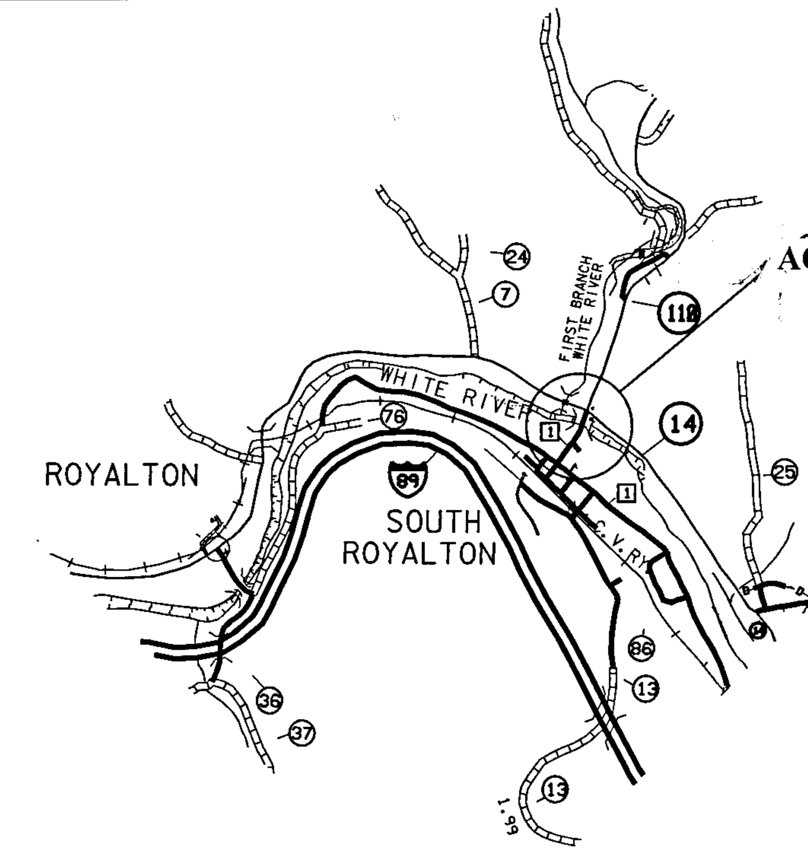
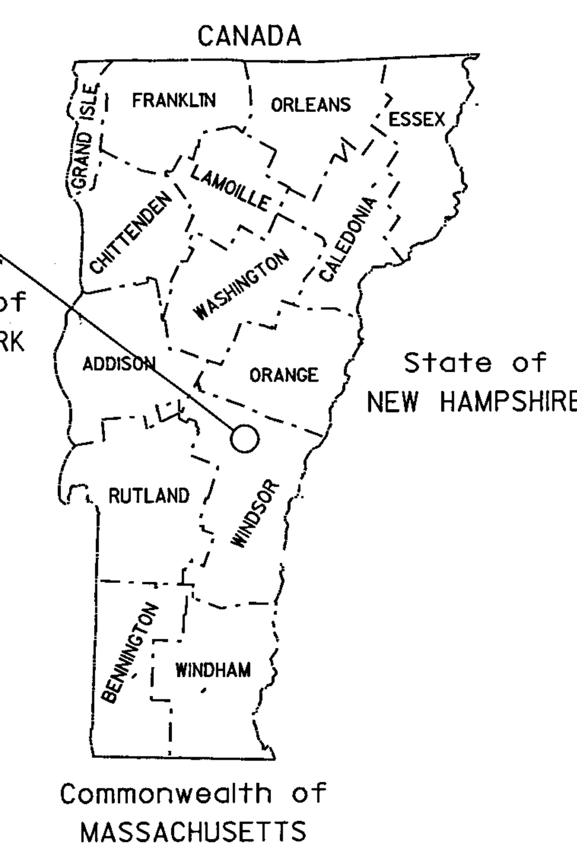
MAIN INDEX

1. TITLE SHEET
2. INDEX OF SHEETS AND STANDARDS

STATE OF VERMONT
AGENCY OF TRANSPORTATION





PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF ROYALTON
COUNTY OF WINDSOR

ROUTE NO : TH 1, CL 1 BRIDGE NO: 3

PROJECT LOCATION : BEGINNING AT A POINT ON TH 1 APPROXIMATELY 0.149 MILES SOUTHERLY OF THE INTERSECTION WITH VT 14 AND EXTENDING NORTHERLY ALONG TH 1 FOR A DISTANCE OF 0.149 MILES.

PROJECT DESCRIPTION : CONSTRUCTION OF A NEW BRIDGE WITH NECESSARY ROADWAY APPROACHES AND CHANNEL WORK.

LENGTH OF STRUCTURE :	397.83	FEET.
LENGTH OF ROADWAY :	390.72	FEET.
LENGTH OF PROJECT :	788.55	FEET.

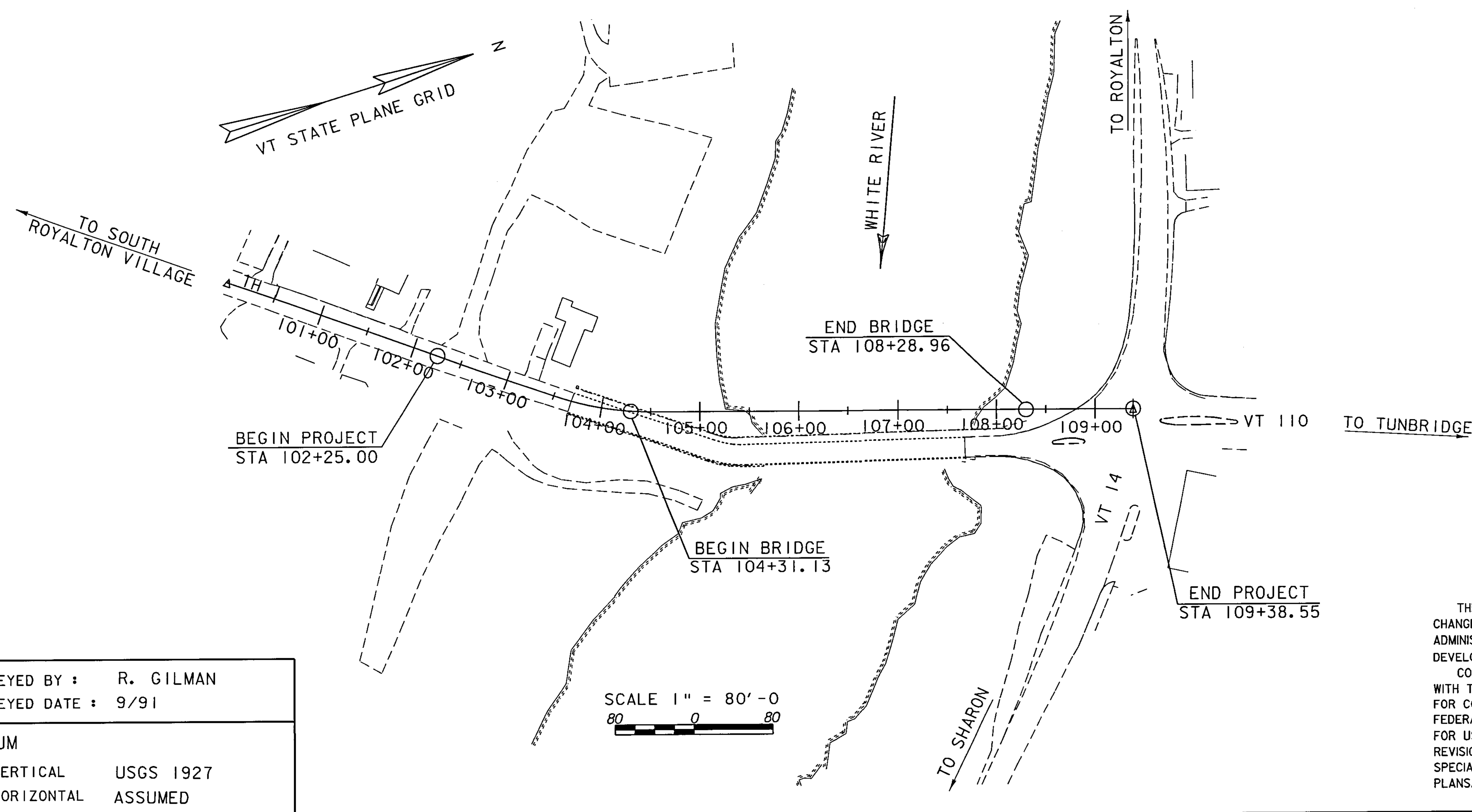
RECORD PLANS

CONTRACTOR: BECK & BELLUCCI INC.- FRANKLIN, NH
RESIDENT ENGINEER: JACQUES COUTURE
CONSTRUCTION BEGAN: APRIL 19, 2001
CONSTRUCTION COMPLETE: JUNE 6, 2003
RECORD PLANS BY: JACQUES COUTURE & KEVIN NORTH

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

BY Jacques M Couture RESIDENT ENGINEER
DATE 4/01/2011

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.



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 : R. GILMAN
SURVEYED DATE : 9/91

DATUM
VERTICAL USGS 1927
HORIZONTAL ASSUMED

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 1990, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON MARCH 15, 1990 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

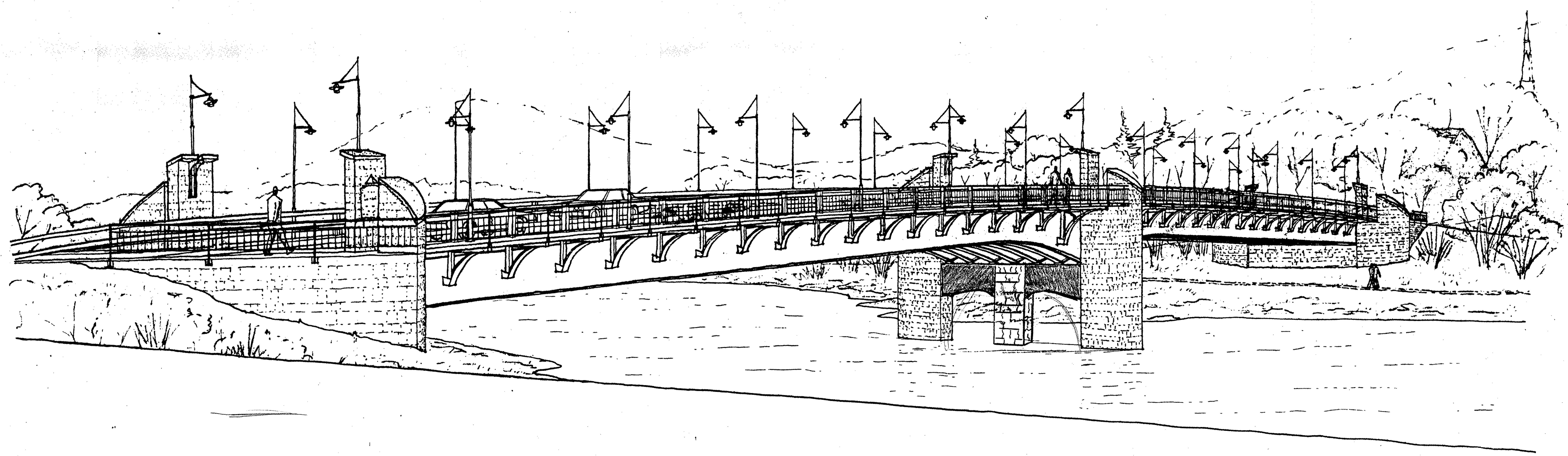
DIRECTOR OF PROJECT DEVELOPMENT
APPROVED [signature] DATE 9/20/00

PROJECT MANAGER : CHRIS WILLIAMS

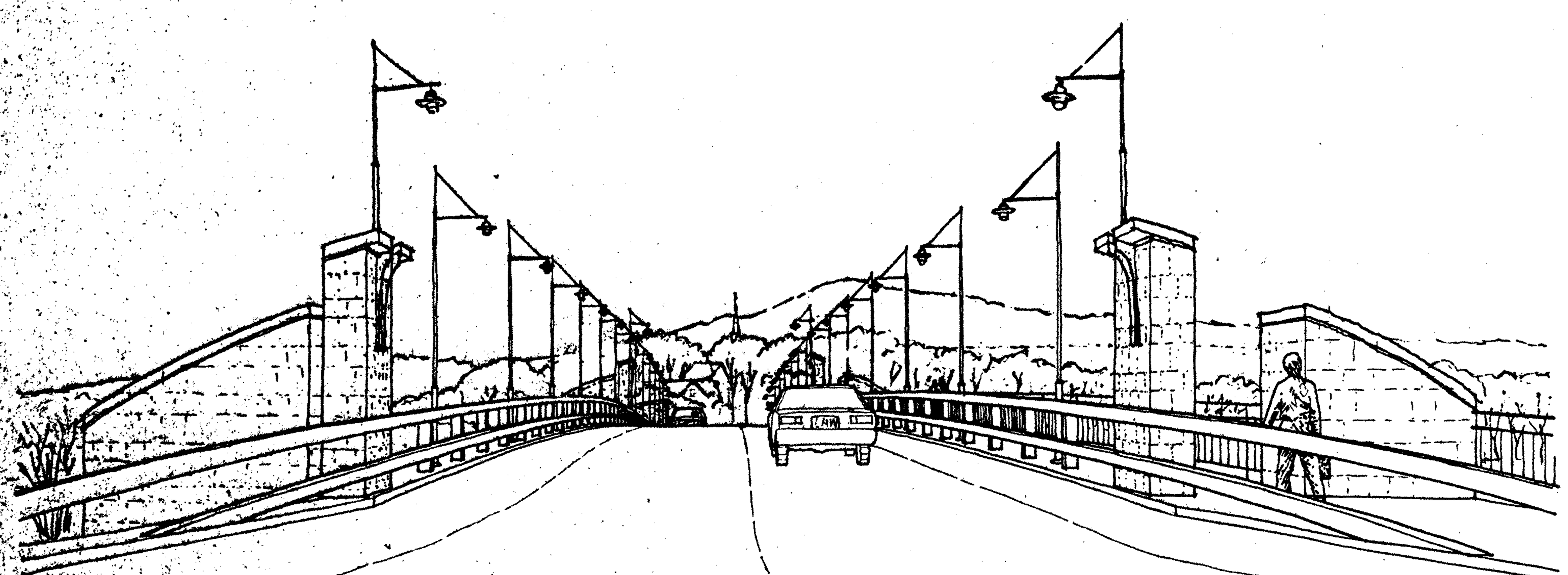
PROJECT NAME : ROYALTON
PROJECT NUMBER : AC BRZ 1444(22)

SHEET 1 OF 118 SHEETS

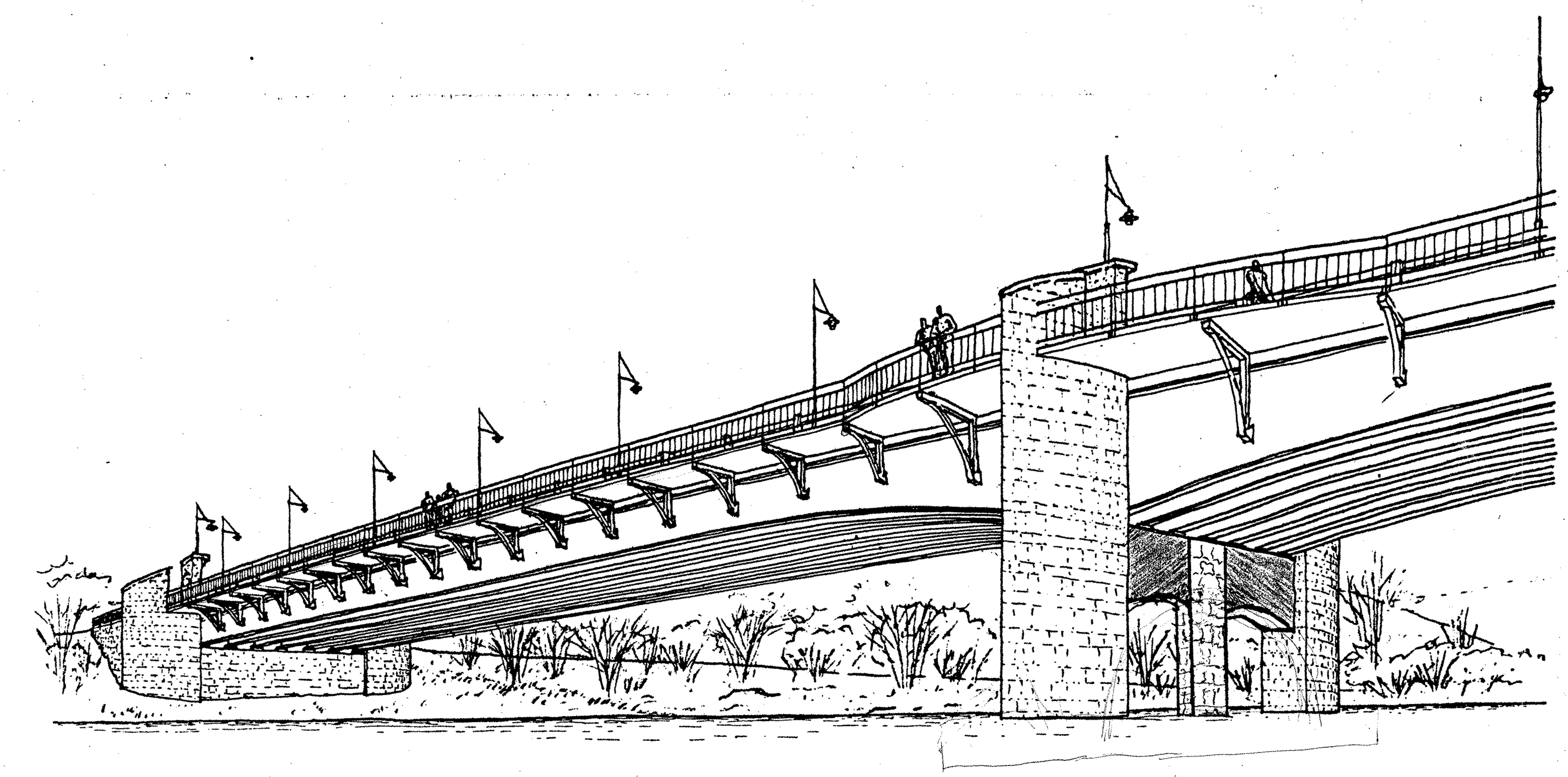
PLOTTED 19-SEP-2000 89j099/structures/sj099bdr.dgn sj099tit.i



VIEW FROM ROUTE 14



VIEW ENTERING SOUTH ROYALTON



VIEW FROM RIVER WALK

Truex deGroot Cullins ARCHITECTS
209 Battery Street Burlington, Vermont

PROPOSED IMPROVEMENT
CHELSEA STREET BRIDGE
South Royalton Vermont

3-27-95

CONCEPT DESIGN
07 MARCH 1995

INDEX OF SHEETS

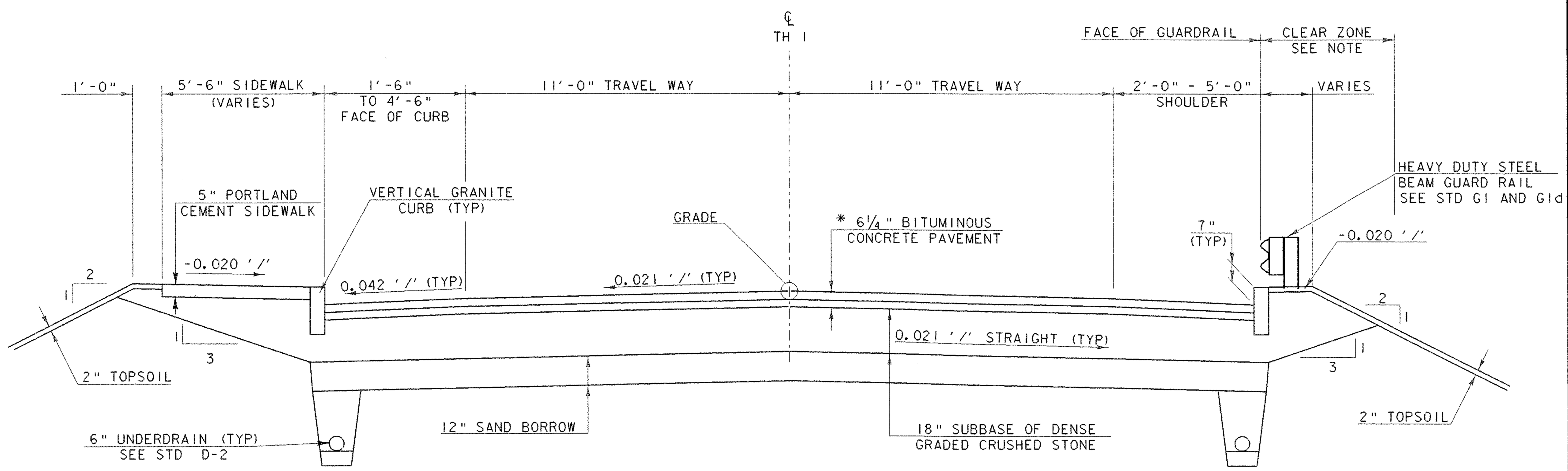
LIST OF STANDARDS

B-5	6/1/94
B-71	3/10/95
C-1	1/3/00
C-2B	1/3/00
C-3	1/3/00
D-2	6/1/94
D-3	6/1/94
D-6	6/1/94
D-8	1/3/00
D-9	6/1/94
D-15	6/1/94
D-22	3/10/95
E-100	1/6/97
E-100a	1/6/97
E-101	3/10/97
E-102	8/8/95
E-102a	8/8/95
E-107	8/8/95
E-107a	8/8/95
E-121	8/8/95
E-160	5/20/99
E-173	8/9/95
E-175	11/17/93
E-180a	8/9/95
E-180b	8/9/95
E-181	8/9/95
E-191	2/1/99
E-192	12/28/98
E-193	8/18/95
G-1	1/3/00
G-1d	1/3/00
J-2	6/1/94
T-1	6/1/94
T-2	6/1/94

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444(22)

FILE NAME: 89j099/structures/sj099notes.dgn
IPARM NAME: sj099index.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
INDEX OF SHEETS AND STANDARDS

PLOT DATE: 25-SEP-2000
DRAWN BY: C. P. WILLIAMS
CHECKED BY: W.B. SYMONDS
SHEET 2 OF 118



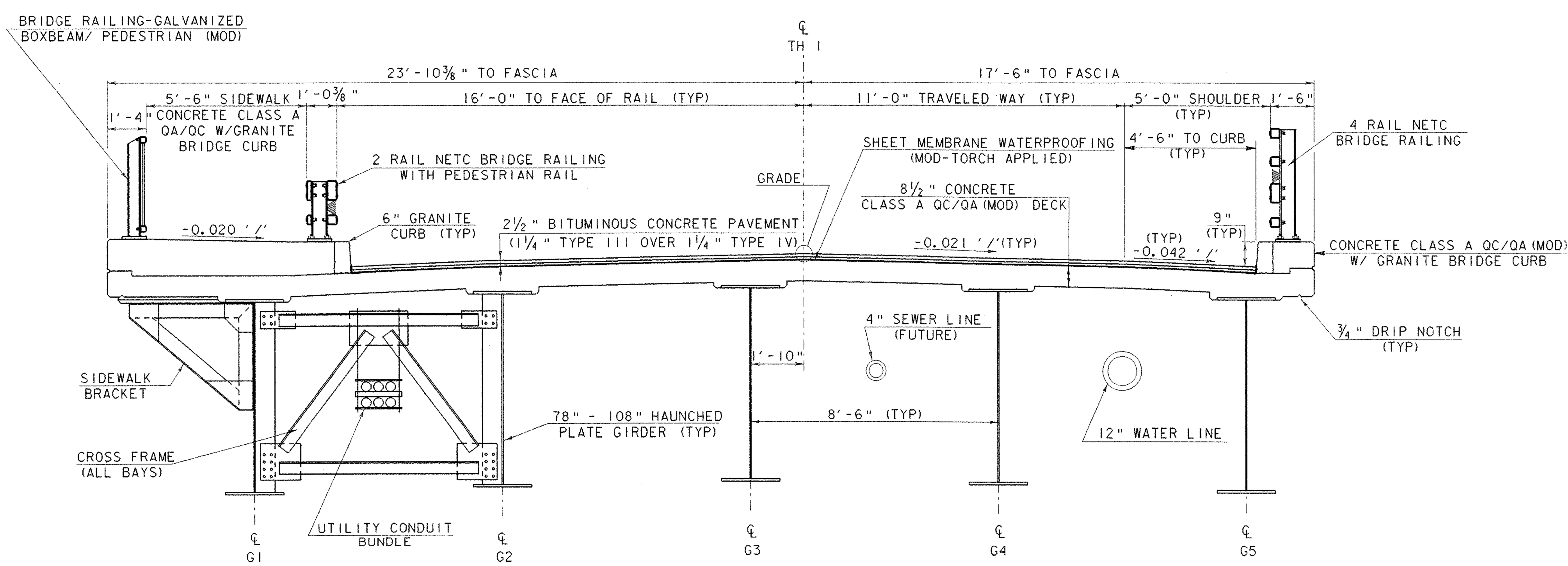
TH 1
ROADWAY TYPICAL SECTION

SCALE 3/8" = 1'-0

MATERIAL ITEM	TOLERANCE
PAVEMENT	+/- 1/4"
SUB BASE	+/- 1"
SAND BORROW	+/- 1"

*BITUMINOUS CONCRETE PAVEMENT
1ST LIFT = 3" TYPE I
2ND LIFT = 2" TYPE II
3RD LIFT = 1¼" TYPE III

NOTE:
THE CLEAR ZONE SHALL BE 4' OUTSIDE THE FACE OF RAIL. WHEN NO RAIL IS PRESENT THE CLEAR ZONE SHALL BE 3' OUTSIDE THE FACE OF CURB.



BRIDGE TYPICAL SECTION

SCALE 3/8" = 1'-0

FINAL HYDRAULICS REPORT

HYDROLOGIC DATA

DRAINAGE AREA= 604.6 sq. mi. (1565.8 sq. km)
CHARACTER OF TERRAIN: Hilly to mountainous
CHARACTER & TYPE OF STREAM: Semi-alluvial channel with some braiding and/ or anabranching, moderate relief valley
NATURE OF STREAMBED: Sand, gravel, cobbles, and ledge

Q2.33= 13000 cfs (368 cms) Q50= 59000 cfs (1671 cms)
Q10= 33000 cfs (934 cms) Q100= 70000 cfs (1982 cms)
Q25= 47000 cfs (1331 cms) Q500= 110000 cfs (3115 cms)

DATE OF FLOOD OF RECORD: November 1927
WATER SURFACE ELEV.: 482 +- ESTIMATED DISCHARGE: Unknown
NATURAL STREAM VELOCITY @ Q25 = 11.4 fps (3.5 mps)
ICE CONDITIONS: Moderate DEBRIS: Light
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY? No
IS ORDINARY RISE RAPID? No
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
IF YES, DESCRIBE.

WATERSHED STORAGE 1% HEADWATERS ___ UNIFORM THROUGHOUT WATERSHED X
IMMEDIATELY ABOVE SITE ___

EXISTING STRUCTURE

STRUCTURE TYPE: Steel truss with 3 approach spans YEAR BUILT: 1928
CLEAR SPAN (NORMAL TO STREAM): 175' + 3 @ 42' = 301' (92 m) total
VERTICAL CLEARANCE ABOVE STREAMBED: 30' (9 m)
WATERWAY OF FULL OPENING: 8100 sq. ft. (752 sq. m)
DISPOSITION OF STRUCTURE: Remove

TYPE OF MATERIAL UNDER SUBSTRUCTURE: some substructure units may be on ledge, others are unknown
WATER SURFACE ELEV. @ Q2.33= 461.9 VELOCITY= 7.6 fps (2.3 mps)
Q10= 467.8 " 10.2 fps (3.1 mps)
Q25= 470.6 " 11.4 fps (3.5 mps)
Q50= 472.7 " 11.9 fps (3.6 mps)
Q100= 474.6 " 12.2 fps (3.7 mps)
Q100= 474.6 " 12.2 fps (3.7 mps)
LONG TERM STREAM BED CHANGES: None noted since 1927 flood
None anticipated, due to ledge
IS THE ROADWAY OVERTOPPED BELOW THE Q100? No FREQUENCY: ---
RELIEF ELEVATION: 479.6 DISCHARGE OVER ROAD @ Q100: None

UPSTREAM STRUCTURE: TOWN: Royalton DISTANCE: 1.2 mi. (1.9 Km)
HIGHWAY NO.: Railroad STRUCTURE NO.: N.A.
STRUCTURE TYPE: N.A.
CLEAR SPAN: N.A. CLEAR HEIGHT: N.A.
YEAR BUILT: N.A. FULL WATERWAY: N.A.
YEAR BUILT: N.A. FULL WATERWAY: N.A.
DOWNSTREAM STRUCTURE: TOWN: Sharon DISTANCE: 3.9 mi. (6.3 km)
HIGHWAY NO.: 189 STRUCTURE NO.: 17
STRUCTURE TYPE: 4 span plate girder
CLEAR SPAN: 801' (244 m) CLEAR HEIGHT: 95' (29 m)
YEAR BUILT: 1968 FULL WATERWAY: N/A

PROPOSED STRUCTURE

STRUCTURE TYPE: Two span plate girder bridge

CLEAR SPAN (NORMAL TO STREAM): 2 spans 188' = 374' (114 m) total
VERTICAL CLEARANCE ABOVE STREAMBED: 26' (8 m)
WATERWAY OF FULL OPENING: 8500 sq. ft. (790 sq. m)

WATER SURFACE ELEV. @ Q2.33= 461.7 VELOCITY= 7.6 fps (2.3 mps)
Q10= 467.3 " = 10.2 fps (3.1 mps)
Q25= 469.9 " = 11.4 fps (3.5 mps)
Q50= 471.9 " = 11.9 fps (3.6 mps)
Q100= 473.9 " = 11.9 fps (3.7 mps)

IS THE ROADWAY OVERTOPPED BELOW THE Q100? No FREQUENCY: ---
RELIEF ELEVATION: 480.3 DISCHARGE OVER ROAD @ Q100: None

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 476.1
VERTICAL CLEARANCE @ Q100 = 2.2 ft. (0.7 m)

SCOUR: Total Q100 scour depth at pier = 15 ft. (4.6 m), except in ledge

PERMIT INFORMATION

AVERAGE DAILY FLOW: 1270 cfs (36 cms)
ORDINARY LOW WATER: 540 cfs (15 cms) ELEV.: 454.0
ORDINARY HIGH WATER: 5600 cfs (159 cms) ELEV.: 458.0

ADDITIONAL COMMENTS

DESIGN CRITERIA:
1. DESIGN LIVE LOAD AASHTO HS-25
2. DESIGN SPAN 196' - 196'
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A ON LEDGE 10 KSF
4. ALLOWABLE LOAD FOR STEEL H PILING 155 KIPS TYPE STEEL HP 14x73 ESTIMATED LENGTH 22 FT +/- (ABUTMENT #1)
5. STRUCTURAL STEEL AASHTO GRADE M270 GRADE 50W
6. REINFORCING STEEL GRADE 60
7. CONCRETE CLASS A QC/QA (MOD) f'_c : 5500 PSI
CONCRETE CLASS B f'_c : 3500 PSI

TRAFFIC MAINTENANCE:
1. IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE YES OR ON TEMPORARY BRIDGE YES (SEE TEMP. DETOUR SHEET)
2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY TWO TRAFFIC CONTROL SIGNALS REQUIRED NO
MINIMUM CLEAR SPAN (NORMAL TO STREAM): 100' (30.5 m) minimum for approach span
VERTICAL CLEARANCE ABOVE STREAMBED: BOTTOM OF STEEL = 474.0 (MINIMUM)
ARE SIDEWALKS REQUIRED? YES IF SO, ON WHAT SIDE? DOWNSTREAM (SEE NOTES ON SHEET 14)
STRUCTURE TYPE —

LOAD FACTOR LOAD RATING (TONS)

LOADING LEVELS (LOAD FACTOR)	TRUCK						
	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY A=2.17; B=1.00	31	56					
POSTED A=1.55; B=1.40	44	79	105		94	95	102
OPERATING A=1.30; B=1.67		95	125	133	112	113	

$$\text{STRENGTH RF} = \frac{\text{Ø}M_N - 1.3\,M_{DL}}{A \times M_{LL+I}} \qquad \text{SERVICEABILITY RF} = B\left[\frac{.95\,F_Y S_{LL+I} - M_{DL}\frac{S_{LL+I}}{S_{DL}} - M_{SDL}\frac{S_{LL+I}}{S_{SDL}}}{1.67\,M_{LL+I}}\right]$$

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2000	3640	505	52	4	255
2020	4920	660	52	4	350

18 kip ESAL for flexible pavement from 2000 to 2020: 3,008,000
18 kip ESAL for flexible pavement from 2000 to 2040: 7,457,000
Design speed: 25 MPH

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	ROYALTON	Bridge No.	3
Highway No.	TH 1	Log Sta. / Surv. Sta.	

TH 1 OVER THE WHITE RIVER

PRELIMINARY INFORMATION SHEET

Designed By W.B. SYMONDS	Drawn By W.B. SYMONDS
Checked By C.P. WILLIAMS Date 9/96	Bridge Design Supervisor C. P. WILLIAMS Date 9/00
PROJECT ROYALTON	PROJECT NO. BRZ 1444(22)

I.G.C. Info. M:89J099\Structures\sj099pi.dgn sj099piJ

Bridge Sheet No. Sheet 3 of 118

PLOTTED 25-SEP-2000

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES																	TOTALS			DESCRIPTIONS		
Non-Partic Telephone	Non-Partic. Sewer	Partic. Water	Roadway	Full E+C	Approach Slab #1	Abutment #1		Pier		Abutment #2	Approach Slab #2	Employee Traineeship	Channel	Super - structure	Erosion Control	BRIDGE QUANTITY	ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER
			1															1		LS	CLEARING AND GRUBBING (INCLUDING INDIV. TREES AND STUMPS)	201.10
			1030															1030		CY	COMMON EXCAVATION	203.15
													6150					6150		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27
			600															600		CY	EARTH BORROW	203.30
			440															440		CY	SAND BORROW	203.31
			1210															1210		CY	GRANULAR BORROW	203.32
			150												10			160		CY	TRENCH EXCAVATION OF EARTH	204.20
															10			10		CY	TRENCH EXCAVATION OF ROCK	204.21
						1180				720								1900		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30
						690		170		1380								2240		CY	COFFERDAM EXCAVATION, EARTH	208.30
						10				50								60		CY	COFFERDAM EXCAVATION, ROCK	208.35
						1												1		LS	COFFERDAM (STA 104+34)	208.40
								1										1		LS	COFFERDAM (STA 106+30)	208.40
										1								1		LS	COFFERDAM (STA 108+26)	208.40
			210															210		SY	COLD PLANING-BIT.PAVEMENT	210.10
			1040												10			1050		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35
			3											2				5		CWT	EMULSIFIED ASPHALT	404.65
			490		10						10			190				700		TON	BITUMINOUS CONCRETE PAVEMENT (PG 58-34)	406.25
														635				635		CY	CONCRETE, CLASS A QC/QA (MOD)	501.221
			30			400		300		370								1100		CY	CONCRETE, CLASS B	501.25
		10																10		CY	CONCRETE, CLASS C	501.30
						1												1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10
								1										1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING (MOD)	504.10
						1034												1034		LF	STEEL PILING (HP 14 X 73)	505.17
								40										40		LF	CAST-IN-PLACE CONCRETE PILING (MOD - ROCK)	505.25
								48										48		LF	CAST-IN-PLACE CONCRETE PILING (MOD - EARTH)	505.25
								4										4		EACH	PILE LOADING TESTS (MOD)	505.40
3380		6750												903160				913290		LB	STRUCTURAL STEEL(PLATE GIRDER)	506.55
						730		540		790				1350				3410		LB	STRUCTURAL STEEL	506.60
			2340			34740		28070		34290								99440		LB	REINFORCING STEEL	507.15
										116								116		LF	DRILLING AND GROUTING DOWELS	507.16
					3370						3380			141800				148550		LB	EPOXY COATED REINFORCING STEEL	507.17
														1				1		LS	SHEAR CONNECTORS (3375 - 7/8" DIAM. X 7" AND 128 - 3/4" DIAM. X 7")	508.15
														1				1		LS	STRUCTURE PAINTING (MOD)	513.20
														1				1		LS	STRUCTURAL PAINTING,SHOP APPLIED (14 TONS)	513.25
														1				1		LS	SURFACE PREPARATION,SHOP (14 TONS)	513.40
														25				25		GAL	WATER REPELLENT	514.10
						45				45								90		LF	BRIDGE EXPANSION JOINT	516.10
					66						68			1359				1493		SY	SHEET MEMBRANE WATERPROOFING (MOD - TORCH APPLIED)	519.20
														650				650		LF	JOINT SEALER, POLYURETHANE	524.21

DETAILED SUMMARY OF QUANTITIES		
QUANTITIES	UNIT	ITEMS

PROJECT NAME: **Royalton**
PROJECT NUMBER: **BRZ 1444(22)**

FILE NAME: sj099quant
PROJECT LEADER: C. Williams
DESIGNED BY: W. Symonds
QUANTITY SHEET #1

PLOT DATE: 9/25/00
DRAWN BY: C. Williams
CHECKED BY: W. Symonds
SHEET 4 OF 118

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES / TOTALS / DESCRIPTIONS

Non-Partic Telephone	Non-Partic. Sewer	Partic. Water	Roadway	Full E+C	Approach Slab #1	Abutment #1		Pier		Abutment #2	Approach Slab #2	Employee Traineeship	Channel	Super-structure	Erosion Control	BRIDGE QUANTITY	ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER
			16															16		LF	METAL HAND RAILING	525.15
														516				516		LF	BRIDGE RAILING- GALV. BOX BEAM / PEDESTRIAN (MOD)	525.32
														396				396		LF	BRIDGE RAILING-NETC 2 RAIL (MOD)	525.33
														394				394		LF	BRIDGE RAILING-NETC 4 RAIL	525.34
			1															1		LS	MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS	527.10
			1															1		LS	TWO-WAY TEMPORARY BRIDGE	528.11
			1															1		LS	TEMPORARY FOOT BRIDGE (MOD)	528.12
			898															898		SY	REMOVAL OF BRIDGE PAVEMENT	529.10
			1															1		EACH	REMOVAL OF STRUCTURE (STA 103+70 - 105+50)	529.15
			1															1		EACH	REMOVAL OF STRUCTURE (STA 105+50 - 107+75)	529.15
						5				5								10		EACH	BEARING DEVICE ASSEMBLY (EXPANSION)	531.10
								5										5		EACH	BEARING DEVICE ASSEMBLY (FIXED)	531.10
1																		1		EACH	CONCRETE VAULT, TYPE I (12'x8'x7')	540.21
1																		1		EACH	CONCRETE VAULT, TYPE I (10'x5'x7')	540.21
																					** BEGIN 18" PIPE OPTIONS **	
			373															373		LF	18" CAAP .060 (2-2/3 X 1/2) (MOD)	601.0215
			373															373		LF	18" PCCSP .064 (2-2/3 X 1/2) (MOD)	601.0415
			373															373		LF	18" RCP CLASS III (MOD)	601.0815
			373															373		LF	18" CPEP (MOD)	601.0915
																					** END 18" PIPE OPTIONS **	
																					** BEGIN 24" PIPE OPTIONS **	
			100															100		LF	24" CAAP .060 (2-2/3 X 1/2) (MOD)	601.0225
			100															100		LF	24" PCCSP .064 (2-2/3 X 1/2) (MOD)	601.0425
			100															100		LF	24" RCP CLASS III (MOD)	601.0825
																					** END 24" PIPE OPTIONS **	
																					** BEGIN 30" PIPE OPTIONS **	
			52															52		LF	30" CAAP .060 (3X1) (MOD)	601.0305
			52															52		LF	30" PCCSP .079 (2-2/3 X 1/2) (MOD)	601.0436
																					** END 30" PIPE OPTIONS **	
						190		279		202								671		SY	STONE MASONRY FACING	602.25
			1															1		EACH	INSTALLATION OF SEWER MANHOLE (MOD)	604.22
			7															7		EACH	CAST IRON GRATE WITH FRAME, TYPE E	604.52
			350															350		LF	6" UNDERDRAIN	605.10
			130															130		LF	6" UNDERDRAIN CARRIER PIPE	605.20
			2															2		EACH	UNDERDRAIN FLUSHING BASINS	605.95
			10												10			20		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25
			1															1		MGAL	DUST CONTROL WITH WATER	609.10
															10			10		CY	STONE FILL, TYPE I	613.10
													60					60		CY	STONE FILL, TYPE II	613.11
													2710					2710		CY	STONE FILL, TYPE IV	613.13
			769															769		LF	VERTICAL GRANITE CURB	616.21
														786				786		LF	GRANITE BRIDGE CURB	616.22
			169															169		SY	PORTLAND CEMENT CONC. SIDEWALK, 5 INCH	618.10
			15															15		SY	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	618.11
			1															1		EACH	DRIVE GATE FOR WOVEN WIRE FENCE (MOD)	620.30
			132															132		LF	REMOVING AND RESETTING FENCE	620.50
			25															25		LF	REMOVAL OF EXISTING FENCE	620.55

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

PROJECT NAME: Royalton
PROJECT NUMBER: BRZ 1444(22)

FILE NAME: sj099quant
PROJECT LEADER: C. Williams
DESIGNED BY: W. Symonds
QUANTITY SHEET #2
PLOT DATE: 9/19/00
DRAWN BY: C. Williams
CHECKED BY: W. Symonds
SHEET 5 OF 118

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES / TOTALS / DESCRIPTIONS

Non-Partic Telephone	Non-Partic. Sewer	Partic. Water	Roadway	Full E+C	Approach Slab #1	Abutment #1		Pier		Abutment #2	Approach Slab #2	Employee Traineeship	Channel	Super - structure	Erosion Control	BRIDGE QUANTITY	ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER
			201															201		LF	HVY DUTY STEEL BEAM GUARD RAIL	621.21
			2															2		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60
			2															2		EACH	GUARD RAIL APPROACH SECTION, TYPE I (MOD)	621.70
			2															2		EACH	GUARD RAIL APPR. SECTION,NETC 2 RAIL (MOD)	621.72
			2															2		EACH	GUARD RAIL APPR. SECTION,NETC 4 RAIL (MOD)	621.73
			168															168		LF	REMOVL AND DISP OF GUARD RAIL	621.80
		1																1		MFBM	INSULATION BOARD	622.10
65																		65		LF	DUCTS, CONCRETE ENCASED (2 - 4" PVC Type C Duct)	624.20
65																		65		LF	DUCTS, CONCRETE ENCASED (3 - 4" PVC Type C Duct)	624.20
450																		450		LF	DUCTS, CONCRETE ENCASED (6 - 4" PVC Type C Duct)	624.20
120																		120		LF	DUCTS, CONCRETE ENCASED (9 - 4" PVC Type C Duct)	624.20
15																		15		LF	DUCTS, CONCRETE ENCASED (12 - 4" PVC Type C Duct)	624.20
12																		12		LF	SLEEVES FOR UTILITIES (6 - 4" GIP)	625.10
		58																58		LF	SLEEVES FOR UTILITIES - 18"	625.10
1																		1		LS	DUCTS ON BRIDGE (6 - 4" FIBERGLASS)	625.16
		60																60		LF	SEAMLESS COPPER WATER TUBE - 3/4" TYPE K (MOD)	629.23
		160																160		LF	DUCTILE, IRON PIPE, CEM LINED - 8" CL 52 (MOD)	629.24
		160																160		LF	DUCTILE, IRON PIPE, CEM LINED - 12" CL 52 (MOD)	629.24
		1																1		EACH	EXTENSION SERVICE BOX AND CURB STOP	629.25
		2																2		EACH	GATE VALVE WITH VALVE BOX - 8"	629.27
		1																1		EACH	GATE VALVE WITH VALVE BOX - 12" (MOD BUTTERFLY VALVE)	629.27
		1																1		EACH	CORPORATION STOP - 3/4"	629.39
		1																1		LS	TRANSFER TO NEW SYSTEM-WATER SYSTEM	629.42
		4																4		EACH	AIR RELEASE - WATER (MANUAL)	629.43
		1																1		LS	WATER MAIN ON BRIDGE - 12" (MOD 1)	629.60
		1																1		LS	WATER MAIN ON BRIDGE - TEMP (MOD 2)	629.60
			240															240		HR	UNIFORMED TRAFFIC OFFICERS	630.10
			240															240		HR	FLAGGERS	630.15
				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 (NABI)	631.25
												1560						1560		HR	EMPLOYEE TRAINEESHIP	634.10
			1															1		LS	MOBILIZATION	635.10
			1580															1580		LF	DURABLE 4" WHITE LINE	646.40
			1530															1530		LF	DURABLE 4" YELLOW LINE	646.41
			33															33		LF	DURABLE 24" STOP BAR	646.46
			4															4		EACH	DURABLE LETTER OR SYMBOL	646.50
			66															66		LF	DURABLE CROSSWALK W/DIAGONAL LINES	646.51
			30															30		LF	DURABLE CROSSWALK W/DIAGONAL LINES (MOD)	646.51
			1450															1450		LF	TEMPORARY 4" WHITE LINE	646.60

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

PROJECT NAME:	Royalton
PROJECT NUMBER:	BRZ 1444(22)
FILE NAME:	sj099quant
PROJECT LEADER:	C. Williams
DESIGNED BY:	W. Symonds
PLOT DATE:	9/25/00
DRAWN BY:	C. Williams
CHECKED BY:	W. Symonds

QUANTITY SHEET #3

SHEET 6 OF 118

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

Non-Partic Telephone	Non-Partic. Sewer	Partic. Water	Roadway	Full E+C	Approach Slab #1	Abutment #1		Pier		Abutment #2	Approach Slab #2	Employee Traineeship	Channel	Super - structure	Erosion Control	BRIDGE QUANTITY	ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER
			1390															1390		LF	TEMPORARY 4" YELLOW LINE	646.61
			36															36		LF	TEMPORARY 24" STOP BAR	646.66
			4															4		EACH	TEMPORARY LETTERS OR SYMBOLS	646.70
			168															168		LF	TEMPORARY CROSSWALK W/DIAGONAL LINES	646.71
													2260					2260		SY	GEOTEXTILE UNDER STONE FILL	649.31
															320			320		SY	GEOTEXTILE FOR SILT FENCE	649.51
															160			160		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61
															20			20		LB	SEED	651.15
															20			20		LB	SEED-WINTER RYE	651.17
															200			200		LB	FERTILIZER	651.18
															1			1		TON	AGRICULTURAL LIMESTONE	651.20
															1			1		TON	HAY MULCH	651.25
															100			100		EACH	HAY BALES FOR EROSION CONTROL	651.26
															90			90		CY	TOPSOIL	651.35
													890					890		SY	GRUBBING MATERIAL	651.40
															10			10		SY	EROSION MATTING	654.10
			20														(EST)	20		SF	TRAFFIC SIGNS, TYPE A	675.20
			100														(EST)	100		LF	FLANGED CHANNEL SIGN POST	675.301
			9															9		EACH	REMOVING SIGNS	675.50
			3															3		EACH	ERECTING SALVAGED SIGNS	675.60
			980															980		LF	WIRED CONDUIT - 2"	678.23
			2															2		EACH	JUNCTION BOX	678.26
			40															40		LF	ELECTRICAL CONDUIT SLEEVE	678.30
			1															1		LS	STREET LIGHTING	679.15
			1															1		EACH	POWER STANCHION	679.28

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

PROJECT NAME: Royalton
PROJECT NUMBER: BRZ 1444(22)

FILE NAME: sj099quant
PROJECT LEADER: C. Williams
DESIGNED BY: W. Symonds
QUANTITY SHEET #4
PLOT DATE: 9/19/00
DRAWN BY: C. Williams
CHECKED BY: W. Symonds
SHEET 7 OF 118

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 1990, AND ITS LATEST REVSIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 1996, AND ITS LATEST REVISIONS.

2. DESIGN IS FOR HS-25 LIVE LOADING.

3. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES F UNLESS NOTED OTHERWISE.

4. EXISTING SIGNS NOT REUSED SHALL REMAIN THE PROPERTY OF THE TOWN OF ROYALTON. THESE SIGNS SHALL BE STOCKPILED ON THE PROJECT AND THEN LOADED ON A TRUCK SUPPLIED BY THE TOWN. CONTACT THE TOWN ROAD FOREMAN (763-7667) TO ARRANGE FOR REMOVAL FROM THE PROJECT.

5. TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT A RATE OF 0.015 GAL/SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT OR AS DIRECTED BY THE ENGINEER.

6. THE STONE FILL TYPE IV UNDER THE BRIDGE SHALL BE PLACED BEFORE THE GIRDERS ARE SET.

7. ESTIMATED QUANTITIES FOR THE ITEMS 575.20 "TRAFFIC SIGNS, TYPE A" AND 575.301 "FLANGE CHANNEL SIGN POST" HAVE BEEN ADDED TO THE CONTRACT TO BE USED AT THE DISCRETION OF THE RESIDENT ENGINEER IN ORDERING ADDITIONAL TRAFFIC SIGNS.

8. THE CONTRACTOR SHALL INSTALL A PLAQUE SUPPLIED BY THE TOWN OF ROYALTON IN A LOCATION TO BE DETERMINED LATER. THE PLAQUE WILL BE SET INTO THE STONE MASONRY FACING ON ONE OF THE TOWERS TO THE SATISFACTION OF THE TOWN OF ROYALTON AND THE RESIDENT ENGINEER. PAYMENT FOR INSTALLATION OF THE BRIDGE PLAQUE WILL BE SUBSIDIARY TO THE ITEM 602.25 "STONE MASONARY FACING".

9. COSTS FOR ALL NECESSARY ANCHOR BOLTS FOR THE INSTALLATION OF THE STREET LIGHTING POLES SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE ITEM 679.15 "STREET LIGHTING".

10. THE ITEM 604.22 "INSTALLATION OF SEWER MANHOLE (MOD)" SHALL BE PAYMENT FOR INSTALLING A PRECAST CONCRETE TOP WITH A MANHOLE FRAME AND CAST IRON COVER OVER THE CAST-IN-PLACE DROP INLET AT SIDELINE STATION 23+20 35′ LT. THE UNIT BID PRICE SHALL BE FULL COMPENSTION FOR ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO INSTALL THE COVER DESCRIBED ABOVE. THE CAST IRON COVER SHALL HAVE "STORM" LETTERED ON TOP.

11. THE ITEM 620.30 "DRIVE GATE FOR WOVEN WIRE FENCE (MOD)" SHALL BE PAYMENT FOR INSTALLING A PREFABRICATED, GALVANIZED STEEL FARM GATE AT THE LOCATION SHOWN ON THE PLANS. THE GATE SHALL BE A MINIMUM OF 15′ WIDE AND 3′ HIGH. THE GATE SHALL BE INSTALLED AND HINGED ON A GATE POST OF ADAQUATE STRENGTH TO SUPPORT THE GATE. THE GATE SHALL CLOSE AGAINST A GATE POST. THE GATE POSTS SHALL BE EITHER GALVANIZED STEEL OR PRESSURE TREATED TIMBER. THE CONTRACTOR SHALL PROVIDE THE RESIDENT ENGINEER WITH A PROPOSED GATE AND POST SIZE FOR APPROVAL. THE UNIT BID PRICE SHALL BE FULL COMPENSATION FOR ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY TO INSTALL THE GATE AND POSTS DESCRIBED ABOVE.

12. THE CONTRACTOR SHALL RELOCATE THE DRY HYDRANT FROM ITS EXISTING LOCATION TO A NEW LOCATION SHOWN ON THE PLANS. PAYMENT FOR MOVING THE HYDRANT SHALL BE PAID UNDER THE ITEM 629.24 "DUCTILE IRON PIPE, CEMENT LINED 8" (MOD). THE UNIT BID PRICE SHALL BE FULL COMPENSATION FOR ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO RELOCATE THE DRY HYDRANT.

TEMPORARY DETOUR

13. TWO-WAY TRAFFIC ON TOWN HIGHWAY 1 SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION EXCEPT AS NOTED BELOW. TRAFFIC SHALL BE MAINTAINED USING A COMBINATION OF THE EXISTING TRUSS STRUCTURE AND A TEMPORARY BRIDGE SPAN.

14. PEDESTRIAN TRAFFIC ALONG TOWN HIGHWAY 1 SHALL BE MAINTAINED THROUGH THE PROJECT AT ALL TIMES DURING CONSTRUCTION EXCEPT AS NOTED BELOW. PEDESTRIAN TRAFFIC SHALL BE MAINTAINED USING A COMBINATION OF MODIFYING THE SIDEWALK ON THE EXISTING TRUSS STRUCTURE AND A TEMPORARY BRIDGE SPAN WITH A SIDEWALK.

15. TOWN HIGHWAY 1 MAY BE CLOSED TO THROUGH TRAFFIC FOR A MAXIMUM OF TWO WEEKS TO ALLOW ERECTION OF THE TEMPORARY BRIDGE. THE PROJECT MAY ALSO BE CLOSED TO PEDESTRIAN TRAFFIC FOR A MAXIMUM OF TWO WEEKS. WRITTEN NOTICE OF THIS ROAD CLOSURE SHALL BE SENT TO THE TOWN OF ROYALTON A MINIMUM OF TWO WEEKS PRIOR TO CLOSURE.

16. THE TEMPORARY BRIDGE SPAN MAY BE LEFT IN PLACE OVER THE WINTER. THE MINIMUM CLEAR SPAN SHALL BE 100 FEET WITH THE BOTTOM OF STEEL NO LOWER THAN 474.0.

17. A SIDEWALK SHALL BE INCORPORATED INTO THE DESIGN OF THE TEMPORARY BRIDGE SPAN AND INCLUDED IN THE BID PRICE FOR ITEM 528.11 "TWO-WAY TEMPORARY BRIDGE". CRITERIA FOR THE SIDEWALK SHALL BE ACCORDING TO SECTION 528. THE SIDEWALK SHALL BE PROTECTED FROM THE ROADWAY BY A VEHICULAR RAIL.

18. PEDESTRIAN TRAFFIC OVER THE EXISTING TRUSS SHALL BE MAINTAINED USING A NEW TEMPORARY SIDEWALK ATTACHED TO THE DOWNSTREAM SIDE OF THE EXISTING TRUSS. THE COST OF THIS SIDEWALK SHALL BE PAID UNDER ITEM 528.12 TEMPORARY FOOT BRIDGE (MOD).

19. PORTIONS OF THE EXISTING SIDEWALK ON THE UPSTREAM SIDE OF THE EXISTING TRUSS MAY BE REMOVED TO PERMIT CONSTRUCTION OF THE NEW STRUCTURE. REMOVAL OF THE SIDEWALK FROM THE EXISTING TRUSS STRUCTURE REGUARDLESS OF PROJECT SEQUENCE, SHALL BE PAID UNDER ITEM 529.15 "REMOVAL OF STRUCTURE".

20. THE TWO-WAY TEMPORARY BRIDGE AND THE TEMPORARY FOOT BRIDGE SHALL BE DESIGNED AND DETAILED PER THE VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION 528.04 AS MODIFIED BY THE SPECIAL PROVISIONS. THE DESIGNS SHALL BE SUBMITTED TO THE PROJECT MANAGER FOR REVIEW.

21. FULL ACCESS TO ALL DRIVES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES.

21a. ALL ON AND OFF PROJECT SIGNS AND BARRICADES AS REQUIRED FOR THE DETOUR AND/OR ORDERED BY THE RESIDENT ENGINEER WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE PAID FOR UNDER THE ITEM 527.10 "MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS" ALL SIGNS AND BARRICADES SHALL BE INSPECTED AND REPAIRED AS NECESSARY DAILY. ALL SIGNS AND BARRICADES SHALL BE CLEANED OF DUST AND DEBRIS WEEKLY.

REMOVAL OF STRUCTURE

22. ITEM 529.15 "REMOVAL OF STRUCTURE" ITEMS SHALL BE USED FOR REMOVAL OF THE EXISTING SUPERSTRUCTURES AND ANY PORTIONS OF THE SUBSTRUCTURE NOT REMOVED UNDER THE ITEMS 208.35 "COFFERDAM EXCAVATION, ROCK" OR 203.27 "UNCLASSIFIED CHANNEL EXCAVATION".

23. ITEM 529.15 "REMOVAL OF STRUCTURE (STA 103+70 - STA 105+50)" SHALL BE PAYMENT FOR REMOVAL OF THE EXISTING CONCRETE SUPERSTRUCTURE, INCLUDING RAILINGS, UTILITY LINES, REMOVAL OF THE SOUTHERLY ABUTMENT, AND THE TWO INTERIOR PIERS UNDER THE CONCRETE SUPERSTRUCTURE. THE PIERS AND ABUTMENT SHALL BE COMPLETELY REMOVED TO THE BOTTOM OF FOOTING ELEVATION.

24. ITEM 529.15 "REMOVAL OF STRUCTURE (STA 105+50 - STA 107+75)" SHALL BE PAYMENT FOR THE REMOVAL OF THE EXISTING TRUSS SUPERSTRUCTURE, RAILINGS, CONCRETE DECK, UTILITY LINES, THE NORTHERLY ABUTMENT, AND THE PIER AT THE SOUTH END. THE TRUSS DOES NOT NEED TO BE SALVAGED (PER PROGAMMATIC AGREEMENT DATED 7/7/98). THE PIER SHALL BE REMOVED DOWN TO STREAMBED ELEVATION AND THE ABUTMENT SHALL BE COMPLETELY REMOVED TO THE BOTTOM OF FOOTING ELEVATION.

25. THE EXISTING STEEL IN THE TRUSS TO BE REMOVED UNDER THE ITEM 529.15 "REMOVAL OF STRUCTURE (STA 105+50 - 107+75) IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD. ALL STEEL REMOVED UNDER THIS ITEM IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR MAY DISPOSE OF IT OR RETAIN IT FOR FUTURE USE. THE CONTRACTOR SHALL INFORM THE ENGINEER OF HIS/HER PLANS FOR THE STEEL PRIOR TO ITS REMOVAL.

PROJECT NAME: ROYALTON BRZ 1444 (22)
PROJECT NUMBER:

FILE NAME: 89j099/structures/sj099notes.dgn
IPARM NAME: sj099notes1.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
GENERAL NOTES SHEET 1

PLOT DATE: 26-SEP-2000
DRAWN BY: P. ROWE
CHECKED BY: W.B. SYMONDS

GENERAL NOTES CONT.

SUBSTRUCTURES

26. BACKFILL BEHIND ABUTMENT 1 AND ABUTMENT 2 SHALL BE LIMITED TO AN ELEVATION OF 479.0 UNTIL THE GIRDERS ARE SET AND THE DECK IS PLACED.

27. PHASE CONSTRUCTION OF THE NEW SUBSTRUCTURES MAY BE NECESSARY IF THE CONSTRUCTION OF COFFERDAMS INTERFERES WITH THE EXISTING TRUSS STRUCTURE. IF PHASE CONSTRUCTION IS REQUIRED THE CONTRACTOR SHALL NOT BE ENTITLED TO ADDITIONAL COMPENSATION ABOVE THE UNIT BID PRICE FOR LOST TIME OR EXTRA COSTS.

28. THE TOP SURFACES OF BRIDGE SEAT PEDESTALS UNDER THE BEARING DEVICES SHALL BE LEVEL. THE TOPS OF THE ABUTMENTS AND PIER AROUND THE BRIDGE SEAT PEDESTALS SHALL BE SLOPED AS SHOWN ON THE CONTRACT PLANS TOWARDS THE BRIDGE SEAT DRAIN. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE GIVEN A MAGNESIUM FLOAT FINISH.

29. THE BEARING PEDESTALS ON THE BRIDGE SEATS OF THE SUBSTRUCTURES MAY BE PLACED IN SEPARATE POURS. HOWEVER, THE TOP OF THE BRIDGE SEAT UNDER THE BEARING PEDESTAL SHALL BE ROUGHENED TO 1/4" AMPLITUDE PRIOR TO THE SET OF THE BRIDGE SEAT CONCRETE.

30. CONCRETE PORTIONS OF THE ABUTMENT AND WINGWALLS ABOVE THE ADJACENT BRIDGE SEAT ELEVATIONS SHALL NOT BE PLACED UNTIL THE GIRDERS HAVE BEEN PLACED AND THE BEAM PROFILES HAVE BEEN TAKEN AND THE FINISH GRADES HAVE BEEN DETERMINED BY THE RESIDENT ENGINEER.

31. HP 14X73 PILES SHALL BE DRIVEN TO LEDGE WITH AN ULTIMATE CAPACITY OF 425 KIPS AS DETERMINED BY THE RESIDENT ENGINEER. THE ALLOWABLE DESIGN LOAD IS 155 KIPS PER PILE.

31a. STEEL H-PILES SHALL CONFORM TO AASHTO M 223/M 223M GR. 36. ALL REQUIRED SPLICE PLATES SHALL ALSO CONFORM TO AASHTO M 223/M 223M GR. 36.

SUBSTRUCTURES ON LEDGE

32. FOR ALL SUBSTRUCTURES, WHERE LEDGE IS 4'-0" OR LESS BELOW THE DESIGN TOP OF FOOTING ELEVATION, THE FOOTING SHALL BE POURED FROM THE TOP OF THE LEDGE AS SHOWN USING "CONCRETE CLASS B".

33. THE SUBSTRUCTURE UNITS HAVE BEEN DESIGNED FOR THE TOP OF FOOTING ELEVATIONS AS SHOWN ON THE PLANS. IF THE LEDGE ELEVATION IS GREATER THAN 4' BELOW THE DESIGN TOP OF FOOTING, THE PROJECT MANAGER SHALL BE NOTIFIED AND PROVIDED WITH A LEDGE PROFILE. NO FURTHER WORK SHALL BE DONE UNTIL A REPLY IS RECEIVED.

34. THE FOOTING SHALL BE FOUNDED ON LEDGE, WHICH HAS BEEN CLEANED OF ALL LOOSE ROCK AND OTHER DEBRIS. THE LEDGE SHALL BE REMOVED AS REQUIRED TO ENSURE THE FOOTINGS ARE PLACED ON COMPETENT ROCK.

35. #8 DOWELS SHALL BE DRILLED AND GROUTED INTO LEDGE AS SHOWN ON THE PLANS. THE DOWELS SHALL HAVE A 2'-0" EMBEDMENT IN THE LEDGE AND SHALL EXTEND IN THE FOOTING A MINIMUM OF 1'-6" UNLESS NOTED OTHERWISE. THE DRILLING AND GROUTING SHALL BE PAID FOR UNDER THE ITEM 507.16 "DRILLING AND GROUTING DOWELS", HOWEVER THE DOWELS SHALL BE PAID FOR UNDER THE ITEM 507.15 "REINFORCING STEEL".

36. FOR ALL SUBSTRUCTURE UNITS, WHERE THE LEDGE ELEVATION IS BETWEEN THE DESIGN TOP OF FOOTING AND 2'-6" BELOW THE DESIGN TOP OF FOOTING ELEVATION, THE LEDGE SHALL BE EXCAVATED DOWN TO 2'-6" BELOW THE DESIGN TOP OF FOOTING. ALL OVERBREAKAGE BELOW THIS ELEVATION SHALL BE REPLACED WITH "CONCRETE CLASS B". A MAXIMUM OF 6" AVERAGE DEPTH OF OVERBREAKAGE REPLACEMENT SHALL BE PAID FOR AS "CONCRETE CLASS B". ANY ADDITIONAL CONCRETE SHALL BE PAID FOR AT THE CONTRACTORS EXPENSE. ALL LEDGE REMOVAL IS PAID FOR UNDER THE ITEM 208.35 "COFFERDAM EXCAVATION, ROCK".

37. IF LEDGE IS ABOVE THE DESIGN TOP OF FOOTING, THE FOOTING ELEVATION MAY BE RAISED. BEFORE ANY ADJUSTMENT IS MADE IN FOOTING ELEVATIONS THE PROJECT MANAGER SHALL BE CONTACTED FOR APPROVAL OF THE CONFIGURATION.

38. IF BLASTING IS REQUIRED AND/OR PERMISSIBLE IN THIS LOCATION THEN THE CONTRACTOR SHALL ACT IN ACCORDANCE WITH VERMONT STANDARD SPECIFICATION 501.10 (f).

CONCRETE

39. THE MINIMUM COVER FOR REINFORCING STEEL IN THE SUBSTRUCTURES SHALL BE TWO INCHES ALONG WALL FACES AGAINST EARTH, AND THREE INCHES ELSEWHERE UNLESS DETAILED OTHERWISE.

40. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE AS FOLLOWS:
    SPACING +/- 1"
    CLEARANCE +/- 1/4"

41. THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT. UPWARD KEYS SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT. JOINTS AND SCORE MARKS IN THE CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

42. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1"X1".

43. THE DECK, SIDEWALK AND CURB CONCRETE SHALL BE CONCRETE, CLASS A QC/QA (MOD). ALL OTHER CONCRETE SHALL BE CLASS "B" UNLESS NOTED OTHERWISE.

44. THE ITEM 501.221 "CONCRETE, CLASS A QC/QA" SHALL BE MODIFIED TO MAKE THE LOWER SPECIFICATION LIMIT FOR 28 DAY COMPRESSIVE STRENGTH 5500 PSI.

45. ALL REINFORCING STEEL IN THE CONCRETE DECK AND BRIDGE CURBS SHALL BE EPOXY COATED AND PAID FOR UNDER THE ITEM 507.17. WHEN EPOXY COATED REINFORCING STEEL IS 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.

46. ALL CONCRETE SURFACES OF THE SUBSTRUCTURE THAT ARE TO BE EXPOSED SHALL BE GIVEN A RUBBED FINISH PER VAOT STANDARD SPECIFICATIONS SUB-SECTION 501.16 (a) 2. PAYMENT FOR THE RUBBED FINISH SHALL BE SUBSIDIARY TO THE ITEM 501.25 "CONCRETE, CLASS B".

47. EXPOSED AREAS OF CONCRETE ON THE SUBSTRUCTURES AND THE CAPS ON THE DECK TOWERS AND SUBSTRUCTURES SHALL BE STAINED GREY. THE AREAS TO BE STAINED WILL NOT RECEIVE WATER REPPELENT, INSTEAD THEY WILL BE SEALED WITH A CLEAR SEALANT. THE STAIN AND SEALANT WILL BE APPLIED TO ALL SURFACES AT THE SAME TIME TO THE SAME SHADE OF GREY. CARE SHALL BE TAKEN TO PREVENT STAINING OF ANY COMPLETED STONE MANONRY FACING. ANY STAIN ON THE FACING WILL BE REMOVED AT THE EXPENSE OF THE CONTRACTOR. ALL STAINING AND SEALANT WILL BE PAID FOR UNDER THE ITEM 513.20 "STRUCTURE PAINTING (MOD)". SEE SPECIAL PROVISIONS FOR MORE INFORMATION.

GRANITE CURBING ON BRIDGE

48. IN ADDITION TO THE REQUIREMENTS OF THE VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION FOR THE GRANITE BRIDGE CURB, THE GRANITE USED SHALL BE FROM THE SAME QUARRY AS THE GRANITE USED FOR STONE MANSONRY FACING.

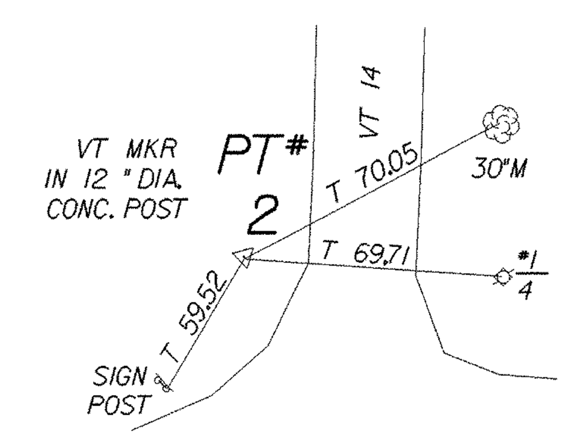
49. THE ITEM 616.22 "GRANITE BRIDGE CURB" SHALL INCLUDE THE COSTS OF MORTAR, TYPE I, EPOXY MORTAR, #4 EPOXY COATED ANCHORS, AND EPOXY USED TO SECURE THE ANCHORS TO THE GRANITE BRIDGE CURB.

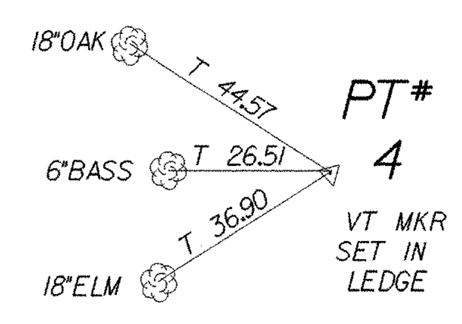
50. BEFORE INSTALLATION OF THE GRANITE BRIDGE CURB THE CONTRACTOR SHALL PROVIDE THE RESIDENT ENGINEER WITH A TECHNICAL DATA SHEET FOR THE PROPOSED EPOXY FOR SECURING ANCHORS TO THE GRANITE CURBING. THE TECHNICAL DATA SHEET SHALL INCLUDE SPECIFICATIONS, AND MANUFACTURERS APPLICATION INSTRUCTIONS. THE RESIDENT ENGINEER SHALL APPROVE THE PRODUCT PRIOR TO ANY INSTALLATION.

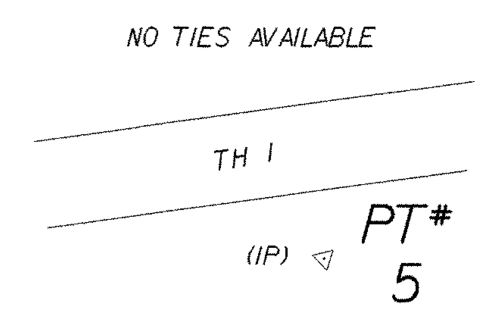
51. THE EPOXY COATED ANCHORS SHALL BE SHIPPED FROM THE SUPPLIER CUT TO LENGTH WITH A TOTAL SHOP APPLIED EPOXY COATING MEETING THE REQUIREMENTS FOR EPOXY COATED REINFORCING STEEL.

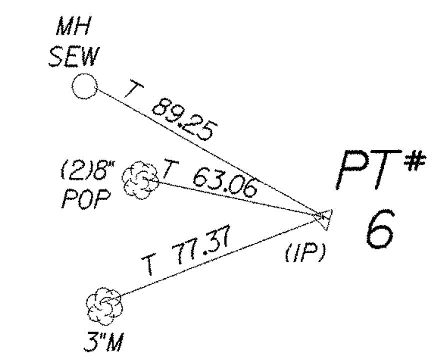
52. THE BLOCKS FOR THE GRANITE BRIDGE CURB MAY BE SHOP ASSEMBLED WITH THE ANCHORS WITH PERMISSION FROM THE RESIDENT ENGINNER.

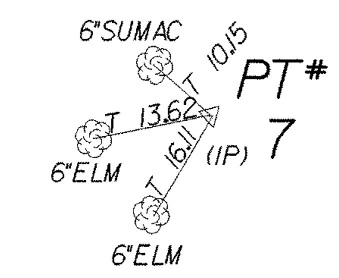
TRAVERSE TIES

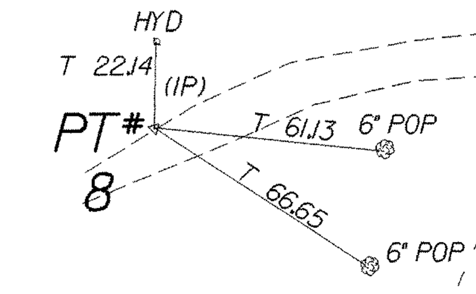






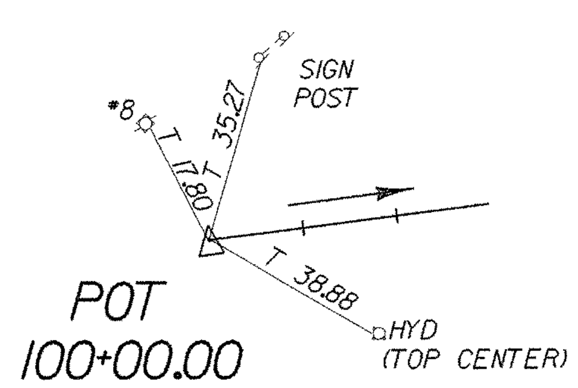


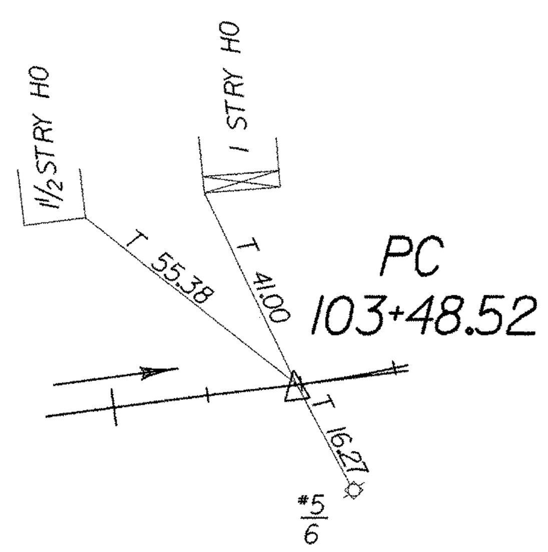


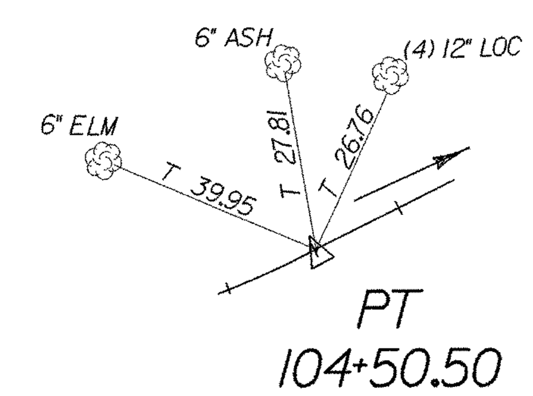


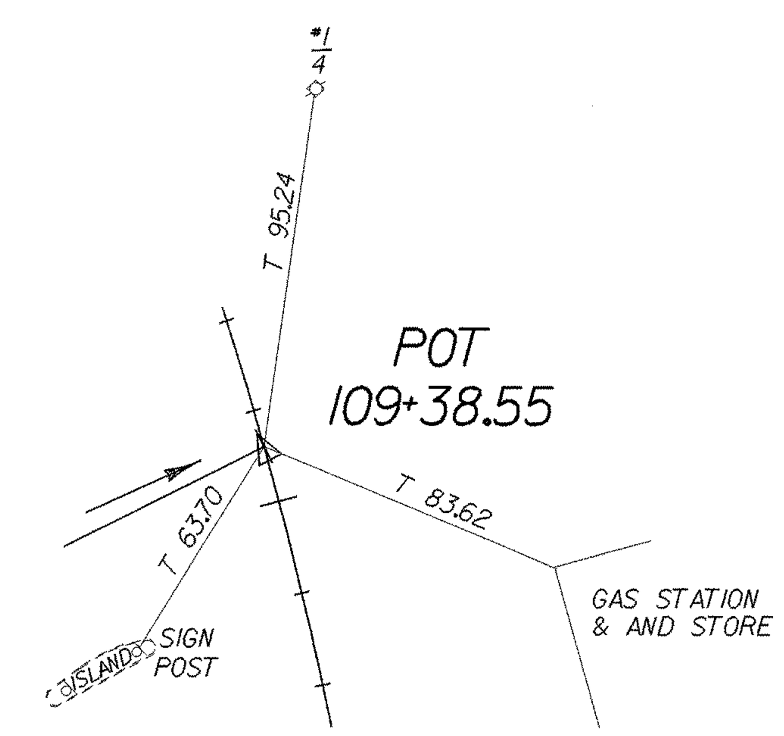
N = 82485.1220 E = 35308.1880 Z = 483.0050	N = 81845.1106 E = 35505.4627 Z = 455.6020	N = 81842.4555 E = 35196.6863 Z = 479.4850	N = 82048.5967 E = 34959.9178 Z = 471.4370	N = 82050.7850 E = 35165.7688 Z = 468.7590	N = 81936.7527 E = 35317.7324 Z = 463.6040

MAINLINE ALIGNMENT TIES









N = 81629.2119 E = 35010.3144	N = 81908.7554 E = 35218.4452	N = 81999.2086 E = 35264.4945	N = 82465.1952 E = 35409.5600

ALL DISTANCES ARE IN FEET

DATUM	
VERTICAL	USGS 1927
HORIZONTAL	ASSUMED

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444 (22)

FILE NAME: 89j099/structures/sj099tie.dgn
IPARM NAME: sj099tie.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
TIE SHEET

PLOT DATE: 25-SEP-2000
DRAWN BY: P.G. JARVIS
CHECKED BY: W.B. SYMONDS
SHEET 10 OF 118

TH 1 CURVE 1

Radius:	301.56
Delta:	19°22′38.23″ Left
Degree of Curvature (Arc):	19°00′00.00″
Length:	101.99
Tangent:	51.48
Chord:	101.50
Middle Ordinate:	4.30
External:	4.36
Banking:	Normal

NOTE: FOR DRIVE AND GUARD RAIL RADII SEE SHEETS 67-69.

6" UNDERDRAIN (NOT SHOWN FOR CLARITY)
STA 102+25-STA 104+25 RT & LT
(OUTLET AROUND WINGWALLS)

UNDERDRAIN FLUSHING BASIN
STA 102+25 RT & LT

SEE SHEET 16 FOR DRAINAGE NOTES
SEE SHEETS 67-69 FOR CURB AND RAILING LAYOUT

RELOCATE DRY HYDRANT
FROM STA 104+22 - 50′ RT
TO STA 103+10 - 80′ RT

REMOVING AND RESETTING FENCE
STA 103+75 LT - 104+14 LT
STA 104+80 LT +/-

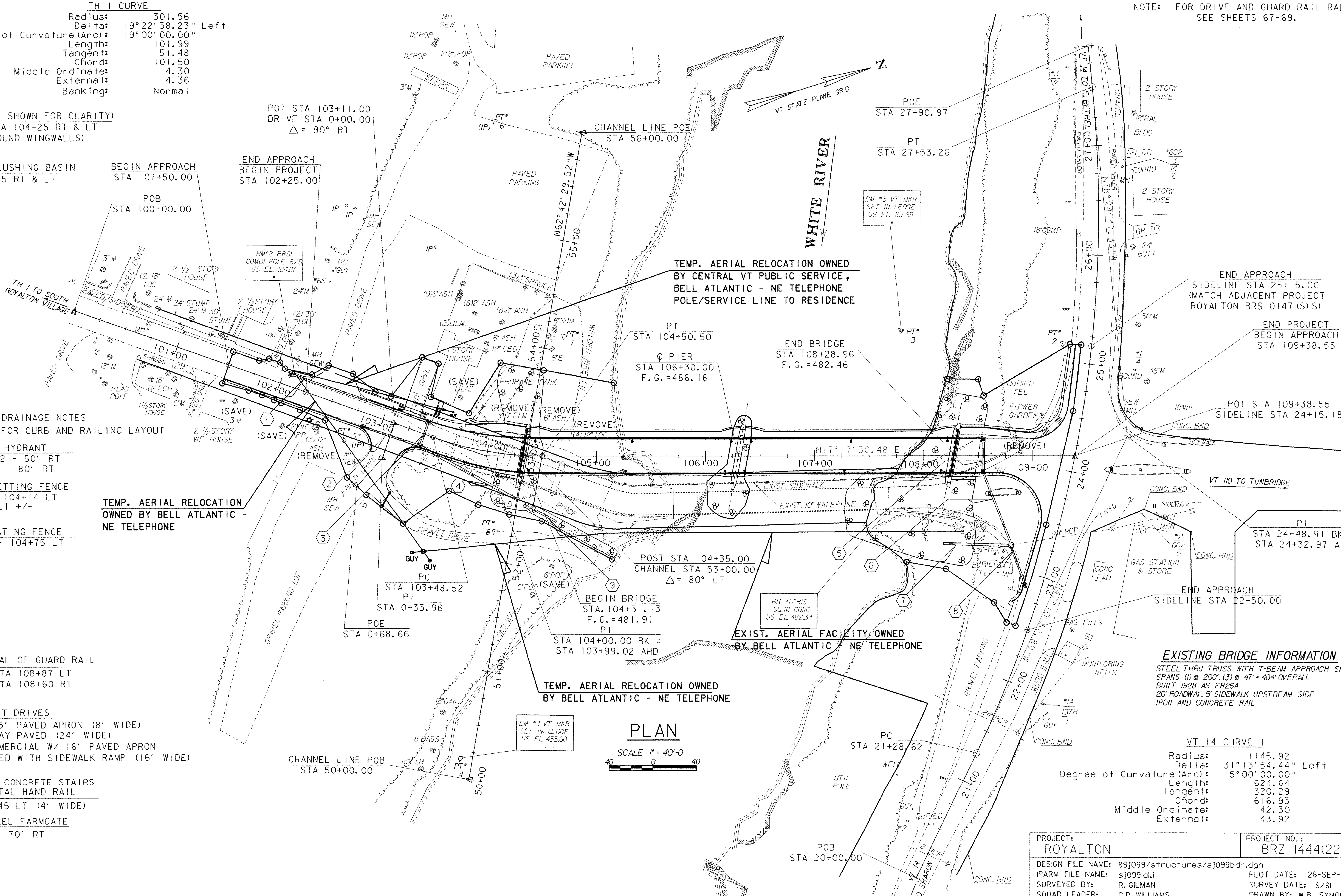
REMOVAL OF EXISTING FENCE
STA 104+65 LT - 104+75 LT

REMOVE AND DISPOSAL OF GUARD RAIL
STA 108+16 RT - STA 108+87 LT
STA 107+80 RT - STA 108+60 RT

CONSTRUCT DRIVES
STA 101+88 LT W/ 5′ PAVED APRON (8′ WIDE)
STA 103+11 RT 2 WAY PAVED (24′ WIDE)
STA 102+50 LT COMMERCIAL W/ 16′ PAVED APRON
STA 103+23 LT PAVED WITH SIDEWALK RAMP (16′ WIDE)

CONSTRUCT CONCRETE STAIRS WITH METAL HAND RAIL
STA 103+45 LT (4′ WIDE)

GATEPOSTS & STEEL FARMGATE
STA 103+27 - 70′ RT



PLAN

SCALE 1″ = 40′-0

EXISTING BRIDGE INFORMATION

STEEL THRU TRUSS WITH T-BEAM APPROACH SPANS
SPANS (1) @ 200′, (3) @ 47′ = 404′ OVERALL
BUILT 1928 AS FR26A
20′ ROADWAY, 5′ SIDEWALK UPSTREAM SIDE
IRON AND CONCRETE RAIL

VT 14 CURVE 1

Radius:	1145.92
Delta:	31°13′54.44″ Left
Degree of Curvature (Arc):	5°00′00.00″
Length:	624.64
Tangent:	320.29
Chord:	616.93
Middle Ordinate:	42.30
External:	43.92

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099bdr.dgn	
IPARM FILE NAME: sj099lol.i	PLOT DATE: 26-SEP-2000
SURVEYED BY: R. GILMAN	SURVEY DATE: 9/91
SQUAD LEADER: C.P. WILLIAMS	DRAWN BY: W.B. SYMONDS
40 SCALE LAYOUT SHEET	SHEET: 11 OF 118

REV TH 1 CURVE 1

Radius:	295.42
Delta:	19°46'47.5" Left
Degree of Curvature (Arc):	19°23'41.00"
Length:	101.99
Tangent:	51.51
Chord:	101.48
Banking:	Normal

REV TH 1 CURVE 2

Radius:	458.366
Delta:	08°43'02.6" Right
Degree of Curvature (Arc):	12°30'00.00"
Length:	69.739
Tangent:	34.94
Chord:	69.67
Banking:	Normal

THIS SHEET IS A REVISION OF THE ORIGINAL SHEET #11 SHOWING THE REVISED ALIGNMENT AND ACTUAL LOCATION OF THE NEW DRAINAGE AND THE ACTUAL LIMIT OF STONE FILL AT ABUT 2

6" UNDERDRAIN (NOT SHOWN FOR CLARITY)
STA 102+25-STA 104+25 RT & LT
(OUTLET AROUND WINGWALLS)

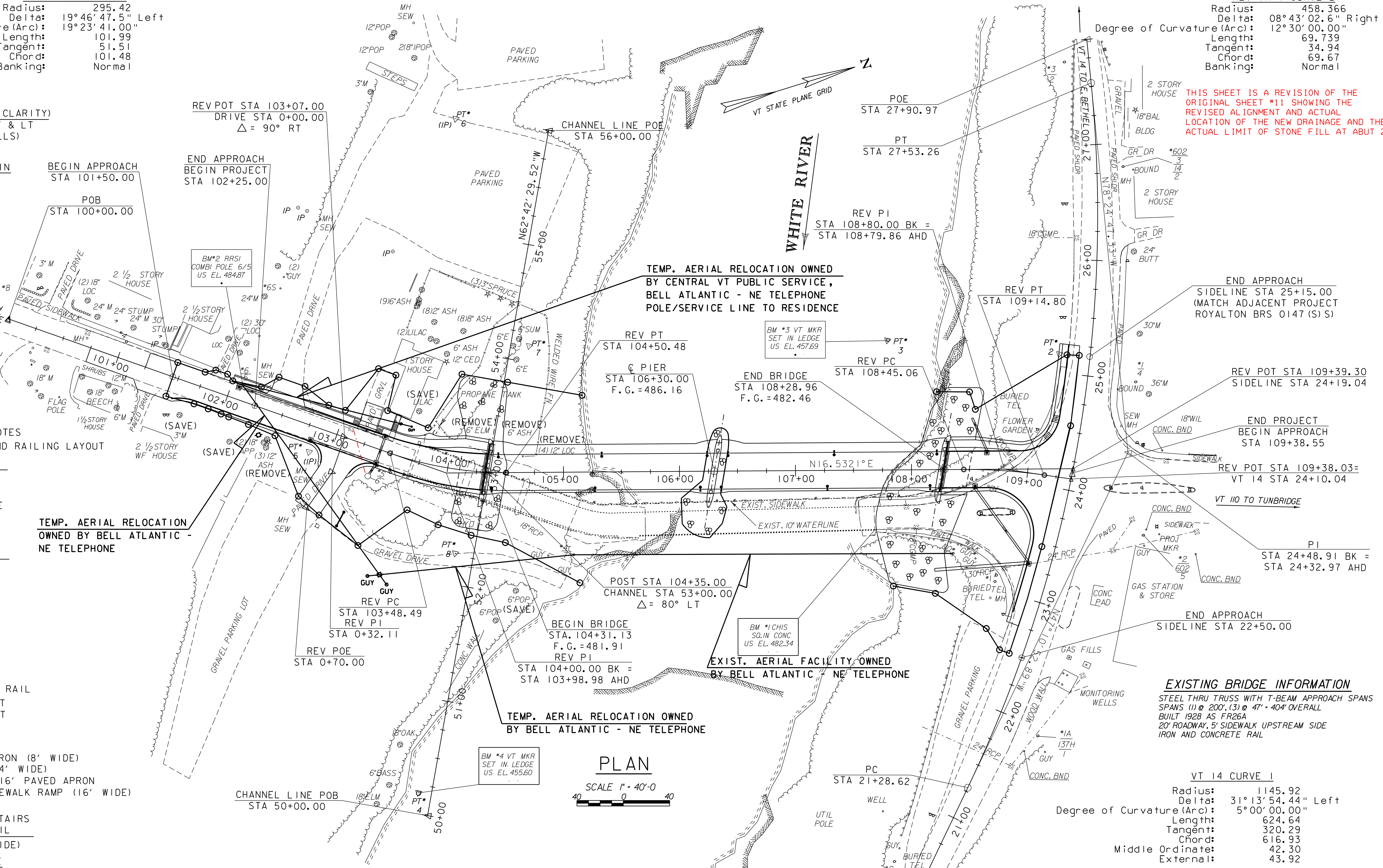
UNDERDRAIN FLUSHING BASIN
STA 102+25 RT & LT

SEE SHEET 16 FOR DRAINAGE NOTES
SEE SHEETS 67-69 FOR CURB AND RAILING LAYOUT

RELOCATE DRY HYDRANT
FROM STA 104+22 - 50' RT
TO STA 103+10 - 80' RT

REMOVING AND RESETTING FENCE
STA 103+75 LT - 104+14 LT
STA 104+80 LT +/-

REMOVAL OF EXISTING FENCE
STA 104+65 LT - 104+75 LT



EXISTING BRIDGE INFORMATION

STEEL THRU TRUSS WITH T-BEAM APPROACH SPANS
SPANS (1) @ 200', (3) @ 47' = 404' OVERALL
BUILT 1928 AS FR26A
20' ROADWAY, 5' SIDEWALK UPSTREAM SIDE
IRON AND CONCRETE RAIL

REMOVE AND DISPOSAL OF GUARD RAIL
STA 108+16 RT - STA 108+87 LT
STA 107+80 RT - STA 108+60 RT

CONSTRUCT DRIVES
STA 101+88 LT W/ 5' PAVED APRON (8' WIDE)
STA 103+11 RT 2 WAY PAVED (24' WIDE)
STA 102+50 LT COMMERCIAL W/ 16' PAVED APRON
STA 103+23 LT PAVED WITH SIDEWALK RAMP (16' WIDE)

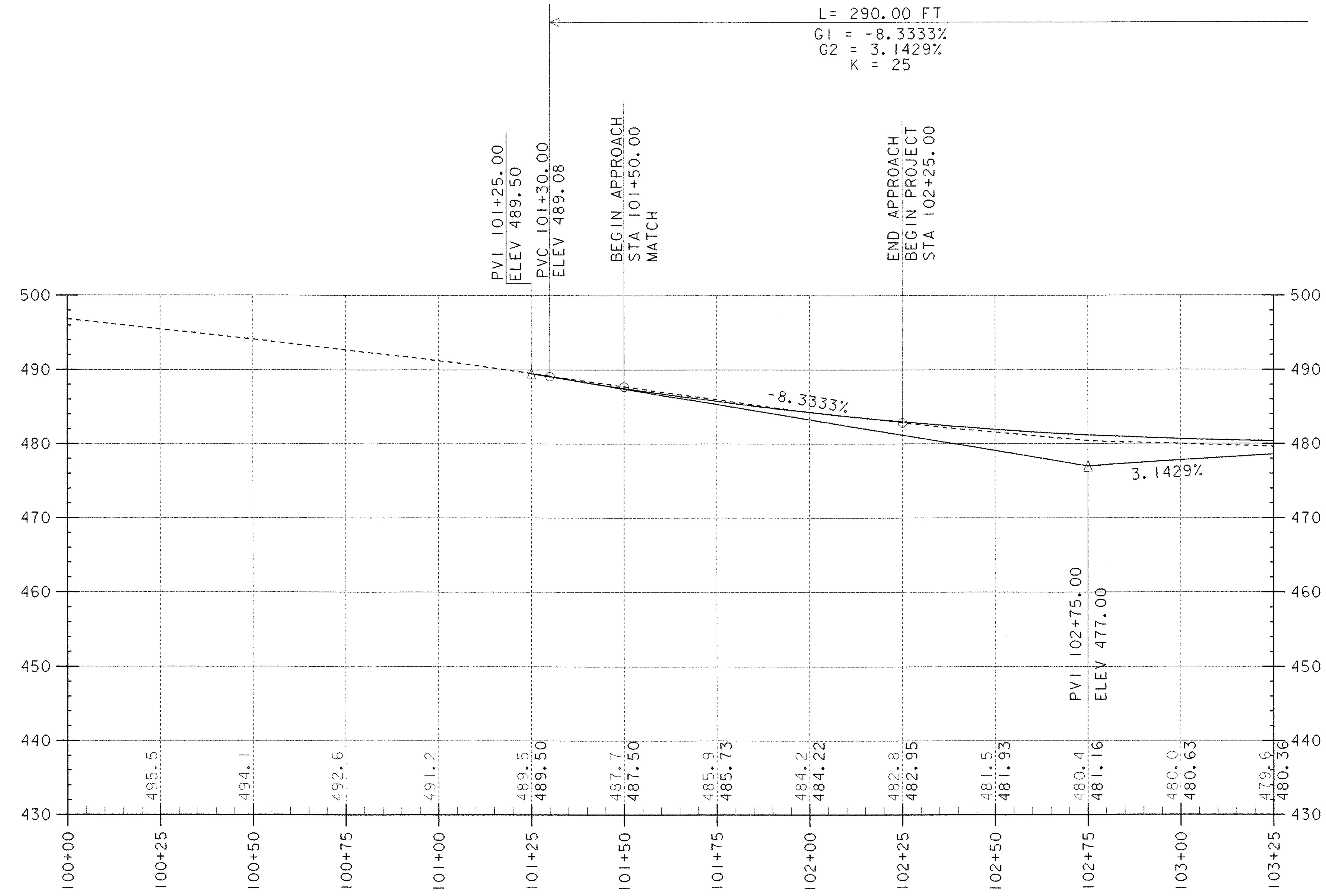
CONSTRUCT CONCRETE STAIRS
WITH METAL HAND RAIL
STA 103+45 LT (4' WIDE)

GATEPOSTS & STEEL FARMGATE
STA 103+27 - 70' RT

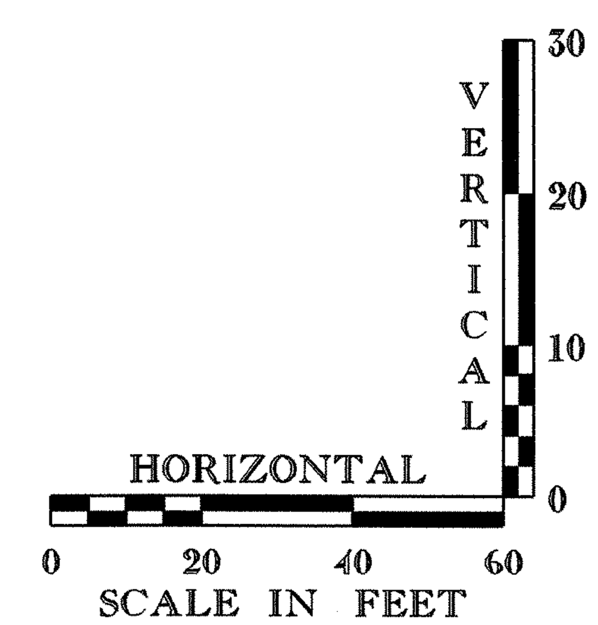
VT 14 CURVE 1

Radius:	1145.92
Delta:	31°13'54.44" Left
Degree of Curvature (Arc):	5°00'00.00"
Length:	624.64
Tangent:	320.29
Chord:	616.93
Middle Ordinate:	42.30
External:	43.92

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/construction/asbuilt.dgn	
IPARM FILE NAME: asbuilt.1	PLOT DATE: 31-OCT-2011 10:52
SURVEYED BY: R. GILMAN	SURVEY DATE: 9/91
SQUAD LEADER: C.P. WILLIAMS	DRAWN BY: D.G. BASSETT
40 SCALE LAYOUT SHEET	SHEET: 11 REV OF 118



PROFILE TH 1



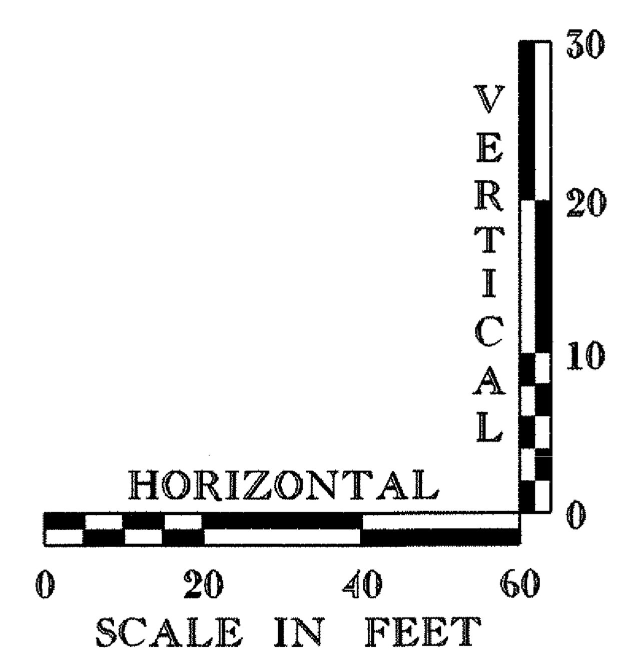
NOTE: EXISTING CENTERLINE ELEVATIONS ARE SHOWN TO THE TENTH.
PROPOSED CENTERLINE ELEVATIONS ARE SHOWN TO THE HUNDREDTH.

STATION 101+50 MATCH ELEVATION TO EXISTING.
THE PROPOSED ELEVATION SHOWN ON PROFILE @ STATION
101+50 IS FOR MATHEMATICAL ACCURACY ONLY.

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099prl.dgn	
IPARM FILE NAME: sj099prl.i	PLOT DATE: 25-SEP-2000
SURVEYED BY: R. GILMAN	SURVEY DATE: 9/91
SQUAD LEADER: C. P. WILLIAMS	DRAWN BY: W.B. SYMONDS
TH 1 PROFILE SHEET A	SHEET: 12 OF 118

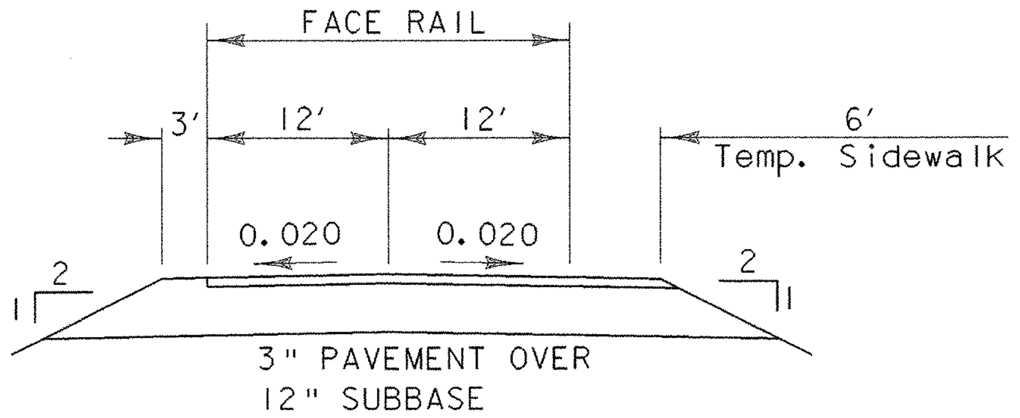
PROFILE TH 1

NOTE: EXISTING CENTERLINE ELEVATIONS ARE SHOWN TO THE TENTH.
PROPOSED CENTERLINE ELEVATIONS ARE SHOWN TO THE HUNDREDTH.



PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89J099/structures/sj099prl.dgn	
IPARM FILE NAME: sj099pr2.I	PLOT DATE: 25-SEP-2000
SURVEYED BY: R. GILMAN	SURVEY DATE: 9/91
SQUAD LEADER: C. P. WILLIAMS	DRAWN BY: W.B. SYMONDS
TH 1 PROFILE SHEET B	SHEET: 13 OF 118

TYPICAL DETOUR SECTION
NOT TO SCALE

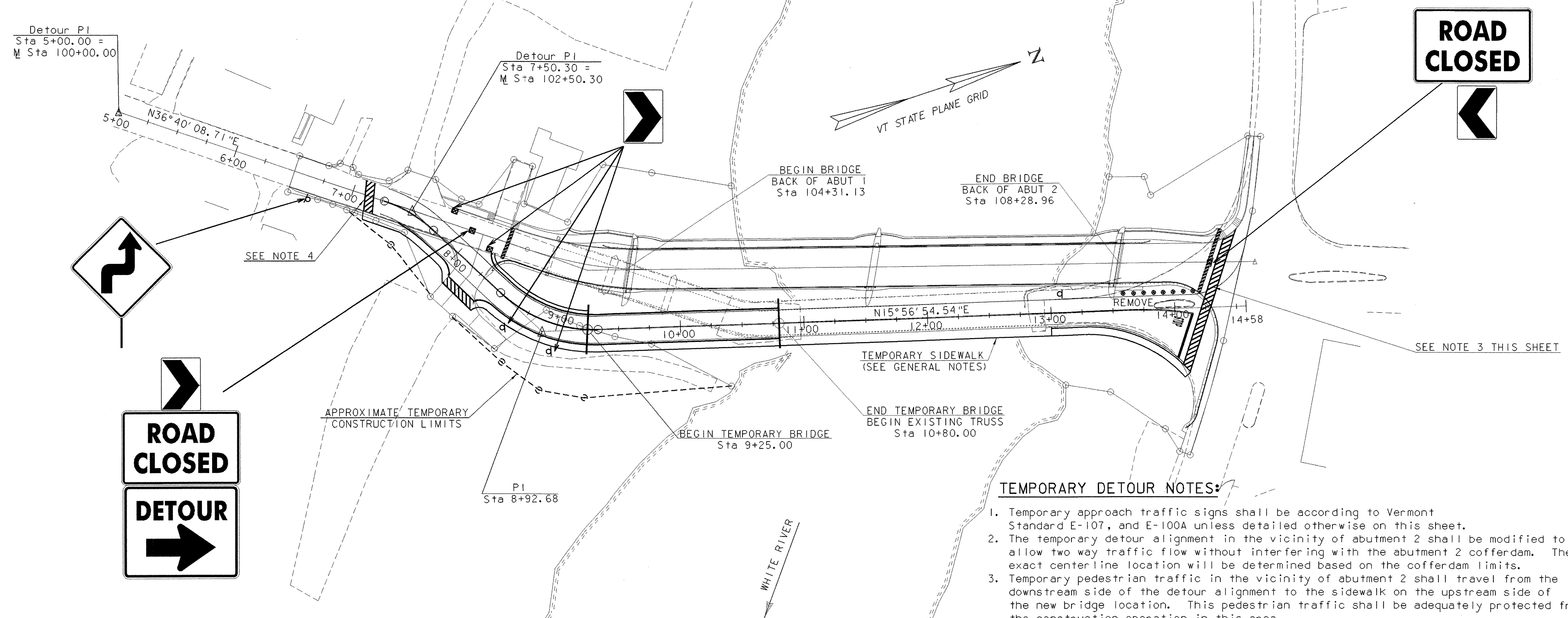


TEMPORARY PAVEMENT MARKINGS	
WHITE LINE	STA. 7+25 - 14+50 RT&LT
YELLOW LINE	STA.
CENTER LINE	STA. 7+25 - 14+20 RT&LT
CROSS WALK	STA. 7+12 STA. 8+25 RT STA. 14+25
STOP AND BAR	STA. 14+20 RT

Detour Curve #2

PC = 8+47.164
PI = 8+92.684
PT = 9+33.483

Radius:	110.000
Delta:	44°57'39.04"
Length:	86.319
Degree of Curvature (Arc):	52°05'13.46"
Tangent:	45.519
Chord:	84.121
Middle Ordinate:	8.359
External:	9.046



TEMPORARY DETOUR NOTES:

1. Temporary approach traffic signs shall be according to Vermont Standard E-107, and E-100A unless detailed otherwise on this sheet.
2. The temporary detour alignment in the vicinity of abutment 2 shall be modified to allow two way traffic flow without interfering with the abutment 2 cofferdam. The exact centerline location will be determined based on the cofferdam limits.
3. Temporary pedestrian traffic in the vicinity of abutment 2 shall travel from the downstream side of the detour alignment to the sidewalk on the upstream side of the new bridge location. This pedestrian traffic shall be adequately protected from the construction operation in this area.
4. Temporary pedestrian traffic in the vicinity of abutment 1 shall cross as shown on this layout sheet.
5. The bridge rail for temporary bridge shall transition smoothly into the existing rail on the truss and shall be connected positively to the truss railing.
6. Access to all drives shall be maintained at all times during construction.
7. For pay items and descriptions, see the General Notes.

LEGEND

⊗	- REFLECTORIZED BARRELS
	- SIGN POSTS
—×—×—	- PEDESTRIAN FENCE
	- TYPE III BARRICADES
⊠	- TYPE III BARRICADES (MOD.)
	- TEMP. TRAFFIC BARRIER
	- TEMP. CROSSWALK

Detour Curve #1

PC = 7+26.678
PI = 7+50.300
PT = 7+73.216

Radius:	110.000
Delta:	24°14'24.87"
Length:	46.538
Degree of Curvature (Arc):	52°05'13.46"
Tangent:	23.622
Chord:	46.192
Middle Ordinate:	2.452
External:	2.508

DETOUR PLAN

SCALE 1" = 40'-0"

40 0 40

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099det.dgn IPARM FILE NAME: sj099det.i	PLOT DATE: 25-SEP-2000
TH 1 OVER THE WHITE RIVER	
TEMPORARY DETOUR LAYOUT	SHEET: 14 OF 118

NOTE:
THE SIGN PACKAGE SHOWN AS EXISTING IS TO BE CONSTRUCTED AS PART OF THE ADJACENT ROYALTON BRS 0147(5)S PROJECT.

NOTE:
THE "OFFSET BRICK" DETAIL SHOWN ABOVE SHALL BE IMPRINTED AS SPECIFIED IN THE SPECIAL PROVISIONS. THE "OFFSET BRICK" PATTERN SHALL BE PAINTED A GRANITE COLOR.

DURABLE 4" WHITE LINE
STA. 101+50 LT - STA. 109+30 LT
(STA. 24+60 MATCH EXISTING)
STA. 101+50 RT - STA. 109+20 RT
(STA. 23+50 MATCH EXISTING)

DURABLE 4" YELLOW LINE
STA. 101+50 - STA. 109+15
(CENTERLINE)

DURABLE 24" STOP BAR
STA. 109+14 (35' ANGLED @ 18')

DURABLE LETTER OR SYMBOL
STA. 109+05 (STOP)

DURABLE CROSSWALK MARKING W/ DIAGONAL LINES
STA. 24+35 LT-RT

DURABLE CROSSWALK MARKING W/ DIAGONAL LINES (MOD)
STA. 102+77 LT - STA 102+87 RT

REMOVE SIGNS
STA. 103+41 RT
STA. 103+52 RT
STA. 103+65 RT
STA. 108+62 RT (3)
STA. 108+85 RT (3)

REMOVING & RESETTING SIGNS
STA. 108+51 RT ⟶ STA. 108+80 LT
STA. 23+22 LT ⟶ STA. 108+90 RT (STA. 23+75 LT)

LEGEND
ALL SIGNS AND POSTS WILL BE NEW UNLESS OTHERWISE NOTED:
R - REMOVE
R&S - REMOVE & SALVAGE
S - SALVAGE
RET - RETAIN

TRAFFIC SIGNS & LINES
SCALE 1" = 40'-0
40 0 40

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099trf.dgn	
IPARM FILE NAME: sj099trf.l	PLOT DATE: 25-SEP-2000
SURVEYED BY: R. GILMAN	SURVEY DATE: 9/91
SQUAD LEADER: C. P. WILLIAMS	DRAWN BY: P.G. JARVIS
TRAFFIC SIGNS AND LINES	SHEET: 15 OF 118

ITEM DETAIL AND DRAINAGE SHEET

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAINAGE STRUCTURES

STA.	STA.	POSITION	ASKEW	TYPE	DITCH		PIPE ARCH			PIPE		ALLOWABLE OPTIONS						PIPE ELBOW	E S	CB	PRECDI	DEPTH	CONC CL B	REIN STEEL	DI GRATE	CHAN ELEV	CRM	TR EXCAV		COMM EXC	UNC CHAN EXC	STRUC EXCAV	GRAN BKF STRUC	GRAN BORR	EROS MATT	STONE FILL		MRKR POSTS		REMARKS
				IN/OUT	IN	OUT	S	R	L	D	L	PCCSP	CAAP	RCP	CSP	CPEP	PCCSP PI					DI						EARTH	ROCK											
							IN	IN	FT	IN	FT	TH	TH	CL	TH	SL	TH	NO-DEG	EA				CY	LBS	TYPE		CY	CY	CY	CY	CY	CY	CY	CY	SY	CY	TYPE	LT	RT	
102+07	103+10	LT-LT																																						REMOVE EXISTING RCDI AND 18" RCP
102+07	103+40	LT-LT		RCDI						18	133	.064	.060	III		X						7.5	4.07	311	E															①
103+10	105+17	LT-RT																																						REMOVE EXISTING RCDI AND 18" RCP
102+85	103+40	RT-RT		RCDI						18	55	.064	.060	III		X						7.0	3.84	303	E															②
103+40	103+40	LT-RT		RCDI						18	23	.064	.060	III		X						6.0	3.40	273	E															③
103+40	104+30	RT-RT		RCDI		X				24	100	.064	.060									7.5	4.07	311	E															STONE FILL TYPE II LINED DITCH TO RIVER ④
108+55	108+55	LT-RT		RCDI						18	30	.064	.060	III		X						5.0	2.96	242	E															⑤
108+55	23+20	RT-LT		RCDI						18	72	.064	.060	III		X						6.0	3.40	273	E															⑥
22+85	23+20	LT-LT		RCDI						18	40	.064	.060	III		X						4.5	2.74	219	E															⑧
23+20	108+00	LT-RT		RCDI		X				30	52	.064	.060									11	5.50	406																NEW RCDI W/ PRECAST COVER: OUTLET IN STONE FILL ⑦
104+50	104+70	RT-RT			X	X				18	20	.064	.060	III		X																								⑨ EXACT LOCATION TO BE DETERMINED BY RESIDENT ENGINEER
23+20	23+09	LT-LT																																						REMOVE EXISTING RCDI AND 30" RCP
24+09	24+30	LT-LT																																						REMOVE EXISTING RCDI AND 18" CMP
107+96	107+94	RT-RT																																						REMOVE EXISTING RCDI AND 18" CMP
108+04		RT																																						REMOVE EXISTING RCDI AND 18" CMP
108+56	108+80	RT-RT		RCP																																				REMOVE EXISTING RC PIPE
102+08	105+18	LT-RT		RCP																																				REMOVE EXISTING RC PIPE
TOTALS											552												29.98	2338																

GUARD RAIL

STA.	STA.	LT.	RT.	END TREATMENT	
TOTALS					

SEE 40 SCALE LAYOUT SHEET 11.

DRAINAGE NOTES:

① STA 102+07 LT - STA 103+40 LT
NEW 18"X133' OPTION PIPE
NEW RCDI @ INLET
REMOVE EXISTING 18" RCP
STA 102+07 REMOVE EXISTING DI
STA 103+10 REMOVE EXISTING DI

② STA 102+85 RT - STA 103+40 RT
NEW 18"X55' OPTION PIPE
NEW RCDI @ INLET

③ STA 103+40 LT - STA 103+40 RT
NEW 18"X23' OPTION PIPE
NEW RCDI @ INLET

④ STA 103+40 - STA 104+30 40' RT
NEW 24"X100' OPTION PIPE
NEW RCDI @ INLET AND STONEFILL
TYPE II LINED DITCH TO RIVER

⑤ STA 108+55 LT - STA 108+55 RT
NEW 18"X30' OPTION PIPE
NEW RCDI @ INLET

⑥ STA 108+55 RT -
SIDELINE STA 23+20 LT
NEW 18"X72' OPTION PIPE
NEW RCDI @ INLET

⑦ SIDELINE STA 23+20 LT -
STA 108+00 80' RT
NEW 30" X52' OPTION PIPE
NEW JUNCTION BOX @ INLET

⑧ SIDELINE STA 22+85 LT -
SIDELINE STA 23+20 LT
NEW 18"X40' OPTION PIPE
NEW RCDI @ INLET

⑨ STA 104+50 RT - STA 104+70 RT
NEW 18"X20' OPTION PIPE
DITCH @ INLET AND OUTLET

(EXACT LOCATION TO BE DETERMINED BY RESIDENT ENGINEER TO PROVIDE FOR BIKE PATH CROSSING OVER STONE FILL DITCH.)

UNDERDRAIN

STA.	STA.	TYPE	POS.	D	L	TRENCH E	TRENCH R	GRAN BKF	FB	MKR PST
102+25	104+25	U	LT	6	205				1	
102+25	104+25	U	RT	6	205				1	
TOTALS										

PROJECT: ROYALTON
PROJECT NO.: BRZ 1444(22)

DESIGN FILE NAME: 89j099/structures/sj099drn.dgn
IPARM FILE NAME: sj099drn.i
SURVEYED BY: R. GILMAN
SQUAD LEADER: C.P. WILLIAMS
DRAINAGE SHEET
PLOT DATE: 25-SEP-2000
SURVEY DATE: 9/91
DRAWN BY: W.B. SYMONDS
SHEET: 16 OF 118

SOIL CLASSIFICATION

AASHTO

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

ROCK QUALITY DESIGNATION

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

SHEAR STRENGTH

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

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

DENSITY (GRANULAR SOILS)

N	DESCRIPTIVE TERM
<5	Very Loose
5-10	Loose
11-24	Med. Dense
25-50	Dense
>50	Very Dense

CONSISTENCY (COHESIVE SOILS)

N	DESCRIPTIVE TERM
<2	Very Soft
2-4	Soft
5-8	Med. Stiff
9-15	Stiff
16-30	Very Stiff
31-60	Hard
>60	Very Hard

COMMONLY USED SYMBOLS

▼	Water Elevation
⊗	Standard Penetration Boring
⊕	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test Blow Count Per Foot For: 2" O. D. Sampler 1 3/8" I. D. Sampler Hammer Weight Of 140 Lbs. Hammer Fall Of 30"
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger
AX	Core Size 1 1/8"
BX	Core Size 1 5/8"
NX	Core Size 2 1/8"
M	Double Tube Core Barrel Used
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
NP	Non Plastic
w	Moisture Content (Dry Wgt. Basis)
D	Dry
M	Moist
MTW	Moist To Wet
W	Wet
Sat	Saturated
Bo	Boulder
Gr	Gravel
Sa	Sand
Si	Silt
Cl	Clay
HP	Hardpan
Le	Ledge
NLTD	No Ledge To Depth
CNPF	Can Not Penetrate Further
TLOB	To Ledge Or Boulder
NR	No Recovery
Rec.	Recovery
%Rec.	Percent Recovery
ROD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)

COLOR

blk	Black	pnk	Pink
bl	Blue	pu	Purple
brn	Brown	rd	Red
dk	Dark	tn	Tan
gry	Gray	wh	White
gn	Green	yel	Yellow
lt	Light	mltc	Multicolored
or	Orange		

DEFINITIONS (AASHTO)

BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.

BOULDER - A rock fragment with an average dimension > 12 inches.

COBBLE - Rock fragments with an average dimension between 3 and 12 inches.

GRAVEL - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).

SAND - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).

SILT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.

CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.

VARVED - Alternate layers of silt and clay.

HARDPAN - Extremely dense soil, cemented layer, not softened when wet.

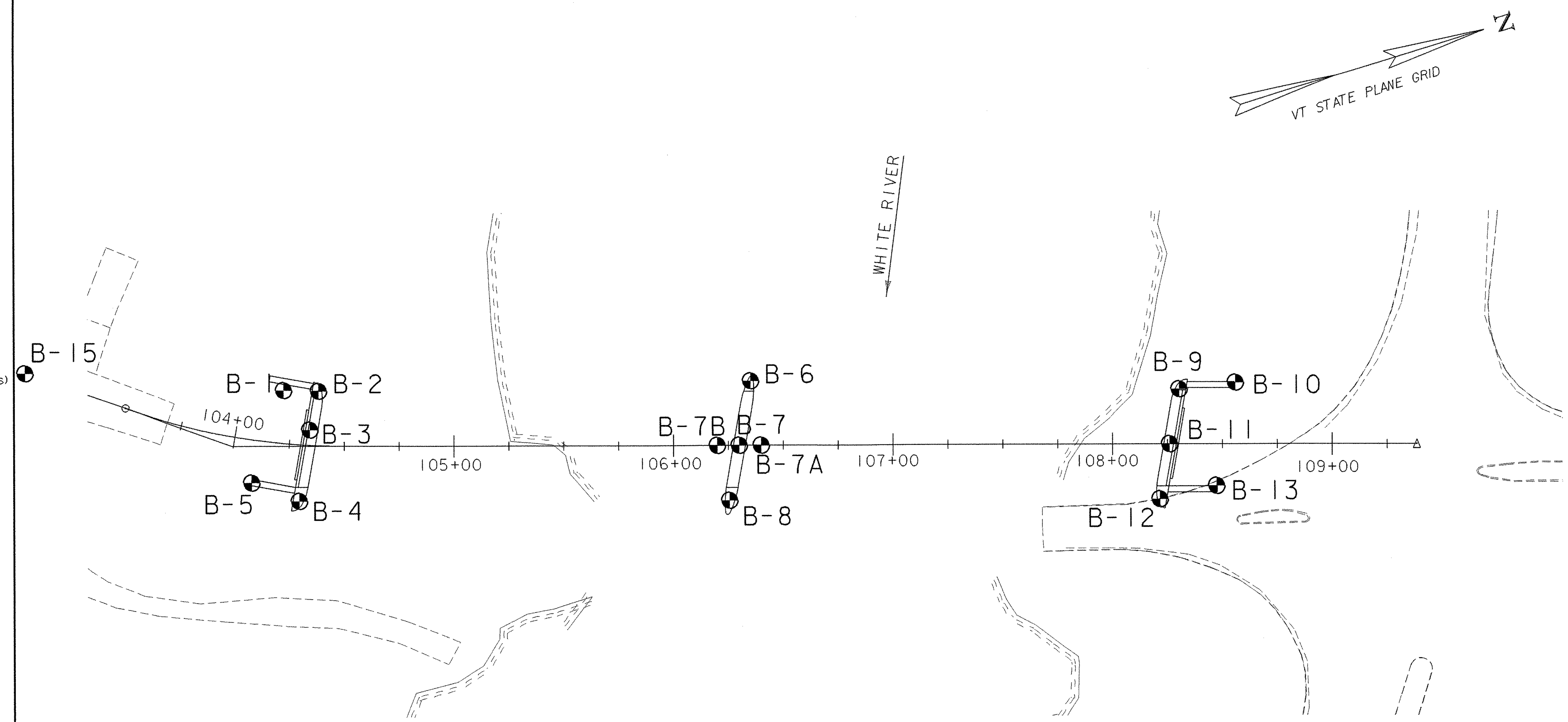
MUCK - Soft organic soil (containing > 10% organic material.

MOISTURE CONTENT - Weight of water divided by dry weight of soil.

FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.

STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.

DIP - Inclination of bed with a horizontal plane.



BORING	STA.	OFFSET	TLOB
B-1	104+20	24' LT	439.8
B-2	104+37	25' LT	443.6
B-3	104+34	7 ' LT	442.0
B-4	104+31	25' RT	430.2
B-5	104+10	20' RT	431.3
B-6	106+35	29' LT	434.6
B-7	106+30	0 '	438.9
B-7A	106+40	0 '	437.7
B-7B	106+20	0 '	440.0
B-8	106+26	25' RT	438.6

BORING	STA.	OFFSET	TLOB
B-9	108+30	25' LT	455.7
B-10	108+56	28' LT	458.8
B-11	108+26	0 '	456.1
B-12	108+22	25' RT	460.6
B-13	108+47	19' RT	461.5
B-14	102+25	0'	NLTD
B-15	103+00	0'	NLTD

BORING INFORMATION

SCALE 1" = 30'-0
30 0 30

GENERAL NOTES

1. The subsurface explorations shown herein were made between 02/28/96 and 08/26/96 by the Agency.
2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
3. Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
4. Engineering judgement was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgement by the Contractor.
5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ROYALTON	Bridge No. 3
Highway No. TH 1	Log Sta. / Surv. Sta.
TH 1 OVER THE WHITE RIVER	
BORING INFORMATION SHEET	
Designed By W. B. SYMONDS	Drawn By P. G. JARVIS
Checked By W. B. SYMONDS, Date 08/98	Bridge Design Supervisor C. P. WILLIAMS Date 08/98
PROJECT ROYALTON	PROJECT NO. BRZ 1444 (22)
I.G.C. Info. M:\89j099\Structures\sj099bor.dgn	sj099bor.i
Bridge Sheet No.	Sheet 17 of 118

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

HOLE NO.: B-1

SHEET 1 OF 1
DATE STARTED: 3/12/96
DATE COMPLETED: 3/13/96

PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444(22)
SITE NAME: TH 1
SITE NO.: BRIDGE 3
STATION: 104+20.00
OFFSET: -24.00
GROUND EL.: 464.77
G.W. DEPTH:

BORING CREW
CREW CHIEF: MCGLYNN
DRILLER: KELLEY .
LOGGER:
BORING RIG: TRUCK
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

Bot Abut. 1 Ftg = 456.00
Estimated Pile Tip Elevation

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5	A-4, SiSa, Moist, br, Rec. = 0.5'	18	32	2.2	57.5	40.3		
10	No recovery.	15						
15	A-1-b, SaGr, Moist, br, Rec. = 0.6'	67	15	54.6	32.6	12.8		
20	No recovery.	66						
		Top of bedrock @ 25.0'						
			DIP (d)	REC %	RQD %			
25	Run 1: BXMDC 25.0' - 30.0', Rec. = 4.4'		45	88	80			
30	Run 2: BXMDC 30.0' - 35.0', Rec. = 5.0'		40	100	100			
35	Geologist's Report	Hole stopped @ 35.0'						

Geologist's Report

Run #1: Gray recrystallized limestone with increasing biotite at bottom of run. Some quartz veins.

Unweathered - medium hard
Rock is competent

Run #2: Gray recrystallized limestone with biotite grading to phyllitic schist with porphyroblasts of garnet.

Unweathered - medium hard.
Rock is competent.

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

HOLE NO.: B-2

SHEET 1 OF 1
DATE STARTED: 3/13/96
DATE COMPLETED: 3/14/96

PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444(22)
SITE NAME: TH 1
SITE NO.: BRIDGE 3
STATION: 104+37.00
OFFSET: -25.00
GROUND EL.: 463.57
G.W. DEPTH:

BORING CREW
CREW CHIEF: MCGLYNN
DRILLER: KELLEY .
LOGGER:
BORING RIG: TRUCK
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

Bot Abut. 1 Ftg = 456.00
Estimated Pile Tip Elev.

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5	A-4, SiSa, Moist, br, Rec. = 0.4'	20	55.2	7.5	53.1	39.4		
10	A-1-b, SaGr, Moist, br, Rec. = 0.5'	59	11	55.1	33.4	11.5		
15	No recovery.	R						
		Top of bedrock @ 20.0'						
			DIP (d)	REC %	RQD %			
20	Run 1: BXMDC 20.0' - 25.0', Rec. = 4.4'		25	88	63			
25	Run 2: BXMDC 25.0' - 30.0', Rec. = 4.9'		25	98	78			
30	Geologist's Report		Hole stopped @ 30.0'					

Geologist's Report

Run #1: Gray recrystallized limestone. Unweathered - medium hard

Rock is competent

Run #2: Same as Run #1

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

HOLE NO.: B-3

SHEET 1 OF 1
DATE STARTED: 3/11/96
DATE COMPLETED: 3/12/96

PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444(22)
SITE NAME: TH 1
SITE NO.: BRIDGE 3
STATION: 104+34.00
OFFSET: -7.00
GROUND EL.: 463.95
G.W. DEPTH:

BORING CREW
CREW CHIEF: MCGLYNN
DRILLER: KELLEY .
LOGGER:
BORING RIG: TRUCK
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

Bot Abut. 1 Ftg = 456.00
Estimated Pile Tip Elevation

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5	A-2-4, SiSa, Moist, br, Rec. = 0.5'	8	25.8	10.2	69.7	20.1		
10	A-1-a, SaGr, Moist, br, Rec. = 0.8'	9	13.4	52	37.4	10.6		
15	A-1-b, GrSa, Moist, br, Rec. = 1.0'	35	11.8	42.5	44.6	12.9		
20	No recovery	61						
		Top of bedrock @ 22.0'						
		DIP (d)	REC %	RQD %				
	Run #1: BXMDC 22.0' - 27.0', Rec. = 4.6'	Massive	92	85				
	Run #2: BXMDC 27.0' - 32.0', Rec. = 4.6'	Massive	92	92				
	Geologist's Report	Hole stopped @ 32.0'						

Geologist's Report

Run #1: Gray recrystallized limestone. Unweathered - medium hard

Rock is competent

Run #2: Same as Run #1

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

HOLE NO.: B-4

SHEET 1 OF 1
DATE STARTED: 2/28/96
DATE COMPLETED: 3/1/96

PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444(22)
SITE NAME: TH 1
SITE NO.: BRIDGE 3
STATION: 104+31.00
OFFSET: 25.00
GROUND EL.: 463.74
G.W. DEPTH:

BORING CREW
CREW CHIEF: MCGLYNN
DRILLER: KELLEY .
LOGGER:
BORING RIG: TRUCK
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

Bot Abut. 1 Ftg = 456.00
Estimated Pile Tip Elevation

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
	A-2-4, SiSa, Moist, gy, Rec. = 1.5'	54	30.6	0.3	73.8	25.9		
	A-2-4, SiSa, Moist, gy, Rec. = 0.65'	7	34.2	0.4	77.3	22.3		
5	A-2-4, GrSa, Wet, gy, Rec. = 1.0'	20	16.7	25.3	55.7	19		
	A-1-a, SaGr, Wet, br, Rec. = 0.83'	49	10.4	71.7	22.2	6.1		
	A-1-a, SaGr, Wet, br, Rec. = 0.25'	42	12.6	50	43.4	6.6		
10	No sample, boulder.							
	No recovery.	28						
	A-1-b, SaGr, Wet, br, Rec. = 1.0'	26	16.3	47	43.1	9.9		
15	A-1-b, GrSa, Wet, br, Rec. = 0.83'	35	11.1	33.5	52.7	13.8		
	No recovery	50						
20	A-1-b, GrSa, Wet, br, Rec. = 0.5'	16	22.4	23.3	71.6	5.1		
	A-1-b, GrSa, Wet, br, Rec. = 1.0'	R	17.4	31	62.3	6.7		
	No sample, boulder							
25	BXMDC, Rec. = 1.5'. Boulder.							
30	A-1-b, GrSa, Wet, br, Rec. = 1.5'	63	12.3	29.6	61.1	9.3		
	A-1-b, GrSa, Wet, br, Rec. = 1.0'	R	17.1	41.4	50.4	8.2		
		Top of bedrock @ 33.5'						
			DIP (d)	REC %	RQD %			
35	Run #1: BXMDC 33.5' - 38.5', Rec. = 4.5'		40	90	65			
40	Run #2: BXMDC 38.5' - 43.5', Rec. = 4.4'		40	88	62			
	Geologist's Report		Hole stopped @ 43.5'					

Geologist's Report

Run #1: Gray phyllitic schist with porphyroblasts of garnet and biotite. Unweathered - medium hard
Rock is competent

Run #2: Same as Run #1

Note: all distances in feet.

SURVEYED BY R. GILMAN	DATE 09/91
DRAWN BY S. COENYE	DATE 09/96
SQUAD LEADER C.BENDA	
DESIGN FILE NO. /89j099/Structures/sj099bor.dgn	
IPARM FILE sj099bol.i	DATE PLOTTED 25-SEP-2000
PROJ. NAME ROYALTON	
PROJ. NO. BRZ 1444(22)	
BORING HOLE CHARTS 1 - 4	
SHEET 18 OF 118	

STATE OF VERMONT — AGENCY OF TRANSPORTATION — MATERIALS & RESEARCH DIVISION — SUBSURFACE INFORMATION

HOLE NO.: B-5

Bot Abut. 1 Ftg = 456.00
Estimated Pile Tip Elevation

HOLE NO.: B-5	SHEET 1 OF 1
DATE STARTED: 3/6/96	DATE COMPLETED: 3/7/96
PROJECT NAME: ROYALTON	PROJECT NUMBER: BRZ 1444(22)
SITE NAME: TH 1	SITE NO.: BRIDGE 3
STATION: 104+10.00	OFFSET: 20.00
GROUND EL.: 464.81	G.W. DEPTH:
BORING CREW CREW CHIEF: MCGLYNN	BORING RIG: TRUCK
DRILLER: KELLEY	BORING TYPE: WASH BORE
LOGGER:	SAMPLE TYPE: SPLIT BARREL

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5	A-2-4, GrSiSa, Moist, br, Rec. = 0.4'	R	33.3	21.2	52	26.8		
10	No recovery	23						
15	A-1-b, SaGr, Wet, br, Rec. = 1.0'	32	18.6	50.9	39.4	9.7		
20	No recovery	81						
25	No recovery	40						
30	BXDC 33.0' - 33.5', boulder, Rec. = 2.0'							
		Top of bedrock @ 33.5'						
			DIP (d)	REC %	ROD %			
35	Run #1: BXMDC 33.5' - 38.5', Rec. = 4.9'		40	98	72			
40	Run #2: BXMDC 38.5' - 43.5', Rec. = 5.0'		40	100	65			
		Hole stopped @ 43.5						

Geologist's Report

Run #1: Gray phyllitic schist with porphyroblasts of garnet and biotite. Some quartz veins. Unweathered - medium hard Rock is competent

Run #2: Same as Run #1

HOLE NO.: B-6

Bot Pier Ftg = 449.00
Estimated Drilled Shaft Tip Elevation

HOLE NO.: B-6	SHEET 1 OF 1
DATE STARTED: 7/30/96	DATE COMPLETED: 8/2/96
PROJECT NAME: ROYALTON	PROJECT NUMBER: BRZ 1444(22)
SITE NAME: TH 1	SITE NO.: BRIDGE 3
STATION: 106+35.00	OFFSET: -29.00
GROUND EL.: 454.44	G.W. DEPTH:
BORING CREW CREW CHIEF: McGLYNN	BORING RIG: TRUCK
DRILLER: WILLIS	BORING TYPE: WASH BORE
LOGGER: CHABOT	SAMPLE TYPE: SPLIT BARREL

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
	BXDC 1.5' - 3.0', boulders							
5	A-1-a, Gr, Sat., br, Rec. = 0.4'	19	6.7	84.3	15.7	0		
	BXDC 7.5' - 8.5', boulder							
10	A-1-b, GrSa, wet, dk br, Rec. = 1.1'	55	16.0	36.5	53.8	9.7		
15	A-1-a, SaGr, wet, dk br, Rec. = 0.6'	62	17.4	64.9	30.9	4.2		
			Top of bedrock @ 19.8'					
			DIP (d)	REC %	ROD %			
20	Run #1: BXDC 19.8' - 21.8', Rec. = 1.2'		35	24	0			
	Run #2: BXMDC 21.8' - 26.8', Rec. = 4.8'		30	96	0			
	Run #3: BXMDC 26.8' - 31.8', Rec. = 4.9'		30	98	90			
			Hole stopped @ 31.8'					

Geologist's Report:

Run #1: gray phyllitic schist with porphyroblasts of biotite and garnet. Some pyrite. Moderately soft. Unweathered.

Low ROD may be due to mechanical breakage.

Run #2: Same as Run #1 but also contains quartz veins.

Low ROD may be due to mechanical breakage.

Run #3: Same as Run #2. Rock is competent

HOLE NO.: B-7

Bot Pier Ftg = 449.00
Estimated Drilled Shaft Tip Elevation

HOLE NO.: B-7	SHEET 1 OF 1
DATE STARTED: 8/5/96	DATE COMPLETED: 8/6/96
PROJECT NAME: ROYALTON	PROJECT NUMBER: BRZ 1444(22)
SITE NAME: TH 1	SITE NO.: BRIDGE 3
STATION: 106+30.00	OFFSET: 0.00
GROUND EL.: 454.09	G.W. DEPTH:
BORING CREW CREW CHIEF: KELLEY	BORING RIG: TRUCK
DRILLER: CHABOT E J	BORING TYPE: WASH BORE
LOGGER: WILLIS	SAMPLE TYPE: SPLIT BARREL

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
	A-1-a, Gr, Sat., br, Rec. = 0.4'	19	16.8	84.2	13.9	1.9		
5	A-1-a, Gr, Sat., br, Rec. = 0.5'	14	12.4	78.1	18.8	3.1		
	A-1-a, Gr, Sat., br, Rec. = 0.2'. Stone in end of sampler.	19		88.1	11.8	0.1		
	BXDC 8.0' - 9.7', Boulders							
10	A-1-a, Gr, Sat., gr br, Rec. = 0.7'	50	7.4	78.2	17.6	4.2		
	A-1-b, GrSa, Wet, gr br, Rec. = 0.5'	33	14.6	37.4	54.1	8.5		
15	A-1-b, GrSa, Wet, gr br, Rec. = 0.7'	R	15.6	29.5	57.7	12.8		
			Top of bedrock @ 15.2'					
			DIP (d)	REC %	ROD %			
	Run #1: BXMDC 15.2' - 20.2', Rec. = 4.7'		30	94	47			
20	Run #2: BXMDC 20.2' - 25.2', Rec. = 4.8'		30	96	88			
25		Hole stopped @ 25.2'						

Geologist's Report:

Run #1: Light gray phyllite grading to gray phyllitic schist. Quartz veins. Phyllitic schist has porphyroblasts of biotite and garnet. Moderately soft. Unweathered. Competent.

Run #2: Gray phyllitic schist with quartz veins and porphyroblasts of biotite and garnet. Moderaltely soft. Unweathered. Competent.

HOLE NO.: B-7A

Bot Pier Ftg = 449.00
Estimated Drilled Shaft Tip Elevation

HOLE NO.: B-7A	SHEET 1 OF 1
DATE STARTED: 8/12/96	DATE COMPLETED: 8/13/96
PROJECT NAME: ROYALTON	PROJECT NUMBER: BRZ 1444(22)
SITE NAME: TH 1	SITE NO.: BRIDGE 3
STATION: 106+40.00	OFFSET: 0.00
GROUND EL.: 453.61	G.W. DEPTH:
BORING CREW CREW CHIEF: WILLIS	BORING RIG: TRUCK
DRILLER: KELLEY	BORING TYPE: WASH BORE
LOGGER: CHABOT	SAMPLE TYPE: SPLIT BARREL

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5	A-1-a, SaGr, Sat., br, Rec. = 0.8'	21	15.6	77	19.8	3.2		
10	A-1-a, Gr, Sat., gr, Rec. = 0.2'	R		91.3	7.8	0.9		
15	A-1-a, SaGr, Sat., br, Rec. = 0.2'	R		73.2	20.0	6.8		
		Top of bedrock @ 15.9'						
		DIP (d)	REC %	ROD %				
	Run #1: BXMDC 15.9' - 20.9', Rec. = 4.8'	25	96	60				
20	Run #2: BXMDC 20.9' - 25.9', Rec. = 4.7'	25-30	94	78				
25		Hole stopped @ 25.9'						

Geologist's Report:

Run #1: Light gray to gray phyllitic schist with quartz veins. Middle portion of core exhibits porphyroblasts of biotite and garnet. Moderately soft. Unweathered. Competent.

Run #2: Same as Run #1

Note: all distances in feet.

SURVEYED BY	R. GILMAN	DATE	09/91
DRAWN BY	S. COENYE	DATE	09/96
SQUAD LEADER	C.BENDA		
DESIGN FILE NO.	/89j099/Structures/sj099bor.dgn		
IPARM FILE	sj099bo2.i	DATE PLOTTED	25-SEP-2000
PROJ. NAME	ROYALTON		
PROJ. NO.	BRZ 1444(22)		
SHEET 19 OF 118	BORING HOLE CHARTS 5 - 7a		

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

HOLE NO.: B-7B
SHEET 1 OF 1
DATE STARTED: 8/14/96
DATE COMPLETED: 8/15/96

PROJECT NAME: ROYALTON
SITE NAME: TH 1
STATION: 106+20.00
GROUND EL.: 452.46
PROJECT NUMBER: BRZ 1444(22)
SITE NO.: BRIDGE 3
OFFSET: 0.00
G.W. DEPTH:

BORING CREW
CREW CHIEF:
DRILLER: KELLEY .
LOGGER: CHABOT .
BORING RIG: TRUCK
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

Bot Pier Ftg = 449.00

Estimated Drilled Shaft Tip Elevation

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5	A-1-a, SaGr, Sat., br, Rec. = 0.4'	10	18.5	50.1	44.4	5.5		
10	A-1-a, SaGr, Wet, gr, Rec. = 0.5'	17	14.6	61.0	32.5	6.5		
		Top of bedrock @ 12.5'						
			DIP (d)	REC %	ROD %			
	Run #1: BXMDC 12.5' - 17.5', Rec. = 4.6'		40	92	35			
	Run #1: BXMDC 17.5' - 21.5', Rec. = 4.0'		30-35	80	63			
			Hole stopped @ 21.5'					

Geologist's Report:

Run #1: Gray phyllitic schist with quartz veins and porphyroblasts of biotite and garnet. Moderately soft and unweathered. Competent.

Low RQD due to mechanical breakage.

Run #2: Same as Run #1 but with greater amounts of garnet porphyroblasts. Competent.

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

HOLE NO.: B-8
SHEET 1 OF 1
DATE STARTED: 8/7/96
DATE COMPLETED: 8/8/96

PROJECT NAME: ROYALTON
SITE NAME: TH 1
STATION: 106+26.00
GROUND EL.: 452.12
PROJECT NUMBER: BRZ 1444(22)
SITE NO.: BRIDGE 3
OFFSET: 25.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: WILLIS
DRILLER: CHABOT E J
LOGGER: TALLMAN .
BORING RIG: TRUCK
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

Bot Pier Ftg = 449.00

Estimated Drilled Shaft Tip Elevation

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5	A-1-a, SaGr, Sat., br, Rec. = 0.6'	13	6.8	71.7	24.8	3.5		
10	A-1-a, SaGr, Sat., br, Rec. = 0.6'	60	9.6	75	21.5	3.5		
	BXDC 12.0' - 13.0', boulders							
			Top of bedrock @ 13.5'					
			DIP (d)	REC %	ROD %			
	Run #1: BXMDC 13.5' - 18.5', Rec. = 4.1'		30	82	7			
	Run #2: BXMDC 18.5' - 23.5', Rec. = 4.8'		30	96	55			
			Hole stopped @ 23.5'					

Geologist's Report:

Run #1: Light gray phyllite grading to gray phyllitic schist with quartz veins and porphyroblasts of biotite and garnet. Moderately soft. Unweathered.

Low RQD may be due to mechanical breakage

Run #2: gray phyllitic schist with quartz veins and porphyroblasts of biotite and garnet. Moderaltely soft. Unweathered. Competent.

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

HOLE NO.: B-9
SHEET 1 OF 1
DATE STARTED: 4/24/96
DATE COMPLETED: 4/25/96

PROJECT NAME: ROYALTON
SITE NAME: TH 1
STATION: 108+30.00
GROUND EL.: 466.70
PROJECT NUMBER: BRZ 1444(22)
SITE NO.: BRIDGE 3
OFFSET: -25.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: MCGLYNN
DRILLER: KELLEY .
LOGGER: CHABOT .
BORING RIG: TRUCK
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

Top Abut. 2 Ftg = 459.00

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
	No sample, boulders.							
			Top of bedrock @ 11.0'					
			DIP (d)	REC %	ROD %			
	Run #1: BXMDC 11.0' - 13.0', Rec. = 1.5'		0	30	0			
	Run #2: BXMDC 13.0' - 18.0', Rec. = 5.0'		40	100	92			
			55	60	60			
	Run #3: BXMDC 18.0' - 21.0', Rec. = 2.9'							
			Hole stopped @ 21.0'					

Geologist's Report:

Run #1: Gray recrystallized limestone. Unweathered - medium hard. May be boulder.

Low RQD may be due to mechanical breakage.

Rock is competent

Run #2: Gray to dark gray quartz biotite schist. Unweathered - medium hard Some quartz veins. Grades to gray recrystallized limestone at 16.5 feet.

Rock is competent.

Run #3: Gray recrystallized limestone with biotite schist and quartzite folded strata.

Rock is competent.

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

HOLE NO.: B-10
SHEET 1 OF 1
DATE STARTED: 4/26/96
DATE COMPLETED: 4/26/96

PROJECT NAME: ROYALTON
SITE NAME: TH 1
STATION: 108+56.00
GROUND EL.: 469.25
PROJECT NUMBER: BRZ 1444(22)
SITE NO.: BRIDGE 3
OFFSET: -28.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: MCGLYNN
DRILLER: KELLEY .
LOGGER:
BORING RIG: TRUCK
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

Top Abut. 2 Ftg = 459.00

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
	Rock fill							
			Top of bedrock @ 10.5'					
			DIP (d)	REC %	ROD %			
	Run #1: 10.5' - 15.5', Rec. = 5.0'		40	94	88			
	Run #2: 15.5' - 20.5', Rec. = 4.8'		25	96	85			
			Hole stopped @ 20.5					

Geologist's Report:

Run #1: Gray phyllite and phyllitic schist grading to recrystallized limestone. Unweathered - moderately hard.

Rock is competent

Run #2: Gray phyllitic schist and recrystallized limestone. Unweathered - moderately hard.

Rock is competent.

Note: all distances in feet.

SURVEYED BY	R. GILMAN	DATE	09/91
DRAWN BY	S. COENYE	DATE	09/96
SQUAD LEADER	C.BENDA		

DESIGN FILE NO. /89j099/Structures/sj099bor.dgn

IPARM FILE sj099bo3.i DATE PLOTTED 25-SEP-2000

PROJ. NAME ROYALTON

PROJ. NO. BRZ 1444(22)

BORING HOLE CHARTS 7b - 10

SHEET 20 OF 118

Top Abut. 2 Ftg = 461.00

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

HOLE NO.: B-11
SHEET 1 OF 1
DATE STARTED: 4/22/96
DATE COMPLETED: 4/23/96

PROJECT NAME: ROYALTON
SITE NAME: TH 1
STATION: 108+26.00
GROUND EL.: 470.07
PROJECT NUMBER: BRZ 1444(22)
SITE NO.: BRIDGE 3
OFFSET: 0.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: MCGLYNN
DRILLER: KELLEY .
LOGGER: WILLIS
BORING RIG: TRUCK
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5		No sample, boulders							
10		A-4, SaSi, Moist, br, Rec. = 1.4'	8	37.5	5.2	29.7	65.1		
				Top of bedrock @ 14.0'					
				DIP (d)	REC %	RQD %			
15		Run #1: BXMDC 14.0' - 19.0', Rec. = 4.6'		25	100	98			
20		Run #2: BXMDC 19.0' - 24.0', Rec. = 5.0'		30	96	96			
25		Geologist's Report:		Hole stopped @ 24.0'					

Geologist's Report:

Run #1: 14.0' - 14.7':
Gray biotite rich phyllite and white quartzite.
Unweathered - moderately hard.

Run #1: 14.7' - 19.0':
Gray recrystallized limestone.
Unweathered - moderately hard.

Rock is competent

Run #2: Same as Run 1:
14.7' - 19.0'

Rock is competent

Top Abut. 2 Ftg = 461.00

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

HOLE NO.: B-12
SHEET 1 OF 1
DATE STARTED: 8/20/96
DATE COMPLETED: 8/21/96

PROJECT NAME: ROYALTON
SITE NAME: TH 1
STATION: 108+22.00
GROUND EL.: 482.20
PROJECT NUMBER: BRZ 1444(22)
SITE NO.: BRIDGE 3
OFFSET: 25.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: McGLYNN
DRILLER: WILLIS
LOGGER: TALLMAN .
BORING RIG: TRUCK
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5		A-1-b, SaGr, Moist, br, Rec. = 0.2'	4	14.5	53.8	33.6	12.6		
10		A-1-b, GrSa, Moist, br, Rec. = 0.8'	14	12.2	32.8	52.4	14.8		
15		A-2-4, GrSa, Moist, br, Rec. = 0.7'	15	19.7	23.2	57.6	19.2		
20		A-1-b, GrSa, Moist, br, Rec. = 0.4'	37	16.6	32.2	54.6	13.2		
				Top of bedrock @ 21.6'					
				DIP (d)	REC %	RQD %			
		Run #1: BXMDC 21.6' - 26.6', Rec. = 4.7'		25	94	32			
25		Run #2: BXMDC 26.6' - 30.6', Rec. = 3.7'		30	80	50			
30		Geologist's Report:		Hole stopped 30.6'					

Geologist's Report:

Run #1: 21.6' - 24.4':
Gray recrystallized limestone. Unweathered - medium hard.

Run #1: 24.4' - 26.6':
Gray phyllitic schist.
Unweathered - medium hard.

Rock is competent

Run #2: Gray phyllitic schist.
Unweathered - medium hard.

Rock is competent

Top Abut. 2 Ftg = 461.00

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

HOLE NO.: B-13
SHEET 1 OF 1
DATE STARTED: 8/19/96
DATE COMPLETED: 8/20/96

PROJECT NAME: ROYALTON
SITE NAME: TH 1
STATION: 108+47.00
GROUND EL.: 482.39
PROJECT NUMBER: BRZ 1444(22)
SITE NO.: BRIDGE 3
OFFSET: 19.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: McGLYNN
DRILLER: WILLIS
LOGGER: CHABOT .
BORING RIG: TRUCK
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5		No recovery	13						
10		A-2-4, GrSa, Moist, br, Rec. = 0.6'	7	20.5	30.2	50.2	19.6		
15		A-4, SaSi, MTW, br, Rec. = 1.2'	9	27.6	0	46.2	53.8		
20		A-2-4, SiSa, Moist, br, Rec. = 0.2'	R	17.2	19.0	61	20		
				Top of bedrock @ 20.9'					
				DIP (d)	REC %	RQD %			
		Run #1: BXMDC 20.9' - 25.9', Rec. = 5.0'		50	100	62			
25		Run #2: BXMDC 25.9' - 30.9', Rec. = 5.0'		40	100	90			
30		Geologist's Report:	Hole stopped @ 30.9'						

Geologist's Report:

Run #1: 20.9' - 22.3':
Gray biotite rich phyllite and white quartzite.
Unweathered - hard to moderately hard.

Run #1: 22.3' - 25.9':
Gray recrystallized limestone. Unweathered - moderately hard.

Rock is competent

Run #2: Gray recrystallized limestone. Unweathered - moderately hard.

Rock is competent

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

HOLE NO.: B-14
SHEET 1 OF 1
DATE STARTED: 8/26/96
DATE COMPLETED: 8/26/96

PROJECT NAME: ROYALTON
SITE NAME: TH 1
STATION: 102+25.00
GROUND EL.: 482.87
PROJECT NUMBER: BRZ 1444(22)
SITE NO.: BRIDGE 3
OFFSET: 0.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: WILLIS
DRILLER: MCGLYNN
LOGGER: TALLMAN .
BORING RIG: TRUCK
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		Pavement							
		A-1-b, SaGr, Moist, br, Rec. = 1.1'	67	5.2	45.6	44	10.4		
		A-2-4, GrSa, Moist, br, Rec. = 1.0'	70	8.0	25	56.9	18.1		
5		A-1-b, SaGr, Moist, br, Rec. = 0.5'	23	12.5	46.5	41.5	12.0		
		A-1-b, SaGr, Moist, br, Rec. = 0.5'	14	11.7	45.9	42.5	11.6		
		A-1-b, SaGr, Moist, br, Rec. = 0.6'	11	17.8	43.8	40	16.2		
10		A-4, SaSi, Moist, br, Rec. = 0.7'	15	25.8	4.8	45.1	50.1		
		A-4, SaSi, Moist, br, Rec. = 1.4'	13	48.6	0.6	22	77.4		
15		A-4, SaSi, Moist, br, Rec. = 0.4'	7	36.4	0	34.1	65.9		
		A-4, SaSi, Moist, br, Rec. = 1.3'	18	29.5	0	40.8	59.2		
		A-2-4, SiSa, Moist, br, Rec. = 1.0'	20	19.3	5.5	64.5	30.0		
20				Hole stopped @ 20.0'					

Note: all distances in feet.

SURVEYED BY R. GILMAN	DATE 09/91
DRAWN BY S. COENYE	DATE 09/96
SQUAD LEADER C.BENDA	
DESIGN FILE NO. /89j099/Structures/sj099bor.dgn	
IPARM FILE sj099bo4.i	DATE PLOTTED 25-SEP-2000
PROJ. NAME ROYALTON	
PROJ. NO. BRZ 1444(22)	
SHEET 21 OF 118	BORING HOLE CHARTS 11 - 14

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH DIVISION SUBSURFACE INFORMATION	HOLE NO.: B-15 SHEET 1 OF 1 DATE STARTED: 8/23/96 DATE COMPLETED: 8/23/96
PROJECT NAME: ROYALTON SITE NAME: TH 1 STATION: 103+00.00 GROUND EL.: 479.95	PROJECT NUMBER: BRZ 1444(22) SITE NO.: BRIDGE 3 OFFSET: 0.00 G.W. DEPTH:
BORING CREW CREW CHIEF: WILLIS DRILLER: MCGLYNN LOGGER: CHABOT .	 BORING RIG: TRUCK BORING TYPE: WASH BORE SAMPLE TYPE: SPLIT BARREL

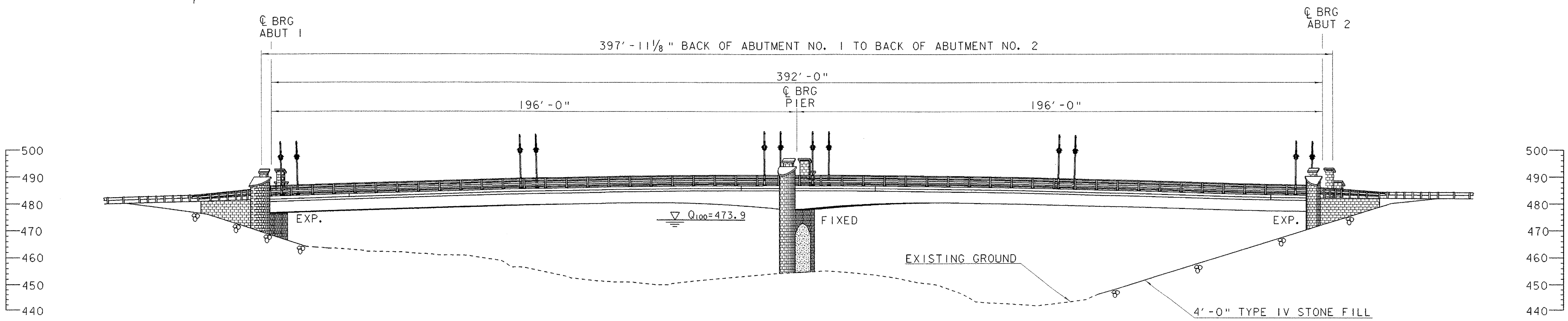
DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		Pavement A-1-b, GrSa, Moist, br, Rec. = 0.6'	48	9.5	36.4	51	12.6		
		No recovery	12						
5		A-1-b, SaGr, Moist, br, Rec. = 0.2'	21	16.1	57.6	29	13.4		
		No recovery	8						
		A-4, SaSi, Moist, br, Rec. = 0.9'	15	29.9	5.3	33.3	61.4		
10		A-2-4, SiSa, Moist, br, Rec. = 0.6'	15	20.8	10.2	58.9	30.9		
		A-2-4, SiSa, Moist, br, Rec. = 1.0'	15	18.3	3.5	62.8	33.7		
15		A-1-a, SaGr, Moist, br, Rec. = 0.7'	60	8.6	58.5	32.2	9.3		
		A-1-a, SaGr, Moist, gr, Rec. = 0.5'	35	12.7	58.5	32.3	9.2		
		A-1-a, SaGr, Moist, gr, Rec. = 0.6'	R	8.1	53.5	35.6	10.9		
20		A-1-a, SaGr, MTW, gr, Rec. = 0.5'	27	10.4	59.3	33.8	6.9		
25									
30									
35									
40									
45									

Note: all distances in feet.

SURVEYED BY	R. GILMAN	DATE	09/91
DRAWN BY	S. COENYE	DATE	09/96
SQUAD LEADER	C.BENDA		
DESIGN FILE NO.	/89j099/Structures/sj099bor.dgn		
IPARM FILE	sj099bo5. i	DATE PLOTTED	25-SEP-2000
PROJ. NAME	ROYALTON		
PROJ. NO.	BRZ 1444(22)		
	BORING HOLE CHART 15		
SHEET	22 OF 118		

PLAN

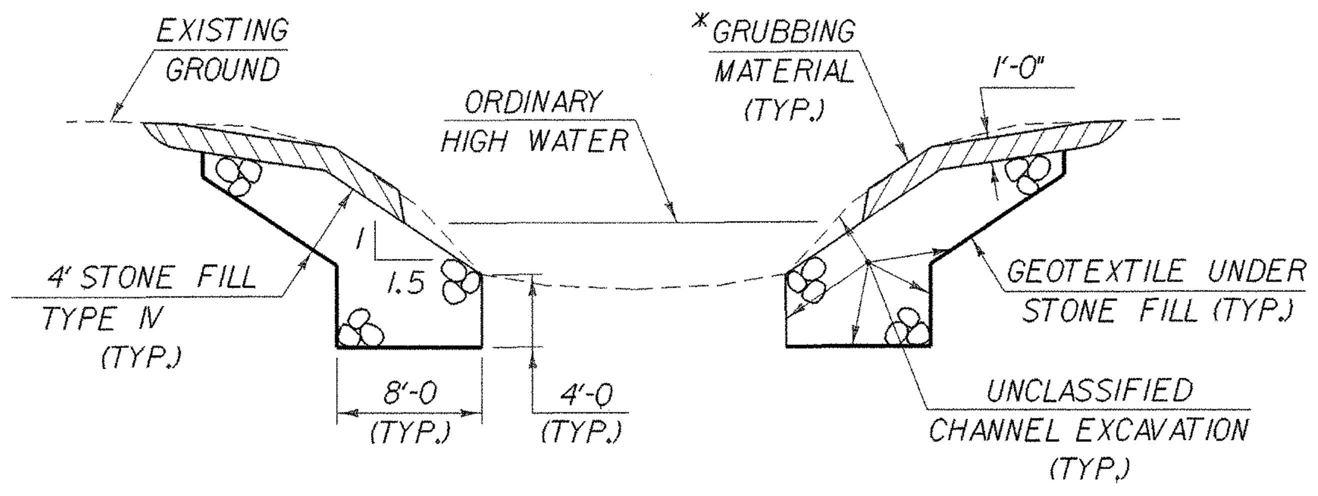
SCALE 1" = 20'-0



ELEVATION @ DOWNSTREAM FASCIA

SCALE 1" = 20'-0

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099pe.dgn	
IPARM FILE NAME: sj099pe.i	PLOT DATE: 25-SEP-2000
TH 1 OVER THE WHITE RIVER	
PLAN AND ELEVATION	SHEET: 23 OF 118

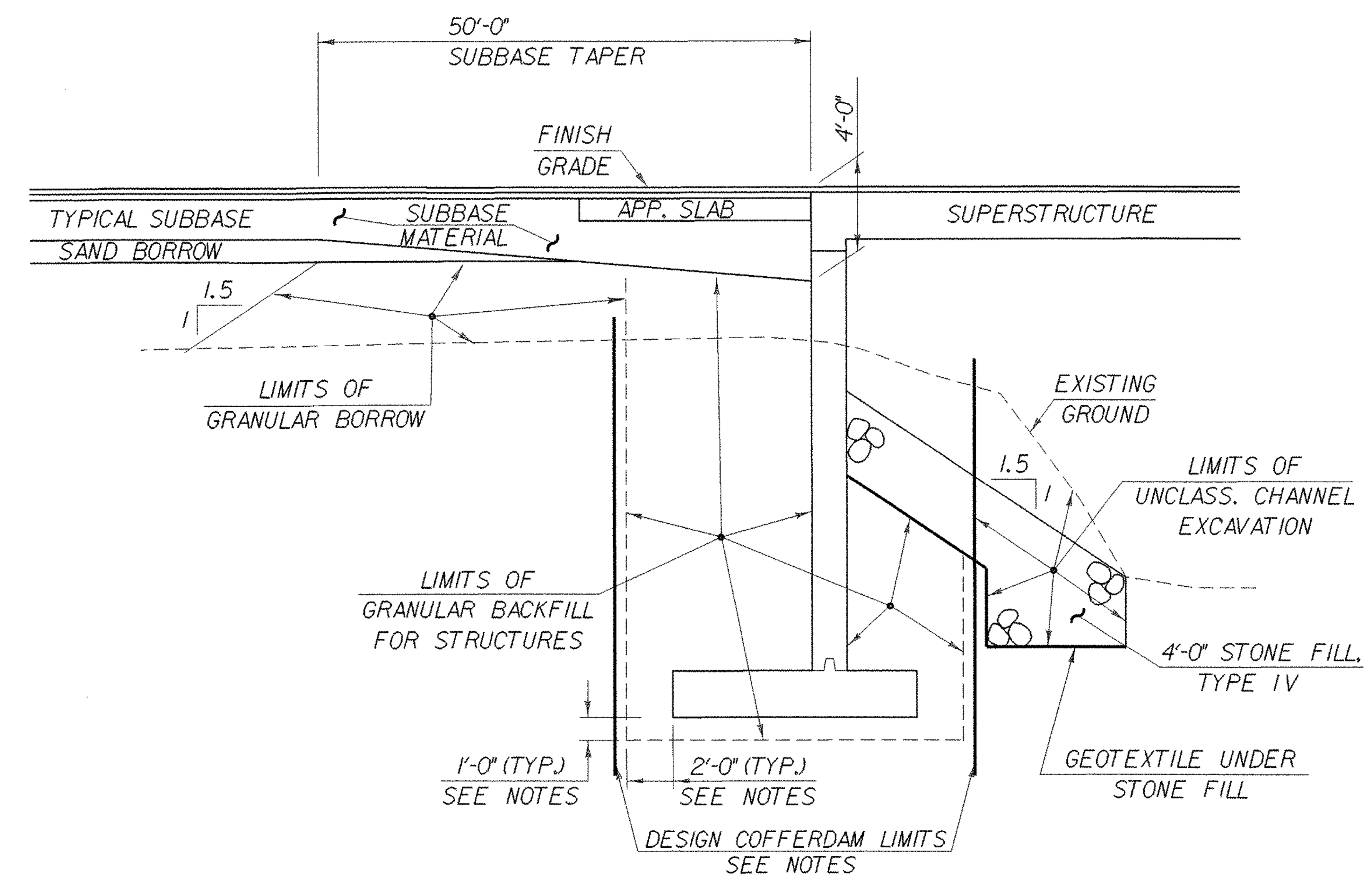


*GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE.

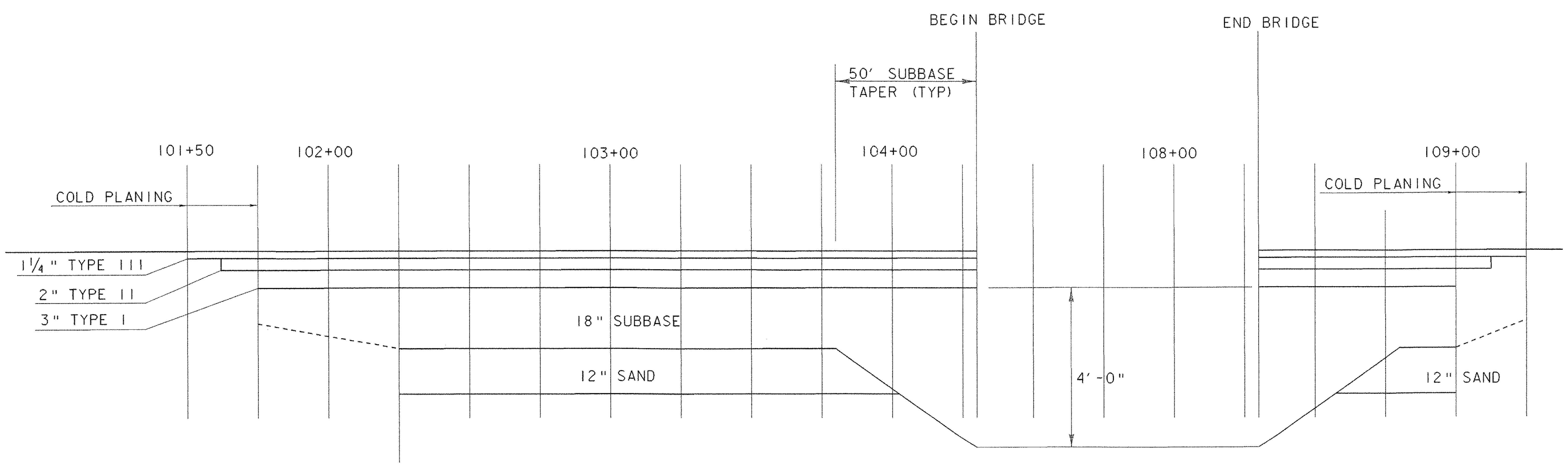
TYPICAL CHANNEL SECTION
(NOT TO SCALE)

NOTES

1. ACTUAL COFFERDAM LIMITS TO BE DETERMINED BY THE CONTRACTOR.
2. THE DESIGN LIMITS OF COFFERDAM SHALL BE 2'-0" OUTSIDE THE PERIMETER OF SUBSTRUCTURE FOOTING. THE QUANTITY TO BE MEASURED FOR PAYMENT FOR EXCAVATION INSIDE THE COFFERDAM WILL BE MEASURED FROM THE DESIGN LIMITS OF COFFERDAM AS SHOWN IN THE CONTRACT PLANS.
3. ONE FOOT UNDERCUT AS DETERMINED NECESSARY BY THE RESIDENT ENGINEER.
4. IF A COFFERDAM IS CONSTRUCTED WHICH IS LARGER THAN THE DESIGN LIMITS OF COFFERDAM, PAYMENT FOR ALL UNCLASSIFIED CHANNEL EXCAVATION INCLUDING THAT PORTION WHICH IS INSIDE THE COFFERDAM BUT OUTSIDE THE DESIGN COFFERDAM LIMITS SHOWN WILL BE MADE AT THE CONTRACT UNIT PRICE FOR UNCLASSIFIED CHANNEL EXCAVATION.



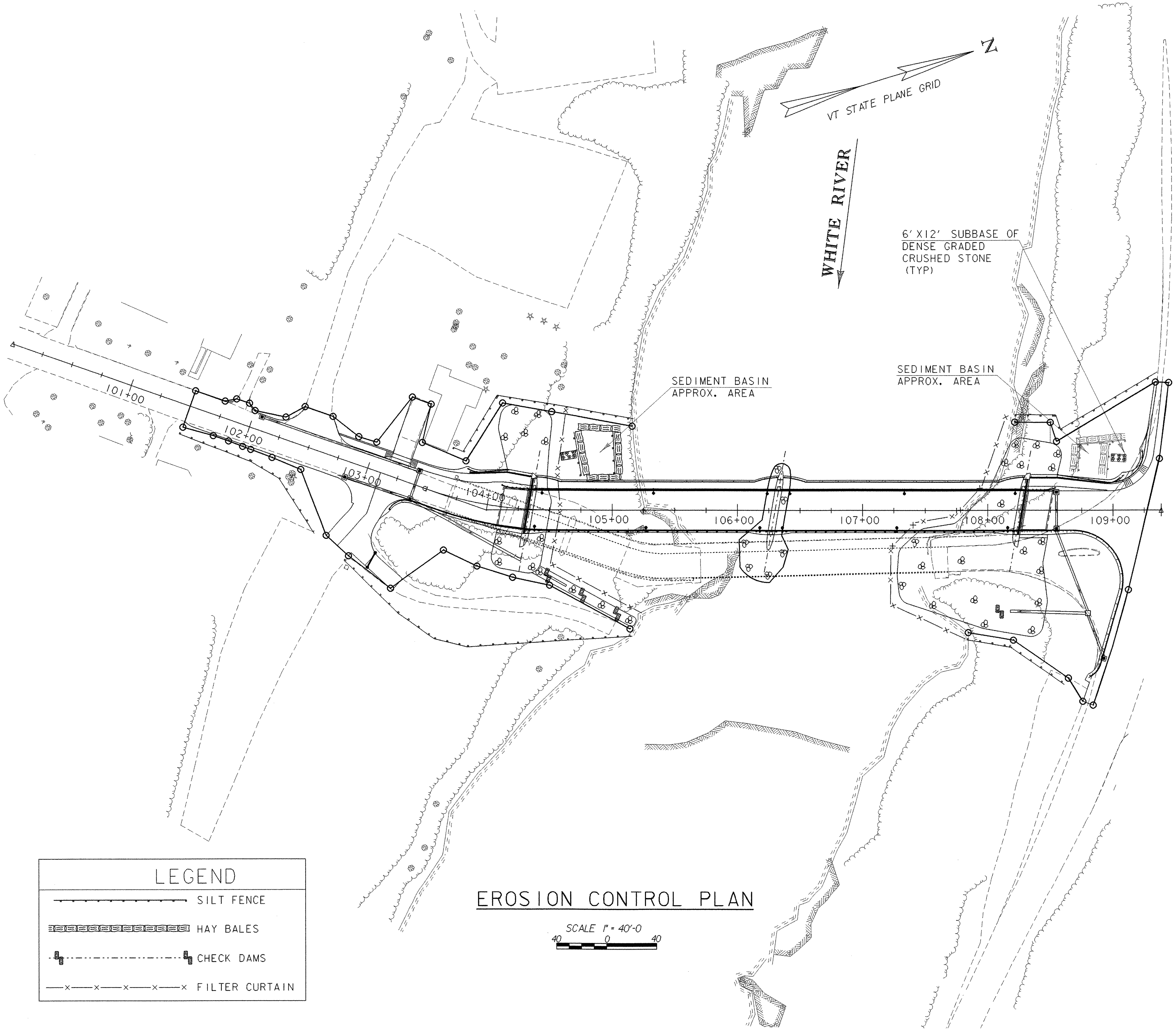
ABUTMENT EARTHWORK SECTION (PIER SIMILAR)
(NOT TO SCALE)



MATERIAL TRANSITION
(NOT TO SCALE)

STATE OF VERMONT AGENCY OF TRANSPORTATION			
Town Of	ROYALTON	Bridge No.	3
		Log Sta.	
Highway No.	TH 1	Surv. Sta.	
TH 1 OVER THE WHITE RIVER			
MISCELLANEOUS DETAILS			
Designed By W.B. SYMONDS		Drawn By W.B. SYMONDS	
Checked By C.WILLIAMS	Date 11/96	Bridge Design Supervisor C.P.WILLIAMS	Date 8/00
PROJECT	ROYALTON	PROJECT NO.	BRZ 1444(22)
I.G.C. Info.	M:89J099\Structures\sJ099pl		sJ099misJ
Bridge Sheet No.		Sheet 24 of 118	

PLOTTED 25-SEP-2000



EROSION CONTROL PLAN

SCALE 1" = 40'-0

40 0 40

LEGEND

silt fence line	SILT FENCE
hay bales line	HAY BALES
check dams line	CHECK DAMS
—x—x—x—x	FILTER CURTAIN

SEEDING FORMULA
URBAN AREAS

% WT.	LBS./A.	NAME	PUR %	GERM %
42.5	34.0	CREEPING RED FESCUE	98	85
10.0	8.0	PERENNIAL RYE GRASS	95	90
42.5	34.0	KENTUCKY BLUE GRASS	85	85
5.0	4.0	ANNUAL RYE GRASS	95	85
100.00	80.0			

GENERAL NOTES

SEED MIXTURE: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.

SEED: TO BE APPLIED PER SEEDING FORMULAS OR AS DIRECTED BY THE ENGINEER.

FERTILIZER: FORMULA 10-20-10, TO BE USED WITH SEED, APPLIED AT THE RATE OF 500 LBS./ACRE. (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).

AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

SLOPE ROUNDING: ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDARD SHEET B-5.

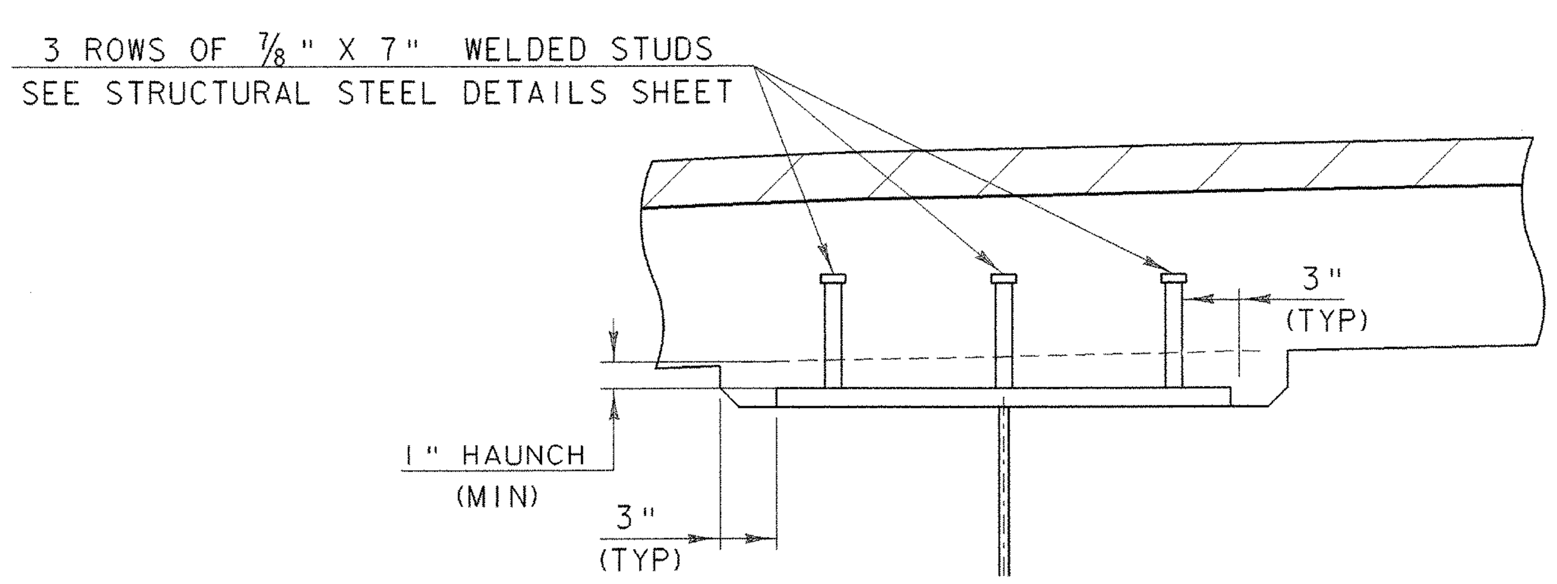
NOTES

1. AN ALTERNATE TEMPORARY EROSION CONTROL PLAN MAY BE SUBMITTED BY THE CONTRACTOR FOR APPROVAL BY THE RESIDENT ENGINEER.
2. SPECIAL CONSIDERATION MUST BE GIVEN TO THE FIRST PUMP-DOWN OF THE COFFERDAMS. THIS WILL CONTAIN THE GREATEST VOLUME OF WATER WITH A HIGH SEDIMENT LOAD. THE CONTRACTOR MAY BE REQUIRED TO PROVIDE ADDITIONAL SEDIMENT TRAPS WITHIN THE RIGHT OF WAY IF REQUIRED OR CONTROL THE RATE OF DRAW-DOWN. ADDITIONAL SEDIMENT TRAPS MUST BE APPROVED BY THE RESIDENT ENGINEER.
3. AFTER COMPLETION OF THE SUBSTRUCTURES, THE SEDIMENT IN THE TRAPS SHALL BE REMOVED AND THE GROUND RESTORED TO ITS ORIGINAL SLOPES OR GRADED AS SHOWN ON THE CONSTRUCTION DRAWINGS.
4. THE CONTRACTOR WILL USE OTHER TEMPORARY OR PERMANENT EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION AND AS DIRECTED BY THE RESIDENT ENGINEER. SEE SECTION 105.23 OF THE VERMONT AOT STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 1990.

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099ero.dgn	
IPARM FILE NAME: sj099ero.1	PLOT DATE: 25-SEP-2000
EROSION CONTROL SHEET	
	SHEET: 25 OF 118

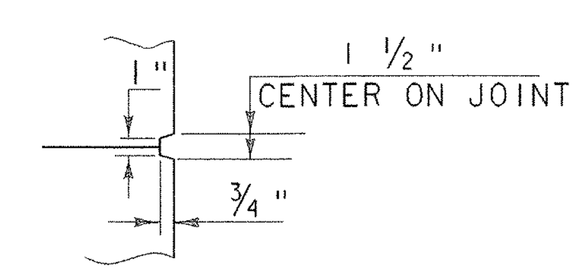
TYPICAL BRIDGE SECTION

SCALE ¾" = 1'-0



GIRDER HAUNCH & SHEAR CONNECTOR DETAILS

SCALE 1 ½" = 1'-0

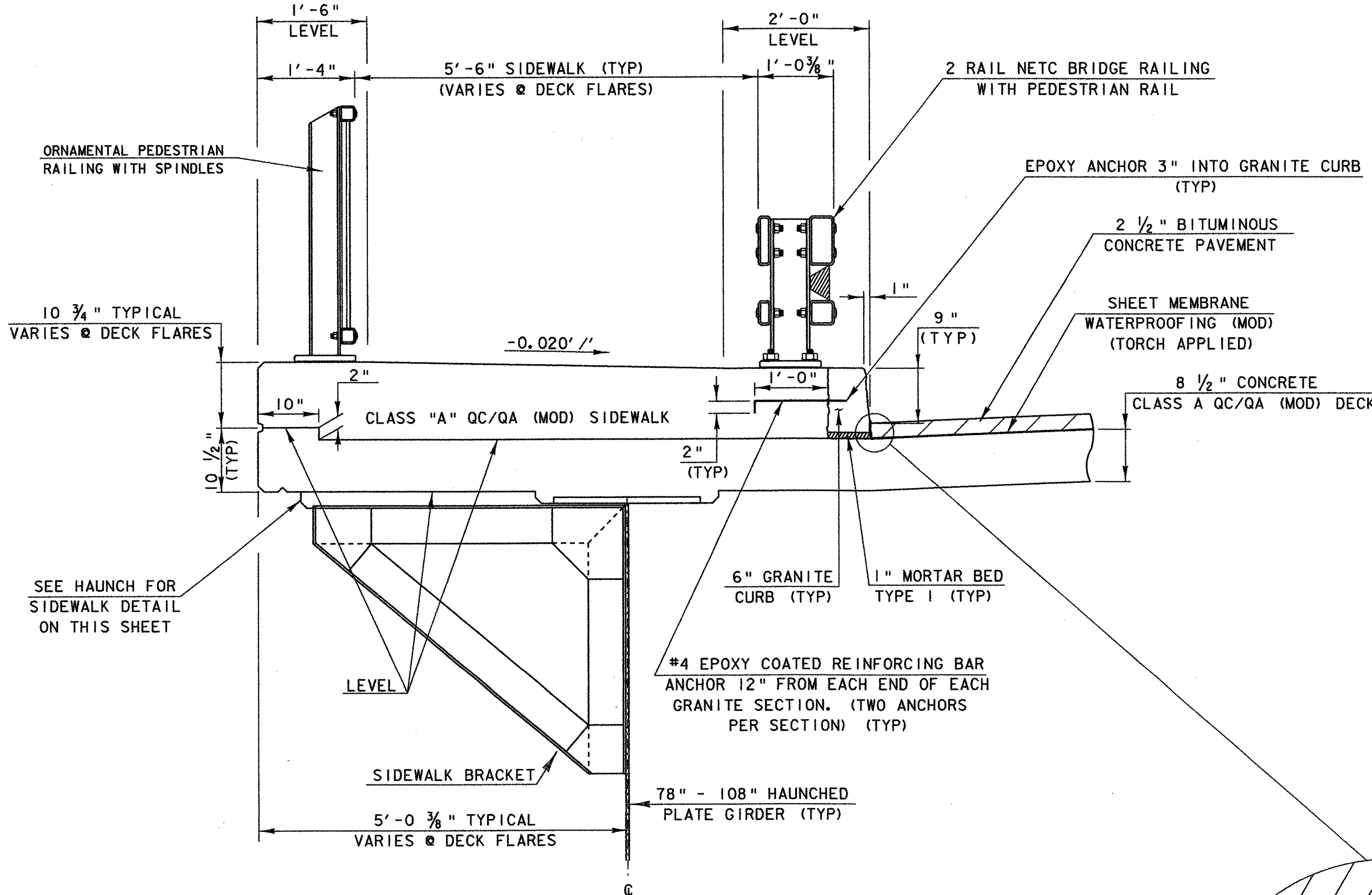


SCORE MARK DETAIL

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444 (22)

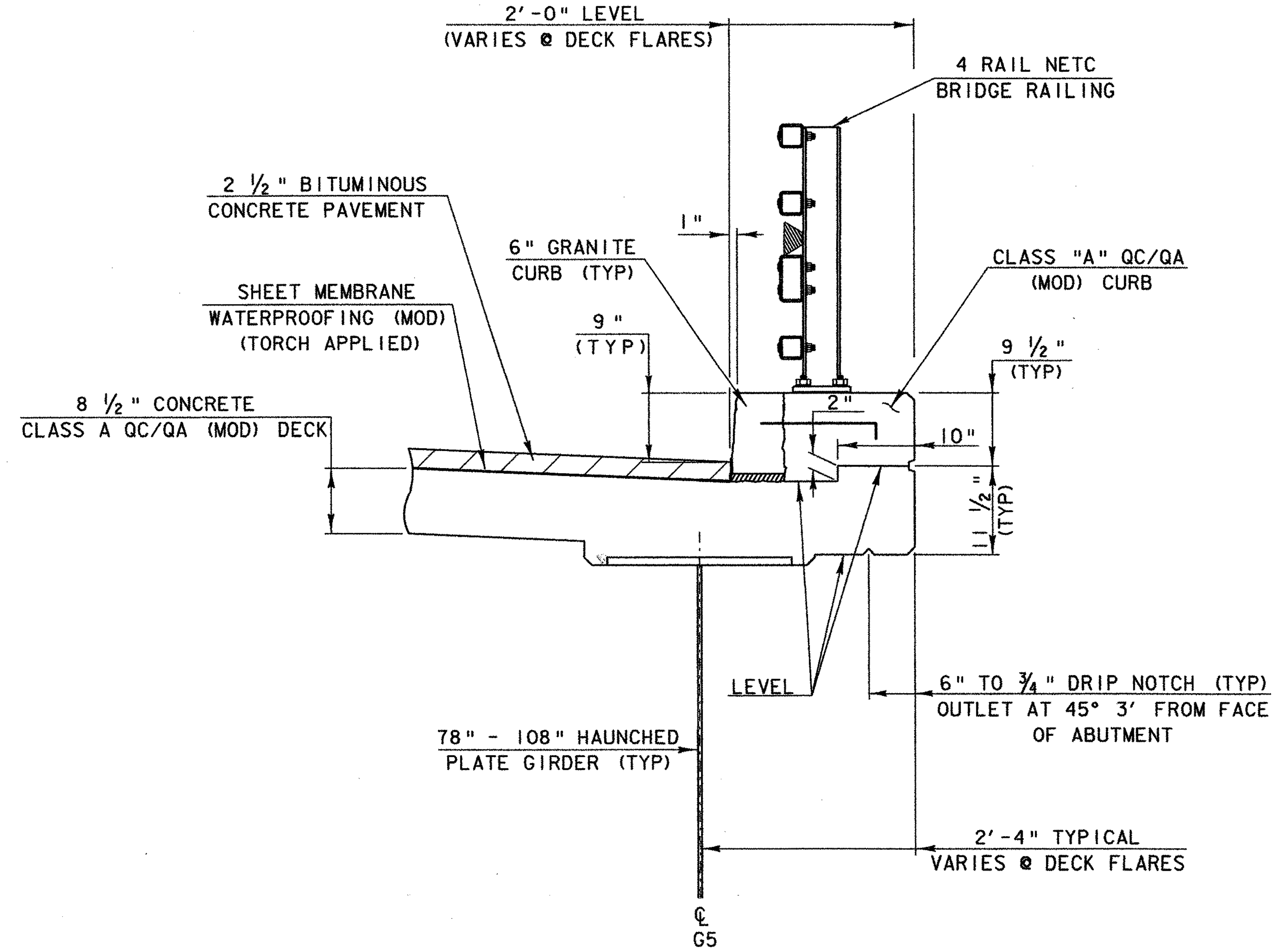
FILE NAME: 89j099/structures/sj099sup2.dgn
IPARM NAME: sj099typbrisec.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
TYPICAL BRIDGE SECTION

PLOT DATE: 25-SEP-2000
DRAWN BY: K. M. HIGGINS
CHECKED BY: W.B. SYMONDS
SHEET 26 OF 118



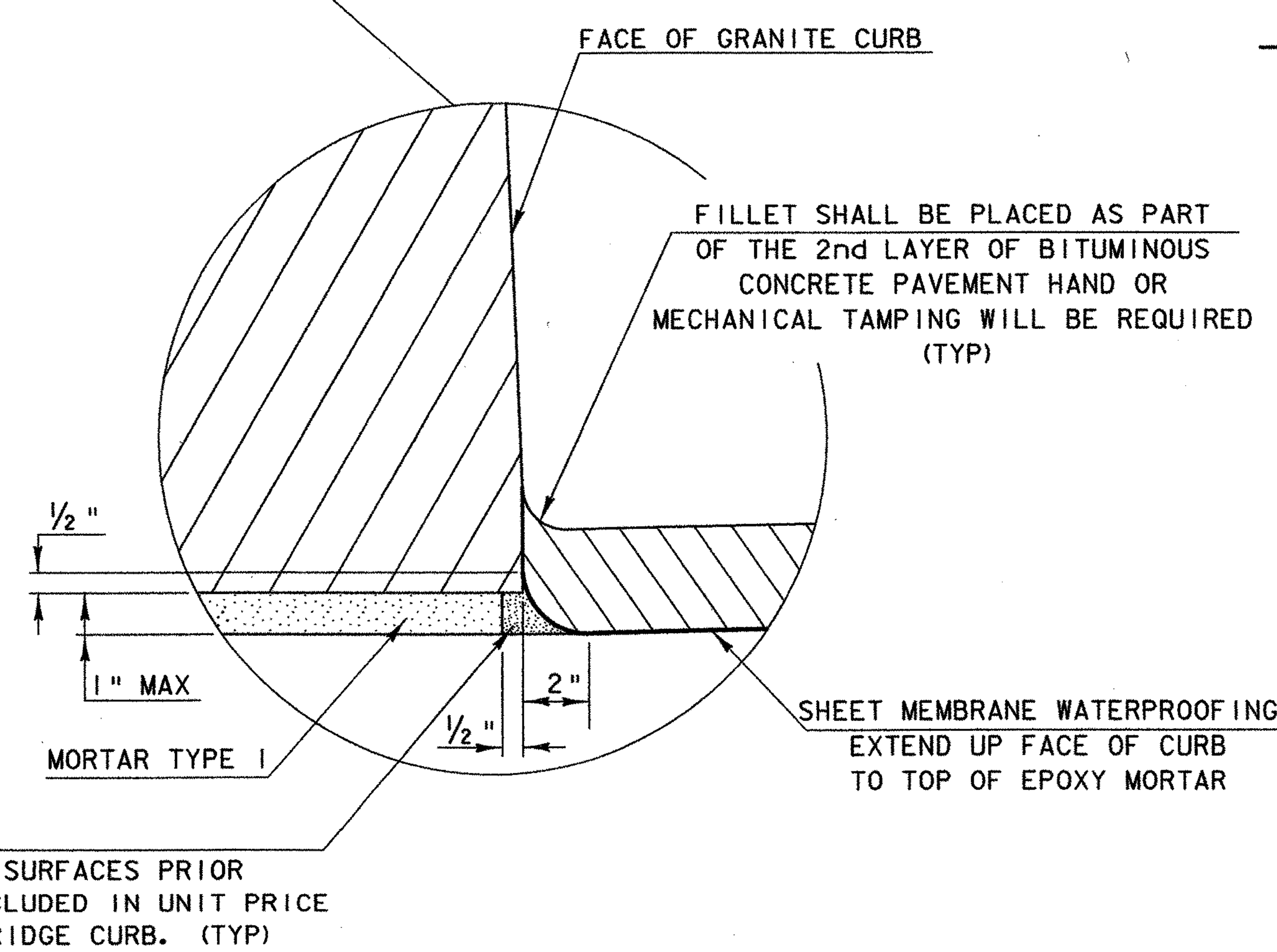
TYPICAL SIDEWALK SECTION

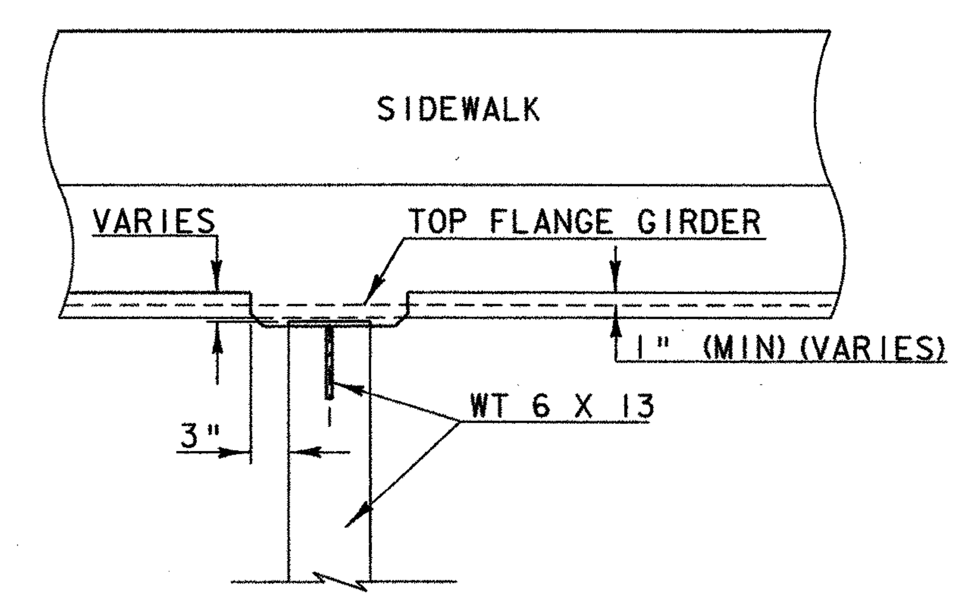
SCALE 1" = 1'-0



TYPICAL CURB SECTION

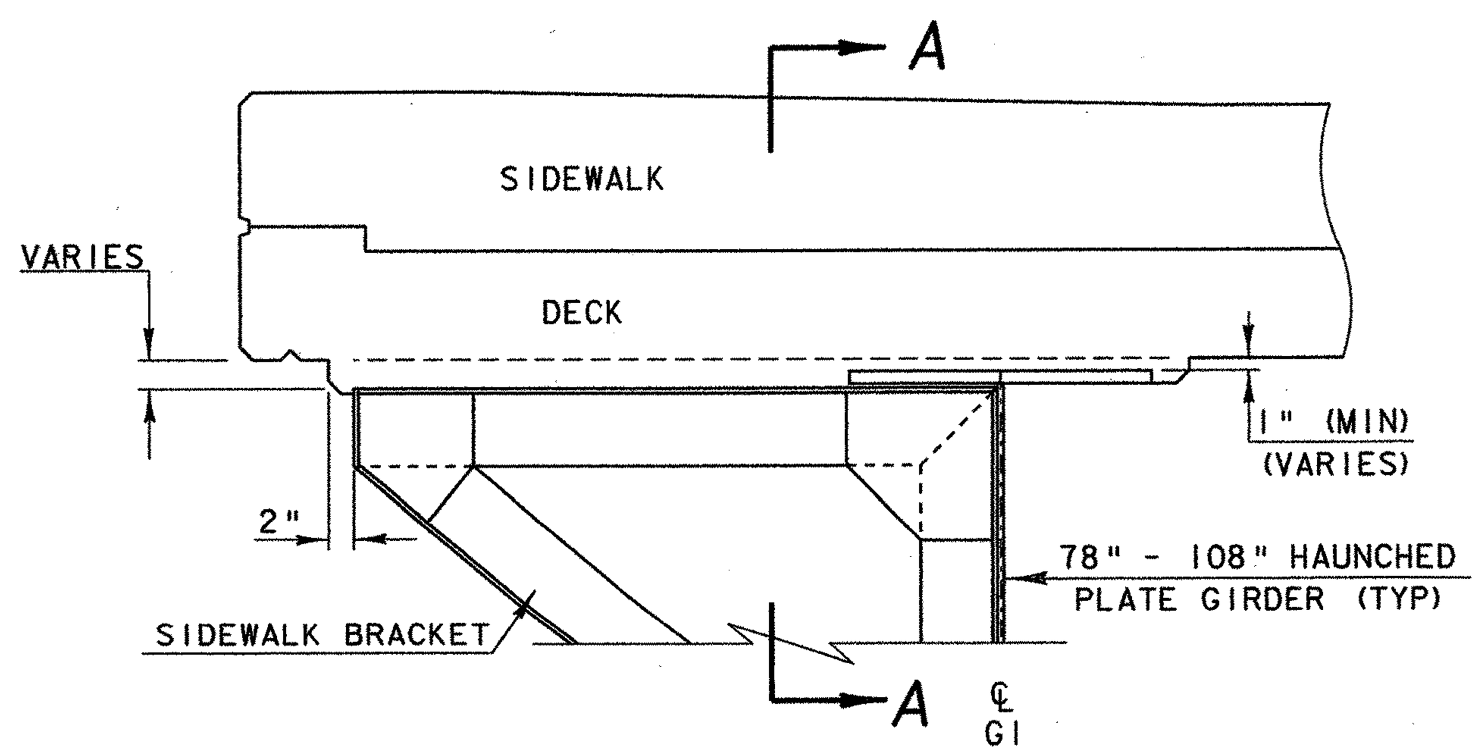
SCALE 1" = 1'-0





SECTION A-A

SCALE 1" = 1'-0



SIDEWALK BRACKET HAUNCH DETAIL

SCALE 1" = 1'-0

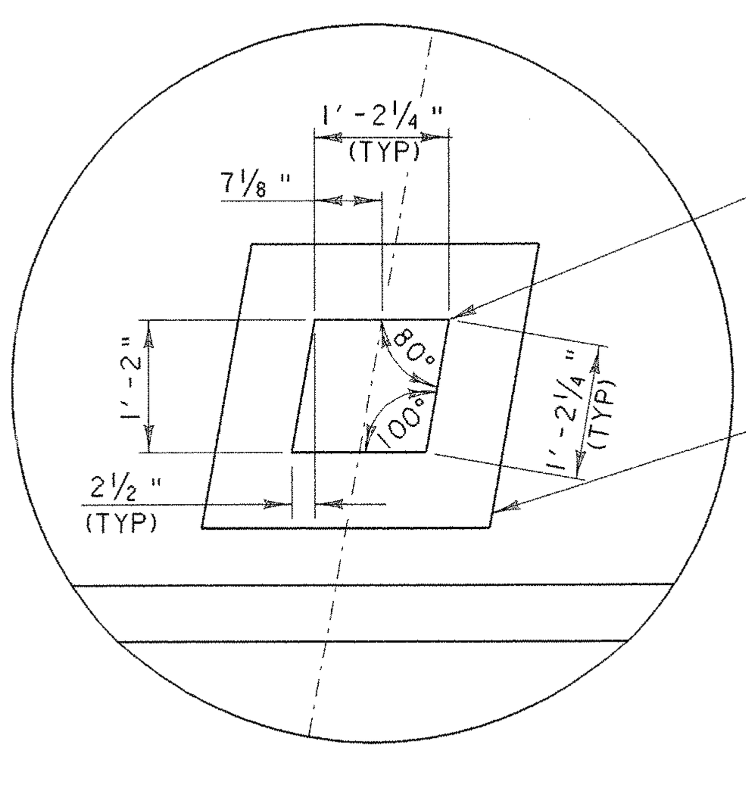
NOTE:
THE BACK FACE OF THE GRANITE CURB SHALL BE SATURATED SURFACE DRY IMMEDIATELY PRIOR TO PLACEMENT OF ADJACENT SIDEWALK OR CURB CONCRETE.

PROJECT NAME: PROJECT NUMBER: ROYALTON BRZ 1444(22)	
FILE NAME: 89j099/structures/sj099sup2.dgn IPARM NAME: sj099typcurb.i PROJECT LEADER: C.P. WILLIAMS DESIGNED BY: W.B. SYMONDS TYPICAL SIDEWALK & CURB SECTION	PLOT DATE: 06-DEC-2000 DRAWN BY: K. M. HIGGINS CHECKED BY: W.B. SYMONDS SHEET 27 OF 118

ADDITIONAL DIMENSIONING MAY BE REQUESTED BY THE RESIDENT ENGINEER

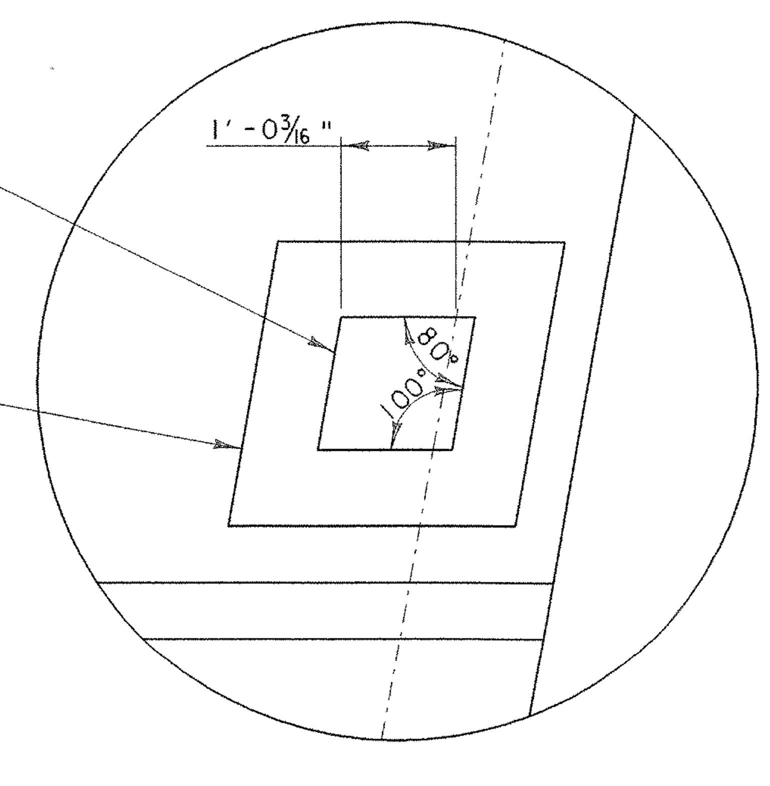
DECK LAYOUT PLAN

SCALE 3/16" = 1'-0



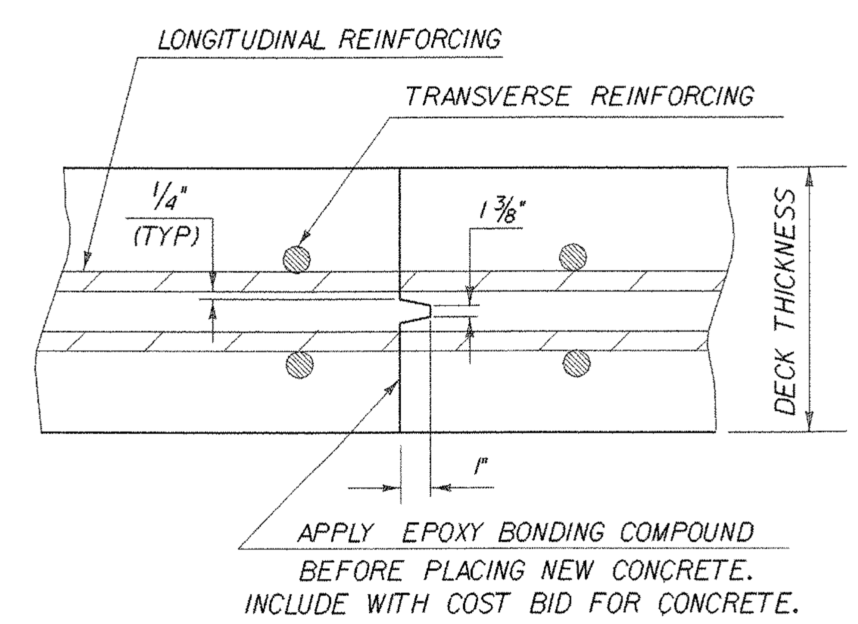
DETAIL "A" PIER

SCALE 3/4" = 1'-0



DETAIL "B" ABUT. 1&2

SCALE 3/4" = 1'-0



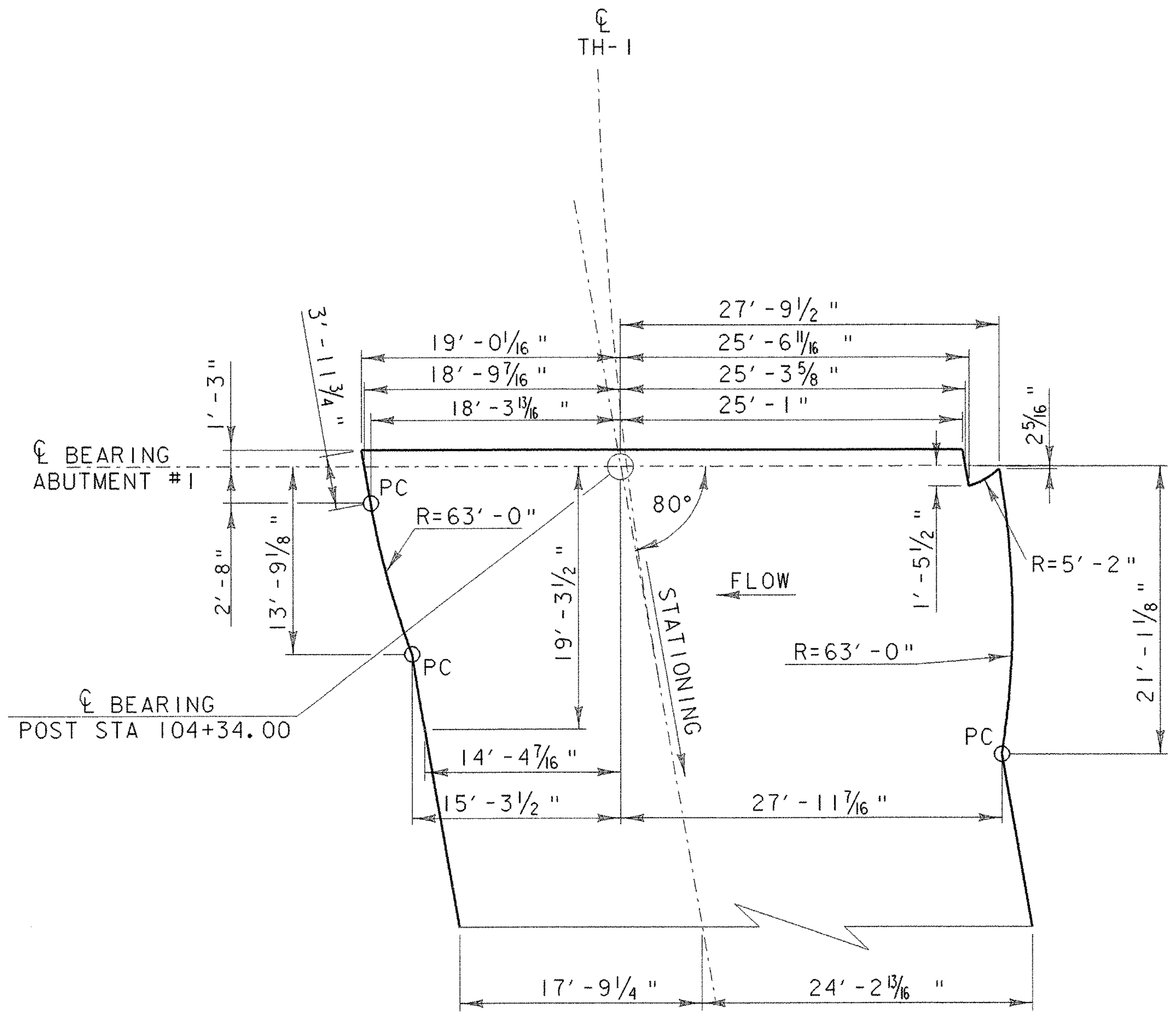
TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS

NOTES:

1. IF APPROVED BY THE ENGINEER, POURS #1 & #2 MAY BE POURED THE SAME DAY PROVIDED THAT THE MAXIMUM TIME SPAN OF THE POUR IS EIGHT HOURS. THE INDICATED POURING SEQUENCE SHALL BE FOLLOWED AND A RETARDING ADMIXTURE USED SO THAT THE DECK CONCRETE WILL NOT SET UP UNTIL ALL THE POUR HAS BEEN MADE. THE RETARDING ADMIXTURE SHALL BE SUBSIDIARY TO THE ITEM 501.221 "CONCRETE, CLASS A QC/QA (MOD)".
2. TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINTS, AS SHOWN ON THIS SHEET SHALL BE USED BETWEEN ADJACENT DECK POURS.
3. ALL INDIVIDUAL DECK POURS SHALL START FROM THE LOW END (RELATIVE TO GRADE).
4. THERE SHALL BE A MINIMUM DELAY PERIOD OF 96 HOURS BETWEEN POURS.
5. ANY POURING SEQUENCE OTHER THAN INDICATED SHALL BE SUBMITTED, IN WRITING, TO THE PROJECT MANAGER FOR APPROVAL.

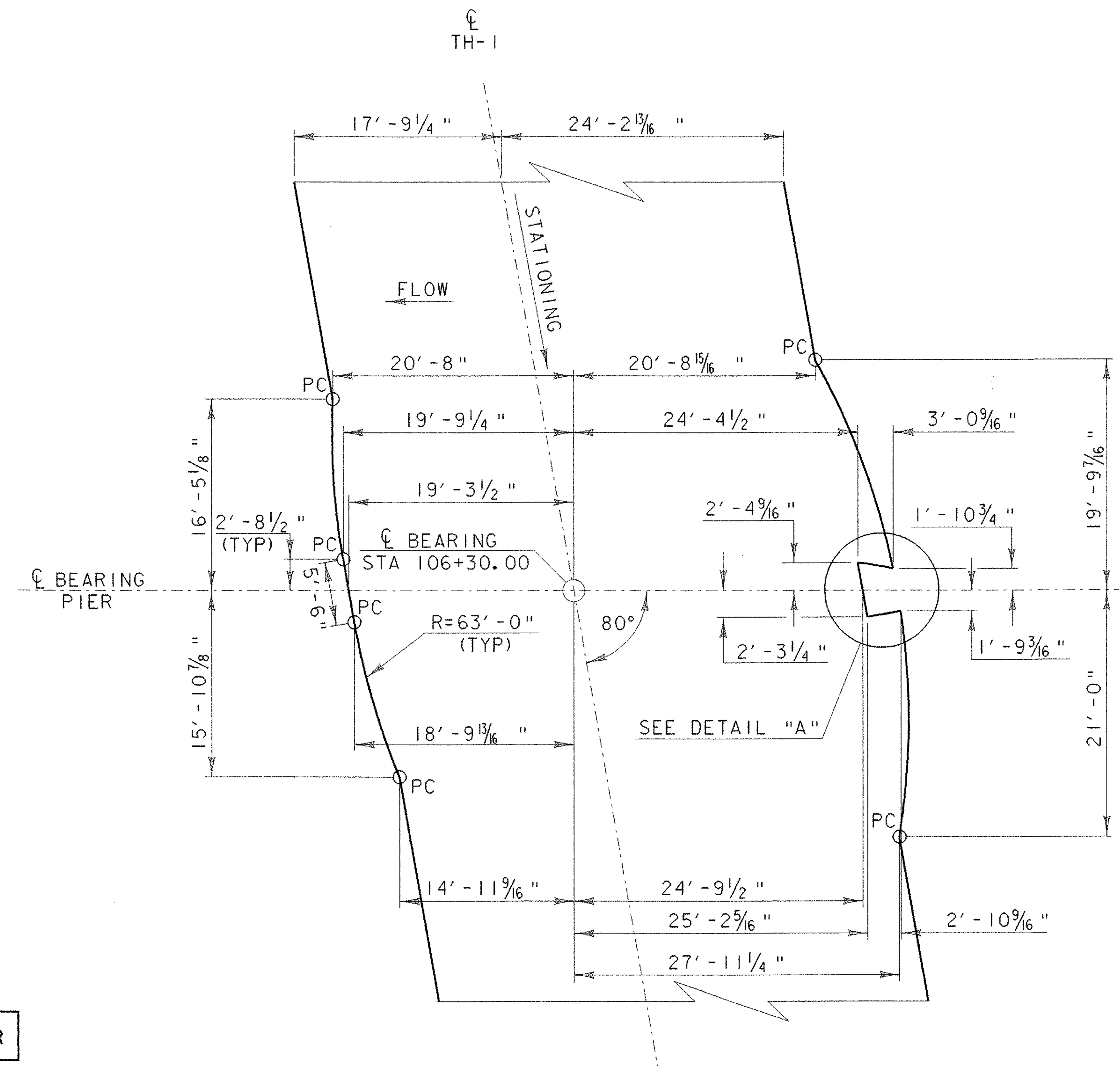
PC = POINT OF CURVATURE

PROJECT NAME: PROJECT NUMBER: ROYALTON BRZ 1444(22)	
FILE NAME: 89j099/structures/sj099sup.dgn	PLOT DATE: 25-SEP-2000
IPARM NAME: sj099decklayout.i	DRAWN BY: R.S. YOUNG
PROJECT LEADER: C.P. WILLIAMS	CHECKED BY: W.B. SYMONDS
DESIGNED BY: W.B. SYMONDS	SHEET 28 OF 118
DECK LAYOUT PLAN	



DECK PLAN DETAIL
@ ABUTMENT #1

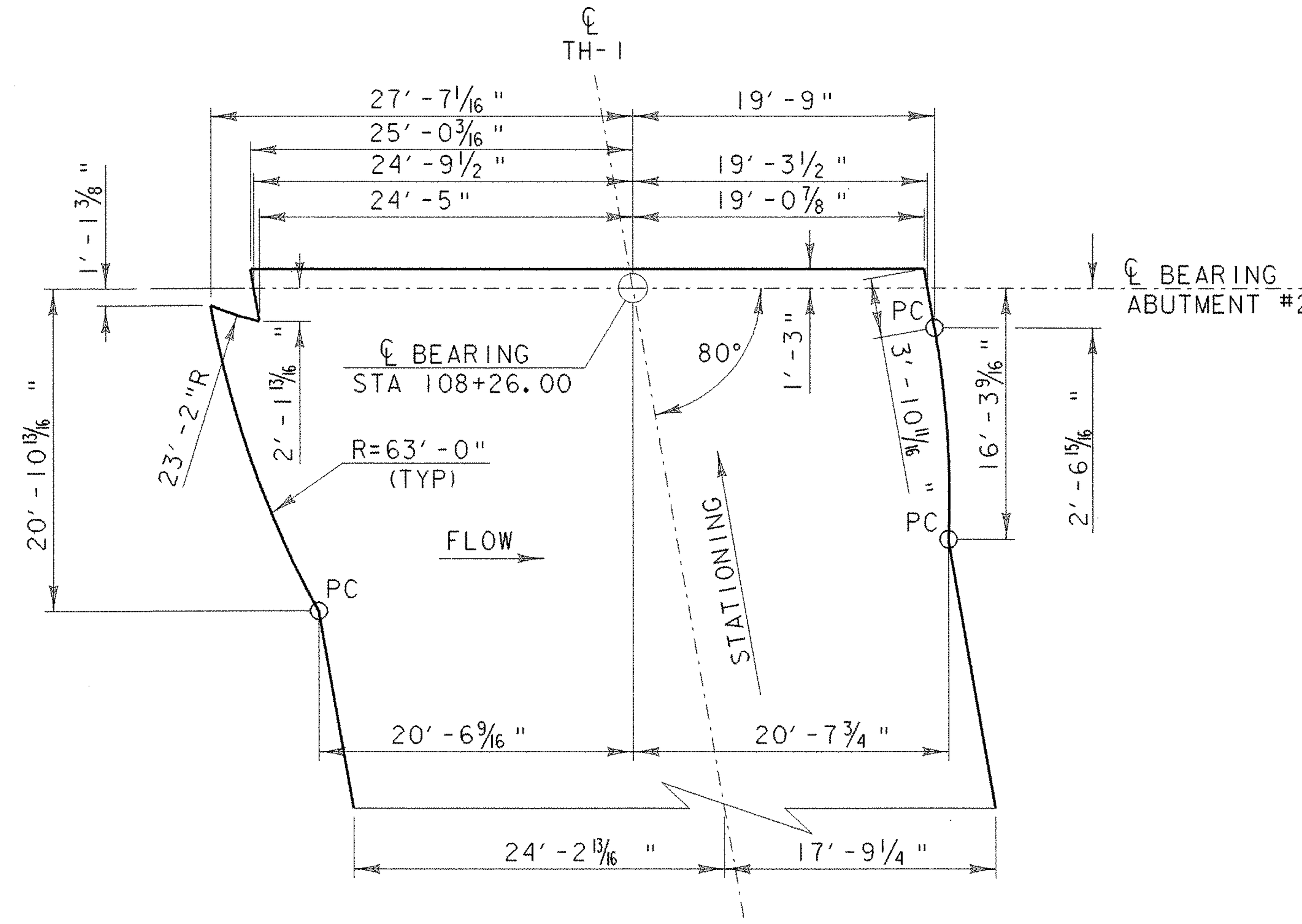
SCALE ⅛" = 1′-0
10 2 4 6 8



DECK PLAN DETAIL
@ PIER

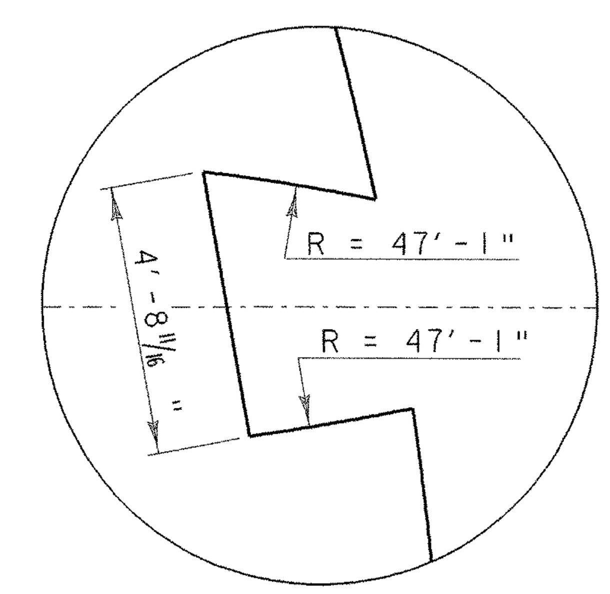
SCALE ⅛" = 1′-0
10 2 4 6 8

ADDITIONAL DIMENSIONING MAY BE REQUESTED BY THE RESIDENT ENGINEER



DECK PLAN DETAIL
@ ABUTMENT #2

SCALE ⅛" = 1′-0
10 2 4 6 8



DETAIL "A"

SCALE ⅜" = 1′-0
1 0 1 2 3 4

PC = POINT OF CURVATURE

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444 (22)

FILE NAME: 89j099/structures/sj099sup.dgn
IPARM NAME: sj099deckdetail.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
DECK PLAN DETAIL

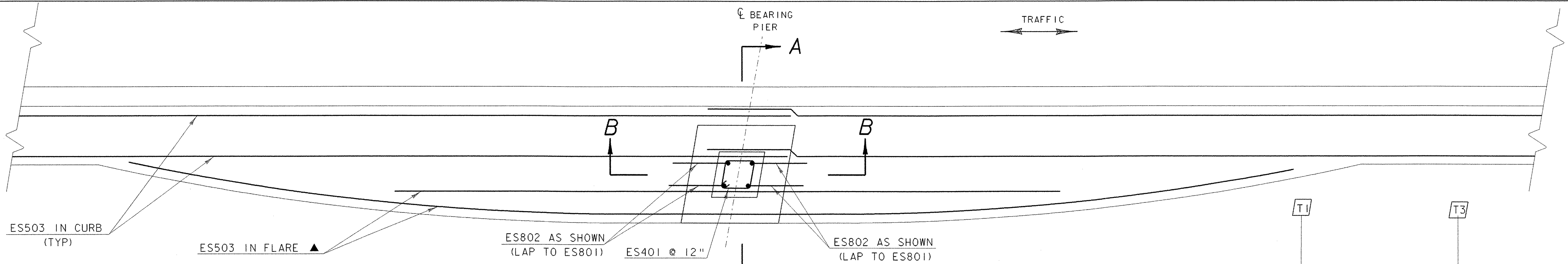
PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: W.B. SYMONDS
SHEET 29 OF 118

DECK REINFORCING PLAN

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444 (22)

FILE NAME: 89j099/structures/sj099sup2.dgn
IPARM NAME: sj099deckreinf.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
DECK REINFORCEMENT PLAN

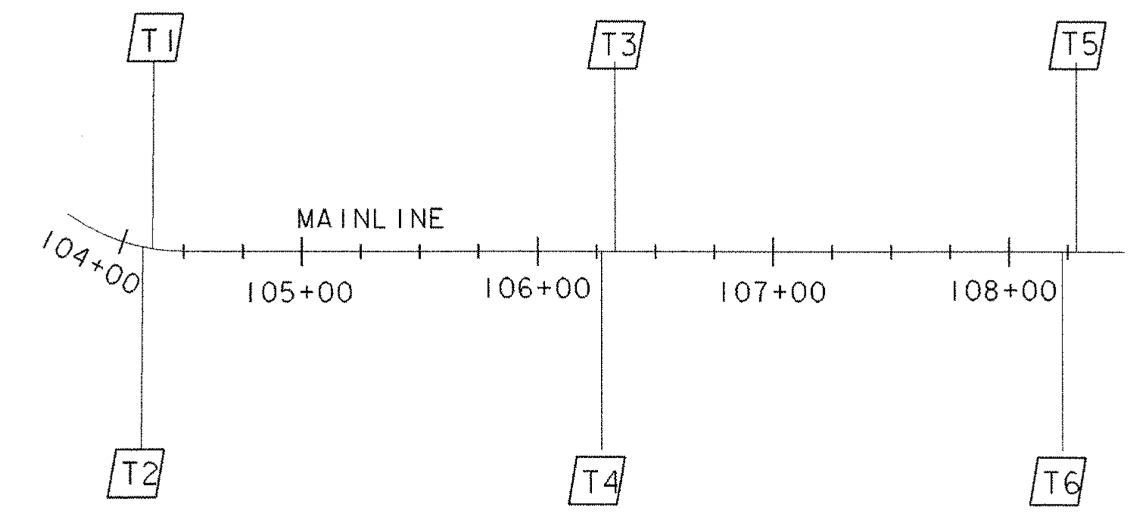
PLOT DATE: 25-SEP-2000
DRAWN BY: K.M. HIGGINS
CHECKED BY: W.B. SYMONDS
SHEET 30 OF 118



DECK TOWER REINFORCING PLAN

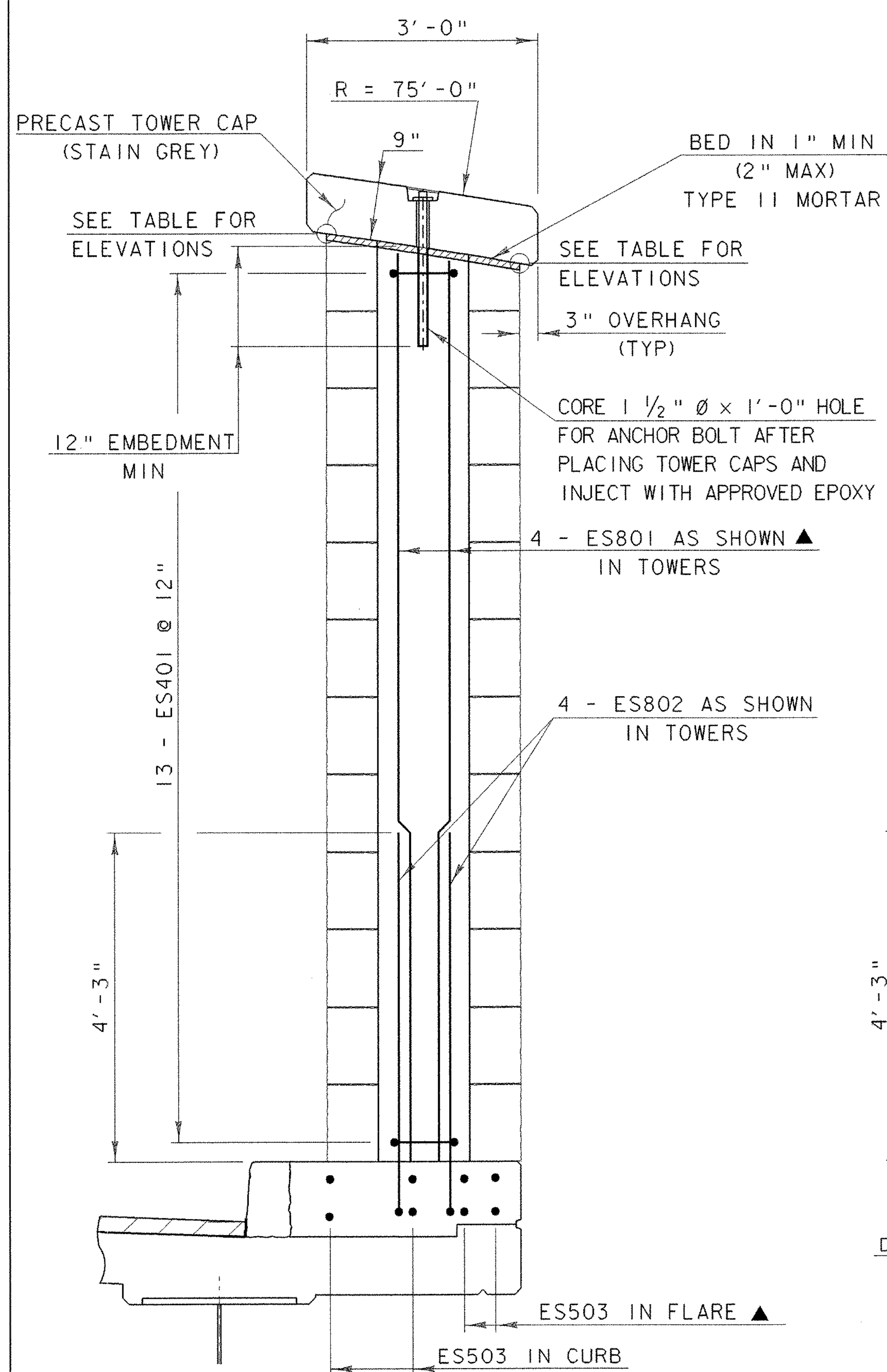
DECK TOWER @ ℄ PIER CURB SIDE SHOWN (OTHERS SIMILAR)

SCALE ¾" = 1'-0



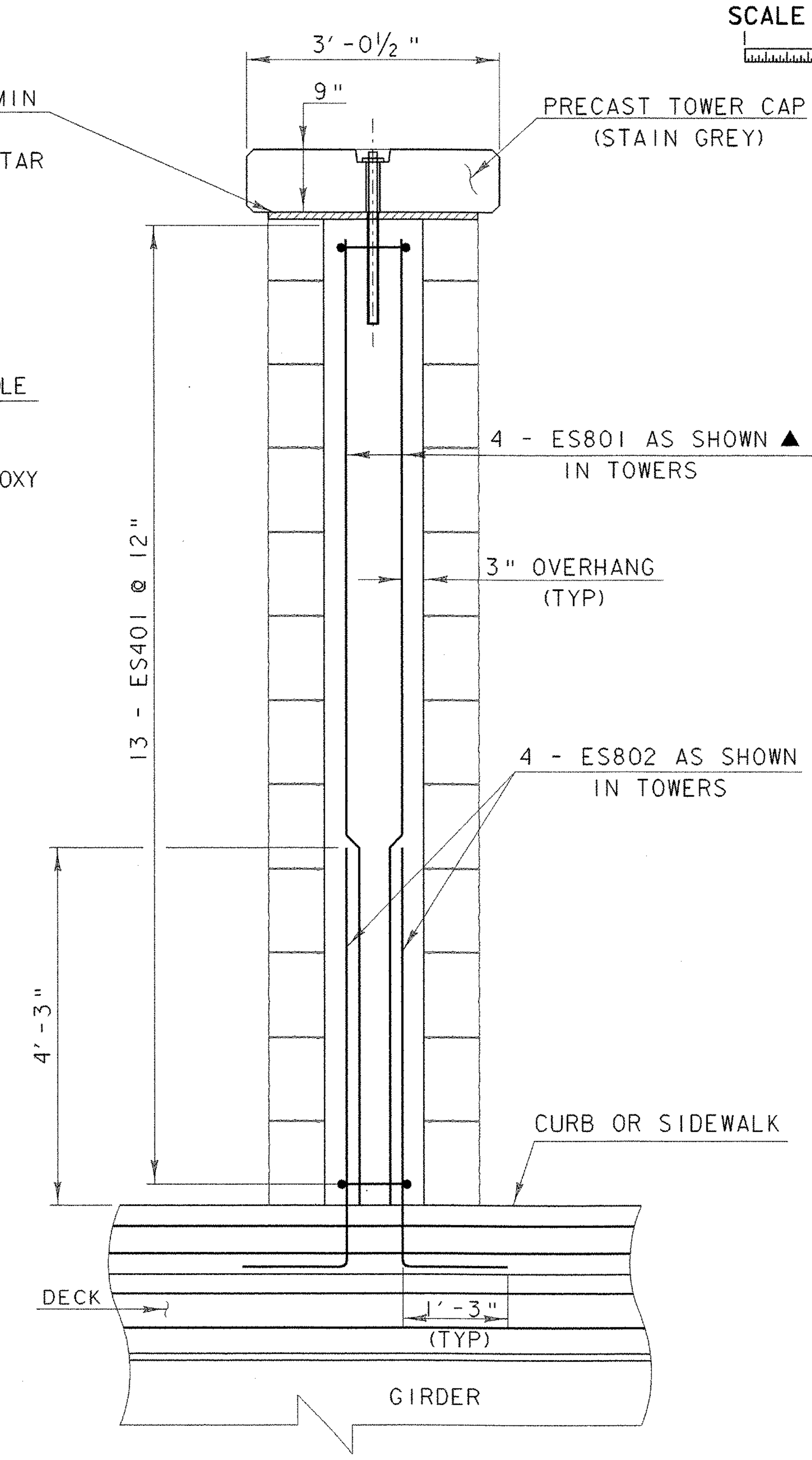
DECK TOWER LAYOUT

NTS



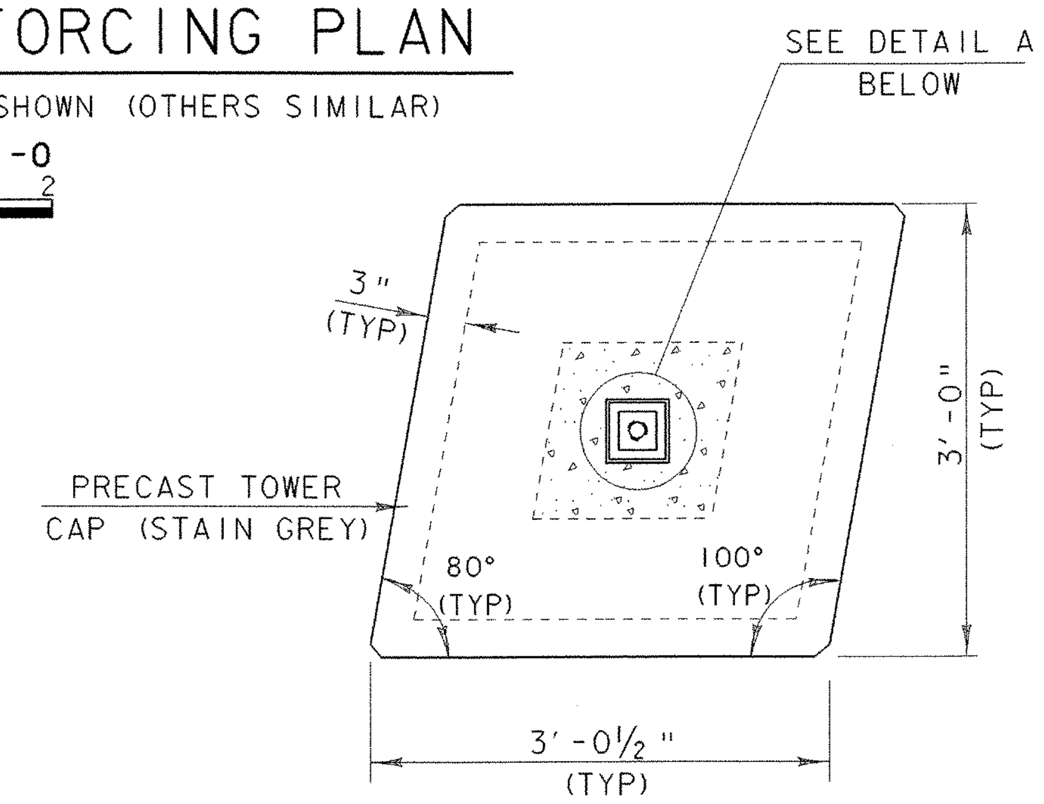
SECTION A-A

SCALE ¾" = 1'-0



SECTION B-B

SCALE ¾" = 1'-0



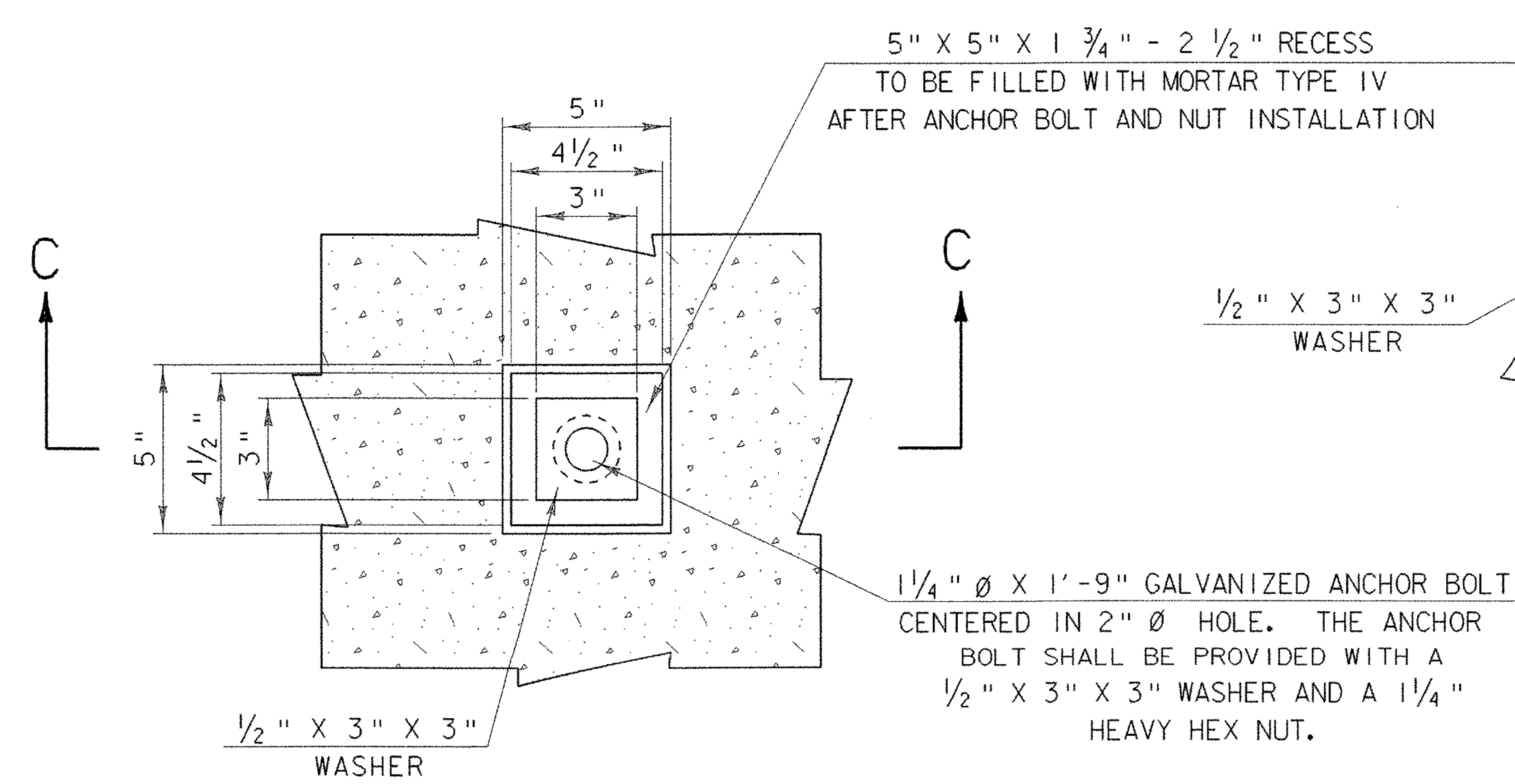
DECK TOWER CAP PLAN

SCALE 1" = 1'-0

TOWER ELEVATIONS

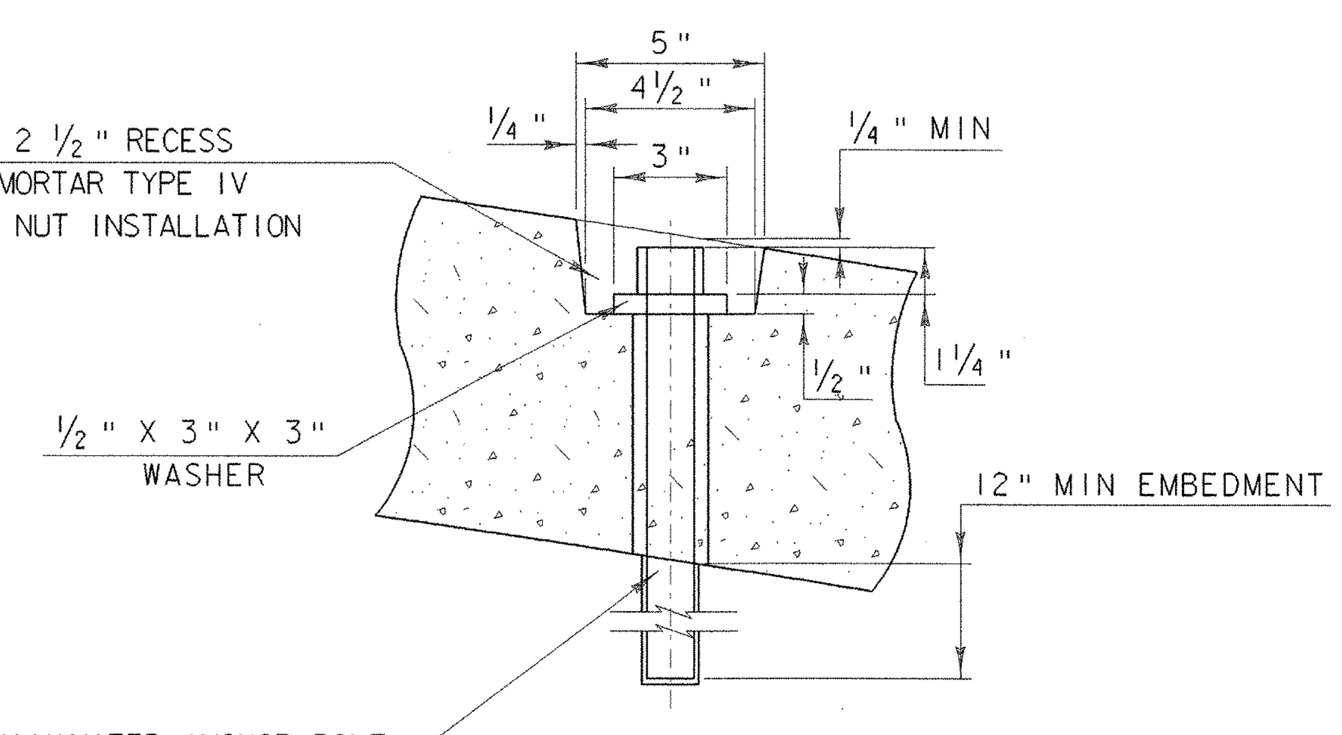
DECK TOWER ID	DECK TOWER HIGH SIDE	DECK TOWER LOW SIDE
T1	494.00	493.61
T2	494.00	493.61
T3	498.00	497.61
T4	498.00	497.61
T5	494.50	494.11
T6	494.50	494.11

ELEVATIONS ARE AT THE BOTTOM OF THE PRECAST TOWER CAP



DETAIL A

SCALE 3" = 1'-0



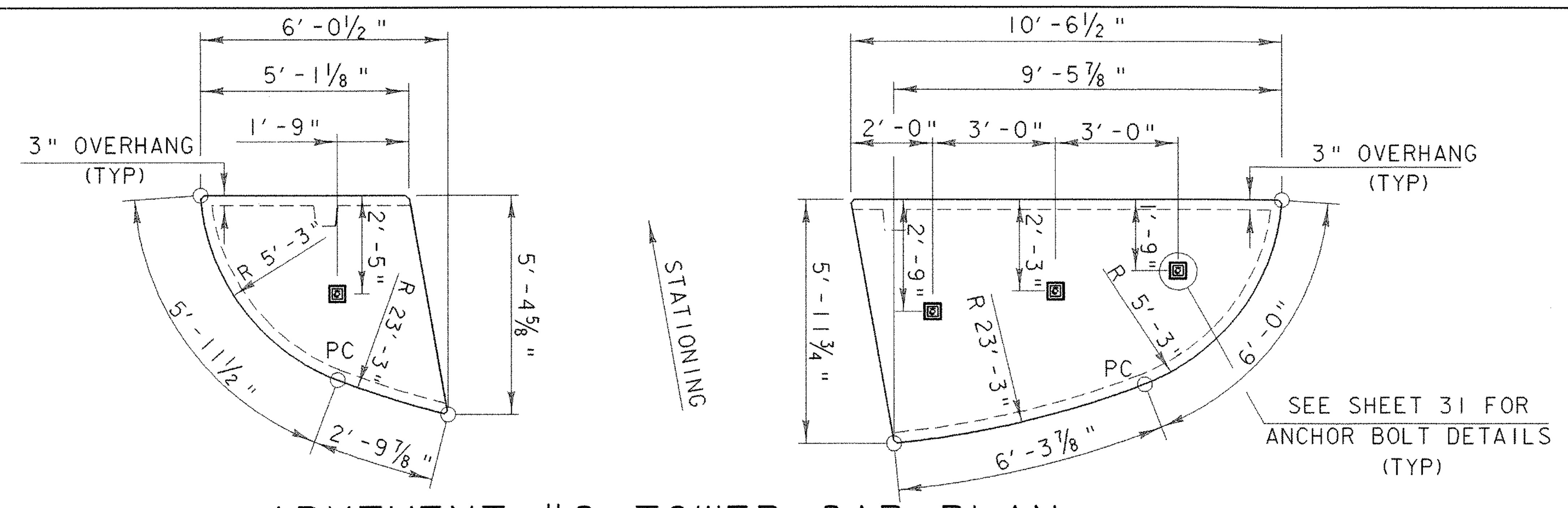
SECTION C-C

SCALE 3" = 1'-0

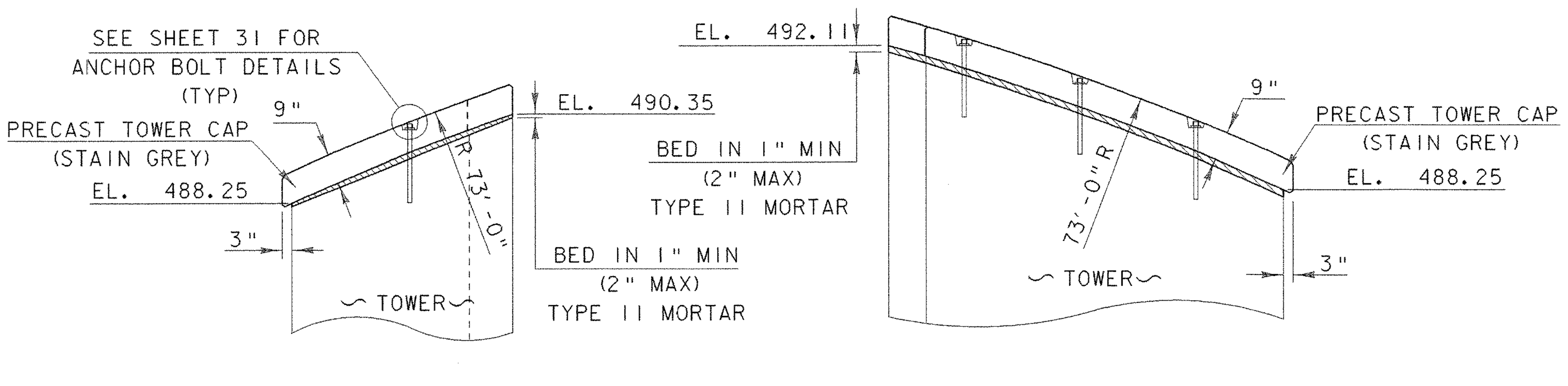
PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444(22)

FILE NAME: 89j099/structures/sj099sup2.dgn
IPARM NAME: sj099decktow.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
DECK TOWER DETAILS

PLOT DATE: 25-SEP-2000
DRAWN BY: K. M. HIGGINS
CHECKED BY: W.B. SYMONDS
SHEET 31 OF 118

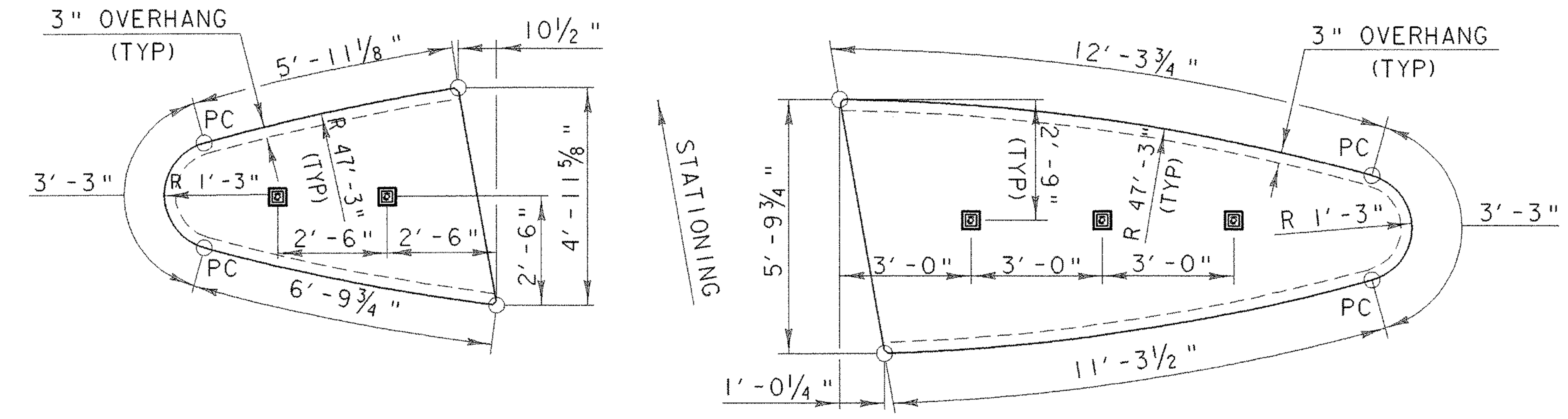


ABUTMENT #2 TOWER CAP PLAN

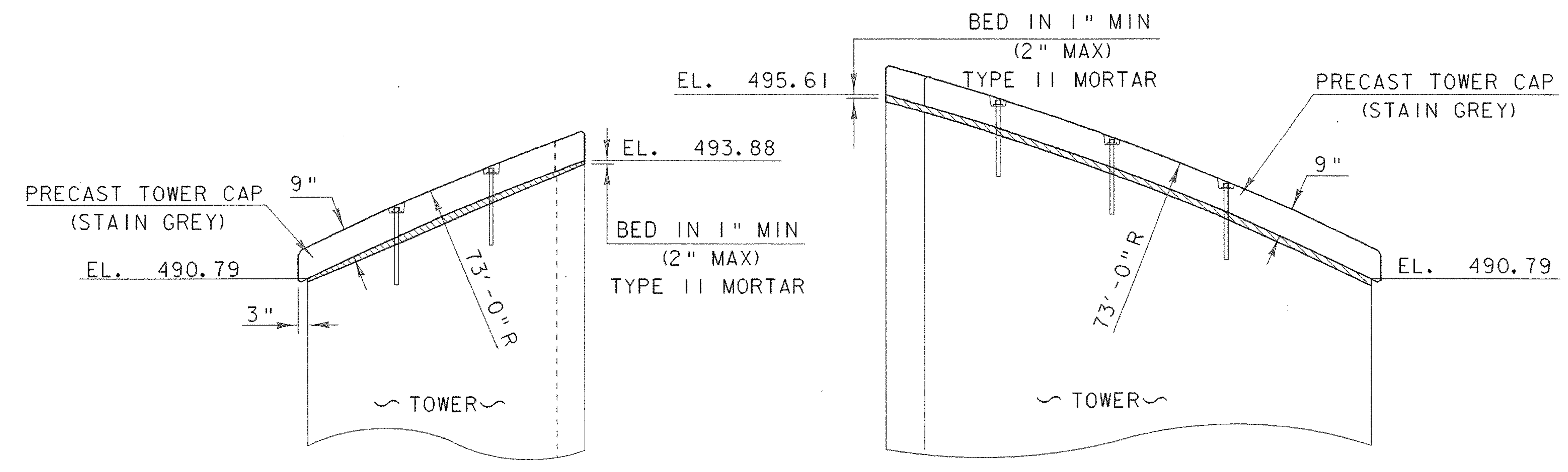


ABUTMENT #2 TOWER CAP ELEVATION

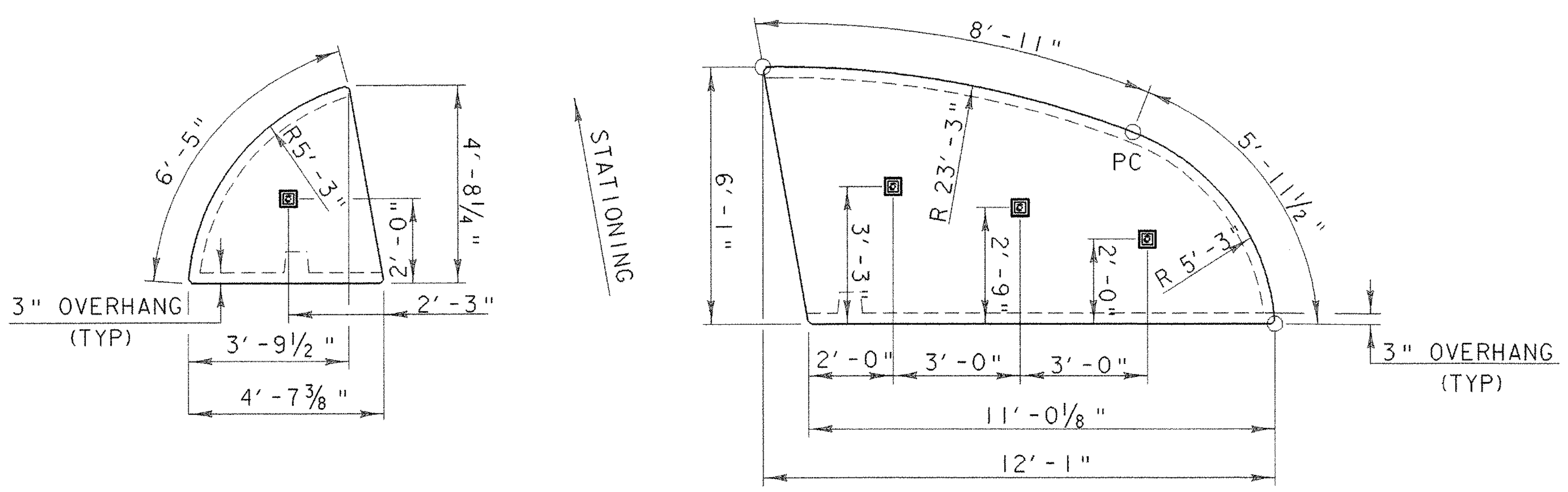
PC = POINT OF CURVATURE



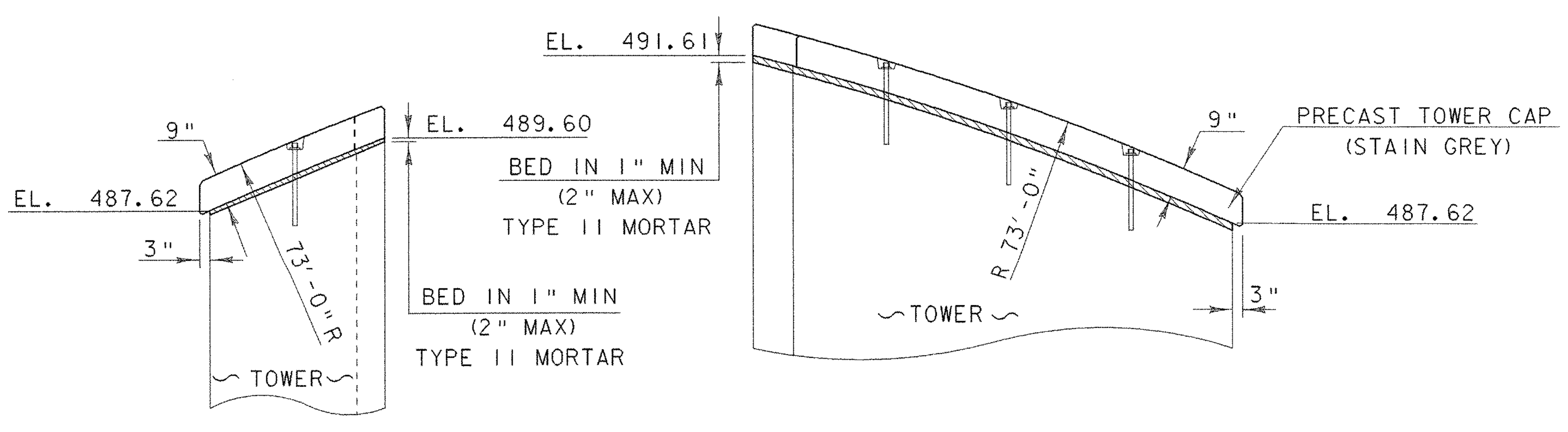
PIER TOWER CAP PLAN



PIER TOWER CAP ELEVATION



ABUTMENT #1 TOWER CAP PLAN



ABUTMENT #1 TOWER CAP ELEVATION

TOWER CAP NOTES:

1. THE TOWER CAPS SHALL BE PRECAST CONCRETE, CLASS B. THE CONCRETE IN THE TOWER CAPS WILL BE PAID FOR UNDER THE ITEM 501.25 "CONCRETE, CLASS B"

2. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68° F UNLESS NOTED OTHERWISE

3. ALL OF THE PRECAST TOWER CAPS SHALL BE REINFORCED WITH ONE LAYER OF 6X6-W2.1 X W2.1 WELDED WIRE FABRIC. THE WELDED WIRE FABRIC SHALL CONFORM TO AASHTO M 55. THE LAYER OF REINFORCEMENT SHALL BE CENTERED IN ALL OF THE PRECAST CAPS AND SHALL FOLLOW THE RADII SHOWN ON THE PLANS. THE WELDED WIRE FABRIC WILL BE PAID UNDER THE ITEM 507.15 "REINFORCING STEEL".

4. THE COSTS OF ANCHOR BOLTS AND RELATED HARDWARE, MORTAR, EPOXY, ERECTION OF PRECAST CAPS AND ALL OTHER INCIDENTALS NECESSARY TO COMPLETE THE PRECAST CAPS SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM 501.25 "CONCRETE, CLASS B"

5. BEFORE INSTALLATION OF THE PRECAST CAPS THE CONTRACTOR SHALL PROVIDE THE RESIDENT ENGINEER WITH A TECHNICAL DATA SHEET FOR THE EPOXY INTENDED TO SECURE THE ANCHOR BOLTS. THE TECHNICAL DATA SHEET SHALL INCLUDE SPECIFICATIONS, AND MANUFACTURER'S APPLICATION INSTRUCTIONS. THE RESIDENT ENGINEER SHALL APPROVE THE PRODUCT AND PROCEDURES PRIOR TO ANY INSTALLATION.

6. ALL SURFACES OF THE PRECAST CAPS THAT ARE TO BE EXPOSED AFTER ERECTION SHALL BE GIVEN A RUBBED FINISH PER VAOT STANDARD SPECIFICATIONS SUB-SECTION 501.16 (a) 2.

7. ALL OF THE PRECAST CAPS SHALL BE STAINED GREY AFTER THEY HAVE BEEN PLACED. THE STAIN SHALL BE APPLIED AFTER THE ANCHOR BOLT BLOCK OUTS HAVE BEEN FILLED AND ALL NECESSARY REPAIRS HAVE BEEN MADE.

8. THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING ANY NECESSARY LIFTING DEVICES REQUIRED TO ERECT THE PRECAST CAPS. LIFTING DEVICES SHALL BE REMOVED AND DAMAGED AREAS REPAIRED TO THE SATISFACTION OF THE RESIDENT ENGINEER.

9. THE ANCHOR BOLTS SHALL BE ASTM A307, GR. C. THE PLATE WASHERS SHALL BE AASHTO M 183/M 183, GR 36.

ALL DETAILS THIS SHEET

SCALE ⅜" = 1'-0

PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444 (22)

FILE NAME: 89j099/structures/sj099sup2.dgn
IPARM NAME: sj099towcap.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
TOWER CAP DETAILS

PLOT DATE: 25-SEP-2000
DRAWN BY: K. M. HIGGINS
CHECKED BY: W.B. SYMONDS
SHEET 32 OF 118

GIRDER ELEVATION

HORIZONTAL SCALE: 1" = 15'-0"
VERTICAL SCALE: 1" = 3'-0"

NOTE: SEE SHEETS 34 - 38 FOR ADDITIONAL STRUCTURAL STEEL DETAILS AND NOTES

FRAMING PLAN

HORIZONTAL SCALE: 1" = 15'-0"
VERTICAL SCALE: 1" = 5'-0"

PROJECT NAME: PROJECT NUMBER: ROYALTON BRZ 1444 (22)

FILE NAME: 89j099/structures/sj099ssd.dgn
IPARM NAME: sj099fraplan.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
FRAMING PLAN & GIRDER ELEVATION

PLOT DATE: 25-SEP-2000
DRAWN BY: P.G. JARVIS
CHECKED BY: W.B. SYMONDS
SHEET 33 OF 118

	0'	19.6'	39.2'	58.8'	78.4'	98.0'	117.6'	137.2'	156.8'	176.4'	196.0'	215.6'	235.2'	254.8'	274.4'	294.0'	313.6'	333.2'	352.8'	372.4'	392.0'
GIRDER 1	0	2 1/2"	4 9/16"	5 7/8"	6 1/4"	5 3/4"	4 9/16"	3"	1 1/2"	3/8"	0	3/8"	1 1/2"	3"	4 9/16"	5 3/4"	6 1/4"	5 7/8"	4 9/16"	2 1/2"	0
GIRDER 2	0	2 1/2"	4 9/16"	5 7/8"	6 1/4"	5 3/4"	4 9/16"	3"	1 1/2"	3/8"	0	3/8"	1 1/2"	3"	4 9/16"	5 3/4"	6 1/4"	5 7/8"	4 9/16"	2 1/2"	0
GIRDER 3	0	2 1/2"	4 9/16"	5 7/8"	6 1/4"	5 3/4"	4 9/16"	3"	1 1/2"	3/8"	0	3/8"	1 1/2"	3"	4 9/16"	5 3/4"	6 1/4"	5 7/8"	4 9/16"	2 1/2"	0
GIRDER 4	0	2 1/2"	4 9/16"	5 7/8"	6 1/4"	5 3/4"	4 9/16"	3"	1 1/2"	3/8"	0	3/8"	1 1/2"	3"	4 9/16"	5 3/4"	6 1/4"	5 7/8"	4 9/16"	2 1/2"	0
GIRDER 5	0	2 3/16"	3 15/16"	5 1/16"	5 7/16"	5"	3 15/16"	2 5/8"	1 5/16"	5/16"	0	5/16"	1 5/16"	2 5/8"	3 15/16"	5"	5 7/16"	5 1/16"	3 15/16"	2 3/16"	0

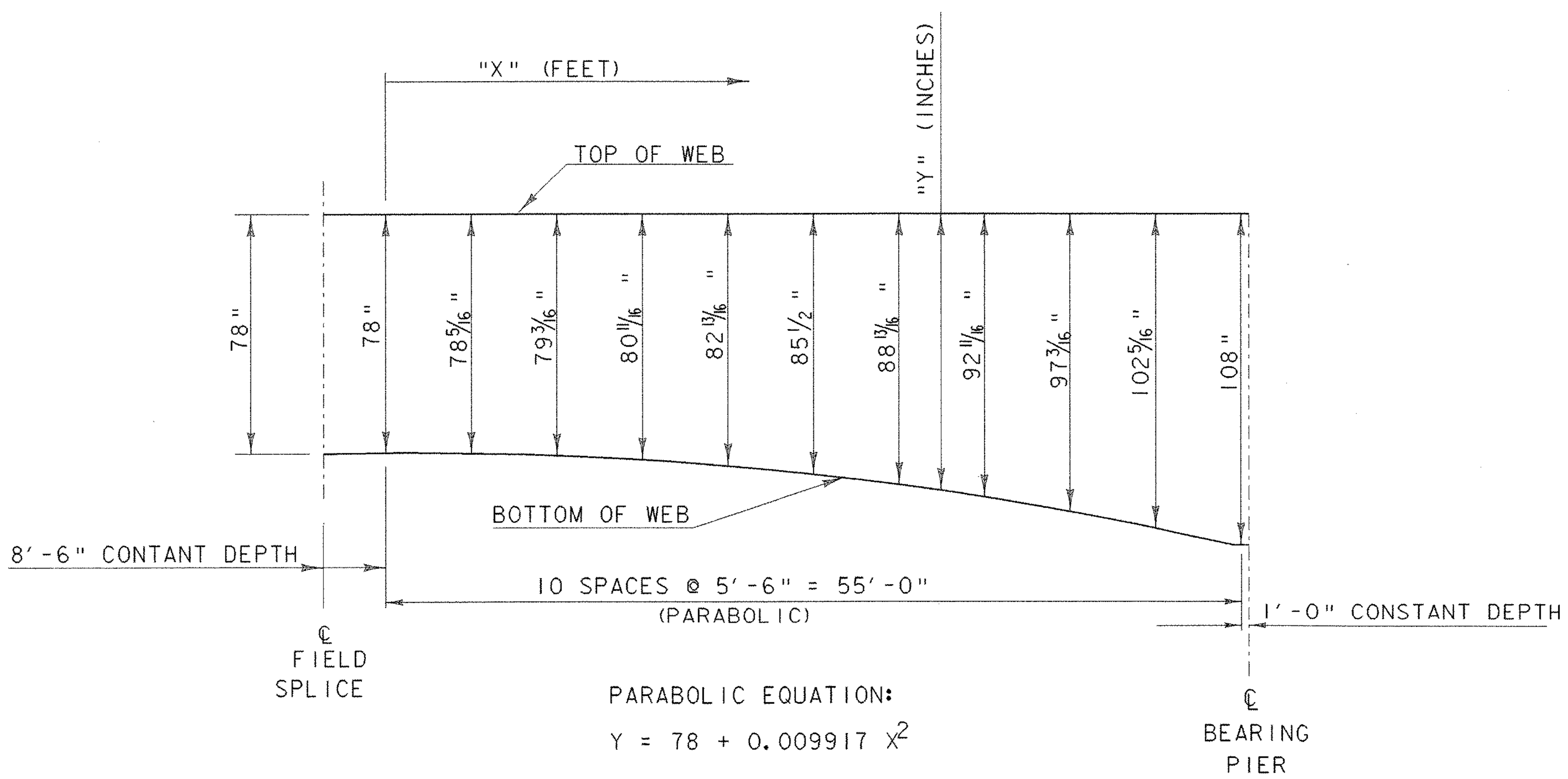
DEAD LOAD DEFLECTION TABLE

DEAD LOAD DEFLECTION VALUES INCLUDE DEFLECTION DUE TO GIRDER SELF WEIGHT.
THE MAGNITUDE OF DEFLECTION IS MEASURED FROM THE MINOR CHORD.

	0'	19.6'	39.2'	58.8'	78.4'	98.0'	117.6'	137.2'	156.8'	176.4'	196.0'	215.6'	235.2'	254.8'	274.4'	294.0'	313.6'	333.2'	352.8'	372.4'	392.0'
GIRDER 1	0	5 1/4"	9 3/4"	13 1/2"	16 3/16"	16 13/16"	15 11/16"	13"	9 5/16"	5"	0	3 3/4"	7 1/8"	9 5/8"	11 3/16"	11 1/4"	9 7/16"	6 7/16"	2 3/4"	3/16"	0
GIRDER 2	0	5 1/16"	9 9/16"	13 3/16"	15 7/8"	16 9/16"	15 1/2"	12 7/8"	9 1/4"	4 7/8"	0	3 7/8"	7 1/4"	9 7/8"	11 9/16"	11 5/8"	9 15/16"	6 15/16"	3 1/8"	3/8"	0
GIRDER 3	0	4 7/8"	9 1/4"	12 15/16"	15 9/16"	16 5/16"	15 5/16"	12 5/8"	9 1/8"	4 13/16"	0	3 7/8"	7 3/8"	10 1/16"	11 13/16"	12"	10 3/8"	7 7/16"	3 9/16"	5/8"	0
GIRDER 4	0	4 11/16"	9 1/16"	12 5/8"	15 5/16"	16 1/16"	15 1/8"	12 5/8"	9"	4 13/16"	0	4 1/8"	7 9/16"	10 3/8"	12 3/16"	12 7/16"	10 7/8"	7 7/8"	4"	3/4"	0
GIRDER 5	0	4 1/16"	8 1/8"	11 9/16"	14 1/8"	15 1/16"	14 1/4"	11 15/16"	8 3/4"	4 5/8"	0	4 1/16"	7 1/2"	10 1/4"	11 13/16"	12 1/16"	10 1/2"	7 9/16"	3 7/8"	13/16"	0

CAMBER TABLE

CAMBER VALUES IN CAMBER TABLE INCLUDE THE DEAD LOAD DEFLECTION DUE TO GIRDER SELFWEIGHT.
THE MAGNITUDE OF THE CAMBER IS MEASURED FROM THE MINOR CHORD.



PARABOLIC EQUATION:

$$Y = 78 + 0.009917\ X^2$$

PARABOLIC GIRDER HAUNCH DETAIL

NTS

STRUCTURAL STEEL NOTES:

1. ALL STRUCTURAL STEEL INCLUDING BUT NOT LIMITED TO GIRDERS, CROSS FRAMES, CONNECTION PLATES, DIAPHRAGMS, AND SIDEWALK BRACKETS SHALL CONFORM TO AASHTO M 270/M 270M GRADE 50W. ALL STRUCTURAL STEEL SHALL BE PAID UNDER THE ITEM 506.55 "STRUCTURAL STEEL (PLATE GIRDER)".

2. ALL FIELD CONNECTIONS IN UNPAINTED AREAS SHALL BE MADE USING 7/8" DIAMETER TYPE III BOLTS MEETING THE AASHTO M 164/M 164M, TYPE III SPECIFICATION. IN PAINTED AREAS ALL FIELD CONNECTIONS SHALL BE MADE USING 7/8" DIAMETER TYPE I BOLTS MEETING THE AASHTO M 164/M 164M SPECIFICATION. ANY CONNECTIONS NOT DESIGNATED SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE PROJECT MANAGER FOR APPROVAL.

3. ANY HOLES IN THE FASCIA BEAMS NOT OTHERWISE FILLED SHALL BE FITTED WITH BOLTS CONFORMING TO AASHTO M 164/M 164M, TYPE III.

4. THE FAYING SURFACES ON GUSSET PLATES, CONNECTION PLATES, SIDEWALK BRACKETS, AND SPLICE PLATES SHALL BE PREPARED AS CLASS "C". THESE SURFACES SHALL BE PROTECTED FROM DAMAGE AND CORROSION PRIOR TO THE CONNECTION.

5. ALL MEMBERS AND OR PLATES MARKED (CVN) AND ONLY THOSE MEMBERS MUST MEET THE CHARPY V-NOTCH REQUIREMENTS FOR MAIN MEMBERS AS INDICATED IN SECTION 714 OF THE VERMONT AGENCY OF TRANSPORTATION SPECIFICATIONS FOR CONSTRUCTION.

6. UTILITIES WILL BE SUPPORTED BY THE UTILITY DIAPHRAGMS AS WELL AS THE CROSS FRAMES. SEE SHEET 80 FOR THE UTILITY CONNECTION DETAIL.

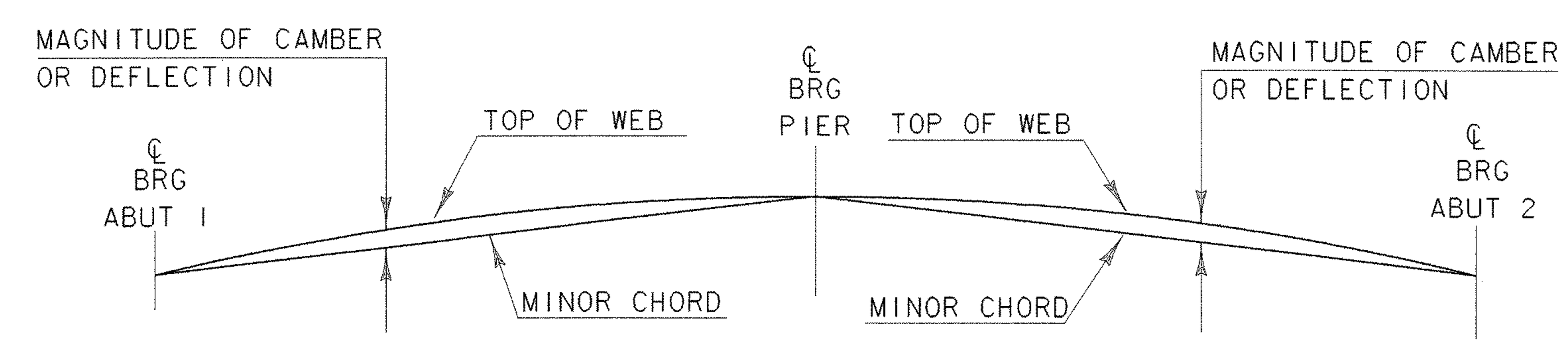
7. THE ENDS OF THE GIRDERS SHALL BE GIVEN A SHOP APPLIED PAINT SYSTEM AND GREASED AFTER INSTALLATION FOR A DISTANCE EQUAL TO THE DEPTH OF THE GIRDER PER SUPPLEMENTAL SPECIFICATION 513. THE ABUTMENT CROSSFRAMES SHALL ALSO BE PAINTED AND GREASED. THE UTILITY SUPPORTS IN THIS AREA DO NOT REQUIRE PAINTING. THE PAINT SHALL BE BROWN COLOR CHIP #20059.

8. THE UTILITY DIAPRAGMS WILL BE PAID FOR UNDER THE ITEM 506.55 "STRUCTURAL STEEL (PLATE GIRDER)". ALL HARDWARE NECESSARY TO CONNECT THE UTILITIES TO THE DIAPRAGMS, INCLUDING STEEL ANGLES, PLATES, BOLTS, HANGING BRACKETS, AND WELDS, SHALL BE CONSIDERED SUBSIDIARY TO THE RESPECTIVE ITEMS 629.60 "WATERMAIN ON BRIDGE-12" (MODI)" AND 625.16 "DUCTS ON BRIDGE".

SIDEWALK BRACKET

9. THE SIDEWALK BRACKETS MAY BE USED TO SUPPORT THE FORMWORK FOR THE SIDEWALK OVERHANG. HOWEVER, A MINIMUM OF TWO EQUALLY SPACED INTERMEDIATE FLEMMING BRACKETS SHALL BE PLACED TO ADDITIONALLY SUPPORT THE FORMWORK.

10. THE REQUIRED FLEMMING BRACKETS AND THE ENTIRE FORM SYSTEM FOR THE SIDEWALK OVERHANG SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER. THE DESIGN AND DETAILS FOR THE FORM SYSTEM SHALL BE SUBMITTED TO THE PROJECT MANAGER FOR REVIEW A MINIMUM OF 14 DAYS PRIOR TO FORMING. THE COST OF THE FORM SYSTEM DESIGN SHALL BE SUBSIDIARY TO THE COST OF THE ITEM 501.221 CONCRETE, CLASS A QC/QA (MOD).



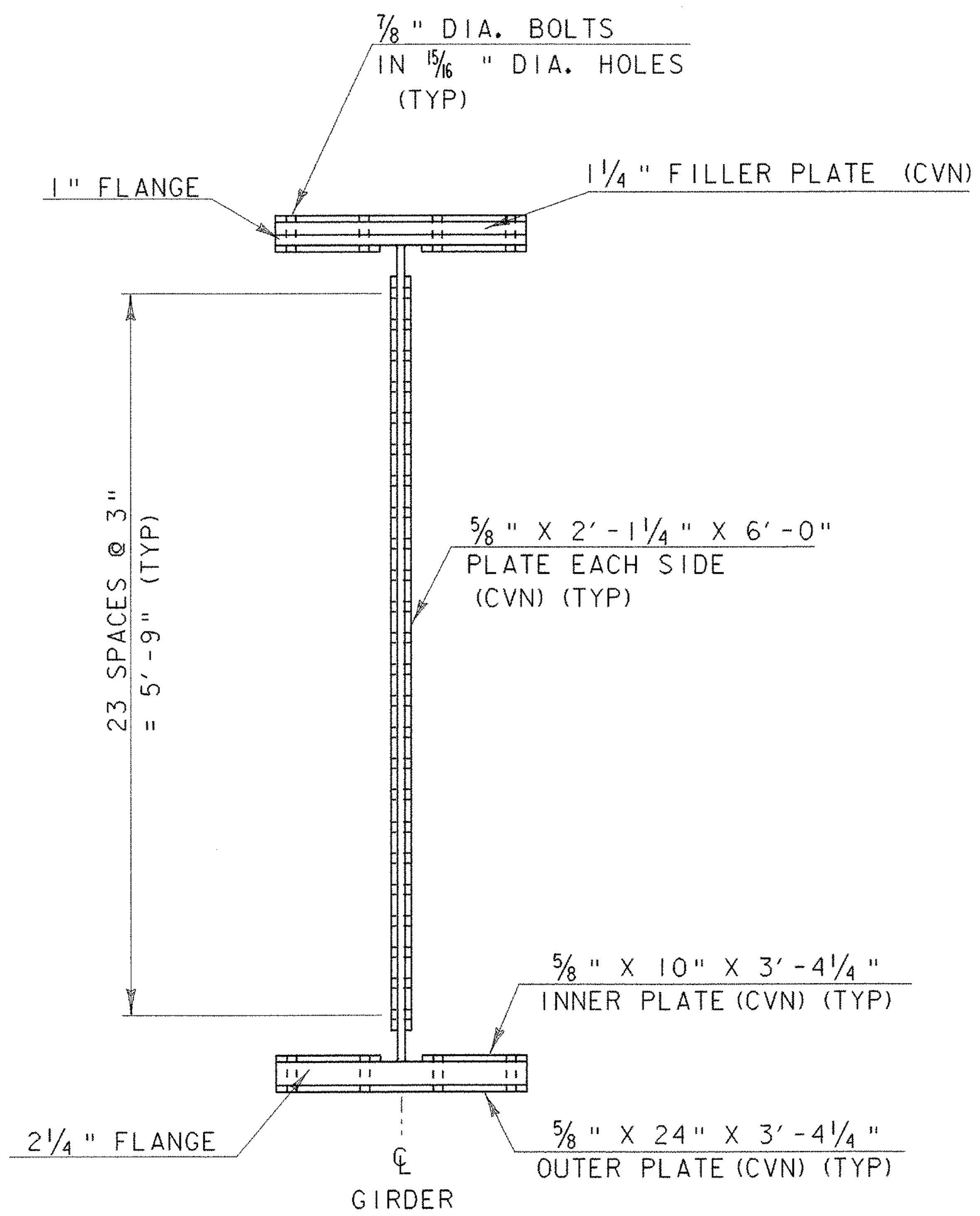
CHORD DIAGRAM

NTS

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444(22)

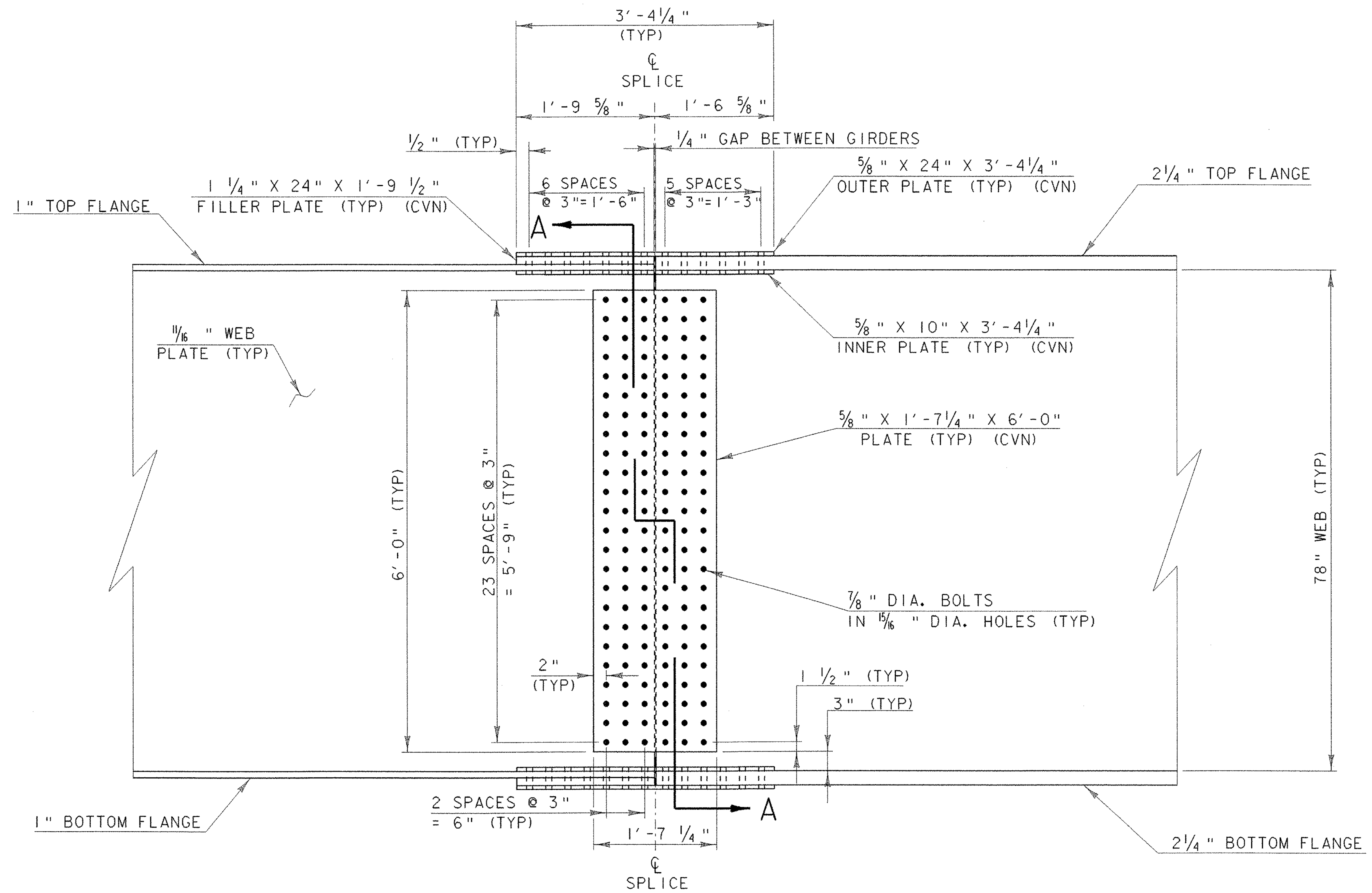
FILE NAME: 89j099/structures/sj099ssd.dgn
IPARM NAME: sj099camber.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
CAMBER AND DEFLECTION TABLES

PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: W.B. SYMONDS
SHEET 34 OF 118



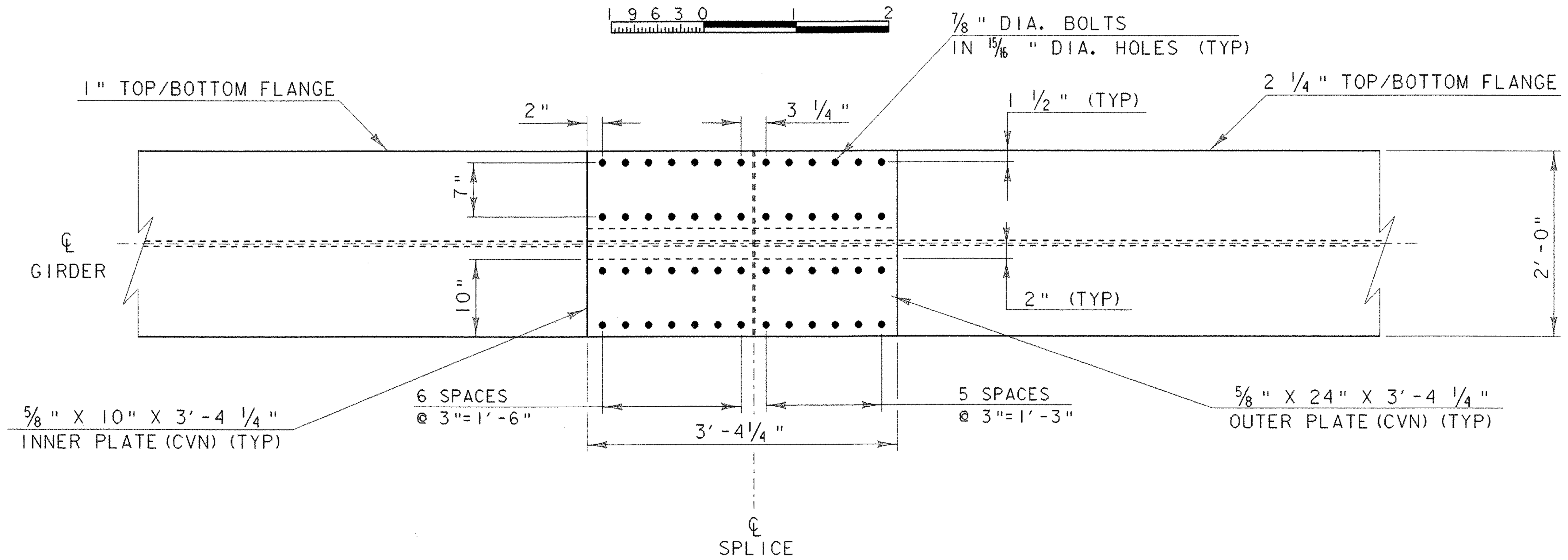
FIELD SPLICE SECTION "A - A"

SCALE 1" = 1'-0



FIELD SPLICE WEB ELEVATION

SCALE 1" = 1'-0



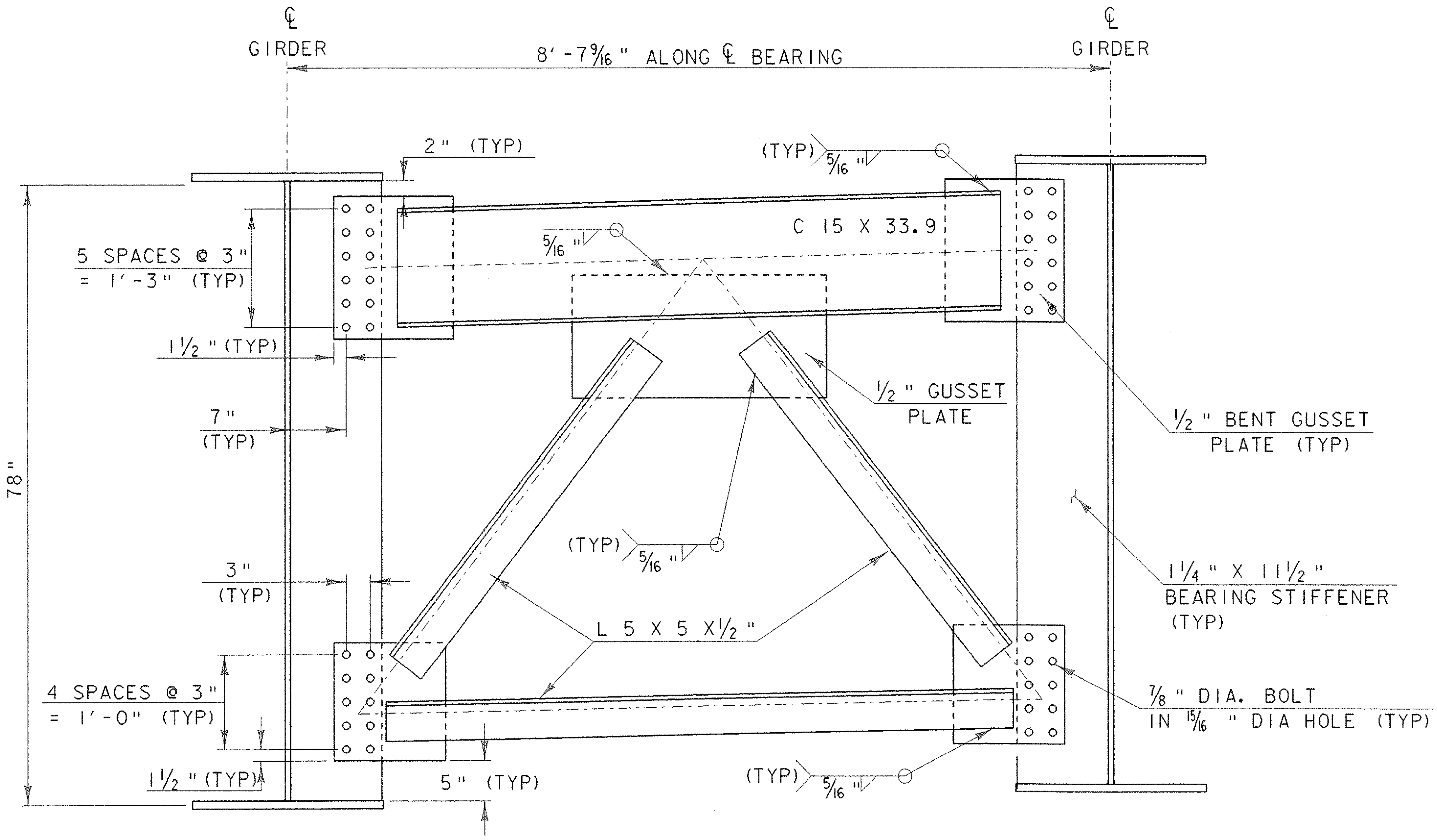
FIELD SPLICE TYPICAL FLANGE PLAN

SCALE 1" = 1'-0

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444 (22)

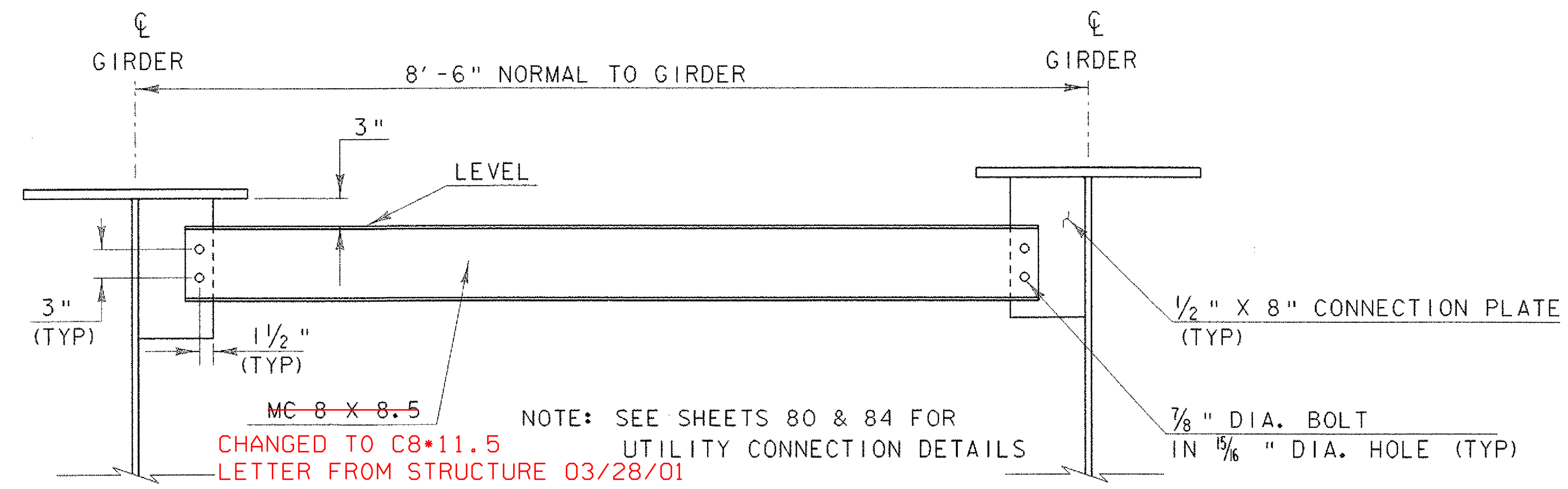
FILE NAME: 89j099/structures/sj099ssd.dgn
IPARM NAME: sj099splice.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
SPLICE DETAILS

PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: W.B. SYMONDS
SHEET 35 OF 118



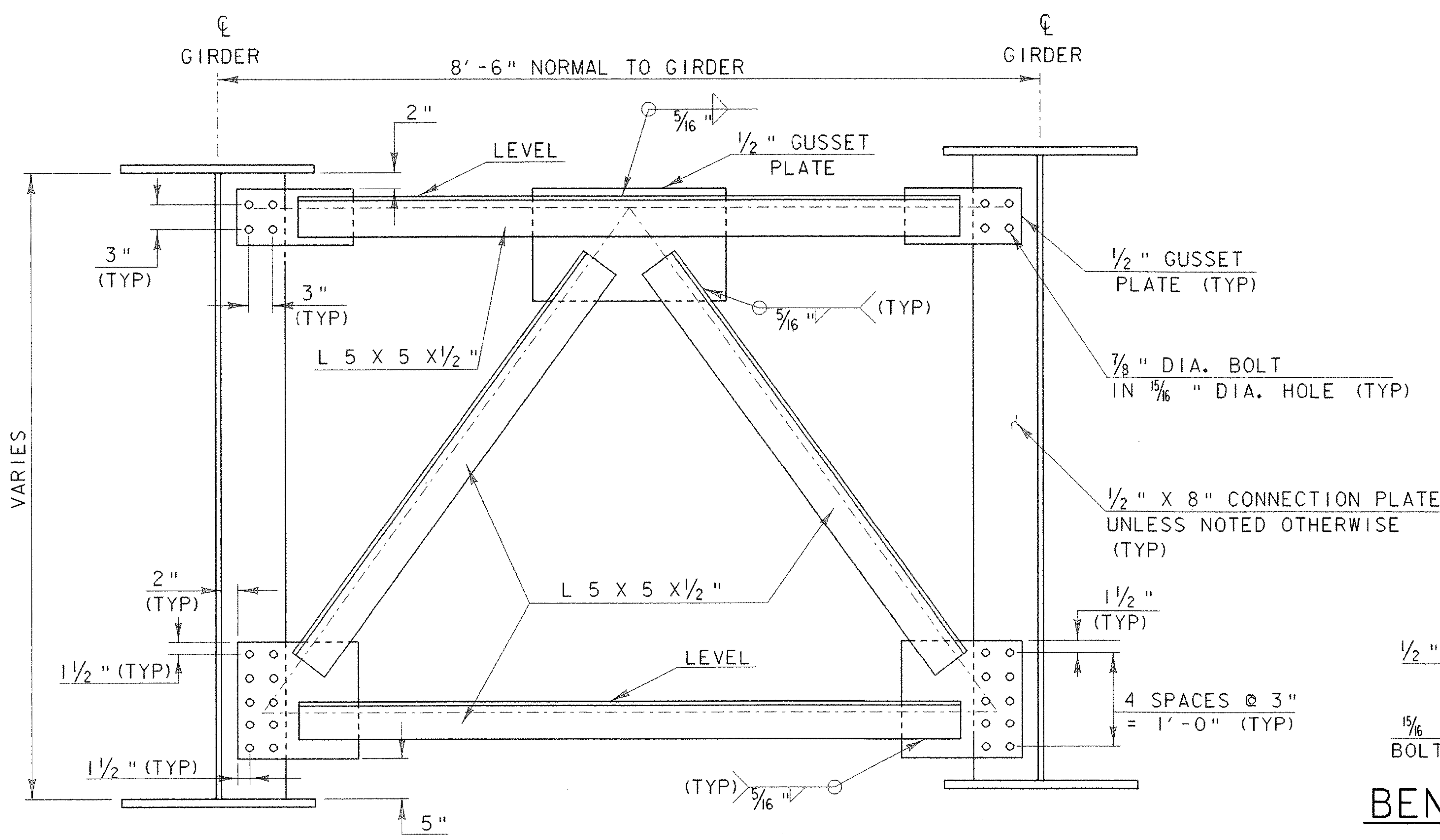
ABUTMENT CROSS FRAME

SCALE 1" = 1'-0



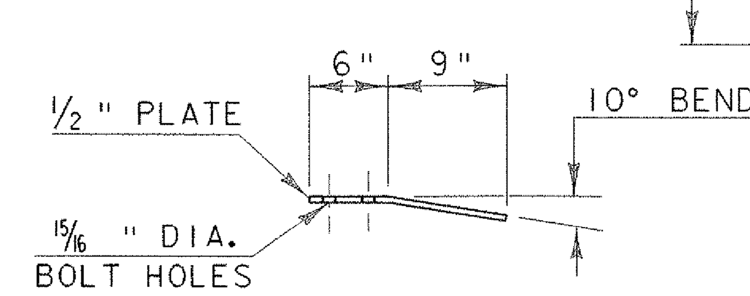
UTILITY DIAPHRAGM

SCALE 1" = 1'-0



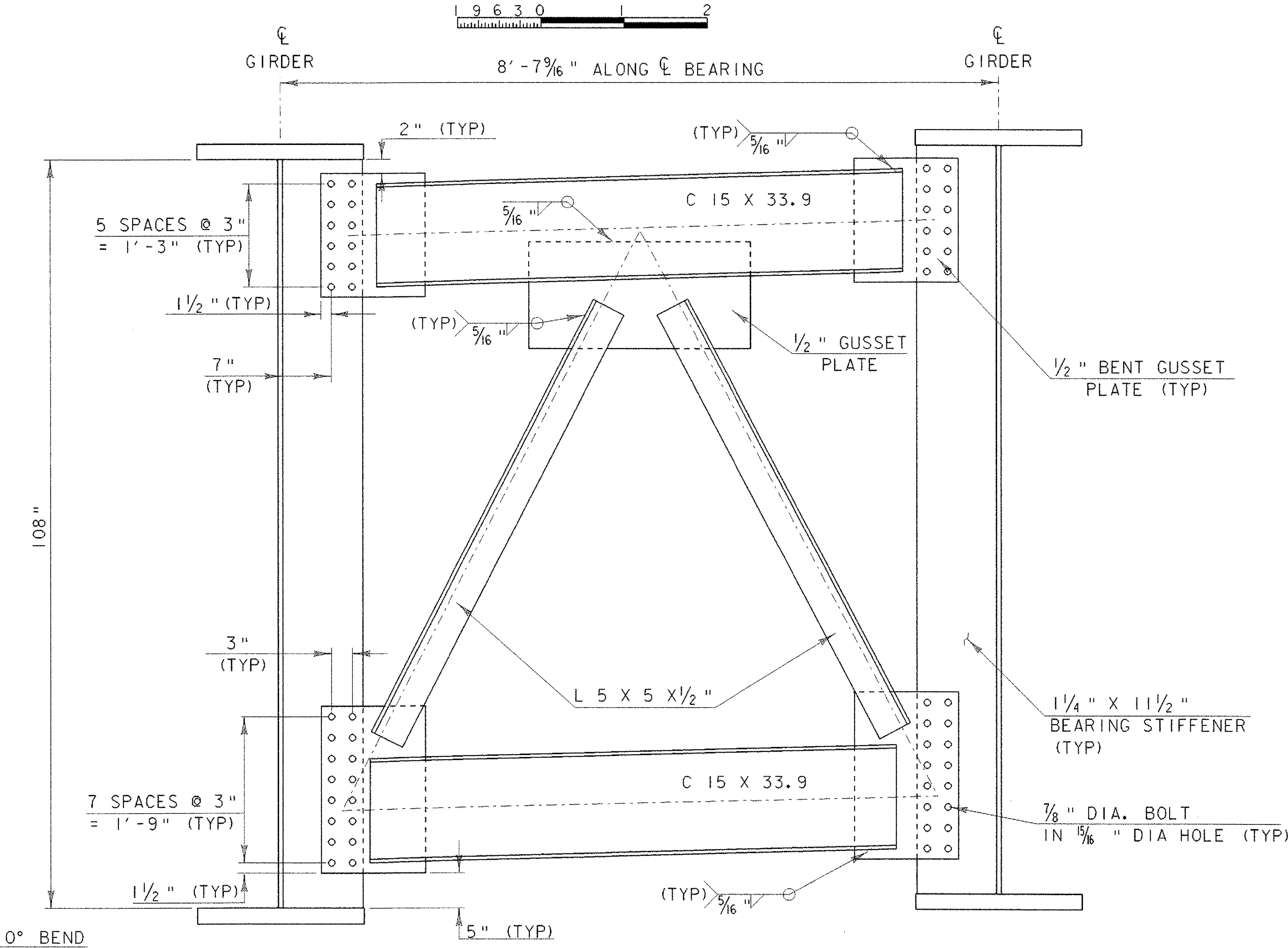
INTERMEDIATE CROSS FRAME

SCALE 1" = 1'-0



BENT GUSSET PLATE DETAIL

SCALE 1" = 1'-0



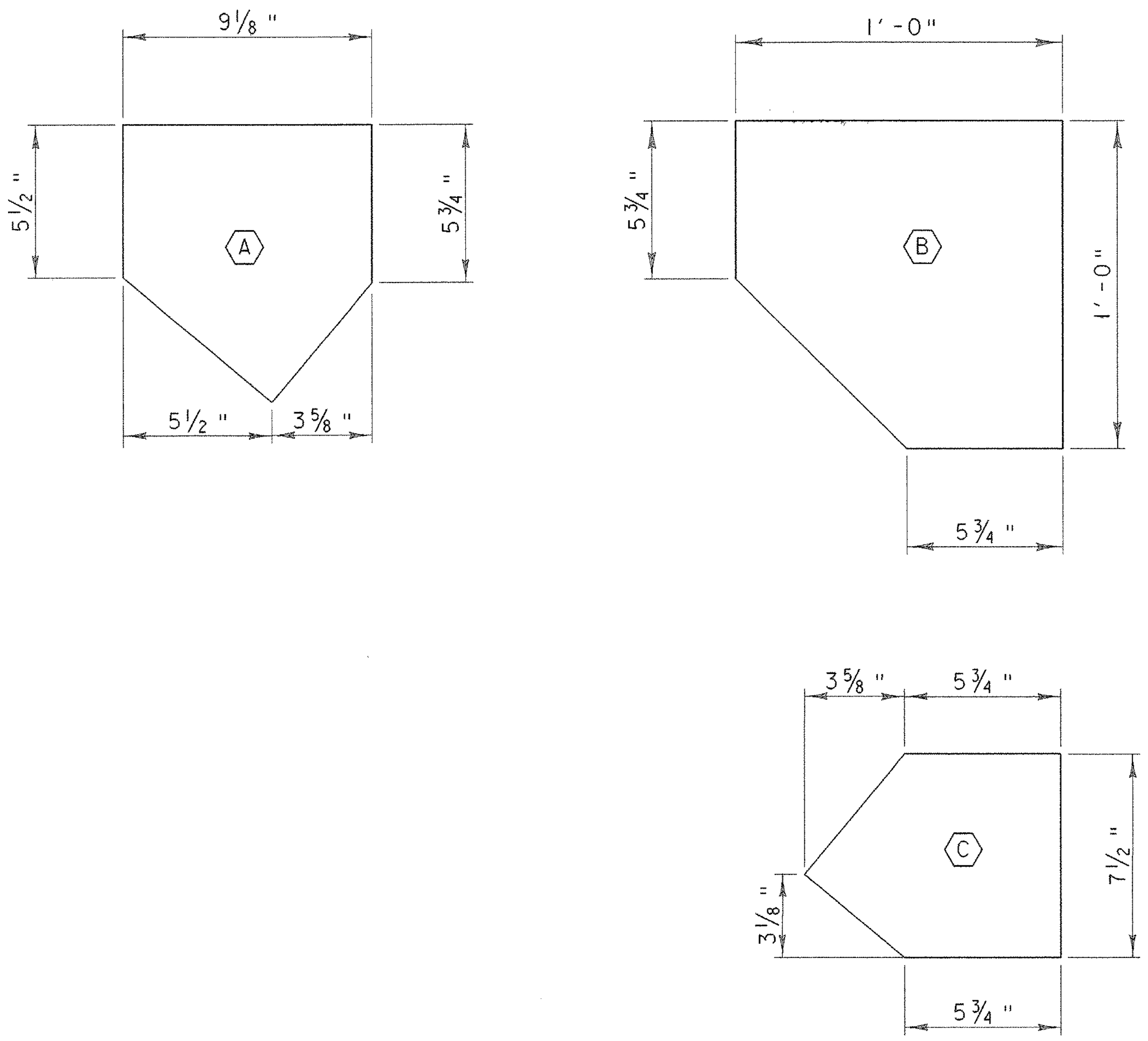
PIER CROSS FRAME

SCALE 1" = 1'-0

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444 (22)

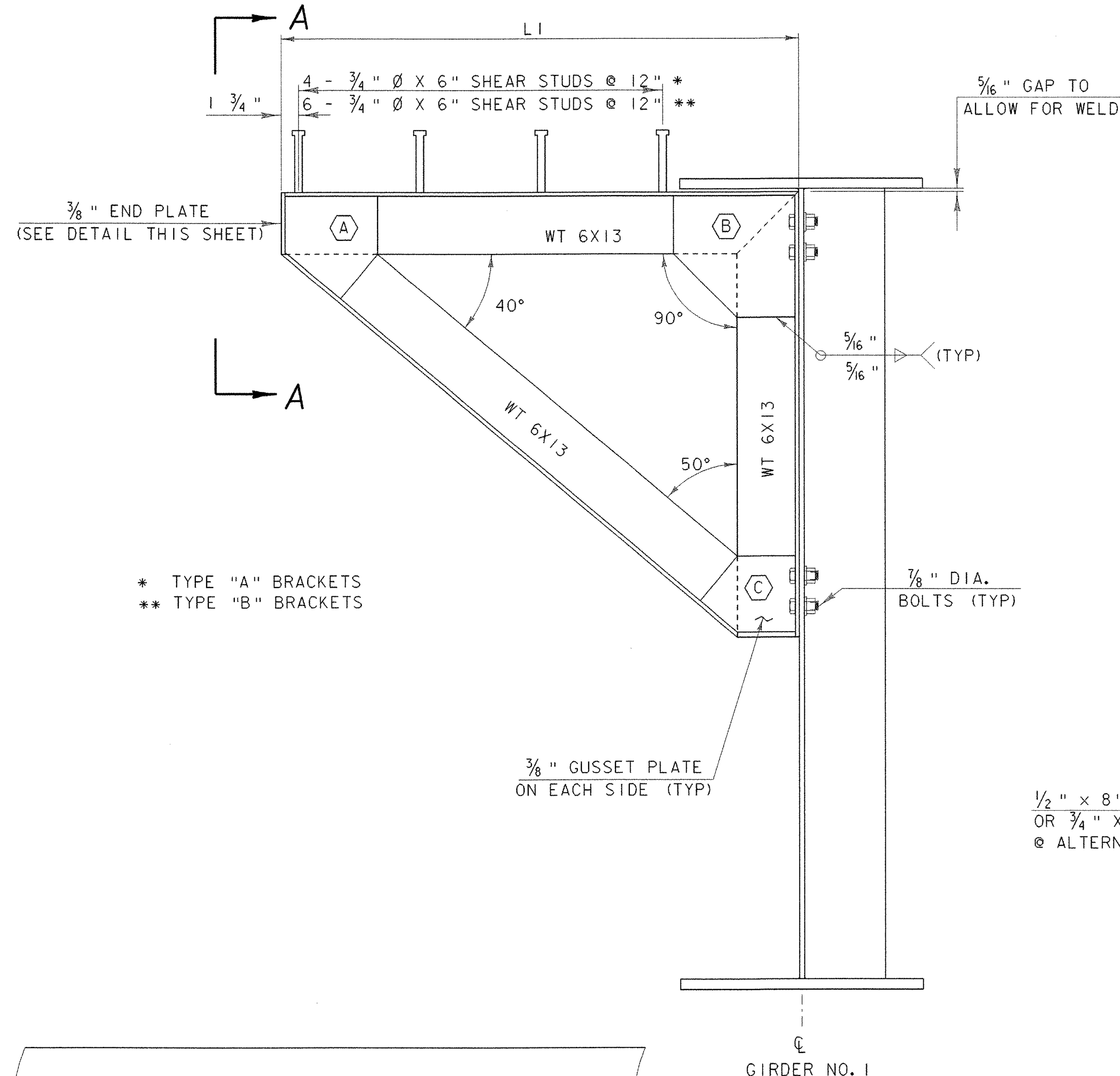
FILE NAME: 89j099/structures/sj099ssd.dgn
IPARM NAME: sj099diaphragm.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
DIAPHRAGM DETAILS

PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: W.B. SYMONDS
SHEET 36 OF 118

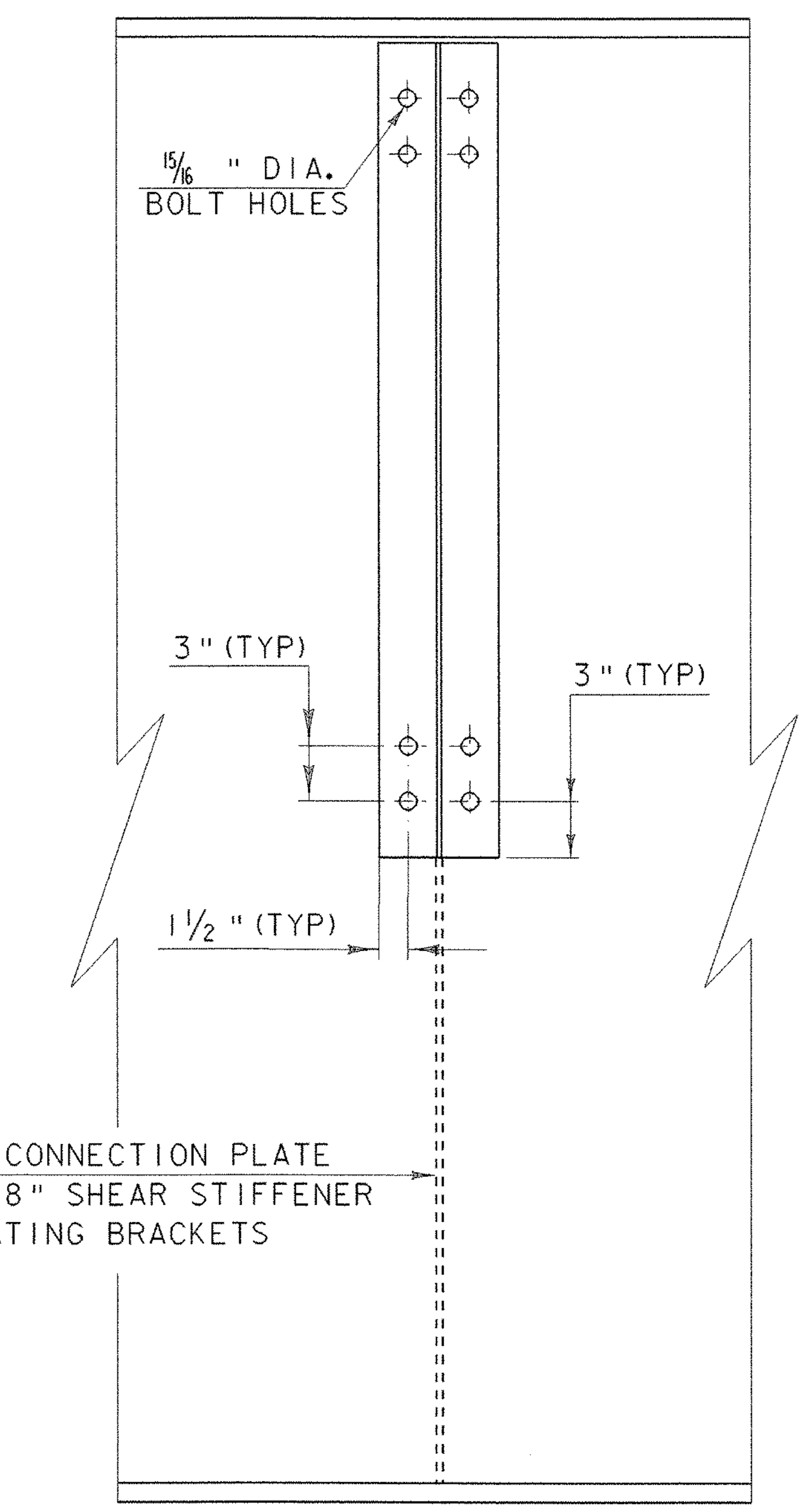


GUSSET PLATE DETAILS

SCALE 3" = 1'-0



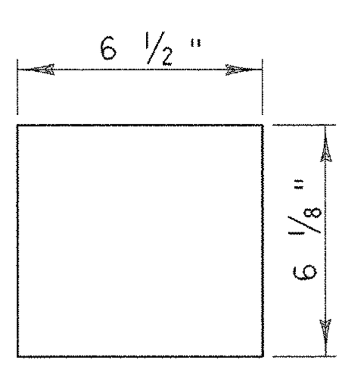
* TYPE "A" BRACKETS
** TYPE "B" BRACKETS



BRACKET DETAILS

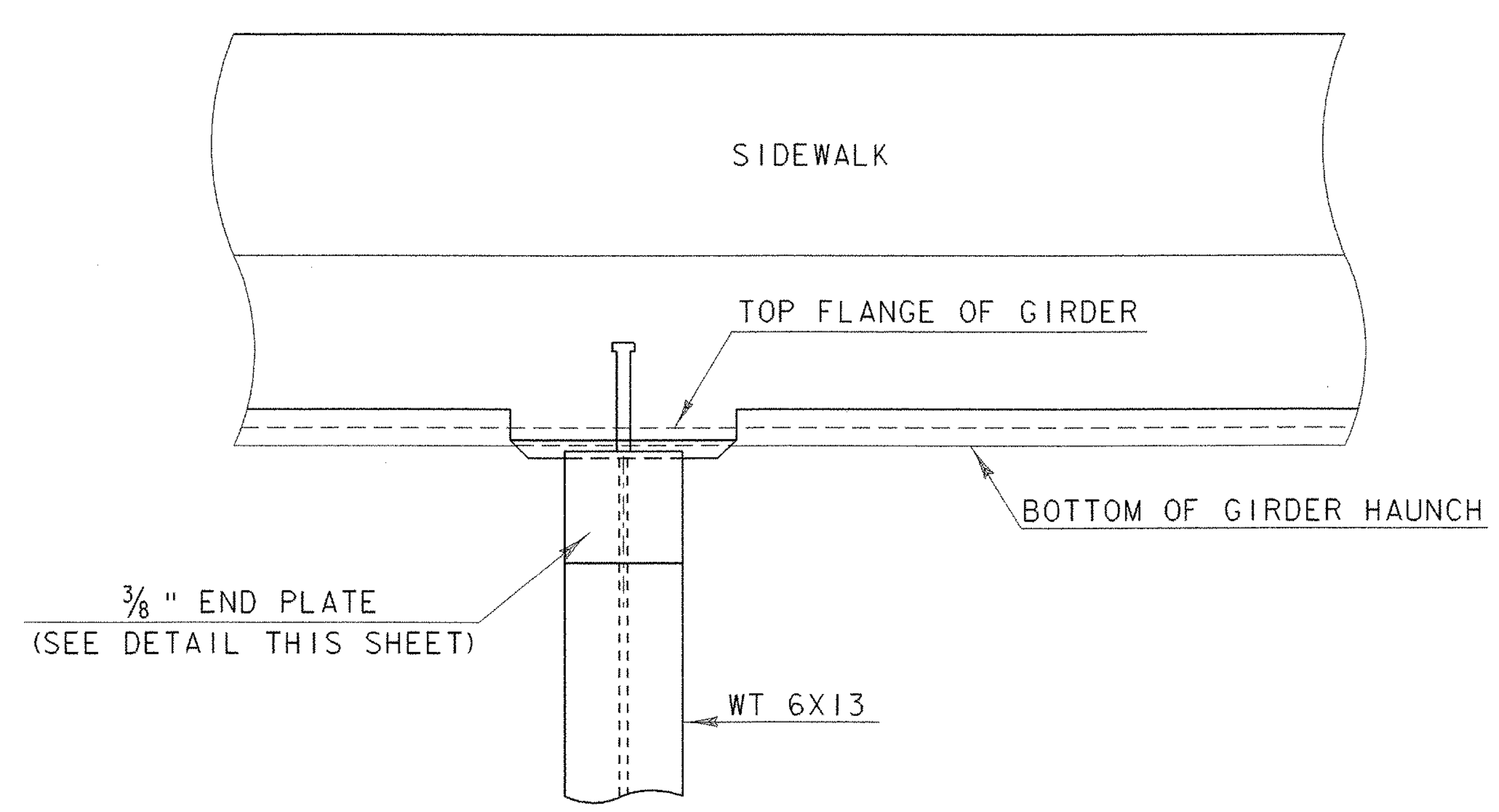
SCALE 1 1/2" = 1'-0

WT 6 X 13 LENGTH SCHEDULE	
BRACKET TYPE	L1
"A" (4 REQUIRED)	6'-9"
"B" (26 REQUIRED)	4'-3"



END PLATE DETAILS

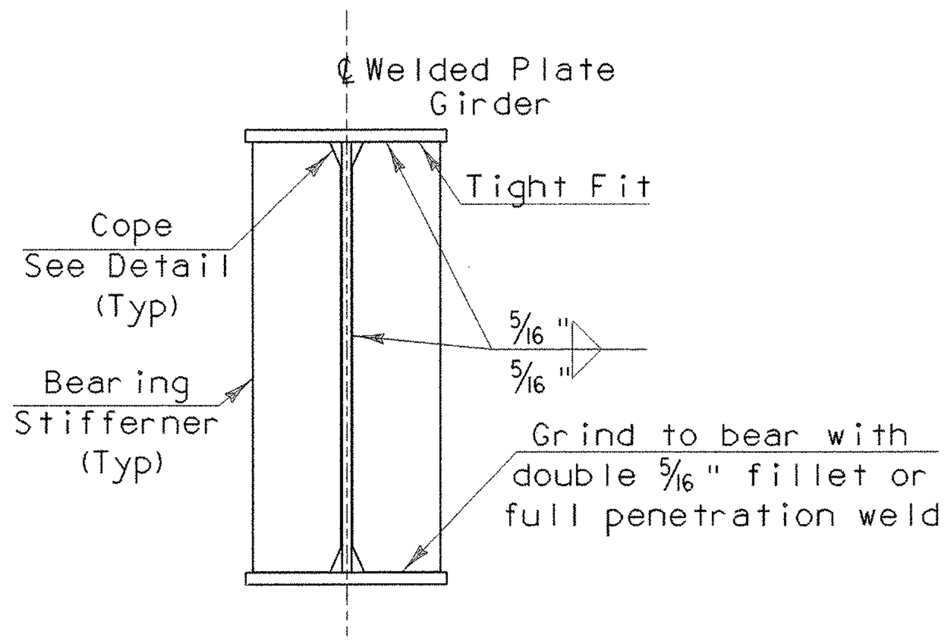
SCALE 3" = 1'-0



SECTION A-A

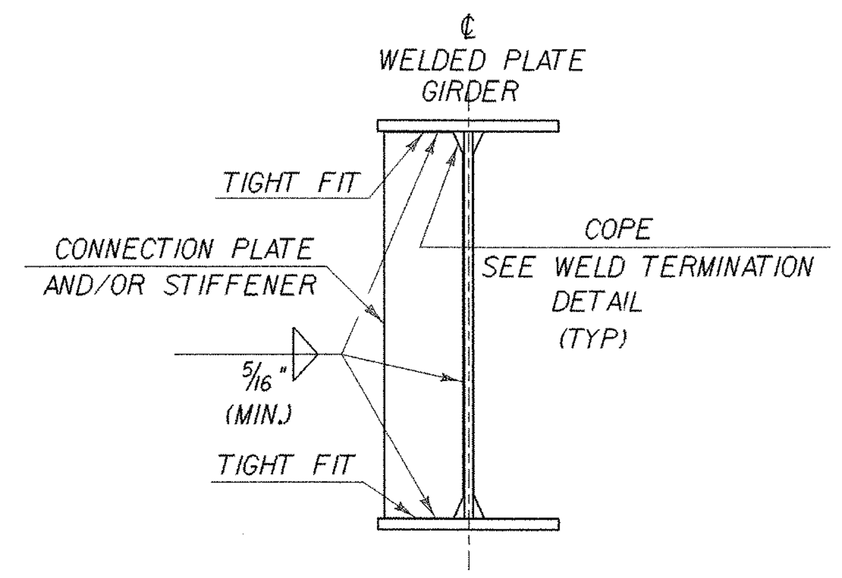
SCALE 1 1/2" = 1'-0

PROJECT NAME: PROJECT NUMBER: ROYALTON BRZ 1444 (22)	
FILE NAME: 89j099/structures/sj099ssd.dgn IPARM NAME: sj099bracket.i PROJECT LEADER: C.P. WILLIAMS DESIGNED BY: R.S. YOUNG BRACKET DETAILS	PLOT DATE: 25-SEP-2000 DRAWN BY: D.G. BASSETT CHECKED BY: W.B. SYMONDS SHEET 37 OF 118

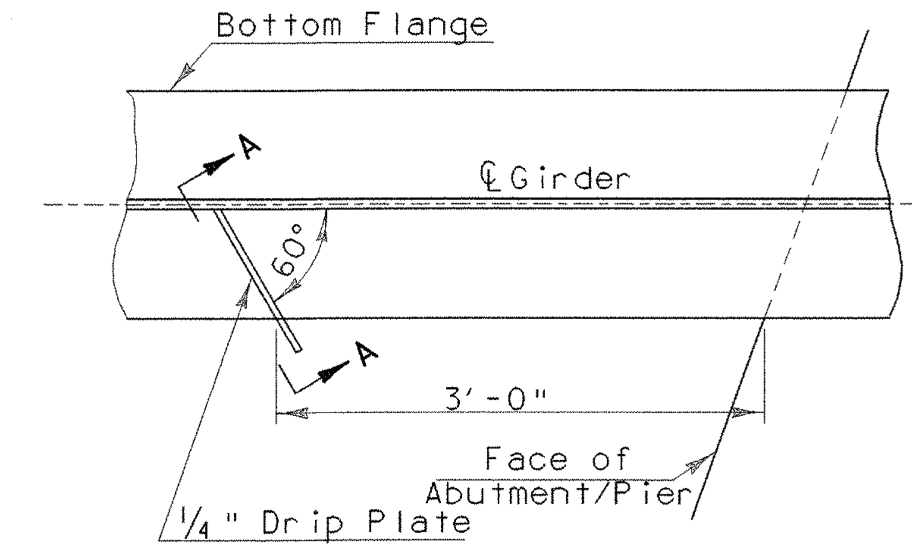


ABUTMENT BEARING STIFFENERS FOR WELDED PLATE GIRDERS

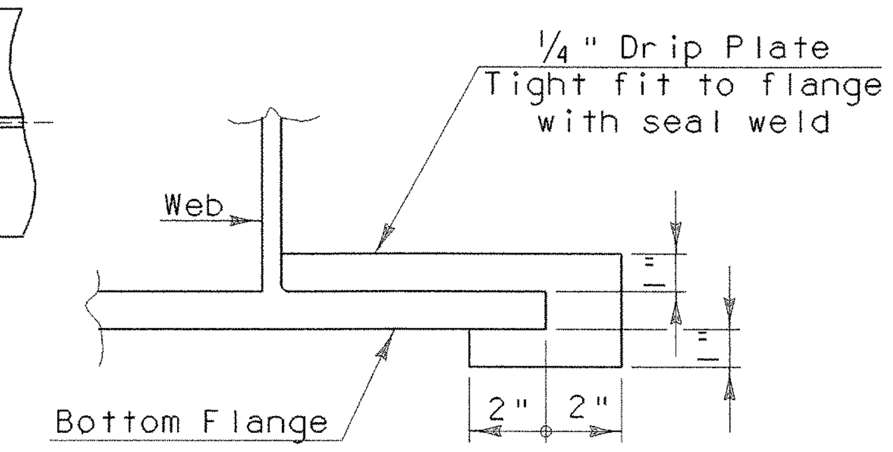
NTS



INTERMEDIATE CONNECTION PLATES AND/OR STIFFENERS FOR WELDED PLATE GIRDERS

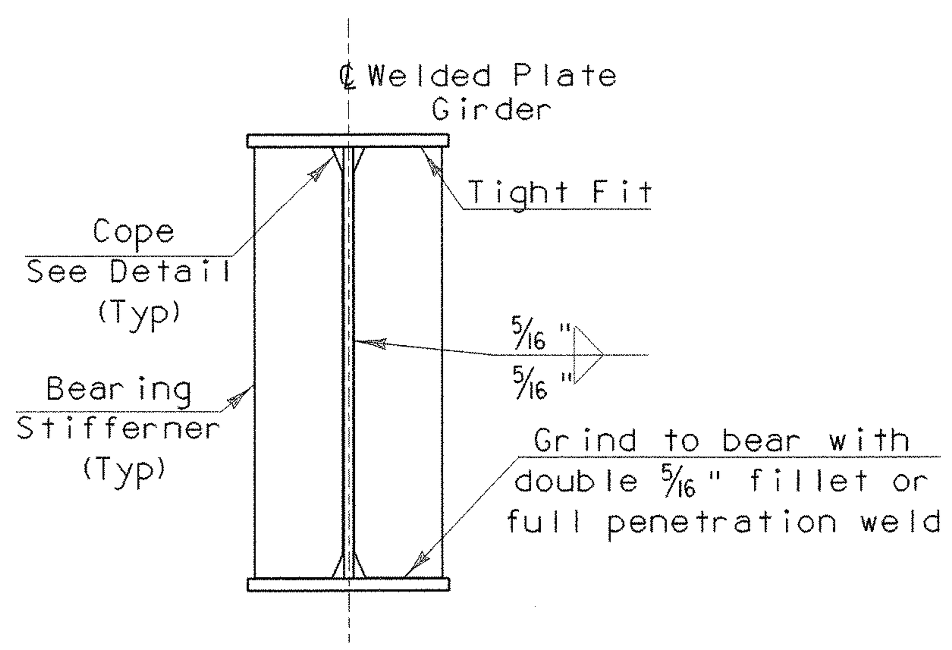


PLAN DRIP PLATE



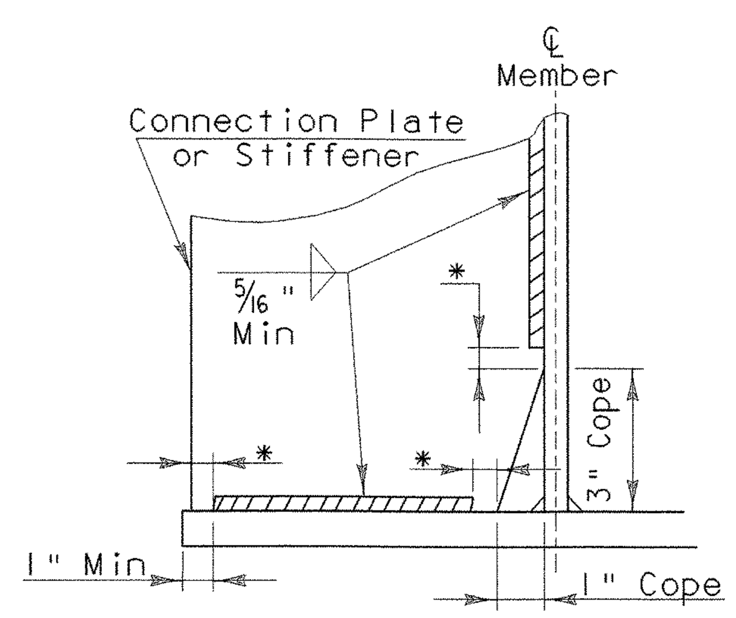
SECTION A - A

Note:
Drip Plates shall be placed on outside edge of fascia girders on the high side of all abutments and the Pier.



