 36
A1L	1	CONNECTION ANGLE	L6x6x.375	8.5"	M270 Gr. 36
A2	4	SHELF ANGLE	L5x3.5x.375	3.5"	M270 Gr. 36
D1	2	END ANGLE	L5x3.5x.375	4.5"	M270 Gr. 36
	2	WELDED END CAP	5.688x.25	5.688	M270 Gr. 36
	6	BENT CAP PLATE	.25"x2.5"	3"	M270 Gr. 36
B1	1	ANGLED BOX BEAM	TS 6x6x.187	15'-5.687"	A500 Gr. B
B2	1	ANGLED BOX BEAM	TS 6x6x.187	15'-2.687"	A500 Gr. B
E1	2	BOX BEAM	TS 6x5x.25	6'-10.875"	A500 Gr. B
A	12	HEX BOLT W/HEX NUT & 2 WASHERS	.75" DIA.	7.5"	A325
	2	HEX BOLT W/HEX NUT & 2 WASHERS	.75" DIA.	8"	A307
	4	HEX BOLT W/HEX NUT & 2 WASHERS	.375" DIA.	7.5"	A307
	4	HEX BOLT W/HEX NUT & WASHER	.875" DIA.	3"	A325
	6	HEX BOLT W/HEX NUT	.50" DIA.	1.5"	A307
	16	SHIM PLATE	.25"x3"	3"	A36



HIGHWAY SAFETY CORP.
 GLASTONBURY, CT

DRAWN: **MHM**
 CHECKED: **P Radice**
 DATE: **7/30/08**
 SCALE: **N.T.S.**
 HSC REFERENCE NO.: **1660**

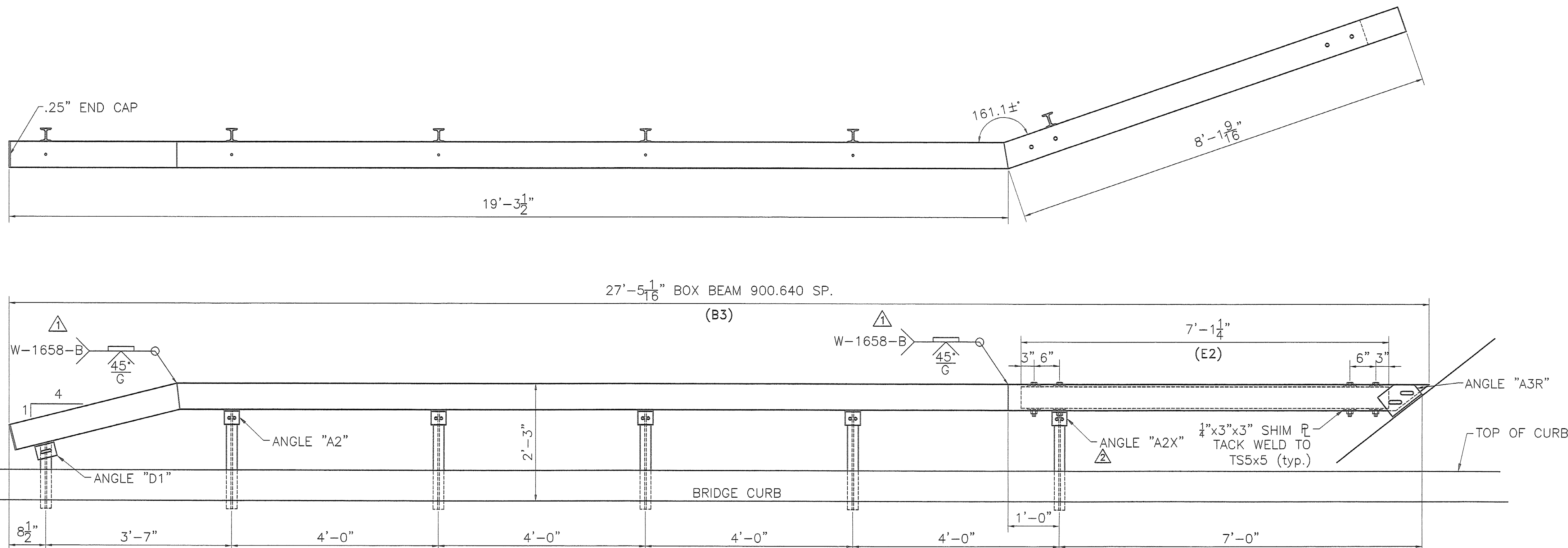
RAILING REPLACEMENT
 ITEM 900.640 SPECIAL PROVISION
 RICHFORD, VERMONT
 PROJECT NO. BHF 0302 (3) S

GENERAL CONTRACTOR: **F.R. LAFAYETTE**
 SUB CONTRACTOR:

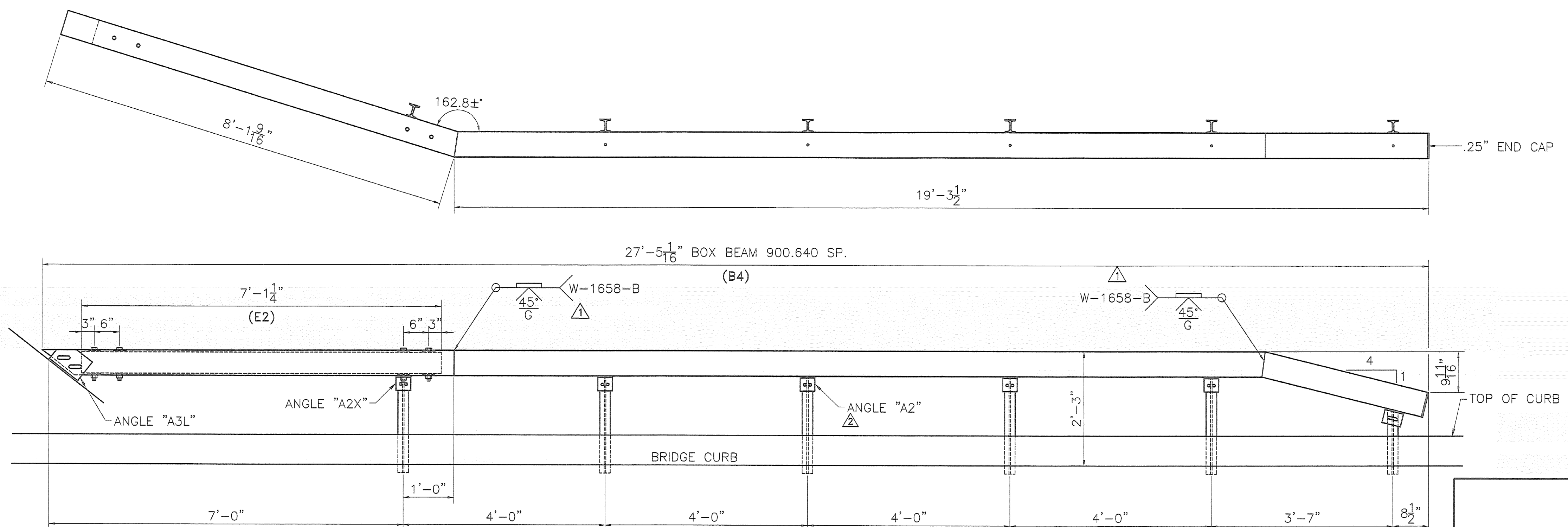
SIZE: **D**
 SHEET NO.: **1 of 4**

REVISIONS		
No.	Remarks	Date
0	Initial submittal	9-16-08
1	Per engineer's comments	10-6-08
2	As built changes	10-15-08

BILL OF MATERIAL					
Mk.	Qty.	Description	Size/Shape	Length/Qty. per unit	Material
	10	DRIVEN POST	5/8x7.5	5'-3"	M270 Gr. 36
	2	DRIVEN POST	5/8x7.5	3'-8"	M270 Gr. 36
A2	8	SHELF ANGLE	L5x3.5x.375	3.5"	M270 Gr. 36
A2X	2	SHELF ANGLE	L5x3.5x.375	3.5"	M270 Gr. 36
A3R	1	SLOTTED CONNECTION ANGLE	L6x6x.375	8.5"	M270 Gr. 36
A3L	1	SLOTTED CONNECTION ANGLE	L6x6x.375	8.5"	M270 Gr. 36
D1	2	END ANGLE	L5x3.5x.375	4.5"	M270 Gr. 36
	2	END CAP	5.688x.25	5.688	M270 Gr. 36
	12	BENT CAP PLATE	.25"x2.5"	3"	M270 Gr. 36
B3	1	ANGLED BOX BEAM	TS 6x6x.187	27'-5.063"	A500 Gr. B
B4	1	ANGLED BOX BEAM	TS 6x6x.187	27'-5.063"	A500 Gr. B
E2	2	BOX BEAM	TS 5x5x.25	7'-1.25"	A500 Gr. B
	12	HEX BOLT W/HEX NUT & 2 WASHERS	.75" DIA.	7.5"	A325
	2	HEX BOLT W/HEX NUT & 2 WASHERS	.75" DIA.	8"	A307
	8	HEX BOLT W/HEX NUT & 2 WASHERS	.375" DIA.	7.5"	A307
	4	HEX BOLT W/HEX NUT & WASHER	.875" DIA.	3"	A325
	12	HEX BOLT W/HEX NUT	.50" DIA.	1.5"	A307
	16	SHIM PLATE	.25"x3"	3"	A36

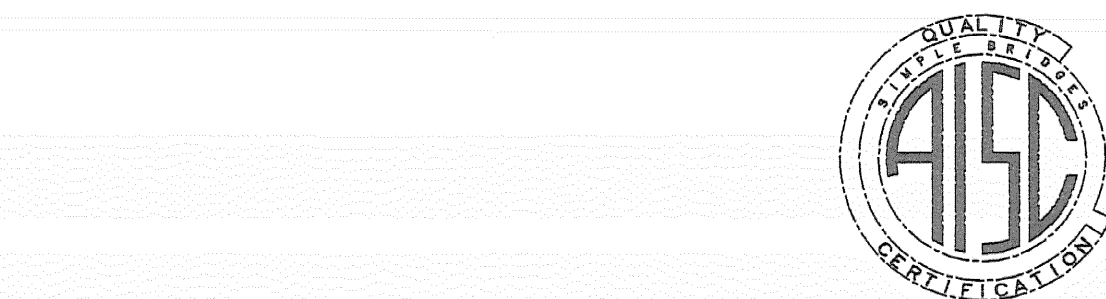


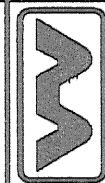
SW CORNER



SE CORNER

REVISIONS		
No.	Remarks	Date
0	Initial submittal	9-16-08
1	Per engineer's comments	10-6-08
2	As built changes	10-15-08





HIGHWAY SAFETY CORP.

