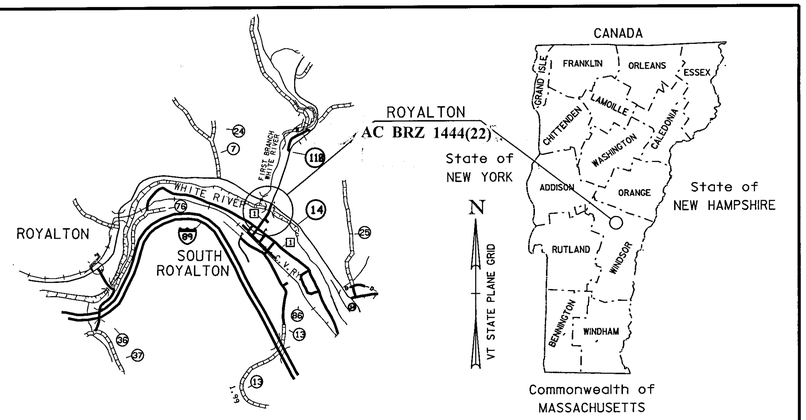
MAIN INDEX


1. TITLE SHEET
2. INDEX OF SHEETS AND STANDARDS


# STATE OF VERMONT
# AGENCY OF TRANSPORTATION




# PROPOSED IMPROVEMENT
# BRIDGE PROJECT

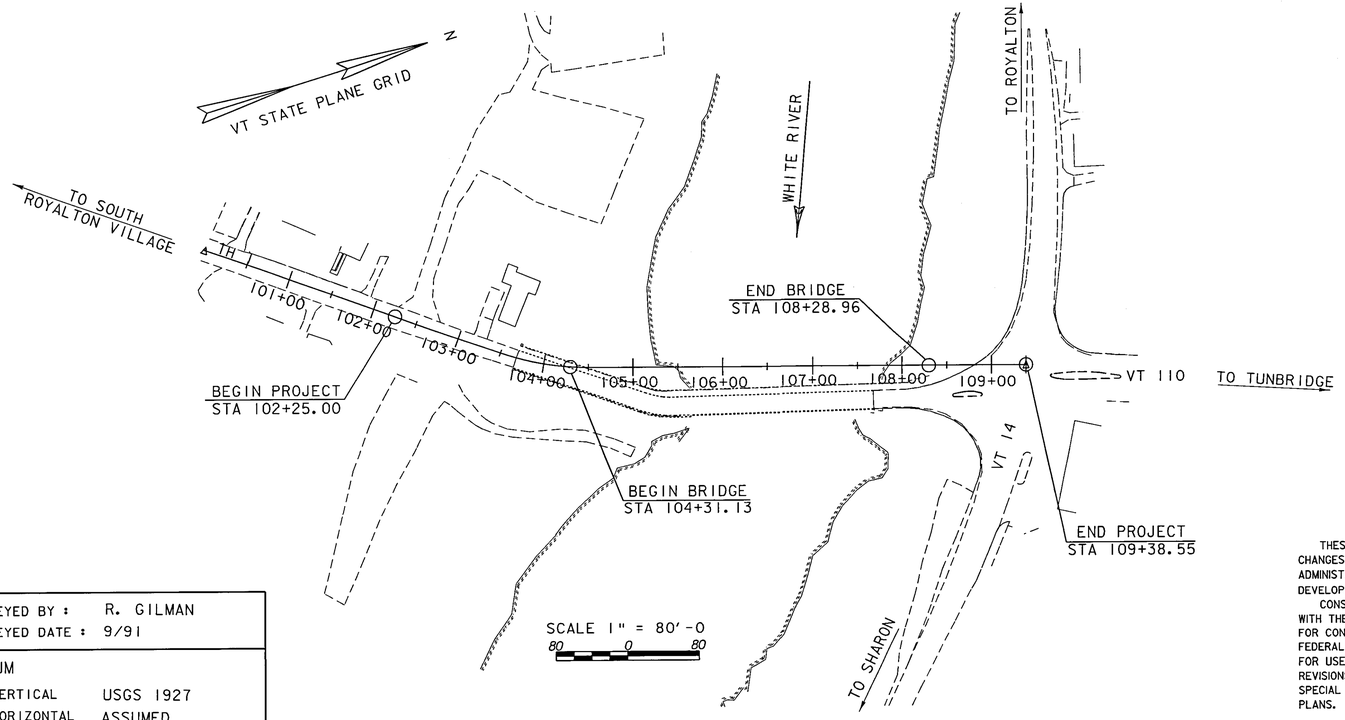
TOWN OF ROYALTON
COUNTY OF WINDSOR

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. |




## 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 (SR SR SR)
TOP OF CUT
TOE OF SLOPE

SURVEYED BY : R. GILMAN
SURVEYED DATE : 9/91

DATUM
VERTICAL USGS 1927
HORIZONTAL ASSUMED

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 J Couture RESIDENT ENGINEER
DATE 4/21/2011

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.

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.

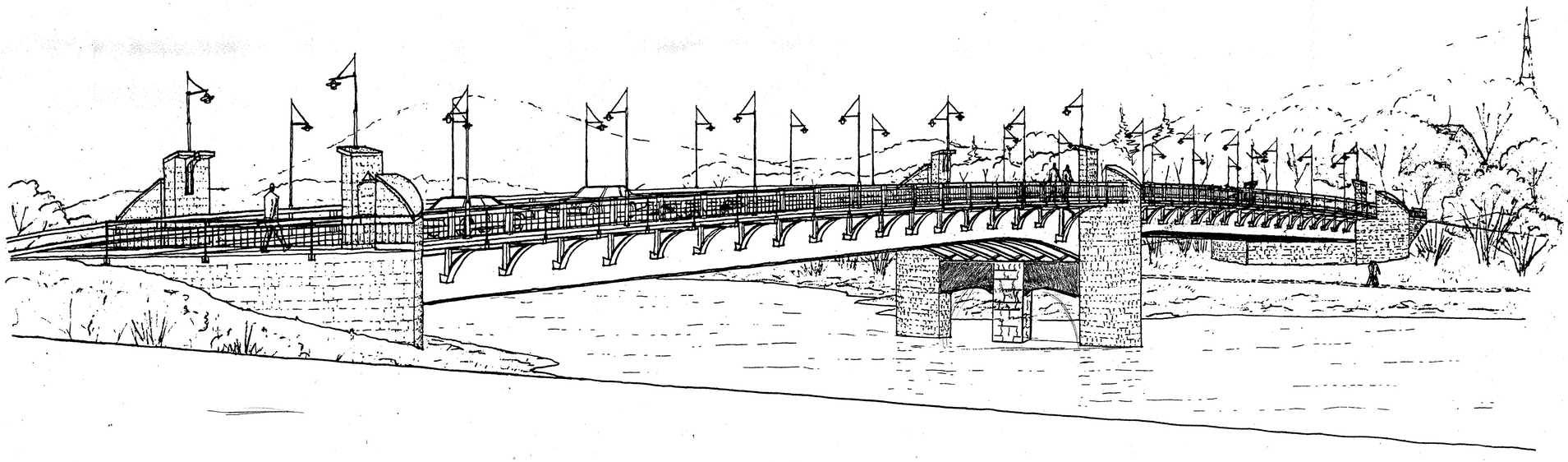
DIRECTOR OF PROJECT DEVELOPMENT
APPROVED [signature] DATE 9/20/00

PROJECT MANAGER : CHRIS WILLIAMS

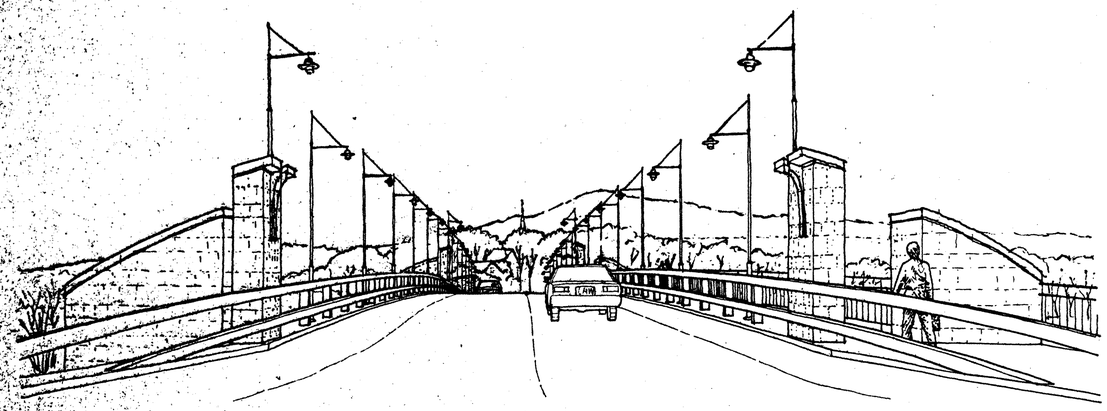
PROJECT NAME : ROYALTON
PROJECT NUMBER : AC BRZ 1444(22)

SHEET 1 OF 118 SHEETS

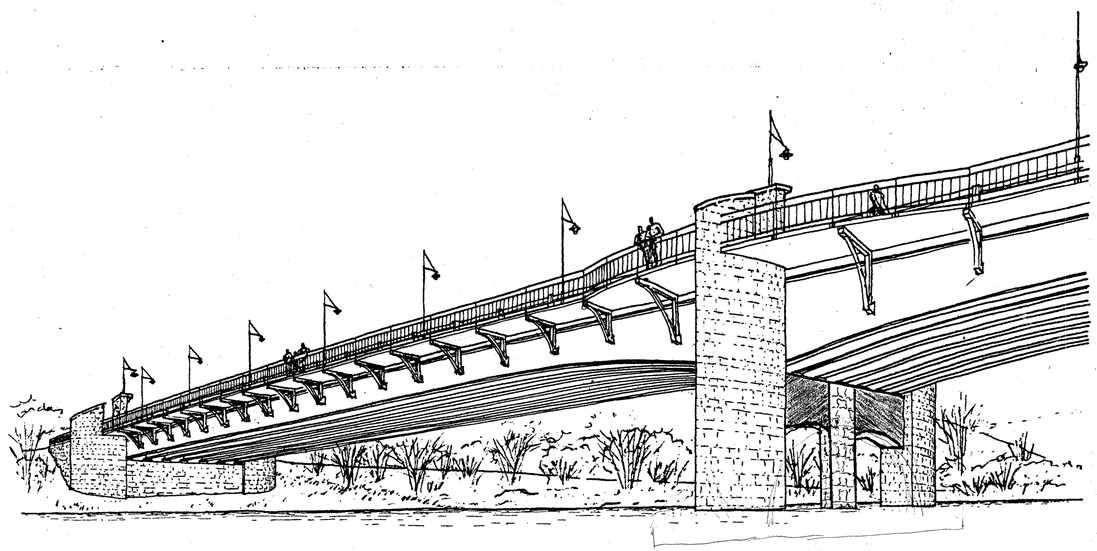
PLOTTED 19-SEP-2000 89j099/structures/sj099bdr.dgn sj099tit.i



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


1. Title
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3. Peliminary Information and Typical Sections
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5. Quantity Sheet 2
6. Quantity Sheet 3
7. Quantity Sheet 4
8. General Notes 1
9. General Notes 2
10. Ties
11. Layout
12. Profile 1
13. Profile 2
14. Temporary Detour Layout
15. Traffic Signs and Lines
16. Drainage
17. Boring Information
18. Boring Log 1
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20. Boring Log 3
21. Boring Log 4
22. Boring Log 5
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24. Miscellaneous Details
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29. Deck Plan Detail
30. Deck Reinforcement Plan
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35. Splice Details
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101. Mainline Sections 105+00 - 106+50
102. Mainline Sections 107+00 - 108+35
103. Mainline Sections 108+50 - 109+00
104. Mainline Sections 109+38.55 and Skewed Sections
105. Vt 14 Sections 20+00 - 21+50
106. Vt 14 Sections 22+00 - 23+00
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114. Channel Sections 52+80 - 53+10
115. Channel Sections 53+20 - 53+50
116. Channel Sections 53+60 - 53+90
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118. Channel Sections 55+00 - 56+00

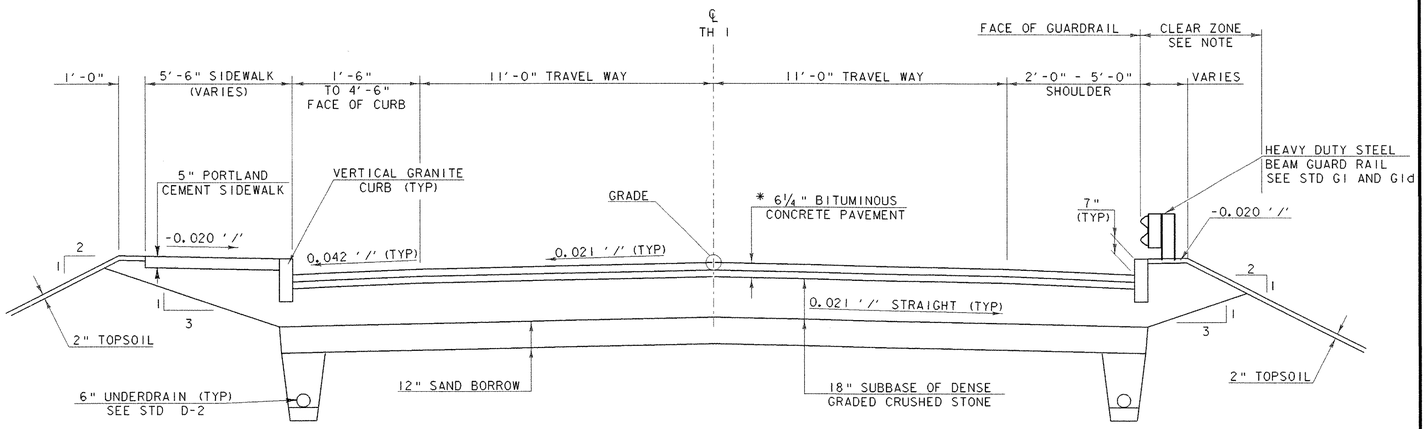

# LIST OF STANDARDS

| | |
|---|---|
| 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



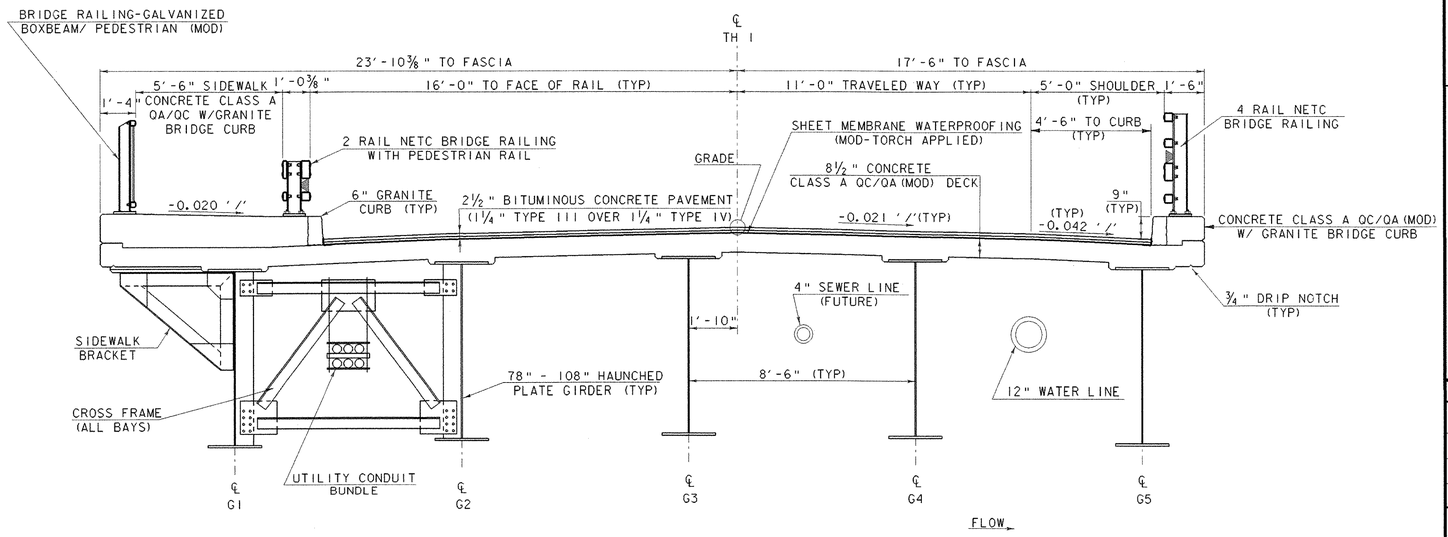

| MATERIAL ITEM | TOLERANCE |
|---|---|
| PAVEMENT | +/-¼" |
| SUB BASE | +/-1" |
| SAND BORROW | +/-1" |

## TH 1
## ROADWAY TYPICAL SECTION

SCALE ⅜" = 1'-0

*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 ⅜" = 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 | |

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

## 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 | Leg 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\sj099pl.dgn | sj099pl1 |
| Bridge Sheet No. | Sheet 3 of 118 |

PLOTTED 25-SEP-2000

STATE OF VERMONT
AGENCY OF TRANSPORTATION

# QUANTITY SHEET

## SUMMARY OF ESTIMATED QUANTITIES

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | | | | | | | | | | | | | |
| | | | 1030 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | 6150 | | | |
| | | | 600 | | | | | | | | | | | | | |
| | | | 440 | | | | | | | | | | | | | |
| | | | 1210 | | | | | | | | | | | | | |
| | | | 150 | | | | | | | | | | | | 10 | |
| | | | | | | | | | | | | | | | 10 | |
| | | | | | | 1180 | | | | 720 | | | | | | |
| | | | | | | 690 | | 170 | | 1380 | | | | | | |
| | | | | | | 10 | | | | 50 | | | | | | |
| | | | | | | 1 | | | | | | | | | | |
| | | | | | | | | 1 | | | | | | | | |
| | | | | | | | | | | 1 | | | | | | |
| | | | 210 | | | | | | | | | | | | | |
| | | | 1040 | | | | | | | | | | | | 10 | |
| | | | 3 | | | | | | | | | | | 2 | | |
| | | | 490 | | 10 | | | | | | 10 | | | 190 | | |
| | | | | | | | | | | | | | | 635 | | |
| | | | 30 | | | 400 | | 300 | | 370 | | | | | | |
| | | 10 | | | | | | | | | | | | | | |
| | | | | | | 1 | | | | | | | | | | |
| | | | | | | | | 1 | | | | | | | | |
| | | | | | | 1034 | | | | | | | | | | |
| | | | | | | | | 40 | | | | | | | | |
| | | | | | | | | 48 | | | | | | | | |
| | | | | | | | | 4 | | | | | | | | |
| 3380 | | 6750 | | | | | | | | | | | | 903160 | | |
| | | | | | | 730 | | 540 | | 790 | | | | 1350 | | |
| | | | 2340 | | | 34740 | | 28070 | | 34290 | | | | | | |
| | | | | | | | | | | 116 | | | | | | |
| | | | | | 3370 | | | | | | 3380 | | | 141800 | | |
| | | | | | | | | | | | | | | 1 | | |
| | | | | | | | | | | | | | | 1 | | |
| | | | | | | | | | | | | | | 1 | | |
| | | | | | | | | | | | | | | 1 | | |
| | | | | | | | | | | | | | | 25 | | |
| | | | | | | 45 | | | | 45 | | | | | | |
| | | | | | 66 | | | | | | 68 | | | 1359 | | |
| | | | | | | | | | | | | | | 650 | | |

## TOTALS

| ROUND | GRAND TOTAL | FINAL |
|---|---|---|
| | 1 | |
| | 1030 | |
| | 6150 | |
| | 600 | |
| | 440 | |
| | 1210 | |
| | 160 | |
| | 10 | |
| | 1900 | |
| | 2240 | |
| | 60 | |
| | 1 | |
| | 1 | |
| | 1 | |
| | 210 | |
| | 1050 | |
| | 5 | |
| | 700 | |
| | 635 | |
| | 1100 | |
| | 10 | |
| | 1 | |
| | 1 | |
| | 1034 | |
| | 40 | |
| | 48 | |
| | 4 | |
| | 913290 | |
| | 3410 | |
| | 99440 | |
| | 116 | |
| | 148550 | |
| | 1 | |
| | 1 | |
| | 1 | |
| | 1 | |
| | 1 | |
| | 25 | |
| | 90 | |
| | 1493 | |
| | 650 | |

## DESCRIPTIONS

| UNIT | ITEMS | ITEM NUMBER |
|---|---|---|
| LS | CLEARING AND GRUBBING (INCLUDING INDIV. TREES AND STUMPS) | 201.10 |
| CY | COMMON EXCAVATION | 203.15 |
| CY | UNCLASSIFIED CHANNEL EXCAVATION | 203.27 |
| CY | EARTH BORROW | 203.30 |
| CY | SAND BORROW | 203.31 |
| CY | GRANULAR BORROW | 203.32 |
| CY | TRENCH EXCAVATION OF EARTH | 204.20 |
| CY | TRENCH EXCAVATION OF ROCK | 204.21 |
| CY | GRANULAR BACKFILL FOR STRUCTURES | 204.30 |
| CY | COFFERDAM EXCAVATION, EARTH | 208.30 |
| CY | COFFERDAM EXCAVATION, ROCK | 208.35 |
| LS | COFFERDAM (STA 104+34) | 208.40 |
| LS | COFFERDAM (STA 106+30) | 208.40 |
| LS | COFFERDAM (STA 108+26) | 208.40 |
| SY | COLD PLANING-BIT.PAVEMENT | 210.10 |
| CY | SUBBASE OF DENSE GRADED CRUSHED STONE | 301.35 |
| CWT | EMULSIFIED ASPHALT | 404.65 |
| TON | BITUMINOUS CONCRETE PAVEMENT (PG 58-34) | 406.25 |
| CY | CONCRETE, CLASS A QC/QA (MOD) | 501.221 |
| CY | CONCRETE, CLASS B | 501.25 |
| CY | CONCRETE, CLASS C | 501.30 |
| LS | FURNISHING EQUIPMENT FOR DRIVING PILING | 504.10 |
| LS | FURNISHING EQUIPMENT FOR DRIVING PILING (MOD) | 504.10 |
| LF | STEEL PILING (HP 14 X 73) | 505.17 |
| LF | CAST-IN-PLACE CONCRETE PILING (MOD - ROCK) | 505.25 |
| LF | CAST-IN-PLACE CONCRETE PILING (MOD - EARTH) | 505.25 |
| EACH | PILE LOADING TESTS (MOD) | 505.40 |
| LB | STRUCTURAL STEEL(PLATE GIRDER) | 506.55 |
| LB | STRUCTURAL STEEL | 506.60 |
| LB | REINFORCING STEEL | 507.15 |
| LF | DRILLING AND GROUTING DOWELS | 507.16 |
| LB | EPOXY COATED REINFORCING STEEL | 507.17 |
| LS | SHEAR CONNECTORS (3375 - 7/8" DIAM. X 7" AND 128 - 3/4" DIAM. X 7") | 508.15 |
| LS | STRUCTURE PAINTING (MOD) | 513.20 |
| LS | STRUCTURAL PAINTING,SHOP APPLIED (14 TONS) | 513.25 |
| LS | SURFACE PREPARATION,SHOP (14 TONS) | 513.40 |
| GAL | WATER REPELLENT | 514.10 |
| LF | BRIDGE EXPANSION JOINT | 516.10 |
| SY | SHEET MEMBRANE WATERPROOFING (MOD - TORCH APPLIED) | 519.20 |
| 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

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 16 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | 516 | |
| | | | | | | | | | | | | | | 396 | |
| | | | | | | | | | | | | | | 394 | |
| | | | 1 | | | | | | | | | | | | |
| | | | 1 | | | | | | | | | | | | |
| | | | 1 | | | | | | | | | | | | |
| | | | 898 | | | | | | | | | | | | |
| | | | 1 | | | | | | | | | | | | |
| | | | 1 | | | | | | | | | | | | |
| | | | | | | 5 | | | | 5 | | | | | |
| | | | | | | | | 5 | | | | | | | |
| 1 | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | |
| | | | 373 | | | | | | | | | | | | |
| | | | 373 | | | | | | | | | | | | |
| | | | 373 | | | | | | | | | | | | |
| | | | 373 | | | | | | | | | | | | |
| | | | 100 | | | | | | | | | | | | |
| | | | 100 | | | | | | | | | | | | |
| | | | 100 | | | | | | | | | | | | |
| | | | 52 | | | | | | | | | | | | |
| | | | 52 | | | | | | | | | | | | |
| | | | | | | 190 | | 279 | | 202 | | | | | |
| | | | 1 | | | | | | | | | | | | |
| | | | 7 | | | | | | | | | | | | |
| | | | 350 | | | | | | | | | | | | |
| | | | 130 | | | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | | |
| | | | 10 | | | | | | | | | | | | 10 |
| | | | 1 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | 10 |
| | | | | | | | | | | | | | 60 | | |
| | | | | | | | | | | | | | 2710 | | |
| | | | 769 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | 786 | |
| | | | 169 | | | | | | | | | | | | |
| | | | 15 | | | | | | | | | | | | |
| | | | 1 | | | | | | | | | | | | |
| | | | 132 | | | | | | | | | | | | |
| | | | 25 | | | | | | | | | | | | |

## TOTALS

| BRIDGE QUANTITY | ROUND | GRAND TOTAL | FINAL |
|---|---|---|---|
| | | 16 | |
| | | 516 | |
| | | 396 | |
| | | 394 | |
| | | 1 | |
| | | 1 | |
| | | 1 | |
| | | 898 | |
| | | 1 | |
| | | 1 | |
| | | 10 | |
| | | 5 | |
| | | 1 | |
| | | 1 | |
| | | 373 | |
| | | 373 | |
| | | 373 | |
| | | 373 | |
| | | 100 | |
| | | 100 | |
| | | 100 | |
| | | 52 | |
| | | 52 | |
| | | 671 | |
| | | 1 | |
| | | 7 | |
| | | 350 | |
| | | 130 | |
| | | 2 | |
| | | 20 | |
| | | 1 | |
| | | 10 | |
| | | 60 | |
| | | 2710 | |
| | | 769 | |
| | | 786 | |
| | | 169 | |
| | | 15 | |
| | | 1 | |
| | | 132 | |
| | | 25 | |

## DESCRIPTIONS

| UNIT | ITEMS | ITEM NUMBER |
|---|---|---|
| LF | METAL HAND RAILING | 525.15 |
| LF | BRIDGE RAILING- GALV. BOX BEAM / PEDESTRIAN (MOD) | 525.32 |
| LF | BRIDGE RAILING-NETC 2 RAIL (MOD) | 525.33 |
| LF | BRIDGE RAILING-NETC 4 RAIL | 525.34 |
| LS | MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS | 527.10 |
| LS | TWO-WAY TEMPORARY BRIDGE | 528.11 |
| LS | TEMPORARY FOOT BRIDGE (MOD) | 528.12 |
| SY | REMOVAL OF BRIDGE PAVEMENT | 529.10 |
| EACH | REMOVAL OF STRUCTURE (STA 103+70 - 105+50) | 529.15 |
| EACH | REMOVAL OF STRUCTURE (STA 105+50 - 107+75) | 529.15 |
| EACH | BEARING DEVICE ASSEMBLY (EXPANSION) | 531.10 |
| EACH | BEARING DEVICE ASSEMBLY (FIXED) | 531.10 |
| EACH | CONCRETE VAULT, TYPE I (12'x6'x7') | 540.21 |
| EACH | CONCRETE VAULT, TYPE I (10'x5'x7') | 540.21 |
| | ** BEGIN 18" PIPE OPTIONS ** | |
| LF | 18" CAAP .060 (2-2/3 X 1/2) (MOD) | 601.0215 |
| LF | 18" PCCSP .064 (2-2/3 X 1/2) (MOD) | 601.0415 |
| LF | 18" RCP CLASS III (MOD) | 601.0815 |
| LF | 18" CPEP (MOD) | 601.0915 |
| | ** END 18" PIPE OPTIONS ** | |
| | ** BEGIN 24" PIPE OPTIONS ** | |
| LF | 24" CAAP .060 (2-2/3 X 1/2) (MOD) | 601.0225 |
| LF | 24" PCCSP .064 (2-2/3 X 1/2) (MOD) | 601.0425 |
| LF | 24" RCP CLASS III (MOD) | 601.0825 |
| | ** END 24" PIPE OPTIONS ** | |
| | ** BEGIN 30" PIPE OPTIONS ** | |
| LF | 30" CAAP .060 (3X1) (MOD) | 601.0305 |
| LF | 30" PCCSP .079 (2-2/3 X 1/2) (MOD) | 601.0436 |
| | ** END 30" PIPE OPTIONS ** | |
| SY | STONE MASONRY FACING | 602.25 |
| EACH | INSTALLATION OF SEWER MANHOLE (MOD) | 604.22 |
| EACH | CAST IRON GRATE WITH FRAME, TYPE E | 604.52 |
| LF | 6" UNDERDRAIN | 605.10 |
| LF | 6" UNDERDRAIN CARRIER PIPE | 605.20 |
| EACH | UNDERDRAIN FLUSHING BASINS | 605.95 |
| HR | ALL PURPOSE EXCAVATOR RENTAL, TYPE I | 608.25 |
| MGAL | DUST CONTROL WITH WATER | 609.10 |
| CY | STONE FILL, TYPE I | 613.10 |
| CY | STONE FILL, TYPE II | 613.11 |
| CY | STONE FILL, TYPE IV | 613.13 |
| LF | VERTICAL GRANITE CURB | 616.21 |
| LF | GRANITE BRIDGE CURB | 616.22 |
| SY | PORTLAND CEMENT CONC. SIDEWALK, 5 INCH | 618.10 |
| SY | PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH | 618.11 |
| EACH | DRIVE GATE FOR WOVEN WIRE FENCE (MOD) | 620.30 |
| LF | REMOVING AND RESETTING FENCE | 620.50 |
| 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: 9/19/06
DRAWN BY: C. Williams
CHECKED BY: W. Symonds
SHEET 5 OF 118

STATE OF VERMONT
AGENCY OF TRANSPORTATION

# QUANTITY SHEET

## SUMMARY OF ESTIMATED QUANTITIES

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 201 | | | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | | |
| | | | 168 | | | | | | | | | | | | |
| | | 1 | | | | | | | | | | | | | |
| 65 | | | | | | | | | | | | | | | |
| 65 | | | | | | | | | | | | | | | |
| 450 | | | | | | | | | | | | | | | |
| 120 | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | |
| | | 58 | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | |
| | | 60 | | | | | | | | | | | | | |
| | | 160 | | | | | | | | | | | | | |
| | | 160 | | | | | | | | | | | | | |
| | | 1 | | | | | | | | | | | | | |
| | | 2 | | | | | | | | | | | | | |
| | | 1 | | | | | | | | | | | | | |
| | | 1 | | | | | | | | | | | | | |
| | | 4 | | | | | | | | | | | | | |
| | | 1 | | | | | | | | | | | | | |
| | | 1 | | | | | | | | | | | | | |
| | | | 240 | | | | | | | | | | | | |
| | | | 240 | | | | | | | | | | | | |
| | | | | 1 | | | | | | | | | | | |
| | | | | 1 | | | | | | | | | | | |
| | | | | 1 | | | | | | | | | | | |
| | | | | 1 | | | | | | | | | | | |
| | | | | | | | | | | | | 1560 | | | |
| | | | 1 | | | | | | | | | | | | |
| | | | 1580 | | | | | | | | | | | | |
| | | | 1530 | | | | | | | | | | | | |
| | | | 33 | | | | | | | | | | | | |
| | | | 4 | | | | | | | | | | | | |
| | | | 66 | | | | | | | | | | | | |
| | | | 30 | | | | | | | | | | | | |
| | | | 1450 | | | | | | | | | | | | |

## TOTALS

| BRIDGE QUANTITY | ROUND | GRAND TOTAL | FINAL |
|---|---|---|---|
| | | 201 | |
| | | 2 | |
| | | 2 | |
| | | 2 | |
| | | 2 | |
| | | 168 | |
| | | 1 | |
| | | 65 | |
| | | 65 | |
| | | 450 | |
| | | 120 | |
| | | 15 | |
| | | 12 | |
| | | 58 | |
| | | 1 | |
| | | 60 | |
| | | 160 | |
| | | 160 | |
| | | 1 | |
| | | 2 | |
| | | 1 | |
| | | 1 | |
| | | 1 | |
| | | 4 | |
| | | 1 | |
| | | 1 | |
| | | 240 | |
| | | 240 | |
| | | 1 | |
| | | 1 | |
| | | 1 | |
| | | 1 | |
| | | 1560 | |
| | | 1 | |
| | | 1580 | |
| | | 1530 | |
| | | 33 | |
| | | 4 | |
| | | 66 | |
| | | 30 | |
| | | 1450 | |

## DESCRIPTIONS

| UNIT | ITEMS | ITEM NUMBER |
|---|---|---|
| LF | HVY DUTY STEEL BEAM GUARD RAIL | 621.21 |
| EACH | ANCHOR FOR STEEL BEAM RAIL | 621.60 |
| EACH | GUARD RAIL APPROACH SECTION, TYPE I (MOD) | 621.70 |
| EACH | GUARD RAIL APPR. SECTION,NETC 2 RAIL (MOD) | 621.72 |
| EACH | GUARD RAIL APPR. SECTION,NETC 4 RAIL (MOD) | 621.73 |
| LF | REMOVL AND DISP OF GUARD RAIL | 621.80 |
| MFBM | INSULATION BOARD | 622.10 |
| LF | DUCTS, CONCRETE ENCASED (2 - 4" PVC Type C Duct) | 624.20 |
| LF | DUCTS, CONCRETE ENCASED (3 - 4" PVC Type C Duct) | 624.20 |
| LF | DUCTS, CONCRETE ENCASED (6 - 4" PVC Type C Duct) | 624.20 |
| LF | DUCTS, CONCRETE ENCASED (9 - 4" PVC Type C Duct) | 624.20 |
| LF | DUCTS, CONCRETE ENCASED (12 - 4" PVC Type C Duct) | 624.20 |
| LF | SLEEVES FOR UTILITIES (6 - 4" GIP) | 625.10 |
| LF | SLEEVES FOR UTILITIES - 18" | 625.10 |
| LS | DUCTS ON BRIDGE (6 - 4" FIBERGLASS) | 625.16 |
| LF | SEAMLESS COPPER WATER TUBE - 3/4" TYPE K (MOD) | 629.23 |
| LF | DUCTILE, IRON PIPE, CEM LINED - 8" CL 52 (MOD) | 629.24 |
| LF | DUCTILE, IRON PIPE, CEM LINED - 12" CL 52 (MOD) | 629.24 |
| EACH | EXTENSION SERVICE BOX AND CURB STOP | 629.25 |
| EACH | GATE VALVE WITH VALVE BOX - 8" | 629.27 |
| EACH | GATE VALVE WITH VALVE BOX - 12" (MOD BUTTERFLY VALVE) | 629.27 |
| EACH | CORPORATION STOP - 3/4" | 629.39 |
| LS | TRANSFER TO NEW SYSTEM-WATER SYSTEM | 629.42 |
| EACH | AIR RELEASE - WATER (MANUAL) | 629.43 |
| LS | WATER MAIN ON BRIDGE - 12" (MOD 1) | 629.60 |
| LS | WATER MAIN ON BRIDGE - TEMP (MOD 2) | 629.60 |
| HR | UNIFORMED TRAFFIC OFFICERS | 630.10 |
| HR | FLAGGERS | 630.15 |
| LS | FIELD OFFICE-ENGINEERS | 631.10 |
| LS | TESTING EQUIPMENT - CONCRETE | 631.16 |
| LS | TESTING EQUIPMENT - BITUMINOUS | 631.17 |
| LU | FIELD OFFICE - TELEPHONE (NABI) | 631.25 |
| HR | EMPLOYEE TRAINEESHIP | 634.10 |
| LS | MOBILIZATION | 635.10 |
| LF | DURABLE 4" WHITE LINE | 646.40 |
| LF | DURABLE 4" YELLOW LINE | 646.41 |
| LF | DURABLE 24" STOP BAR | 646.46 |
| EACH | DURABLE LETTER OR SYMBOL | 646.50 |
| LF | DURABLE CROSSWALK W/DIAGONAL LINES | 646.51 |
| LF | DURABLE CROSSWALK W/DIAGONAL LINES (MOD) | 646.51 |
| 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
QUANTITY SHEET #3

PLOT DATE: 9/25/00
DRAWN BY: C. Williams
CHECKED BY: W. Symonds
SHEET 6 OF 118

STATE OF VERMONT
AGENCY OF TRANSPORTATION

# QUANTITY SHEET

| SUMMARY OF ESTIMATED QUANTITIES | | | | | | | | | | | | | | | | TOTALS | | | | DESCRIPTIONS | | | DETAILED SUMMARY OF QUANTITIES | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | QUANTITIES | UNIT | ITEMS |
| | | | 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 | | | |

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

FILE NAME: **sj098quant**
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:
PROJECT NUMBER: ROYALTON BRZ 1444(22)

FILE NAME: 89j099/structures/sj099notes.dgn
IPARM NAME: sj099notesl.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
SHEET 8 OF 118

# 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.

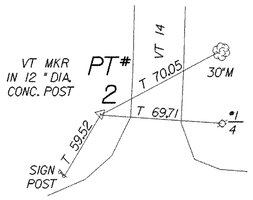
52. THE BLOCKS FOR THE GRANITE BRIDGE CURB MAY BE SHOP ASSEMBLED WITH THE ANCHORS WITH PERMISSION FROM THE RESIDENT ENGINNER.

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

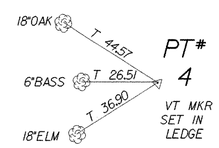
FILE NAME: 89j099/structures/sj099notes.dgn
IPARM NAME: sj099notes2.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
GENERAL NOTES SHEET 2

PLOT DATE: 25-SEP-2000
DRAWN BY: P. ROWE
CHECKED BY: W.B. SYMONDS
SHEET 9 OF 118

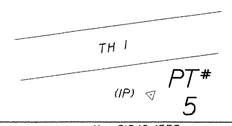
# TRAVERSE TIES



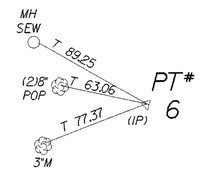

N = 82485.1220
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Z = 483.0050



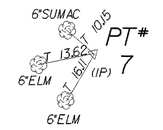

N = 81845.1106
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Z = 455.6020



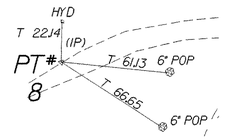

N = 81842.4555
E = 35196.6863
Z = 479.4850



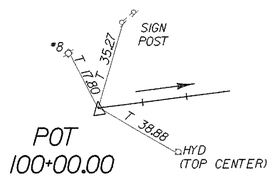

N = 82050.7850
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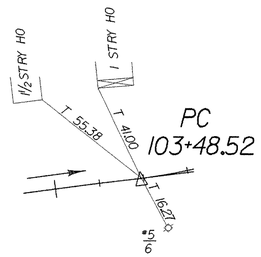

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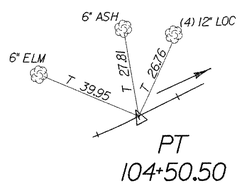

# MAINLINE ALIGNMENT TIES



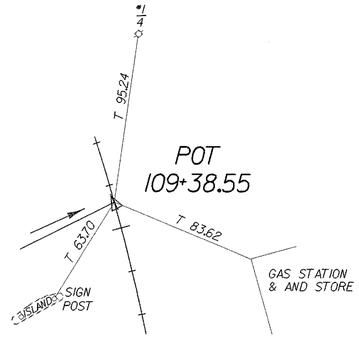

N = 81629.2119
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N = 81908.7554
E = 35218.4452




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

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

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

BEGIN APPROACH
STA 101+50.00

POB
STA 100+00.00

END APPROACH
BEGIN PROJECT
STA 102+25.00

POT STA 103+11.00
DRIVE STA 0+00.00
△ = 90° RT

CHANNEL LINE POE
STA 56+00.00

N62°42'29.52"W

55+00

PAVED PARKING

STEPS

MH SEW

12"POP

2(8")POP

3"M

(IP) PT• 6

VT STATE PLANE GRID

Z

WHITE RIVER

POE
STA 27+90.97

PT
STA 27+53.26

BM •3 VT MKR
SET IN. LEDGE
US EL. 457.69

PT• 3

VT 14 TO E. BETHEL

2 STORY HOUSE

18"BAL

BLDG

GR DR

•602

BOUND

MH

2 STORY HOUSE

GR DR

24" BUTT

18"CMP

N18°24'47.33"W

26+00

25+00

24+00

23+00

22+00

GRAVEL

PAVED SHLDR

END APPROACH
SIDELINE STA 25+15.00
(MATCH ADJACENT PROJECT
ROYALTON BRS 0147(S)S)

END PROJECT
BEGIN APPROACH
STA 109+38.55

POT STA 109+38.55
SIDELINE STA 24+15.18

30"M

36"M

BOUND

SEW MH

18"WIL

CONC. BND

SIDEWALK

VT 110 TO TUNBRIDGE

CONC. BND

SIDEWALK

PAVED

GUY

MKR

•2

602

5

CONC. BND

PI
STA 24+48.91 BK =
STA 24+32.97 AHD

CONC PAD

GAS STATION & STORE

END APPROACH
SIDELINE STA 22+50.00

GAS FILLS

MONITORING WELLS

WOOD WALL

24" RCP

CONC. BND

TEMP. AERIAL RELOCATION OWNED BY CENTRAL VT PUBLIC SERVICE, BELL ATLANTIC - NE TELEPHONE POLE/SERVICE LINE TO RESIDENCE

PT
STA 104+50.50

℄ PIER
STA 106+30.00
F.G. = 486.16

END BRIDGE
STA 108+28.96
F.G. = 482.46

TH 1 TO SOUTH ROYALTON VILLAGE

PAVED DRIVE

PAVED SIDEWALK

(2) 18" LOC

2 ½ STORY HOUSE

24" M 24" STUMP 24" M 30" STUMP

BM•2 RRSI
COMBI POLE 6/5
US EL. 484.87

(2) GUY

•6S

24"M

2 ½ STORY HOUSE

(2) 30" LOC

PAVED DRIVE

MH SEW

101+00

102+00

103+00

104+00

105+00

106+00

107+00

108+00

109+00

N17°17'30.48"E

54+00

53+00

52+00

51+00

50+00

PAVED DRIVE

18" M

FLAG POLE

SHRUBS 12"M

18" BEECH

6"M

1½ STORY HOUSE

PAVED DRIVE

2 ½ STORY WF HOUSE

3"M

(SAVE)

(SAVE)

(REMOVE)

(3) 12" ASH

APP

PP

(IP)

PT• 5

MH SEW

PAVED DRIVE

(3)"SPRUCE

(9)16"ASH

(8)12" ASH

(8)8" ASH

(2)LILAC

6" ASH

12" CED

STORY HOUSE

(SAVE) LILAC

PROPANE TANK

(REMOVE) 6" ELM

(REMOVE) 6" ASH

(REMOVE)

(4)12" LOC

6"E

6"SUM

PT• 7

WELDED WIRE FEN

4" DI GRVL

PAVED DRIVE

IP

IP

3"MH SEW

IP

(2) GUY

(IP)

PT• 6

STEPS

12"POP

2(8")POP

MH SEW

3"M

PAVED PARKING

PAVED PARKING

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

TEMP. AERIAL RELOCATION OWNED BY BELL ATLANTIC - NE TELEPHONE

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

GUY GUY
PC
STA 103+48.52
PI
STA 0+33.96
POE
STA 0+68.66

6"POP
6"POP
(SAVE)

BEGIN BRIDGE
STA. 104+31.13
F.G. = 481.91
PI
STA 104+00.00 BK =
STA 103+99.02 AHD

POST STA 104+35.00
CHANNEL STA 53+00.00
△ = 80° LT

EXIST. SIDEWALK

EXIST. 10" WATERLINE

18"RCP

GUY

GUY

CONC WAL

GRAVEL DRIVE

PT• 8

GRAVEL PARKING LOT

MH SEW

PAVED DRIVE

APP

PP

(3) 12" ASH

(REMOVE)

2 ½ STORY WF HOUSE

3"M

(SAVE)

(SAVE)

(REMOVE)

(REMOVE)

(REMO

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

BEGIN APPROACH
STA 101+50.00

POB
STA 100+00.00

END APPROACH
BEGIN PROJECT
STA 102+25.00

REV POT STA 103+07.00
DRIVE STA 0+00.00
△ = 90° RT

CHANNEL LINE POB
STA 56+00.00

N62°42'29.52"W
55+00

WHITE RIVER

VT STATE PLANE GRID

POE
STA 27+90.97

PT
STA 27+53.26

REV PI
STA 108+80.00 BK =
STA 108+79.86 AHD

REV PT
STA 109+14.80

TEMP. AERIAL RELOCATION OWNED BY CENTRAL VT PUBLIC SERVICE, BELL ATLANTIC - NE TELEPHONE POLE/SERVICE LINE TO RESIDENCE

REV PT
STA 104+50.48

℄ PIER
STA 106+30.00
F.G. = 486.16

END BRIDGE
STA 108+28.96
F.G. = 482.46

REV PC
STA 108+45.06

BM #2 RRSI COMBI POLE 6/5 US EL. 484.87

BM #3 VT MKR SET IN LEDGE US EL. 457.69

TH 1 TO SOUTH ROYALTON VILLAGE

VT 14 TO E. BETHEL 00+42

N18°24'47.33"W

END APPROACH
SIDELINE STA 25+15.00
(MATCH ADJACENT PROJECT
ROYALTON BRS 0147(S)S)

REV POT STA 109+39.30
SIDELINE STA 24+19.04

END PROJECT
BEGIN APPROACH
STA 109+38.55

REV POT STA 109+38.03=
VT 14 STA 24+10.04

PI
STA 24+48.91 BK =
STA 24+32.97 AHD

VT 110 TO TUNBRIDGE

END APPROACH
SIDELINE STA 22+50.00

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

TEMP. AERIAL RELOCATION OWNED BY BELL ATLANTIC - NE TELEPHONE

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

REV POT STA 103+07.00
DRIVE STA 0+00.00
△ = 90° RT

REV PC
STA 103+48.49
REV PI
STA 0+32.11

REV POE
STA 0+70.00

POST STA 104+35.00
CHANNEL STA 53+00.00
△ = 80° LT

BEGIN BRIDGE
STA. 104+31.13
F.G. = 481.91
REV PI
STA 104+00.00 BK =
STA 103+98.98 AHD

BM #1 CHIS SQ.IN CONC US EL. 482.34

EXIST. AERIAL FACILITY OWNED BY BELL ATLANTIC - NE TELEPHONE

TEMP. AERIAL RELOCATION OWNED BY BELL ATLANTIC - NE TELEPHONE

BM #4 VT MKR SET IN. LEDGE US EL. 455.60

CHANNEL LINE POB
STA 50+00.00

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

PC
STA 21+28.62

POB
STA 20+00.00

VT 14 TO SHARON

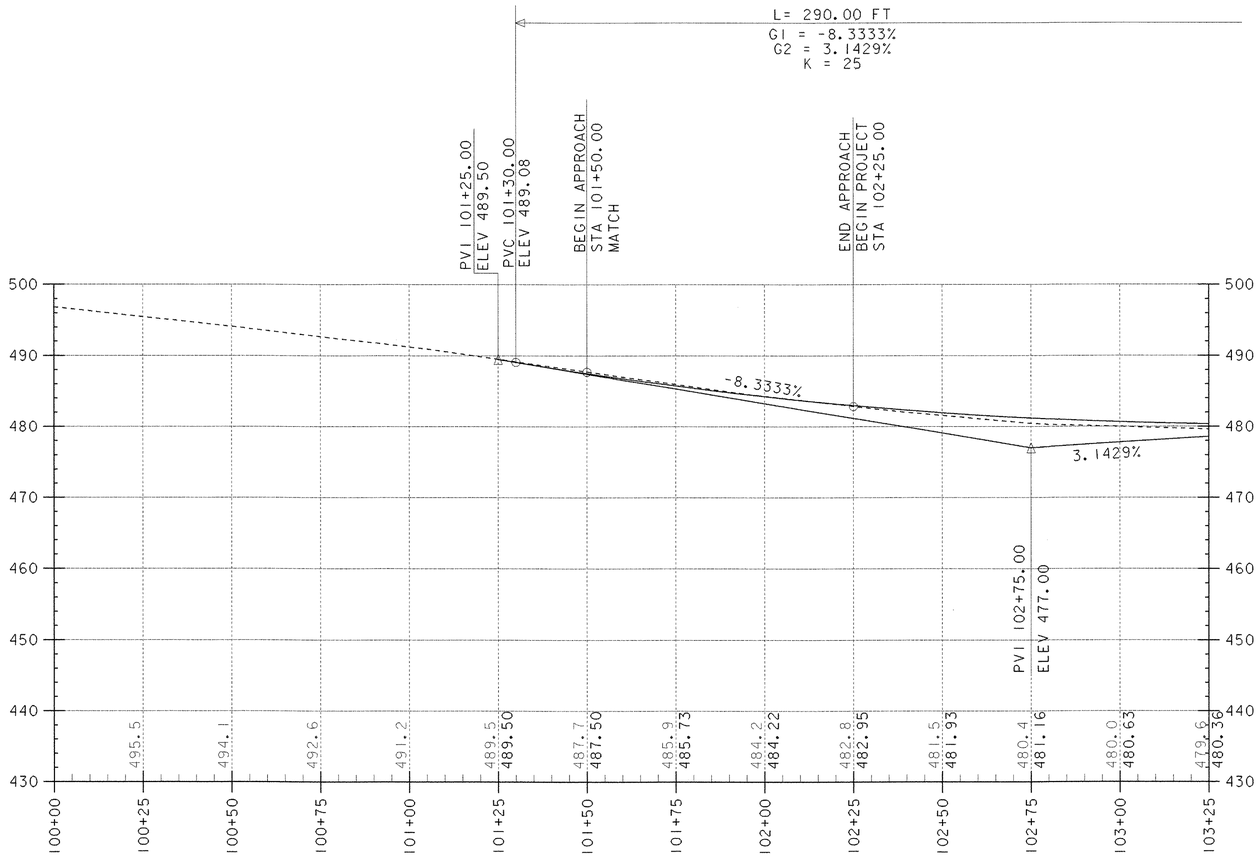
## EXISTING BRIDGE INFORMATION

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

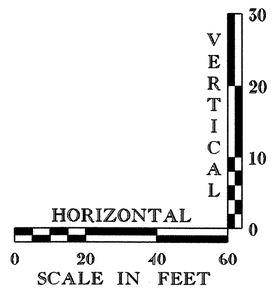
VT 14 CURVE 1

| | |
|---|---|
| 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/construction/asbuilt.dgn | |
| IPARM FILE NAME: asbuilt.i | 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 |



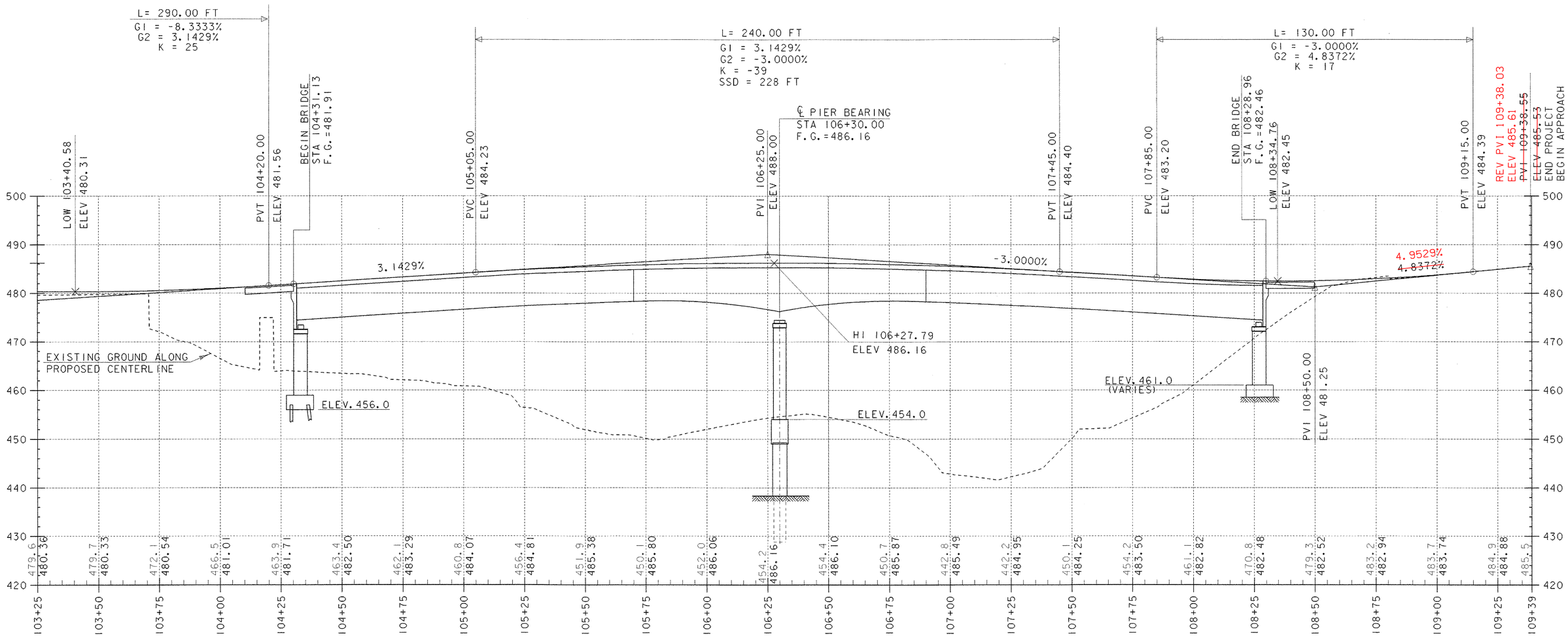

# PROFILE TH 1




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

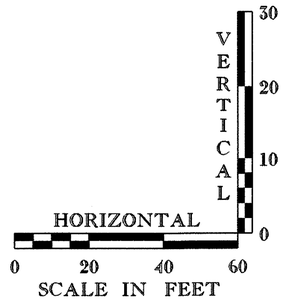
STATION 101+50 MATCH ELEVATION TO EXISTING.
THE PROPOSED ELEVATION SHOWN ON PROFILE @ STATION 101+50 IS FOR MATHEMATICAL ACCURACY ONLY.

| PROJECT: ROYALTON | PROJECT NO.: BRZ 1444(22) |
|---|---|
| DESIGN FILE NAME: 89J099/structures/sj099pr1.dgn | |
| IPARM FILE NAME: sj099pr1.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 |

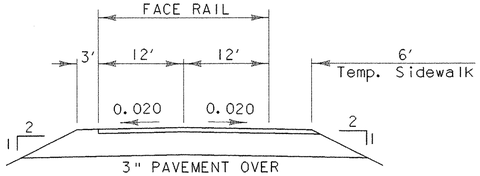



# PROFILE TH 1

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/sj099pr1.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

## 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 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 PI
Sta 5+00.00 =
M Sta 100+00.00

Detour PI
Sta 7+50.30 =
M Sta 102+50.30

N36°40'08.71"E

5+00
6+00
7+00
8+00
9+00
10+00
11+00
12+00
13+00
14+00
14+58

BEGIN BRIDGE
BACK OF ABUT 1
Sta 104+31.13

END BRIDGE
BACK OF ABUT 2
Sta 108+28.96

VT STATE PLANE GRID

N15°56'54.54"E

REMOVE

SEE NOTE 4

SEE NOTE 3 THIS SHEET

TEMPORARY SIDEWALK
(SEE GENERAL NOTES)

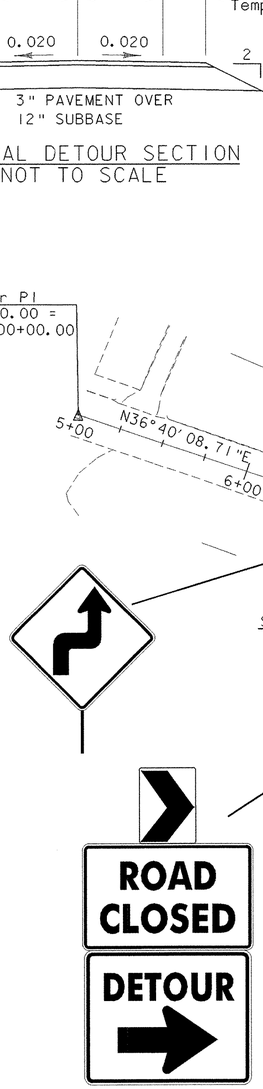
APPROXIMATE TEMPORARY
CONSTRUCTION LIMITS

BEGIN TEMPORARY BRIDGE
Sta 9+25.00

END TEMPORARY BRIDGE
BEGIN EXISTING TRUSS
Sta 10+80.00

PI
Sta 8+92.68

WHITE RIVER







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 |

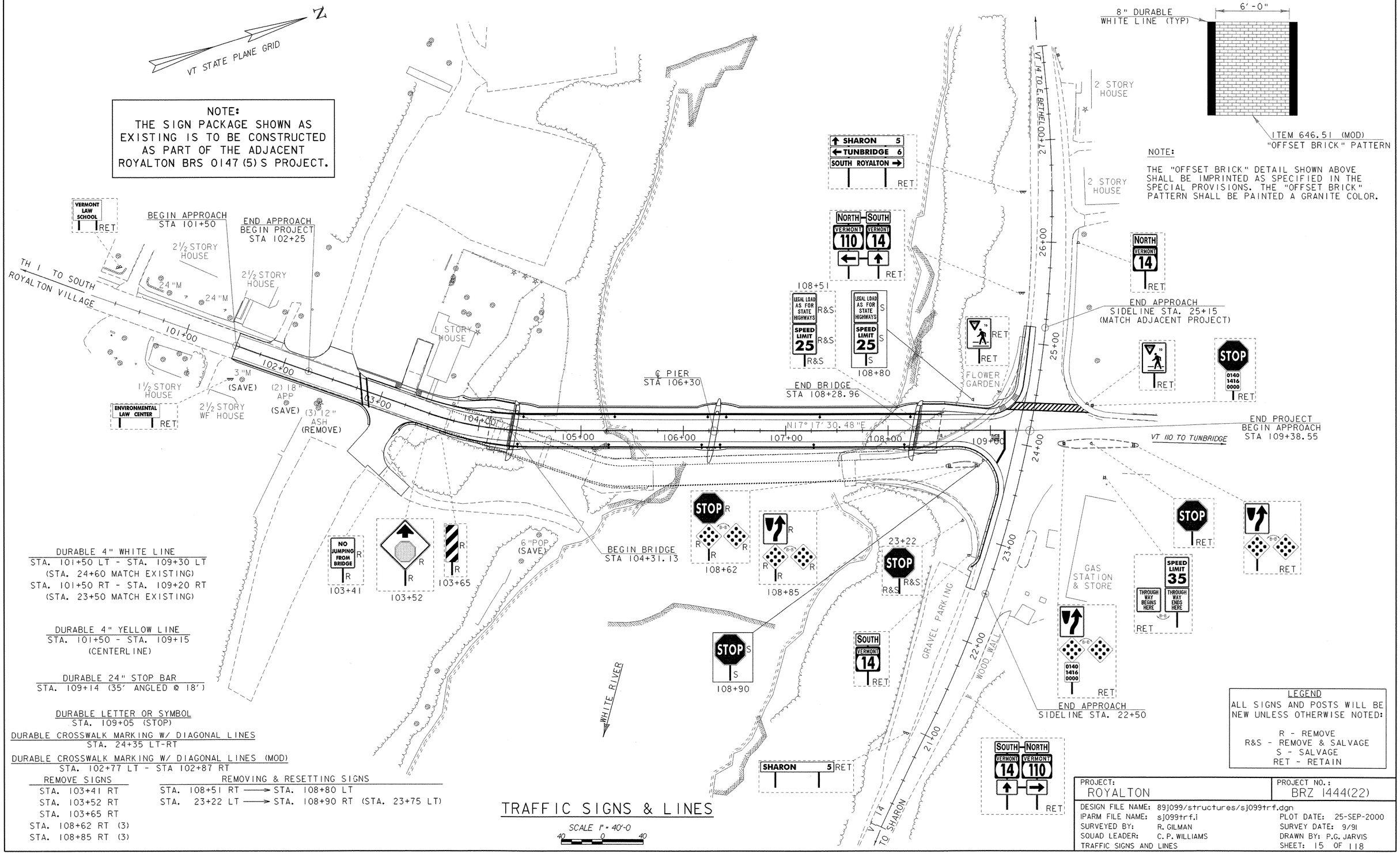
## DETOUR PLAN

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

## 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.

| | |
|---|---|
| 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 |




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)

## TRAFFIC SIGNS & LINES

SCALE 1" = 40'-0
40 0 40

LEGEND
ALL SIGNS AND POSTS WILL BE NEW UNLESS OTHERWISE NOTED:

R - REMOVE
R&S - REMOVE & SALVAGE
S - SALVAGE
RET - RETAIN

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

DESIGN FILE NAME: 89J099/structures/sj099trf.dgn
IPARM FILE NAME: sj099trf.i
SURVEYED BY: R. GILMAN
SQUAD LEADER: C. P. WILLIAMS
TRAFFIC SIGNS AND LINES
PLOT DATE: 25-SEP-2000
SURVEY DATE: 9/91
DRAWN BY: P.G. JARVIS
SHEET: 15 OF 118

# ITEM DETAIL AND DRAINAGE SHEET

**STATE OF VERMONT**
**AGENCY OF TRANSPORTATION**

## DRAINAGE STRUCTURES

| STA. | STA. | POSITION | ASKEW | TYPE IN/OUT | DITCH IN | DITCH OUT | PIPE ARCH S IN | PIPE ARCH R IN | PIPE ARCH L FT | PIPE D IN | PIPE L FT | ALLOWABLE OPTIONS PCCSP TH | CAAP TH | RCP CL | CSP TH | CPEP SL | PCCSP PI TH | PIPE ELBOW NO-DEG | ES EA | CB | PRCDI | DEPTH DI | CONC CL B CY | REIN STEEL LBS | DI GRATE TYPE | CHAN ELEV | CRM CY | TR EXCAV EARTH CY | TR EXCAV ROCK CY | COMM EXC CY | UNC CHAN EXC CY | STRUC EXCAV CY | GRAN BKF STRUC CY | GRAN BORR CY | EROS MATT SY | STONE FILL CY | STONE FILL TYPE | MRKR POSTS LT | MRKR POSTS RT | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | | | | | | | | | | | | | | | |

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.)

## GUARD RAIL

| STA. | STA. | LT. | RT. | END TREATMENT |
|---|---|---|---|---|
| TOTALS | | | | |

## 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 | DENSITY (GRANULAR SOILS) DESCRIPTIVE TERM | CONSISTENCY (COHESIVE SOILS) N | CONSISTENCY (COHESIVE SOILS) DESCRIPTIVE TERM |
|---|---|---|---|
| <5 | Very Loose | <2 | Very Soft |
| 5-10 | Loose | 2-4 | Soft |
| 11-24 | Med. Dense | 5-8 | Med. Stiff |
| 25-50 | Dense | 9-15 | Stiff |
| >50 | Very Dense | 16-30 | Very Stiff |
| | | 31-60 | Hard |
| | | >60 | Very Hard |

## COMMONLY USED SYMBOLS

| | |
|---|---|
| ▼ | Water Elevation |
| ⊕ | Standard Penetration Boring |
| ⊕ | Auger Boring |
| ⊙ | Rod Sounding |
| S | Sample |
| N | Standard Penetration Test Blow Count Per Foot For: 2" O.D. Sampler, 1 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.

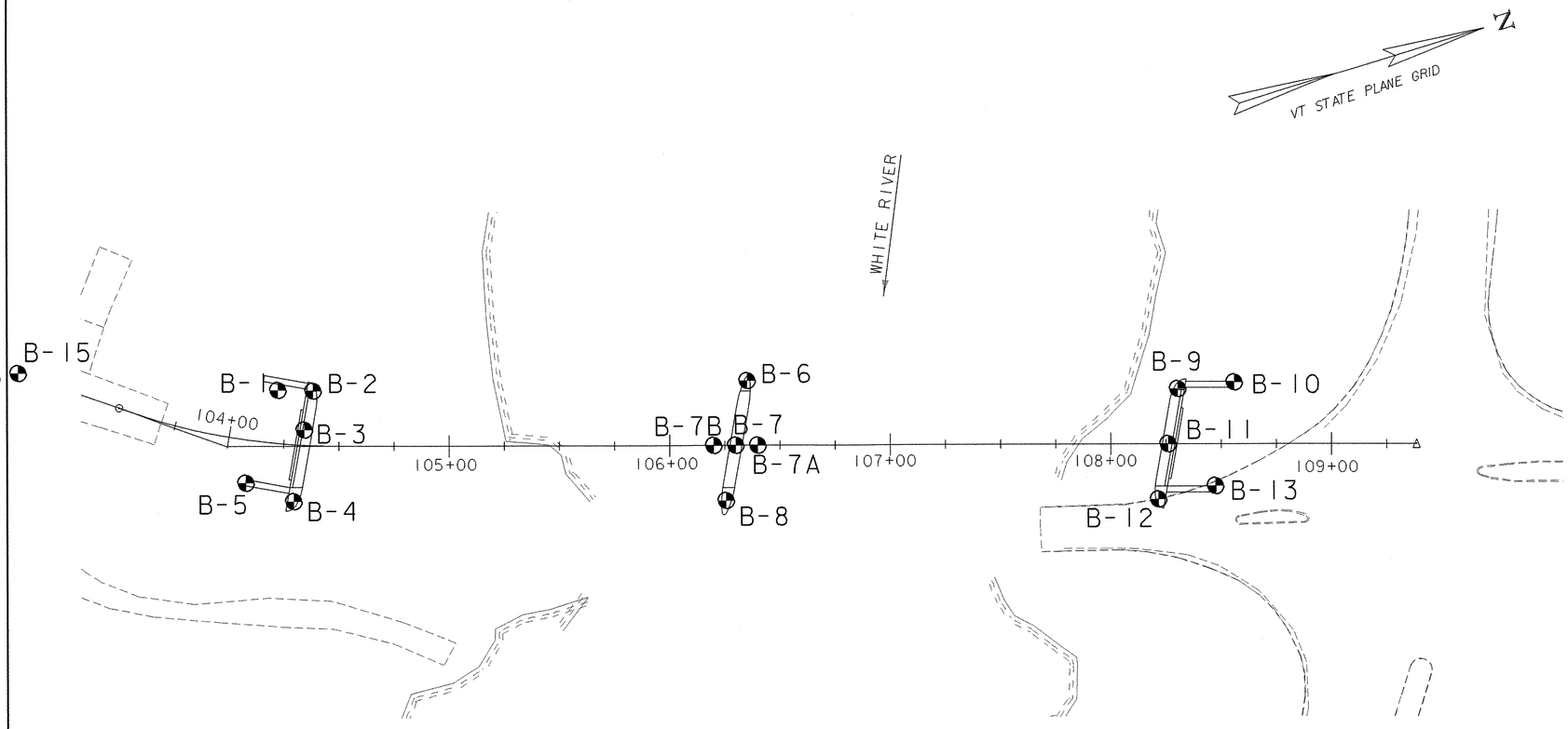
**MUCK** - Soft organic soil (containing > 10% organic material.

**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 |



PLOTTED 25-SEP-2000

**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
SITE NAME: TH 1
STATION: 104+20.00
GROUND EL.: 464.77

PROJECT NUMBER: BRZ 1444(22)
SITE NO.: BRIDGE 3
OFFSET: -24.00
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' | | | | | | |
| 25 | Run 1: BXMDC 25.0' - 30.0', Rec. = 4.4' | DIP (d) 45 | REC % 88 | ROD % 80 | | | | |
| 30 | Run 2: BXMDC 30.0' - 35.0', Rec. = 5.0' | 40 | 100 | 100 | | | | |
| 35 | Geologist's Report<br><br>Run #1: Gray recrystallized limestone with increasing biotite at bottom of run. Some quartz veins.<br><br>Unweathered - medium hard Rock is competent<br><br>Run #2: Gray recrystallized limestone with biotite grading to phyllitic schist with porphyroblasts of garnet.<br><br>Unweathered - medium hard. Rock is competent. | Hole stopped @ 35.0' | | | | | | |
| 40 | | | | | | | | |
| 45 | | | | | | | | |

**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
SITE NAME: TH 1
STATION: 104+37.00
GROUND EL.: 463.57

PROJECT NUMBER: BRZ 1444(22)
SITE NO.: BRIDGE 3
OFFSET: -25.00
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' | | | | | | |
| 20 | Run 1: BXMDC 20.0' - 25.0', Rec. = 4.4' | DIP (d) | REC % 25 | ROD % 88 | 63 | | | |
| 25 | Run 2: BXMDC 25.0' - 30.0', Rec. = 4.9' | | 25 | 98 | 78 | | | |
| 30 | Geologist's Report<br><br>Run #1: Gray recrystallized limestone. Unweathered - medium hard<br><br>Rock is competent<br><br>Run #2: Same as Run #1 | Hole stopped @ 30.0' | | | | | | |
| 35 | | | | | | | | |
| 40 | | | | | | | | |
| 45 | | | | | | | | |

**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
SITE NAME: TH 1
STATION: 104+34.00
GROUND EL.: 463.95

PROJECT NUMBER: BRZ 1444(22)
SITE NO.: BRIDGE 3
OFFSET: -7.00
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' | | | | | | |
| 25 | Run #1: BXMDC 22.0' - 27.0', Rec. = 4.6' | DIP (d) Massive | REC % 92 | ROD % 85 | | | | |
| 30 | Run #2: BXMDC 27.0' - 32.0', Rec. = 4.6' | Massive | 92 | 92 | | | | |
| 35 | Geologist's Report<br><br>Run #1: Gray recrystallized limestone. Unweathered - medium hard<br><br>Rock is competent<br><br>Run #2: Same as Run #1 | Hole stopped @ 32.0' | | | | | | |
| 40 | | | | | | | | |
| 45 | | | | | | | | |

**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
SITE NAME: TH 1
STATION: 104+31.00
GROUND EL.: 463.74

PROJECT NUMBER: BRZ 1444(22)
SITE NO.: BRIDGE 3
OFFSET: 25.00
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, 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 | | |
| | 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 | | | | | | |
| | A-1-b, GrSa, Wet, br, Rec. = 0.5' | 16 | 22.4 | 23.3 | 71.6 | 5.1 | | |
| 20 | 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. | | | | | | | |
| | 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 | | |
| 30 | Run #1: BXMDC 33.5' - 38.5', Rec. = 4.5' | Top of bedrock @ 33.5' | | | | | | |
| | | DIP (d) 40 | REC % 90 | ROD % 65 | | | | |
| | Run #2: BXMDC 38.5' - 43.5', Rec. = 4.4' | 40 | 88 | 62 | | | | |
| 35 | Geologist's Report<br><br>Run #1: Gray phyllitic schist with porphyroblasts of garnet and biotite. Unweathered - medium hard Rock is competent<br><br>Run #2: Same as Run #1 | Hole stopped @ 43.5' | | | | | | |
| 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. /891099/Structures/s1099bor.dgn
IPARM FILE s1099bo1.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
SHEET 1 OF 1
DATE STARTED: 3/6/96
DATE COMPLETED: 3/7/96

PROJECT NAME: ROYALTON
SITE NAME: TH 1
STATION: 104+10.00
GROUND EL.: 464.81
PROJECT NUMBER: BRZ 1444(22)
SITE NO.: BRIDGE 3
OFFSET: 20.00
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, 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 | | | | |
| | Geologist's Report | | | | | | | |
| 45 | Hole stopped @ 43.5 | | | | | | | |

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

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

HOLE NO.: B-6
SHEET 1 OF 1
DATE STARTED: 7/30/96
DATE COMPLETED: 8/2/96

PROJECT NAME: ROYALTON
SITE NAME: TH 1
STATION: 106+35.00
GROUND EL.: 454.44
PROJECT NUMBER: BRZ 1444(22)
SITE NO.: BRIDGE 3
OFFSET: -29.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: McGLYNN
DRILLER: WILLIS
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 |
|---|---|---|---|---|---|---|---|---|
| | 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 | | | |
| 25 | Run #3: BXMDC 26.8' - 31.8', Rec. = 4.9' | | 30 | 98 | 90 | | | |
| 30 | Geologist's Report | | Hole stopped @ 31.8' | | | | | |
| 35 | | | | | | | | |
| 40 | | | | | | | | |
| 45 | | | | | | | | |

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

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

HOLE NO.: B-7
SHEET 1 OF 1
DATE STARTED: 8/5/96
DATE COMPLETED: 8/6/96

PROJECT NAME: ROYALTON
SITE NAME: TH 1
STATION: 106+30.00
GROUND EL.: 454.09
PROJECT NUMBER: BRZ 1444(22)
SITE NO.: BRIDGE 3
OFFSET: 0.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: KELLEY
DRILLER: CHABOT E J
LOGGER: WILLIS
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, Gr, Sat., br, Rec. = 0.4' | 19 | 16.8 | 84.2 | 13.9 | 1.9 | | |
| | 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' | | | | | | | |
| | Run #1: BXMDC 15.2' - 20.2', Rec. = 4.7' | | DIP (d) | REC % | ROD % | | | |
| | | | 30 | 94 | 47 | | | |
| 20 | Run #2: BXMDC 20.2' - 25.2', Rec. = 4.8' | | 30 | 96 | 88 | | | |
| 25 | Geologist's Report | | Hole stopped @ 25.2' | | | | | |
| 30 | | | | | | | | |
| 35 | | | | | | | | |
| 40 | | | | | | | | |
| 45 | | | | | | | | |

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.

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

HOLE NO.: B-7A
SHEET 1 OF 1
DATE STARTED: 8/12/96
DATE COMPLETED: 8/13/96

PROJECT NAME: ROYALTON
SITE NAME: TH 1
STATION: 106+40.00
GROUND EL.: 453.61
PROJECT NUMBER: BRZ 1444(22)
SITE NO.: BRIDGE 3
OFFSET: 0.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: WILLIS
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. = 0.8' | 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' | | | | | | | |
| | Run #1: BXMDC 15.9' - 20.9', Rec. = 4.8' | | DIP (d) | REC % | ROD % | | | |
| | | | 25 | 96 | 60 | | | |
| 20 | Run #2: BXMDC 20.9' - 25.9', Rec. = 4.7' | | 25-30 | 94 | 78 | | | |
| 25 | Geologist's Report | | Hole stopped @ 25.9' | | | | | |
| 30 | | | | | | | | |
| 35 | | | | | | | | |
| 40 | | | | | | | | |
| 45 | | | | | | | | |

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)
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

Estimated Drilled Shaft Tip Elevation Bot Pier Ftg = 449.00

| DEPTH | SYMBOL | 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' | | | | | | | |
| | | Run #1: BXMDC 12.5' - 17.5', Rec. = 4.6' | DIP (d): 40 | REC %: 92 | ROD %: 35 | | | | |
| 15 | | Run #1: BXMDC 17.5' - 21.5', Rec. = 4.0' | 30-35 | 80 | 63 | | | | |
| 20 | | Geologist's Report: | Hole stopped @ 21.5' | | | | | | |
| | | Run #1: Gray phyllitic schist with quartz veins and porphyroblasts of biotite and garnet. Moderately soft and unweathered. Competent. | | | | | | | |
| | | Low ROD due to mechanical breakage. | | | | | | | |
| | | Run #2: Same as Run #1 but with greater amounts of garnet porphyroblasts. Competent. | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |
| 40 | | | | | | | | | |
| 45 | | | | | | | | | |

## 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

Estimated Drilled Shaft Tip Elevation Bot Pier Ftg = 449.00

| DEPTH | SYMBOL | 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' | | | | | | |
| | | Run #1: BXMDC 13.5' - 18.5', Rec. = 4.1' | DIP (d): 30 | REC %: 82 | ROD %: 7 | | | | |
| 15 | | Run #2: BXMDC 18.5' - 23.5', Rec. = 4.8' | 30 | 96 | 55 | | | | |
| 20 | | Geologist's Report: | Hole stopped @ 23.5' | | | | | | |
| | | Run #1: Light gray phyllite grading to gray phyllitic schist with quartz veins and porphyroblasts of biotite and garnet. Moderately soft. Unweathered. | | | | | | | |
| | | Low ROD may be due to mechanical breakage | | | | | | | |
| | | Run #2: gray phyllitic schist with quartz veins and porphyroblasts of biotite and garnet. Moderaltely soft. Unweathered. Competent. | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | | | | | |
| 40 | | | | | | | | | |
| 45 | | | | | | | | | |

## 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 | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|---|
| 5 | | No sample, boulders. | | | | | | | |
| 10 | | Top of bedrock @ 11.0' | | | | | | | |
| | | Run #1: BXMDC 11.0' - 13.0', Rec. = 1.5' | DIP (d): 0 | REC %: 30 | ROD %: 0 | | | | |
| | | Run #2: BXMDC 13.0' - 18.0', Rec. = 5.0' | 40 | 100 | 92 | | | | |
| 15 | | | 55 | 60 | 60 | | | | |
| | | Run #3: BXMDC 18.0' - 21.0', Rec. = 2.9' | | | | | | | |
| 20 | | Geologist's Report: | Hole stopped @ 21.0' | | | | | | |
| | | Run #1: Gray recrystallized limestone. Unweathered - medium hard. May be boulder. | | | | | | | |
| | | Low ROD 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. | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | Rock is competent. | | | | | | | |
| | | Run #3: Gray recrystallized limestone with biotite schist and quartzite folded strata. | | | | | | | |
| 35 | | | | | | | | | |
| 40 | | Rock is competent. | | | | | | | |
| 45 | | | | | | | | | |

## 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 | SYMBOL | CLASSIFICATION OF MATERIALS (Description) | BLOWS PER FOOT | M.C. % | GRAVEL % | SAND % | FINES % | LL | PI |
|---|---|---|---|---|---|---|---|---|---|
| 5 | | Rock fill | | | | | | | |
| 10 | | Top of bedrock @ 10.5' | | | | | | | |
| | | Run #1: 10.5' - 15.5', Rec. = 5.0' | DIP (d): 40 | REC %: 94 | ROD %: 88 | | | | |
| 15 | | Run #2: 15.5' - 20.5', Rec. = 4.8' | 25 | 96 | 85 | | | | |
| 20 | | Geologist's Report: | Hole stopped @ 20.5' | | | | | | |
| | | 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. | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | Rock is competent. | | | | | | | |
| 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 sj099bo3.i DATE PLOTTED 25-SEP-2000

PROJ. NAME ROYALTON
PROJ. NO. BRZ 1444(22)
BORING HOLE CHARTS 7b - 10
SHEET 20 OF 118

**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

Top Abut. 2 Ftg = 461.00

| 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' | | | | | | | |
| 15 | | Run #1: BXMDC 14.0' - 19.0', Rec. = 4.6' | | DIP (d) 25 | REC % 100 | ROD % 98 | | | |
| | | Run #2: BXMDC 19.0' - 24.0', Rec. = 5.0' | | 30 | 96 | 96 | | | |
| 25 | | Geologist's Report: | | Hole stopped @ 24.0' | | | | | |
| | | Run #1: 14.0' - 14.7': Gray biotite rich phyllite and white quartzite. Unweathered - moderately hard. | | | | | | | |
| 30 | | Run #1: 14.7' - 19.0': Gray recrystallized limestone. Unweathered - moderately hard. | | | | | | | |
| 35 | | Rock is competent | | | | | | | |
| | | Run #2: Same as Run 1: 14.7' - 19.0' | | | | | | | |
| 40 | | Rock is competent | | | | | | | |
| 45 | | | | | | | | | |

**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

Top Abut. 2 Ftg = 461.00

| 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' | | | | | | | |
| | | Run #1: BXMDC 21.6' - 26.6', Rec. = 4.7' | | DIP (d) 25 | REC % 94 | ROD % 32 | | | |
| 25 | | Run #2: BXMDC 26.6' - 30.6', Rec. = 3.7' | | 30 | 80 | 50 | | | |
| 30 | | Geologist's Report: | | Hole stopped 30.6' | | | | | |
| | | Run #1: 21.6' - 24.4': Gray recrystallized limestone. Unweathered - medium hard. | | | | | | | |
| 35 | | Run #1: 24.4' - 26.6': Gray phyllitic schist. Unweathered - medium hard. | | | | | | | |
| | | Rock is competent | | | | | | | |
| 40 | | Run #2: Gray phyllitic schist. Unweathered - medium hard. | | | | | | | |
| | | Rock is competent | | | | | | | |
| 45 | | | | | | | | | |

**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

Top Abut. 2 Ftg = 461.00

| 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' | | | | | | | |
| | | Run #1: BXMDC 20.9' - 25.9', Rec. = 5.0' | | DIP (d) 50 | REC % 100 | ROD % 62 | | | |
| 25 | | Run #2: BXMDC 25.9' - 30.9', Rec. = 5.0' | | 40 | 100 | 90 | | | |
| 30 | | Geologist's Report: | | Hole stopped @ 30.9' | | | | | |
| | | Run #1: 20.9' - 22.3': Gray biotite rich phyllite and white quartzite. Unweathered - hard to moderately hard. | | | | | | | |
| 35 | | Run #1: 22.3' - 25.9': Gray recrystallized limestone. Unweathered - moderately hard. | | | | | | | |
| | | Rock is competent | | | | | | | |
| 40 | | Run #2: Gray recrystallized limestone. Unweathered - moderately hard. | | | | | | | |
| | | Rock is competent | | | | | | | |
| 45 | | | | | | | | | |

**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 | 67 | 5.2 | 45.6 | 44 | 10.4 | | |
| | | A-1-b, SaGr, Moist, br, Rec. = 1.1' | 70 | 8.0 | 25 | 56.9 | 18.1 | | |
| | | A-2-4, GrSa, Moist, br, Rec. = 1.0' | 23 | 12.5 | 46.5 | 41.5 | 12.0 | | |
| 5 | | 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. = 0.5' | 11 | 17.8 | 43.8 | 40 | 16.2 | | |
| | | A-1-b, SaGr, Moist, br, Rec. = 0.6' | 15 | 25.8 | 4.8 | 45.1 | 50.1 | | |
| 10 | | A-4, SaSi, Moist, br, Rec. = 0.7' | 13 | 48.6 | 0.6 | 22 | 77.4 | | |
| | | A-4, SaSi, Moist, br, Rec. = 1.4' | 7 | 36.4 | 0 | 34.1 | 65.9 | | |
| | | A-4, SaSi, Moist, br, Rec. = 0.4' | 18 | 29.5 | 0 | 40.8 | 59.2 | | |
| 15 | | A-4, SaSi, Moist, br, Rec. = 1.3' | 20 | 19.3 | 5.5 | 64.5 | 30.0 | | |
| | | A-2-4, SiSa, Moist, br, Rec. = 1.0' | | | | | | | |
| 20 | | | | Hole stopped @ 20.0' | | | | | |
| 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 sj099bo4.i DATE PLOTTED 25-SEP-2000

PROJ. NAME ROYALTON
PROJ. NO. BRZ 1444(22)
BORING HOLE CHARTS 11 - 14
SHEET 21 OF 118

**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

BEGIN APPROACH SLAB NO. 1
STA. 104+11.13
F.G.=481.29

BEGIN BRIDGE
STA. 104+31.13
FG=481.91

PC
Sta 103+48.52

℄ BEARING
POST STA 104+34.00
FG=482.00

SCUPPER (TYP)
(SEE SHEET 46.)

℄ PIER
STA. 106+30.00
FG=486.16

WHITE RIVER
FLOW

LIGHTS (TYP). SEE
LIGHTING SHEETS FOR
DETAILS AND LOCATIONS

END APPROACH SLAB NO. 2
STA 108+48.96
F.G.=482.51

END BRIDGE
STA 108+28.96
FG=482.46

℄ BEARING ABUT. 2
STA 108+26.00
FG=482.48

NOTE: REFER TO SHEETS 67-69
FOR GUARD RAIL AND RADII INFO.

℄ RTE 14

WW 1
WW 2
WW 3
WW 4

1:2

103+00
104+00
105+00
106+00
107+00
108+00
109+00
53+00
52+00
24+00
23+00

MAINLINE
REV ℄ TH 1
80° (TYP)

POST STA 104+35.00=
CHAN. STA. 53+00.00
DELTA = 80° LT

PT
Sta 104+50.50

POST STA 109+38.55=
VT 14 STA. 24+15.18

DRIVE GATE
WOVEN WIRE FENCE (MOD)
SEE NOTE 11 SHEET 8.

EXISTING 18" RCP

STONE FILL TYPE II

STONE FILL TYPE IV
(TYP)

CHANNEL
LINE

ELIMINATED

N
VT STATE PLANE GRID

## PLAN

SCALE 1" = 20'-0
20 0 20

℄ BRG
ABUT 1

℄ BRG
ABUT 2

397'-11 1/8" BACK OF ABUTMENT NO. 1 TO BACK OF ABUTMENT NO. 2

392'-0"

℄ BRG
PIER

196'-0"

196'-0"

500
490
480
470
460
450
440

EXP.

$\nabla$ $Q_{100}$=473.9

FIXED

EXP.

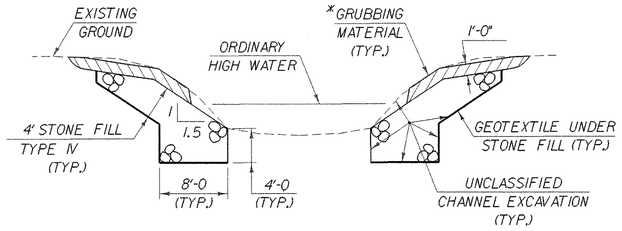
EXISTING GROUND

4'-0" TYPE IV STONE FILL

## ELEVATION @ DOWNSTREAM FASCIA

SCALE 1" = 20'-0
20 0 20

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



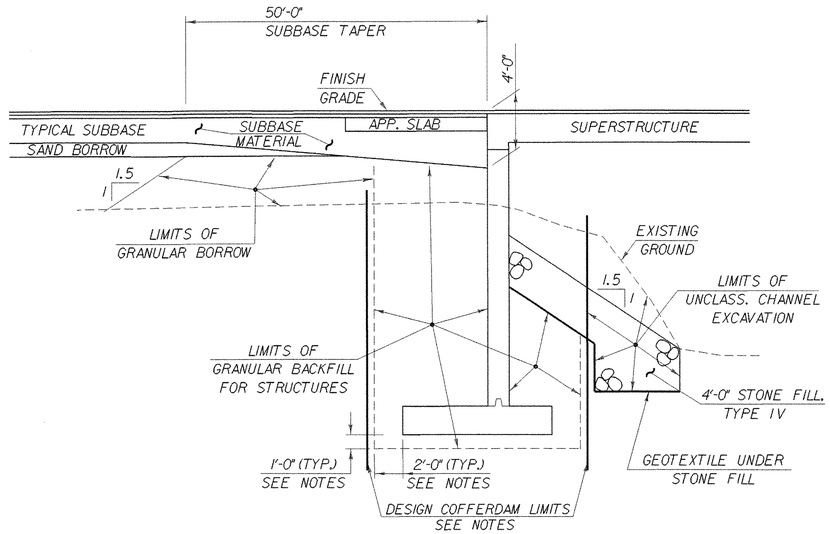

*GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE.

## TYPICAL CHANNEL SECTION

**(NOT TO SCALE)**

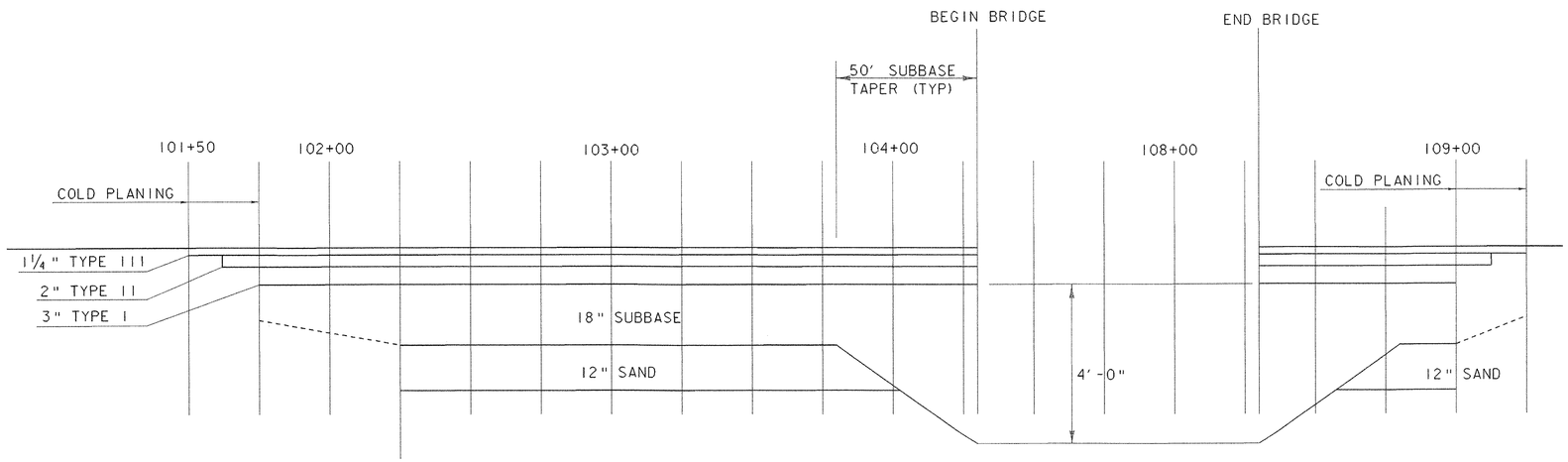
## NOTES

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)**



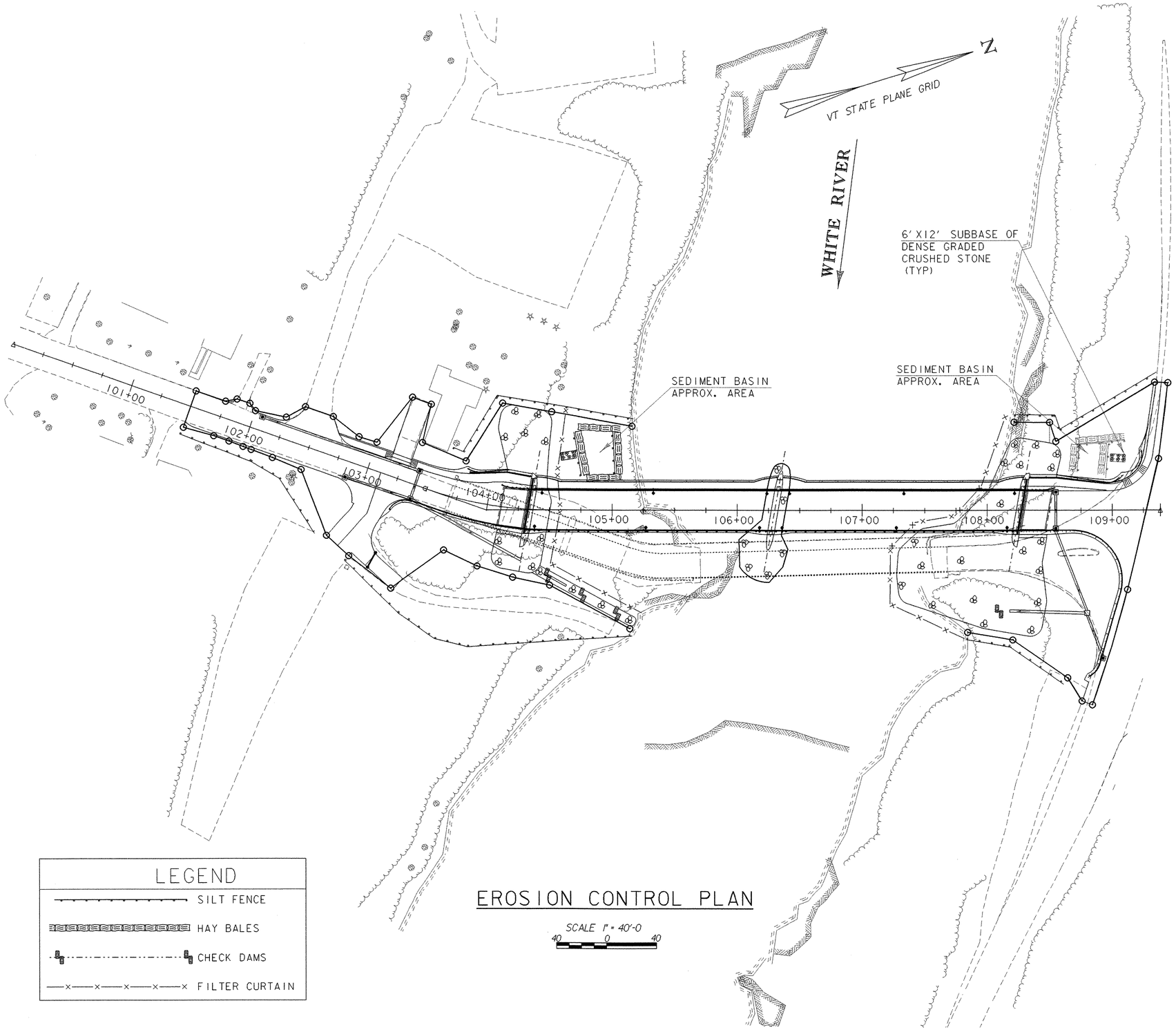

## MATERIAL TRANSITION

**(NOT TO SCALE)**

# STATE OF VERMONT
## AGENCY OF TRANSPORTATION

| | |
|---|---|
| Town Of ROYALTON | Bridge No. 3 |
| Highway No. TH 1 | Log Sta. / 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
- HAY BALES
- CHECK DAMS
- 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<br>IPARM FILE NAME: sj099ero.i | PLOT DATE: 25-SEP-2000 |
| EROSION CONTROL SHEET | |
| | SHEET: 25 OF 118 |

℄ TH 1

23'-10⅜" TO FASCIA

17'-6" TO FASCIA

5'-6" SIDEWALK

1'-0⅜"

16'-0" TO FACE OF RAIL (TYP)

11'-0" TRAVELED WAY (TYP)

5'-0" SHOULDER (TYP)

1'-6"

1'-4"

15'-6" TO FACE OF CURB (TYP)

2'-0" CURB

BRIDGE RAILING-GALV. BOX BEAM/PEDESTRIAN (MOD)

ES701 @ 12"

2 RAIL NETC BRIDGE RAILING WITH PEDESTRIAN RAIL

2 ½" BITUMINOUS CONCRETE PAVEMENT *

ES501 @ 6" TOP & BOTTOM

4 RAIL NETC BRIDGE RAILING

4" CLEAR SIDEWALK & CURB

1 ½" CLR BOTTOM

8 ½" CONCRETE CLASS A QC/QA (MOD) DECK

6" GRANITE CURB (TYP)

2 ½" CLR TOP

GRADE

SHEET MEMBRANE WATERPROOFING (MOD-TORCH APPLIED)

9" (TYP)

ES503 AS SHOWN

-0.020'/'

* 1 ¼" TYPE III OVER 1 ¼" TYPE IV

-0.021'/' (TYP)

-0.042'/' (TYP)

8 - ES601 @ 12"

SEE SCORE MARK DETAIL

2'-0" (TYP)

ES505 @ 12"

SIDEWALK BRACKET

6" TO ¾" DRIP NOTCH (TYP) OUTLET AT 45° 3' FROM FACE OF ABUTMENT

UTILITY CONDUIT BUNDLE

4" SEWER LINE (FUTURE)

12" WATER LINE

78" - 108" HAUNCHED PLATE GIRDER (TYP)

UTILITY DIAPHRAGM (NORMAL TO GIRDER) (TYP)

4" TO ¾" DRIP NOTCH (TYP) OUTLET AT 45° 3' FROM FACE OF ABUTMENT

INTERMEDIATE CROSS FRAME (NORMAL TO GIRDER) (TYP)

1'-10"

ABUTMENT CROSS FRAME (PARALLEL TO ℄ BEARING) (PIER CROSS FRAME SIMILAR) (TYP)

8'-6" (TYP)

℄ G1

℄ G2

℄ G3

℄ G4

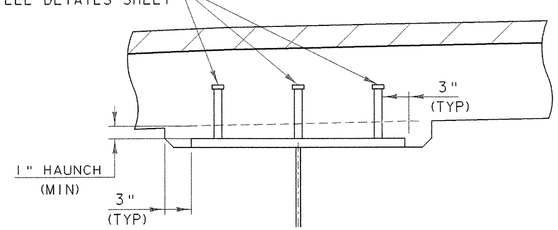
℄ G5

ES503 @ 12" OR ES601 @ 6" (TOP)
ES503 @ 12"

## TYPICAL BRIDGE SECTION

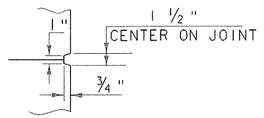
SCALE ¾" = 1'-0

3 ROWS OF ⅞" X 7" WELDED STUDS SEE STRUCTURAL STEEL DETAILS SHEET




## GIRDER HAUNCH & SHEAR CONNECTOR DETAILS

SCALE 1 ½" = 1'-0

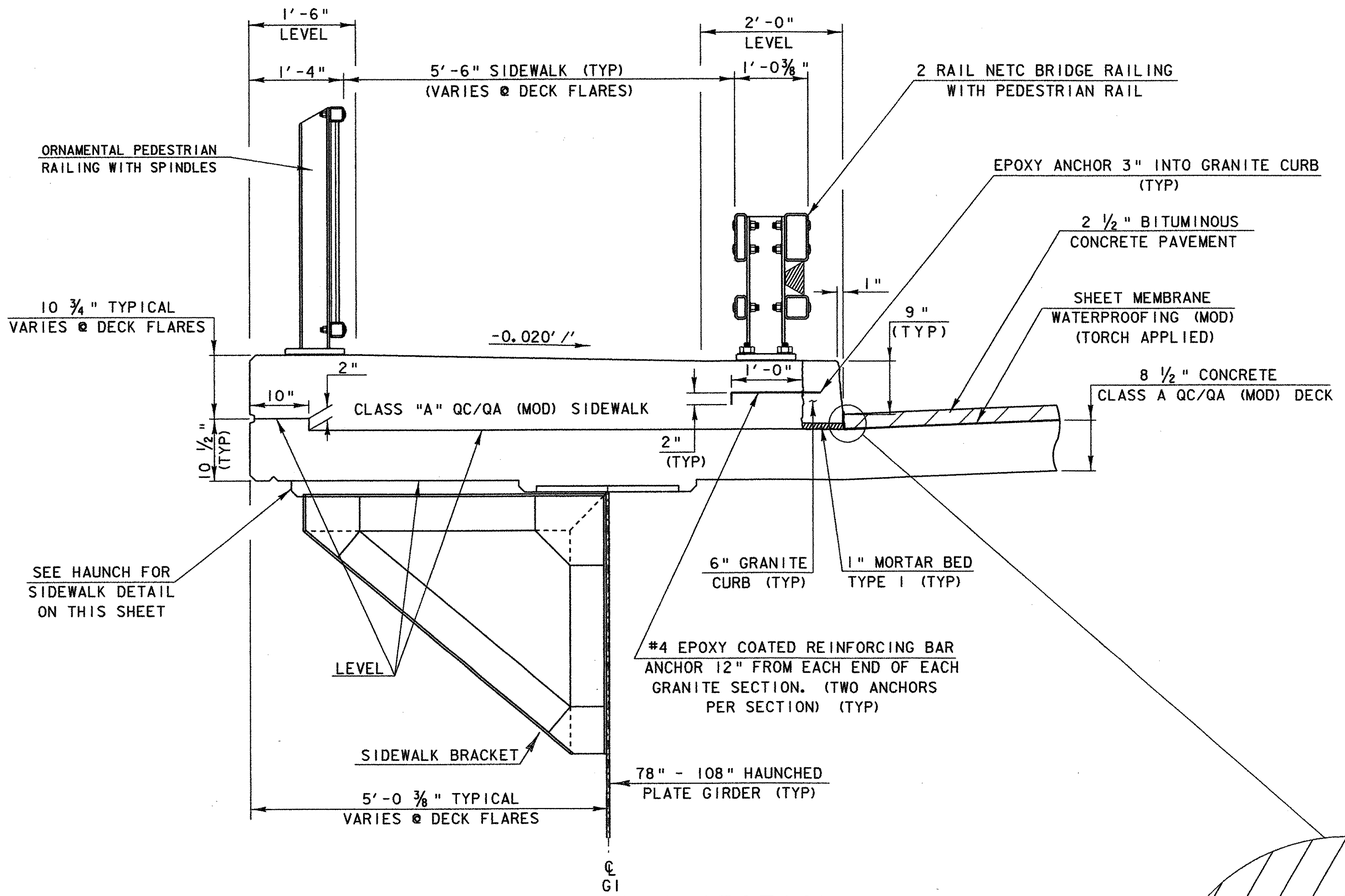



## SCORE MARK DETAIL

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

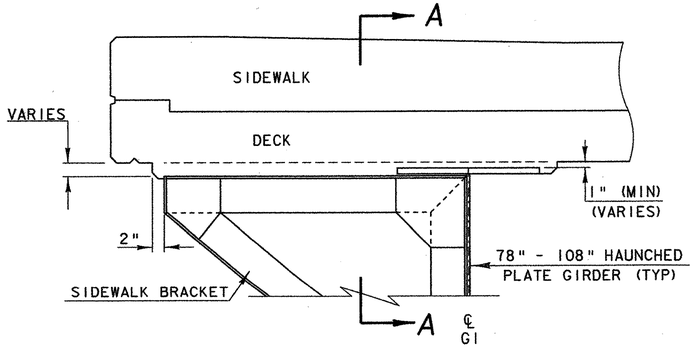
FILE NAME: 89j099/structures/sj099sup2.dgn
IPARM NAME: sj099typbrisec.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
TYPICAL BRIDGE SECTION

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



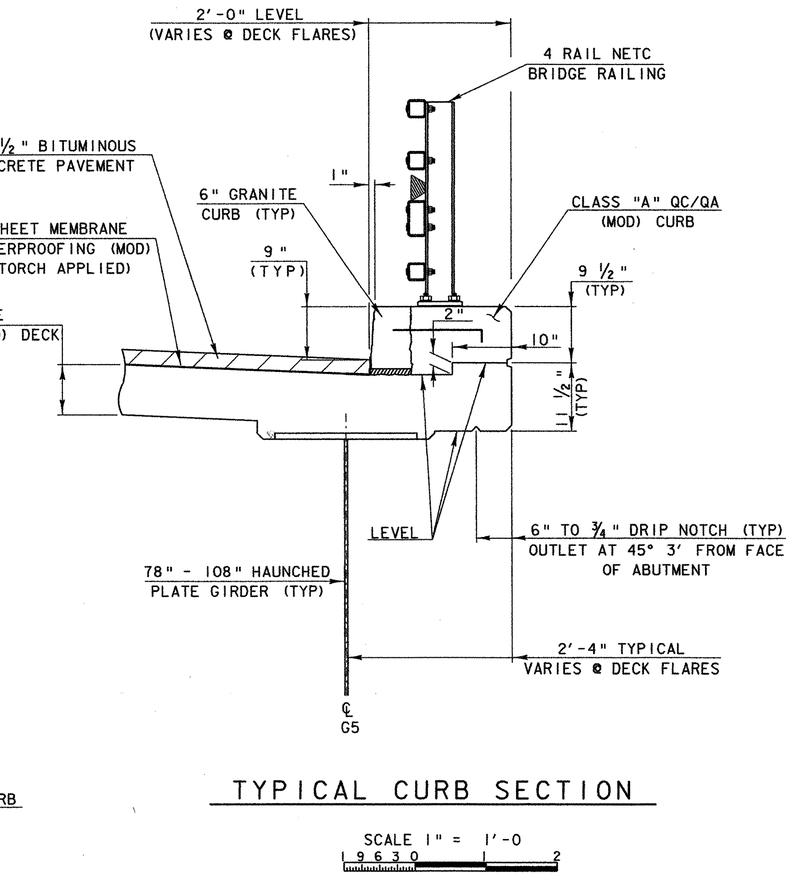

## TYPICAL SIDEWALK SECTION

SCALE 1" = 1'-0



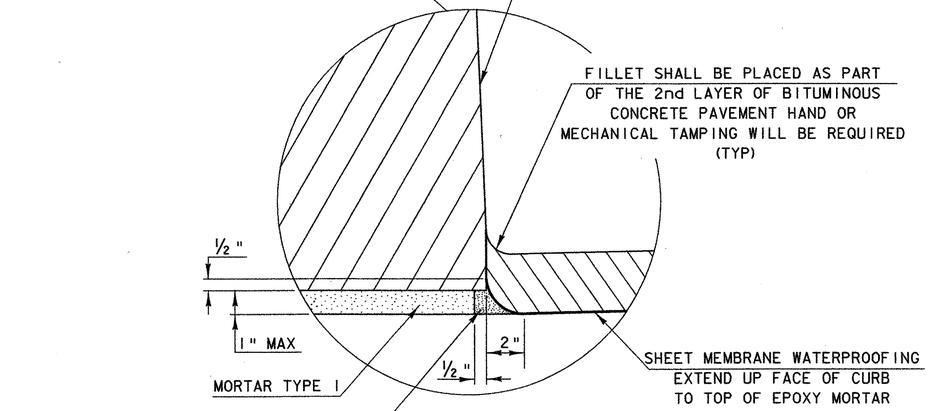

## SIDEWALK BRACKET HAUNCH DETAIL

SCALE 1" = 1'-0

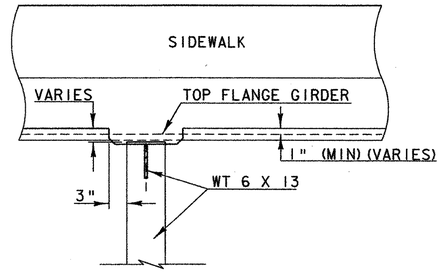



## TYPICAL CURB SECTION

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.