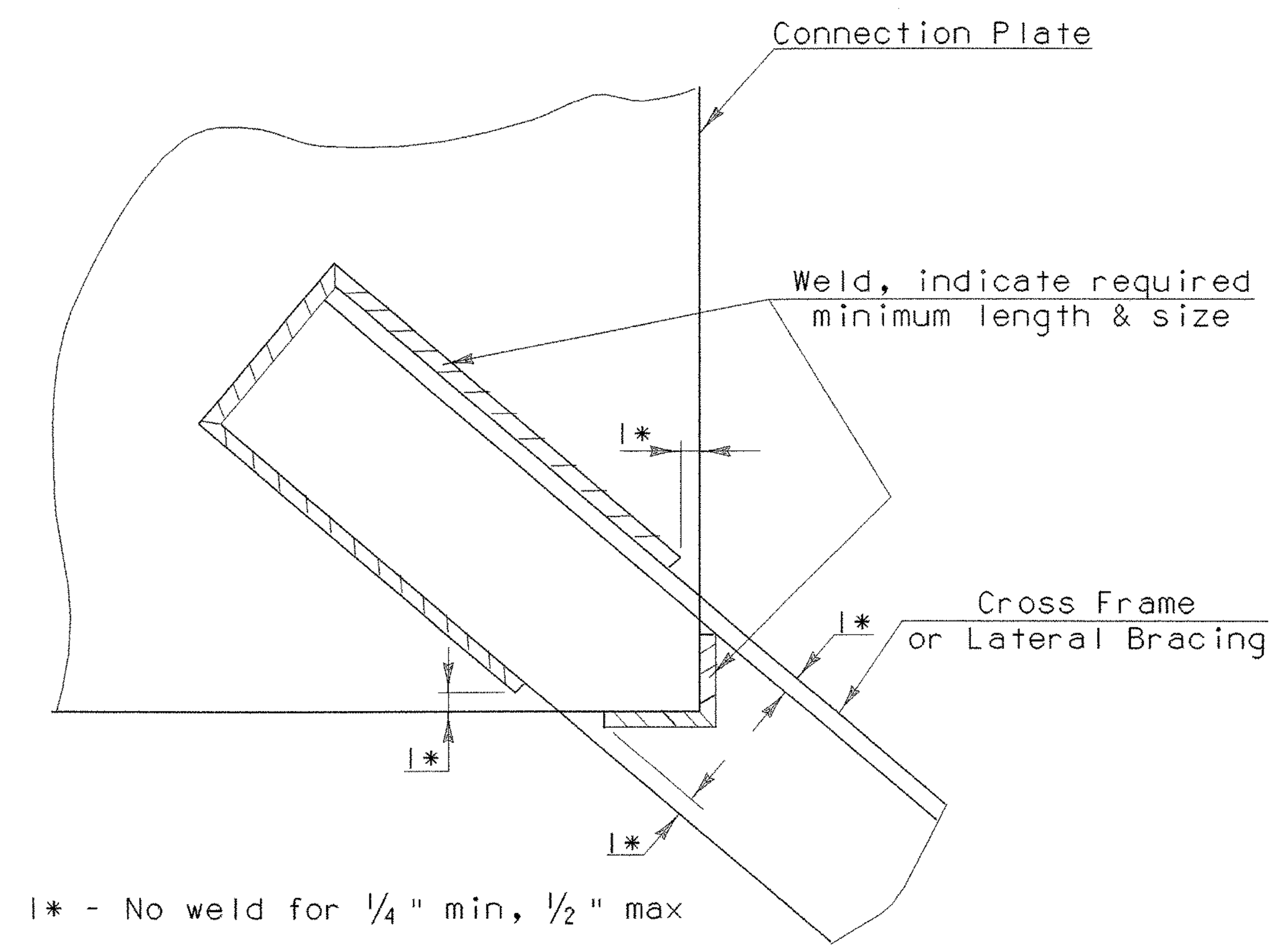
PIER BEARING STIFFENERS FOR WELDED PLATE GIRDERS

NTS



*No weld for 1/4" Min, 1/2" Max
(Except must maintain 1" minimum from edge of flange)

WELD TERMINATION AND COPING DETAILS FOR STEEL MEMBERS



1* - No weld for 1/4" min, 1/2" max

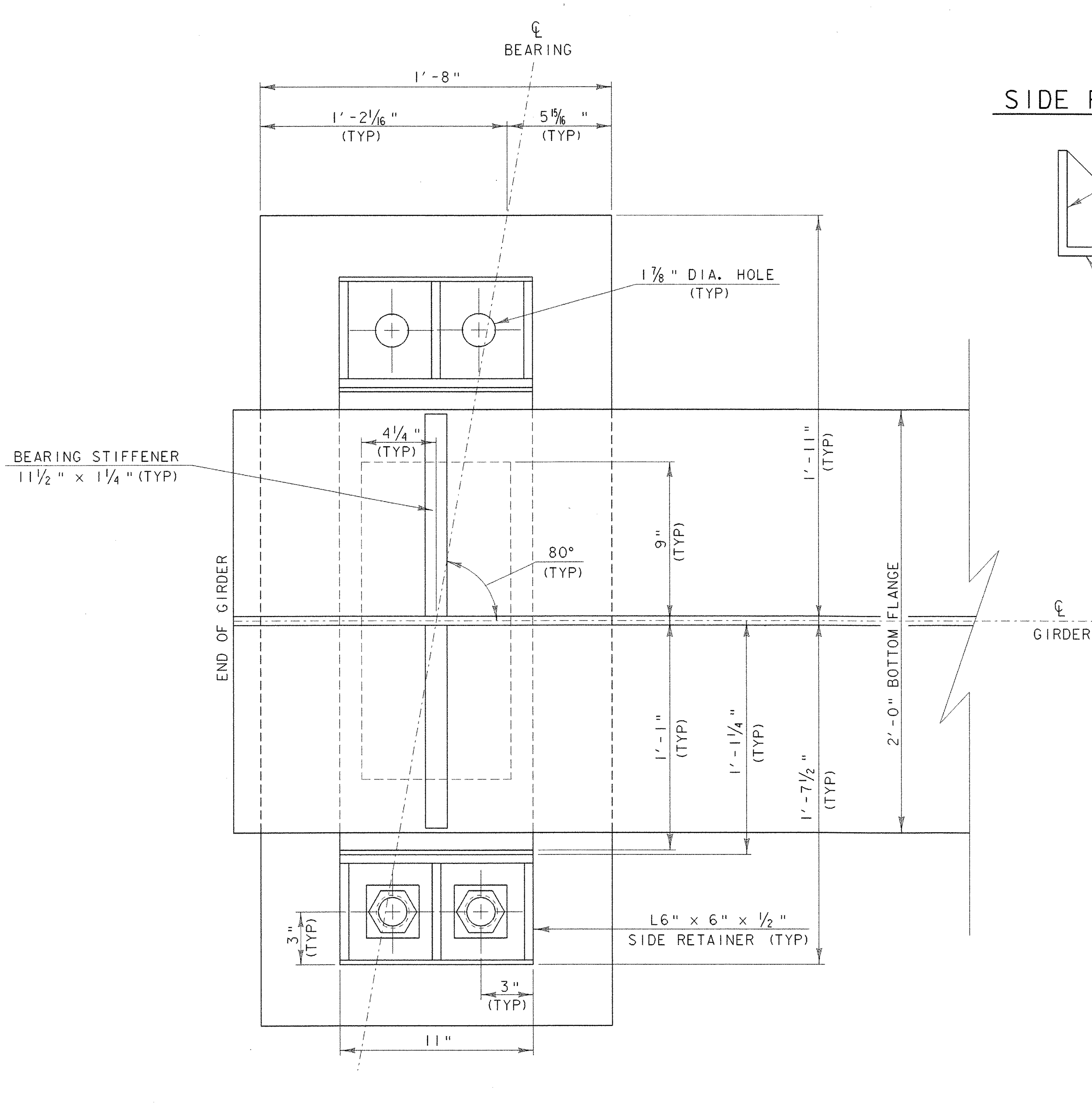
WELD LOCATION DETAIL AT CROSS FRAMES AND LATERAL BRACING

PROJECT NAME: ROYALTON BRZ 1444(22)
PROJECT NUMBER:

FILE NAME: 89j099/structures/sj099ssd.dgn
IPARM NAME: sj099ssdl.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
MISCELLANEOUS STEEL DETAILS

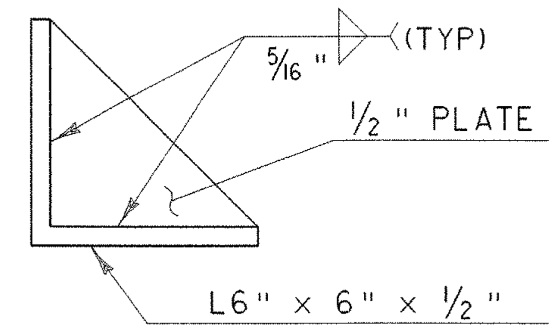
PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: W.B. SYMONDS
SHEET 38 OF 118

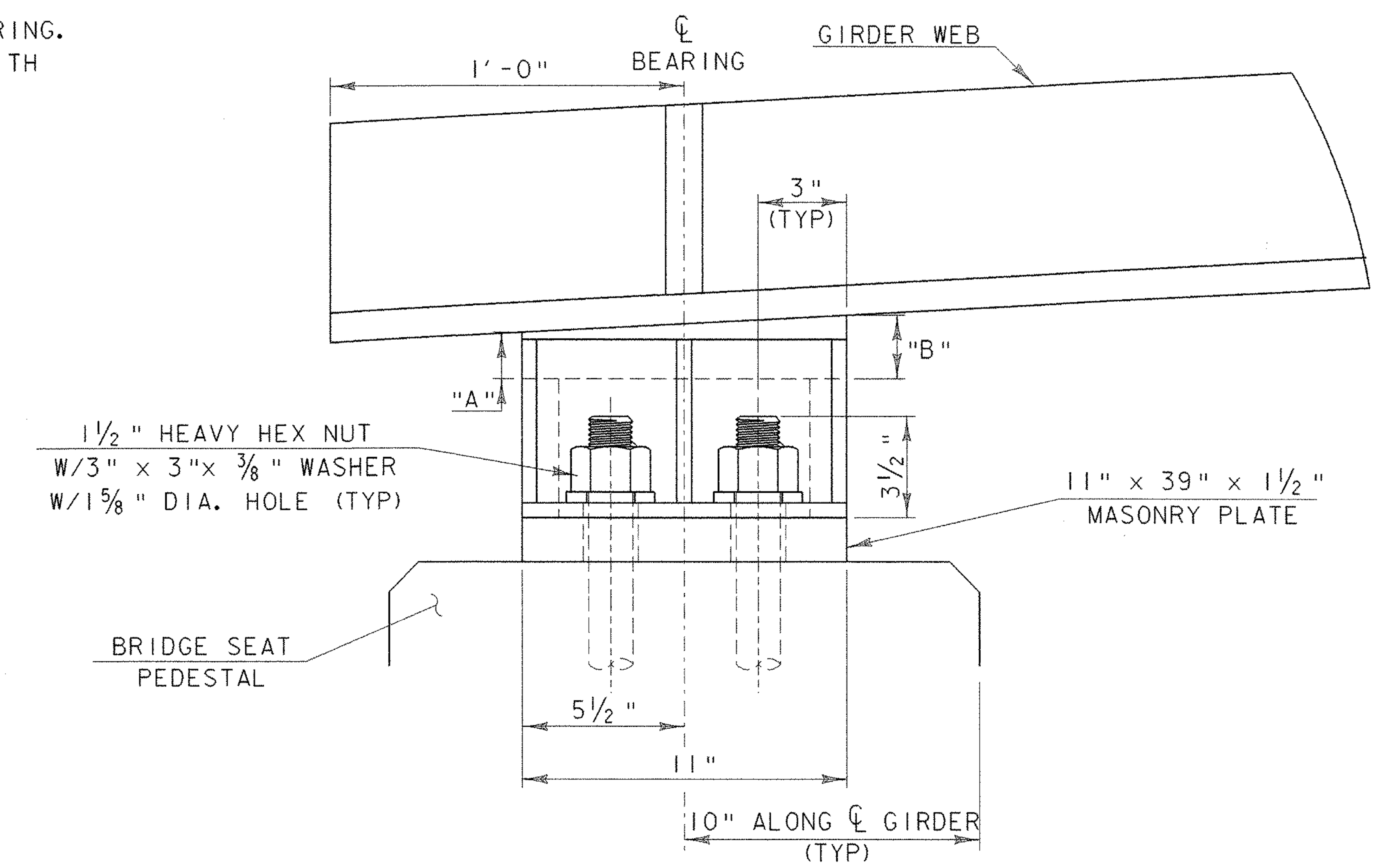
NOTE: THE DETAILS SHOWN ARE FOR ABUTMENT #1 EXPANSION BEARING. THESE DETAILS SHALL APPLY FOR ABUTMENT #2 BEARING WITH DIMENSIONS OPPOSITE HAND



PLAN VIEW

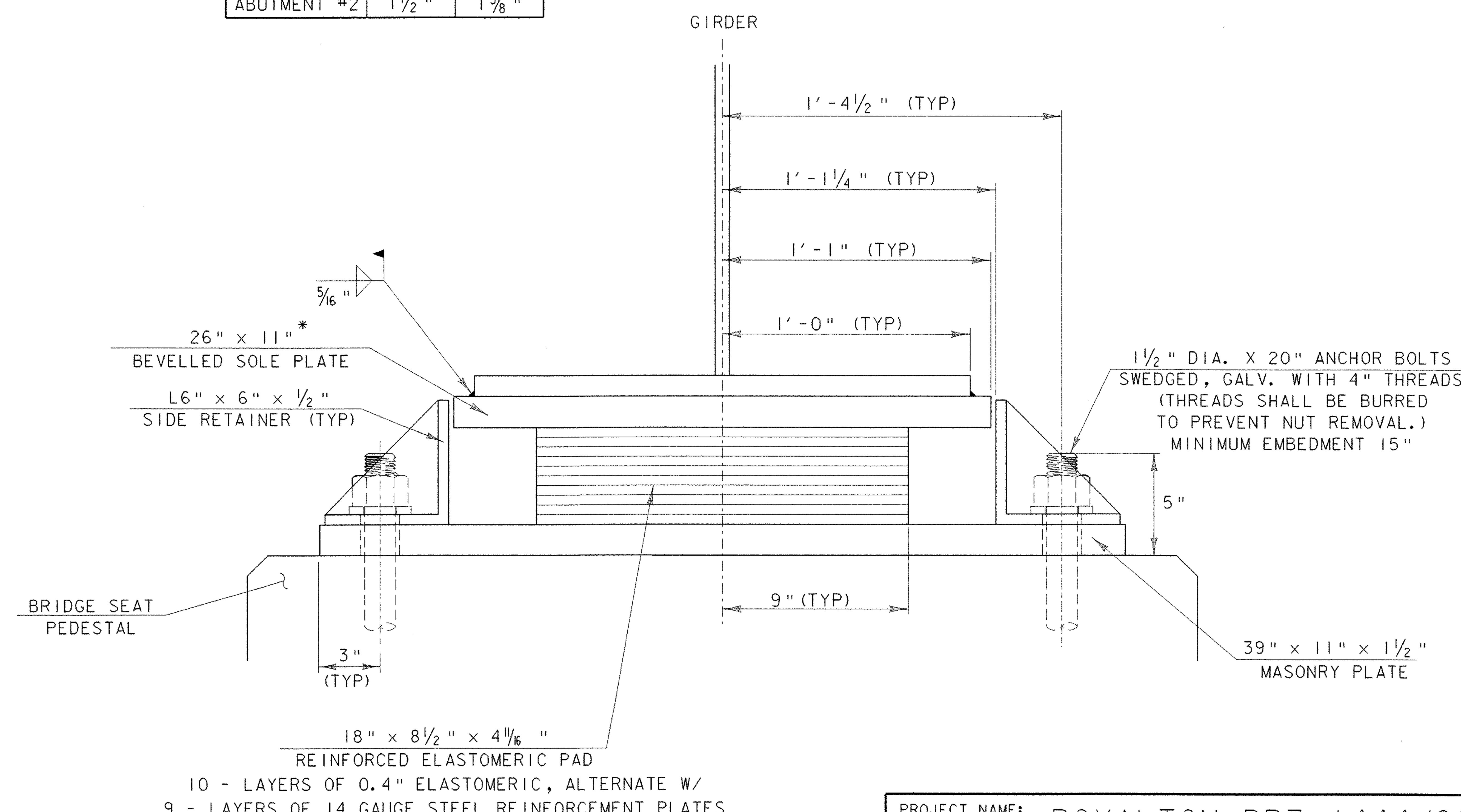
SIDE RETAINER





SIDE ELEVATION

* BEVEL PLATE THICKNESS		
	"A"	"B"
ABUTMENT #1	1 1/2"	1 11/16"
ABUTMENT #2	1 1/2"	1 5/8"



FRONT ELEVATION

SCALE 3" = 1'-0

9 6 3 0

SEE SHEET 41 FOR BEARING NOTES

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444 (22)

FILE NAME: 89j099/structures/sj099bearing.dgn
IPARM NAME: sj099abutbearing.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
EXPANSION BEARING DETAILS

PLOT DATE: 25-SEP-2000
DRAWN BY: P.R. ROWE
CHECKED BY: W.B. SYMONDS

SEE SHEET 41 FOR BEARING NOTES.

PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444 (22)

FILE NAME: 89j099/structures/sj099bearing.dgn
IPARM NAME: sj099brgpier.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: R.S. YOUNG
PIER FIXED BEARING DETAIL

PLOT DATE: 25-SEP-2000
DRAWN BY: R.S. YOUNG
CHECKED BY: W.B. SYMONDS
SHEET 40 OF 118

EXPANSION BEARING NOTES

1. EXPANSION BEARINGS SHALL BE PAID FOR UNDER THE ITEM 531.10 "BEARING DEVICE ASSEMBLY (EXPANSION)" AND SHALL CONFORM TO APPLICABLE SUBSECTIONS OF SECTION 531 AND 731.

2. THE FIELD WELD CONNECTING THE BOTTOM FLANGE WITH THE BEARING DEVICE SHALL BE MADE WITH E7018 RODS. AREAS OF METALIZING DAMAGED BY WELDING AND/OR HANDLING SHALL BE REPAIRED BY METALIZING IN ACCORDANCE WITH ASTM A 760/760M.

3. SHOP DRAWINGS CONFORMING TO SUBSECTION 531.03 SHALL BE SUBMITTED AND INCLUDE ANY NECESSARY WELDING OR BONDING PROCEDURES. THE SHOP DRAWINGS SUBMITTAL SHALL ALSO INCLUDE ALL APPLICABLE CERTIFICATIONS FOR ELASTOMERIC MATERIAL.

4. ALL STEEL COMPONENTS SHALL BE METALIZED AS PER SECTION 531.04(b) AND 506.15. AFTER THE BEARINGS ARE METALIZED, THEY SHALL BE SEALED WITH AN APPROVED PRIMER AS SPECIFIED IN SUBSECTION 506.15(c). ALL WASHERS SHALL BE 3/8" PLATE MINIMUM. PAYMENT FOR ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR "BEARING DEVICE ASSEMBLY (EXPANSION)". ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED PER AASHTO M 232/M 232M.

5. ALL STEEL IN BEARING DEVICES SHALL BE AASHTO M 270/M 270M GRADE 50.

6. ALL REINFORCEMENT BETWEEN LAYERS OF ELASTOMERIC SHALL BE STEEL ASTM A36. ALL INTERNAL STEEL PLATES SHALL BE SAND BLASTED AND FREE OF COATINGS, RUST, AND MILL SCALE. THE PLATES SHALL BE FREE OF SHARP EDGES AND BURRS.

7. STEEL REINFORCED ELASTOMERIC BEARINGS SHALL HAVE A MINIMUM OF 1/8" EDGE SEAL OF ELASTOMER INTEGRAL WITH THE BEARING OVER ALL INTERNAL PLATES.

8. FOR ELASTOMERIC BEARINGS, ALL MATERIALS AND FABRICATION SHALL BE PER AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, EDITION 1996 AND ITS LATEST REVISIONS AND AASHTO M 251/M 251M.

9. ALTERNATE CONFIGURATIONS FOR BEARINGS MAY BE SUBMITTED FOR APPROVAL. ANY ALTERNATE SUBMITTED SHALL BE DESIGNED AND CERTIFIED TO MEET THE DESIGN LOADS AND CRITERIA SHOWN ON THIS SHEET. THE ALTERNATE SHALL MAINTAIN THE ANCHORAGE SYSTEM SHOWN AND SHALL BE DESIGNED PER AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES 1996 EDITION AND ITS LATEST REVISIONS.

10. BRIDGE SEAT ELEVATIONS MAY BE REVISED TO ACCOMMODATE AN ALTERNATIVE CONFIGURATION.

11. DESIGN CRITERIA:
    - A. MASONRY PLATE TO CONCRETE DESIGN PRESSURE = 1000 psi
    - B. DESIGN ROTATION = 0.02 RAD
    - C. HORIZONTAL CAPACITY SHALL BE MINIMUM OF 20% VERTICAL LOAD IN ANY RESTRAINED DIRECTION.
    - D. DESIGN LOAD PER BEARING
      - RDL = 141.11 Kips
      - RLL = 77.52 Kips
    - E. TEMPERATURE RANGE = -30° TO 120°F
    - F. ELASTOMER SHALL HAVE NOMINAL HARDNESS OF 60 ON SHORE 'A' SCALE. ELASTOMER SHALL HAVE A SHEAR MODULUS BETWEEN 130 AND 175 psi. THE RAW ELASTOMER SHALL BE VIRGIN NEOPRENE CLASSIFIED AS LOW TEMPERATURE GRADE 4 AS DEFINED IN TABLE 18.4.5.1 - 1A OF AASHTO, DIVISION II, SECTION 18.
    - G. NO FABRIC REINFORCEMENT WILL BE ALLOWED IN ELASTOMERIC PADS

12. THE STEEL SOLE PLATES AND MASONRY PLATES SHALL BE HOT BONDED TO THE REINFORCED ELASTOMERIC PAD DURING THE VULCANIZATION PROCESS. THE STEEL SURFACES TO BE BONDED TO THE PAD SHALL NOT BE METALIZED.

13. THE BEARING TOLERANCES SHALL MEET THOSE GIVEN IN AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION DATED 1996 AND ITS LATESTS REVISIONS, DIVISION II SECTION 18.

FIXED BEARING NOTES

1. FIXED BEARINGS SHALL BE PAID FOR UNDER THE ITEM 531.10 "BEARING DEVICE ASSEMBLY (FIXED)", AND SHALL CONFORM TO APPLICABLE SUBSECTIONS OF 531 AND 731.

2. THE FIELD WELD CONNECTING THE BOTTOM FLANGE WITH THE BEARING DEVICE SHALL BE MADE WITH E7018 RODS. AREAS OF METALIZING DAMAGED BY WELDING AND/OR HANDLING SHALL BE REPAIRED BY METALIZING IN ACCORDANCE WITH ASTM A 760/760M.

3. SHOP DRAWINGS CONFORMING TO SUBSECTION 531.03 SHALL BE SUBMITTED AND INCLUDE ANY NECESSARY WELDING PROCEDURES.

4. ALL STEEL COMPONENTS SHALL BE METALIZED AS PER SECTION 531.04(b) AND 506.15(c). AFTER THE BEARINGS ARE METALIZED, THEY SHALL BE SEALED WITH AN APPROVED PRIMER AS SPECIFIED IN SUBSECTION 506.15(c). ALL WASHERS SHALL BE 3/8" PLATE MINIMUM. PAYMENT FOR ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR "BEARING DEVICE ASSEMBLY (FIXED)". ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED PER AASHTO M 232/M 232M.

5. ALL STEEL IN FIXED BEARING DEVICES SHALL BE AASHTO M 270/M 270M GRADE 50.

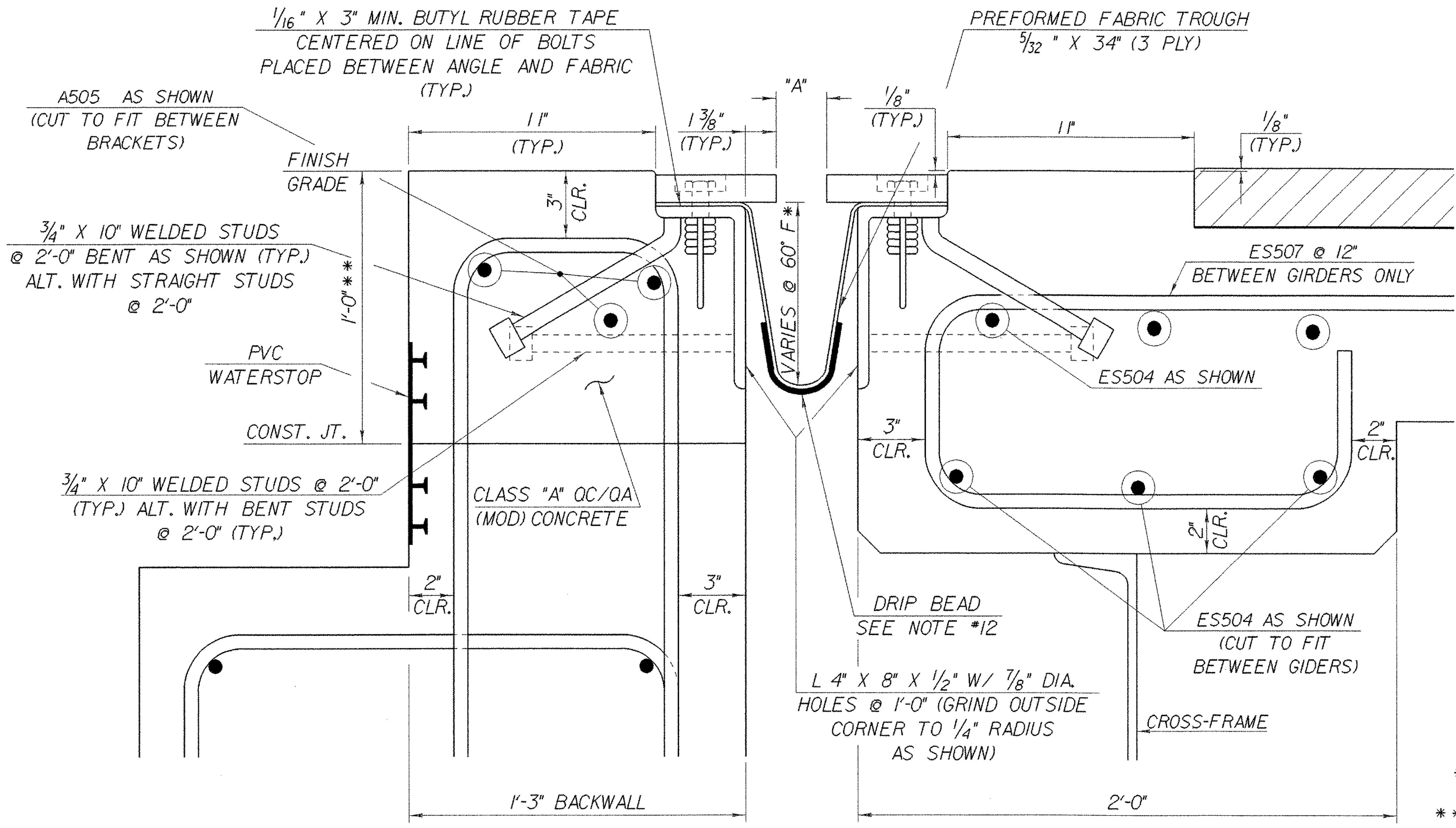
6. DESIGN CRITERIA:
    - A. MASONRY PLATE ON CONCRETE DESIGN PRESSURE IS 1000 psi.
    - B. HORIZONTAL CAPACITY SHALL BE A MINIMUM OF 20% DEAD LOAD IN ANY RESTRAINED DIRECTION.
    - C. DESIGN LOAD PER BEARING
      - RDL = 546.98 Kips
      - RLL = 178.93 Kips

7. ALTERNATE CONFIGURATIONS FOR BEARINGS MAY BE SUBMITTED FOR APPROVAL. ANY ALTERNATE SUBMITTED SHALL BE DESIGNED AND CERTIFIED TO MEET THE DESIGN LOADS AND CRITERIA SHOWN ON THIS SHEET. THE ALTERNATE SHALL MAINTAIN THE ANCHORAGE SYSTEM SHOWN AND SHALL BE DESIGNED PER AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES 1996 EDITION AND ITS LATEST REVISIONS.

8. BRIDGE SEAT ELEVATIONS MAY BE REVISED TO ACCOMMODATE AN ALTERNATE CONFIGURATION.

9. THE BEARING TOLERANCES SHALL MEET THOSE GIVEN IN AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION DATED 1996 AND ITS LATEST REVISIONS, DIVISION II SECTION 18. THE CONTACT SURFACES OF THE CURVED BEARING SURFACES OF THE BEARING COLUMN AND SOLE PLATES SHALL MEET THE TOLERANCES AND FINISH REQUIREMENTS OF BEARING PINS AND BUSHINGS.

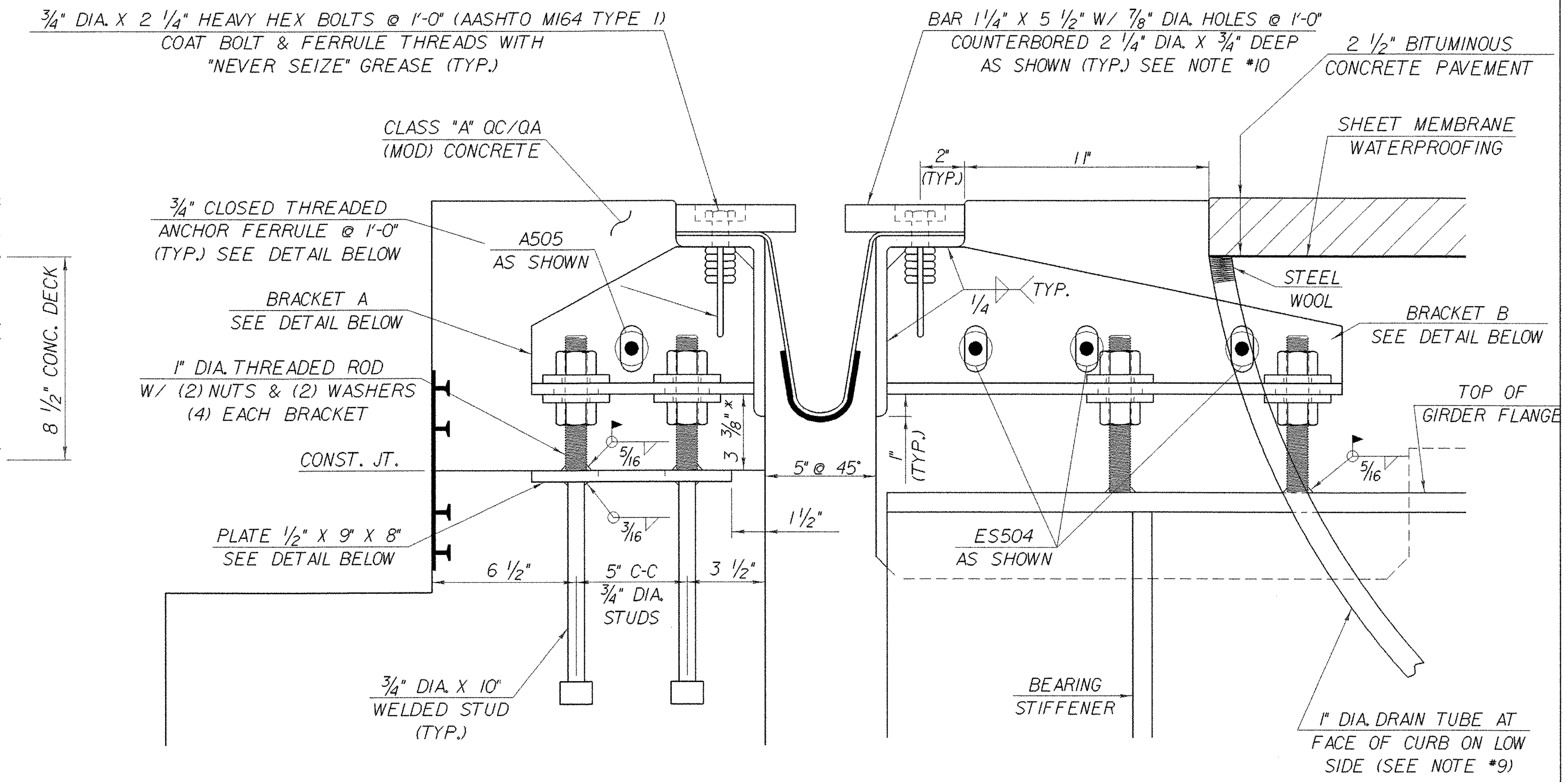
10. THE CURVED CONTACT SURFACES SHALL NOT BE METALIZED.



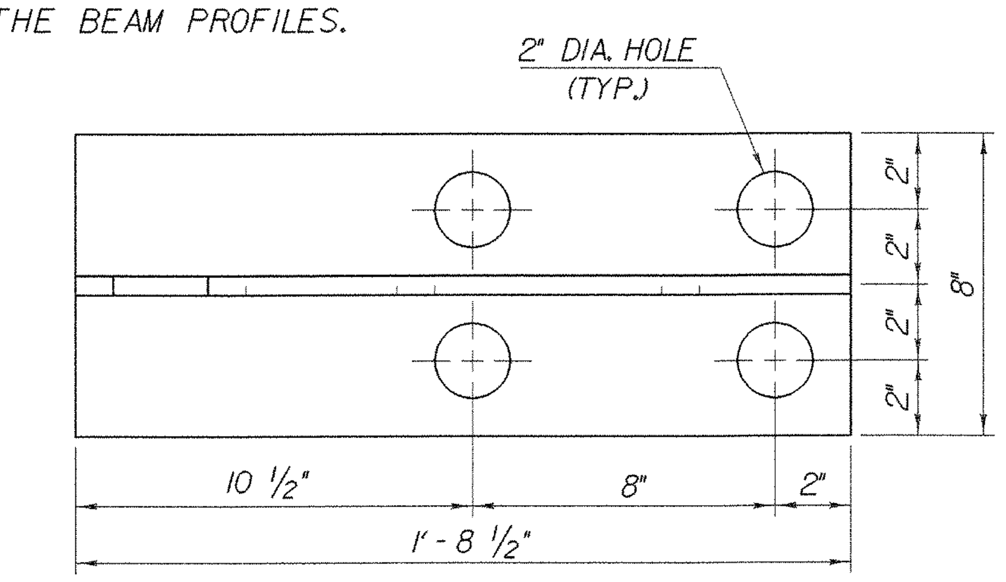
* 4" AT FASCIA TO 12" AT DOWNSPOUT

** THESE DIMENSIONS ARE THEORETICAL AND MAY CHANGE DEPENDING UPON THE OUTCOME OF THE BEAM PROFILES.

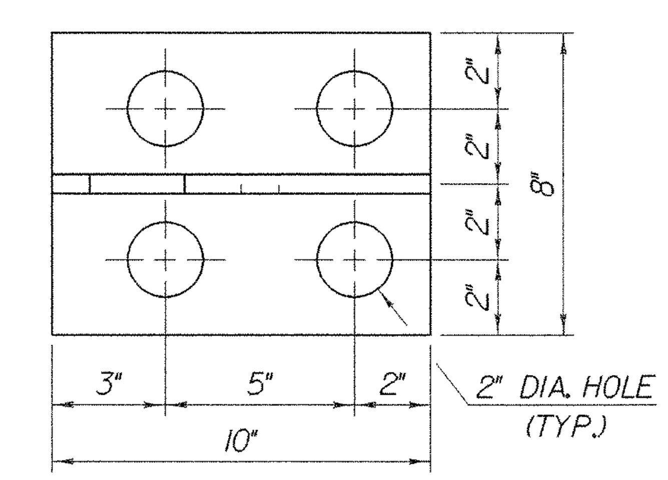
TYPICAL SECTION BETWEEN GIRDERS



TYPICAL SECTION AT GIRDERS



BRACKET B PLAN



BRACKET A PLAN

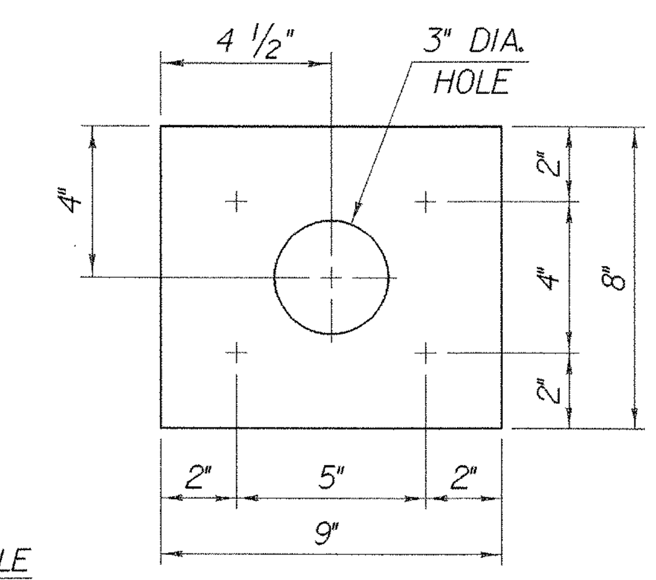
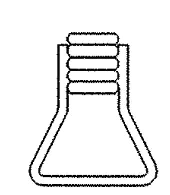


PLATE PLAN

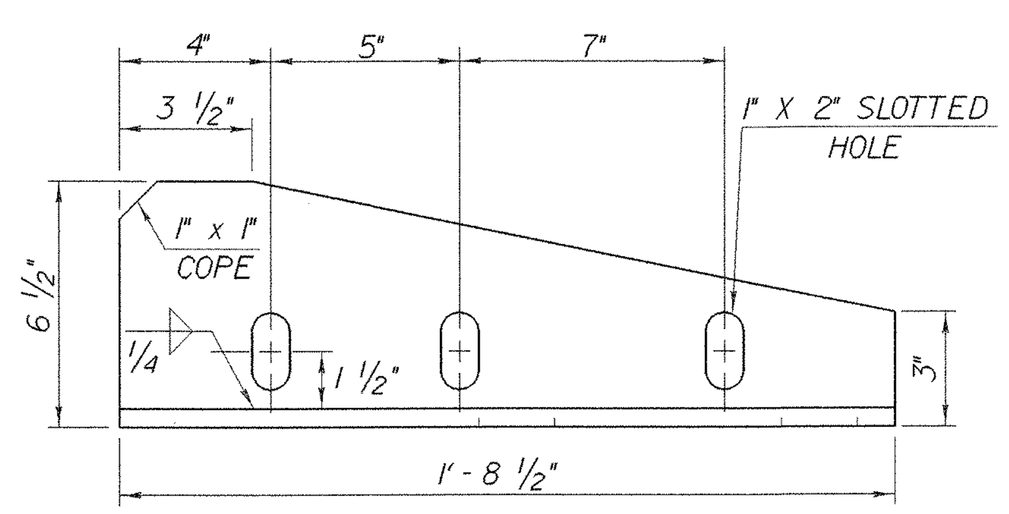
1. DETAILS ON THIS SHEET ARE FOR ITEM 516.10 "BRIDGE EXPANSION JOINT". THE UNIT BID PRICE FOR THIS ITEM SHALL INCLUDE THE MATERIAL, FABRICATION AND INSTALLATION OF THE CURB AND SIDEWALK PLATES.
2. PREFORMED FABRIC MATERIAL SHALL BE CONTINUOUS AND SHALL CONFORM TO SUBSECTION 707.07.
3. BUTYL RUBBER TAPE SHALL CONFORM TO AASHTO SPECIFICATION M-198, TYPE II.
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 M270 GRADE 36 GALVANIZED OR METALIZED AS PER SUBSECTION 516.02 AS MODIFIED BY GENERAL SPECIAL PROVISIONS UNLESS OTHERWISE SPECIFIED. THE TOP PLATE FOR THE CURB AND SIDEWALK PLATES SHALL BE SLIP-NOT OR EQUIVALENT ASTM A-36 STEEL.
6. THE ITEM "BRIDGE EXPANSION JOINT" 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 4" X 8" X 1/2" ANGLES SHALL BE FURNISHED AS ONE CONTINUOUS PIECE. THE 1 1/4" X 5 1/2" BARS EACH SIDE OF THE JOINT SHALL BE PROVIDED IN TWO 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 516.10 "BRIDGE EXPANSION JOINT".
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 ADJACENT GIRDER. THE DRAIN TUBES SHALL BE FASTENED TO THE GIRDERS USING A METHOD APPROVED BY THE ENGINEER.
10. FILL COUNTERBORED HOLES WITH HOT POURED JOINT SEALER (STD. SPEC. 707.04 AS MODIFIED BY THE GENERAL SPECIAL PROVISIONS) AFTER BOLT INSTALLATION. PAYMENT FOR THE WORK SHALL BE SUBSIDIARY TO ITEM 516.10.
11. PAYMENT FOR WATERSTOP SHALL BE SUBSIDIARY TO CONCRETE PAY ITEM.
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.

TEMP	"A" DIST
0° F	2 15/16"
15° F	2 11/16"
30° F	2 1/2"
45° F	2 1/4"
60° F	2"
75° F	1 13/16"
90° F	1 9/16"
105° F	1 3/8"

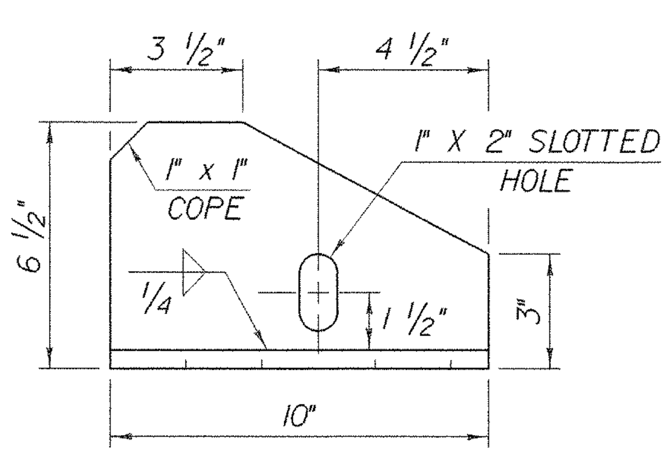
"A" IS THE SETTING BEFORE DECK HAS BEEN PLACED.



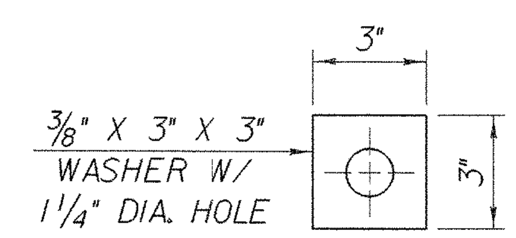
ANCHOR FERRULE DETAIL



BRACKET B ELEVATION



BRACKET A ELEVATION

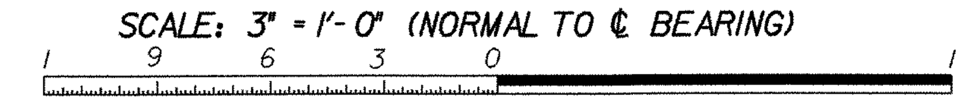


WASHER FOR BRACKET

ALL PLATES 1/2"

ALL DETAILS THIS SHEET

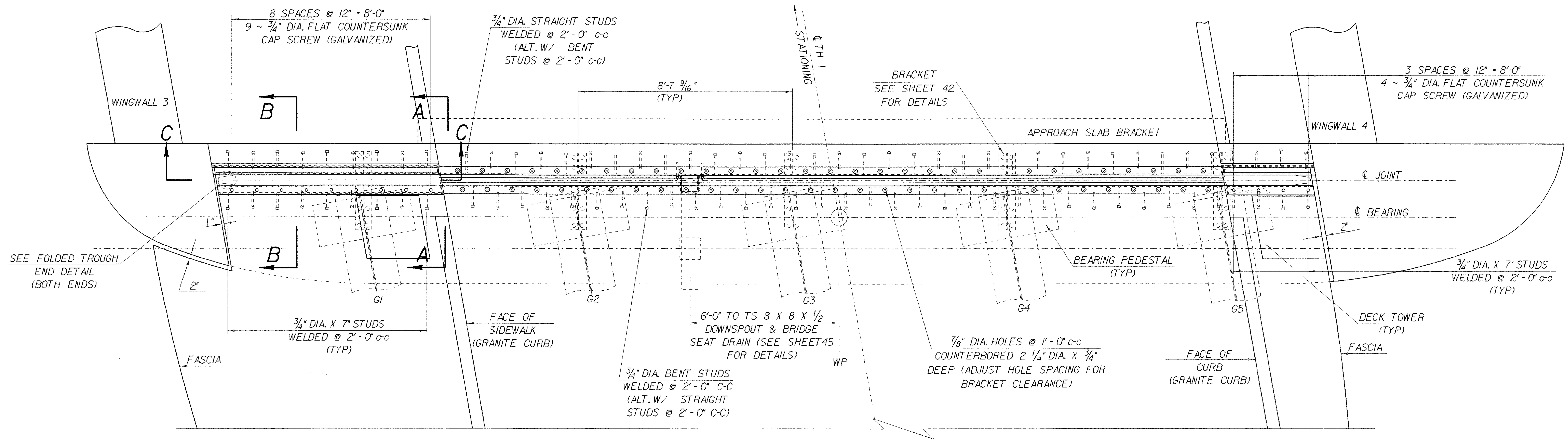
SCALE: 3" = 1'-0" (NORMAL TO ℄ BEARING)



PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444 (22)

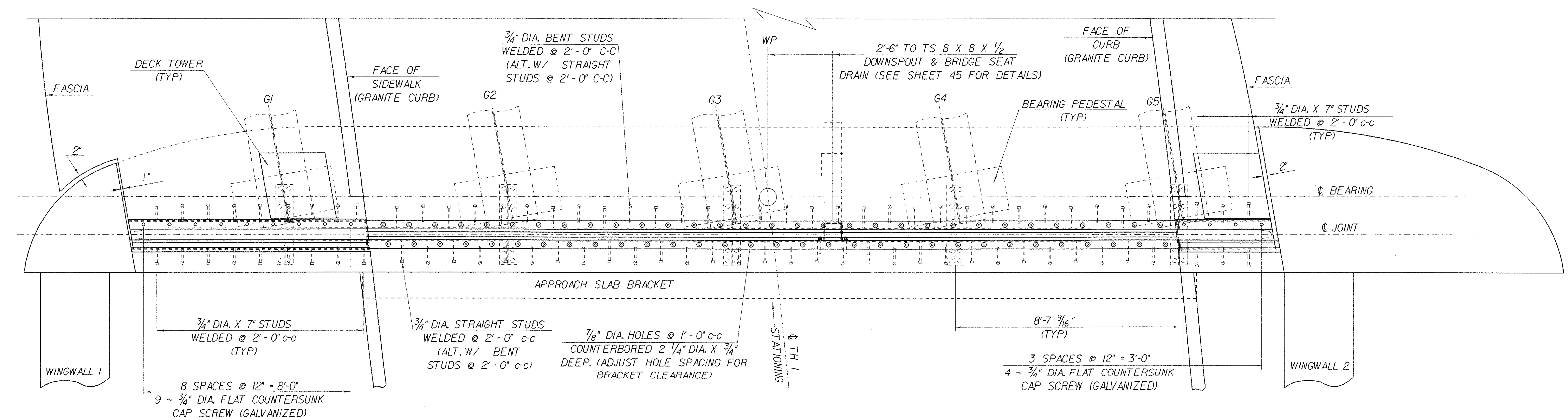
FILE NAME: 89j099/structures/sj099joint.dgn
IPARM NAME: sj099expl.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
EXPANSION JOINT DETAILS

PLOT DATE: 25-SEP-2000
DRAWN BY: K. M. HIGGINS
CHECKED BY: W. B. SYMONDS
SHEET 42 OF 118



EXPANSION JOINT ABUTMENT NO. 2

SCALE 1/2" = 1'-0



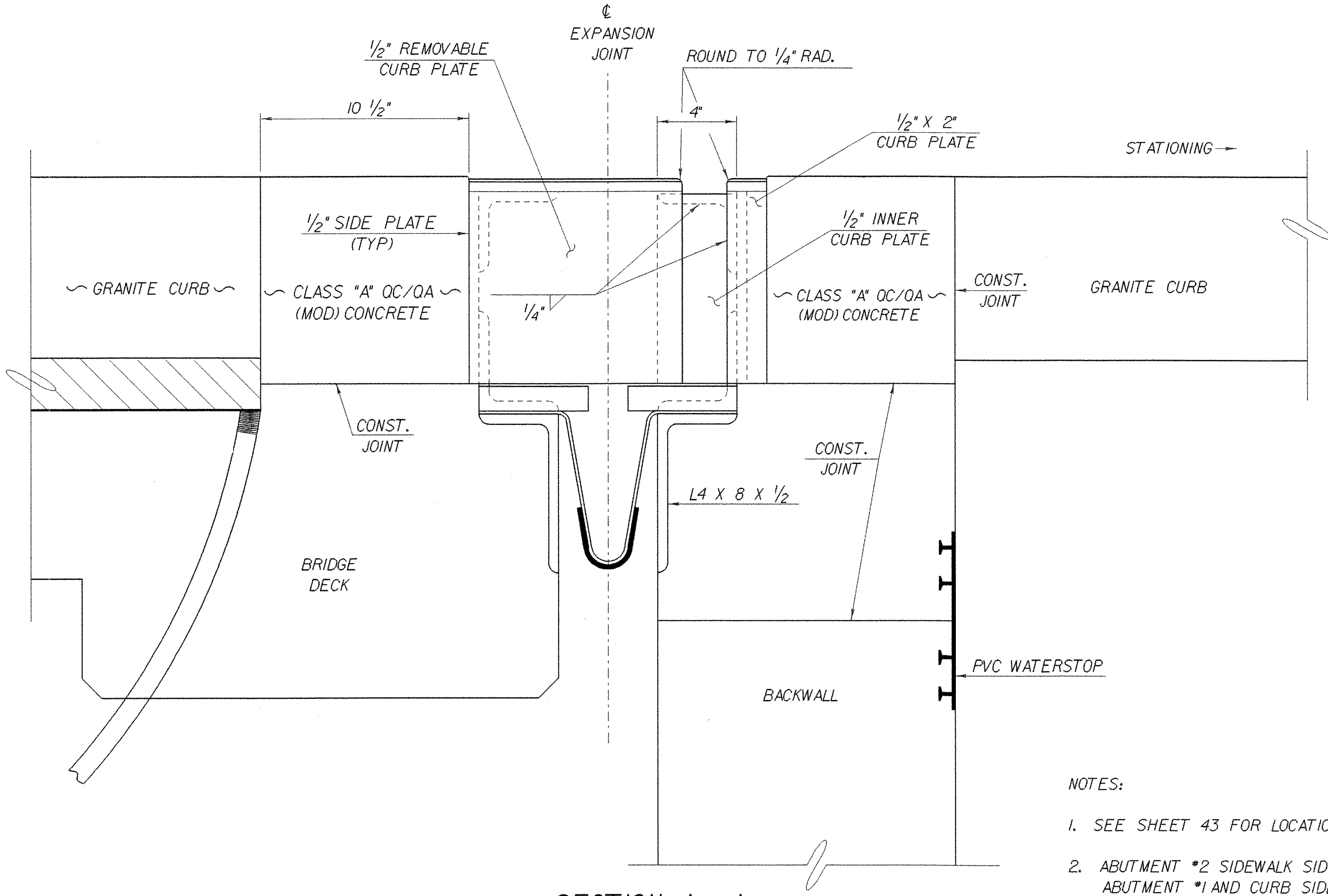
EXPANSION JOINT ABUTMENT NO. 1

SCALE 1/2" = 1'-0

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444 (22)

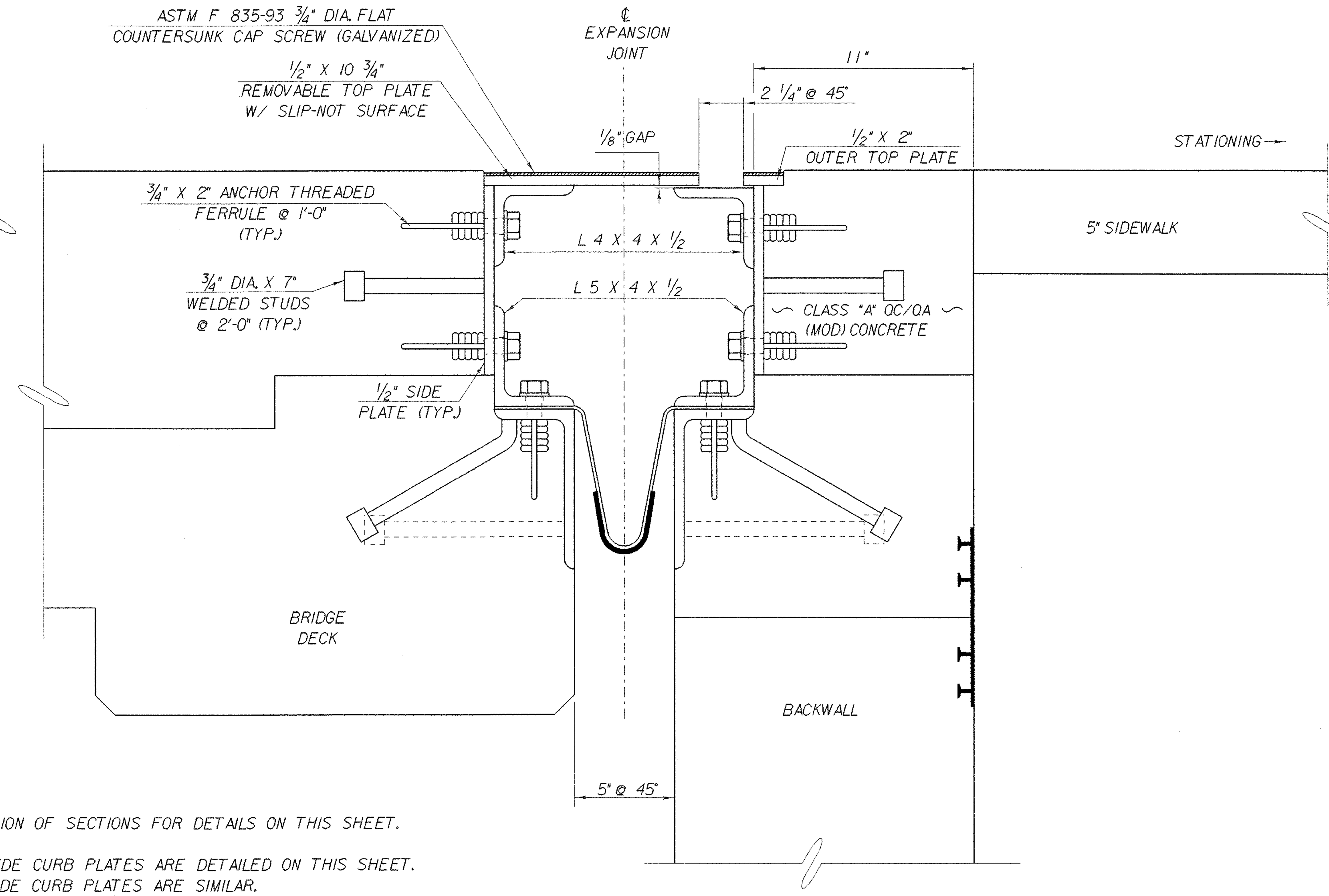
FILE NAME: 89j099/structures/sj099joint.dgn
IPARM NAME: sj099exp2.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
EXPANSION JOINT PLAN

PLOT DATE: 25-SEP-2000
DRAWN BY: K.M. HIGGINS
CHECKED BY: W.B. SYMONDS
SHEET 43 OF 118



SECTION A - A

SCALE 3" = 1'-0

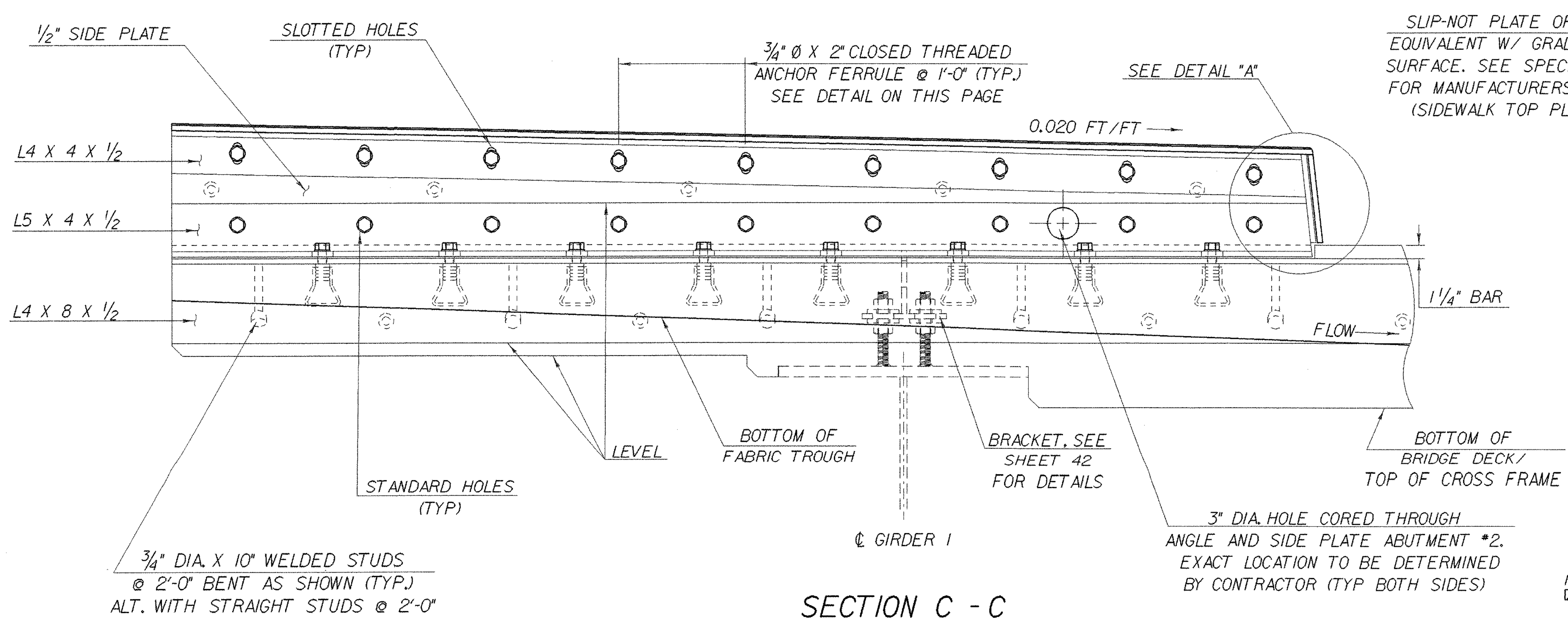


SECTION B - B

SCALE 3" = 1'-0

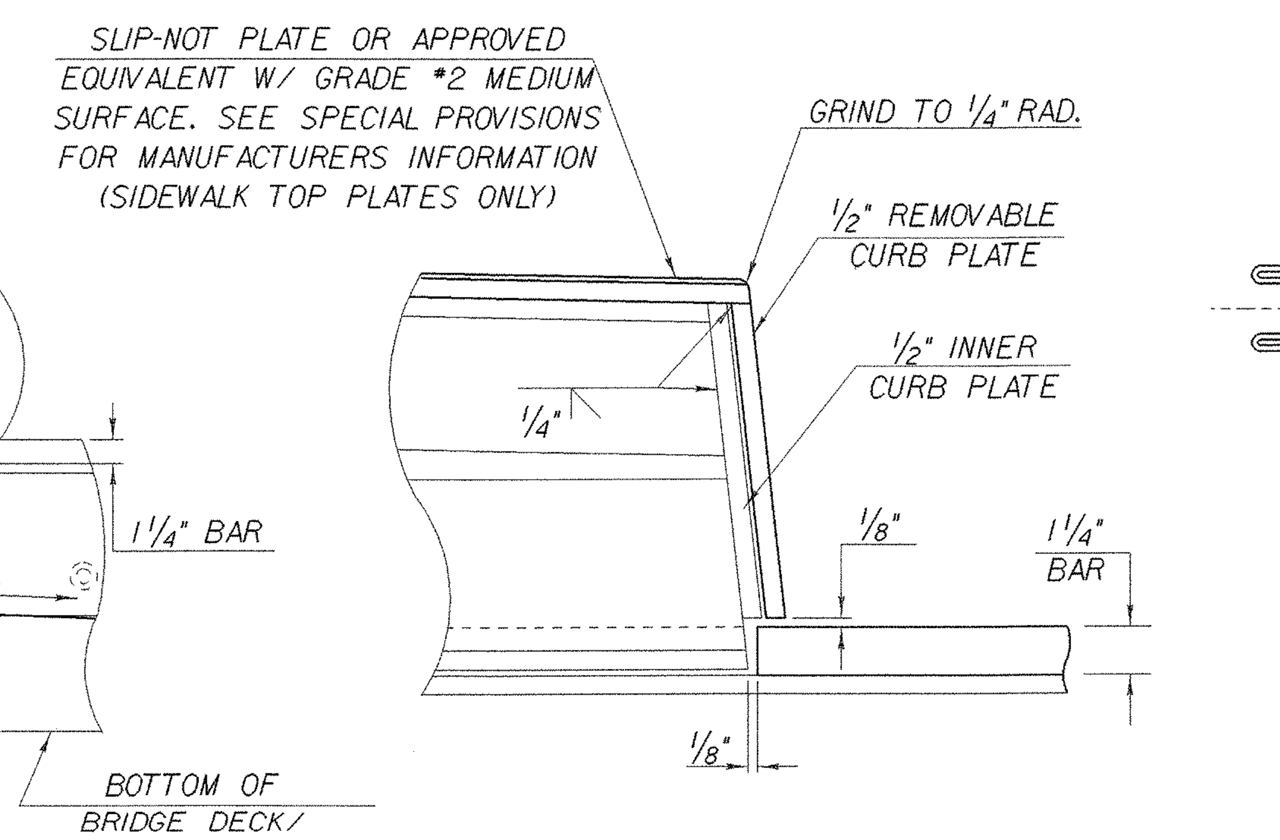
NOTES:

1. SEE SHEET 43 FOR LOCATION OF SECTIONS FOR DETAILS ON THIS SHEET.
2. ABUTMENT #2 SIDEWALK SIDE CURB PLATES ARE DETAILED ON THIS SHEET. ABUTMENT #1 AND CURB SIDE CURB PLATES ARE SIMILAR.
3. ABUTMENT #2 CURB PLATES MUST ACCOMODATE 2" PVC CONDUIT THROUGH THE JOINT.



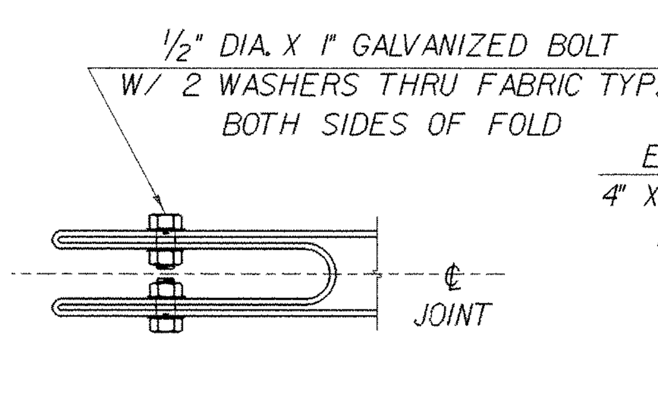
SECTION C - C

SCALE 1 1/2" = 1'-0

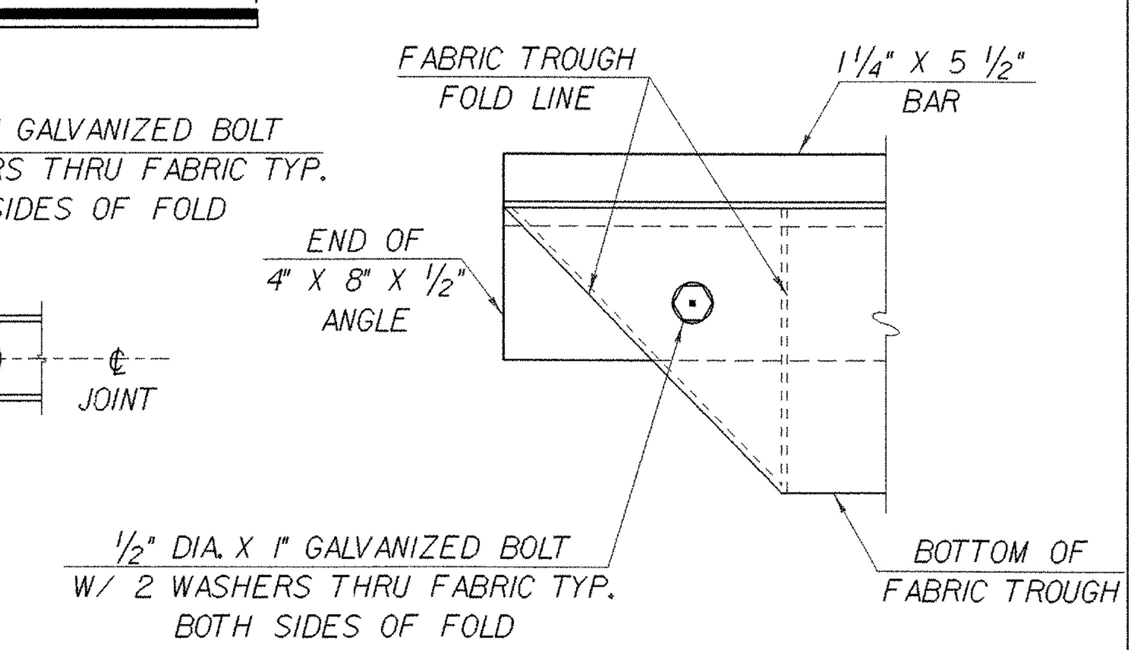


DETAIL "A"

SCALE 3" = 1'-0



PLAN



ELEVATION

FOLDED TROUGH END DETAILS

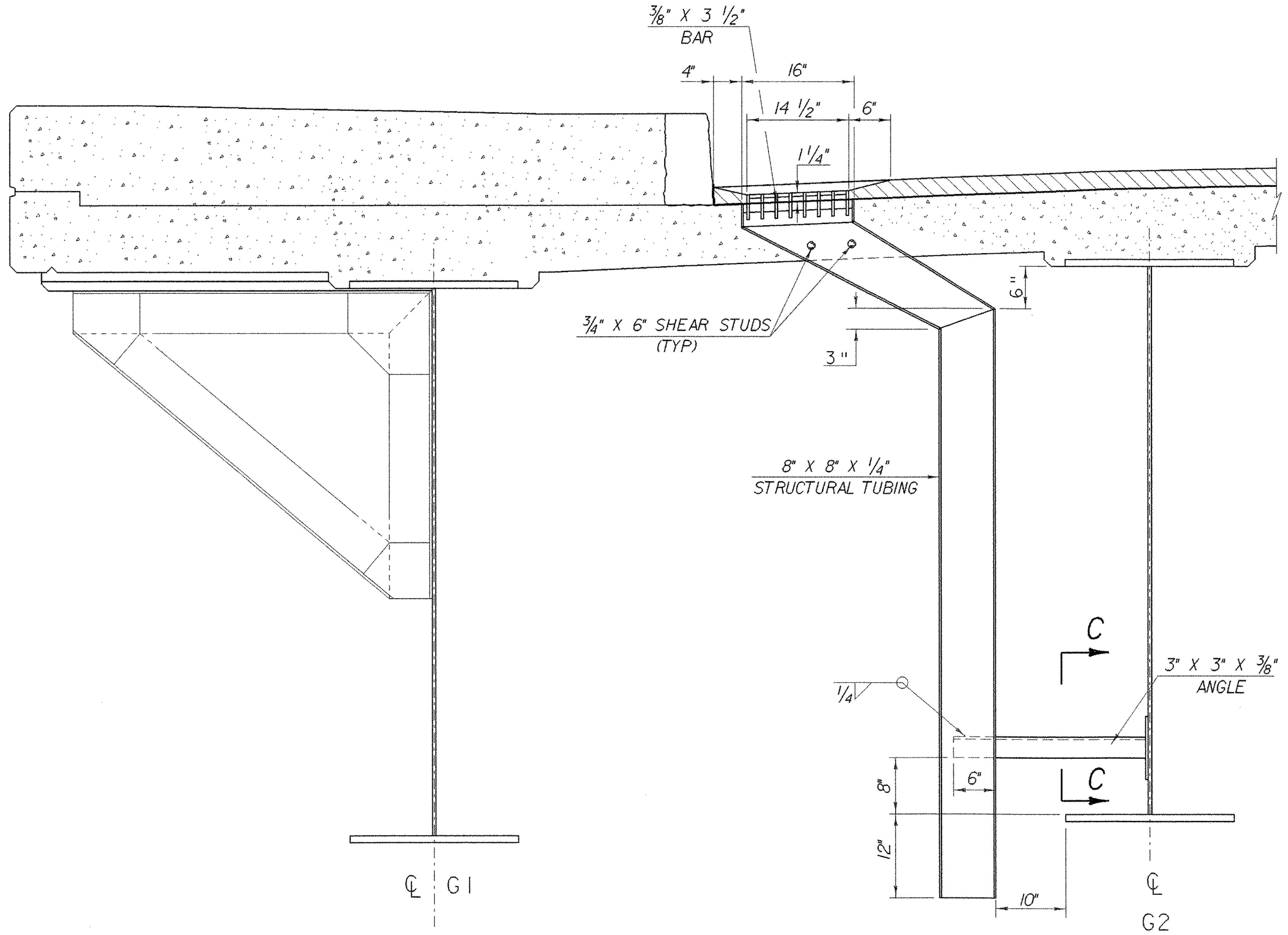
NOT TO SCALE

PROJECT NAME: PROJECT NUMBER: ROYALTON BRZ 1444 (22)	
FILE NAME: 89j099/structures/sj099joint.dgn	PLOT DATE: 25-SEP-2000
IPARM NAME: sj099exp3.i	DRAWN BY: K.M. HIGGINS
PROJECT LEADER: C.P. WILLIAMS	CHECKED BY: W.B. SYMONDS
DESIGNED BY: W.B. SYMONDS	SHEET 44 OF 118
SIDEWALK & CURB PLATE DETAILS	

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444 (22)

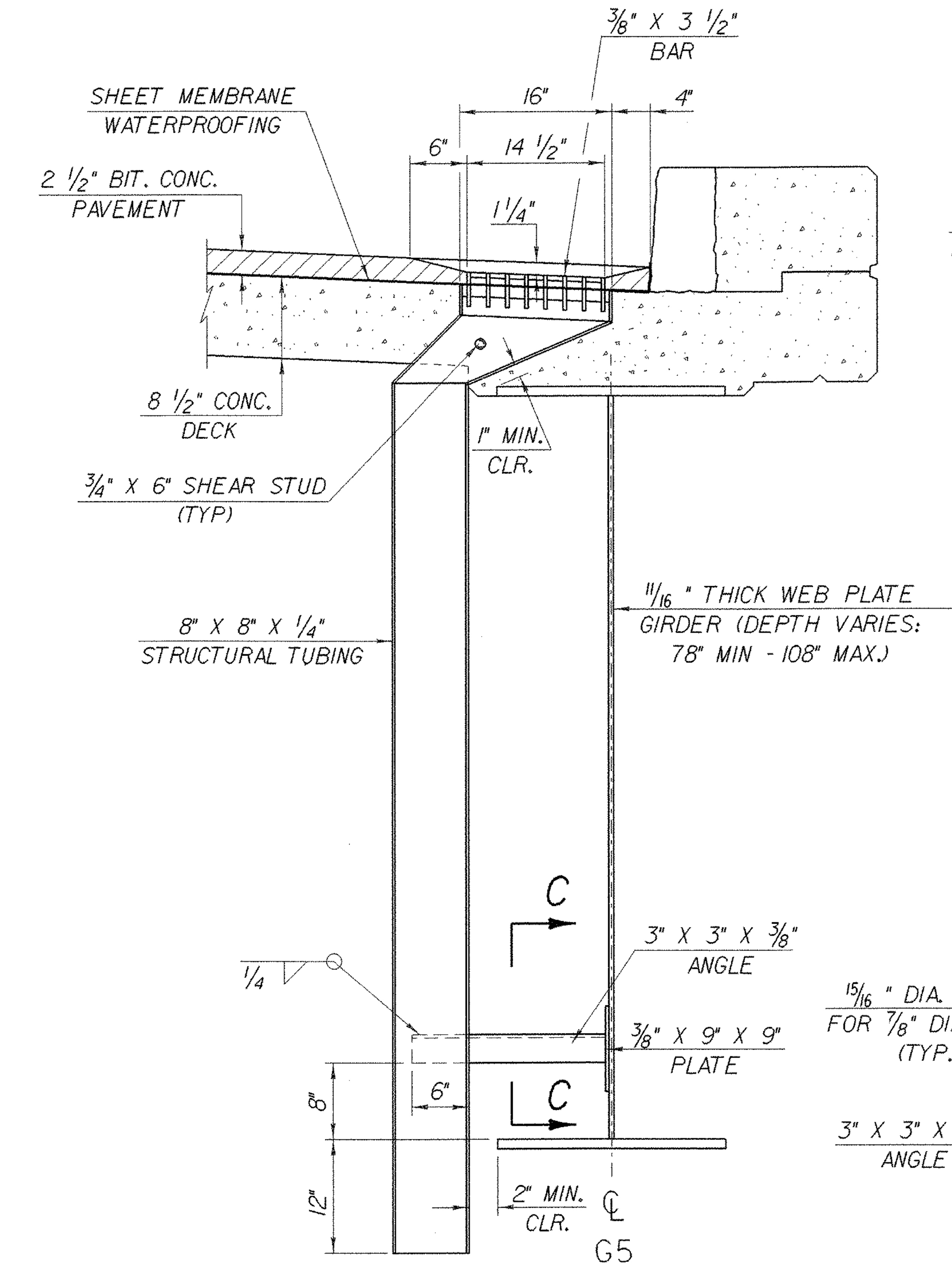
FILE NAME: 89j099/structures/sj099joint.dgn
IPARM NAME: sj099hop.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: K.M. HIGGINS
HOPPER/DOWNSPOUT DETAILS

PLOT DATE: 25-SEP-2000
DRAWN BY: KMH
CHECKED BY: W.B. SYMONDS
SHEET 45 OF 118



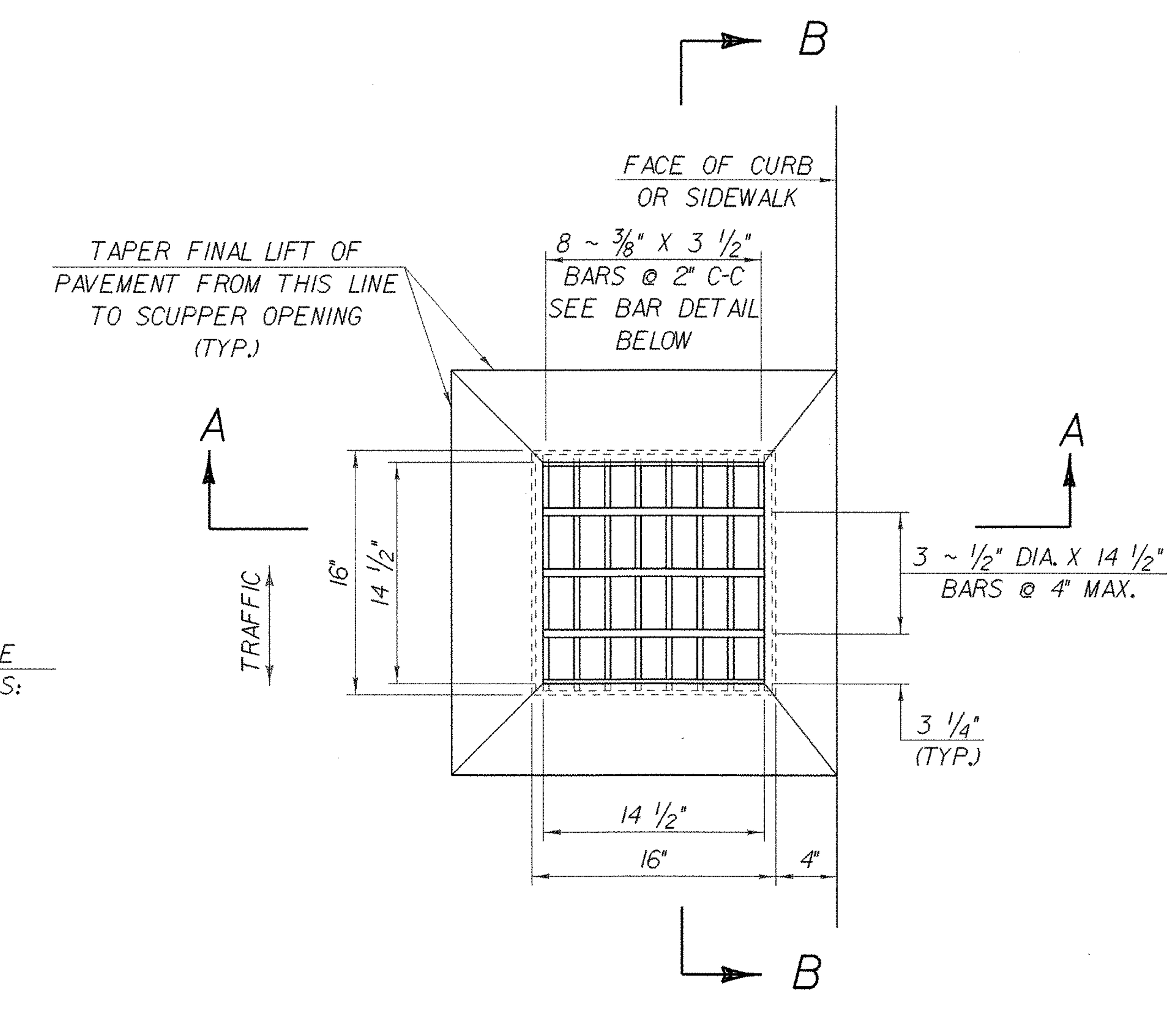
SECTION A - A (AT SIDEWALK)

SCALE: 1" = 1'-0"



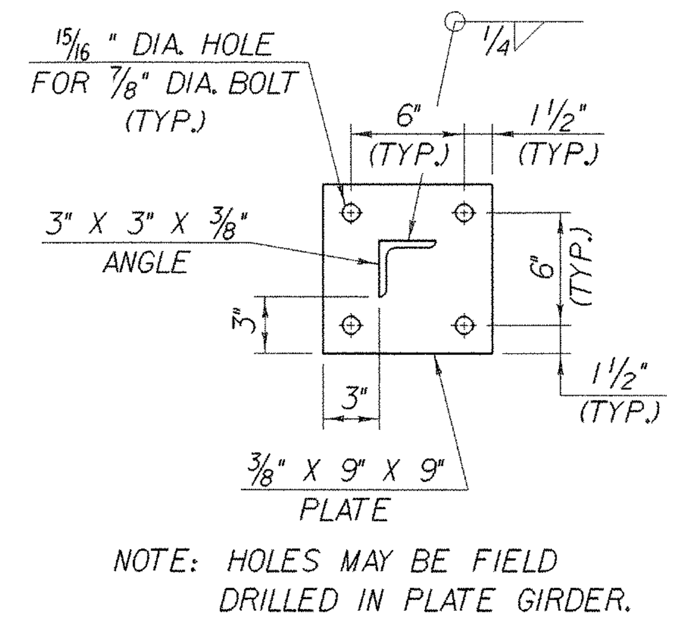
SECTION A - A (AT CURB)

SCALE: 1" = 1'-0"



SCUPPER PLAN

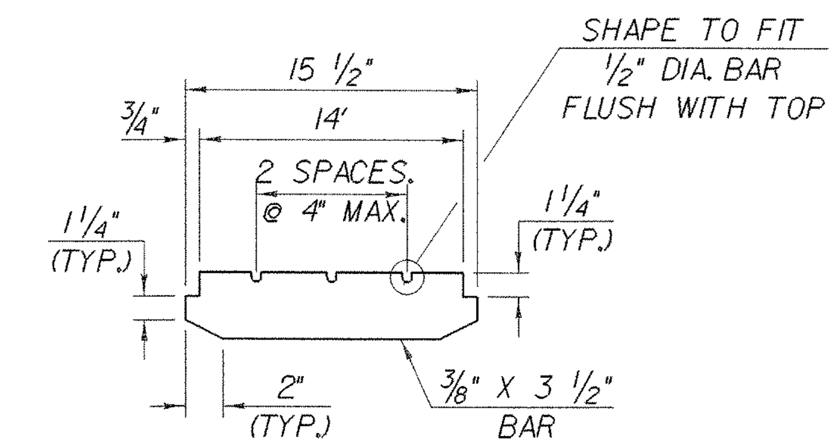
SCALE 1 1/2" = 1'-0



NOTE: HOLES MAY BE FIELD DRILLED IN PLATE GIRDER.

SECTION C - C

SCALE 1 1/2" = 1'-0

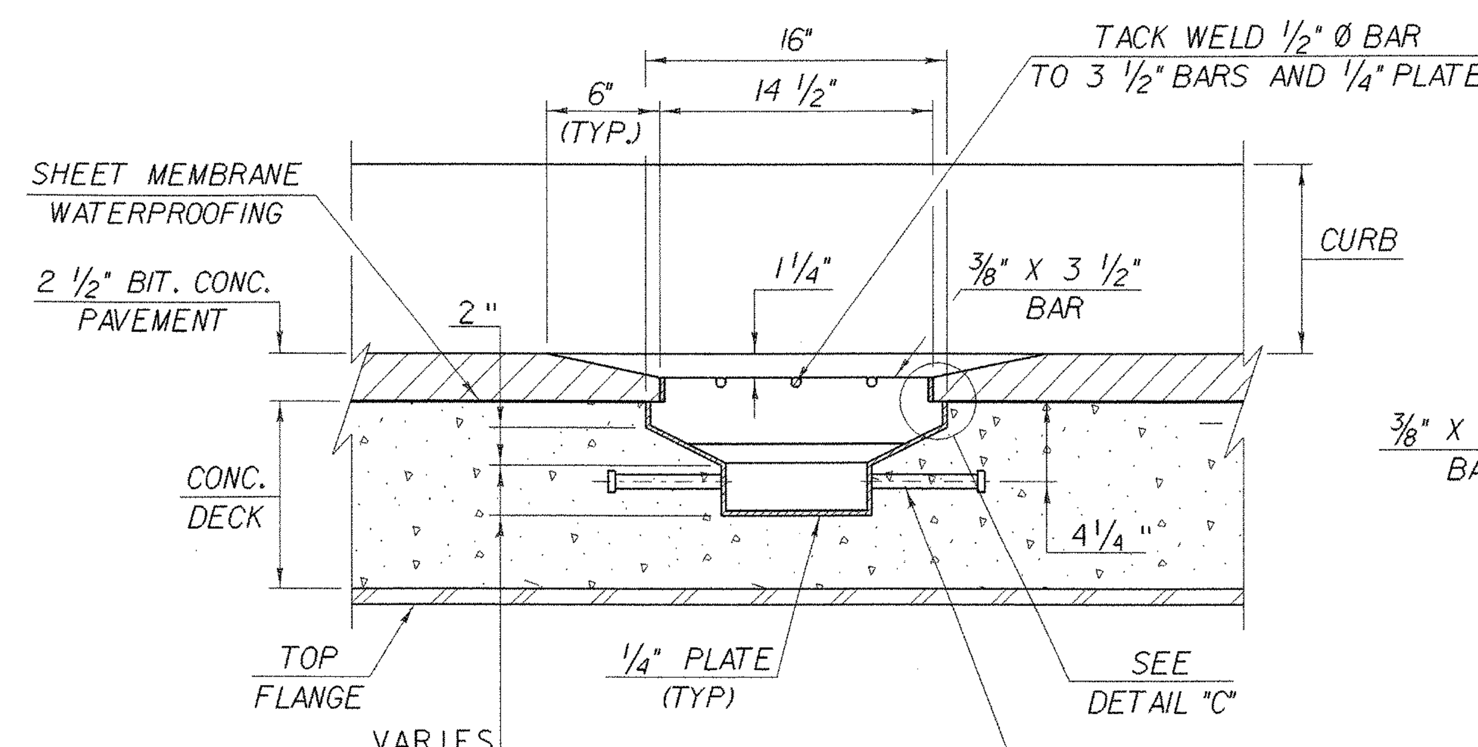


BAR DETAIL FOR GRATE

SCALE 1 1/2" = 1'-0

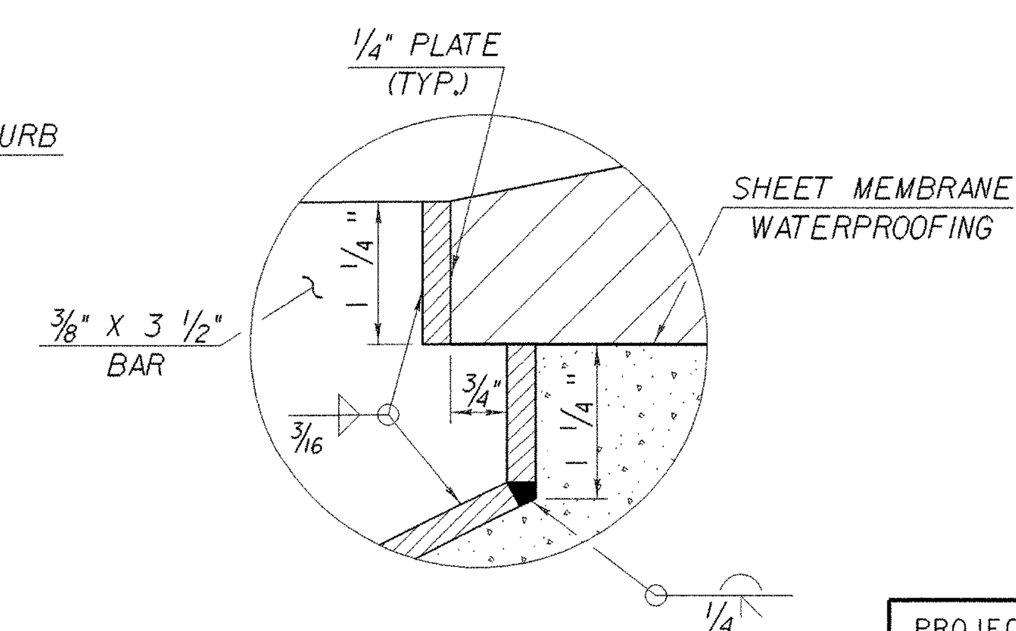
SCUPPER AND DOWNSPOUT NOTES

1. HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A-500 GR. B.
2. ALL PLATES, BARS, AND ANGLES SHALL CONFORM TO AASHTO M 270/M 270M GR. 36.
3. ALL SCUPPERS, DOWNSPOUTS & SUBSTRUCTURE DRAINS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111M/M 111 AFTER FABRICATION.
4. THE TOP SURFACE OF SCUPPER SHALL BE SLOPED TO MATCH ROADWAY SLOPE AND GRADE.
5. THE BAR AND GRATE SECTION MAY BE PREFABRICATED PROVIDING THE GEOMETRY AND SECTION PROPERTIES ARE EQUIVALENT TO THE DETAILS SHOWN.
6. SCUPPERS & DOWNSPOUTS SHALL BE PAID FOR UNDER ITEM 506.60 "STRUCTURAL STEEL".
7. ALL REQUIRED WELDS FOR SCUPPERS & DOWNSPOUTS SHALL BE DETAILED ON SHOP DRAWINGS WHICH SHALL ALSO INCLUDE ALL APPLICABLE WELDING PROCEDURES.
8. AFTER ALL PAVING AND CONCRETING OPERATIONS THE SCUPPERS & DOWNSPOUTS SHALL BE CLEANED OF ALL CONTAMINATION BY FLUSHING.
9. SCUPPER CONNECTION BOLTS SHALL BE 7/8" Ø AASHTO M 164/M 164M, TYPE III.



SECTION B - B

SCALE 1 1/2" = 1'-0



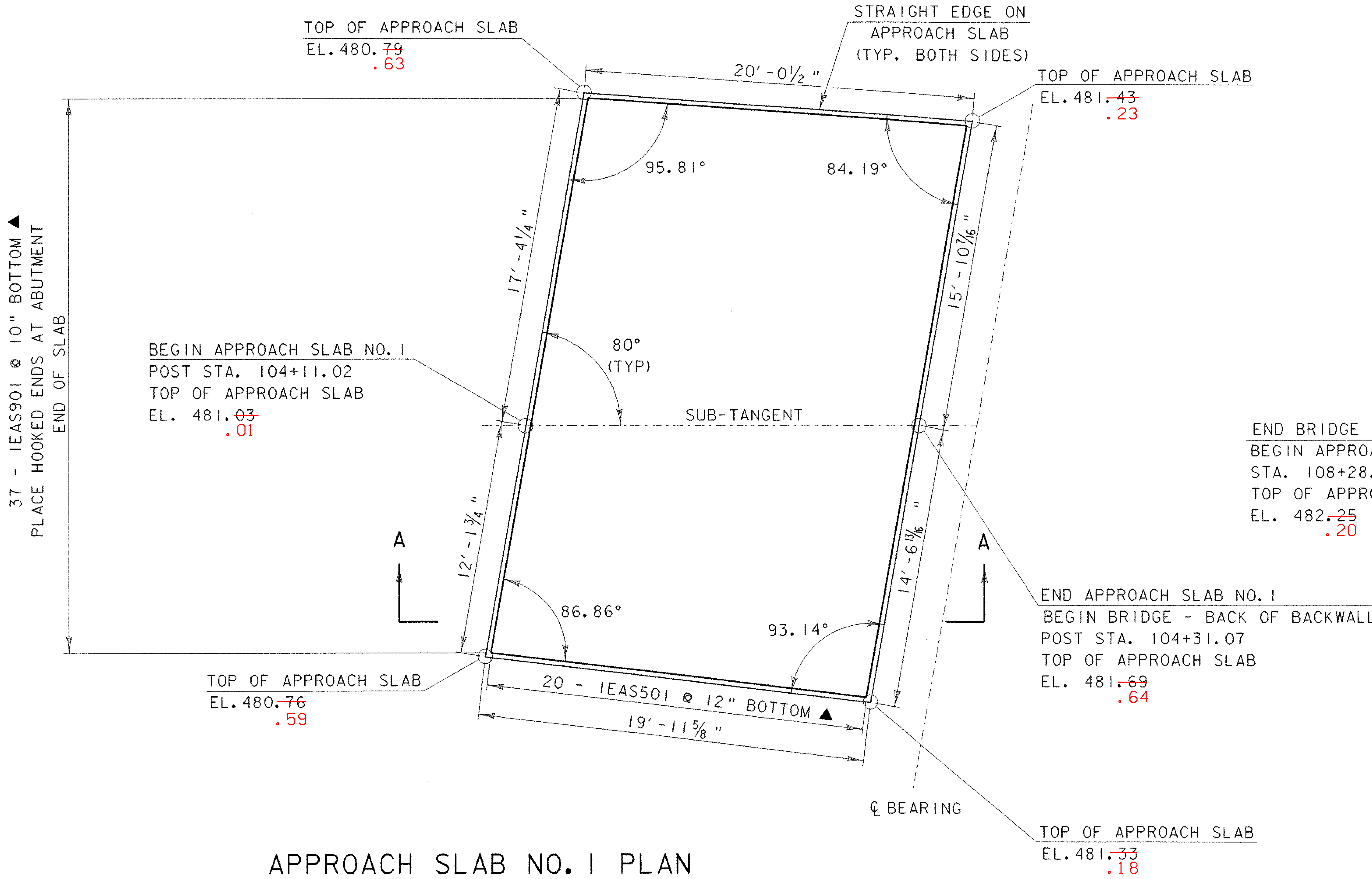
DETAIL "C"

NTS

SCUPPER LOCATION

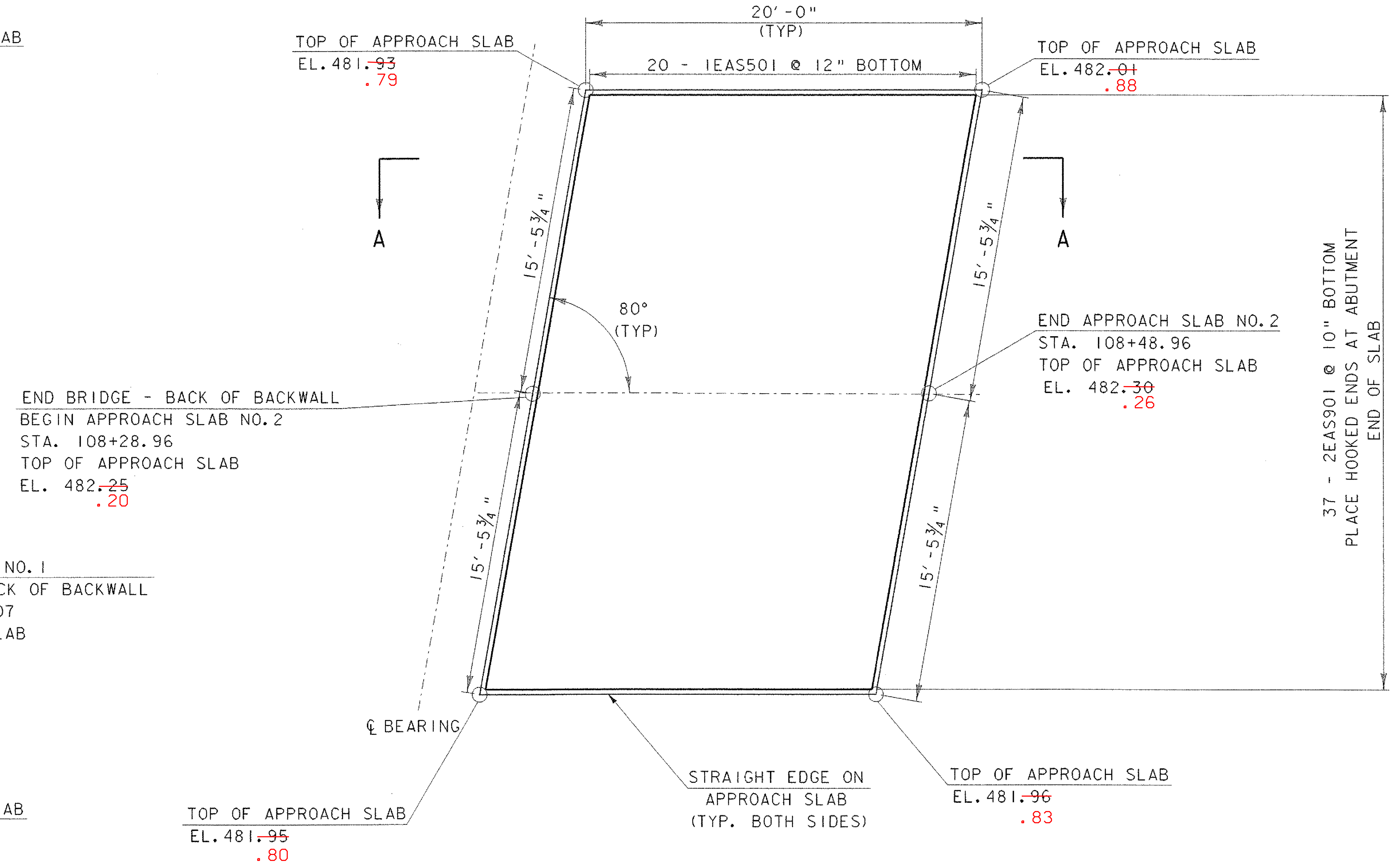
STA. 104 + 93 LT. & RT.
STA. 107 + 68 LT. & RT.
(SEE PLAN & ELEVATION ON SHEET 23)

PROJECT NAME: / PROJECT NUMBER: ROYALTON BRZ 1444 (22)	
FILE NAME: 90j099/structures/sj099scu.dgn	PLOT DATE: 25-SEP-2000
IPARM NAME: sj099scu.i	DRAWN BY: K. M. HIGGINS
PROJECT LEADER: C.P. WILLIAMS	CHECKED BY: W.B. SYMONDS
DESIGNED BY: K.M. HIGGINS	SHEET 46 OF 118
SCUPPER DETAILS	



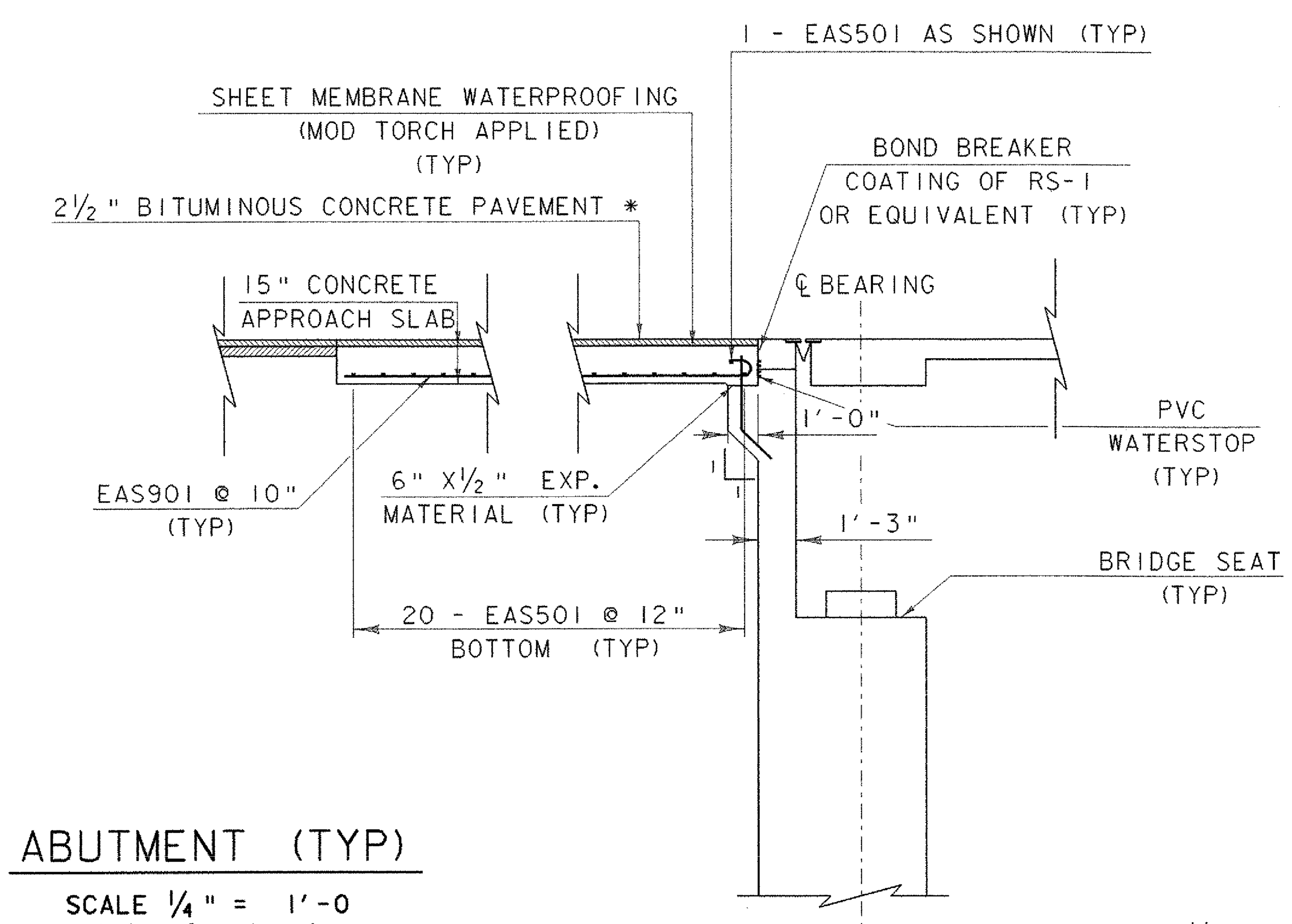
APPROACH SLAB NO. 1 PLAN

SCALE ¼" = 1'-0



APPROACH SLAB NO. 2 PLAN

SCALE ¼" = 1'-0

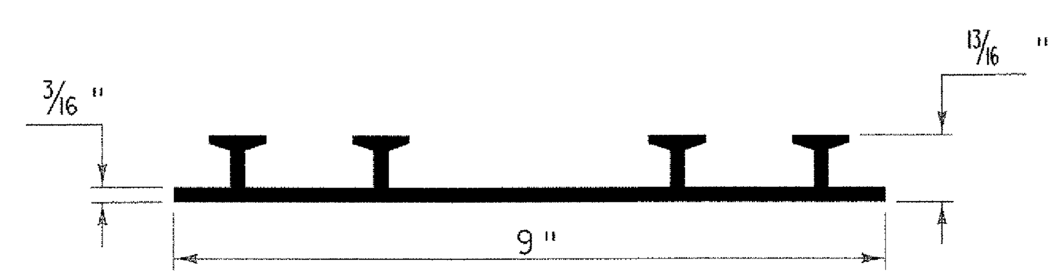


ABUTMENT (TYP)

SCALE ¼" = 1'-0

SECTION A - A

* 1¼" TYPE III OVER
1¼" TYPE IV



P.V.C. WATERSTOP FOR CONSTRUCTION JOINTS

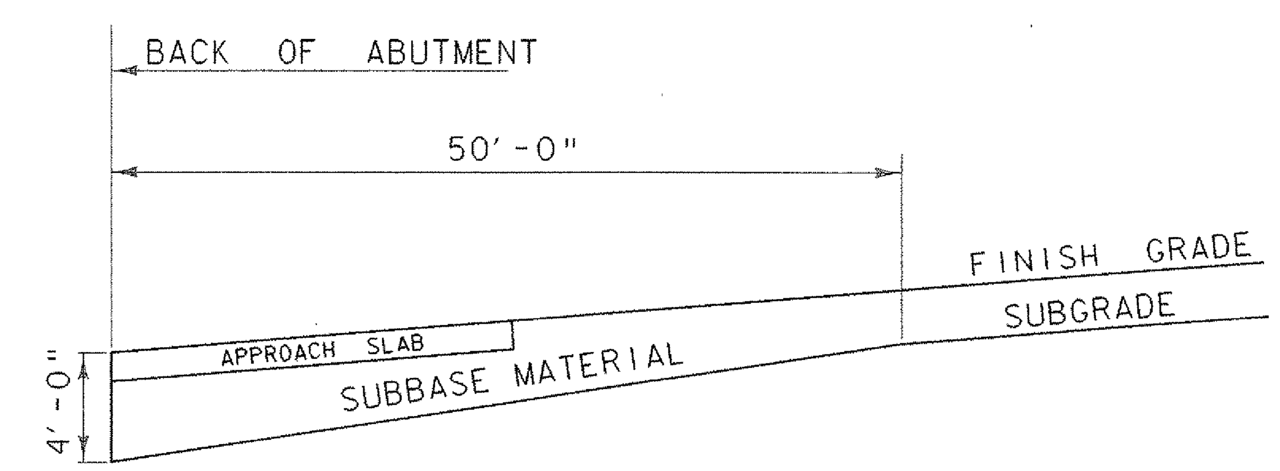
THE COSTS FOR P.V.C. WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE. OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL OF THE STRUCTURES ENGINEER.

NOTE:

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

ALL LAP SPLICES NOT DETAILED SHALL BE 2'-2"

ALL CLEAR COVER SHALL BE 3" UNLESS NOTED OTHERWISE.



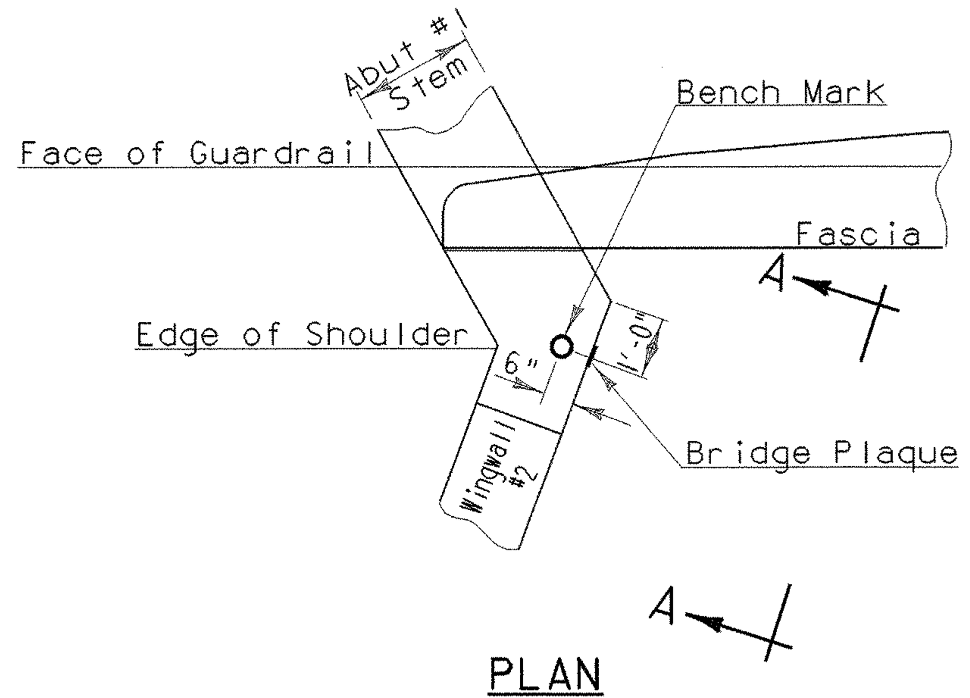
SUBBASE DETAIL AT ABUTMENTS

(ELEVATION IN CUT AND FILL)
NOT TO SCALE

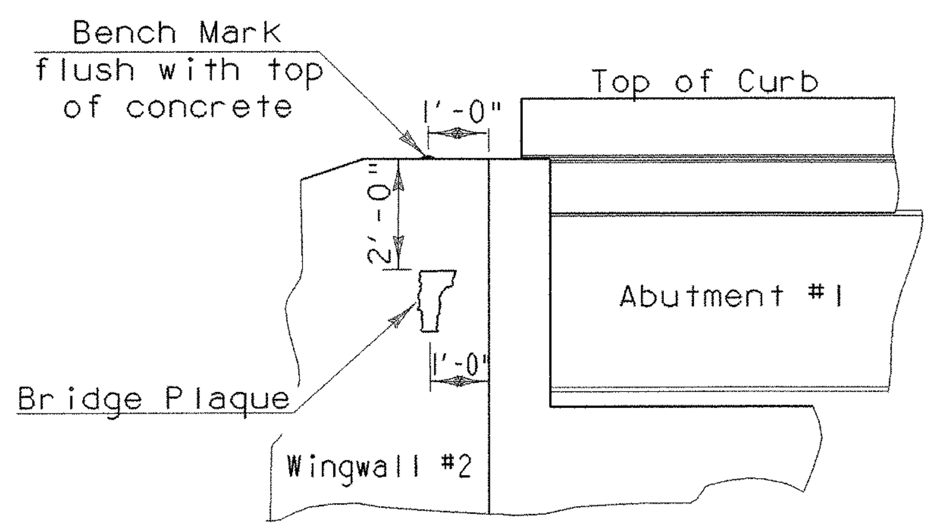
PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444(22)

FILE NAME: 89j099/structures/sj099appslab.dgn
IPARM NAME: sj099appslab.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
APPROACH SLAB DETAILS

PLOT DATE: 25-SEP-2000
DRAWN BY: P.R. ROWE
CHECKED BY: W.B. SYMONDS
SHEET 47 OF 118



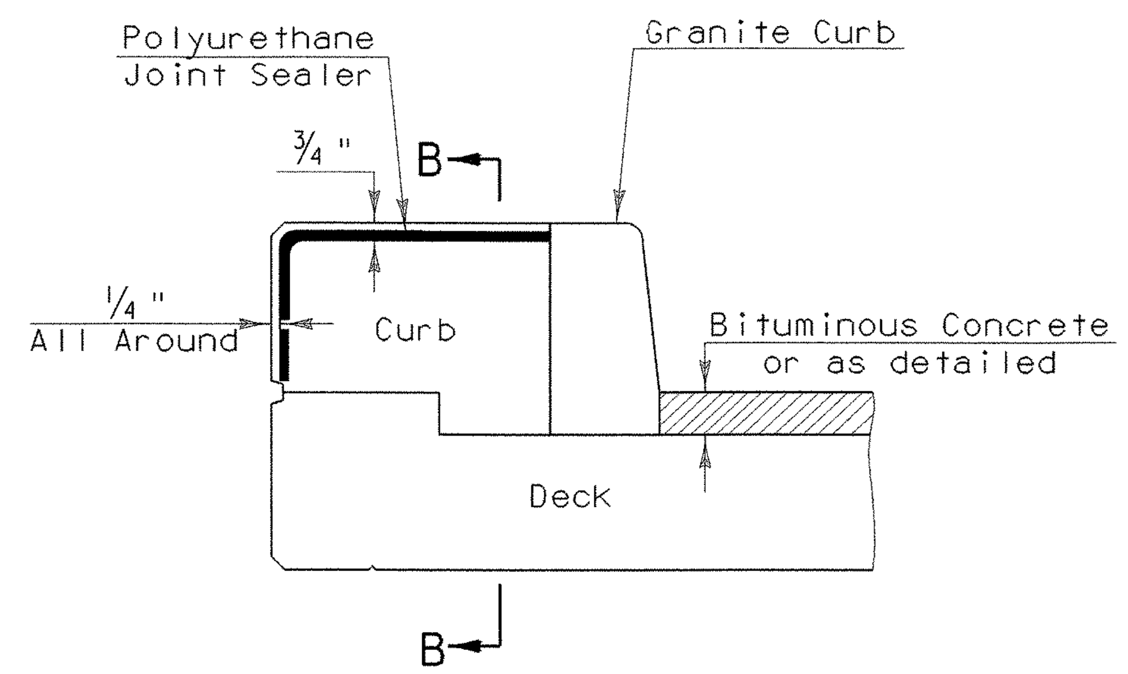
PLAN



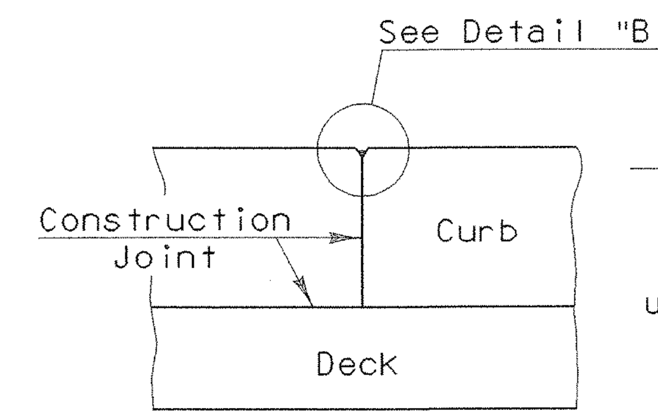
VIEW "A - A"

LOCATE BENCH MARK AND BRIDGE PLAQUE

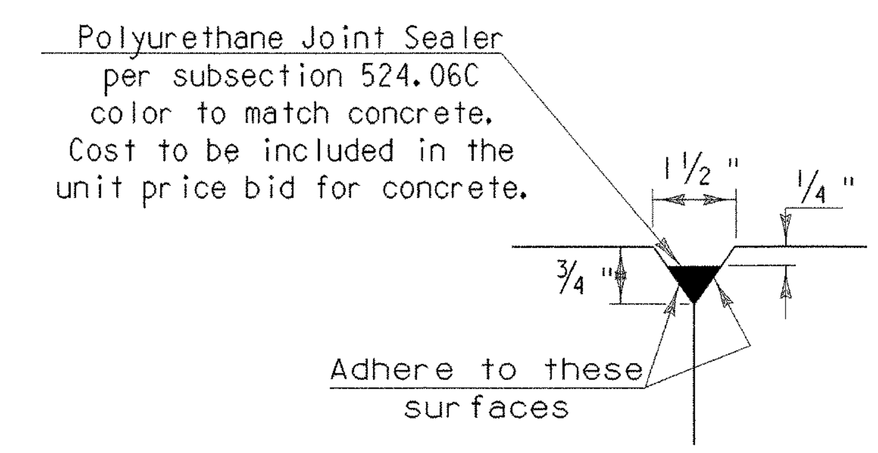
The bench mark and bridge plaque will be supplied by The Agency of Transportation and shall be installed by the contractor at abutment #1 on the right side as shown or as directed by the engineer.



TYPICAL SECTION THROUGH CONCRETE CURB CONSTRUCTION JOINT



SECTION B - B



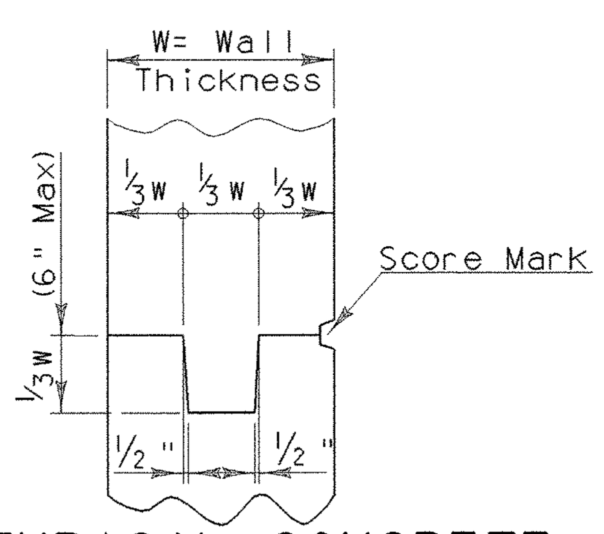
DETAIL "B"

Notes:

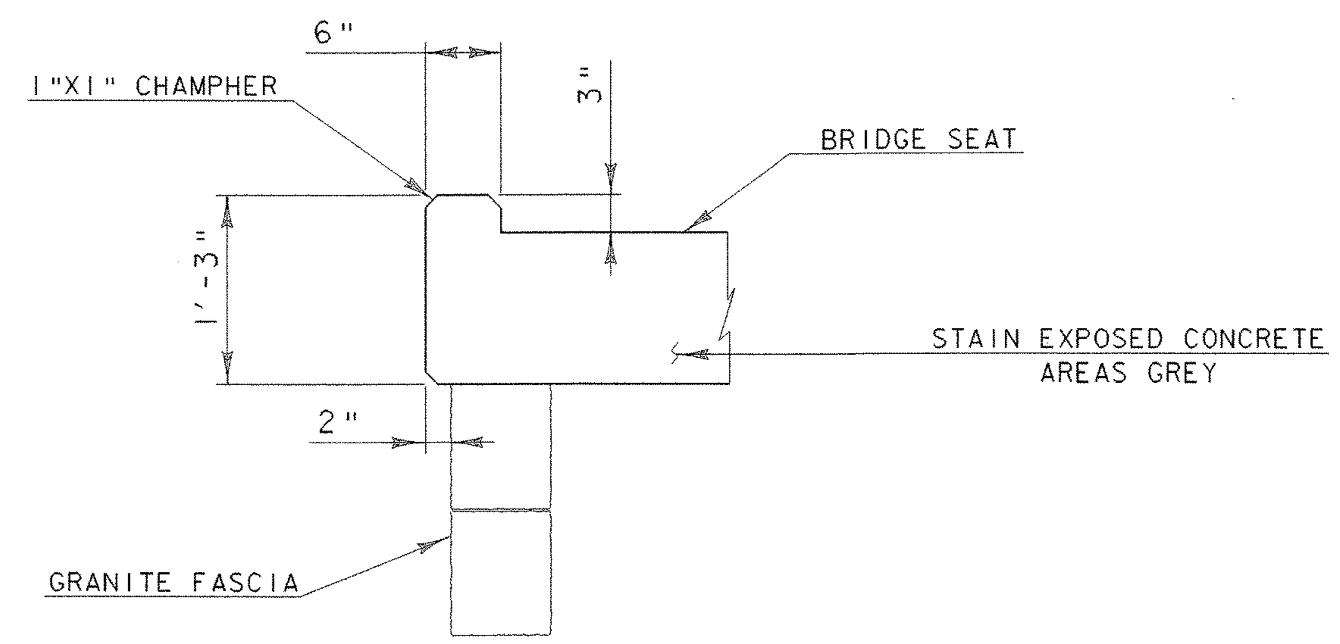
1) Construction joints through concrete curbs shall be spaced maximum 15'-0" center to center and shall be 1'-6" minimum from the center of the nearest bridge rail post. Concrete shall be placed in alternating sections with a minimum of 48 hours delay between adjacent pours.

2) Longitudinal reinforcing shall pass through concrete curb construction joints.

3) Construction joints through sidewalks shall be similar to concrete curb construction joints.



TYPICAL CONCRETE CONSTRUCTION JOINT



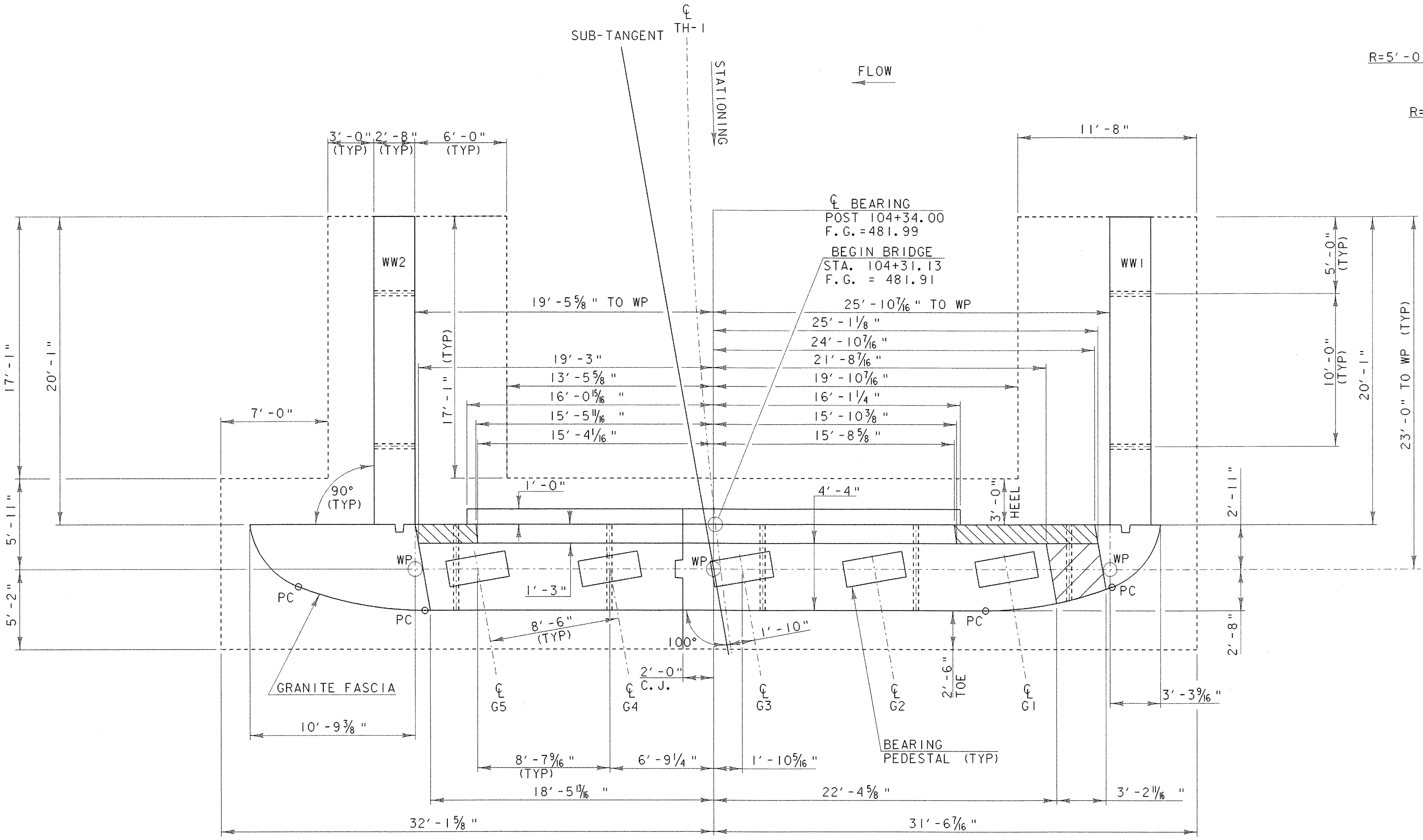
TYPICAL COPE DETAIL

ALL DETAILS NTS UNLESS NOTED OTHERWISE

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444 (22)

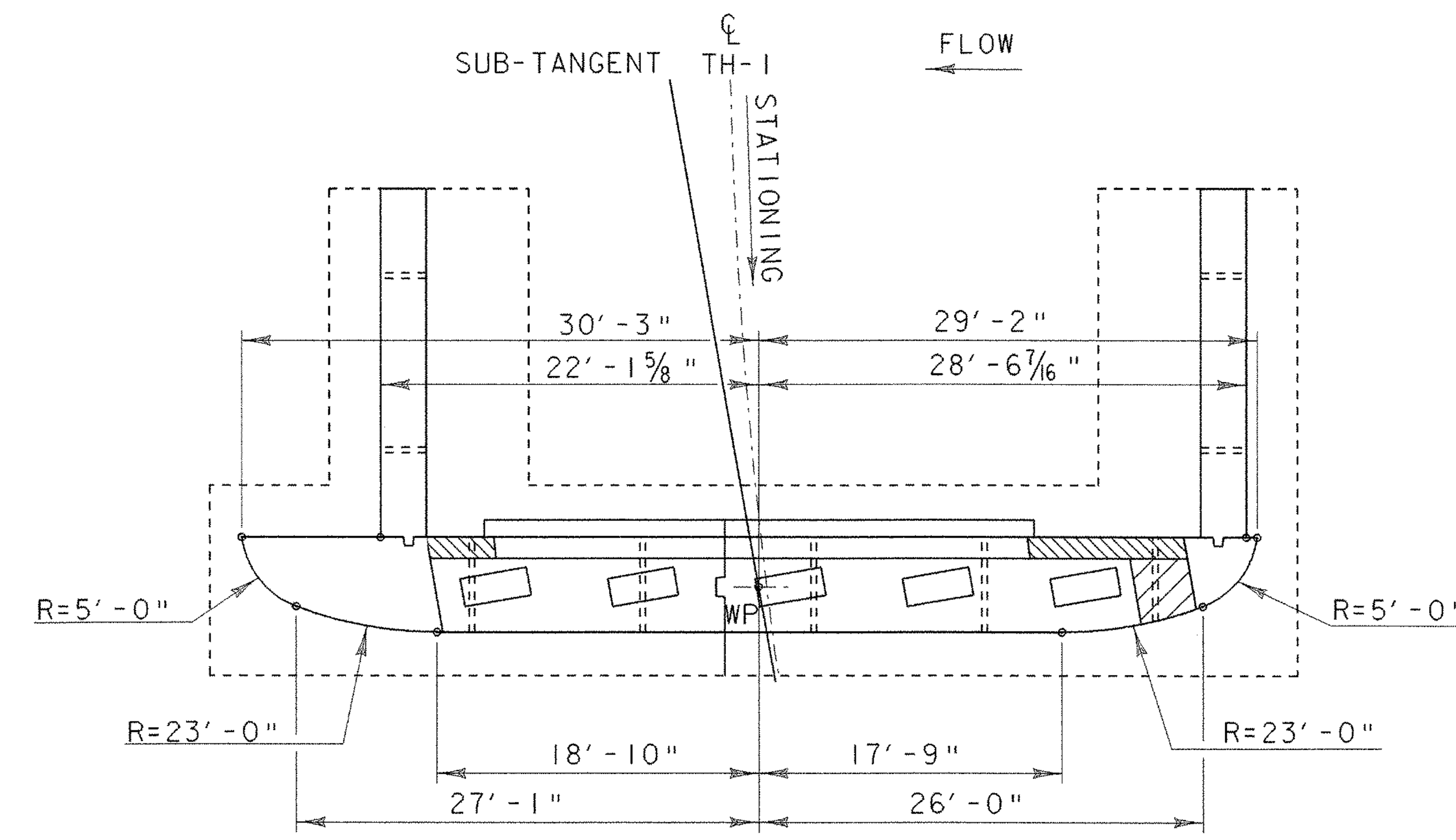
FILE NAME: 89j099/structures/sj099abl.dgn
IPARM NAME: sj099misctyp.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
MISCELLANEOUS CONCRETE DETAILS

PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: C.P. WILLIAMS
SHEET 48 OF 118



ABUTMENT #1 PLAN

SCALE ¼" = 1'-0



ABUTMENT #1 PLAN ADDITIONAL DIMENSIONS

SCALE ⅛" = 1'-0

NOTE:

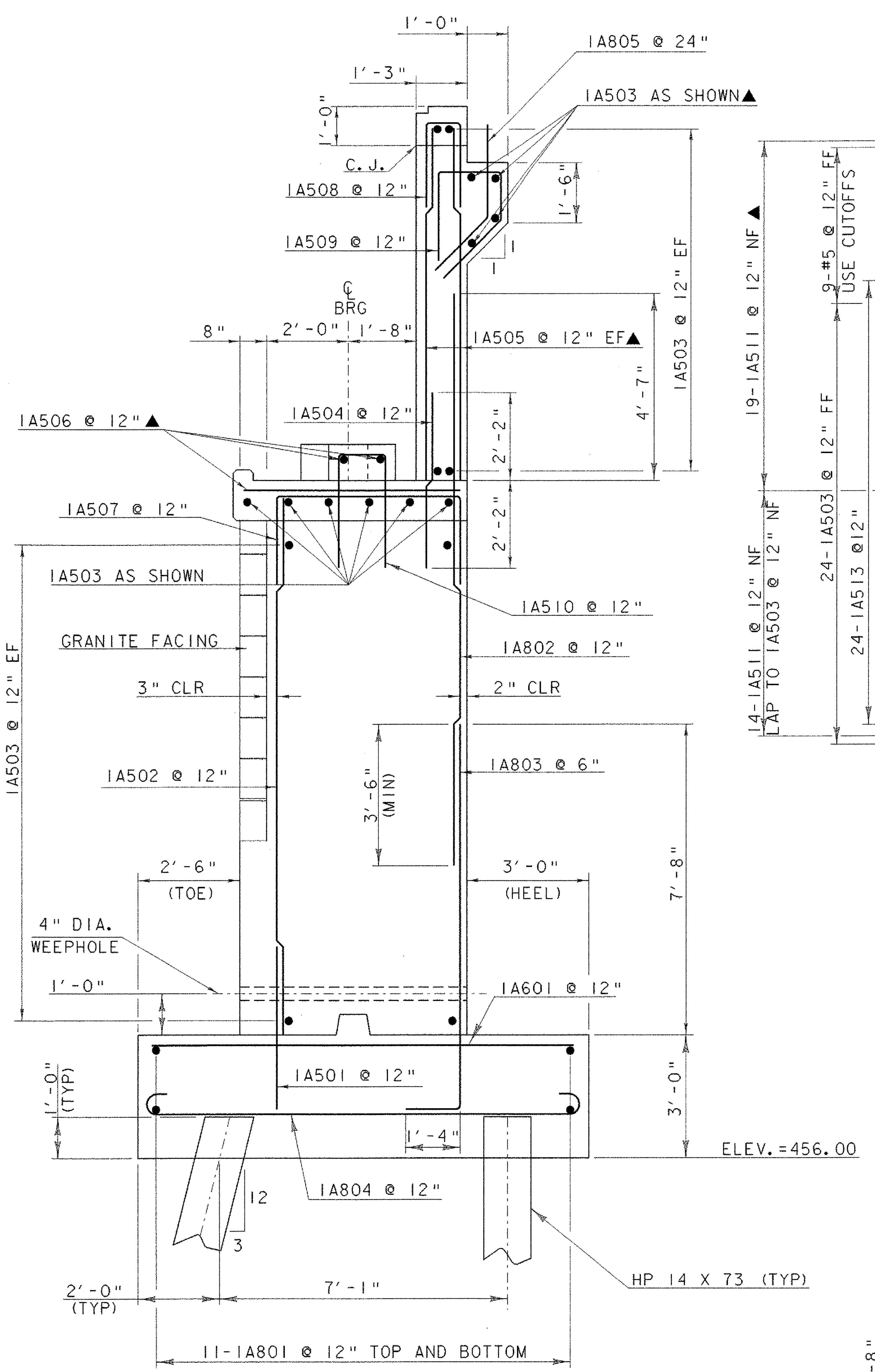
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
PC = POINT OF CURVATURE
C.J.= CONSTRUCTION JOINT
ALL LAP SPLICES NOT DETAILED SHALL BE 2'-2"

FOR GRANITE FACING DETAILS AND NOTES SEE SHEET 66.

PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444(22)

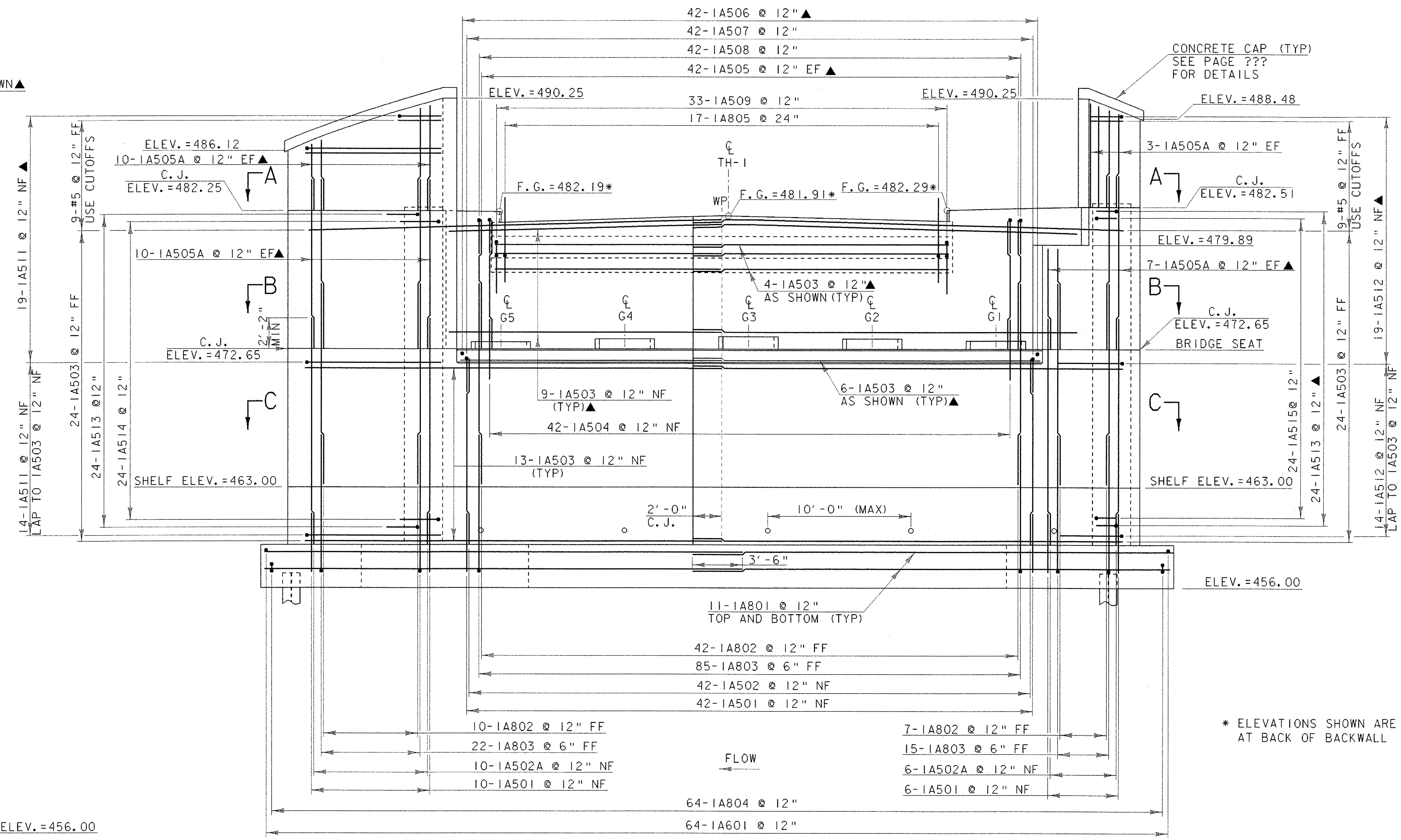
FILE NAME: 89j099/structures/sj099abl.dgn
IPARM NAME: sj099abut1a.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: C.P. WILLIAMS
ABUTMENT #1 PLAN

PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: C.P. WILLIAMS
SHEET 49 OF 118



ABUTMENT #1 TYPICAL SECTION

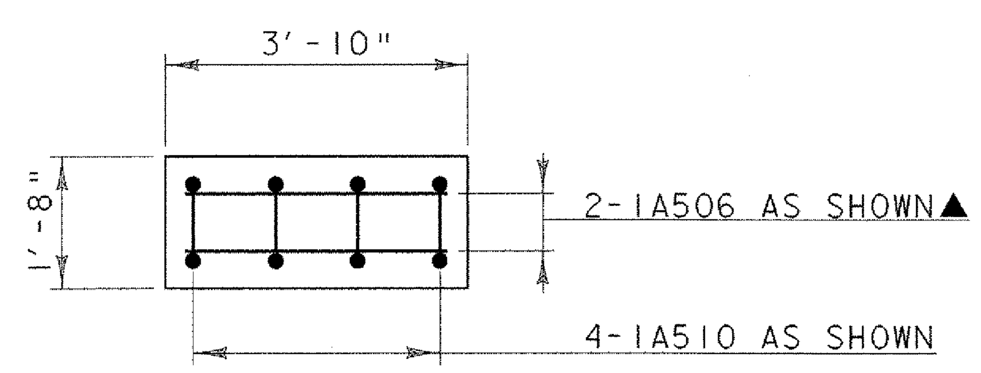
SCALE ½" = 1'-0



* ELEVATIONS SHOWN ARE AT BACK OF BACKWALL

ABUTMENT #1 ELEVATION

SCALE ¼" = 1'-0



BEARING PEDESTAL

SCALE ½" = 1'-0

BEARING PEDESTAL ELEVATIONS

℄ G5	℄ G4	℄ G3	℄ G2	℄ G1
~~473.15~~ 473.07	473.36	473.52	473.37	~~473.23~~ 473.20

NOTE:

BOXOUTS SHALL BE FORMED IN THE BACKWALL TO ACCOMODATE ALL UTILITIES. SEE UTILITY PLANS AND GENERAL NOTES FOR DETAILS.

NOTE:

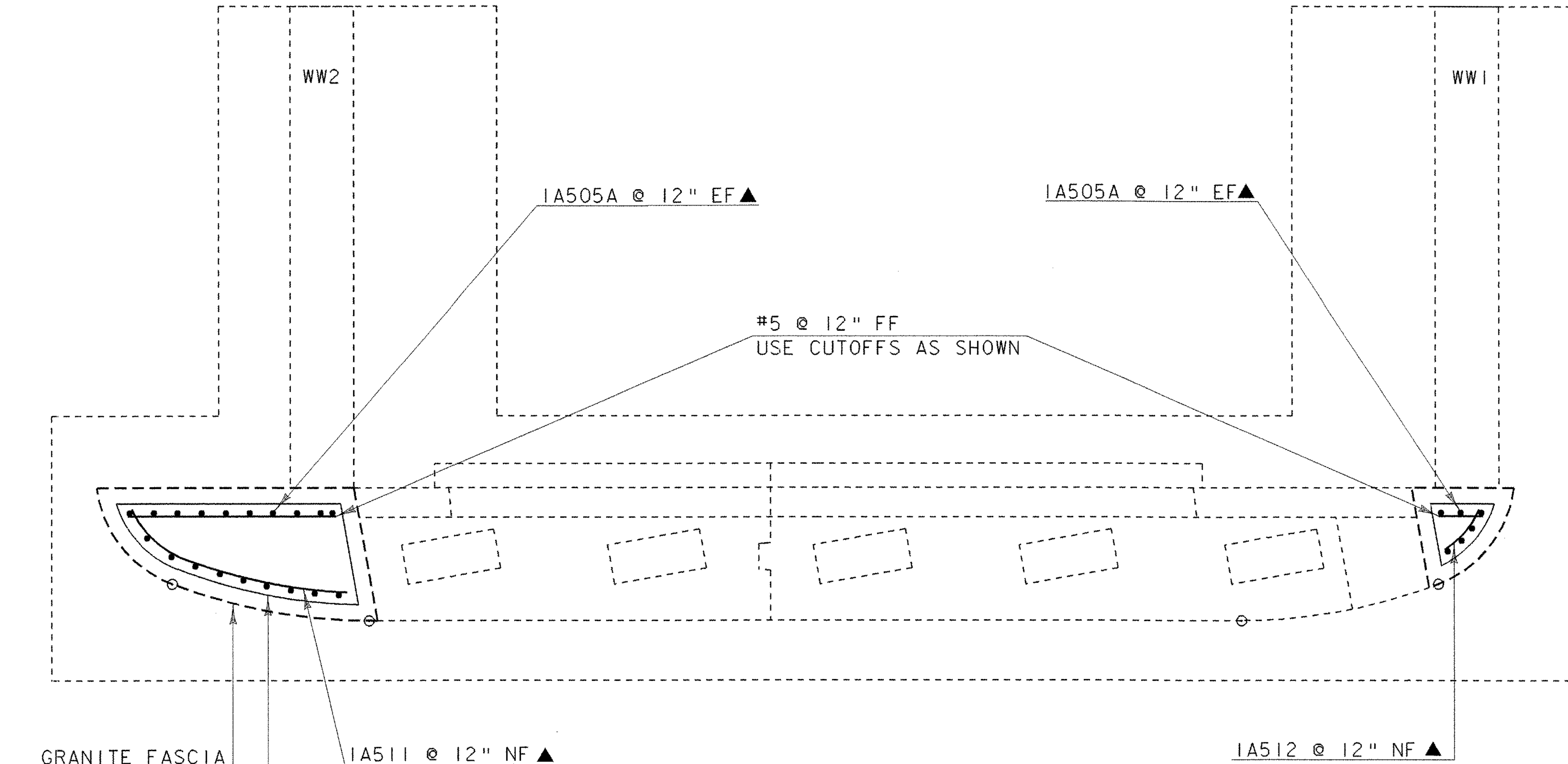
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

ALL LAP SPLICES NOT DETAILED SHALL BE 2'-2"

PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444(22)

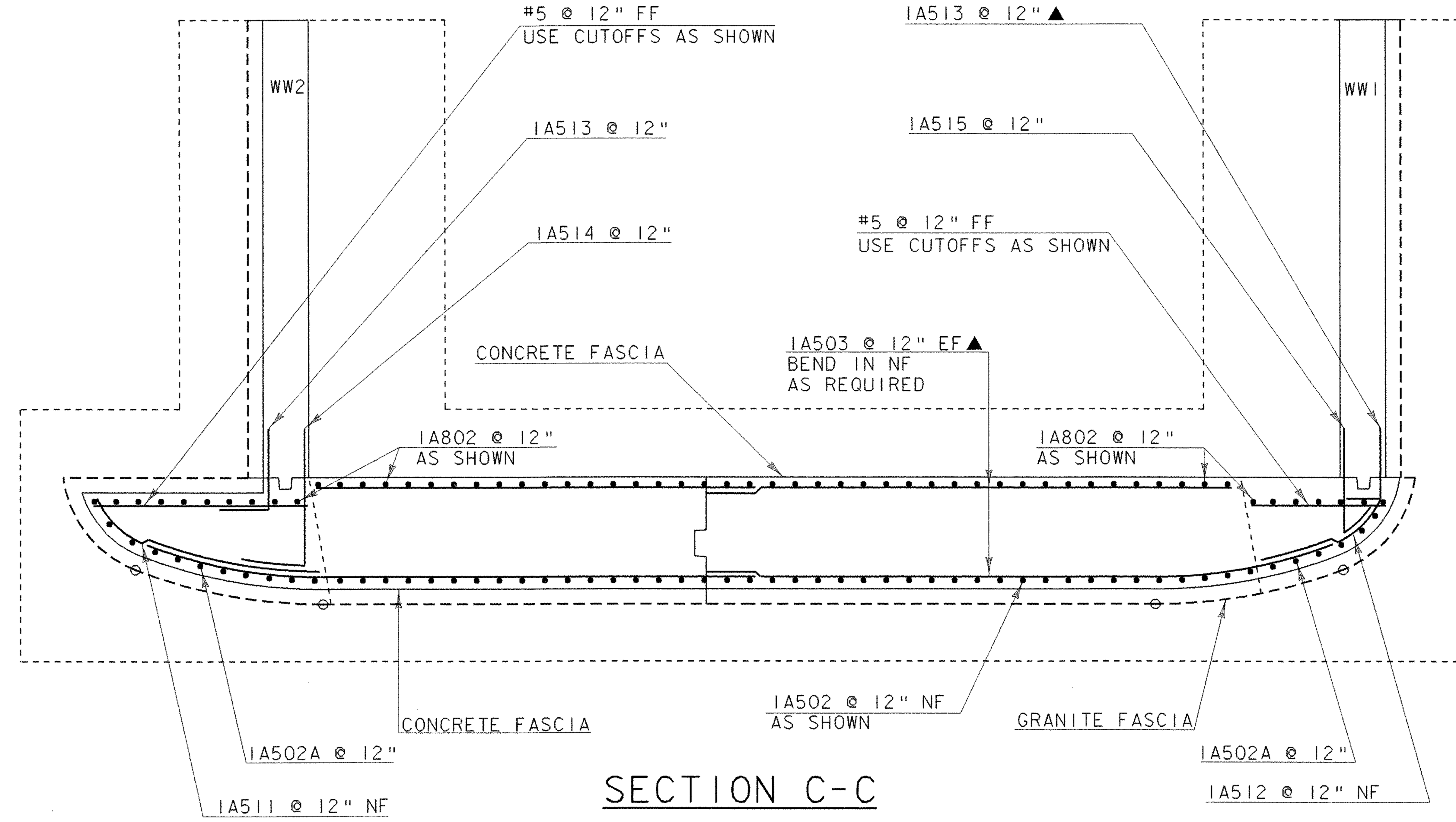
FILE NAME: 89j099/structures/sj099abl.dgn
IPARM NAME: sj099abut1.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
ABUTMENT #1 TYPICAL AND ELEVATION

PLOT DATE: 11-AUG-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: C.P. WILLIAMS
SHEET 50



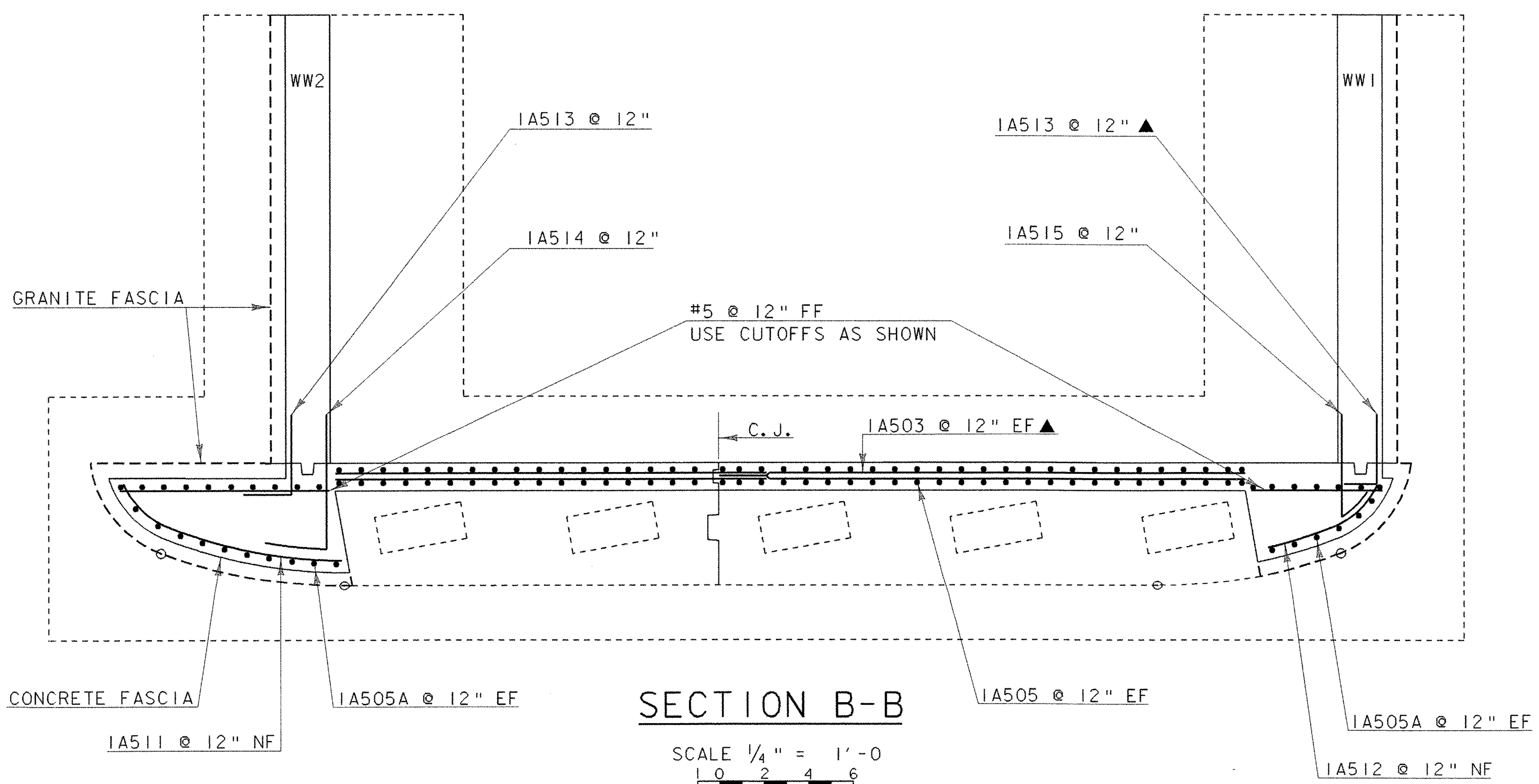
SECTION A-A

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



SECTION C-C

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



SECTION B-B

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

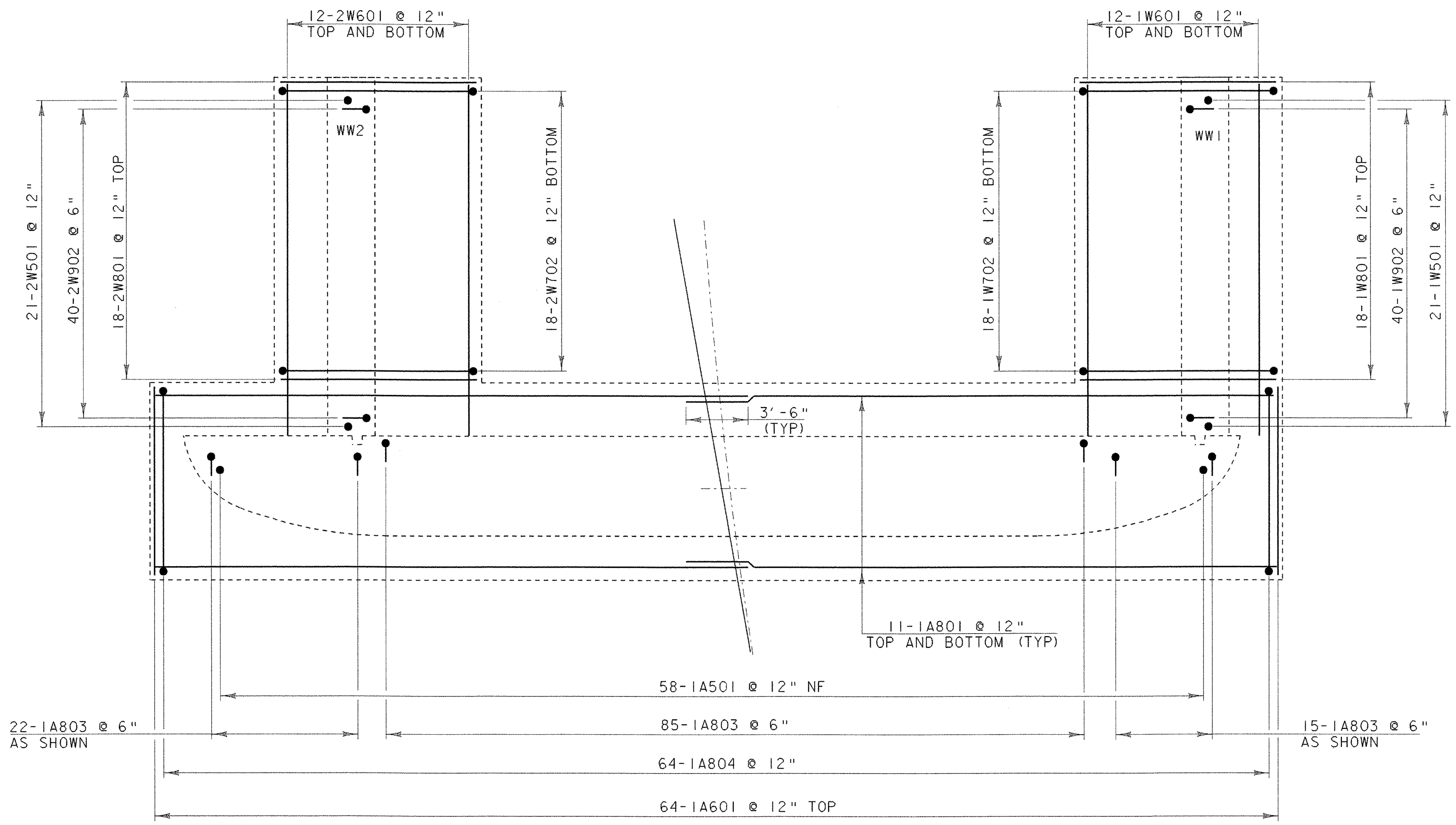
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
PC = POINT OF CURVATURE
C.J. = CONSTRUCTION JOINT
ALL LAP SPLICES NOT DETAILED SHALL BE 2'-2"

PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444(22)

FILE NAME: 89j099/structures/sj099ab1.dgn
IPARM NAME: sj099ab1sections.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: C.P. WILLIAMS
ABUTMENT #1 SECTIONS

PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: C.P. WILLIAMS
SHEET 51 OF 118



ABUTMENT #1 FOOTING REINFORCING PLAN

SCALE 1/4" = 1'-0

1 0 2 4 6

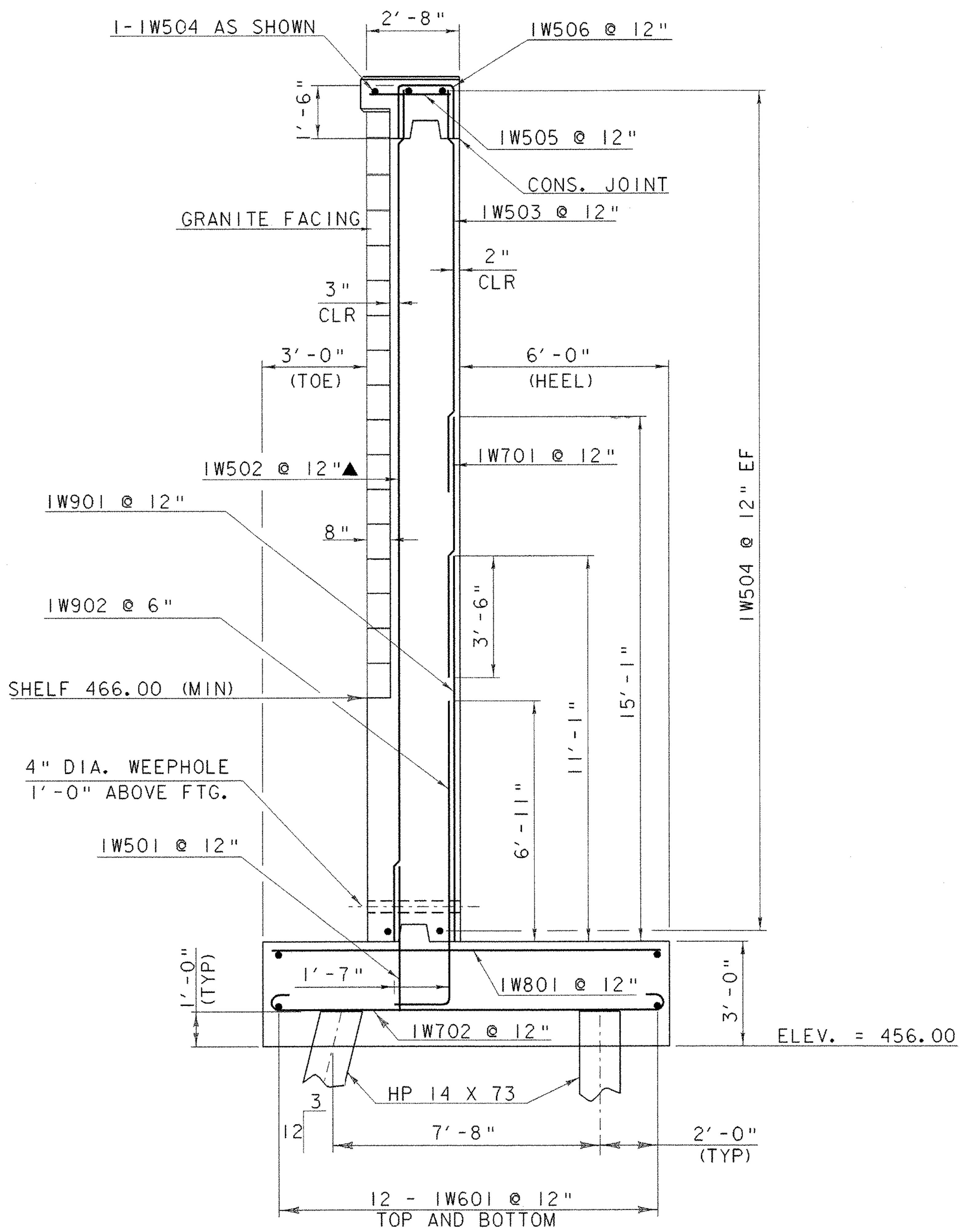
NOTE:

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

ALL LAP SPLICES NOT DETAILED SHALL BE 2'-2"

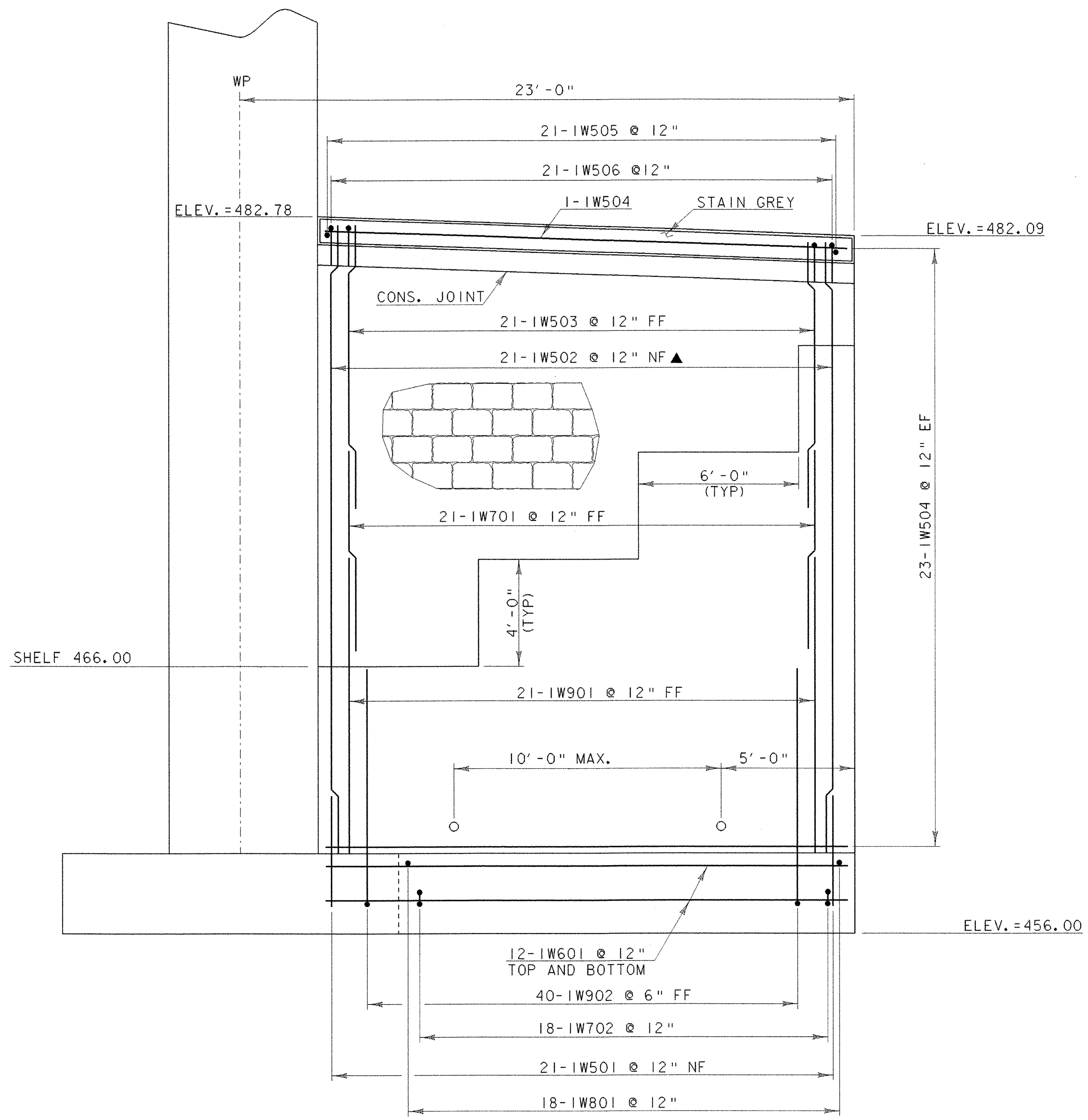
PILES NOT SHOWN FOR CLARITY

PROJECT NAME: PROJECT NUMBER: ROYALTON BRZ 1444 (22)	
FILE NAME: 89j099/structures/sj099abl.dgn IPARM NAME: sj099ftgreinl.i PROJECT LEADER: C.P. WILLIAMS DESIGNED BY: C.P. WILLIAMS ABUT #1 FOOTING REINFORCING PLAN	PLOT DATE: 25-SEP-2000 DRAWN BY: D.G. BASSETT CHECKED BY: C.P. WILLIAMS SHEET 52 OF 118



WINGWALL # 1 TYPICAL SECTION

SCALE 3/8" = 1'-0



WINGWALL # 1 ELEVATION

SCALE 3/8" = 1'-0

NOTE:

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

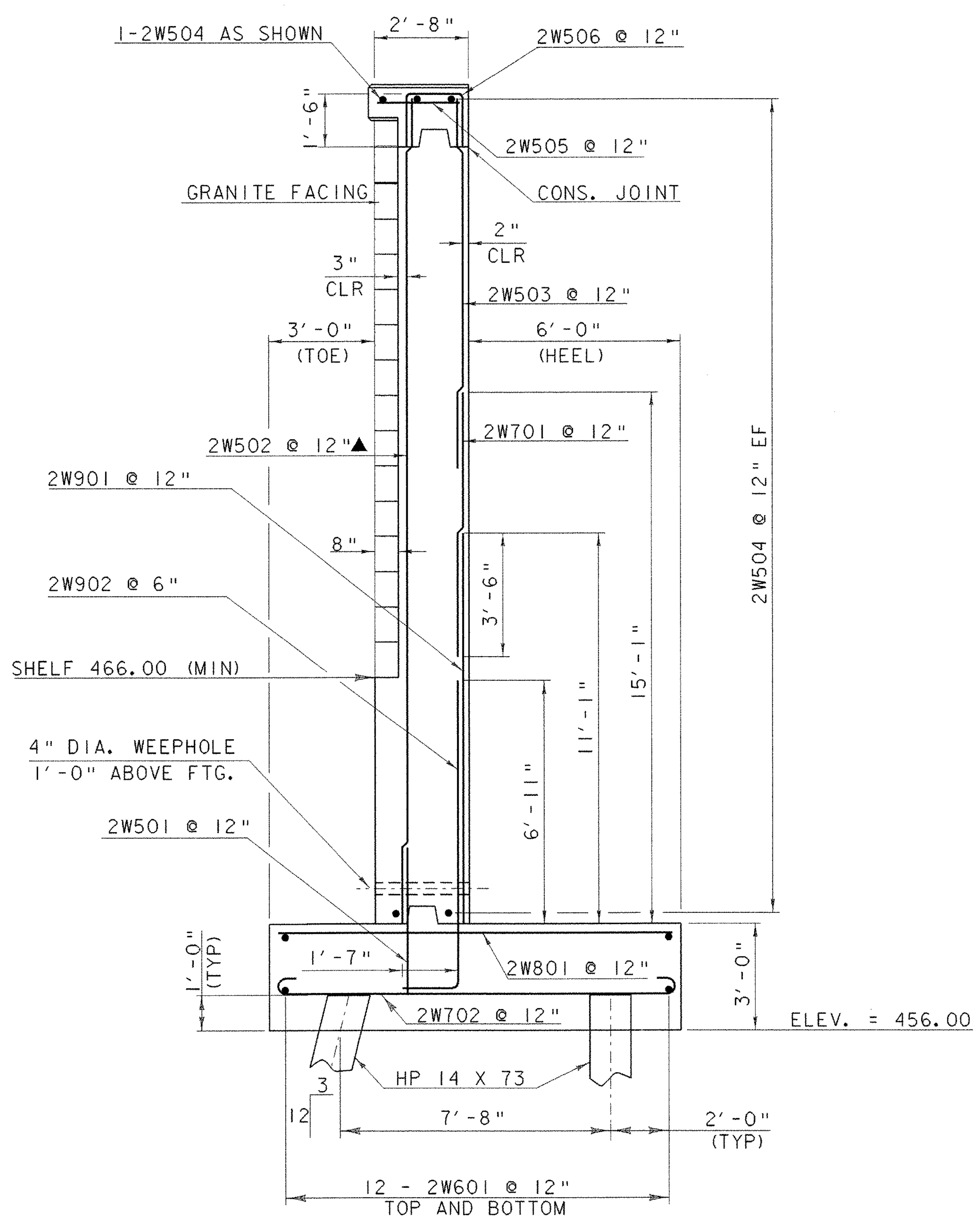
ALL LAP SPLICES NOT DETAILED SHALL BE 2'-2"

PILES NOT SHOWN IN ELEVATION FOR CLARITY

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444 (22)

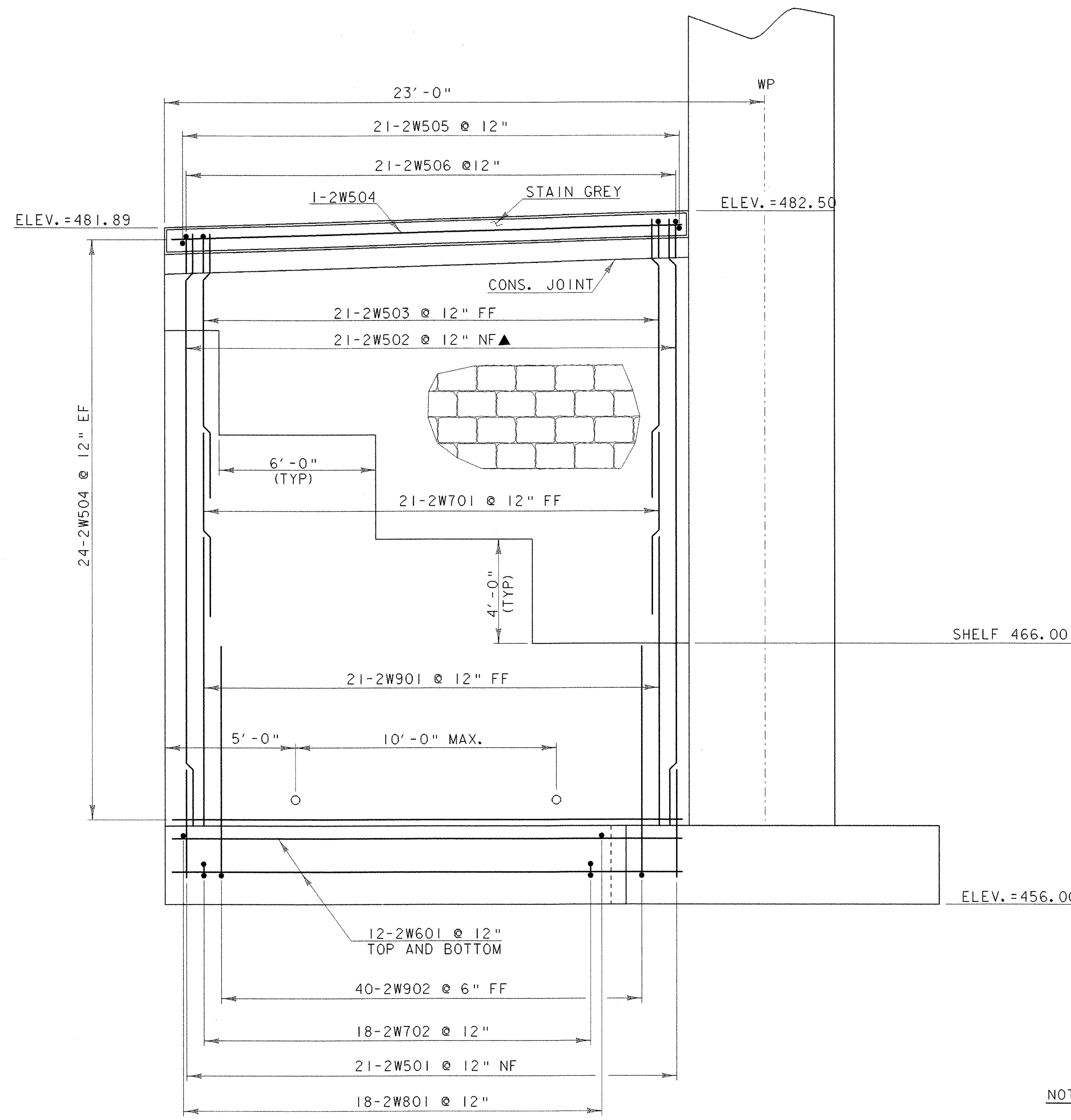
FILE NAME: 89j099/structures/sj099abl.dgn
IPARM NAME: sj099wwl.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: C.P. WILLIAMS
WINGWALL #1 DETAILS

PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: C.P. WILLIAMS
SHEET 53 OF 118



WINGWALL # 2 TYPICAL SECTION

SCALE 3/8" = 1'-0



WINGWALL # 2 ELEVATION

SCALE 3/8" = 1'-0

NOTE:

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

ALL LAP SPLICES NOT DETAILED SHALL BE 2'-2"

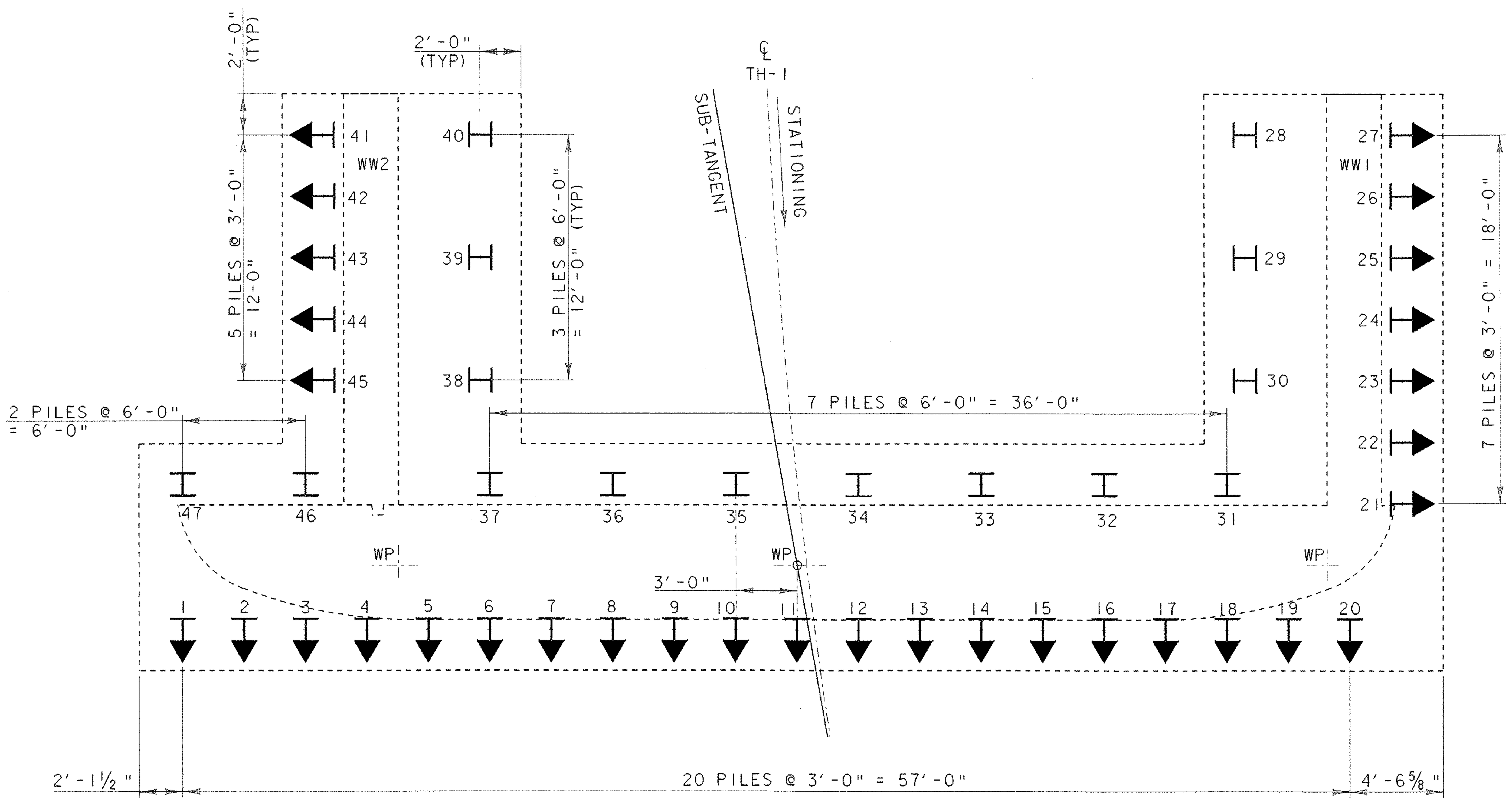
PILES NOT SHOWN IN ELEVATION FOR CLARITY

PROJECT NAME: ROYALTON BRZ 1444 (22)
PROJECT NUMBER:

FILE NAME: 89j099/structures/sj099ab1.dgn
IPARM NAME: sj099ww2.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: C.P. WILLIAMS
WINGWALL #2 DETAILS

PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: C.P. WILLIAMS
SHEET 54 OF 118

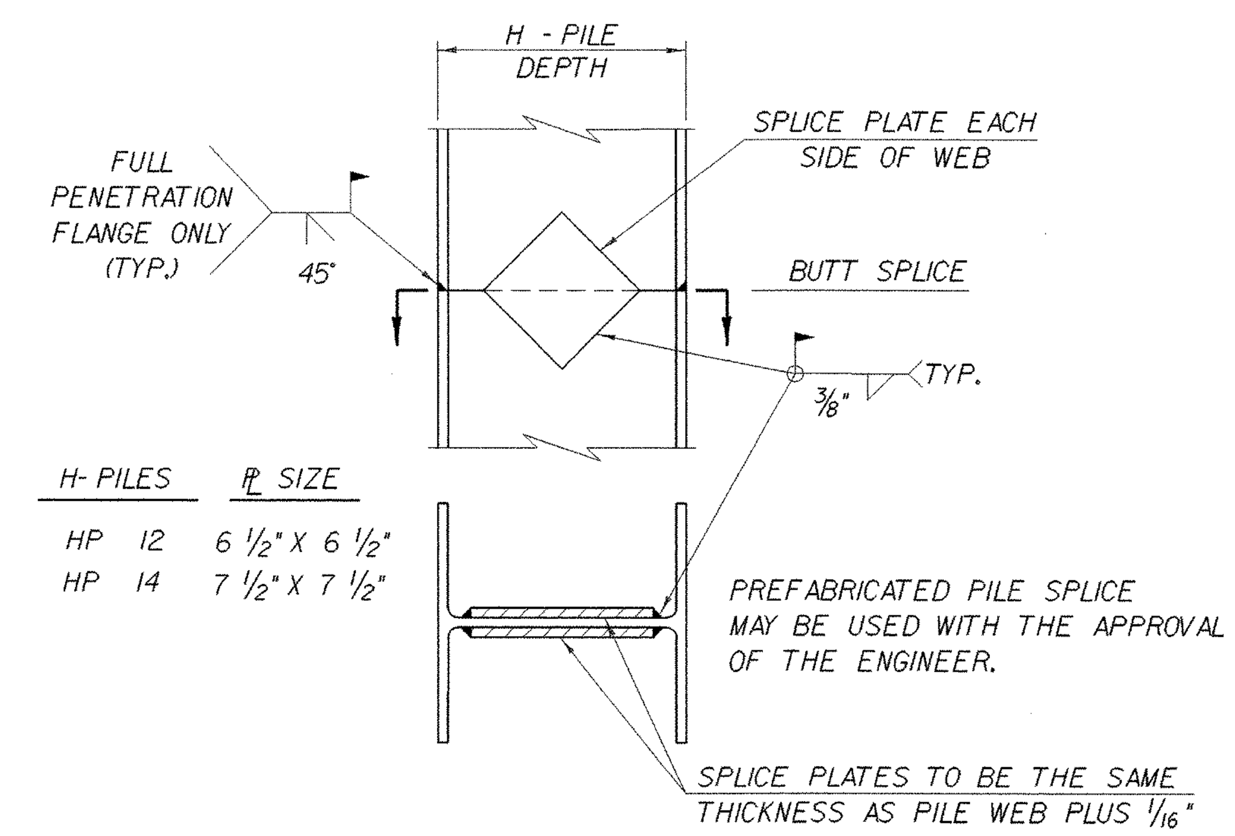
ALL PILES ARE HP 14 X 73



FLOW

ABUTMENT #1 PILE LAYOUT

SCALE ¼" = 1'-0



DETAIL OF PILE SPLICE

NTS

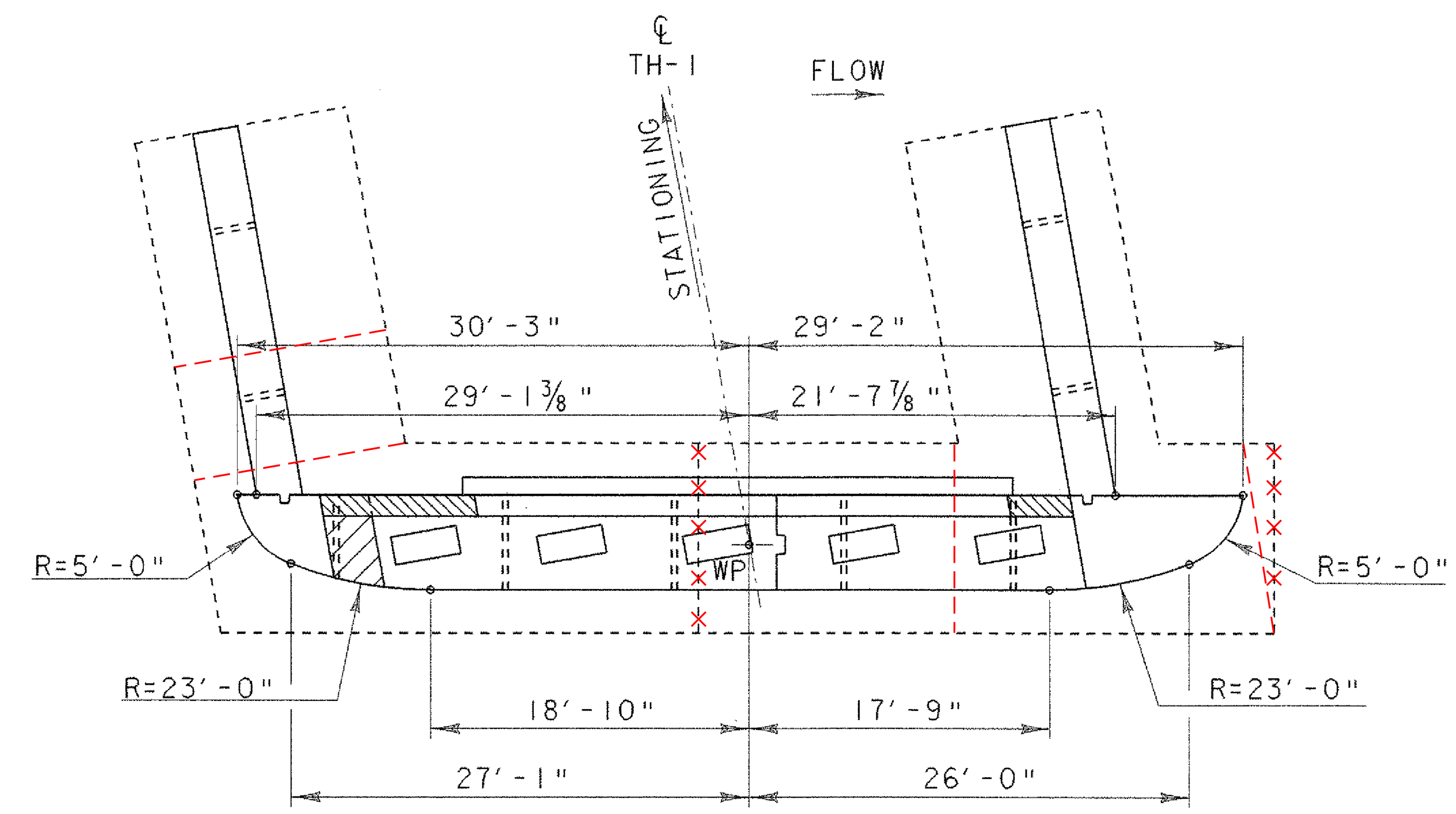
PILE KEY

VERTICAL PILE

BATTERED 3 HORIZONTAL TO 12 VERTICAL

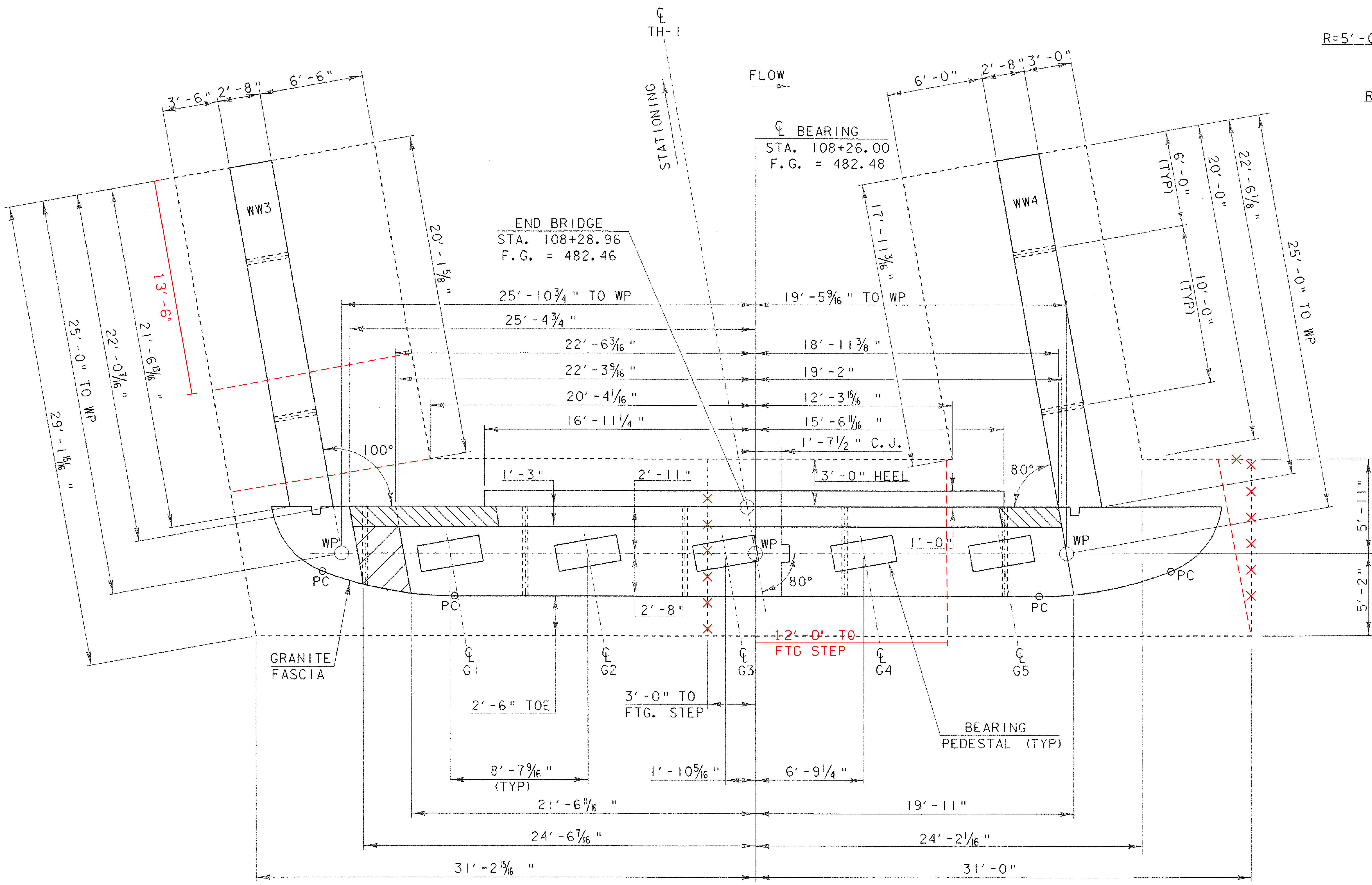
PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444 (22)

FILE NAME: 89j099/structures/sj099abl.dgn	PLOT DATE: 25-SEP-2000
IPARM NAME: sj099pileplan.i	DRAWN BY: D.G. BASSETT
PROJECT LEADER: C.P. WILLIAMS	CHECKED BY: C.P. WILLIAMS
DESIGNED BY: C.P. WILLIAMS	SHEET 55 OF 118
ABUTMENT #1 PILE LAYOUT	



ABUTMENT #2 PLAN
ADDITIONAL DIMENSIONS

SCALE 1/8″ = 1′-0



ABUTMENT #2 PLAN

SCALE 1/4″ = 1′-0

FOR GRANITE FACING DETAILS AND NOTES SEE SHEET 66.

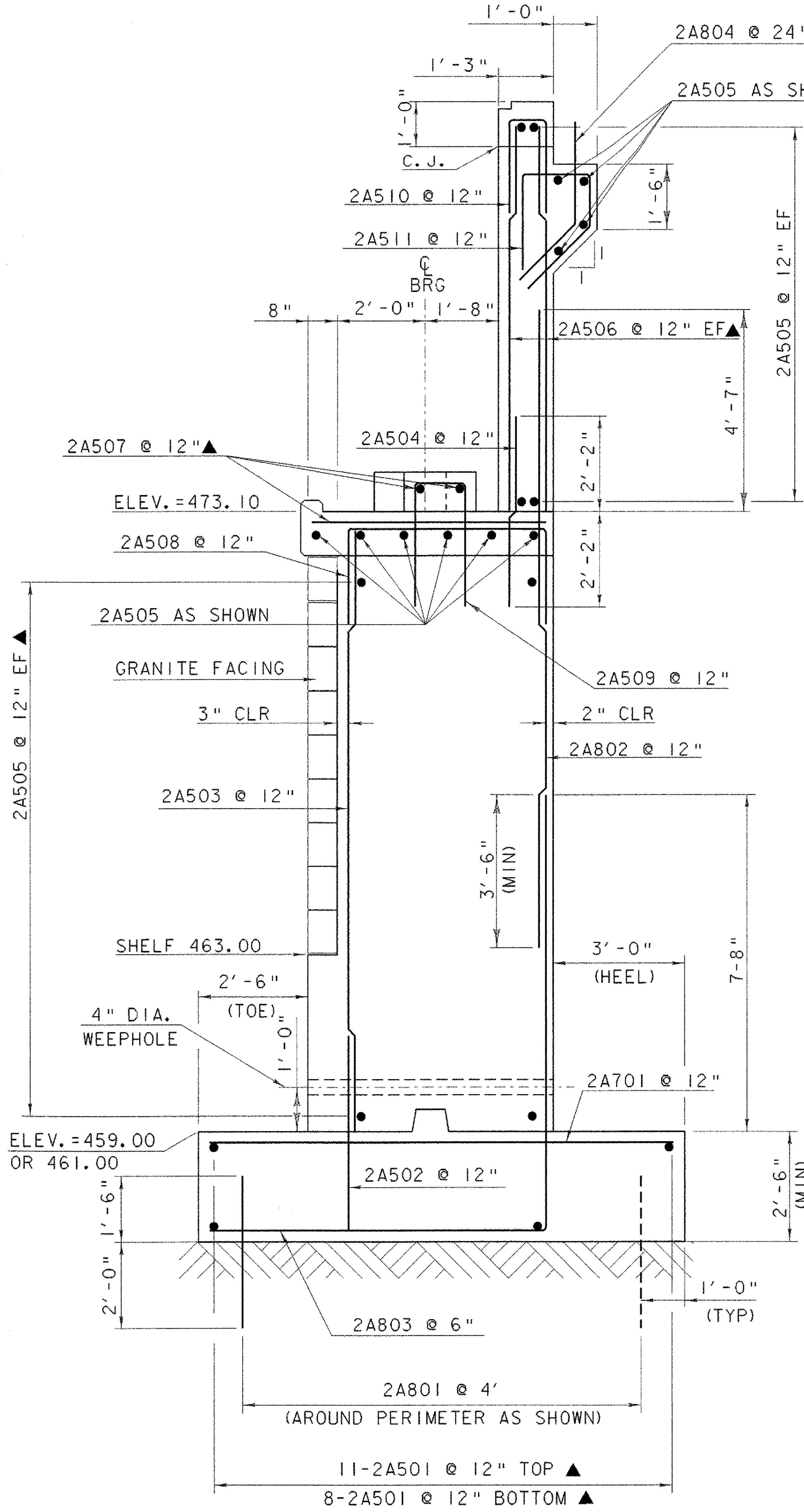
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
PC = POINT OF CURVATURE
C.J. = CONSTRUCTION JOINT
ALL LAP SPLICES NOT DETAILED SHALL BE 2′-2″

PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444 (22)

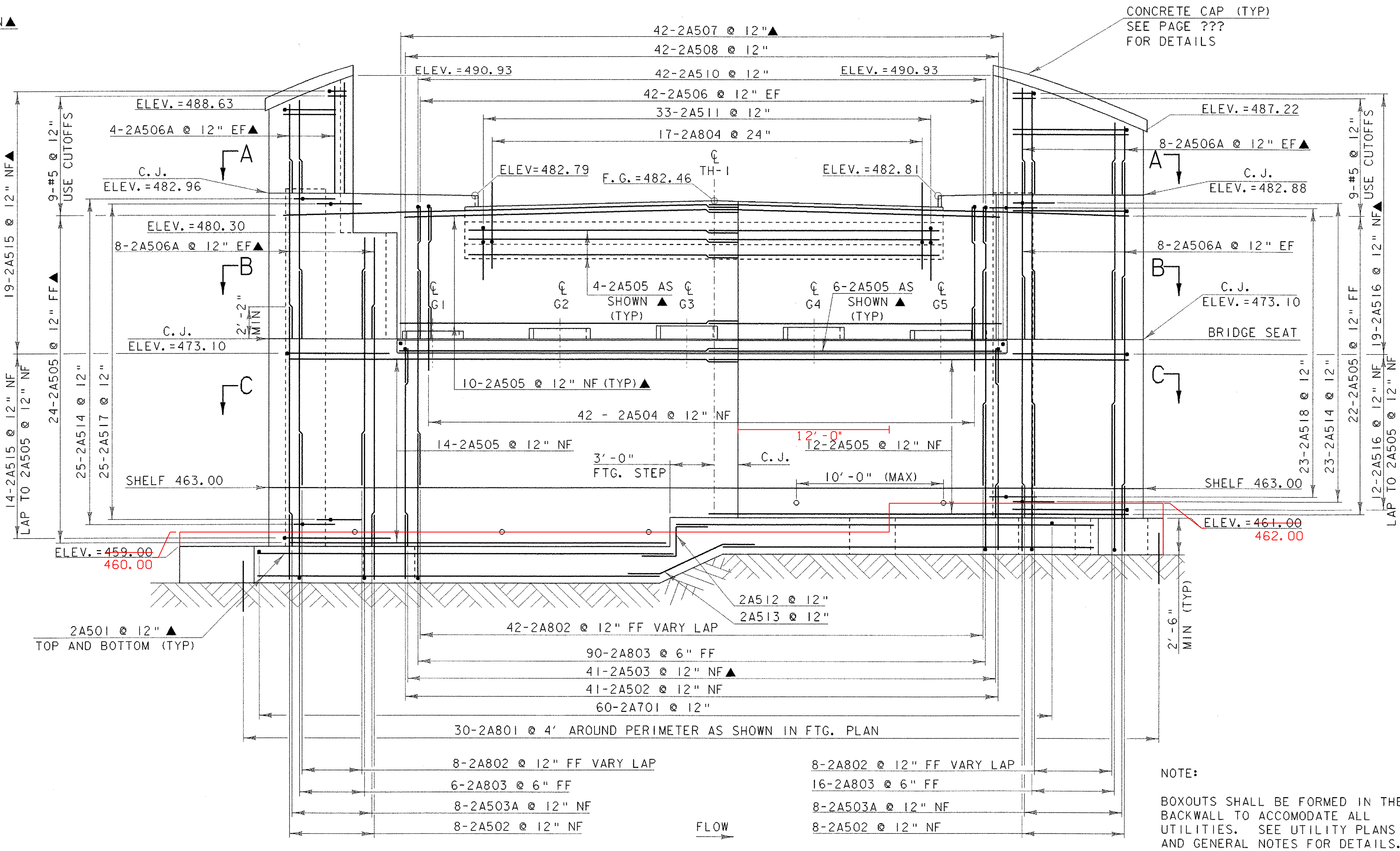
FILE NAME: 89j099/structures/sj099ab2.dgn
IPARM NAME: sj099abut2a.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: K.M. HIGGINS
ABUTMENT #2 PLAN

PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: C.P. WILLIAMS
SHEET 56 OF 118



ABUTMENT #2 TYPICAL SECTION

SCALE 1/2" = 1'-0

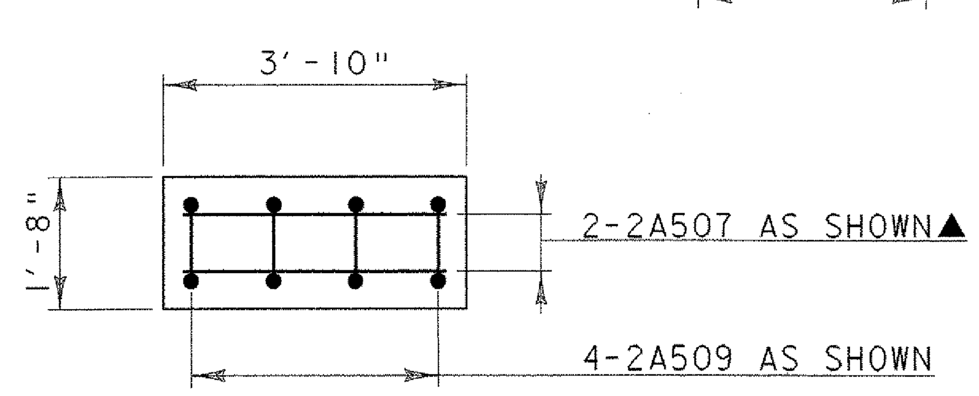


NOTE:

BOXOUTS SHALL BE FORMED IN THE BACKWALL TO ACCOMODATE ALL UTILITIES. SEE UTILITY PLANS AND GENERAL NOTES FOR DETAILS.

ABUTMENT #2 ELEVATION

SCALE 1/4" = 1'-0



BEARING PEDESTAL

SCALE 1/2" = 1'-0

NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
C.J. = CONSTRUCTION JOINT
ALL LAP SPLICES NOT DETAILED SHALL BE 2'-2"

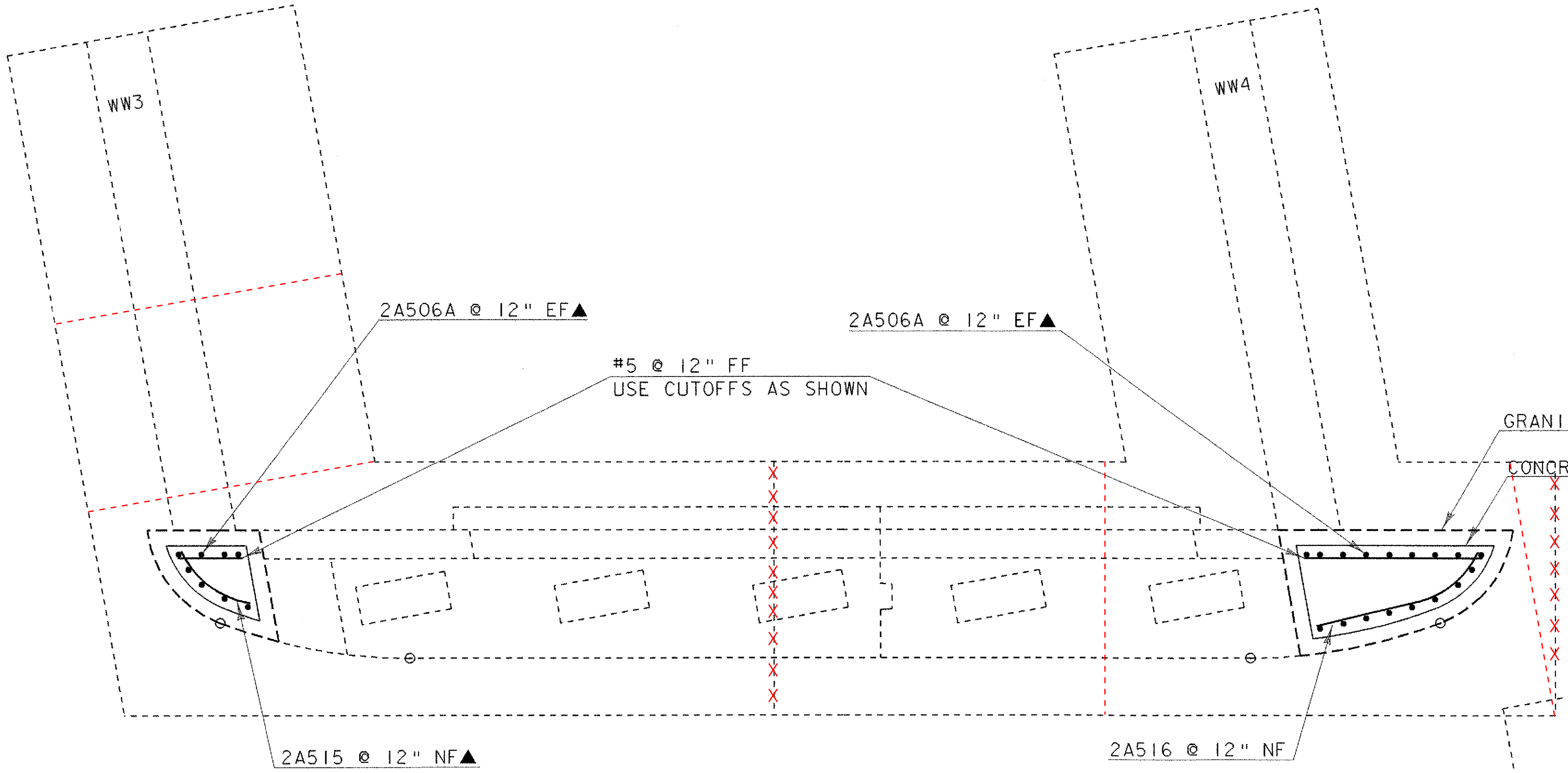
BEARING PEDESTAL ELEVATIONS

℄ G1	℄ G2	℄ G3	℄ G4	℄ G5
473.~~61~~ .59	473.79	473.97	473.89	473.~~70~~ .61

PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444 (22)

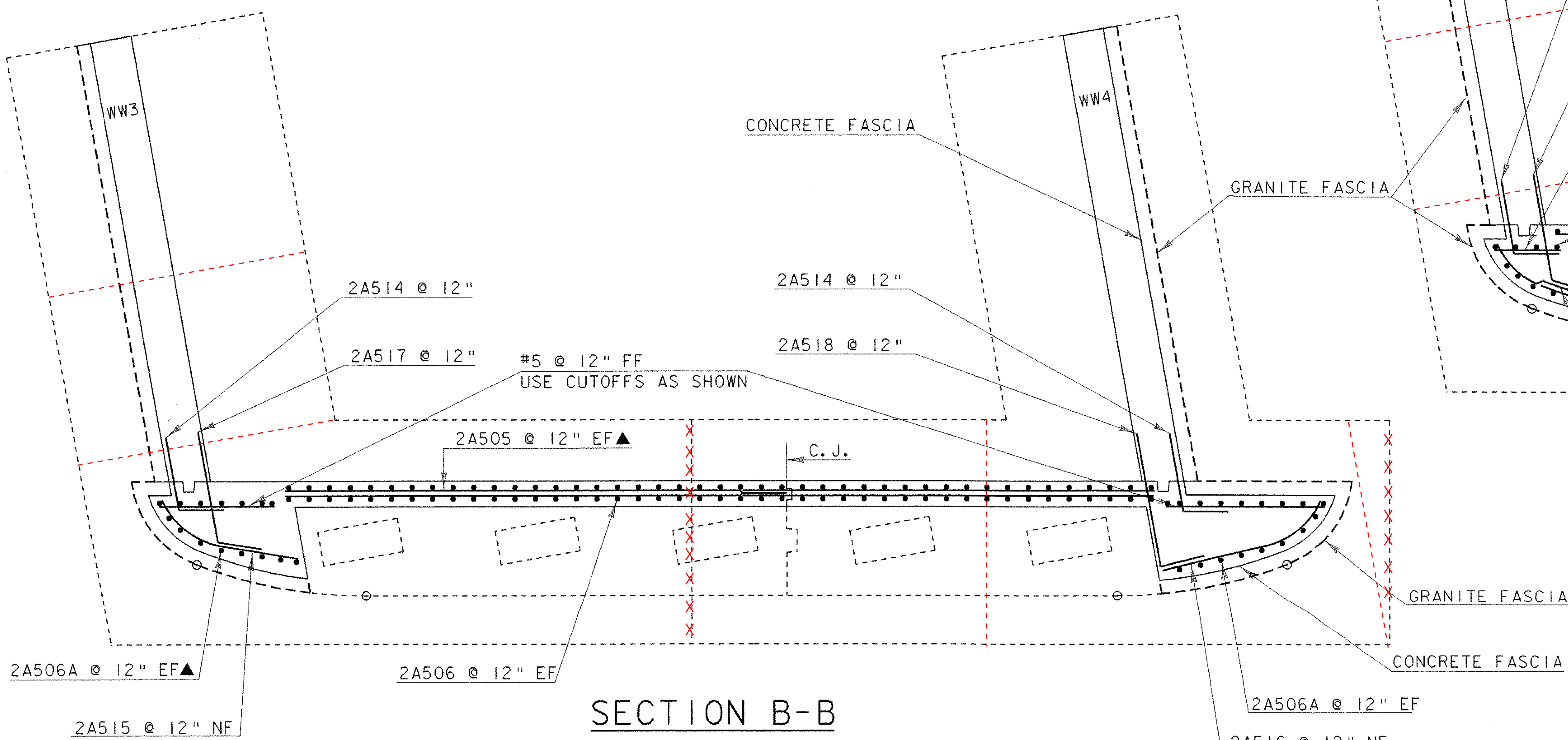
FILE NAME: 89j099/structures/sj099ab2.dgn
IPARM NAME: sj099abut2.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
ABUTMENT #2 TYPICAL AND ELEVATION

PLOT DATE: 11-AUG-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: C.P. WILLIAMS
SHEET 57



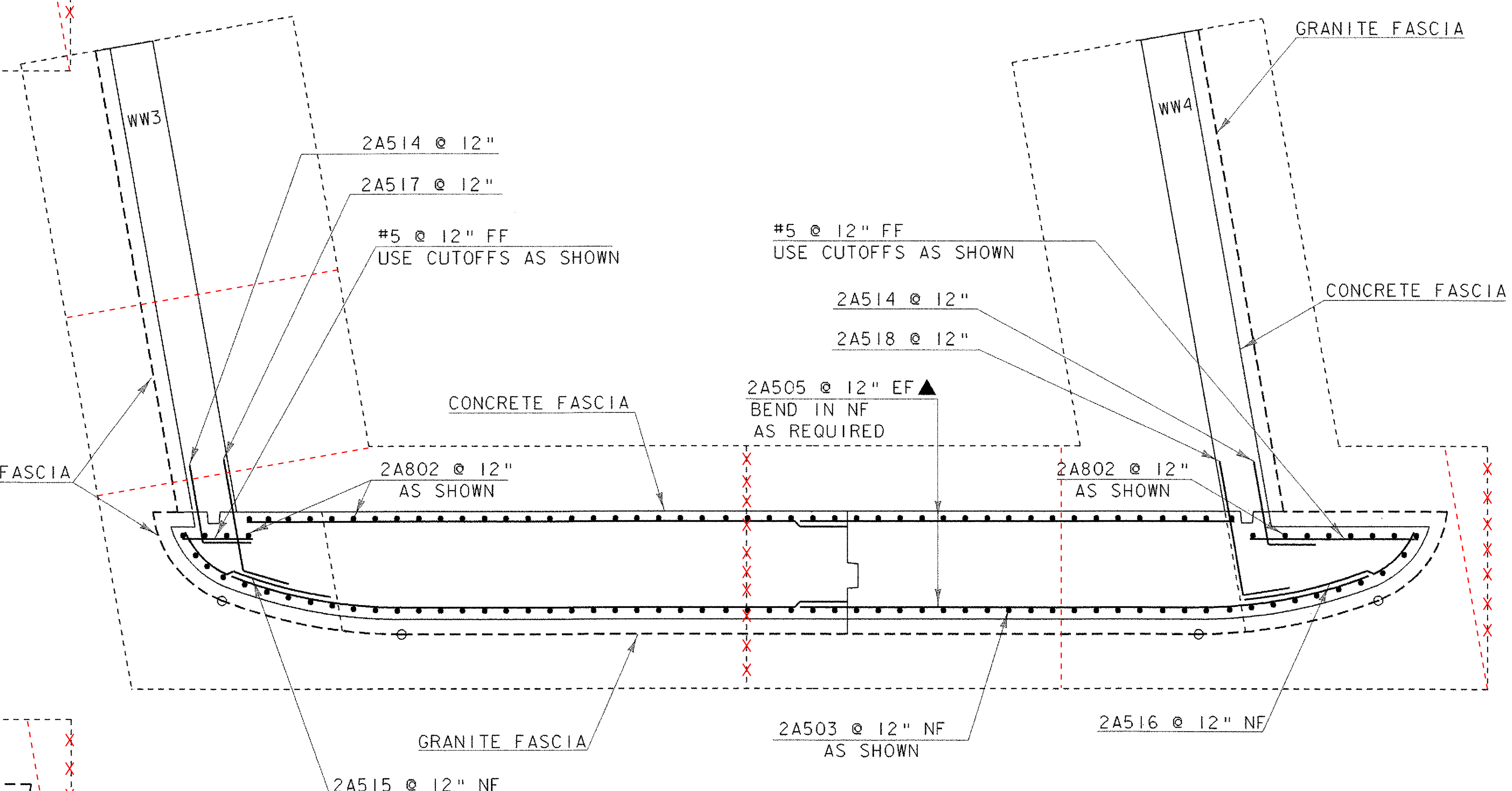
SECTION A-A

SCALE 1/4" = 1'-0



SECTION B-B

SCALE 1/4" = 1'-0



SECTION C-C

SCALE 1/4" = 1'-0

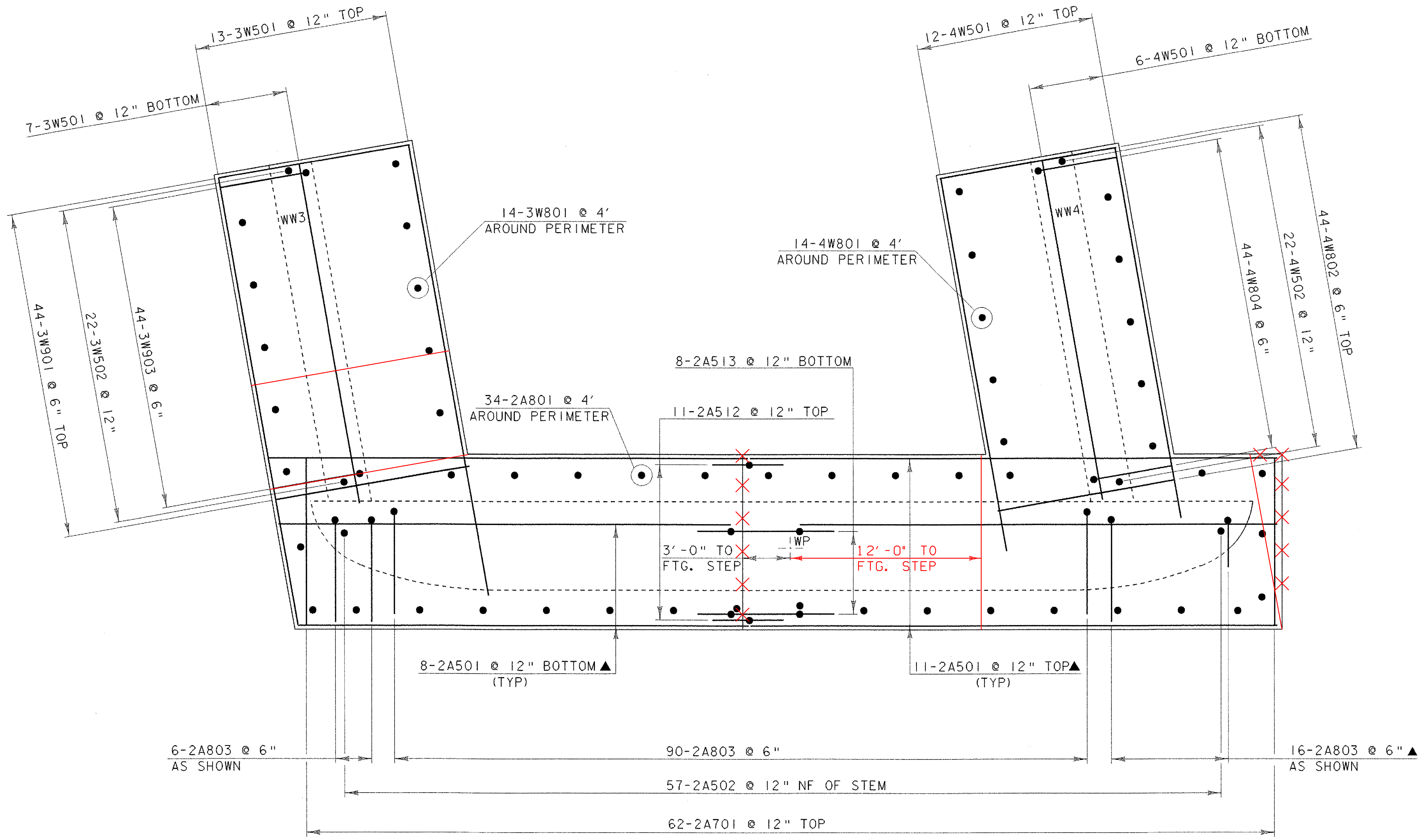
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
C.J. = CONSTRUCTION JOINT
ALL LAP SPLICES NOT DETAILED SHALL BE 2'-2"

PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444 (22)

FILE NAME: 89j099/structures/sj099ab2.dgn
IPARM NAME: sj099ab2sections.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: K.M. HIGGINS
ABUTMENT #2 SECTIONS

PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: C.P. WILLIAMS
SHEET 58 OF 118



ABUTMENT #2 FOOTING REINFORCING PLAN

SCALE ¼" = 1'-0

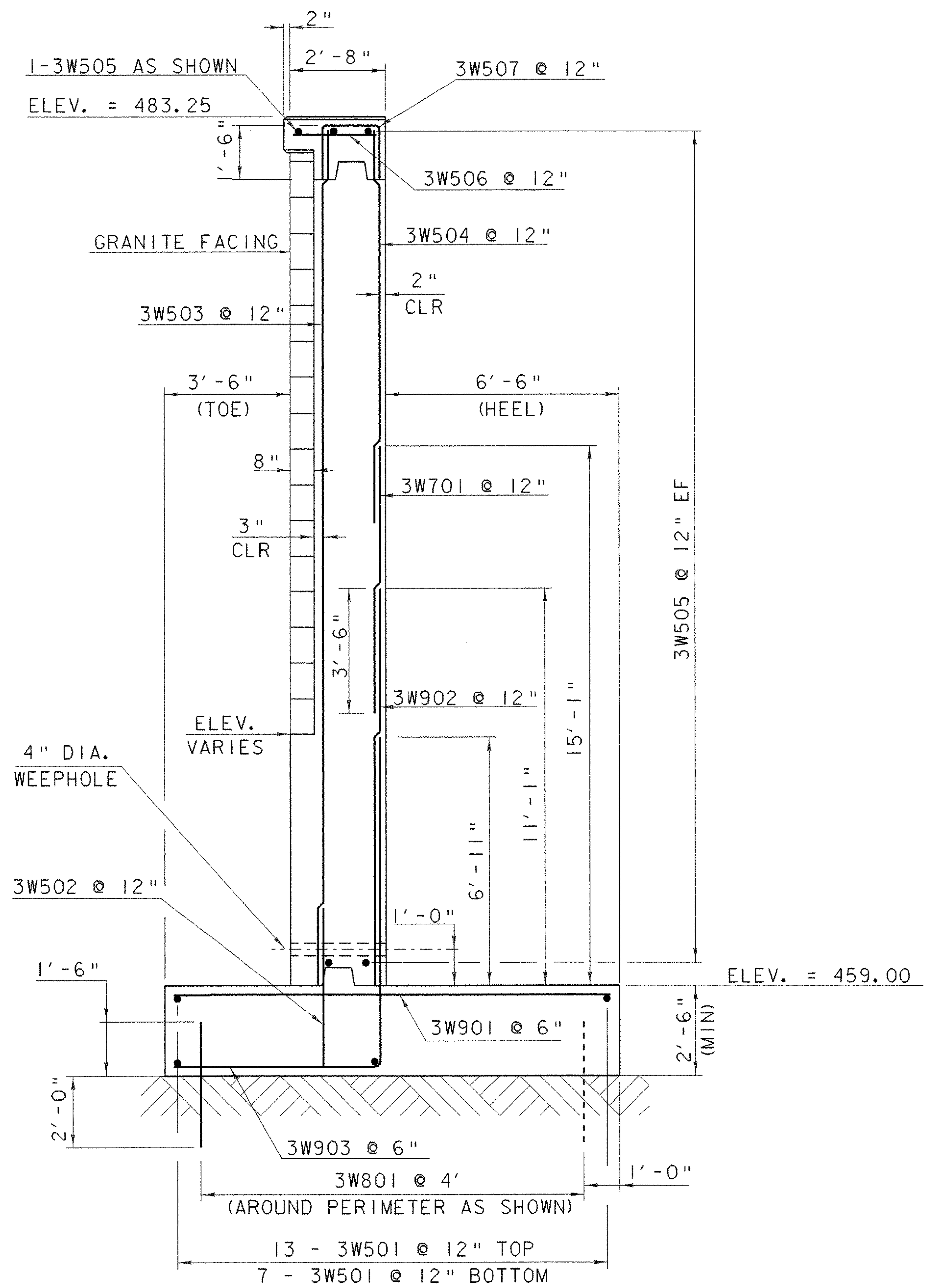
1 0 2 4 6

NOTE:

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

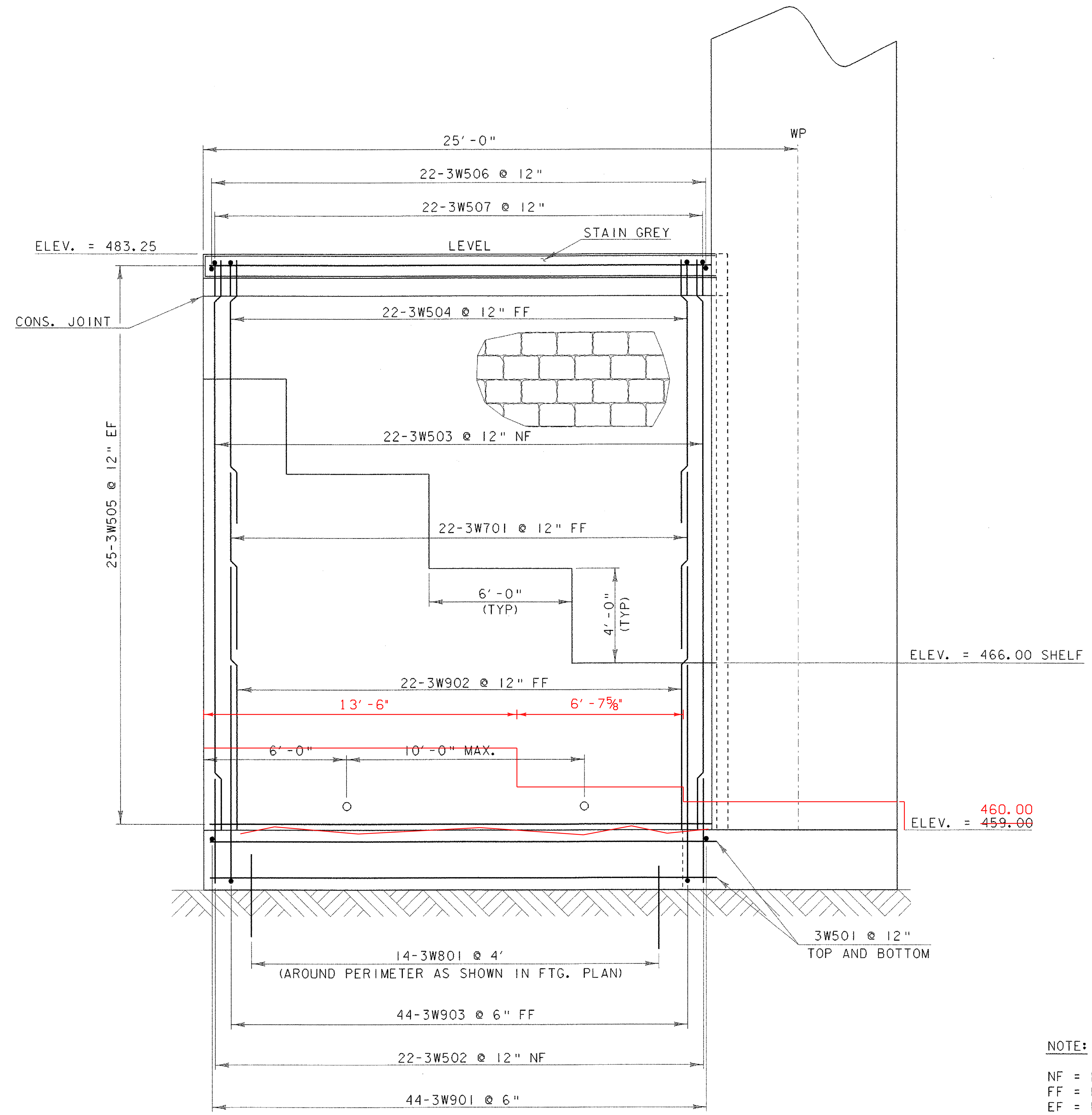
[illegible] CONSTRUCTION JOINT
DETAILED SHALL BE 2'-2"

PROJECT NAME: ROYALTON	
PROJECT NUMBER: BRZ 1444(22)	
FILE NAME: 89j099/structures/sj099ab2.dgn	PLOT DATE: 25-SEP-2000
IPARM NAME: sj099ftgrein2.i	DRAWN BY: D.G. BASSETT
PROJECT LEADER: C.P. WILLIAMS	CHECKED BY: C.P. WILLIAMS
DESIGNED BY: K.M. HIGGINS	SHEET 59 OF 118
ABUT # 2 FOOTING REINFORCING PLAN	



WINGWALL # 3 TYPICAL SECTION

SCALE ⅜" = 1'-0



WINGWALL # 3 ELEVATION

SCALE ⅜" = 1'-0

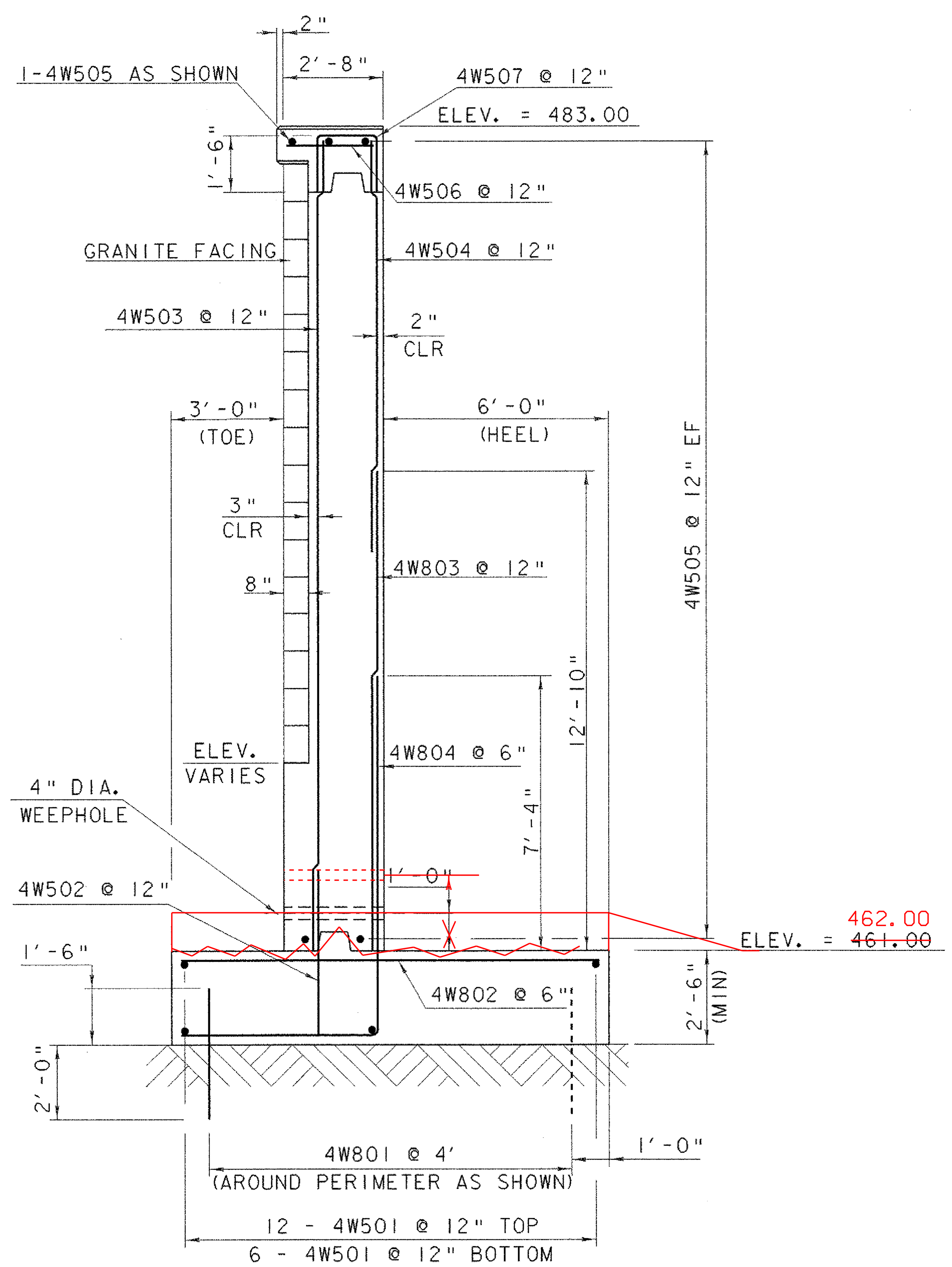
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
C.J. = CONSTRUCTION JOINT
ALL LAP SPLICES NOT DETAILED SHALL BE 2'-2"

PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444(22)

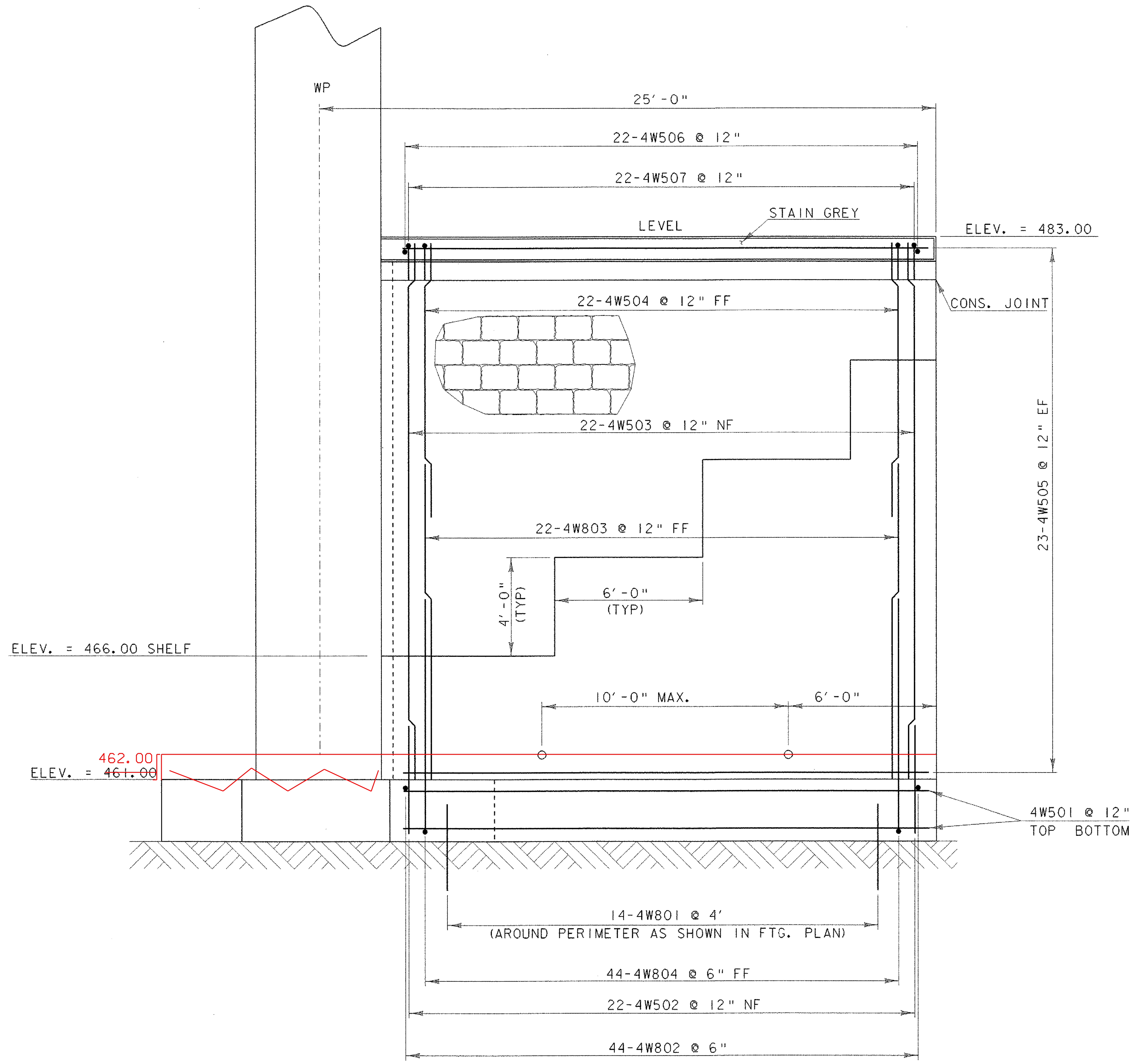
FILE NAME: 89j099/structures/sj099ab2.dgn
IPARM NAME: sj099ww3.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: K.M. HIGGINS
WINGWALL #3 DETAILS

PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: C.P. WILLIAMS
SHEET 60 OF 118



WINGWALL # 4 TYPICAL SECTION

SCALE 3/8" = 1'-0



WINGWALL # 4 ELEVATION

SCALE 3/8" = 1'-0

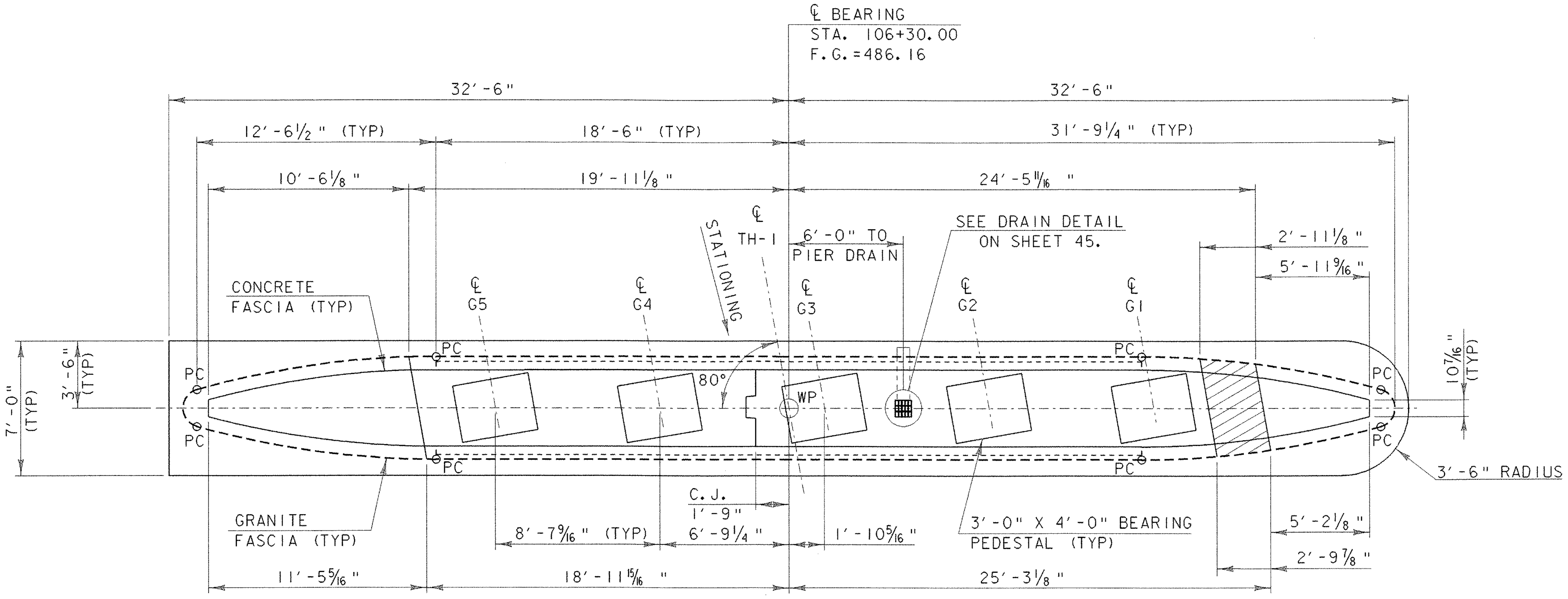
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
C.J. = CONSTRUCTION JOINT
ALL LAP SPLICES NOT DETAILED SHALL BE 2'-2"

PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444 (22)

FILE NAME: 89j099/structures/sj099ab2.dgn
IPARM NAME: sj099ww4.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: K.M. HIGGINS
WINGWALL #4 DETAILS

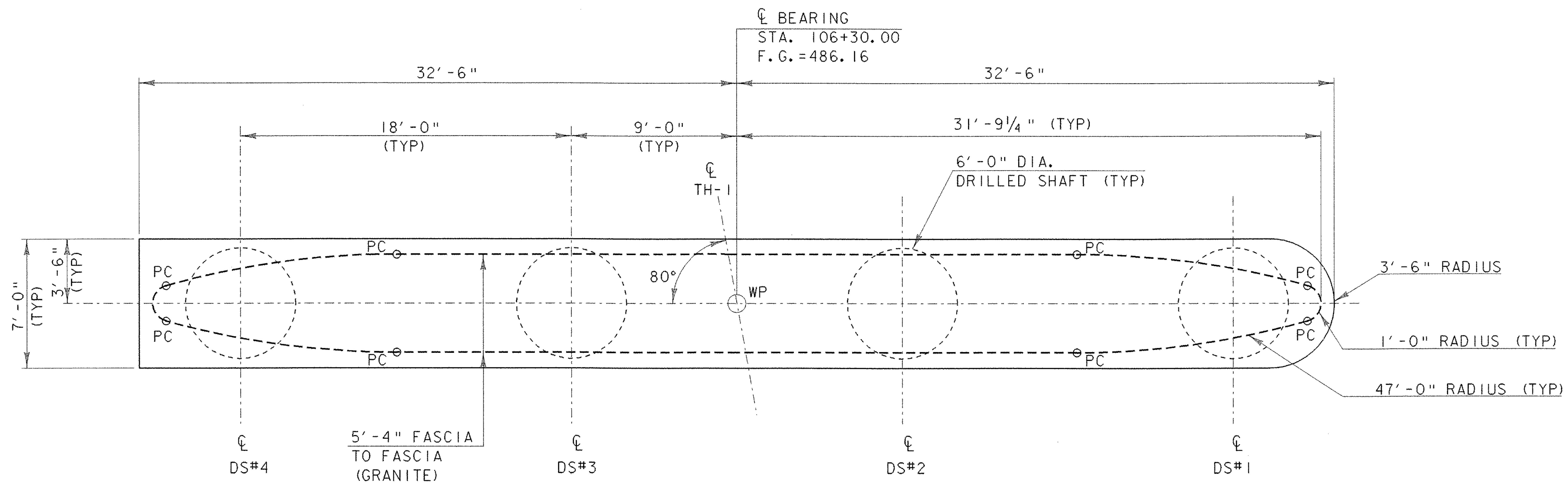
PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: C.P. WILLIAMS
SHEET 61 OF 118



PIER PLAN

SCALE ¼" = 1'-0

FLOW



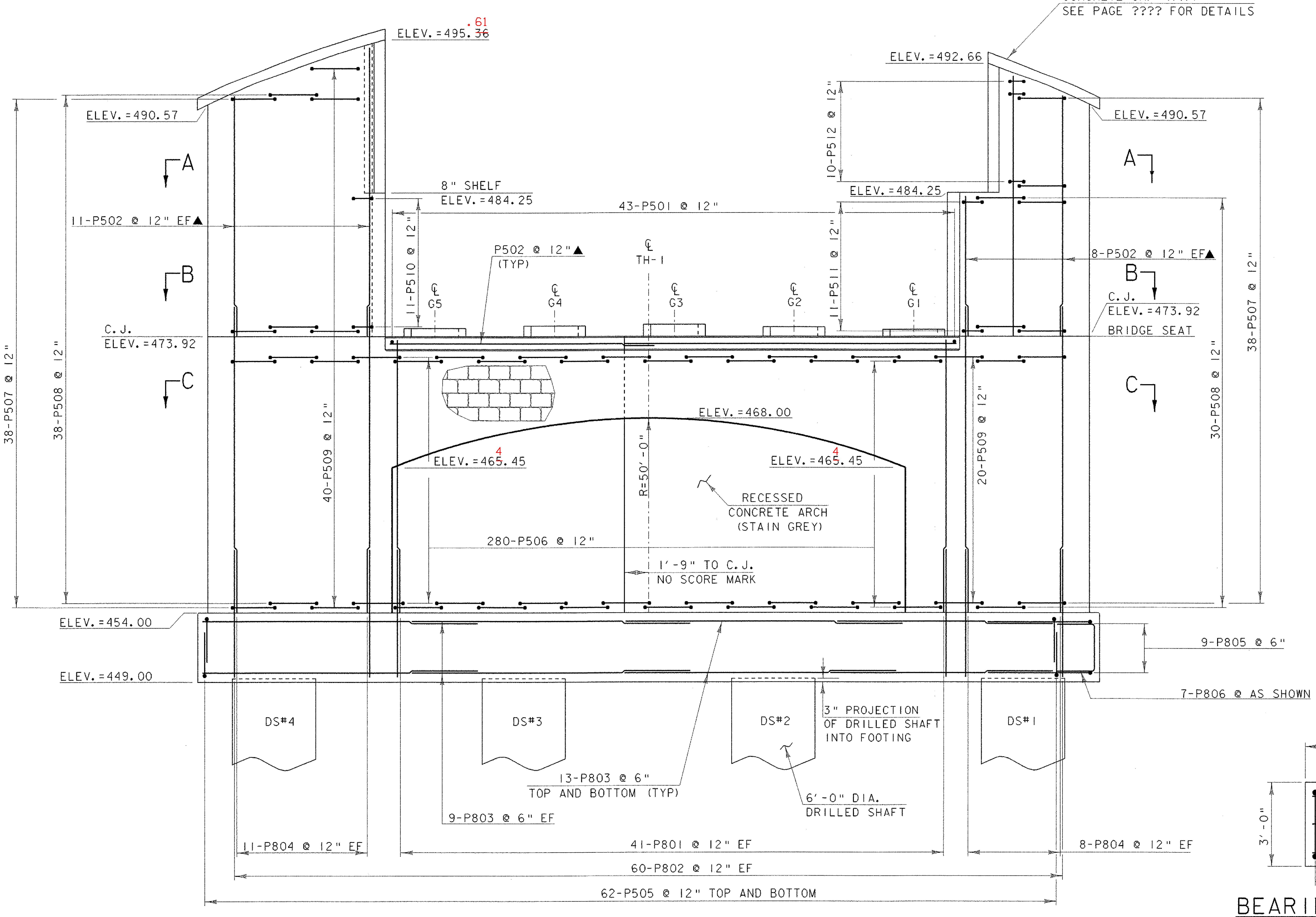
DRILLED SHAFT AND PIER FOOTING PLAN

SCALE ¼" = 1'-0

NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
PC = POINT OF CURVATURE
C.J. = CONSTRUCTION JOINT
ALL LAP SPLICES NOT DETAILED SHALL BE 2'-2"

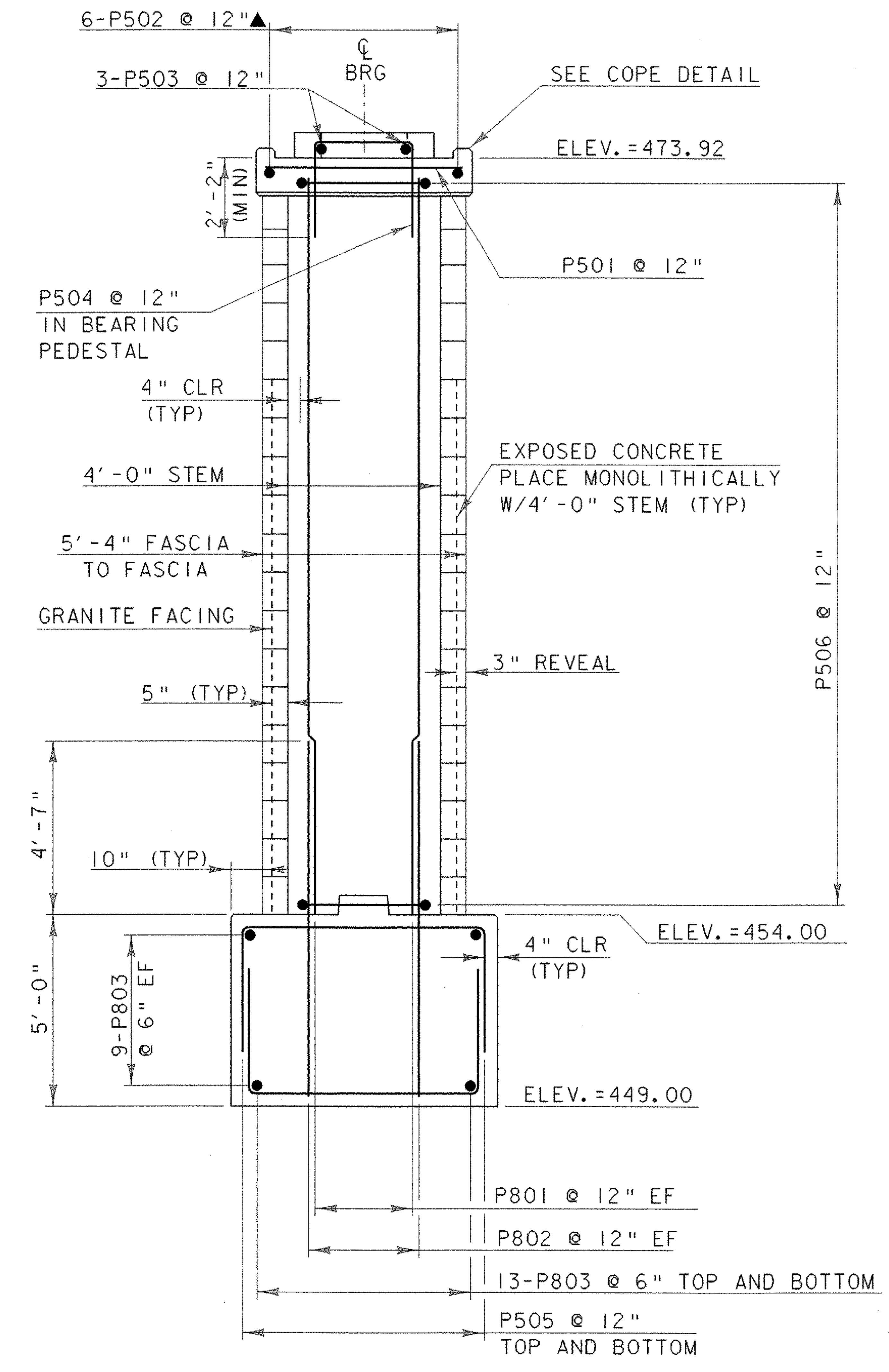
PROJECT NAME: PROJECT NUMBER: ROYALTON BRZ 1444 (22)	
FILE NAME: 89j099/structures/sj099pier.dgn	PLOT DATE: 25-SEP-2000
IPARM NAME: sj099pierpe.i	DRAWN BY: D.G. BASSETT
PROJECT LEADER: C.P. WILLIAMS	CHECKED BY: W.B. SYMONDS
DESIGNED BY: W.B. SYMONDS	SHEET 62 OF 118
PIER AND FOOTING PLAN	



PIER REINFORCING PLAN AND ELEVATION

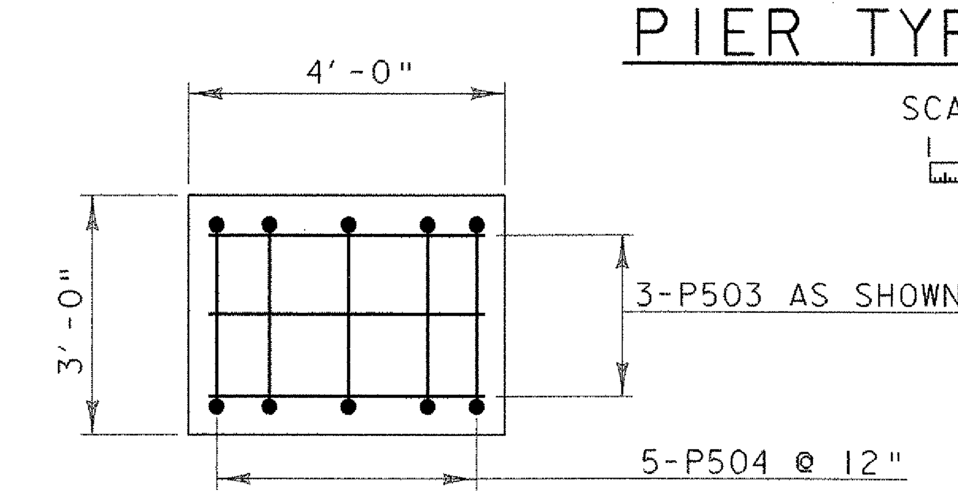
SCALE 1/4" = 1'-0

FLOW



PIER TYPICAL SECTION

SCALE 3/8" = 1'-0



BEARING PEDESTAL

SCALE 1/2" = 1'-0

BEARING PEDESTAL ELEVATIONS

℄ G5	℄ G4	℄ G3	℄ G2	℄ G1
~~474.50~~ 474.42	474.68	474.78	474.60	~~474.43~~ 474.39

DRILLED SHAFT REINFORCING NOT SHOWN FOR CLARITY

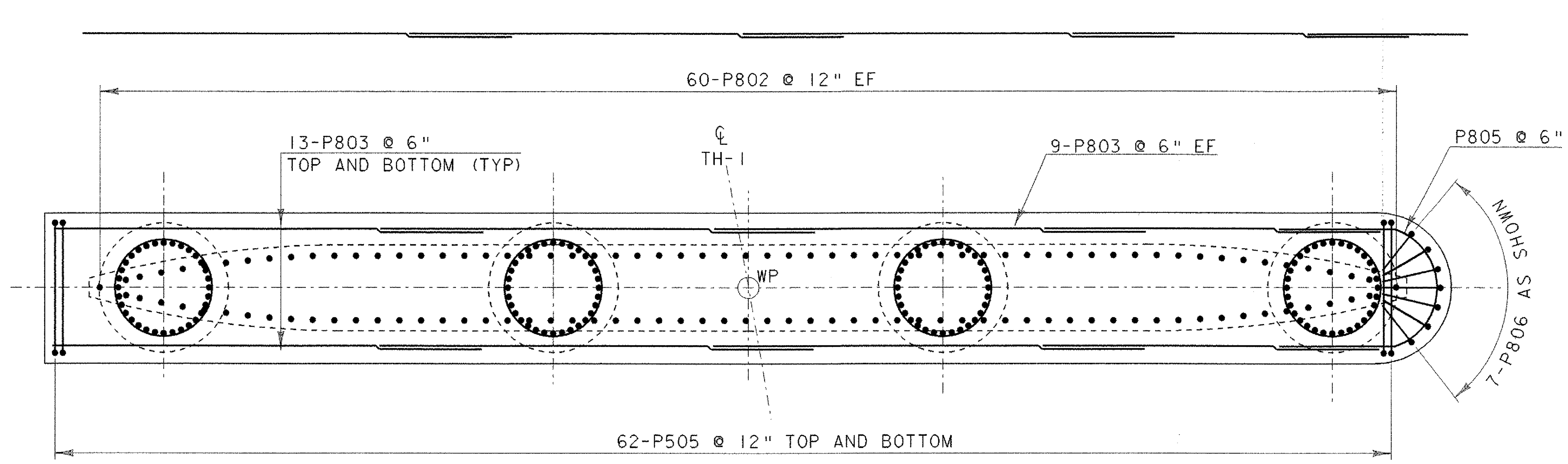
NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
C.J. = CONSTRUCTION JOINT
ALL LAP SPLICES NOT DETAILED SHALL BE 2'-2"

PROJECT NAME: ROYALTON BRZ 1444(22)
PROJECT NUMBER:

FILE NAME: 89j099/structures/sj099pier.dgn
IPARM NAME: sj099pierrein.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
PIER REINFORCING DETAILS

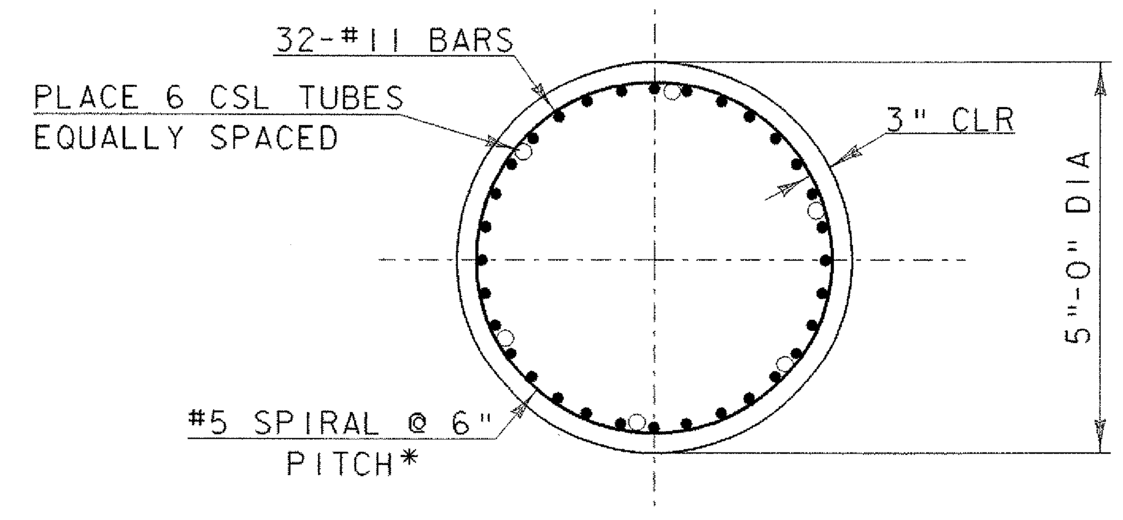
PLOT DATE: 11-AUG-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: W.B. SYMONDS
SHEET 63

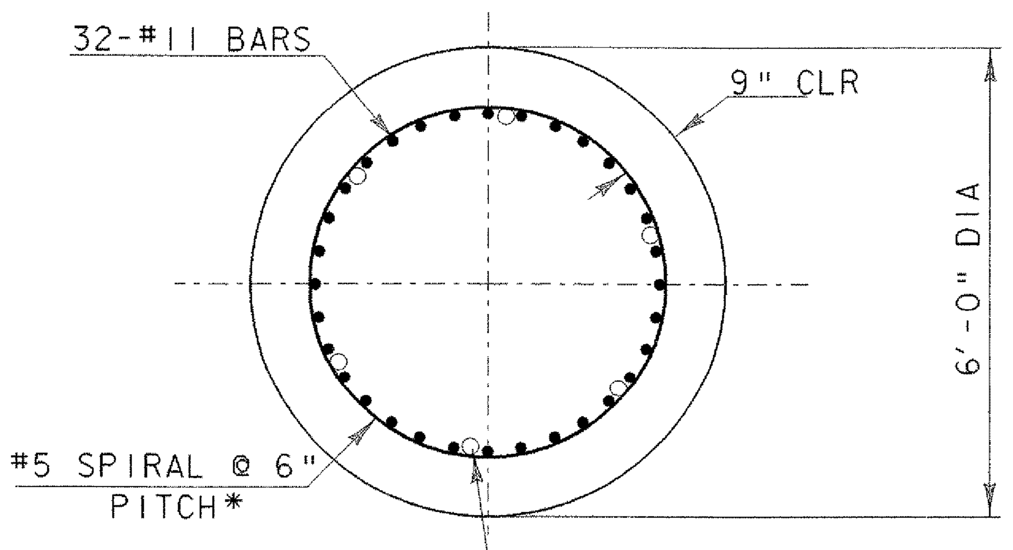


DRILLED SHAFT AND PIER FOOTING REINFORCING PLAN

SCALE ¼" = 1'-0

FLOW





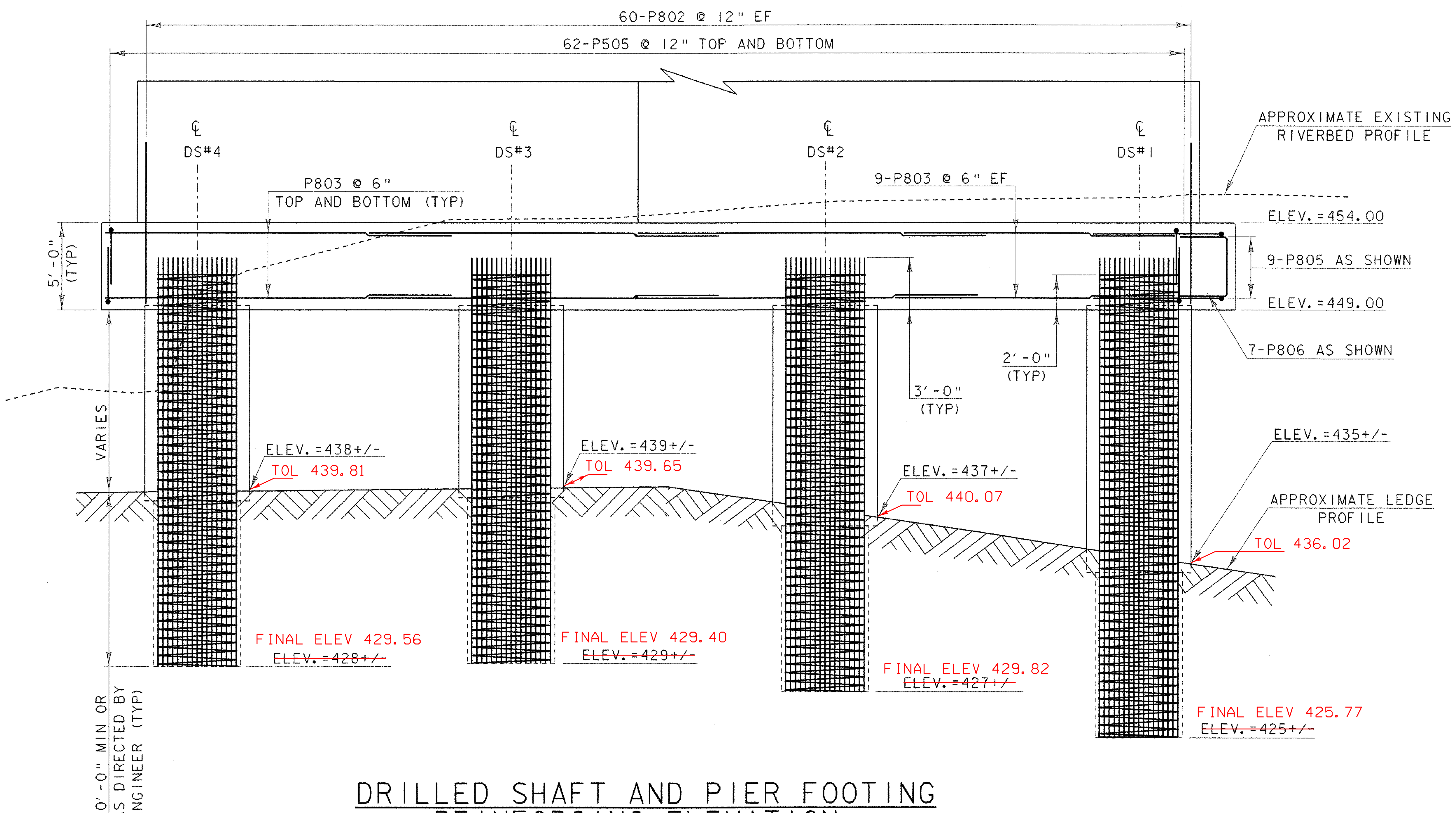
*LAPS SHALL BE 2'-6" MINIMUM

DRILLED SHAFT IN ROCK TYPICAL SECTION

SCALE ½" = 1'-0

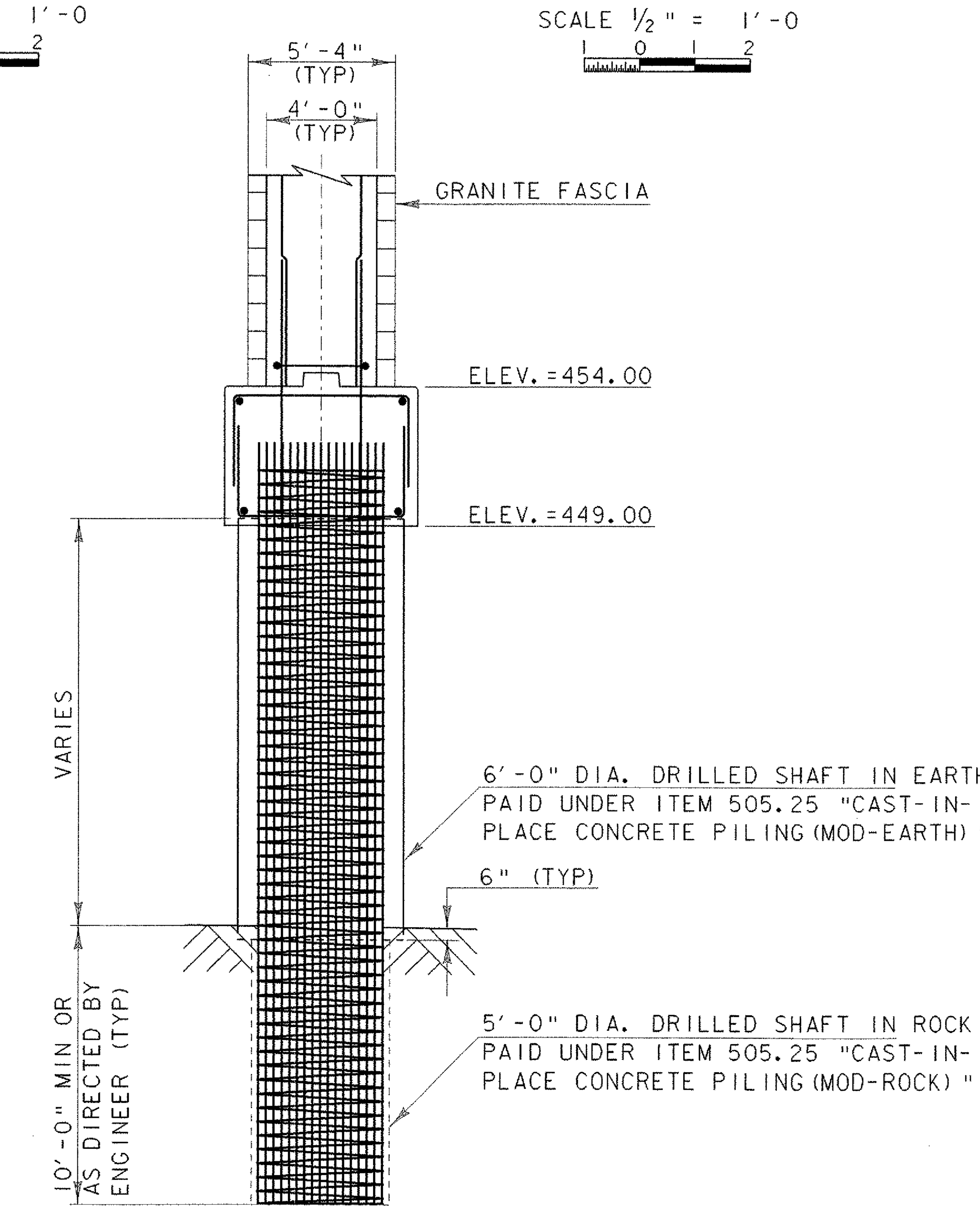
DRILLED SHAFT IN EARTH TYPICAL SECTION

SCALE ½" = 1'-0



DRILLED SHAFT AND PIER FOOTING REINFORCING ELEVATION

SCALE ¼" = 1'-0



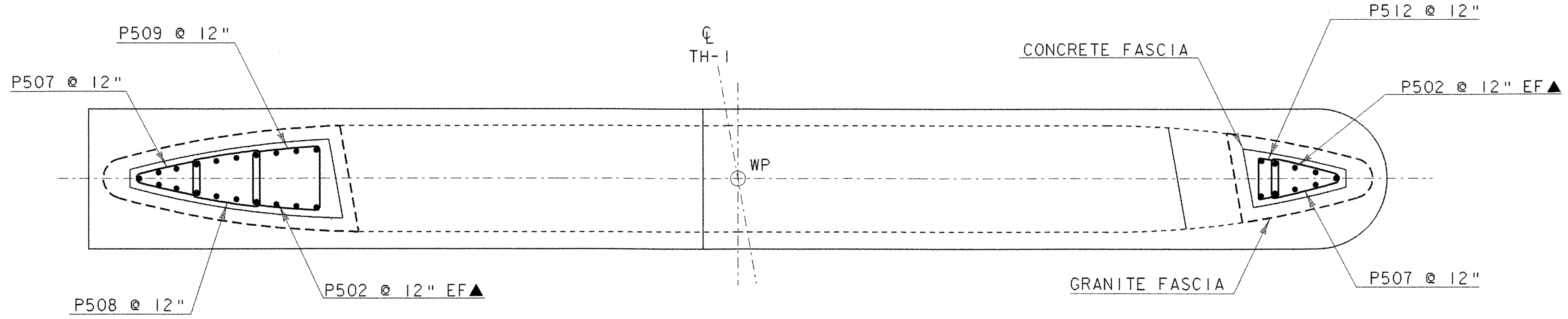
DRILLED SHAFT TYPICAL SECTION

SCALE ¼" = 1'-0

NOTE:

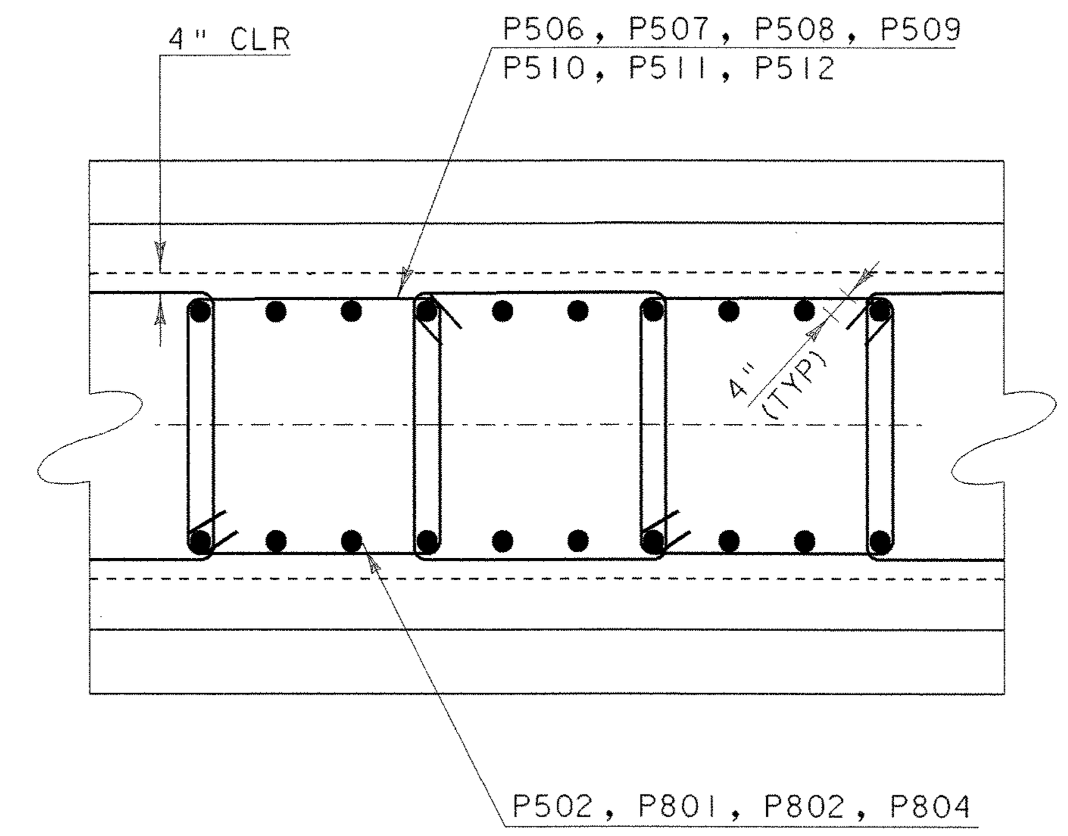
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
PC = POINT OF CURVATURE
C.J. = CONSTRUCTION JOINT
ALL LAP SPLICES NOT
DETAILED SHALL BE 2'-2"
CSL = CROSS HOLE SONIC LOGGING

PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444 (22)
FILE NAME: 89j099/structures/sj099pier.dgn
IPARM NAME: sj099ftgshaftrein.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
DRILLED SHAFT AND FOOTING DETAILS
PLOT DATE: 11-AUG-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: W.B. SYMONDS
SHEET 64



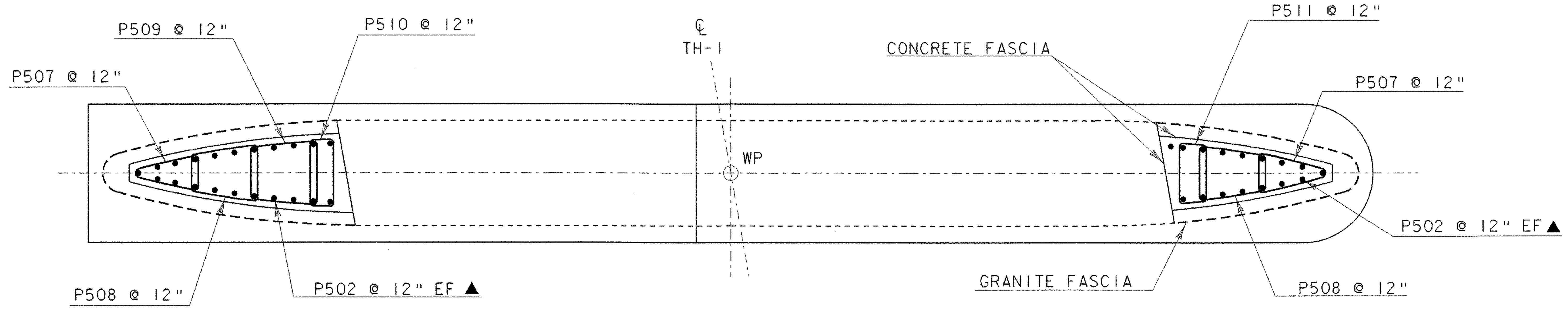
PIER SECTION A-A

SCALE 1/4" = 1'-0



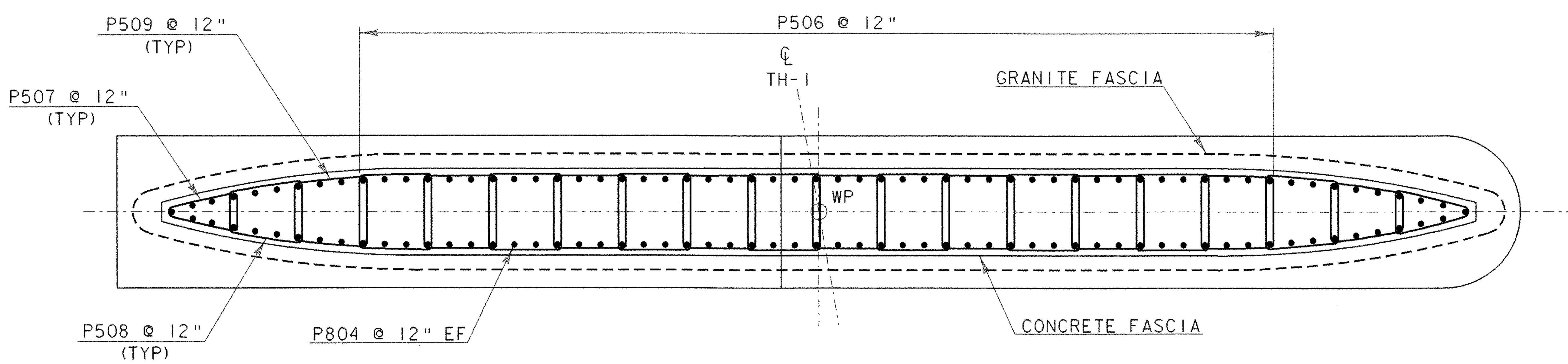
TYPICAL TIE DETAIL

SCALE 1/2" = 1'-0



PIER SECTION B-B

SCALE 1/4" = 1'-0



PIER SECTION C-C

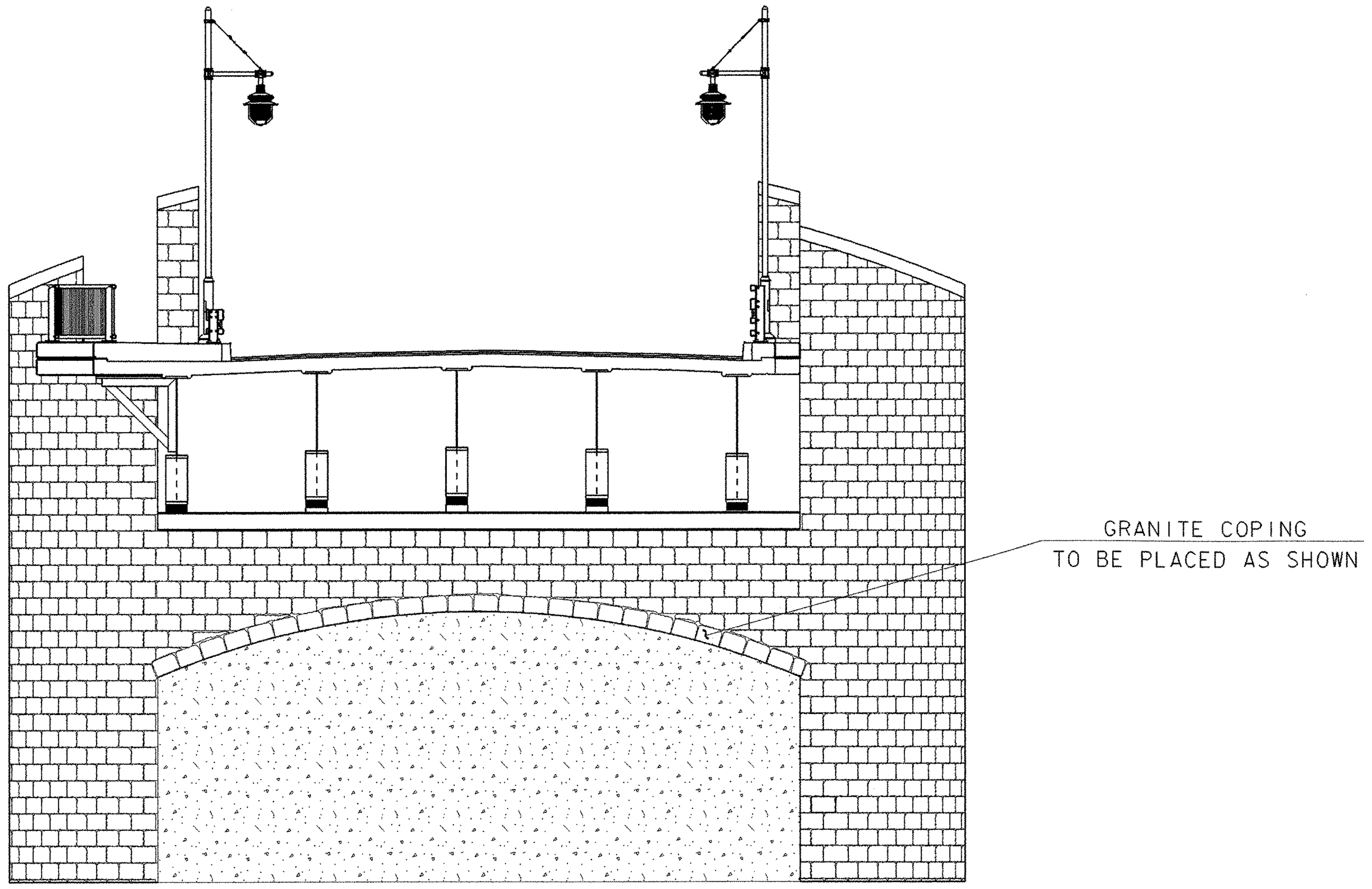
SCALE 1/4" = 1'-0

FLOW

NOTE:

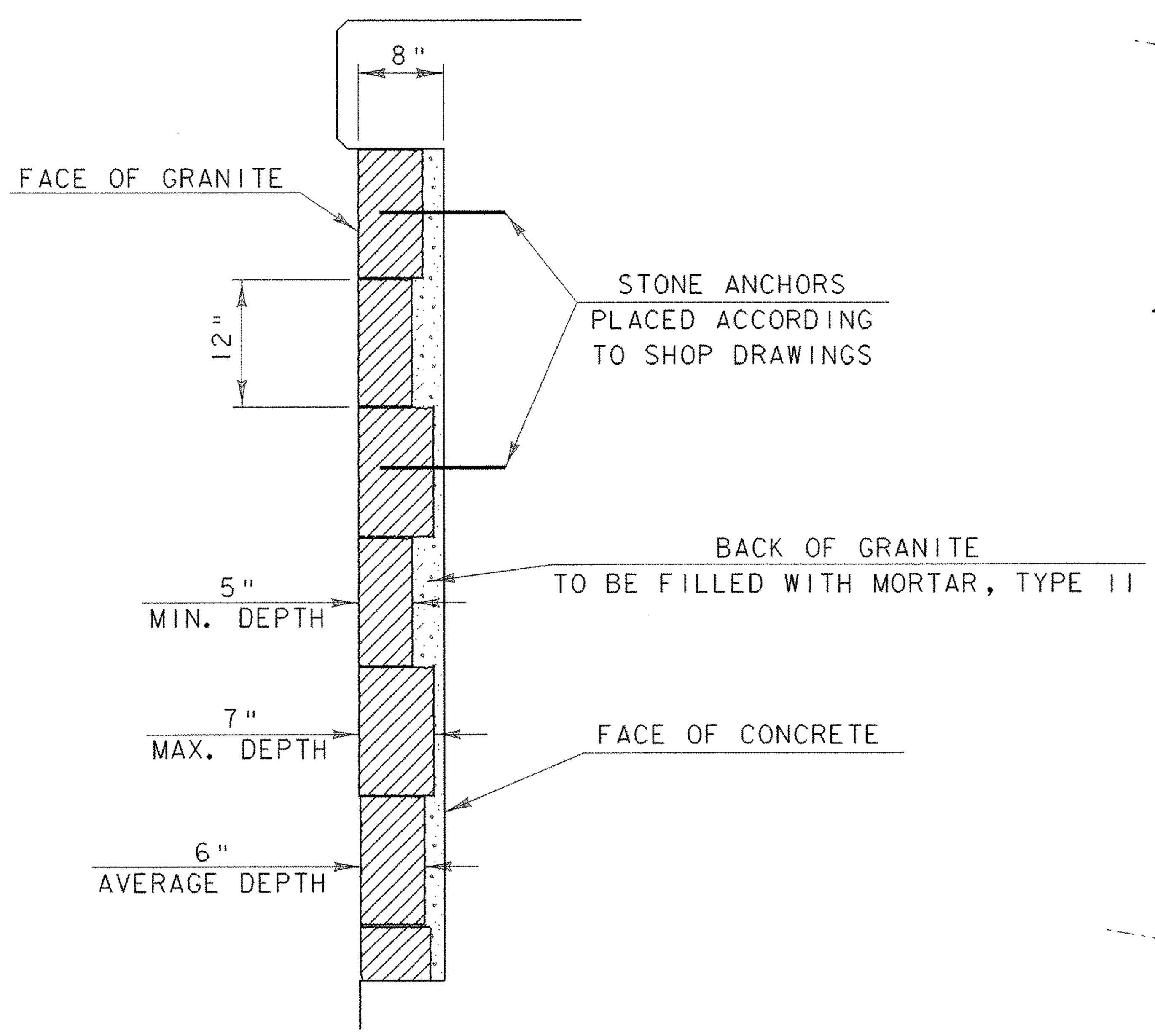
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
PC = POINT OF CURVATURE
C.J. = CONSTRUCTION JOINT
ALL LAP SPLICES NOT DETAILED SHALL BE 2'-2"

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444(22)
FILE NAME: 89j099/structures/sj099pier.dgn
IPARM NAME: sj099piersections.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
PIER SECTIONS
PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: W.B. SYMONDS
SHEET 65 OF 118



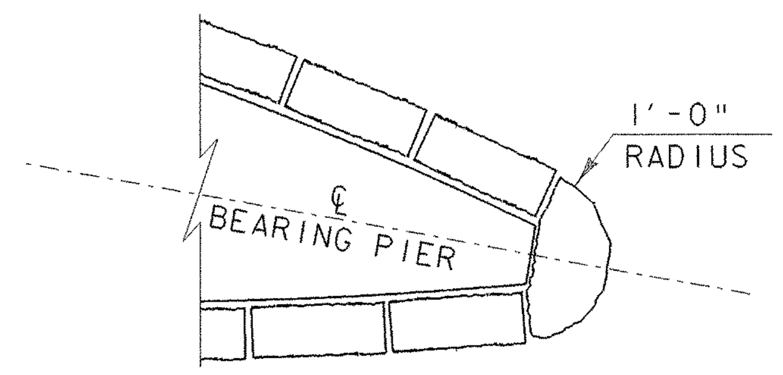
ELEVATION VIEW OF PIER

NTS



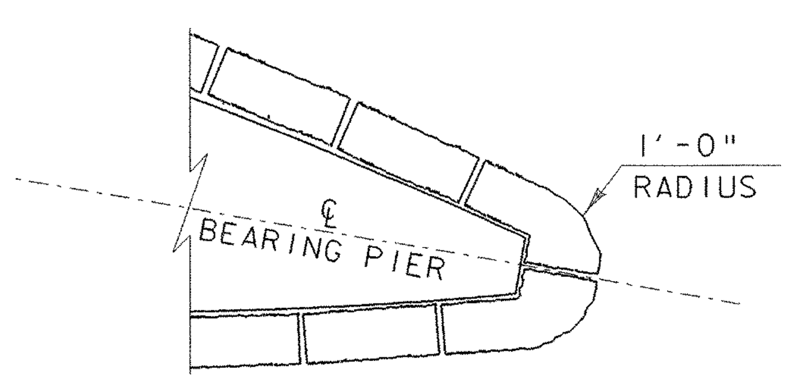
GRANITE FACING TYPICAL

NTS



PIER NOSE SECTION

NTS



PIER NOSE SECTION

ALTERNATE COURSE

NTS

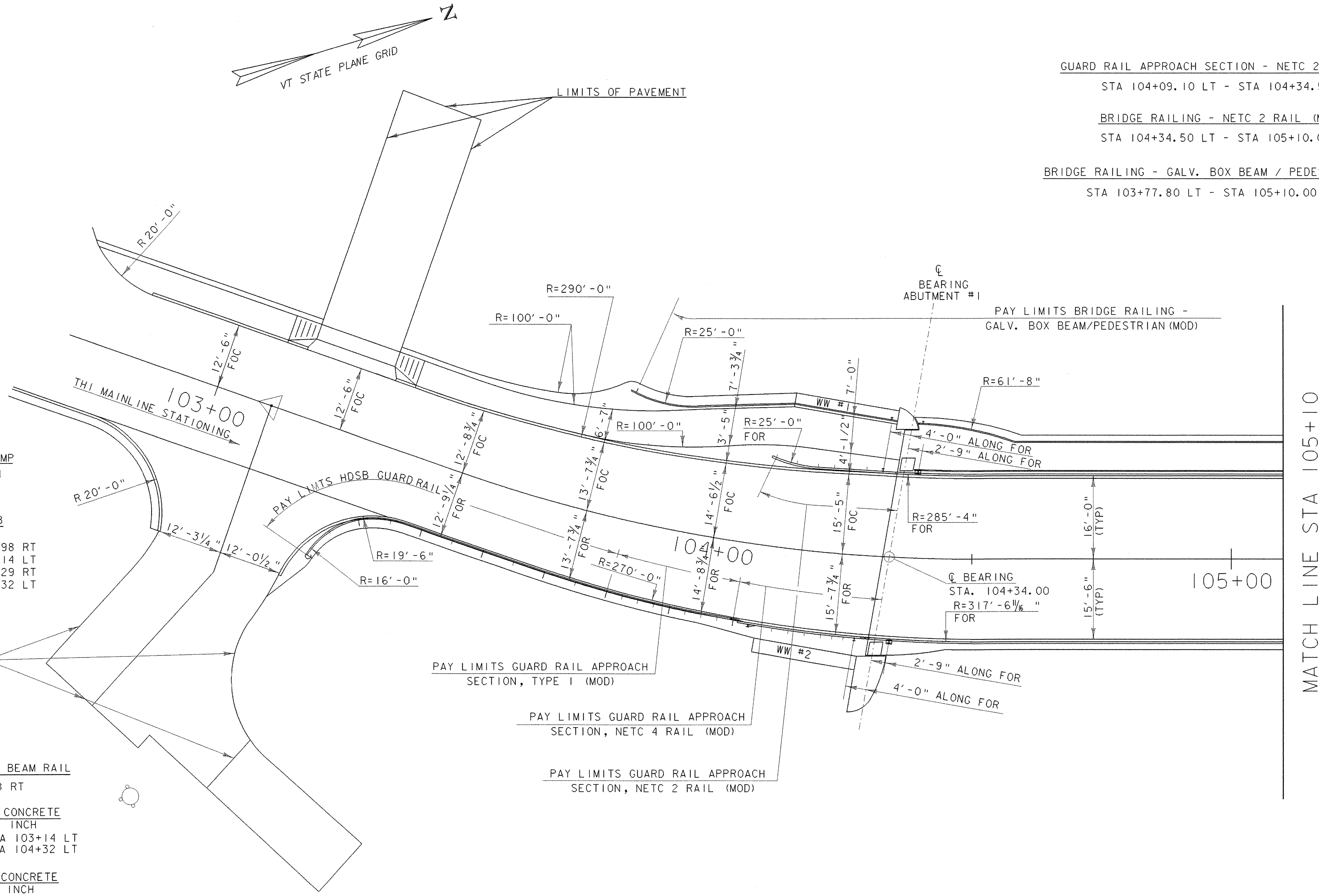
GRANITE NOTES

1. GRANITE FACING SHALL BE PAID UNDER ITEM 602.25 "STONE MASONRY FACING." THE UNIT BID PRICE SHALL BE FULL COMPENSATION FOR ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY.
2. ALL EXPOSED FACES OF THE SUB-STRUCTURES AND TOWERS SHALL BE FACED WITH GRANITE BLOCK UNLESS NOTED OTHERWISE. THE GRANITE FACING SHALL EXTEND BELOW GROUND TO THE SHELF ELEVATION SHOWN ON THE PLANS.
3. LAYOUT DIMENSIONS SHOWN ON THE PLANS ARE TO THE OUTSIDE FACE OF THE GRANITE FACING OR TO THE FACE OF CONCRETE IF NO GRANITE FACING IS PRESENT. ADDITIONAL DIMENSIONS NEEDED BY THE CONTRACTOR WILL BE SUPPLIED UPON REQUEST.
4. ALL GRANITE SHALL BE GREY NATIVE VERMONT GRANITE AND BE IN ACCORDANCE WITH SUBSECTION 706.02 "STONE FOR MASONRY FACING". ALL GRANITE SHALL BE CONSISTENT IN COLOR AND TAKEN FROM THE SAME QUARRY. THE NAME OF THE QUARRY SHALL BE SUBMITTED TO THE RESIDENT ENGINEER.
5. THE STONE SHALL BE CLASSIFIED AS "SQUARED"(APPROXIMATE DIMENSIONS) WITH A "ROUGH FINISH"(SURFACES IN WHICH THE VARIATIONS FROM THE PITCH LINE DO NOT EXCEED ½"). THE NOMINAL DIMENSIONS OF THE STONES WILL BE 12" VERTICAL, 18" HORIZONTAL AND 6" DEEP (5" MINIMUM AND 7" MAXIMUM). THE PATTERN SHALL BE "RANGED" WITH 12" COURSES OF UNIFORM HEIGHT.
6. THE JOINT MATERIAL SHALL CONFORM TO SPECIFICATIONS IN ITEM 707.02 "MORTAR, TYPE II". THE MAXIMUM JOINT THICKNESS SHALL BE 1". THE SPACE BETWEEN THE BACK FACE OF GRANITE AND THE FRONT FACE OF THE CONCRETE SHALL BE COMPLETELY FILLED WITH MORTAR, TYPE II
7. ANCHORS CONNECTING THE GRANITE TO THE CONCRETE SHALL BE PLACED ACCORDING TO SHOP DRAWINGS SUPPLIED FROM THE GENERAL CONTRACTOR OR THE SUBCONTRACTOR PERFORMING MASONRY WORK. TYPICAL GRANITE PLACEMENT AROUND CURVED SURFACES AND SHARP CORNERS SHALL ALSO BE SHOWN ON SHOP DRAWINGS. THE MASONRY CONTRACTOR SHALL BE ABLE TO DEMONSTRATE 3 YEARS OF PRIOR EXPERIENCE WITH SIMILAR MASONRY INSTALLATION. THE SHOP DRAWINGS DETAILING THE ANCHOR SYSTEM SHALL BE APPROVED BY THE PROJECT MANAGER PRIOR TO PLACING ANY CONCRETE THAT WILL BE FACED.
8. ALL ANCHORS, CRAMPS, DOWELS, AND OTHER ANCHORING DEVICES SHALL BE AUSTENITIC STAINLESS STEEL (ALLOY TYPE 304) OR OTHER APPROVED NONFERROUS METAL OF THE TYPES AND SIZES SHOWN ON APPROVED SHOP DRAWINGS. RELYING ON ADHESIVES ALONE FOR ANCHORING WILL NOT BE ALLOWED.
9. DUPLICATE SAMPLES OF GRANITE SHALL BE SUBMITTED TO THE RESIDENT ENGINEER THROUGH THE GENERAL CONTRACTOR TO SHOW TEXTURE, FINISH, AND ANTICIPATED RANGE OF COLOR TO BE SUPPLIED. ONE SET OF APPROVED SAMPLES SHALL BE RETAINED BY THE RESIDENT ENGINEER, THE OTHER BEING RETURNED TO THE GRANITE SUPPLIER FOR GUIDANCE.
10. ANY PIECE OF GRANITE SHOWING FLAWS, IMPERFECTIONS, OR UNUSUAL COLOR UPON RECEIPT ON THE PROJECT SHALL BE REFERRED TO THE RESIDENT ENGINEER FOR A DECISION AS TO WHETHER IT SHALL BE REJECTED, PATCHED, OR REDRESSSED FOR USE. ANY STONE REJECTED BY THE RESIDENT ENGINEER SHALL BE REMOVED FROM THE PROJECT IMMEDIATELY OR MARKED WITH PAINT. THE RESIDENT WILL MAKE THE FINAL DETERMINATION ABOUT WHETHER A PARTICULAR BLOCK SHALL BE USED.
11. WHERE THICKNESS PERMITS, ALL PIECES WEIGHING OVER 100 POUNDS MAY HAVE LEWIS HOLES FOR LIFTING IF DESIRED. LEWIS HOLES MAY EXTEND NO CLOSER THAN 2"FROM THE FINISHED FACE, AND WILL NOT BE PERMITTED ON EXPOSED SURFACES.
12. STONE SHALL BE CAREFULLY SET WITHOUT JARRING STONE ALREADY LAID AND SHALL BE HANDLED WITH A LEWIS OR OTHER SUITABLE DEVICE WHICH WILL NOT MAR THE STONE. ROLLING OR TURNING OF STONE ON MASONRY ALREADY IN PLACE WILL NOT BE PERMITTED.
13. STONE TO BE LAID IN CEMENT MORTAR SHALL BE THOROUGHLY CLEANED BEFORE BEING SET, AND THE BED TO RECEIVE IT SHALL BE WELL CLEANED. THE THICKNESS OF ALL JOINTS AND BEDS SHALL BE UNIFORM THROUGHOUT. SPALLS SHALL NOT BE USED AS PINNERS IN MORTAR BEDS OR JOINTS. WHEN ANY STONE IS DISTURBED OR MORTAR JOINT BROKEN, THE STONE SHALL BE TAKEN UP, AND AFTER ALL MORTAR HAS BEEN CLEANED FROM THE STONE, BED, AND JOINTS, IT SHALL BE RESET IN FRESH MORTAR.
14. ALL STONES SHALL BE WELL BEDDED WITH THE FACE JOINTS PROPERLY POINTED BEFORE THE MORTAR HAS SET, UNLESS OTHERWISE PERMITTED. WHEN PERMITTED, JOINTS TO BE POINTED AFTER MORTAR HAS SET, SHALL BE RAKED OUT TO A DEPTH OF 2". JOINTS SHALL BE MOISTENED AND FILLED WITH MORTAR WELL DRIVEN IN. ALL POINTING SHALL BE FINISHED WITH AN APPROVED POINTING TOOL TO FORM THE TYPE OF JOINT INDICATED ON THE PLANS OR ORDERED.
15. THE MASONRY SHALL BE KEPT WET DURING POINTING, AND IN HOT OR DRY WEATHER SHALL BE PROTECTED FROM THE SUN AND KEPT WET FOR A PERIOD OF 3 DAYS AFTER COMPLETION UNLESS OTHERWISE PERMITTED OR ORDERED. THE EXPOSED SURFACES OF THE STONES SHALL NOT BE SMEARED WITH MORTAR. THE JOINTS SHALL BE WIPED FREE OF LOOSE MORTAR. STONE SHALL NOT BE SET WHEN CONTAINING FROST OR DURING FREEZING WEATHER.
16. GRANITE SHALL BE SHOP CLEANED AT THE TIME OF FINAL FABRICATION. AFTER INSTALLATION AND POINTING IS COMPLETED, THE CONTRACTOR SHALL CAREFULLY CLEAN THE GRANITE, REMOVING ALL DIRT, EXCESS MORTAR WELD SPLATTER, STAINS, AND/OR OTHER SITE INCIDENT DEFACEMENTS.

PROJECT NAME: ROYALTON
PROJECT NUMBER: BRZ 1444 (22)

FILE NAME:89j099/structures/sj099granite.dgn PLOT DATE: 25-SEP-2000
PROJECT LEADER: C.P. WILLIAMS DRAWN BY: R.S. YOUNG
DESIGNED BY: R.S. YOUNG CHECKED BY: W.B. SYMONDS
GRANITE DETAILS AND NOTES SHEET 66 OF 118

CURB AND RAILING LAYOUT



GUARD RAIL APPROACH SECTION - NETC 2 RAIL (MOD)
STA 104+09.10 LT - STA 104+34.50 LT

BRIDGE RAILING - NETC 2 RAIL (MOD)
STA 104+34.50 LT - STA 105+10.00 LT

BRIDGE RAILING - GALV. BOX BEAM / PEDESTRIAN (MOD)
STA 103+77.80 LT - STA 105+10.00 LT

CONSTRUCT CROSSWALK RAMP
STA 102+70 LT TYPE I

VERTICAL GRANITE CURB
STA 101+50 RT - STA 102+98 RT
STA 102+75 LT - STA 103+14 LT
STA 103+23 RT - STA 104+29 RT
STA 103+32 LT - STA 104+32 LT

LIMITS OF PAVEMENT

ANCHOR FOR STEEL BEAM RAIL
STA 103+28 RT

PORTLAND CEMENT CONCRETE
SIDEWALK, 5 INCH
STA 102+70 LT - STA 103+14 LT
STA 103+32 LT - STA 104+32 LT

PORTLAND CEMENT CONCRETE
SIDEWALK, 8 INCH
STA 130+14 LT - 103+32 LT

CONSTRUCT DRIVES
STA 101+88 LT W/ 5' PAVED APRON (8' WIDE)
(1 LIFT OF 1½" TYPE III)

STA 103+11 RT 2 WAY PAVED (24' WIDE)
(2 LIFTS OF 1¼" TYPE III OVER 2" TYPE II)

STA 102+55 LT COMMERCIAL W/ 16' PAVED APRON
(2 LIFTS OF 1¼" TYPE III OVER 2" TYPE II)

STA 103+23 LT PAVED WITH SIDEWALK RAMP (16' WIDE)
(1 LIFT OF 1½" TYPE III)

GUARD RAIL HDSB W/ OFFSET BLOCKS
STA 103+26.70 RT - STA 103+82.20 RT

GUARD RAIL APPROACH SECTION, TYPE I (MOD)
STA 103+82.20 RT - STA 104+06.00 RT

GUARD RAIL APPROACH SECTION, NETC 4 RAIL (MOD)
STA 104+06.00 RT - STA 104+30.80 RT

BRIDGE RAILING - NETC 4 RAIL
STA 104+30.80 RT - STA 105+10.00 RT

SCALE 1" = 10'-0
10 0 10

FOR = FACE OF RAIL
FOC = FACE OF CURB

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444 (22)

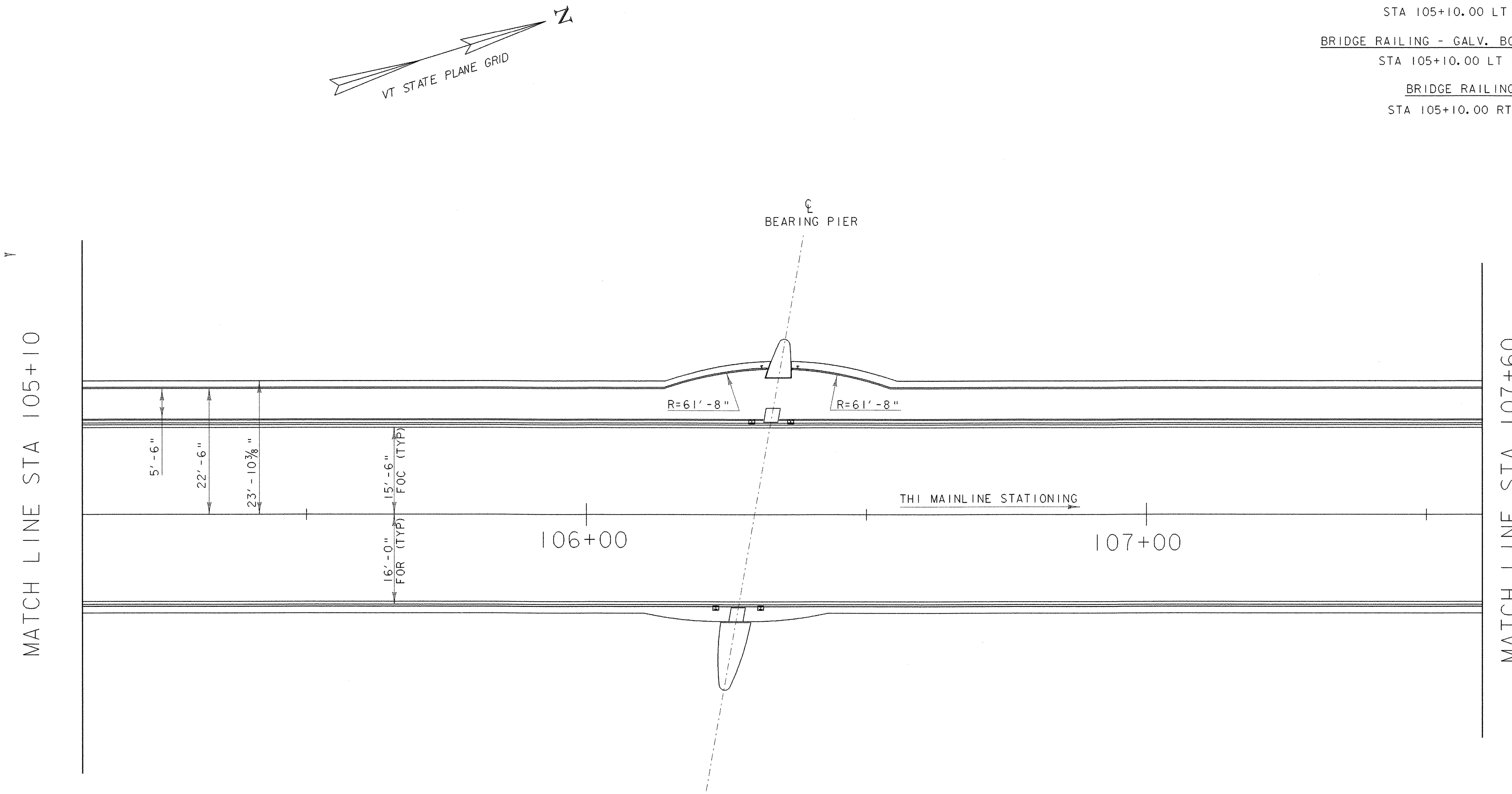
FILE NAME: 89j099/structures/sj099rail.dgn
IPARM NAME: sj099raillayl.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
CURB AND RAILING LAYOUT I

PLOT DATE: 25-SEP-2000
DRAWN BY: P.R. ROWE
CHECKED BY: W.B. SYMONDS

BRIDGE RAILING - NETC 2 RAIL (MOD)
STA 105+10.00 LT - STA 107+60.00 LT

BRIDGE RAILING - GALV. BOX BEAM / PEDESTRIAN (MOD)
STA 105+10.00 LT - STA 107+60.00 LT

BRIDGE RAILING - NETC 4 RAIL
STA 105+10.00 RT - STA 107+60.00 RT

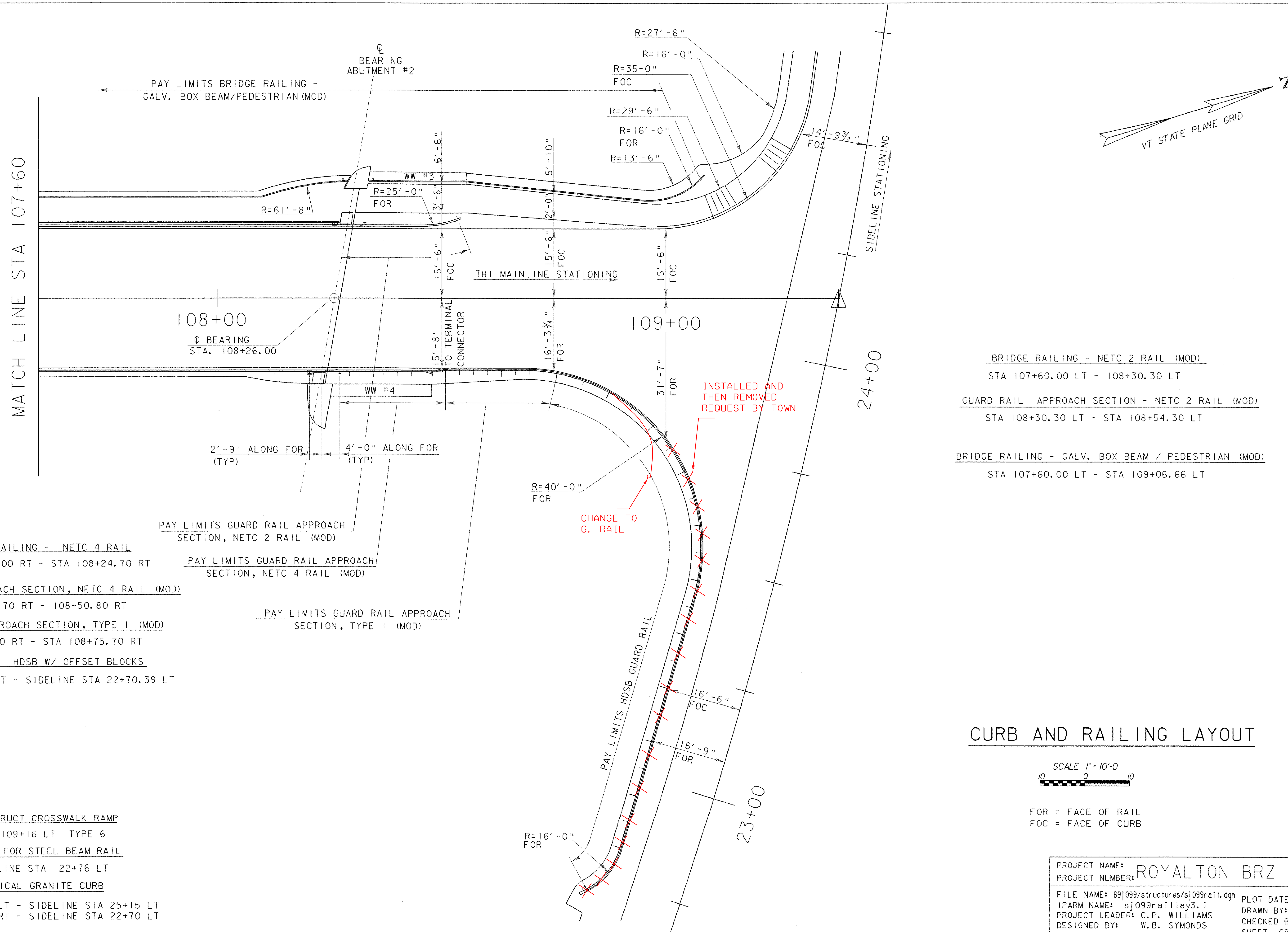


CURB AND RAILING LAYOUT

SCALE 1" = 10'-0

FOR = FACE OF RAIL
FOC = FACE OF CURB

PROJECT NAME: PROJECT NUMBER: ROYALTON BRZ 1444 (22)	
FILE NAME: 89j099/structures/sj099rail.dgn	PLOT DATE: 25-SEP-2000
IPARM NAME: sj099railay2.i	DRAWN BY: P.R. ROWE
PROJECT LEADER: C.P. WILLIAMS	CHECKED BY: W.B. SYMONDS
DESIGNED BY: W.B. SYMONDS	SHEET 68 OF 118
CURB AND RAILING LAYOUT 2	



BRIDGE RAILING - NETC 4 RAIL
STA 107+60.00 RT - STA 108+24.70 RT

GUARD RAIL APPROACH SECTION, NETC 4 RAIL (MOD)
STA 108+24.70 RT - 108+50.80 RT

GUARD RAIL APPROACH SECTION, TYPE I (MOD)
STA 108+50.80 RT - STA 108+75.70 RT

GUARD RAIL HDSB W/ OFFSET BLOCKS
STA 108+75.70 RT - SIDELINE STA 22+70.39 LT

CONSTRUCT CROSSWALK RAMP
STA 109+16 LT TYPE 6

ANCHOR FOR STEEL BEAM RAIL
SIDELINE STA 22+76 LT

VERTICAL GRANITE CURB
STA 108+32 LT - SIDELINE STA 25+15 LT
STA 108+29 RT - SIDELINE STA 22+70 LT

BRIDGE RAILING - NETC 2 RAIL (MOD)
STA 107+60.00 LT - 108+30.30 LT

GUARD RAIL APPROACH SECTION - NETC 2 RAIL (MOD)
STA 108+30.30 LT - STA 108+54.30 LT

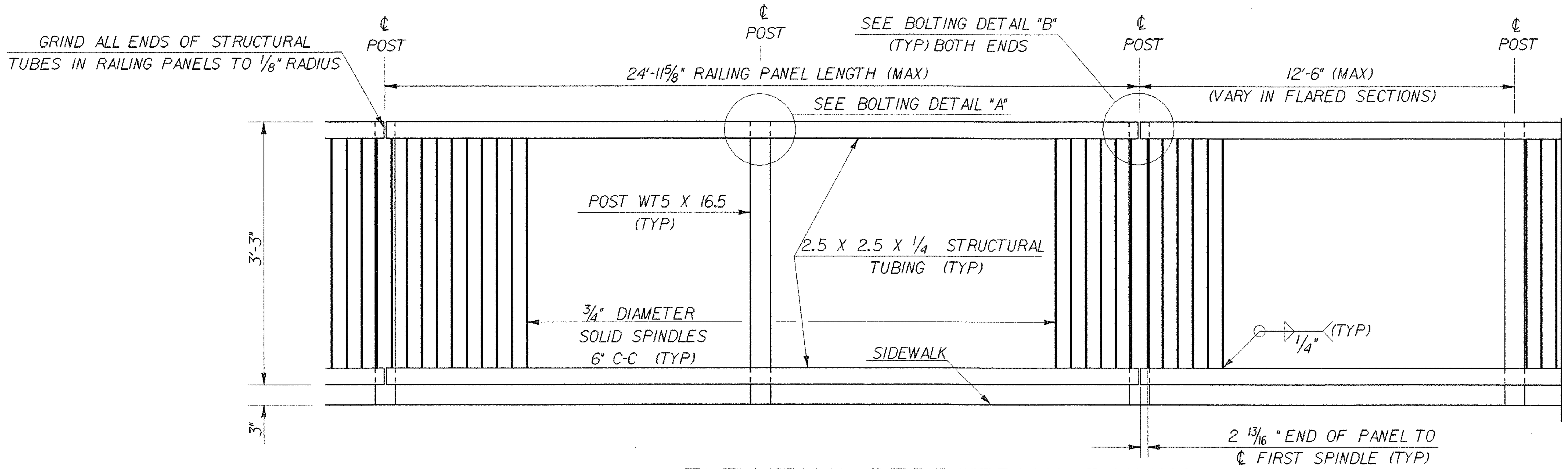
BRIDGE RAILING - GALV. BOX BEAM / PEDESTRIAN (MOD)
STA 107+60.00 LT - STA 109+06.66 LT

CURB AND RAILING LAYOUT

SCALE 1" = 10'-0
10 0 10

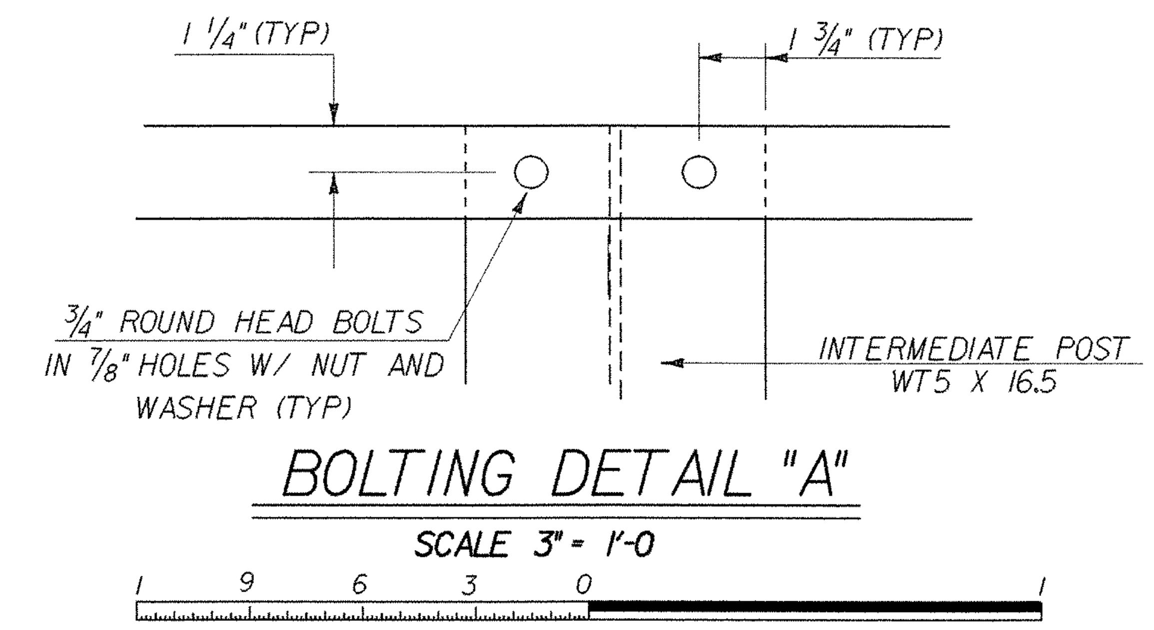
FOR = FACE OF RAIL
FOC = FACE OF CURB

PROJECT NAME: ROYALTON BRZ 1444(22)
PROJECT NUMBER:
FILE NAME: 89j099/structures/sj099rail.dgn
IPARM NAME: sj099raillay3.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
CURB AND RAILING LAYOUT 3
PLOT DATE: 25-SEP-2000
DRAWN BY: P.R. ROWE
CHECKED BY: W.B. SYMONDS
SHEET 69 OF 118



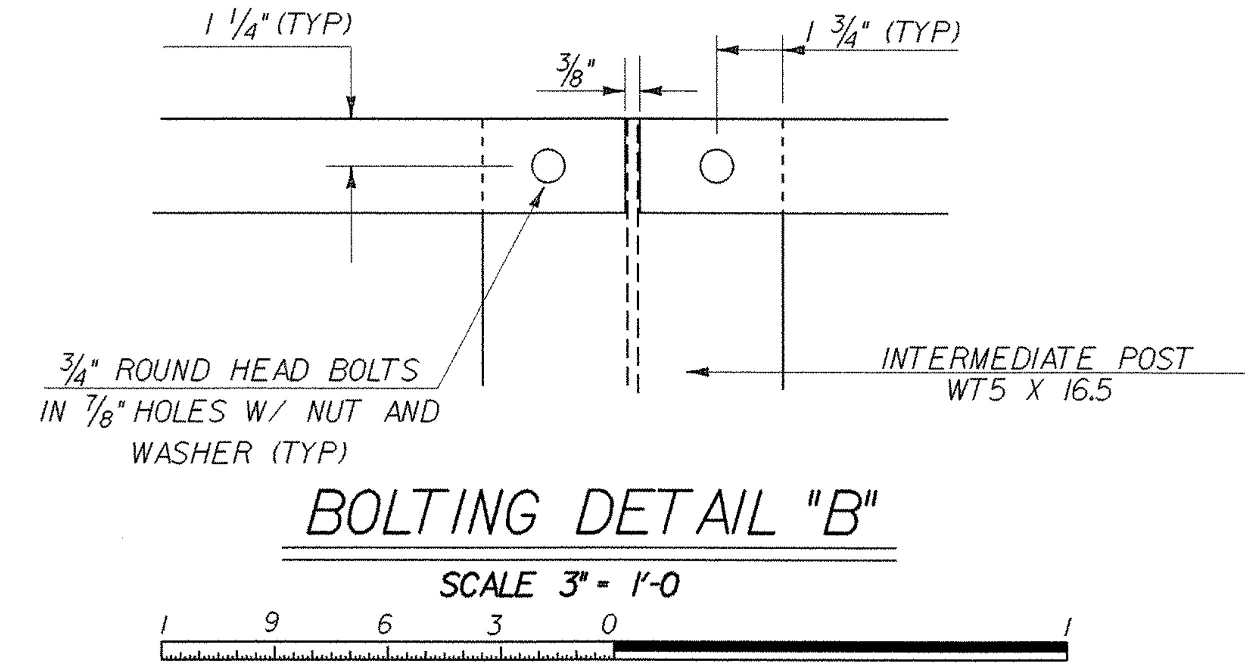
ELEVATION PEDESTRIAN RAILING

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



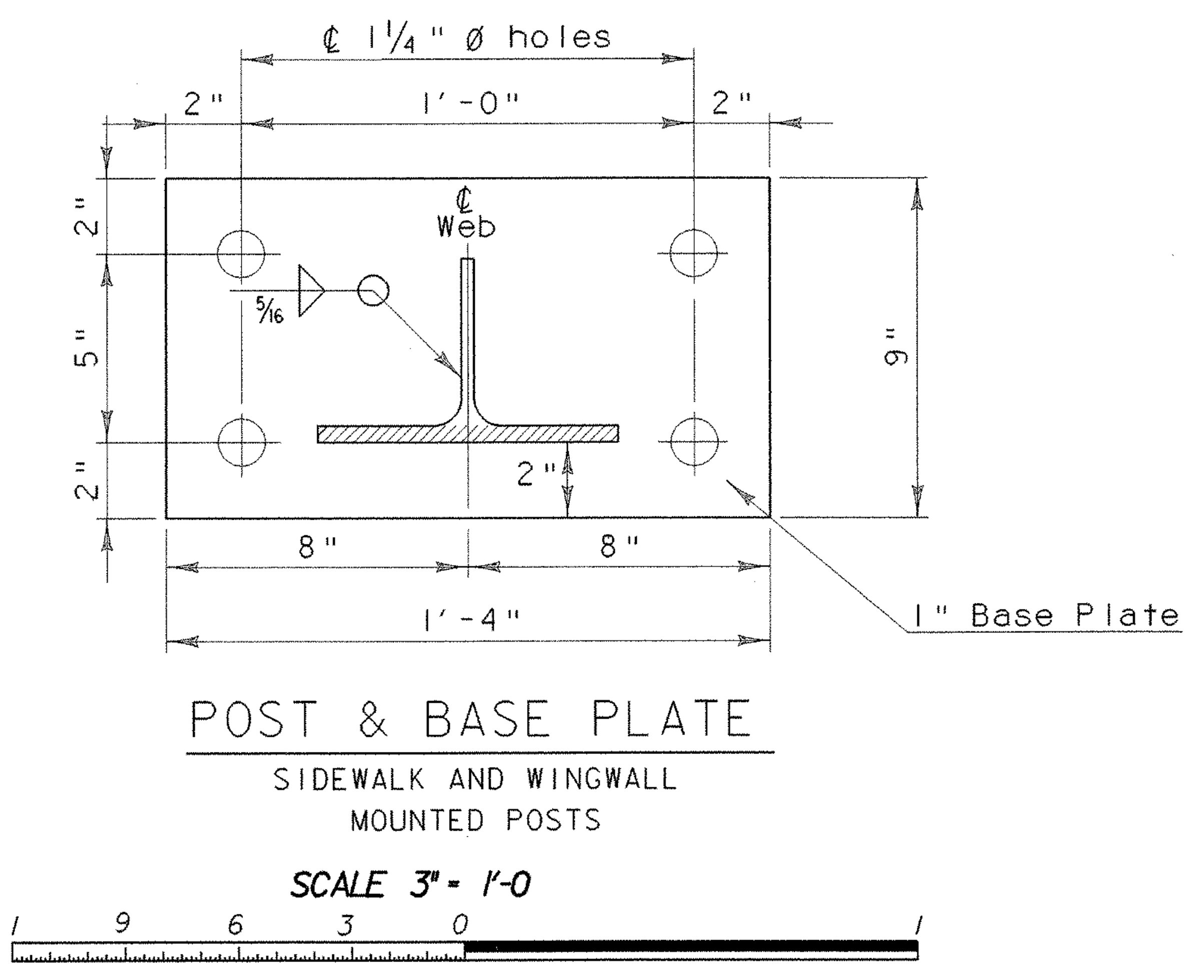
BOLTING DETAIL "A"

SCALE 3" = 1'-0



BOLTING DETAIL "B"

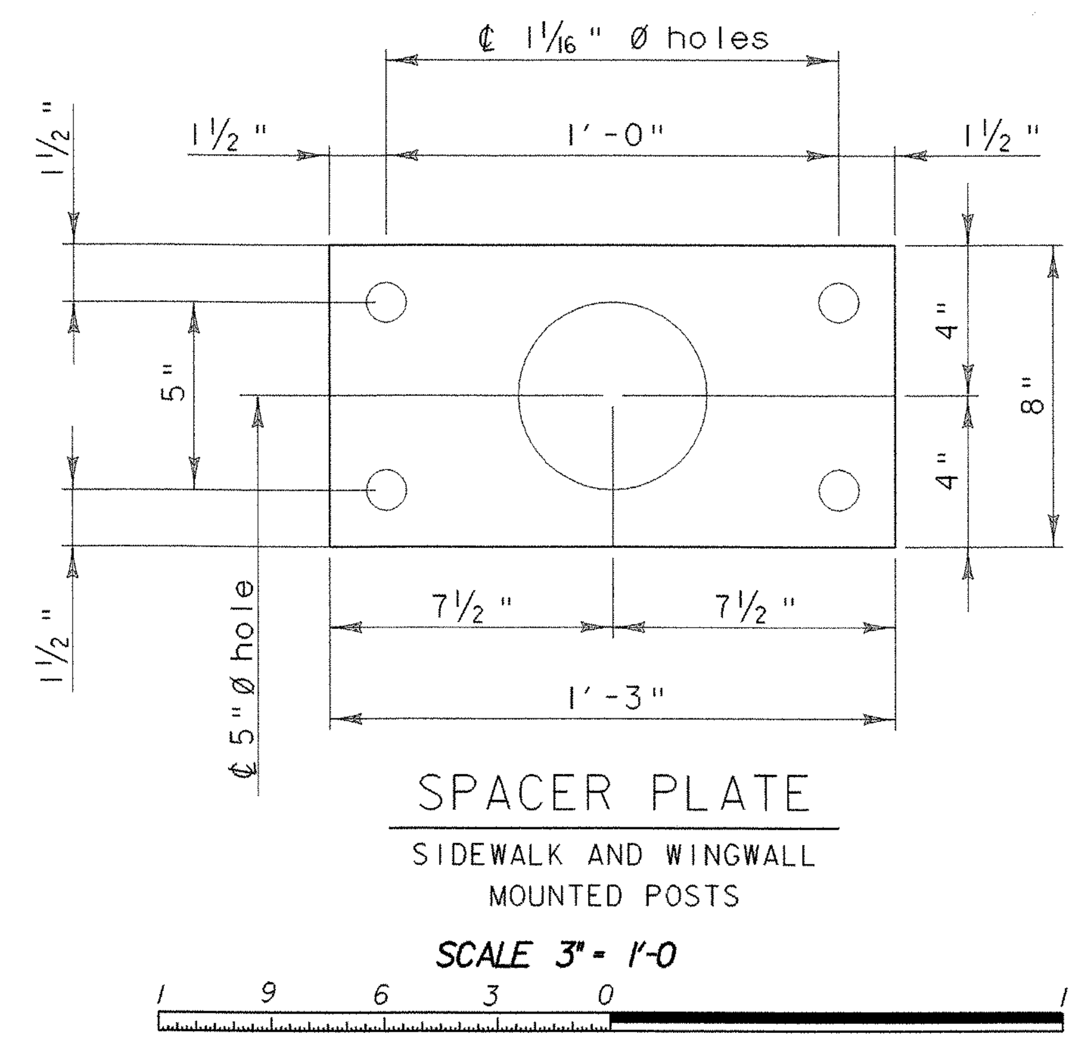
SCALE 3" = 1'-0



POST & BASE PLATE

SIDEWALK AND WINGWALL MOUNTED POSTS

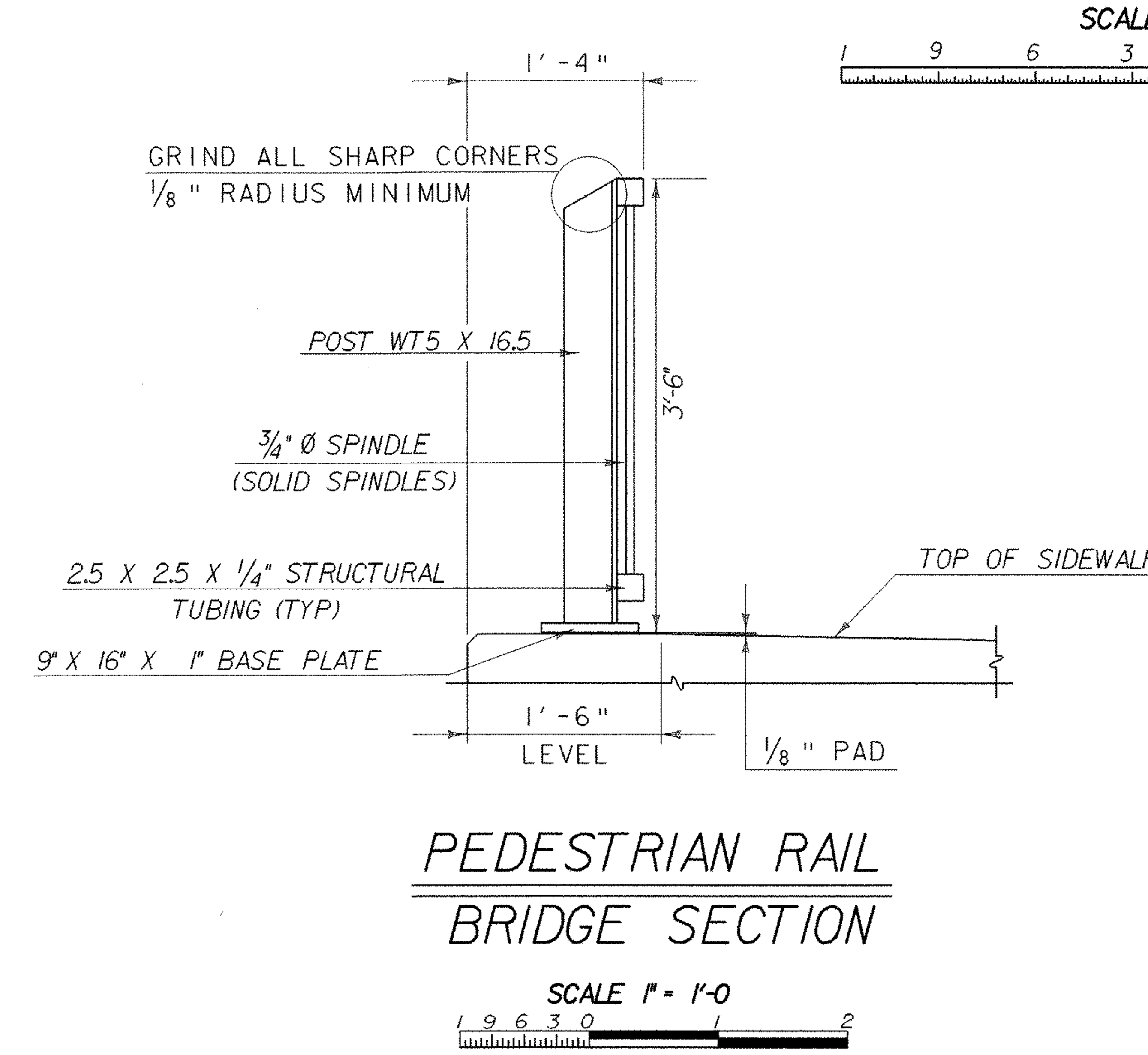
SCALE 3" = 1'-0



SPACER PLATE

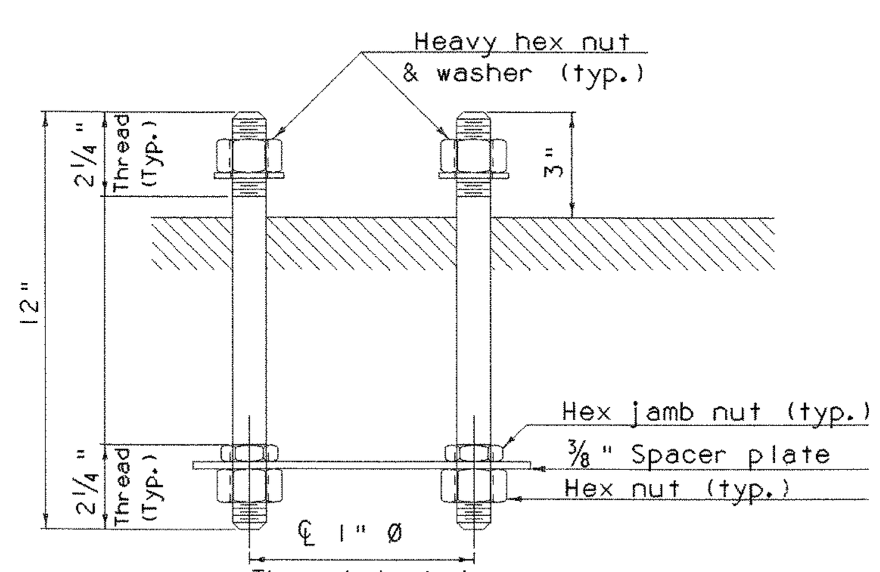
SIDEWALK AND WINGWALL MOUNTED POSTS

SCALE 3" = 1'-0



PEDESTRIAN RAIL
BRIDGE SECTION

SCALE 1" = 1'-0

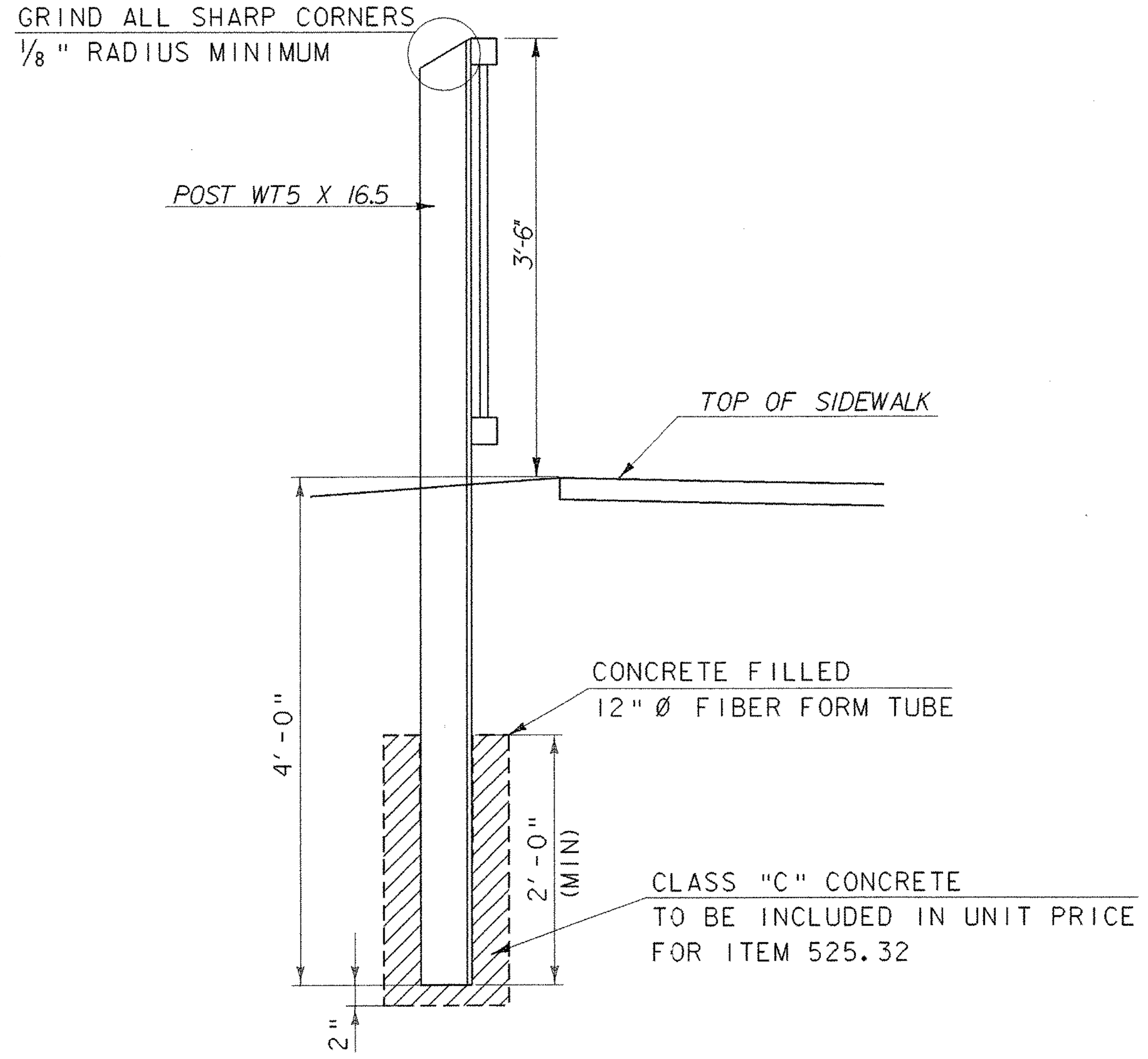


RAIL POST ANCHORAGE

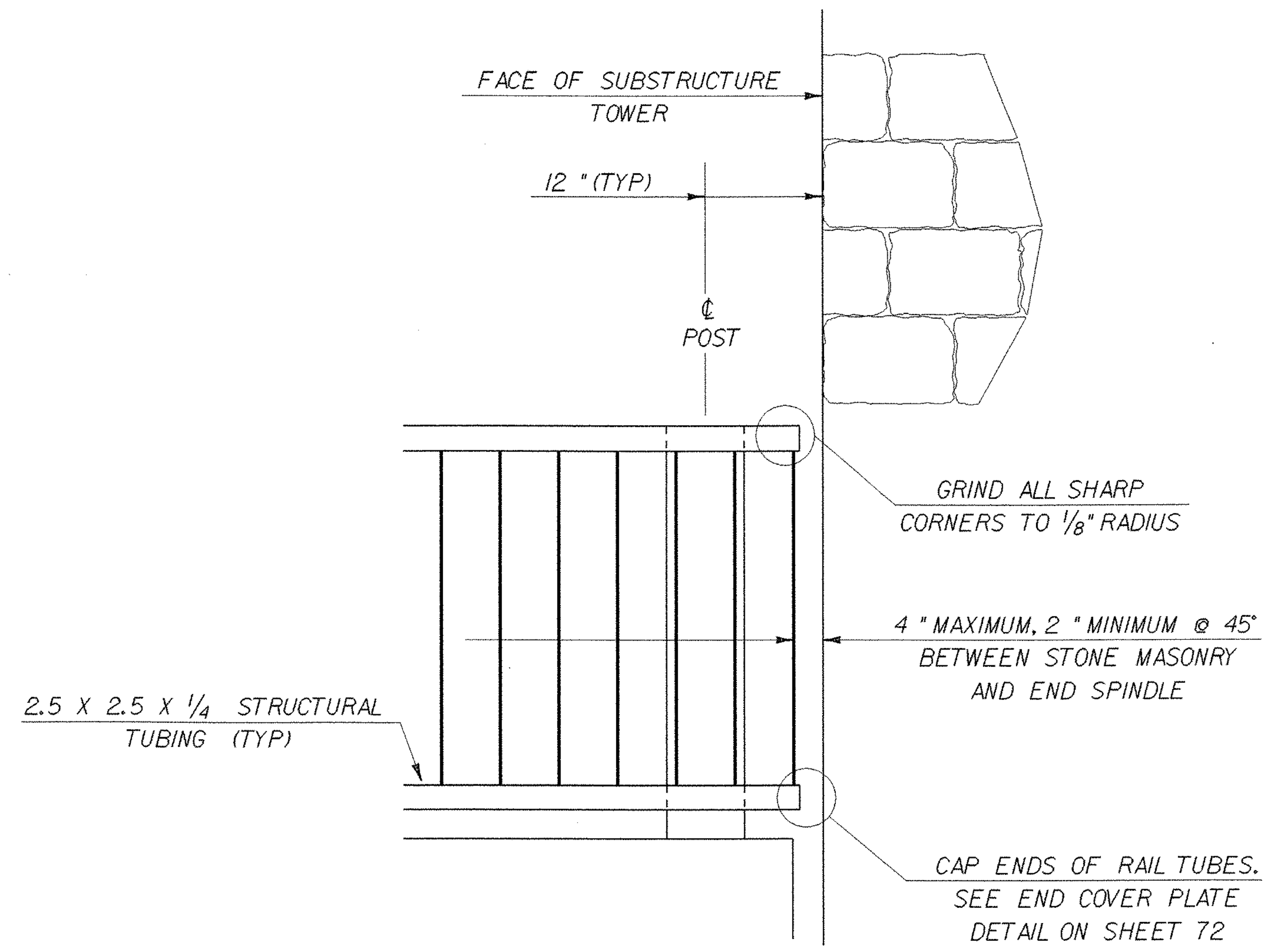
NTS

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444 (22)

FILE NAME: 89j099/structures/sj099rail.dgn
IPARM NAME: sj099pedl.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
PEDESTRIAN RAIL DETAILS
PLOT DATE: 25-SEP-2000
DRAWN BY: P.R. ROWE
CHECKED BY: W.B. SYMONDS
SHEET 70 OF 118



PEDESTRIAN RAIL
APPROACH SECTION
(POSTS INSTALLED IN SOIL)
SCALE 1" = 1'-0



PEDESTRIAN RAIL
TERMINATION @ TOWER
SCALE 1" = 1'-0

PEDESTRIAN RAIL NOTES

1. All work and materials shall conform to the provisions of Section 525 - Railings of the Standard Specifications for Construction.