GLASTONBURY, CT

DRAWN: **MMH**

CHECKED: **P Radice**

DATE: **7/30/08**

SCALE: **N.T.S.**

HSC REFERENCE NO.: **1660**

PROJECT NO.: **BHF 0302 (3) S**

GENERAL CONTRACTOR: **F.R. LAFAYETTE**

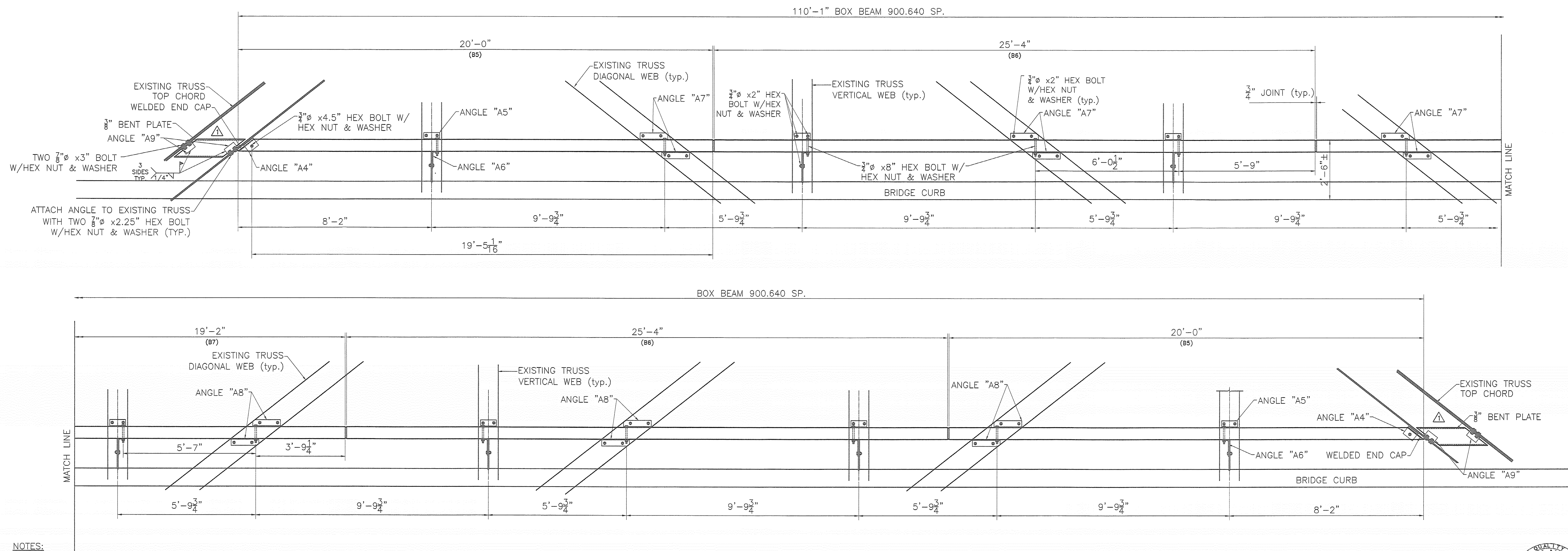
SUB CONTRACTOR: **F.R. LAFAYETTE**

SIZE: **D**

REVISION: **2**

SHEET NO.: **2 of 4**

BILL OF MATERIAL					
Mk.	Qty.	Description	Size/Shape	length/qty. per unit	Material
A4	4	CONNECTION ANGLE	L5x3.5x.375	6"	M270 Gr. 36
A5	14	CONNECTION ANGLE	L5x3.5x.375	8"	M270 Gr. 36
A6	14	CONNECTION ANGLE	L5x3.5x.375	4"	M270 Gr. 36
A7	12	CONNECTION ANGLE	L5x3.5x.375	14"	M270 Gr. 36
A8	12	CONNECTION ANGLE	L5x3.5x.375	14"	M270 Gr. 36
A9	8	CONNECTION ANGLE	L3.5x3.5x.375	6"	M270 Gr. 36
	4	BENT PLATE	9"x.375"	24.375"	M270 Gr. 36
B5	4	END TUBE W/WELDED CAP	TS 6x3x.375"	20'-0"	A500 Gr. B
B6	4	TUBE	TS 6x3x.375"	25'-4"	A500 Gr. B
B7	2	TUBE	TS 6x3x.375"	19'-2"	A500 Gr. B
	8	SPLICE TUBE W/2 WELDED NUTS	TS 5x2x.313"	1'-8"	A500 Gr. B
	32	SPLICE HEX BOLT W/WASHER	.625" DIA.	1.75"	A307
	4	HEX BOLT W/HEX NUT & WASHER	.75" DIA.	4.5"	A307
	26	HEX BOLT W/HEX NUT & WASHER	.75" DIA.	8"	A307
	98	HEX BOLT W/HEX NUT & WASHER	.75" DIA.	2"	A307
	8	HEX BOLT W/HEX NUT & WASHER	.875" DIA.	2.25"	A325
	8	HEX BOLT W/HEX NUT & WASHER	.875" DIA.	3"	A325



NOTES:

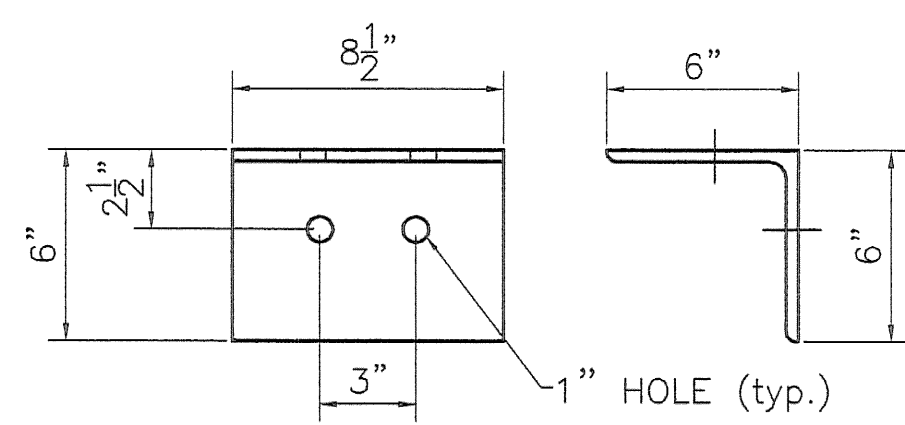
- BOX BEAM SHALL BE SHOP PAINTED IN ACCORDANCE WITH VT DOT SEC. 513 COLOR 14062.
- ALL WORK AND MATERIAL SHALL CONFORM TO SECTION 525.
- ALL BRIDGE RAIL CONNECTION HARDWARE SHALL BE INCIDENTAL TO ITEM 900.640 SPECIAL PROVISION (BRIDGE RAILING, TRUSS).
- TUBING SHALL MEET THE REQUIREMENTS OF SUBSECTION 732.03. ALL OTHER SHAPES AND PLATES SHALL BE AASHTO M 270M/M 270 GRADE 36.
- ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO $\frac{1}{16}$ " RADIUS AND BE FREE OF BURRS.
- SECTIONS OF BRIDGE RAIL SHALL BE ATTACHED TO A MINIMUM OF TWO (2) TRUSS MEMBERS.
- ANY BENDING OF BRIDGE RAIL SHALL BE BY SHOP PROCEDURE ONLY.
- ALL HOLES FOR CONNECTING ANGLES TO BRIDGE TUBES WILL BE SHOP DRILLED.