## SECTION A-A

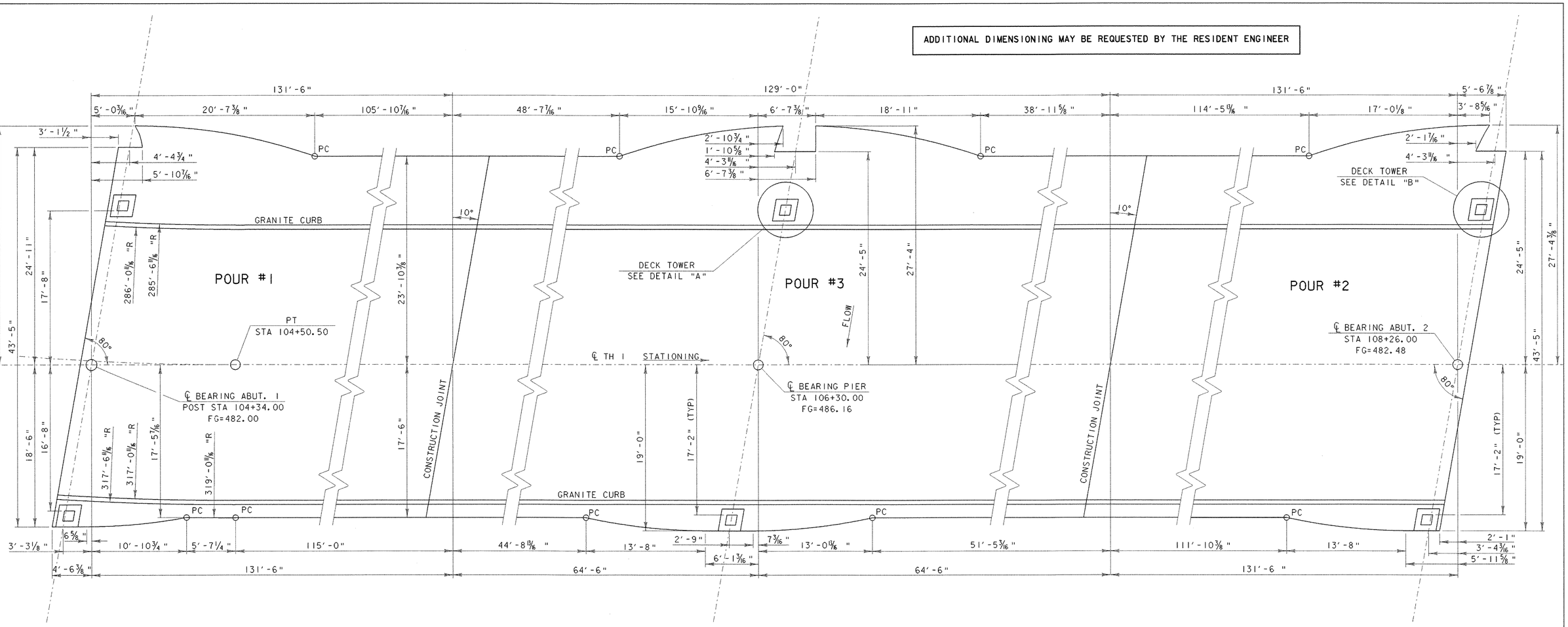
SCALE 1" = 1'-0

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

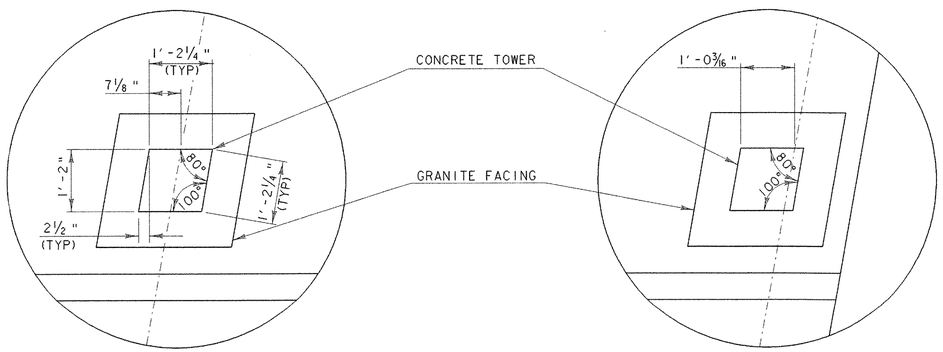
PLOT DATE: 06-DEC-2000
DRAWN BY: K. M. HIGGINS
CHECKED BY: W.B. SYMONDS
SHEET 27 OF 118

ADDITIONAL DIMENSIONING MAY BE REQUESTED BY THE RESIDENT ENGINEER




## DECK LAYOUT PLAN

SCALE 3/16" = 1'-0

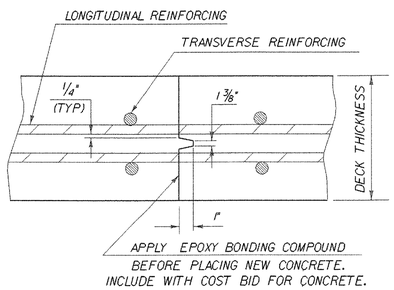



## DETAIL "A" PIER

SCALE 3/4" = 1'-0

## DETAIL "B" ABUT. 1&2

SCALE 3/4" = 1'-0




## TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS

NOTES:

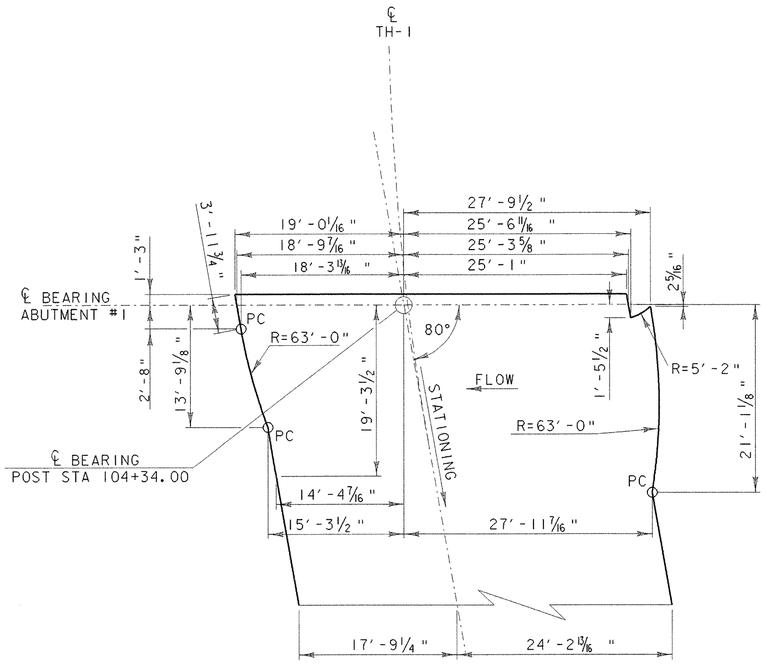
1. IF APPROVED BY THE ENGINEER, POURS #1 & #2 MAY BE POURED THE SAME DAY PROVIDED THAT THE MAXIMUM TIME SPAN OF THE POUR IS EIGHT HOURS. THE INDICATED POURING SEQUENCE SHALL BE FOLLOWED AND A RETARDING ADMIXTURE USED SO THAT THE DECK CONCRETE WILL NOT SET UP UNTIL ALL THE POUR HAS BEEN MADE. THE RETARDING 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)

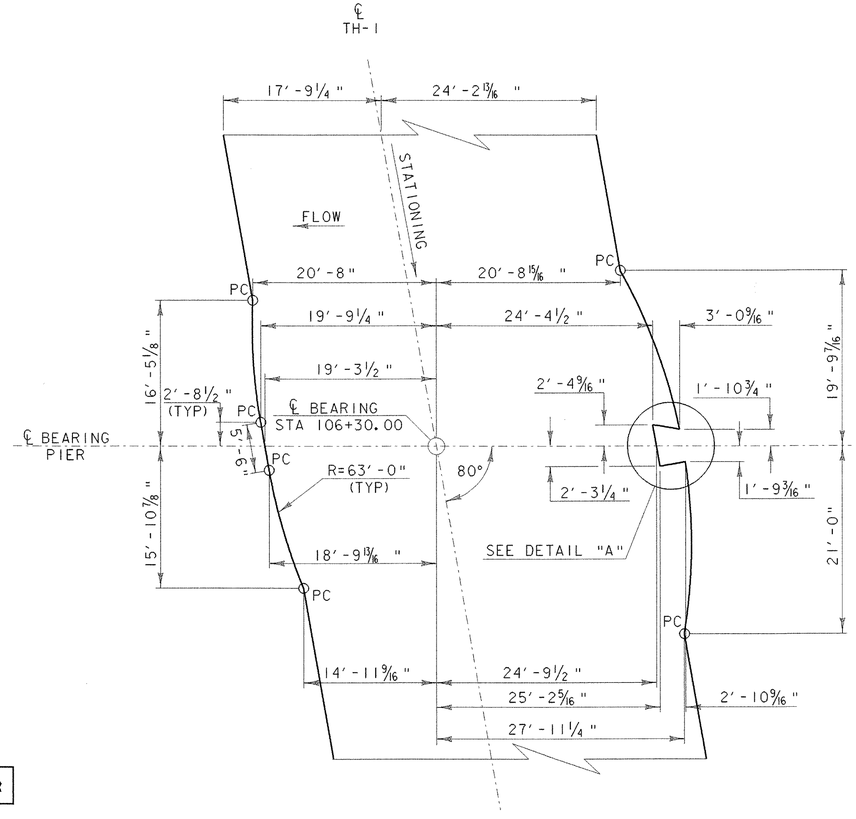
FILE NAME: 89j099/structures/sj099sup.dgn
IPARM NAME: sj099decklayout.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
DECK LAYOUT PLAN

PLOT DATE: 25-SEP-2000
DRAWN BY: R.S. YOUNG
CHECKED BY: W.B. SYMONDS
SHEET 28 OF 118



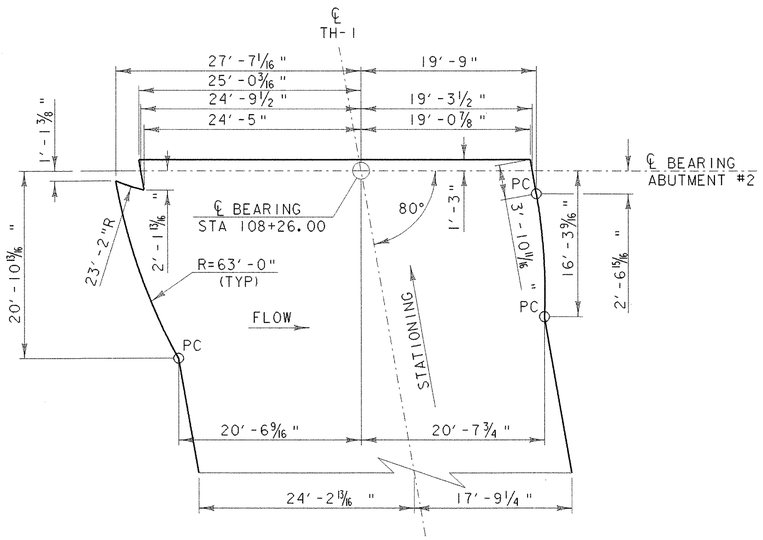

## DECK PLAN DETAIL @ ABUTMENT #1

SCALE ⅛" = 1'-0
1 0 2 4 6 8



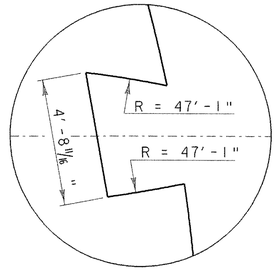

## DECK PLAN DETAIL @ PIER

SCALE ⅛" = 1'-0
1 0 2 4 6 8




## DECK PLAN DETAIL @ ABUTMENT #2

SCALE ⅛" = 1'-0
1 0 2 4 6 8




## DETAIL "A"

SCALE ⅜" = 1'-0
1 0 1 2 3 4

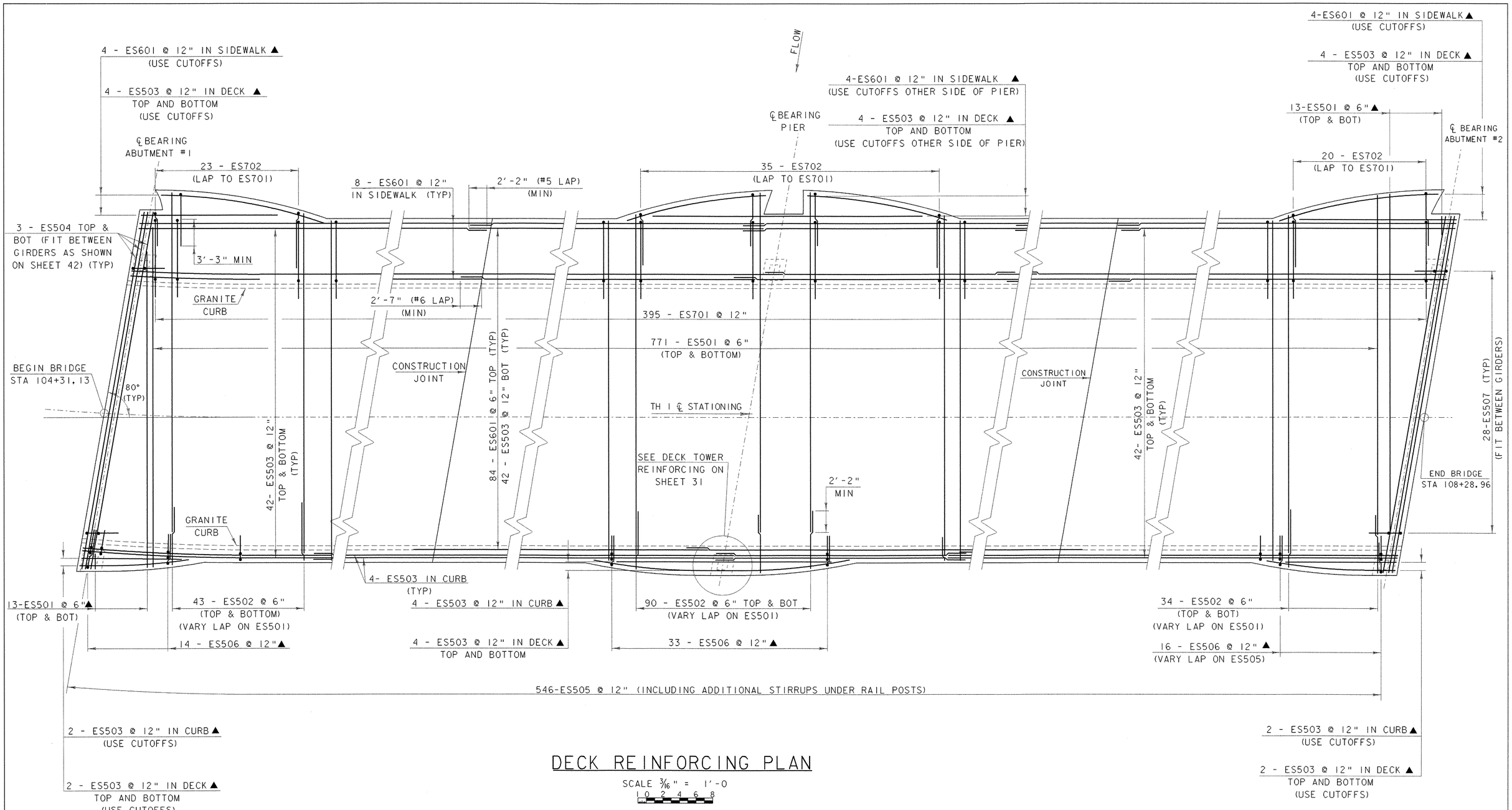
ADDITIONAL DIMENSIONING MAY BE REQUESTED BY THE RESIDENT ENGINEER

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

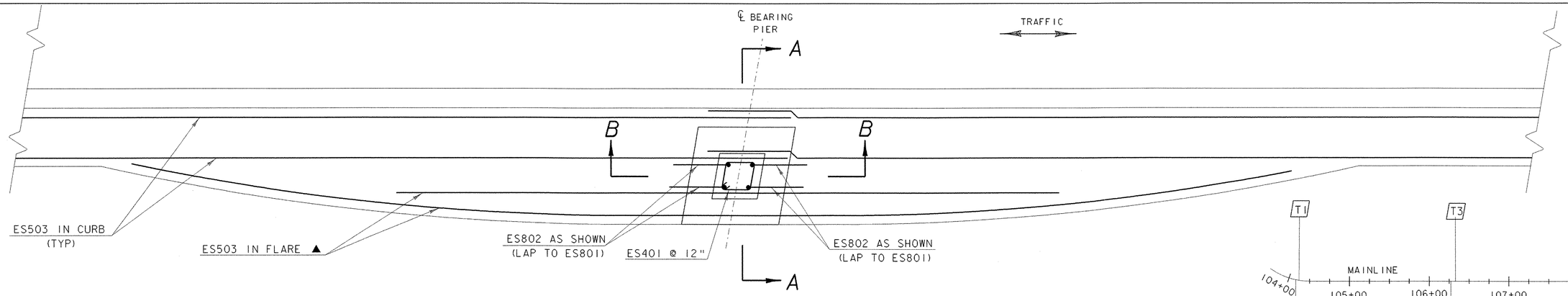
PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: W.B. SYMONDS
SHEET 29 OF 118




# DECK REINFORCING PLAN

SCALE 3/16" = 1'-0

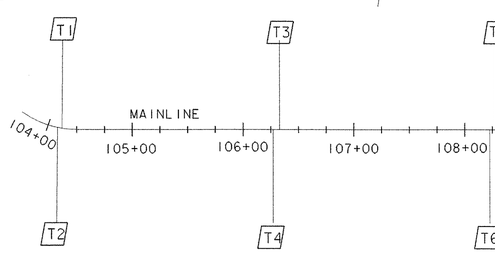
| | |
|---|---|
| PROJECT NAME: | |
| PROJECT NUMBER: | ROYALTON BRZ 1444 (22) |
| FILE NAME: 89j099/structures/sj099sup2.dgn | PLOT DATE: 25-SEP-2000 |
| IPARM NAME: sj099deckreinf.i | DRAWN BY: K.M. HIGGINS |
| PROJECT LEADER: C.P. WILLIAMS | CHECKED BY: W.B. SYMONDS |
| DESIGNED BY: W.B. SYMONDS | SHEET 30 OF 118 |
| DECK REINFORCEMENT PLAN | |




## DECK TOWER REINFORCING PLAN

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

SCALE 3/4" = 1'-0



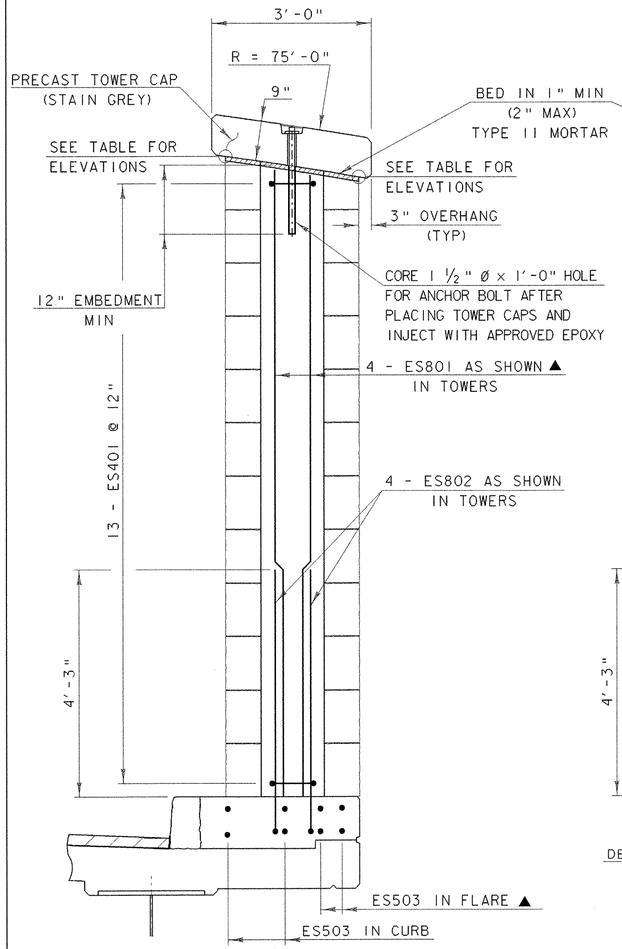

## DECK TOWER LAYOUT

NTS

### TOWER ELEVATIONS

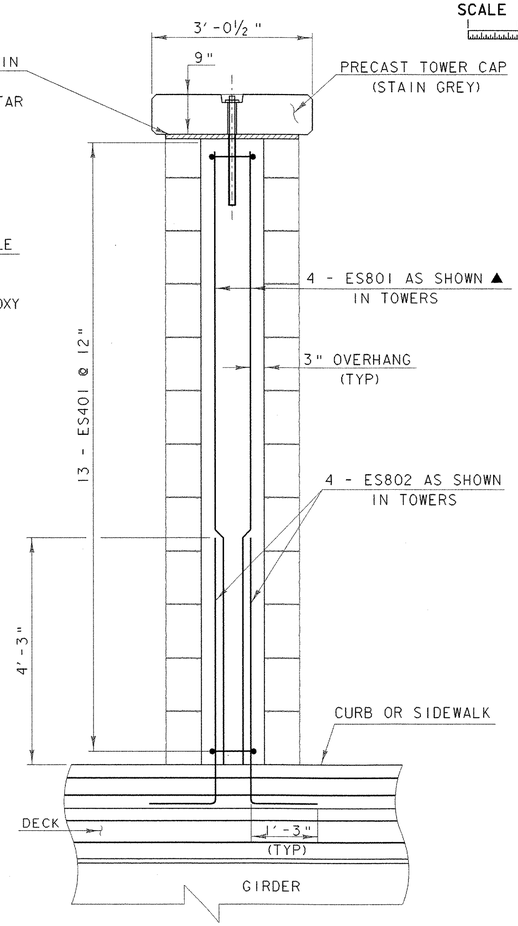
| DECK TOWER ID | DECK TOWER HIGH SIDE | DECK TOWER LOW SIDE |
|---|---|---|
| T1 | 494.00 | 493.61 |
| T2 | 494.00 | 493.61 |
| T3 | 498.00 | 497.61 |
| T4 | 498.00 | 497.61 |
| T5 | 494.50 | 494.11 |
| T6 | 494.50 | 494.11 |

ELEVATIONS ARE AT THE BOTTOM OF THE PRECAST TOWER CAP



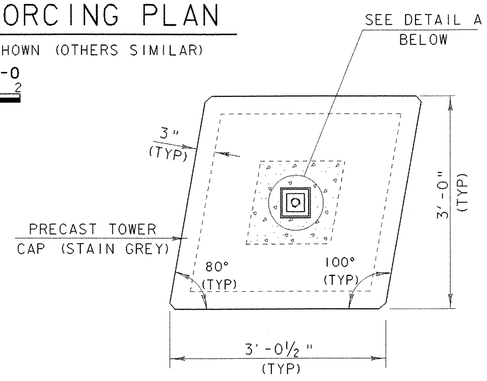

## SECTION A-A

SCALE 3/4" = 1'-0



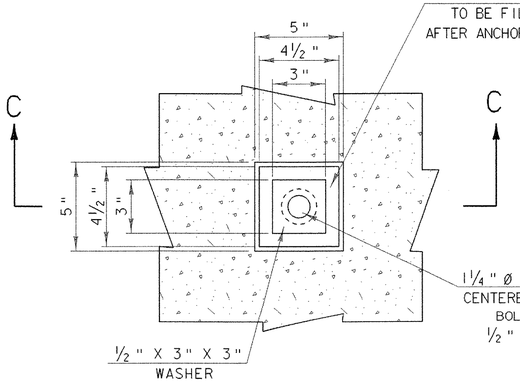

## SECTION B-B

SCALE 3/4" = 1'-0



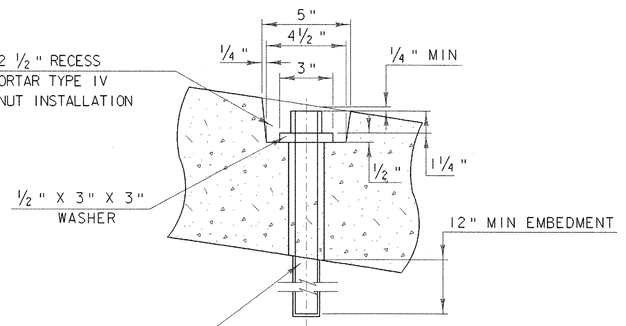

## DECK TOWER CAP PLAN

SCALE 1" = 1'-0




## DETAIL A

SCALE 3" = 1'-0



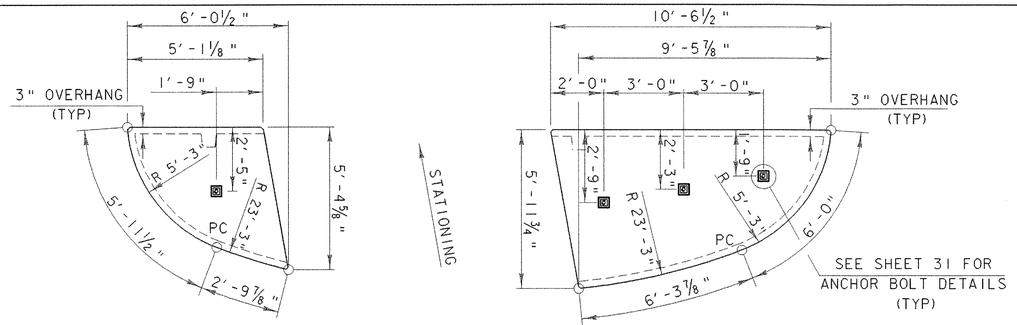

## SECTION C-C

SCALE 3" = 1'-0

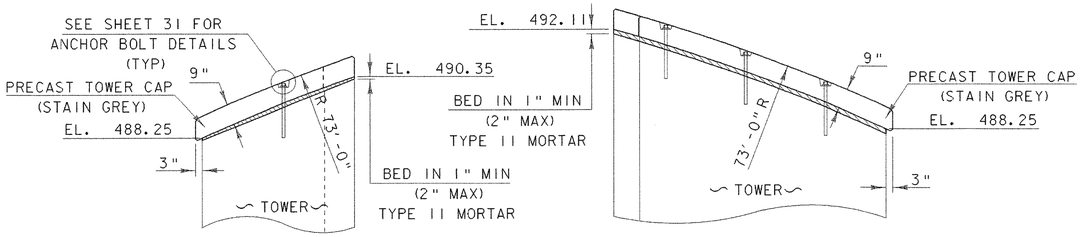
PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444(22)

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

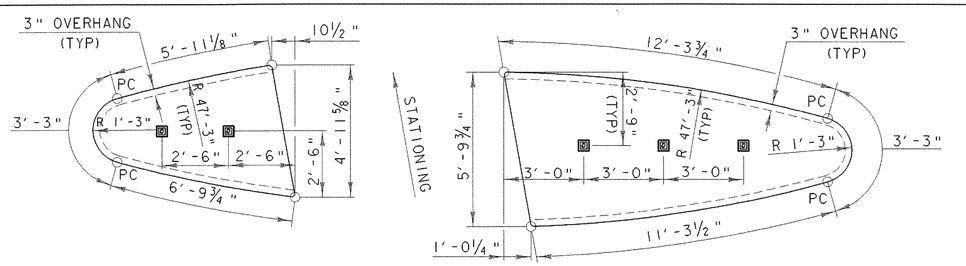
PLOT DATE: 25-SEP-2000
DRAWN BY: K. M. HIGGINS
CHECKED BY: W.B. SYMONDS
SHEET 31 OF 118



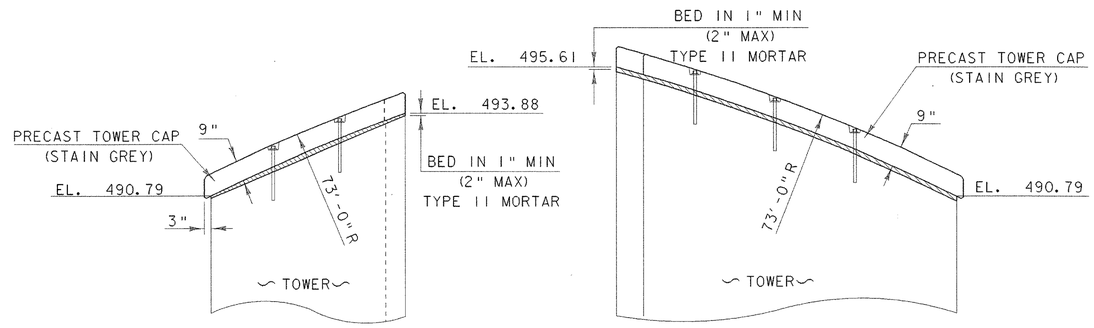

## ABUTMENT #2 TOWER CAP PLAN




## ABUTMENT #2 TOWER CAP ELEVATION

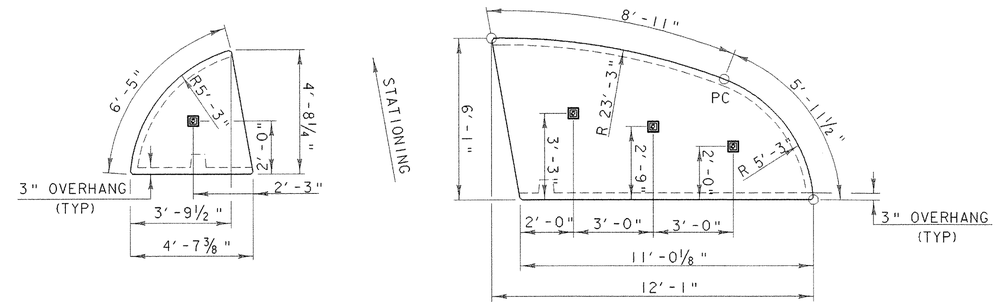



## PIER TOWER CAP PLAN

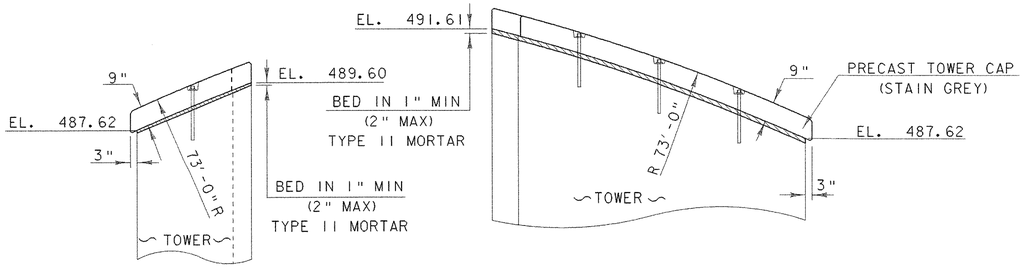



## PIER TOWER CAP ELEVATION

PC = POINT OF CURVATURE




## 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.

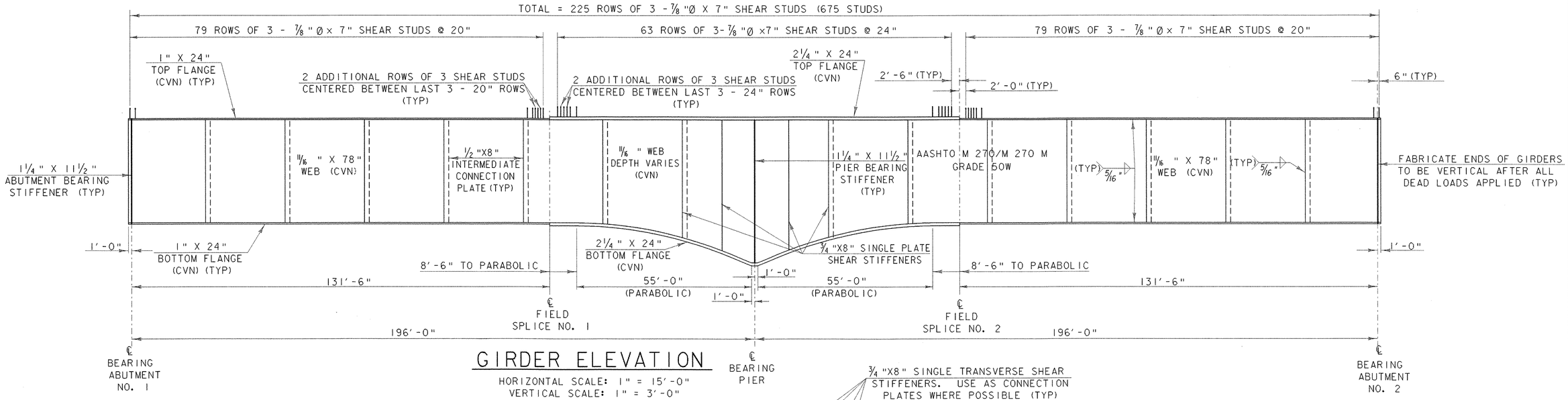
## ALL DETAILS THIS SHEET

SCALE ⅜" = 1'-0

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

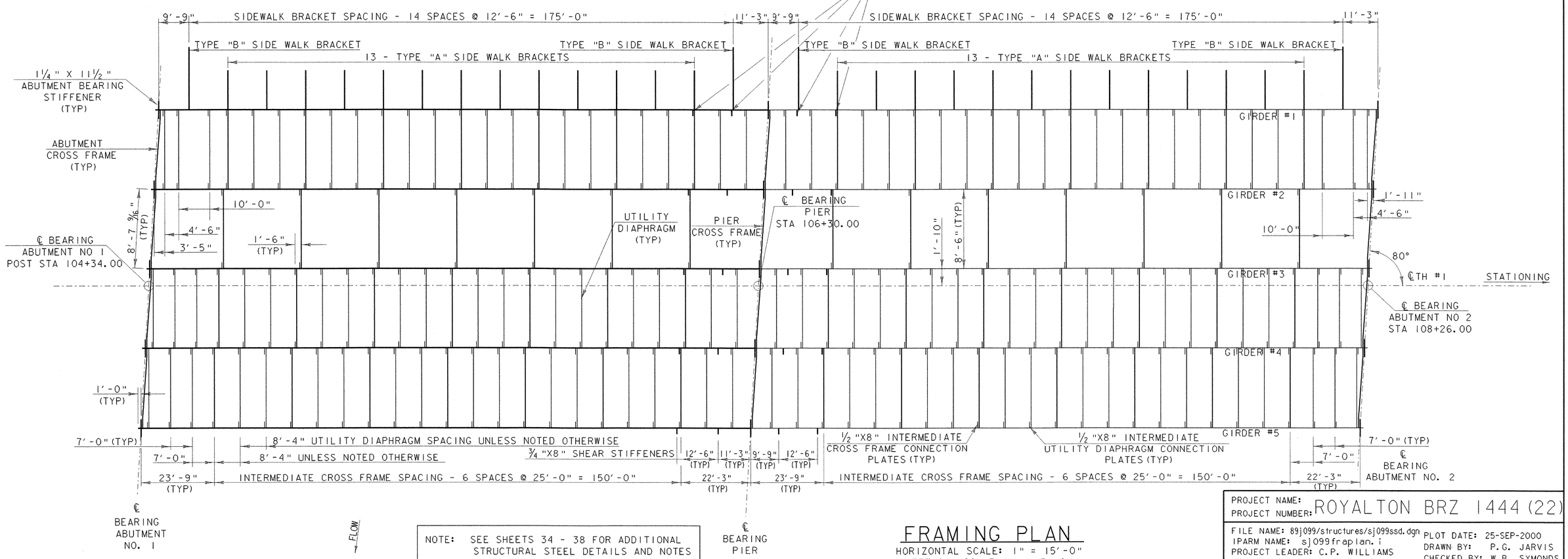
FILE NAME: 89j099/structures/sj099sup2.dgn
IPARM NAME: sj099towcap.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
TOWER CAP DETAILS

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"




## FRAMING PLAN

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

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

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

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 |

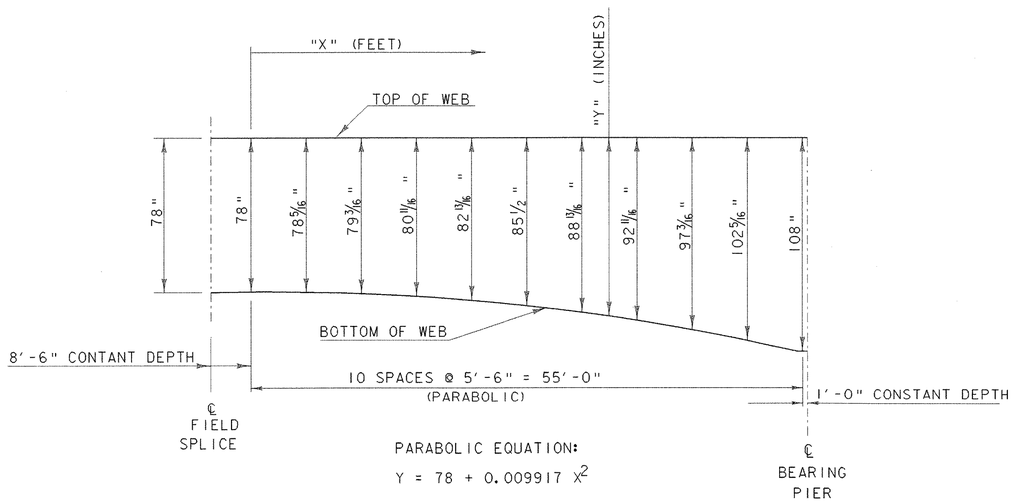
# DEAD LOAD DEFLECTION TABLE

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 5/16" | 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 5/16" | 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 1/16" | 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 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.

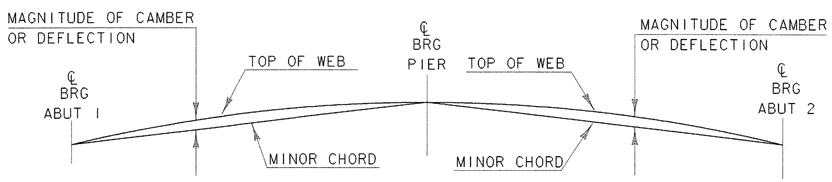
7. THE ENDS OF THE GIRDERS SHALL BE GIVEN A SHOP APPLIED PAINT SYSTEM AND GREASED AFTER INSTALLATION FOR A DISTANCE EQUAL TO THE DEPTH OF THE GIRDER PER SUPPLEMENTAL SPECIFICATION 513. THE ABUTMENT CROSSFRAMES SHALL ALSO BE PAINTED AND GREASED. THE UTILITY SUPPORTS IN THIS AREA DO NOT REQUIRE PAINTING.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



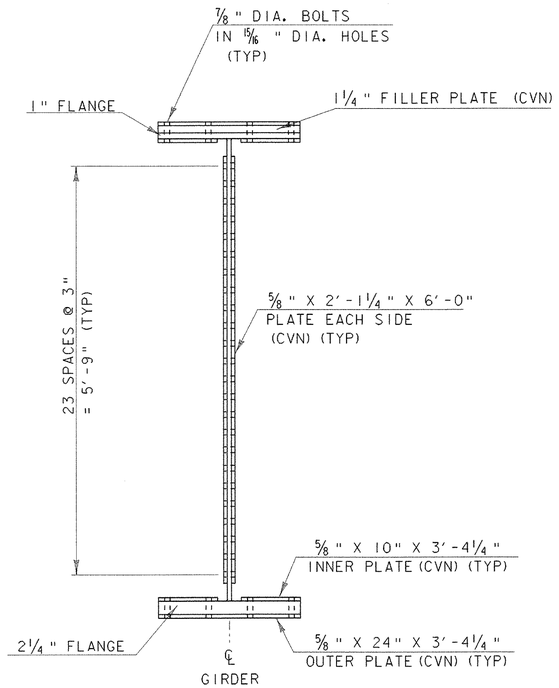

# CHORD DIAGRAM

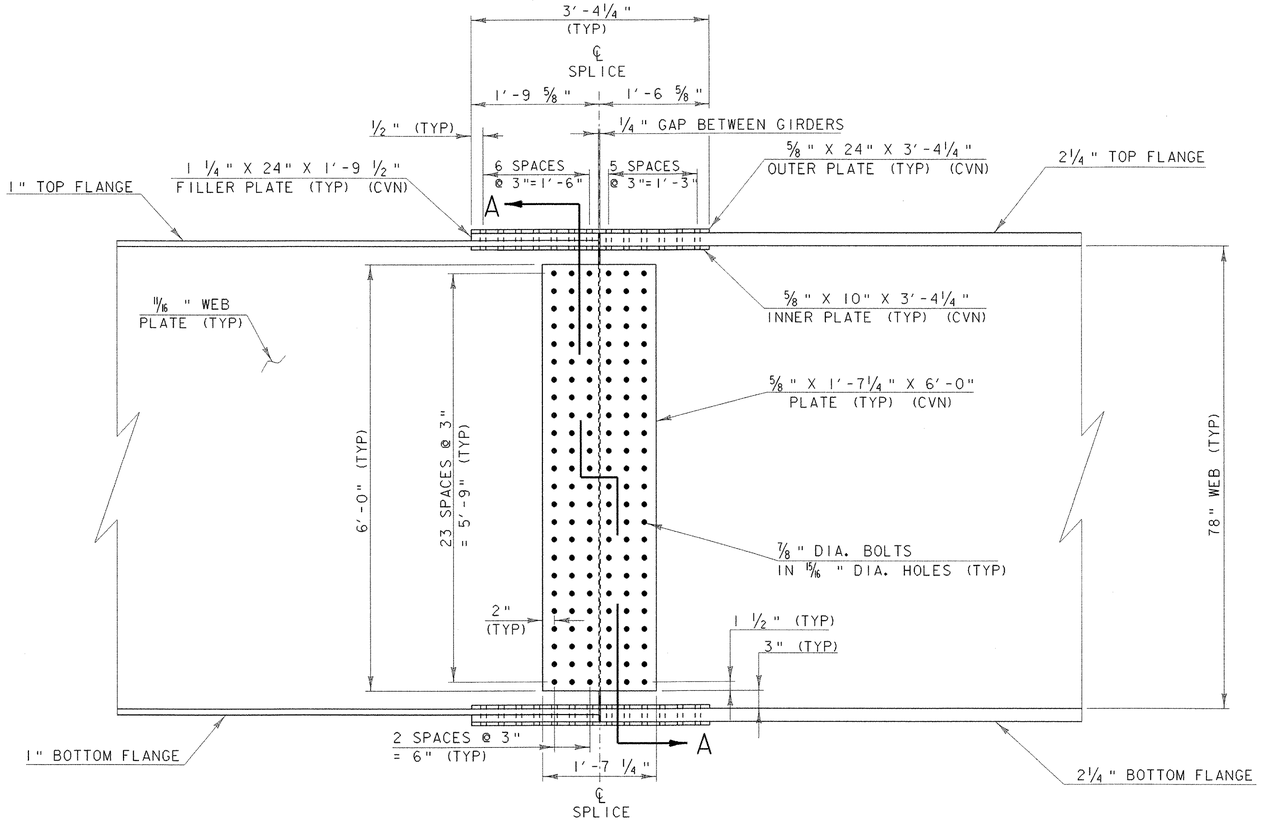
NTS

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

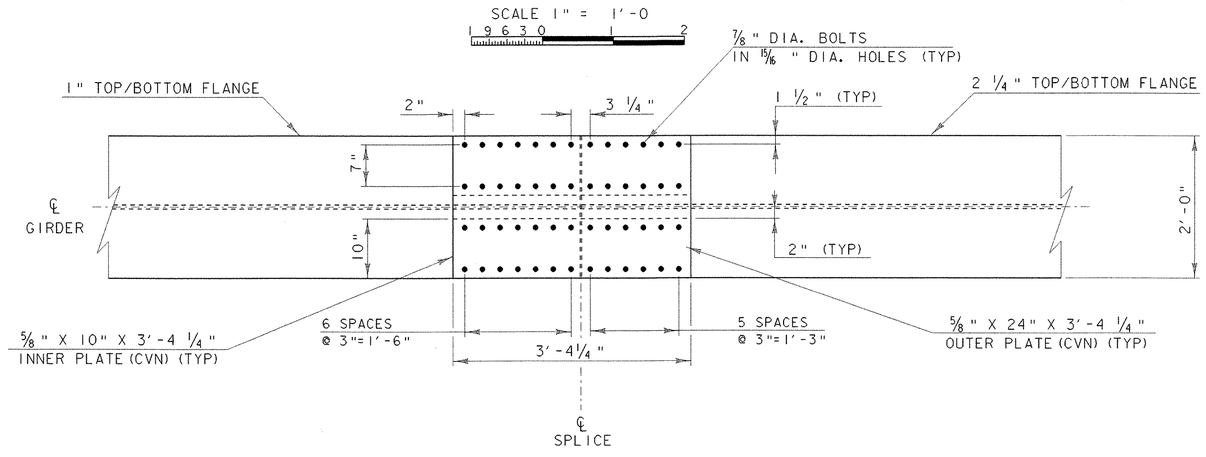
FILE NAME: 89j099/structures/sj099ssd.dgn
IPARM NAME: sj099camber.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
CAMBER AND DEFLECTION TABLES

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

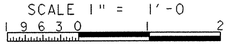


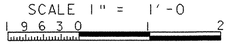

## FIELD SPLICE WEB ELEVATION




## FIELD SPLICE SECTION "A - A"



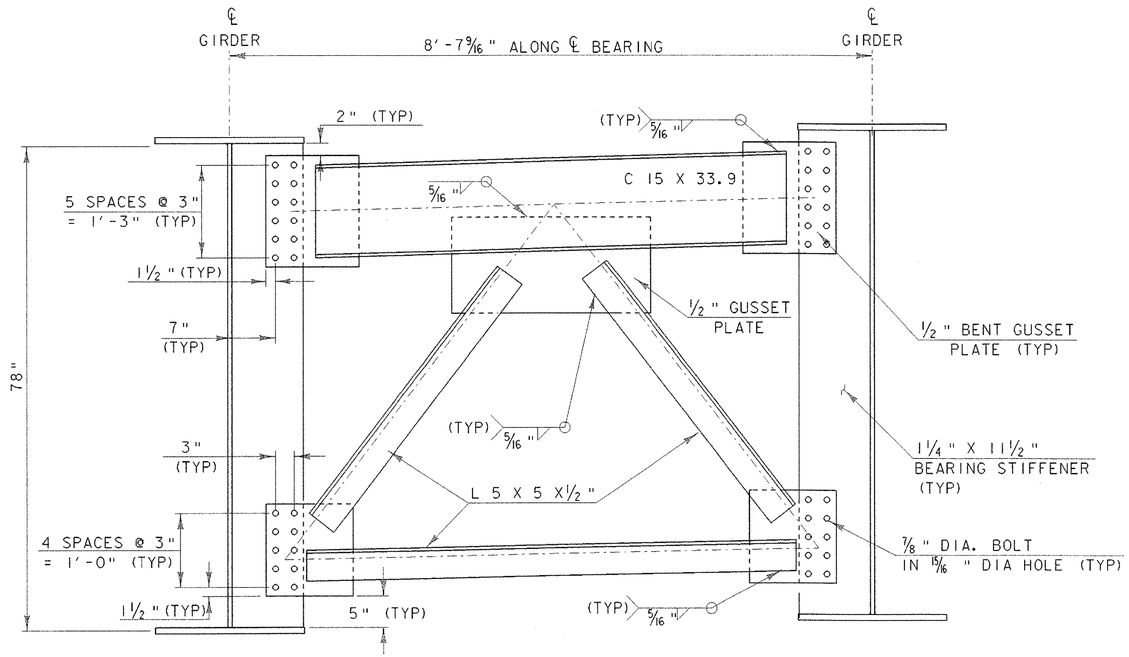

## FIELD SPLICE TYPICAL FLANGE PLAN




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

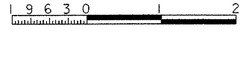
FILE NAME: 89j099/structures/sj099ssd.dgn
IPARM NAME: sj099splice.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
SPLICE DETAILS

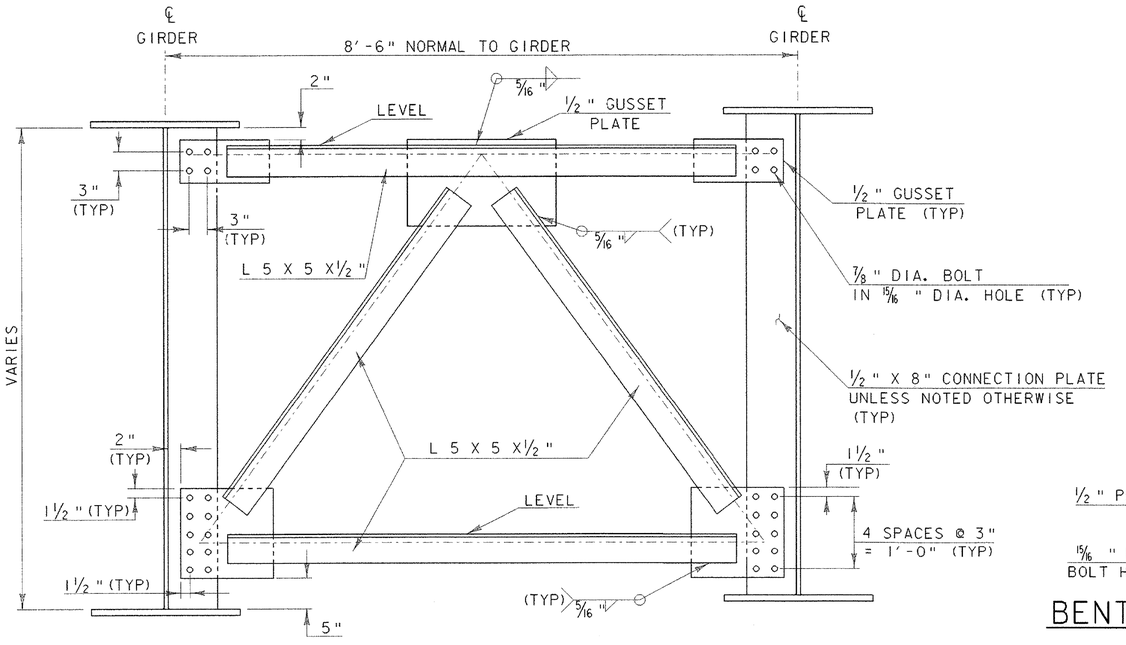
PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: W.B. SYMONDS
SHEET 35 OF 118




## ABUTMENT CROSS FRAME

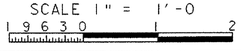
SCALE 1" = 1′-0

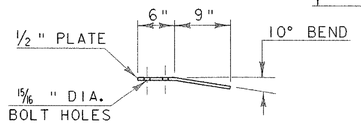



## INTERMEDIATE CROSS FRAME

SCALE 1" = 1′-0

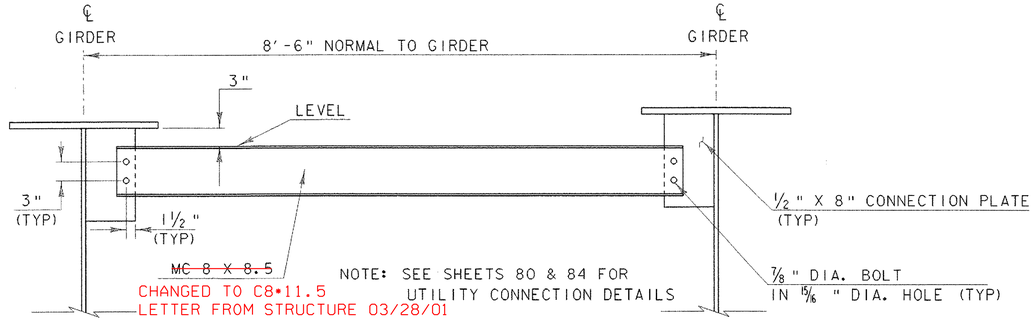



## BENT GUSSET PLATE DETAIL

SCALE 1" = 1′-0

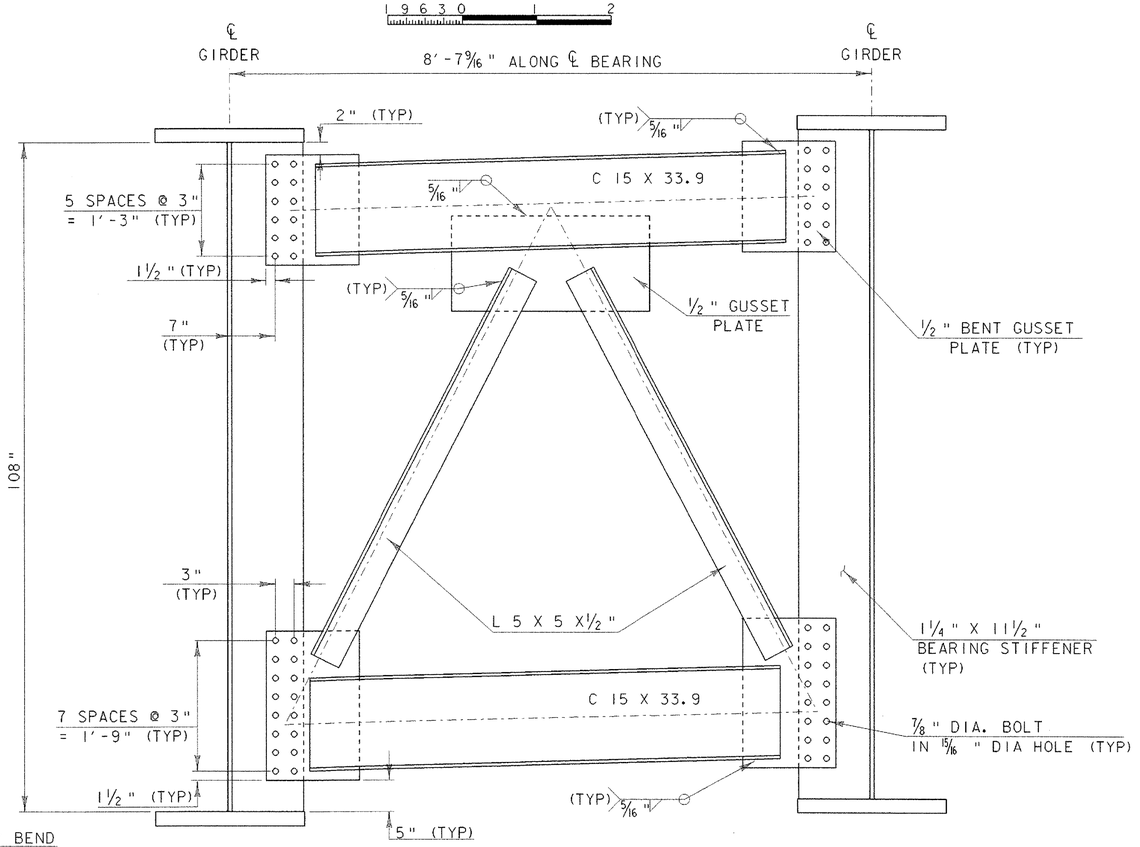



## UTILITY DIAPHRAGM

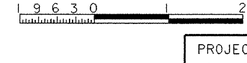
SCALE 1" = 1′-0




## PIER CROSS FRAME

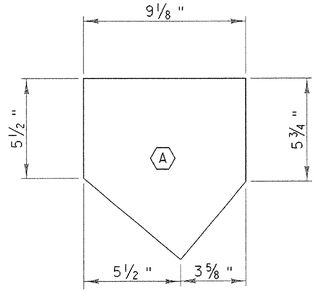
SCALE 1" = 1′-0

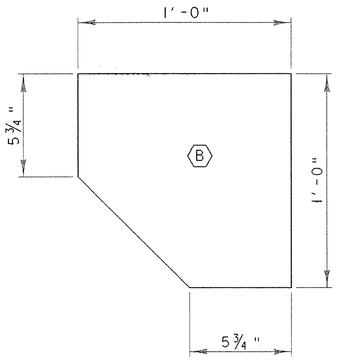


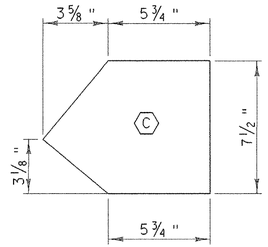

PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444(22)

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

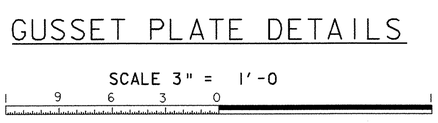


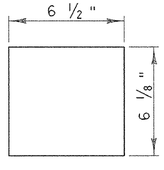




## GUSSET PLATE DETAILS

SCALE 3" = 1'-0

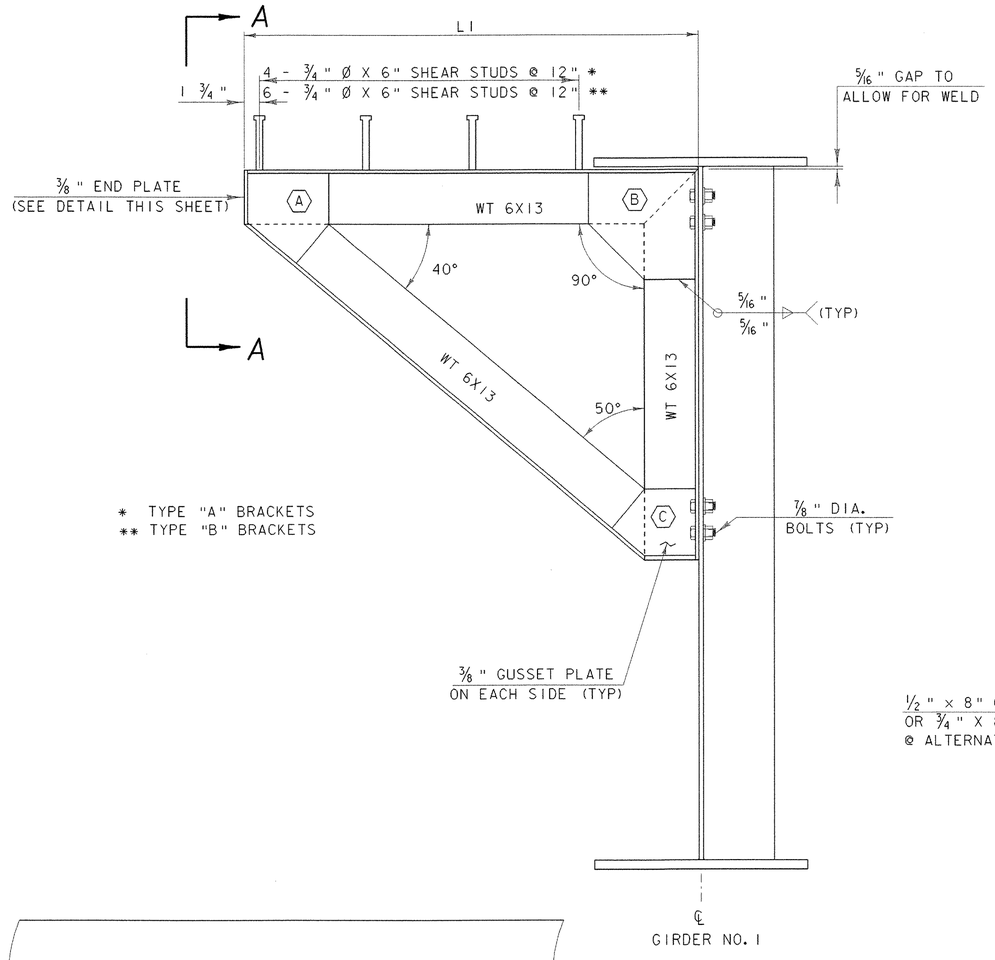


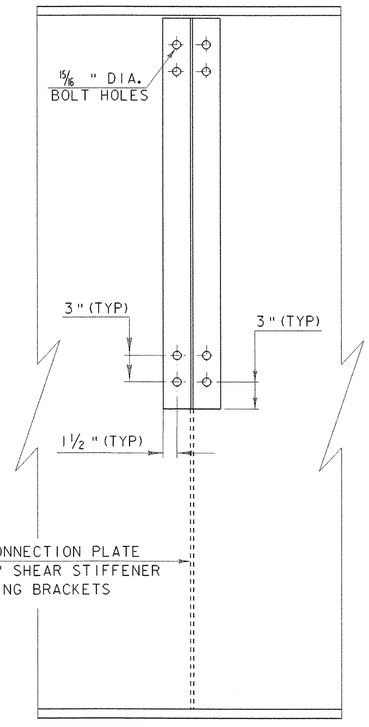



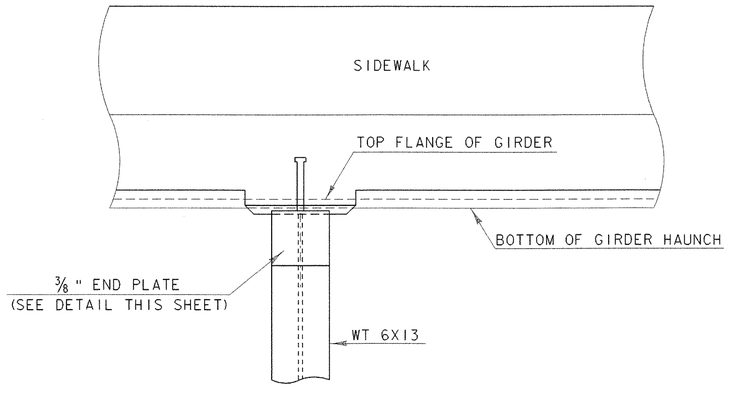

## END PLATE DETAILS

SCALE 3" = 1'-0



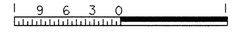

## SECTION A-A

SCALE 1 1/2 " = 1'-0




## BRACKET DETAILS

SCALE 1 1/2 " = 1'-0

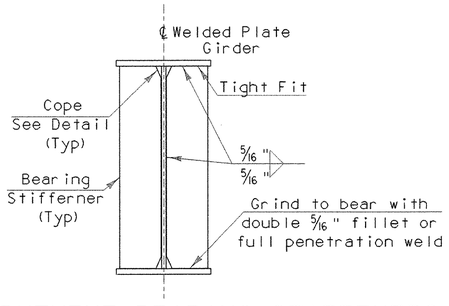



| WT 6 X 13 LENGTH SCHEDULE | |
|---|---|
| BRACKET TYPE | L1 |
| "A" (4 REQUIRED) | 6'-9" |
| "B" (26 REQUIRED) | 4'-3" |

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

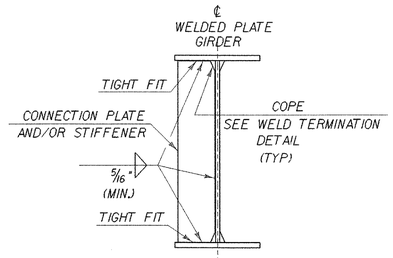
FILE NAME: 89j099/structures/sj099ssd.dgn
IPARM NAME: sj099bracket.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: R.S. YOUNG
BRACKET DETAILS

PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: W.B. SYMONDS
SHEET 37 OF 118

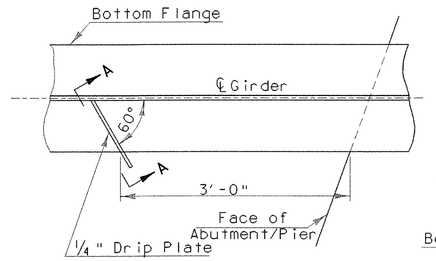



## ABUTMENT BEARING STIFFENERS FOR WELDED PLATE GIRDERS

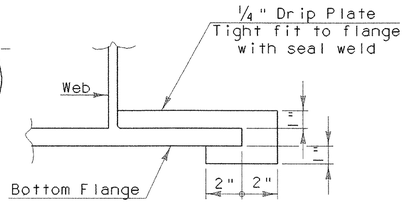
NTS




## *INTERMEDIATE CONNECTION PLATES AND/OR STIFFENERS FOR WELDED PLATE GIRDERS*

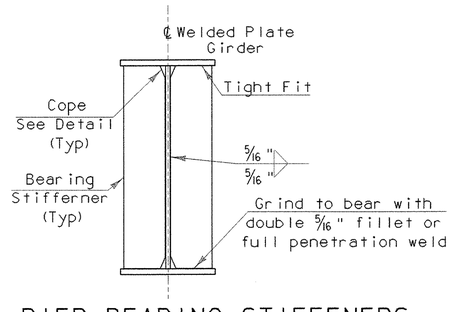



PLAN DRIP PLATE



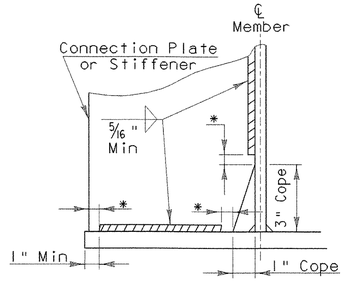

SECTION A - A

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



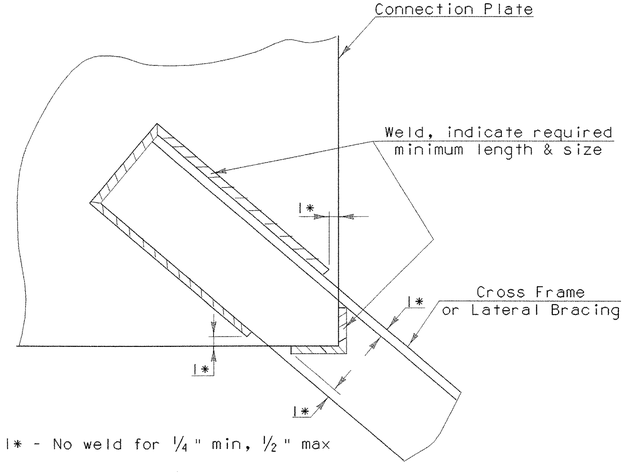

## PIER BEARING STIFFENERS FOR WELDED PLATE GIRDERS

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




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

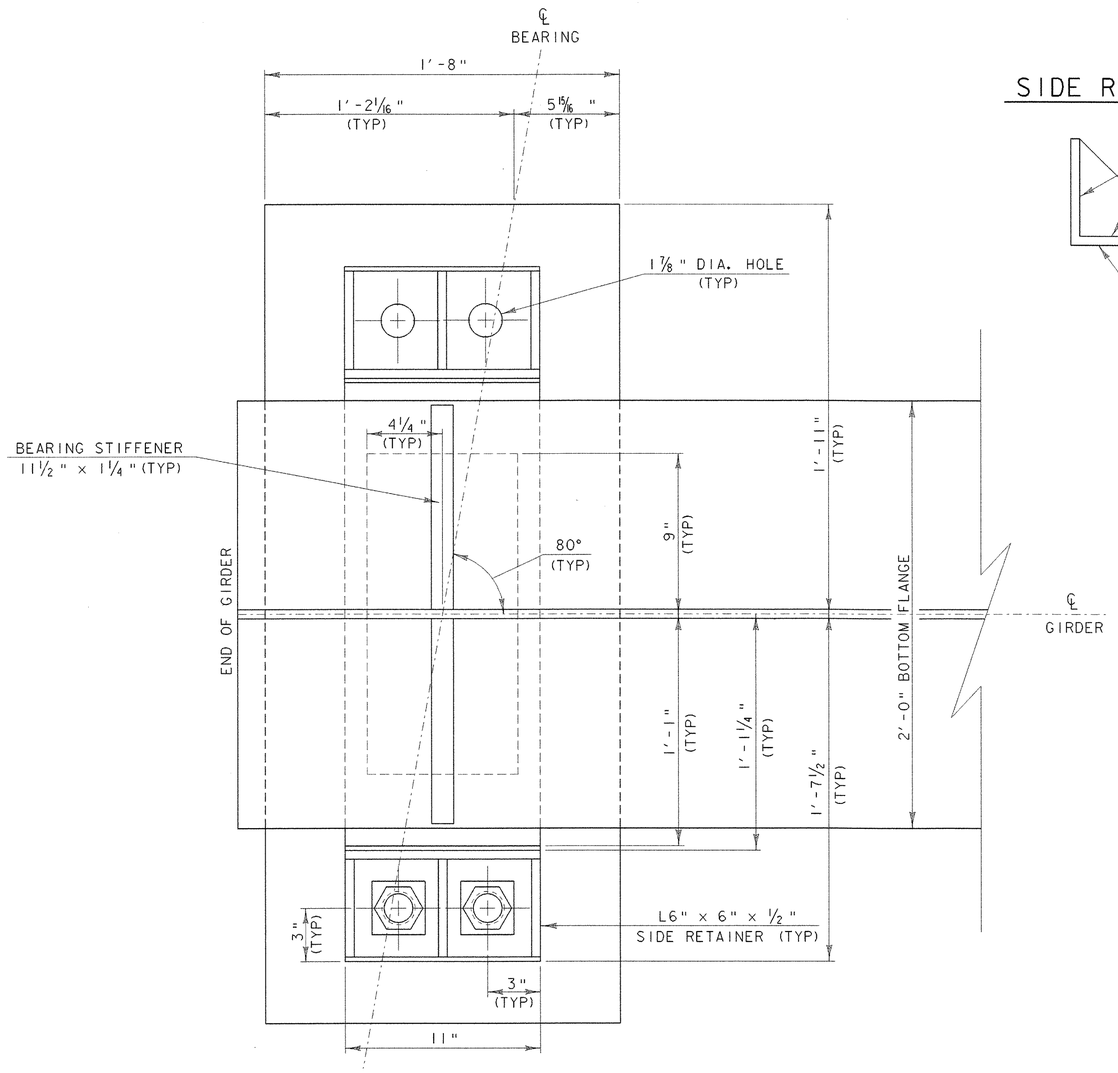
## WELD LOCATION DETAIL AT CROSS FRAMES AND LATERAL BRACING

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

FILE NAME: 89j099/structures/sj099ssd.dgn
IPARM NAME: sj099ssd1.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
MISCELLANEOUS STEEL DETAILS

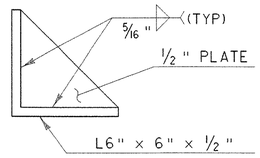
PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: W.B. SYMONDS
SHEET 38 OF 118

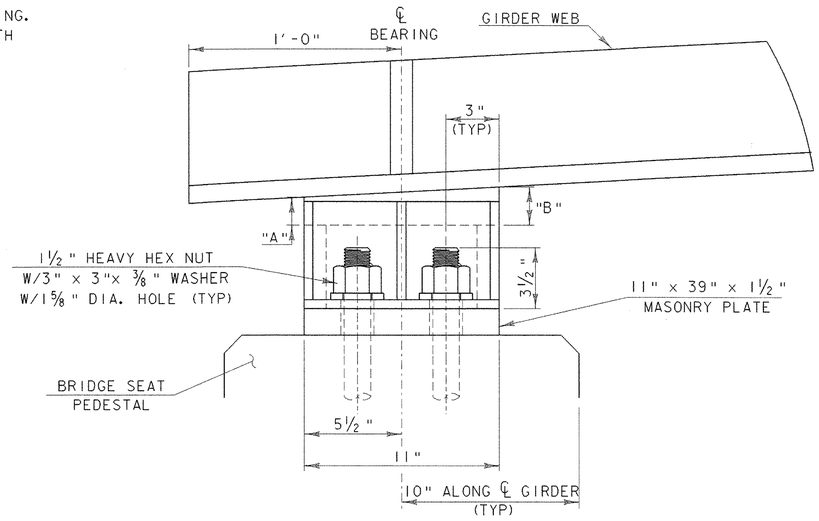
NOTE: THE DETAILS SHOWN ARE FOR ABUTMENT #1 EXPANSION BEARING. THESE DETAILS SHALL APPLY FOR ABUTMENT #2 BEARING WITH DIMENSIONS OPPOSITE HAND




PLAN VIEW

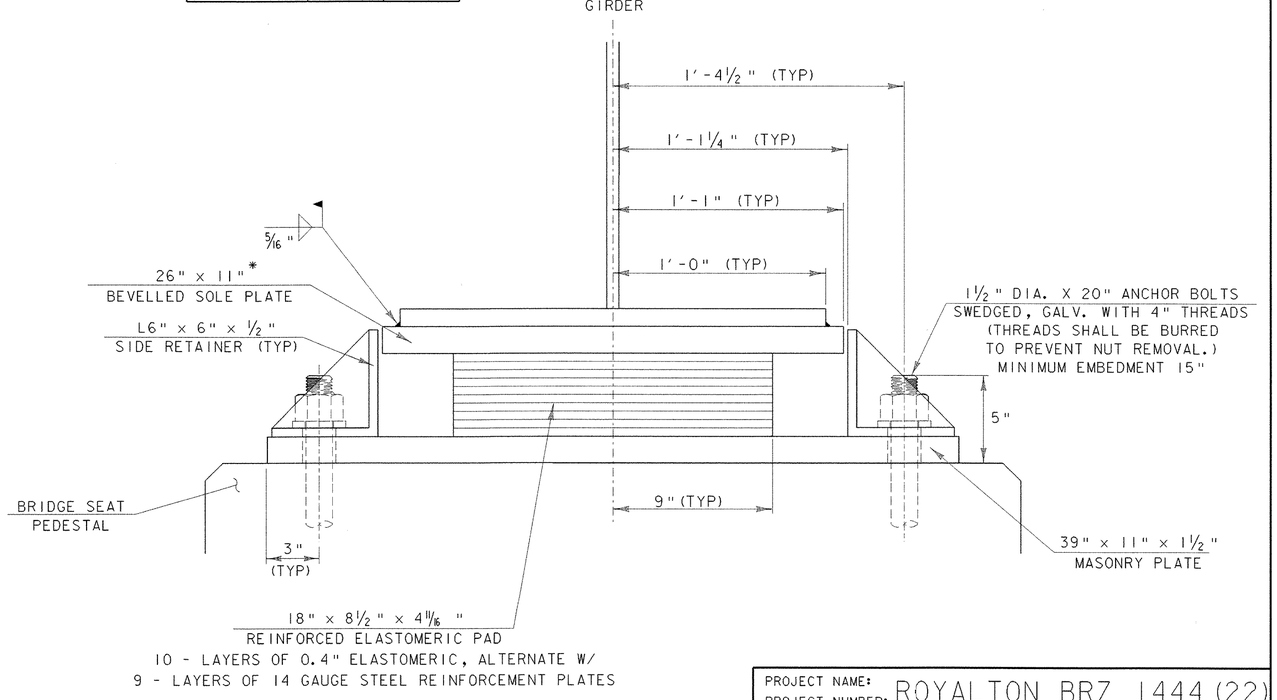
## SIDE RETAINER




SIDE ELEVATION

| * BEVEL PLATE THICKNESS | | |
|---|---|---|
| | "A" | "B" |
| ABUTMENT #1 | 1 1/2" | 1 13/16" |
| ABUTMENT #2 | 1 1/2" | 1 5/8" |




FRONT ELEVATION

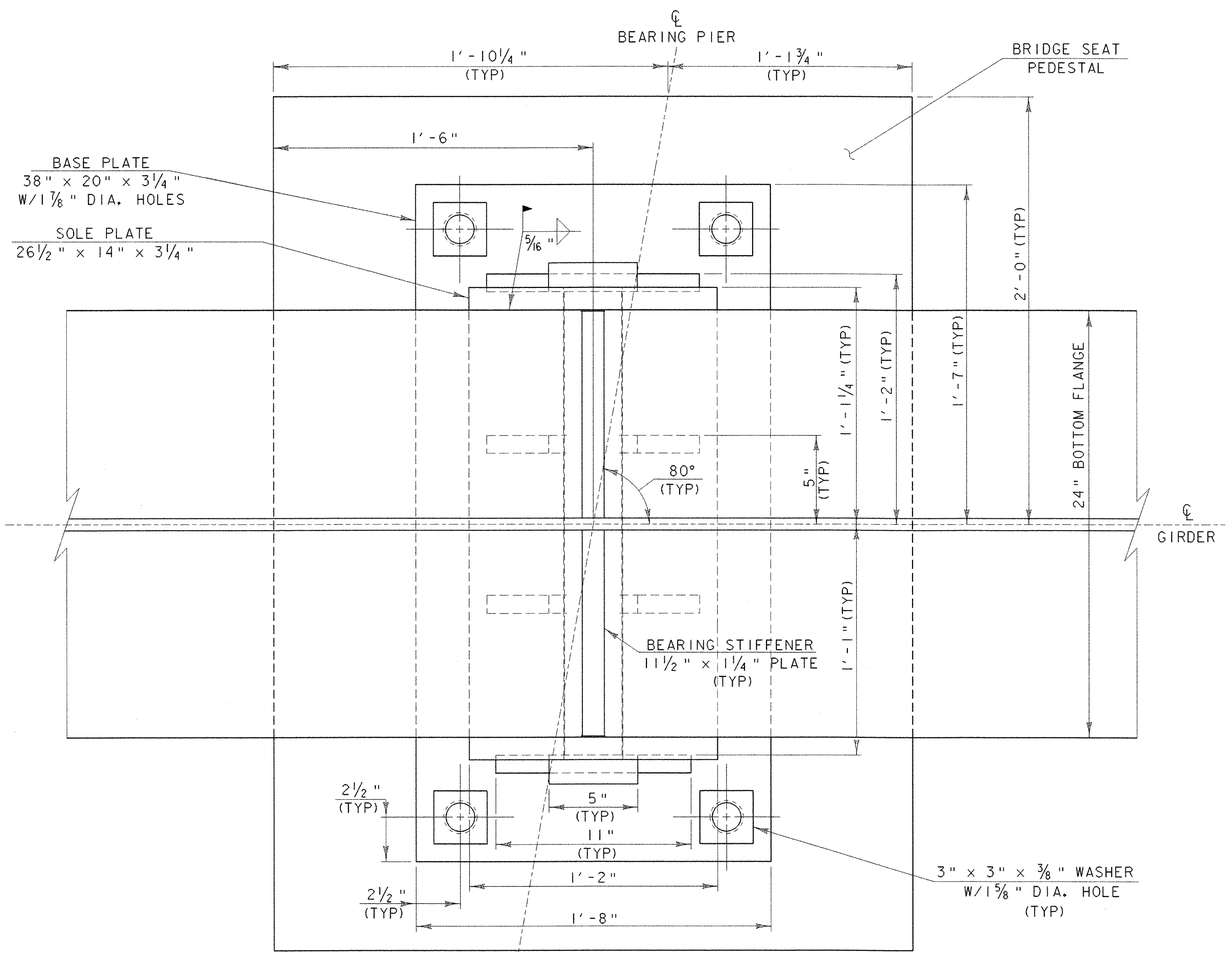
SCALE 3" = 1'-0
9 6 3 0

SEE SHEET 41 FOR BEARING NOTES

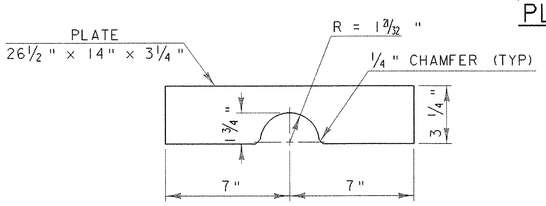
PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444(22)

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

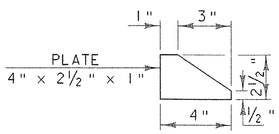
PLOT DATE: 25-SEP-2000
DRAWN BY: P.R. ROWE
CHECKED BY: W.B. SYMONDS
SHEET 39 OF 118




PLAN VIEW

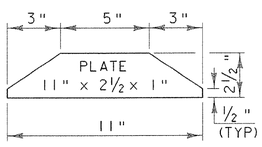



SOLE PLATE DETAIL



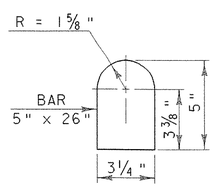

INNER COLUMN BRACE DETAIL

(4 REQUIRED)

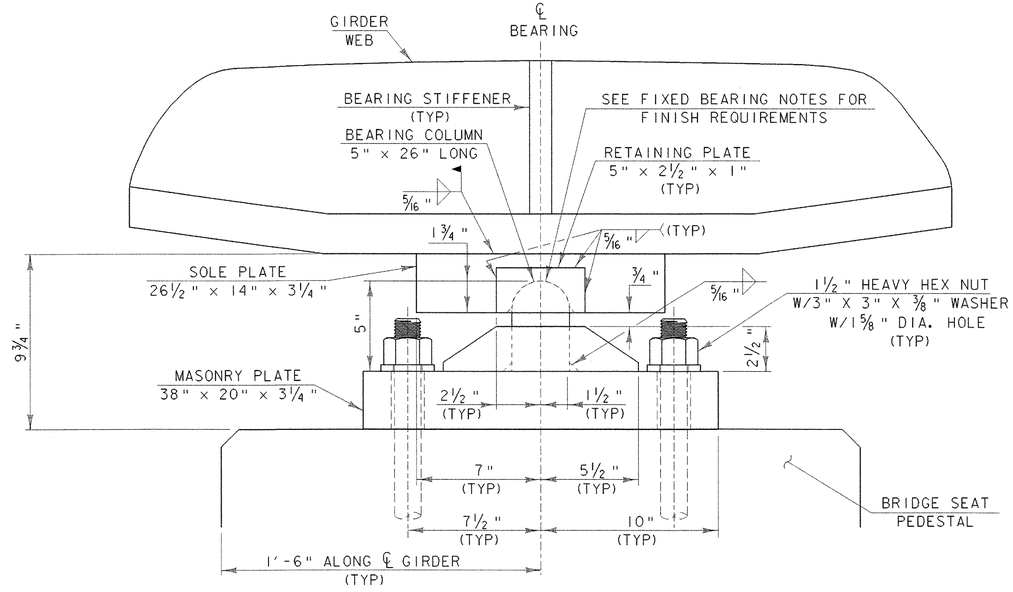



OUTER COLUMN BRACE DETAIL

(2 REQUIRED)




BEARING COLUMN DETAIL




SIDE ELEVATION




FRONT ELEVATION

SCALE 3" = 1'-0

SEE SHEET 41 FOR BEARING NOTES.

PROJECT NAME:
PROJECT NUMBER: ROYALTON 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.

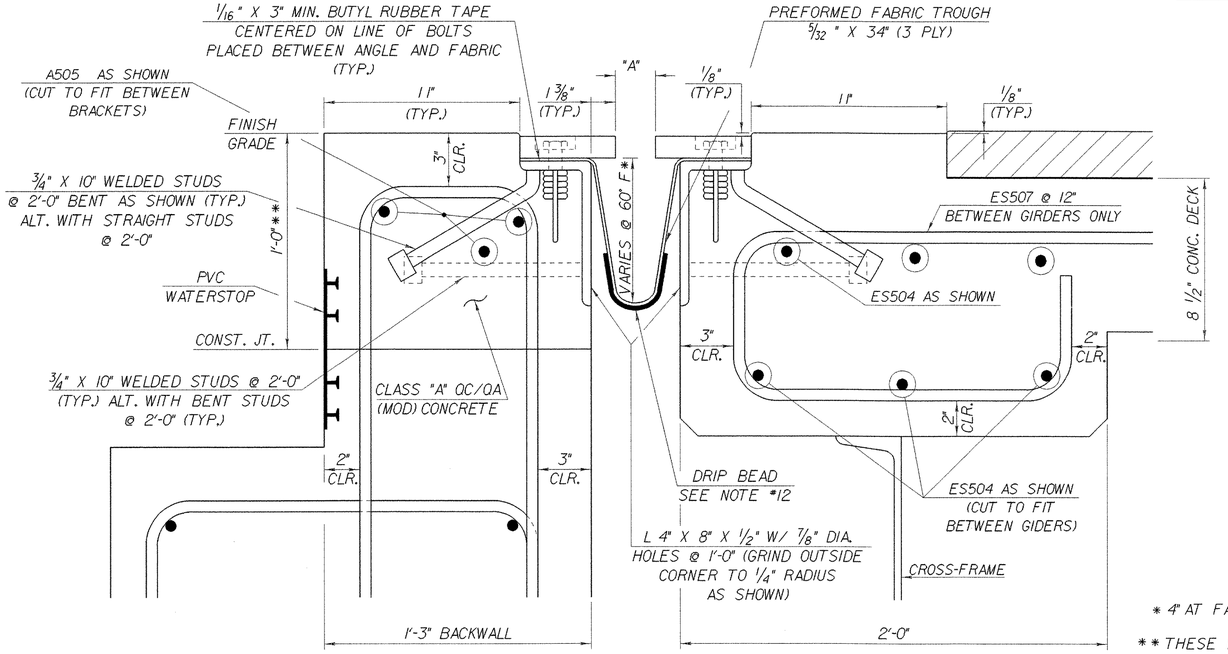
9. THE BEARING TOLERANCES SHALL MEET THOSE GIVEN IN AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION DATED 1996 AND ITS LATEST REVISIONS, DIVISION II SECTION 18. THE CONTACT SUFACES OF THE CURVED BEARING SURFACES OF THE BEARING COLUMN AND SOLE PLATES SHALL MEET THE TOLERANCES AND FINISH REQUIREMENTS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

10. THE CURVED CONTACT SURFACES SHALL NOT BE METALIZED.

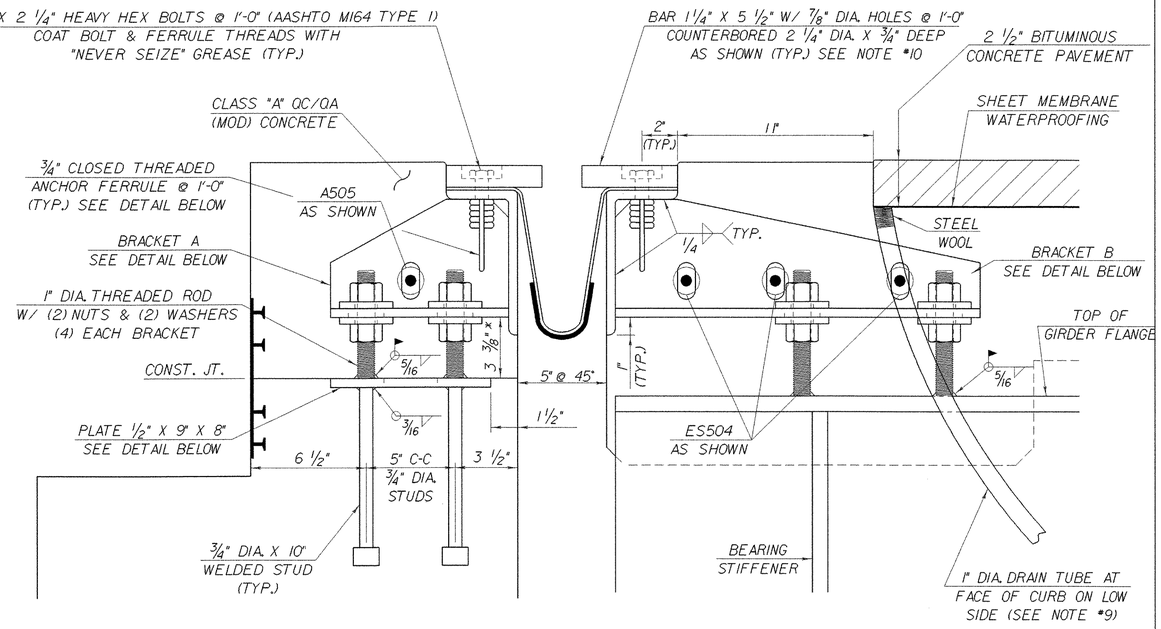
PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444(22)

FILE NAME:89j099/structures/sj099bearing.dgn
IPARM NAME: sj099bearingnotes.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: R.S. YOUNG
BEARING NOTES

PLOT DATE: 25-SEP-2000
DRAWN BY: R.S. YOUNG
CHECKED BY: W.B. SYMONDS
SHEET 41 OF 118




## TYPICAL SECTION BETWEEN GIRDERS




## TYPICAL SECTION AT GIRDERS

* 4" AT FASCIA TO 12" AT DOWNSPOUT

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

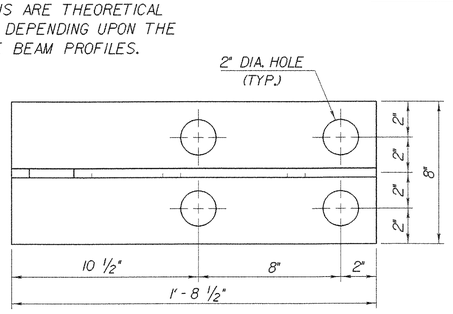
1. DETAILS ON THIS SHEET ARE FOR ITEM 516.10 "BRIDGE EXPANSION JOINT". THE UNIT BID PRICE FOR THIS ITEM SHALL INCLUDE THE MATERIAL, FABRICATION AND INSTALLATION OF THE CURB AND SIDEWALK PLATES.
2. PREFORMED FABRIC MATERIAL SHALL BE CONTINUOUS AND SHALL CONFORM TO SUBSECTION 707.07.
3. BUTYL RUBBER TAPE SHALL CONFORM TO AASHTO SPECIFICATION M-198, TYPE 11.
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" |

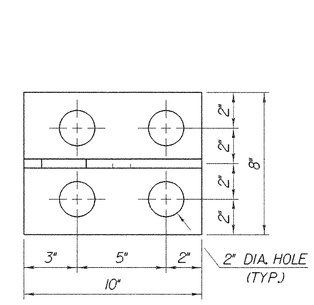
"A" IS THE SETTING BEFORE DECK HAS BEEN PLACED.



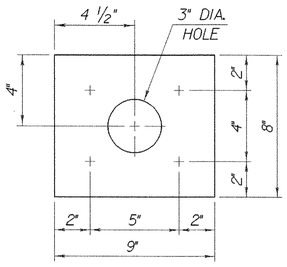
## ANCHOR FERRULE DETAIL



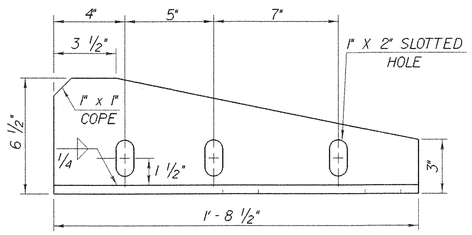

## BRACKET B PLAN



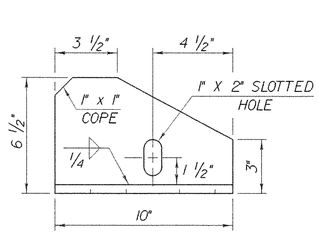

## BRACKET A PLAN



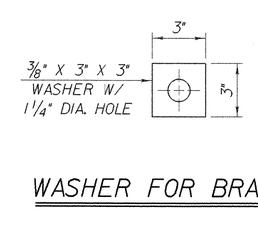

## PLATE PLAN




## BRACKET B ELEVATION




## BRACKET A ELEVATION




## WASHER FOR BRACKET

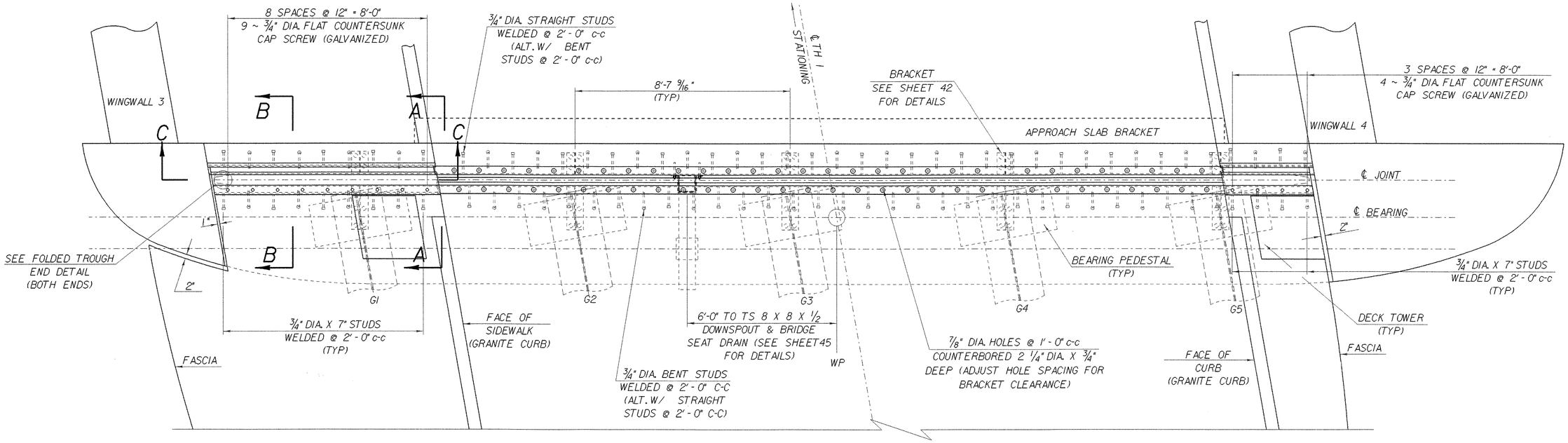
ALL PLATES 1/2"

ALL DETAILS THIS SHEET
SCALE: 3" = 1'-0" (NORMAL TO ℄ BEARING)
1 9 6 3 0 1

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

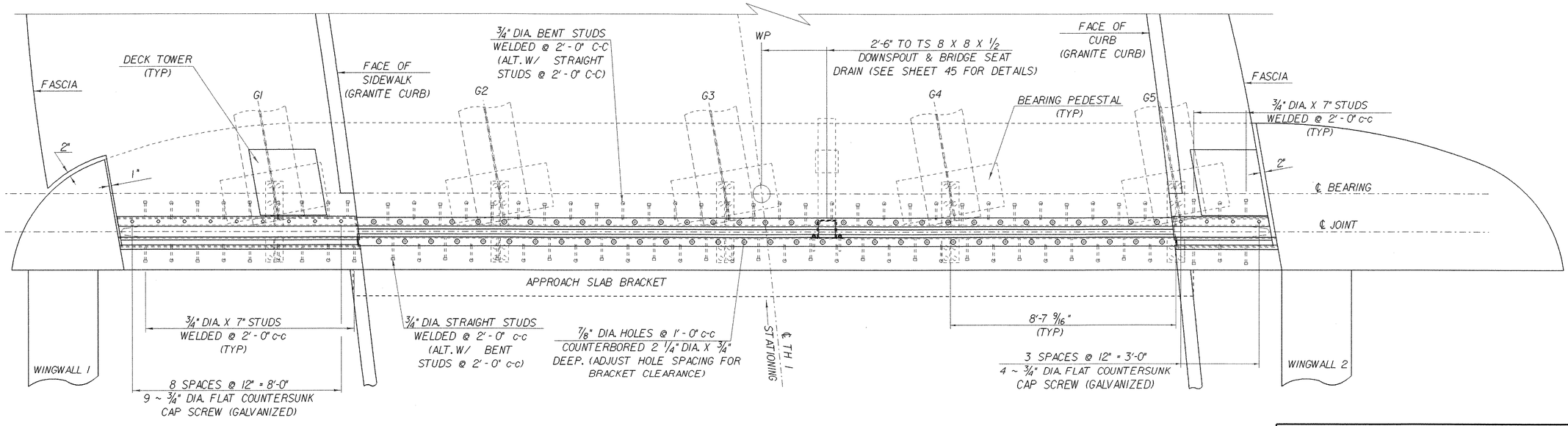
FILE NAME: 89j099/structures/sj099joint.dgn
IPARM NAME: sj099expl.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
EXPANSION JOINT DETAILS

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



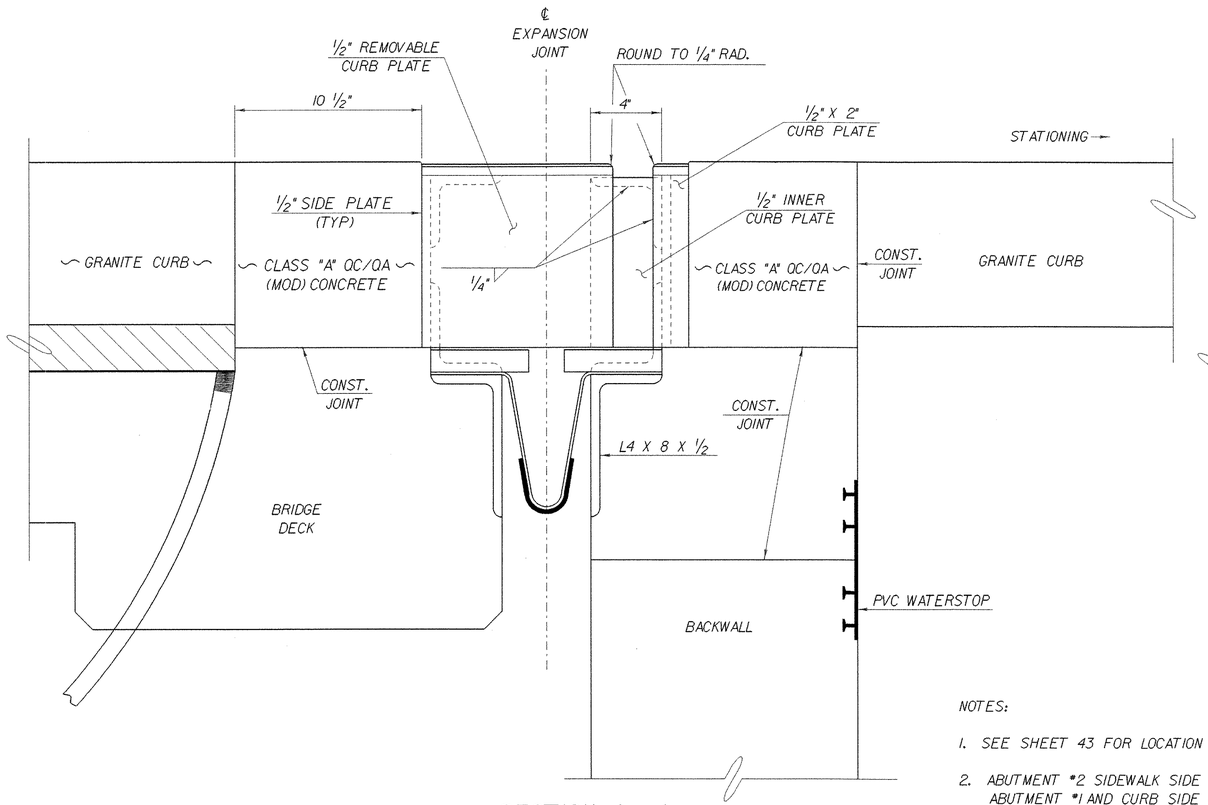

## EXPANSION JOINT ABUTMENT NO. 1

SCALE 1/2" = 1'-0

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

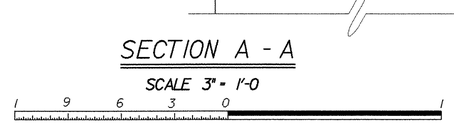
FILE NAME: 89j099/structures/sj099joint.dgn
IPARM NAME: sj099exp2.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
EXPANSION JOINT PLAN

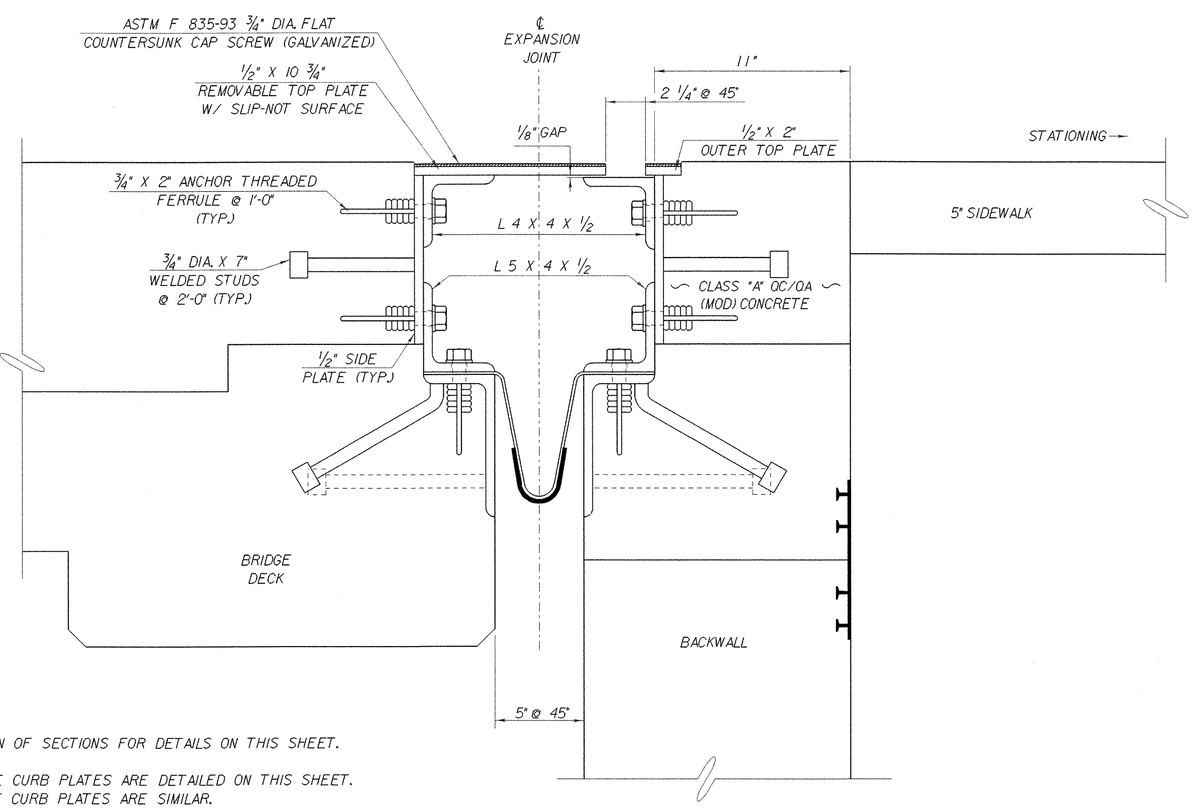
PLOT DATE: 25-SEP-2000
DRAWN BY: K.M. HIGGINS
CHECKED BY: W.B. SYMONDS
SHEET 43 OF 118




## SECTION A - A

SCALE 3" = 1'-0



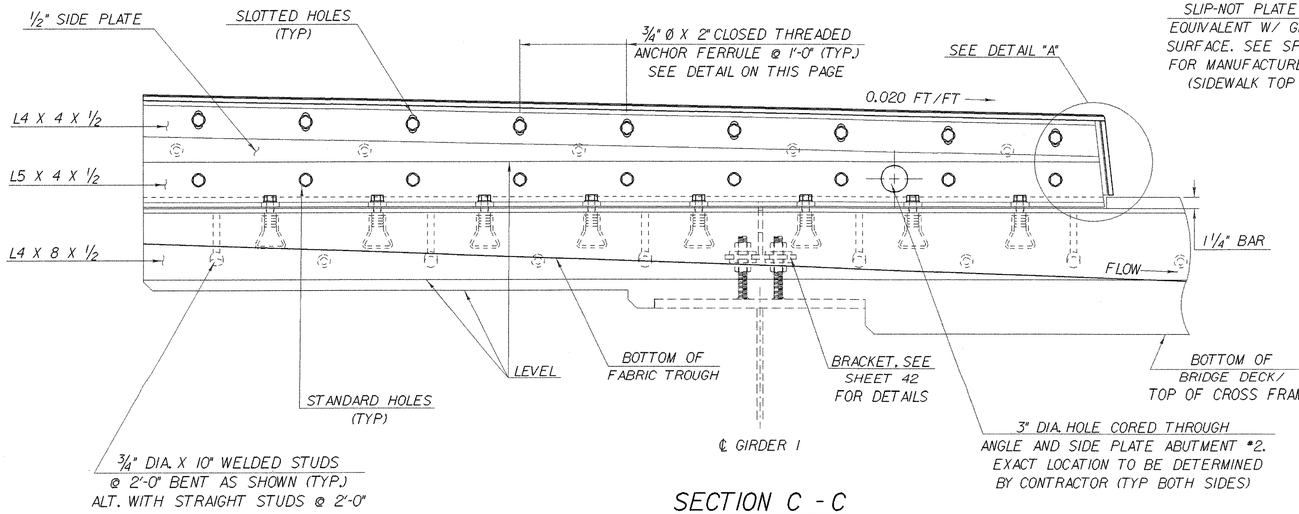

## SECTION B - B

SCALE 3" = 1'-0



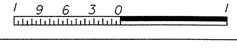

NOTES:

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.

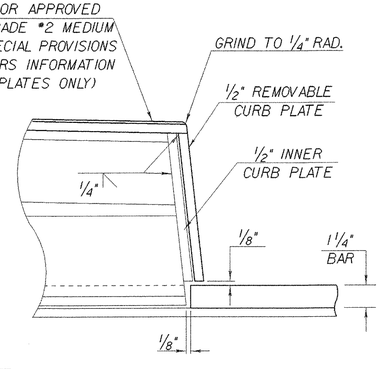



## SECTION C - C

SCALE 1 1/2" = 1'-0



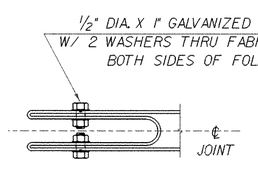

SLIP-NOT PLATE OR APPROVED EQUIVALENT W/ GRADE #2 MEDIUM SURFACE. SEE SPECIAL PROVISIONS FOR MANUFACTURERS INFORMATION (SIDEWALK TOP PLATES ONLY)



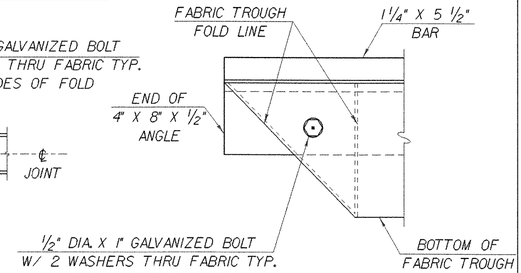

## DETAIL "A"

SCALE 3" = 1'-0




## PLAN



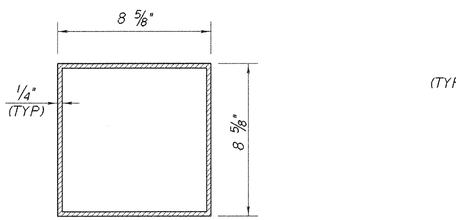

## ELEVATION
## FOLDED TROUGH END DETAILS

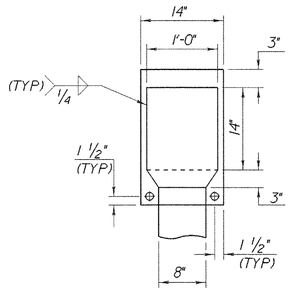
NOT TO SCALE

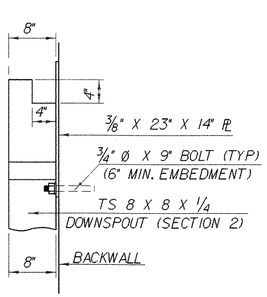
PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444 (22)

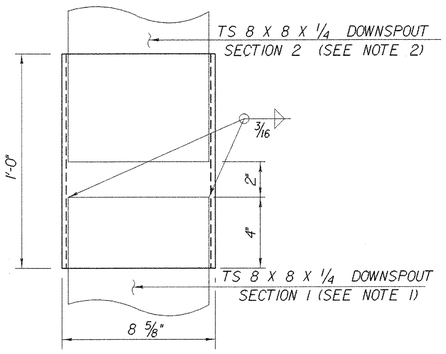
FILE NAME: 89j099/structures/sj099joint.dgn
IPARM NAME: sj099exp3.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
SIDEWALK & CURB PLATE DETAILS

PLOT DATE: 25-SEP-2000
DRAWN BY: K.M. HIGGINS
CHECKED BY: W.B. SYMONDS
SHEET 44 OF 118



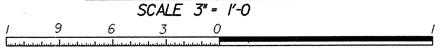



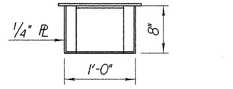




## SLEEVE DETAILS

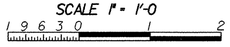
SCALE 3" = 1'-0




## HOPPER DETAILS

SCALE 1" = 1'-0

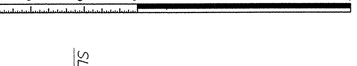


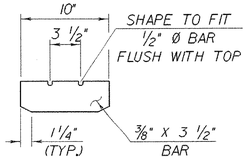




## SUBSTRUCTURE DRAIN PLAN

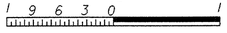
SCALE 1 1/2" = 1'-0

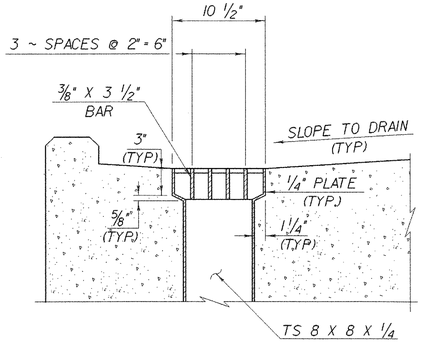



## BAR DETAIL FOR SUBSTRUCTURE DRAIN GRATE

SCALE 1 1/2" = 1'-0

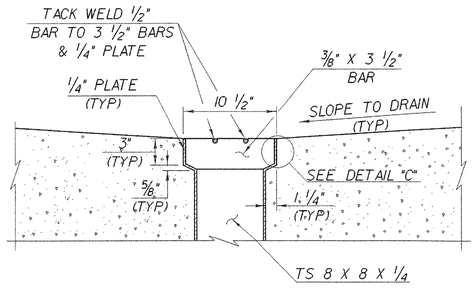



## SECTION A - A

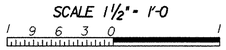
SCALE 1 1/2" = 1'-0

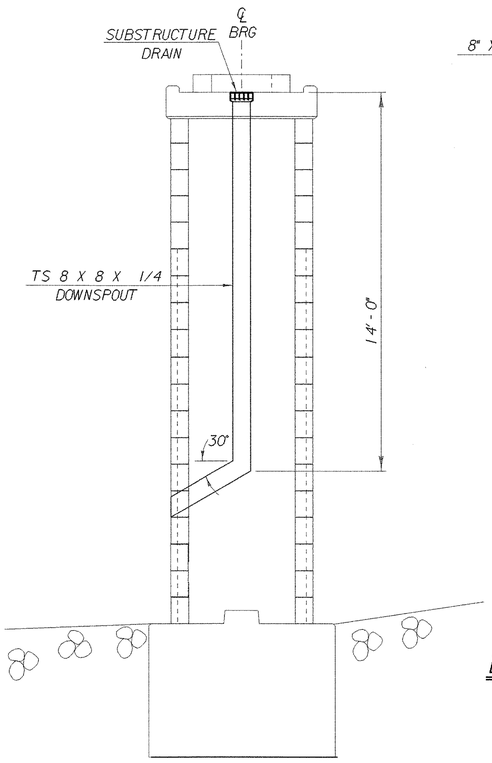



## SECTION B - B

SCALE 1 1/2" = 1'-0

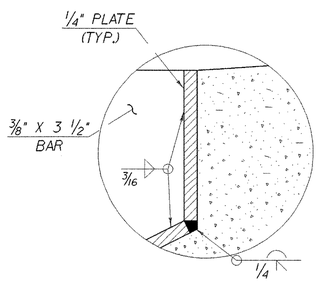



## TYPICAL SECTION THROUGH DOWNSPOUT @ PIER

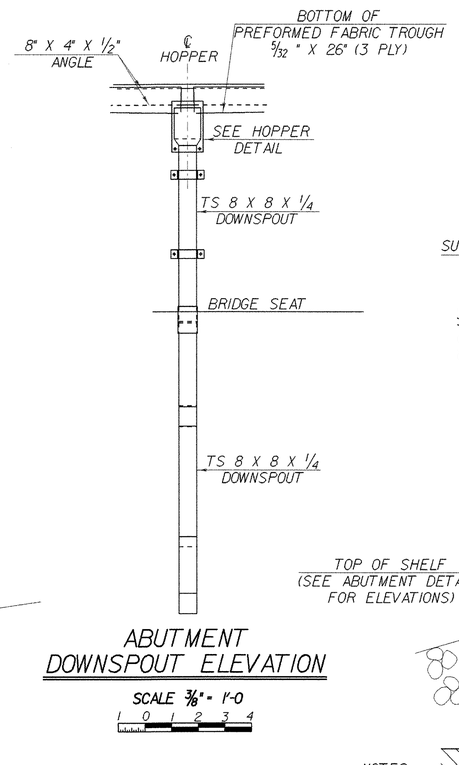
SCALE 3/8" = 1'-0




## DETAIL "C"

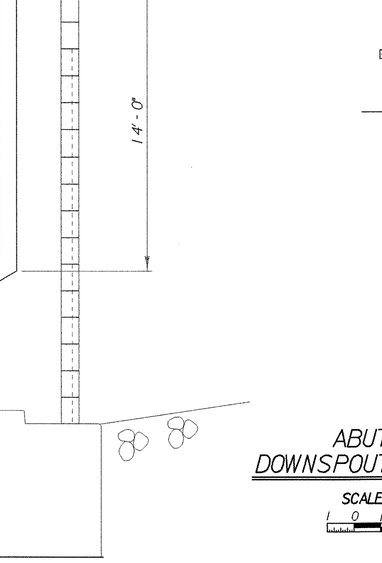
NTS




## ABUTMENT DOWNSPOUT ELEVATION

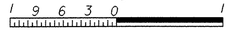
SCALE 3/8" = 1'-0

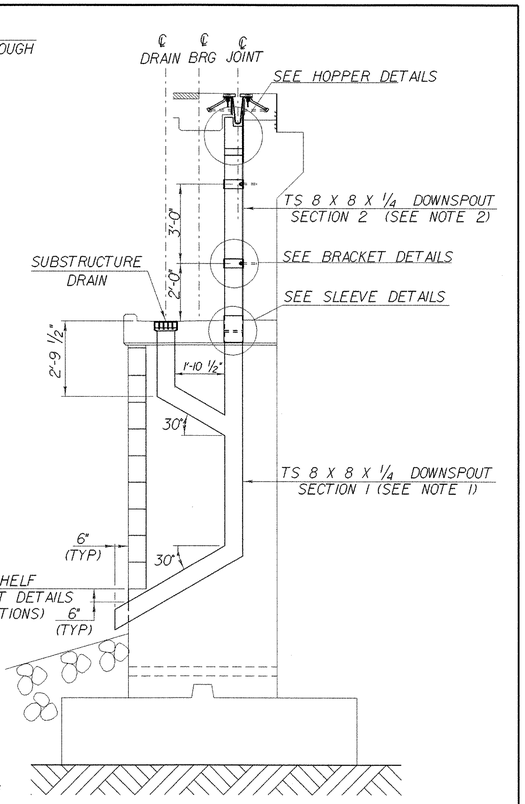



## BLOCKOUT DETAILS

SCALE 1 1/2" = 1'-0



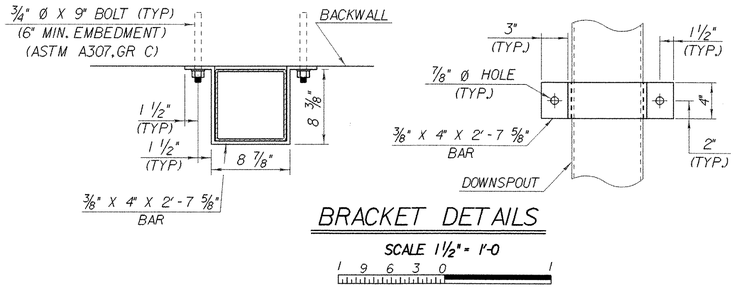

NOTES:

1. WELD SLEEVE TO DOWNSPOUT SECTION 1 AND CAST INTO ABUTMENT.
2. SLIDE DOWNSPOUT SECTION 2 INTO SLEEVE AND ADJUST TO DESIRED ELEVEVATION.