2. The pedestrian railing approach end section shall be installed on both approaches.

3. Rail posts shall be set normal to grade.

4. All bolts in the pedestrian railing shall be high-strength and shall conform to AASHTO M164/M164M, type I specification.

5. Splices between pedestrian railing panels shall occur at the centerline of a rail post.

7. Rail posts anchoring nuts shall be tightened to a snug fit and given an additional 1/8 turn.

8. All railing parts shall be galvanized after fabrication in accordance with subsection 506.15, as modified by the special provisions.

9. The tubing and posts shall meet the requirements of section 732 of the Standard Specifications for Construction.

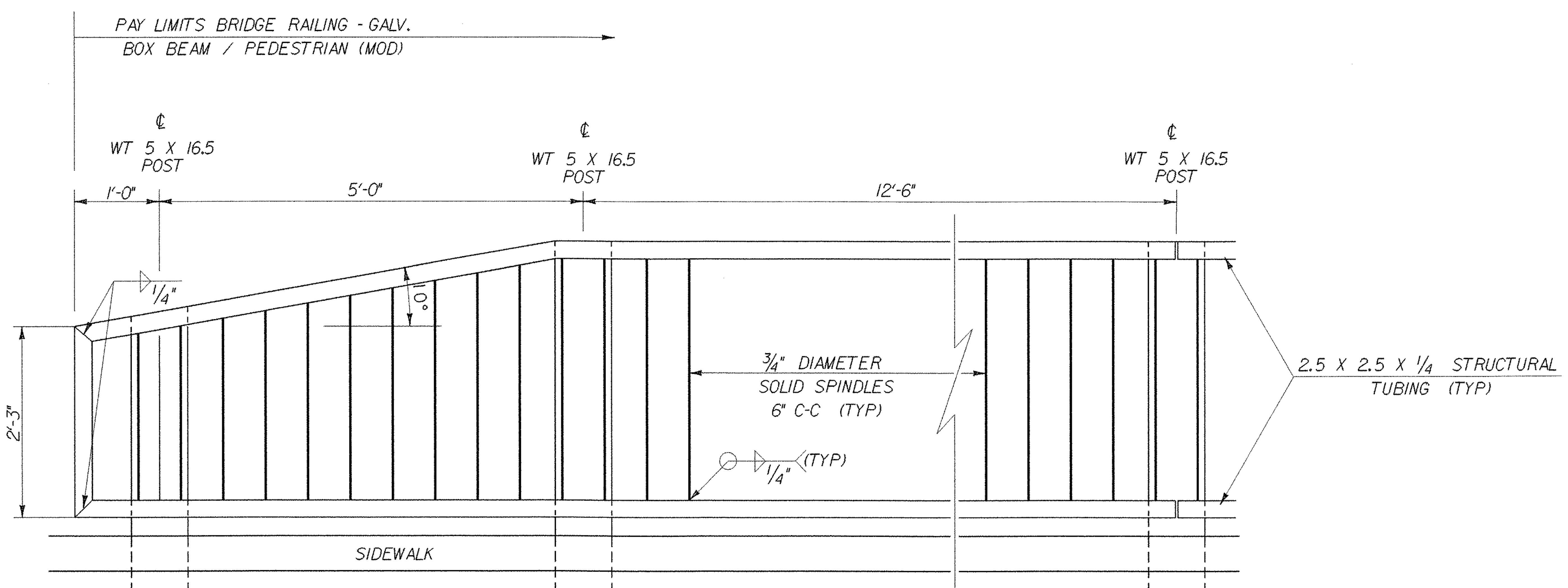
10. A rail post shall be placed within 1' of all unsupported railing panel ends.

11. Holes in rails for rail bar attachment may be field drilled. The holes shall be coated with an approved zinc rich paint.

12. Any bending of rail shall be by shop procedure only.

13. The fabricator shall submit shop drawings including welding procedures to the Structures Section for approval in accordance with the provision of 506.04, shop drawings. All welding shall conform with section 506.10.

14. Pedestrian railing shall be paid for under item 525.32 "Bridge Railing - Galv. Box Beam / Pedestrian (mod)" This shall include both pedestrian railing mounted on bridge and approach railing.



PEDESTRIAN RAIL APPROACH END SECTION
SCALE 1" = 1'-0

MATERIALS

Rail bars........................ASTM A500, Grade B
Rail posts and other shapes............ASTM A709/A709M, Grade 50
Anchor studs...ASTM A449
All other bolts [unless noted].............AASHTO M164, TYPE I

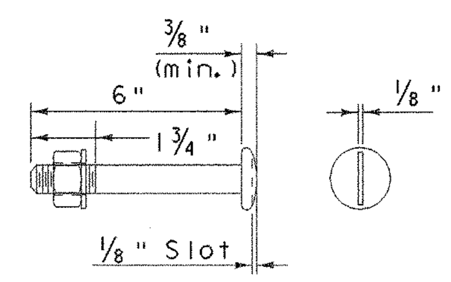
Nuts for AASHTO M164 bolts shall comply with AASHTO M291. Nuts for anchor studs shall comply with ASTM A563.

Washers shall comply with AASHTO M293 (ASTM F436) specification.

1/8 " pad shall comply with standard specification subsection 731.01 or 731.02.

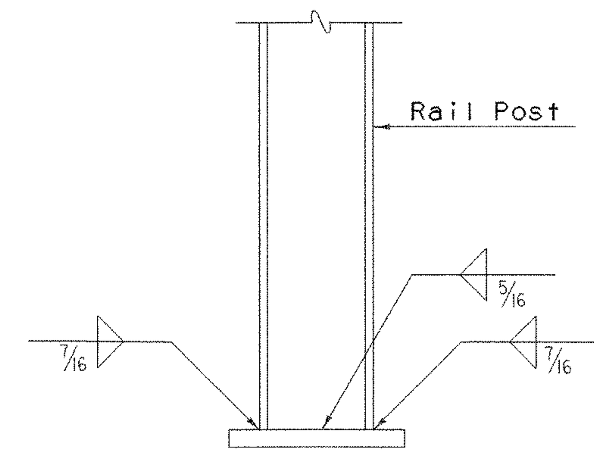
PROJECT NAME: PROJECT NUMBER: ROYALTON BRZ 1444(22)	
FILE NAME: 89j099/structures/sj099rail.dgn	PLOT DATE: 26-SEP-2000
IPARM NAME: sj099ped2.i	DRAWN BY: P.R. ROWE
PROJECT LEADER: C.P. WILLIAMS	CHECKED BY: W.B. SYMONDS
DESIGNED BY: W.B. SYMONDS	SHEET 71 OF 118
PEDESTRIAN RAIL APPROACH DETAILS	

NETC TYPICAL DETAILS

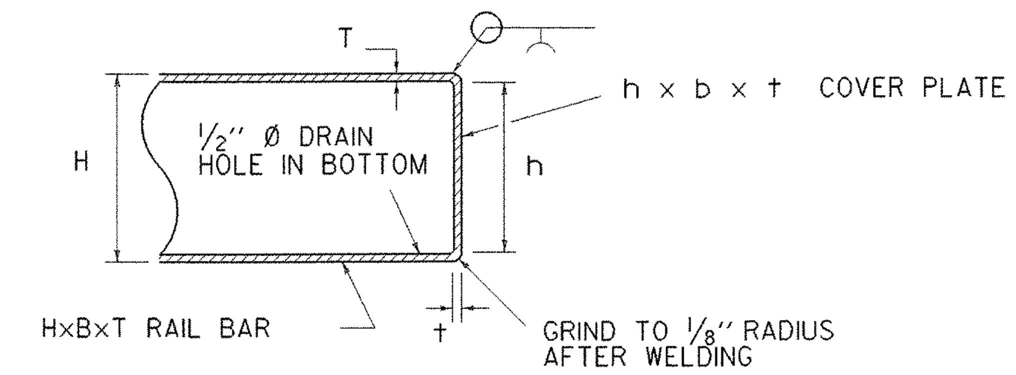


3/4" Ø M164 (TYPE 1) ROUND HEAD BOLT

[with washer & prevailing torque type lock nut]
[See note No. 9]
Only full diameter body bolts will be allowed

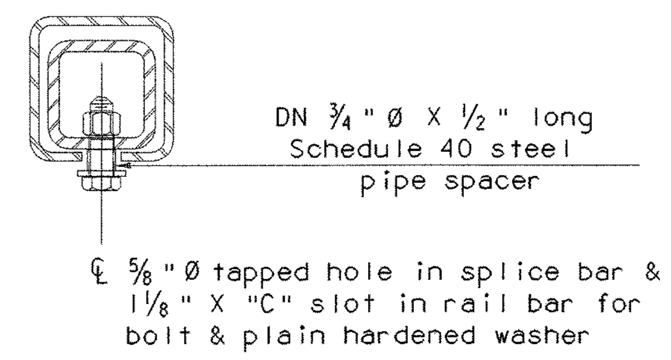


BASE WELD DETAIL



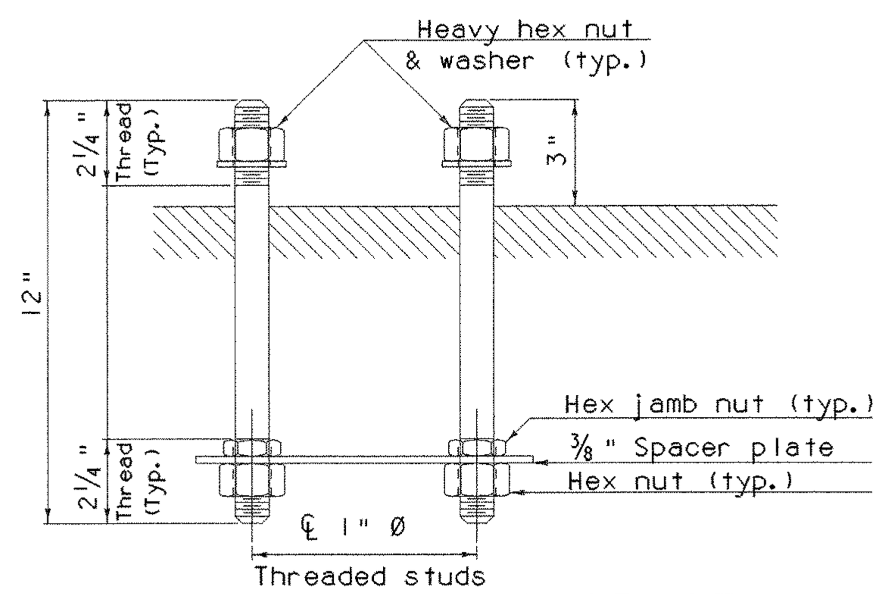
STEEL BEAM	COVER PLATE
8"x4"x5/16"	7 1/2"x3 1/2"x1/4"
4"x4"x1/4"	3 5/8"x3 5/8"x1/4"
8"x2"x1/4"	7 5/8"x1 5/8"x1/4"
4"x2"x1/4"	3 5/8"x1 5/8"x1/4"
2.5"x2.5"x1/4"	2 1/8"x2 1/8"x1/4"

END COVER PLATE DETAIL

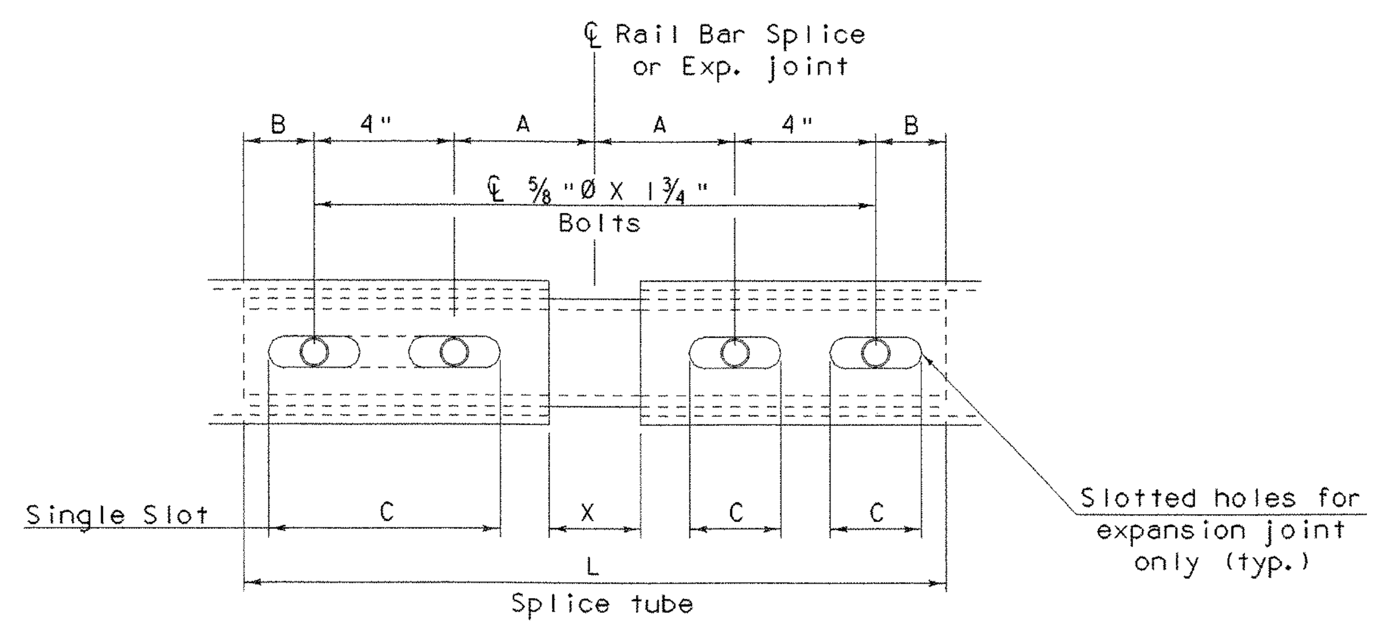


EXPANSION JOINT SECTION

For details not shown, see "Rail Bar Splice Section"

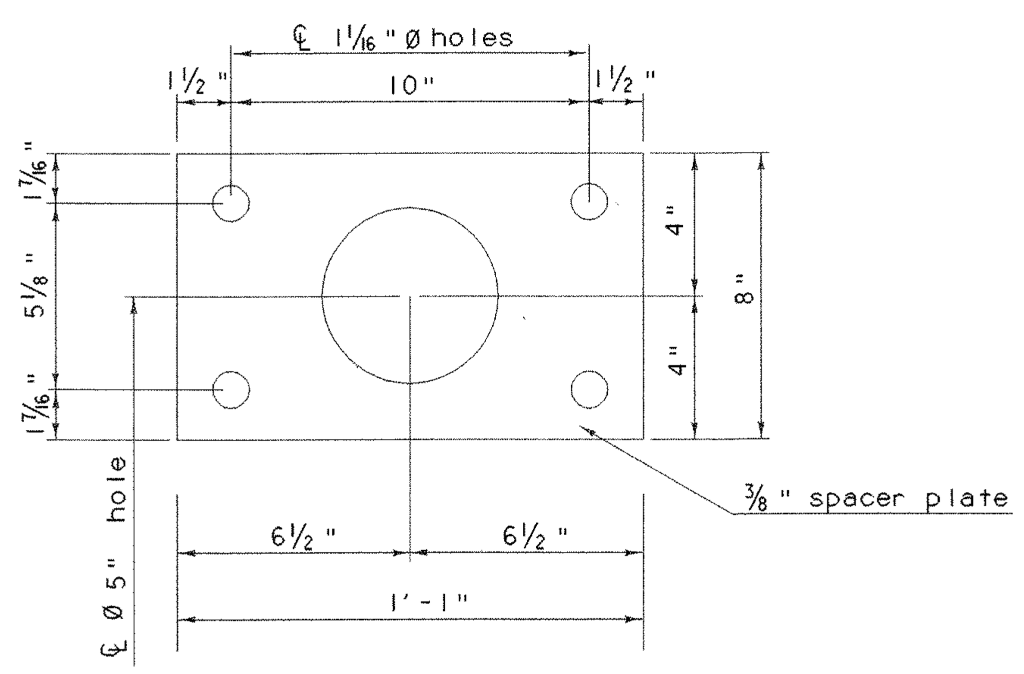


RAIL POST ANCHORAGE



RAIL BAR SPLICE & RAIL EXP. JOINT DETAIL

[Bottom View]



SPACER PLATE

NETC 2 RAIL AND 4 RAIL NOTES

1. All work and materials shall conform to the provisions of Section 525 - Railings of the Standard Specifications for Construction.

2. Tubing and posts shall meet the requirements of Section 732 - Railing materials of the Standard Specifications for Construction.

3. All exposed cut or sheared edges shall be rounded to a 1/16" radius and be free of burrs.

4. Rail posts shall be set normal to grade.

5. Sections of rail bar shall be attached to a minimum of two [2] rail posts and preferably to at least four [4] posts.

6. Rail bar expansion joints shall be provided in any rail bay spanning a superstructure expansion joint. Expansion joint width shall be "X" at 45 °F and will be adjusted in the field by the Engineer.

7. All railing parts shall be galvanized after fabrication in accordance with subsection 506.15, as modified by the special provisions.

8. Rail posts anchoring nuts shall be tightened to a snug fit and given an additional 1/8 turn.

9. Rail bars shall be attached using 3/4" full diameter body AASHTO M164 (Type 1) round head bolts inserted through the face of the bar. Holes in posts shall be 1/16" larger than the bolt size.

10. If there is a conflict between these Standard Details and the Design Drawings, the requirements of the Design drawings shall be followed.

11. Any bending of rail shall be by shop procedure only.

12. The fabricator shall submit shop drawings including welding procedures to the Structures Section for approval in accordance with the provision of 506.04, shop drawings. All welding shall conform with section 506.10.

13. The drop-weight tear test in section 732 shall not apply to the structural tubing on this standard.

14. The gaps between the ends of pedestrian rail bars and granite facing of towers shall be 4" maximum, 2" minimum @ 45°

15. Pedestrian railbars shall be spliced at posts, and do not require splice tubes.

16. Holes in rails for rail bar attachment may be field drilled. The holes shall be coated with an approved zinc-rich paint.

MATERIALS

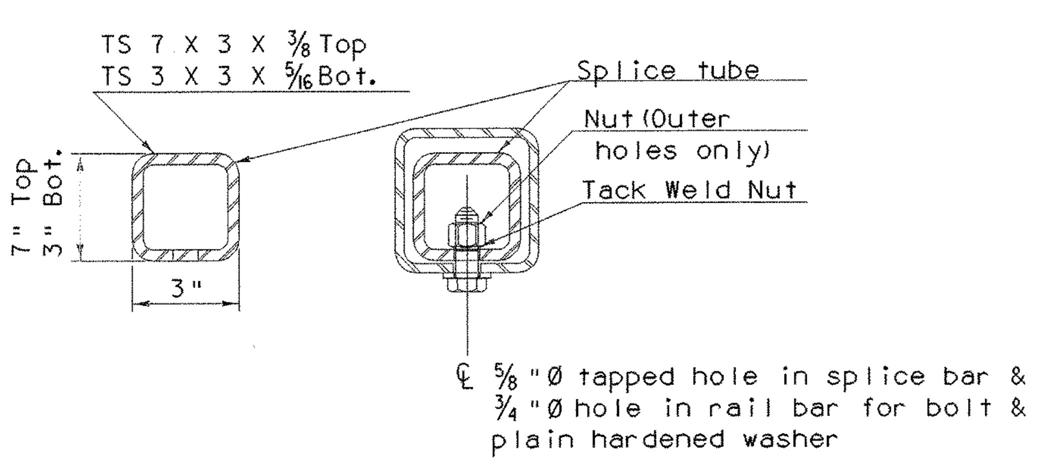
Rail bars........................ASTM A500, Grade B or ASTM A501
Rail posts............................ASTM A709/A709M, Grade 50
All other shapes & plates.............ASTM A709/A709M, Grade 36
Anchor studs...ASTM A449
All other bolts [unless noted].............AASHTO M164, TYPE 1

Nuts for AASHTO M164 bolts shall comply with AASHTO M291. Nuts for anchor studs shall comply with ASTM A563.

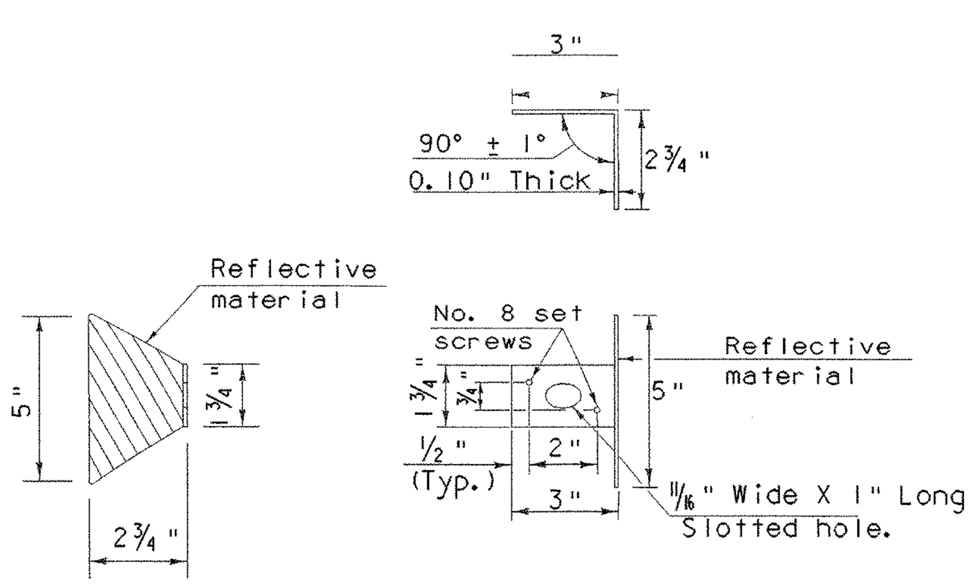
Washers shall comply with AASHTO M293 (ASTM F436) specification.

1/8" pad shall comply with standard specification subsection 731.01 or 731.02.

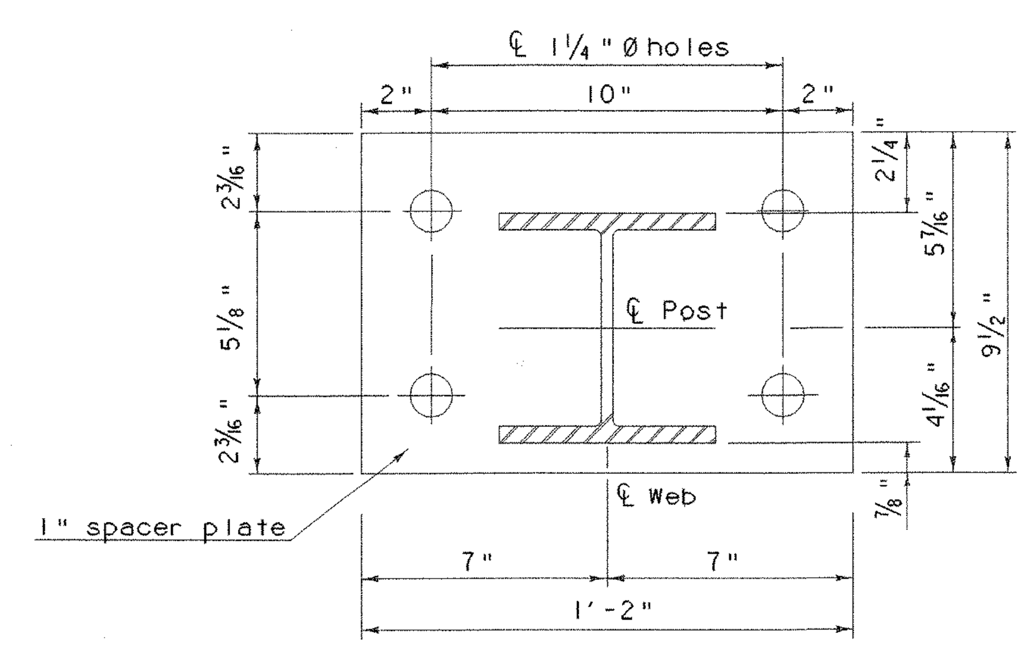
Set screws for delineation devices shall conform to ASTM Specification F880, condition CW, Alloy Type 304.



RAIL BAR SPLICE SECTION



DELINEATION DEVICE DETAILS



POST & BASE PLATE

SPLICE & EXPANSION JOINT TABLE					
T	A	B	C	L	X
Splice	4"	2"	--	20"	3/4"
≤4"	4"	2"	2 1/2"	20"	2 1/2"

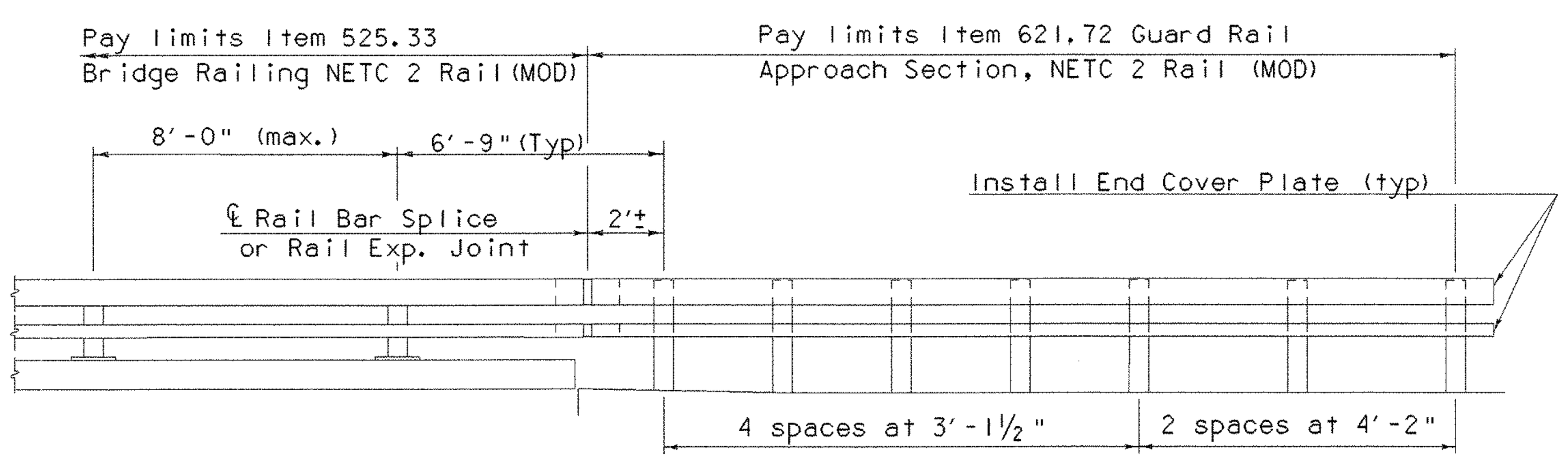
T = Total Movement * = Single Slot

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444 (22)

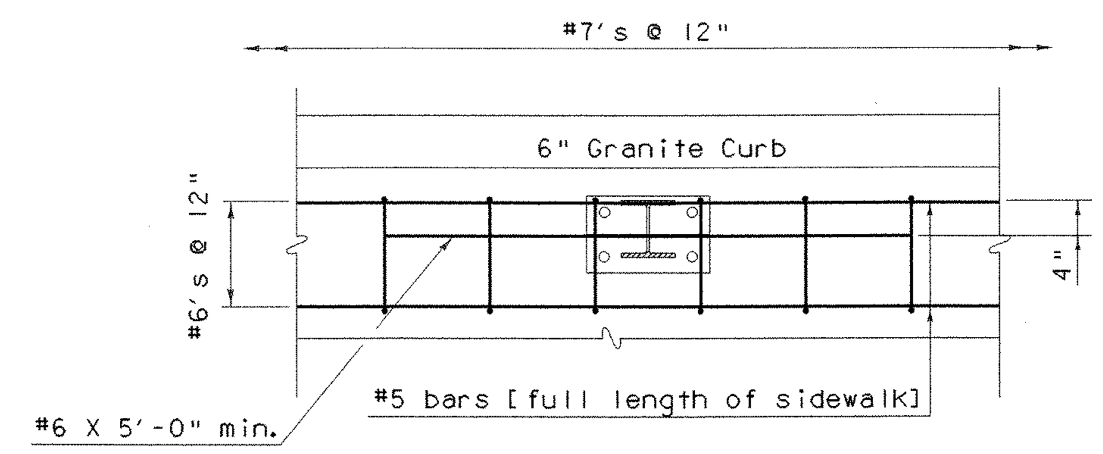
FILE NAME: 89j099/structures/sj099rail.dgn
IPARM NAME: sj099netcl.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
NETC TYPICAL DETAILS

PLOT DATE: 25-SEP-2000
DRAWN BY: P.R. ROWE
CHECKED BY: W.B. SYMONDS
SHEET 72 OF 118

NETC 2 RAIL DETAILS



RAILING TRANSITION ELEVATION

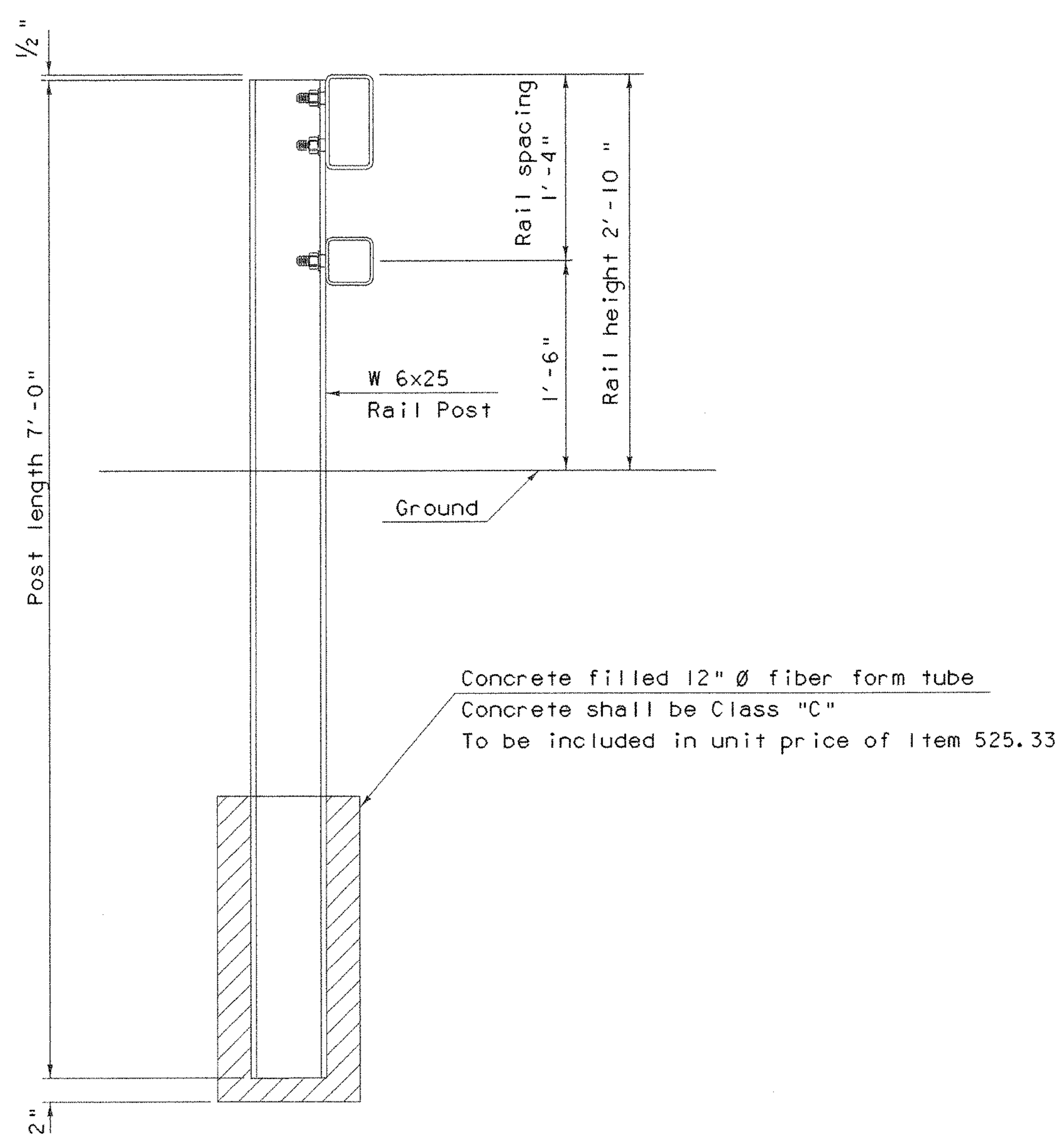


CURB REINFORCING PLAN

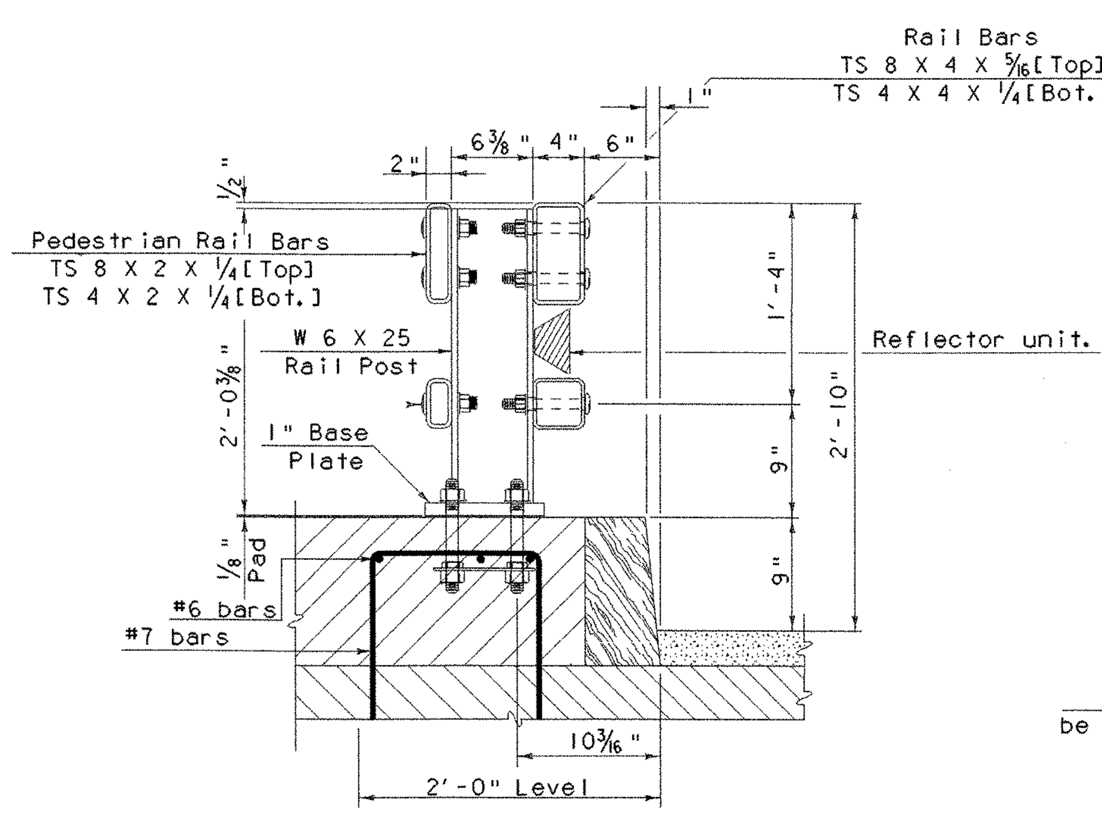
[sidewalk side only]

Notes:

1. Refer to detail sheet 72 for additional details, notes and materials specifications.
2. To facilitate field fit - up of the transition railing posts shall be set loosely into fiber form tubes while transition parts are being assembled. Post holes shall be backfilled with a concrete mix approved by the Engineer. Payment for components, including backup plate and end terminal connector for guard rail, augering, fiber form tubes and concrete, and installation shall be considered incidental to Bridge railing, N.E.T.C. 2 rail.
3. The reflectorized aluminum delineation is to be erected every 30' (or closest post) with 2 No. 8 X ¾" self tapping screws. Delineators shall meet specification requirements for ASTM B209 alloy 5052-H32
4. Reflective material shall meet requirements of subsection 750.08 and shall be of encapsulated lens silver or amber. Amber is to be installed on the driver's left and silver on their right.
5. Delineators shall be installed on the curb (traffic) side of all traffic barriers on the bridge and approaches. Payment shall be subsidiary to all other rail items.
6. All approach rail splices shall be lapped in the direction of traffic flow.

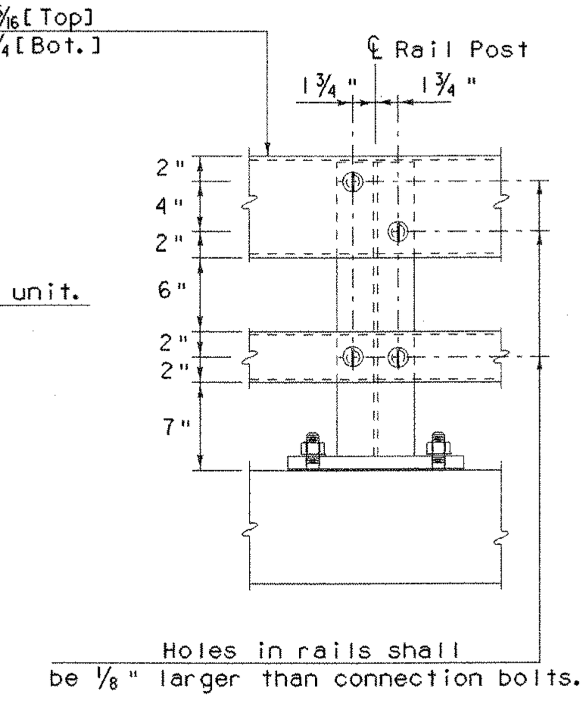


TYPICAL SECTION

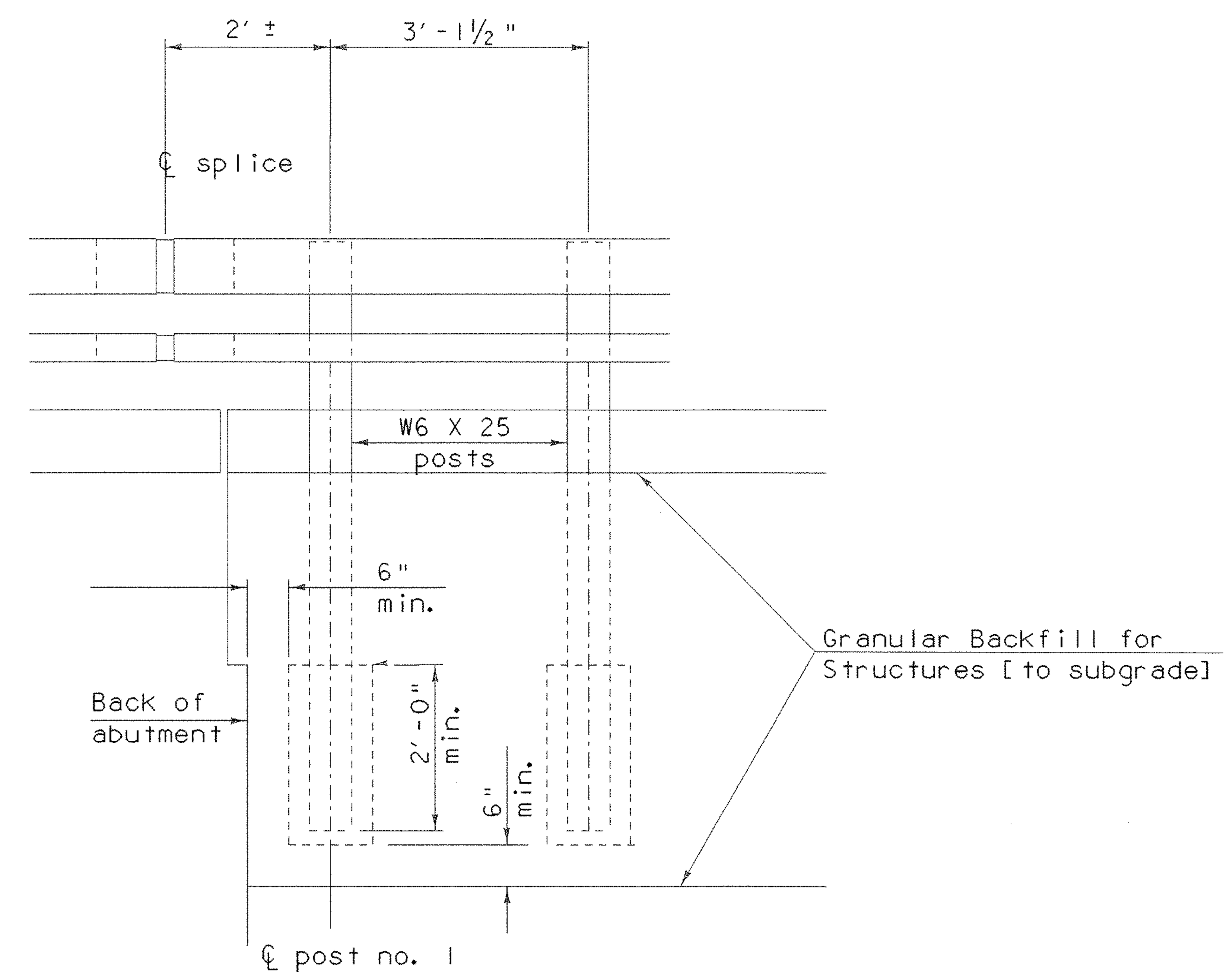


TYPICAL SECTION

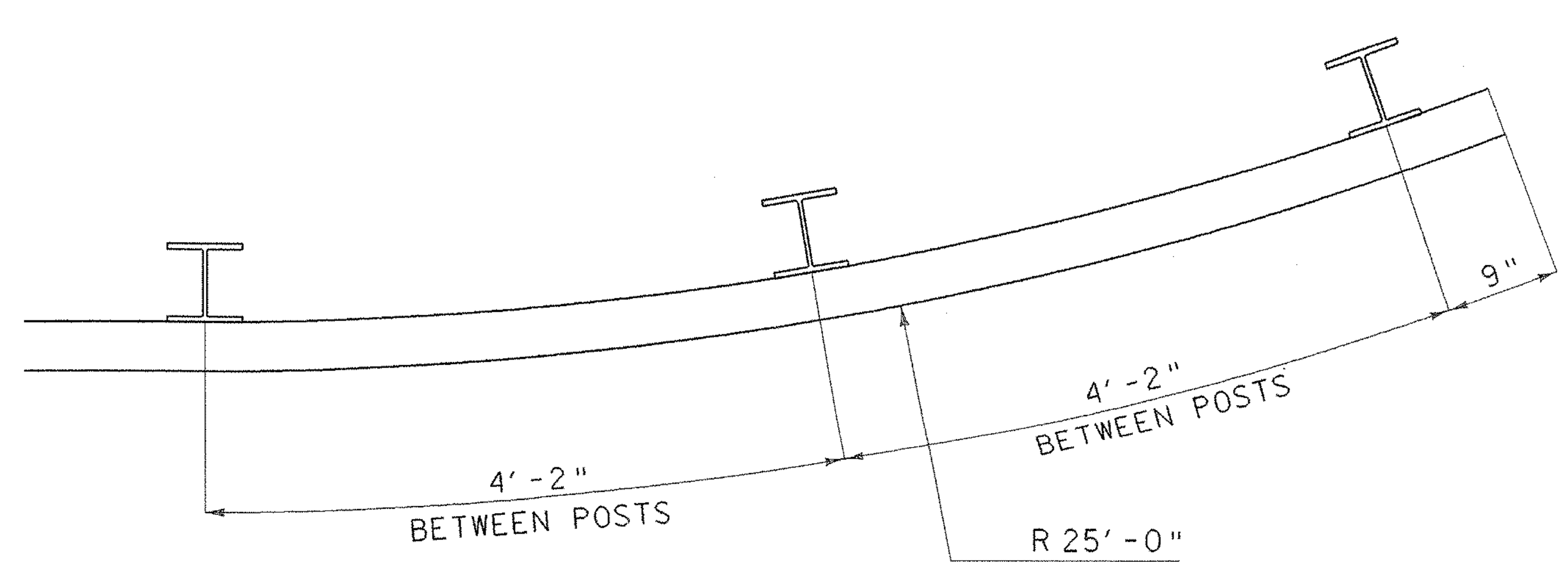
[sidewalk side only]



ELEVATION



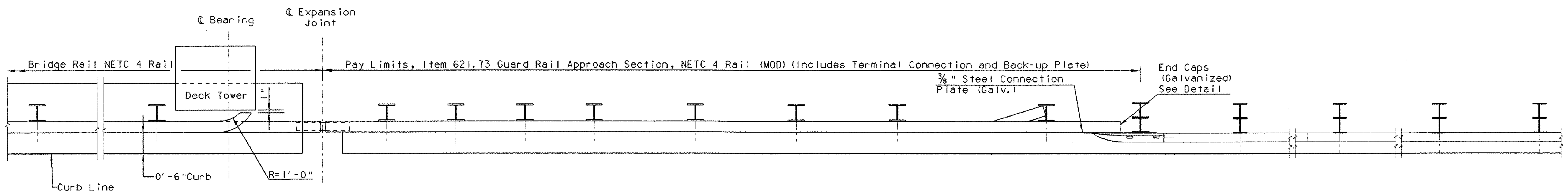
ELEVATION



TYPICAL 2 RAIL NETC FLARE

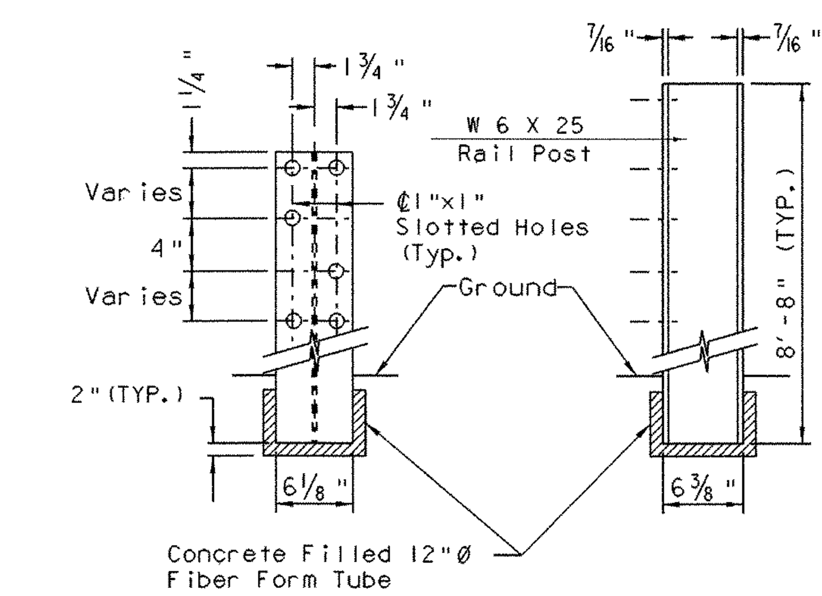
PROJECT NAME: PROJECT NUMBER: ROYALTON BRZ 1444 (22)	
FILE NAME: 89j099/structures/sj099rail.dgn IPARM NAME: sj099netc2.i PROJECT LEADER: C.P. WILLIAMS DESIGNED BY: W.B. SYMONDS NETC 2 RAIL DETAILS	PLOT DATE: 25-SEP-2000 DRAWN BY: P.R. ROWE CHECKED BY: W.B. SYMONDS SHEET 73 OF 118

NETC 4 RAIL DETAILS



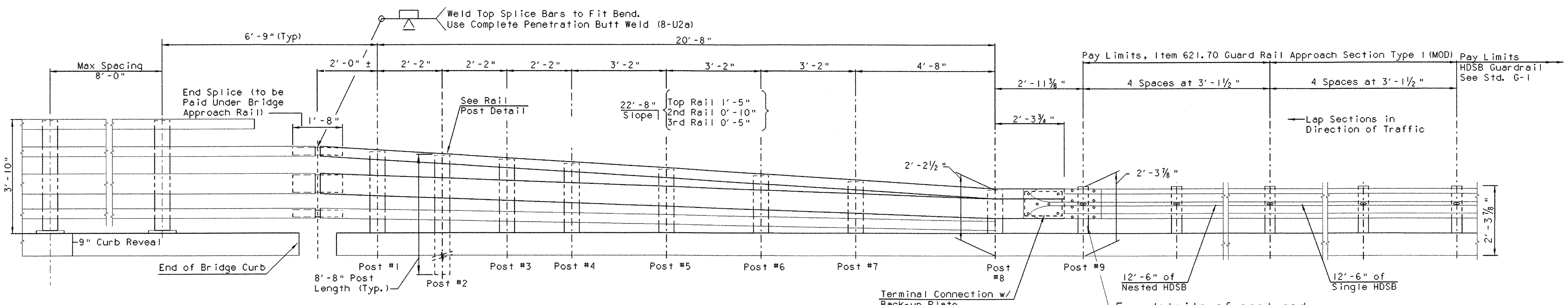
PLAN VIEW - APPROACH RAIL

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



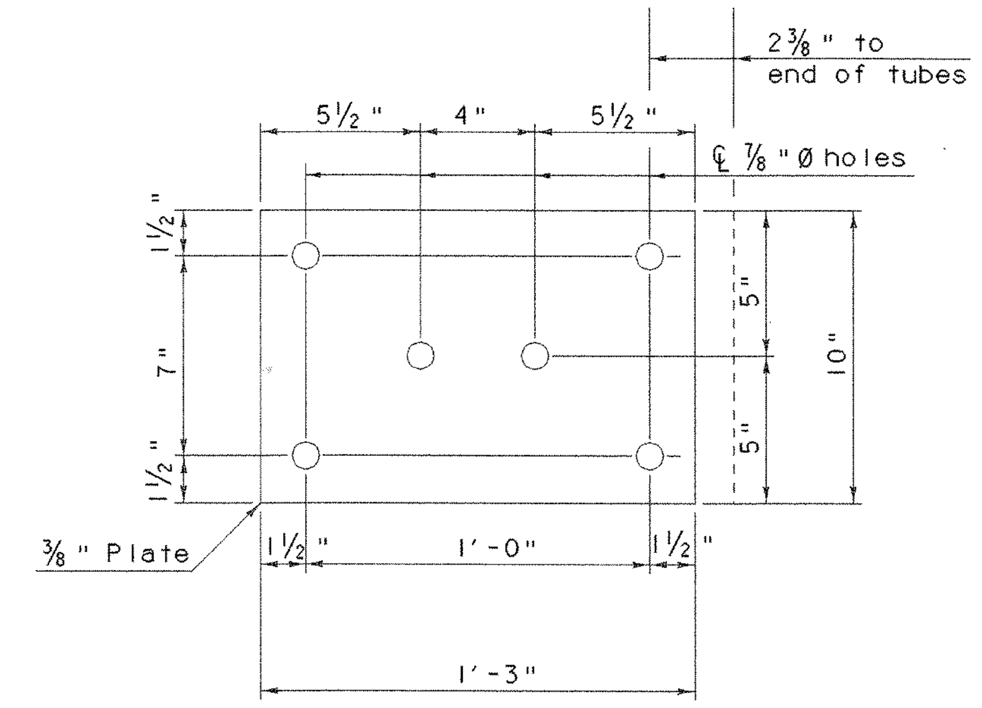
RAIL POST

SCALE: 1" = 1'-0"

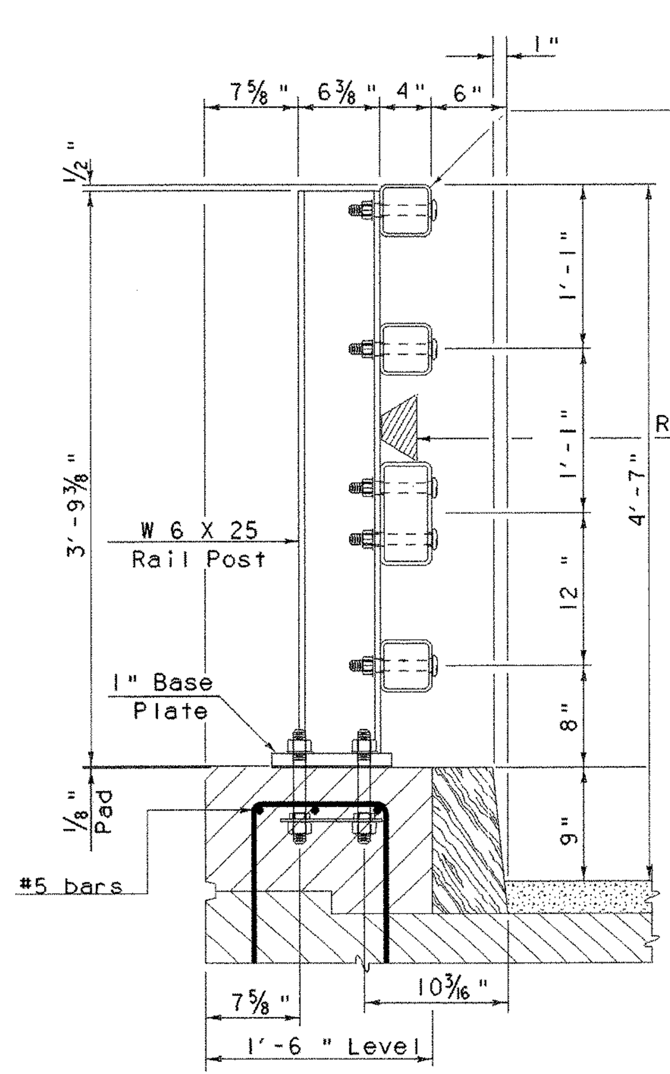


ELEVATION VIEW - APPROACH RAIL

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

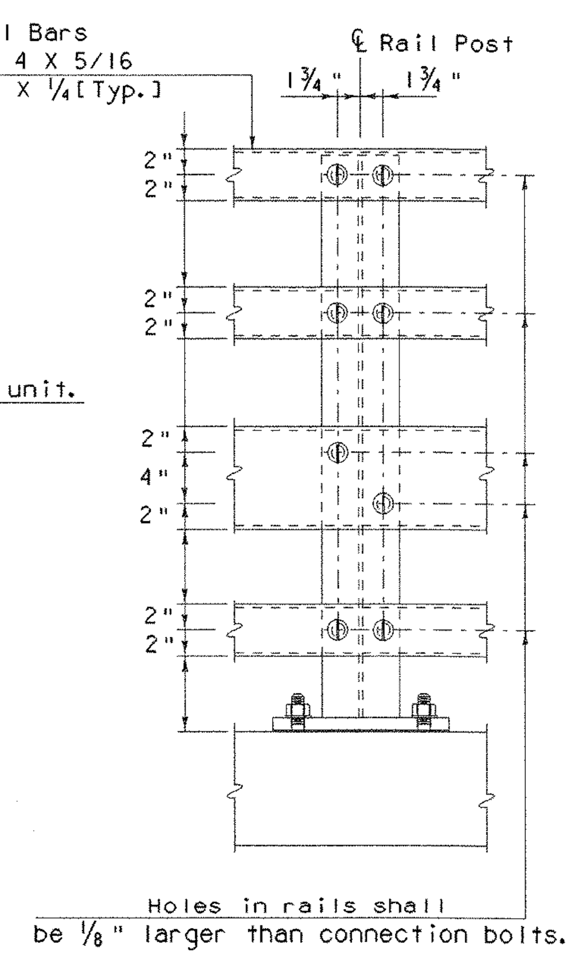


BACK - UP PLATE



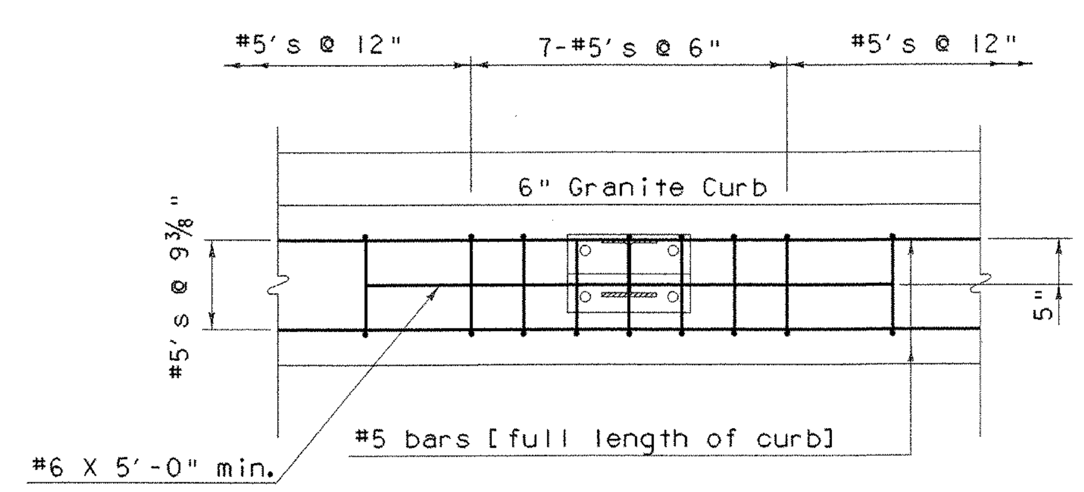
TYPICAL SECTION

[Curb Side Only]



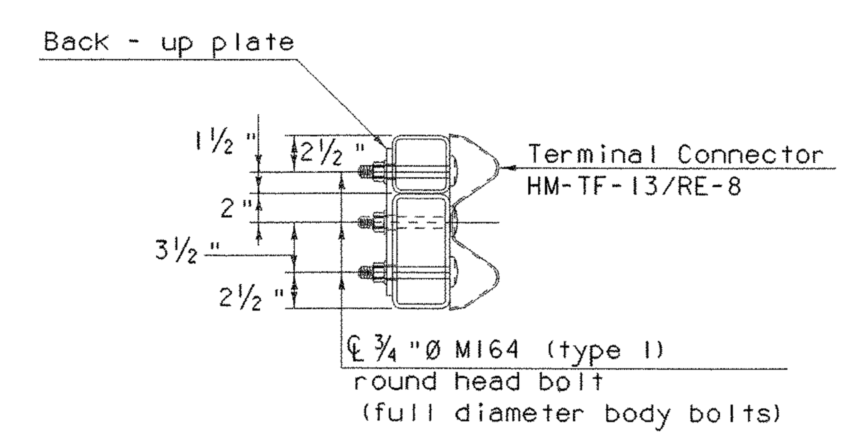
ELEVATION

[Curb Side Only]



CURB REINFORCING PLAN

[Curb Side Only]



SECTION THROUGH GUARD RAIL CONNECTION AT TERMINAL CONNECTOR

Note:

1. Refer to detail sheets 72 & 73 for additional details, notes and materials specifications.

PROJECT NAME: PROJECT NUMBER: ROYALTON BRZ 1444(22)	
FILE NAME: 89j099/structures/sj099rail.dgn	PLOT DATE: 25-SEP-2000
IPARM NAME: sj099netc3.i	DRAWN BY: P.R. ROWE
PROJECT LEADER: C.P. WILLIAMS	CHECKED BY: W.B. SYMONDS
DESIGNED BY: W.B. SYMONDS	SHEET 74 OF 118
NETC 4 RAIL DETAILS	

678.23 WIRED CONDUIT (2")

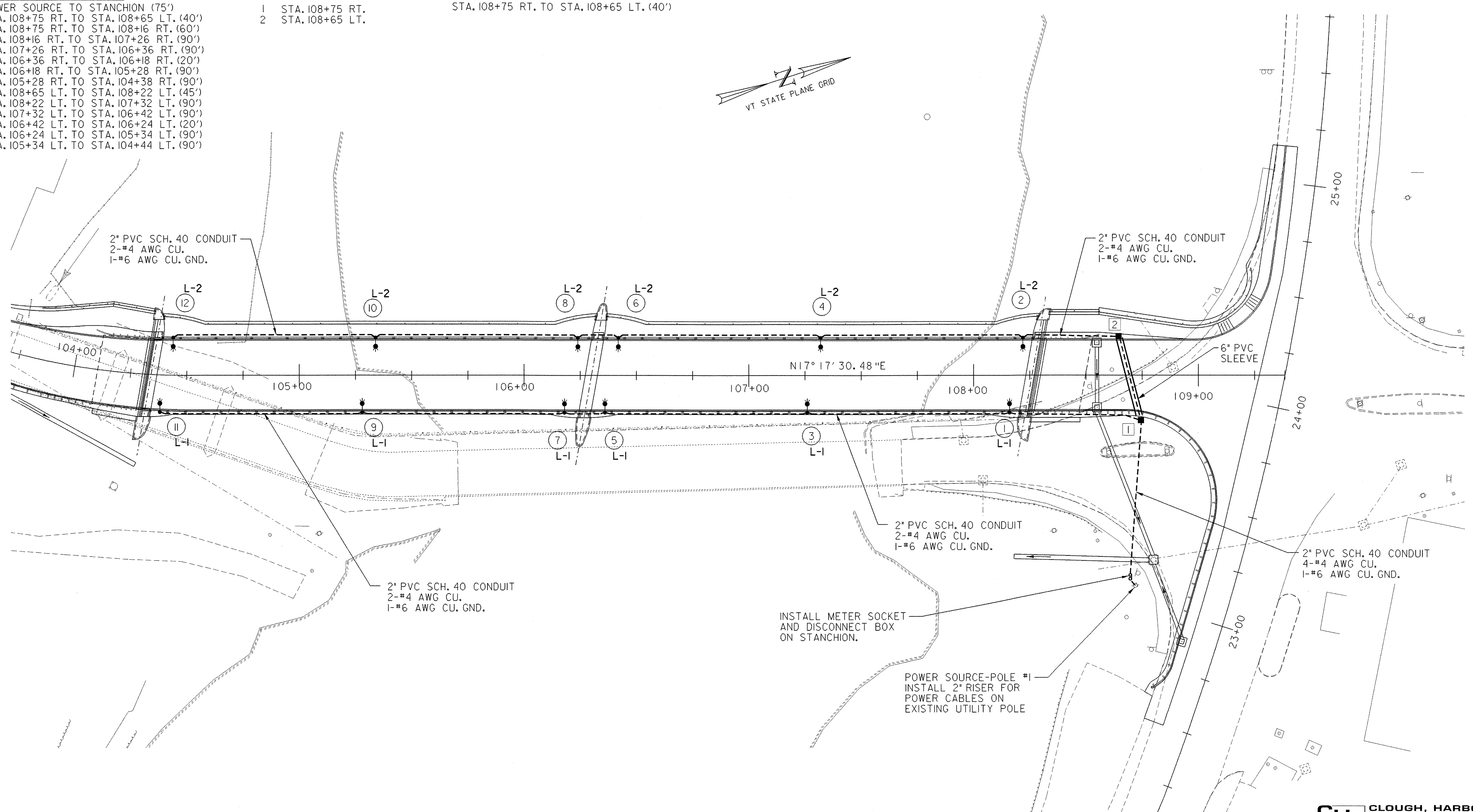
POWER SOURCE TO STANCHION (75')
STA. 108+75 RT. TO STA. 108+65 LT. (40')
STA. 108+75 RT. TO STA. 108+16 RT. (60')
STA. 108+16 RT. TO STA. 107+26 RT. (90')
STA. 107+26 RT. TO STA. 106+36 RT. (90')
STA. 106+36 RT. TO STA. 106+18 RT. (20')
STA. 106+18 RT. TO STA. 105+28 RT. (90')
STA. 105+28 RT. TO STA. 104+38 RT. (90')
STA. 108+65 LT. TO STA. 108+22 LT. (45')
STA. 108+22 LT. TO STA. 107+32 LT. (90')
STA. 107+32 LT. TO STA. 106+42 LT. (90')
STA. 106+42 LT. TO STA. 106+24 LT. (20')
STA. 106+24 LT. TO STA. 105+34 LT. (90')
STA. 105+34 LT. TO STA. 104+44 LT. (90')

678.26 JUNCTION BOX

1 STA. 108+75 RT.
2 STA. 108+65 LT.

678.30 ELECTRICAL CONDUIT SLEEVE (6")

STA. 108+75 RT. TO STA. 108+65 LT. (40')



20' 0' 20'
SCALE 1" = 20'
@ FULL SIZE

NOTE:

POWER SERVICE SHALL BE 100 AMP (MIN.)
SINGLE PHASE 120 VOLT.

L-1 AND L-2 SHALL HAVE SEPARATE 30 AMP CIRCUIT BREAKERS IN ADDITION TO A 100 AMP MAIN DISCONNECT.

CLOUGH, HARBOUR & ASSOCIATES LLP
ENGINEERS, SURVEYORS, PLANNERS & LANDSCAPE ARCHITECTS
III WINNERS CIRCLE ALBANY, NEW YORK 12205

PROJECT NAME: PROJECT NUMBER: ROYALTON BRZ 1444(22)	
FILE NAME: U:\9425\MSTN\SLP-1.DGN	PLOT DATE: 08/01/00
IPARM NAME:	DRAWN BY: M. WIESZCHOWSKI
PROJECT LEADER: P. FAITH	CHECKED BY: T. JOHNSON
DESIGNED BY: M. WIESZCHOWSKI	SHEET 75 OF 118

STREET LIGHT LOCATIONS

POLE NO.	LOCATION	OFFSET	LENGTH OF POLE/ARM	WALL THICKNESS	BREAK AWAY BASE	LUMINAIRE			MOUNT HEIGHT (OF ARM)
						LAMP	WATTS	TYPE	
1	108+16 RT.	16.67′	25.0′/2.8′	0.25″	NO	MH	100	III	22.0′
2	108+22 LT.	16.67′	25.0′/2.8′	0.25″	NO	MH	100	III	22.0′
3	107+26 RT.	16.67′	25.0′/2.8′	0.25″	NO	MH	100	III	22.0′
4	107+32 LT.	16.67′	25.0′/2.8′	0.25″	NO	MH	100	III	22.0′
5	106+36 RT.	16.67′	25.0′/2.8′	0.25″	NO	MH	100	III	22.0′
6	106+42 LT.	16.67′	25.0′/2.8′	0.25″	NO	MH	100	III	22.0′
7	106+18 RT.	16.67′	25.0′/2.8′	0.25″	NO	MH	100	III	22.0′
8	106+24 LT.	16.67′	25.0′/2.8′	0.25″	NO	MH	100	III	22.0′
9	105+28 RT.	16.67′	25.0′/2.8′	0.25″	NO	MH	100	III	22.0′
10	105+34 LT.	16.67′	25.0′/2.8′	0.25″	NO	MH	100	III	22.0′
11	104+38 RT.	16.67′	25.0′/2.8′	0.25″	NO	MH	100	III	22.0′
12	104+44 LT.	16.67′	25.0′/2.8′	0.25″	NO	MH	100	III	22.0′

STREET LIGHTING DESIGN PARAMETERS

	RECOMMENDED	ACTUAL
ROADWAY (COLLECTOR-INTERMEDIATE)	0.8 FC 4 : 1 UR	1.43 FC 2.75 : 1 UR
SIDEWALK	0.8 FC 4 : 1 UR	0.84 FC 1.75 : 1 UR

LUMINAIRE DIRT DEPRECIATION: 0.95 - ENCLOSED AND FILTERED

LAMP LUMEN DEPRECIATION: 0.65 @ 7,500 HOURS (END OF LIFE)

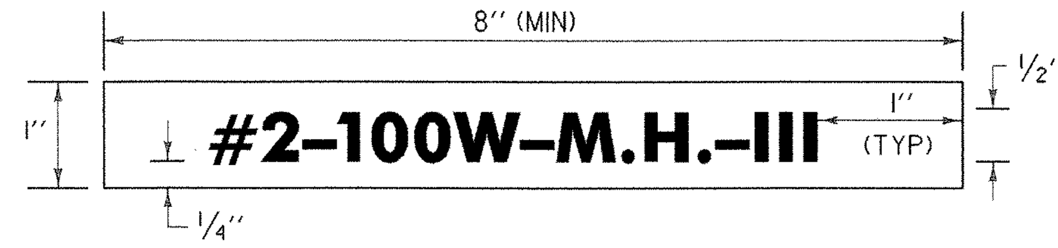
COMBINED LAMP (MAINT.) FACTOR: 0.62

EXISTING	NEW	LEGEND
		STREET LIGHT POLE
		LUMINAIRE
		JUNCTION BOX
— EX —		CONDUIT
		SLEEVE
		STANCHION
		UTILITY POLE
L-3 = CIRCUIT NUMBER		
(34) = LIGHT POLE NUMBER		
4 = JUNCTION BOX NUMBER		

ABBREVIATIONS

FC = FOOTCANDLE
UR = UNIFORMITY RATIO
AVE = AVERAGE
MH = METAL HALIDE
HPS = HIGH PRESSURE SODIUM
AWG = AMERICAN WIRE GAUGE
GND = GROUND
CU = COPPER
PVC = POLYVINYL CHLORIDE
MIN = MINIMUM
MAX = MAXIMUM
LT = LEFT
RT = RIGHT
′ = FEET
″ = INCHES

DETAILS FOR TAGS ATTACHED TO STREET LIGHT POLES



LEGEND: WHITE (NON-REFL.) - STAMPED PRIOR TO PRINTING/PAINTING.
BACKGROUND: FLAT BLACK SURFACE, SAME AS POLE FINISH.

NOTES:
1. THE TAG SHALL BE MOUNTED ON ALL STREET LIGHT POLES IN SUCH A MANNER AS NOT TO BE EASILY REMOVED, SUCH AS WELDED, RIVETED, OR BOLTED WITH VANDAL PROOF BOLTS.
2. THE LETTERS SHALL BE PUNCHED, STAMPED, ENGRAVED, OR PHOTO-ETCHED. PUNCHING, STAMPING OR ENGRAVING SHALL PENETRATE ONE HALF THE BASE MATERIAL THICKNESS.
3. THE BASE MATERIAL FOR THE TAG SHALL BE ALUMINUM WITH A MINIMUM THICKNESS OF 0.100 INCHES.
4. THE TAG SHALL BE ATTACHED TO THE POLE ABOVE THE HANDHOLE, 6″ MAXIMUM. IF THE POLE HAS A TRANSFORMER BASE, ATTACH TAG TO COVER.

GENERAL STREET LIGHTING NOTES

ANCHOR BOLTS

1.) ANCHOR BOLTS SHALL BE PLACED IN THE BRIDGE DECK SUCH THAT THE LIGHT POLES CAN BE ERECTED WITHOUT CONFLICTING WITH BRIDGE RAILING PLACEMENT. IF A SPECIFIED POLE LOCATION INTERFERES WITH A RAILING POST, THE CONTRACTOR SHALL MOVE THE LIGHT POLE UP TO 5′ LONGITUDINALLY FROM THE SPECIFIED LOCATION TO AVOID THE CONFLICT. IN ALL CASES, THE CONTRACTOR SHALL MAINTAIN SYMMETRY IN THE POLE LOCATIONS.

2.) ANCHOR BOLTS SHALL BE 1″ DIA. PLACED TO FORM A 11 1/2″ BOLT CIRCLE PER MANUFACTURER'S SPECIFICATIONS.

POLES AND ARMS

1.) LIGHT POLES SHALL BE 5″ DIAMETER ROUND STEEL POLES WITH AN ELECTROSTATICALLY APPLIED BLACK POWDER COAT FINISH (ZED P105SV-25 OR EQUIVALENT).

2.) POLES SHALL BE MOUNTED IN THE 6 3/8″ SPACE BETWEEN BRIDGE RAILINGS ON THE SIDEWALK SIDE OR IMMEDIATELY BEHIND THE RAILING ON THE NON-SIDEWALK SIDE OF THE BRIDGE AS SHOWN ON THE PLAN. HANDHOLES SHALL BE MOUNTED 90 DEGREES FROM THE ROADWAY SO THAT THEY CAN BE ACCESSED WHILE THE RAILING IS IN PLACE.

3.) THE CONTRACTOR SHALL INSTALL METAL TAGS ON EACH LIGHT POLE WITH THE INFORMATION AS NOTED ON THE DETAIL SHOWN ON THIS SHEET.

4.) ALL LUMINAIRE SUPPORT ARMS INSTALLED SHALL BE LUMEC MODEL M20M AND SHALL HAVE AN ELECTROSTATICALLY APPLIED BLACK POWDER COAT FINISH.

LUMINAIRES

1.) LUMINAIRES SHALL BE HARMONIA SERIES TYPE Z-60A WITH TYPE III LIGHT DISTRIBUTION MANUFACTURED BY LUMEC/ZED.

2.) LUMINAIRES SHALL HAVE AN ELECTROSTATICALLY APPLIED BLACK POWDER COAT FINISH AND SHALL BE FITTED WITH A BUTTON-TYPE PHOTOELECTRIC CELL.

CONDUIT

1.) A 2″ MINIMUM DIAMETER CONDUIT SHALL BE USED AT ALL LOCATIONS UNLESS OTHERWISE NOTED ON THE PLANS. ALL CONDUIT SHALL BE AT LEAST (SCHEDULE 40 P.V.C.) OR RIGID GALVANIZED STEEL ELECTRICAL CONDUIT (AND CONFORM TO THE REQUIREMENTS OF UL-6). TYPE OF CONDUIT (P.V.C. OR STEEL) SHALL BE NOTED ON THE PLANS.

2.) A CONDUIT EXPANSION JOINT COUPLING (AS DETAILED ON STANDARD SHEET E-181) SHALL BE USED WHERE EVER CONDUIT CROSSES A BRIDGE EXPANSION JOINT. COUPLINGS SHALL BE DESIGNED TO ACCOMMODATE A 2 1/4″ MOVEMENT IN THE BRIDGE.

CONDUIT SLEEVE

1.) MINIMUM WALL THICKNESS FOR RIGID PLASTIC PIPE SLEEVES SHALL BE 1/35TH THE DIAMETER. ALL CONDUIT RUNS UNDER ROADWAY SHALL BE INSTALLED IN RIGID PLASTIC OR STEEL PIPE SLEEVES. THE SLEEVE SHALL EXTEND TO WITHIN 2′-0″ OF THE SIDE OF A CONCRETE BASE OR PULLBOX. WHERE NO CONCRETE BASE OR PULLBOX IS PRESENT, THE SLEEVE SHALL EXTEND 4′-0″ BEYOND THE OUTSIDE EDGE OF SHOULDER OR FACE OF CURB. BACKFILLING AROUND A SLEEVE SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

2.) WHEN JACKING A SLEEVE UNDER ROADWAY IT SHALL BE STEEL WITH A MINIMUM DIAMETER OF 8″ AND MINIMUM WALL THICKNESS OF 3/8″. ACTUAL LENGTH TO BE DETERMINED IN THE FIELD BY THE RESIDENT ENGINEER.

WIRE

1.) ALL WIRING BETWEEN THE METER AND/OR POWER SOURCE AND THE FIRST POLE AND/OR PULLBOX AND BETWEEN POLES AND/OR PULLBOXES SHALL BE COPPER AND SIZED AS SPECIFIED ON THE PLANS. ALL WIRE SHALL HAVE TYPE XHHW INSULATION OR EQUIVALENT.

GROUNDING

1.) ALL CONDUIT MUST INCLUDE A GROUNDING CONDUCTOR. RIGID STEEL CONDUIT SHALL BE PROPERLY CONNECTED AT THE JOINTS SO AS TO BE WATERTIGHT AND MAINTAIN ELECTRICAL CONTINUITY AND HAVE GROUNDING BUSHINGS SO AS TO ACT AS A GROUND CONDUCTOR.

2.) ALUMINUM WIRE SHALL NOT BE USED FOR GROUND WIRE.

PULLBOXES AND JUNCTION BOXES

1.) FOR DETAILS SEE STANDARD SHEET E-173.

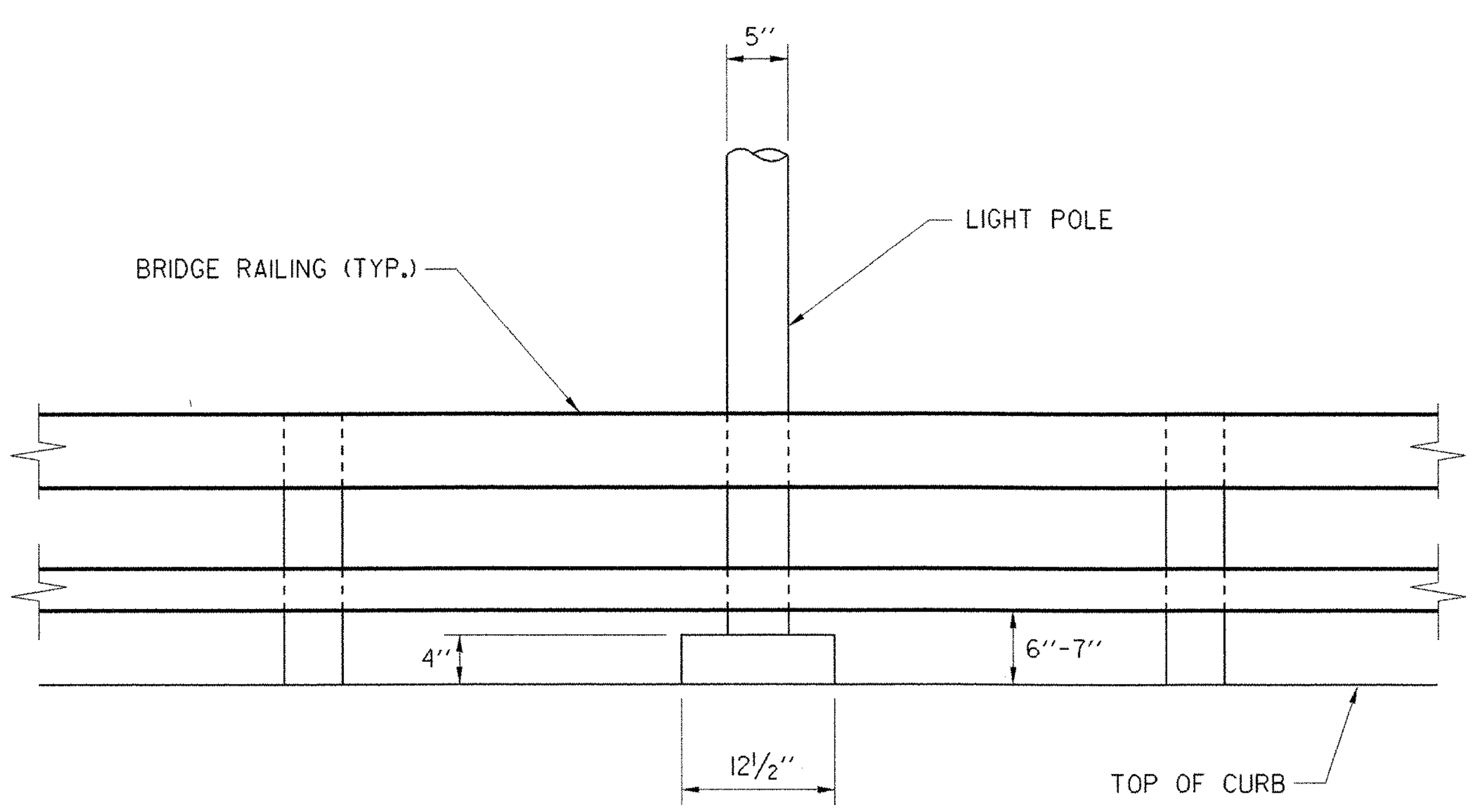
GENERAL

1.) THE LOAD ON EACH BRANCH OF THE THREE WIRE CIRCUIT SHALL BE BALANCED AS POSSIBLE. LOAD TO NEUTRAL.

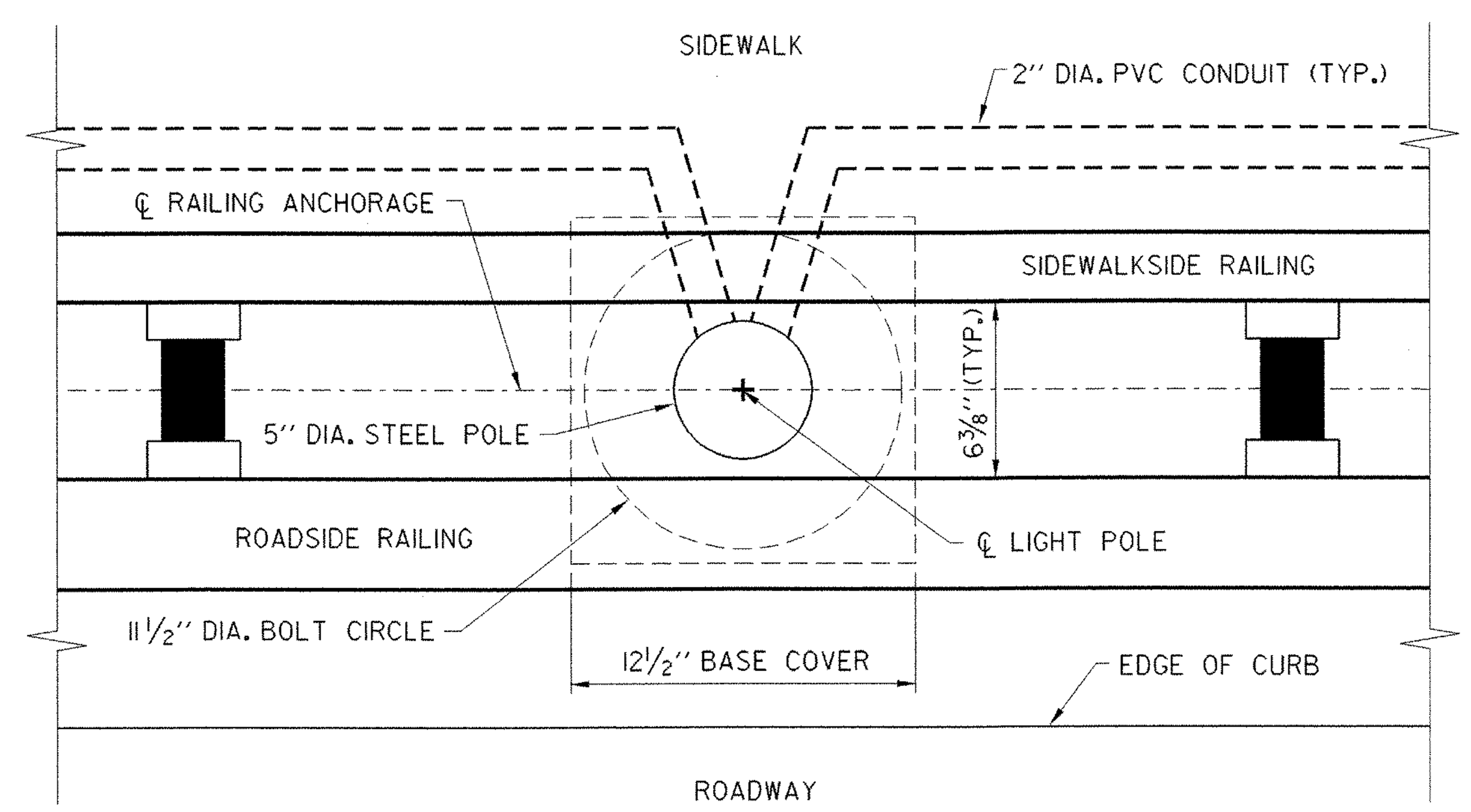
2.) FOR STANCHION DETAIL SEE STANDARD SHEET E-175.

3.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY ELECTRICAL PERMITS.

4.) SEE STANDARD SHEET E-181 FOR ADDITIONAL BRIDGE MOUNTING DETAILS FOR STREET LIGHT POLES.



ELEVATION VIEW



PLAN VIEW

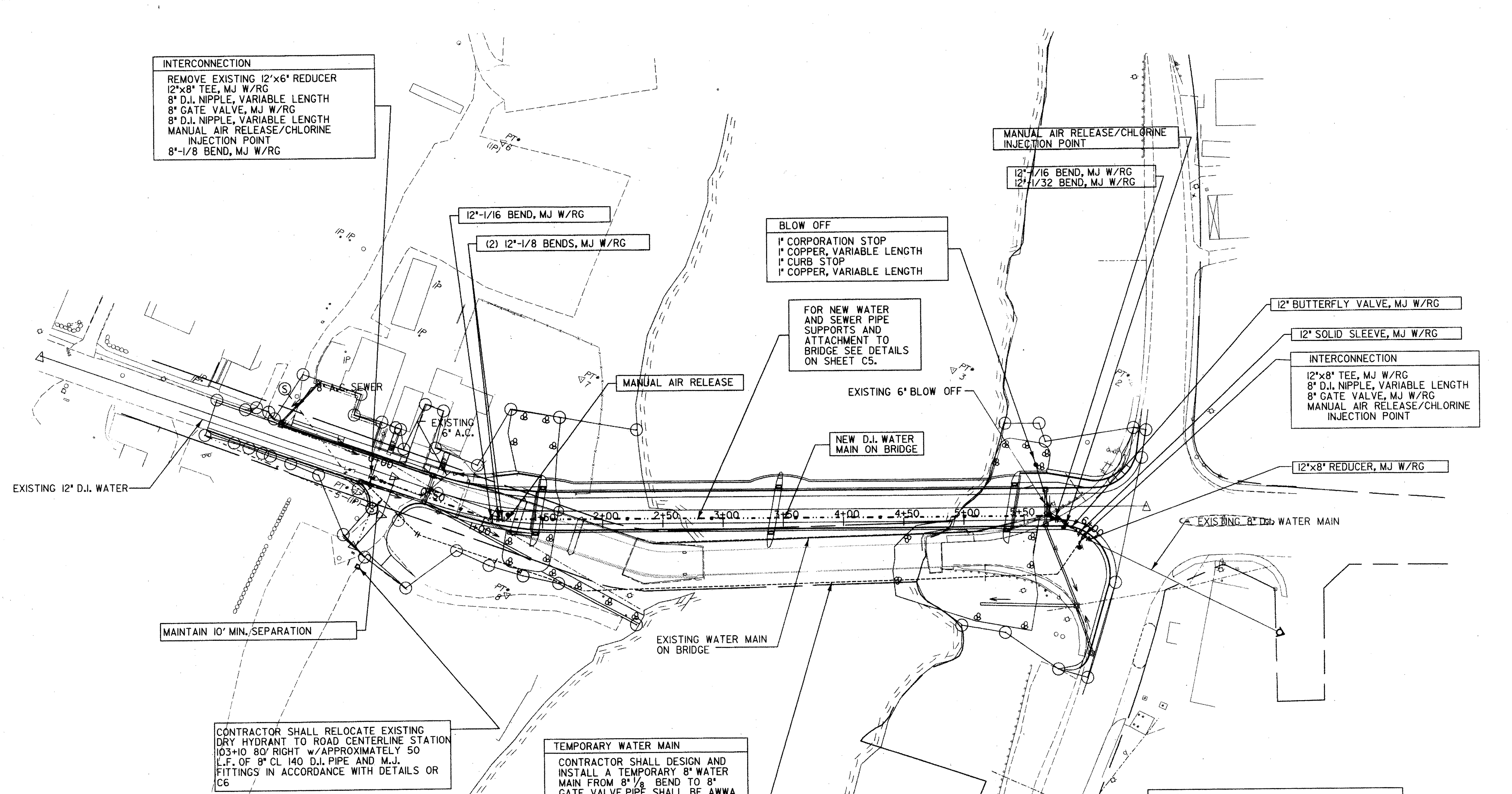
LIGHT POLE PLACEMENT DETAILS

N.T.S.

CLOUGH, HARBOUR & ASSOCIATES LLP
ENGINEERS, SURVEYORS, PLANNERS & LANDSCAPE ARCHITECTS
III WINNERS CIRCLE ALBANY, NEW YORK 12205

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444(22)

FILE NAME: U:\9425\MSTN\SLP-2.DGN
IPARM NAME:
PROJECT LEADER: P. FAITH
DESIGNED BY: M. WIESZCHOWSKI
PLOT DATE: 08/01/00
DRAWN BY: M. WIESZCHOWSKI
CHECKED BY: T. JOHNSON
SHEET 76 OF 118



GENERAL LEGEND
(TYPICAL FOR ALL SHEETS)

Symbol		Description	Symbol		Description
	=	HYDRANT		=	PROPOSED HYDRANT
	=	WATER SHUT OFF		=	PROPOSED WATER MAIN
	=	GATE VALVE		=	PROPOSED WATER SERVICE
	=	PROPOSED MANHOLE	MJ	=	MECHANICAL JOINT
	=	PROPOSED GATE VALVE	RG	=	RETAINER GLAND
	=	PROPOSED MANUAL AIR CHLORINE INJECTION P	SE/	=	BUTTERFLY VALVE

NOTE:
INFORMATION ON THIS SHEET SHOULD ONLY BE CONSTRUED TO REPRESENT WATER MAIN, PRESSURE SEWER, AND APPURTENANCES. OTHER INFORMATION SHOWING STRUCTURAL ITEMS, STORM SEWER, AND SANITARY SEWER IS SHOWN ONLY FOR RELATIVE RELATIONSHIPS ONLY. THIS INFORMATION SHOULD BE OBTAINED FROM OTHER DRAWINGS.

STATE OF VERMONT ADAM T. RICE PROFESSIONAL ENGINEER
6-8-00

PROJECT: ROYALTON
PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: /usr/str4/891099/s1099bdr.dgn
IPARM FILE NAME: /str4/891099/s1099iol.l
SURVEYED BY: R. GILMAN
SQUAD LEADER: C.P. WILLIAMS
UTILITY SITE PLAN
PLOT DATE: 01 JUL 98
SURVEY DATE: 9/91
DRAWN BY: W.B. SYMONDS
SHEET: 77 OF 118

Dufresne-Henry, Inc.
Consulting Engineers
Montpelier, Vermont 05602

REV.	DESCRIPTION	BY	DATE
	CORRECTED SCALE	BLB	6-8-00
	VT AOT COMMENTS	EET	5-26-00
	DELETE SEWER	BLB	5-2-00

TOWN OF ROYALTON AND ROYALTON FIRE DISTRICT No. 1
WHITE RIVER BRIDGE UTILITY CROSSING

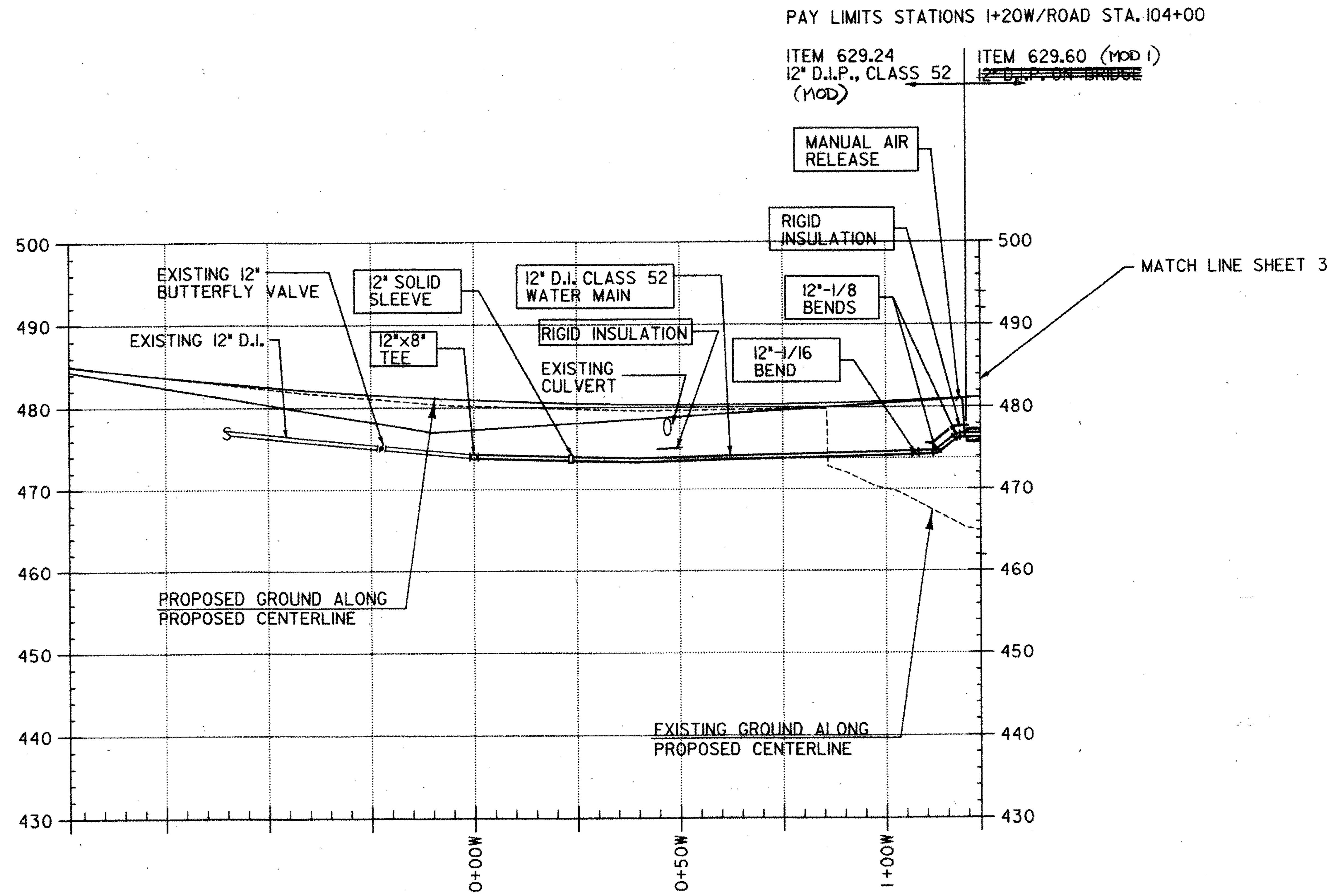
UTILITY SITE PLAN

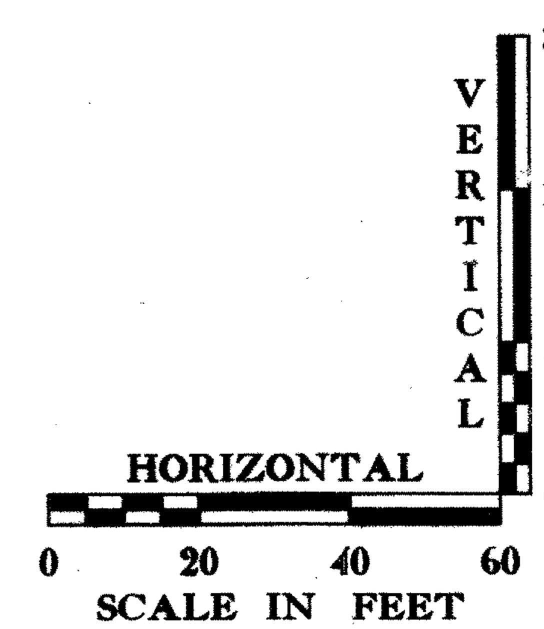
SOUTH ROYALTON VERMONT

Project No.	6170051
Proj. Manager	A. T. RICE
Proj. Designer	R. N. GOODWIN
Drawn By	J.A.M./L.A.W.
Checked By	A. T. RICE
Scale	1" = 40'
Approved	
Date	APRIL 2000

C1

Sheet 1 of 6
D 6170051





NOTE:

INFORMATION ON THIS SHEET SHOULD ONLY BE CONSTRUED TO REPRESENT WATER MAIN, PRESSURE SEWER, AND APPURTENANCES. OTHER INFORMATION SHOWING STRUCTURAL ITEMS, STORM SEWER, AND SANITARY SEWER IS SHOWN ONLY FOR RELATIVE RELATIONSHIPS ONLY. THIS INFORMATION SHOULD BE OBTAINED FROM OTHER DRAWINGS.

STATE OF VERMONT ADAM T. RICE No. 6897 PROFESSIONAL ENGINEER

6-8-00

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: /usr/str4/89J099/sJ099bdr.dgn	
IPARM FILE NAME: /str4/89J099/sJ099lgl.I	PLOT DATE: JUL 98
SURVEYED BY: R. GILMAN	SURVEY DATE: 91
SQUAD LEADER: C.P. WILLIAMS	DRAWN BY:
UTILITY PROFILE	SHEET: 78 OF 118

Dufresne-Henry, Inc.
Consulting Engineers
Montpelier, Vermont 05602
Tel. (802) 229-0711 • FAX (802) 229-0891 • www.d-hinc.com

REV.	DESCRIPTION	BY	DATE
3	CORRECTED SCALE	BLB	6-8-00
2	VT AOT COMMENTS	EET	5-26-00
1	DELETE SEWER	BLB	5-2-00

TOWN OF ROYALTON AND ROYALTON FIRE DISTRICT No. 1
WHITE RIVER BRIDGE UTILITY CROSSINGS

UTILITY PROFILE
STA. 0+00 TO 1+23

SOUTH ROYALTON — VERMONT

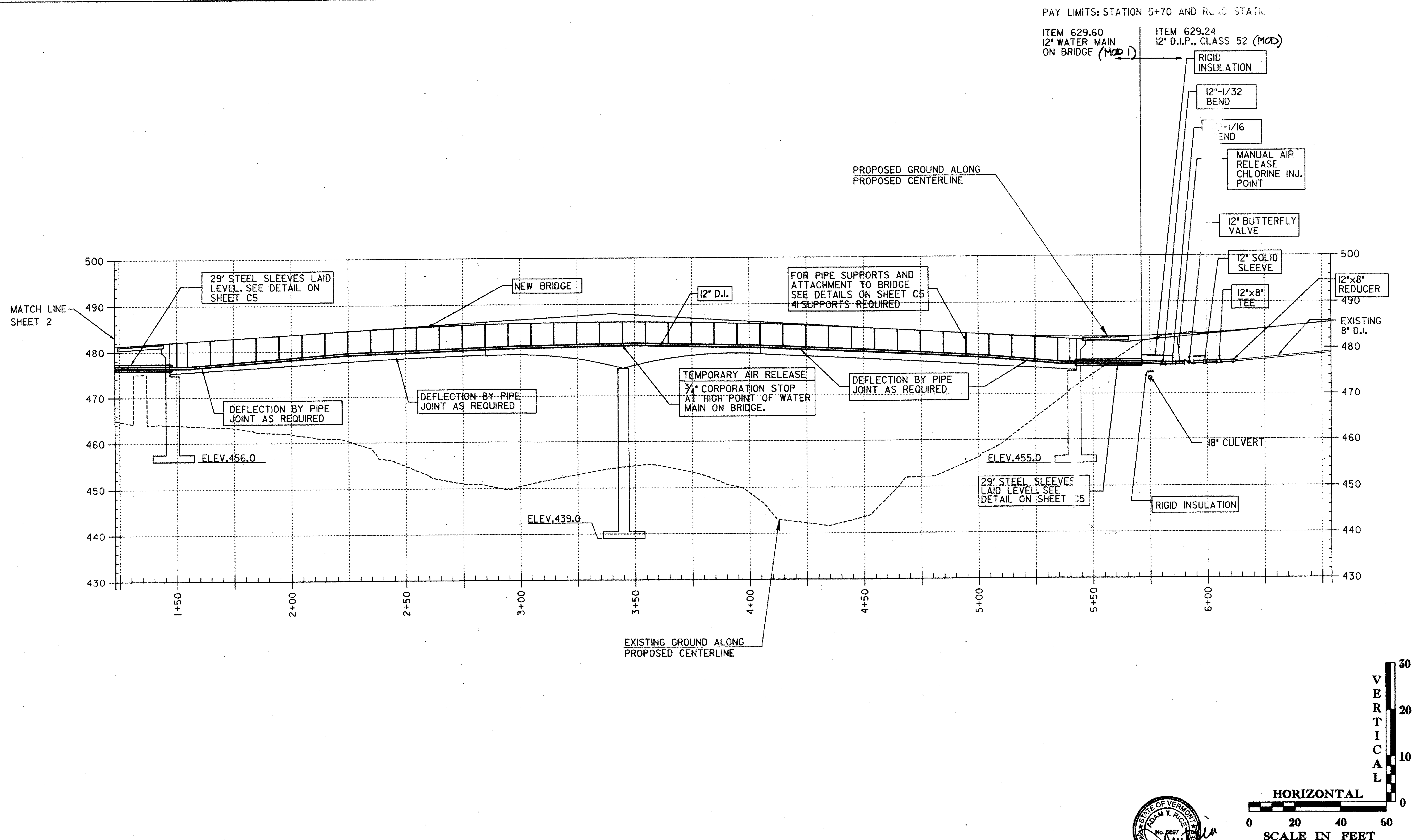
Project No.	6170051
Proj. Manager	A. T. RICE
Proj. Designer	R. N. GOODWIN
Drawn By	M.A.M./L.A.W.
Checked By	A. T. RICE
Scale	AS SHOWN
Approved	
Date	APRIL 2000

C2

Sheet 2 of 6

D 6170051

\drawings\revisions5-25-00.dgn Jun 09, 2000 07:58:09



STATE OF VERMONT
ADAM T. RICE
No. 6897
PROFESSIONAL ENGINEER
6-8-00

NOTE:

INFORMATION ON THIS SHEET SHOULD ONLY BE CONSTRUED TO REPRESENT WATER MAIN, PRESSURE SEWER, AND APPURTENANCES. OTHER INFORMATION SHOWING STRUCTURAL ITEMS, STORM SEWER, AND SANITARY SEWER IS SHOWN ONLY FOR RELATIVE RELATIONSHIPS ONLY. THIS INFORMATION SHOULD BE OBTAINED FROM OTHER DRAWINGS.

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: /usr/str4/89j099/sj099bdr.dgn	
IPARM FILE NAME: /str4/89j099/sj099al.l	PLOT DATE: 01JULY 98
SURVEYED BY: R. GILMAN	SURVEY DATE: 9/91
SQUAD LEADER: C.P. WILLIAMS	DRAWN BY:
UTILITY PROFILE	SHEET: 79 OF 118

DuBois & King / Dufresne-Henry, Inc.
Consulting Engineers
Montpelier, Vermont 05602
Tel. (802) 229-0711 • FAX (802) 229-0981 • www.dufresnehenry.com

REV.	DESCRIPTION	BY	DATE
3	CORRECTED SCALE	BLB	6-8-00
2	VT AOT COMMENTS	EET	5-26-00
1	DELETE SEWER	BLB	5-2-00

TOWN OF ROYALTON AND ROYALTON FIRE DISTRICT No. 1
WHITE RIVER BRIDGE UTILITY CROSSINGS

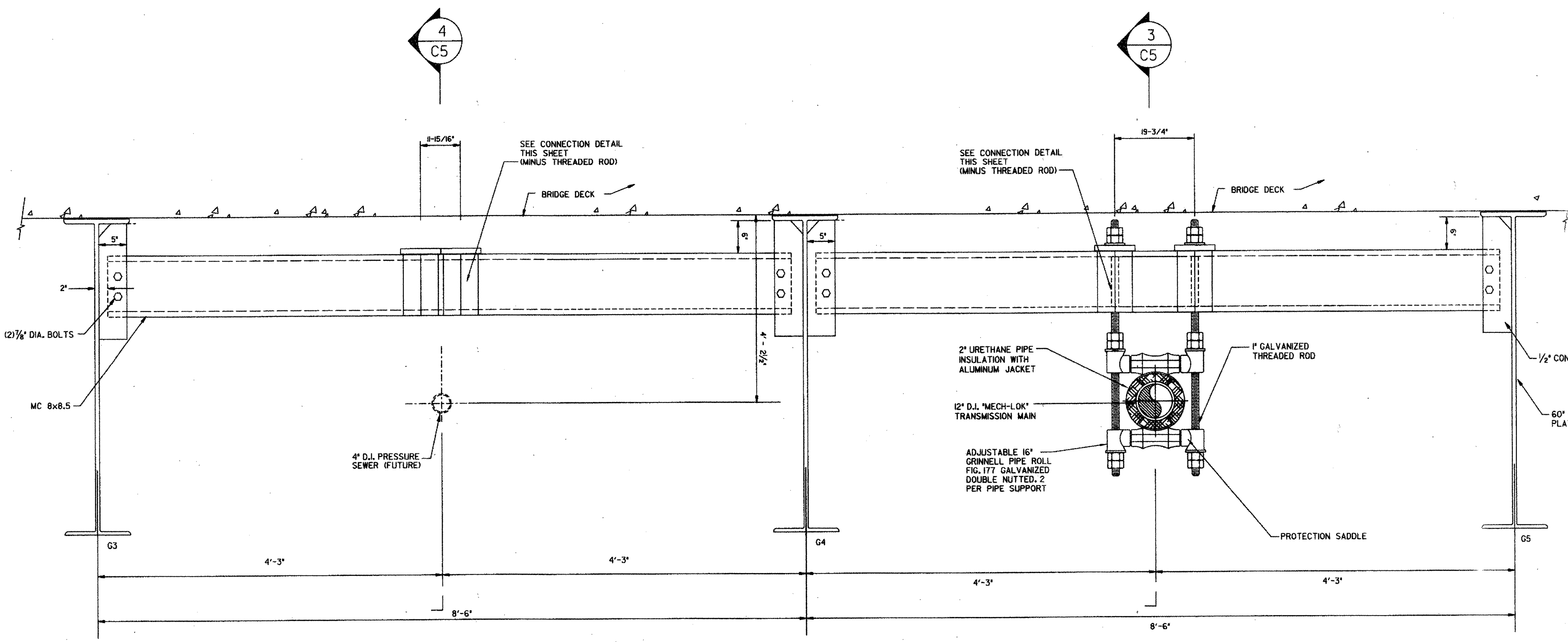
UTILITY PROFILE
STA. 1+23 TO 6+25

SOUTH ROYALTON VERMONT

Project No.	6170051
Proj. Manager	A. T. RICE
Proj. Designer	R. N. GOODWIN
Drawn By	M.A.M./L.A.W.
Checked By	A. T. RICE
Scale	AS SHOWN
Approved	
Date	APRIL 2000

C3

Sheet 3 of 5
D 6170051

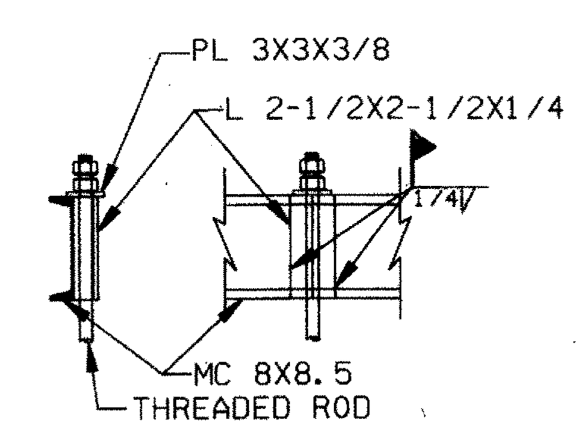


1
C4
SECTION
NOT TO SCALE

NOTE:

PIPE ALIGNMENT GUIDES TO BE INSTALLED AT THE BELL AND MID LENGTH OF EACH PIECE OF PIPE NOT TO EXCEED 10.0' O.C., ALONG THE BRIDGE CROSSING. FOR PIPE ALIGNMENT GUIDE LOCATIONS SEE PROFILE ON SHEET C3.

SEE STATE PLANS FOR BRIDGE TYPICAL SECTION.



CONNECTION DETAIL
NOT TO SCALE

NOTE:

INFORMATION ON THIS SHEET SHOULD ONLY BE CONSTRUED TO REPRESENT WATER MAIN, PRESSURE SEWER, AND APPURTENANCES. OTHER INFORMATION SHOWING STRUCTURAL ITEMS, STORM SEWER, AND SANITARY SEWER IS SHOWN ONLY FOR RELATIVE RELATIONSHIPS ONLY. THIS INFORMATION SHOULD BE OBTAINED FROM OTHER DRAWINGS.

STATE OF VERMONT · ADAM T. RICE · No. 6897 · PROFESSIONAL ENGINEER
6-6-00

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: /usr/str /89J099/sJ099bdr.dgn	
IPARM FILE NAME: /str4/89 099/sJ099lgl.I	PLOT DATE: 01 JULY 98
SURVEYED BY: R. GILMA	SURVEY DATE: 9/91
SQUAD LEADER: C.P. WIL AMS	DRAWN BY:
12" WATER MAIN IN BRIDGE ION	SHEET: 80 OF 118

Dufresne-Henry, Inc.
Consulting Engineers
Montpelier, Vermont 05602
Tel. (802) 229-0711 • FAX (802) 229-0881 • www.d-hinc.com

REV.	DESCRIPTION	BY	DATE
3	CORRECTED SCALE	BLB	6-8-00
2	BAY LOCATIONS PER VT AOT	EET	5-26-00
1	DELETE SEWER	BLB	5-2-00

TOWN OF ROYALTON AND ROYALTON FIRE DISTRICT No. 1
WHITE RIVER BRIDGE UTILITY CROSSINGS

UTILITY LOCATIONS
UNDER BRIDGE

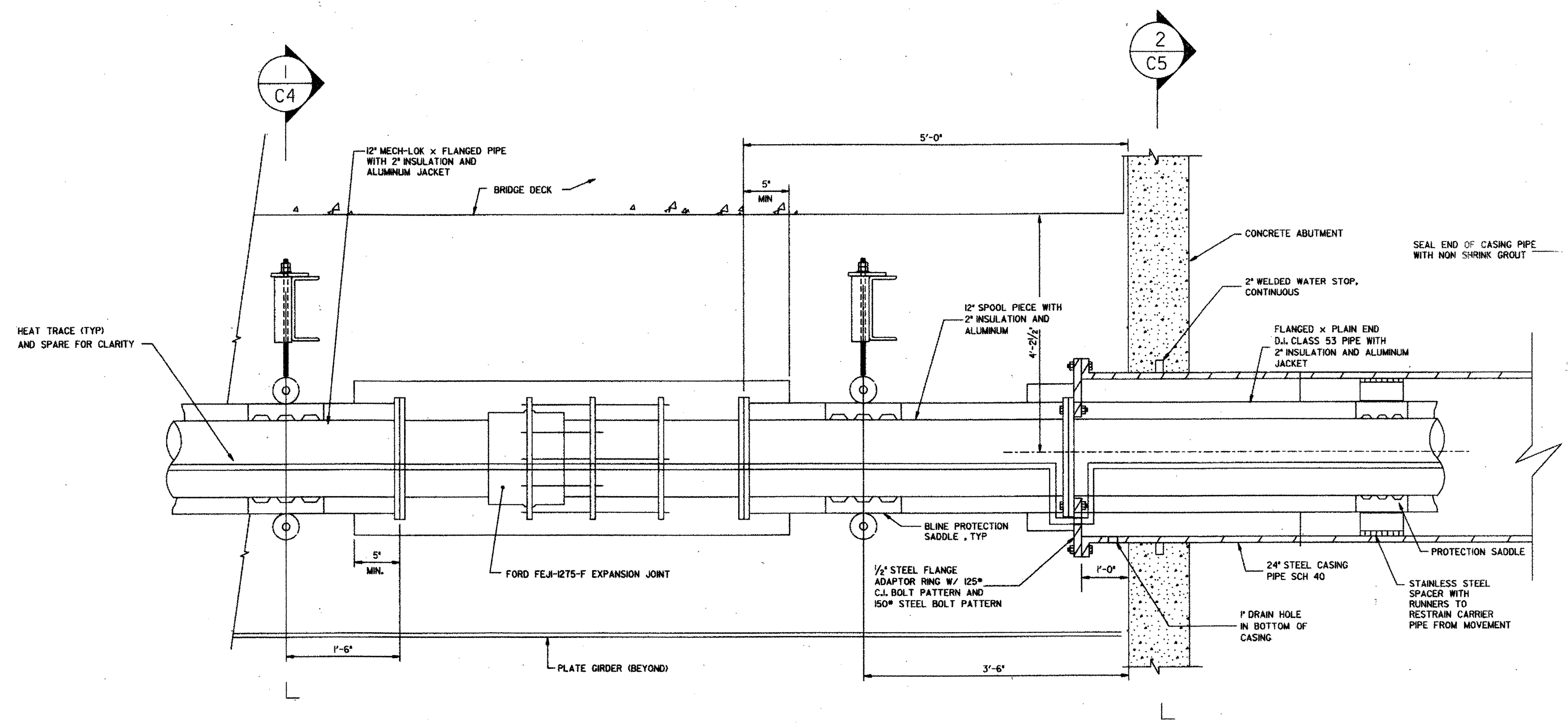
SOUTH ROYALTON VERMONT

Project No.	6170051
Proj. Manager	A. T. RICE
Proj. Designer	R. N. GOODWIN
Drawn By	M.A.M./L.A.W.
Checked By	A. T. RICE
Scale	AS SHOWN
Approved	
Date	APRIL 2000

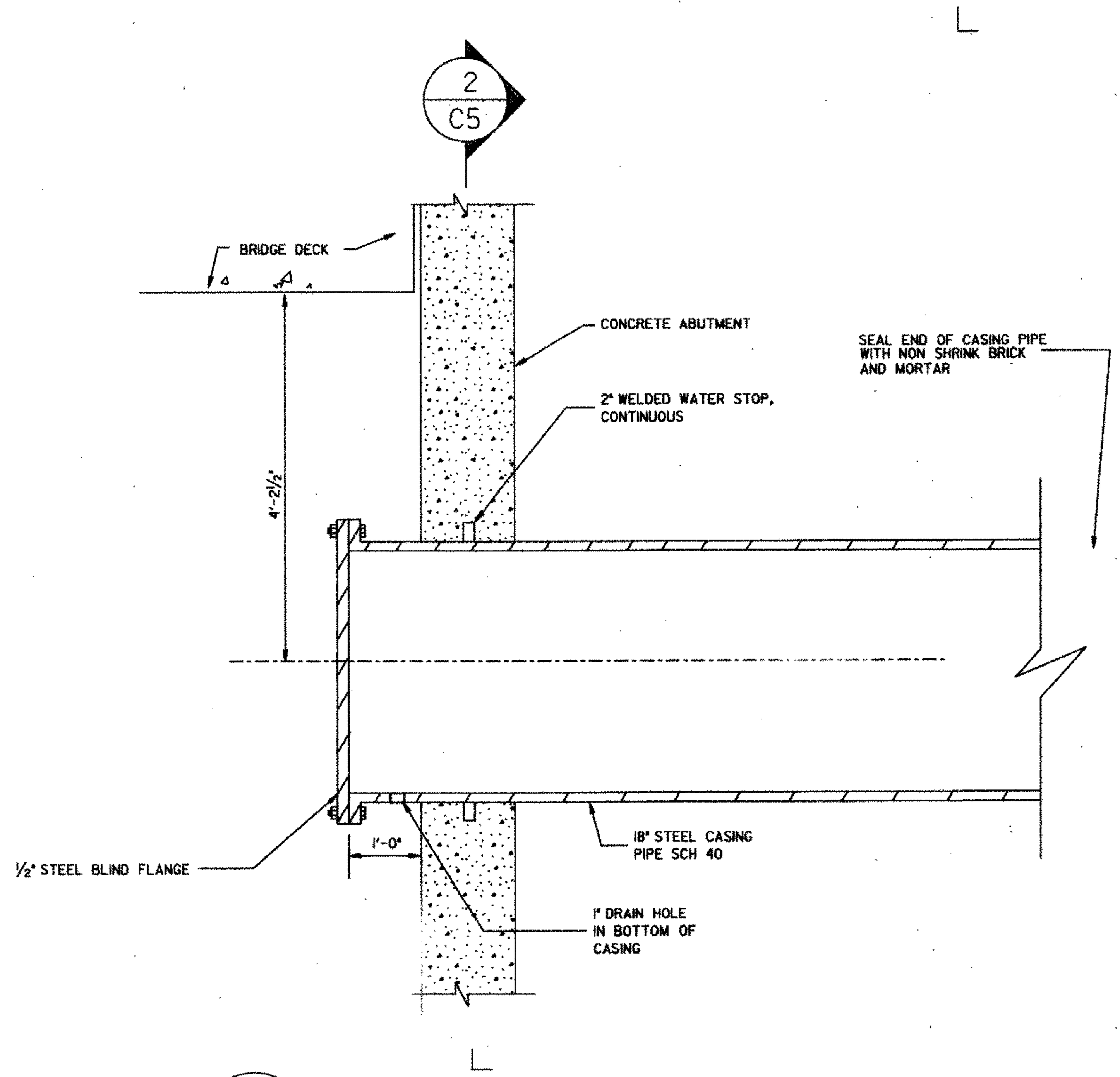
C4

Sheet 4 of 6
D 6170051

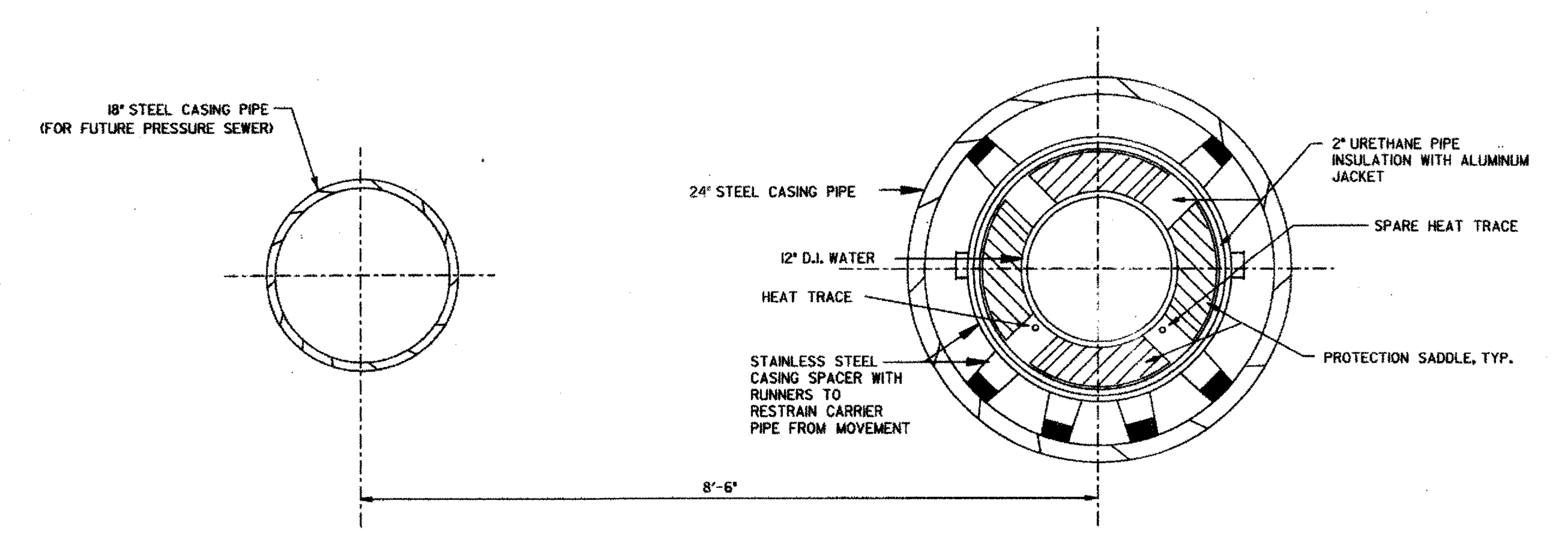
..\drawings\revisions5-25-00.dgn Jun. 09, 2000 07:57:14



3
C5
EXPANSION JOINT AND WATER MAIN SUPPORT DETAIL
NOT TO SCALE TYPICAL BOTH ENDS OF BRIDGE



4
C5
PRESSURE SEWER SLEEVE DETAIL
NOT TO SCALE TYPICAL BOTH ENDS OF BRIDGE



2
C5
SECTION
NOT TO SCALE

NOTE:
INSTALL 3 STAINLESS STEEL SPACERS INSIDE STEEL CASING PIPE PER LENGTH OF DUCTILE IRON PIPE AT BOTH ENDS OF THE BRIDGE

NOTE:
INFORMATION ON THIS SHEET SHOULD ONLY BE CONSTRUED TO REPRESENT WATER MAIN, PRESSURE SEWER, AND APPURTENANCES. OTHER INFORMATION SHOWING STRUCTURAL ITEMS, STORM SEWER, AND SANITARY SEWER IS SHOWN ONLY FOR RELATIVE RELATIONSHIPS ONLY. THIS INFORMATION SHOULD BE OBTAINED FROM OTHER DRAWINGS.

STATE OF VERMONT
WILLIAM T. RICE
No. 6897
PROFESSIONAL ENGINEER
6-8-00

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: /usr/stc4 89J099/sJ099bdr.dgn	
IPARM FILE NAME: /stc4/89 99/sJ099lgl.l	PLOT DATE: 01 JULY 98
SURVEYED BY: B. GILMA	SURVEY DATE: 9/91
SQUAD LEADER: C.P. WILLIAMS	DRAWN BY:
UTILITY SUPPORT DETAILS	SHEET: 81 OF 118

Dufresne-Henry, Inc.
Consulting Engineers
Montpelier, Vermont 05602
Tel (802) 229-0711 • FAX (802) 229-0611 • www.dufresnehenry.com

REV.	DESCRIPTION	BY	DATE
3	CORRECTED SCALE	BLB	6-8-00
2	BAY LOCATIONS PER VT AOT	EET	5-26-00
1	DELETE SEWER	BLB	5-2-00

TOWN OF ROYALTON AND ROYALTON FIRE DISTRICT No. 1
WHITE RIVER BRIDGE UTILITY CROSSINGS

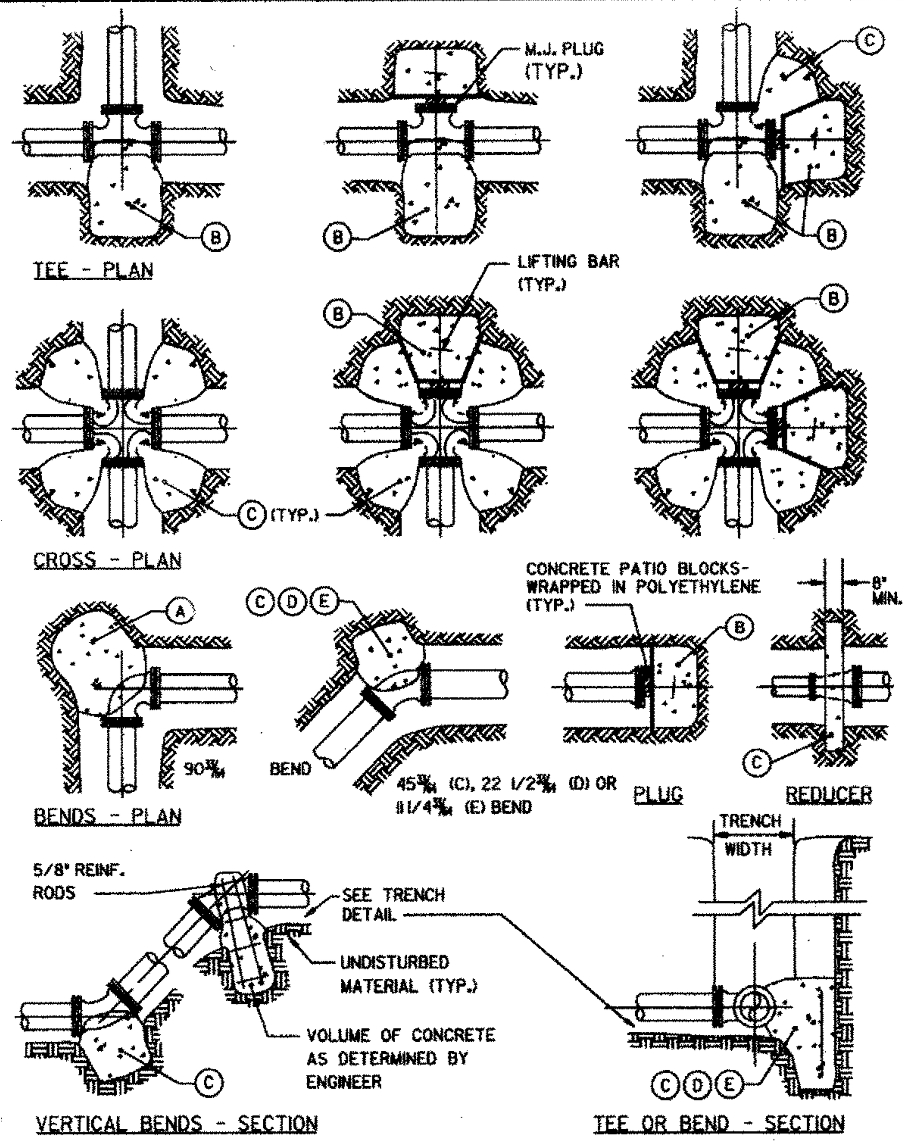
UTILITY SUPPORT DETAILS

SOUTH ROYALTON VERMONT

Project No.	6170051
Proj. Manager	A. T. RICE
Proj. Designer	R. N. GOODWIN
Drawn By	M.A.M./L.A.W.
Checked By	A. T. RICE
Scale	AS SHOWN
Approved	
Date	APRIL 2000

C5

Sheet 5 of 6



THRUST BLOCK DETAILS

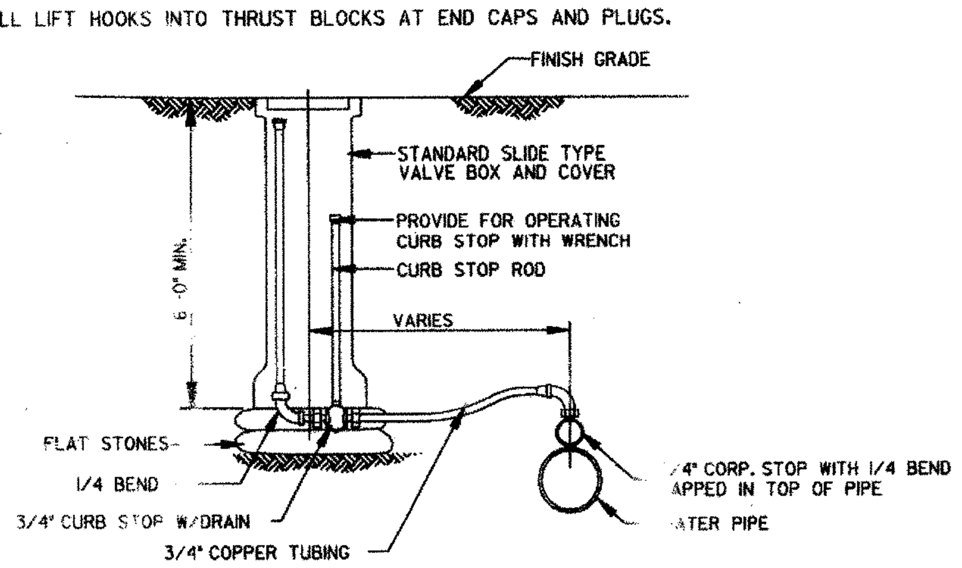
NOT TO SCALE

THRUST BLOCK SCHEDULE
SQUARE FEET OF CONCRETE THRUST
BLOCKING BEARING ON UNDISTURBED MATERIAL

REACTION TYPE		PIPE SIZE											
		4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"
TEST PRESSURE = 100 PSIG	(A)	0.89	2.19	3.92	5.57	8.62	10.91	15.41	18.02	24.06	34.64	53.83	77.39
	(B)	0.65	1.55	2.76	4.19	6.09	8.37	10.89	13.87	17.01	24.49	38.06	54.72
	(C)	0.48	1.19	2.12	3.01	4.66	5.91	8.34	9.71	13.02	18.75	29.13	41.88
	(D)	0.25	0.60	1.08	1.54	2.37	3.01	4.25	4.97	6.64	9.56	14.85	21.35
	(E)	0.13	0.30	0.54	0.77	1.19	1.52	2.12	2.51	3.33	4.79	7.45	10.71
Other test pressures for the above reactions		TEST PRESSURE TO BE 200 PSI MIN. AT LOW END OF THE TEST SECTION. SQUARE FEET OF CONCRETE THRUST BLOCKING FOR OTHER TEST PRESSURES IS DIRECTLY PROPORTIONAL TO THE ABOVE TABLE. FOR INSTANCE, AT 200 PSI TEST PRESSURE FOR ABOVE NUMBERS DOUBLE.											

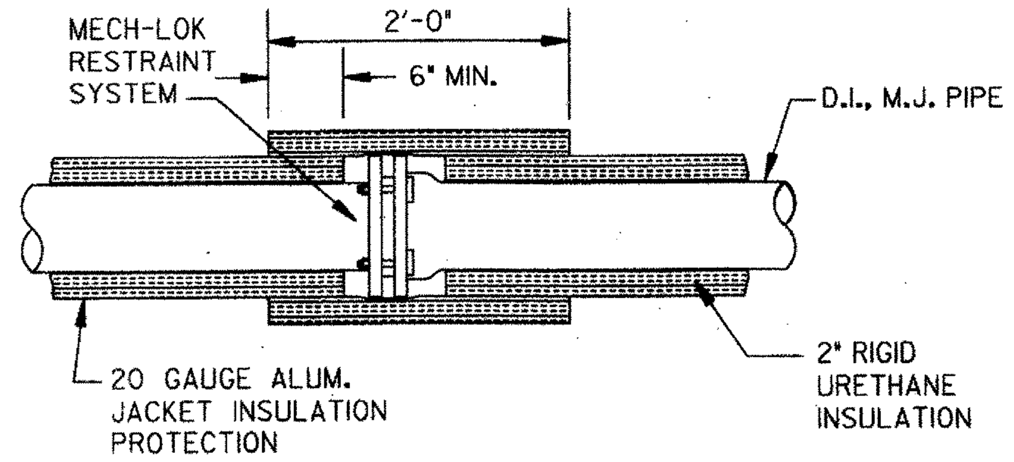
NOTES:

1. POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL. WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE.
2. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
3. PLACE CONCRETE PATIO BLOCKS IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCK.
4. REQUIREMENTS OF THE ABOVE TABLE PRESUME MINIMUM SOIL BEARING OF 1 TON PER SQUARE FOOT, AND MAY BE VARIED BY THE ENGINEER TO MEET OTHER CONDITIONS ENCOUNTERED.
5. MEGA-LUG RETAINER GLANDS ARE REQUIRED FOR ALL MECHANICAL JOINTS. THESE GLANDS DO NOT REDUCE THE REQUIREMENTS FOR THRUST RESTRAINT.
6. ALL FITTINGS SHALL BE WRAPPED IN POLYETHYLENE OR BUILDING PAPER PRIOR TO INSTALLATION OF CONCRETE RESTRAINT.
7. THREADED ROD SHALL BE ANSI A242 FY50 PIPE RESTRAINT NUTS TO MATCH AWWA C111. THREADED RODS AND NUTS TO BE FIELD COATED WITH BITUMINOUS PAINT.
8. THRUST RESTRAINT IS REQUIRED FOR ALL TEES, BENDS, REDUCERS, CAPS, PLUGS, OR CROSSES.
9. INSTALL LIFT HOOKS INTO THRUST BLOCKS AT END CAPS AND PLUGS.



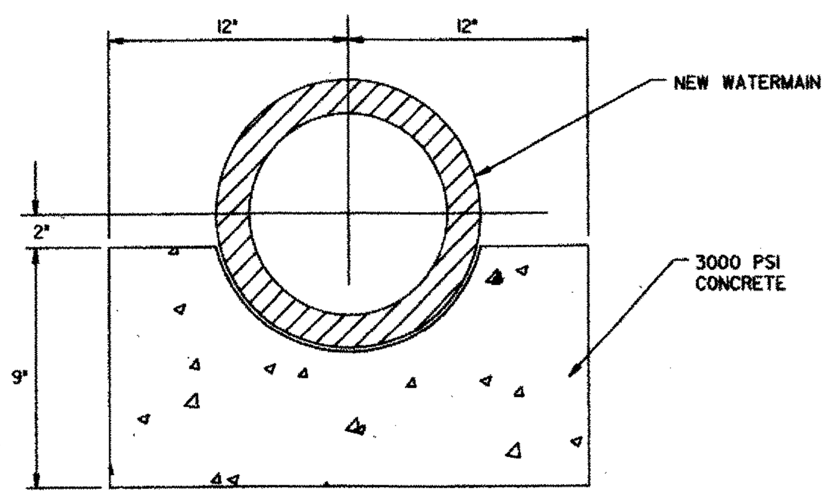
TYPICAL INSTALLATION-TRAVEL WAY FOR AIR VENT OR CHLORINATION INJECTION

NOT TO SCALE



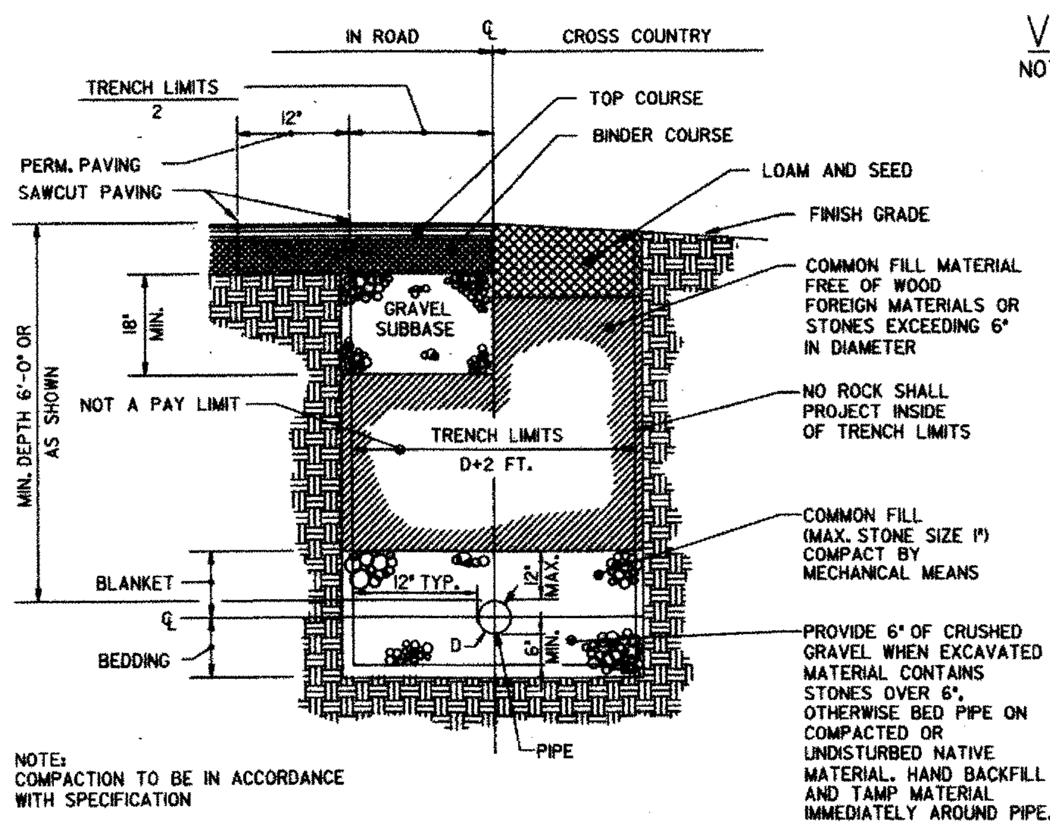
DETAIL OF INSULATION AT JOINT FOR RESTRAINED PIPE

NOT TO SCALE



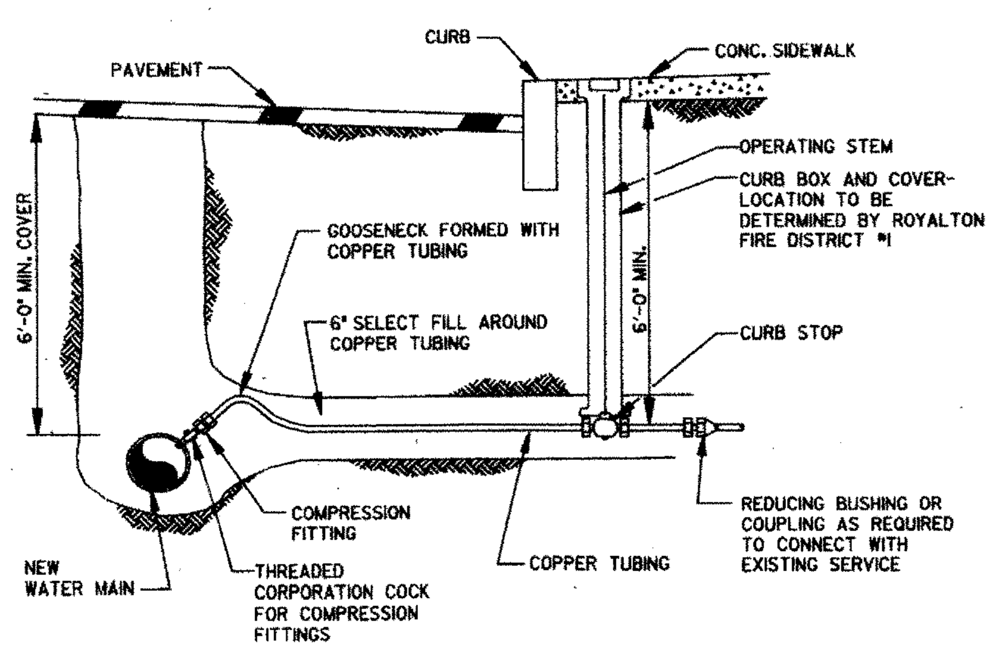
CONCRETE CRADLE DETAIL

NOT TO SCALE



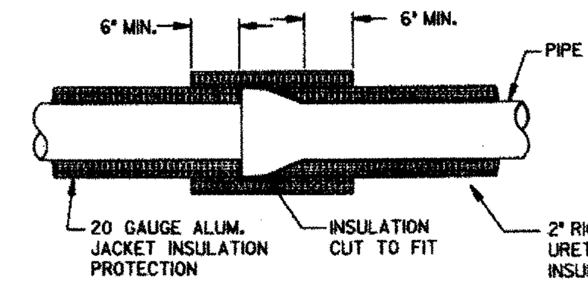
TYPICAL DUCTILE IRON TRENCH DETAIL

NOT TO SCALE



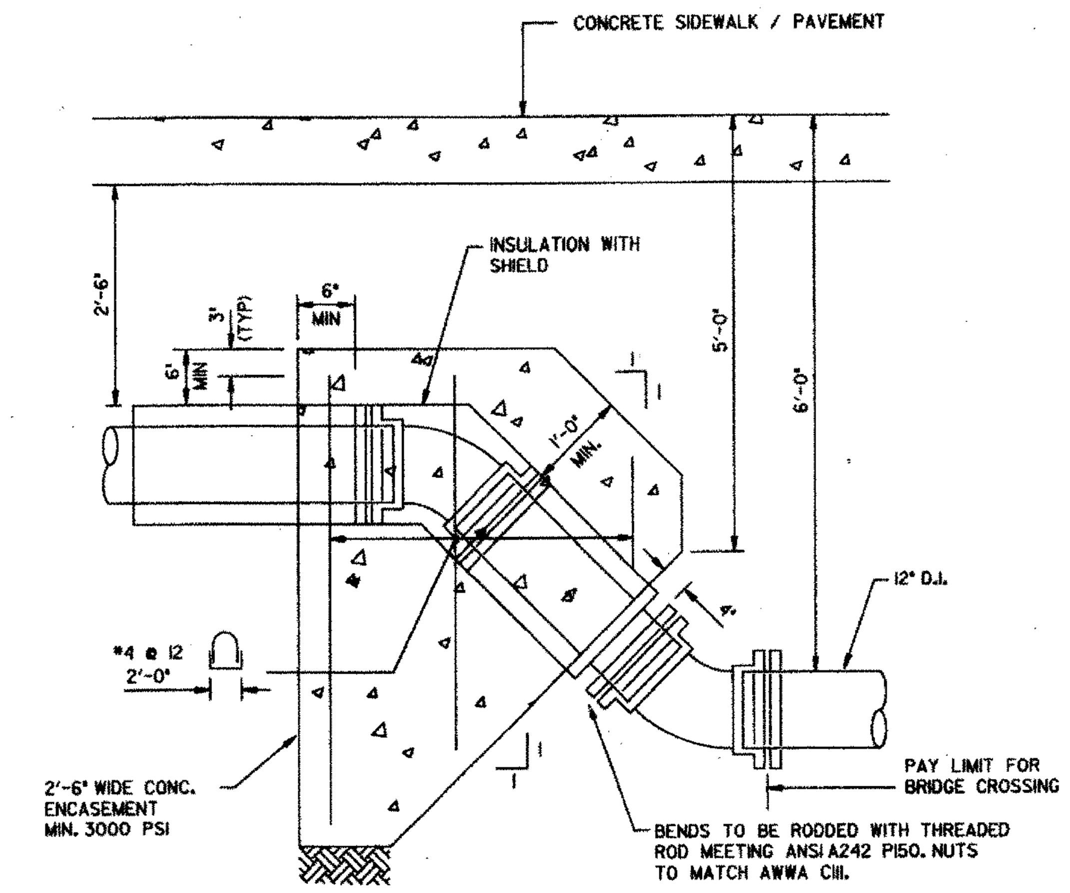
TYPICAL SERVICE CONNECTION DETAIL

NOT TO SCALE



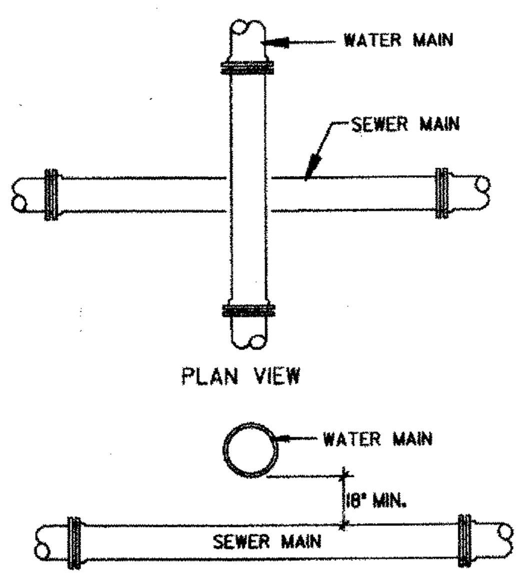
DETAIL OF INSULATION FOR BURIED PIPE

NOT TO SCALE



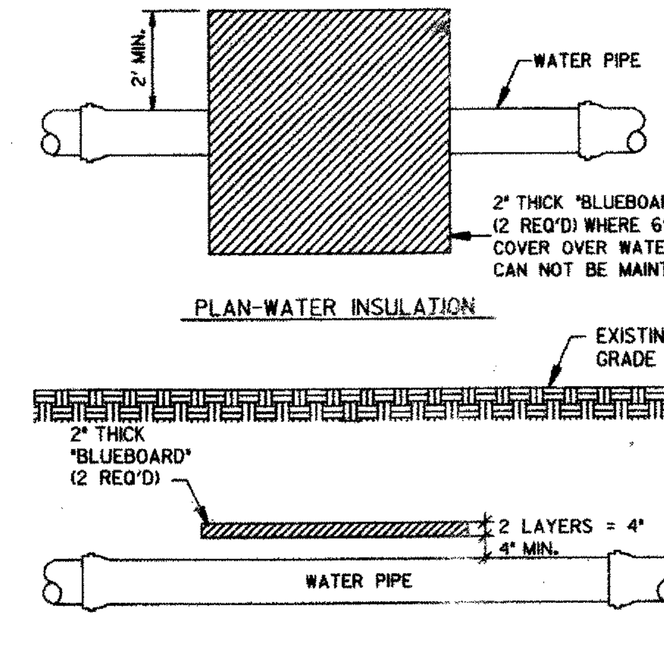
VERTICAL BEND CONCRETE ENCASEMENT DETAIL

NOT TO SCALE



WATER AND SEWER CROSSING DETAIL

NOT TO SCALE



RIGID BOARD INSULATION DETAIL

NOT TO SCALE

NOTE:
INFORMATION ON THIS SHEET SHOULD ONLY BE CONSTRUED TO REPRESENT WATER MAIN AND APPURTENANCES. OTHER INFORMATION SHOWING STRUCTURAL ITEMS, STORM SEWER AND SANITARY SEWER IS SHOWN FOR RELATIVE RELATIONSHIPS ONLY. THIS INFORMATION SHOULD BE OBTAINED FROM OTHER DRAWINGS.

GENERAL CONSTRUCTION NOTES:

1. CONTRACTOR MUST ESTABLISH TEMPORARY WATER SERVICE FOR ALL AFFECTED USERS IN THE PROJECT AREA. THIS TEMPORARY WATER SERVICE MUST BE ESTABLISHED, DISINFECTED, AND TESTED AS PER THE SPECIFICATIONS. POTABLE WATER MUST BE PROVIDED FOR ALL USERS.
2. EXPLORATORY EXCAVATION IS REQUIRED TO LOCATE UNDERGROUND UTILITES. CONTRACTOR SHALL USE EXTREME CAUTION TO PREVENT DAMAGE TO EXISTING UTILITIES.
3. LOCATION OF PROPOSED WATER MAIN IS INTENDED NOT TO DISTURB ROOT SYSTEMS OF EXISTING TREES OR SHRUBS. CONTRACTOR SHALL EXERCISE DUE CARE TO PREVENT DAMAGE THERETO. ALL GRASS AREAS DISTURBED SHALL BE RESTORED TO CLASS A RESTORATION. CONTRACTOR IS RESPONSIBLE FOR REMOVAL, CARE & REPLANTING OF ALL PLANTINGS AND SHRUBS DISTURBED DURING CONSTRUCTION.
4. ALL WORK TO BE DONE SHALL BE WITHIN PUBLIC RIGHT-OF-WAY OR EASEMENT AREAS.
5. MATERIAL MAY BE REQUIRED. SOLID SLEEVE COUPLINGS WILL BE REQUIRED.
6. MINIMUM VERTICAL CLEARANCE BETWEEN NEW WATER MAINS AND ALL EXISTING UTILITIES, EXCEPT SEWERS TO BE SIX (6) INCHES AT CROSSING LOCATIONS. FOR SEWERS SEE NOTE BELOW.
7. ALTHOUGH NOT SHOWN EXISTING SEWER SERVICES WILL BE REPAIRED OR RELOCATED AS NECESSARY IN ORDER TO MAINTAIN FLOW. THE TOWN OF ROYALTON WILL ASSIST IN LOCATING SERVICES.
8. ALL BURIED FITTINGS MUST INCLUDE CONCRETE THRUST BLOCKS. REFER TO THRUST BLOCK, HYDRANT BRANCH, AND TRENCH DETAILS SHOWN ON THIS SHEET.
9. MECHANICAL JOINT RESTRAINTS SHALL BE USED WHERE VALVES WILL BE SUBJECTED TO SERVICE PRESSURES ON ONE SIDE BEFORE BEING FULLY INCORPORATED INTO THE DISTRIBUTION SYSTEM.
10. WATER MAINS TO HAVE 6.0 FEET MIN. COVER UNLESS OTHERWISE STATED OR SHOWN ON THE PROFILES. WHEN 6.0 FEET OF COVER CANNOT BE MAINTAINED 4" RIGID BOARD INSULATION SHALL BE USED. DEPTH OF COVER SHALL NOT BE LESS THAN 4 FEET EVEN WITH INSULATION.
11. ALL MECHANICAL JOINT FITTINGS, VALVES, AND HYDRANTS SHALL INCORPORATE A MEGALUG RETAINER GLAND INSTEAD OF THE COMMON FOLLOWER GLAND.
12. ALL EXISTING UNDERGROUND UTILITES WERE LOCATED USING THE BEST AVALABLE INFORMATION. CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF ALL UTILITES WHETHER OR NOT THEY ARE SHOWN ON THE PLANS. ALL REPAIRS TO DAMAGED UTILITIES SHALL BE MADE BY THE CONTRACTOR USING MATERIALS APPROVED BY THE ENGINEER AT NO ADDITIONAL EXPENSE OF THE STATE OR THE ROYALTON FIRE DISTRICT #1.
13. CONTRACTOR IS RESPONSIBLE FOR FLUSHING, PRESSURE TESTING AND DISINFECTING ALL NEW WATER MAIN. CHLORINE INJECTION POINTS SHALL BE INSTALLED WHERE REQUIRED AND APPROVED BY THE ENGINEER PRIOR TO INSTALLATION AND REMOVED UPON COMPLETION OF TESTING.
14. CONTRACTOR SHALL VERIFY LOCATION OF ALL OVERHEAD AND UNDERGROUND ELECTRIC AND TELEPHONE LINES AND TAKE NECESSARY PRECAUTIONS IN STRICT ACCORDANCE WITH OSHA STANDARDS DURING CONSTRUCTION. CONTRACTOR SHALL CONTACT LOCAL POWER AND TELEPHONE COMPANIES REGARDING ANY NECESSARY SUPPORT OF ANY UTILITY POLES DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR THE SUPPORT OR TEMPORARY RELOCATION OF ALL UTILITY POLES AFFECTED BY THE CONSTRUCTION.
15. WHERE THE WATERMAIN CROSSES OVER OR UNDER A STORM DRAIN, A FULL LENGTH OF D.I. WATER PIPE SHALL BE PLACED WITH THE MID-LENGTH CENTERED UNDER THE STORM DRAIN.
16. CONTRACTOR TO PROVIDE CAPS FOR ALL ABANDONED PIPING AS REQUIRED. ALL TYPES OF PIPE CAPPING TO BE PAID FOR UNDER MISCELLANEOUS WORK AND CLEAN-UP. ALL PIPE TO BE ABANDONED SHALL BE DRAINED OF WATER AND CAPPED.

LOCAL VALVE OPERATION

1. EXISTING AND PROPOSED MAIN LINE BUTTERFLY VALVES AND GATE VALVES OPEN LEFT OR COUNTER-CLOCKWISE. OPERATION OF GATE VALVES WILL BE PERFORMED BY THE ROYALTON FIRE DISTRICT #1 STAFF ONLY.
2. GATE VALVES SHALL BE RESILIENT WEDGE GATE VALVES AND SHALL MEET OF EXCEED THE REQUIREMENTS AWWA C515. BONNET, BODY, AND STUFFING BOX BOLTS AND NUTS SHALL BE STAINLESS STEEL. VALVES SHALL BE AMERICAN FLOW CONTROL SERIES 2500, OR EQUAL.
3. BUTTERFLY VALVES SHALL BE THE RUBBER-SEALED TIGHT-CLOSING TYPE AND SHALL MEET OR EXCEED THE REQUIREMENTS OF AWWA C-504, VALVE SHALL BE MUELLER LINESEAL XP OR M&H 450 AWWA C-504 BUTTERFLY VALVE, OR EQUAL.
4. ALL INTERCONNECTIONS TO THE EXISTING SYSTEM CAN ONLY BE MADE WITH THE WRITTEN PERMISSION OF THE FIELD ENGINEER.

WATER AND SEWER SEPARATION

1. PARALLEL INSTALLATION: MAINTAIN 5' MINIMUM LATERAL DISTANCE BETWEEN STORM DRAIN AND WATERLINES. MAINTAIN 10' MINIMUM LATERAL DISTANCE BETWEEN SEWER AND WATER LINES. THESE DISTANCES SHALL BE MEASURED EDGE TO EDGE. IN CASES WHERE IT IS NOT PRACTICAL TO MAINTAIN THESE SEPARATIONS, THE REVIEWING AUTHORITY MAY ALLOW DEVIATION ON A CASE BY CASE BASIS.

2. WATER MAIN CROSSING SEWERS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18" BETWEEN OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER. THIS SHALL BE THE CASE WHERE THE WATER MAIN IS EITHER ABOVE OR BELOW THE SEWER. IF THE SEWER MAIN IS OVER THE WATER MAIN, THE FIRST SEWER PIPE JOINTS ON EACH SIDE OF THE WATER MAIN MUST BE CONCRETE ENCASED. SPECIAL STRUCTURAL SUPPORT FOR THE WATER AND SEWER PIPES MAY BE REQUIRED.

3. IF IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS DESCRIBED ABOVE, BOTH WATER MAIN AND SEWER MUST BE CONSTRUCTED OF PRESSURE TYPE PIPE AND BE PRESSURE TESTED TO 200 PSI TO ASSURE TIGHTNESS BEFORE BACKFILLING. REFER TO WATER/SEWER CROSSING DETAIL.

PROJECT: ROYALTON	PROJECT NO. BRZ ... (22)
DESIGN FILE NAME: ...j099bdr.dgn	PLOT DATE: JULY 98
IPARM FILE NAME: ...j099lol.l	SURVEY DATE: ...291
SURVEYED BY: R. GILMAS	DRAWN BY:
SQUAD LEADER: C.P. WILLIAMS	
WATER DETAILS	SHEET: 82 OF 118

6-8-00

Dufresne-Henry, Inc.
Consulting Engineers
Montpelier, Vermont 05602
Tel. (802) 229-0711 • FAX (802) 229-0841 • www.dh-inc.com

REV.	DESCRIPTION	BY	DATE
	CORRECTED SCALE	BLB	6-8-00
	VT AOT COMMENTS	EET	5-26-00
	DELETE SEWER	BLB	5-2-00

TOWN OF ROYALTON AND ROYALTON FIRE DISTRICT No. 1
WHITE RIVER BRIDGE UTILITY CROSSINGS

WATER DETAILS

SOUTH ROYALTON VERMONT

Project No.	6170051
Proj. Manager	A. T. RICE
Proj. Designer	R. N. GOODWIN
Drawn By	M. A. MOYER
Checked By	A. T. RICE
Scale	AS SHOWN
Approved	
Date	APRIL 2000

C6

Sheet 6 of 6

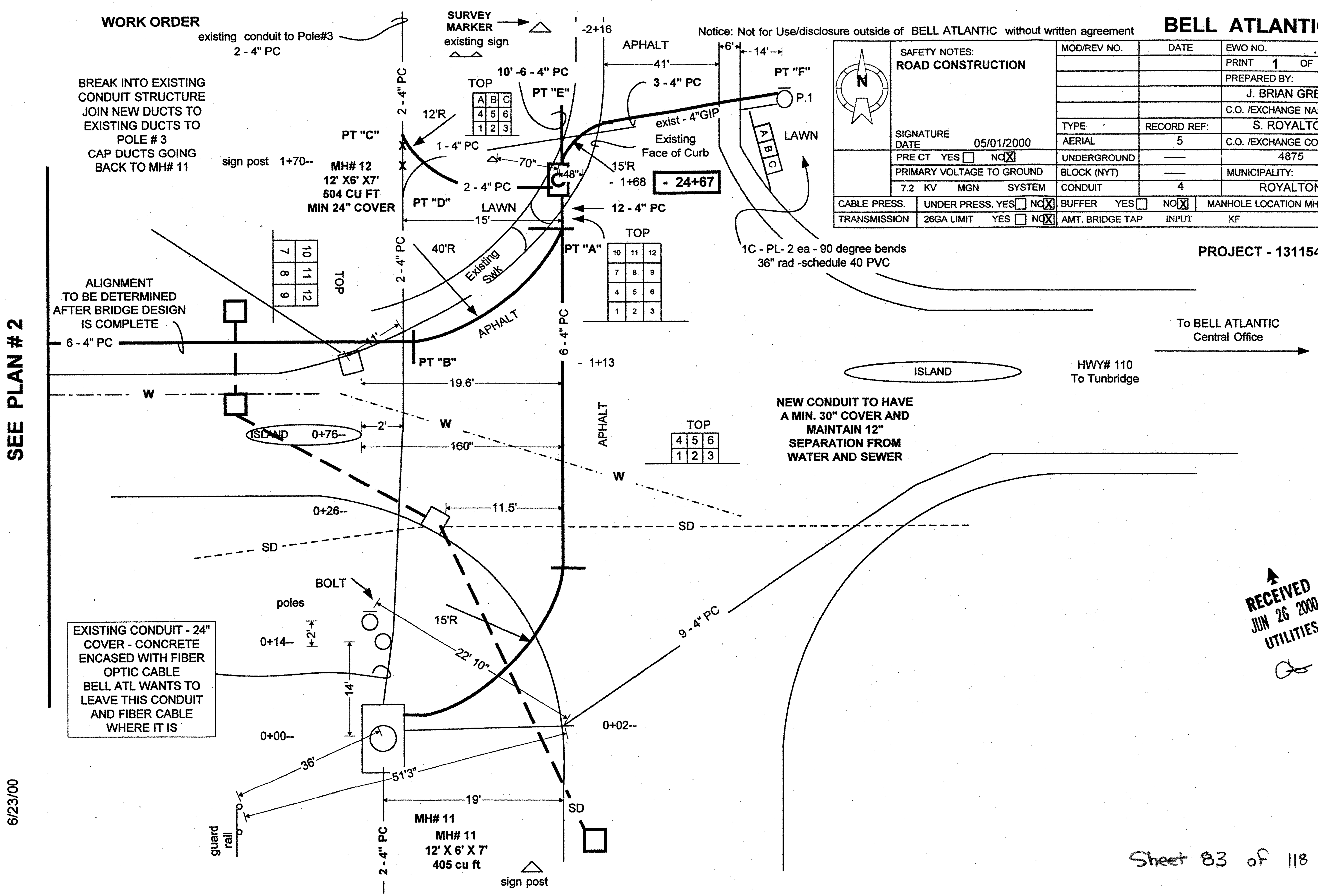
D 6170051

Notice: Not for Use/disclosure outside of BELL ATLANTIC without written agreement

BELL ATLANTIC

SAFETY NOTES: ROAD CONSTRUCTION	MOD/REV NO.	DATE	EWO NO.	
			PRINT 1 OF	
			PREPARED BY:	J. BRIAN GRESL
			C.O. /EXCHANGE NAME:	S. ROYALTON
SIGNATURE DATE 05/01/2000	TYPE	RECORD REF:		
	AERIAL	5	C.O. /EXCHANGE CODE:	4875
PRE CT YES ☐ NO ☒	UNDERGROUND	—		
PRIMARY VOLTAGE TO GROUND	BLOCK (NYT)	—	MUNICIPALITY:	
7.2 KV MGN SYSTEM	CONDUIT	4	ROYALTON	
CABLE PRESS.	UNDER PRESS. YES ☐ NO ☒	BUFFER YES ☐ NO ☒	MANHOLE LOCATION MH# NA	
TRANSMISSION	26GA LIMIT YES ☐ NO ☒	AMT. BRIDGE TAP	INPUT	KF

PROJECT - 131154



RECEIVED
JUN 26 2000
UTILITIES

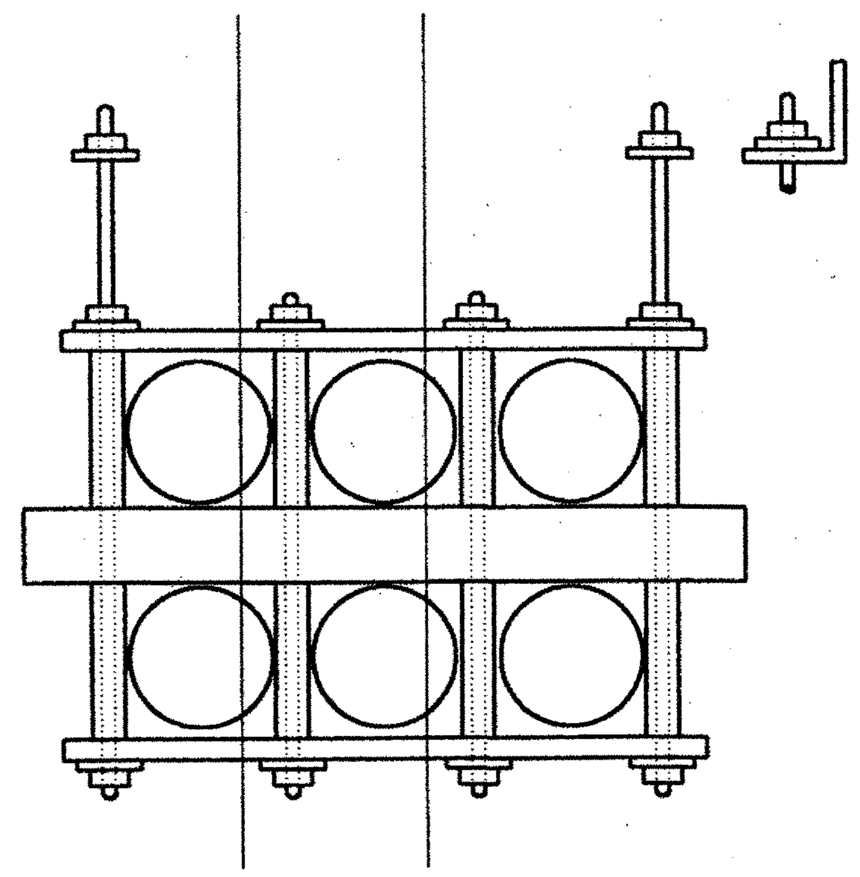
Sheet 83 of 118

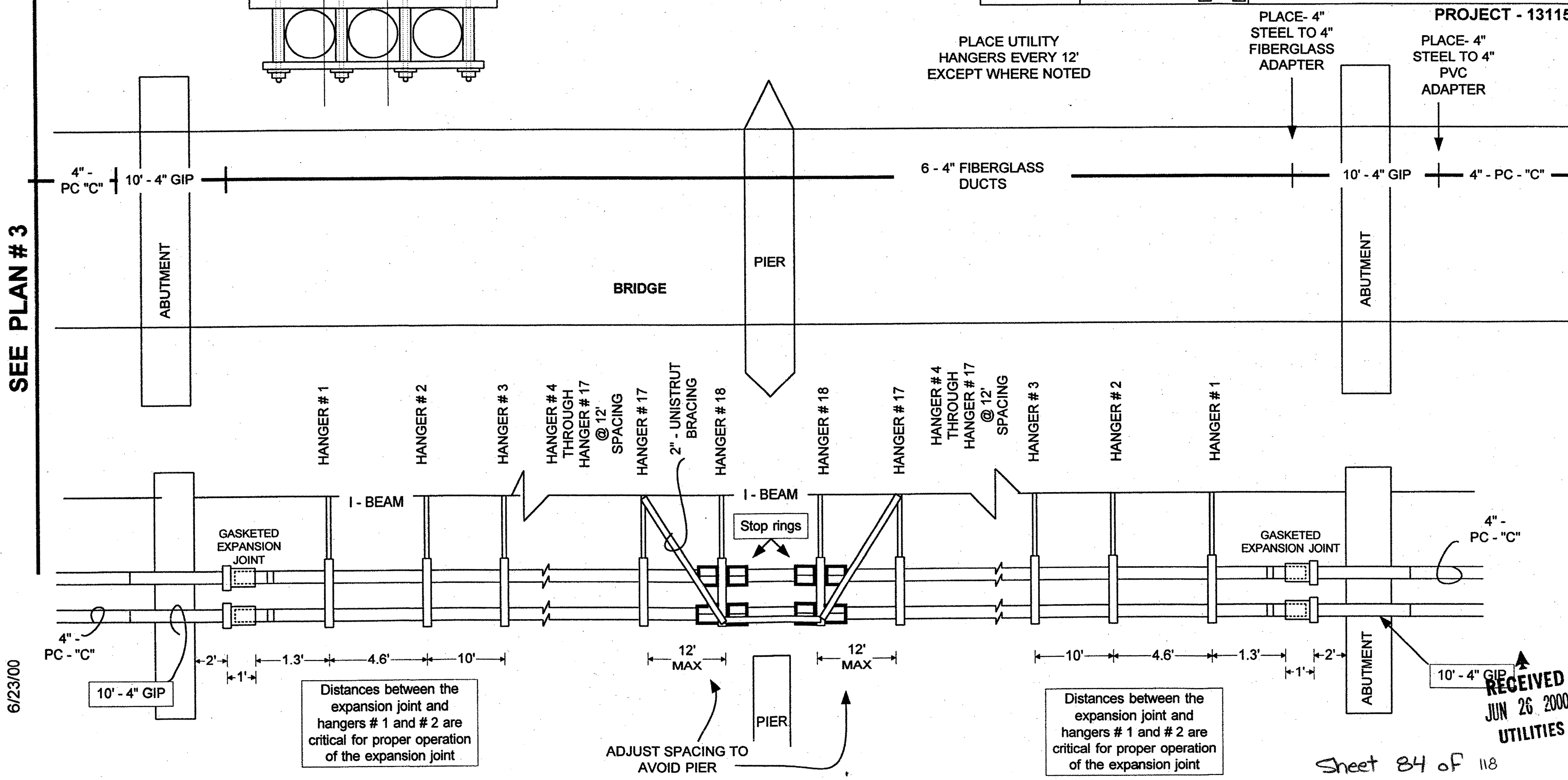
WORK ORDER

Notice: Not for Use/disclosure outside of BELL ATLANTIC without written agreement

BELL ATLANTIC

N	SAFETY NOTES: bridge construction, road work	MOD/REV NO.	DATE	EWO NO.
				PRINT 2 OF
				PREPARED BY:
				J. BRIAN GRESL
				C.O. /EXCHANGE NAME:
		TYPE -	RECORD REF:	S. ROYALTON
	SIGNATURE DATE 5/18/2000	AERIAL	INPUT	C.O. /EXCHANGE CODE:
	PRE CT YES ☐ NO ☒	UNDERGROUND	—	4875
	PRIMARY VOLTAGE TO GROUND	BLOCK (NYT)	—	MUNICIPALITY:
	7.2 KV MGN SYSTEM	CONDUIT	4	ROYALTON
CABLE PRESS.	UNDER PRESS. YES ☐ NO ☒	BUFFER YES ☐ NO ☒	MANHOLE LOCATION MH# NA	
TRANSMISSION	26GA LIMIT YES ☐ NO ☒	AMT. BRIDGE TAP	INPUT	KF





6/23/00

RECEIVED JUN 26 2000 UTILITIES

Sheet 84 of 118

WORK ORDER

4C - PL 6 - 4" PC
MH#13 TO PT"A" = '406

Notice: Not for Use/disclosure outside of BELL ATLANTIC without written agreement

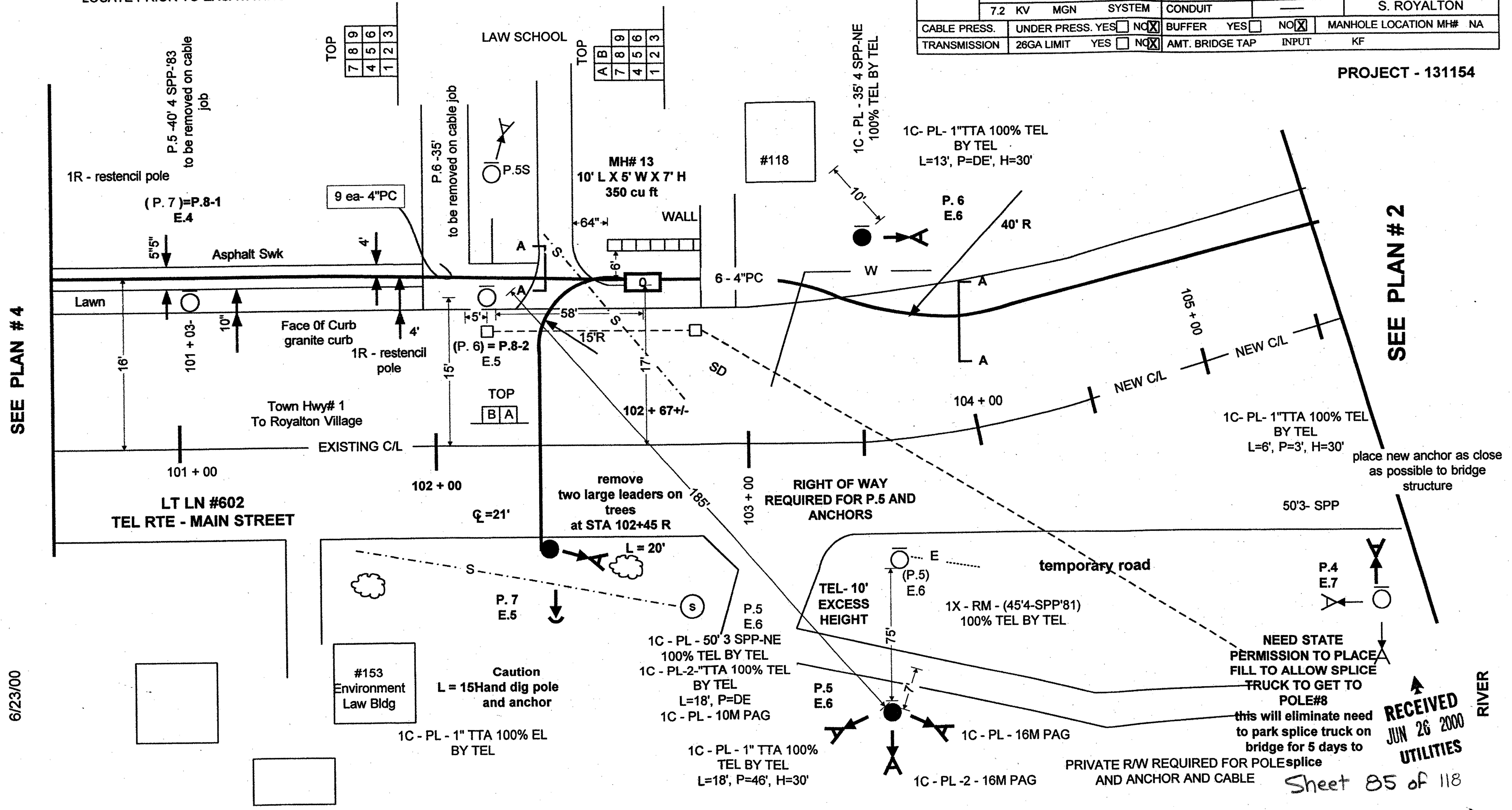
BELL ATLANTIC

SAFETY NOTES: INPUT	MOD/REV NO.	DATE	EWO NO.
			PRINT 3 OF
			PREPARED BY:
			J. BRIAN GRESL
			C.O. /EXCHANGE NAME:
	TYPE	RECORD REF:	S. ROYALTON
SIGNATURE DATE INPUT	AERIAL	INPUT	C.O. /EXCHANGE CODE:
PRE CT YES ☐ NO ☒	UNDERGROUND	—	4875
PRIMARY VOLTAGE TO GROUND	BLOCK (NYT)	—	MUNICIPALITY:
7.2 KV MGN SYSTEM	CONDUIT	—	S. ROYALTON
CABLE PRESS. UNDER PRESS. YES ☐ NO ☒	BUFFER YES ☐ NO ☒	MANHOLE LOCATION MH# NA	
TRANSMISSION 26GA LIMIT YES ☐ NO ☒	AMT. BRIDGE TAP INPUT	KF	

PROJECT - 131154

SEE PLAN # 5 & 6
FOR TRENCH
DETAILS

NOTE TO CONTRACTOR
- WATER AND SEWER SERVICES NOT SHOWN
LOCATE PRIOR TO EXCAVATING



6/23/00

RECEIVED
JUN 26 2000
UTILITIES

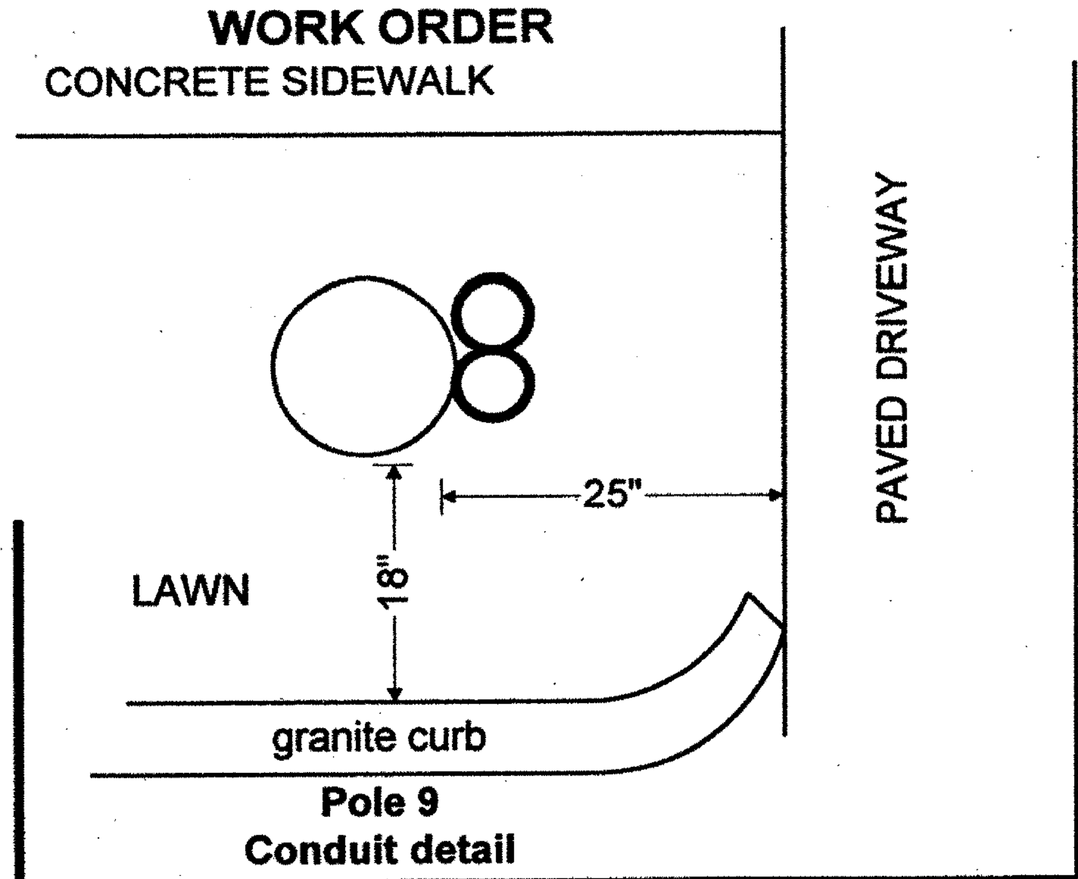
Sheet 85 of 118

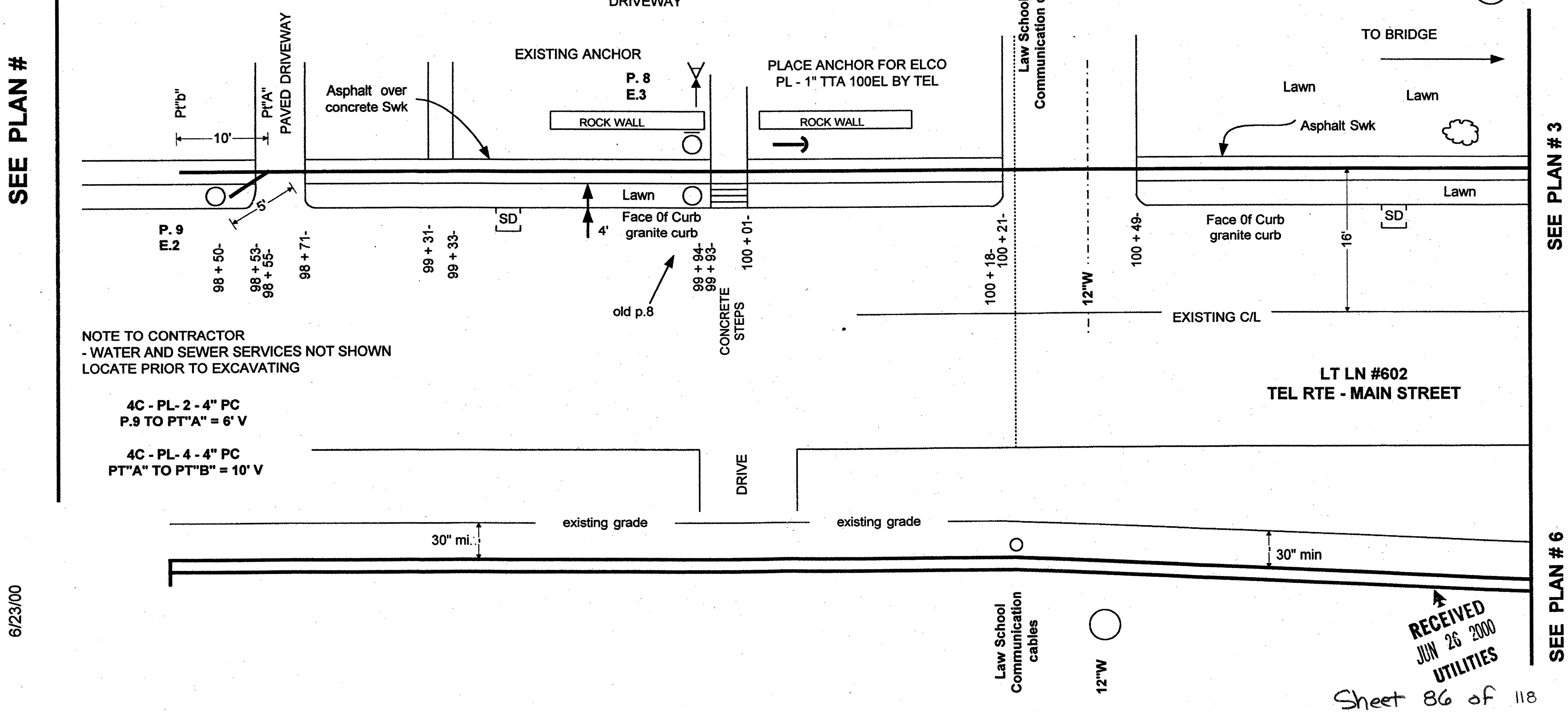
Notice: Not for Use/disclosure outside of BELL ATLANTIC without written agreement

BELL ATLANTIC

SAFETY NOTES: HIGHWAY TRAFFIC PEDESTRIAN TRAFFIC	MOD/REV NO.	DATE	EWO NO.
			PRINT 4 OF
			PREPARED BY: J. BRIAN GRESL
			C.O. /EXCHANGE NAME:
SIGNATURE	TYPE	RECORD REF:	S. ROYALTON
DATE 5/24/2000	AERIAL	INPUT	C.O. /EXCHANGE CODE:
PRE CT YES ☐ NO ☒	UNDERGROUND	—	4875
PRIMARY VOLTAGE TO GROUND	BLOCK (NYT)	—	MUNICIPALITY:
7.2 KV MGN SYSTEM	CONDUIT	—	S. ROYALTON
CABLE PRESS. UNDER PRESS. YES ☐ NO ☒	BUFFER YES ☐ NO ☒		MANHOLE LOCATION MH# NA
TRANSMISSION 26GA LIMIT YES ☐ NO ☒	AMT. BRIDGE TAP	INPUT	KF

PROJECT - 131154





Sheet 86 of 118

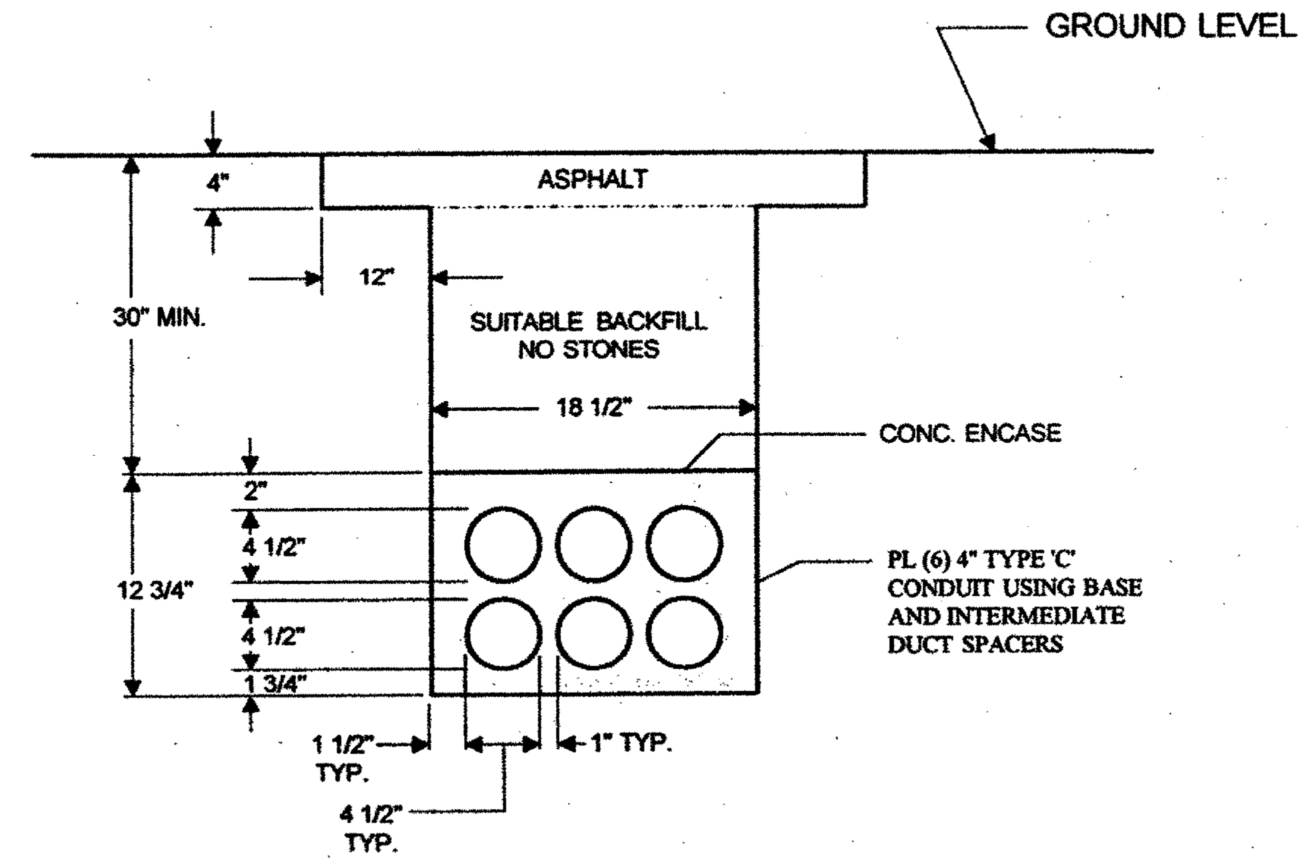
WORK ORDER

Notice: Not for Use/disclosure outside of BELL ATLANTIC without written agreement

BELL ATLANTIC

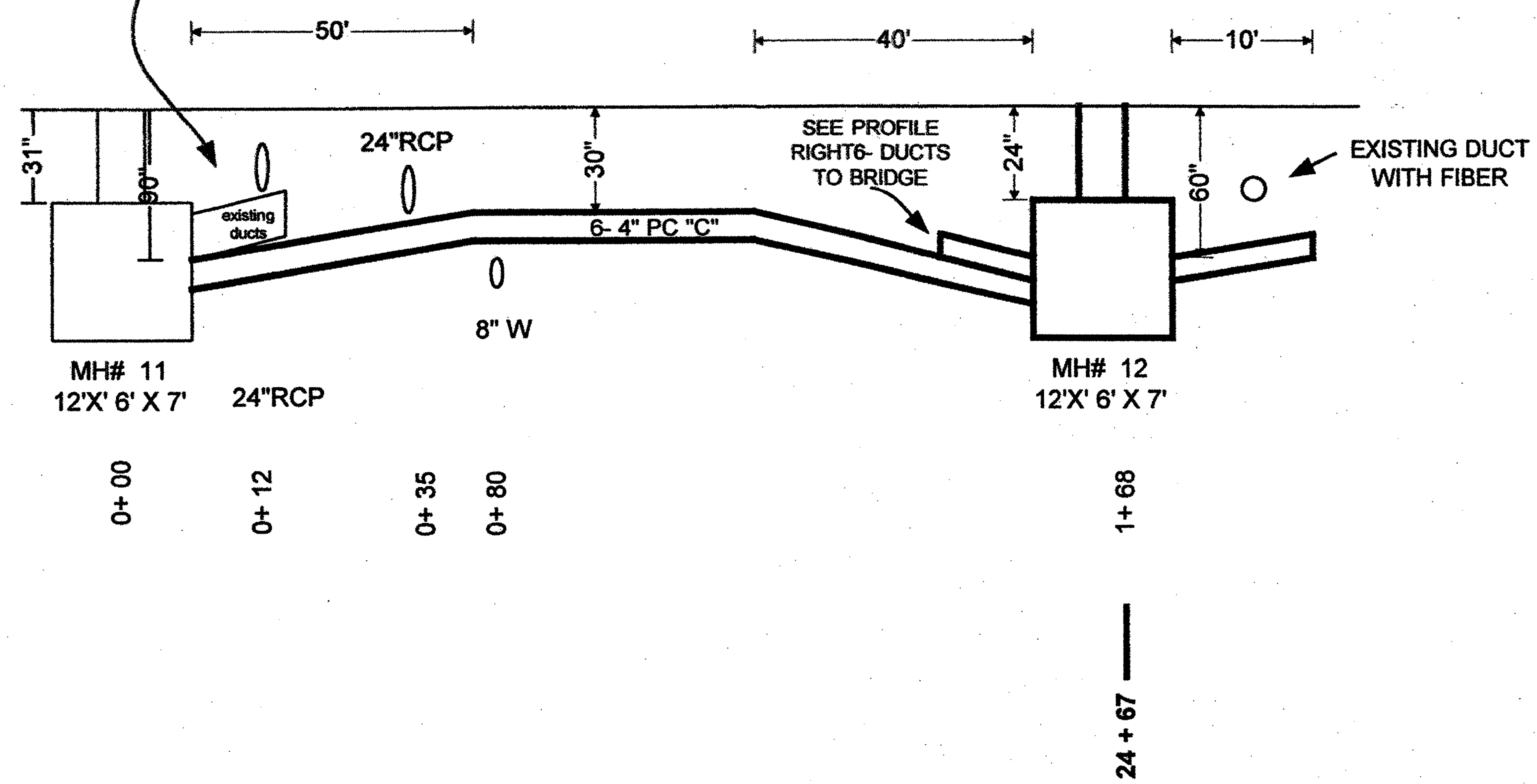
N	SAFETY NOTES: TRAFFIC , BRIDGE CONSTRUCTION	MOD/REV NO.	DATE	EWO NO.
				PRINT 5 OF
				PREPARED BY:
				J. BRIAN GRESL
				C.O. /EXCHANGE NAME:
	SIGNATURE DATE 5/18/2000	TYPE	RECORD REF:	S. ROYALTON
		AERIAL	5	C.O. /EXCHANGE CODE:
	PRE CT YES ☐ NO ☒	UNDERGROUND	—	4875
	PRIMARY VOLTAGE TO GROUND	BLOCK (NYT)	—	MUNICIPALITY:
	7.2 KV MGN SYSTEM	CONDUIT	4	ROYALTON
CABLE PRESS.	UNDER PRESS. YES ☐ NO ☒	BUFFER YES ☐ NO ☒	MANHOLE LOCATION MH# NA	
TRANSMISSION	26GA LIMIT YES ☐ NO ☒	AMT. BRIDGE TAP	INPUT	KF

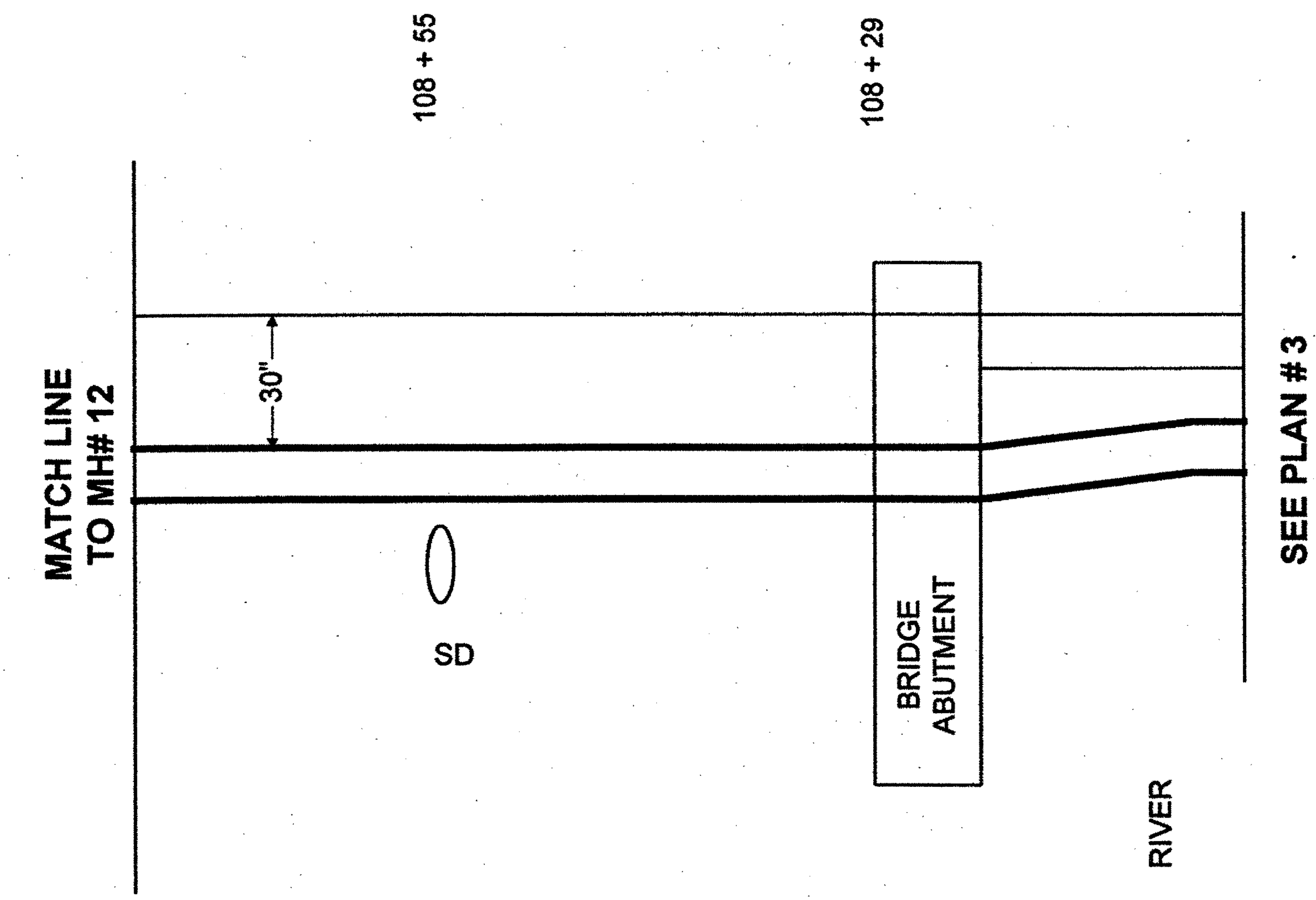
PROJECT - 131154



TRENCH DETAIL
A - A

Note :
Existing vacant duct terminaters are under the existing ductbank





6/23/00

PROFILE FOR PLAN 1

RECEIVED
JUN 26 2000
UTILITIES

Sheet 87 of 118

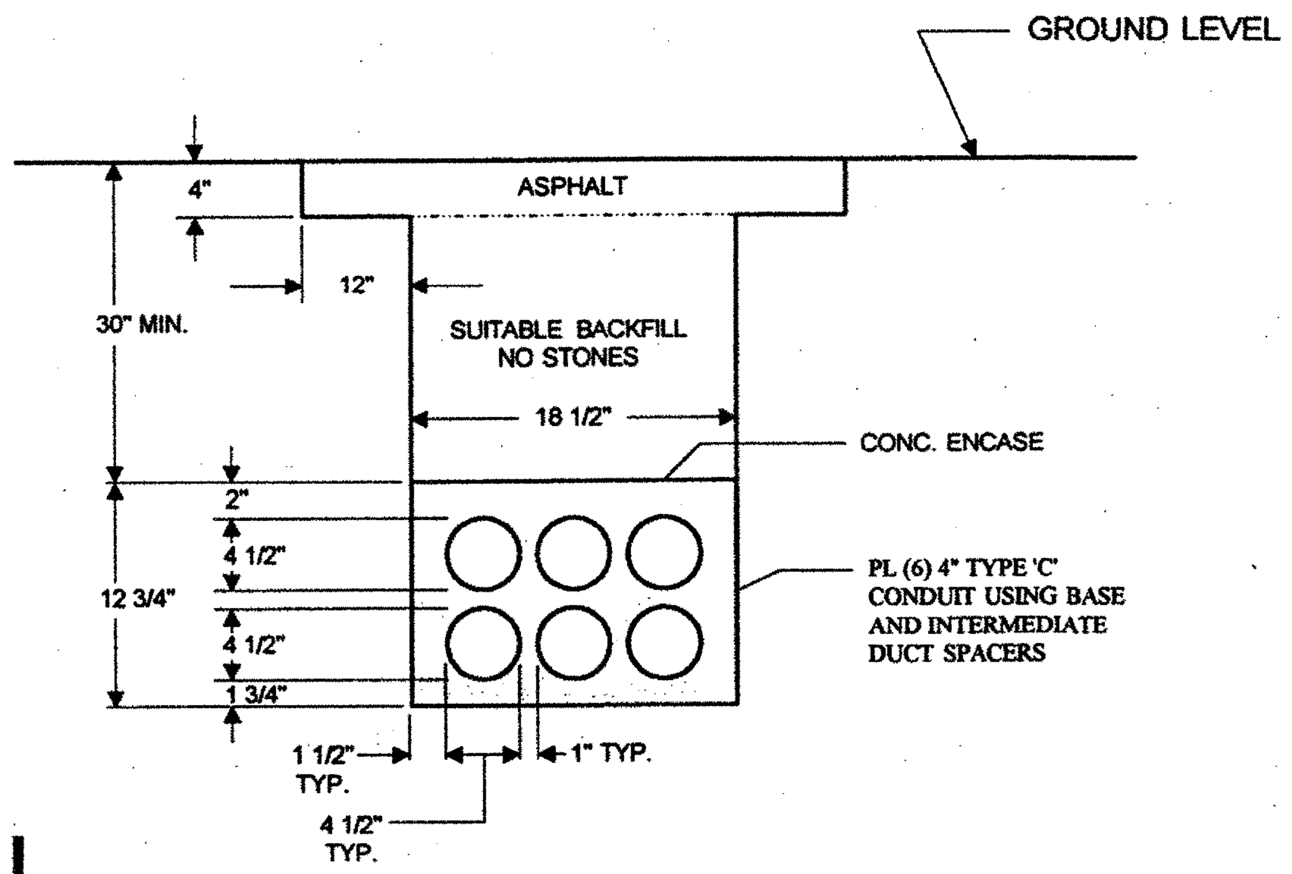
WORK ORDER

Notice: Not for Use/disclosure outside of BELL ATLANTIC without written agreement

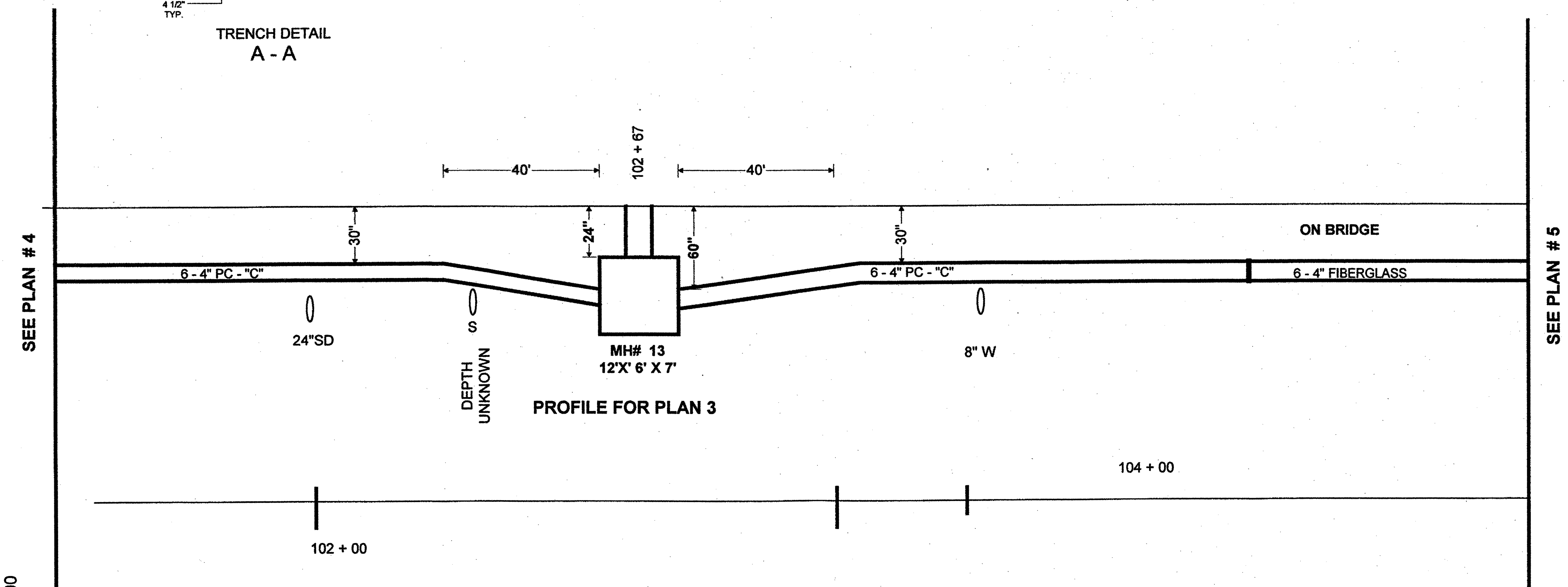
BELL ATLANTIC

SAFETY NOTES: TRAFFIC, BRIDGE CONSTRUCTION	MOD/REV NO.	DATE	EWO NO.
			PRINT 6 OF
			PREPARED BY:
			J. BRIAN GRESL
			C.O. /EXCHANGE NAME:
SIGNATURE DATE 5/18/2000	TYPE	RECORD REF:	S. ROYALTON
	AERIAL	5	C.O. /EXCHANGE CODE:
PRE CT YES ☐ NO ☒	UNDERGROUND	—	4875
PRIMARY VOLTAGE TO GROUND	BLOCK (NYT)	—	MUNICIPALITY:
7.2 KV MGN SYSTEM	CONDUIT	4	ROYALTON
CABLE PRESS. UNDER PRESS. YES ☐ NO ☒	BUFFER YES ☐ NO ☒	MANHOLE LOCATION MH# NA	
TRANSMISSION 26GA LIMIT YES ☐ NO ☒	AMT. BRIDGE TAP	INPUT	KF

PROJECT - 131154



TRENCH DETAIL
A - A



6/23/00

MAINTAIN MIN OF 12" SEPARATION FROM WATER AND SEWER LINES

RECEIVED
JUN 26 2000
UTILITIES

Sheet 88 of 118

WORK ORDER

GENERAL NOTES:

1. THE CONTRACTOR IS REQUIRED TO COMPLY WITH ALL NATIONALLY ACCEPTED SAFETY PRACTICES.

2. THE CONTRACTOR IS REQUIRED TO COMPLY WITH ALL LOCAL, STATE, FEDERAL AND BELL ATLANTIC REGULATIONS.

3. BELL ATLANTIC WILL OBTAIN THE NECESSARY STATE AND LOCAL PERMITS REQUIRED TO COMPLETE THE TELEPHONE WORK ON THE BRIDGE AND BRIDGE APPROACHES.

4. THE DESIGN CABLE LOAD IS 8.0 POUNDS PER FOOT FOR EACH OF SIX DUCTS. THE TOTAL CONDUIT AND HANGER LOAD AT EACH SUPPORTS 652 LB.. BASED ON A NOMINAL SPACING OF 12 FEET.

5. THE UTILITY SUPPORTS ARE TO BE FABRICATED FROM 3" x 3" x 1/4" STEEL AND HOT DIPPED GAVANIZED

6. THE CONTRACTOR MUST LOCATE AND PROTECT ALL EXISTING BURIED CABLES DURING EXCAVATION ON BRIDGE APPROACHES.

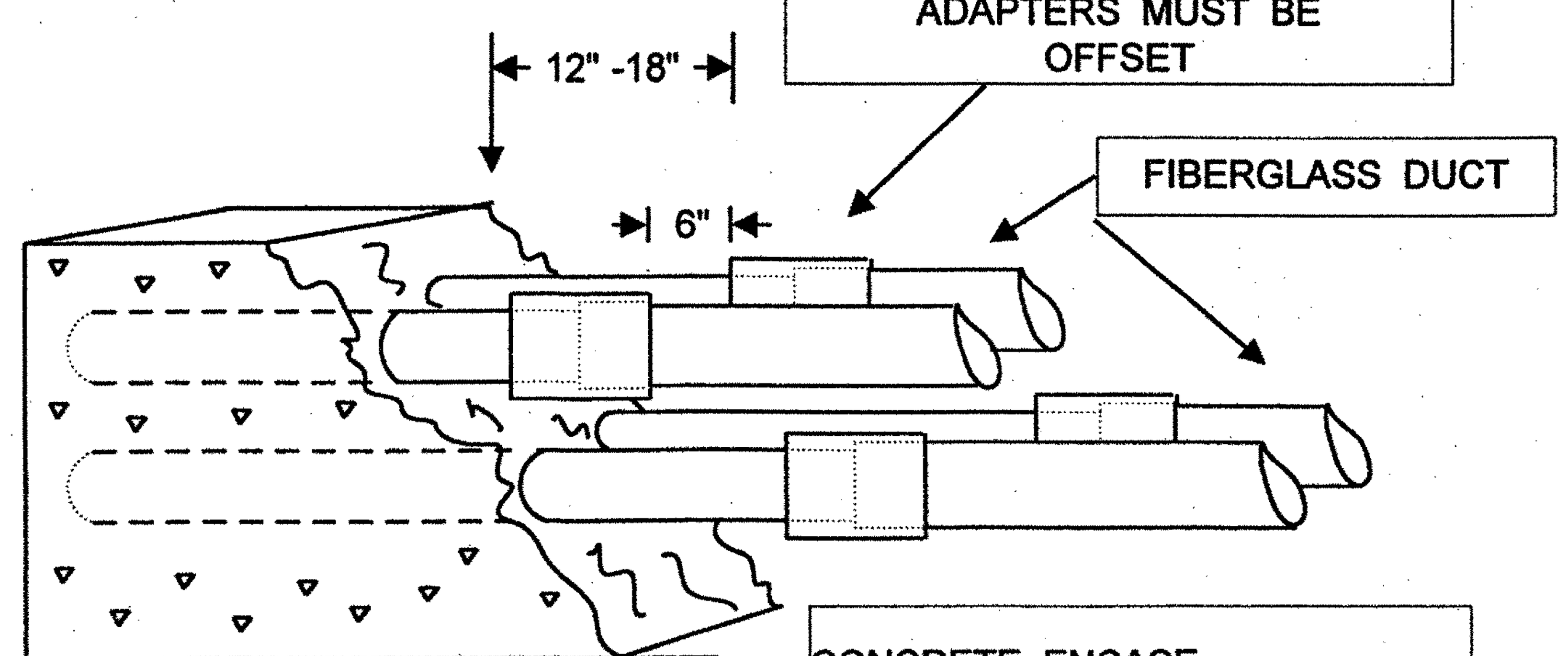
7. SPECIFIED FIBERGLASS CONDUIT AMERICAN U-TEL [PN 12370]
   A. 4" DIAMETER FIBERGLASS DUCTS WITH THREADED JOINTS WITH 3000 LB.. PULLOUT STRENGTH.
   B. ULTIMATE TENSILE STRENGTH 10,000 PSI PER ASTM D-2105.
   C. 4" IPS 4.5" OUTSIDE DIAMETER x 4.36" INSIDE DIAMETER x 30 FT LENGTHS.
   D. CAPABLE OF HANGER SUPPORT SPANS OF 17.2" FOR 8 LBS.PER FT. CABLE BASED. ON LESS THAN 5/8" MIDSPAN DEFLECTION.

8. ALL DRAWINGS ARE BASED ON AVAILABLE CONTRACT DRAWINGS WHICH MAY VARY FROM ACTUAL AS-BUILT CONDITIONS. THE CONTRACTOR SHALL VERIFY ALL PERTINENT DIMENSIONS BEFORE FABRICATION OR INSTALLATION.

9. CONDUIT DRAINAGE. THE CONTRACTOR SHALL INSURE THAT ALL CONDUITS ARE SLOPED TO PROVIDE DRAINAGE FROM THE BRIDGE GRADE BEAM TO THE FIRST MANHOLE ON EITHER SIDE OF THE BRIDGE.

10. GASKETED EXPANSION JOINTS MUST BE PRESET FOR THE AMBIENT TEMPERATURE AT THE TIME OF INSTALLATION. (SEE RIGHT)

11. ALL CONDUIT ON BRIDGE APPROACHES IS TO BE CONCRETE ENCASED WITH A MINIMUM OF 2" OF CONCRETE ON TOP, BOTTOM, AND SIDES. DUCTS WILL BE SEPARATED BY 1" OF CONCRETE



TYPICAL
4" PVC TO 4"
FIBERGLASS DUCT
PVC TO STEEL

CONCRETE ENCASE
DUCTS TO ABUTMENT WALL
DUCT SEPARATION WILL VARY
TO MATCH DUCTS ON BRIDGE

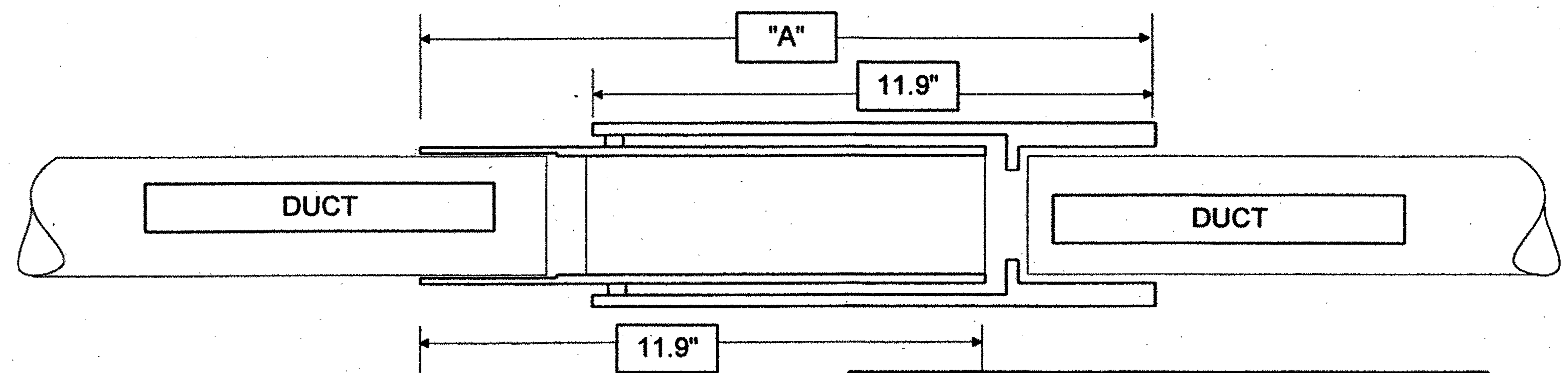
6/23/00

BELL ATLANTIC

N	SAFETY NOTES: HWY CONSTRUCTION TRAFFIC	MOD/REV NO.	DATE	EWO NO.
				PRINT 8 OF
				PREPARED BY:
				J. BRIAN GRESL
				C.O. /EXCHANGE NAME:
	SIGNATURE	TYPE	RECORD REF:	SOUTH ROYALTON
	DATE INPUT	AERIAL	INPUT	C.O. /EXCHANGE CODE:
	PRE CT YES ☐ NO ☒	UNDERGROUND	—	4875
	PRIMARY VOLTAGE TO GROUND	BLOCK (NYT)	—	MUNICIPALITY:
	7.2 KV MGN SYSTEM	CONDUIT	—	SOUTH ROYALTON
CABLE PRESS.	UNDER PRESS. YES ☐ NO ☒	BUFFER YES ☐	NO ☒	MANHOLE LOCATION MH# NA
TRANSMISSION	26GA LIMIT YES ☐ NO ☒	AMT. BRIDGE TAP	INPUT	KF

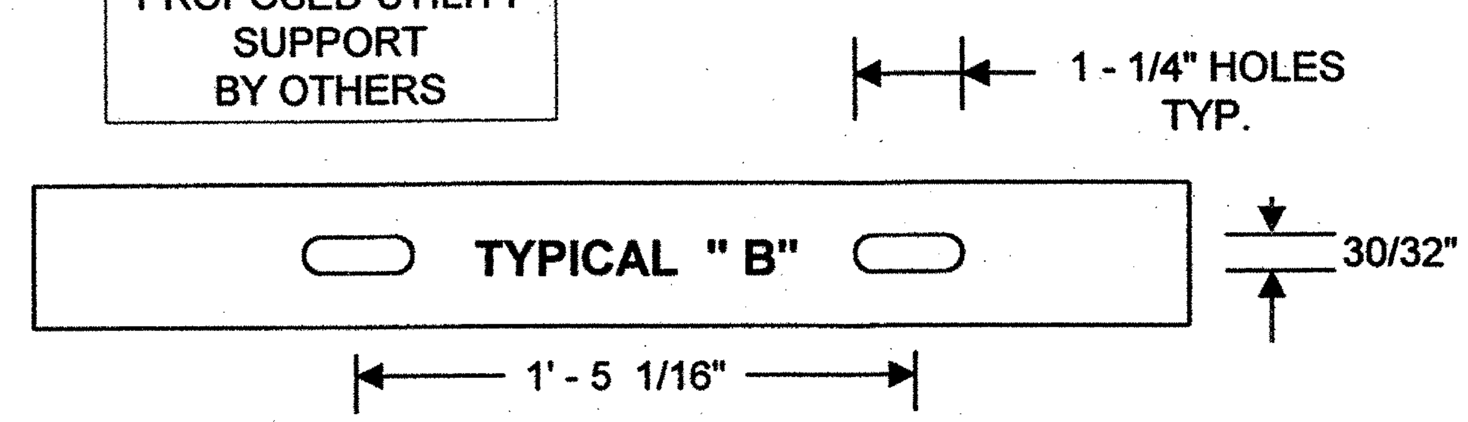
PROJECT - 131154

TYPICAL EXPANSION JOINT



PRESET LENGTH "A BASED ON AMBIENT TEMPERATURE"	
TEMPERATURE (degree)	LENGTH
- 20 F.	19.4"
0 F.	18.8"
20 F.	18.3"
40 F.	17.7"
60 F.	17.1"
80 F.	16.5"
100 F.	15.9"

PROPOSED UTILITY
SUPPORT
BY OTHERS



RECEIVED
JUN 26 2000
UTILITIES

Sheet 89 of 118

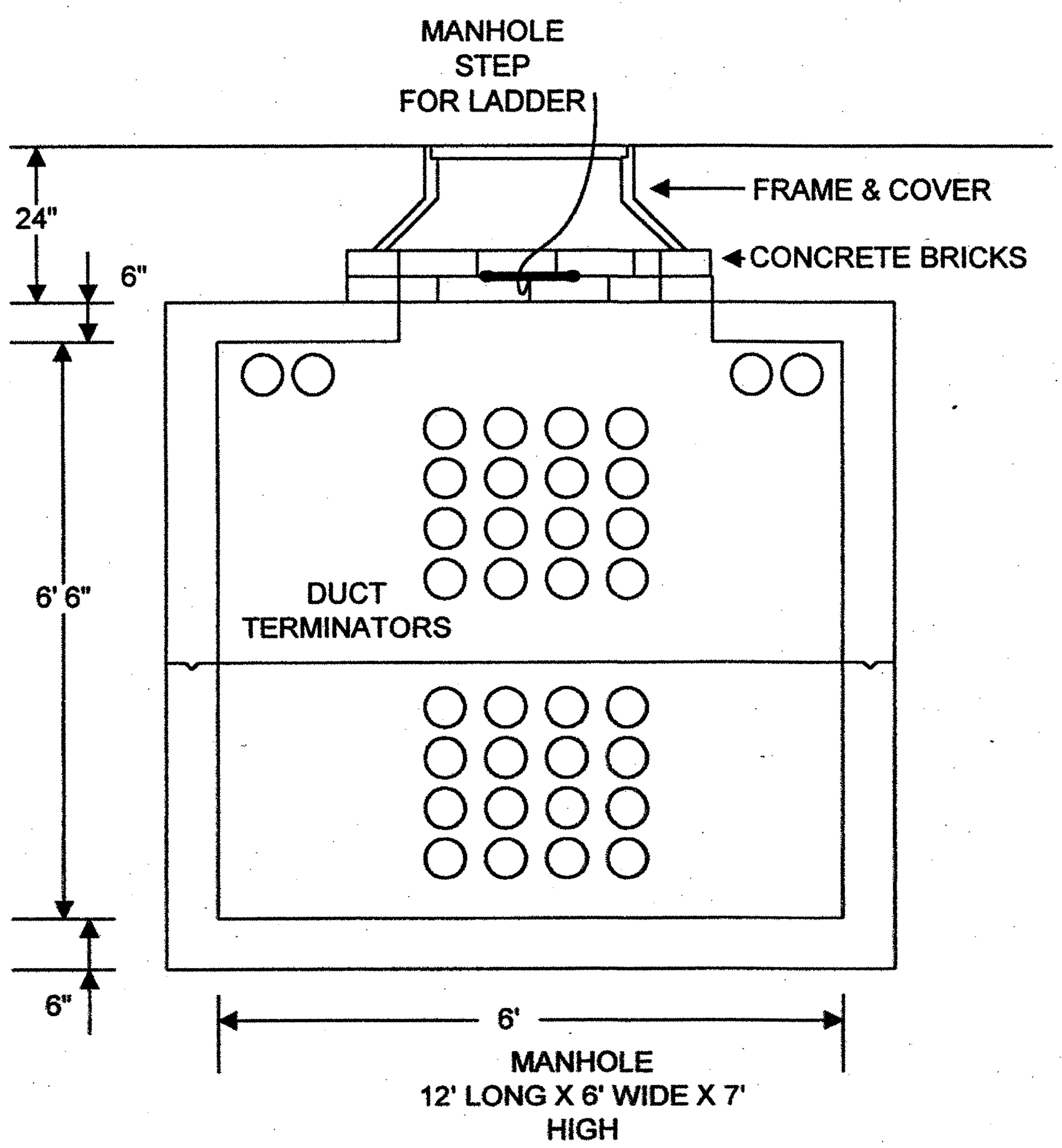
WORK ORDER

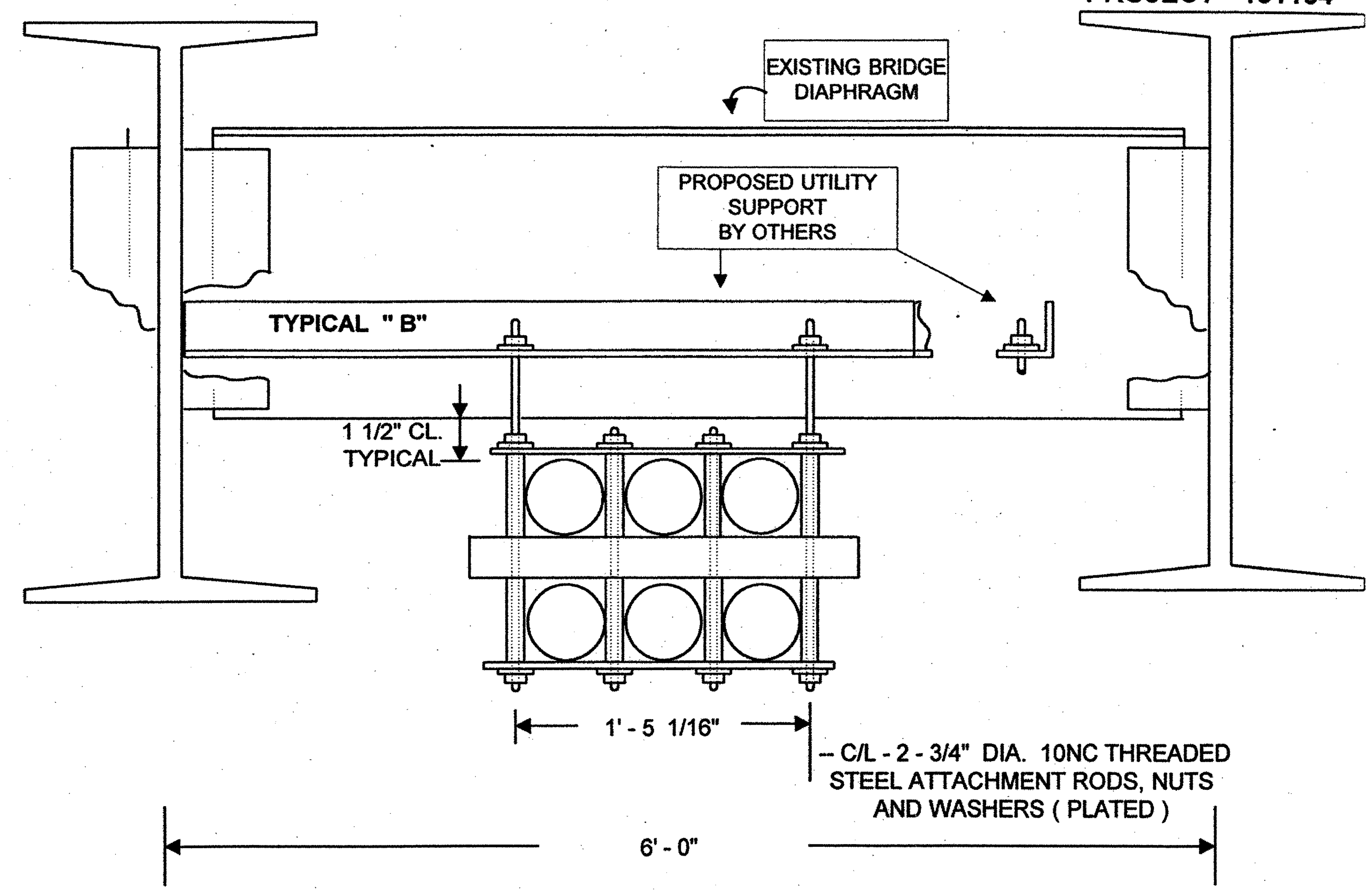
Notice: Not for Use/disclosure outside of BELL ATLANTIC without written agreement

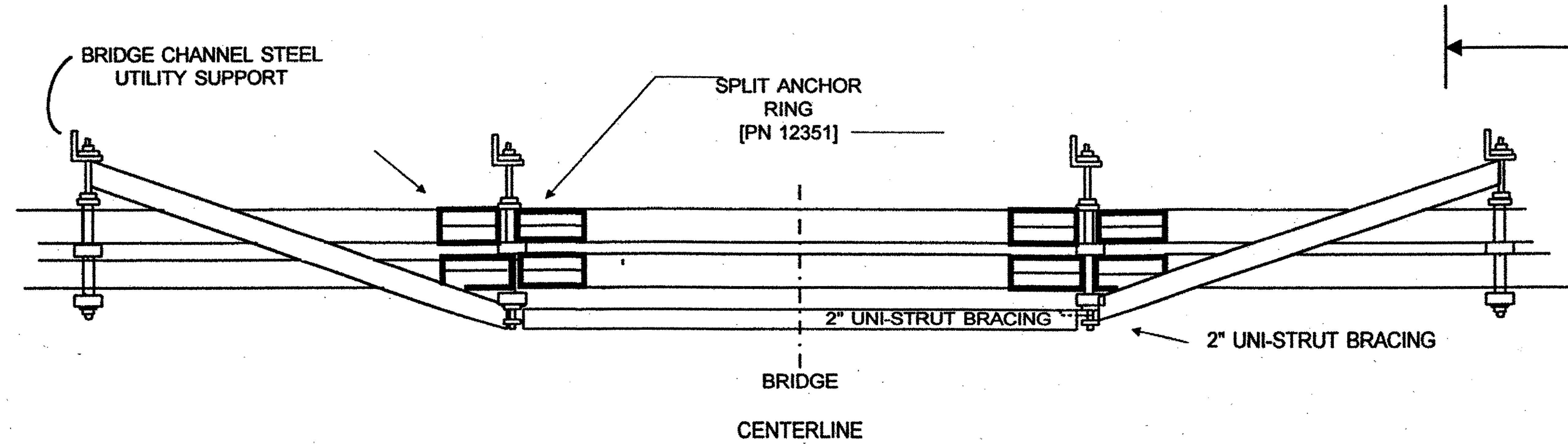
BELL ATLANTIC

N	SAFETY NOTES: BRIDGE CONSTRUCTION TRAFFIC	MOD/REV NO.	DATE	EWO NO.
				PRINT 9 OF
				PREPARED BY:
				J. BRIAN GRESL
				C.O. /EXCHANGE NAME:
	SIGNATURE	TYPE	RECORD REF:	SOUTH ROYALTON
	DATE INPUT	AERIAL	INPUT	C.O. /EXCHANGE CODE:
	PRE CT YES ☐ NO ☒	UNDERGROUND	—	4875
	PRIMARY VOLTAGE TO GROUND	BLOCK (NYT)	—	MUNICIPALITY:
	7.2 KV MGN SYSTEM	CONDUIT	—	SOUTH ROYALTON
CABLE PRESS.	UNDER PRESS. YES ☐ NO ☒	BUFFER YES ☐ NO ☒		MANHOLE LOCATION MH# NA
TRANSMISSION	26GA LIMIT YES ☐ NO ☒	AMT. BRIDGE TAP	INPUT	KF

PROJECT - 131154







6/23/00

RECEIVED
JUN 26 2000
UTILITIES

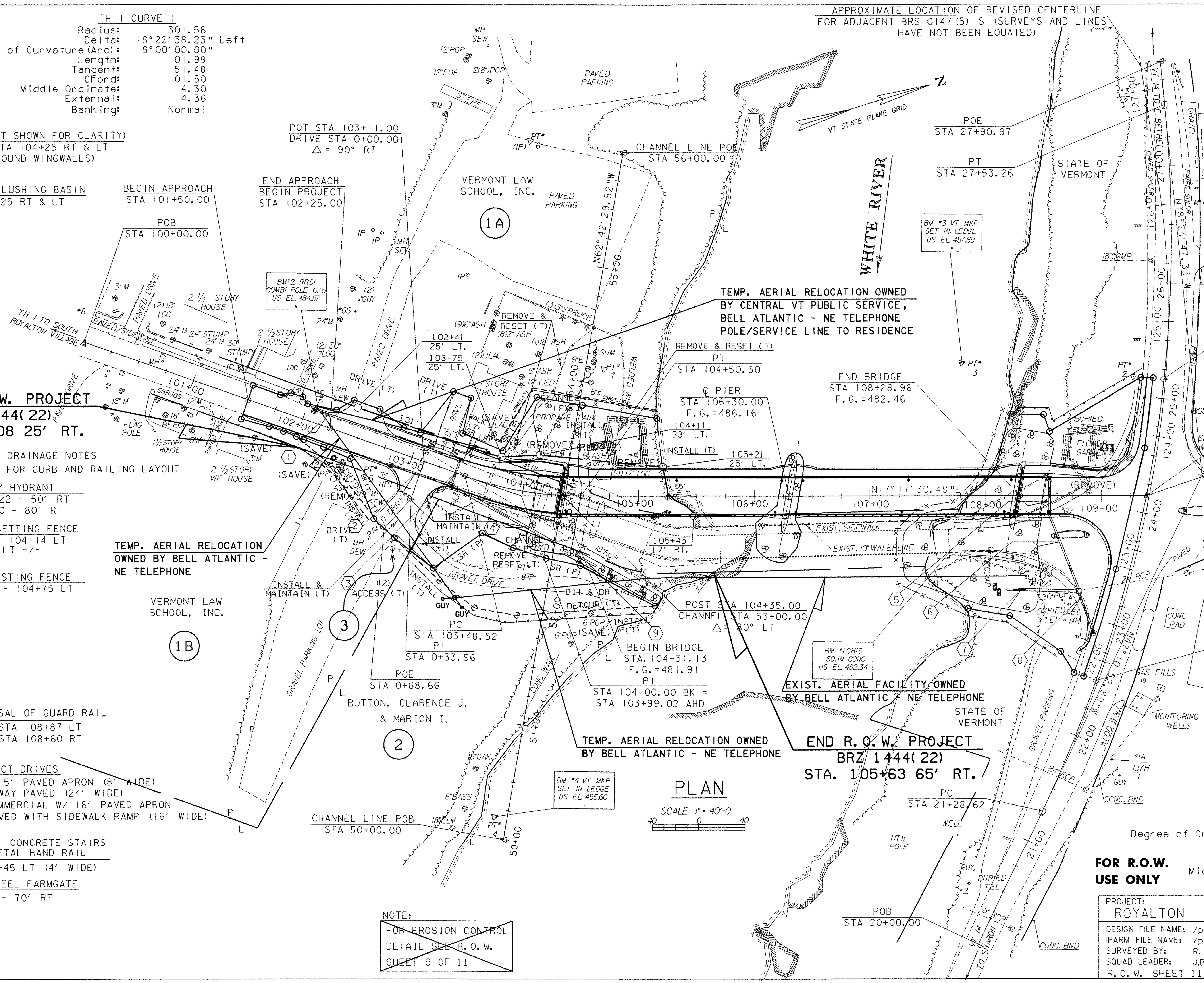
Sheet 90 of 118

TH 1 CURVE 1

Radius:	301.56
Delta:	19°22'38.23" Left
Degree of Curvature (Arc):	19°00'00.00"
Length:	101.99
Tangent:	51.48
Chord:	101.50
Middle Ordinate:	4.30
External:	4.36
Banking:	Normal

6" UNDERDRAIN (NOT SHOWN FOR CLARITY)
STA 102+25-STA 104+25 RT & LT
(OUTLET AROUND WINGWALLS)

UNDERDRAIN FLUSHING BASIN
STA 102+25 RT & LT



PLAN

SCALE 1" = 40'-0

SEE SHEET 16 FOR DRAINAGE NOTES
SEE SHEETS 67-69 FOR CURB AND RAILING LAYOUT

RELOCATE DRY HYDRANT
FROM STA 104+22 - 50' RT
TO STA 103+10 - 80' RT

REMOVING AND RESETTING FENCE
STA 103+75 LT - 104+14 LT
STA 104+80 LT +/-

REMOVAL OF EXISTING FENCE
STA 104+65 LT - 104+75 LT

REMOVE AND DISPOSAL OF GUARD RAIL
STA 108+16 RT - STA 108+87 LT
STA 107+80 RT - STA 108+60 RT

CONSTRUCT DRIVES
STA 101+88 LT W/ 5' PAVED APRON (8' WIDE)
STA 103+11 RT 2 WAY PAVED (24' WIDE)
STA 102+50 LT COMMERCIAL W/ 16' PAVED APRON
STA 103+23 LT PAVED WITH SIDEWALK RAMP (16' WIDE)

CONSTRUCT CONCRETE STAIRS
WITH METAL HAND RAIL
STA 103+45 LT (4' WIDE)

GATEPOSTS & STEEL FARMGATE
STA 103+27 - 70' RT

NOTE:
~~FOR EROSION CONTROL DETAIL SEE R.O.W. SHEET 9 OF 11~~

NOTE: FOR DRIVE AND GUARD RAIL RADII
SEE SHEETS 67-69.

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

EXISTING BRIDGE INFORMATION

STEEL THRU TRUSS WITH T-BEAM APPROACH SPANS
SPANS (1) @ 200', (3) @ 47' - 404' OVERALL
BUILT 1928 AS FR26A
20' ROADWAY, 5' SIDEWALK UPSTREAM SIDE
IRON AND CONCRETE RAIL

VT 14 CURVE 1

Radius:	1145.92
Delta:	31°13'54.44" Left
Degree of Curvature (Arc):	5°00'00.00"
Length:	624.64
Tangent:	320.29
Chord:	616.93
Middle Ordinate:	42.30
External:	43.92

FOR R.O.W. USE ONLY

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: /prop/89j099/rj099zzz.dgn	
IPARM FILE NAME: /prop/89j099/rj099lr.l	PLOT DATE: 25-SEP-2000
SURVEYED BY: R. GILMAN	SURVEY DATE: 9/91
SQUAD LEADER: J.B. McCARTHY	DRAWN BY: W.B. SYMONDS
R.O.W. SHEET 11 OF 11 SHEETS	SHEET 91 OF 118

TABLE OF PROJECT PROPERTY ACQUISITION

STATE OF VERMONT
AGENCY OF TRANSPORTATION
RIGHT OF WAY PLANS
DETAIL SHEET

PARCEL NO.	GRANTOR	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKING	REM.	RIGHTS	TITLE TAKEN	DATE	TOWN OR CITY RECORDED	BK.	PG.	REMARKS
1A	VERMONT LAW SCHOOL, INC.	11	102+41 LT.	105+45 RT.	0.10A±					ROYALTON			
			102+55 LT.				DRIVE (T)						16' PAVED
			103+23 LT.				DRIVE (T)						16' PAVED
			103+32 LT.	103+61 LT.			INSTALL & MAINTAIN (T)						UTILITIES
			103+35 LT.	104+08 LT.			SLOPE (P) 970 S.F.±						
			103+55 LT.	105+16 LT.			CONST. (T) 1150 S.F.±						
			103+80 LT.±				REMOVE & RESET (T)						PROPANE TANK -
			103+75 LT.	104+14 LT.			REMOVE & RESET (T)						FENCE
			104+00 LT.	104+54 LT.			CHANNEL (P) 1820 S.F.±						
			104+80 LT.±				REMOVE & RESET (T)						FENCE
			103+45 LT.				WALK (T)						WALK, STAIRS, & HANDRAIL
			104+54 LT.	105+20 LT.			INSTALL (T) 2920 S.F.±						EROSION CONTROL BASIN
			104+65 LT.±	104+75 LT.±			ALL R.T.& I						FENCE
1B		11	102+08 RT.	102+86 RT.			INSTALL (T)						SILT FENCE
			103+08 RT.	103+24 RT.			INSTALL (T)						SILT FENCE
			102+26 RT.	103+32 RT.			DETOUR (T) 2690 S.F.±						TWO WAY TRAFFIC WITH SIDEWALK
			102+56 RT.	102+98 RT.			SLOPE (T) 725 S.F.±						
			102+98 RT.				INSTALL & MAINTAIN (P)						CURB
			103+11 RT.				DRIVE (T)						24' GRAVEL ALSO ROW TO PARCEL #2
			103+11 RT.				ACCESS (T)						FROM DETOUR TO PARCEL 1B & 2
			103+23 RT.				INSTALL & MAINTAIN (P)						CURB
			102+65 RT.	103+26 RT.			INSTALL & MAINTAIN (T)						UTILITIES
			103+10 RT.	103+25 RT.			INSTALL & MAINTAIN (T)						DRY HYDRANT
2	BUTTON, CLARENCE J. & MARION I.	11	103+11 RT.				DRIVE (T)						ROW OVER PARCEL 1B
			103+11 RT.				ACCESS (T)						FROM DETOUR OVER PARCEL 1B
			103+24 RT.	105+15 RT.			INSTALL (T)						SILT FENCE
			103+23 RT.	105+63 RT.			DETOUR (T) .29A±						TWO WAY TRAFFIC WITH SIDEWALK
			103+28 RT.	105+15 RT.			SLOPE (P) 3,157 S.F.±						
			103+25 RT.	104+28 RT.			INSTALL & MAINTAIN (T)						DRY HYDRANT
			103+26 RT.	105+60 RT.			INSTALL & MAINTAIN (T)						UTILITIES
			103+27 RT.				INSTALL (T)						FARM GATE
			104+10 RT.	104+45 RT.			CHANNEL (P) 375 S.F.±						
			104+38 RT.	105+20 RT.			DITCH & DRAINAGE (P) 525 S.F.±						
3	SO. ROYALTON FIRE DEPT.	11	103+10 RT.	104+28 RT.			REMOVE & RESET (T)						DRY HYDRANT
4	CENTRAL VERMONT PUBLIC SERVICE												UTILITY
5	BELL ATLANTIC-NEW ENGLAND												UTILITY
6	HELICON CABLE TELEVISION												UTILITY

REVISION NO.	SHEET	DESCRIPTION OF REVISION	DATE	MADE BY	APPROVED BY
1	10,11	PARCEL NO. 2 BUTTON. CHANGE SPELLING OF MARIAN TO MARION. ADD GATEPOSTS AND STEEL FARM GATE ON P/L BETWEEN PARCELS 1B & 2. ADD INSTALL (T) AT STA. 103+27 RT. PER C.O. NO. 9074.	10-20-99	B.A.H.	L.W.B.
		ELECTRONIC IPARMS TO STRUCTURES 9-20-00			

LAWRENCE W. BLISS
07-23-99

/PROP/89J099/RJ099D.DGN

ACCT.Repro
\\vaot_cadd\filingcabinet$\89J099\RightOfWay\rj099cd.dgn
DATE PLOTTED 25-SEP-2000

DR.(P)- DRAINAGE RIGHT
DIT.(P)- DITCHING RIGHT
CH.(P)- CHANNEL RT.
DRIVE (T)- DRIVE RIGHT
CUL.(P)- CULVERT RIGHT
W - WATER SOURCES

PRESENT R.O.W.
TAKING WITHOUT ACCESS
P L TAKING WITHOUT ACCESS ALONG PROPERTY LINE
TAKING WITH ACCESS
(P) PERMANENT EASEMENT
(T) TEMPORARY EASEMENT

LEGEND
CZ (P) CLEAR ZONE
CONST.(T) CONSTRUCTION EASEMENT
SR SR SLOPE RIGHTS
P L PROPERTY LINE
TOP OF CUT
TOE OF SLOPE

APPROVED: LAWRENCE W. BLISS DATE: 07-23-99
CHIEF, PLANS & TITLES

R.O.W. PLANS
ROYALTON
BRZ 1444(22)
R.O.W. SHEET 10 OF 11 SHEETS
SHEET 92 OF 118

STATE OF VERMONT
AGENCY OF TRANSPORTATION

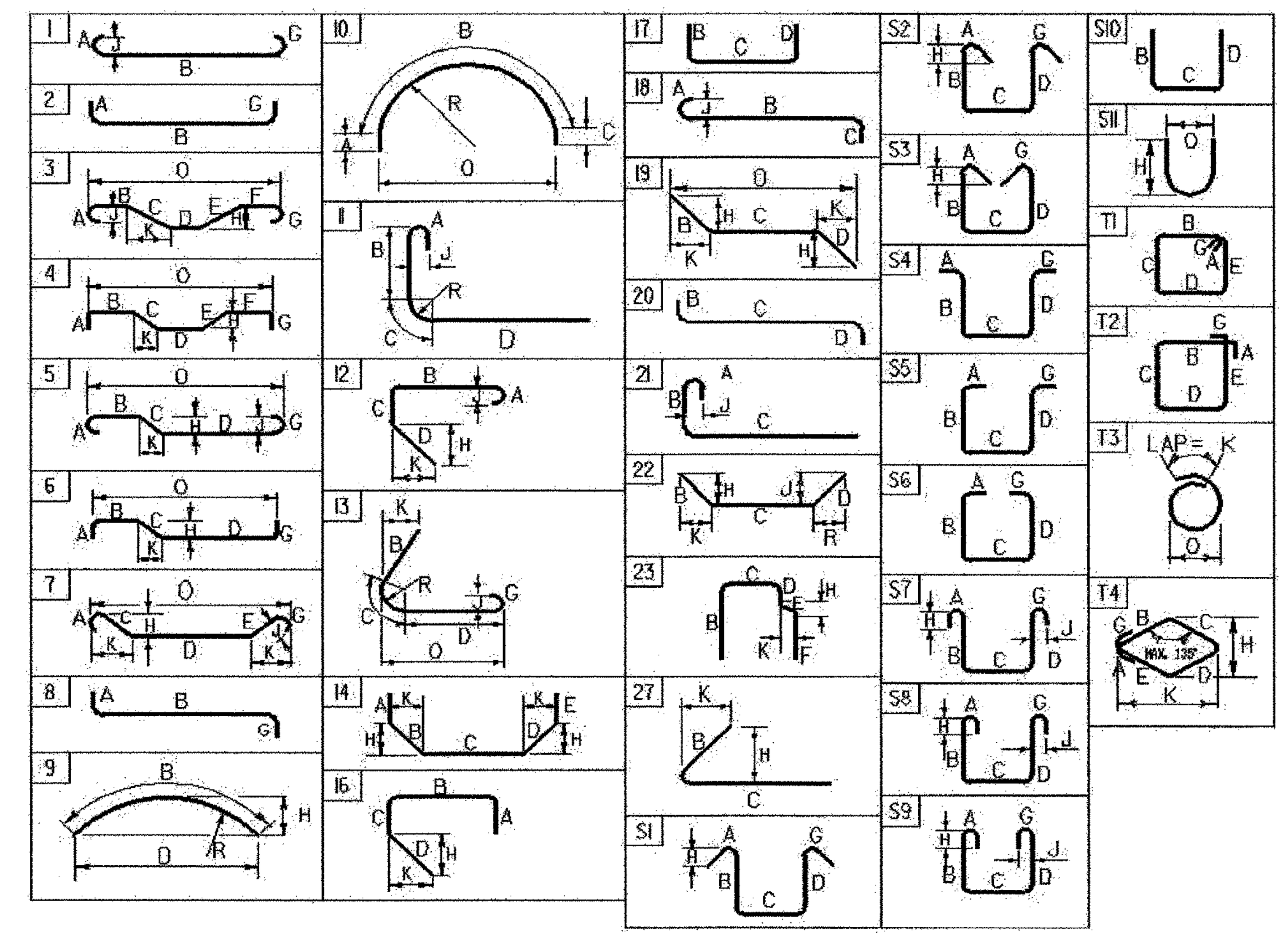
REINFORCING STEEL SCHEDULE

	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	SUPER STRUCTURE																
	1594	5	40'- 10"	ES501	STR												
●	335	5	7'- 0"	ES502	STR												
▲ ●	966	5	35'- 2"	ES503	STR												
▲	12	5	43'- 7"	ES504	STR												
▲ ■	546	5	35'- 6"	ES601	STR												
▲ ●	25	8	11'- 3"	ES801	STR												
	78	4	3'- 4"	ES401	T4	0'- 4"	0'- 8"	0'- 8"	0'- 8"	0'- 8"		0'- 4"	0'- 10"		0'- 10"		
	396	5	6'- 11"	ES505	S5	2'- 0"	1'- 3"	0'- 10"	0'- 10"			2'- 0"					
▲	63	5	8'- 7"	ES506	S10		3'- 8"	1'- 3"	3'- 8"								
	56	5	6'- 6"	ES507	S5	0'- 6"	1'- 7"	0'- 8"	3'- 9"			—					
■	398	7	13'- 3"	ES701	S5	2'- 0"	1'- 3"	7'- 2"	0'- 10"			2'- 0"					
	78	7	14'- 9"	ES702	S10		6'- 9"	1'- 3"	6'- 9"								
	24	8	6'- 3"	ES802	17		1'- 3"	5'- 0"	—								
	APPROACH SLAB 1																
▲ ●	22	5	29'- 11"	1EAS501	STR												
●	38	9	20'- 9"	1EAS901	1	1'- 3"	19'- 6"					—		0'- 11"			
	APPROACH SLAB 2																
●	22	5	30'- 6"	2EAS501	STR												
●	38	9	20'- 9"	2EAS901	STR	1'- 3"	19'- 6"					—		0'- 11"			
	PIER																
●	44	5	5'- 0"	P501	STR												
▲ ●	51	5	24'- 2"	P502	STR												
	15	5	3'- 3"	P503	STR												
	82	8	19'- 7"	P801	STR												
●	121	8	9'- 3"	P802	STR												
●	161	8	18'- 8"	P803	STR												
	38	8	22'- 1"	P804	STR												
	25	5	7'- 8"	P504	17		2'- 8"	2'- 4"	2'- 8"								
	124	5	12'- 10"	P505	17		3'- 3"	6'- 4"	3'- 3"								
	280	5	13'- 6"	P506	T1	0'- 4"	3'- 2"	3'- 3"	3'- 2"	3'- 3"		0'- 4"					
	76	5	9'- 4"	P507	T1	0'- 4"	3'- 4"	1'- 10"	3'- 4"	0'- 2"		0'- 4"					
	68	5	11'- 9"	P508	T1	0'- 4"	3'- 3"	2'- 9"	3'- 3"	1'- 10"		0'- 4"					
	60	5	13'- 0"	P509	T1	0'- 4"	3'- 2"	3'- 3"	3'- 2"	2'- 9"		0'- 4"					
	11	5	9'- 6"	P510	T1	0'- 4"	1'- 2"	3'- 3"	1'- 2"	3'- 3"		0'- 4"					
	11	5	8'- 8"	P511	T1	0'- 4"	1'- 2"	2'- 11"	1'- 2"	2'- 9"		0'- 4"					
	10	5	6'- 10"	P512	T1	0'- 4"	1'- 2"	2'- 0"	1'- 2"	1'- 10"		0'- 4"					
	9	8	14'- 0"	P805	10	4'- 7"	4'- 10"	4'- 7"								3'- 1"	6'- 2"
	7	8	8'- 1"	P806	17		2'- 0"	4'- 1"	2'- 0"								

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	ABUTMENT 1																
	58	5	4'- 2"	1A501	STR												
●	43	5	13'- 2"	1A502	STR												
●	17	5	15'- 10"	1A502A	STR												
▲	112	5	30'- 0"	1A503	STR												
	42	5	4'- 4"	1A504	STR												
▲	84	5	9'- 0"	1A505	STR												
▲	60	5	12'- 0"	1A505A	STR												
▲	52	5	5'- 3"	1A506	STR												
■	66	6	10'- 7"	1A601	STR												
●	45	8	33'- 3"	1A801	STR												
●	60	8	14'- 0"	1A802	STR												
	42	5	8'- 10"	1A507	17		2'- 2"	4'- 6"	2'- 2"								
	42	5	5'- 2"	1A508	17		2'- 2"	0'- 10"	2'- 2"								
	33	5	7'- 1"	1A509	16	2'- 2"	1'- 9"	1'- 2"	2'- 0"				1'- 5"		1'- 5"		
	20	5	7'- 2"	1A510	17		3'- 0"	1'- 2"	3'- 0"								
▲	33	5	10'- 10"	1A511	9		10'- 10"						0'- 8"			22'- 0"	10'- 9"
▲	33	5	5'- 9"	1A512	11	—	—	3'- 0"	2'- 9"					—		4'- 0"	
▲	48	5	5'- 8"	1A513	17		2'- 2"	3'- 6"	—								
	24	5	8'- 8"	1A514	17		2'- 2"	6'- 6"	—								
	24	5	6'- 2"	1A515	27		1'- 5"	4'- 9"					1'- 0"	1'- 0"			
	122	8	11'- 0"	1A803	17		1'- 4"	9'- 8"	—								
	64	8	12'- 5"	1A804	1	0'- 11"	10'- 7"					0'- 11"		0'- 8"			
	17	8	4'- 1"	1A805	22		1'- 9"	2'- 4"	—				1'- 3"	—	1'- 3"	—	
	WINGWALL 1																
	21	5	4'- 2"	1W501	STR												
▲	21	5	23'- 6"	1W502	STR												
	21	5	10'- 6"	1W503	STR												
	47	5	19'- 6"	1W504	STR												
	21	5	2'- 2"	1W505	STR												
	24	6	22'- 9"	1W601	STR												
●	22	7	7'- 6"	1W701	STR												
	18	8	11'- 2"	1W801	STR												
	21	9	11'- 1"	1W901	STR												
	21	5	4'- 7"	1W506	17		1'- 6"	1'- 7"	1'- 6"								
	18	7	12'- 10"	1W702	1	0'- 10"	11'- 2"					0'- 10"		0'- 7"			
	40	9	10'- 6"	1W902	17		1'- 7"	8'- 11"	—								
	WINGWALL 2																
	21	5	4'- 2"	2W501	STR												
▲	21	5	23'- 3"	2W502	STR												
	21	5	10'- 3"	2W503	STR												
	49	5	19'- 6"	2W504	STR												
	21	5	2'- 2"	2W505	STR												
	24	6	22'- 9"	2W601	STR												
	22	7	7'- 6"	2W701	STR												
	18	8	11'- 2"	2W801	STR												
	21	9	11'- 1"	2W901	STR												
	21	5	4'- 7"	2W506	17		1'- 6"	1'- 7"	1'- 6"								
	18	7	12'- 10"	2W702	1	0'- 10"	11'- 2"					0'- 10"		0'- 7"			
	40	9	10'- 6"	2W902	17		1'- 7"	8'- 11"	—								

~ 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-SI). 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 DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION: DIAMETER INCHES	AREA INCHES²	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: **Royalton**
PROJECT NUMBER: **BRZ 1444(22)**

FILE NAME: 89j099rei.xls — PLOT DATE: 8/11/00
PROJECT LEADER: C.P. Williams — DRAWN BY: C.P. Williams
DESIGNED BY: C.P. Williams — CHECKED BY: W.B. Symonds
REINFORCING STEEL SCHEDULE SHEET #1 — SHEET 93 OF 118

STATE OF VERMONT
AGENCY OF TRANSPORTATION

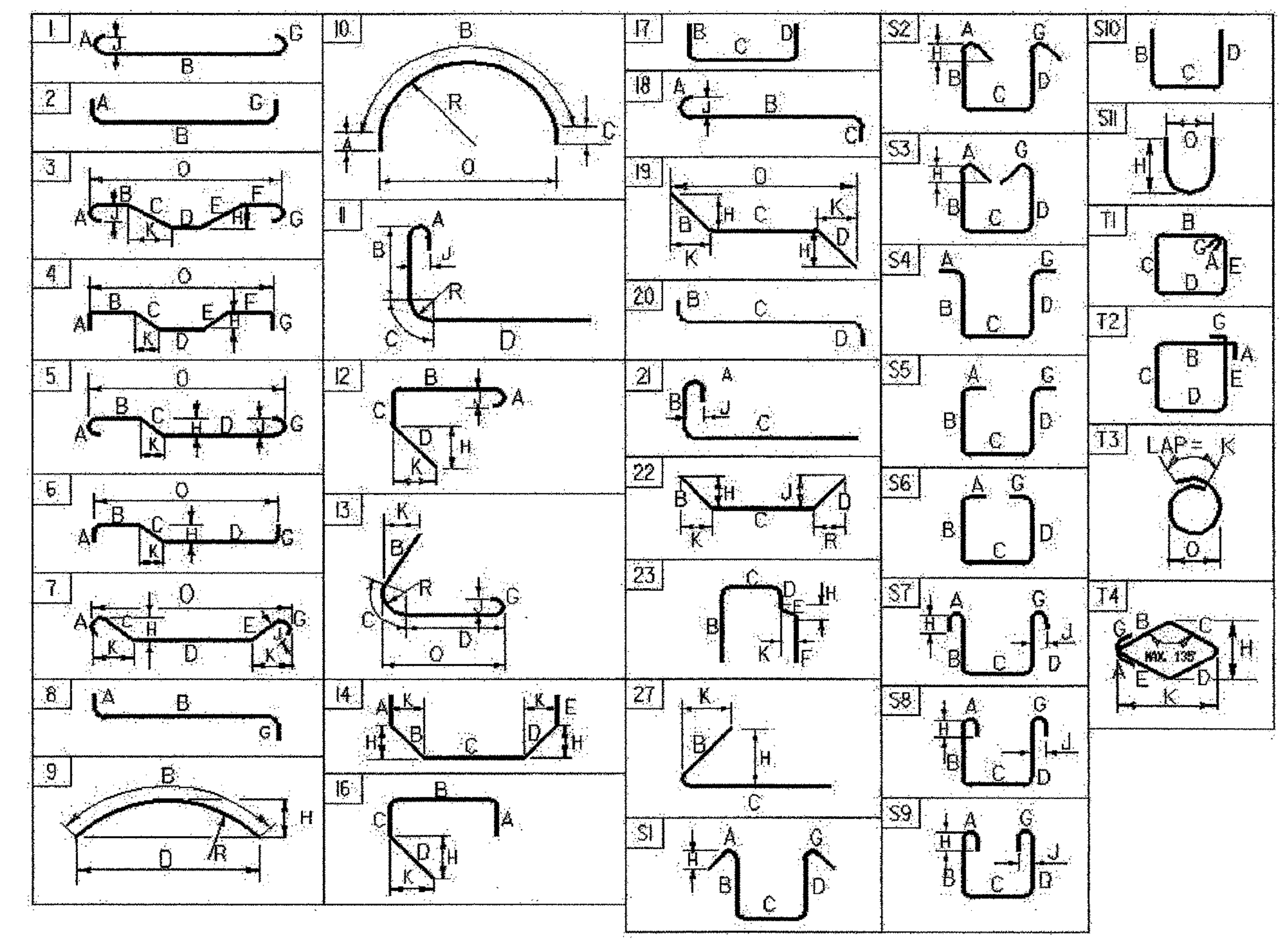
REINFORCING STEEL SCHEDULE

	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	ABUTMENT 2																
▲	38	5	32'- 0"	2A501	STR												
	57	5	4'- 5"	2A502	STR												
●	41	5	13'- 9"	2A503	STR												
	16	5	16'- 3"	2A503A	STR												
	42	5	4'- 4"	2A504	STR												
▲	112	5	30'- 6"	2A505	STR												
▲ ●	84	5	9'- 1"	2A506	STR												
▲	56	5	12'- 0"	2A506A	STR												
▲	52	5	5'- 3"	2A507	STR												
	42	5	8'- 10"	2A508	17		2'- 2"	4'- 6"	2'- 2"								
	20	5	7'- 2"	2A509	17		3'- 0"	1'- 2"	3'- 0"								
	42	5	5'- 2"	2A510	17		2'- 2"	0'- 10"	2'- 2"								
	33	5	7'- 1"	2A511	16	2'- 2"	1'- 9"	1'- 2"	2'- 0"								
	11	5	6'- 4"	2A512	8	2'- 2"	2'- 0"					2'- 2"					
	8	5	9'- 1"	2A513	19		2'- 2"	4'- 9"	2'- 2"				1'- 1"		1'- 10"		8'- 5"
	48	5	5'- 8"	2A514	22		3'- 6"	2'- 2"	---				3'- 5"	---	0'- 8"	---	
▲	33	5	7'- 7"	2A515	11		---	3'- 7"	4'- 0"							4'- 0"	
▲	31	5	9'- 3"	2A516	9		9'- 3"						0'- 6"			22'- 0"	9'- 2"
	25	5	7'- 8"	2A517	22		5'- 6"	2'- 2"	---				5'- 5"	---	0'- 11"	---	
	23	5	9'- 2"	2A518	17		2'- 2"	7'- 0"	---								
	62	7	10'- 7"	2A701	STR												
●	34	8	3'- 6"	2A801	STR												
●	58	8	14'- 6"	2A802	STR												
	112	8	17'- 7"	2A803	17		7'- 8"	9'- 11"	---								
	17	8	4'- 1"	2A804	22		1'- 9"	2'- 4"					1'- 3"	---	1'- 3"	---	
	WINGWALL 3																
	20	5	28'- 6"	3W501	STR												
	22	5	4'- 5"	3W502	STR												
	22	5	24'- 0"	3W503	STR												
	22	5	11'- 1"	3W504	STR												
	51	5	21'- 0"	3W505	STR												
	22	5	2'- 2"	3W506	STR												
	22	5	4'- 7"	3W507	17		1'- 6"	1'- 7"	1'- 6"								
●	22	7	7'- 6"	3W701	STR												
	14	8	3'- 6"	3W801	STR												
●	44	9	12'- 3"	3W901	STR												
●	22	9	11'- 1"	3W902	STR												
	44	9	14'- 11"	3W903	17		5'- 9"	9'- 2"	---								
	WINGWALL 4																
	18	5	23'- 9"	4W501	STR												
	22	5	4'- 5"	4W502	STR												
	22	5	21'- 9"	4W503	STR												
	22	5	11'- 1"	4W504	STR												
	47	5	21'- 9"	4W505	STR												
	22	5	2'- 2"	4W506	STR												
	22	5	4'- 7"	4W507	17		1'- 6"	1'- 7"	1'- 6"								
	14	8	3'- 6"	4W801	STR												
●	44	8	11'- 2"	4W802	STR												
●	22	8	12'- 10"	4W803	STR												
	44	8	14'- 10"	4W804	17		5'- 3"	9'- 7"	---								

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O

~ 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-SI). 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.