WEST RAIL ELEVATION EAST ELEVATION SIMILAR

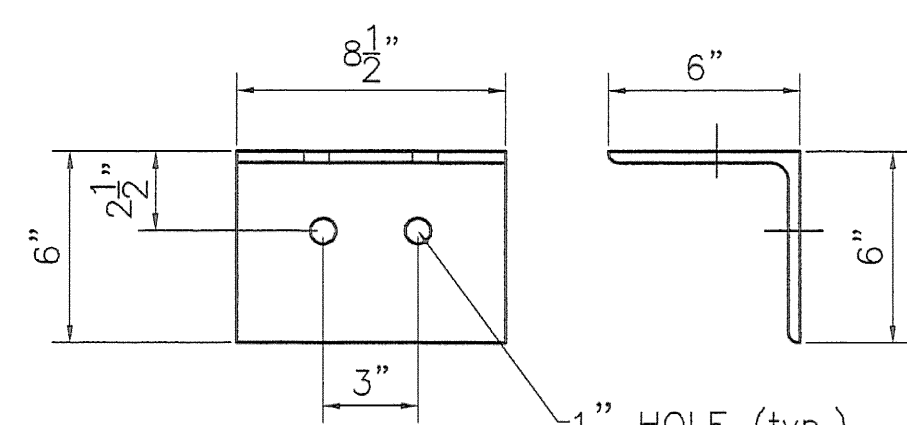
REVISIONS		
No.	Remarks	Date
0	Initial submittal	9-16-08
1	Per engineer's comments	10-6-08
2	As built changes	10-15-08



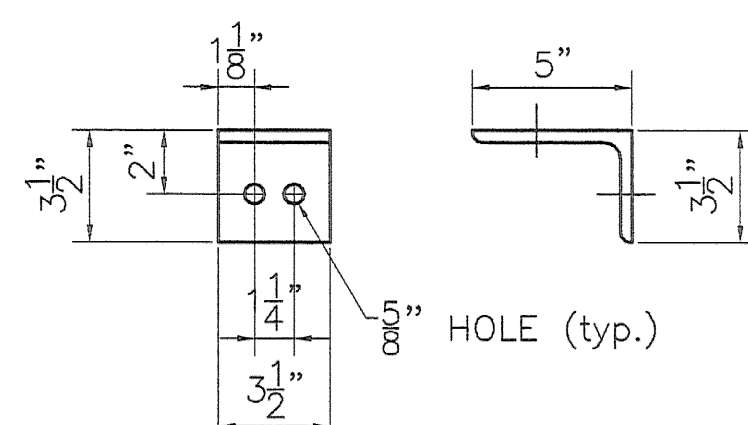
HIGHWAY SAFETY CORP. GLASTONBURY, CT		DRAWN: MHM CHECKED: P Radice DATE: 7/30/08 SCALE: N.T.S. HSC REFERENCE NO.: 1660	
		PROJECT NO. BHF 0302 (3) S	
GENERAL CONTRACTOR: F.R. LAFAYETTE		SIZE: D REVISION: 2 SHEET NO.: 3 of 4	



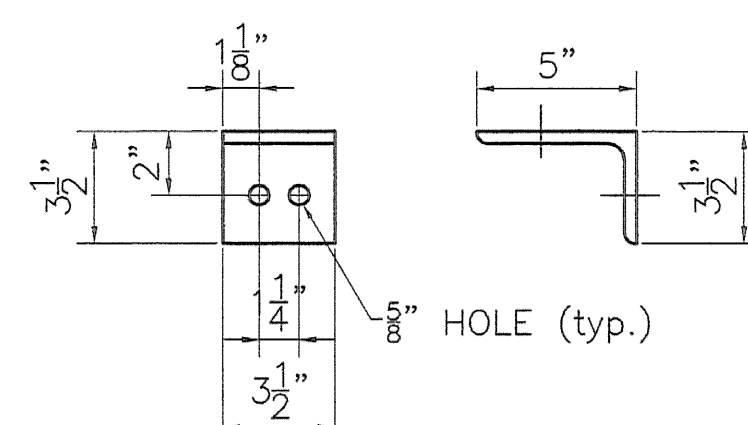
△
L 6x6x $\frac{3}{8}$ " - "A1R"



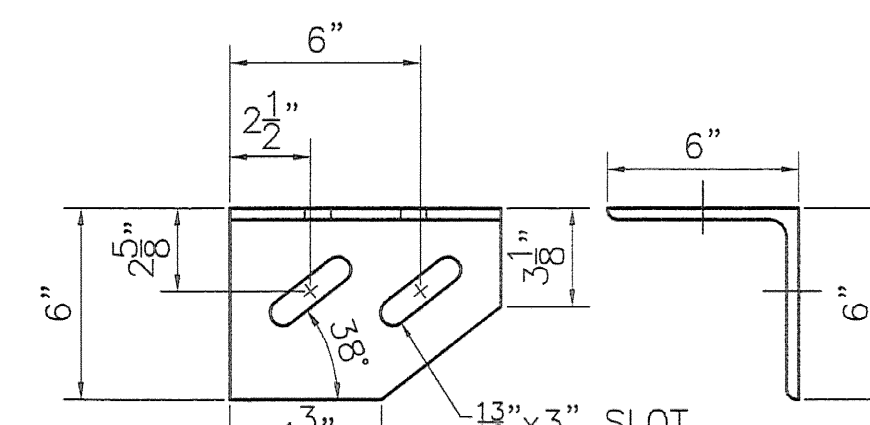
L 6x6x $\frac{3}{8}$ " - "A1L"



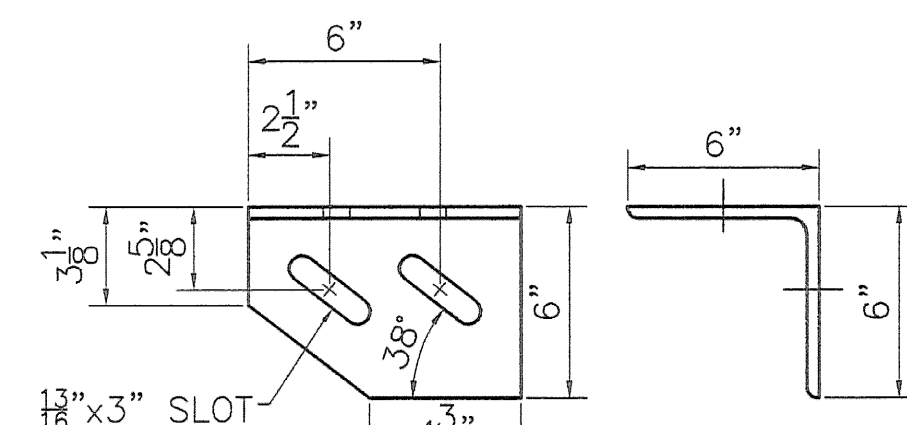
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L 5x3 $\frac{1}{2}$ "x $\frac{3}{8}$ " - "A2X"



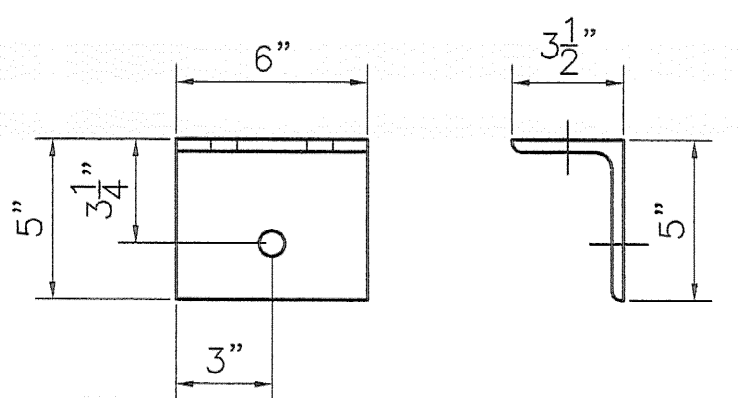
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L 5x3 $\frac{1}{2}$ "x $\frac{3}{8}$ " - "A2"



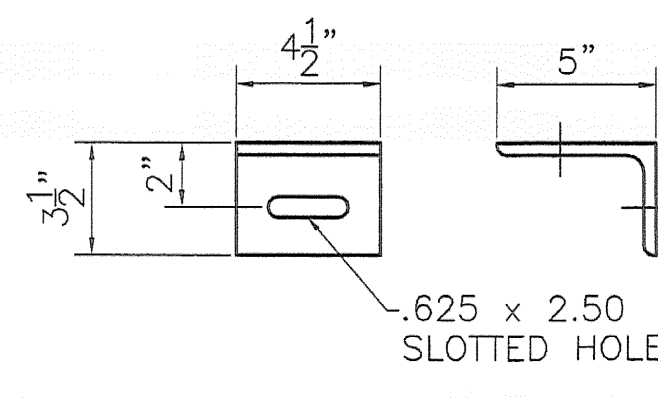
L 6x6x $\frac{3}{8}$ " - "A3L"



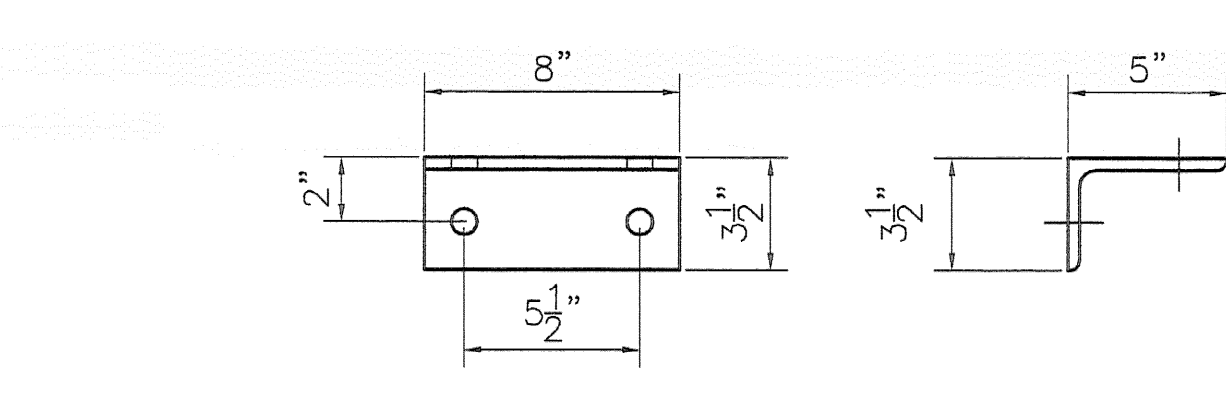
L 6x6x $\frac{3}{8}$ " - "A3R"