## TYPICAL SECTION THROUGH DOWNSPOUT @ ABUTMENT NO. 2 (ABUTMENT NO. 1 SIMILAR)

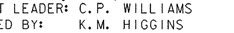
SCALE 3/8" = 1'-0



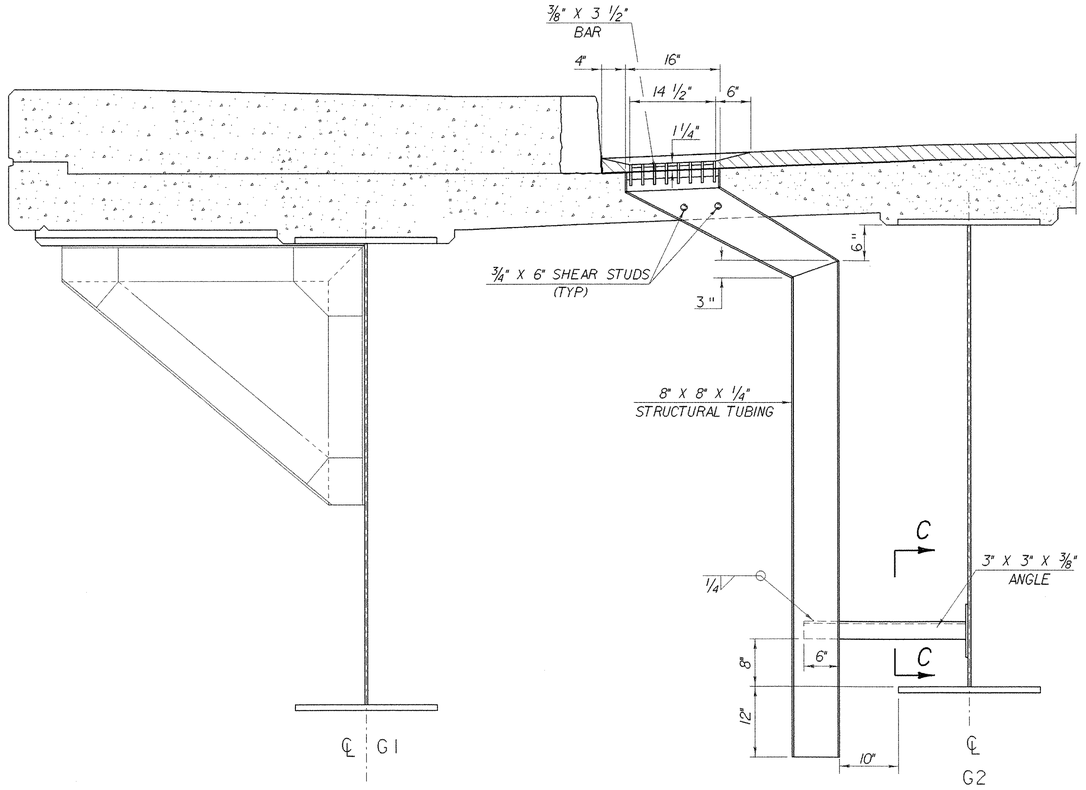




## BRACKET DETAILS

SCALE 1 1/2" = 1'-0

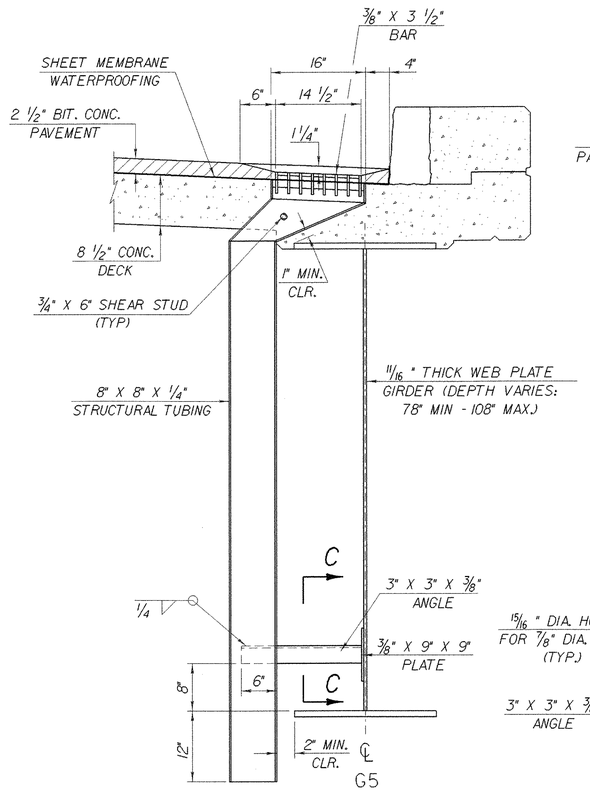



| | |
|---|---|
| PROJECT NAME: | |
| PROJECT NUMBER: | ROYALTON BRZ 1444 (22) |
| FILE NAME: 89j099/structures/sj099joint.dgn | PLOT DATE: 25-SEP-2000 |
| IPARM NAME: sj099hop.i | DRAWN BY: KMH |
| PROJECT LEADER: C.P. WILLIAMS | CHECKED BY: W.B. SYMONDS |
| DESIGNED BY: K.M. HIGGINS | SHEET 45 OF 118 |
| HOPPER/DOWNSPOUT DETAILS | |



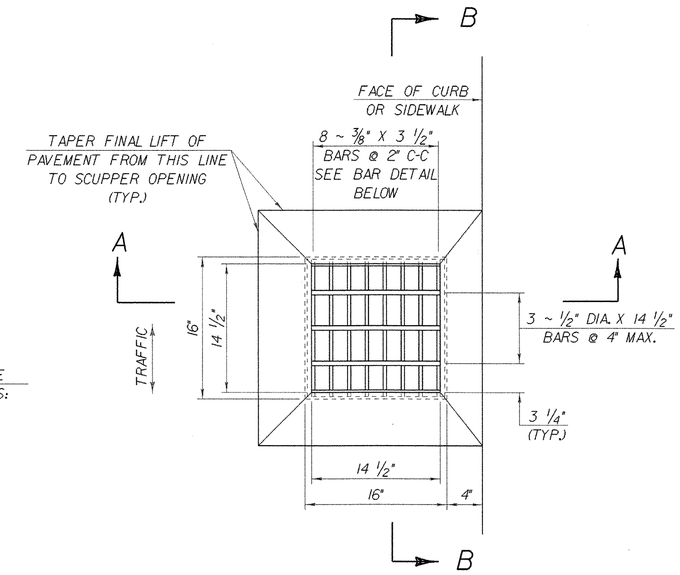

## SECTION A - A (AT SIDEWALK)

SCALE: 1" = 1'-0"




## SECTION A - A (AT CURB)

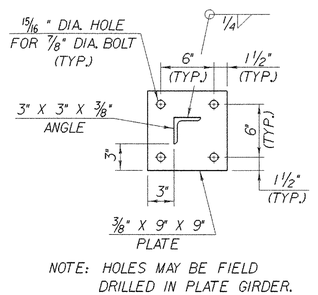
SCALE: 1" = 1'-0"




## SCUPPER PLAN

SCALE 1 1/2" = 1'-0

1 9 6 3 0 1

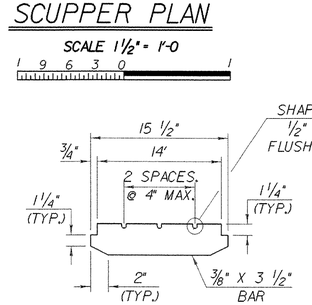



NOTE: HOLES MAY BE FIELD DRILLED IN PLATE GIRDER.

## SECTION C - C

SCALE 1 1/2" = 1'-0

1 9 6 3 0 1



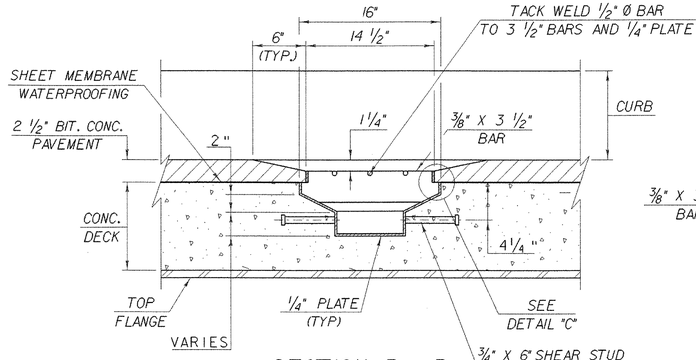

## BAR DETAIL FOR GRATE

SCALE 1 1/2" = 1'-0

1 9 6 3 0 1

## SCUPPER AND DOWNSPOUT NOTES

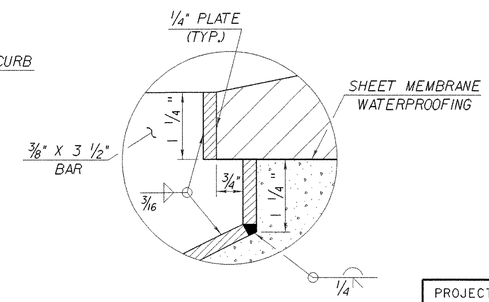
1. HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A-500 GR. B.
2. ALL PLATES, BARS, AND ANGLES SHALL CONFORM TO AASHTO M 270/M 270M GR. 36.
3. ALL SCUPPERS, DOWNSPOUTS & SUBSTRUCTURE DRAINS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111M/M 111 AFTER FABRICATION.
4. THE TOP SURFACE OF SCUPPER 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

1 9 6 3 0 1




## DETAIL "C"

NTS

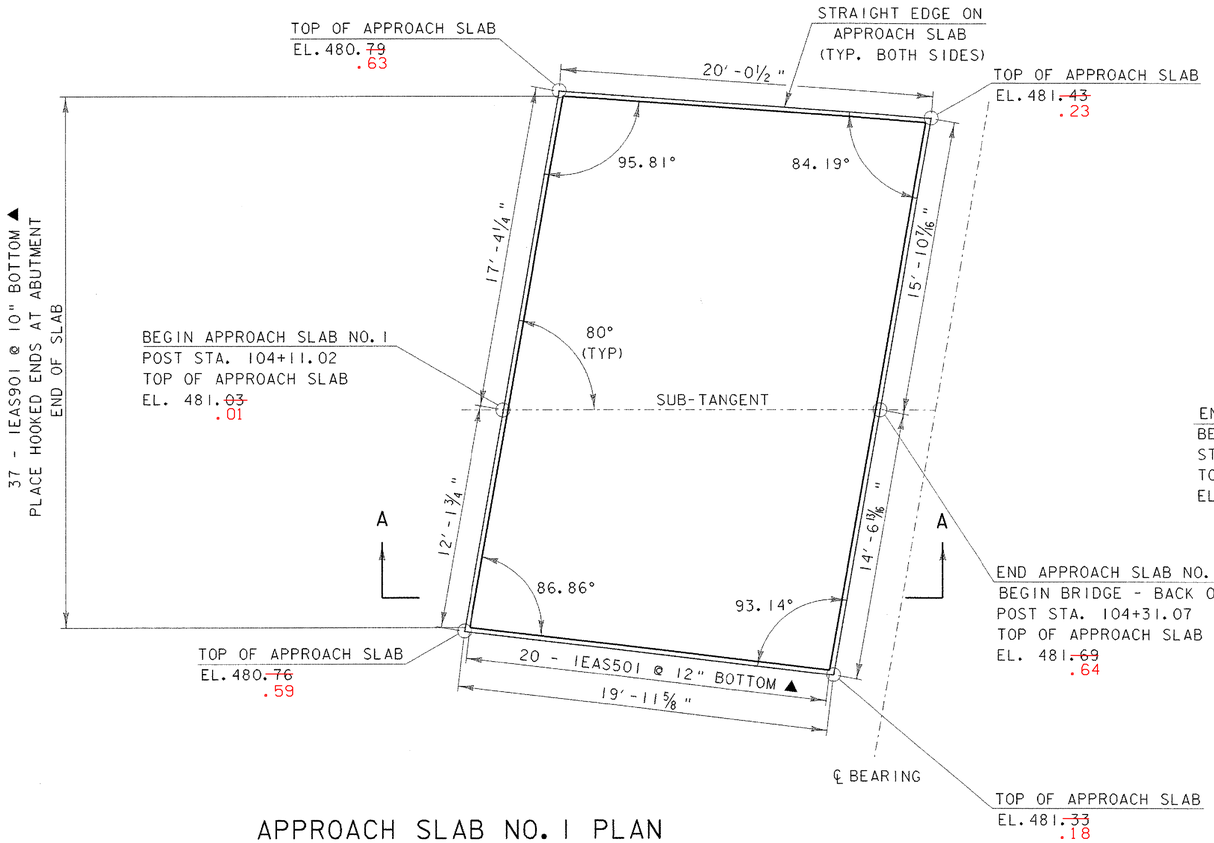
## SCUPPER LOCATION

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

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

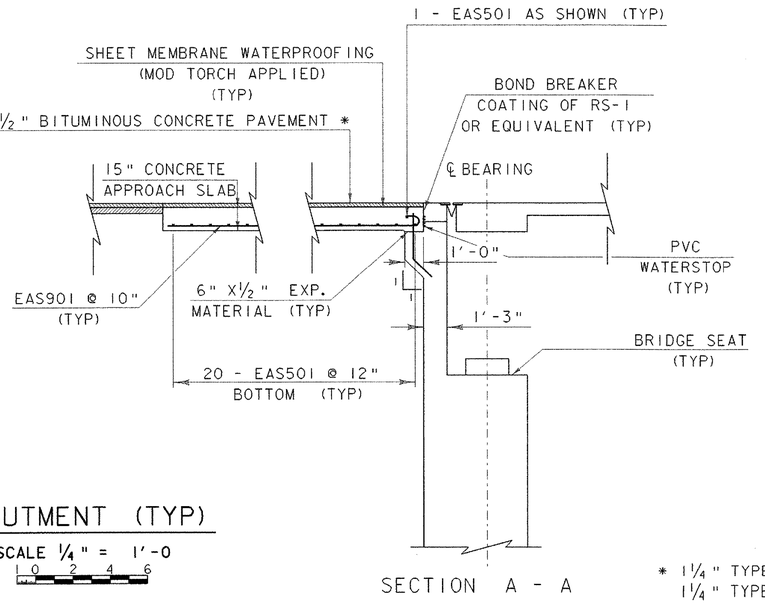
FILE NAME: 90j099/structures/sj099scu.dgn
IPARM NAME: sj099scu.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: K.M. HIGGINS
SCUPPER DETAILS

PLOT DATE: 25-SEP-2000
DRAWN BY: K. M. HIGGINS
CHECKED BY: W.B. SYMONDS
SHEET 46 OF 118




## APPROACH SLAB NO. 1 PLAN

SCALE ¼" = 1'-0
1 0 2 4 6

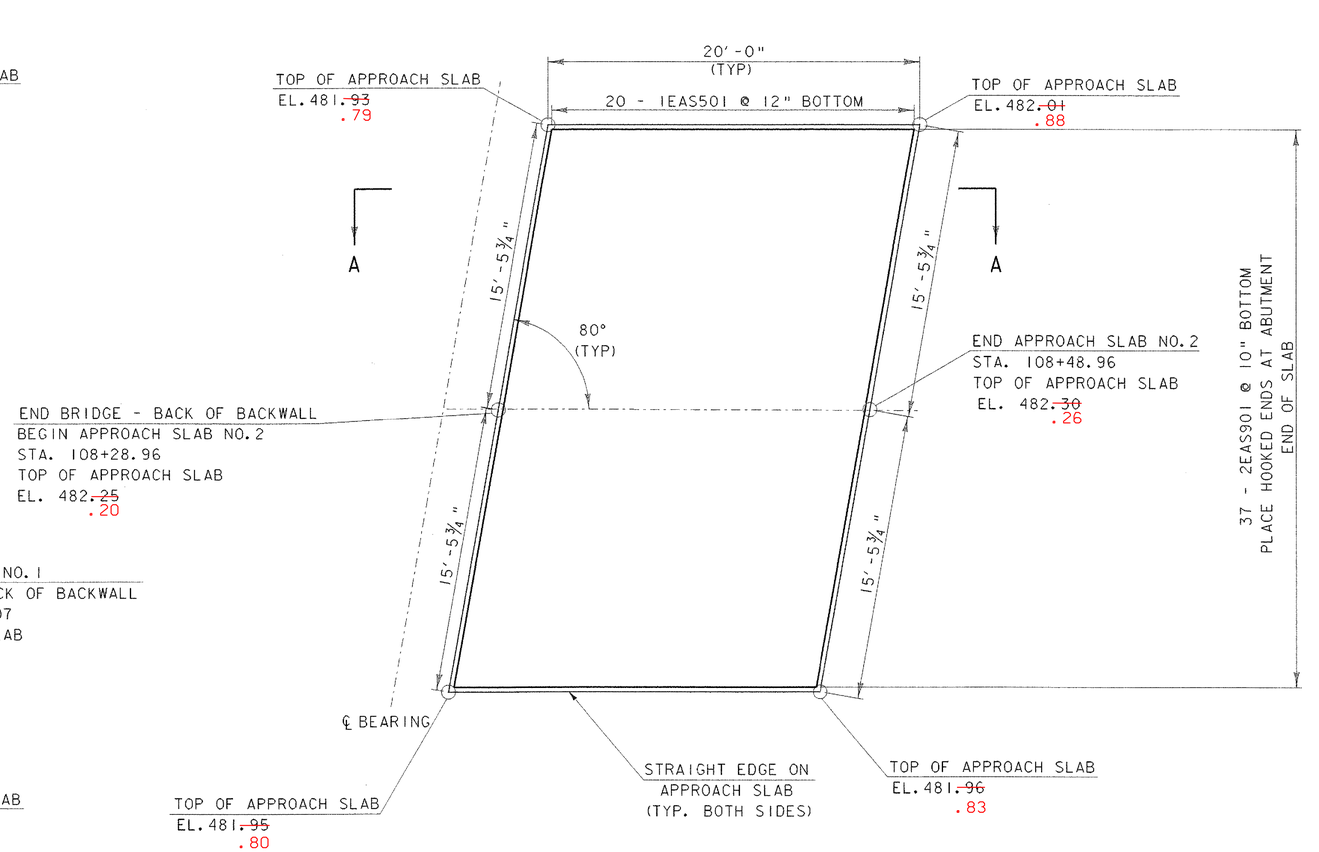



## ABUTMENT (TYP)

SCALE ¼" = 1'-0
1 0 2 4 6

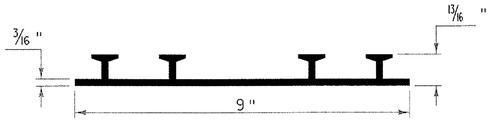
SECTION A - A

* 1¼" TYPE III OVER 1¼" TYPE IV




## APPROACH SLAB NO. 2 PLAN

SCALE ¼" = 1'-0
1 0 2 4 6




## P.V.C. WATERSTOP FOR CONSTRUCTION JOINTS

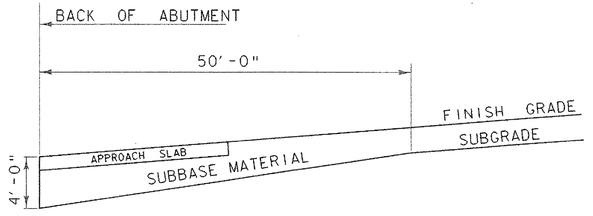
THE COSTS FOR P.V.C. WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE. OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL OF THE STRUCTURES ENGINEER.

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.



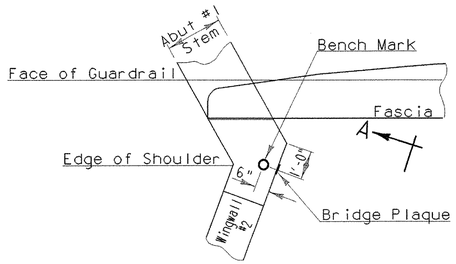

## SUBBASE DETAIL AT ABUTMENTS

(ELEVATION IN CUT AND FILL)
NOT TO SCALE

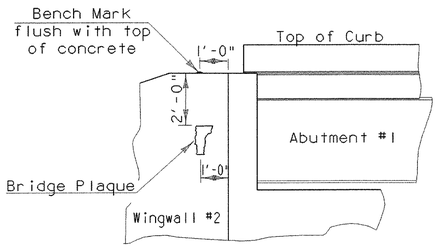
PROJECT NAME:
PROJECT NUMBER: ROYALTON BRZ 1444(22)

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



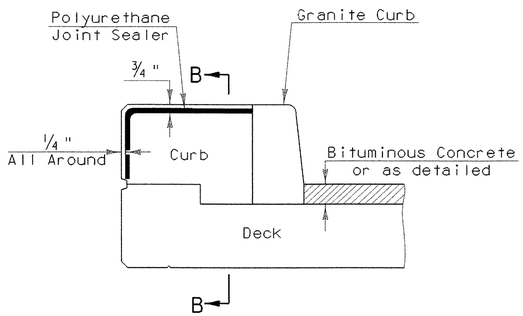

PLAN



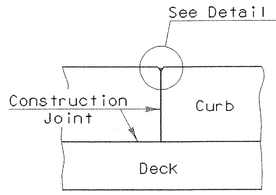

VIEW "A - A"

## LOCATE BENCH MARK AND BRIDGE PLAQUE

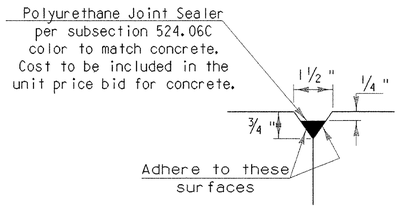
The bench mark and bridge plaque will be supplied by The Agency of Transportation and shall be installed by the contractor at abutment #1 on the right side as shown or as directed by the engineer.




## TYPICAL SECTION THROUGH CONCRETE CURB CONSTRUCTION JOINT




SECTION B - B



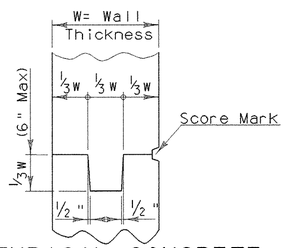

DETAIL "B"

Notes:

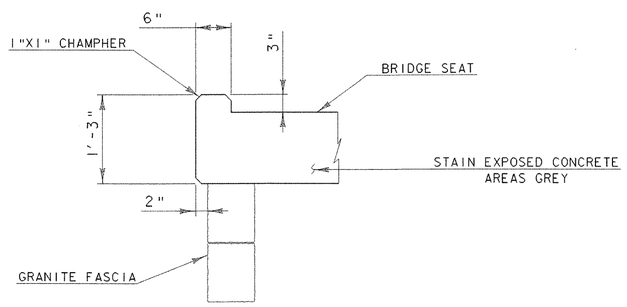
1) Construction joints through concrete curbs shall be spaced maximum 15'-0" center to center and shall be 1'-6" minimum from the center of the nearest bridge rail post. Concrete shall be placed in alternating sections with a minimum of 48 hours delay between adjacent pours.

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



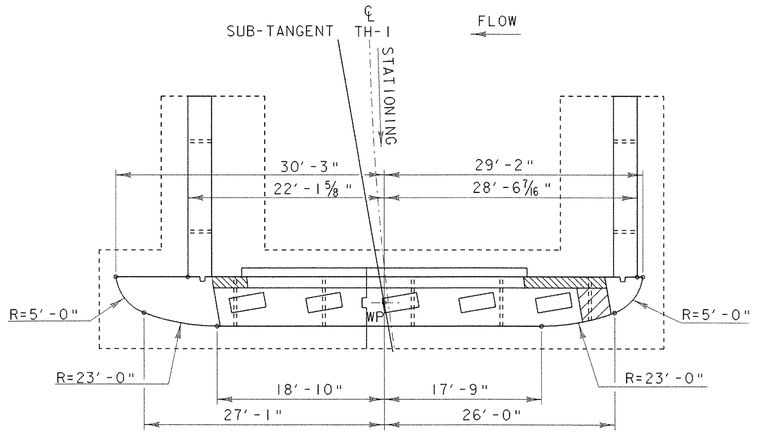

## TYPICAL COPE DETAIL

ALL DETAILS NTS UNLESS NOTED OTHERWISE

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

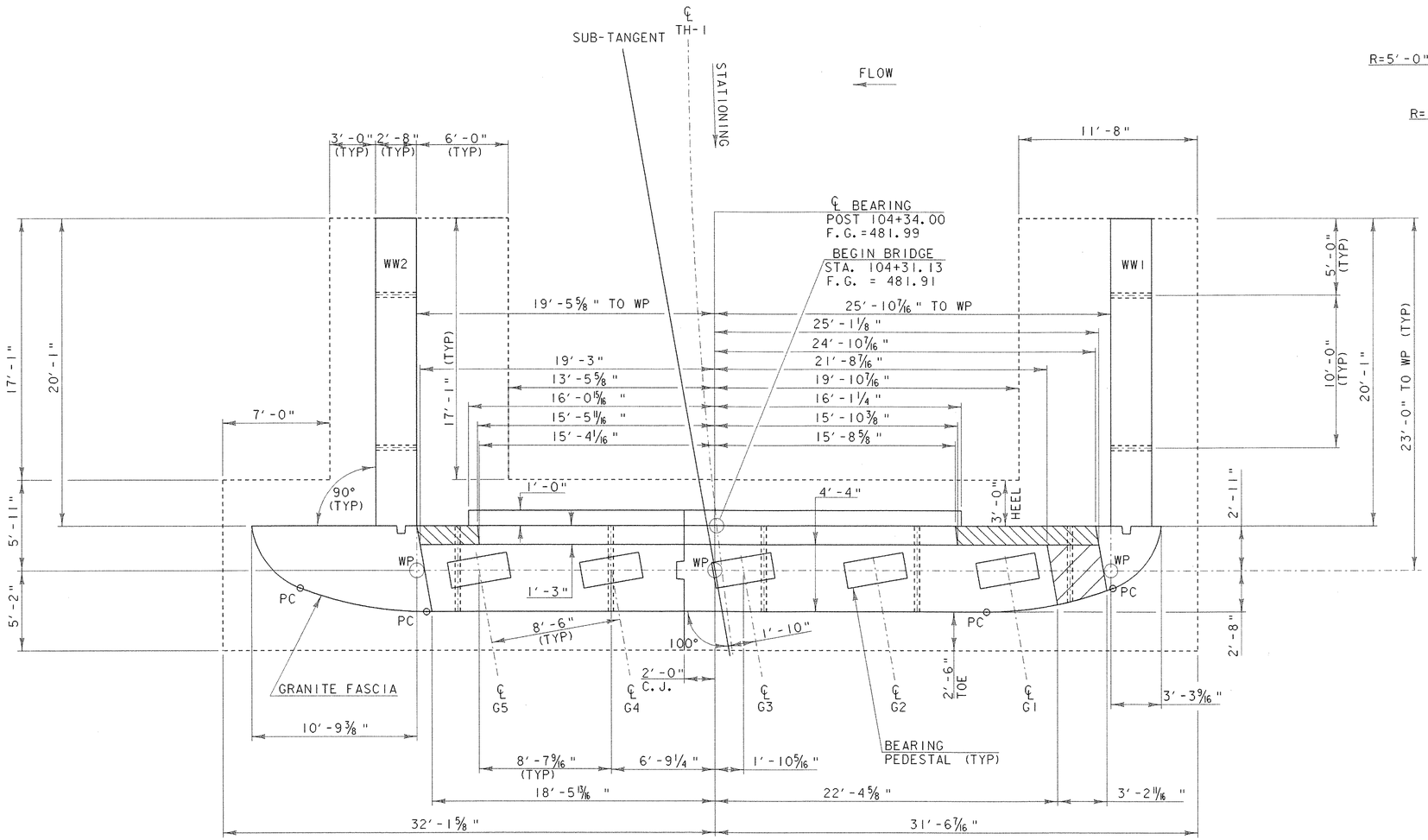
FILE NAME: 89j099/structures/sj099abl.dgn
IPARM NAME: sj099misctyp.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
MISCELLANEOUS CONCRETE DETAILS

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




## ABUTMENT #1 PLAN
## ADDITIONAL DIMENSIONS

SCALE ⅛" = 1′-0
1 0 2 4 6 8




## ABUTMENT #1 PLAN

SCALE ¼" = 1′-0
1 0 2 4 6

NOTE:

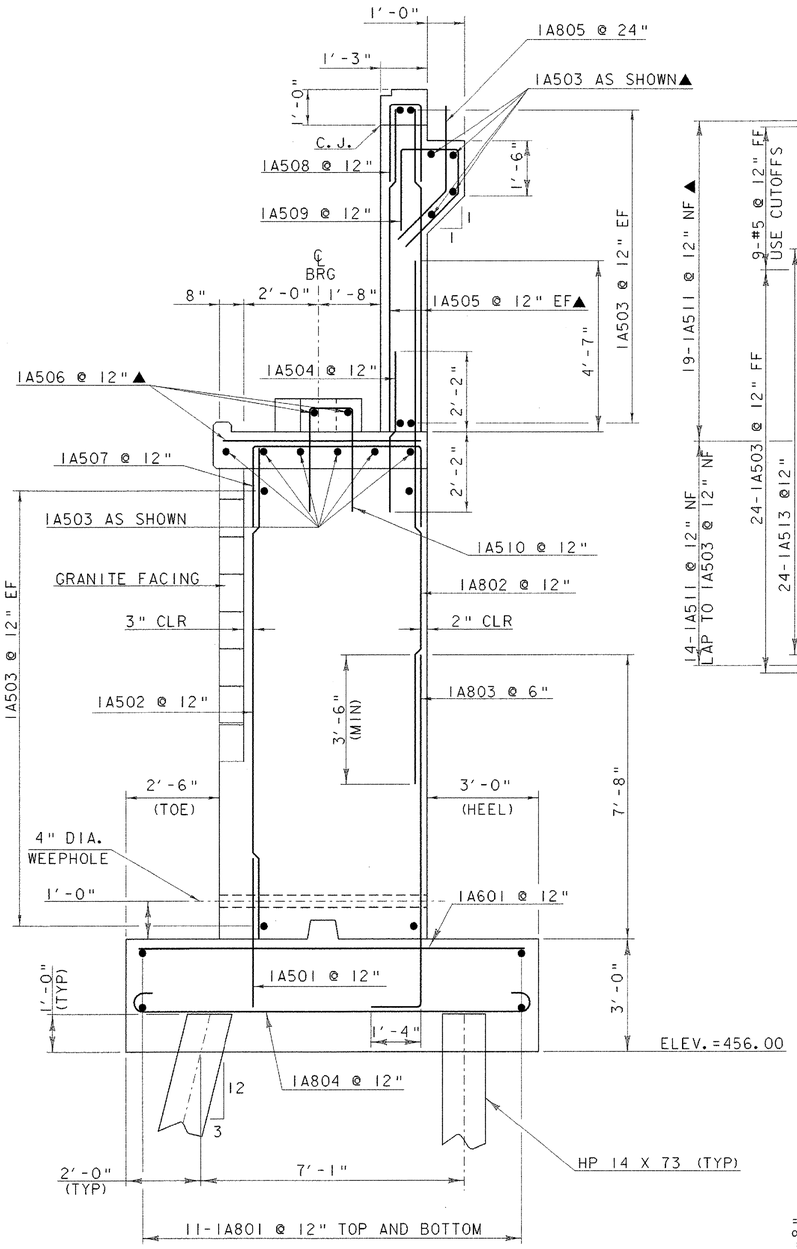
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
PC = POINT OF CURVATURE
C.J. = CONSTRUCTION JOINT
ALL LAP SPLICES NOT DETAILED SHALL BE 2′-2"

FOR GRANITE FACING DETAILS AND NOTES SEE SHEET 66.

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

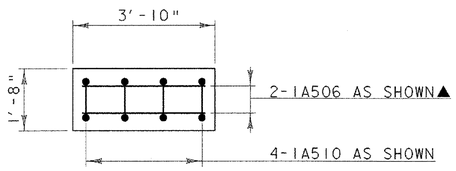
FILE NAME: 89j099/structures/sj099abl.dgn
IPARM NAME: sj099abutla.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: C.P. WILLIAMS
ABUTMENT #1 PLAN

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



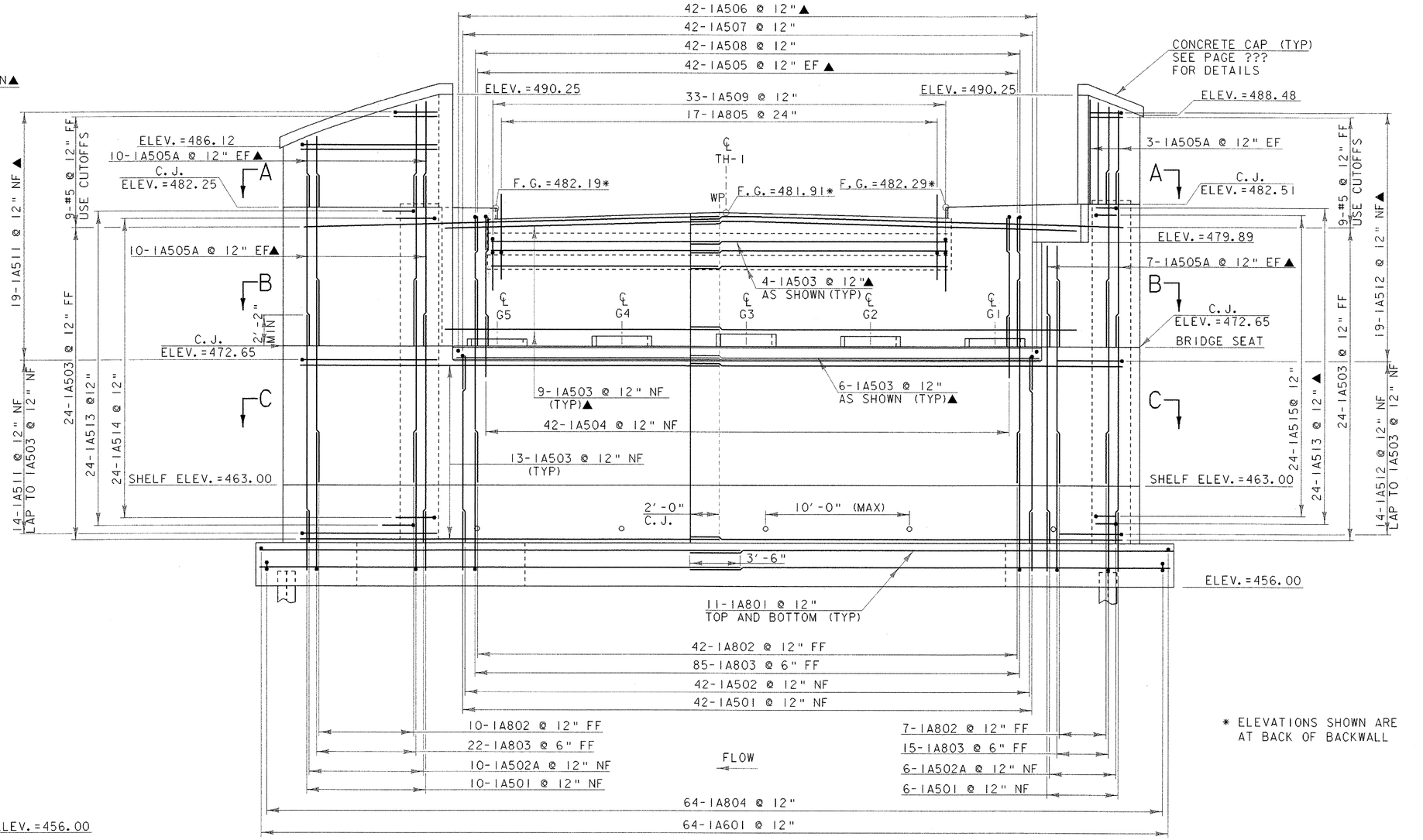

## ABUTMENT #1 TYPICAL SECTION

SCALE 1/2" = 1'-0




## BEARING PEDESTAL

SCALE 1/2" = 1'-0




* ELEVATIONS SHOWN ARE AT BACK OF BACKWALL

## ABUTMENT #1 ELEVATION

SCALE 1/4" = 1'-0

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"

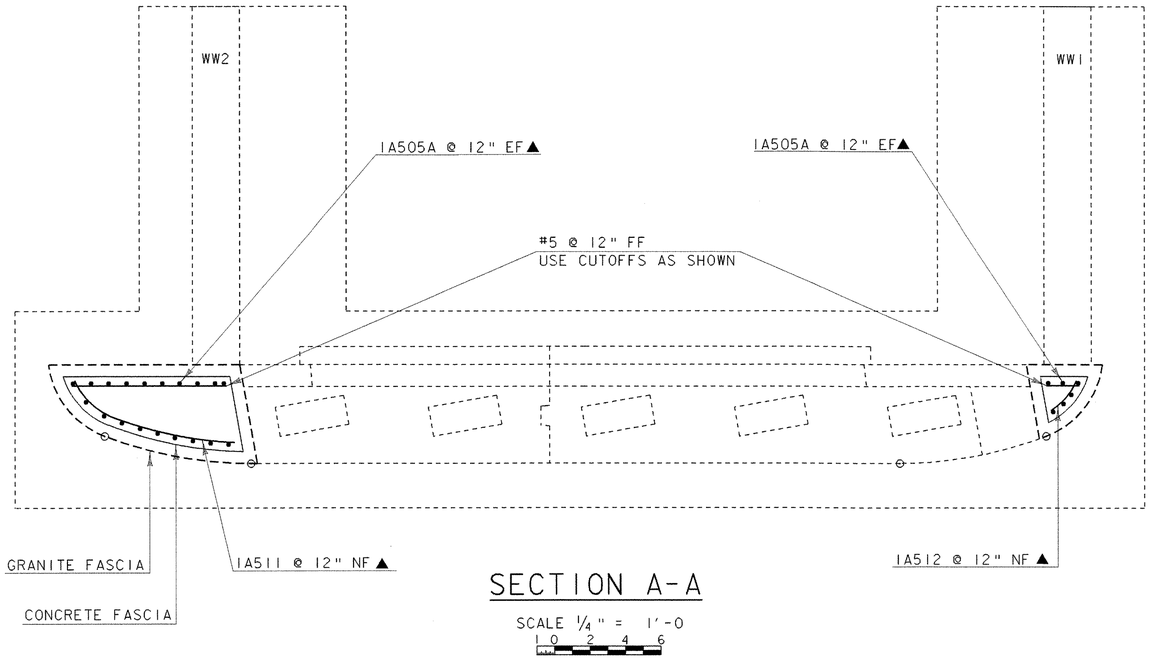
BEARING PEDESTAL ELEVATIONS

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

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

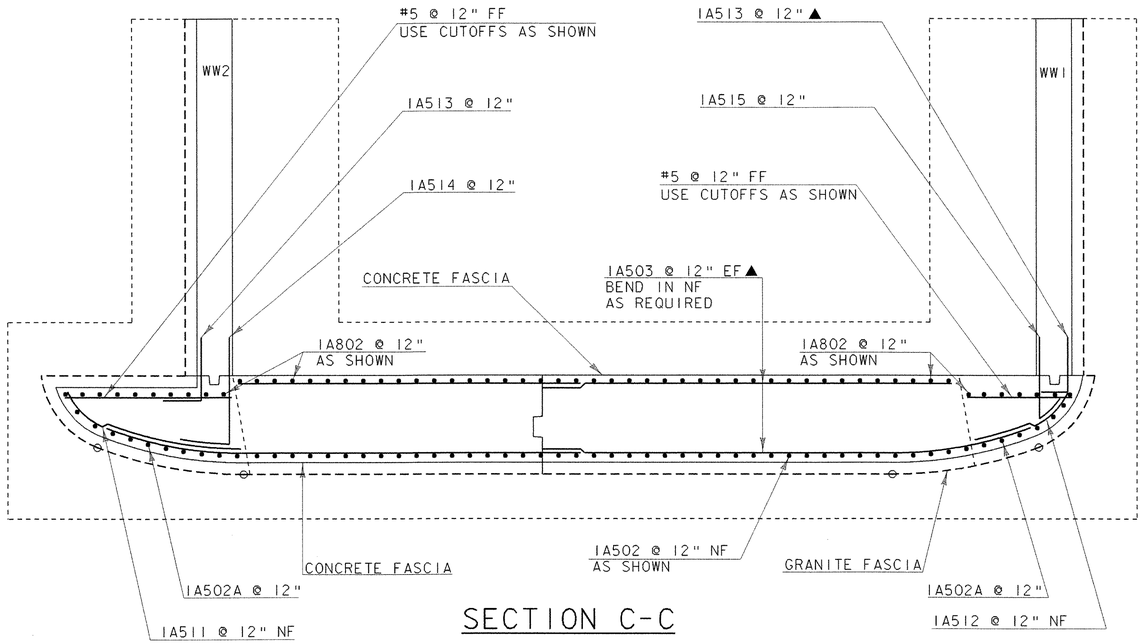
FILE NAME: 89J099/structures/sj099ab1.dgn
IPARM NAME: sj099abut1.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
ABUTMENT #1 TYPICAL AND ELEVATION

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



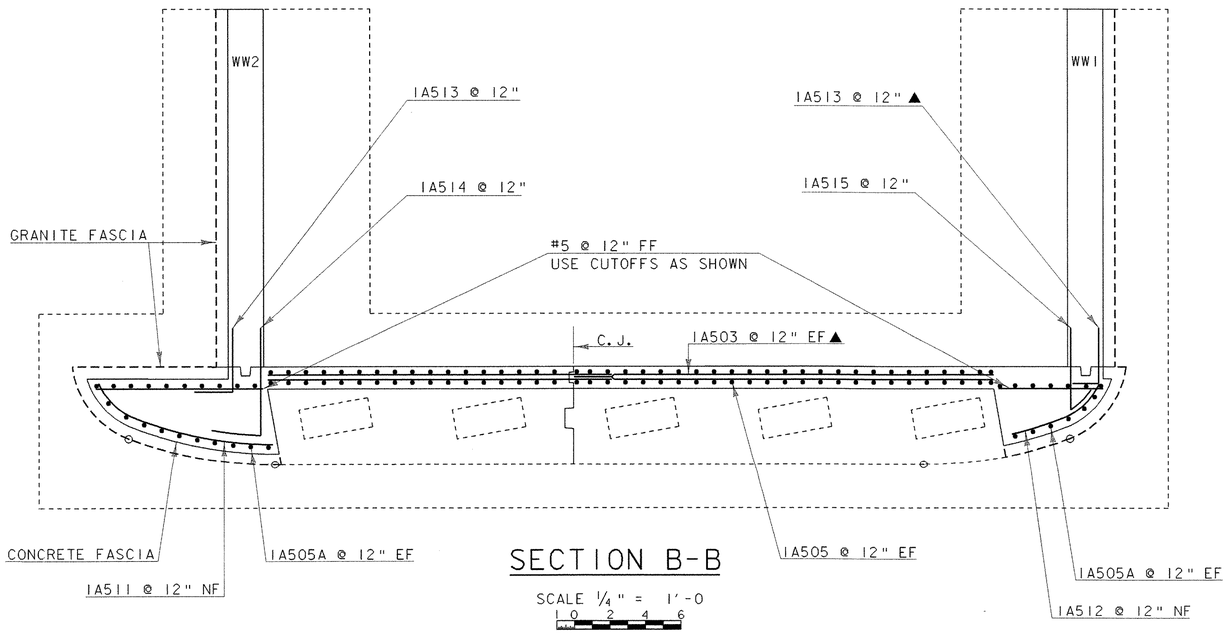

## SECTION A-A

SCALE 1/4" = 1'-0




## SECTION C-C

SCALE 1/4" = 1'-0




## SECTION B-B

SCALE 1/4" = 1'-0

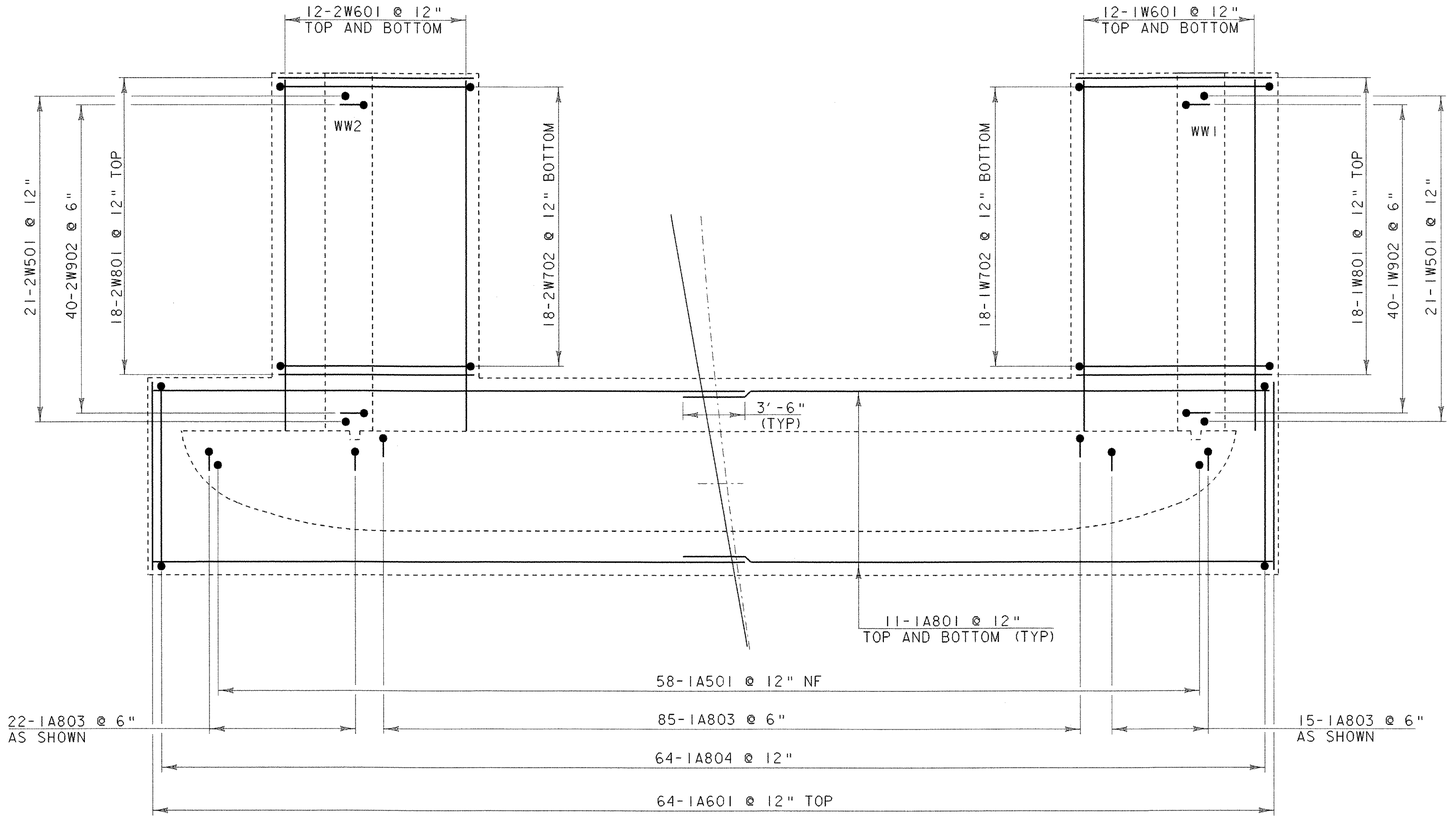
NOTE:

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/sj099abl.dgn
IPARM NAME: sj099ablsections.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

0 2 4 6

PILES NOT SHOWN FOR CLARITY

NOTE:

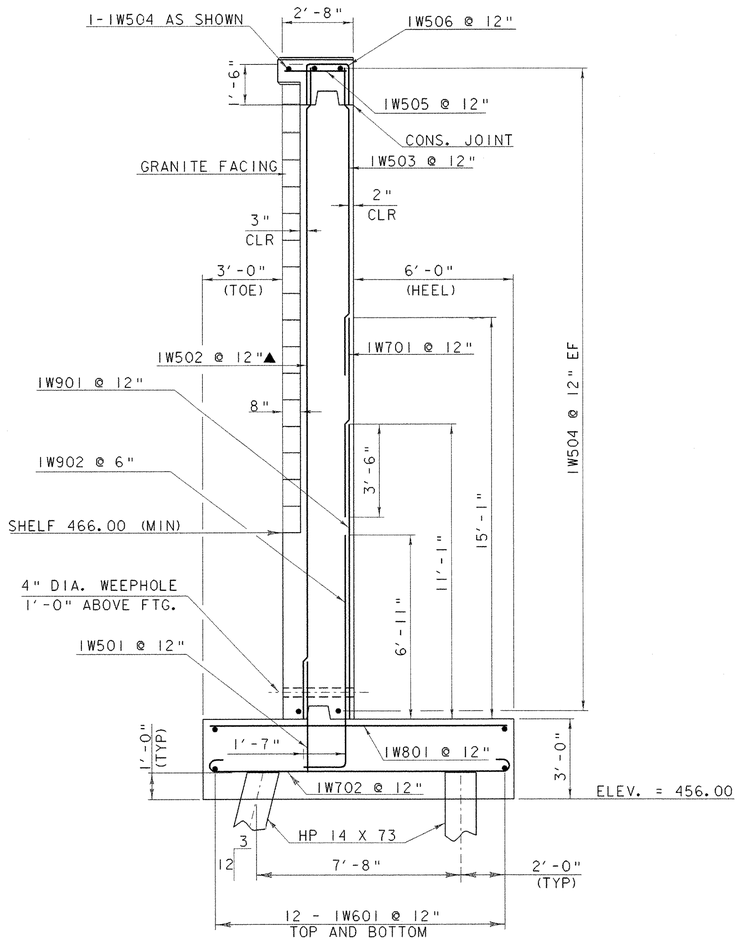
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

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

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

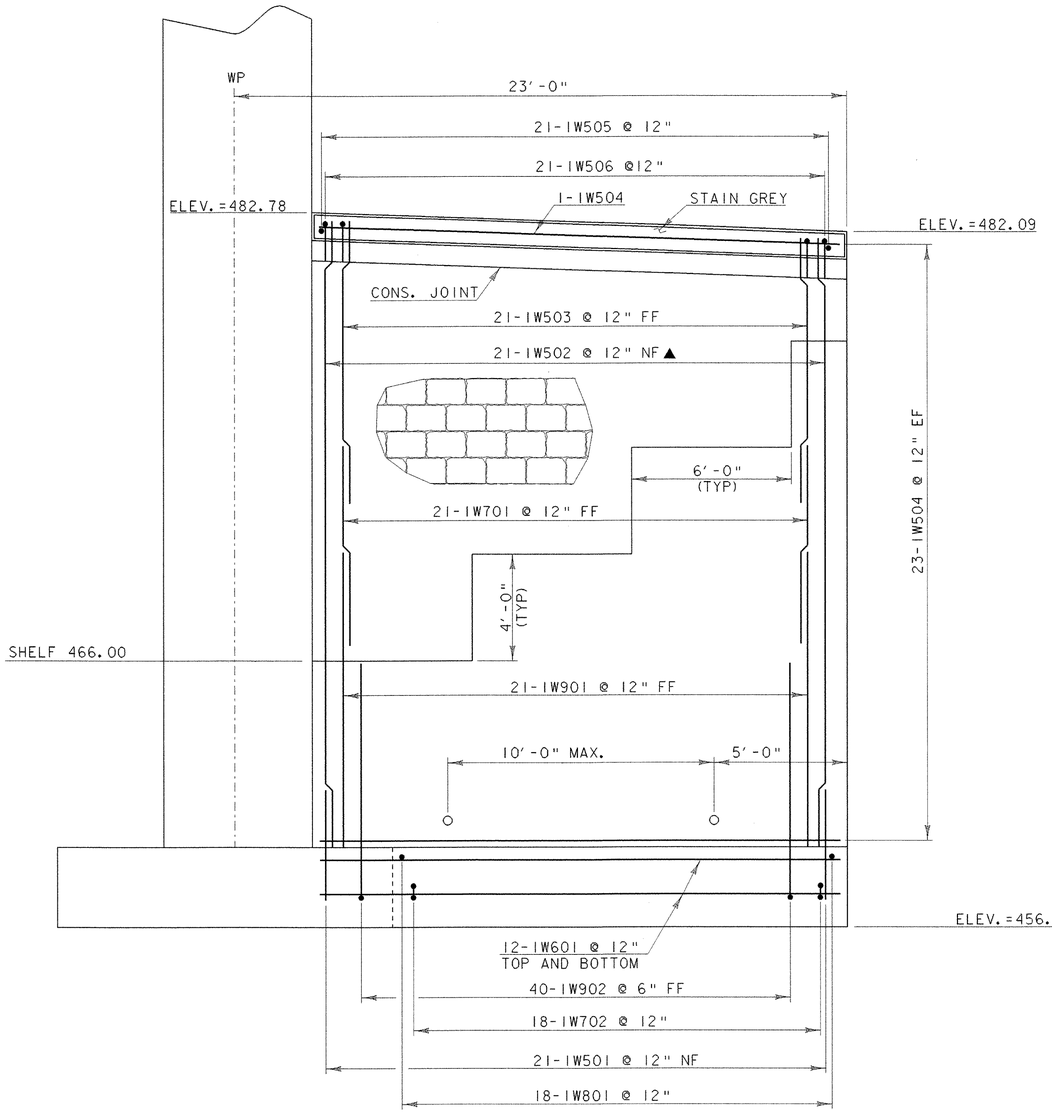
FILE NAME: 89j099/structures/sj099ab1.dgn
IPARM NAME: sj099ftgreini.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: C.P. WILLIAMS
ABUT #1 FOOTING REINFORCING PLAN

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

PILES NOT SHOWN IN ELEVATION FOR CLARITY

NOTE:

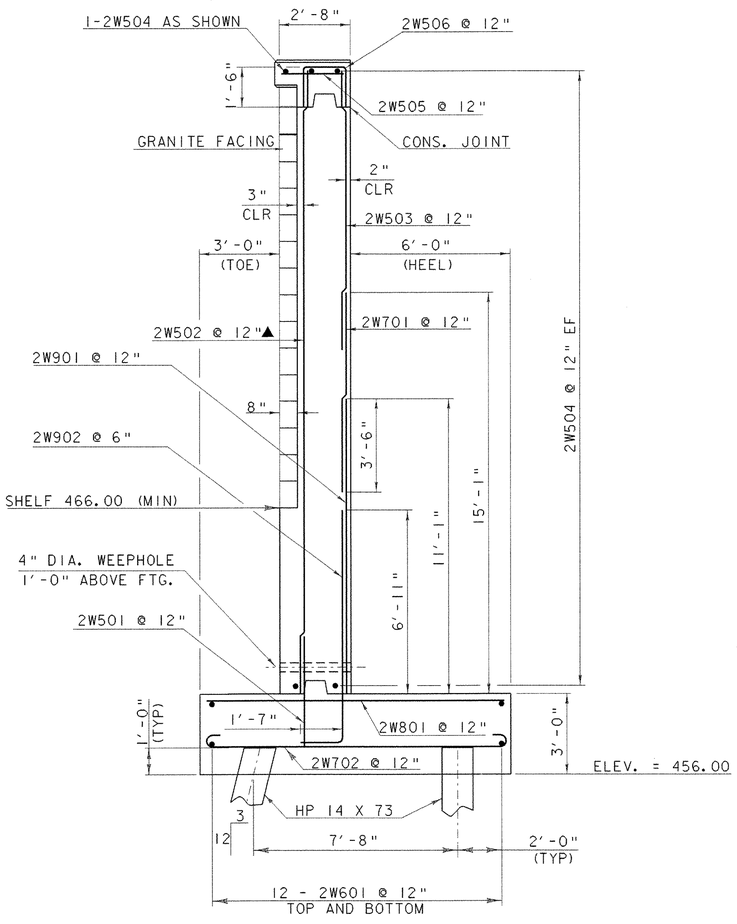
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

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

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

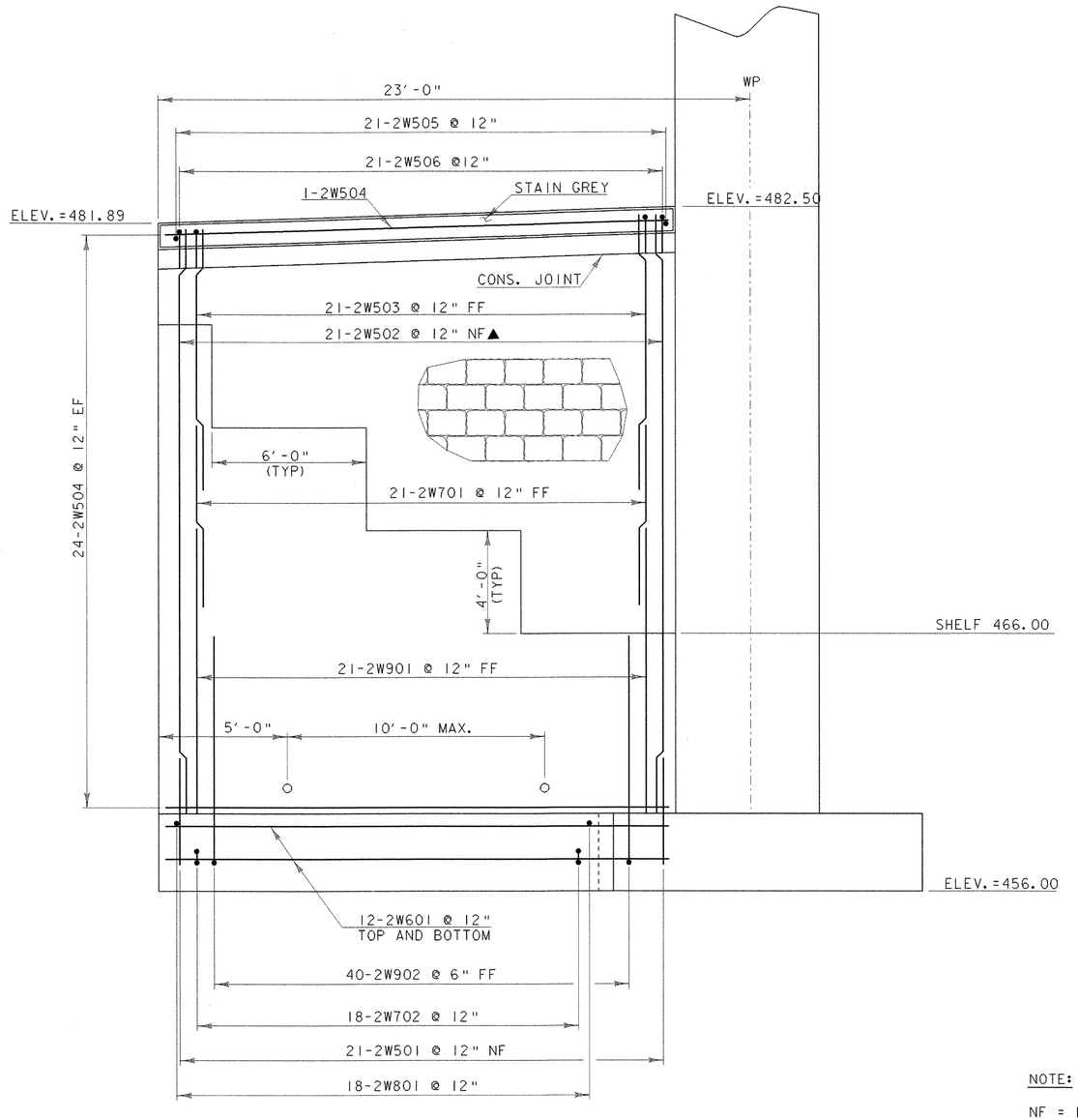
FILE NAME: 89j099/structures/sj099ab1.dgn
IPARM NAME: sj099ww1.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: C.P. WILLIAMS
WINGWALL #1 DETAILS

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"

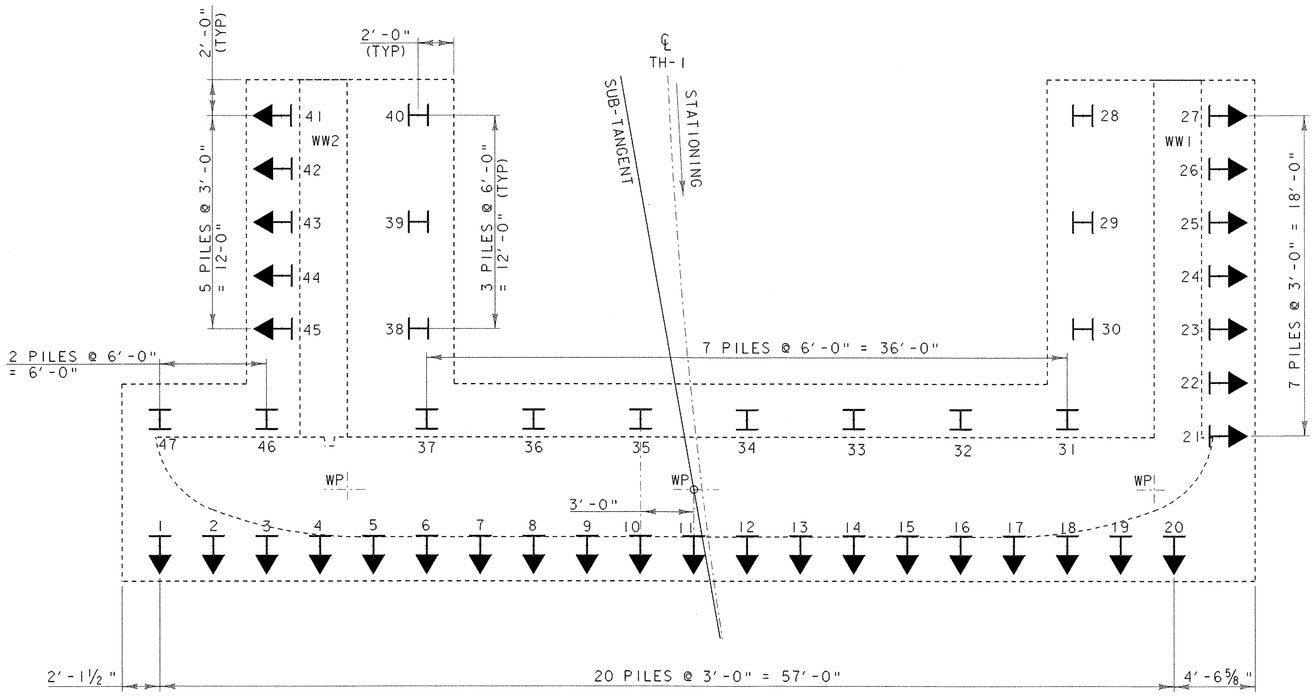
PILES NOT SHOWN IN ELEVATION FOR CLARITY

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

FILE NAME: 89j099/structures/sj099abl.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

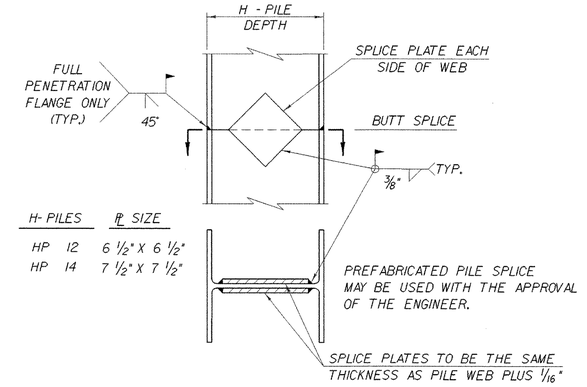



FLOW

## ABUTMENT #1 PILE LAYOUT

SCALE ¼" = 1'-0

1 0 2 4 6




## DETAIL OF PILE SPLICE

NTS

PILE KEY

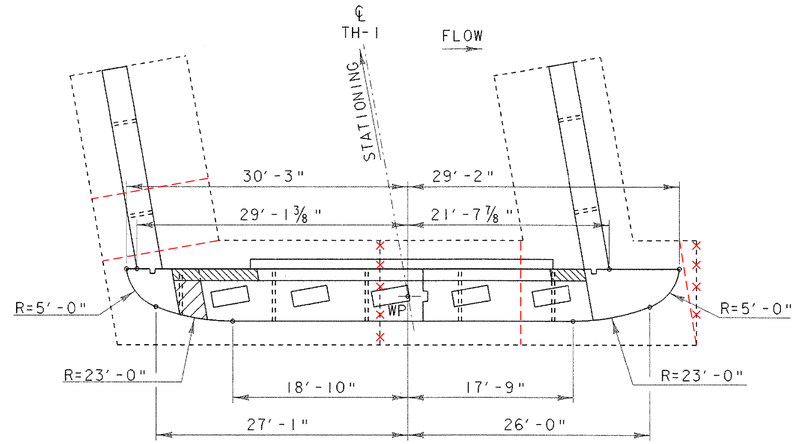
VERTICAL PILE

BATTERED 3 HORIZONTAL TO 12 VERTICAL

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

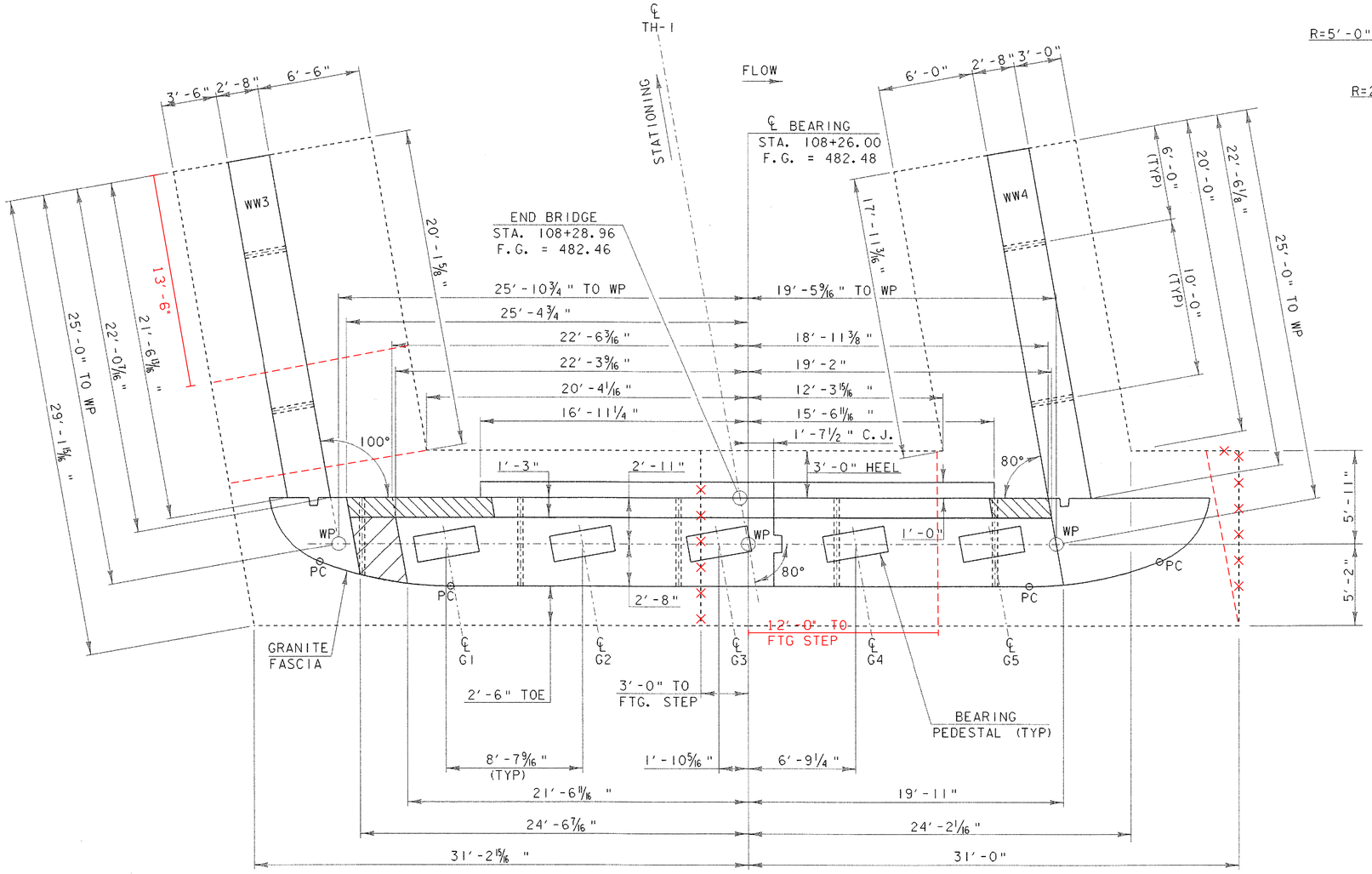
FILE NAME: 89j099/structures/sj099ab1.dgn
IPARM NAME: sj099pileplan.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: C.P. WILLIAMS
ABUTMENT #1 PILE LAYOUT

PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: C.P. WILLIAMS
SHEET 55 OF 118




## ABUTMENT #2 PLAN
## ADDITIONAL DIMENSIONS

SCALE 1/8" = 1'-0
1 0 2 4 6 8




## ABUTMENT #2 PLAN

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

NOTE:

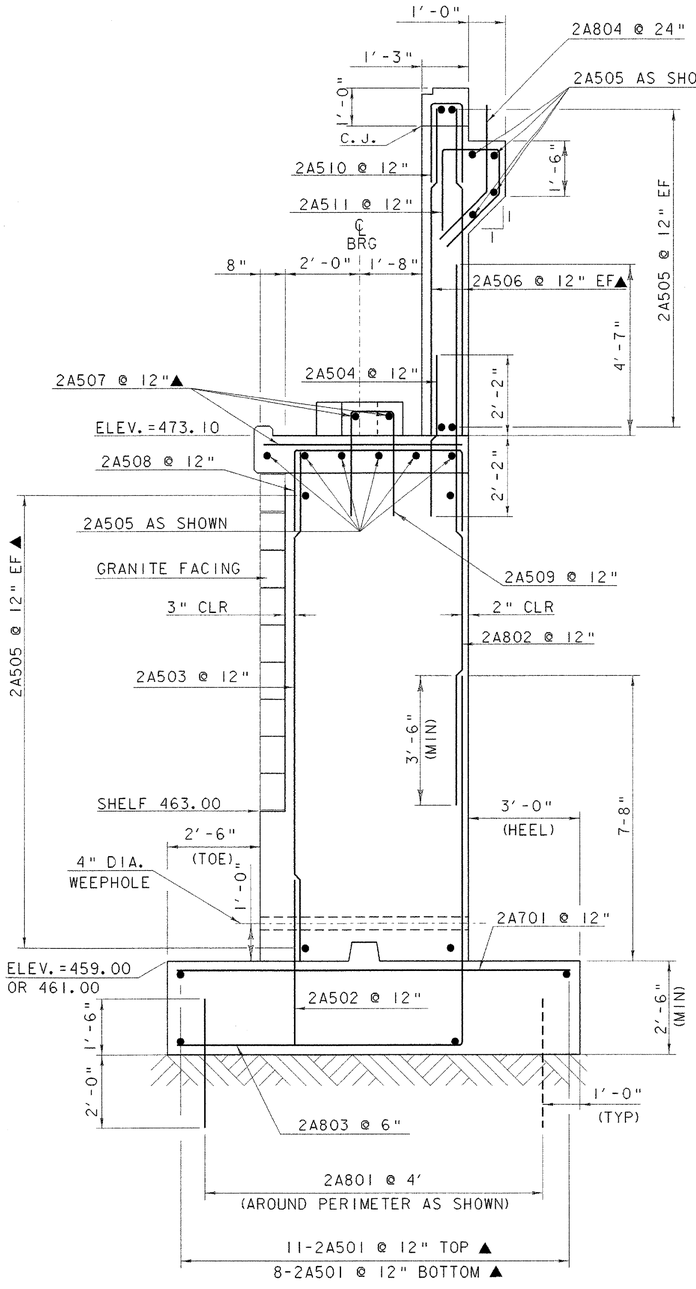
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
PC = POINT OF CURVATURE
C.J. = CONSTRUCTION JOINT
ALL LAP SPLICES NOT DETAILED SHALL BE 2'-2"

FOR GRANITE FACING DETAILS AND NOTES SEE SHEET 66.

PROJECT NAME:
PROJECT NUMBER: ROYALTON 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



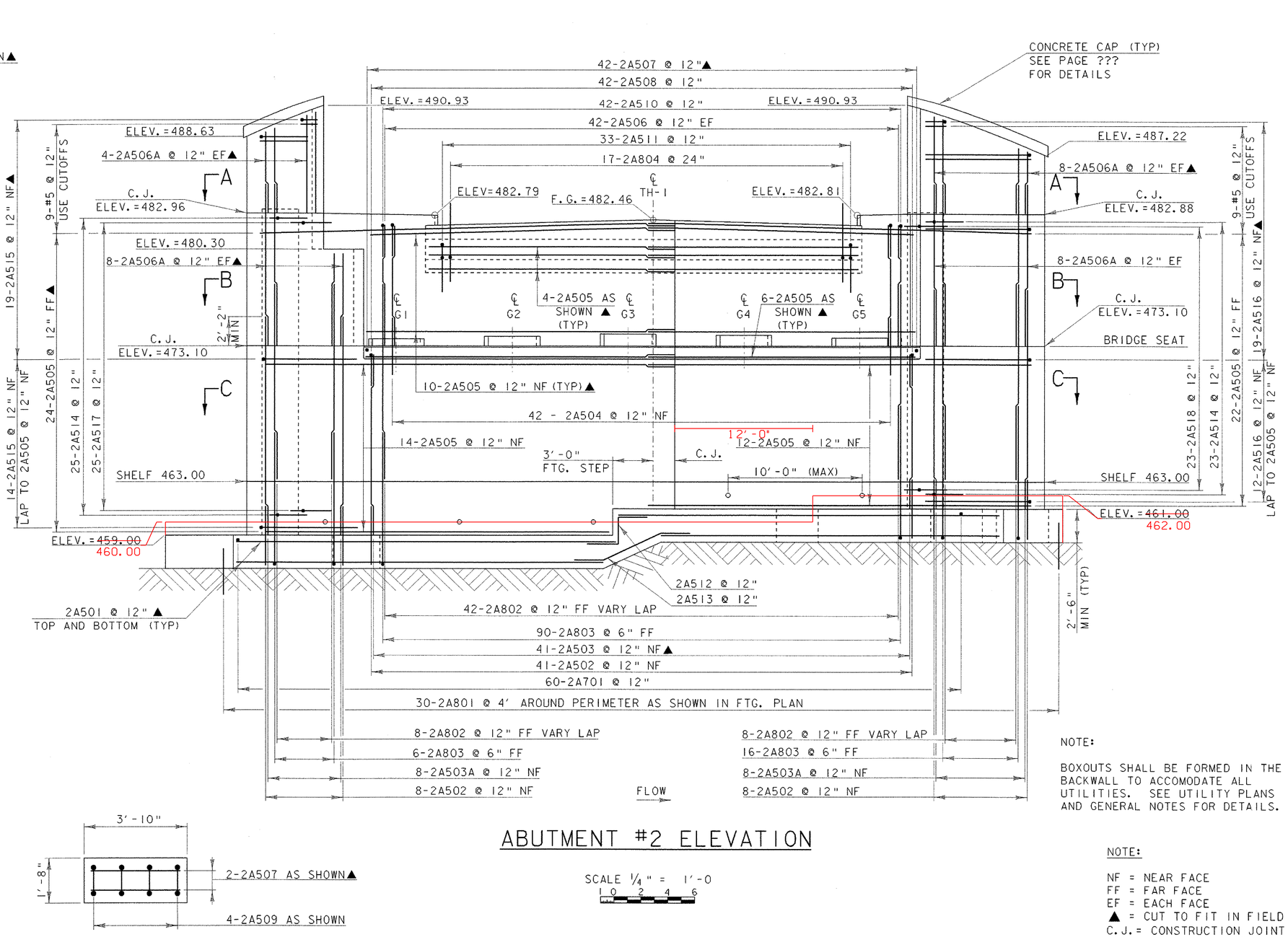

## ABUTMENT #2 TYPICAL SECTION

SCALE ½" = 1'-0




## BEARING PEDESTAL

SCALE ½" = 1'-0




## ABUTMENT #2 ELEVATION

SCALE ¼" = 1'-0

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
C.J. = CONSTRUCTION JOINT
ALL LAP SPLICES NOT DETAILED SHALL BE 2'-2"

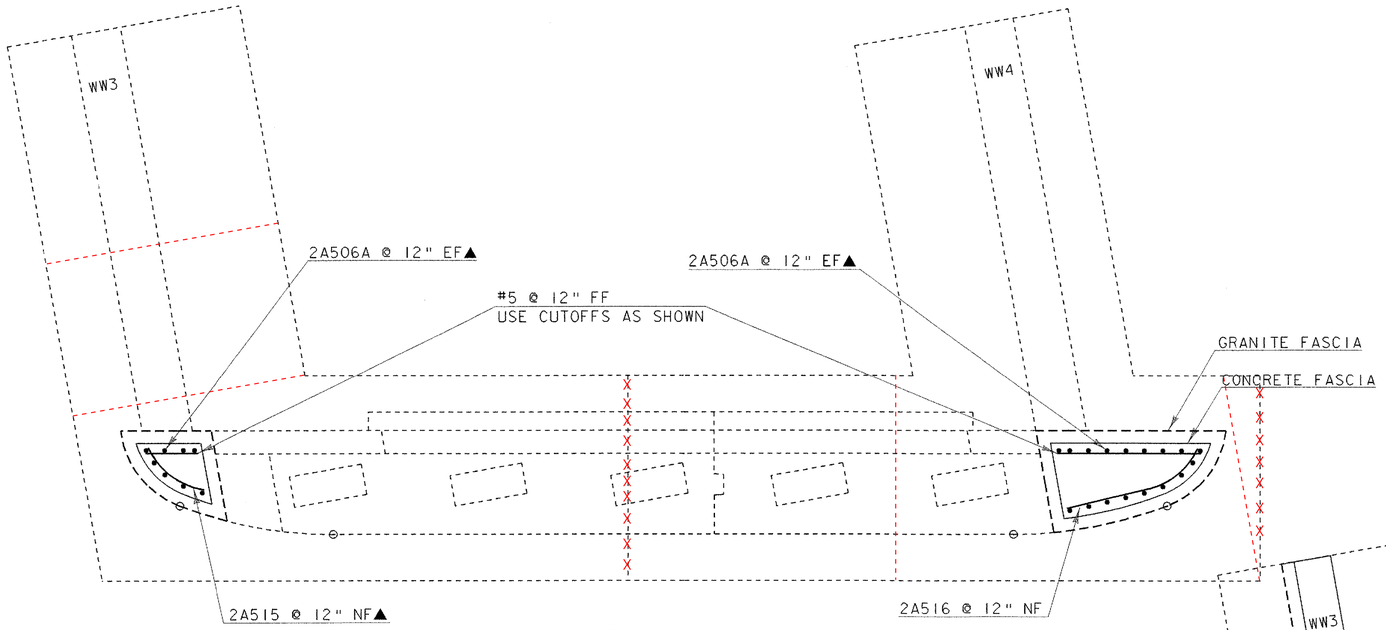
BEARING PEDESTAL ELEVATIONS

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

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

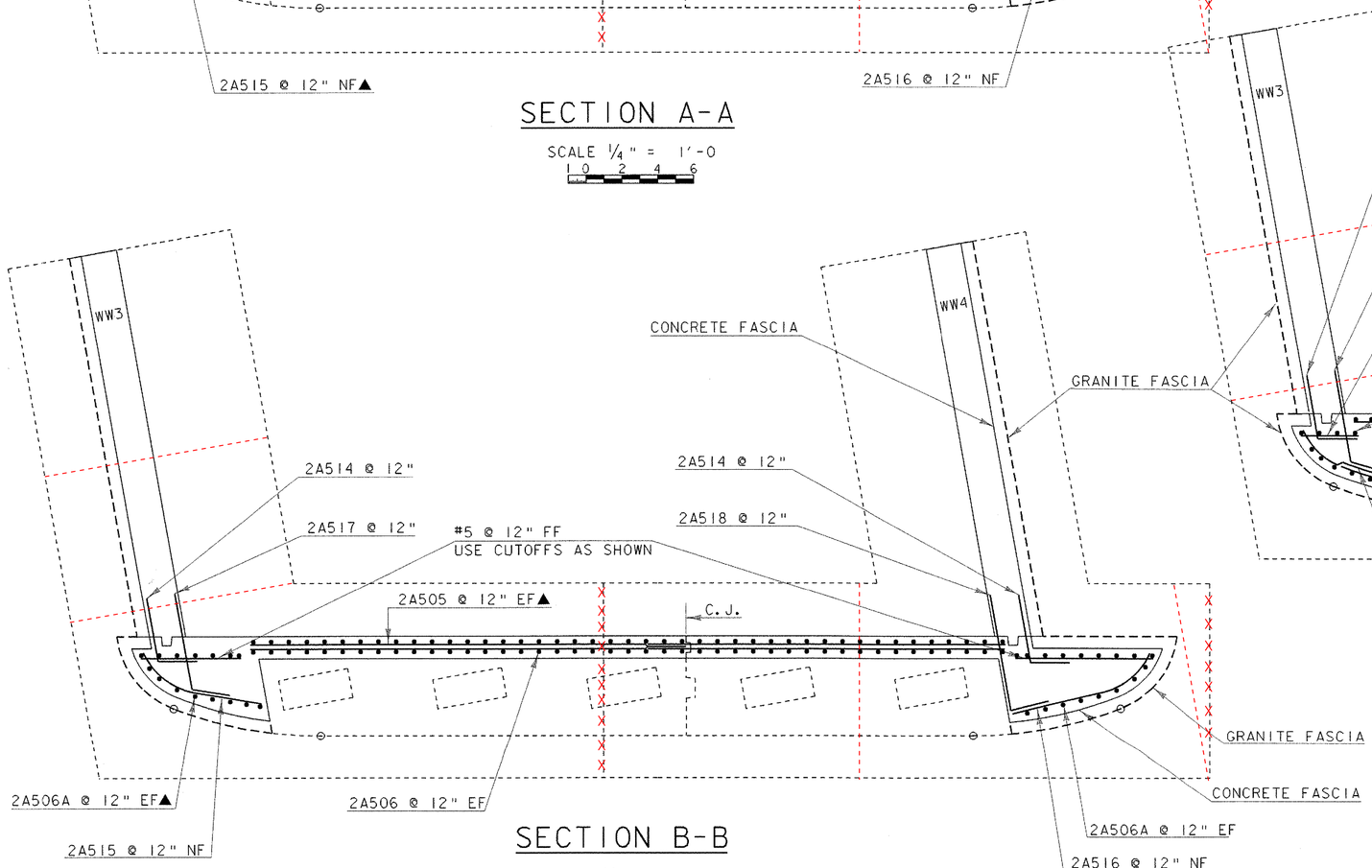
FILE NAME: 89j099/structures/sj099ab2.dgn
IPARM NAME: sj099abut2.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
ABUTMENT #2 TYPICAL AND ELEVATION

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



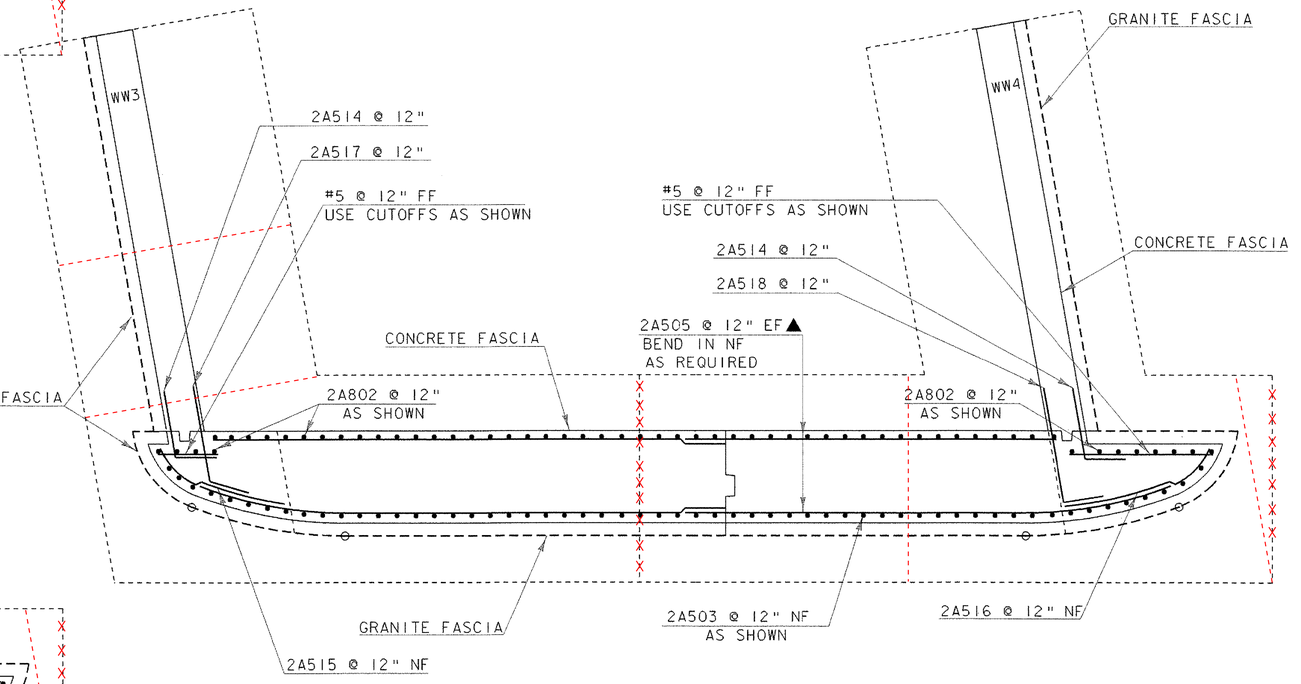

## SECTION A-A

SCALE 1/4" = 1'-0




## SECTION B-B

SCALE 1/4" = 1'-0




## SECTION C-C

SCALE 1/4" = 1'-0

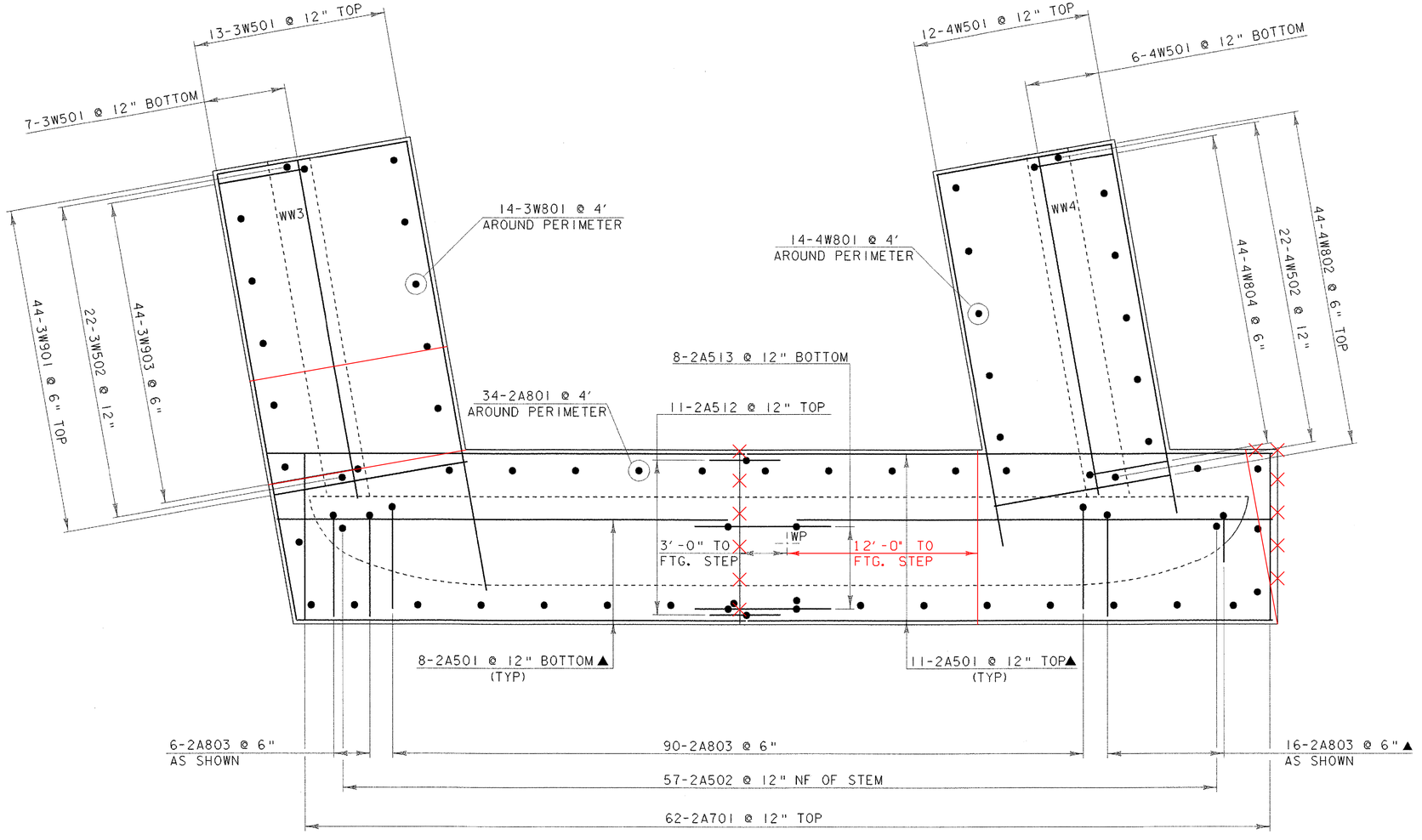
NOTE:

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:
PROJECT NUMBER: ROYALTON 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 1/4" = 1'-0
1 0 2 4 6

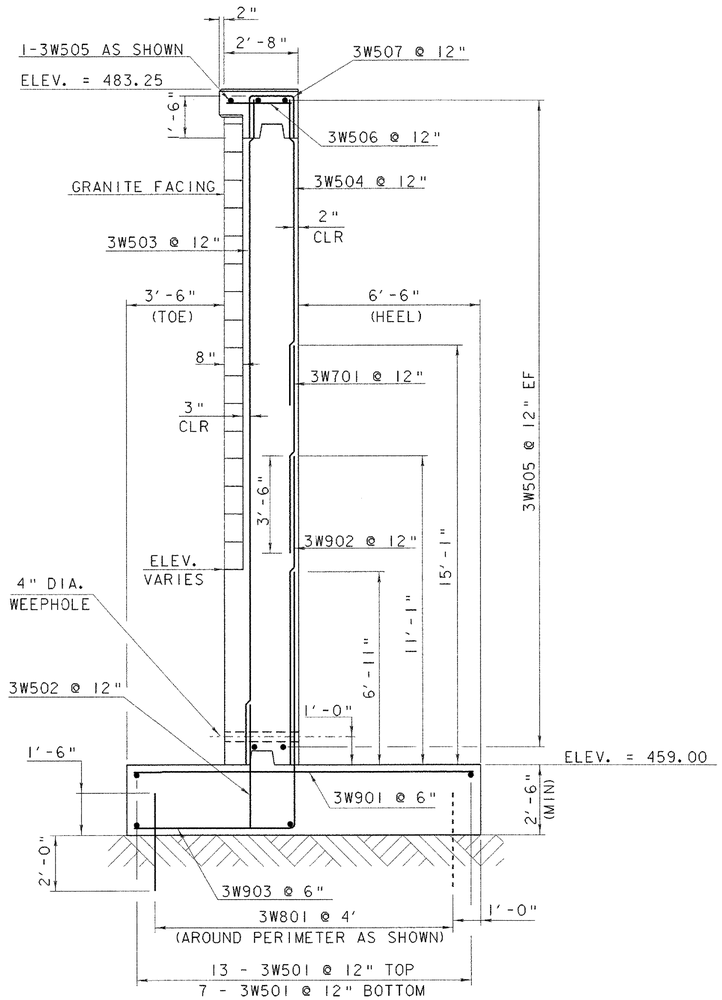
NOTE:

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

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

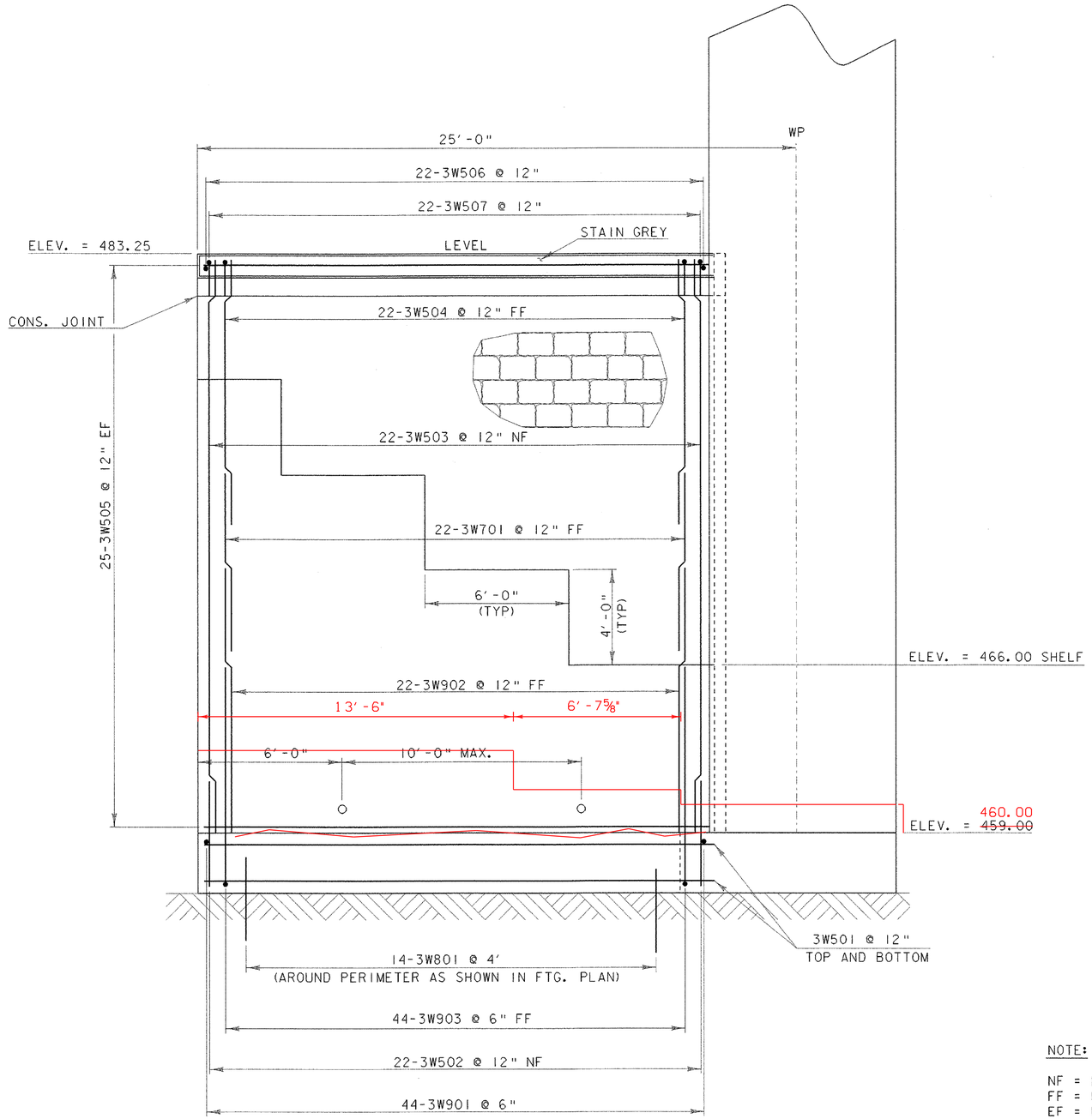
FILE NAME: 89j099/structures/sj099ab2.dgn
IPARM NAME: sj099ftgrein2.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: K.M. HIGGINS
ABUT # 2 FOOTING REINFORCING PLAN

PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: C.P. WILLIAMS
SHEET 59 OF 118




## WINGWALL # 3 TYPICAL SECTION

SCALE 3/8" = 1'-0




## WINGWALL # 3 ELEVATION

SCALE 3/8" = 1'-0

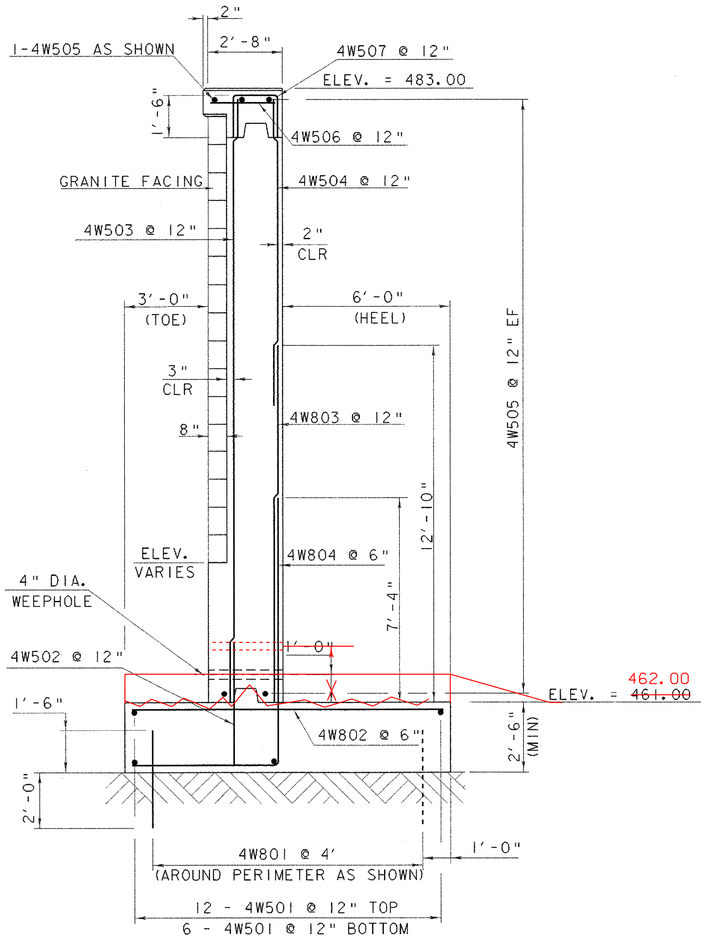
NOTE:

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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:
PROJECT NUMBER: ROYALTON BRZ 1444(22)

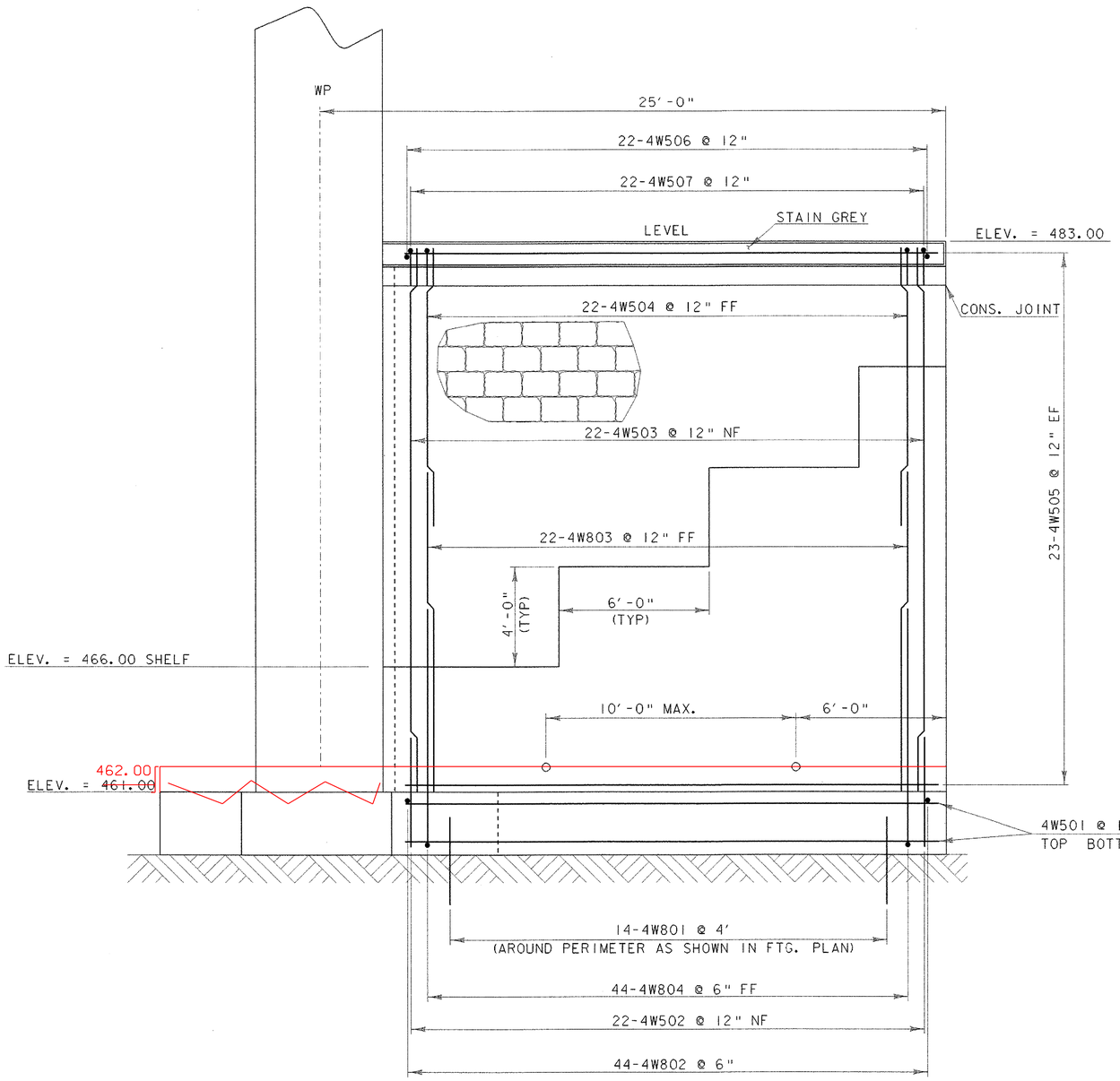
FILE NAME: 89j099/structures/sj099ab2.dgn
IPARM NAME: sj099ww3.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: K.M. HIGGINS
WINGWALL #3 DETAILS

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

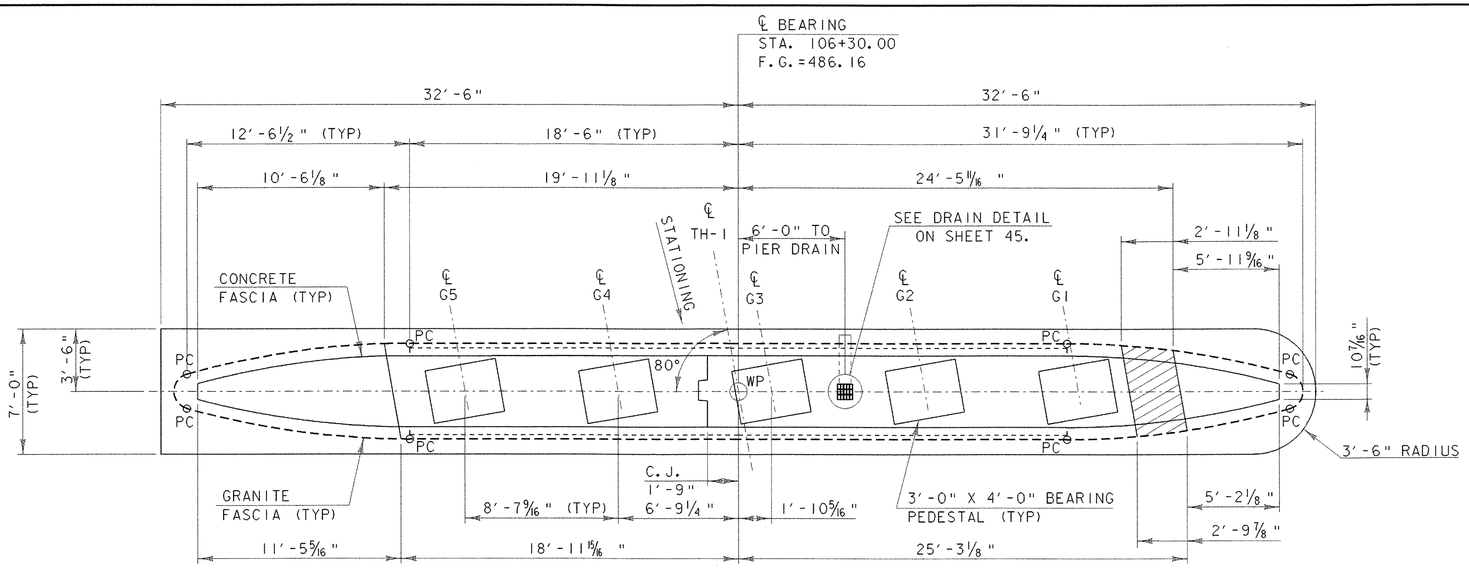
NOTE:

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:
PROJECT NUMBER: ROYALTON 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

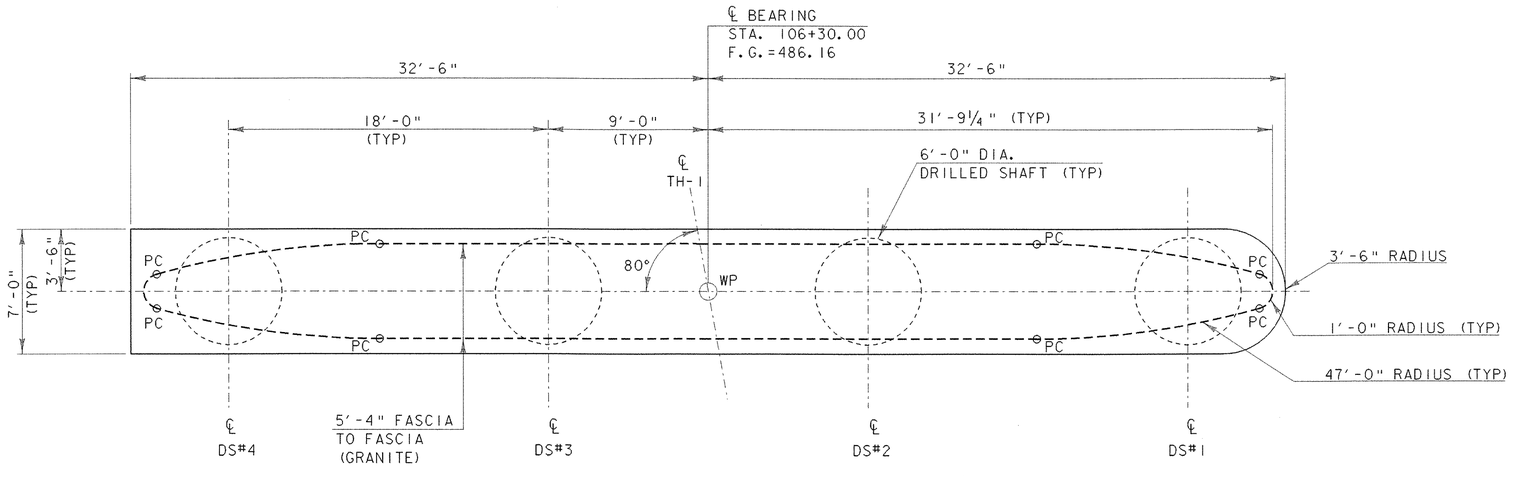
PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: C.P. WILLIAMS
SHEET 61 OF 118




# PIER PLAN

SCALE ¼" = 1'-0
1 0 2 4 6

FLOW




# DRILLED SHAFT AND PIER FOOTING PLAN

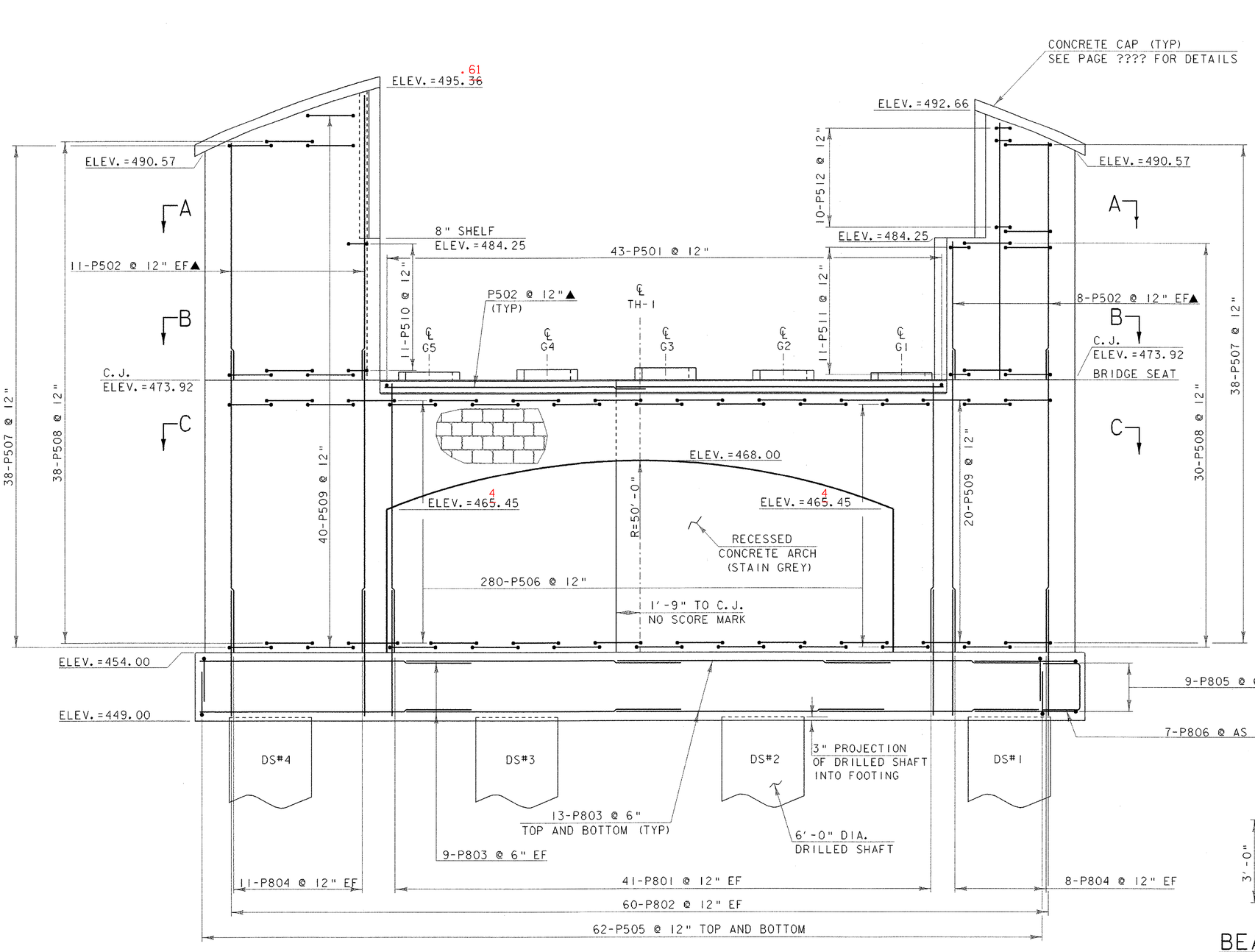
SCALE ¼" = 1'-0
1 0 2 4 6

NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
PC = POINT OF CURVATURE
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: sj099pierpe.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
PIER AND FOOTING PLAN
PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: W.B. SYMONDS
SHEET 62 OF 118



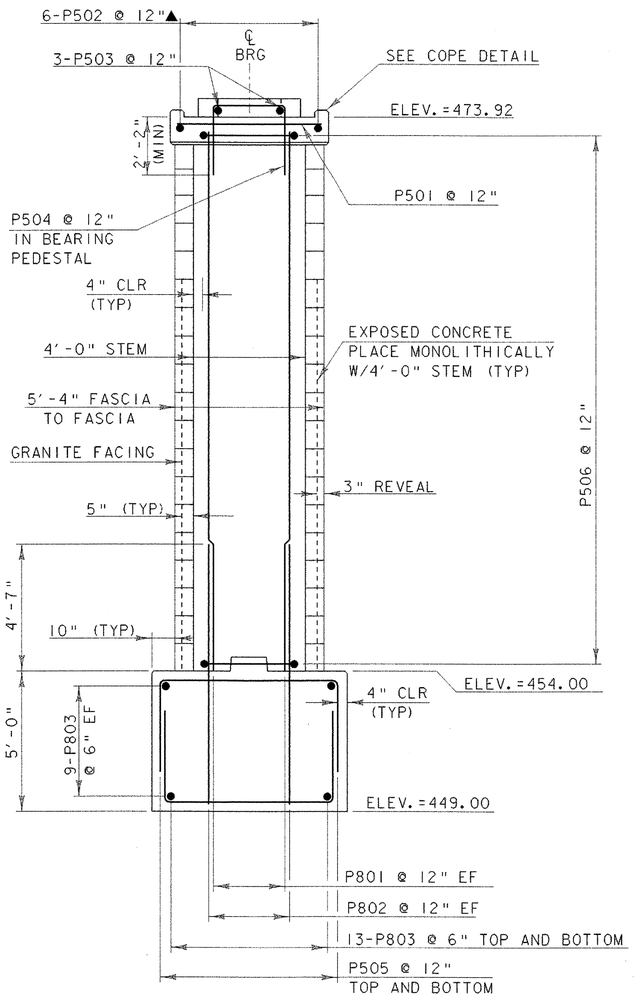

## PIER REINFORCING PLAN AND ELEVATION

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

FLOW

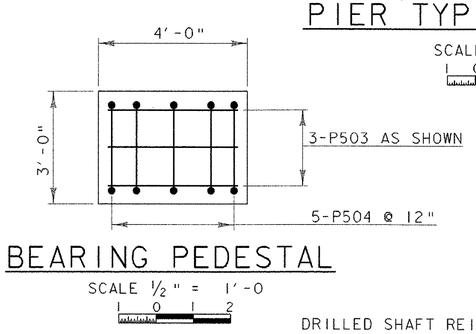
BEARING PEDESTAL ELEVATIONS

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




## PIER TYPICAL SECTION

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




## BEARING PEDESTAL

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

DRILLED SHAFT REINFORCING NOT SHOWN FOR CLARITY

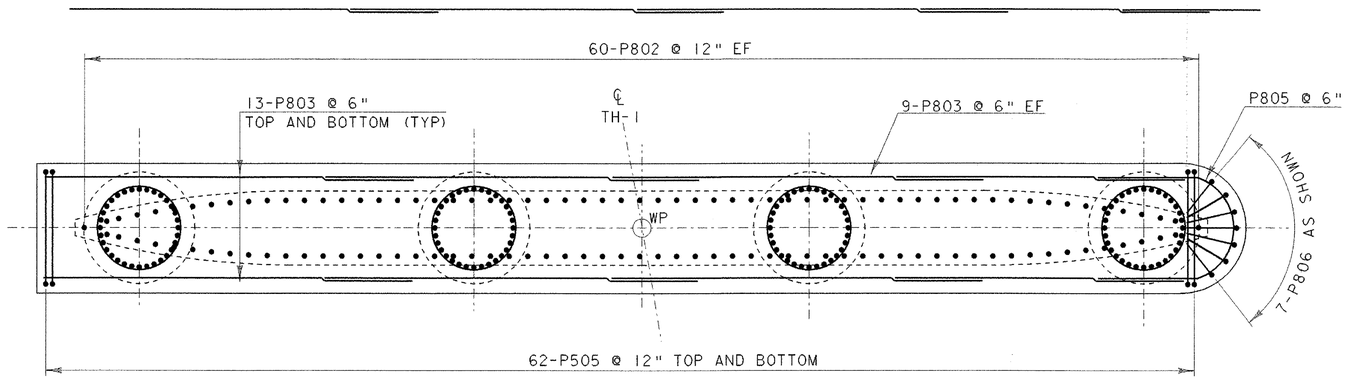
NOTE:

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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:
PROJECT NUMBER: ROYALTON BRZ 1444 (22)

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

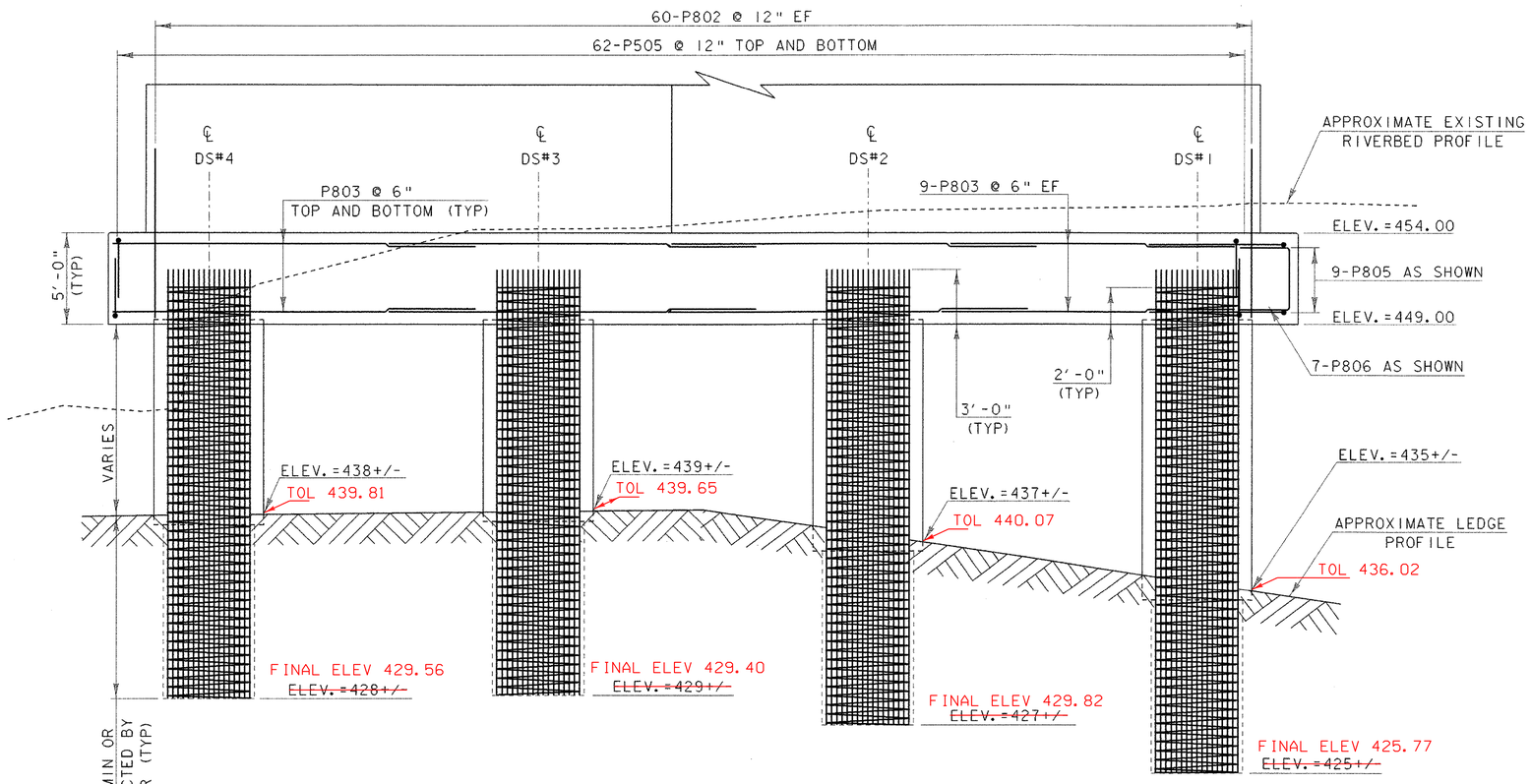
PLOT DATE: 11-AUG-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: W.B. SYMONDS
SHEET 63




## DRILLED SHAFT AND PIER FOOTING
## REINFORCING PLAN

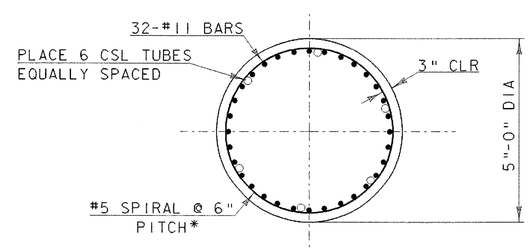
FLOW

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



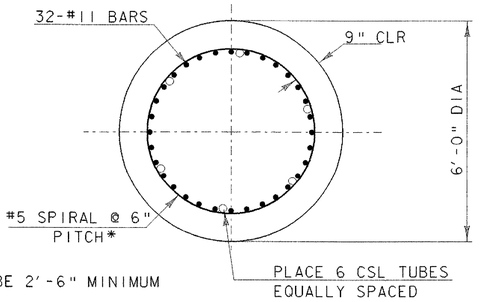

## DRILLED SHAFT AND PIER FOOTING
## REINFORCING ELEVATION

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




## DRILLED SHAFT IN ROCK
## TYPICAL SECTION

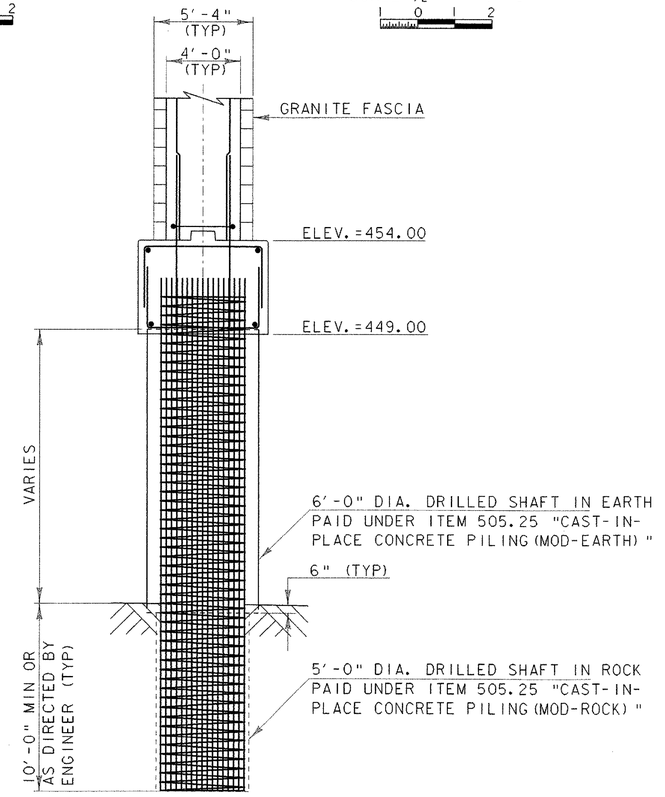
SCALE 1/2" = 1'-0
0 1 2




*LAPS SHALL BE 2'-6" MINIMUM

## DRILLED SHAFT IN EARTH
## TYPICAL SECTION

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




## DRILLED SHAFT TYPICAL SECTION

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

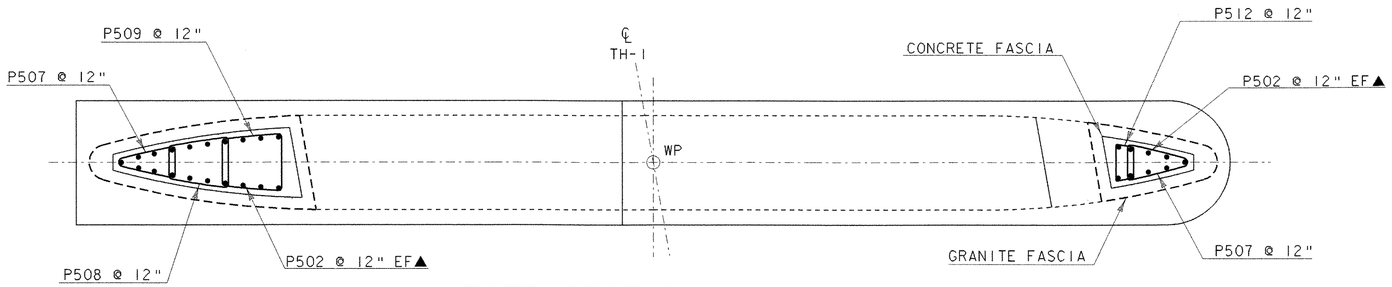
NOTE:

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"
CSL = CROSS HOLE SONIC LOGGING

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

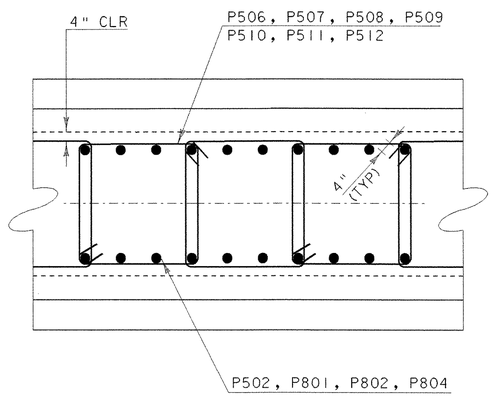
FILE NAME: 89j099/structures/sj099pier.dgn
IPARM NAME: sj099ftgshaftrein.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
DRILLED SHAFT AND FOOTING DETAILS

PLOT DATE: 11-AUG-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: W.B. SYMONDS
SHEET 64



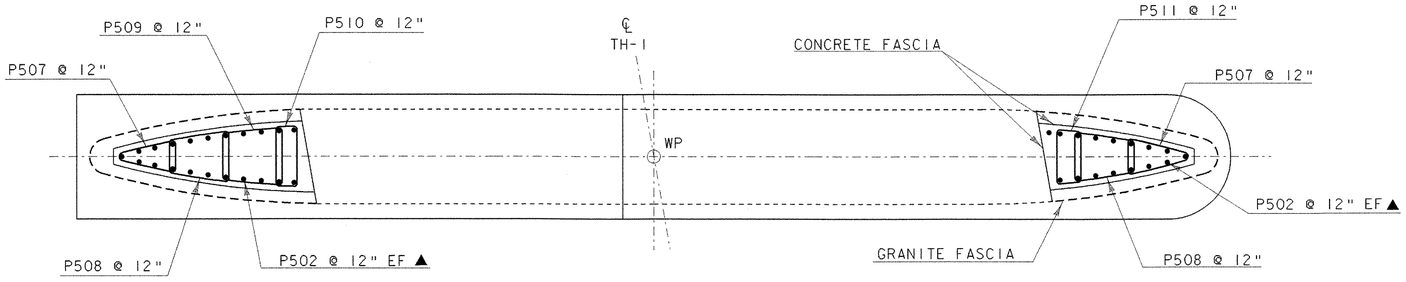

## PIER SECTION A-A

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



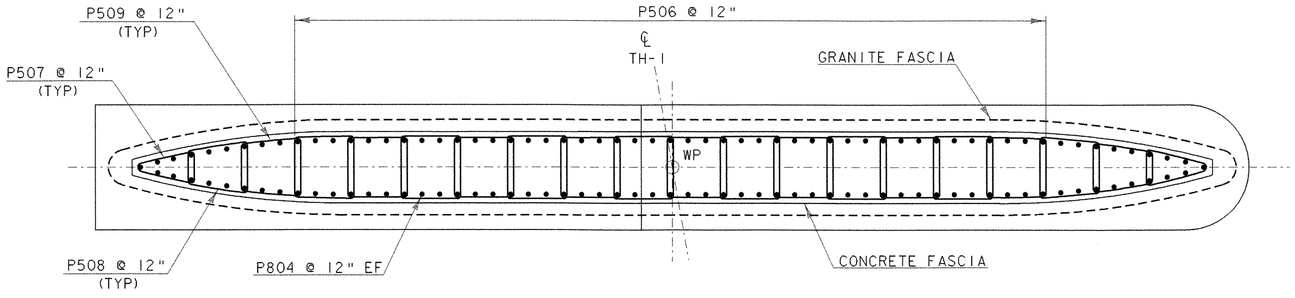

## TYPICAL TIE DETAIL

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




## PIER SECTION B-B

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




## PIER SECTION C-C

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

FLOW

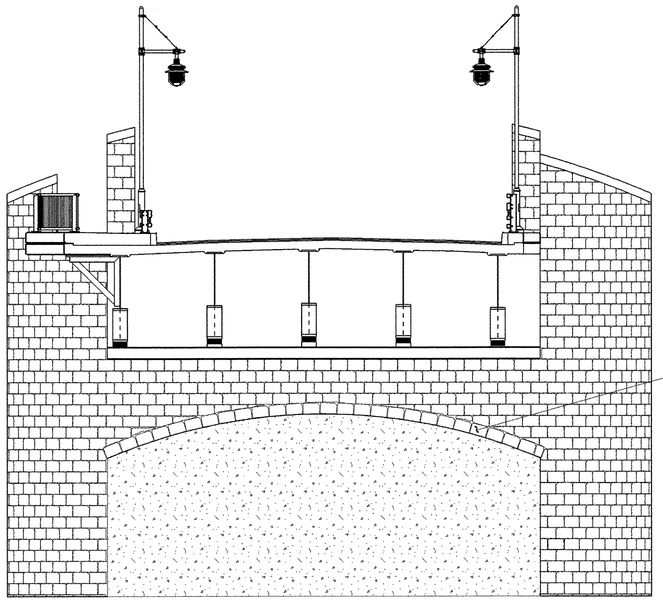
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▲ = CUT TO FIT IN FIELD
PC = POINT OF CURVATURE
C.J. = CONSTRUCTION JOINT
ALL LAP SPLICES NOT DETAILED SHALL BE 2'-2"

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

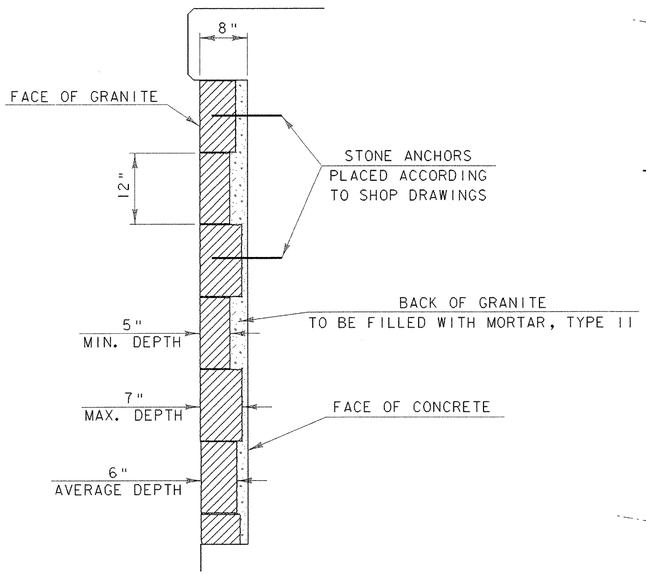
FILE NAME: 89j099/structures/sj099pier.dgn
IPARM NAME: sj099piersections.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
PIER SECTIONS

PLOT DATE: 25-SEP-2000
DRAWN BY: D.G. BASSETT
CHECKED BY: W.B. SYMONDS
SHEET 65 OF 118



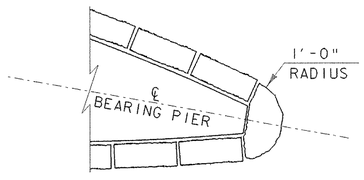

ELEVATION VIEW OF PIER

NTS



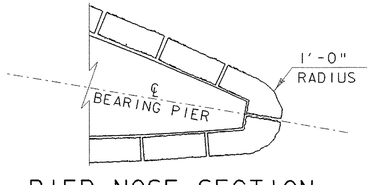

GRANITE FACING TYPICAL

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.

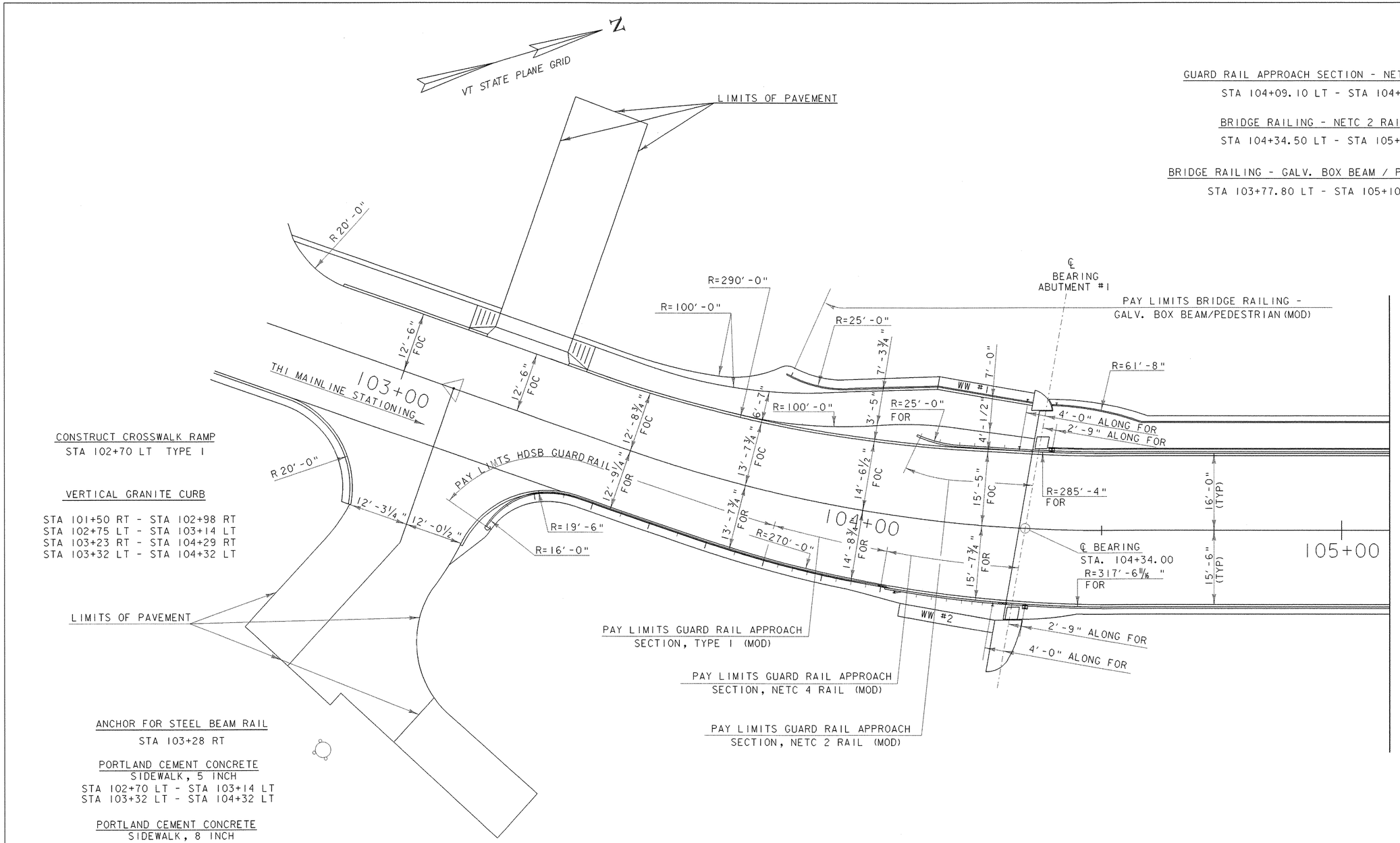
14. ALL STONES SHALL BE WELL BEDDED WITH THE FACE JOINTS PROPERLY POINTED BEFORE THE MORTAR HAS SET, UNLESS OTHERWISE PERMITTED. WHEN PERMITTED, JOINTS TO BE POINTED AFTER MORTAR HAS SET, SHALL BE RAKED OUT TO A DEPTH OF 2". JOINTS SHALL BE MOISTENED AND FILLED WITH MORTAR WELL DRIVEN IN. ALL POINTING 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




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

PAY LIMITS GUARD RAIL APPROACH SECTION, TYPE I (MOD)

PAY LIMITS GUARD RAIL APPROACH SECTION, NETC 4 RAIL (MOD)

PAY LIMITS GUARD RAIL APPROACH SECTION, NETC 2 RAIL (MOD)

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

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

# CURB AND RAILING LAYOUT

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 1

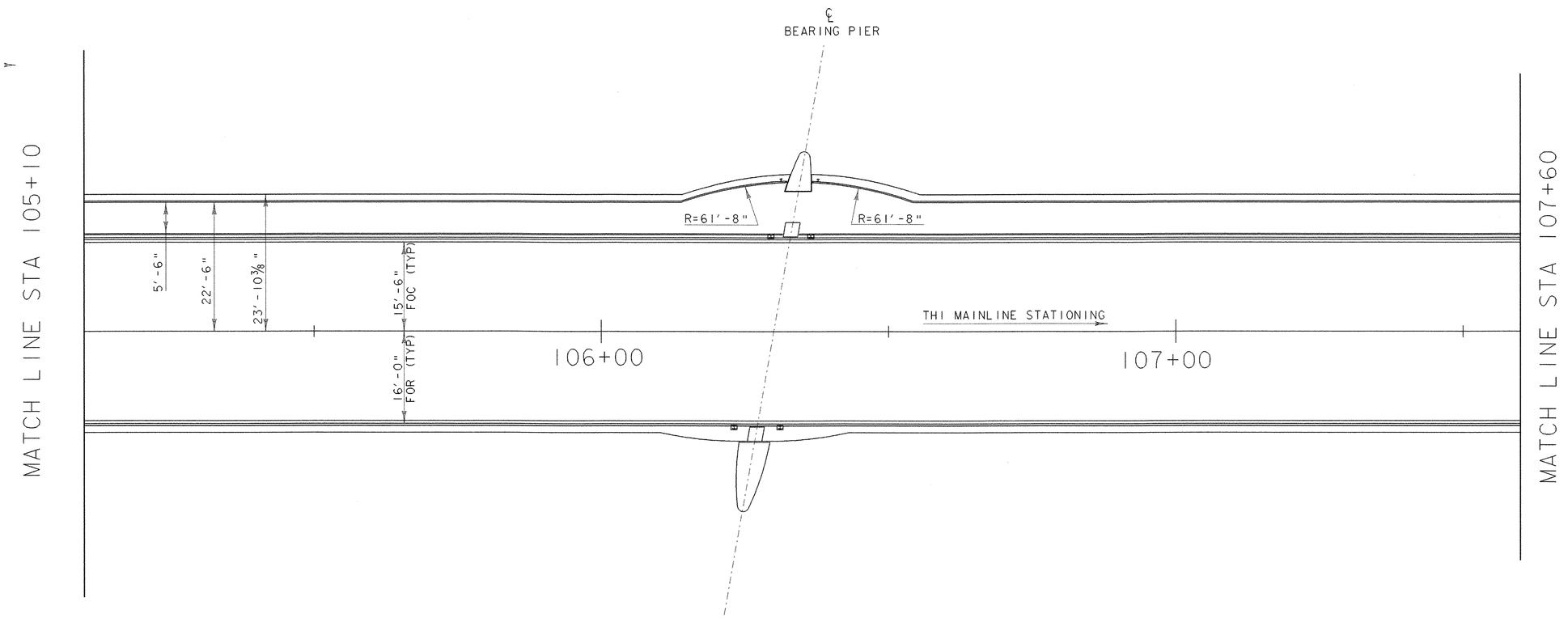
PLOT DATE: 25-SEP-2000
DRAWN BY: P.R. ROWE
CHECKED BY: W.B. SYMONDS
SHEET 67 OF 118

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

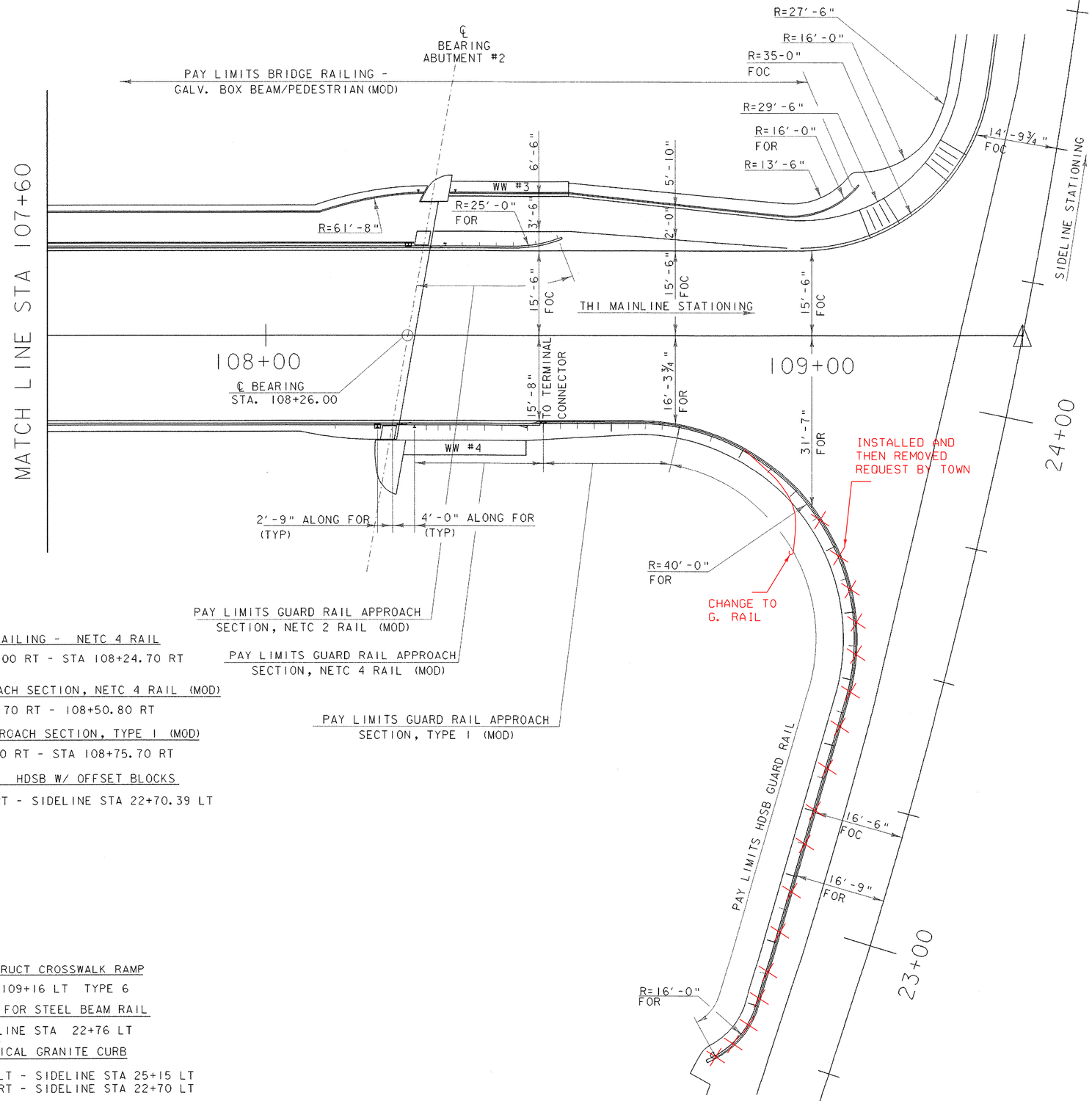
SCALE 1" = 10'-0
10 0 10

FOR = FACE OF RAIL
FOC = FACE OF CURB

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

FILE NAME: 89j099/structures/sj099rail.dgn
IPARM NAME: sj099raillay2.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
CURB AND RAILING LAYOUT 2

PLOT DATE: 25-SEP-2000
DRAWN BY: P.R. ROWE
CHECKED BY: W.B. SYMONDS
SHEET 68 OF 118




N

VT STATE PLANE GRID

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

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 1 (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

# CURB AND RAILING LAYOUT

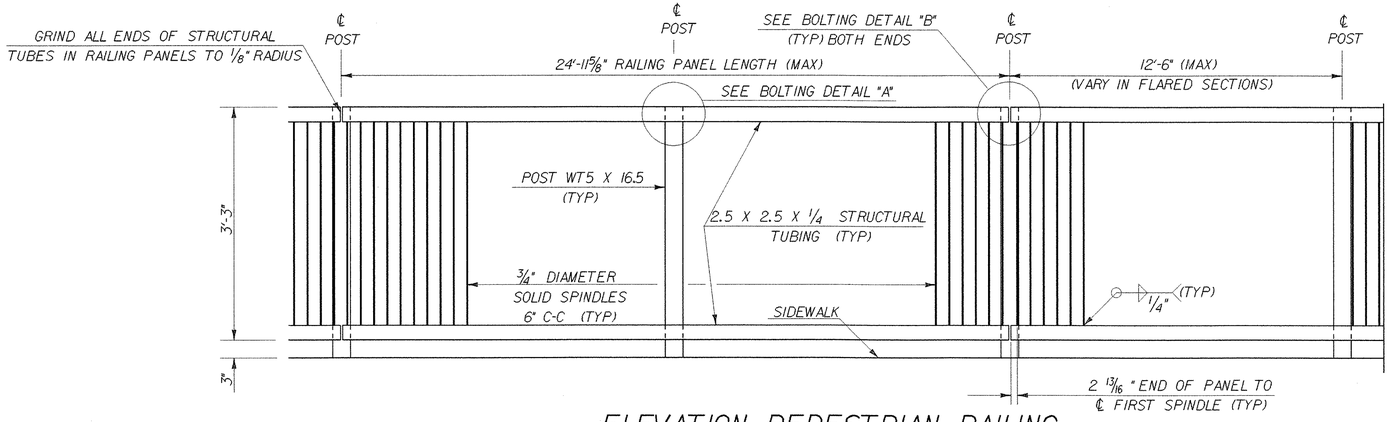
SCALE 1" = 10'-0
10 0 10

FOR = FACE OF RAIL
FOC = FACE OF CURB

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

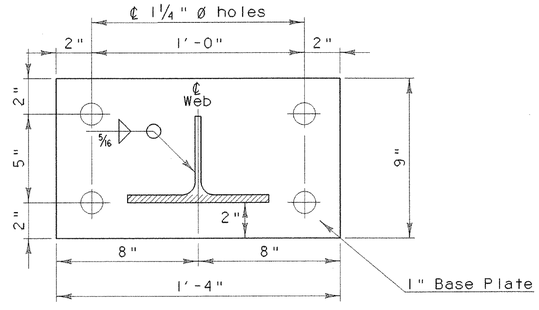
FILE NAME: 89j099/structures/sj099rail.dgn
IPARM NAME: sj099raillay3.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
CURB AND RAILING LAYOUT 3

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"

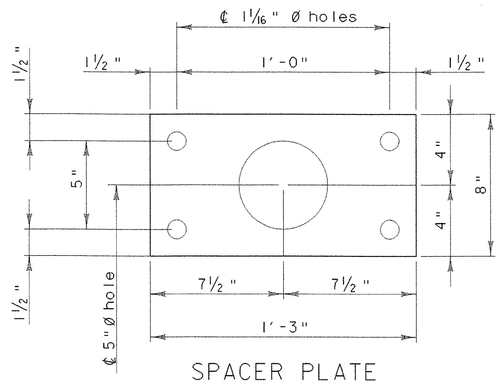



## POST & BASE PLATE

SIDEWALK AND WINGWALL MOUNTED POSTS

SCALE 3" = 1'-0



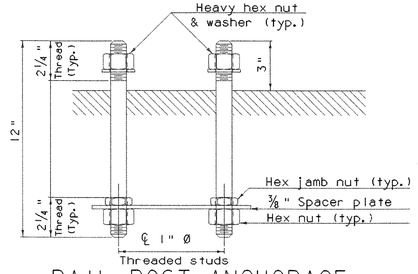




## SPACER PLATE

SIDEWALK AND WINGWALL MOUNTED POSTS

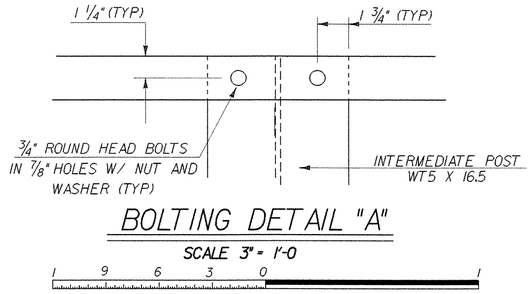
SCALE 3" = 1'-0




## RAIL POST ANCHORAGE

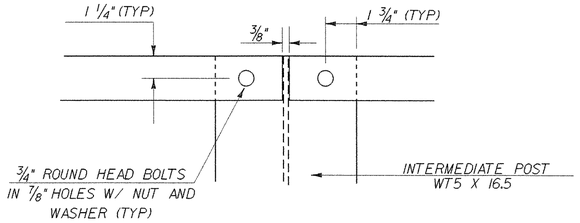
NTS




## BOLTING DETAIL "A"

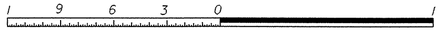
SCALE 3" = 1'-0

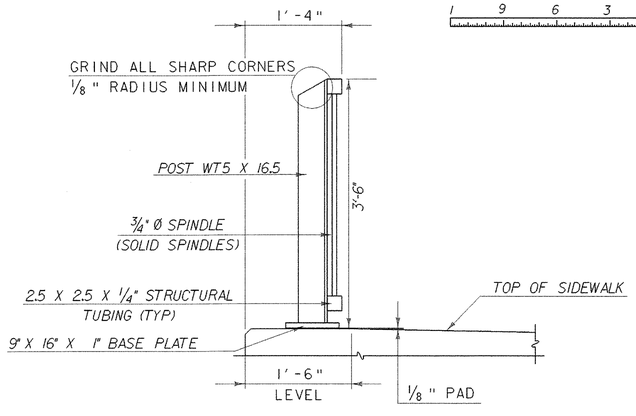



## BOLTING DETAIL "B"

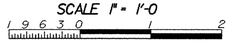
SCALE 3" = 1'-0




## PEDESTRIAN RAIL BRIDGE SECTION

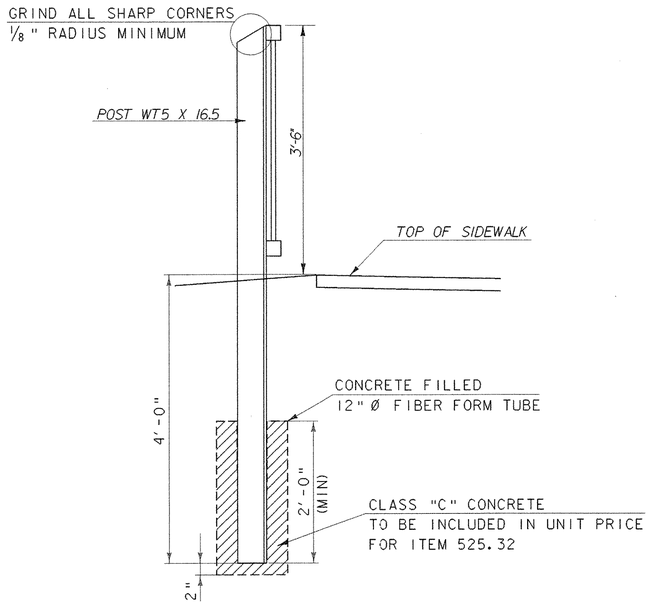
SCALE 1" = 1'-0




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

FILE NAME: 89j099/structures/sj099rail.dgn
IPARM NAME: sj099ped1.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
PEDESTRIAN RAIL DETAILS

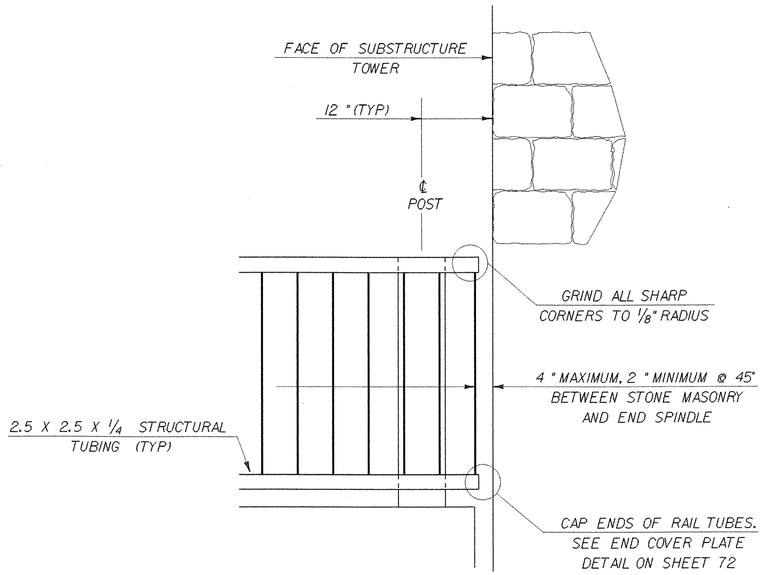
PLOT DATE: 25-SEP-2000
DRAWN BY: P.R. ROWE
CHECKED BY: W.B. SYMONDS
SHEET 70 OF 118




## PEDESTRIAN RAIL APPROACH SECTION

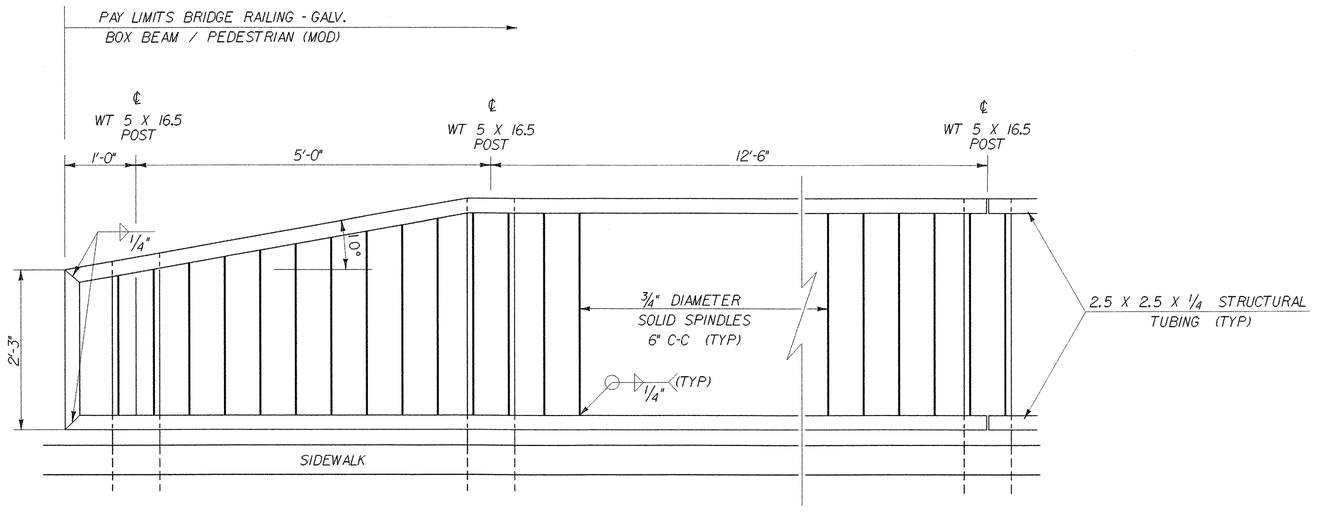
(POSTS INSTALLED IN SOIL)

SCALE 1" = 1'-0




## PEDESTRIAN RAIL TERMINATION @ TOWER

SCALE 1" = 1'-0




## PEDESTRIAN RAIL APPROACH END SECTION

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 1 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.

## 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.

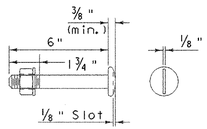
1/8" pad shall comply with standard specification subsection 731.01 or 731.02.

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

FILE NAME: 89j099/structures/sj099rail.dgn
IPARM NAME: sj099ped2.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
PEDESTRIAN RAIL APPROACH DETAILS

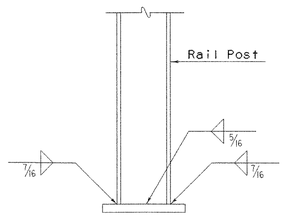
PLOT DATE: 26-SEP-2000
DRAWN BY: P.R. ROWE
CHECKED BY: W.B. SYMONDS
SHEET 71 OF 118

# NETC TYPICAL DETAILS

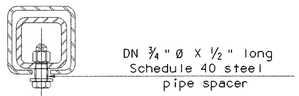



## 3/4 " Ø M164 (TYPE I) ROUND HEAD BOLT

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

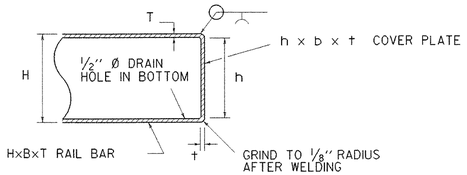



## BASE WELD DETAIL



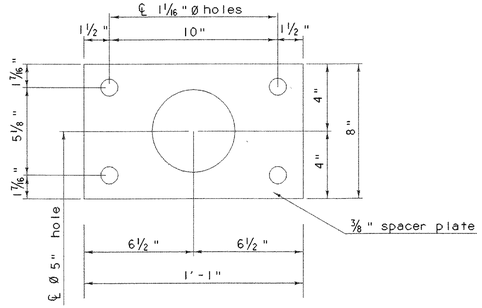

## EXPANSION JOINT SECTION

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

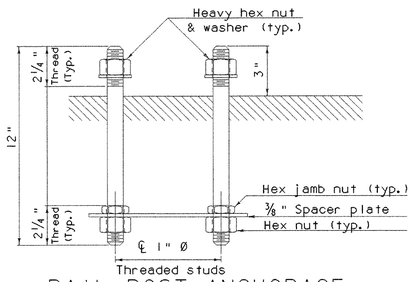



| STEEL BEAM | COVER PLATE |
|---|---|
| 8"x4"x5/16" | 7 1/2"x3 1/2"x1/4" |
| 4"x4"x1/4" | 3 5/8"x3 5/8"x1/4" |
| 8"x2"x1/4" | 7 5/8"x1 5/8"x1/4" |
| 4"x2"x1/4" | 3 5/8"x1 5/8"x1/4" |
| 2.5"x2.5"x1/4" | 2 1/8"x2 1/8"x1/4" |

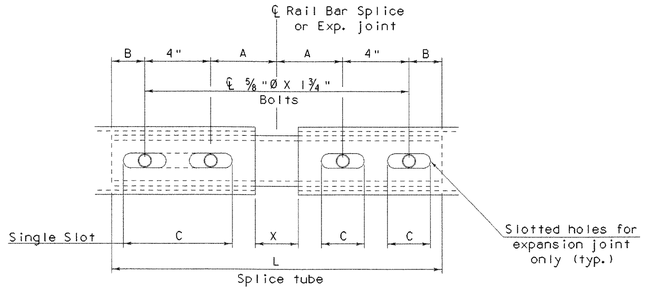
## END COVER PLATE DETAIL




## SPACER PLATE

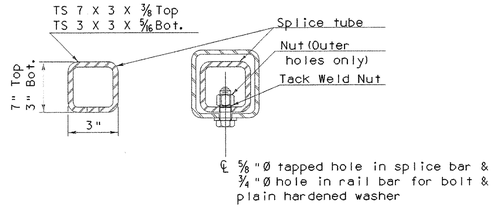



## RAIL POST ANCHORAGE

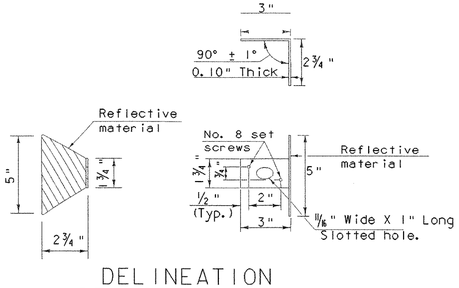



## RAIL BAR SPLICE & RAIL EXP. JOINT DETAIL

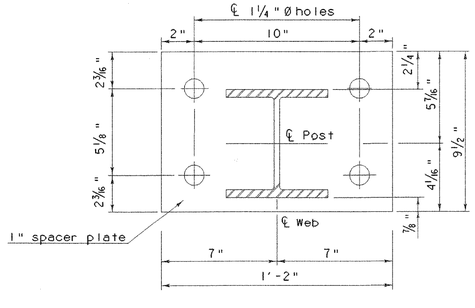
[Bottom View]




## RAIL BAR SPLICE SECTION




## DELINEATION DEVICE DETAILS




## POST & BASE 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 I) 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 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.

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

| 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 " |

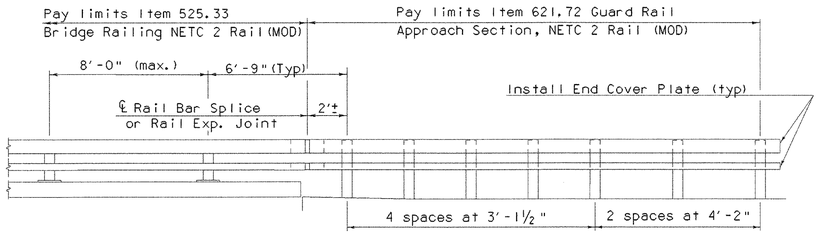
T = Total Movement  * = Single Slot

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

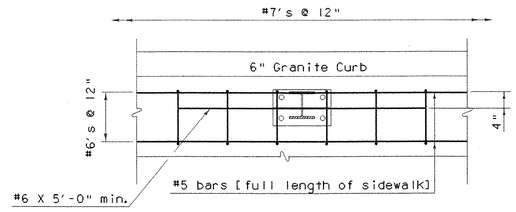
FILE NAME: 89J099/structures/sj099rail.dgn
IPARM NAME: sj099netcl.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
NETC TYPICAL DETAILS

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.

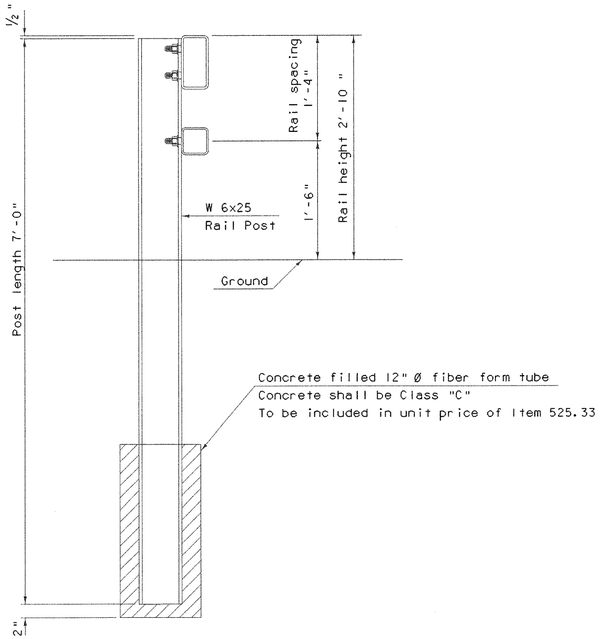
2. To facilitate field fit - up of the transition railing posts shall be set loosely into fiber form tubes while transition parts are being assembled. Post holes shall be backfilled with a concrete mix approved by the Engineer. Payment for components, including backup plate and end terminal connector 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

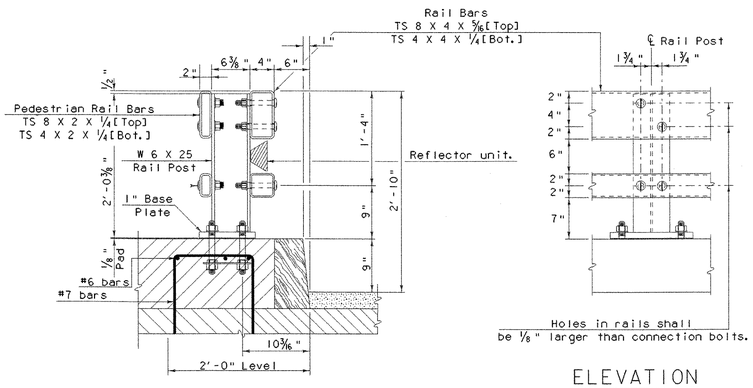
4. Reflective material shall meet requirements of subsection 750.08 and shall be of encapsulated lens silver or amber. Amber is to be installed on the driver's left and silver on their right.

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.

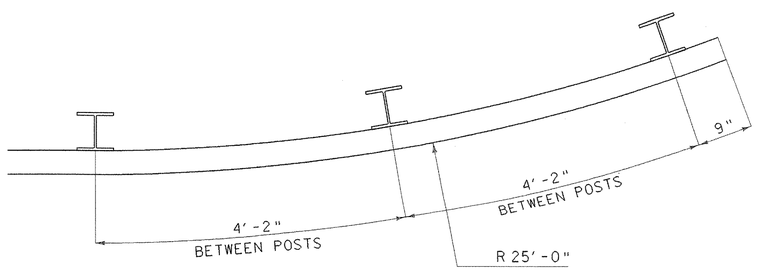



TYPICAL SECTION

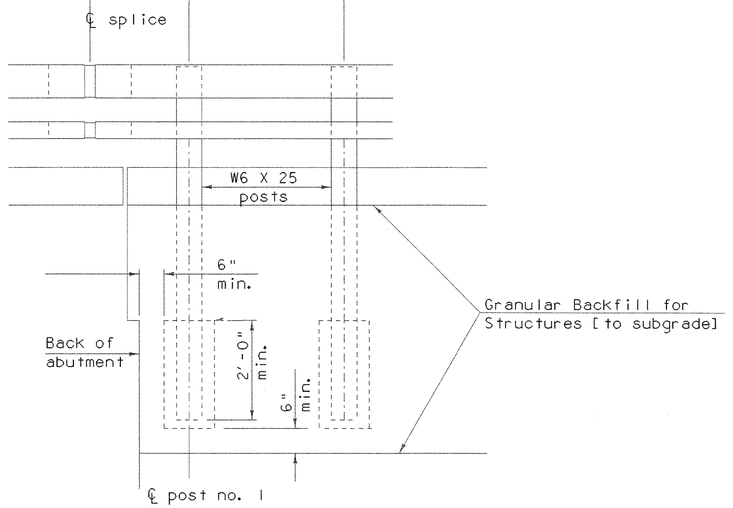



TYPICAL SECTION
[sidewalk side only]

ELEVATION




TYPICAL 2 RAIL NETC FLARE



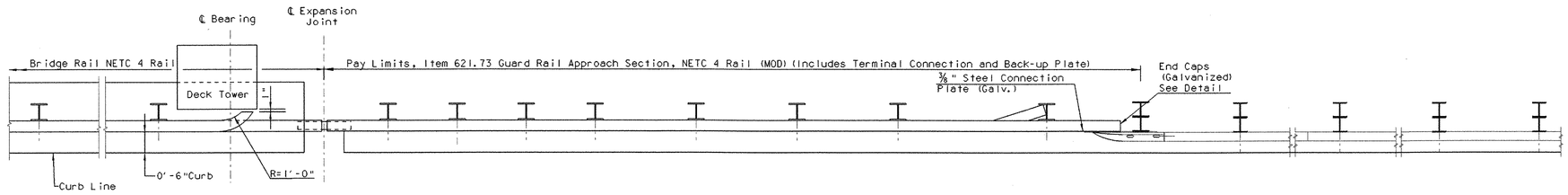

ELEVATION

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

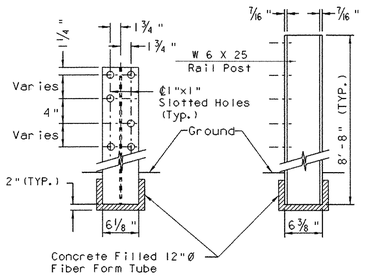
PLOT DATE: 25-SEP-2000
DRAWN BY: P.R. ROWE
CHECKED BY: W.B. SYMONDS
SHEET 73 OF 118

# NETC 4 RAIL DETAILS



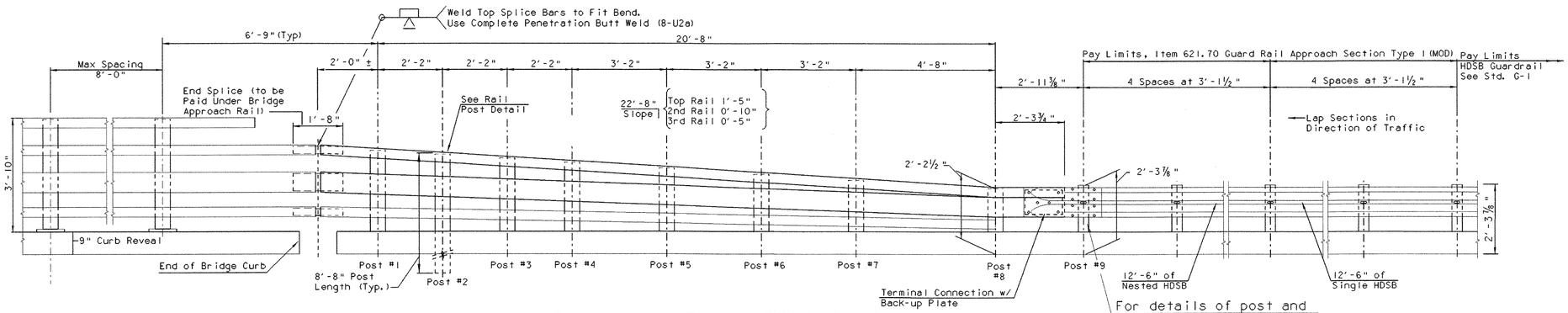

## PLAN VIEW - APPROACH RAIL

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



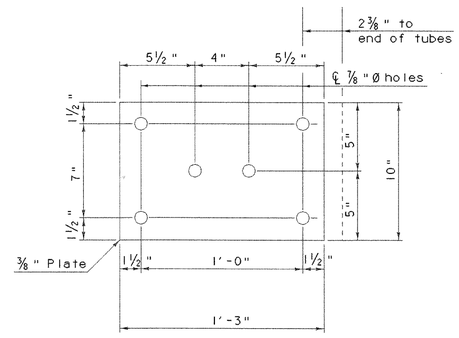

## RAIL POST

SCALE: 1" = 1'-0"

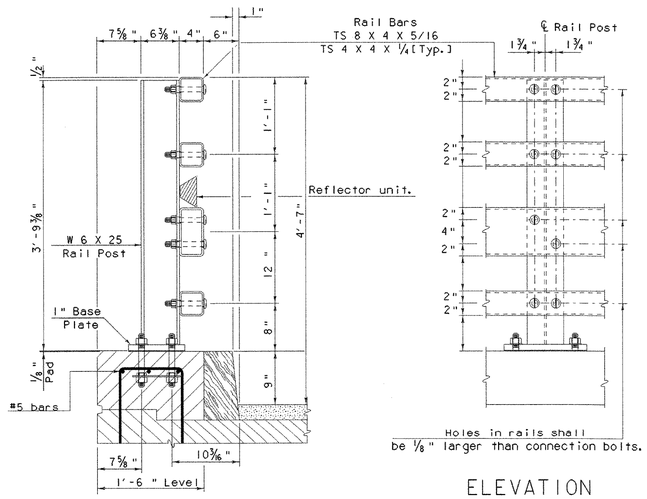



## ELEVATION VIEW - APPROACH RAIL

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




## BACK - UP PLATE



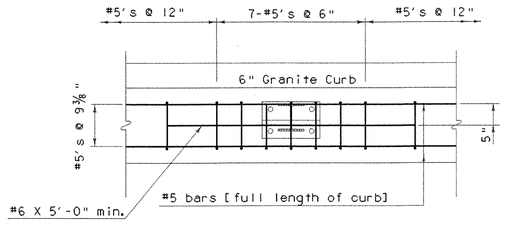

## TYPICAL SECTION

[Curb Side Only]



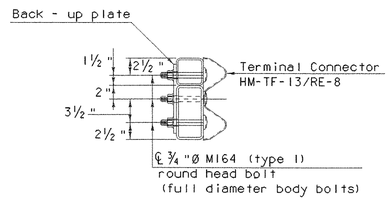

## ELEVATION

[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)

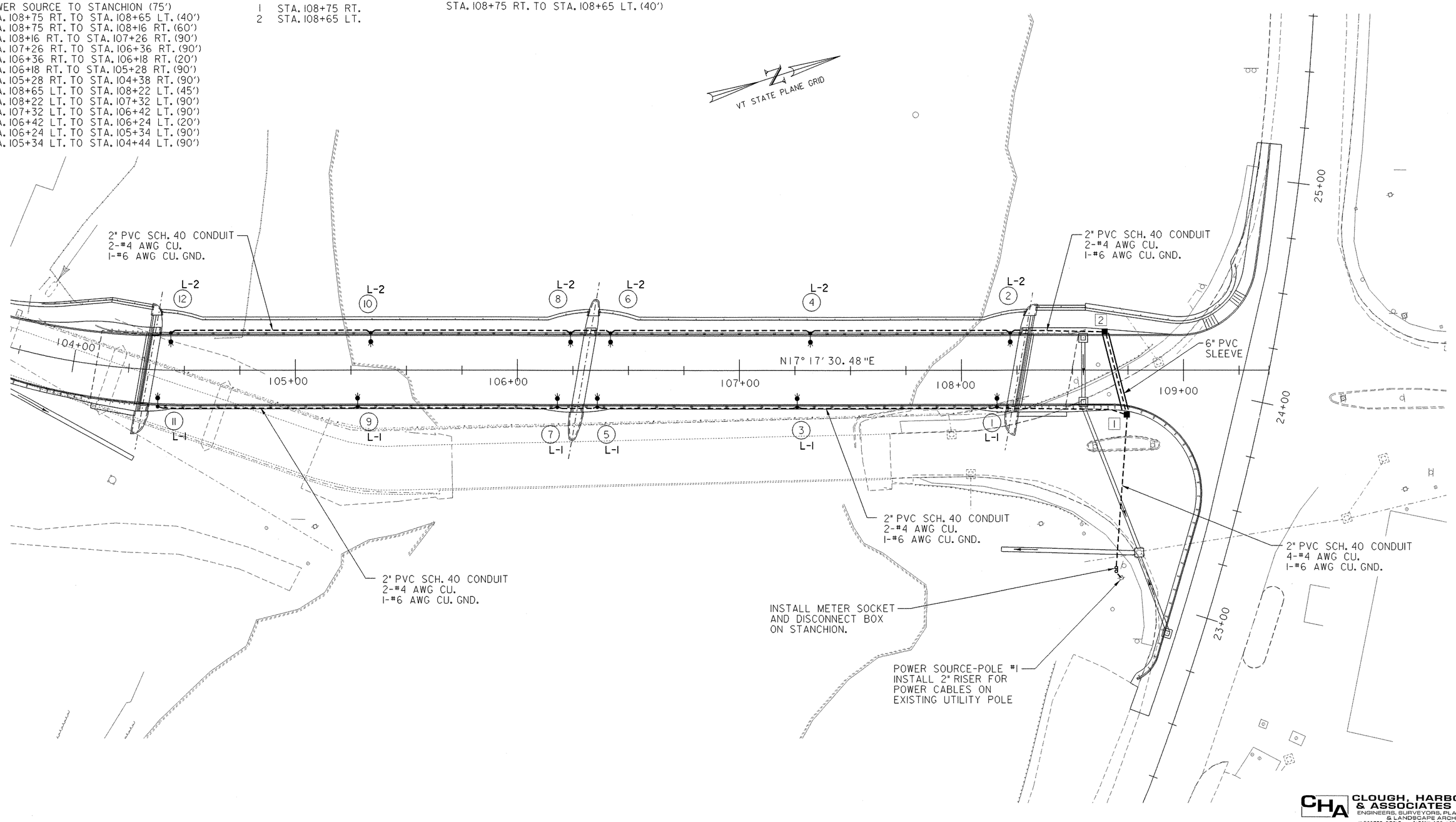
FILE NAME: 89j099/structures/sj099rail.dgn
IPARM NAME: sj099netc3.i
PROJECT LEADER: C.P. WILLIAMS
DESIGNED BY: W.B. SYMONDS
NETC 4 RAIL DETAILS

PLOT DATE: 25-SEP-2000
DRAWN BY: P.R. ROWE
CHECKED BY: W.B. SYMONDS
SHEET 74 OF 118

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
18 WINNERS CIRCLE ALBANY, NEW YORK 12205


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

FILE NAME: U:\9425\MSTN\SLP-1.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 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' |

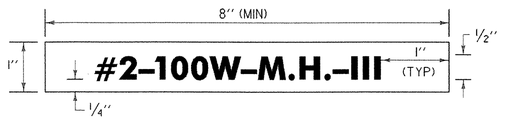
## STREET LIGHTING DESIGN PARAMETERS

| | RECOMMENDED | ACTUAL |
|---|---|---|
| ROADWAY (COLLECTOR-INTERMEDIATE) | 0.8 FC<br>4 : 1 UR | 1.43 FC<br>2.75 : 1 UR |
| SIDEWALK | 0.8 FC<br>4 : 1 UR | 0.84 FC<br>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 |
| ơơ | ơơ | 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.

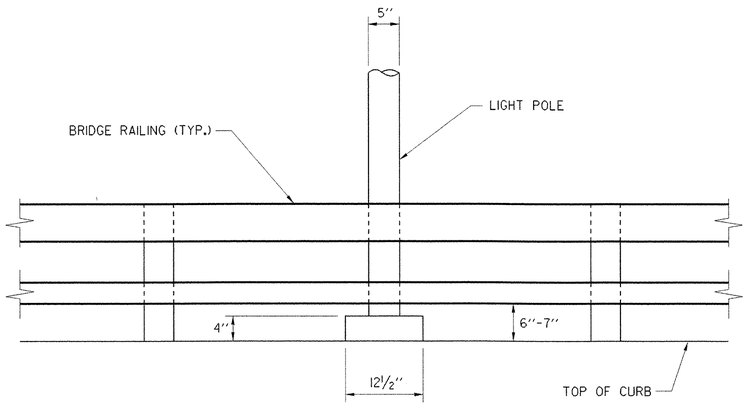
### GENERAL

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

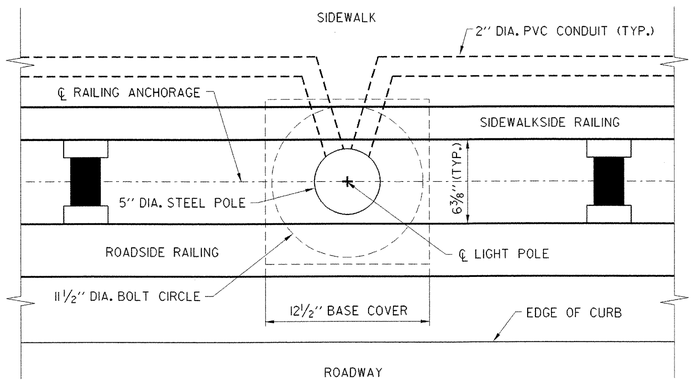
2.) FOR STANCHION DETAIL SEE STANDARD SHEET E-175.

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

INTERCONNECTION
REMOVE EXISTING 12"x6" REDUCER
12"x8" TEE, MJ W/RG
8" D.I. NIPPLE, VARIABLE LENGTH
8" GATE VALVE, MJ W/RG
8" D.I. NIPPLE, VARIABLE LENGTH
MANUAL AIR RELEASE/CHLORINE INJECTION POINT
8"-1/8 BEND, MJ W/RG

12"-1/16 BEND, MJ W/RG

(2) 12"-1/8 BENDS, MJ W/RG

BLOW OFF
1" CORPORATION STOP
1" COPPER, VARIABLE LENGTH
1" CURB STOP
1" COPPER, VARIABLE LENGTH

FOR NEW WATER AND SEWER PIPE SUPPORTS AND ATTACHMENT TO BRIDGE SEE DETAILS ON SHEET C5.

MANUAL AIR RELEASE

8" A.C. SEWER

EXISTING 6" A.C.

EXISTING 12" D.I. WATER

NEW D.I. WATER MAIN ON BRIDGE

EXISTING 6" BLOW OFF

MANUAL AIR RELEASE/CHLORINE INJECTION POINT

12"-7/16 BEND, MJ W/RG
12"-11/32 BEND, MJ W/RG

12" BUTTERFLY VALVE, MJ W/RG

12" SOLID SLEEVE, MJ W/RG

INTERCONNECTION
12"x8" TEE, MJ W/RG
8" D.I. NIPPLE, VARIABLE LENGTH
8" GATE VALVE, MJ W/RG
MANUAL AIR RELEASE/CHLORINE INJECTION POINT

12"x8" REDUCER, MJ W/RG

EXISTING 8" D.I. WATER MAIN

MAINTAIN 10' MIN. SEPARATION

EXISTING WATER MAIN ON BRIDGE

CONTRACTOR SHALL RELOCATE EXISTING DRY HYDRANT TO ROAD CENTERLINE STATION 103+10 80' RIGHT w/APPROXIMATELY 50 L.F. OF 8" CL 140 D.I. PIPE AND M.J. FITTINGS IN ACCORDANCE WITH DETAILS OR C6

TEMPORARY WATER MAIN
CONTRACTOR SHALL DESIGN AND INSTALL A TEMPORARY 8" WATER MAIN FROM 8"1/8 BEND TO 8" GATE VALVE. PIPE SHALL BE AWWA APPROVED MIN. 200 psi WORKING PRESSURE. ~~FURNISH DESIGN OF PIPE SUPPORTS WITH TEMPORARY BRIDGE SUBMITTAL~~

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.

## GENERAL LEGEND
( TYPICAL FOR ALL SHEETS)

| | | | | | |
|---|---|---|---|---|---|
| ⊙ | = | 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 | ⋈ | = | BUTTERFLY VALVE |

STATE OF VERMONT — A. T. RICE — No. 9951 — REGISTERED PROFESSIONAL ENGINEER
6-8-00

PROJECT: ROYALTON
PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: /usr/str4/891099/sl099bdr.dgn
IPARM FILE NAME: /str4/891099/sl099lgl.I
SURVEYED BY: R. GILMAN
SQUAD LEADER: C.P. WILLIAMS
UTILITY SITE PLAN
PLOT DATE: 01JUL 98
SURVEY DATE: 9/91
DRAWN BY: W.B. SYMONDS
SHEET: 77 OF 118

Dufresne-Henry, Inc.
Consulting Engineers
Northfield, Vermont 05602
Tel (802) 229-0771 • FAX (802) 229-0480 • www.d-h.com

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

VERMONT

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

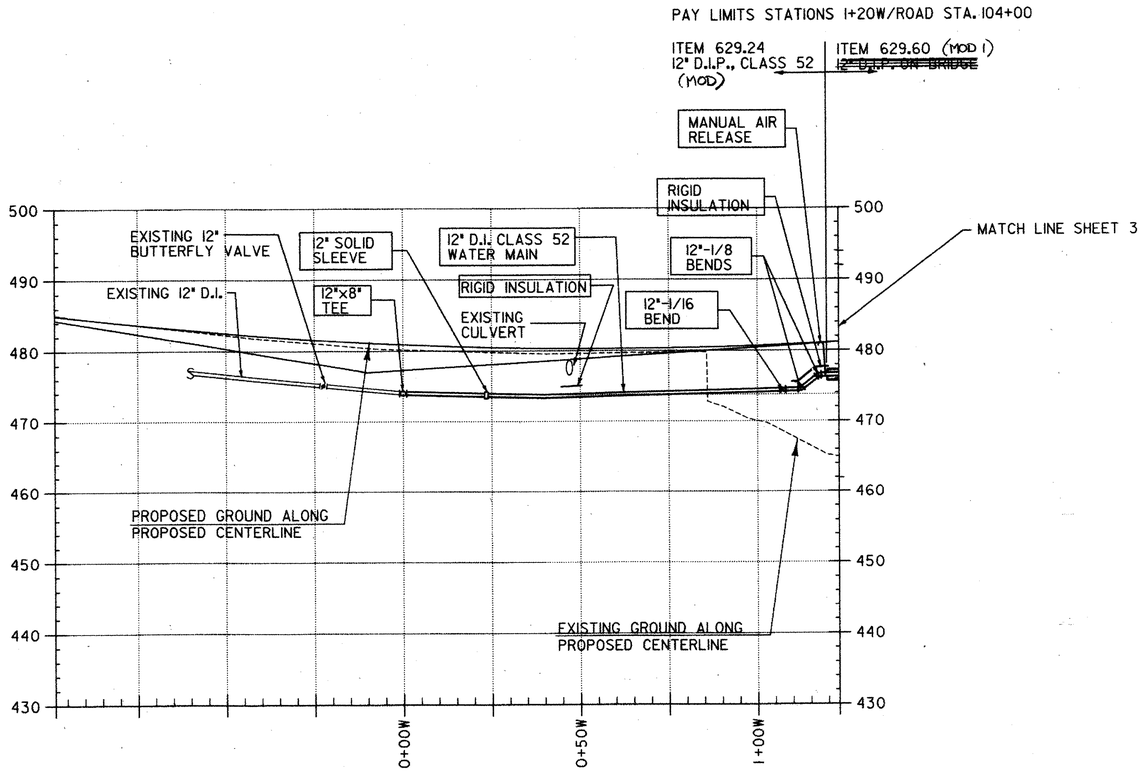
# UTILITY SITE PLAN

SOUTH ROYALTON

Project No. 617005I
Proj. Manager A. T. RICE
Proj. Designe. 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 617005I




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.

VERTICAL 0 10 20 30
HORIZONTAL 0 20 40 60
SCALE IN FEET

STATE OF VERMONT ADAM T. RICE No. 6867 REGISTERED PROFESSIONAL ENGINEER
6-8-00

PROJECT: ROYALTON
PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: /usr/str4/891099/sl099bdr.dgn
IPARM FILE NAME: /str4/891099/sl099lgl.l
SURVEYED BY: B. GILMAN
SQUAD LEADER: C.P. WILLIAMS
UTILITY PROFILE
PLOT DATE: JUL 98
SURVEY DATE: 5/91
DRAWN BY:
SHEET: 78 OF 118

Dufresne-Henry, Inc.
Consulting Engineers
Williston, Vermont 05602
Tel. (802) 658-0071 • FAX (802) 658-0091 • www.dufresne-henry.com

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

VERMONT

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

**UTILITY PROFILE**
**STA. 0+00 TO 1+23**

SOUTH ROYALTON

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

C2

Sheet 2 of 6

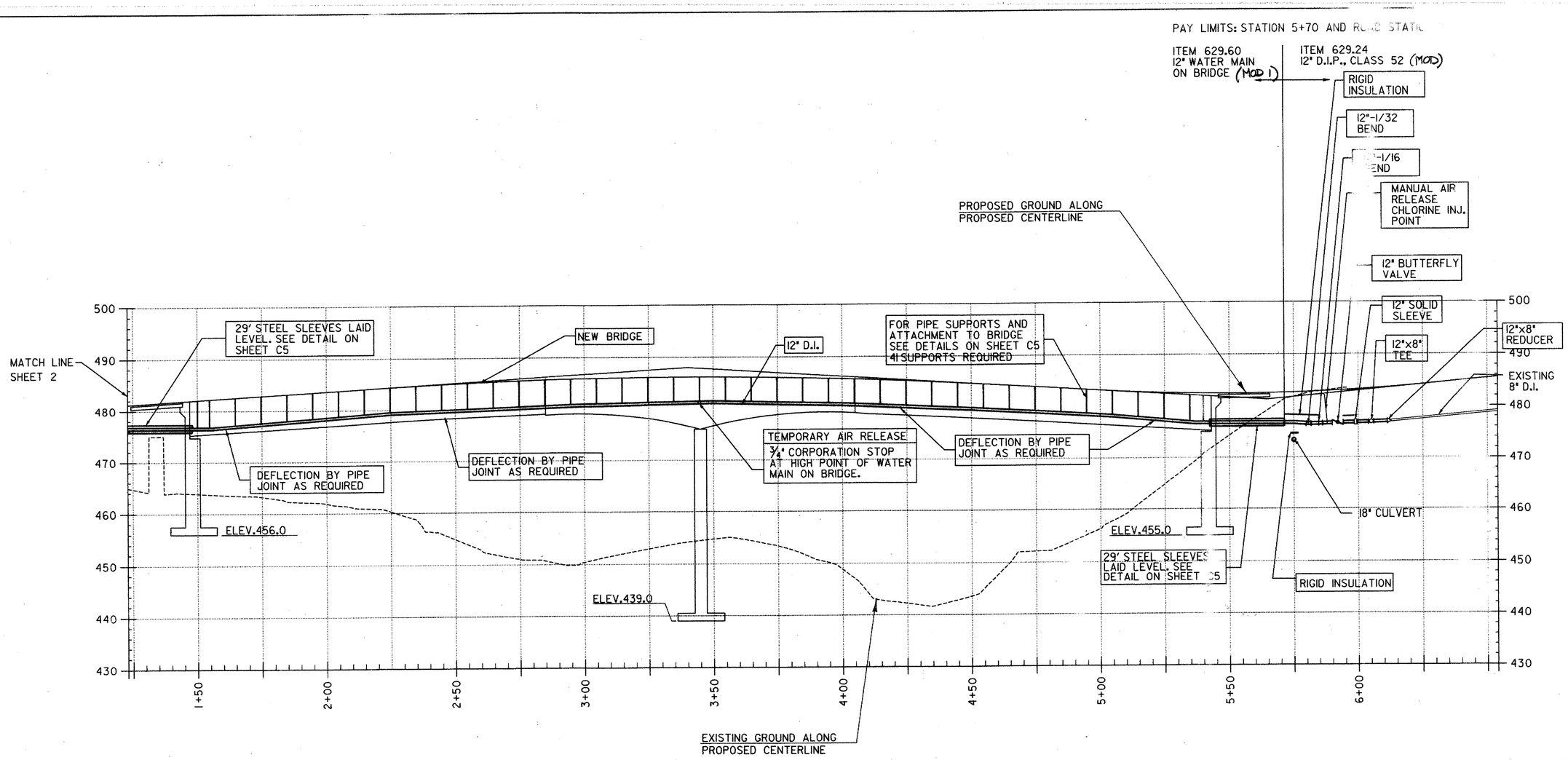
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PAY LIMITS: STATION 5+70 AND ROAD STATION

ITEM 629.60
12" WATER MAIN
ON BRIDGE (MOD 1)

ITEM 629.24
12" D.I.P., CLASS 52 (MOD)




VERTICAL
30
20
10
0

HORIZONTAL
0 20 40 60
SCALE IN FEET

NOTE:

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

6-8-00

PROJECT: ROYALTON
PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: /usr/str4/891099/sl099bdc.dgn
IPARM FILE NAME: /str4/891099/sl099lgl.l
SURVEYED BY: B. GILMAN
SQUAD LEADER: C.P. WILLIAMS
UTILITY PROFILE
PLOT DATE: 01 JULY 98
SURVEY DATE: 9/91
DRAWN BY:
SHEET: 79 OF 118

Dufresne-Henry, Inc.
Consulting Engineers
Montpelier, Vermont 05602
Tel (802) 229-1771 • FAX (802) 229-1864 • www.d-h-inc.com

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

VERMONT

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

**UTILITY PROFILE**
**STA. 1+23 TO 6+25**

SOUTH ROYALTON

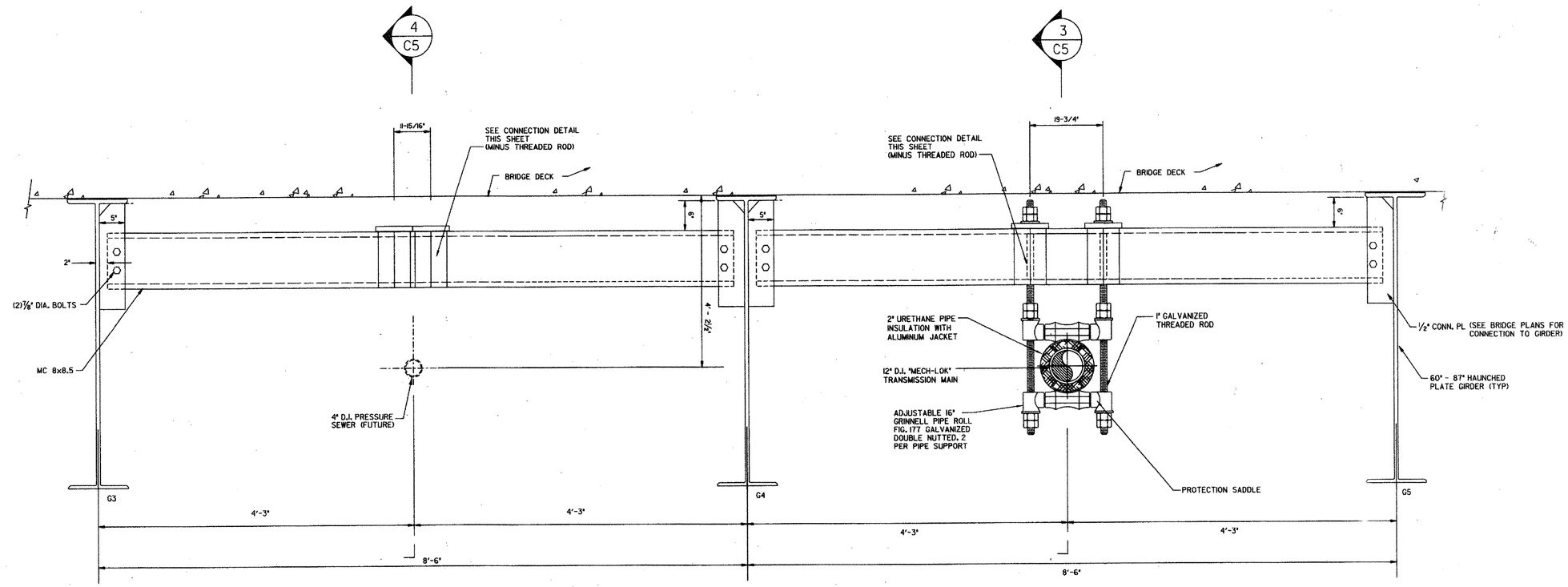
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|---|---|
| Project No. | 6170051 |
| Proj. Manager | A. T. RICE |
| Proj. Designer | R. N. GOODWIN |
| Drawn By | M.A.M./L.A.W. |
| Checked By | A. T. RICE |
| Scale | AS SHOWN |
| Approved | |
| Date | APRIL 2000 |

C3

Sheet 3 of 5

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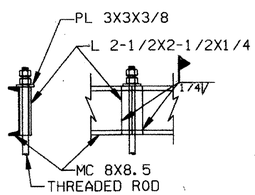



1 / C4 SECTION
NOT TO SCALE

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. 6997 PROFESSIONAL ENGINEER
6-6-00

PROJECT: ROYALTON
PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: /usr/str/89J099/sJ099bdr.dgn
IPARM FILE NAME: /str4/89J099/sJ099lgl.I
SURVEYED BY: R. GILMAN
SQUAD LEADER: C.P. WILLIAMS
12" WATER MAIN IN BRIDGE SECTION
PLOT DATE: 01 JULY 98
SURVEY DATE: 8/91
DRAWN BY:
SHEET: 80 OF 118

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Consulting Engineers
Montpelier, Vermont 05602
Tel (802) 229-0771 • FAX (802) 229-0981 • www.d-h-inc.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 |

VERMONT

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

**UTILITY LOCATIONS UNDER BRIDGE**

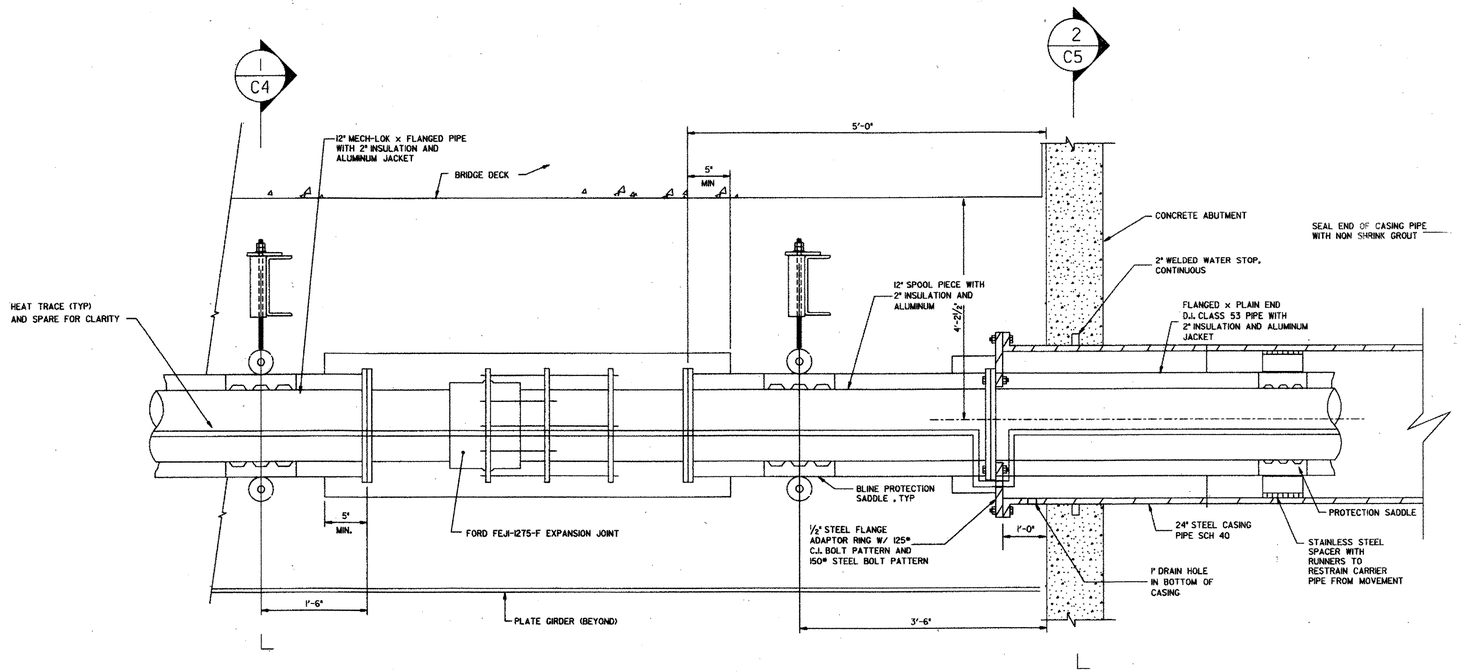
SOUTH ROYALTON

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

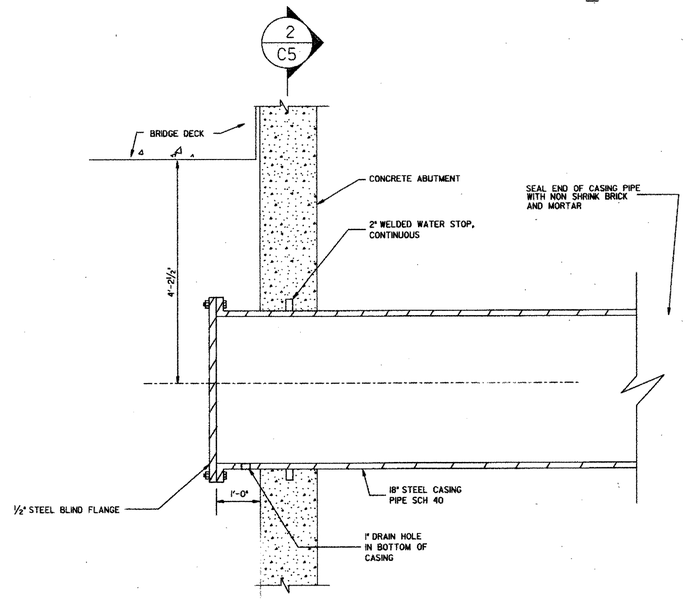
C4

Sheet 4 of 6
6170051

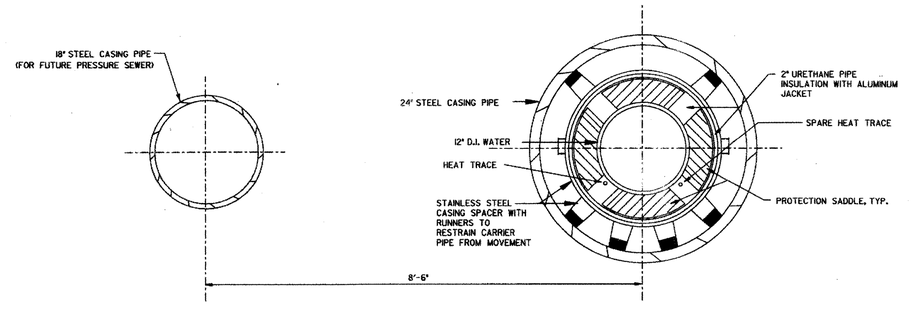
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3/C5 EXPANSION JOINT AND WATER MAIN SUPPORT DETAIL
NOT TO SCALE TYPICAL BOTH ENDS OF BRIDGE




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

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STATE OF VERMONT — WILLIAM T. RICE — No. 8897 — PROFESSIONAL ENGINEER
6-8-00

PROJECT: ROYALTON
PROJECT NO.: BRZ 1444(22)
DESIGN FILE NAME: /usr/str4 891099/sl099bdr.dgn
IPARM FILE NAME: /str4/89 99/sl099lgl.i
SURVEYED BY: B. GILMA
SQUAD LEADER: C.P. WILLAMS
UTILITY SUPPORT DETAILS
PLOT DATE: 01 JULY 98
SURVEY DATE: 9/91
DRAWN BY:
SHEET: 81 OF 118

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

VERMONT

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

# UTILITY SUPPORT DETAILS

SOUTH ROYALTON

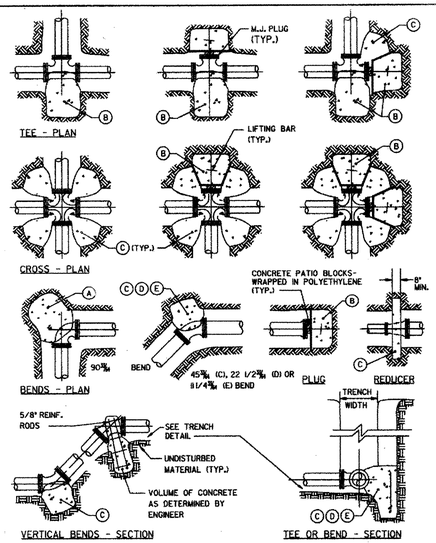
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| Project No. | 617005 |
| Proj. Manager | A. T. RICE |
| Proj. Designer | R. N. GOODWIN |
| Drawn By | M.A.W./L.A.W. |
| Checked By | A. T. RICE |
| Scale | AS SHOWN |
| Approved | |
| Date | APRIL 2000 |

C5

Sheet 5 of 6

617005

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## THRUST BLOCK DETAILS

NOT TO SCALE

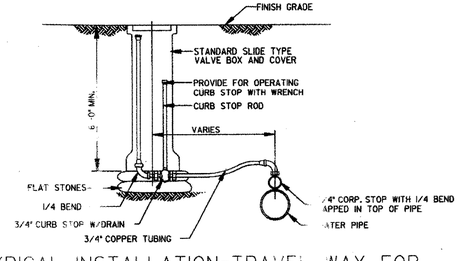
THRUST BLOCK SCHEDULE
SQUARE FEET OF CONCRETE THRUST
BLOCKING BEARING ON UNDISTURBED MATERIAL

| 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.

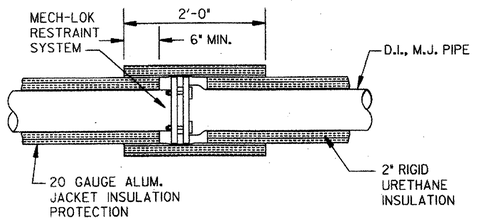
NOTES:

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.



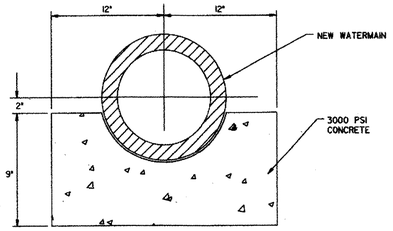

## TYPICAL INSTALLATION-TRAVELWAY FOR AIR VENT OR CHLORINATION INJECTION

NOT TO SCALE



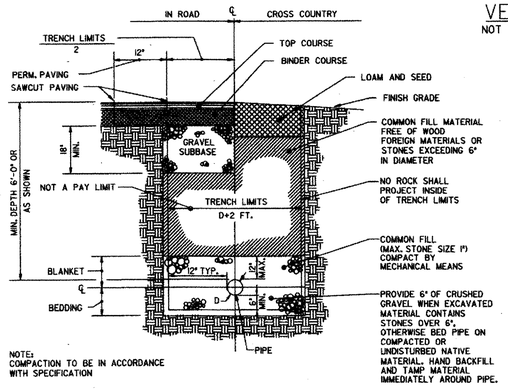

## DETAIL OF INSULATION AT JOINT FOR RESTRAINED PIPE

NOT TO SCALE



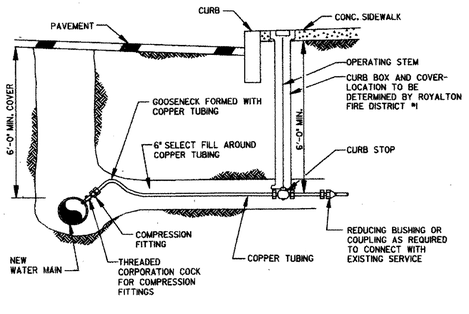

## CONCRETE CRADLE DETAIL

NOT TO SCALE



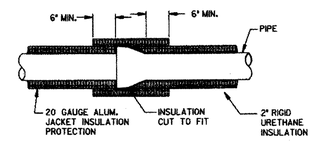

## TYPICAL DUCTILE IRON TRENCH DETAIL

NOT TO SCALE



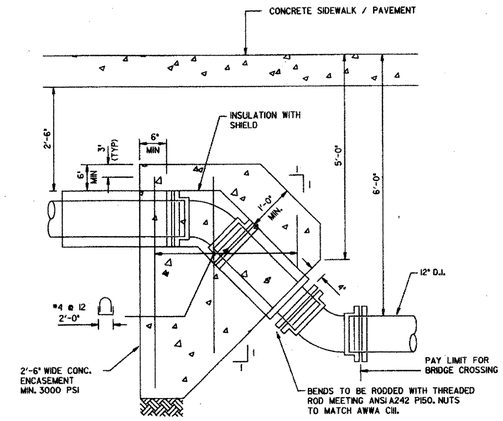

## TYPICAL SERVICE CONNECTION DETAIL

NOT TO SCALE



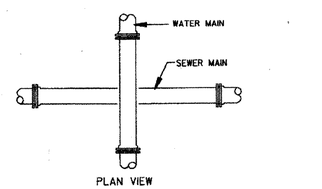

## DETAIL OF INSULATION FOR BURIED PIPE

NOT TO SCALE



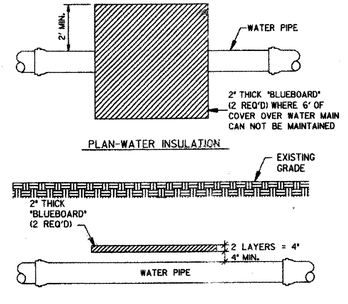

## VERTICAL BEND CONCRETE ENCASEMENT DETAIL

NOT TO SCALE




## WATER AND SEWER CROSSING DETAIL

NOT TO SCALE




## RIGID BOARD INSULATION DETAIL

NOT TO SCALE

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## 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 OF 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 VERTICAL 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 WATERTIGHTNESS BEFORE BACKFILLING. REFER TO WATER/SEWER CROSSING DETAIL.