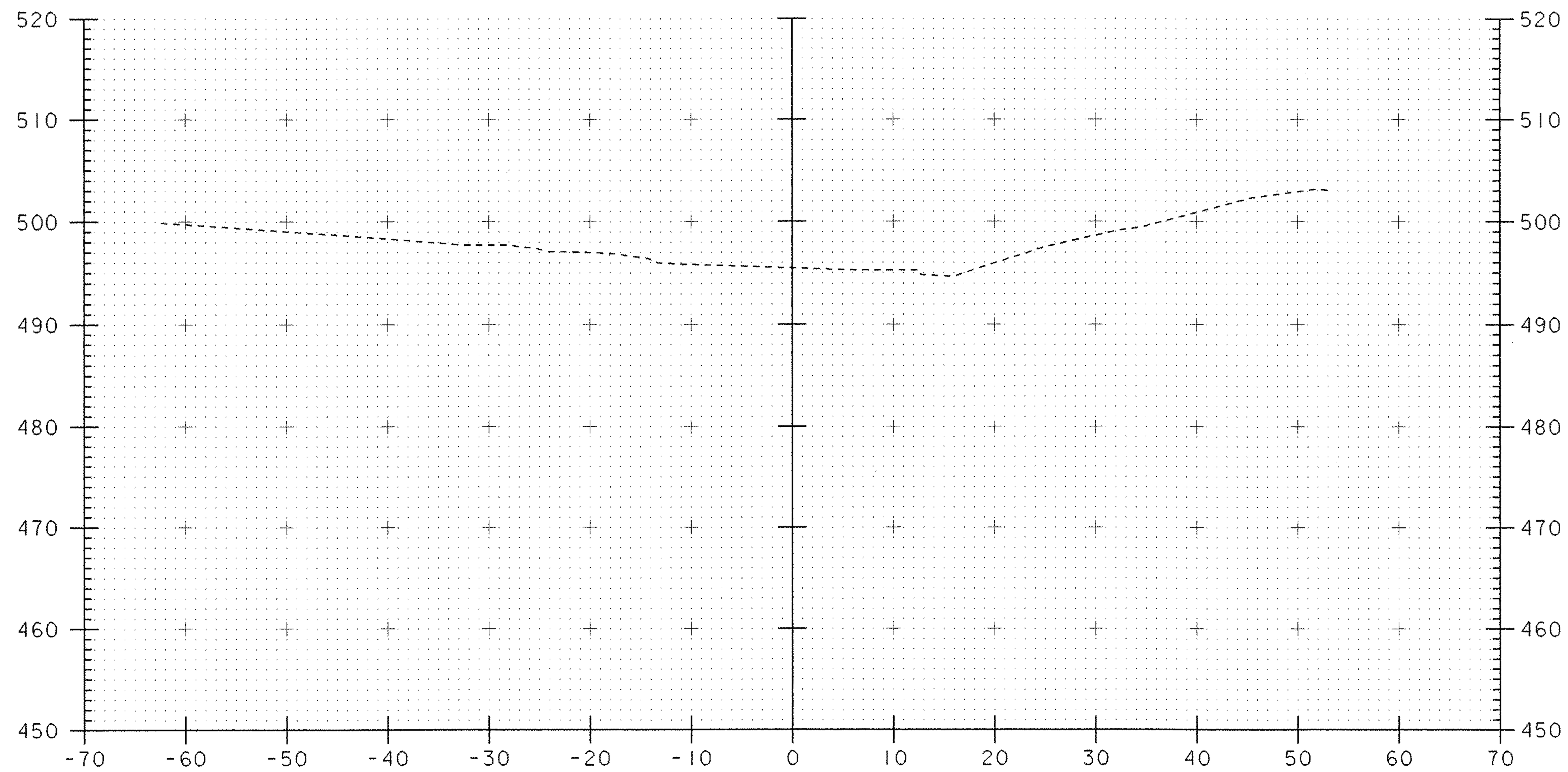


ASTM STANDARD REINFORCING BARS

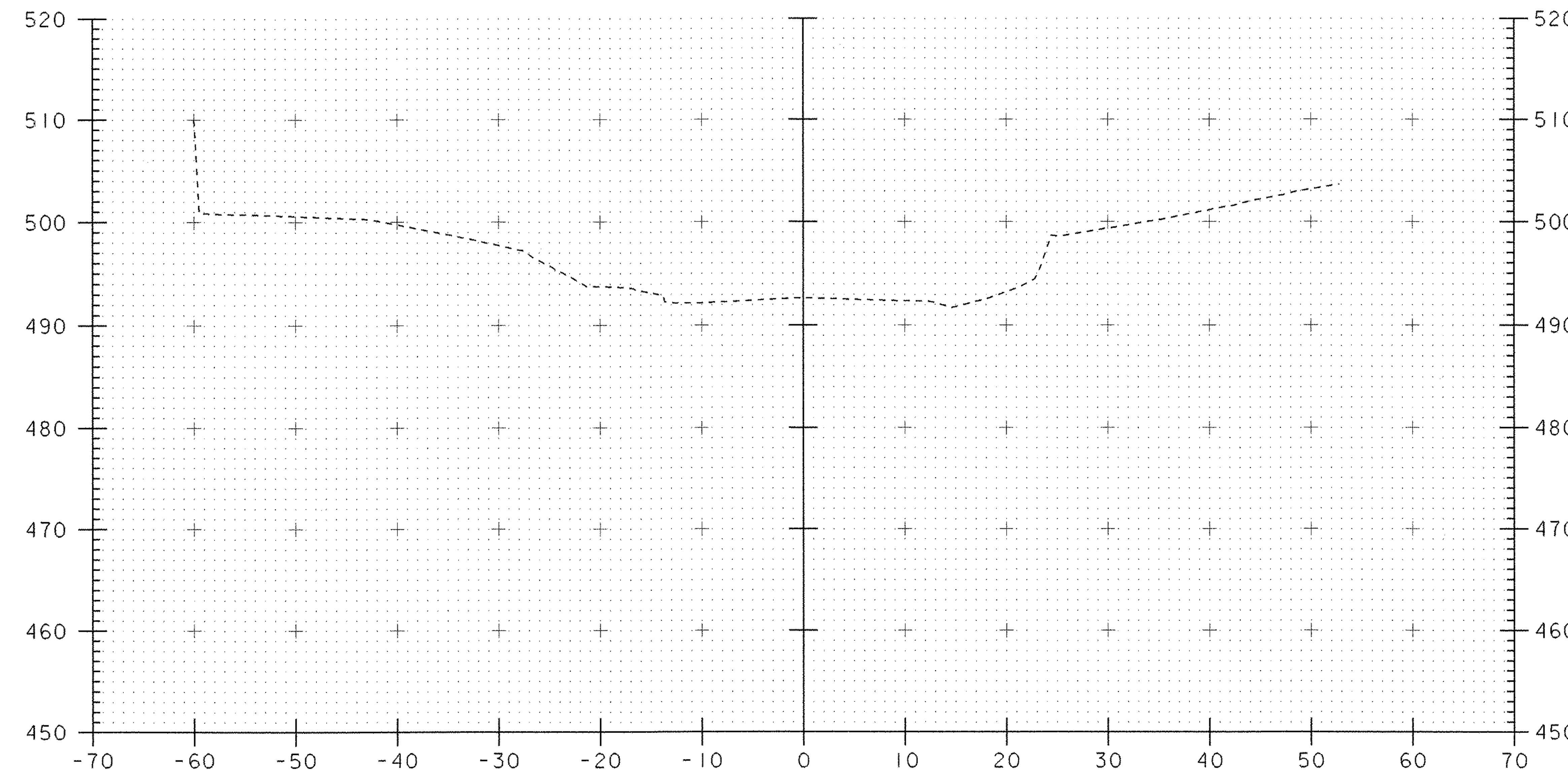
BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION: DIAMETER INCHES	AREA $INCHES^2$	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.044	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.142
#9	3.400	1.128	1.00	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: Royalton
PROJECT NUMBER: BRZ 1444(22)

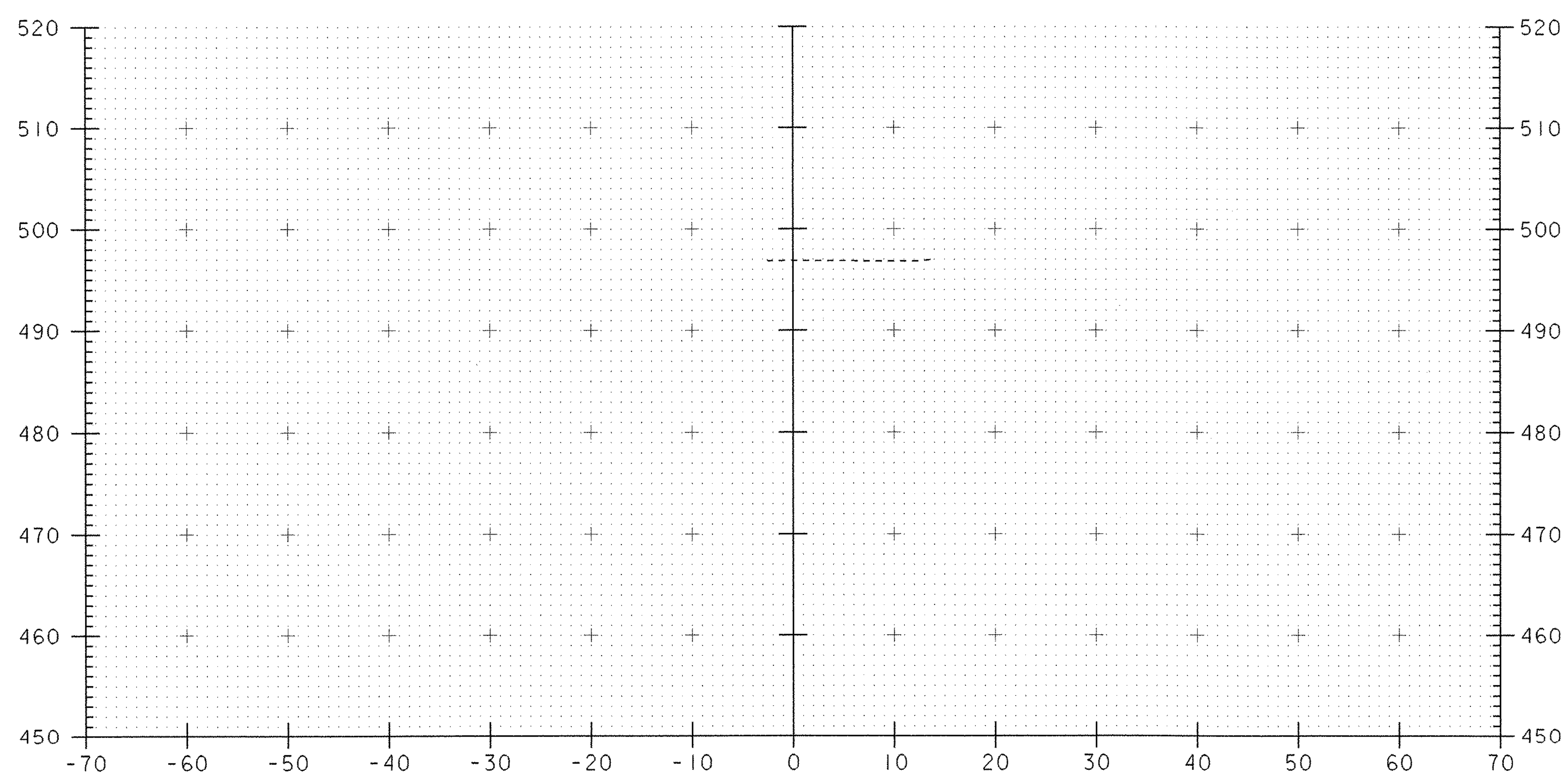
FILE NAME: 89j099rei.xls | PLOT DATE: 8/11/00
PROJECT LEADER: C.P. Williams | DRAWN BY: C.P. Williams
DESIGNED BY: C.P. Williams | CHECKED BY: W.B. Symonds
REINFORCING STEEL SCHEDULE SHEET #2 | SHEET 94 OF 118



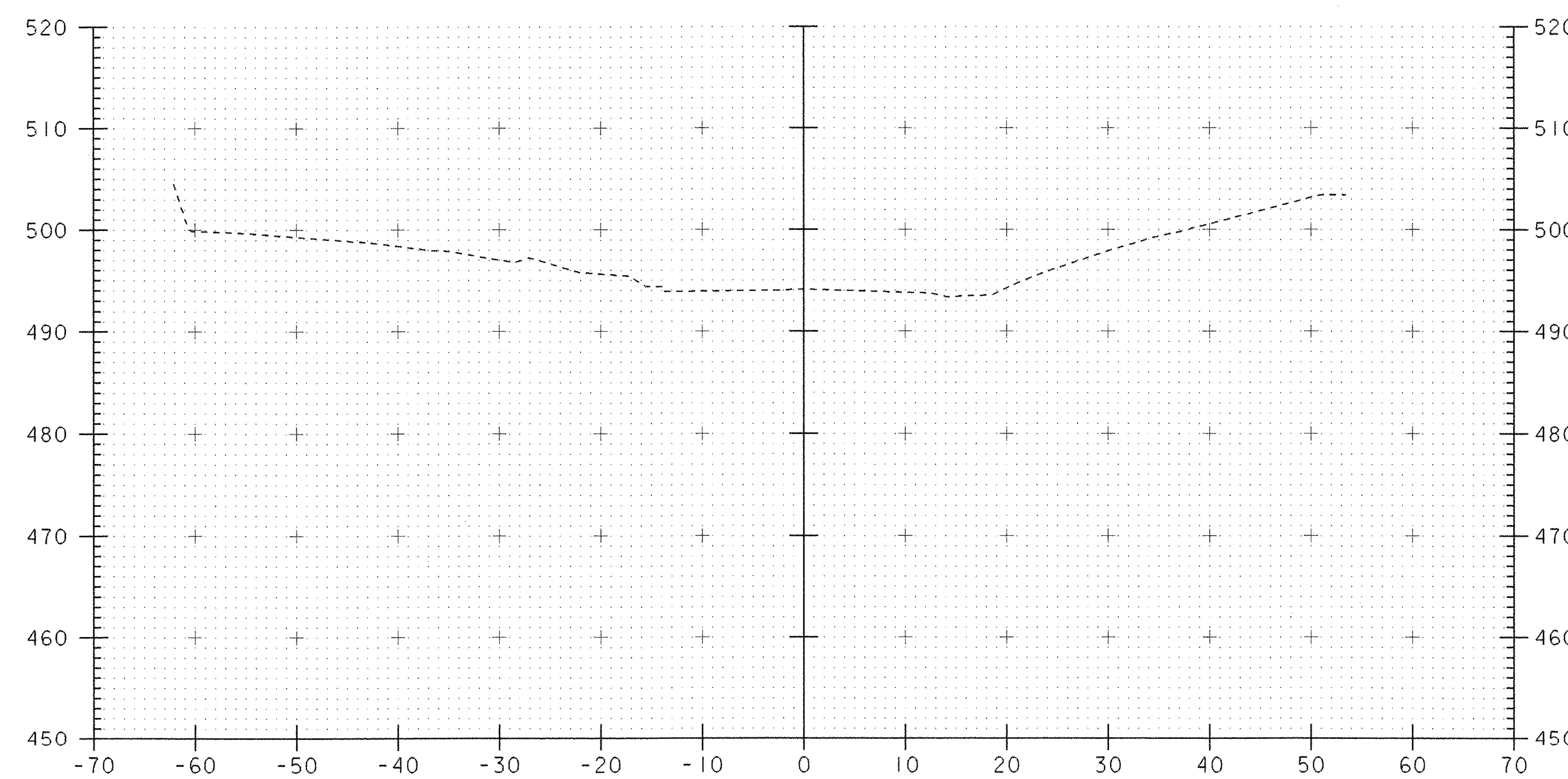
100+25



100+75



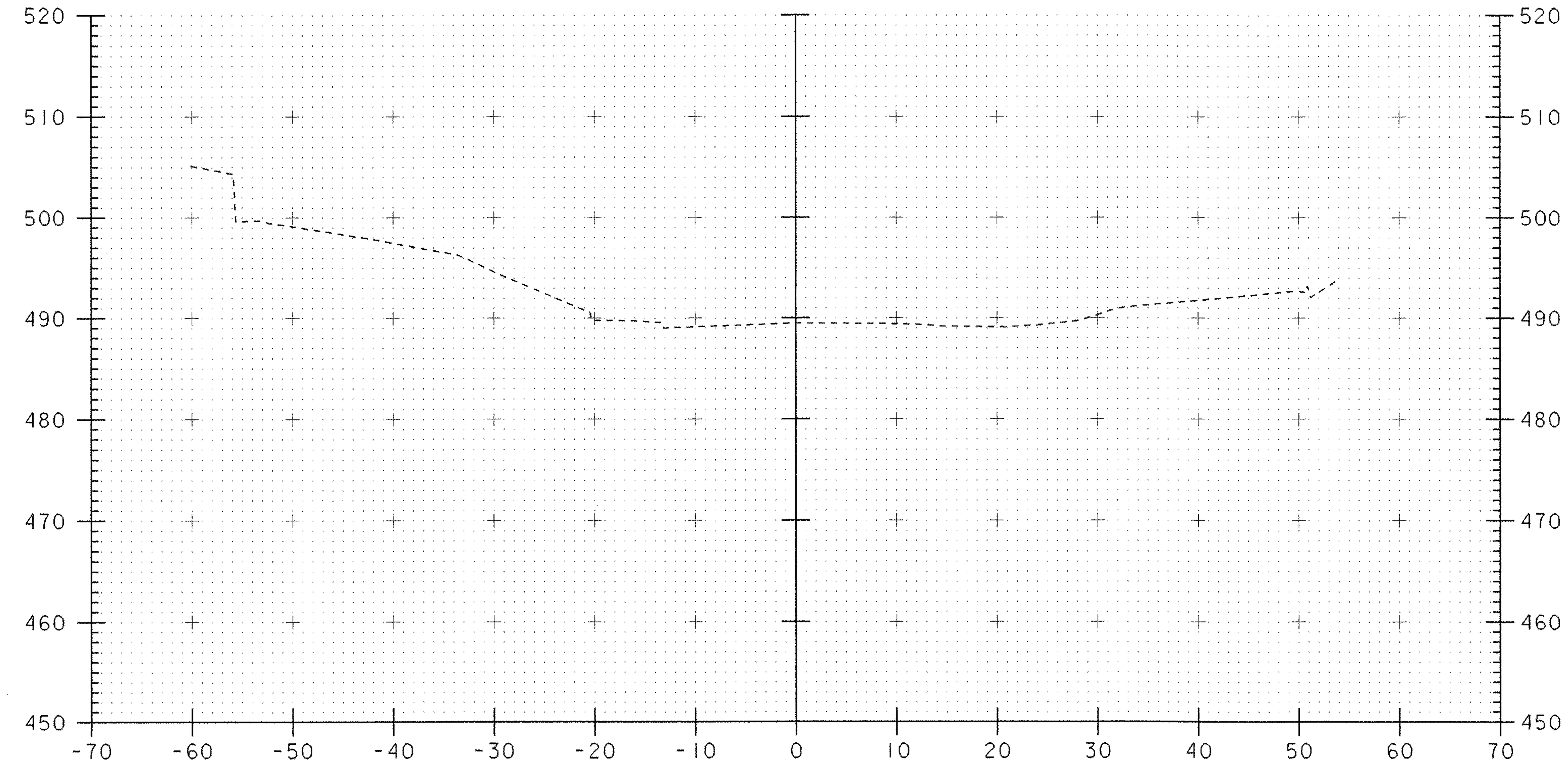
100+00



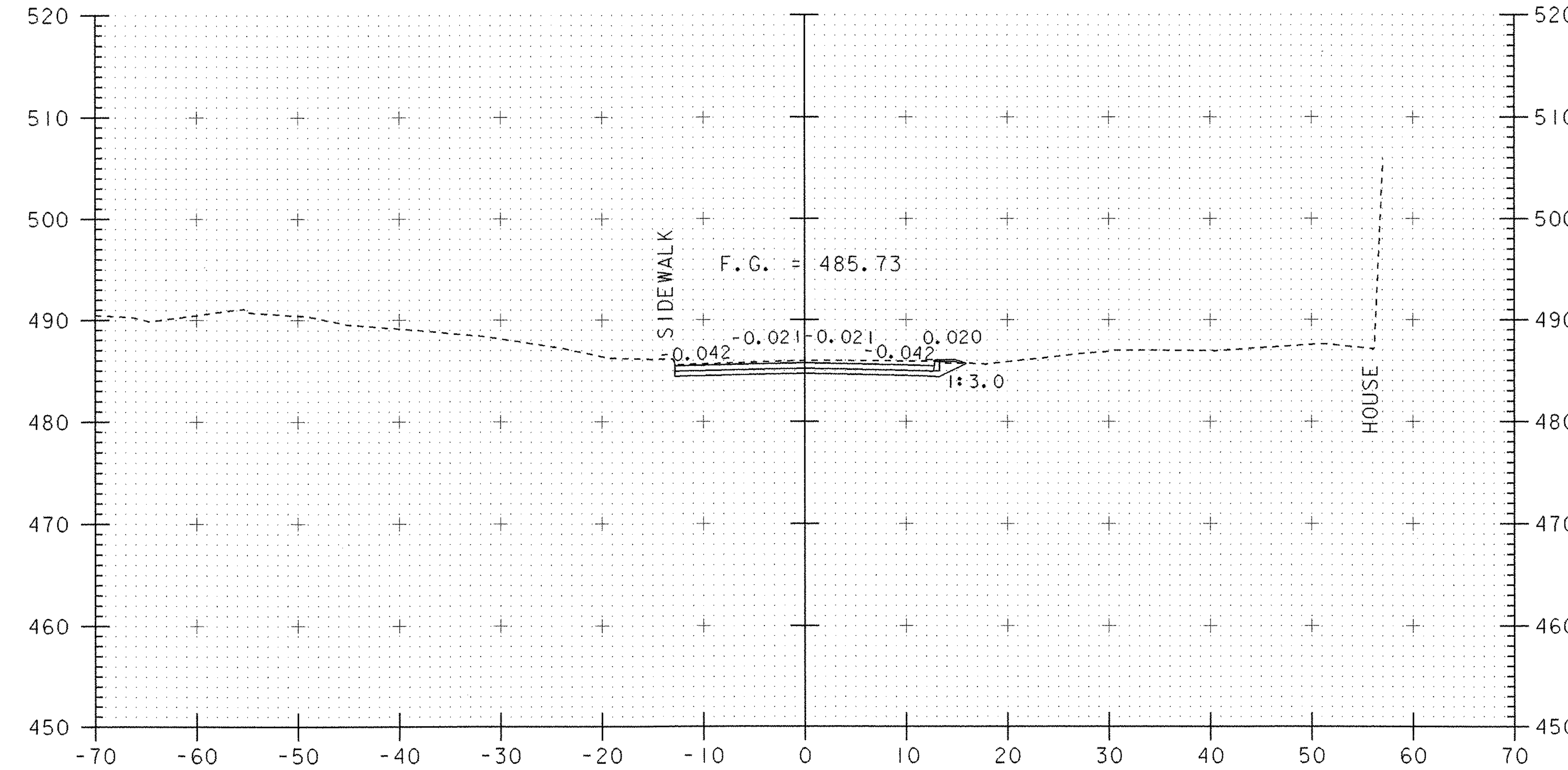
100+50

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

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099mlx.dgn IPARM FILE NAME: sj099m01.i	PLOT DATE: 25-SEP-2000
MAINLINE CROSS SECTIONS 100+00 TO 100+75	
	SHEET: 95 OF 118

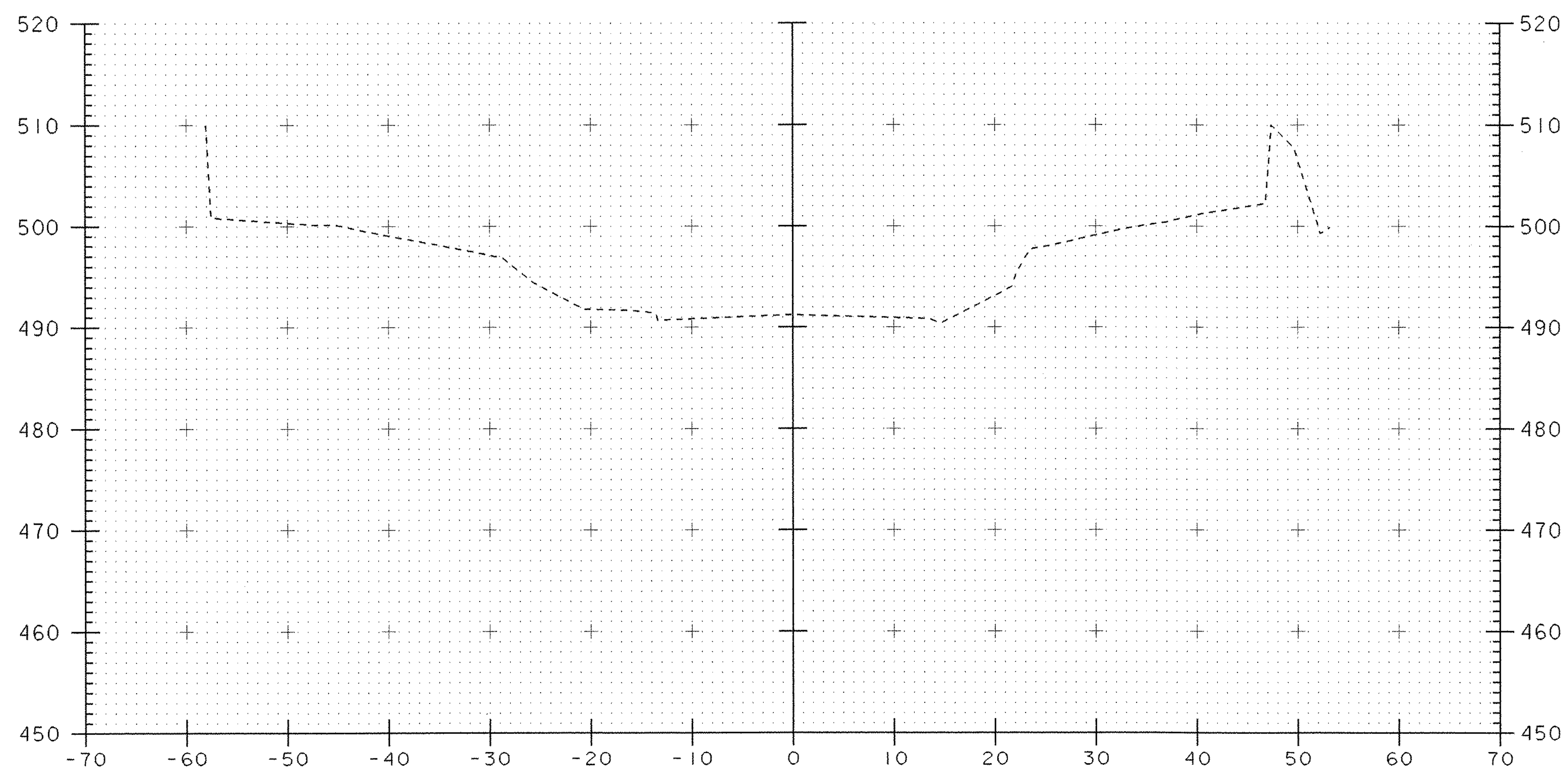


101+25

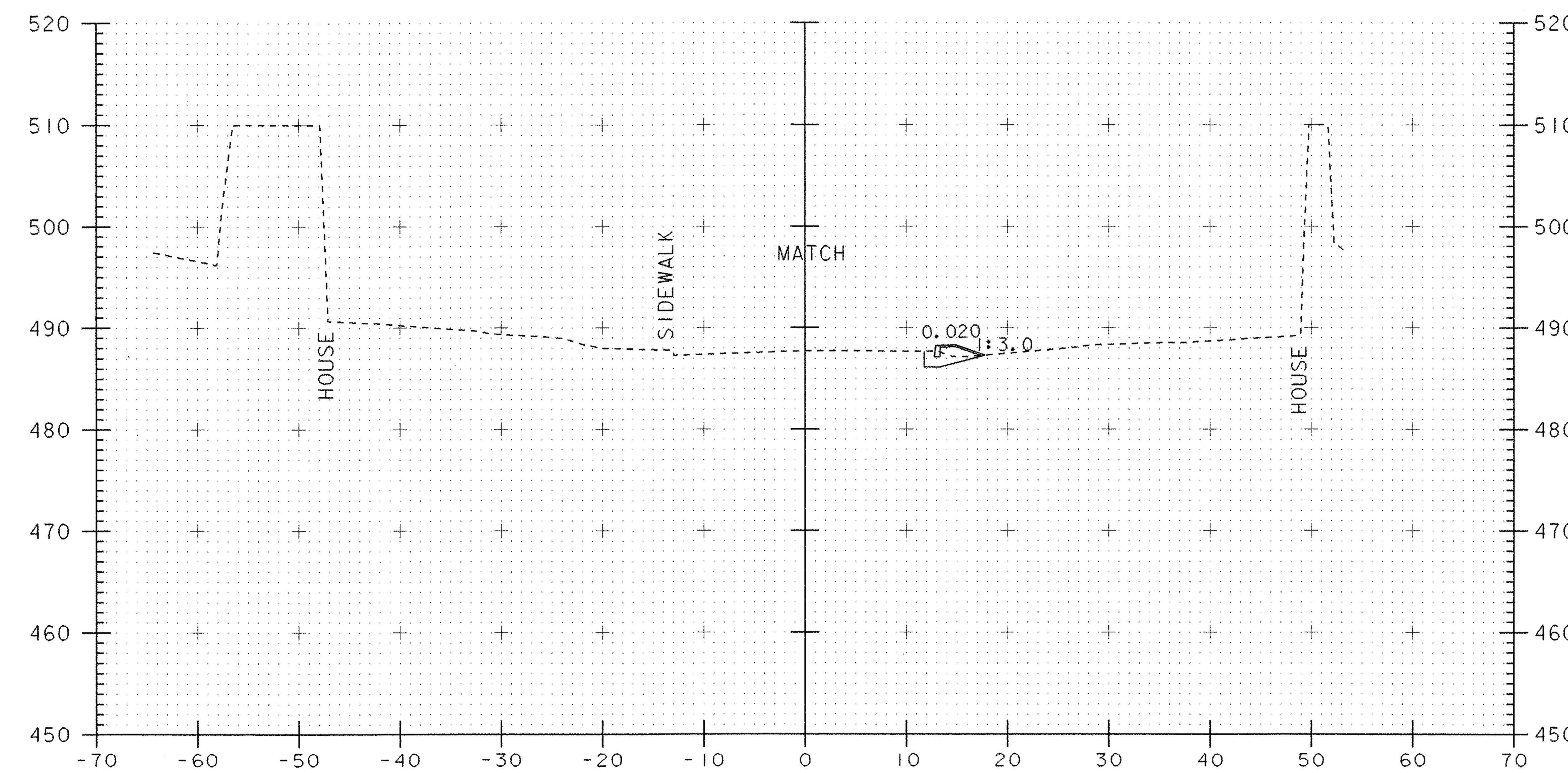


101+75

STA 101+75
TRANSITION SUBBASE FROM EXISTING TO
PROPOSED TYPICAL IN 50' (6" MINIMUM)
END COLD PLANING



101+00

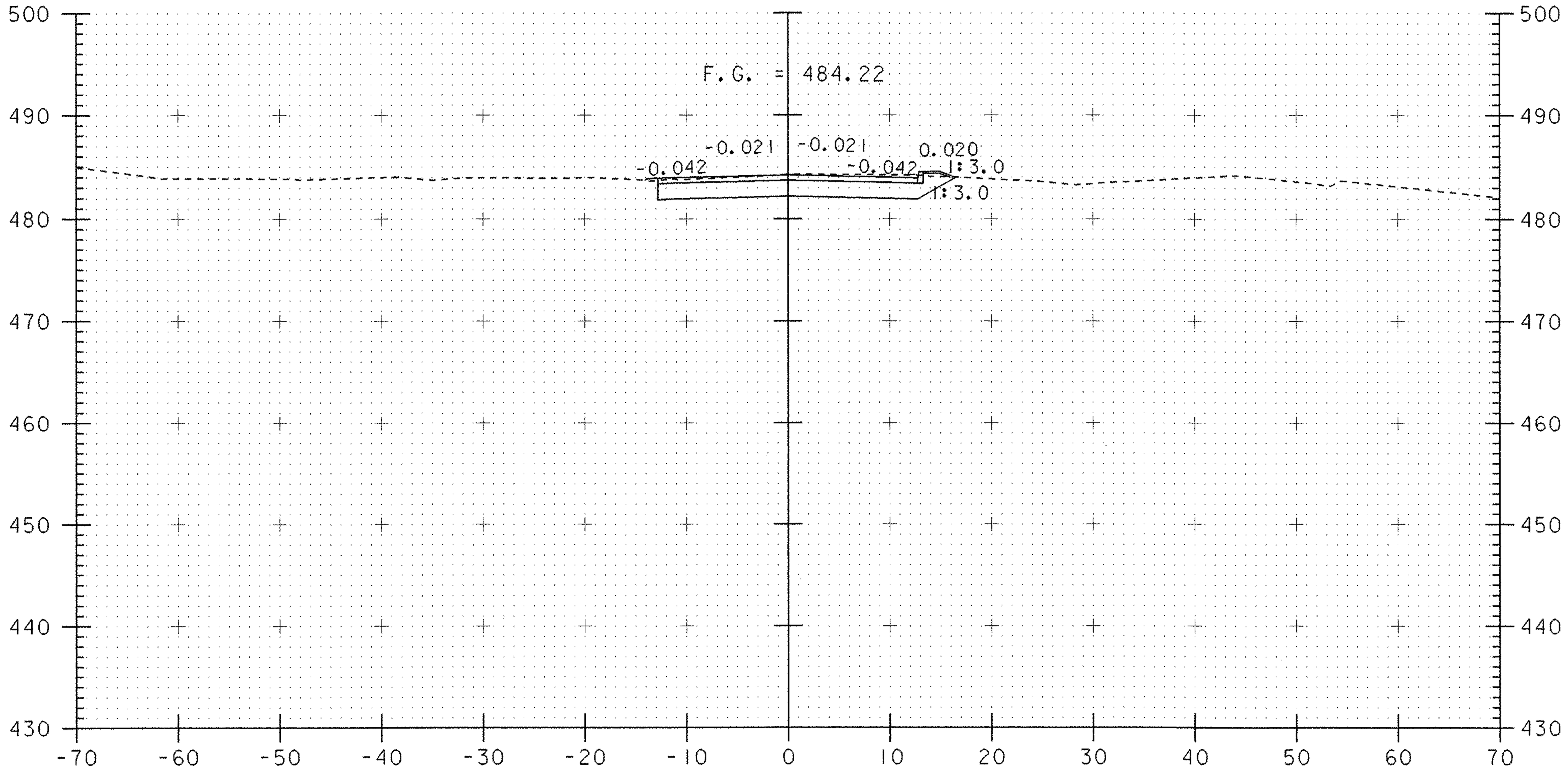


101+50

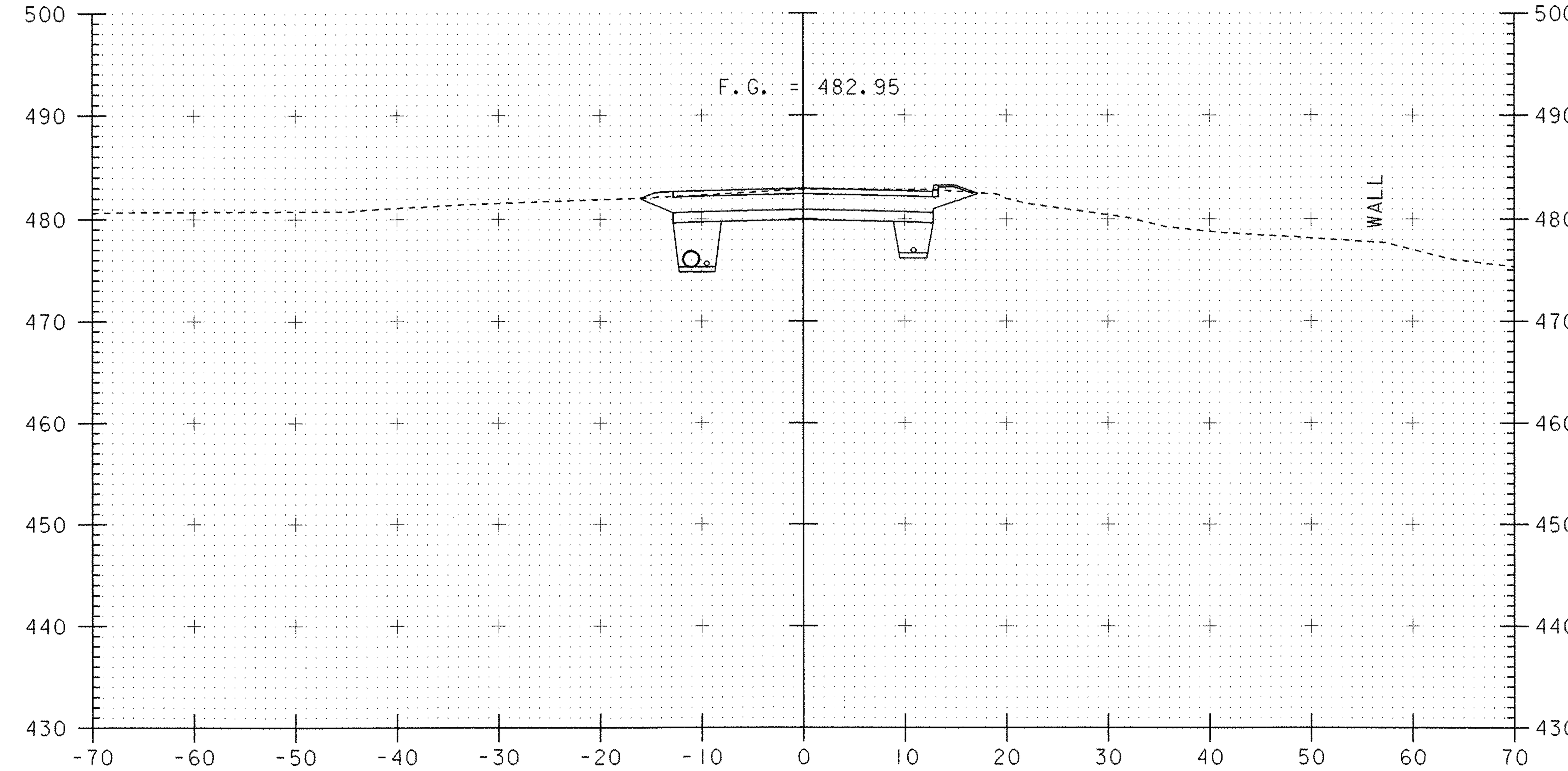
STA 101+50
BEGIN APPROACH
BEGIN COLD PLANING TO TRANSITION
PAVEMENT

SCALE 1" = 10'-0
10 0 10

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099mlx.dgn	
IPARM FILE NAME: sj099m02.i	PLOT DATE: 25-SEP-2000
MAINLINE CROSS SECTIONS 101+00 TO 101+75	
	SHEET: 96 OF 118

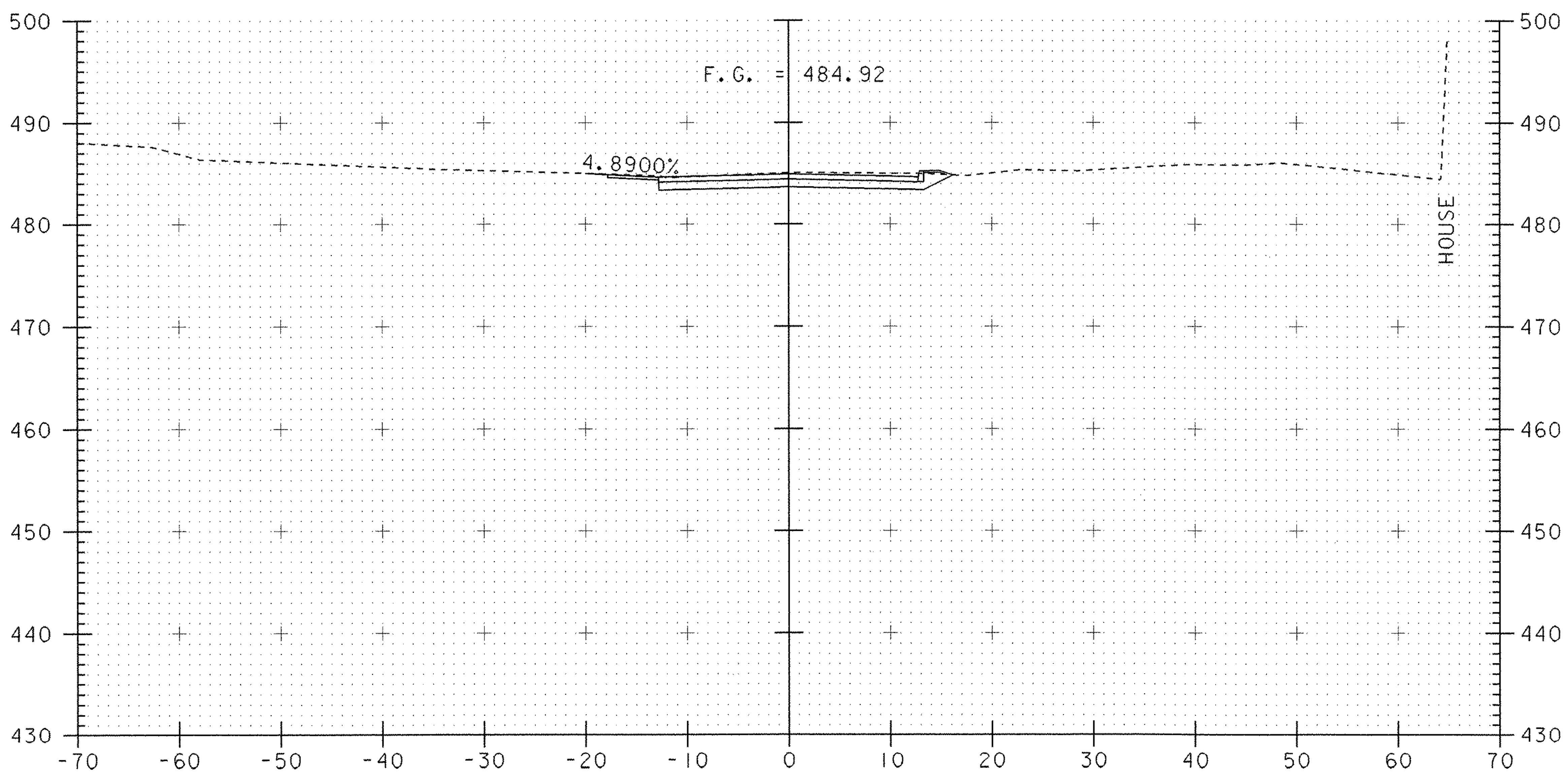


102+00

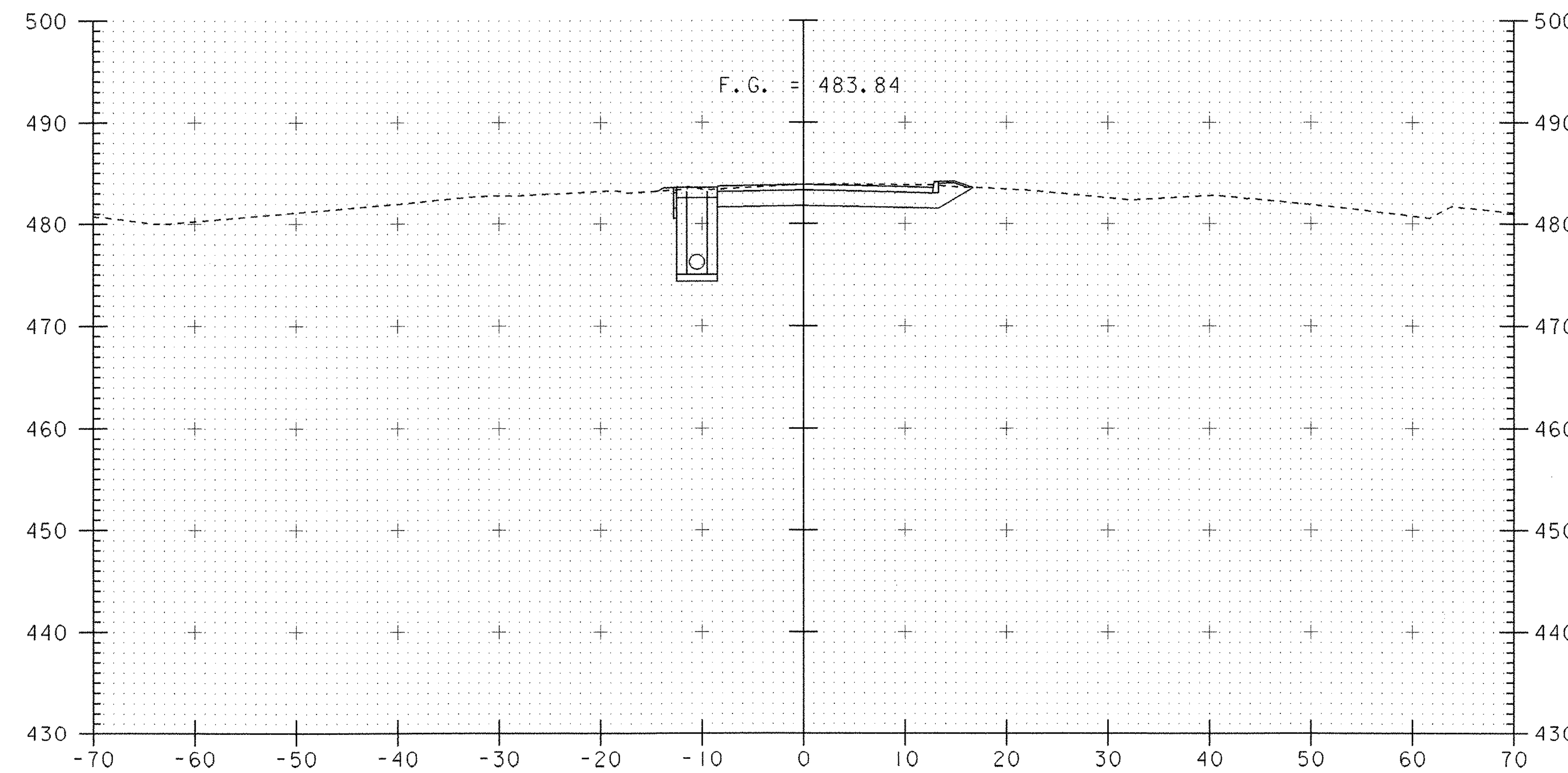


102+25

STA 102+25
END APPROACH / BEGIN PROJECT
END SUBBASE TAPER
BEGIN SAND BORROW - BOX CUT SAND TO FULL DEPTH



101+88

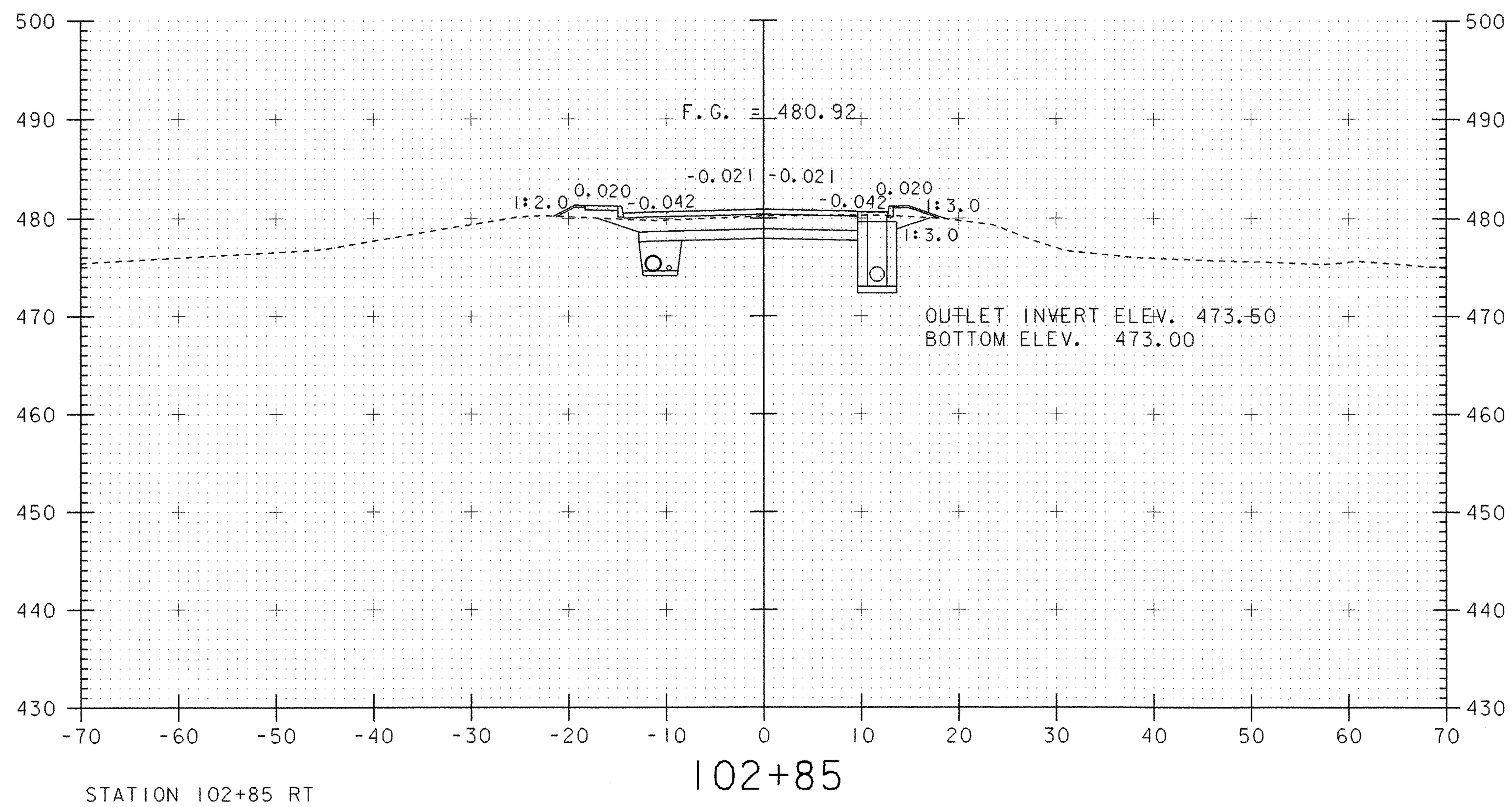


102+07

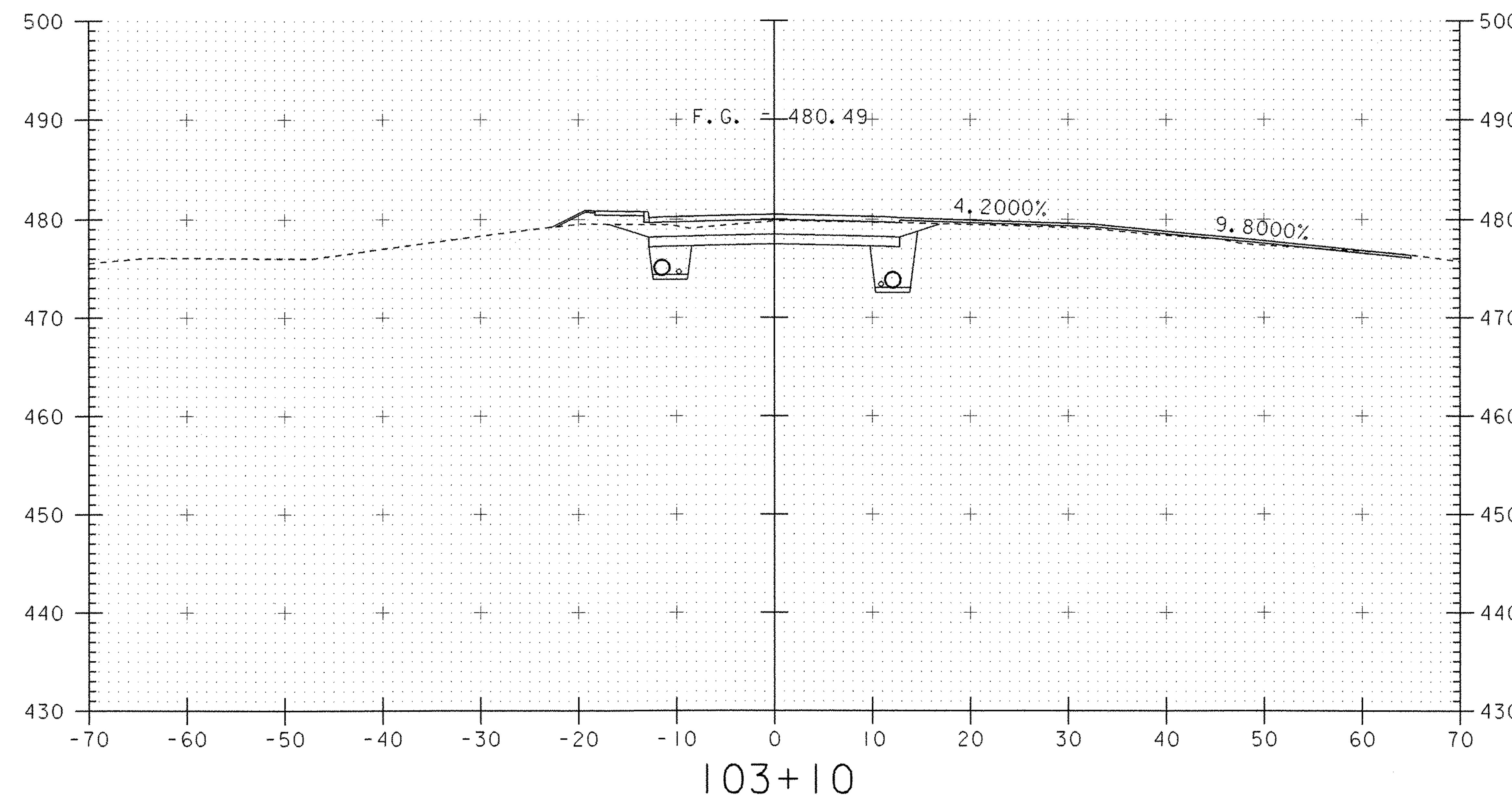
STATION 102+07 LT
BEGIN NEW 18" OPTION PIPE
CONSTRUCT NEW 4'X4' CONC. DI
REMOVE EXISTNG DI

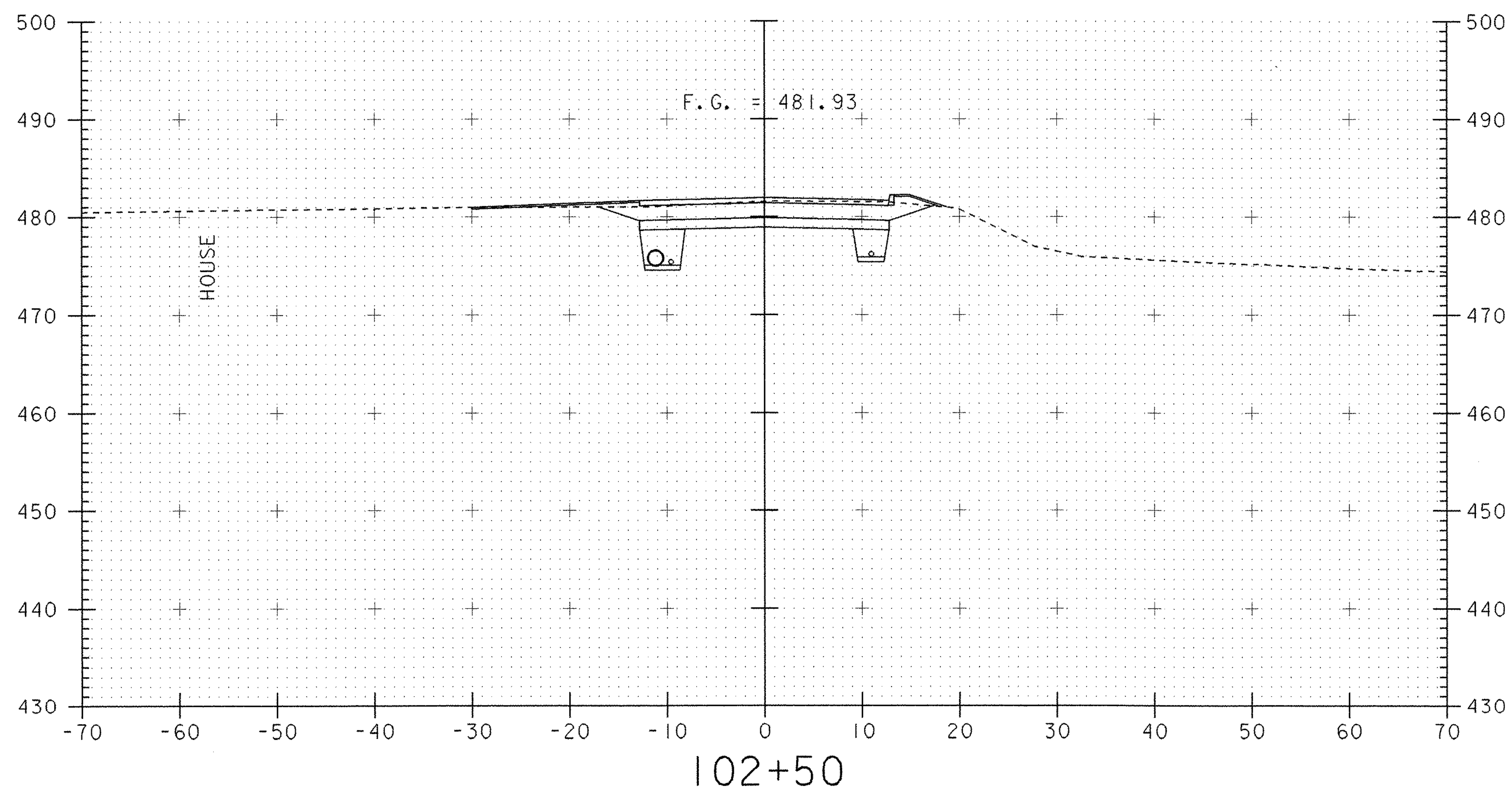
SCALE 1" = 10'-0
10 0 10

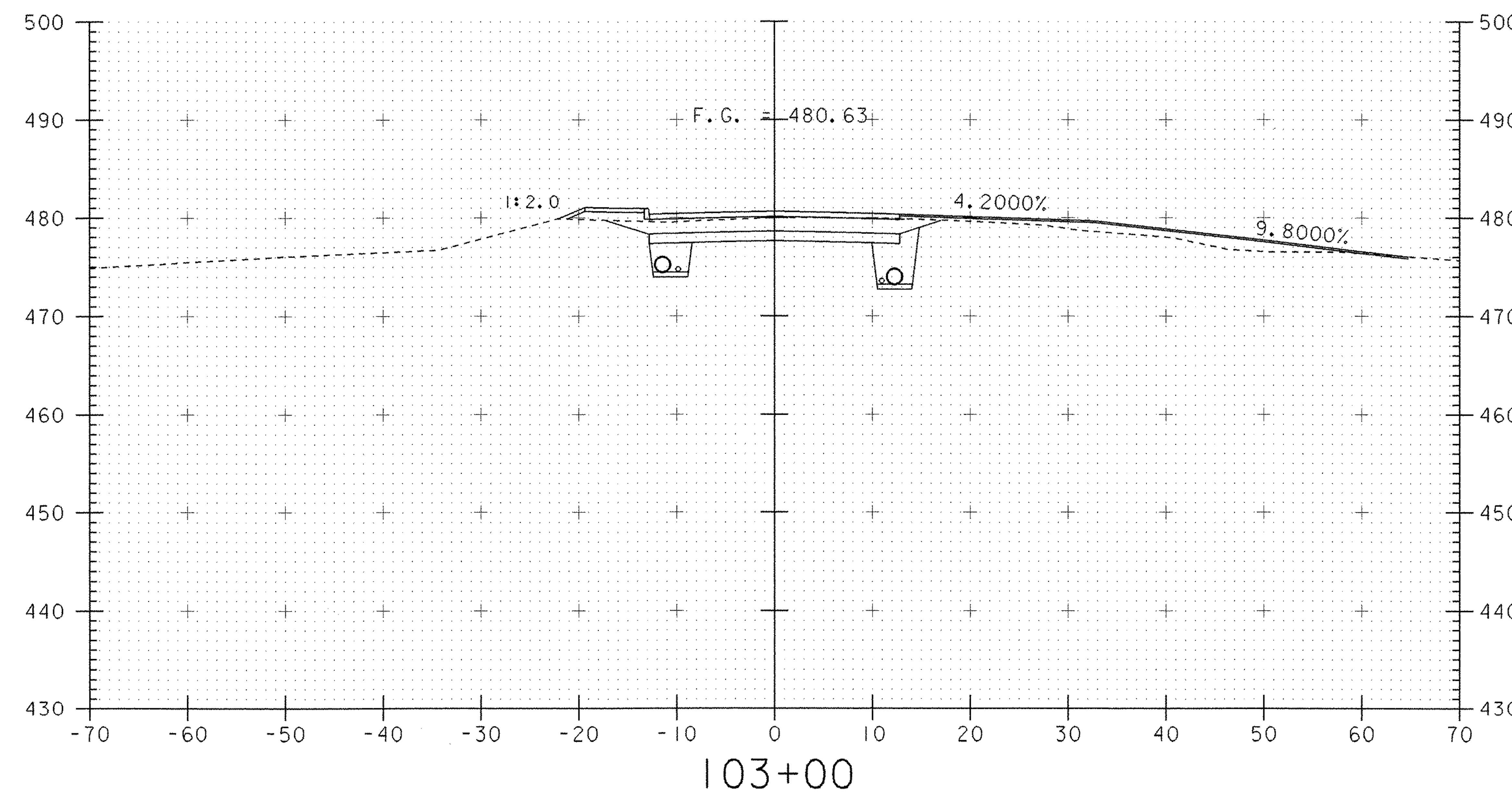
PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099mlx.dgn	
IPARM FILE NAME: sj099m03.i	PLOT DATE: 25-SEP-2000
MAINLINE CROSS SECTIONS 101+88 TO 102+25	
	SHEET: 97 OF 118



STATION 102+85 RT
BEGIN NEW 18" OPTION PIPE
CONSTRUCT NEW 4'X4' CONC. DI

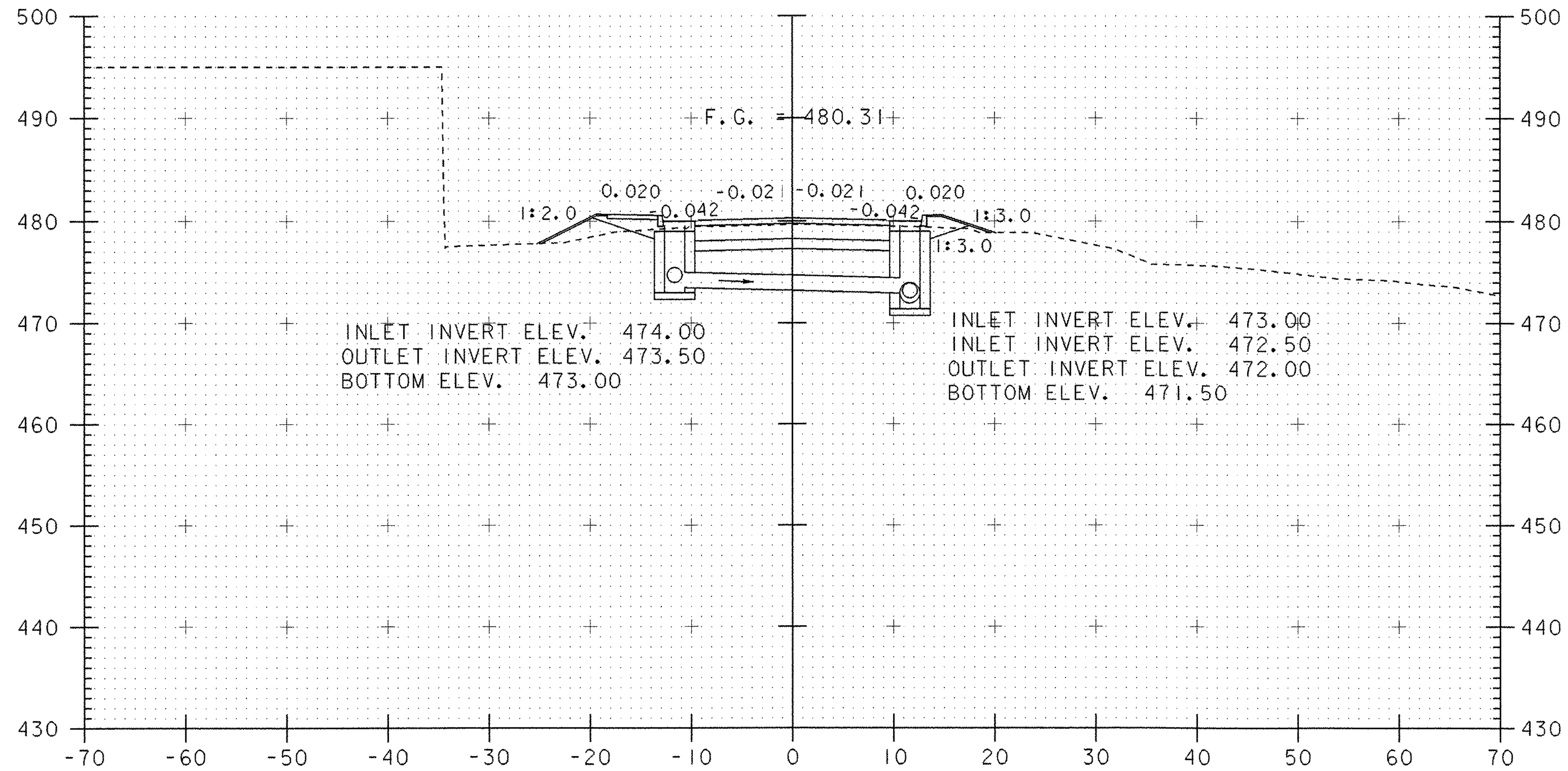






SCALE 1" = 10'-0

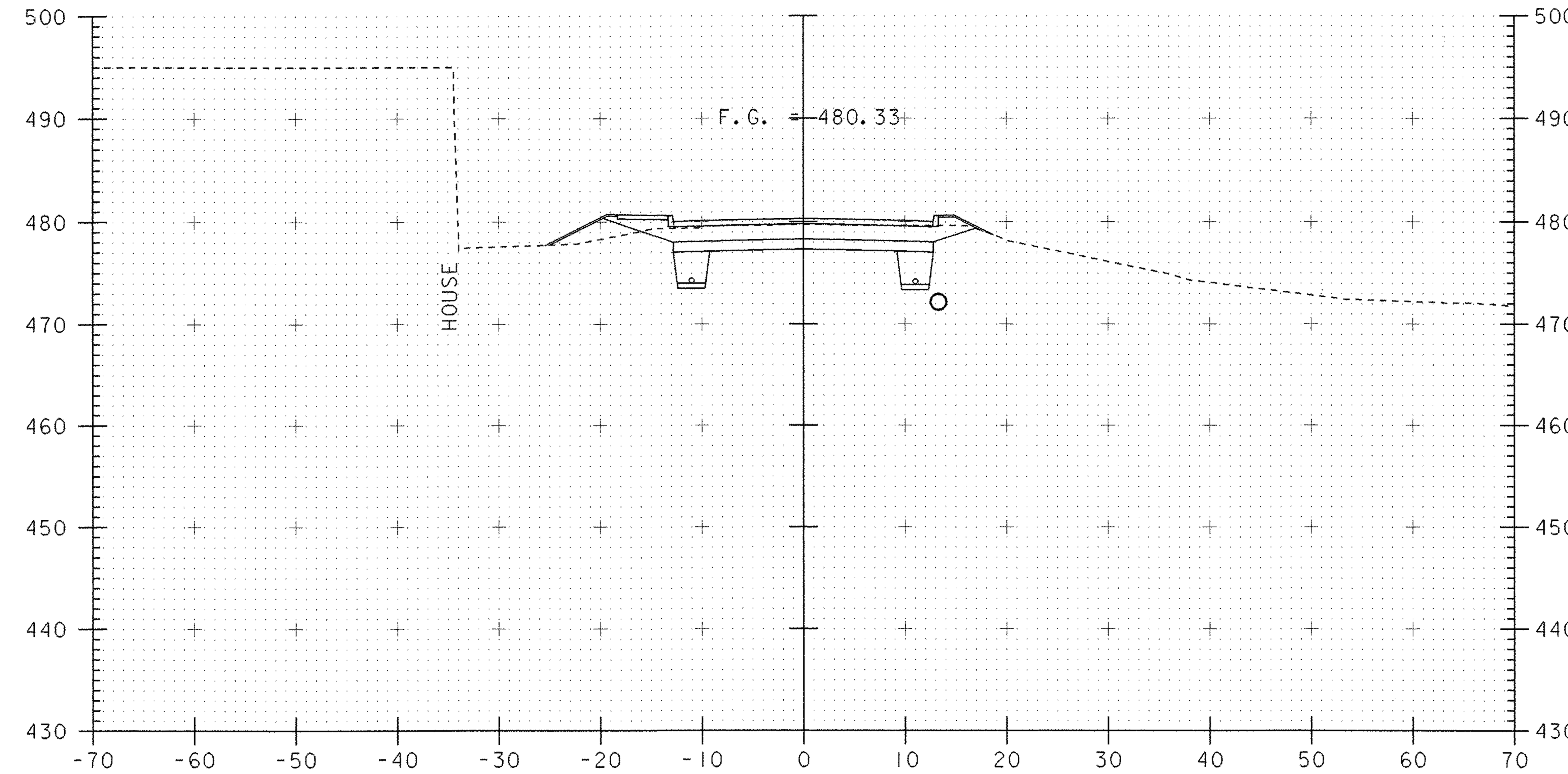
PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099mlx.dgn	
IPARM FILE NAME: sj099m04.i	PLOT DATE: 25-SEP-2000
MAINLINE CROSS SECTIONS 102+50 TO 103+10	
	SHEET: 98 OF 118



103+40

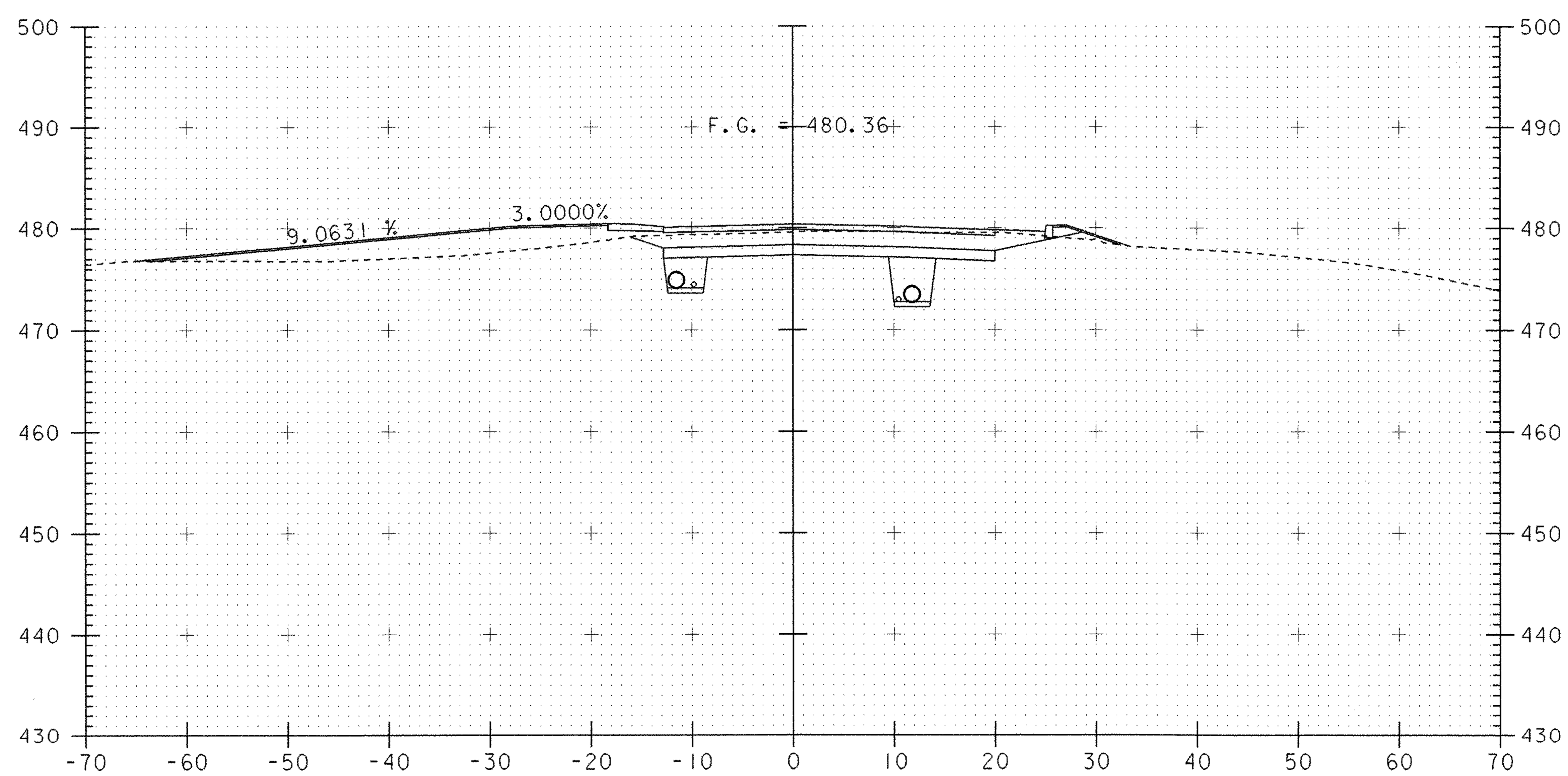
STATION 103+40 LT
END NEW 18" OPTION PIPE / BEGIN NEW 18" OPTION PIPE
CONSTRUCT NEW 4'X4' CONC. DI

STATION 103+40 RT
END NEW 18" OPTION PIPE (2) / BEGIN NEW 24" OPTION PIPE
CONSTRUCT NEW 4'X4' CONC. DI

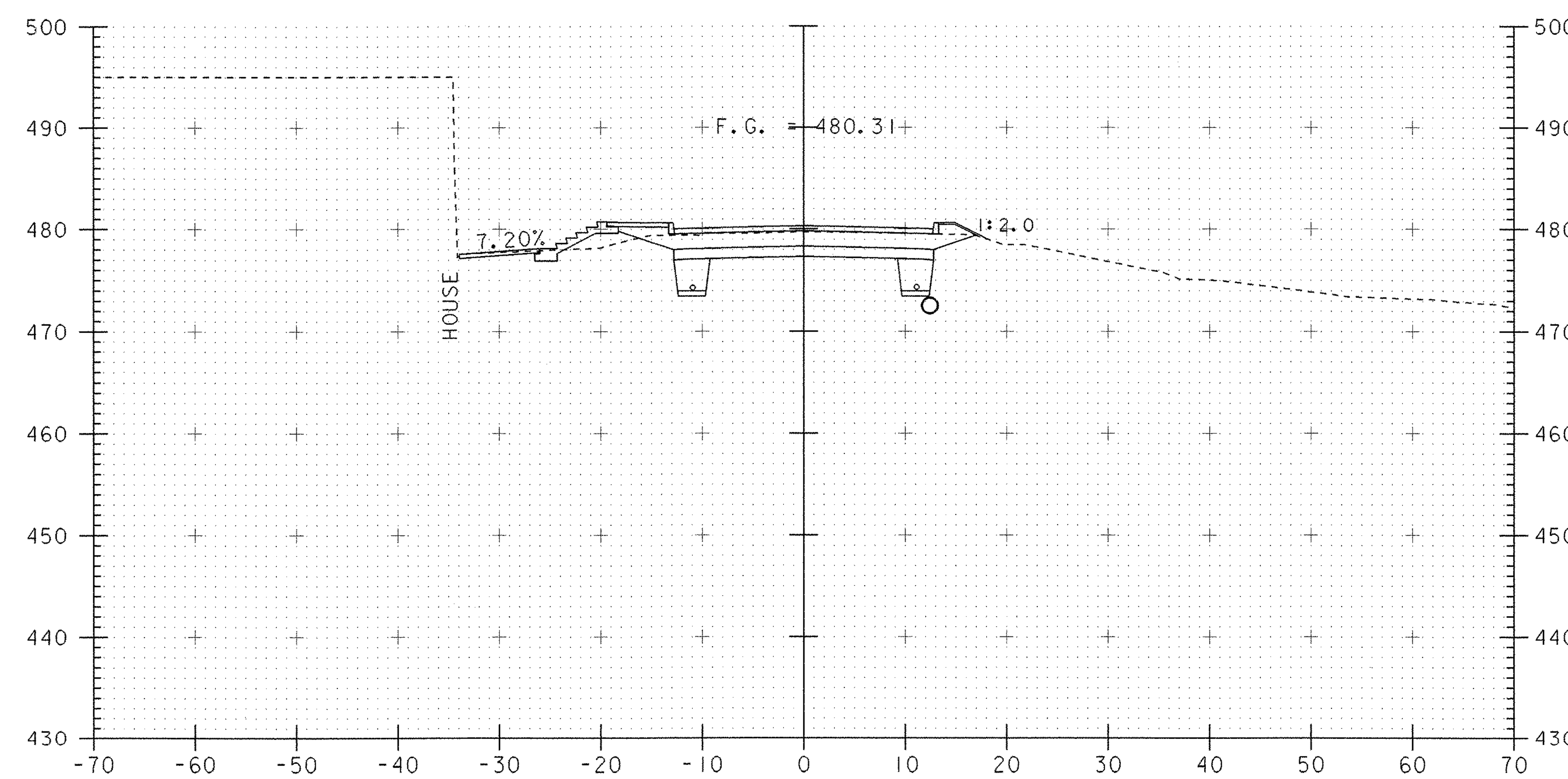


103+50

STATION 103+50
LINEAR TRANSITION SHOULDER WIDTH FROM 2'-0" TO 5'-0" @ STA 104+25
LINEAR TRANSITION FACE OF RAIL FROM 12'-9½" TO 15'-9½" @ STA 104+25
LINEAR TRANSITION GRASS STRIP FROM 0' TO 4'-0" @ STA 104+25



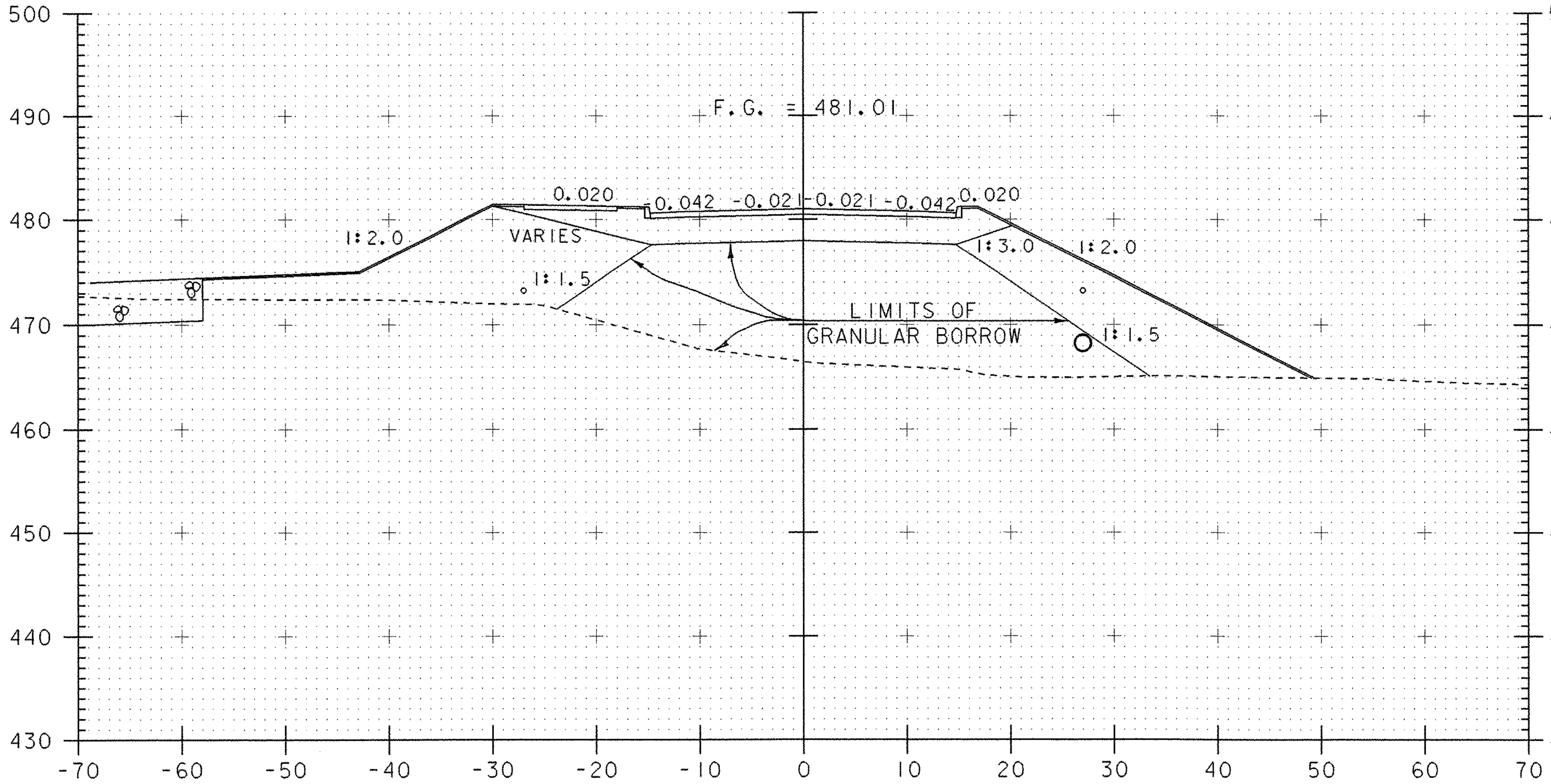
103+25



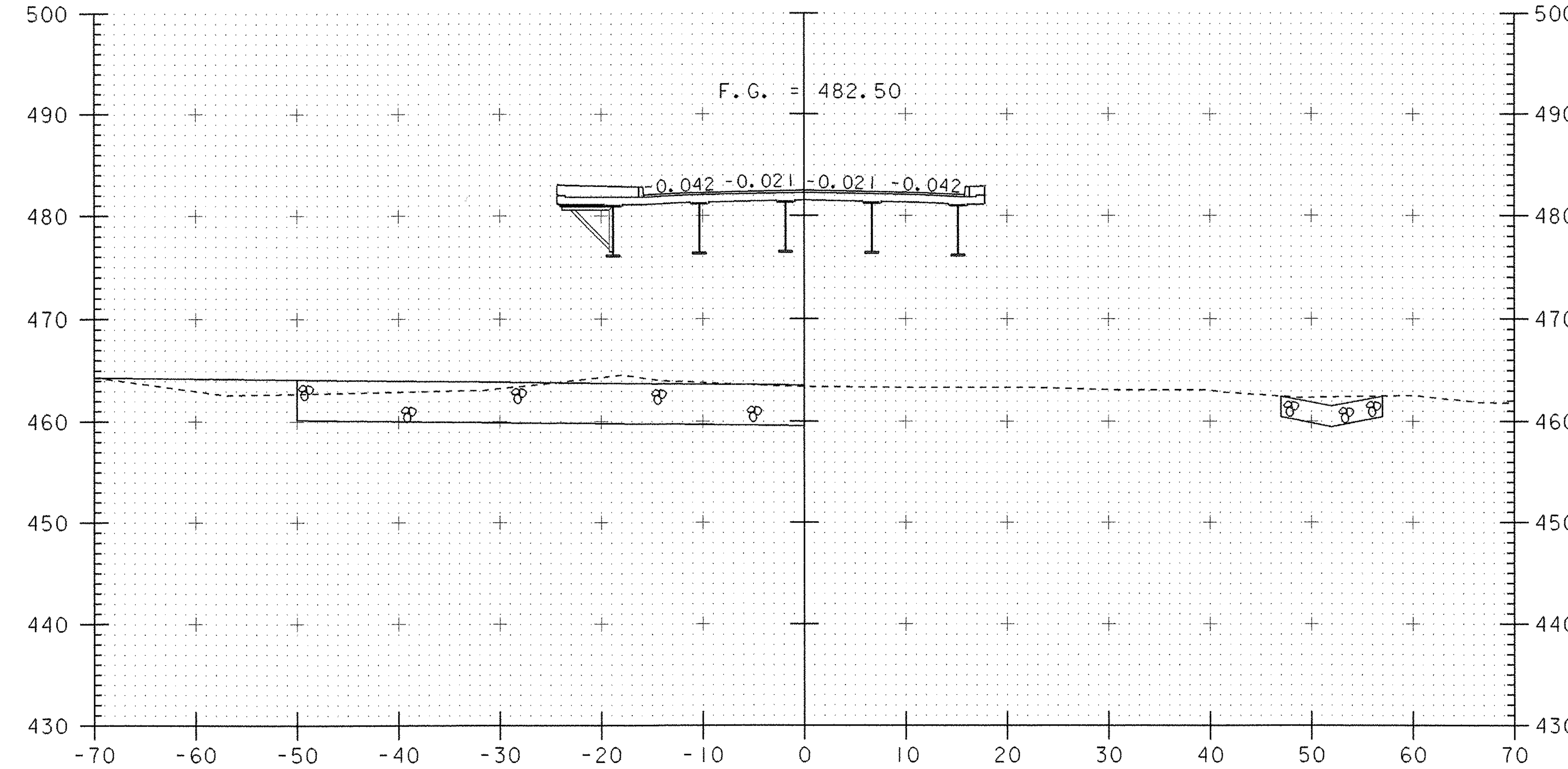
103+45

SCALE 1" = 10'-0"

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099mlx.dgn IPARM FILE NAME: sj099m05.i	PLOT DATE: 25-SEP-2000
MAINLINE CROSS SECTIONS 103+25 TO 103+50	
	SHEET: 99 OF 118

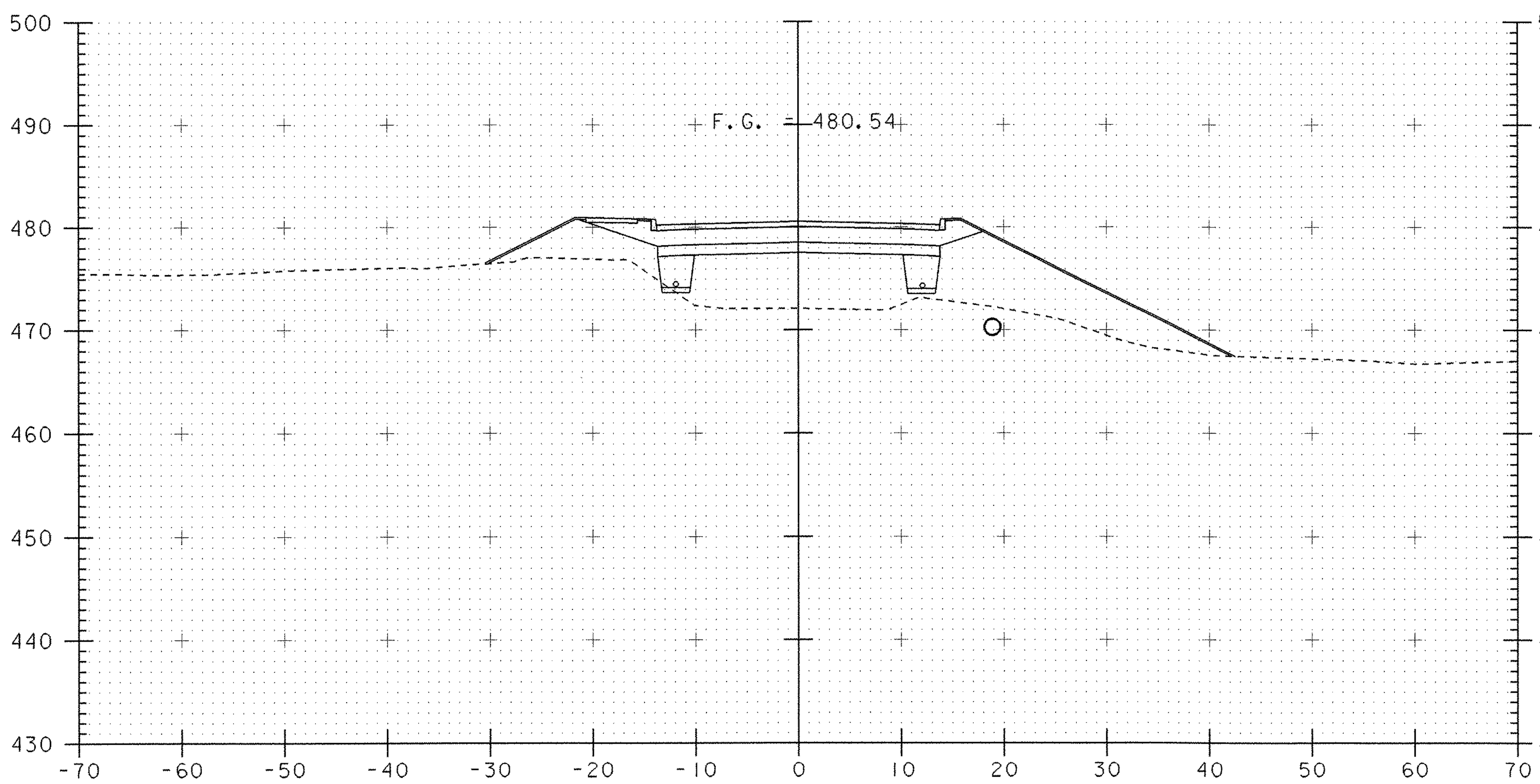


104+00



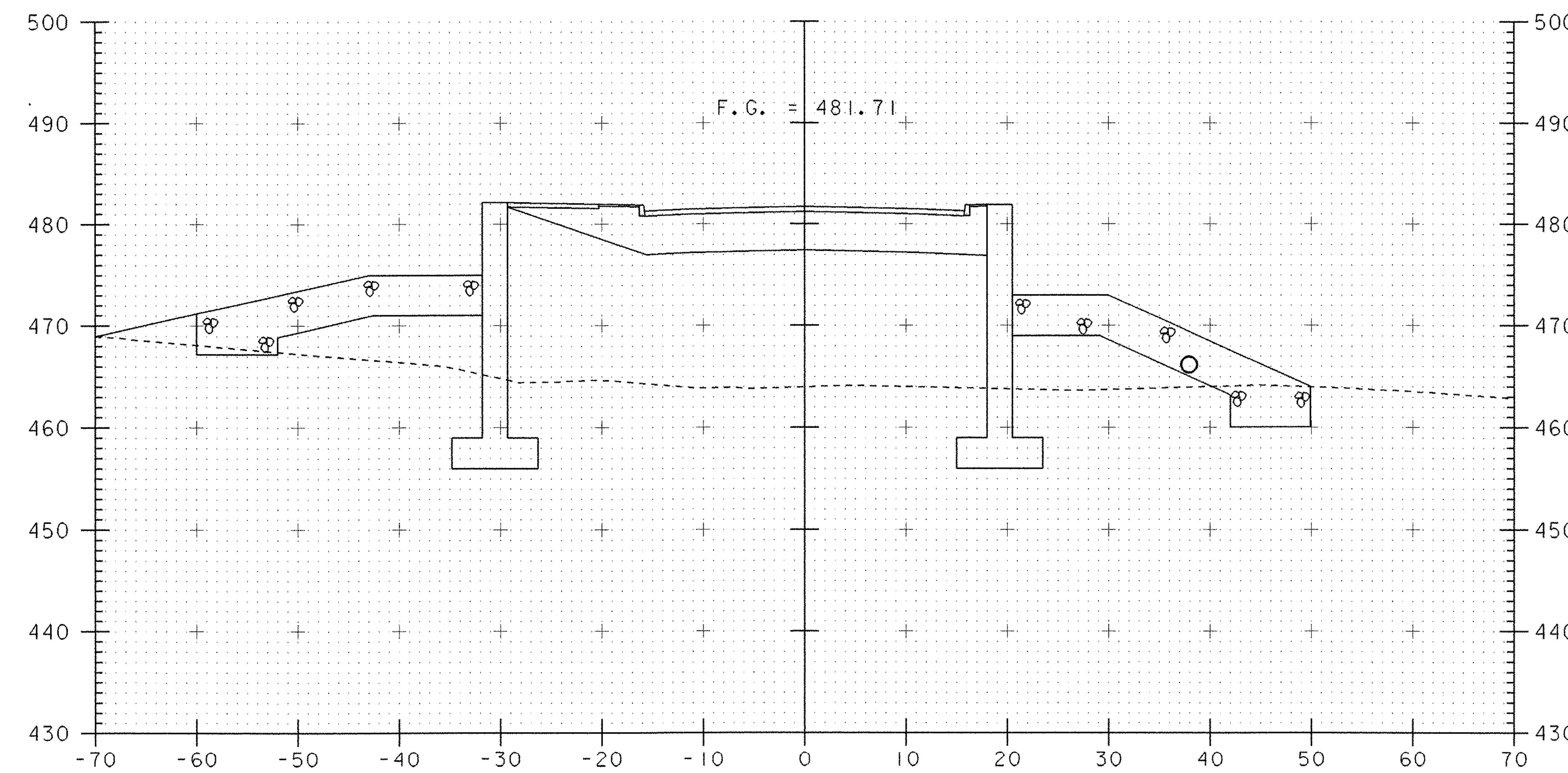
104+50

STATION 103+80
BEGIN GRANULAR BORROW
BEGIN SUBBASE TAPER TO 4'-0" IN 50'
END SAND BORROW FULL DEPTH



103+75

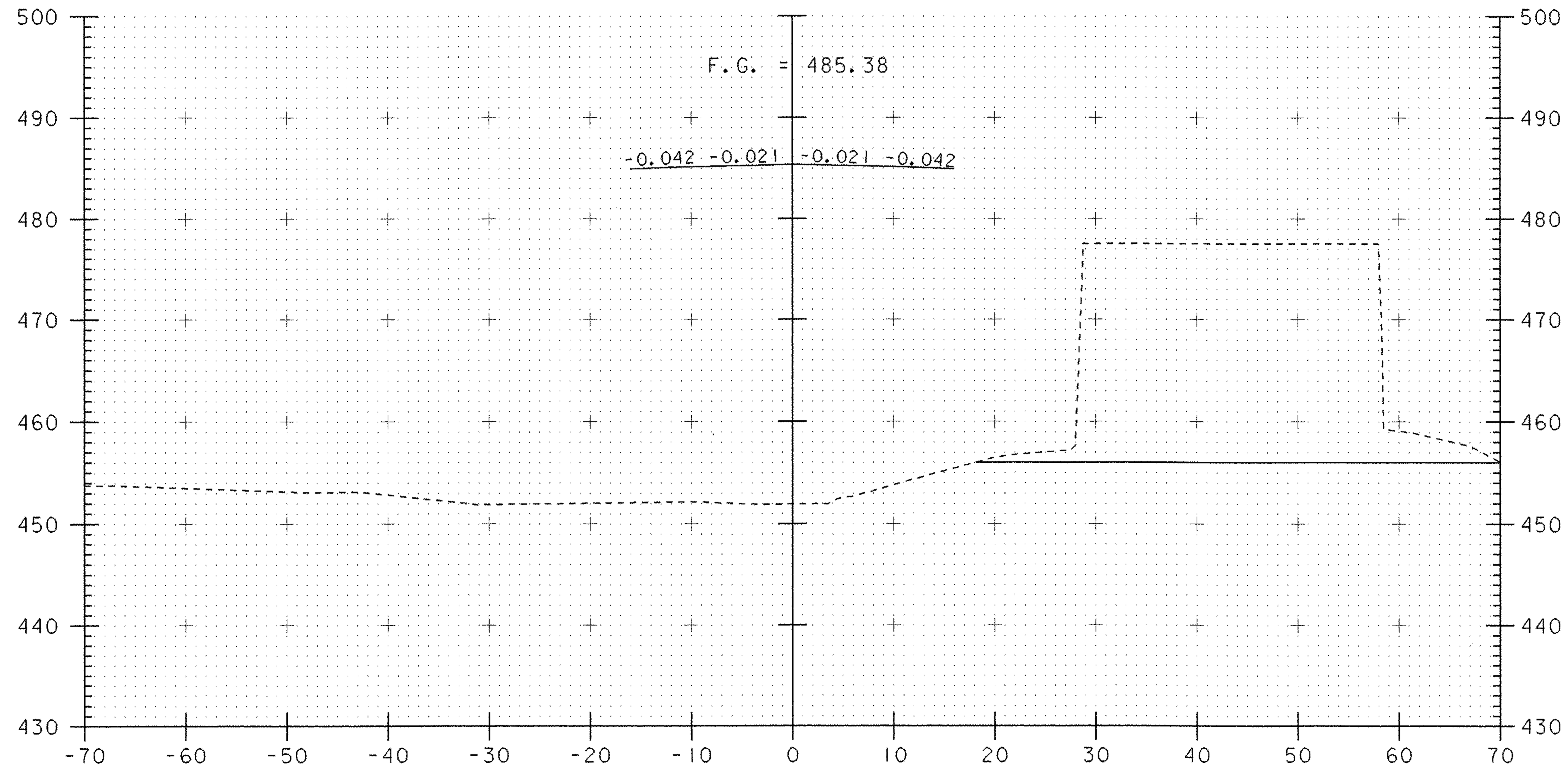
STATION 104+31.13
BEGIN BRIDGE
STATION 104+30 40' RT
OUTLET 24" OPTION PIPE @ ELEV. 465.00



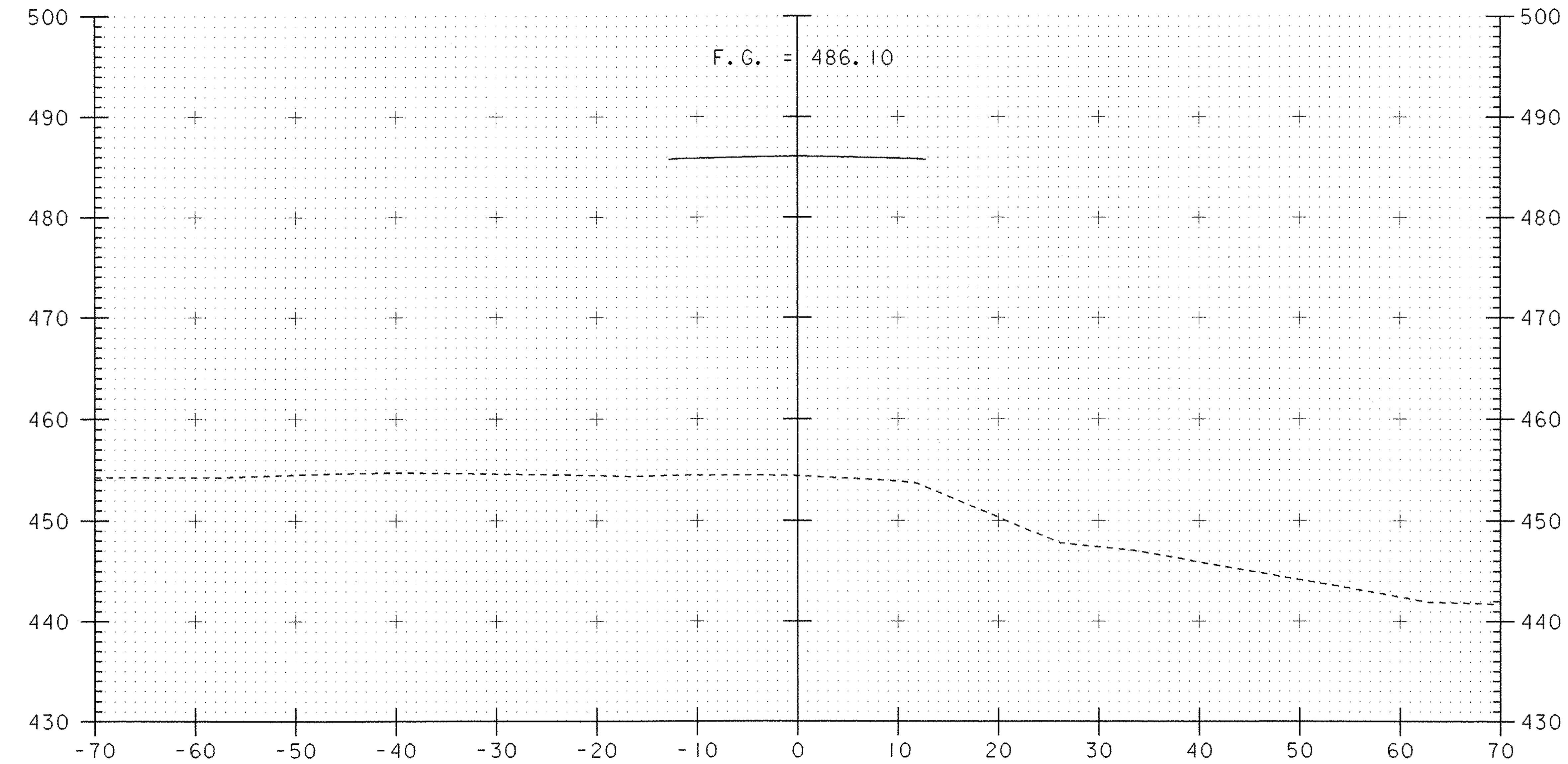
104+25

SCALE 1" = 10'-0
10 0 10

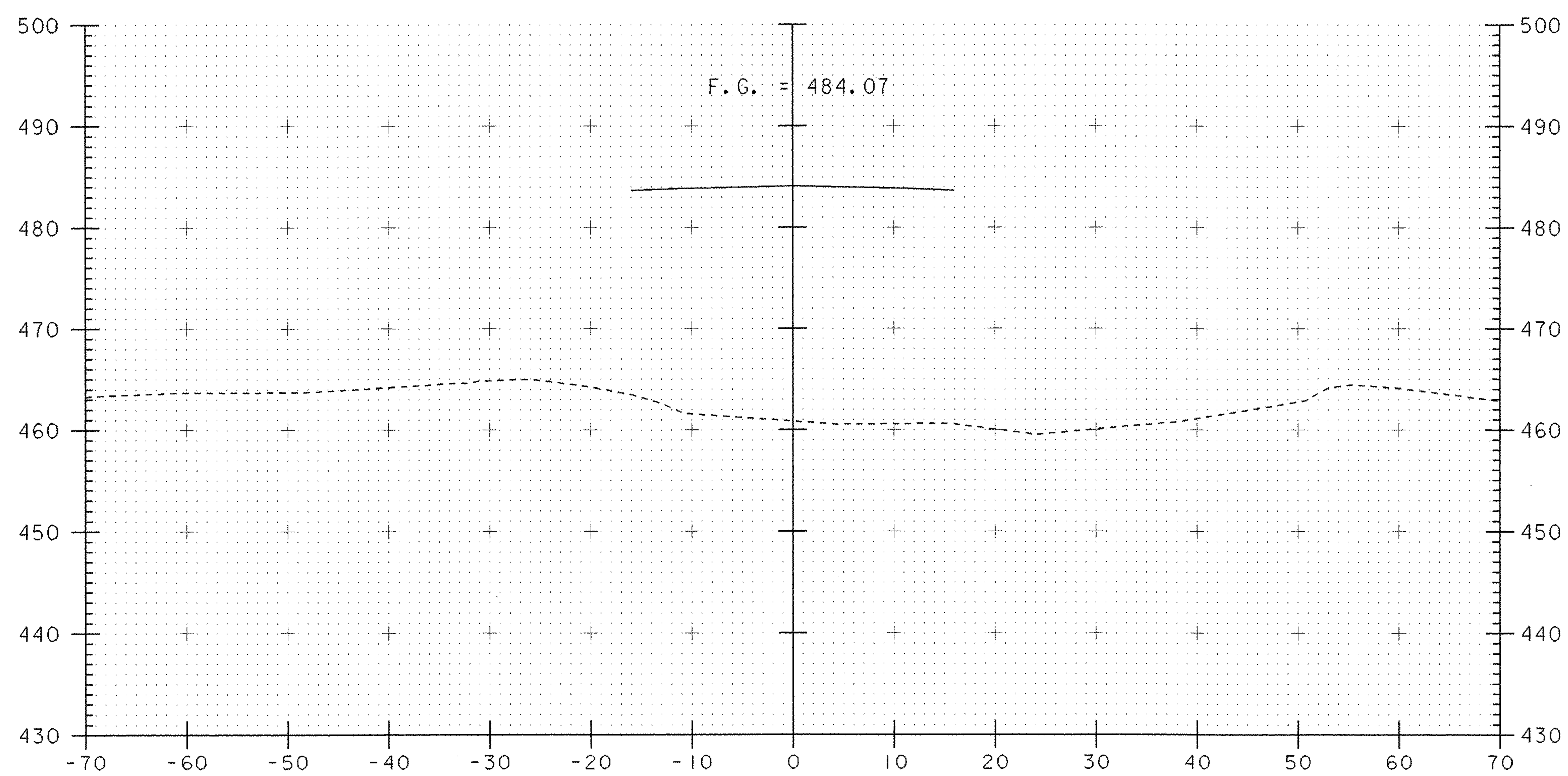
PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099mlx.dgn	
IPARM FILE NAME: sj099m06.i	PLOT DATE: 25-SEP-2000
MAINLINE CROSS SECTIONS 103+75 TO 104+50	
	SHEET: 100 OF 118



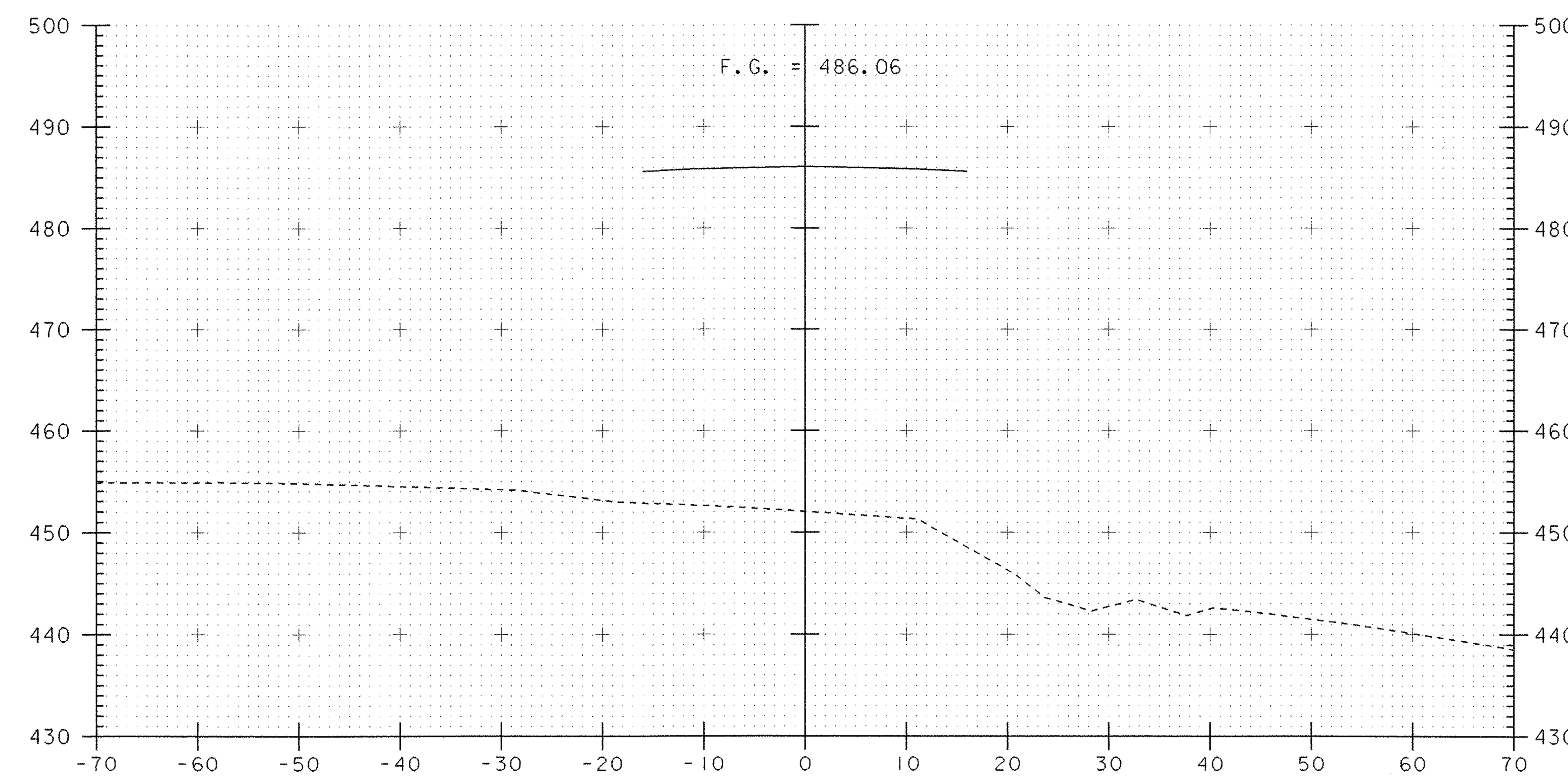
105+50



106+50



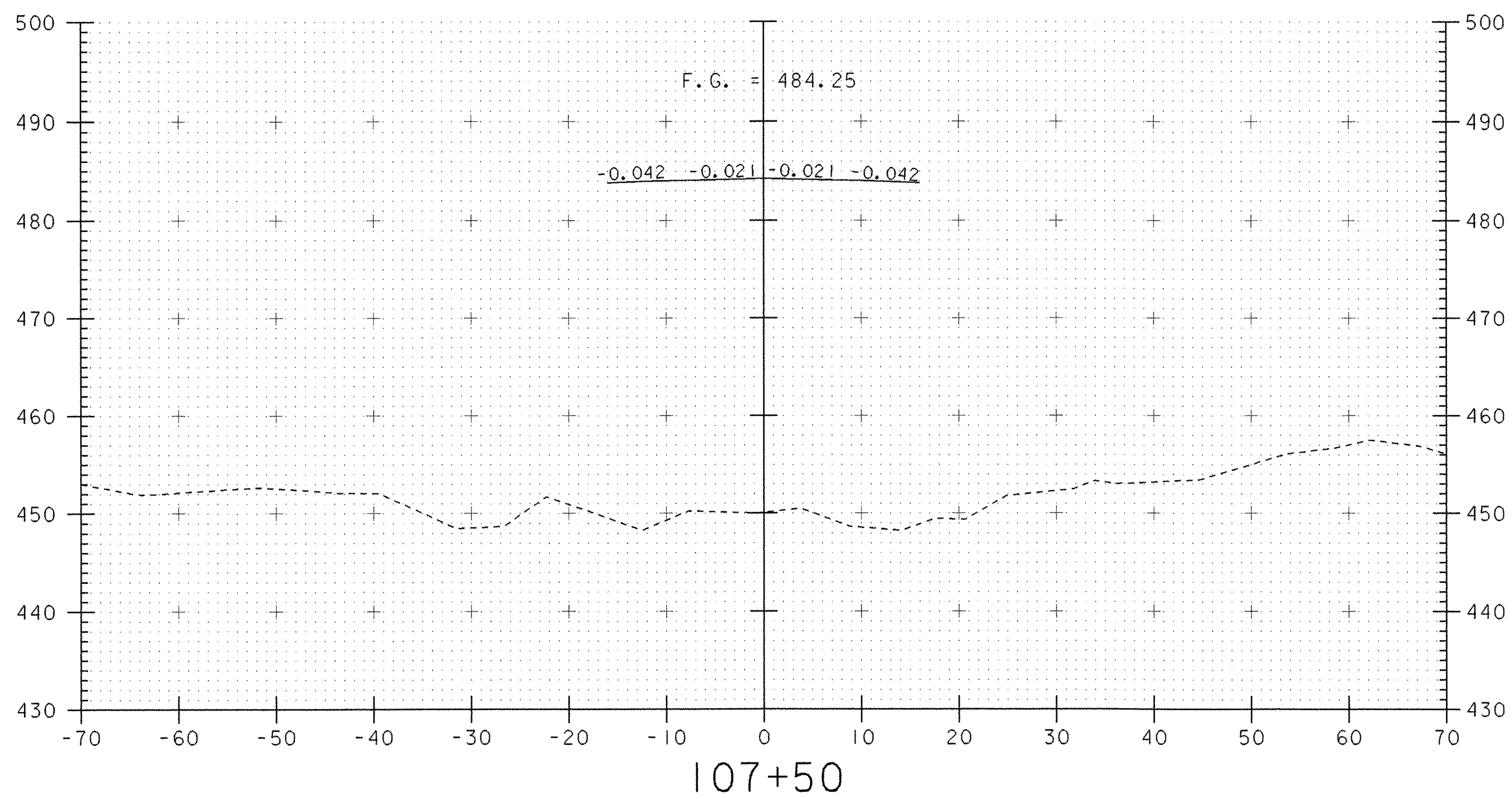
105+00

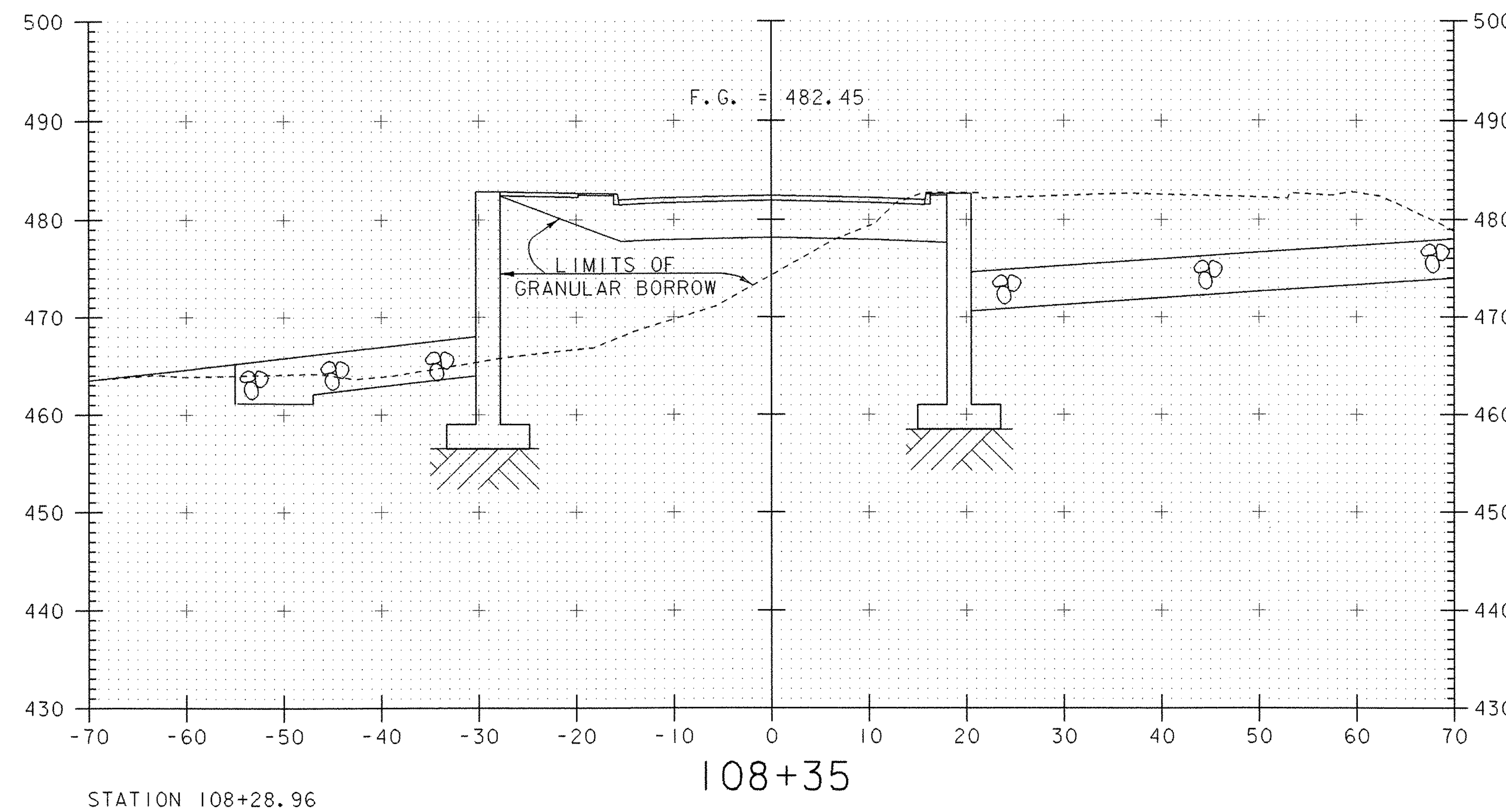


106+00

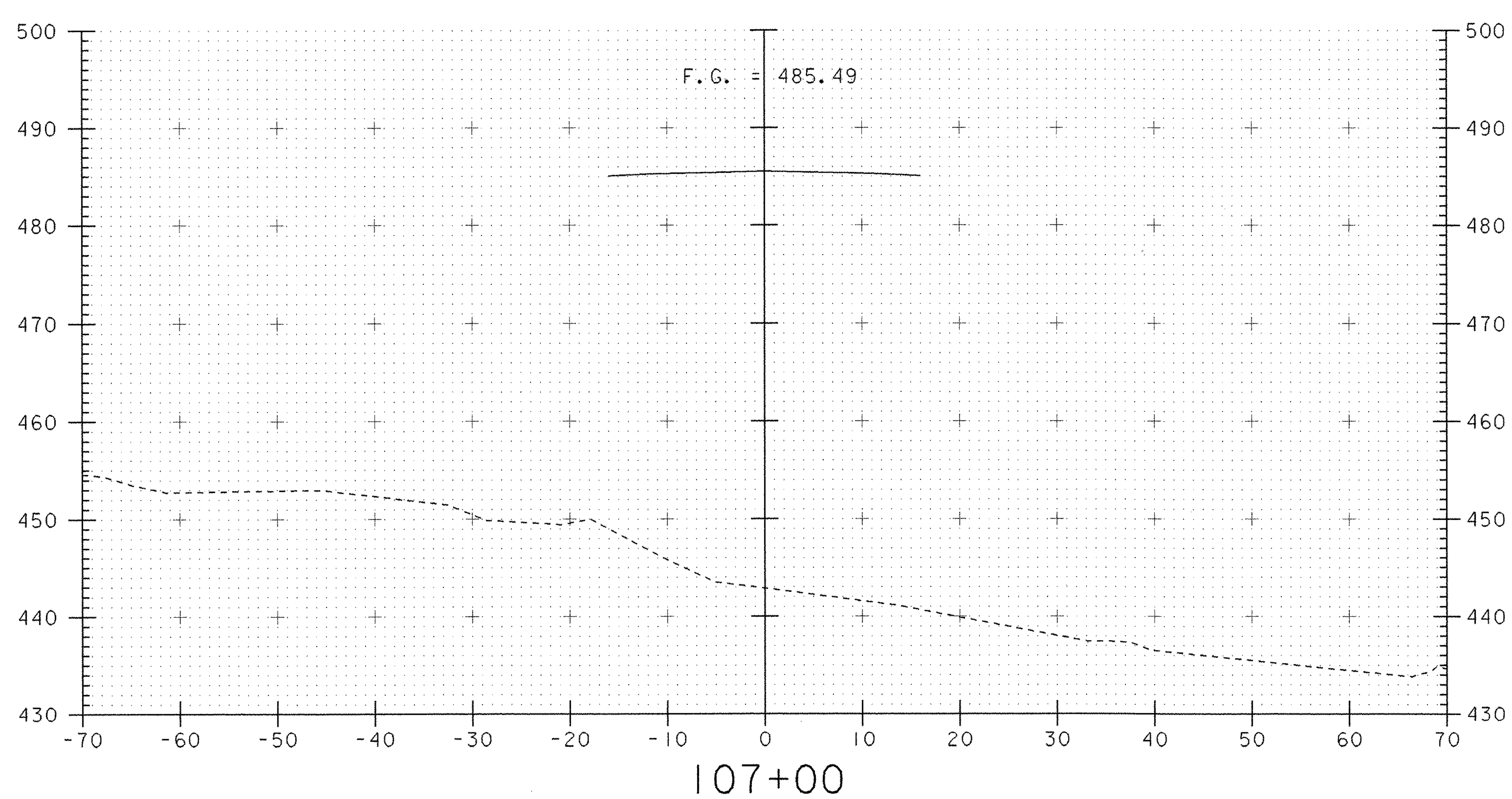
SCALE 1" = 10'-0

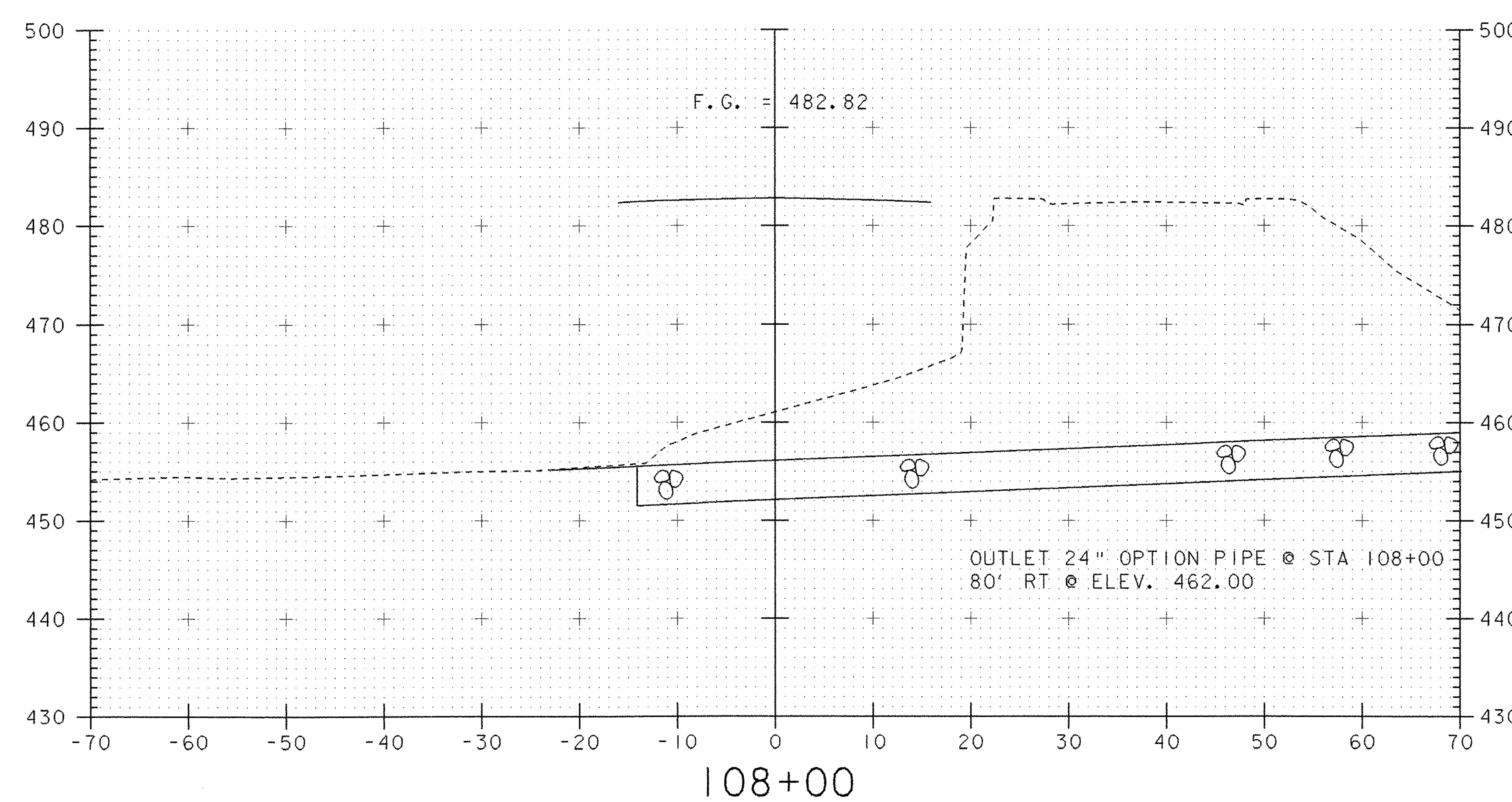
PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099mlx.dgn IPARM FILE NAME: sj099m07.i	PLOT DATE: 25-SEP-2000
MAINLINE CROSS SECTIONS 105+00 TO 106+50	
	SHEET: 101 OF 118





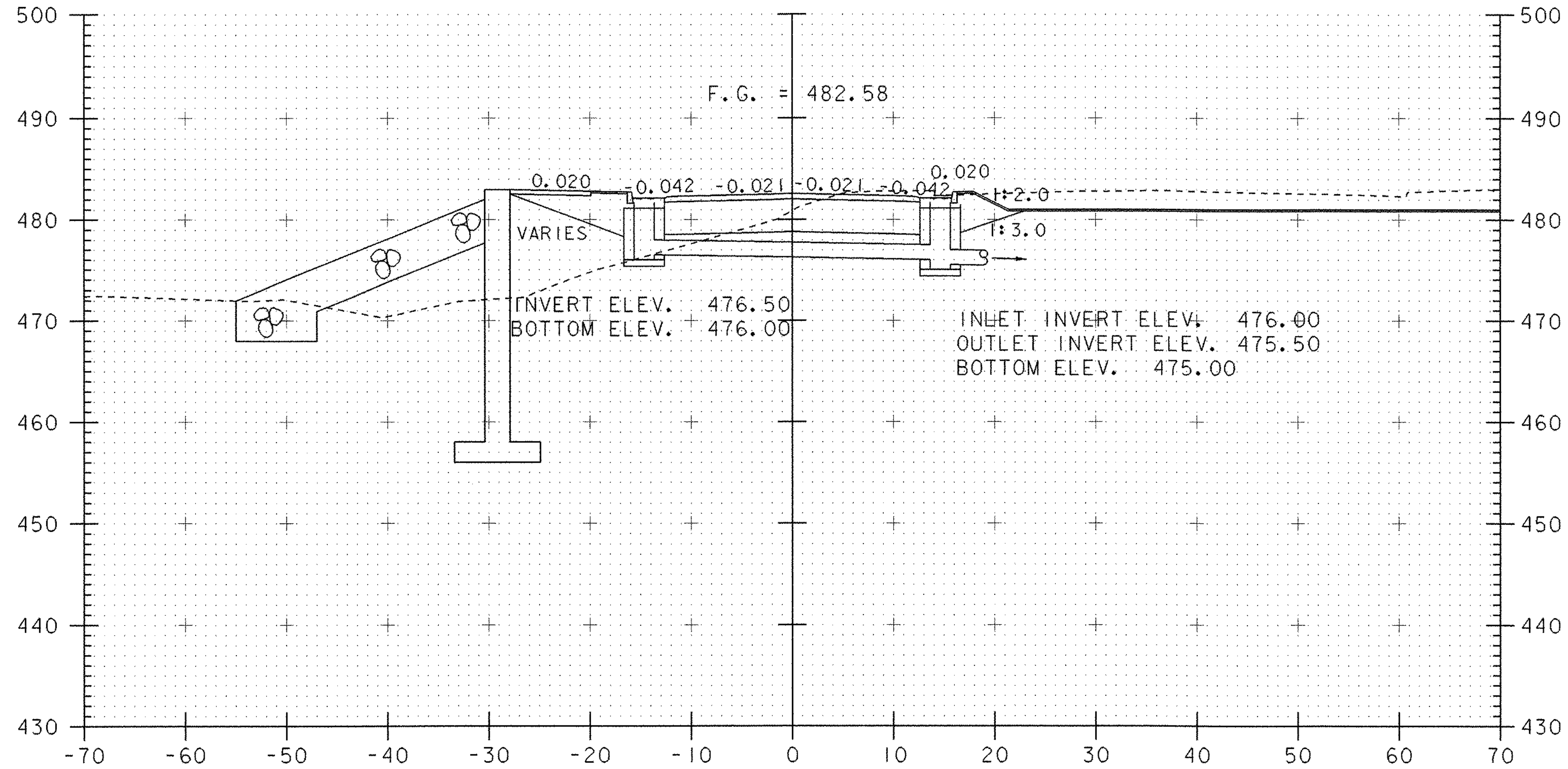
STATION 108+28.96
END BRIDGE





SCALE 1" = 10'-0

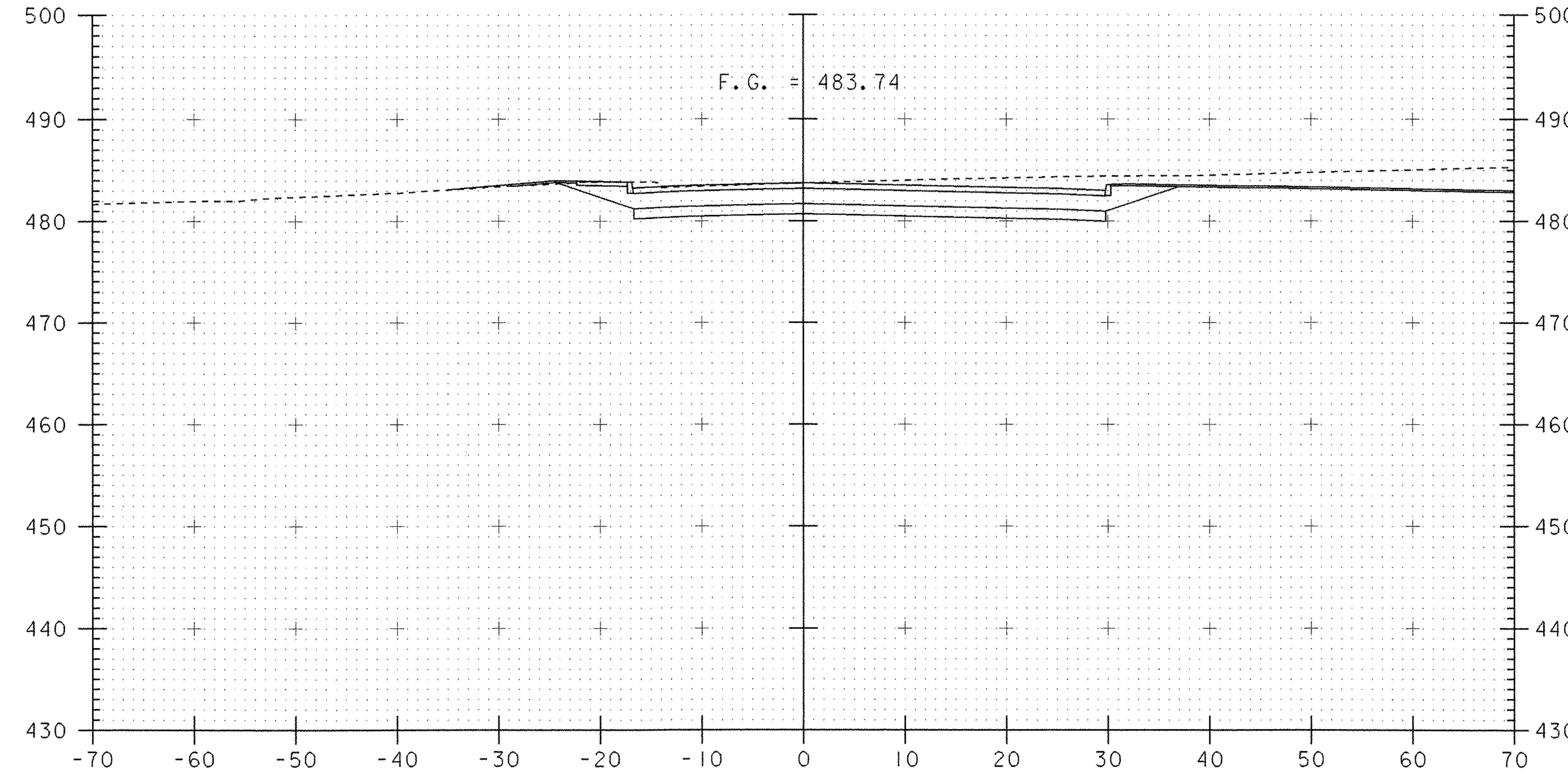
PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099mlx.dgn	
IPARM FILE NAME: sj099m08.i	PLOT DATE: 25-SEP-2000
MAINLINE CROSS SECTIONS 107+00 TO 108+35	
	SHEET: 102 OF 118



STATION 108+55 LT
BEGIN NEW 18" OPTION PIPE
CONSTRUCT NEW 4'X4' CONC. DI

108+55

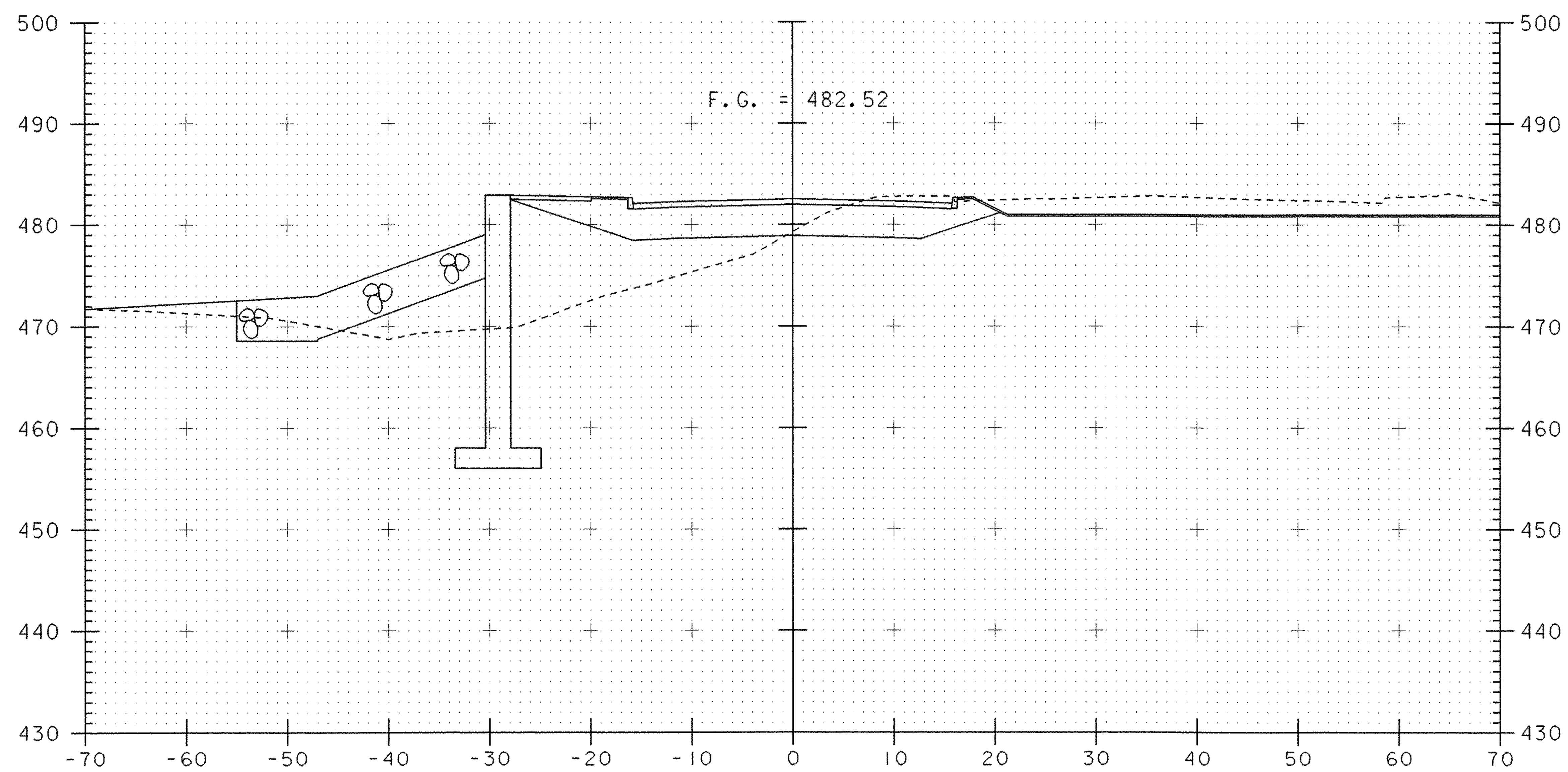
STATION 108+55 RT
END NEW 18" OPTION PIPE / BEGIN NEW 18" OPTION PIPE
CONSTRUCT NEW 4'X4' CONC. DI



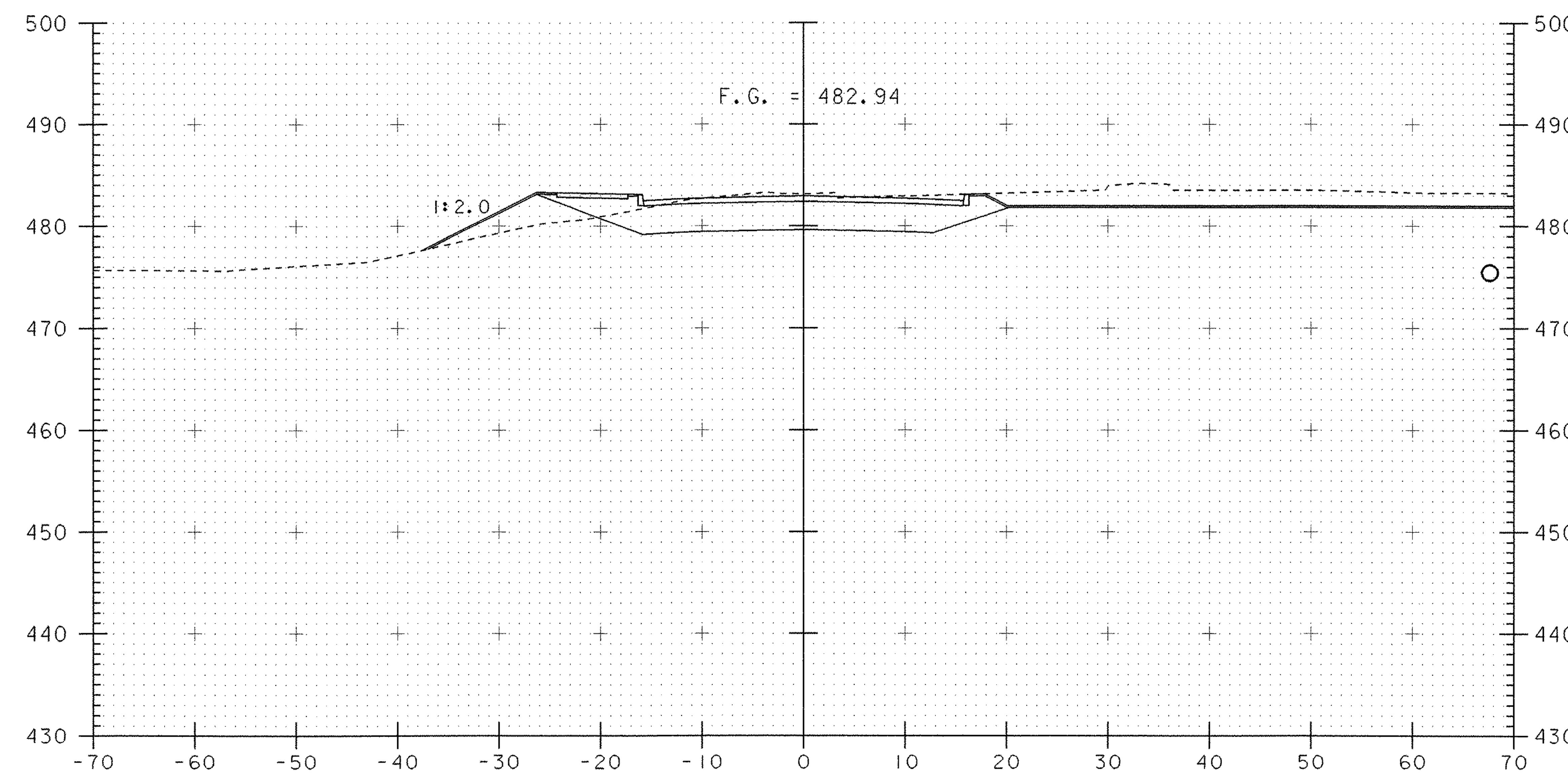
STA 108+80
END GRANULAR BORROW
END SUBBASE TAPER
BEGIN SAND BORROW FULL DEPTH

109+00

STA 109+00
TRANSITION SUBBASE FROM PROPOSED TYPICAL TO EXISITNG
CONDITION IN 25' (6" MIN)
END SAND BORROW BOX CUT SAND TO FULL DEPTH



108+50

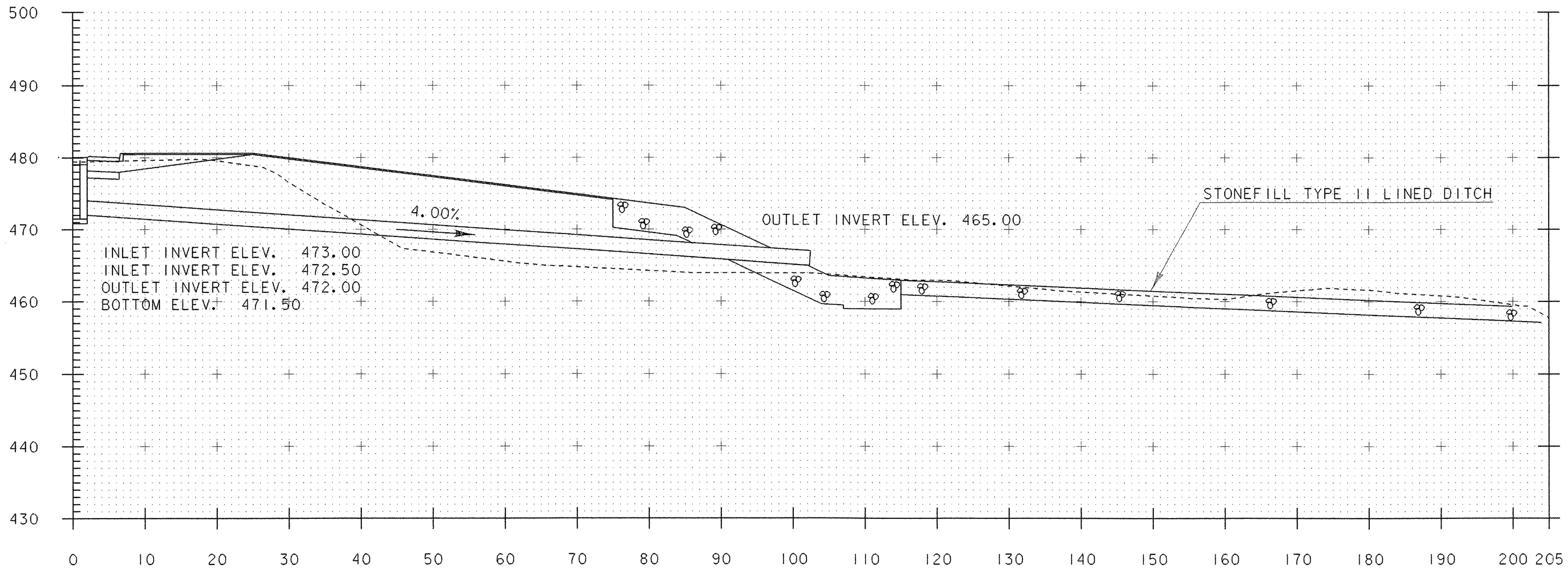


108+75

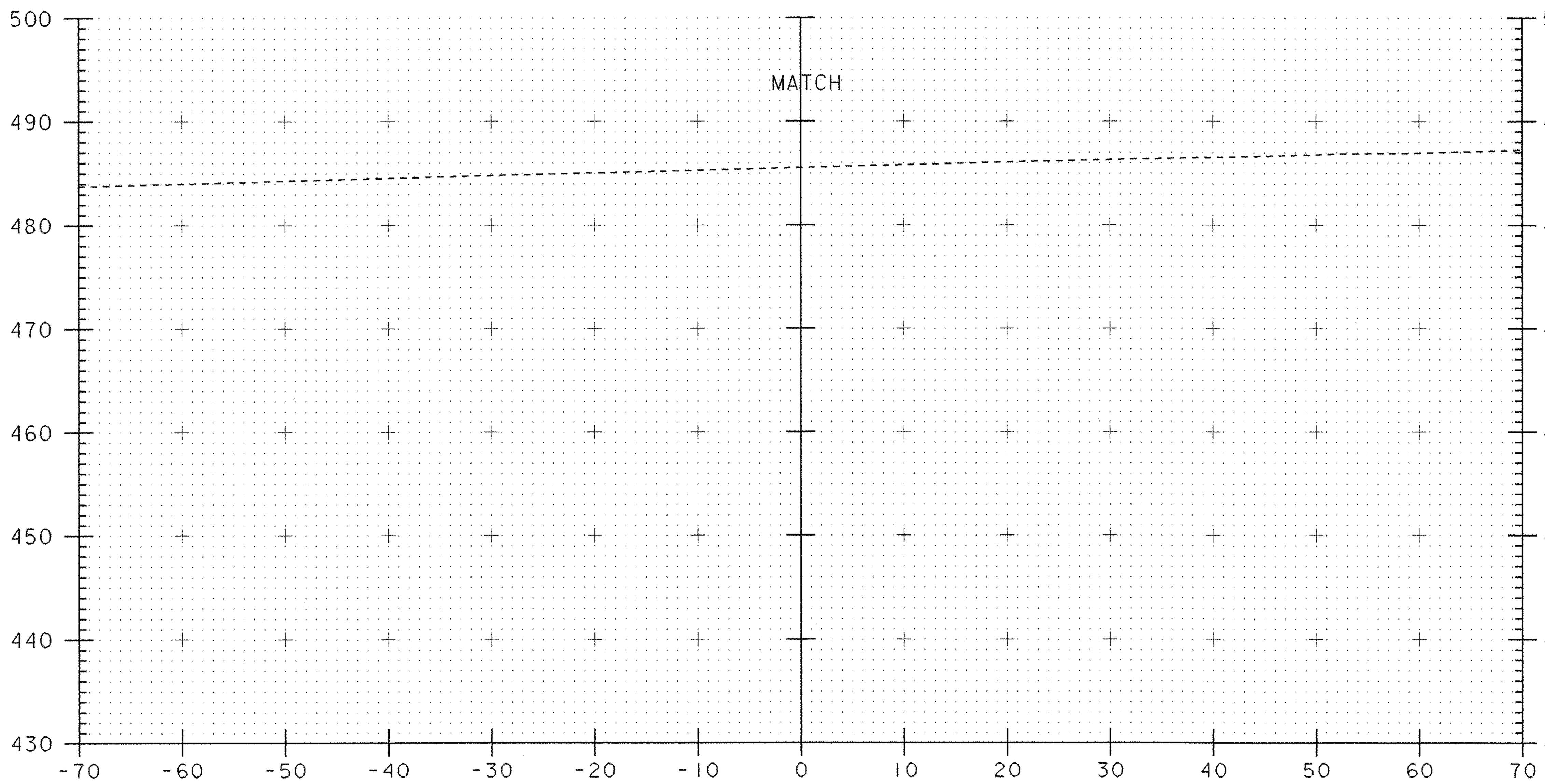
STA 108+55
LINEAR TRANSITION GRASS STRIP FROM 4'-0" TO 0' @ STA 108+80

SCALE 1" = 10'-0

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099mlx.dgn	
IPARM FILE NAME: sj099m09.i	PLOT DATE: 25-SEP-2000
MAINLINE CROSS SECTIONS 108+50 TO 109+00	
	SHEET: 103 OF 118



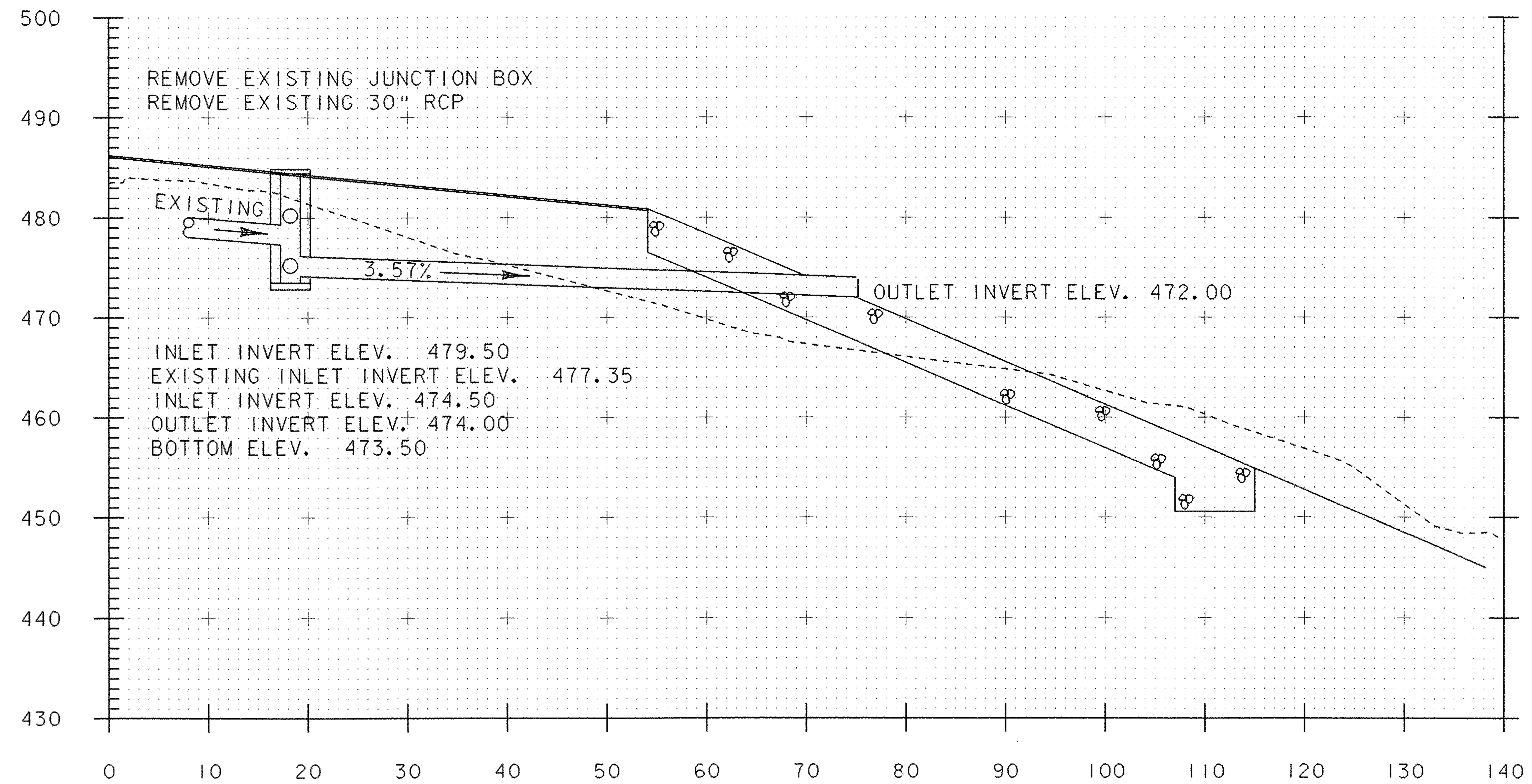
SKEWED PIPE SECTION STA. 103+40 RT - 104+30 RT



109+39

STATION 109+38.55
END PROJECT
BEGIN APPROACH

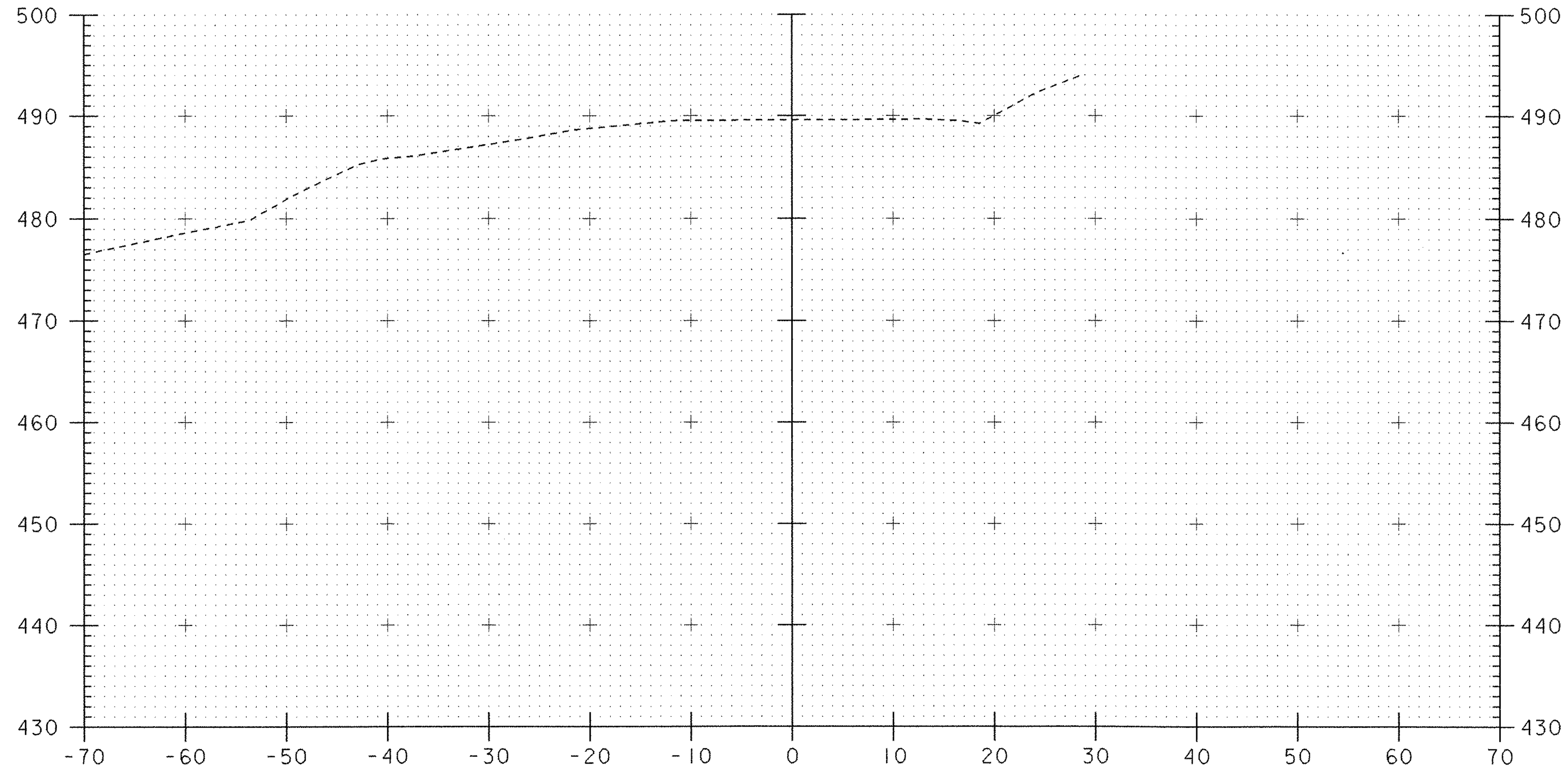
STATION 109+25
BEGIN COLD PLANING TO TRANSITION PAVEMENT



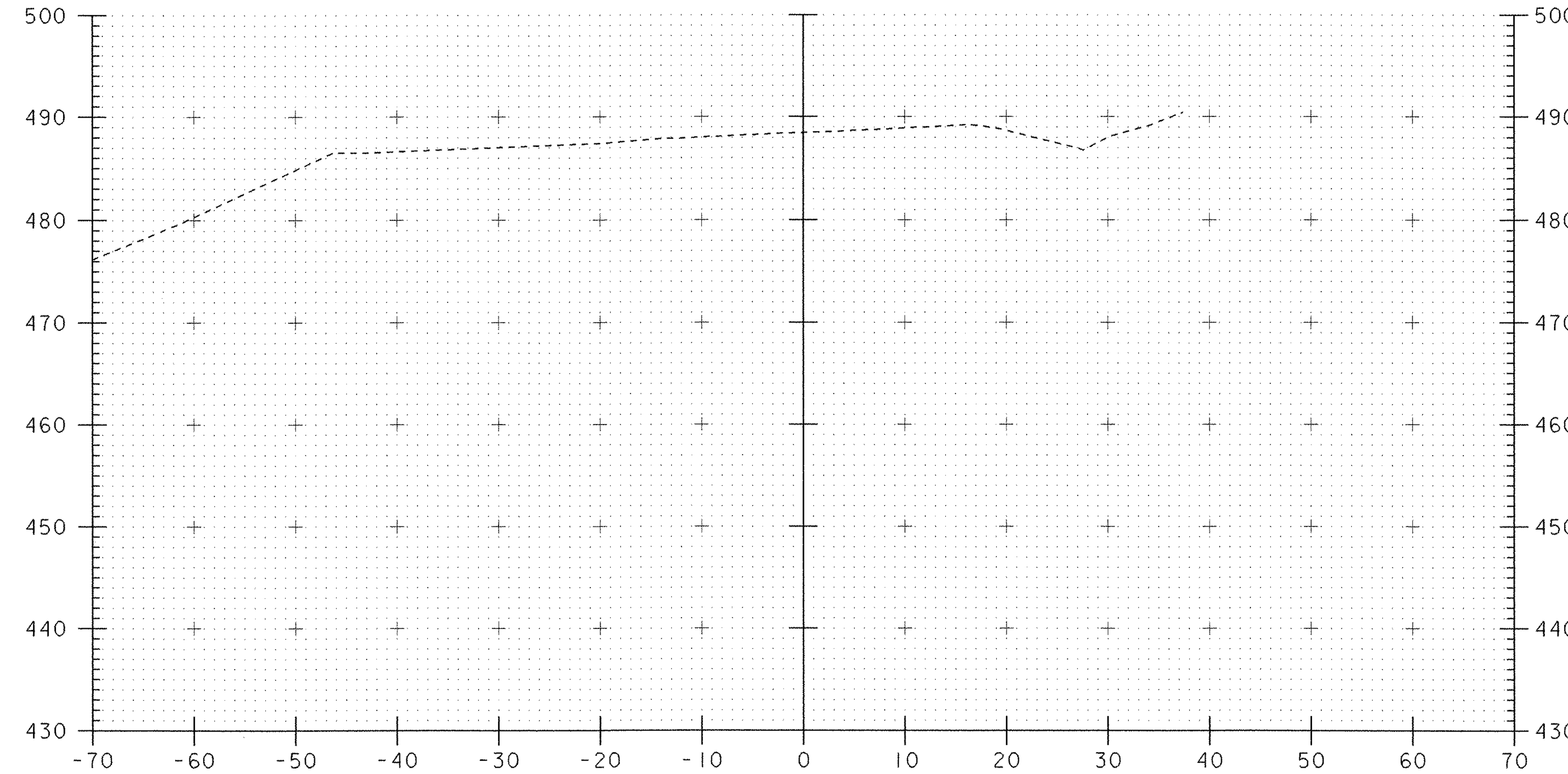
SKEWED PIPE SECTION SIDELINE STA. 23+20 LT - 108+00 RT

SCALE 1" = 10'-0

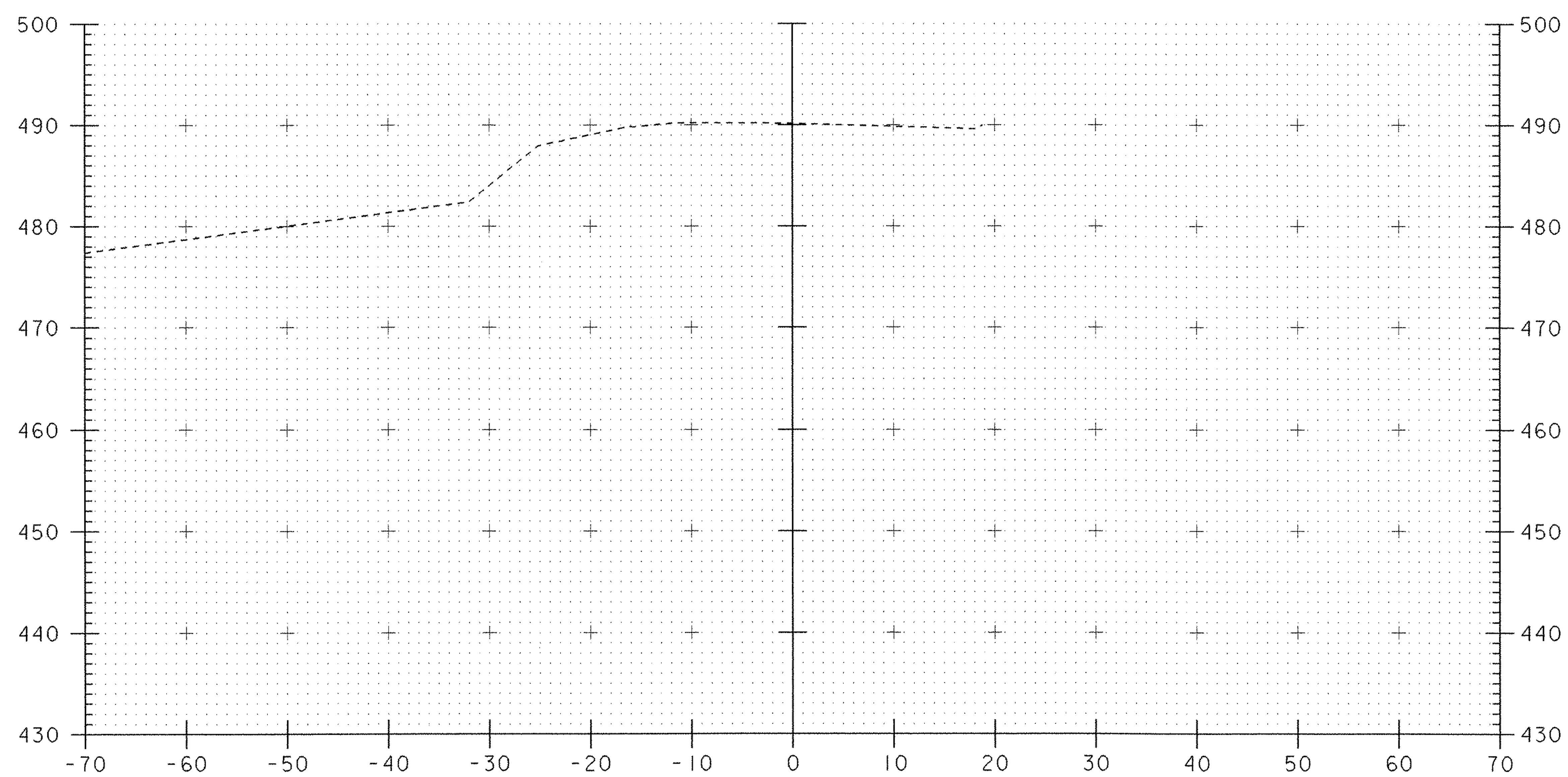
PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099mlx.dgn	
IPARM FILE NAME: sj099ml0.i	PLOT DATE: 25-SEP-2000
MAINLINE CROSS SECTIONS 109+38.55 AND SKEWED SECTIONS	
	SHEET: 104 OF 118



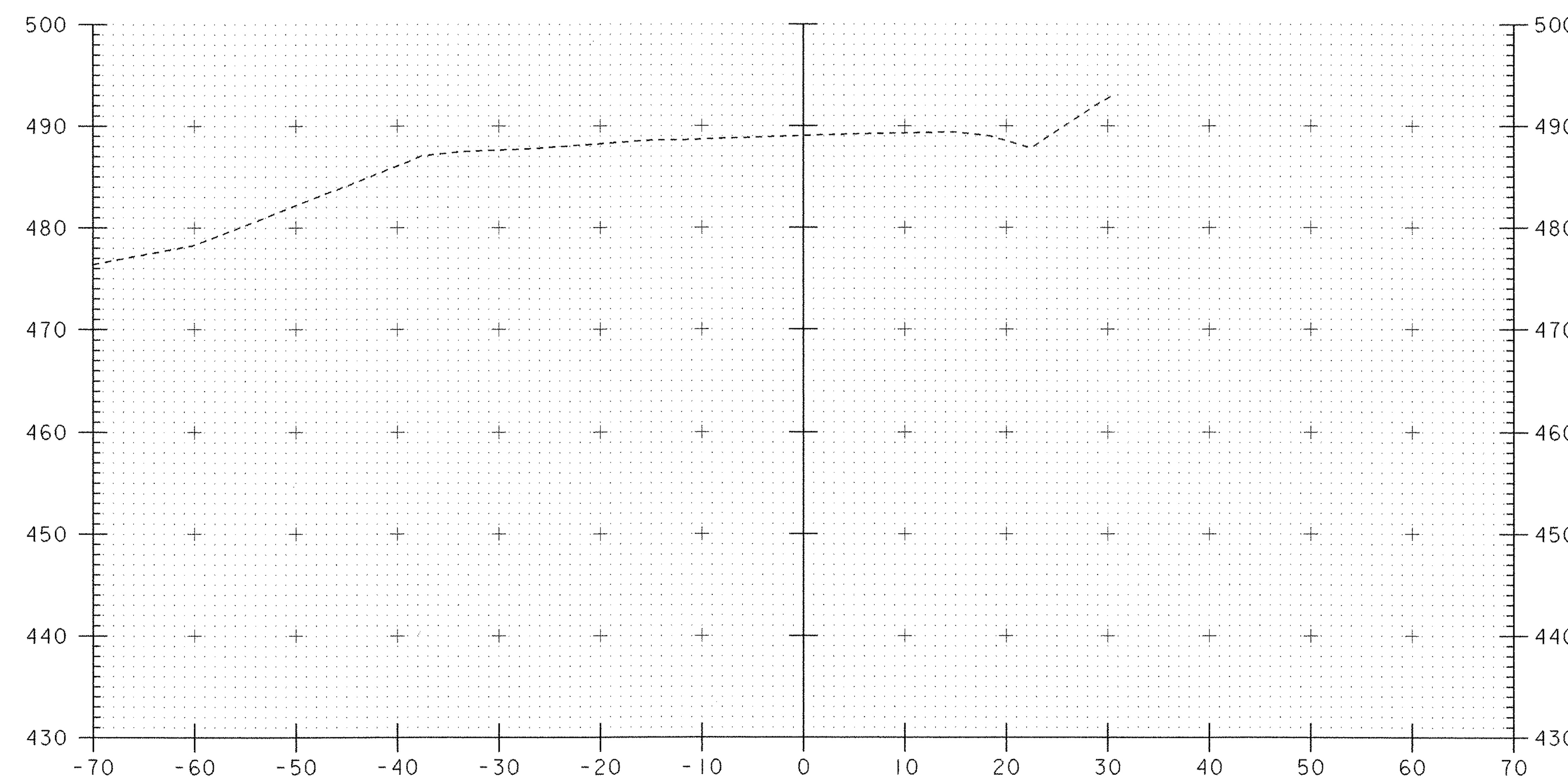
20+50



21+50



20+00

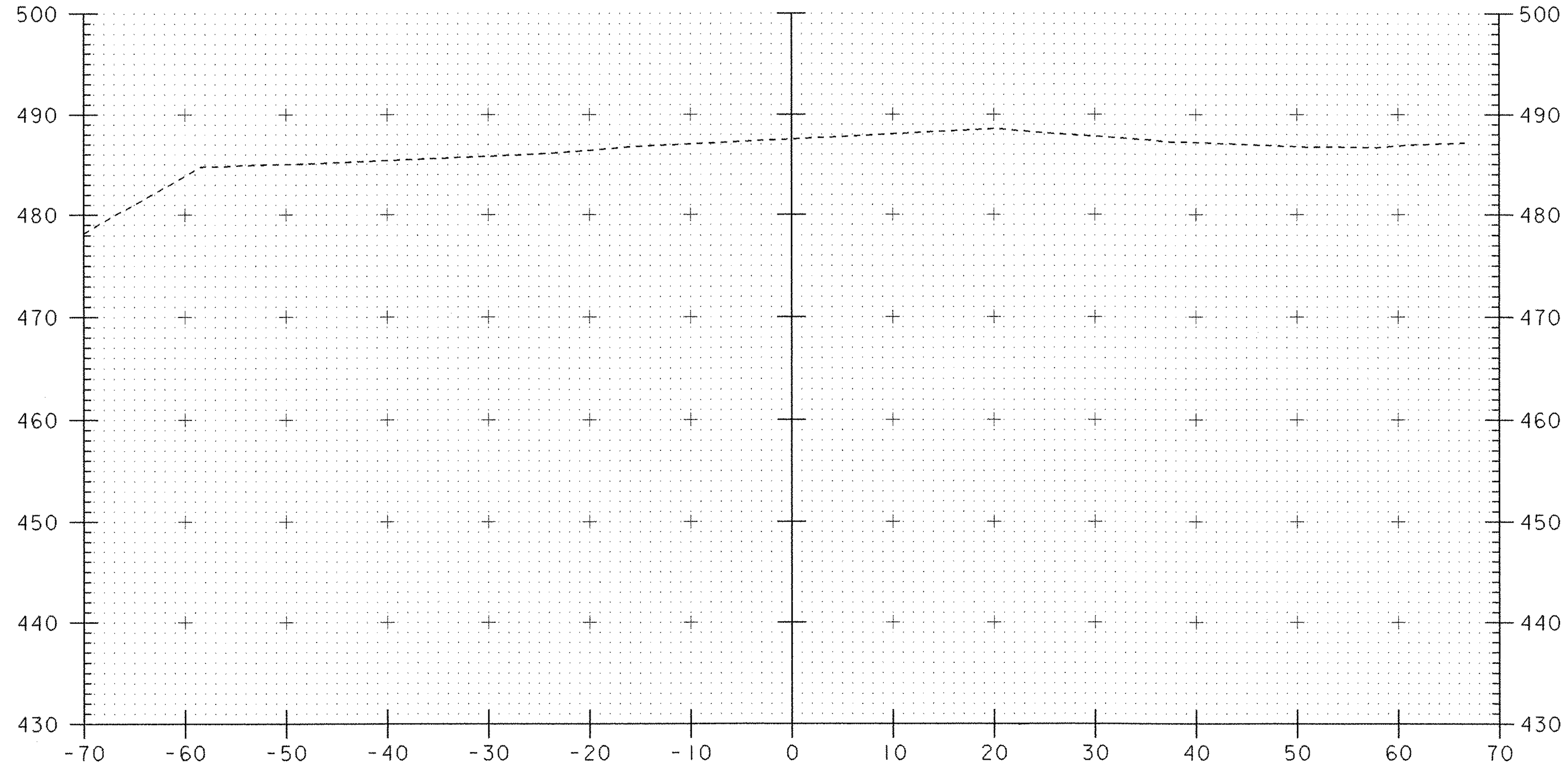


21+00

SCALE 1" = 10'-0

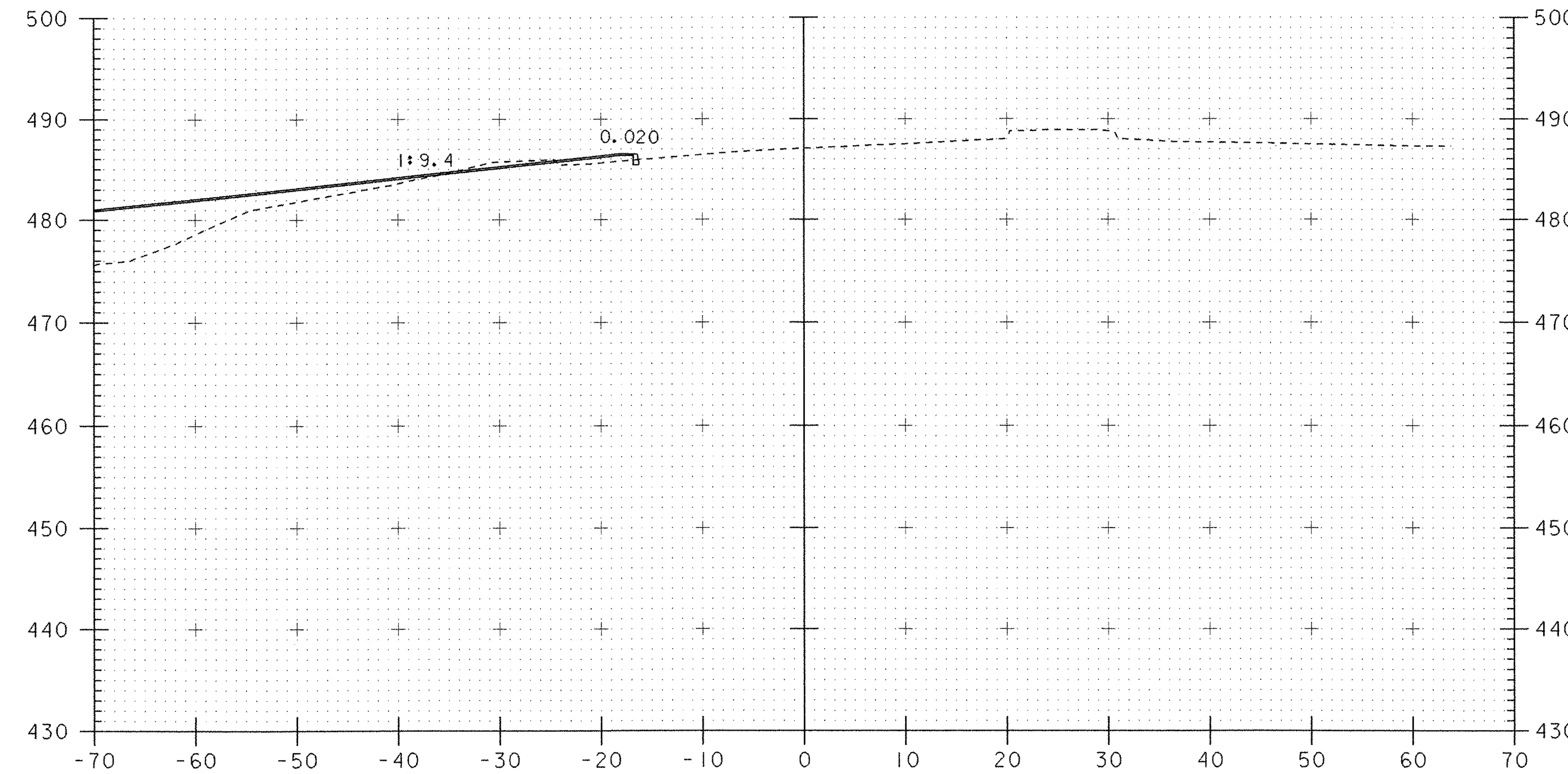
10 0 10

PROJECT: Royalton	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099slx.dgn IPARM FILE NAME: sj099s01.i	PLOT DATE: 25-SEP-2000
VT. 14 CROSS SECTIONS 20+00 TO 21+50	
	SHEET: 105 OF 118

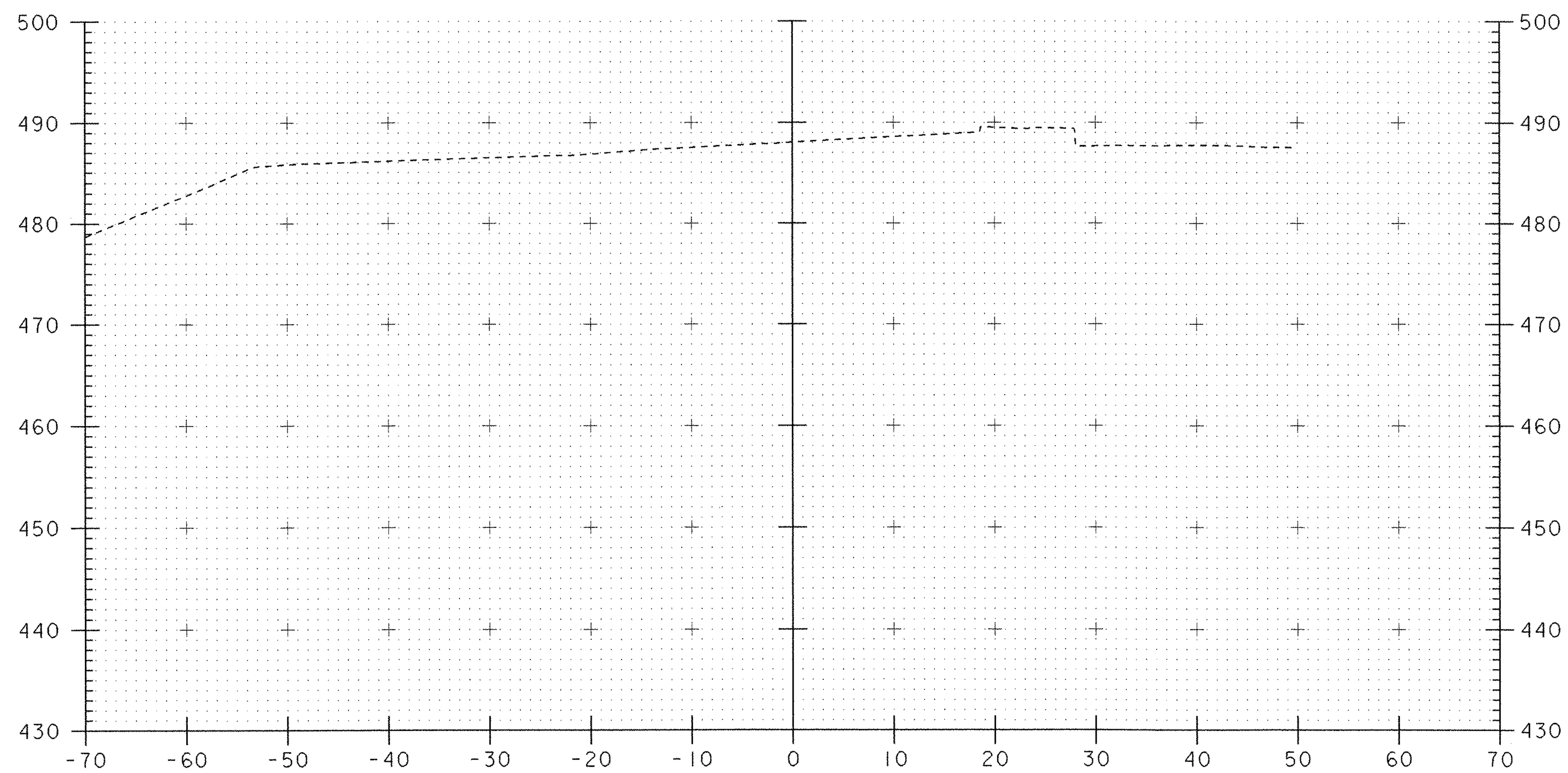


22+50

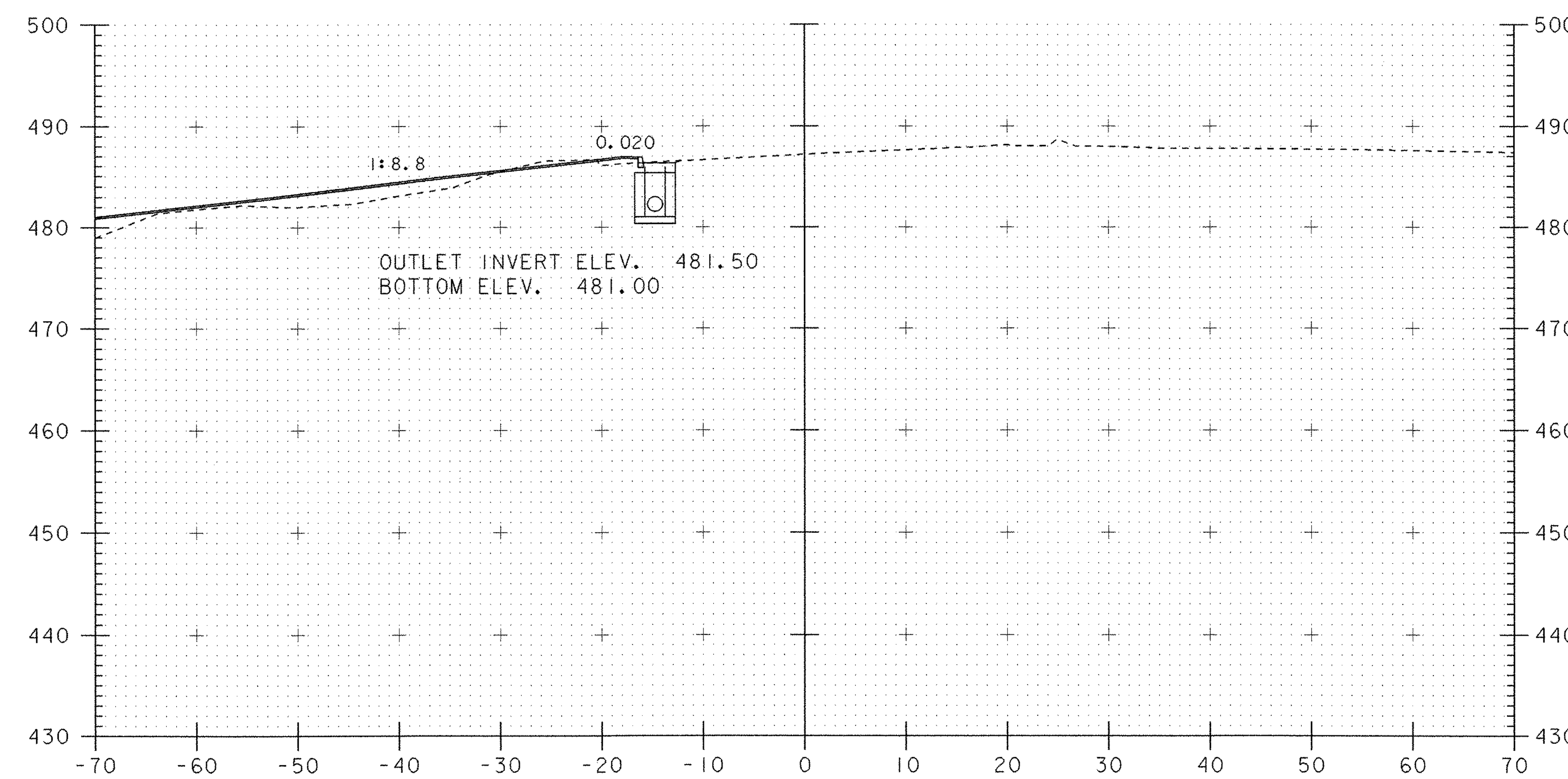
STA 22+50
END APPROACH



23+00



22+00

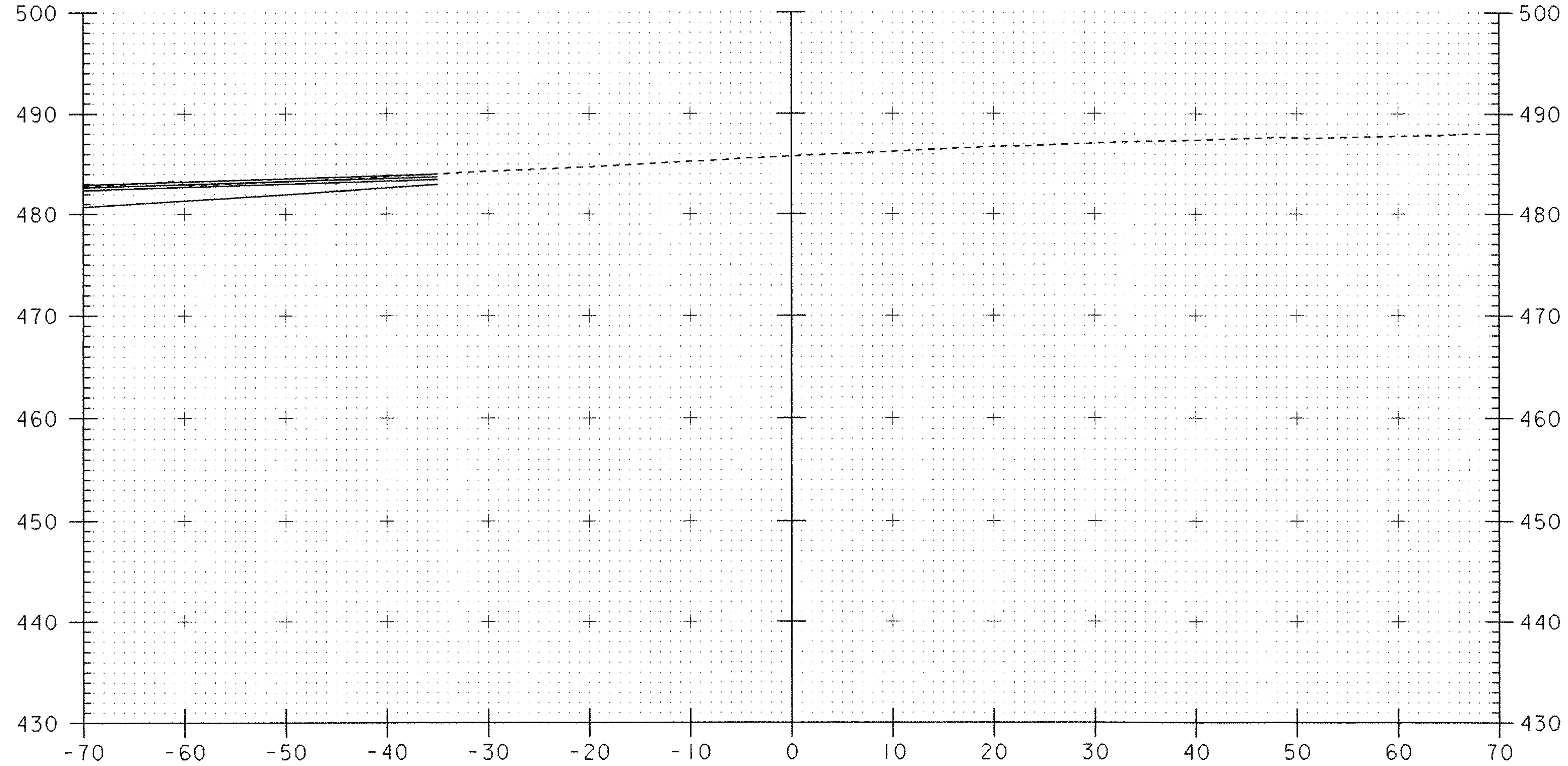


22+85

STATION 22+85 LT
BEGIN NEW 18" OPTION PIPE
CONSTRUCT NEW 4'X4' CONC. DI

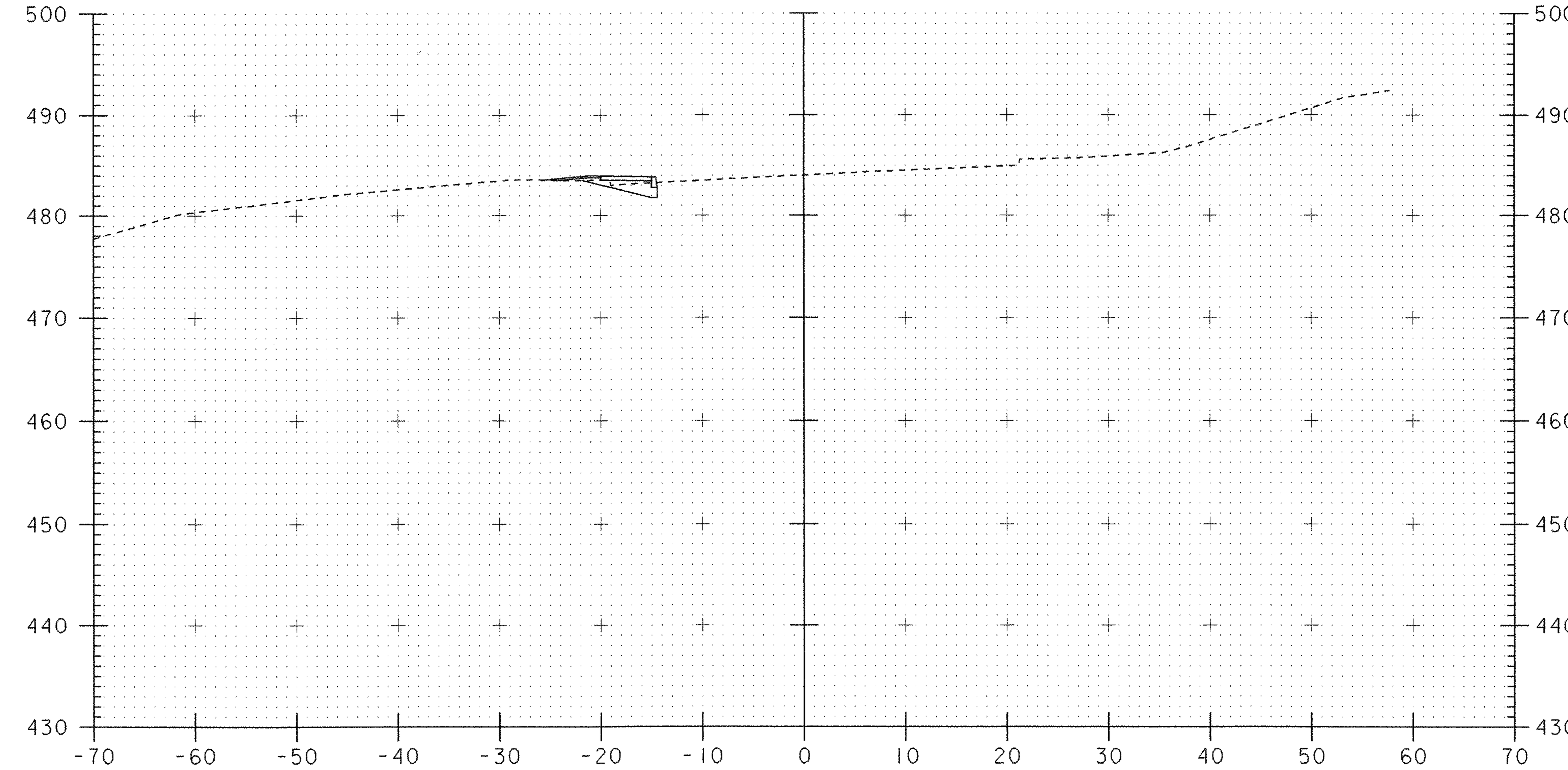
SCALE 1" = 10'-0
10 0 10

PROJECT: Royalton	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099slx.dgn IPARM FILE NAME: sj099s02.i	PLOT DATE: 25-SEP-2000
VT.14 CROSS SECTIONS 22+00 TO 23+00	
	SHEET: 106 OF 118

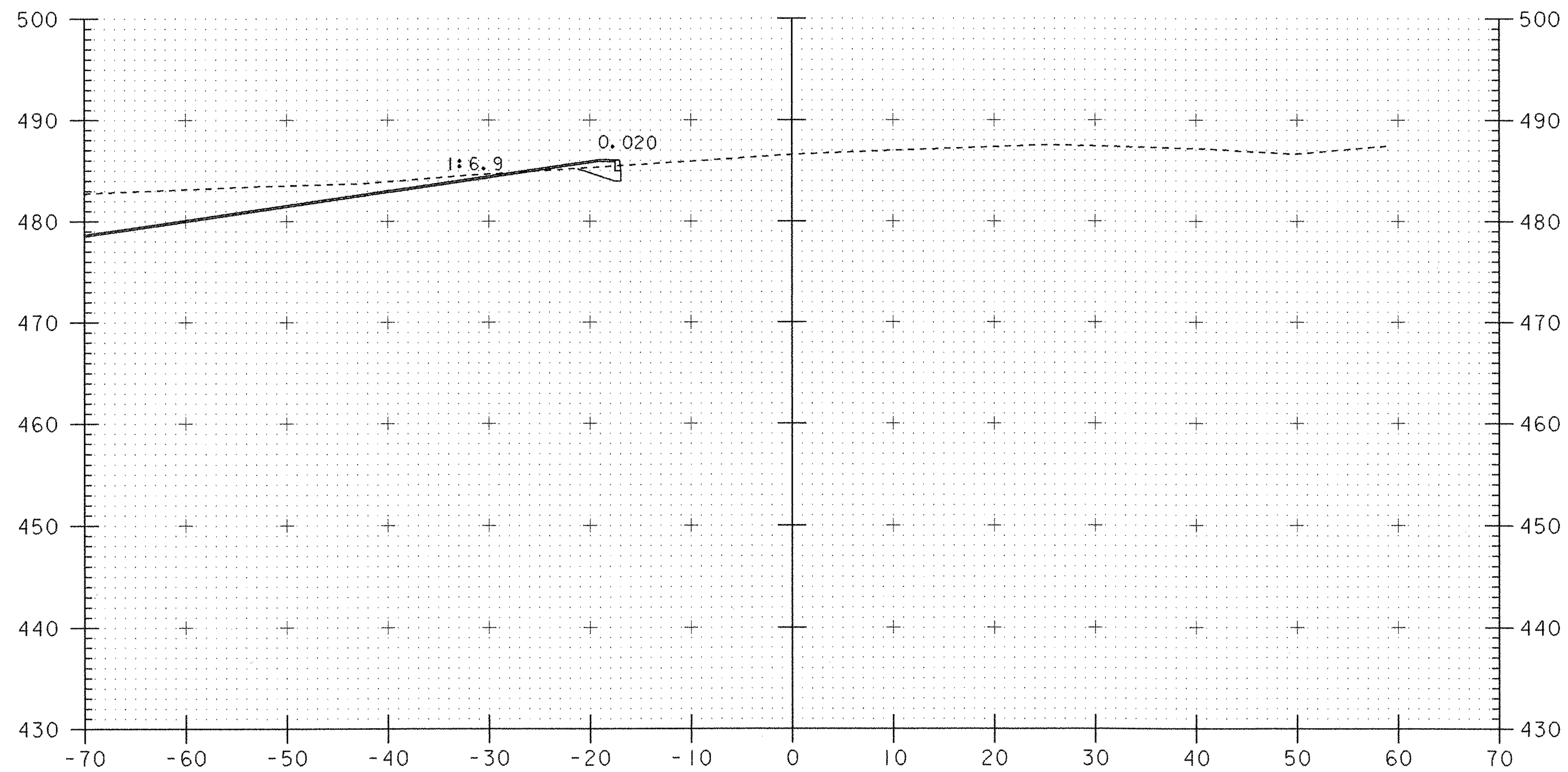


24+00

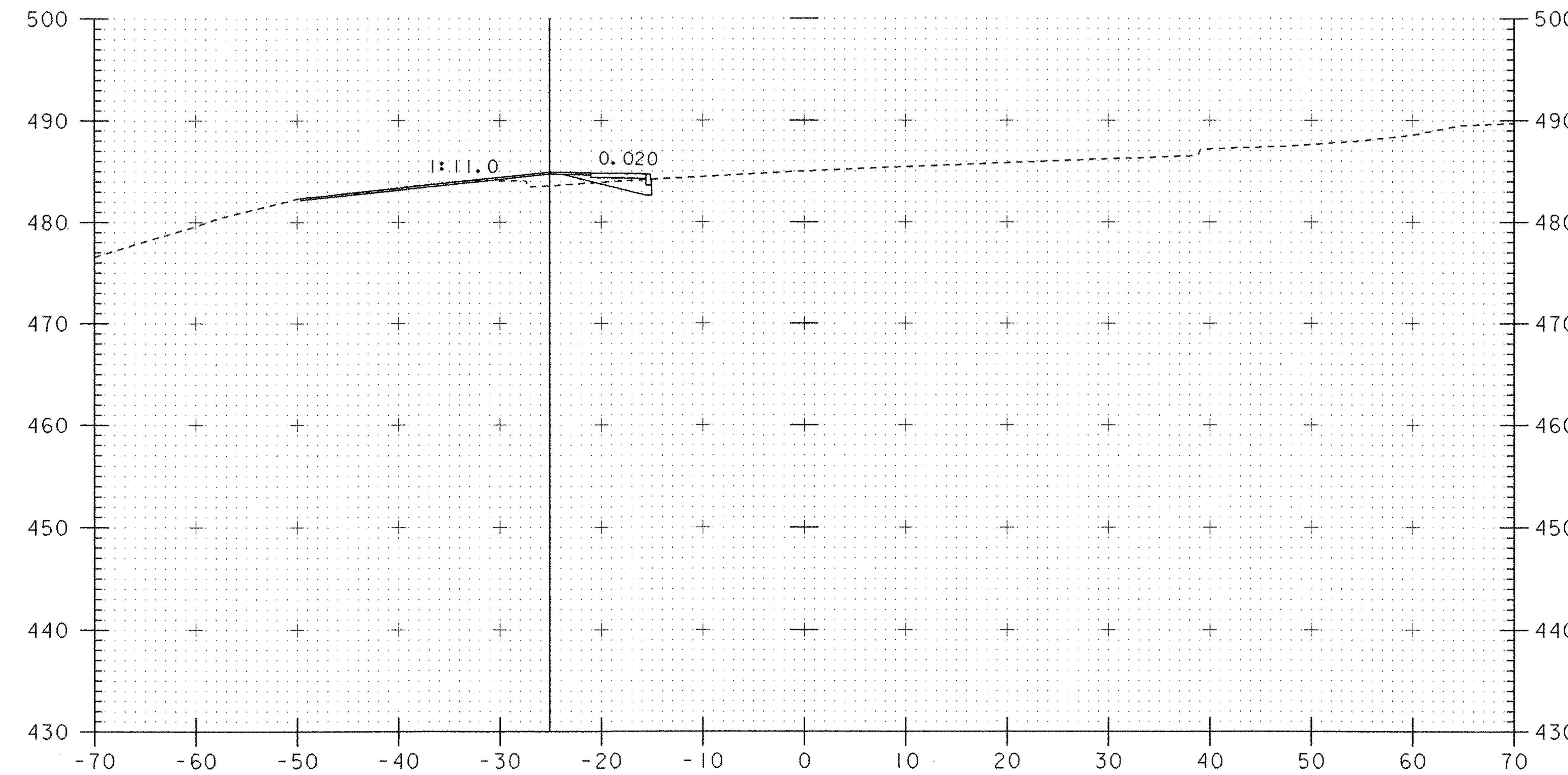
STA 25+15
END APPROACH
(MATCH PROJECT BRS 0147 (5) S)



25+00



23+50

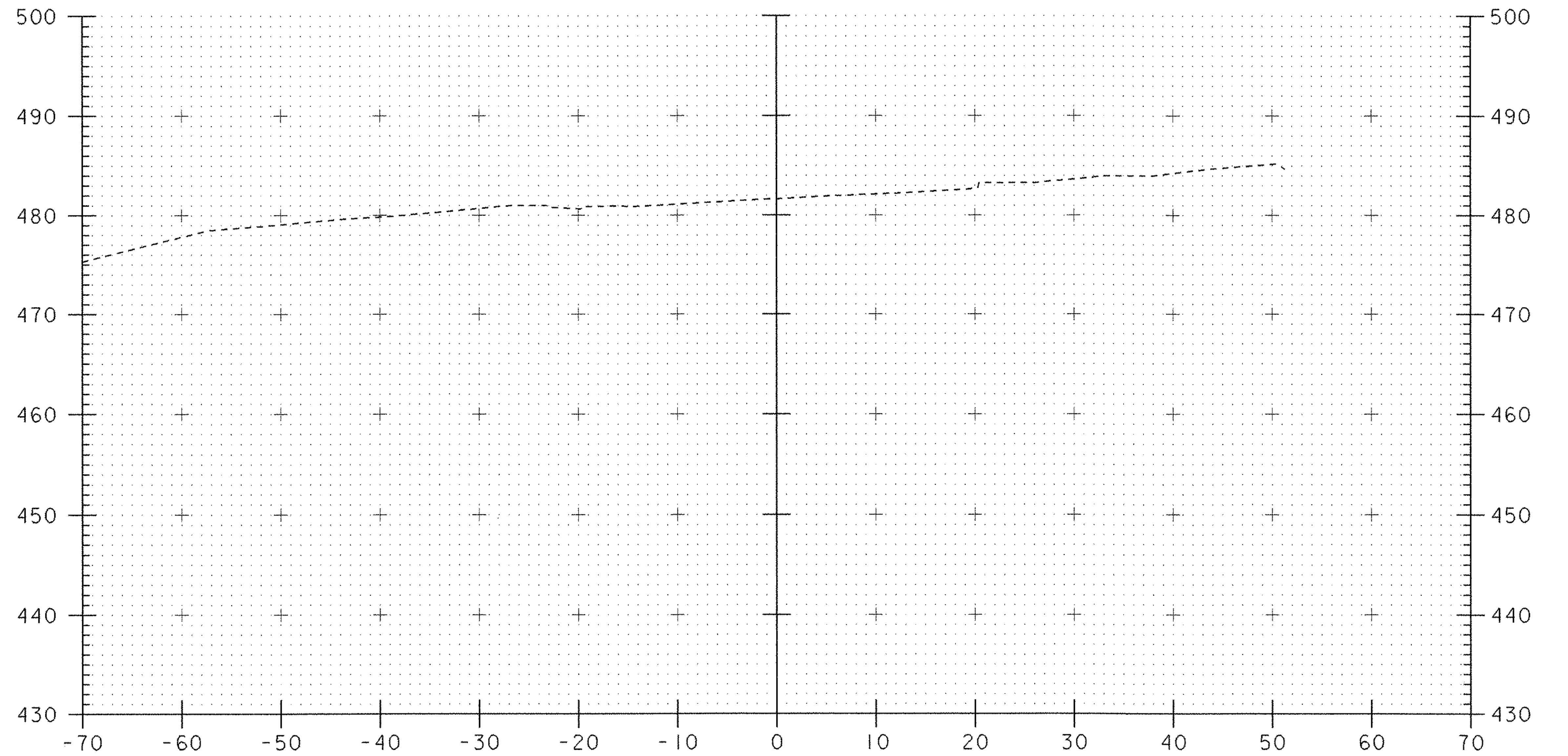


24+50

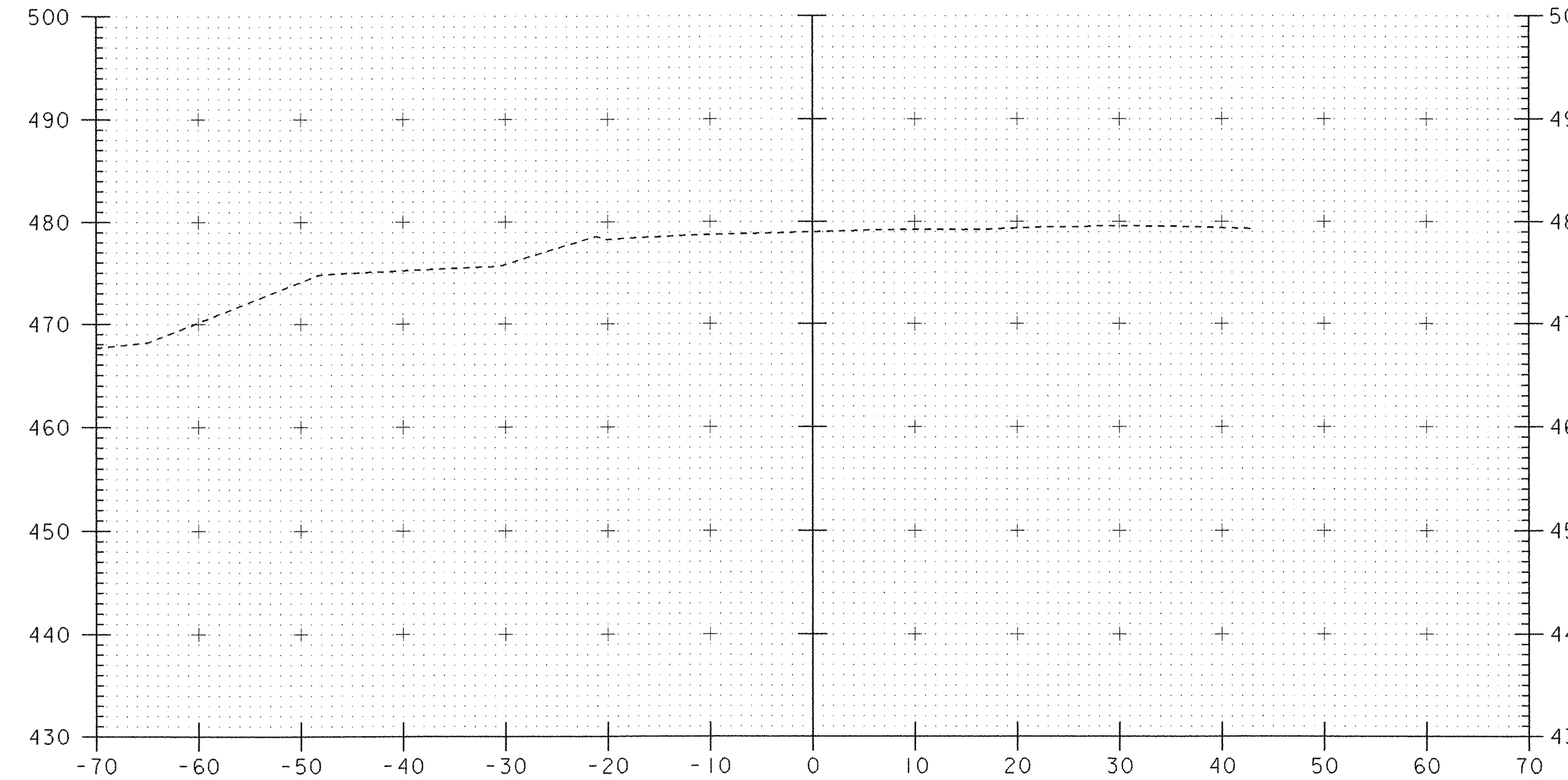
STATION 23+20 LT
END NEW 18" OPTION PIPE (2)
BEGIN NEW 24" OPTION PIPE
CONSTRUCT NEW 4'X4' RCDI W/ PRECAST COVER

SCALE 1" = 10'-0"

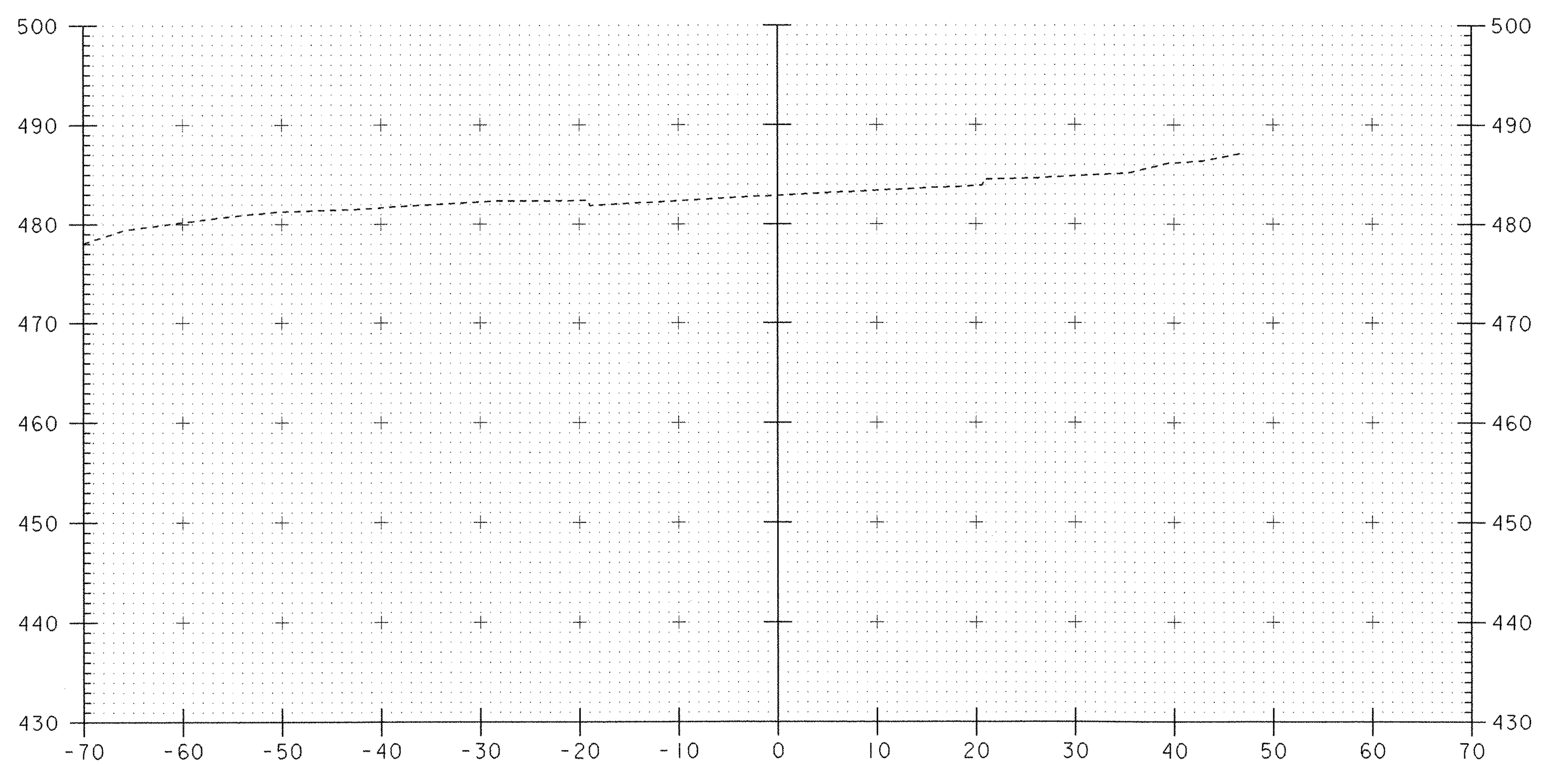
PROJECT: Royalton	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099slx.dgn IPARM FILE NAME: sj099s03.1	PLOT DATE: 25-SEP-2000
VT.14 CROSS SECTIONS 23+50 TO 25+00	
	SHEET: 107 OF 118



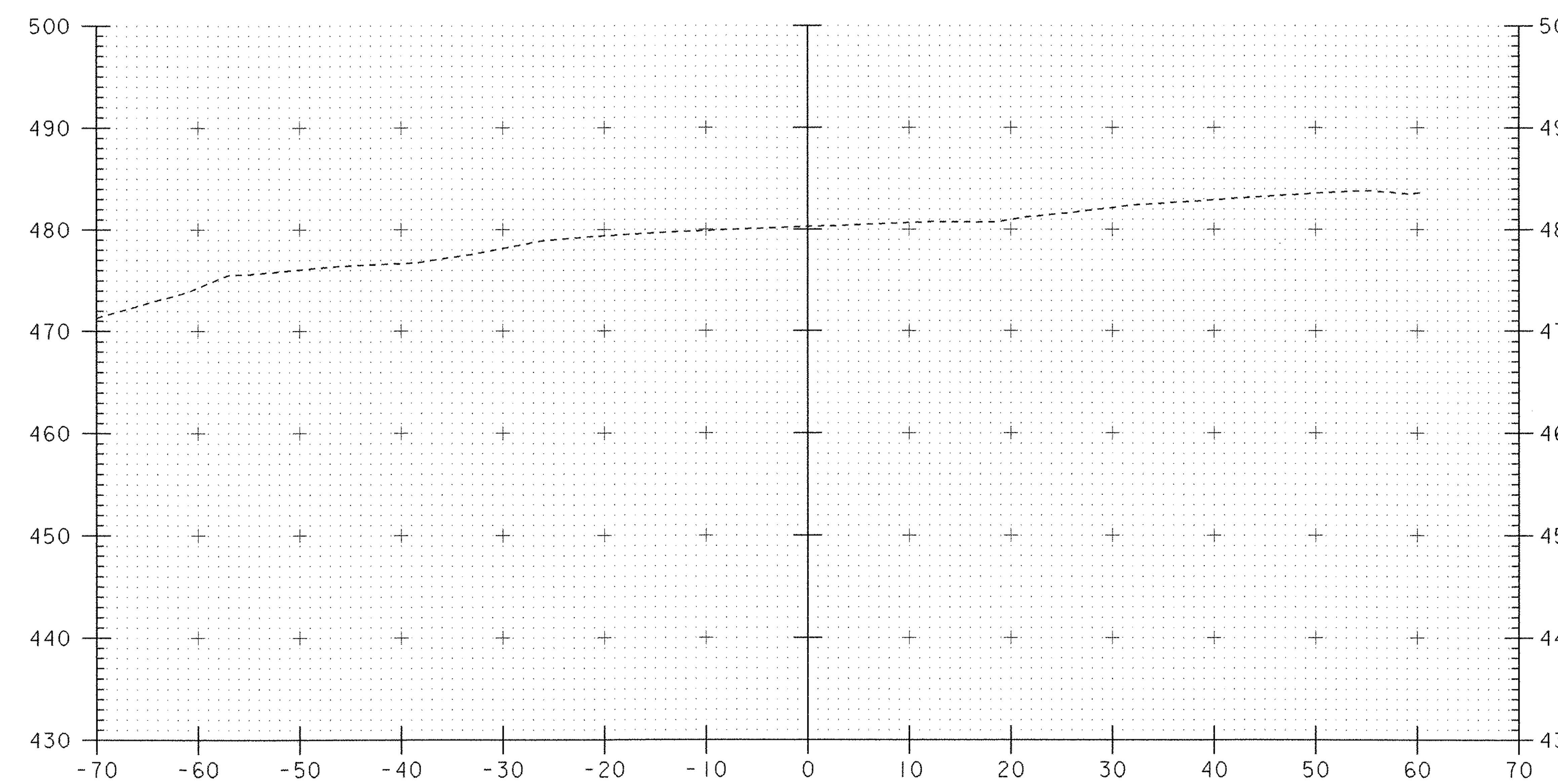
26+00



27+00



25+50

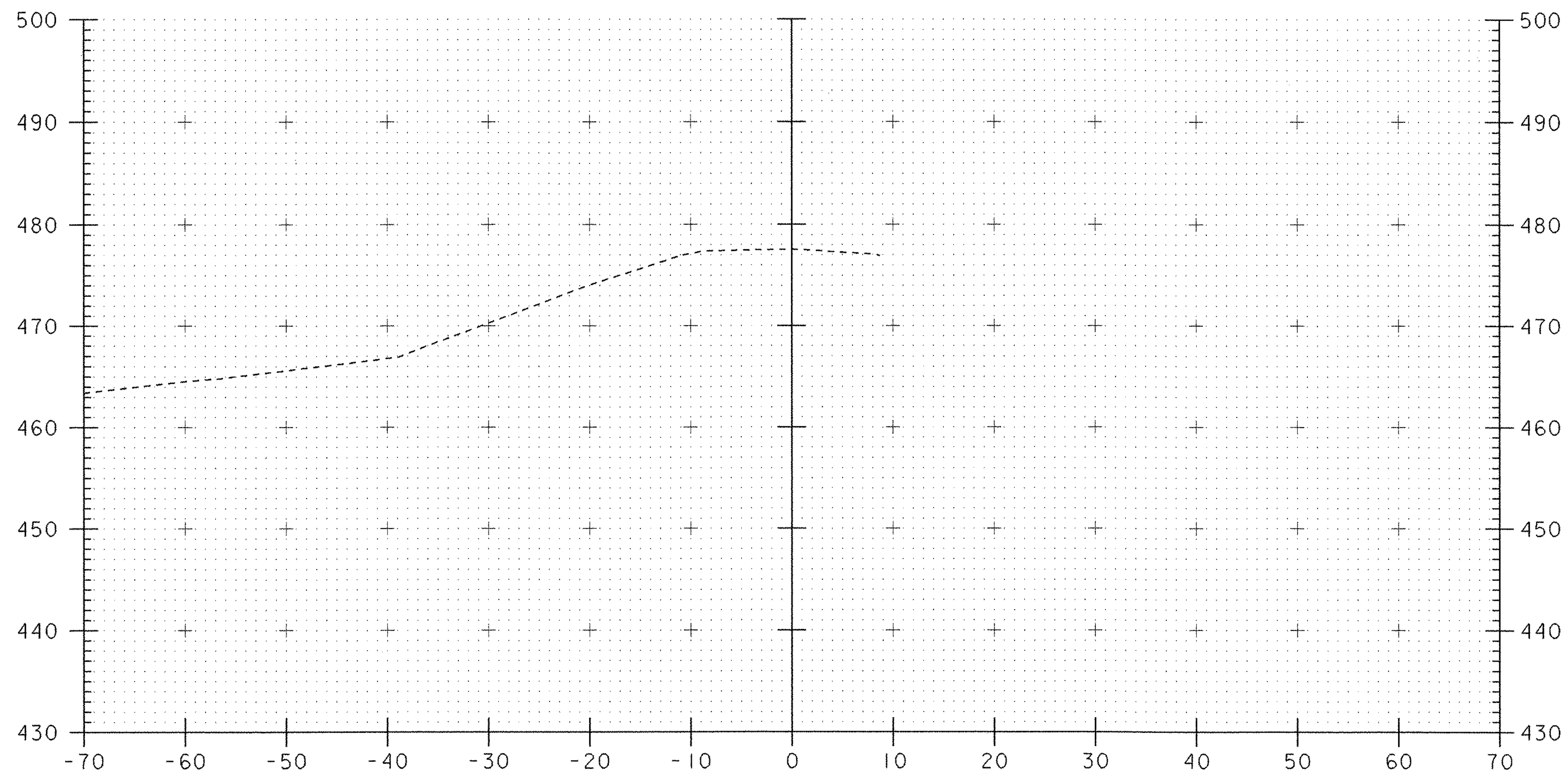


26+50

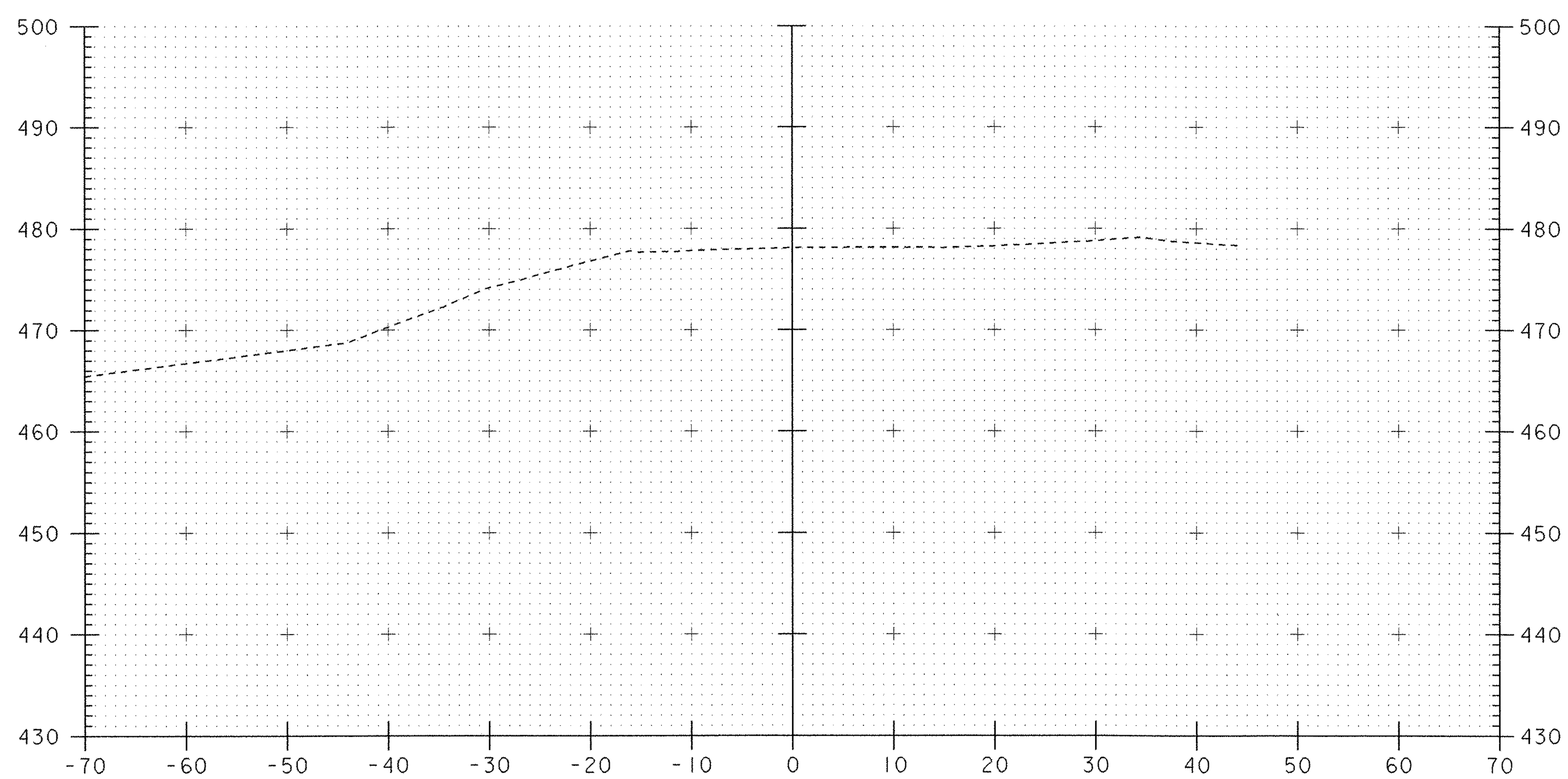
SCALE 1" = 10'-0"

10 0 10

PROJECT: Royalton	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099slx.dgn IPARM FILE NAME: sj099s04.i	PLOT DATE: 25-SEP-2000
VT. 14 CROSS SECTIONS 25+50 TO 27+00	
	SHEET: 108 OF 118



27+91

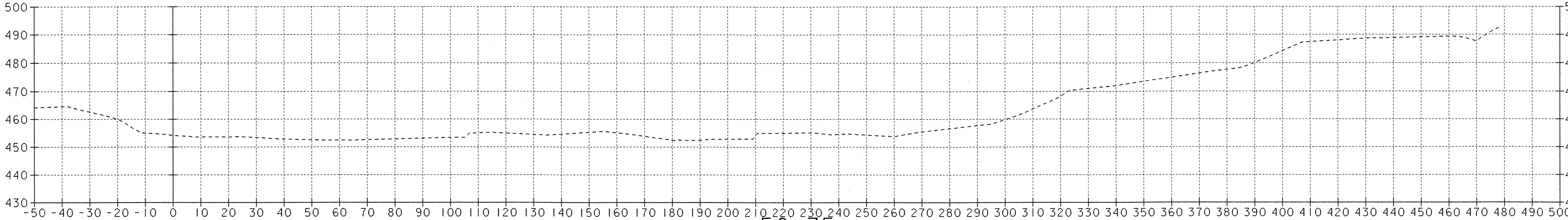


27+50

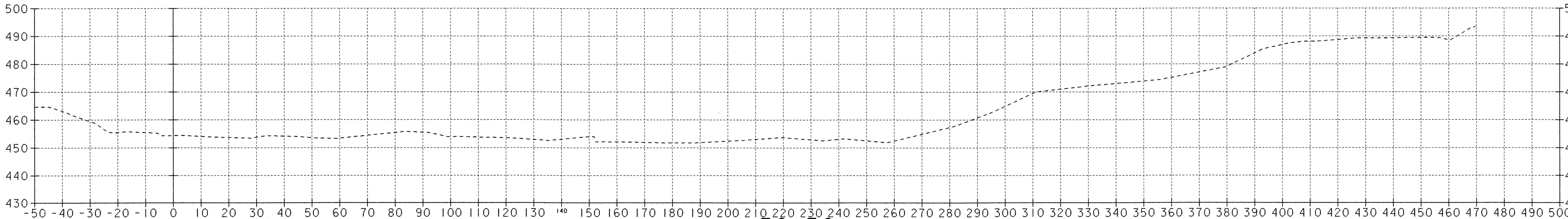
SCALE 1" = 10'-0

10 0 10

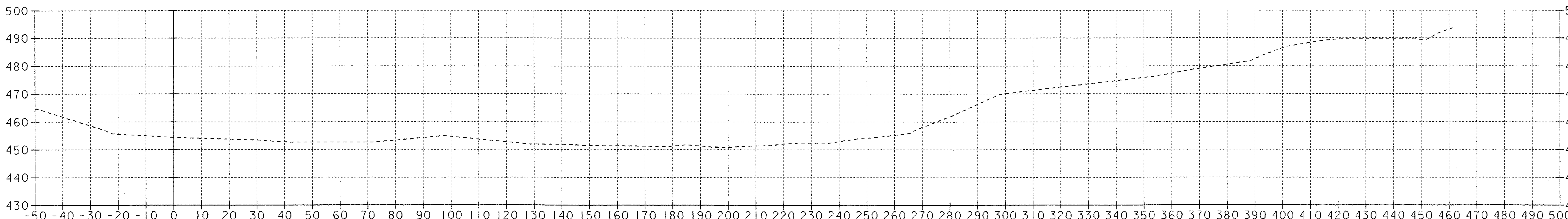
PROJECT: Royalton	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099slx.dgn IPARM FILE NAME: sj099s05.i	PLOT DATE: 25-SEP-2000
VT. 14 CROSS SECTIONS 27+50 TO 27+91	
	SHEET: 109 OF 118



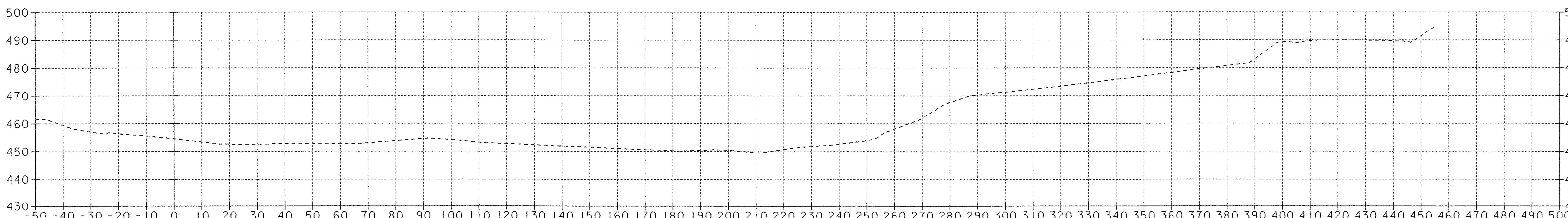
50+75



50+50



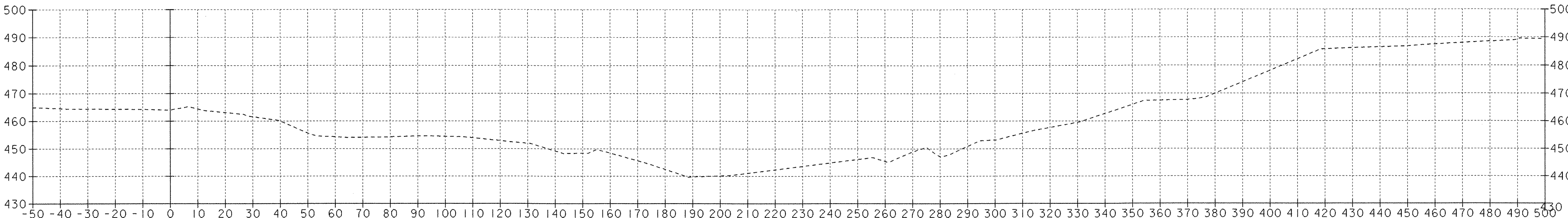
50+25



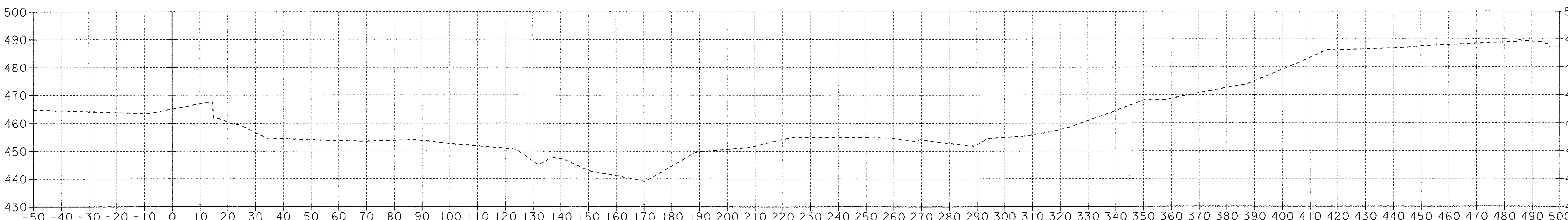
50+00

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

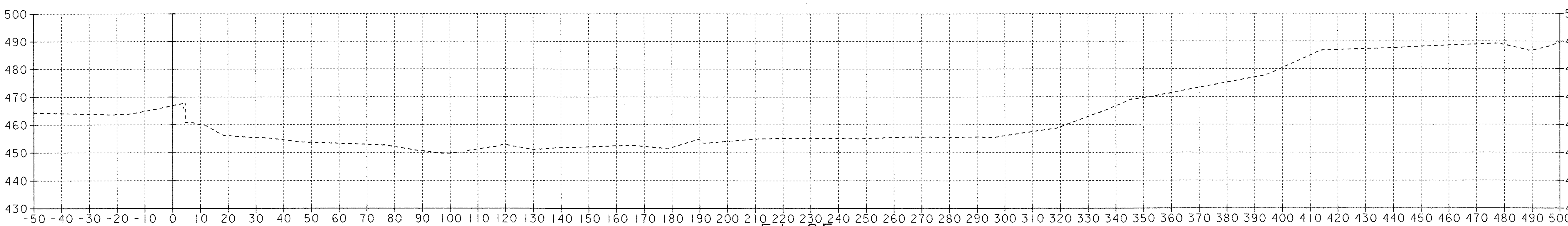
PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099chx.dgn IPARM FILE NAME: sj099c01.i	PLOT DATE: 25-SEP-2000
CHANNEL CROSS SECTIONS 50+00 - 50+75	
	SHEET: 110 OF 118



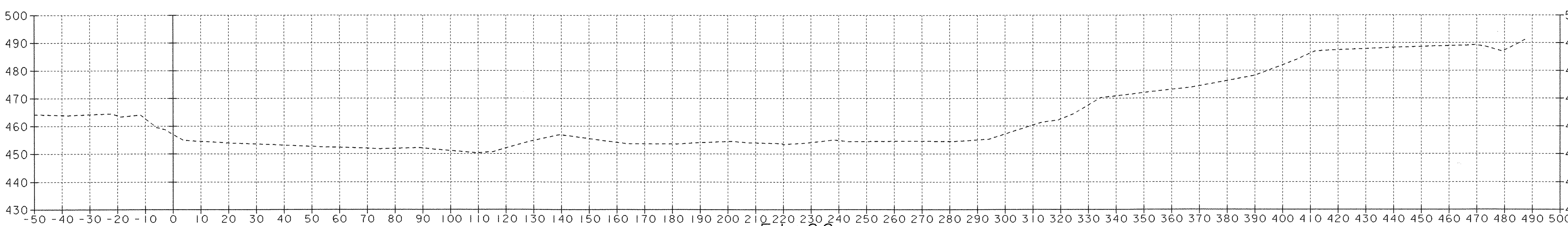
51+75



51+50



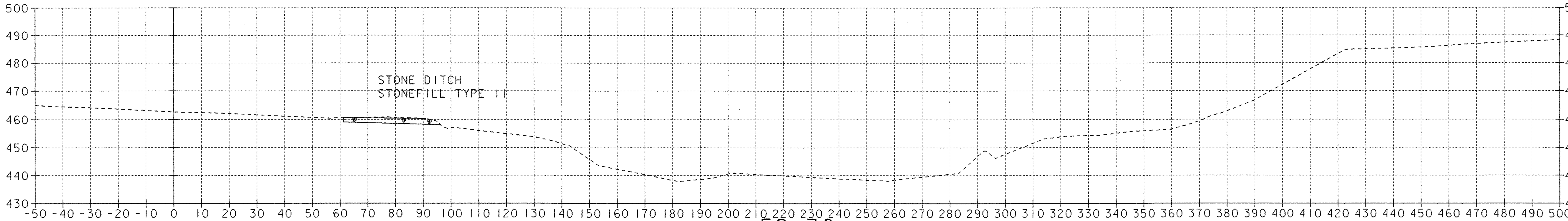
51+25



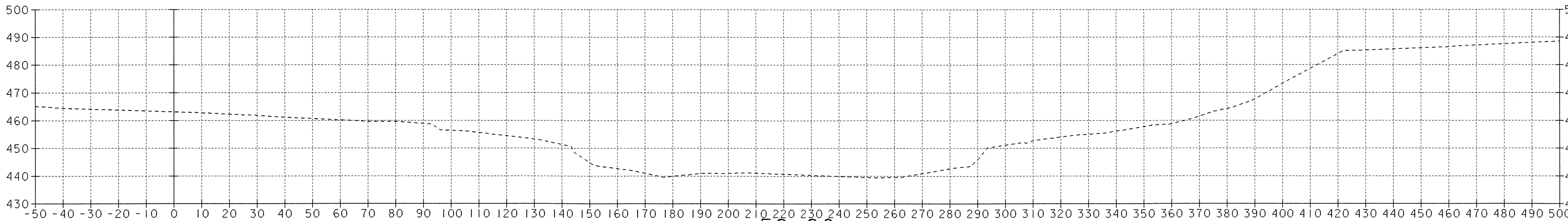
51+00

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

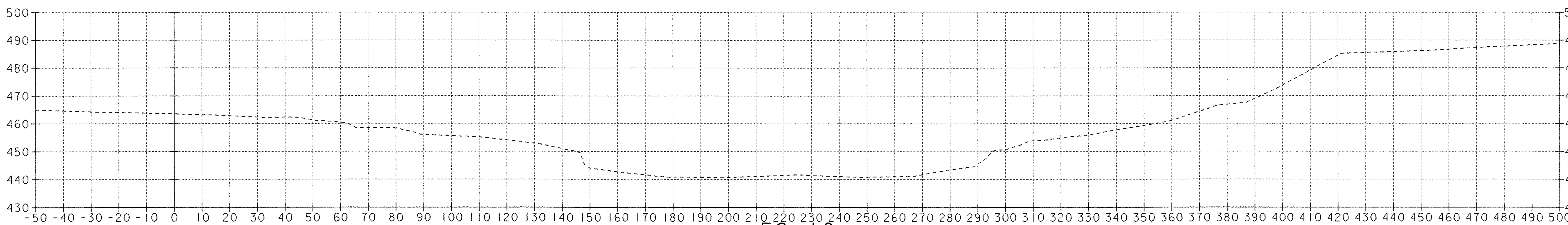
PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099chx.dgn IPARM FILE NAME: sj099c02.i	PLOT DATE: 25-SEP-2000
CHANNEL CROSS SECTION 51+00 - 51+75	
	SHEET: 111 OF 118



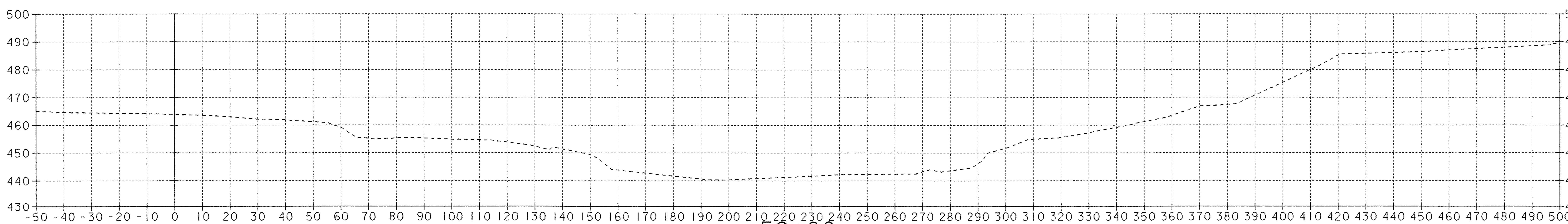
52+30



52+20



52+10

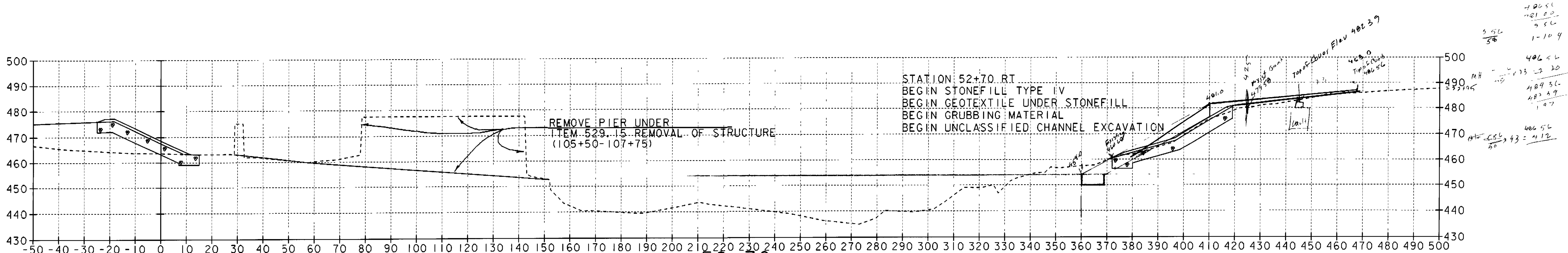


52+00

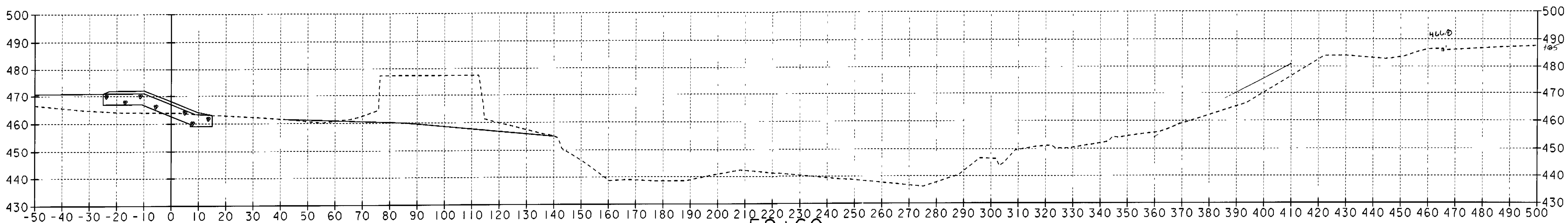
SCALE 1" = 20'-0"

20 0 20

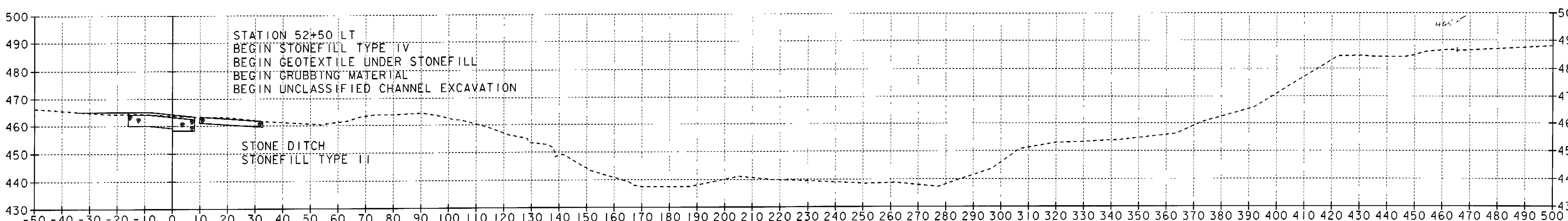
PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099chx.dgn IPARM FILE NAME: sj099c03.i	PLOT DATE: 25-SEP-2000
CHANNEL CROSS SECTIONS 52+00 - 52+30	
	SHEET: 112 OF 118



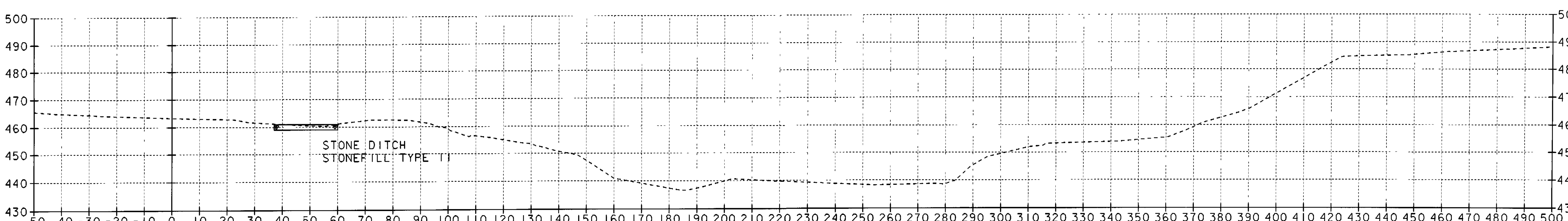
52+70



52+60



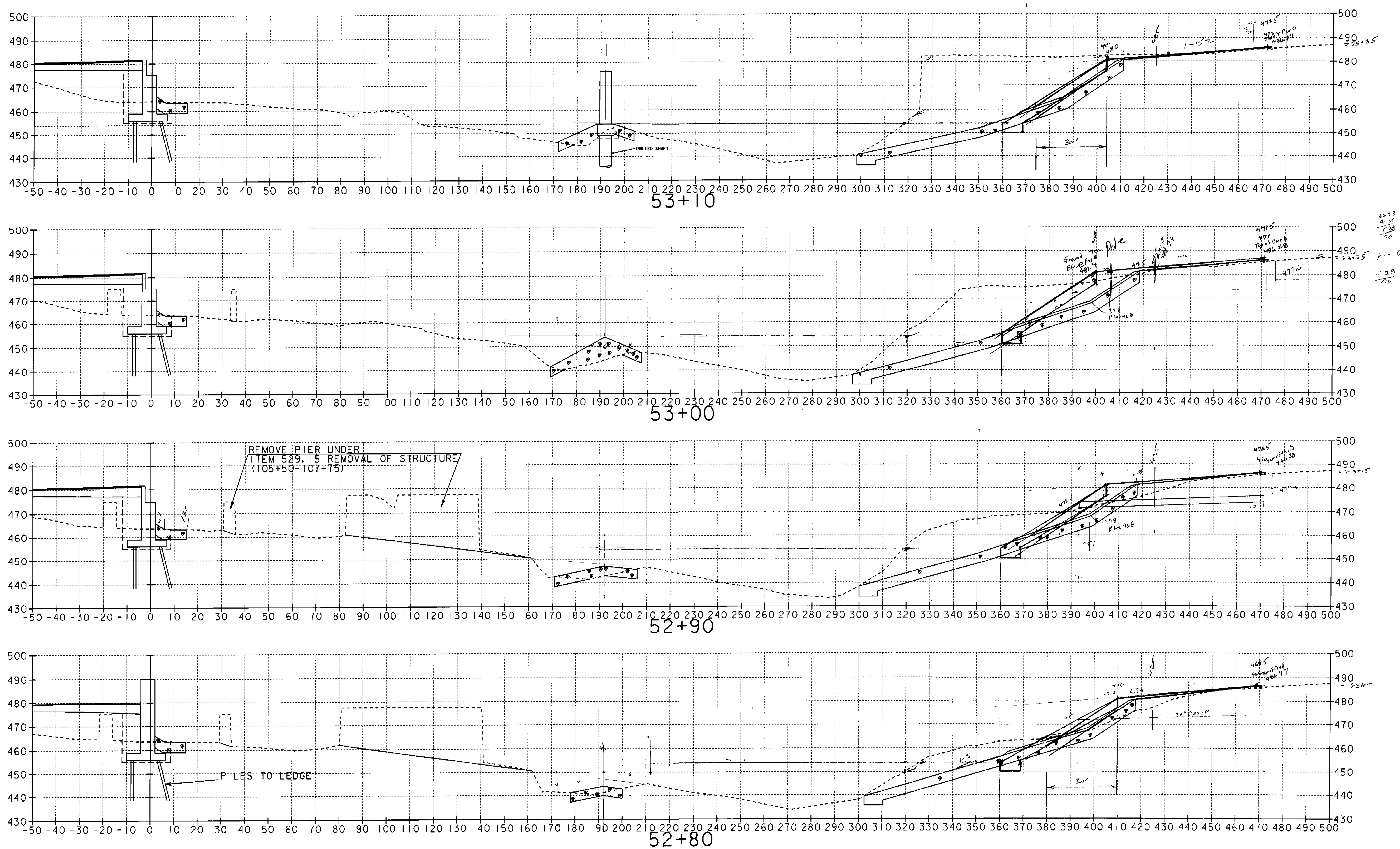
52+50



52+40

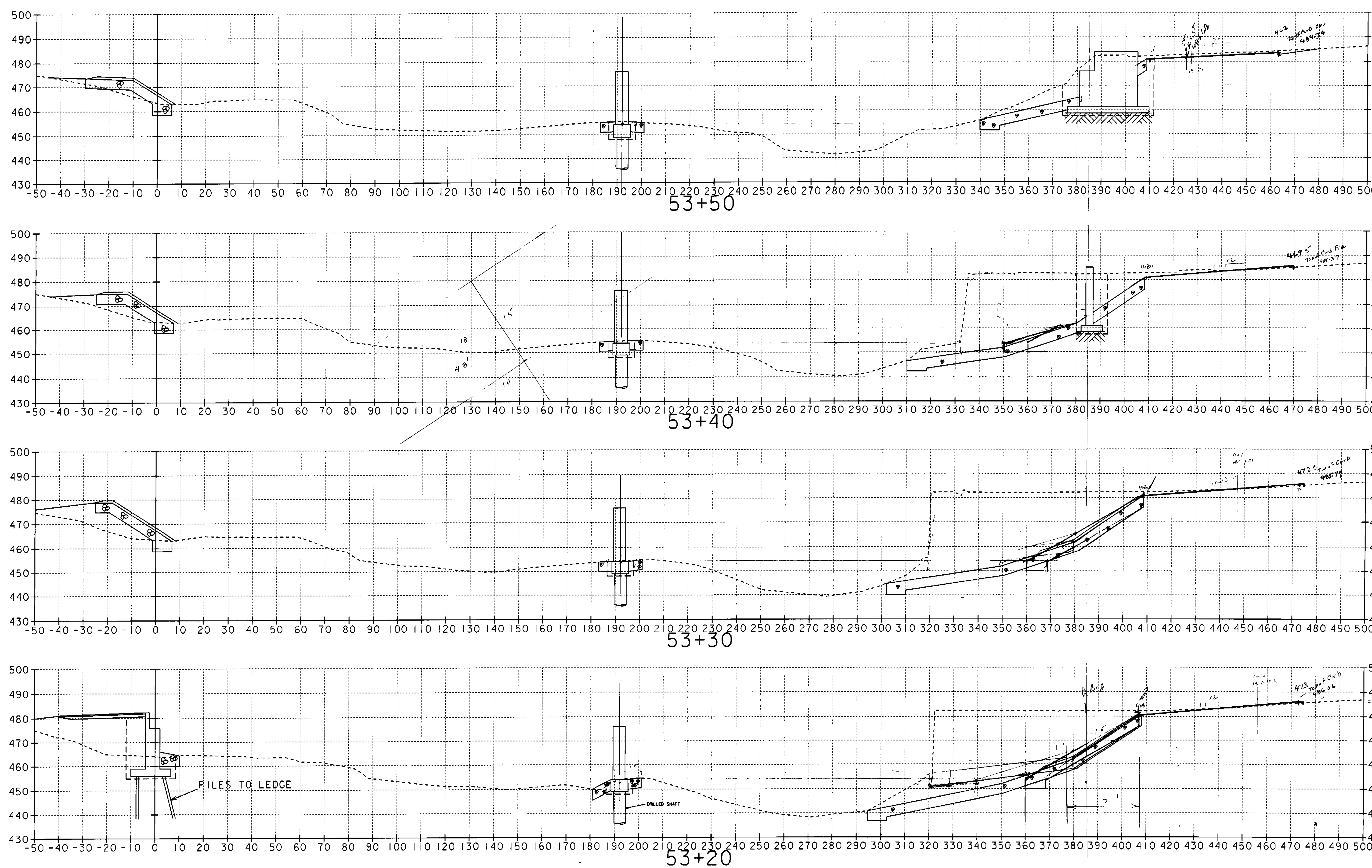
SCALE 1" = 20'-0

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89J099/structures/sj099chx.dgn IPARM FILE NAME: sj099c04.i	PLOT DATE: 25-SEP-2000
CHANNEL CROSS SECTIONS 52+40 - 52+70	SHEET: 113 OF 118



SCALE 1" = 20'-0
20 0 20

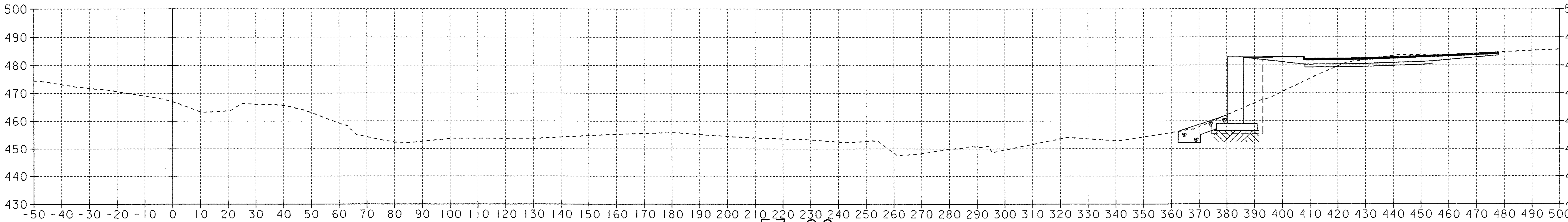
PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89J099/structures/sj099c□x.dgn	
IPARM FILE NAME: sj099c05.i	PLOT DATE: 25-SEP-2000
CHANNEL CROSS SECTIONS 52+80 - 53+10	
	SHEET. 114 OF 118



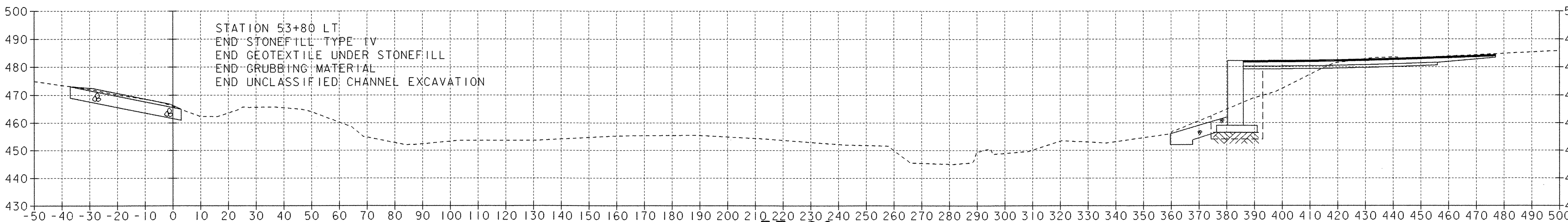
SCALE 1" = 20'-0

20 0 20

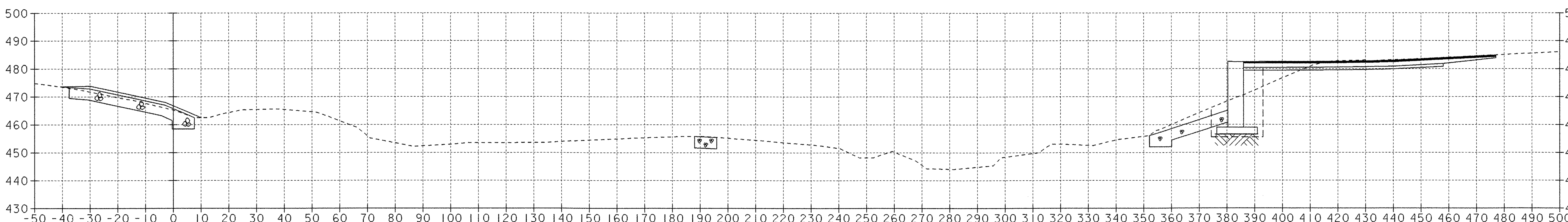
PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099chx.dgn	
IPARM FILE NAME: sj099c06.l	PLOT DATE: 25-SEP-2000
CHANNEL CROSS SECTIONS 53+20 - 53+50	
	SHEET: 115 OF 118



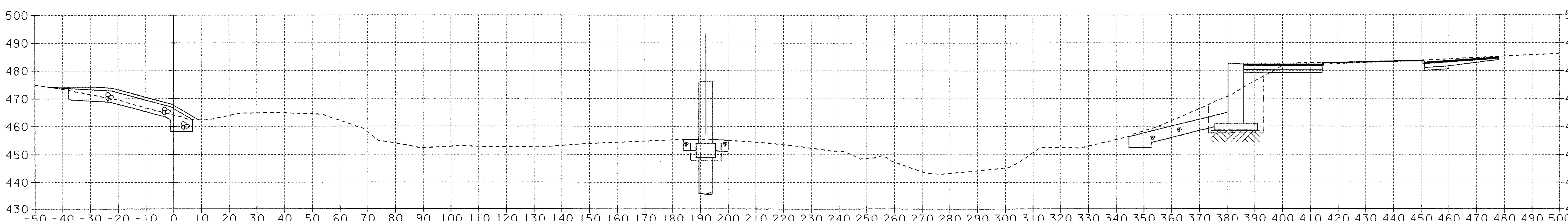
53+90



53+80



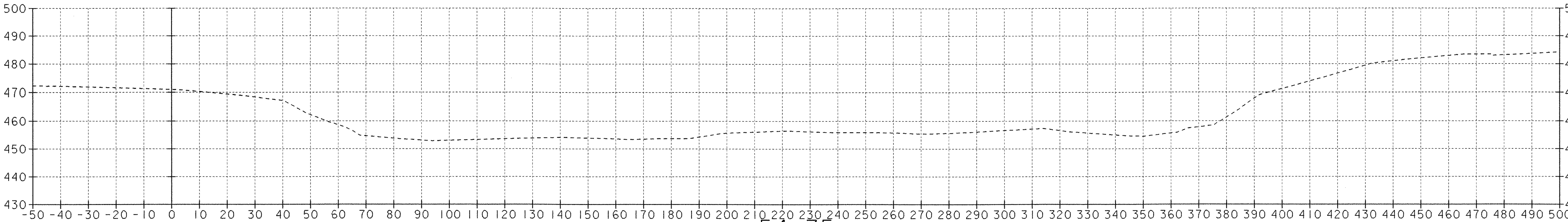
53+70



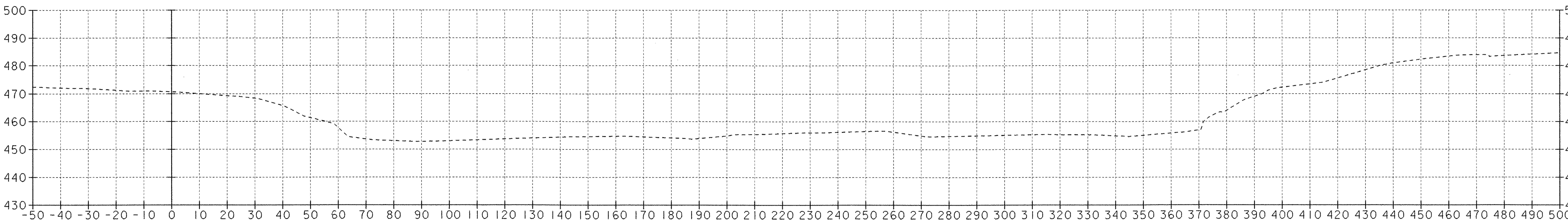
53+60

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

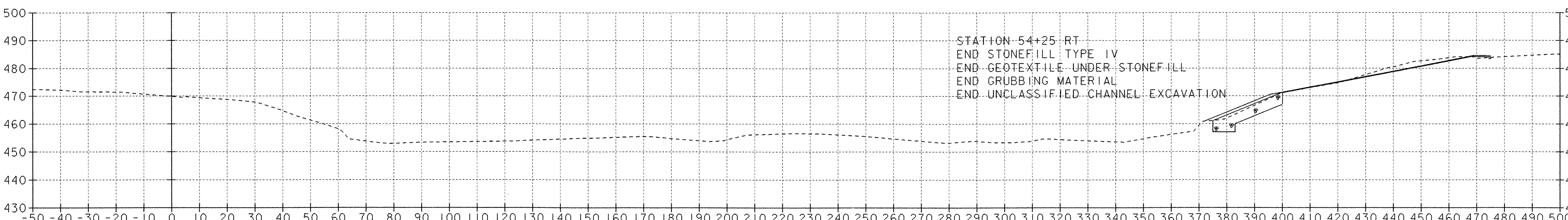
PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099chx.dgn IPARM FILE NAME: sj099c07.i	PLOT DATE: 25-SEP-2000
CHANNEL CROSS SECTIONS 53+60 - 53+90	
	SHEET: 116 OF 118



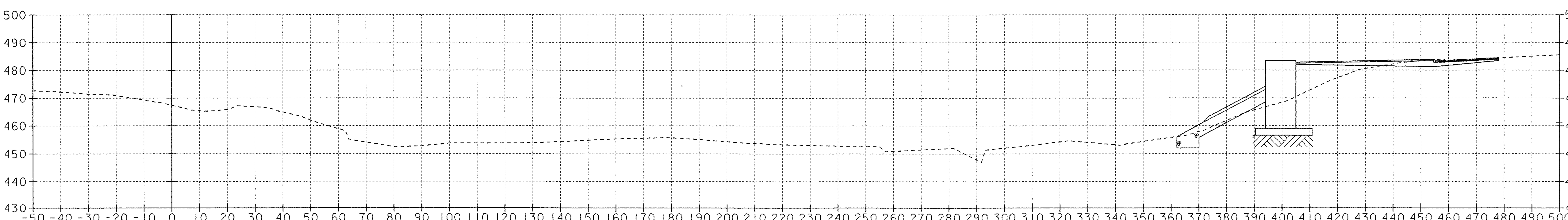
54+75



54+50



54+25

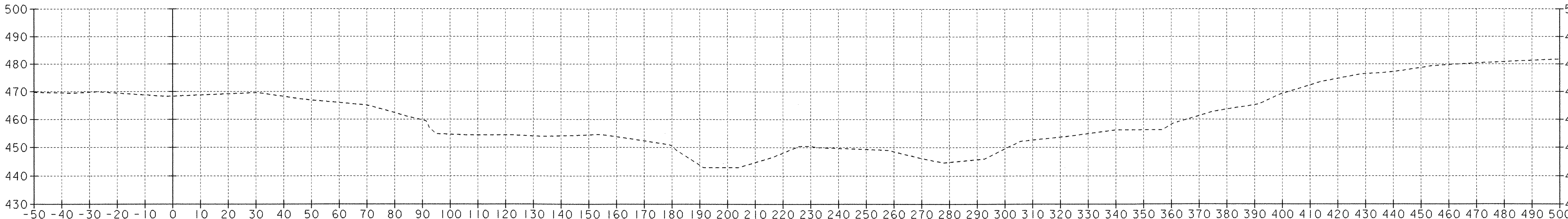


54+00

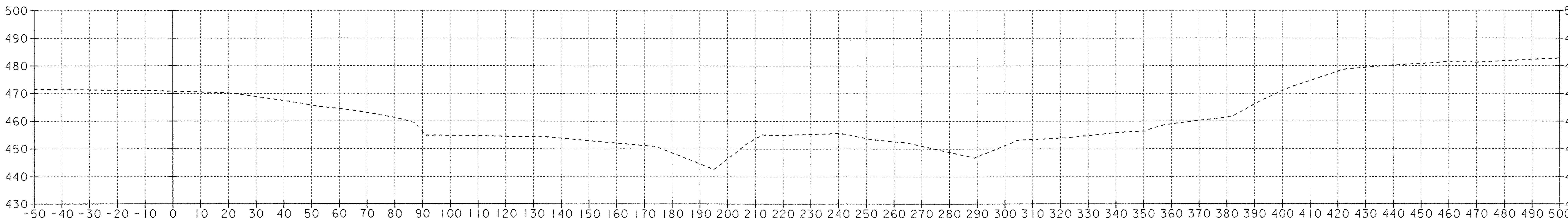
SCALE 1" = 20'-0

20 0 20

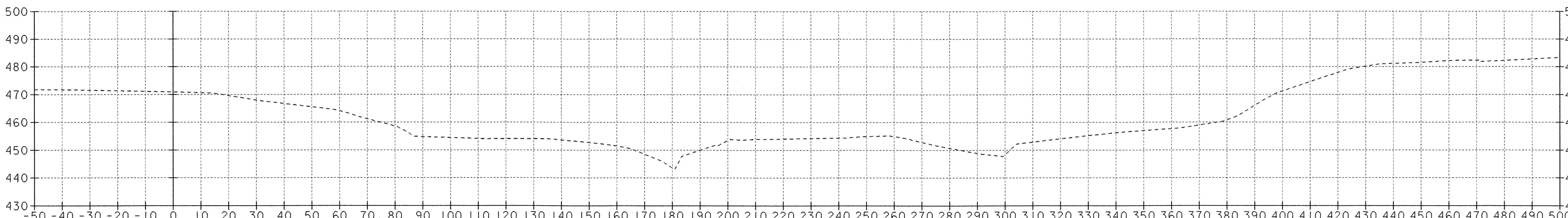
PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099chx.dgn IPARM FILE NAME: sj099c08.i	PLOT DATE: 25-SEP-2000
CHANNEL CROSS SECTIONS 54+00 - 54+75	
	SHEET: 117 OF 118



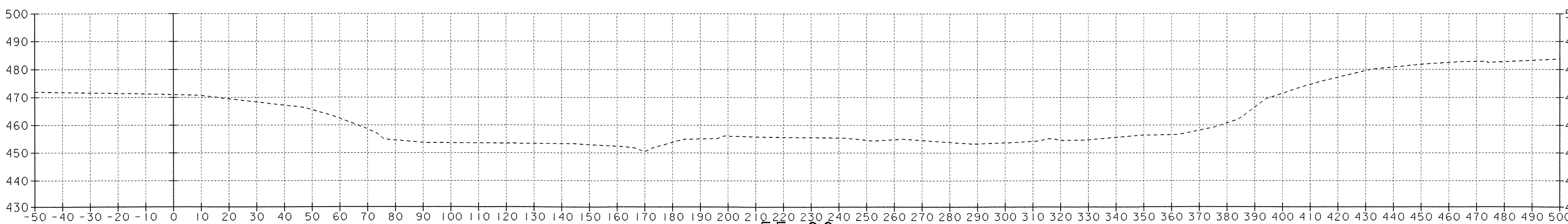
56+00



55+50



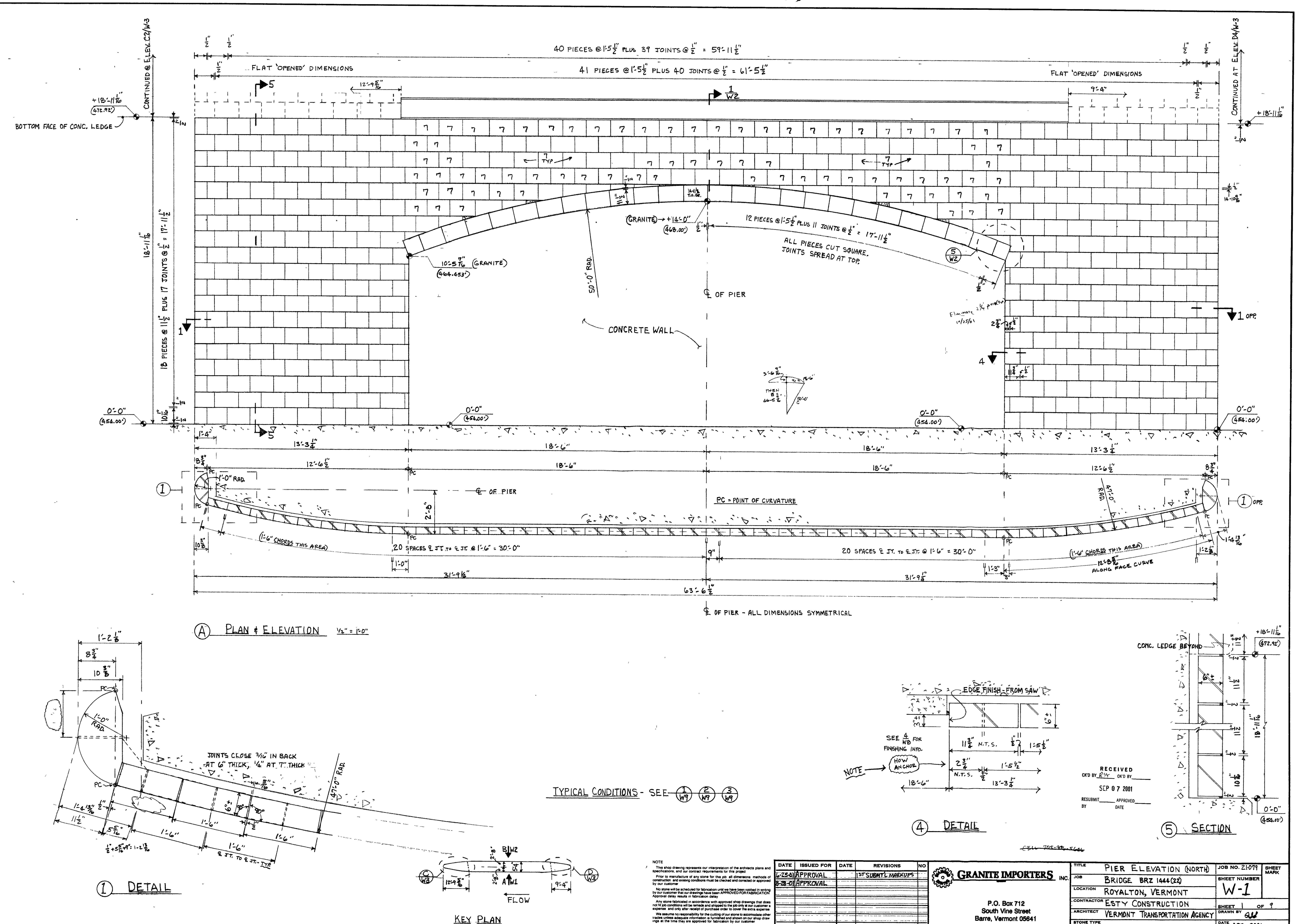
55+25



55+00

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

PROJECT: ROYALTON	PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: 89j099/structures/sj099chx.dgn IPARM FILE NAME: sj099c09.i	PLOT DATE: 25-SEP-2000
CHANNEL CROSS SECTIONS 55+00 - 56+00	
	SHEET: 118 OF 118



NOTE

This shop drawing represents our interpretation of the architects plans and specifications, and our contract requirements for this project

Prior to manufacture of any stone for this job all dimensions methods of construction and existing conditions must be checked and corrected or approved by our customer

No stone will be scheduled for fabrication until we have been notified in writing by our customer that our drawings have been APPROVED FOR FABRICATION Approval delay results in fabrication delay

Any stone fabricated in accordance with approved shop drawings that does not fit job conditions will be remade and shipped to the job only at our customer's expense and only after receipt of purchase order to cover the extra expense

We assume no responsibility for the cutting of our stone to accomodate other trades unless adequate information is furnished and shown on our shop drawings at the time they are approved for fabrication by our customer

We assume no responsibility as to measurements or details affecting any work but our own and will not be responsible for any errors occuring through the use of this drawing by other parties

DATE	ISSUED FOR	DATE	REVISIONS	NO
6-25-01	APPROVAL		1ST SUBMIT'L MARKUPS	
8-28-01	APPROVAL			

GRANITE IMPORTERS INC.
P.O. Box 712
South Vine Street
Barre, Vermont 05641
(802) 476-5812 FAX 802-476-7349

TITLE	PIER ELEVATION (NORTH)	JOB NO. 21-079	SHEET MARK
JOB	BRIDGE BRZ 1444(22)	SHEET NUMBER W-1	
LOCATION	ROYALTON, VERMONT		
CONTRACTOR	ESTY CONSTRUCTION	SHEET 1 OF 9	
ARCHITECT	VERMONT TRANSPORTATION AGENCY	DRAWN BY GW	
STONE TYPE AND FINISH	WOODBURY GRANITE-SPLIT FACE	DATE APR. 2001	
		SCALE 1/8" & 1 1/2" = 1'-0"	

MEMO

AUG. 28, 2001

RE: BRIDGE BRZ 1444 (22)
ROYALTON, VT.

REGARDING OUR SHOP DRAWING SHEETS NO. W-1 THRU W-9 ISSUED 8-28-01 FOR APPROVAL, WE SPECIFICALLY CALL THE FOLLOWING TO YOUR ATTENTION.

1. ALL PIECES MARKED WITH PIECE NUMBERS 7, 7A, 7B, 7C & 7D ON SHEETS W-1 THRU W-7 HAVE BEEN PLACED INTO PRODUCTION. ANY REVISIONS AFFECTING ANY OF THOSE PIECES MIGHT RESULT IN REPLACEMENT COST.

2. CHECK ALL DIMENSIONS. APPROVE AS SHOWN OR REVISE AS NEEDED.

3. CHECK ALL DETAILS. APPROVE AS SHOWN OR REVISE AS NEEDED.

4. SHEET W-3, BETWEEN ELEVS. C2 & C4 AND D2 & D4 - 1ST MARKUPS PUT CONCRETE LEDGE TIGHT AGAINST EDGE OF GRANITE. IF CUTTING IS REQUIRED TO FIT GRANITE TO END OF LEDGE, PROVIDE DETAILS OR FIELD CUT.

5. ADDRESS VERIFY NOTE AT K1/W6 AND AT L2/W7.

6. DETAIL 16/W8 - 1ST MARKUPS REFER TO SMALL WEDGE PIECE. THERE IS NO SMALL WEDGE. THE WEDGE AREA REFERRED TO IS ACTUALLY:
   A. LEFT END OF PIECE #1 AT ONE COURSE
   B. RIGHT END OF PIECE #2 AT ALT. COURSE.

GRANITE IMPORTERS, INC.

Rob Young 7/31/01 Granite Shop Drawings Royalton BRZ 1444(32)

WBS 4/22/01

Curb Elev	Deck Tower			
482.41	T1	494.00 − [482.08 − (.021×11) − (.042×4.5') + .75'] STA 104+36.74	=	11.59'
482.28	T2	494.00 − [481.95 + 0.33'] STA 104+32.50	=	11.72'
486.48	T3	498.00 − [486.15 + 0.33] STA 106+33.03	=	11.52'
486.49	T4	498.00 − [486.16 + 0.33] STA 106+26.97	=	11.51'
482.80	T5	494.5 − [482.47 + 0.33] STA 108+28.52	=	11.7'
472.83	T6	494.5 − [482.50 + 0.33'] STA 108+22.55	=	11.67'

Annotations above T1 formula: FG (over 482.08), cross slope (over .021×11), Curb ~~sidewalk~~ (over .75')

STATIONS ARE AT THE CENTER

OF THE TOWER FACE

7516

Royalton AC BRZ 1444(22)

TOWER ELEVATIONS

04/22/2002

Deck Tower ID	Bottom of Tower Elev	Deck Tower High Side	Deck Tower Low Side
T1	492.44	494.00	493 61
T2	492.28	494.00	493 61
T3	496.51	498.00	497.61
T4	496.49	498 00	497 61
T5	492.92	494 50	494 11
T6	492.83	494 50	494.11

Dave Fournier
Granite Importers
Barre, VT

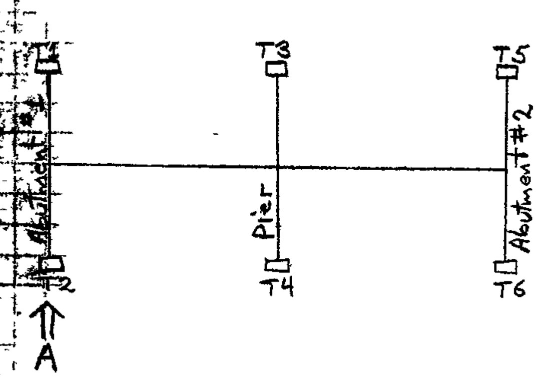
Dave,
These are the "bottom of tower" elevations for the deck towers
The top of the towers are level alng the high face and the low face

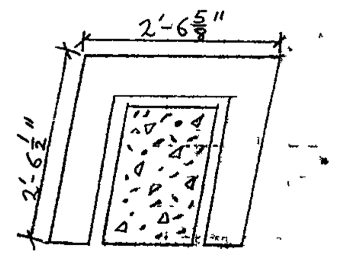
RECEIVED
CK'D BY RST OK'D BY
APR 2 3 2002
RESUBMIT APPROVED ✓
BY DATE 4/30/02

Deck Towers – DOWNSTREAM

3-04-02

ROYALTON
AC BRZ 1444(22)
BECK & BELLUCCI
ESTY CONST

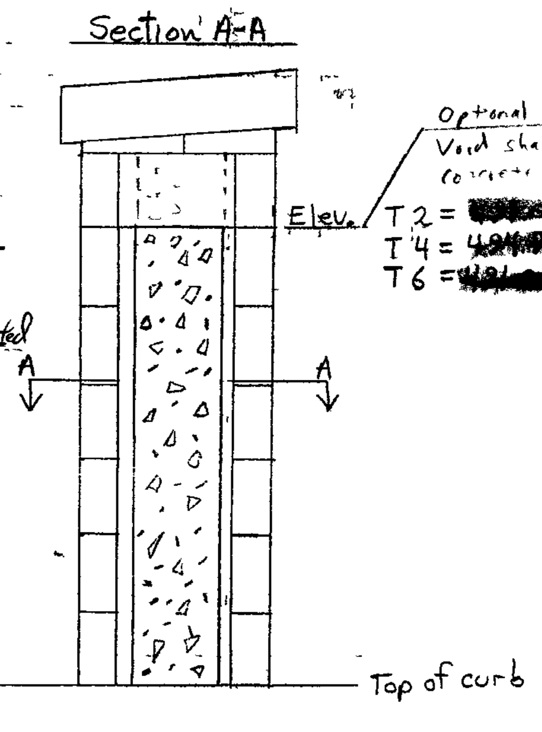




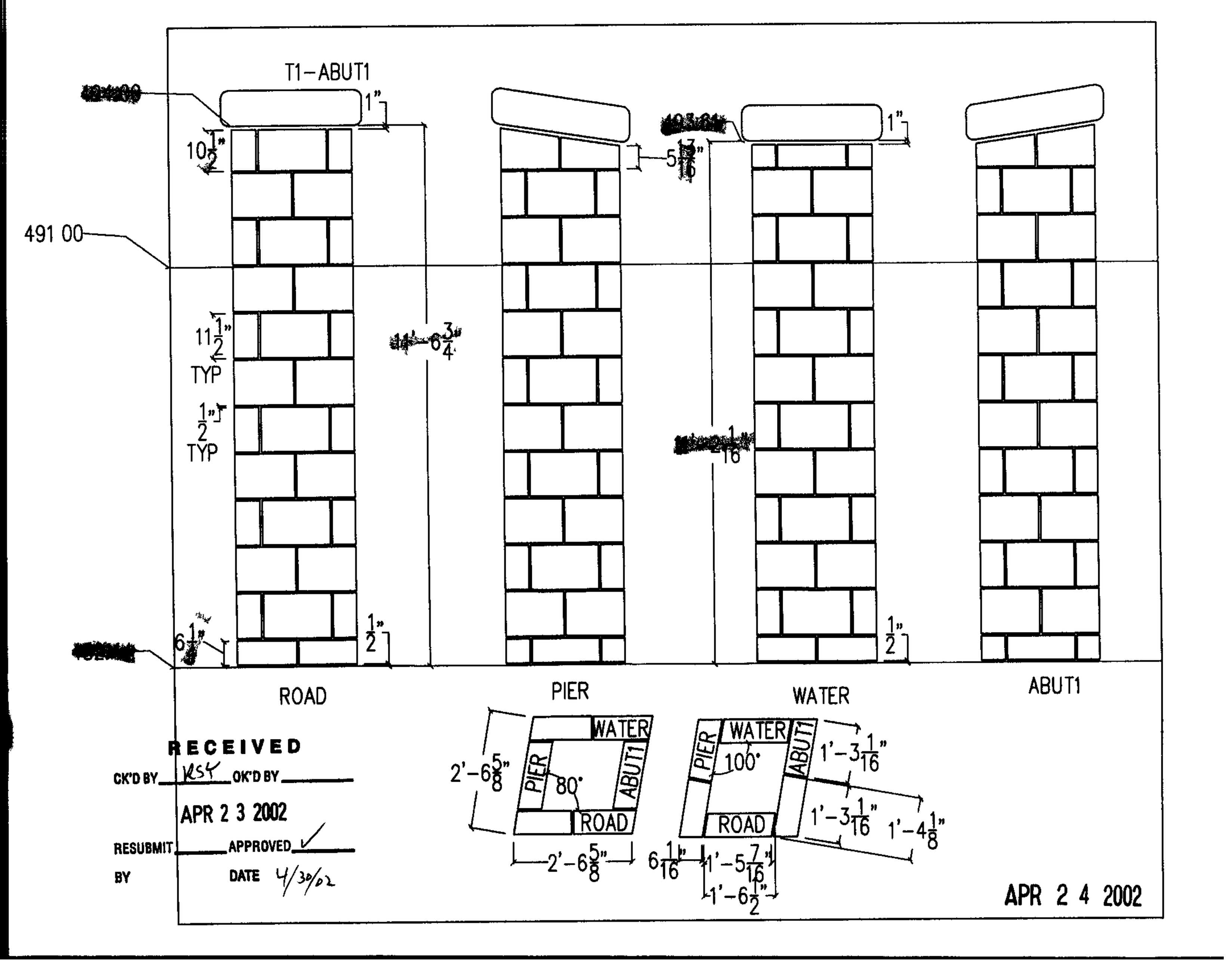
Section A-A

Optional Construction Joint
Void shall Be Filled With
Concrete After Top Cast
In Place

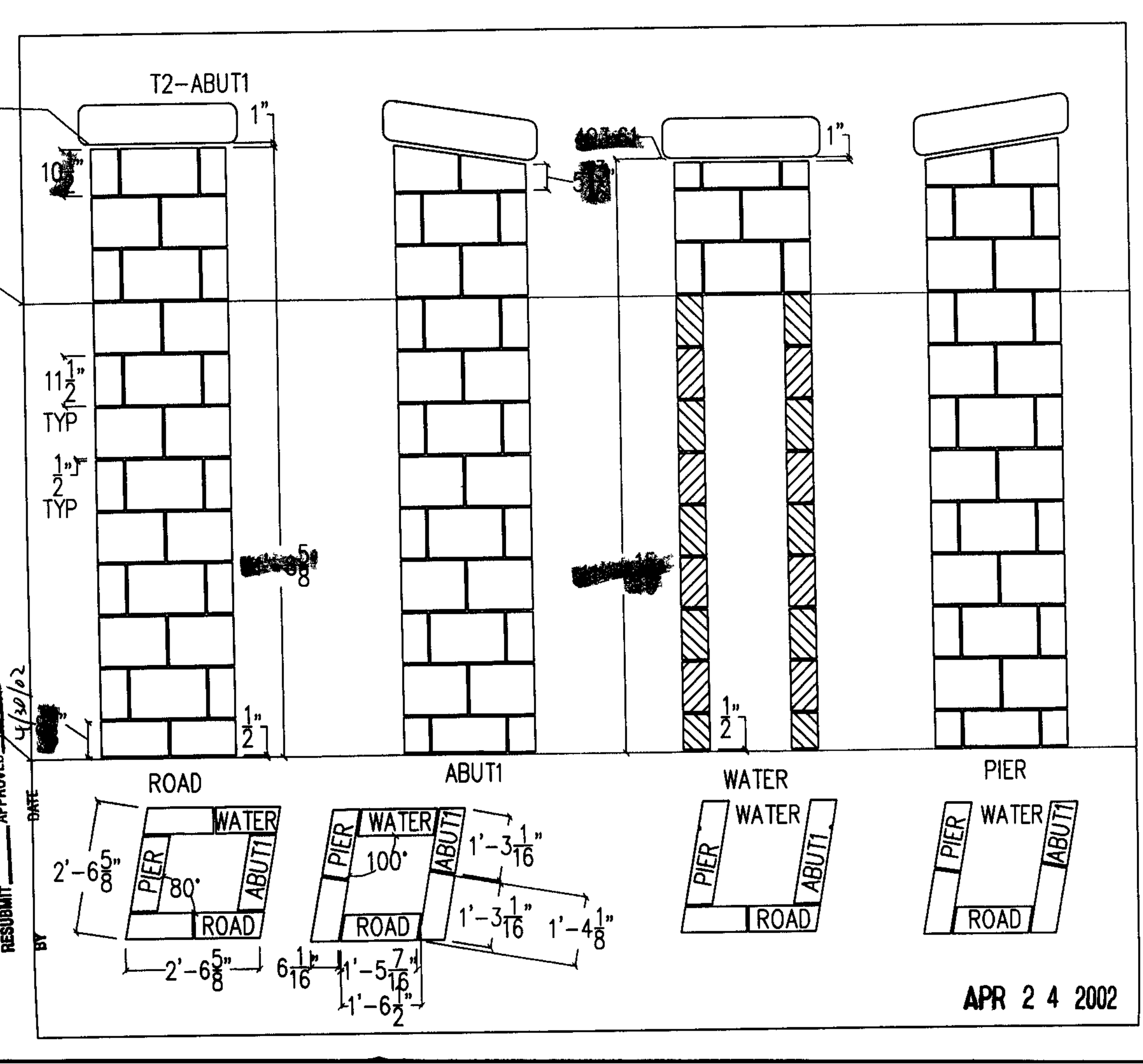
Elev.
T2 = [redacted]
T4 = [redacted]
T6 = [redacted]



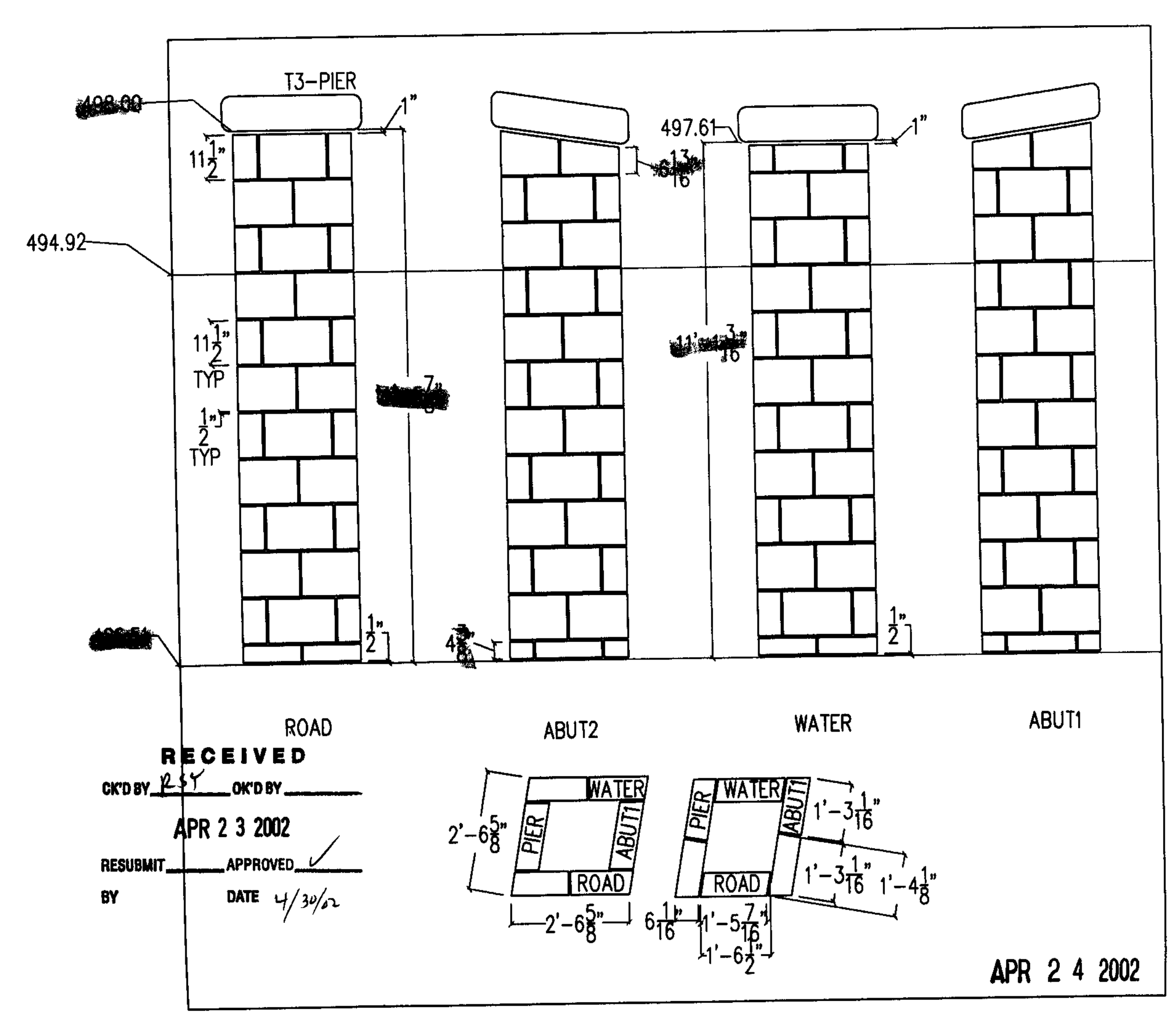
Elevation View A
T4 and T6 Similar


T1–ABUT1
[redacted]
491 00
ROAD
PIER
WATER
ABUT1
1"
10 1/2"
11 1/2" TYP
1/2" TYP
6 1/2"
1/2"
5 13/16"
1 1/16"
1/2"
2'-6 5/8"
2'-6 5/8"
80°
100°
1'-3 1/16"
1'-3 1/16"
1'-4 1/8"
6 1/16"
1'-5 7/16"
1'-6 1/2"
RECEIVED
CK'D BY KSY OK'D BY
APR 2 3 2002
RESUBMIT APPROVED ✓
BY DATE 4/30/02
APR 2 4 2002

RECEIVED
CK'D BY KSY CK'D BY [redacted]
APR 2 3 2002
RESUBMIT ____ APPROVED 4/30/02
BY ____ DATE ____

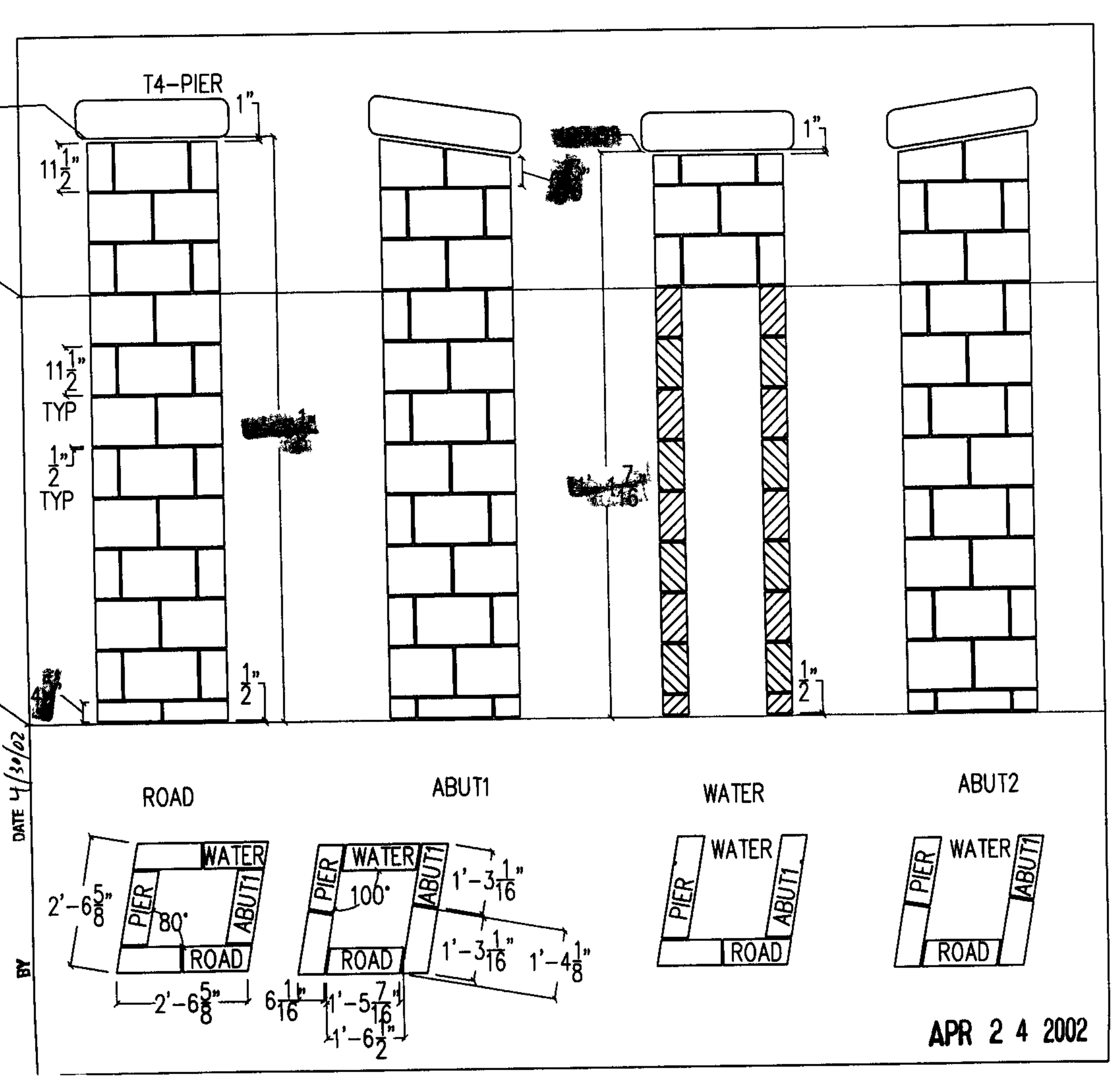


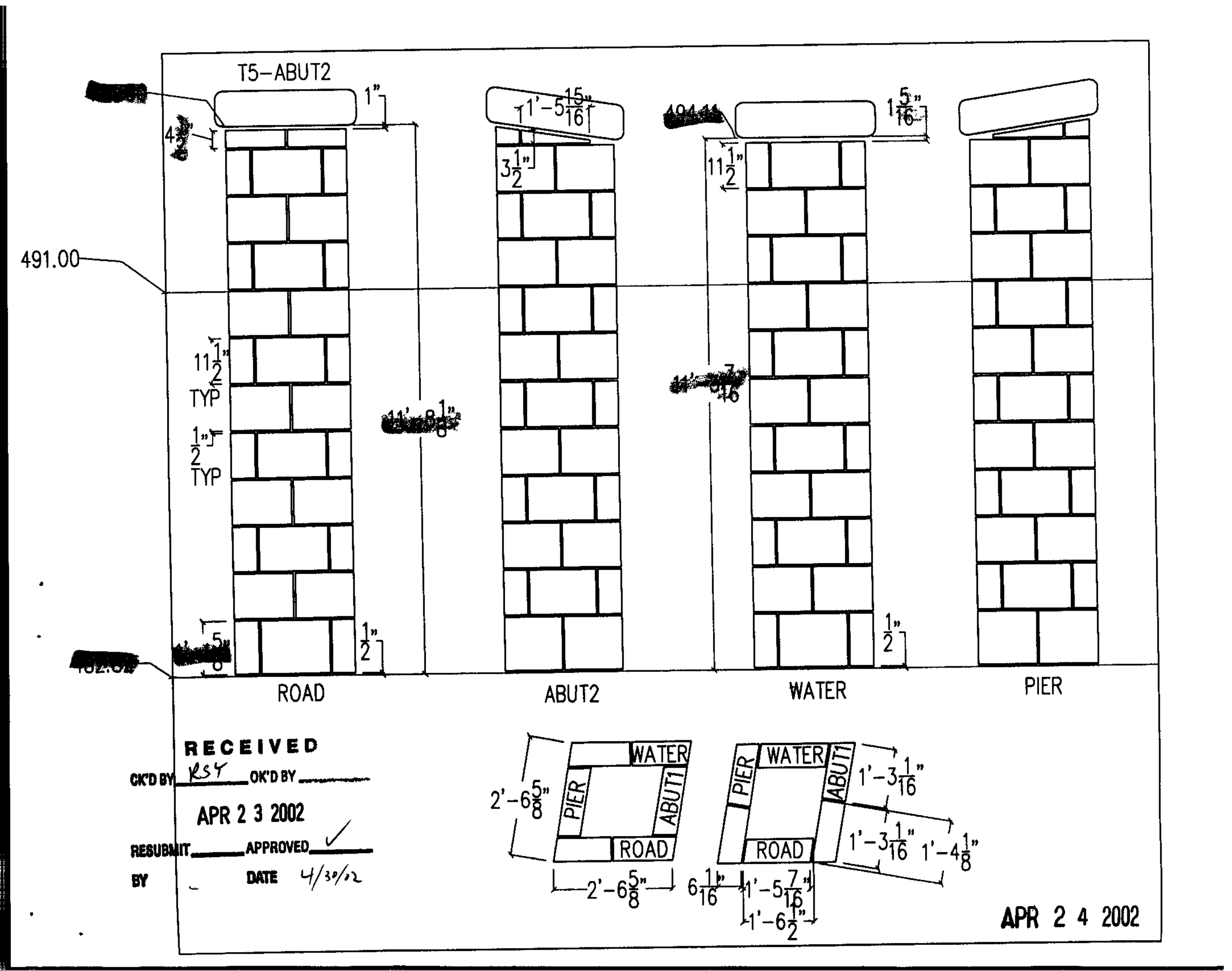
APR 2 4 2002



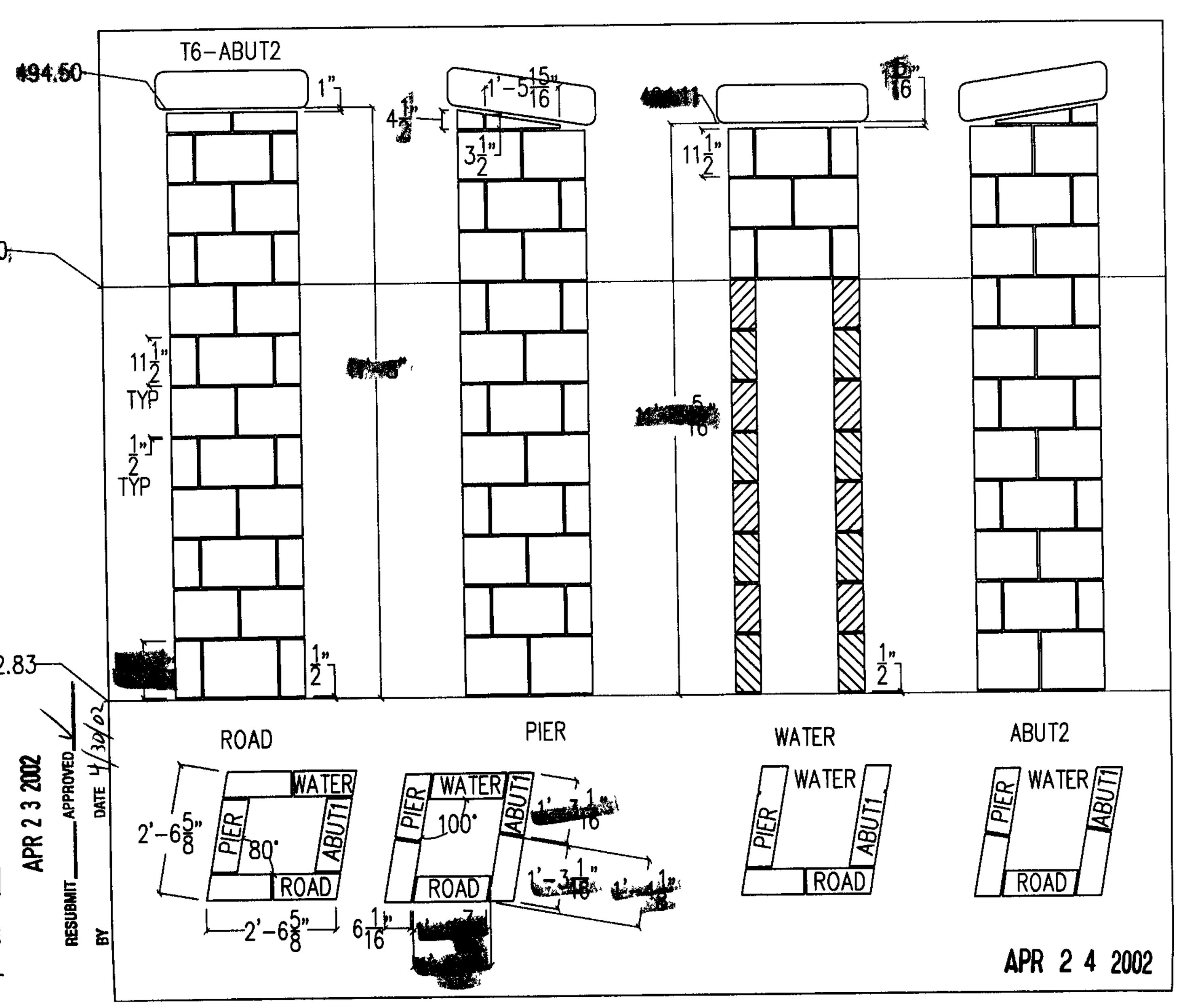
RECEIVED
CK'D BY RSY OK'D BY
APR 2 3 2002
RESUBMIT ____ APPROVED ✓
BY DATE 4/30/02

APR 2 4 2002

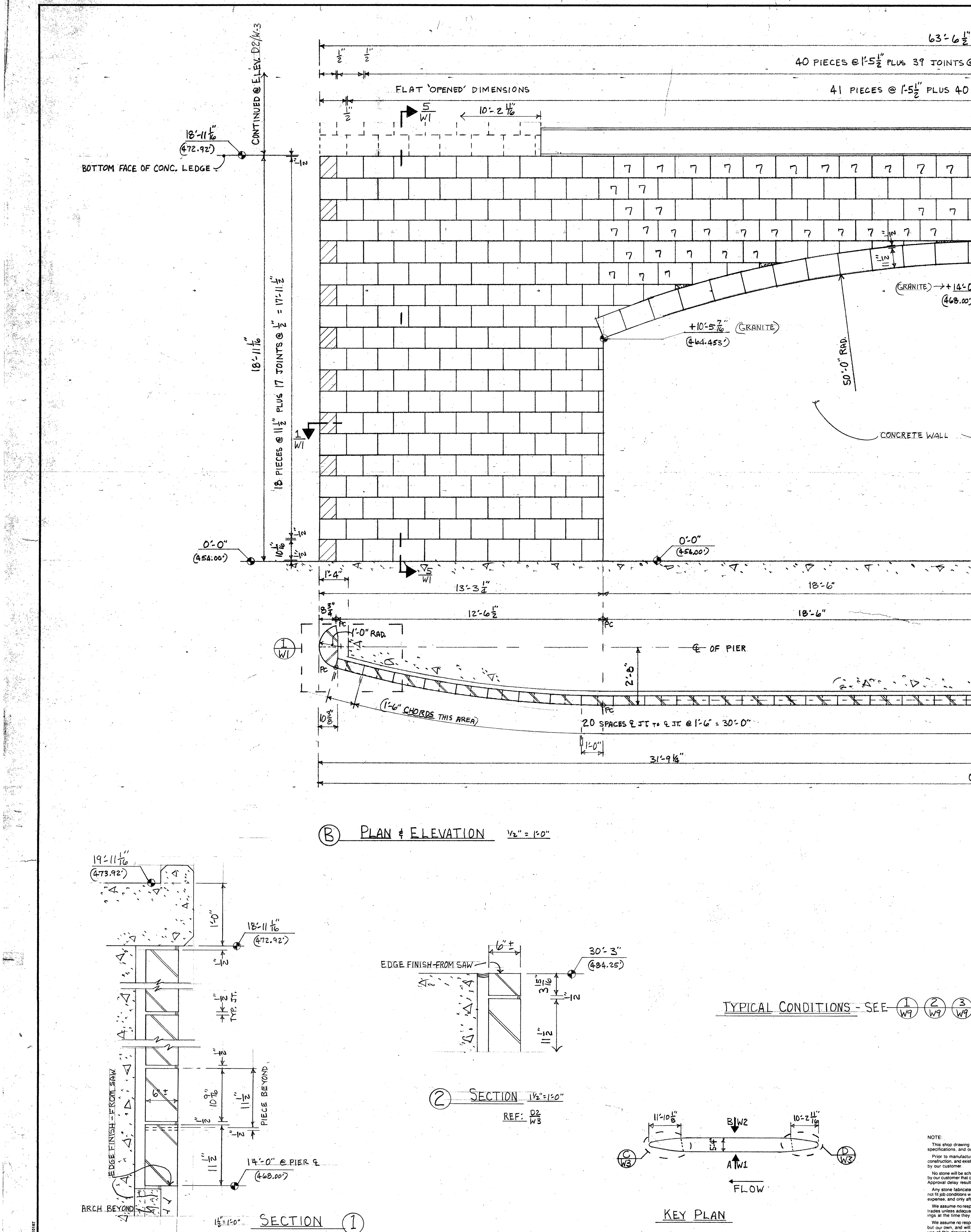

T4-PIER
ROAD
ABUT1
WATER
ABUT2
PIER
TYP
APR 2 4 2002



T5-ABUT2
[redacted]
1"
1'-5 15/16"
[redacted]
1 5/16"
3 1/2"
11 1/2"
491.00
11 1/2" TYP
1/2" TYP
[redacted]
[redacted]
[redacted]
1/2"
1/2"
ROAD
ABUT2
WATER
PIER
RECEIVED
CK'D BY KSY OK'D BY
APR 2 3 2002
RESUBMIT APPROVED ✓
BY DATE 4/23/02
2'-6 5/8"
WATER
PIER
ROAD
ABUT1
1'-3 1/16"
1'-3 1/16"
1'-4 1/8"
6 1/16"
1'-5 7/16"
1'-6 1/2"
APR 2 4 2002



RECEIVED
CK'D BY KSY OK'D BY ____
APR 2 3 2002
RESUBMIT ____ APPROVED ✓
DATE 4/30/02
BY



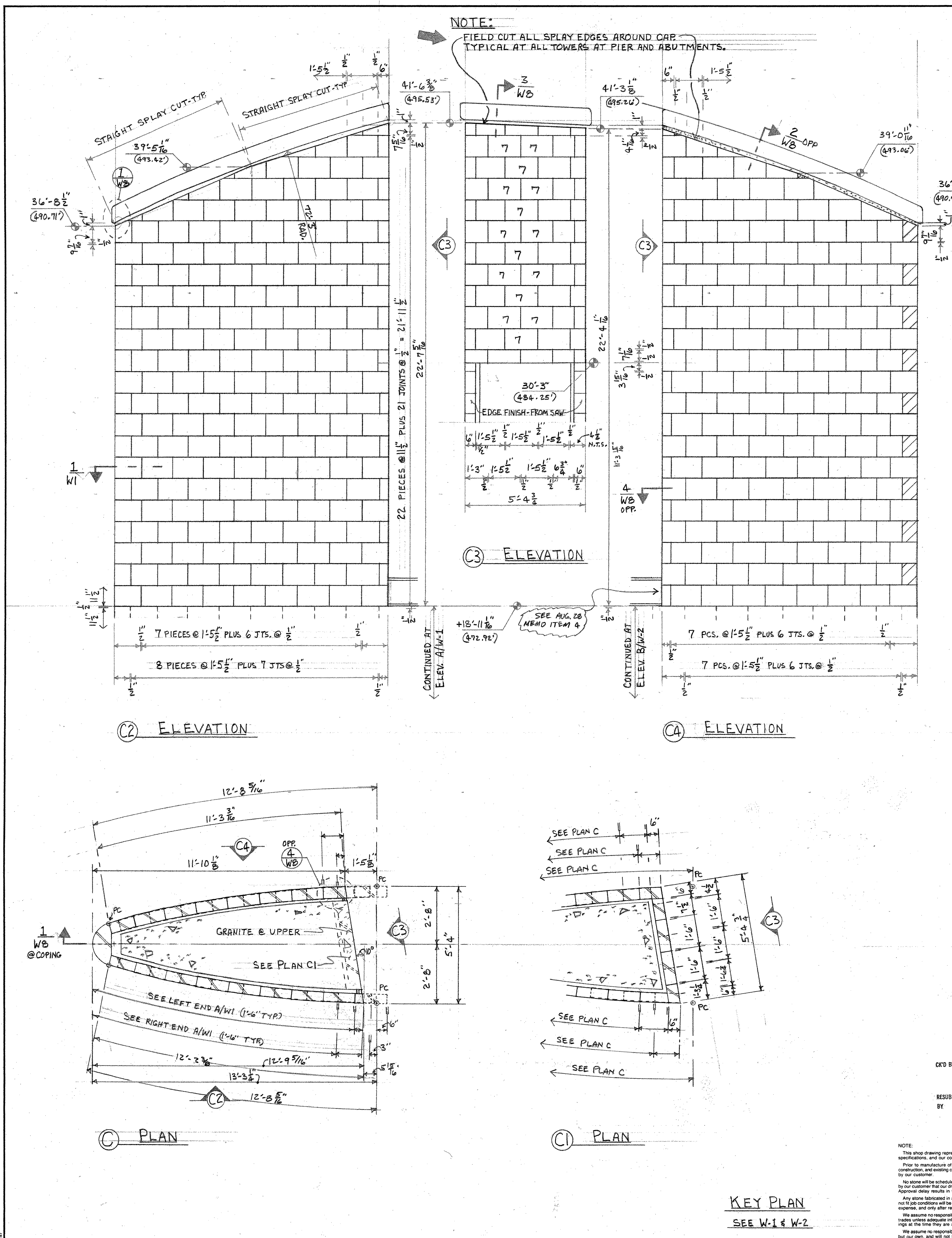
B PLAN & ELEVATION 1/2" = 1'-0"

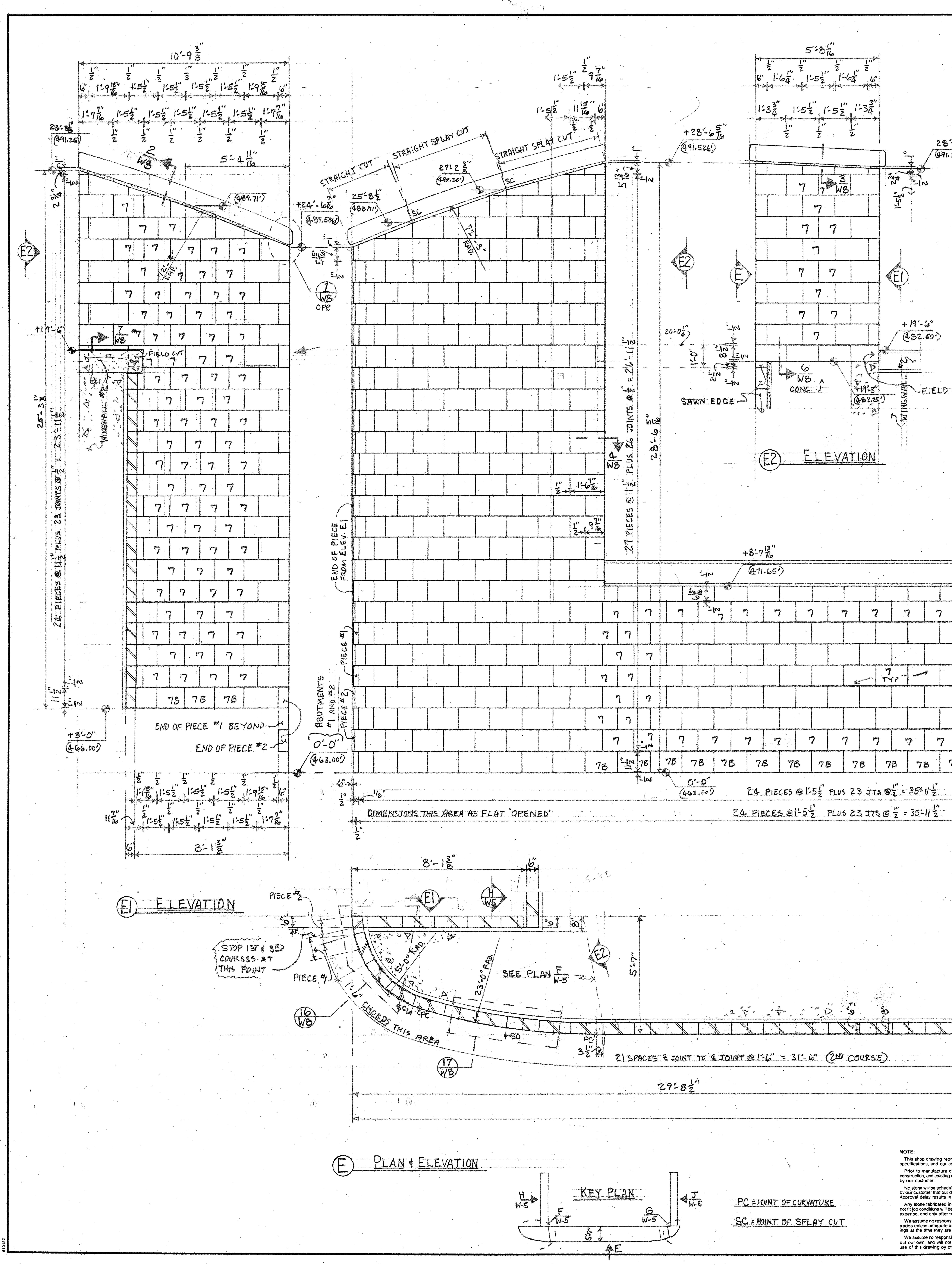
1 SECTION 1 1/2" = 1'-0"

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

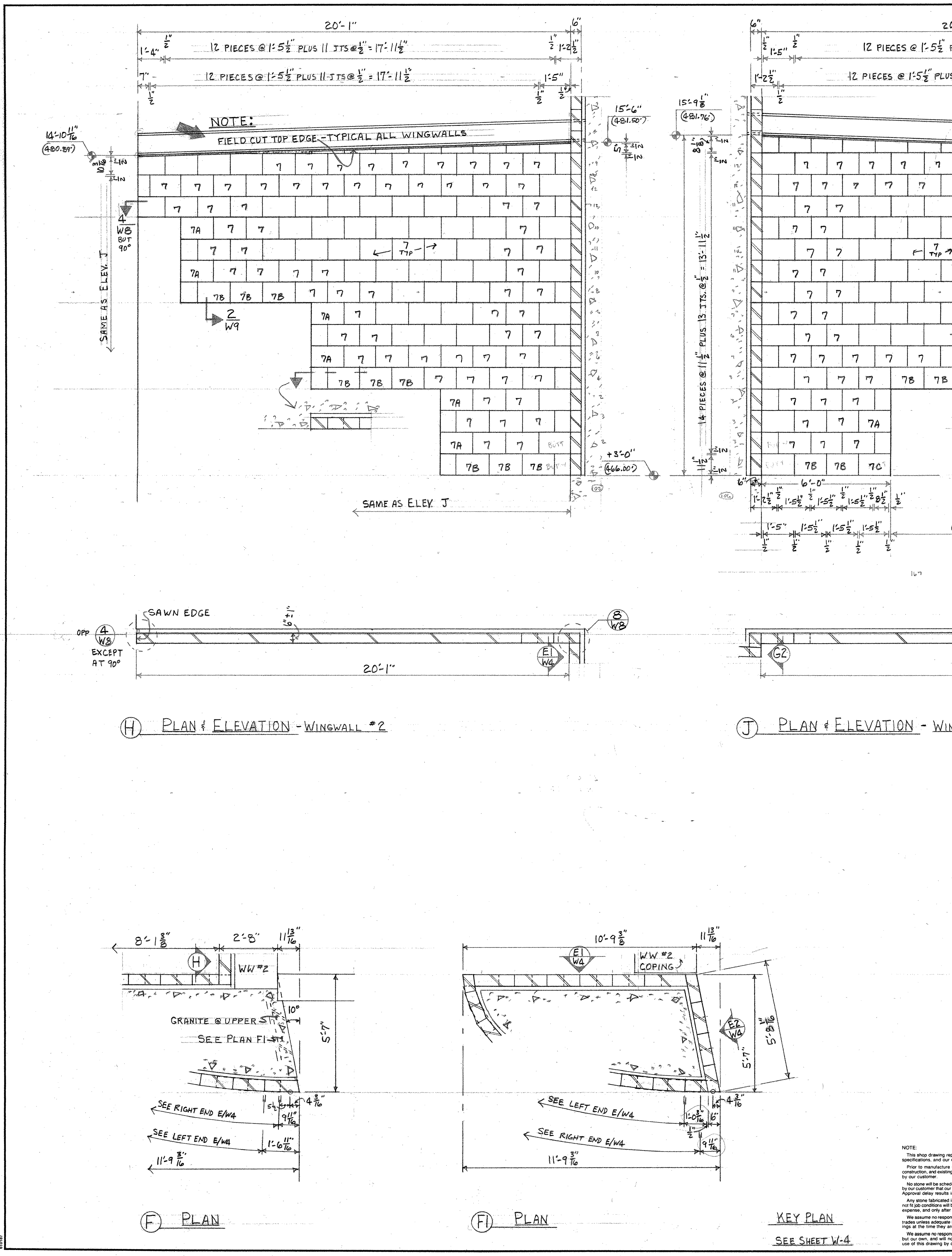
TYPICAL CONDITIONS - SEE 1/W9 2/W9 3/W9

KEY PLAN

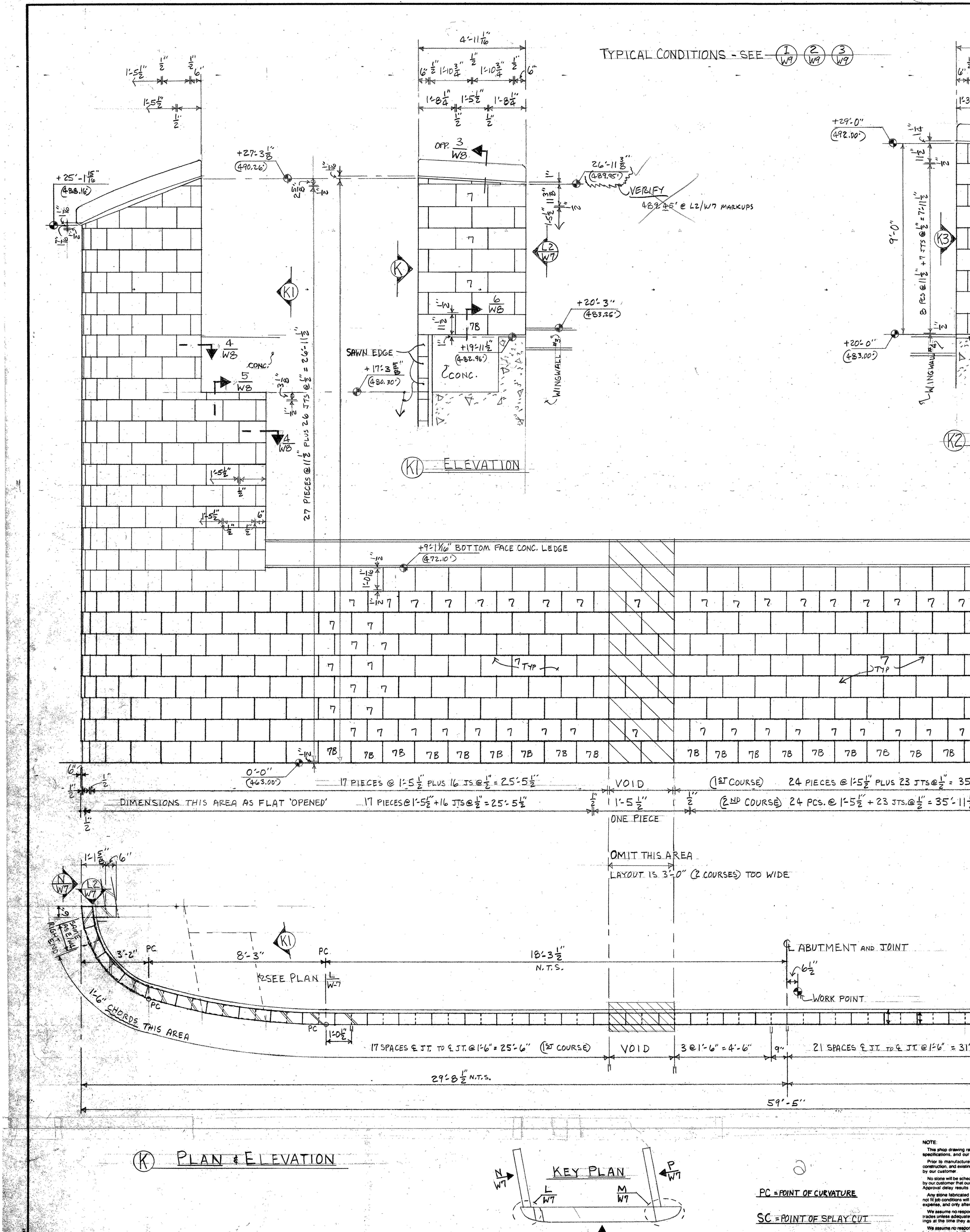

NOTE:
FIELD CUT ALL SPLAY EDGES AROUND CAP.
TYPICAL AT ALL TOWERS AT PIER AND ABUTMENTS.
STRAIGHT SPLAY CUT-TYP.
39'-5 1/16" (493.42')
36'-8 1/2" (490.71')
72'-3" RAD.
41'-6 3/8" (495.53')
41'-3 1/8" (495.26')
39'-0 11/16" (493.06')
30'-3" (484.25')
EDGE FINISH-FROM SAW
22 PIECES @ 11 1/2" PLUS 21 JOINTS @ 1/2" = 21'-11 1/2"
22'-7 5/16"
22'-4 1/16"
5'-4 3/4"
N.T.S.
+18'-11 1/16" (472.92')
SEE AUG. 28 MEMO ITEM 4
CONTINUED AT ELEV. A/W-1
CONTINUED AT ELEV. B/W-2
7 PIECES @ 1'-5 1/2" PLUS 6 JTS. @ 1/2"
8 PIECES @ 1'-5 1/2" PLUS 7 JTS @ 1/2"
7 PCS. @ 1'-5 1/2" PLUS 6 JTS. @ 1/2"
C2 ELEVATION
C3 ELEVATION
C4 ELEVATION
12'-8 5/16"
11'-3 3/16"
11'-10 1/8"
GRANITE @ UPPER
SEE PLAN C1
SEE LEFT END A/W1 (1'-6" TYP.)
SEE RIGHT END A/W1 (1'-6" TYP.)
12'-2 3/8"
12'-9 5/16"
13'-3 1/4"
12'-8 5/16"
1/W8 @ COPING
C PLAN
SEE PLAN C
C1 PLAN
KEY PLAN
SEE W-1 & W-2
CK'D BY
RESUBMIT BY
NOTE:



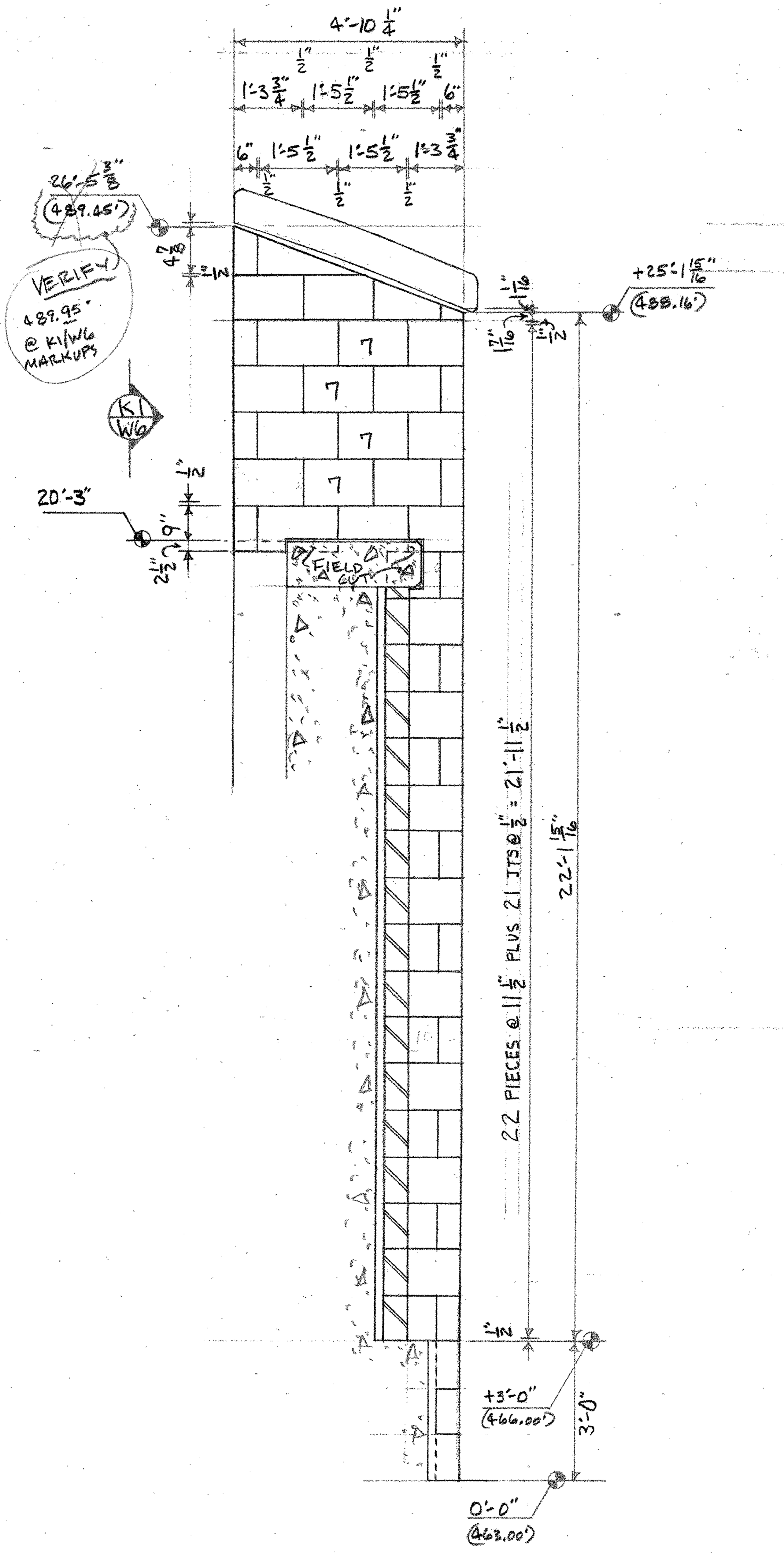
E1 ELEVATION
E2 ELEVATION
E PLAN & ELEVATION
KEY PLAN
PC = POINT OF CURVATURE
SC = POINT OF SPLAY CUT
STRAIGHT CUT
STRAIGHT SPLAY CUT
WINGWALL #2
FIELD CUT
SAWN EDGE
END OF PIECE #1 BEYOND
END OF PIECE #2
END OF PIECE FROM ELEV. E1
ABUTMENTS #1 AND #2
PIECE #1
PIECE #2
STOP 1ST & 3RD COURSES AT THIS POINT
CHORDS THIS AREA
SEE PLAN F/W-5
DIMENSIONS THIS AREA AS FLAT 'OPENED'
24 PIECES @ 11 1/2" PLUS 23 JOINTS @ 1/2" = 23'-11 1/2"
27 PIECES @ 11 1/2" PLUS 26 JOINTS @ 1/2" = 26'-11 1/2"
24 PIECES @ 1'-5 1/2" PLUS 23 JTS @ 1/2" = 35'-11 1/2"
21 SPACES & JOINT TO & JOINT @ 1'-6" = 31'-6" (2ND COURSE)



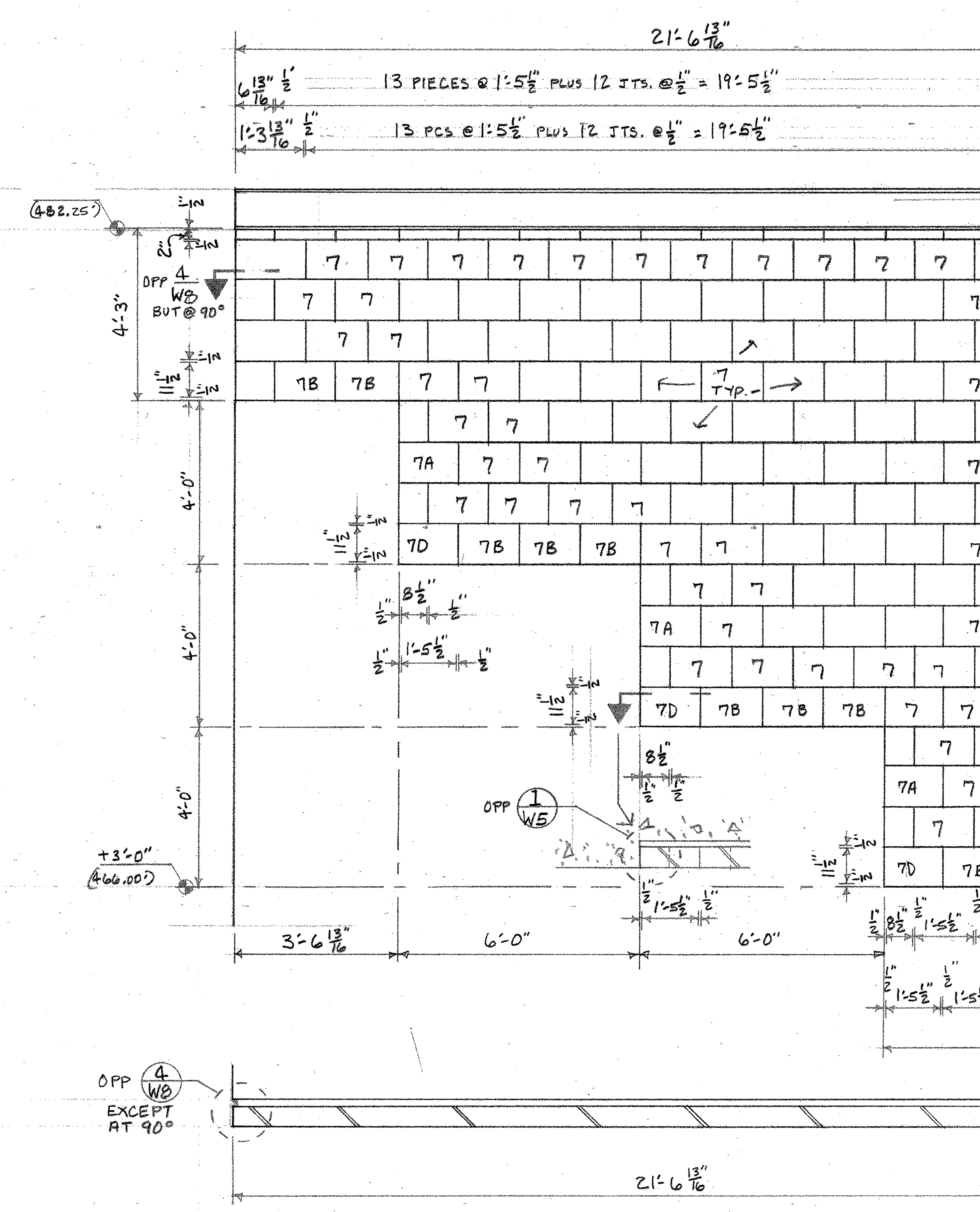
NOTE:
FIELD CUT TOP EDGE - TYPICAL ALL WINGWALLS
12 PIECES @ 1'-5 1/2" PLUS 11 JTS @ 1/2" = 17'-11 1/2"
12 PIECES @ 1'-5 1/2" PLUS 11 JTS @ 1/2" = 17'-11 1/2"
20'-1"
SAME AS ELEV. J
SAWN EDGE
EXCEPT AT 90°
H PLAN & ELEVATION - WINGWALL #2
14 PIECES @ 11 1/2" PLUS 13 JTS. @ 1/2" = 13'-11 1/2"
J PLAN & ELEVATION - WING
GRANITE @ UPPER ST
SEE PLAN F1
SEE RIGHT END E/W4
SEE LEFT END E/W4
WW #2 COPING
F PLAN
F1 PLAN
KEY PLAN
SEE SHEET W-4



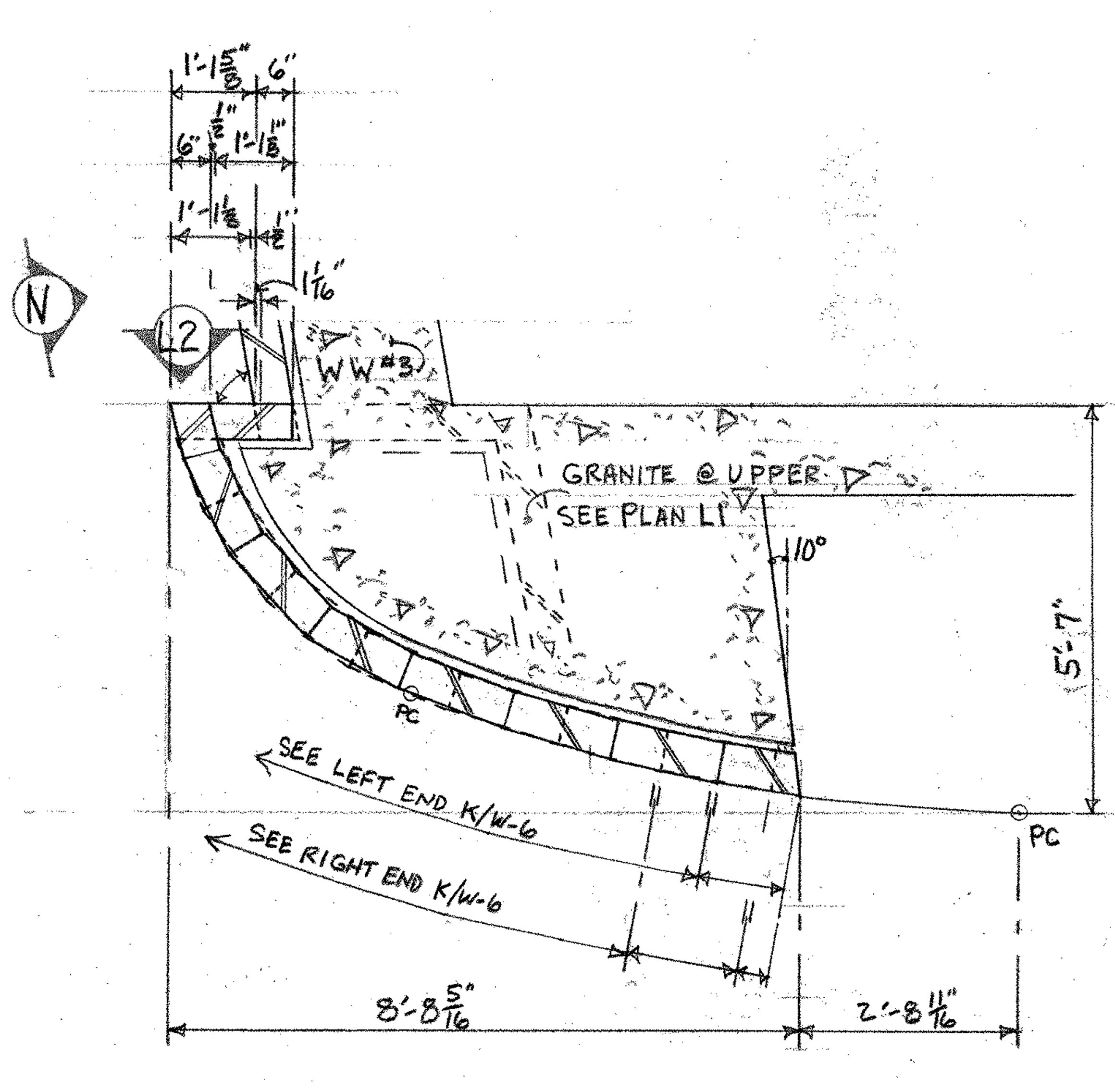
TYPICAL CONDITIONS - SEE 1/W9 2/W9 3/W9
K1 ELEVATION
27 PIECES @ 11 1/2" PLUS 26 JTS @ 1/2" = 26'-11 1/2"
SAWN EDGE
CONC.
WINGWALL
VERIFY
489.45' @ L2/W7 MARKUPS
+9'-1 1/16" BOTTOM FACE CONC. LEDGE
17 PIECES @ 1'-5 1/2" PLUS 16 JTS @ 1/2" = 25'-5 1/2"
DIMENSIONS THIS AREA AS FLAT 'OPENED'
17 PIECES @ 1'-5 1/2" + 16 JTS @ 1/2" = 25'-5 1/2"
VOID
1'-5 1/2"
ONE PIECE
(1ST COURSE) 24 PIECES @ 1'-5 1/2" PLUS 23 JTS @ 1/2" = 35'
(2ND COURSE) 24 PCS. @ 1'-5 1/2" + 23 JTS. @ 1/2" = 35'-11 1/2"
OMIT THIS AREA
LAYOUT IS 3'-0" (2 COURSES) TOO WIDE
ABUTMENT AND JOINT
WORK POINT
SEE PLAN L/W7
1'-6" CHORDS THIS AREA
SAME AS @ WALL RIGHT END
17 SPACES ℄ JT. TO ℄ JT. @ 1'-6" = 25'-6" (1ST COURSE)
3 @ 1'-6" = 4'-6"
21 SPACES ℄ JT. TO ℄ JT. @ 1'-6" = 31'-
29'-8 1/2" N.T.S.
59'-5"
K PLAN & ELEVATION
KEY PLAN
PC = POINT OF CURVATURE
SC = POINT OF SPLAY CUT



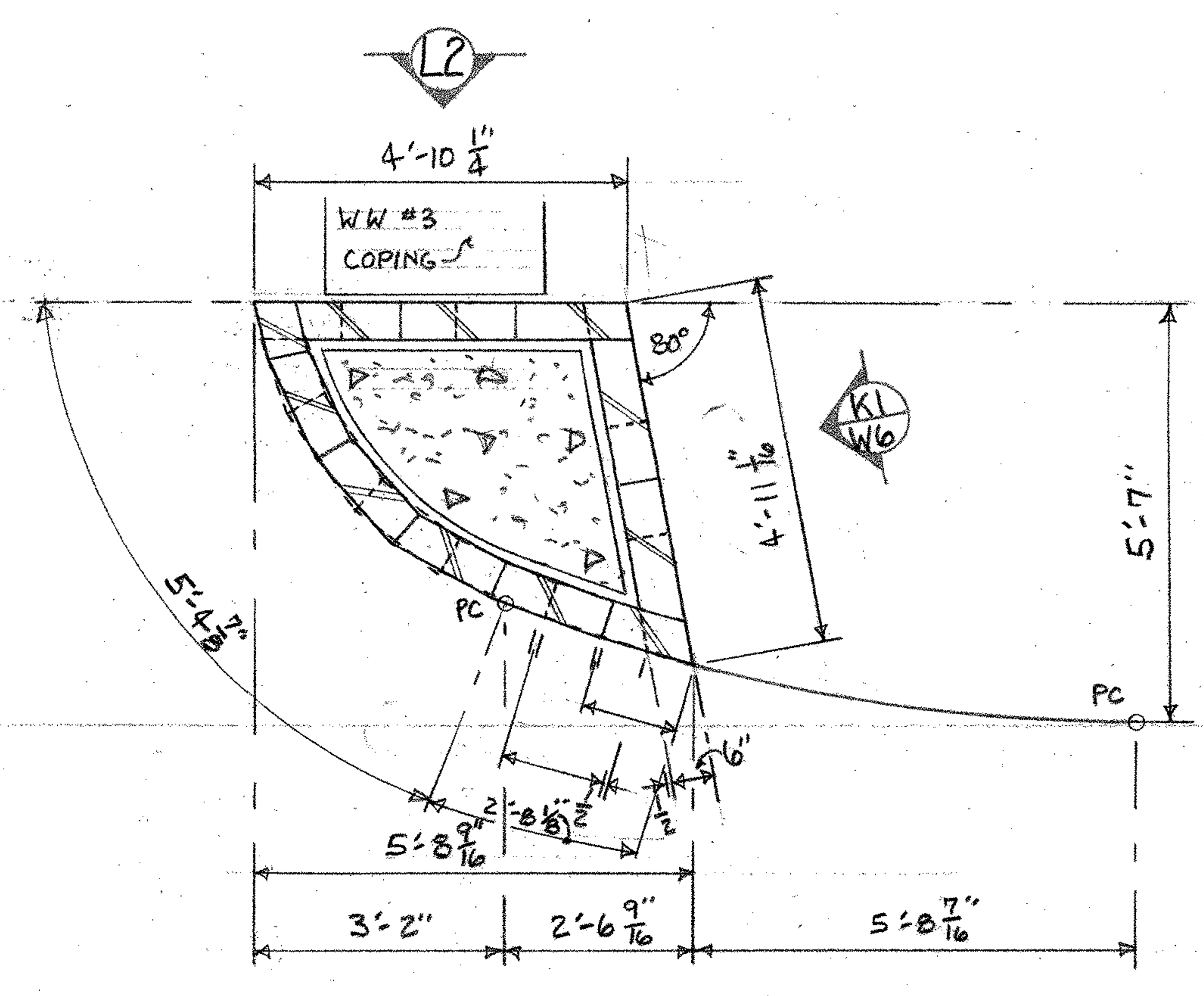
L2 ELEVATION



N PLAN & ELEVATION - WINGWALL #3



L PLAN



L1 PLAN

KEY PLAN

SEE SHEET W-6

NOTE:

This shop drawing represen... specifications, and our contra...

Prior to manufacture of any ... construction, and existing condi... by our customer.

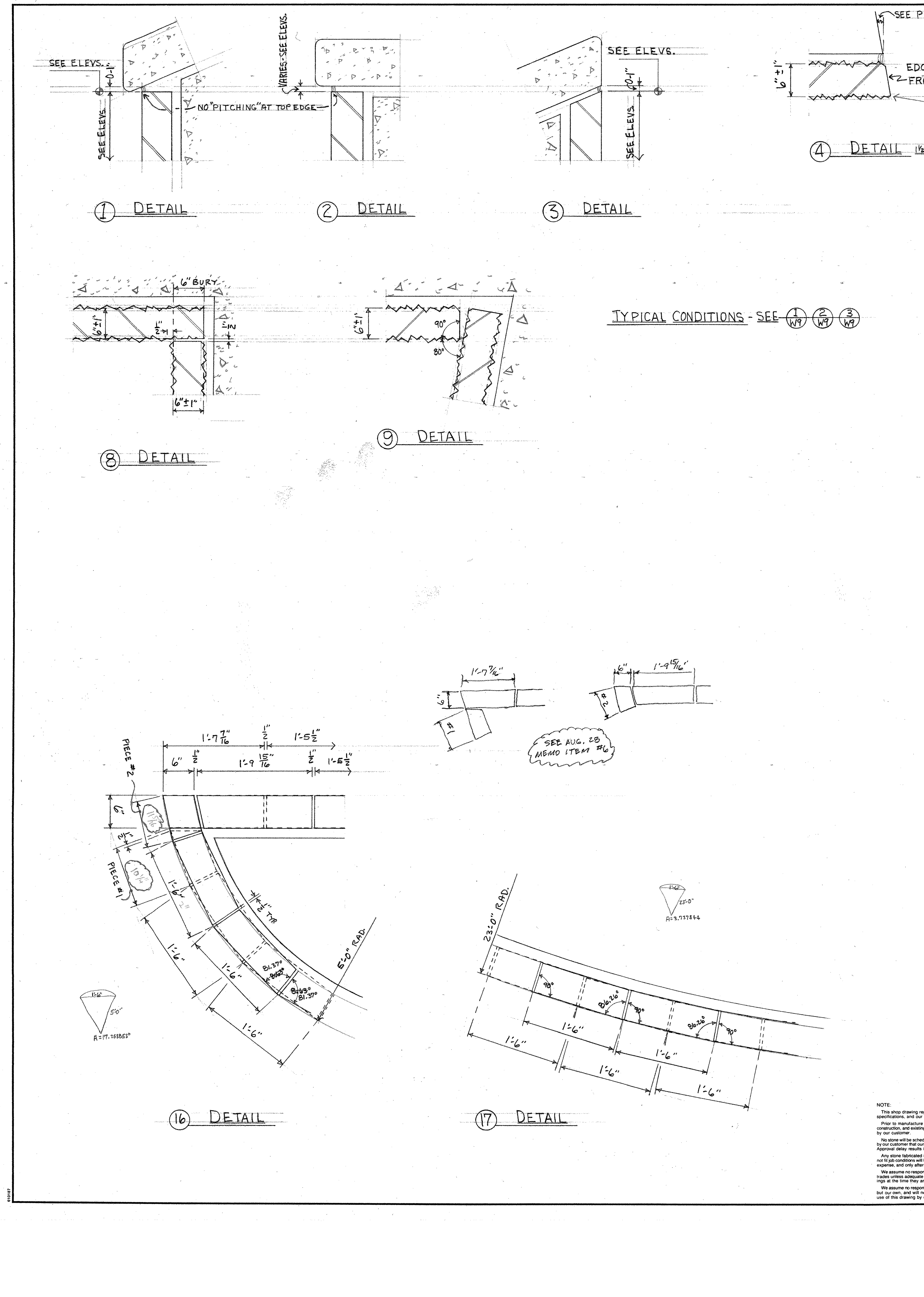
No stone will be scheduled fo... by our customer that our drawin... Approval delay results in fabri...

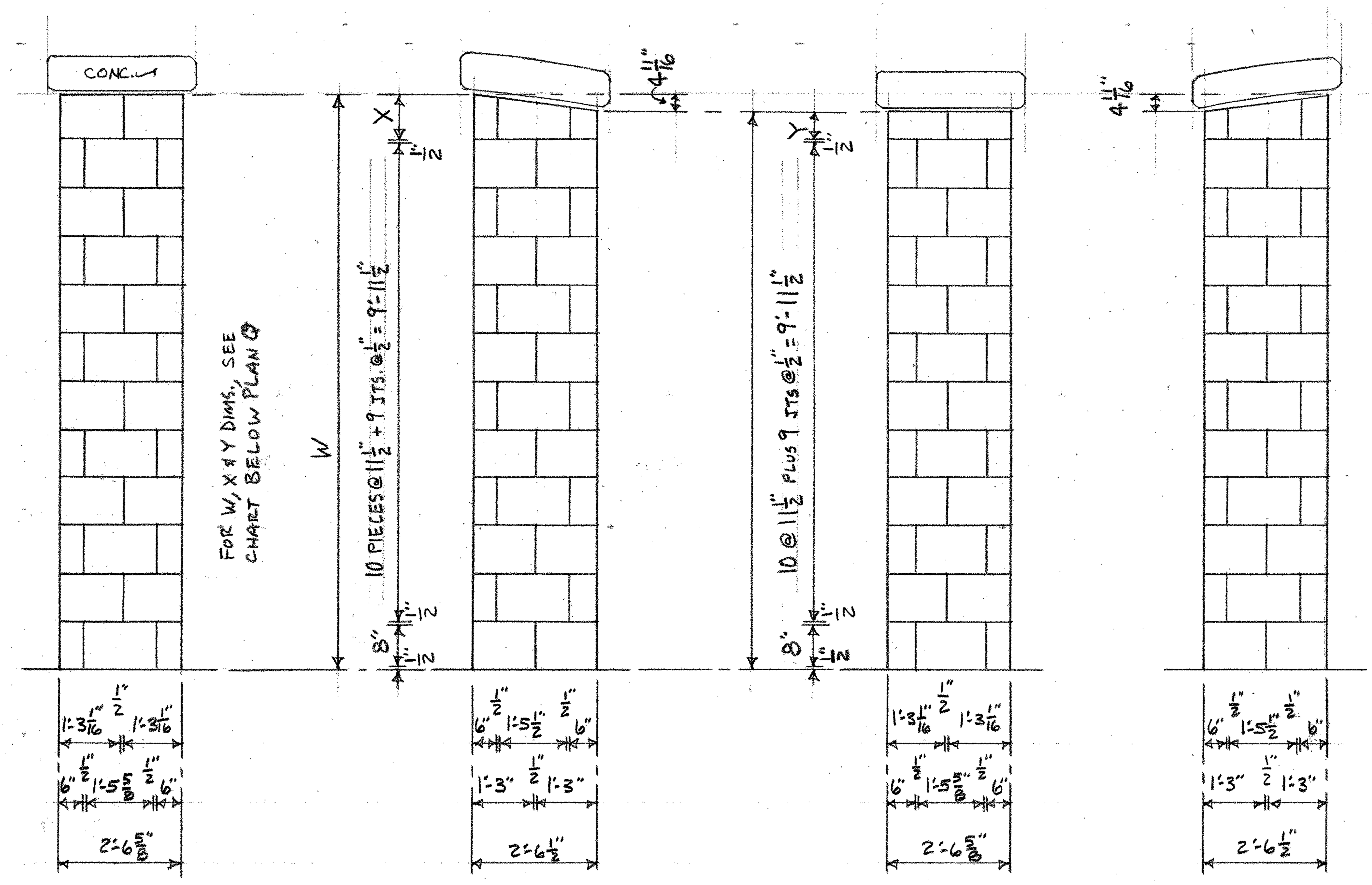
Any stone fabricated in acco... not fit job conditions will be rem... expense, and only after receip...

We assume no responsibility... trades unless adequate inform... ings at the time they are appr...

We assume no responsibility... but our own, and will not be r... use of this drawing by other p...

610187


SEE ELEVS.
0-1"
SEE ELEVS.
NO "PITCHING" AT TOP EDGE
VARIES-SEE ELEVS.
SEE ELEVS.
0-1"
SEE ELEVS.
6"±1"
EDGE
FRO
SEE PL
1 DETAIL
2 DETAIL
3 DETAIL
4 DETAIL
6" BURY
6"±1"
1/2"
1" IN
6"±1"
6"±1"
90°
80°
8 DETAIL
9 DETAIL
TYPICAL CONDITIONS - SEE 1/W9 2/W9 3/W9
1'-7 7/16"
6"
#1
6"
1'-9 15/16"
#2
SEE AUG. 28 MEMO ITEM #6
PIECE #2
1'-7 7/16"
1/2"
1'-5 1/2"
6"
1/2"
1'-9 15/16"
1/2"
1'-5 1/2"
6"
11 5/16
2 1/2"
PIECE #1
10 1/4
1'-6"
1/2" TYP.
1'-6"
1'-6"
1'-6"
81.37°
81.37°
5'-0" RAD.
1'-6"
5'-0"
A=17.258853°
16 DETAIL
23'-0" RAD.
1'-6"
23'-0"
A=3.737844
90°
86.26°
90°
86.26°
90°
1'-6"
1'-6"
1'-6"
1'-6"
1'-6"
17 DETAIL

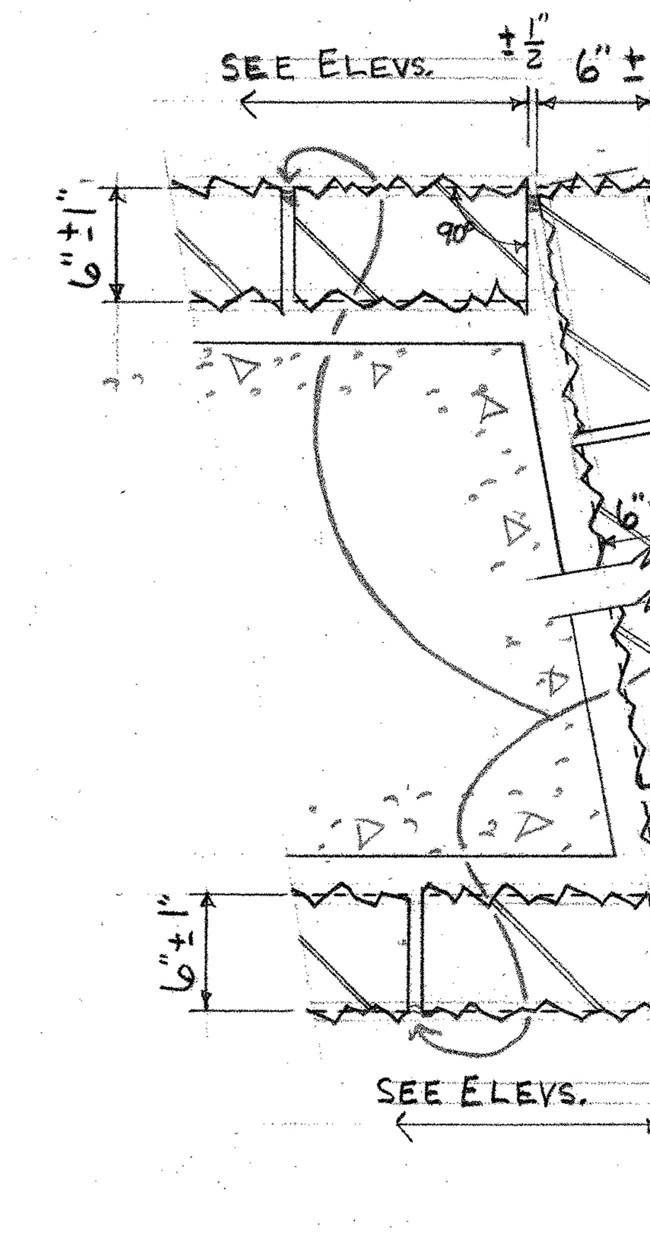


(R1) ELEV.
SIX THUS

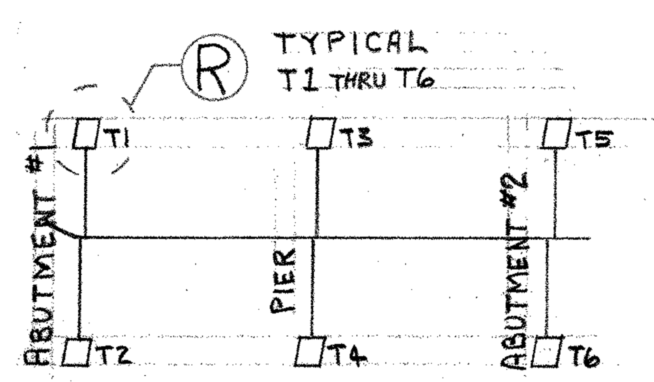
(R2) ELEV.
SIX THUS

(R3) ELEV.
SIX THUS

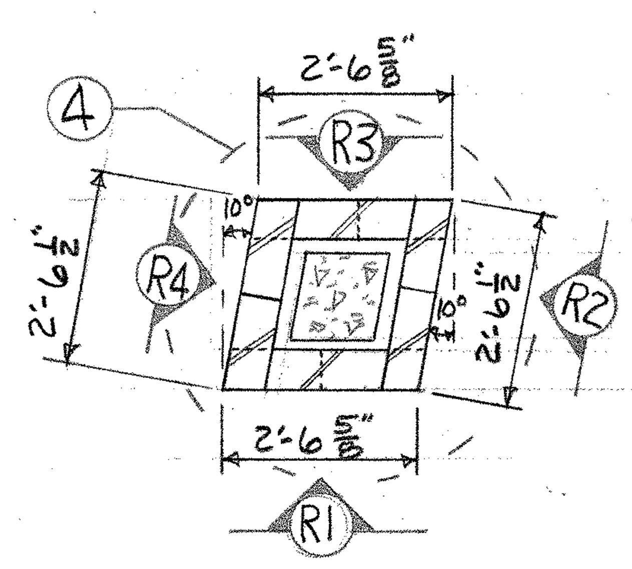
(R4) ELEV.
SIX THUS



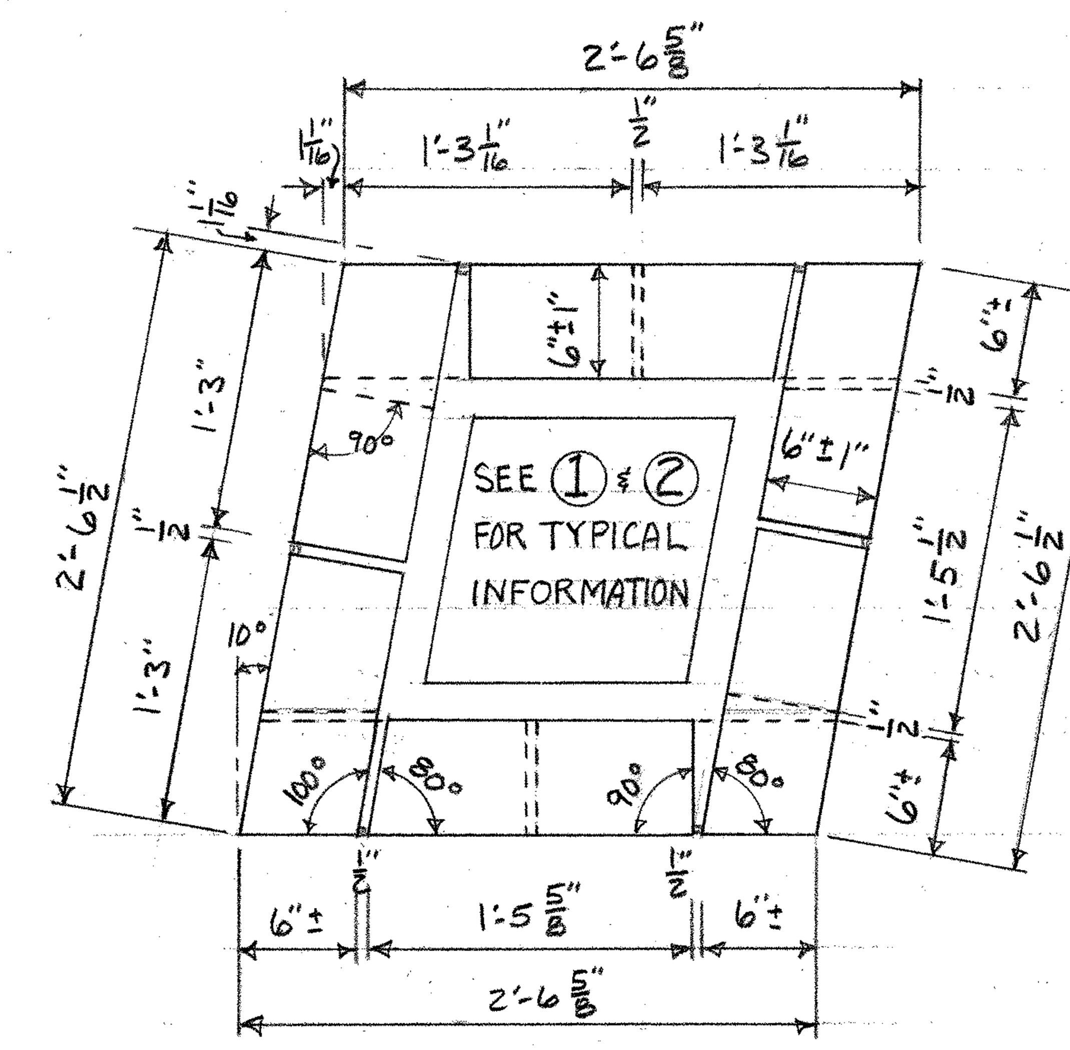
(1) DETAIL



(Q) KEY PLAN - DECK TOWERS



(R) PLAN
TOTAL SIX THUS



(4) DETAIL PLAN

TOWER	'W' DIM.	'X' DIM.	'Y' DIM.
T1	11'-7 1/16"	10 1/16"	5 3/8"
T2	11'-8 5/16"	11 5/16"	6 5/8"
T3	11'-6 1/4"	9 1/4"	4 9/16"
T4	11'-6 1/8"	9 1/8"	4 7/16"
T5	11'-8 3/8"	11 3/8"	6 11/16"
T6	11'-8"	11"	6 5/16"

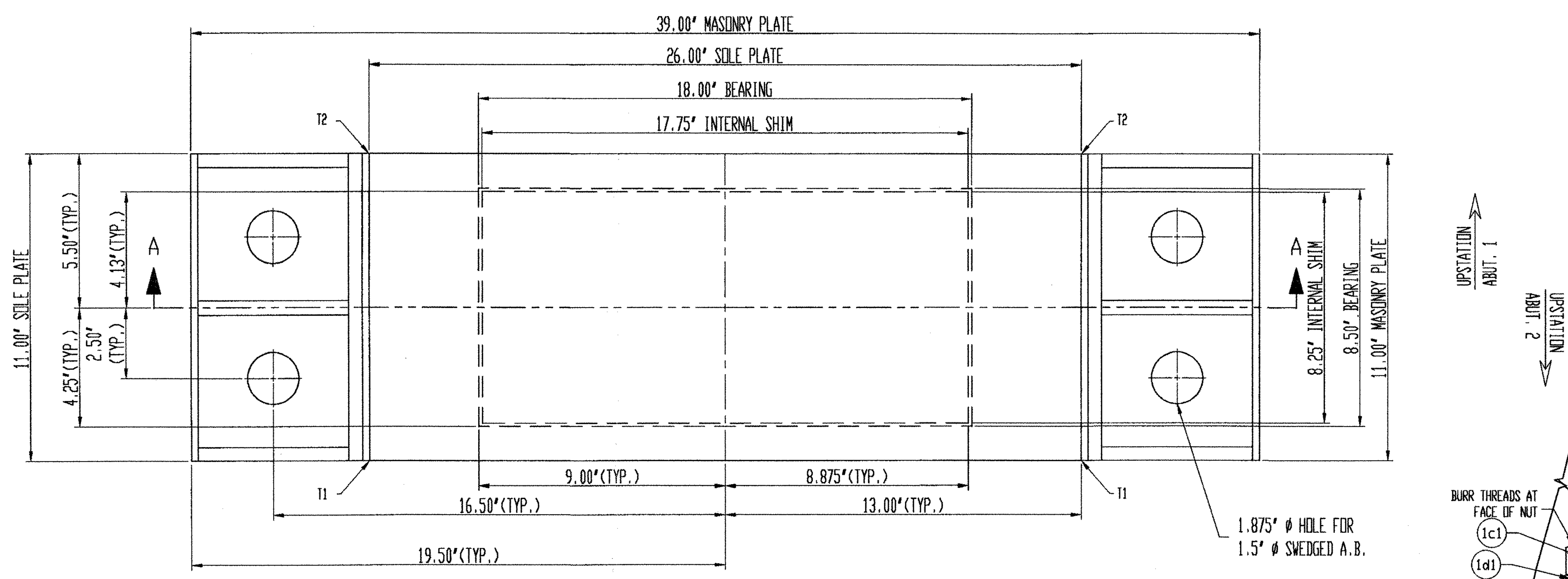
11'-8½"

AT 'X' & Y DIMS, MAKE:
T5 SAME AS T2
T3 " " T4
OKAY? NO

(5) PROJECT NOTES

1. THE N.B.G.Q.A. FABRICATION TOLERANCES WILL APPLY, PLUS AS NOTED HEREIN.
2. ANCHORAGE:
   A. METHOD, DESIGN AND DETAILING - BY OTHERS.
   B. THAT SHOWN HEREIN IS OUR UNDERSTANDING OF WHAT IS WANTED. CHECK AND APPROVE AS SHOWN OR REVISE AS NEEDED.
   C. IF ADDITIONAL CUTTING/DRILLING FOR ANCHORAGE IS WANTED, PROVIDE DETAILS AND LOCATIONS.
3. ANCHORS & OTHER ACCESSORIES - BY OTHERS
4. ANCHORS & OTHER ITEMS IN CONTACT WITH GRANITE ARE TO BE NON-STAINNG.