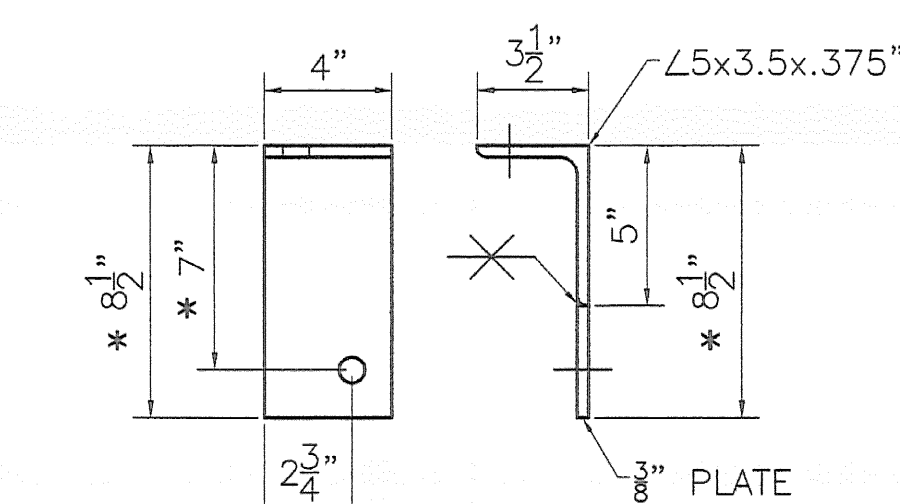
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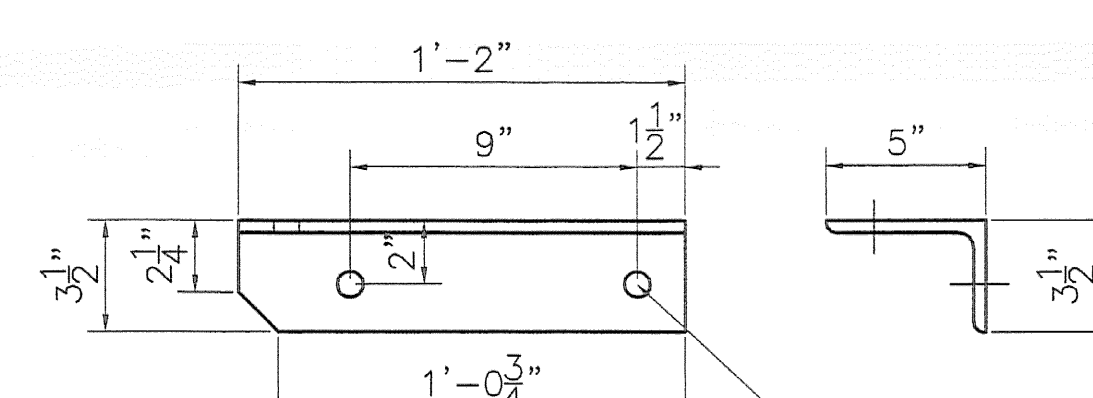
L 5x3 $\frac{1}{2}$ "x $\frac{3}{8}$ " - "D1"



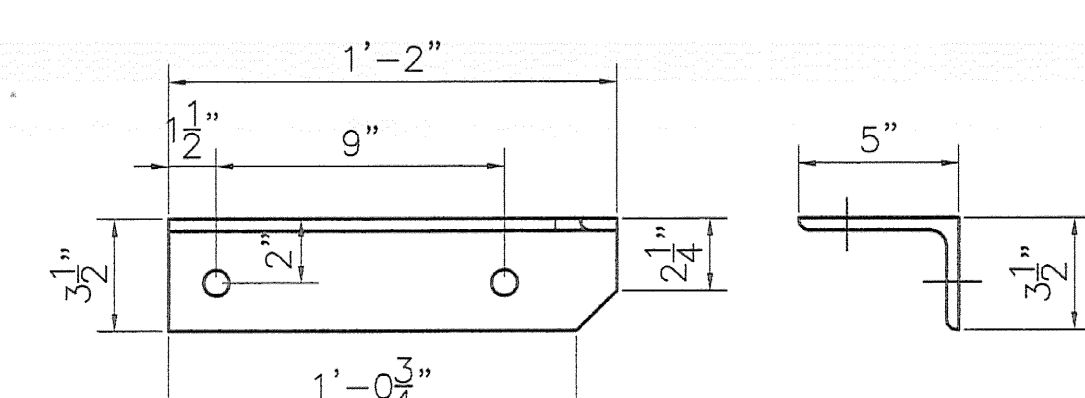
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L 5x3 $\frac{1}{2}$ "x $\frac{3}{8}$ " - "A5"



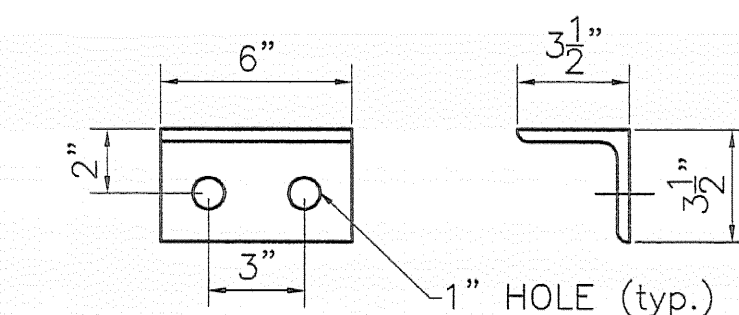
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L 5x3 $\frac{1}{2}$ "x $\frac{3}{8}$ " - "A6"



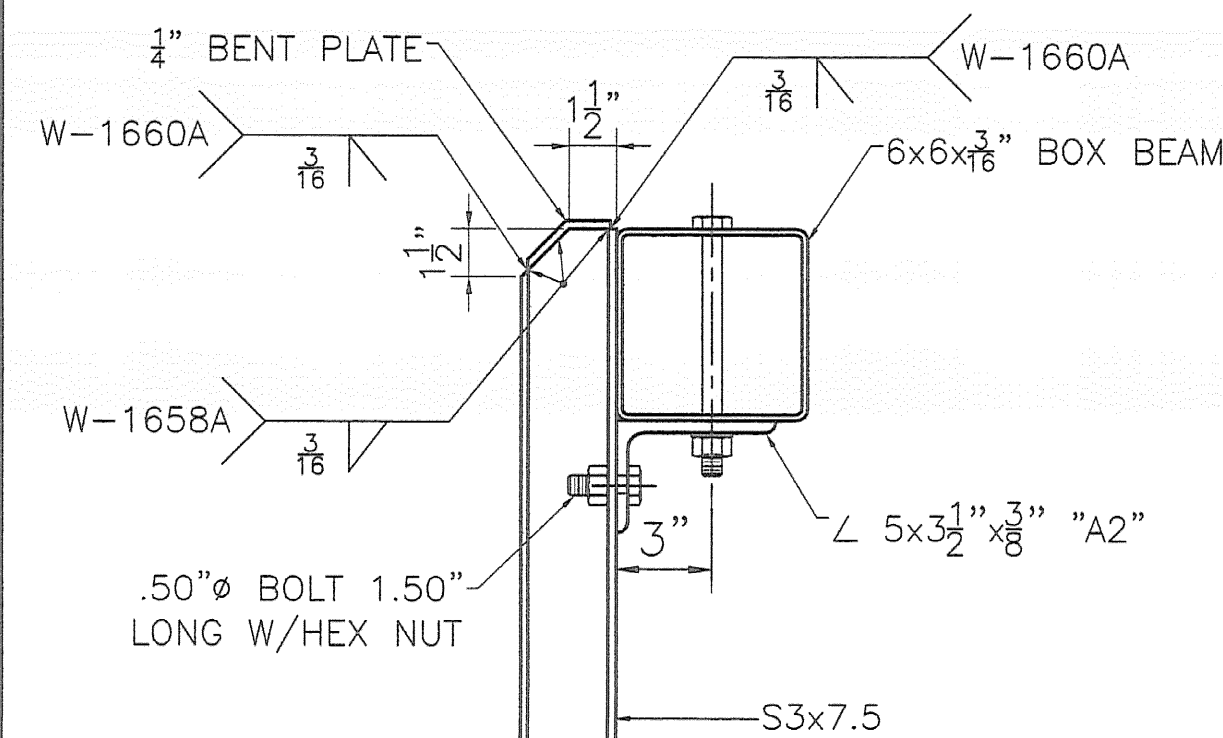
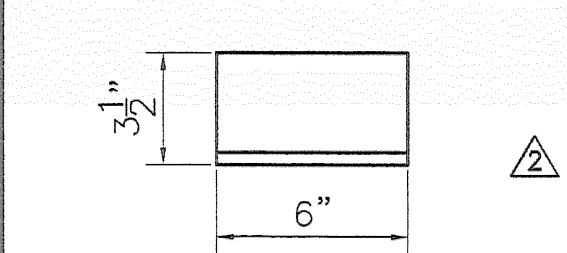
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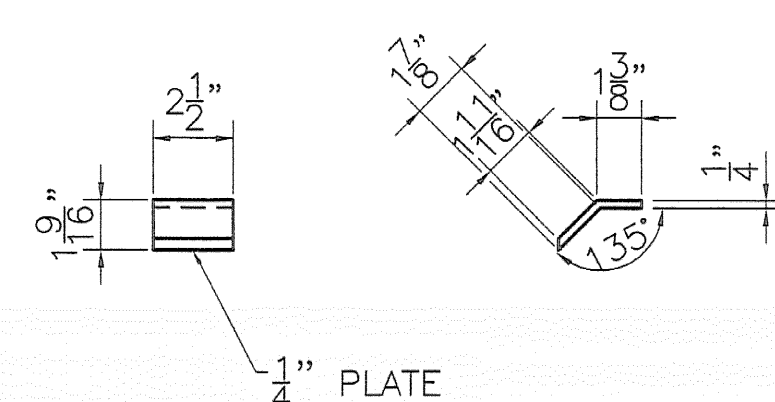
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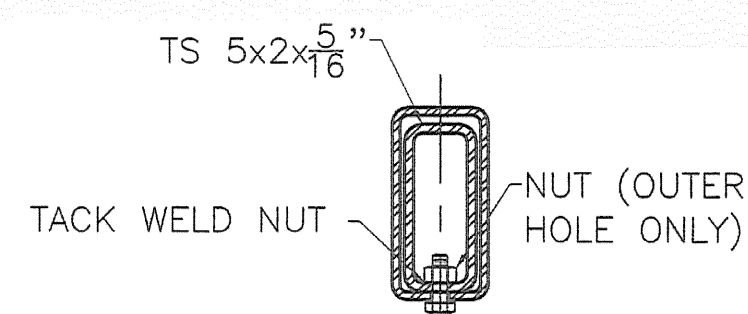
L 3 $\frac{1}{2}$ "x3 $\frac{1}{2}$ "x $\frac{3}{8}$ " - "A9"