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

PROJECT: ROYALTON — PROJECT NO: BRZ-(22)
DESIGN FILE NAME: /usr4/489j099/sj099bdr.dgn
IPARM FILE NAME: /str4/489j099/sj099lgl.i
SURVEYED BY: B. GILMAN — PLOT DATE: JULY 98
SQUAD LEADER: C.P. WILLIAMS — SURVEY DATE: 3/91
WATER DETAILS — DRAWN BY: — SHEET: 82 OF 118

Dufresne-Henry, Inc.
Consulting Engineers
Montpelier, Vermont 05602
Tel. (802) 229-1771 • FAX (802) 229-5061 • www.d-h-inc.com

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

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

**WATER DETAILS**

| | |
|---|---|
| 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

/usr4/489j099/sj099bdr.dgn Jun 26, 2000 07:55:28

**WORK ORDER**

existing conduit to Pole#3
2 - 4" PC

BREAK INTO EXISTING CONDUIT STRUCTURE
JOIN NEW DUCTS TO EXISTING DUCTS TO POLE # 3
CAP DUCTS GOING BACK TO MH# 11

sign post 1+70--

**MH# 12**
**12' X6' X7'**
**504 CU FT**
**MIN 24" COVER**

SURVEY MARKER
existing sign

-2+16

APHALT

41'

6'

14'

**10' -6 - 4" PC**

**PT "E"**

**3 - 4" PC**

**PT "F"**

P.1

exist - 4"GIP

Existing Face of Curb

LAWN

TOP

| | | |
|---|---|---|
| A | B | C |
| 4 | 5 | 6 |
| 1 | 2 | 3 |

12'R

2 - 4" PC

**PT "C"**

1 - 4" PC

70"

48"

15'R

- 1+68

**- 24+67**

2 - 4" PC

**PT "D"**

LAWN

**12 - 4" PC**

15'

40'R

Existing Swk

**PT "A"**

TOP

| | | |
|---|---|---|
| 10 | 11 | 12 |
| 7 | 8 | 9 |
| 4 | 5 | 6 |
| 1 | 2 | 3 |

1C - PL- 2 ea - 90 degree bends
36" rad -schedule 40 PVC

TOP

| | | |
|---|---|---|
| 7 | 10 | 11 | 12 |
| 8 | | | |
| 9 | | | |

ALIGNMENT TO BE DETERMINED AFTER BRIDGE DESIGN IS COMPLETE

6 - 4" PC

1'

APHALT

**PT "B"**

6 - 4" PC

- 1+13

19.6'

W

ISLAND

0+76--

2'

W

160'

APHALT

TOP

| | | |
|---|---|---|
| 4 | 5 | 6 |
| 1 | 2 | 3 |

W

0+26--

11.5'

SD

SD

BOLT

poles

15'R

22' 10"

9 - 4" PC

EXISTING CONDUIT - 24" COVER - CONCRETE ENCASED WITH FIBER OPTIC CABLE
BELL ATL WANTS TO LEAVE THIS CONDUIT AND FIBER CABLE WHERE IT IS

0+14--

2'

14'

0+00--

0+02--

36'

51'3"

19'

SD

guard rail

2 - 4" PC

**MH# 11**

**MH# 11**
**12' X 6' X 7'**
**405 cu ft**

sign post

**SEE PLAN # 2**

6/23/00

**NEW CONDUIT TO HAVE A MIN. 30" COVER AND MAINTAIN 12" SEPARATION FROM WATER AND SEWER**

To BELL ATLANTIC Central Office

HWY# 110
To Tunbridge

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**BELL ATLANTIC**

SAFETY NOTES:
**ROAD CONSTRUCTION**

SIGNATURE
DATE 05/01/2000

PRE CT YES ☐ NO ☒
PRIMARY VOLTAGE TO GROUND
7.2 KV MGN SYSTEM
CABLE PRESS. UNDER PRESS. YES ☐ NO ☒
TRANSMISSION 26GA LIMIT YES ☐ NO ☒

| MOD/REV NO. | DATE | EWO NO. |
|---|---|---|
| | | PRINT 1 OF |
| | | PREPARED BY: |
| | | J. BRIAN GRESL |
| | | C.O. /EXCHANGE NAME: |
| TYPE | RECORD REF: | S. ROYALTON |
| AERIAL | 5 | C.O. /EXCHANGE CODE: |
| UNDERGROUND | — | 4875 |
| BLOCK (NYT) | — | MUNICIPALITY: |
| CONDUIT | 4 | ROYALTON |
| BUFFER YES ☐ NO ☒ | | MANHOLE LOCATION MH# NA |
| AMT. BRIDGE TAP | INPUT | KF |

**PROJECT - 131154**

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UTILITIES

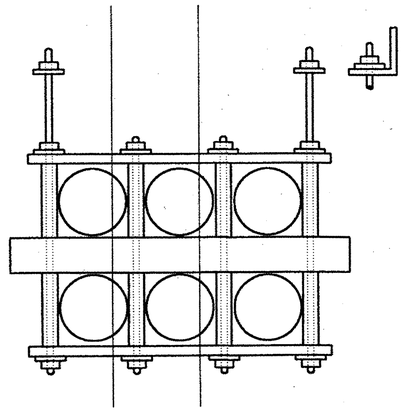
WORK ORDER

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| | | | | |
|---|---|---|---|---|
| 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 |

**PROJECT - 131154**



PLACE UTILITY HANGERS EVERY 12' EXCEPT WHERE NOTED

PLACE- 4" STEEL TO 4" FIBERGLASS ADAPTER

PLACE- 4" STEEL TO 4" PVC ADAPTER

SEE PLAN # 3

SEE PLAN # 1

4" - PC "C"

10' - 4" GIP

6 - 4" FIBERGLASS DUCTS

10' - 4" GIP

4" - PC - "C"

ABUTMENT

BRIDGE

PIER

ABUTMENT

HANGER # 1

HANGER # 2

HANGER # 3

HANGER # 4 THROUGH HANGER # 17 @ 12' SPACING

HANGER # 17

2" - UNISTRUT BRACING

HANGER # 18

HANGER # 18

HANGER # 17

HANGER # 4 THROUGH HANGER # 17 @ 12' SPACING

HANGER # 3

HANGER # 2

HANGER # 1

I - BEAM

I - BEAM

Stop rings

GASKETED EXPANSION JOINT

GASKETED EXPANSION JOINT

4" - PC - "C"

4" - PC - "C"

10' - 4" GIP

10' - 4" GIP

2' 1' 1.3' 4.6' 10'

12' MAX

12' MAX

10' 4.6' 1.3' 2' 1'

Distances between the expansion joint and hangers # 1 and # 2 are critical for proper operation of the expansion joint

ADJUST SPACING TO AVOID PIER

PIER

Distances between the expansion joint and hangers # 1 and # 2 are critical for proper operation of the expansion joint

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# BELL ATLANTIC

| | | | | |
|---|---|---|---|---|
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| | | | | PRINT 3 OF |
| | | | | PREPARED BY: |
| | | | | J. BRIAN GRESL |
| | | | | C.O. /EXCHANGE NAME: |
| | SIGNATURE DATE INPUT | TYPE - | RECORD REF: | S. ROYALTON |
| | | 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 | |

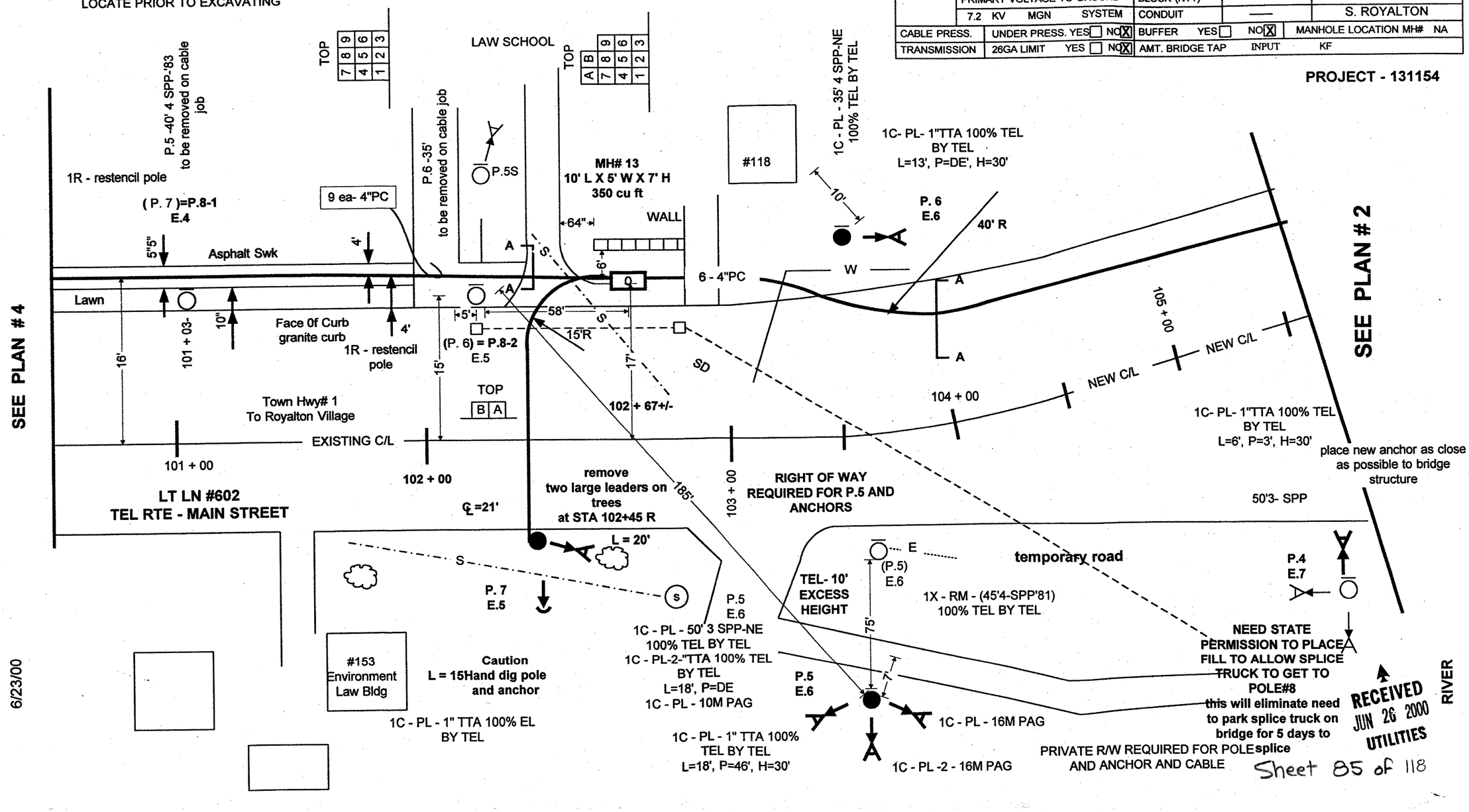
**PROJECT - 131154**

**WORK ORDER**

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

**SEE PLAN # 5 & 6 FOR TRENCH DETAILS**

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




Sheet 85 of 118

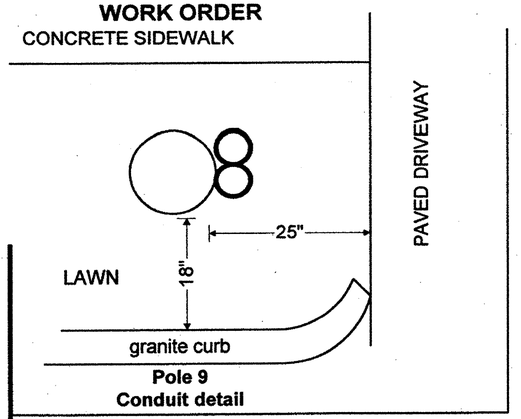
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**BELL ATLANTIC**

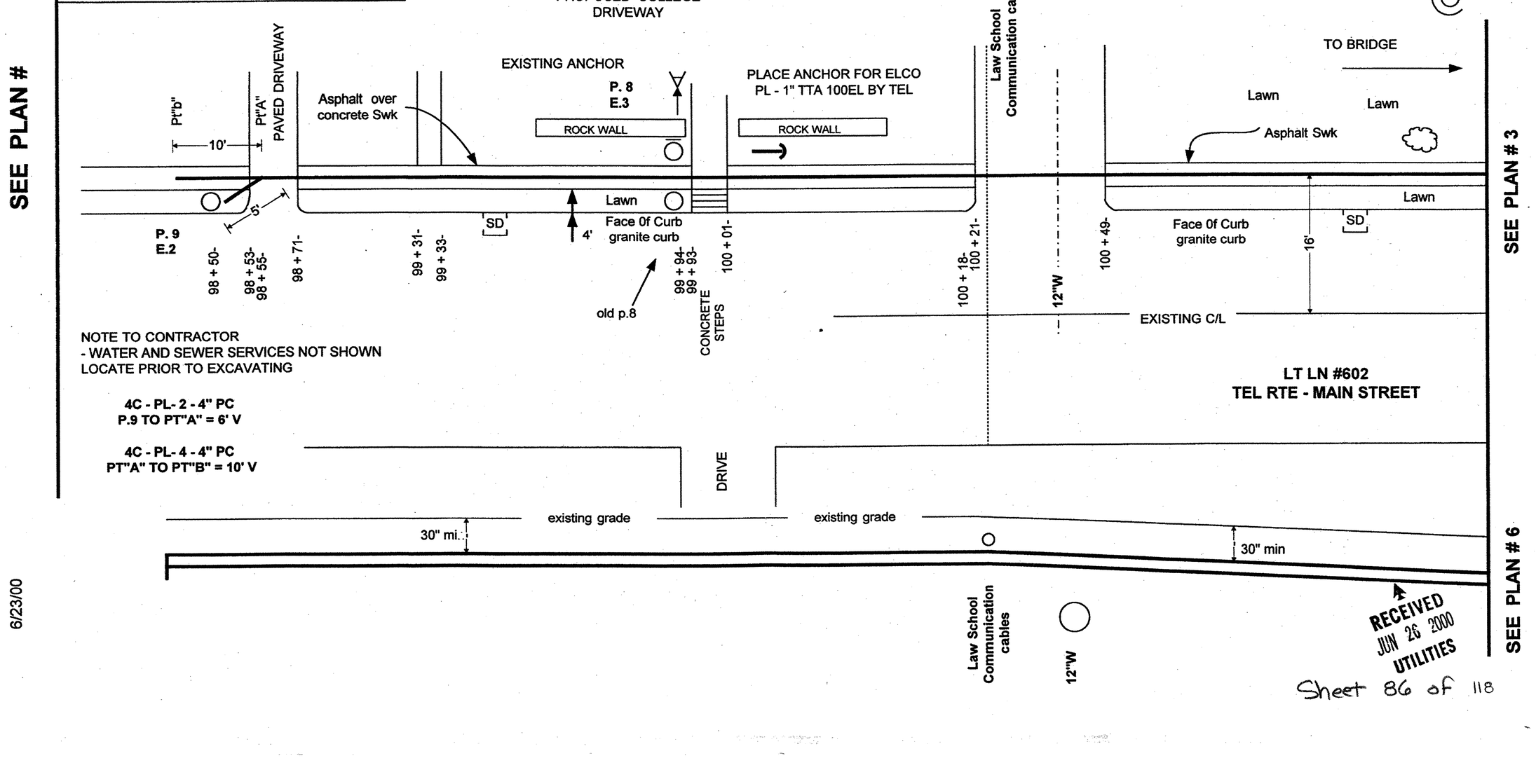
| | | | | |
|---|---|---|---|---|
| SAFETY NOTES: HIGHWAY TRAFFIC PEDESTRIAN TRAFFIC | | MOD/REV NO. | DATE | EWO NO. |
| | | | | PRINT 4 OF |
| | | | | PREPARED BY: |
| | | | | J. BRIAN GRESL |
| | | | | C.O. /EXCHANGE NAME: |
| | | TYPE | RECORD REF: | S. ROYALTON |
| SIGNATURE DATE 5/24/2000 | | AERIAL | 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**

**WORK ORDER**
CONCRETE SIDEWALK




TOP: 4 5 6 / 1 2 3




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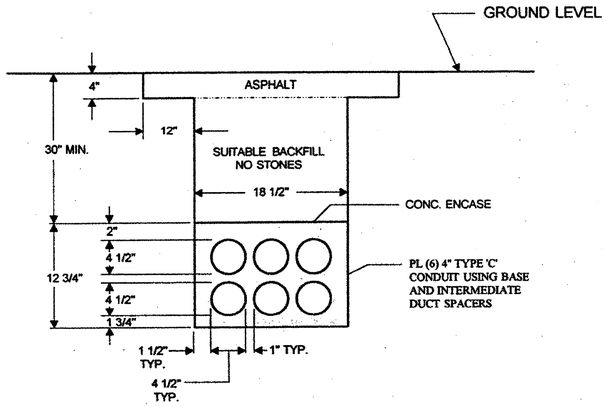
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**BELL ATLANTIC**

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

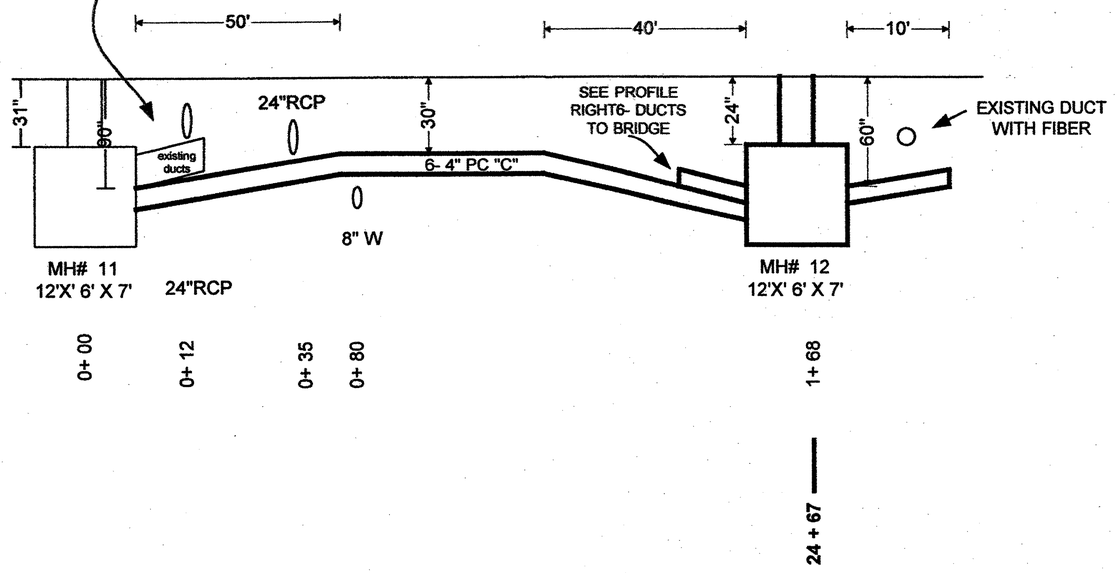
**PROJECT - 131154**

## WORK ORDER



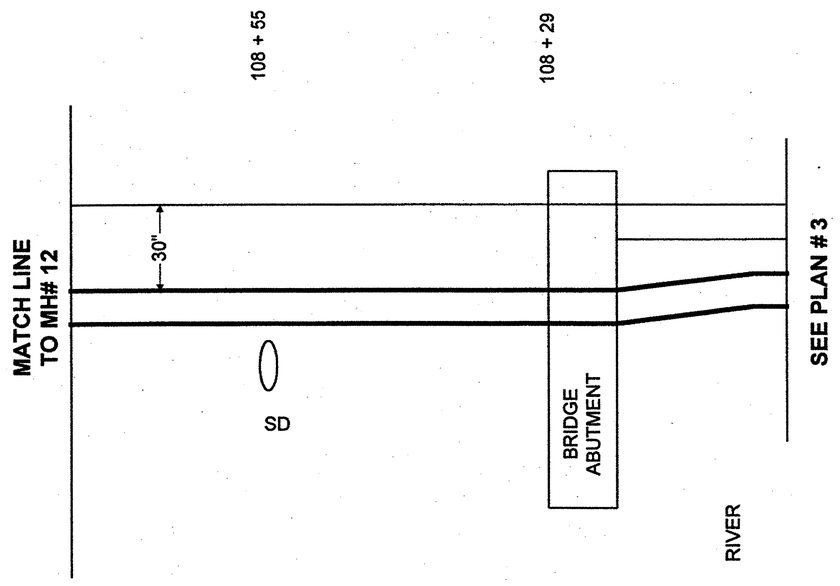

TRENCH DETAIL
A - A

**Note :**
**Existing vacant duct terminaters are under the existing ductbank**




PROFILE FOR PLAN 1

6/23/00




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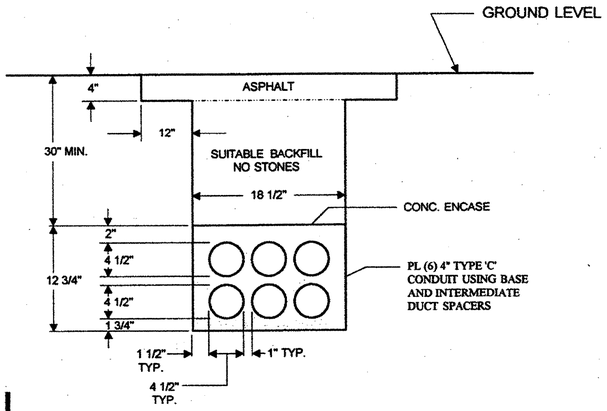
**WORK ORDER**

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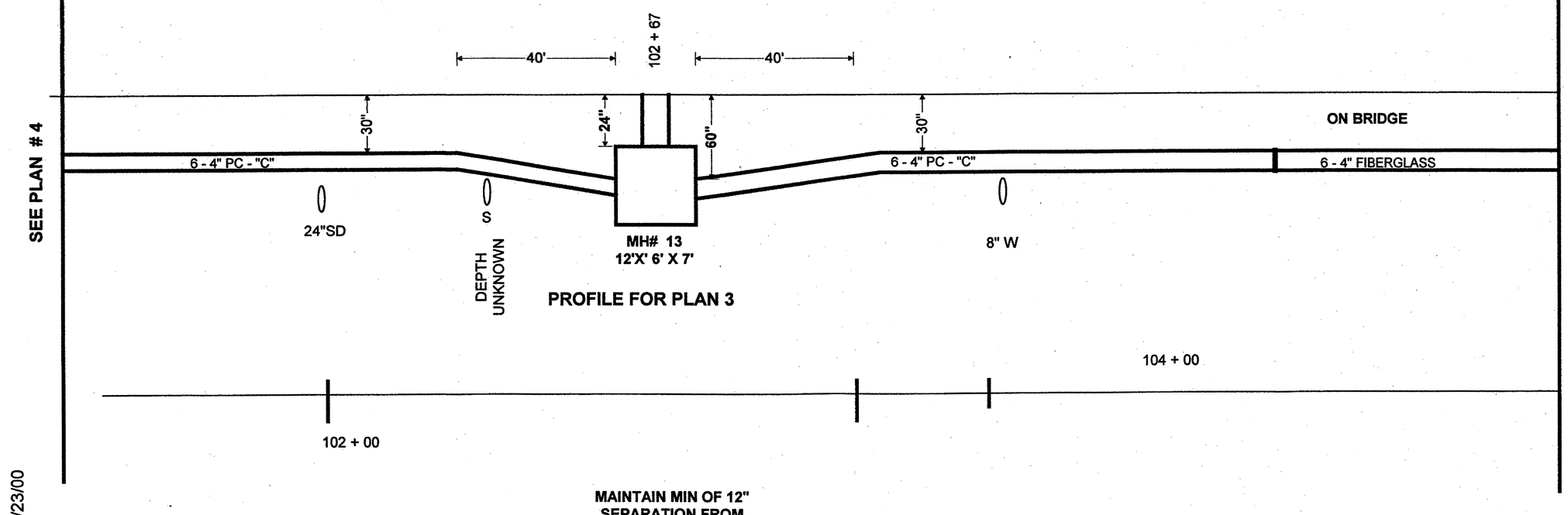
**BELL ATLANTIC**

| | | | | |
|---|---|---|---|---|
| N | SAFETY NOTES: TRAFFIC , BRIDGE CONSTRUCTION | MOD/REV NO. | DATE | EWO NO. |
| | | | | PRINT 6 OF |
| | | | | PREPARED BY: |
| | | | | J. BRIAN GRESL |
| | | | | C.O. /EXCHANGE NAME: |
| | | TYPE | RECORD REF: | S. ROYALTON |
| | SIGNATURE DATE 5/18/2000 | 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**




**PROFILE FOR PLAN 3**

**MAINTAIN MIN OF 12" SEPARATION FROM WATER AND SEWER LINES**

6/23/00

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UTILITIES

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.

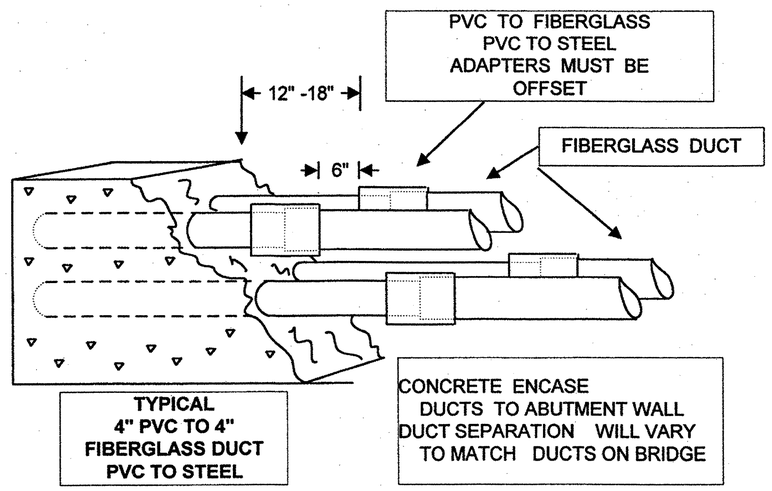
7. SPECIFIED FIBERGLASS CONDUIT AMERICAN U-TEL [PN 12370]
   - A. 4" DIAMETER FIBERGLASS DUCTS WITH THREADED JOINTS WITH 3000 LB.. PULLOUT STRENGTH.
   - B. ULTIMATE TENSILE STRENGTH 10,000 PSI PER ASTM D-2105.
   - C. 4" IPS 4.5" OUTSIDE DIAMETER x 4.36" INSIDE DIAMETER x 30 FT LENGTHS.
   - D. CAPABLE 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




6/23/00

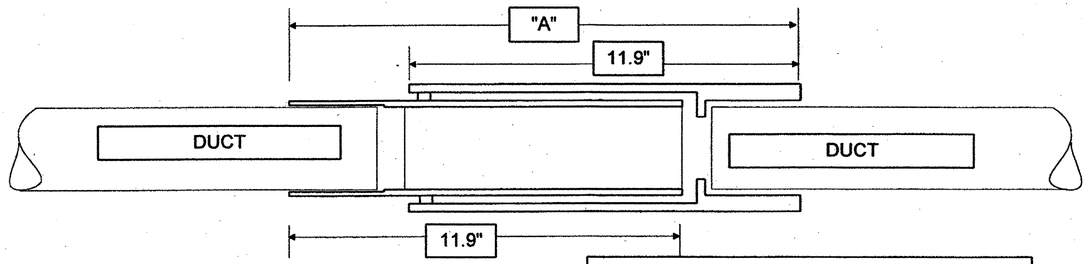
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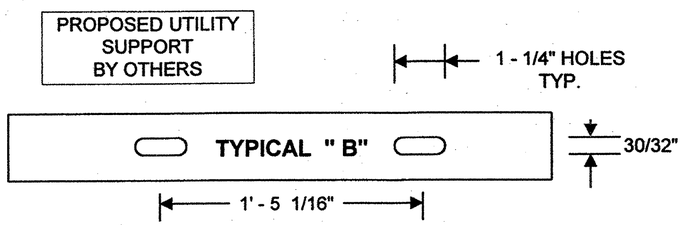
| | | | | |
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| N | SAFETY NOTES: HWY CONSTRUCTION TRAFFIC | MOD/REV NO. | DATE | EWO NO. |
| | | | | PRINT 8 OF |
| | | | | PREPARED BY: J. BRIAN GRESL |
| | | | | C.O. /EXCHANGE NAME: |
| | SIGNATURE DATE INPUT | TYPE | RECORD REF: | SOUTH ROYALTON |
| | | 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" |



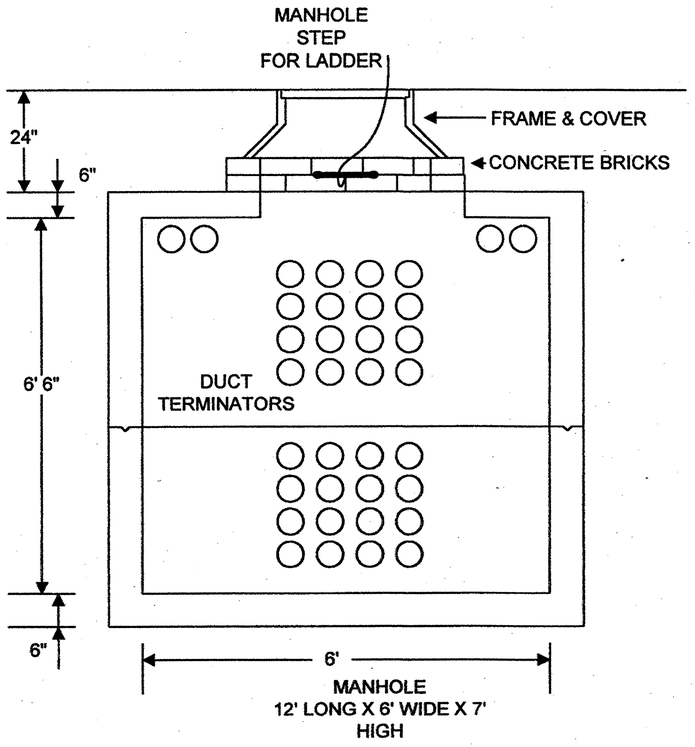

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UTILITIES

**WORK ORDER**

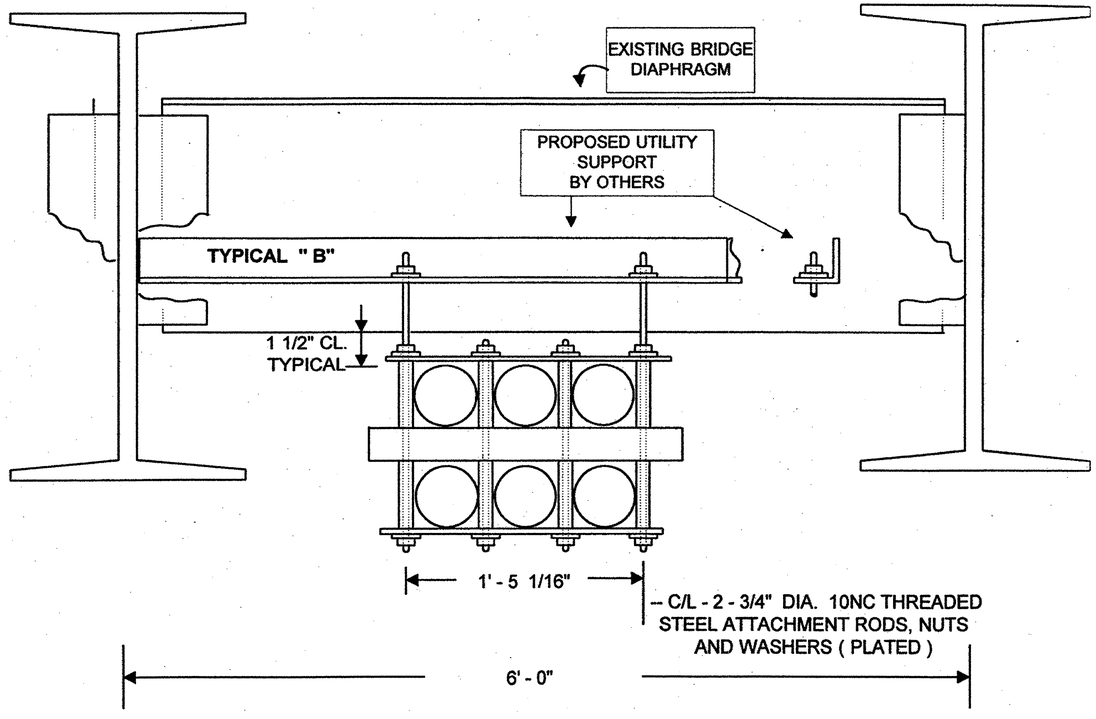
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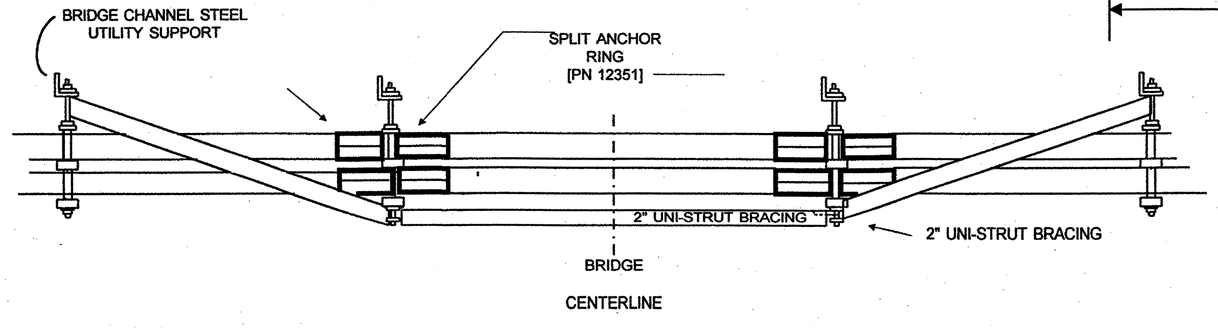
**BELL ATLANTIC**

| | | | | |
|---|---|---|---|---|
| N | SAFETY NOTES: **BRIDGE CONSTRUCTION TRAFFIC** | MOD/REV NO. | DATE | EWO NO. |
| | | | | PRINT 9 OF |
| | | | | PREPARED BY: |
| | | | | J. BRIAN GRESL |
| | | | | C.O. /EXCHANGE NAME: |
| | | TYPE | RECORD REF: | SOUTH 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 | — | 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

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

BEGIN APPROACH
STA 101+50.00

POB
STA 100+00.00

END APPROACH
BEGIN PROJECT
STA 102+25.00

POT STA 103+11.00
DRIVE STA 0+00.00
△ = 90° RT

APPROXIMATE LOCATION OF REVISED CENTERLINE
FOR ADJACENT BRS 0147(5) S (SURVEYS AND LINES
HAVE NOT BEEN EQUATED)

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.

CHANNEL LINE POB
STA 56+00.00

POE
STA 27+90.97

PT
STA 27+53.26

STATE OF
VERMONT

VERMONT LAW
SCHOOL, INC.

PAVED PARKING

WHITE RIVER

VT STATE PLANE GRID

BM #3 VT MKR
SET IN LEDGE
US EL. 457.69

BM #2 RRS1
COMBI POLE 6/5
US EL. 484.87

TEMP. AERIAL RELOCATION OWNED
BY CENTRAL VT PUBLIC SERVICE,
BELL ATLANTIC - NE TELEPHONE
POLE/SERVICE LINE TO RESIDENCE

REMOVE & RESET (T)
PT
STA 104+50.50

℄ PIER
STA 106+30.00
F.G. = 486.16

END BRIDGE
STA 108+28.96
F.G. = 482.46

BEGIN R.O.W. PROJECT
BRZ 1444(22)
STA. 102+08 25' RT.

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

TEMP. AERIAL RELOCATION
OWNED BY BELL ATLANTIC -
NE TELEPHONE

VERMONT LAW
SCHOOL, INC.

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

PC
STA 103+48.52
PI
STA 0+33.96
POE
STA 0+68.66

BUTTON, CLARENCE J.
& MARION I.

BEGIN BRIDGE
STA. 104+31.13
F.G. = 481.91
PI
STA 104+00.00 BK =
STA 103+99.02 AHD

POST STA 104+35.00
CHANNEL STA 53+00.00
△ = 30° LT

BM #1 CHIS
SQ.IN CONC
US EL. 482.34

EXIST. AERIAL FACILITY OWNED
BY BELL ATLANTIC - NE TELEPHONE

STATE OF
VERMONT

TEMP. AERIAL RELOCATION OWNED
BY BELL ATLANTIC - NE TELEPHONE

CHANNEL LINE POB
STA 50+00.00

BM #4 VT MKR
SET IN. LEDGE
US EL. 455.60

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

END R.O.W. PROJECT
BRZ 1444(22)
STA. 105+63 65' RT.

PC
STA 21+28.62

POB
STA 20+00.00

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

END APPROACH
SIDELINE STA 25+15.00
(MATCH ADJACENT PROJECT
ROYALTON BRS 0147(S)S)

END PROJECT
BEGIN APPROACH
STA 109+38.55

POT STA 109+38.55
SIDELINE STA 24+15.18

VT 110 TO TUNBRIDGE

PI
STA 24+48.91 BK =
STA 24+32.97 AHD

END APPROACH
SIDELINE STA 22+50.00

GAS STATION
& STORE

2 STORY
HOUSE

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.i | 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 |

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

## TABLE OF PROJECT PROPERTY ACQUISITION

| 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
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

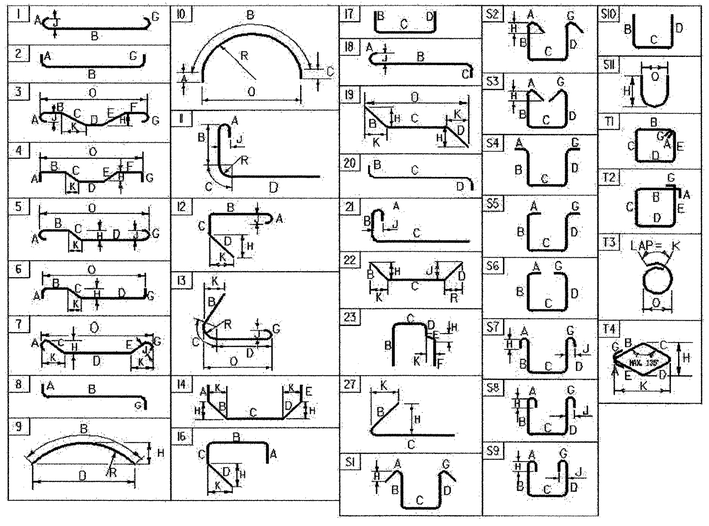
# REINFORCING STEEL SCHEDULE

| | 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 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
PROJECT LEADER: C.P. Williams
DESIGNED BY: C.P. Williams
REINFORCING STEEL SCHEDULE SHEET #1

PLOT DATE: 8/11/00
DRAWN BY: C.P. Williams
CHECKED BY: W.B. Symonds
SHEET 93 OF 118

STATE OF VERMONT
AGENCY OF TRANSPORTATION

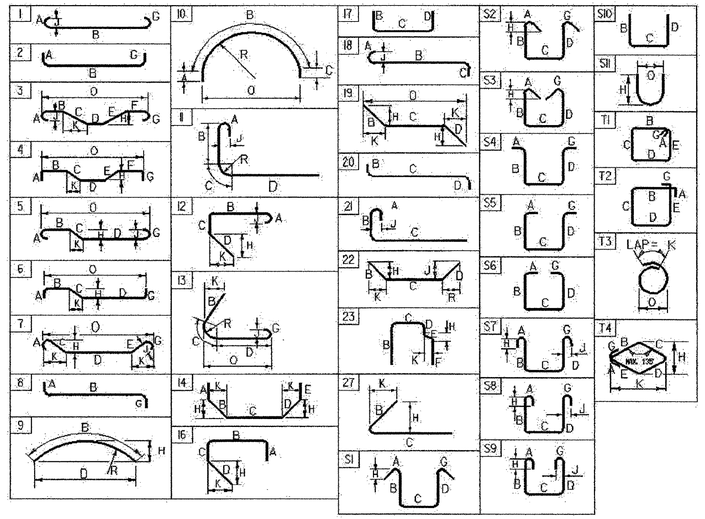
# REINFORCING STEEL SCHEDULE

| | 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 ~

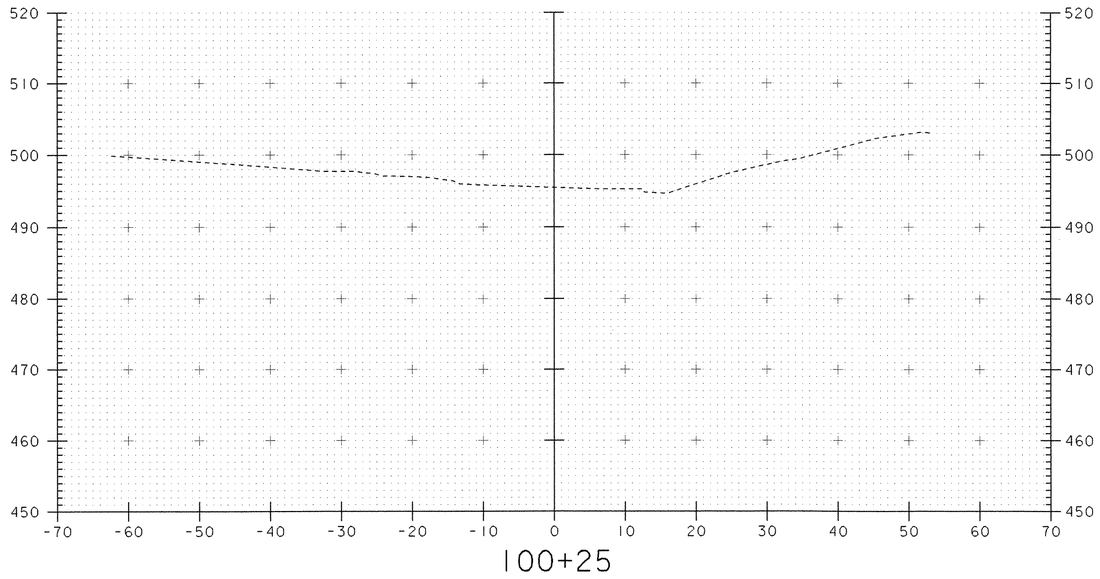
1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-SI). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
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.



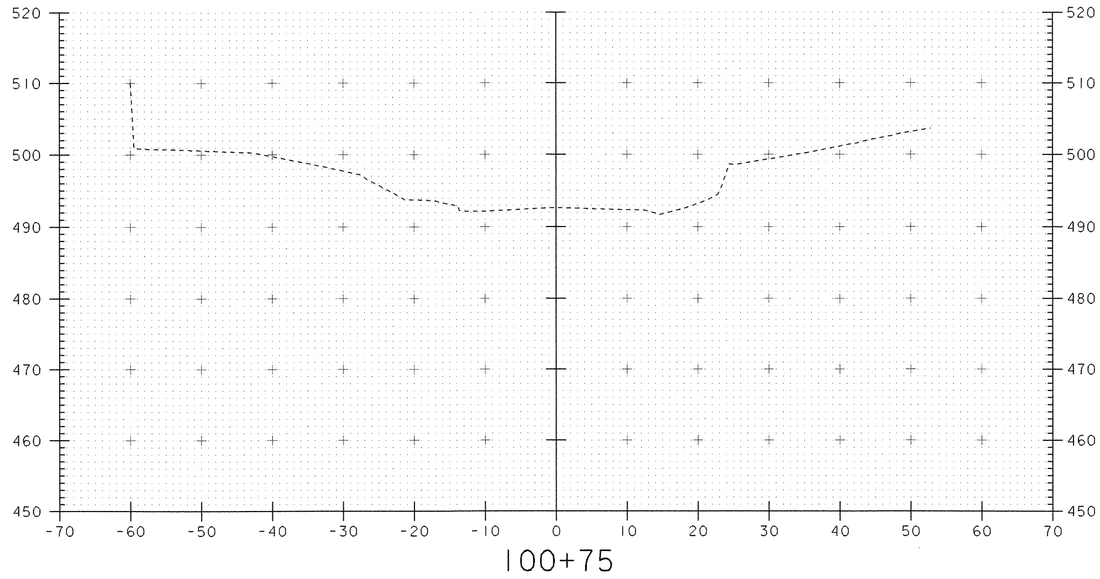

**ASTM STANDARD REINFORCING BARS**

| 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 |

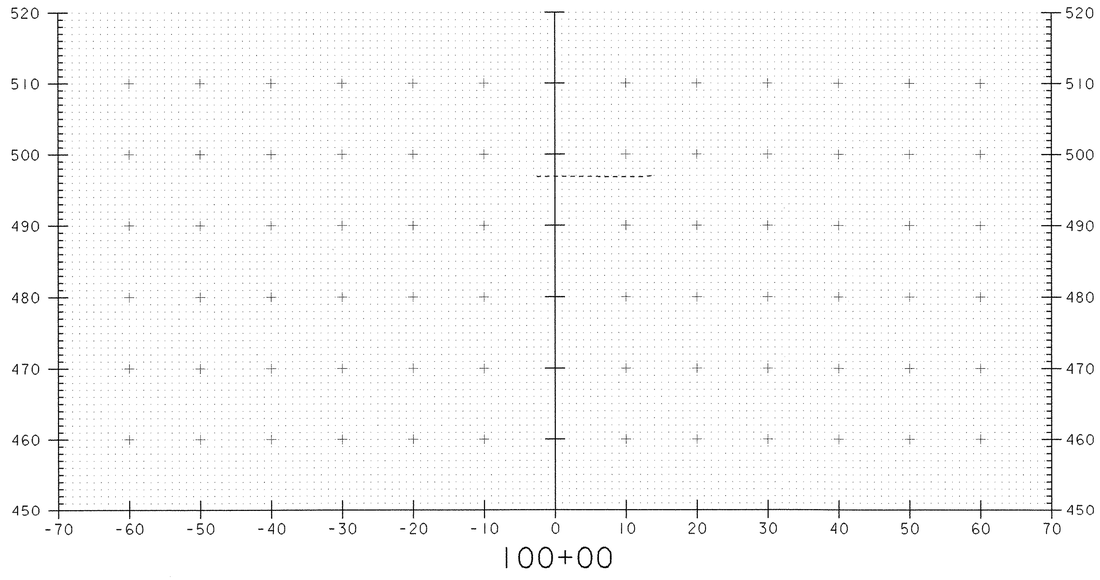
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|---|---|---|---|
| PROJECT NAME: | Royalton | | |
| PROJECT NUMBER: | BRZ 1444(22) | | |
| FILE NAME: | 89j099rei.xls | PLOT DATE: | 8/11/09 |
| PROJECT LEADER: | C.P. Williams | DRAWN BY: | C.P. Williams |
| DESIGNED BY: | C.P. Williams | CHECKED BY: | W.B. Symonds |
| REINFORCING STEEL SCHEDULE SHEET #2 | | SHEET 94 OF 118 | |



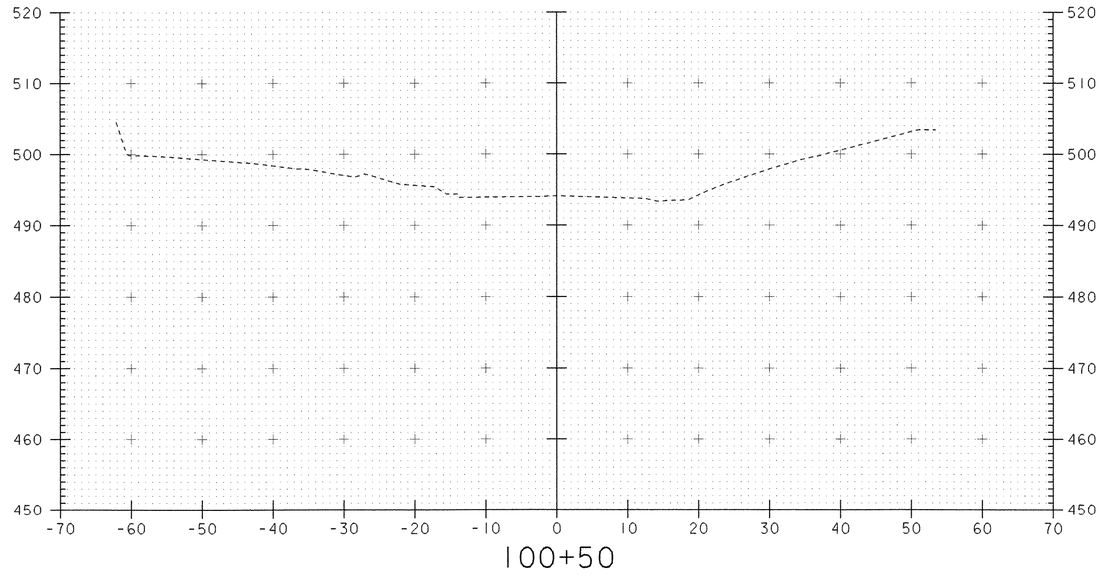

100+25




100+75




100+00

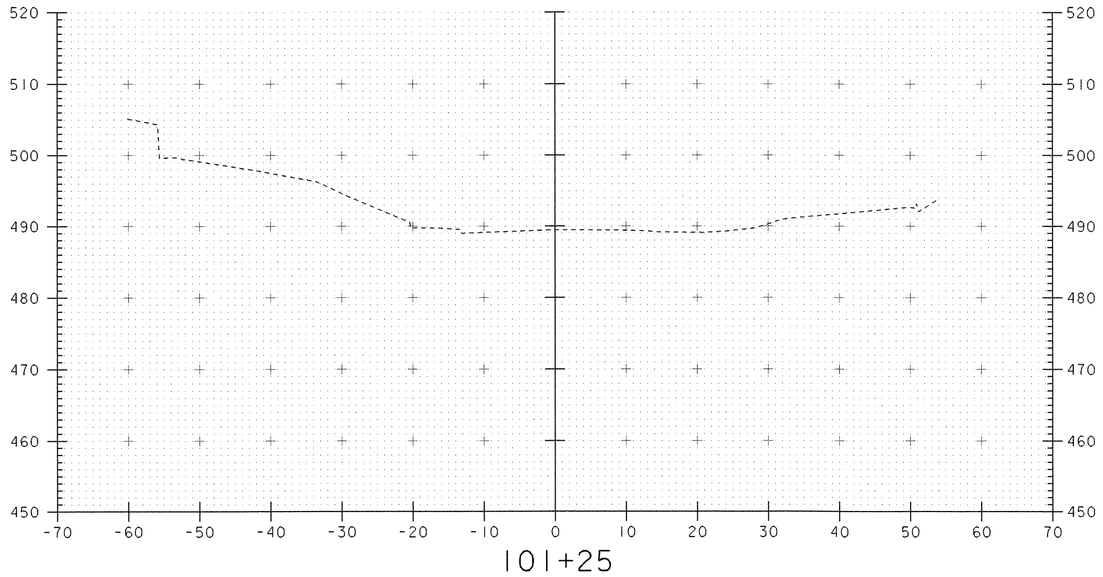



100+50

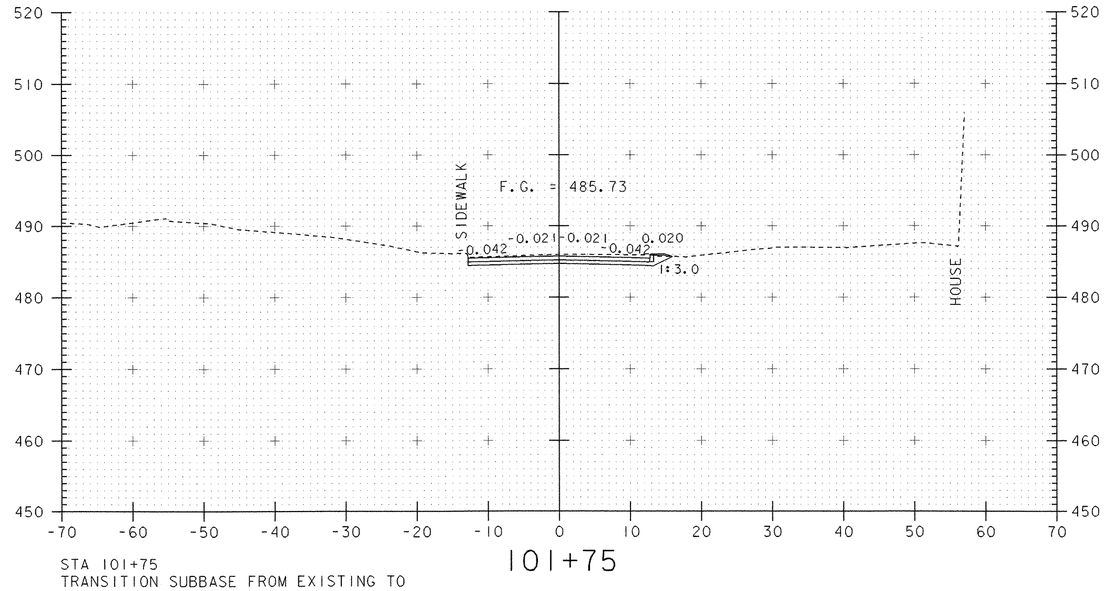
SCALE 1" = 10'-0

10 0 10

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

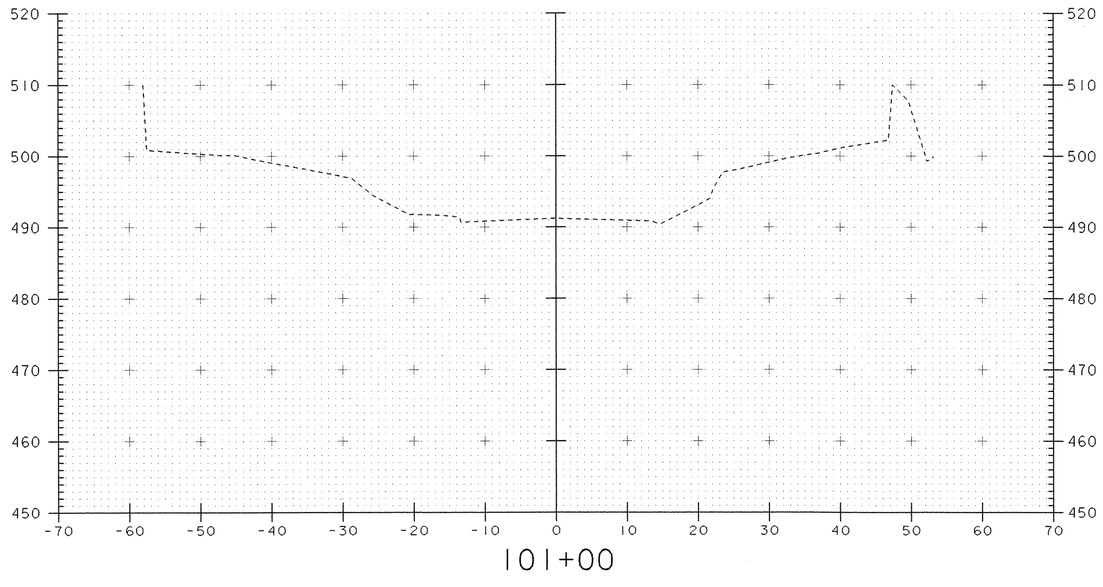



101+25

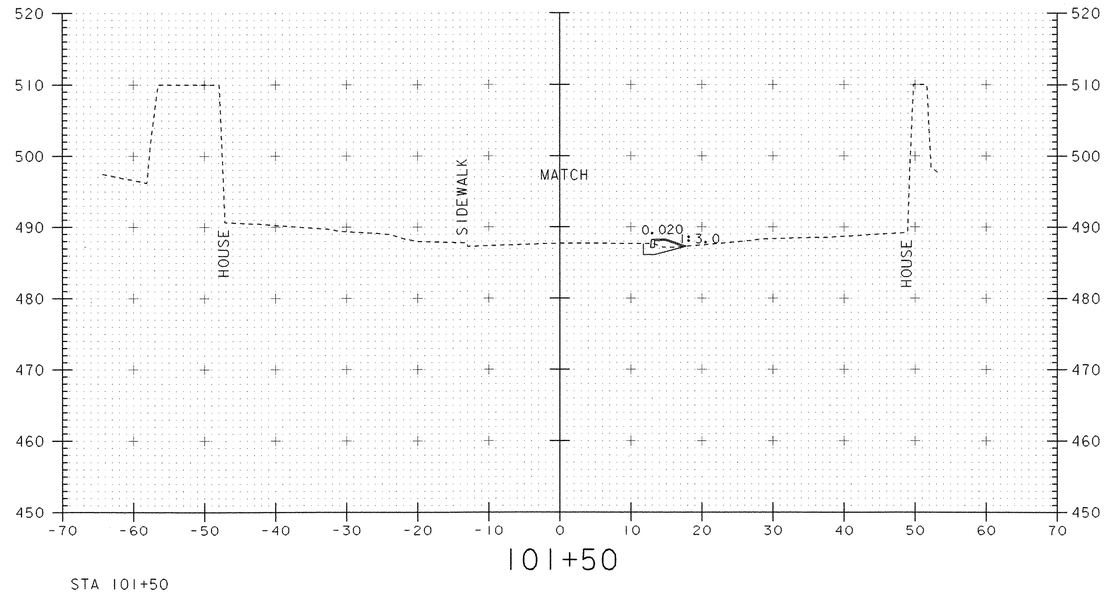



101+75

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




101+00

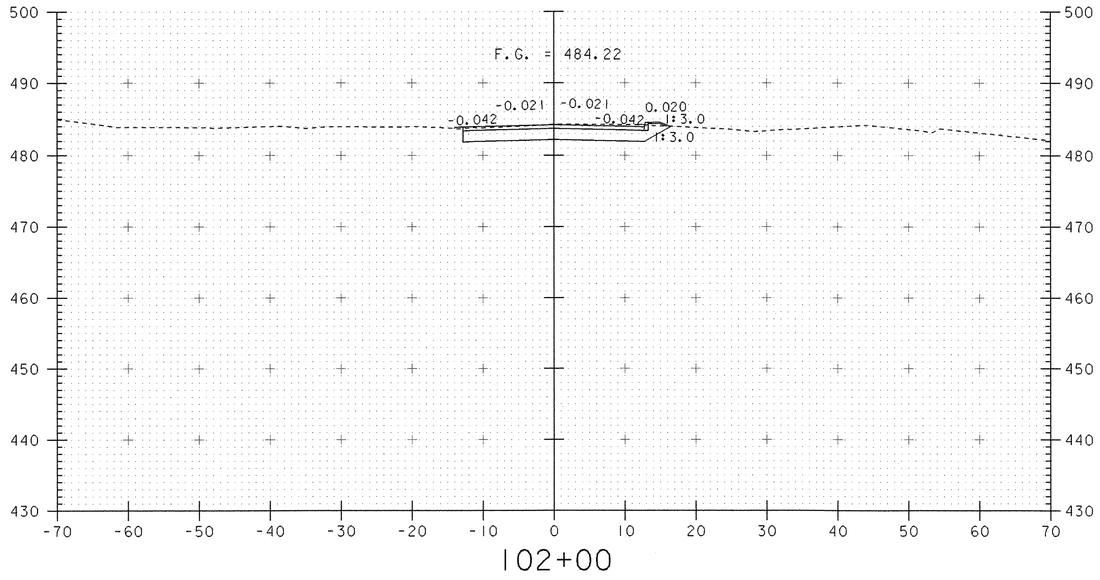



101+50

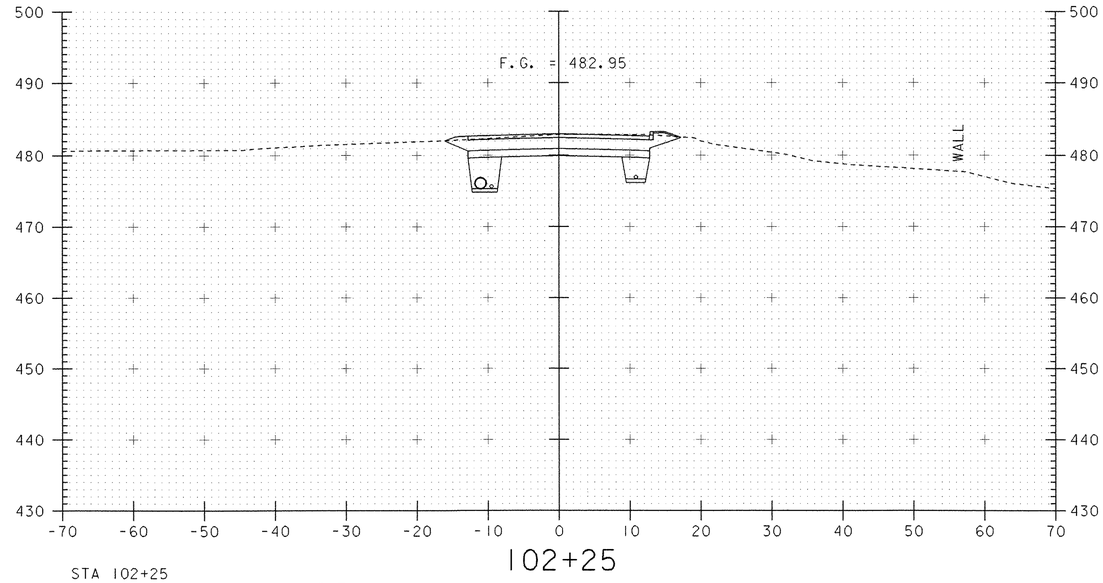
STA 101+50
BEGIN APPROACH
BEGIN COLD PLANING TO TRANSITION PAVEMENT

SCALE 1" = 10'-0
10 0 10

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

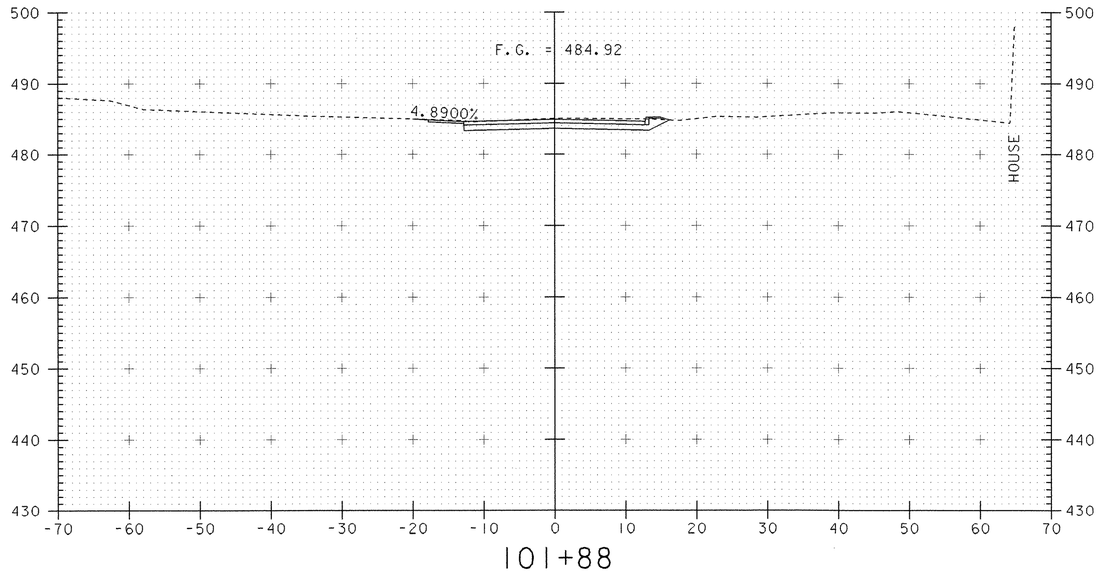



102+00

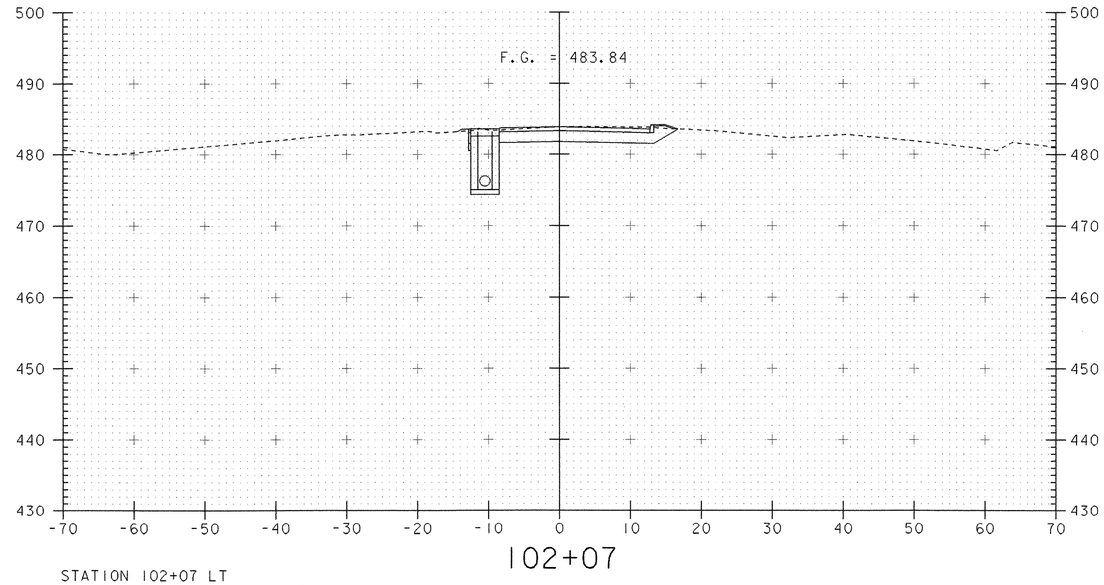



102+25

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




101+88

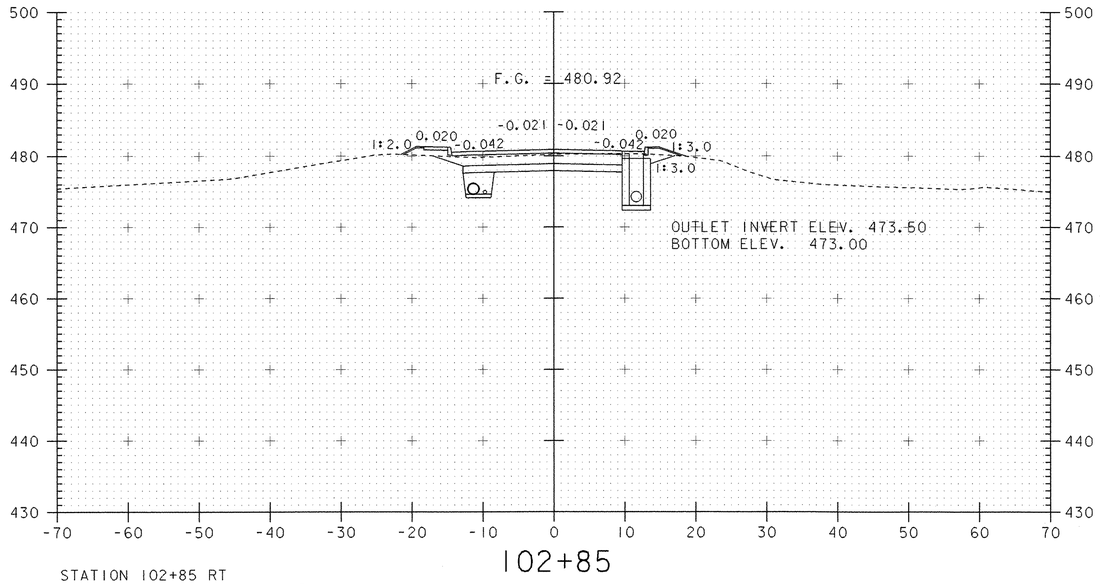



102+07

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

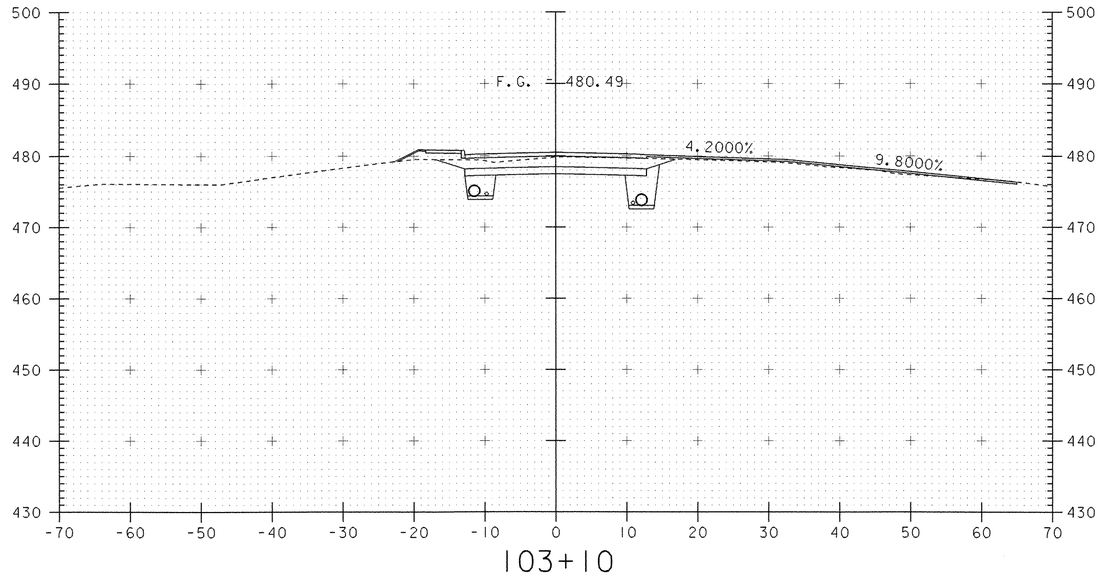
SCALE 1" = 10'-0
10 0 10

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

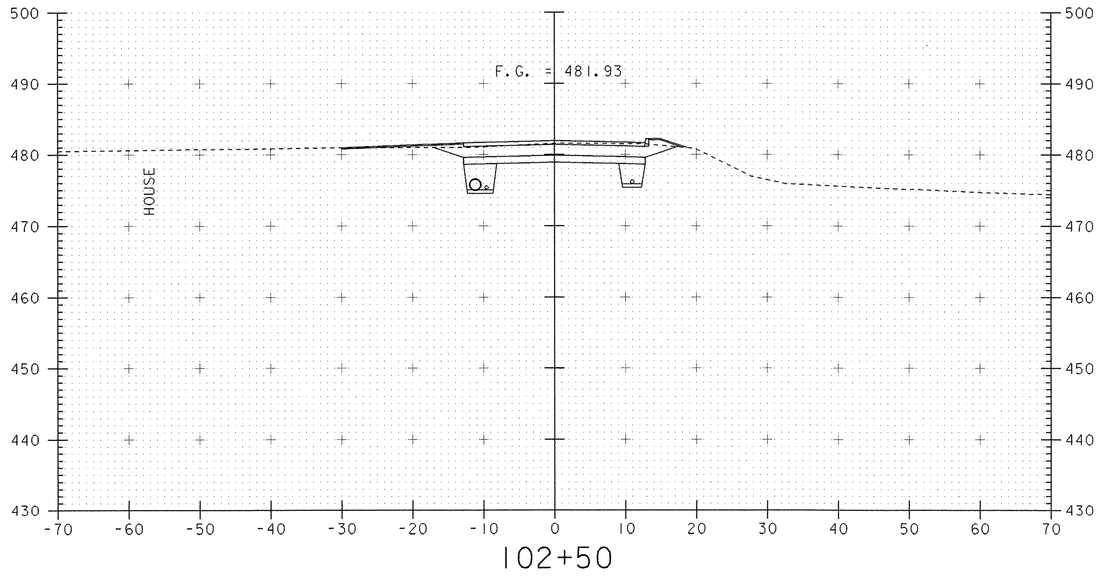



102+85

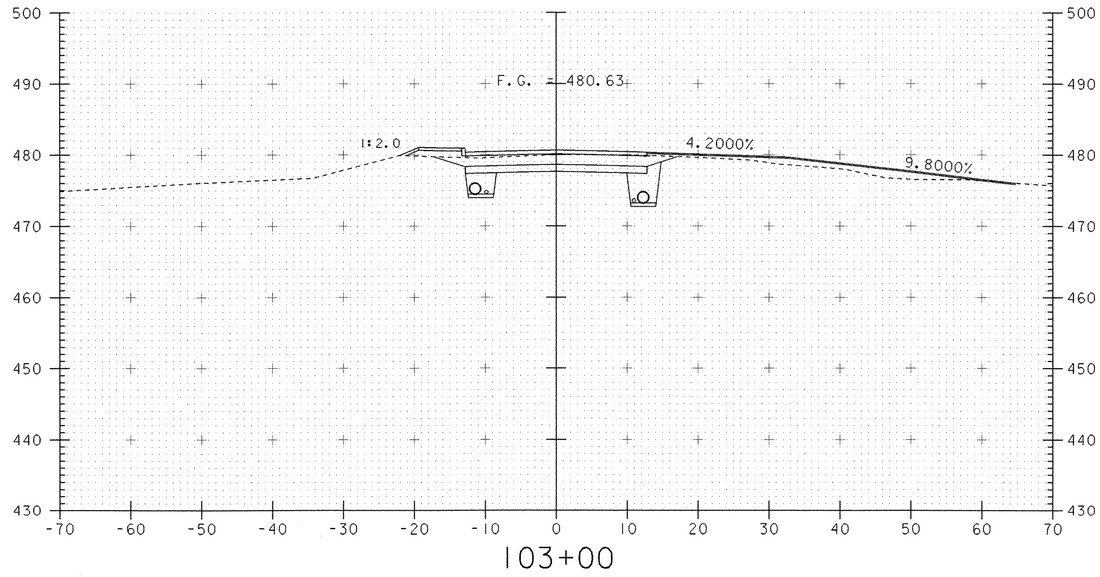
STATION 102+85 RT
BEGIN NEW 18" OPTION PIPE
CONSTRUCT NEW 4'X4' CONC. DI




103+10



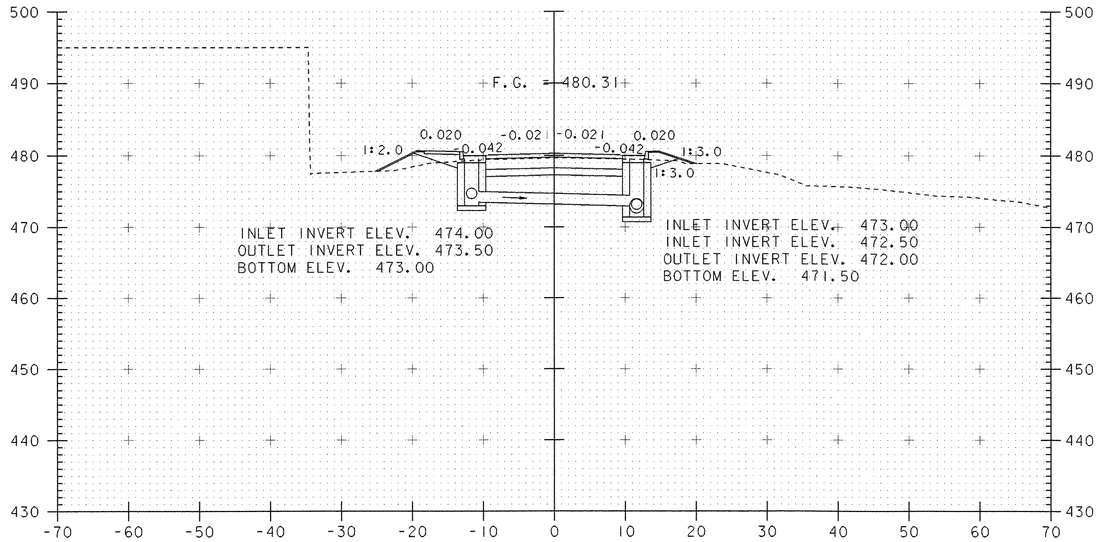

102+50




103+00

SCALE 1" = 10'-0
10 0 10

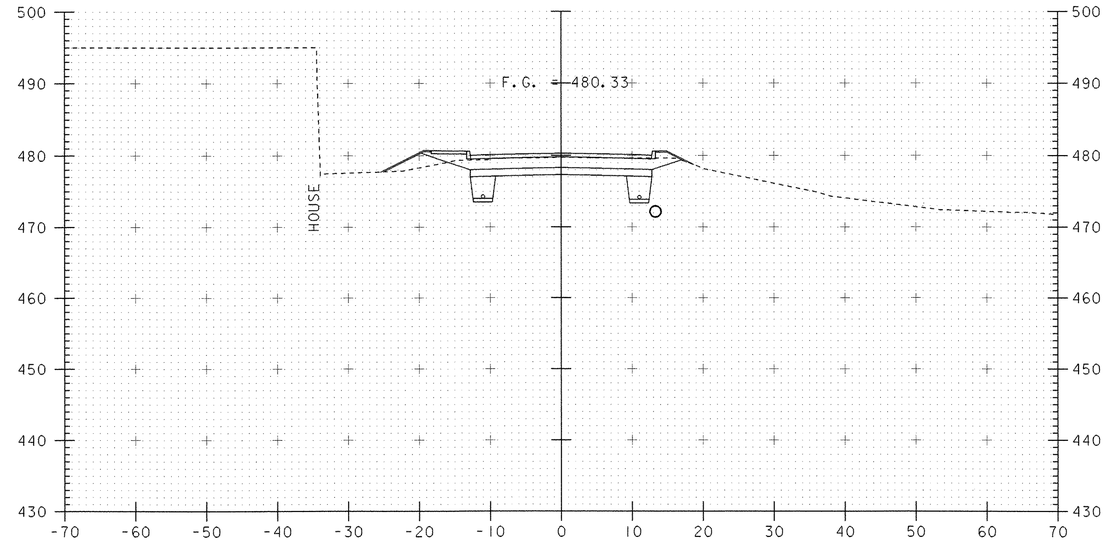
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|---|---|
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| DESIGN FILE NAME: 89j099/structures/sj099mlx.dgn<br>IPARM FILE NAME: sj099m04.i | PLOT DATE: 25-SEP-2000 |
| MAINLINE CROSS SECTIONS 102+50 TO 103+10 | |
| | SHEET: 98 OF 118 |




103+40

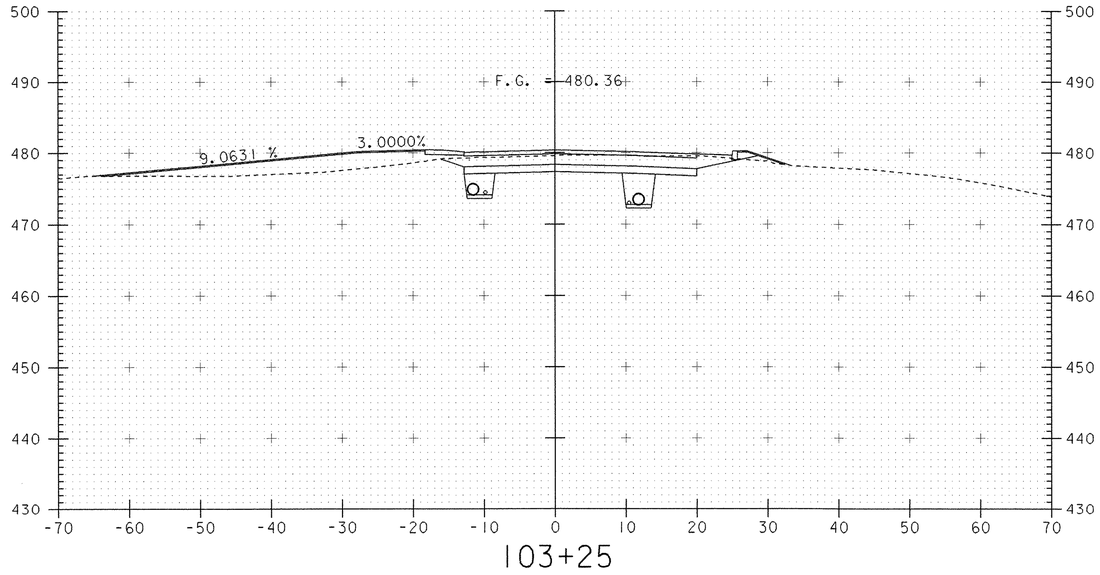
STATION 103+40 LT
END NEW 18" OPTION PIPE / BEGIN NEW 18" OPTION PIPE
CONSTRUCT NEW 4'X4' CONC. DI

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

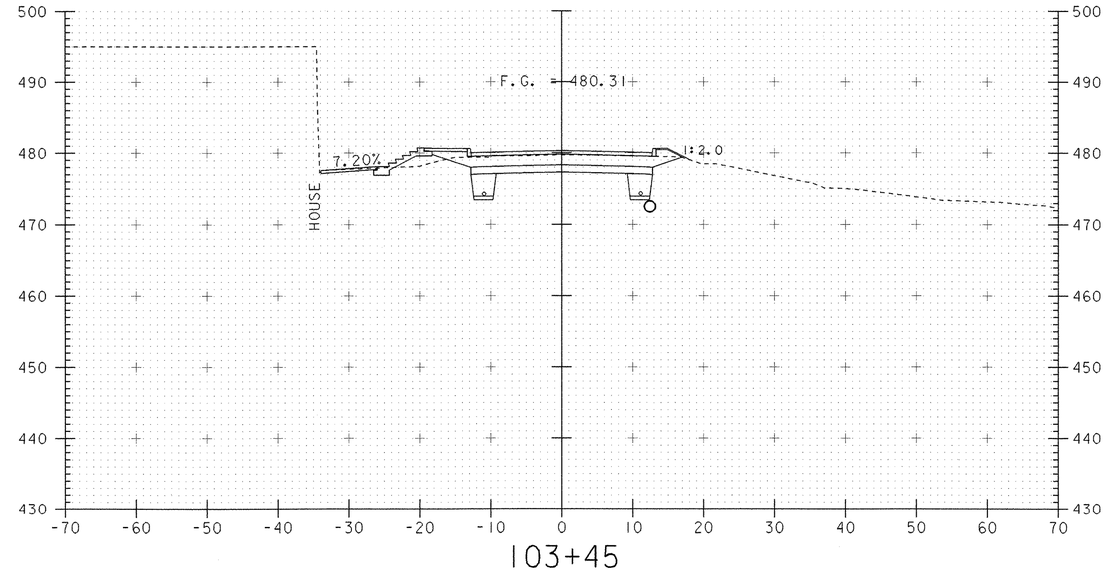



103+50

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



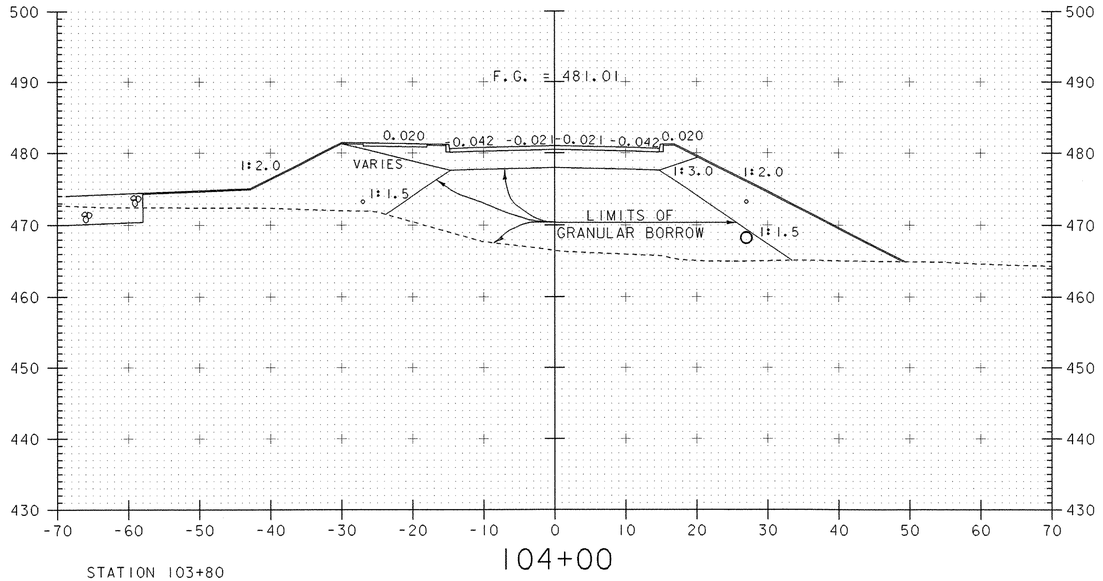

103+25




103+45

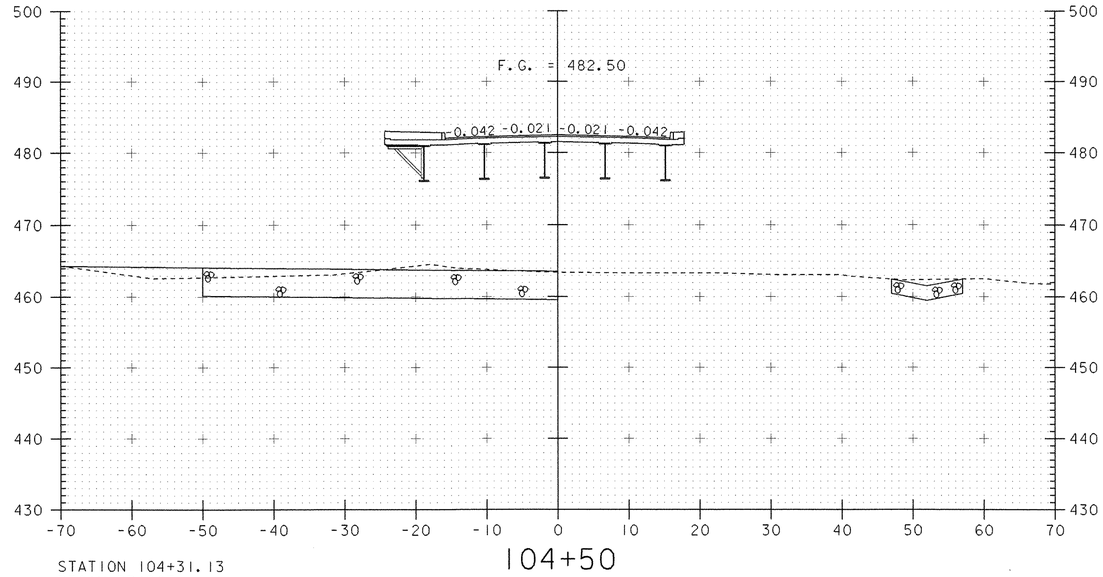
SCALE 1" = 10'-0
10 0 10

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




104+00

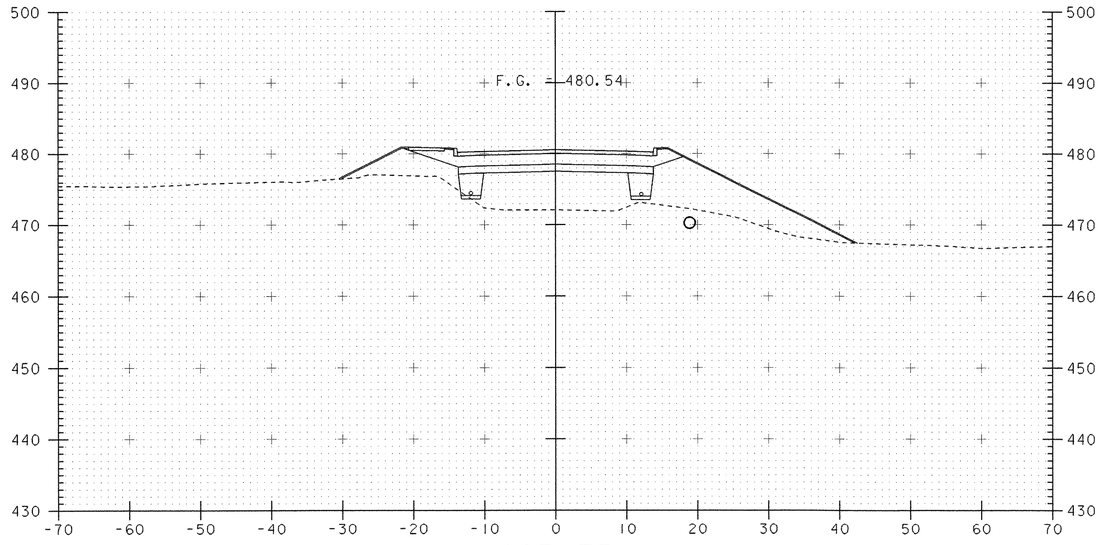
STATION 103+80
BEGIN GRANULAR BORROW
BEGIN SUBBASE TAPER TO 4'-0" IN 50'
END SAND BORROW FULL DEPTH



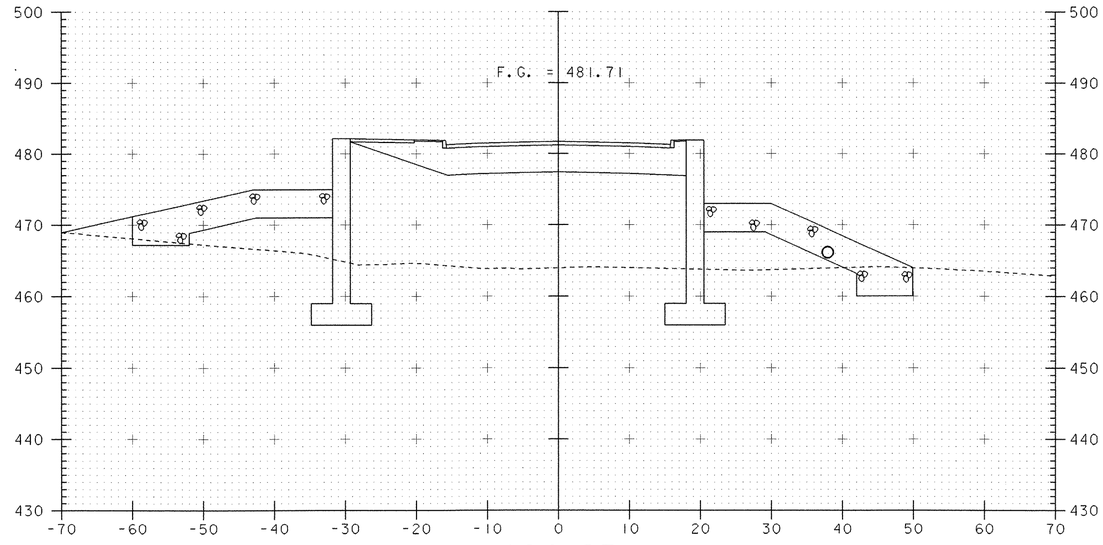

104+50

STATION 104+31.13
BEGIN BRIDGE

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



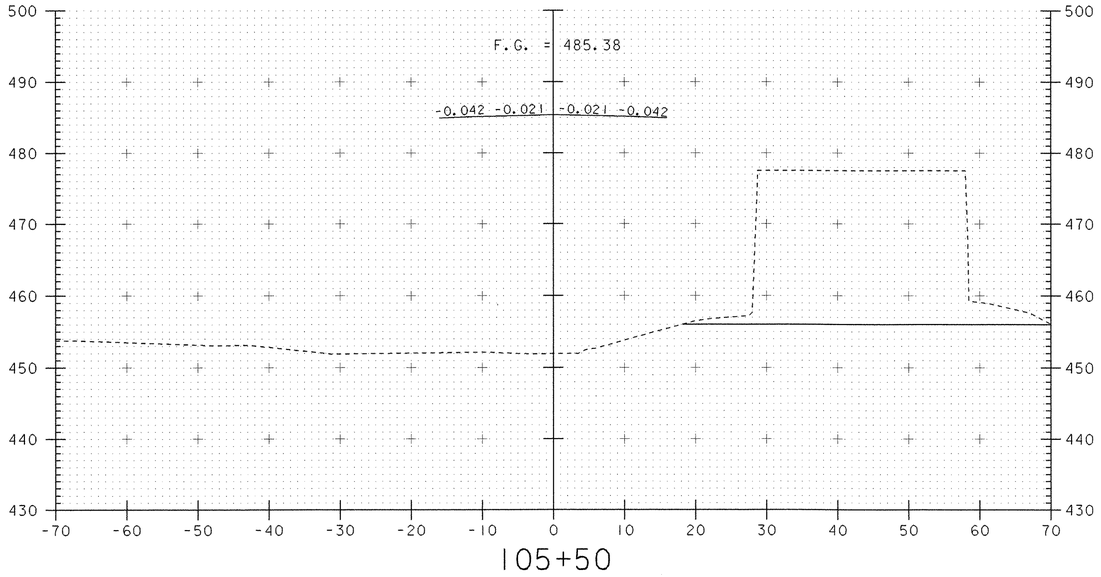

103+75



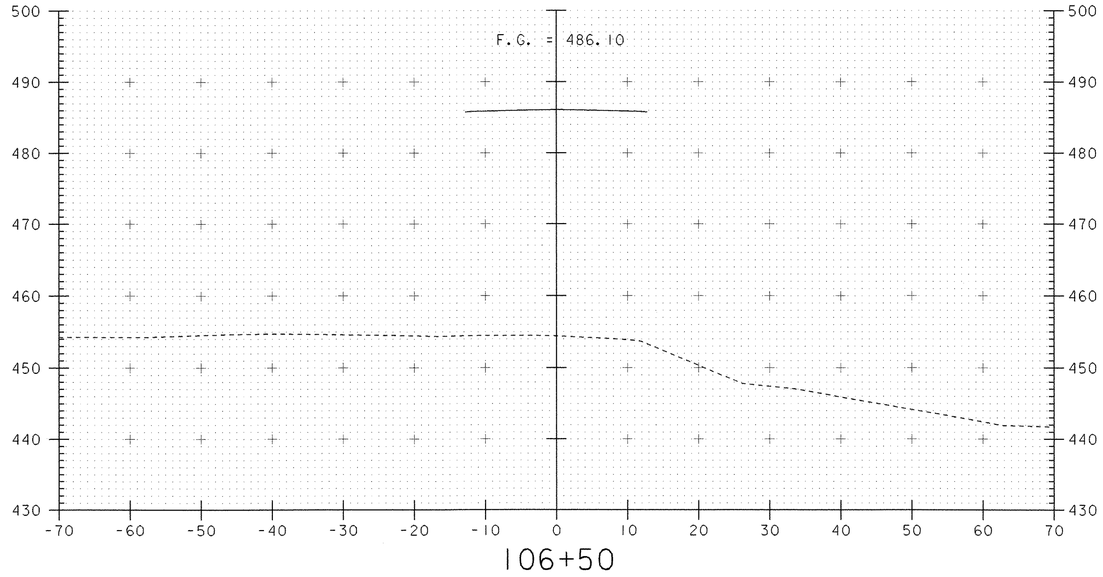

104+25

SCALE 1" = 10'-0
10 0 10

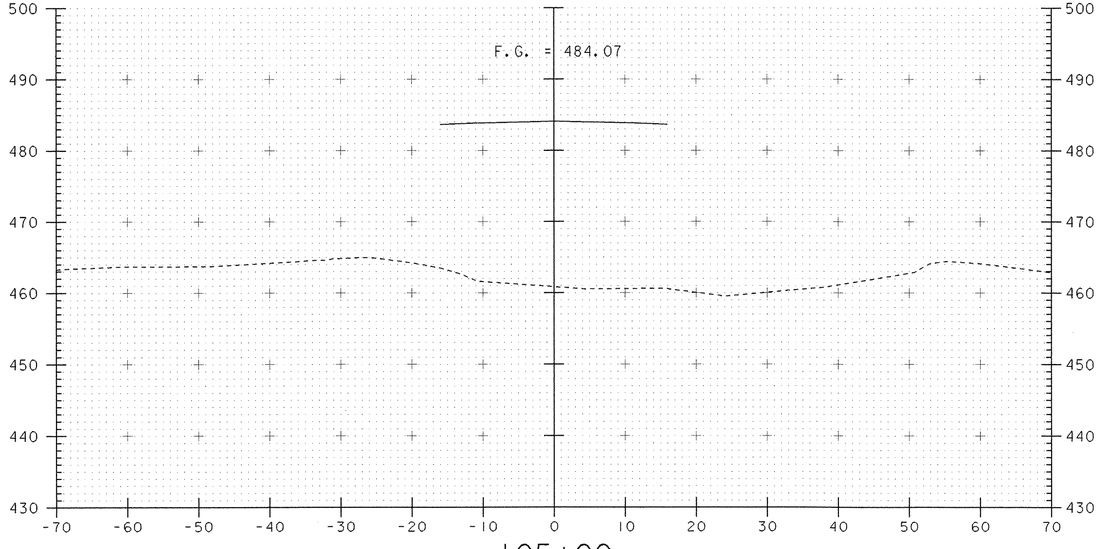
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|---|---|
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| DESIGN FILE NAME: 89J099/structures/sj099mlx.dgn<br>IPARM FILE NAME: sj099m06.i | PLOT DATE: 25-SEP-2000 |
| MAINLINE CROSS SECTIONS 103+75 TO 104+50 | |
| | SHEET: 100 OF 118 |



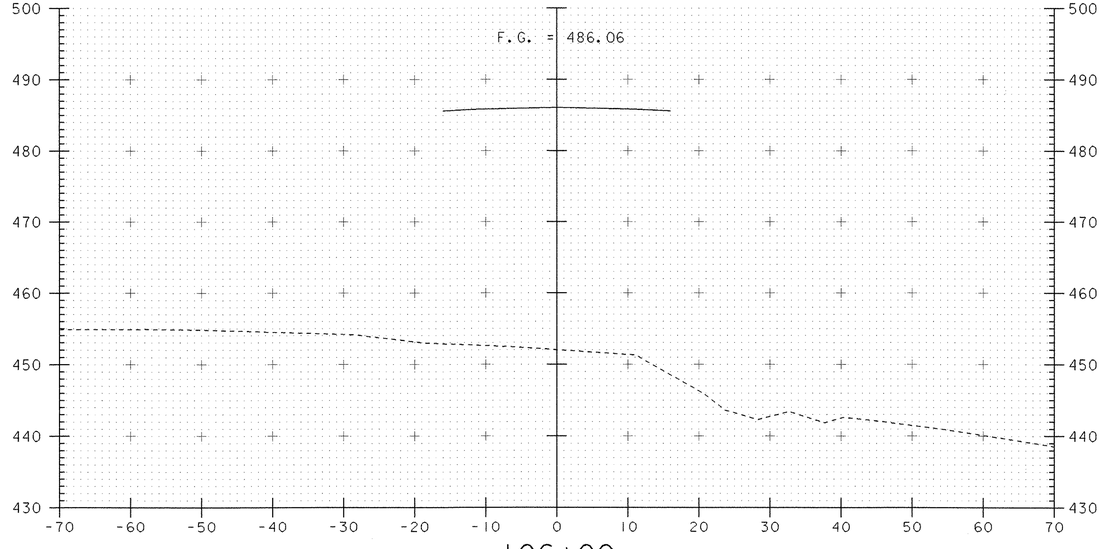

105+50




106+50




105+00

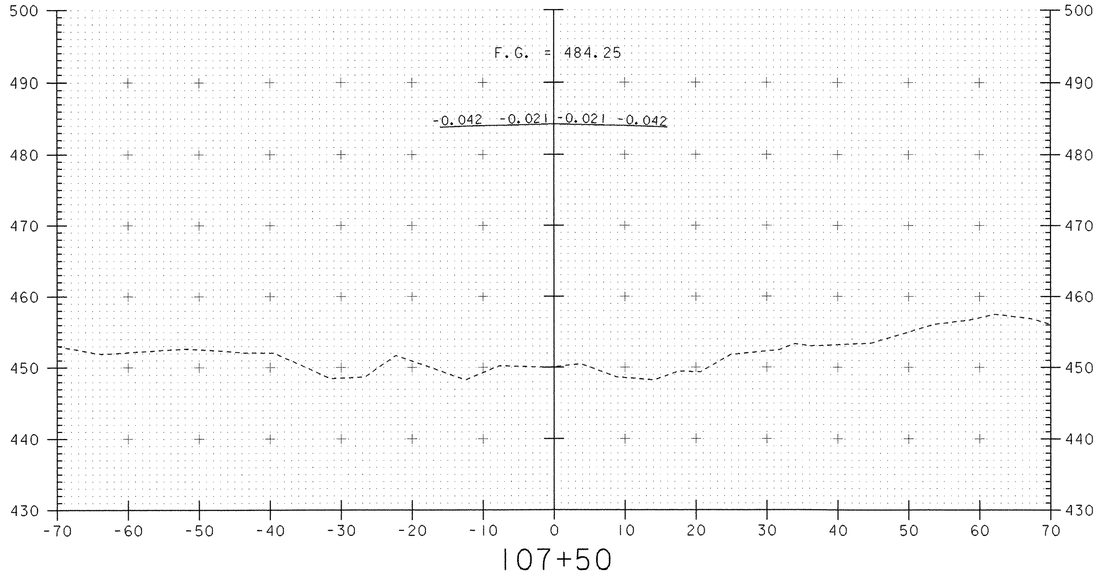



106+00

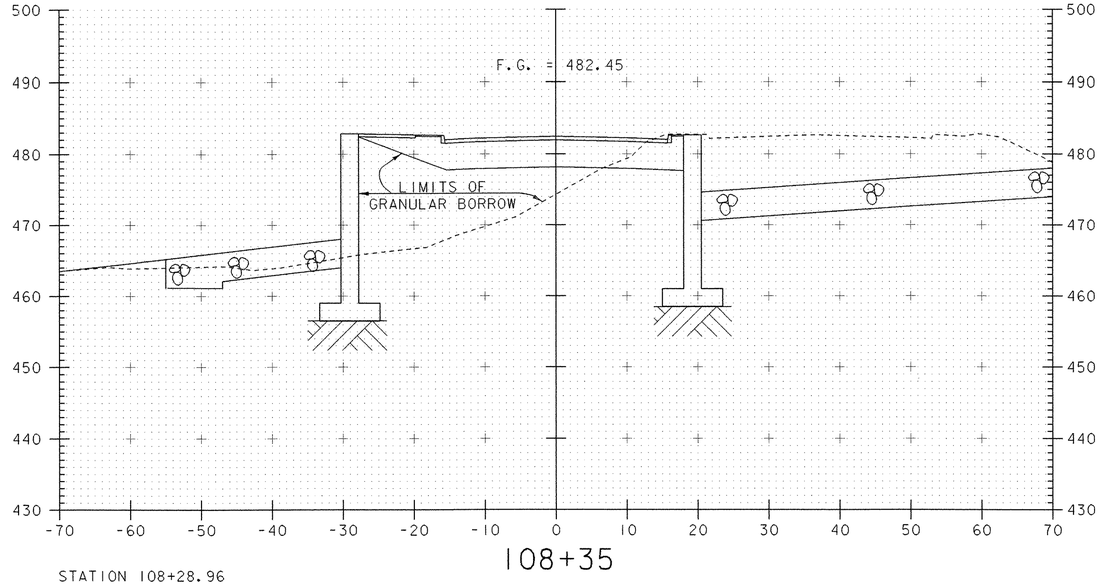
SCALE 1" = 10'-0

10 0 10

| | |
|---|---|
| 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 |

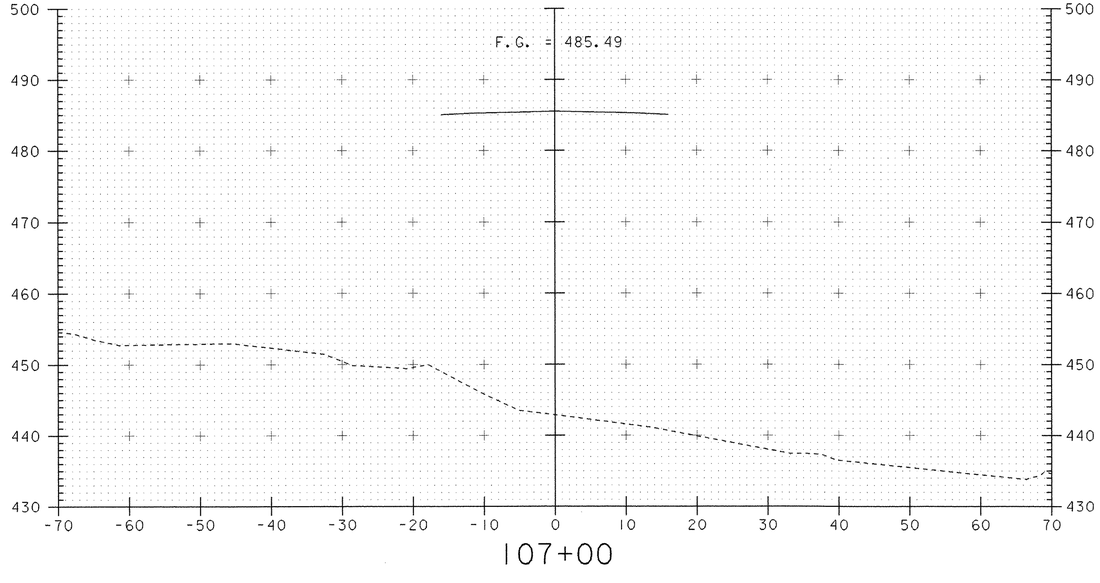



107+50

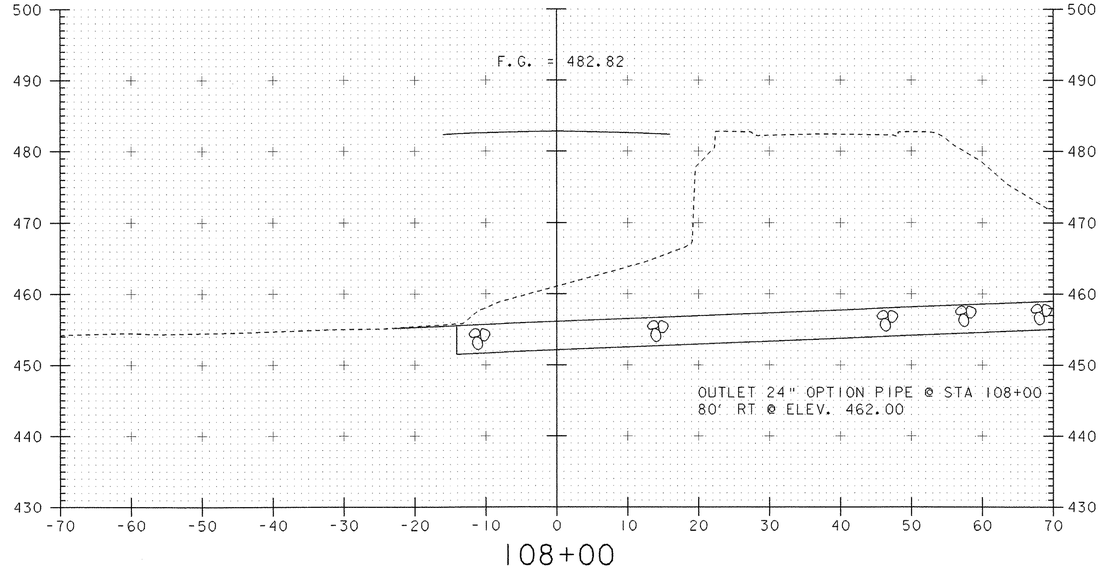



108+35

STATION 108+28.96
END BRIDGE



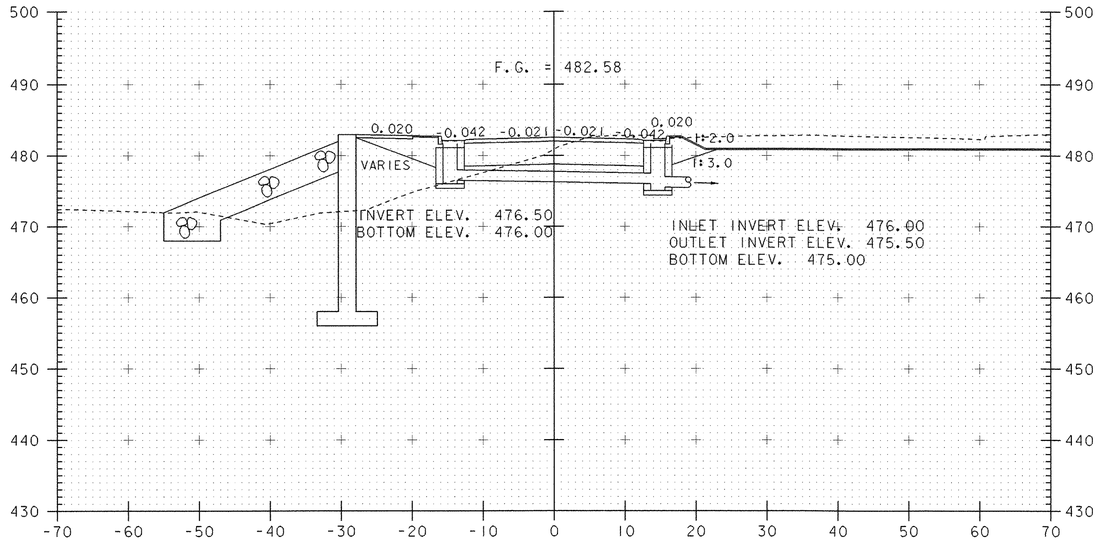

107+00




108+00

SCALE 1" = 10'-0
10 0 10

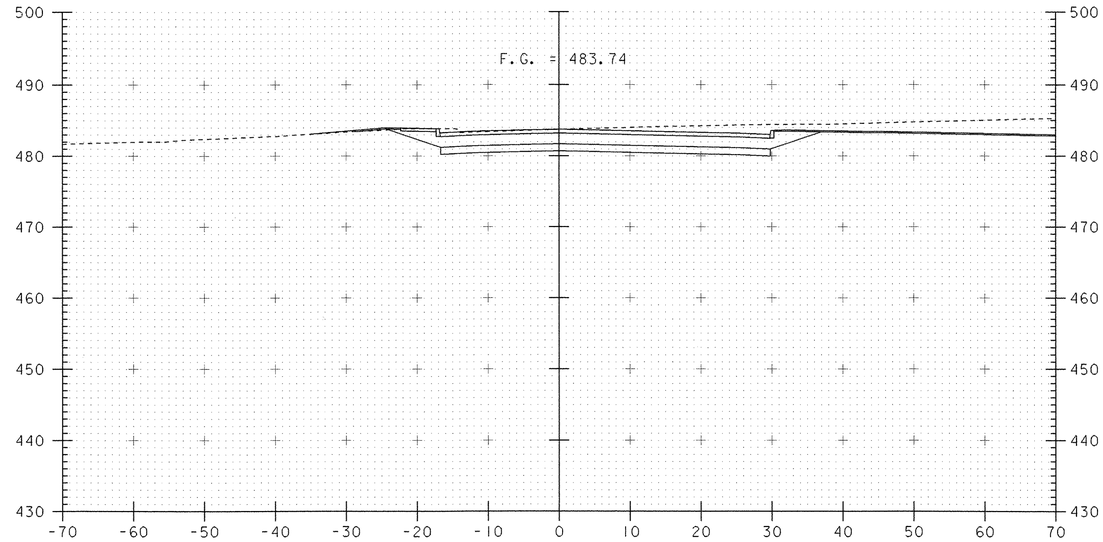
| | |
|---|---|
| PROJECT: ROYALTON | PROJECT NO.: BRZ 1444(22) |
| DESIGN FILE NAME: 89j099/structures/sj099mlx.dgn<br>IPARM FILE NAME: sj099m08.i | PLOT DATE: 25-SEP-2000 |
| MAINLINE CROSS SECTIONS 107+00 TO 108+35 | |
| | SHEET: 102 OF 118 |




108+55

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

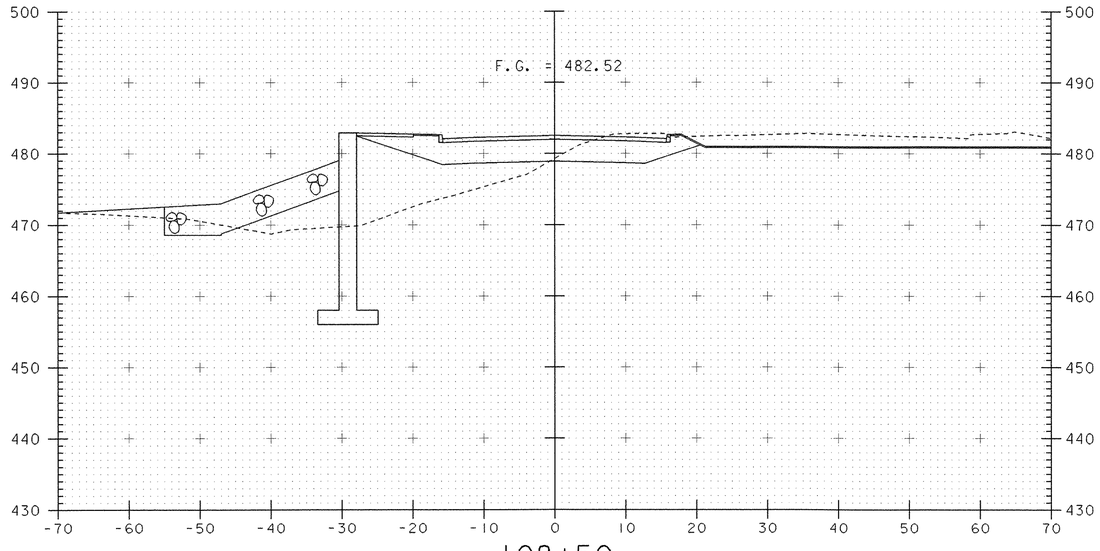
STATION 108+55 RT
END NEW 18" OPTION PIPE / BEGIN NEW 18" OPTION PIPE
CONSTRUCT NEW 4'X4' CONC. DI