NOTE:



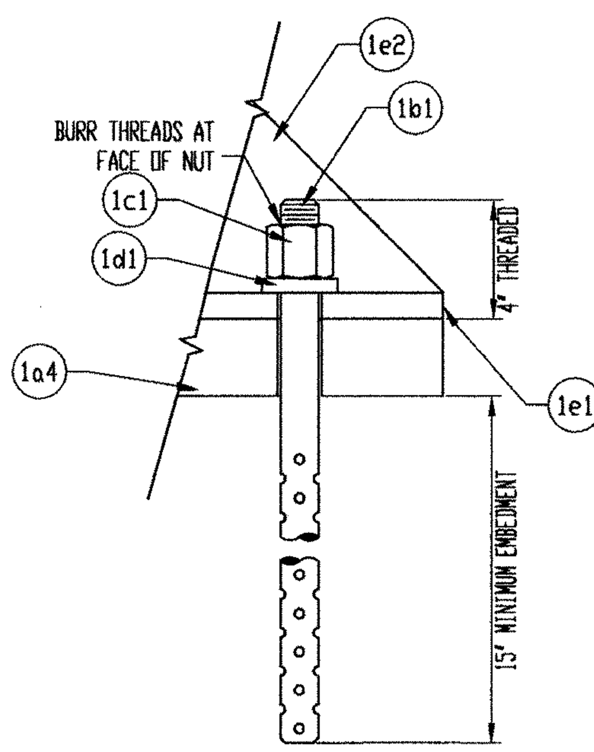
DATA	2034-1104
AASHTO SHAPE FACTOR	7
AREA OF COMPRESSION	153.0
AREA OF SHEAR	153.0
EFFECTIVE RUBBER THICKNESS	4.0
LENGTH/HEIGHT	2.1

PLAN VIEW

MARK: 2034-1104-A
EXPANSION BEARING
(5) REQ'D @ ABUT. 1
(5) REQ'D @ ABUT. 2
(10) REQ'D TOTAL

SOLE PLATE SCHEDULE

LOCATION	T1	T2	MARK
ABUT. 1	1.5"	1.8125"	1a3
ABUT. 2	1.5"	1.625"	1f3



SWEDGED ANCHOR DETAIL

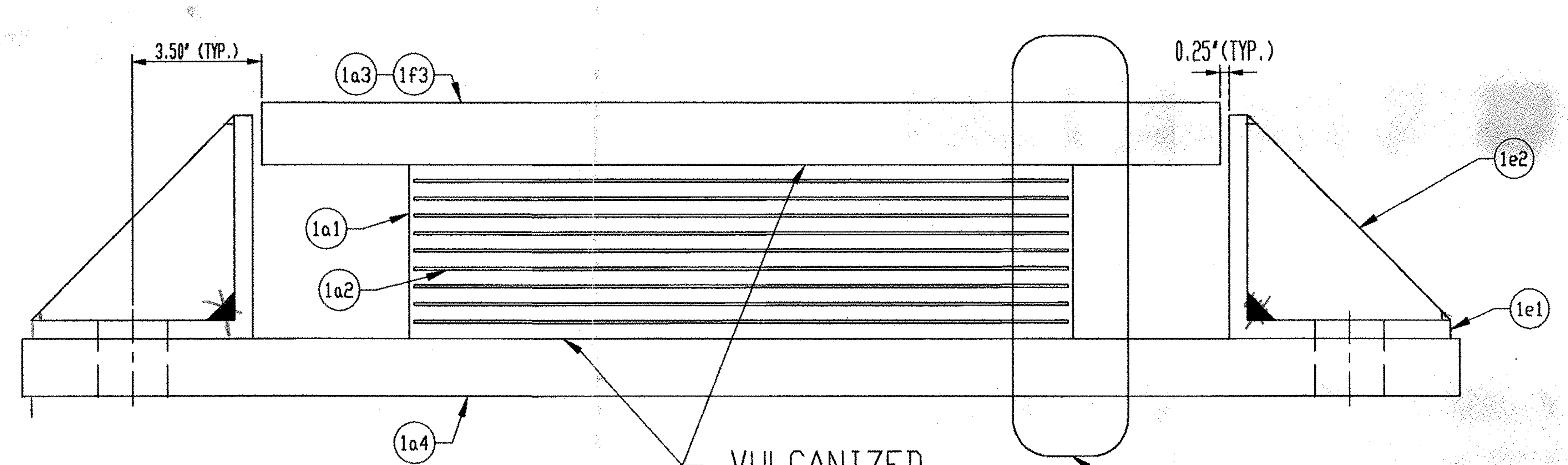
LINE	PART	MARK	NO. REQ'D	DESCRIPTION	REMARKS
1		1A	5	ELASTOMERIC BEARING	
2	ELASTOMERIC BEARING	1a1	5	4.6875" X 18" X 8.5"	DUROMETER 60±5, NEOPRENE, GR. 4(166.80 LBS.)
3	SHIMS	1a2	45	14 GA X 17.75" X 8.25"	ASTM A570 GR 36
4	SOLE PLATE	1a3	5	1.5"-1.8125" X 26" X 11"	ASTM A709 GR 50,VULCANIZED, METALIZED, PAINTED
5	MASONRY PLATE	1a4	5	39" X 11" X 1.5" W/(4) 1.875"ø HOLES	ASTM A709 GR 50,VULCANIZED, METALIZED, PAINTED
6		1B	40	ANCHOR BOLTS	
7	ANCHOR BOLTS	1b1	40	1.5"ø X 20", 4" THREAD, 14" SWEDGE	ASTM A449, GALVANIZED A153
8		1C	40	HEAVY HEX NUT	
9	HEAVY HEX NUT	1c1	40	1.5ø	ASTM A563 GR DH
10		1D	40	WASHER	
11	WASHER	1d1	40	3" X 3" X .375" W/1.625"ø HOLE	ASTM A36, GALVANIZED A123
12		1E	20	SIDE RETAINER	
13	SIDE RETAINER	1e1	20	L6" X 6" X .5" W/(2) 1.875ø HOLES	ASTM A709 GR 50, METALIZED, PAINTED
14	RETAINER STIFFENER	1e2	60	.5" X 3.5" X 7.75" BAR Revise	ASTM A709 GR 50, METALIZED, PAINTED
15		1F	5	ELASTOMERIC BEARING	
16	ELASTOMERIC BEARING	1a1	5	4.6875" X 18" X 8.5"	DUROMETER 60±5, NEOPRENE (166.80 LBS.)
17	SHIMS	1a2	45	14 GA X 17.75" X 8.25"	ASTM A570 GR 36
18	SOLE PLATE	1f3	5	1.5"-1.625" X 26" X 11"	ASTM A709 GR 50,VULCANIZED, METALIZED, PAINTED
19	MASONRY PLATE	1a4	5	39" X 11" X 1.5" W/(4) 1.875"ø HOLES	ASTM A709 GR 50,VULCANIZED, METALIZED, PAINTED

GENERAL NOTES:

1. PAD AND MATERIALS SHALL CONFORM TO VERMONT DEPARTMENT OF TRANSPORTATION – DIVISION OF HIGHWAYS SPECIFICATIONS FOR ELASTOMERIC BEARINGS.
2. THESE SHOP DRAWINGS WERE PREPARED IN ACCORDANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS. THE D.S. BROWN COMPANY DOES NOT ACCEPT LIABILITY FOR THE DESIGN OF THE PRODUCTS DETAILED IN THESE SHOP DRAWINGS.
3. THE D.S. BROWN COMPANY TO SUPPLY ONLY THE PARTS SHOWN ON THIS DRAWING.
4. THE BEARINGS SHALL BE SUBJECTED TO RANDOM IN-HOUSE ELASTOMER TESTING AND RANDOM IN-HOUSE PROOF LOAD TESTING IN ACCORDANCE WITH AASHTO DIVISION I, SECTION 14 (METHOD "A") AND AASHTO DIVISION II, SECTION 18 ~~(GRADES 0, 2, OR 3).~~ (GRADE 4)
5. D.S. BROWN SHALL PROVIDE A TYPE D CERTIFICATION OF ALL ELASTOMERIC BEARINGS PER VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS SECTION 731.03.

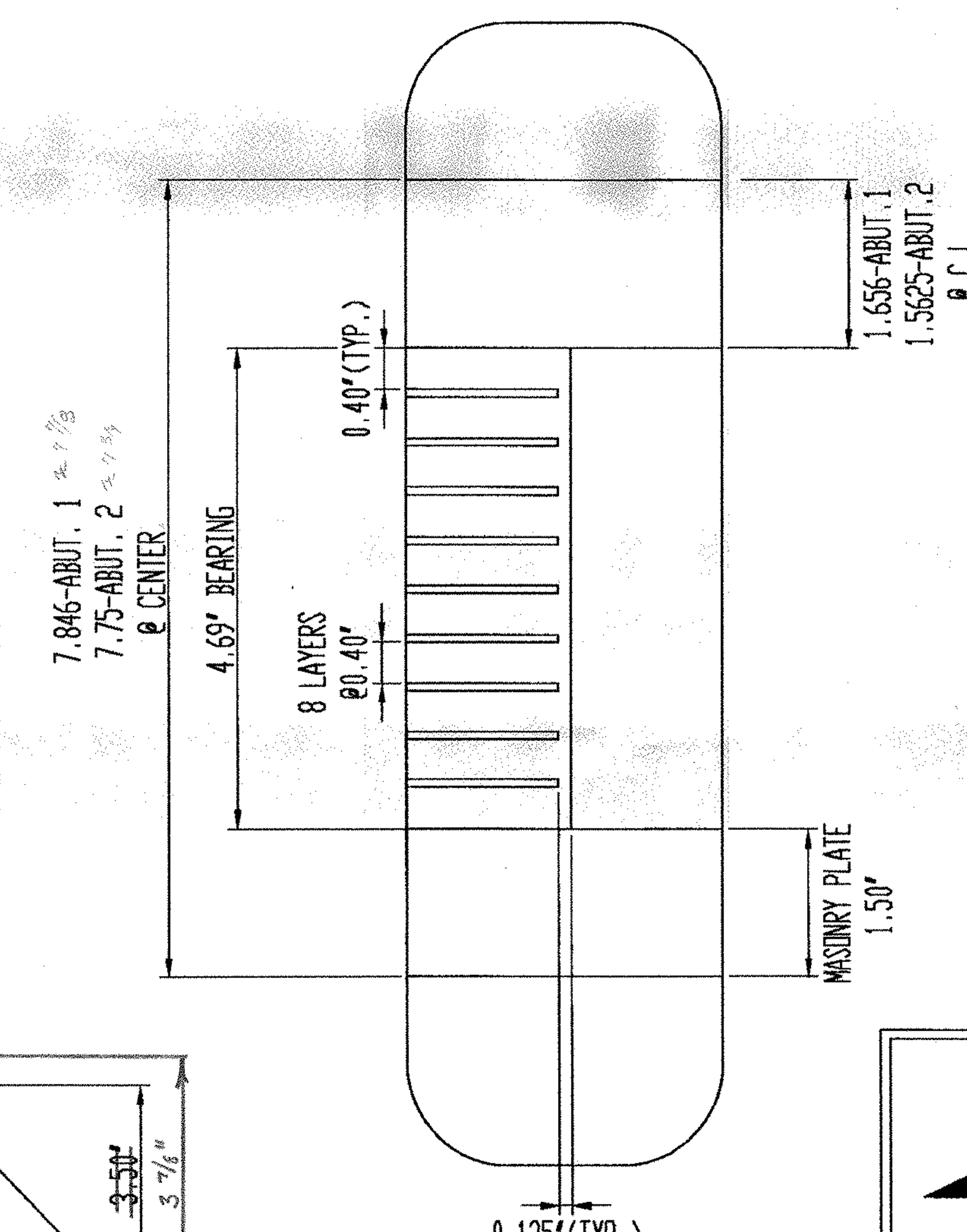
METALIZING:

1. SURFACES TO BE METALIZED AND COATED IN ACCORDANCE WITH AWS C ~~2.2~~ 2.18-93
2. COATING TO BE PURE ZINC (99.9% PURITY, MIN.)
3. ALL SURFACES (EXCEPT WHERE VULCANIZING) TO RECEIVE A MINIMUM OF 6 MILS.
4. BLAST CLEAN SURFACES TO BE THERMAL SPRAYED TO WHITE METAL. FINAL SURFACE APPEARANCE SHALL BE EQUIVALENT TO PREPARATION GR. ~~SA3~~ SP10 AS DEFINED BY ASTM D 2200.
5. ADHESION TEST IN ACCORDANCE WITH AASHTO M-11, SECTION 9, REQ'D.
6. METALIZED SURFACES SHALL RECEIVE A SEAL COAT OF CARBOLINE RUSTBOND PENETRATING SEALER TO A MINIMUM DRY FILM THICKNESS OF 2 MILS.
7. PRIOR TO METALIZING, ALL CORNERS AND EDGES OF STEEL PLATES, SHAPES, ETC, SHALL BE GROUND TO A 1/16" RADIUS.



SECTION 'A-A'

SEE DETAIL 'A'

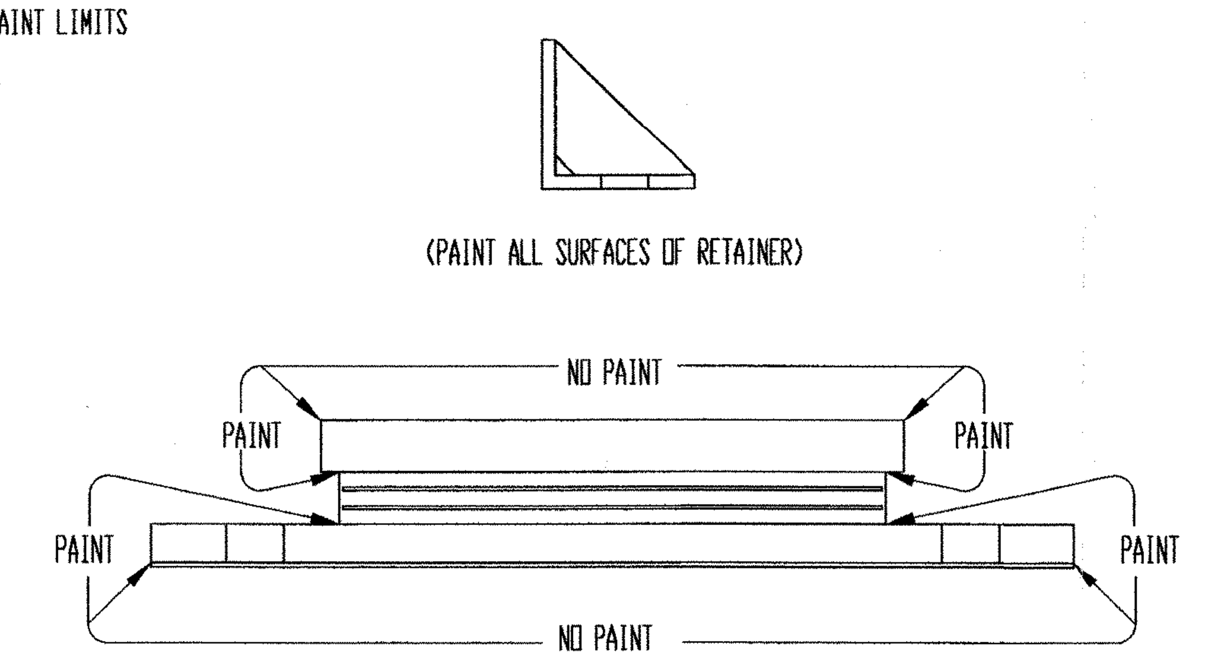


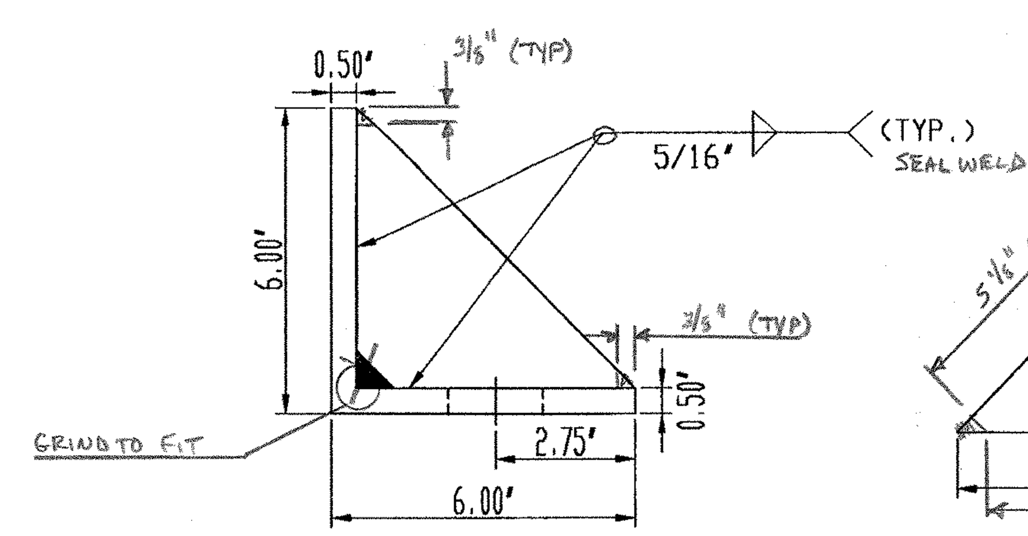
DETAIL 'A'

RECEIVED
CK'D BY WBS OK'D BY RSY
FEB 2 6 2001
RESUBMIT ____ APPROVED As noted
BY DATE

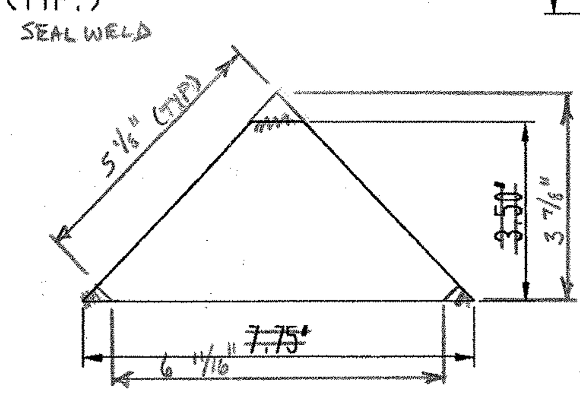
D.S. BROWN 2034.1104.25363.01 SHEET 1 OF 1

PAINT LIMITS





RETAINER ANGLE DETAIL



RETAINER STIFFENER DETAIL

DSB FILE NO: 2034-1104/SHT-01

DATE	SYM	REVISION	DR	CK

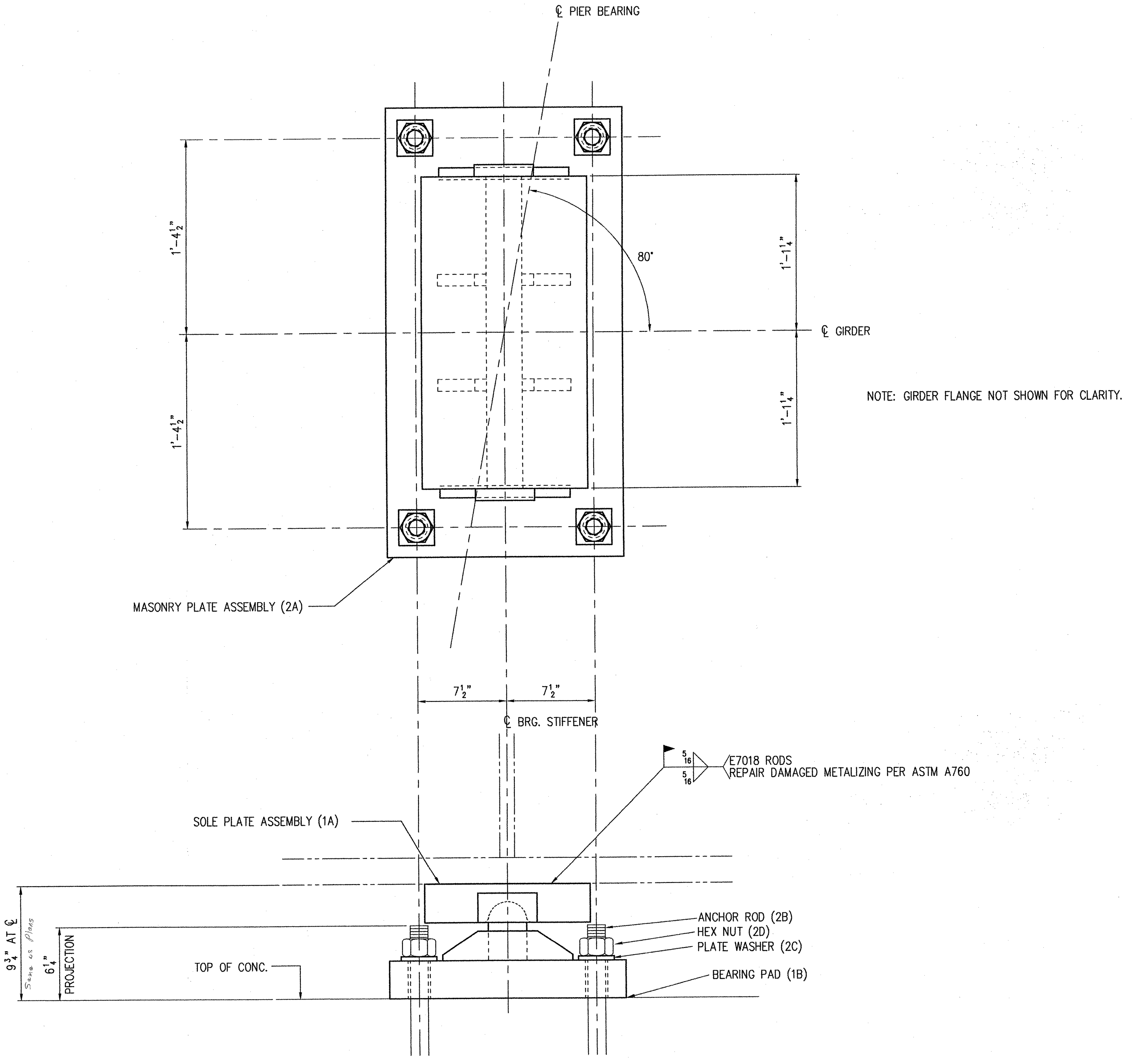
D.S. BROWN

F.A.P. NO.: N/A
STATE PROJ. NO.: .C BRZ 1444(22)
BRIDGE NO: 3 (ROALTON)
DESIGNER: -
CONTRACTOR: BEC & BELLUCI

THE D.S. BROWN COMPANY, INC.
NORTH BALTIMORE, OHIO 45872-0158 U.S.A.

SCALE: FULL | CHECKED BY: John L. Wolf | DRAWN BY: B.COPPUS
DATE: 01-10-01

T.H. 1 OVER THE WHITE RIVER
WINDSOR COUNTY VERMONT
ELASTOMERIC BEARING
DRAWING NUMBER 2034-1104-01



PLAN/ELEVATION AT PIER FIXED BEARING

RECEIVED
CHKD BY WBS CHKD BY RSY
MAR 1 2 2001
APPROVED ✓
BY CPW DATE 3/27/01

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

PROJECT — ROYALTON/ RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — PIER FIXED BEARING ERECTION DETAILS

	ORIG.
W.P. chk'd	N/R
Drawn By	TSF
Chk'd. By	NY
Date:	2/01

SHEET NO. E1 OF 1 | Job. No. : 2034.1121.1

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR	DATE
PRINTS ISSUED	

GENERAL NOTES:

1) ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE VERMONT AGENCY OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION", 1990 EDITION, THE SUPPLEMENTAL SPECIFICATIONS AND THE SPECIAL PROVISIONS.

2) ALL STEEL SHALL CONFORM TO AASHTO M270 GRADE 50 (ASTM A709 GRADE 50) U.N.O.

3) MATERIAL FOR ANCHOR RODS AND PLATE WASHERS SHALL CONFORM TO AASHTO M183 (ASTM A36). NUTS FOR ANCHOR RODS SHALL BE HEAVY HEX A563A. GALVANIZE ANCHOR RODS, PLATE WASHERS AND NUTS PER AASHTO M232 (ASTM A153).

4) BEARING PADS SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATION 731.01.

5) WELDING SHALL BE IN ACCORDANCE WITH AWS D1.5 AND SECTION 506.10 OF THE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS. REPAIR TORCH GOUGES PER REPAIR PROCEDURE F-REP-04 (1G-2G-3G).

6) TOLERANCES: AFTER FABRICATION AND APPLICATION OF OF SURFACE PROTECTION BEARING DEVICES OR COMPONENTS SHALL BE WITHIN THE FOLLOWING TOLERANCES:
   a) DIMENSIONS (LENGTH, WIDTH, THICKNESS), HOLE LOCATIONS AND POSITION OF WELDED COMPONENTS, +/- 1/16".
   b) SOLE PLATE: BEARING SURFACES SHALL BE FLAT WITH MAXIMUM PERMISSIBLE VARIATION OF 0.01 INCHES FROM A PLANE DETERMINED BY ANY THREE CORNERS OF THE PLATE.
   c) MASONRY PLATE: BEARING SURFACES SHALL BE FLAT WITH A MAXIMUM PERMISSIBLE VARIATION OF 0.04 INCHES FROM A PLANE DETERMINED BY ANY THREE CORNERS OF THE PLATE.
   d) CURVED SURFACES: THE CONTACT LENGTH ALONG THE AXIS OF ROTATION TIMES 0.0001.

7) METALIZING AND COATING:
   a) ALL CORNERS AND EDGES OF STEEL PLATES SHALL BE CHAMFERED 1/16".
   b) SURFACES TO BE METALIZED SHALL BE PREPARED AND COATED IN ACCORDANCE WITH AWS ~~C2.2~~ C2.18. THE COATING SHALL BE PURE ZINC (99.9% PURITY MINIMUM). A MINIMUM OF 6 MILS SHALL BE APPLIED TO ALL SURFACES EXCEPT CURVED CONTACT SURFACES (THOSE WITH A 125 SURFACE FINISH). ALL SURFACES SHALL THEN BE SEALED WITH A SPAR URETHANE CONFORMING WITH THE RECOMMENDATIONS OF THE THERMAL SPRAY SUPPLIER. THE MINIMUM D.F.T. OF THE SEALANT SHALL BE 2 MILS.
   c) ALL SURFACES TO BE METALIZED SHALL BE BLAST CLEANED TO WHITE METAL (~~ASTM D2200 GRADE SA-3~~ SSPC SP10). THE FIRST COATING SHALL BE APPLIED WITHIN ONE HOUR OF BLAST CLEANING AND THE SURFACE MUST BE COMPLETELY COATED TO THE SPECIFIED THICKNESS WITHIN TWO HOURS OF BLASTING.
   d) ADHERENCE OF THE METALIZED COATING TO THE BASE METAL SHALL BE TESTED IN ACCORDANCE WITH AASHTO M111, SECTION 9 "FINISH AND ADHERENCE OF COATING".

APPROVER PLEASE VERIFY: CURVED CONTACT SURFACES WHICH DO NOT RECEIVE METALIZING WILL STILL RECEIVE THE SPAR URETHANE SEAL COAT?

NO. ONLY METALIZED SURFACES RECIEVE SEAL COAT.

RECEIVED
CKD BY WBS CKD BY RSY
MAR 12 2001
RESUBMIT ____ APPROVED As Noted
BY OPW DATE 3/29/01

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

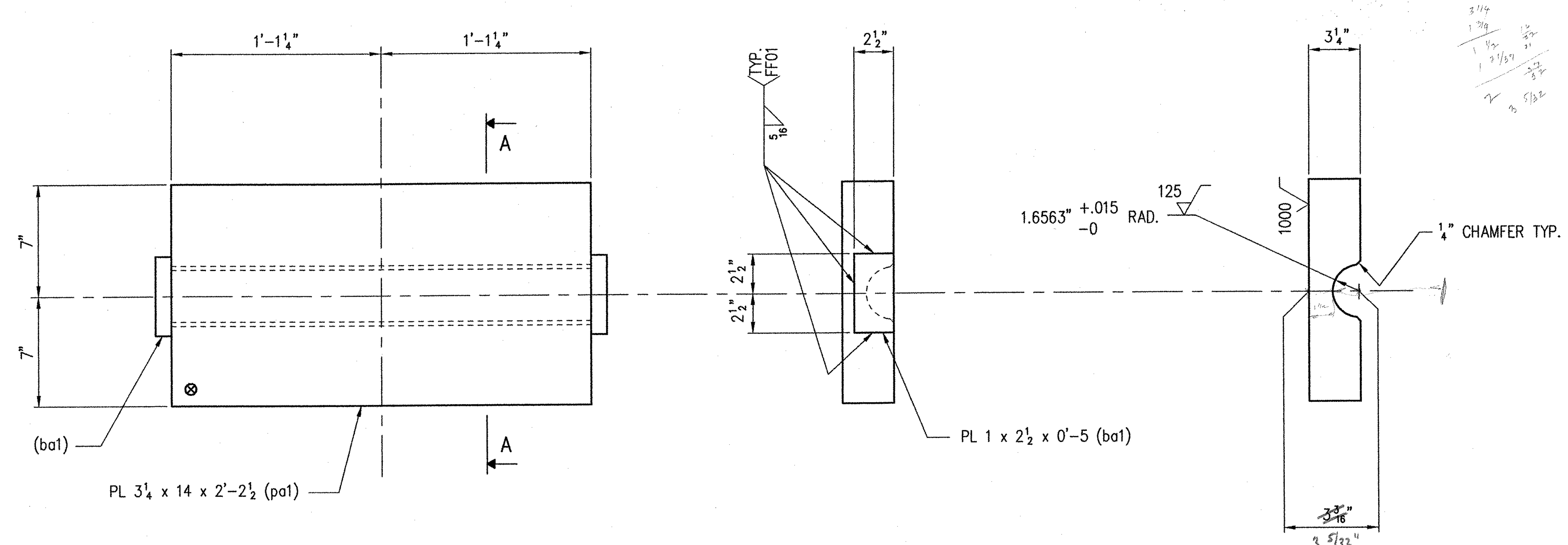
LEWIS ENGINEERING COMPANY
4201 NORE.. DRIVE - CHASKA, MINNESOTA 55318 - (612) 368-3000

PROJECT — .OYALTON/ RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — .ECK & BELLUCCI, INC.
LOCATION — .INDSOR COUNTY, VT
DESCRIPTION — .IER FIXED BEARING .ENERAL NOTES

ORIG
W.P. chk'd N/R
Drawn By TSF
Chk'd. By NY
Date: 2/01

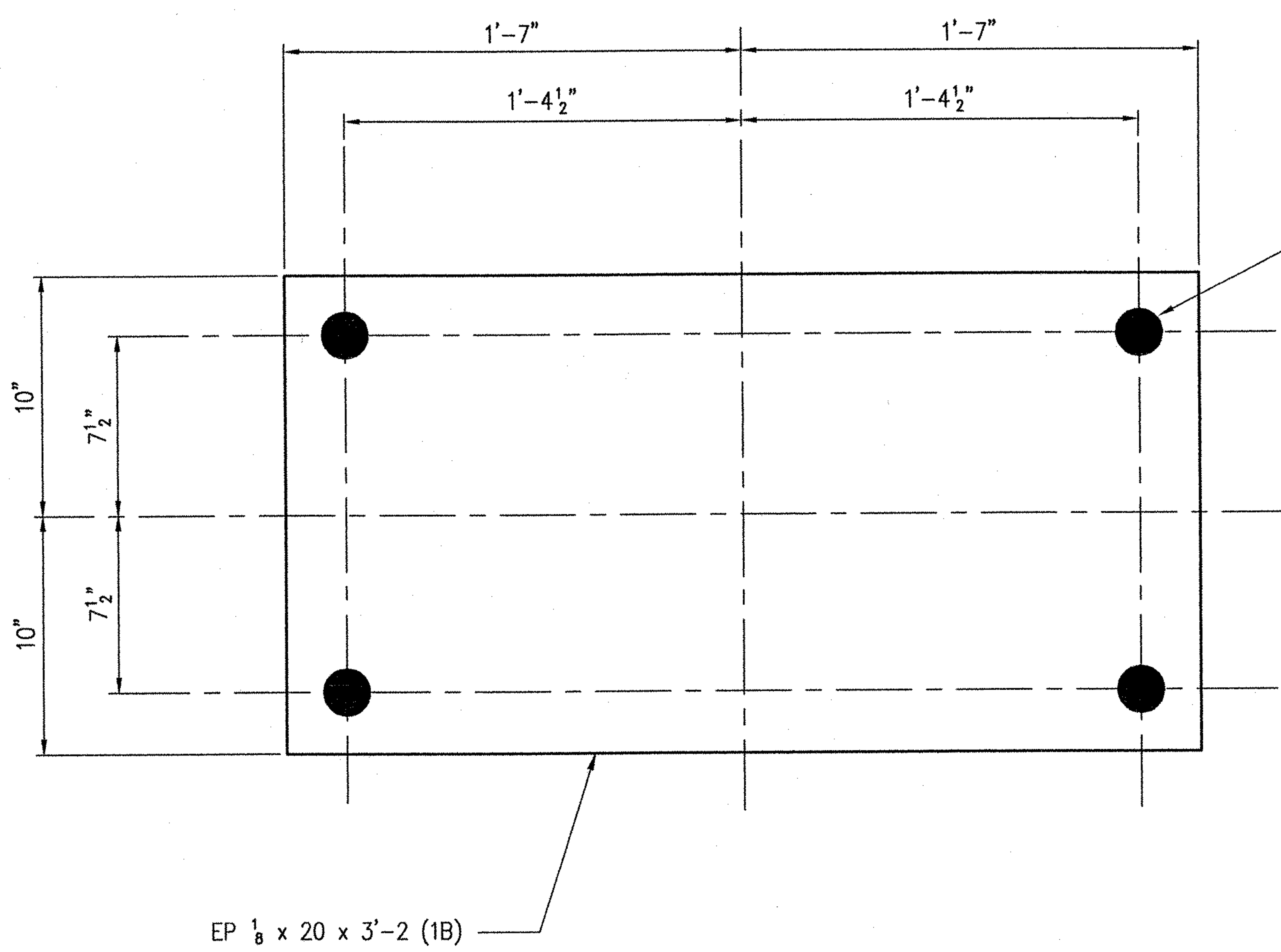
SHEET NO. GN1 OF 1 | Job. No. : 2034.1121.1

FOR PRINTS ISSUED	DATE
SHOP	
APPROVAL	
DIST.	
CUST.	



SHOP NOTE :
⊗ – INDICATES LOCATION OF SHIPPING PIECE MARK

5 – SOLE PLATE ASSEMBLY – 1A



5 – BEARING PADS – 1B

6 ½
3 ¼

RECEIVED
CHK'D BY WJ CHK'D BY RSY
MAR 1 2 2001
APPROVED As Noted
BY OPW DATE 3/29/01

LINE	NO. REQ'D.	DESCRIPTION	LENGTH	MK	REMARKS	PART NO.
1	5	SOLE PLATE ASSEMBLY		1A	METALIZE/PAINT	
2	5	PL 3¼ x 14 A709 GR. 50	2'-2½	pa1	MACH./ ADD MAT'L. FOR MACH.	
3	5	PL 1 x 2½ A709 GR. 50	0'-5	ba1		19-60
4						
5						
6	5	BEARING PADS		1B	B	
7	5	EP ⅛ x 20	3'-2	1B	SEE NOTE 4	
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53						
54						
55						
56						
57						
58						
59						
60						

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

FOR PRINTS ISSUED	DATE
SHOP	
APPROVAL	
DIST.	
CUST.	

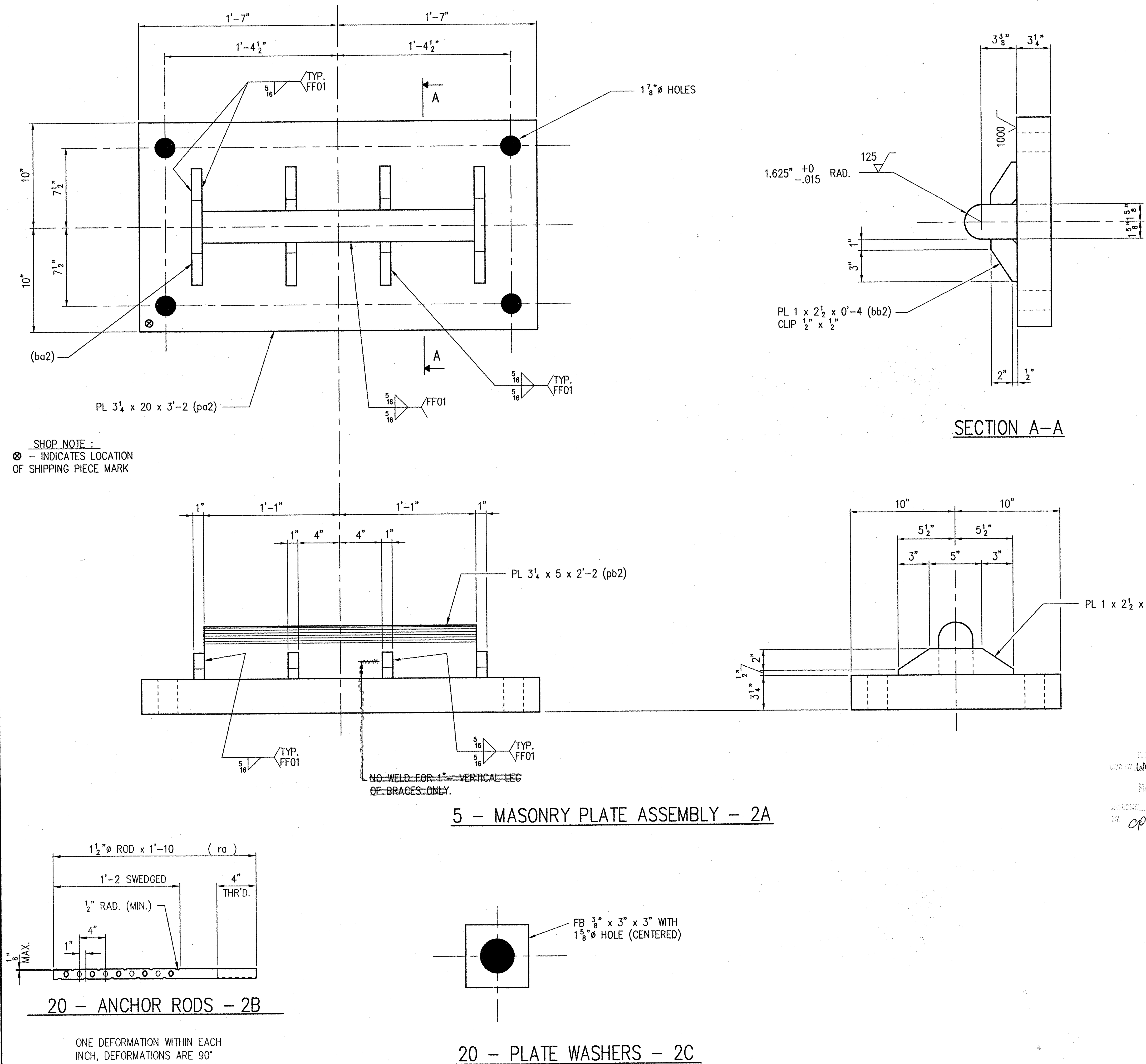
LEWIS ENGINEERING COMPANY
4201 NORE DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

PROJECT – ROYALTON/ RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT – AC BRZ 1444(22)
FEDERAL PROJECT –
CUSTOMER – BECK & BELLUCCI, INC.
LOCATION – WINDSOR COUNTY, VT
DESCRIPTION – PIER FIXED BEARING DETAILS

ORIG.
W.P. chk'd JDK
Drawn By TSF
Chk'd. By NY
Date: 2/01

GENERAL NOTES: SEE SHT. GN1.

SHEET NO. 1 OF 2 | Job. No. : 2034.1121.1



GENERAL NOTES: SEE SHT. GN1.

LINE	NO. REQ'D.	DESCRIPTION	LENGTH	MK	REMARKS	PART NO.
1	5	MASONRY PLATE ASSEMBLY		2A	METALIZE/ PAINT	
2	5	PL 3¼ x 20 A709 GR. 50	3'-2	pa2	MACH./ ADD MAT'L. FOR MACH.	
3	5	PL 3¼ x 5 A709 GR. 50	2'-2	pb2	MACH./ ADD MAT'L. FOR MACH.	
4	10	PL 1 x 2½ A709 GR. 50	0'-11	ba2	SHAPE CUT	19-60
5	20	PL 1 x 2½ A709 GR. 50	0'-4	bb2	SHAPE CUT	19-60
6						
7						
8	20	ANCHOR RODS		2B	HDG	
9	20	RB 1½" A36	1'-10	2B	SWEDGE	
10						
11	20	PLATE WASHERS		2C	HDG	
12	20	FB ⅜ x 3 A36	0'-3	2C		
13						
14						
15	21	HN 1½"ø HVY. A563A HDG		2D	20	
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53						
54						
55						
56						
57						
58						
59						
60						

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

FOR	DATE
SHOP	
APPROVAL	
DIST.	
CUST.	

PRINTS ISSUED

LEWIS ENGINEERING COMPANY

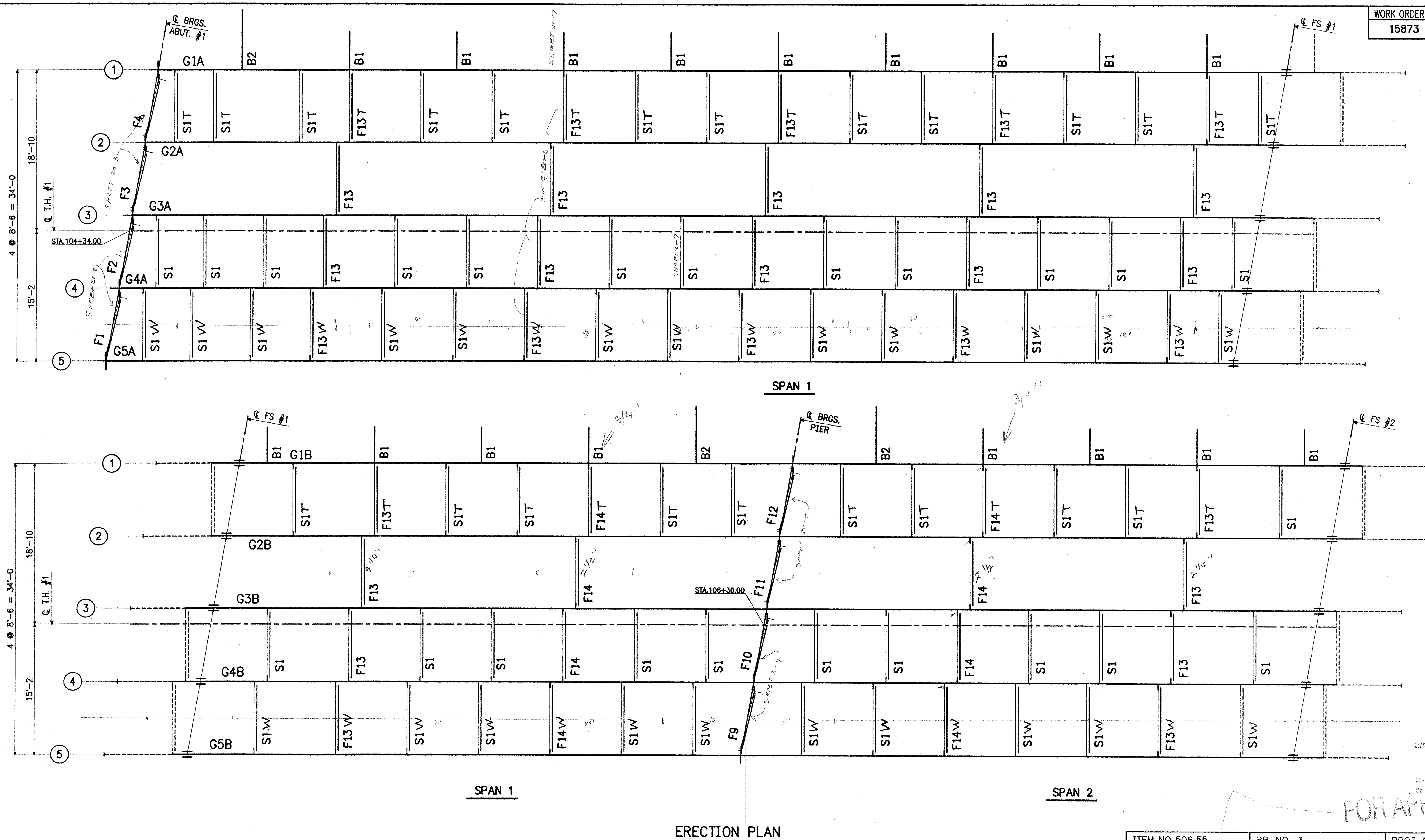
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

PROJECT — ROYALTON/ RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — PIER FIXED BEARING DETAILS

ORIG.
W.P. chk'd JDK
Drawn By TSF
Chk'd. By NY
Date: 2/01

SHEET NO. 2 OF 2 | Job. No. : 2034.1121.1

WORK ORDER NO.	DRAWING NO.	REV.
15873	E1	1



ERECTION PLAN

RECEIVED
NOV 21 2001
FOR APPROVAL

ITEM NO. 506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)
TITLE: ERECTION PLAN		

APPROVED: 9-5-01

PRINT DIST.		
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP
5	8-24-01	APP
5	11-19-01	APP
11	11-19-01	FAB

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

REVISED

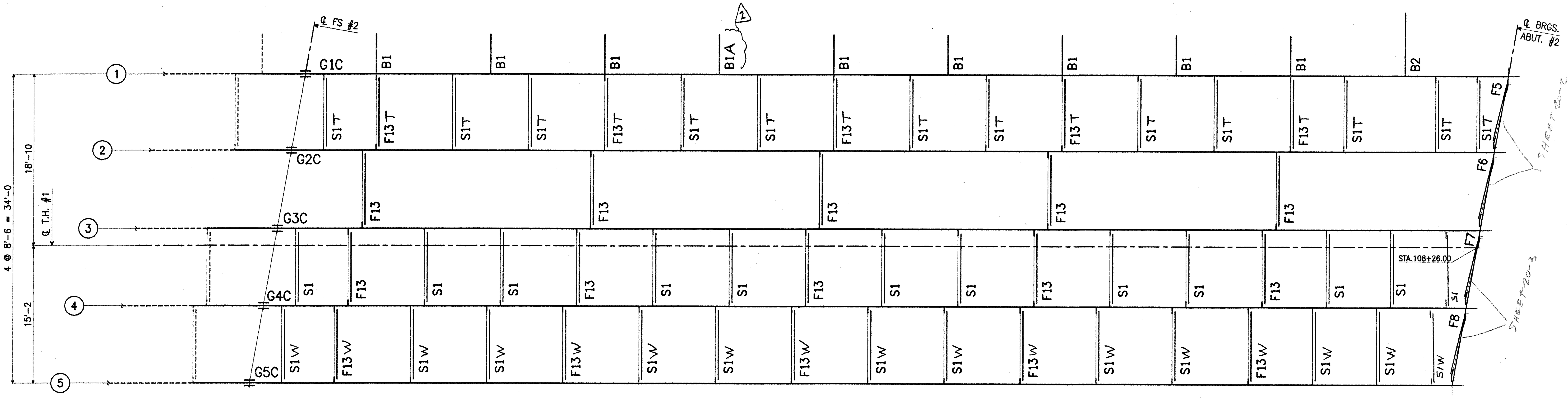
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

			WORK ORDER NO.	DRAWING NO.	REV.
CHECKED	TS	3/01	15873	E1	1
DRAWN	AV	3/01			

⚠ PC MKS 11-12-01 JCM

WORK ORDER NO.	DRAWING NO.	REV.
15873	E 2	2



SPAN 2

ERECTION PLAN

2-14-02

RECEIVED
CK'D BY CPW OK'D BY
JAN 30 2002
RESUBMIT ____ APPROVED X
BY CPW DATE 2/11/02

2 MK B1A 1-28-02 JCM
1 PC MKS 11-12-01 JCM

ITEM NO.506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)
TITLE: ERECTION PLAN		

REVISED

APPROVED: 9-5-01

PRINT DIST.		
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP
5	8-24-01	APP
5	11-19-01	APP
11	11-19-01	FAB
5	1-28-02	APP
11	1-28-02	FAB
CHECKED	TS	3/01
DRAWN	AV	3/01

NE National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

FOR APPROVAL

CUSTOMER: BECK & BELLUCCI, INC.

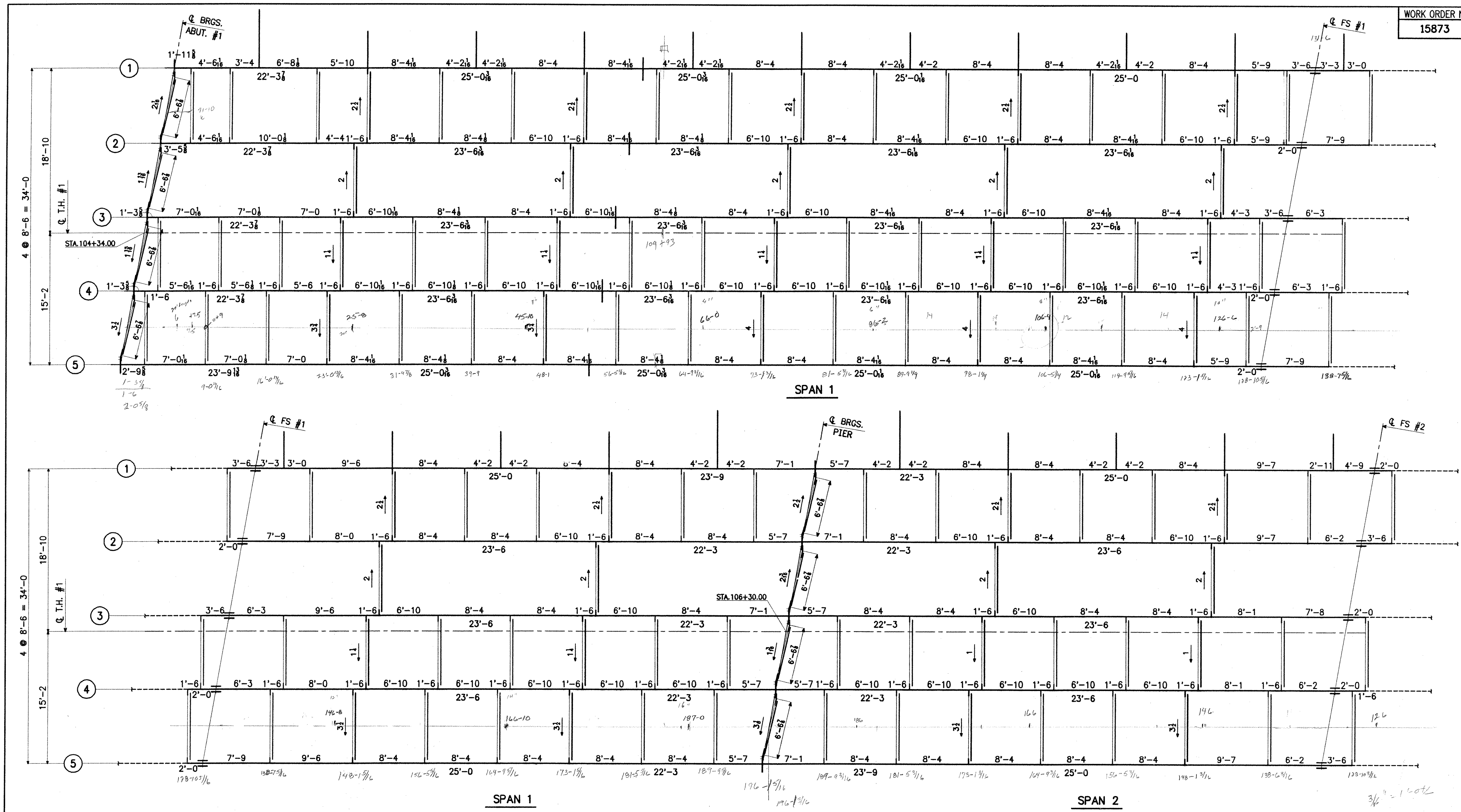
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

WORK ORDER NO.	DRAWING NO.	REV.
15873	E2	2

Rec'd 2-14-02

WS 4, 12-21, 20-7, 99-1

WORK ORDER NO.	DRAWING NO.	REV.
15873	WS1	B



CALC PLAN

RECEIVED
CK'D BY WGS OK'D BY
AUG 27 2001
RESUBMIT APPROVED ✓
BY CPW DATE 8/30/01

NOTES:

1. ALL LONGITUDINAL LENGTHS ARE DEVELOPED ALONG THE TOP OF WEB.
2. ALL TRANSVERSE DIMENSIONS ARE IN A HORIZONTAL PLANE.
3. ←—— ARROW POINTS TO LOW END.
4. BEARING STIFFENERS AND ENDS OF GIRDERS AND GIRDERS SHALL BE VERTICAL AFTER FULL DEAD LOAD DEFLECTION.

ITEM NO. 506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)
TITLE: CALC PLAN		FOR APPROVAL

APPROVED:		
	PRINT DIST.	
5	4-7-01	APPR.
ORIG.		FAB.
5	7-13-01	APP
5	8-24-01	APP
CHECKED	TS	3/01
DRAWN	AV	3/01

National Eastern Corporation
Plainville, Connecticut

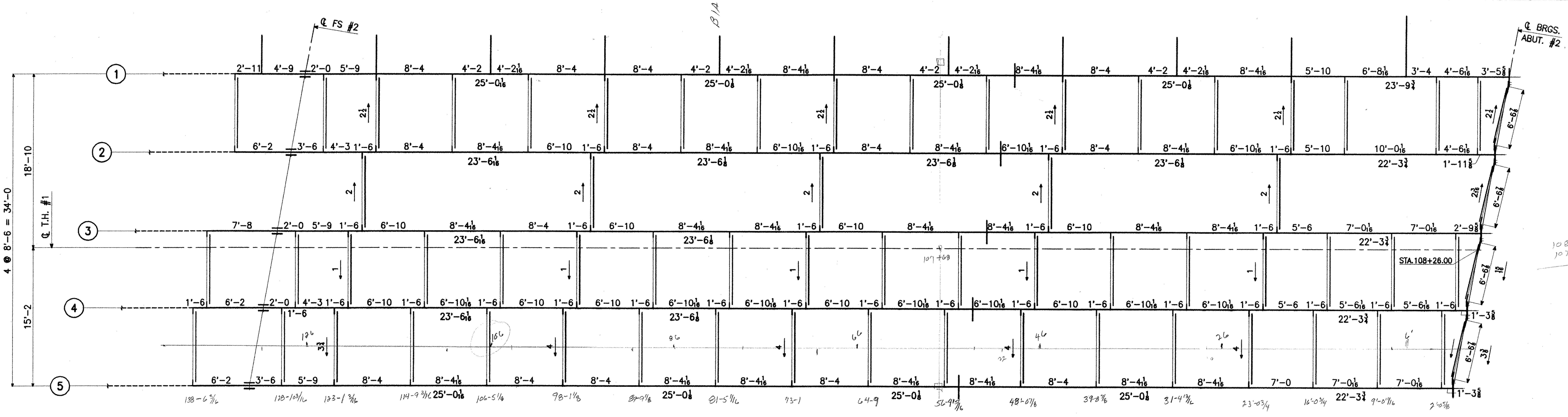
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

WORK ORDER NO.	DRAWING NO.	REV.
15873	WS1	B

WORK ORDER NO.	DRAWING NO.	REV.
15873	WS2	B



SPAN 2

CALC PLAN

RECEIVED
CK'D BY LJGS OK'D BY
AUG 2 7 2001
RESUBMIT ____ APPROVED ✓
BY OPW DATE 6/30/01

ITEM NO. 506.55			BR. NO. 3	PROJ. NO. BRZ 1444(22)
TITLE: CALC PLAN			FOR APPROVAL	
APPROVED:			National Eastern Corporation, Plainville, Connecticut	
PRINT DIST.				
5	4-7-01	APPR.		
ORIG.		FAB.		
5	7-13-01	APP	JOB: T.H. 1 OVER THE WHITE RIVER, ROYALTON, VERMONT	
5	8-24-01	APP		
			CUSTOMER: BECK & BELLUCCI, INC.	
			DESIGNER: VERMONT AGENCY OF TRANSPORTATION	
			WORK ORDER NO.	DRAWING NO. / REV.
CHECKED	TS	3/01	15873	WS2 / B
DRAWN	AV	3/01		

WORK ORDER NO.	DRAWING NO.	REV.
15873	GN1	1

GENERAL SHOP NOTES

CONSTRUCTION SPECIFICATIONS

1). ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 1990, AND IT'S LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 1996, AND IT'S LATEST REVISONS.

MATERIAL SPECIFICATIONS

1). ALL STRUCTURAL STEEL SHALL BE ASTM A709M GRADE 50W

2). HIGH STRENGTH BOLTS SHALL CONFORM TO THE FOLLOWING:

HIGH STRENGTH BOLTS: ASTM A325M TYPE-3
HARD FLAT WASHERS: ASTM F436M TYPE-3
HEAVY HEX NUTS: ASTM A563M TYPE-3

BOLTS & NUTS SHALL BE ROTATIONAL CAPACITY TESTED AND MEET ALL OTHER REQUIREMENTS OF SUBSECTION 11.3.2 OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. DO NOT MIX NUTS & BOLTS FROM DIFFERENT CONTAINERS UNLESS ALL BOLTS & NUTS HAVE THE SAME LOT NUMBER.

3). MAIN LOAD CARRYING MEMBERS SHALL MEET THE NOTCH TOUGHNESS REQUIREMENTS OF ZONE 2, H FREQUENCY:

15 FT LBS AT 40° F (UP TO 2" WELDED)
20 FT LBS AT 40° F (2" TO 4" WELDED)

DRAWINGS SHALL CALL OUT 'CVN' FOR EACH APPLICABLE ITEM IN THE BILLS OF MATERIAL.

4). ALL MATERIAL SUBSTITUTIONS SHALL BE SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL PRIOR TO FABRICATION.

FABRICATION

1). ALL WELDING AND DIMENSIONAL TOLERANCES OF WELDED MEMBERS SHALL CONFORM TO THE LATEST ANSI/AASHTO/AWS BRIDGE WELDING CODE AND IT'S LATEST REVISIONS.

2). NON DESTRUCTIVE TESTING OF WELDS SHALL BE IN ACCORDANCE WITH THE REFERENCED SPECIFICATIONS.

MAGNETIC PARTICLE INSPECTION:
WEB TO FLANGES 10% OR 300mm MINIMUM.
CONN. PLATES TO WEB 10% OR 300mm MINIMUM.
CONN. PLATES TO FLANGES 10%. OR 300mm MINIMUM
UNLESS NOTED, ALL WELDS ARE CONTINUOUS.

GROOVE WELD INSPECTION:
BUTT GROOVE WELDS IN TENSION: 100% RT
BUTT GROOVE WELDS IN COMPRESSION: 25% UT

1

SURFACE PREPARATION

1). ALL CORNERS AND EDGES OF STEEL WHICH HAVE BEEN FLAME CUT OR OTHERWISE HARDENED SHALL BE SOFTENED BY GRINDING OR BLAST-CLEANING TO PROVIDE A SUITABLE SURFACE FOR THE SPECIFIED PAINT SYSTEM.

2). ALL STEEL SURFACES ARE TO BE BLAST CLEANED IN ACCORDANCE WITH THE PROVISIONS OF SSPC-SP10 "NEAR-WHITE BLAST CLEANING". ALL SURFACES SHALL BE FREE OF ALL OIL, DIRT, GREASE, MILL SCALE AND OTHER FOREIGN MATERIAL.

PAINT

ALL STEEL 6'-6 FROM THE ENDS OF GIRDERS SHALL BE PAINTED WITH THE FOLLOWING THREE COAT PAINT SYSTEM, EXCEPT AS NOTED:

1). PRIME COAT: CARBOLINE 11HS 0300 GREEN, 2-6 MILS D.F.T.

2). INTERMEDIATE COAT: CARBOLINE 0893 0800 WHITE, 4-10 MILS D.F.T.

3). TOP COAT: CARBOLINE 133HB 2248 DARK BROWN, 3-5 MILS D.F.T.

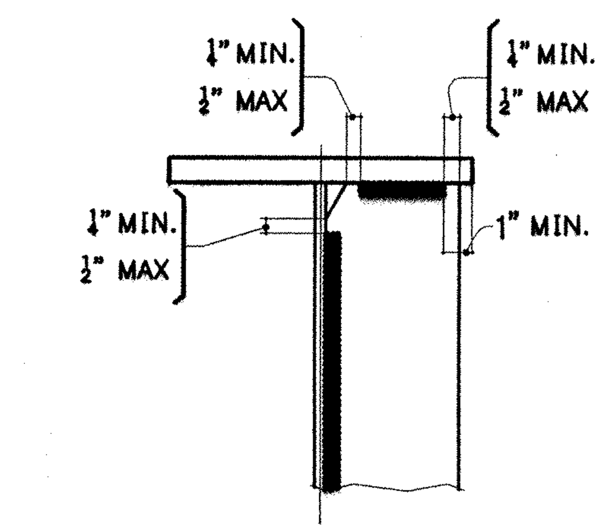
THE FOLLOWING SURFACES SHALL RECEIVE THE PRIME COAT ONLY:

- ALL SURFACES WITHIN 3" OF OPEN HOLES.
- ALL SURFACES IN CONTACT WITH CONCRETE.
- ALL SURFACES TO BE FIELD WELDED.

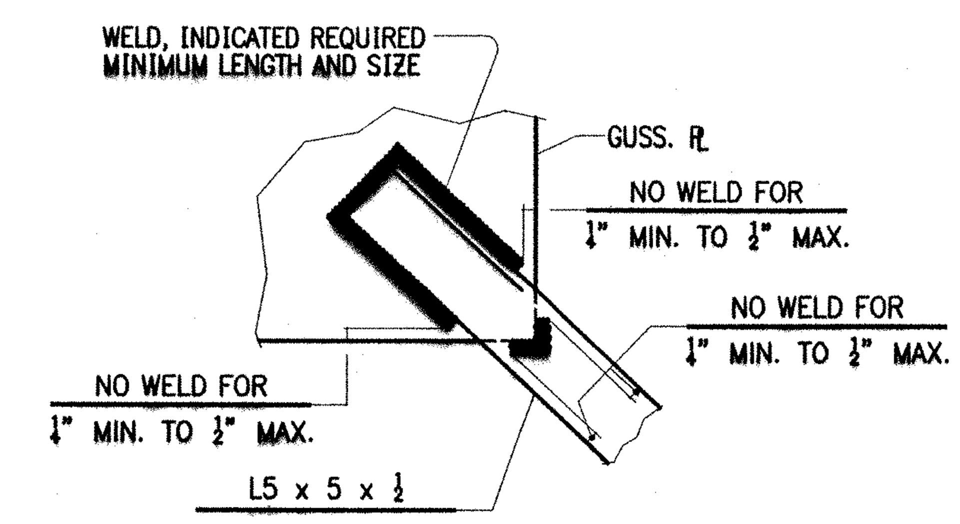
FIELD CONNECTIONS

1). FIELD BOLTS SHALL HAVE HEAVY HEX NUT, HEX HEAD AND ONE HARD WASHER EACH.

2). PIECE MARKS WILL BE LOCATED AS SHOWN ON ERECTION DRAWINGS. ALL ERECTION MARKS, MATCH MARKS AND WEIGHT MARKS MUST NOT BE EXPOSED IN THE FINISHED STRUCTURE.



TYP. WELD TERMINATION DETAIL



WELD LOCATION DETAIL AT CROSSFRAMES

RECEIVED
CK'D BY WBS OK'D BY
SEP 13 2001
RESUBMIT ___ APPROVED ✓
BY CPW DATE 9/18/01

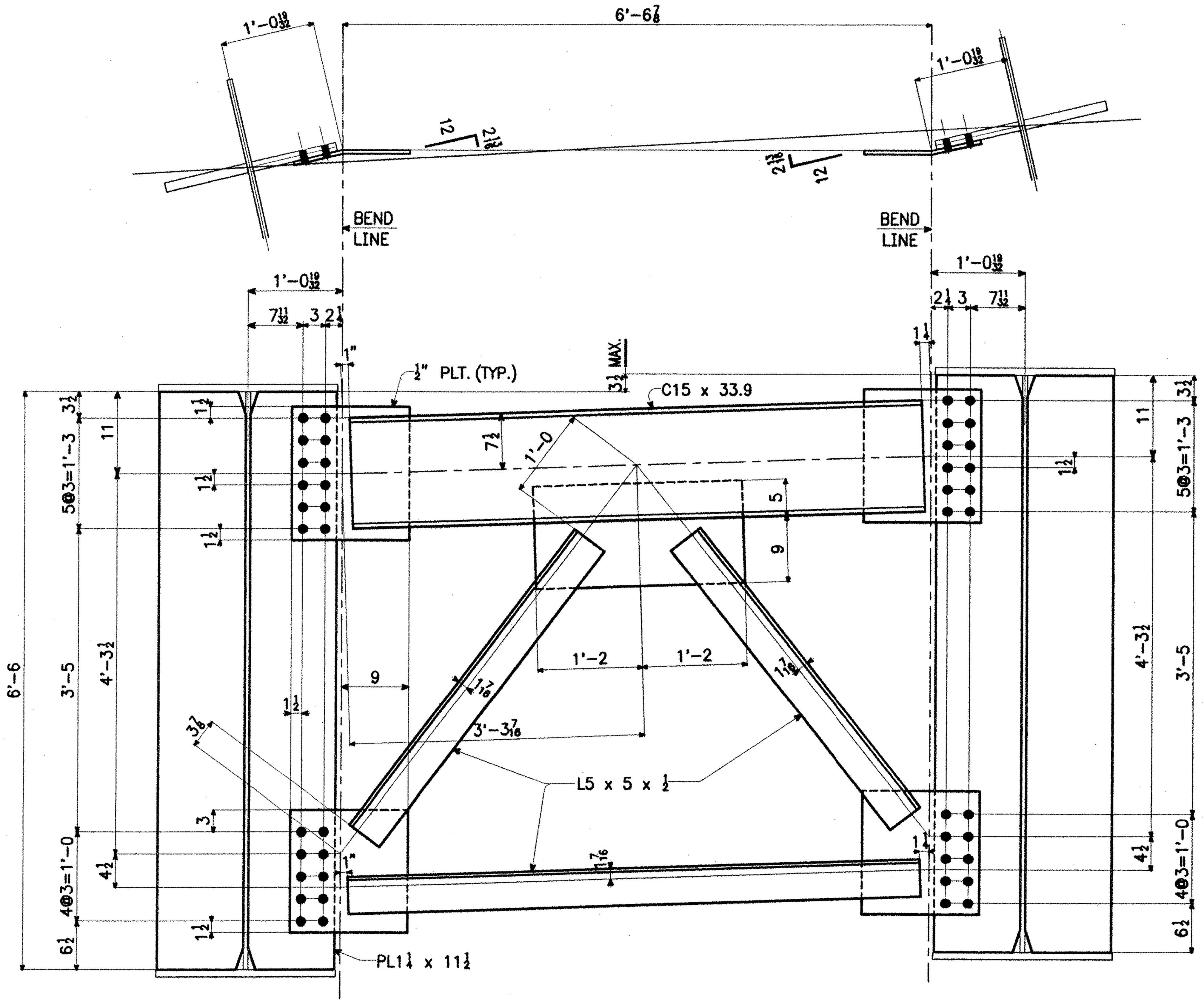
1 GROOVE WELD INSPECTION 9-10-01 JCM

ITEM NO. 506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)
TITLE: GENERAL NOTES		FOR APPROVAL

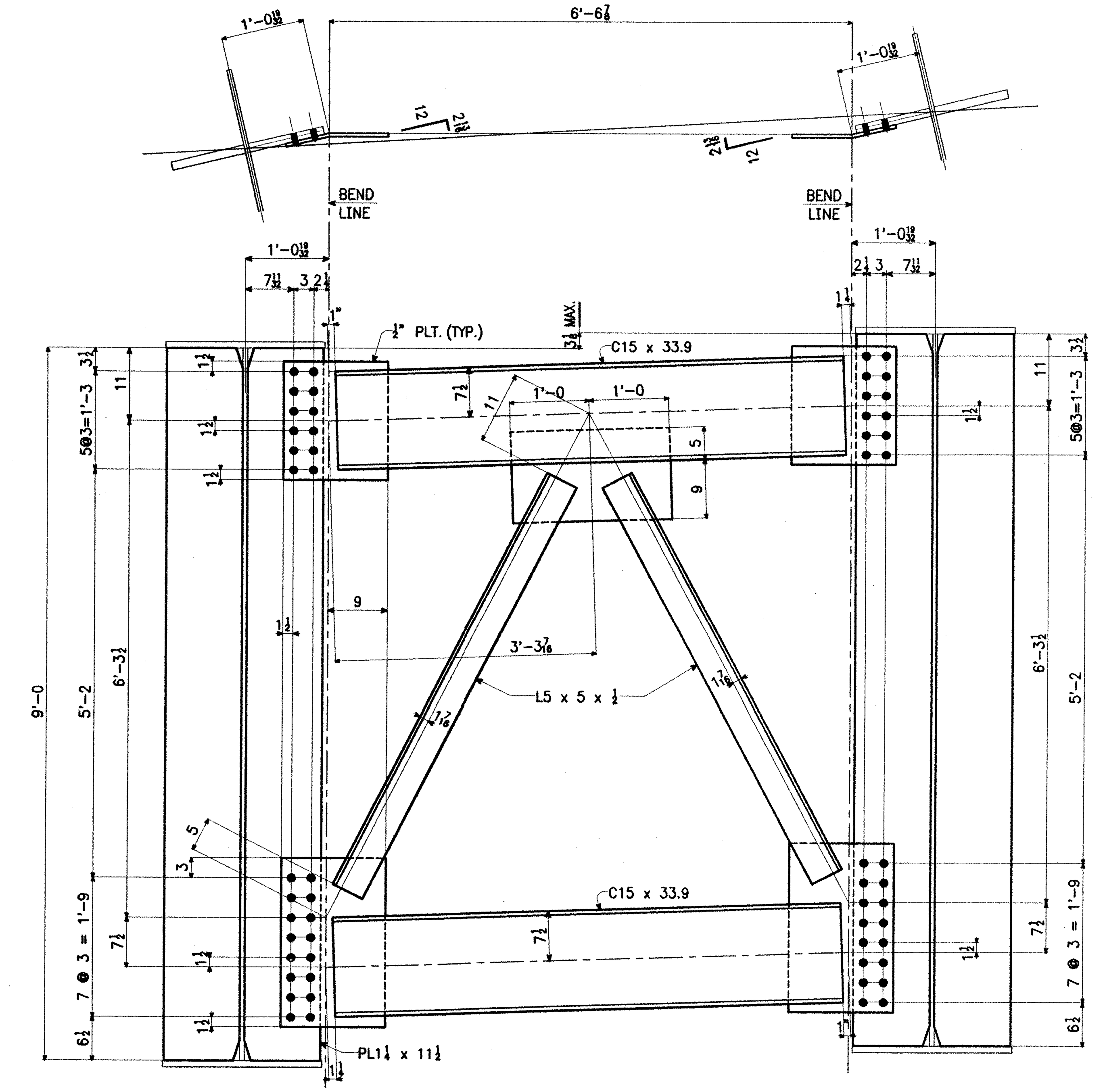
APPROVED: 9-5-01			National Eastern Corporation, Plainville, Connecticut
PRINT DIST.			
5	4-7-01	APPR.	
ORIG.	9-5-01	FAB.	
5	7-13-01	APP	JOB: T.H. 1 OVER THE WHITE RIVER ROYALTON, VERMONT — REVISED
5	8-24-01	APP	
5	9-10-01	APP	
11	9-10-01	FAB	
			CUSTOMER: BECK & BELLUCCI, INC.
			DESIGNER: VERMONT AGENCY OF TRANSPORTATION
			WORK ORDER NO. 15873 / DRAWING NO. GN1 / REV. 1
CHECKED	TS	3/01	
DRAWN	AV	3/01	

OK

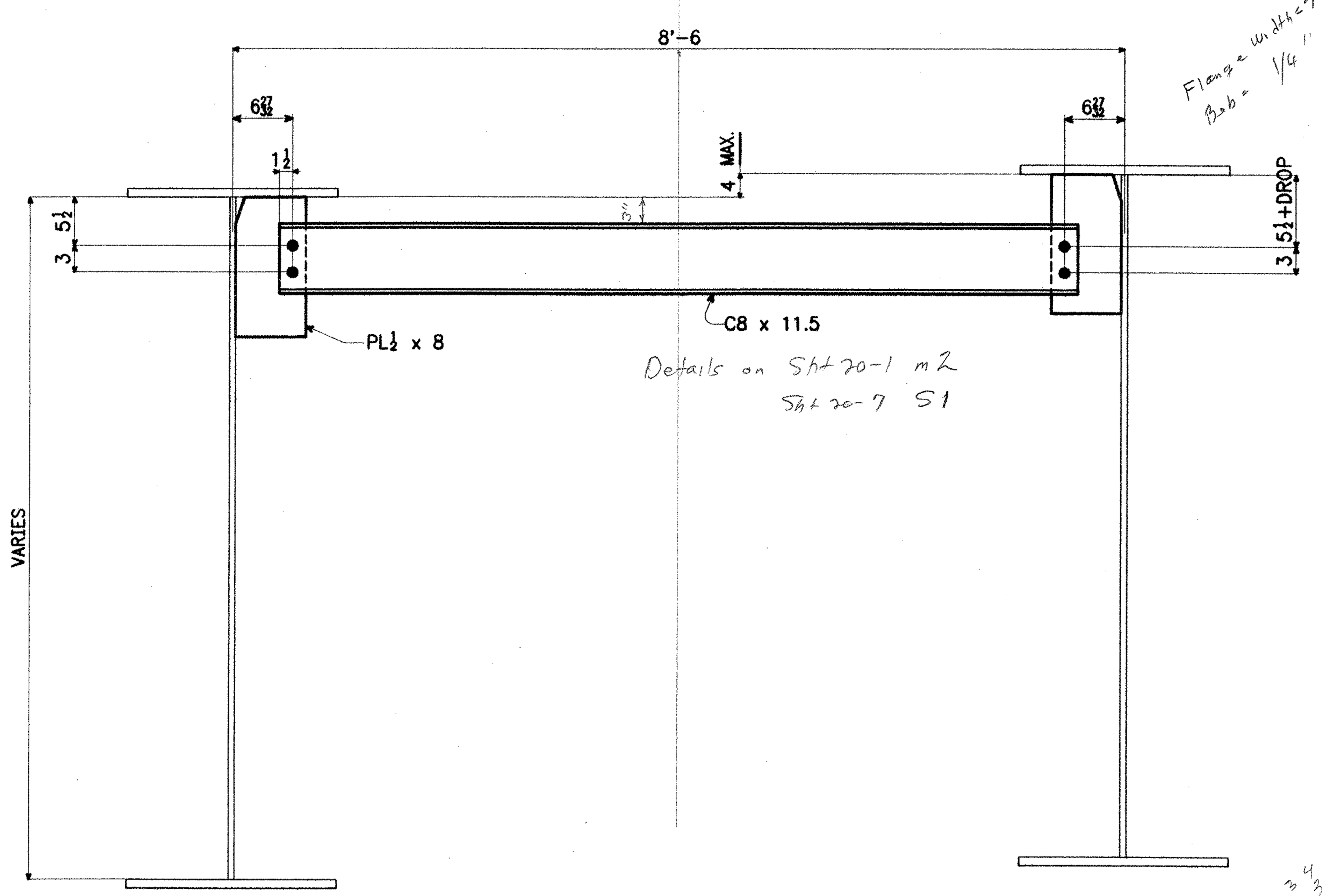
WORK ORDER NO.	DRAWING NO.	REV.
15873	WS3	A



ABUT. CROSSFRAME LAYOUT



PIER CROSSFRAME LAYOUT



Flange width = 7 1/4"
Bob = 1/4"

Details on Sht 20-1 m2
Sht 20-7 S1

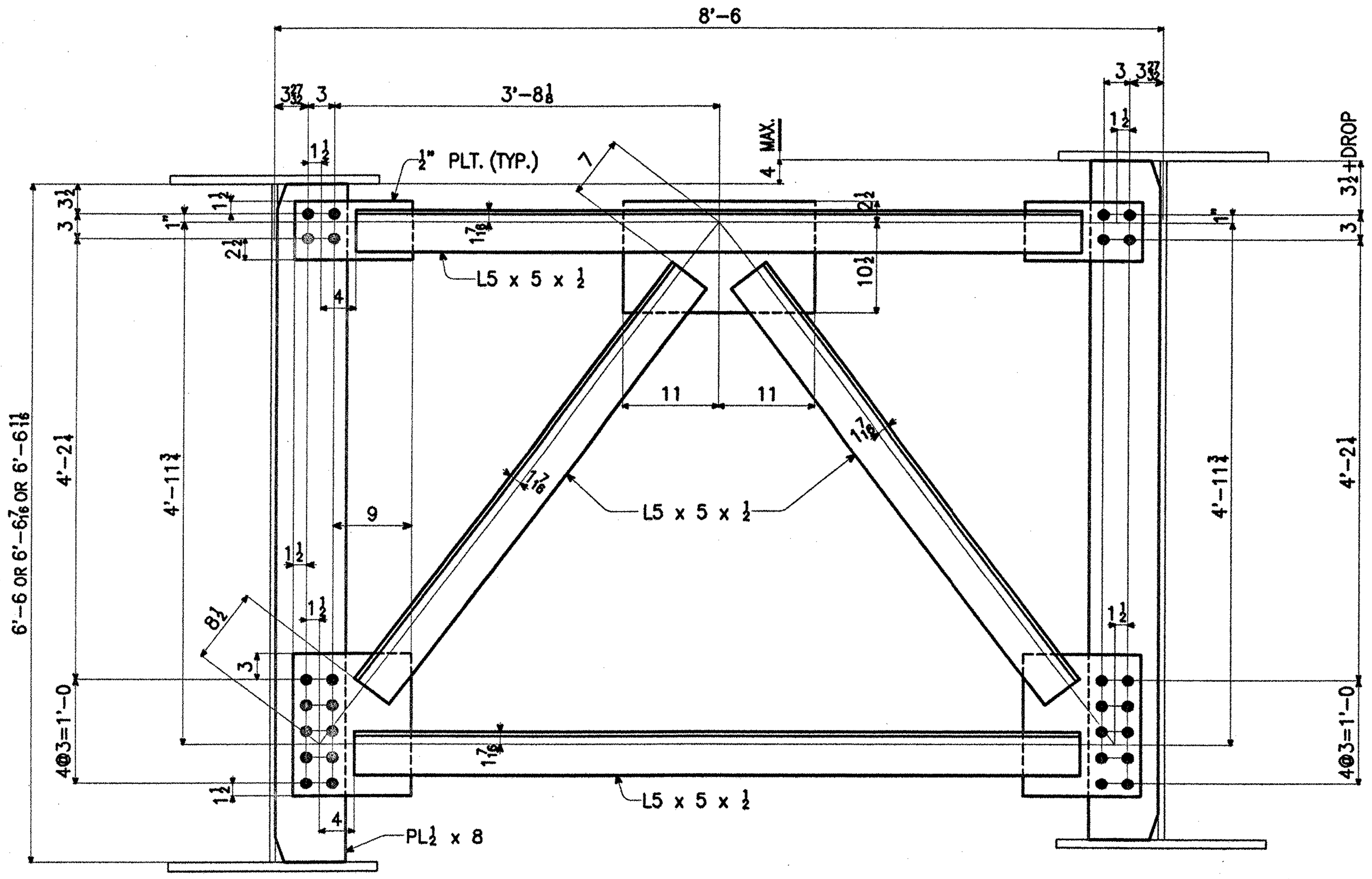
UTILITY SUPPORT LAYOUT

RECEIVED
CK'D BY WGS OK'D BY
AUG 2 7 2001
RESUBMIT ___ APPROVED ✓
BY CPW DATE 8/30/01

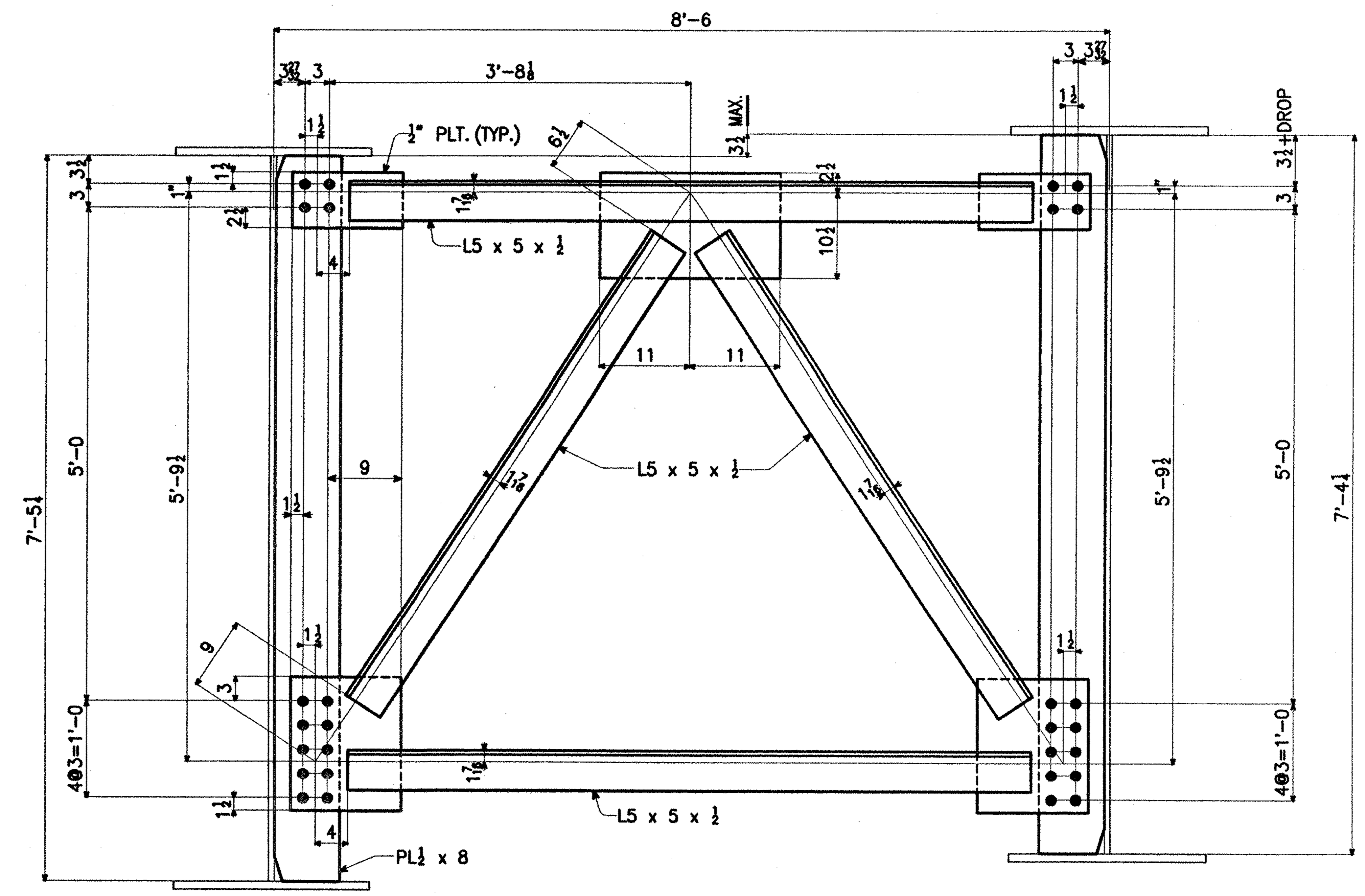
1"=1'-0"

ITEM NO.506.55			BR. NO. 3	PROJ. NO. BRZ 1444(22)
TITLE: LAYOUTS			FOR APPROVAL	
APPROVED:			National Eastern Corporation, Plainville, Connecticut	
PRINT DIST.				
5	4-7-01	APPR.		
ORIG.		FAB.		
5	7-13-01	APP	JOB: T.H. 1 OVER THE WHITE RIVER ROYALTON, VERMONT	
5	8-24-01	APP		
			CUSTOMER: BECK & BELLUCCI, INC.	
			DESIGNER: VERMONT AGENCY OF TRANSPORTATION	
CHECKED	TS	3/01	WORK ORDER NO. 15873	DRAWING NO. WS3, REV. A
DRAWN	AV	3/01		

WORK ORDER NO.	DRAWING NO.	REV.
15873	WS4	1

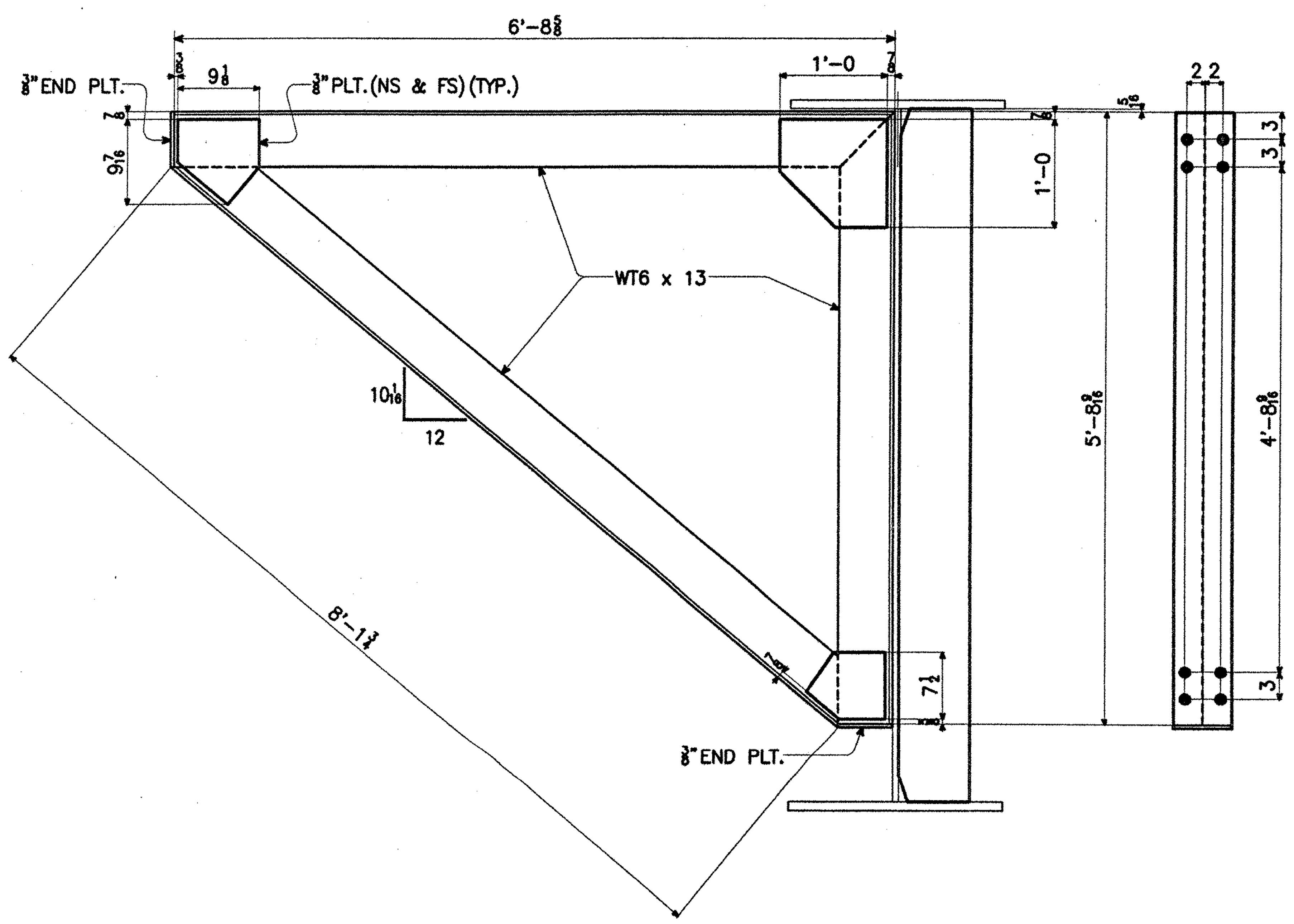


INT. CROSSFRAME LAYOUT



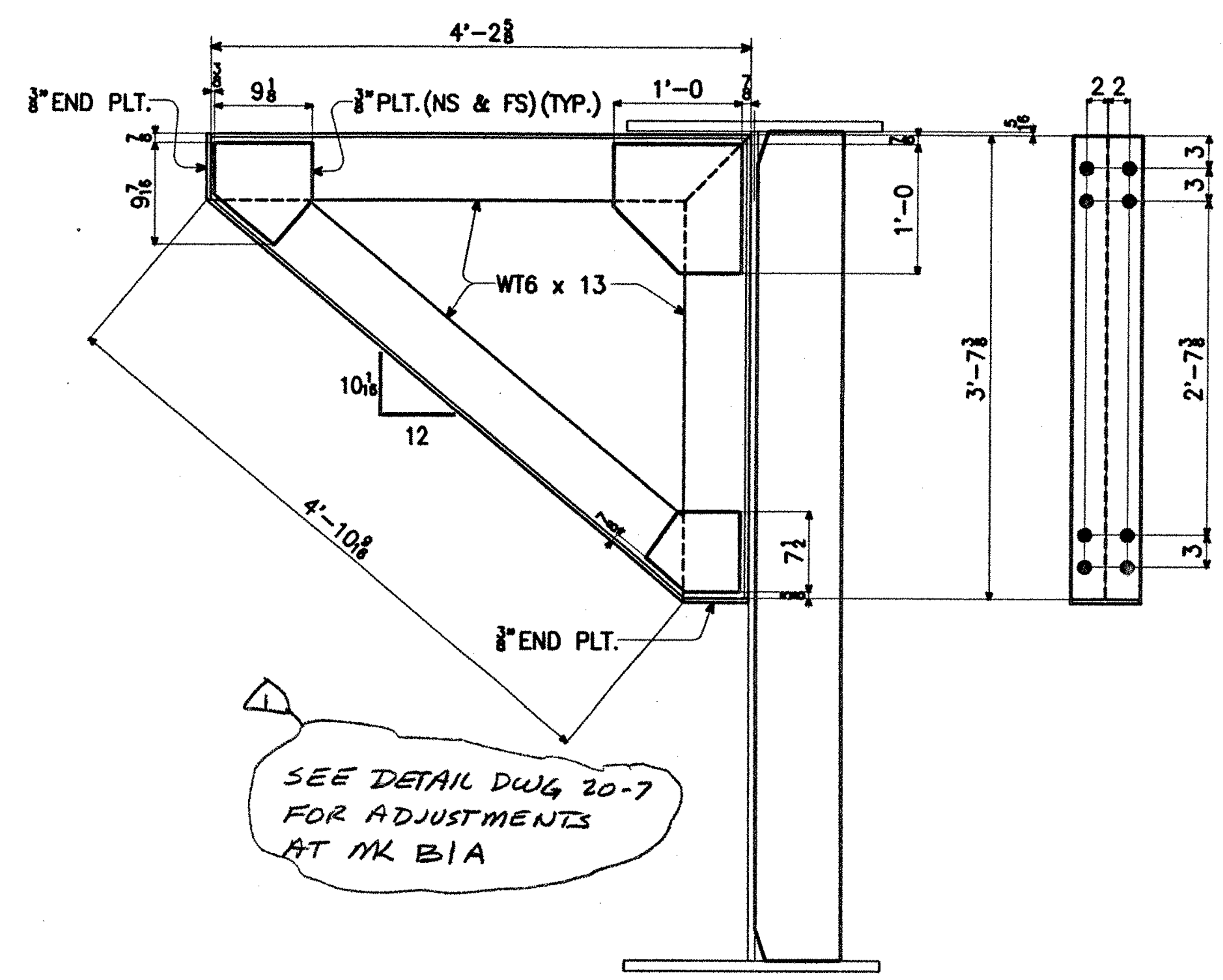
INT. CROSSFRAME LAYOUT

28 bolts / x-frame



SIDEWALK BRACKET LAYOUT

(NEAREST BEARING POINTS)



SIDEWALK BRACKET LAYOUT

(INTERMEDIATE POINTS)

SEE DETAIL DWG 20-7 FOR ADJUSTMENTS AT MK B1A

RECEIVED
CK'D BY CPW OK'D BY
JAN 30 2002
RESUBMIT ___ APPROVED X
BY CPW DATE 2/11/02

2-14-02

△ MK B1A 1-28-02 JCM

ITEM NO. 506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)
TITLE: LAYOUTS		

APPROVED: 9-5-01		
PRINT DIST.		
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP
5	8-14-01	APP
5	1-28-02	APP
11	1-28-02	FAB
CHECKED	TS	3/01
DRAWN	AV	3/01

National Eastern Corporation
Plainville, Connecticut

REVISED

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

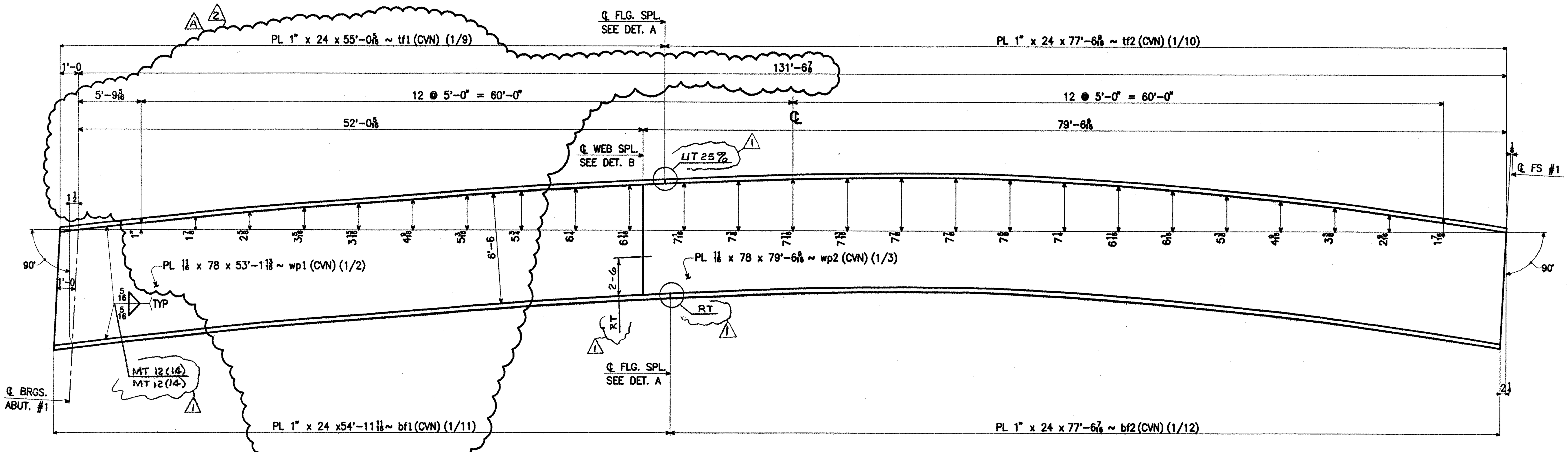
FOR APPROVAL

CUSTOMER: BECK & BELLUCCI, INC.

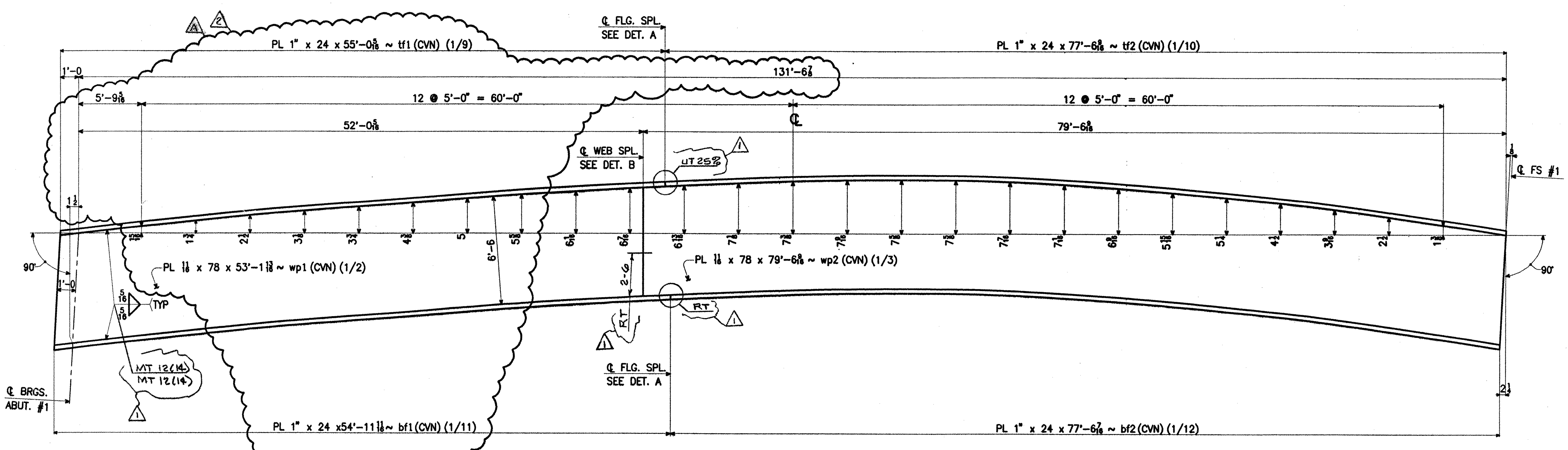
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

WORK ORDER NO.	DRAWING NO.	REV.
15873	WS4	1

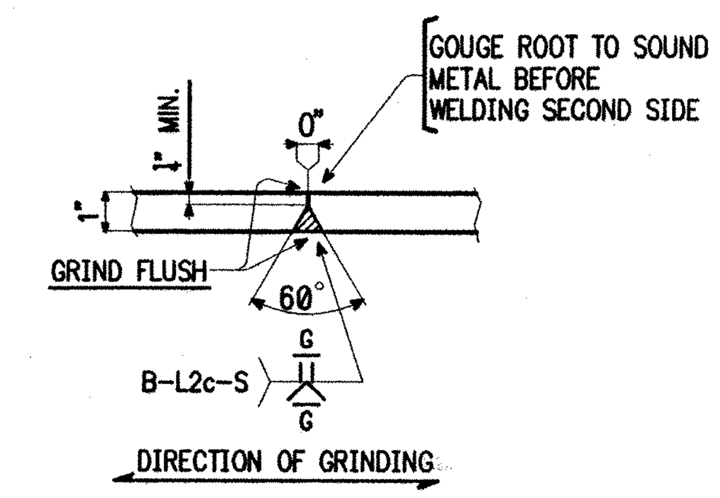
WORK ORDER NO.	DRAWING NO.	REV.
15873	12-1	A



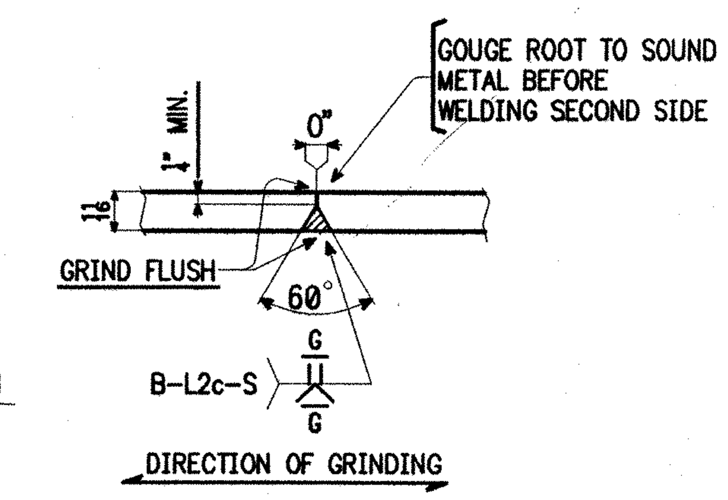
CAMBER DIAGRAM FOR GIRDER ~ G1A



CAMBER DIAGRAM FOR GIRDER ~ G2A



FLANGE SPLICE DETAIL A



WEB SPLICE DETAIL B

RECEIVED
CK'D BY WAS OK'D BY
DEC 27 2001
RESUBMIT ___ APPROVED ✓
BY OPW DATE 1/4/02

NOTES:

1. MATERIAL: ASTM A709-50W
2. CVN DENOTES CHARPY V-NOTCH TESTING REQUIRED.

2 FLG & WEB 12-17-01 AV

1 NDT 8-23-01 JCM

A APPL COMMENTS 6-21-01 AV

ITEM NO.506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)
TITLE: CAMBER DIAGRAMS		

APPROVED: 9-5-01		
PRINT DIST.		
5	4-7-01	APPR.
ORIG.	6-21-01	FAB.
5	7-13-01	APP
5	8-24-01	APP
12	8-24-01	FAB
5	12-18-01	APP
11	12-18-01	FAB
CHECKED	TS	3/01
DRAWN	AV	3/01

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

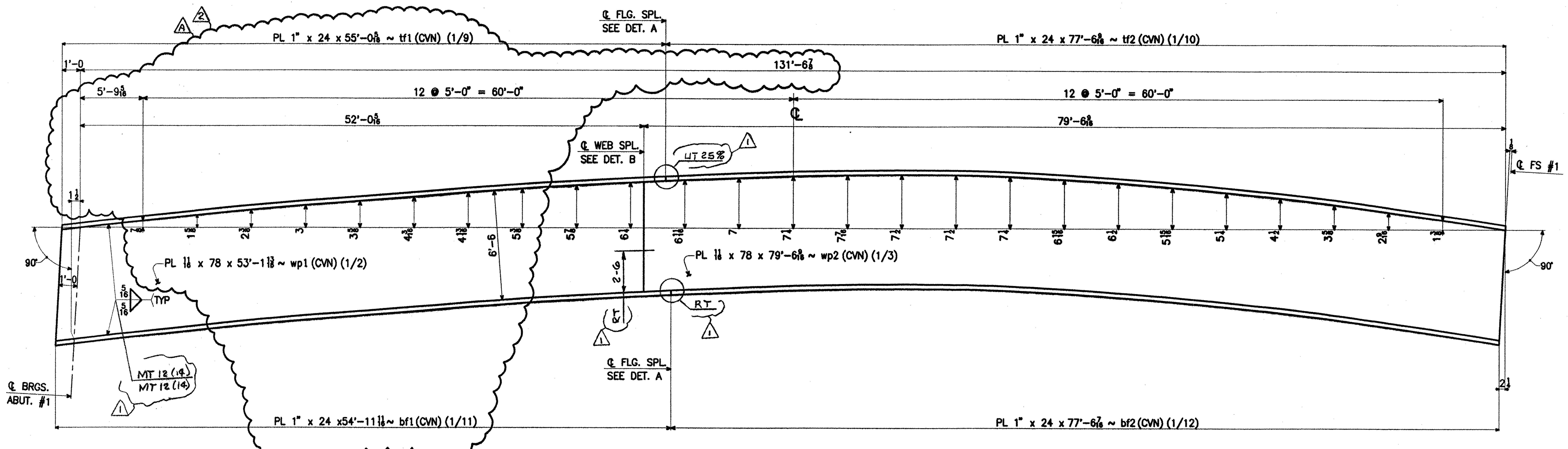
FOR APPROVAL
REVISED

CUSTOMER: BECK & BELLUCCI, INC.

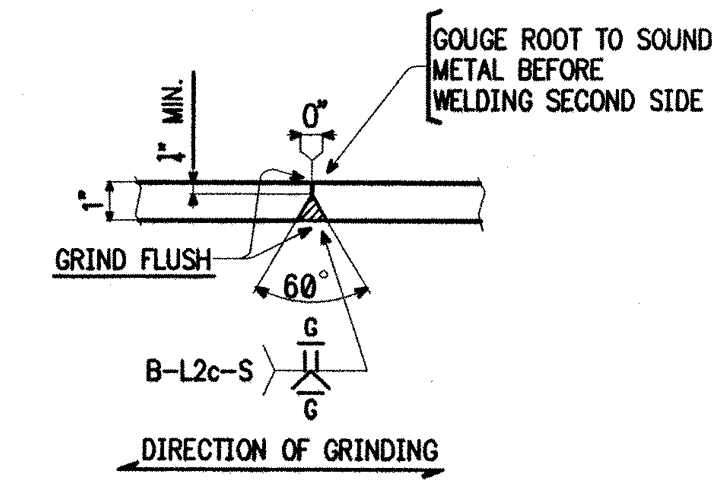
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

WORK ORDER NO.	DRAWING NO.	REV.
15873	12-1	A

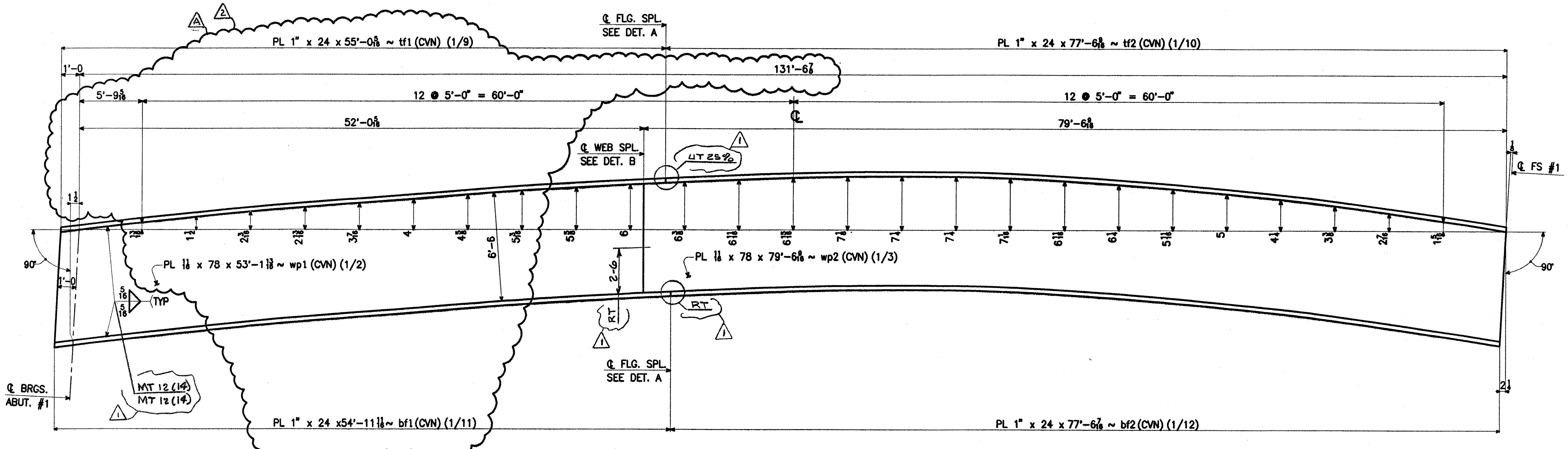
WORK ORDER NO.	DRAWING NO.	REV.
15873	12-2	A



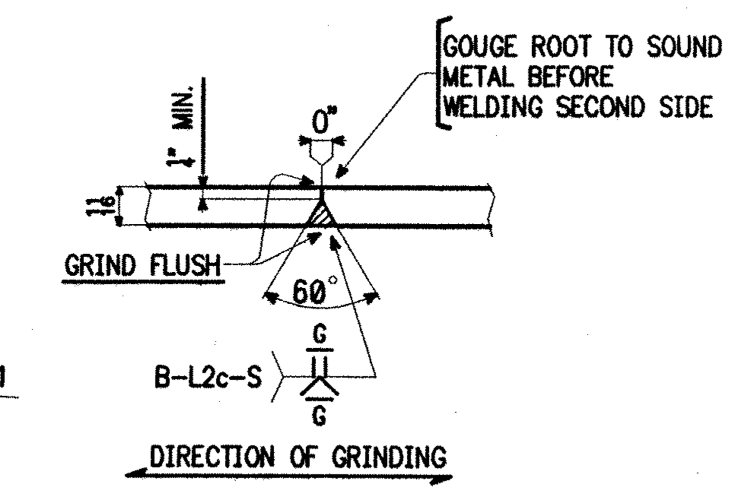
CAMBER DIAGRAM FOR GIRDER ~ G3A



FLANGE SPLICE DETAIL A



CAMBER DIAGRAM FOR GIRDER ~ G4A



WEB SPLICE DETAIL B

RECEIVED
CK'D BY ____ OK'D BY ____
DEC 27 2001
RESUBMIT ____ APPROVED ✓
BY CPW DATE 1/4/02

NOTES:

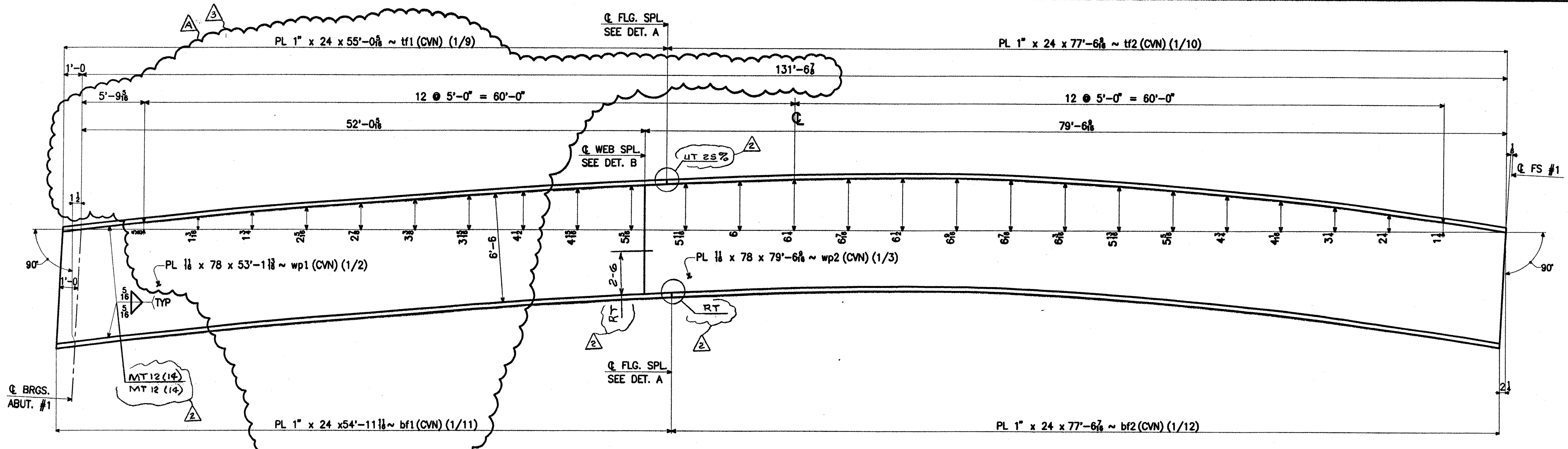
1. MATERIAL: ASTM A709-50W
2. CVN DENOTES CHARPY V-NOTCH TESTING REQUIRED.

2 FLG & WEB 12-17-01 AV
1 NDT 8-23-01 JCM
A APPL COMMENTS 6-21-01 AV

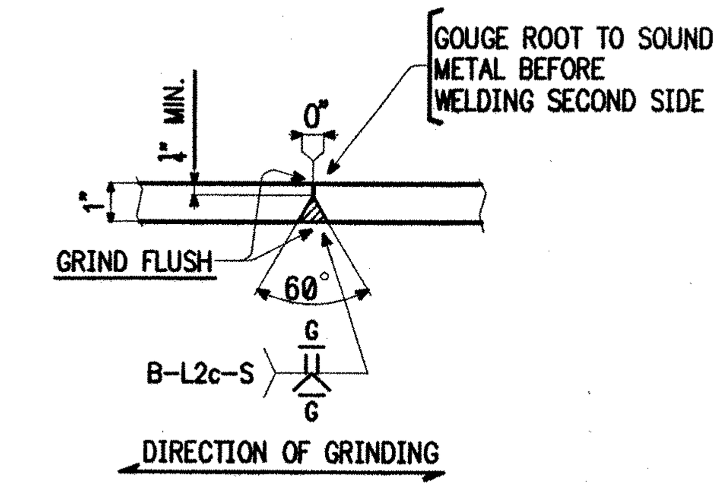
ITEM NO. 506.55			BR. NO. 3	PROJ. NO. BRZ 1444(22)
TITLE: CAMBER DIAGRAMS				
APPROVED: 9-5-01			National Eastern Corporation, Plainville, Connecticut	
PRINT DIST.				
5	4-7-01	APPR.		
ORIG.	6-21-01	FAB.		
5	7-13-01	APP	JOB: T.H. 1 OVER THE WHITE RIVER, ROYALTON, VERMONT	
5	8-24-01	APP		
12	8-24-01	FAB		
5	12-18-01	APP		
11	12-18-01	FAB	CUSTOMER: BECK & BELLUCCI, INC.	
			DESIGNER: VERMONT AGENCY OF TRANSPORTATION	
CHECKED	TS	3/01	WORK ORDER NO. 15873	DRAWING NO. 12-2 / REV. A
DRAWN	AV	3/01		

FOR APPROVAL
REVISED

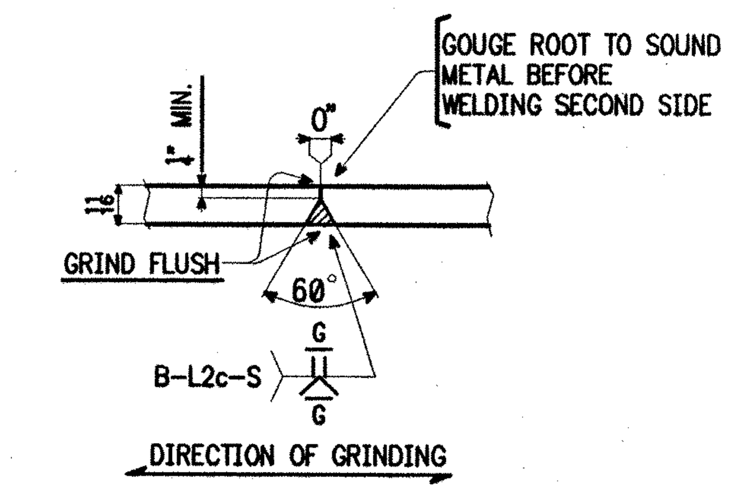
WORK ORDER NO.	DRAWING NO.	REV.
15873	12-3	3



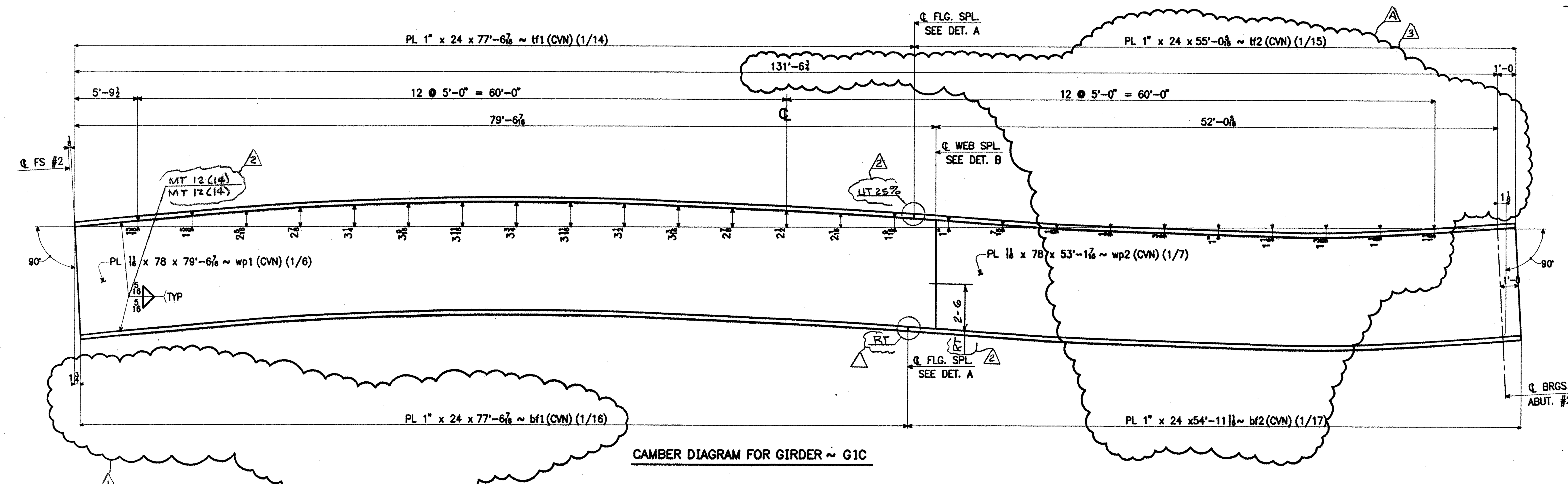
CAMBER DIAGRAM FOR GIRDER ~ G5A



FLANGE SPLICE DETAIL A



WEB SPLICE DETAIL B



CAMBER DIAGRAM FOR GIRDER ~ G1C

RECEIVED
CK'D BY WSS OK'D BY
DEC 27 2001
RESUBMIT ___ APPROVED ✓
BY QPW DATE 1/4/02

NOTES:

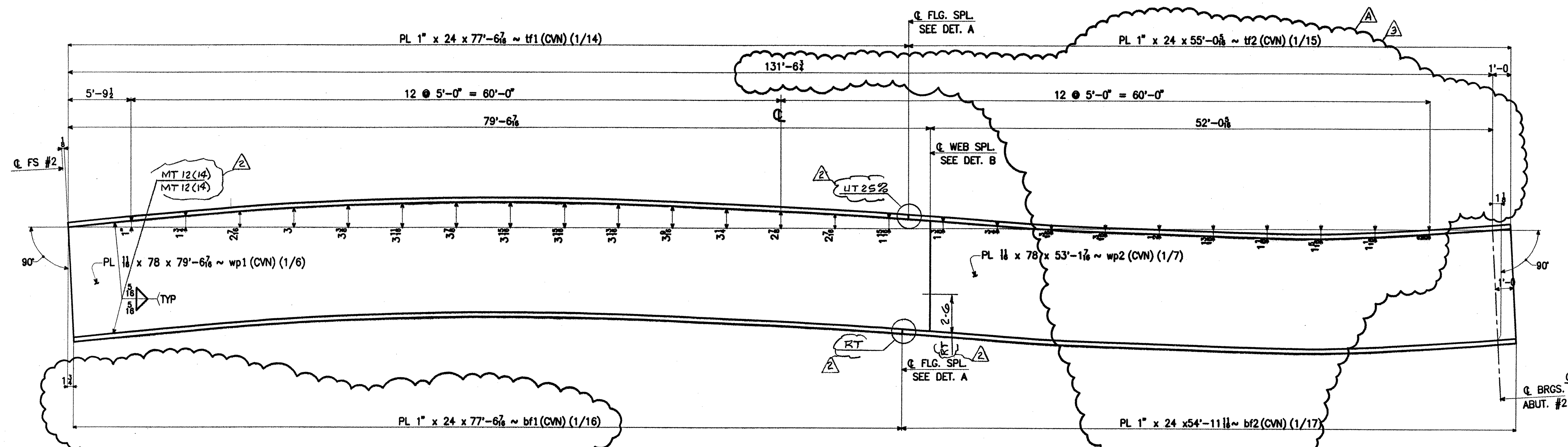
1. MATERIAL: ASTM A709-50W
2. CVN DENOTES CHARPY V-NOTCH TESTING REQUIRED.

3 FLG & WEB 12-17-01 AV
2 NDT 8-23-01 JCM
1 APPL COMMENTS 6-21-01 AV
A APPL COMMENTS 6-21-01 AV

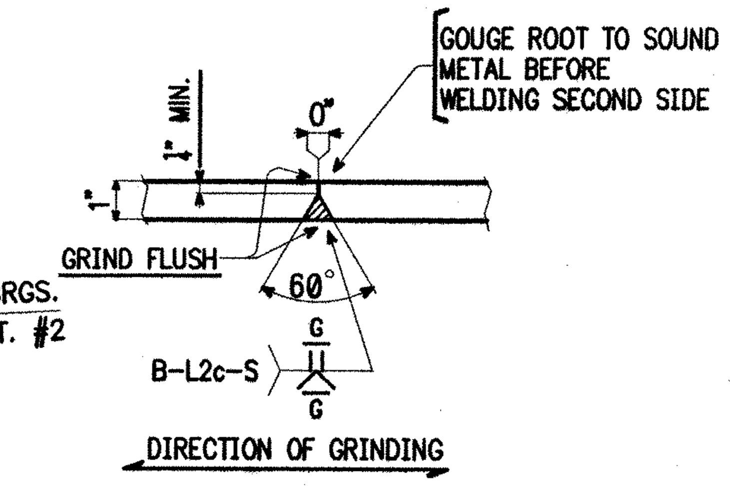
ITEM NO. 506.55			BR. NO. 3	PROJ. NO. BRZ 1444(22)	
TITLE: CAMBER DIAGRAMS					
APPROVED: 9-5-01			National Eastern Corporation, Plainville, Connecticut		
PRINT DIST.					
5	4-7-01	APPR.			
ORIG.	6-21-01	FAB.	JOB: T.H. 1 OVER THE WHITE RIVER ROYALTON, VERMONT		
5	7-13-01	APP			
12	8-23-01	FAB			
5	8-24-01	APP			
12	8-24-01	FAB	CUSTOMER: BECK & BELLUCCI, INC.		
5	12-18-01	APP			
11	12-18-01	FAB	DESIGNER: VERMONT AGENCY OF TRANSPORTATION		
			WORK ORDER NO.	DRAWING NO.	REV.
CHECKED	TS	3/01	15873	12-3	3
DRAWN	AV	3/01			

FOR APPROVAL
REVISED

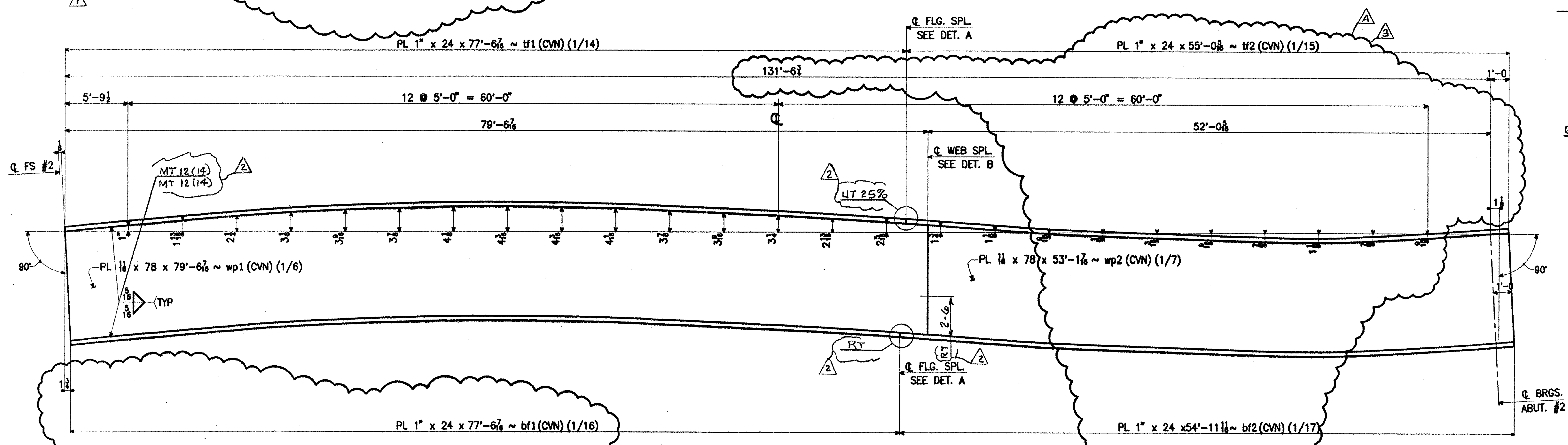
WORK ORDER NO.	DRAWING NO.	REV.
15873	12-4	3



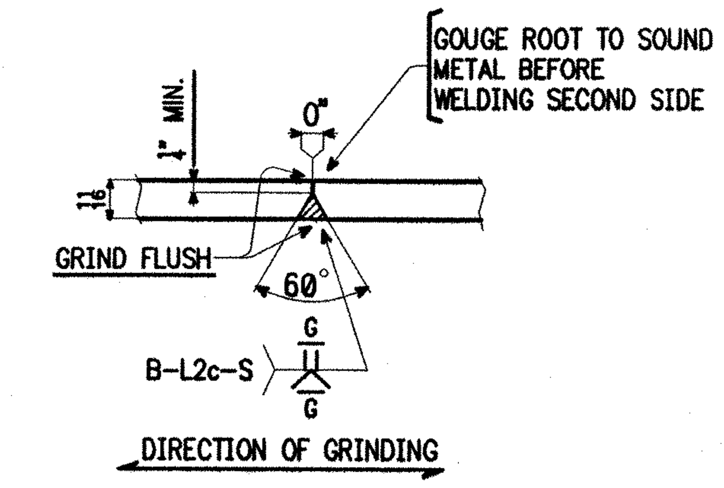
CAMBER DIAGRAM FOR GIRDER ~ G2C



FLANGE SPLICE DETAIL A



CAMBER DIAGRAM FOR GIRDER ~ G3C



WEB SPLICE DETAIL B

RECEIVED
CK'D BY (WG) OK'D BY
DEC 27 2001
RESUBMIT APPROVED ✓
BY CPW DATE 1/4/02

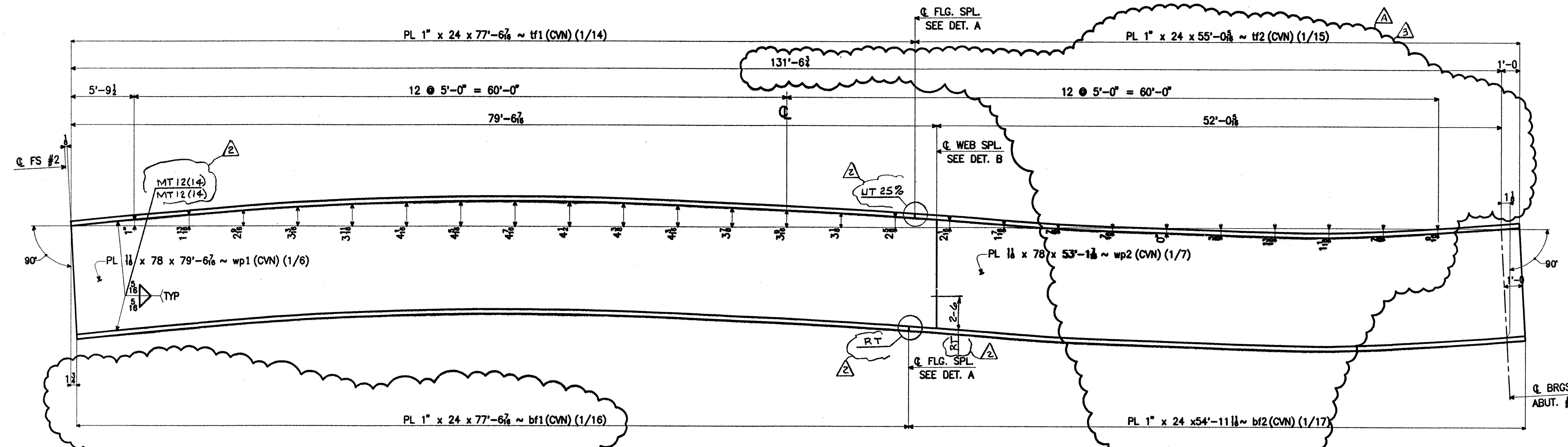
NOTES:
1. MATERIAL: ASTM A709-50W
2. CVN DENOTES CHARPY V-NOTCH TESTING REQUIRED.

3 FLG & WEB 12-17-01 AV
2 NDT 8-23-01 JCM
1 APPL COMMENTS 8-22-01 AV
A APPL COMMENTS 6-21-01 AV

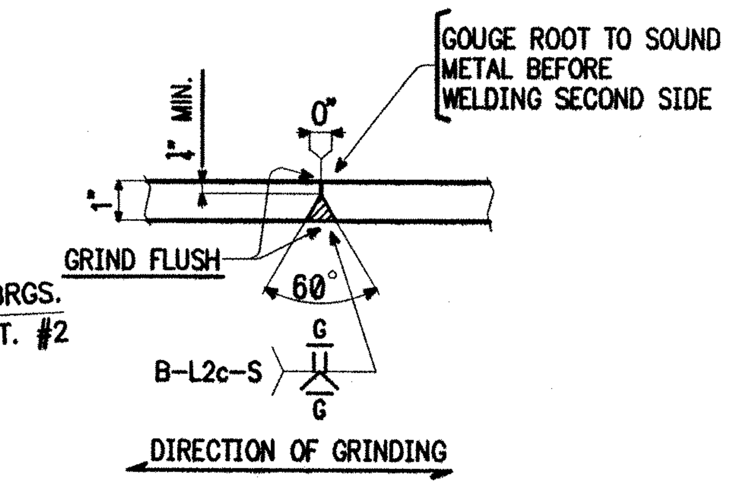
ITEM NO. 506.55			BR. NO. 3	PROJ. NO. BRZ 1444(22)	
TITLE: CAMBER DIAGRAMS					
APPROVED: 9-5-01			National Eastern Corporation, Plainville, Connecticut		
PRINT DIST.					
5	4-7-01	APPR.			
ORIG.	6-21-01	FAB.			
5	7-13-01	APP	JOB: T.H. 1 OVER THE WHITE RIVER ROYALTON, VERMONT		
12	8-23-01	FAB			
5	8-24-01	APP			
12	8-24-01	FAB			
5	12-18-01	APP	CUSTOMER: BECK & BELLUCCI, INC.		
11	12-18-01	FAB	DESIGNER: VERMONT AGENCY OF TRANSPORTATION		
			WORK ORDER NO.	DRAWING NO.	REV.
CHECKED	TS	3/01	15873	12-4	3
DRAWN	AV	3/01			

FOR APPROVAL
REVISED

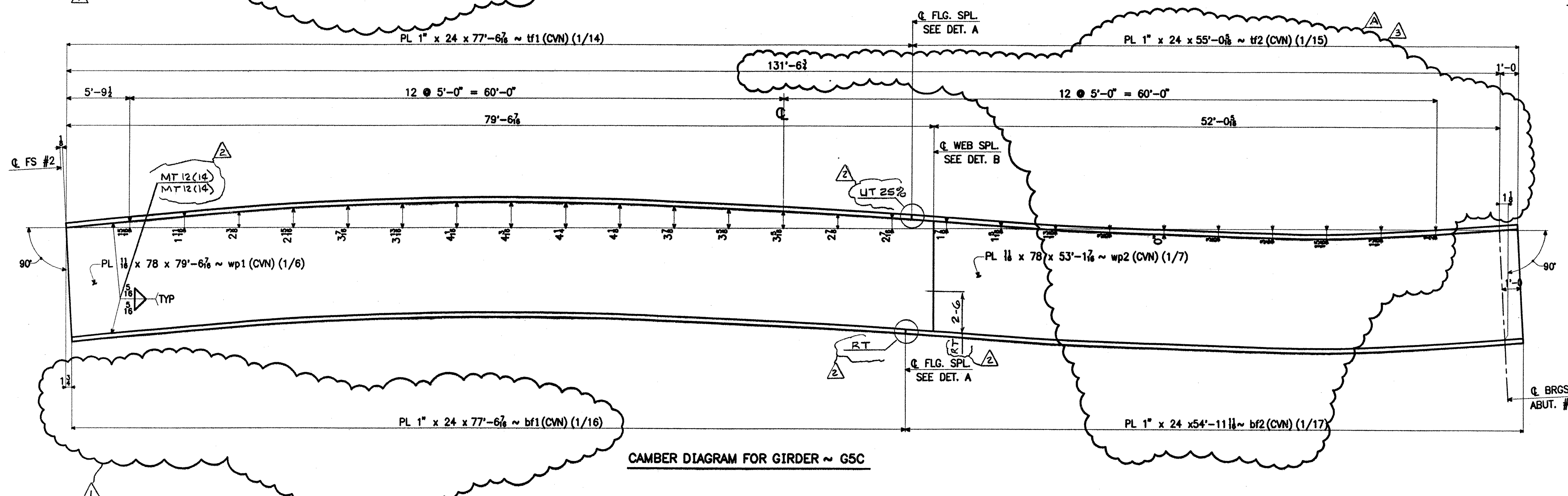
WORK ORDER NO.	DRAWING NO.	REV.
15873	12-5	3



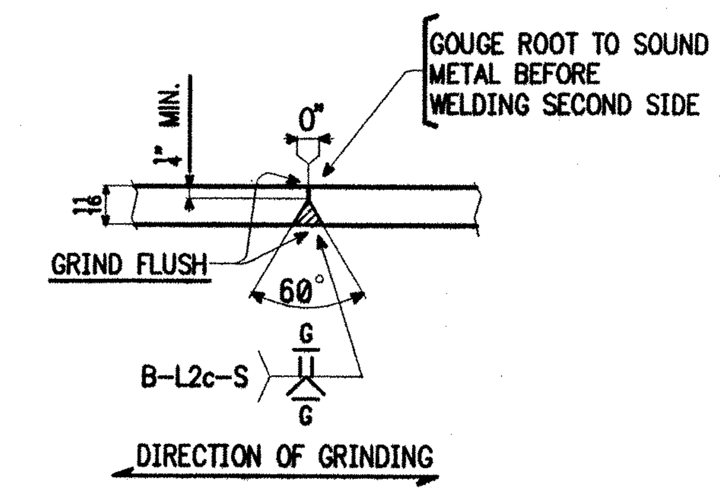
CAMBER DIAGRAM FOR GIRDER ~ G4C



FLANGE SPLICE DETAIL A



CAMBER DIAGRAM FOR GIRDER ~ G5C



WEB SPLICE DETAIL B

RECEIVED
CK'D BY LWS OK'D BY
DEC 27 2001
RESUBMIT APPROVED ✓
BY CPW DATE 1/4/02

NOTES:

1. MATERIAL: ASTM A709-50W
2. CVN DENOTES CHARPY V-NOTCH TESTING REQUIRED.

3 FLG & WEB 12-17-01 AV
2 NDT 8-23-01 4cm
1 APPL COMMENTS 8-22-01 AV
A APPL COMMENTS 6-21-01 AV

ITEM NO. 506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)
TITLE: CAMBER DIAGRAMS		

APPROVED: 9-5-01		
PRINT DIST.		
5	4-7-01	APPR.
ORIG.	6-21-01	FAB.
5	7-13-01	APP
12	8-23-01	FAB
5	8-24-01	APP
12	8-24-01	FAB
5	12-18-01	APP
11	12-18-01	FAB
CHECKED	TS	3/01
DRAWN	AV	3/01

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

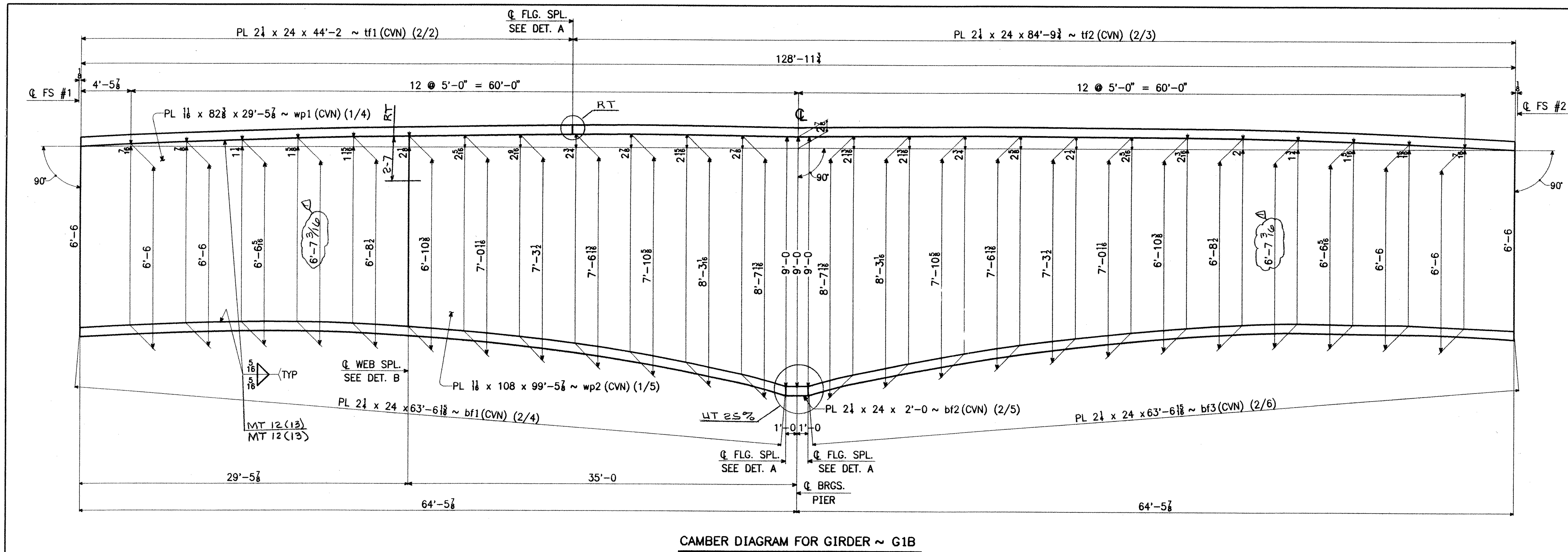
FOR APPROVAL
REVISED

CUSTOMER: BECK & BELLUCCI, INC.

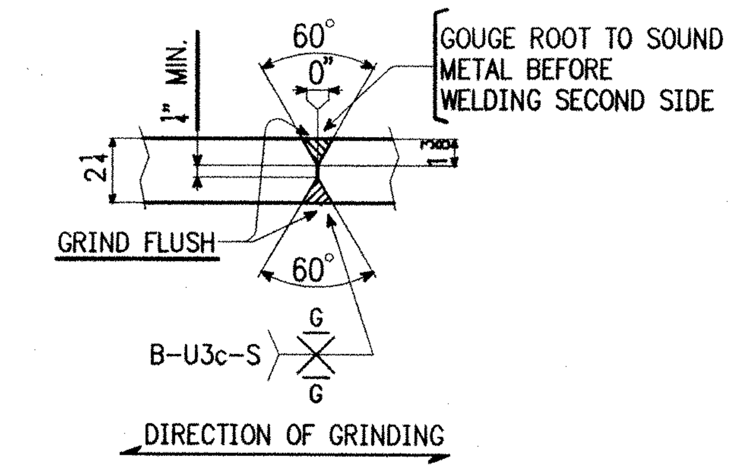
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

WORK ORDER NO.	DRAWING NO.	REV.
15873	12-5	3

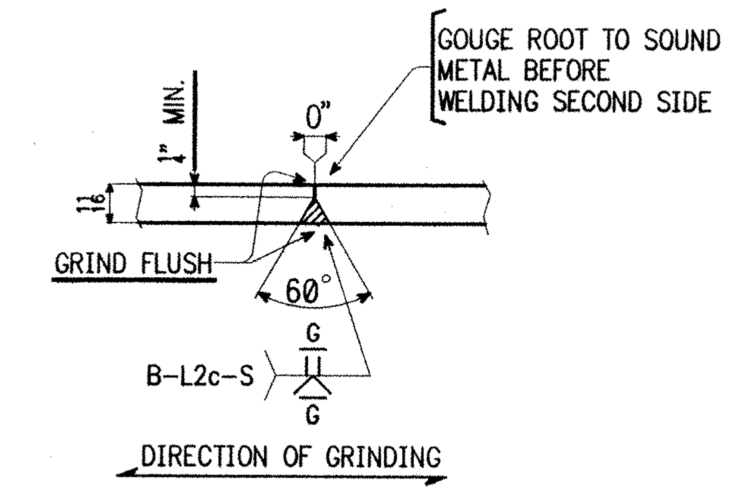
WORK ORDER NO.	DRAWING NO.	REV.
15873	12-6	2



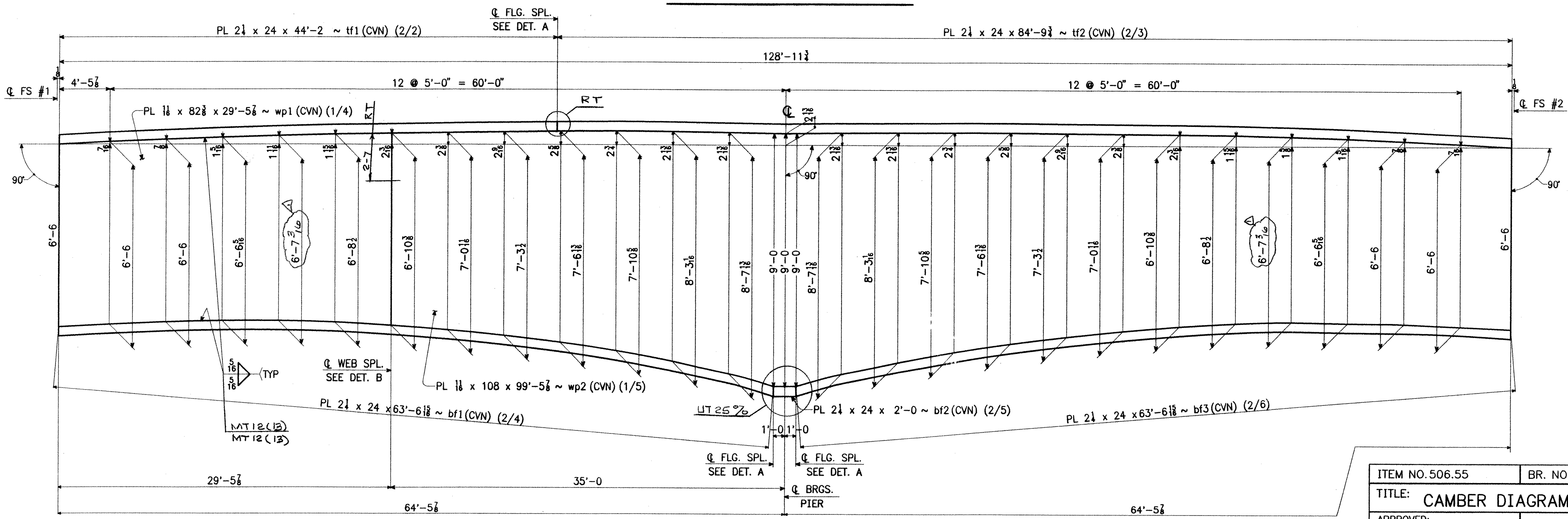
CAMBER DIAGRAM FOR GIRDER ~ G1B



FLANGE SPLICE DETAIL A



WEB SPLICE DETAIL B



CAMBER DIAGRAM FOR GIRDER ~ G2B

NOTES:

1. MATERIAL: ASTM A709-50W
2. CVN DENOTES CHARPY V-NOTCH TESTING REQUIRED.

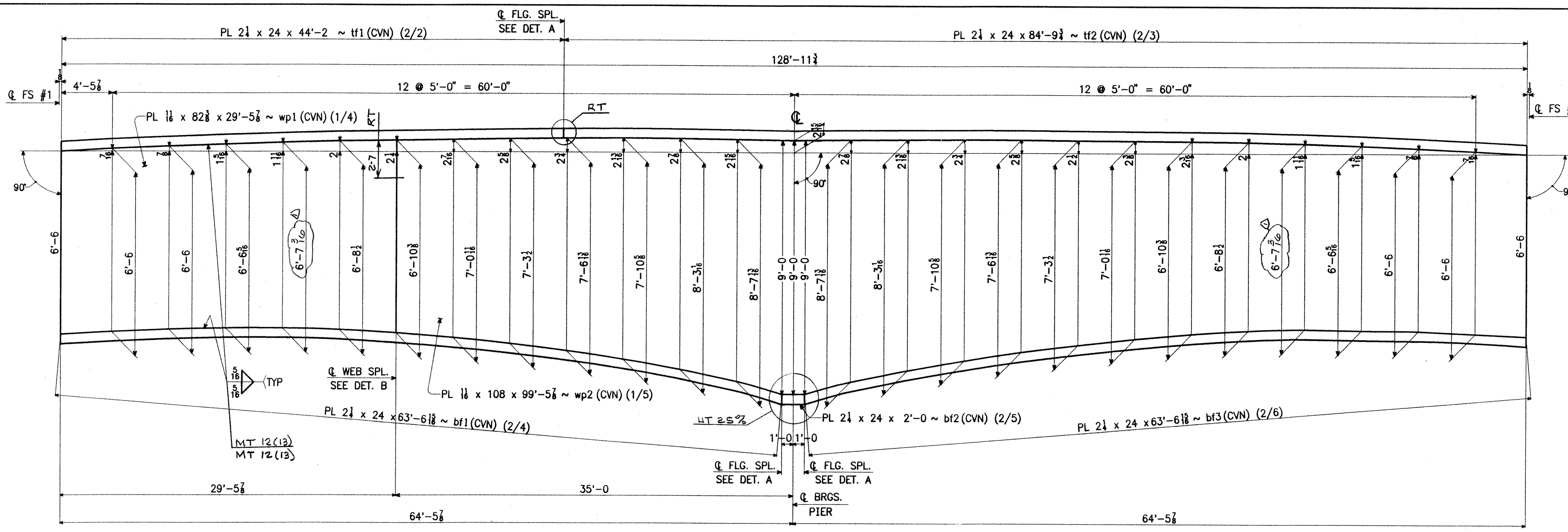
RECEIVED
CK'D BY WS OK'D BY
AUG 2 7 2001
RESUBMIT ___ APPROVED ✓
BY GW DATE 8/30/01

△2 NDT 8-23-01 JCM
△1 WEB DEPTH 6-25-01 JCM
△A APPL COMMENTS (GENREV) 6-21-01

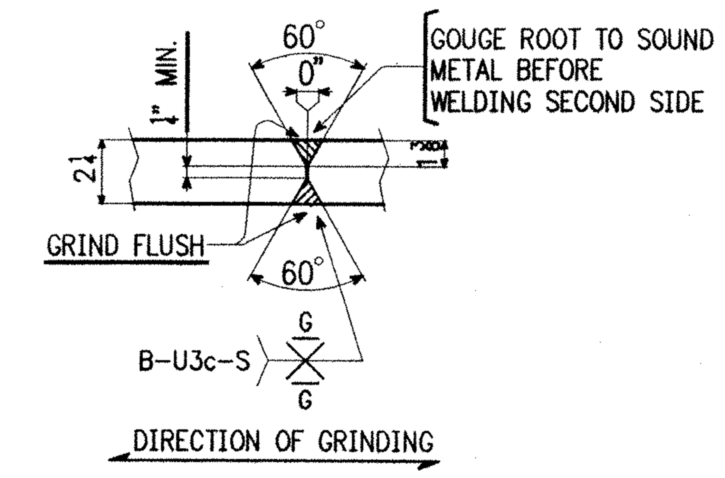
ITEM NO. 506.55			BR. NO. 3	PROJ. NO. BRZ 1444(22)
TITLE: CAMBER DIAGRAMS			FOR APPROVAL	
APPROVED:			National Eastern Corporation, Plainville, Connecticut	
PRINT DIST.				
5	4-7-01	APPR.		
ORIG.	6-21-01	FAB.	JOB: T.H. 1 OVER THE WHITE RIVER ROYALTON, VERMONT	
11	6-25-01	FAB		
5	7-13-01	APP		
5	8-24-01	APP		
12	8-24-01	FAB		
			CUSTOMER: BECK & BELLUCCI, INC.	
			DESIGNER: VERMONT AGENCY OF TRANSPORTATION	
CHECKED	TS	3/01	WORK ORDER NO. 15873	DRAWING NO. 12-6 / REV. 2
DRAWN	AV	3/01		

OK

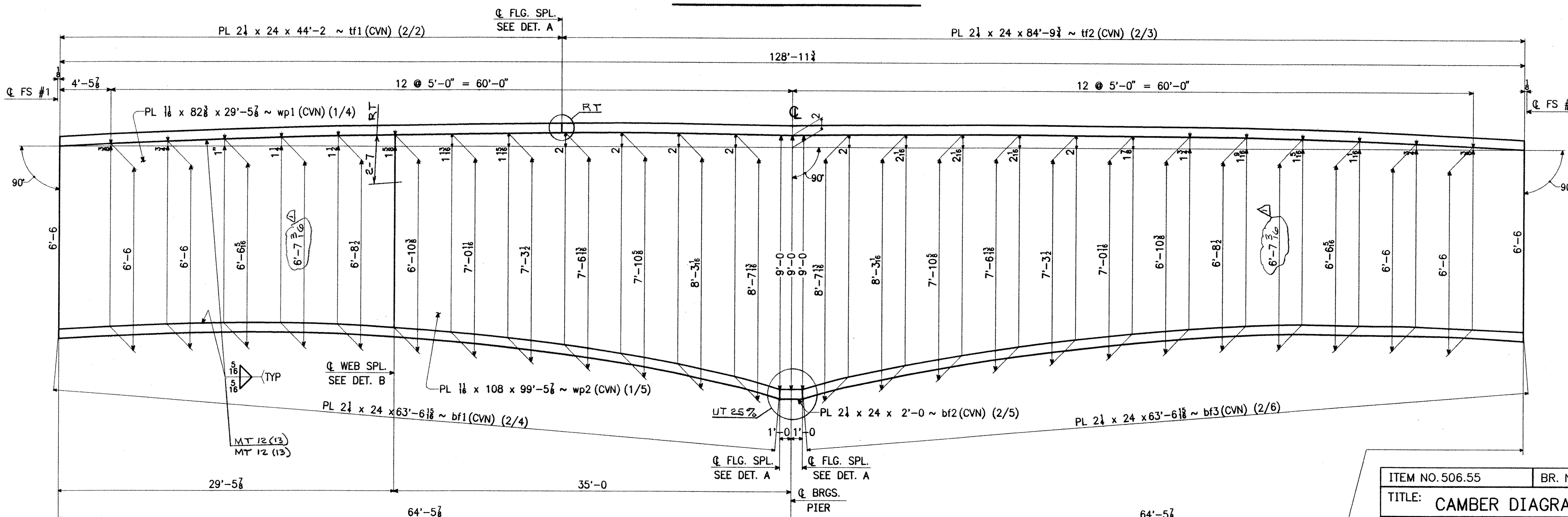
WORK ORDER NO.	DRAWING NO.	REV.
15873	12-7	2



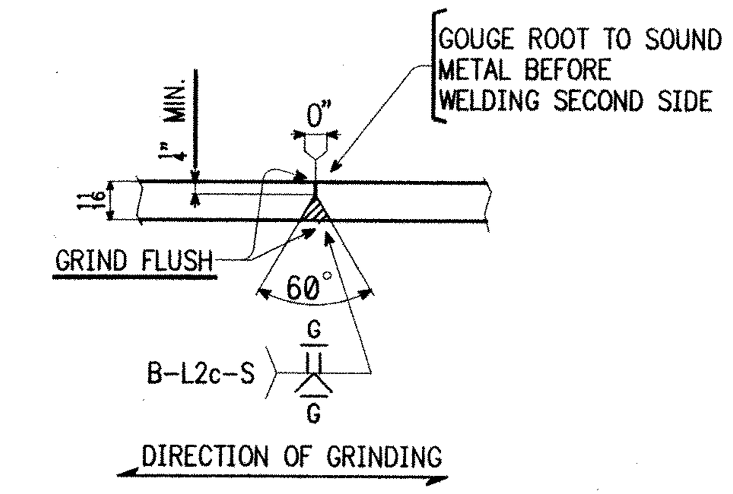
CAMBER DIAGRAM FOR GIRDER ~ G3B



FLANGE SPLICE DETAIL A



CAMBER DIAGRAM FOR GIRDER ~ G4B



WEB SPLICE DETAIL B

NOTES:

1. MATERIAL: ASTM A709-50W
2. CVN DENOTES CHARPY V-NOTCH TESTING REQUIRED.

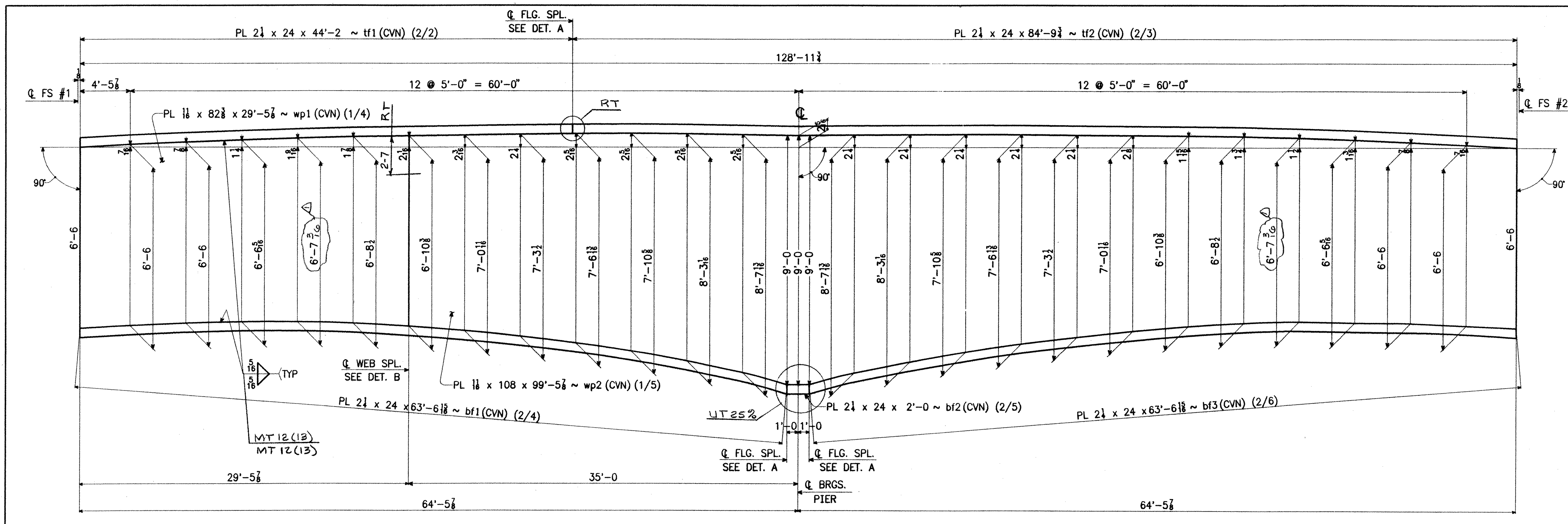
RECEIVED
CK'D BY WBS OK'D BY
AUG 2 7 2001
RESUBMIT APPROVED ✓
BY CPW DATE 8/30/01

△ NDT 8-23-01 JCM
△ WEB DEPTH 6-25-01 JCM
△ APPL COMMENTS (GEN REV) 6-21-01 AV

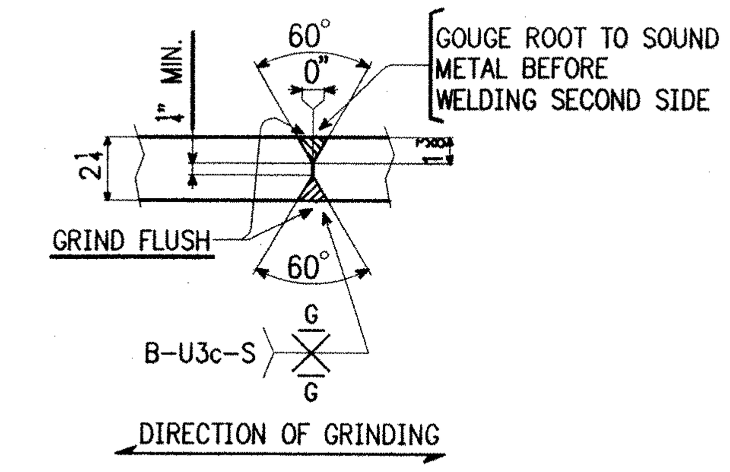
ITEM NO. 506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)
TITLE: CAMBER DIAGRAMS		FOR APPROVAL

APPROVED:			
PRINT DIST.			National Eastern Corporation, Plainville, Connecticut
5	4-7-01	APPR.	
ORIG.	6-21-01	FAB.	JOB: T.H. 1 OVER THE WHITE RIVER, ROYALTON, VERMONT
11	6-25-01	FAB	
5	7-13-01	APP	
5	8-24-01	APP	
12	8-24-01	FAB	CUSTOMER: BECK & BELLUCCI, INC.
			DESIGNER: VERMONT AGENCY OF TRANSPORTATION
CHECKED	TS	3/01	WORK ORDER NO. 15873 — DRAWING NO. 12-7 — REV. 2
DRAWN	AV	3/01	

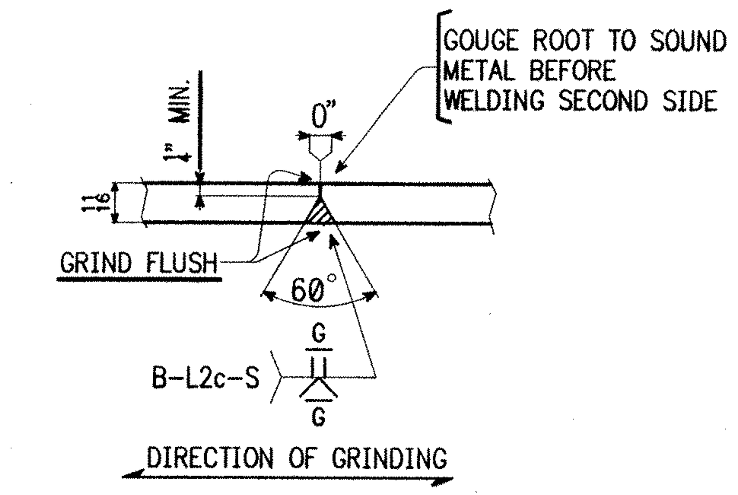
WORK ORDER NO.	DRAWING NO.	REV.
15873	12-8	2



CAMBER DIAGRAM FOR GIRDER ~ G5B



FLANGE SPLICE DETAIL A



WEB SPLICE DETAIL B

NOTES:

1. MATERIAL: ASTM A709-50W
2. CVN DENOTES CHARPY V-NOTCH TESTING REQUIRED.

RECEIVED
CK'D BY WGS OK'D BY
AUG 2 7 2001
RESUBMIT APPROVED ✓
BY CPW DATE 8/30/01

3 NDT 8-23-01 JCM
2 WEB DEPTH 6-25-01 JCM
1 APPL COMMENTS (GEN REV) 6-21-01 AV

ITEM NO. 506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)
TITLE: CAMBER DIAGRAMS		FOR APPROVAL

APPROVED: PRINT DIST.		
5	4-7-01	APPR.
ORIG.	6-21-01	FAB.
11	6-25-01	FAB
5	7-13-01	APP
5	8-24-01	APP
12	8-24-01	FAB
CHECKED	TS	3/01
DRAWN	AV	3/01

NE National Eastern Corporation
Plainville, Connecticut

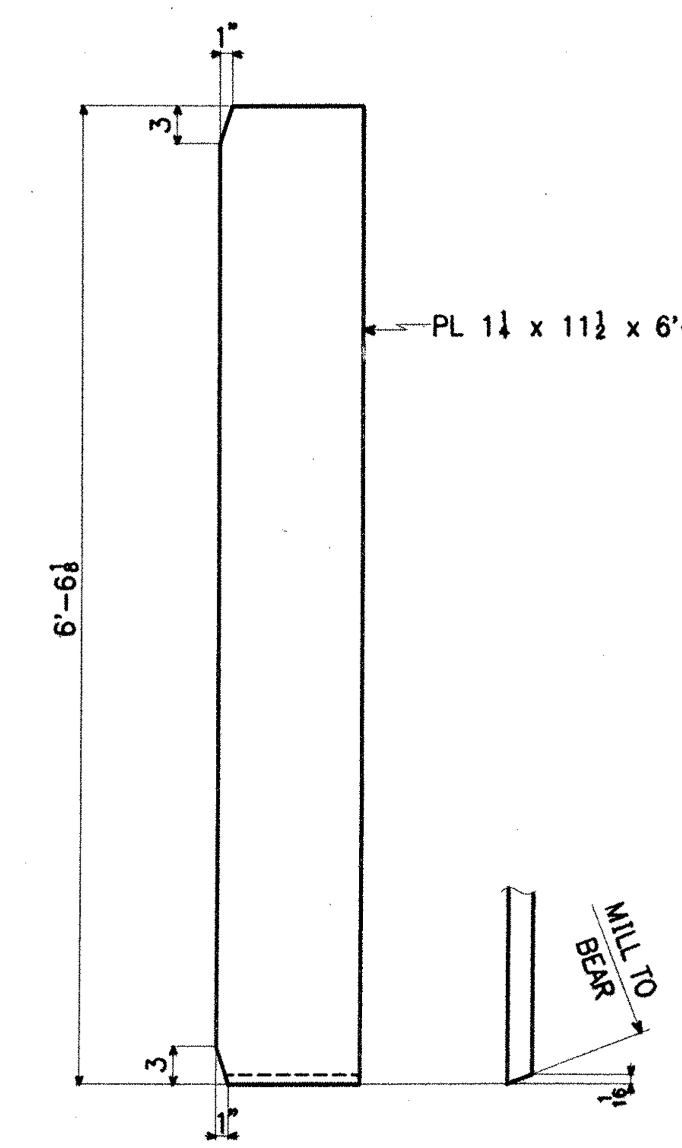
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

CUSTOMER: BECK & BELLUCCI, INC.

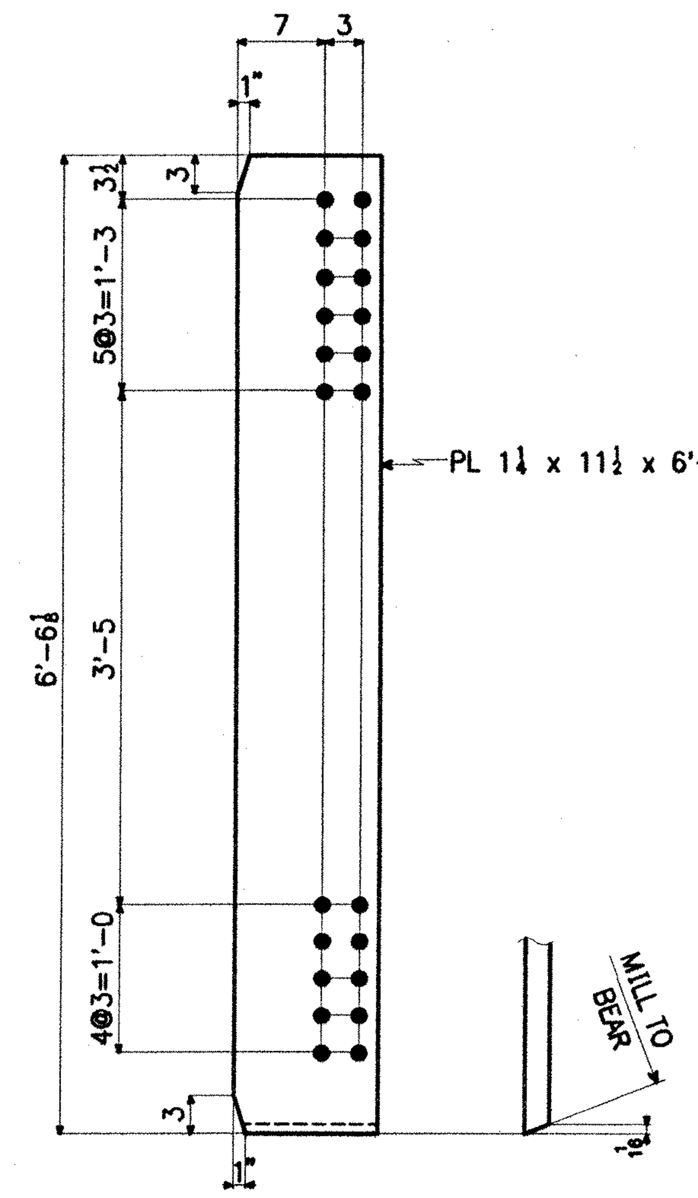
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

WORK ORDER NO.	DRAWING NO.	REV.
15873	12-8	2

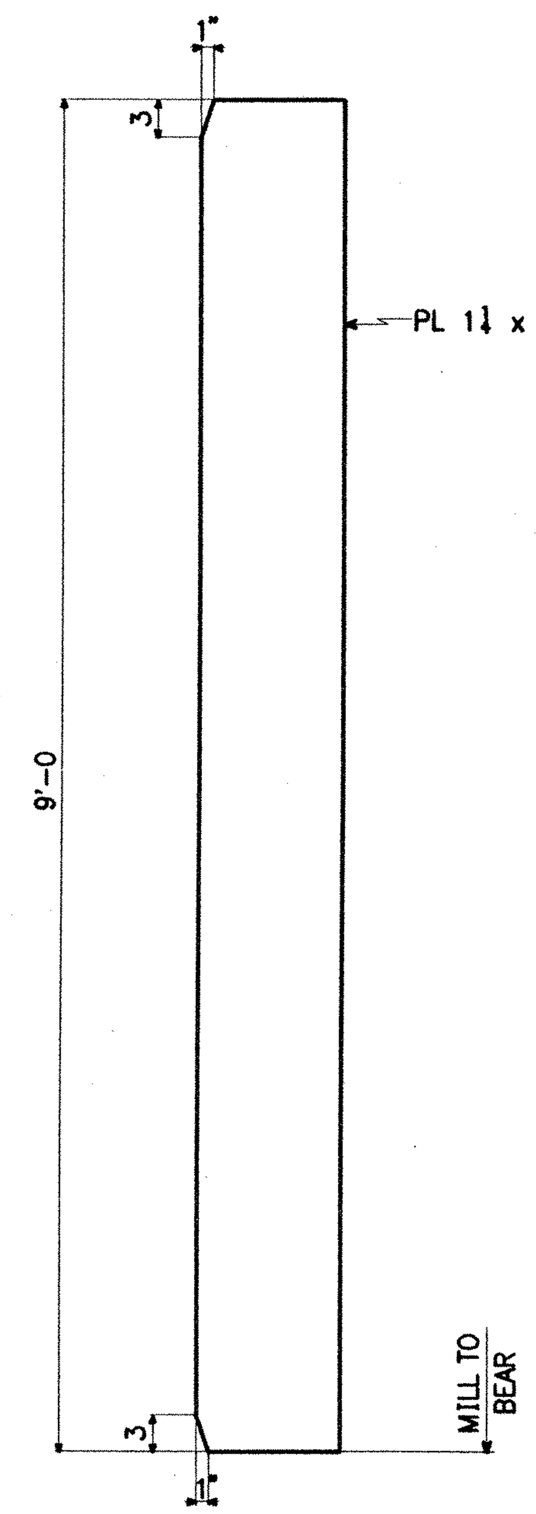
WORK ORDER NO.	DRAWING NO.	REV.
15873	12-9	B



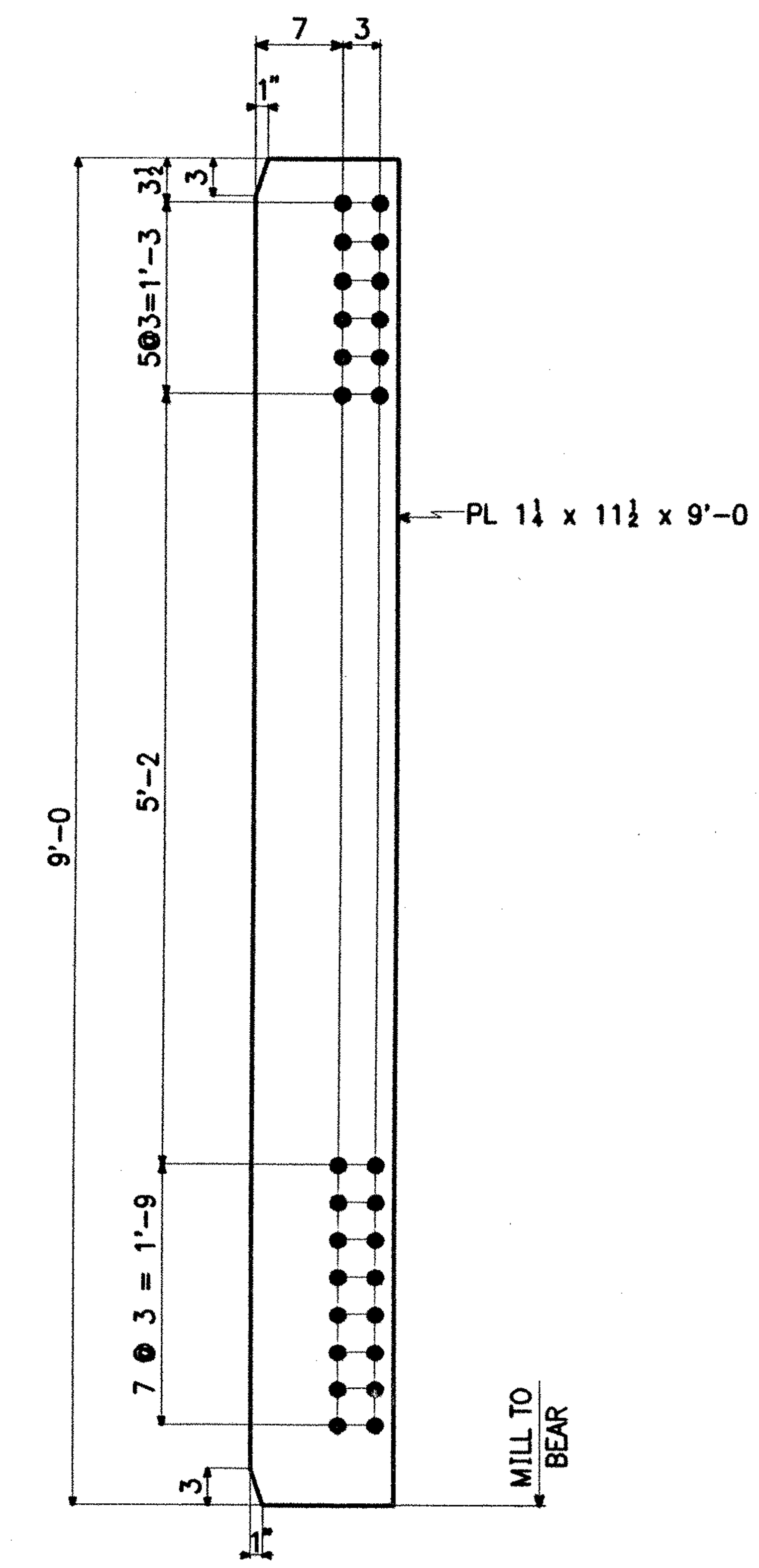
2 ~ BEARING STFS. ~ bs1[R] 3/12 S5/11
2 ~ BEARING STFS. ~ bs1[L]



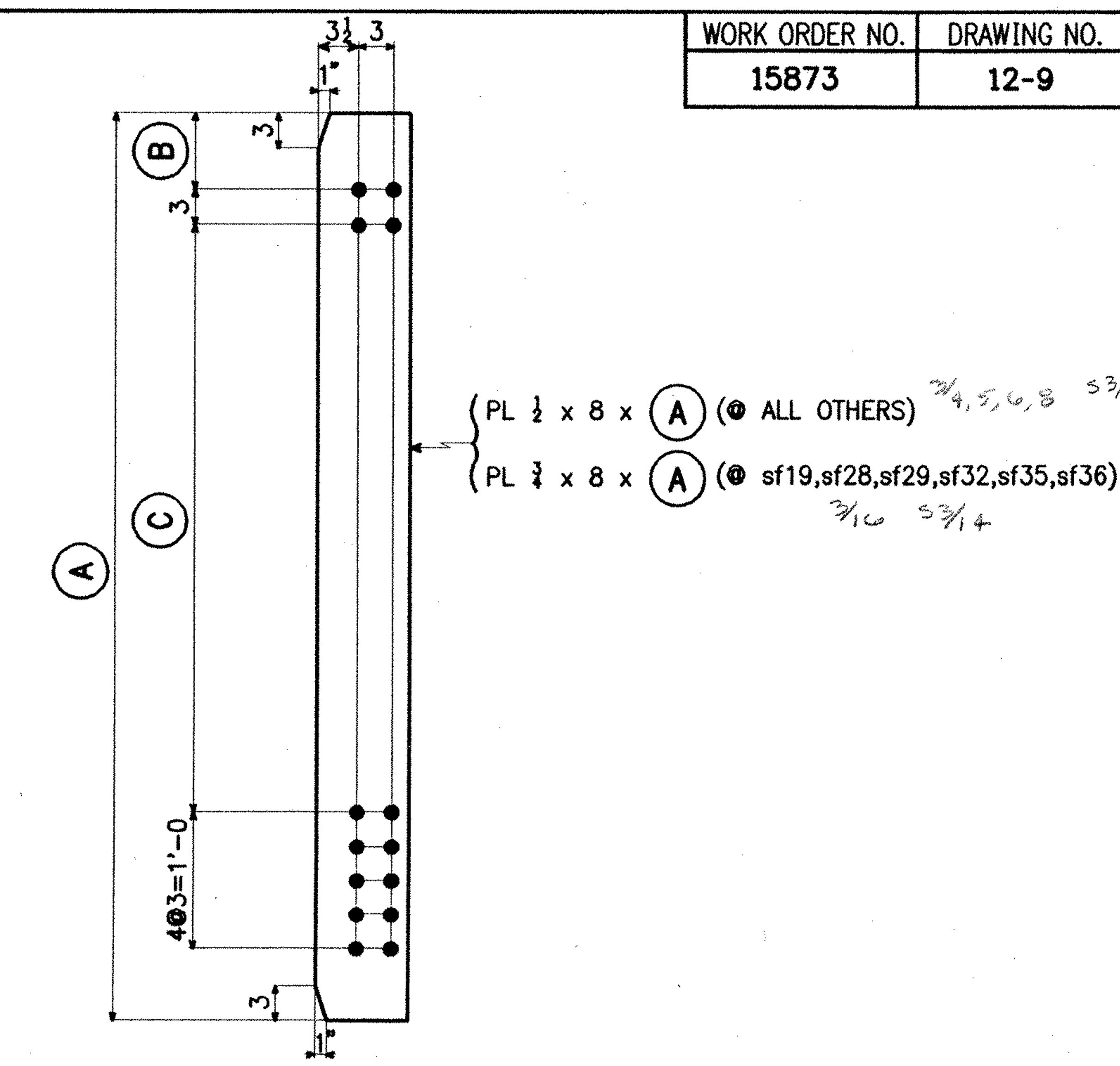
8 ~ BEARING STFS. ~ bs2[R] 3/12 S5/11
8 ~ BEARING STFS. ~ bs2[L]



2 ~ BEARING STFS. ~ bs3 3/12 S5/11



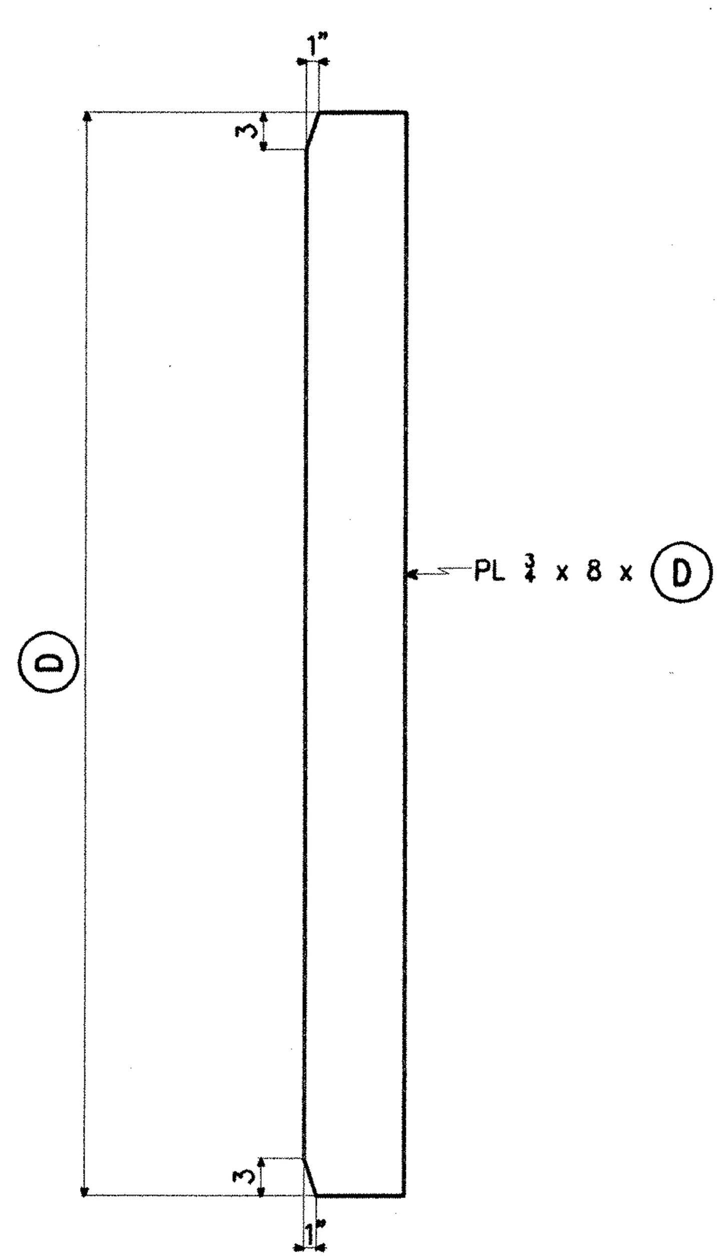
8 ~ BEARING STFS. ~ bs3 3/12 S5/11



INT. CONN. PLTS.

MARK	No. REQ'D.	A	B	C
sf1	40	6'-6	3½	4'-2¼
sf2	5	6'-6	4½	4'-2¼
sf3	5	6'-6	4¾	4'-2¼
sf4	10	6'-6	5½	4'-2¼
sf5	10	6'-6	6	4'-2¼
sf6	3	6'-6	7¼	4'-2¼
sf7	4	6'-6 7/16	3½	4'-2¼
sf8	7	6'-6	7½	4'-2¼
sf9	1	6'-6 7/16	4¾	4'-2¼
sf10	1	6'-6 7/16	5½	4'-2¼
sf11	4	6'-6 11/16	3½	4'-2¼
sf12	1	6'-6 7/16	6	4'-2¼
sf13	1	6'-6 7/16	7	5'-0
sf14	2	7'-4¼	3½	5'-0
sf15	1	6'-6 11/16	5½	5'-0

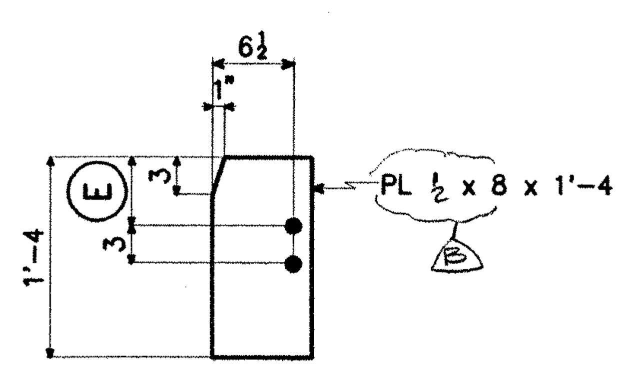
MARK	No. REQ'D.	A	B	C
sf16	1	6'-6 11/16	6	5'-0
sf17	1	6'-6 11/16	7	5'-0
sf18	2	7'-5¼	3½	5'-0
sf19	1	7'-4¼	4¾	5'-0
sf20	1	7'-4¼	5½	5'-0
sf27	1	7'-4¼	6	5'-0
sf28	1	7'-4¼	7	5'-0
sf29	1	7'-5¼	4½	5'-0
sf30	1	7'-5¼	5½	5'-0
sf31	1	7'-5¼	6	5'-0
sf32	1	7'-5¼	7	5'-0
sf33	1	6'-6 11/16	4½	5'-0
sf35	2	7'-4¼	3½	5'-0
sf36	2	7'-5¼	3½	5'-0



INT. STIFFS.

MARK	No. REQ'D.	D
s1	5	8'-1⅞
s2	5	8'-3¼
s3	1	7'-4¼
s4	1	7'-5¼

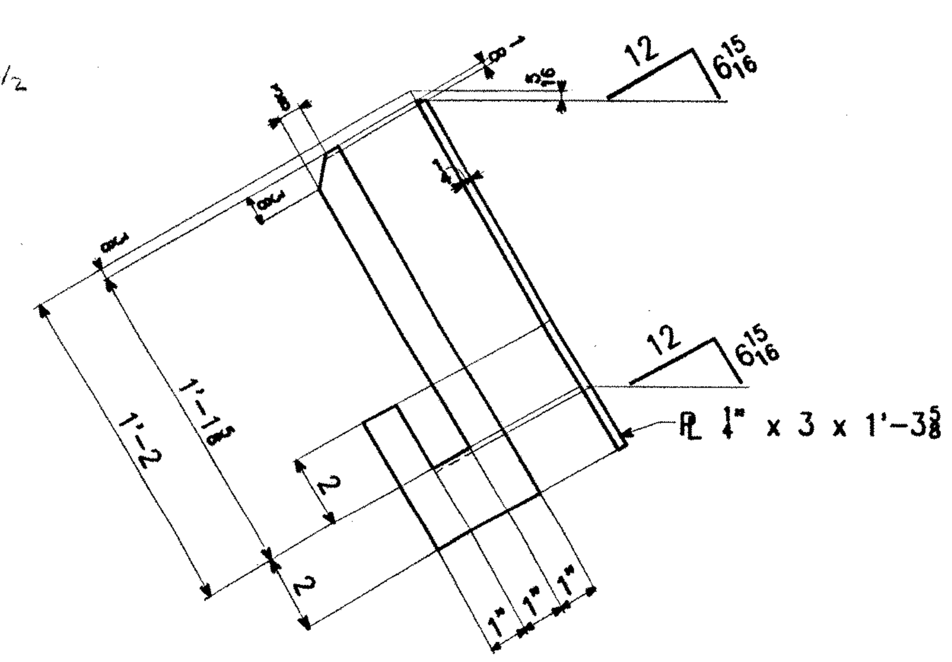
3/17 S3/14
3/17
3/16
3/16



UTILITY CONN. PLTS.

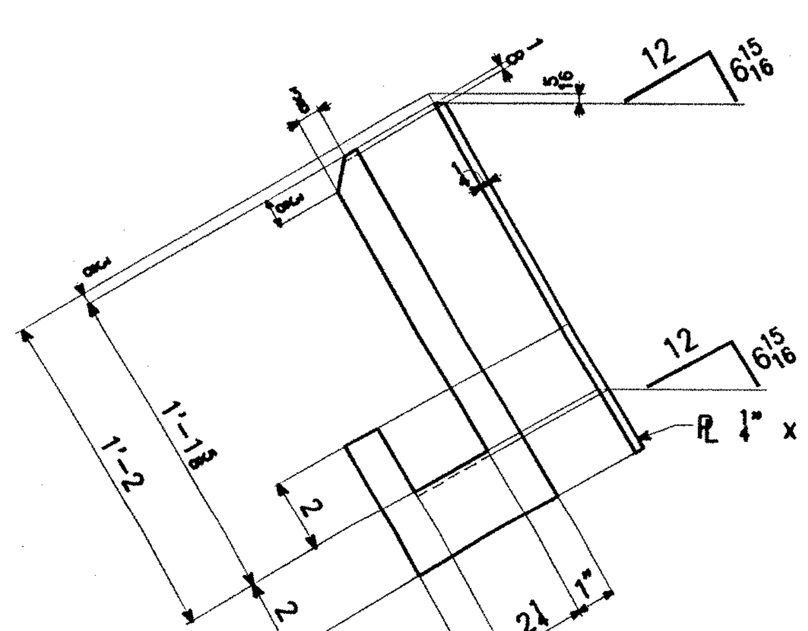
MARK	No. REQ'D.	E
sf21	34	8
sf22	17	6½
sf23	17	6¾
sf24	10	9¼
sf25	14	9½
sf26	102	5½
sf34	10	9

3/8 S3/2



2 ~ dp1[R] 3/11 S3/10
2 ~ dp1[L]

RECEIVED
CK'D BY WBS OK'D BY
AUG 2 7 2001
RESUBMIT APPROVED As Noted
BY OPW DATE 8/30/01



2 ~ dp2[R] 3/11 S3/10
2 ~ dp2[L]

STEEL: ASTM ☐ A709-36 ☐ A709-50 ☒ A709-50W ☐ Unless Noted ☐
WELDING ELECTRODE: ☒ E70 ☐ See Welding Proc. ☐ None ☐
HOLES: ☐ 13/16 ☒ 15/16 ☐ 1 1/16 ☐ Unless Noted ☐ As Noted ☐ None
PAINT: ☒ None ☐ Galv. After Fab. ☐ As Noted ☐
SPECIAL PAINT:
SPECIAL CLEANING: ☒ Blast Clean SSPC SP6 10 ☐ None

ITEM NO. 506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22)

TITLE: GIRDER STANDARD PARTS FOR APPROVAL

APPROVED:

PRINT DIST.		APPR.
5	4-7-01	APP
ORIG.		FAB.
5	7-13-01	APP
5	8-24-01	AFP

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

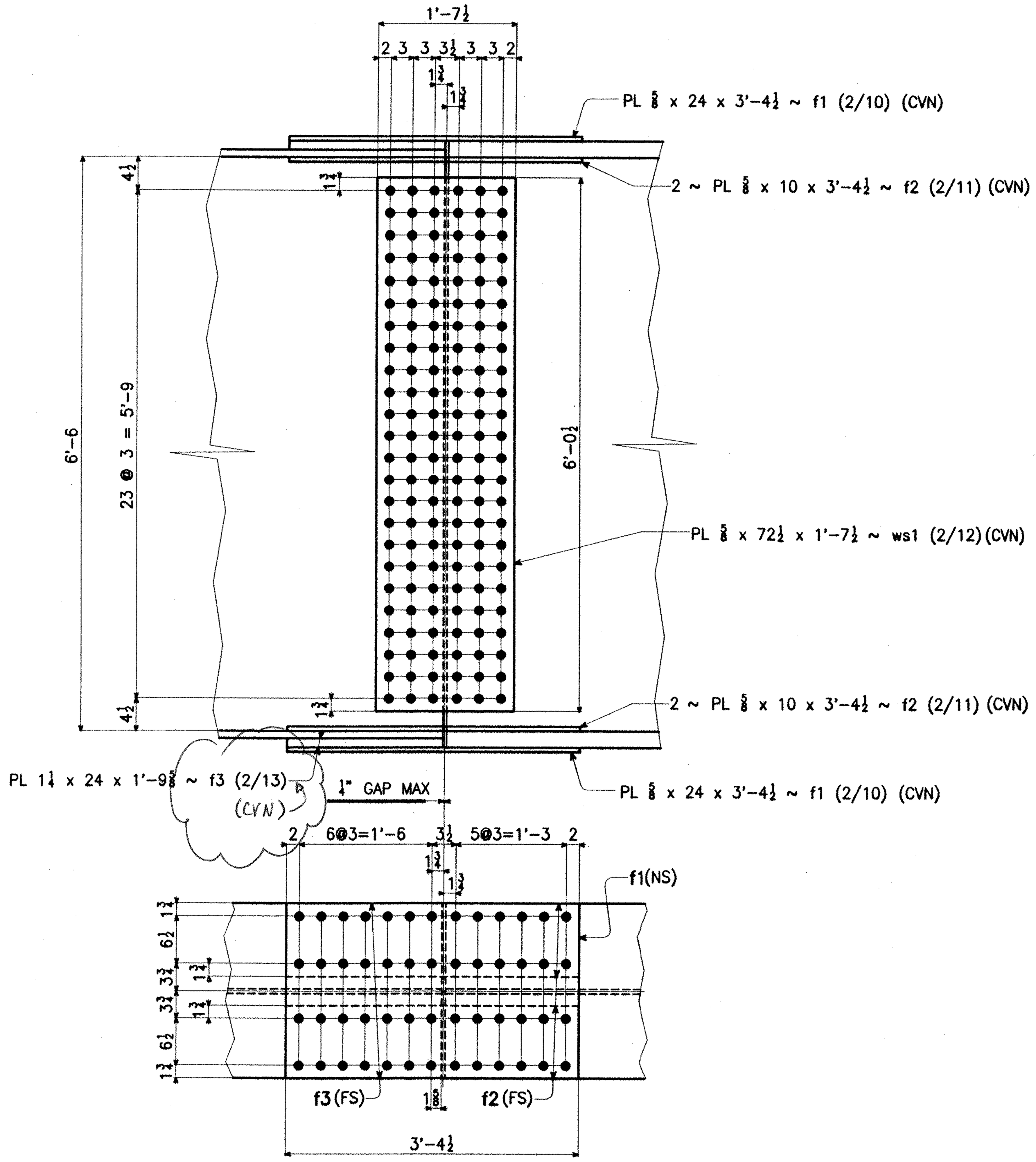
CUSTOMER: BECK & BELLUCCI, INC.
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

CHECKED	TS	3/01
DRAWN	AV	3/01

WORK ORDER NO.	DRAWING NO.	REV.
15873	12-9	B

OK

WORK ORDER NO.	DRAWING NO.	REV.
15873	12-10	



FIELD SPLICE #1 (LINES 1 – 5) (AS SHOWN)

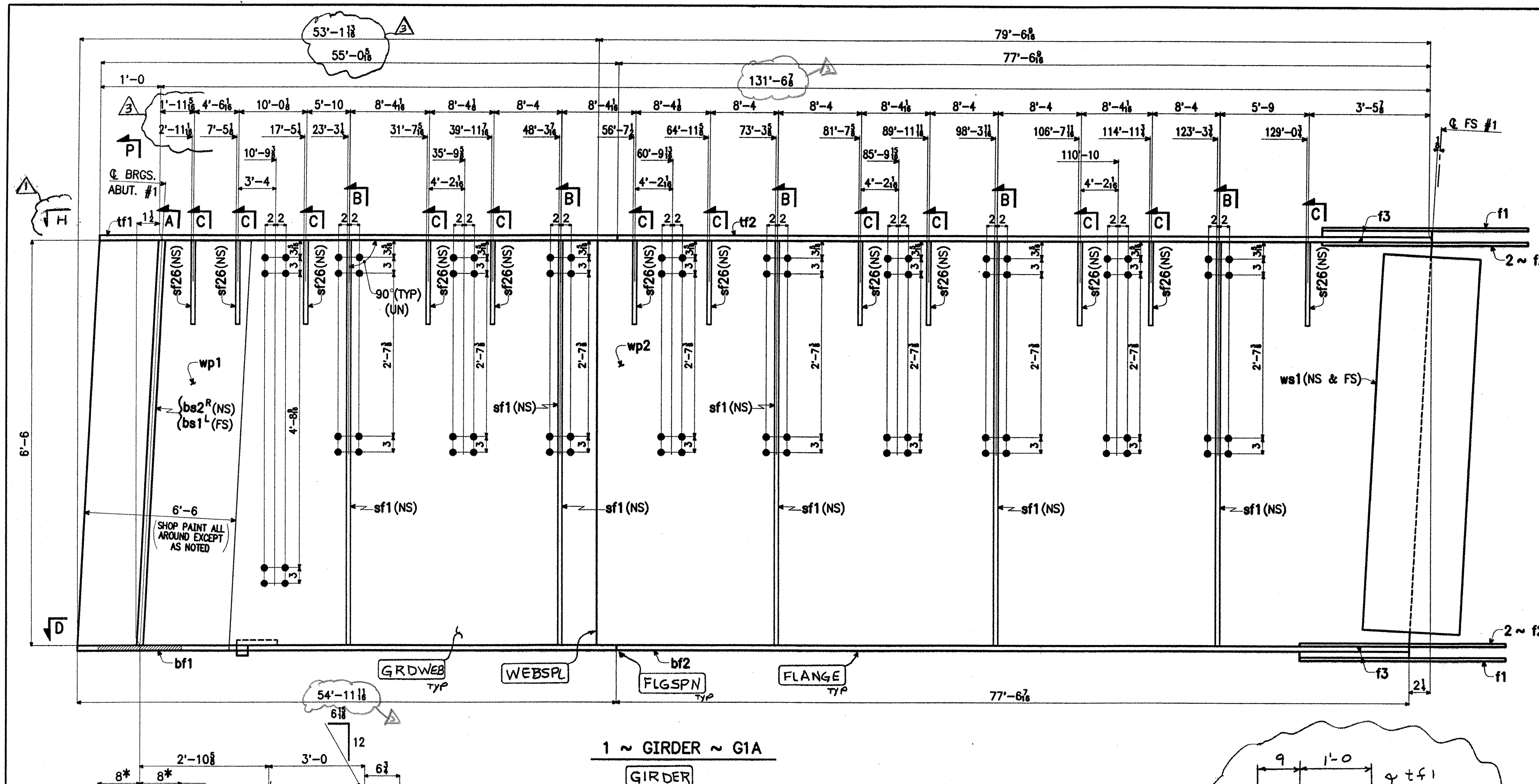
FIELD SPLICE #2 (LINES 1 – 5) (ROTATE 180°)

NOTES:
1. FOR GENERAL NOTES, SEE SHT. GN1.
2. MATERIAL: A709-50W
3. HOLES TO BE REAM ASSEMBLED (RA) TO $\frac{15}{16}$"ø

RECEIVED
CK'D BY WES OK'D BY
AUG 2 7 2001
RESUBMIT APPROVED As Noted
BY CPW DATE 8/30/01

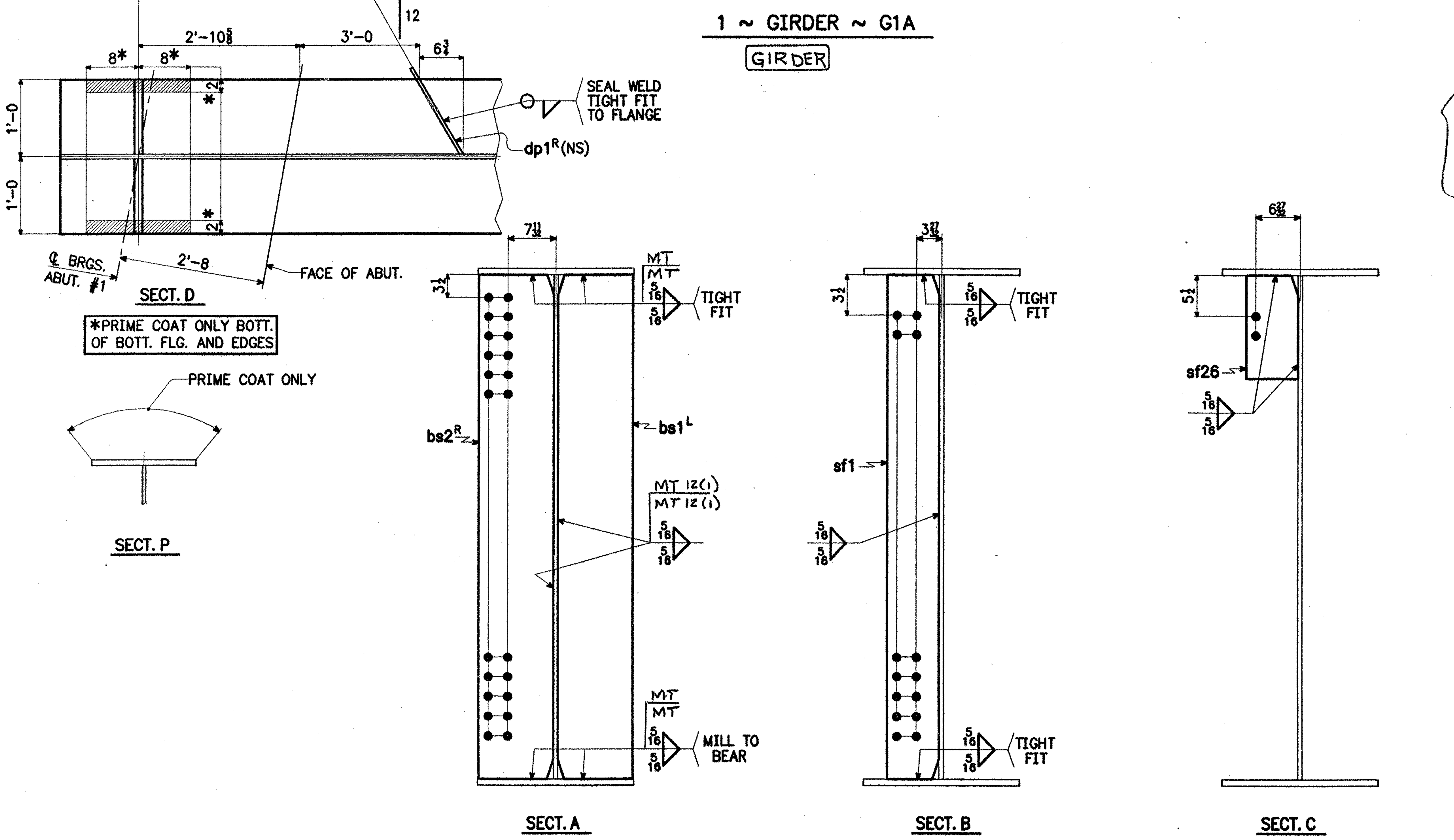
ITEM NO.506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)
TITLE: FIELD SPLICES		FOR APPROVAL

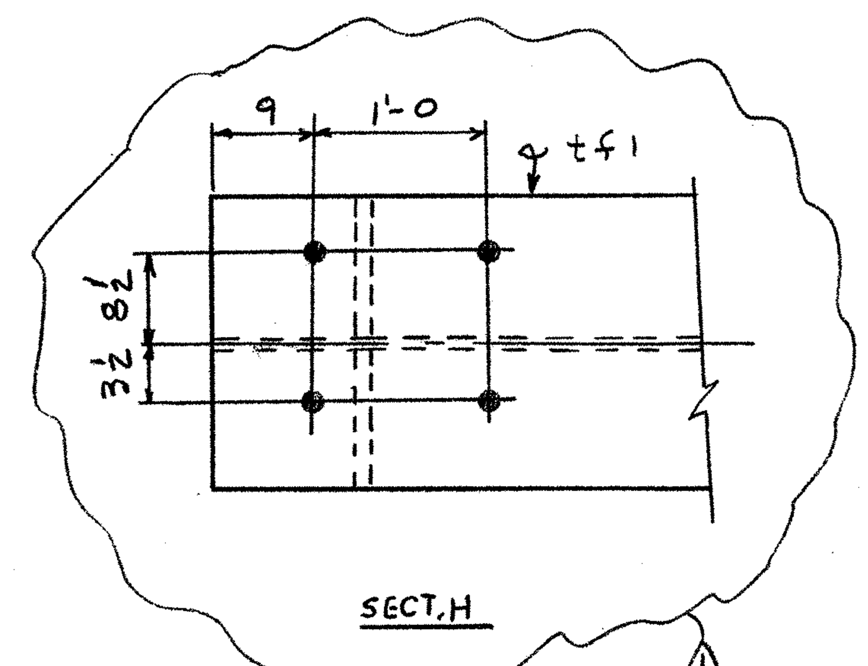
APPROVED:			
PRINT DIST.			National Eastern Corporation, Plainville, Connecticut
5	4-2-01	APPR.	
ORIG.		FAB.	
5	7-13-01	APP	JOB: T.H. 1 OVER THE WHITE RIVER ROYALTON, VERMONT
5	8-14-01	APP	
			CUSTOMER: BECK & BELLUCCI, INC.
			DESIGNER: VERMONT AGENCY OF TRANSPORTATION
CHECKED	TS	3/01	WORK ORDER NO. 15873 — DRAWING NO. 12-10 — REV.
DRAWN	AV	3/01	



1 ~ GIRDER ~ G1A

GIRDER





NOTES:

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-1.
3. FOR GIRDER STANDARD DETAILS, SEE DWG. 12-9.
4. FOR FIELD SPLICE DETAIL, SEE DWG. 12-10.

RECEIVED
CK'D BY WJJ OK'D BY
DEC 27 2001
RESUBMIT APPROVED As Noted
BY CPW DATE 1/4/02

3 FLG, WEB & EXT DIM 12-17-01 AV
2 PAINT NOTE 11-19-01 JCM
1 SECT H 9-11-01 JCM

SHIP MARK	BILL OF MATERIAL					WORK ORDER NO. 15873		DRAWING NO. 12-11	REV. 3
	NO.	MARK	SHAPE	LENGTH			ITEM NO.	WT.	REMARKS
G1A	1		GIRDER						
	1	tf1	PL 1" x 24	55'-0 5/16	3	5-1/15	1/9	4494	CVN
	1	tf2	PL 1" x 24	77'-6 9/16		5-1/14	1/10	6333	CVN
	1	bf1	PL 1" x 24	54'-11 11/16	3	5-1/15	1/11	4490	CVN
	1	bf2	PL 1" x 24	77'-6 7/16		5-1/14	1/12	6332	CVN
	1	wp1	PL 11/16 x 78	53'-1 13/16		5-2/3	1/2		CVN
	1	wp2	PL 11/16 x 78	79'-6 9/16		5-2/2	1/3	24185	CVN
	1	bs1R	PL 1 1/4 x 11 1/2	6'-6 1/8		5-1/11	3/2	318	M1E
	1	bs2L	PL 1 1/4 x 11 1/2	6'-6 1/8		{	3/2	318	M1E
	5	sf1	PL 1/2 x 8	6'-6		5-3/2	3/4	442	
12	11	sf26	PL 1/2 x 8	1'-4		{	3/8	200	
	1	dp1R	PL 1/4 x 3	1'-3 5/8		5-3/12	3/10	3	
	2	f1	PL 5/8 x 24	3'-4 1/2		5-2/5	2/10	345	CVN
	4	f2	PL 5/8 x 10	3'-4 1/2		{	2/11	287	CVN
	2	f3	PL 1 1/4 x 24	1'-9 5/8		5-1/12	2/13	368	
	2	ws1	PL 5/8 x 72 1/2	1'-7 1/2		5-2/5	2/12	501	CVN
					3			48616 #	

STEAL: ASTM — A709-36 / A709-50 / [X] A709-50W / Unless Noted
WELDING ELECTRODE: [X] E70 / See Welding Proc. / None
HOLES: 13/16 / [X] 15/16 / 1 1/16 / Unless Noted / As Noted / None
PAINT: 2 None / Galv. After Fab. / As Noted / [X] SEE SHT GN1
SPECIAL PAINT:
SPECIAL CLEANING: [X] Blast Clean SSPC SP10 / None

ITEM NO. 506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)

TITLE: GIRDER ~ G1A

APPROVED: 9-5-01		
PRINT DIST.		
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP
5	8-24-01	APP
5	9-12-01	APP
12	9-12-01	FAB
5	11-19-01	APP
11	11-19-01	FAB
5	12-18-01	APP
11	12-18-01	FAB
CHECKED	TS	3/01
DRAWN	AV	3/01

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

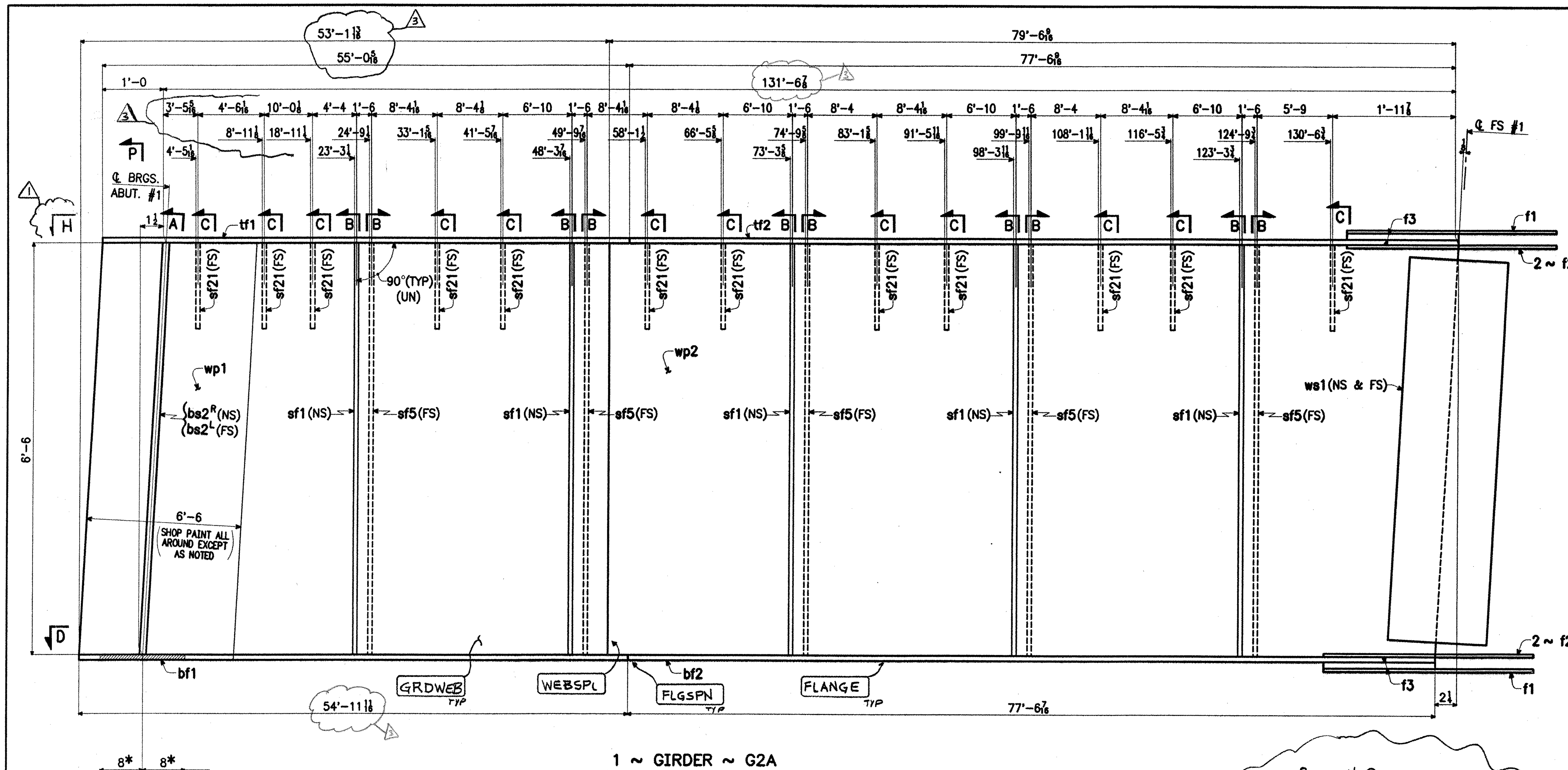
FOR APPROVAL

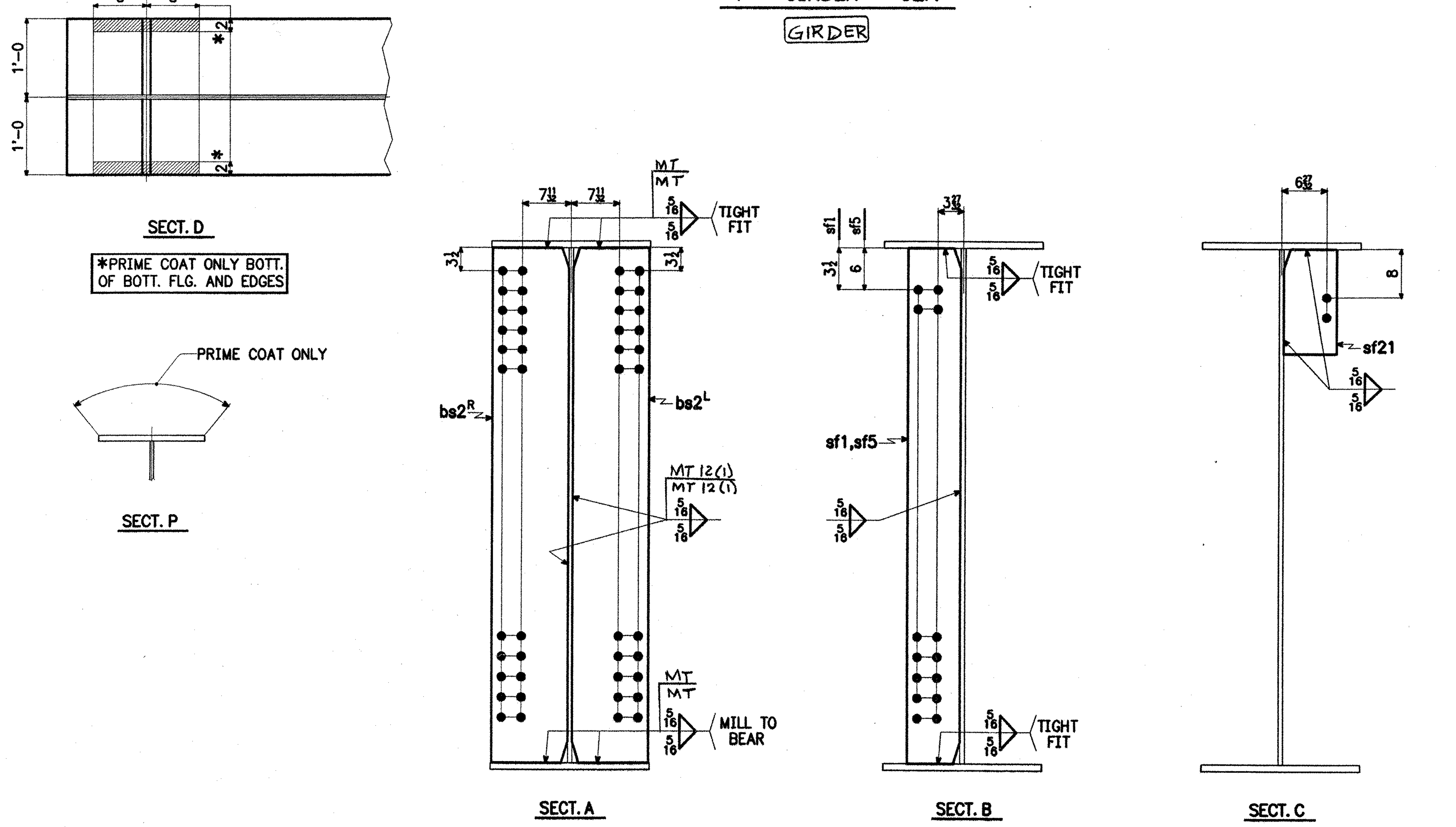
CUSTOMER: BECK & BELLUCCI, INC.

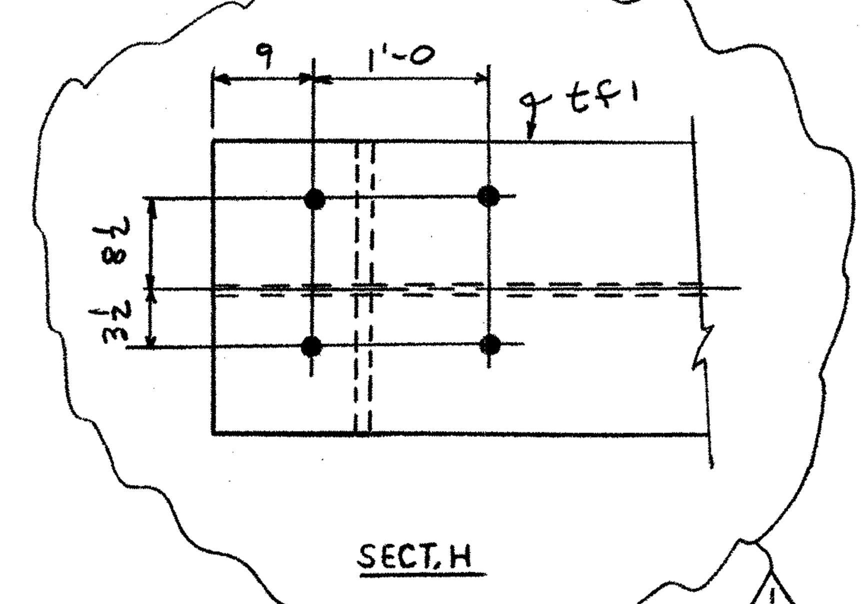
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

REVISED

WORK ORDER NO.	DRAWING NO.	REV.
15873	12-11	3







SHIP MARK	NO.	MARK	SHAPE	LENGTH			ITEM NO.	WT.	REMARKS
G2A	1		GIRDER						
	1	tf1	PL 1" x 24	55'–0 5/16	3	S-1/15	1/9	4494	CVN
	1	tf2	PL 1" x 24	77'–6 9/16		S-1/14	1/10	6333	CVN
	1	bf1	PL 1" x 24	54'–11 11/16	3	S-1/15	1/11	4490	CVN
	1	bf2	PL 1" x 24	77'–6 7/16		S-1/14	1/12	6332	CVN
	1	wp1	PL 11/16 x 78	53'–1 13/16		S-2/3	1/2		CVN
	1	wp2	PL 11/16 x 78	79'–6 9/16		S-2/2	1/3	24185	CVN
	1	$bs2^L$	PL 1 1/4 x 11 1/2	6'–6 1/8		S-1/11	3/2	318	M1E
	1	$bs2^R$	PL 1 1/4 x 11 1/2	6'–6 1/8			3/2	318	M1E
	5	sf1	PL 1/2 x 8	6'–6		S-3/2	3/4	442	
	5	sf5	PL 1/2 x 8	6'–6			3/4	442	
	12	sf21	PL 1/2 x 8	1'–4			3/8	218	
	2	f1	PL 5/8 x 24	3'–4 1/2		S-2/5	2/10	345	CVN
	4	f2	PL 5/8 x 10	3'–4 1/2			2/11	287	CVN
	2	f3	PL 1 1/4 x 24	1'–9 5/8		S-1/2	2/13	368	
	2	ws1	PL 5/8 x 72 1/2	1'–7 1/2		S-2/5	2/12	501	CVN
					3			49073 #	

WORK ORDER NO. 15873 — DRAWING NO. 12-12 — REV. 3

NOTES:

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-1.
3. FOR GIRDER STANDARD DETAILS, SEE DWG. 12-9.
4. FOR FIELD SPLICE DETAIL, SEE DWG. 12-10.

RECEIVED
CK'D BY WBS OK'D BY
DEC 27 2001
RESUBMIT APPROVED As Noted
BY CPW DATE 1/4/02

3 FLG, WEB & EXT DIM 12-17-01 AV
2 PAINT NOTE 11-19-01 JCM
1 SECT H 9-11-01 JCM

STEEL: ASTM [ ] A709-36 [ ] A709-50 [X] A709-50W [ ] Unless Noted
WELDING ELECTRODE: [X] E70 [ ] See Welding Proc. [ ] None
HOLES: [ ] 13/16 [X] 15/16 [ ] 1 1/16 [ ] Unless Noted [ ] As Noted [ ] None
PAINT: 2 [ ] None [ ] Galv. After Fab. [ ] As Noted [X] SEE SHT GN1
SPECIAL PAINT:
SPECIAL CLEANING: [X] Blast Clean SSPC SP10 [ ] None

ITEM NO. 506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)

TITLE: GIRDER ~ G2A

APPROVED:		
PRINT DIST.		
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP
5	8-24-01	APP
5	9-12-01	APP
12	9-12-01	FAB
5	11-19-01	APP
11	11-19-01	FAB
5	12-18-01	APP
11	12-18-01	FAB
CHECKED	TS	3/01
DRAWN	AV	3/01

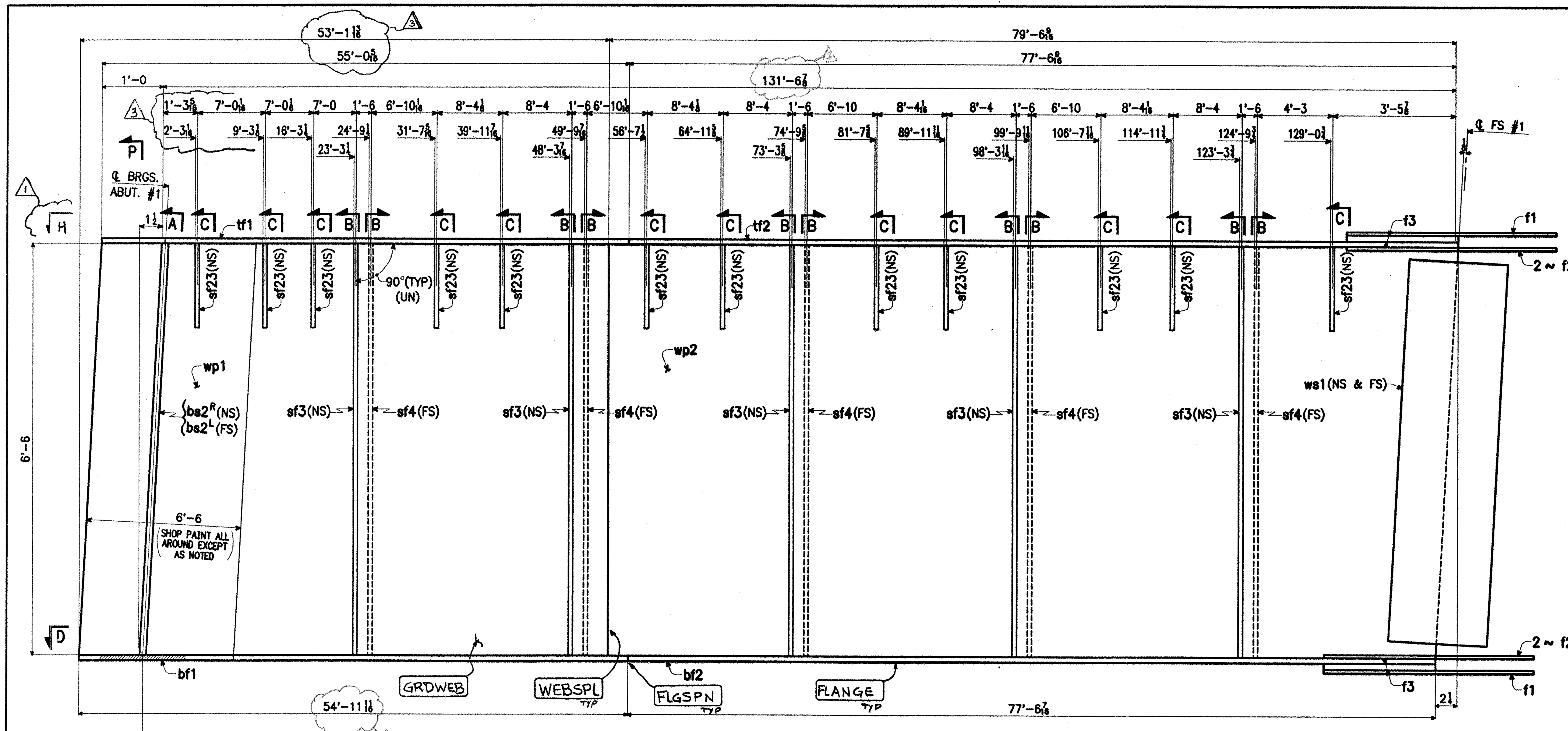
National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

FOR APPROVAL
REVISED

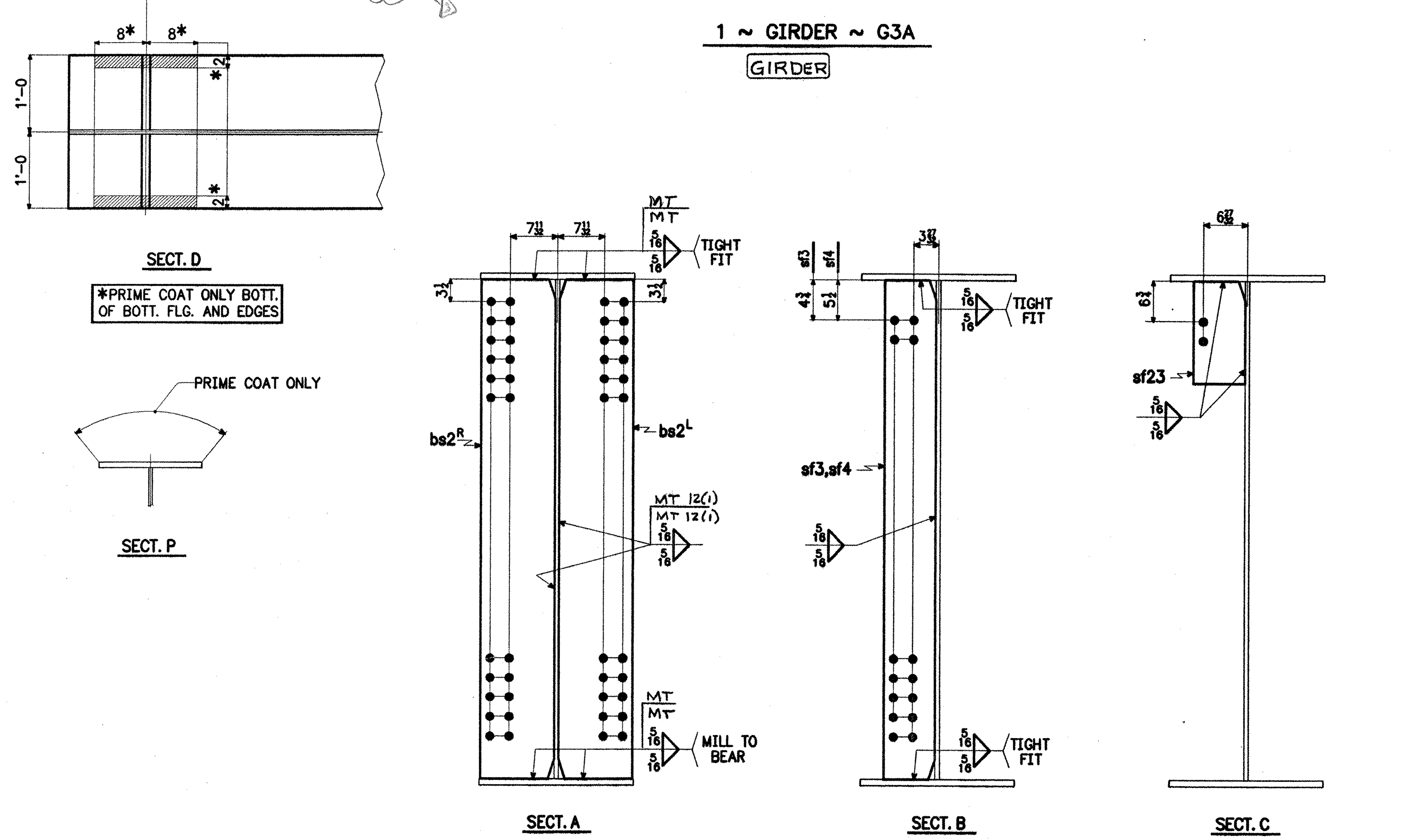
CUSTOMER: BECK & BELLUCCI, INC.
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

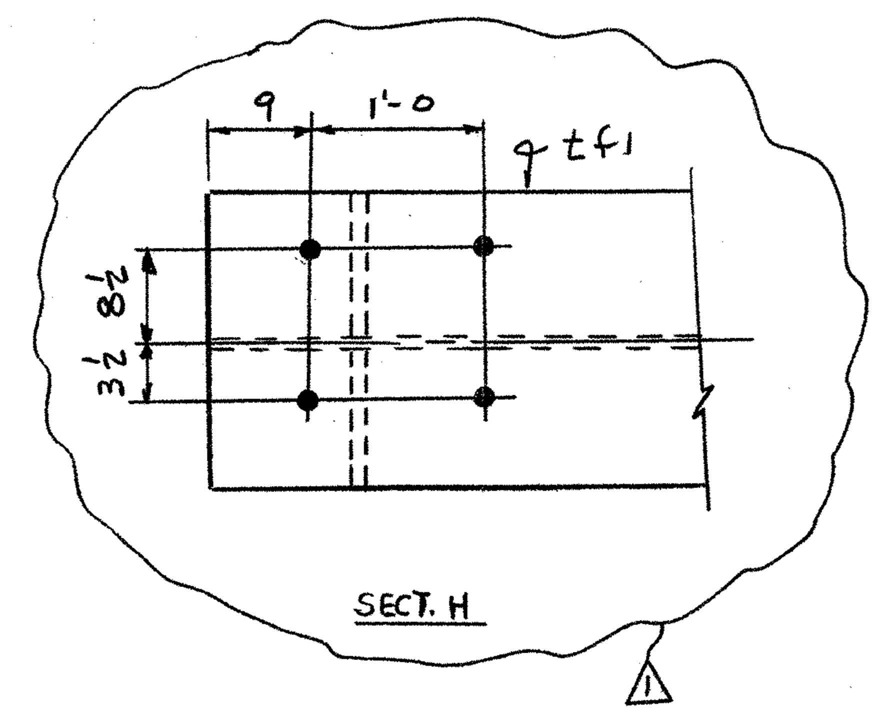
WORK ORDER NO.	DRAWING NO.	REV.
15873	12-12	3



1 ~ GIRDER ~ G3A

GIRDER





NOTES:

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-2.
3. FOR GIRDER STANDARD DETAILS, SEE DWG. 12-9.
4. FOR FIELD SPLICE DETAIL, SEE DWG. 12-10.

RECEIVED
CK'D BY WDS OK'D BY
DEC 27 2001
RESUBMIT BY OPW APPROVED A. Nihl DATE 1/4/02

3 WEB, FLG & EXT DIM 12-17-01 AV
2 PAINT NOTE 11-19-01 JCM
1 SECT H 9-11-01 JCM

SHIP MARK	BILL OF MATERIAL					WORK ORDER NO. 15873	DRAWING NO. 12-13	REV. 3
	NO.	MARK	SHAPE	LENGTH		ITEM NO.	WT.	REMARKS
G3A	1		GIRDER					
	1	tf1	PL 1" x 24	55'-0 5/16	3 5-1/15	1/9	4494	CVN
	1	tf2	PL 1" x 24	77'-6 9/16	5-1/14	1/10	6333	CVN
	1	bf1	PL 1" x 24	54'-11 11/16	3 5-1/15	1/11	4490	CVN
	1	bf2	PL 1" x 24	77'-6 7/16	5-1/14	1/12	6332	CVN
	1	wp1	PL 11/16 x 78	53'-1 13/16	5-2/3	1/2		CVN
	1	wp2	PL 11/16 x 78	79'-6 9/16	5-2/2	1/3	24185	CVN
	1	bs2L	PL 1 1/4 x 11 1/2	6'-6 1/8	5-1/11	3/2	318	M1E
	1	bs2R	PL 1 1/4 x 11 1/2	6'-6 1/8		3/2	318	M1E
	5	sf3	PL 1/2 x 8	6'-6	5-3/2	3/4	442	
	5	sf4	PL 1/2 x 8	6'-6		3/4	442	
	12	sf23	PL 1/2 x 8	1'-4	5-3/2	3/8	218	
	2	f1	PL 5/8 x 24	3'-4 1/2	5-2/5	2/10	345	CVN
	4	f2	PL 5/8 x 10	3'-4 1/2		2/11	287	CVN
	2	f3	PL 1 1/4 x 24	1'-9 5/8	5-1/12	2/13	368	
	2	ws1	PL 5/8 x 72 1/2	1'-7 1/2	5-2/5	2/12	501	CVN
					3		49073	

STEEL: ASTM [ ] A709-36 [ ] A709-50 [X] A709-50W [ ] Unless Noted [ ]
WELDING ELECTRODE: [X] E70 [ ] See Welding Proc. [ ] None [ ]
HOLES: [ ] 13/16 [X] 15/16 [ ] 1 1/16 [ ] Unless Noted [ ] As Noted [ ] None
PAINT: 2 [ ] None [ ] Galv. After Fab. [ ] As Noted [X] SEE SHT GN1
SPECIAL PAINT:
SPECIAL CLEANING: [X] Blast Clean SSPC SP10 [ ] None

ITEM NO. 506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)

TITLE: GIRDER ~ G3A

APPROVED: 9-5-01

PRINT DIST.		
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP
5	8-24-01	APP
5	9-12-01	APP
12	9-12-01	FAB
5	11-19-01	APP
11	11-19-01	FAB
5	12-18-01	APP
11	12-18-01	FAV
CHECKED	TS	3/01
DRAWN	AV	3/01

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER ROYALTON, VERMONT

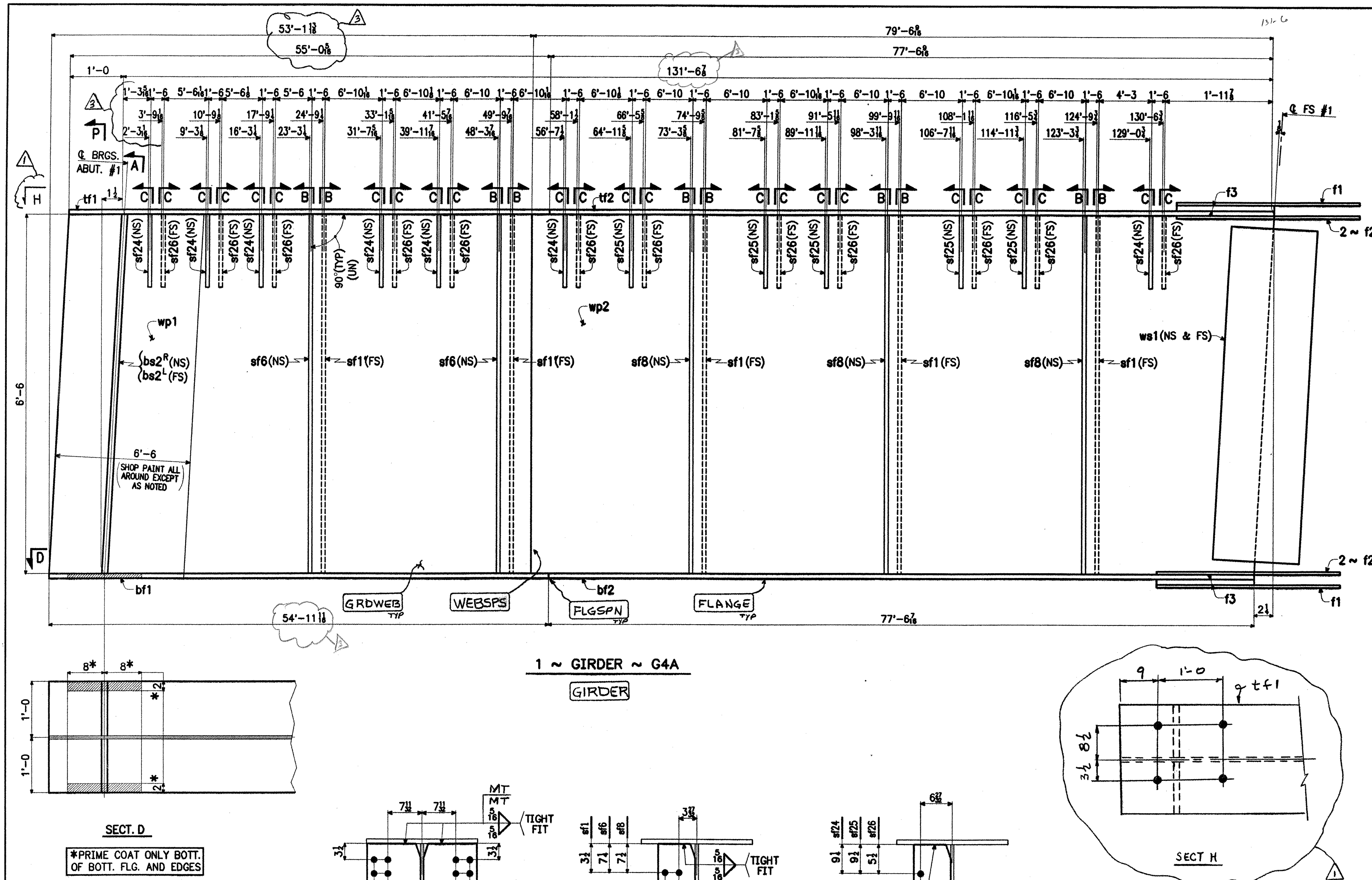
FOR APPROVAL

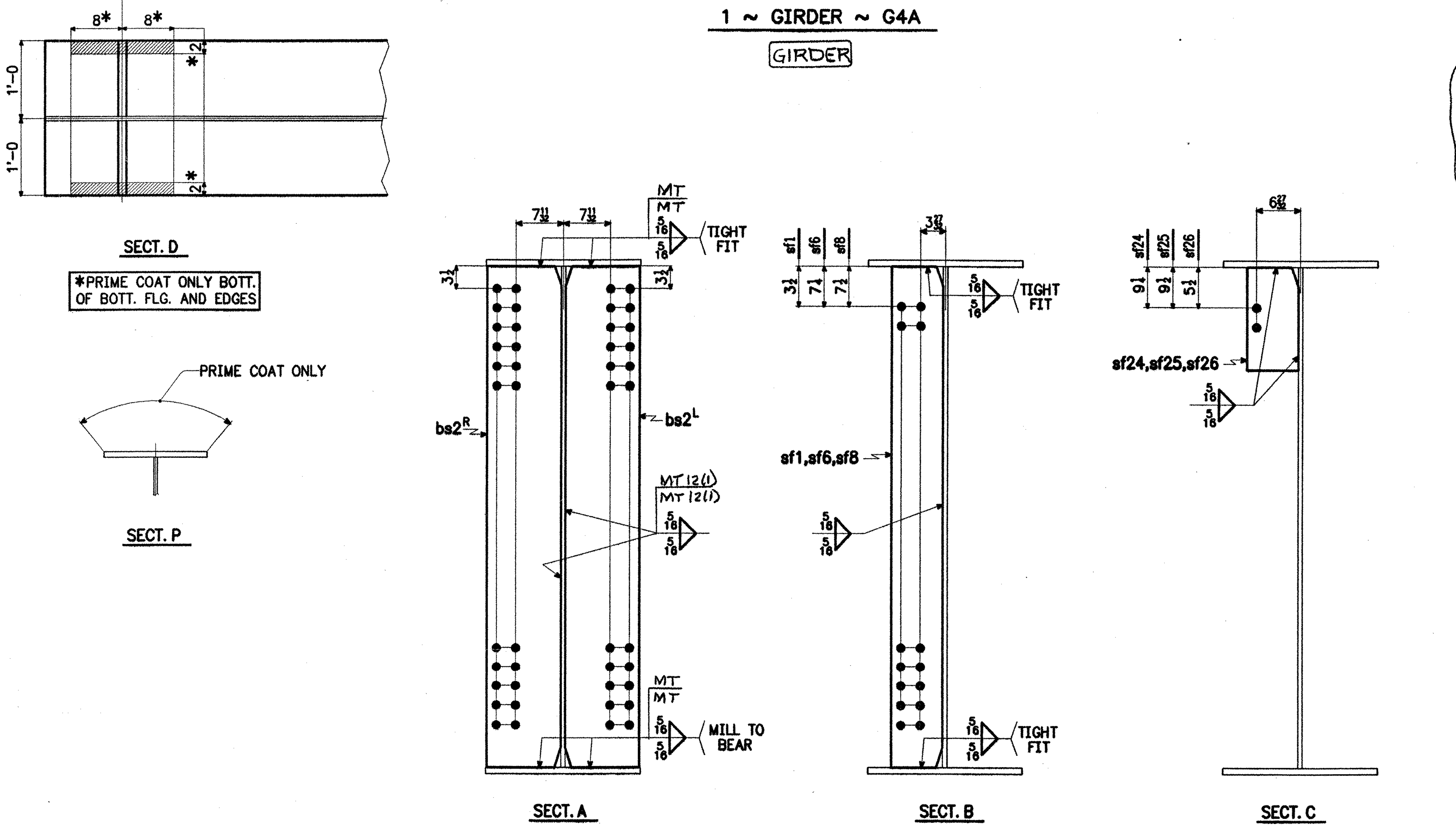
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

REVISED

WORK ORDER NO.	DRAWING NO.	REV.
15873	12-13	3





NOTES:

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-2.
3. FOR GIRDER STANDARD DETAILS, SEE DWG. 12-9.
4. FOR FIELD SPLICE DETAIL, SEE DWG. 12-10.

RECEIVED
CK'D BY WBS OK'D BY
DEC 27 2001
RESUBMIT APPROVED As Noted
BY OPW DATE 1/4/02

3 FLG, WEB & EXT DIM 12-17-01 AV
2 PAINT NOTE 11-19-01 JCM
1 SECT H 9-11-01 JCM

SHIP MARK	BILL OF MATERIAL					WORK ORDER NO. 15873	DRAWING NO. 12-14	REV. 3
	NO.	MARK	SHAPE	LENGTH		ITEM NO.	WT.	REMARKS
G4A	1		GIRDER					
	1	tf1	PL 1" x 24	55'-0$\frac{5}{16}$	3 5-1/15	1/9	4494	CVN
	1	tf2	PL 1" x 24	77'-6$\frac{9}{16}$	5-1/14	1/10	6333	CVN
	1	bf1	PL 1" x 24	54'-11$\frac{11}{16}$	3 5-1/15	1/11	4490	CVN
	1	bf2	PL 1" x 24	77'-6$\frac{7}{16}$	5-1/14	1/12	6332	CVN
	1	wp1	PL $\frac{11}{16}$ x 78	53'-1$\frac{13}{16}$	5-2/3	1/2		CVN
	1	wp2	PL $\frac{11}{16}$ x 78	79'-6$\frac{9}{16}$	5-3/2	1/3	24185	CVN
	1	$bs2^L$	PL 1$\frac{1}{4}$ x 11$\frac{1}{2}$	6'-6$\frac{1}{8}$	5-1/11	3/2	318	M1E
	1	$bs2^R$	PL 1$\frac{1}{4}$ x 11$\frac{1}{2}$	6'-6$\frac{1}{8}$		3/2	318	M1E
	5	sf1	PL $\frac{1}{2}$ x 8	6'-6	5-3/2	3/4	442	
	2	sf6	PL $\frac{1}{2}$ x 8	6'-6		3/4	177	
	3	sf8	PL $\frac{1}{2}$ x 8	6'-6		3/4	265	
	7	sf24	PL $\frac{1}{2}$ x 8	1'-4	5-3/2	3/8	137	
	5	sf25	PL $\frac{1}{2}$ x 8	1'-4		3/8	91	
	12	sf26	PL $\frac{1}{2}$ x 8	1'-4		3/8	218	✓
	2	f1	PL $\frac{5}{8}$ x 24	3'-4$\frac{1}{2}$	5-2/5	2/10	345	CVN
	4	f2	PL $\frac{5}{8}$ x 10	3'-4$\frac{1}{2}$		2/11	287	CVN
	2	f3	PL 1$\frac{1}{4}$ x 24	1'-9$\frac{5}{8}$	5-1/12	2/13	368	
	2	ws1	PL $\frac{5}{8}$ x 72$\frac{1}{2}$	1'-7$\frac{1}{2}$	5-2/5	2/12	501	CVN
					3		49291	#

STEEL: ASTM ☐ A709-36 ☐ A709-50 ☒ A709-50W ☐ Unless Noted ☐
WELDING ELECTRODE: ☒ E70 ☐ See Welding Proc. ☐ None ☐
HOLES: ☐ 13/16 ☒ 15/16 ☐ 1 1/16 ☐ Unless Noted ☐ As Noted ☐ None
PAINT: 2 ☐ None ☐ Galv. After Fab. ☐ As Noted ☒ SEE SHT GN1
SPECIAL PAINT:
SPECIAL CLEANING: ☒ Blast Clean SSPC SP10 ☐ None

ITEM NO. 506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)

TITLE: GIRDER ~ G4A

APPROVED: 9-5-01		
PRINT DIST.		
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP
5	8-24-01	APP
5	9-12-01	APP
12	9-12-01	FAB
5	11-19-01	APP
11	11-19-01	FAB
5	12-18-01	APP
11	12-18-01	FAB
CHECKED	TS	3/01
DRAWN	AV	3/01

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

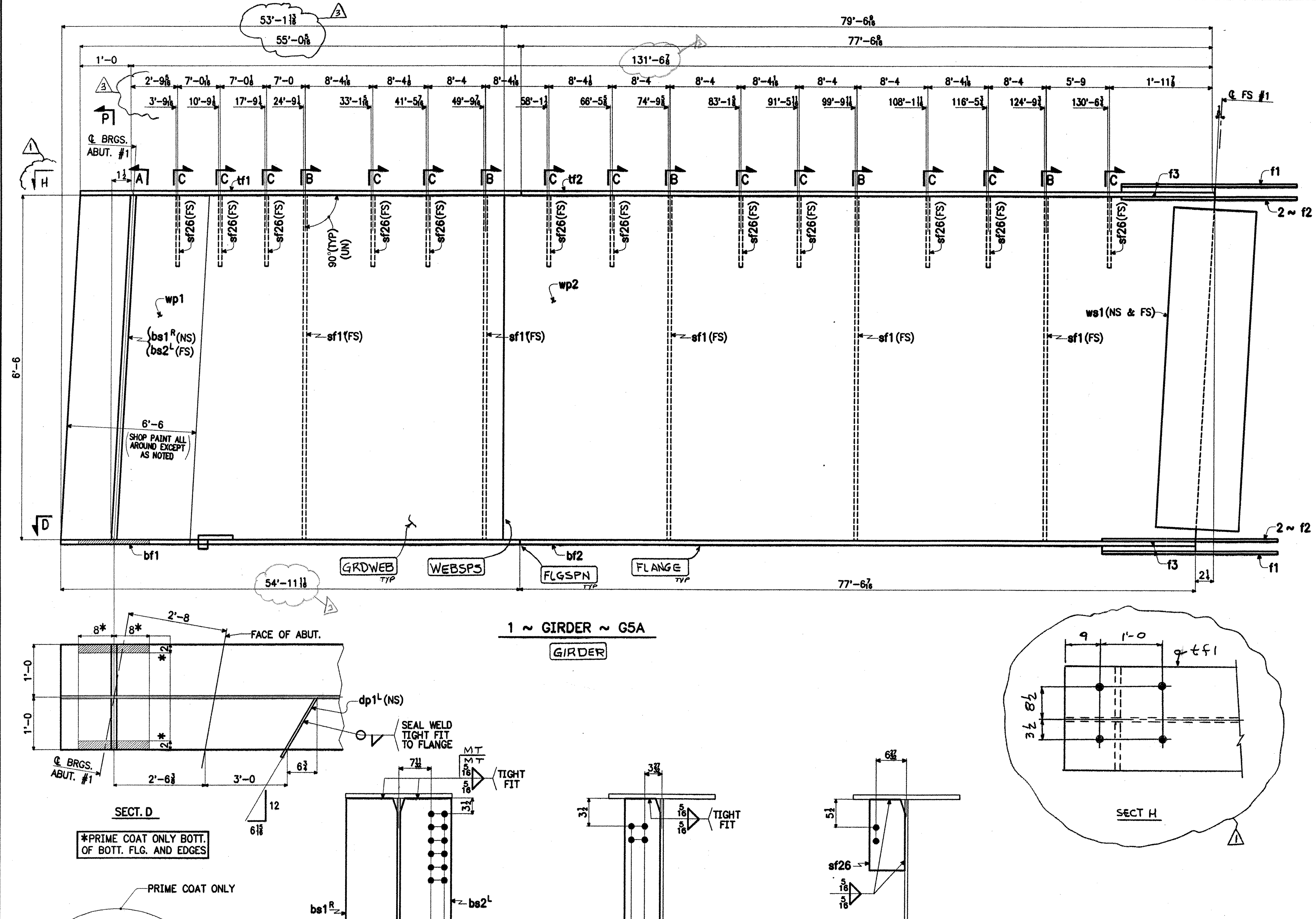
FOR APPROVAL

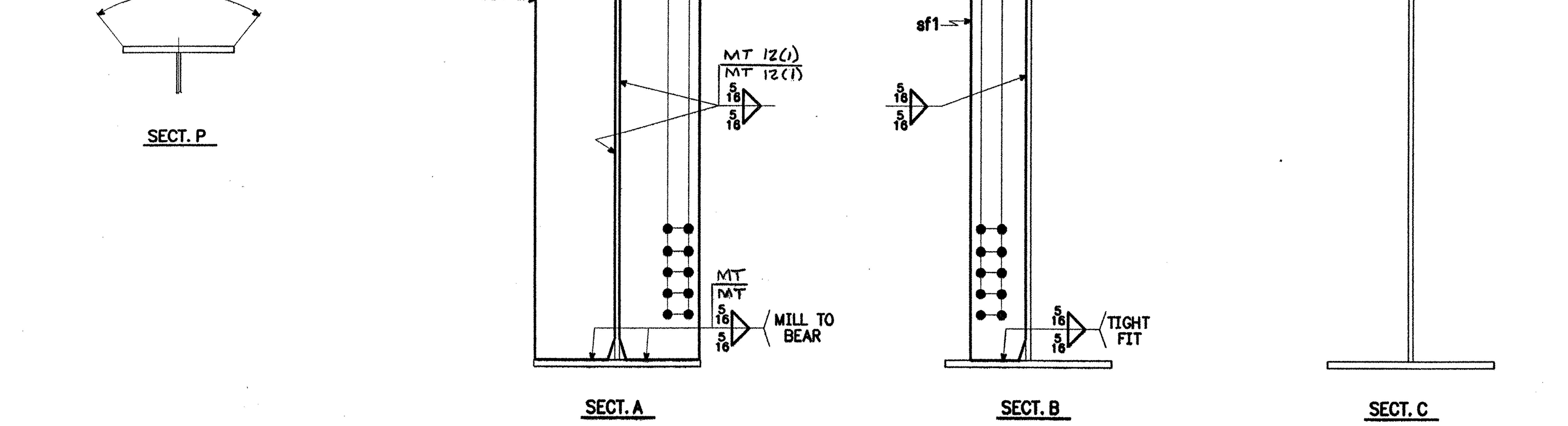
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

REVISED

WORK ORDER NO.	DRAWING NO.	REV.
15873	12-14	3





NOTES:

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-3.
3. FOR GIRDER STANDARD DETAILS, SEE DWG. 12-9.
4. FOR FIELD SPLICE DETAIL, SEE DWG. 12-10.

RECEIVED
CK'D BY LWS OK'D BY
DEC 27 2001
RESUBMIT APPROVED
BY OPW DATE 1/4/02

3 FLG, WEW & EXT DIM 12-17-01 AV
2 PAINT NOTE 11-19-01 JCM
1 SECT H 9-11-01 JCM

SHIP MARK	NO.	MARK	SHAPE	LENGTH			ITEM NO.	WT.	REMARKS
G5A	1		GIRDER						
	1	tf1	PL 1" x 24	55'-0 5/16	3	5-1/15	1/9	4494	CVN
	1	tf2	PL 1" x 24	77'-6 9/16		5-1/14	1/10	6333	CVN
	1	bf1	PL 1" x 24	54'-11 11/16	3	5-1/15	1/11	4490	CVN
	1	bf2	PL 1" x 24	77'-6 7/16		5-1/14	1/12	6332	CVN
	1	wp1	PL 11/16 x 78	53'-1 13/16		5-2/3	1/2		CVN
	1	wp2	PL 11/16 x 78	79'-6 9/16		5-2/2	1/3	24185	CVN
	1	bs1R	PL 1 1/4 x 11 1/2	6'-6 1/8		5-1/11	3/2	318	M1E
	1	bs2L	PL 1 1/4 x 11 1/2	6'-6 1/8			3/2	318	M1E
	5	sf1	PL 1/2 x 8	6'-6		5-3/2	3/4	442	
	12	sf26	PL 1/2 x 8	1'-4			3/8	218	
	1	dp1L	PL 1/4 x 3	1'-3 5/8		5-3/12	3/10	3	
	2	f1	PL 5/8 x 24	3'-4 1/2		5-2/5	2/10	345	CVN
	4	f2	PL 5/8 x 10	3'-4 1/2			2/11	287	CVN
	2	f3	PL 1 1/4 x 24	1'-9 5/8		5-1/12	2/13	368	
	2	ws1	PL 5/8 x 72 1/2	1'-7 1/2		5-2/5	2/12	501	CVN
					3			48634 #	

WORK ORDER NO.	DRAWING NO.	REV.
15873	12-15	3

STEEL: ASTM [ ] A709-36 [ ] A709-50 [X] A709-50W [ ] Unless Noted [ ]
WELDING ELECTRODE: [X] E70 [ ] See Welding Proc. [ ] None [ ]
HOLES: [ ] 13/16 [X] 15/16 [ ] 1 1/16 [ ] Unless Noted [ ] As Noted [ ] None
PAINT: 2 [ ] None [ ] Galv. After Fab. [ ] As Noted [X] SEE SHT GN1
SPECIAL PAINT:
SPECIAL CLEANING: [X] Blast Clean SSPC SP10 [ ] None

ITEM NO. 506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22)

TITLE: GIRDER ~ G5A

APPROVED: 9-5-01

PRINT DIST.		
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP
5	8-24-01	APP
5	9-12-01	APP
12	9-12-01	FAB
5	11-19-01	APP
11	11-19-01	FAB
5	12-18-01	APP
11	12-18-01	FAB
CHECKED	TS	3/01
DRAWN	AV	3/01

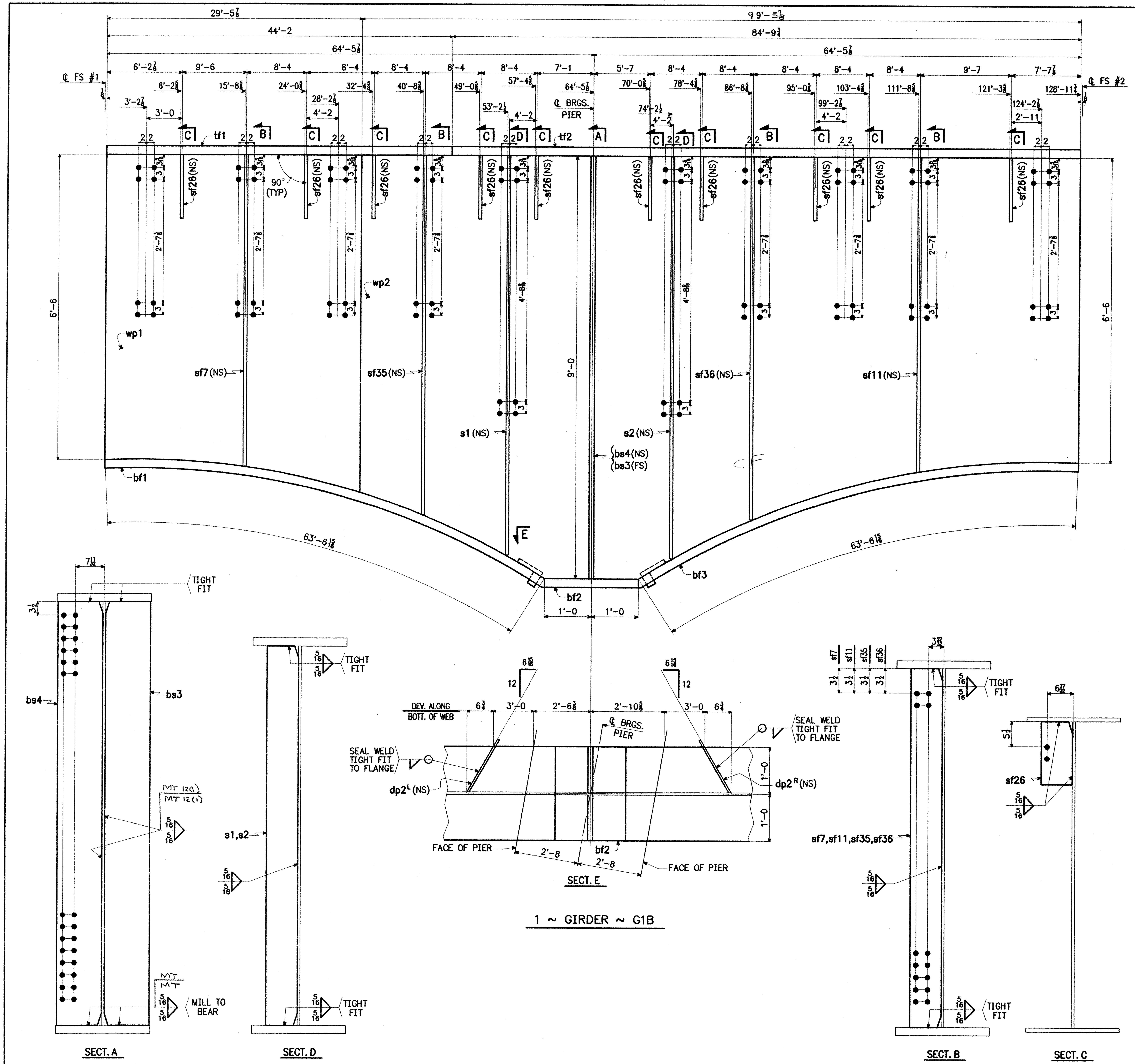
National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

FOR APPROVAL
REVISED

CUSTOMER: BECK & BELLUCCI, INC.
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

WORK ORDER NO.	DRAWING NO.	REV.
15873	12-15	3



SHIP MARK	BILL OF MATERIAL					WORK ORDER NO. 15873	DRAWING NO. 12-16	REV. B
	NO.	MARK	SHAPE	LENGTH		ITEM NO.	WT.	REMARKS
G1B	1		GIRDER					
	1	tf1	PL 2 1/4 x 24	44'-2	S1/8	2/2	8116	CVN
	1	tf2	PL 2 1/4 x 24	84'-9 3/4	S1/2	2/3	15584	CVN
	1	bf1	PL 2 1/4 x 24	63'-6 15/16	S1/4	2/4	11682	CVN
	1	bf2	PL 2 1/4 x 24	2'-0		2/5	368	CVN
	1	bf3	PL 2 1/4 x 24	63'-6 15/16	S1/6	2/6	11682	CVN
	1	wp1	PL 11/16 x 82 3/8	29'-5 7/8	8/6	1/4		CVN
	1	wp2	PL 11/16 x 108	99'-5 7/8		1/5	26140	CVN
	1	bs3	PL 1 1/4 x 11 1/2	9'-0	S1/11	3/2	440	M1E
	1	bs4	PL 1 1/4 x 11 1/2	9'-0		3/2	440	M1E
	1	sf11	PL 1/2 x 8	6'-6 11/16	S3/2	3/5	89	
	1	sf36	PL 3/4 x 8	7'-5 1/4	S-3/14	3/16	152	
	1	sf35	PL 3/4 x 8	7'-4 1/4		3/16	150	
	1	sf7	PL 1/2 x 8	6'-6 7/16	S3/2	3/5	89	
	10	sf26	PL 1/2 x 8	1'-4		3/8	181	
	1	s1	PL 3/4 x 8	8'-1 7/8	S3/14	3/17	167	
	1	s2	PL 3/4 x 8	8'-3 1/4		3/17	169	
	1	dp2R	PL 1/4 x 4 1/4	1'-3 5/8	S3/10	3/11	5	
	1	dp2L	PL 1/4 x 4 1/4	1'-3 5/8		3/11	5	
							75459	#

NOTES:

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-6.
3. FOR GIRDER STANDARD DETAILS, SEE DWG. 12-9.
4. FOR FIELD SPLICE DETAIL, SEE DWG. 12-10.

RECEIVED
CK'D BY WAS CK'D BY
AUG 2 7 2001
RESUBMIT APPROVED ✓
BY GPW DATE 8/30/01

STEEL: ASTM [ ] A709-36 [ ] A709-50 [X] A709-50W [ ] Unless Noted
WELDING ELECTRODE: [X] E70 [ ] See Welding Proc. [ ] None
HOLES: [ ] 13/16 [X] 15/16 [ ] 1 1/16 [ ] Unless Noted [ ] As Noted [ ] None
PAINT: [X] None [ ] Galv. After Fab. [ ] As Noted
SPECIAL PAINT:
SPECIAL CLEANING: [X] Blast Clean SSPC SP10 [ ] None

ITEM NO. 506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22)

TITLE: GIRDER ~ G1B

FOR APPROVAL

APPROVED:		
	PRINT DIST.	
5	4-7-01	APPR.
ORIG.		FAB.
5	7-13-01	APP
5	8-24-01	APP
CHECKED	TS	3/01
DRAWN	AV	3/01

National Eastern Corporation
Plainville, Connecticut

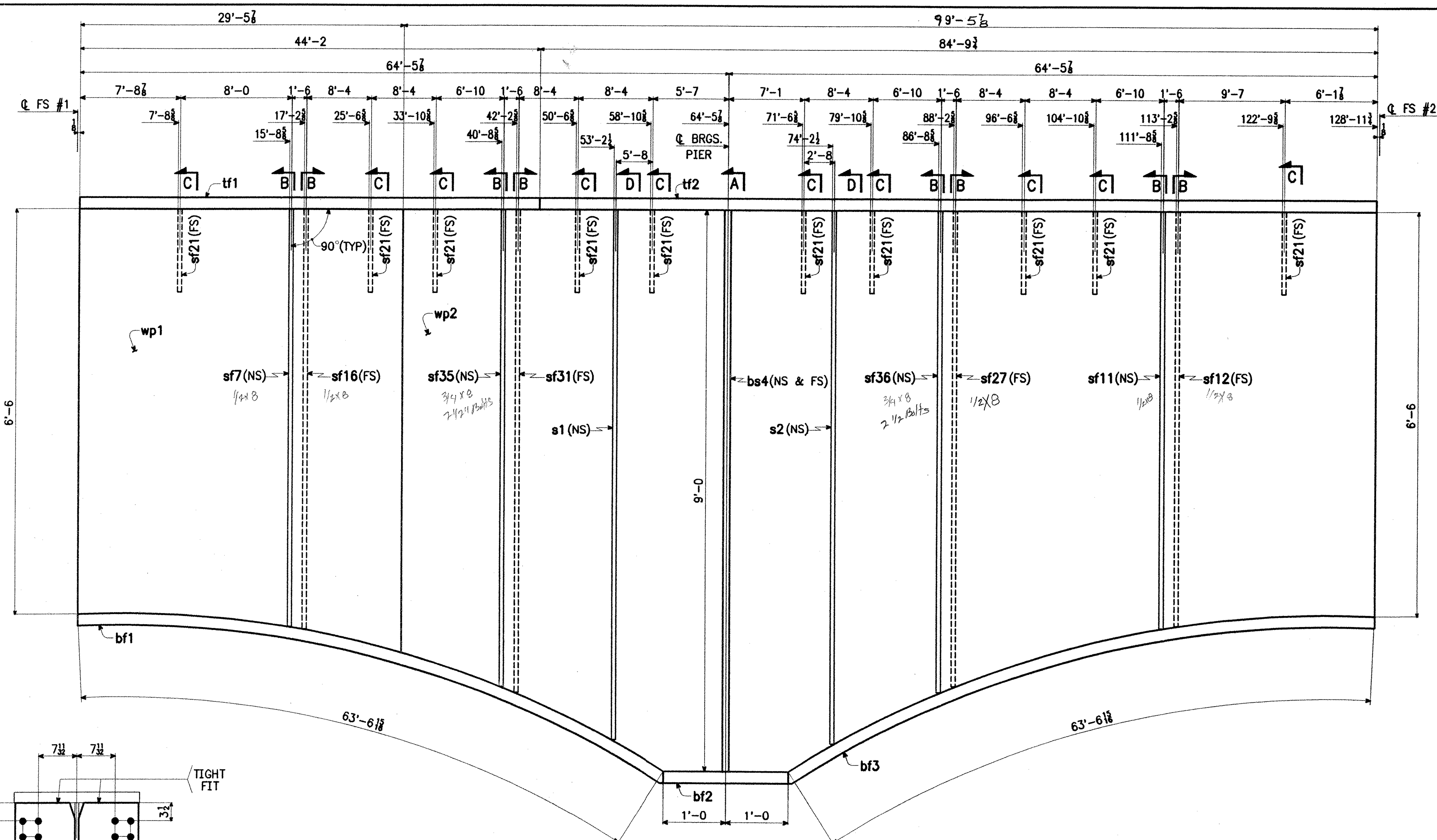
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

CUSTOMER: BECK & BELLUCCI, INC.

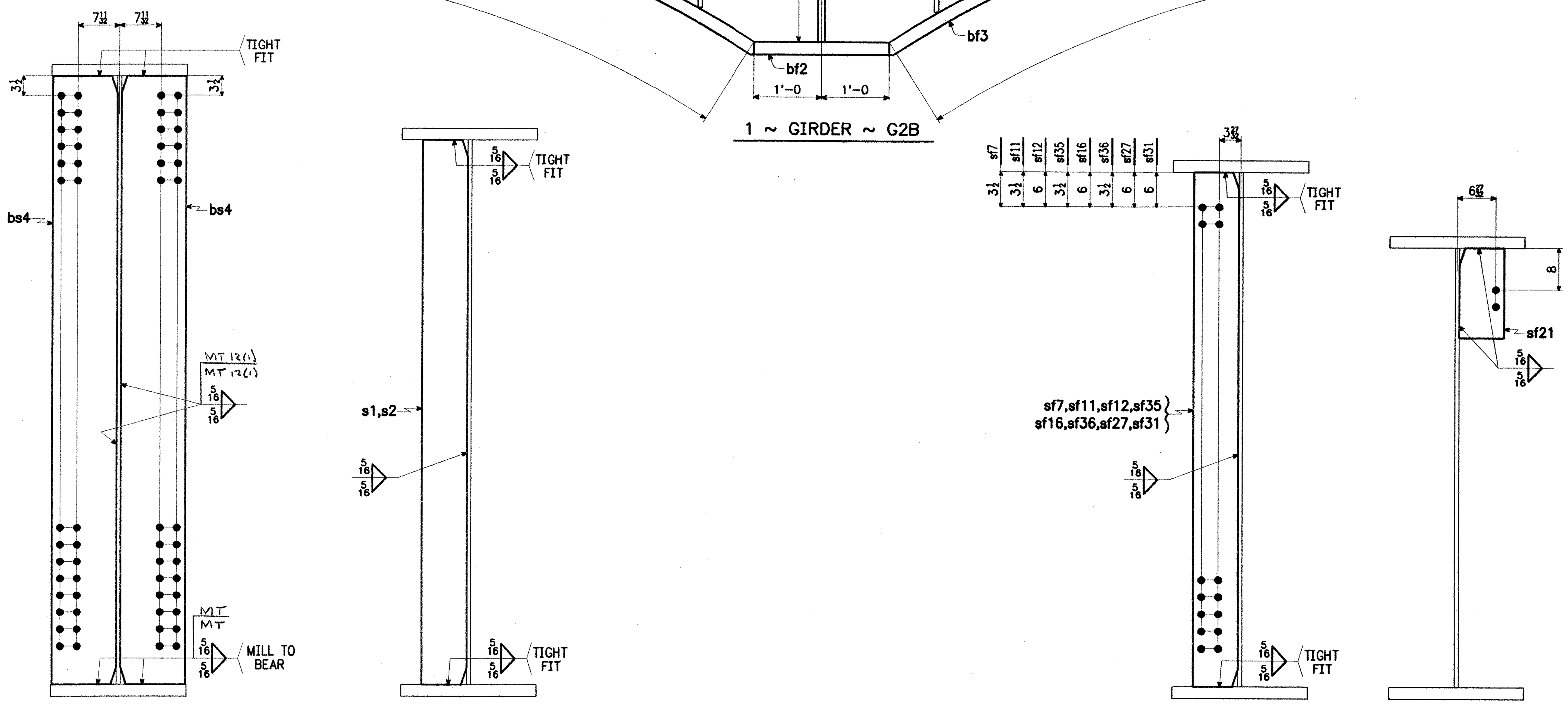
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

WORK ORDER NO.	DRAWING NO.	REV.
15873	12-16	B

OK



1 ~ GIRDER ~ G2B



SECT. A

SECT. D

SECT. B

SECT. C

SHIP MARK	BILL OF MATERIAL					WORK ORDER NO. 15873	DRAWING NO. 12-17	REV. B
	NO.	MARK	SHAPE	LENGTH		ITEM NO.	WT.	REMARKS
G2B	1		GIRDER					
	1	tf1	PL 2¼ x 24	44'-2	S1/8	2/2	8116	CVN
	1	tf2	PL 2¼ x 24	84'-9¾	S1/2	2/3	15584	CVN
	1	bf1	PL 2¼ x 24	63'-6 15/16	S1/4	2/4	11682	CVN
	1	bf2	PL 2¼ x 24	2'-0		2/5	368	CVN
	1	bf3	PL 2¼ x 24	63'-6 15/16	S1/6	2/6	11682	CVN
	1	wp1	PL 11/16 x 82⅜	29'-5⅞	B/0	1/4		CVN
	1	wp2	PL 11/16 x 108	99'-5⅞		1/5	26140	CVN
	2	bs4	PL 1¼ x 11½	9'-0	S1/11	3/2	880	M1E
	1	sf7	PL ½ x 8	6'-6 7/16	S3/2	3/5	89	
	1	sf11	PL ½ x 8	6'-6 11/16		3/5	89	
	1	sf12	PL ½ x 8	6'-6 7/16		3/5	89	
	1	sf35	PL ¾ x 8	7'-4¼	S3/14	3/16	150	
	1	sf16	PL ½ x 8	6'-6 11/16	S3/2	3/5	89	
	1	sf36	PL ¾ x 8	7'-5¼	S3/14	3/16	152	
	1	sf27	PL ½ x 8	7'-4¼	S3/2	3/6	100	
	1	sf31	PL ½ x 8	7'-5¼		3/6	101	
	10	sf21	PL ½ x 8	1'-4		3/8	181	
	1	s1	PL ¾ x 8	8'-1⅞	S3/14	3/17	167	
	1	s2	PL ¾ x 8	8'-3¼	S3/14	3/17	169	
							75828	

NOTES:

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-6.
3. FOR GIRDER STANDARD DETAILS, SEE DWG. 12-9.
4. FOR FIELD SPLICE DETAIL, SEE DWG. 12-10.

RECEIVED
CK'D BY WAS OK'D BY
AUG 2 7 2001
RESUBMIT ___ APPROVED ✓
BY CPW DATE 8/30/01

STEEL: ASTM ☐ A709-36 ☐ A709-50 ☒ A709-50W ☐ Unless Noted ☐
WELDING ELECTRODE: ☒ E70 ☐ See Welding Proc. ☐ None ☐
HOLES: ☐ 13/16 ☒ 15/16 ☐ 1 1/16 ☐ Unless Noted ☐ As Noted ☐ None
PAINT: ☒ None ☐ Galv. After Fab. ☐ As Noted ☐
SPECIAL PAINT:
SPECIAL CLEANING: ☒ Blast Clean SSPC SP10 ☐ None

ITEM NO. 506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22)

TITLE: GIRDER ~ G2B

FOR APPROVAL

APPROVED:		
PRINT DIST.		
5	4-7-01	APPR.
ORIG.		FAB.
5	7-13-01	APP
5	8-24-01	APP
CHECKED	TS	3/01
DRAWN	AV	3/01

National Eastern Corporation
Plainville, Connecticut

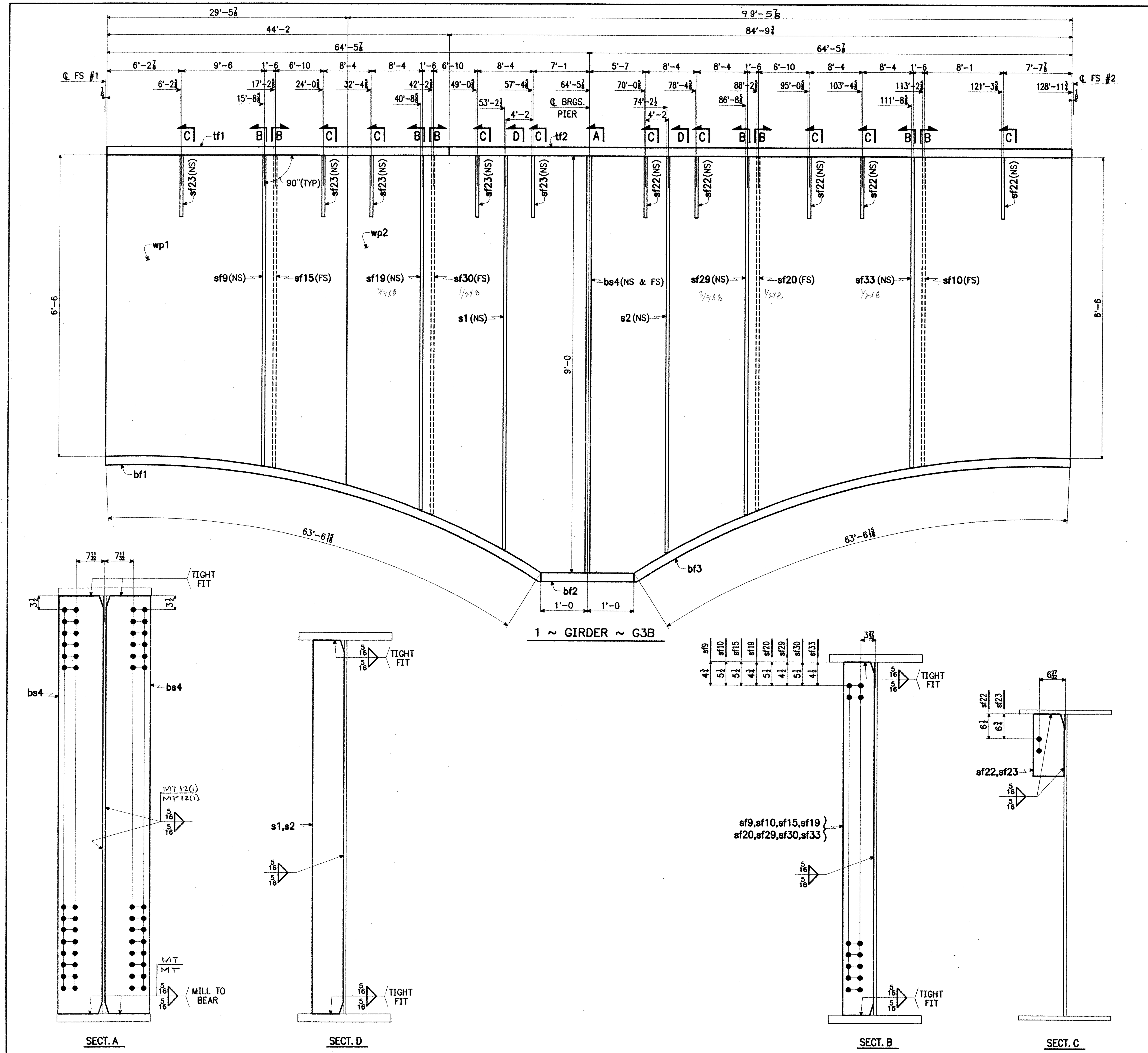
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

WORK ORDER NO.	DRAWING NO.	REV.
15873	12-17	B

OK



SHIP MARK	NO.	MARK	SHAPE	LENGTH		ITEM NO.	WT.	REMARKS
G3B	1		GIRDER					
	1	tf1	PL 2 1/4 x 24	44'-2	S1/8	2/2	8116	CVN
	1	tf2	PL 2 1/4 x 24	84'-9 3/4	S1/2	2/3	15584	CVN
	1	bf1	PL 2 1/4 x 24	63'-6 15/16	S1/4	2/4	11682	CVN
	1	bf2	PL 2 1/4 x 24	2'-0		2/5	368	CVN
	1	bf3	PL 2 1/4 x 24	63'-6 15/16	S1/6	2/6	11682	CVN
	1	wp1	PL 11/16 x 82 3/8	29'-5 7/8	8/0	1/4		CVN
	1	wp2	PL 11/16 x 108	99'-5 7/8		1/5	26140	CVN
	2	bs4	PL 1 1/4 x 11 1/2	9'-0	S1/11	3/2	880	M1E
	1	sf9	PL 1/2 x 8	6'-6 7/16	S3/2	3/5	89	
	1	sf10	PL 1/2 x 8	6'-6 7/16		3/5	89	
	1	sf15	PL 1/2 x 8	6'-6 11/16		3/5	89	
	1	sf19	PL 3/4 x 8	7'-4 1/4	S3/14	3/6	150	
	1	sf20	PL 1/2 x 8	7'-4 1/4	S3/2	3/6	100	
	1	sf29	PL 3/4 x 8	7'-5 1/4	S3/14	3/6	152	
	1	sf30	PL 1/2 x 8	7'-5 1/4	S3/2	3/6	101	
	1	sf33	PL 1/2 x 8	6'-6 11/16		3/5	89	
	5	sf22	PL 1/2 x 8	1'-4	S3/2	3/8	91	
	5	sf23	PL 1/2 x 8	1'-4		3/8	91	
	1	s1	PL 3/4 x 8	8'-1 7/8	S3/14	3/17	167	
	1	s2	PL 3/4 x 8	8'-3 1/4		3/17	169	
							75829	#

WORK ORDER NO. 15873 — DRAWING NO. 12-18 — REV. B

NOTES:

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-7.
3. FOR GIRDER STANDARD DETAILS, SEE DWG. 12-9.
4. FOR FIELD SPLICE DETAIL, SEE DWG. 12-10.

RECEIVED
CK'D BY LWS OK'D BY
AUG 2 7 2001
RESUBMIT APPROVED ✓
BY CPW DATE 8/30/01

STEEL: ASTM [ ] A709-36 [ ] A709-50 [X] A709-50W [ ] Unless Noted
WELDING ELECTRODE: [X] E70 [ ] See Welding Proc. [ ] None
HOLES: [ ] 13/16 [X] 15/16 [ ] 1 1/16 [ ] Unless Noted [ ] As Noted [ ] None
PAINT: [X] None [ ] Galv. After Fab. [ ] As Noted
SPECIAL PAINT:
SPECIAL CLEANING: [X] Blast Clean SSPC SP10 [ ] None

ITEM NO. 506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22)

TITLE: GIRDER ~ G3B

FOR APPROVAL

APPROVED:		
	PRINT DIST.	
5	4-7-01	APPR.
ORIG.		FAB.
5	7-13-01	APP
5	8-24-01	APP

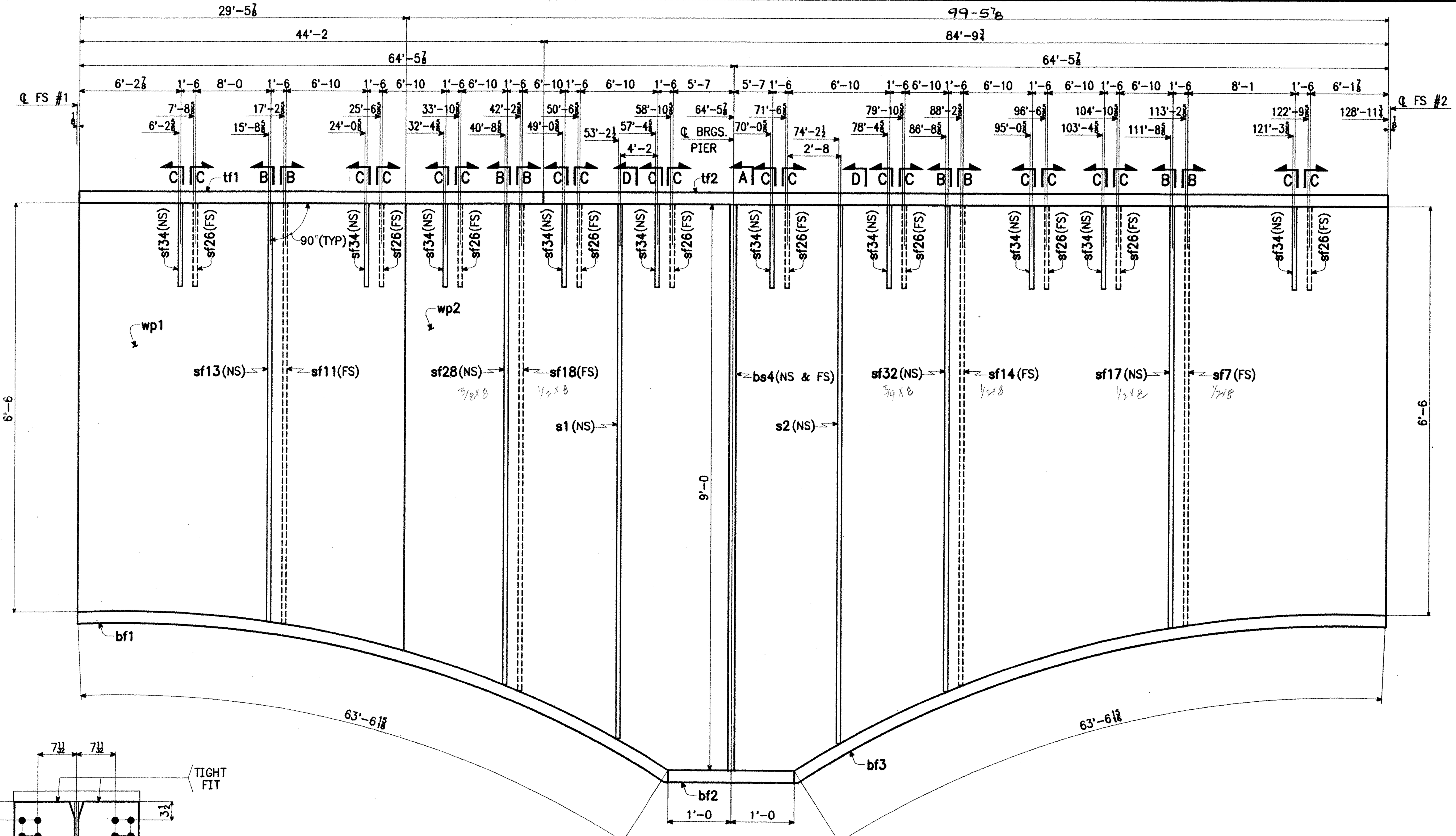
National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

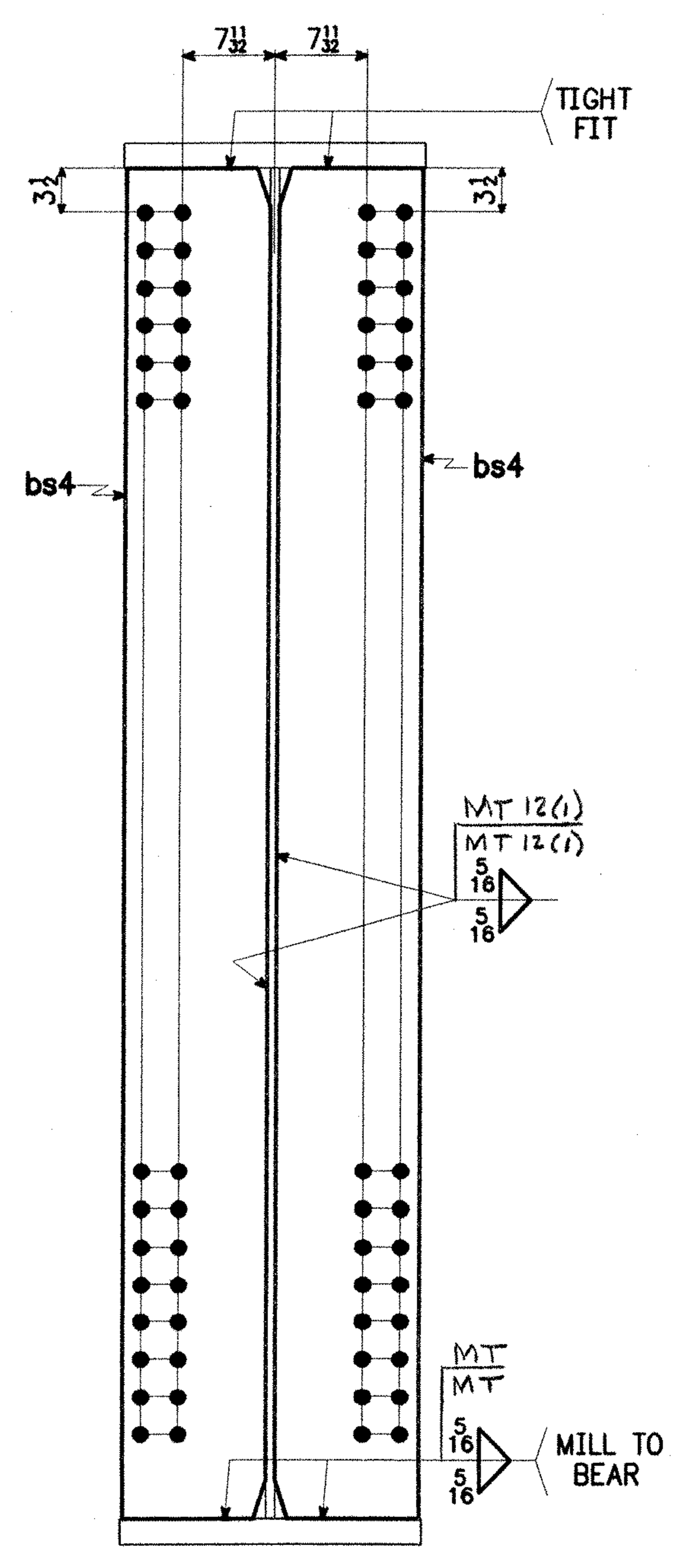
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

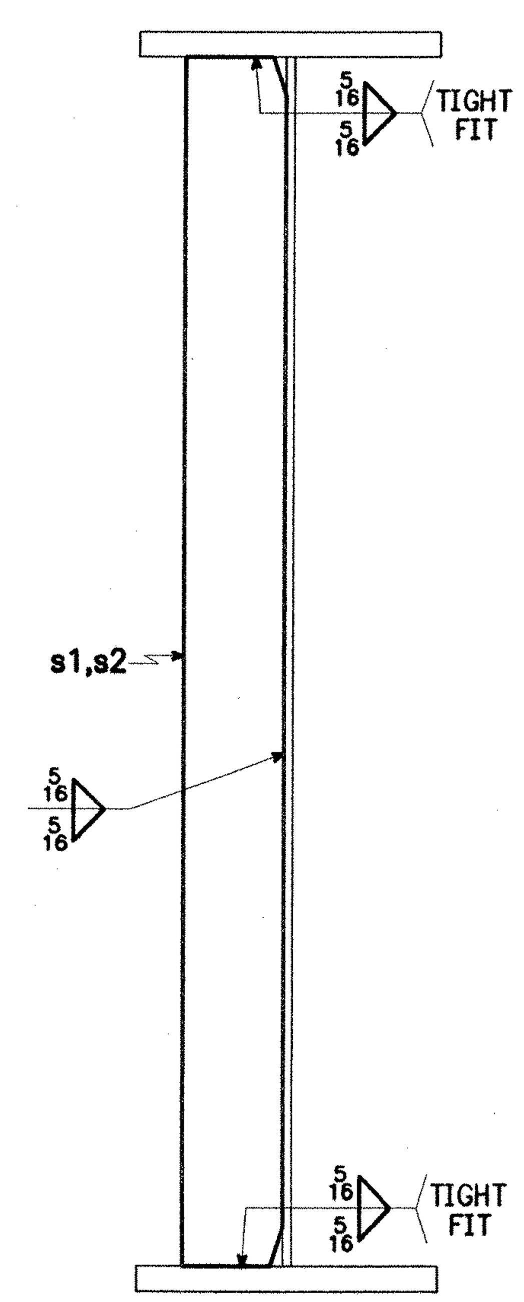
CHECKED	TS	3/01	WORK ORDER NO.	DRAWING NO.	REV.
DRAWN	AV	3/01	15873	12-18	B



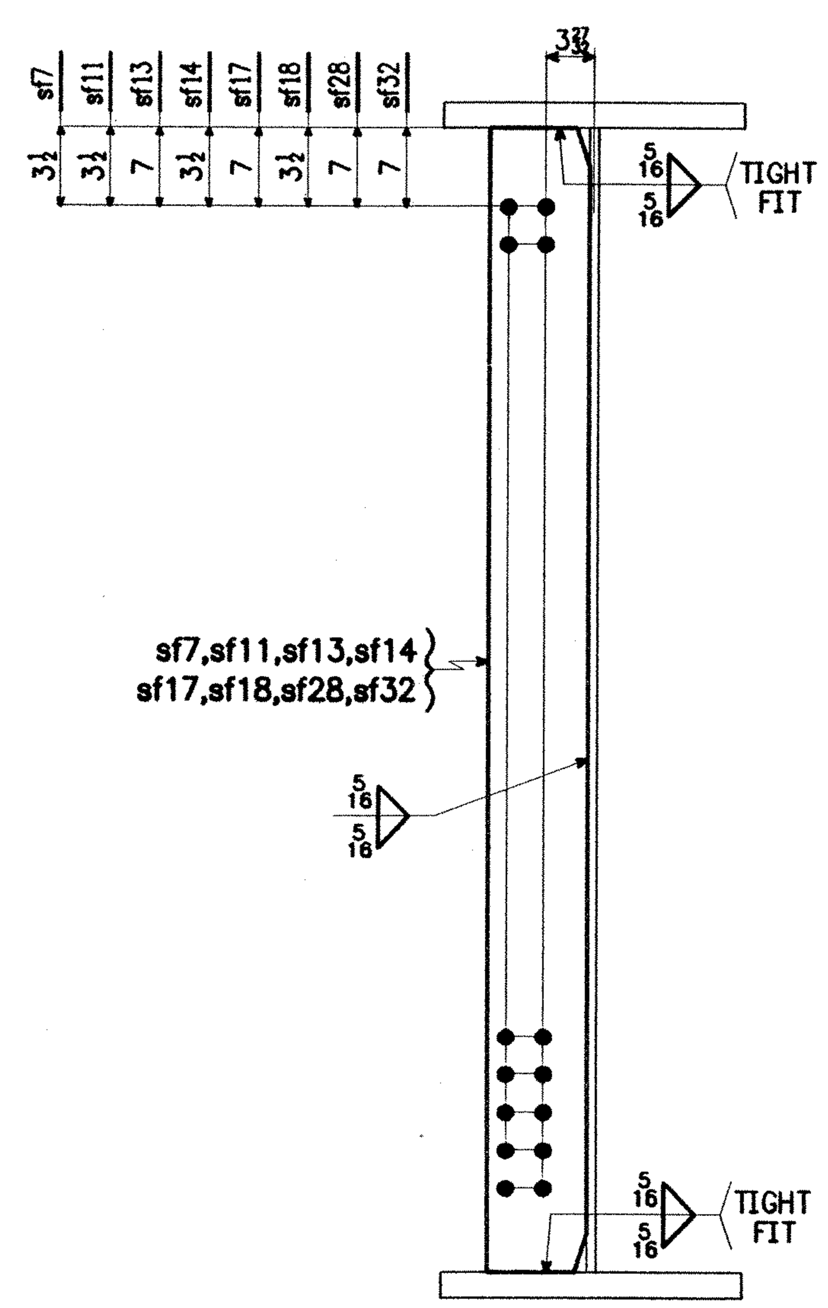
1 ~ GIRDER ~ G4B



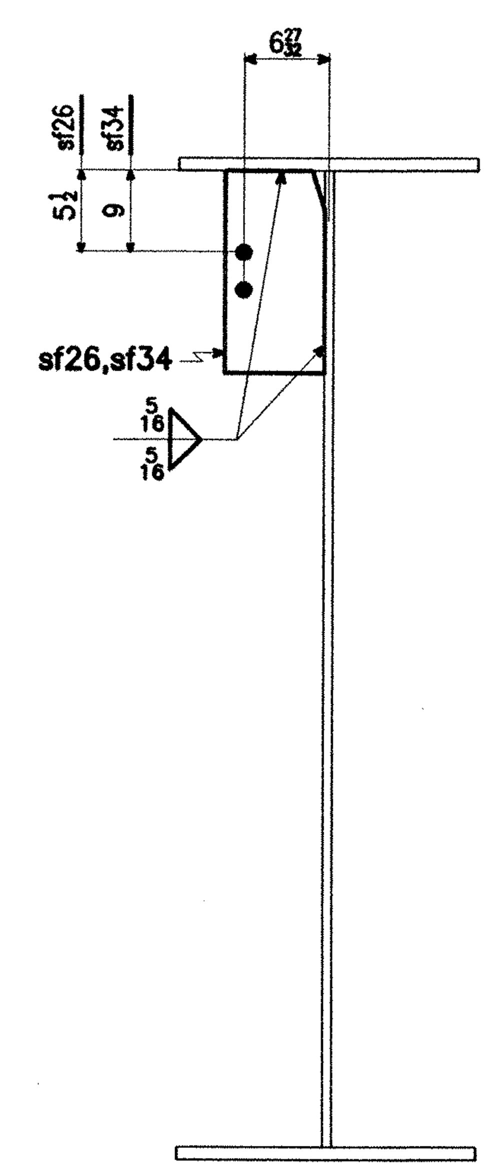
SECT. A



SECT. D



SECT. B



SECT. C

SHIP MARK	BILL OF MATERIAL					WORK ORDER NO. 15873	DRAWING NO. 12-19	REV. B
	NO.	MARK	SHAPE	LENGTH		ITEM NO.	WT.	REMARKS
G4B	1		GIRDER					
	1	tf1	PL 2¼ x 24	44'-2	51/8	2/2	8116	CVN
	1	tf2	PL 2¼ x 24	84'-9¾	51/2	2/3	15584	CVN
	1	bf1	PL 2¼ x 24	63'-6 13/16	51/4	2/4	11682	CVN
	1	bf2	PL 2¼ x 24	2'-0		2/5	368	CVN
	1	bf3	PL 2¼ x 24	63'-6 13/16	51/6	2/6	11682	CVN
	1	wp1	PL 11/16 x 82⅜	29'-5⅞	8/10	1/4		CVN
	1	wp2	PL 11/16 x 108	99'-5⅞		1/5	26140	CVN
	2	bs4	PL 1¼ x 11½	9'-0	51/11	3/2	880	M1E
	1	sf7	PL ½ x 8	6'-6 7/16	53/2	3/5	89	
	1	sf11	PL ½ x 8	6'-6 11/16		3/5	89	
	1	sf13	PL ½ x 8	6'-6 7/16		3/5	89	
	1	sf14	PL ½ x 8	7'-4¼		3/6	100	
	1	sf17	PL ½ x 8	6'-6 11/16		3/5	89	
	1	sf18	PL ½ x 8	7'-5¼		3/6	101	
	1	sf28	PL ¾ x 8	7'-4¼	53/14	3/16	150	
	1	sf32	PL ¾ x 8	7'-5¼	53/14	3/16	152	
	10	sf26	PL ½ x 8	1'-4	53/2	3/8	181	
	10	sf34	PL ½ x 8	1'-4		3/8	181	
	1	s1	PL ¾ x 8	8'-1⅞	53/14	3/17	167	
	1	s2	PL ¾ x 8	8'-3¼	53/14	3/17	169	
							76009#	

NOTES:

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-7.
3. FOR GIRDER STANDARD DETAILS, SEE DWG. 12-9.
4. FOR FIELD SPLICE DETAIL, SEE DWG. 12-10.

RECEIVED
CK'D BY WRJ OK'D BY
AUG 27 2001
RESUBMIT APPROVED ✓
BY CPW DATE 8/30/01

STEEL: ASTM [ ] A709-36 [ ] A709-50 [X] A709-50W [ ] Unless Noted
WELDING ELECTRODE: [X] E70 [ ] See Welding Proc. [ ] None
HOLES: [ ] 13/16 [X] 15/16 [ ] 1 1/16 [ ] Unless Noted [ ] As Noted [ ] None
PAINT: [X] None [ ] Galv. After Fab. [ ] As Noted
SPECIAL PAINT:
SPECIAL CLEANING: [X] Blast Clean SSPC SP10 [ ] None

ITEM NO. 506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22)

TITLE: GIRDER ~ G4B

FOR APPROVAL

APPROVED:		
PRINT DIST.		
5	4-7-01	APPR.
ORIG.		FAB.
5	7-13-01	APP
5	8-14-01	APP

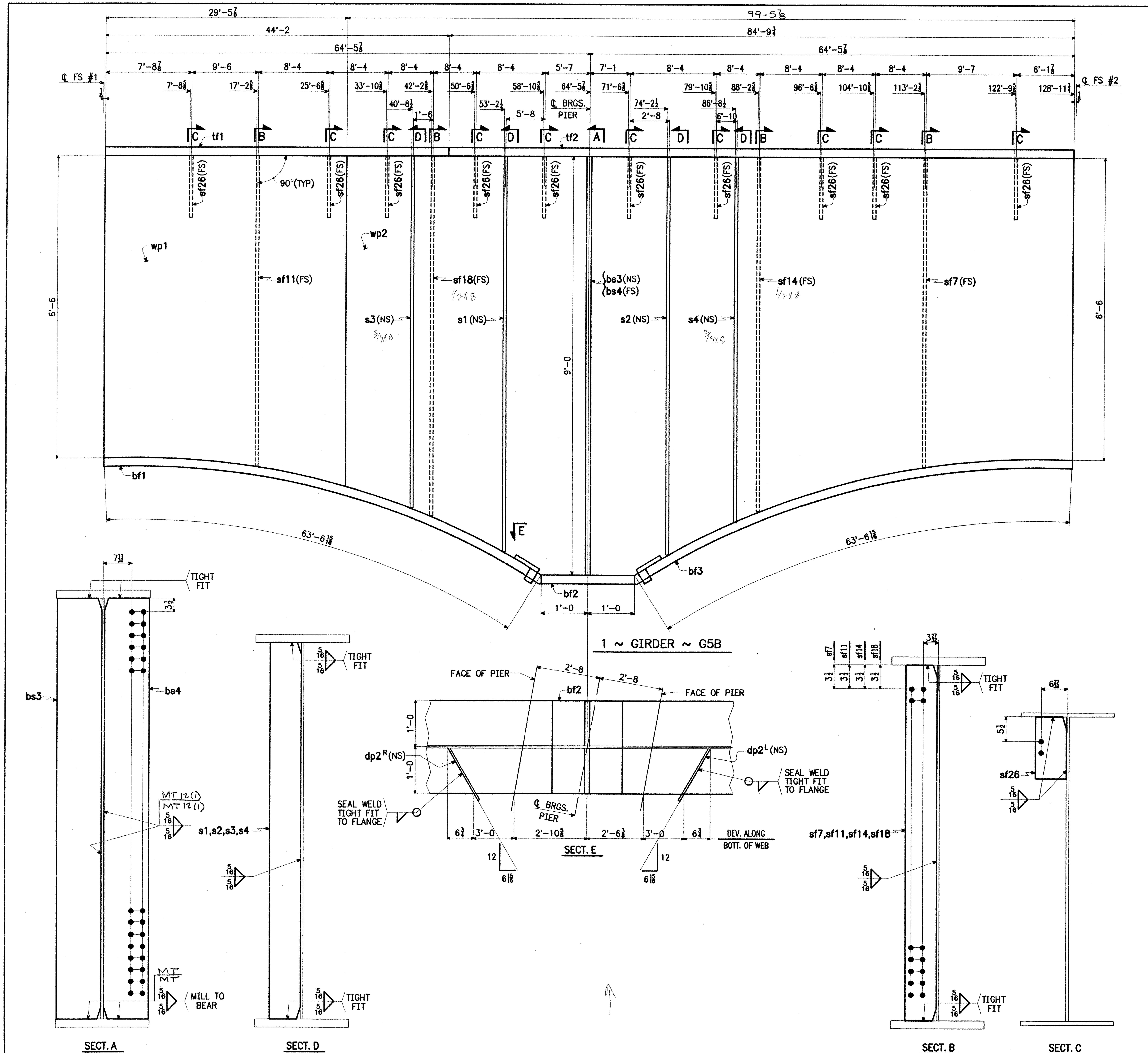
National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

		WORK ORDER NO.	DRAWING NO.	REV.
CHECKED	TS 3/01	15873	12-19	B
DRAWN	AV 3/01			



1 ~ GIRDER ~ G5B

SECT. A

SECT. D

SECT. E

SECT. B

SECT. C

SHIP MARK	BILL OF MATERIAL					WORK ORDER NO. 15873	DRAWING NO. 12-20	REV. B
	NO.	MARK	SHAPE	LENGTH		ITEM NO.	WT.	REMARKS
G5B	1		GIRDER					
	1	tf1	PL $2\frac{1}{4}$ x 24	44'-2	S1/8	2 / 2	8116	CVN
	1	tf2	PL $2\frac{1}{4}$ x 24	84'-$9\frac{3}{4}$	S1/2	2 / 3	~~15584~~	CVN
	1	bf1	PL $2\frac{1}{4}$ x 24	63'-$6\frac{15}{16}$	S1/4	2 / 4	11682	CVN
	1	bf2	PL $2\frac{1}{4}$ x 24	2'-0		2 / 5	368	CVN
	1	bf3	PL $2\frac{1}{4}$ x 24	63'-$6\frac{15}{16}$	S1/6	2 / 6	11682	CVN
	1	wp1	PL $\frac{11}{16}$ x $82\frac{3}{8}$	29'-$5\frac{7}{8}$	B/0	1 / 4		CVN
	1	wp2	PL $\frac{11}{16}$ x 108	99'-$5\frac{7}{8}$		1 / 5	26140	CVN
	1	bs3	PL $1\frac{1}{4}$ x $11\frac{1}{2}$	9'-0	S1/11	3 / 2	440	M1E
	1	bs4	PL $1\frac{1}{4}$ x $11\frac{1}{2}$	9'-0		3 / 2	440	M1E
	1	sf11	PL $\frac{1}{2}$ x 8	6'-$6\frac{11}{16}$	S3/2	3 / 5	89	
	1	sf18	PL $\frac{1}{2}$ x 8	7'-$5\frac{1}{4}$		3 / 6	101	
	1	sf14	PL $\frac{1}{2}$ x 8	7'-$4\frac{1}{4}$		3 / 6	100	
	1	sf7	PL $\frac{1}{2}$ x 8	6'-$6\frac{7}{16}$		3 / 5	89	
	10	sf26	PL $\frac{1}{2}$ x 8	1'-4		3 / 8	181	
	1	s1	PL $\frac{3}{4}$ x 8	8'-$1\frac{7}{8}$	S3/14	3 / 17	167	
	1	s2	PL $\frac{3}{4}$ x 8	8'-$3\frac{1}{4}$		3 / 17	169	
	1	s3	PL $\frac{3}{4}$ x 8	7'-$4\frac{1}{4}$		3 / 16	150	
	1	s4	PL $\frac{3}{4}$ x 8	7'-$5\frac{1}{4}$		3 / 16	152	
	1	$dp2^R$	PL $\frac{1}{4}$ x $4\frac{1}{4}$	1'-$3\frac{5}{8}$	S3/10	3 / 11	5	
	1	$dp2^L$	PL $\frac{1}{4}$ x $4\frac{1}{4}$	1'-$3\frac{5}{8}$		3 / 11	5	
							75660	#

NOTES:

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-8.
3. FOR GIRDER STANDARD DETAILS, SEE DWG. 12-9.
4. FOR FIELD SPLICE DETAIL, SEE DWG. 12-10.

RECEIVED
CK'D BY WKS OK'D BY
AUG 2 7 2001
RESUBMIT ____ APPROVED ✓
BY CPW DATE 8/30/01

STEEL: ASTM [ ] A709-36 [ ] A709-50 [X] A709-50W [ ] Unless Noted [ ]
WELDING ELECTRODE: [X] E70 [ ] See Welding Proc. [ ] None [ ]
HOLES: [ ] 13/16 [X] 15/16 [ ] 1 1/16 [ ] Unless Noted [ ] As Noted [ ] None
PAINT: [X] None [ ] Galv. After Fab. [ ] As Noted [ ]
SPECIAL PAINT:
SPECIAL CLEANING: [X] Blast Clean SSPC SP10 [ ] None

ITEM NO. 506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22)

TITLE: GIRDER ~ G5B

FOR APPROVAL

APPROVED:		
PRINT DIST.		
5	4-7-01	APPR.
ORIG.		FAB.
5	7-13-01	APP
5	8-24-01	APP
CHECKED	TS	3/01
DRAWN	AV	3/01

National Eastern Corporation
Plainville, Connecticut

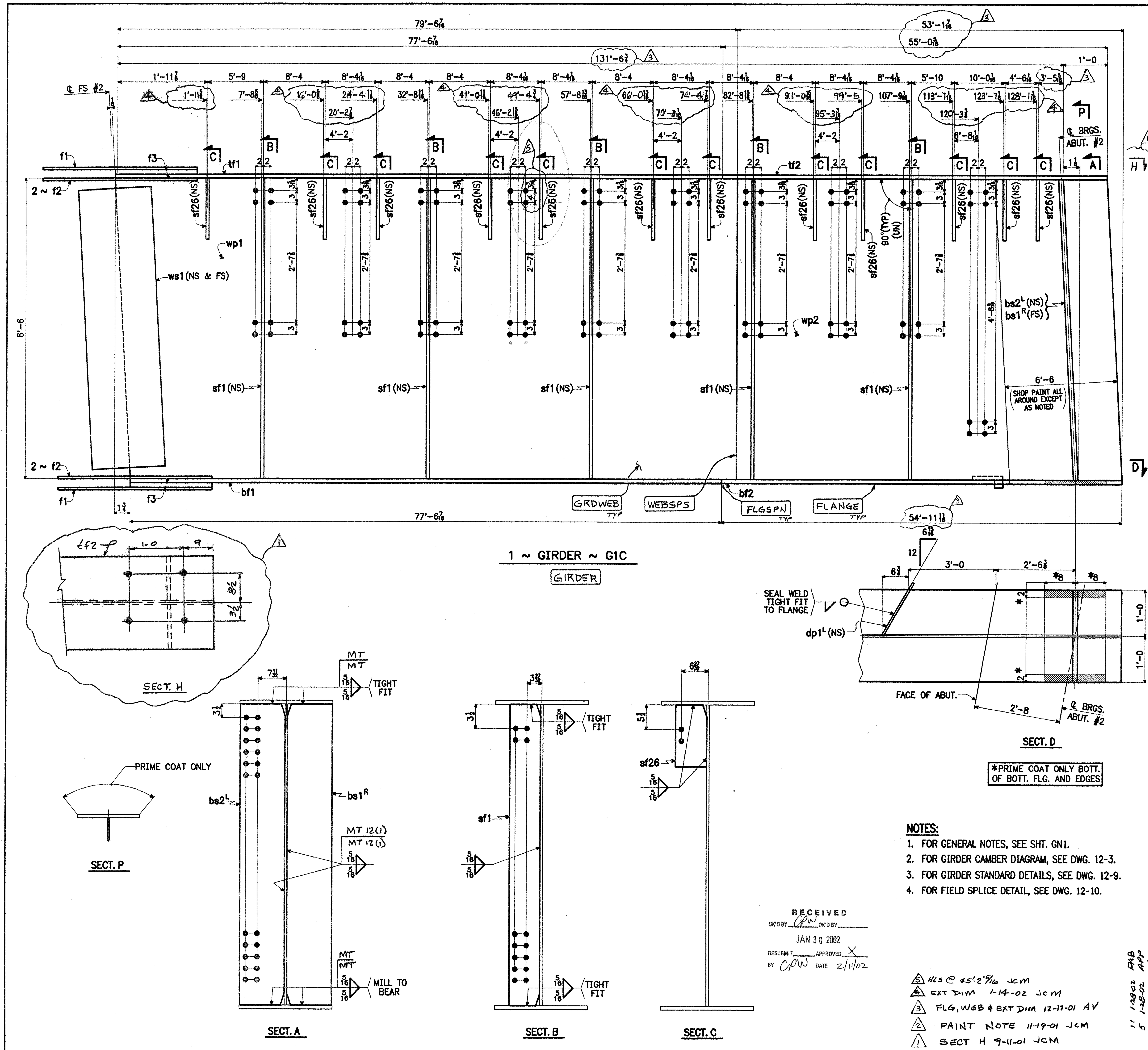
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

WORK ORDER NO.	DRAWING NO.	REV.
15873	12-20	B

OK



NOTES:

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-3.
3. FOR GIRDER STANDARD DETAILS, SEE DWG. 12-9.
4. FOR FIELD SPLICE DETAIL, SEE DWG. 12-10.

5 HLS @ 45'-2 5/16 JCM
4 EXT DIM 1-14-02 JCM
3 FLG, WEB & EXT DIM 12-17-01 AV
2 PAINT NOTE 11-19-01 JCM
1 SECT H 9-11-01 JCM

BILL OF MATERIAL

WORK ORDER NO. 15873 | DRAWING NO. 12-21 | REV. 5

SHIP MARK	NO.	MARK	SHAPE	LENGTH		ITEM NO.	WT.	REMARKS
G1C	1		GIRDER					
	1	tf1	PL 1" x 24	77'–6 7/16	5-1/14	1/14	6332	CVN
	1	tf2	PL 1" x 24	55'–0 5/16	3 5-1/15	1/15	4494	CVN
	1	bf1	PL 1" x 24	77'–6 7/16	5-1/14	1/16	6332	CVN
	1	bf2	PL 1" x 24	54'–11 11/16	3 5-1/15	1/17	4490	CVN
	1	wp1	PL 11/16 x 78	79'–6 7/16	5-2/2	1/6		CVN
	1	wp2	PL 11/16 x 78	53'–1 7/16	5-2/3	1/7	24184	CVN
	1	bs2ᴸ	PL 1 1/4 x 11 1/2	6'–6 1/8	5-1/11	3/2	318	M1E
	1	bs1ᴿ	PL 1 1/4 x 11 1/2	6'–6 1/8		3/2	318	M1E
	5	sf1	PL 1/2 x 8	6'–6	5-3/2	3/4	442	
	12	sf26	PL 1/2 x 8	1'–4		3/8	218	
	1	dp1ᴸ	PL 1/4 x 3	1'–3 5/8	5-3/12	3/10	3	
	2	f1	PL 5/8 x 24	3'–4 1/2	5-2/5	2/10	345	CVN
	4	f2	PL 5/8 x 10	3'–4 1/2		2/11	287	CVN
	2	f3	PL 1 1/4 x 24	1'–9 5/8	5-1/12	2/13	368	
	2	ws1	PL 5/8 x 72 1/2	1'–7 1/2	5-2/5	2/12	501	CVN
					3		48632 #	

7-14-02

STEEL: ASTM	☐ A709-36	☐ A709-50	☒ A709-50W	☐ Unless Noted	☐
WELDING ELECTRODE:	☒ E70	☐ See Welding Proc.	☐ None	☐	
HOLES:	☐ 13/16	☒ 15/16	☐ 1 1/16	☐ Unless Noted	☐ As Noted	☐ None
PAINT: 2	☐ None	☐ Galv. After Fab.	☐ As Noted	☒ SEE SHT GN1	
SPECIAL PAINT:					
SPECIAL CLEANING:	☒ Blast Clean SSPC SP10	☐ None			

ITEM NO. 506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22)

TITLE: GIRDER ~ G1C

REVISED

APPROVED: 9-5-01		
PRINT DIST.		
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP
5	8-24-01	APP
5	9-12-01	APP
12	9-12-01	FAB
5	11-19-01	APP
11	11-19-01	FAB
5	12-18-01	APP
11	12-18-01	FAB
CHECKED	TS	3/01
DRAWN	AV	3/01

11 1-28-02 FAB
5 1-28-02 APP
11 1-15-02 FAB

National Eastern Corporation
Plainville, Connecticut

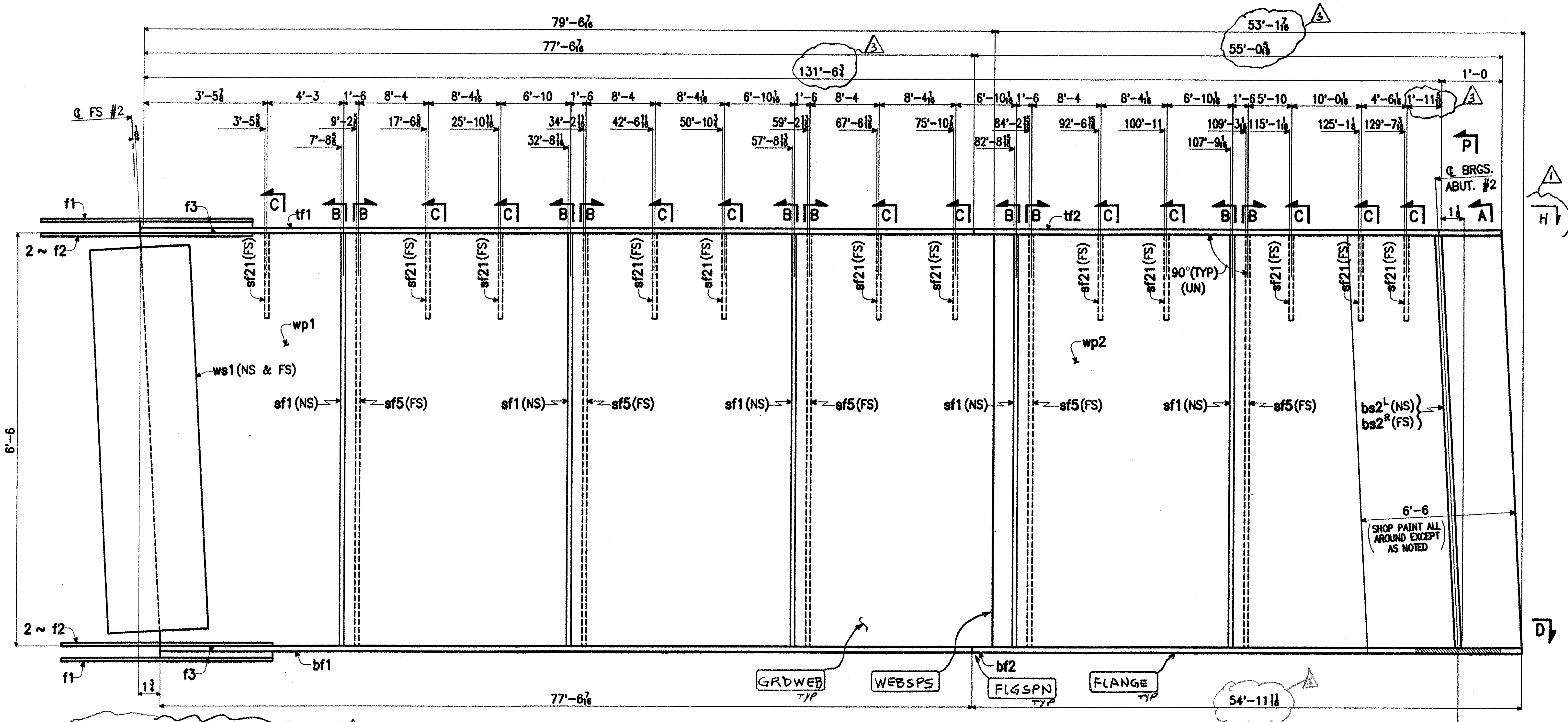
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

FOR APPROVAL

CUSTOMER: BECK & BELLUCCI, INC.