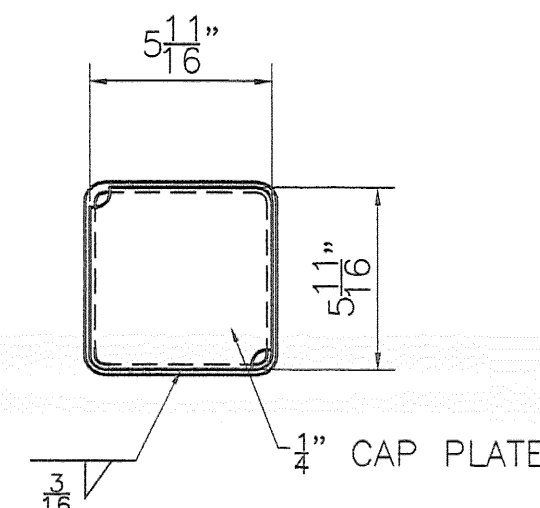
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POST SECTION



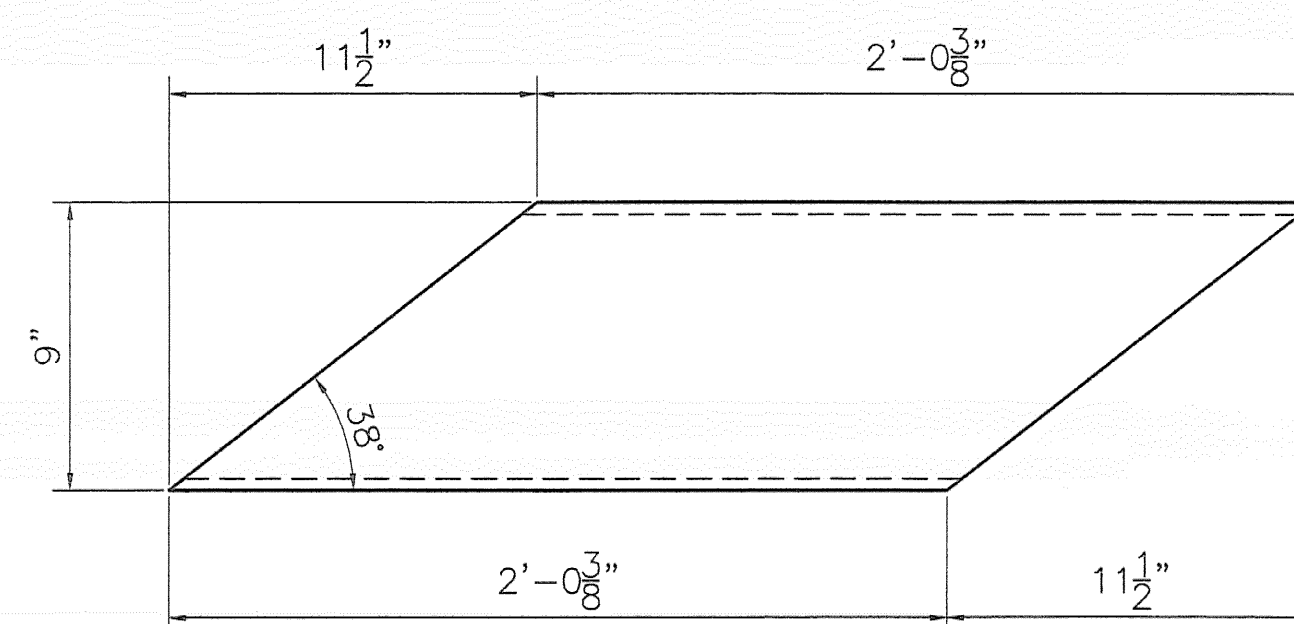
BENT CAP DETAIL



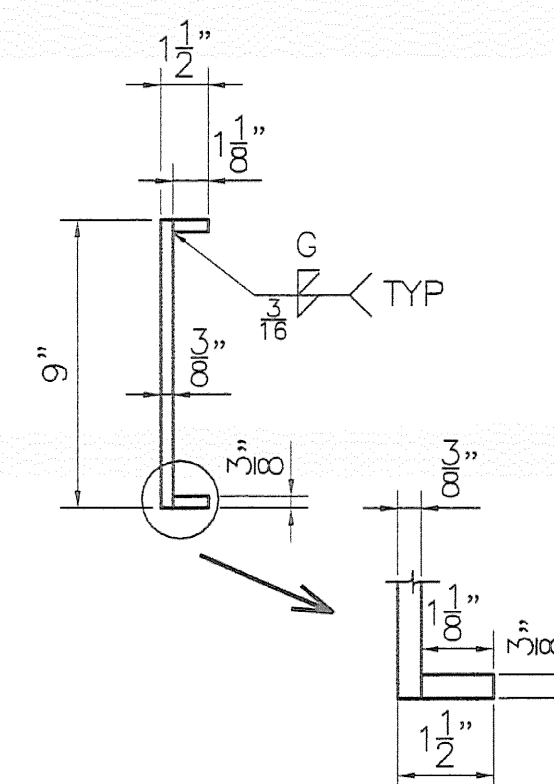
RAIL SPLICE SECTION



CAP PLATE



BENT PLATE



BRIDGE RAIL BAR SPLICE DETAIL

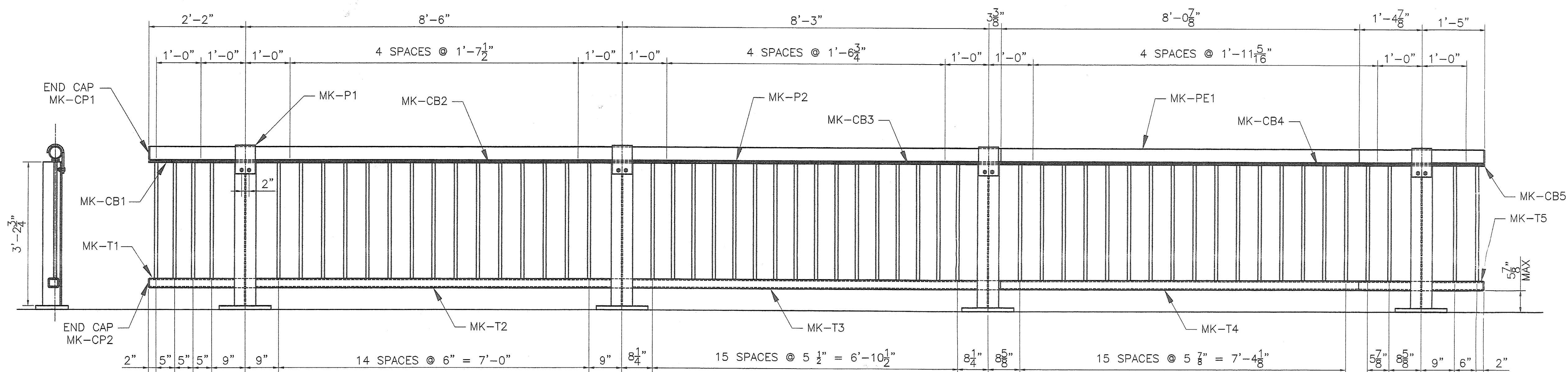
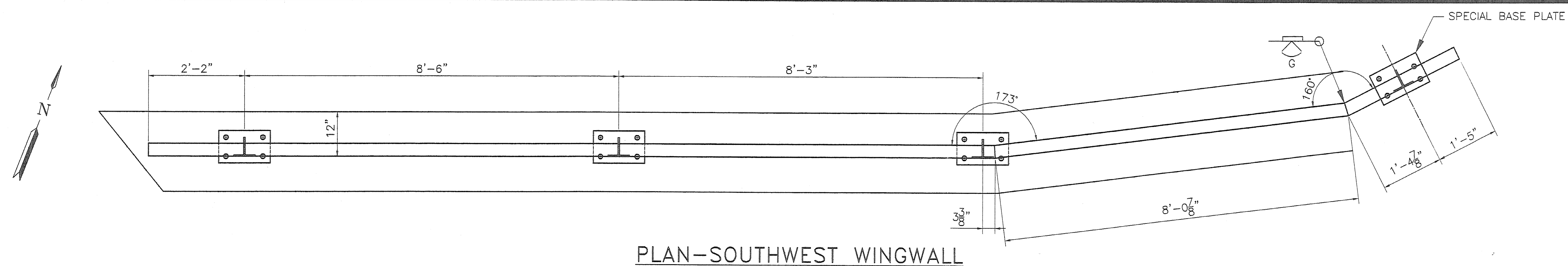
HIGHWAY SAFETY CORP.
GLASTONBURY, CT