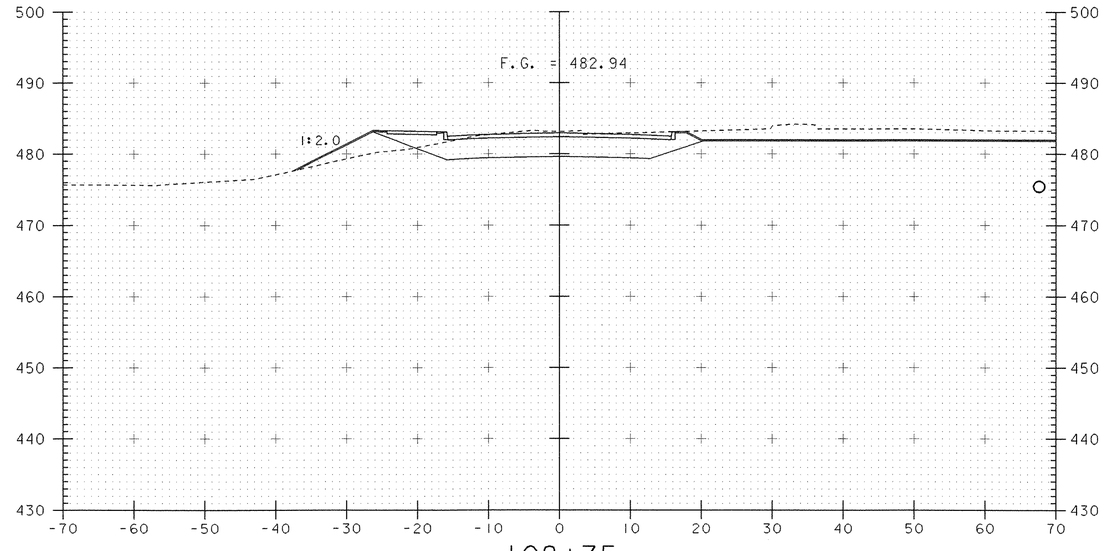

109+00

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

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

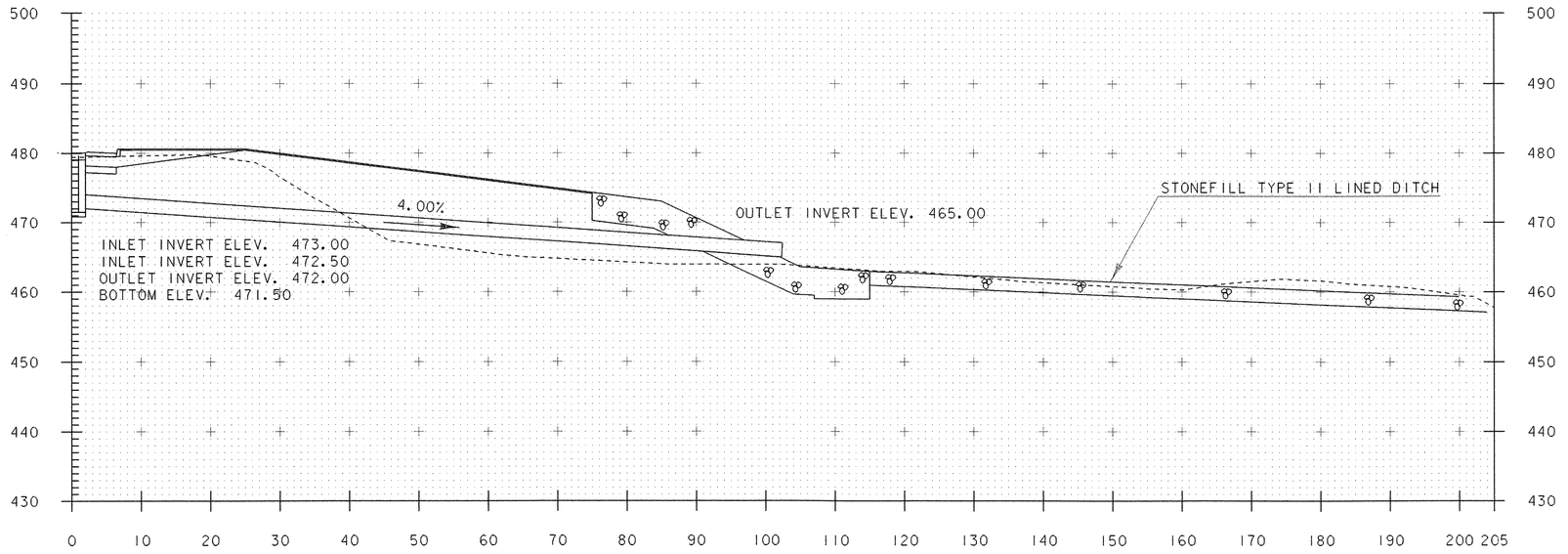



108+75

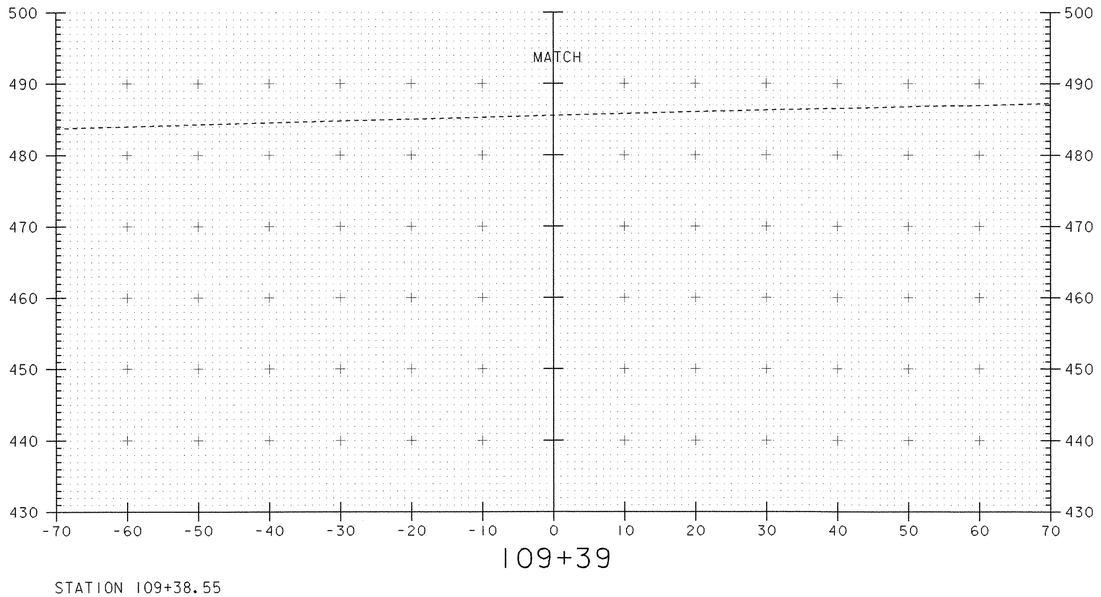
STA 108+55
LINEAR TRANSITION GRASS STRIP FROM 4'-0" TO 0' @ STA 108+80

SCALE 1" = 10'-0
10 0 10

| | |
|---|---|
| PROJECT: ROYALTON | PROJECT NO.: BRZ 1444(22) |
| DESIGN FILE NAME: 89j099/structures/sj099mix.dgn<br>IPARM FILE NAME: sj099m09.i | PLOT DATE: 25-SEP-2000 |
| MAINLINE CROSS SECTIONS 108+50 TO 109+00 | |
| | SHEET: 103 OF 118 |



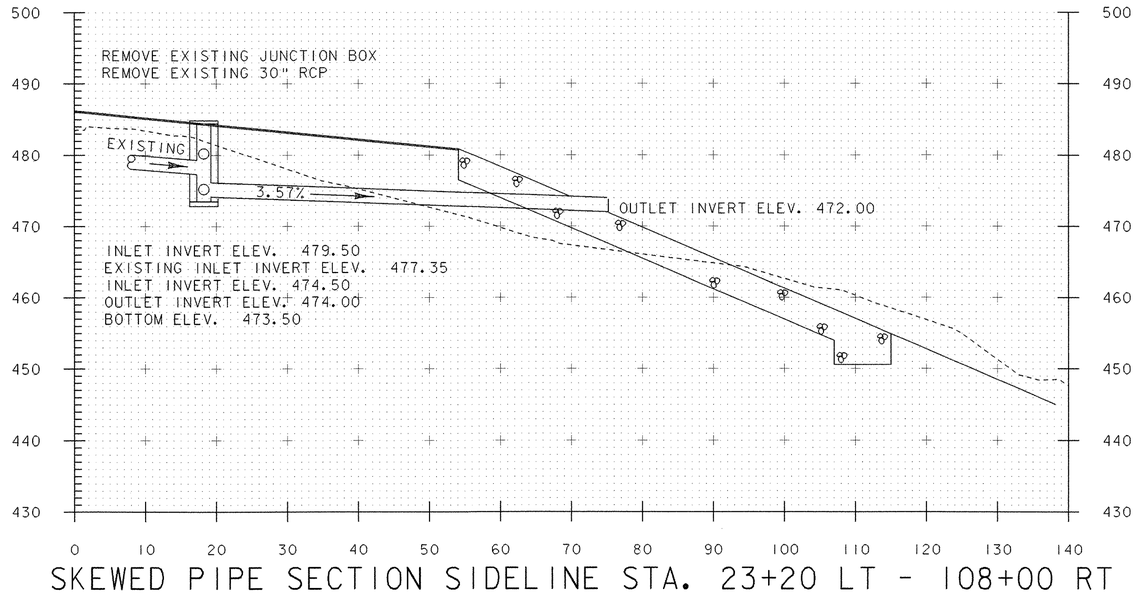

## SKEWED PIPE SECTION STA. 103+40 RT - 104+30 RT




109+39

STATION 109+38.55
END PROJECT
BEGIN APPROACH

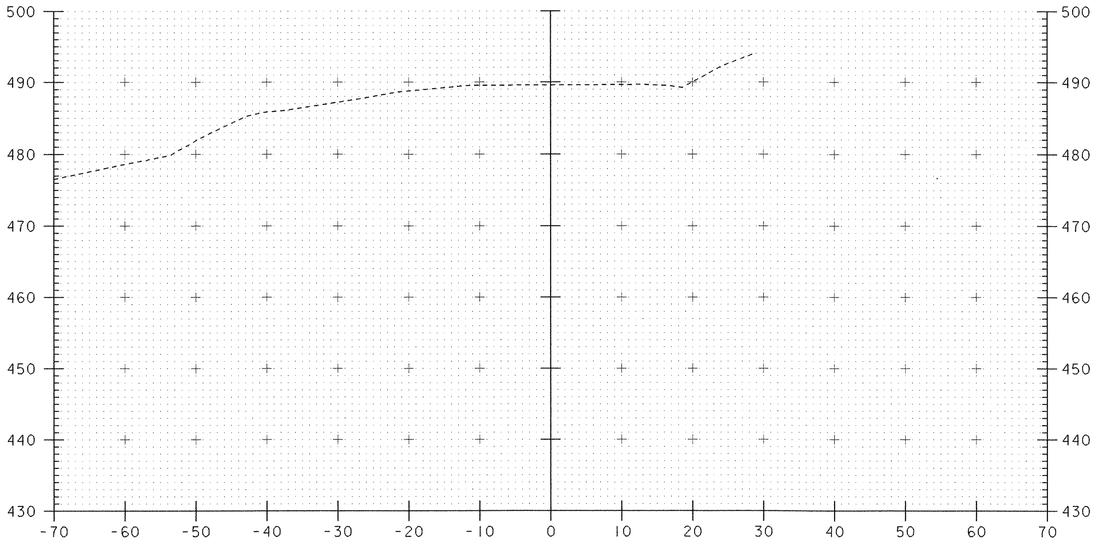
STATION 109+25
BEGIN COLD PLANING TO TRANSITION PAVEMENT



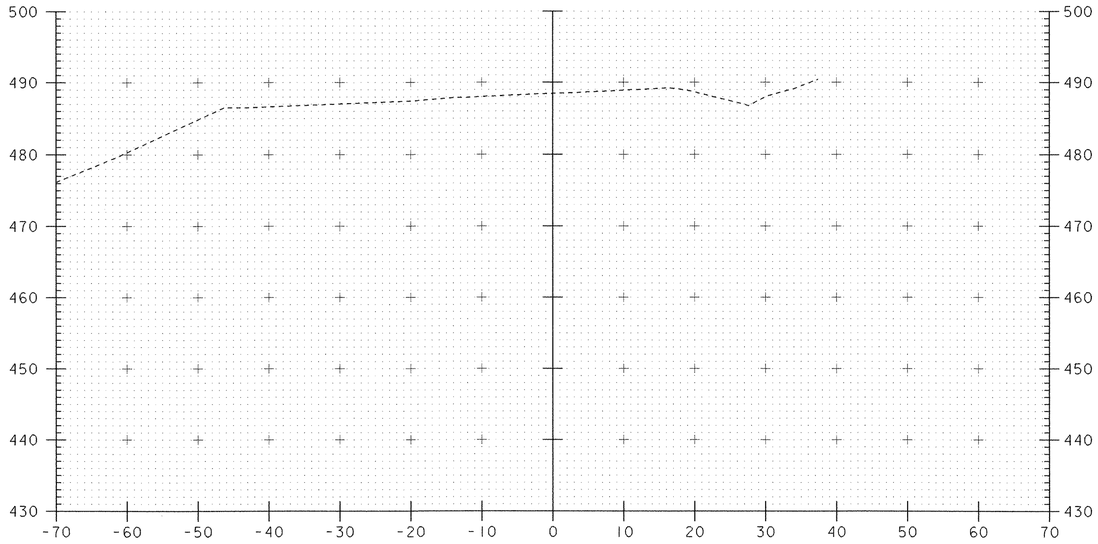

## SKEWED PIPE SECTION SIDELINE STA. 23+20 LT - 108+00 RT

SCALE 1" = 10'-0
10 0 10

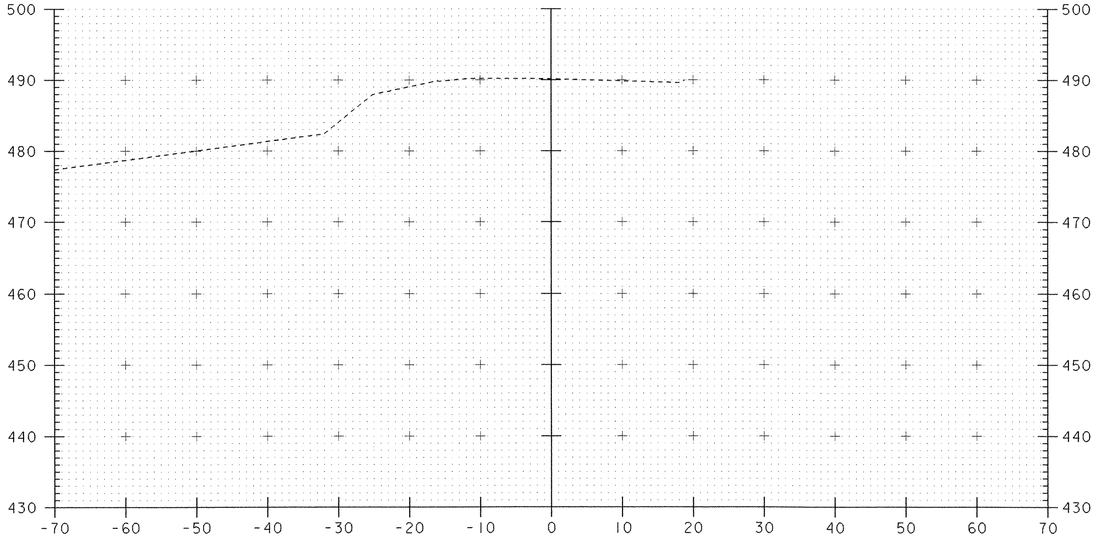
| | |
|---|---|
| PROJECT: ROYALTON | PROJECT NO.: BRZ 1444(22) |
| DESIGN FILE NAME: 89j099/structures/sj099mlx.dgn | |
| IPARM FILE NAME: sj099ml0.i | PLOT DATE: 25-SEP-2000 |
| MAINLINE CROSS SECTIONS 109+38.55 AND SKEWED SECTIONS | |
| | SHEET: 104 OF 118 |



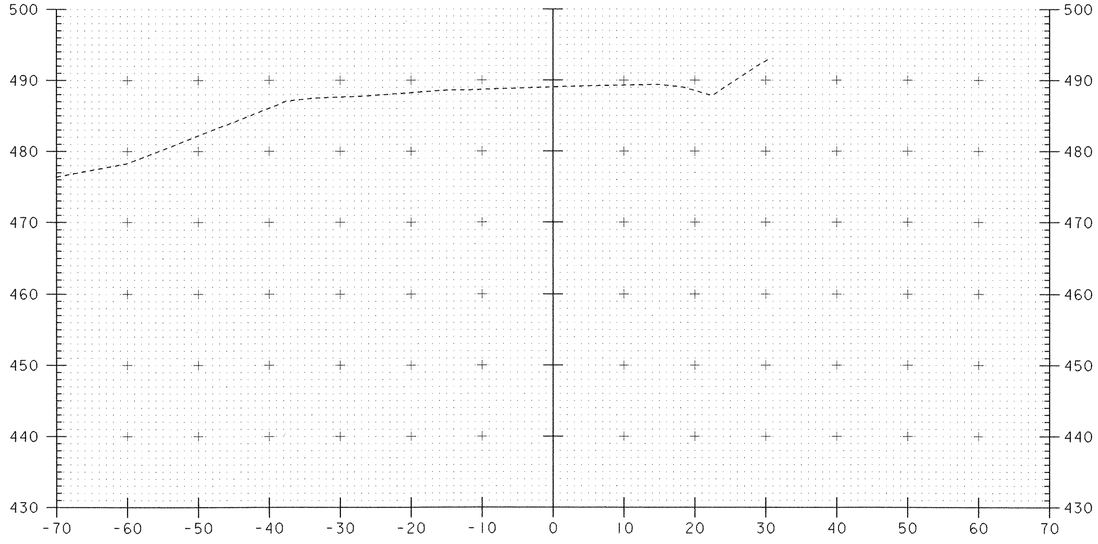

20+50




21+50




20+00

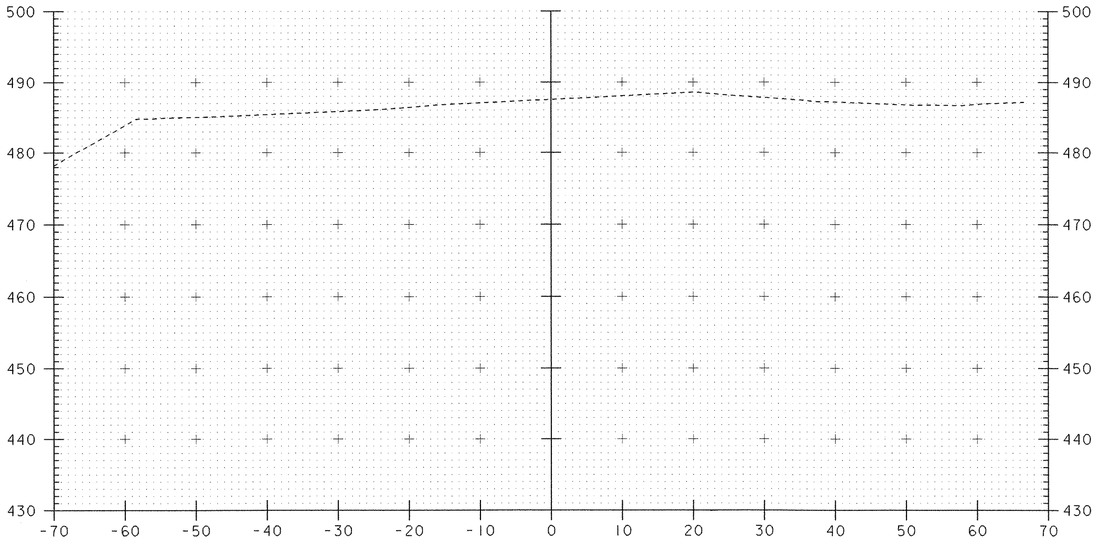



21+00

SCALE 1" = 10'-0

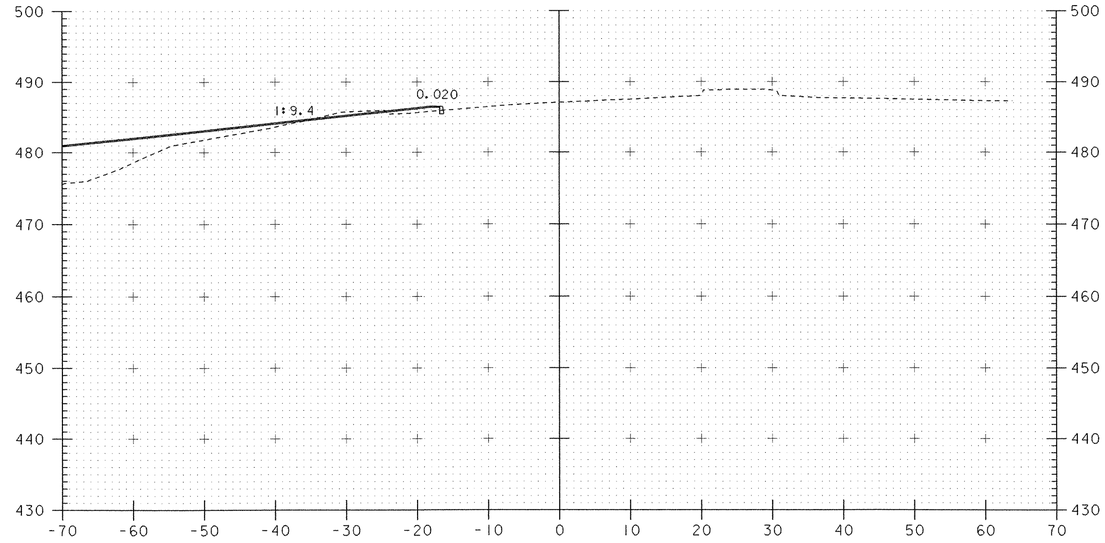
10 0 10

| | |
|---|---|
| PROJECT: Royalton | PROJECT NO.: BRZ 1444(22) |
| DESIGN FILE NAME: 89j099/structures/sj099slx.dgn<br>IPARM FILE NAME: sj099s01.i | PLOT DATE: 25-SEP-2000 |
| VT. 14 CROSS SECTIONS 20+00 TO 21+50 | |
| | SHEET: 105 OF 118 |

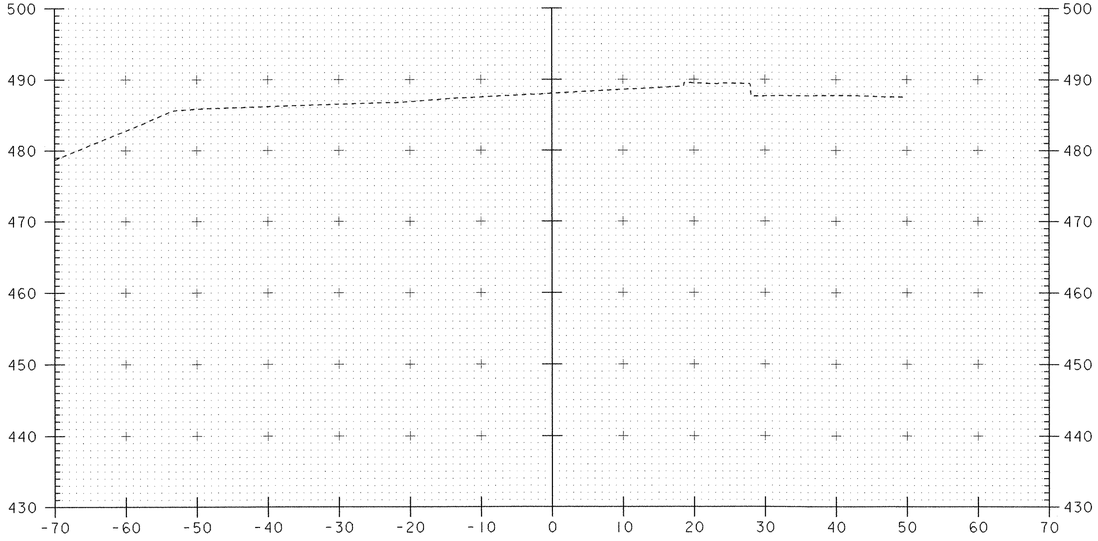



22+50

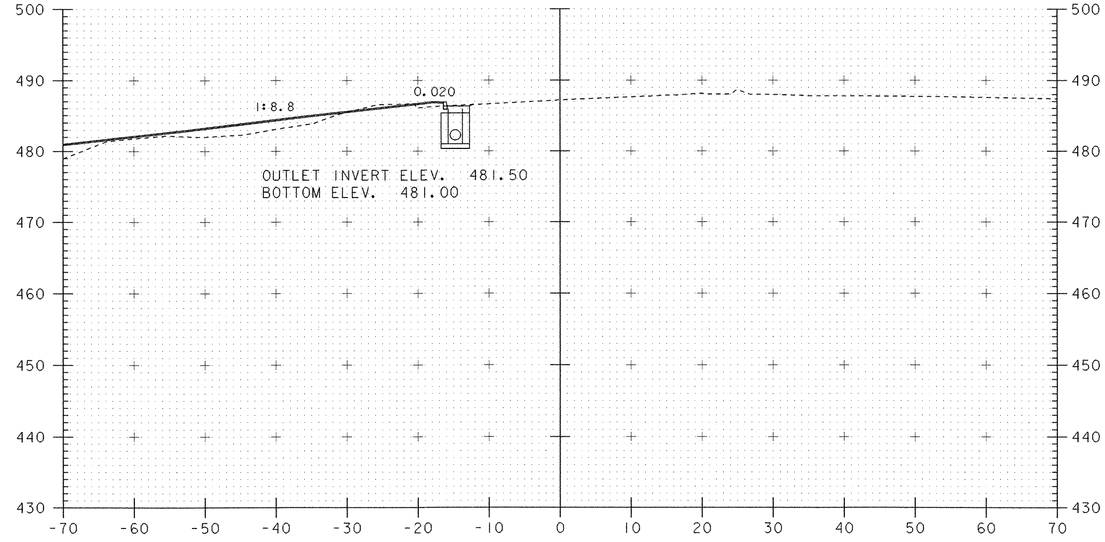
STA 22+50
END APPROACH




23+00




22+00

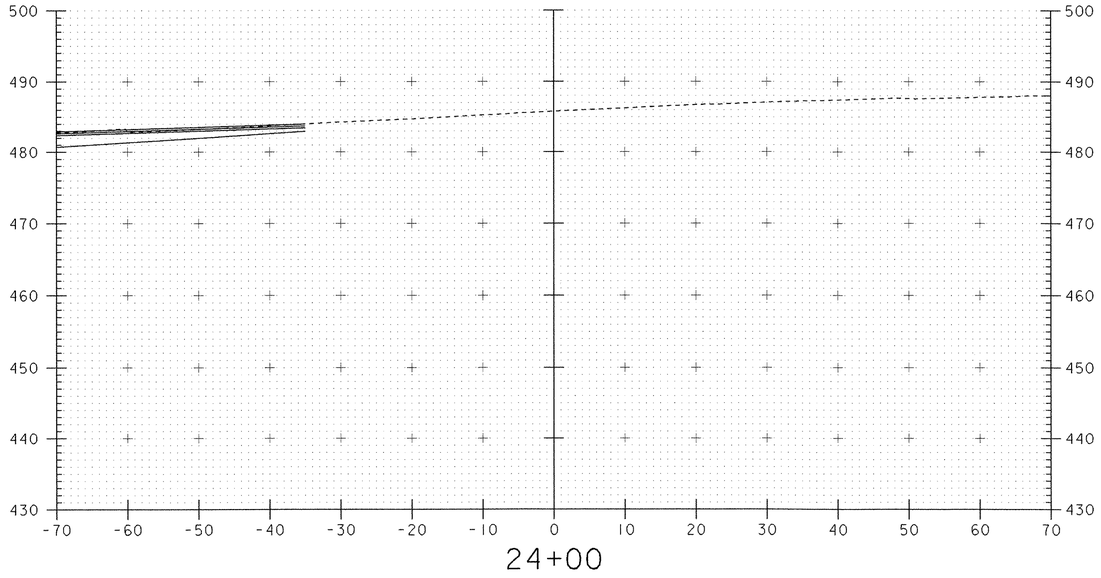



22+85

STATION 22+85 LT
BEGIN NEW 18" OPTION PIPE
CONSTRUCT NEW 4'X4' CONC. DI

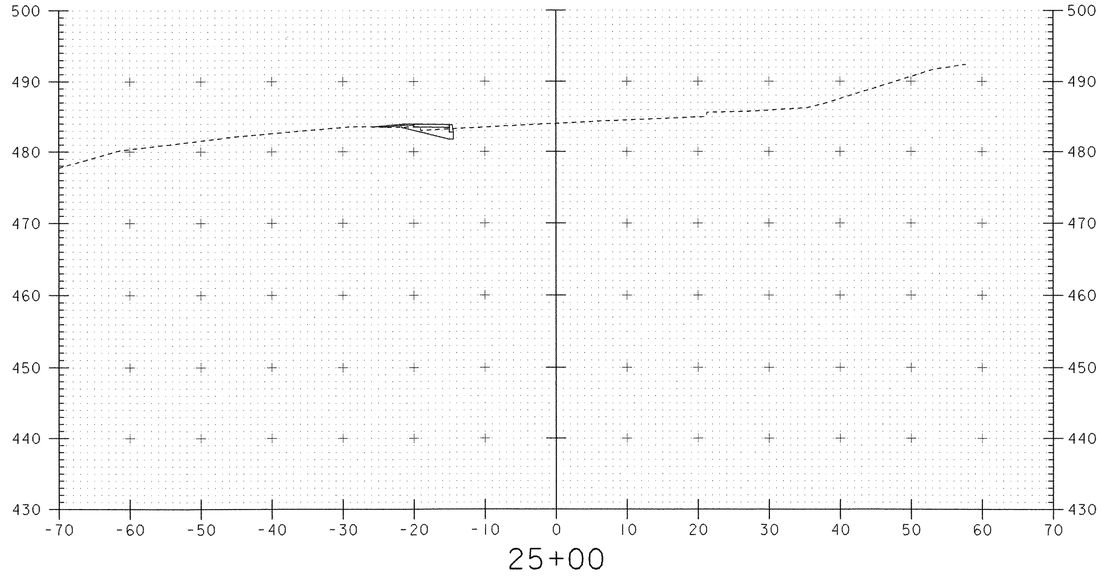
SCALE 1" = 10'-0
10 0 10

| | |
|---|---|
| PROJECT: Royalton | PROJECT NO.: BRZ 1444(22) |
| DESIGN FILE NAME: 89j099/structures/sj099slx.dgn<br>IPARM FILE NAME: sj099s02.i | PLOT DATE: 25-SEP-2000 |
| VT. 14 CROSS SECTIONS 22+00 TO 23+00 | |
| | SHEET: 106 OF 118 |

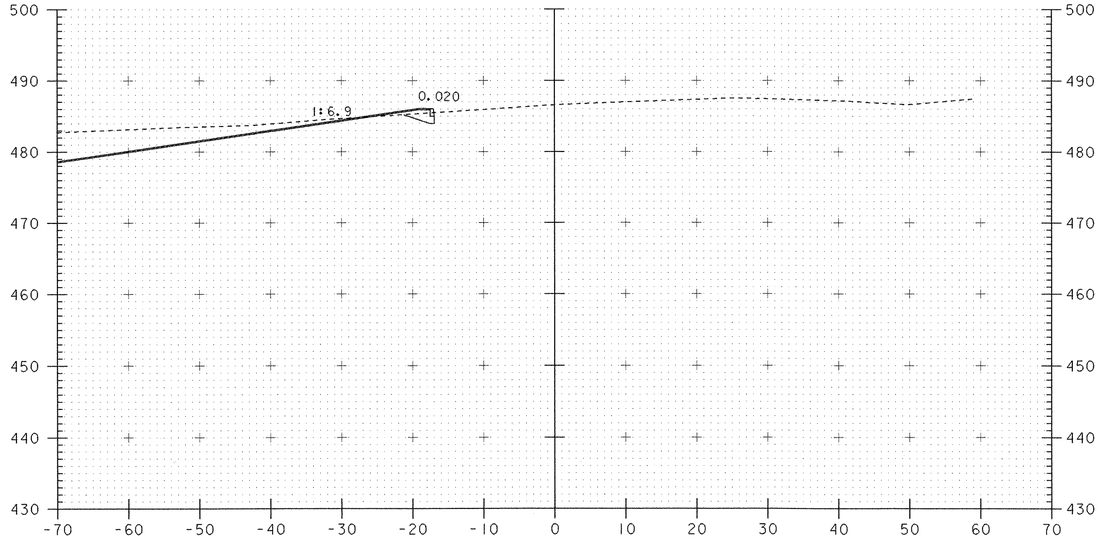



24+00

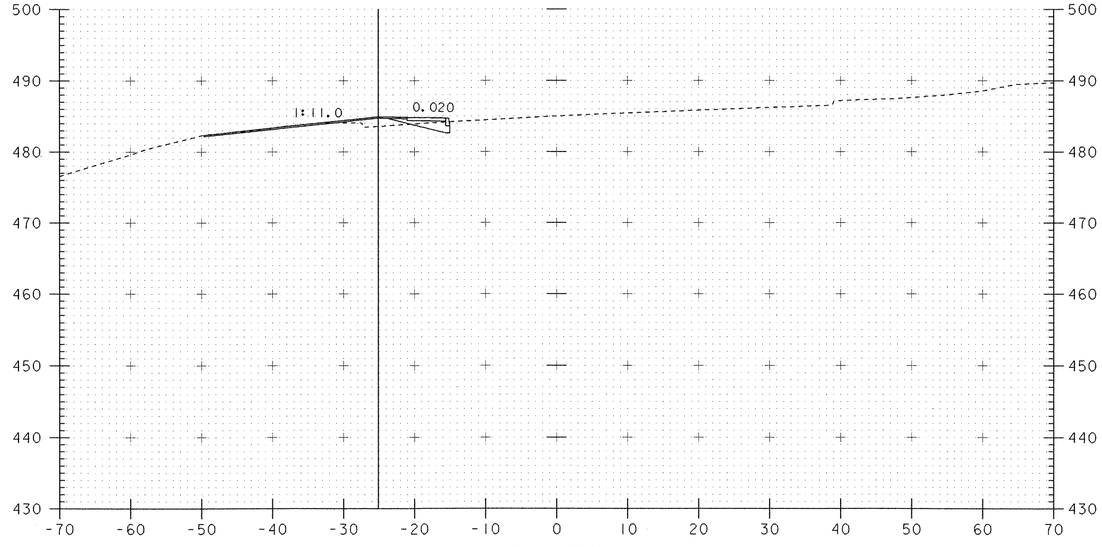
STA 25+15
END APPROACH
(MATCH PROJECT BRS 0147 (5) S)




25+00




23+50



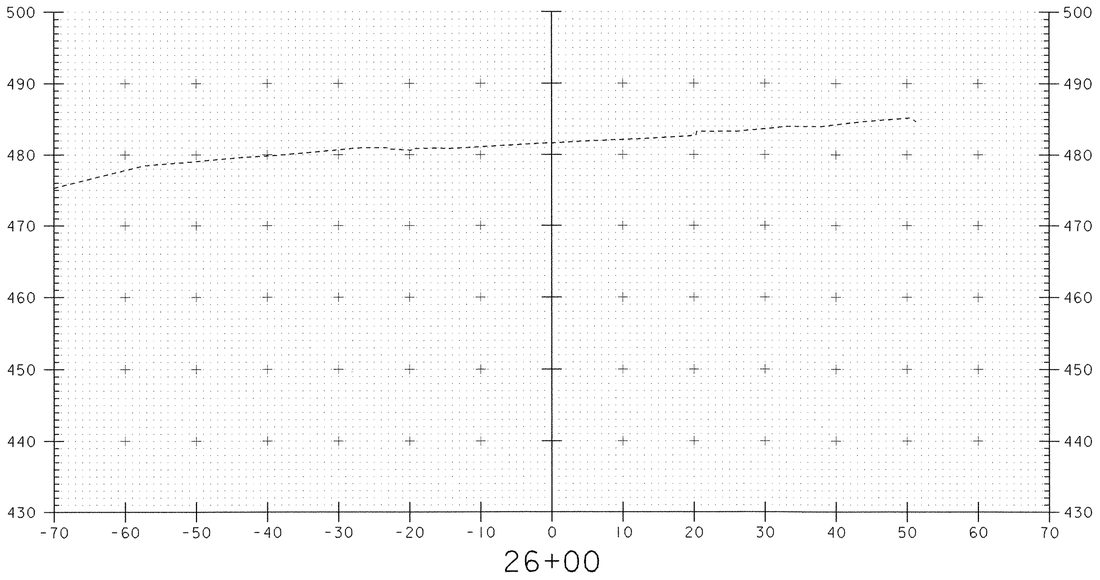

24+50

STATION 23+20 LT
END NEW 18" OPTION PIPE (2)
BEGIN NEW 24" OPTION PIPE
CONSTRUCT NEW 4'X4' RCDI W/ PRECAST COVER

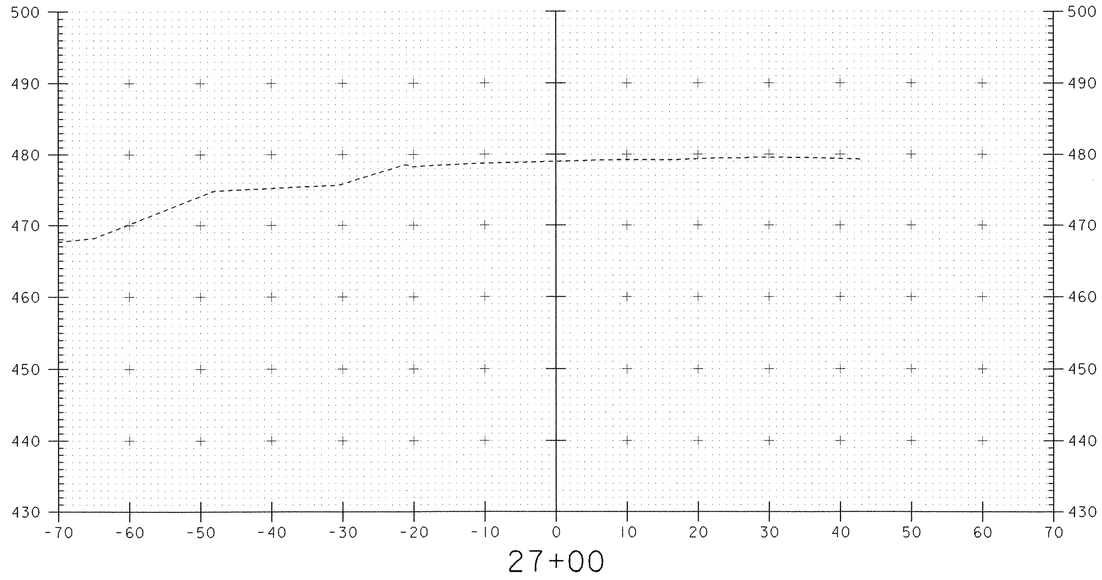
SCALE 1" = 10'-0

10 0 10

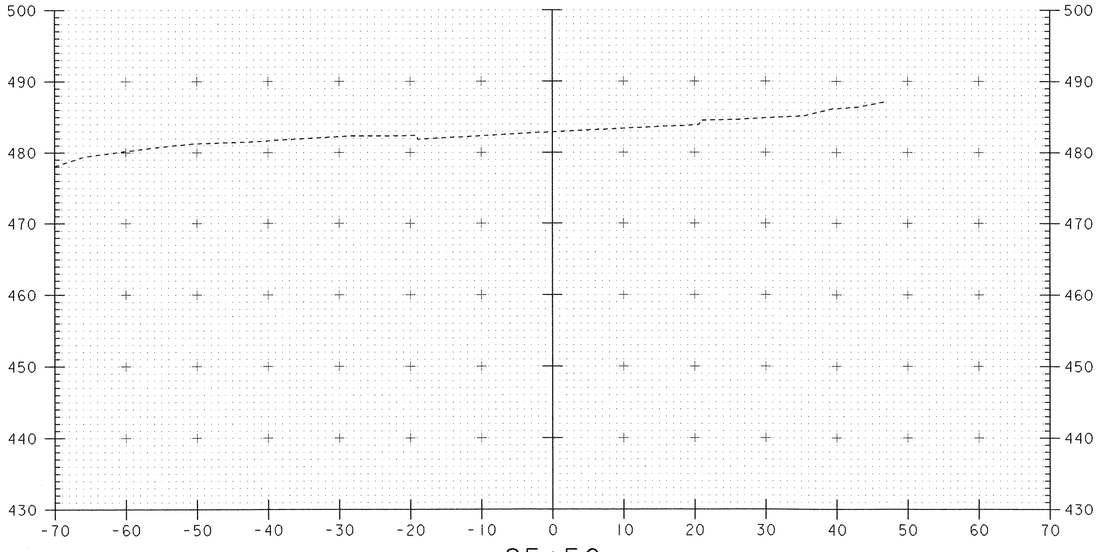
| | |
|---|---|
| PROJECT: Royalton | PROJECT NO.: BRZ 1444(22) |
| DESIGN FILE NAME: 89j099/structures/sj099slx.dgn<br>IPARM FILE NAME: sj099s03.i | PLOT DATE: 25-SEP-2000 |
| VT. 14 CROSS SECTIONS 23+50 TO 25+00 | |
| | SHEET: 107 OF 118 |



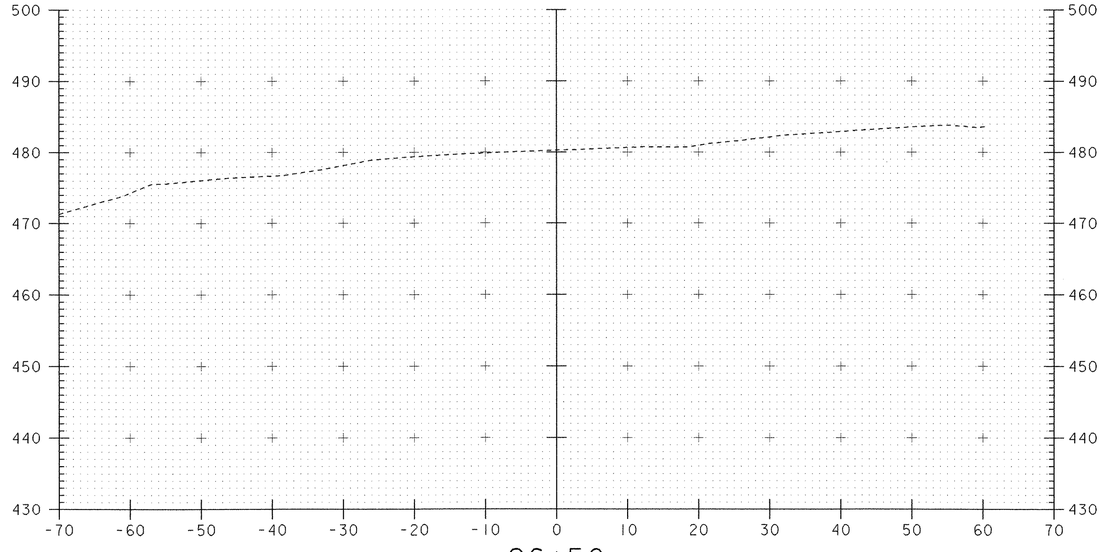

26+00




27+00




25+50

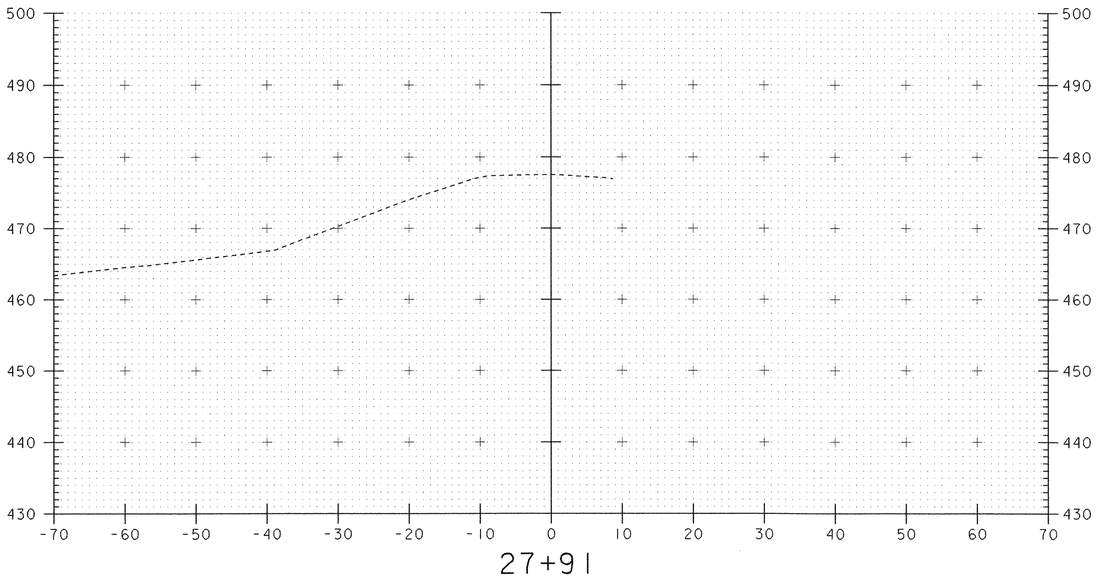



26+50

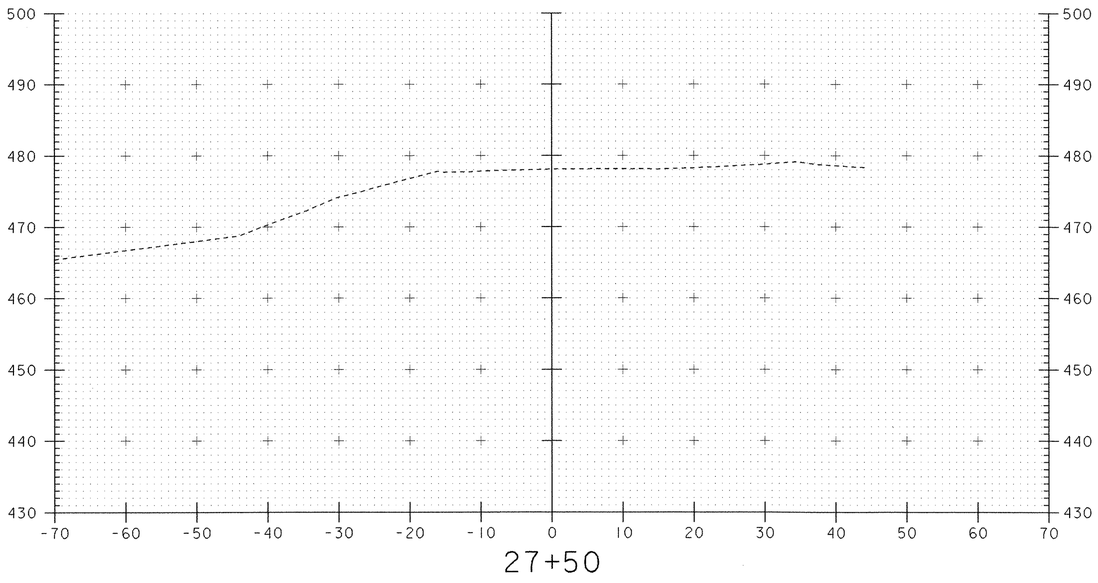
SCALE 1" = 10'-0

10 0 10

| | |
|---|---|
| PROJECT: Royalton | PROJECT NO.: BRZ 1444(22) |
| DESIGN FILE NAME: 89J099/structures/sj099slx.dgn<br>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

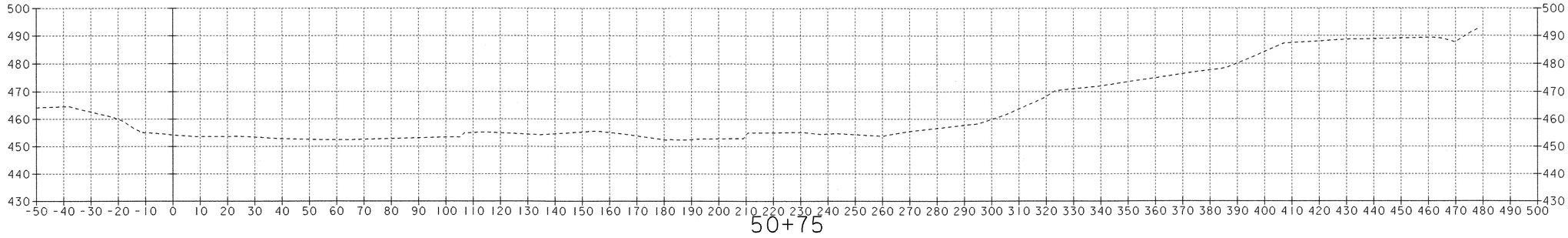



27+50

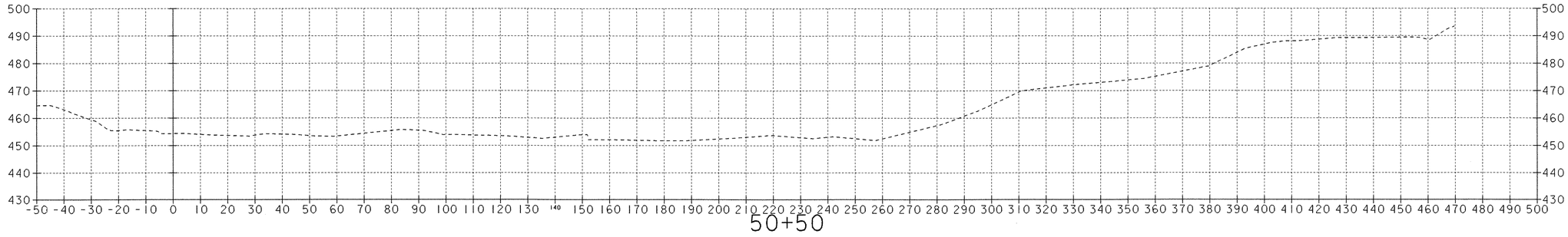
SCALE 1" = 10'-0

10 0 10

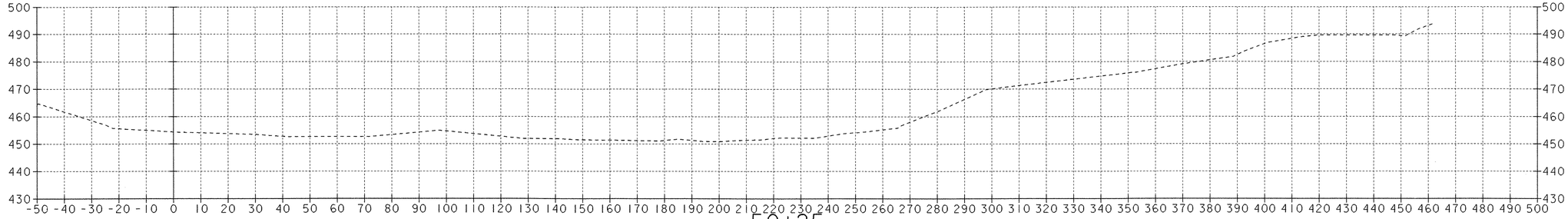
| | |
|---|---|
| PROJECT: Royalton | PROJECT NO.: BRZ 1444(22) |
| DESIGN FILE NAME: 89j099/structures/sj099six.dgn<br>IPARM FILE NAME: sj099s05.i | PLOT DATE: 25-SEP-2000 |
| VT. 14 CROSS SECTIONS 27+50 TO 27+91 | |
| | SHEET: 109 OF 118 |



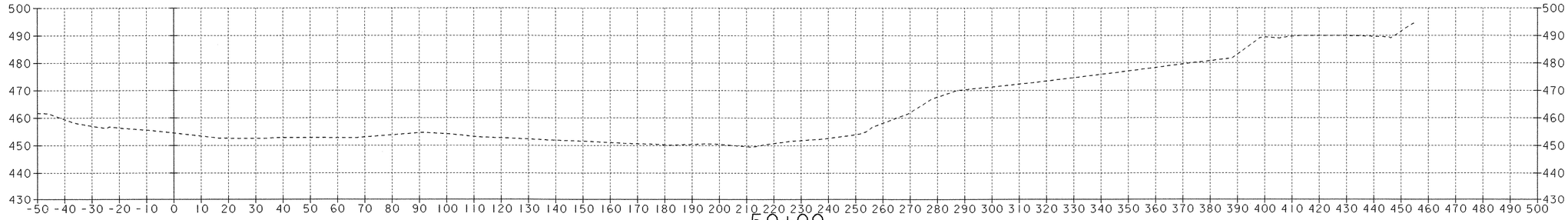

50+75




50+50




50+25

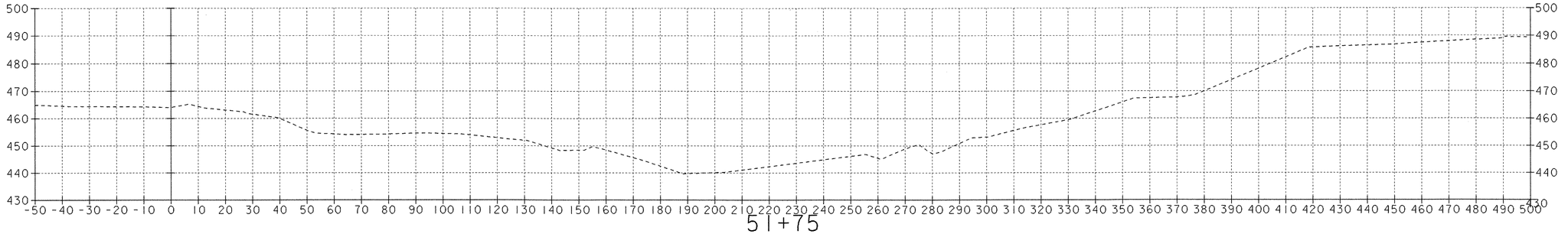



50+00

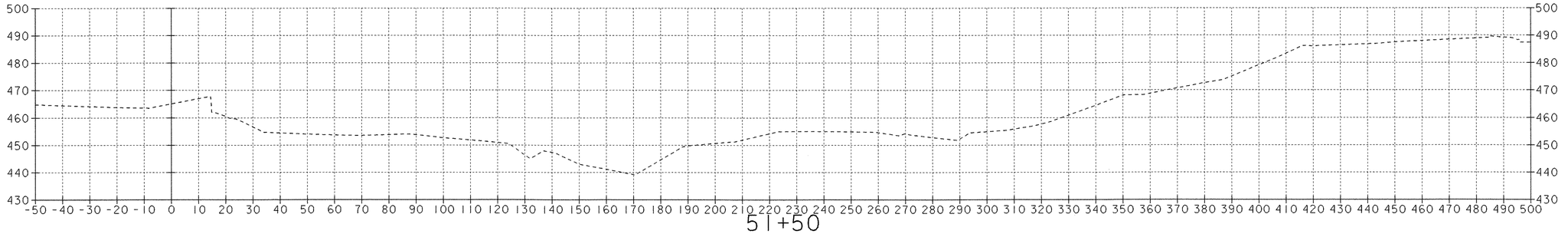
SCALE 1" = 20'-0

20 0 20

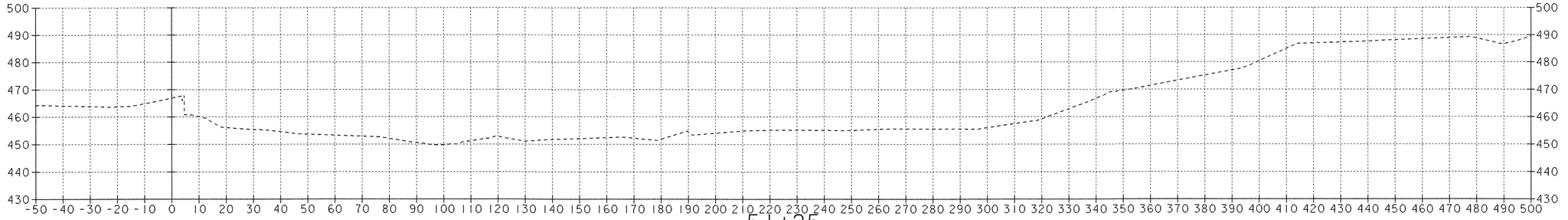
| | |
|---|---|
| PROJECT: ROYALTON | PROJECT NO.: BRZ 1444(22) |
| DESIGN FILE NAME: 89j099/structures/sj099chx.dgn<br>IPARM FILE NAME: sj099c01.i | PLOT DATE: 25-SEP-2000 |
| CHANNEL CROSS SECTIONS 50+00 - 50+75 | |
| | SHEET: 110 OF 118 |



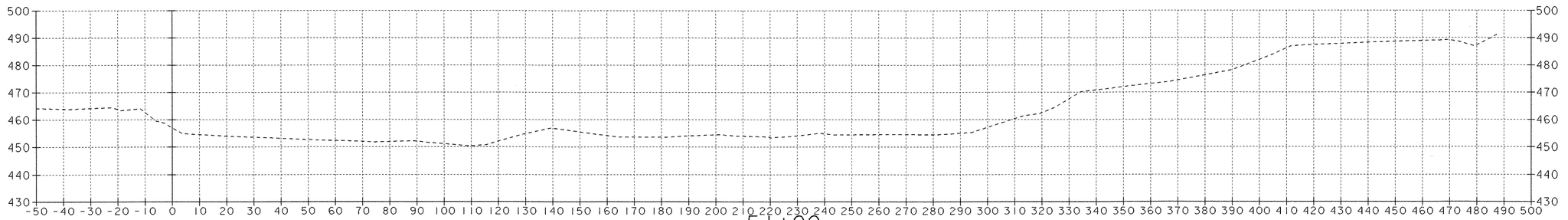

51+75




51+50




51+25

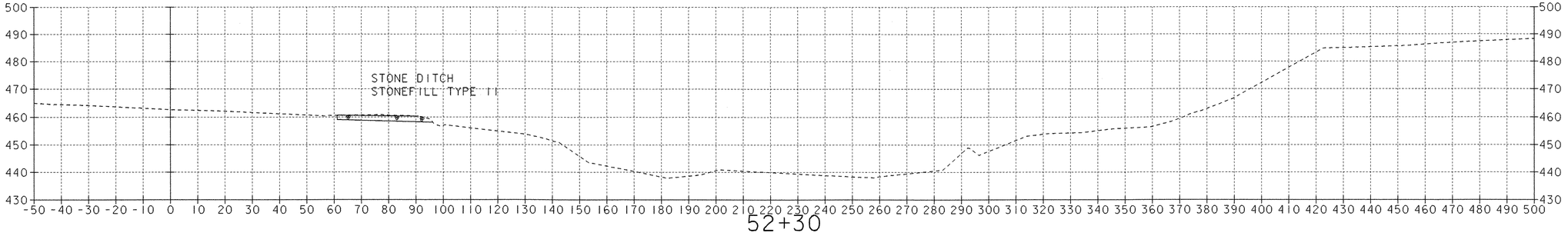



51+00

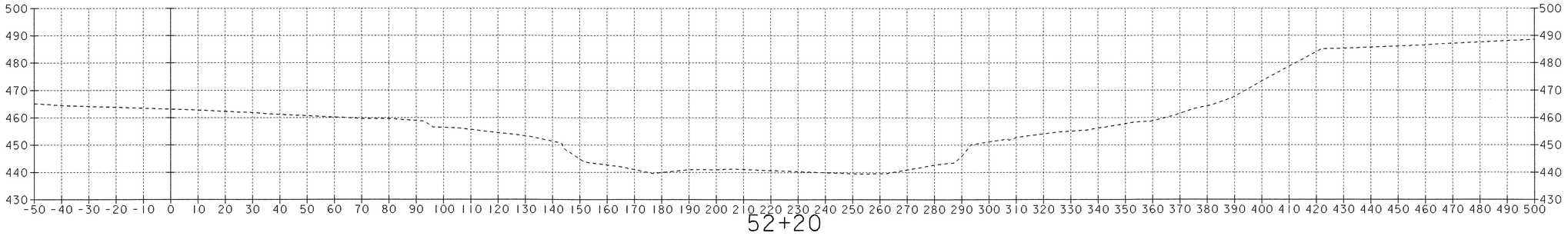
SCALE 1" = 20'-0

20 0 20

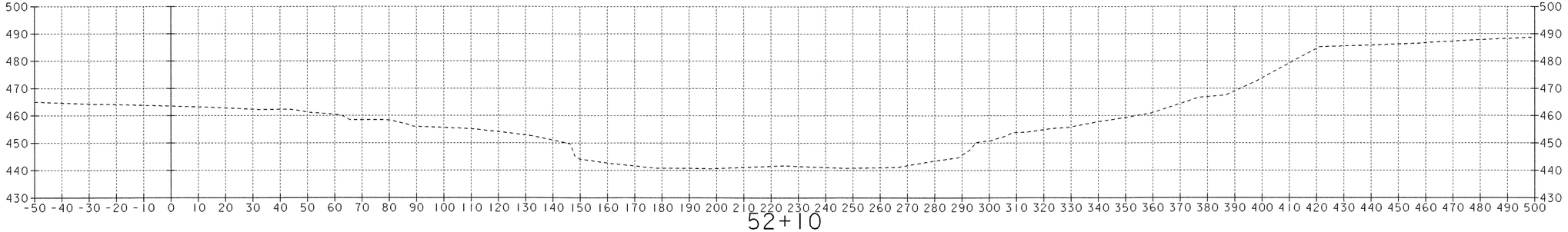
| PROJECT: ROYALTON | PROJECT NO.: BRZ 1444(22) |
|---|---|
| DESIGN FILE NAME: 89j099/structures/sj099chx.dgn | |
| IPARM FILE NAME: sj099c02.i | PLOT DATE: 25-SEP-2000 |
| CHANNEL CROSS SECTION 51+00 - 51+75 | |
| | SHEET: 111 OF 118 |



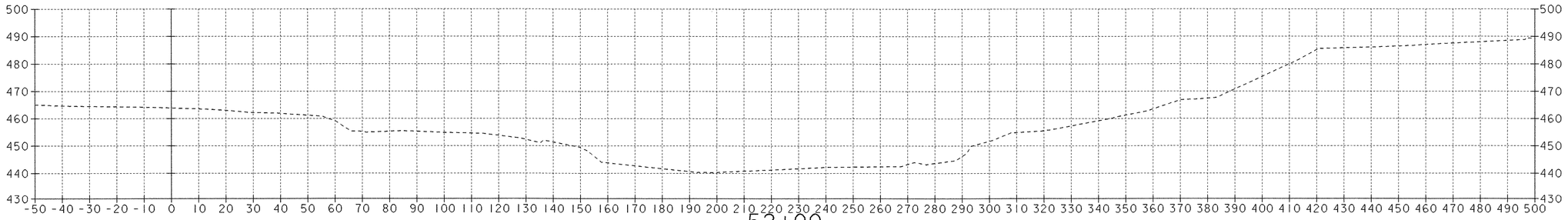

52+30



52+20



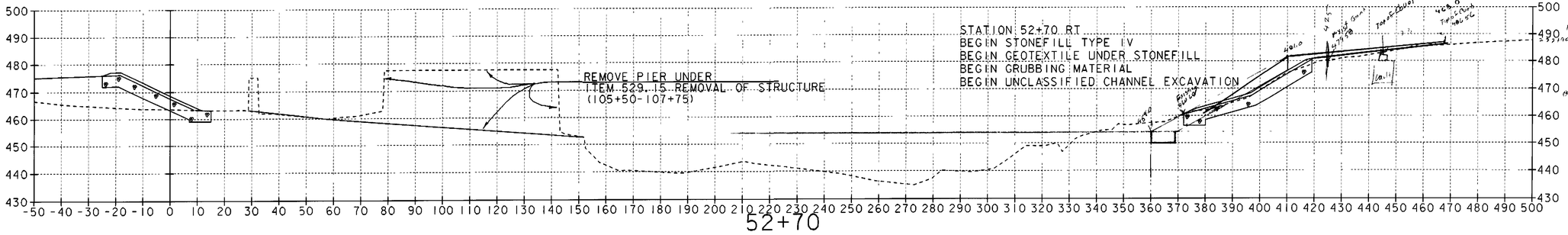
52+10

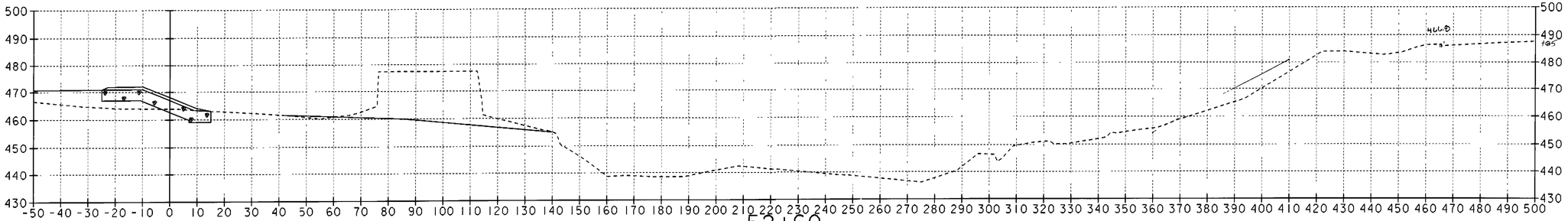


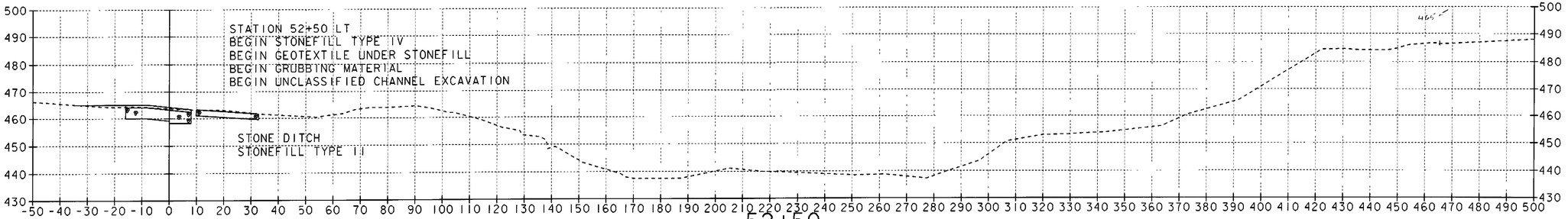
52+00

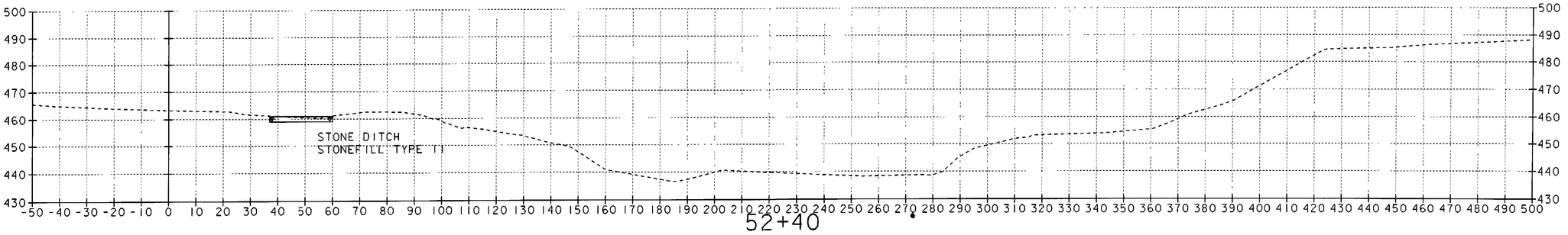
SCALE 1" = 20'-0
20 0 20

| | |
|---|---|
| PROJECT: ROYALTON | PROJECT NO.: BRZ 1444(22) |
| DESIGN FILE NAME: 89j099/structures/sj099chx.dgn<br>IPARM FILE NAME: sj099c03.i | PLOT DATE: 25-SEP-2000 |
| CHANNEL CROSS SECTIONS 52+00 - 52+30 | |
| | SHEET: 112 OF 118 |



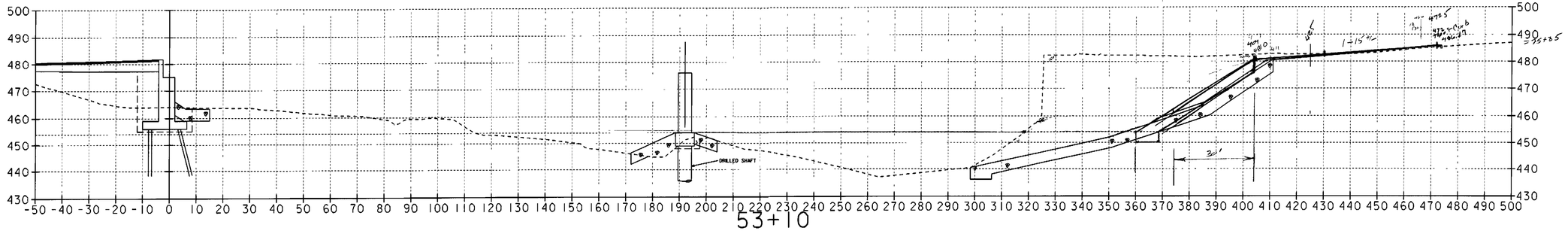



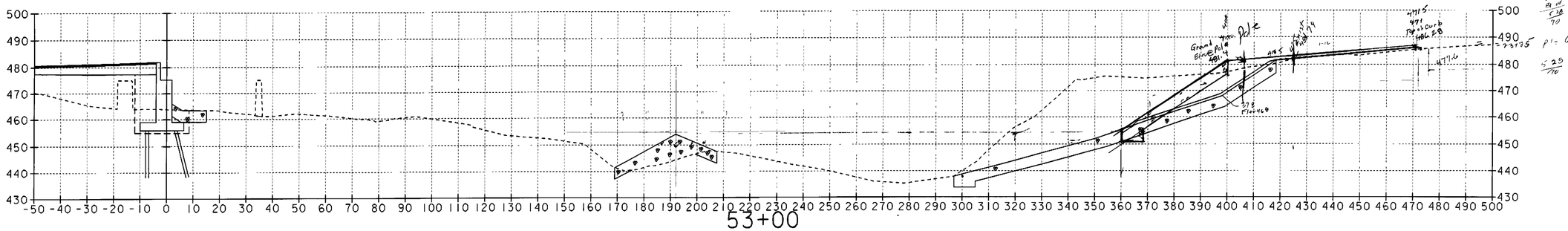




SCALE 1" = 20'-0

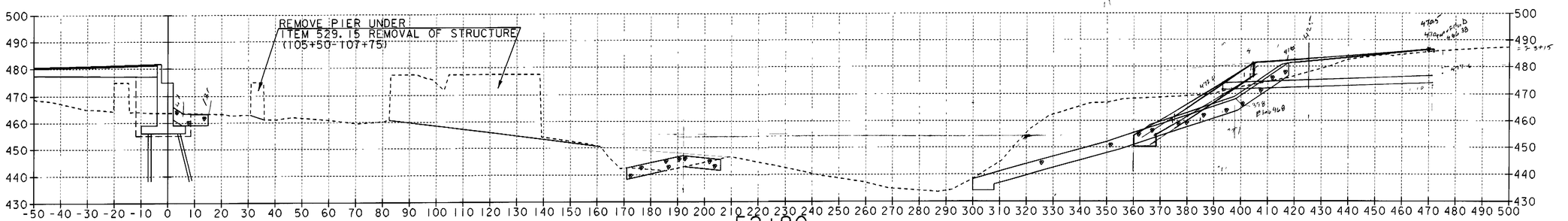
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| DESIGN FILE NAME: 89J099/structures/sj099chx.dgn<br>IPARM FILE NAME: sj099c04.i | PLOT DATE: 25-SEP-2000 |
| CHANNEL CROSS SECTIONS 52+40 - 52+70 | |
| | SHEET: 113 OF 118 |



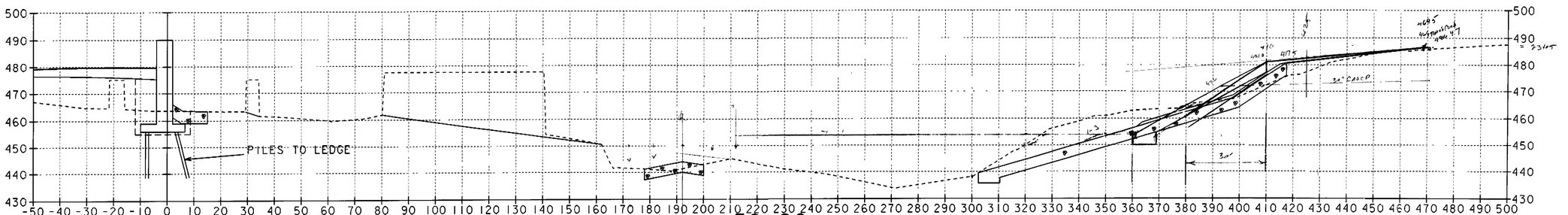

53+10




53+00



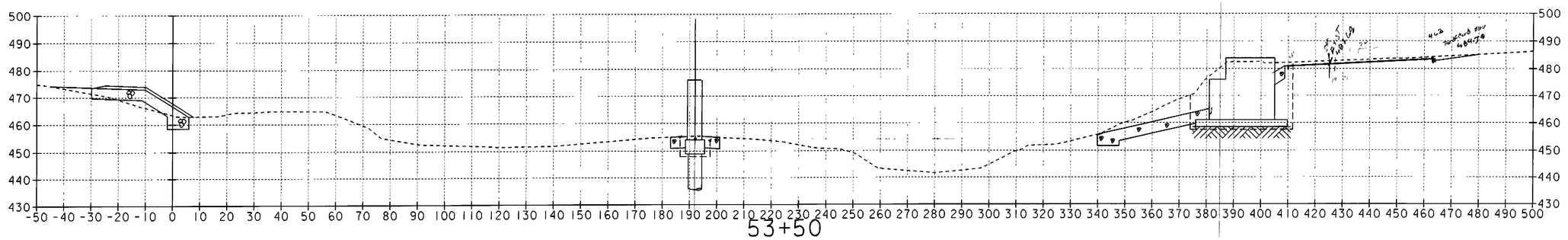

52+90



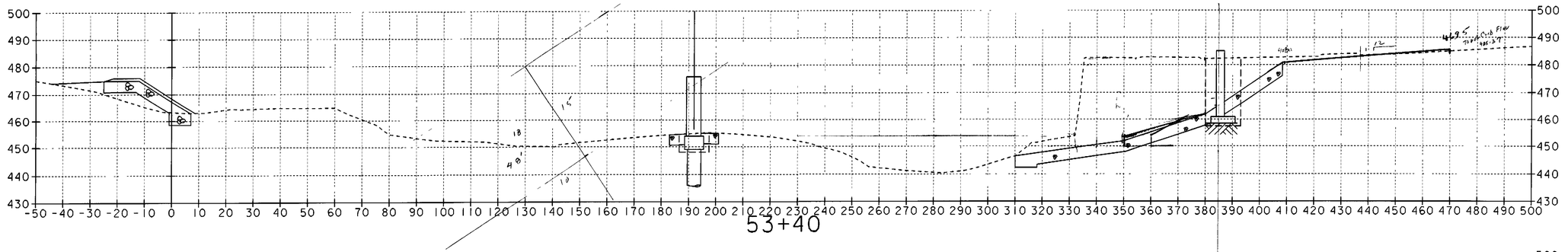

52+80

SCALE 1" - 20'-0
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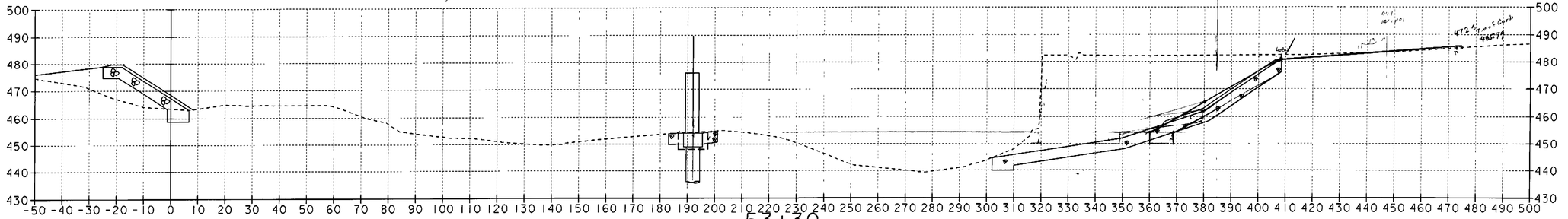
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|---|---|
| DESIGN FILE NAME: 89J099/structures/sj099c11x.dgn<br>IPARM FILE NAME: sj099c05.i | PLOT DATE: 25-SEP-2000 |
| CHANNEL CROSS SECTIONS 52+80 - 53+10 | |
| | SHEET. 114 OF 118 |



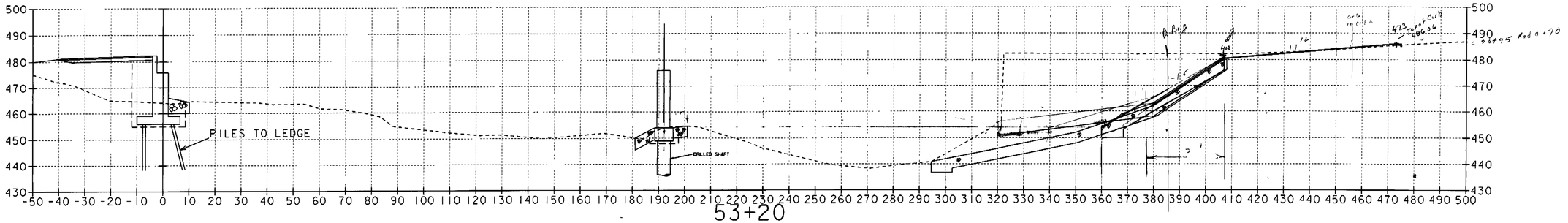

53+50




53+40




53+30

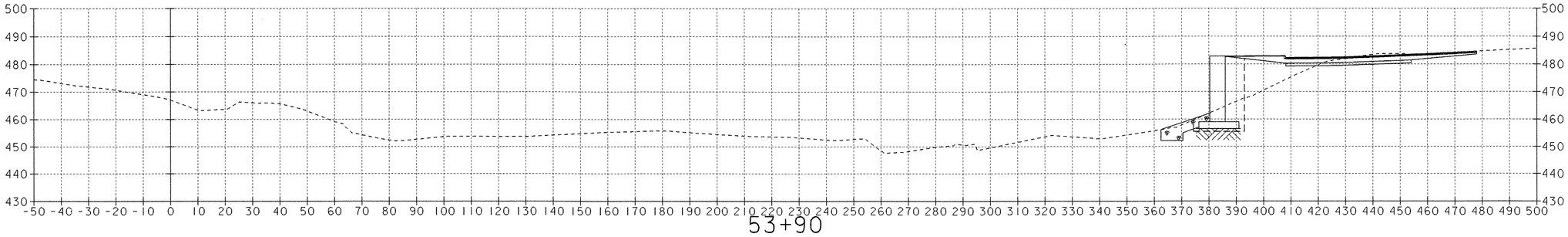



53+20

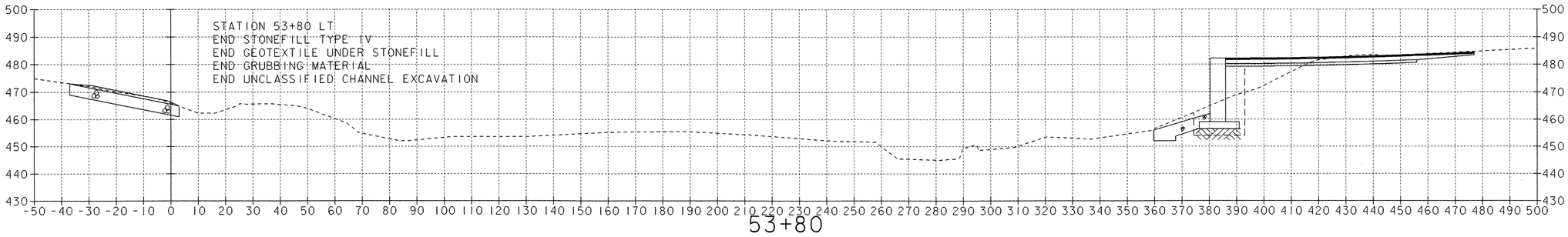
SCALE 1" = 20'-0

20 0 20

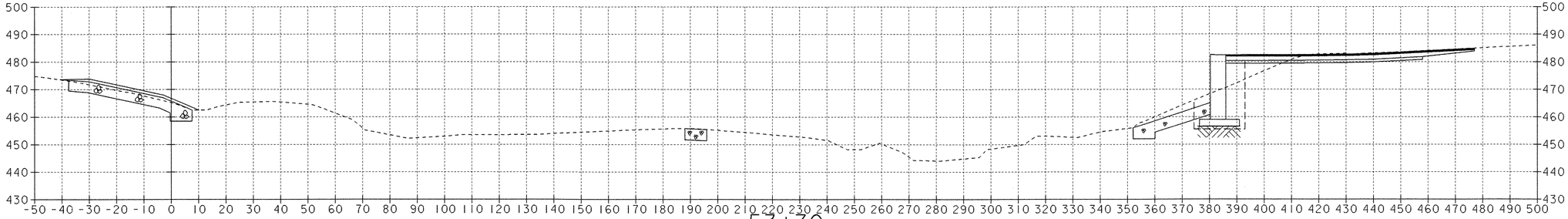
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| DESIGN FILE NAME: 89J099/structures/sj099chx.dgn<br>IPARM FILE NAME: sj099c06.i | PLOT DATE: 25-SEP-2000 |
| CHANNEL CROSS SECTIONS 53+20 - 53+50 | |
| | SHEET: 115 OF 118 |



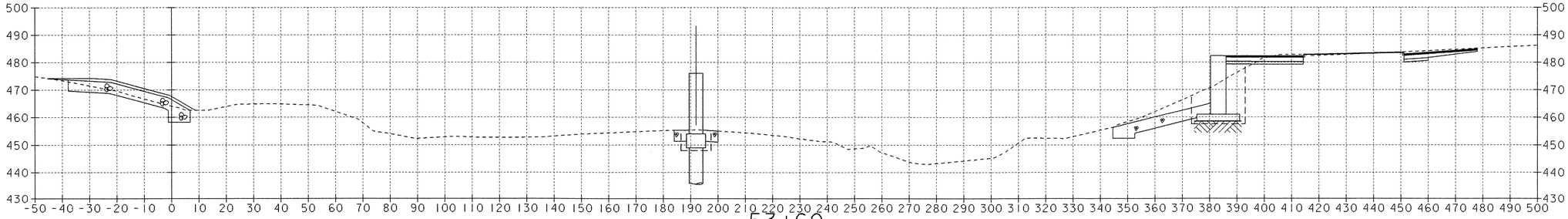

53+90




53+80



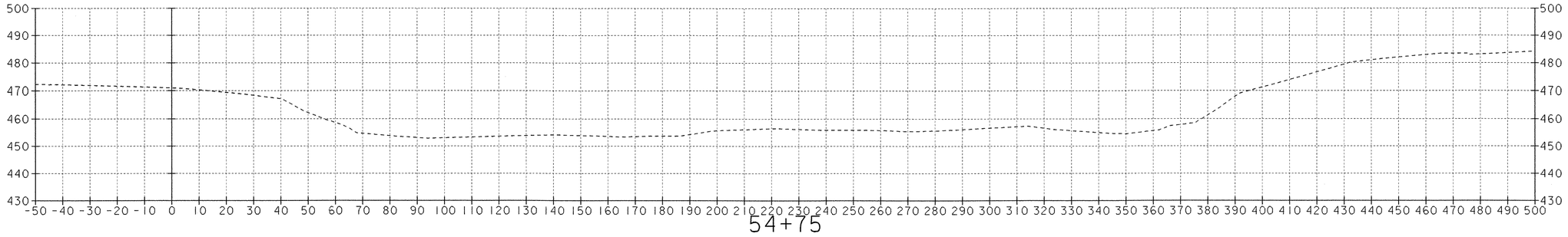

53+70



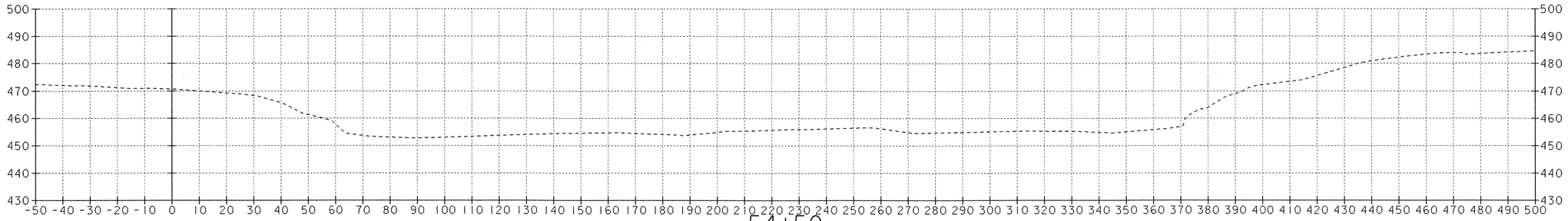

53+60

SCALE 1" = 20'-0
20 0 20

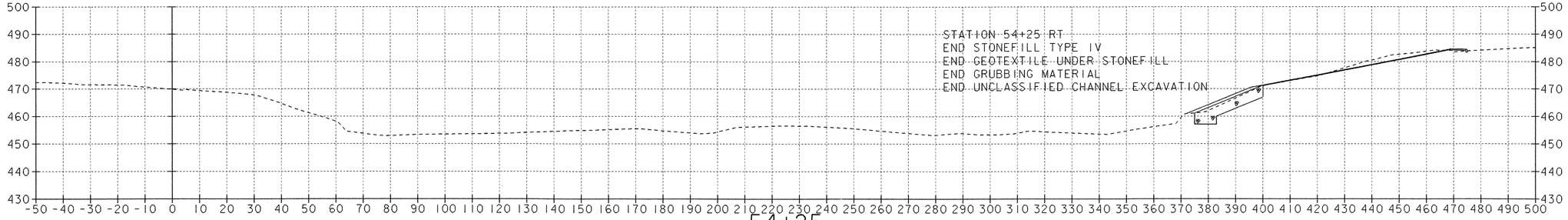
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|---|---|
| PROJECT: ROYALTON | PROJECT NO.: BRZ 1444(22) |
| DESIGN FILE NAME: 89j099/structures/sj099chx.dgn<br>IPARM FILE NAME: sj099c07.i | PLOT DATE: 25-SEP-2000 |
| CHANNEL CROSS SECTIONS 53+60 - 53+90 | |
| | SHEET: 116 OF 118 |



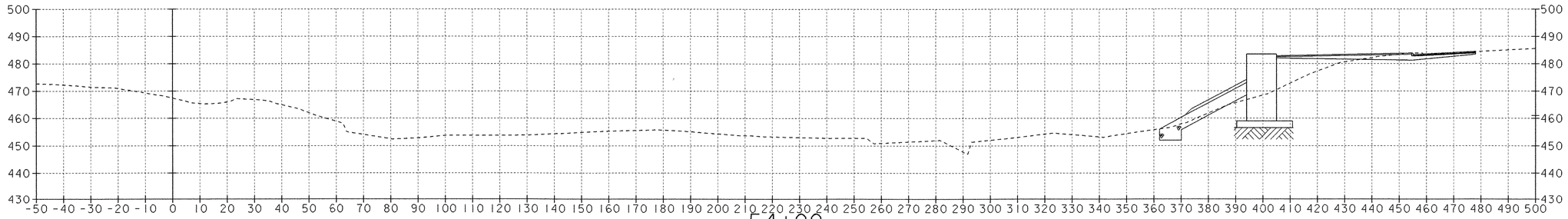

54+75




54+50



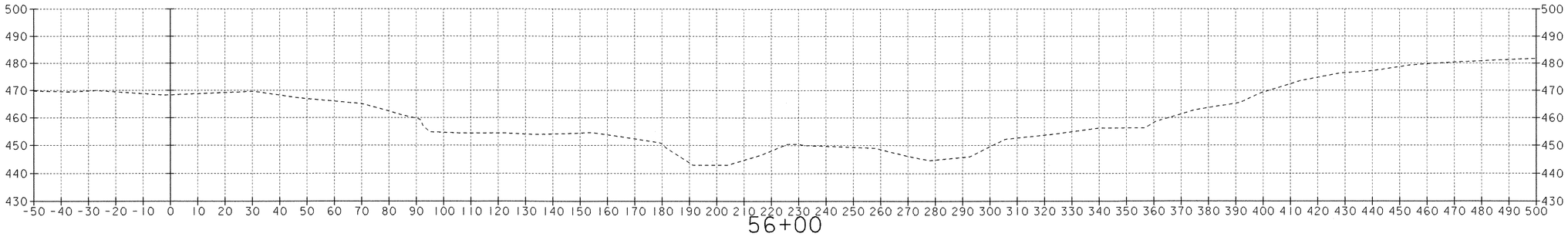

54+25



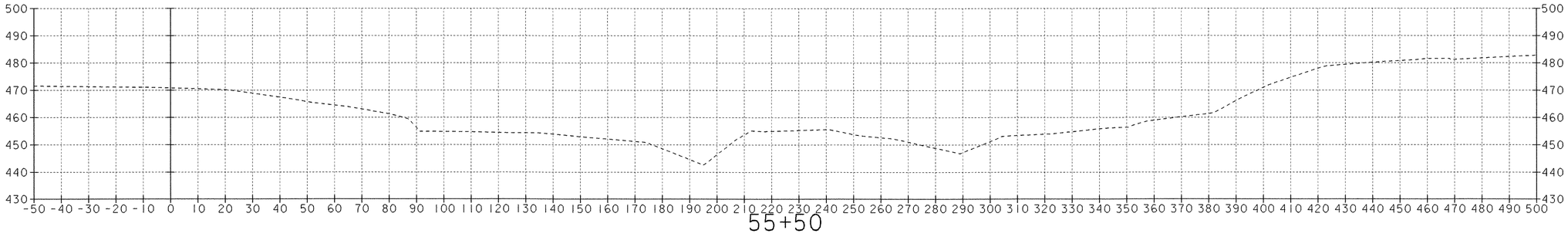

54+00

SCALE 1" = 20'-0
20 0 20

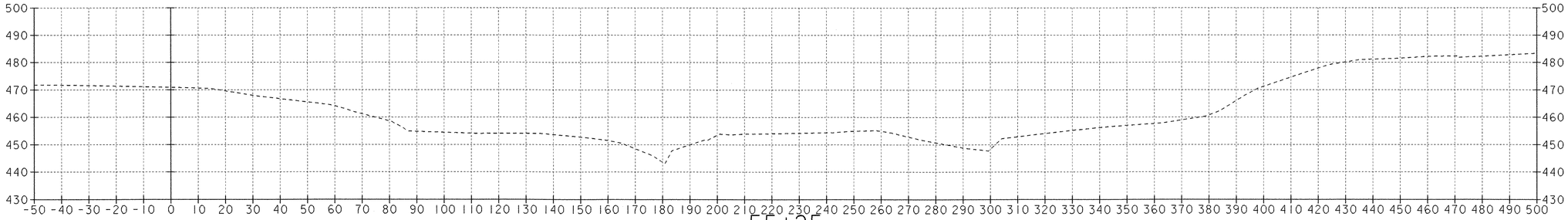
| PROJECT: ROYALTON | PROJECT NO.: BRZ 1444(22) |
|---|---|
| DESIGN FILE NAME: 89j099/structures/sj099chx.dgn<br>IPARM FILE NAME: sj099c08.i | PLOT DATE: 25-SEP-2000 |
| CHANNEL CROSS SECTIONS 54+00 - 54+75 | |
| | SHEET: 117 OF 118 |



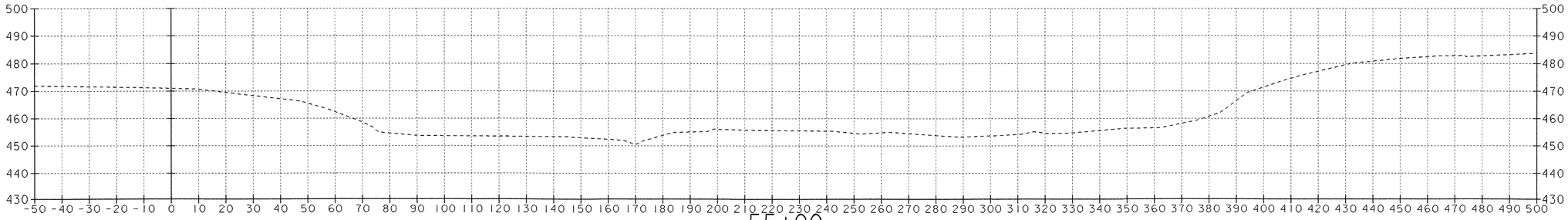

56+00




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<br>IPARM FILE NAME: sj099c09.i | PLOT DATE: 25-SEP-2000 |
| CHANNEL CROSS SECTIONS 55+00 - 56+00 | |
| | SHEET: 118 OF 118 |

40 PIECES @ 1'-5½" PLUS 39 JOINTS @ ½" = 59'-11½"

41 PIECES @ 1'-5½" PLUS 40 JOINTS @ ½" = 61'-5½"

FLAT 'OPENED' DIMENSIONS

FLAT 'OPENED' DIMENSIONS

CONTINUED @ EL.EV. C2/W-3

CONTINUED AT EL.EV. D4/W-3

+18'-11⅞" (472.98')

BOTTOM FACE OF CONC. LEDGE

18'-11⅞"

18 PIECES @ 11½" PLUS 17 JOINTS @ ½" = 17'-11½"

12'-9⅞"

9'-4"

TYP

(GRANITE) → +16'-0" (468.00')

12 PIECES @ 1'-5½" PLUS 11 JOINTS @ ½" = 17'-11½"

ALL PIECES CUT SQUARE. JOINTS SPREAD AT TOP.

10'-5⅞" (GRANITE) (464.653')

50'-0" RAD.

℄ OF PIER

CONCRETE WALL

1 OPP.

0'-0" (456.00')

13'-3¼"

18'-6"

12'-6½"

1'-0" RAD.

PC = POINT OF CURVATURE

(1'-6" CHORDS THIS AREA)

20 SPACES @ JT. TO @ JT. @ 1'-6" = 30'-0"

31'-9⅛"

63'-6½"

℄ OF PIER - ALL DIMENSIONS SYMMETRICAL

## Ⓐ PLAN & ELEVATION ⅛" = 1'-0"

1'-0" RAD.

JOINTS CLOSE 3/16" IN BACK AT 6" THICK, ¼" AT 7" THICK

PC

1'-6"

℄ JT. TO ℄ JT.

## ① DETAIL

TYPICAL CONDITIONS - SEE ① W9 ② W9 ③ W9

KEY PLAN

## ④ DETAIL

EDGE FINISH - FROM SAW

SEE 4 W8 FOR FINISHING INFO.

HOW ANCHOR

NOTE

N.T.S.

## ⑤ SECTION

CONC. LEDGE BEYOND

+18'-11⅞" (472.98')

0'-0" (456.00')

RECEIVED
CK'D BY CK'D BY
SEP 07 2001
RESUBMIT APPROVED
BY DATE

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 the contractor.

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. Such cutting will be done only after our submission to and acceptance 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 occurring through the use of this drawing by other parties.

| DATE | ISSUED FOR | DATE | REVISIONS | NO |
|---|---|---|---|---|
| 6-25-01 | APPROVAL | | 1ST SUBMIT. MARKUPS | |
| 8-28-01 | APPROVAL | | | |


GRANITE IMPORTERS INC.
P.O. Box 712
South Vine Street
Barre, Vermont 05641
(802) 476-3812 FAX 802-476-7349


| | |
|---|---|
| TITLE | PIER ELEVATION (NORTH) |
| JOB | BRIDGE BRZ 1444(22) |
| LOCATION | ROYALTON, VERMONT |
| CONTRACTOR | ESTY CONSTRUCTION |
| ARCHITECT | VERMONT TRANSPORTATION AGENCY |
| STONE TYPE AND FINISH | WOODBURY GRANITE-SPLIT FACE |
| JOB NO. | 21079 |
| SHEET NUMBER | W-1 |
| SHEET | 1 OF 9 |
| DRAWN BY | GLL |
| DATE | APR. 2001 |
| SCALE | ½" = 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 Grimm Shop Drawings Royalton BR2 1444(22)

WSS 4 reviewer C

| Curb Elev | Deck | Tower | | | | | | | Curb Station |
|---|---|---|---|---|---|---|---|---|---|
| 482.41 | T1 | | 494.00 − [ | 482.08 | − (.021 × 11) − (.042 × 45') + 75' ] | = | 11.59 | | |
| | | | | STA 104+36.74 | | | | | |
| 482.28 | T2 | | 494.00 − [ | 481.95 + 0.33' ] | | = | 11.72 | | |
| | | | | STA 104+32.50 | | | | | |
| 486.48 | T3 | | 498.00 − [ | 486.15 + 0.33 ] | | = | 11.52' | | |
| | | | | STA 106+33.03 | | | | | |
| 486.49 | T4 | | 498.00 − [ | 486.16 + 0.33 ] | | = | 11.51' | | |
| | | | | STA 106+26.97 | | | | | |
| 482.80 | T5 | | 494.5 − [ | 482.47 + 0.33 ] | | = | 11.7' | | |
| | | | | STA 108+28.52 | | | | | |
| 482.83 | T6 | | 494.5 − [ | 482.50 + 0.33' ] | | = | 11.67' | | |
| | | | | STA 108+22.55 | | | | | |

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 | ~~493.43~~ | 494.00 | 493.61 |
| T2 | ~~493.28~~ | 494.00 | 493.61 |
| T3 | ~~498.51~~ | 498.00 | 497.61 |
| T4 | ~~498.49~~ | 498.00 | 497.61 |
| T5 | ~~493.92~~ | 494.50 | 494.11 |
| T6 | ~~493.93~~ | 494.50 | 494.11 |
| | | | |

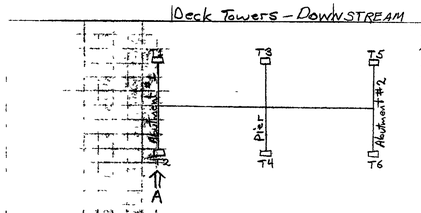
Dave Fournier
Granite Importers
Barre, VT

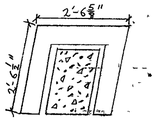
Dave,
These are the "bottom of tower" elevations for the deck towers
The top of the towers are level alng the high face and the low face

RECEIVED
OK'D BY JSY OK'D BY
APR 2 3 2002
RESUBMIT APPROVED ✓
BY DATE 4/24/02

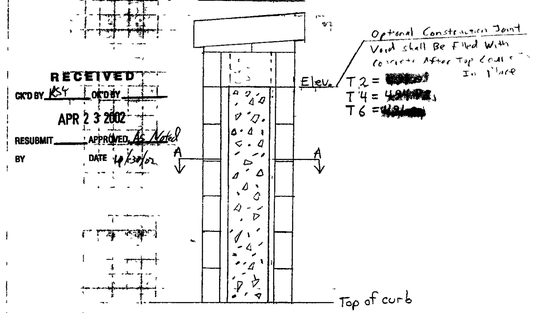
Deck Towers – DownSTREAM 3-04-02

ROYALTAN
AC BRZ 1944L22
Berg & Bellocci
Esty Const



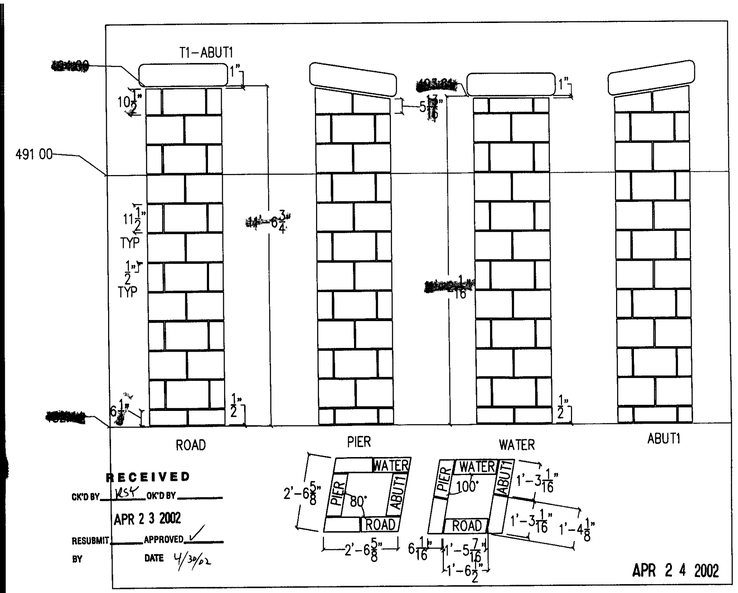



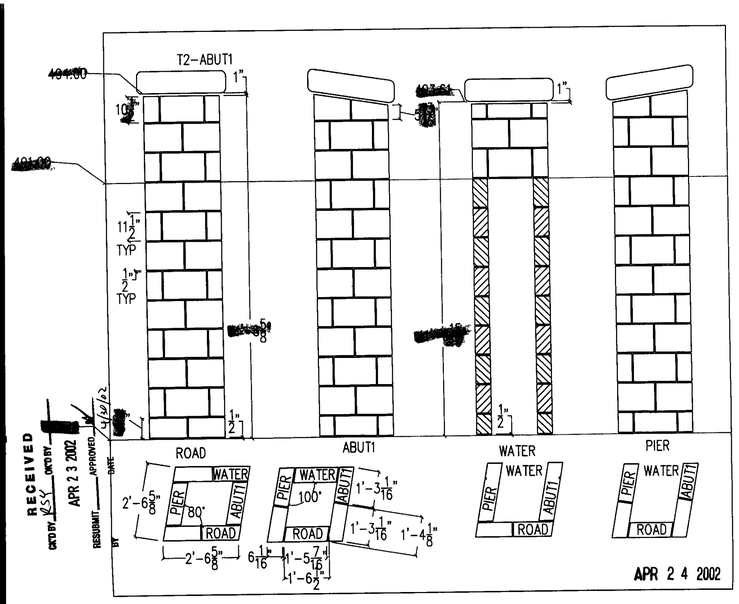

Section A-A

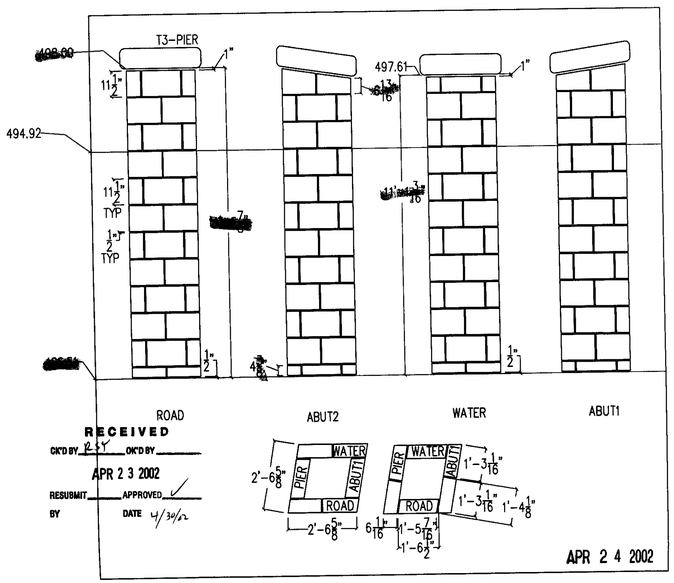



Elevation View A
T4 and T6 Similar

RECEIVED
CKD BY KSY OK'D BY
APR 23 2002
RESUBMIT APPROVED As Noted
BY DATE 4/30/02


T1–ABUT1
491 00
ROAD
PIER
WATER
ABUT1
RECEIVED
APR 2 3 2002
APR 2 4 2002
WATER
PIER
ROAD
ABUT1
80°
100°


T2-ABUT1
1"
10 1/2"
11 1/2" TYP
1/2" TYP
1"
2
ROAD
ABUT1
WATER
PIER
WATER
PIER
ABUT1
ROAD
2'-6 5/8"
80'
100'
1'-3 1/16"
1'-4 1/8"
6 1/16"
1'-5 7/16"
1'-6 1/2"
RECEIVED
APR 23 2002
CKD BY
APPROVED
DATE
RESUBMIT
BY
APR 24 2002




RECEIVED

CK'D BY ____ OK'D BY ____

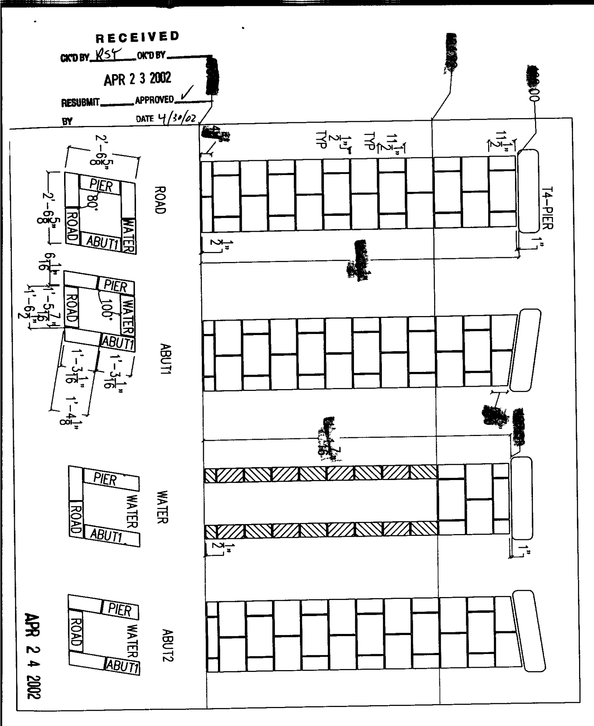
APR 2 3 2002

RESUBMIT ____ APPROVED ✓

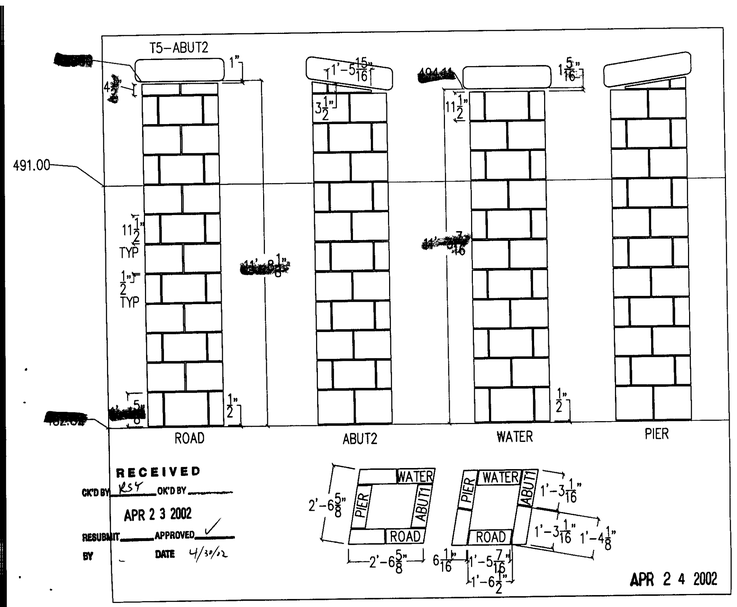
BY ____ DATE 4/30/02

APR 2 4 2002

RECEIVED
CK'D BY KSY CK'D BY
APR 2 3 2002
RESUBMIT APPROVED
BY DATE 4/23/02



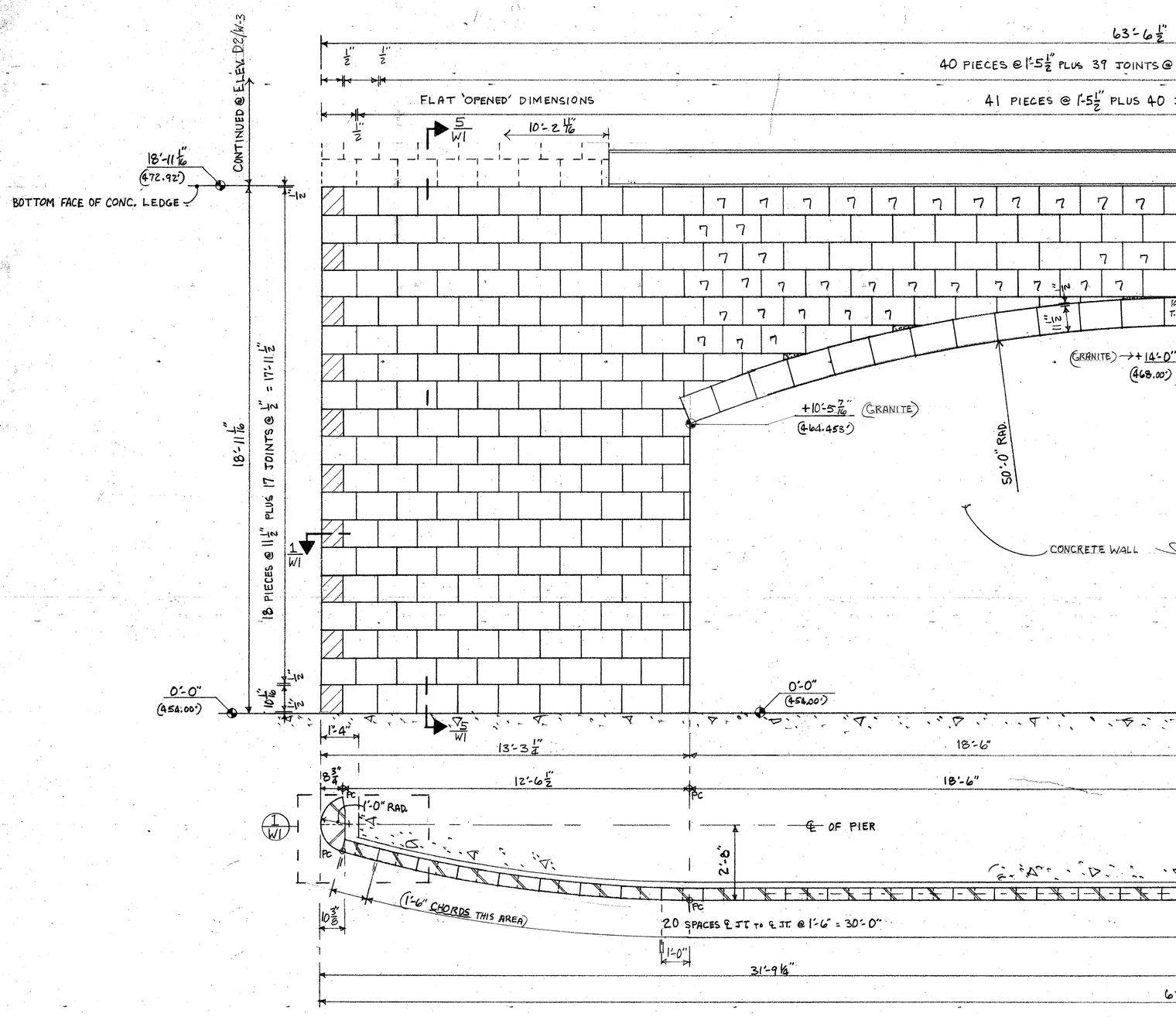

APR 2 4 2002



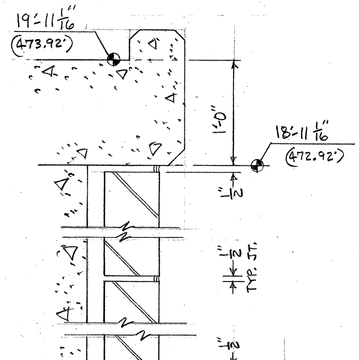

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APR 2 3 2002
RESUBMIT APPROVED ✓
BY DATE 4/30/02

APR 2 4 2002

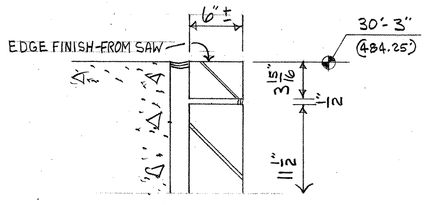
T6-ABUT2
494.50
491.00
482.83
1"
1'-5 15/16"
4 1/2"
3 1/2"
11 1/2" TYP
1/2" TYP
1/2"
ROAD
PIER
WATER
ABUT2
2'-6 5/8"
80°
100°
ABUT1
6 1/16"
RECEIVED
APR 23 2002
CKD BY
RESUBMIT
BY
DATE
APPROVED
4/19/02
APR 24 2002




## (B) PLAN & ELEVATION 1½" = 1'-0"



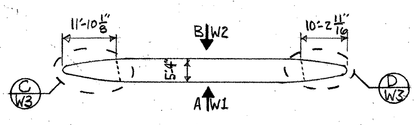

1½" = 1'-0" SECTION (1)




## (2) SECTION 1½" = 1'-0"

REF: D2/W3

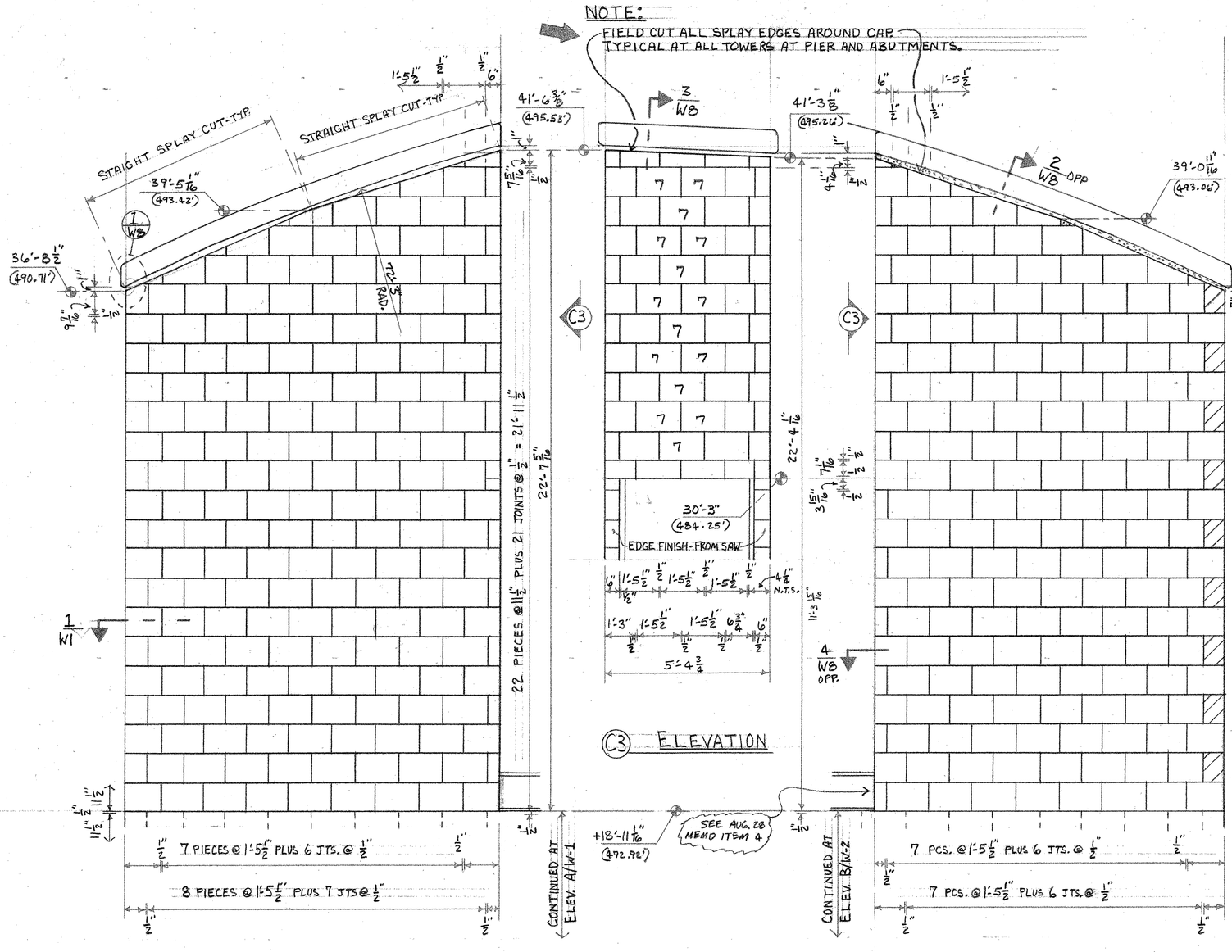
TYPICAL CONDITIONS - SEE (1/W9) (2/W9) (3/W9)




KEY PLAN

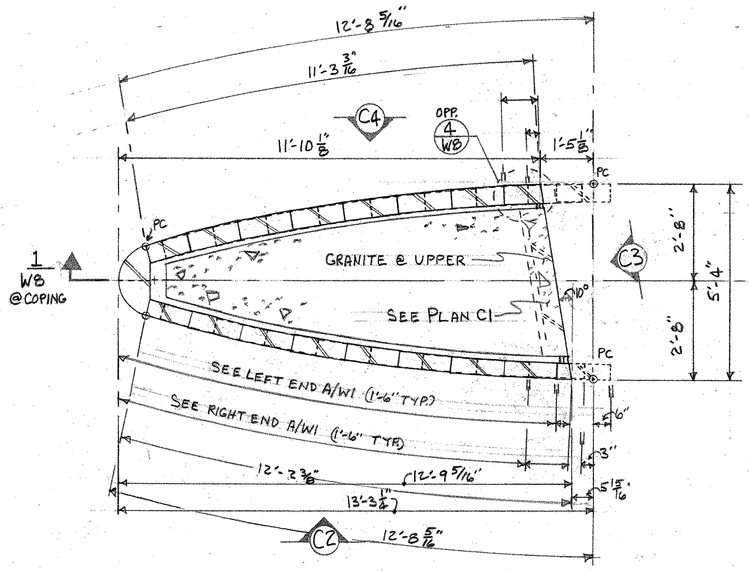
NOTE:
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by our customer.
No stone will be sched
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Any stone fabricated i
not fit job conditions will b
expense, and only after
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trades unless adequate
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We assume no respons
but our own, and will no
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NOTE:
FIELD CUT ALL SPLAY EDGES AROUND CAP
TYPICAL AT ALL TOWERS AT PIER AND ABUTMENTS.