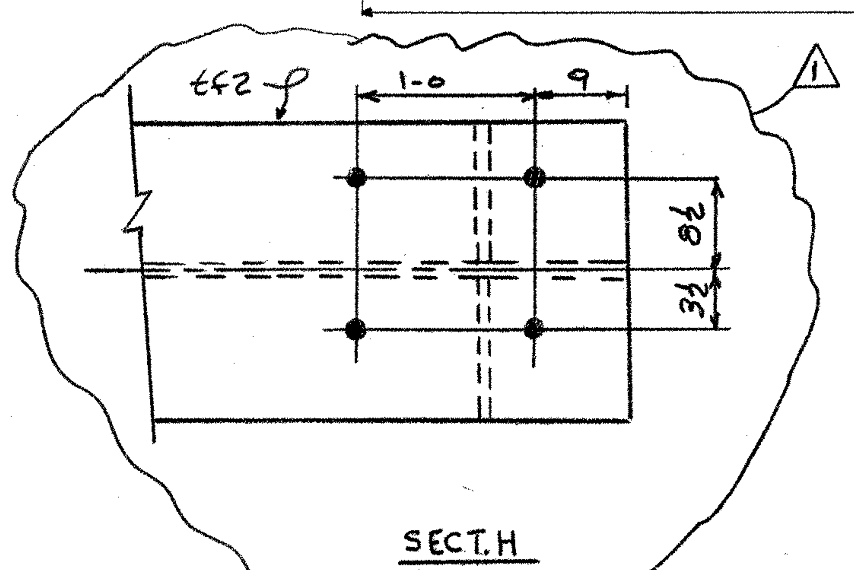
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

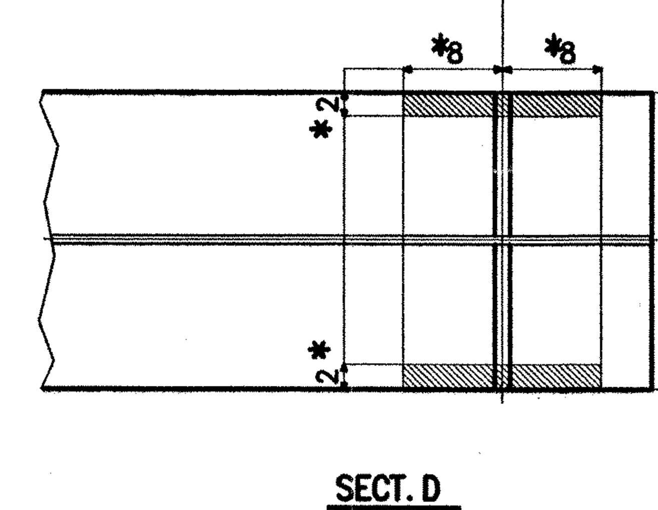
WORK ORDER NO.	DRAWING NO.	REV.
15873	12-21	5



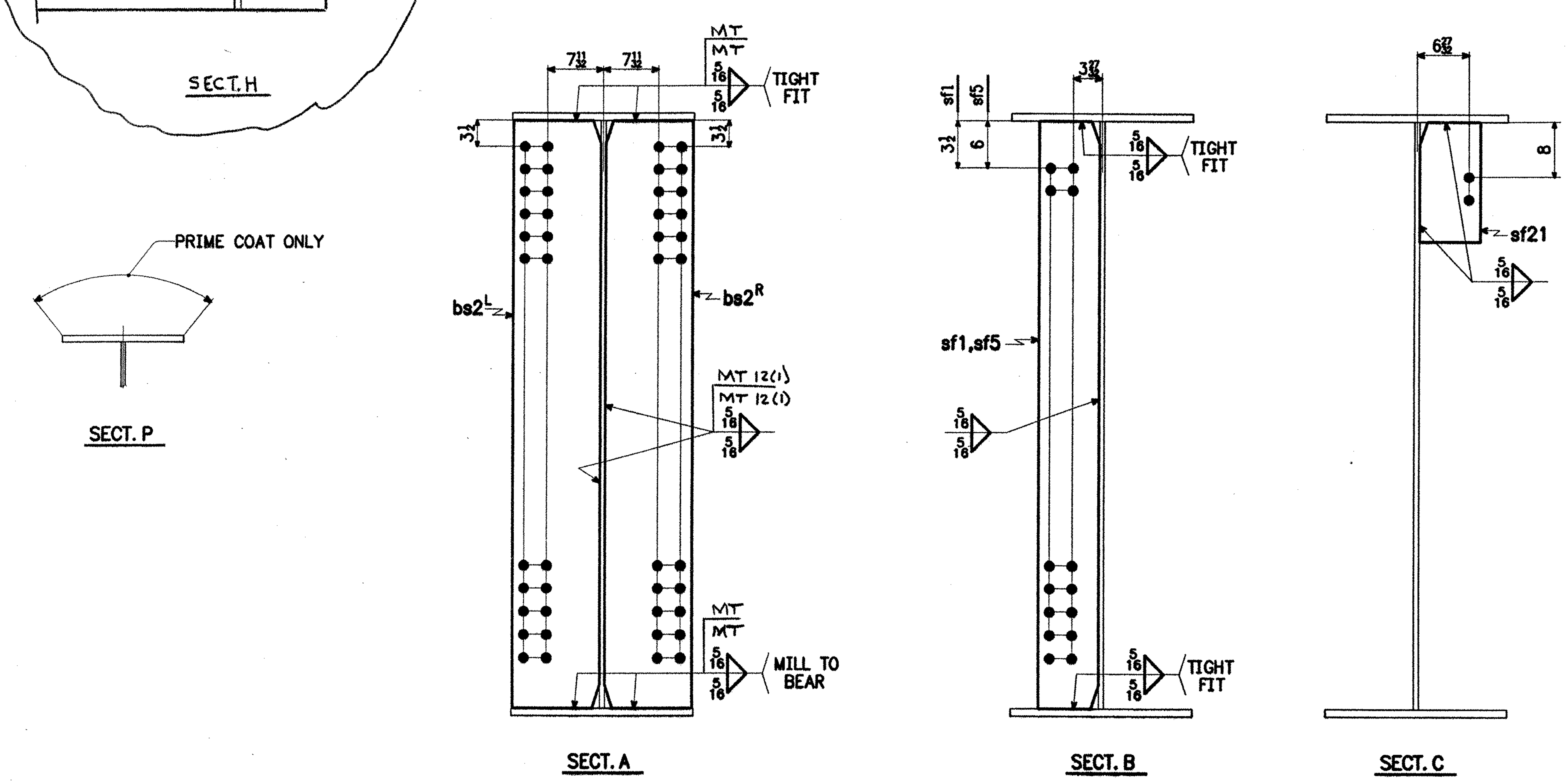
1 ~ GIRDER ~ G2C

GIRDER





*PRIME COAT ONLY BOTT. OF BOTT. FLG. AND EDGES



SHIP MARK	NO.	MARK	SHAPE	LENGTH		ITEM NO.	WT.	REMARKS
G2C	1		GIRDER					
	1	tf1	PL 1" x 24	77'-6 7/16	5-1/14	1/14	6332	CVN
	1	tf2	PL 1" x 24	55'-0 5/16	△3 5-1/15	1/15	4494	CVN
	1	bf1	PL 1" x 24	77'-6 7/16	5-1/14	1/16	6332	CVN
	1	bf2	PL 1" x 24	54'-11 11/16	△3 5-1/15	1/17	4490	CVN
	1	wp1	PL 11/16 x 78	79'-6 7/16	5-2/2	1/6		CVN
	1	wp2	PL 11/16 x 78	53'-1 7/16	5-2/3	1/7	24184	CVN
	1	bs2^L	PL 1 1/4 x 11 1/2	6'-6 1/8	5-1/11	3/2	318	M1E
	1	bs2^R	PL 1 1/4 x 11 1/2	6'-6 1/8	↓	3/2	318	M1E
	5	sf1	PL 1/2 x 8	6'-6	5-3/2	3/4	442	
	5	sf5	PL 1/2 x 8	6'-6	↓	3/4	442	
	12	sf21	PL 1/2 x 8	1'-4	5-3/2	3/8	218	
	2	f1	PL 5/8 x 24	3'-4 1/2	5-2/5	2/10	345	CVN
	4	f2	PL 5/8 x 10	3'-4 1/2	↓	2/11	287	CVN
	2	f3	PL 1 1/4 x 24	1'-9 5/8	5-1/12	2/13	368	
	2	ws1	PL 5/8 x 72 1/2	1'-7 1/2	5-2/5	2/12	501	CVN
					△3		49071	#

WORK ORDER NO. 15873 | DRAWING NO. 12-22 | REV. 3

NOTES:

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-4.
3. FOR GIRDER STANDARD DETAILS, SEE DWG. 12-9.
4. FOR FIELD SPLICE DETAIL, SEE DWG. 12-10.

RECEIVED
CK'D BY LWS OK'D BY
DEC 27 2001
RESUBMIT APPROVED As Noted
BY QPW DATE 1/4/02

△3 FLG, WEB & EXT DIM 12-17-01 AV
△2 PAINT NOTE 11-19-01 JCM
△1 SECT H 9-11-01 JCM

STEEL: ASTM ☐ A709-36 ☐ A709-50 ☒ A709-50W ☐ Unless Noted ☐
WELDING ELECTRODE: ☒ E70 ☐ See Welding Proc. ☐ None ☐
HOLES: ☐ 13/16 ☒ 15/16 ☐ 1 1/16 ☐ Unless Noted ☐ As Noted ☐ None
PAINT: △2 ☐ None ☐ Galv. After Fab. ☐ As Noted ☐
SPECIAL PAINT:
SPECIAL CLEANING: ☒ Blast Clean SSPC SP10 ☐ None

ITEM NO. 506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22)

TITLE: GIRDER ~ G2C

APPROVED: 9-5-01

PRINT DIST.		
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP
5	8-24-01	APP
5	9-12-01	APP
12	9-12-01	FAB
5	11-19-01	APP
11	11-19-01	FAB
5	12-18-01	APP
11	12-18-01	FAB
CHECKED	TS	3/01
DRAWN	AV	3/01

National Eastern Corporation
Plainville, Connecticut

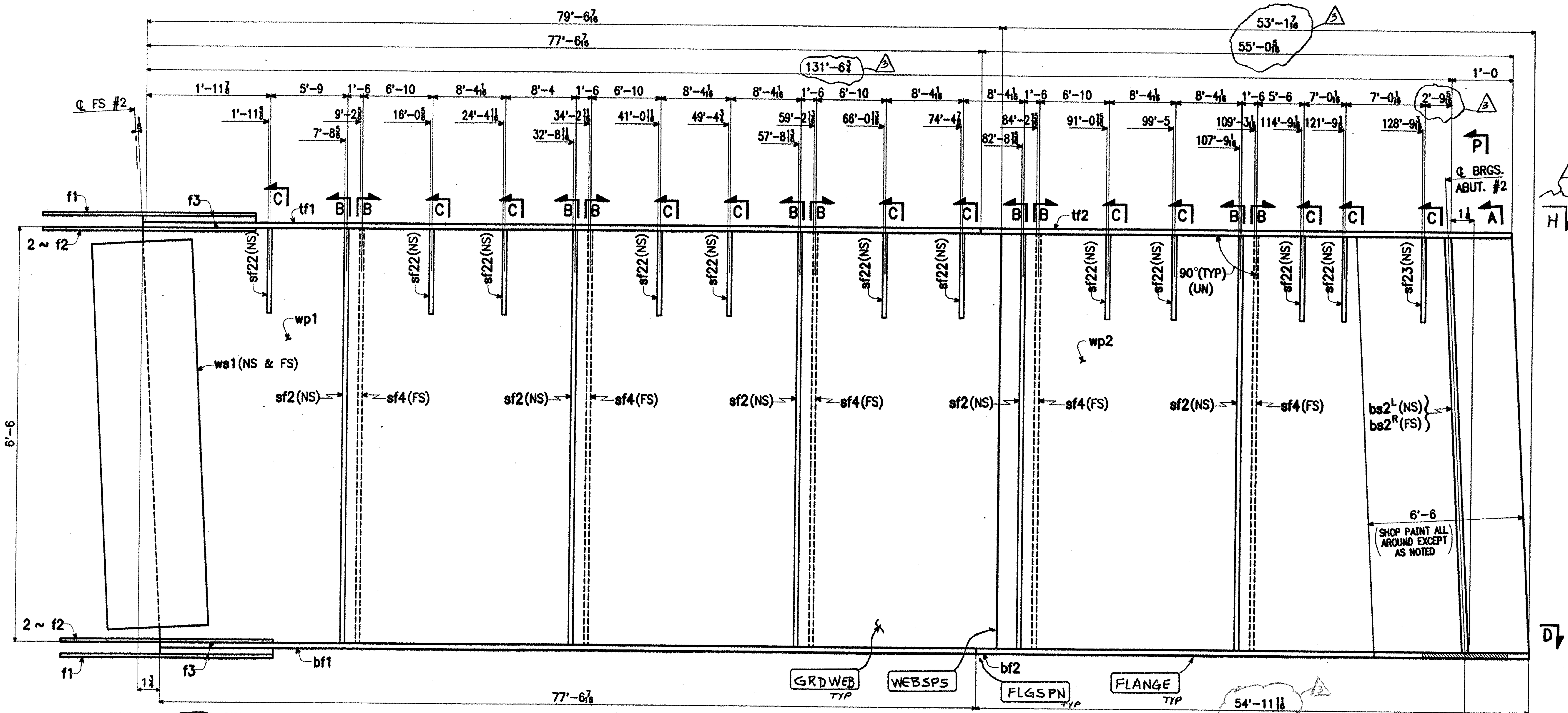
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

FOR APPROVAL
REVISED

CUSTOMER: BECK & BELLUCCI, INC.

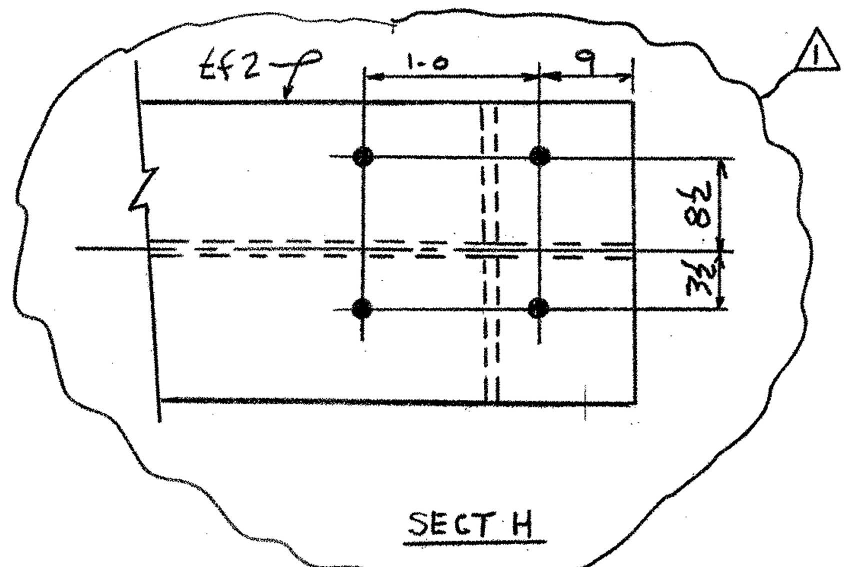
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

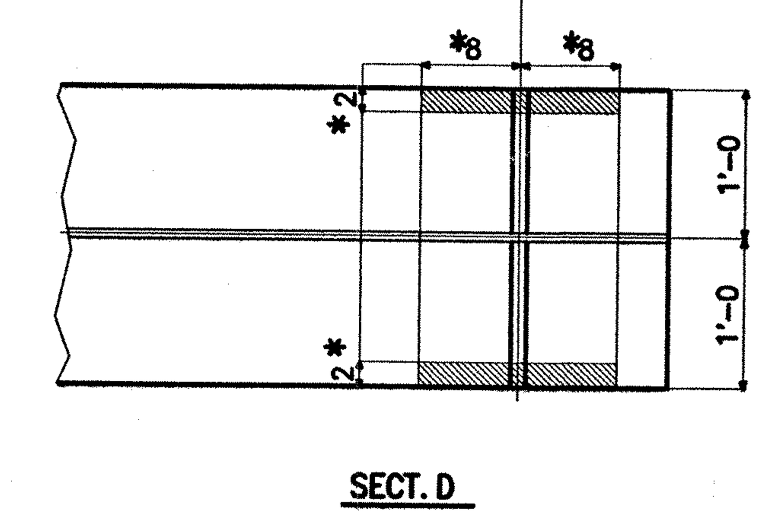
WORK ORDER NO.	DRAWING NO.	REV.
15873	12-22	3



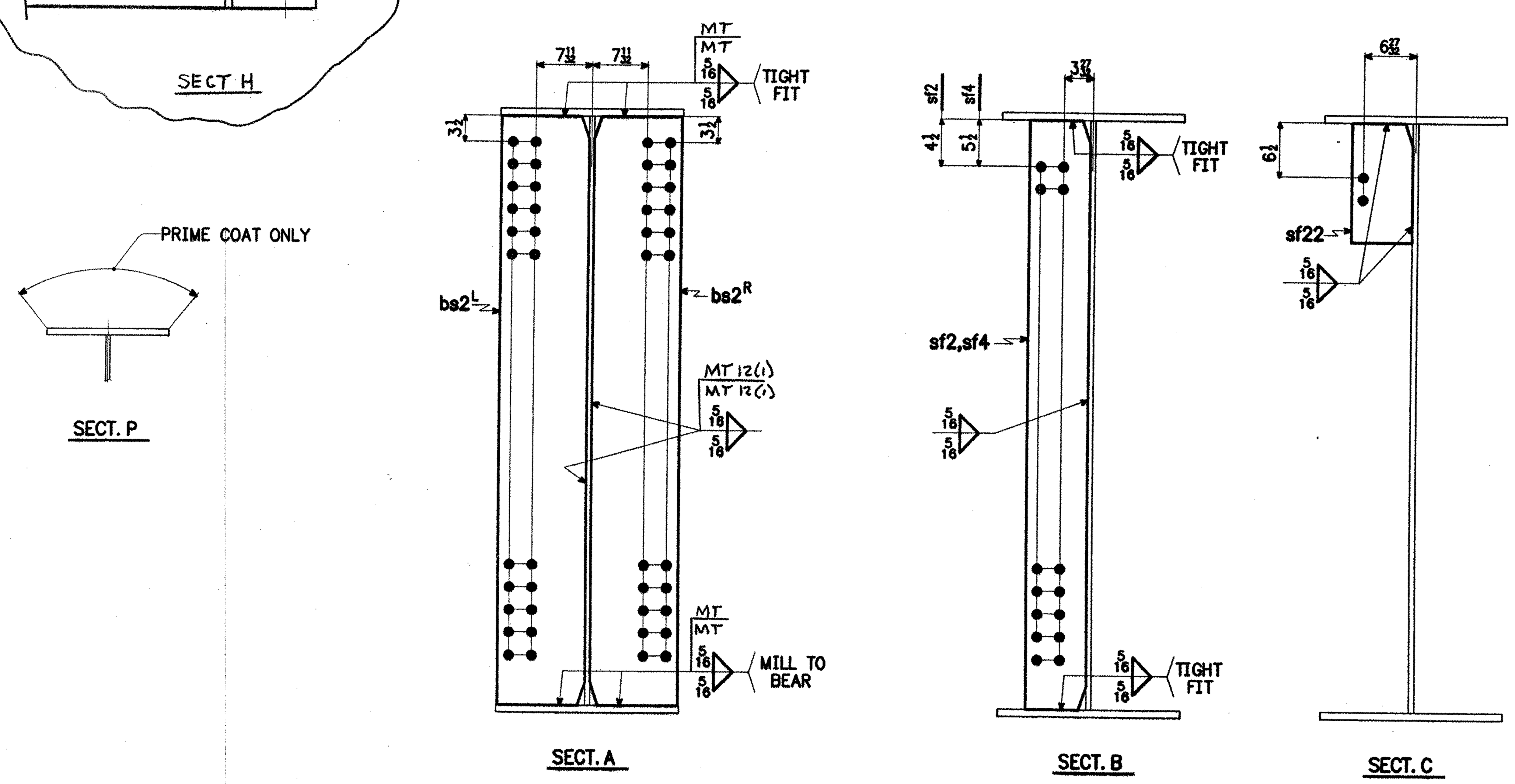
1 ~ GIRDER ~ G3C

GIRDER





SECT. D



SECT. P SECT. A SECT. B SECT. C

NOTES:

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-4.
3. FOR GIRDER STANDARD DETAILS, SEE DWG. 12-9.
4. FOR FIELD SPLICE DETAIL, SEE DWG. 12-10.

RECEIVED
CK'D BY WJSS OK'D BY
DEC 27 2001
RESUBMIT ___ APPROVED As Noted
BY CPW DATE 1/4/02

3 FLG, WEB & EXT DIM 12-17-01 AV
2 PAINT NOTE 11-19-01 JCM
1 SECT H 9-11-01 JCM

SHIP MARK	NO.	MARK	SHAPE	LENGTH			ITEM NO.	WT.	REMARKS
G3C	1		GIRDER						
	1	tf1	PL 1" x 24	77'-6 7/16		5-1/14	1/14	6332	CVN
	1	tf2	PL 1" x 24	55'-0 5/16	3	5-1/15	1/15	4494	CVN
	1	bf1	PL 1" x 24	77'-6 7/16		5-1/14	1/16	6332	CVN
	1	bf2	PL 1" x 24	54'-11 11/16	3	5-1/15	1/17	4490	CVN
	1	wp1	PL 11/16 x 78	79'-6 7/16		5-2/2	1/6		CVN
	1	wp2	PL 11/16 x 78	53'-1 7/16		5-2/3	1/7	24184	CVN
	1	bs2^L	PL 1 1/4 x 11 1/2	6'-6 1/8		5-1/11	3/2	318	M1E
	1	bs2^R	PL 1 1/4 x 11 1/2	6'-6 1/8			3/2	318	M1E
	5	sf2	PL 1/2 x 8	6'-6		5-3/2	3/4	442	
	5	sf4	PL 1/2 x 8	6'-6			3/4	442	
	12	sf22	PL 1/2 x 8	1'-4			3/8	218	
	2	f1	PL 5/8 x 24	3'-4 1/2		5-2/5	2/10	345	CVN
	4	f2	PL 5/8 x 10	3'-4 1/2			2/11	287	CVN
	2	f3	PL 1 1/4 x 24	1'-9 5/8		5-1/12	2/13	368	
	2	ws1	PL 5/8 x 72 1/2	1'-7 1/2		5-2/5	2/12	501	CVN

WORK ORDER NO. 15873 — DRAWING NO. 12-23 — REV. 3

STEEL: ASTM [ ] A709-36 [ ] A709-50 [X] A709-50W [ ] Unless Noted [ ]
WELDING ELECTRODE: [X] E70 [ ] See Welding Proc. [ ] None [ ]
HOLES: [ ] 13/16 [X] 15/16 [ ] 1 1/16 [ ] Unless Noted [ ] As Noted [ ] None
PAINT: 2 [ ] None [ ] Galv. After Fab. [ ] As Noted [X] SEE SHT GN1
SPECIAL PAINT:
SPECIAL CLEANING: [X] Blast Clean SSPC SP10 [ ] None

ITEM NO. 506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22)

TITLE: GIRDER ~ G3C

APPROVED: 9-5-01

PRINT DIST.		
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP
5	8-24-01	APP
5	9-12-01	APP
12	9-12-01	FAB
5	11-19-01	APP
11	11-19-01	FAB
5	12-18-01	APP
11	12-18-01	FAB
CHECKED	TS	3/01
DRAWN	AV	3/01

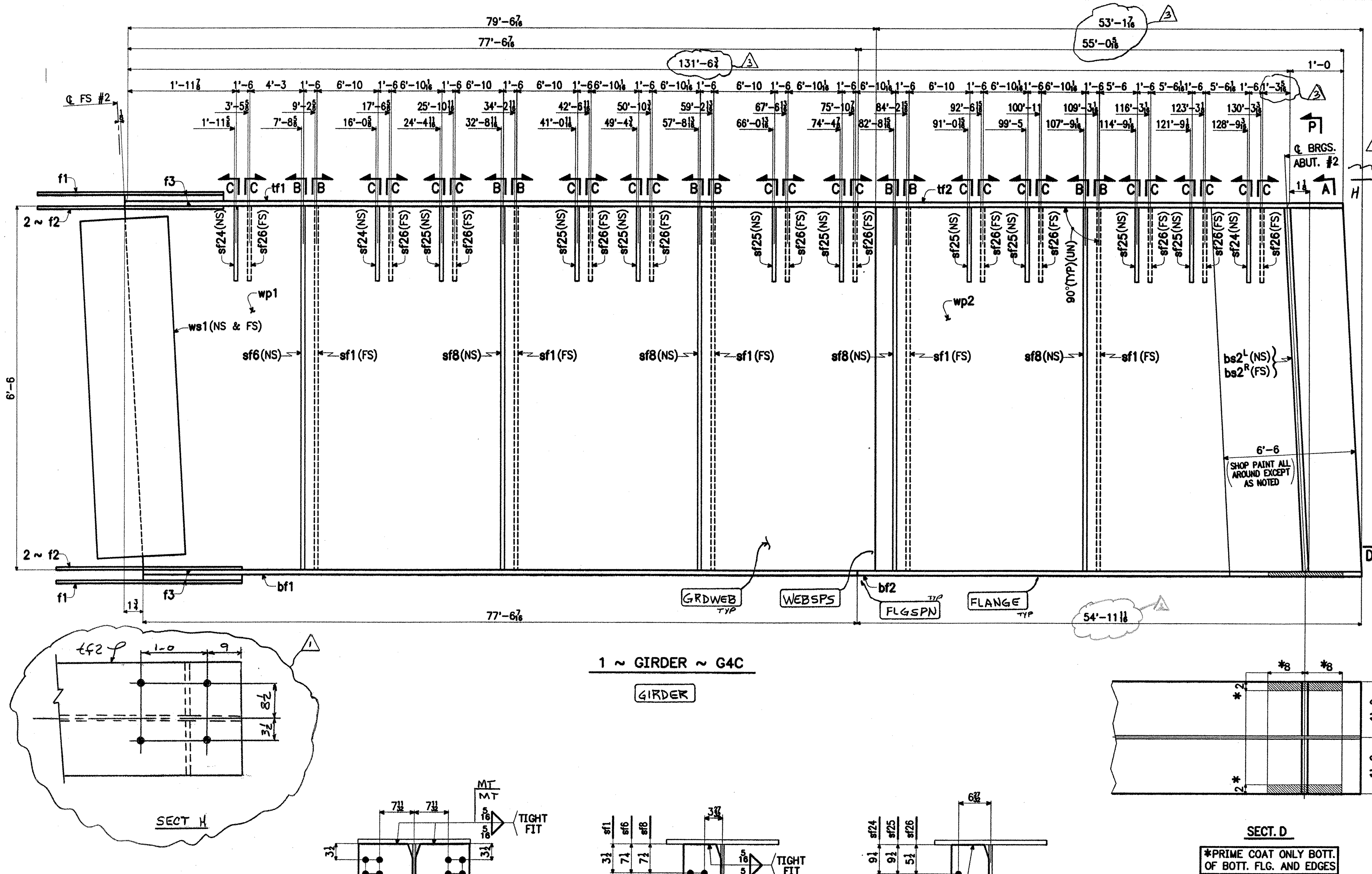
National Eastern Corporation
Plainville, Connecticut

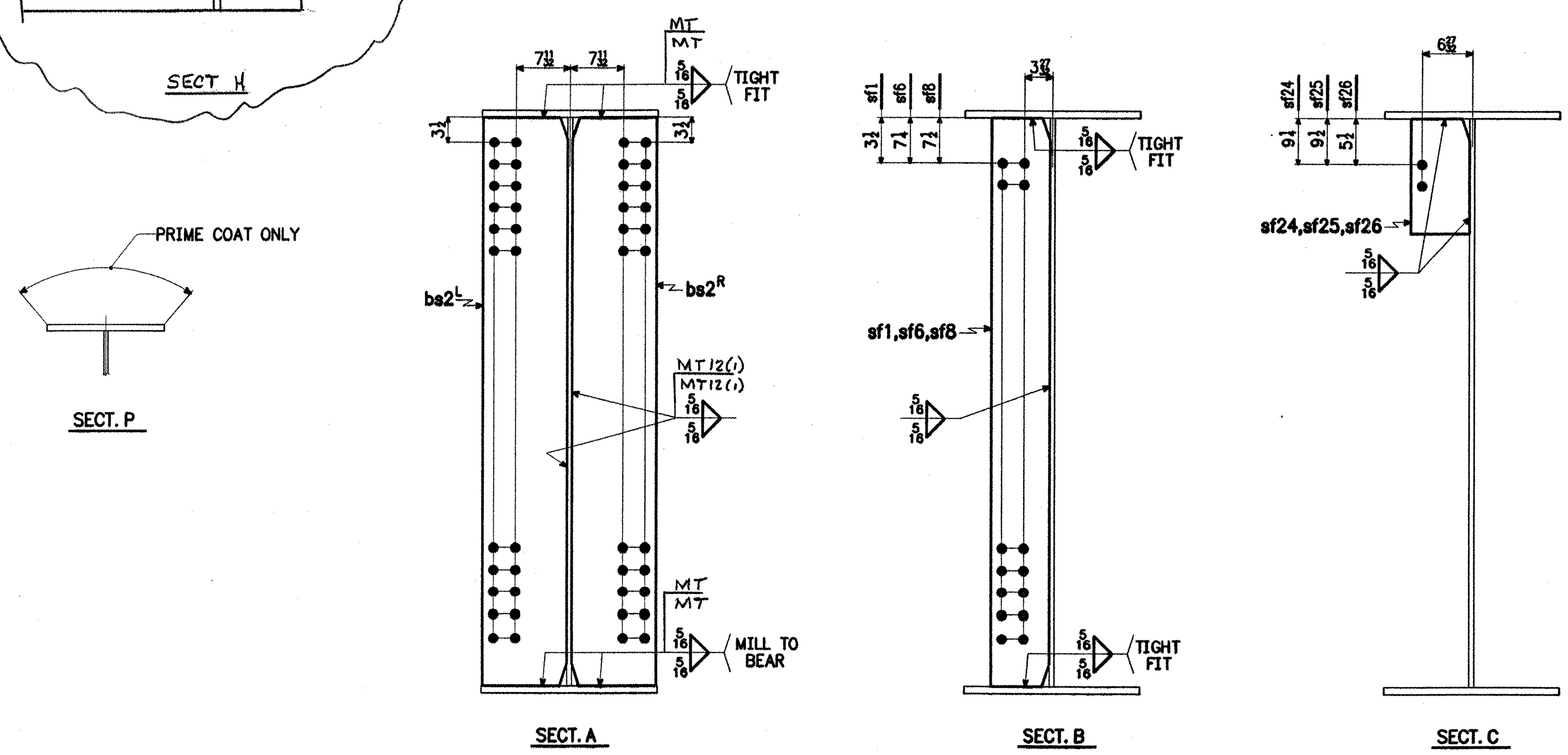
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

FOR APPROVAL
REVISED

CUSTOMER: BECK & BELLUCCI, INC.
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

WORK ORDER NO.	DRAWING NO.	REV.
15873	12-23	3





NOTES:

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-5.
3. FOR GIRDER STANDARD DETAILS, SEE DWG. 12-9.
4. FOR FIELD SPLICE DETAIL, SEE DWG. 12-10.

RECEIVED
CK'D BY WBS OK'D BY
DEC 27 2001
RESUBMIT APPROVED As Noted
BY OPW DATE 1/4/02

3 FLG, WEB & EXT DIM 12-17-01 AV
2 PAINT NOTE 11-19-01 JCM
1 SECT H 9-11-01 JCM

SHIP MARK	BILL OF MATERIAL					WORK ORDER NO. 15873	DRAWING NO. 12-24	REV. 3
	NO.	MARK	SHAPE	LENGTH		ITEM NO.	WT.	REMARKS
G4C	1		GIRDER					
	1	tf1	PL 1" x 24	77'-6 7/16	5-1/14	1 / 14	6332	CVN
	1	tf2	PL 1" x 24	55'-0 5/16	3 5-1/15	1 / 15	4494	CVN
	1	bf1	PL 1" x 24	77'-6 7/16	5-1/14	1 / 16	6332	CVN
	1	bf2	PL 1" x 24	54'-11 11/16	3 5-1/15	1 / 17	4490	CVN
	1	wp1	PL 11/16 x 78	79'-6 7/16	5-2/2	1 / 6		CVN
	1	wp2	PL 11/16 x 78	53'-1 7/16	5-2/3	1 / 7	24184	CVN
	1	bs2L	PL 1 1/4 x 11 1/2	6'-6 1/8	5-1/11	3 / 2	318	M1E
	1	bs2R	PL 1 1/4 x 11 1/2	6'-6 1/8		3 / 2	318	M1E
	5	sf1	PL 1/2 x 8	6'-6	5-3/2	3 / 4	442	
	1	sf6	PL 1/2 x 8	6'-6	5-3/2	3 / 4	88	
	4	sf8	PL 1/2 x 8	6'-6		3 / 4	354	
	3	sf24	PL 1/2 x 8	1'-4	5-3/2	3 / 8	54	
	9	sf25	PL 1/2 x 8	1'-4		3 / 8	163	
	12	sf26	PL 1/2 x 8	1'-4		3 / 8	218	
	2	f1	PL 5/8 x 24	3'-4 1/2	5-2/5	2 / 10	345	CVN
	4	f2	PL 5/8 x 10	3'-4 1/2		2 / 11	287	CVN
	2	f3	PL 1 1/4 x 24	1'-9 5/8	5-1/12	2 / 13	368	
	2	ws1	PL 5/8 x 72 1/2	1'-7 1/2	5-2/5	2 / 12	501	CVN
					3		49288 #	

STEEL: ASTM ☐ A709-36 ☐ A709-50 ☒ A709-50W ☐ Unless Noted ☐
WELDING ELECTRODE: ☒ E70 ☐ See Welding Proc. ☐ None ☐
HOLES: ☐ 13/16 ☒ 15/16 ☐ 1 1/16 ☐ Unless Noted ☐ As Noted ☐ None
PAINT: 2 ☐ None ☐ Galv. After Fab. ☐ As Noted ☒ SEE SHT GN1
SPECIAL PAINT:
SPECIAL CLEANING: ☒ Blast Clean SSPC SP10 ☐ None

ITEM NO. 506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)

TITLE: GIRDER ~ G4C

APPROVED: 9-5-01		
PRINT DIST.		
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP
5	8-24-01	APP
5	9-12-01	APP
12	9-12-01	FAB
5	11-19-01	APP
11	11-19-01	FAB
5	12-18-01	APP
11	12-18-01	FAB
CHECKED	TS	3/01
DRAWN	AV	3/01

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

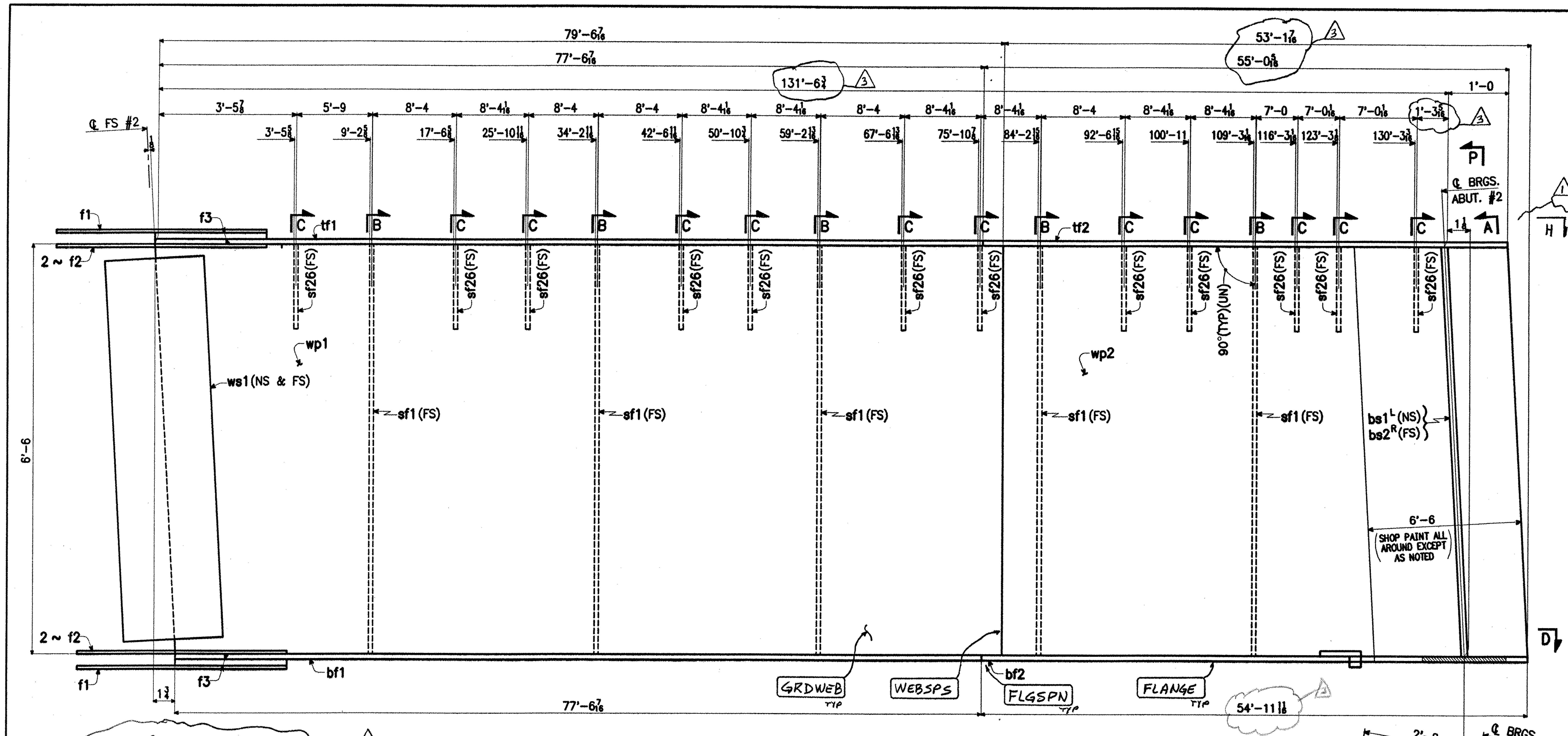
FOR APPROVAL

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

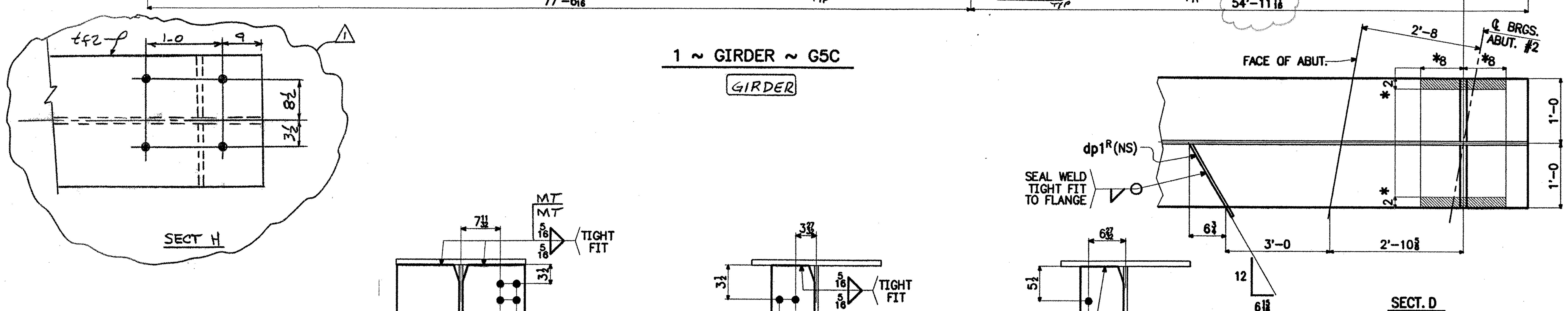
REVISED

WORK ORDER NO.	DRAWING NO.	REV.
15873	12-24	3



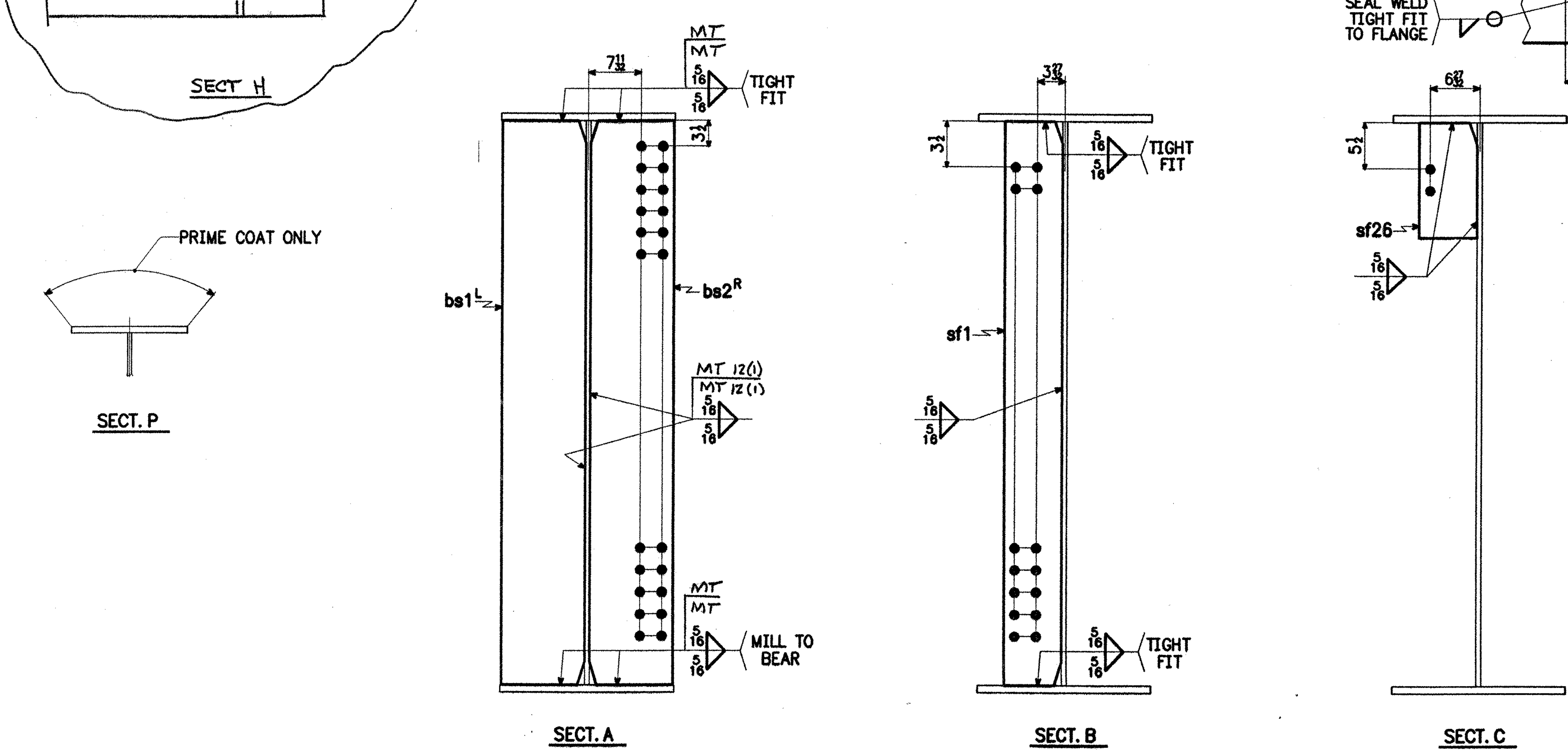
1 ~ GIRDER ~ G5C

GIRDER



SECT. D

*PRIME COAT ONLY BOTT. OF BOTT. FLG. AND EDGES



NOTES:

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-5.
3. FOR GIRDER STANDARD DETAILS, SEE DWG. 12-9.
4. FOR FIELD SPLICE DETAIL, SEE DWG. 12-10.

RECEIVED
CK'D BY WBJ OK'D BY
DEC 27 2001
RESUBMIT APPROVED As Noted
BY DATE 1/4/02

3 FLG, WEB & EXT DIM 12-17-01 AV
2 PAINT NOTE 11-19-01 JCM
1 SECT H 9-11-01 JCM

SHIP MARK	NO.	MARK	SHAPE	LENGTH		ITEM NO.	WT.	REMARKS
G5C	1		GIRDER					
	1	tf1	PL 1" x 24	77'-6 7/16	5-1/14	1/14	6332	CVN
	1	tf2	PL 1" x 24	55'-0 5/16	3 5-1/15	1/15	4494	CVN
	1	bf1	PL 1" x 24	77'-6 7/16	5-1/14	1/16	6332	CVN
	1	bf2	PL 1" x 24	54'-11 11/16	3 5-1/15	1/17	4490	CVN
	1	wp1	PL 11/16 x 78	79'-6 7/16	5-2/2	1/6		CVN
	1	wp2	PL 11/16 x 78	53'-1 7/16	5-2/3	1/7	24184	CVN
	1	bs1L	PL 1 1/4 x 11 1/2	6'-6 1/8	5-1/11	3/2	318	M1E
	1	bs2R	PL 1 1/4 x 11 1/2	6'-6 1/8		3/2	318	M1E
	5	sf1	PL 1/2 x 8	6'-6	5-3/2	3/4	442	
	12	sf26	PL 1/2 x 8	1'-4		3/8	218	
	1	dp1R	PL 1/4 x 3	1'-3 5/8	5-3/12	3/10	3	
	2	f1	PL 5/8 x 24	3'-4 1/2	5-2/5	2/10	345	CVN
	4	f2	PL 5/8 x 10	3'-4 1/2		2/11	287	CVN
	2	f3	PL 1 1/4 x 24	1'-9 5/8	5-1/12	2/13	368	
	2	ws1	PL 5/8 x 72 1/2	1'-7 1/2	5-2/5	2/12	501	CVN
					3		48632	

WORK ORDER NO. 15873 | DRAWING NO. 12-25 | REV. 3

STEEL: ASTM ☐ A709-36 ☐ A709-50 ☒ A709-50W ☐ Unless Noted ☐
WELDING ELECTRODE: ☒ E70 ☐ See Welding Proc. ☐ None ☐
HOLES: ☐ 13/16 ☒ 15/16 ☐ 1 1/16 ☐ Unless Noted ☐ As Noted ☐ None
PAINT: 2 ☐ None ☐ Galv. After Fab. ☐ As Noted ☒ SEE SHT GN1
SPECIAL PAINT:
SPECIAL CLEANING: ☒ Blast Clean SSPC SP10 ☐ None

ITEM NO. 506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22)

TITLE: GIRDER ~ G5C

APPROVED: 9-5-01

PRINT DIST.		
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP
5	8-24-01	APP
5	9-12-01	APP
12	9-12-01	FAB
5	11-19-01	APP
11	11-19-01	FAB
5	12-18-01	APP
11	12-18-01	FAB
CHECKED	TS	3/01
DRAWN	AV	3/01

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

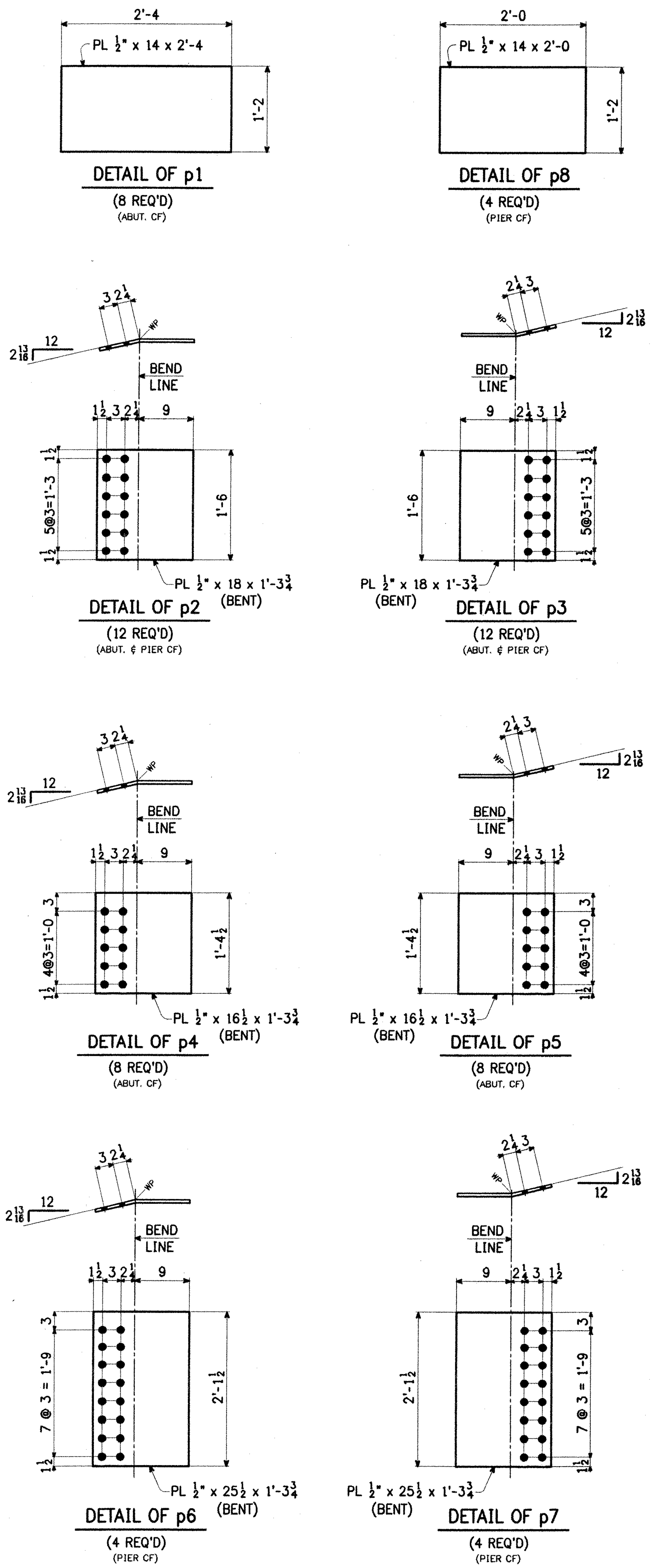
FOR APPROVAL
REVISED

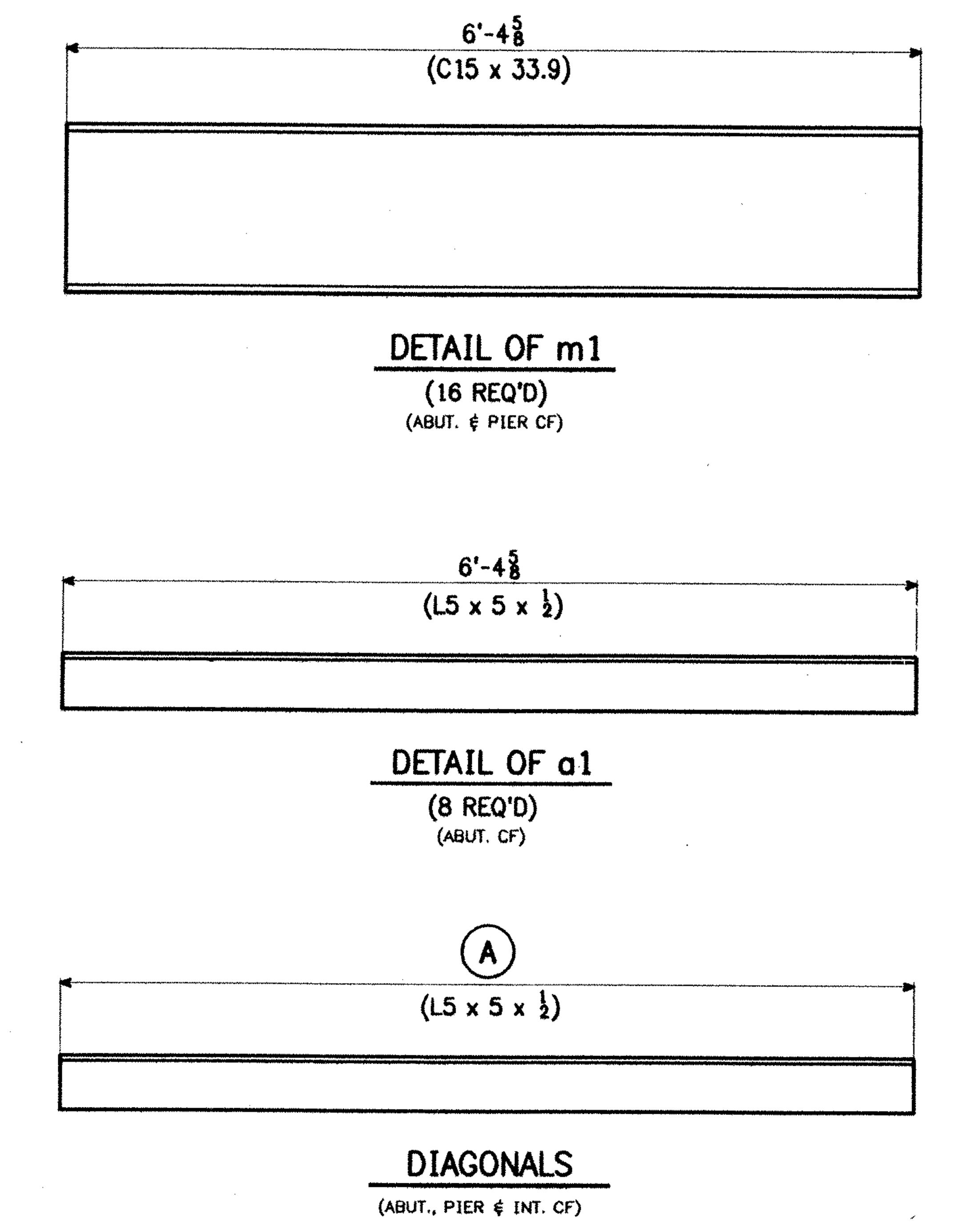
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

WORK ORDER NO.	DRAWING NO.	REV.
15873	12-25	3

WORK ORDER NO.	DRAWING NO.	REV.
15873	20-1	A



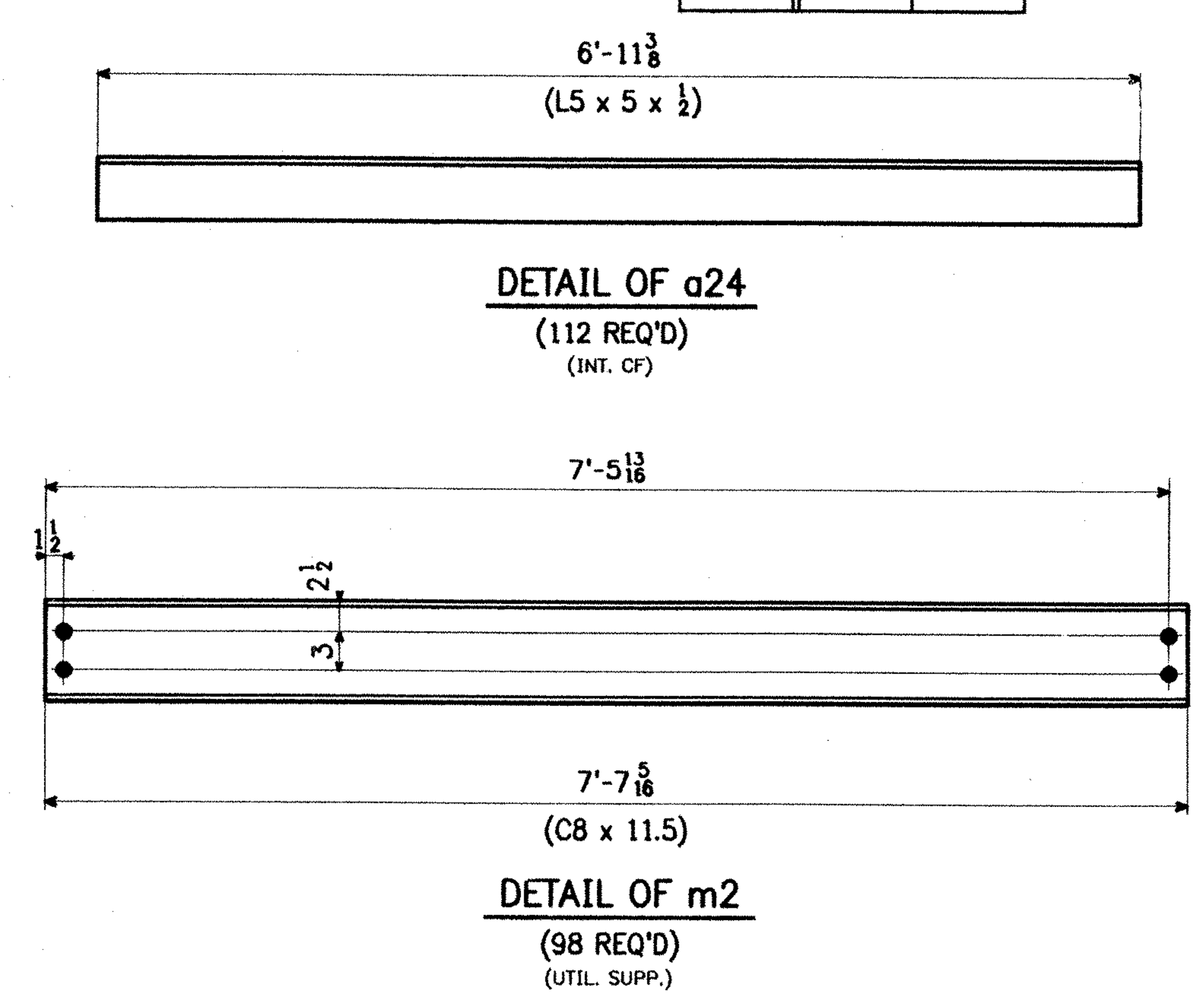


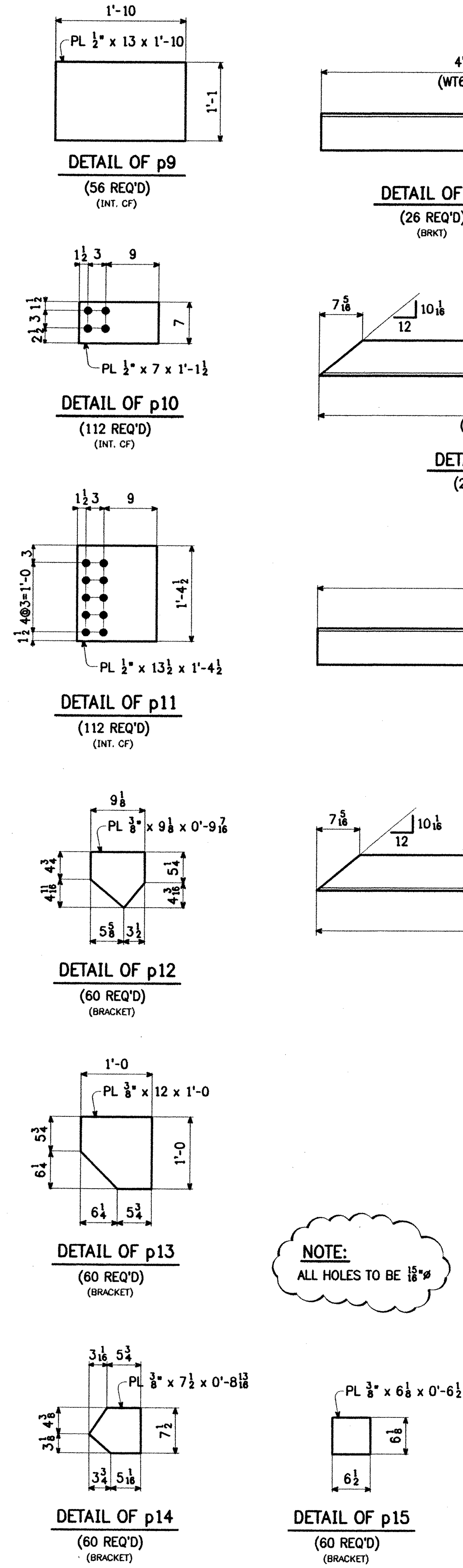
DIAGONALS

(ABUT., PIER ¢ INT. CF)

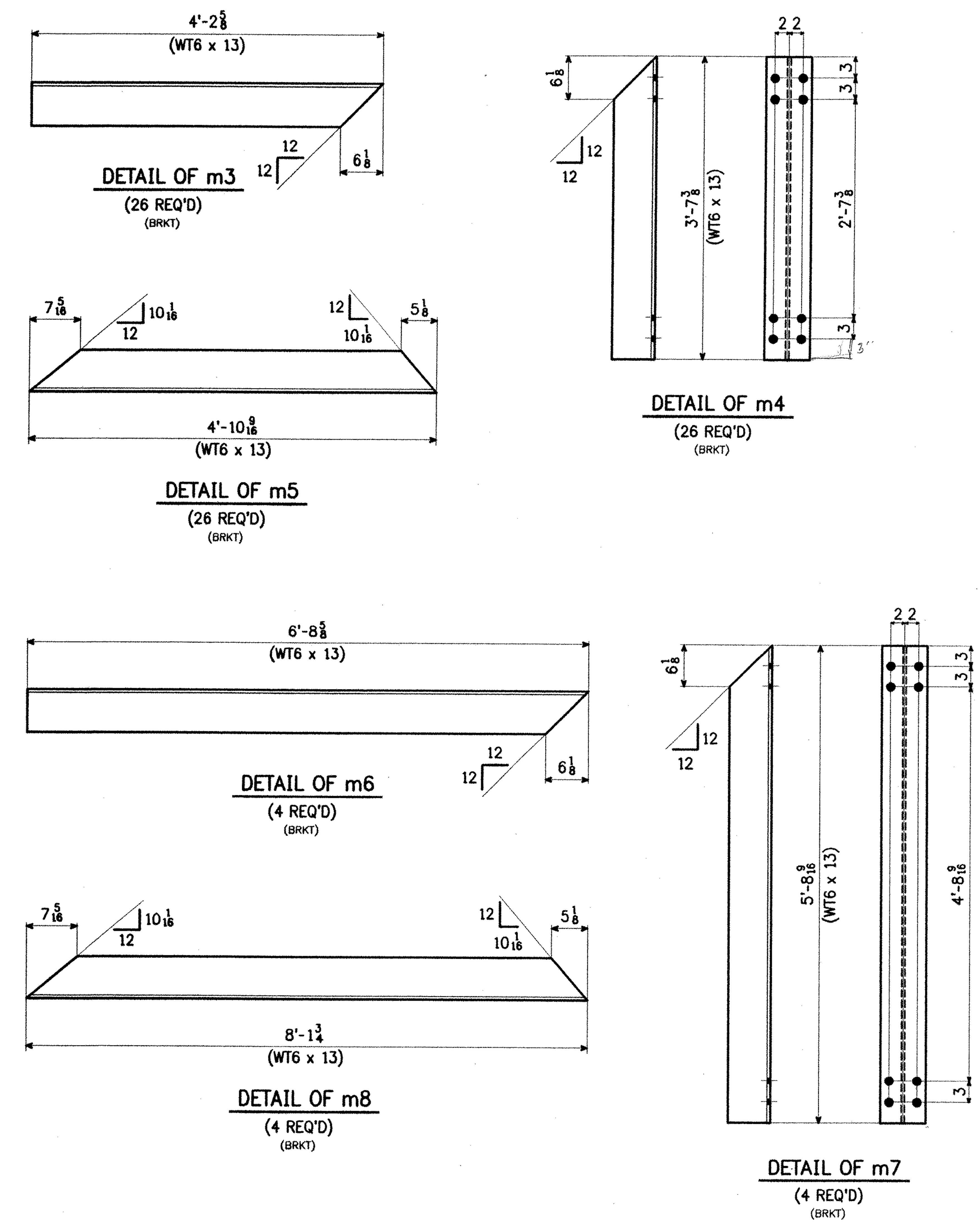
	MARK	NO. REQ'D	A
ABT.	a2	1	4'-2⅜
ABT.	a3	1	3'-11⅝
ABT.	a4	1	4'-1 13/16
ABT.	a5	1	4'-0¼
ABT.	a6	1	4'-0 5/16
ABT.	a7	1	4'-1¾
ABT.	a8	1	4'-0 3/16
ABT.	a9	1	4'-1 13/16
ABT.	a10	1	4'-2
ABT.	a11	1	4'-0
ABT.	a12	2	4'-2 5/16

	MARK	NO. REQ'D	A
ABT.	a13	2	3'-11 11/16
ABT.	a14	1	4'-0⅝
ABT.	a15	1	4'-1⅜
PR.	a16	1	5'-10 9/16
PR.	a17	1	5'-7 3/16
PR.	a18	1	5'-10⅛
PR.	a19	1	5'-8 3/16
PR.	a20	1	5'-8¼
PR.	a21	1	5'-9¼
INT.	a22	96	4'-11 11/16
INT.	a23	16	5'-7⅝
	a24	1	5'-10 5/16
	a25	1	5'-8 1/16





NOTE:
ALL HOLES TO BE 15/16"ø



RECEIVED
CK'D BY WBS OK'D BY______
AUG 2 7 2001
RESUBMIT______ APPROVED ✓
BY CPW DATE 8/30/01

ITEM NO. 506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)

TITLE: CROSSFRAME STANDARDS — FOR APPROVAL

APPROVED:		
PRINT DIST.		
5	4-7-01	APPR.
ORIG.		FAB.
5	7-13-01	APP
5	8-24-01	APP
CHECKED	TS	3/01
DRAWN	AV	3/01

National Eastern Corporation
Plainville, Connecticut

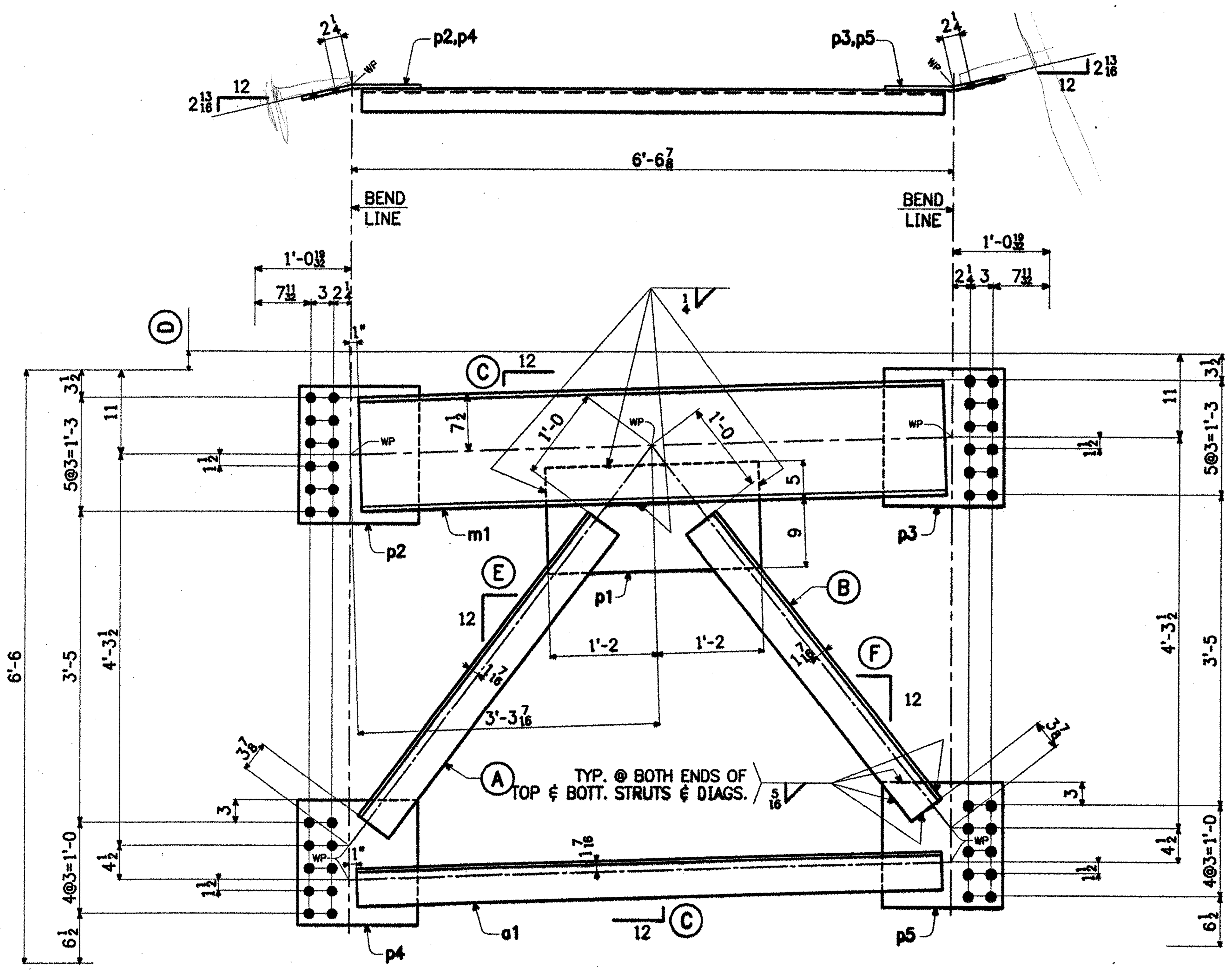
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

CUSTOMER: BECK ¢ BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

WORK ORDER NO.	DRAWING NO.	REV.
15873	20-1	A

OK



ABUT. CROSSFRAMES

	MARK	NO. REQ'D	(A)	(B)	(C)	(D)	(E)	(F)
ABT. 1	F1	1	a2	a3	9/16	3 1/2	8 7/8	9 1/2
ABT. 1	F2	1	a4	a5	5/16	1 15/16	9	9 3/8
ABT. 2	F5	1	a10	a11	3/8	2 1/2	9	9 7/16
ABT. 2	F6	1	a9	a8	5/16	2 3/16	9	9 3/8

1

EDCSKW

RECEIVED
CHD BY WB1 CHD BY
NOV 2 1 2001
APPROVED ✓
BY GPW DATE 11/30/01

2 PAINT NOTE 11-19-01 JCM
1 REVISED PC. MK. a8 & a9 AV. 9-20-01

BILL OF MATERIAL

WORK ORDER NO. 15873 | DRAWING NO. 20-2 | REV. 2

SHIP MARK	NO.	MARK	SHAPE	LENGTH		ITEM NO.	WT.	REMARKS
F1	1		CROSSFRAME					661
	1	m1	C15 x 33.9	6'-4 5/8	S4/8	5/2	216	
	1	a1	L5 x 5 x 1/2	6'-4 5/8	S4/2	5/4	103	
	1	a2	L5 x 5 x 1/2	4'-2 3/8		5/3	68	
	1	a3	L5 x 5 x 1/2	3'-11 5/8		5/3	64	
	1	p1	PL 1/2 x 14	2'-4	S2/7	5/7	56	
	1	p2	PL 1/2 x 18	1'-3 3/4		5/5	40	BENT
	1	p3	PL 1/2 x 18	1'-3 3/4		5/5	40	BENT
	1	p4	PL 1/2 x 16 1/2	1'-3 3/4		5/6	37	BENT
	1	p5	PL 1/2 x 16 1/2	1'-3 3/4		5/6	37	BENT
F2	1		CROSSFRAME					661
	1	m1	C15 x 33.9	6'-4 5/8	S4/8	5/2	216	
	1	a1	L5 x 5 x 1/2	6'-4 5/8	S4/2	5/4	103	
	1	a4	L5 x 5 x 1/2	4'-1 13/16		5/3	67	
	1	a5	L5 x 5 x 1/2	4'-0 1/4		5/3	65	
	1	p1	PL 1/2 x 14	2'-4	S2/7	5/7	56	
	1	p2	PL 1/2 x 18	1'-3 3/4		5/5	40	BENT
	1	p3	PL 1/2 x 18	1'-3 3/4		5/5	40	BENT
	1	p4	PL 1/2 x 16 1/2	1'-3 3/4		5/6	37	BENT
	1	p5	PL 1/2 x 16 1/2	1'-3 3/4		5/6	37	BENT
F5	1		CROSSFRAME					661
	1	m1	C15 x 33.9	6'-4 5/8	S4/8	5/2	216	
	1	a1	L5 x 5 x 1/2	6'-4 5/8	S4/2	5/4	103	
	1	a10	L5 x 5 x 1/2	4'-2		5/3	67	
	1	a11	L5 x 5 x 1/2	4'-0		5/3	65	
	1	p1	PL 1/2 x 14	2'-4	S2/7	5/7	56	
	1	p2	PL 1/2 x 18	1'-3 3/4		5/5	40	BENT
	1	p3	PL 1/2 x 18	1'-3 3/4		5/5	40	BENT
	1	p4	PL 1/2 x 16 1/2	1'-3 3/4		5/6	37	BENT
	1	p5	PL 1/2 x 16 1/2	1'-3 3/4		5/6	37	BENT
F6	1		CROSSFRAME					661
	1	m1	C15 x 33.9	6'-4 5/8	S4/8	5/2	216	
	1	a1	L5 x 5 x 1/2	6'-4 5/8	S4/2	5/4	103	
1	1	a8	L5 x 5 x 1/2	4'-0 3/16		5/3	67	
	1	a9	L5 x 5 x 1/2	4'-1 13/16		5/3	65	
	1	p1	PL 1/2 x 14	2'-4	S2/7	5/7	56	
	1	p2	PL 1/2 x 18	1'-3 3/4		5/5	40	BENT
	1	p3	PL 1/2 x 18	1'-3 3/4		5/5	40	BENT
	1	p4	PL 1/2 x 16 1/2	1'-3 3/4		5/6	37	BENT
	1	p5	PL 1/2 x 16 1/2	1'-3 3/4		5/6	37	BENT

2644#

STEEL: ASTM ☐ A709-36 ☐ A709-50 ☒ A709-50W ☐ Unless Noted ☐
WELDING ELECTRODE: ☒ E70 ☐ See Welding Proc. ☐ None ☐
HOLES: ☐ 13/16 ☒ 15/16 ☐ ☐ Unless Noted ☐ As Noted ☐ None
PAINT: ☐ None ☐ Galv. After Fab. ☐ As Noted ☒ SEE SHT GN1
SPECIAL PAINT:
SPECIAL CLEANING: ☒ Blast Clean SSPC SP10 ☐ None

ITEM NO. 506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22)

TITLE: CROSSFRAME DETAILS

FOR APPROVAL

APPROVED: 9-5-01

PRINT DIST.		
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP.
5	8-24-01	APP.
5	11-19-01	APP
11	11-19-01	FAB
DRAWN	TS	3/01
CHECKED	AV	3/01

National Eastern Corporation
Plainville, Connecticut

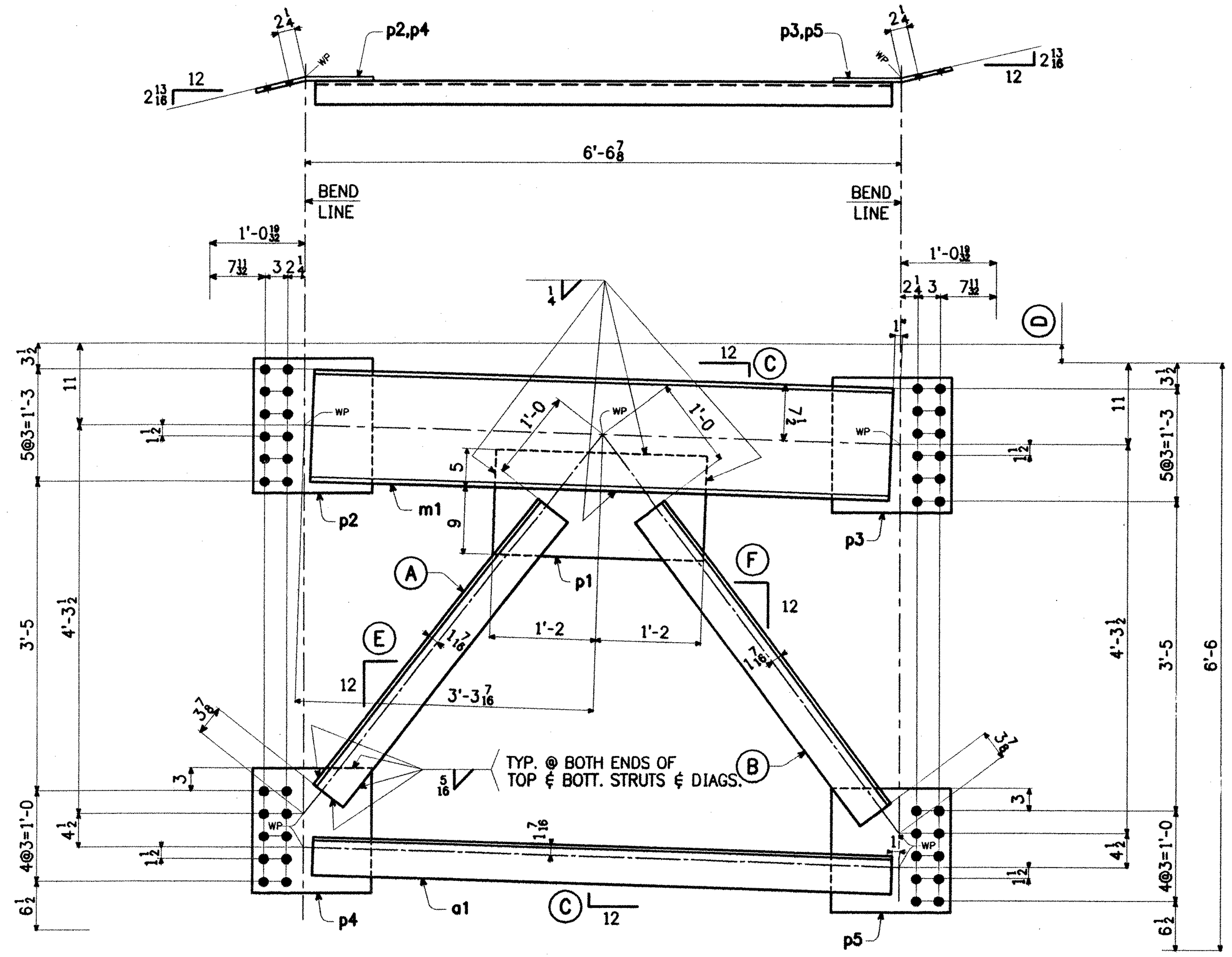
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

REVISED

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

WORK ORDER NO.	DRAWING NO.	REV.
15873	20-2	2



ABUT. CROSSFRAMES

	MARK	NO. REQ'D	A	B	C	D	E	F
ABT. 1	F3	1	a6	a7	1/4	1 13/16	9 3/8	9 1/16
ABT. 1	F4	1	a8	a9	5/16	2 1/16	9 3/8	9
ABT. 2	F7	1	a14	a15	1/8	15/16	9 1/4	9 1/8
ABT. 2	F8	1	a13	a12	1/2	3 3/8	9 1/2	8 7/8

BILL OF MATERIAL

WORK ORDER NO. 15873 | DRAWING NO. 20-3 | REV. A

SHIP MARK	NO.	MARK	SHAPE	LENGTH		ITEM NO.	WT.	REMARKS
F3	1		CROSSFRAME					661
	1	m1	C15 x 33.9	6'-4 5/8	S4/8	5/2	216	
	1	a1	L5 x 5 x 1/2	6'-4 5/8	S4/2	5/4	103	
	1	a6	L5 x 5 x 1/2	4'-0 5/16		5/3	65	
	1	a7	L5 x 5 x 1/2	4'-1 3/4		5/3	67	
	1	p1	PL 1/2 x 14	2'-4	S2/7	5/7	56	
	1	p2	PL 1/2 x 18	1'-3 3/4		5/5	40	BENT
	1	p3	PL 1/2 x 18	1'-3 3/4		5/5	40	BENT
	1	p4	PL 1/2 x 16 1/2	1'-3 3/4		5/6	37	BENT
	1	p5	PL 1/2 x 16 1/2	1'-3 3/4		5/6	37	BENT
F4	1		CROSSFRAME					661
	1	m1	C15 x 33.9	6'-4 5/8	S4/8	5/2	216	
	1	a1	L5 x 5 x 1/2	6'-4 5/8	S4/2	5/4	103	
	1	a8	L5 x 5 x 1/2	4'-0 3/16		5/3	65	
	1	a9	L5 x 5 x 1/2	4'-1 13/16		5/3	67	
	1	p1	PL 1/2 x 14	2'-4	S2/7	5/7	56	
	1	p2	PL 1/2 x 18	1'-3 3/4		5/5	40	BENT
	1	p3	PL 1/2 x 18	1'-3 3/4		5/5	40	BENT
	1	p4	PL 1/2 x 16 1/2	1'-3 3/4		5/6	37	BENT
	1	p5	PL 1/2 x 16 1/2	1'-3 3/4		5/6	37	BENT
F7	1		CROSSFRAME					662
	1	m1	C15 x 33.9	6'-4 5/8	S4/8	5/2	216	
	1	a1	L5 x 5 x 1/2	6'-4 5/8	S4/2	5/4	103	
	1	a14	L5 x 5 x 1/2	4'-0 5/8		5/3	66	
	1	a15	L5 x 5 x 1/2	4'-1 3/8		5/3	67	
	1	p1	PL 1/2 x 14	2'-4	S2/7	5/7	56	
	1	p2	PL 1/2 x 18	1'-3 3/4		5/5	40	BENT
	1	p3	PL 1/2 x 18	1'-3 3/4		5/5	40	BENT
	1	p4	PL 1/2 x 16 1/2	1'-3 3/4		5/6	37	BENT
	1	p5	PL 1/2 x 16 1/2	1'-3 3/4		5/6	37	BENT
F8	1		CROSSFRAME					661
	1	m1	C15 x 33.9	6'-4 5/8	S4/8	5/2	216	
	1	a1	L5 x 5 x 1/2	6'-4 5/8	S4/2	5/4	103	
	1	a12	L5 x 5 x 1/2	4'-2 5/16		5/3	68	
	1	a13	L5 x 5 x 1/2	3'-11 11/16		5/3	64	
	1	p1	PL 1/2 x 14	2'-4	S2/7	5/7	56	
	1	p2	PL 1/2 x 18	1'-3 3/4		5/5	40	BENT
	1	p3	PL 1/2 x 18	1'-3 3/4		5/5	40	BENT
	1	p4	PL 1/2 x 16 1/2	1'-3 3/4		5/6	37	BENT
	1	p5	PL 1/2 x 16 1/2	1'-3 3/4		5/6	37	BENT

2645 #

STEEL: ASTM [ ] A709-36 [ ] A709-50 [X] A709-50W [ ] Unless Noted [ ]
WELDING ELECTRODE: [X] E70 [ ] See Welding Proc. [ ] None [ ]
HOLES: [ ] 13/16 [X] 15/16 [ ] [ ] Unless Noted [ ] As Noted [ ] None
PAINT: [ ] None [ ] Galv. After Fab. [ ] As Noted [X] See Sht. Gn1
SPECIAL PAINT:
SPECIAL CLEANING: [X] Blast Clean SSPC SP10 [ ] None

ITEM NO. 506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)

TITLE: CROSSFRAME DETAILS

FOR APPROVAL

APPROVED:		
PRINT DIST.		
5	4-7-01	APPR.
ORIG.		FAB.
5	7-13-01	APP
5	8-29-01	APP
DRAWN	TS	3/01
CHECKED	AV	3/01

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

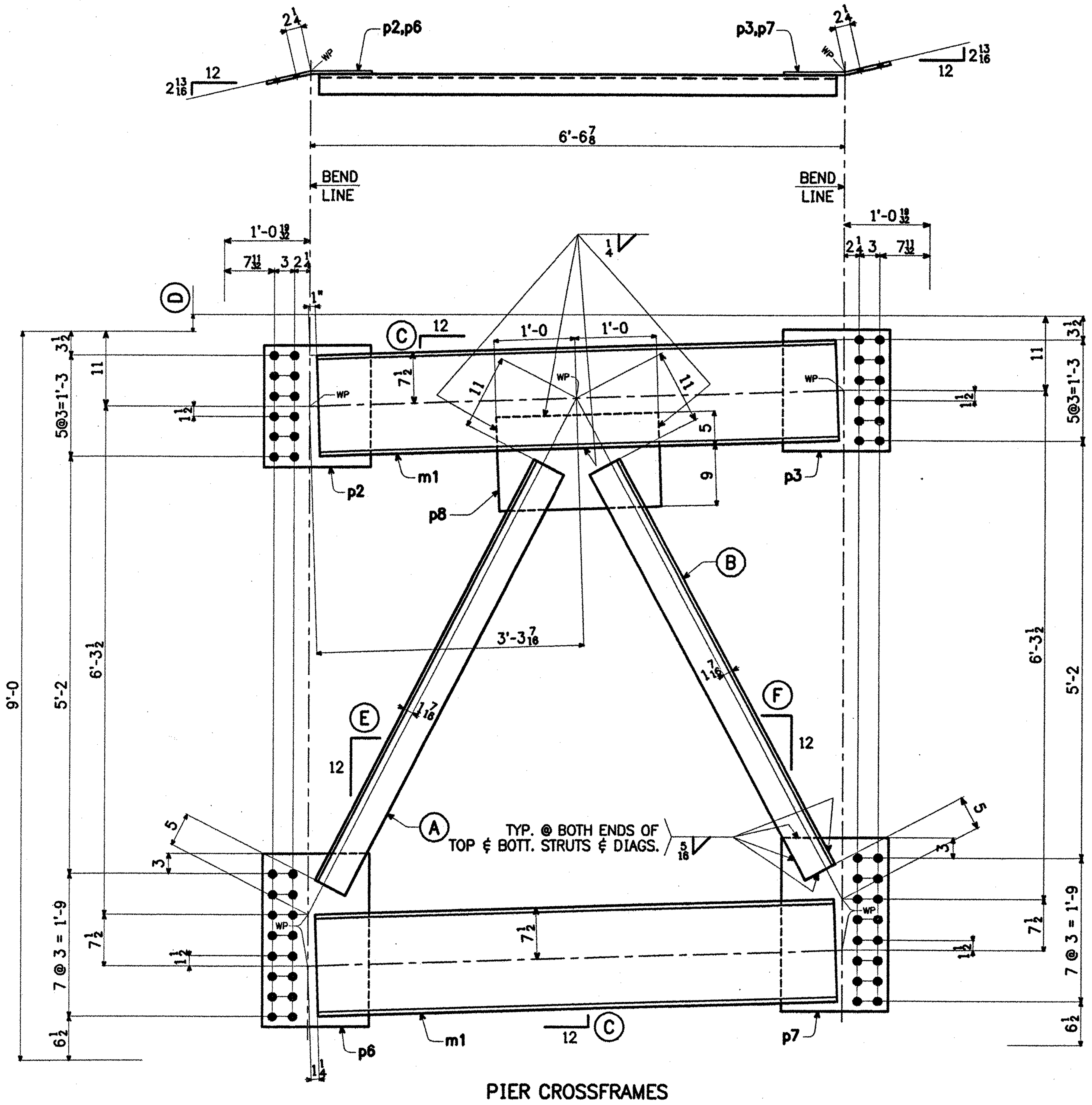
CUSTOMER: BECK ¢ BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

WORK ORDER NO.	DRAWING NO.	REV.
15873	20-3	A

RECEIVED
CK'D BY WBS OK'D BY
AUG 2 7 2001
RESUBMIT APPROVED ✓
BY OPW DATE 8/30/01

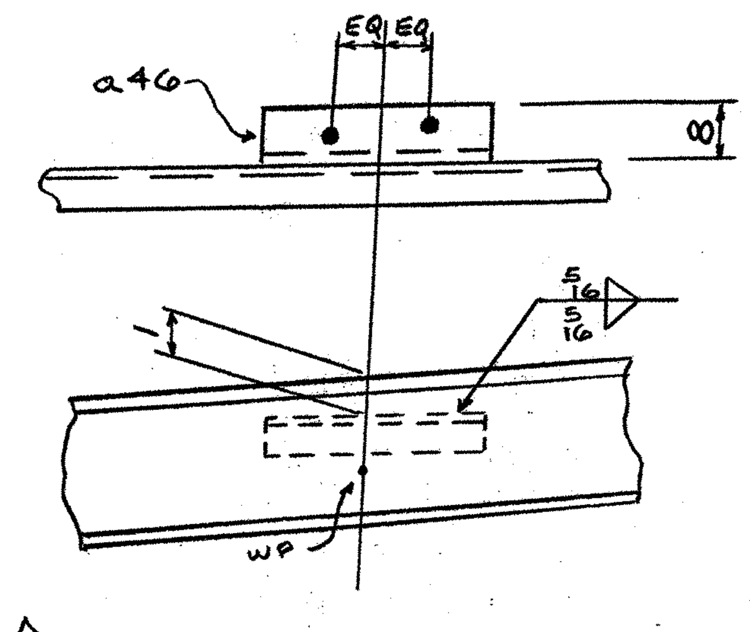
OK



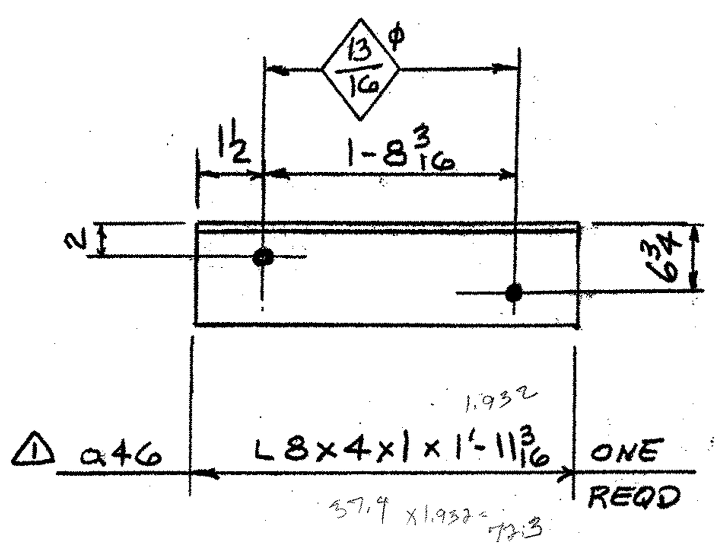
PIER CROSSFRAMES

MARK	NO. REQ'D	(A)	(B)	(C)	(D)	(E)	(F)
PIER F9	1	a16	a17	$\frac{1}{2}$	$3\frac{1}{8}$	$6\frac{1}{8}$	$6\frac{3}{8}$
PIER F10	1	a21	a20	$\frac{3}{16}$	$1\frac{3}{16}$	$6\frac{1}{4}$	$6\frac{5}{16}$

EDCSKW



△ PARTIAL DETAIL FOR F9



△ a46 L8x4x1 x 1'-11$\frac{3}{16}$ ONE REQD

SHIP MARK	NO.	MARK	SHAPE	LENGTH		ITEM NO.	WT.	REMARKS
F9	1		CROSSFRAME		△			933
	2	m1	C15 x 33.9	6'-4$\frac{5}{8}$	54/8	5/10	433	
	1	a16	L5 x 5 x $\frac{1}{2}$	5'-10$\frac{9}{16}$	54/2	5/11	95	
	1	a17	L5 x 5 x $\frac{1}{2}$	5'-7$\frac{3}{16}$		5/11	91	
	1	p2	PL $\frac{1}{2}$ x 18	1'-3$\frac{3}{4}$	52/7	5/12	40	BENT
	1	p3	PL $\frac{1}{2}$ x 18	1'-3$\frac{3}{4}$		5/12	40	BENT
	1	p6	PL $\frac{1}{2}$ x 25$\frac{1}{2}$	1'-3$\frac{3}{4}$		5/13	57	BENT
	1	p7	PL $\frac{1}{2}$ x 25$\frac{1}{2}$	1'-3$\frac{3}{4}$		5/13	57	BENT
	1	p8	PL $\frac{1}{2}$ x 14	2'-0		5/7	48	
	1	a46	L8x4x1	1-11$\frac{3}{16}$	△ 54/1	6/13	72	
F10	1		CROSSFRAME					860
	2	m1	C15 x 33.9	6'-4$\frac{5}{8}$	54/8	5/10	433	
	1	a20	L5 x 5 x $\frac{1}{2}$	5'-8$\frac{1}{4}$	54/2	5/11	92	
	1	a21	L5 x 5 x $\frac{1}{2}$	5'-9$\frac{1}{4}$		5/11	93	
	1	p2	PL $\frac{1}{2}$ x 18	1'-3$\frac{3}{4}$	52/7	5/12	40	BENT
	1	p3	PL $\frac{1}{2}$ x 18	1'-3$\frac{3}{4}$		5/12	40	BENT
	1	p6	PL $\frac{1}{2}$ x 25$\frac{1}{2}$	1'-3$\frac{3}{4}$		5/13	57	BENT
	1	p7	PL $\frac{1}{2}$ x 25$\frac{1}{2}$	1'-3$\frac{3}{4}$		5/13	57	BENT
	1	p8	PL $\frac{1}{2}$ x 14	2'-0	6	5/7	48	
							1793	#

WORK ORDER NO. 15873 — DRAWING NO. 20-4 — REV. A

STEEL: ASTM ☐ A709-36 ☐ A709-50 ☒ A709-50W ☐ Unless Noted
WELDING ELECTRODE: ☒ E70 ☐ See Welding Proc. ☐ None
HOLES: ☐ 13/16 ☒ 15/16 ☐ Unless Noted ☐ As Noted ☐ None
PAINT: ☒ None ☐ Galv. After Fab. ☐ As Noted
SPECIAL PAINT:
SPECIAL CLEANING: ☒ Blast Clean SSPC SP10 ☐ None

ITEM NO. 506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22)

TITLE: CROSSFRAME DETAILS

FOR APPROVAL

APPROVED: 9-5-01

PRINT DIST.		
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP
5	8-24-01	APP
5	11-19-01	APP
11	11-19-01	FAB

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

REVISED

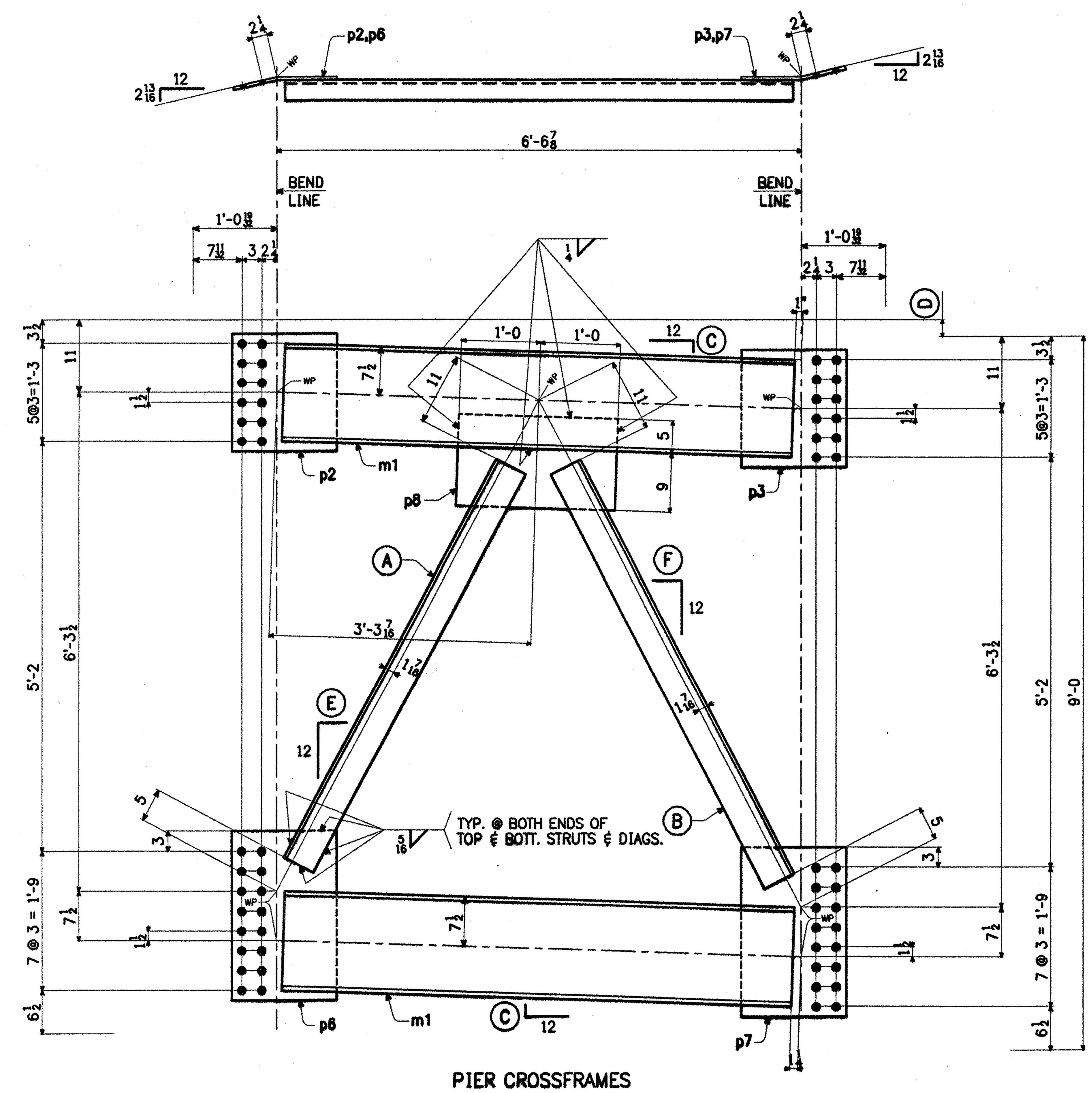
CUSTOMER: BECK & BELLUCCI, INC.
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

DRAWN	TS	3/01	WORK ORDER NO.	DRAWING NO.	REV.
CHECKED	AV	3/01	15873	20-4	1

RECEIVED
NOV 21 2001
APPROVED ✓
OPW DATE 12/3/01

△ ADDED a46 11-14-01 JCM

OK

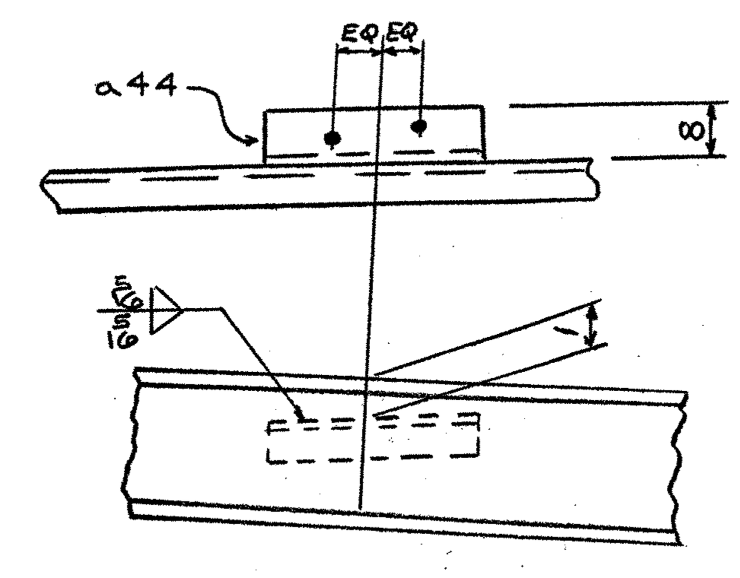


PIER CROSSFRAMES

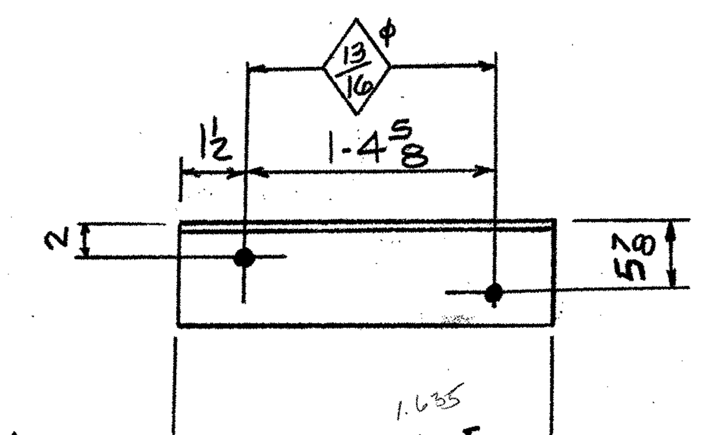
	MARK	NO. REQ'D	(A)	(B)	(C)	(D)	(E)	(F)
PIER	F11	1	a19	a18	5/16	2 3/16	6 3/8	6 3/16
PIER	F12	1	a25	a24	3/8	2 1/2	6 3/8	6 3/16

Telephone

EDCSKW



2 PARTIAL DETAIL FOR F12



2 a44 L8x4x1 x 1'-7 5/8 ONE REQ'D

37.4 x 1.635 = 61.16

Telephone

SHIP MARK	NO.	MARK	SHAPE	LENGTH		ITEM NO.	WT.	REMARKS
			BILL OF MATERIAL		WORK ORDER NO. 15873		DRAWING NO. 20-5	REV. 2
F11	1		CROSSFRAME					862
	2	m1	C15 x 33.9	6'-4 5/8	S4/8	5/10	433	
	1	a18	L5 x 5 x 1/2	5'-10 1/8	S4/2	5/11	95	
	1	a19	L5 x 5 x 1/2	5'-8 3/16		5/11	92	
	1	p2	PL 1/2 x 18	1'-3 3/4	S2/7	5/12	40	BENT
	1	p3	PL 1/2 x 18	1'-3 3/4		5/12	40	BENT
	1	p6	PL 1/2 x 25 1/2	1'-3 3/4		5/13	57	BENT
	1	p7	PL 1/2 x 25 1/2	1'-3 3/4		5/13	57	BENT
	1	p8	PL 1/2 x 14	2'-0		5/7	48	
F12	1		CROSSFRAME		2			919
	2	m1	C15 x 33.9	6'-4 5/8	S4/8	5/10	433	
	1	a24	L5 x 5 x 1/2	5'-10 5/16	S4/2	5/11	92	
	1	a25	L5 x 5 x 1/2	5'-8 1/16		5/11	95	
	1	p2	PL 1/2 x 18	1'-3 3/4	S2/7	5/12	40	BENT
	1	p3	PL 1/2 x 18	1'-3 3/4		5/12	40	BENT
	1	p6	PL 1/2 x 25 1/2	1'-3 3/4		5/13	57	BENT
	1	p7	PL 1/2 x 25 1/2	1'-3 3/4		5/13	57	BENT
	1	p8	PL 1/2 x 14	2'-0		5/7	48	
	1	a44	L8x4x1	1-7 5/8	2 S4/1	6/13	57	61 LB
							1781#	

STEEL: ASTM [ ] A709-36 [ ] A709-50 [X] A709-50W [ ] Unless Noted [ ]
WELDING ELECTRODE: [X] E70 [ ] See Welding Proc. [ ] None [ ]
HOLES: [ ] 13/16 [X] 15/16 [ ] [ ] Unless Noted [ ] As Noted [ ] None
PAINT: [X] None [ ] Galv. After Fab. [ ] As Noted [ ]
SPECIAL PAINT:
SPECIAL CLEANING: [X] Blast Clean SSPC SP10 [ ] None

ITEM NO. 506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22)

TITLE: CROSSFRAME DETAILS

FOR APPROVAL

APPROVED: 9-5-01

PRINT DIST.		
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP.
5	8-24-01	APP.
5	11-19-01	APP
11	11-19-01	FAB

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

REVISED

CUSTOMER: BECK & BELLUCCI, INC.

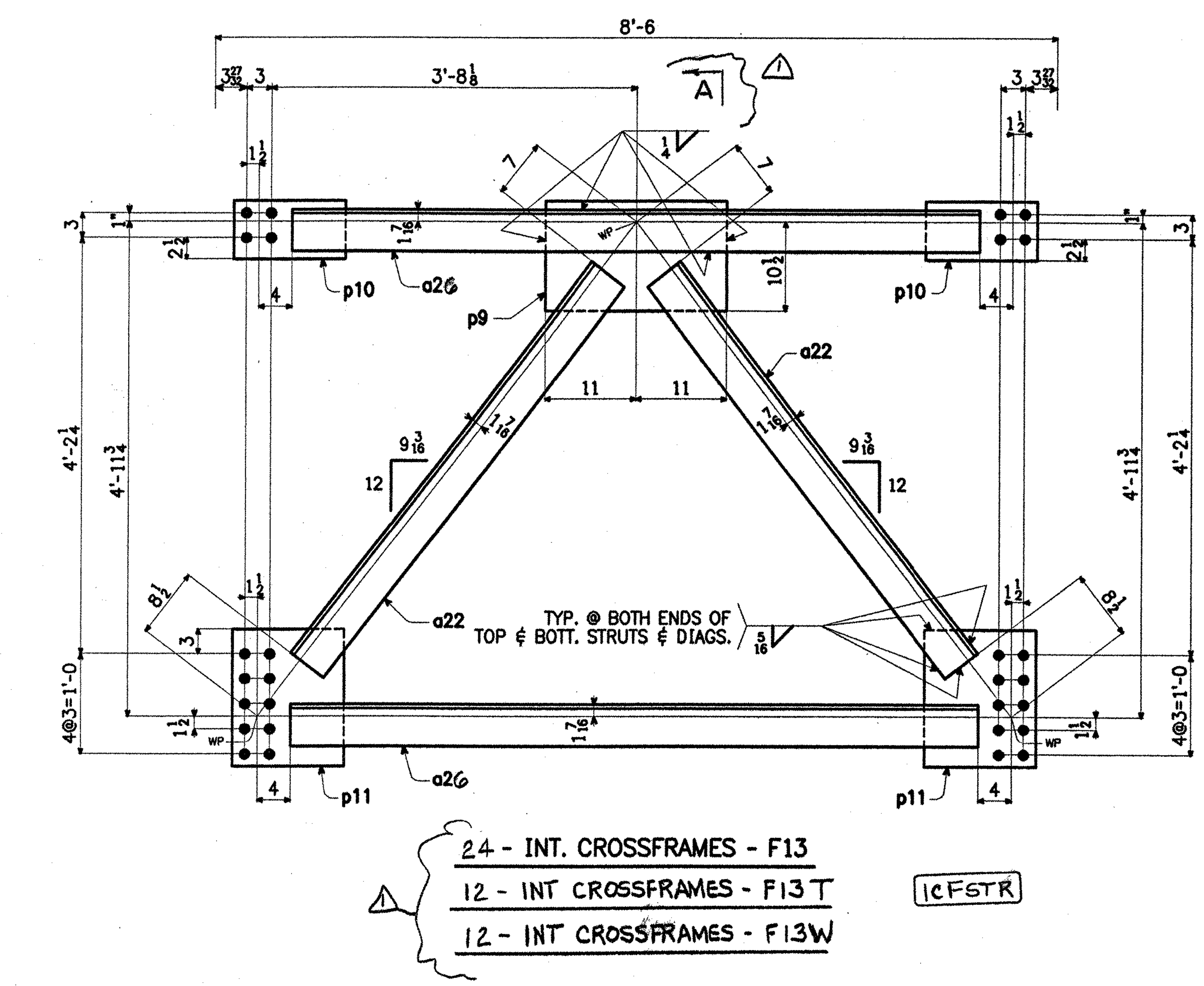
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

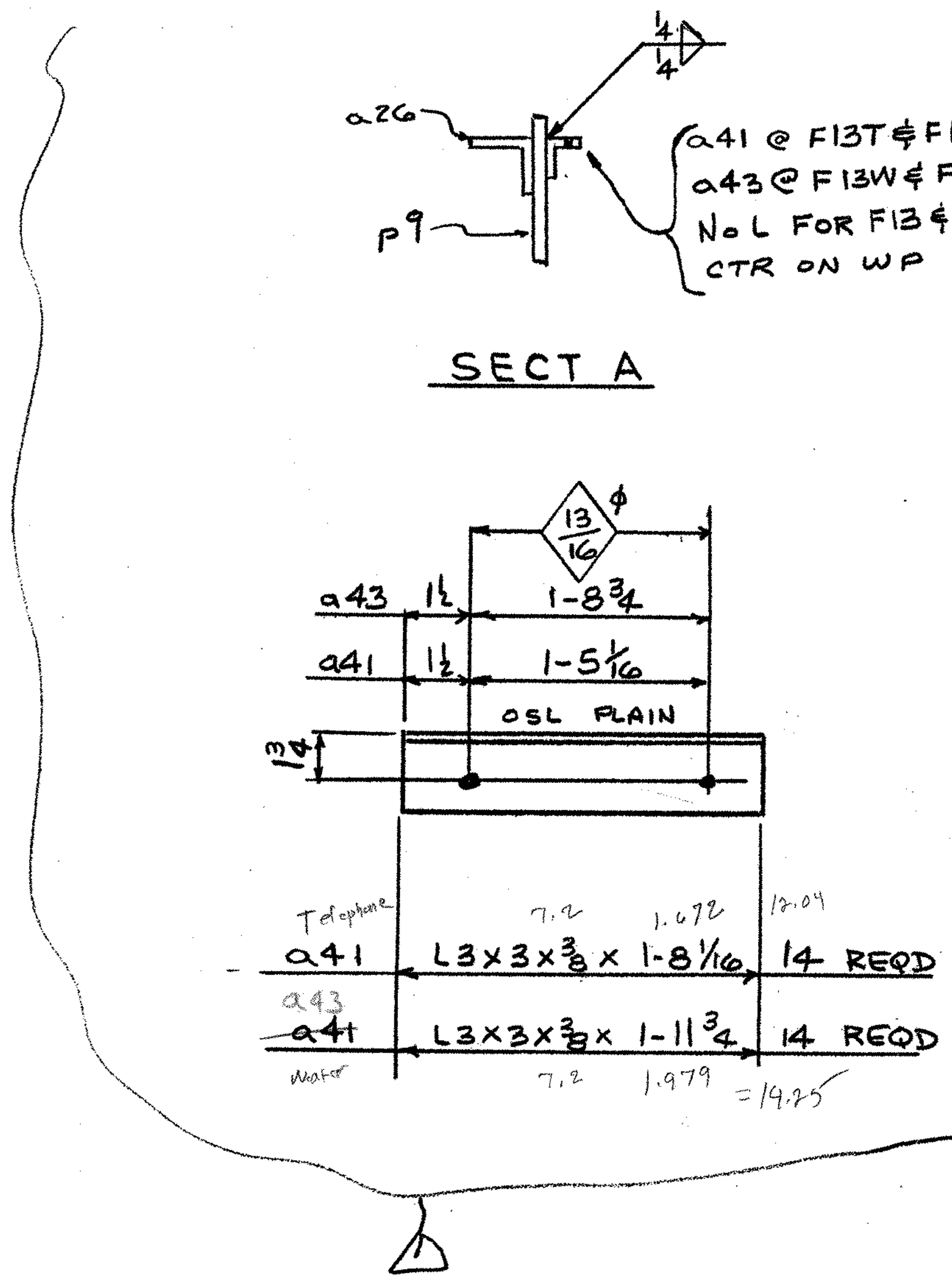
DRAWN	TS	3/01	WORK ORDER NO.	DRAWING NO.	REV.
CHECKED	AV	3/01	15873	20-5	2

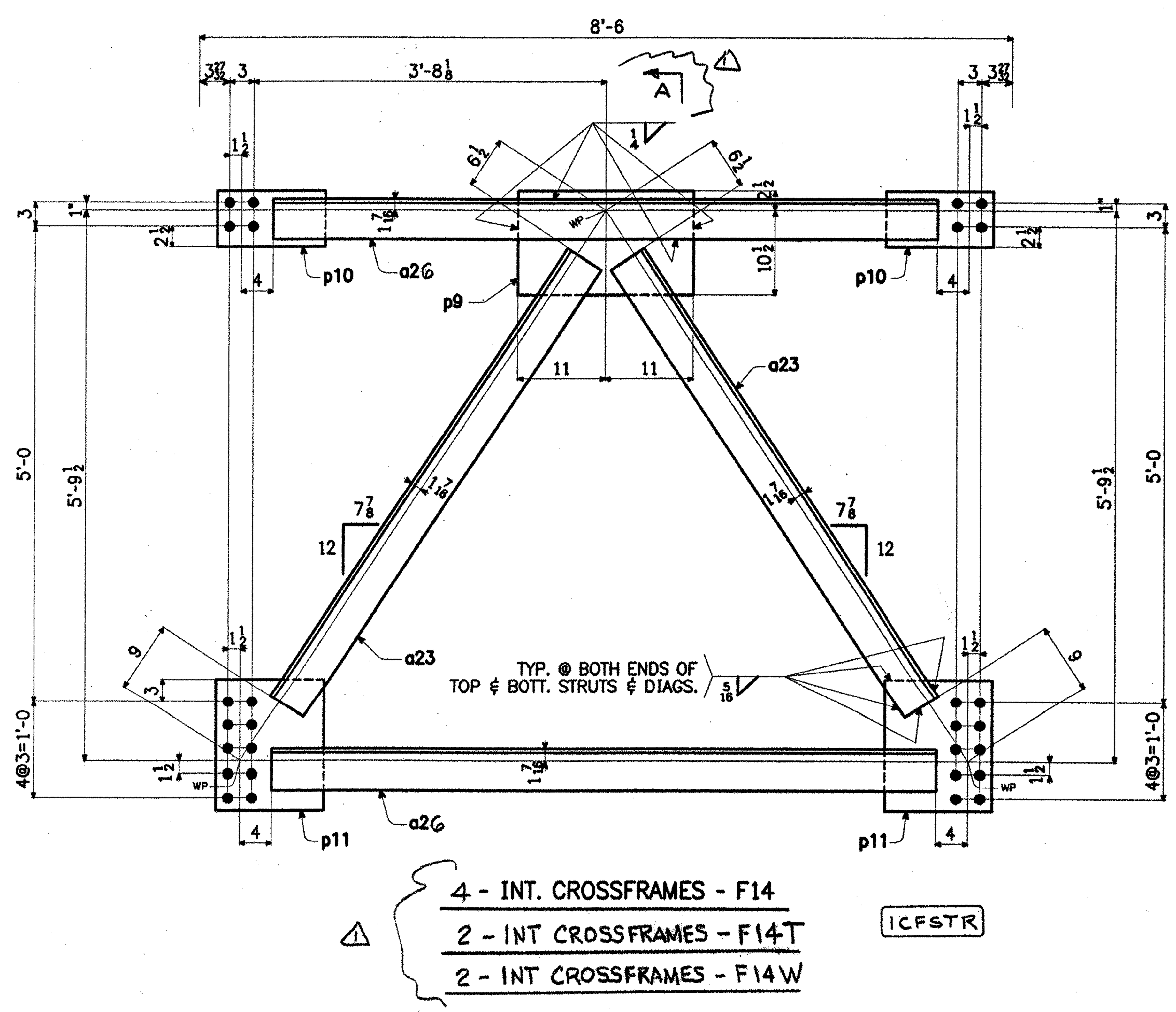
RECEIVED
CHD BY LWS CHD BY
NOV 21 2001
APPROVED ✓
BY CPW DATE 12/3/01

2 ADDED a44 11-14-01 JCM
1 REVISED PC. MK. a24 & a25 A.V. 9-20-01

OK







△ ADDED UTIL SUPPORT 11-15-01 JCM

SHIP MARK	BILL OF MATERIAL							WORK ORDER NO. 15873	DRAWING NO. 20-6	REV. 1
	NO.	MARK	SHAPE	LENGTH			ITEM NO.	WT.	REMARKS	
F13	24		CROSSFRAME		△				12402	
F13T	12		CROSSFRAME		△				6345	
F13W	12		CROSSFRAME		△				6372	
	96	a22	L5x5x1/2	4-11 11/16		54/2	6/3	7735		
	96	a26	L5x5x1/2	6-11 3/8			6/2	10805		
	48	p9	PL 1/2x13	1-0		52/7	6/7	1946		
	96	p10	PL 1/2x7	1-1 1/2		53/4	6/5	1286		
	96	p11	PL 1/2x13 1/2	1-4 1/2		52/7	6/6	3032		
	12	a41	L3x3x3/8	1-8 1/16	△	54/13	6/14	144	FOR F13T	
	12	a43	L3x3x3/8	1-11 3/4	△		6/14	171	FOR F13W	
F14	4		CROSSFRAME		△				2153	
F14T	2		CROSSFRAME		△				1100	
F14W	2		CROSSFRAME		△				1094	
	16	a23	L5x5x1/2	5-7 5/8		54/2	6/4	1461		
	16	a26	L5x5x1/2	6-11 3/8			6/2	1801		
	8	p9	PL 1/2x13	1-10		52/7	6/7	324		
	16	P10	PL 1/2x7	1-1 1/2		53/4	6/5	214		
	16	P11	PL 1/2x13 1/2	1-4 1/2		52/7	6/6	505		
	2	a41	L3x3x3/8	1-8 1/16	△	54/13	6/14	24	FOR F14T	
	2	a43	L3x3x3/8	1-11 3/4	△		6/14	~~18~~ 28	FOR F14W	
					△			29446#		

STEEL: ASTM [ ] A709-36 [ ] A709-50 [X] A709-50W [ ] Unless Noted [ ]
WELDING ELECTRODE: [X] E70 [ ] See Welding Proc. [ ] None [ ]
HOLES: [ ] 13/16 [X] 15/16 [ ] [ ] Unless Noted [ ] As Noted [ ] None
PAINT: [X] None [ ] Galv. After Fab. [ ] As Noted [ ]
SPECIAL PAINT:
SPECIAL CLEANING: [X] Blast Clean SSPC SP10 [ ] None

ITEM NO. 506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22)

TITLE: CROSSFRAME DETAILS

FOR APPROVAL

APPROVED: 9-5-01	
PRINT DIST.	
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP
5	8-24-01	APP
5	11-19-01	APP
11	11-19-01	FAB

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

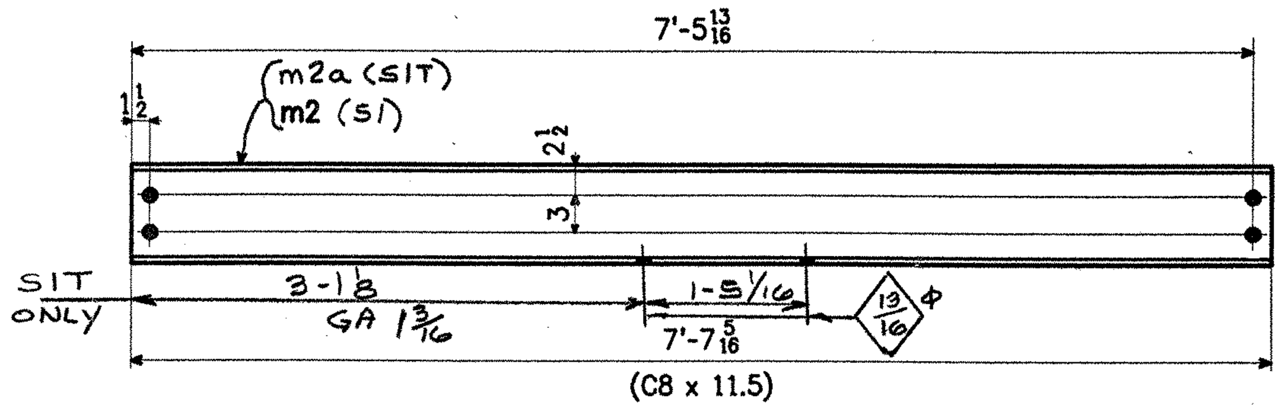
REVISED

OK
AN

RECEIVED
CHKD BY WBS CHKD BY
NOV 21 2001
APPROVED As Noted
BY CPW DATE 12/3/01

CUSTOMER: BECK & BELLUCCI, INC.
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

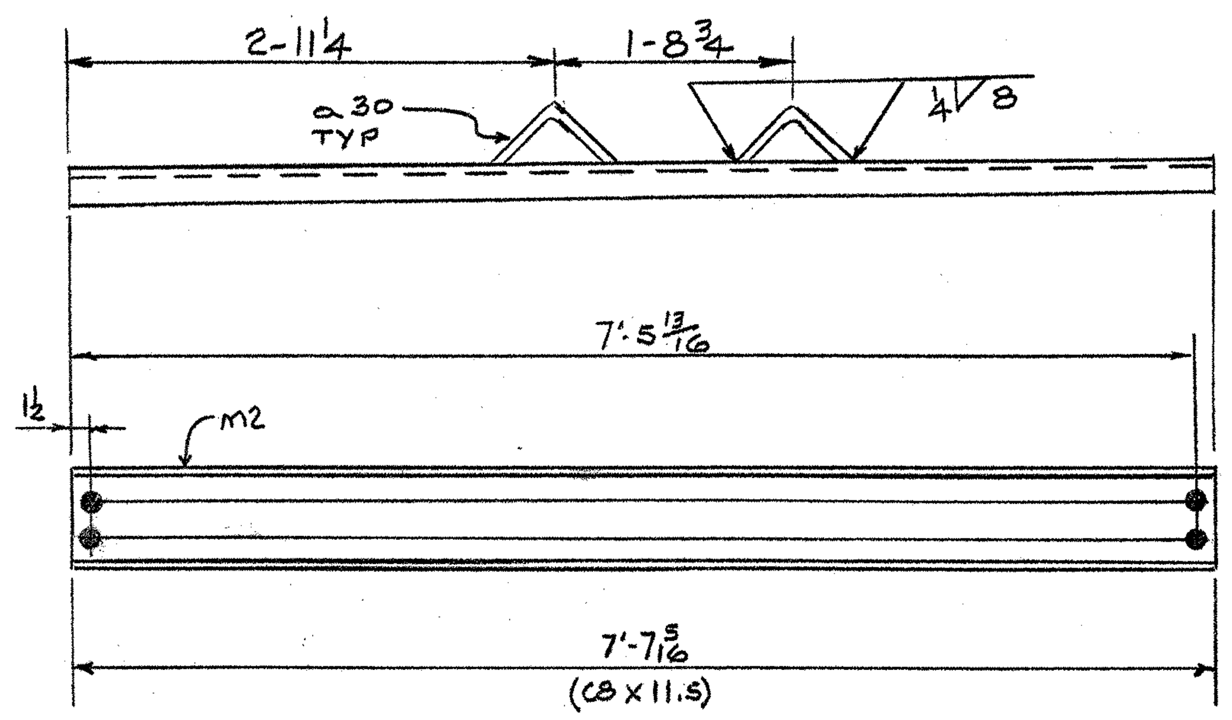
			WORK ORDER NO.	DRAWING NO.	REV.
DRAWN	TS	3/01	15873	20-6	1
CHECKED	AV	3/01			



34 - UTILITY SUPPORTS - S1

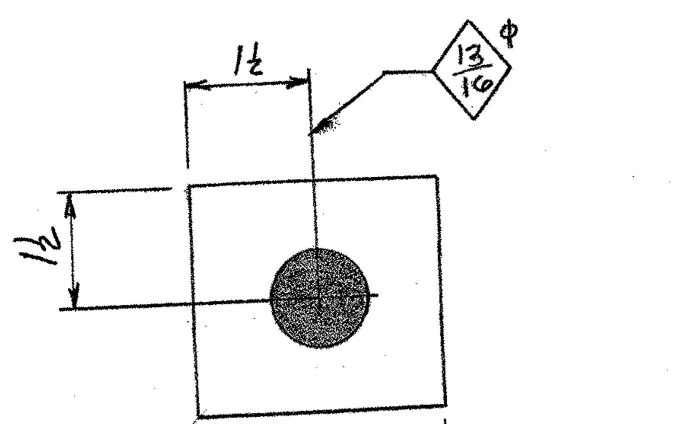
34 - UTILITY SUPPORTS - S1T

UTSPPT



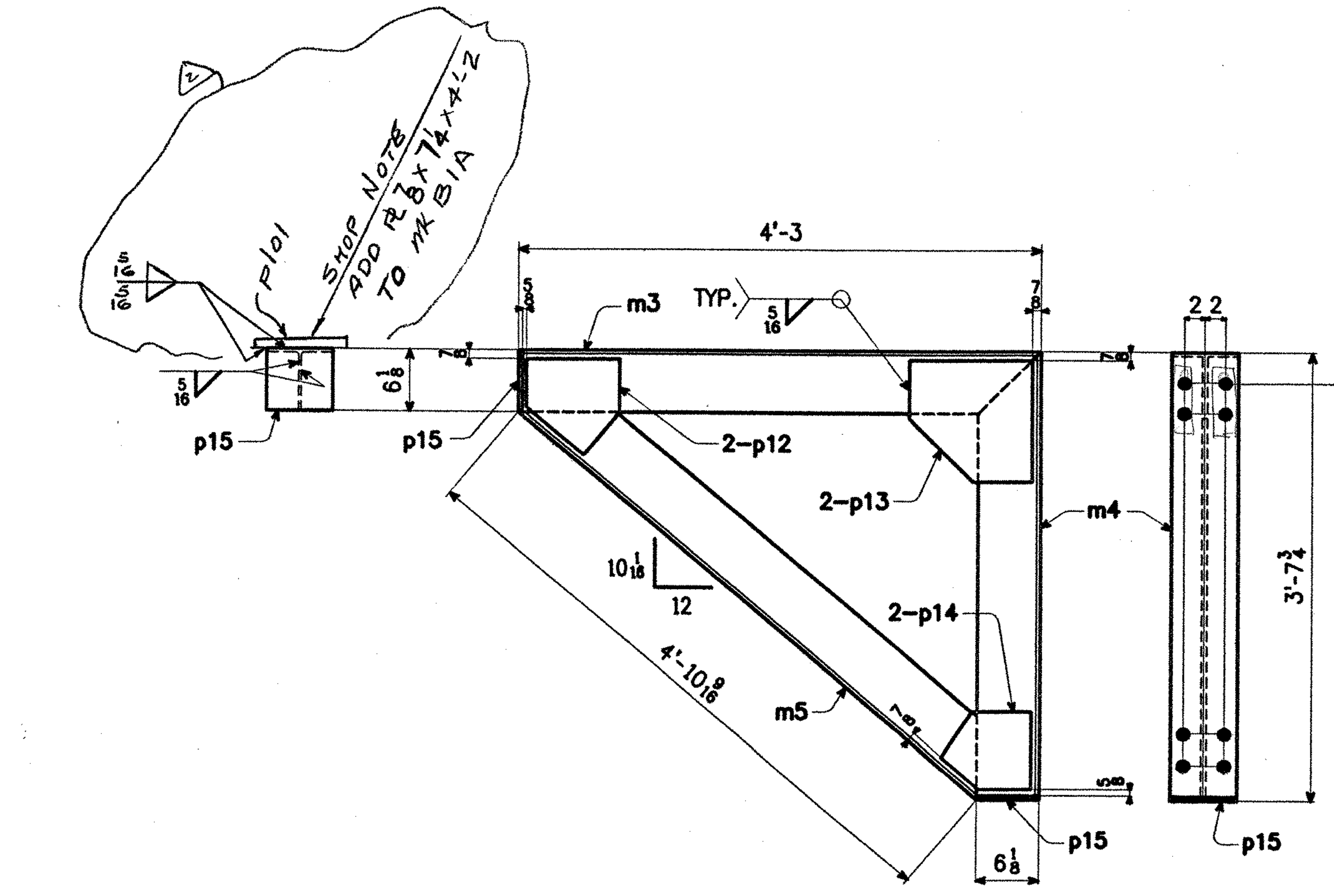
34 - UTILITY SUPPORTS - S1W

UTSPPT



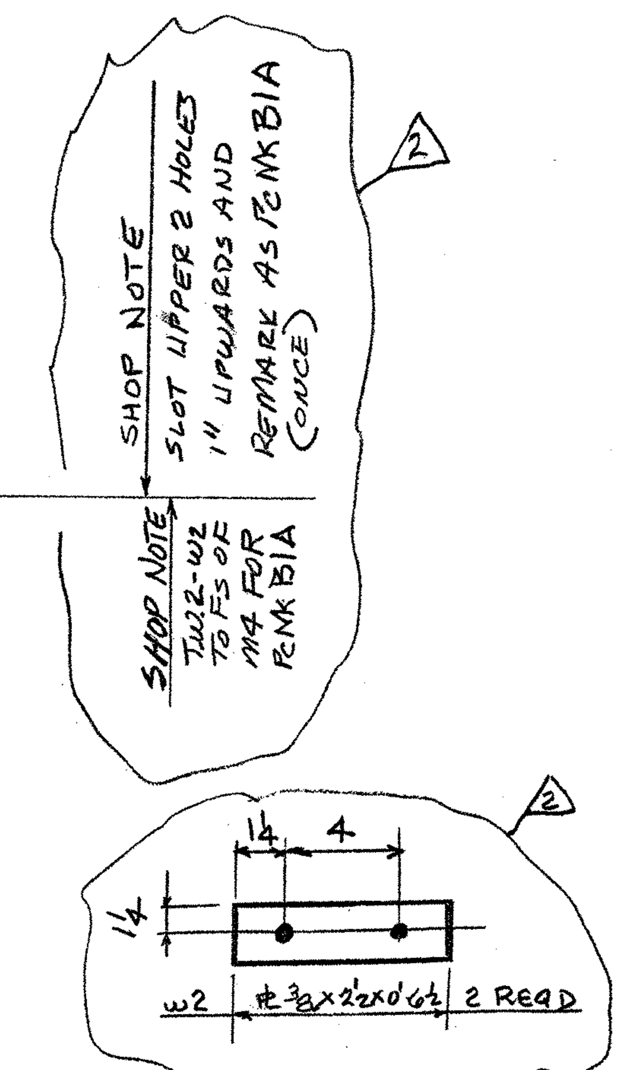
W1 PL 3x3/8x0'-3 ~~68 REQD~~

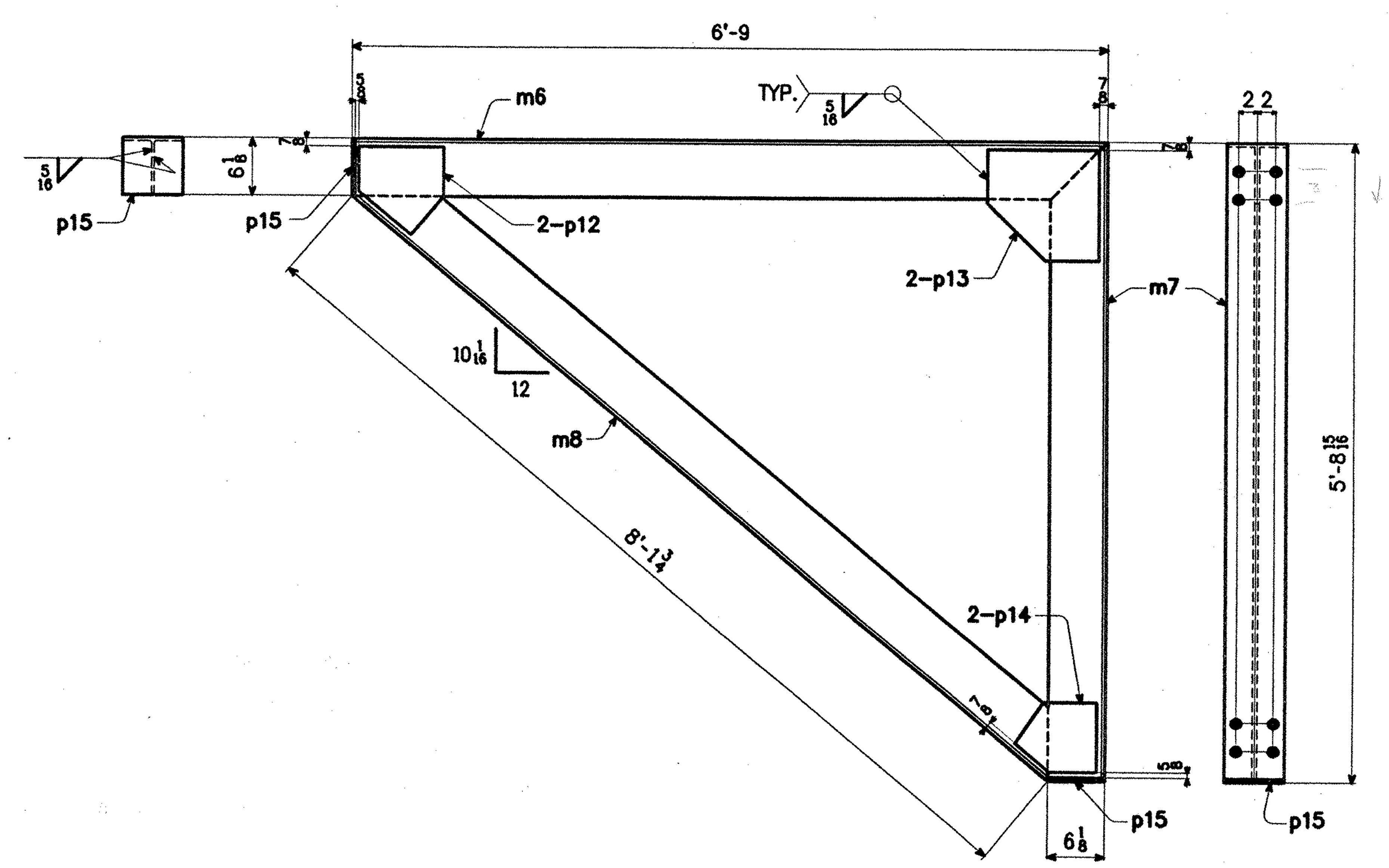
UTSPPT



26 - SIDEWALK BRACKETS - B1

BKSPPT





4 - SIDEWALK BRACKETS - B2

BKSPPT

RECEIVED
CK'D BY CPW OK'D BY
JAN 30 2002
RESUBMIT APPROVED X
BY CPW DATE 2/11/02

△2 MK B1A 1-28-02 JCM
△1 UTILITY SUPPORTS 11-15-01 JCM

SHIP MARK	BILL OF MATERIAL					WORK ORDER NO. 15873	DRAWING NO. 20-7	REV. 2
	NO.	MARK	SHAPE	LENGTH		ITEM NO.	WT.	REMARKS
S1	34		UTIL. SUPP.		△1			2975 sewer
	34	m2	C8 x 11.5	7'-7 5/16	△1 S4/11	6/11	2975	
B1A	1		BRACKET		△2			330 (237)
B1	25		BRACKETS		△2			5918
	26	m3	WT6 x 13	4'-2 5/8	S4/5	4/5	1426	
	26	m4	WT6 x 13	3'-7 3/8		4/7	1222	
	26	m5	WT6 x 13	4'-10 9/16		4/6	1650	
	52	p12	PL 3/8 x 9 1/8	0'-9 7/16	S2/9	4/10	476	
	52	p13	PL 3/8 x 12	1'-0		4/8	796	
	52	p14	PL 3/8 x 7 1/2	0'-8 13/16	S3/16	4/9	365	
	52	p15	PL 3/8 x 6 1/8	0'-6 1/2	S3/8	4/11	220	
	1	p101	PL 7/8 x 7 1/4	4-2	△2		90	B1A
	2	w2	PL 3/8 x 2 1/2	0-6 1/2	△2		3	B1A
B2	4		BRACKETS					1356
	4	m6	WT6 x 13	6'-8 5/8	S4/5	4/2	349	
	4	m7	WT6 x 13	5'-8 9/16		4/4	297	
	4	m8	WT6 x 13	8'-1 3/4		4/3	424	
	8	p12	PL 3/8 x 9 1/8	0'-9 7/16	S2/9	4/10	73	
	8	p13	PL 3/8 x 12	1'-0		4/8	123	
	8	p14	PL 3/8 x 7 1/2	0'-8 13/16	S3/16	4/9	56	
	8	p15	PL 3/8 x 6 1/8	0'-6 1/2	S3/8	4/11	34	
S1T	34		UTIL SUPP		△1			2975 Telephone
	34	m2a	C8 x 11.5 (8.5)	7-7 5/16	△1 S-4/11	6/11	2975	
S1W	34		UTIL SUPP		△1			3161 water
	34	m2	C8 x 11.5 (8.5)	7-7 5/16	△1 S4/11	6/11	2975	
	68	a30	L2½ x 2½ x ¼	0-8	△1 S4/15	6/15	186	
W1 water line only	68		PL WASHER		△1			65
	68	p50	PL 3 x 3/8	0-3	△1 S4/17	6/16	65	
					△1△2		16780	#

2-14-02

STEEL: ASTM [ ] A709-36 [ ] A709-50 [X] A709-50W [ ] Unless Noted [ ]
WELDING ELECTRODE: [X] E70 [ ] See Welding Proc. [ ] None [ ]
HOLES: [ ] 13/16 [X] 15/16 [ ] [ ] Unless Noted [ ] As Noted [ ] None
PAINT: [X] None [ ] Galv. After Fab. [ ] As Noted [ ]
SPECIAL PAINT:
SPECIAL CLEANING: [X] Blast Clean SSPC SP10 [ ] None

ITEM NO. 506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22)

TITLE: UTILITY SUPPORT DETAILS

APPROVED: 9-5-01

PRINT DIST.		
5	4-7-01	APPR.
ORIG.	9-5-01	FAB.
5	7-13-01	APP
5	8-24-01	APP
5	11-19-01	APP
11	11-19-01	FAB
5	1-28-02	APP
11	1-28-02	FAB

REVISED

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

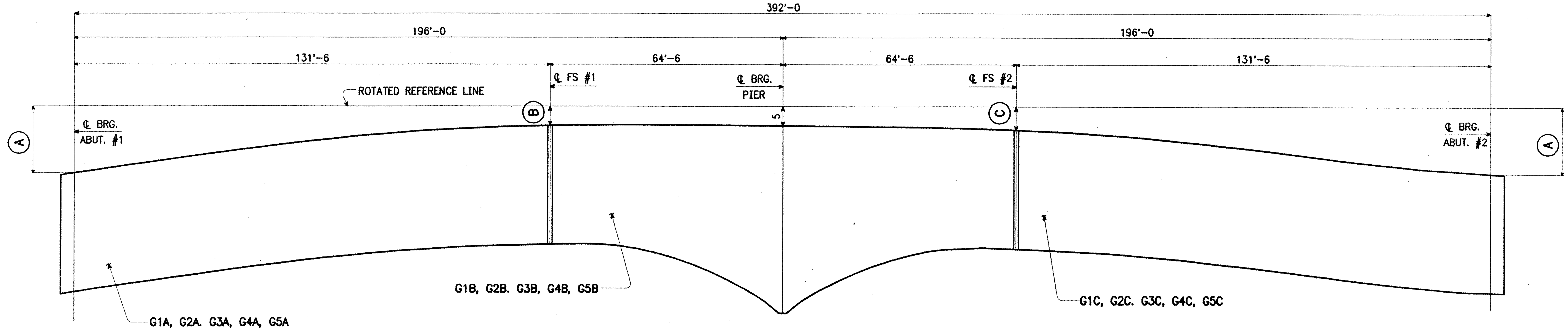
FOR APPROVAL

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

DRAWN	TS	3/01	WORK ORDER NO. 15873	DRAWING NO. 20-7	REV. 2
CHECKED	AV	3/01			

WORK ORDER NO.	DRAWING NO.	REV.
15873	70-1	A



VERTICAL BLOCKING DIAGRAM FOR GIRDER LINES 1 THRU 5

LINE	A	B	C
1	4'-2 1/4	5 15/16	9 11/16
2	4'-2 1/2	6 3/16	9 1/2
3	4'-2 11/16	6 1/2	9 5/16
4	4'-2 7/8	6 9/16	9 1/16
5	4'-3 3/16	7 1/2	9 3/8

NOTES:

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. ALL HOLES FOR SPLICES SHALL BE SUBPUNCHED OR SUBDRILLED 11/16"ø AND REAMED TO 15/16"ø WITH ALL PARTS ASSEMBLED OR DRILLED TO 15/16"ø FROM SOLID.
3. ALL LONGITUDINAL DIMENSIONS IN THE VERTICAL BLOCKING DIAGRAM ARE DEVELOPED ALONG THE ROTATED REFERENCE LINE.
4. ALL GIRDERS MUST BE ASSEMBLED AS PER THE DIAGRAM SHOWN PRIOR TO REAMING OR DRILLING. FOR FIELD SPLICE DETAILS, SEE DWG. 12-10.

RECEIVED
CK'D BY WGS OK'D BY
AUG 2 7 2001
RESUBMIT APPROVED ✓
BY OPW DATE 8/30/01

ITEM NO. 506.55	BR. NO. 3	PROJ. NO. BRZ 1444(22)
TITLE: BLOCKING DIAGRAMS	FOR APPROVAL	

APPROVED:		
PRINT DIST.		
5	4-7-01	APPR.
ORIG.		FAB.
5	7-13-01	APP
5	8-24-01	APP
CHECKED	TS	3/01
DRAWN	AV	3/01

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

WORK ORDER NO.	DRAWING NO.	REV.
15873	70-1	A

OK

FIELD BOLTS

WORK ORDER NO.	15873
DWG. NO.	99-1 ⚠1

SPECIFICATIONS: 7/8"Ø H.S. BOLTS A325-3, HARD. WASHERS F436-3
HVY. HEX NUTS A563-C3

	CONNECTION	LENGTH											
			2	2¼	2½	3	3¼		4¾				2¾
	WEB FIELD SPLICE CONNECTION						1440						
	TOP & BOTT. FLG. FIELD SPLICE CONN.								1040				
	ABUTS.& PIER CF TO GDR. BRG. STF.					576							
FOR "A" & "C" GIRDERS	INT. CROSSFRAME TO GDR. CONN. PLT.			1120									
FOR "B" GIRDERS	INT CROSSFRAME TO GDR CONN PLT			336 224	112 ~~224~~								
224/8 = 8 X-Frames	UTIL. SUPPORT TO GDR. CONN. PLT.		408										
	SIDEWALK BRKT. TO GDR. WEB				240								
⚠1	do @ MK 81A												2

LENGTH		2	2¼	2½	3	3¼		4¾				2¾
SUBTOTAL ADD 2% (MIN. 10)		408 10	~~1344~~ 27	~~464~~ 10	576 12	1440 29		1040 21				2 10
TOTAL		418	1371	474	588	1469		1061				12
ITEM NO.		7/2	7/3	7/4	7/5	7/6		7/7				7/8
WEIGHT		237	824	~~304~~	426	1125		1082				8

NUTS & WASHERS	NUTS		PLAIN WASHERS		D.T.I.	
QTY. & ITEM NO.	5393	7/9	5393	7/10		
WEIGHT	1602		383			
			TOTAL SHEET WEIGHT		5991 #	

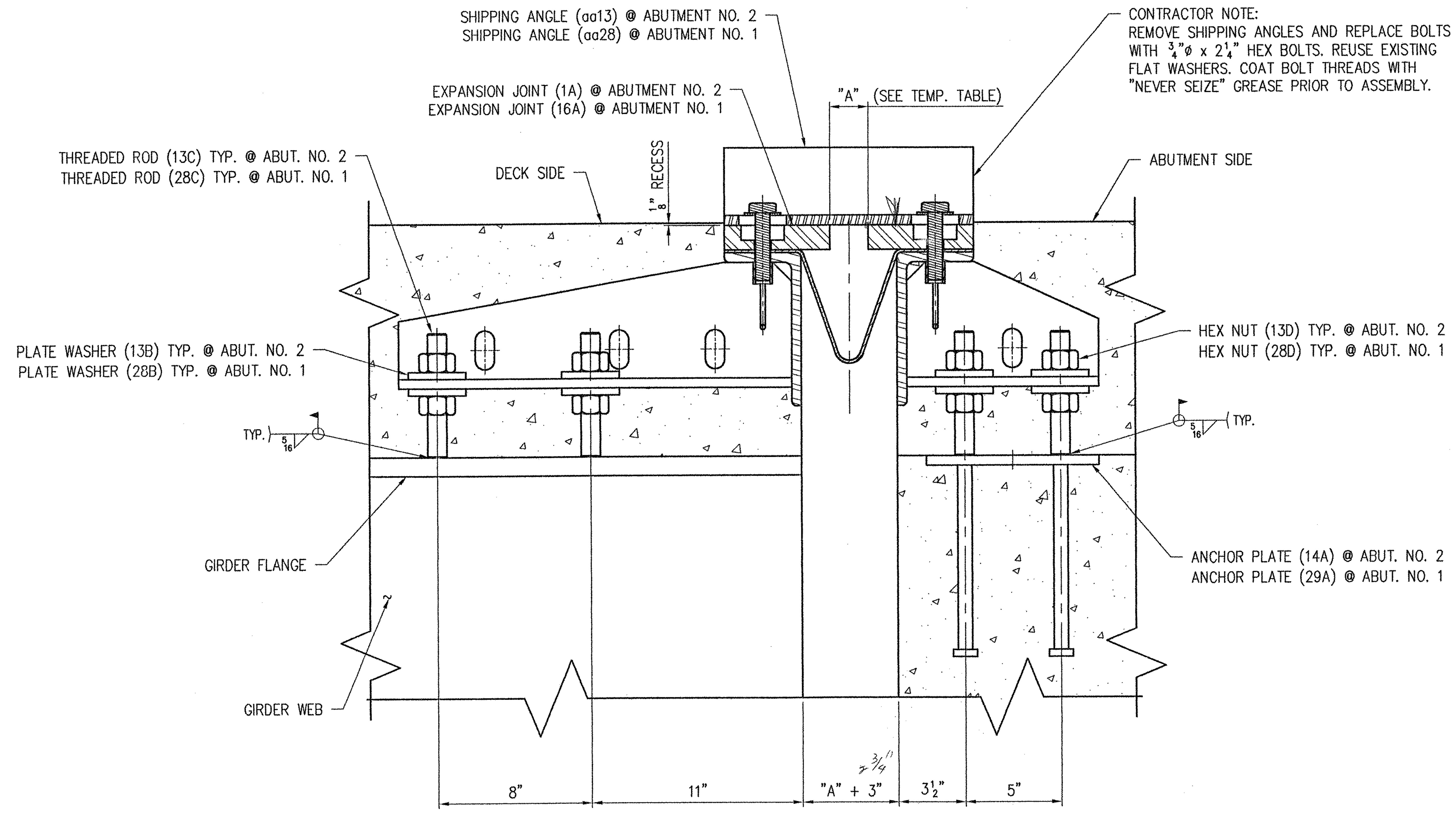
2-14-02

RCT NOTE
BOLTS & NUTS SHALL BE ROTATIONAL CAPACITY TESTED AND MEET ALL OTHER REQUIREMENTS OF SUBSECTION 11.3.2 OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. DO NOT MIX NUTS & BOLTS FROM DIFFERENT CONTAINERS UNLESS ALL BOLTS & NUTS HAVE THE SAME LOT NUMBER.

RECEIVED
CK'D BY CPW OK'D BY
JAN 30 2002
RESUBMIT APPROVED X
BY CPW DATE 2/11/02

⚠1 ADDED 2¾Ø BOLTS 1-28-02 JCM

ITEM NO. 506.55			BR. NO. 3	PROJ. NO. BRZ 1444(22)
TITLE: FIELD BOLTS			REVISED	
APPROVED: 9-5-01			National Eastern Corporation Plainville, Connecticut	
PRINT DIST.				
5	4-2-01	APPR.		
ORIG.	9-5-01	FAB.		
5	7-13-01	APP	JOB: T.H. 1 OVER THE WHITE RIVER ROYALTON, VERMONT	FOR APPROVAL
5	8-24-01	APP		
5	1-28-02	APP		
11	1-28-02	FAB		
			CUSTOMER: BECK & BELLUCCI, INC.	
			DESIGNER: VERMONT AGENCY OF TRANSPORTATION	
CHECKED	TS	3/01	WORK ORDER NO.: 15873	DRAWING NO.: 99-1 / REV.: 1
DRAWN	AV	3/01		



TYPICAL SECTION THRU JOINT @ GIRDER

TEMP. TABLE	
TEMP.	"A"
0° F	2 15/16"
15° F	2 11/16"
30° F	2 1/2"
45° F	2 1/4"
60° F	2"
75° F	1 13/16"
90° F	1 9/16"
105° F	1 3/8"

"A" IS THE SETTING BEFORE THE DECK HAS BEEN PLACED

RECEIVED
CK'D BY WBS OK'D BY
JAN 11 2002
RESUBMIT APPROVED ✓
BY QPW DATE 1/11/02

SEE SHEET NO. 15 FOR GENERAL NOTES.
SEE PLAN VIEWS ON SHEET NO. 1 & 16 FOR ORIENTATION OF JOINTS.

REV.	DESCRIPTION	DATE	INT.
1	GENERAL REVISION PER APPROVAL.	1/2/02	JMB

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

PRINTS ISSUED	FOR	DATE
SHOP		
APPROVAL		
DIST.		
CUST.		

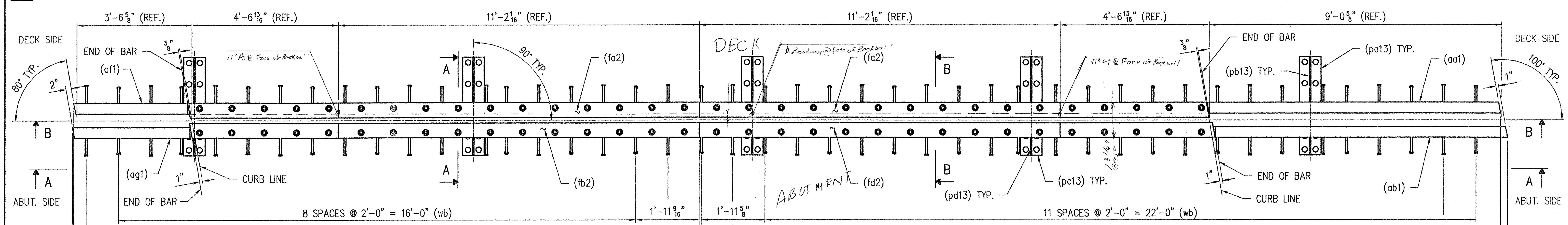
PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT ERECTION ABUTMENT NO. 1 & 2

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

L.E.C. E1 OF 1 | SHEET NO. E1 OF 1 | Job. No. : 2034.1042.1

NOTE: SEE SHEET NO. 3 FOR CURB ASSEMBLY ON THIS SIDE.

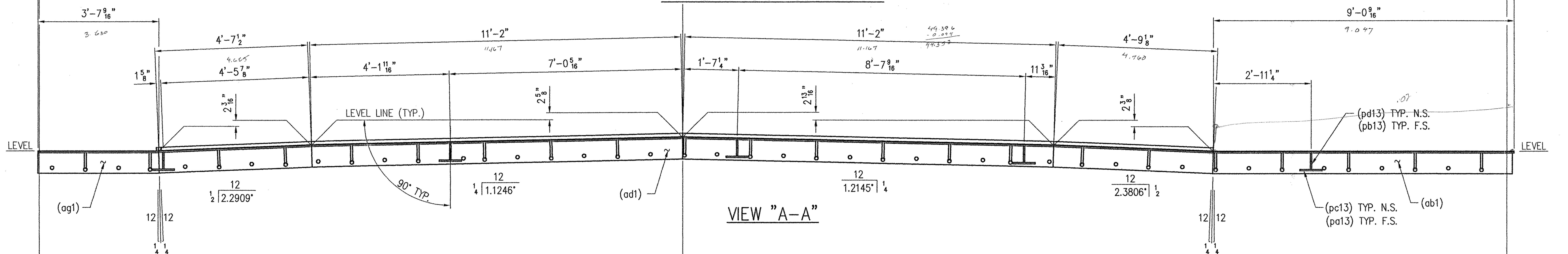
NOTE: SEE SHEET NO. 8 FOR CURB ASSEMBLY ON THIS SIDE.



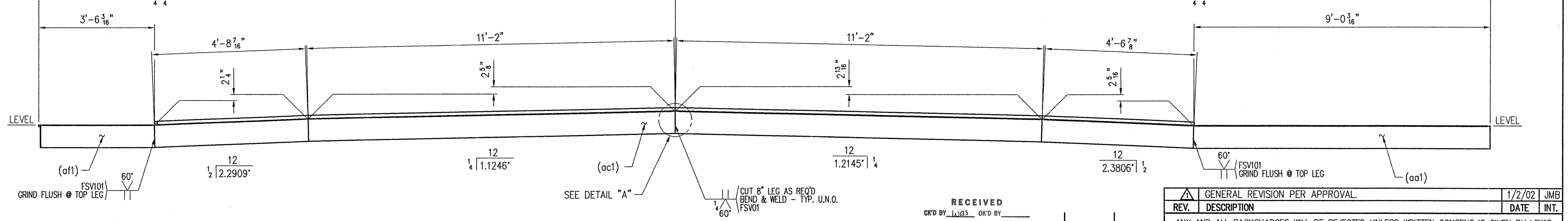
SHOP NOTE:
ADJUST STUD SPACING AS REQUIRED TO AVOID INTERFERENCE WITH SUPPORTS AND LOOP FERRULE INSERTS.

PLAN VIEW
1 – EXPANSION JOINT – 1A

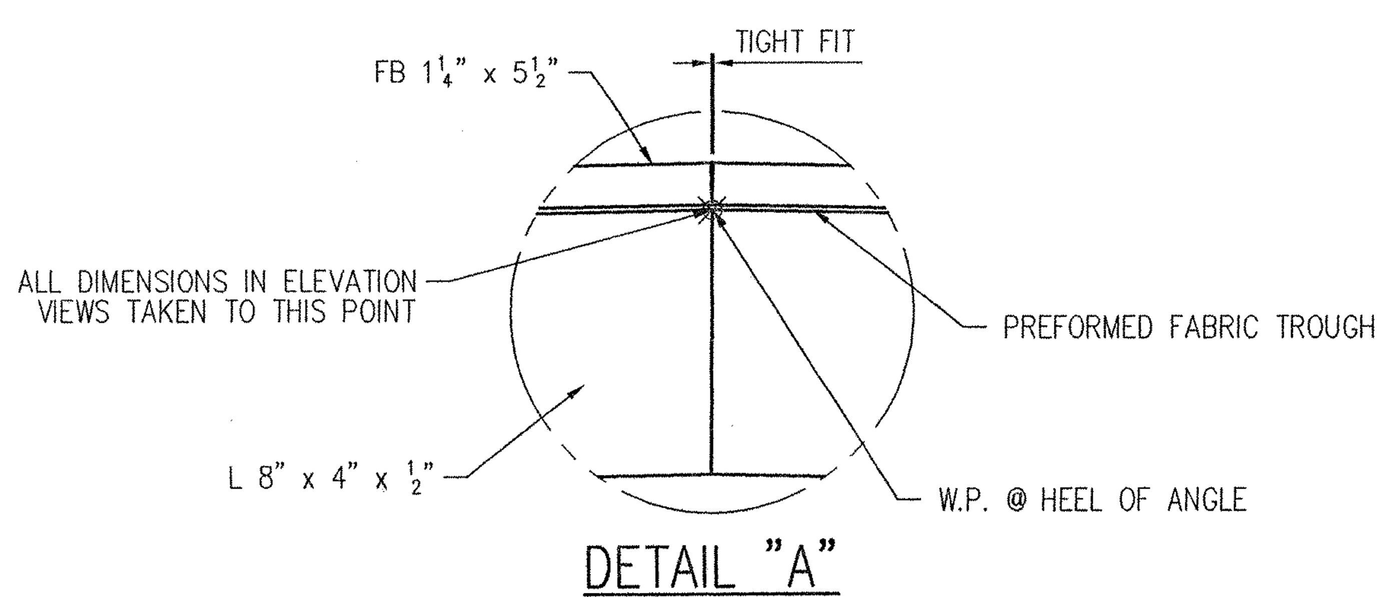
SHOP NOTE:
ADJUST STUD SPACING AS REQUIRED TO AVOID INTERFERENCE WITH SUPPORTS AND LOOP FERRULE INSERTS.



VIEW "A-A"



VIEW "B-B"



DETAIL "A"

SHOP NOTE:
ALL WELDS SHOWN IN VIEW "B-B" ARE TYP. IN VIEW "A-A". ALL MITER CUTS IN VIEW "A-A" ARE ALSO TYP. IN VIEW "B-B". IN ADDITION, ALL DIMENSIONS FOR "SUPPORT PLATES" SHOWN IN VIEW "A-A" ARE TYPICAL IN VIEW "B-B" ALSO. SEAL ALL ACCESSIBLE JOINTS FOR GALVANIZING.

RECEIVED
CK'D BY LWBS OK'D BY
JAN 11 2002
RESUBMIT BY CPW APPROVED DATE 1/11/02

-SEE SHEET NO. 15 FOR GENERAL NOTES.
-HIDDEN LINES REMOVED FOR CLARITY.
-SHIPPING ANGLES REMOVED FOR CLARITY.
-CURB ASSEMBLY NOT SHOWN FOR CLARITY.
-ALL DIMENSIONS SHOWN IN THE ELEVATION VIEWS ARE MEASURED ALONG THE HEEL OF THE L 8" x 4" x 1/2".
-FOR SECTION "A-A" AND SECTION "B-B" SEE SHEET NO. 2.

PRINTS ISSUED	
SHOP	
APPROVAL	
DIST.	
CUST.	
FOR	DATE

REV.	DESCRIPTION	DATE	INT.
1	GENERAL REVISION PER APPROVAL.	1/2/02	JMB

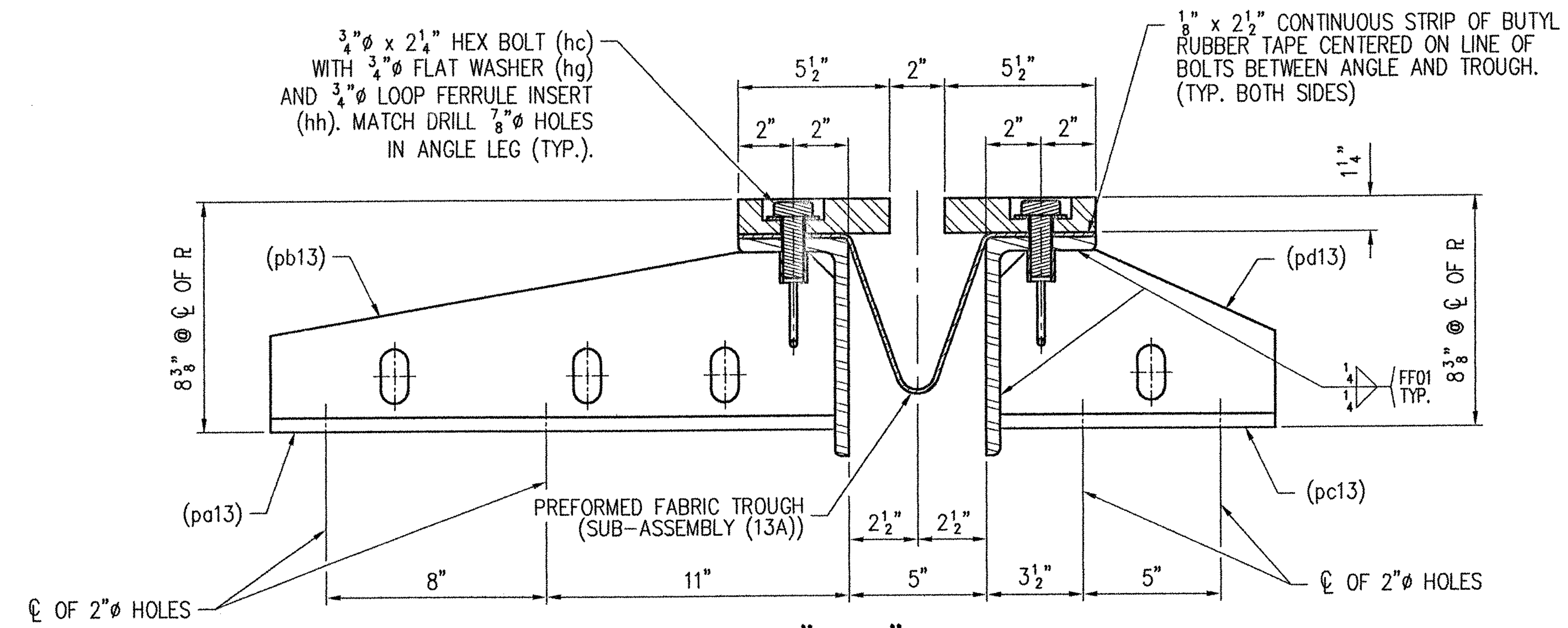
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

PROJECT – ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT – AC BRZ 1444(22)
FEDERAL PROJECT –
CUSTOMER – BECK & BELLUCCI, INC.
LOCATION – WINDSOR COUNTY, VT
DESCRIPTION – EXPANSION JOINT DETAILS ABUTMENT NO. 2

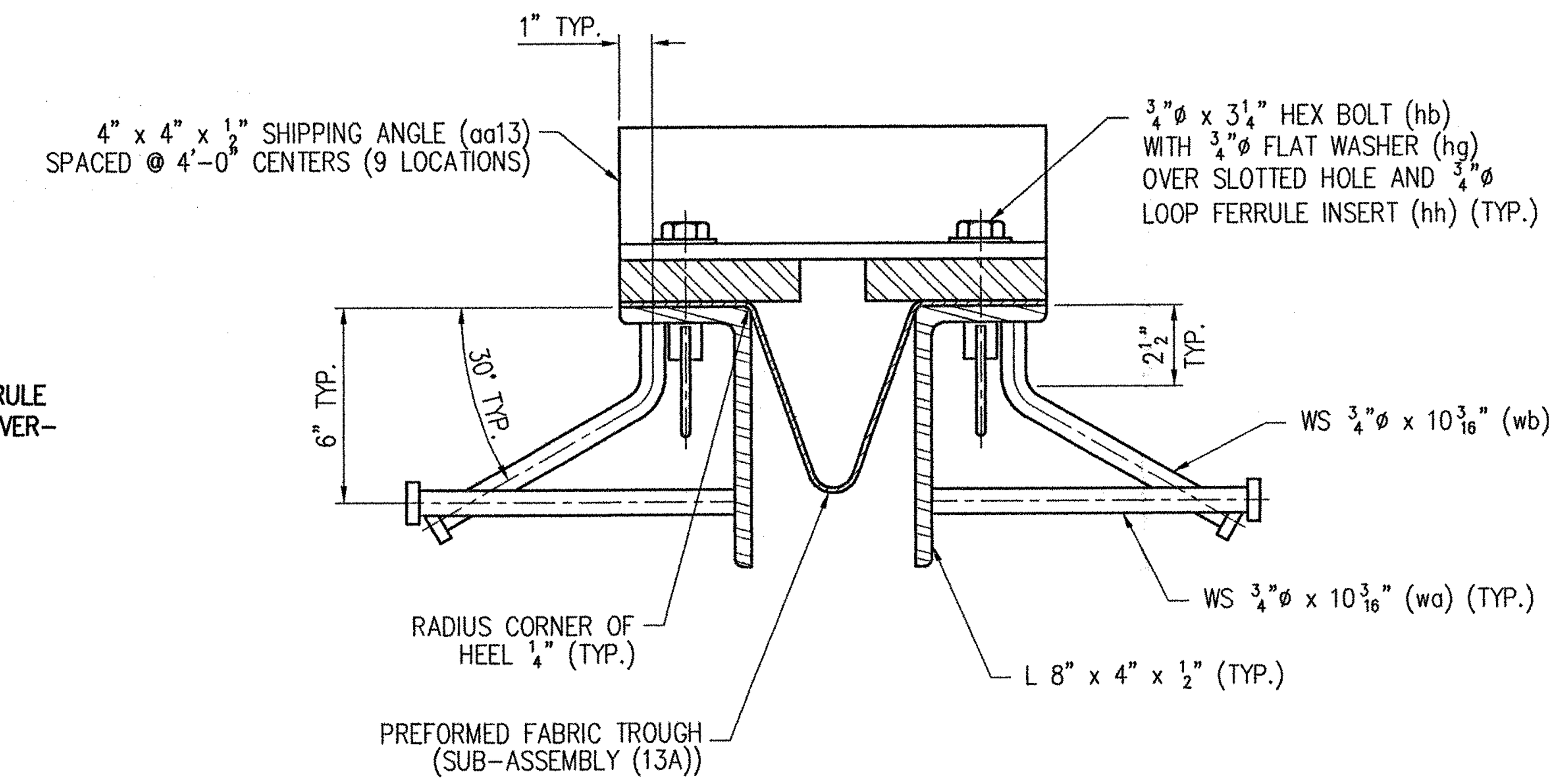
W.P. chk'd Orig.
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

L.E.C. 1 OF 30 | SHEET NO. 1 OF 15 | Job. No. : 2034.1042.1

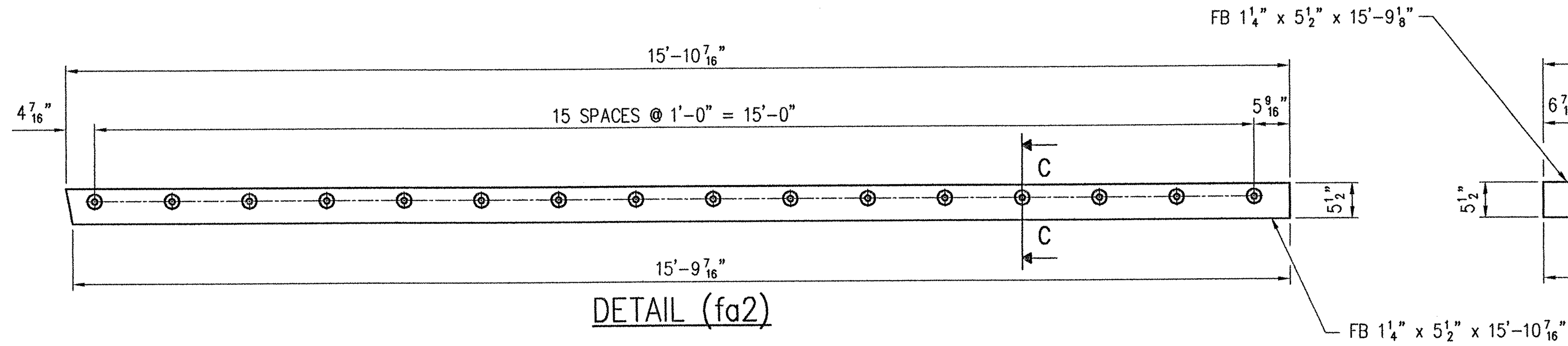


SECTION "A-A"

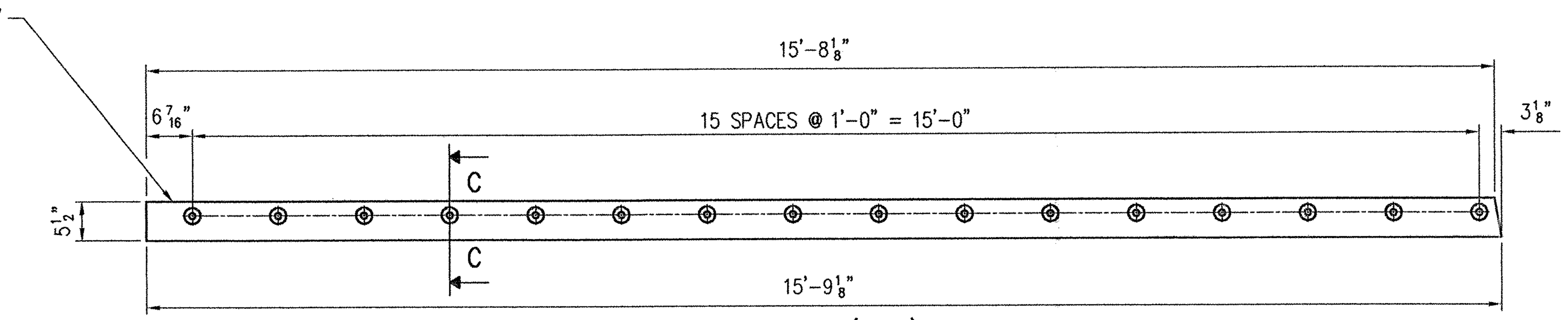
SHOP NOTE:
COAT BOLT & FERRULE THREADS WITH "NEVER-SEIZE" GREASE.



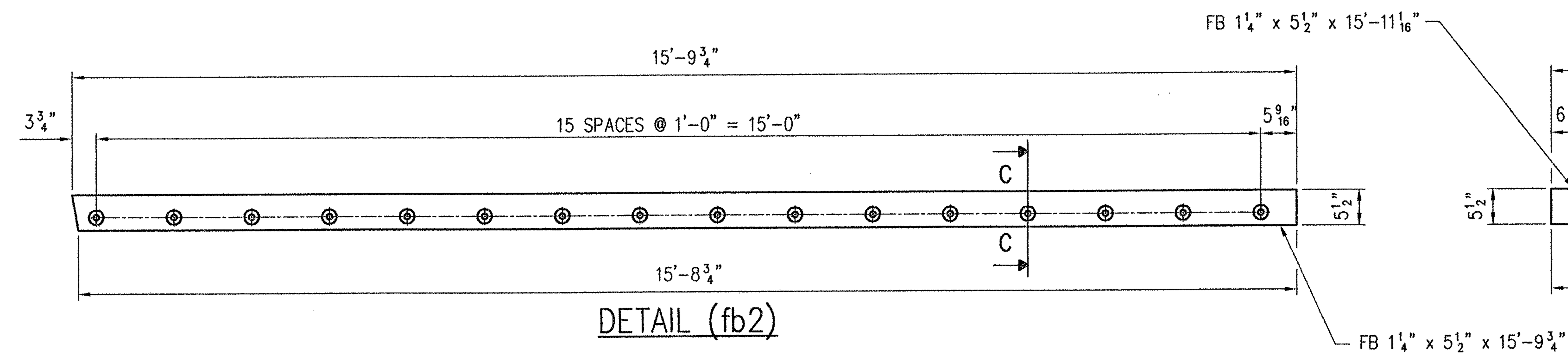
SECTION "B-B"



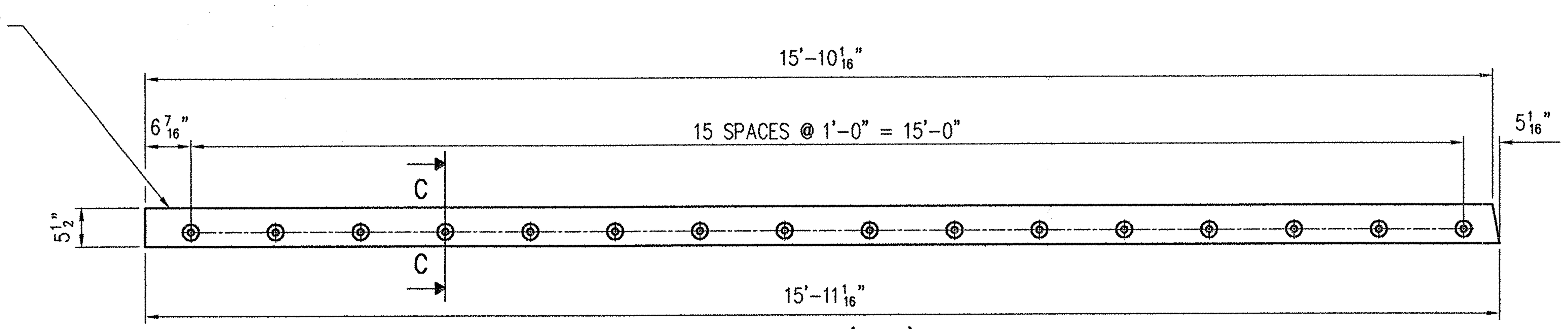
DETAIL (fa2)



DETAIL (fc2)

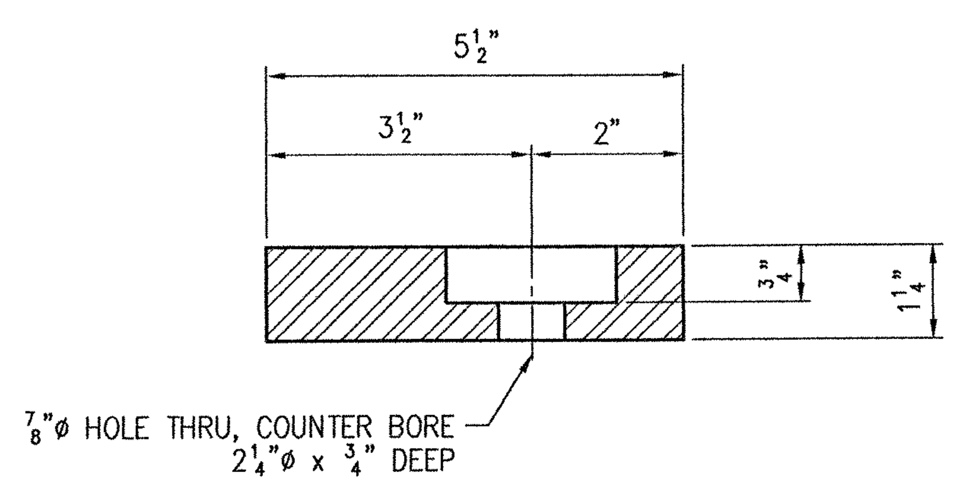


DETAIL (fb2)



DETAIL (fd2)

SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 1.



SECTION "C-C"

RECEIVED
CK'D BY WISS CK'D BY
JAN 11 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/11/02

REV.	DESCRIPTION	DATE	INT.
1	GENERAL REVISION PER APPROVAL.	1/2/02	JMB

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

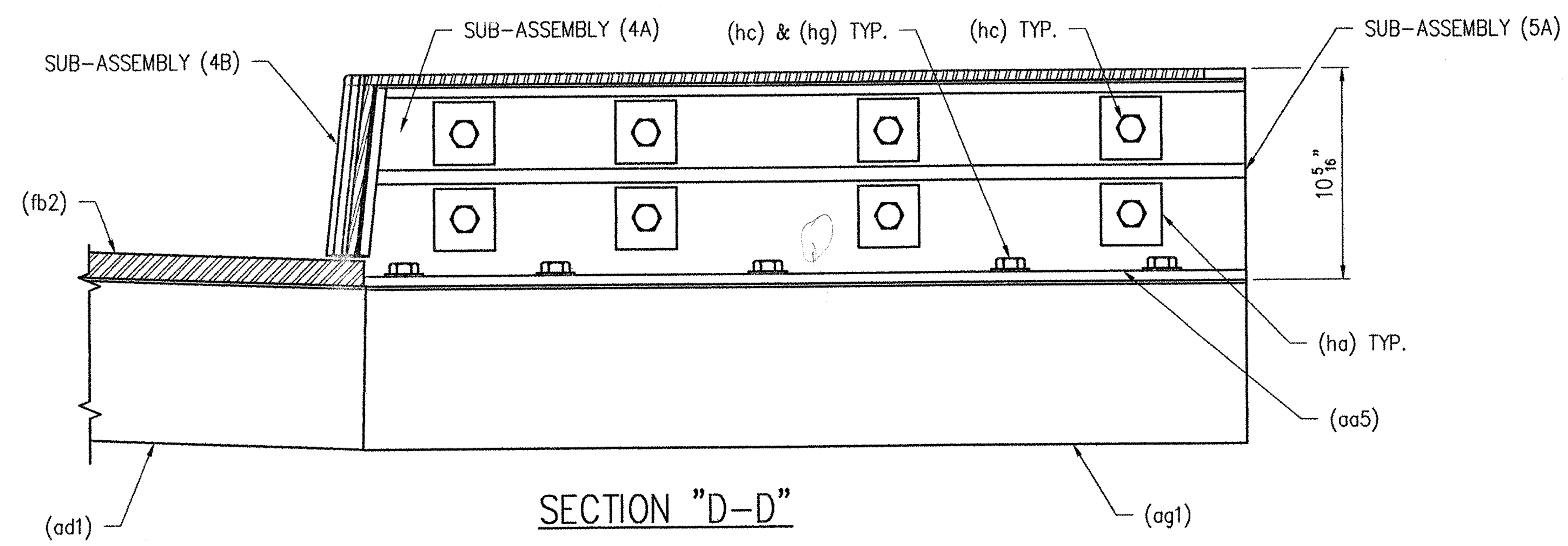
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

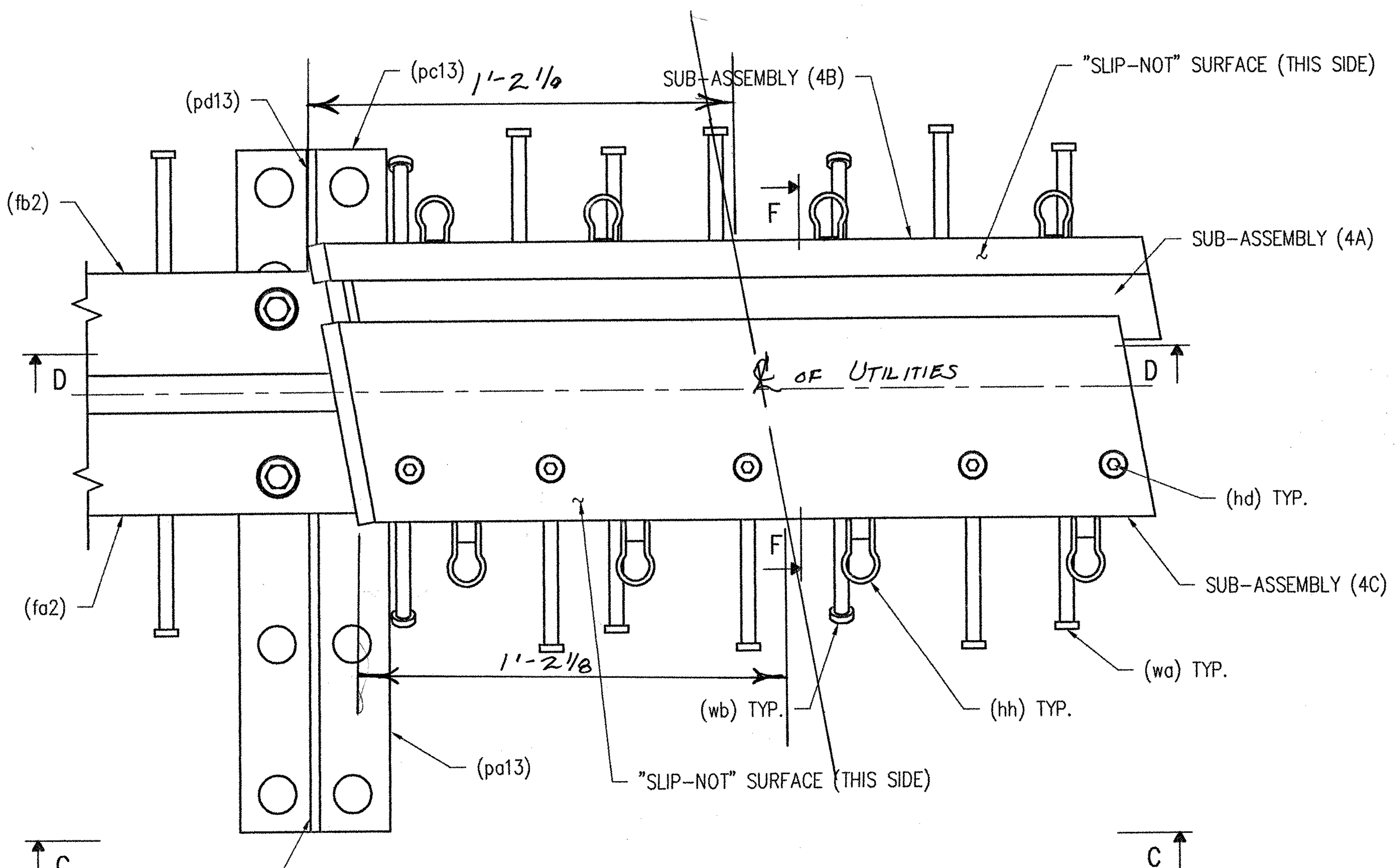
PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS ABUTMENT NO. 2

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

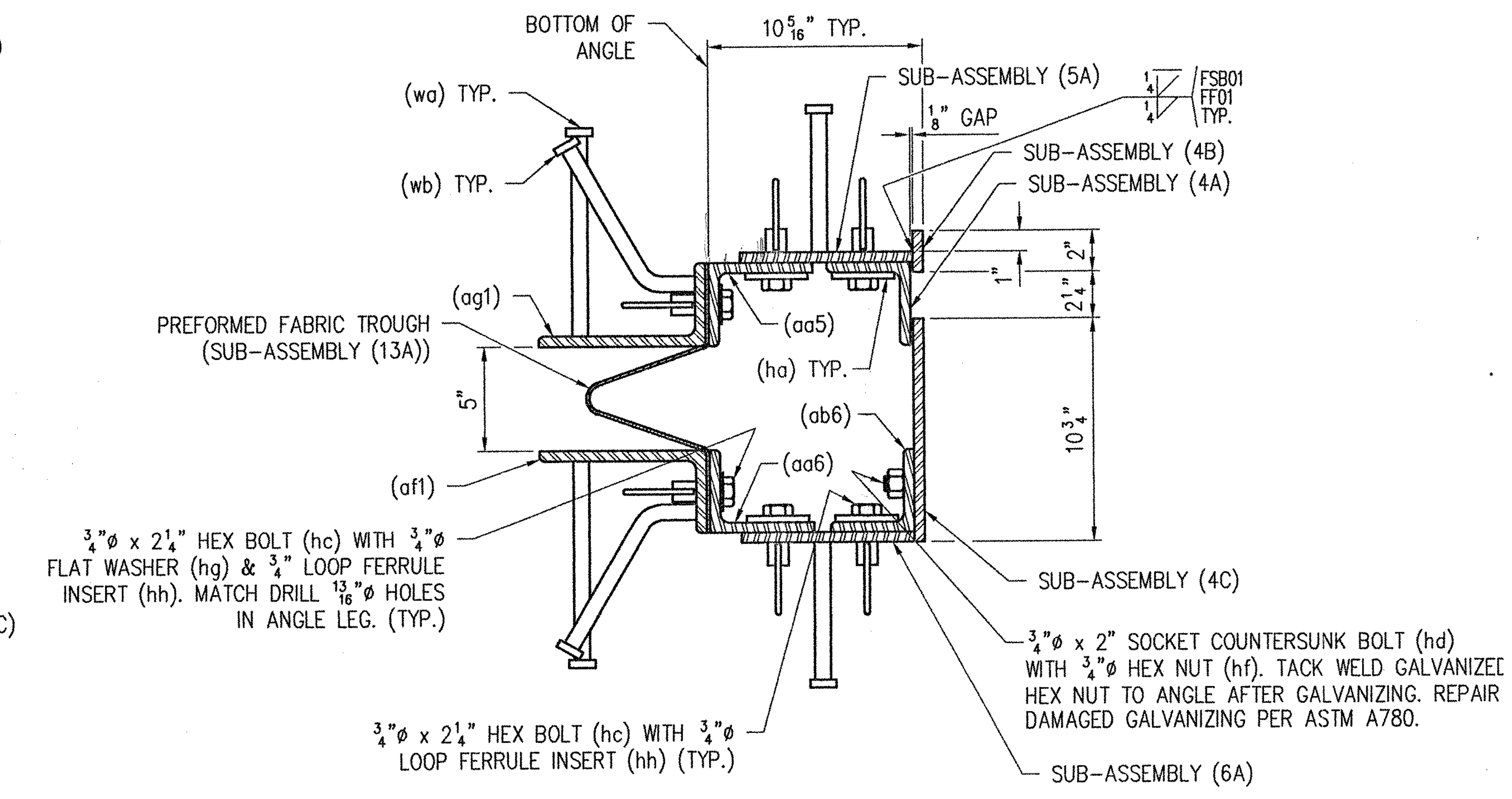
L.E.C. 2 OF 30 | SHEET NO. 2 OF 15 | Job. No. : 2034.1042.1



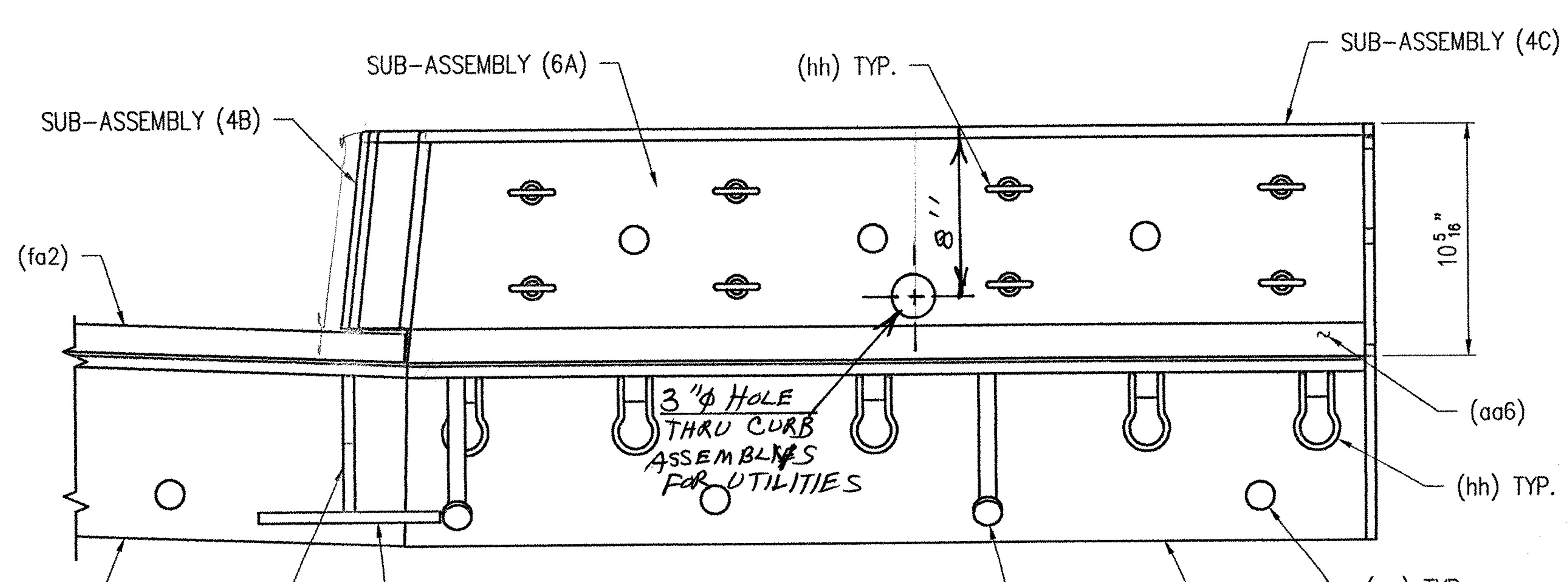
SECTION "D-D"



DETAIL "B"
(ROTATED 180° FROM THAT SHOWN ON SHEET NO. 1)



SECTION "F-F"



VIEW "C-C"

SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 1, 4, 5, 6 & 7.

RECEIVED
CK'D BY LWBS OK'D BY
JAN 11 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/11/02

REV.	DESCRIPTION	DATE	INT.
1	GENERAL REVISION PER APPROVAL.	1/2/02	JMB

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

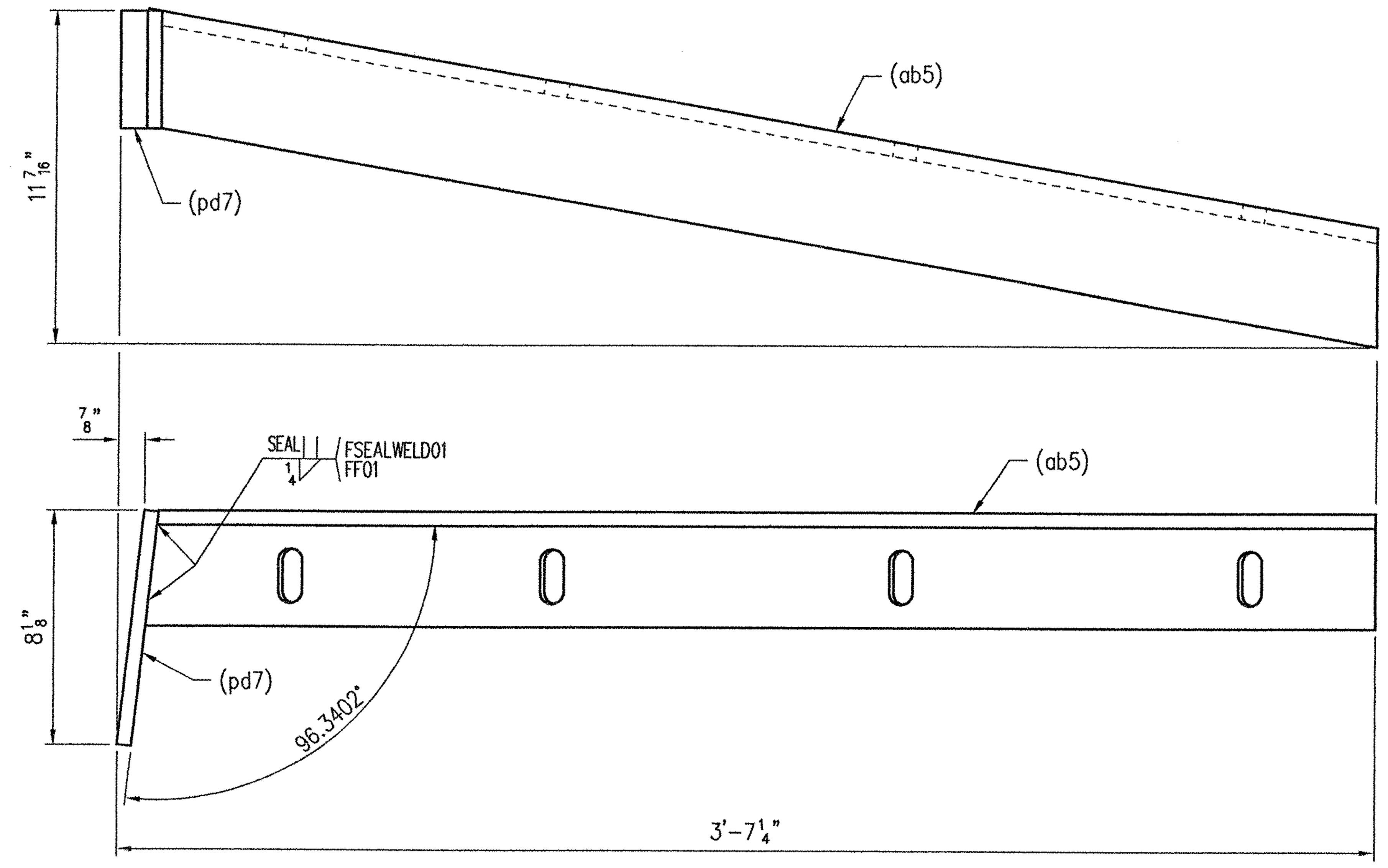
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

PROJECT	— ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT	— AC BRZ 1444(22)
FEDERAL PROJECT	—
CUSTOMER	— BECK & BELLUCCI, INC.
LOCATION	— WINDSOR COUNTY, VT
DESCRIPTION	— EXPANSION JOINT DETAILS ABUTMENT NO. 2

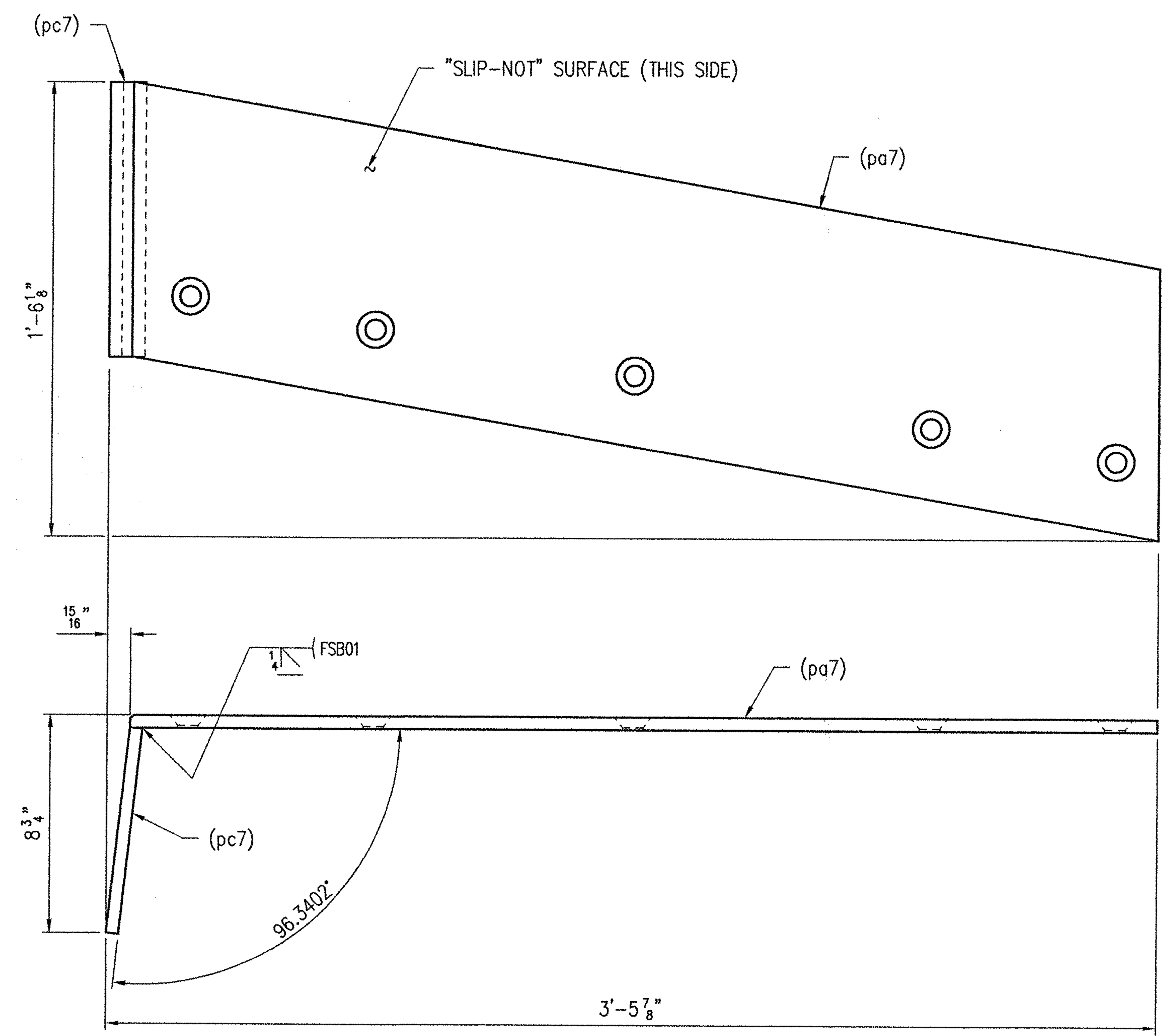
W.P. chk'd	Orig.
Drawn By	JMB
Chk'd. By	TSF
Date:	12/5/01

PRINTS ISSUED	
FOR	DATE
SHOP	
APPROVAL	
DIST.	
CUST.	

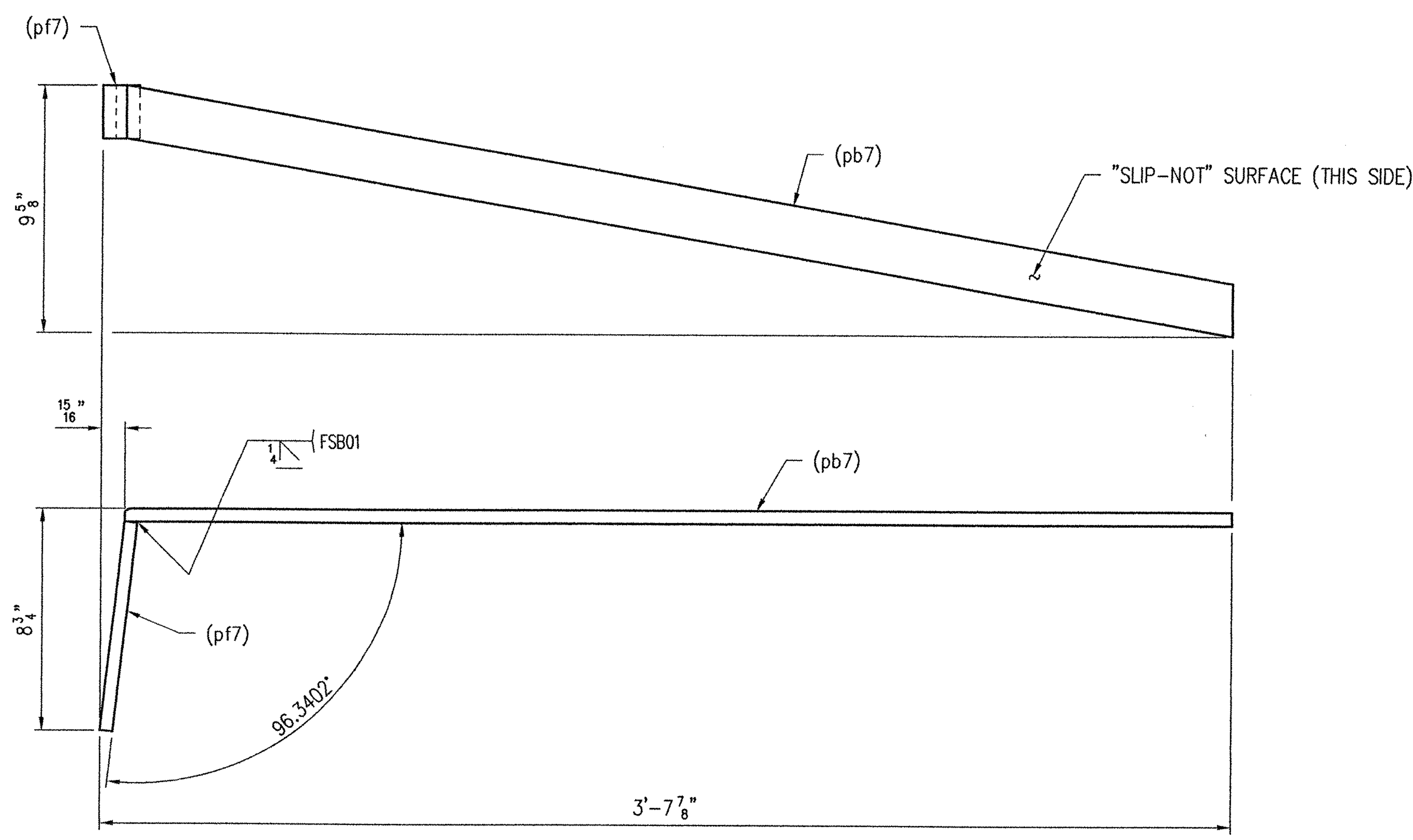
L.E.C. 3 OF 30 | SHEET NO. 3 OF 15 | Job. No. : 2034.1042.1



1 - SUB-ASSEMBLY - 4A
(SOME HIDDEN LINES REMOVED FOR CLARITY)



1 - SUB-ASSEMBLY - 4C



1 - SUB-ASSEMBLY - 4B

SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 3, 5, 6 & 7.

REV.	DESCRIPTION	DATE	INT.
1	GENERAL REVISION PER APPROVAL.	1/2/02	JMB

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (952) 368-3000

RECEIVED
CK'D BY WBS OK'D BY
JAN 11 2002
RESUBMIT APPROVED ✓
BY OPW DATE 1/11/02

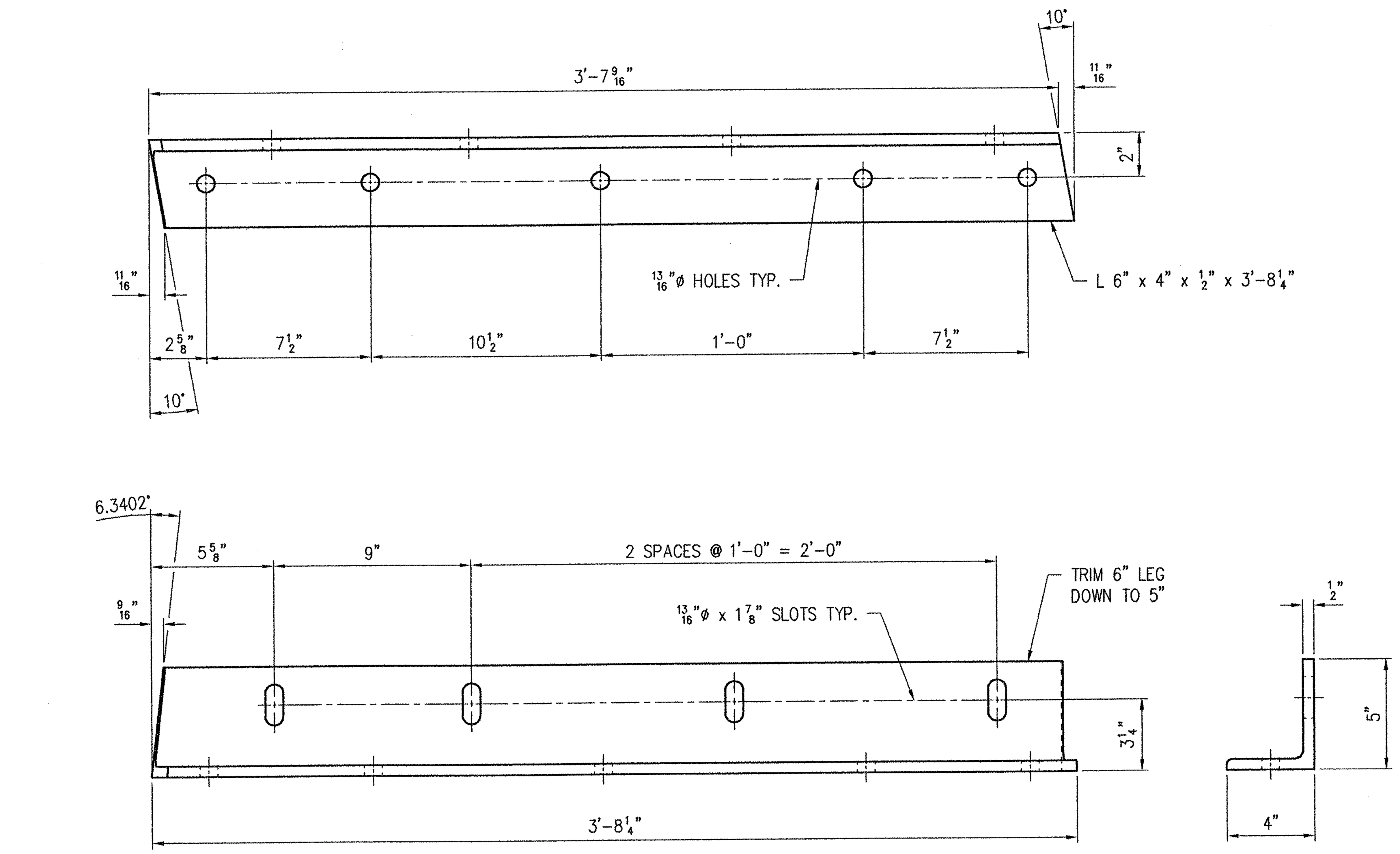
PRINTS ISSUED	
FOR	DATE
SHOP	
APPROVAL	
DIST.	
CUST.	

PROJECT	—	ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT	—	AC BRZ 1444(22)
FEDERAL PROJECT	—	
CUSTOMER	—	BECK & BELLUCCI, INC.
LOCATION	—	WINDSOR COUNTY, VT
DESCRIPTION	—	EXPANSION JOINT DETAILS ABUTMENT NO. 2

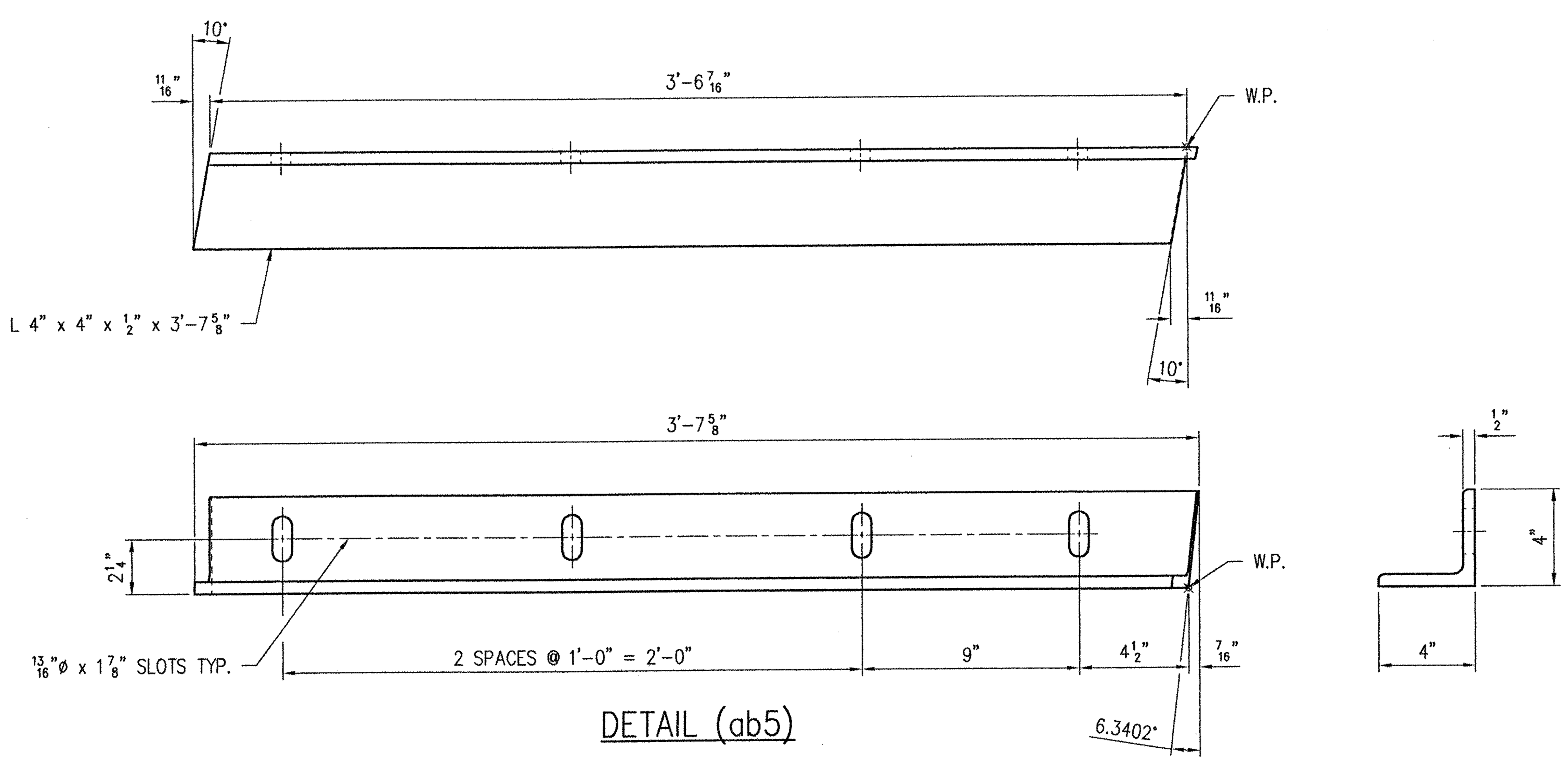
Orig.

W.P. chk'd	
Drawn By	JMB
Chk'd. By	TSF
Date:	12/5/01

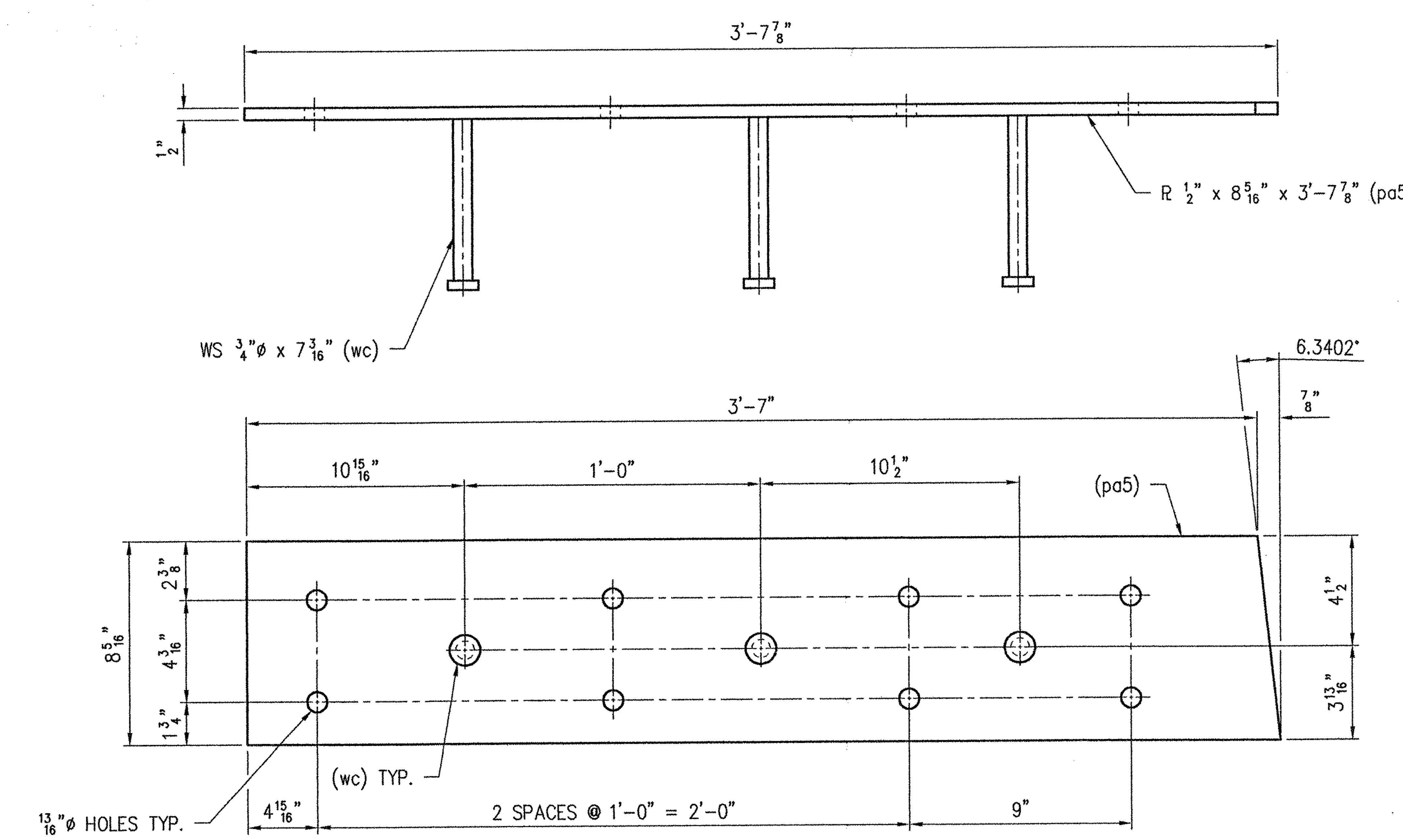
L.E.C. 4 OF 30 | SHEET NO. 4 OF 15 | Job. No. : 2034.1042.1



DETAIL (aa5)



DETAIL (ab5)



1 – SUB-ASSEMBLY – 5A

SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 3, 4, 6 & 7.

REV.	DESCRIPTION	DATE	INT

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

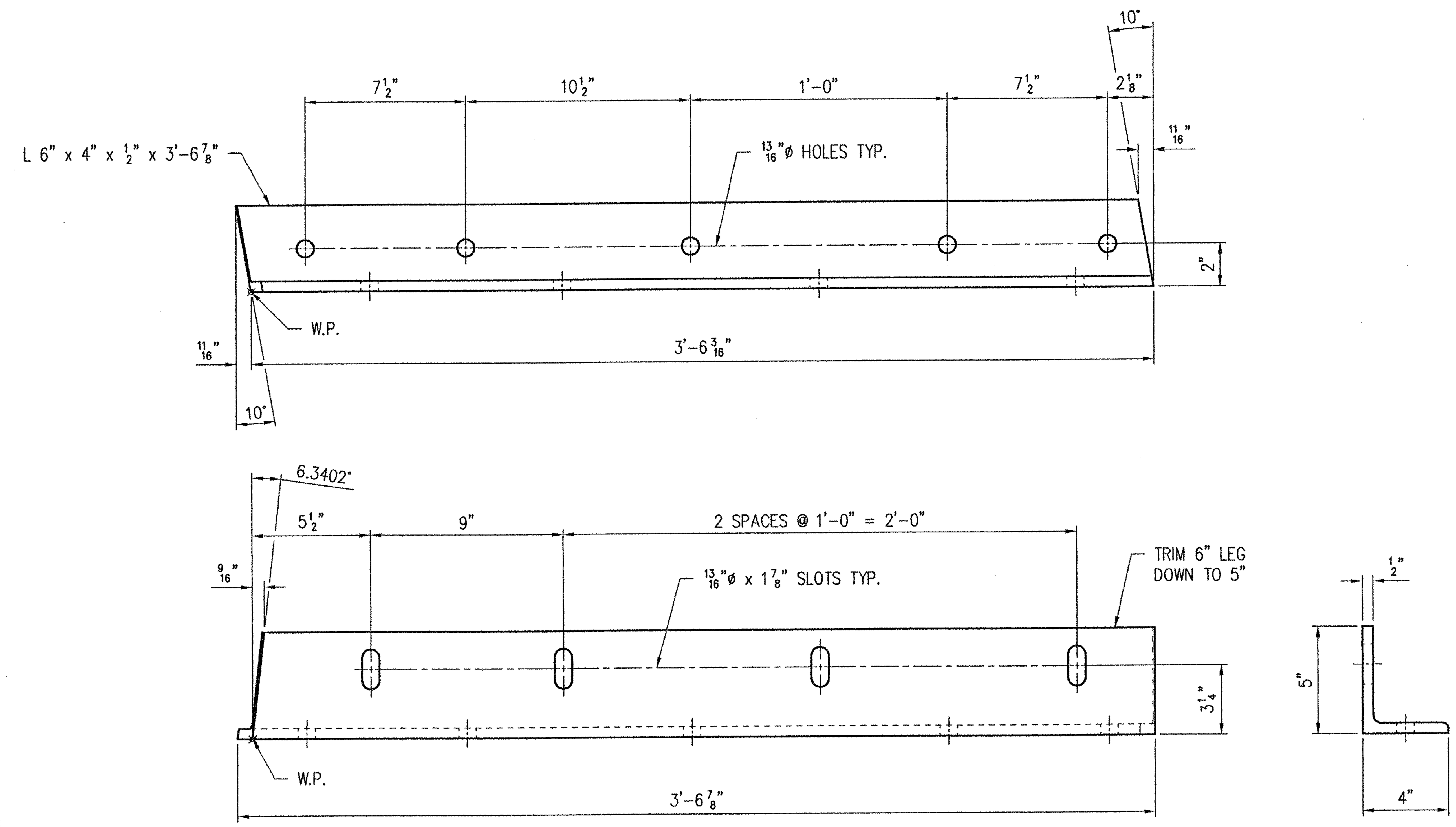
PROJECT	– ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT	– AC BRZ 1444(22)
FEDERAL PROJECT	–
CUSTOMER	– BECK & BELLUCCI, INC.
LOCATION	– WINDSOR COUNTY, VT
DESCRIPTION	– EXPANSION JOINT DETAILS ABUTMENT NO. 2

W.P. chk'd	Orig.
Drawn By	JMB
Chk'd. By	TSF
Date:	12/5/01

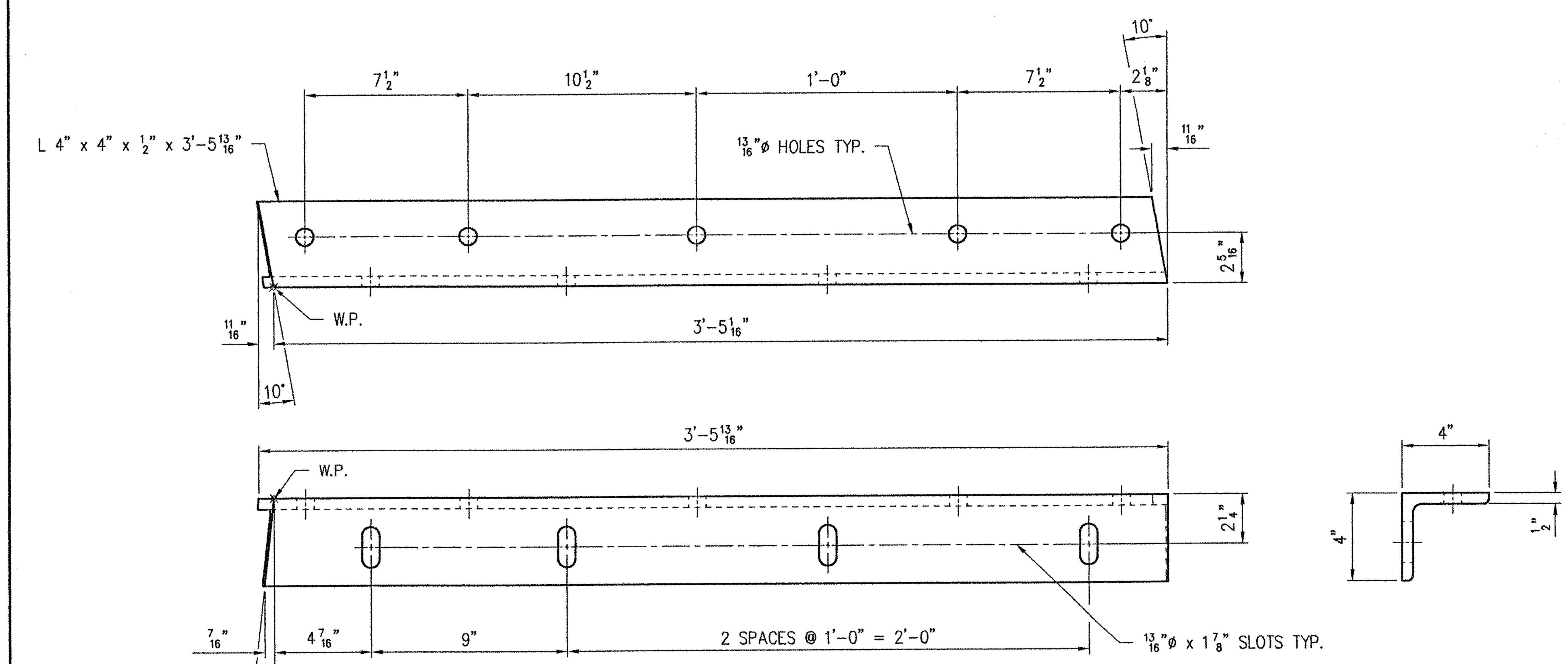
L.E.C. 5 OF 30 | SHEET NO. 5 OF 15 | Job. No. : 2034.1042.

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

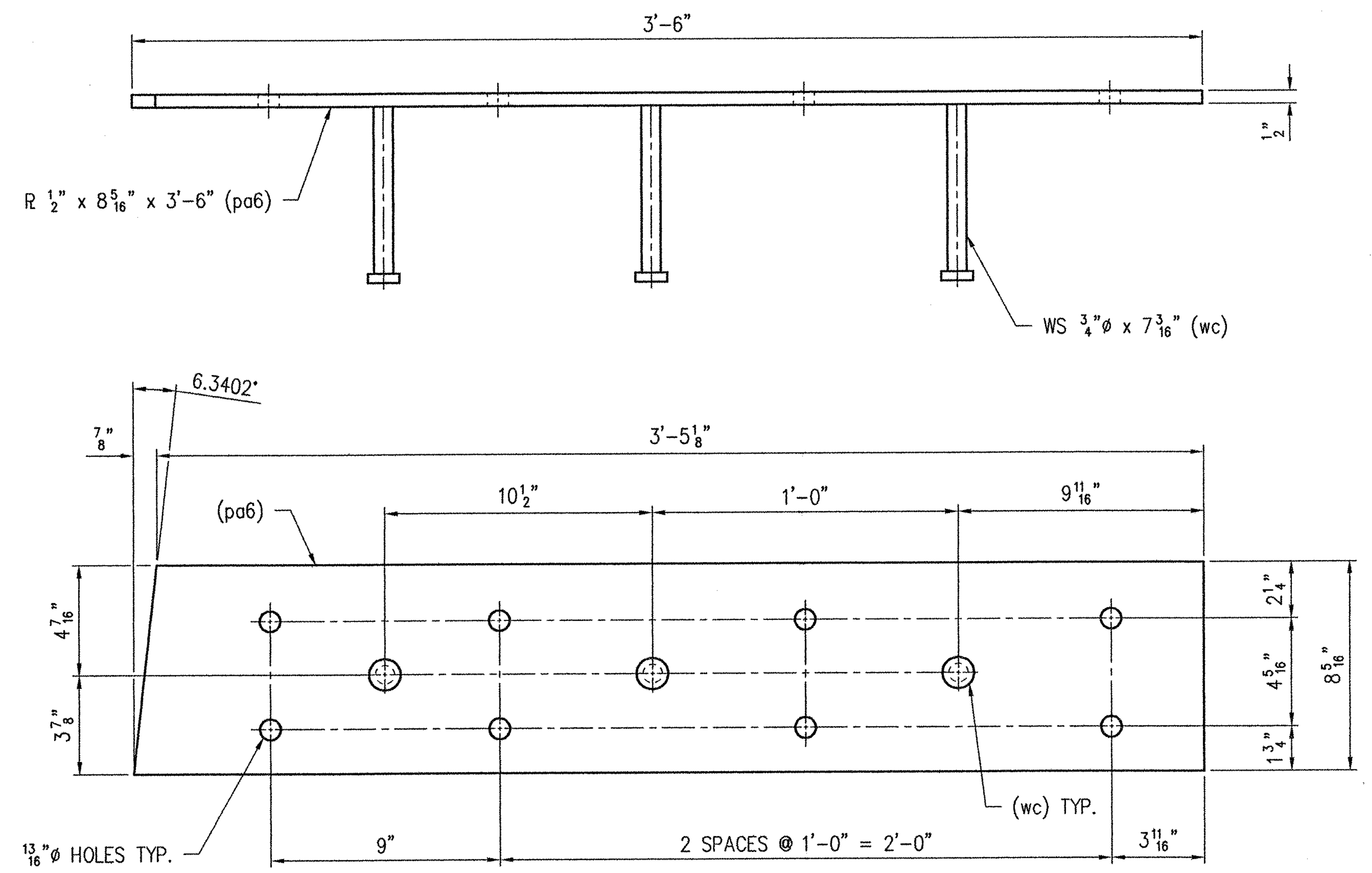
RECEIVED
CK'D BY LWAS CK'D BY
JAN 11 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/11/02



DETAIL (aa6)



DETAIL (ab6)



1 - SUB-ASSEMBLY - 6A

SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 3, 4, 5 & 7.

RECEIVED
CK'D BY LWJ OK'D BY
JAN 11 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/11/02

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

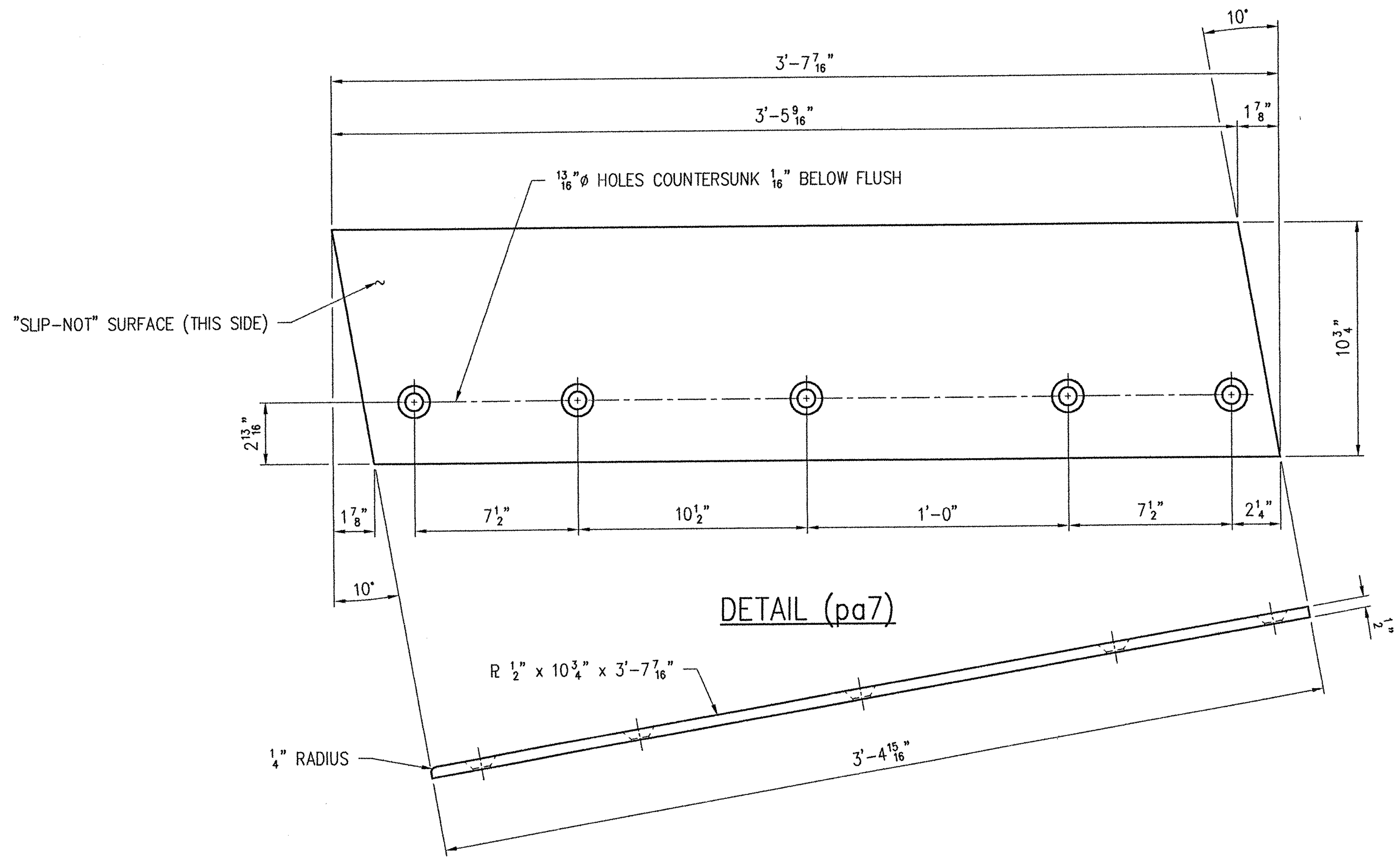
PROJECT	— ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT	— AC BRZ 1444(22)
FEDERAL PROJECT	—
CUSTOMER	— BECK & BELLUCCI, INC.
LOCATION	— WINDSOR COUNTY, VT
DESCRIPTION	— EXPANSION JOINT DETAILS ABUTMENT NO. 2

Orig.

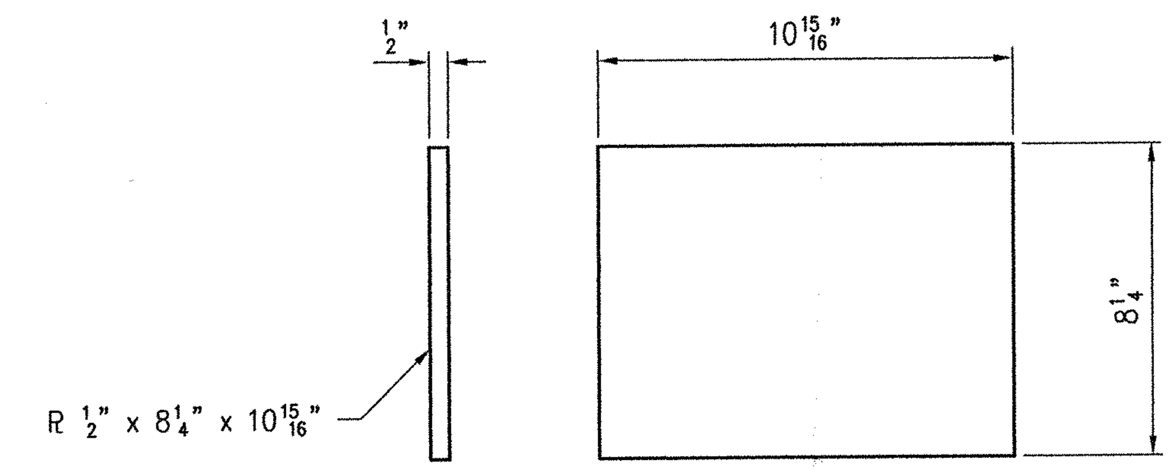
W.P. chk'd	
Drawn By	JMB
Chk'd. By	TSF
Date:	12/5/01

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

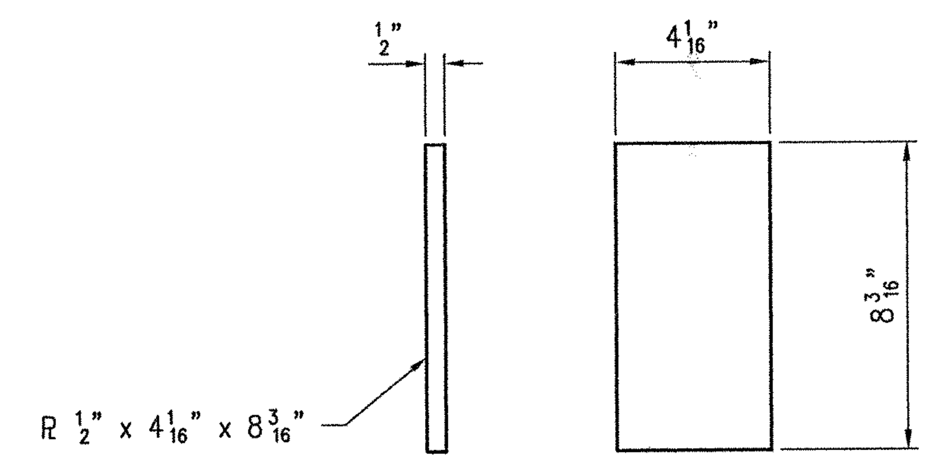
L.E.C. 6 OF 30 | SHEET NO. 6 OF 15 | Job. No. : 2034.1042.1



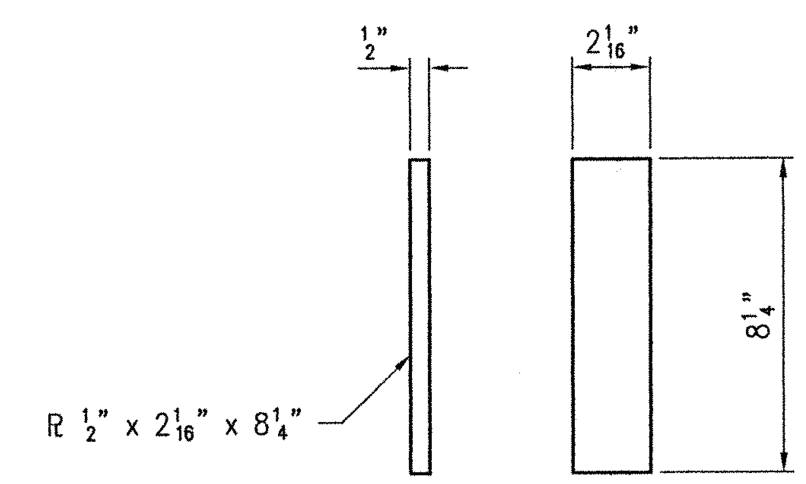
DETAIL (pa7)



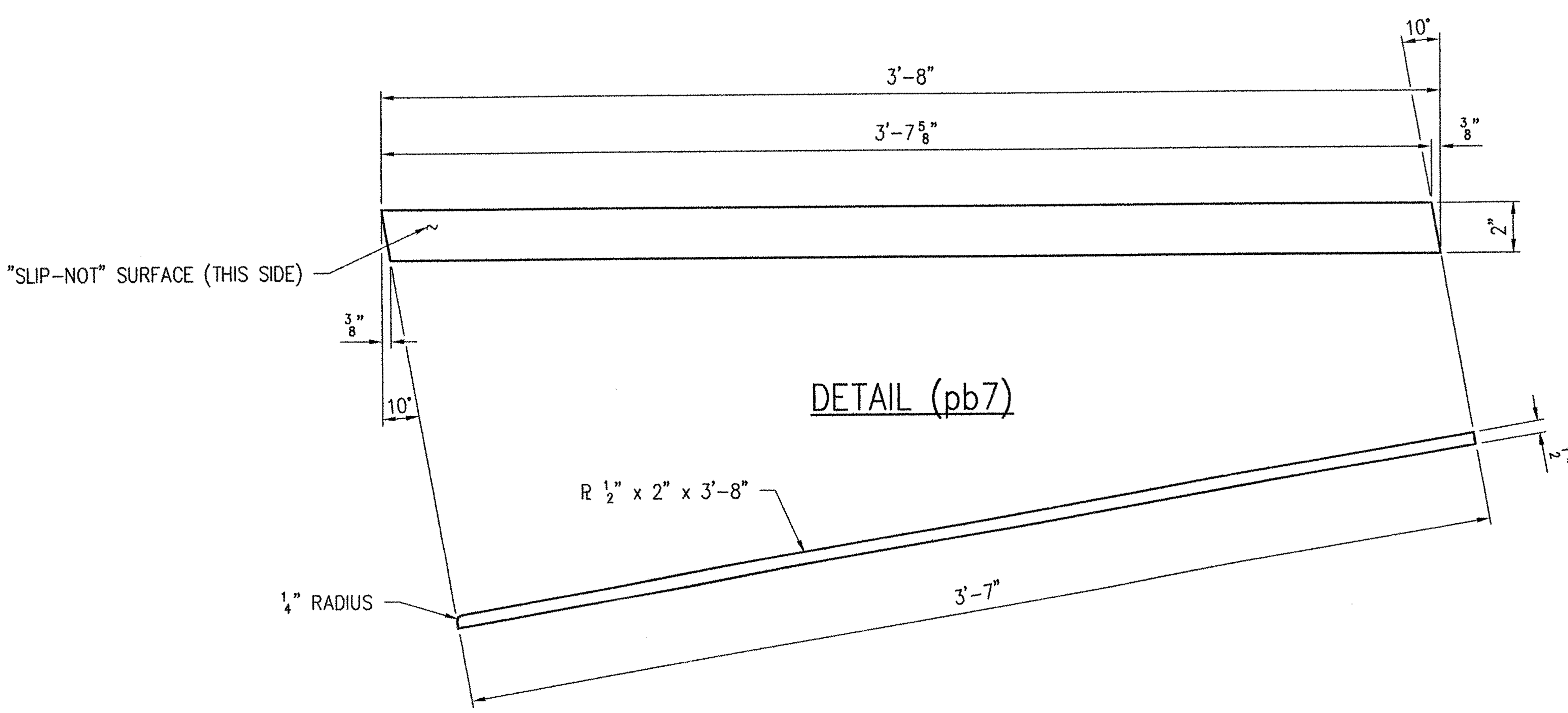
DETAIL (pc7)



DETAIL (pd7)



DETAIL (pf7)



DETAIL (pb7)

SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 3, 4, 5 & 6.

RECEIVED
CK'D BY Was OK'D BY
JAN 11 2002
RESUBMIT APPROVED ✓
BY GPW DATE 1/11/02

SHOP
APPROVAL
DIST.
CUST.
FOR DATE
PRINTS ISSUED

REV. | DESCRIPTION | DATE | INT

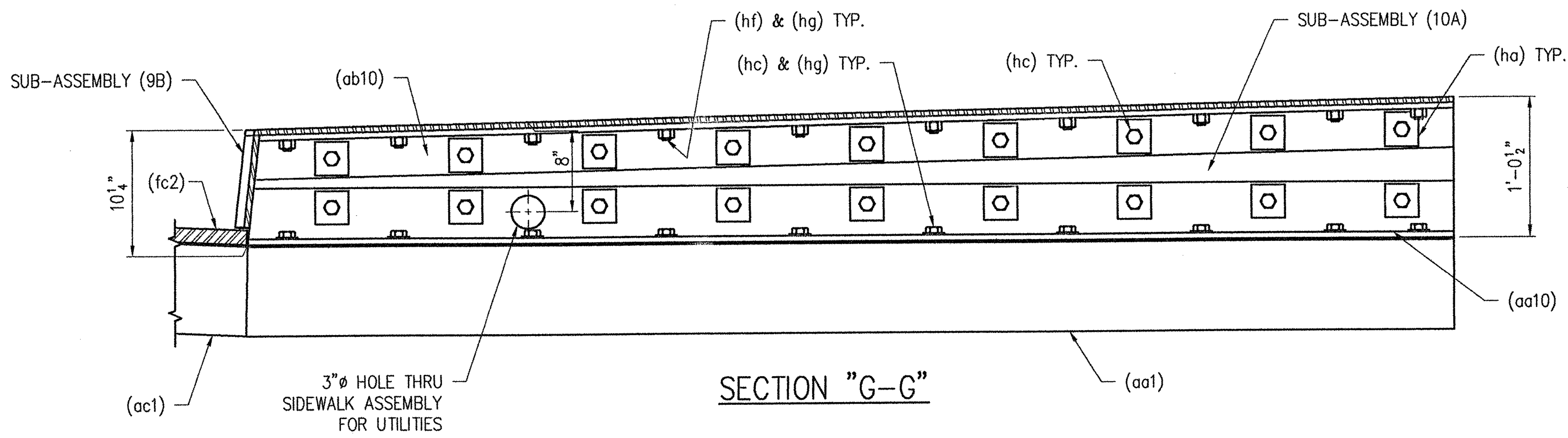
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

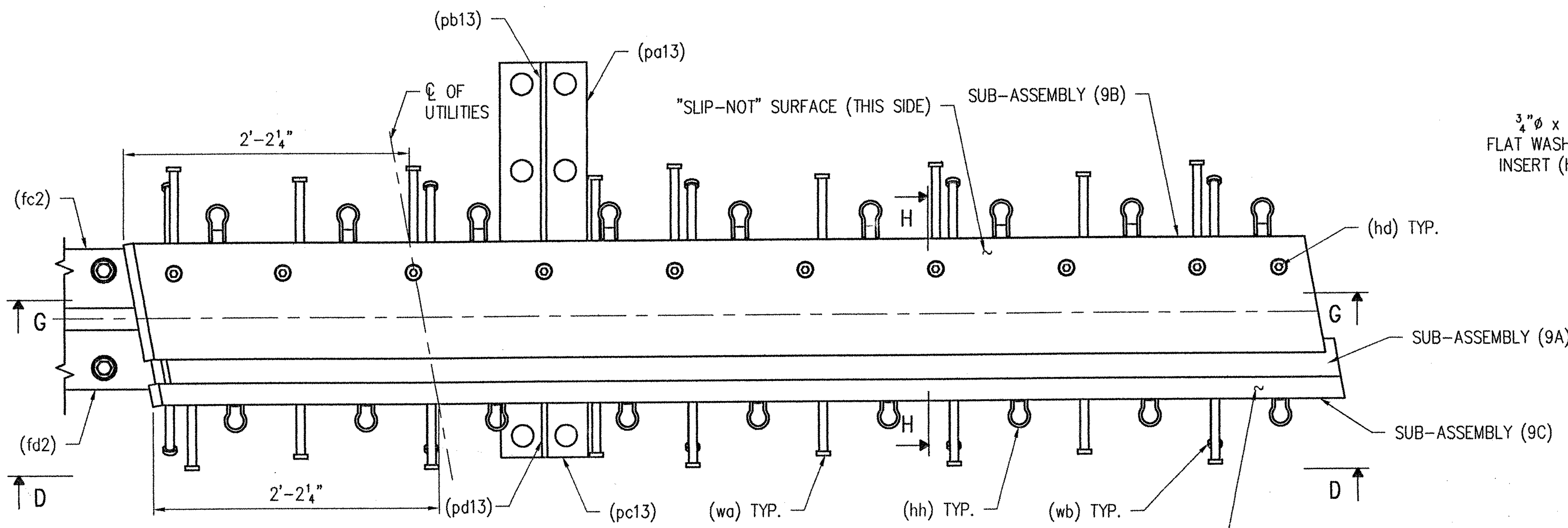
PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS ABUTMENT NO. 2

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

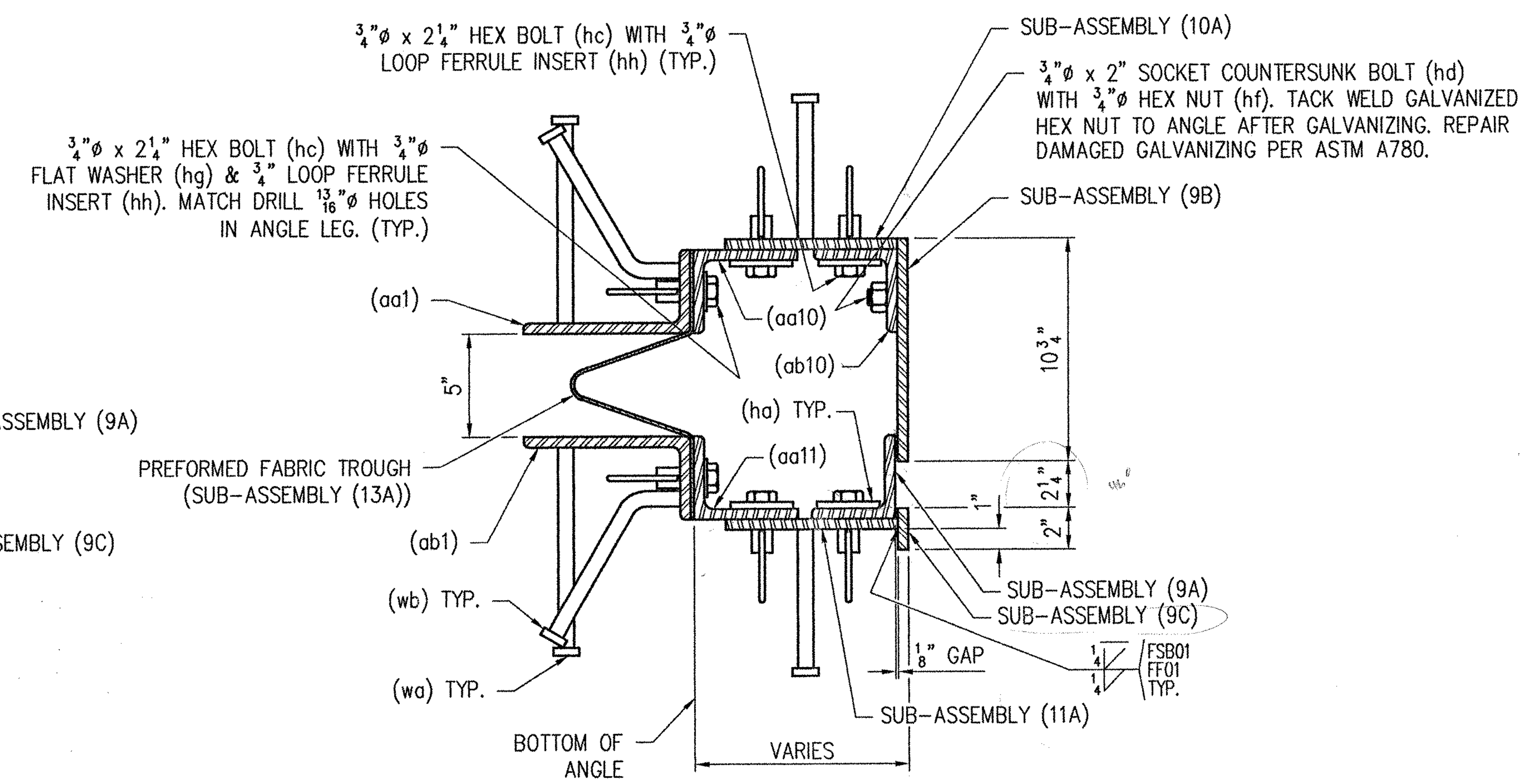
L.E.C. 7 OF 30 | SHEET NO. 7 OF 15 | Job. No. : 2034.1042.1



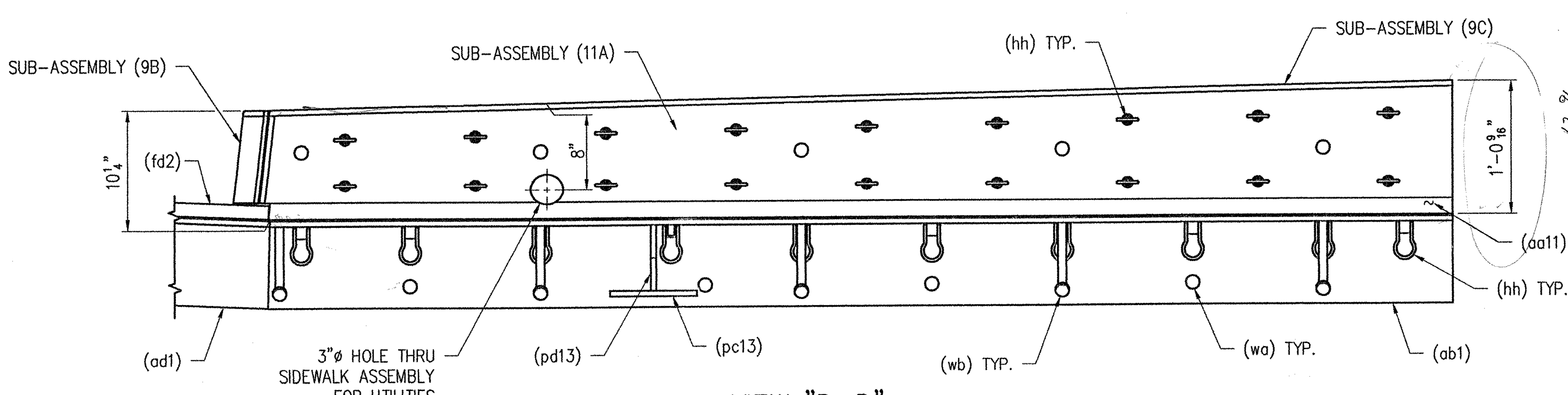
SECTION "G-G"



DETAIL "C"



SECTION "H-H"



VIEW "D-D"

SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 1, 9, 10, 11 & 12.

REV.	DESCRIPTION	DATE	INT.
1	GENERAL REVISION PER APPROVAL.	1/3/02	JMB

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

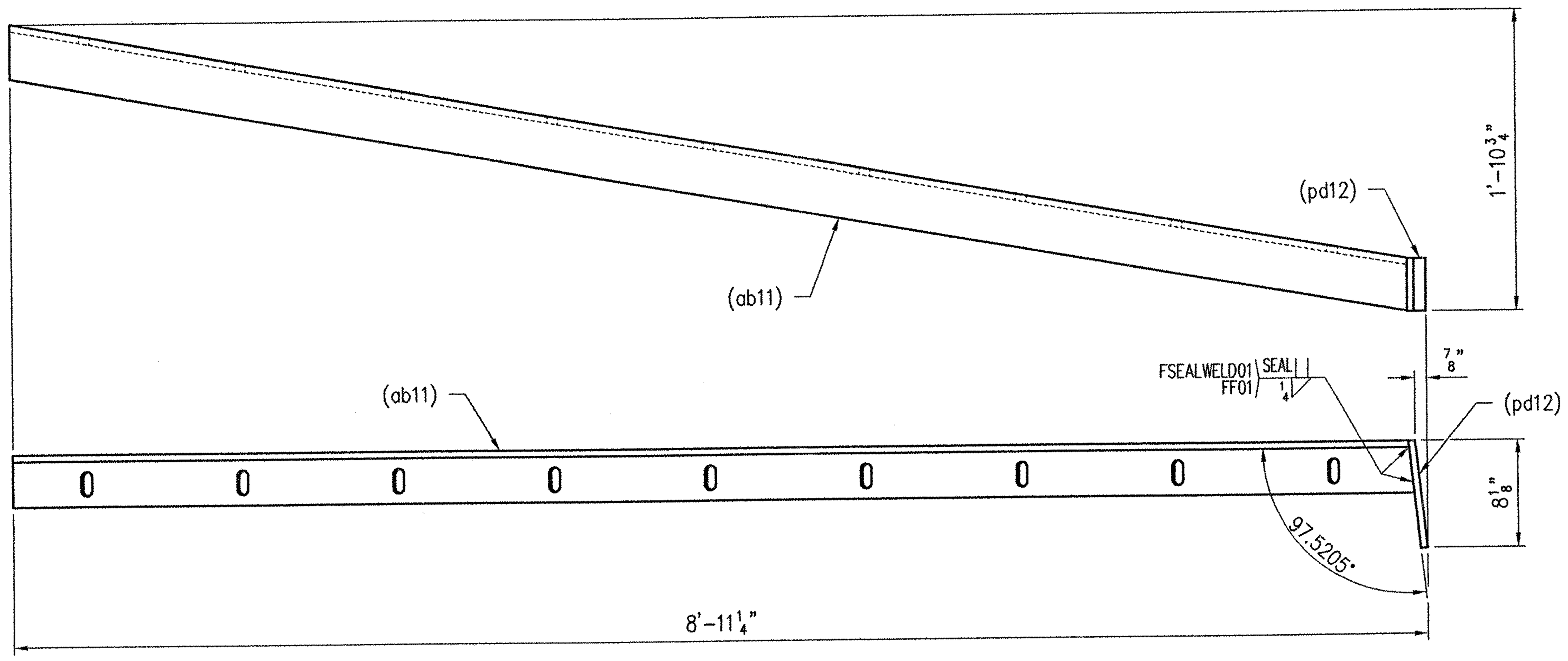
PROJECT	— ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT	— AC BRZ 1444(22)
FEDERAL PROJECT	—
CUSTOMER	— BECK & BELLUCCI, INC.
LOCATION	— WINDSOR COUNTY, VT
DESCRIPTION	— EXPANSION JOINT DETAILS ABUTMENT NO. 2

W.P. chk'd	Orig.
Drawn By	JMB
Chk'd. By	TSF
Date:	12/5/01

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR	DATE
PRINTS ISSUED	

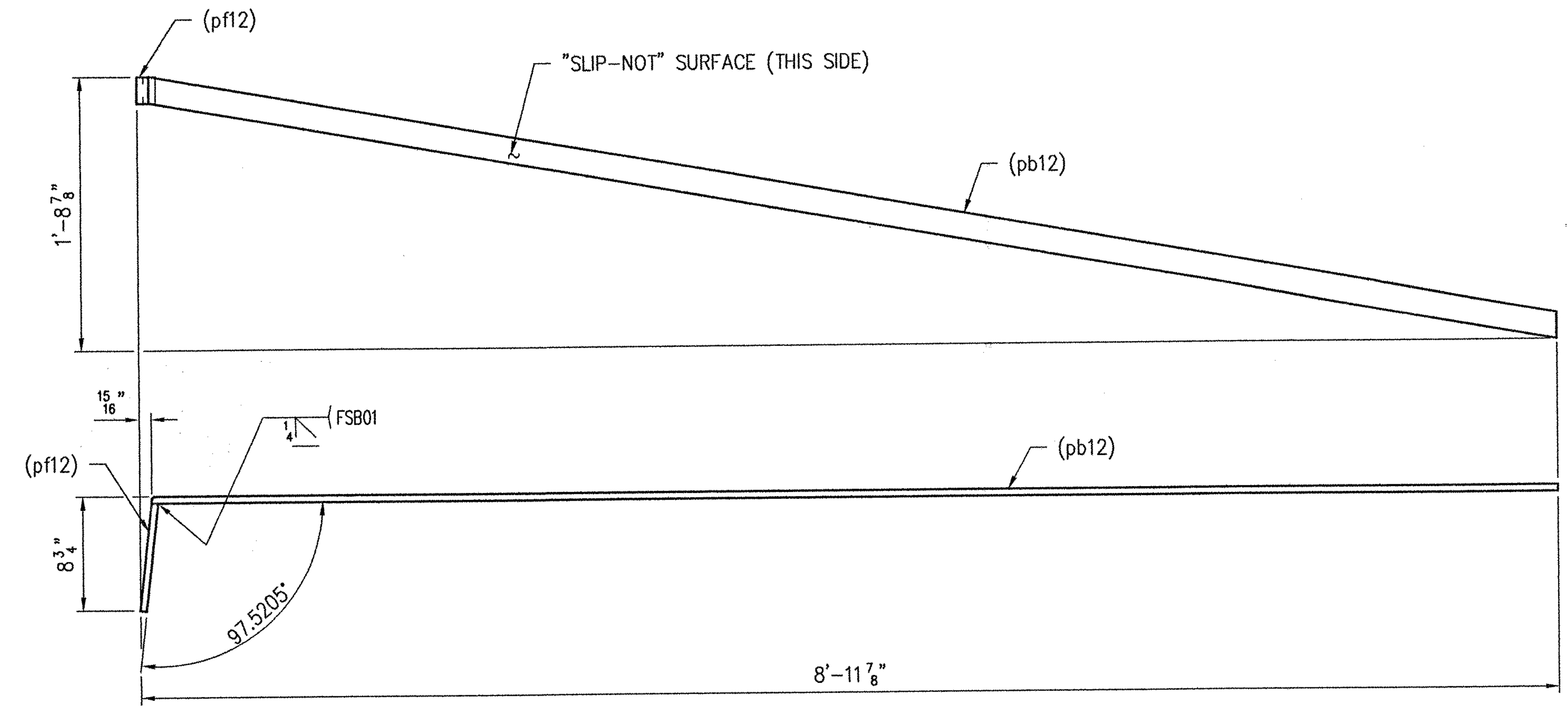
L.E.C. 8 OF 30 | SHEET NO. 8 OF 15 | Job. No. : 2034.1042.1

RECEIVED
CK'D BY WAS OK'D BY
JAN 11 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/11/02

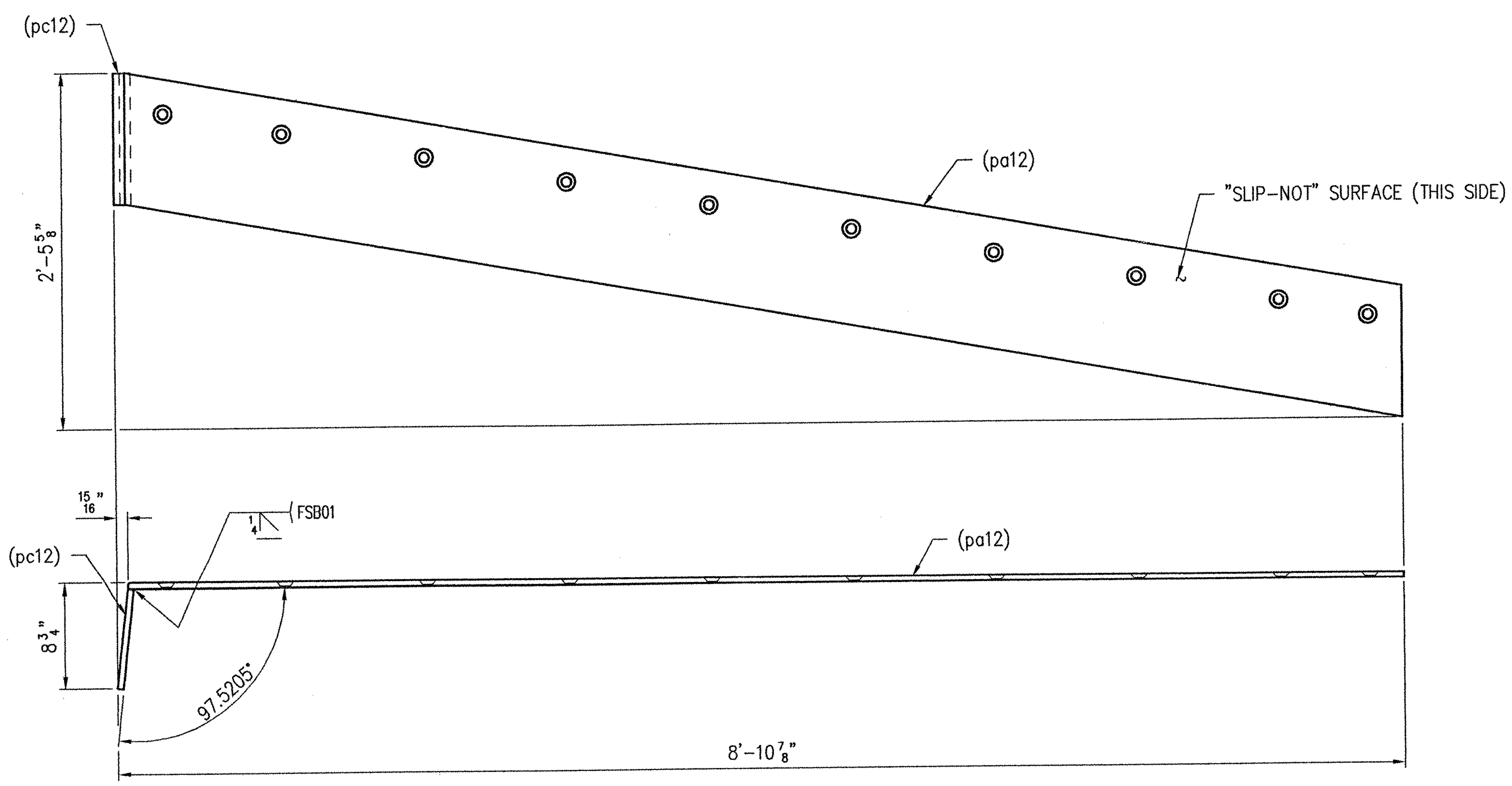


1 - SUB-ASSEMBLY - 9A

(SOME HIDDEN LINES REMOVED FOR CLARITY)



1 - SUB-ASSEMBLY - 9C



1 - SUB-ASSEMBLY - 9B

RECEIVED
CK'D BY WBJ CK'D BY
JAN 11 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/11/02

SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 8, 10, 11 & 12.

REV.	DESCRIPTION	DATE	INT.
1	GENERAL REVISION PER APPROVAL.	1/3/02	JMB

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

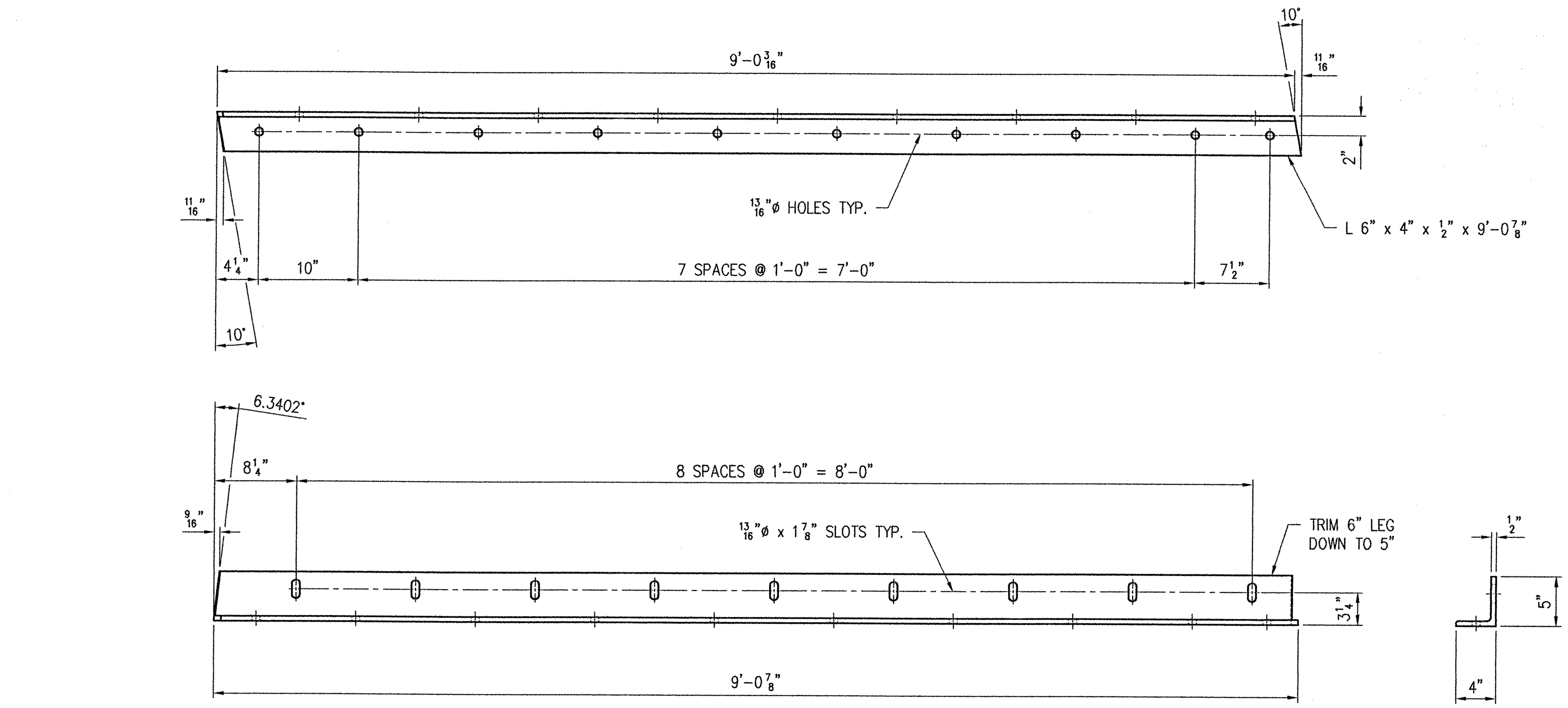
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (952) 368-3000

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

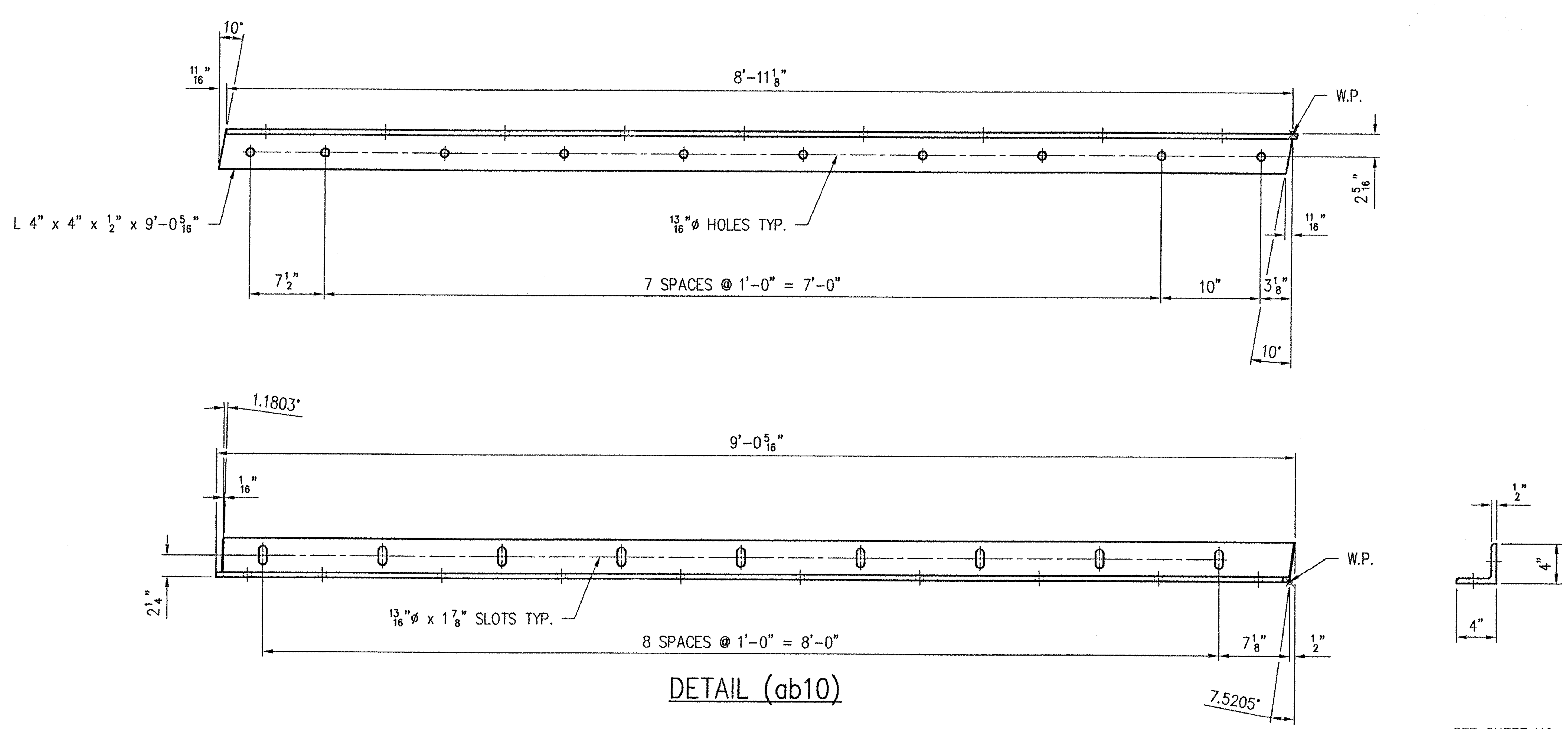
PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS ABUTMENT NO. 2

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

L.E.C. 9 OF 30 | SHEET NO. 9 OF 15 | Job. No. : 2034.1042.1

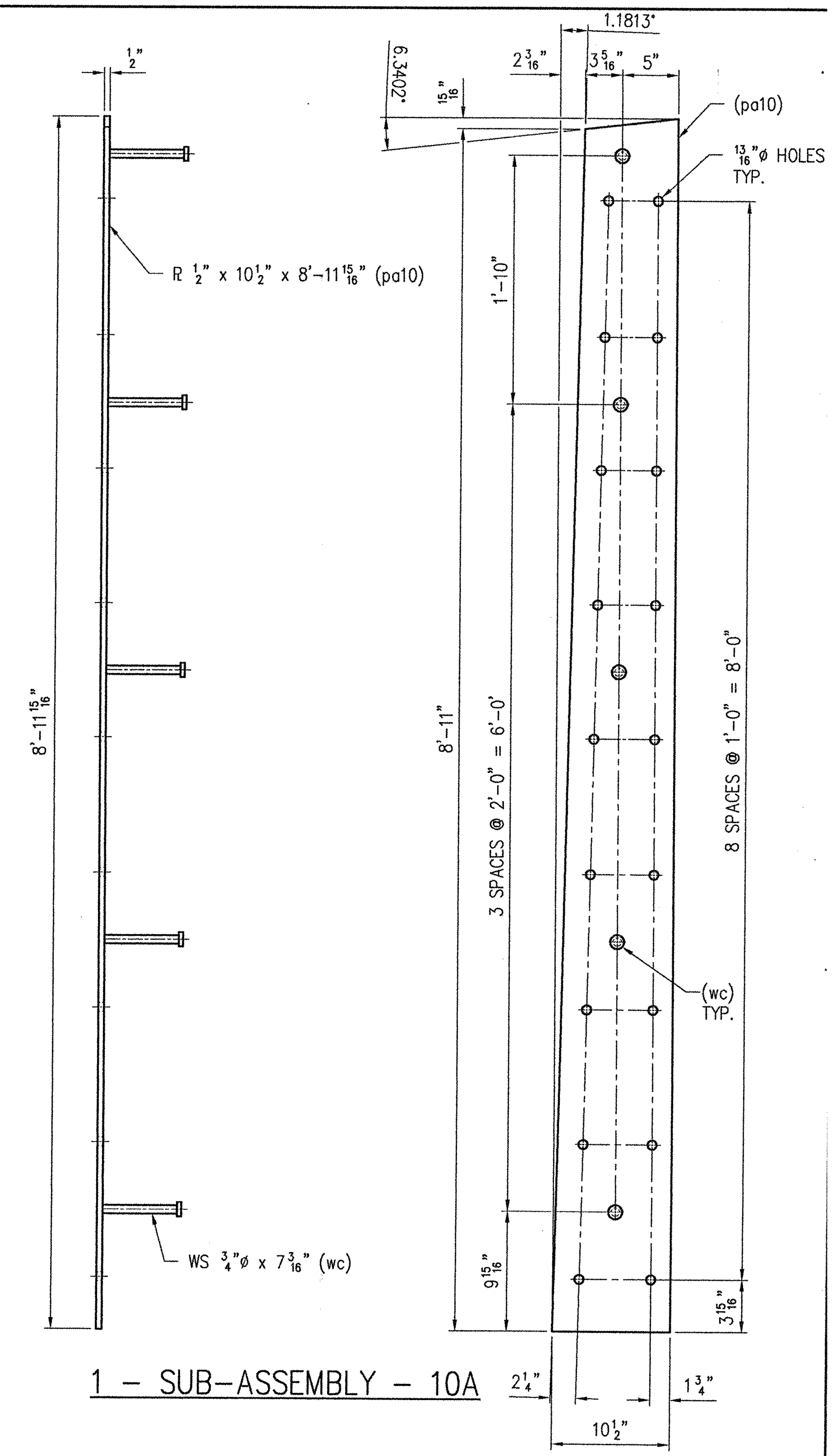


DETAIL (aa10)



DETAIL (ab10)

RECEIVED
CK'D BY LWS OK'D BY
JAN 1 1 2002
RESUBMIT ____ APPROVED ✓
BY CPW DATE 1/11/02



1 – SUB-ASSEMBLY – 10A

SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 8, 9, 11 & 12.

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

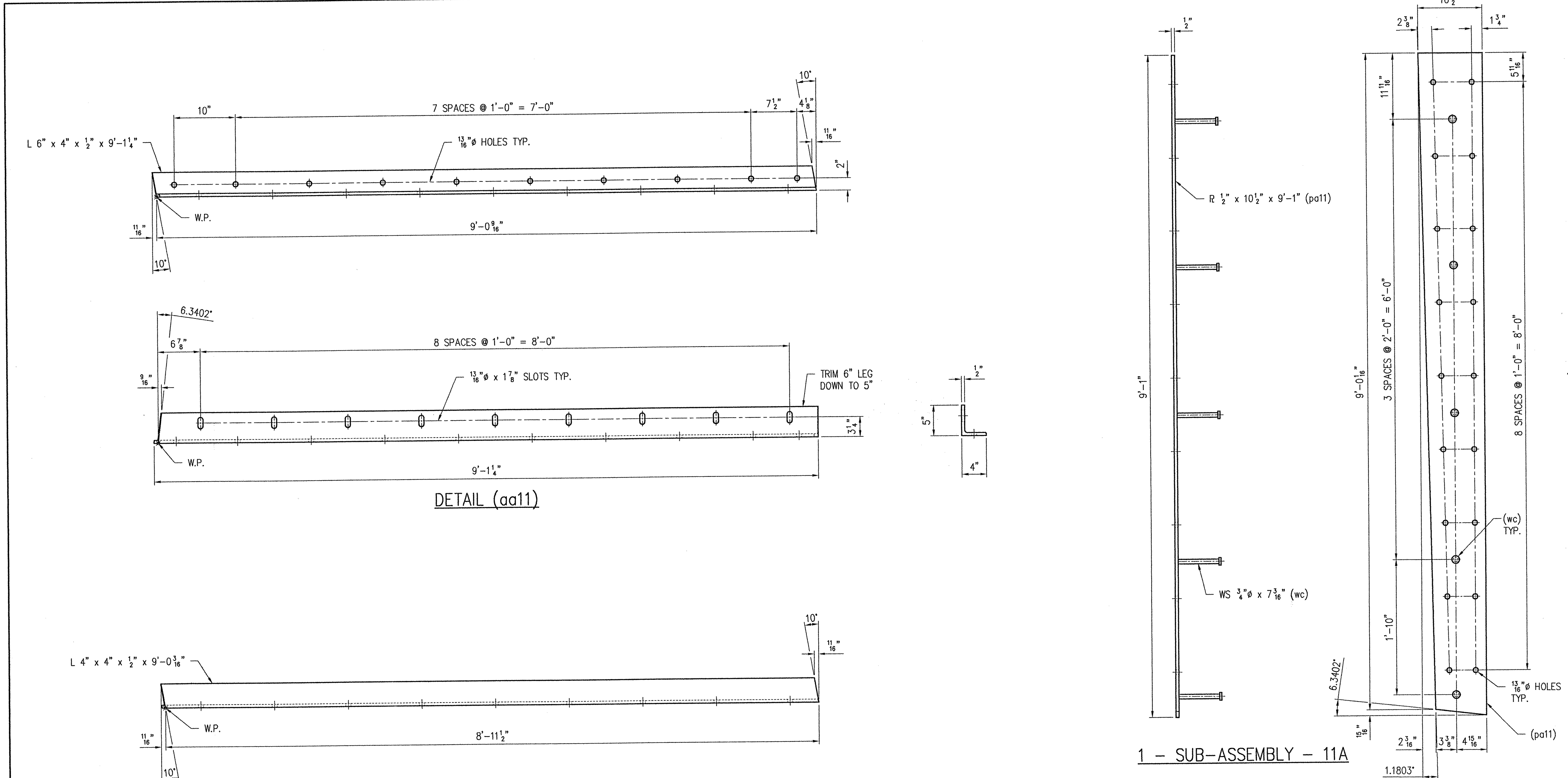
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

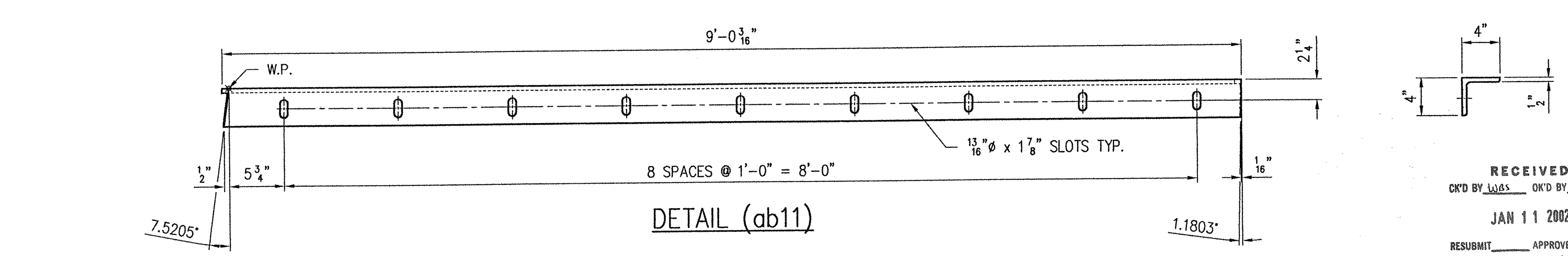
SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS ABUTMENT NO. 2

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

L.E.C. 10 OF 30 | SHEET NO. 10 OF 15 | Job. No. : 2034.1042.1





RECEIVED
CK'D BY WAS OK'D BY
JAN 11 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/11/02

SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 8, 9, 10 & 12.

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR	DATE
PRINTS ISSUED	

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

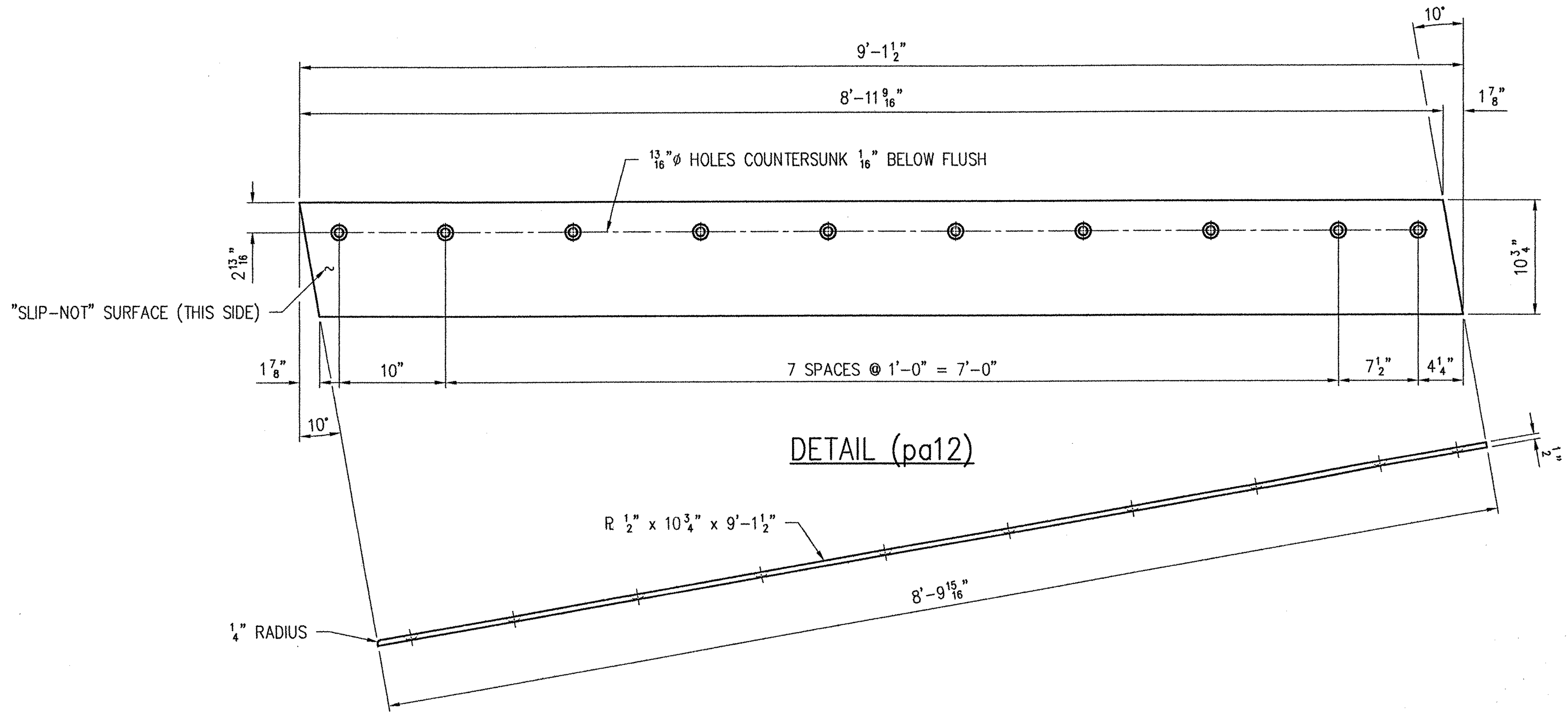
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (952) 368-3000

PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS ABUTMENT NO. 2

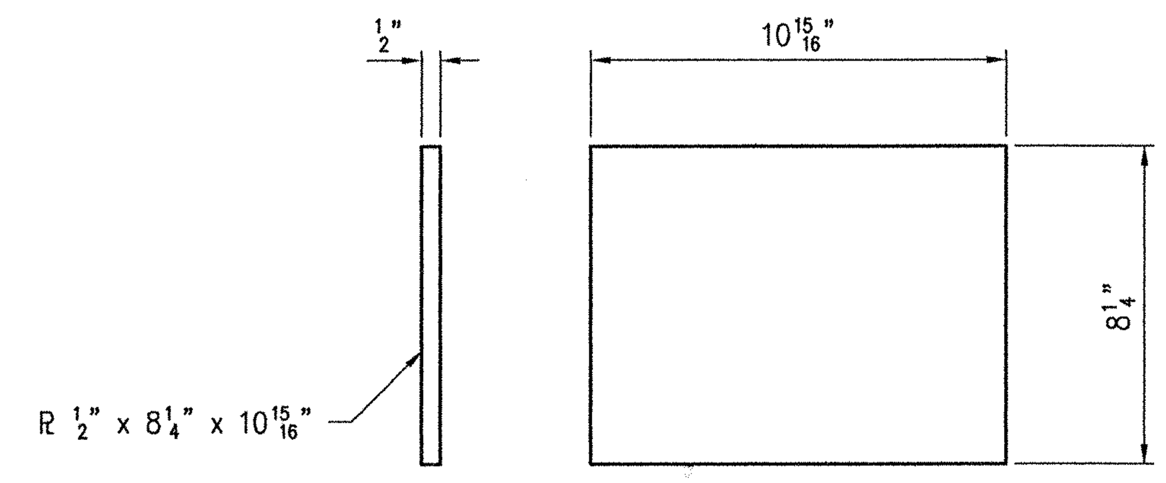
Orig.

W.P. chk'd	
Drawn By	JMB
Chk'd. By	TSF
Date:	12/5/01

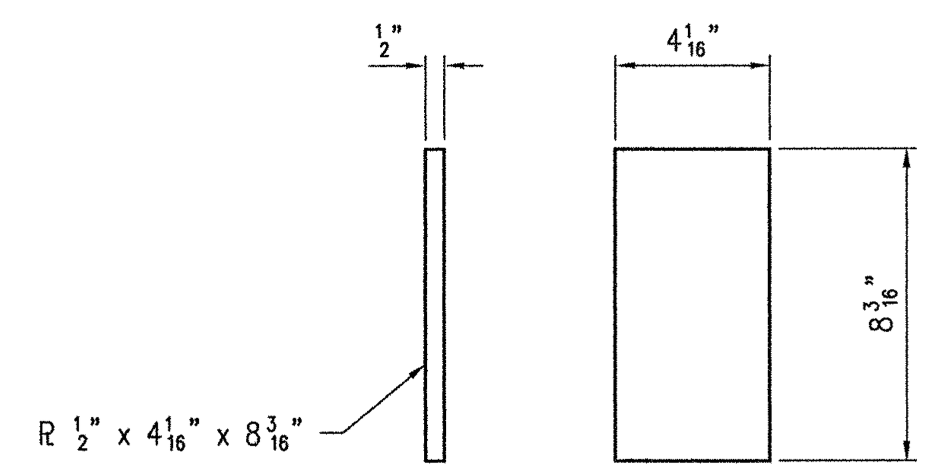
L.E.C. 11 OF 30 | SHEET NO. 11 OF 15 | Job. No. : 2034.1042.1



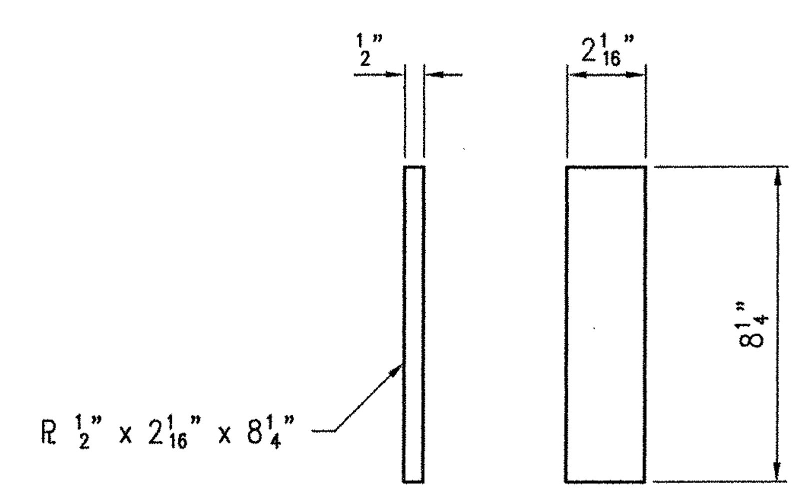
DETAIL (pa12)



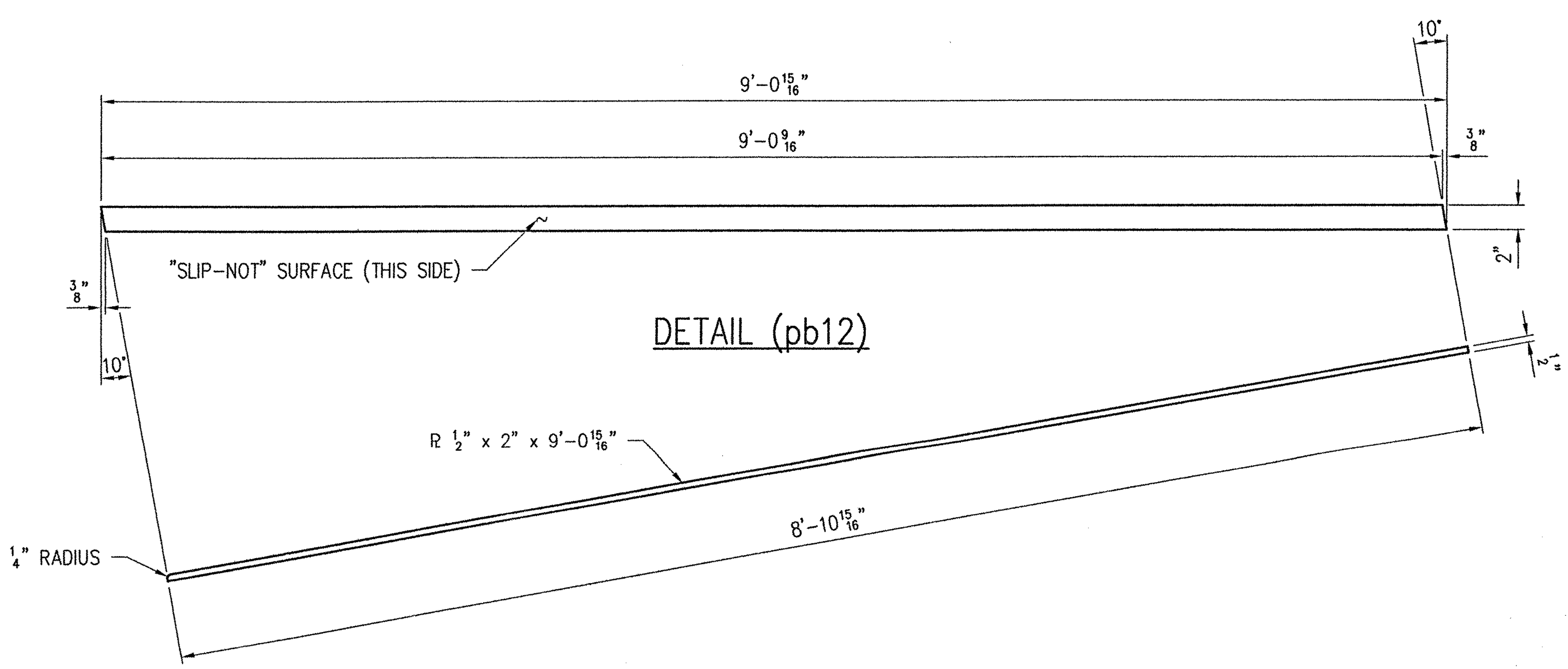
DETAIL (pc12)



DETAIL (pd12)



DETAIL (pf12)



DETAIL (pb12)

SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 8, 9, 10 & 11.

RECEIVED
CK'D BY WBS OK'D BY
JAN 1 1 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/11/02

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

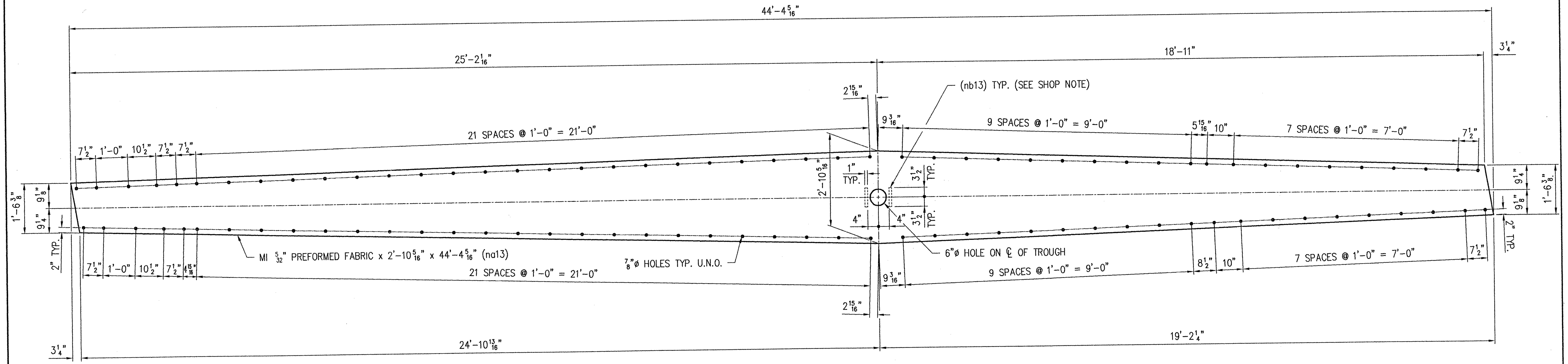
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

SHOP
APPROVAL
DIST.
CUST.
FOR PRINTS ISSUED | DATE

PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS
ABUTMENT NO. 2

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

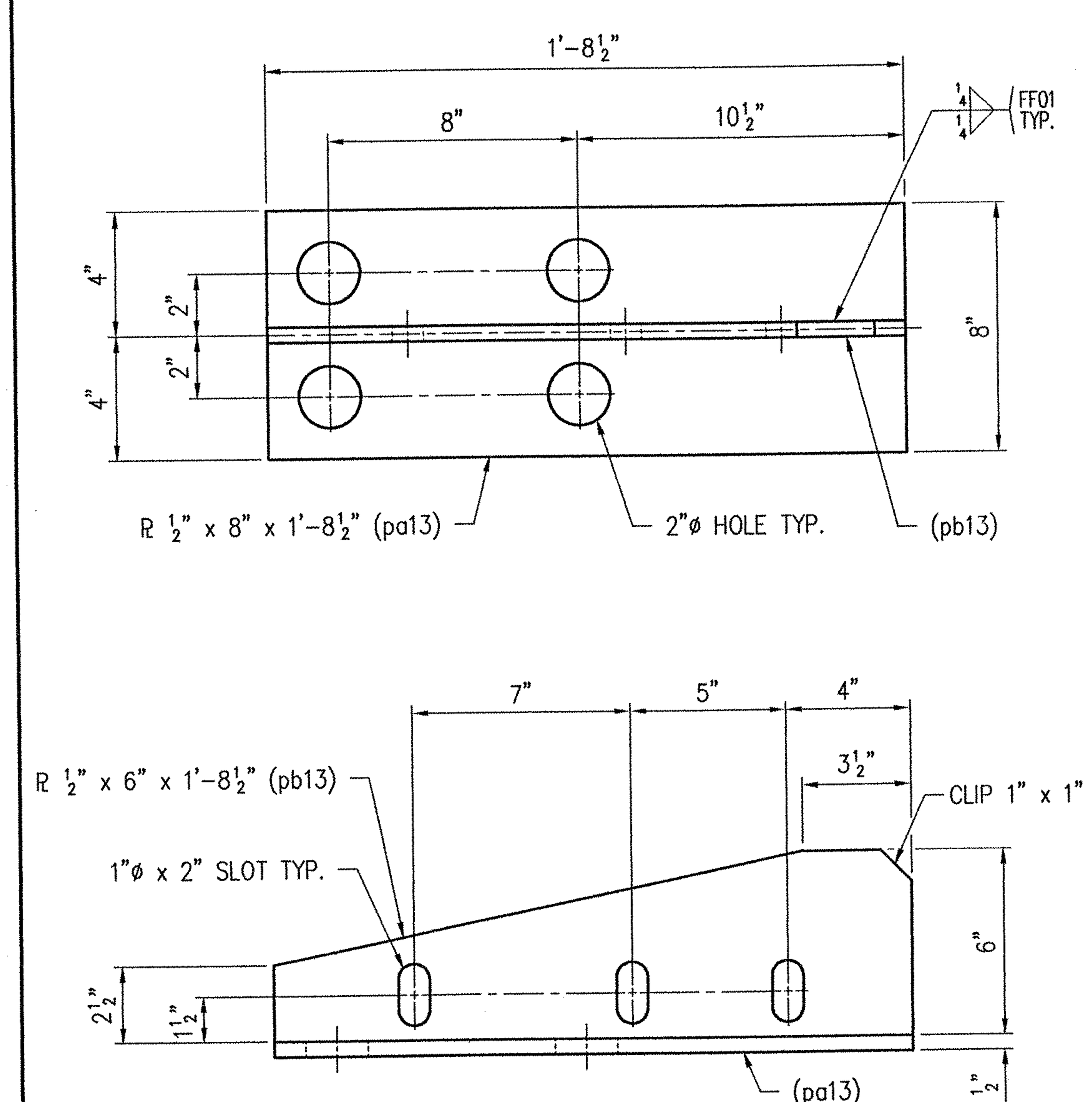
L.E.C. 12 OF 30 | SHEET NO. 12 OF 15 | Job. No. : 2034.1042.1



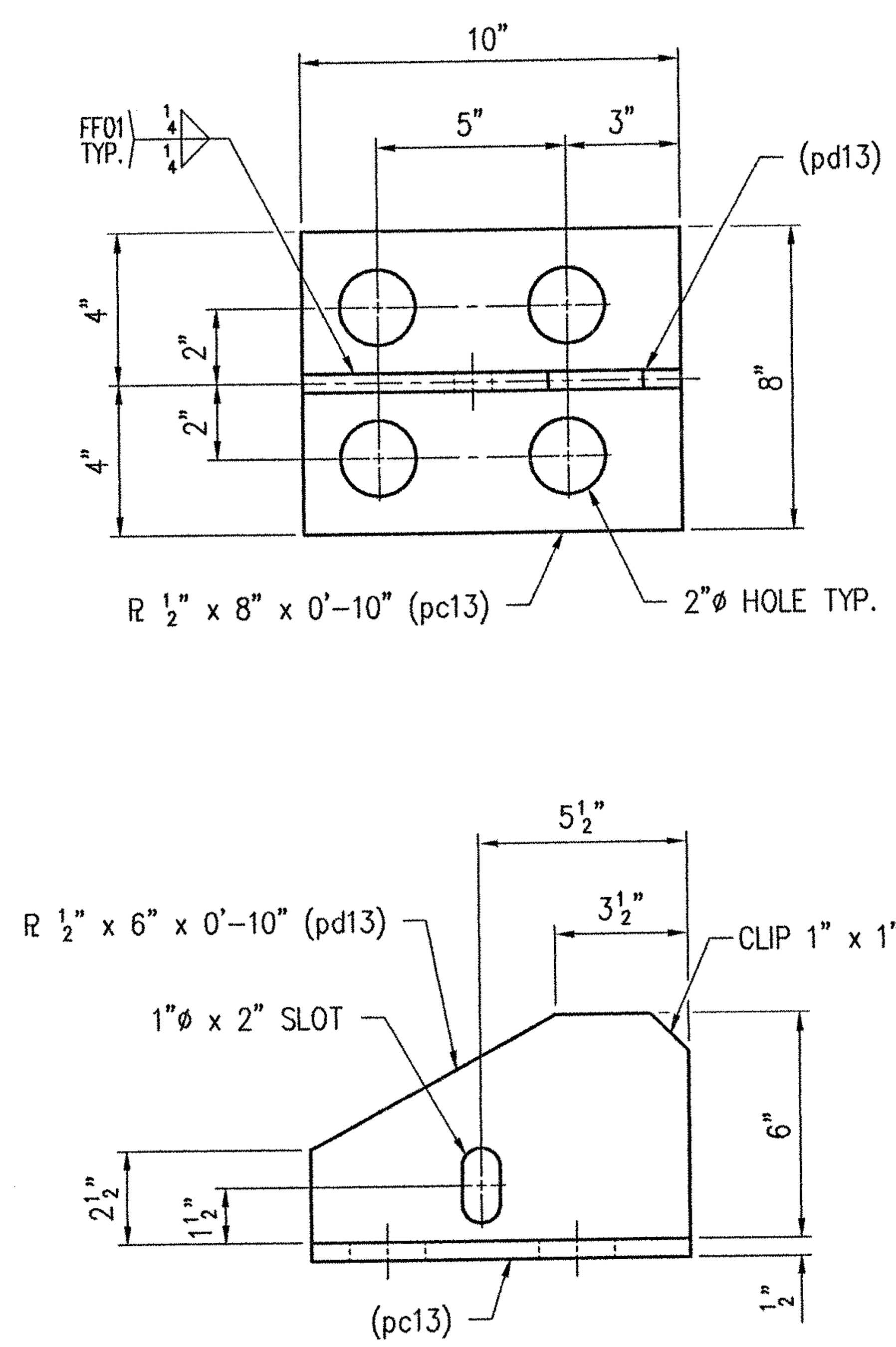
1 – SUB-ASSEMBLY – 13A

SHOP NOTE:
SEE SHEET NO. 15 OF 15 FOR FOLDED TROUGH END DETAILS.

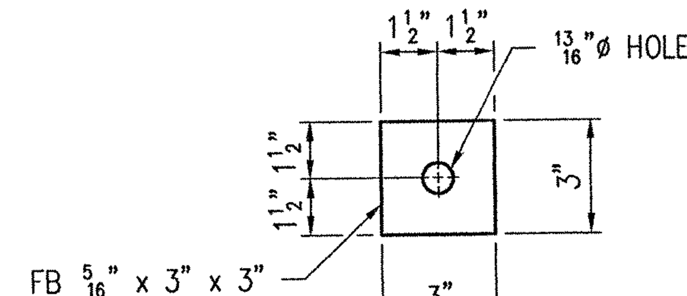
SHOP NOTE:
A 1/4" x 1" x 7" STRIP OF PREFORMED FABRIC (nb13) SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH. USE AN ADHESIVE APPROVED BY THE MANUFACTURER. THIS WILL SERVE AS A DRIP BEAD.



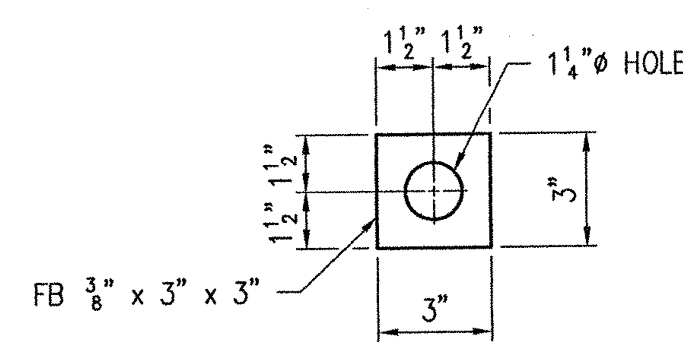
DETAIL (pa13) & (pb13)



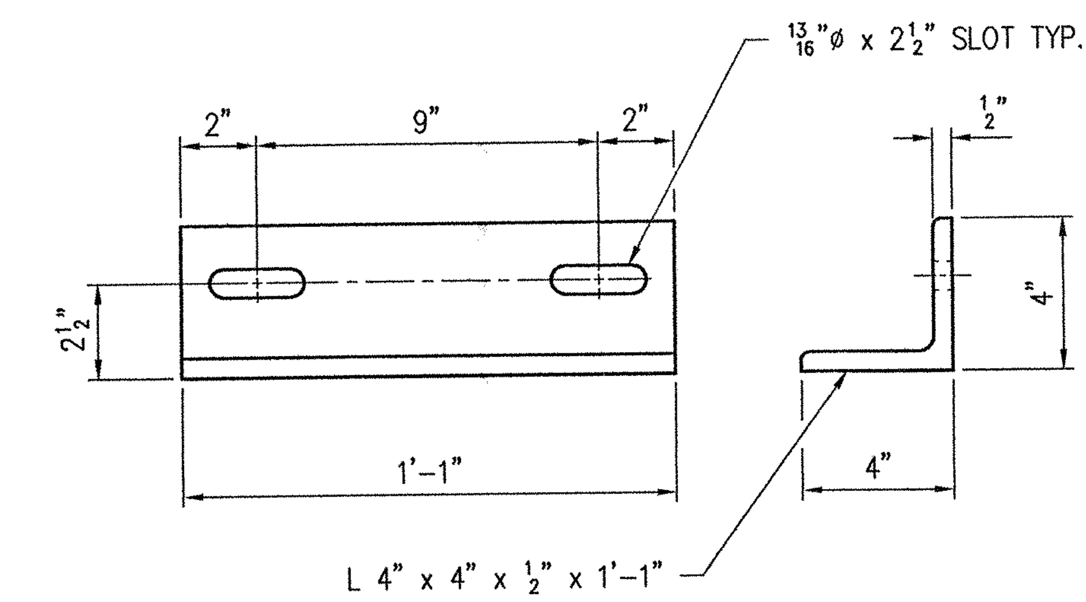
DETAIL (pc13) & (pd13)



DETAIL (ha)



80 – PLATE WASHER(S) – 13B



DETAIL (aa13)

SEE SHEET NO. 15 FOR GENERAL NOTES.

REV.	DESCRIPTION	DATE	INT.
1	GENERAL REVISION PER APPROVAL.	1/3/02	JMB

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

PROJECT	– ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT	– AC BRZ 1444(22)
FEDERAL PROJECT	–
CUSTOMER	– BECK & BELLUCCI, INC.
LOCATION	– WINDSOR COUNTY, VT
DESCRIPTION	– EXPANSION JOINT DETAILS ABUTMENT NO. 2

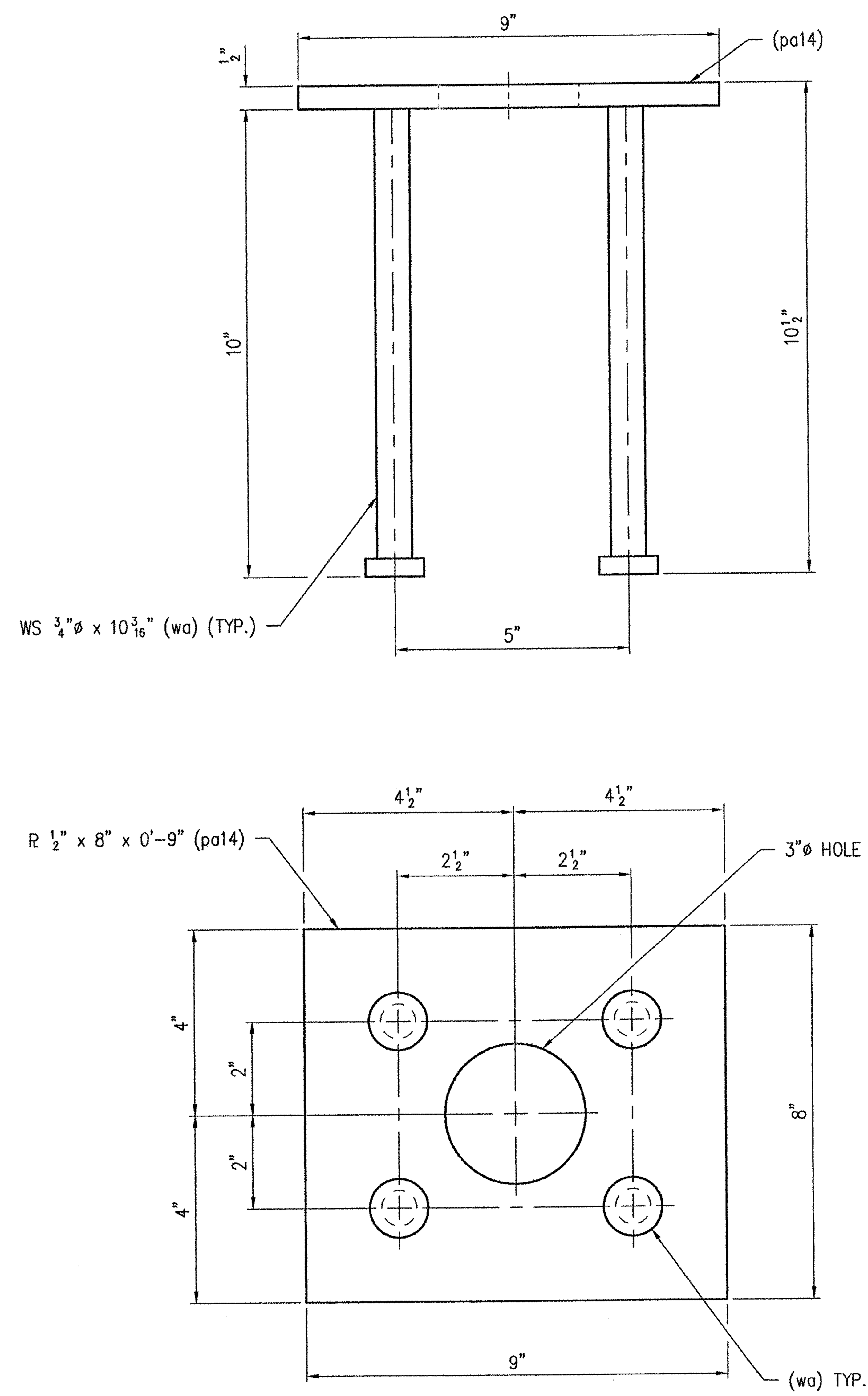
W.P. chk'd	Orig.
Drawn By	JMB
Chk'd. By	TSF
Date:	12/5/01

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

L.E.C. 13 OF 30 | SHEET NO. 13 OF 15 | Job. No. : 2034.1042.1

RECEIVED
CK'D BY WAS CK'D BY
JAN 11 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/11/02

LINE	NO. REQ'D.	DESCRIPTION	LENGTH	MK	REMARKS	PART N
1	5	ANCHOR PLATES		14A	HDG	
2	5	R $\frac{1}{2}$" x 8" A36	0'-9"	pa14		19-
3	20	WS $\frac{3}{4}$"ø x 10$\frac{3}{16}$" A108		wa		29-



5 - ANCHOR PLATES - 14A

RECEIVED
CK'D BY Wo) CK'D BY
JAN 1 1 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/11/02

SEE SHEET NO. 15 FOR GENERAL NOTES.

REV.	DESCRIPTION	DATE

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

PROJECT	— ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT	— AC BRZ 1444(22)
FEDERAL PROJECT	—
CUSTOMER	— BECK & BELLUCCI, INC.
LOCATION	— WINDSOR COUNTY, VT
DESCRIPTION	— EXPANSION JOINT DETAILS ABUTMENT NO. 2

Orig

W.P. chk'd	
Drawn By	JME
Chk'd. By	TSF
Date:	12/5/01

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR	DATE
PRINTS ISSUED	

L.E.C. 14 OF 30 | SHEET NO. 14 OF 15 | Job. No. : 2034.1042

GENERAL NOTES

1.) ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 1990, AND ITS LATEST REVISIONS, THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 1996, AND ITS LATEST REVISIONS, AND THE SPECIAL PROVISIONS.

2.) STEEL SHALL CONFORM TO ASTM A709 GRADE 36 (AASHTO M270 GRADE 36).

3.) WELDING SHALL MEET THE REQUIREMENTS OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE AS MODIFIED BY STANDARD SPECIFICATIONS.

4.) FOR STUD REPAIR USE FF-STUD-REP-01 OR SM-STUD-REP-01.

5.) BOLTS SHALL BE HIGH STRENGTH AND CONFORM TO ASTM A325 (AASHTO M164). ALL FIELD HARDWARE IS TO BE GALVANIZED PER ASTM A153 (AASHTO M232). ALL SHOP HARDWARE IS TO BE GALVANIZED PER ASTM B695 (AASHTO M298 CLASS 50).

6.) STEEL SHALL BE GALVANIZED PER ASTM A123 (AASHTO M111).

7.) PREFORMED FABRIC TROUGH SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 1990, SUB-SECTION 707.07.

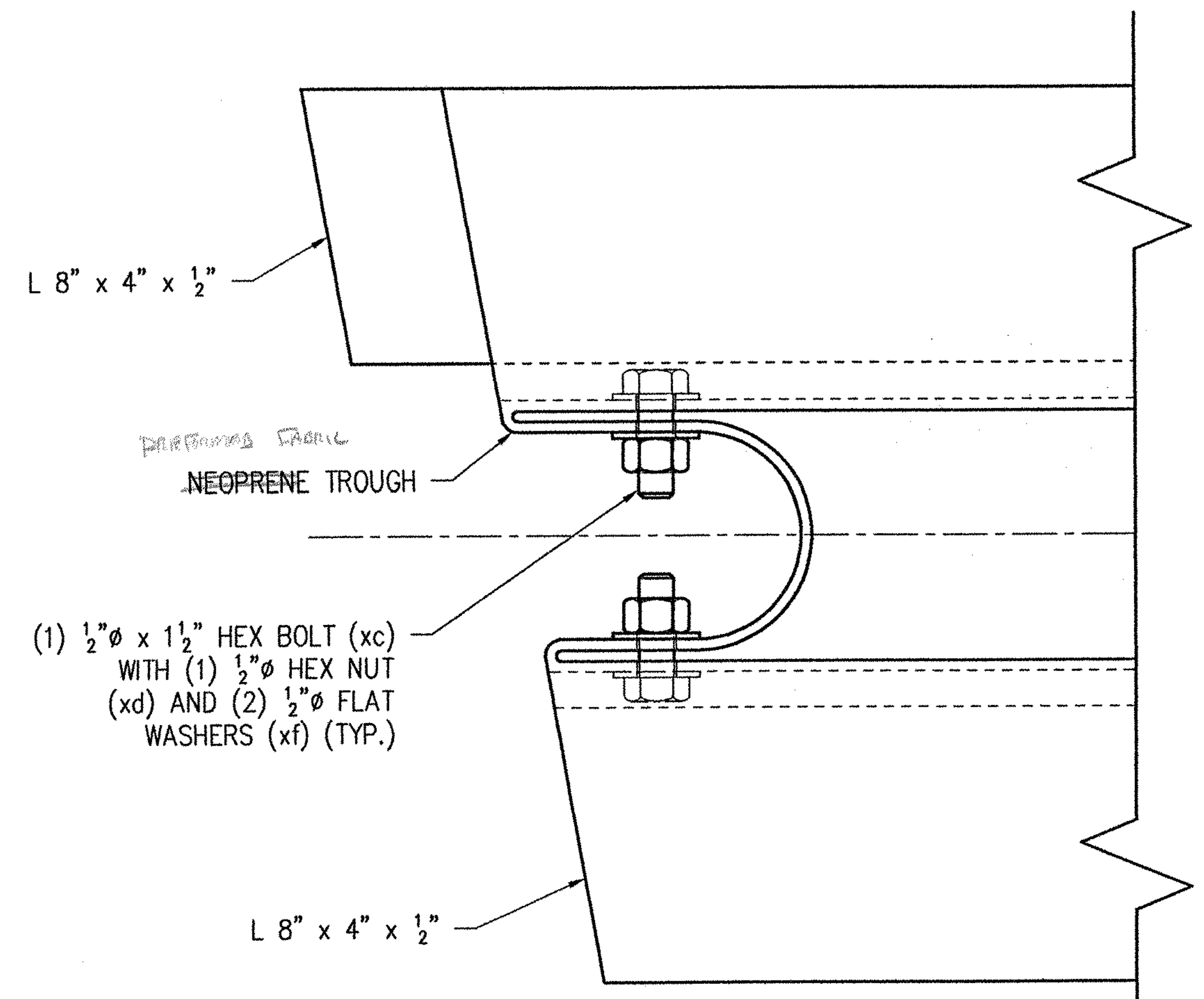
8.) BUTYL RUBBER TAPE SHALL CONFORM TO AASHTO M198 TYPE II.

9.) SHOP INSPECTION TO BE DONE BY VAOT.

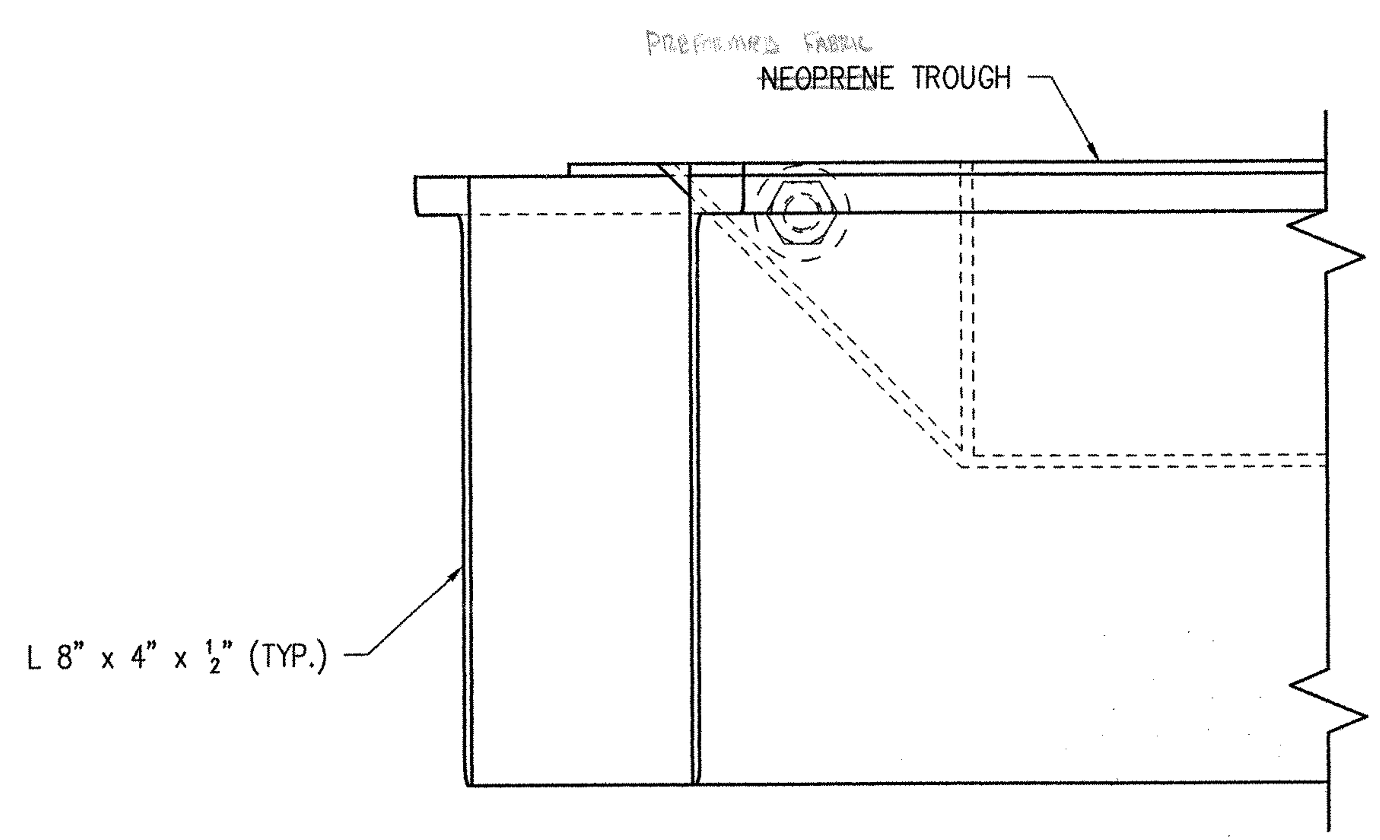
10.) PRIOR TO GALVANIZING, ALL CORNERS AND EDGES OF STEEL PLATES SHALL BE GROUND TO 1/16" RADIUS.

11.) THE JOINT SHALL BE SHOP ASSEMBLED AND SHIPPED AS ONE UNIT.

12.) SEAL WELD ALL ACCESSABLE JOINTS PRIOR TO GALVANIZING.



SHOP NOTE: PREFORMED FABRIC ~~NEOPRENE~~ FOLD TROUGH AS SHOWN. DRILL 9/16"ø HOLES THRU AND FASTEN AS SHOWN WITH 1/2"ø HARDWARE.