RAILING REPLACEMENT
RICHFORD, VERMONT
PROJECT NO. BHF 0302 (3) S

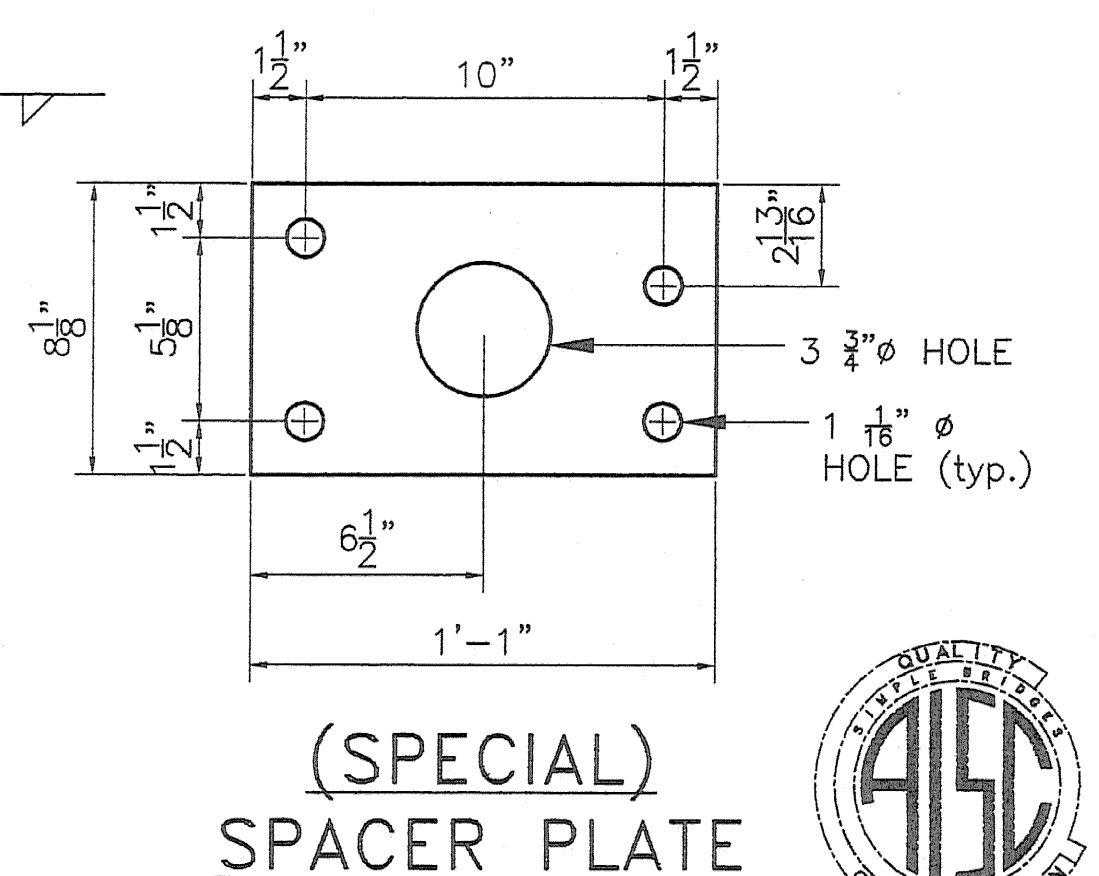
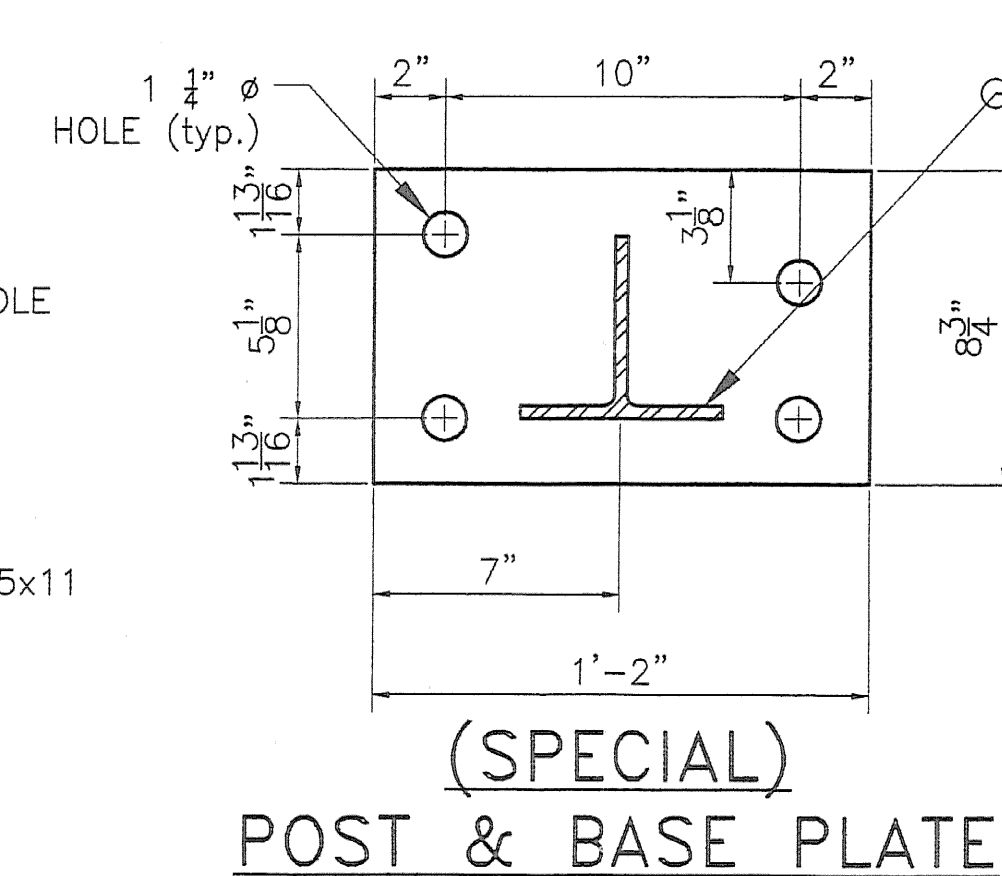
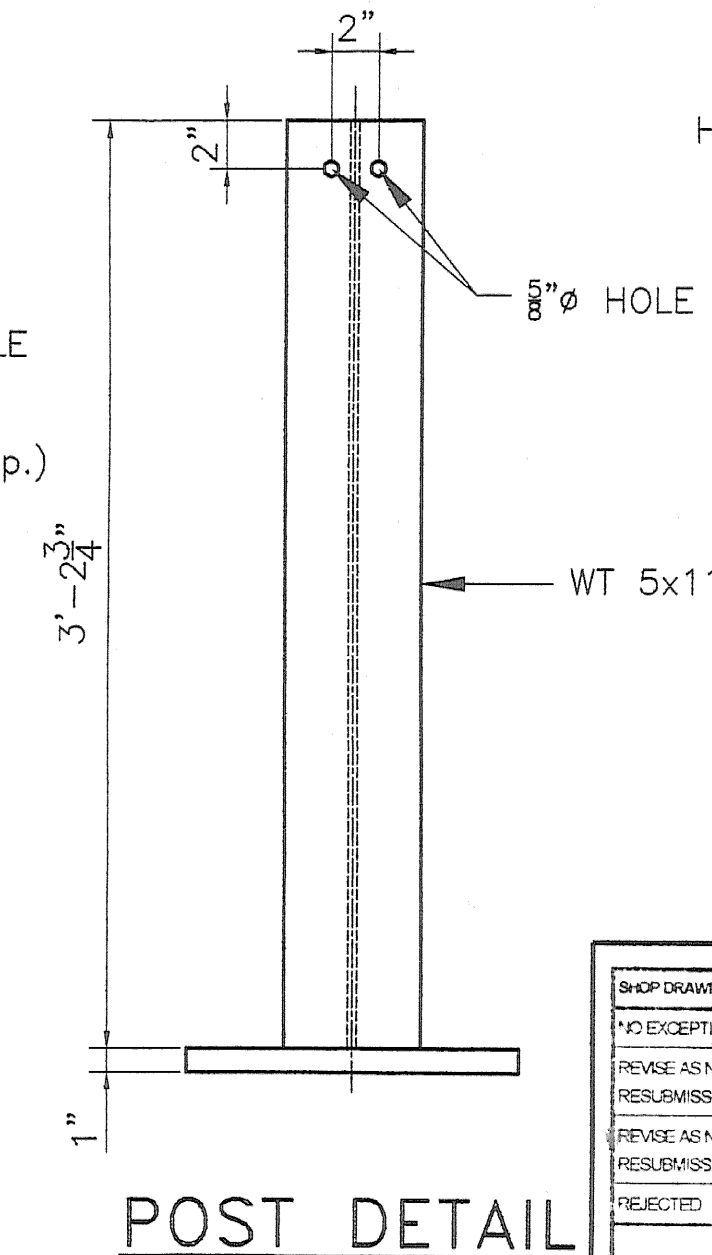