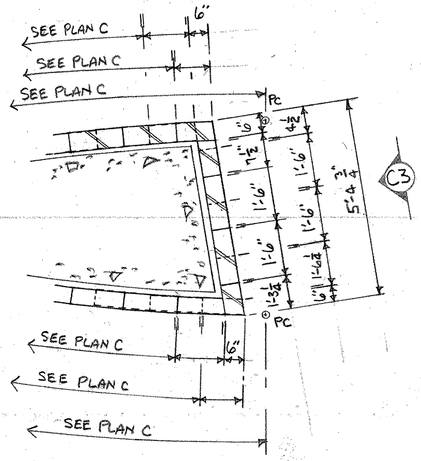



C2 ELEVATION

C4 ELEVATION




C PLAN




C1 PLAN

KEY PLAN
SEE W-1 & W-2

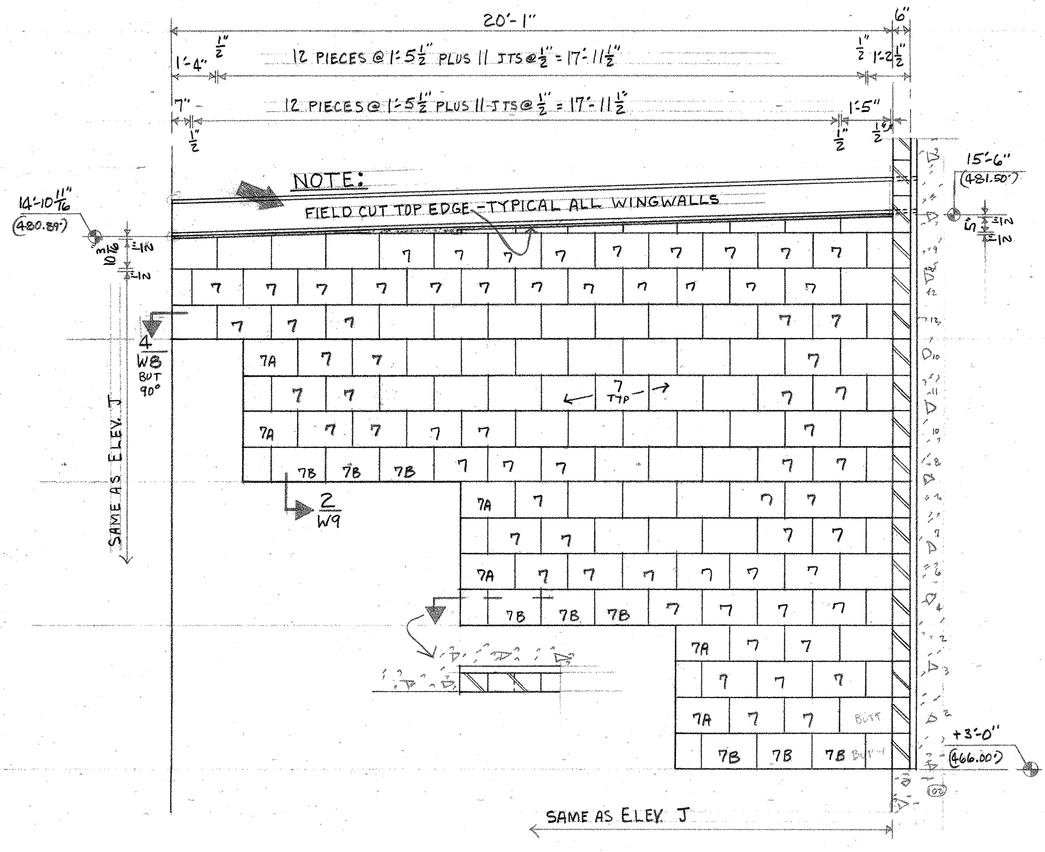
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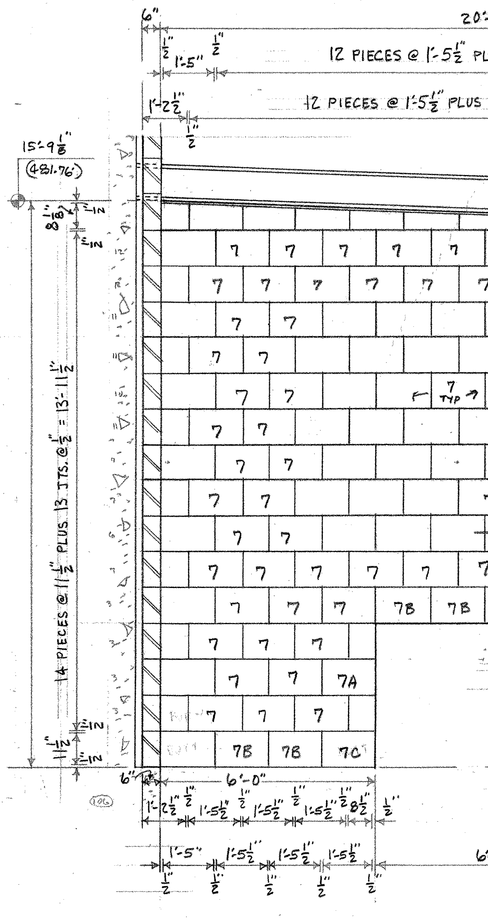
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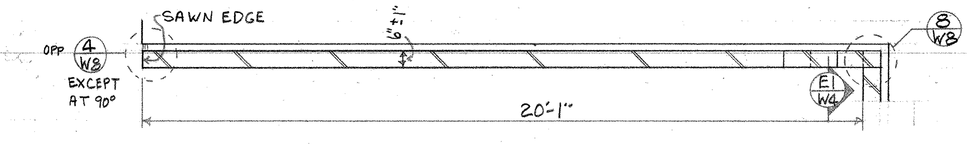
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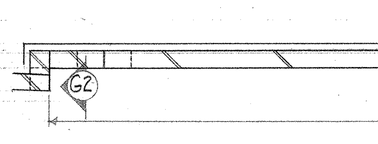
410187

E2 ELEVATION
E1 ELEVATION
E PLAN & ELEVATION
KEY PLAN
DIMENSIONS THIS AREA AS FLAT 'OPENED'
24 PIECES @ 1'-5½" PLUS 23 JTS @ ½" = 35'-11½"
24 PIECES @ 1'-5½" PLUS 23 JTS @ ½" = 35'-11½"
21 PIECES @ 11½" PLUS 24 JOINTS @ ½" = 21'-11"
24 PIECES @ 11½" PLUS 23 JOINTS @ ½" = 23'-11½"
21 SPACES @ JOINT TO @ JOINT @ 1'-6" = 31'-6" (2ND COURSE)
29'-8½"
SAWN EDGE
CONC. J
WINGWALL #1
WINGWALL #2
FIELD CUT
STRAIGHT CUT
STRAIGHT SPLAY CUT
SC
CC
PC
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
SEE PLAN F W-5
72" RAD.
55'-0" RAD.
23'-0" RAD.
16 CHORDS THIS AREA
PC = POINT OF CURVATURE
SC = POINT OF SPLAY CUT
NOTE:
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No stone will be scheduled
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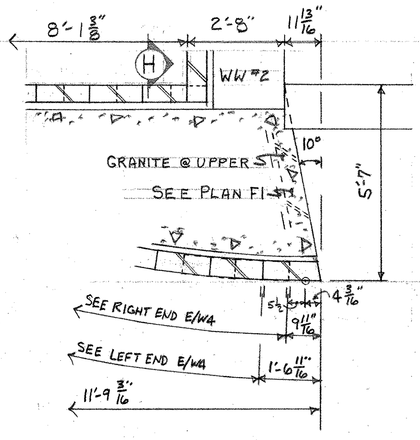



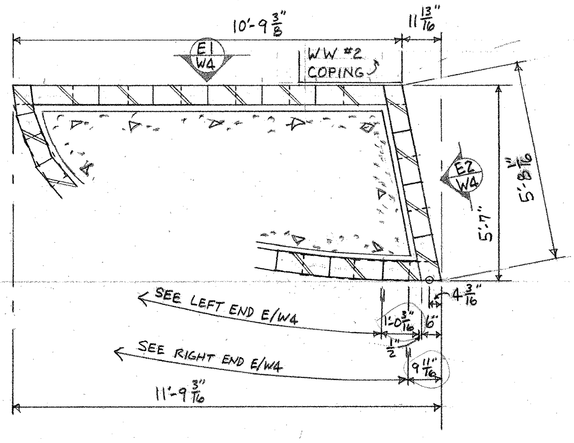




(H) PLAN & ELEVATION - WINGWALL #2

(J) PLAN & ELEVATION - WING




(F) PLAN

(F1) PLAN

KEY PLAN

SEE SHEET W-4

NOTE:

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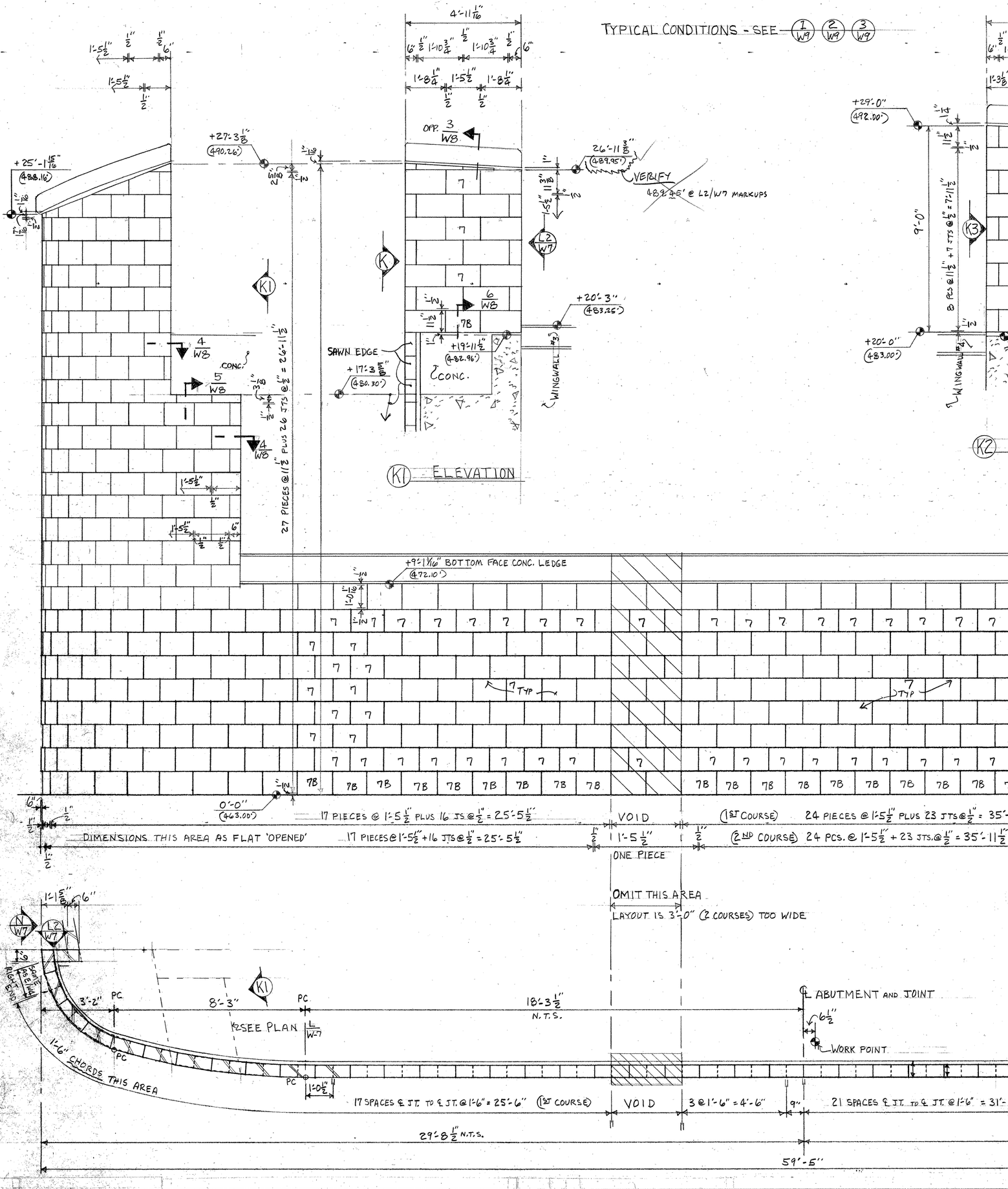
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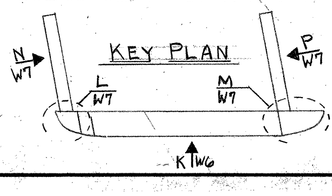
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## K PLAN & ELEVATION




PC = POINT OF CURVATURE

SC = POINT OF SPLAY CUT

NOTE:

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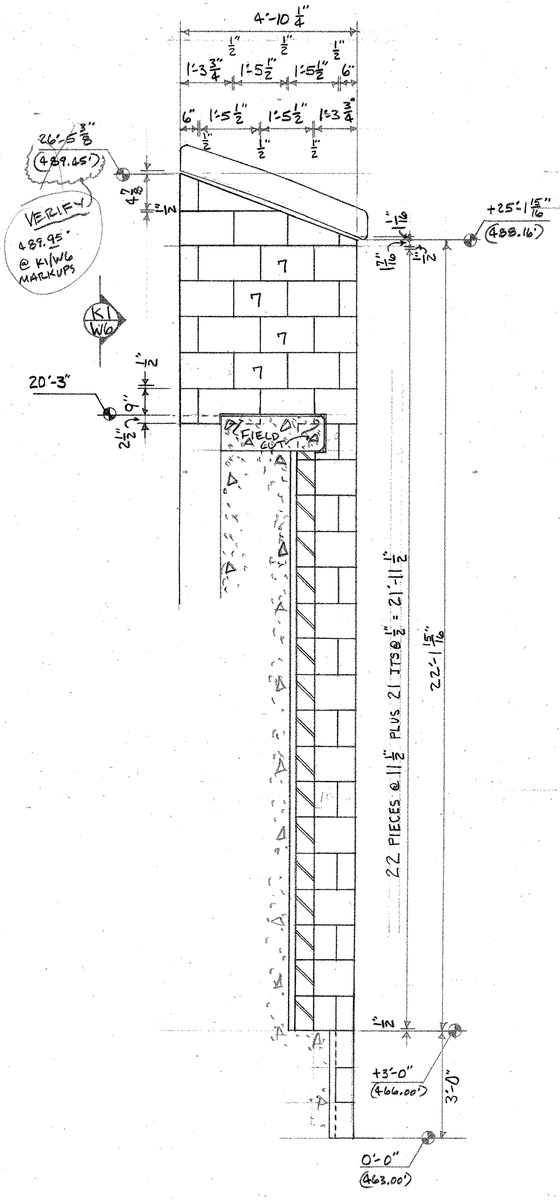
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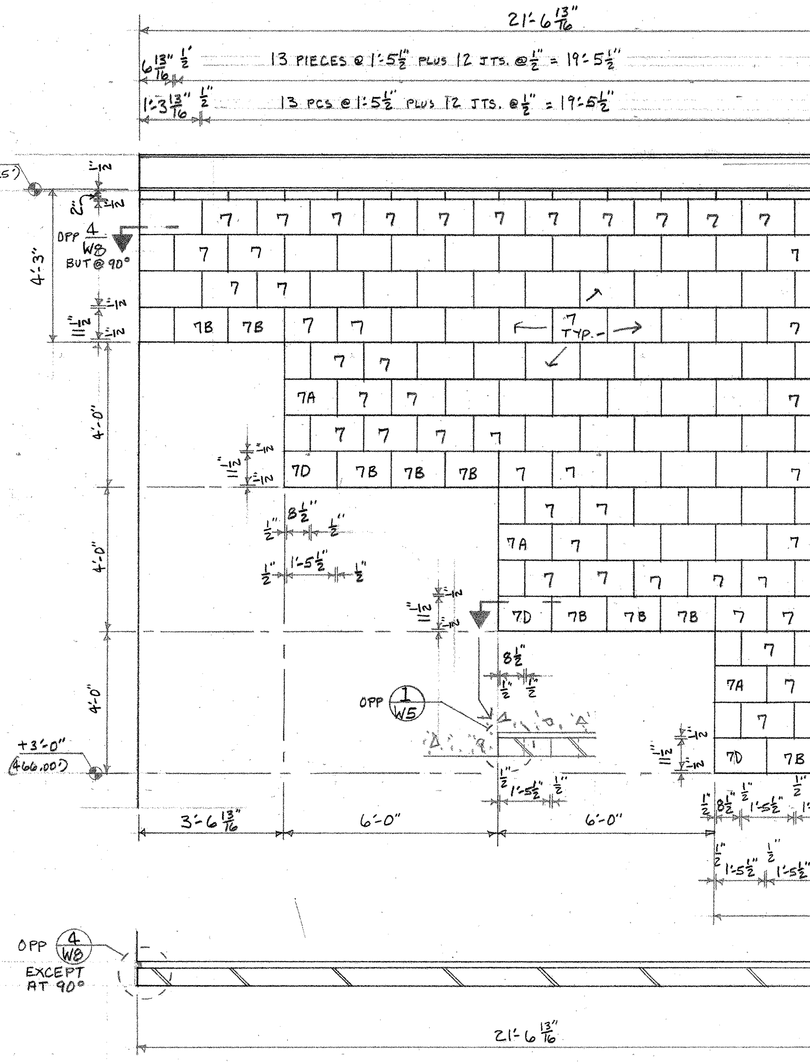
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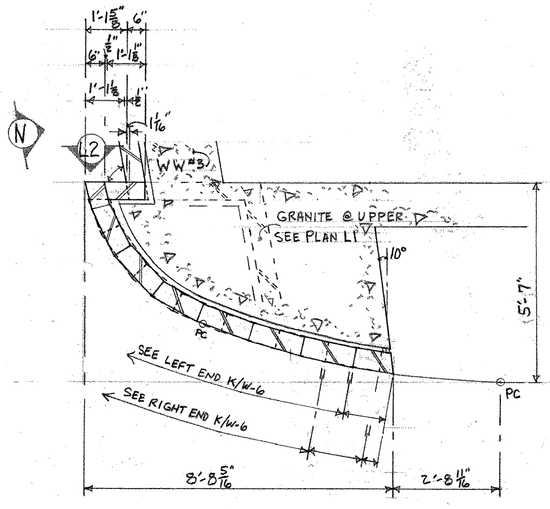
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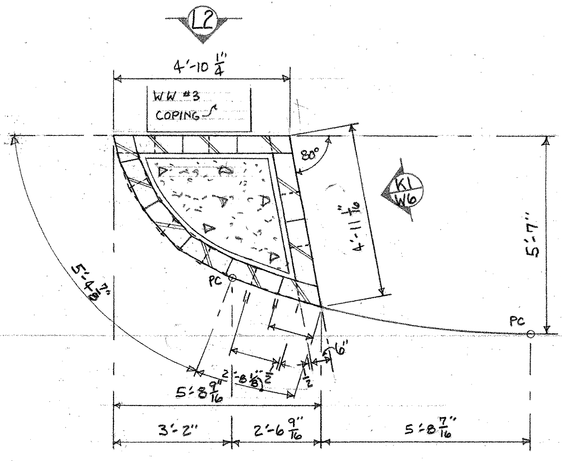

L2 ELEVATION




N PLAN & ELEVATION - WINGWALL #3




L PLAN




L1 PLAN

KEY PLAN

SEE SHEET W-6

NOTE:

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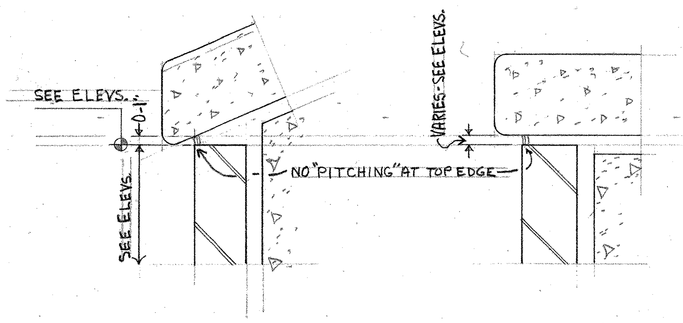
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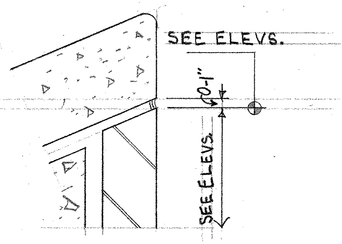
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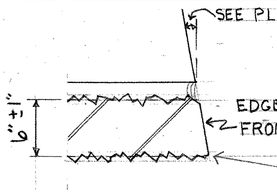
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1 DETAIL

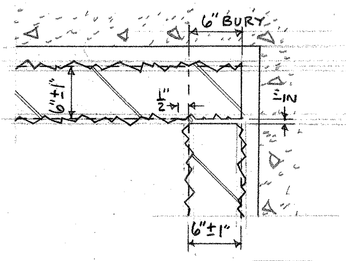



2 DETAIL

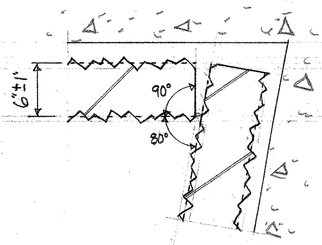



3 DETAIL

4 DETAIL

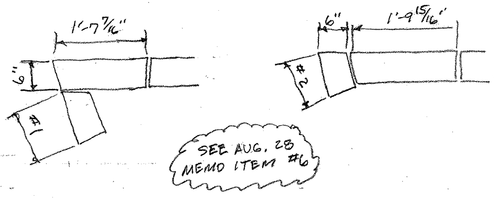


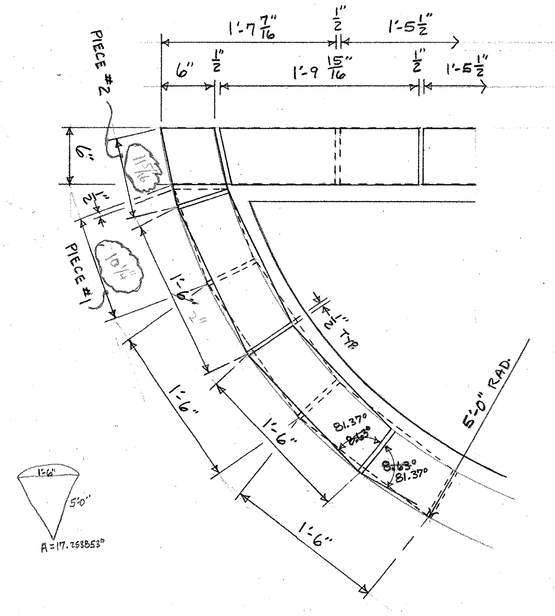

8 DETAIL



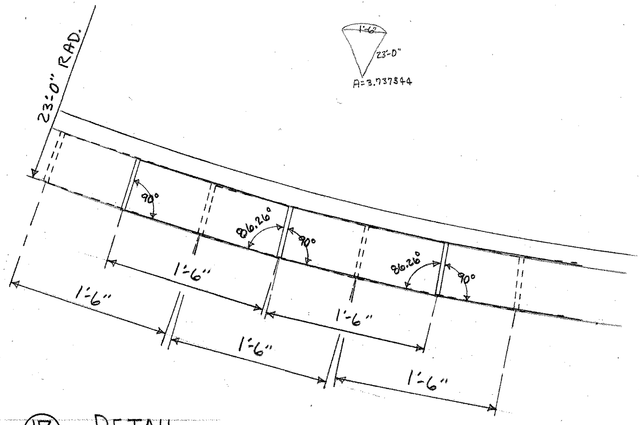

9 DETAIL

TYPICAL CONDITIONS - SEE (1/W9) (2/W9) (3/W9)




16 DETAIL




17 DETAIL

NOTE:

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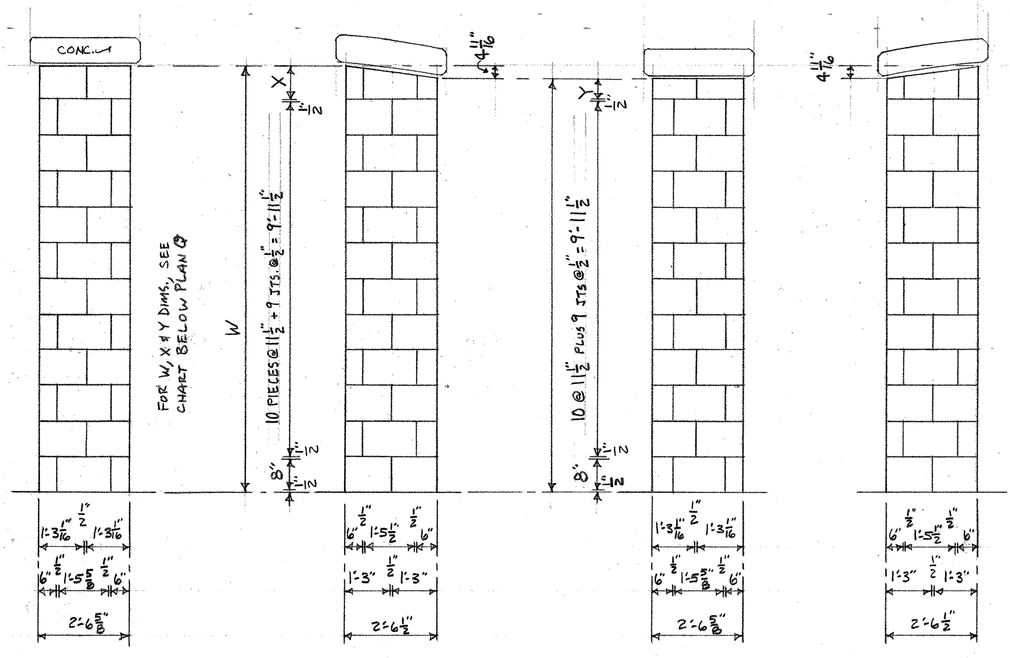
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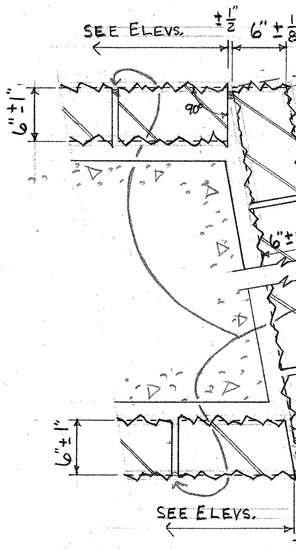



R1 ELEV. SIX THUS

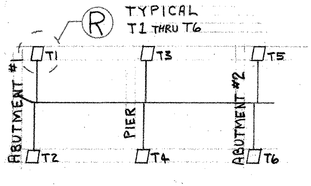
R2 ELEV. SIX THUS

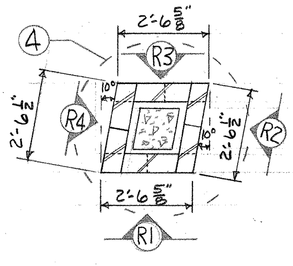
R3 ELEV. SIX THUS

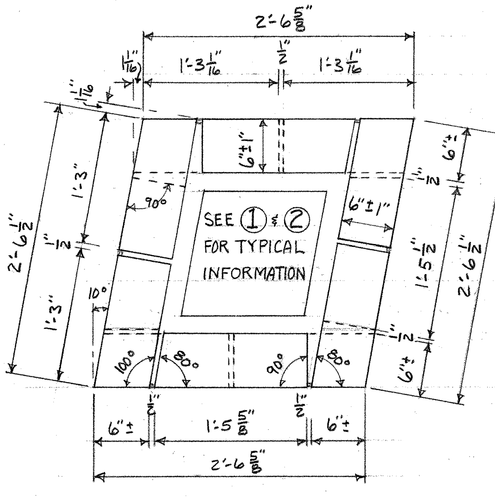
R4 ELEV. SIX THUS




1 DETAIL




Q KEY PLAN - DECK TOWERS

| 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 1/16" | 9 1/16" | 4 7/16" |
| T5 | 11'-8 3/8" | 11 3/8" | 6 11/16" |
| T6 | 11'-8" | 11" | 6 5/16" |

AT 'X' & Y DIMS., MAKE: T5 SAME AS T2, T3 " " T4 } OKAY?

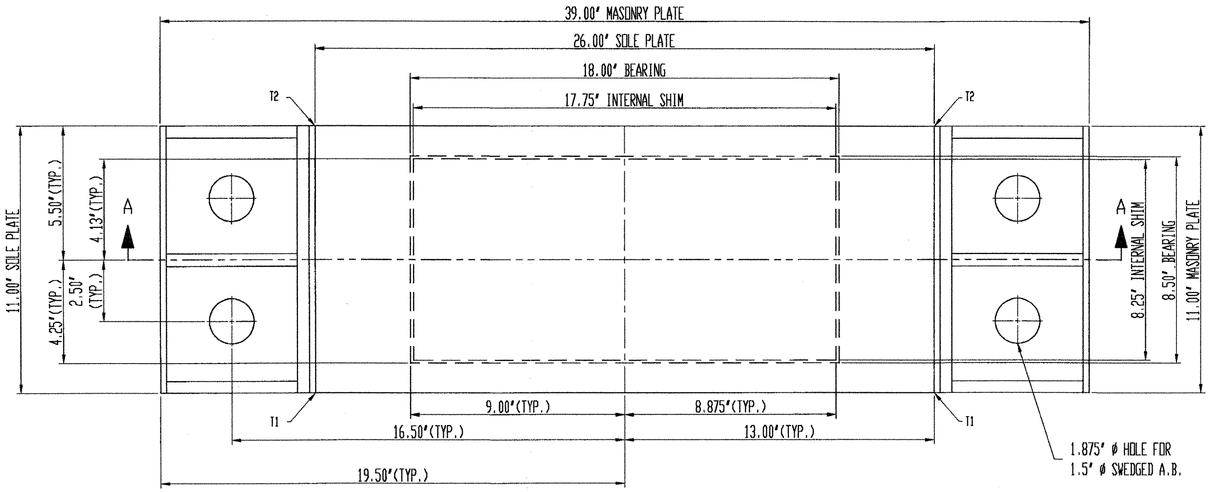
R PLAN
TOTAL SIX THUS

4 DETAIL PLAN

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:
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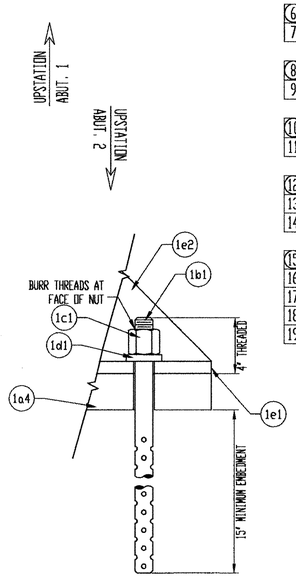

| DATA | 2034-1104 |
|---|---|
| AASHTO SHAPE FACTOR | 7 |
| AREA OF COMPRESSION | 153.0 |
| AREA OF SHEAR | 153.0 |
| EFFECTIVE RUBBER THICKNESS | 4.0 |
| LENGTH/HEIGHT | 2.1 |

## 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:

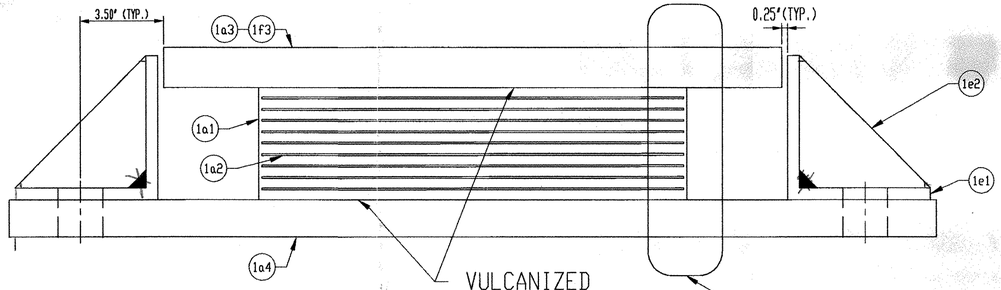
1. PAD AND MATERIALS SHALL CONFORM TO VERMONT DEPARTMENT OF TRANSPORTATION – DIVISION OF HIGHWAYS SPECIFICATIONS FOR ELASTOMERIC BEARINGS.
2. THESE SHOP DRAWINGS WERE PREPARED IN ACCORDANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS. THE D.S. BROWN COMPANY DOES NOT ACCEPT LIABILITY FOR THE DESIGN OF 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:

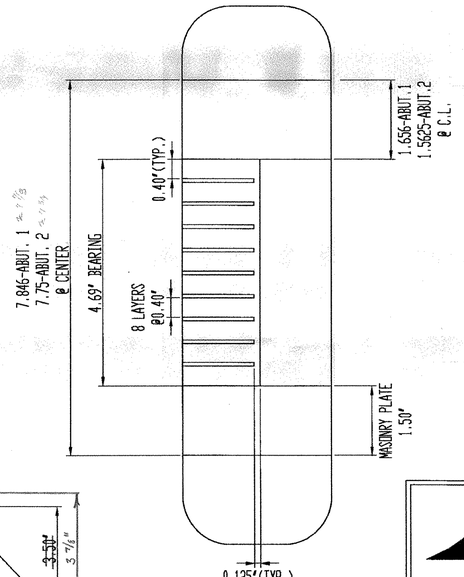
1. SURFACES TO BE METALIZED AND COATED IN ACCORDANCE WITH AWS C ~~2.2~~ 2.18-93
2. COATING TO BE PURE ZINC (99.9% PURITY, MIN.)
3. ALL SURFACES (EXCEPT WHERE VULCANIZING) TO RECEIVE A MINIMUM OF 6 MILS.
4. BLAST CLEAN SURFACES TO BE THERMAL SPRAYED TO WHITE METAL. SP10 FINAL SURFACE APPEARANCE SHALL BE EQUIVALENT TO PREPARATION GR. ~~SA3~~ 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.

RECEIVED
CK'D BY WBS CK'D BY RSY
FEB 26 2001
RESUBMIT ____ APPROVED As noted
BY DATE

D.S. BROWN 2034.1104.25363.01 SHEET 1 OF 1




SECTION 'A-A'

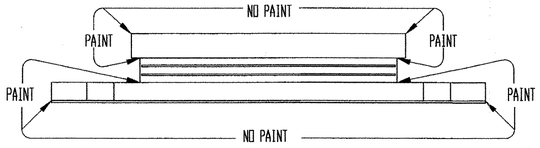


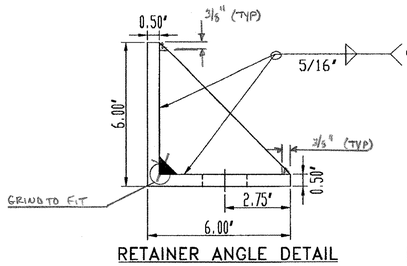

DETAIL 'A'

PAINT LIMITS

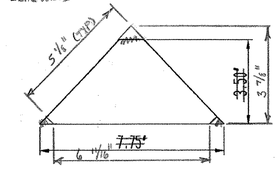


(PAINT ALL SURFACES OF RETAINER)




RETAINER ANGLE DETAIL




RETAINER STIFFENER DETAIL

DSB FILE NO: 2034-1104/SHT-01

D.S. BROWN

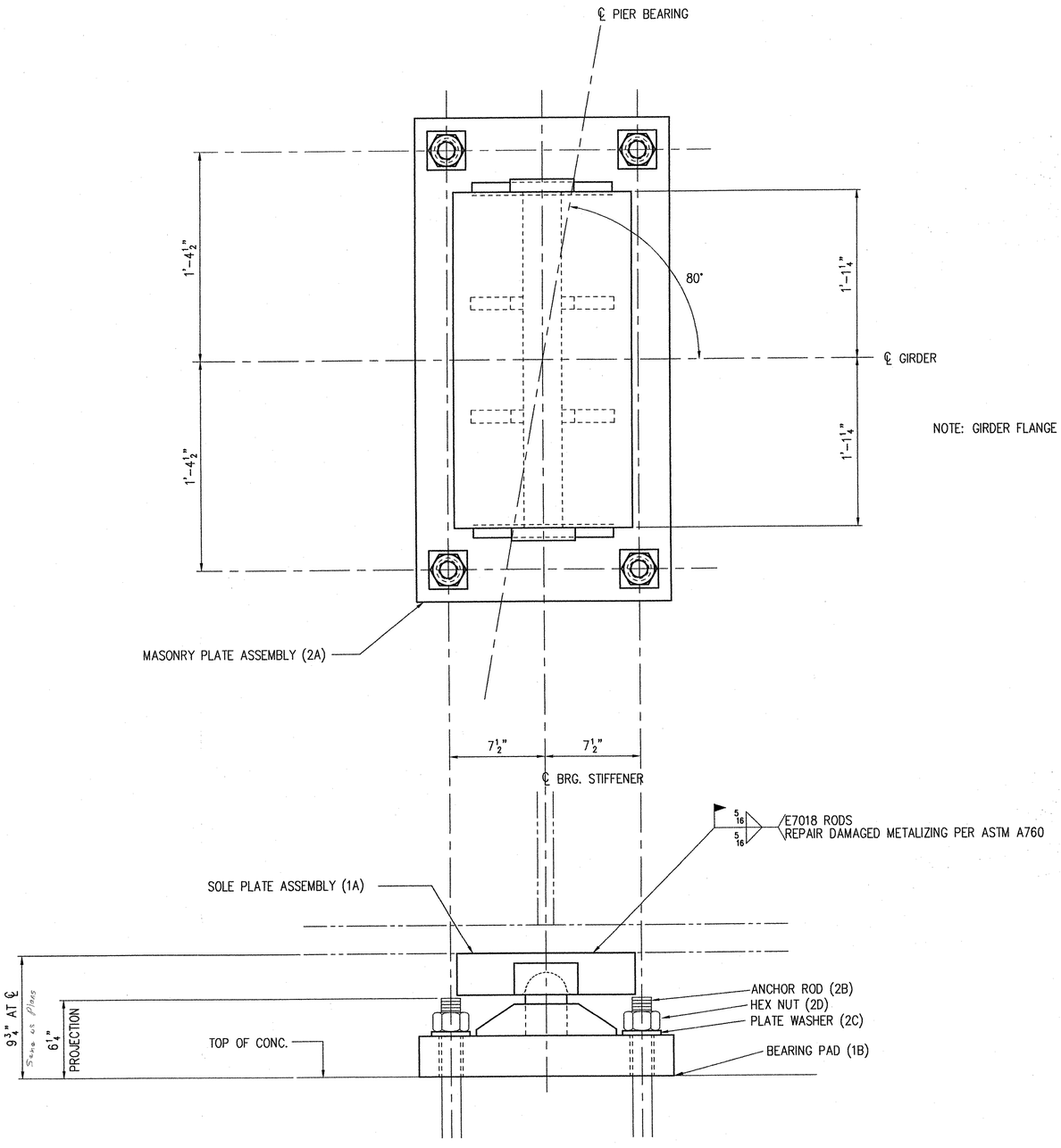
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F.A.P. NO.: N/A
STATE PROJ. NO.: C BRZ 1444(22)
BRIDGE NO: 3 (ROWALTON)
DESIGNER: –
CONTRACTOR: BEC & BELLUCI

THE D.S. BROWN COMPANY, INC.
NORTH BALTIMORE, OHIO 45872-0158 U.S.A.

SCALE: FULL
DATE: 01-10-01
CHECKED BY: John L. Wolfe
DRAWN BY B.COPPUS

T.H. 1 OVER THE WHITE RIVER
WINDSOR COUNTY VERMONT
ELASTOMERIC BEARING
DRAWING NUMBER 2034-1104-01




NOTE: GIRDER FLANGE NOT SHOWN FOR CLARITY.

## PLAN/ELEVATION AT PIER FIXED BEARING

RECEIVED
DRD BY WJS DRD BY RSK
MAR 12 2001
RESIDENT APPROVED
BY CPW DATE 3/27/01

| REV. | DESCRIPTION | DATE | INT. |
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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 |

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| 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

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| FOR PRINTS ISSUED | DATE |

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~~ C2.16. 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
GRD BY WNS GRD BY RSY
MAR 12 2001
RESIDENT ____ APPROVED A. Wilcox
BY GPW DATE 3/29/01

| REV. | DESCRIPTION | DATE | INT. |
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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

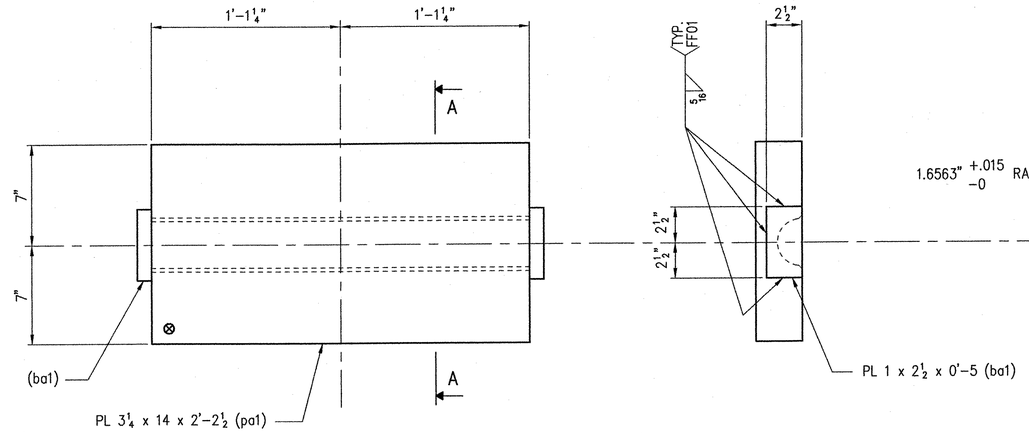
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| PROJECT | — | :OYALTON/ RTE. NO. TH 1, CL 1 BRIDGE NO. 3 |
| STATE PROJECT | — | AC BRZ 1444(22) |
| FEDERAL PROJECT | — | |
| CUSTOMER | — | :ECK & BELLUCCI, INC. |
| LOCATION | — | /INDSOR COUNTY, VT |
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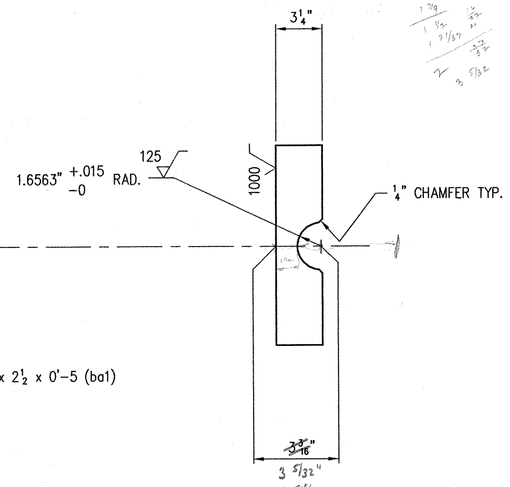
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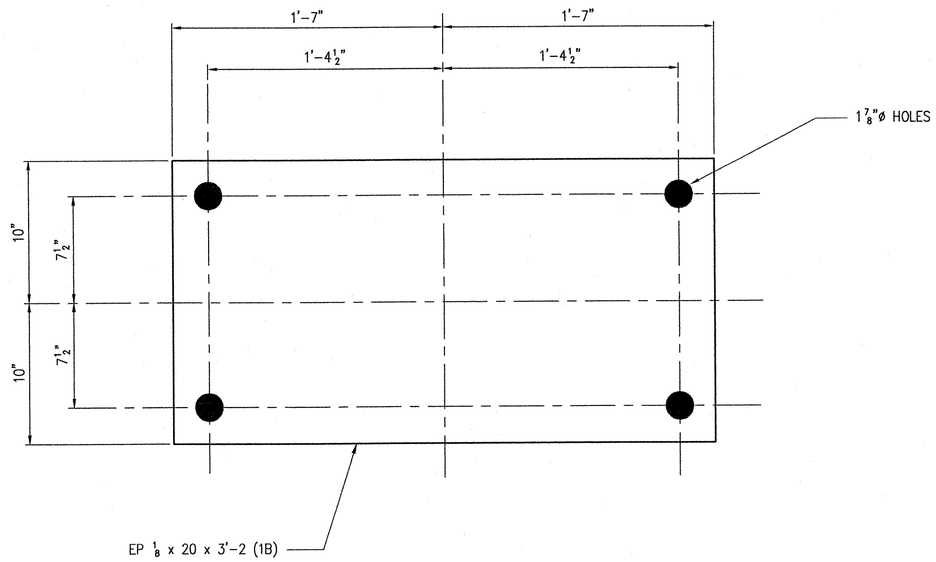





SECTION A–A

SHOP NOTE :
⊗ – INDICATES LOCATION OF SHIPPING PIECE MARK

## 5 – SOLE PLATE ASSEMBLY – 1A




## 5 – BEARING PADS – 1B

GENERAL NOTES: SEE SHT. GN1.

| 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 | |
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MAR 12 2001
ACCOUNT APPROVED W/ NOTED
BY OPW DATE 3/29/01

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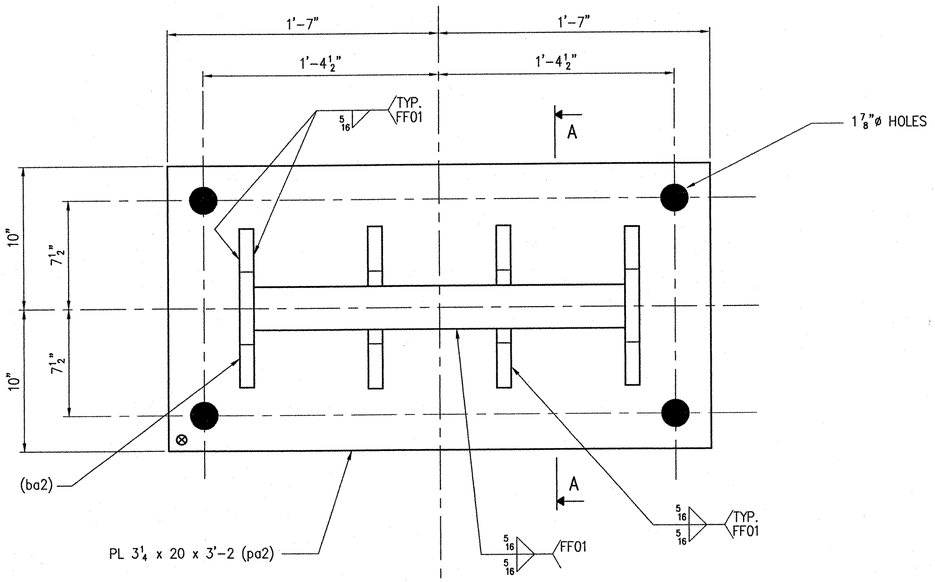
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NORELL DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

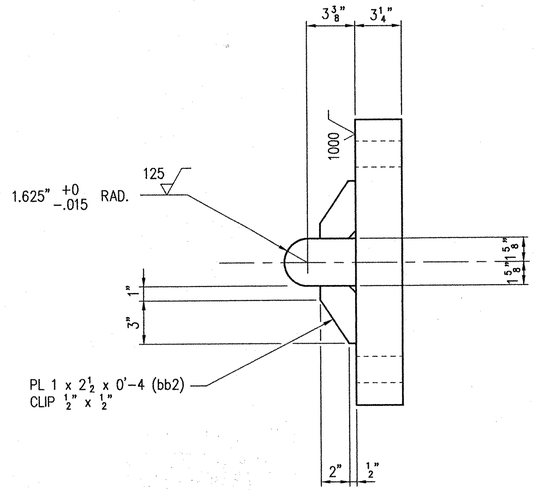
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| PROJECT | — | ROYALTON/ RTE. NO. TH 1, CL 1 BRIDGE NO. 3 |
| STATE PROJECT | — | AC BRZ 1444(22) |
| FEDERAL PROJECT | — | |
| CUSTOMER | — | BECK & BELLUCCI, INC. |
| LOCATION | — | WINDSOR COUNTY, VT |
| DESCRIPTION | — | PIER FIXED BEARING DETAILS |

ORIG.
W.P. chk'd JDK
Drawn By TSF
Chk'd. By NY
Date: 2/01

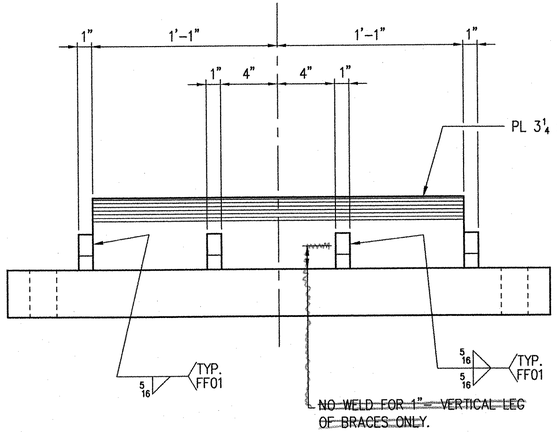

Job. No. : 2034.1121.1

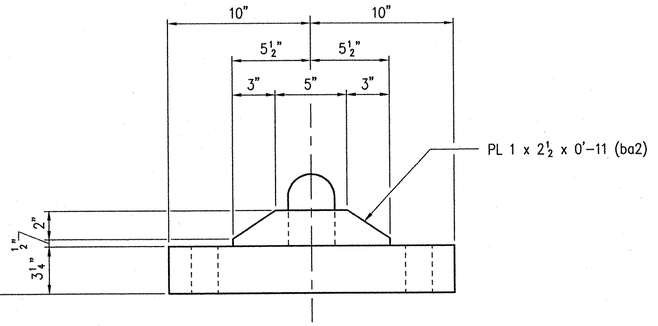



SHOP NOTE :
⊗ – INDICATES LOCATION OF SHIPPING PIECE MARK

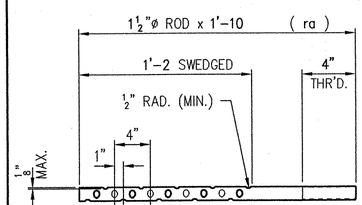



SECTION A–A



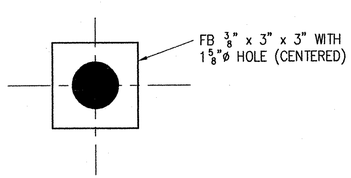




5 – MASONRY PLATE ASSEMBLY – 2A




20 – ANCHOR RODS – 2B

ONE DEFORMATION WITHIN EACH INCH, DEFORMATIONS ARE 90° OUT OF PHASE WITH ADJACENT DEFORMATIONS.




20 – PLATE WASHERS – 2C

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 | | |
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| 14 | | | | | | |
| 15 | 21 | HN 1½"ø HVY. A563A HDG | | 2D | 20 | |
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RECEIVED
CHD BY LWSS CHD BY RSK
MAR 12 2001
ACCOUNT APPROVED
BY CPW DATE 3/29/01

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| SHOP | |
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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.

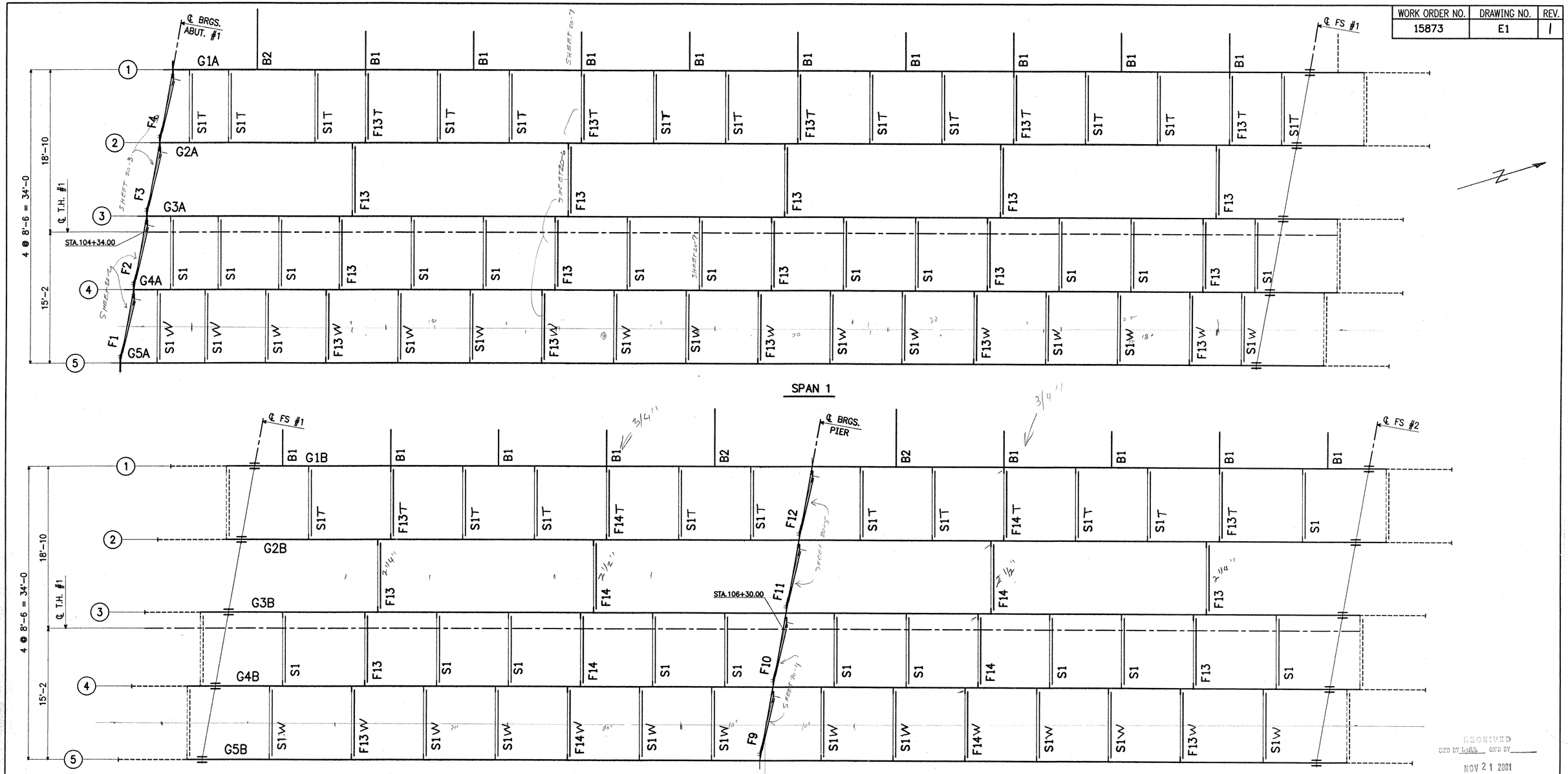
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

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 DETAILS

ORIG.
W.P. chk'd JDK
Drawn By TSF
Chk'd. By NY
Date: 2/01


Job. No. : 2034.1121.1

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | E1 | 1 |




ERECTION PLAN

RECEIVED
CKD BY JMS CKD BY
NOV 21 2001
RESUBMIT APPROVED
BY CPW DATE 11/20/01

FOR APPROVAL

OK

| | | |
|---|---|---|
| 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 |
| CHECKED | TS | 3/01 |
| DRAWN | AV | 3/01 |

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

REVISED

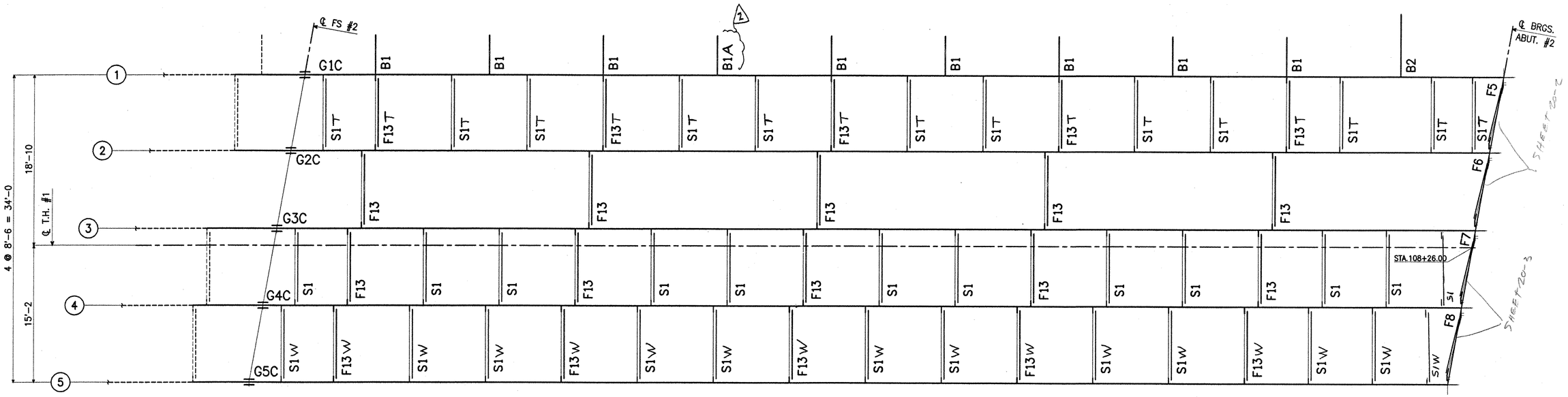
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | E1 | 1 |

⚠ PC MKS 11-12-01 JCM

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | E 2 | 2 |




SPAN 2

ERECTION PLAN

RECEIVED
CK'D BY CPW OK'D BY
JAN 30 2002
RESUBMIT APPROVED X
BY CPW DATE 2/11/02

2-14-02

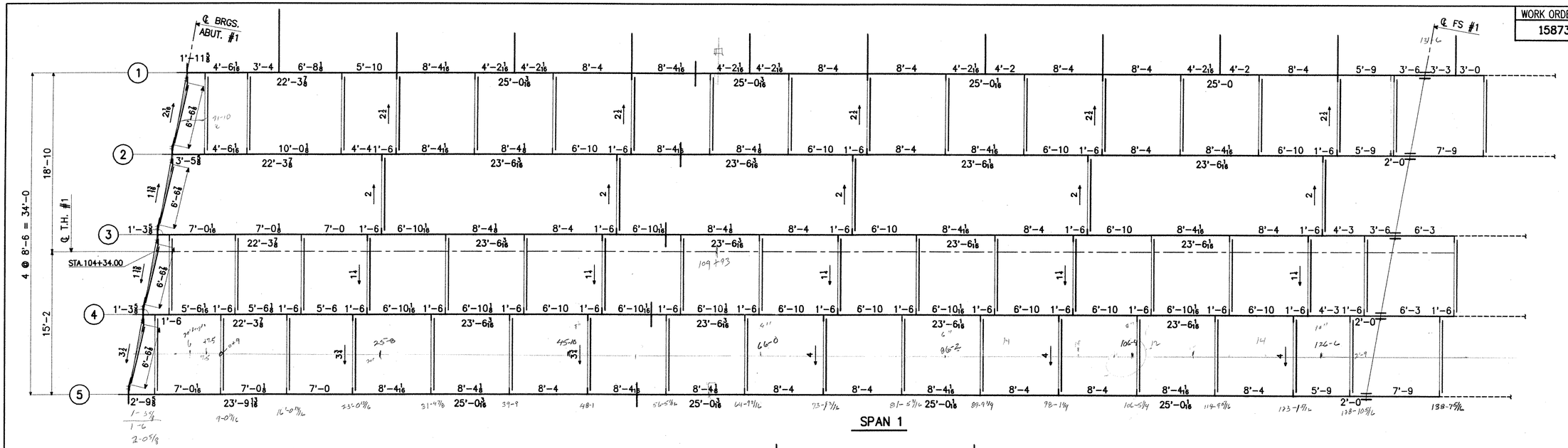
| ITEM NO.506.55 | | | BR. NO. 3 | PROJ. NO. BRZ 1444(22) |
|---|---|---|---|---|
| TITLE: ERECTION PLAN | | | | |
| APPROVED: 9-5-01 | | | REVISED | |
| PRINT DIST. | | | National Eastern Corporation<br>Plainville, Connecticut | |
| 5 | 4-7-01 | APPR. | | |
| ORIG. | 9-5-01 | FAB. | | |
| 5 | 7-13-01 | APP | JOB: T.H. 1 OVER THE WHITE RIVER<br>ROYALTON, VERMONT | |
| 5 | 8-24-01 | APP | | |
| 5 | 11-19-01 | APP | FOR APPROVAL | |
| 11 | 11-19-01 | FAB | | |
| 5 | 1-28-02 | APP | CUSTOMER: BECK & BELLUCCI, INC. | |
| 11 | 1-28-02 | FAB | DESIGNER: VERMONT AGENCY OF TRANSPORTATION | |
| | | | WORK ORDER NO. | DRAWING NO. / REV. |
| CHECKED | TS | 3/01 | 15873 | E2 / 2 |
| DRAWN | AV | 3/01 | | |

⚠2 MK B1A 1-28-02 JCM
⚠1 PC MKS 11-12-01 JCM

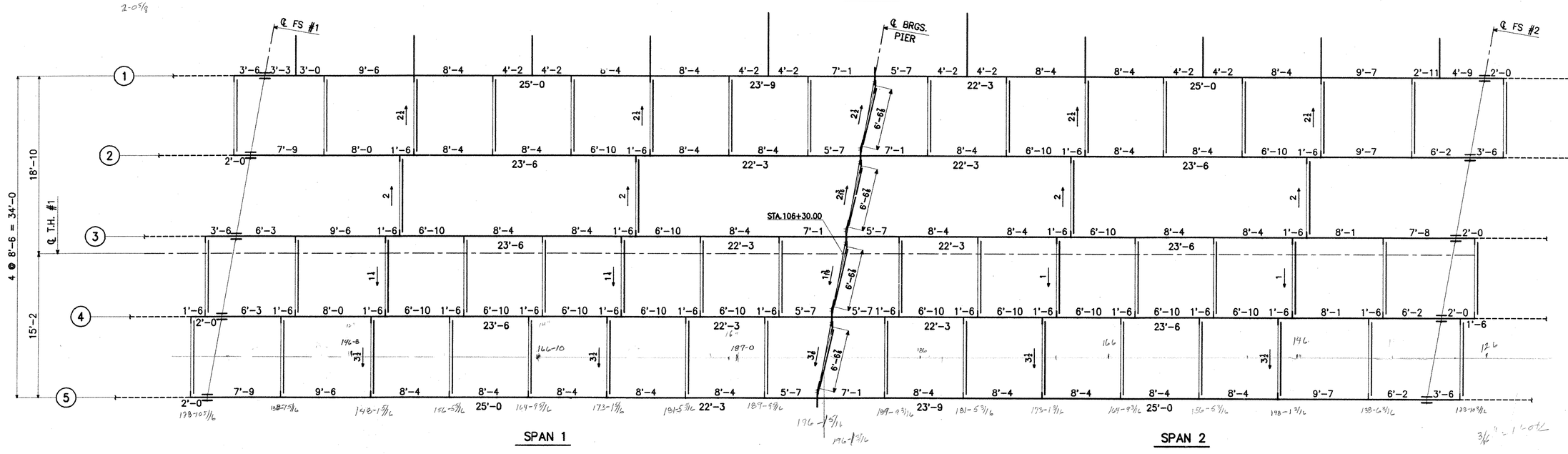
Rec'd 2-14-02

WS 4, 12-21, 20-7, 99-1

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | WS1 | B |




SPAN 1




SPAN 1 SPAN 2

## CALC PLAN

RECEIVED
CK'D BY Lwss OK'D BY
AUG 2 7 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 |

National Eastern Corporation
Plainville, Connecticut

| APPROVED: | | |
|---|---|---|
| PRINT DIST. | | |
| 5 | 4-7-01 | APPR. |
| ORIG. | | FAB. |
| 5 | 7-13-01 | APP |
| 5 | 8-24-01 | APP |

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

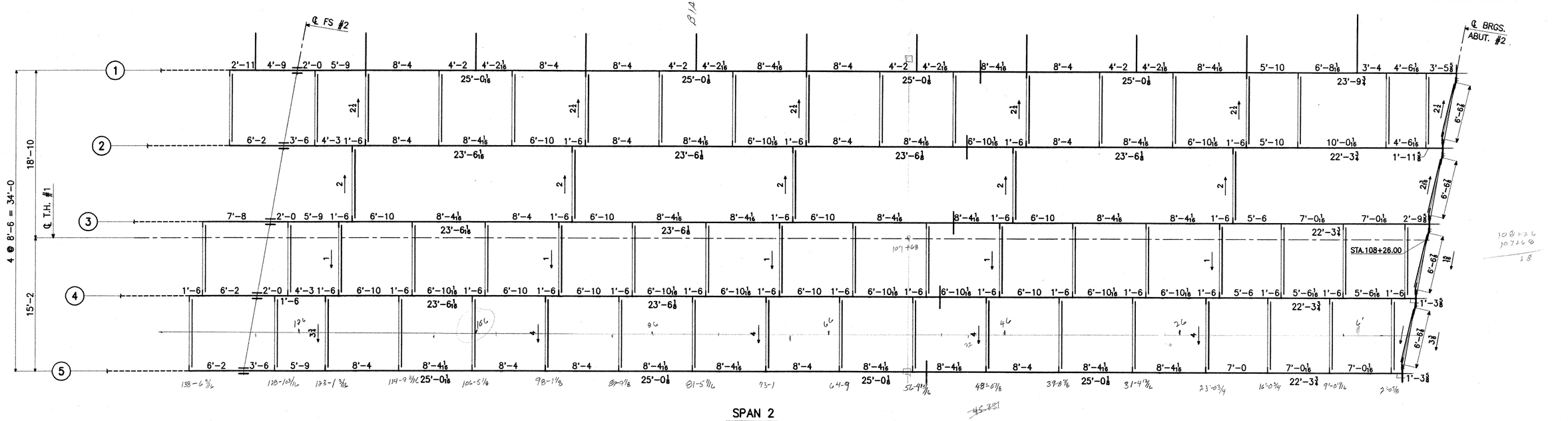
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| | | |
|---|---|---|
| CHECKED | TS | 3/01 |
| DRAWN | AV | 3/01 |

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | WS1 | B |

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | WS2 | B |




# CALC PLAN

RECEIVED
CK'D BY LWS 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: CALC PLAN | | | FOR APPROVAL | |
| APPROVED: | | | National Eastern Corporation<br>Plainville, Connecticut | |
| PRINT DIST. | | | | |
| 5 | 4-7-01 | APPR. | | |
| ORIG. | | FAB. | | |
| 5 | 7-13-01 | APP | JOB: T.H. 1 OVER THE WHITE RIVER<br>ROYALTON, VERMONT | |
| 5 | 8-24-01 | APP | | |
| | | | CUSTOMER: BECK & BELLUCCI, INC. | |
| | | | DESIGNER: VERMONT AGENCY OF TRANSPORTATION | |
| CHECKED | TS | 3/01 | WORK ORDER NO. | DRAWING NO. / REV. |
| DRAWN | AV | 3/01 | 15873 | WS2 / B |

| 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.

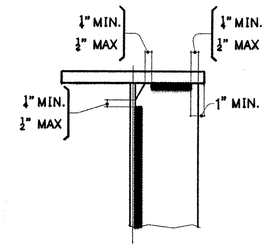
GROOVE WELD INSPECTION:
BUTT GROOVE WELDS IN TENSION: 100% RT
BUTT GROOVE WELDS IN COMPRESSION: 25% UT

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.




TYP. WELD TERMINATION DETAIL

## PAINT

ALL STEEL 6'-6 FROM THE ENDS OF GIRDERS SHALL BE PAINTED WITH THE FOLLOWING THREE COAT PAINT SYSTEM, EXCEPT AS NOTED:

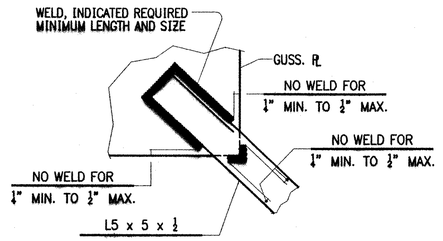
1). PRIME COAT: CARBOLINE 11HS 0300 GREEN, 2-6 MILS D.F.T.

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.




WELD LOCATION DETAIL AT CROSSFRAMES

## 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.

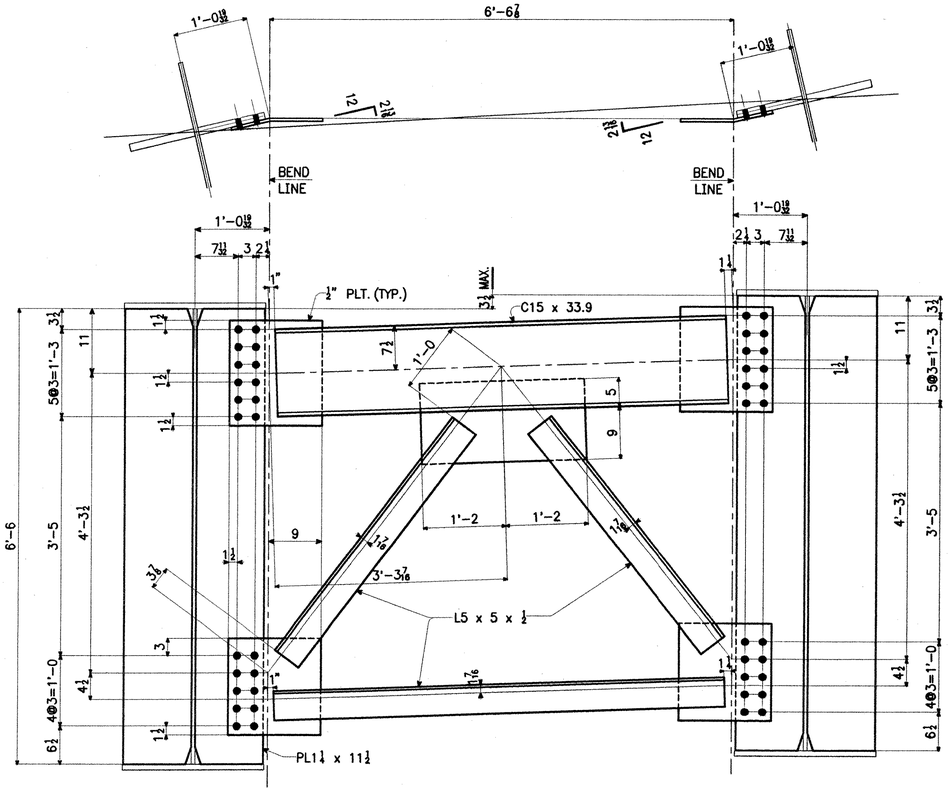
RECEIVED
CK'D BY LWSS OK'D BY
SEP 13 2001
RESUBMIT APPROVED ✓
BY CPW DATE 9/6/01

| | | |
|---|---|---|
| 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 | | |
| 5 8-24-01 APP | | |
| 5 9-10-01 APP | | |
| 11 9-10-01 FAB | | |
| JOB: T.H. 1 OVER THE WHITE RIVER, ROYALTON, VERMONT | | REVISED |
| CUSTOMER: BECK & BELLUCCI, INC. | | |
| DESIGNER: VERMONT AGENCY OF TRANSPORTATION | | |
| CHECKED TS 3/01 | WORK ORDER NO. 15873 | DRAWING NO. GN1 / REV. 1 |
| DRAWN AV 3/01 | | |

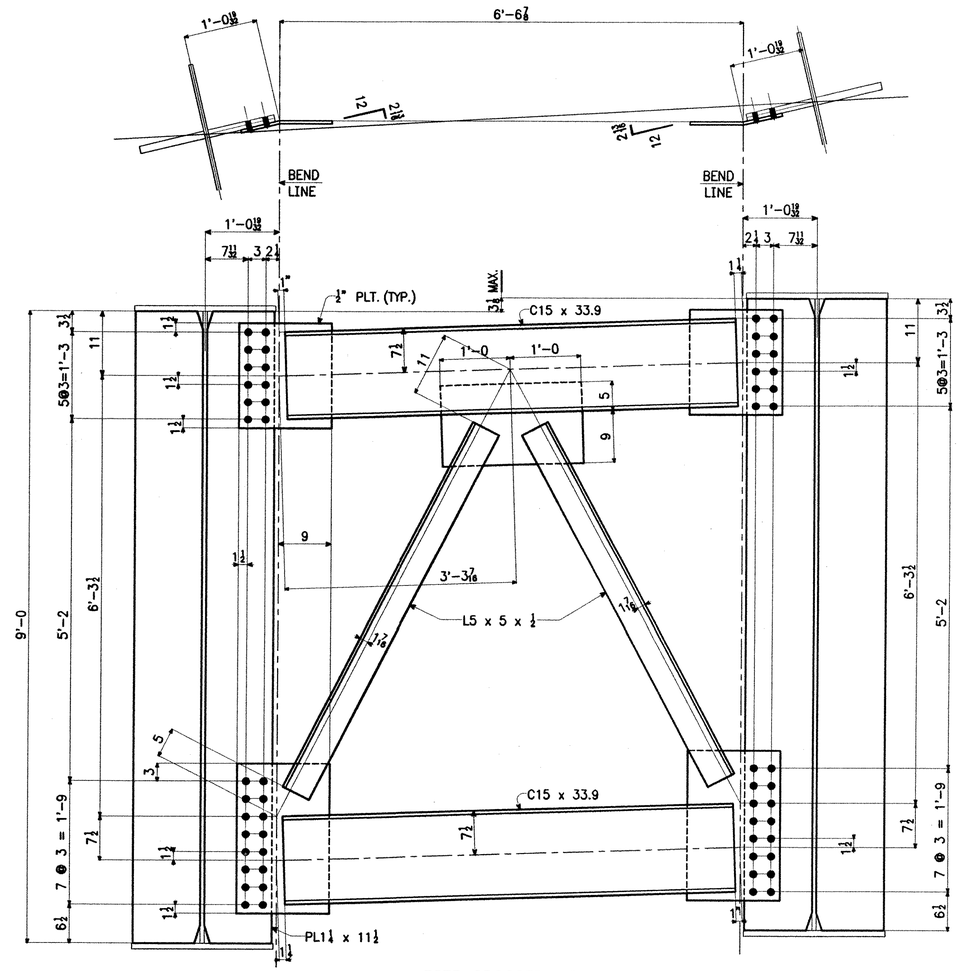
OK

1 GROOVE WELD INSPECTION 9-10-01 JCM

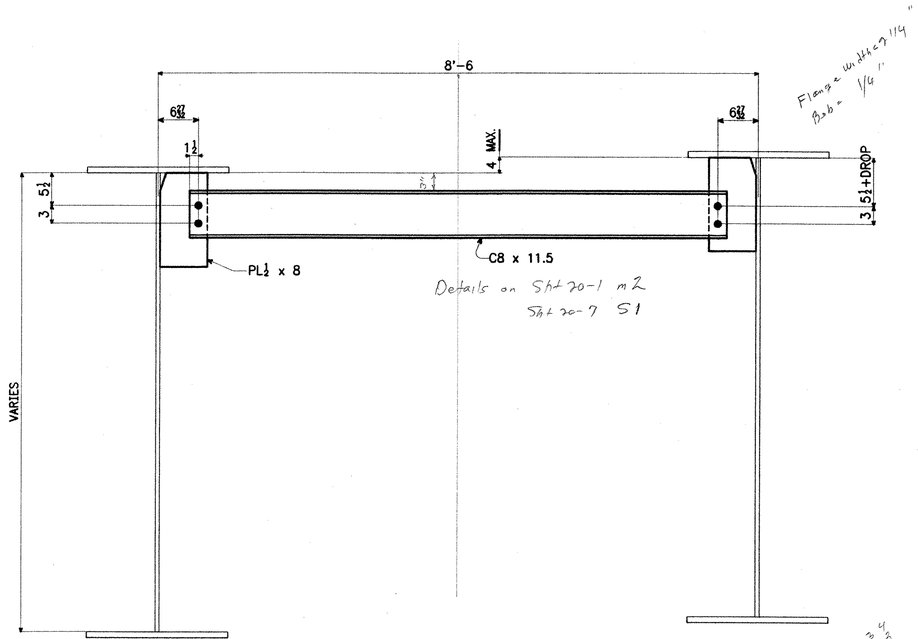
| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | WS3 | A |




ABUT. CROSSFRAME LAYOUT




PIER CROSSFRAME LAYOUT




UTILITY SUPPORT LAYOUT

1"=1'-0"

RECEIVED
CK'D BY GMS 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: LAYOUTS | | 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

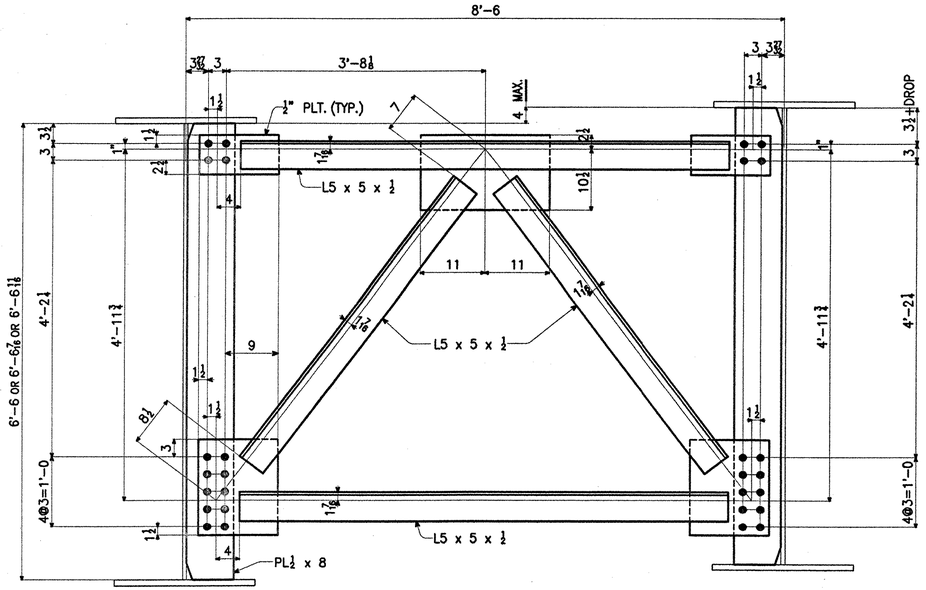
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

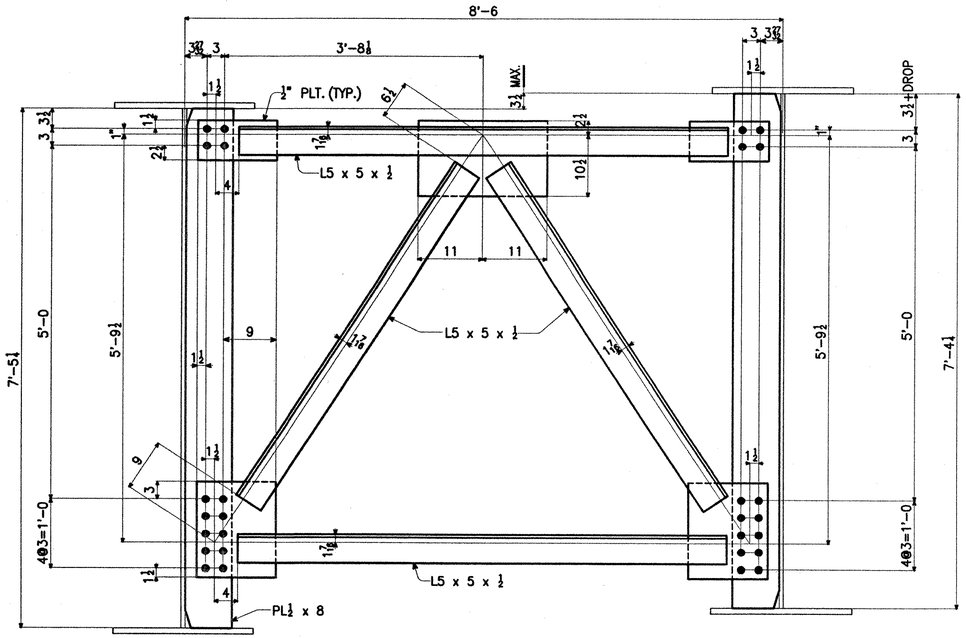
| CHECKED | TS | 3/01 |
|---|---|---|
| DRAWN | AV | 3/01 |

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | WS3 | A |

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | WS4 | 1 |

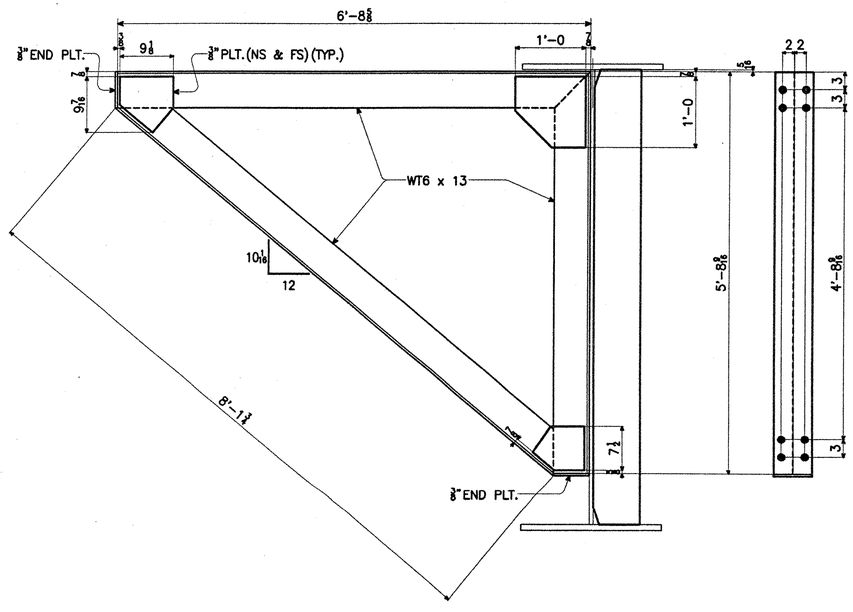



INT. CROSSFRAME LAYOUT

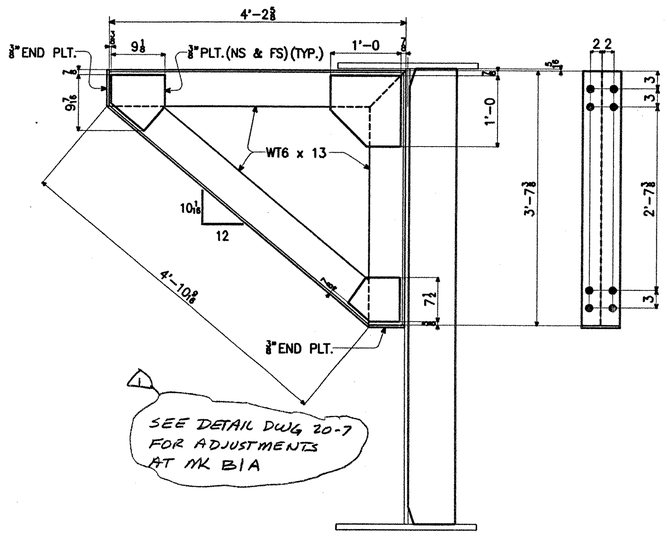



INT. CROSSFRAME LAYOUT

78 bolts/ X-Frame




SIDEWALK BRACKET LAYOUT
(NEAREST BEARING POINTS)




SIDEWALK BRACKET LAYOUT
(INTERMEDIATE POINTS)

RECEIVED
CK'D BY CPW OK'D BY
JAN 30 2002
RESUBMIT ____ APPROVED X
BY CPW DATE 2/11/02

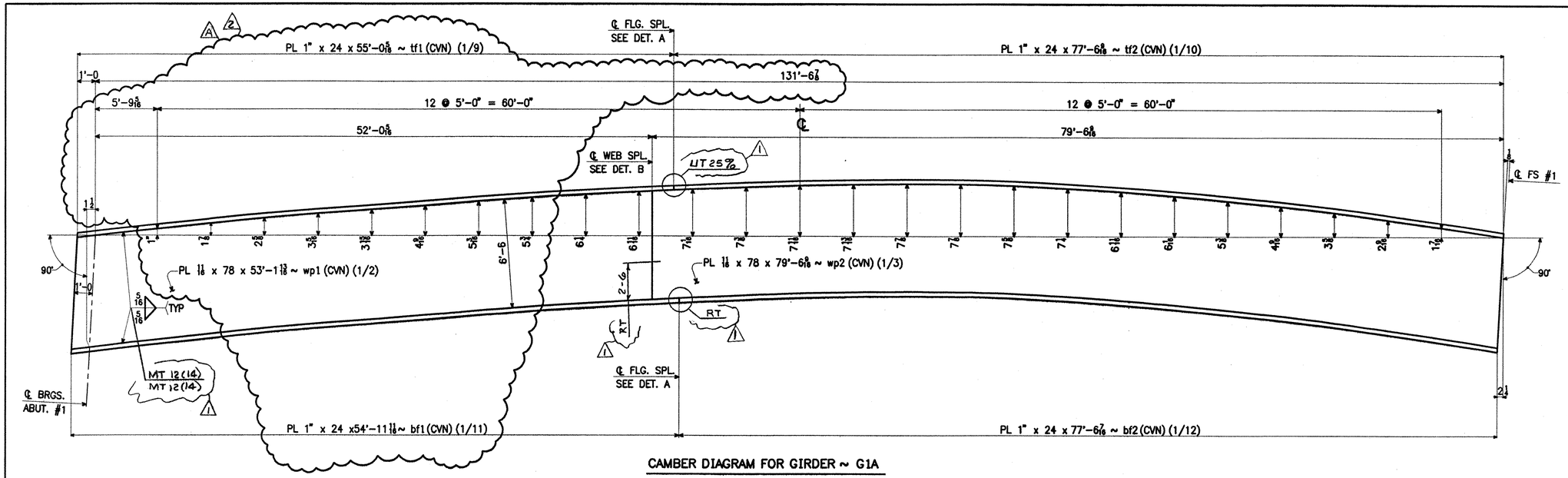
MK BIA 1-28-02 JCM

2-14-02

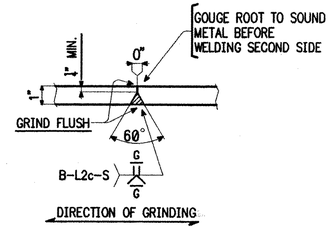
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|---|---|---|---|---|
| TITLE: LAYOUTS | | | | |
| APPROVED: 9-5-01 | | | REVISED | |
| PRINT DIST. | | | National Eastern Corporation | |
| 5 | 4-7-01 | APPR. | Plainville, Connecticut | |
| ORIG. | 9-5-01 | FAB. | | |
| 5 | 7-13-01 | APP | JOB: T.H. 1 OVER THE WHITE RIVER | |
| 5 | 8-24-01 | APP | ROYALTON, VERMONT | |
| 5 | 1-28-02 | APP | FOR APPROVAL | |
| 11 | 1-28-02 | FAB | | |
| | | | CUSTOMER: BECK & BELLUCCI, INC. | |
| | | | DESIGNER: VERMONT AGENCY OF TRANSPORTATION | |
| | | | WORK ORDER NO. | DRAWING NO. / REV. |
| CHECKED | TS | 3/01 | 15873 | WS4 / 1 |
| DRAWN | AV | 3/01 | | |

1

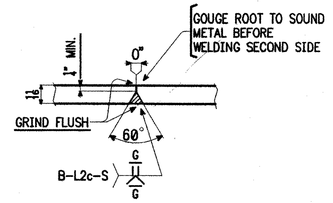
| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-1 | 2 |



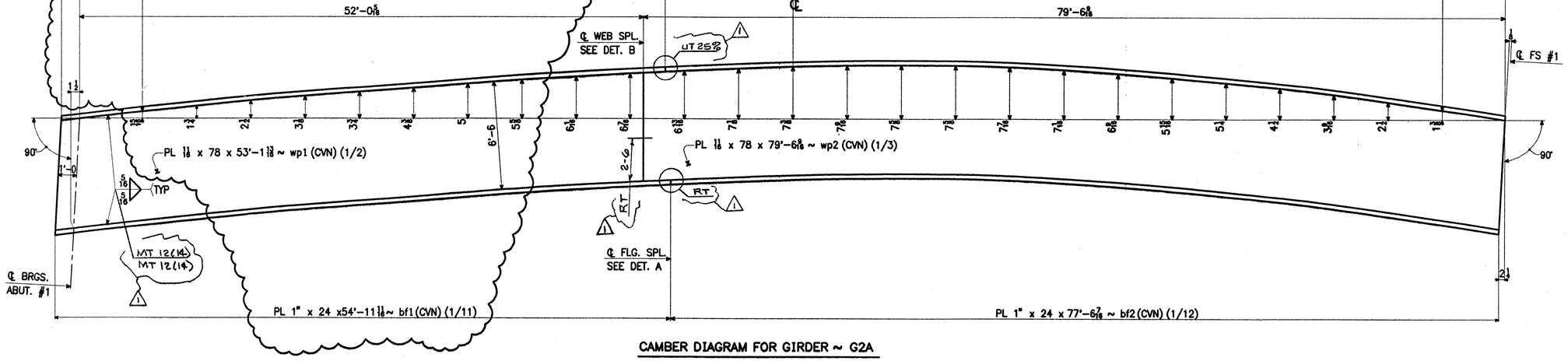

CAMBER DIAGRAM FOR GIRDER ~ G1A




FLANGE SPLICE DETAIL A




WEB SPLICE DETAIL B




CAMBER DIAGRAM FOR GIRDER ~ G2A

RECEIVED
CK'D BY WAS OK'D BY
DEC 27 2001
RESUBMIT APPROVED ✓
BY OPW DATE 1/2/02

**NOTES:**

1. MATERIAL: ASTM A709-50W
2. CVN DENOTES CHARPY V-NOTCH TESTING REQUIRED.

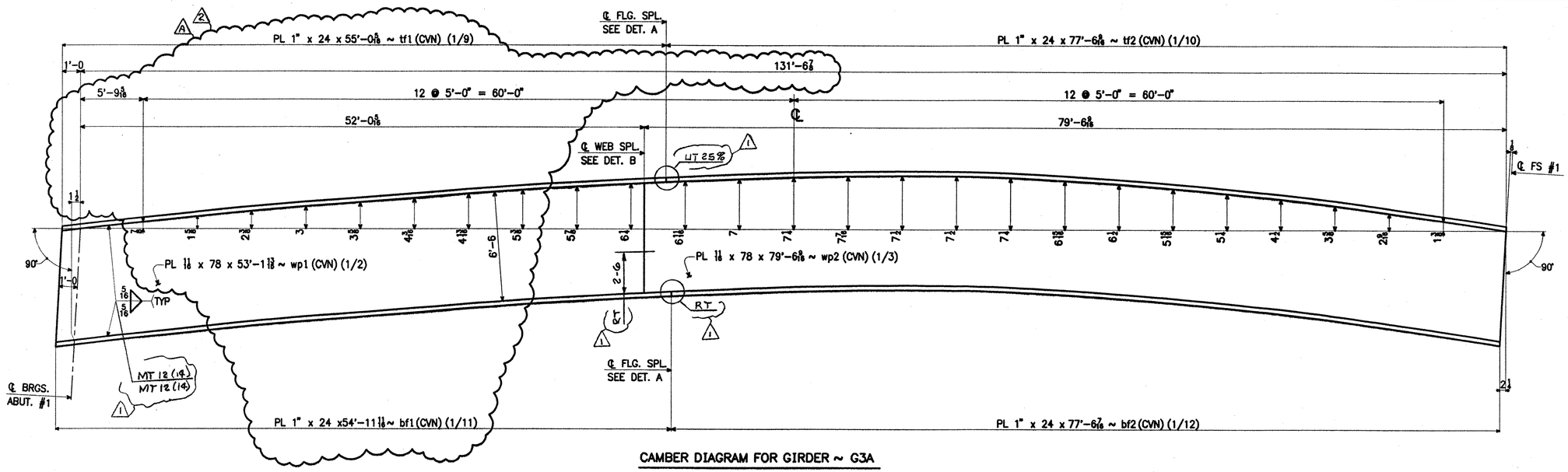
2 FLG & WEB 12-17-01 AV
1 NDT 8-23-01 JCM
A APPL COMMENTS 6-21-01 AV

| ITEM NO. 506.55 | | | BR. NO. 3 | PROJ. NO. BRZ 1444(22) | |
|---|---|---|---|---|---|
| TITLE: CAMBER DIAGRAMS | | | | | |
| APPROVED: 9-5-01 | | | National Eastern Corporation<br>Plainville, Connecticut | | |
| PRINT DIST. | | | | | |
| 5 | 4-7-01 | APPR. | | | |
| ORIG. | 6-21-01 | FAB. | | | |
| 5 | 7-13-01 | APP | | | |
| 5 | 8-24-01 | APP | JOB: T.H. 1 OVER THE WHITE RIVER<br>ROYALTON, VERMONT | | |
| 12 | 8-24-01 | FAB | | | |
| 5 | 12-18-01 | APP | | | |
| 11 | 12-18-01 | FAB | CUSTOMER: BECK & BELLUCCI, INC. | | |
| | | | DESIGNER: VERMONT AGENCY OF TRANSPORTATION | | |
| | | | WORK ORDER NO. | DRAWING NO. | REV. |
| CHECKED | TS | 3/01 | 15873 | 12-1 | 2 |
| DRAWN | AV | 3/01 | | | |

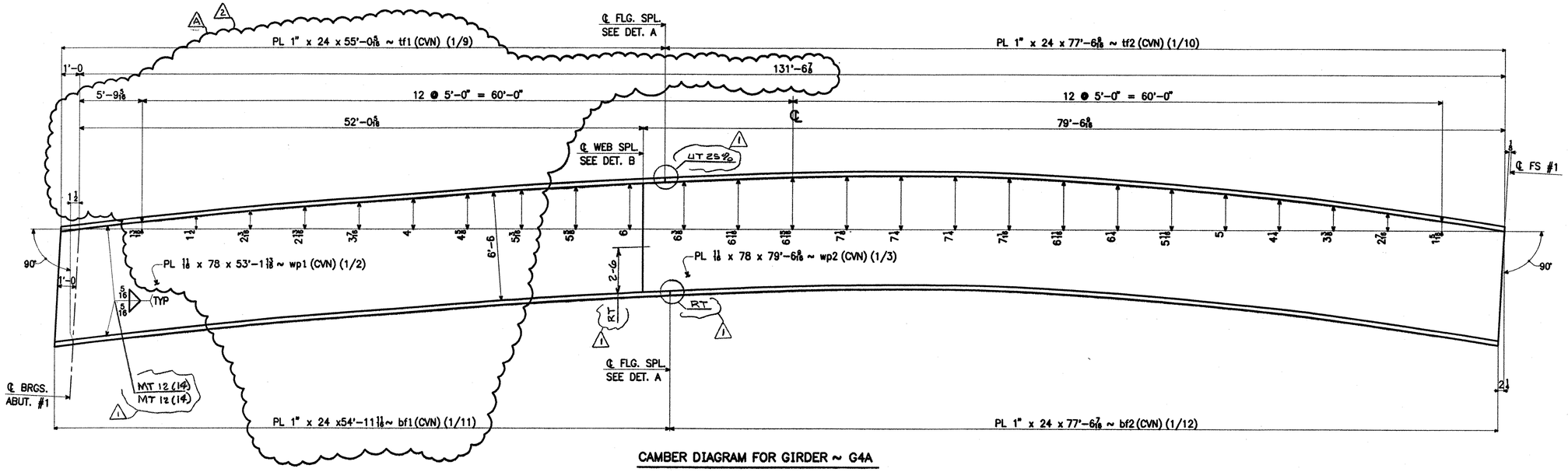
FOR APPROVAL

REVISED

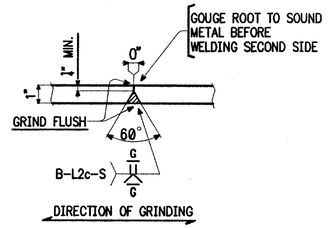
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|---|---|---|
| 15873 | 12-2 | 2 |



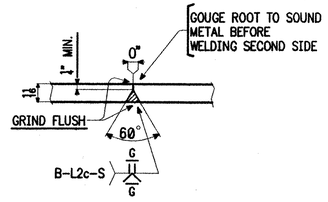

CAMBER DIAGRAM FOR GIRDER ~ G3A




CAMBER DIAGRAM FOR GIRDER ~ G4A




FLANGE SPLICE DETAIL A




WEB SPLICE DETAIL B

RECEIVED
CK'D BY JMS 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

| 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

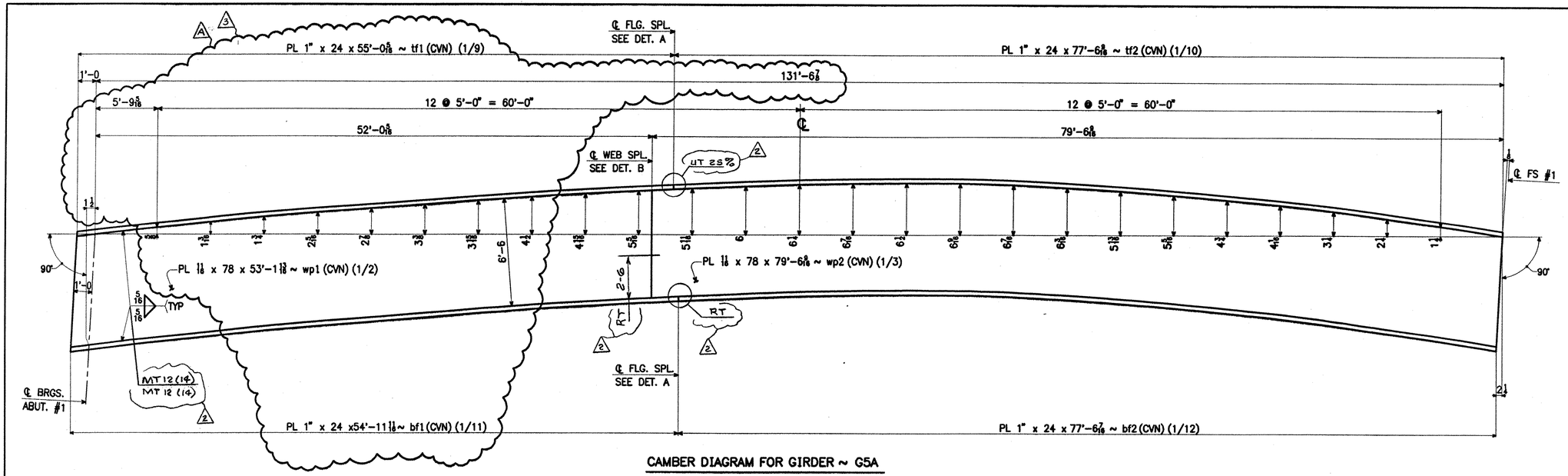
FOR APPROVAL
REVISED

CUSTOMER: BECK & BELLUCCI, INC.