FOLDED TROUGH END DETAIL
(TYPICAL @ BOTH ENDS OF TROUGH)

LINE	NO. REQ'D.	DESCRIPTION	LENGTH	MK	REMARKS	PART NO
1	1	EXPANSION JOINT	44'-3 5/16"	1A	HDG	
2	1	L 8" x 4" x 1/2" A36	9'-0 3/8"	aa1		15-10
3	1	L 8" x 4" x 1/2" A36	9'-0 3/4"	ab1		15-10
4	1	L 8" x 4" x 1/2" A36	31'-7 11/16"	ac1		15-10
5	1	L 8" x 4" x 1/2" A36	31'-9"	ad1		15-10
6	1	L 8" x 4" x 1/2" A36	3'-6 3/8"	af1		15-10
7	1	L 8" x 4" x 1/2" A36	3'-7 3/4"	ag1		15-10
8	1	FB 1 1/4" x 5 1/2" A36	15'-10 7/16"	fa2		16-16
9	1	FB 1 1/4" x 5 1/2" A36	15'-9 3/4"	fb2		16-16
10	1	FB 1 1/4" x 5 1/2" A36	15'-9 1/8"	fc2		16-16
11	1	FB 1 1/4" x 5 1/2" A36	15'-11 1/16"	fd2		16-16
12	1	L 6" x 4" x 1/2" A36	3'-8 1/4"	aa5	TRIM 6" LEG DOWN TO 5"	15-8
13	1	L 4" x 4" x 1/2" A36	3'-7 5/8"	ab5		15-6
14	1	PL 1/2" x 8 5/16" A36	3'-7 7/8"	pa5	SHAPE CUT	19-1
15	1	L 6" x 4" x 1/2" A36	3'-6 7/8"	aa6	TRIM 6" LEG DOWN TO 5"	15-8
16	1	L 4" x 4" x 1/2" A36	3'-5 13/16"	ab6		15-6
17	1	PL 1/2" x 8 5/16" A36	3'-6"	pa6	SHAPE CUT	19-1
18	1	PL 1/2" x 10 3/4" A36	3'-7 7/16"	pa7	SLIP-NOT GRIP PLATE/SHAPE CUT	
19	1	PL 1/2" x 2" A36	3'-8"	pb7	SLIP-NOT GRIP PLATE/SHAPE CUT	
20	1	PL 1/2" x 8 1/4" A36	0'-10 15/16"	pc7		19-1
21	1	PL 1/2" x 4 1/16" A36	0'-8 3/16"	pd7		19-1
22	1	PL 1/2" x 2 1/16" A36	0'-8 1/4"	pf7		19-1
23	1	L 6" x 4" x 1/2" A36	9'-0 7/8"	aa10	TRIM 6" LEG DOWN TO 5"	15-8
24	1	L 4" x 4" x 1/2" A36	9'-0 5/16"	ab10		15-6
25	1	PL 1/2" x 10 1/2" A36	8'-11 15/16"	pa10	SHAPE CUT	19-1
26	1	L 6" x 4" x 1/2" A36	9'-1 1/4"	aa11	TRIM 6" LEG DOWN TO 5"	15-8
27	1	L 4" x 4" x 1/2" A36	9'-0 3/16"	ab11		15-6
28	1	PL 1/2" x 10 1/2" A36	9'-1"	pa11	SHAPE CUT	19-1
29	1	PL 1/2" x 10 3/4" A36	9'-1 1/2"	pa12	SLIP-NOT GRIP PLATE/SHAPE CUT	
30	1	PL 1/2" x 2" A36	9'-0 15/16"	pb12	SLIP-NOT GRIP PLATE/SHAPE CUT	
31	1	PL 1/2" x 8 1/4" A36	0'-10 15/16"	pc12		19-1
32	1	PL 1/2" x 4 1/16" A36	0'-8 3/16"	pd12		19-1
33	1	PL 1/2" x 2 1/16" A36	0'-8 1/4"	pf12		19-1
34	9	L 4" x 4" x 1/2" A36	1'-1"	aa13	SHIPPING DEVICE	15-6
35	1	MI 5/32" PREFORMED FABRIC x 34 5/16"	44'-4 5/16"	na13	3-PLY/SEE NOTE NO. 7	
36	2	MI 1/4" PREFORMED FABRIC x 1"	0'-7"	nb13	DRIP BEAD	
37	5	PL 1/2" x 8" A36	1'-8 1/2"	pa13		19-1
38	5	PL 1/2" x 6" A36	1'-8 1/2"	pb13	SHAPE CUT	19-1
39	5	PL 1/2" x 8" A36	0'-10"	pc13		19-1
40	5	PL 1/2" x 6" A36	0'-10"	pd13	SHAPE CUT	19-1
41	52	FB 5/16" x 3" A36	0'-3"	ha		16-5
42	18	HB 3/4"ø x 3 1/2" A325 HDG		hb	SHIPPING HARDWARE	23-13
43	128	HB 3/4"ø x 2 1/4" A325 HDG		hc		23-11
44	15	MB 3/4"ø x 2" SOKT CTSK F835 HDG		hd		
45	15	HN 3/4"ø HVY A563DH HDG		hf		25-
46	94	FW 3/4"ø F436 HDG		hg		27-
47	146	MI 3/4"ø FERRULE LOOP INSERT ZP		hh	DAYTON/RICHMOND F-42	35-
48	44	WS 3/4"ø x 10 3/16" A108		wa		29-1
49	44	WS 3/4"ø x 10 3/16" A108		wb	BEND @ 30°	29-1
50	16	WS 3/4"ø x 7 3/16" A108		wc		29-1
51	4	MI 1/8" x 2 1/2" BUTYL RUBBER TAPE	8 YD. ROLL	xa	MCMASTER CARR #76385A16	
52	1	MI NEVER-SEIZE GREASE		xb		
53	4	HB 1/2"ø x 1 1/2" A325 HDG		xc		23-
54	4	HN 1/2"ø HVY A563DH HDG		xd		25-
55	8	FW 1/2"ø F436 HDG		xf		27-
56	80	PLATE WASHERS		13B	HDG	
57	80	FB 3/8" x 3" A36	0'-3"	13B		16-7
58	45	RB 1"ø CONT. THRD. A36	0'-6 1/2"	13C	40 / HDG	18-2
59	85	HN 1"ø HVY A563DH HDG		13D	80	25-1
60	20	HB 3/4"ø x 2 1/4" A325 HDG		13F	18	23-11

REV.	DESCRIPTION	DATE	INT
1	GENERAL REVISION PER APPROVAL.	1/3/02	JM

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

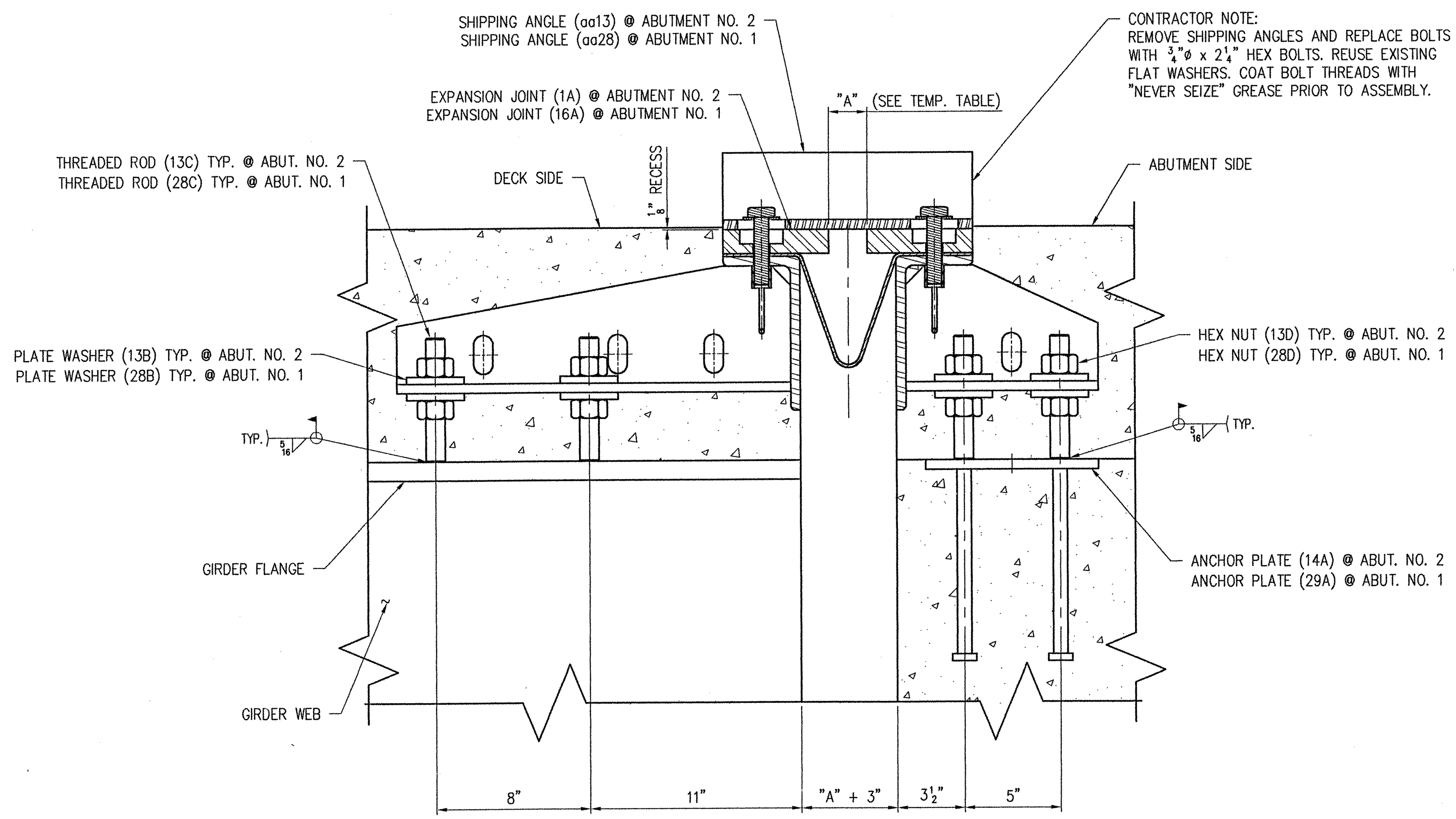
PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — BILL OF MATERIAL & GENERAL NOTES ABUTMENT NO. 2

Orig
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

SHOP
APPROVAL
DIST.
CUST.
FOR | DATE
PRINTS ISSUED

RECEIVED
CK'D BY WBS OK'D BY
JAN 11 2002
RESUBMIT BY CPW APPROVED As Noted DATE 1/11/02

L.E.C. 15 OF 30 | SHEET NO. 15 OF 15 | Job. No. : 2034.1042.



TYPICAL SECTION THRU JOINT @ GIRDER

TEMP. TABLE	
TEMP.	"A"
0° F	$2\frac{15}{16}$"
15° F	$2\frac{11}{16}$"
30° F	$2\frac{1}{2}$"
45° F	$2\frac{1}{4}$"
60° F	2"
75° F	$1\frac{13}{16}$"
90° F	$1\frac{9}{16}$"
105° F	$1\frac{3}{8}$"

"A" IS THE SETTING BEFORE THE DECK HAS BEEN PLACED

SEE SHEET NO. 15 FOR GENERAL NOTES.
SEE PLAN VIEWS ON SHEET NO. 1 & 16 FOR ORIENTATION OF JOINTS.

REV.	DESCRIPTION	DATE	INT.
1	GENERAL REVISION PER APPROVAL.	1/2/02	JMB

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

PROJECT	— ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT	— AC BRZ 1444(22)
FEDERAL PROJECT	—
CUSTOMER	— BECK & BELLUCCI, INC.
LOCATION	— WINDSOR COUNTY, VT
DESCRIPTION	— EXPANSION JOINT ERECTION ABUTMENT NO. 1 & 2

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

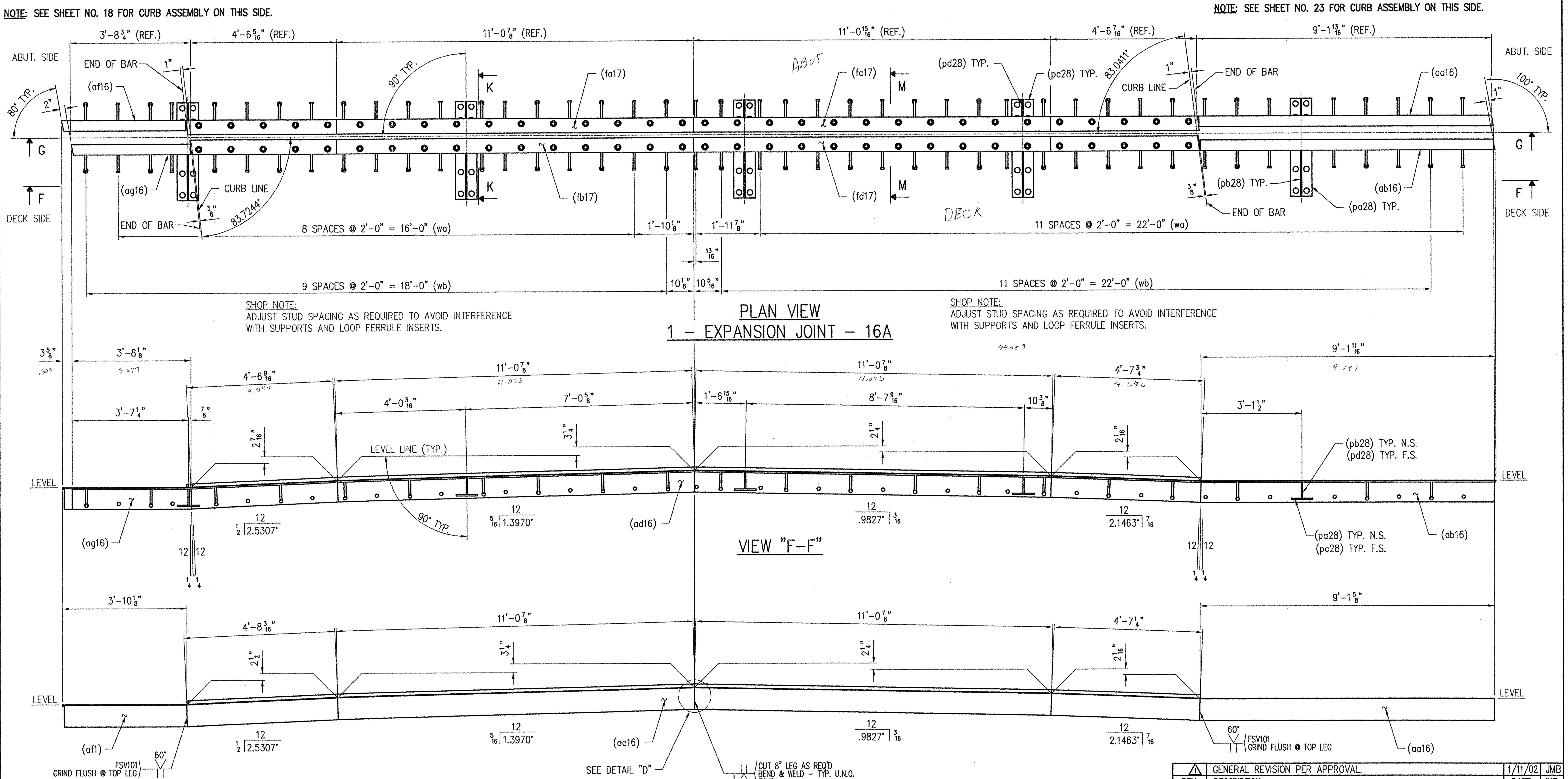
	FOR	DATE
SHOP		
APPROVAL		
DIST.		
CUST.		
PRINTS ISSUED		

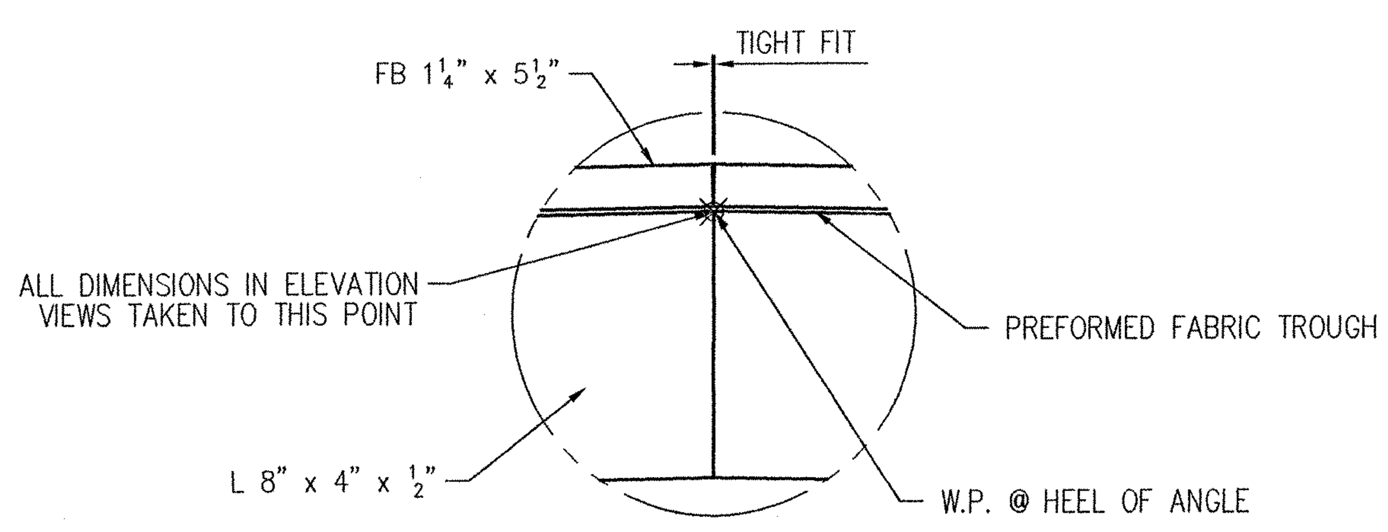
L.E.C. E1 OF 1 | SHEET NO. E1 OF 1 | Job. No.: 2034.1042.1

RECEIVED
CK'D BY WBJ OK'D BY
JAN 2 1 2002
RESUBMIT APPROVED ✓
BY OPW DATE 1/24/02

NOTE: SEE SHEET NO. 18 FOR CURB ASSEMBLY ON THIS SIDE.

NOTE: SEE SHEET NO. 23 FOR CURB ASSEMBLY ON THIS SIDE.





DETAIL "D"

SHOP NOTE:
ALL WELDS SHOWN IN VIEW "G-G" ARE TYP. IN VIEW "F-F". ALL MITER CUTS IN VIEW "F-F" ARE ALSO TYP. IN VIEW "G-G". IN ADDITION, ALL DIMENSIONS FOR "SUPPORT PLATES" SHOWN IN VIEW "F-F" ARE TYPICAL IN VIEW "G-G" ALSO. SEAL ALL ACCESSIBLE JOINTS FOR GALVANIZING.

RECEIVED
CK'D BY WMJ OK'D BY
JAN 2 1 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/24/02

-SEE SHEET NO. 30 FOR GENERAL NOTES.
-HIDDEN LINES REMOVED FOR CLARITY.
-SHIPPING ANGLES REMOVED FOR CLARITY.
-CURB ASSEMBLY NOT SHOWN FOR CLARITY.
-ALL DIMENSIONS SHOWN IN THE ELEVATION VIEWS ARE MEASURED ALONG THE HEEL OF THE L 8" x 4" x ½".
-FOR SECTION "K-K" AND SECTION "M-M" SEE SHEET NO. 17.

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR	DATE
PRINTS ISSUED	

REV.	DESCRIPTION	DATE	INT.
1	GENERAL REVISION PER APPROVAL.	1/11/02	JMB

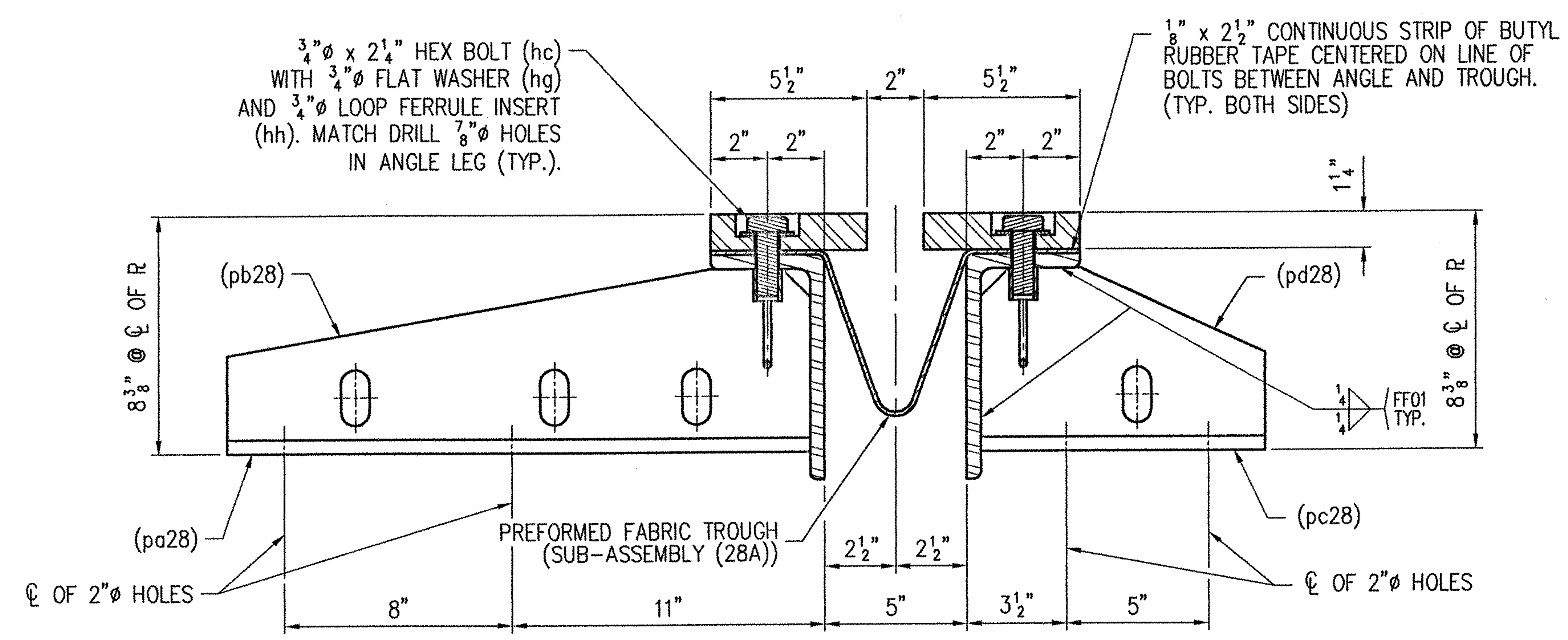
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (952) 368-3000

PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS ABUTMENT NO. 1

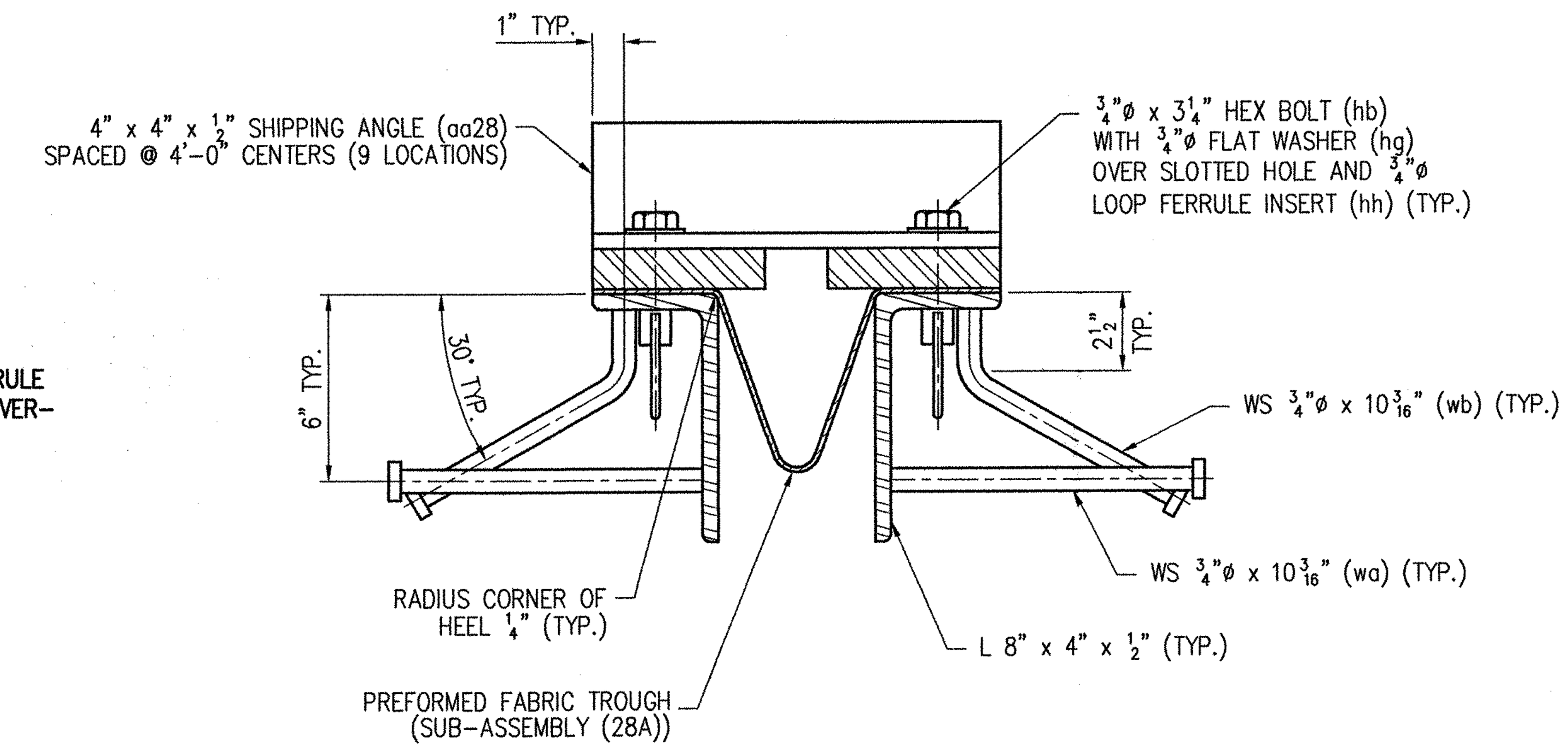
Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/20/01

L.E.C. 16 OF 30 | SHEET NO. 1 OF 15 | Job. No. : 2034.1042.1

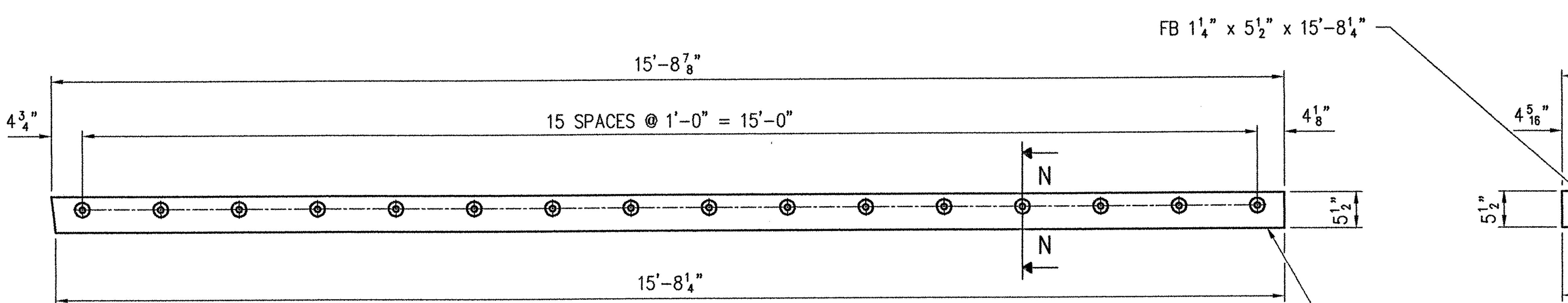


SECTION "K-K"

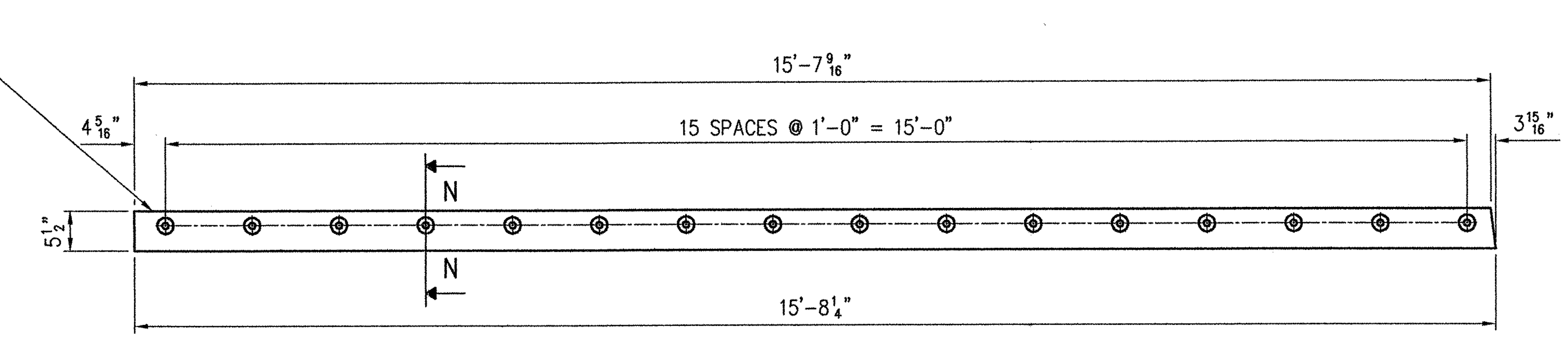
SHOP NOTE:
COAT BOLT & FERRULE THREADS WITH "NEVER-SEIZE" GREASE.



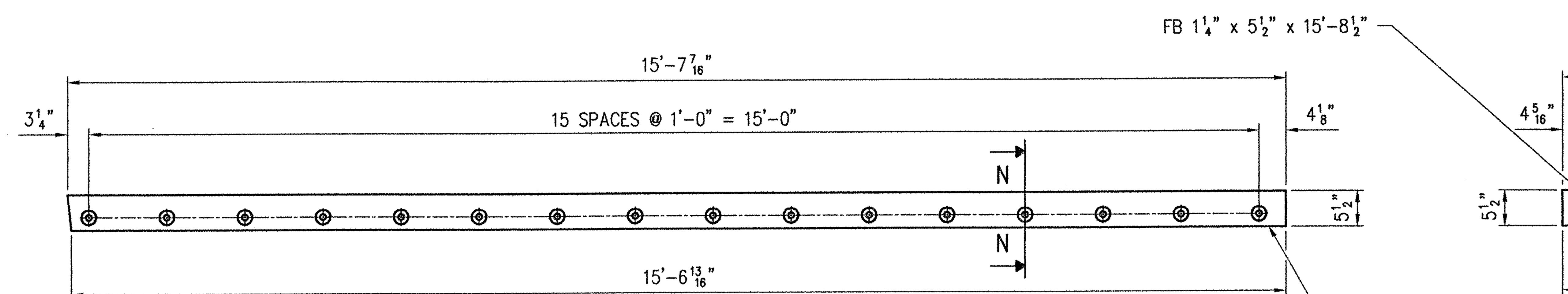
SECTION "M-M"



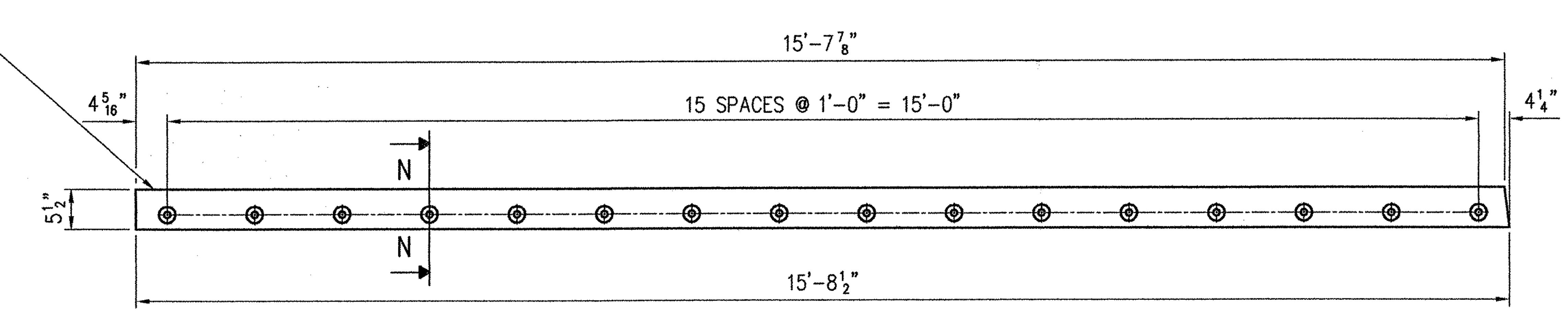
DETAIL (fa17)



DETAIL (fc17)

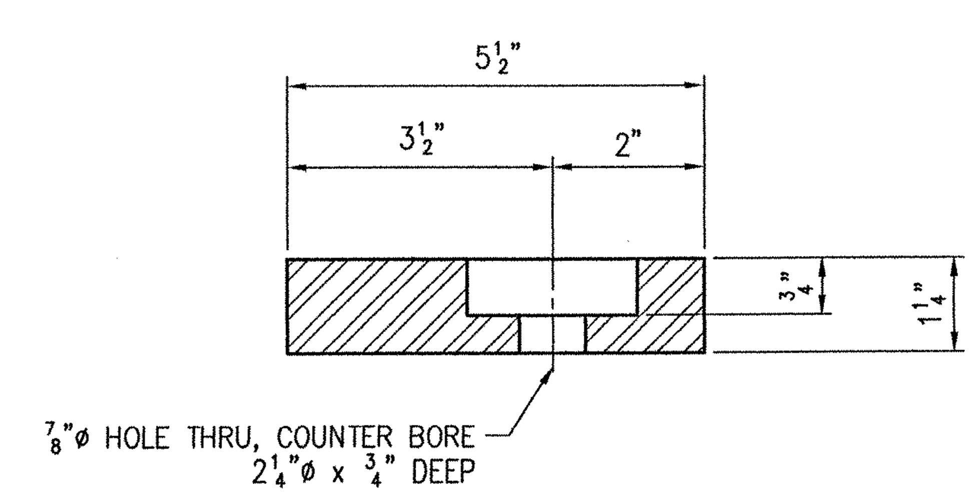


DETAIL (fb17)



DETAIL (fd17)

SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 16.



SECTION "N-N"

RECEIVED
CK'D BY WJS OK'D BY
JAN 2 1 2002
RESUBMIT APPROVED ✓
BY OPW DATE 1/24/02

REV.	DESCRIPTION	DATE	INT.
1	GENERAL REVISION PER APPROVAL.	1/11/02	JMB

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

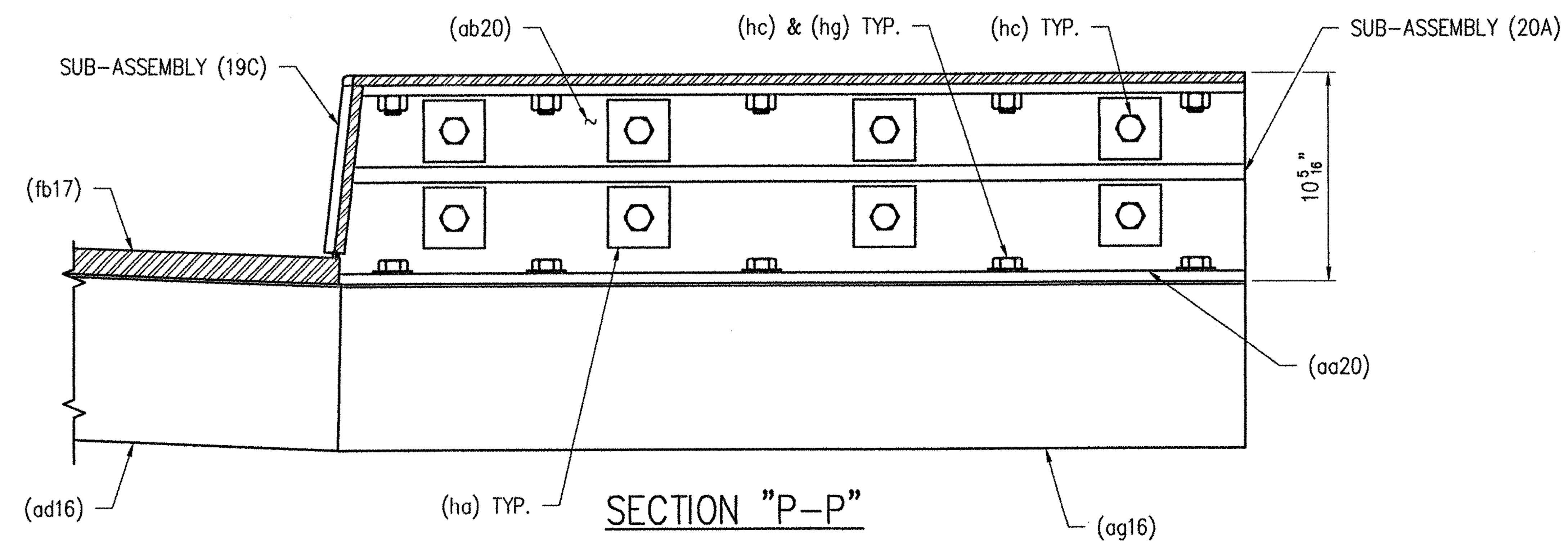
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

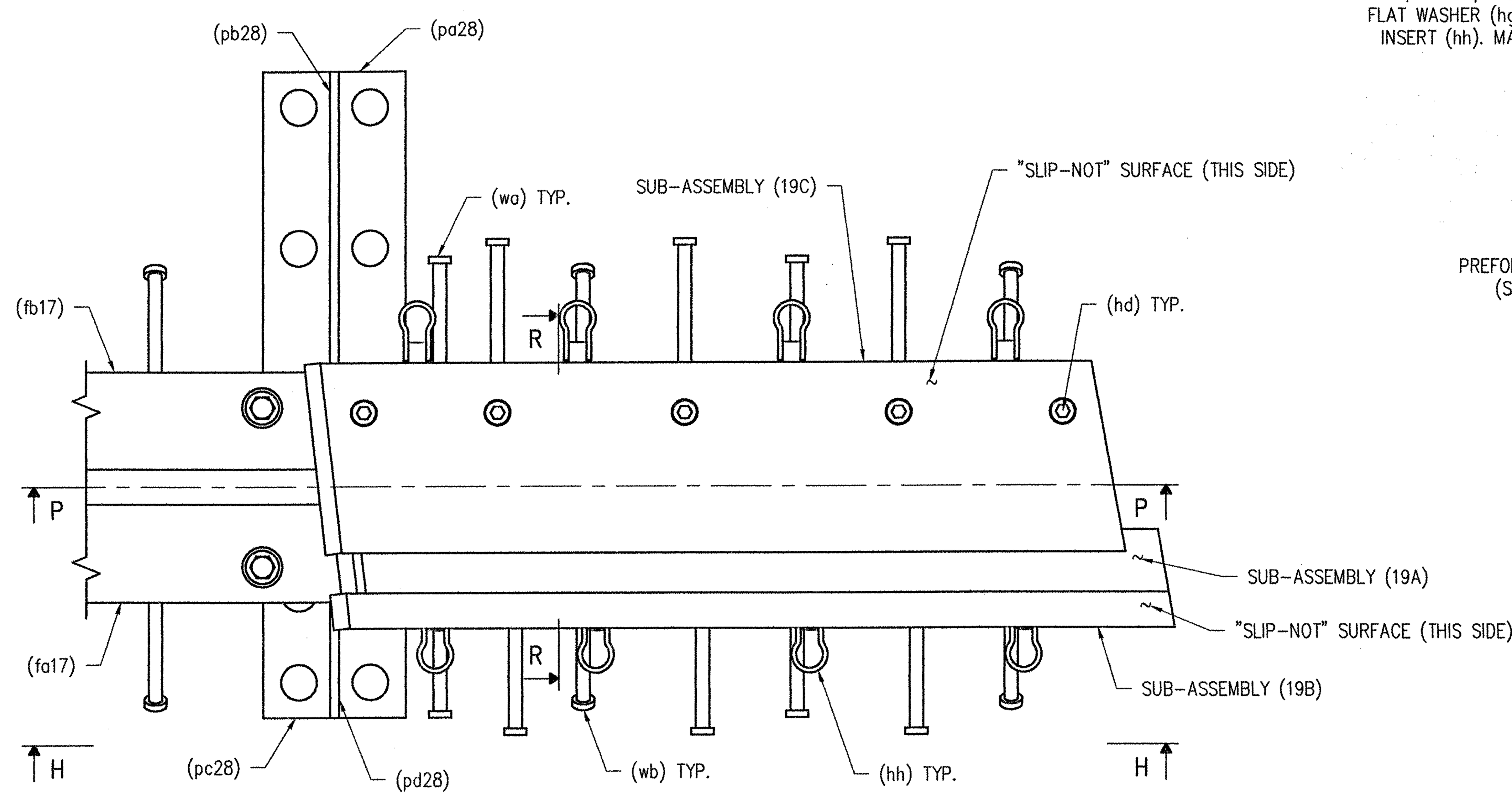
PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS ABUTMENT NO. 1

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/20/01

L.E.C. 17 OF 30 | SHEET NO. 2 OF 15 | Job. No.: 2034.1042.1

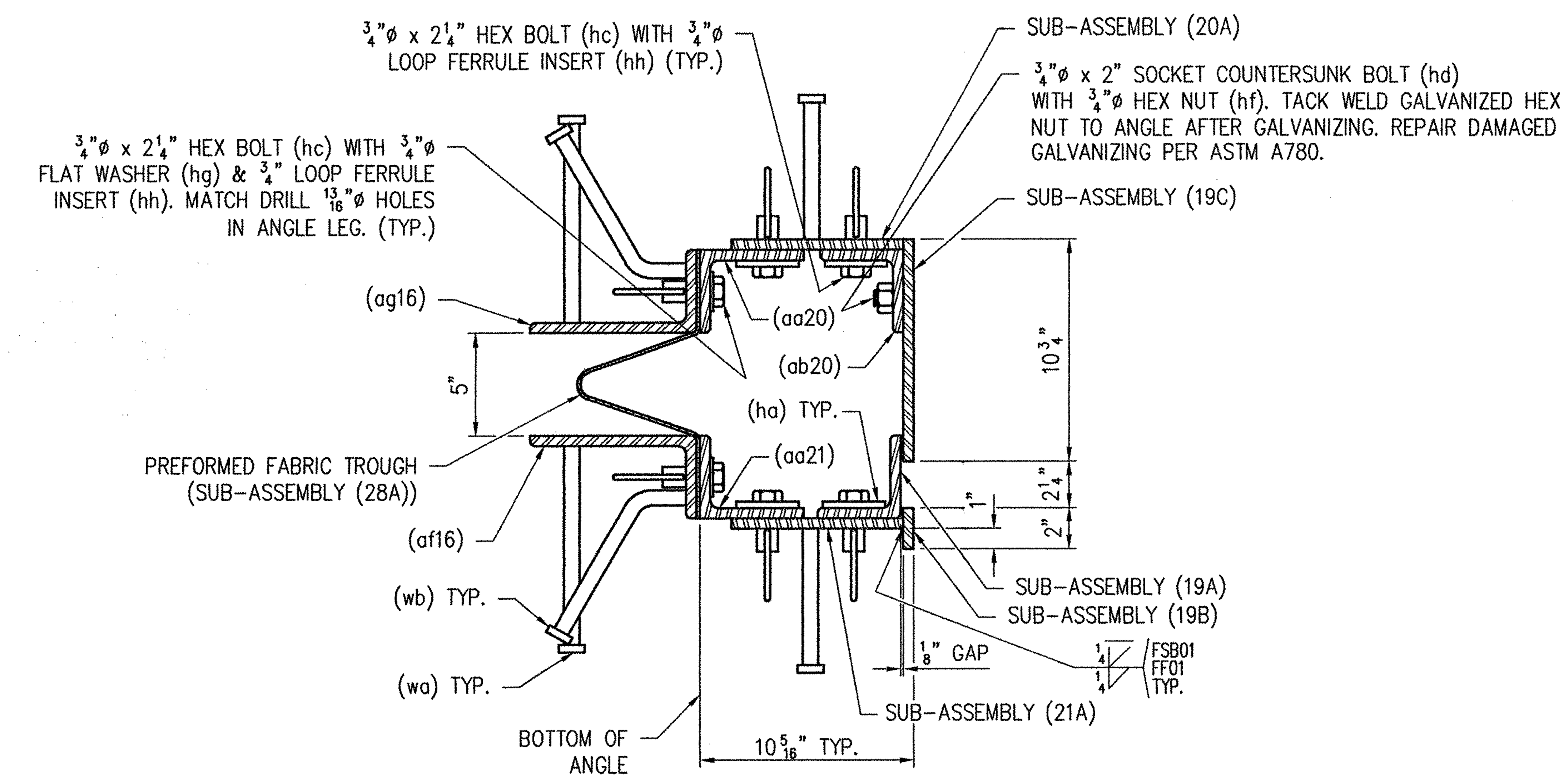


SECTION "P-P"



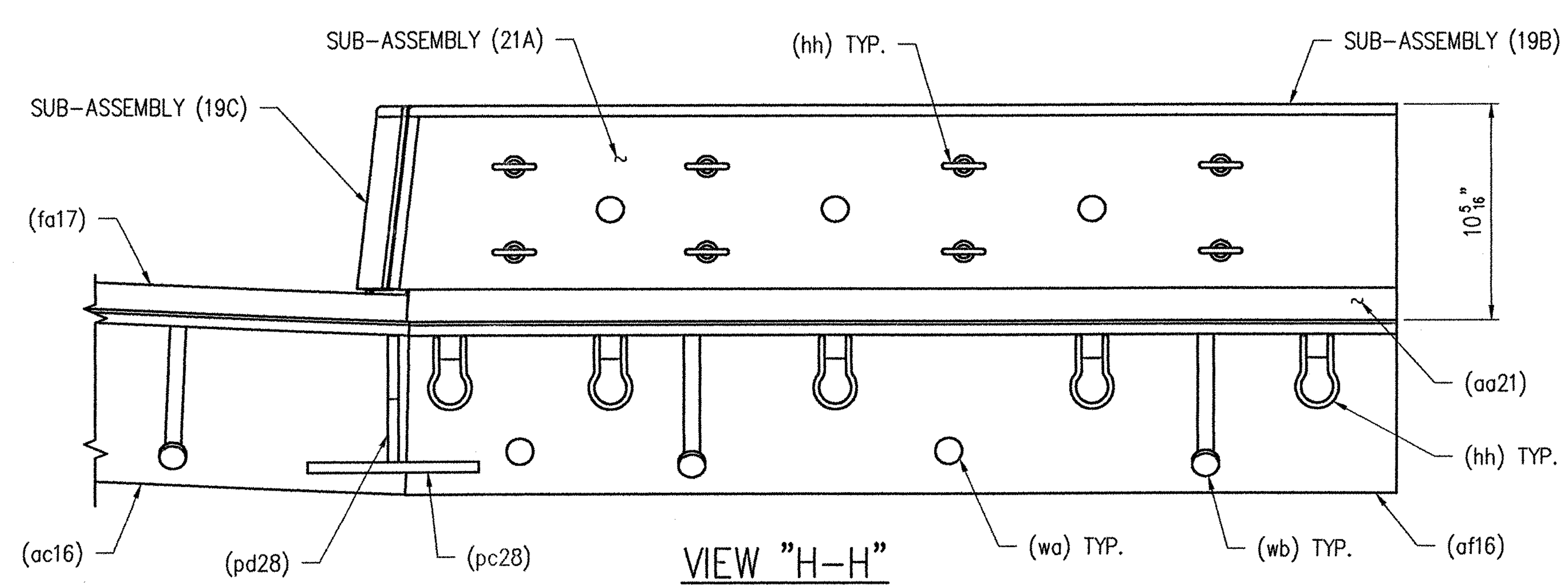
DETAIL "F"

(ROTATED 180° FROM THAT SHOWN ON SHEET NO. 1)



SECTION "R-R"

SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 16, 19, 20, 21 & 22.



VIEW "H-H"

REV.	DESCRIPTION	DATE	INT.
1	GENERAL REVISION PER APPROVAL	1/11/02	JMB

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY

4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

RECEIVED
CK'D BY LJ/SJ OK'D BY
JAN 2 1 2002
RESUBMIT ____ APPROVED ✓
BY CPW DATE 1/29/02

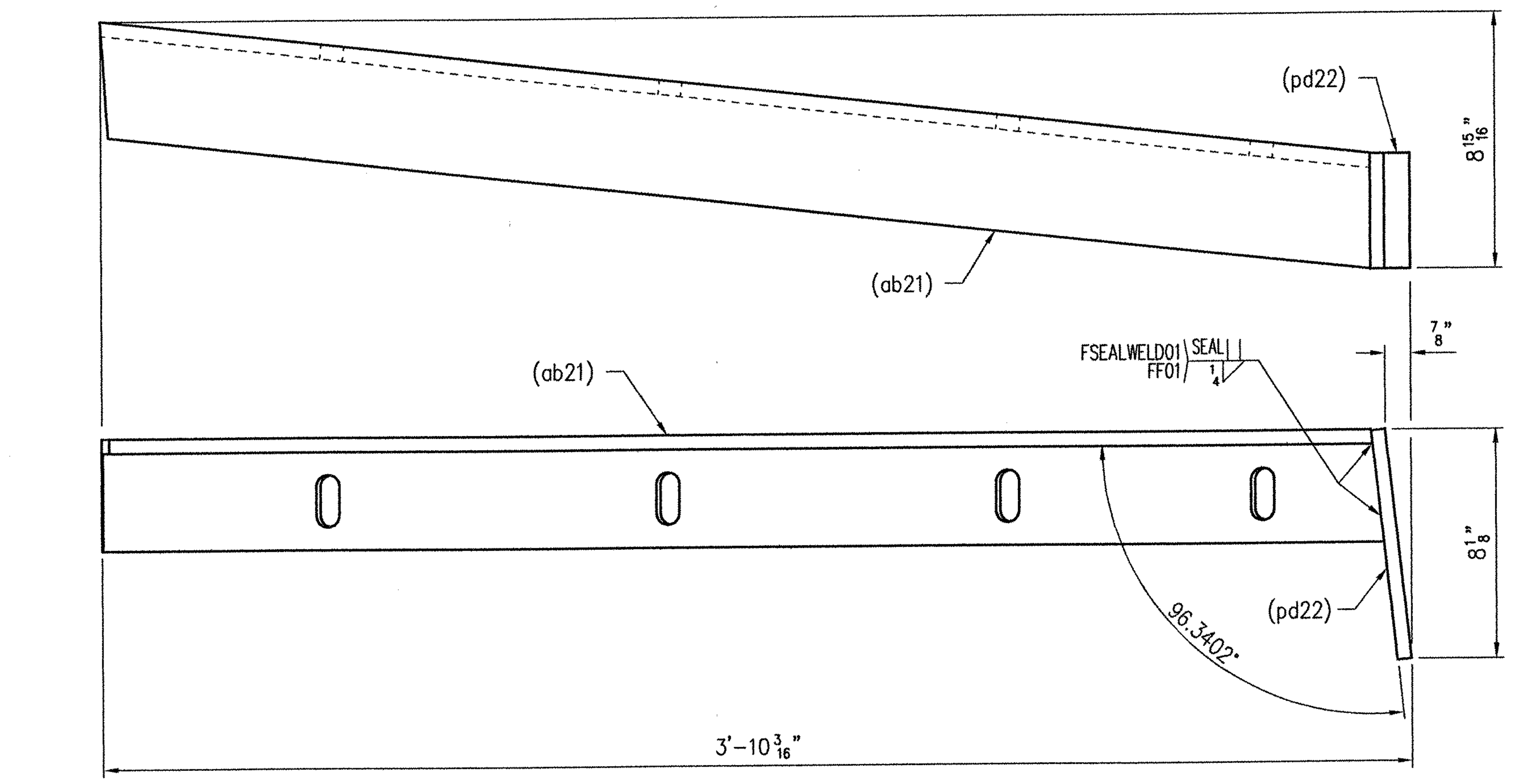
SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

PROJECT	—	ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT	—	AC BRZ 1444(22)
FEDERAL PROJECT	—	
CUSTOMER	—	BECK & BELLUCCI, INC.
LOCATION	—	WINDSOR COUNTY, VT
DESCRIPTION	—	EXPANSION JOINT DETAILS ABUTMENT NO. 1

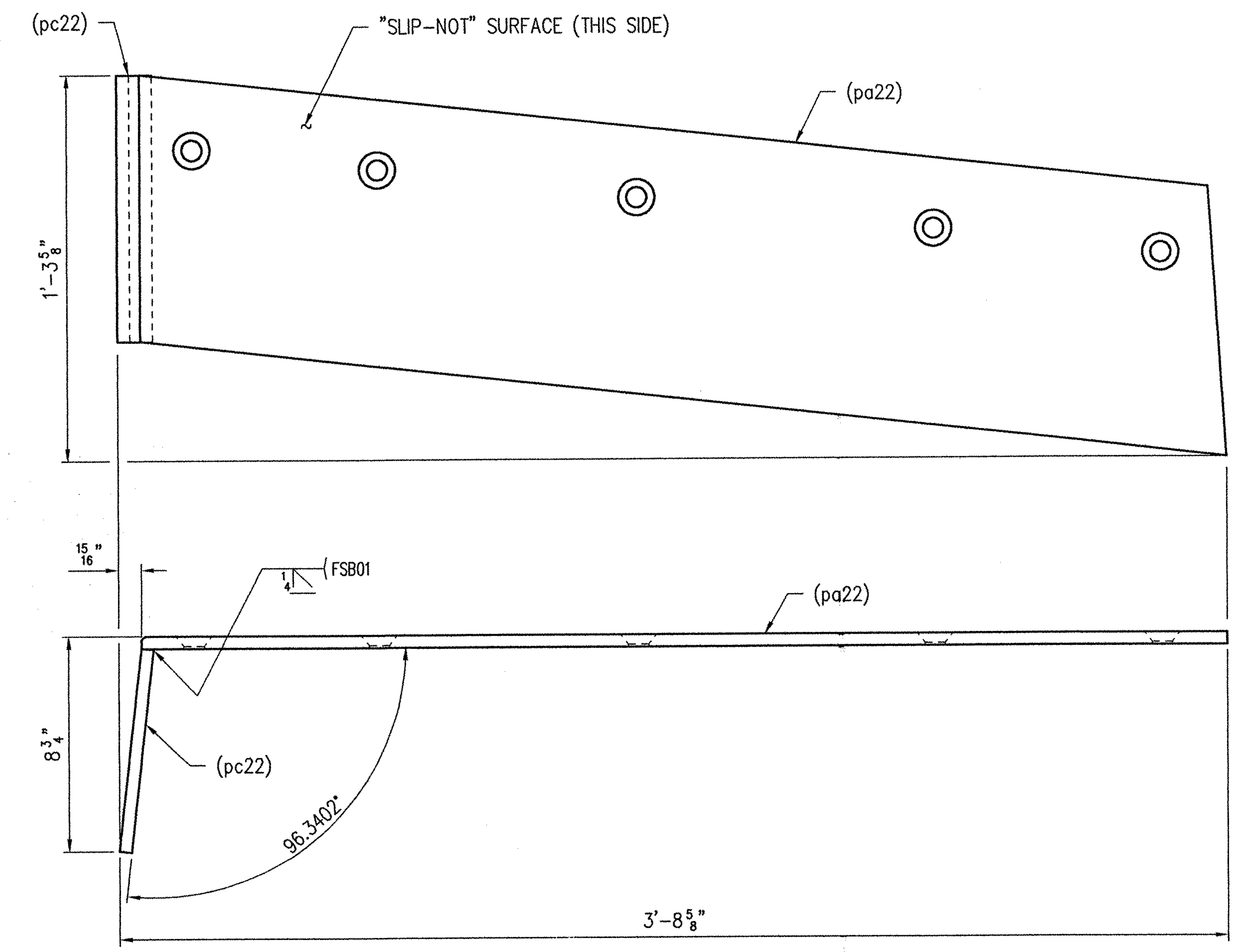
Orig.

W.P. chk'd	
Drawn By	JMB
Chk'd. By	TSF
Date:	12/20/01

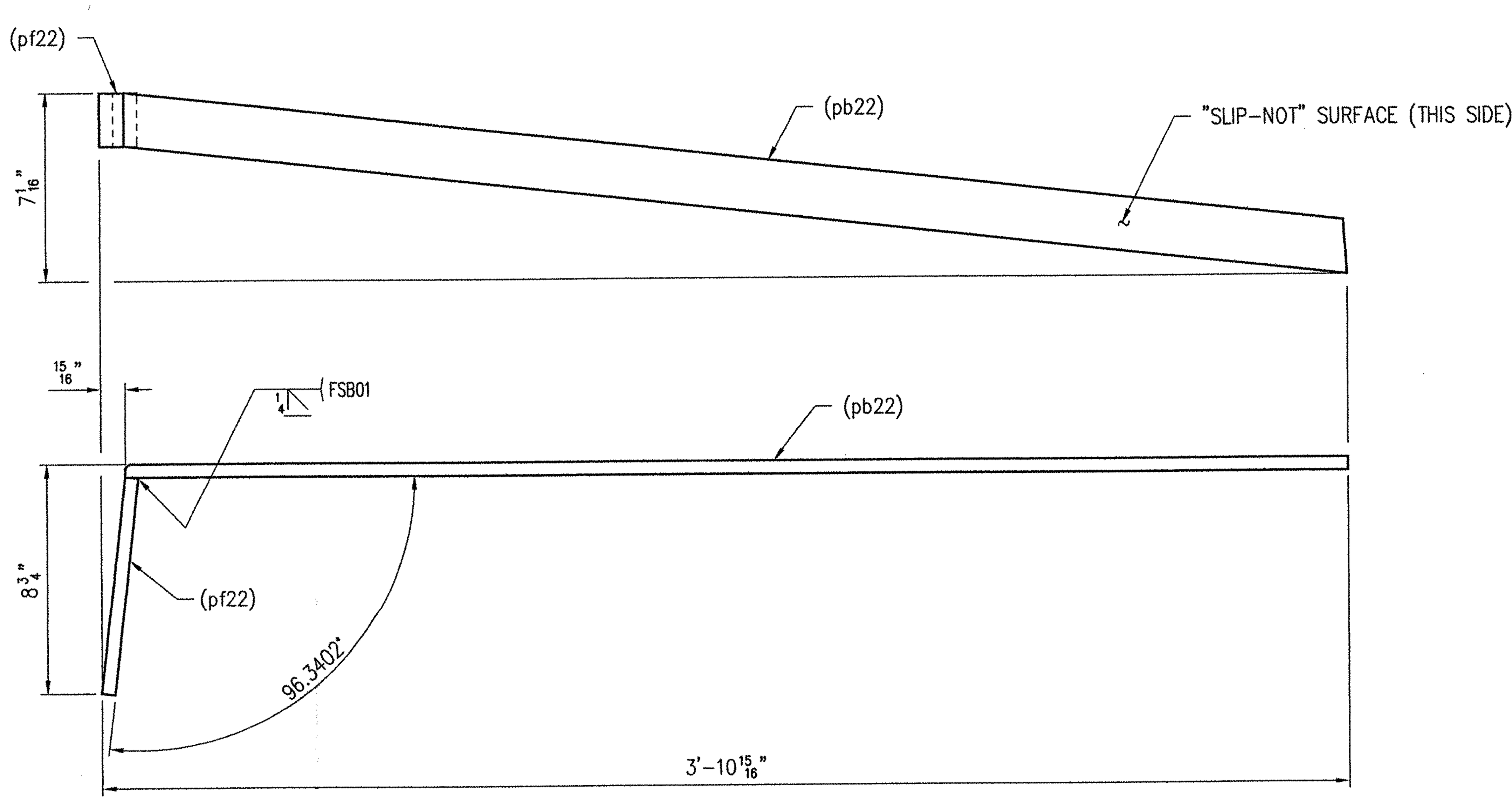
L.E.C. 18 OF 30 | SHEET NO. 3 OF 15 | Job. No. : 2034.1042.1



1 – SUB-ASSEMBLY – 19A
(SOME HIDDEN LINES REMOVED FOR CLARITY)



1 – SUB-ASSEMBLY – 19C



1 – SUB-ASSEMBLY – 19B

RECEIVED
CK'D BY WB OK'D BY
JAN 2 1 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/24/02

SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 18, 20, 21 & 22.

REV.	DESCRIPTION	DATE
1	GENERAL REVISION PER APPROVAL.	1/11/02

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LE ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECT MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BA

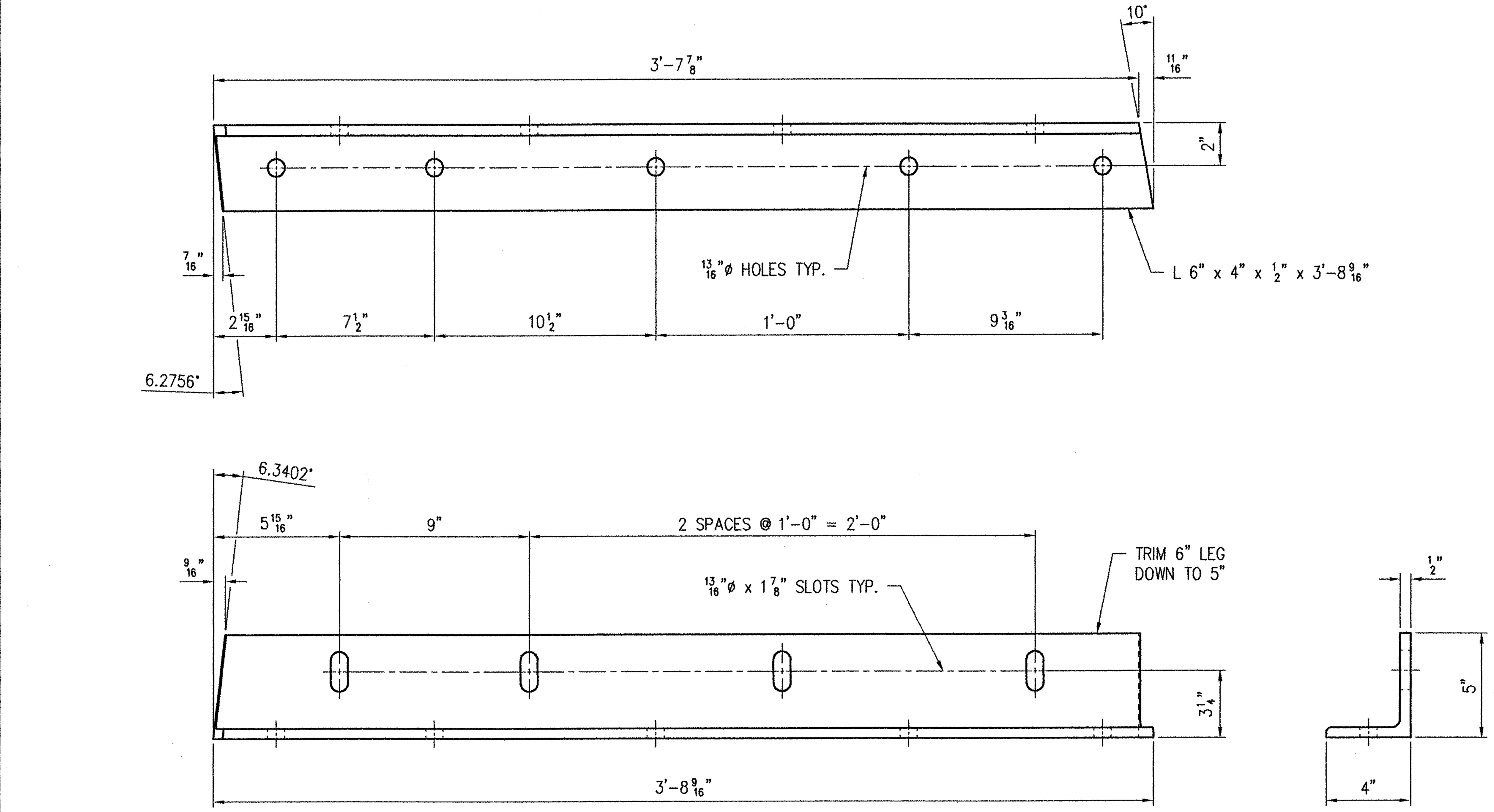
PRINTS ISSUED FOR	DATE
SHOP	
APPROVAL	
DIST.	
CUST.	

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

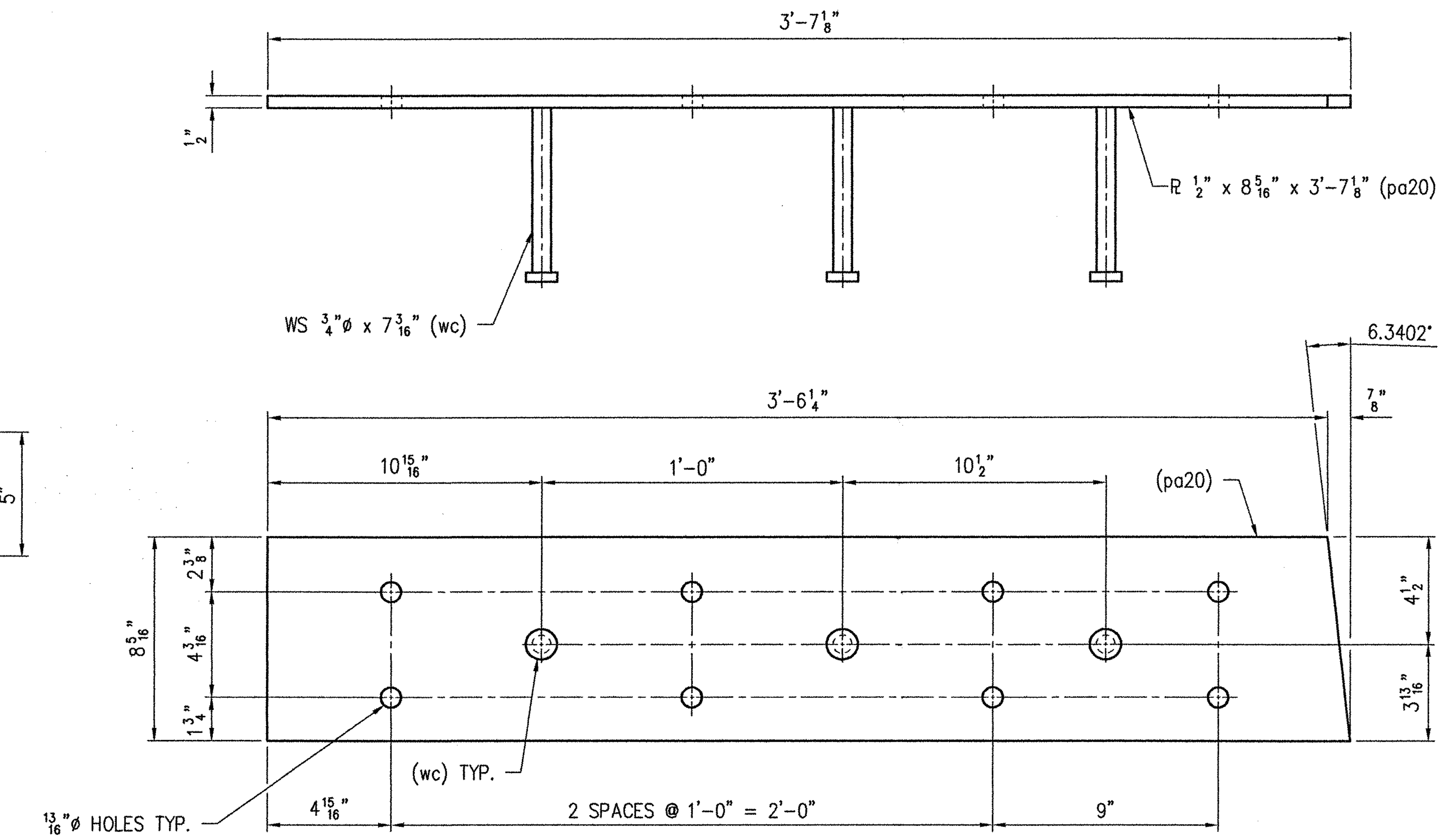
PROJECT	—	ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT	—	AC BRZ 1444(22)
FEDERAL PROJECT	—	
CUSTOMER	—	BECK & BELLUCCI, INC.
LOCATION	—	WINDSOR COUNTY, VT
DESCRIPTION	—	EXPANSION JOINT DETAILS ABUTMENT NO. 1

Or
W.P. chk'd
Drawn By J
Chk'd. By T
Date: 12/20,

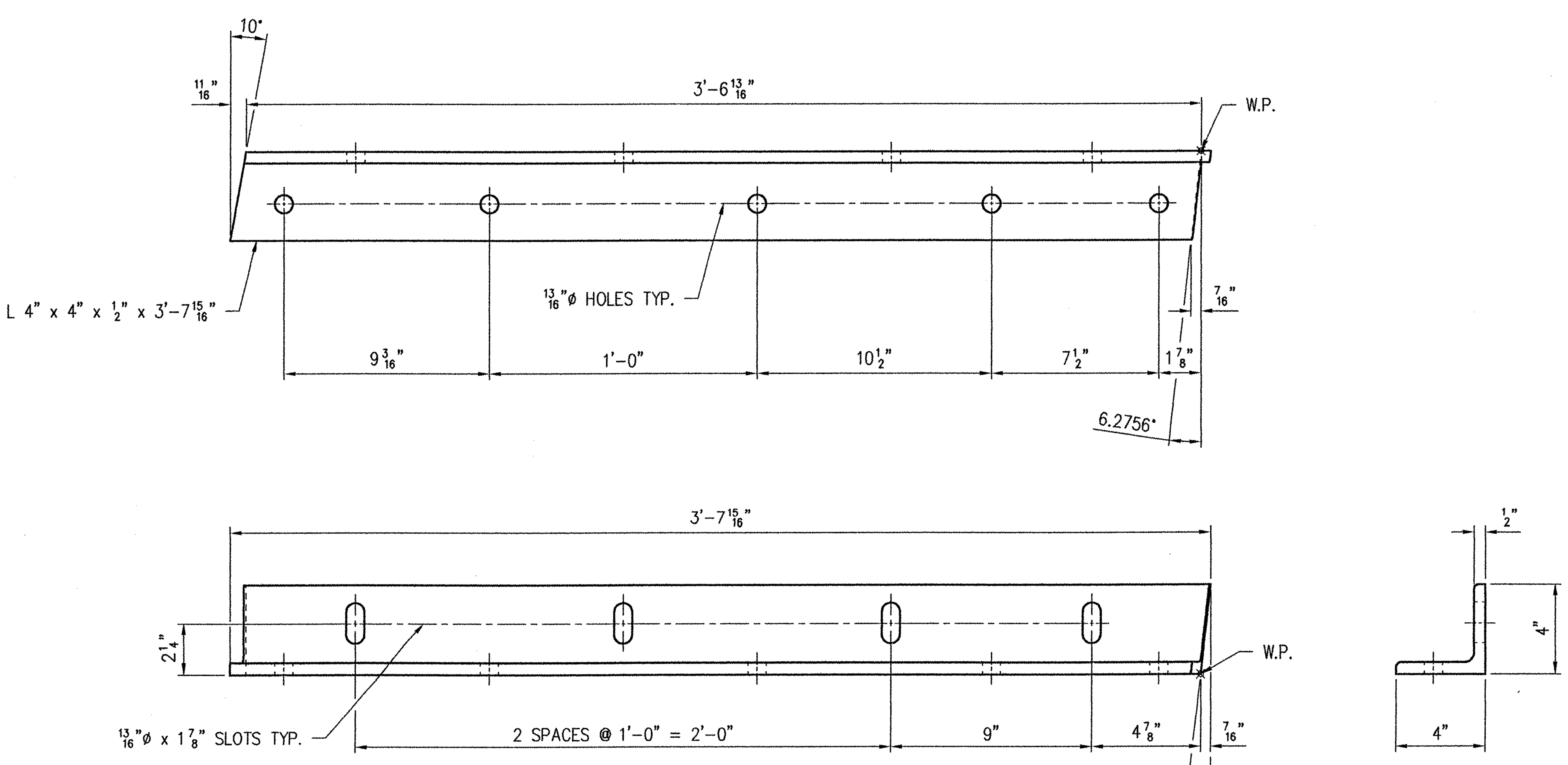
L.E.C. 19 OF 30 | SHEET NO. 4 OF 15 | Job. No. : 2034.10



DETAIL (aa20)



1 – SUB-ASSEMBLY – 20A



DETAIL (ab20)

SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 18, 19, 21 & 22.

RECEIVED
CK'D BY WJSJ OK'D BY
JAN 2 1 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/24/02

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

REV.	DESCRIPTION	DATE	INT.

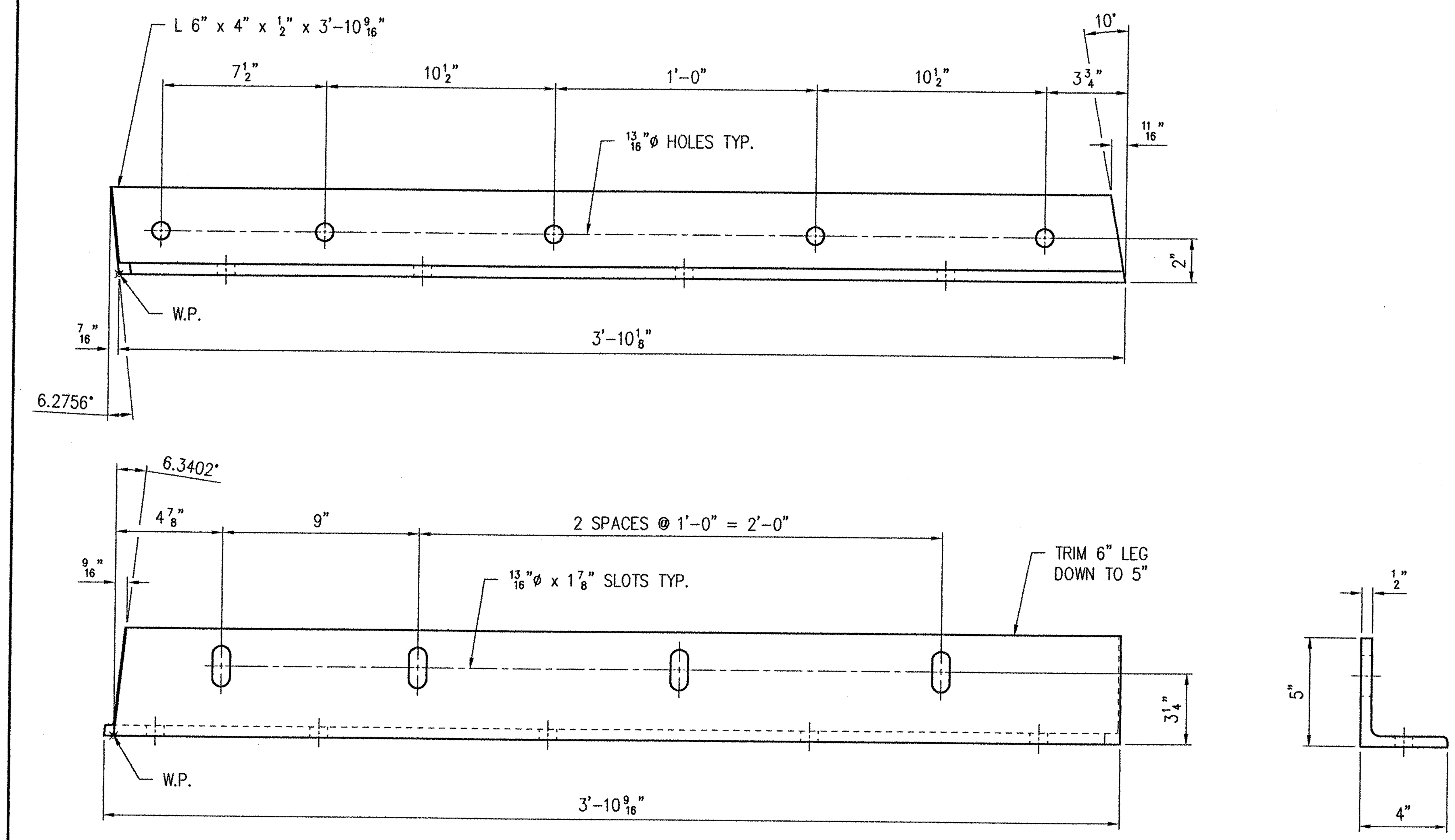
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

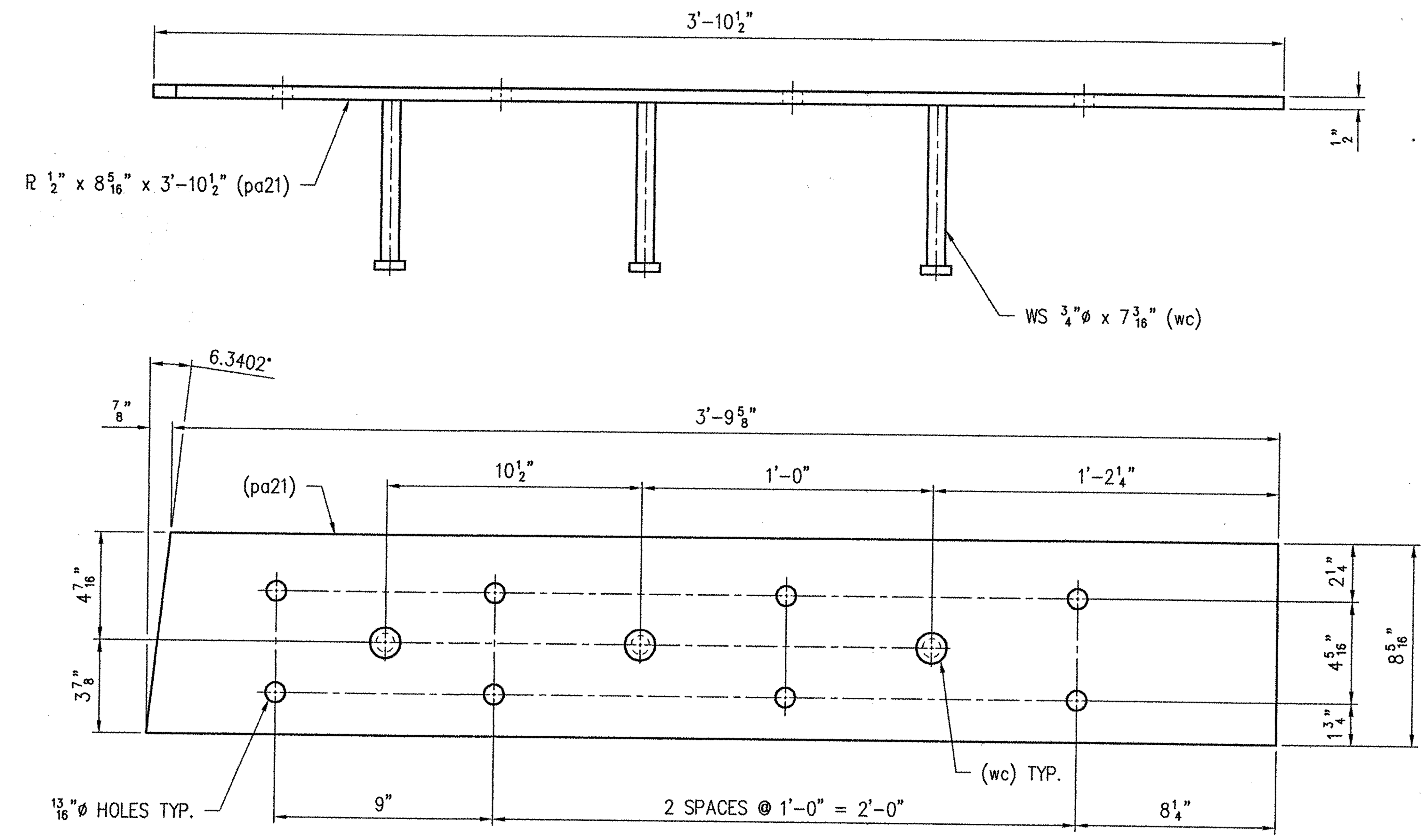
PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS ABUTMENT NO. 1

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/20/01

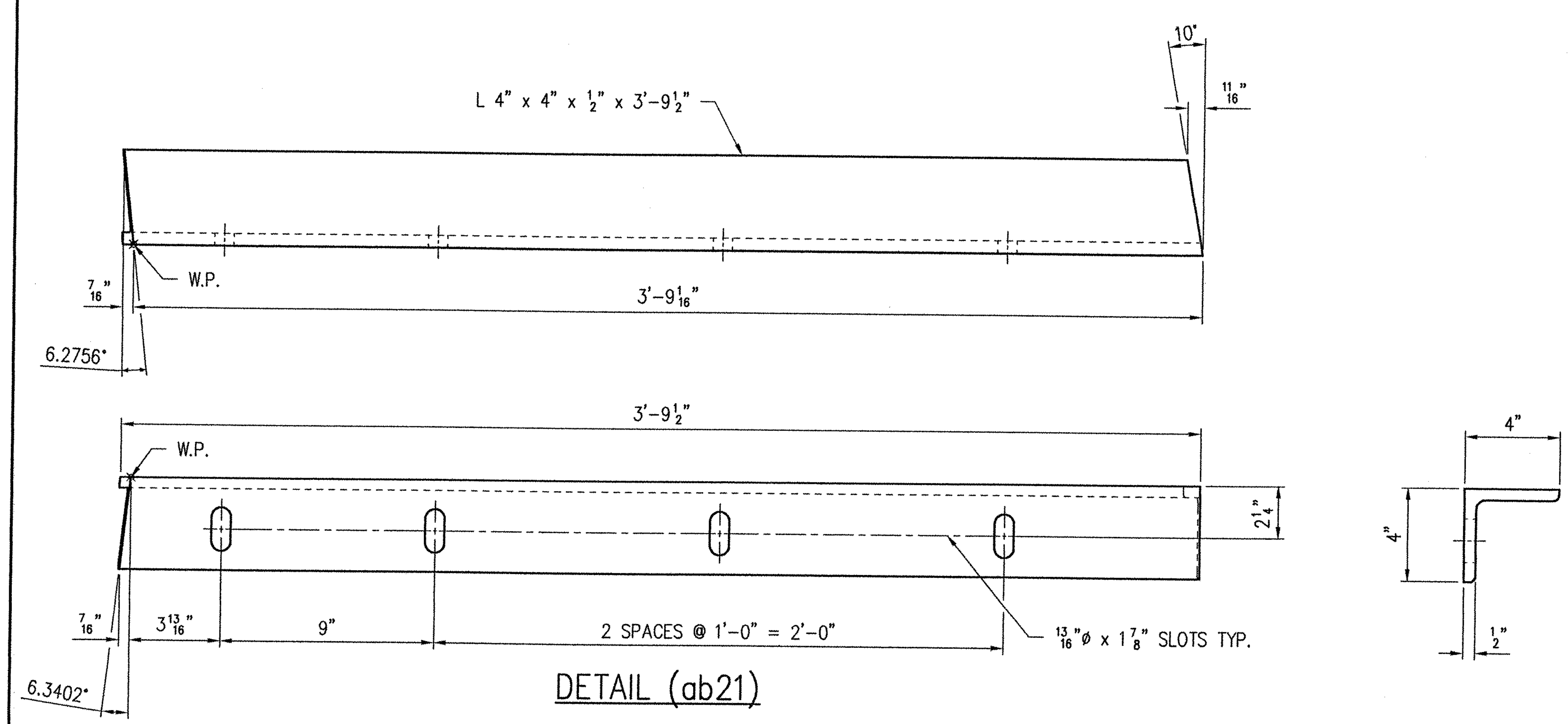
L.E.C. 20 OF 30 | SHEET NO. 5 OF 15 | Job. No. : 2034.1042.1



DETAIL (aa21)



1 – SUB-ASSEMBLY – 21A



DETAIL (ab21)

SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 18, 19, 20 & 22.

RECEIVED
CK'D BY W/S3 OK'D BY
JAN 2 1 2002
RESUBMIT ___ APPROVED ✓
BY CPW DATE 1/24/02

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

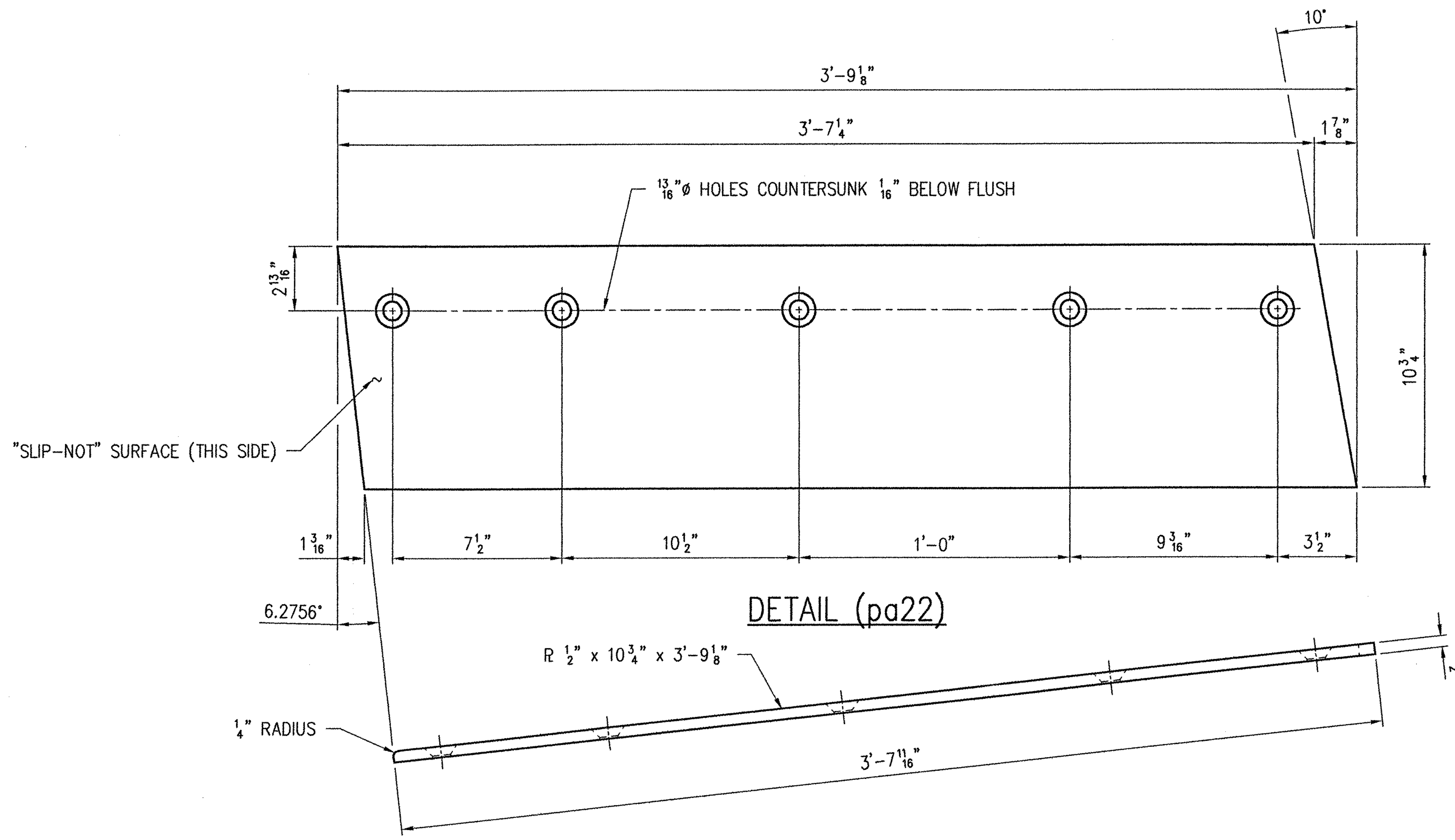
SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

PROJECT – ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT – AC BRZ 1444(22)
FEDERAL PROJECT –
CUSTOMER – BECK & BELLUCCI, INC.
LOCATION – WINDSOR COUNTY, VT
DESCRIPTION – EXPANSION JOINT DETAILS ABUTMENT NO. 1

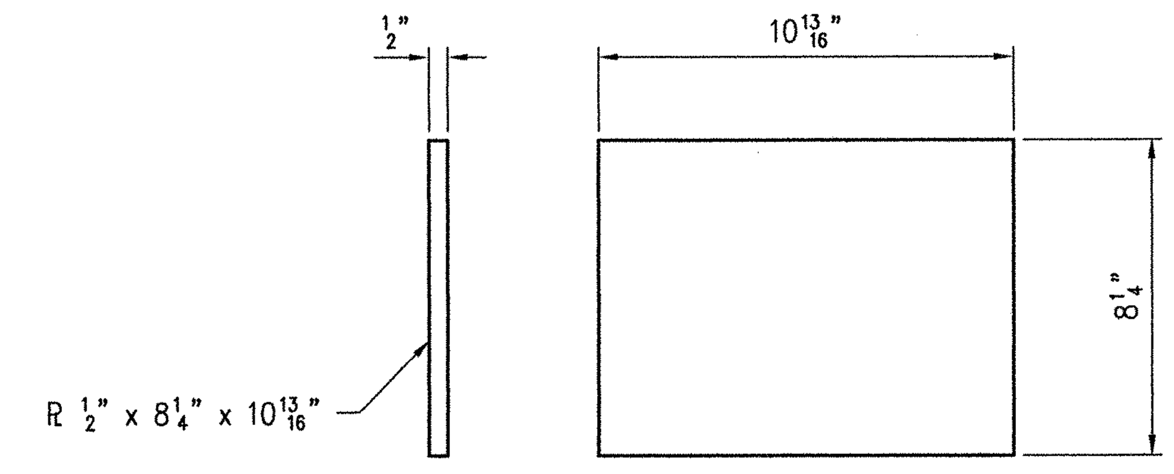
Orig.

W.P. chk'd	
Drawn By	JMB
Chk'd. By	TSF
Date:	12/20/01

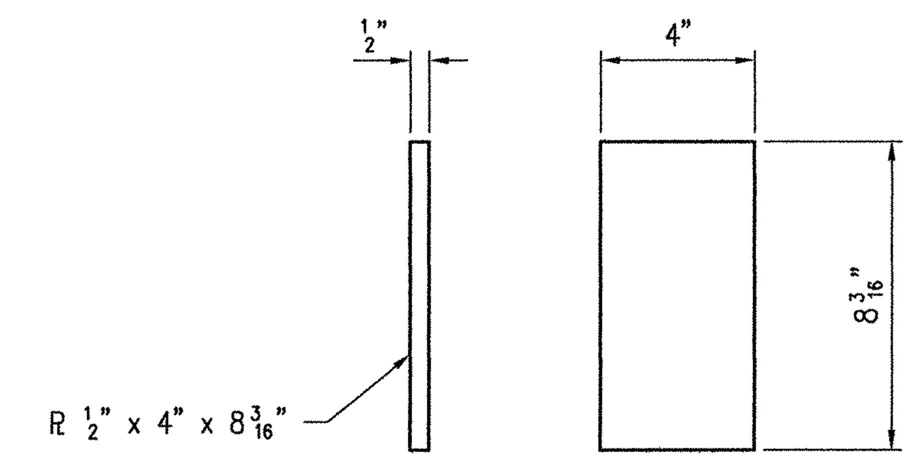
L.E.C. 21 OF 30 | SHEET NO. 6 OF 15 | Job. No. : 2034.1042.1



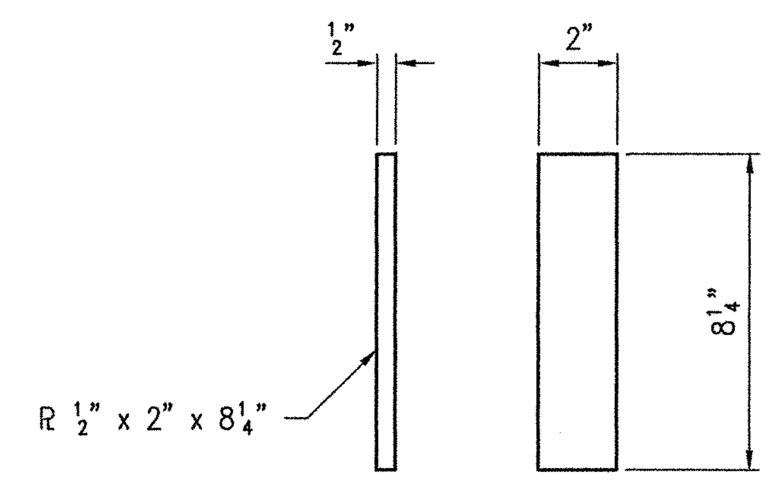
DETAIL (pa22)



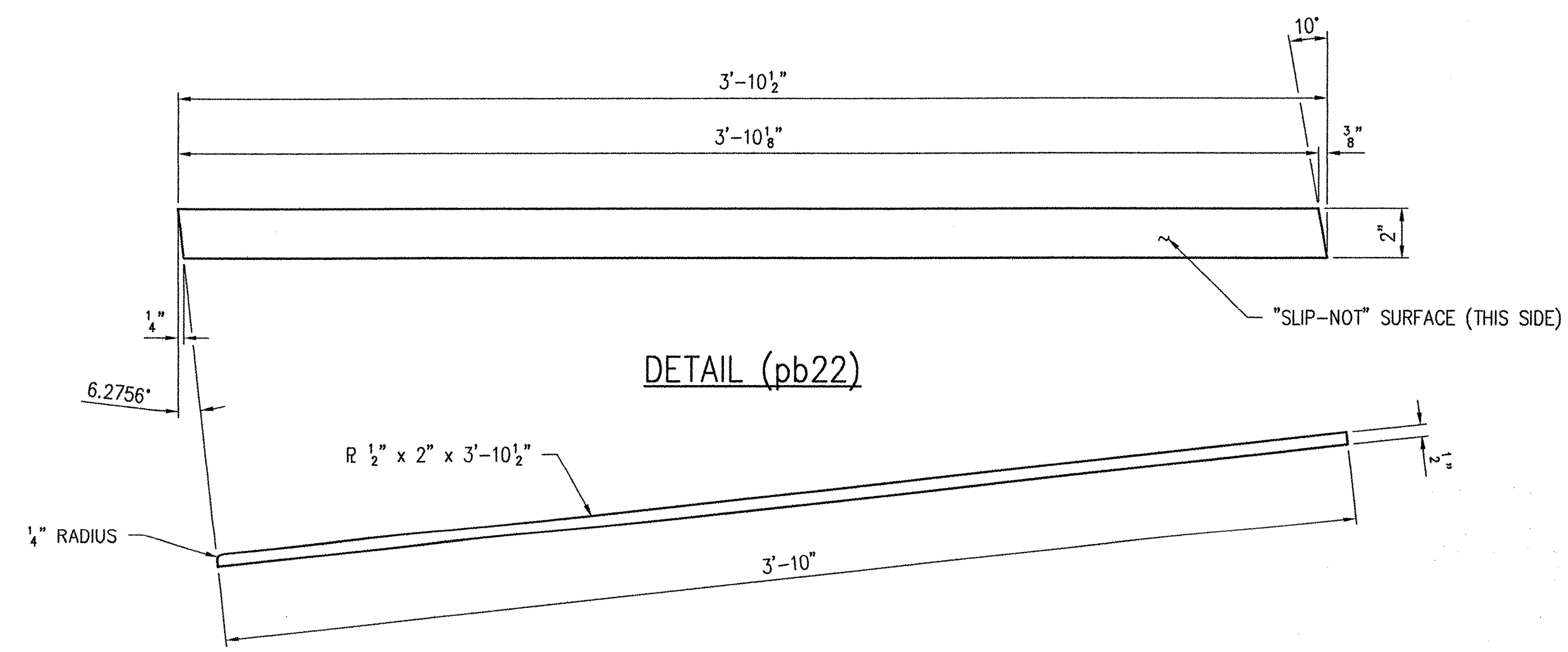
DETAIL (pc22)



DETAIL (pd22)



DETAIL (pf22)



DETAIL (pb22)

SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 18, 19, 20 & 21.

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

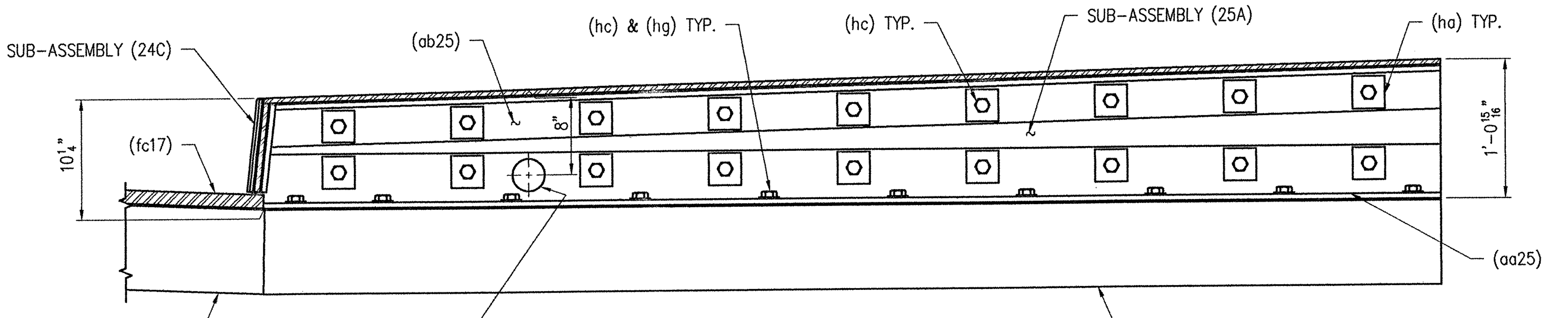
SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS ABUTMENT NO. 1

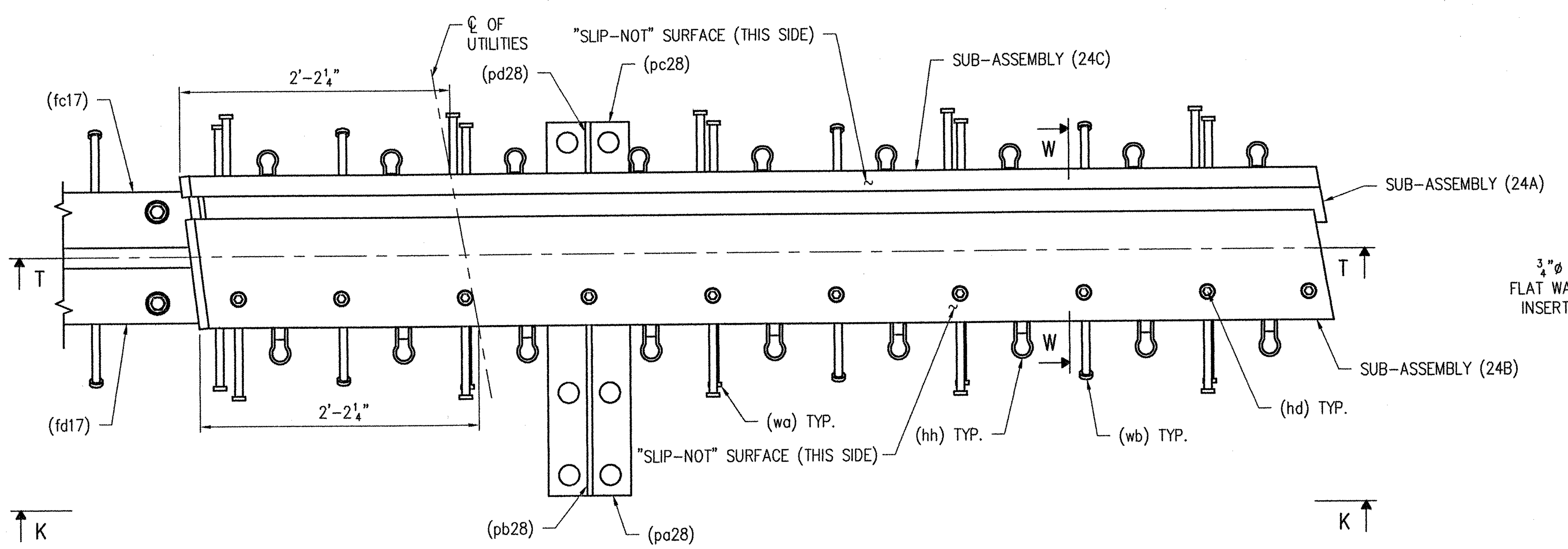
Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/20/01

L.E.C. 22 OF 30 | SHEET NO. 7 OF 15 | Job. No.: 2034.1042.1

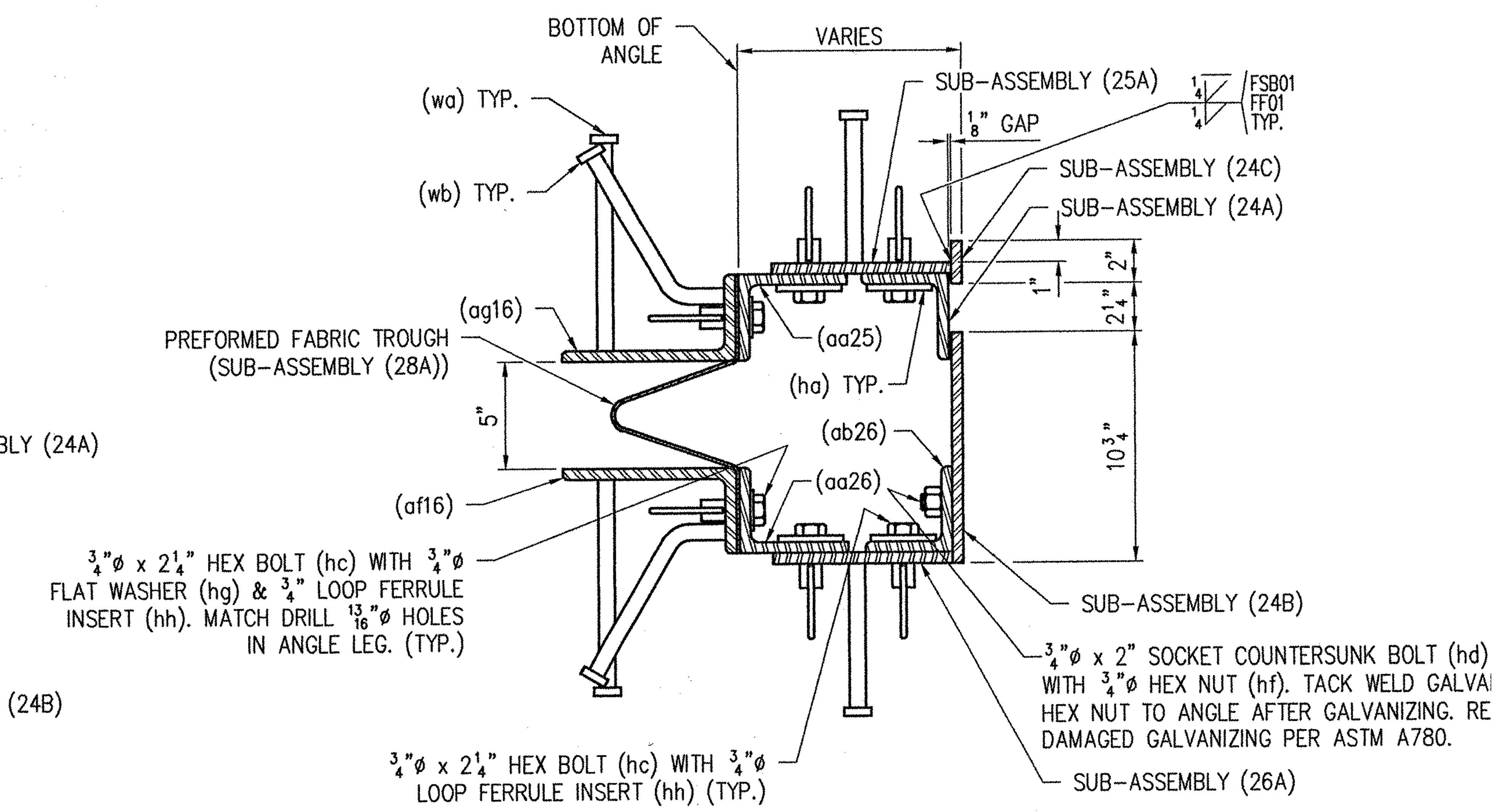
RECEIVED
OK'D BY LWS OK'D BY ____
JAN 2 1 2002
RESUBMIT ____ APPROVED ✓
BY CPW DATE 1/24/02



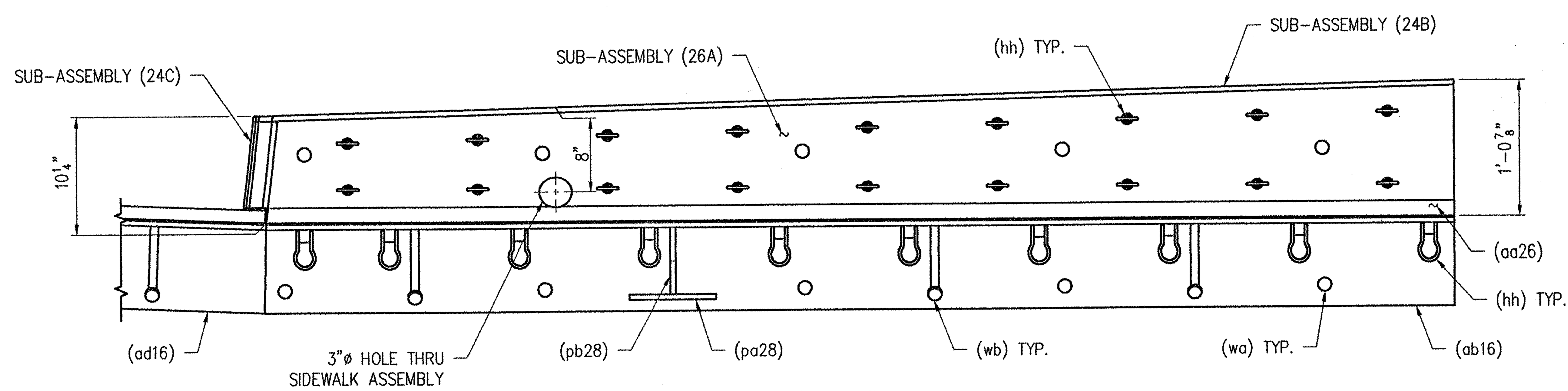
SECTION "T-T"



DETAIL "G"



SECTION "W-W"



VIEW "K-K"

SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 16, 24, 25, 26 & 27.

REV.	DESCRIPTION	DATE
1	GENERAL REVISION PER APPROVAL.	1/11/02

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LE ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJEC MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED B

RECEIVED
CK'D BY WJS OK'D BY
JAN 2 1 2002
RESUBMIT ____ APPROVED ✓
BY OPW DATE 1/24/02

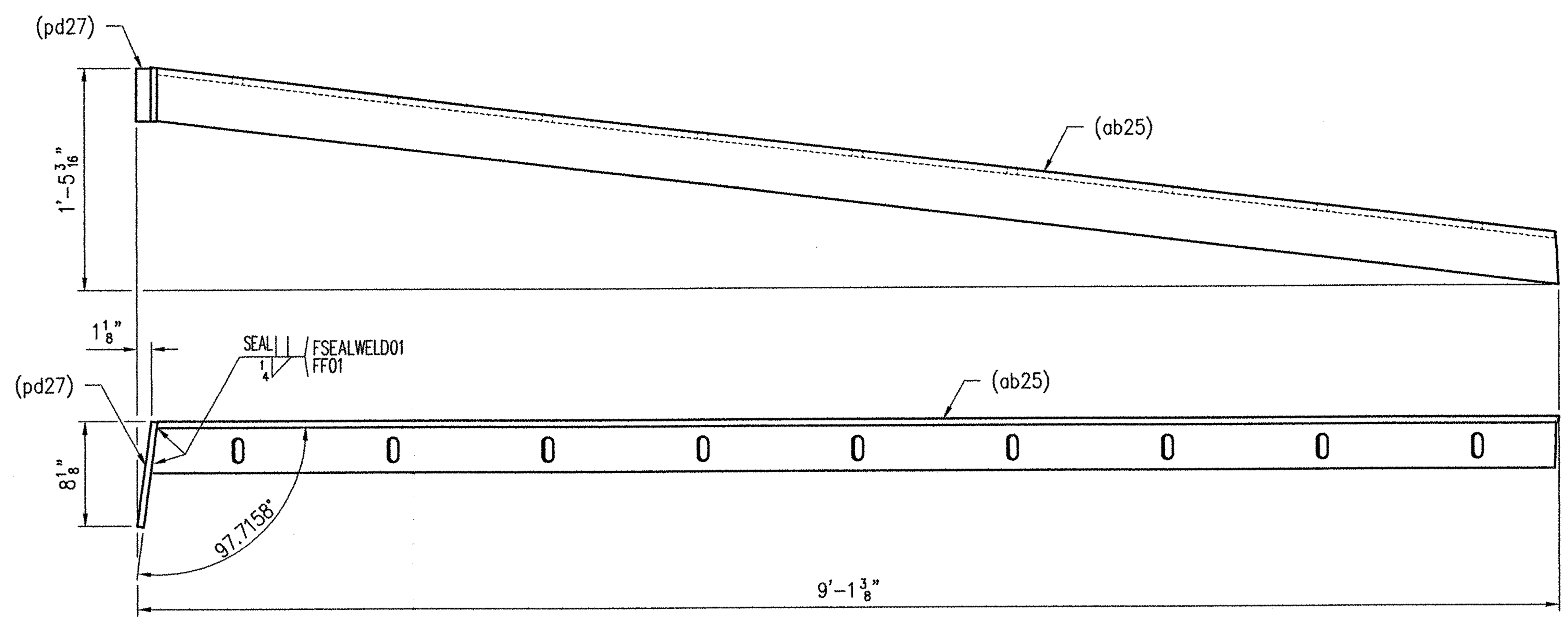
SHOP	
APPROVAL	
DIST.	
CUST.	
FOR	DATE
PRINTS ISSUED	

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

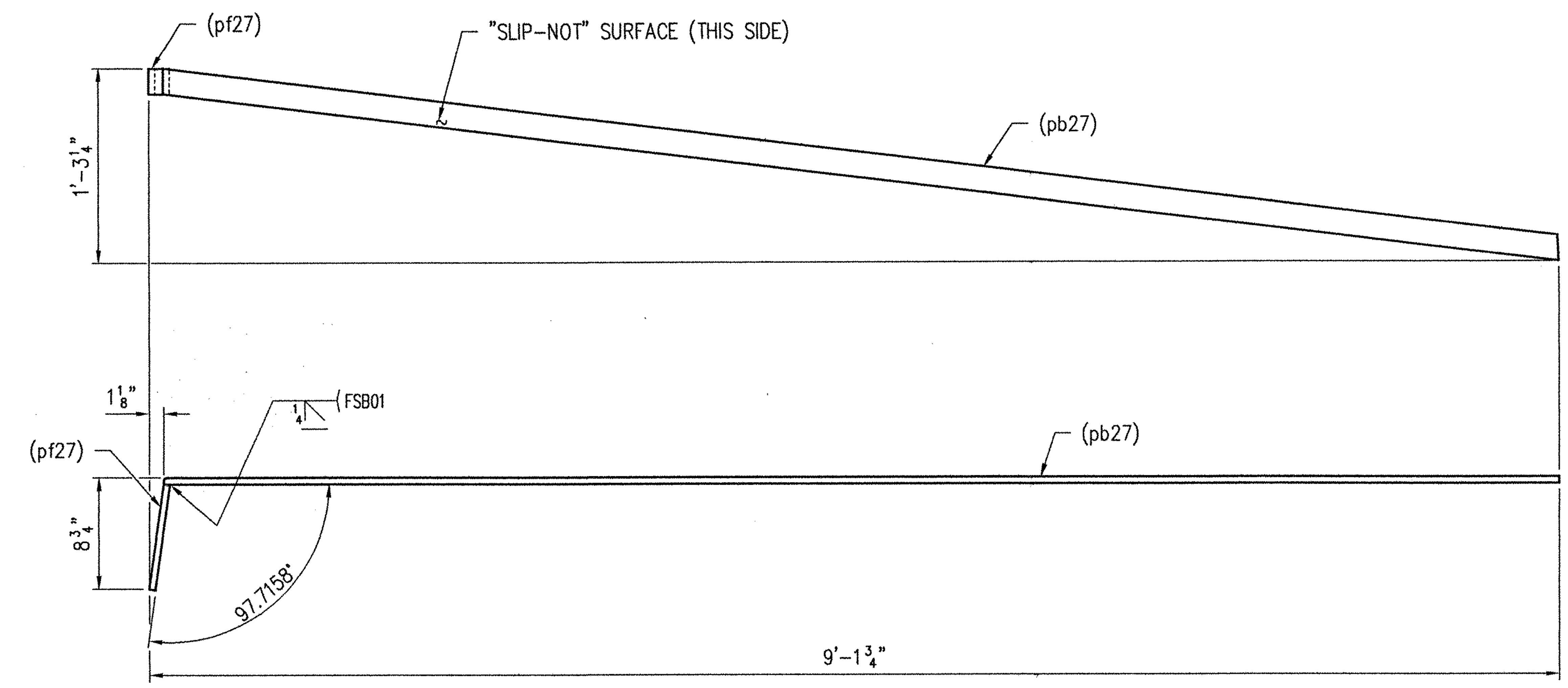
PROJECT	—	ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT	—	AC BRZ 1444(22)
FEDERAL PROJECT	—	
CUSTOMER	—	BECK & BELLUCCI, INC.
LOCATION	—	WINDSOR COUNTY, VT
DESCRIPTION	—	EXPANSION JOINT DETAILS ABUTMENT NO. 1

W.P. chk'd
Drawn By
Chk'd. By
Date: 12/20

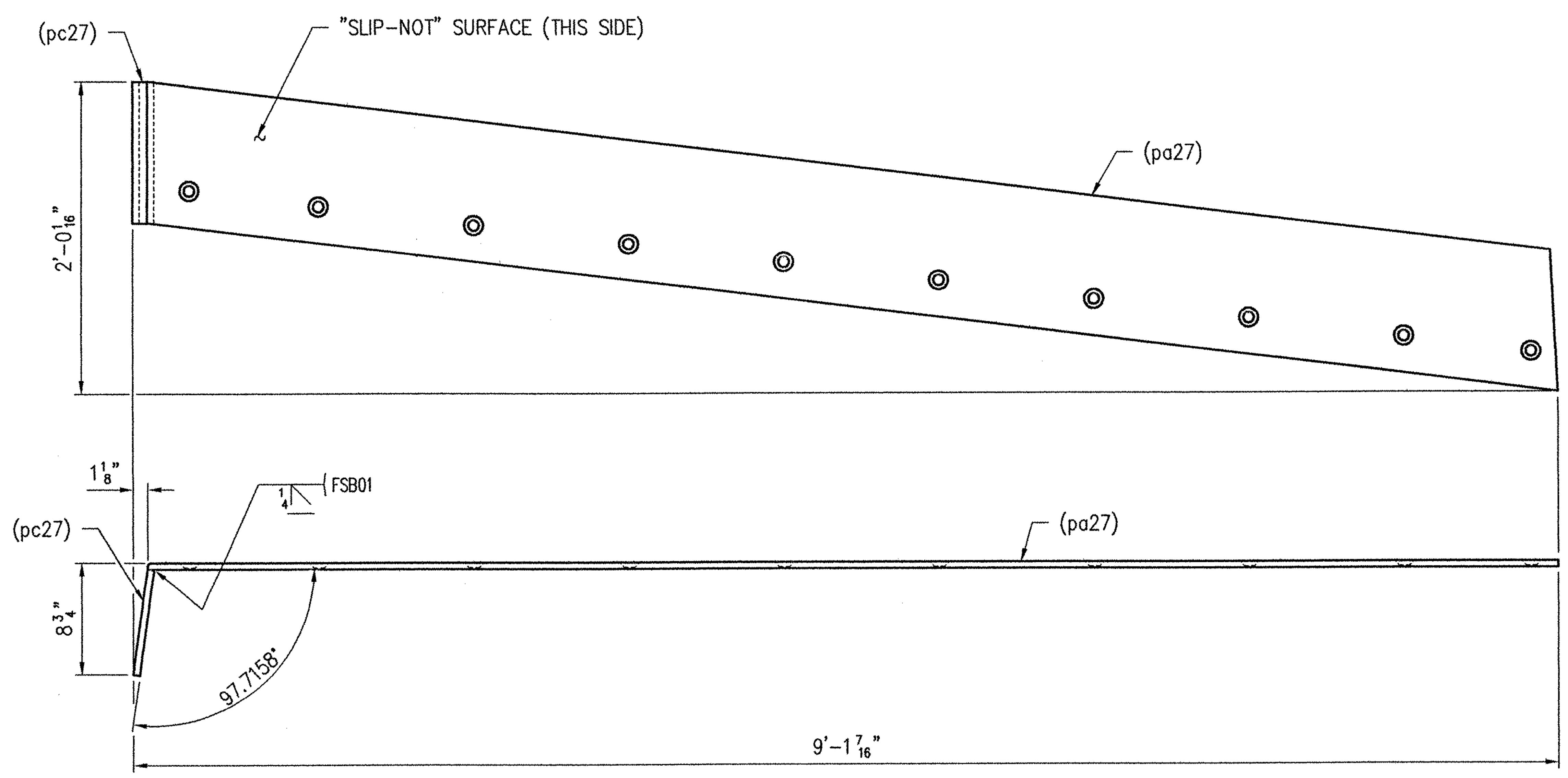
L.E.C. 23 OF 30 | SHEET NO. 8 OF 15 | Job. No. : 2034.10



1 - SUB-ASSEMBLY - 24A
(SOME HIDDEN LINES REMOVED FOR CLARITY)



1 - SUB-ASSEMBLY - 24C



1 - SUB-ASSEMBLY - 24B

SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 23, 25, 26 & 27.

REV.	DESCRIPTION	DATE	INT.
1	GENERAL REVISION PER APPROVAL.	1/11/02	JMB

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368–3000

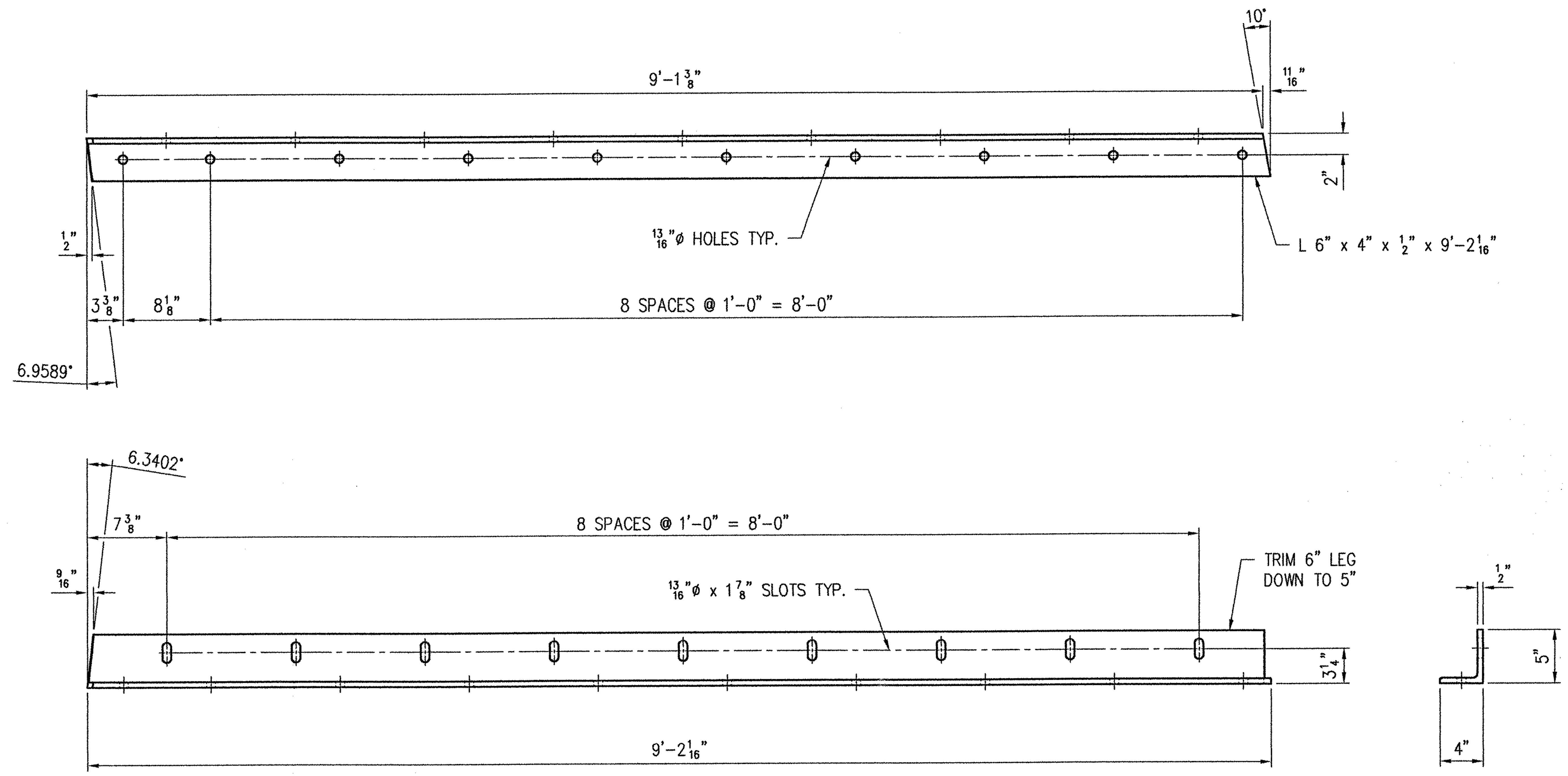
PROJECT	— ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT	— AC BRZ 1444(22)
FEDERAL PROJECT	—
CUSTOMER	— BECK & BELLUCCI, INC.
LOCATION	— WINDSOR COUNTY, VT
DESCRIPTION	— EXPANSION JOINT DETAILS ABUTMENT NO. 1

W.P. chk'd	Orig
Drawn By	JMB
Chk'd. By	TSF
Date:	12/20/01

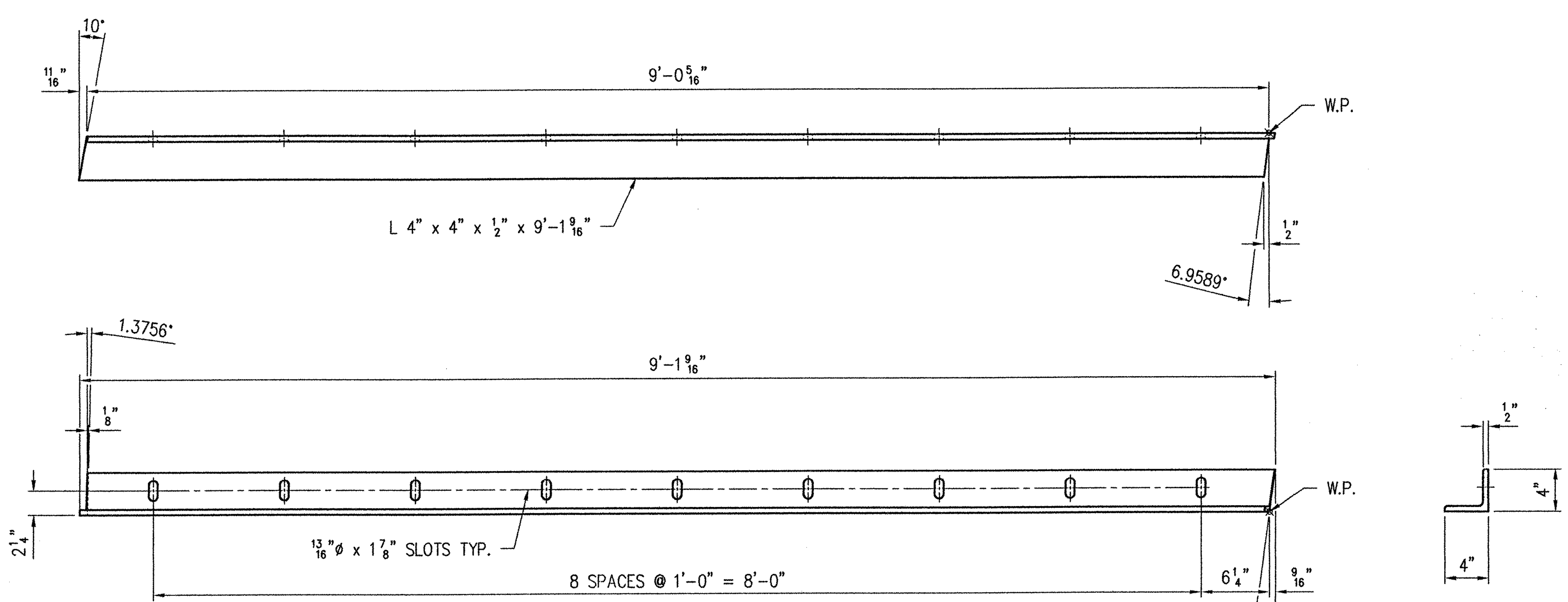
SHOP
APPROVAL
DIST.
CUST.
FOR | DATE
PRINTS ISSUED

L.E.C. 24 OF 30 | SHEET NO. 9 OF 15 | Job. No. : 2034.1042.1

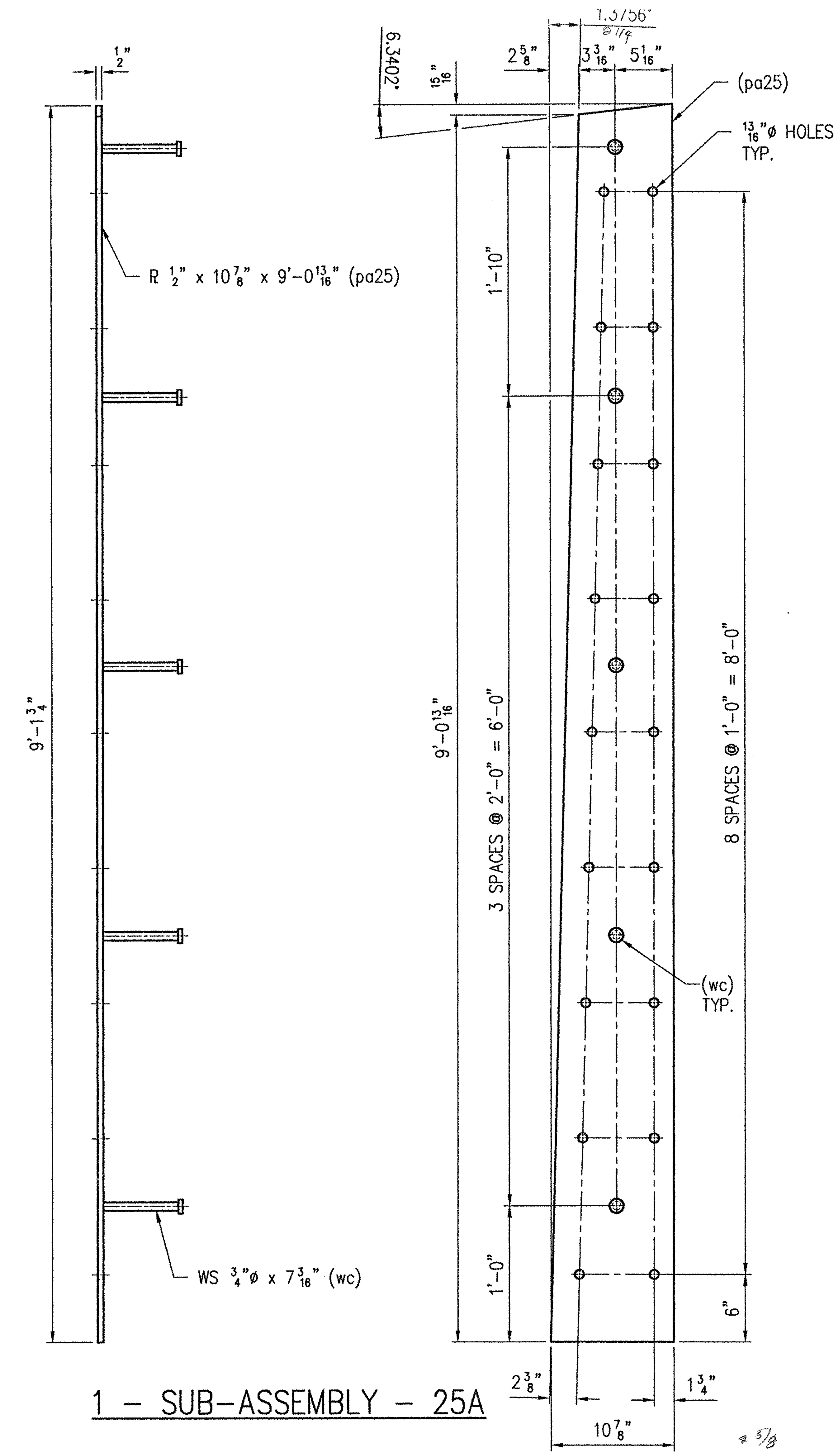
RECEIVED
CK'D BY WJS OK'D BY
JAN 2 1 2002
RESUBMIT ____ APPROVED ✓
BY CPW DATE 1/24/02



DETAIL (aa25)



DETAIL (ab25)



1 – SUB-ASSEMBLY – 25A

RECEIVED
CK'D BY WJS OK'D BY
JAN 2 1 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/24/02

SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 23, 24, 26 & 27.

REV.	DESCRIPTION	DATE

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK

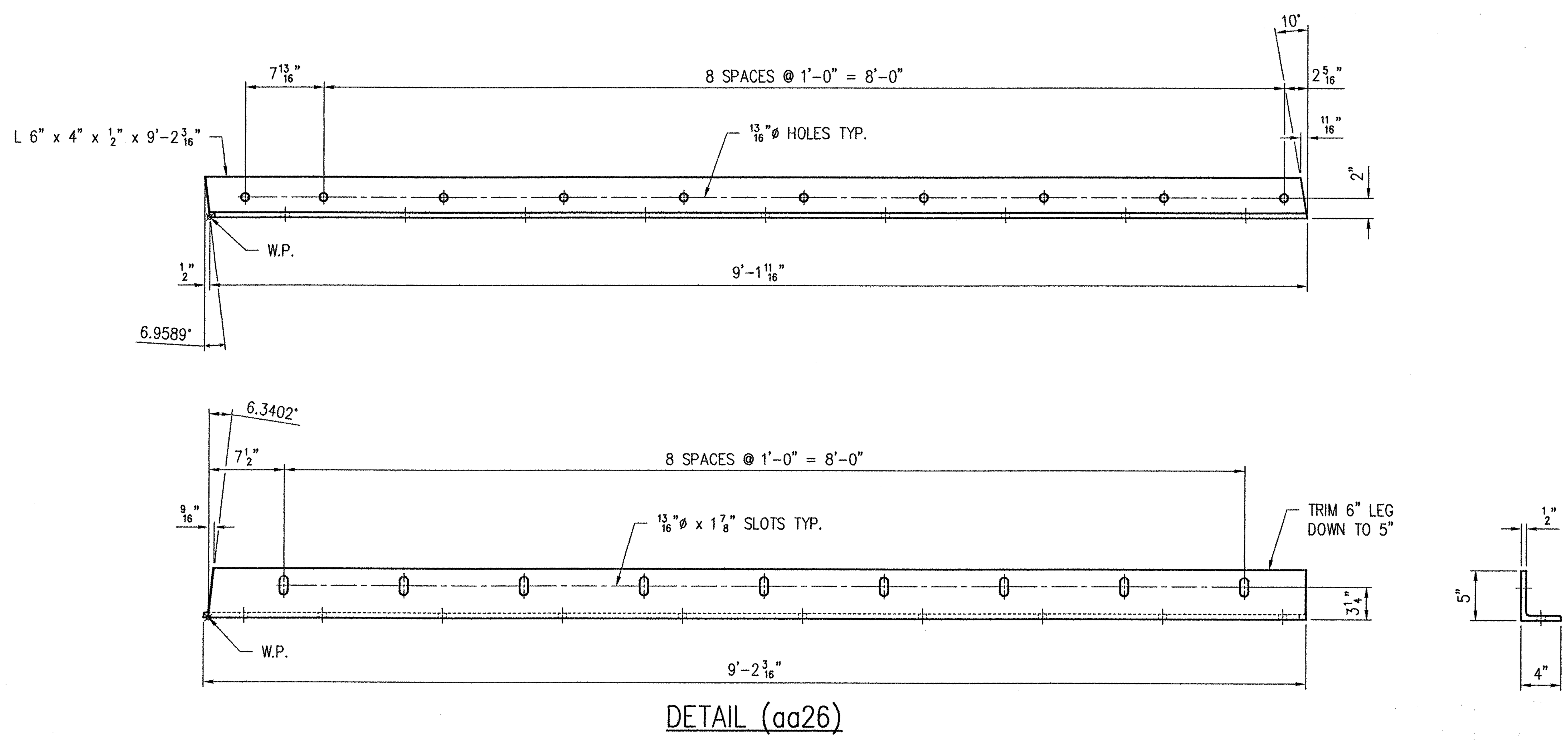
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

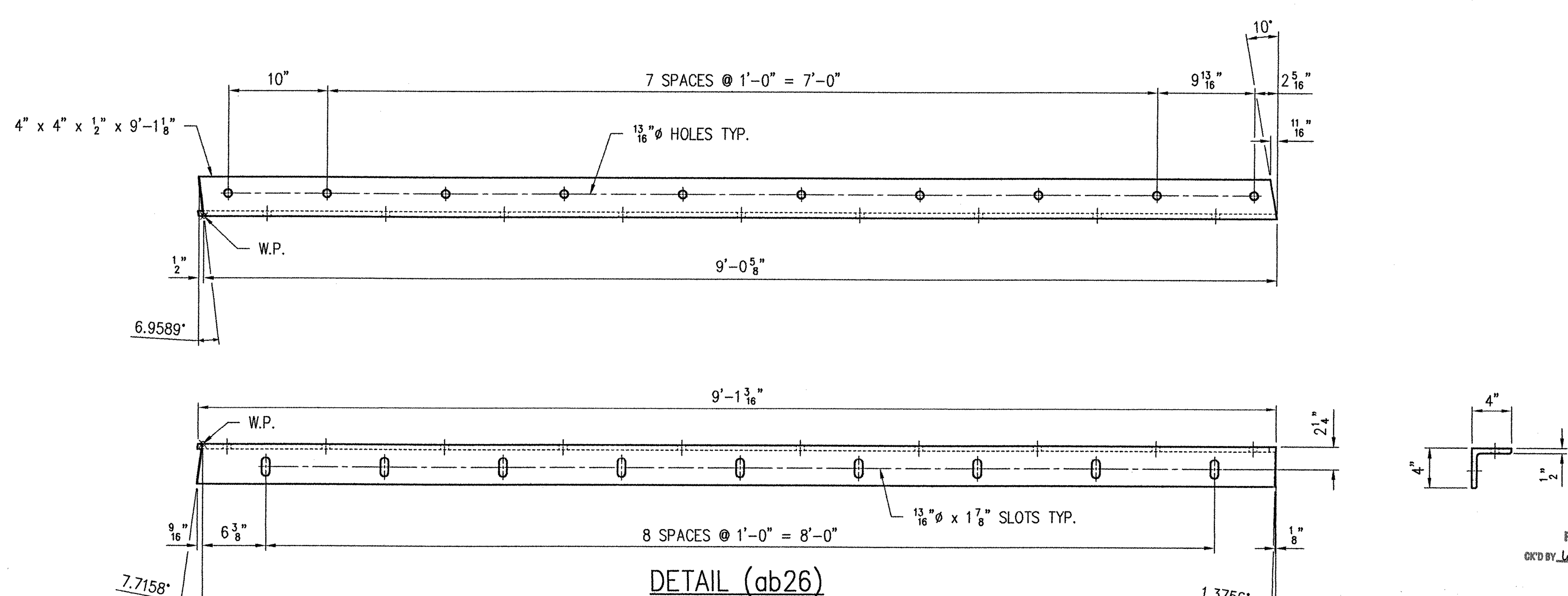
PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS ABUTMENT NO. 1

Orig
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/20/01

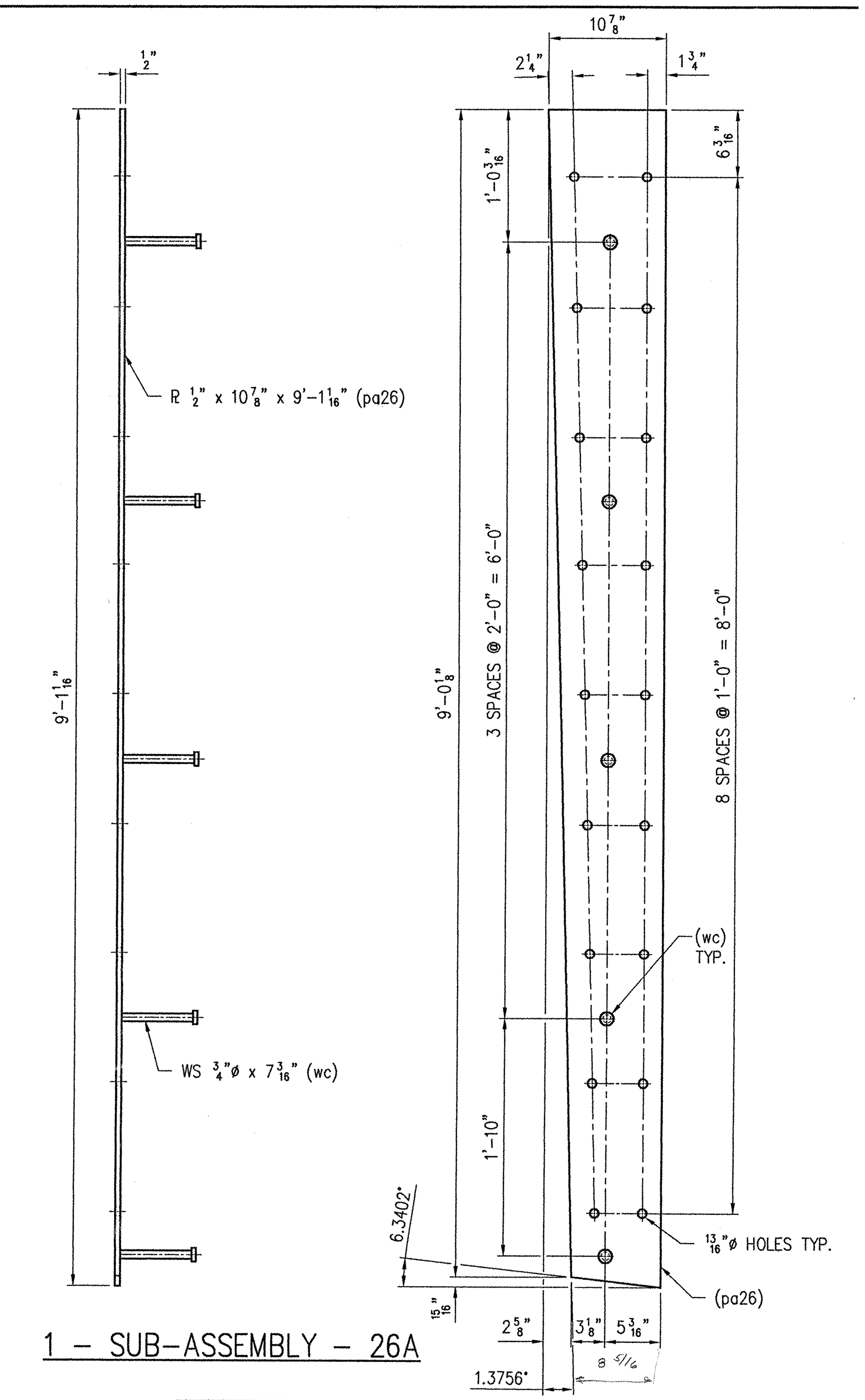
L.E.C. 25 OF 30 | SHEET NO. 10 OF 15 | Job. No. : 2034.1042



DETAIL (aa26)



DETAIL (ab26)



1 - SUB-ASSEMBLY - 26A

RECEIVED
CK'D BY WAS OK'D BY
JAN 2 1 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/24/02

SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 23, 24, 25 & 27.

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

REV.	DESCRIPTION	DATE	INT.

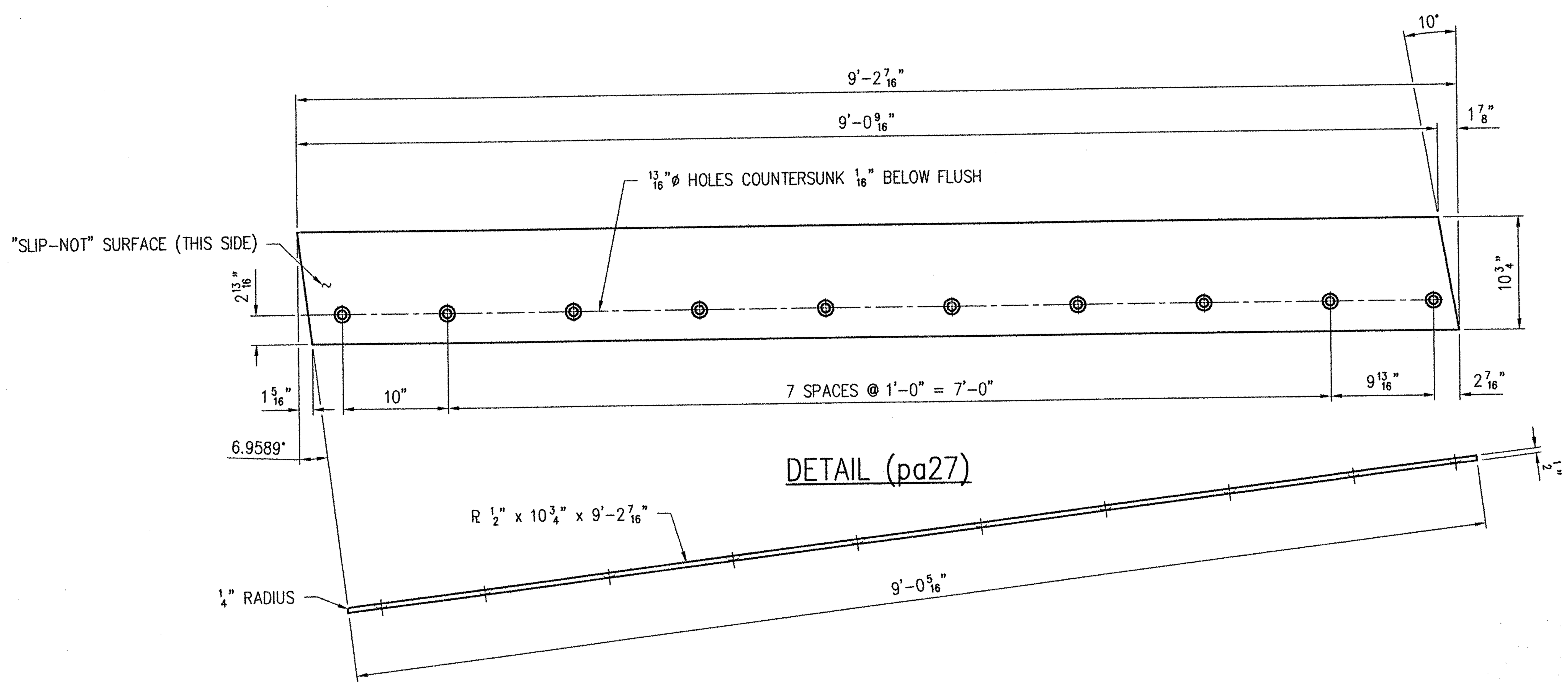
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

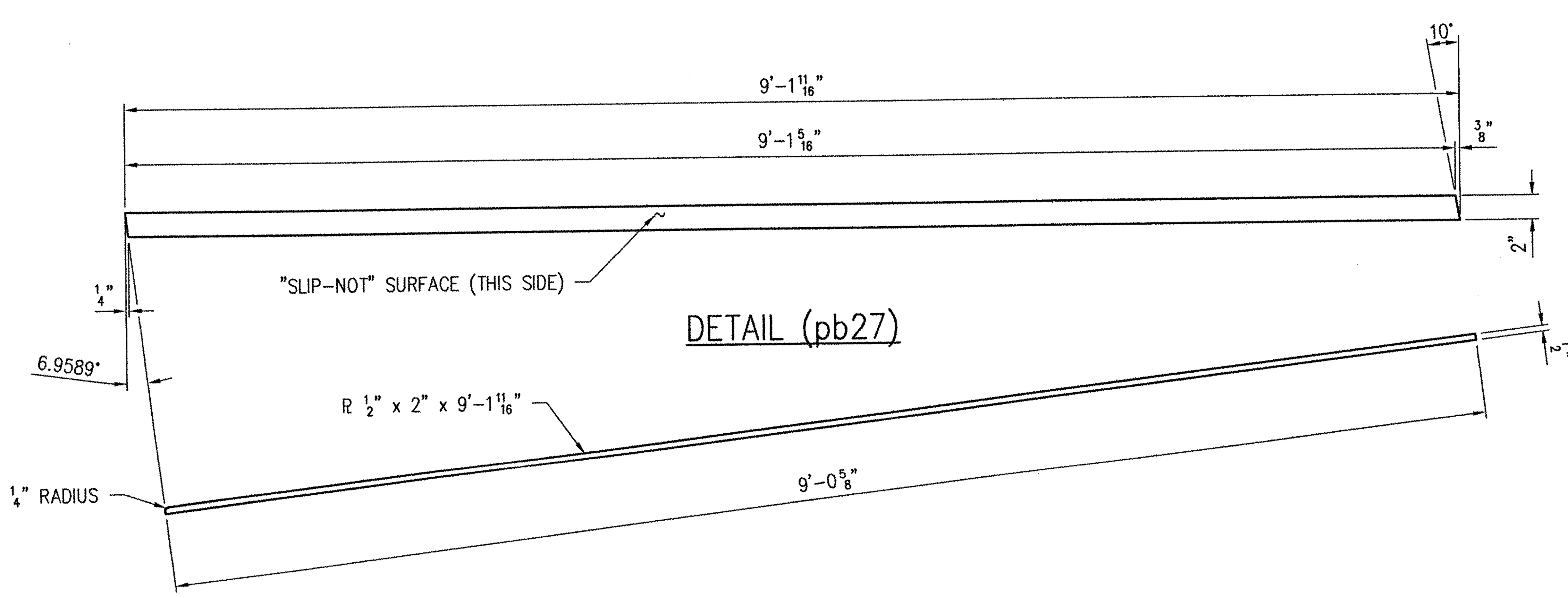
PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS ABUTMENT NO. 1

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/20/01

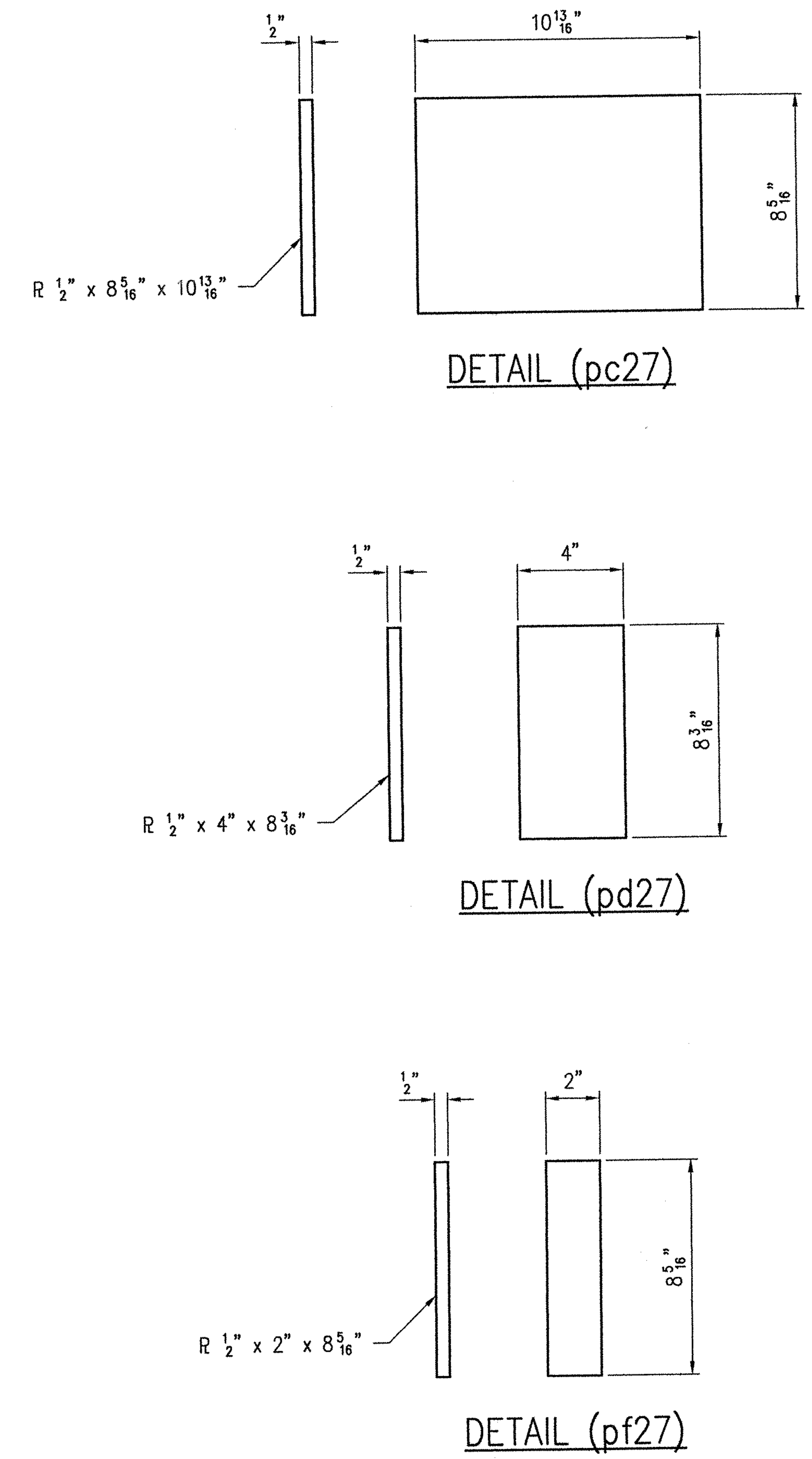
L.E.C. 26 OF 30 | SHEET NO. 11 OF 15 | Job. No. : 2034.1042.1



DETAIL (pa27)



DETAIL (pb27)



SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 23, 24, 25 & 26.

REV.	DESCRIPTION	DATE

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEW ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTIC MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BAC

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

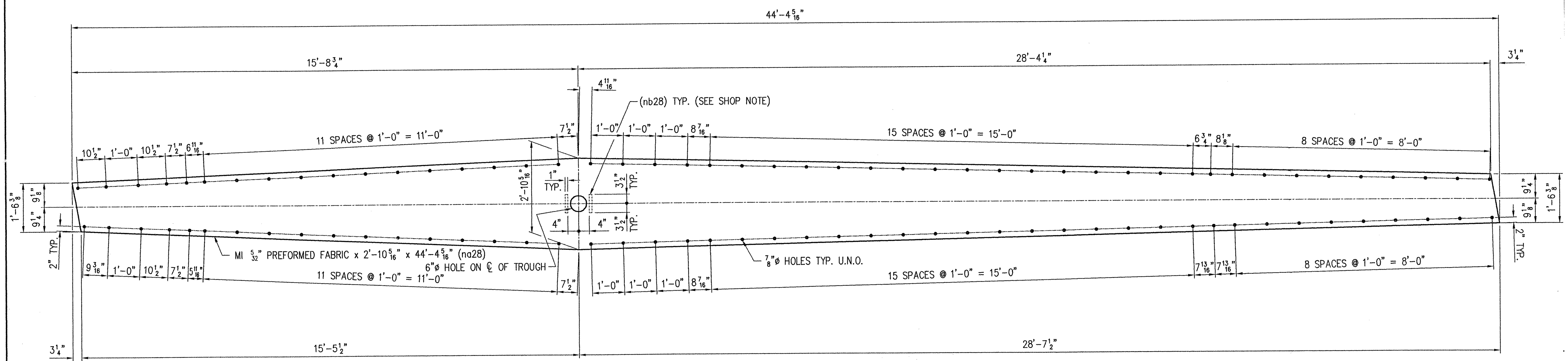
PROJECT	— ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT	— AC BRZ 1444(22)
FEDERAL PROJECT	—
CUSTOMER	— BECK & BELLUCCI, INC.
LOCATION	— WINDSOR COUNTY, VT
DESCRIPTION	— EXPANSION JOINT DETAILS ABUTMENT NO. 1

Orig
W.P. chk'd
Drawn By JM
Chk'd. By TS
Date: 12/20/

L.E.C. 27 OF 30 | SHEET NO. 12 OF 15 | Job. No. : 2034.104

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

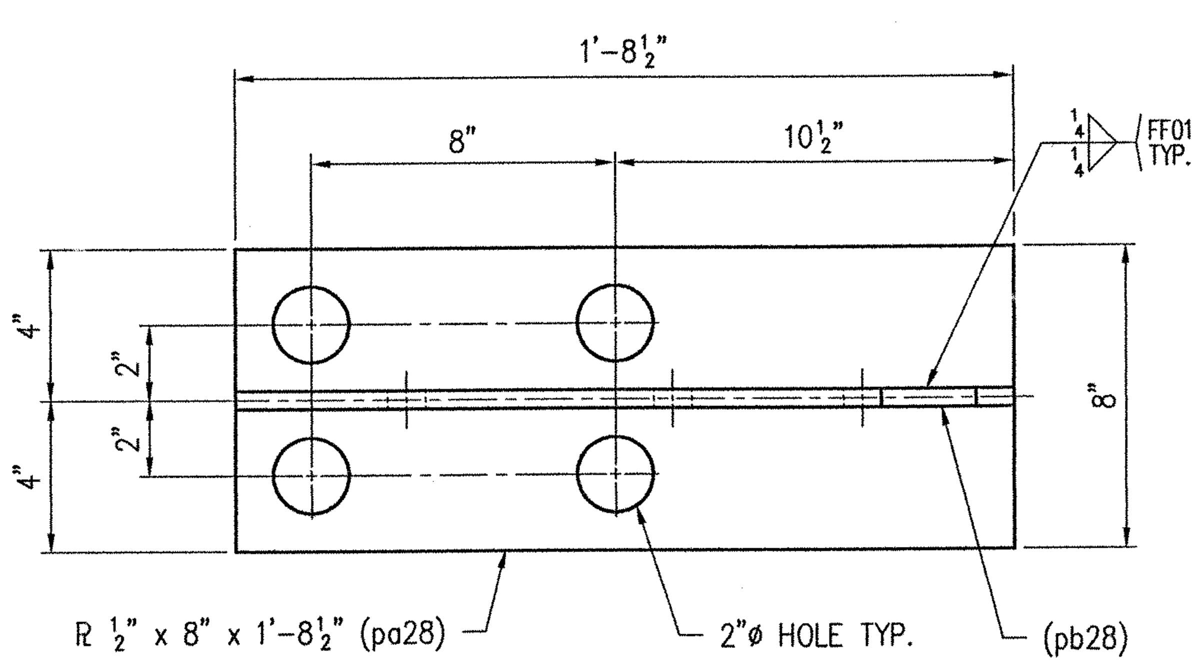
RECEIVED
CK'D BY LWS OK'D BY
JAN 2 1 2002
RESUBMIT APPROVED ✓
BY OPW DATE 1/24/02

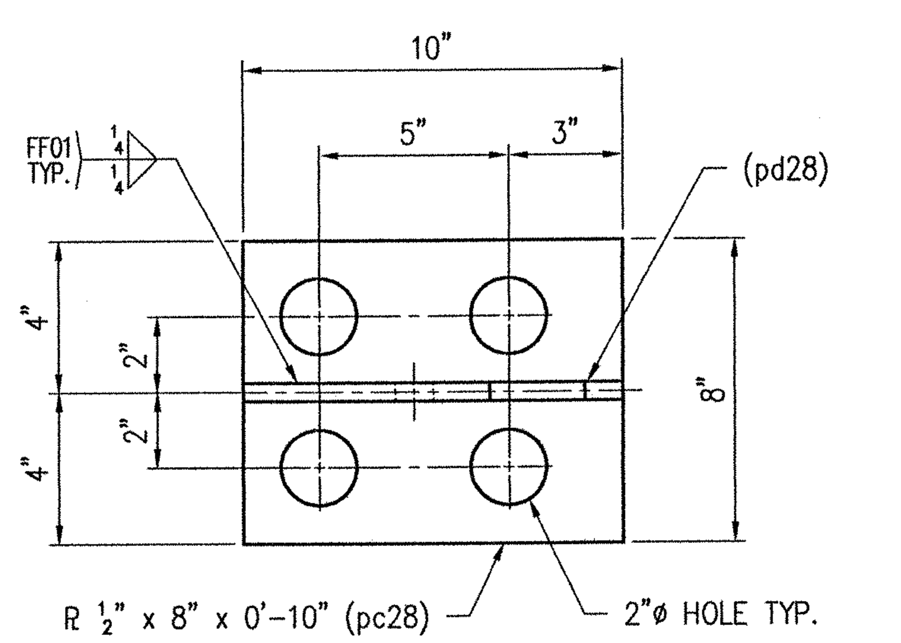


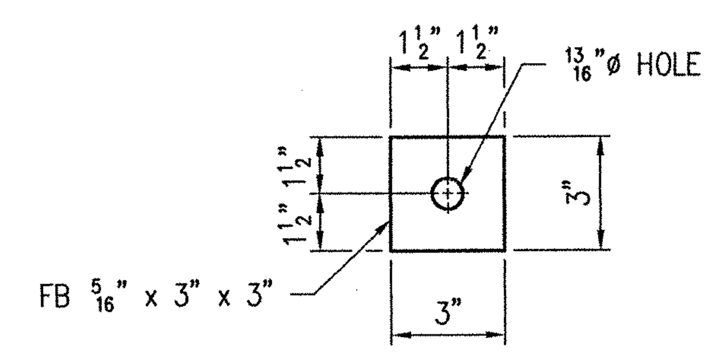
1 – SUB-ASSEMBLY – 28A

SHOP NOTE:
SEE SHEET NO. 15 OF 15 FOR FOLDED TROUGH END DETAILS.

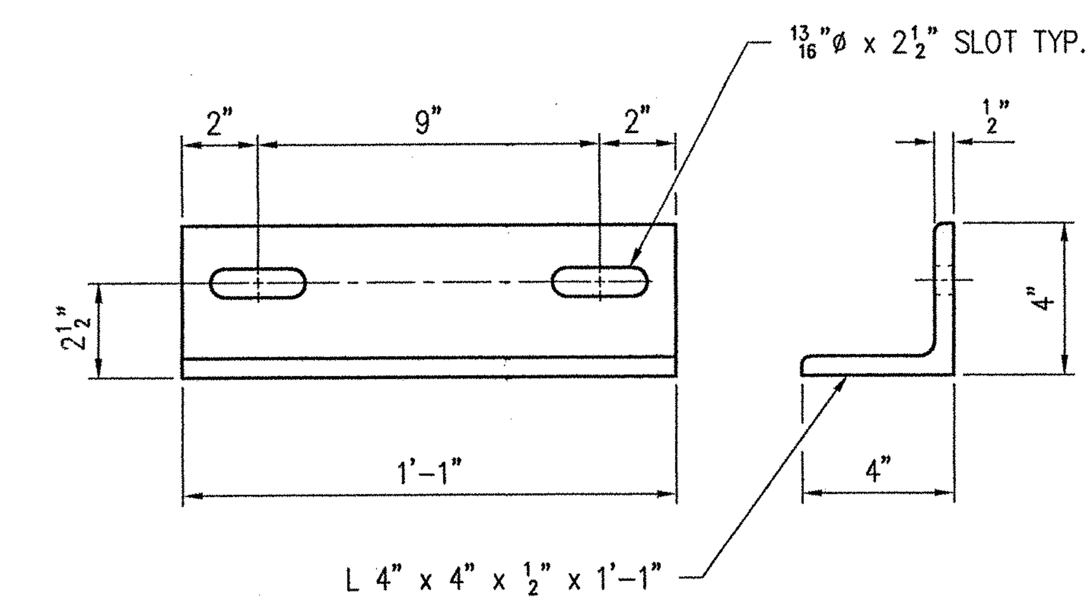
SHOP NOTE:
A 1/4" x 1" x 7" STRIP OF PREFORMED FABRIC (nb28) SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH. USE AN ADHESIVE APPROVED BY THE MANUFACTURER. THIS WILL SERVE AS A DRIP BEAD.





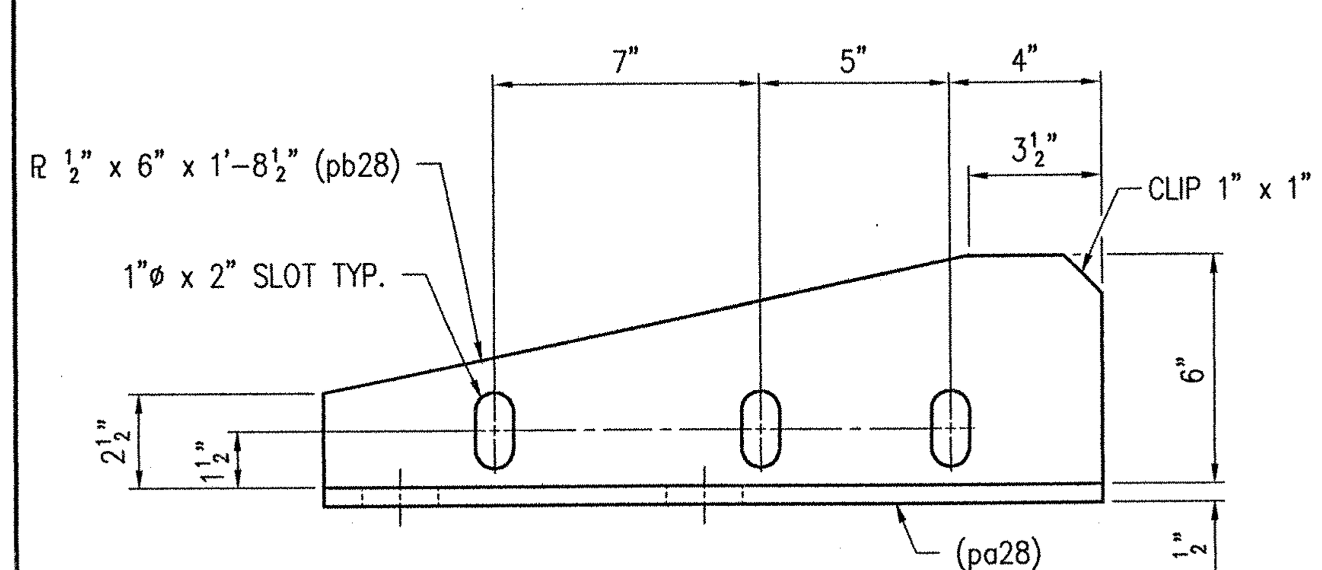


DETAIL (ha)

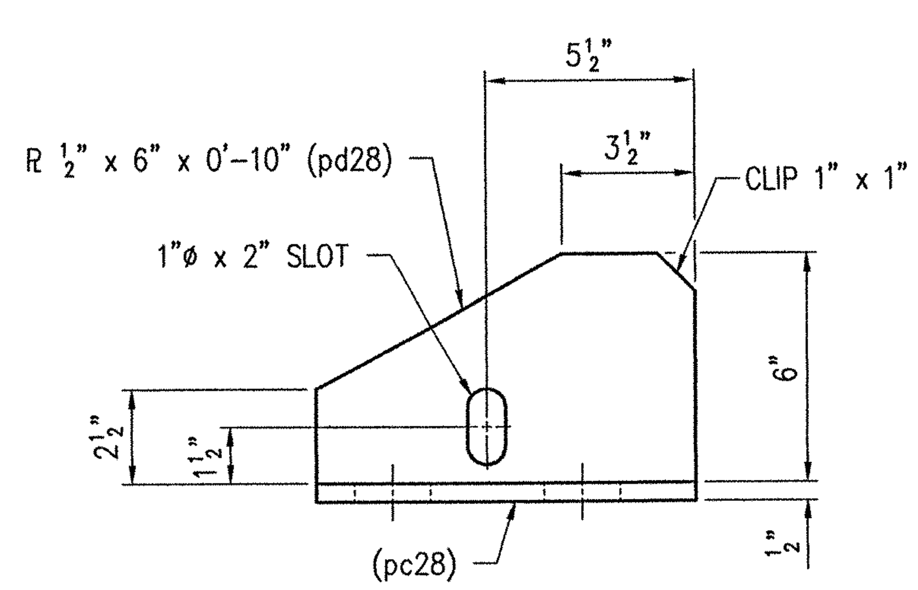


DETAIL (aa28)

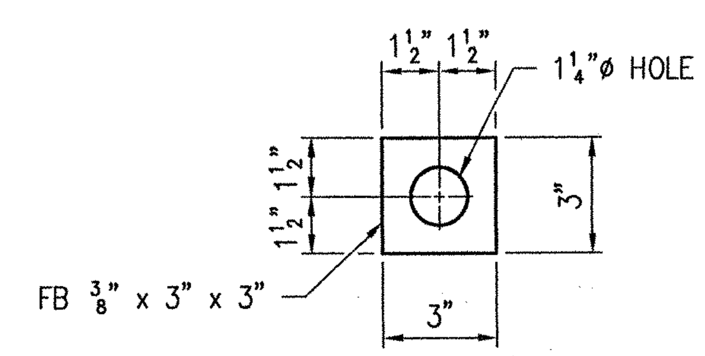
SEE SHEET NO. 30 FOR GENERAL NOTES.



DETAIL (pa28) & (pb28)



DETAIL (pc28) & (pd28)



80 – PLATE WASHER(S) – 28B

RECEIVED
CK'D BY WJS OK'D BY
JAN 2 1 2002
RESUBMIT APPROVED ✓
BY GPW DATE 1/24/02

REV.	DESCRIPTION	DATE	INT.
1	GENERAL REVISION PER APPROVAL.	1/11/02	JMB

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

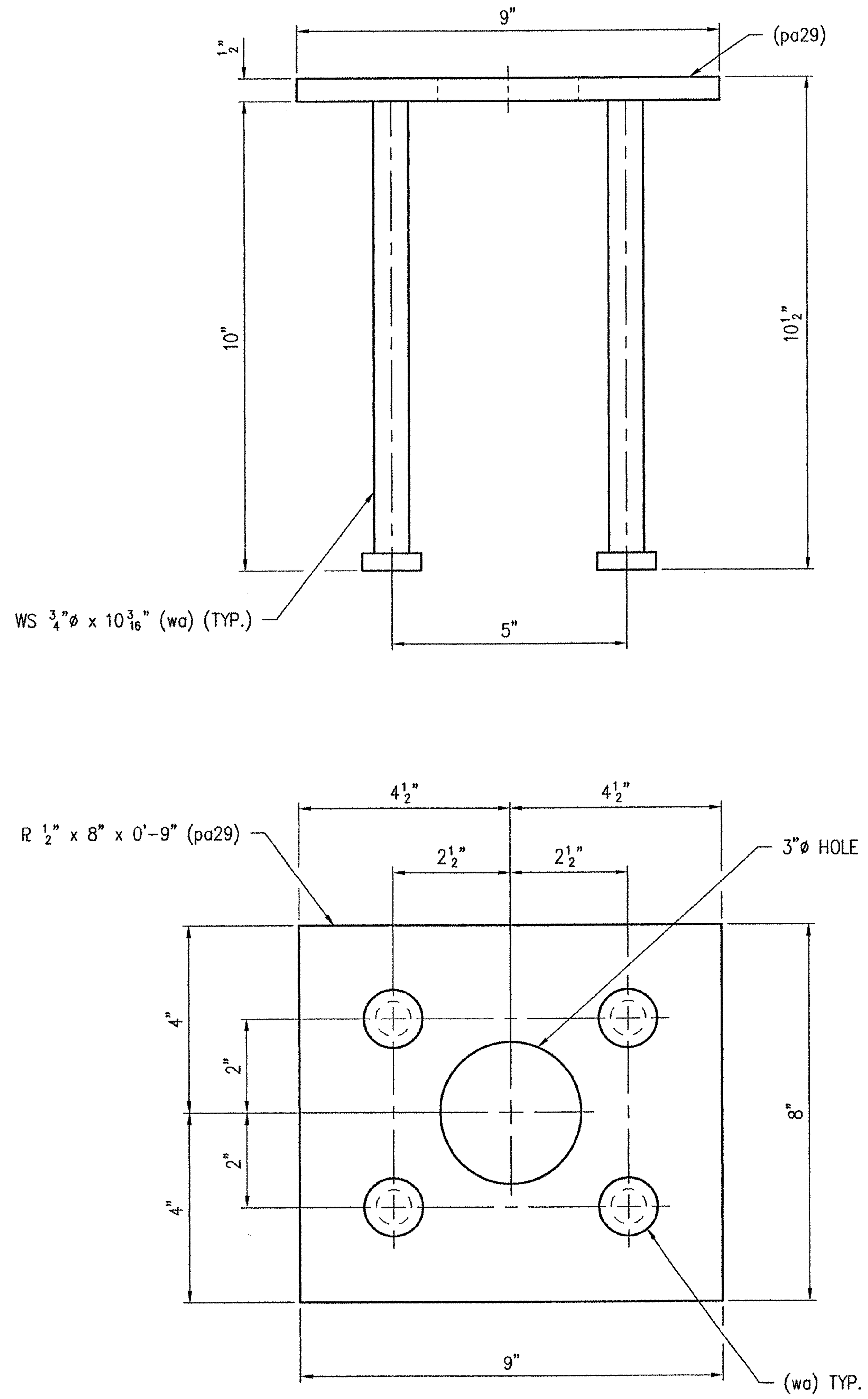
SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS ABUTMENT NO. 1

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/20/01

L.E.C. 28 OF 30 | SHEET NO. 13 OF 15 | Job. No. : 2034.1042.1

LINE	NO. REQ'D.	DESCRIPTION		LENGTH	MK	REMARKS	PART NO.
1	5	ANCHOR PLATES			29A	HDG	
2	5	R 1/2" x 8"	A36	0'-9"	pa29		19-16
3	20	WS 3/4"ø x 10 3/16"	A108		wa		29-19



5 - ANCHOR PLATES - 29A

SEE SHEET NO. 30 FOR GENERAL NOTES.

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY

4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (952) 368-3000

PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS ABUTMENT NO. 1

W.P. chk'd	Orig.
Drawn By	JMB
Chk'd. By	TSF
Date:	12/20/01

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS	DATE ISSUED

L.E.C. 29 OF 30 | SHEET NO. 14 OF 15 | Job. No. : 2034.1042.1

RECEIVED
CK'D BY WJS OK'D BY ______
JAN 2 1 2002
RESUBMIT ______ APPROVED ✓
BY GPW DATE 1/24/02

GENERAL NOTES

1.) ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 1990, AND ITS LATEST REVISIONS, THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 1996, AND ITS LATEST REVISIONS, AND THE SPECIAL PROVISIONS.

2.) STEEL SHALL CONFORM TO ASTM A709 GRADE 36 (AASHTO M270 GRADE 36).

3.) WELDING SHALL MEET THE REQUIREMENTS OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE AS MODIFIED BY STANDARD SPECIFICATIONS.

4.) FOR STUD REPAIR USE FF-STUD-REP-01 OR SM-STUD-REP-01.

5.) BOLTS SHALL BE HIGH STRENGTH AND CONFORM TO ASTM A325 (AASHTO M164). ALL FIELD HARDWARE IS TO BE GALVANIZED PER ASTM A153 (AASHTO M232). ALL SHOP HARDWARE IS TO BE GALVANIZED PER ASTM B695 (AASHTO M298 CLASS 50).

6.) STEEL SHALL BE GALVANIZED PER ASTM A123 (AASHTO M111).

7.) PREFORMED FABRIC TROUGH SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 1990, SUB-SECTION 707.07.

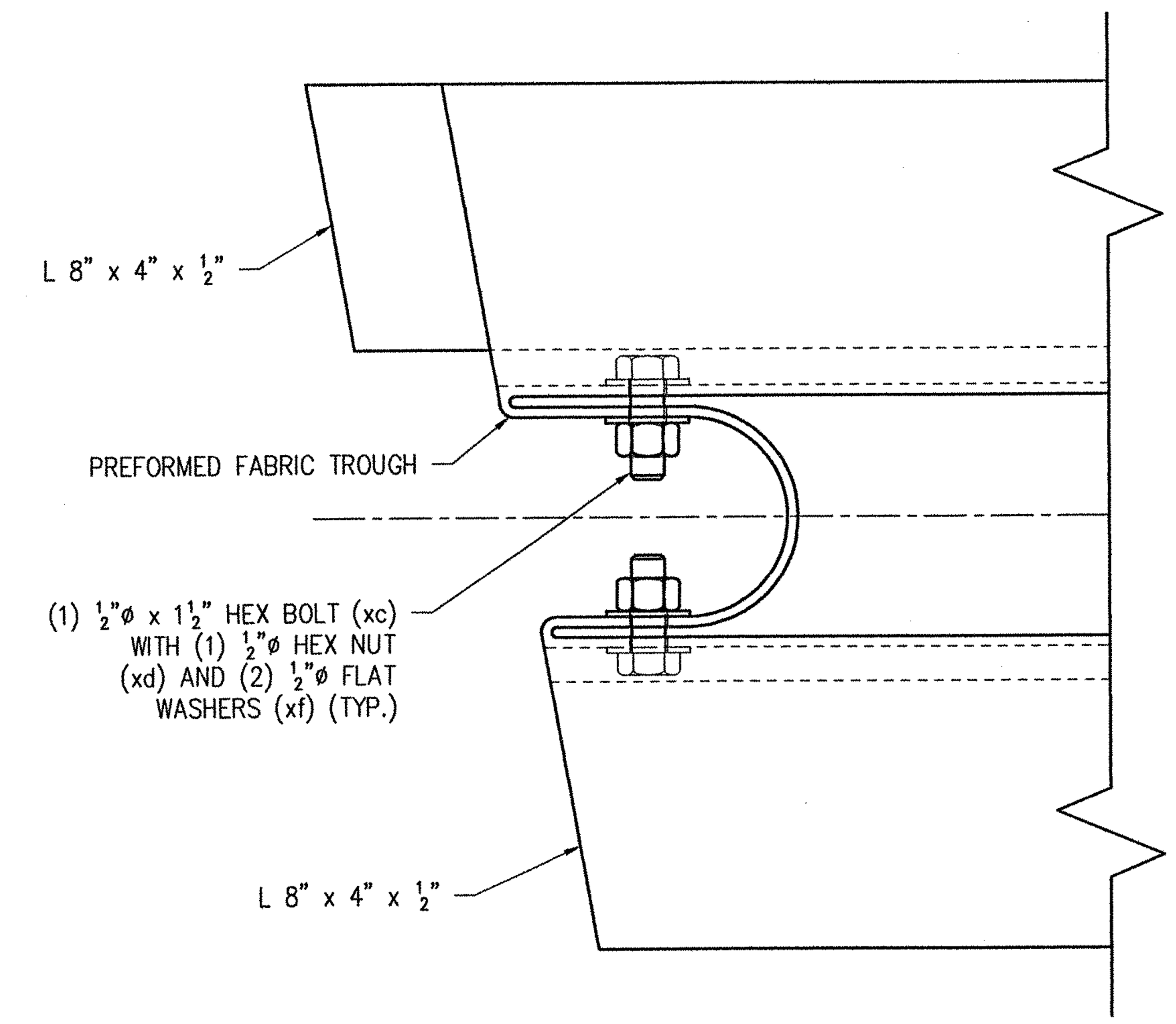
8.) BUTYL RUBBER TAPE SHALL CONFORM TO AASHTO M198 TYPE II.

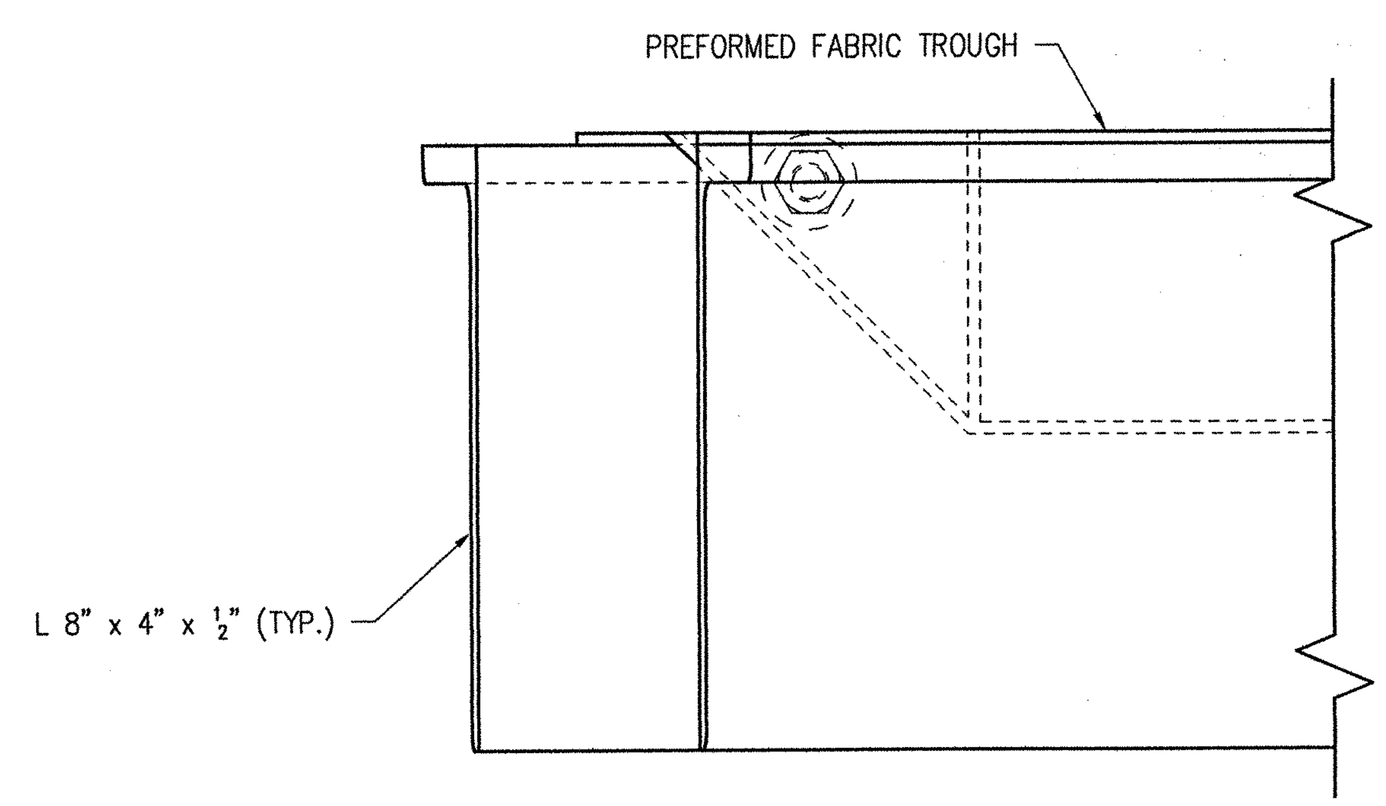
9.) SHOP INSPECTION TO BE DONE BY VAOT.

10.) PRIOR TO GALVANIZING, ALL CORNERS AND EDGES OF STEEL PLATES SHALL BE GROUND TO 1/16" RADIUS.

11.) THE JOINT SHALL BE SHOP ASSEMBLED AND SHIPPED AS ONE UNIT.

12.) SEAL ALL ACCESSIBLE JOINTS FOR GALVANIZING (FSEALWELD01).





FOLDED TROUGH END DETAIL
(TYPICAL @ BOTH ENDS OF TROUGH)

SHOP NOTE:
FOLD PREFORMED FABRIC TROUGH AS SHOWN. DRILL 9/16"ø HOLES THRU AND FASTEN AS SHOWN WITH 1/2"ø HARDWARE.

LINE	NO. REQ'D.	DESCRIPTION	LENGTH	MK	REMARKS	PART N
1	1	EXPANSION JOINT	44'-5 3/8"	1A	HDG	
2	1	L 8" x 4" x 1/2" A36	9'-1 5/8"	aa16		15-1
3	1	L 8" x 4" x 1/2" A36	9'-1 11/16"	ab16		15-1
4	1	L 8" x 4" x 1/2" A36	31'-5 3/16"	ac16		15-1
5	1	L 8" x 4" x 1/2" A36	31'-4 1/16"	ad16		15-1
6	1	L 8" x 4" x 1/2" A36	3'-10 1/8"	af16		15-1
7	1	L 8" x 4" x 1/2" A36	3'-8 1/8"	ag16		15-1
8	1	FB 1 1/4" x 5 1/2" A36	15'-8 7/8"	fa17		16-1
9	1	FB 1 1/4" x 5 1/2" A36	15'-7 7/16"	fb17		16-1
10	1	FB 1 1/4" x 5 1/2" A36	15'-7 9/16"	fc17		16-1
11	1	FB 1 1/4" x 5 1/2" A36	15'-7 7/8"	fd17		16-1
12	1	L 6" x 4" x 1/2" A36	3'-8 9/16"	aa20	TRIM 6" LEG DOWN TO 5"	15-
13	1	L 4" x 4" x 1/2" A36	3'-7 15/16"	ab20		15-
14	1	R 1/2" x 8 5/16" A36	3'-7 1/8"	pa20	SHAPE CUT	19-
15	1	L 6" x 4" x 1/2" A36	3'-10 9/16"	aa21	TRIM 6" LEG DOWN TO 5"	15-
16	1	L 4" x 4" x 1/2" A36	3'-9 1/2"	ab21		15-
17	1	R 1/2" x 8 5/16" A36	3'-10 1/2"	pa21	SHAPE CUT	19-
18	1	R 1/2" x 10 3/4" A36	3'-9 1/8"	pa22	SLIP-NOT GRIP PLATE/SHAPE CUT	
19	1	R 1/2" x 2" A36	3'-10 1/2"	pb22	SLIP-NOT GRIP PLATE/SHAPE CUT	
20	1	R 1/2" x 8 1/4" A36	0'-10 13/16"	pc22		19-
21	1	R 1/2" x 4" A36	0'-8 3/16"	pd22		19-
22	1	R 1/2" x 2" A36	0'-8 1/4"	pf22		19-
23	1	L 6" x 4" x 1/2" A36	9'-2 1/16"	aa25	TRIM 6" LEG DOWN TO 5"	15-
24	1	L 4" x 4" x 1/2" A36	9'-1 9/16"	ab25		15-
25	1	R 1/2" x 10 7/8" A36	9'-0 13/16"	pa25	SHAPE CUT	19-
26	1	L 6" x 4" x 1/2" A36	9'-2 3/16"	aa26	TRIM 6" LEG DOWN TO 5"	15-
27	1	L 4" x 4" x 1/2" A36	9'-1 1/8"	ab26		15-
28	1	R 1/2" x 10 7/8" A36	9'-1 1/16"	pa26	SHAPE CUT	19-
29	1	R 1/2" x 10 3/4" A36	9'-2 7/16"	pa27	SLIP-NOT GRIP PLATE/SHAPE CUT	
30	1	R 1/2" x 2" A36	9'-1 11/16"	pb27	SLIP-NOT GRIP PLATE/SHAPE CUT	
31	1	R 1/2" x 8 5/16" A36	0'-10 13/16"	pc27		19-
32	1	R 1/2" x 4" A36	0'-8 3/16"	pd27		19-
33	1	R 1/2" x 2" A36	0'-8 5/16"	pf27		19-
34	9	L 4" x 4" x 1/2" A36	1'-1"	aa28	SHIPPING DEVICE	15-
35	1	MI 5/32" PREFORMED FABRIC x 34 5/16"	44'-4 5/16"	na28	3-PLY/SEE NOTE NO. 7	
36	2	MI 1/4" PREFORMED FABRIC x 1"	0'-7"	nb28	DRIP BEAD	
37	5	R 1/2" x 8" A36	1'-8 1/2"	pa28		19-
38	5	R 1/2" x 6" A36	1'-8 1/2"	pb28	SHAPE CUT	19-
39	5	R 1/2" x 8" A36	0'-10"	pc28		19-
40	5	R 1/2" x 6" A36	0'-10"	pd28	SHAPE CUT	19-
41	52	FB 5/16" x 3" A36	0'-3"	ha		16-
42	18	HB 3/4"ø x 3 1/2" A325 HDG		hb	SHIPPING HARDWARE	23-1
43	128	HB 3/4"ø x 2 1/4" A325 HDG		hc		23-1
44	15	MB 3/4"ø x 2" SOKT CTSK F835 HDG		hd		
45	15	HN 3/4"ø HVY A563DH HDG		hf		25
46	94	FW 3/4"ø F436 HDG		hg		27
47	146	MI 3/4"ø FERRULE LOOP INSERT ZP		hh	DAYTON/RICHMOND F-42	35
48	44	WS 3/4"ø x 10 3/16" A108		wa		29-
49	44	WS 3/4"ø x 10 3/16" A108		wb	BEND @ 30°	29-
50	16	WS 3/4"ø x 7 3/16" A108		wc		29-
51	4	MI 1/8" x 2 1/2" BUTYL RUBBER TAPE	8 YD. ROLL	xa	MCMASTER CARR #76385A16	
52	1	MI NEVER-SEIZE GREASE		xb		
53	4	HB 1/2"ø x 1 1/2" A325 HDG		xc		23
54	4	HN 1/2"ø HVY A563DH HDG		xd		25
55	8	FW 1/2"ø F436 HDG		xf		27
56	80	PLATE WASHERS		28B	HDG	
57	80	FB 3/8" x 3" A36	0'-3"	28B		16-
58	45	RB 1"ø CONT. THRD. A36	0'-6 1/2"	28C	40 / HDG	18-
59	85	HN 1"ø HVY A563DH HDG		28D	80	25-
60	20	HB 3/4"ø x 2 1/4" A325 HDG		28F	18	23-1

REV.	DESCRIPTION	DATE	IN
1	GENERAL REVISION PER APPROVAL.	1/11/02	J

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

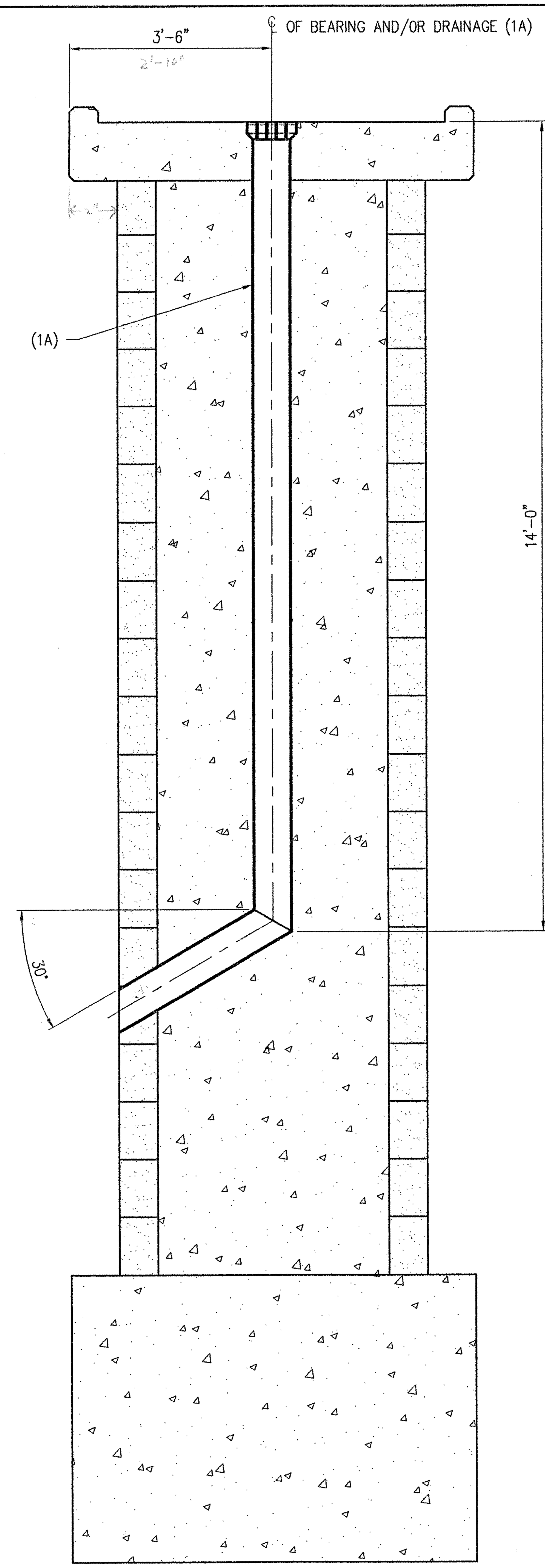
PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — BILL OF MATERIAL & GENERAL NOTES ABUTMENT NO. 1

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/20/01

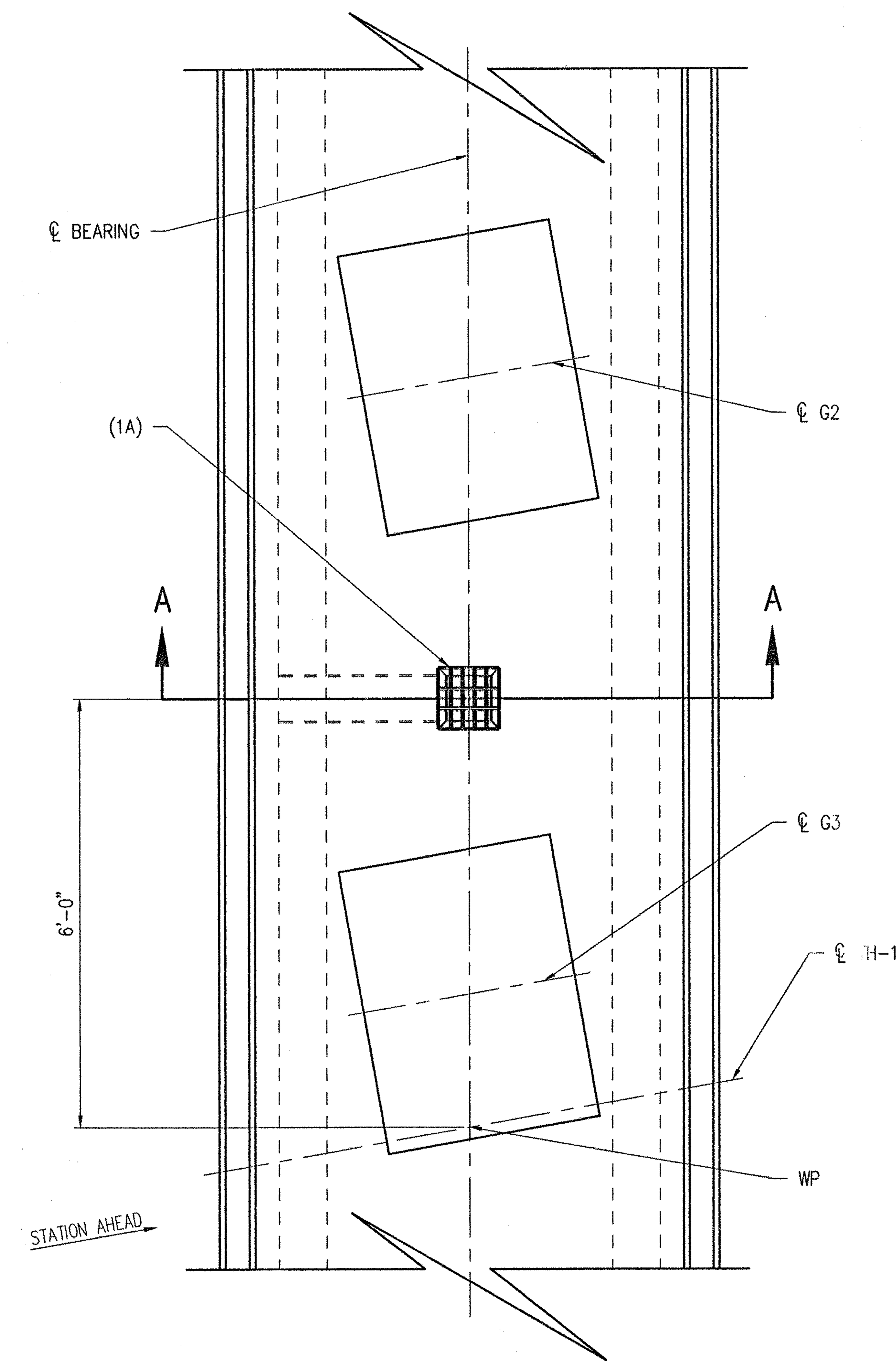
SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

RECEIVED
CK'D BY WAS OK'D BY
JAN 21 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/24/02

L.E.C. 30 OF 30 | SHEET NO. 15 OF 15 | Job. No. : 2034.1042



SECTION A-A



PLAN VIEW OF DRAINAGE @ PIER

SOME HIDDEN LINES REMOVED FOR CLARITY.
SEE SHEET NO. 2 FOR GENERAL NOTES.

RECEIVED
CK'D BY ____ CK'D BY ____
JUN 11 2001
RESUBMIT____ APPROVED As Noted
BY CPW DATE 7/3/01

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR	DATE
PRINTS ISSUED	

REV.	DESCRIPTION	DATE	INT.

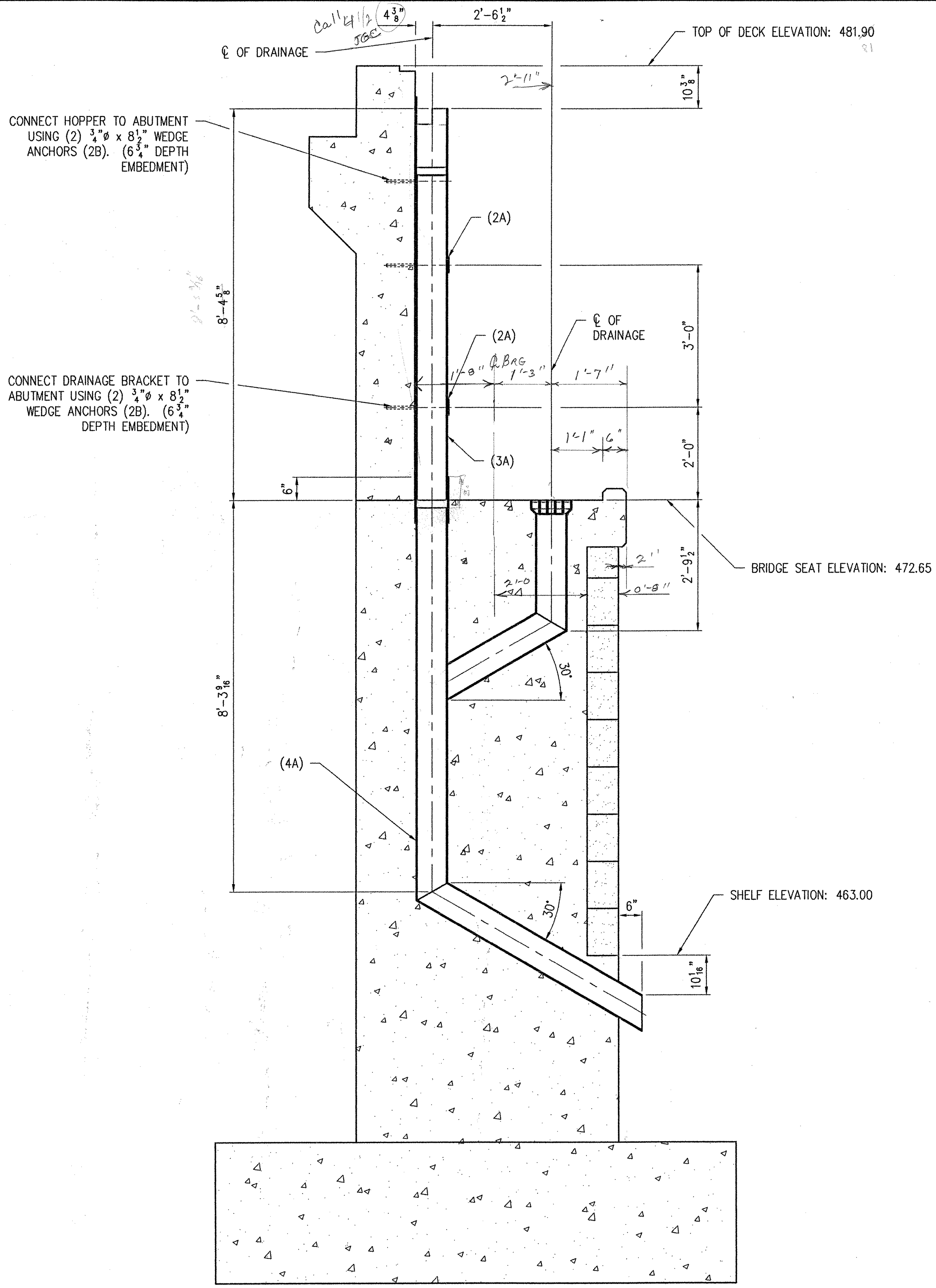
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (612) 368-3000

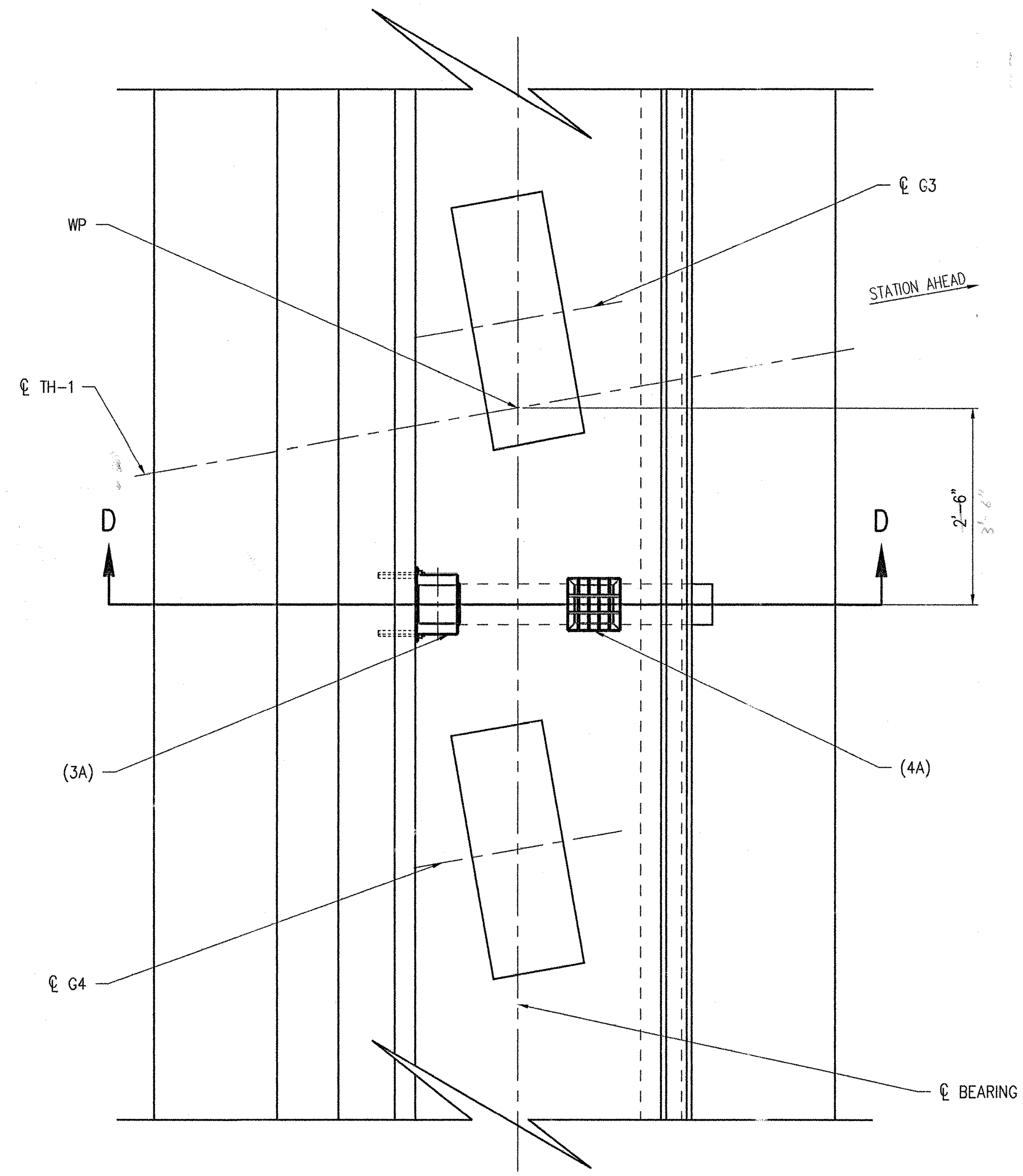
PROJECT — ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT — -
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — SCUPPER(S) ERECTION PLAN @ PIER

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 5/25/01

SHEET NO. E1 OF 3
Job. No. : 2034.1236.1



SECTION D–D



PLAN VIEW OF DRAINAGE @ ABUTMENT NO. 1

SOME HIDDEN LINES REMOVED FOR CLARITY.
SEE SHEET NO. 2 FOR GENERAL NOTES.

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

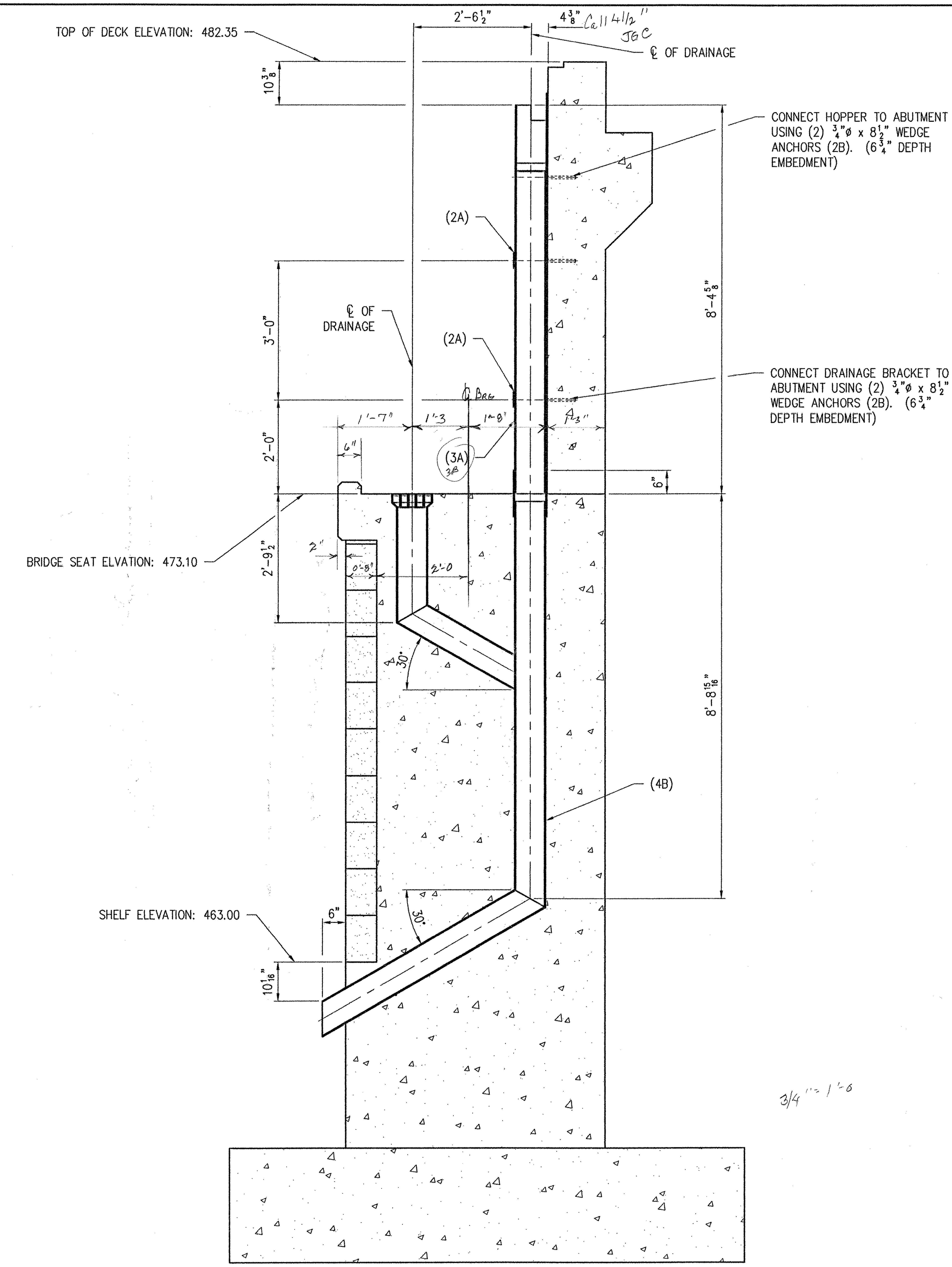
PROJECT	—	ROY.:.TON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3
STATE PROJECT	—	AC L.RZ 1444(22)
FEDERAL PROJECT	—	–
CUSTOMER	—	BECK & BELLUCCI, INC.
LOCATION	—	WINDSOR COUNTY, VT
DESCRIPTION	—	SCUPPER(S) ERECTION PLAN @ ABUT. NO. 1

W.P. chk'd	Orig.
Drawn By	JMB
Chk'd. By	TSF
Date:	5/25/01

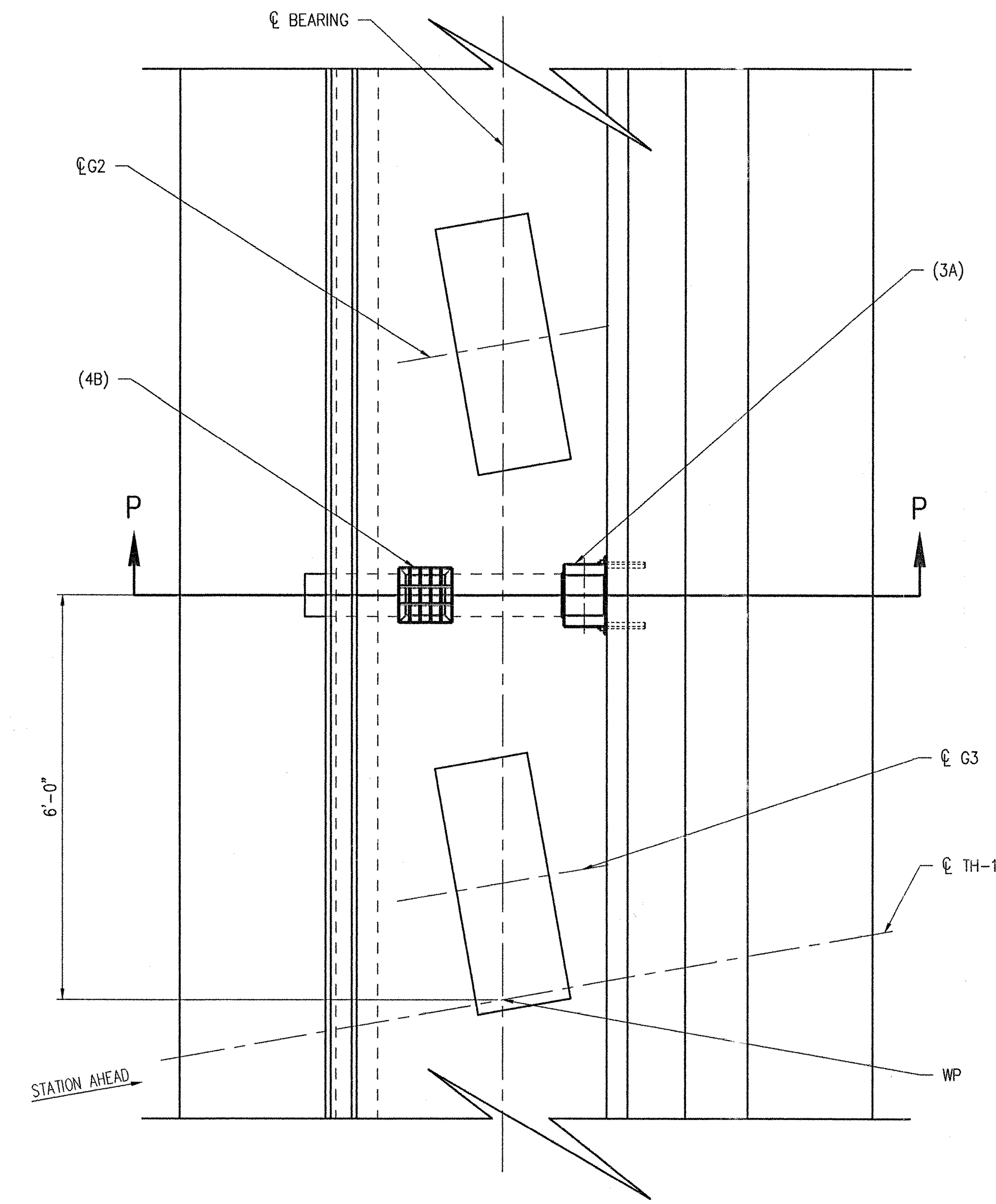
SHEET NO. E2 OF 3 Job. No. : 2034.1236.1

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

RECEIVED
CK'D BY ___ CK'D BY LWB3
JUN 11 2001
RESUBMIT ___ APPROVED As Noted
BY CPW DATE 7/3/01



SECTION P-P



PLAN VIEW OF DRAINAGE @ ABUTMENT NO. 2

SOME HIDDEN LINES REMOVED FOR CLARITY.
SEE SHEET NO. 2 FOR GENERAL NOTES.

3/4" = 1'-0

RECEIVED
CK'D BY ___ CK'D BY ___
JUN 11 2001
RESUBMIT ___ APPROVED ✓
BY OPW DATE 7/3/01

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR	DATE
PRINTS ISSUED	

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

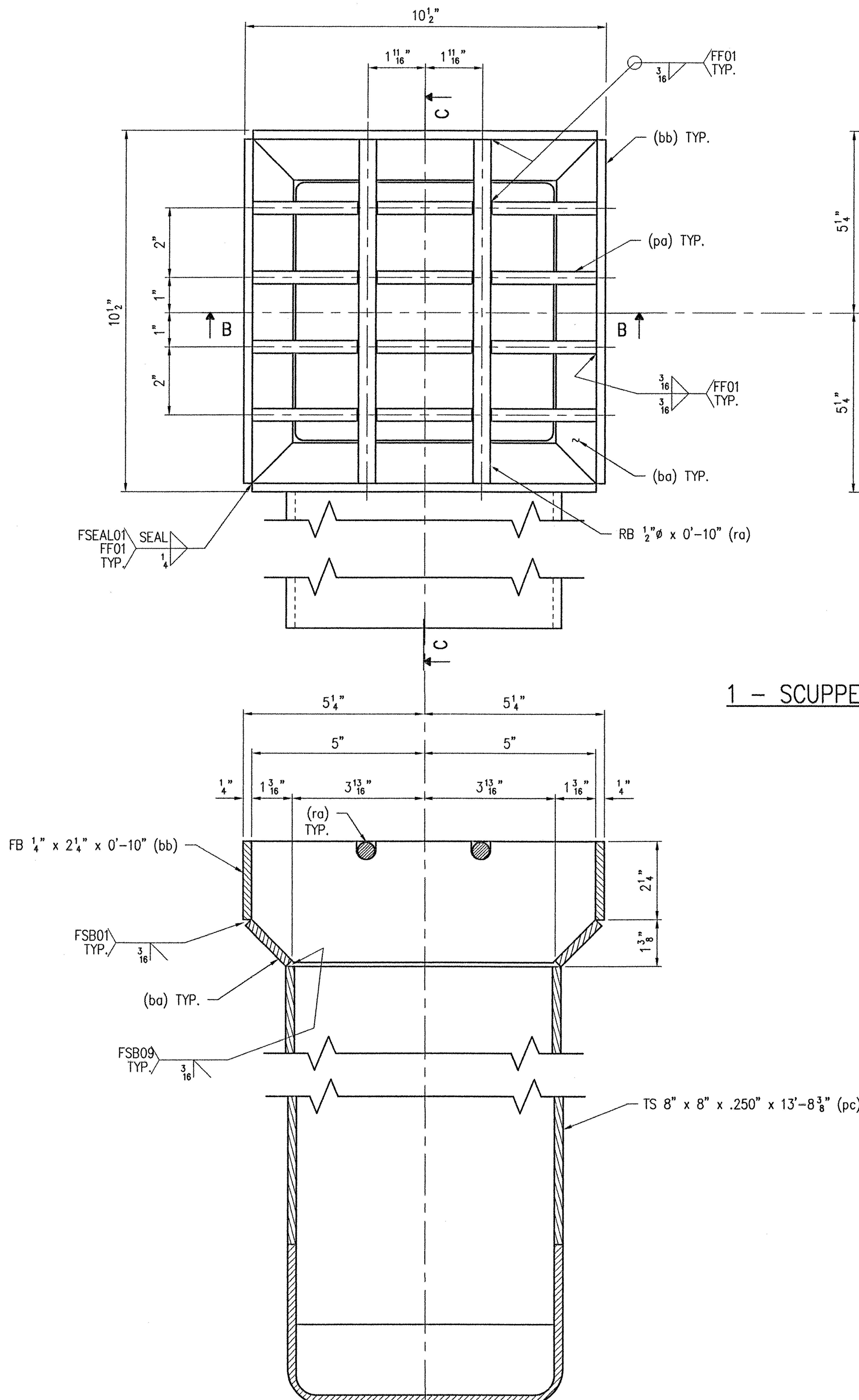
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

PROJECT	—	ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3
STATE PROJECT	—	AC BRZ 1444(22)
FEDERAL PROJECT	—	–
CUSTOMER	—	BECK & BELLUCCI, INC.
LOCATION	—	WINDSOR COUNTY, VT
DESCRIPTION	—	SCUPPER(S) ERECTION PLAN @ ABUT. NO. 2

Orig.

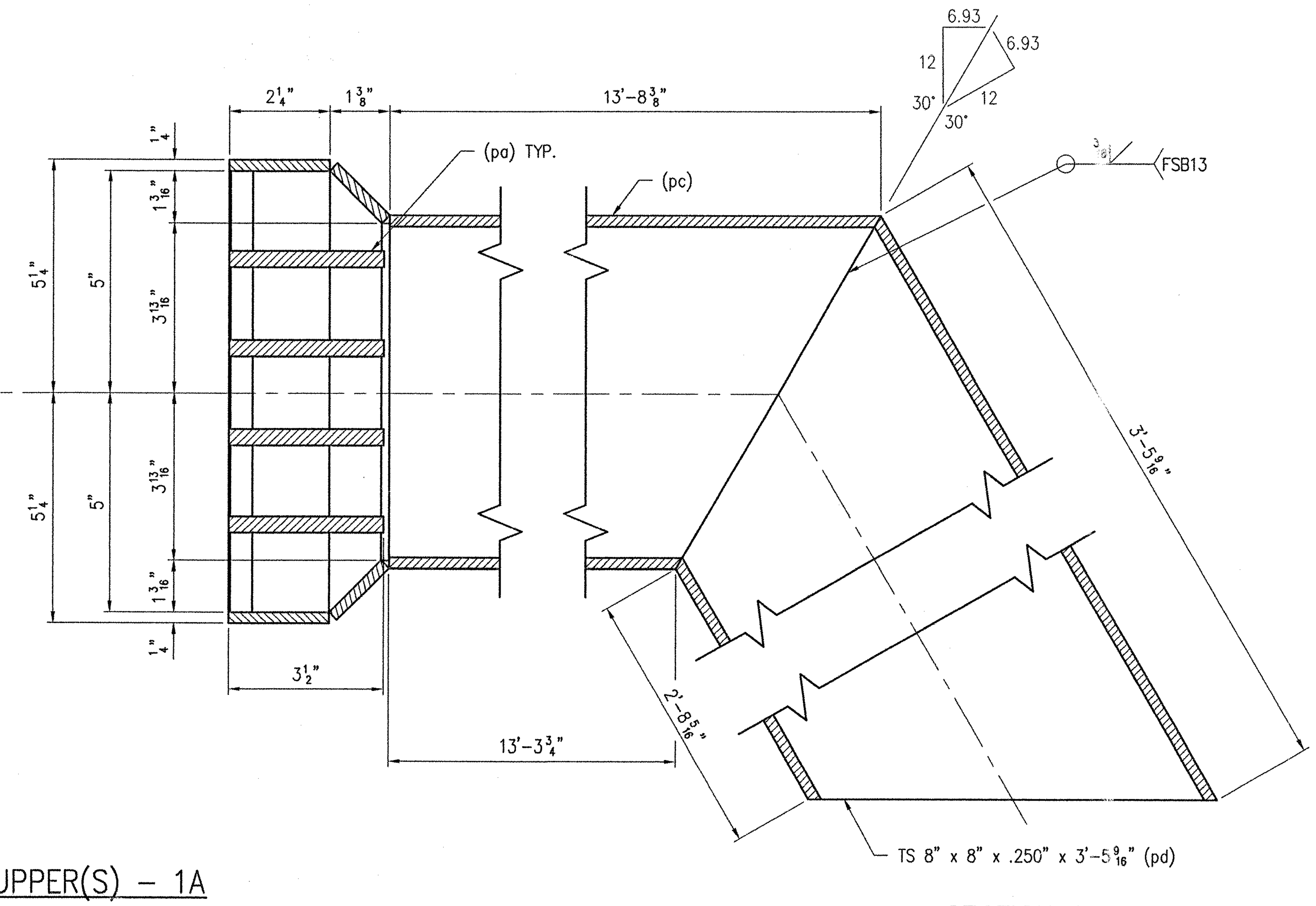
W.P. chk'd	
Drawn By	JMB
Chk'd. By	TSF
Date:	5/25/01

SHEET NO. E3 OF 3 Job. No. : 2034.1236.1



SECTION B-B

1 – SCUPPER(S) – 1A



SECTION C-C

LINE	NO. REQ'D.	DESCRIPTION	LENGTH	MK	REMARKS	PART NO.
1	1	SCUPPER(S)	15'-8 13/16"	1A	HDG	
2	4	R 1/4" x 1 11/16" A36	0'-10"	ba	SHAPE CUT	19-12
3	4	FB 1/4" x 2 1/4" A36	0'-10"	bb		16-30
4	4	R 3/8" x 3 1/2" A36	0'-10"	pa	SHAPE CUT	19-14
5	2	RB 1/2"ø A36	0'-10"	ra		18-3
6	1	TS 8" x 8" x .250" A500-B	13'-8 3/8"	pc		22-5
7	1	TS 8" x 8" x .250" A500-B	3'-5 9/16"	pd		22-5

SEE SHEET NO. 2 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 2.

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

PROJECT – ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3
STATE PROJECT – AC BRZ 1444(22)
FEDERAL PROJECT – –
CUSTOMER – BECK & BELLUCCI, INC.
LOCATION – WINDSOR COUNTY, VT
DESCRIPTION – SCUPPER(S) DETAILS

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 5/25/01

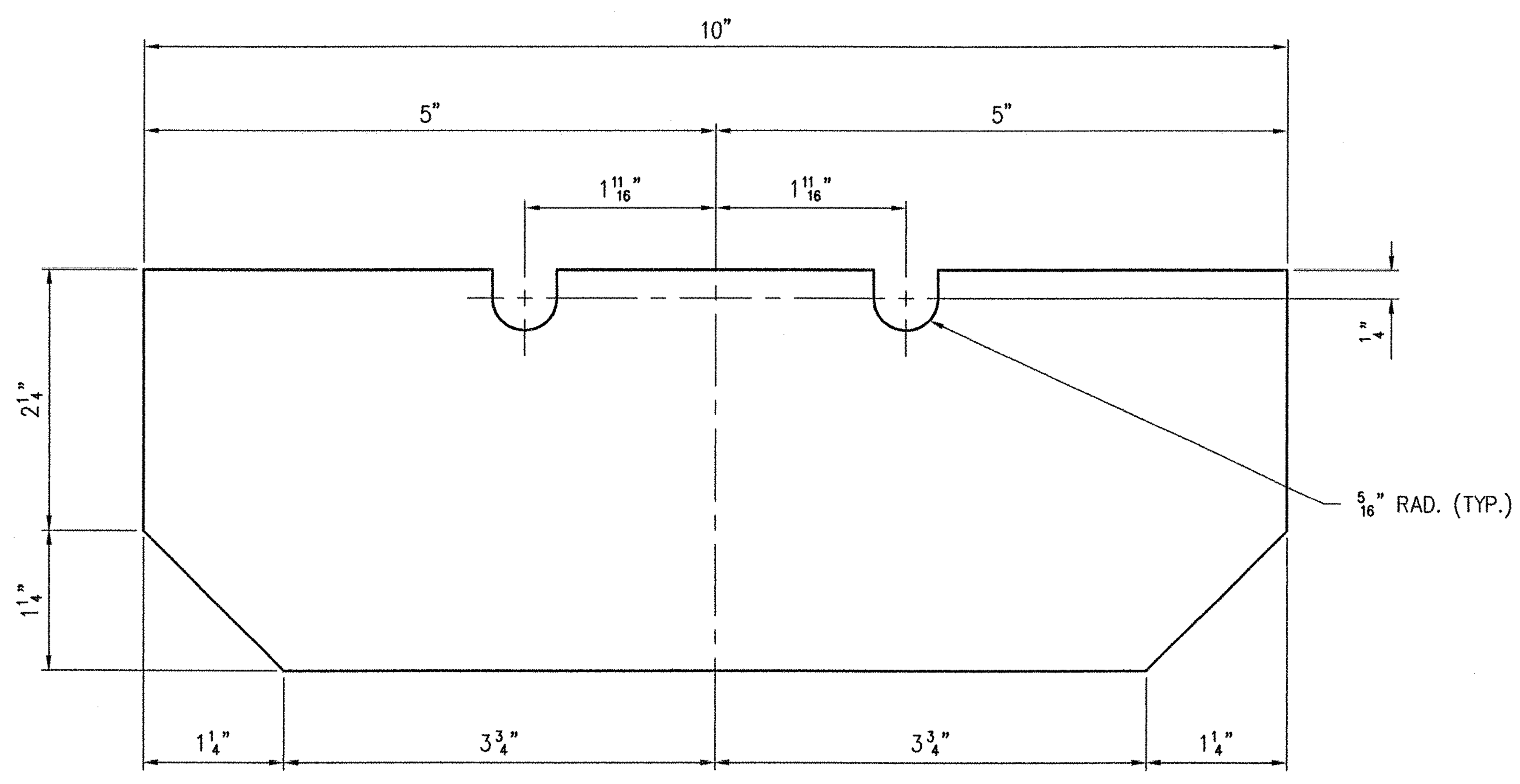
SHT. NO. 1 OF 5 Job. No.: 2034.1236.1

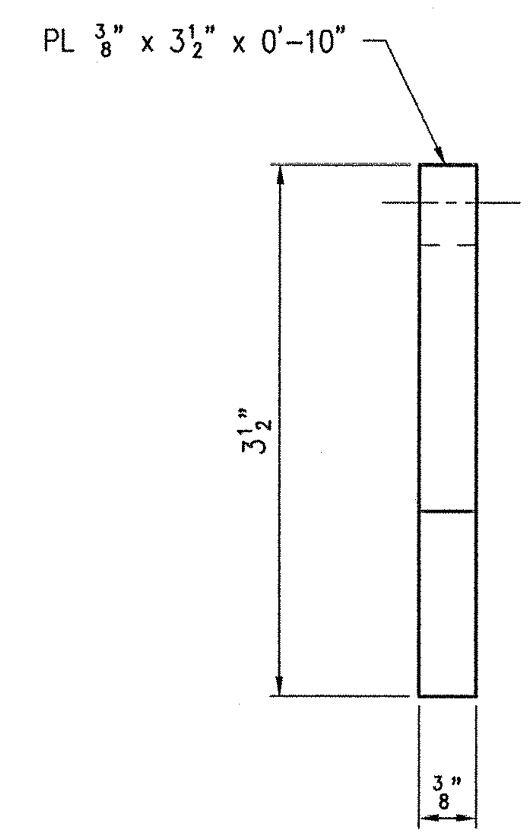
SHOP
APPROVAL
DIST.
CUST.
FOR | DATE
PRINTS ISSUED

RECEIVED
CK'D BY KLT CK'D BY WBJ
JUN 11 2001
RESUBMIT____ APPROVED ✓
BY CPW DATE 7/3/01

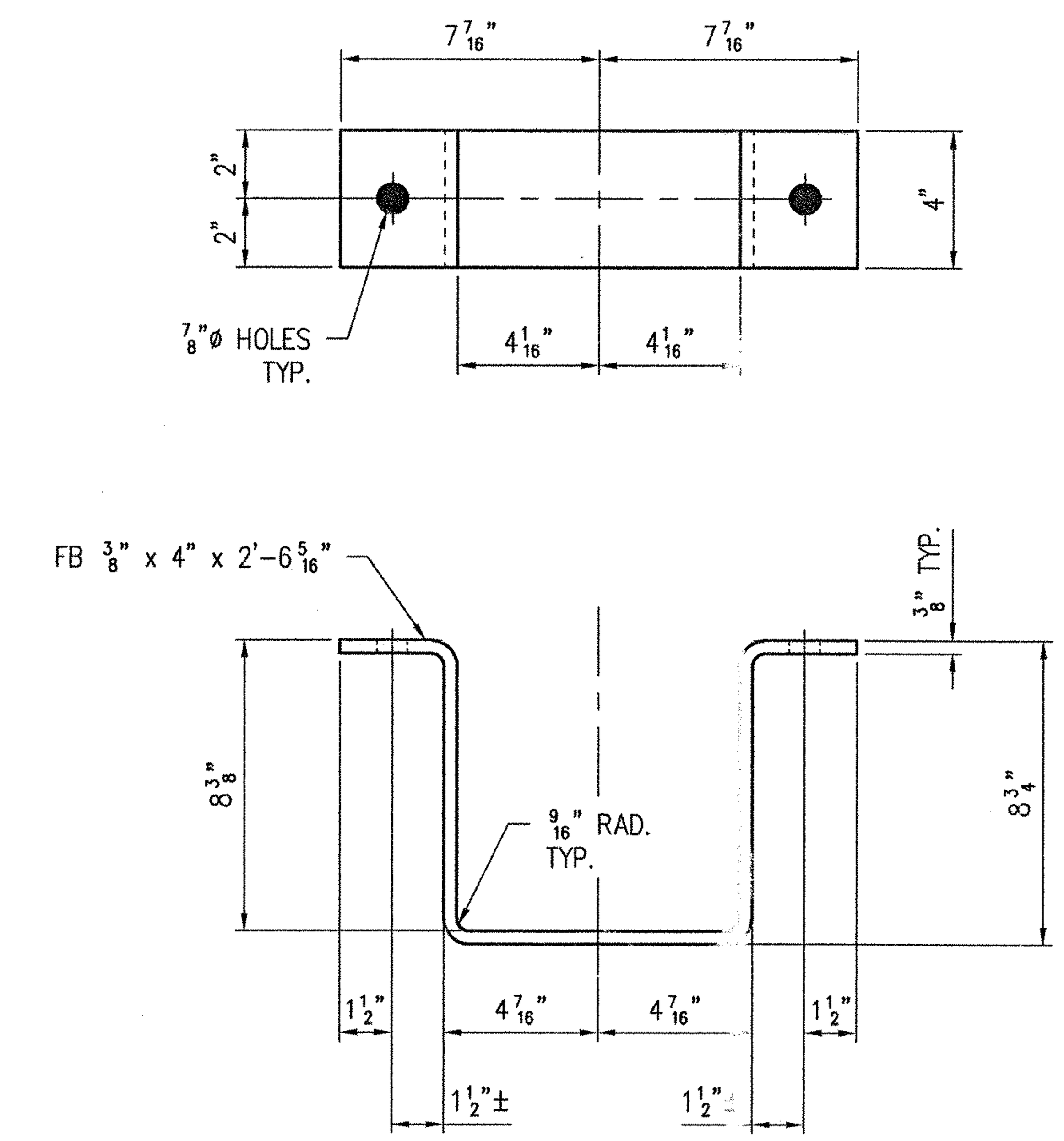
SHOP NOTE:
SEAL WELD ALL ACCESSIBLE JOINTS FOR GALVANIZING.

LINE	NO. REQ'D.	DESCRIPTION	LENGTH	MK	REMARKS	PART NO.
1	4	BRACKET(S)		2A	HDG	
2	4	FB 3/8" x 4" A36	2'-6 5/16"	2A	BEND	16-76
3						
4		FIELD BOLT :				
5	12	MI 3/4"ø WEDGE ANCHOR MG	0'-8 1/2"	2B	RAWL #7748	30-27





DETAIL (pa)

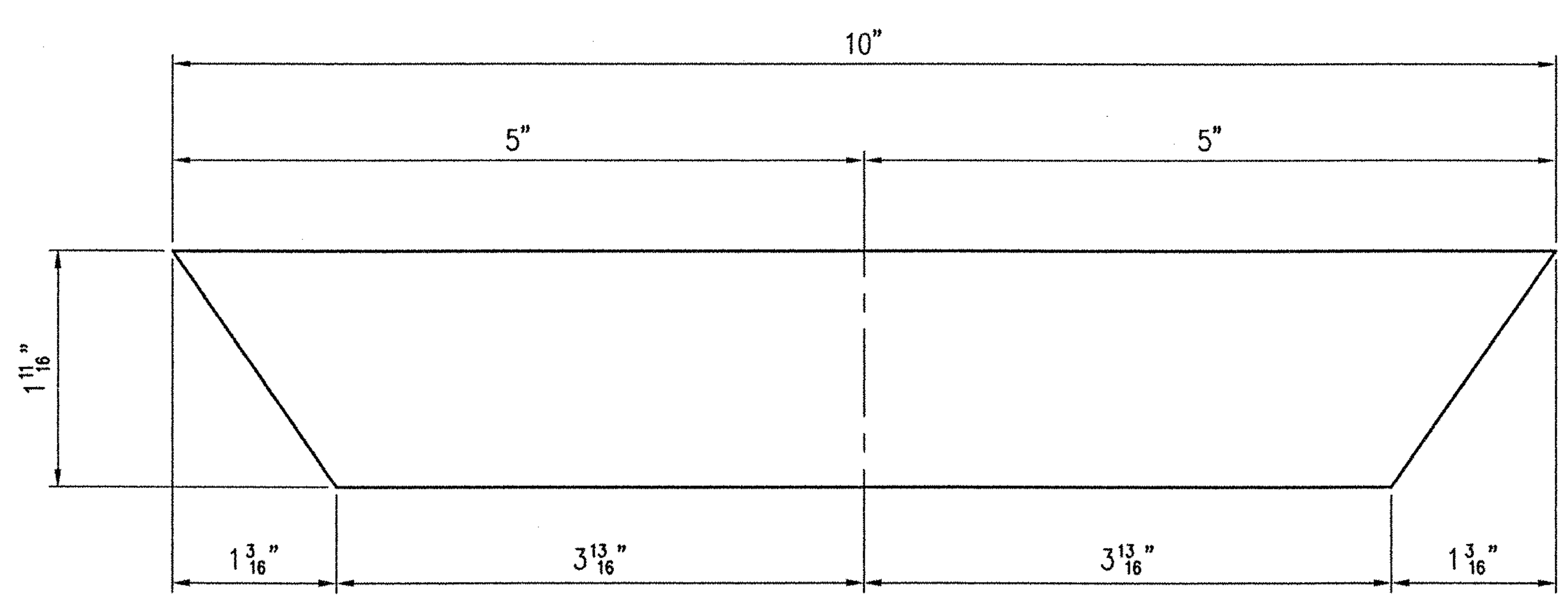


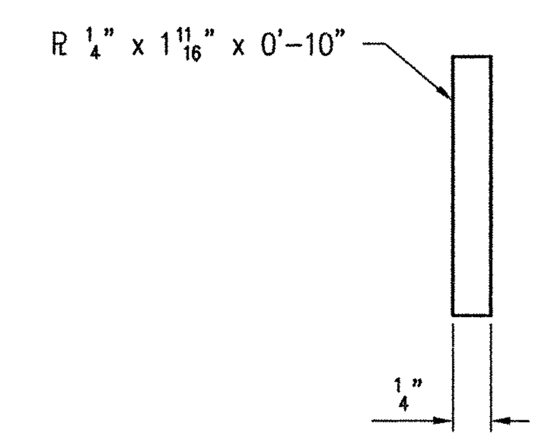
4 – BRACKET(S) – 2A

13.40lbs each
weighed on site DGB 8/28/01

GENERAL NOTES:

1.) MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH VT/AOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION – 1990 EDITION" THE CURRENT SUPPLEMENTAL SPECIFICATIONS AND THE SPECIAL PROVISIONS.
2.) WELDING SHALL CONFORM TO ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.
3.) ALL STEEL SHALL COMPLY WITH AASHTO M270 GR 36 (ASTM A709 GR 36). TUBE STEEL SHALL COMPLY WITH ASTM A500 GR B.
4.) GALVANIZE STEEL SHAPES AFTER FABRICATION PER AASHTO M111 (ASTM A123).
5.) GALVANIZE HARDWARE PER AASHTO M232 (ASTM A-153 CLASS C).
6.) PRIOR TO GALVANIZING, ALL CORNERS AND EDGES OF STEEL PLATES, ETC., SHALL BE GROUND TO A 1/16 INCH RADIUS.





DETAIL (ba)

RECEIVED
CK'D BY ____ OK'D BY ____
JUN 11 2001
RESUBMIT ____ APPROVED ✓
BY GPW DATE 7/3/01

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

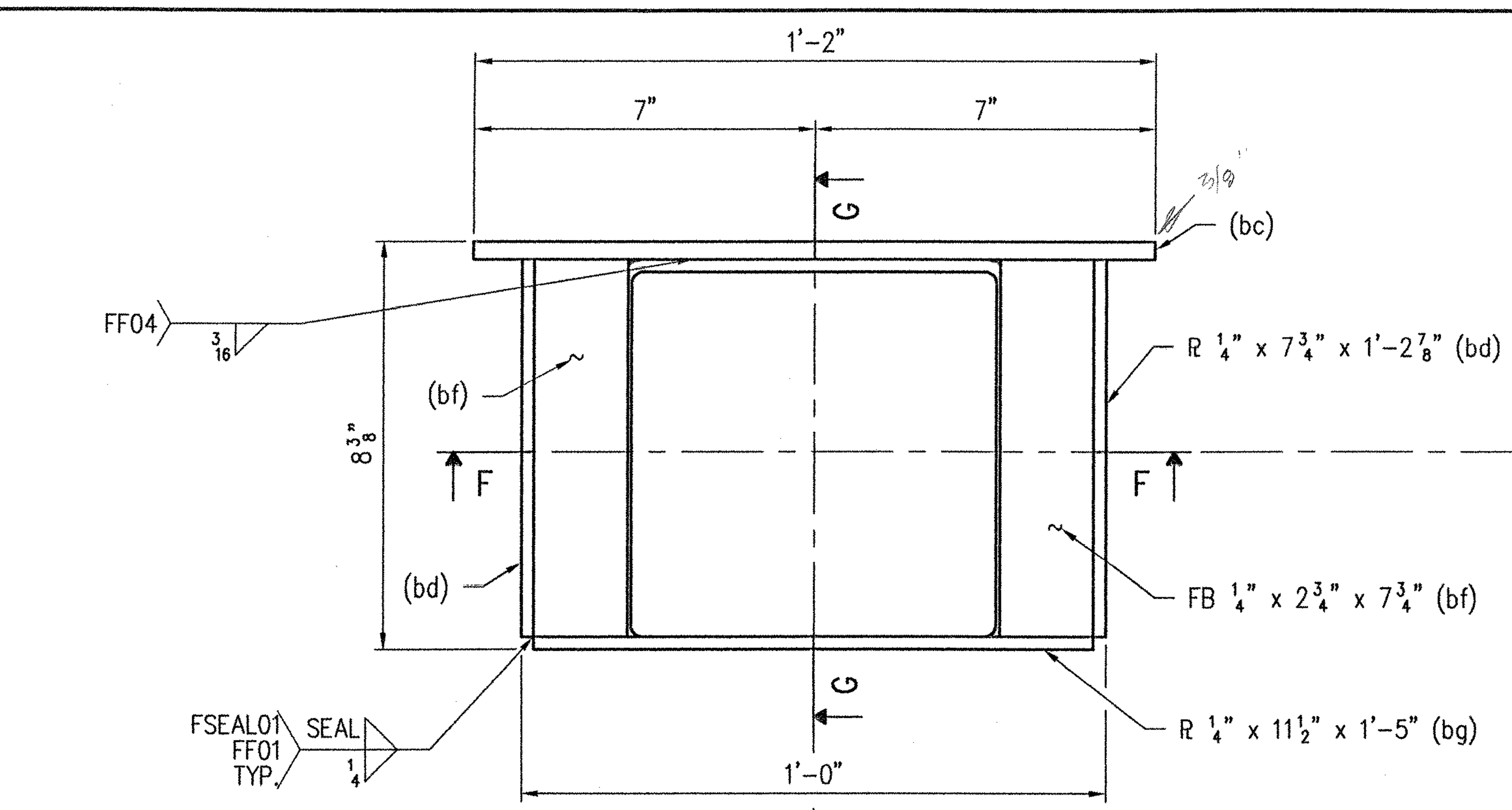
SHOP	
APPROVAL	
DIST.	
CUST.	
FOR	DATE
PRINTS ISSUED	

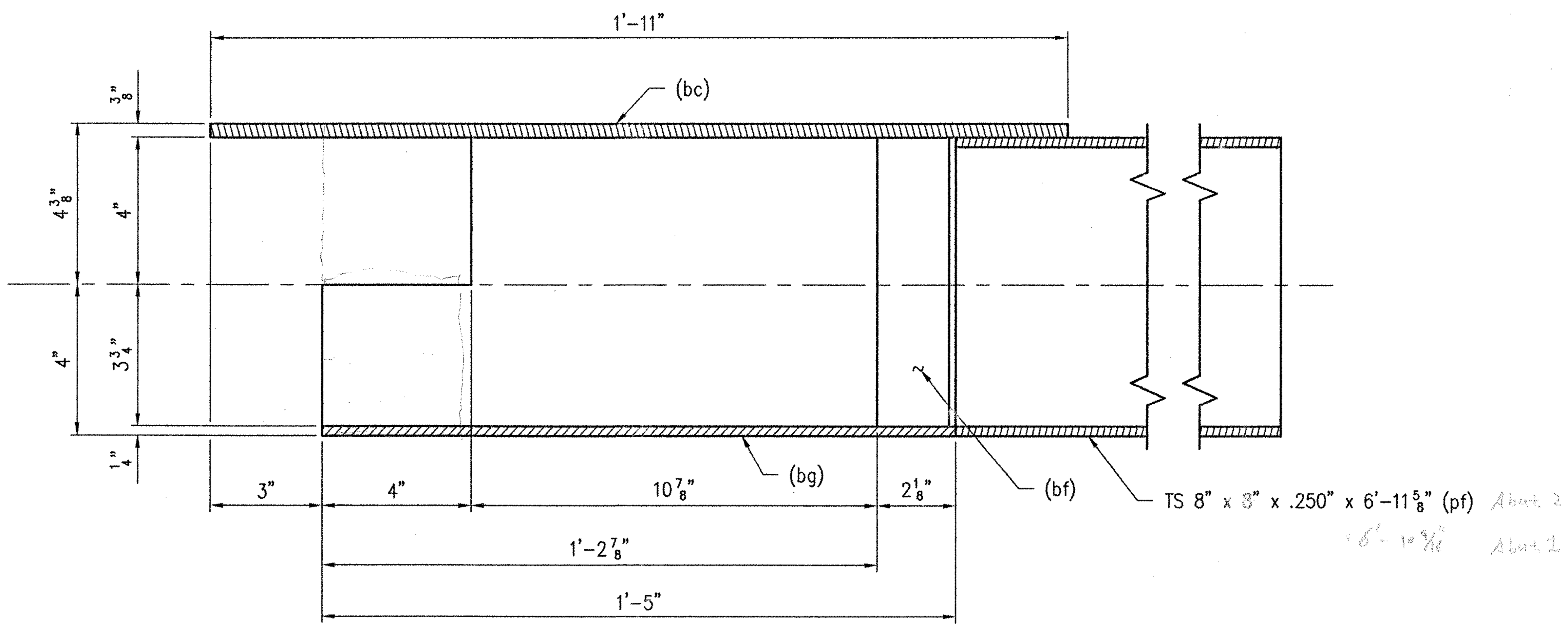
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

PROJECT – ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3
STATE PROJECT – AC BRZ 1444(22)
FEDERAL PROJECT – –
CUSTOMER – BECK & BELLUCCI, INC.
LOCATION – WINDSOR COUNTY, VT
DESCRIPTION – SCUPPER & BRACKET DETAILS

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 5/25/01

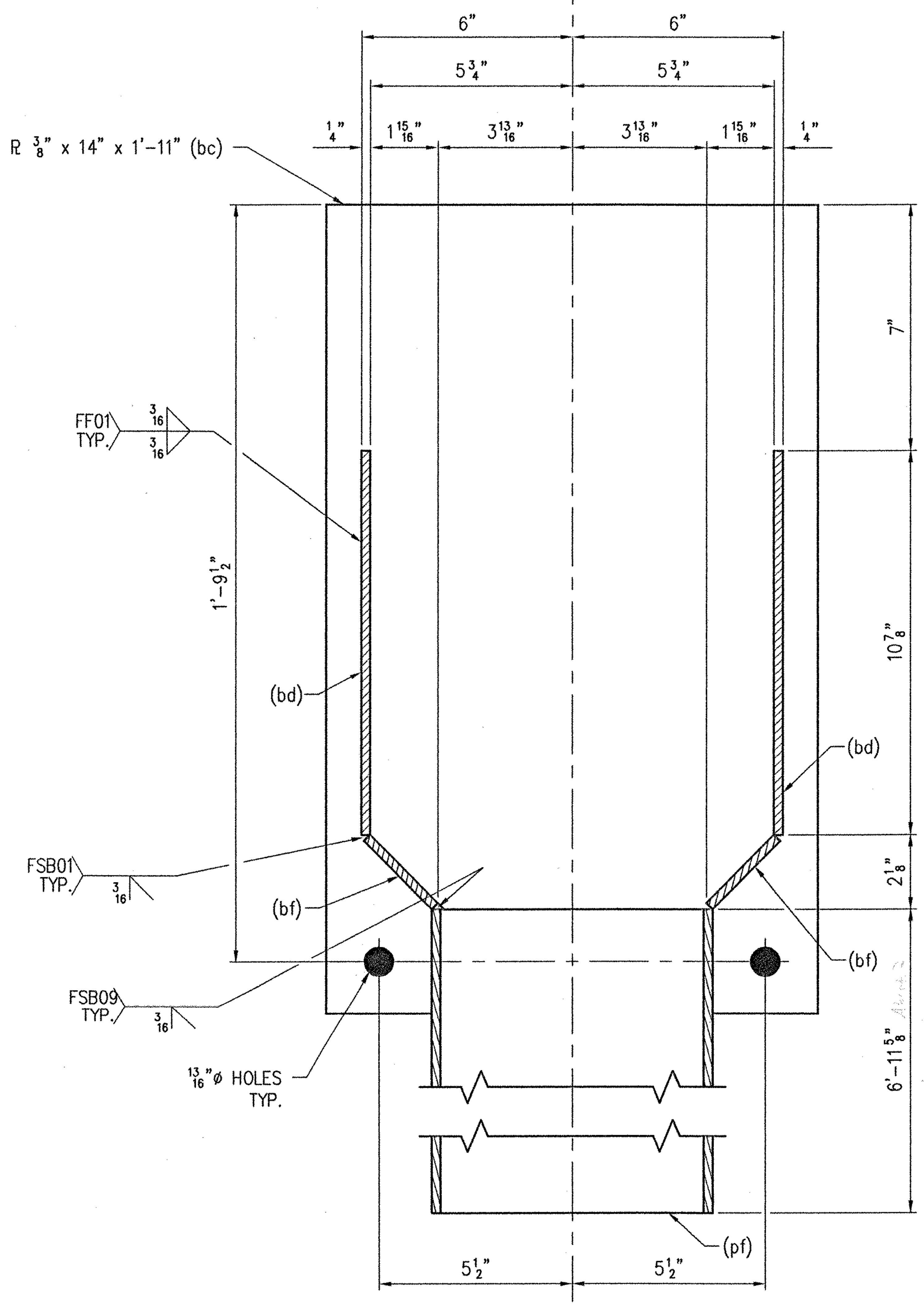
SHEET NO. 2 OF 5 | Job. No. : 2034.1236.1



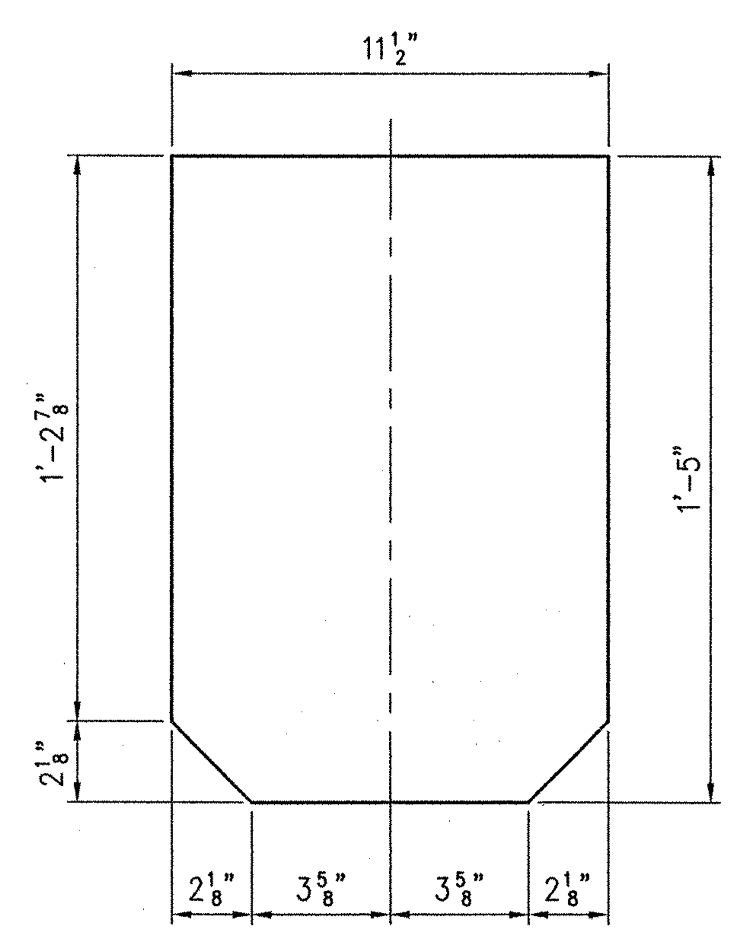


SECTION G-G

2 – HOPPER(S) – 3A



SECTION F-F



DETAIL (bg)

LINE	NO. REQ'D.	DESCRIPTION	LENGTH	MK	REMARKS	PART NO.
1	2	HOPPER(S)	8'-7 5/8"	3A	HDG	
2	2	R 3/8" x 14" A36	1'-11"	bc		19-14
3	4	R 1/4" x 7 3/4" A36	1'-2 7/8"	bd	SHAPE CUT	19-12
4	4	FB 1/4" x 2 3/4" A36	0'-7 3/4"	bf		16-32
5	2	R 1/4" x 11 1/2" A36	1'-5"	bg	SHAPE CUT	19-12
6	2	TS 8" x 8" x .250" A500	6'-11 5/8"	pf		22-5

SEE SHEET NO. 2 FOR GENERAL NOTES.

RECEIVED
CK'D BY ___ CK'D BY ___
JUN 11 2001
RESUBMIT ___ APPROVED As Noted
BY OPW DATE 7/3/01

SHOP NOTE:
SEAL WELD ALL ACCESSIBLE JOINTS FOR GALVANIZING.

SHOP
APPROVAL
DIST.
CUST.
FOR | DATE
PRINTS ISSUED

REV.	DESCRIPTION	DATE	INT.

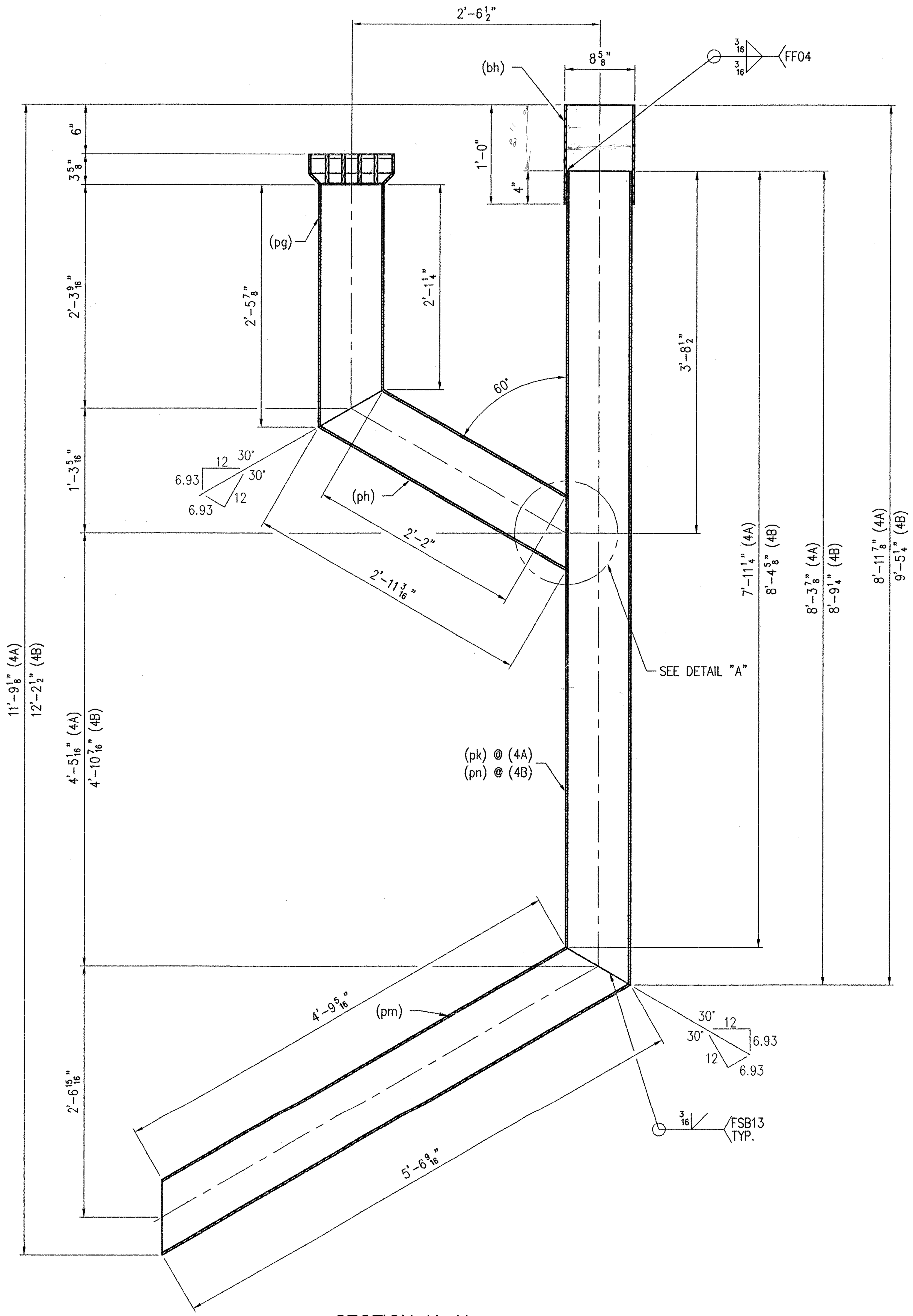
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

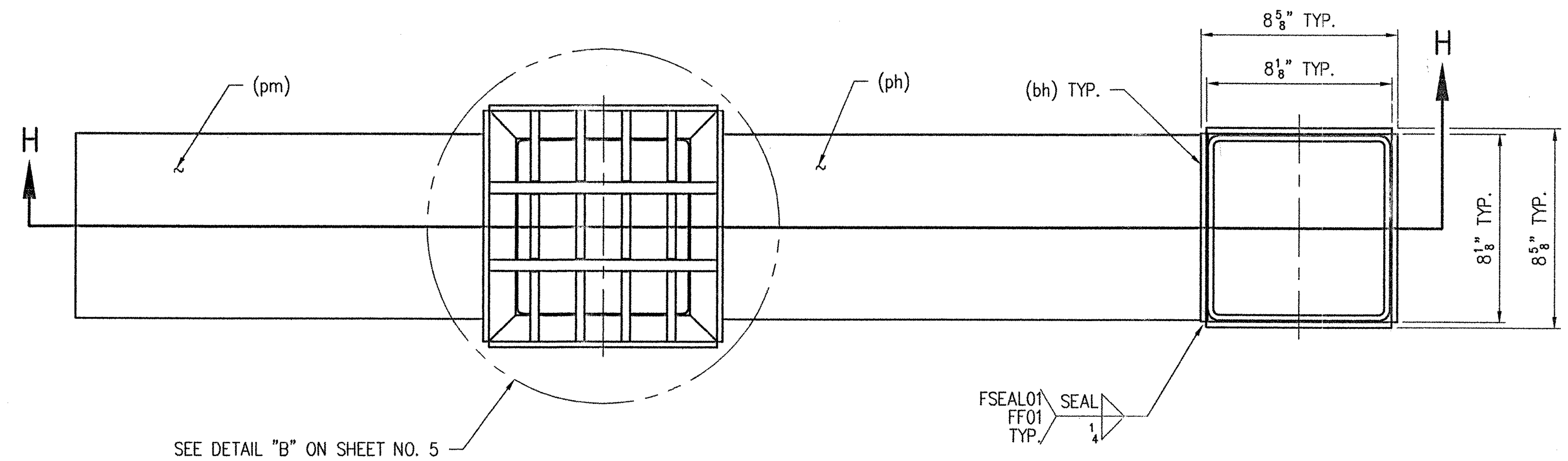
PROJECT — ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT — –
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — HOPPER(S) DETAILS

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 5/25/01

SHEET NO. 3 OF 5
Job. No. : 2034.1236.1

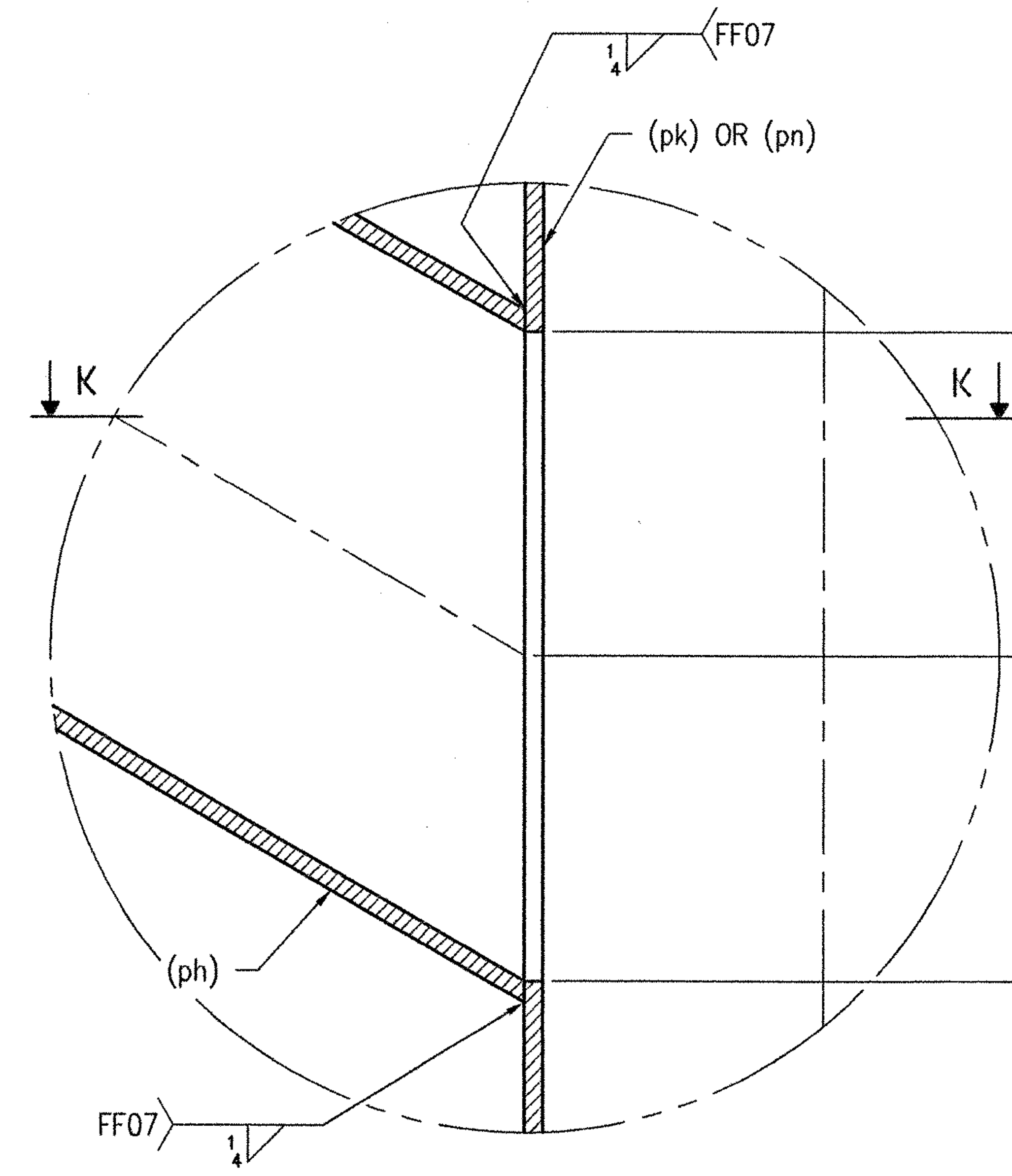


SECTION H-H

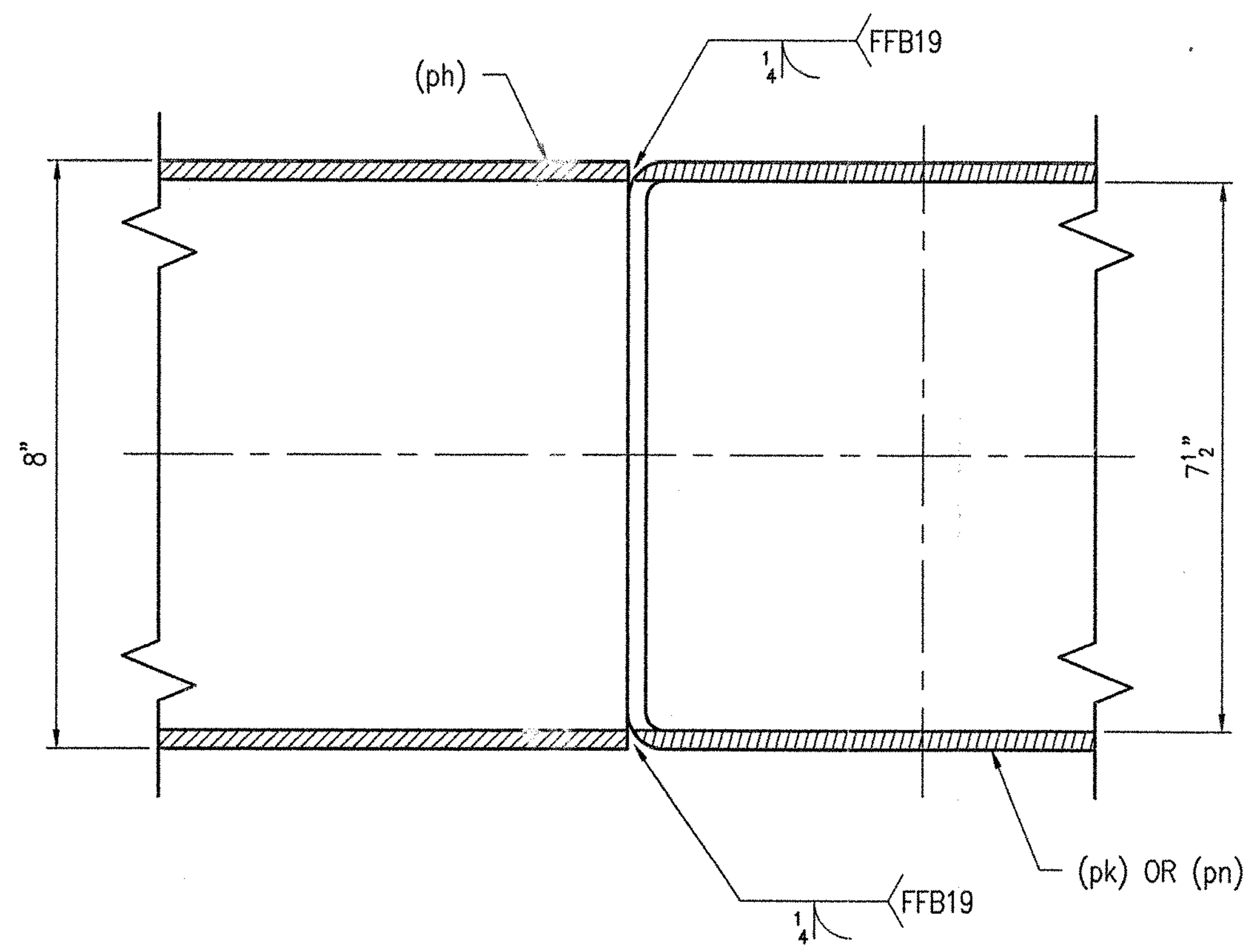


PLAN VIEW

1 – DOWNSPOUT(S) – 4A
1 – DOWNSPOUT(S) – 4B



DETAIL "A"



SECTION K-K

SEE SHEET NO. 2 FOR GENERAL NOTES.

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

PROJECT — ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT — –
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — DOWNSPOUTING DETAILS

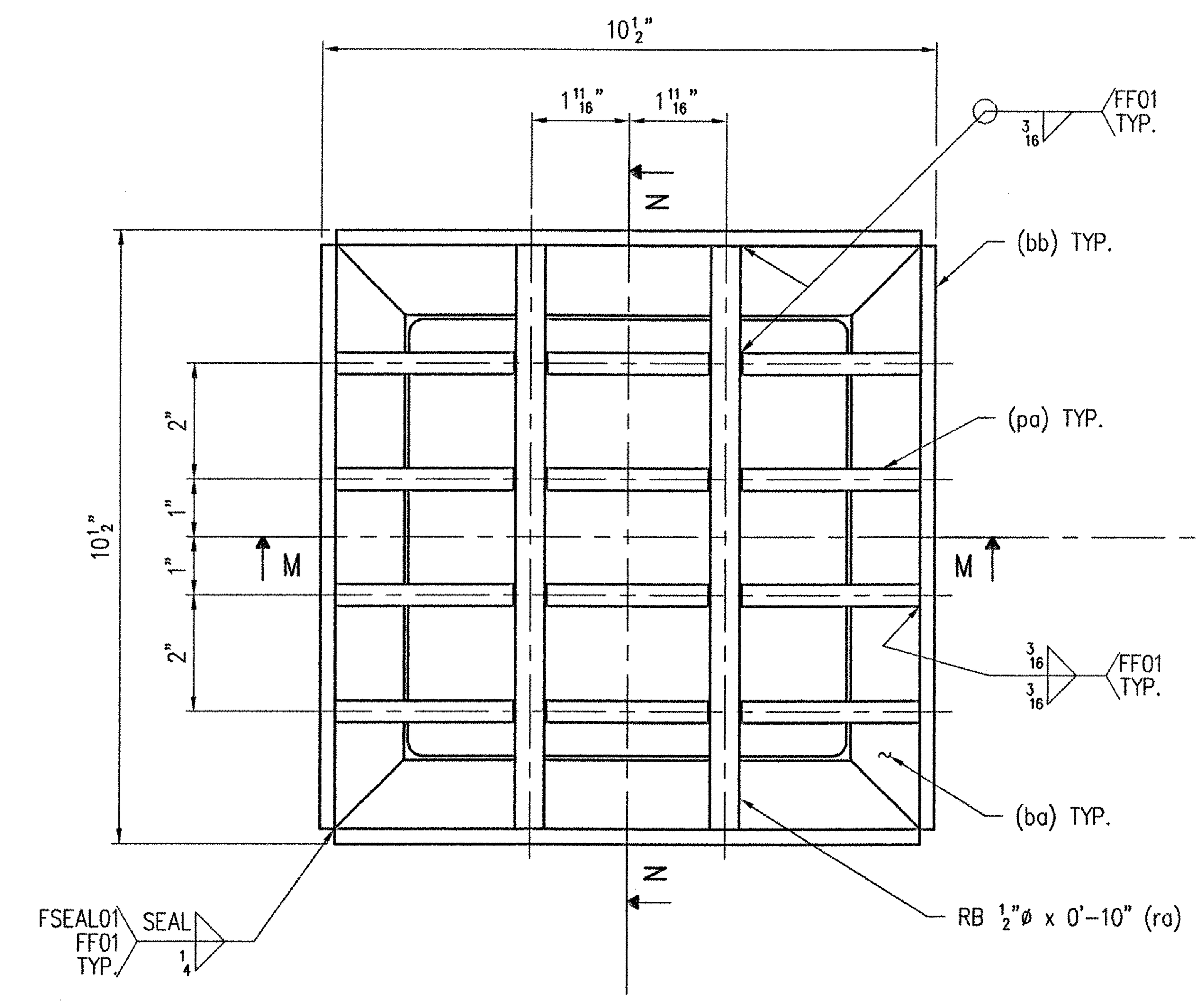
Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 5/25/01

SHEET NO. 4 OF 5 Job. No.: 2034.1236.1

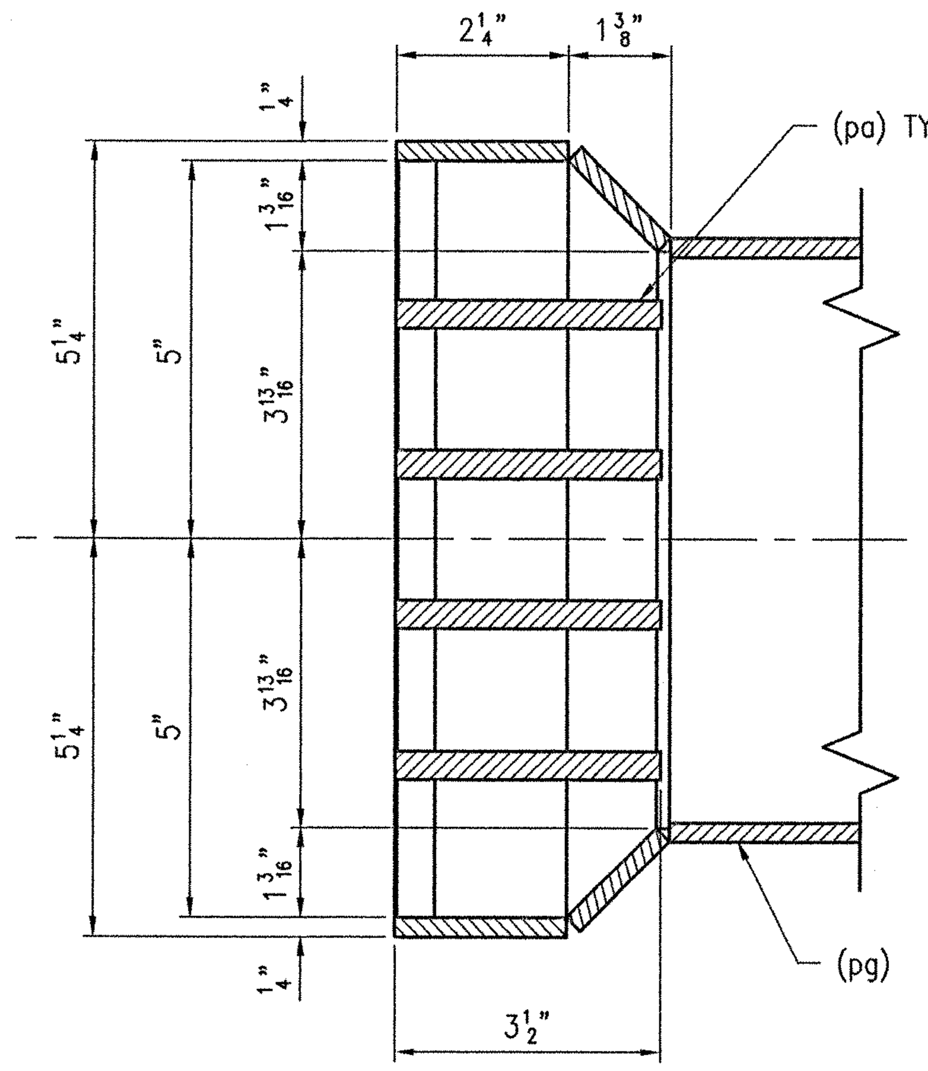
SHOP
APPROVAL
DIST.
CUST.
FOR DATE
PRINTS ISSUED

RECEIVED
CK'D BY ___ OK'D BY WBJ
JUN 11 2001
RESUBMIT ___ APPROVED ✓
BY CPW DATE 7/3/01

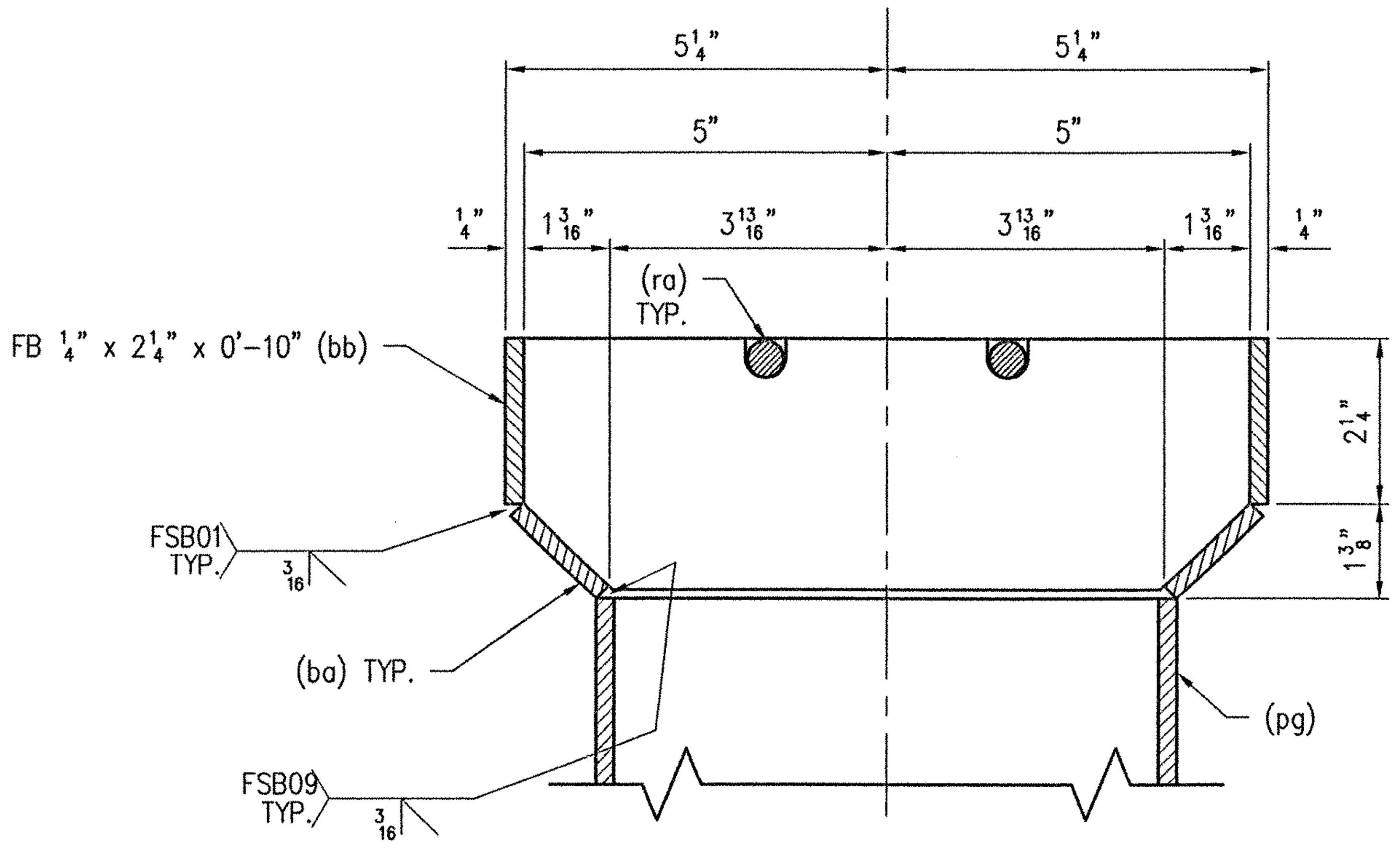
SHOP NOTE:
SEAL WELD ALL ACCESSIBLE JOINTS FOR GALVANIZING.



DETAIL "B"



SECTION N-N



SECTION M-M

LINE	NO. REQ'D.	DESCRIPTION		LENGTH	MK	REMARKS	PART NO.
1	1	DOWNSPOUT(S)		11'-9⅛"	4A	HDG	
2	4	PL ¼" x 1$\frac{11}{16}$"	A36	0'-10"	ba	SHAPE CUT	19-12
3	4	FB ¼" x 2¼"	A36	0'-10"	bb		16-30
4	4	PL ⅜" x 3½"	A36	0'-10"	pa	SHAPE CUT	19-14
5	2	RB ½"ø	A36	0'-10"	ra		18-3
6	4	PL ¼" x 8⅛"	A36	1'-0"	bh		19-12
7	1	TS 8" x 8" x .250"	A500-B	2'-5[illegible]"	pg		22-5
8	1	TS 8" x 8" x .250"	A500-B	2'-11[illegible]"	ph		22-5
9	1	TS 8" x 8" x .250"	A500-B	8'-3⅞"	pk		22-5
10	1	TS 8" x 8" x .250"	A500-B	5'-6$\frac{9}{16}$"	pm		22-5
11							
12	1	DOWNSPOUT(S)		12'-2½"	4B	HDG	
13	4	PL ¼" x 1$\frac{11}{16}$"	A36	0'-10"	ba	SHAPE CUT	19-12
14	4	FB ¼" x 2¼"	A36	0'-10"	bb		16-30
15	4	PL ⅜" x 3½"	A36	0'-10"	pa	SHAPE CUT	19-14
16	2	RB ½"ø	A36	0'-10"	ra		18-3
17	4	PL ¼" x 8⅛"	A36	1'-0"	bh		19-12
18	1	TS 8" x 8" x .250"	A500-B	2'-5⅞"	pg		22-5
19	1	TS 8" x 8" x .250"	A500-B	2'-11$\frac{3}{16}$"	ph		22-5
20	1	TS 8" x 8" x .250"	A500-B	8'-9¼"	pn		22-5
21	1	TS 8" x 8" x .250"	A500-B	5'-6$\frac{9}{16}$"	pm		22-5

SEE SHEET NO. 2 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 2.

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

PROJECT — ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT — -
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — SCUPPER(S) DETAILS

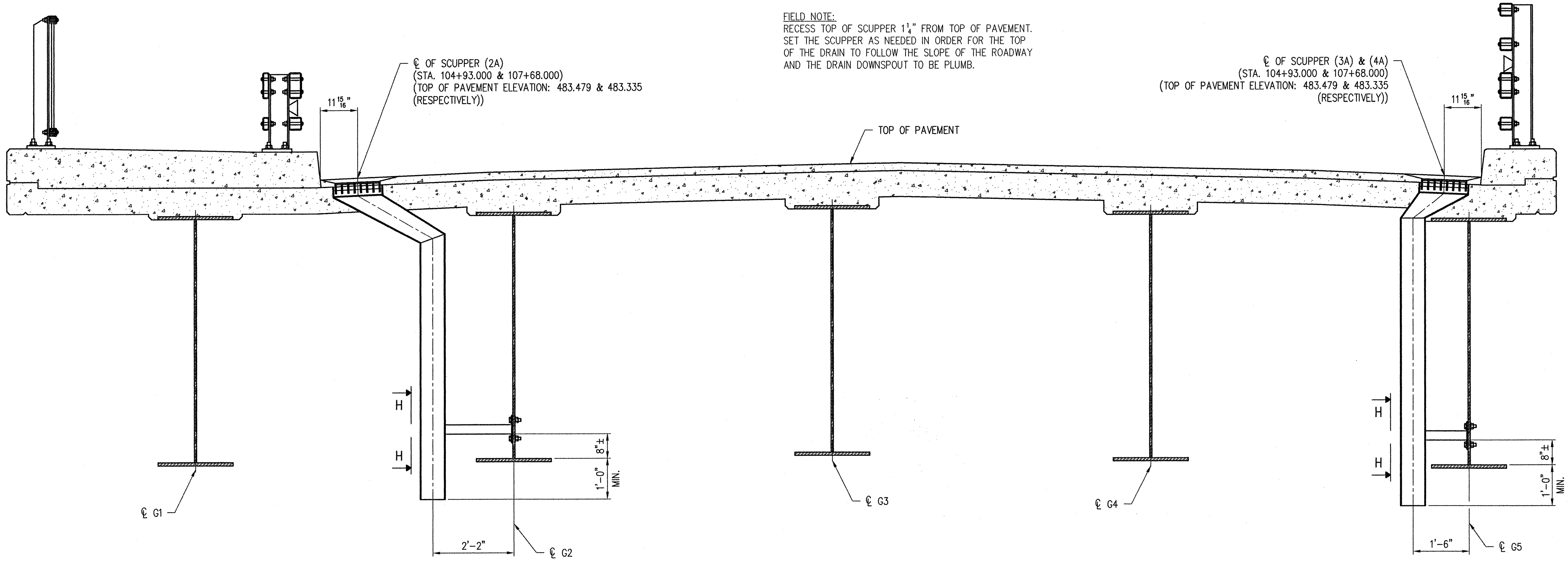
Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 5/25/01

SHEET NO. 5 OF 5 Job. No. : 2034.1236.1

SHOP
APPROVAL
DIST.
CUST.
FOR DATE
PRINTS ISSUED

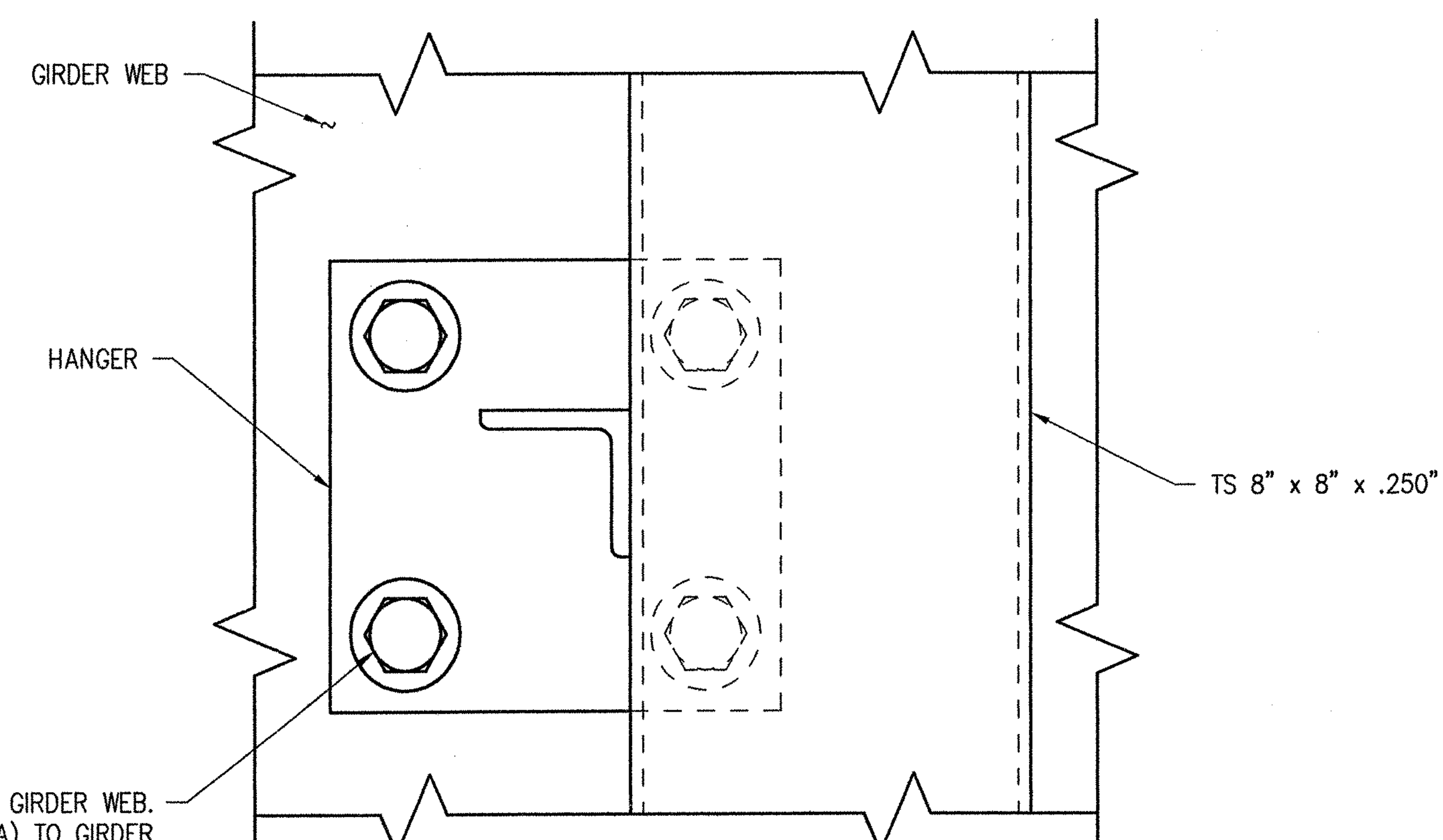
RECEIVED
CK'D BY ____ OK'D BY ____
JUN 11 2001
RESUBMIT____ APPROVED ✓
BY CPW DATE 7/3/01

SHOP NOTE:
SEAL WELD ALL ACCESSIBLE JOINTS FOR GALVANIZING.



SECTION THRU BRIDGE @ ℄ OF SCUPPERS

(LOOKING NORTH)



VIEW "H-H"

(TYPICAL FOR (2A), (3A) & (4A))

RECEIVED
CK'D BY WBS OK'D BY______
DEC 12 2001
RESUBMIT____ APPROVED ✓
BY CPW DATE 12/21/01

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

REV.	DESCRIPTION	DATE	INT.

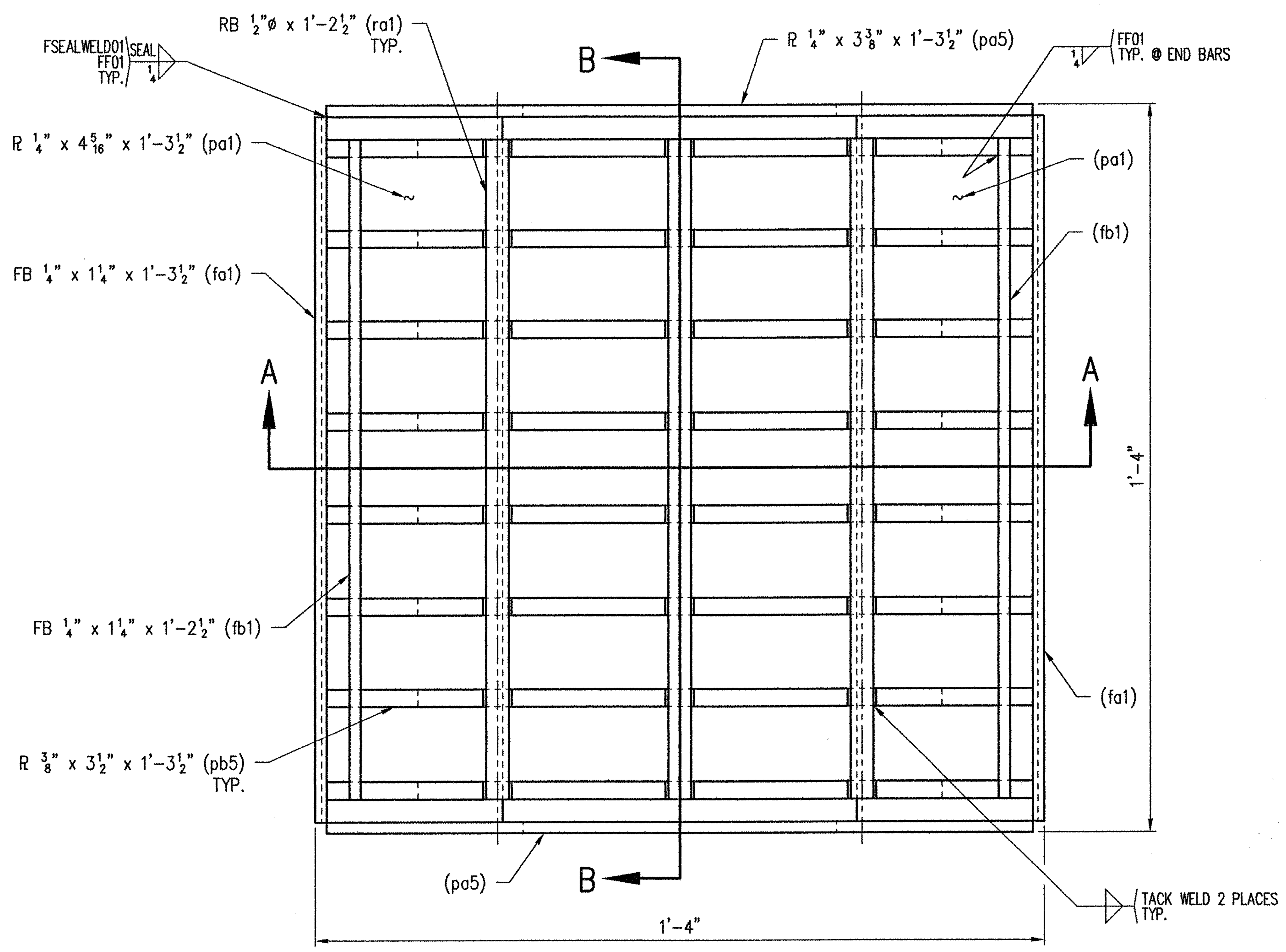
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

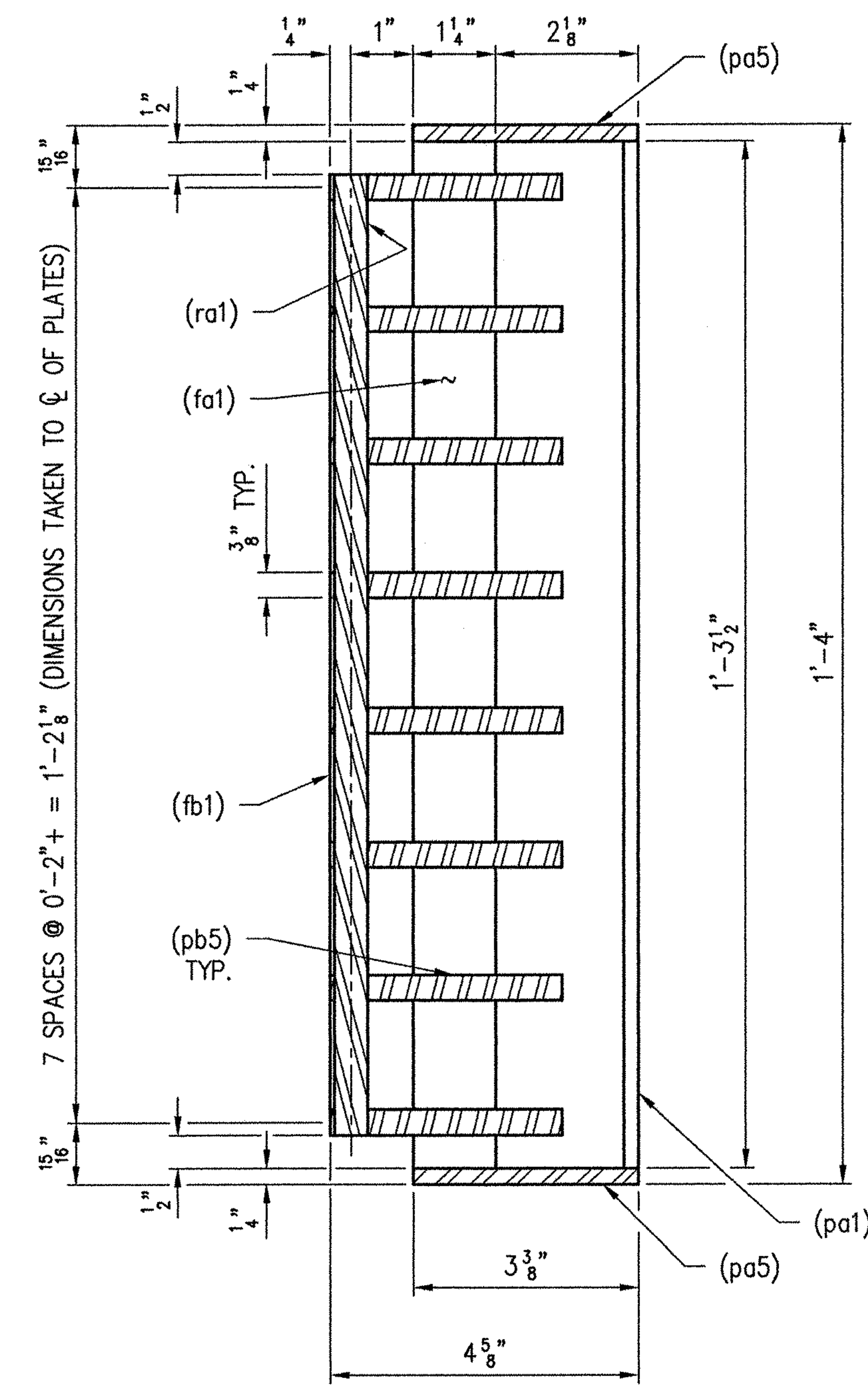
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

PROJECT	—	ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3
STATE PROJECT	—	AC BRZ 1444(22)
FEDERAL PROJECT	—	-
CUSTOMER	—	BECK & BELLUCCI, INC.
LOCATION	—	WINDSOR COUNTY, VT
DESCRIPTION	—	SCUPPER(S) ERECTION

W.P. chk'd	Orig. N/R
Drawn By	JMB
Chk'd. By	TSF
Date:	12/5/01

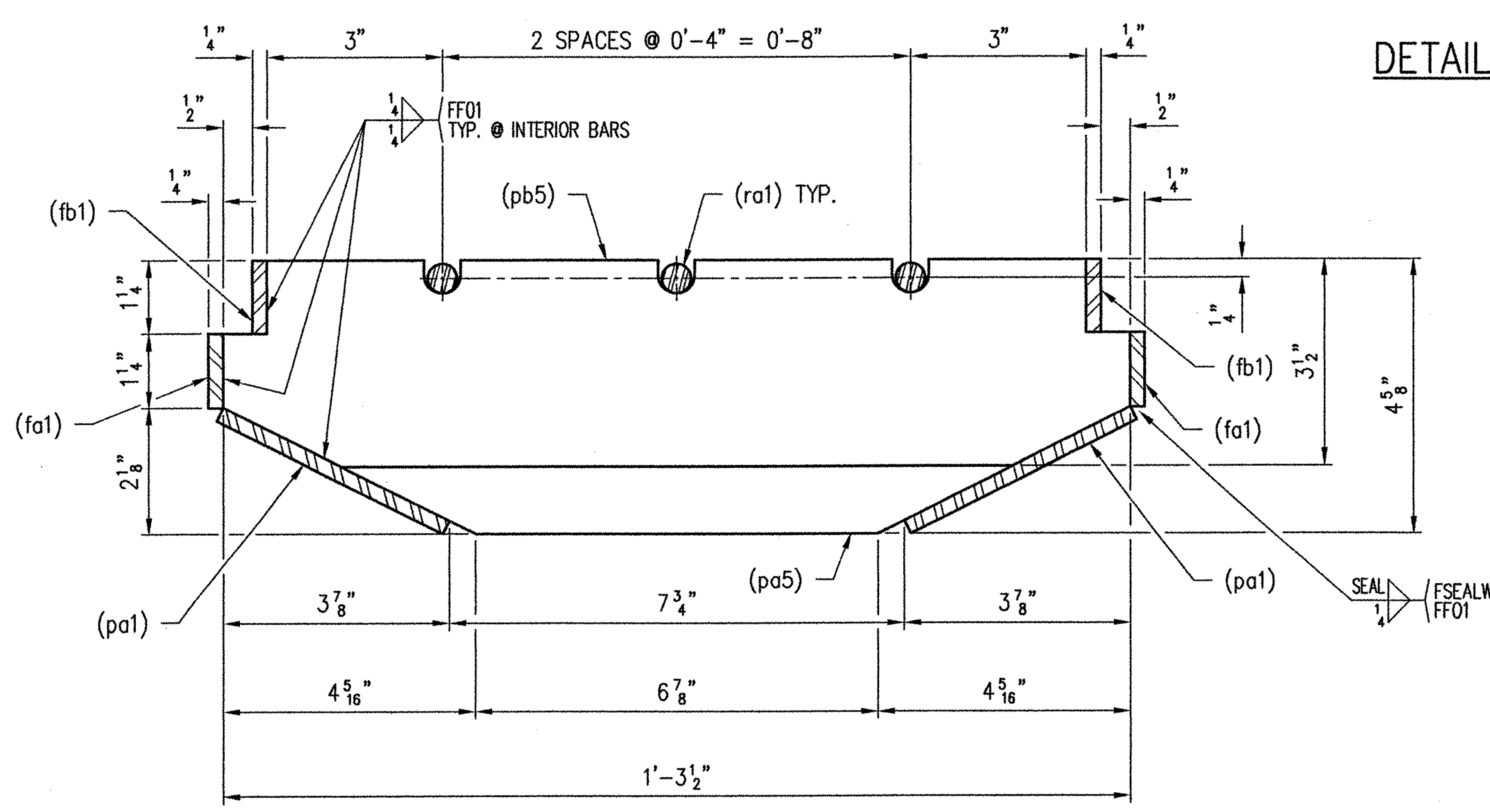
SHEET NO. E1 OF 1 Job. No. : 2034.1236.2





SECTION "B-B"

DETAIL – UPPER ASSEMBLY



SECTION "A-A"

GENERAL NOTES:

1.) MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH VT/AOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION – 1990 EDITION" THE CURRENT SUPPLEMENTAL SPECIFICATIONS AND THE SPECIAL PROVISIONS.
2.) WELDING SHALL CONFORM TO ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.
3.) ALL STEEL SHALL COMPLY WITH AASHTO M270 GR 36 (ASTM A709 GR 36). TUBE STEEL SHALL COMPLY WITH ASTM A500 GR B.
4.) GALVANIZE STEEL SHAPES AFTER FABRICATION PER AASHTO M111 (ASTM A123).
5.) PRIOR TO GALVANIZING, ALL CORNERS AND EDGES OF STEEL PLATES, ETC., SHALL BE GROUND TO A $\frac{1}{16}$ INCH RADIUS.

RECEIVED
CK'D BY WBS OK'D BY
DEC 12 2001
RESUBMIT ___ APPROVED ✓
BY CPW DATE 12/21/01

SHOP NOTE:
SEAL WELD ALL ACCESSIBLE JOINTS FOR GALVANIZING.

FOR	DATE
SHOP	
APPROVAL	
DIST.	
CUST.	
PRINTS ISSUED	

REV.	DESCRIPTION	DATE	INT.

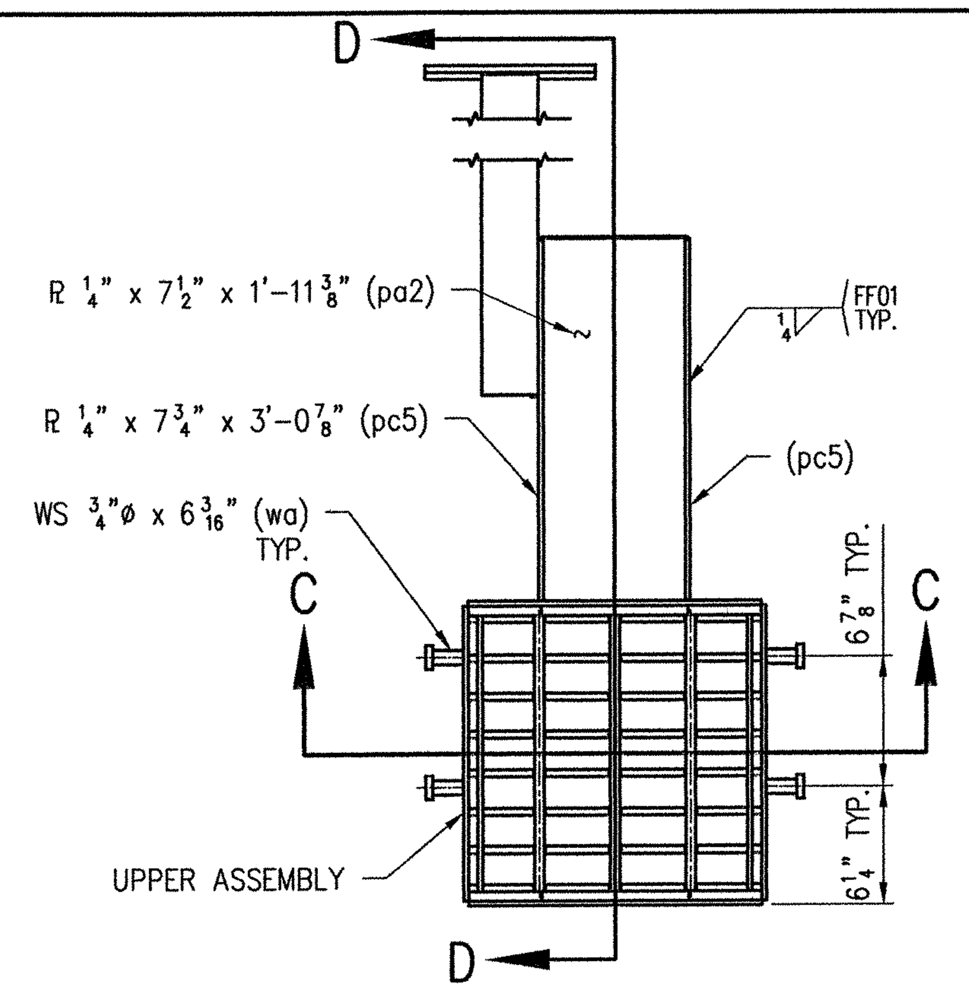
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

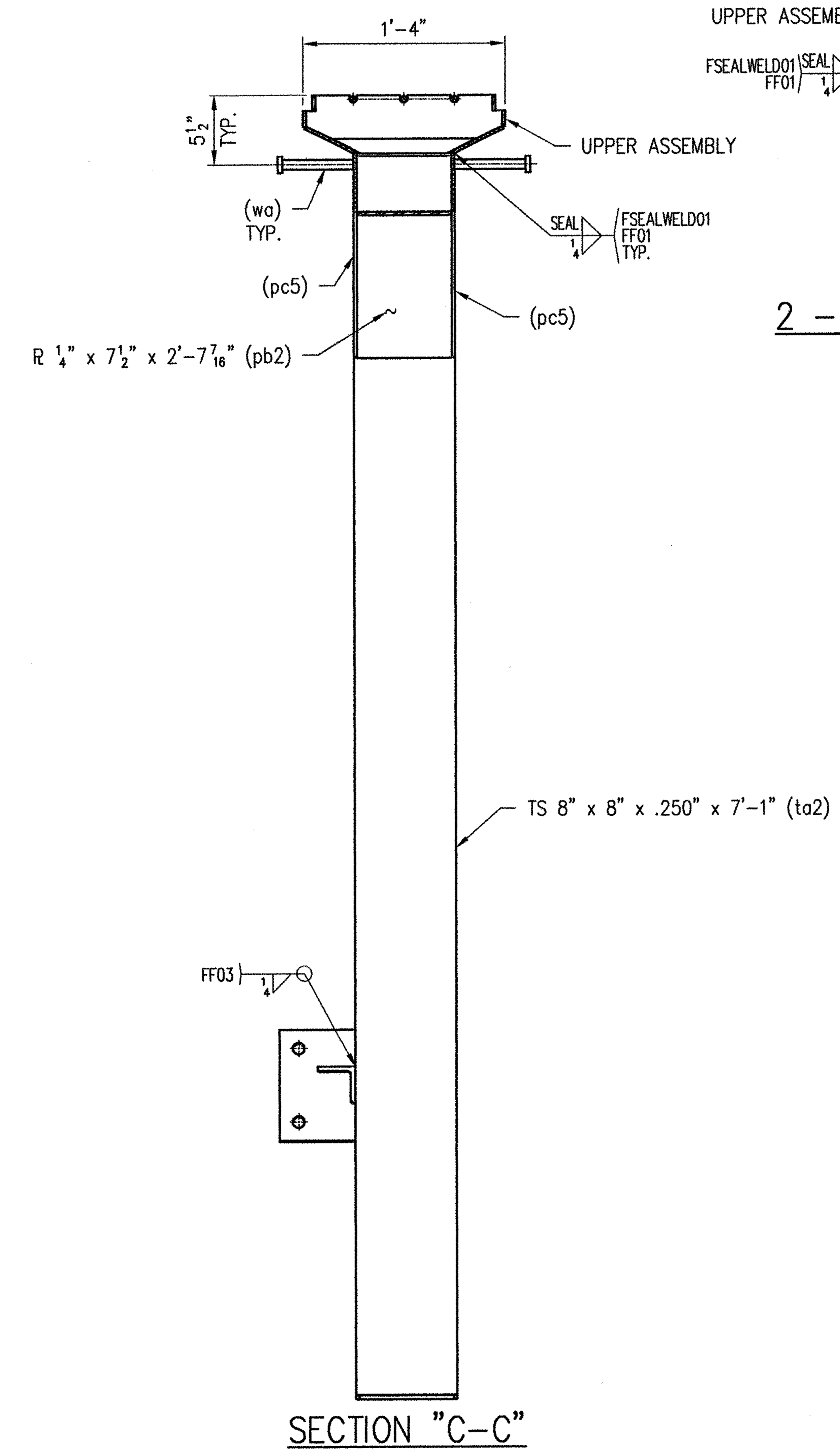
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

PROJECT	–	ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3
STATE PROJECT	–	AC BRZ 1444(22)
FEDERAL PROJECT	–	–
CUSTOMER	–	BECK & BELLUCCI, INC.
LOCATION	–	WINDSOR COUNTY, VT
DESCRIPTION	–	SCUPPER(S) DETAILS

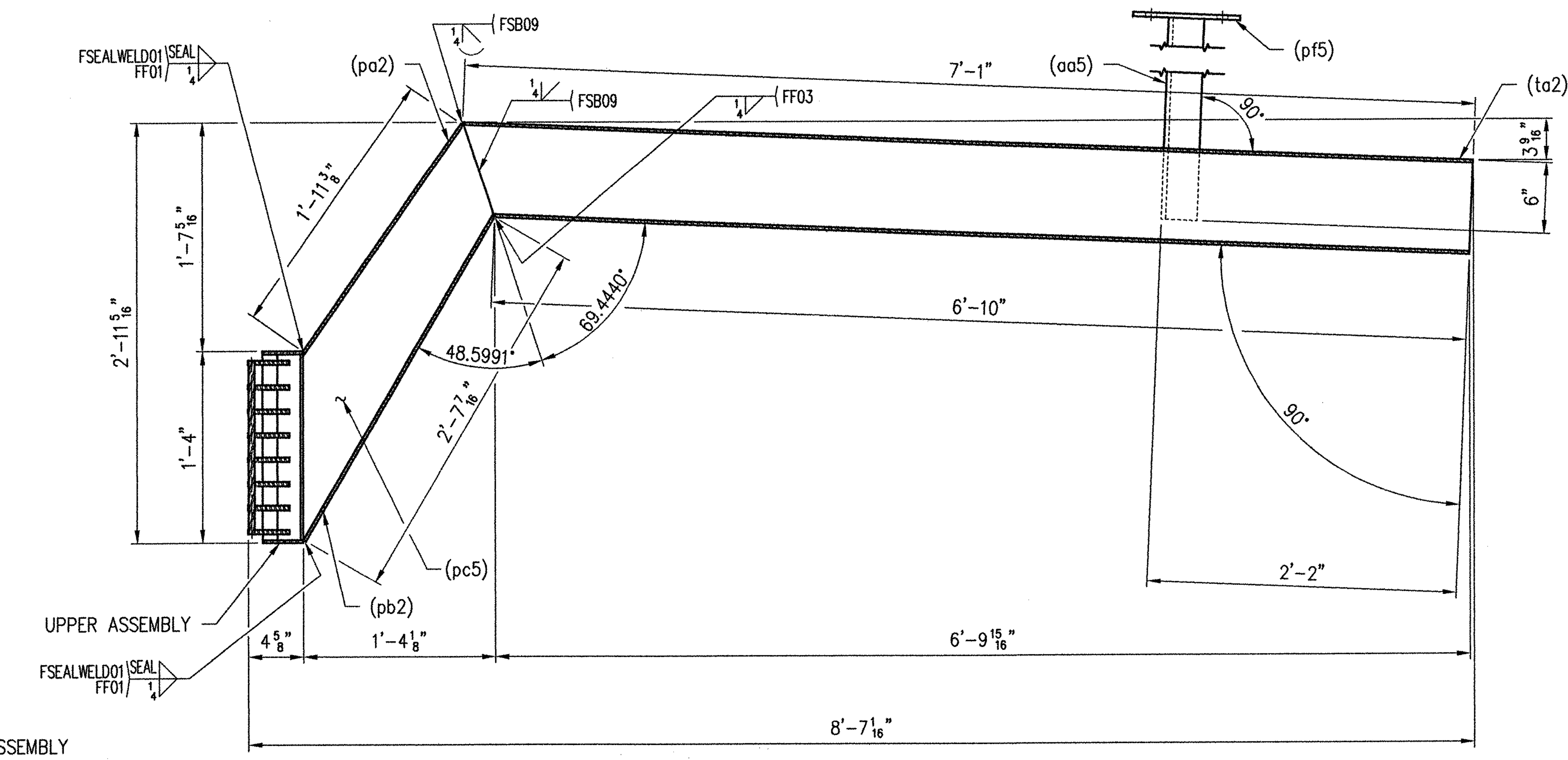
Orig.
W.P. chk'd TSF
Drawn By JMB
Chk'd. By JMB
Date: 12/5/01

SHEET NO. 1 OF 5
Job. No. : 2034.1236.2





SECTION "C-C"



SECTION "D-D"

2 – DOWNSPOUT SCUPPER(S) – 2A

SEE SHEET NO. 1 FOR GENERAL NOTES.
SEE SHEET NO. 5 FOR DETAILS OF (pf5) & (aa5).
SOME HIDDEN LINES REMOVED FOR CLARITY.

RECEIVED
CK'D BY LWBS OK'D BY
DEC 12 2001
RESUBMIT APPROVED ✓
BY CPW DATE 12/21/01

SHOP NOTE:
SEAL WELD ALL ACCESSIBLE JOINTS FOR GALVANIZING.

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

REV.	DESCRIPTION	DATE	INT.

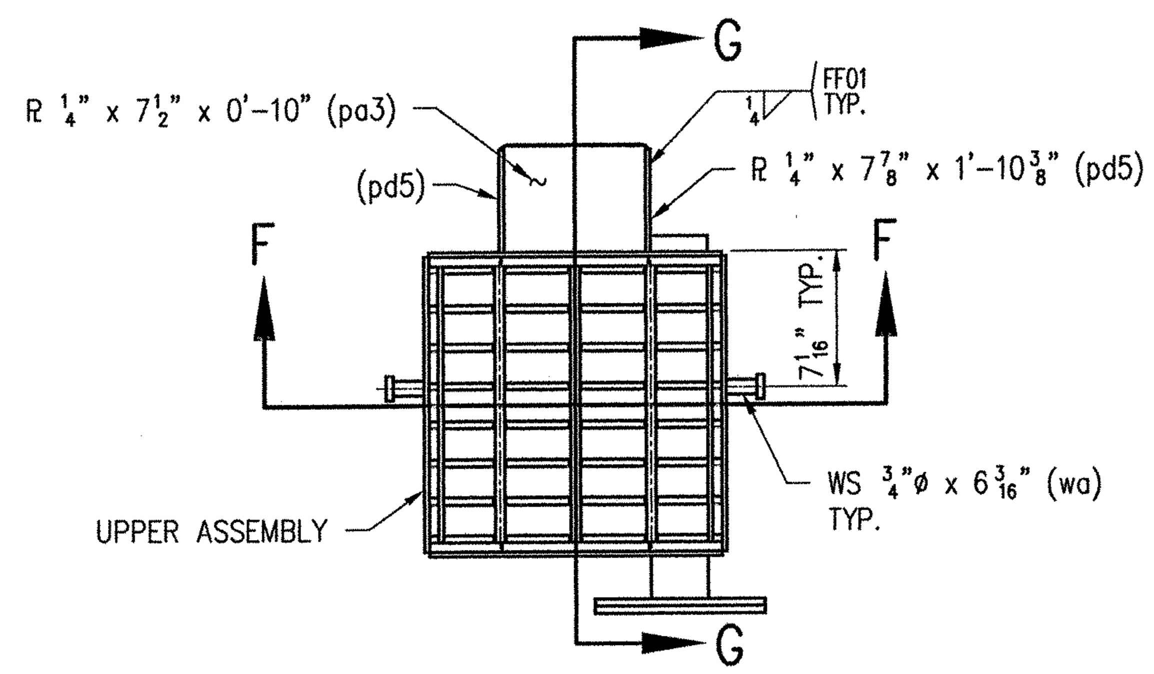
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

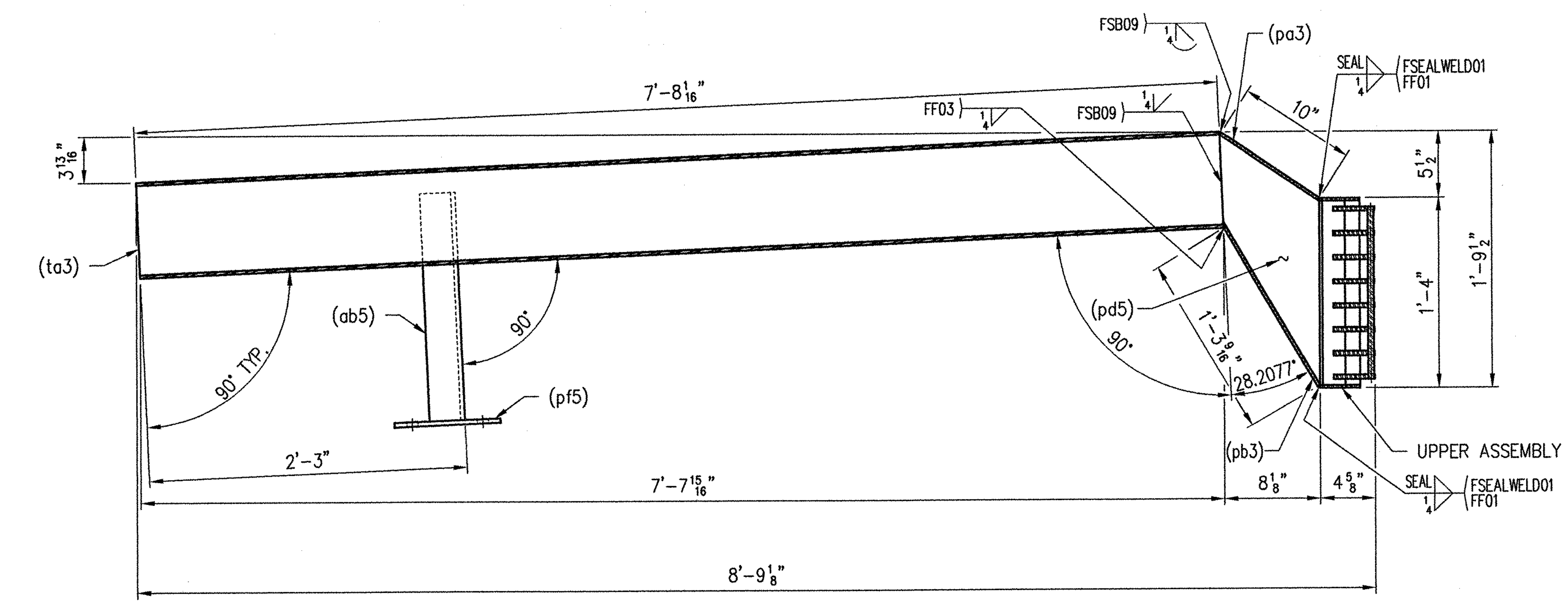
PROJECT	–	ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3
STATE PROJECT	–	AC BRZ 1444(22)
FEDERAL PROJECT	–	–
CUSTOMER	–	BECK & BELLUCCI, INC.
LOCATION	–	WINDSOR COUNTY, VT
DESCRIPTION	–	SCUPPER(S) DETAILS

Orig.
W.P. chk'd TSF
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

SHEET NO. 2 OF 5 Job. No. : 2034.1236.2

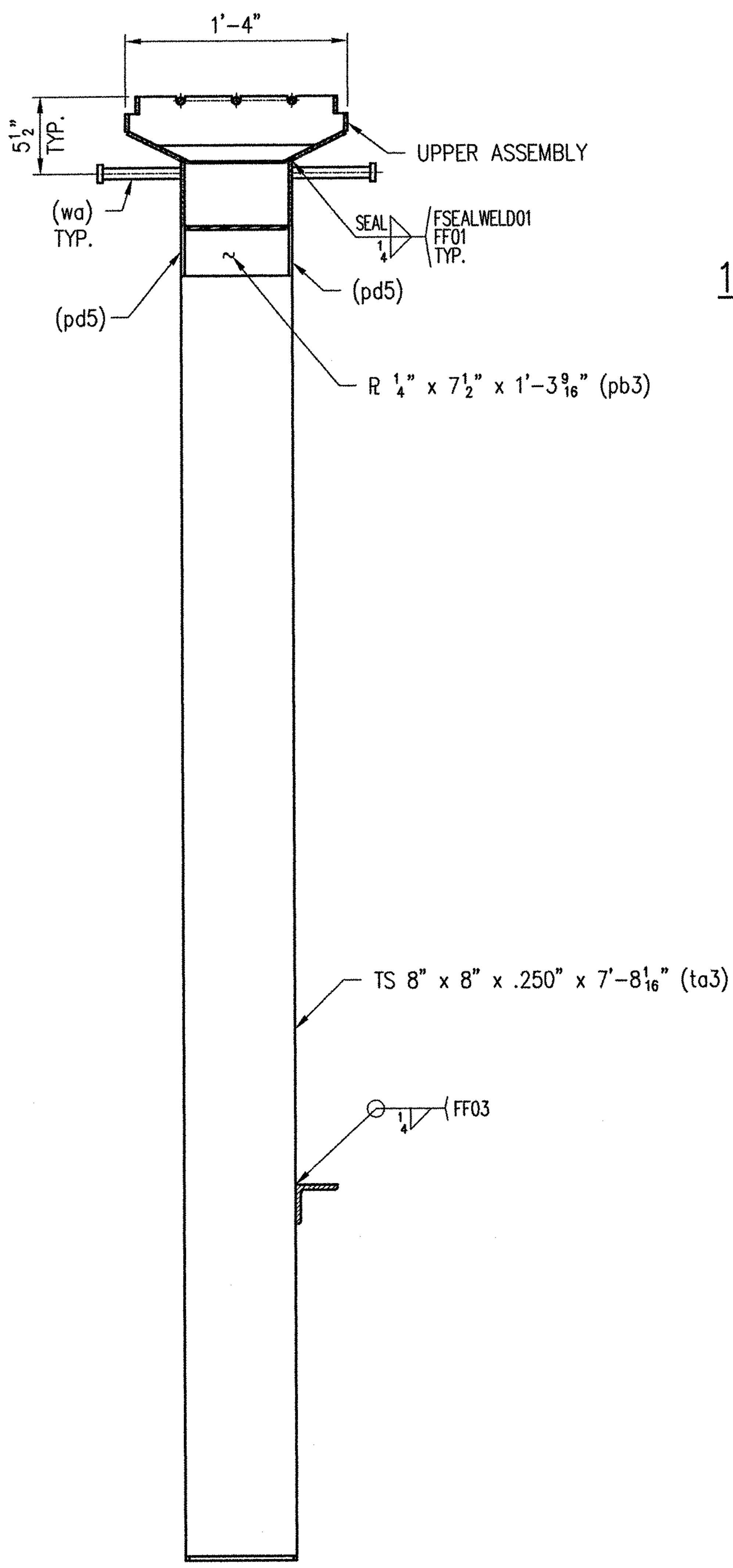


PLAN VIEW



SECTION "G-G"

1 - DOWNSPOUT SCUPPER(S) - 3A



SECTION "F-F"

SEE SHEET NO. 1 FOR GENERAL NOTES.
SEE SHEET NO. 5 FOR DETAILS OF (pf5) & (ab5).
SOME HIDDEN LINES REMOVED FOR CLARITY.