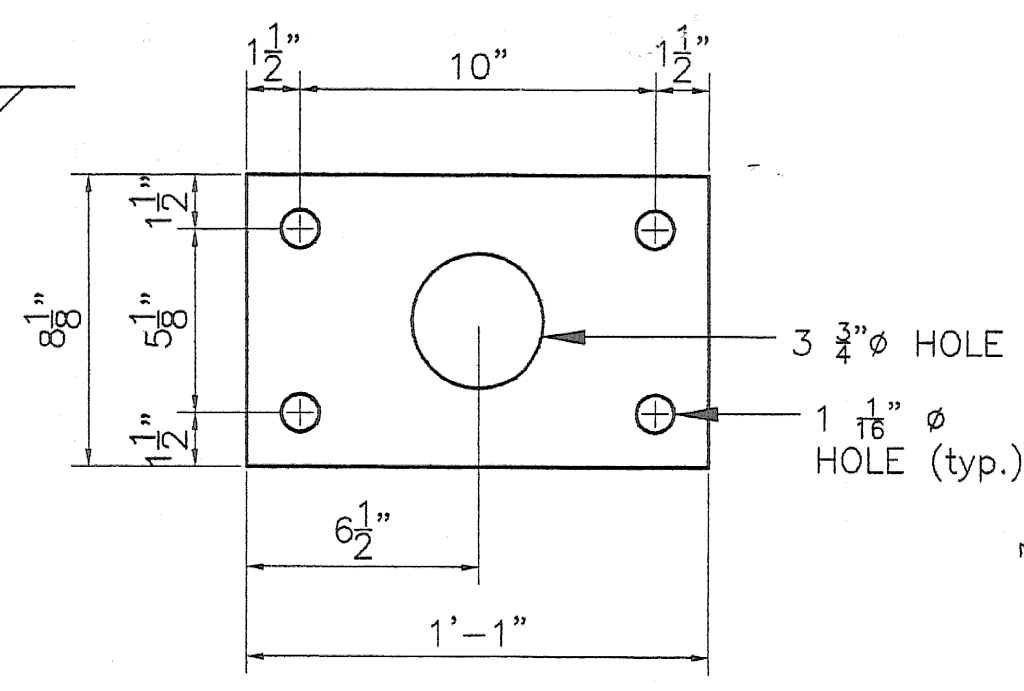
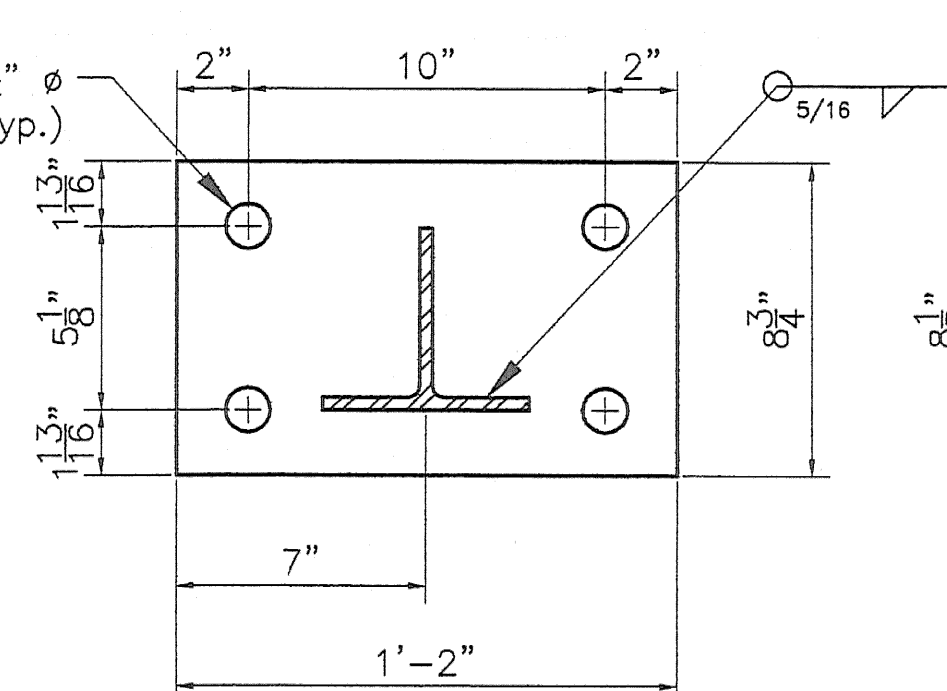
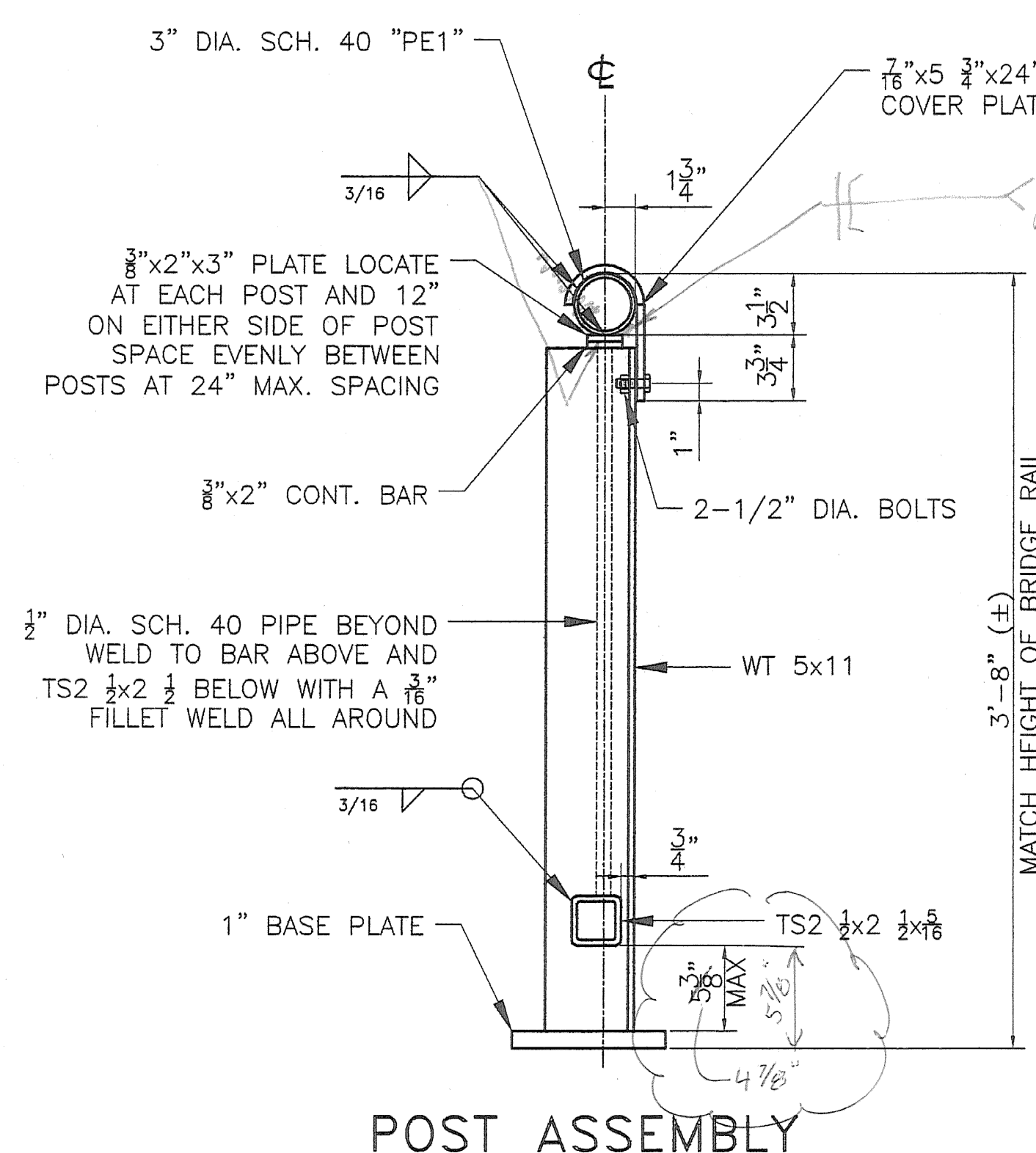
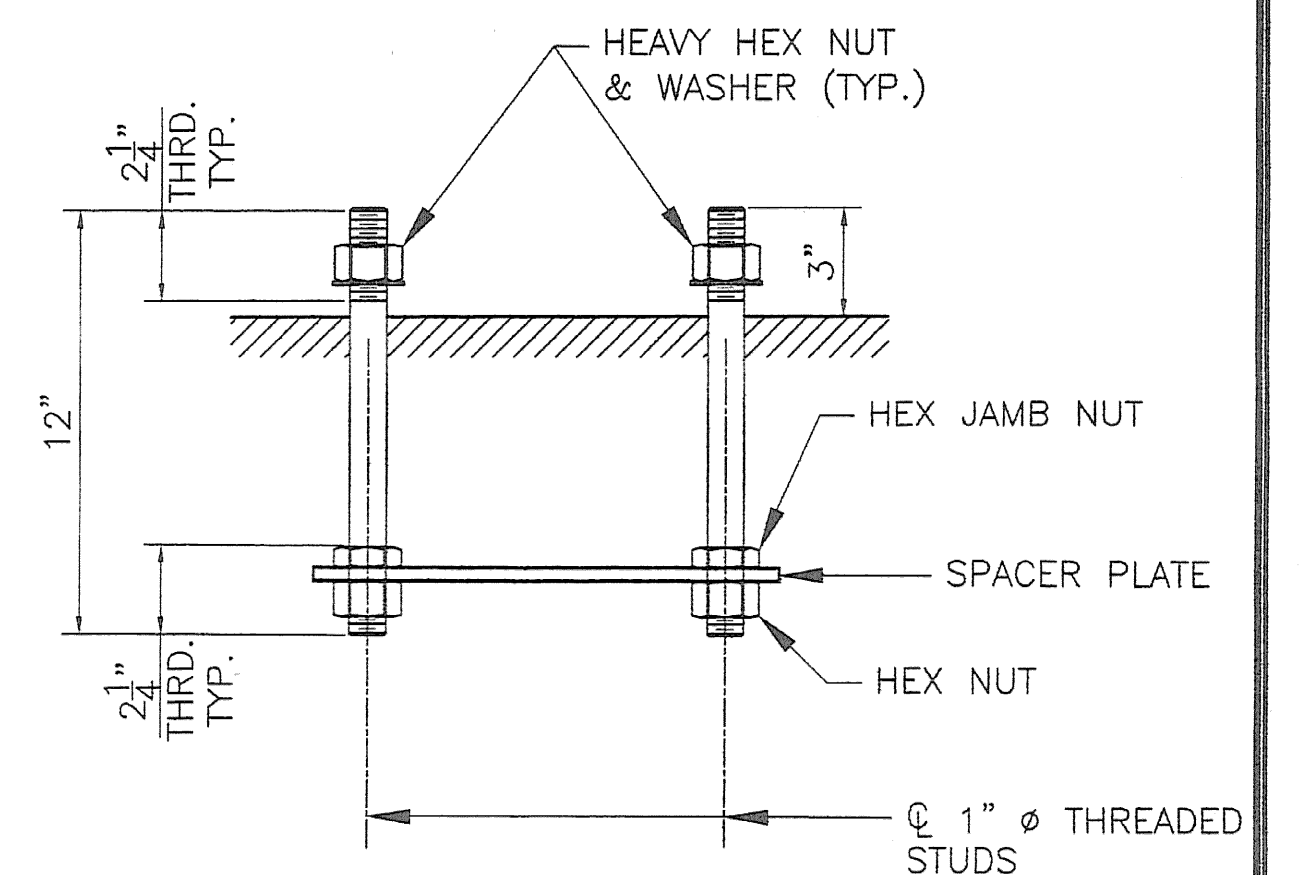
GENERAL CONTRACTOR
SUB CONTRACTOR
F.R. LAFAYETTE