RECEIVED
CK'D BY WRG OK'D BY
DEC 12 2001
RESUBMIT APPROVED ✓
BY CPW DATE 12/21/01

SHOP NOTE:
SEAL WELD ALL ACCESSIBLE JOINTS FOR GALVANIZING.

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR	DATE
PRINTS ISSUED	

REV.	DESCRIPTION	DATE	INT

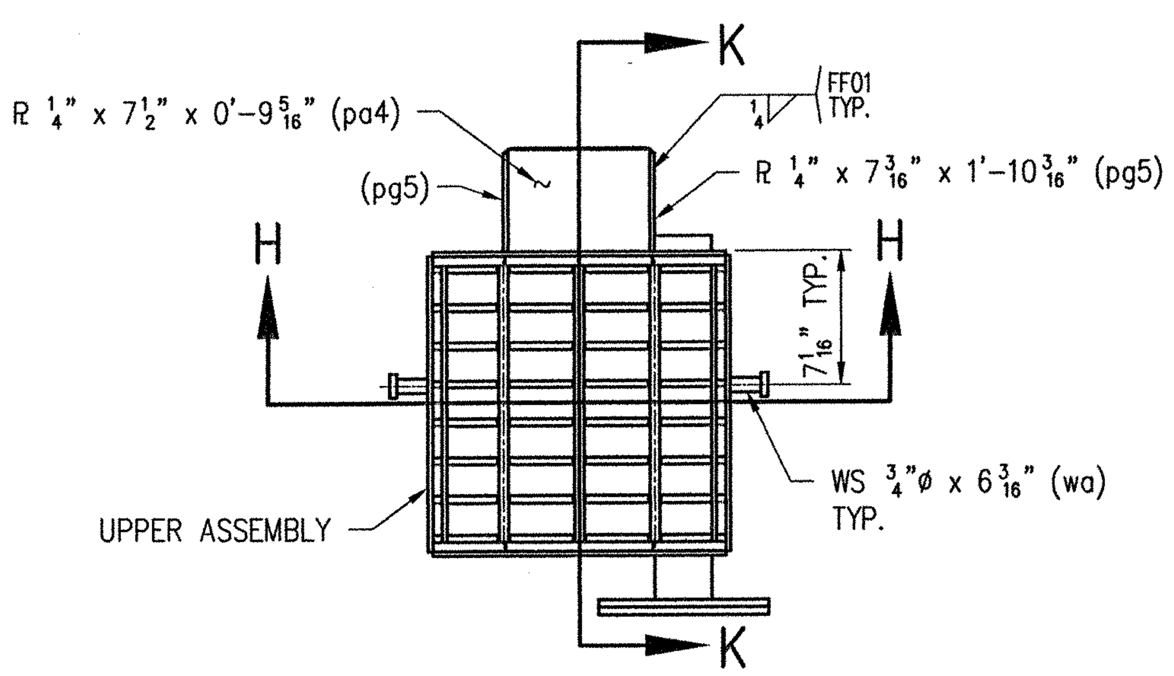
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

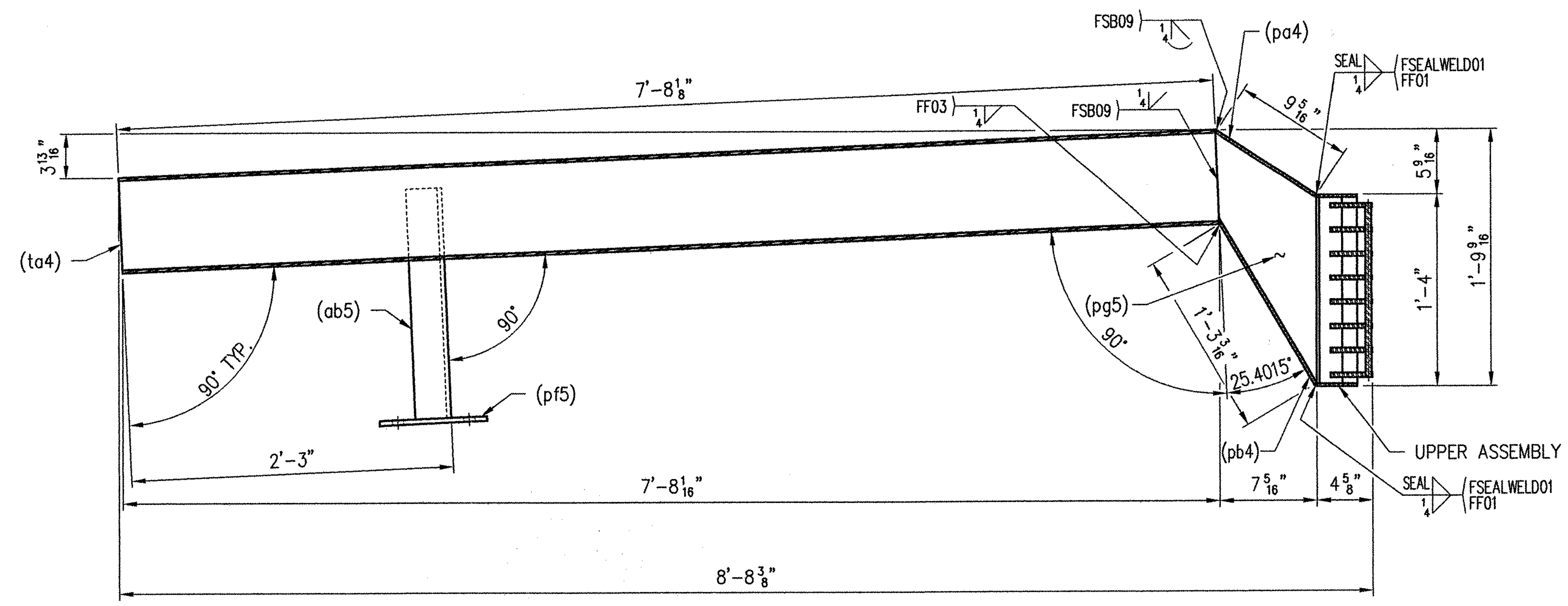
PROJECT — ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT — -
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — SCUPPER(S) DETAILS

Orig.
W.P. chk'd TSF
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

SHEET NO. 3 OF 5
Job. No. : 2034.1236.

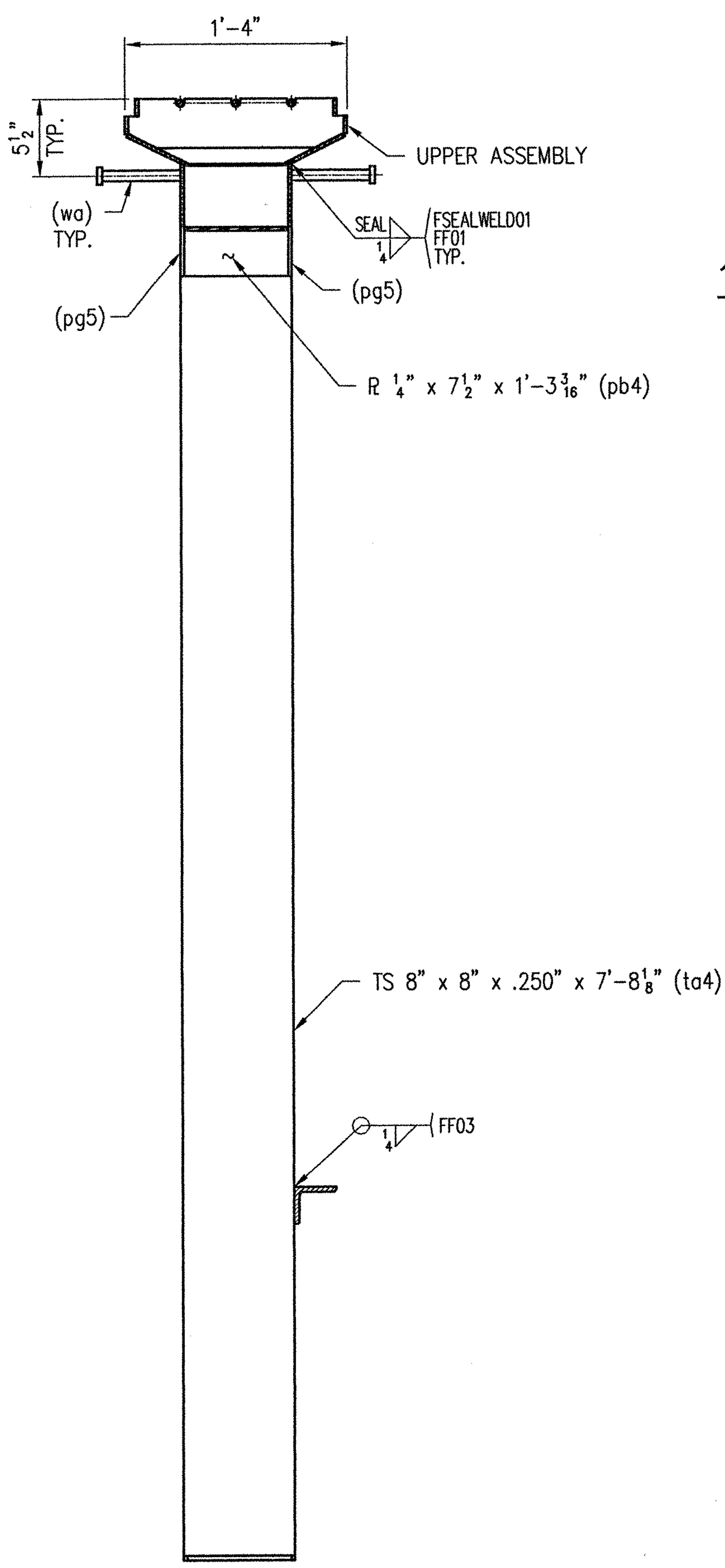


PLAN VIEW



SECTION "K-K"

1 - DOWNSPOUT SCUPPER(S) - 4A



SECTION "H-H"

SEE SHEET NO. 1 FOR GENERAL NOTES.
SEE SHEET NO. 5 FOR DETAILS OF (pf5) & (ab5).
SOME HIDDEN LINES REMOVED FOR CLARITY.

RECEIVED
CK'D BY WGS OK'D BY
DEC 1 2 2001
RESUBMIT APPROVED ✓
BY CPW DATE 12/21/01

SHOP NOTE:
SEAL WELD ALL ACCESSIBLE JOINTS FOR GALVANIZING.

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

REV.	DESCRIPTION	DATE	INT.

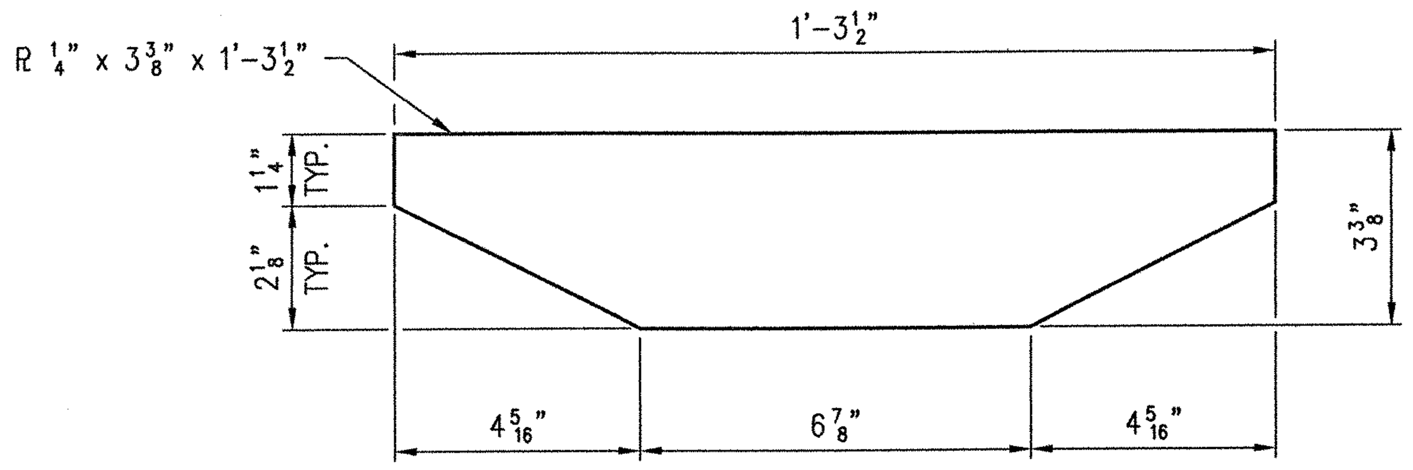
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (612) 368-3000

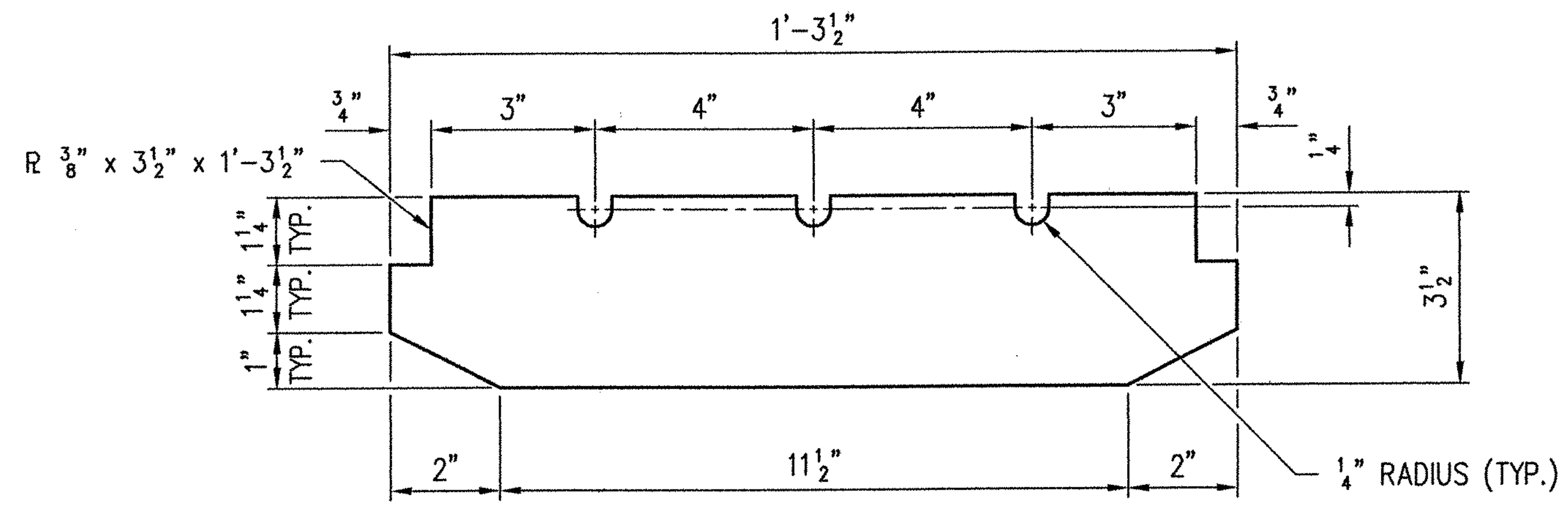
PROJECT — ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT — -
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — SCUPPER(S) DETAILS

Orig.
W.P. chk'd TSF
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

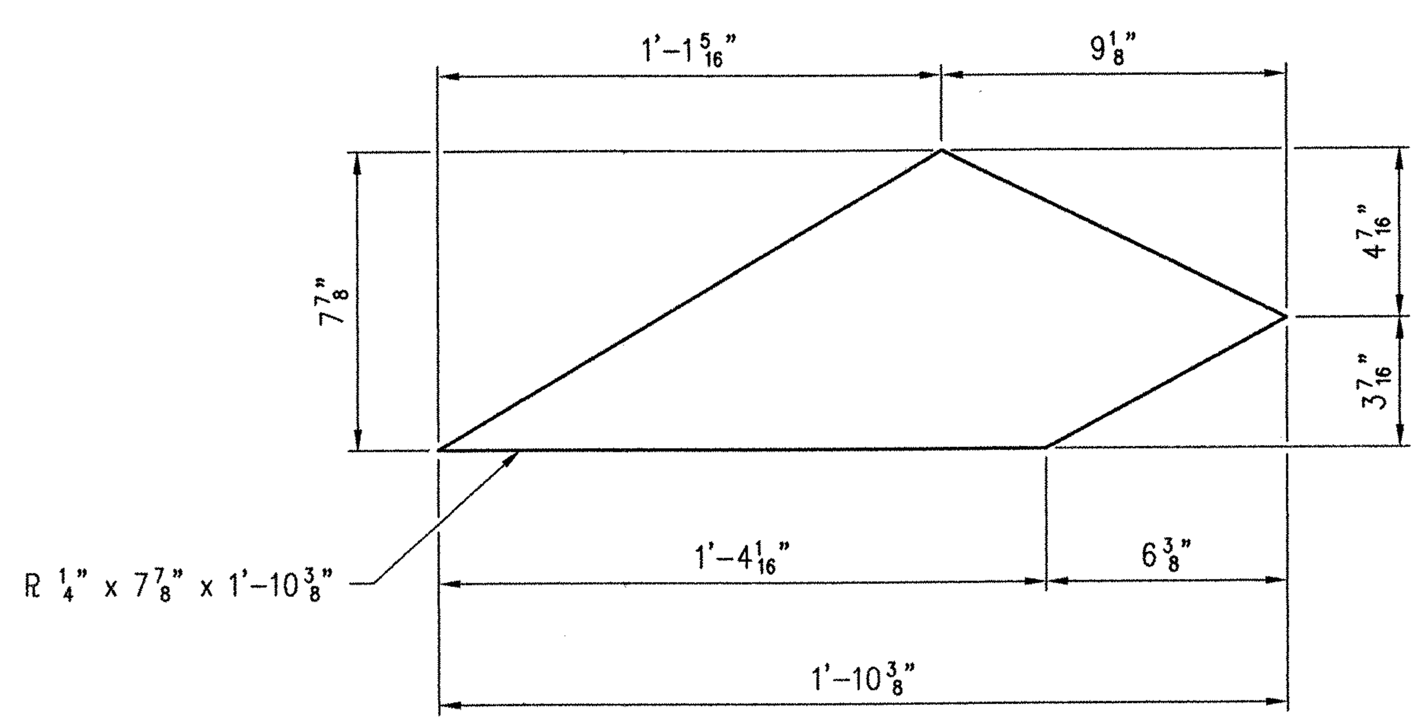
SHEET NO. 4 OF 5
Job. No. : 2034.1236.2



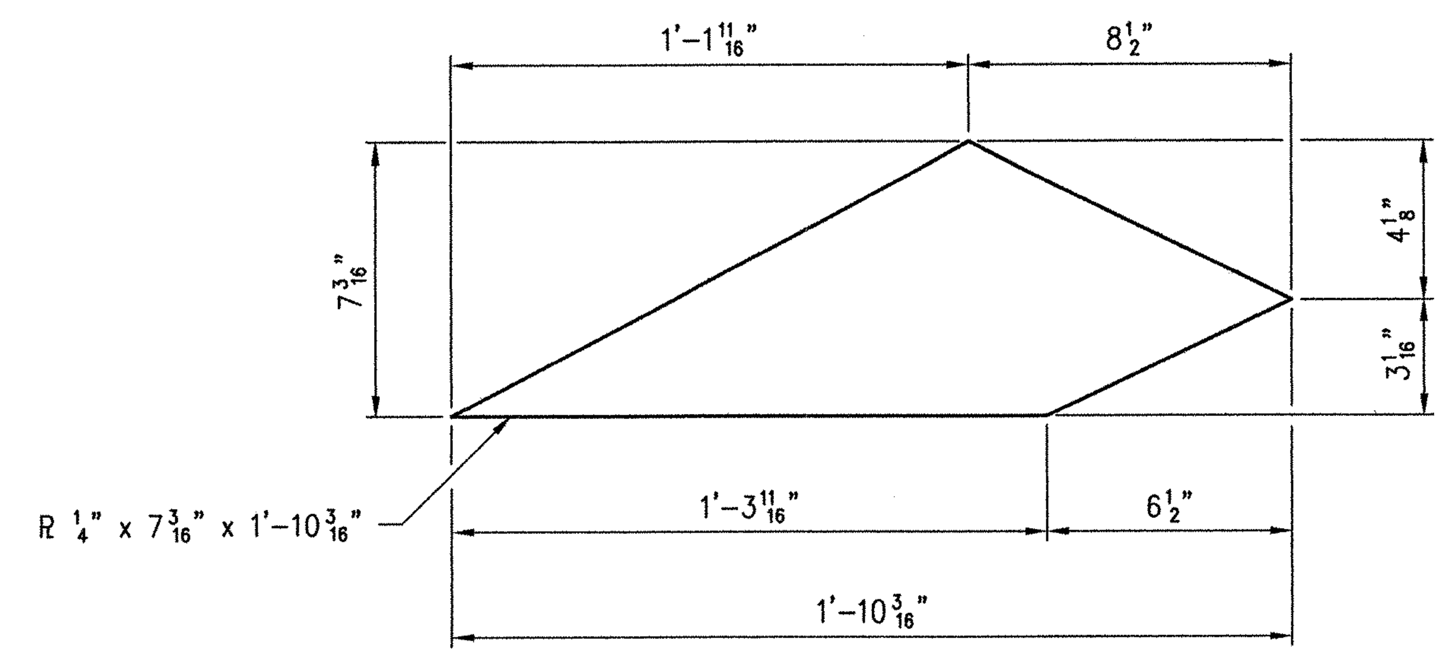
DETAIL (pa5)



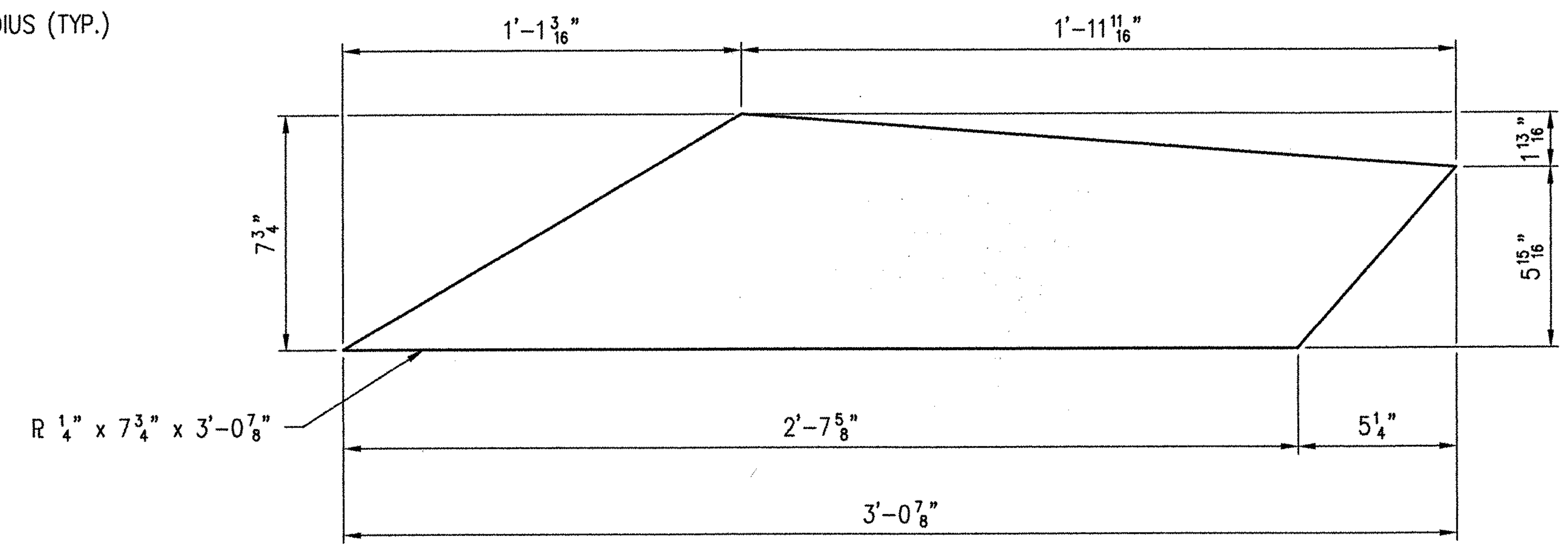
DETAIL (pb5)



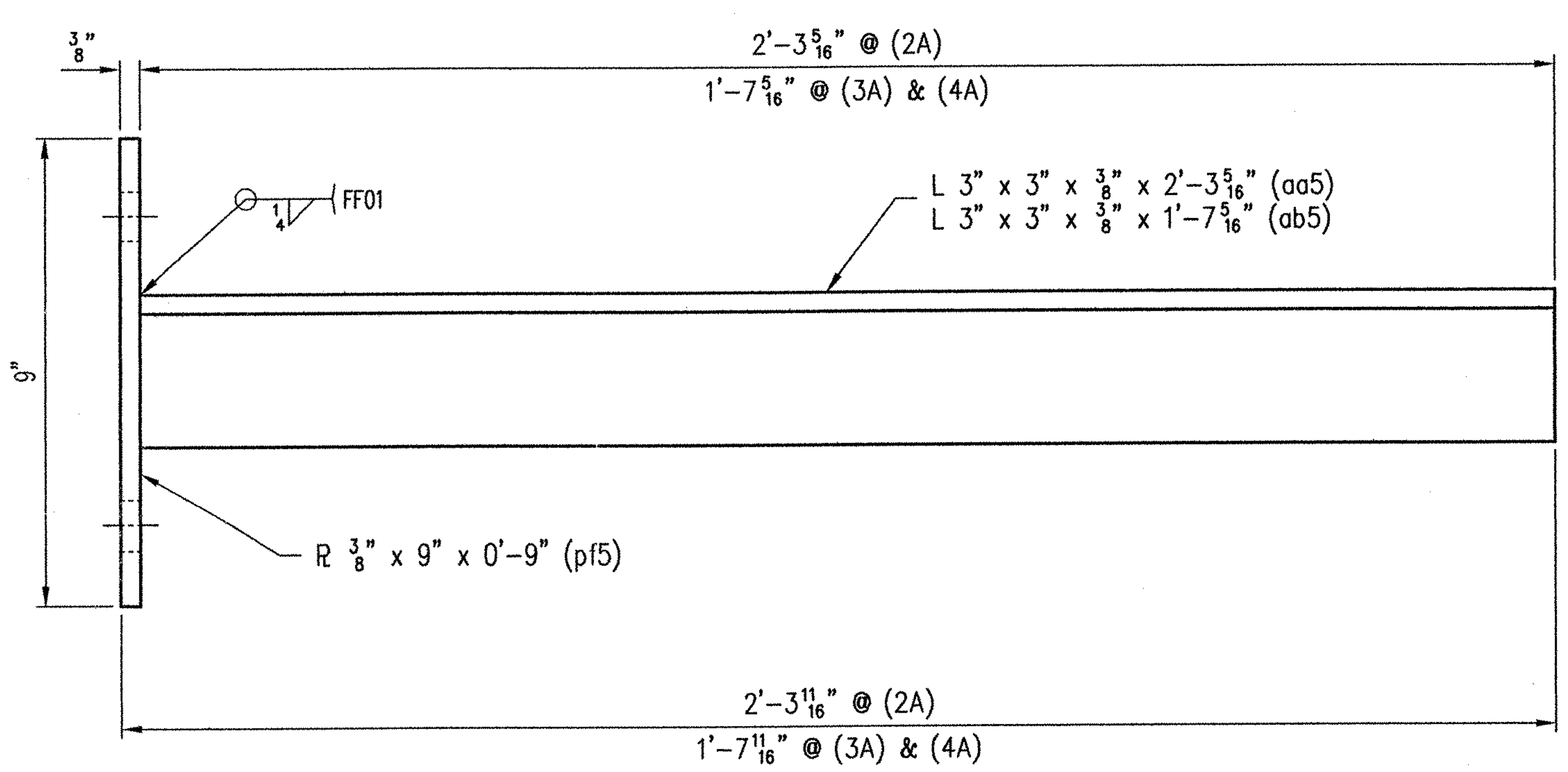
DETAIL (pd5)

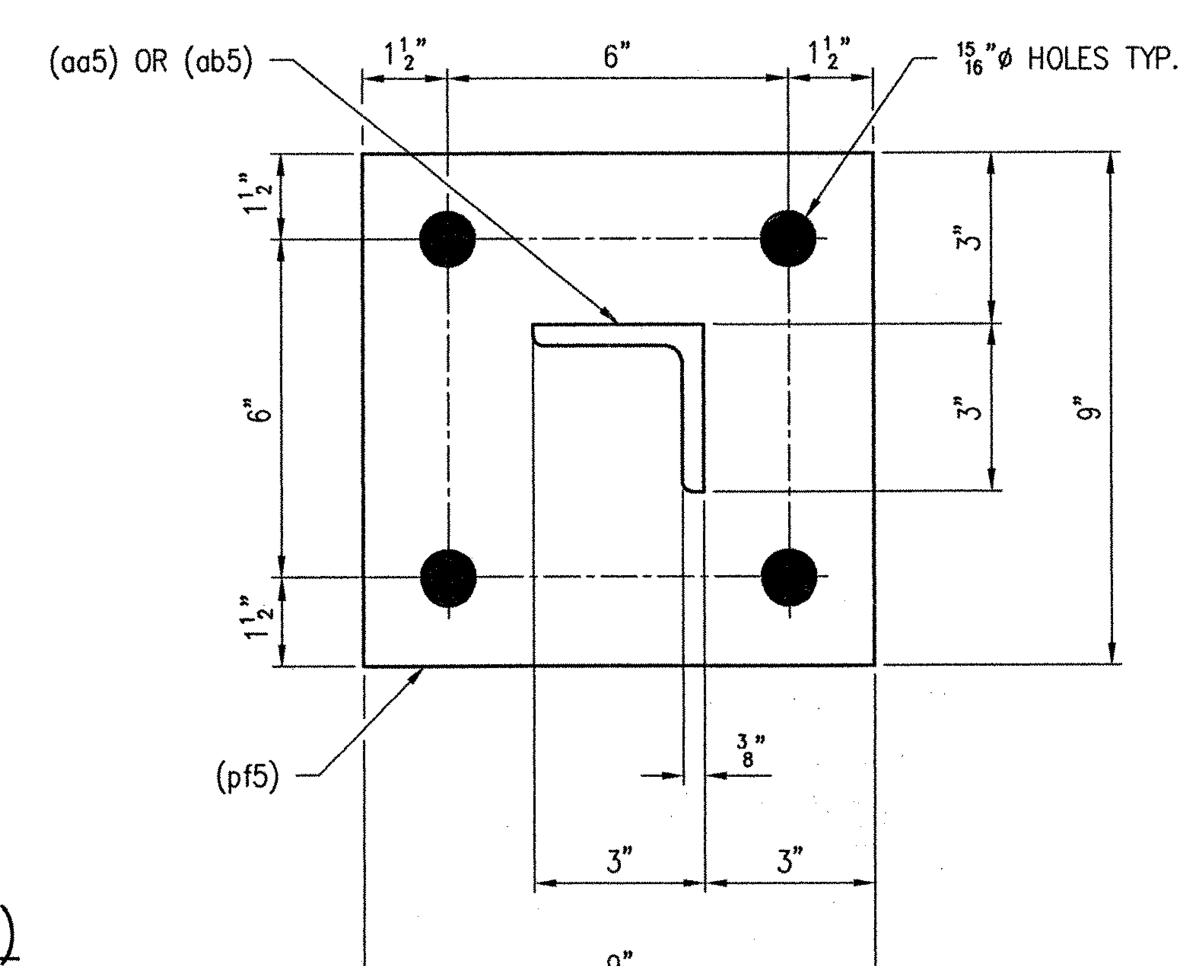


DETAIL (pg5)



DETAIL (pc5)





DETAIL – (pf5) & (aa5)/(ab5)

LINE	NO. REQ'D.	DESCRIPTION	LENGTH	MK	REMARKS	PART NO.
1	2	DOWNSPOUT SCUPPER(S)	8'-7 1/16"	2A	HDG	
2	2	L 3" x 3" x 3/8" A36	2'-3 5/16"	aa5		15-37
3	4	FB 1/4" x 1 1/4" A36	1'-3 1/2"	fa1		16-26
4	4	FB 1/4" x 1 1/4" A36	1'-2 1/2"	fb1		16-26
5	4	R 1/4" x 4 5/16" A36	1'-3 1/2"	pa1		19-12
6	2	R 1/4" x 7 1/2" A36	1'-11 3/8"	pa2		19-12
7	2	R 1/4" x 7 1/2" A36	2'-7 7/16"	pb2		19-12
8	4	R 1/4" x 3 3/8" A36	1'-3 1/2"	pa5	SHAPE CUT	19-12
9	16	R 1/4" x 3 1/2" A36	1'-3 1/2"	pb5	SHAPE CUT	19-12
10	4	R 1/4" x 7 3/4" A36	3'-0 7/8"	pc5	SHAPE CUT	19-12
11	2	R 3/8" x 9" A36	0'-9"	pf5		19-14
12	6	RB 1/2"ø A36	1'-2 1/2"	ra1		18-3
13	2	TS 8" x 8" x .250" A500B	7'-1"	ta2		22-35
14	8	WS 3/4"ø x 6 3/16" A108		wa		29-16
15						
16	1	DOWNSPOUT SCUPPER(S)	8'-9 1/8"	3A	HDG	
17	1	L 3" x 3" x 3/8" A36	1'-7 5/16"	ab5		15-37
18	2	FB 1/4" x 1 1/4" A36	1'-3 1/2"	fa1		16-26
19	2	FB 1/4" x 1 1/4" A36	1'-2 1/2"	fb1		16-26
20	2	R 1/4" x 4 5/16" A36	1'-3 1/2"	pa1		19-12
21	1	R 1/4" x 7 1/2" A36	0'-10"	pa3		19-12
22	1	R 1/4" x 7 1/2" A36	1'-3 9/16"	pb3		19-12
23	2	R 1/4" x 3 3/8" A36	1'-3 1/2"	pa5	SHAPE CUT	19-12
24	8	R 1/4" x 3 1/2" A36	1'-3 1/2"	pb5	SHAPE CUT	19-12
25	2	R 1/4" x 7 7/8" A36	1'-10 3/8"	pd5	SHAPE CUT	19-12
26	1	R 3/8" x 9" A36	0'-9"	pf5		19-14
27	3	RB 1/2"ø A36	1'-2 1/2"	ra1		18-3
28	1	TS 8" x 8" x .250" A500B	7'-8 1/16"	ta3		22-35
29	2	WS 3/4"ø x 6 3/16" A108		wa		29-16
30						
31	1	DOWNSPOUT SCUPPER(S)	8'-8 3/8"	4A	HDG	
32	1	L 3" x 3" x 3/8" A36	1'-7 5/16"	ab5		15-37
33	2	FB 1/4" x 1 1/4" A36	1'-3 1/2"	fa1		16-26
34	2	FB 1/4" x 1 1/4" A36	1'-2 1/2"	fb1		16-26
35	2	R 1/4" x 4 5/16" A36	1'-3 1/2"	pa1		19-12
36	1	R 1/4" x 7 1/2" A36	0'-9 5/16"	pa4		19-12
37	1	R 1/4" x 7 1/2" A36	1'-3 3/16"	pb4		19-12
38	2	R 1/4" x 3 3/8" A36	1'-3 1/2"	pa5	SHAPE CUT	19-12
39	8	R 1/4" x 3 1/2" A36	1'-3 1/2"	pb5	SHAPE CUT	19-12
40	2	R 1/4" x 7 3/16" A36	1'-10 3/16"	pg5	SHAPE CUT	19-12
41	1	R 3/8" x 9" A36	0'-9"	pf5		19-14
42	3	RB 1/2"ø A36	1'-2 1/2"	ra1		18-3
43	1	TS 8" x 8" x .250" A500B	7'-8 1/8"	ta4		22-35
44	2	WS 3/4"ø x 6 3/16" A108		wa		29-16
45						
46		FIELD BOLTS :				
47	20	HB 7/8"ø x 2 1/2" A325-3		5C	16	
48	20	HN 7/8"ø HVY A563DH-3		5D	16	
49	20	FW 7/8"ø F436-3		5F	16	

RECEIVED
CK'D BY [illegible] OK'D BY
DEC 12 2001
RESUBMIT APPROVED ✓
BY CAW DATE 12/21/01

SEE SHEET NO. 1 FOR GENERAL NOTES.

REV.	DESCRIPTION	DATE	INT.

ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

SHOP	
APPROVAL	
DIST.	
CUST.	
FOR PRINTS ISSUED	DATE

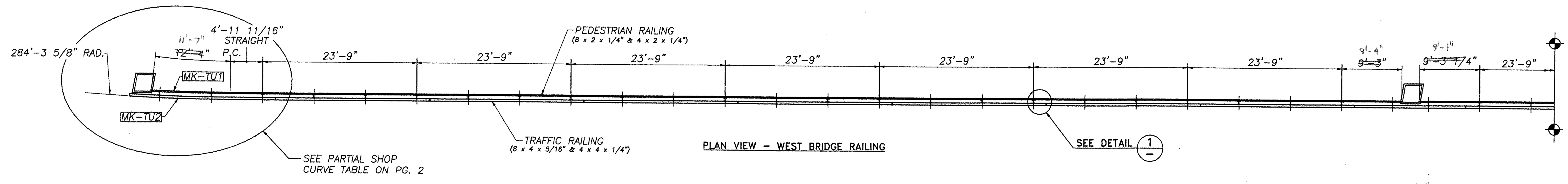
PROJECT — ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT — –
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — SCUPPER(S) DETAILS

Orig.
W.P. chk'd TSF
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

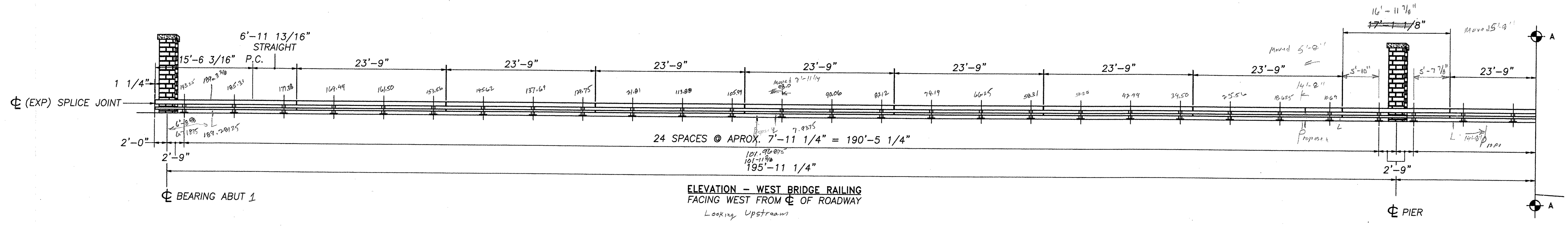
SHEET NO. 5 OF 5 | Job. No. : 2034.1236.2

88'-0
0'-8 1/4
87'-3 3/4

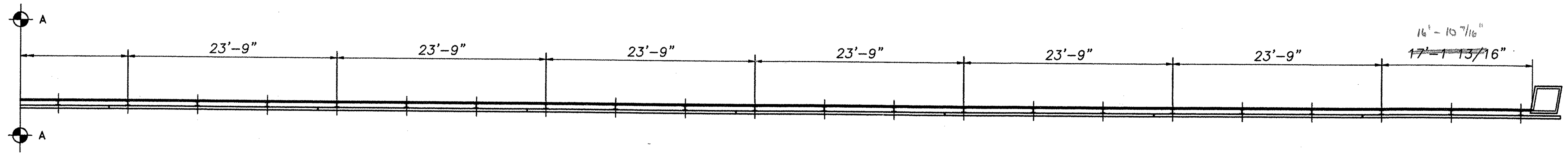
87'-3 3/4
14'-8'
101'-11 3/4



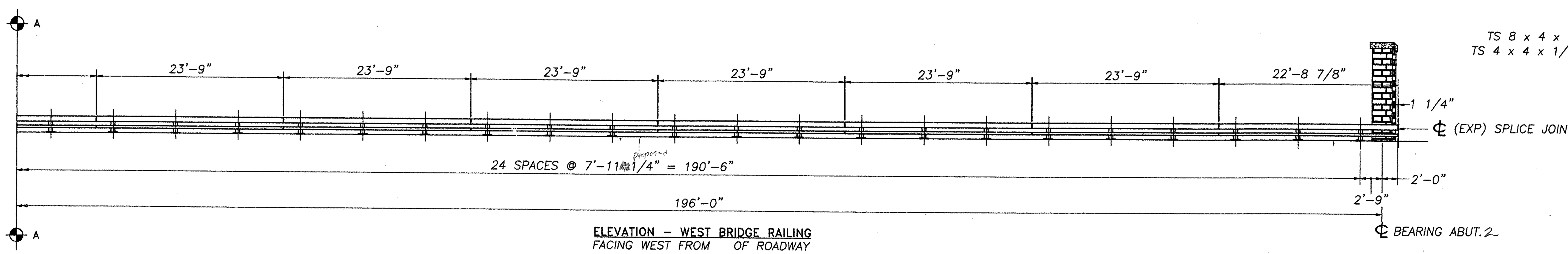
PLAN VIEW – WEST BRIDGE RAILING



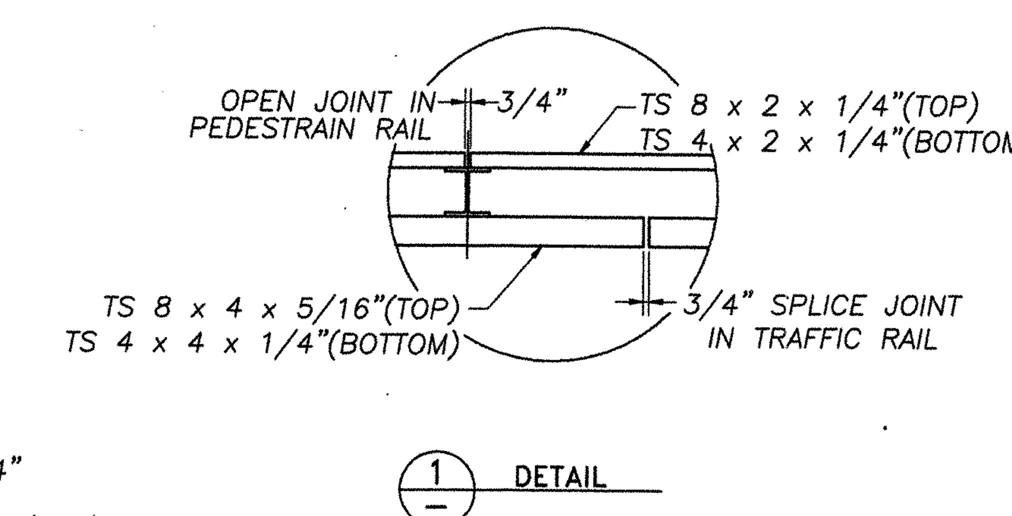
ELEVATION – WEST BRIDGE RAILING
FACING WEST FROM ℄ OF ROADWAY
Looking Upstream



PLAN VIEW – WEST BRIDGE RAILING



ELEVATION – WEST BRIDGE RAILING
FACING WEST FROM OF ROADWAY



1 DETAIL

RECEIVED
CK'D BY WBS CK'D BY RSY
APR 2 3 2002
RESUBMIT ___ APPROVED As noted
BY OPW DATE 4/30/02

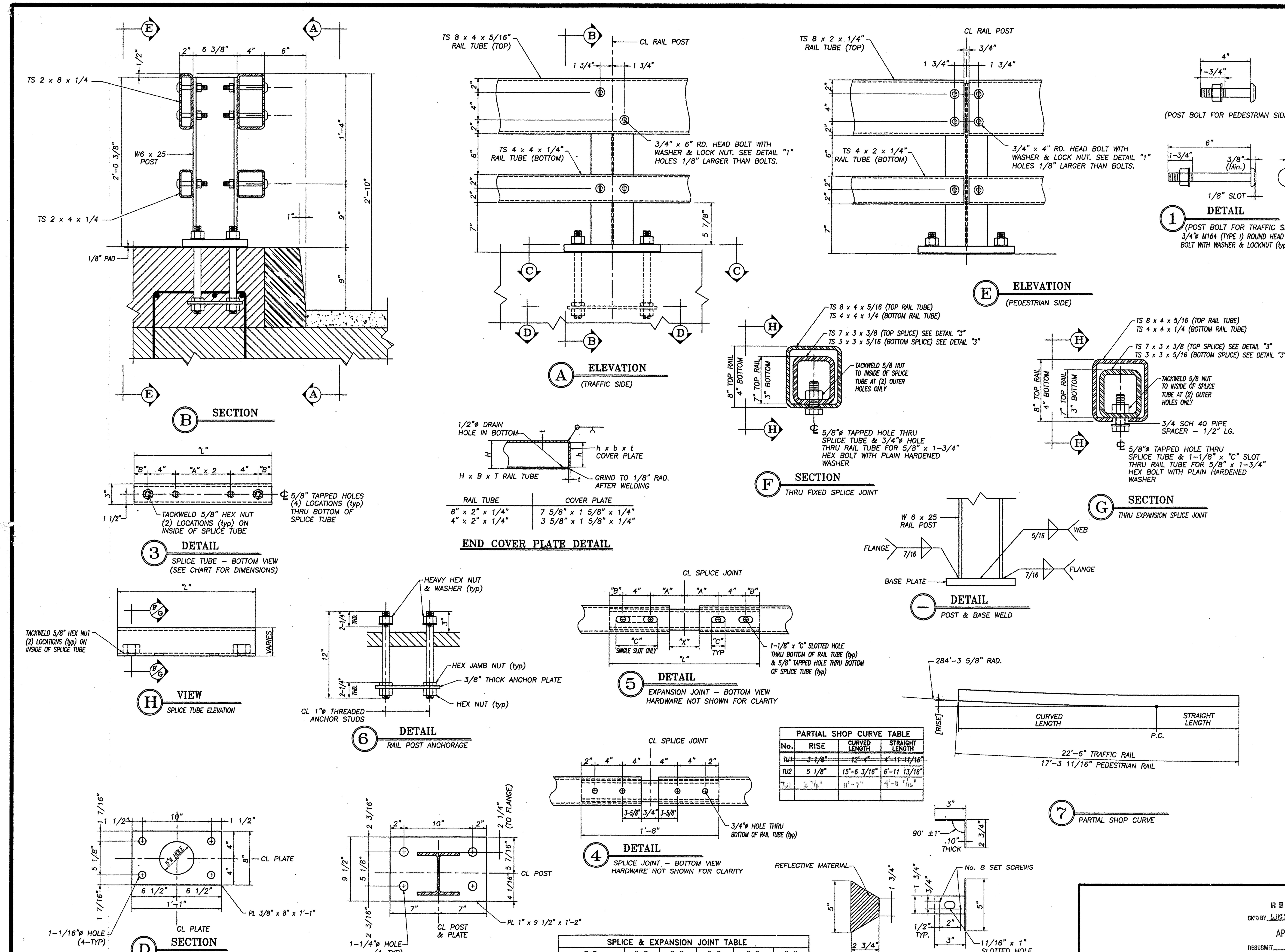
REVISIONS		
No.	Remarks	Date
0	Initial submittal	10/16/01
	Second Submittal	3/18/01
	Third Submittal	4/17/02

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

ITEM 525.33 – BRIDGE RAIL – NETC 2 RAIL
PROJECT No. AC BRZ 1444(22)
TOWN OF ROYALTON
TH1 OVER THE WHITE RIVER
(BRIDGE No. 3) WINDSOR COUNTY

DRAWN	J. Ruiz
DATE	10/15/01
SCALE	1/8 : 12
HSC REFERENCE NO.	1240
SIZE	D
REVISION	0
SHEET NO.	1 of 2

GENERAL CONTRACTOR
SUB CONTRACTOR F. R. LAFAYETTE, INC.



PARTIAL SHOP CURVE TABLE			
No.	RISE	CURVED LENGTH	STRAIGHT LENGTH
~~TU1~~	~~3 1/8"~~	~~12'-4"~~	~~4'-11 11/16"~~
TU2	5 1/8"	15'-6 3/16"	6'-11 13/16"
TU1	2 7/16"	11'-7"	4'-11 11/16"

SPLICE & EXPANSION JOINT TABLE					
"T"	"A"	"B"	"C"	"L"	"X"
SPLICE	4"	2"	--	20"	3/4"
≤4"	4"	2"	2-1/2"	20"	2-1/2"

"T" = TOTAL REQUIRED MOVEMENT * = SINGLE SLOT

DELINEATION DEVICE
PROVIDED BY OTHERS
SEE NOTE 13

BILL OF MATERIAL		
Mk.	Qty.	Description
	50	W6 x 25 POST W/BASE PLATE (2'-0 3/8" OAH)
	14	TS 8 x 4 x 5/16" (23'-9" OAL) TRAFFIC RAIL
	14	TS 4 x 4 x 1/4" (23'-9" OAL) TRAFFIC RAIL
	1	TS 8 x 4 x 5/16" (22'-8 7/8" OAL) TRAFFIC RAIL
	1	TS 4 x 4 x 1/4" (22'-8 7/8" OAL) TRAFFIC RAIL
TU2	1	TS 8 x 4 x 5/16" (22'-6" OAL) TRAFFIC RAIL W/PARTIAL SHOP CURVE
TU2	1	TS 4 x 4 x 1/4" (22'-6" OAL) TRAFFIC RAIL W/PARTIAL SHOP CURVE
	1	TS 8 x 4 x 5/16" (17'-1 1/8" OAL) TRAFFIC RAIL
	1	TS 4 x 4 x 1/4" (17'-1 1/8" OAL) TRAFFIC RAIL
	14	TS 8 x 2 x 1/4" (23'-9" OAL) PEDESTRIAN RAIL
	14	TS 4 x 2 x 1/4" (23'-9" OAL) PEDESTRIAN RAIL
TU1	1	TS 8 x 2 x 1/4" (17'-3 11/16" OAL) PEDESTRIAN RAIL W/PARTIAL SHOP CURVE
TU1	1	TS 4 x 2 x 1/4" (17'-3 11/16" OAL) PEDESTRIAN RAIL W/PARTIAL SHOP CURVE
	1	TS 8 x 2 x 1/4" (17'-1 13/16" OAL) PEDESTRIAN RAIL
	1	TS 4 x 2 x 1/4" (17'-1 13/16" OAL) PEDESTRIAN RAIL
	1	TS 8 x 2 x 1/4" (9'-3 1/4"OAL) PEDESTRIAN RAIL
	1	TS 4 x 2 x 1/4" (9'-3 1/4" OAL) PEDESTRIAN RAIL
	1	TS 8x 2 x 1/4" (9'-3" OAL) PEDESTRIAN RAIL
	1	TS 4 x 2 x 1/4" (9'-3" OAL) PEDESTRAIN RAIL
	50	ANCHOR PLATE (3/8 x 8 x 1'-1")
	16	TS 7 x 3 x 3/8" (20" LG.) SPLICE TUBE
	16	TS 3 x 3 x 5/16" (20" LG.) SPLICE TUBE
	4	COVER PLATE (1/4 x 1 5/8 x 7 5/8")
	4	COVER PLATE (1/4 x 1 5/8 x 3 5/8")
	200	1"ø x 12" LG. THREADED ANCHOR STUD W/HEAVY HEX NUT & WASHER
	200	1"ø JAMB NUT
	200	1"ø HEX NUT
	200	3/4"ø x 6" LG. M164 ROUND HEAD BOLT W/WASHER & LOCKNUT
	300	3/4"ø x 4" LG. M164 ROUND HEAD BOLT W/WASHER & LOCKNUT
	128	5/8"ø x 1 3/4" LG. HEX BOLT W/PLAIN WASHER
	50	1/8" THICK NEOPRENE PAD

NETC 2 RAIL NOTES

1. All work and materials shall conform to the provisions of Section 525 – Railings of the Vermont Standard Specifications for Construction.

2. Tubing & posts shall meet the requirements of Section 732 – Railing materials of the Standard Specifications for Construction.

3. All exposed cut or sheared edges shall be ground to a 1/16" radius & be free of burrs.

4. Rail posts shall be set normal to grade.

5. Sections of rail bar shall be attached to a minimum of two (2) posts and preferebly to at least four (4) posts.

6. Rail bar expansion joints shall be provided in any rail bay spanning a superstructure expansion joint. Expansion joint width shall be "X" at 45° F and will be adjusted in the field by the engineer.

7. All parts shall be galvanized after fabrication in accordance with subsection 506.15, as modified by the special provisions.

8. Rail posts anchoring nuts shall be tightened to a snug-tight fit and given an additional 1/8 turn.

9. Rail bars shall be attached using 3/4"ø full diameter body head bolts AASHTO M164 (Type-I) inserted through the face of the bar. Holes in post shall be 1/16" larger than the bolt size.

10. Holes in rails for attachment to posts will be field-drilled. Holes shall be coated with an approved zinc-rich paint prior to erection.

11. Radiused rails (if required) will be shop-curved. No field-bending of rail tubes.

12. The drop-weight tear test in section 732 shall not apply to the structure tubing on this standard.

13. Delination devices shall be set aproximately every 30 ft. or to closest post.

MATERIALS

Rail bars..........ASTM A500 GR B or ASTM A501
Rail posts..........ASTM A709/A709M, GR 50
All other shapes & plates..........ASTM A709/A709M GR 36
Anchor studs..........ASTM A449
All other bolts [unless noted]..........AASHTO M164, TYPE I

Nuts for AASHTO m164 bolts shall comply with AASHTO M291. Nuts for anchor studs shall comply with ASTM A563.

Washers shall comply with AASHTO M293 (ASTM F436) specification.

1/8" pad shall comply with standard specification subsection 731.01 or 731.02 of Vermont Standard Specifications.

Set screws for delineation devices shall conform to ASTM specifications F880 condition CW, alloy type 304.

REVISIONS		
No.	Remarks	Date
0	Initial submittal	10/16/01
	Second Submittal	3/18/02
	Third Submittal	4/17/02

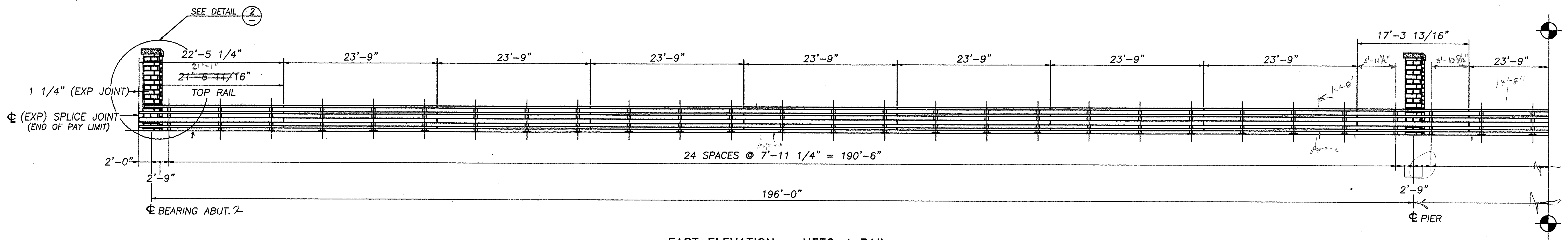
RECEIVED
CK'D BY WBS OK'D BY RST
APR 2 3 2002
RESUBMIT ____ APPROVED As noted
BY CPW DATE 4/30/02

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

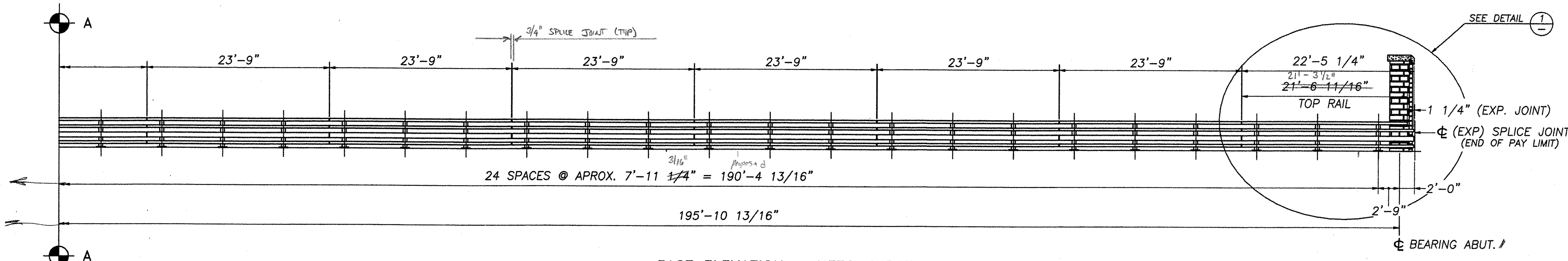
ITEM 525.33 – BRIDGE RAIL – NETC 2 RAIL
PROJECT No. AC BRZ 1444(22)
TOWN OF ROYALTON
TH1 OVER THE WHITE RIVER
(BRIDGE No. 3) WINDSOR COUNTY

GENERAL CONTRACTOR
SUB CONTRACTOR F.R. LAFAYETTE. INC.

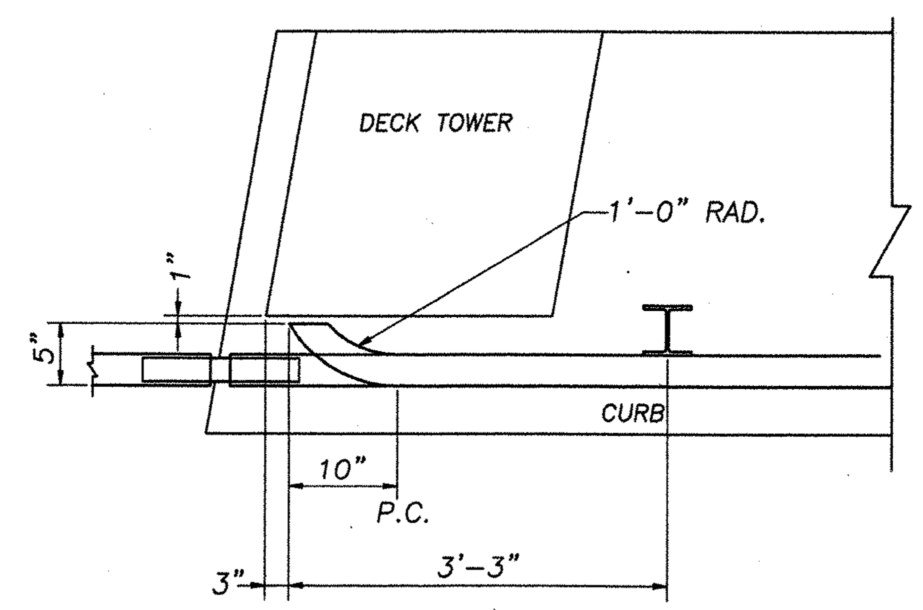
DRAWN J. Ruiz
CHECKED
DATE 10/15/01
SCALE N.T.S
HSC REFERENCE NO. 1240
SIZE D REVISION 0
SHEET NO. 2 of 2



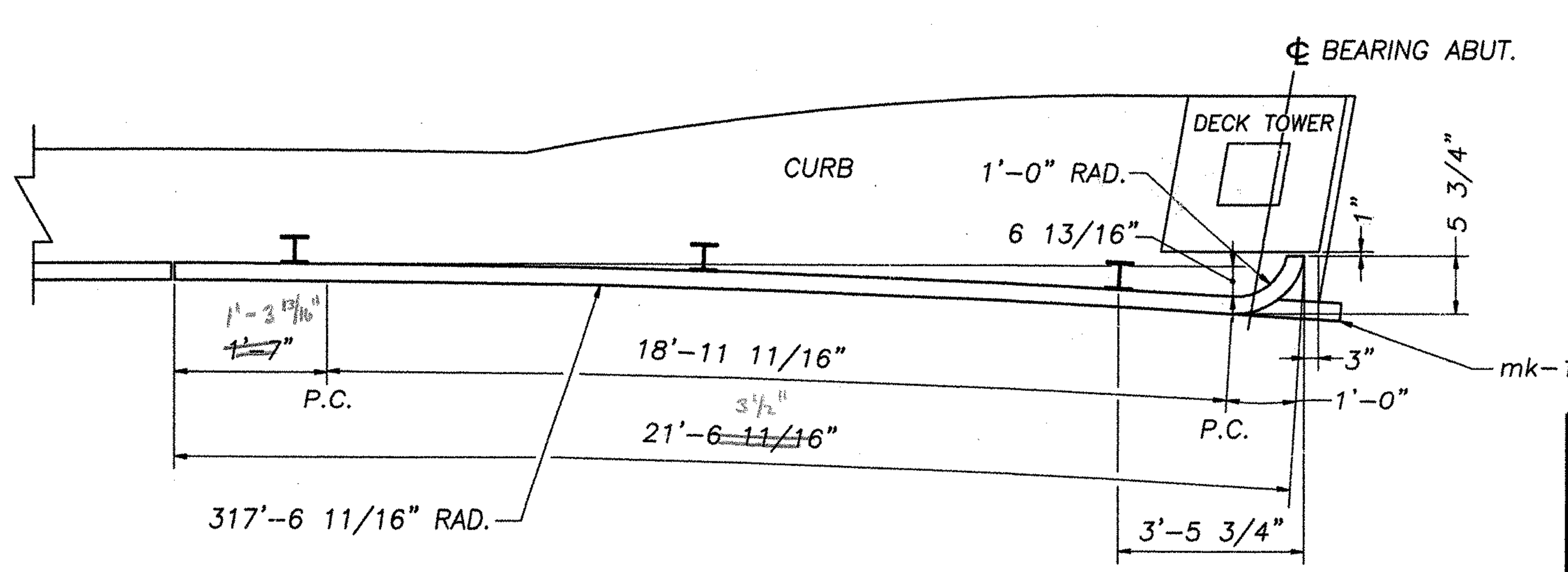
EAST ELEVATION – NETC 4 RAIL
FACING EAST FROM ℄ OF ROADWAY
Looking Downstream



EAST ELEVATION – NETC 4 RAIL
FACING EAST FROM ℄ OF ROADWAY
Looking Downstream



2 DETAIL



1 DETAIL

REVISIONS		
No.	Remarks	Date
0	Initial submittal	10/16/01
	Second submittal	3/18/02
	Third submittal	4/17/02

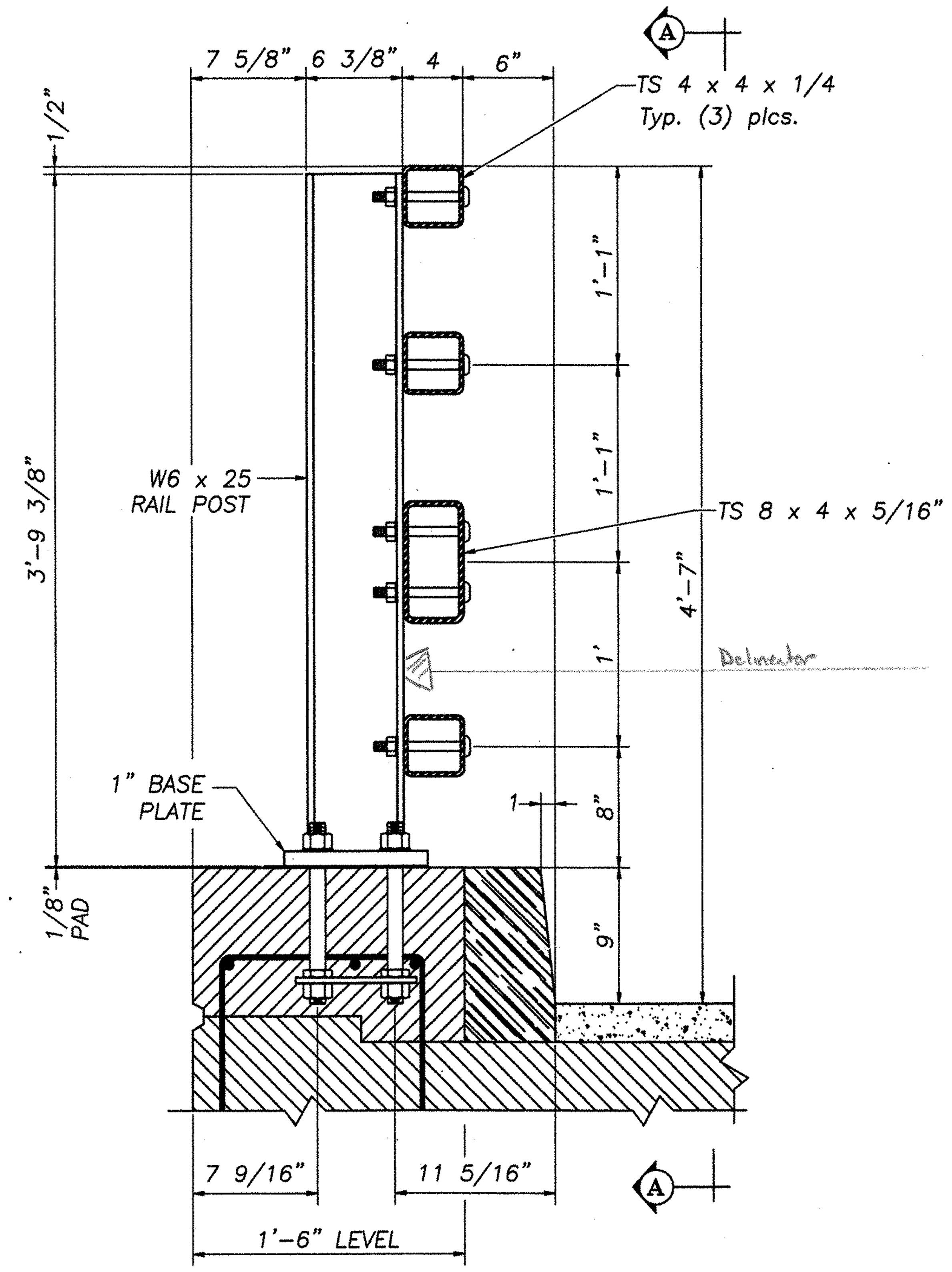
RECEIVED
CK'D BY WBS OK'D BY RSY
APR 23 2002
RESUBMIT ___ APPROVED As noted
BY CPW DATE 4/30/02

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

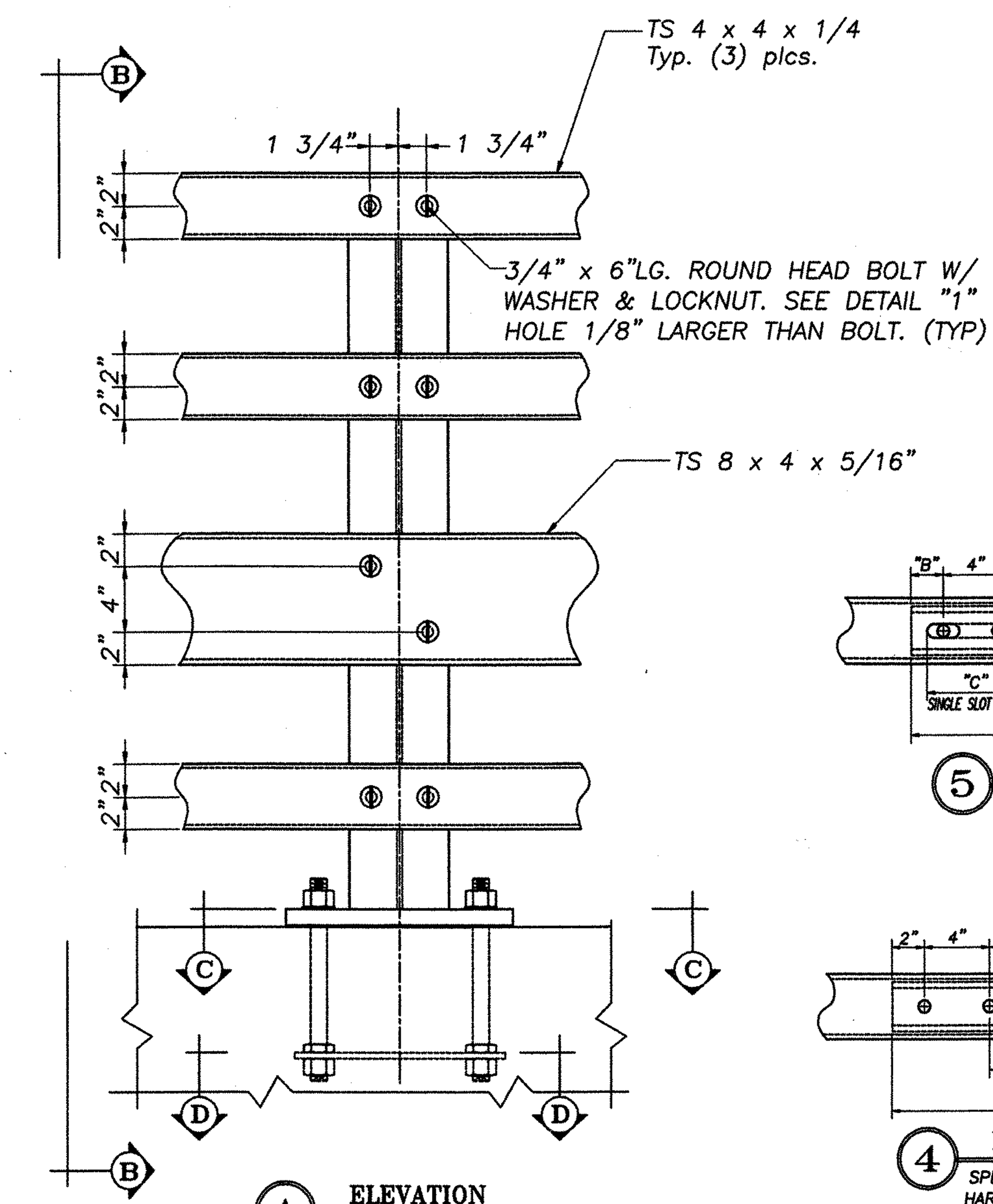
ITEM 525.34 – BRIDGE RAIL – NETC 4 RAIL
PROJECT No. AC BRZ 1444(22)
TOWN OF ROYALTON
TH1 OVER THE WHITE RIVER
(BRIDGE No. 3) WINDSOR COUNTY

GENERAL CONTRACTOR
SUB CONTRACTOR F. R. LAFAYETTE, INC.

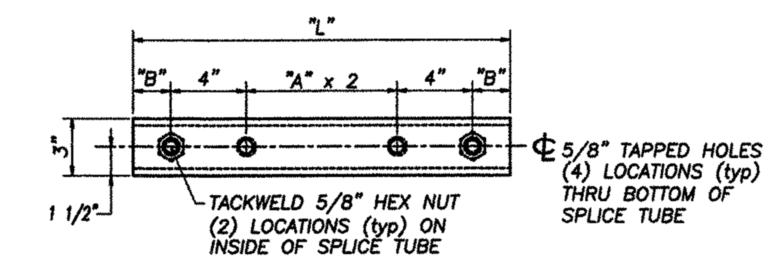
DRAWN J. Ruiz
CHECKED
DATE 10/15/01
SCALE 1/8 : 12
HSC REFERENCE NO. 1241
SIZE D REVISION 0
SHEET NO. 1 of 2



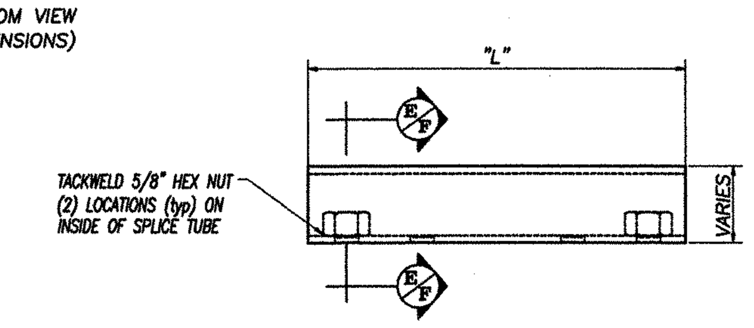
B SECTION



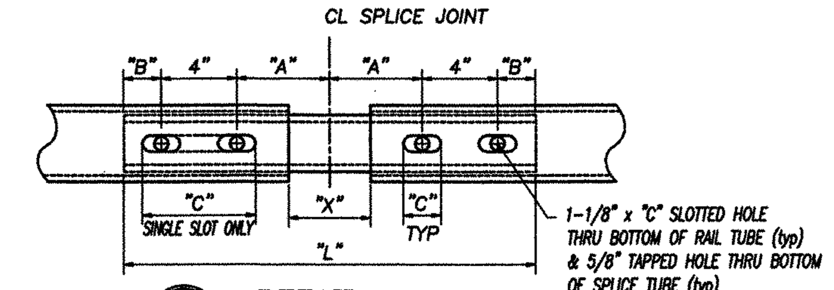
A ELEVATION



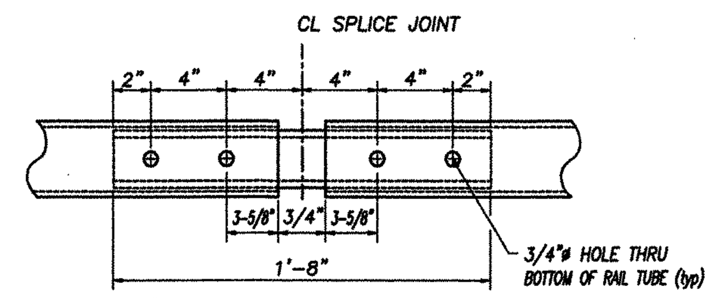
3 DETAIL
SPLICE TUBE – BOTTOM VIEW
(SEE CHART FOR DIMENSIONS)



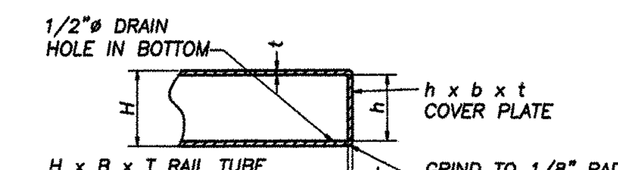
G VIEW
SPLICE TUBE ELEVATION



5 DETAIL
EXPANSION JOINT – BOTTOM VIEW
HARDWARE NOT SHOWN FOR CLARITY



4 DETAIL
SPLICE JOINT – BOTTOM VIEW
HARDWARE NOT SHOWN FOR CLARITY



RAIL TUBE	COVER PLATE
8" x 4" x 5/16"	7 1/2" x 3 1/2" x 1/4"
4" x 4" x 1/4"	3 5/8" x 3 5/8" x 1/4"

END COVER PLATE DETAIL

BILL OF MATERIAL		
Mk.	Qty.	Description
	50	W6 x 25 POST W/BASE PLATE (3'-9 3/8" OAH)
	14	TS 8 x 4 x 5/16" (23'-9" OAL)
	42	TS 4 x 4 x 1/4" (23'-9" OAL)
	1	TS 8 x 4 x 5/16" (22'-5 1/4" OAL)
	2	TS 4 x 4 x 1/4" (22'-5 1/4" OAL)
TU1	1	TS 8 x 4 x 5/16" (22'-5 1/4" OAL) W/PARTIAL SHOP CURVE
TU1	2	TS 4 x 4 x 1/4" (22'-5 1/4" OAL) W/PARTIAL SHOP CURVE
	1	TS 4 x 4 x 1/4" (21'-6 11/16" OAL) W/1'-0" RAD.
	1	TS 4 x 4 x 1/4" (21'-6 11/16" OAL) W/1'-0" RAD. & PARTIAL CURVE
	1	TS 8 x 4 x 5/16" (17'-3 13/16" OAL)
	3	TS 4 x 4 x 1/4" (17'-3 13/16" OAL)
	50	ANCHOR PLATE (3/8 x 8 x 1'-1")
	16	TS 7 x 3 x 3/8" (20" LG.) SPLICE TUBE W/(2) TACKWELDED 5/8"ø HEX NUTS
	48	TS 3 x 3 x 5/16" (20" LG.) SPLICE TUBE W/(2) TACKWELDED 5/8"ø HEX NUTS
	200	1"ø x 12" LG. ANCHOR BOLTS W/HEAVY HEX NUT & WASHER
	200	1"ø JAMB NUT
	200	1"ø HEX NUT
	400	3/4"ø x 6" LG. M164 ROUND HEAD BOLT W/LOCKNUT & WASHER
	256	5/8"ø x 1 3/4"LG. HEX BOLT W/WASHER
	2	1/4 x 3 5/8 x 3 5/8" COVER PLATE
	50	1/8" THICK NEOPRENE PAD

NETC 4 RAIL NOTES

1. All work and materials shall conform to the provisions of Section 525 – Railings of the Vermont Standard Specifications for Construction.

2. Tubing & posts shall meet the requirements of Section 732 – Railing materials of the Standard Specifications for Construction.

3. All exposed cut or sheared edges shall be ground to a 1/16" radius & be free of burrs.

4. Rail posts shall be set normal to grade.

5. Sections of rail bar shall be attached to a minimum of two (2) posts and preferebly to at least four (4) posts.

6. Rail bar expansion joints shall be provided in any rail bay spanning a superstructure expansion joint. Expansion joint width shall be "X" at 45° F and will be adjusted in the field by the engineer.

7. All parts shall be galvanized after fabrication in accordance with subsection 506.15, as modified by the special provisions.

8. Rail posts anchoring nuts shall be tightened to a snug-tight fit and given an additional 1/8 turn.

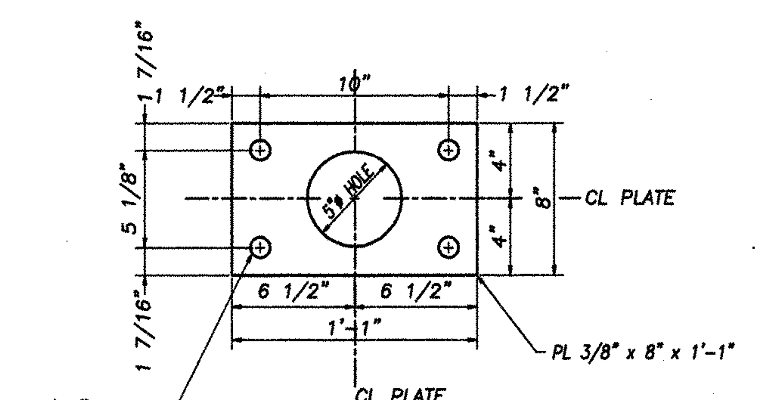
9. Rail bars shall be attached using 3/4"ø full diameter body head bolts AASHTO M164 (Type-I) inserted through the face of the bar. Holes in post shall be 1/16" larger than the bolt size.

10. Holes in rails for attachment to posts will be field-drilled. Holes shall be coated with an approved zinc-rich paint prior to erection.

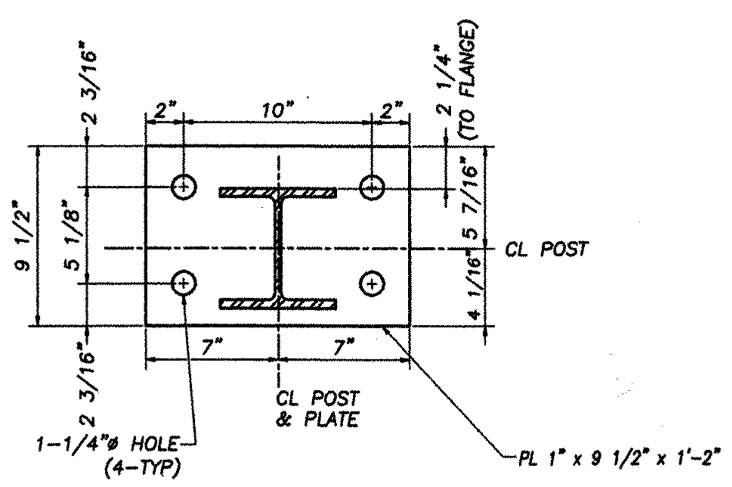
11. Radiused rails (if required) will be shop-curved. No field-bending of rail tubes.

12. The drop-weight tear test in section 732 shall not apply to the structure tubing on this standard.

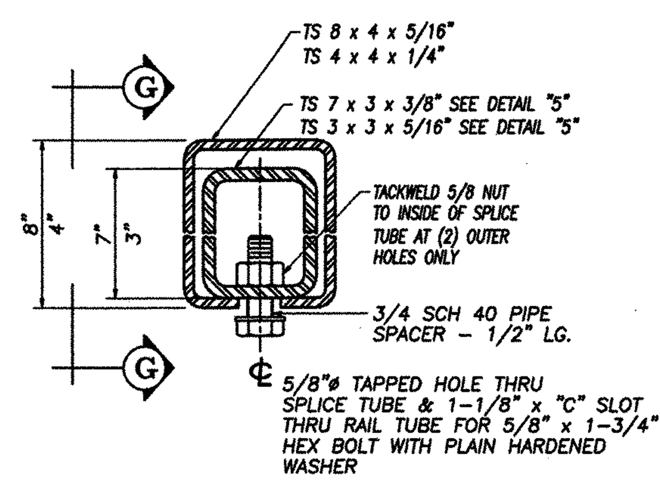
13. Delineation devices shall be set approximately every 30 feet or to closest post



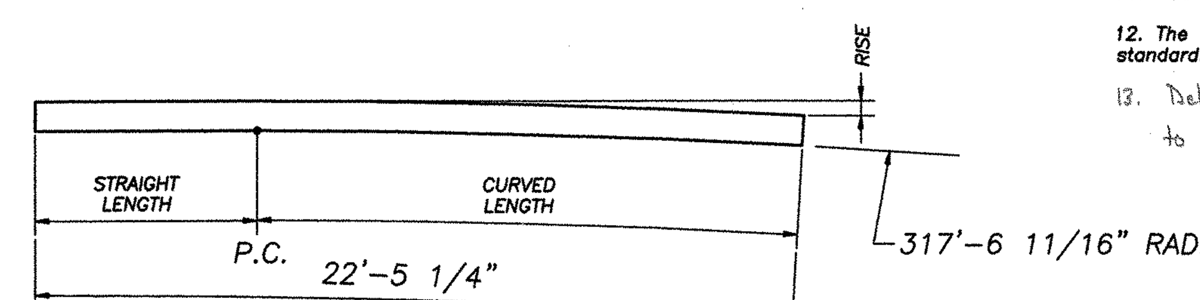
D SECTION
ANCHOR PALTE



C SECTION
RAIL POST & BASE PLATE
SEE DETAIL "F" FOR POST-BASE WELD



F SECTION
THRU EXPANSION SPLICE JOINT



PARTIAL SHOP CURVE TABLE			
No.	RISE	STRAIGHT LENGTH	CURVED LENGTH
~~TU1~~	~~2 3/8"~~	~~1'-3 13/16"~~	~~21'-1 11/16"~~
MK-1	8 7/16"	1'-3 13/16"	21'-17/16"

7 DETAIL
PARTIAL SHOP CURVE

~~LENGTH OF CURVED TUBING TO BE DI~~
~~CONTRACTOR PRIOR TO SHOP FABRICA~~

MATERIALS

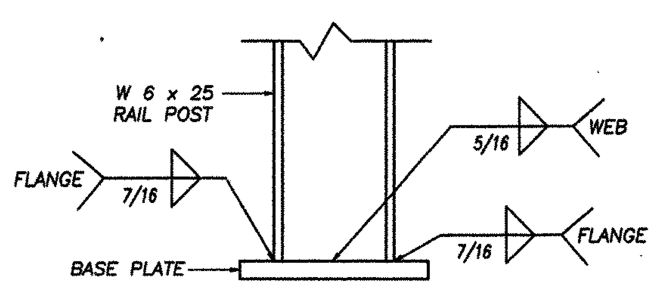
Rail bars..............................ASTM A500 GR B or ASTM A501
Rail posts..............................ASTM A709/A709M, GR 50
All other shapes & plates..............................ASTM A709/A709M GR 36
Anchor studs..............................ASTM A449
All other bolts [unless noted]..............................AASHTO M164, TYPE I

Nuts for AASHTO m164 bolts shall comply with AASHTO M291. Nuts for anchor studs shall comply with ASTM A563.

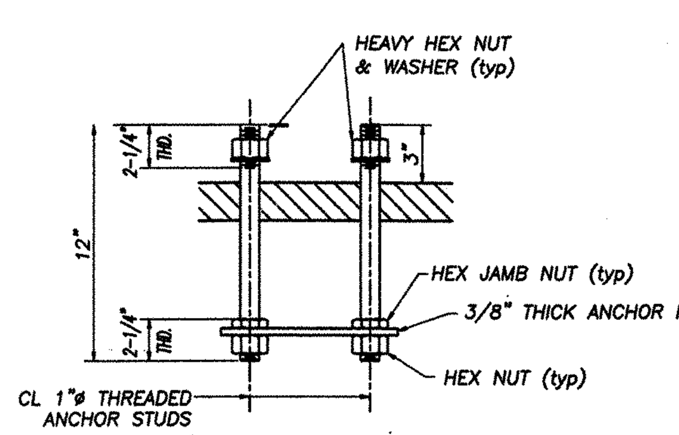
Washers shall comply with AASHTO M293 (ASTM F436) specification.

1/8" pad shall comply with standard specification subsection 731.01 or 731.02 of Vermont Standard Specifications.

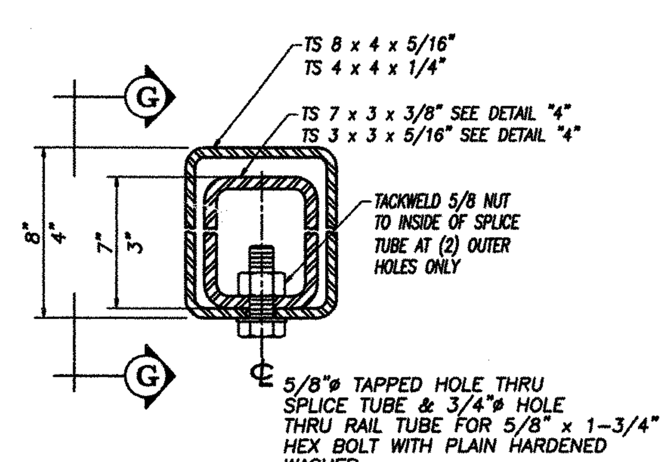
Set screws for delinaeation devices shall conform to ASTM specification F880, condition CW, alloy type 304.



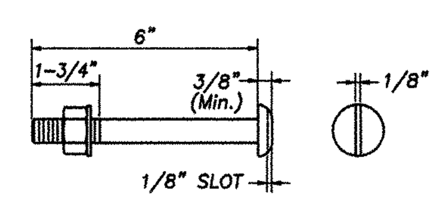
2 DETAIL
POST-BASE WELD



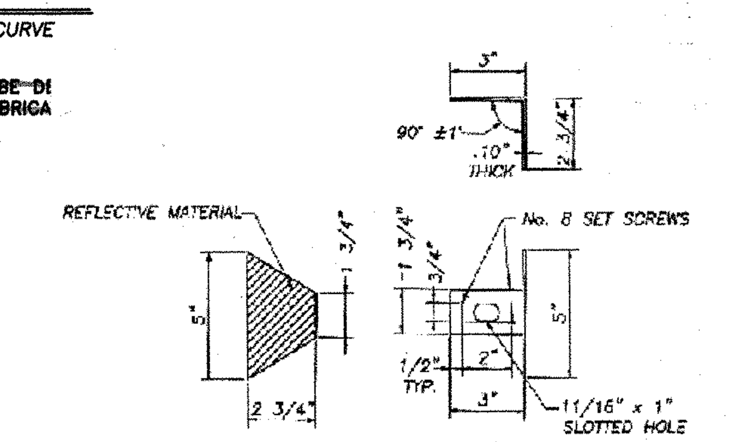
6 DETAIL
RAIL POST ANCHORAGE



E SECTION
THRU FIXED SPLICE JOINT



1 DETAIL
3/4"ø M164 (TYPE I) ROUND HEAD BOLT WITH WASHER & LOCKNUT (typ).



DELINEATION DEVICE
PROVIDED BY OTHERS
SEE NOTE 13

SPLICE & EXPANSION JOINT TABLE					
"T"	"A"	"B"	"C"	"L"	"X"
SPLICE	4"	2"	--	20"	3/4"
≤4"	4"	2"	2-1/2"	20"	2-1/2"

"T" = TOTAL REQUIRED MOVEMENT * = SINGLE SLOT

REVISIONS		
No.	Remarks	Date
0	Initial submittal	10/16/01
	Second submittal	3/18/02
	Third submittal	4/17/02

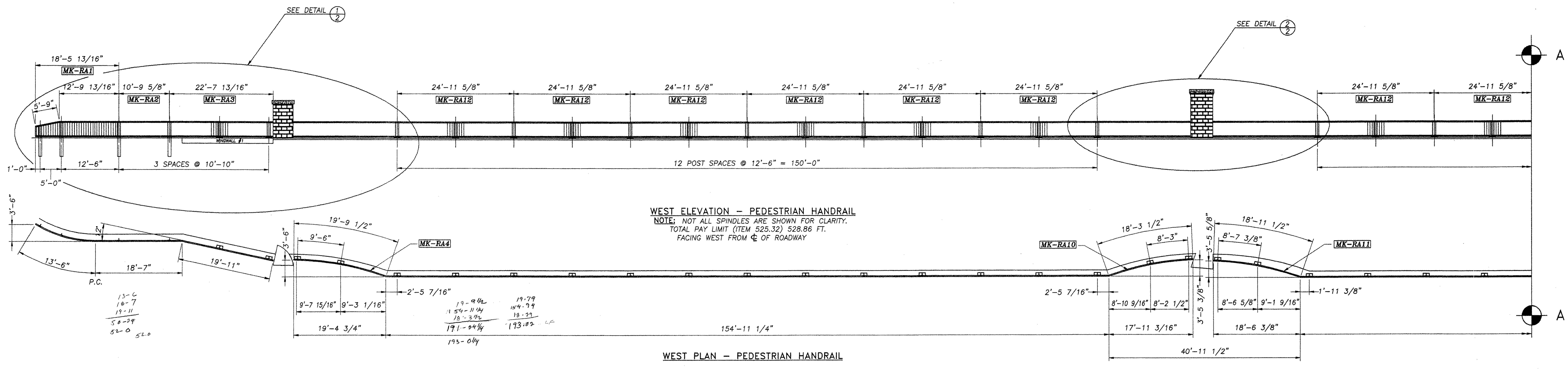
RECEIVED
CK'D BY WBS OK'D BY KS4
APR 2 3 2002
RESUBMIT ____ APPROVED As noted
BY CPW DATE 4/30/02

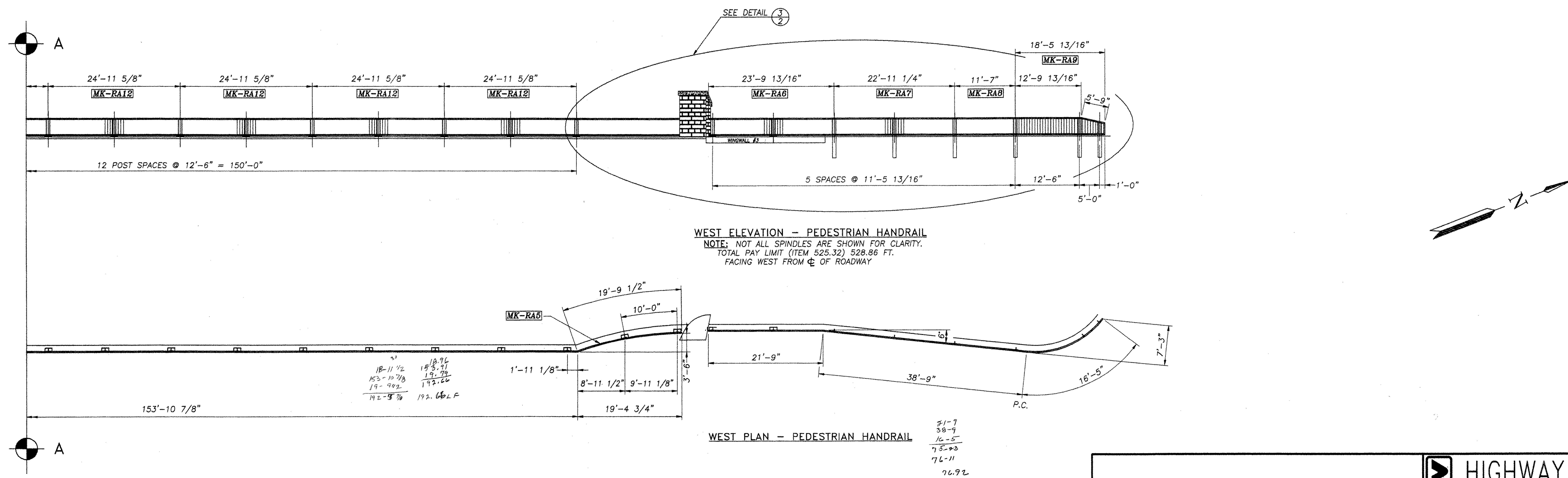
HIGHWAY SAFETY CORP.
GLASTONBURY, CT

ITEM 525.34 – BRIDGE RAIL – 4 RAIL
PROJECT No. AC BRZ 1444(22)
TOWN OF ROYALTON
TH1 OVER THE WHITE RIVER
(BRIDGE No. 3) WINDSOR COUNTY

GENERAL CONTRACTOR
SUB CONTRACTOR F. R. LAFAYETTE, INC.

DRAWN J. Ruiz
CHECKED Paul X.
DATE 10/15/01
SCALE N.T.S
HSC REFERENCE NO. 1241
SIZE D REVISION 0
SHEET NO. 2 of 2





RECEIVED
CK'D BY LWSi OK'D BY
MAY 15 2002
RESUBMIT APPROVED ✓
BY CPW DATE 5/20/02

REVISIONS		
No.	Remarks	Date
0	Initial submittal	10/16/01
	Second submittal	3/18/02
	Third submittal	4/17/02
	Fourth submittal	5/8/02

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

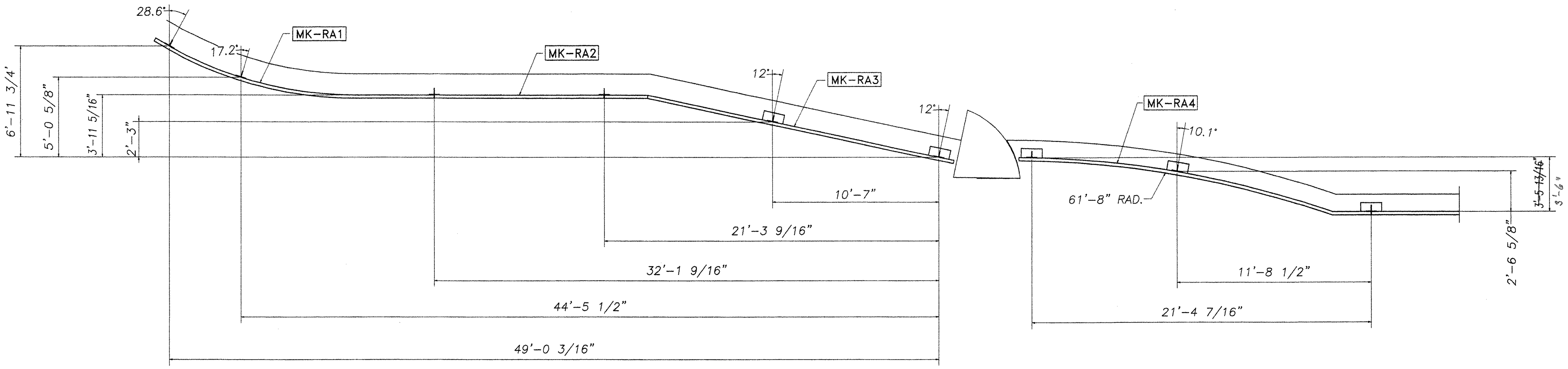
ITEM 525.32 PEDESTRIAN RAIL (MOD)
PROJECT No. AC BRZ 1444(22)
TOWN OF ROYALTON
TH1 OVER THE WHITE RIVER
(BRIDGE No. 3) WINDSOR COUNTY

GENERAL CONTRACTOR

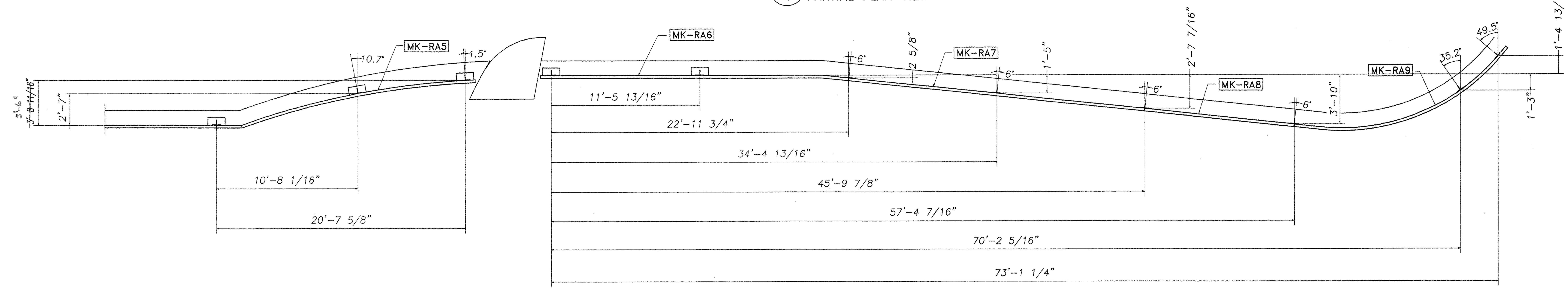
SUB CONTRACTOR F. R. LAFAYETTE, INC.

DRAWN	J. Ruiz
CHECKED	
DATE	10/15/01
SCALE	3/32 : 12
HSC REFERENCE NO.	1242
SIZE	D
REVISION	0
SHEET NO.	1 of 5

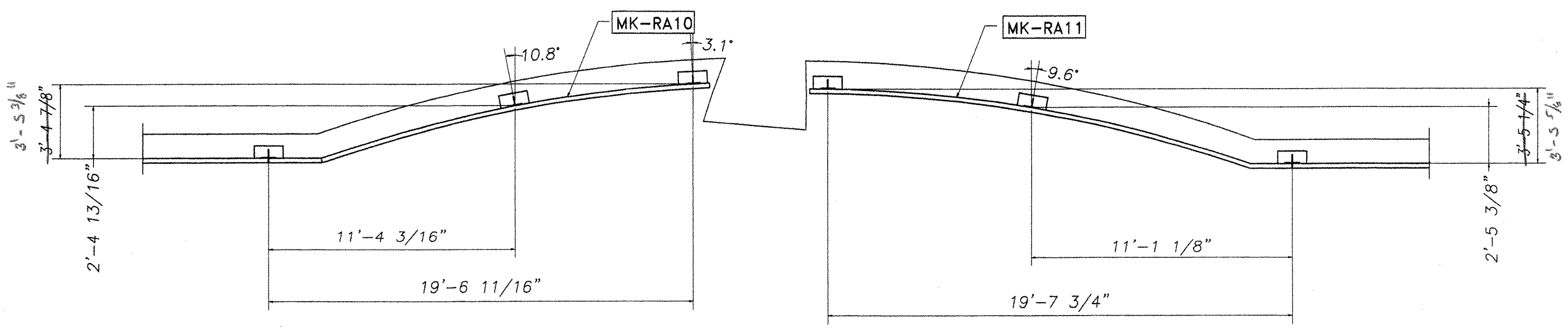
QUALITY CERTIFICATION AISC



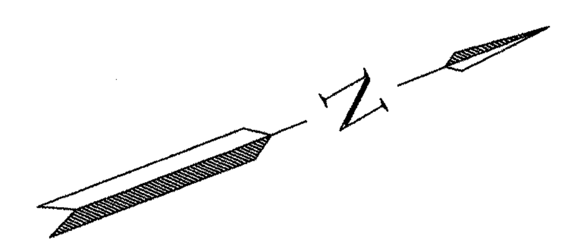
1 DETAIL
1 PARTIAL PLAN VIEW



3 DETAIL
1 PARTIAL PLAN VIEW



2 DETAIL
1 PARTIAL PLAN VIEW



RECEIVED
CK'D BY WJK OK'D BY ______
MAY 15 2002
RESUBMIT ______ APPROVED As noted
BY CPW DATE 5/20/02

REVISIONS		
No.	Remarks	Date
0	Initial submittal	10/16/01
	Second submittal	3/18/02
	Third submittal	4/17/02
	Fourth submittal	5/8/02

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

ITEM 525.32 PEDESTRIAN RAIL (MOD)
PROJECT No. AC BRZ 1444(22)
TOWN OF ROYALTON
TH1 OVER THE WHITE RIVER
(BRIDGE No. 3) WINDSOR COUNTY

GENERAL CONTRACTOR
SUB CONTRACTOR F.R. LAFAYETTE, INC.

DRAWN J. Ruiz
CHECKED Paul K.
DATE 4/15/02
SCALE NONE
HSC REFERENCE NO. 1242
SIZE D
REVISION 0
SHEET NO. 2 of 5

AISC QUALITY CERTIFICATION

RECEIVED
CK'D BY WBS OK'D BY ____
MAY 15 2002
RESUBMIT ____ APPROVED As noted
BY OPW DATE 5/20/02

REVISIONS		
No.	Remarks	Date
0	Initial submittal	10/16/01
	Second submittal	3/18/02
	Third submittal	4/17/02
	Fourth submittal	5/8/02

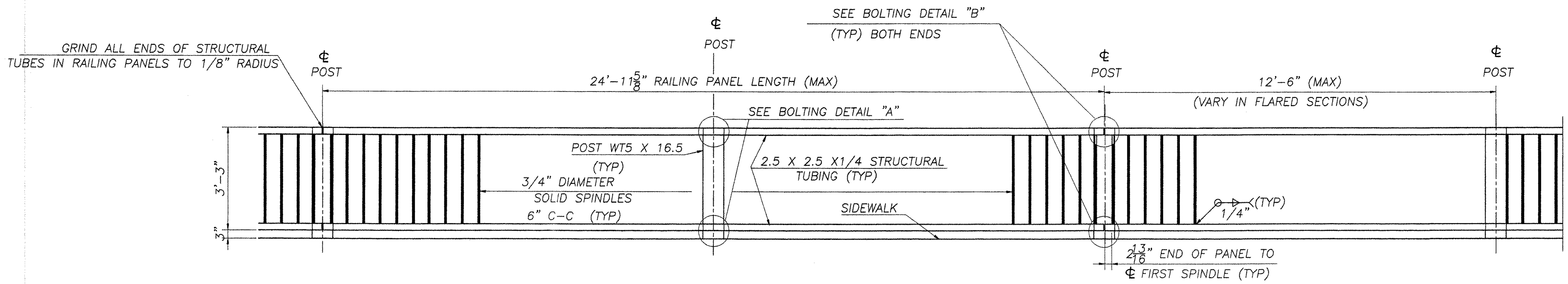
HIGHWAY SAFETY CORP.
GLASTONBURY, CT

ITEM 525.32 PEDESTRIAN RAIL (MOD)
PROJECT No. AC BRZ 1444(22)
TOWN OF ROYALTON
TH1 OVER THE WHITE RIVER
(BRIDGE No. 3) WINDSOR COUNTY

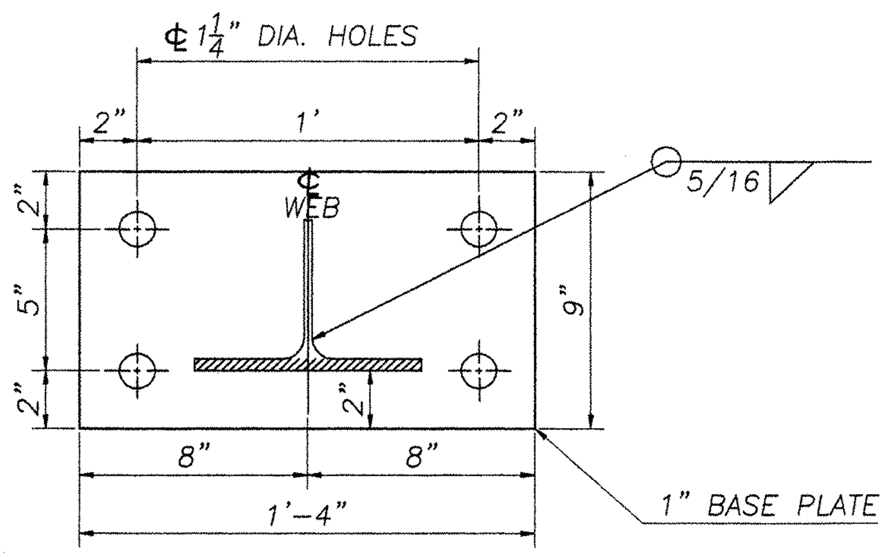
GENERAL CONTRACTOR

SUB CONTRACTOR F.R. LAFAYETTE, INC.

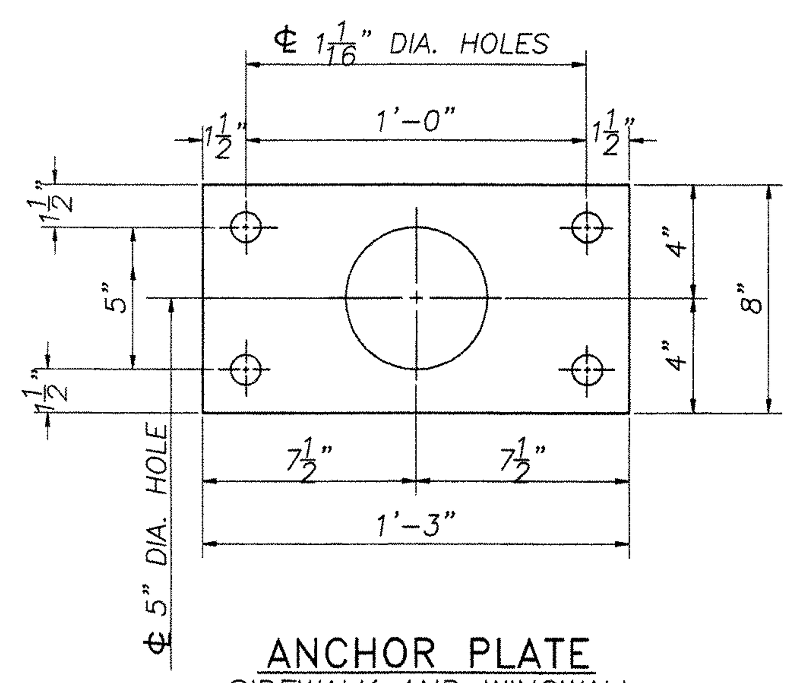
DRAWN J. Ruiz
CHECKED
DATE 4/15/02
SCALE NONE
HSC REFERENCE NO. 1242
SIZE D REVISION 0
SHEET NO. 3 of 5



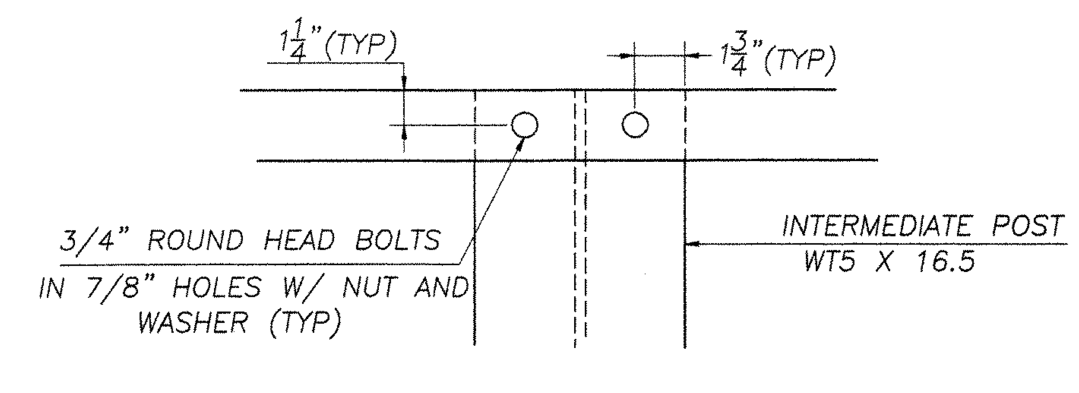
ELEVATION PEDESTRIAN RAILING



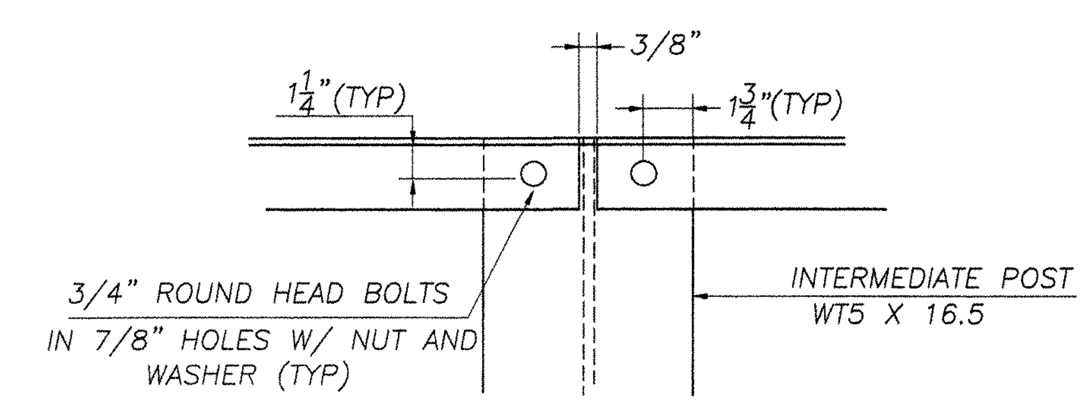
POST & BASE PLATE
SIDEWALK AND WINGWALL
MOUNTED POSTS



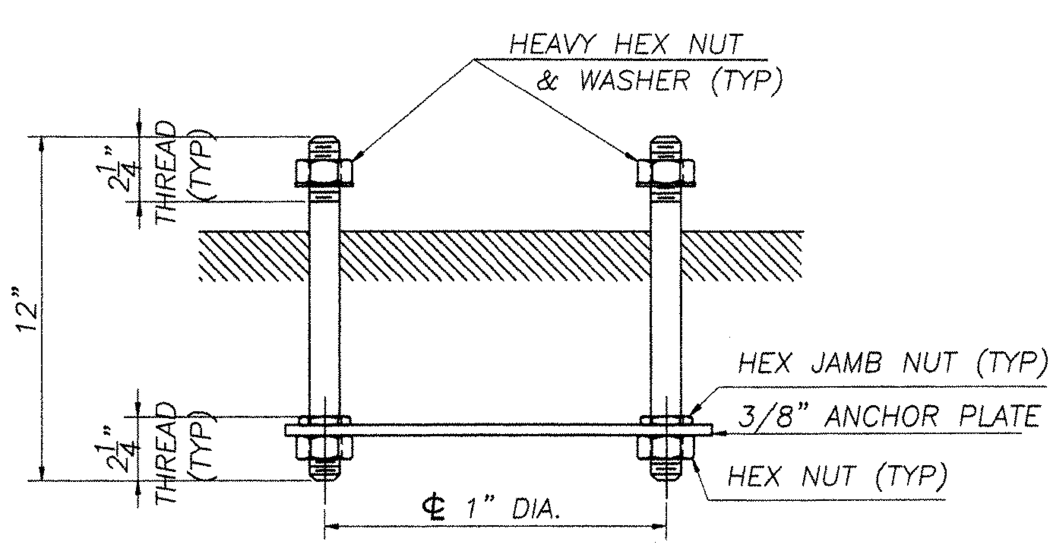
ANCHOR PLATE
SIDEWALK AND WINGWALL
MOUNTED POSTS



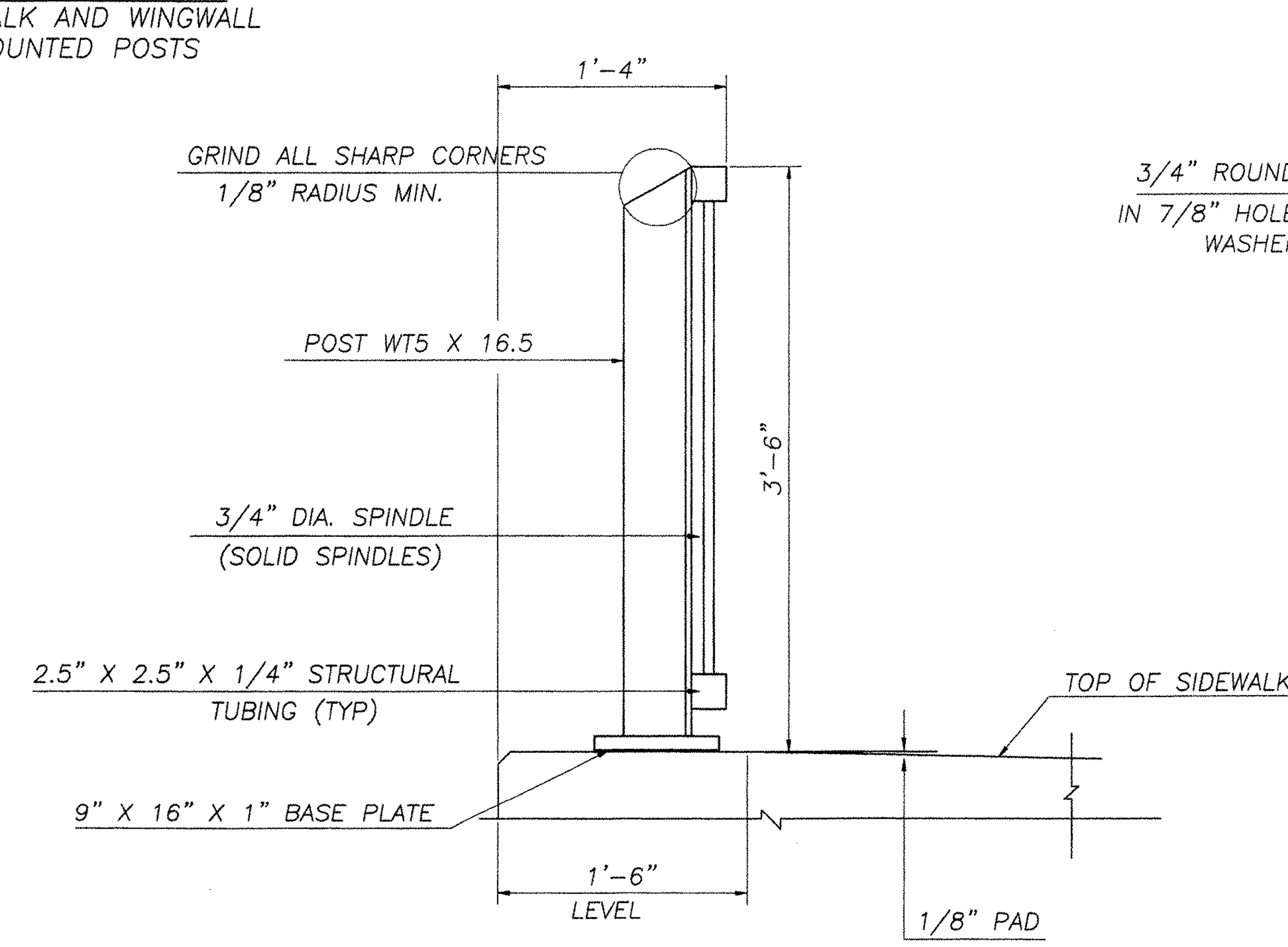
BOLTING DETAIL "A"



BOLTING DETAIL "B"



RAIL POST ANCHORAGE
NTS



PEDESTRIAN RAIL
BRIDGE SECTION

PEDESTRIAN RAIL NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE PROVISIONS OF SECTION 525 – RAILINGS OF THE STANDARD SPECIFICATIONS FOR CONSTRUCITON.

2. THE PEDESTRIAN RAILING APPROACH END SECTION SHALL BE INSTALLED ON BOTH APPROACHES.

3. RAIL POSTS SHALL BE SET NORMAL TO GRADE.

4. ALL BOLTS IN THE PEDESTRIAN RAILING SHALL BE HIGH-STRENGTH AND SHALL CONFORM TO AASHTO M164/M164M, TYPE 1 SPECIFICATION.

5. SPLICES BETWEEN PEDESTRIAN RAILING PANELS SHALL OCCUR AT THE CENTERLINE OF A RAIL POST.

6. RAIL POSTS ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.

7. ALL RAILING PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH SUBSECTION 506.15, AS MODIFIED BY THE SPECIAL PROVISIONS.

8. THE TUBING AND POSTS SHALL MEET THE REQUIREMENTS OF SECTION 732 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

9. A RAIL POST SHALL BE PLACED WITHIN 1' OF ALL UNSUPPORTED RAILING PANEL ENDS.

10. HOLES IN RAILS FOR RAIL BAR ATTACHMENT MAY BE FIELD DRILLED. THE HOLES SHALL BE COATED WITH AN APPROVED ZINC RICH PAINT.

11. ANY BENDING OF RAIL SHALL BE BY SHOP PROCEDURE ONLY.

12. THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS INCLUDING WELDING PROCEDURES TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH THE PROVISION OF 506.04, SHOP DRAWINGS. ALL WELDING SHALL CONFORM WITH SECTION 506.10.

13. PEDESTRIAN RAILING SHALL BE PAID FOR UNDER ITEM 525.32 "BRIDGE RAILING – GALV. BOX BEAM / PEDESTRIAN (MOD)." THIS SHALL INCLUDE BOTH PEDESTRIAN RAILING MOUNTED ON BRIDGE AND APPROACH RAILING.

MATERIALS

RAIL BARS..................ASTM A500, GRADE B
RAIL POSTS AND OTHER SHAPES........ASTM A709/A709M, GRADE 50
ANCHOR STUDS...ASTM A449
ALL OTHER BOLTS [UNLESS NOTED]..........AASHTO M164, TYPE 1

NUTS FOR AASHTO M164 BOLTS SHALL COMPLY WITH AASHTO M291.
NUTS FOR ANCHOR STUDS SHALL COMPLY WITH ASTM A563.

WASHERS SHALL COMPLY WITH AASHTO M293 (ASTM F436) SPECIFICATION.

1/8" PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSECTION 731.01 OR 731.02.

REVISIONS		
No.	Remarks	Date
0	Initial submittal	10/16/01
	Second submittal	3/18/02
	Third submittal	4/17/02
	Fourth submittal	5/8/02

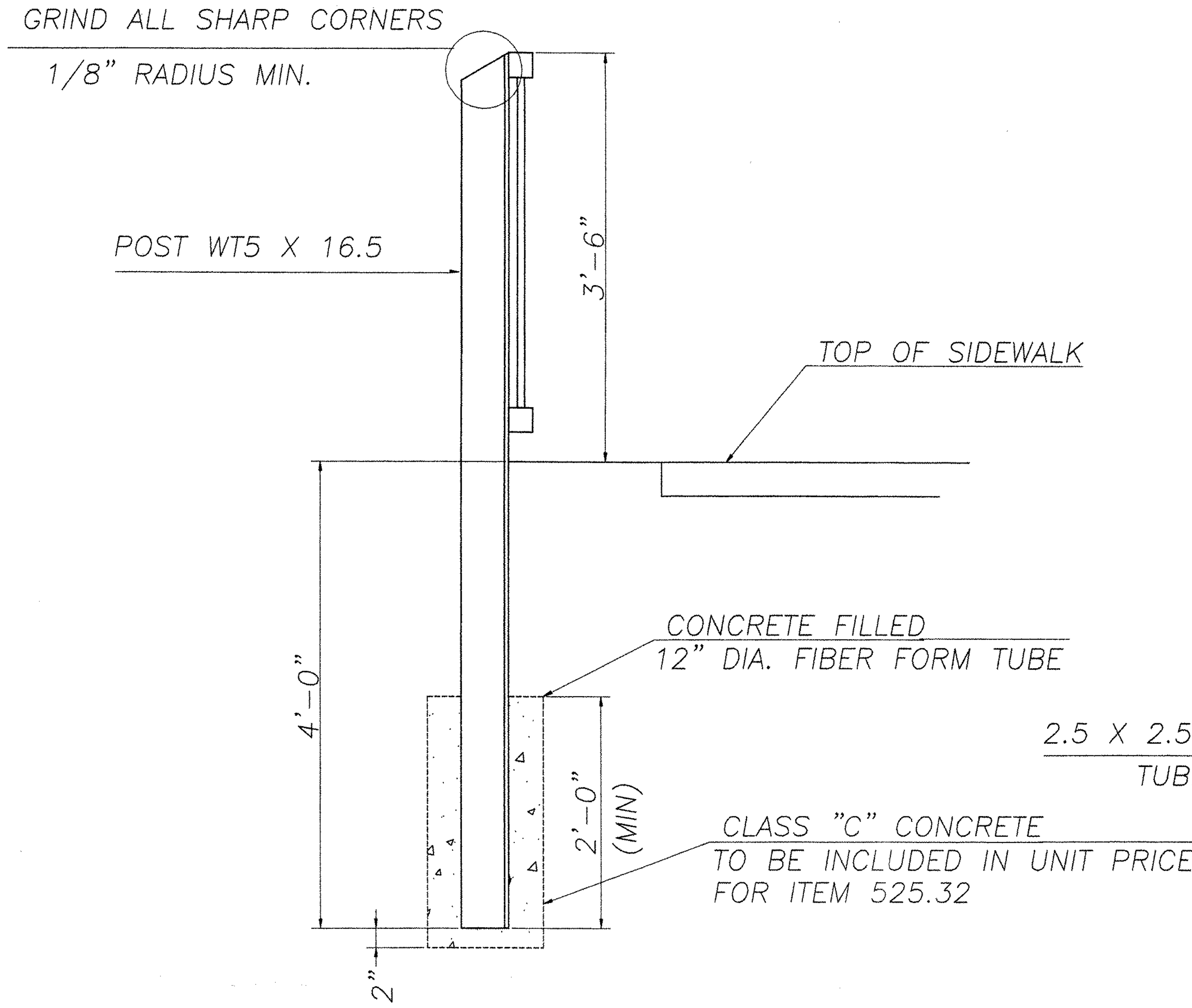
RECEIVED
CK'D BY WJS OK'D BY
MAY 1 5 2002
RESUBMIT APPROVED ✓
BY CPW DATE 5/20/02

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

ITEM 525.32 PEDESTRIAN RAIL (MOD)
PROJECT No. AC BRZ 1444(22)
TOWN OF ROYALTON
TH1 OVER THE WHITE RIVER
(BRIDGE No. 3) WINDSOR COUNTY

GENERAL CONTRACTOR
SUB CONTRACTOR F. R. LAFAYETTE, INC.

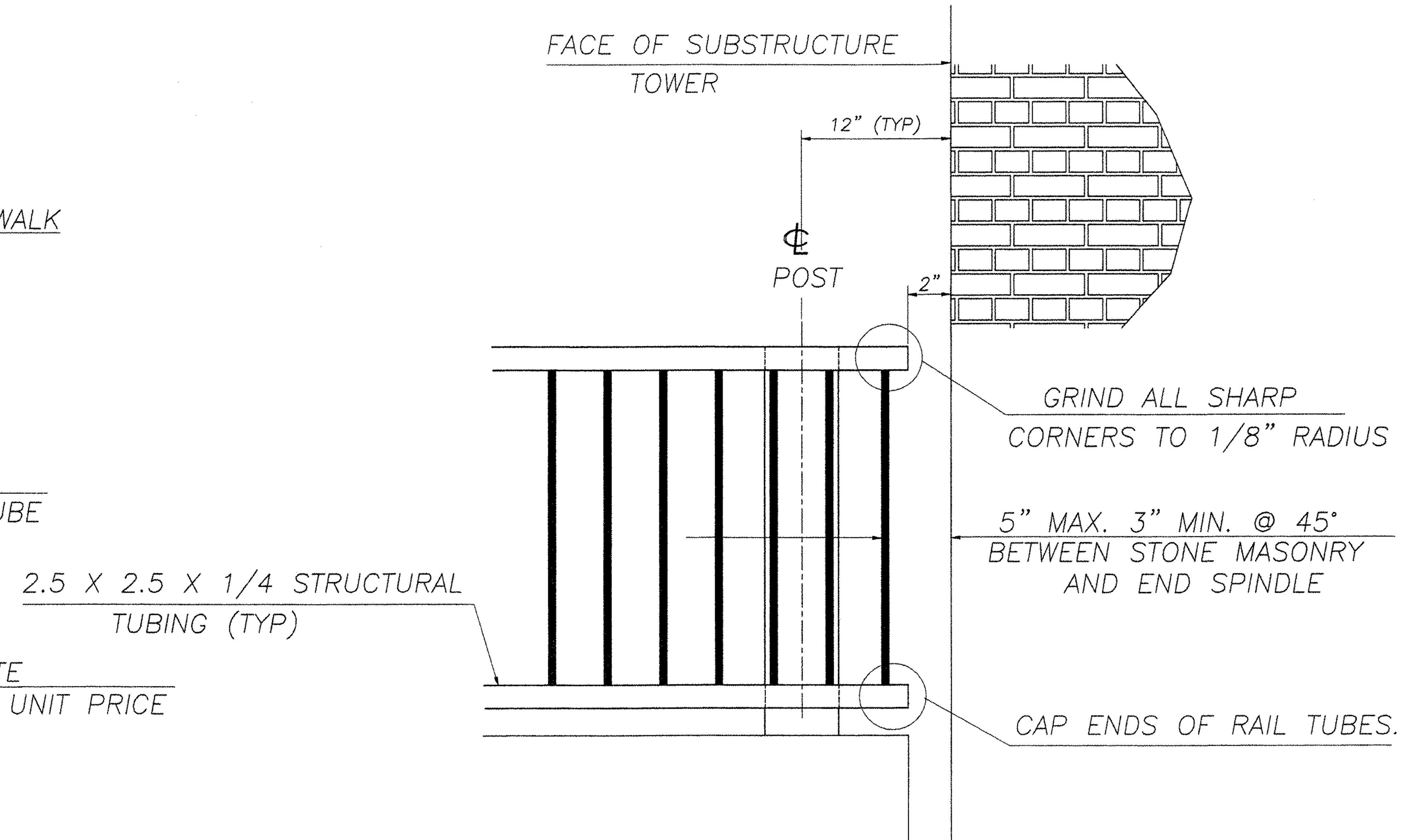
DRAWN J. Ruiz
CHECKED
DATE 10/15/01
SCALE N.T.S
HSC REFERENCE NO. 1242
SIZE D REVISION 0
SHEET NO. 4 of 5



PEDESTRIAN RAIL

APPROACH SECTION

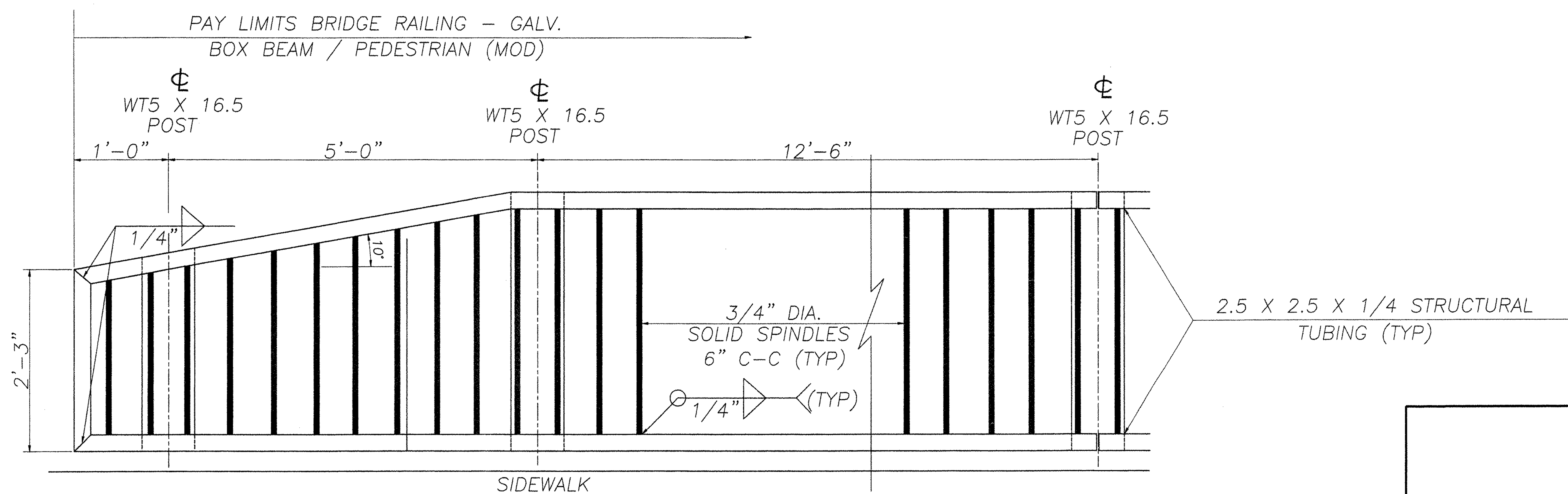
(POST INSTALLED IN SOIL)



PEDESTRIAN RAIL

TERMINATION @ TOWER

BILL OF MATERIAL		
Mk.	Qty.	Description
	8	WT5 x 16.5 POST (7'-6" OAH)
	2	WT5 x 16.5 POST (6'-8 13/16" OAH)
	38	WT5 x 16.5 POST W/BASE PLATE
	2	PEDESTRIAN RAIL APPROACH (18"-5 13/16" OAL)
RA1	1	RAIL SECTION (18'-5 13/16" OAL) W/37 SPINDLES (APPROACH RAIL W/SHOP CURVE)
RA2	1	RAIL SECTION (10'-9 5/8" OAL) W/22 SPINDLES
RA3	1	RAIL SECTION (22'-7 13/16" OAL) W/45 SPINDLES & CUT & WELD
RA4	1	RAIL SECTION (22'-2 15/16" OAL) W/SHOP CURVE & 45 SPINDLES
RA5	1	RAIL SECTION (21'-8 5/8" OAL) W/SHOP CURVE & 44 SPINDLES
RA6	1	RAIL SECTION (21'-8 5/16" OAL) W/CUT & WELD & 43 SPINDLES
RA7	1	RAIL SECTION (22'-11 1/4" OAL) W/46 SPINDLES
RA8	1	RAIL SECTION (11'-7" OAL) W/23 SPINDLES
RA9	1	RAIL SECTION (18'-5 13/16" OAL) W/37 SPINDLES (APPROACH RAIL W/SHOP CURVE)
RA10	1	RAIL SECTION (20'-8 15/16" OAL) W/SHOP CURVE & 37 SPINDLES
RA11	1	RAIL SECTION (20'-10 7/8" OAL) W/41 SPINDLES
RA12	12	RAIL SECTION (24'-11 5/8" OAL) W/50 SPINDLES
	152	1"ø x 12" LG. ANCHOR BOLT W/HEAVY HEX NUT & WASHER
	152	1"ø JAMB NUT
	152	1"ø HEX NUT
	152	1"ø HEAVY HEX NUT
	38	ANCHOR PLATE (3/8 x 8 x 1'-3")
	208	3/4"ø ROUND HEAD BOLT W/NUT & WASHER



PEDESTRIAN RAIL APPROACH END SECTION

REVISIONS		
No.	Remarks	Date
0	Initial submittal	10/16/01
	Second submittal	3/18/02
	Third submittal	4/17/02
	Fourth submittal	5/8/02

RECEIVED
CK'D BY WW OK'D BY
MAY 1 5 2002
RESUBMIT ____ APPROVED ✓
BY CPW DATE 5/20/02

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

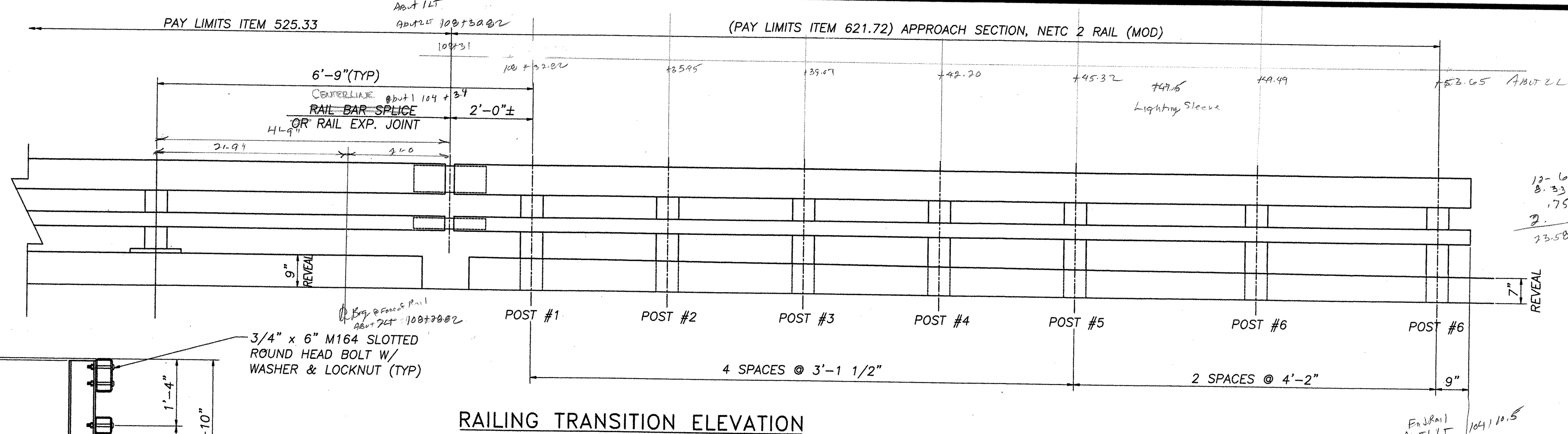
ITEM 525.32 PEDESTRIAN RAIL (MOD)
PROJECT No. AC BRZ 1444(22)
TOWN OF ROYALTON
TH1 OVER THE WHITE RIVER
(BRIDGE No. 3) WINDSOR COUNTY

GENERAL CONTRACTOR

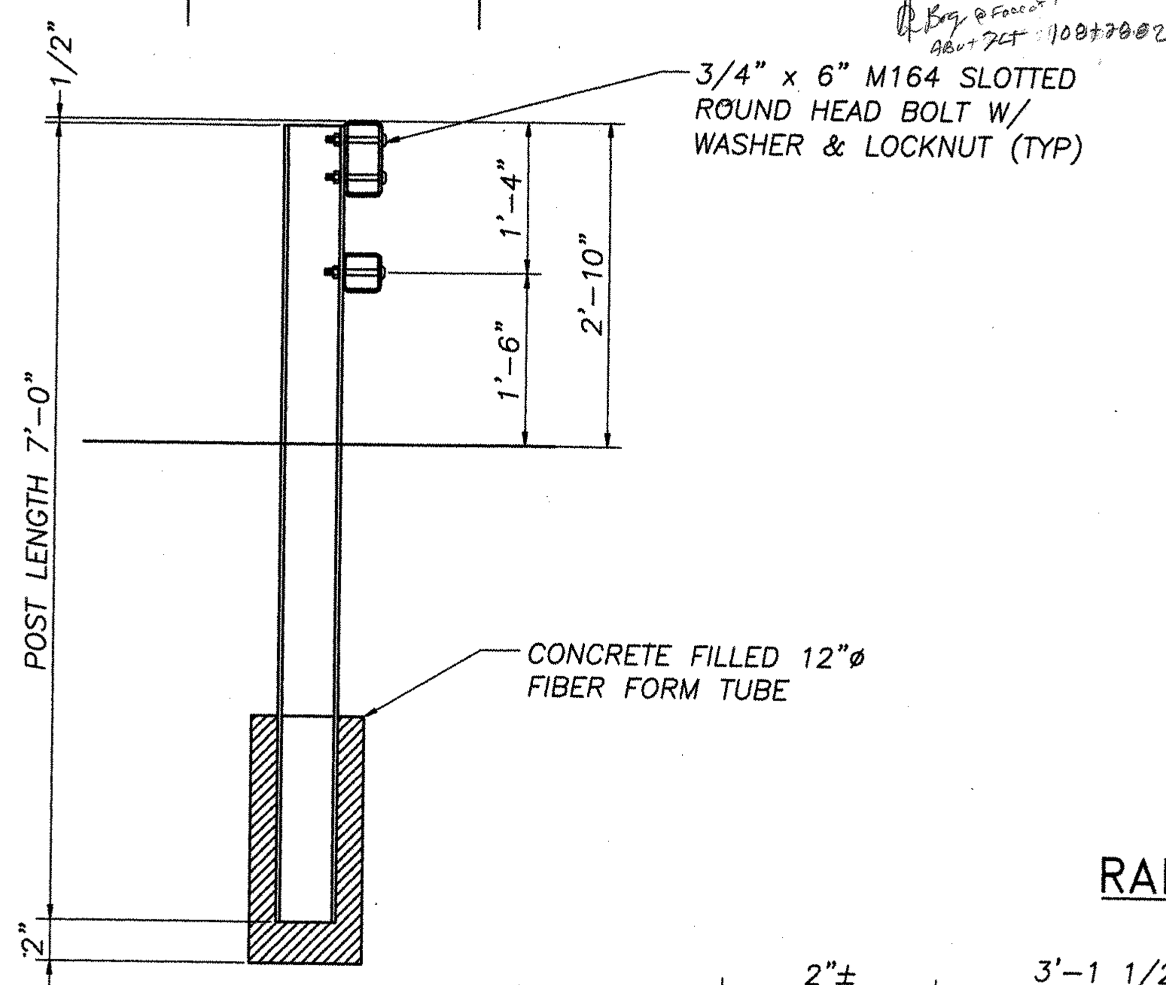
SUB CONTRACTOR F. R. LAFAYETTE, INC.

DRAWN J. Ruiz
CHECKED
DATE 10/15/01
SCALE N.T.S
HSC REFERENCE NO. 1242
SIZE D REVISION 0
SHEET NO. 5 of 5

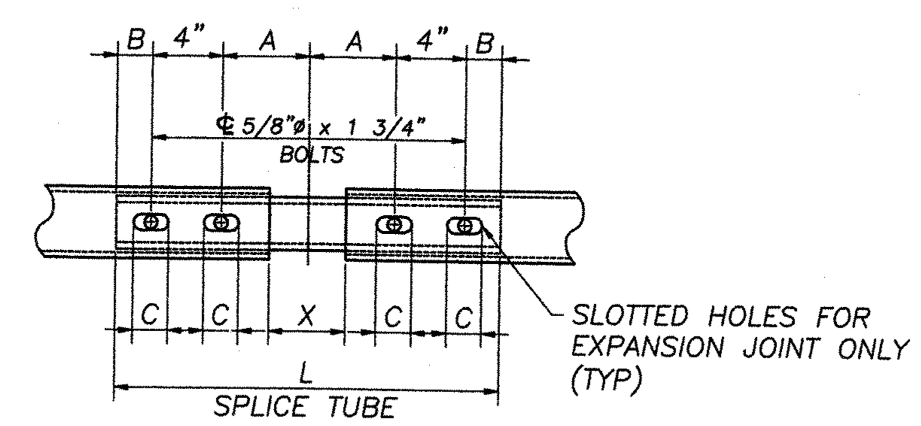
ℓ Brg Sta @ ℓ Rdwy - Abut 1 104+34
Abut 2 108+76



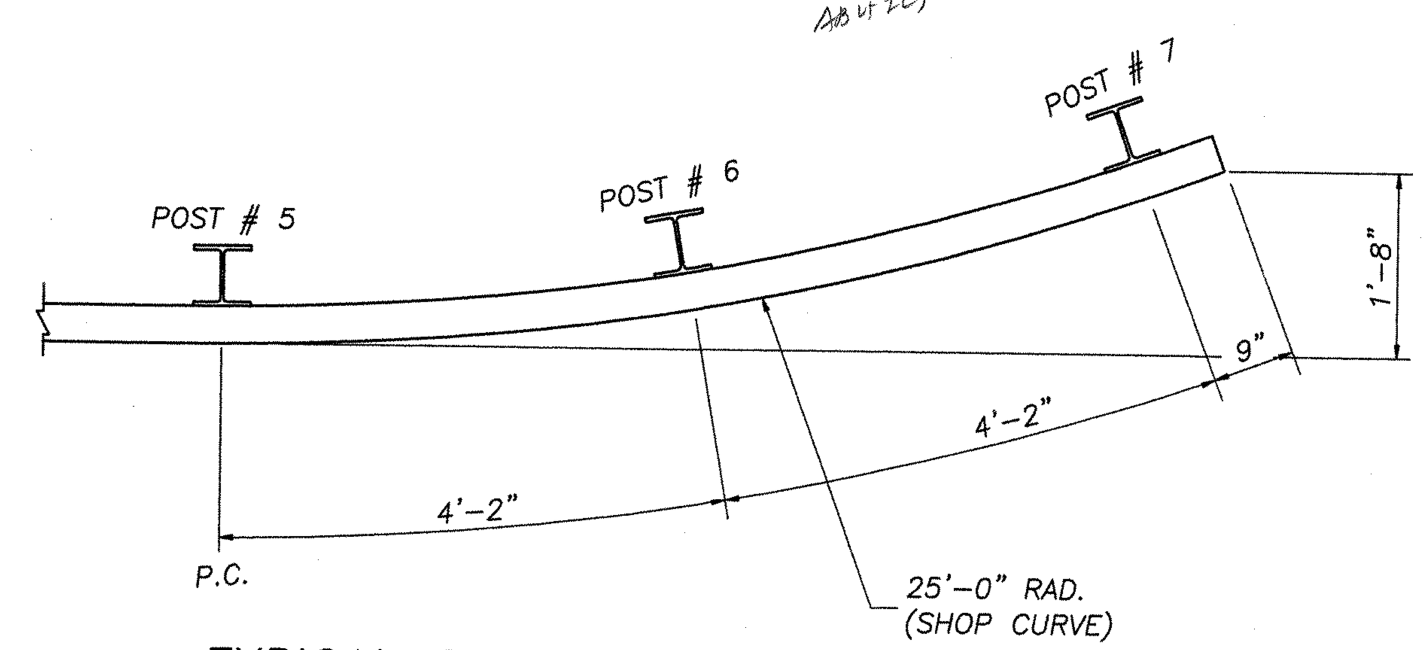
RAILING TRANSITION ELEVATION



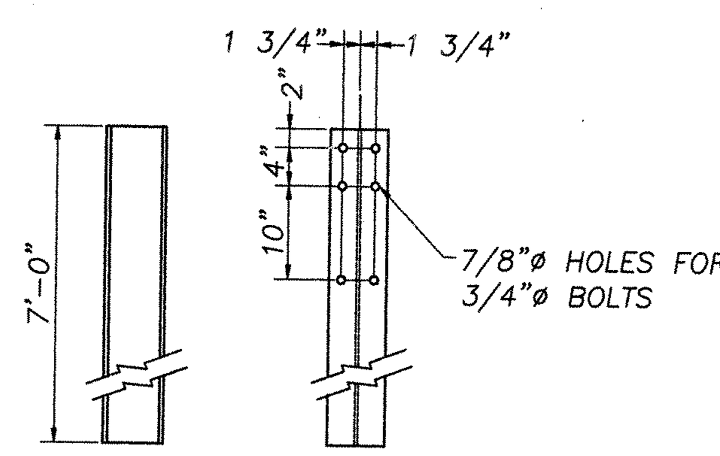
TYPICAL SECTION



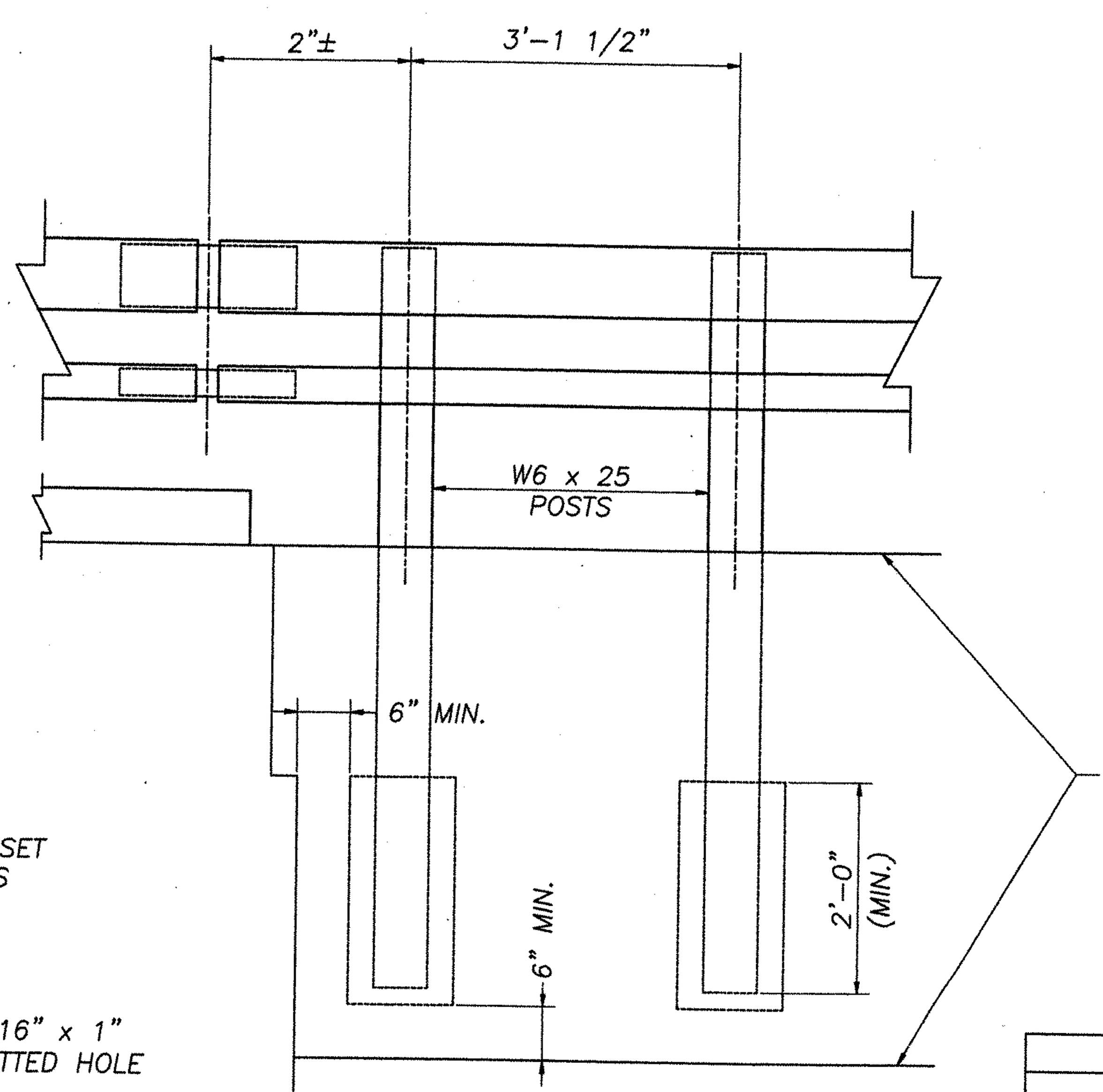
RAIL BAR SPLICE & EXP. JOINT DETAIL



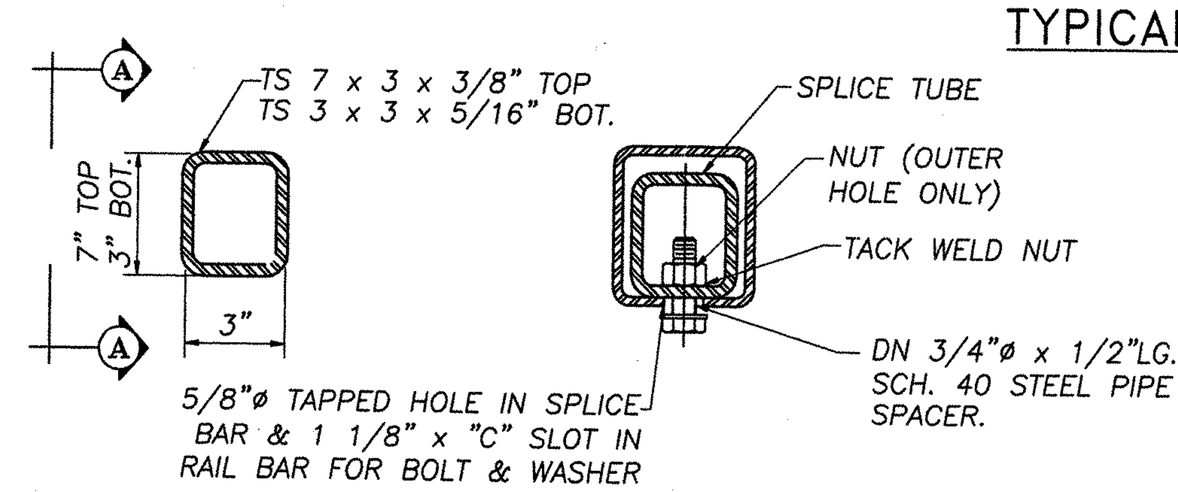
TYPICAL 2 RAIL NETC FLARE



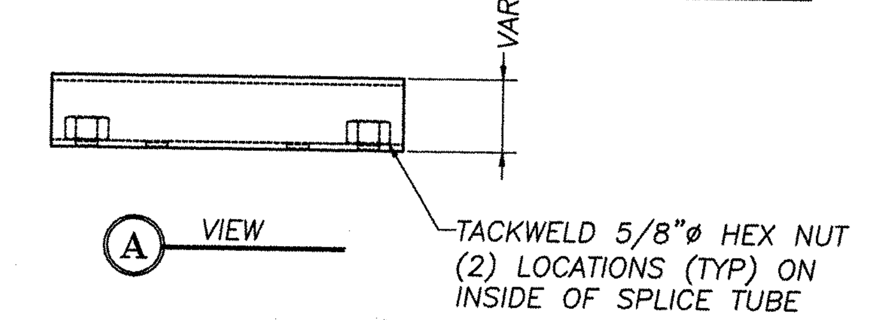
RAIL POST

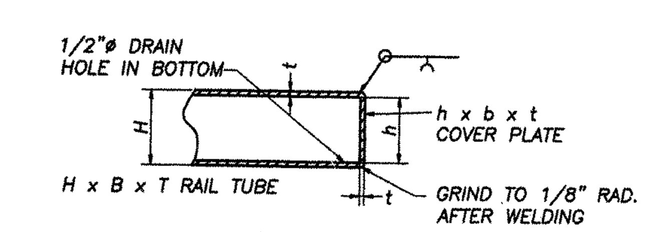


ELEVATION



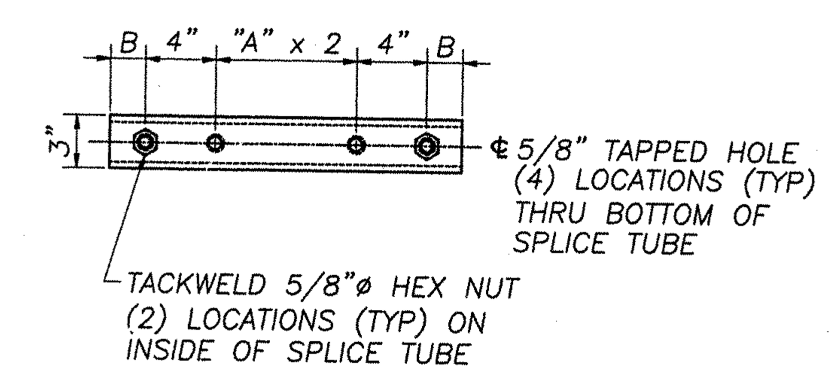
EXPANSION JOINT SECTION

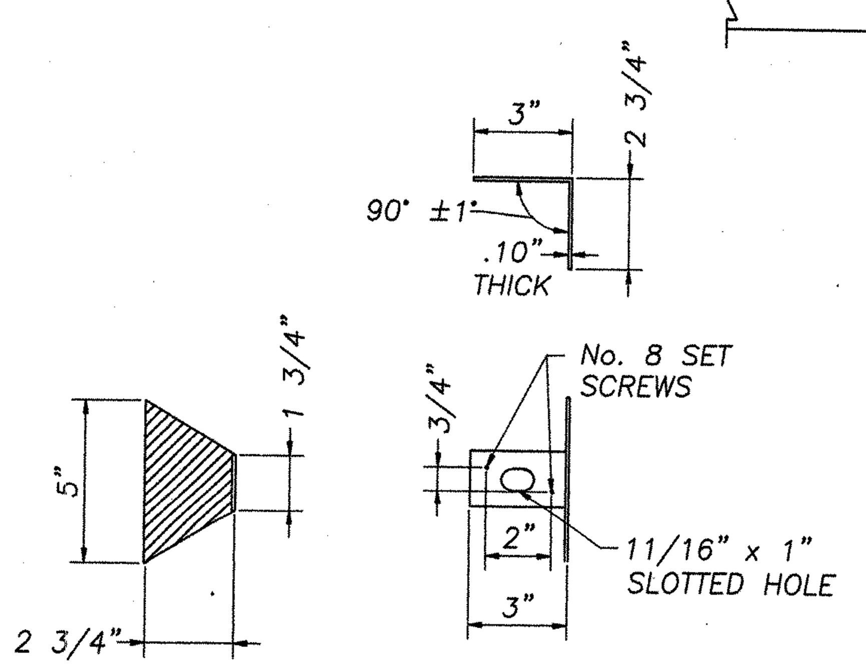




RAIL TUBE	COVER PLATE
8" x 4" x 5/16"	7 1/2" x 3 1/2" x 1/4"
4" x 4" x 1/4"	3 5/8" x 3 5/8" x 1/4"

END COVER PLATE DETAIL





DELINEATION DEVICE
PROVIDED BY OTHERS

BILL OF MATERIAL

Mk.	Qty.	Description
	2	TS 8 x 4 x 5/8" RAIL TUBE (23'-4 1/2" OAL) W/SHOP CURVE & END CAP
	2	TS 4 x 4 x 1/4" RAIL TUBE (23'-4 1/2" OAL) W/SHOP CURVE & END CAP
	2	TS 7 x 3 x 3/8" SPLICE BAR 20" LG. W/(2) TACKWELDED 5/8" ø HEX NUT
	2	TS 3 x 3 x 5/16" SPLICE TUBE 20" LG W/(2) TACKWELDED 5/8"ø HEX NUT
	14	W6 x 25 POST 7'-0" OAH
	56	3/4" x 6" LG. M164 ROUND HEAD BOLT W/WASHER & LOCKNUT
	16	5/8"ø x 1 3/4" LG. BOLTS W/PLAIN WASHER
	8	3/4"ø x 1/2" LG. SCH. 40 SPACER PIPE

NOTES:

1. TO FACILITATE FIELD FIT - UP OF THE TRANSITION RAILING POSTS SHALL BE SET LOOSELY INTO FIBER FORM TUBES WHILE TRANSITION PARTS ARE BEING ASSEMBLED. POST HOLES SHALL BE BACKFILLED WITH A CONCRETE MIX APPROVED BY THE ENGINEER.
2. ALL APPROACH RAIL SPLICES SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW.
3. SEE NOTES ON SHEET 2 of 2 BRIDGE RAIL - NETC 2 RAIL FOR MATERIAL AND CONSTRUCTION REQUIREMENTS.

SPLICE & EXPANSION JOINT TABLE

"T"	"A"	"B"	"C"	"L"	"X"
SPLICE	4"	2"	--	20"	3/4"
≤4"	4"	2"	2-1/2"	20"	2-1/2"

"T" = TOTAL REQUIRED MOVEMENT * = SINGLE SLOT

REVISIONS

No.	Remarks	Date
0	Initial submittal	10/16/01
	Second Submittal	3/12/02
	Third Submittal	4/1/02

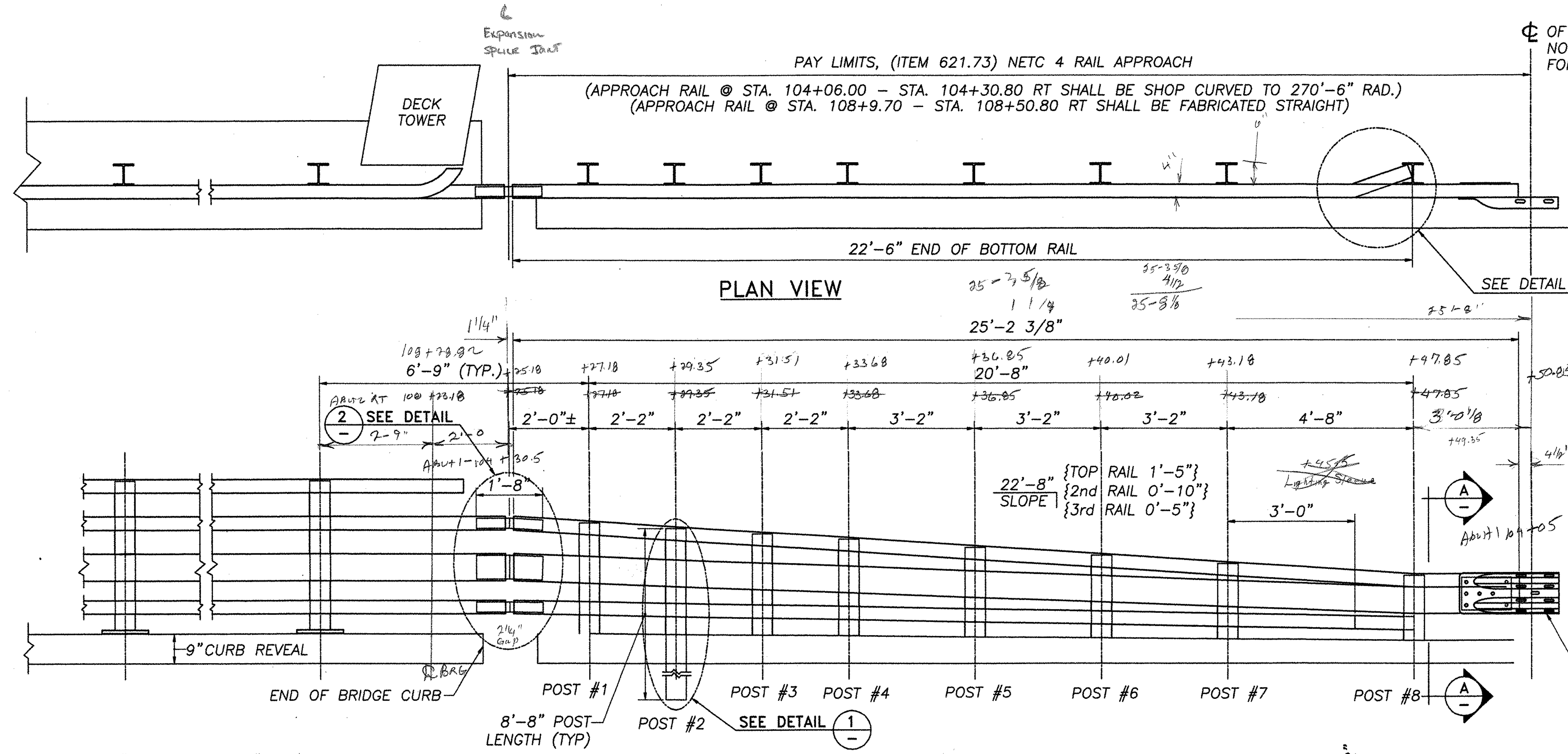
RECEIVED
CK'D BY WBB OK'D BY ESK
APR 2 3 2002
RESUBMIT ___ APPROVED As noted
BY GPW DATE 4/30/02

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

ITEM 621.72 - NETC 2 RAIL - APPROACH
PROJECT No. AC BRZ 1444(22)
TOWN OF ROYALTON
TH1 OVER THE WHITE RIVER
(BRIDGE No. 3) WINDSOR COUNTY

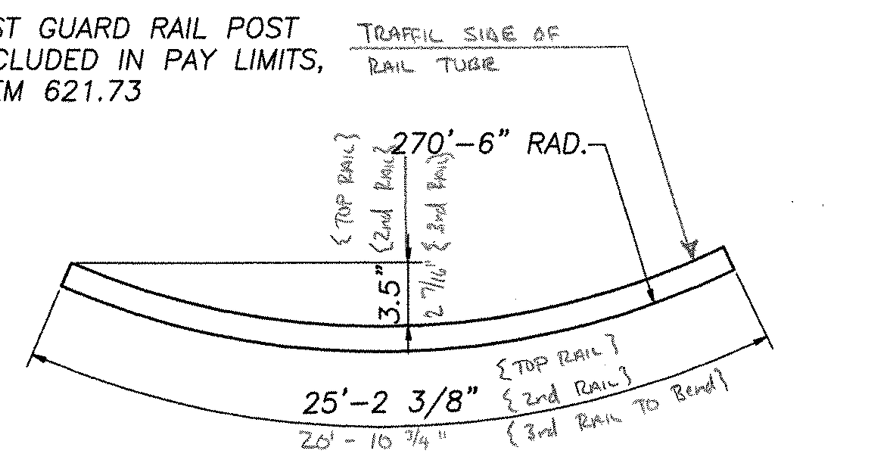
GENERAL CONTRACTOR
SUB CONTRACTOR F.R. LAFAYETTE

DRAWN J. Ruiz
CHECKED [signature]
DATE 10/15/01
SCALE N.T.S
HSC REFERENCE NO. 1270
SIZE D REVISION 0
SHEET NO. 1 of 1



PLAN VIEW

ELEVATION VIEW



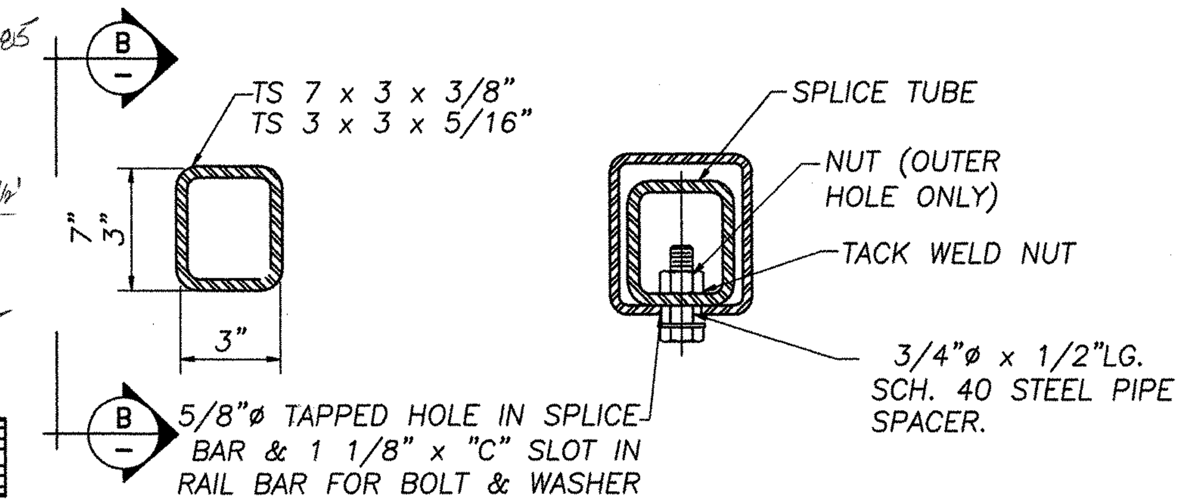
SHOP CURVE FOR APPROACH RAIL

STA. 109+06.00 – STA. 104+30.80

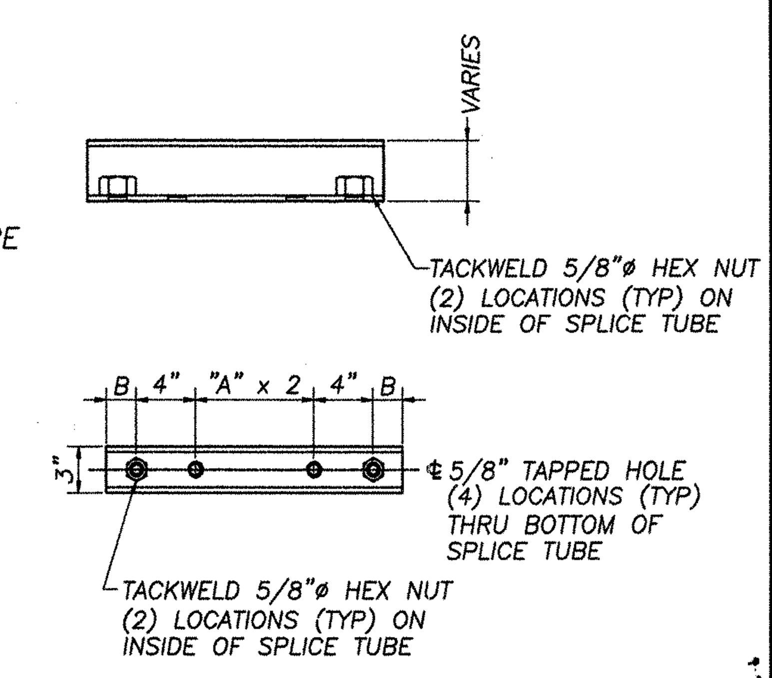
Mk.	Qty.	Description
	1	TS 4 x 4 x 1/4" (25'–2 3/8" OAL)
	1	TS 8 x 4 x 5/16" (25'–2 3/8" OAL)
	1	TS 4 x 4 x 1/4" (22'–6" OAL) W/SHOP BEND
	1	TS 4 x 4 x 1/4" (25'–2 3/8" OAL) W/SHOP CURVE
	1	TS 8 x 4 x 5/16" (25'–2 3/8" OAL) W/SHOP CURVE
	1	TS 4 x 4 x 1/4" (22'–6" OAL) W/SHOP CURVE & SHOP BEND
	4	TS 3 x 3 x 5/16" (1'–8" OAL) SPLICE TUBE, CUT & WELD
	2	TS 7 x 3 x 3/8" (1'–8" OAL) SPLICE TUBE, CUT & WELD
	16	W6 x 25 POST 8'–8" OAH
	2	TERMINAL CONNECTION
	2	BACK–UP PLATE 3/8 x 10 x 1'–3"
	104	3/4"ø M164 ROUND HEAD BOLT W/WASHER & LOCKNUT
	24	3/4"ø x 1/2" LG. SCH.40 SPACER PIPE
	24	5/8"ø x 1 3/4" BOLT W/WASHER

BILL OF MATERIAL

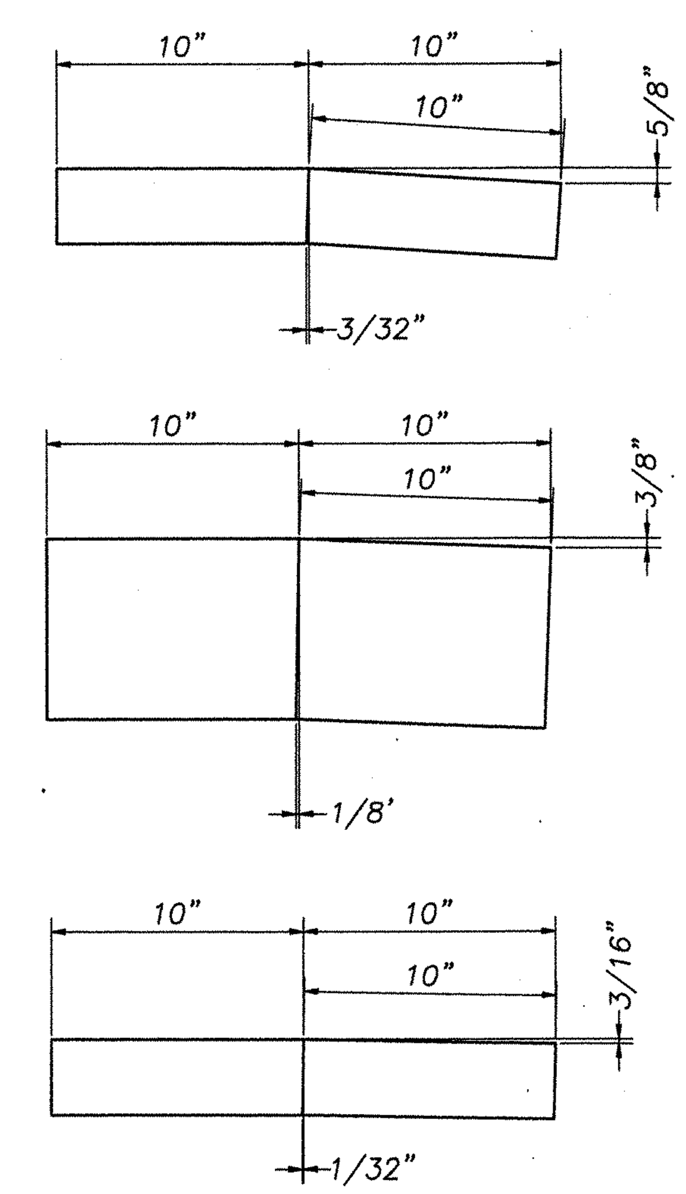
NOTE: SEE NOTES ON SHEET 2 of 2, BRIDGE RAIL – NETC 4 RAIL FOR MATERIAL AND CONSTRUCTION REQUIREMENTS.



EXPANSION JOINT

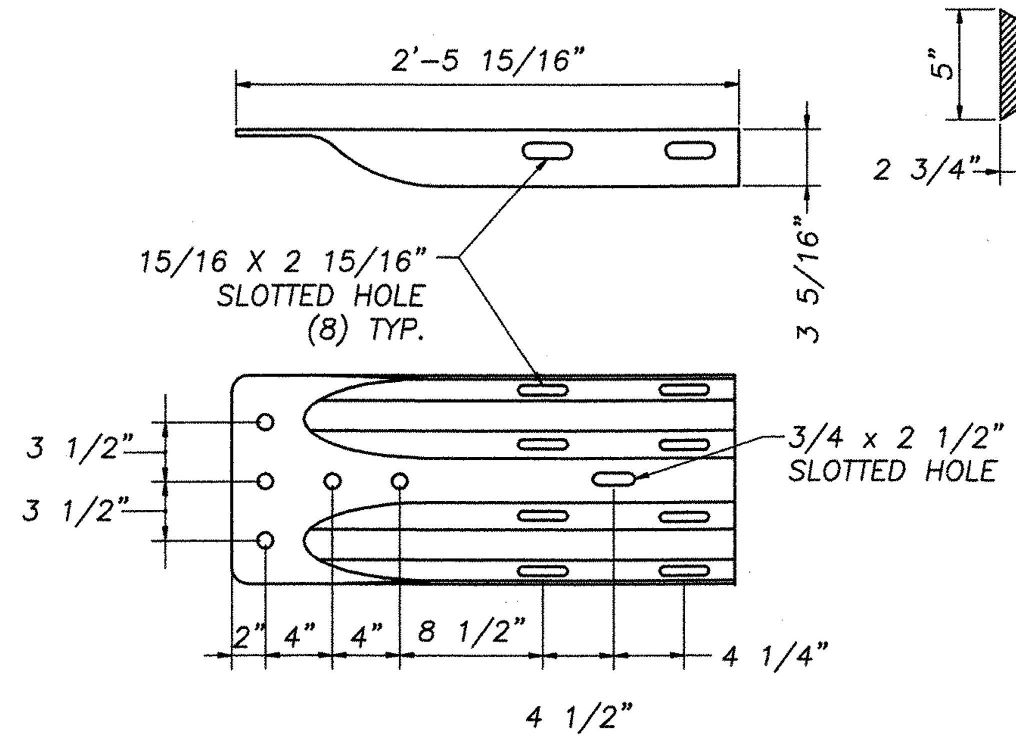


VIEW A

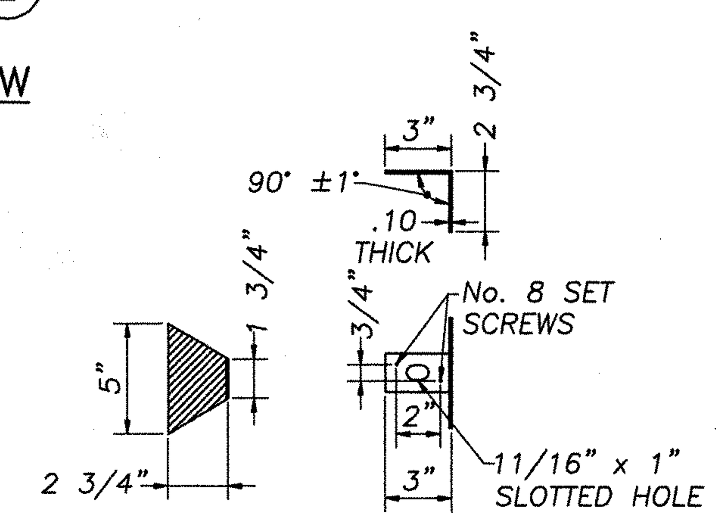


BENT SPLICE TUBE DETAIL

2 DETAIL

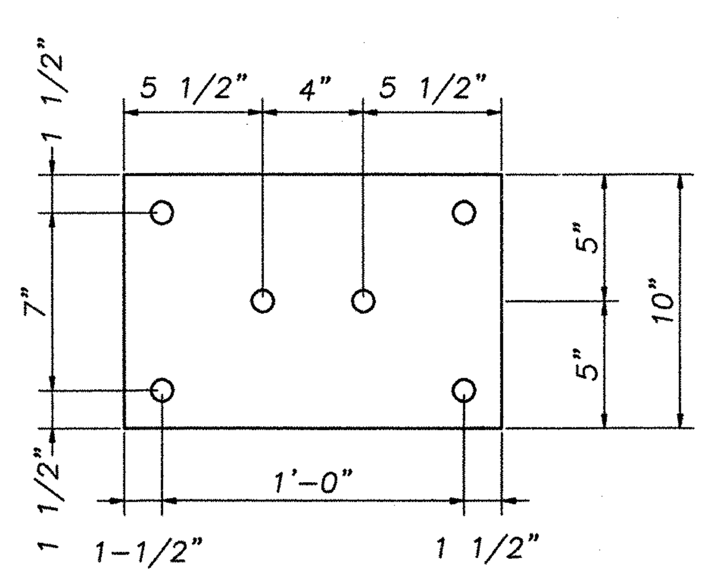


TERMINAL CONNECTION

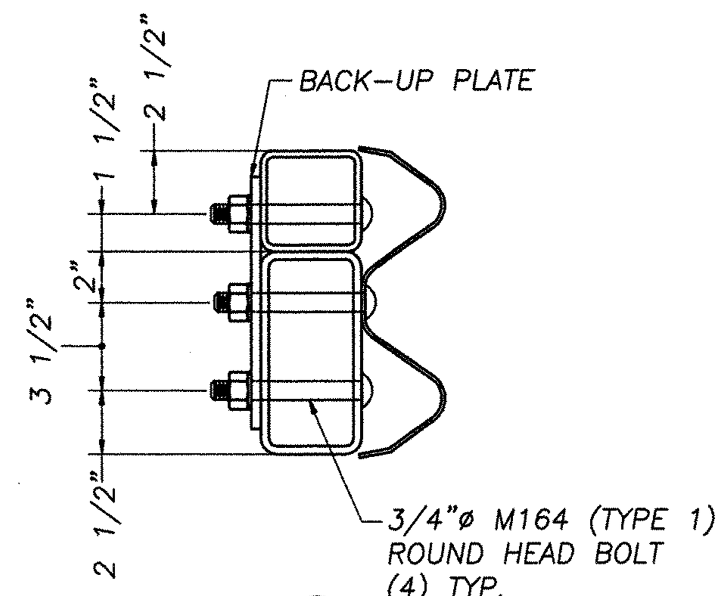


DELINATION DEVICE

PROVIDED BY OTHERS

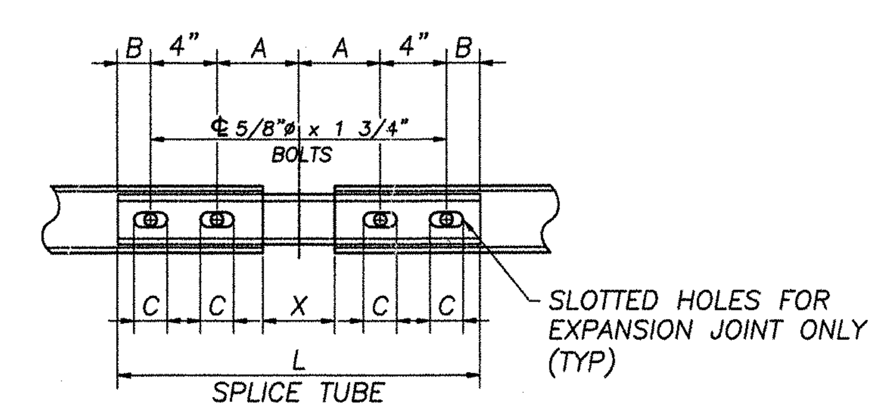


BACK–UP PLATE

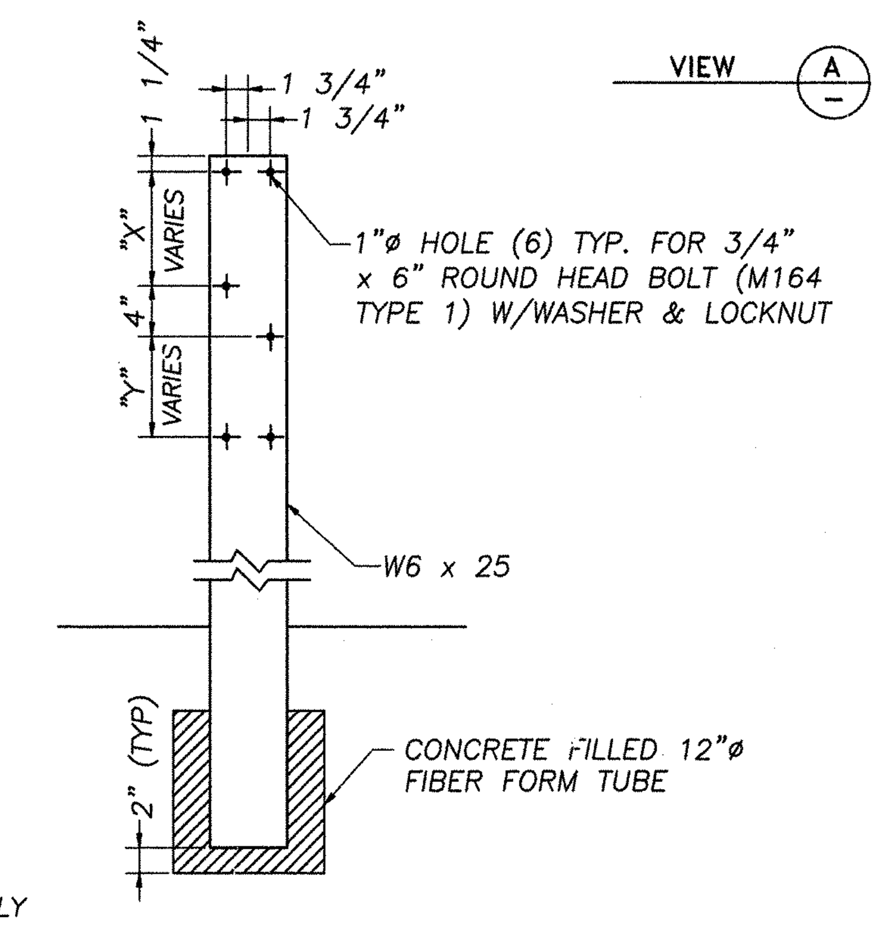


SECTION A

# POST	"X"	"Y"
1	10 3/8"	9 9/16"
2	9 3/4"	9 1/8"
3	9"	8 5/8"
4	8 3/8"	8 1/4"
5	7 3/8"	7 1/2"
6	6 7/16"	6 13/16"
7	5 7/16"	6 1/8"
8	4"	5 3/16""

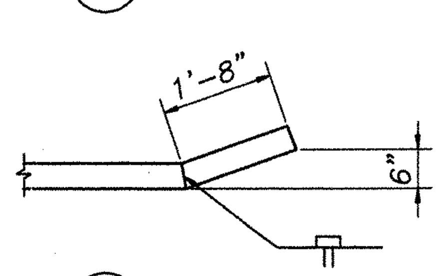


RAIL BAR SPLICE JOINT DETAIL

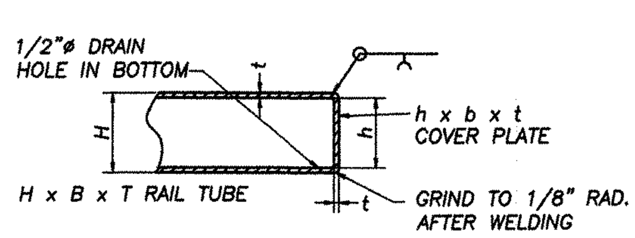


DETAIL 1

RAIL POST



3 DETAIL BOTTOM RAIL



RAIL TUBE	COVER PLATE
8" x 4" x 5/16"	7 1/2" x 3 1/2" x 1/4"
4" x 4" x 1/4"	3 5/8" x 3 5/8" x 1/4"

END COVER PLATE DETAIL

SPLICE & EXPANSION JOINT TABLE

"T"	"A"	"B"	"C"	"L"	"X"
SPLICE	4"	2"	––	20"	3/4"
≤4"	4"	2"	2–1/2"	20"	2–1/2"

"T" = TOTAL REQUIRED MOVEMENT * = SINGLE SLOT

REVISIONS

No.	Remarks	Date
0	Initial submittal	10/16/01
	Second Submittal	3/12/02
	Third Submittal	4/17/02

RECEIVED
CK'D BY WMJ OK'D BY BSF
APR 2 3 2002
RESUBMIT____ APPROVED As noted
BY CPW DATE 4/30/02

HIGHWAY SAFETY CORP.

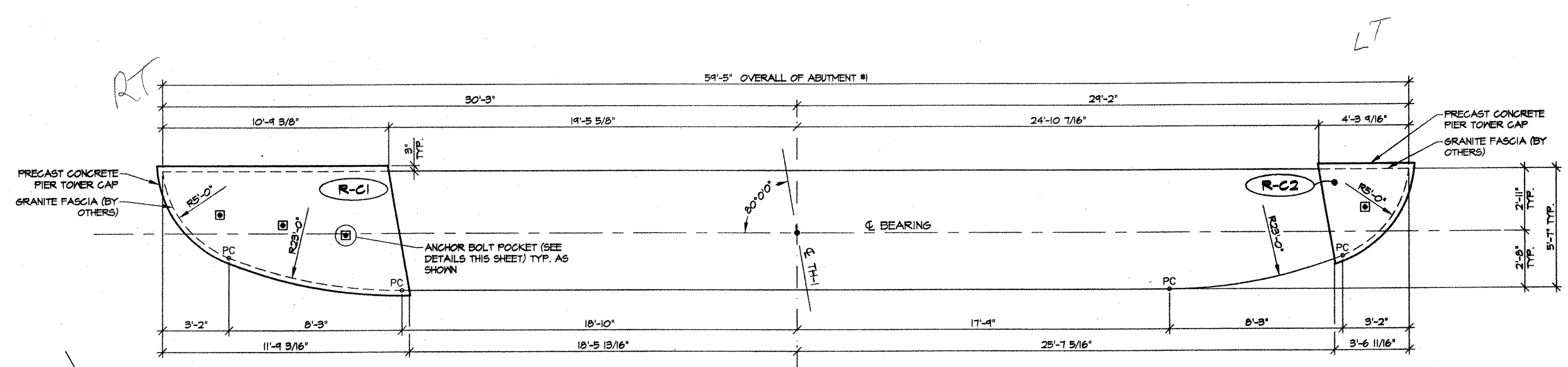
GLASTONBURY, CT

ITEM 621.73 – NETC 4 RAIL – APPROACH
PROJECT No. AC BRZ 1444(22)
TOWN OF ROYALTON
TH1 OVER THE WHITE RIVER
(BRIDGE No. 3) WINDSOR COUNTY

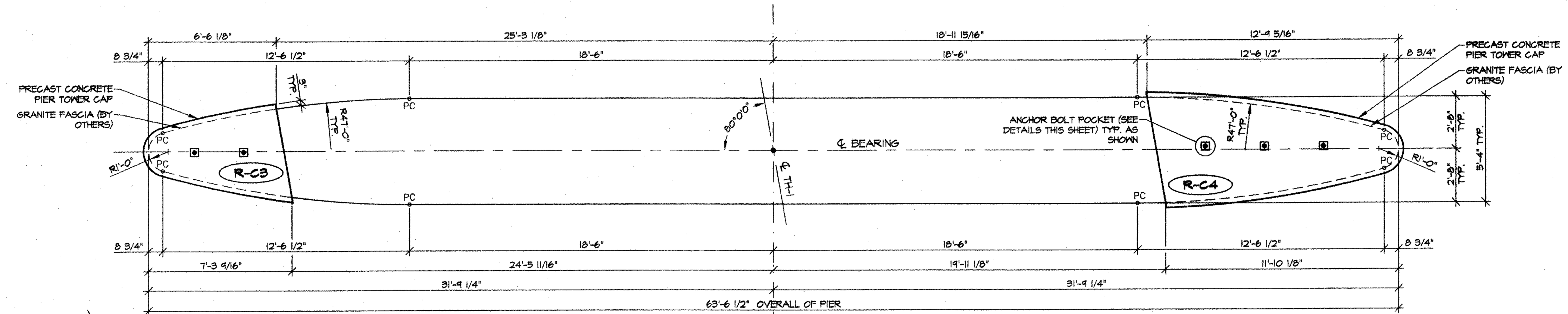
DRAWN	J. Ruiz
CHECKED	Paul K.
DATE	10/15/01
SCALE	N.T.S
HSC REFERENCE NO.	1271
SIZE	D
REVISION	0
SHEET NO.	1 of 1

GENERAL CONTRACTOR

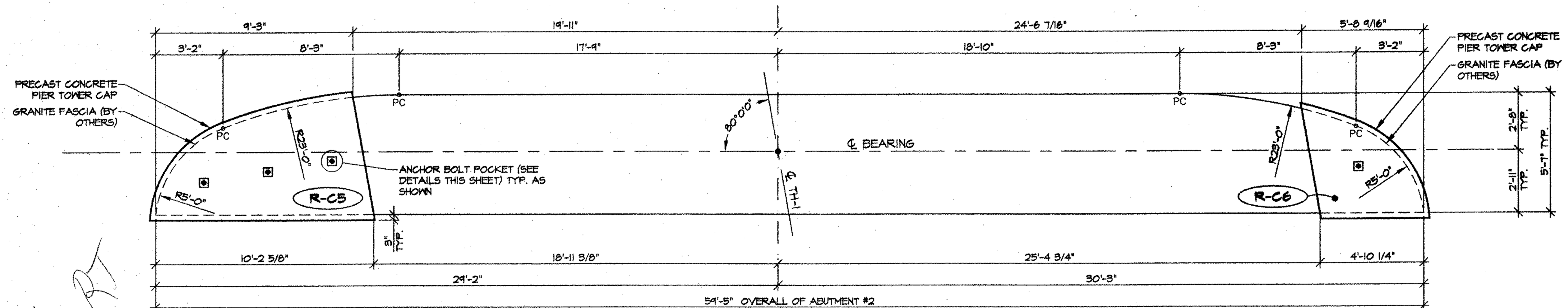
SUB CONTRACTOR F.R. LAFAYETTE



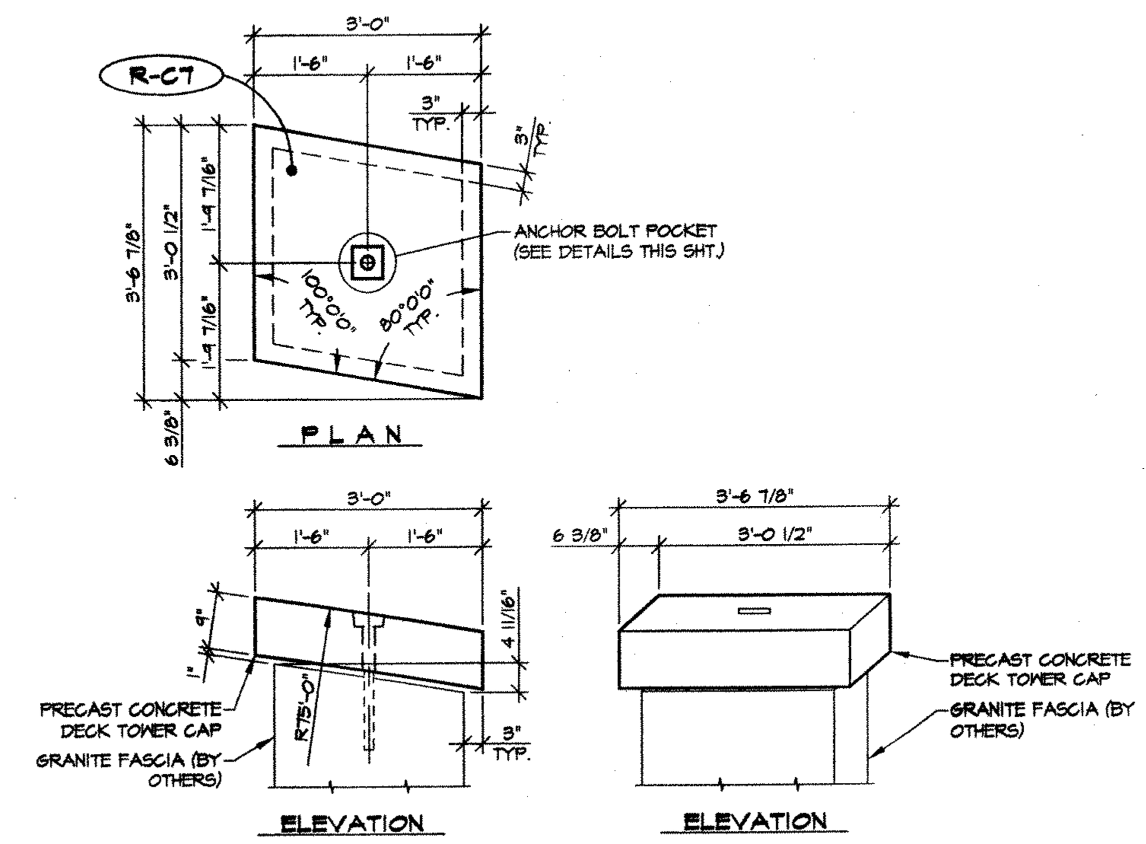
1/F1 PIER TOWER CAP PLAN - ABUTMENT #1
1/4" = 1'-0"



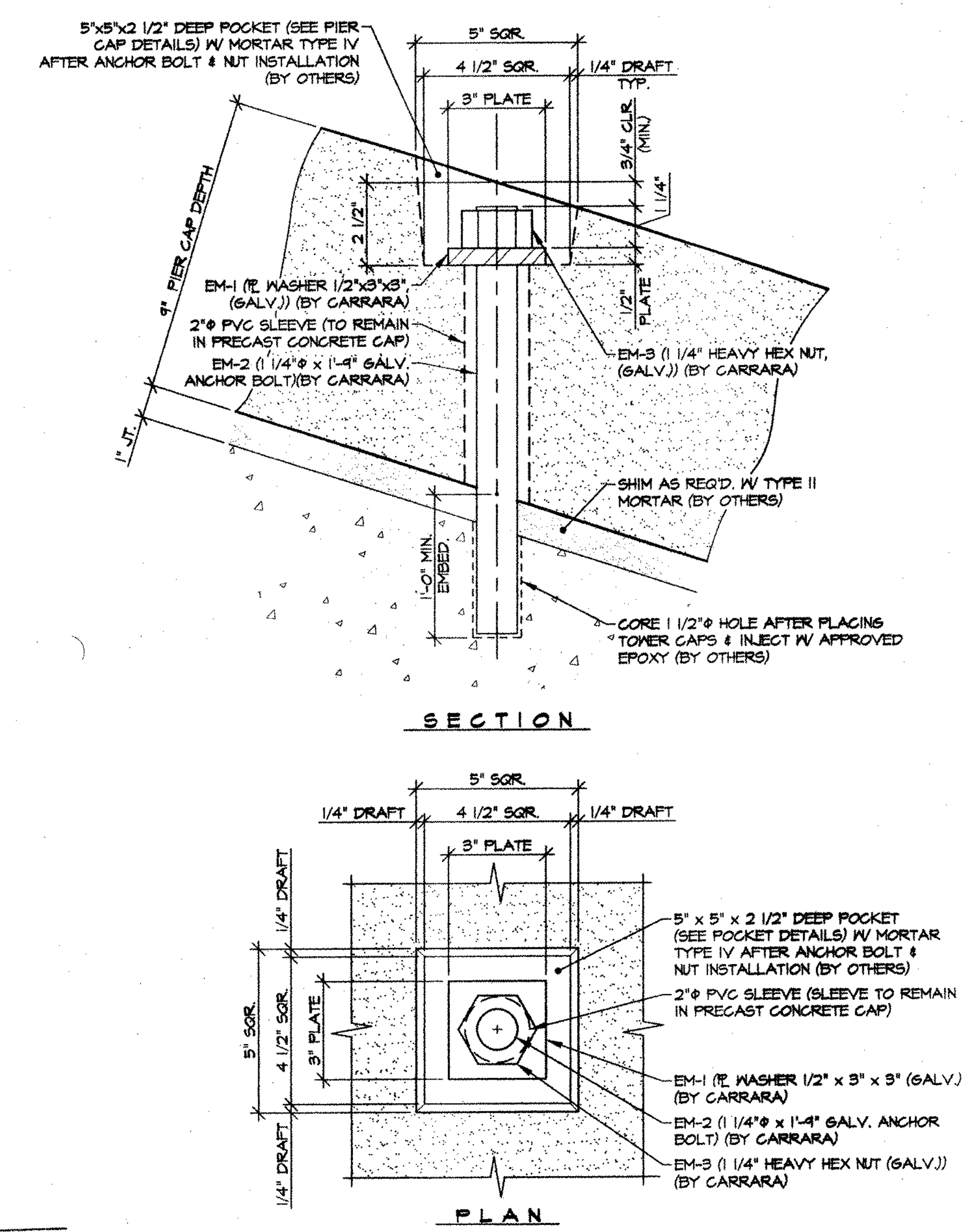
2/F1 PIER TOWER CAP PLAN - PIER
1/4" = 1'-0"



3/F1 PIER TOWER CAP PLAN - ABUTMENT #2
1/4" = 1'-0"



4/F1 DECK TOWER CAP (AT (6) LOCATIONS)
1/2" = 1'-0"



ANCHOR BOLT INSTALLATION DETAIL
3" = 1'-0"

RECEIVED
CK'D BY WJS OK'D BY
APR 26 2001
RESUBMIT___ APPROVED ✓
BY CPW DATE 5/29/01

NO.	DATE	REVISION	
1	4-3-01	RESUBMITTED FOR APPROVAL	B.L.

DRAWN: B.M. LOPEZ
DESIGNED: E.J. BROD
CHECKED:
APPROVED:

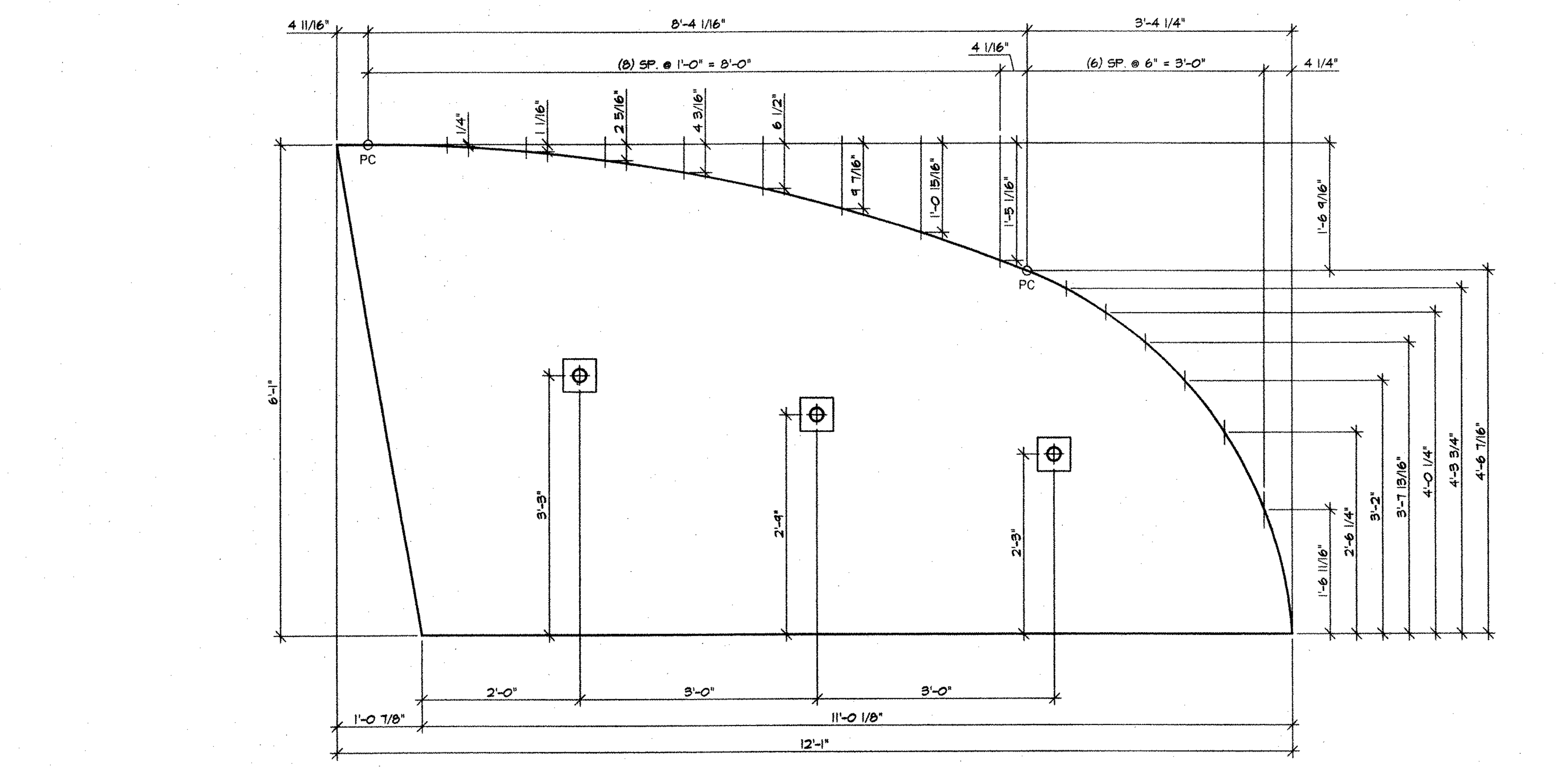
J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-6361
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

BECK & BELLUCCI, INC.
10 SALISBURY ROAD, PO BOX 429
FRANKLIN, NEW HAMPSHIRE 03235

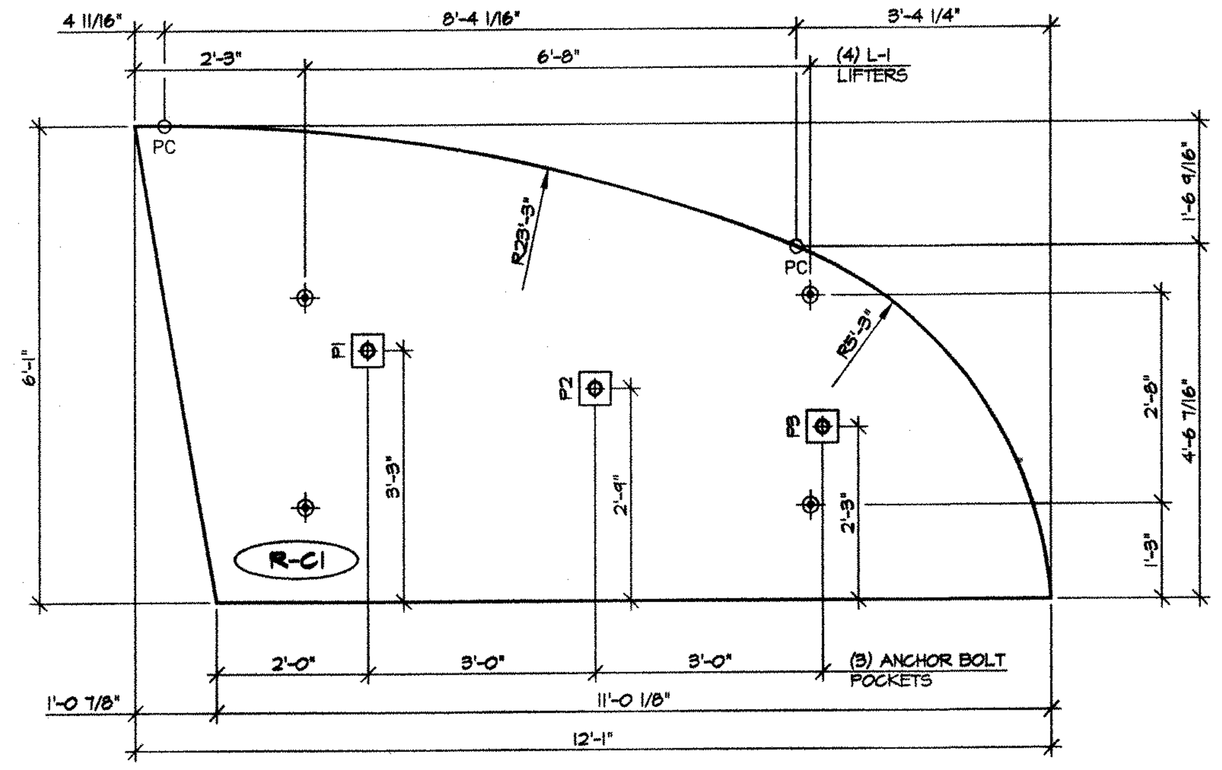
Project Name:
ROYALTON BRIDGE
BRZ 1444 (22)
ROYALTON, VERMONT

TOWER CAP LAYOUT
PLANS & DETAILS

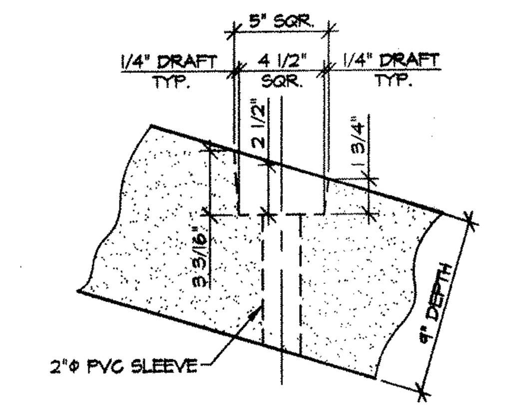
SCALE: NOTED
JOB #: 23111-00
DATE: 2-20-01
SHEET #: F1

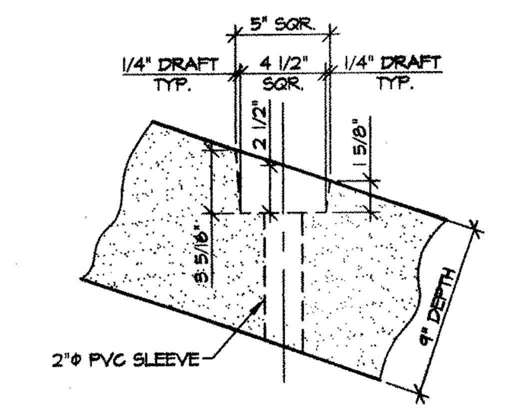


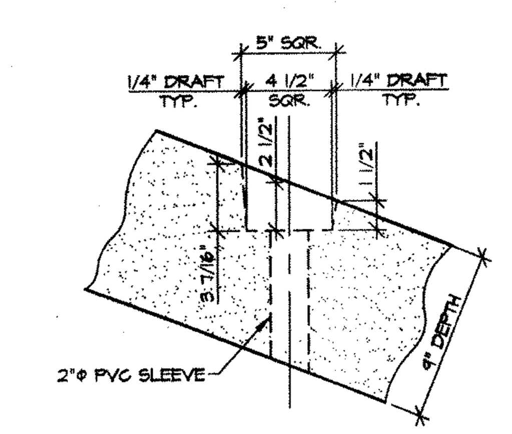
ABUTMENT #1 TOWER CAP - GEOMETRY PLAN
3/4" = 1'-0"

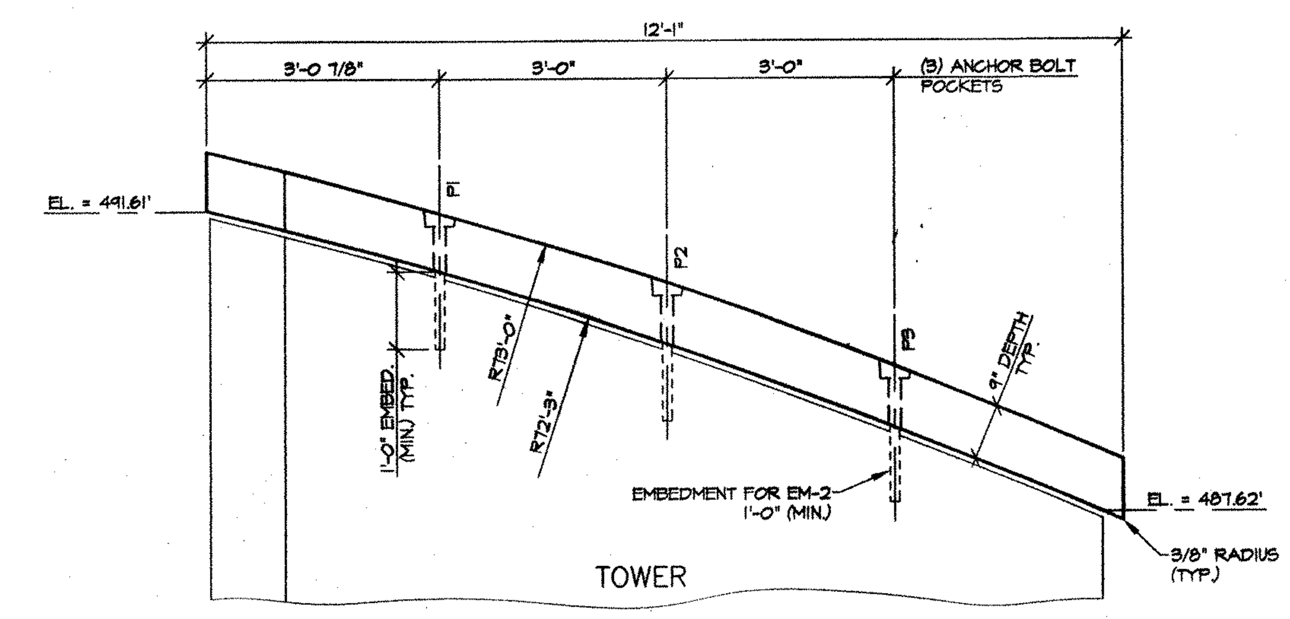


ABUTMENT #1 TOWER CAP - TRUE PLAN
1/2" = 1'-0"

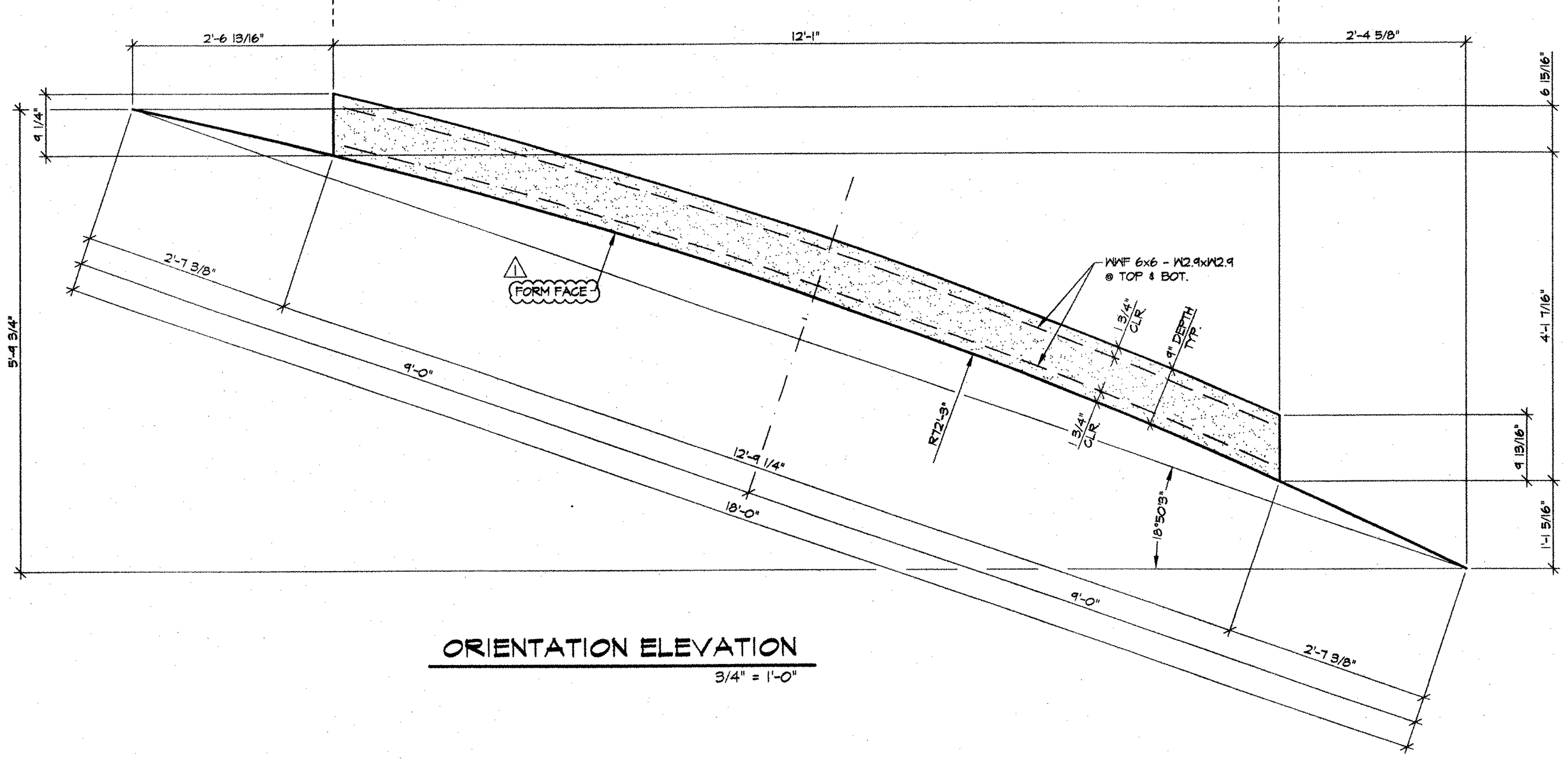








ABUTMENT #1 TOWER CAP ELEVATION
1/2" = 1'-0"



ORIENTATION ELEVATION
3/4" = 1'-0"

RECEIVED
CK'D BY WBS OK'D BY
APR 26 2001
RESUBMIT APPROVED ✓
BY CPW DATE 5/29/01

SHOP NOTE:
f'ci = 3,000 PSI (MIN.) @ STRIPPING
f'c = 5,000 PSI (MIN.) @ 28 DAYS

NOTES:
1. ALL SURFACES OF THE PRECAST CAPS (EXCLUDING FORM FACE) SHALL BE GIVEN A RUBBED FINISH PER VAOT STD. SPECIFICATIONS SUB-SECTION 501.16(a)2.
2. ALL EDGES OF PRECAST CAPS SHALL BE FABRICATED TO BE VERTICAL IN THE FINAL ERECTED POSITION.

MARK: R-C1	QTY.: 1	WT./TONS: 3.22	CU. YDS.: 1.59

MATERIALS LIST

ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1	EM-1	3	PL WASHER 1/2"x3"x3" (AASHTO 183, GR. 36) W/ (1) 1 1/2"Ø HOLE (GALV.)	FOR ERECTION
2	EM-2	3	1 1/4"Ø x 1'-9" ANCHOR BOLT (GALV.) (ASTM A307, GR. C)	FOR ERECTION
3	EM-3	3	1 1/4" HEAVY HEX NUT (GALV.)	FOR ERECTION
4	L-1	4	1T x 4 3/4" SWIFT LIFT LIFTERS (DAYTON)	
5				
6				
7				
8				
9				
10				

NO.	DATE	REVISION	
1	4-3-01	REVISED FOR APPROVAL	B.L.

DRAWN: B.M. LOPEZ
DESIGNED: E.J. BROD
CHECKED:
APPROVED:

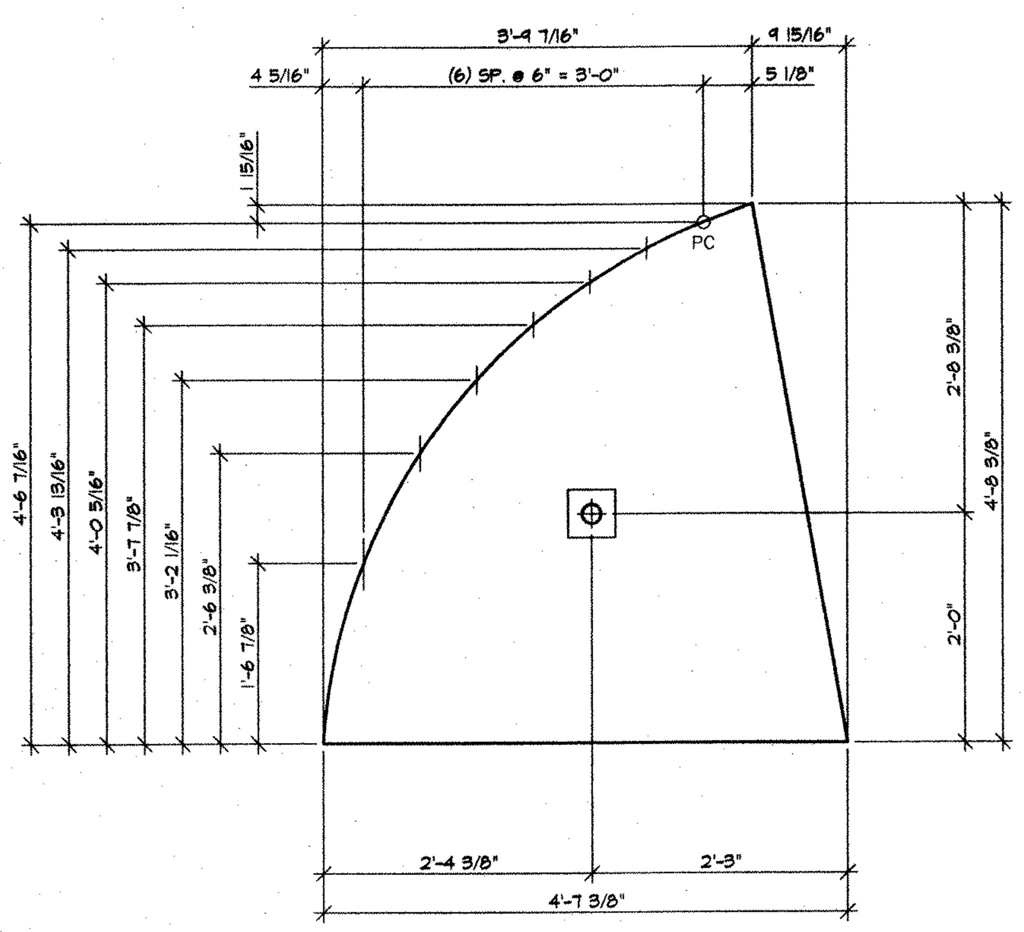
J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-6361
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

BECK & BELLUCCI, INC.
10 SALISBURY ROAD, PO BOX 429
FRANKLIN, NEW HAMPSHIRE 03235

Project Name:
ROYALTON BRIDGE
BRZ 1444 (22)
ROYALTON, VERMONT

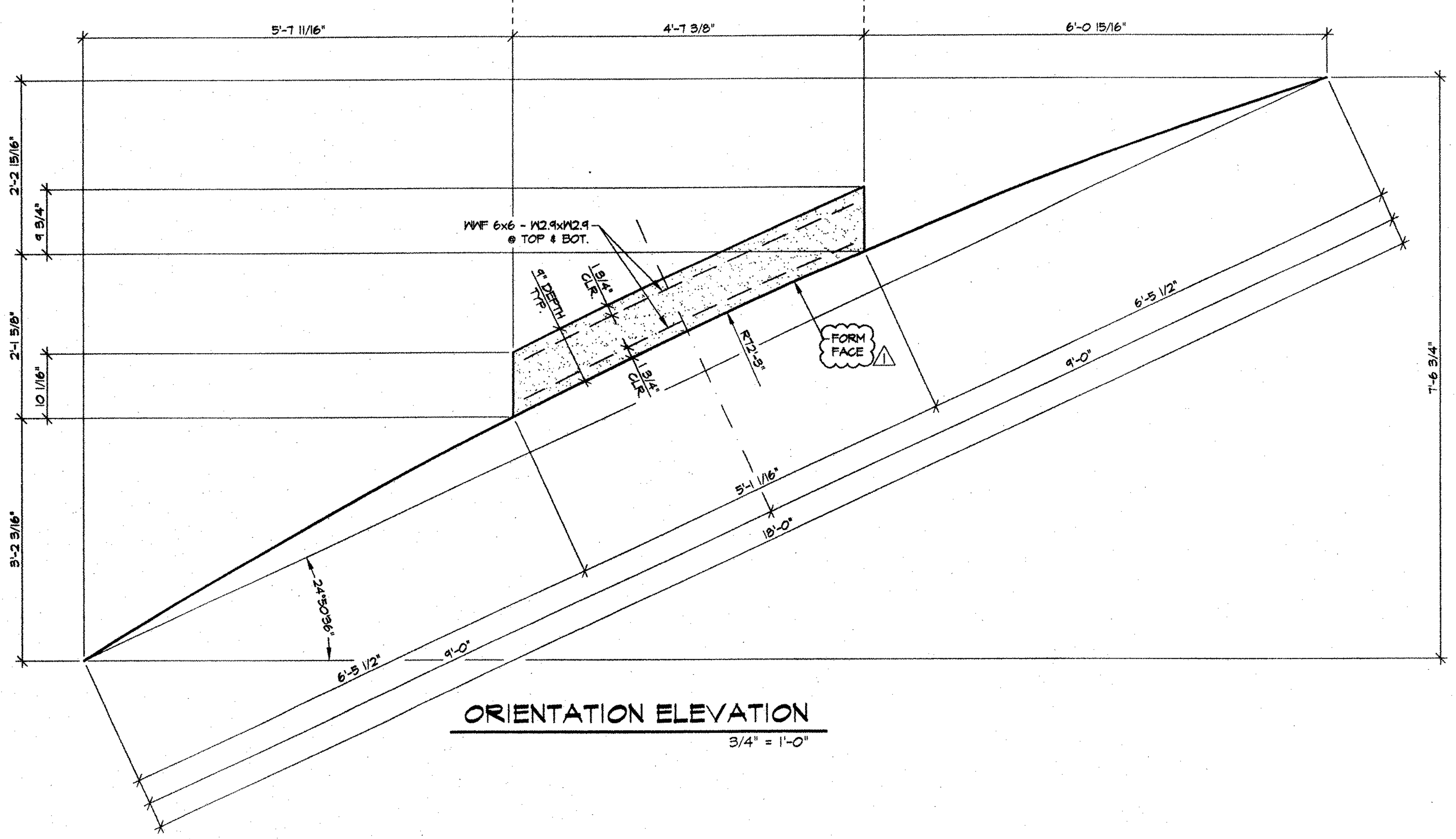
PIER TOWER CAP DETAILS

SCALE:	JOB #:
NOTED	23111-00
DATE:	SHEET #:
2-20-01	PC1



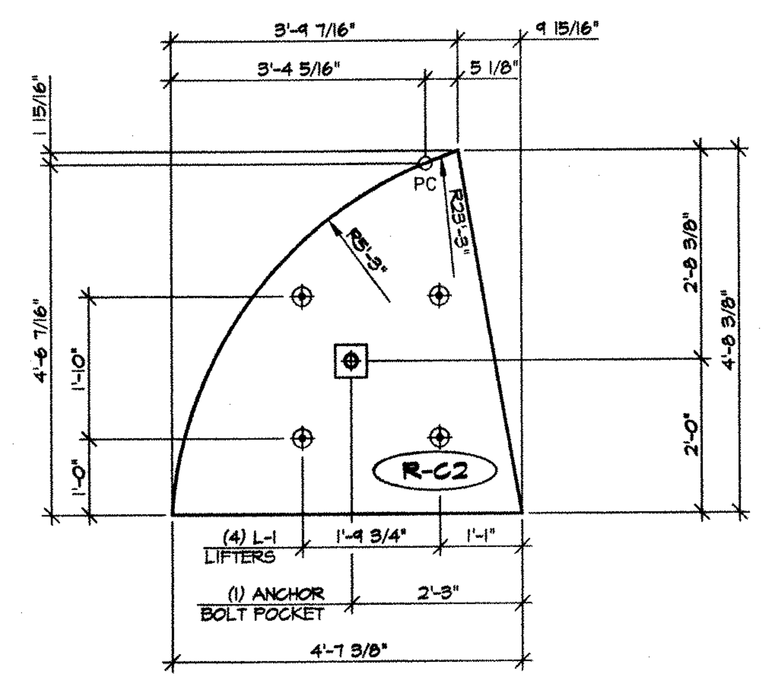
ABUTMENT #1 TOWER CAP - GEOMETRY PLAN

3/4" = 1'-0"



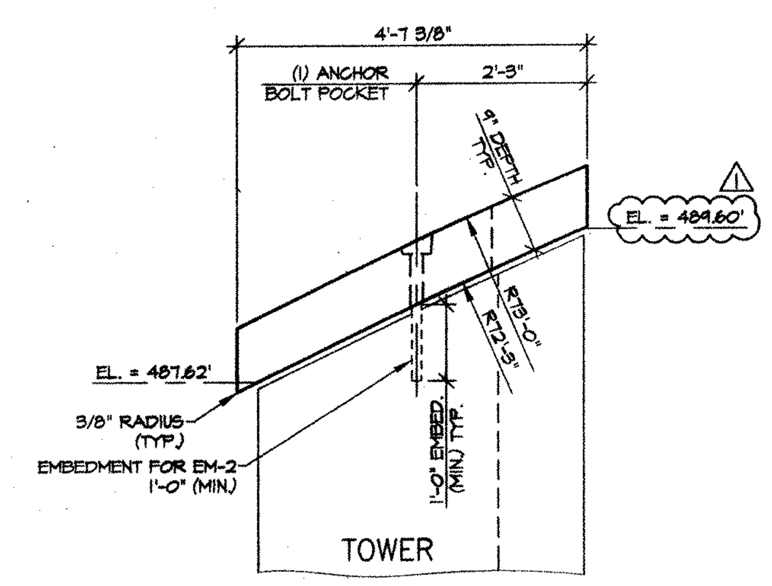
ORIENTATION ELEVATION

3/4" = 1'-0"



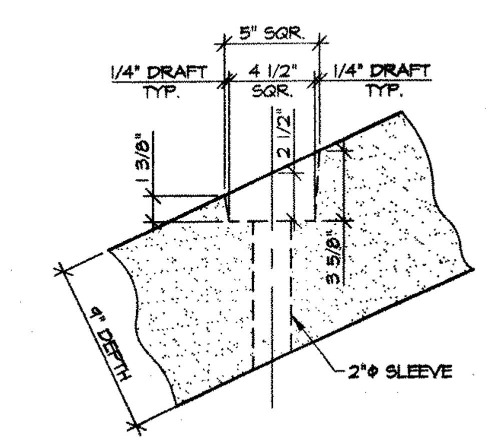
ABUTMENT #1 TOWER CAP - TRUE PLAN

1/2" = 1'-0"



ABUTMENT #1 TOWER CAP ELEVATION

1/2" = 1'-0"



POCKET DETAIL

1 1/2" = 1'-0"

RECEIVED
CK'D BY WBS OK'D BY
APR 26 2001
RESUBMIT APPROVED ✓
BY CPW DATE 5/29/01

SHOP NOTE:
f'ci = 3,000 PSI (MIN.) @ STRIPPING
f'c = 5,000 PSI (MIN.) @ 28 DAYS

MARK: R-C2	QTY.: 1	WT./TONS: 0.73	CU. YDS.: 0.36

MATERIALS LIST

ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1	EM-1	1	PL WASHER 1/2"x3"x3" (AASHTO 183, GR. 36) W/ (1) 1 1/2"φ HOLE (GALV.)	FOR ERECTION
2	EM-2	1	1 1/4"φ x 1'-9" ANCHOR BOLT (GALV.) (ASTM A307, GR. C)	FOR ERECTION
3	EM-3	1	1 1/4" HEAVY HEX NUT (GALV.)	FOR ERECTION
4	L-1	4	1T x 4 3/4" SWIFT LIFT LIFTERS (DAYTON)	
5				
6				
7				
8				
9				
10				

NOTES:
1. ALL SURFACES OF THE PRECAST CAPS (EXCLUDING FORM FACE) SHALL BE GIVEN A RUBBED FINISH PER VAOT STD. SPECIFICATIONS SUB-SECTION 501.16(a)2.
2. ALL EDGES OF PRECAST CAPS SHALL BE FABRICATED TO BE VERTICAL IN THE FINAL ERECTED POSITION.

NO.	DATE	REVISION	
1	4-3-01	REVISED FOR APPROVAL	B.L.

DRAWN: B.M. LOPEZ
DESIGNED: E.J. BROD
CHECKED:
APPROVED:

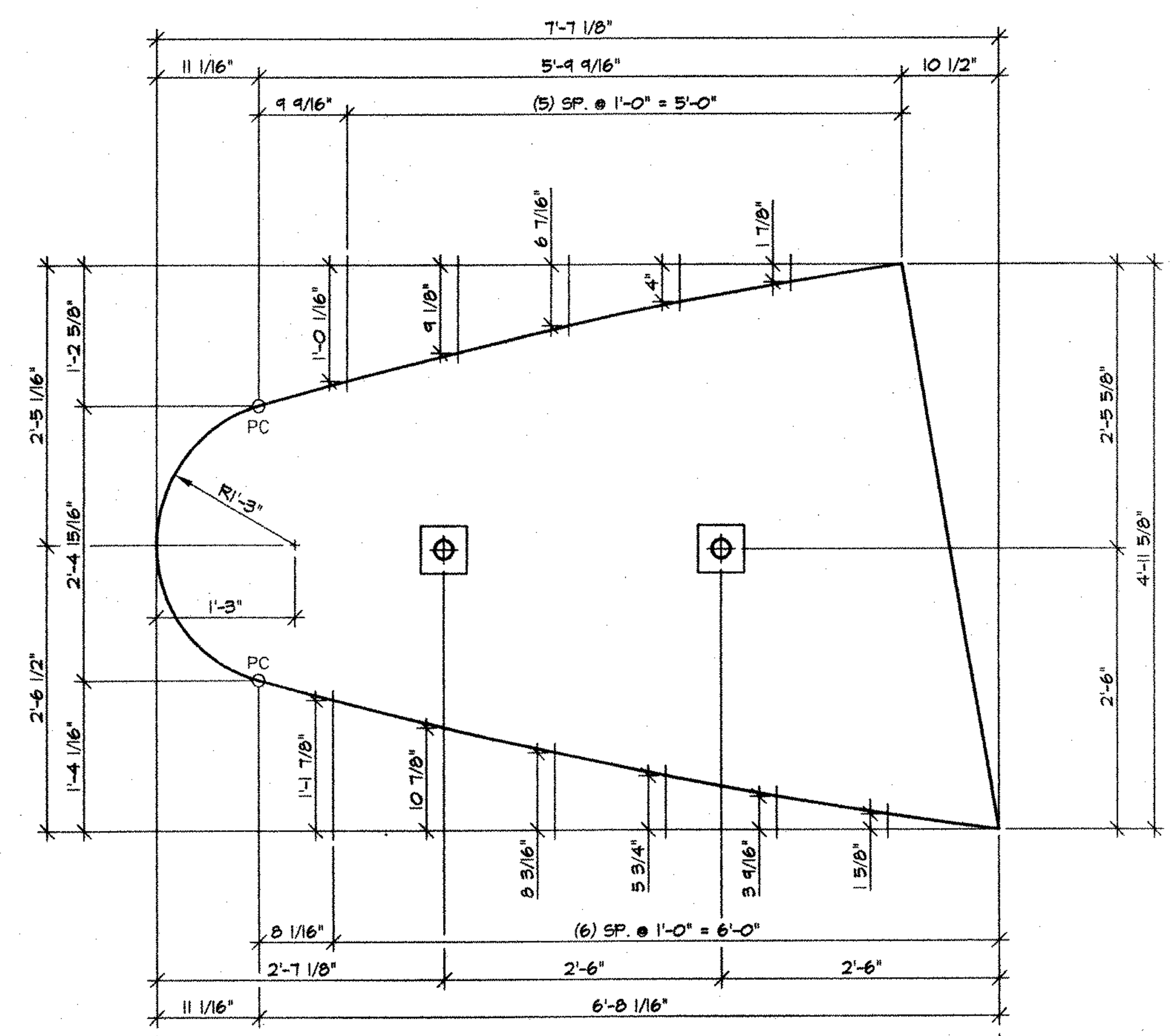
J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-6361
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

BECK & BELLUCCI, INC.
10 SALISBURY ROAD, PO BOX 429
FRANKLIN, NEW HAMPSHIRE 03235

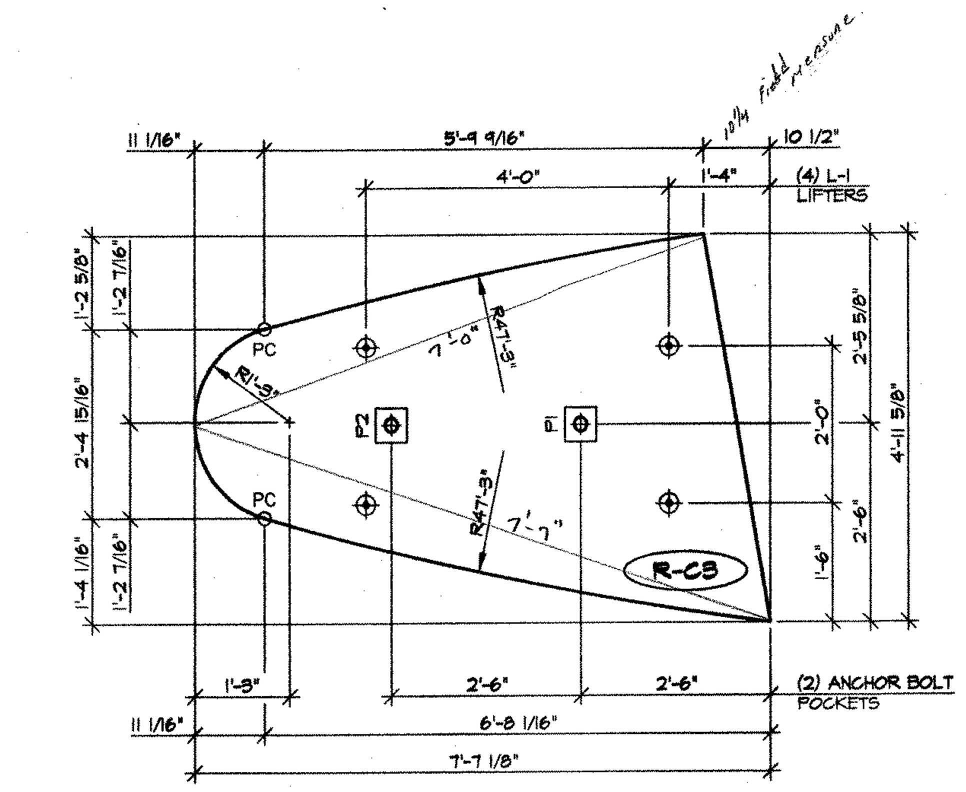
Project Name:
ROYALTON BRIDGE
BRZ 1444 (22)
ROYALTON, VERMONT

PIER TOWER CAP DETAILS

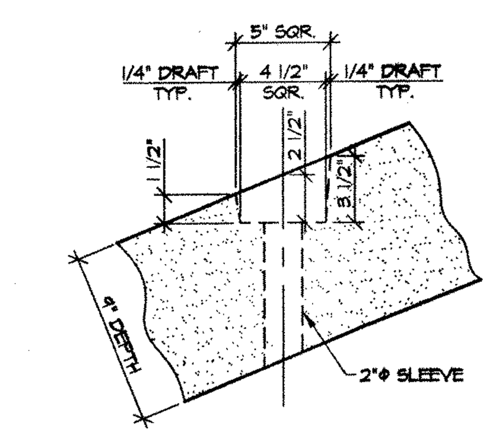
SCALE: NOTED
JOB #: 23111-00
DATE: 2-20-01
SHEET #: PC2



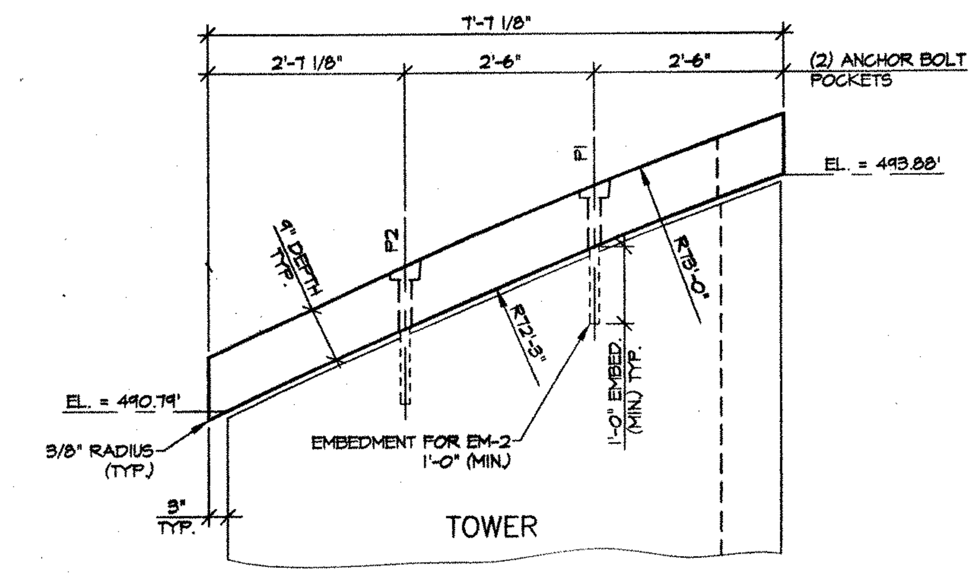
PIER TOWER CAP - GEOMETRY PLAN
3/4" = 1'-0"



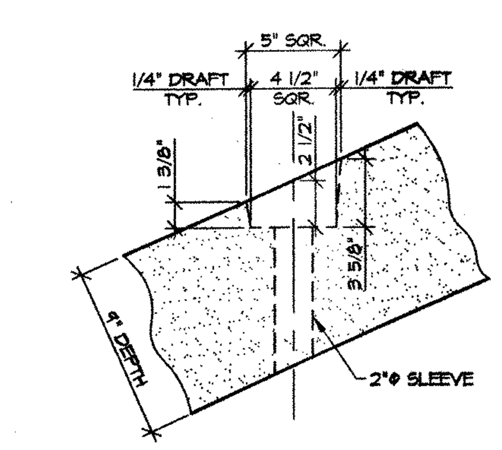
PIER TOWER CAP - TRUE PLAN
1/2" = 1'-0"



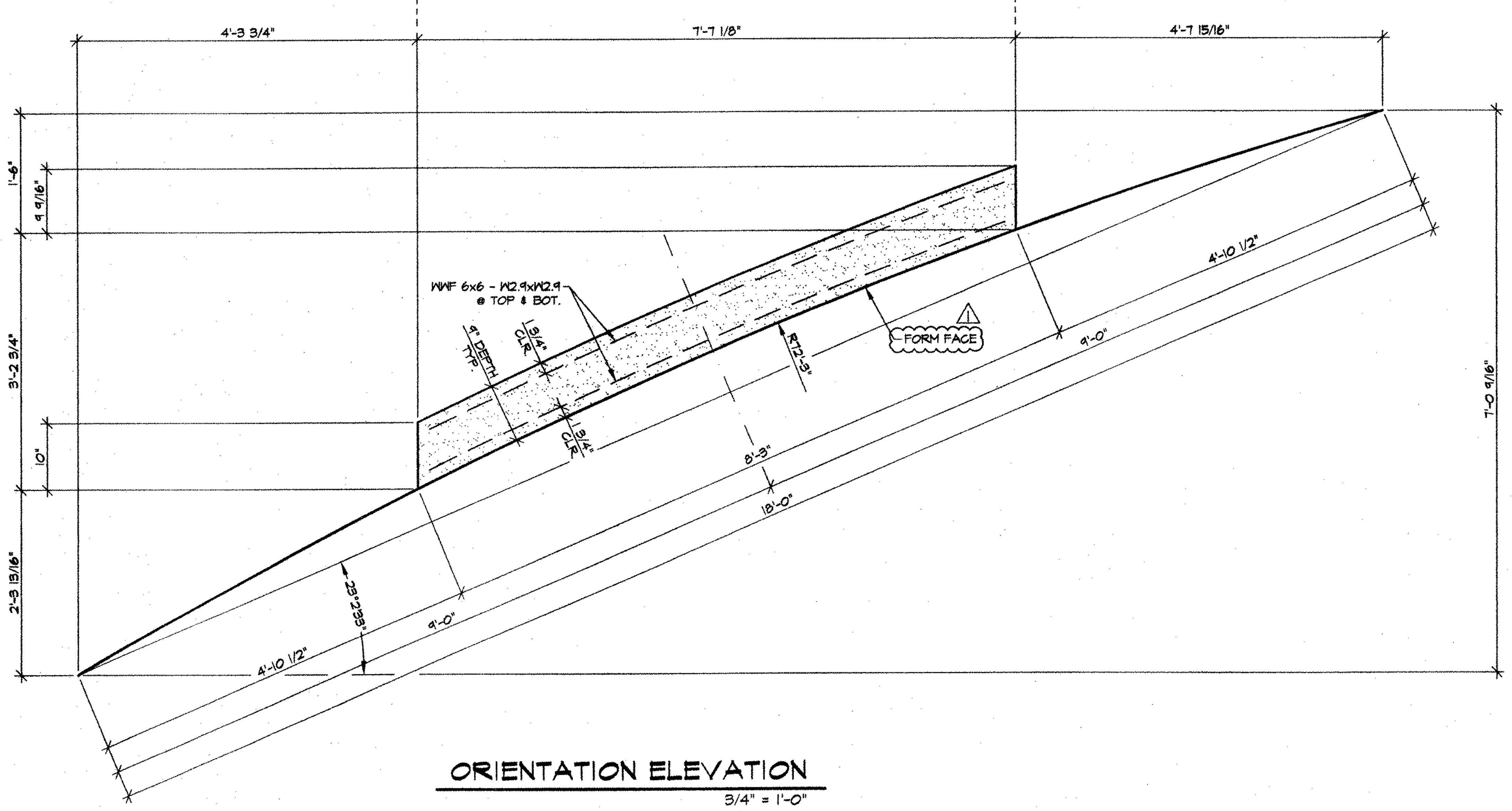
POCKET DETAIL - P1
1 1/2" = 1'-0"



PIER TOWER CAP ELEVATION
1/2" = 1'-0"



POCKET DETAIL - P2
1 1/2" = 1'-0"



ORIENTATION ELEVATION
3/4" = 1'-0"

RECEIVED
CK'D BY WBS OK'D BY
APR 26 2001
RESUBMIT APPROVED ✓
BY CPW DATE 5/29/01

SHOP NOTE:
f'ci = 3,000 PSI (MIN.) @ STRIPPING
f'c = 5,000 PSI (MIN.) @ 28 DAYS

MARK: R-C3	QTY.: 1	WT./TONS: 1.56	CU. YDS.: 0.77

MATERIALS LIST

ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1	EM-1	2	PL WASHER 1/2"x3"x3" (AASHTO 183, GR. 36) W/ (1) 1 1/2"Φ HOLE (GALV.)	FOR ERECTION
2	EM-2	2	1 1/4"Φ x 1'-9" ANCHOR BOLT (GALV.) (ASTM A307, GR. C)	FOR ERECTION
3	EM-3	2	1 1/4" HEAVY HEX NUT (GALV.)	FOR ERECTION
4	L-1	4	1T x 4 3/4" SWIFT LIFT LIFTERS (DAYTON)	
5				
6				
7				
8				
9				
10				

1

NOTES:
1. ALL SURFACES OF THE PRECAST CAPS (EXCLUDING FORM FACE) SHALL BE GIVEN A RUBBED FINISH PER VAOT STD. SPECIFICATIONS SUB-SECTION 501.16(a)2.
2. ALL EDGES OF PRECAST CAPS SHALL BE FABRICATED TO BE VERTICAL IN THE FINAL ERECTED POSITION.

NO.	DATE	REVISION	
1	4-3-01	REVISED FOR APPROVAL	B.L.

DRAWN: B.M. LOPEZ
DESIGNED: E.J. BROD
CHECKED:
APPROVED:

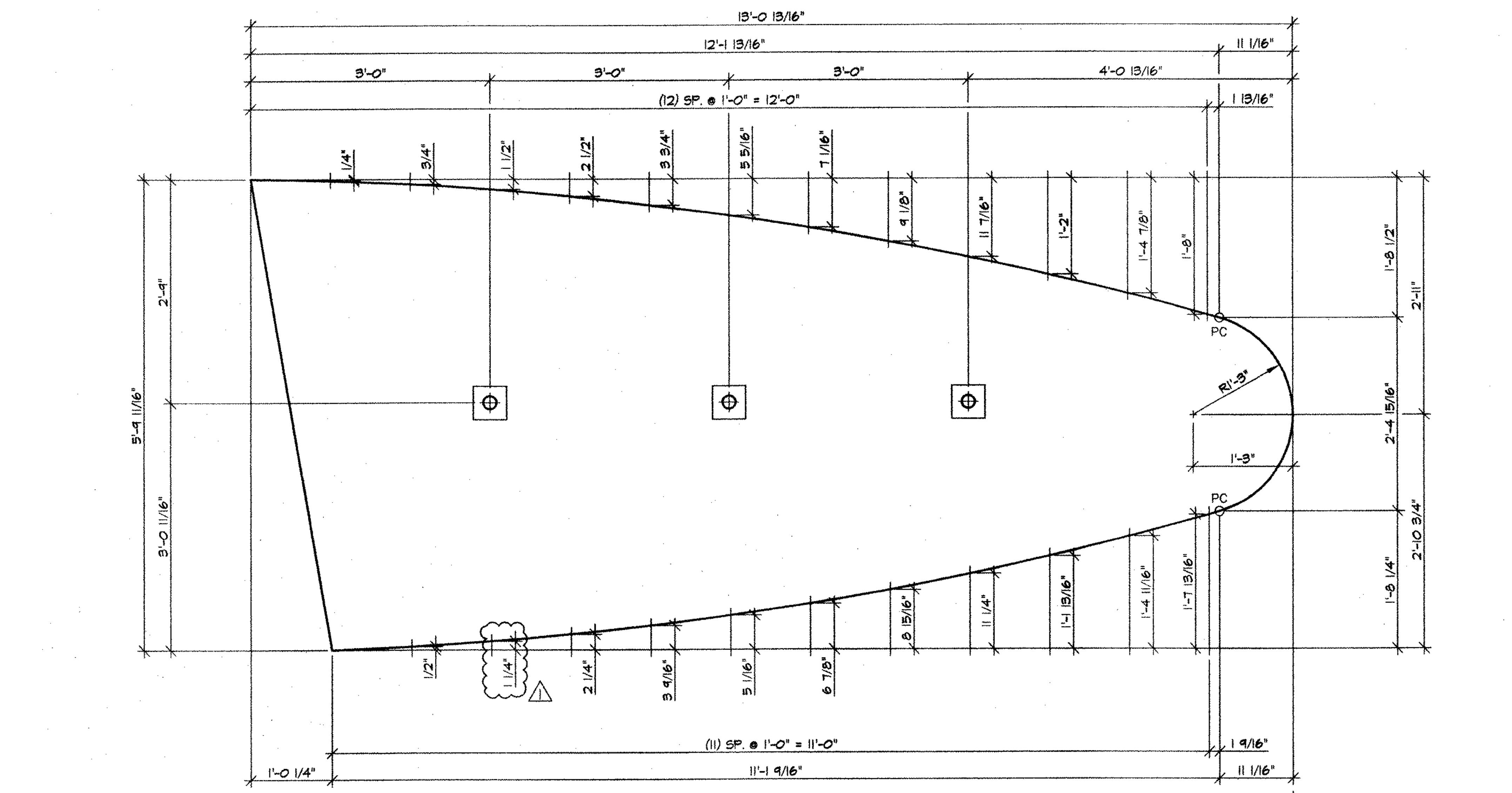
J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-6361
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

BECK & BELLUCCI, INC.
10 SALISBURY ROAD, PO BOX 429
FRANKLIN, NEW HAMPSHIRE 03235

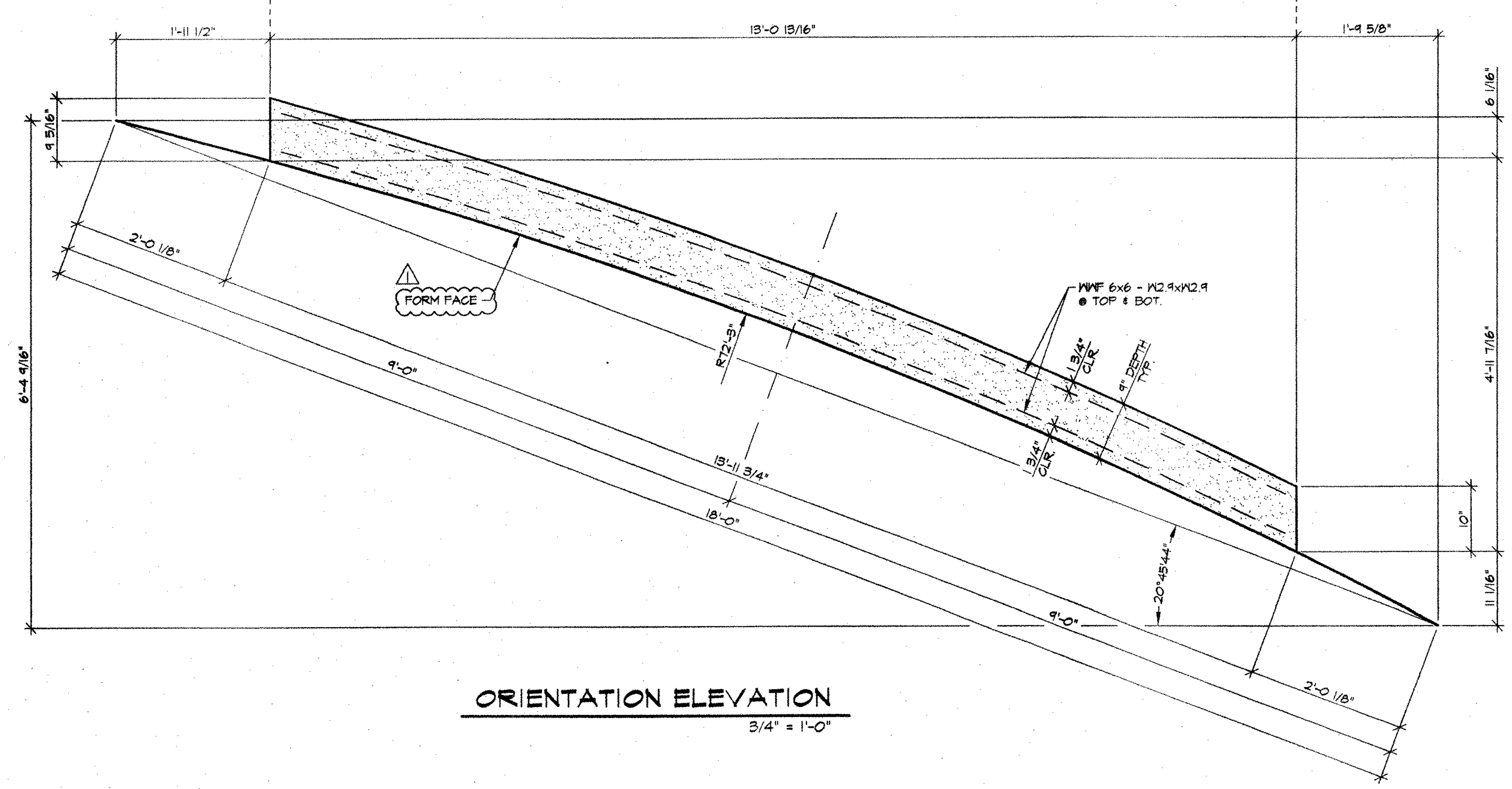
Project Name:
ROYALTON BRIDGE
BRZ 1444 (22)
ROYALTON, VERMONT

PIER TOWER CAP DETAILS

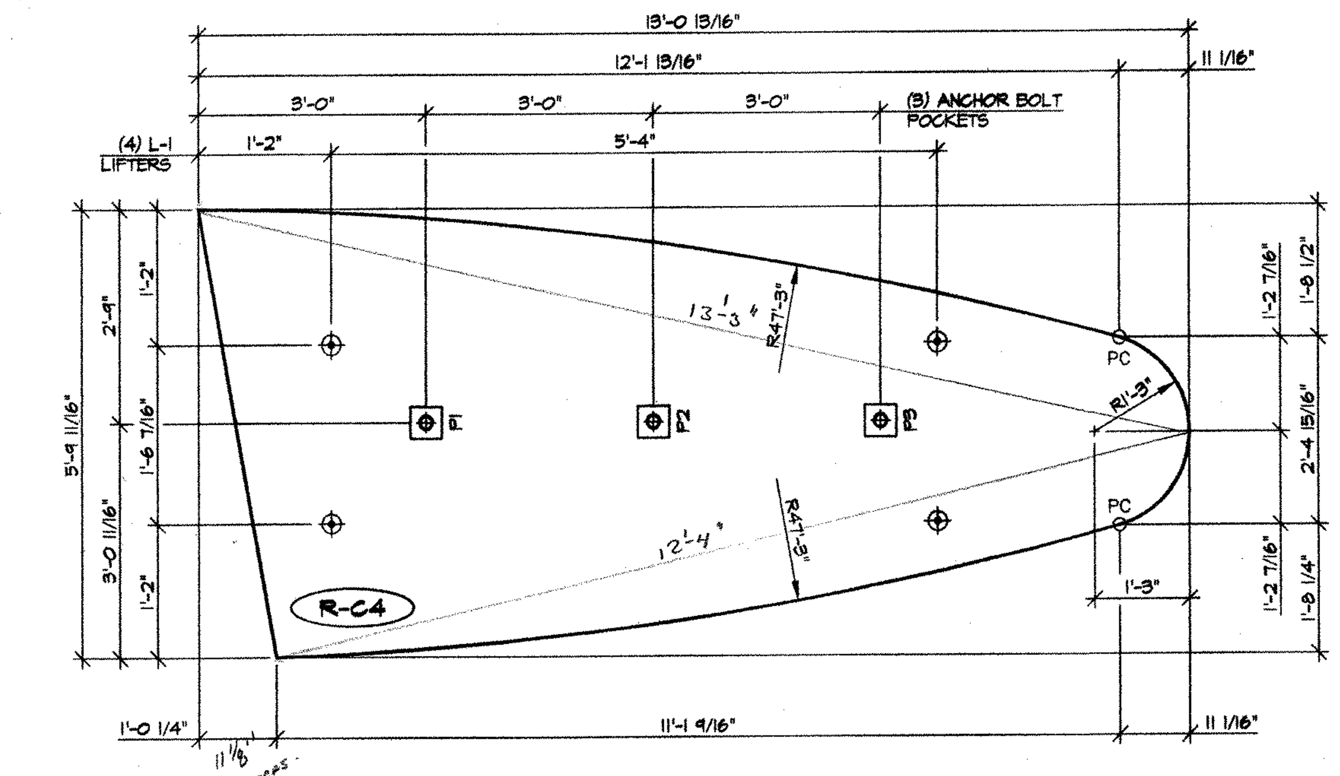
SCALE:	JOB #:
NOTED	23111-00
DATE:	SHEET #:
2-20-01	PC3



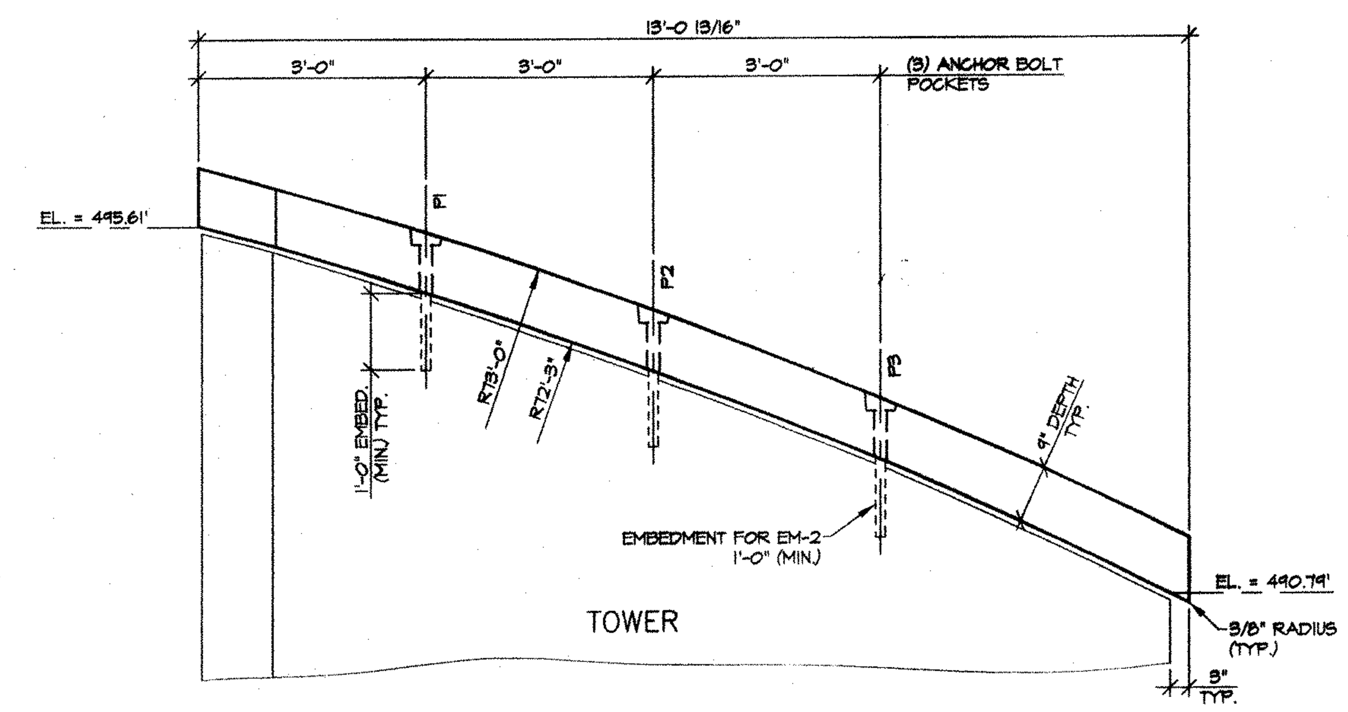
PIER TOWER CAP - GEOMETRY PLAN
3/4" = 1'-0"



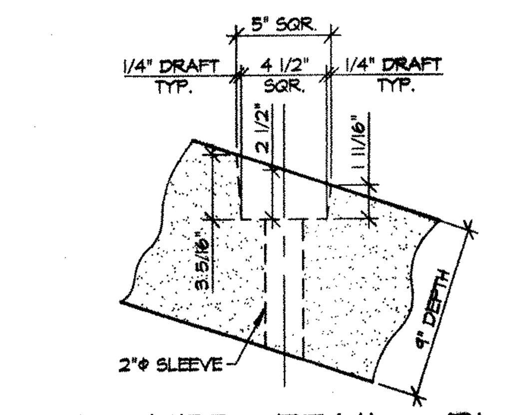
ORIENTATION ELEVATION
3/4" = 1'-0"



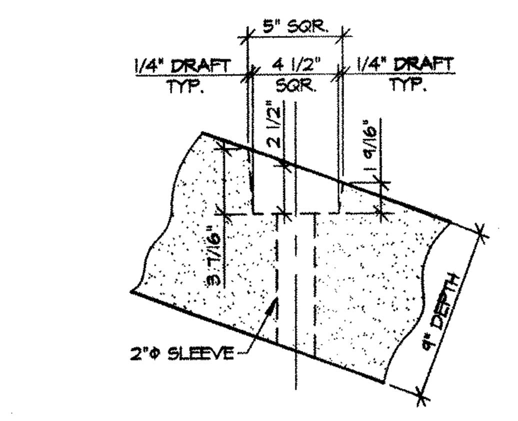
PIER TOWER CAP - TRUE PLAN
1/2" = 1'-0"



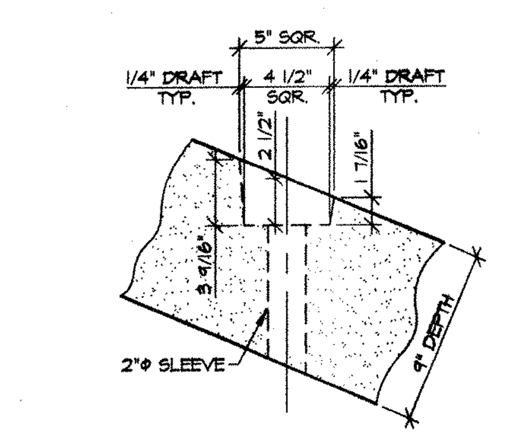
PIER TOWER CAP ELEVATION
1/2" = 1'-0"



POCKET DETAIL - P1
1 1/2" = 1'-0"



POCKET DETAIL - P2
1 1/2" = 1'-0"



POCKET DETAIL - P3
1 1/2" = 1'-0"

RECEIVED
CK'D BY WBS OK'D BY ______
APR 2 6 2001
RESUBMIT ______ APPROVED ✓
BY cpw DATE 5/29/01

SHOP NOTE:
f'ci = 3,000 PSI (MIN.) @ STRIPPING
f'c = 5,000 PSI (MIN.) @ 28 DAYS

MARK: R-C4	QTY.: 1	WT./TONS: 3.32	CU. YDS.: 1.64

MATERIALS LIST

ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1	EM-1	3	PL WASHER 1/2"x3"x3" (AASHTO 183, GR. 36) W/ (1) 1 1/2"Φ HOLE (GALV.)	FOR ERECTION
2	EM-2	3	1 1/4"Φ x 1'-9" ANCHOR BOLT (GALV.) (ASTM A307, GR. C)	FOR ERECTION
3	EM-3	3	1 1/4" HEAVY HEX NUT (GALV.)	FOR ERECTION
4	L-1	4	1T x 4 3/4" SWIFT LIFT LIFTERS (DAYTON)	
5				
6				
7				
8				
9				
10				

NOTES:
1. ALL SURFACES OF THE PRECAST CAPS (EXCLUDING FORM FACE) SHALL BE GIVEN A RUBBED FINISH PER VAOT STD. SPECIFICATIONS SUB-SECTION 501.16(a)2.
2. ALL EDGES OF PRECAST CAPS SHALL BE FABRICATED TO BE VERTICAL IN THE FINAL ERECTED POSITION.

NO.	DATE	REVISION	
1	4-3-01	REVISED FOR APPROVAL	B.L.

DRAWN: B.M. LOPEZ
DESIGNED: E.J. BROD
CHECKED: ______
APPROVED: ______

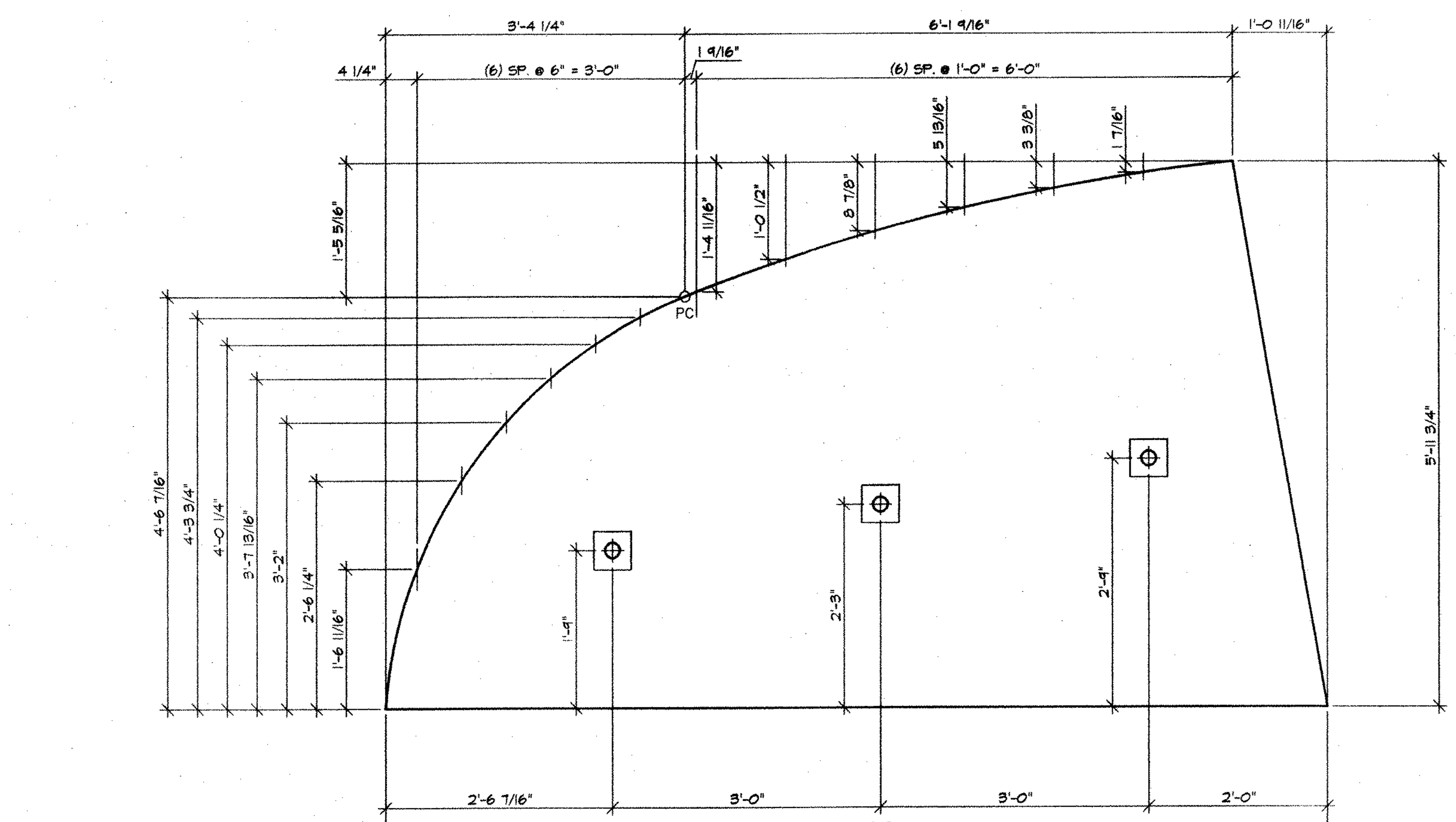
J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-6361
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

BECK & BELLUCCI, INC.
10 SALISBURY ROAD, PO BOX 429
FRANKLIN, NEW HAMPSHIRE 03235

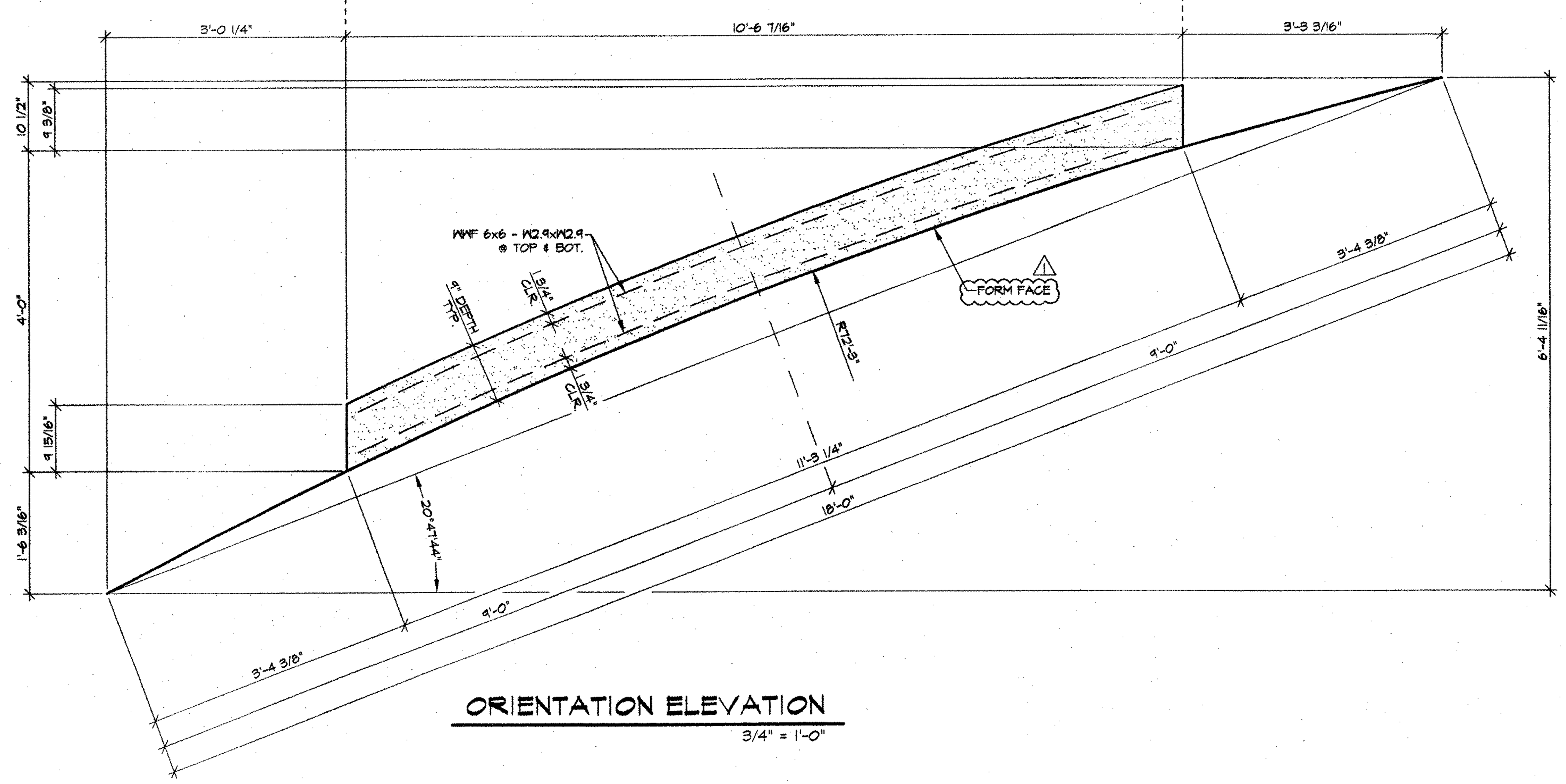
Project Name:
ROYALTON BRIDGE
BRZ 1444 (22)
ROYALTON, VERMONT

PIER TOWER CAP DETAILS

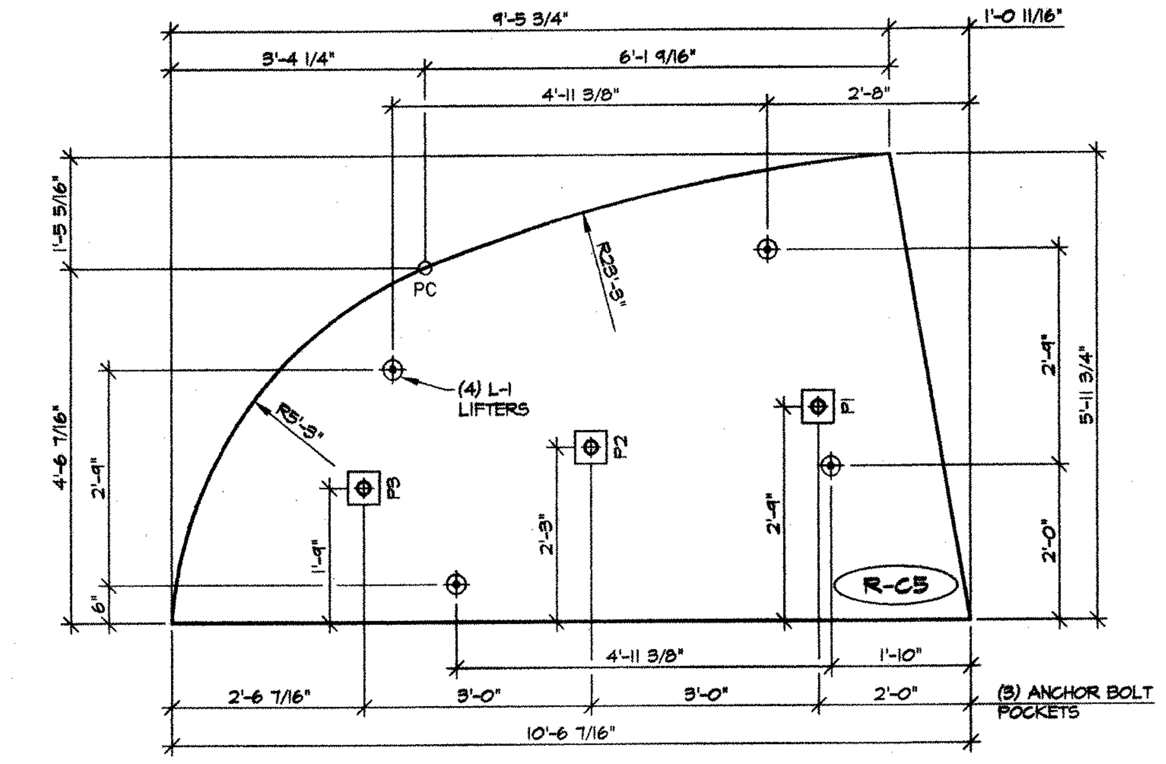
SCALE:	JOB #:
NOTED	23111-00
DATE:	SHEET #:
1-10-01	PC4



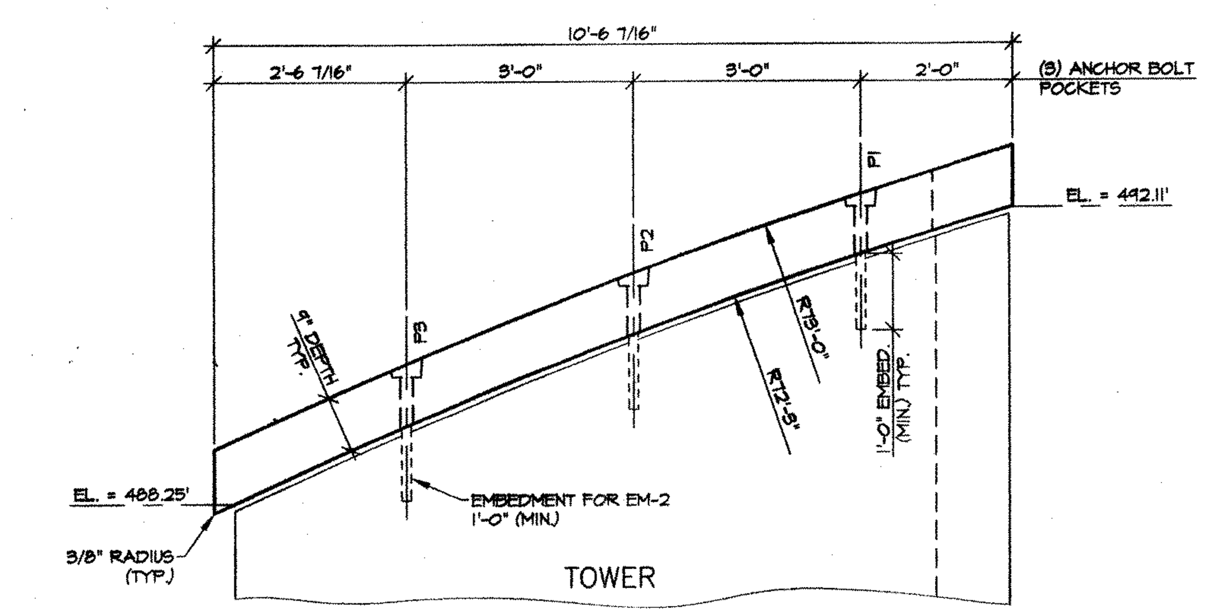
ABUTMENT #2 TOWER CAP - GEOMETRY PLAN
3/4" = 1'-0" 3/4" = 1'-0"



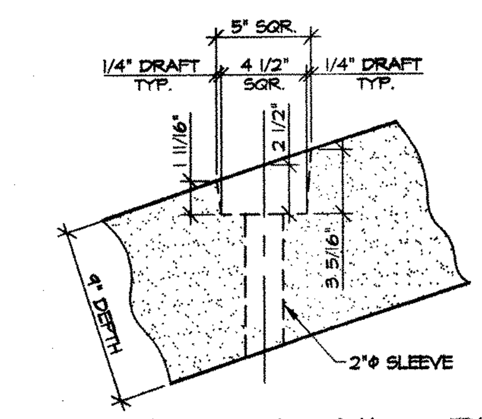
ORIENTATION ELEVATION
3/4" = 1'-0"



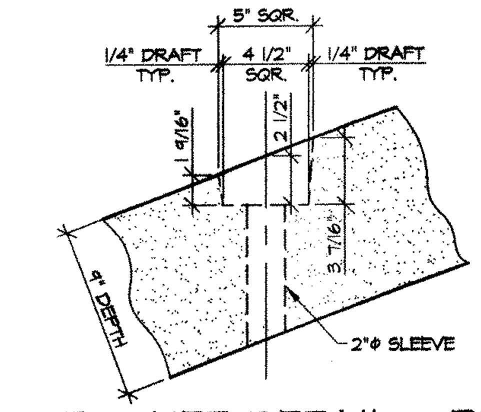
ABUTMENT #2 TOWER CAP - TRUE PLAN
1/2" = 1'-0"



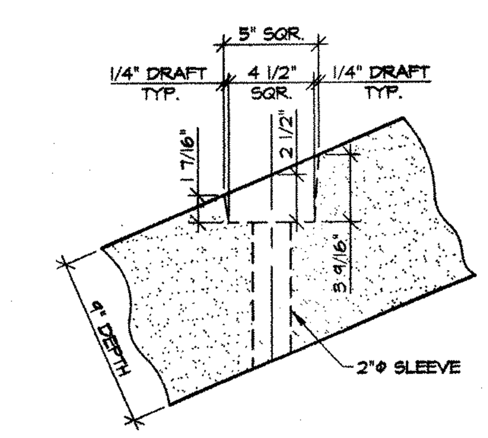
ABUTMENT #2 TOWER CAP ELEVATION
1/2" = 1'-0"



POCKET DETAIL - P1
1 1/2" = 1'-0"



POCKET DETAIL - P2
1 1/2" = 1'-0"



POCKET DETAIL - P3
1 1/2" = 1'-0"

RECEIVED
CK'D BY WB3 OK'D BY______
APR 26 2001
RESUBMIT______ APPROVED ✓
BY CPW DATE 5/29/01

SHOP NOTE:
F'ci = 3,000 PSI (MIN.) @ STRIPPING
F'c = 5,000 PSI (MIN.) @ 28 DAYS

MARK: R-C5	QTY.: 1	WT./TONS: 2.70	CU. YDS.: 1.33

MATERIALS LIST

ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1	EM-1	3	PL WASHER 1/2"x3"x3" (AASHTO 183, GR. 36) W/ (1) 1 1/2"⌀ HOLE (GALV.)	FOR ERECTION
2	EM-2	3	1 1/4"⌀ x 1'-4" ANCHOR BOLT (GALV.) (ASTM A307, GR. C)	FOR ERECTION
3	EM-3	3	1 1/4" HEAVY HEX NUT (GALV.)	FOR ERECTION
4	L-1	4	1T x 4 3/4" SWIFT LIFT LIFTERS (DAYTON)	
5				
6				
7				
8				
9				
10				

NOTES:
1. ALL SURFACES OF THE PRECAST CAPS (EXCLUDING FORM FACE) SHALL BE GIVEN A RUBBED FINISH PER VAOT STD. SPECIFICATIONS SUB-SECTION 501.16(a)2.
2. ALL EDGES OF PRECAST CAPS SHALL BE FABRICATED TO BE VERTICAL IN THE FINAL ERECTED POSITION.

NO.	DATE	REVISION	
1	4-3-01	REVISED FOR APPROVAL	B.L.

DRAWN: B.M. LOPEZ
DESIGNED: E.J. BROD
CHECKED: ______
APPROVED: ______

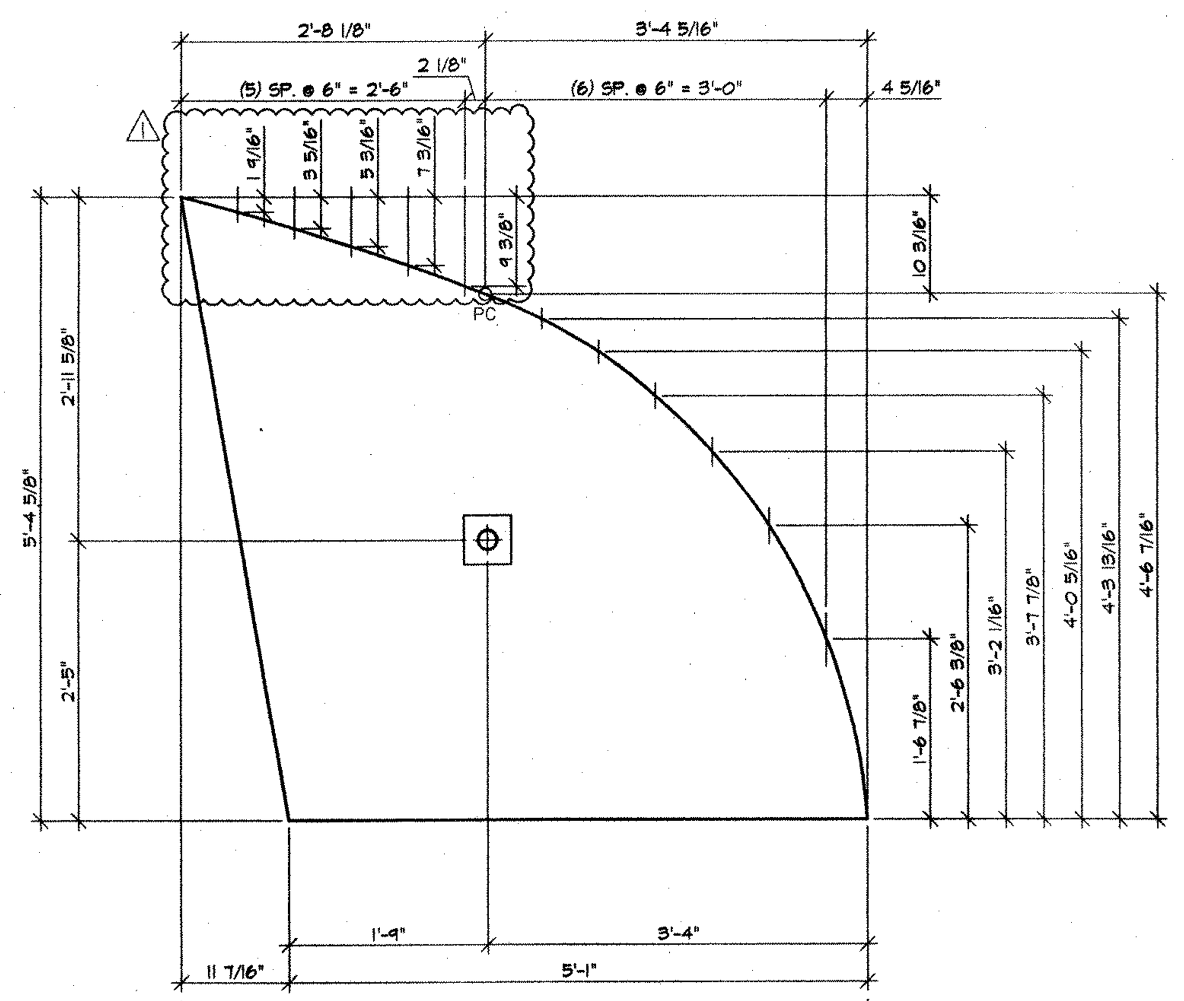
J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-6361
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

BECK & BELLUCCI, INC.
10 SALISBURY ROAD, PO BOX 429
FRANKLIN, NEW HAMPSHIRE 03235

Project Name:
ROYALTON BRIDGE
BRZ 1444 (22)
ROYALTON, VERMONT

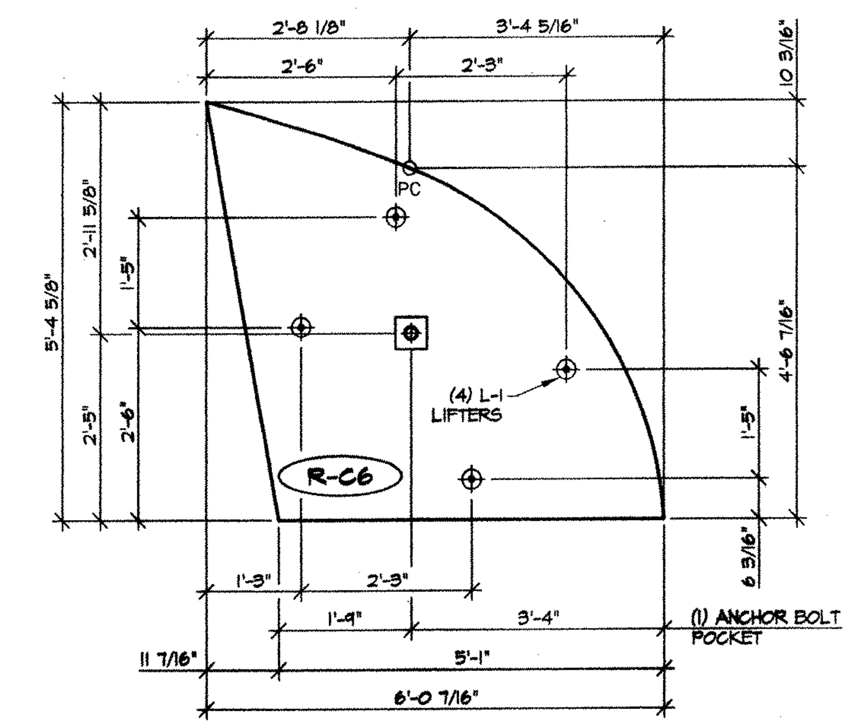
PIER TOWER CAP DETAILS

SCALE: NOTED
JOB #: 23111-00
DATE: 2-20-01
SHEET #: PC5



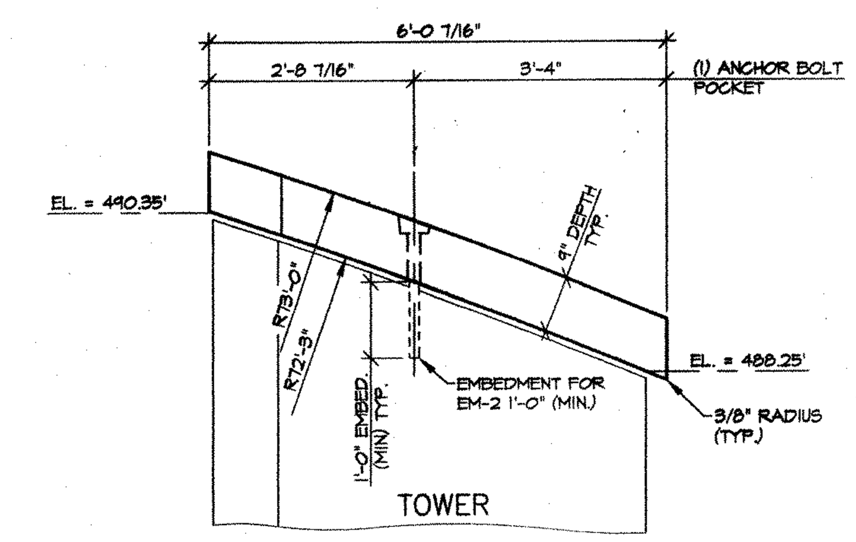
ABUTMENT #2 TOWER CAP - GEOMETRY PLAN

3/4" = 1'-0"



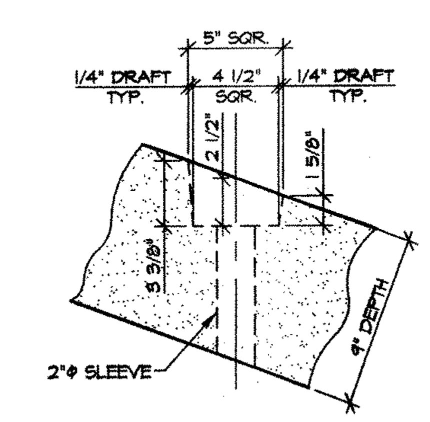
ABUTMENT #2 TOWER CAP - TRUE PLAN

1/2" = 1'-0"



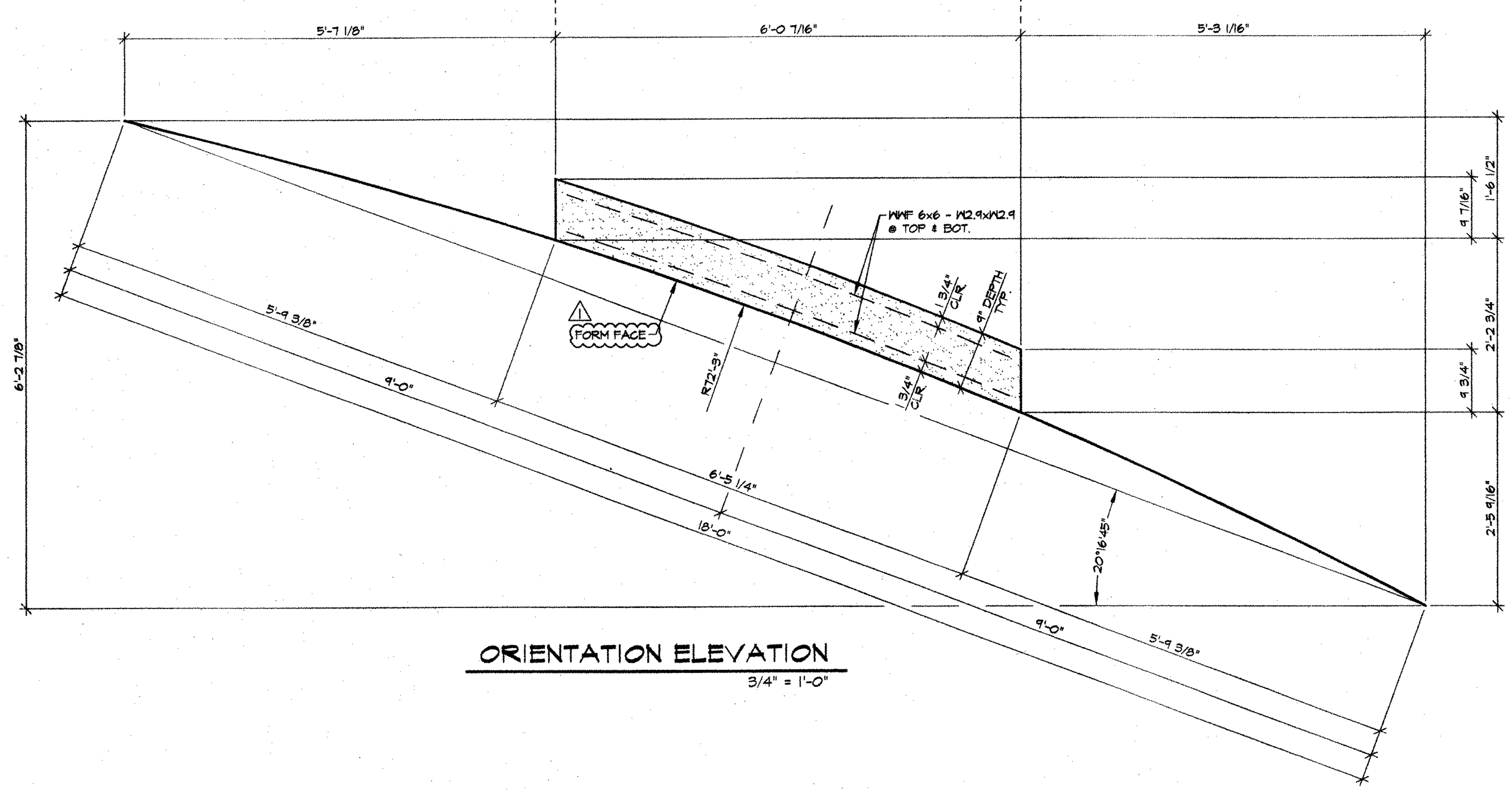
ABUTMENT #2 TOWER CAP ELEVATION

1/2" = 1'-0"



POCKET DETAIL

1 1/2" = 1'-0"



ORIENTATION ELEVATION

3/4" = 1'-0"

RECEIVED
CK'D BY WBS OK'D BY
APR 26 2001
RESUBMIT APPROVED ✓
BY GPW DATE 5/29/01

SHOP NOTE:
f'ci = 3,000 PSI (MIN.) @ STRIPPING
f'c = 5,000 PSI (MIN.) @ 28 DAYS

MARK: R-C6 | QTY.: 1 | WT./TONS: 1.17 | CU. YDS.: 0.58

MATERIALS LIST

ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1	EM-1	1	PL WASHER 1/2"x3"x3" (AASHTO 183, GR. 36) W/ (1) 1 1/2"Φ HOLE (GALV.)	FOR ERECTION
2	EM-2	1	1 1/4"Φ x 1'-9" ANCHOR BOLT (GALV.) (ASTM A307, GR. C)	FOR ERECTION
3	EM-3	1	1 1/4" HEAVY HEX NUT (GALV.)	FOR ERECTION
4	L-1	4	1T x 4 3/4" SWIFT LIFT LIFTERS (DAYTON)	
5				
6				
7				
8				
9				
10				

NOTES:
1. ALL SURFACES OF THE PRECAST CAPS (EXCLUDING FORM FACE) SHALL BE GIVEN A RUBBED FINISH PER VAOT STD. SPECIFICATIONS SUB-SECTION 501.16(a)2.
2. ALL EDGES OF PRECAST CAPS SHALL BE FABRICATED TO BE VERTICAL IN THE FINAL ERECTED POSITION.

NO.	DATE	REVISION	
1	4-3-01	REVISED FOR APPROVAL	B.L.

DRAWN: B.M. LOPEZ
DESIGNED: E.J. BROD
CHECKED:
APPROVED:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-6361
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

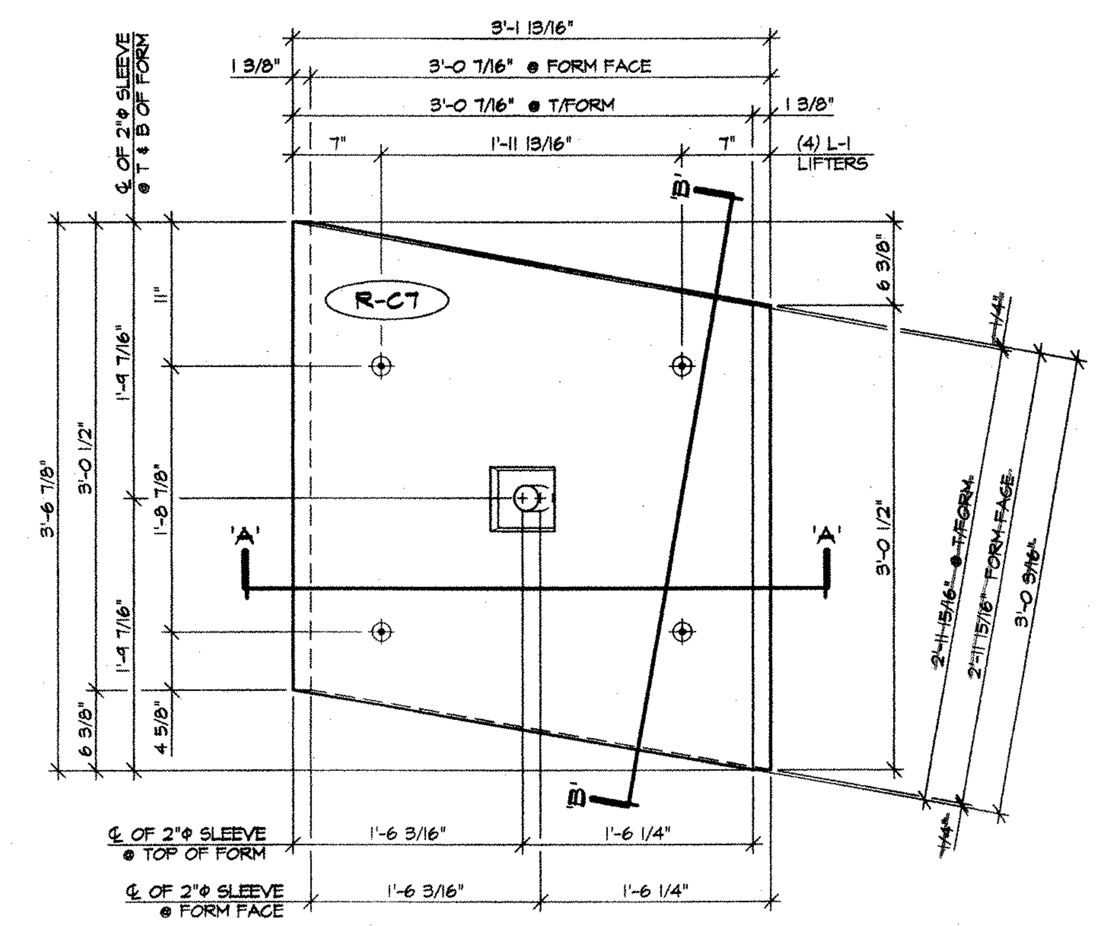
BECK & BELLUCCI, INC.
10 SALISBURY ROAD, PO BOX 429
FRANKLIN, NEW HAMPSHIRE 03235

Project Name:
ROYALTON BRIDGE
BRZ 1444 (22)
ROYALTON, VERMONT

PIER TOWER CAP DETAILS

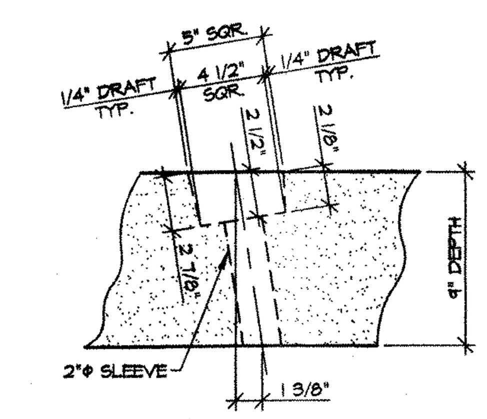
SCALE: NOTED
JOB #: 23111-00
DATE: 2-20-01
SHEET #: PC6

1 bag Portland
1 bag Lime
32 shovelsful of sand

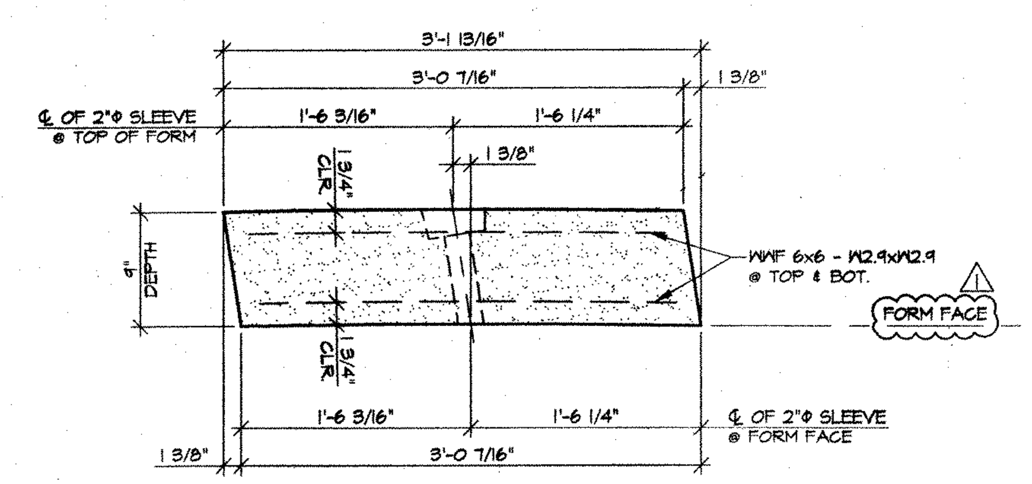


DECK TOWER CAP - PLAN VIEW IN FORM
1" = 1'-0"

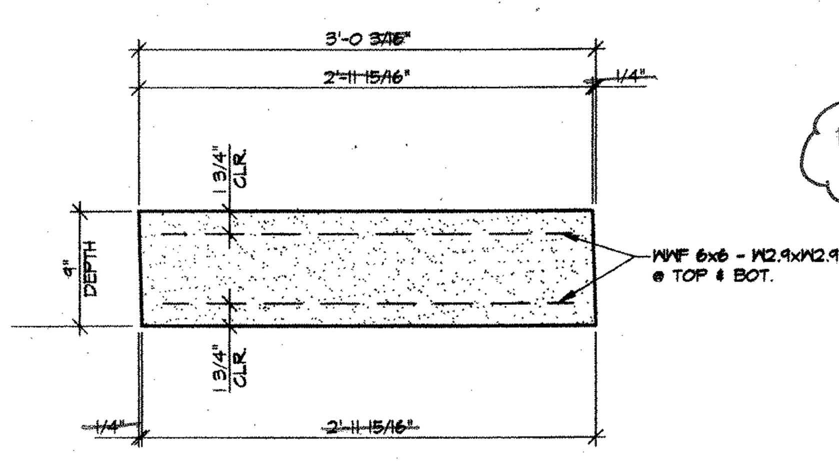
Remove 1/4" DRAFT



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



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



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

Remove 1/4" DRAFT

RECEIVED
CK'D BY WBJ OK'D BY______
APR 26 2001
RESUBMIT______ APPROVED As Noted
BY CPW DATE 5/29/01

SHOP NOTE:
f'ci = 3,000 PSI (MIN.) @ STRIPPING
f'c = 5,000 PSI (MIN.) @ 28 DAYS

MARK: R-C7 | QTY.: 6 | WT./TONS: 0.52 | CU. YDS.: 0.26

MATERIALS LIST

ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1	EM-1	1	ℙ WASHER 1/2"x3"x3" (AASHTO 183, GR. 36) W/ (1) 1 1/2"Φ HOLE (GALV.)	FOR ERECTION
2	EM-2	1	1 1/4"Φ x 1'-9" ANCHOR BOLT (GALV.) (ASTM A307, GR. C)	FOR ERECTION
3	EM-3	1	1 1/4" HEAVY HEX NUT (GALV.)	FOR ERECTION
4	L-1	4	1T x 4 3/4" SWIFT LIFT LIFTERS (DAYTON)	
5				
6				
7				
8				
9				
10				

NOTES:
1. ALL SURFACES OF THE PRECAST CAPS (EXCLUDING FORM FACE) SHALL BE GIVEN A RUBBED FINISH PER VAOT STD. SPECIFICATIONS SUB-SECTION 501.16(a)2.
2. ALL EDGES OF PRECAST CAPS SHALL BE FABRICATED TO BE VERTICAL IN THE FINAL ERECTED POSITION.

NO.	DATE	REVISION	
1	4-3-01	REVISED FOR APPROVAL	B.M.L.

DRAWN: B.M. LOPEZ
DESIGNED: E.J. BROD
CHECKED:
APPROVED:

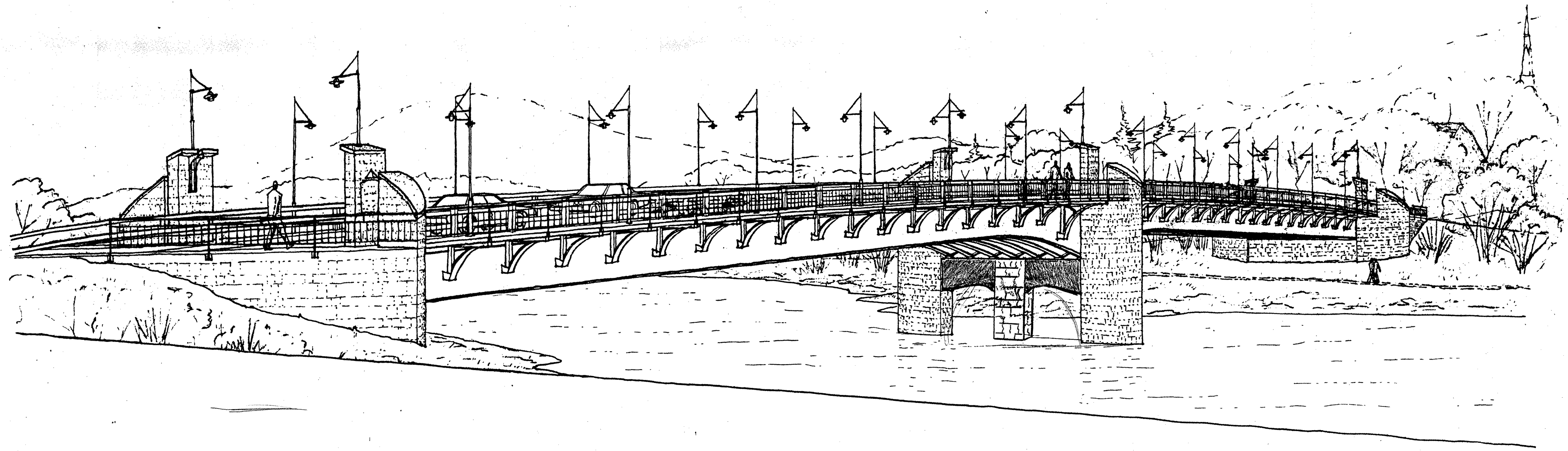
J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-6361
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

BECK & BELLUCCI, INC.
10 SALISBURY ROAD, PO BOX 429
FRANKLIN, NEW HAMPSHIRE 03235

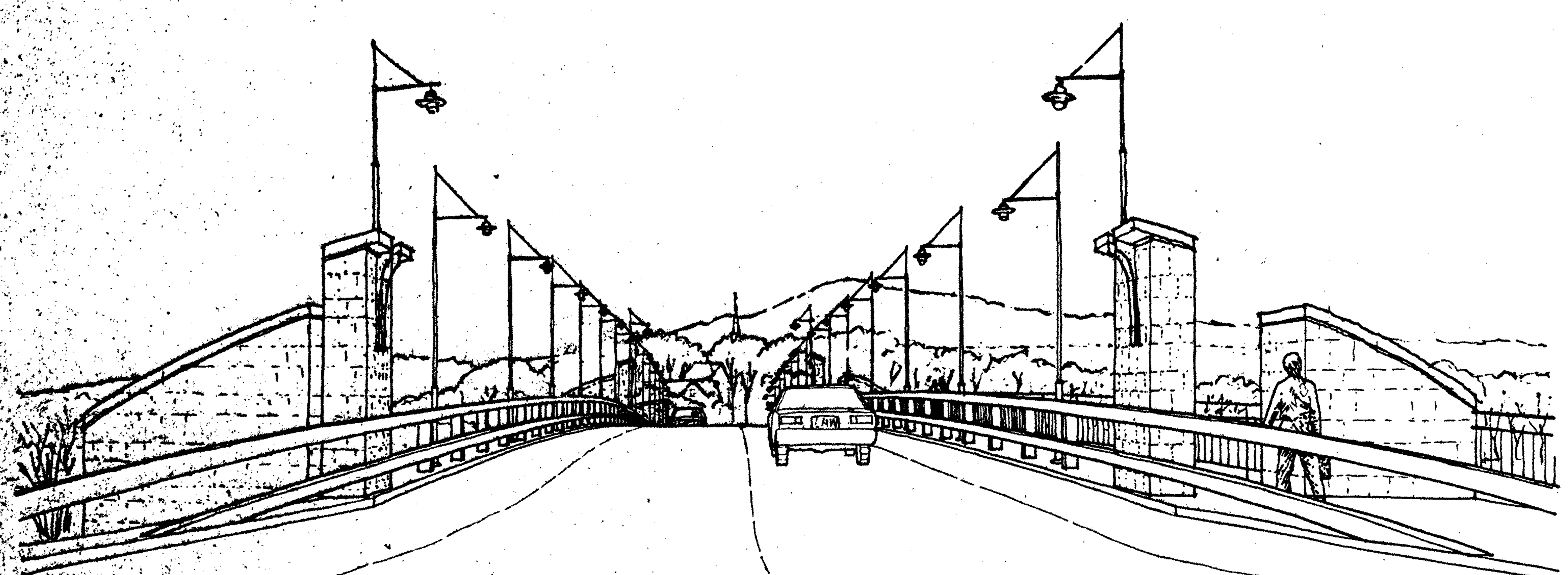
Project Name:
ROYALTON BRIDGE
BRZ 1444 (22)
ROYALTON, VERMONT

DECK TOWER CAP DETAILS

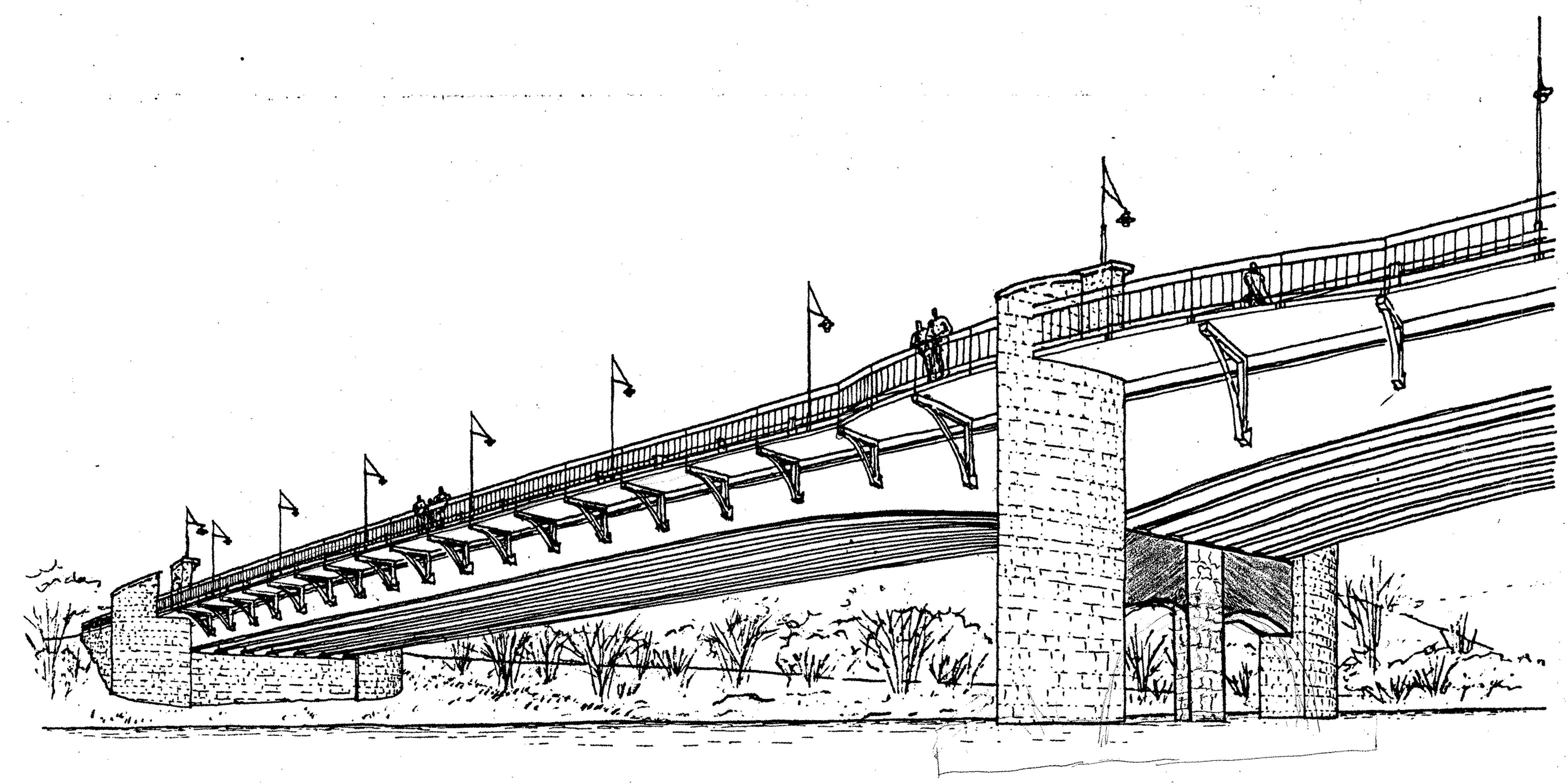
SCALE: NOTED
JOB #: 23111-00
DATE: 2-20-01
SHEET #: PC7



VIEW FROM ROUTE 14



VIEW ENTERING SOUTH ROYALTON



VIEW FROM RIVER WALK

Truex deGroot Cullins ARCHITECTS
209 Battery Street Burlington, Vermont

PROPOSED IMPROVEMENT
CHELSEA STREET BRIDGE
South Royalton Vermont

3-27-95

CONCEPT DESIGN
07 MARCH 1995