DRAWN: MHM
CHECKED: P Radice
DATE: 7/30/08
SCALE: N.T.S.
HSC REFERENCE NO.: 1660
SIZE: D
SHEET NO.: 4 of 4

REVISIONS		
No.	Remarks	Date
0	Initial submittal	9-16-08
1	Per engineer's comments	10-6-08
2	As built changes	10-15-08



BILL OF MATERIAL						
Mk.	Qty.	Description	Size/Shape	length/qty. per unit	Material	
	3	BRIDGE RAIL PED POST 3'-3 3/4"	OAH W/ BASE PLATE			
	3	POST UPRIGHT	WT 5x11	3'-2 3/4"	M270 Gr.	36
	3	POST BASE PLATE	1" x 8 3/4"	1'-2"	M270 Gr.	36
	1	BRIDGE RAIL PED POST 3'-3 3/4"	OAH W/ BASE PLATE			
	1	POST UPRIGHT	WT 5x11	3'-2 3/4"	M270 Gr.	36
	3	POST BASE PLATE	1" x 8 3/4"	1'-2"	M270 Gr.	36
	3	ANCHOR PLATE	3/8" x 8 1/4"	1'-1"	A36	
	1	ANCHOR PLATE	3/8" x 8 1/4"	1'-1"	A36	
PE1	1	UPPER PIPE SCH. 40	3.5" O.D.	30'-1 1/8"	A53 Gr. B	
PE2	55	VERTICAL PIPE SCH. 40	0.840" O.D.	2'-7 3/8"	A53 Gr. B	
T1	1	LOWER RAIL	TS 2.5x2.5x5/16	2'-1 13/16"	A500 Gr. B	
T2	1	LOWER RAIL	TS 2.5x2.5x5/16	8'-5 5/8"	A500 Gr. B	
T3	1	LOWER RAIL	TS 2.5x2.5x5/16	8'-2 5/8"	A500 Gr. B	
T4	1	LOWER RAIL	TS 2.5x2.5x5/16	9'-6 1/16"	A500 Gr. B	
T5	1	LOWER RAIL	TS 2.5x2.5x5/16	1'-4 13/16"	A500 Gr. B	
P1	4	BENT COVER PLATE	7/16"x5 3/4"	2'-0"	M270 Gr.	36
P2	18	PLATE	3/8"x2"	3"	M270 Gr.	36
CB1	1	CONTINUOUS BAR	3/8"x2"	2'-1 13/16"	M270 Gr.	36
CB2	1	CONTINUOUS BAR	3/8"x2"	8'-5 5/8"	M270 Gr.	36
CB3	1	CONTINUOUS BAR	3/8"x2"	8'-2 5/8"	M270 Gr.	36
CB4	1	CONTINUOUS BAR	3/8"x2"	9'-6 1/16"	M270 Gr.	36
CB5	1	CONTINUOUS BAR	3/8"x2"	1'-4 13/16"	M270 Gr.	36
	16	ANCHOR BOLTS	1" DIA.	12"	A449	
	32	HEX NUT	1" DIA.	--	A563DH	
	16	JAMB NUT	1/2" DIA.	--	A563DH	
	16	WASHER	1" DIA.	--	F436	
	8	HEX BOLT	1/2" DIA.	1.5"	A325	
	8	HEX NUT	1/2" DIA.	--	A563DH	
	2	PIPE END CAP	3.313"	1/4"	A36	
	2	END CAP	2.25"x2.25"	1/4"	A36	



NOTES:

1. HAND RAIL TO SHALL BE SHOP PAINTED IN ACCORDANCE WITH VT DOT SEC. 513, COLOR GREEN #14062.

2. ALL STEEL FROM RAILING ASSEMBLY SHALL CONFORM TO AASHTO M 270/M 270 GRADE 36 UNLESS OTHERWISE NOTED. STEEL PIPE SHALL CONFORM TO ASTM A53 GRADE B, SCHEDULE 40. STRUCTURAL TUBING SHALL CONFORM TO SUBSECTIONS 714.11 OR 732.03.

3. ANCHOR STUDS SHALL MEET THE REQUIREMENTS OF ASTM A449.

4. GRIND ALL SHARP CORNERS TO MIN. $\frac{1}{16}$ " RADIUS.

REVISIONS		
No.	Remarks	Date
0	Initial submittal	

SHOP DRAWINGS ARE REVIEWED UNLESS NOTED OTHERWISE

☐ NO EXCEPTION TAKEN

☐ REUSE AS NOTED ☒

☐ RESUBMISSION NOT REQUIRED

☐ REUSE AS NOTED

☐ RESUBMISSION REQUIRED

☐ REJECTED

DATE 8/10/08

SIGNATURE M. J. Shortt

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-TRADE DETAIL DESIGN OF COMPONENTS, AND ERROR OR OMISSIONS ON SHOP DRAWINGS.



HIGHWAY SAFETY CORP.
GLASTONBURY, CT

RAILING REPLACEMENT

RICHFORD, VERMONT

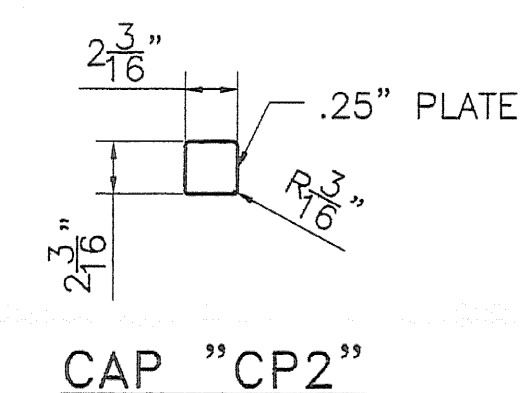
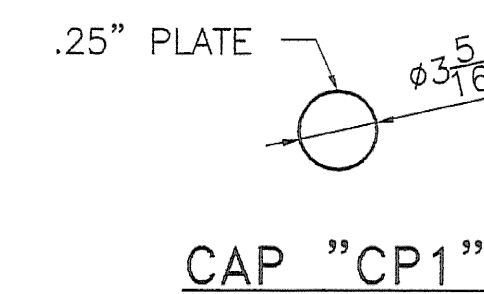
PROJECT NO. BHF 0302 (3) S

GENERAL CONTRACTOR

SUB CONTRACTOR

F.R. LAFAYETTE

RAW	MHM	
CHECKED	<i>P Radice</i>	
DATE	7/22/08	
SCALE	N.T.S.	
C REFERENCE NO.		
1658		
REVISION	0	
SHEET NO.		
1 of 2		



RAILING REPLACEMENT RICHFORD, VERMONT PROJECT NO. BHF 0302 (3) S	DRAWN		MHM	
	CHECKED		<i>P Radice</i>	
	DATE		7/22/08	
	SCALE		N.T.S.	
	MSC REFERENCE NO.		1658	
GENERAL CONTRACTOR	SIZE	D	REVISION	0
SUB CONTRACTOR	SHEET NO.		2 of 2	
F.R. LAFAYETTE				

REVISIONS		
No.	Remarks	Date
0	Initial submittal	