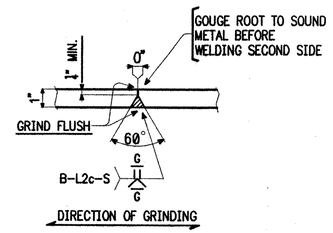
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-2 | 2 |

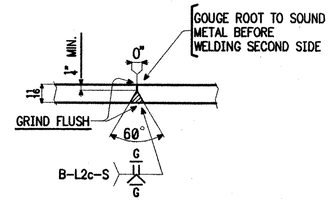
| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-3 | 3 |



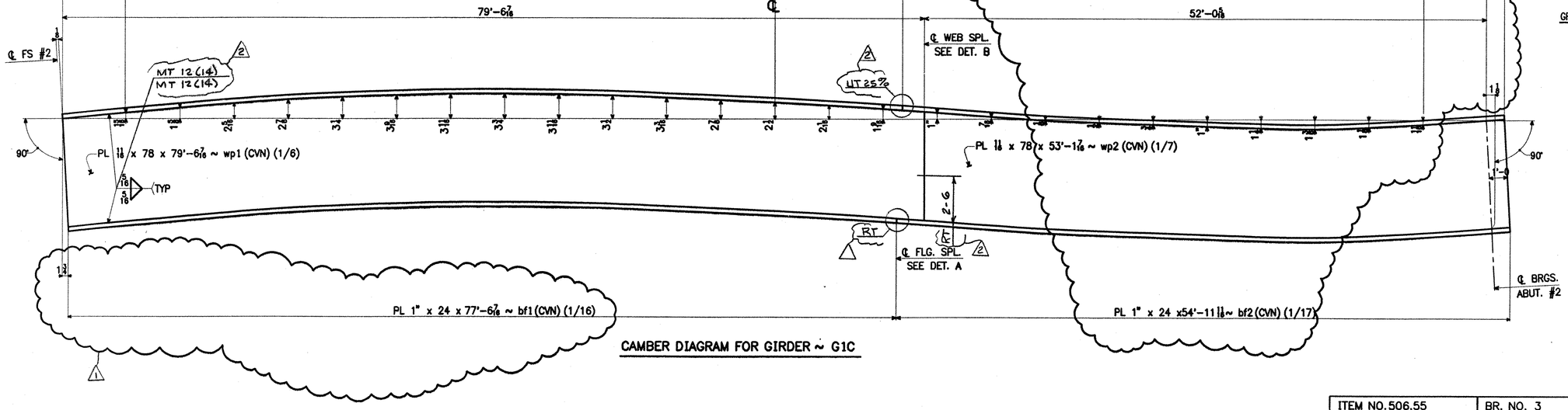

CAMBER DIAGRAM FOR GIRDER ~ G5A




FLANGE SPLICE DETAIL A




WEB SPLICE DETAIL B




CAMBER DIAGRAM FOR GIRDER ~ G1C

RECEIVED
CK'D BY WJS 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

| 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

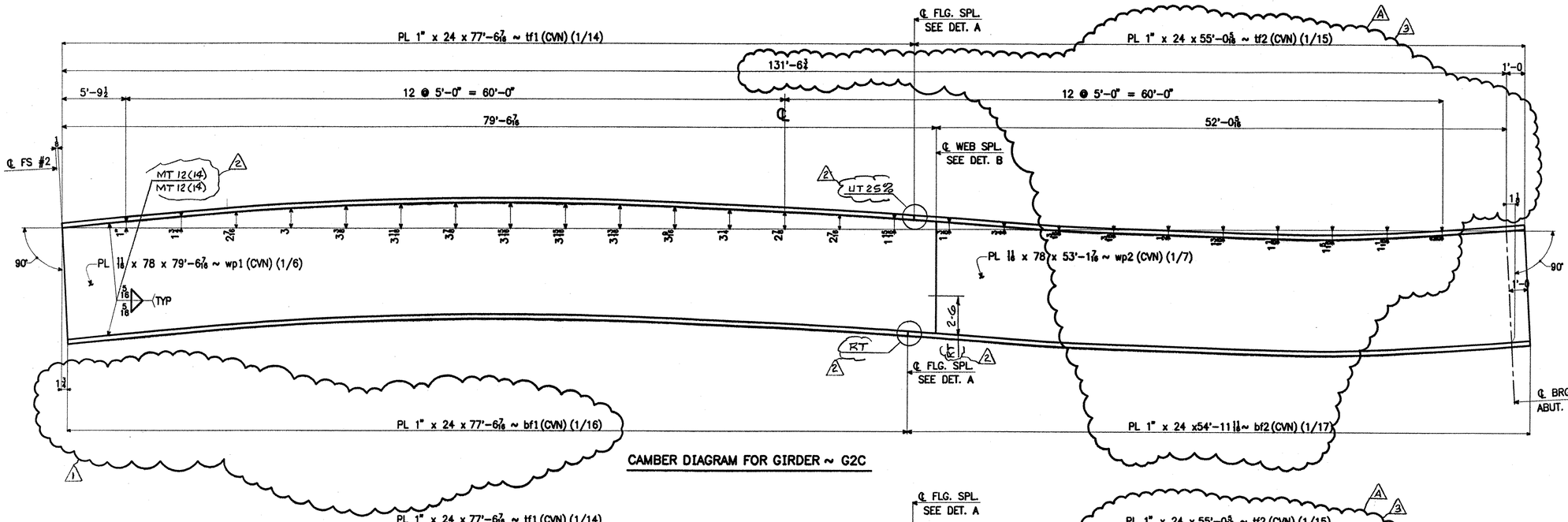
FOR APPROVAL
REVISED

CUSTOMER: BECK & BELLUCCI, INC.

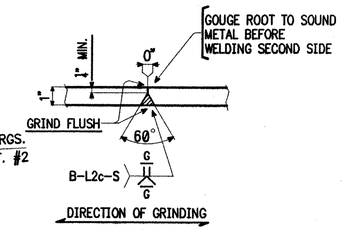
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-3 | 3 |

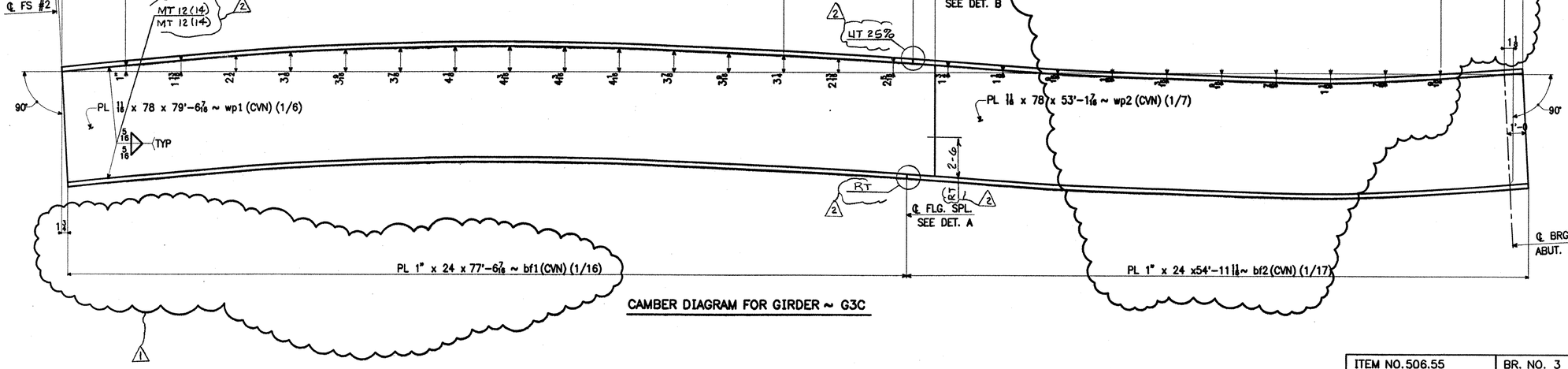
| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-4 | 3 |



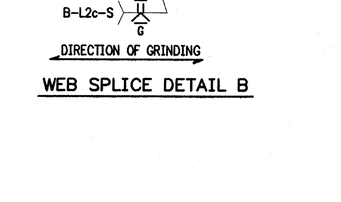

CAMBER DIAGRAM FOR GIRDER ~ G2C




FLANGE SPLICE DETAIL A




CAMBER DIAGRAM FOR GIRDER ~ G3C




WEB SPLICE DETAIL B

RECEIVED
CK'D BY WJS 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

| PRINT DIST. | | |
|---|---|---|
| 5 | 7-7-01 | 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

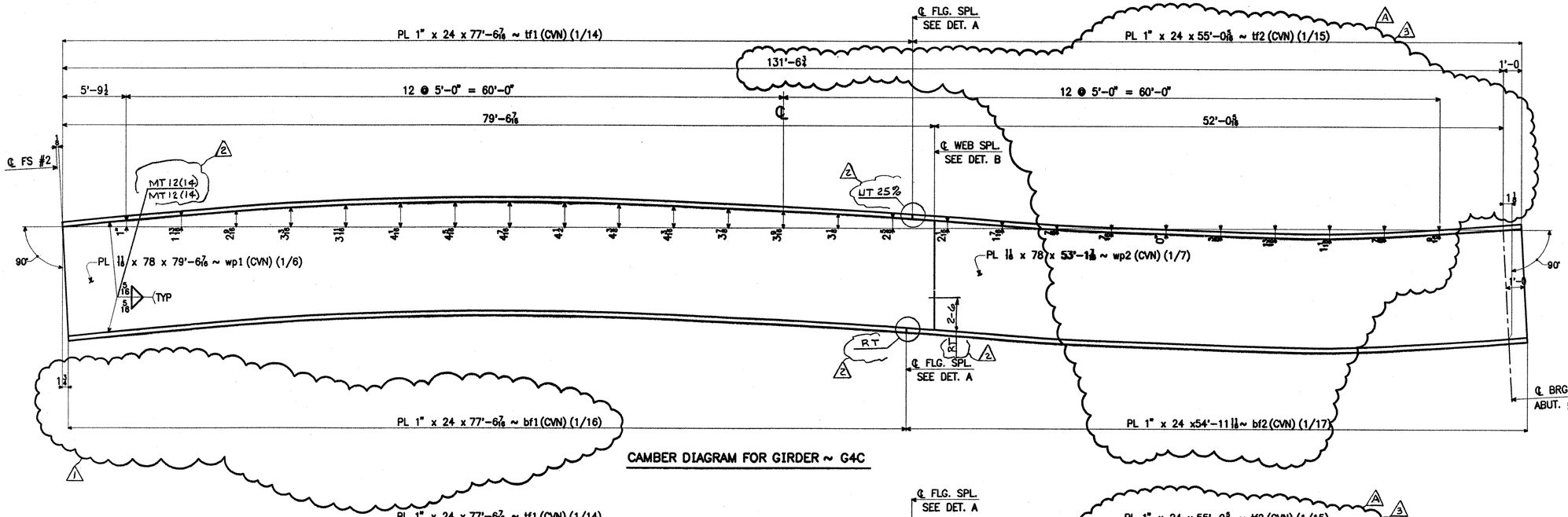
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

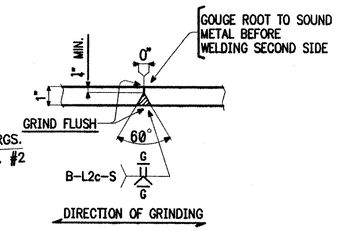
REVISED

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-4 | 3 |

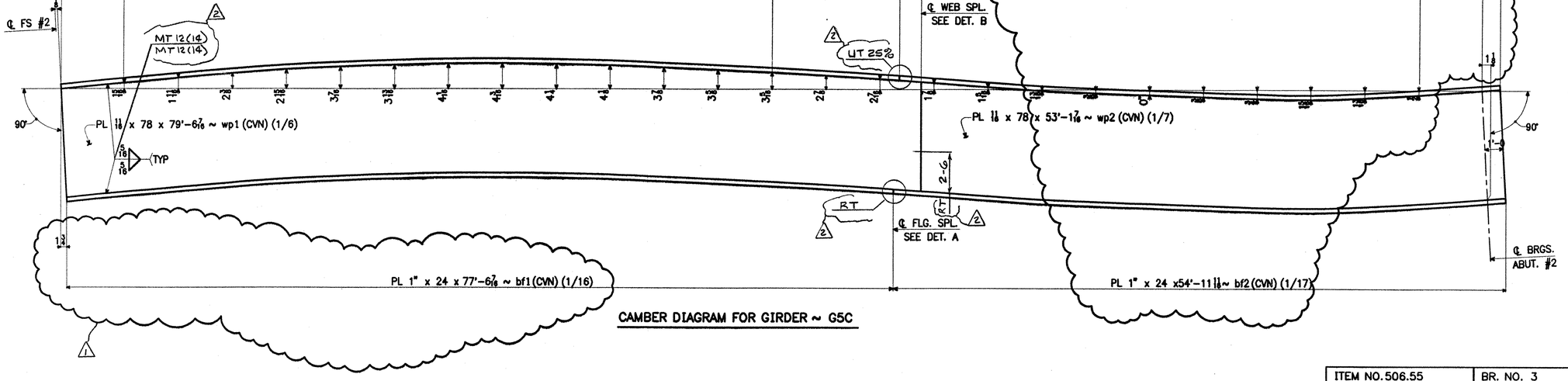
| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-5 | 3 |



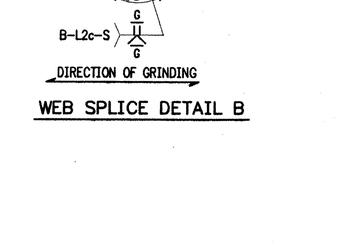

CAMBER DIAGRAM FOR GIRDER ~ G4C




FLANGE SPLICE DETAIL A




CAMBER DIAGRAM FOR GIRDER ~ G5C




WEB SPLICE DETAIL B

**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 |

RECEIVED
CK'D BY LWS OK'D BY
DEC 27 2001
RESUBMIT APPROVED
BY CPW DATE 1/9/02

| | | |
|---|---|---|
| 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

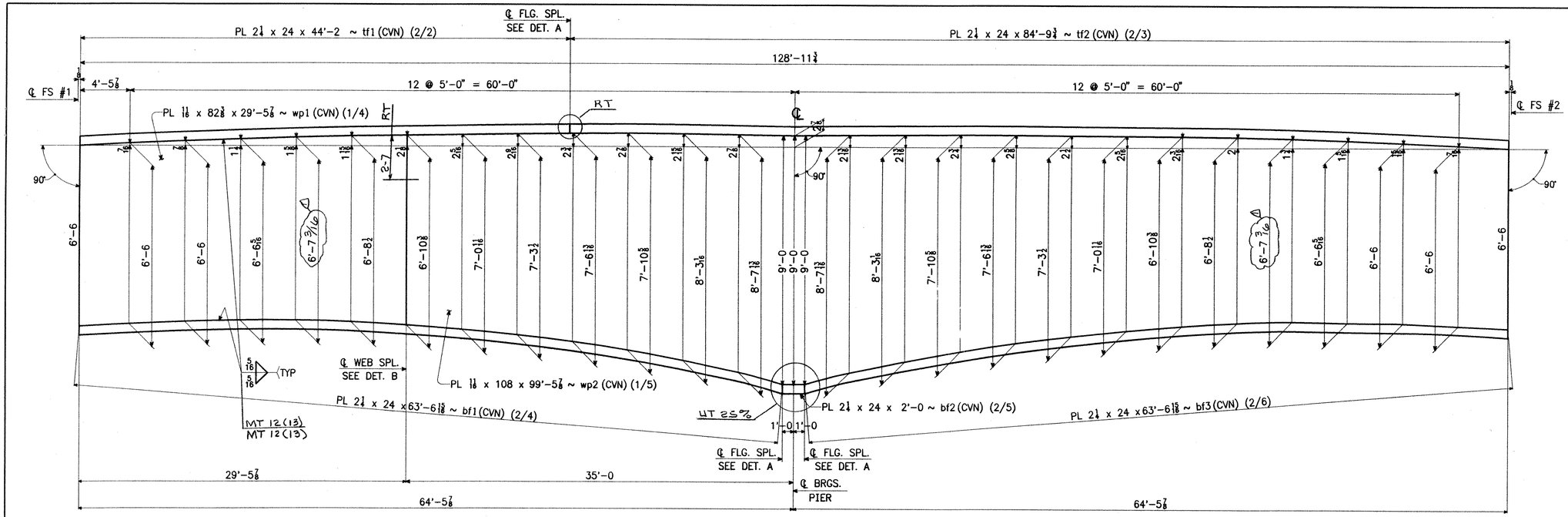
CUSTOMER: BECK & BELLUCCI, INC.

REVISED

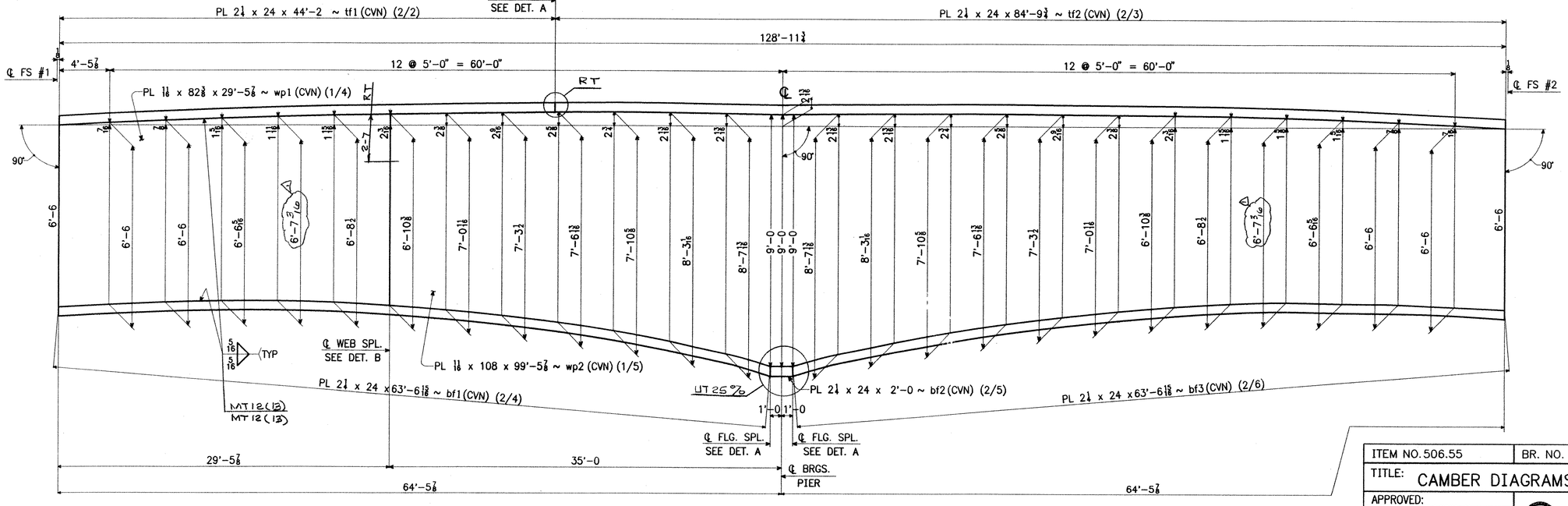
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-5 | 3 |

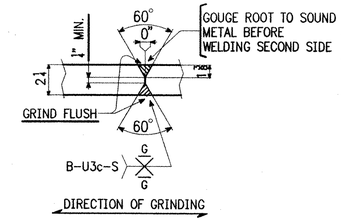
| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-6 | 2 |



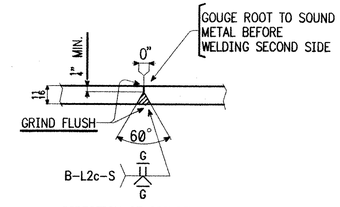

CAMBER DIAGRAM FOR GIRDER ~ G1B




CAMBER DIAGRAM FOR GIRDER ~ G2B




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 WJS OK'D BY
AUG 27 2001
RESUBMIT APPROVED ✓
BY CJW DATE 8/30/01

2 NDT 8-23-01 JCM
1 WEB DEPTH 6-26-01 JCM
A APPL COMMENTS (GEN REV) 6-21-01

| 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 |

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

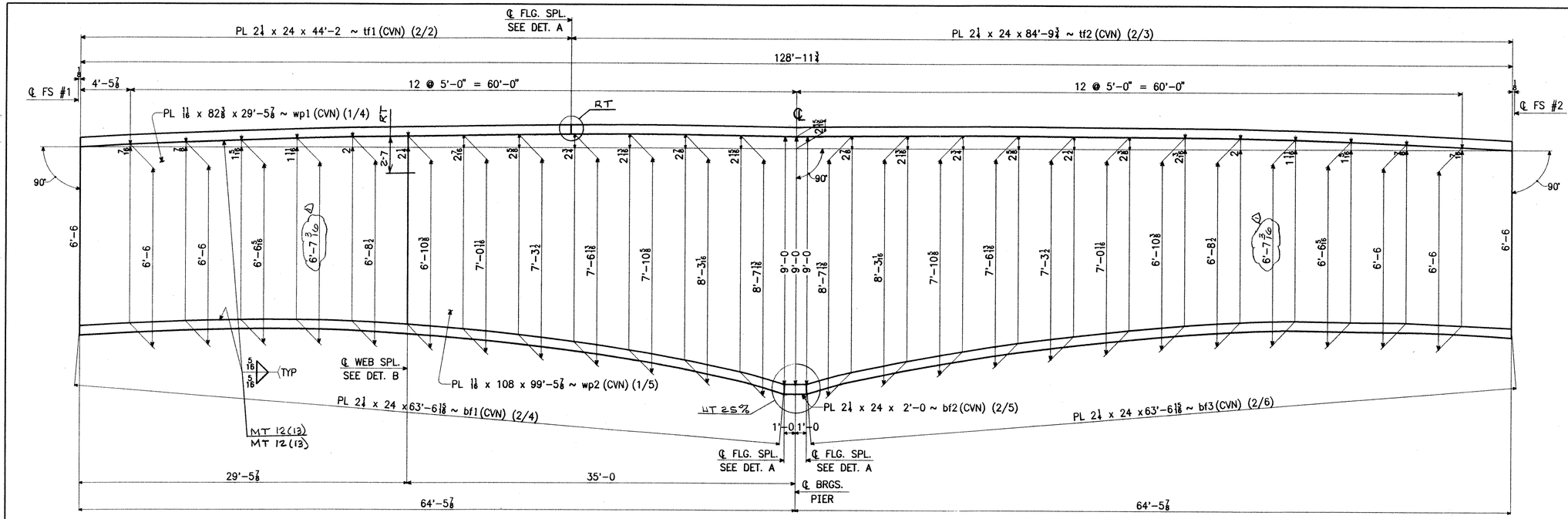
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

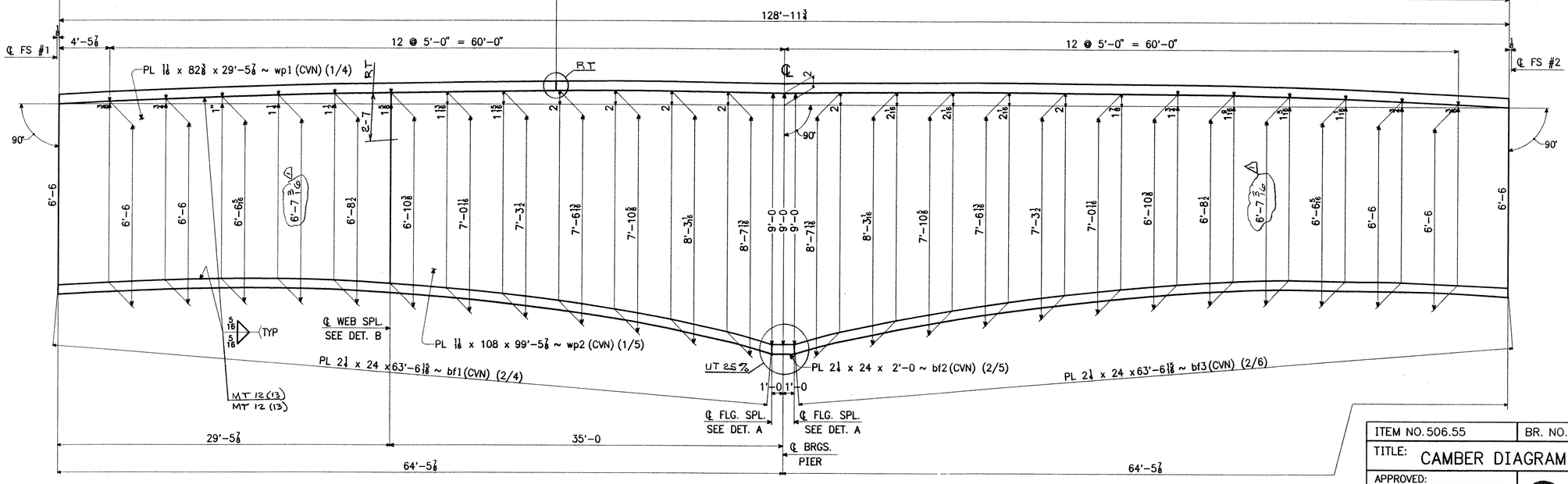
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| CHECKED | TS | 3/01 |
| DRAWN | AV | 3/01 |

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
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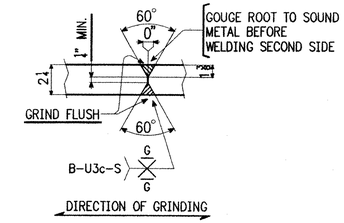
| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-7 | 2 |



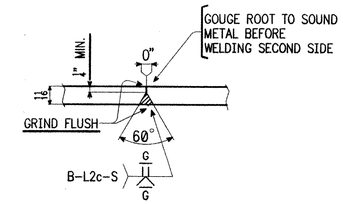

CAMBER DIAGRAM FOR GIRDER ~ G3B




CAMBER DIAGRAM FOR GIRDER ~ G4B




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 LWB? 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. | | |
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| 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 |
| | | |
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| | | |
| CHECKED | TS | 3/01 |
| DRAWN | AV | 3/01 |

National Eastern Corporation
Plainville, Connecticut

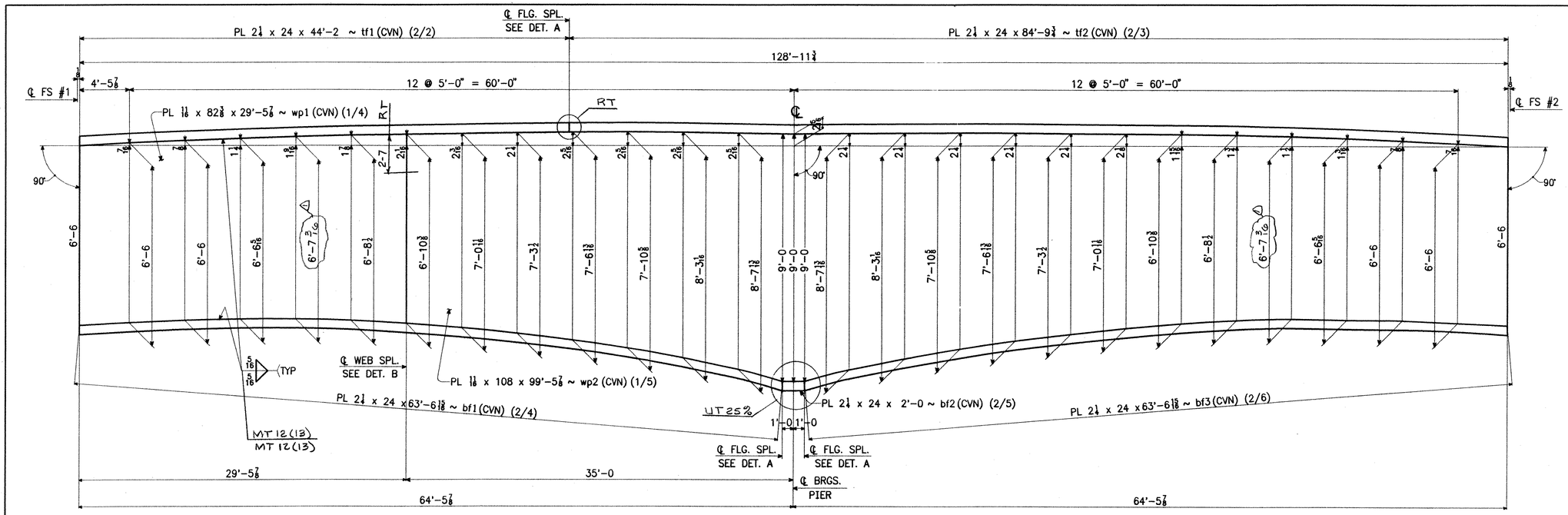
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

CUSTOMER: BECK & BELLUCCI, INC.

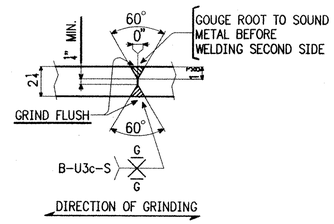
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| WORK ORDER NO. | DRAWING NO. | REV. |
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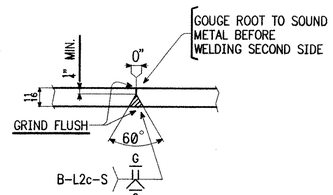
| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-8 | 2 |




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 WJS OK'D BY
AUG 27 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. | | |
|---|---|---|
| 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 |
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| CHECKED | TS | 3/01 |
| DRAWN | AV | 3/01 |

National Eastern Corporation
Plainville, Connecticut

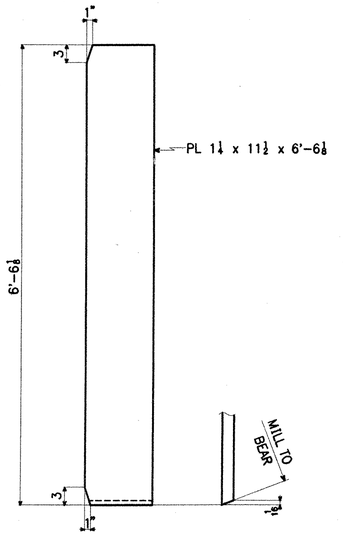
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

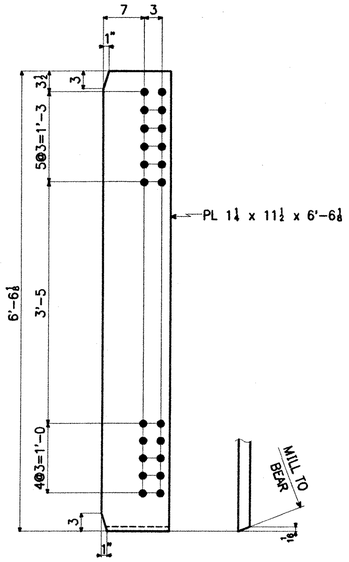
| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-8 | 2 |

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-9 | B |



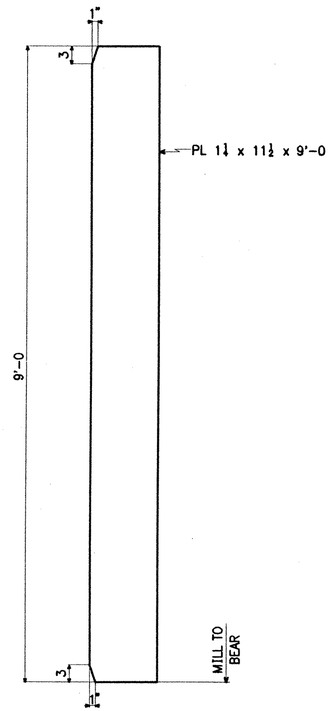

2 ~ BEARING STFS. ~ bs1$^{R}$ 3/2 S1/11

2 ~ BEARING STFS. ~ bs1$^{L}$

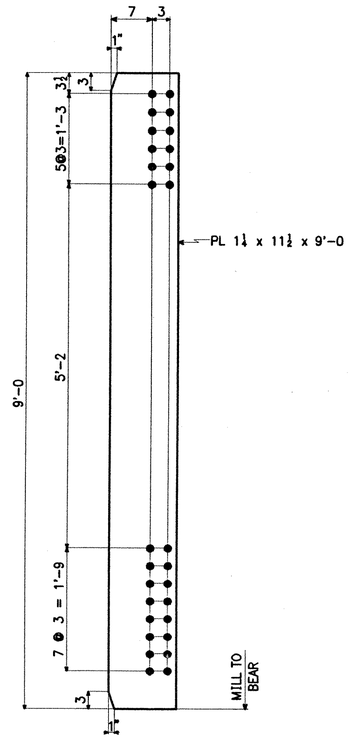



8 ~ BEARING STFS. ~ bs2$^{R}$ 3/2 S1/11

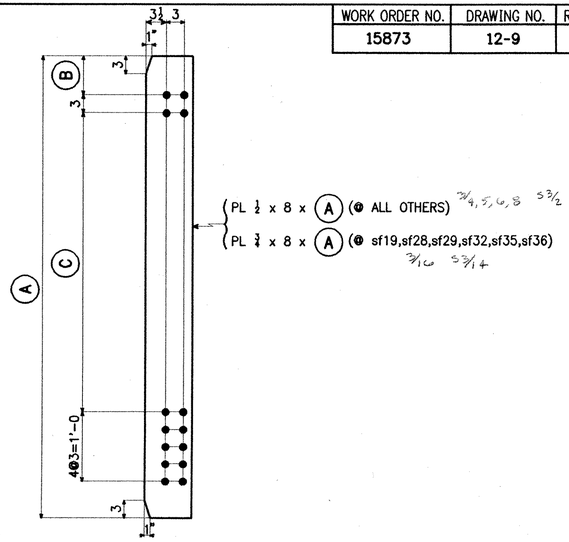
8 ~ BEARING STFS. ~ bs2$^{L}$




2 ~ BEARING STFS. ~ bs3 3/2 S1/11



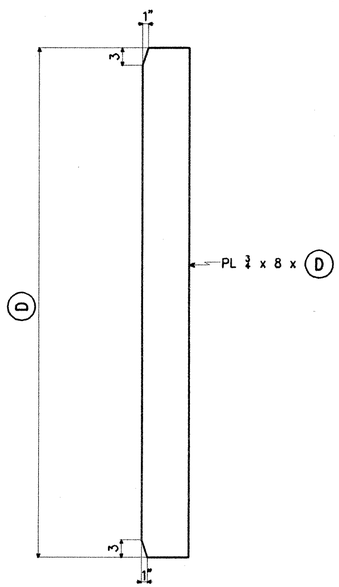

8 ~ BEARING STFS. ~ bs3 3/2 S1/11




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 |

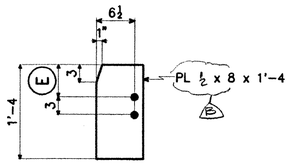
| MARK | No. REQ'D. | A | B | C |
|---|---|---|---|---|
| sf16 | 1 | 6'-6 11/16 | 6 | 5'-0 |
| sf17 | 1 | 6'-6 11/16 | 7 | 5'-0 |
| sf18 | 2 | 7'-5¼ | 3½ | 5'-0 |
| sf19 | 1 | 7'-4¼ | 4¾ | 5'-0 |
| sf20 | 1 | 7'-4¼ | 5½ | 5'-0 |
| sf27 | 1 | 7'-4¼ | 6 | 5'-0 |
| sf28 | 1 | 7'-4¼ | 7 | 5'-0 |
| sf29 | 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'-1 7/8 |
| s2 | 5 | 8'-3¼ |
| s3 | 1 | 7'-4¼ |
| s4 | 1 | 7'-5¼ |

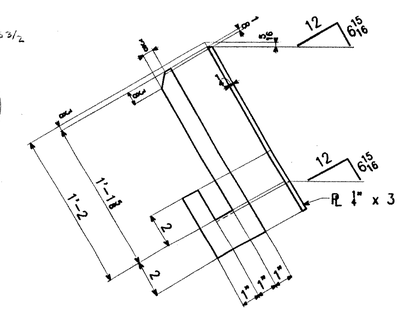
3/11 S3/14




UTILITY CONN. PLTS.

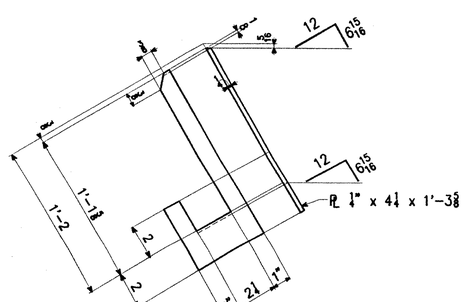
| MARK | No. REQ'D. | E |
|---|---|---|
| sf21 | 34 | 8 |
| sf22 | 17 | 6½ |
| sf23 | 17 | 6¾ |
| sf24 | 10 | 9¼ |
| sf25 | 14 | 9½ |
| sf26 | 102 | 5½ |
| sf34 | 10 | 9 |

3/8 S3/12




2 ~ dp1$^{R}$ 3/11 S3/10

2 ~ dp1$^{L}$




2 ~ dp2$^{R}$ 3/11 S3/10

2 ~ dp2$^{L}$

RECEIVED
CK'D BY WAS OK'D BY
AUG 27 2001
RESUBMIT APPROVED As Noted
BY OPW DATE 8/30/01

OK

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 STANDARD PARTS 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

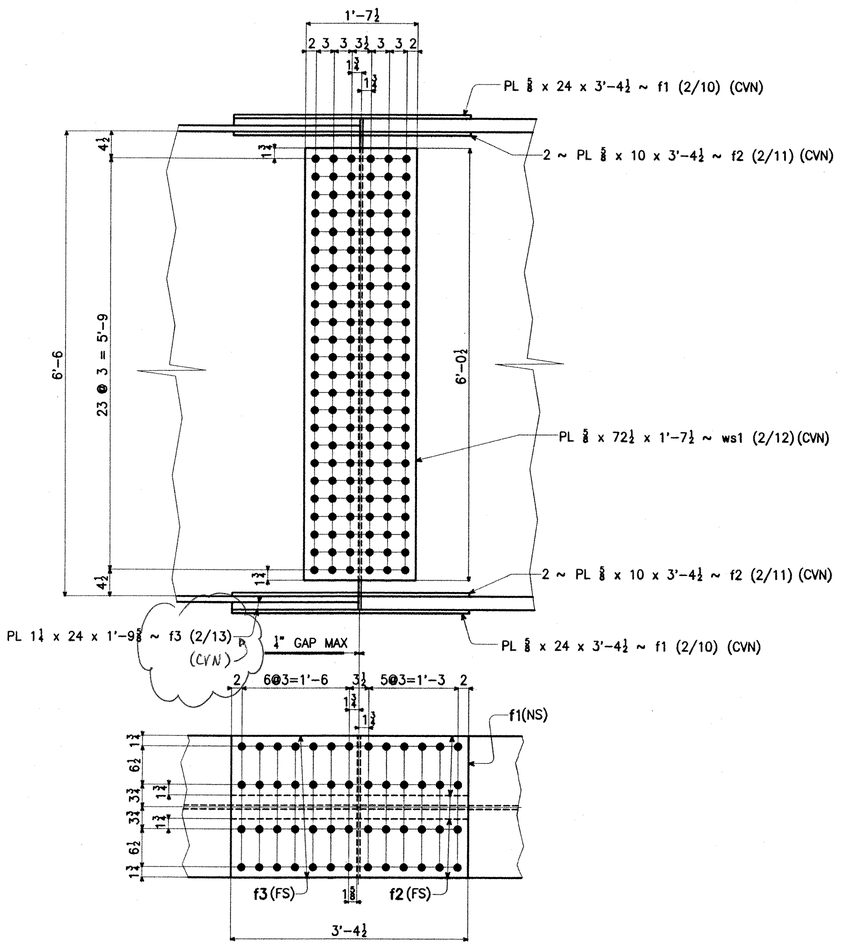
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| CHECKED | TS | 3/01 |
|---|---|---|
| DRAWN | AV | 3/01 |

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-9 | B |

| 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 LWS OK'D BY
AUG 2 7 2001
RESUBMIT APPROVED As Noted
BY CPN DATE 8/30/01

| ITEM NO.506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22) |
|---|---|---|
| TITLE: FIELD SPLICES | | FOR APPROVAL |

| APPROVED: | | |
|---|---|---|
| PRINT DIST. | | |
| 5 | 7-2-01 | APPR. |
| ORIG. | | FAB. |
| 5 | 7-13-01 | APP |
| 5 | 8-14-01 | APP |

| | | |
|---|---|---|
| CHECKED | TS | 3/01 |
| DRAWN | AV | 3/01 |

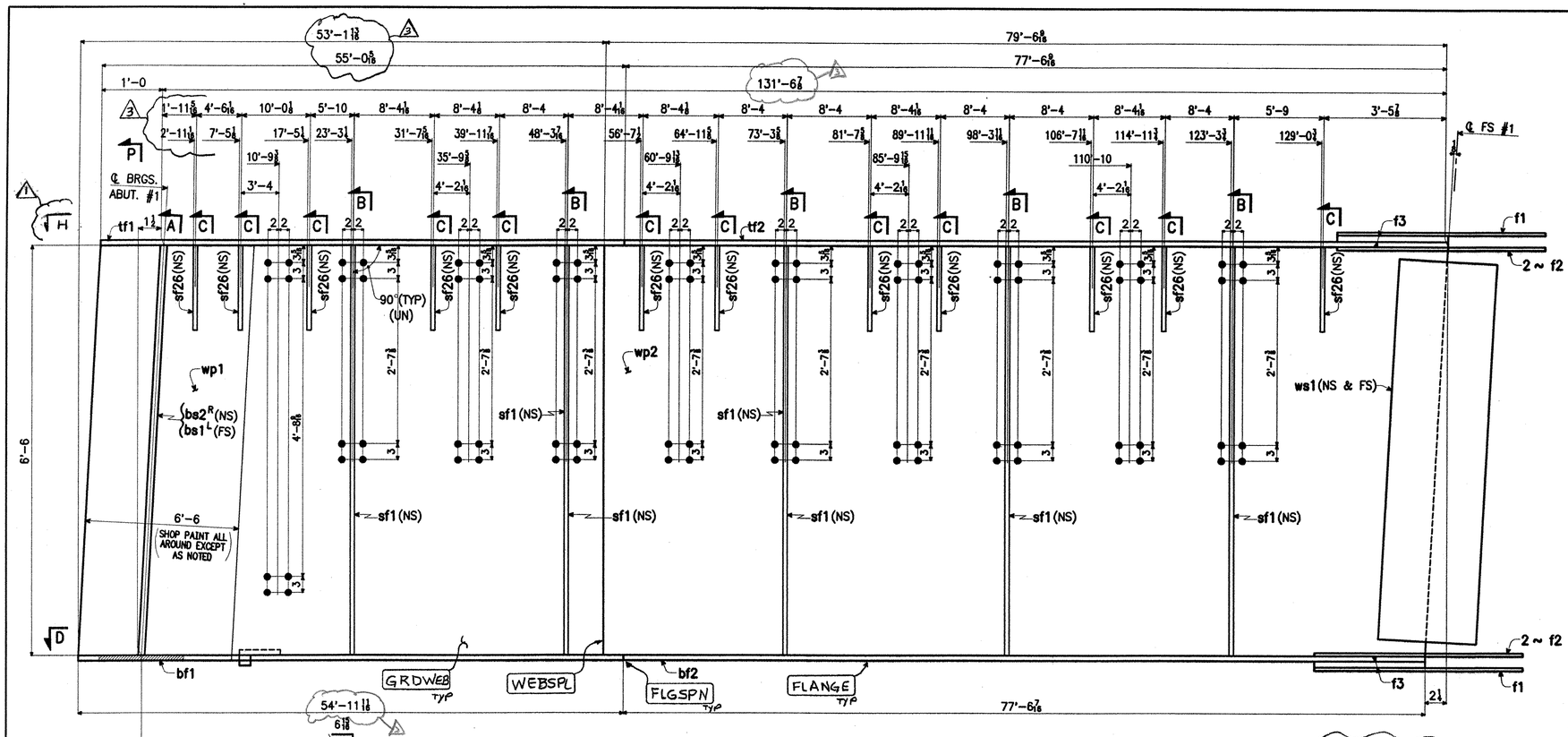
National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

CUSTOMER: BECK & BELLUCCI, INC.

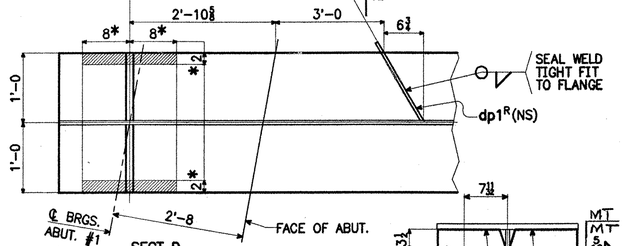
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-10 | |



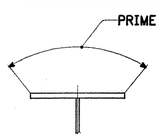

## 1 ~ GIRDER ~ G1A

GIRDER

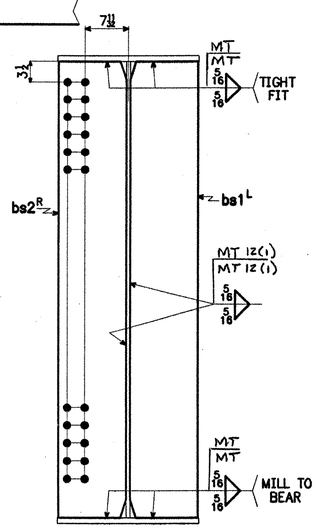



SECT. D

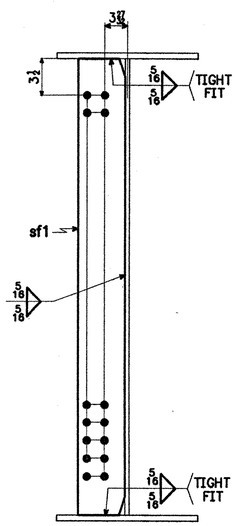
*PRIME COAT ONLY BOTT. OF BOTT. FLG. AND EDGES



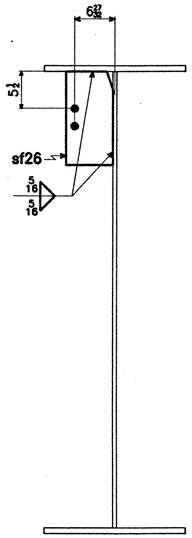

SECT. P



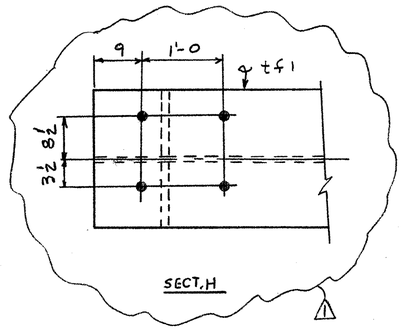

SECT. A




SECT. B




SECT. C




SECT. H

**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 WAS OK'D BY
DEC 27 2001
RESUBMIT BY CPW APPROVED As Noted 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

## BILL OF MATERIAL

WORK ORDER NO. 15873 | DRAWING NO. 12-11 | REV. 3

| SHIP MARK | NO. | MARK | SHAPE | LENGTH | | ITEM NO. | WT. | REMARKS |
|---|---|---|---|---|---|---|---|---|
| G1A | 1 | | GIRDER | | | | | |
| | 1 | tf1 | PL 1" x 24 | 55'-0 5/16 | 3 | 5-1/16 1/9 | 4494 | CVN |
| | 1 | tf2 | PL 1" x 24 | 77'-6 5/8 | | 5-1/4 1/10 | 6333 | CVN |
| | 1 | bf1 | PL 1" x 24 | 54'-11 13/16 | 3 | 5-1/16 1/11 | 4490 | CVN |
| | 1 | bf2 | PL 1" x 24 | 77'-6 5/8 | | 5-1/4 1/12 | 6332 | CVN |
| | 1 | wp1 | PL 1/2 x 78 | 53'-1 13/16 | | 5-1/3 1/2 | X | CVN |
| | 1 | wp2 | PL 1/2 x 78 | 79'-6 5/8 | | 5-3/4 1/3 | 24185 | CVN |
| | 1 | bs1R | PL 1 1/2 x 11 1/2 | 6'-6 1/8 | | 5-1/11 3/2 | 318 | M1E |
| | 1 | bs2L | PL 1 1/2 x 11 1/2 | 6'-6 1/8 | | 〃 3/2 | 318 | M1E |
| | 5 | sf1 | PL 1/2 x 8 | 6'-6 | | 5-3/4 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 1/2 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 | | 5-3/5 2/12 | 501 | CVN |
| | | | | | 3 | | 48616 | # |

| | |
|---|---|
| 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 ~ 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

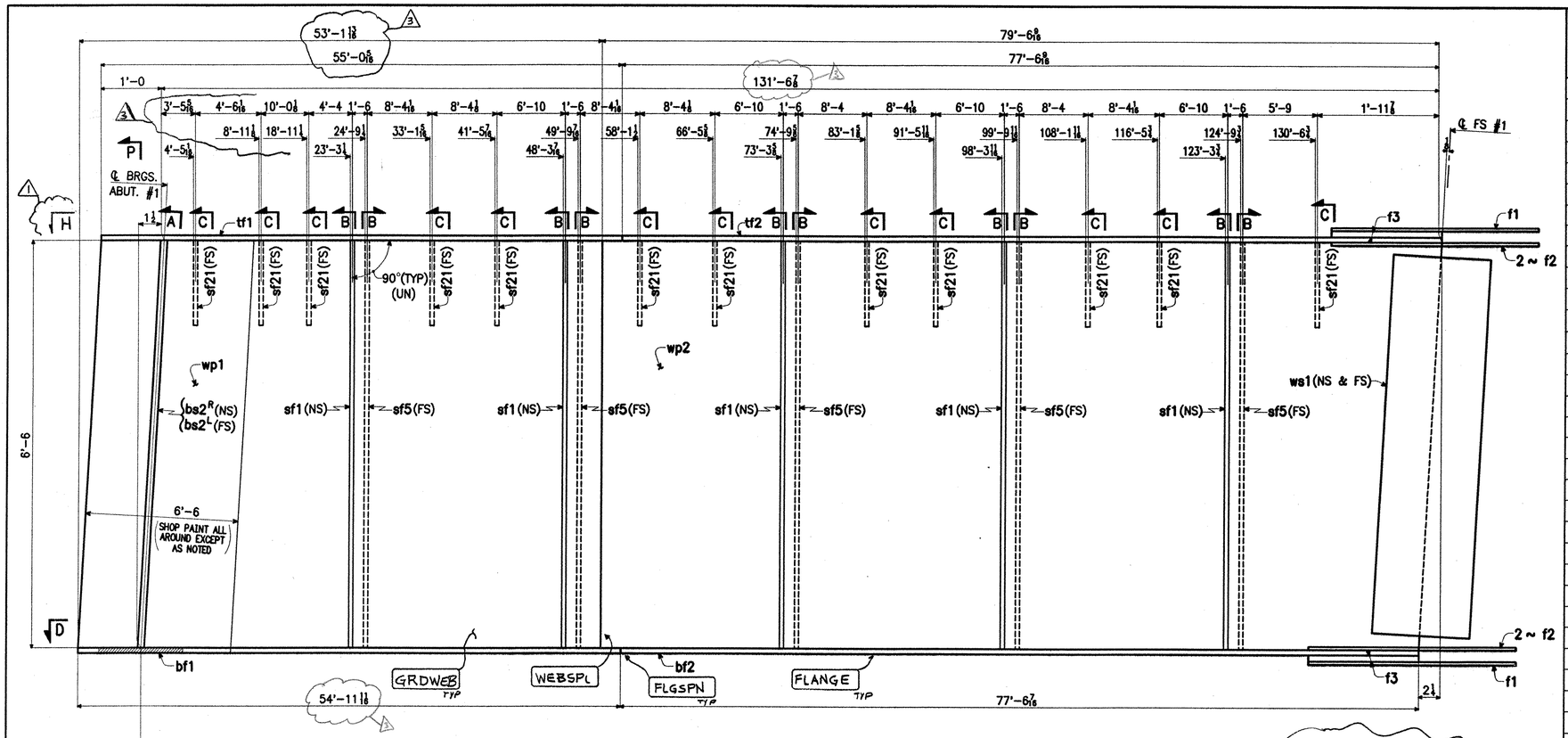
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

FOR APPROVAL
REVISED

CUSTOMER: BECK & BELLUCCI, INC.

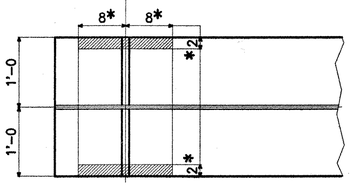
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-11 | 3 |



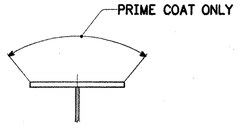

1 ~ GIRDER ~ G2A

GIRDER

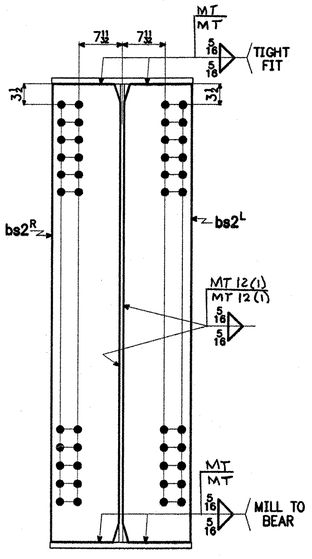



SECT. D

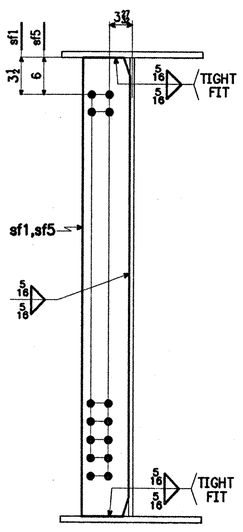
*PRIME COAT ONLY BOTT. OF BOTT. FLG. AND EDGES



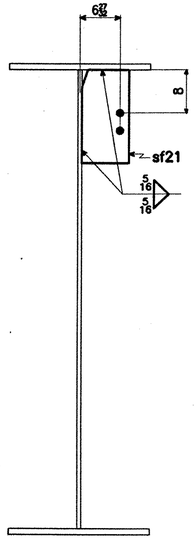

SECT. P



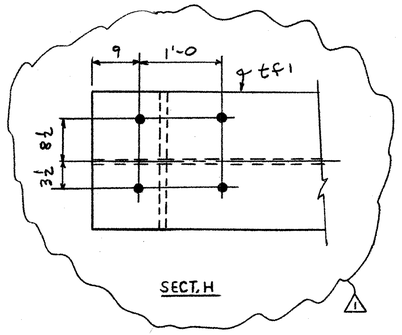

SECT. A




SECT. B




SECT. C




SECT. H

**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 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 |
|---|---|---|---|---|---|---|---|---|
| G2A | 1 | | GIRDER | | | | | |
| | 1 | tf1 | PL 1" x 24 | 55'-0 5/16 | 3 5'-1 15/16 | 9 | 4494 | CVN |
| | 1 | tf2 | PL 1" x 24 | 77'-6 5/8 | 5'-1 1/4 | 10 | 6333 | CVN |
| | 1 | bf1 | PL 1" x 24 | 54'-11 13/16 | 3 5'-1 15/16 | 11 | 4490 | CVN |
| | 1 | bf2 | PL 1" x 24 | 77'-6 7/16 | 5'-1 1/4 | 12 | 6332 | CVN |
| | 1 | wp1 | PL 1 13/16 x 78 | 53'-1 13/16 | 5'-7 1/3 | 7 | | CVN |
| | 1 | wp2 | PL 1 13/16 x 78 | 79'-6 5/8 | 5'-7 1/2 | 8 | 24185 | CVN |
| | 1 | bs2L | PL 1 1/2 x 11 1/2 | 6'-6 1/8 | 5'-1 11/16 | 5 | 318 | M1E |
| | 1 | bs2R | PL 1 1/2 x 11 1/2 | 6'-6 1/8 | | 6 | 318 | M1E |
| | 5 | sf1 | PL 1/2 x 8 | 6'-6 | 5'-3 1/2 | 4 | 442 | |
| | 5 | sf5 | PL 1/2 x 8 | 6'-6 | | 5 | 442 | |
| | 12 | sf21 | PL 1/2 x 8 | 1'-4 | | 6 | 218 | |
| | 2 | f1 | PL 5/8 x 24 | 3'-4 1/2 | 5'-7 1/8 | 10 | 345 | CVN |
| | 4 | f2 | PL 5/8 x 10 | 3'-4 1/2 | | 11 | 287 | CVN |
| | 2 | f3 | PL 1 1/2 x 24 | 1'-9 5/8 | 5'-1/2 | 13 | 368 | |
| | 2 | ws1 | PL 5/8 x 72 1/2 | 1'-7 1/2 | 5'-1/5 | 12 | 501 | CVN |
| | | | | | 3 | | 49073 | # |

| | | |
|---|---|---|
| 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 ~ 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

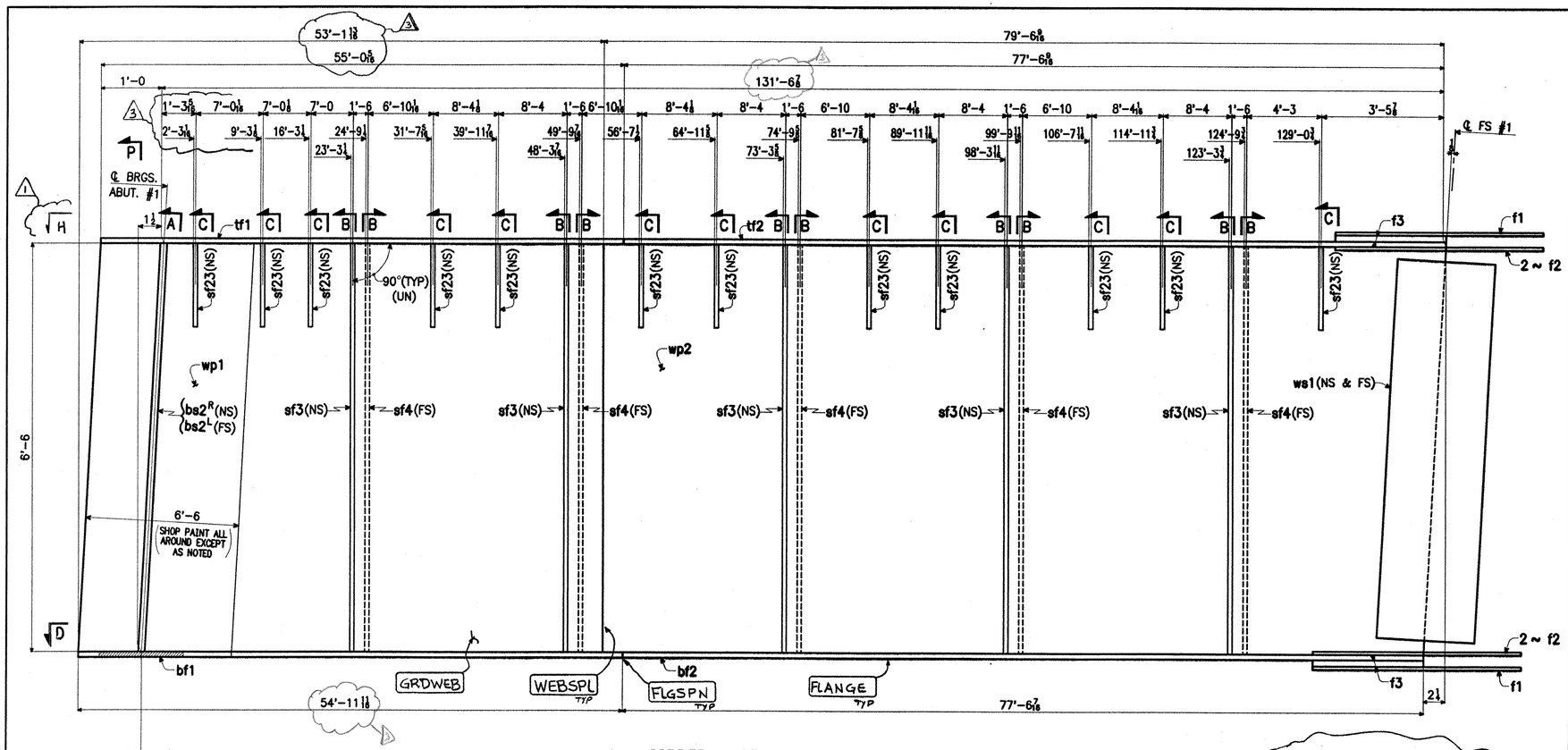
FOR APPROVAL

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

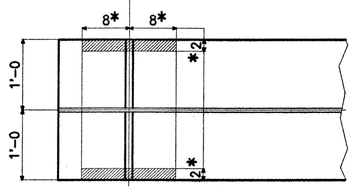
REVISED

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-12 | 3 |



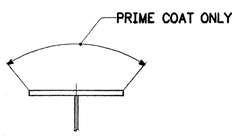

## 1 ~ GIRDER ~ G3A

GIRDER

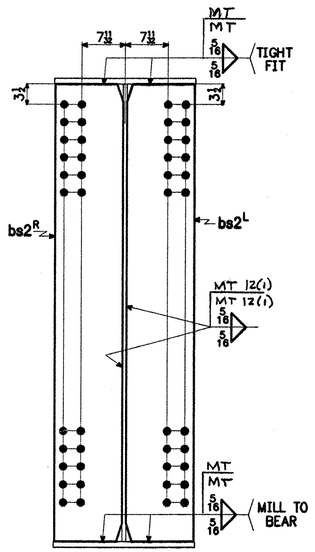



SECT. D

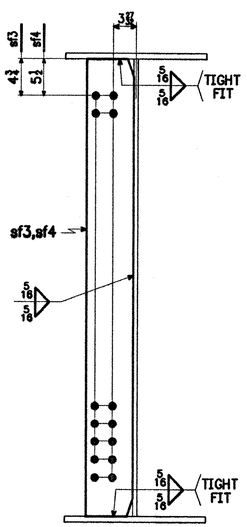
*PRIME COAT ONLY BOTT. OF BOTT. FLG. AND EDGES



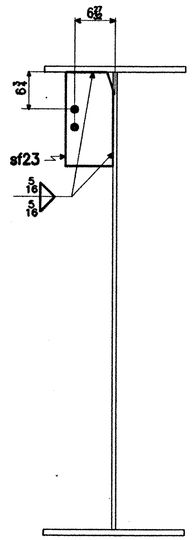

SECT. P



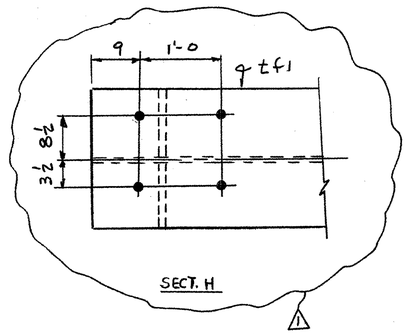

SECT. A




SECT. B




SECT. C




SECT. H

1

**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 WJS OK'D BY
DEC 27 2001
RESUBMIT BY
APPROVED AS NOTED 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 | NO. | MARK | SHAPE | LENGTH | | ITEM NO. | WT. | REMARKS |
|---|---|---|---|---|---|---|---|---|
| G3A | 1 | | GIRDER | | | | | |
| | 1 | tf1 | PL 1" x 24 | 55'-0 5/16 | 3 5-1 5/16 | 1/9 | 4494 | CVN |
| | 1 | tf2 | PL 1" x 24 | 77'-6 5/8 | 5-1 1/4 | 1/10 | 6333 | CVN |
| | 1 | bf1 | PL 1" x 24 | 54'-11 13/16 | 3 5-1 1/2 | 1/11 | 4490 | CVN |
| | 1 | bf2 | PL 1" x 24 | 77'-6 7/8 | 5-1 1/4 | 1/12 | 6332 | CVN |
| | 1 | wp1 | PL 1/2 x 78 | 53'-1 13/16 | 5-3 1/3 | 1/2 | | CVN |
| | 1 | wp2 | PL 1/2 x 78 | 79'-6 5/8 | 5-1 1/2 | 1/3 | 2485 | 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 1/2 | 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 1/2 | 3/8 | 218 | |
| | 2 | f1 | PL 5/8 x 24 | 3'-4 1/2 | 5-3 1/5 | 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 1/2 | 2/13 | 368 | |
| | 2 | ws1 | PL 5/8 x 72 1/2 | 1'-7 1/2 | 5-2 1/5 | 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

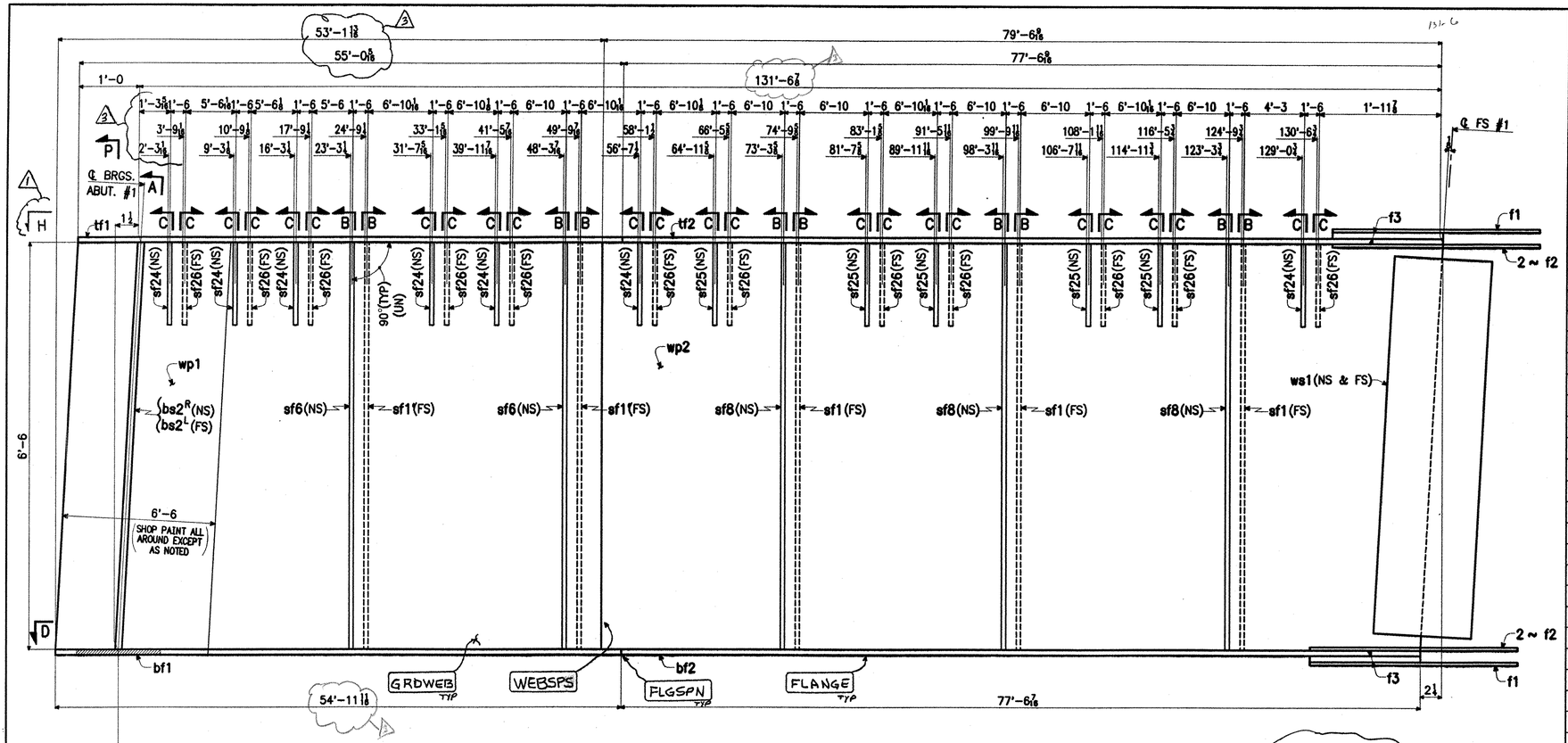
FOR APPROVAL

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

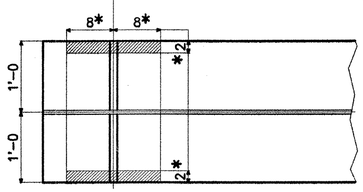
REVISED

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-13 | 3 |



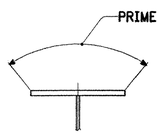

1 ~ GIRDER ~ G4A

GIRDER

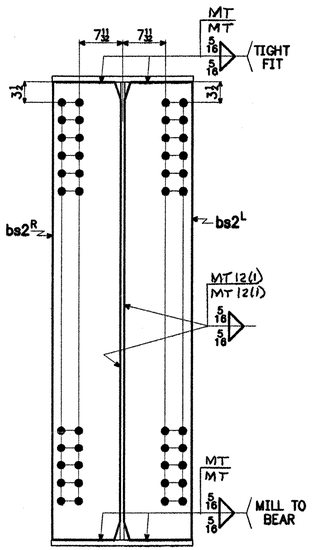



SECT. D

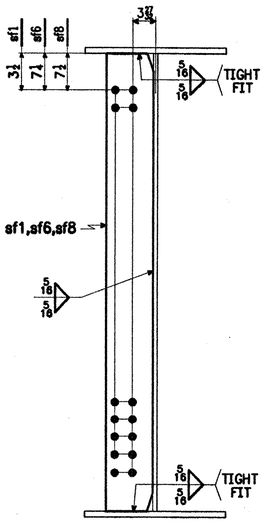
*PRIME COAT ONLY BOTT. OF BOTT. FLG. AND EDGES



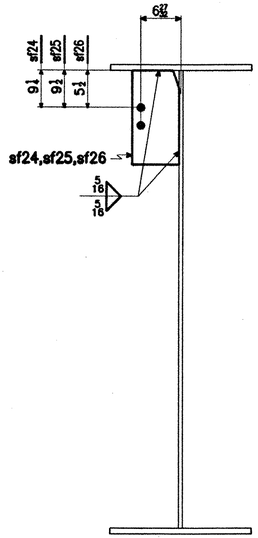

SECT. P



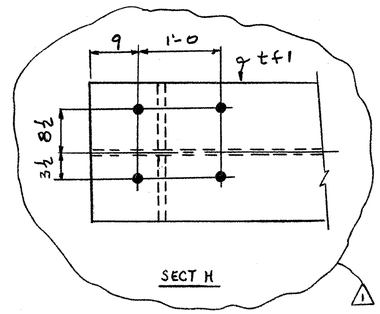

SECT. A




SECT. B




SECT. C




SECT H

**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 WJS OK'D BY
DEC 27 2001
RESUBMIT APPROVED
BY DPW DATE 12/9/02

3 FLG, WEB & EXTDM 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 |
|---|---|---|---|---|---|---|---|---|
| G4A | 1 | | GIRDER | | | | | |
| | 1 | tf1 | PL 1" x 24 | 55'-0 5/16 | 3 | 5-11/16 \ 9 | 4494 | CVN |
| | 1 | tf2 | PL 1" x 24 | 77'-6 5/16 | | 5-11/4 \ 10 | 6333 | CVN |
| | 1 | bf1 | PL 1" x 24 | 54'-11 13/16 | 3 | 5-11/5 \ 11 | 4490 | CVN |
| | 1 | bf2 | PL 1" x 24 | 77'-6 5/16 | | 5-11/4 \ 12 | 6332 | CVN |
| | 1 | wp1 | PL 1 13/16 x 78 | 53'-1 13/16 | | 5-2/3 \ 1 | | CVN |
| | 1 | wp2 | PL 1 13/16 x 78 | 79'-6 5/16 | | 5-3/2 \ 2 | 24185 | CVN |
| | 1 | bs2L | PL 1 1/2 x 11 1/2 | 6'-6 3/8 | | 5-1/11 \ 3 | 318 | M1E |
| | 1 | bs2R | PL 1 1/2 x 11 1/2 | 6'-6 3/8 | | ⊥ \ 3 | 318 | M1E |
| | 5 | sf1 | PL 1/2 x 8 | 6'-6 | | 5-3/2 \ 4 | 442 | |
| | 2 | sf6 | PL 1/2 x 8 | 6'-6 | | ⊥ \ 4 | 177 | |
| | 3 | sf8 | PL 1/2 x 8 | 6'-6 | | ⊥ \ 4 | 265 | |
| | 7 | sf24 | PL 1/2 x 8 | 1'-4 | | 5-3/4 \ 6 | 137 | |
| | 5 | sf25 | PL 1/2 x 8 | 1'-4 | | ⊥ \ 6 | 91 | |
| | 12 | sf26 | PL 1/2 x 8 | 1'-4 | | ⊥ \ 6 | 218 | |
| | 2 | f1 | PL 5/8 x 24 | 3'-4 1/2 | | 5-2/5 \ 10 | 345 | CVN |
| | 4 | f2 | PL 5/8 x 10 | 3'-4 1/2 | | ⊥ \ 11 | 287 | CVN |
| | 2 | f3 | PL 1 1/2 x 24 | 1'-9 5/8 | | 5-1/12 \ 13 | 368 | |
| | 2 | ws1 | PL 5/8 x 72 1/2 | 1'-7 1/2 | | 5-3/6 \ 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

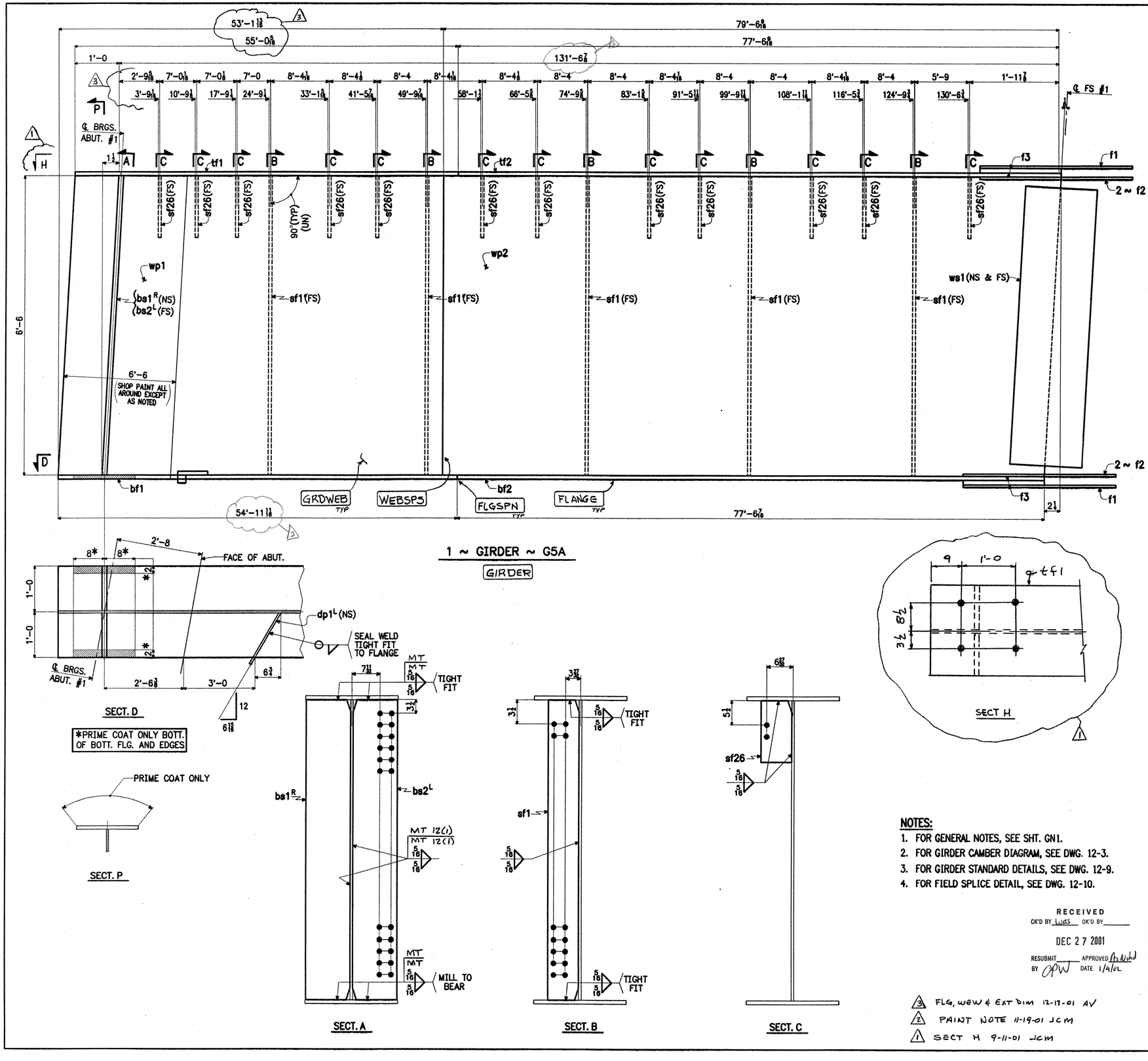
FOR APPROVAL

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

REVISED

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-14 | 3 |




## 1 ~ GIRDER ~ G5A

GIRDER



















**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 As Noted
BY CPW 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

## BILL OF MATERIAL

WORK ORDER NO. 15873 | DRAWING NO. 12-15 | REV. 3

| SHIP MARK | NO. | MARK | SHAPE | LENGTH | | ITEM NO. | WT. | REMARKS |
|---|---|---|---|---|---|---|---|---|
| G5A | 1 | | GIRDER | | | | | |
| | 1 | tf1 | PL 1" x 24 | 55'-0 5/16 | 3 | 5-5/16 1/9 | 4494 | CVN |
| | 1 | tf2 | PL 1" x 24 | 77'-6 5/8 | | 5-1/4 1/10 | 6333 | CVN |
| | 1 | bf1 | PL 1" x 24 | 54'-11 13/16 | 3 | 5-5/16 1/11 | 4490 | CVN |
| | 1 | bf2 | PL 1" x 24 | 77'-6 7/16 | | 5-1/4 1/12 | 6332 | CVN |
| | 1 | wp1 | PL 1 1/2 x 78 | 53'-1 13/16 | | 5-3/8 1/2 | X | CVN |
| | 1 | wp2 | PL 1 1/2 x 78 | 79'-6 5/8 | | 5-3/4 1/3 | 24185 | CVN |
| | 1 | bs1R | PL 1 1/4 x 11 1/2 | 6'-6 1/8 | | 5-11/11 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 | | 5-3/4 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 | | 5-3/16 3/10 | 3 | |
| | 2 | f1 | PL 5/8 x 24 | 3'-4 1/2 | | 5-5/16 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 | | 5-1/16 2/12 | 501 | CVN |
| | | | | | 3 | | 48634 | # |

| | |
|---|---|
| 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 ~ 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

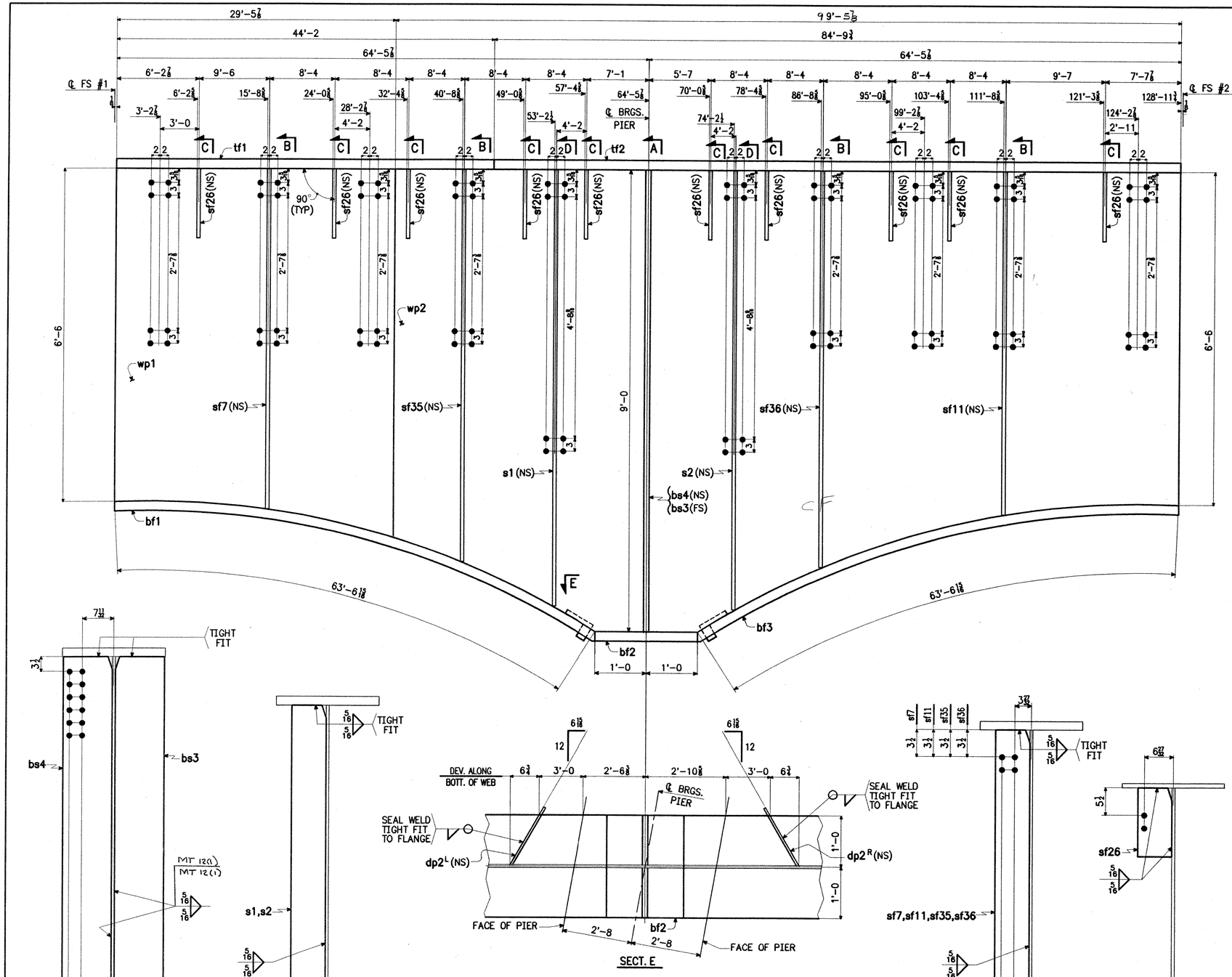
FOR APPROVAL

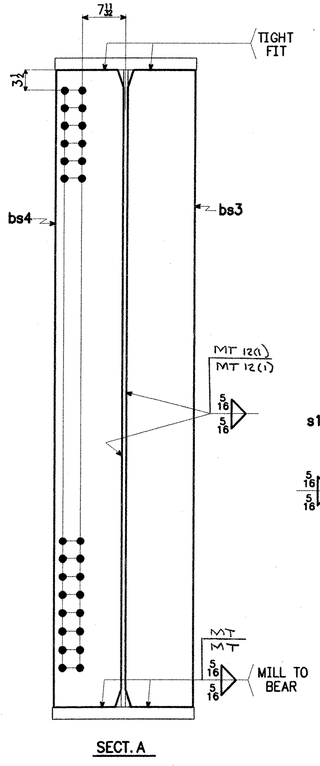
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

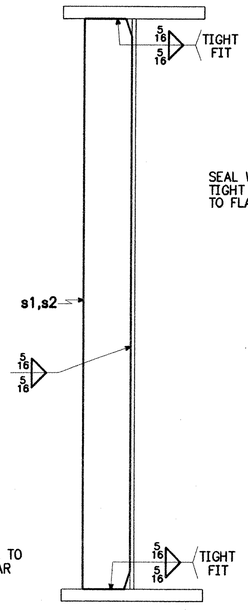
REVISED

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-15 | 3 |




SECT. A

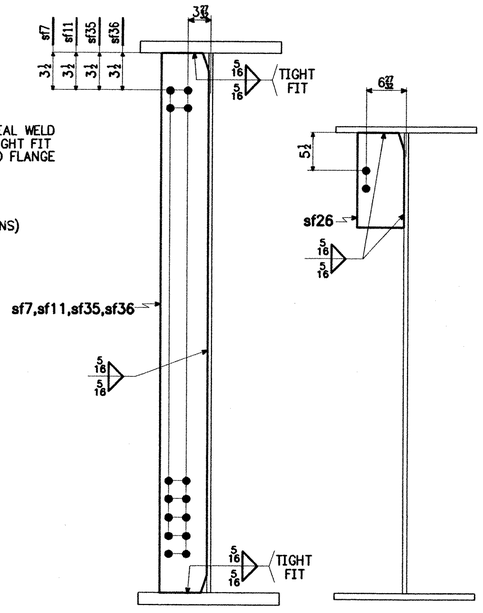



SECT. D




SECT. E

1 ~ GIRDER ~ G1B




SECT. B

SECT. C

| SHIP MARK | NO. | MARK | SHAPE | LENGTH | | ITEM NO. | WT. | REMARKS |
|---|---|---|---|---|---|---|---|---|
| G1B | 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 15/16 | 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 15/16 | 51/6 | 2 6 | 11682 | CVN |
| | 1 | wp1 | PL 1 1/16 x 82⅜ | 29'-5 7/8 | 8/6 | 1 4 | | CVN |
| | 1 | wp2 | PL 1 1/16 x 108 | 99'-5 7/8 | | 1 5 | 26140 | CVN |
| | 1 | bs3 | PL 1¼ x 11½ | 9'-0 | 51/11 | 3 2 | 440 | M1E |
| | 1 | bs4 | PL 1¼ x 11½ | 9'-0 | | 3 2 | 440 | M1E |
| | 1 | sf11 | PL ½ x 8 | 6'-6 11/16 | 53/12 | 3 3 | 89 | |
| | 1 | sf36 | PL ¾ x 8 | 7'-5½ | 5-3/14 | 3 16 | 152 | |
| | 1 | sf35 | PL ¾ x 8 | 7'-4½ | | 3 16 | 150 | |
| | 1 | sf7 | PL ½ x 8 | 6'-6 7/16 | 53/2 | 3 3 | 89 | |
| | 10 | sf26 | PL ½ x 8 | 1'-4 | | 3 8 | 181 | |
| | 1 | s1 | PL ¾ x 8 | 8'-1 7/8 | 53/14 | 3 17 | 167 | |
| | 1 | s2 | PL ¾ x 8 | 8'-3½ | | 3 17 | 169 | |
| | 1 | dp2R | PL ½ x 4½ | 1'-3⅝ | 53/10 | 3 11 | 5 | |
| | 1 | dp2L | PL ½ x 4½ | 1'-3⅝ | | 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 LWAS OK'D BY
AUG 2 7 2001
RESUBMIT APPROVED ✓
BY GPW 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 ~ G1B

FOR APPROVAL

APPROVED:

| PRINT DIST. | | |
|---|---|---|
| 5 | 4-7-01 | APPR. |
| ORIG. | | FAB. |
| 5 | 7-13-01 | APPR |
| 5 | 8-24-01 | APP |

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

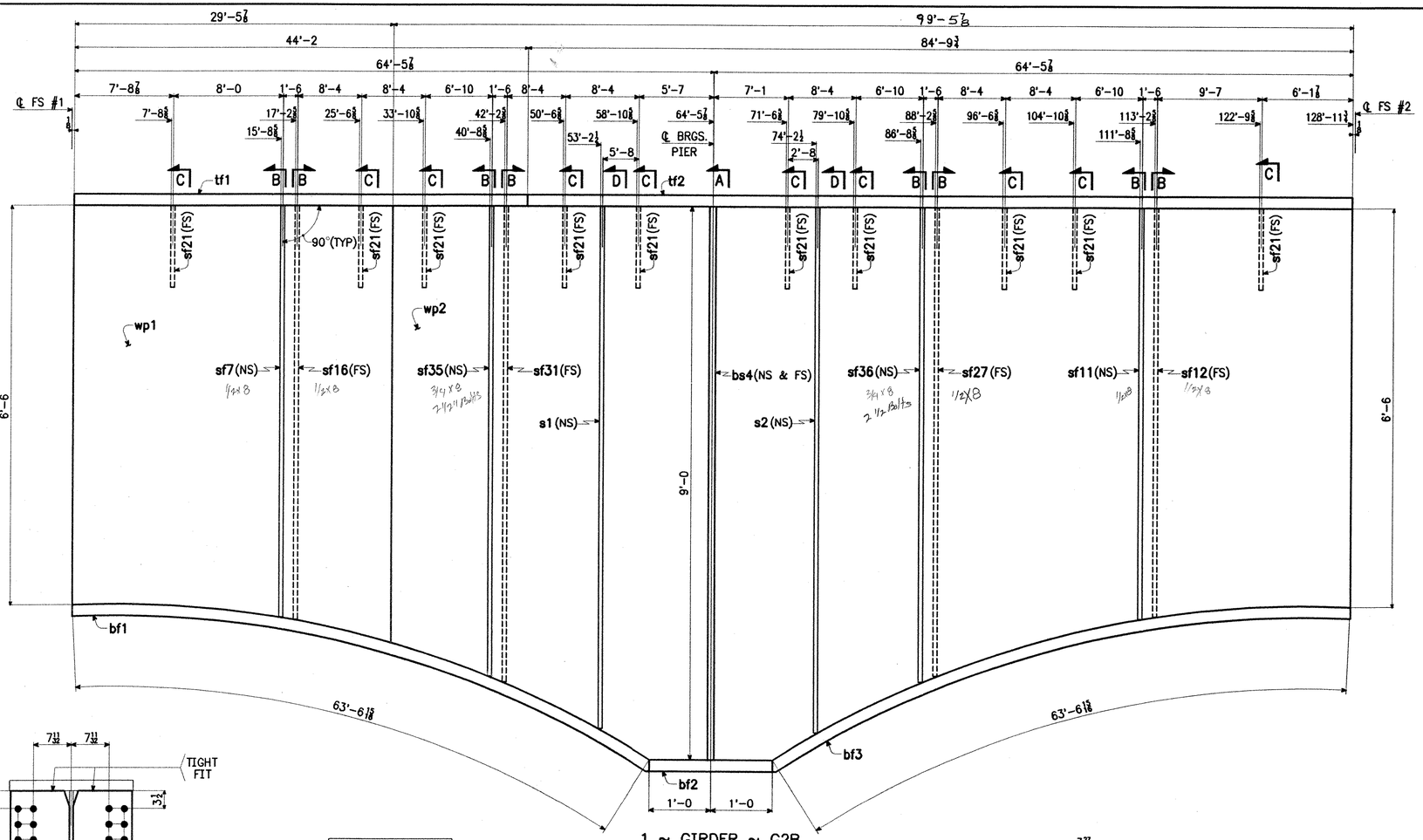
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

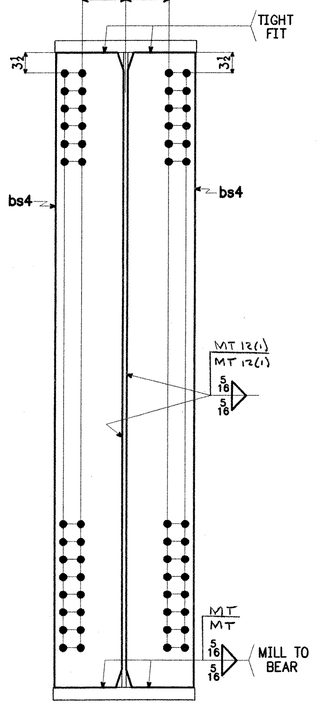
| CHECKED | TS | 3/01 |
|---|---|---|
| DRAWN | AV | 3/01 |

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-16 | B |

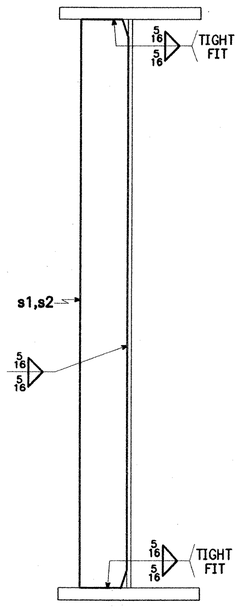
OK



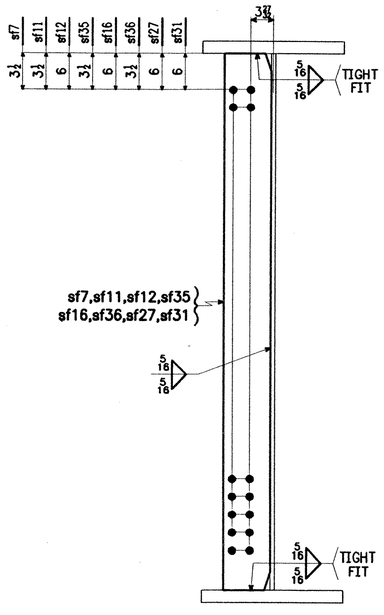

1 ~ GIRDER ~ G2B



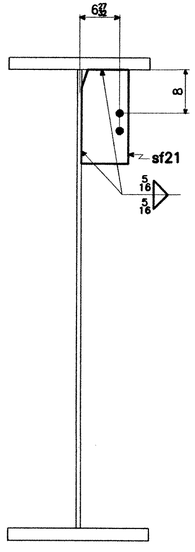

SECT. A




SECT. D




SECT. B




SECT. C

| SHIP MARK | NO. | MARK | SHAPE | LENGTH | | ITEM NO. | WT. | REMARKS |
|---|---|---|---|---|---|---|---|---|
| G2B | 1 | | GIRDER | | | | | |
| | 1 | tf1 | PL 2 1/2 x 24 | 44'-2 | S1/8 | 2 2 | 8116 | CVN |
| | 1 | tf2 | PL 2 1/2 x 24 | 84'-9 3/4 | S1/2 | 2 3 | 15584 | CVN |
| | 1 | bf1 | PL 2 1/2 x 24 | 63'-6 1/8 | S1/4 | 2 4 | 11682 | CVN |
| | 1 | bf2 | PL 2 1/2 x 24 | 2'-0 | S1/4 | 2 5 | 368 | CVN |
| | 1 | bf3 | PL 2 1/2 x 24 | 63'-6 1/8 | S1/8 | 2 6 | 11682 | CVN |
| | 1 | wp1 | PL 1 1/8 x 82 3/8 | 29'-5 7/8 | B/8 | 1 4 | X | CVN |
| | 1 | wp2 | PL 1 1/8 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 | sf7 | PL 1/2 x 8 | 6'-6 7/16 | S3/2 | 3 3 | 89 | |
| | 1 | sf11 | PL 1/2 x 8 | 6'-6 1/16 | | 3 4 | 89 | |
| | 1 | sf12 | PL 1/2 x 8 | 6'-6 7/16 | | 3 5 | 89 | |
| | 1 | sf35 | PL 3/8 x 8 | 7'-4 1/2 | S3/4 | 3 10 | 150 | |
| | 1 | sf16 | PL 1/2 x 8 | 6'-6 1/16 | S3/2 | 3 3 | 89 | |
| | 1 | sf36 | PL 3/8 x 8 | 7'-5 1/2 | S3/4 | 3 6 | 152 | |
| | 1 | sf27 | PL 1/2 x 8 | 7'-4 1/2 | S3/2 | 3 6 | 100 | |
| | 1 | sf31 | PL 1/2 x 8 | 7'-5 1/2 | | 3 6 | 101 | |
| | 10 | sf21 | PL 1/2 x 8 | 1'-4 | | 3 8 | 181 | |
| | 1 | s1 | PL 3/8 x 8 | 8'-1 7/8 | S3/4 | 3 17 | 167 | |
| | 1 | s2 | PL 3/8 x 8 | 8'-3 1/2 | S3/4 | 3 11 | 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 WJS 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 |

National Eastern Corporation
Plainville, Connecticut

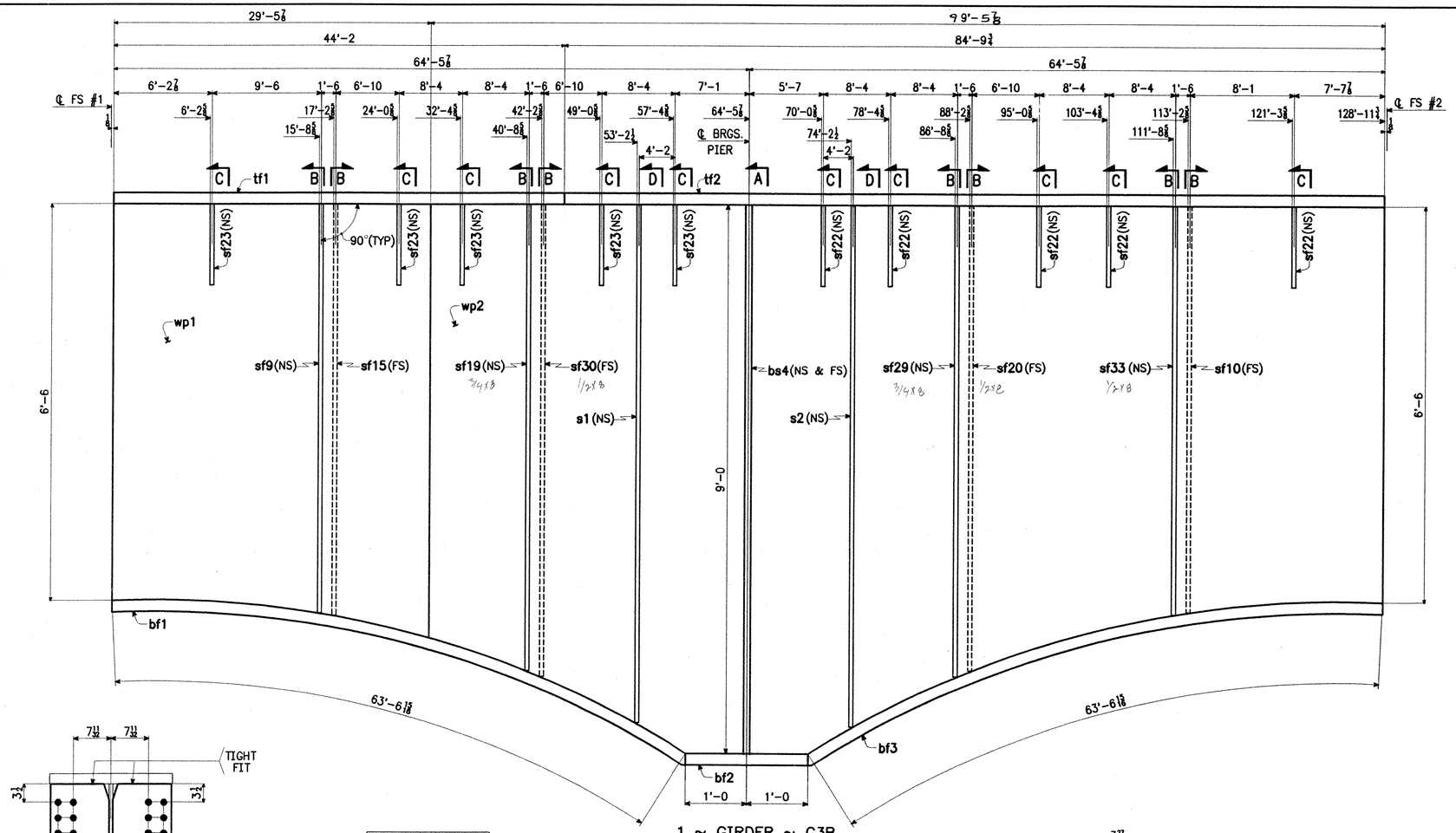
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

CUSTOMER: BECK & BELLUCCI, INC.

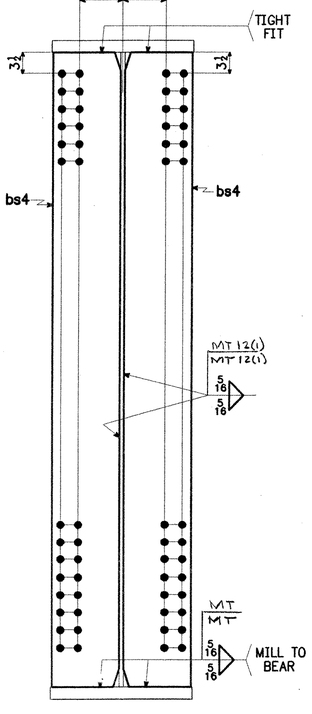
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| | | | WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|---|---|---|
| CHECKED | TS | 3/01 | 15873 | 12-17 | B |
| DRAWN | AV | 3/01 | | | |

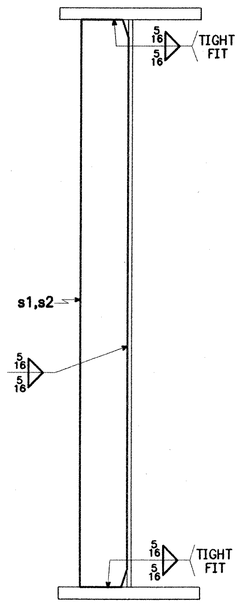
OK



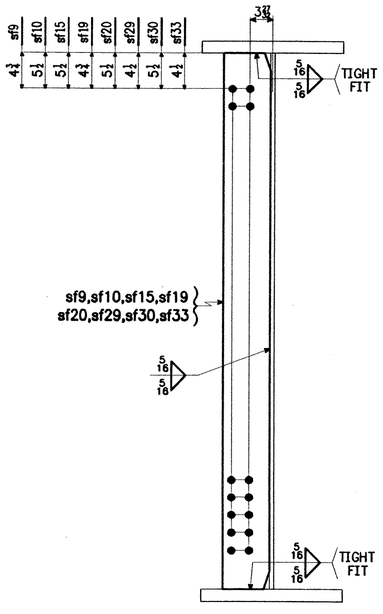

1 ~ GIRDER ~ G3B



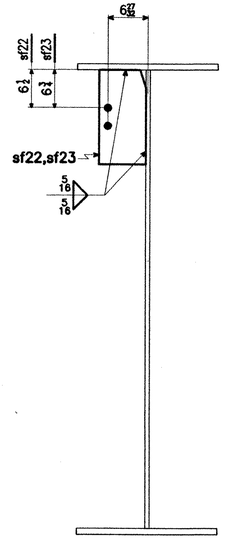

SECT. A




SECT. D




SECT. B




SECT. C

| SHIP MARK | NO. | MARK | SHAPE | LENGTH | | ITEM NO. | WT. | REMARKS |
|---|---|---|---|---|---|---|---|---|
| G3B | 1 | | GIRDER | | | | | |
| | 1 | tf1 | PL 2½ x 24 | 44'-2 | 5½8 | 3/2 | 8116 | CVN |
| | 1 | tf2 | PL 2½ x 24 | 84'-9¾ | 5½2 | 3/3 | 15584 | CVN |
| | 1 | bf1 | PL 2½ x 24 | 63'-6⅛ | 5¼4 | 3/4 | 11682 | CVN |
| | 1 | bf2 | PL 2½ x 24 | 2'-0 | ↓ | 3/5 | 368 | CVN |
| | 1 | bf3 | PL 2½ x 24 | 63'-6⅛ | 5½6 | 3/6 | 11682 | CVN |
| | 1 | wp1 | PL 11⅛ x 82⅜ | 29'-5⅞ | 8/0 | 1/4 | | CVN |
| | 1 | wp2 | PL 11⅛ x 108 | 99'-5⅞ | ↓ | 1/5 | 26140 | CVN |
| | 2 | bs4 | PL 1½ x 11½ | 9'-0 | 5½4 | 3/2 | 880 | M1E |
| | 1 | sf9 | PL ½ x 8 | 6'-6⅞ | 53/2 | 3/5 | 89 | |
| | 1 | sf10 | PL ½ x 8 | 6'-6⅞ | ↓ | 3/6 | 89 | |
| | 1 | sf15 | PL ½ x 8 | 6'-6⅛ | ↓ | 3/5 | 89 | |
| | 1 | sf19 | PL ½ x 8 | 7'-4½ | 53/4 | 3/6 | 150 | |
| | 1 | sf20 | PL ½ x 8 | 7'-4½ | 53/2 | 3/6 | 100 | |
| | 1 | sf29 | PL ½ x 8 | 7'-5½ | 53/4 | 3/6 | 152 | |
| | 1 | sf30 | PL ½ x 8 | 7'-5½ | 53/2 | 3/6 | 101 | |
| | 1 | sf33 | PL ½ x 8 | 6'-6⅛ | ↓ | 3/5 | 89 | |
| | 5 | sf22 | PL ½ x 8 | 1'-4 | 53/2 | 3/8 | 91 | |
| | 5 | sf23 | PL ½ x 8 | 1'-4 | ↓ | 3/8 | 91 | |
| | 1 | s1 | PL ½ x 8 | 8'-1⅞ | 53/4 | 3/11 | 167 | |
| | 1 | s2 | PL ½ x 8 | 8'-3½ | ↓ | 3/11 | 169 | |
| | | | | | | | 75829 | ✱ |

BILL OF MATERIAL — 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 LWBS OK'D BY
AUG 27 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 ~ G3B

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

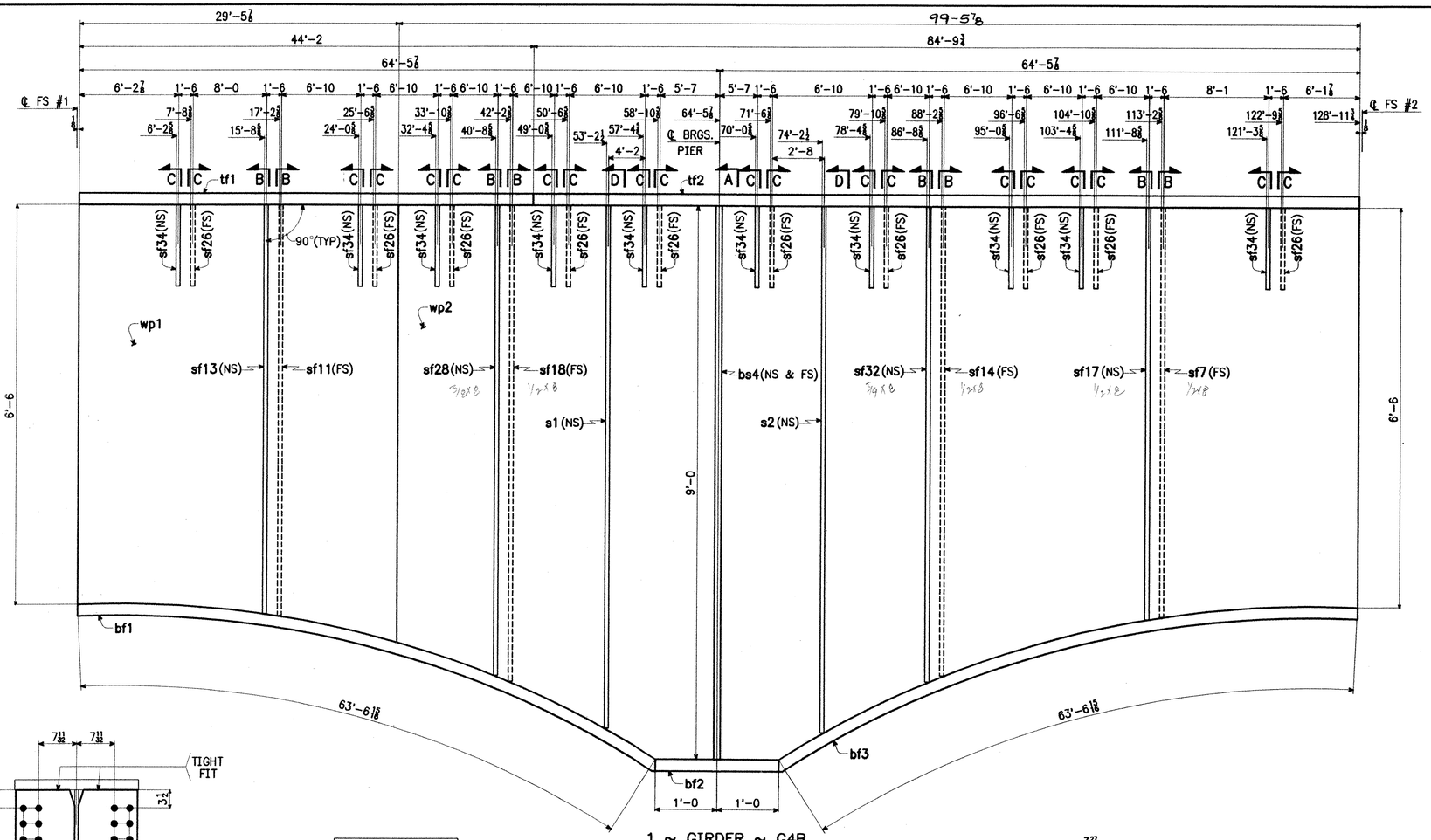
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

CUSTOMER: BECK & BELLUCCI, INC.

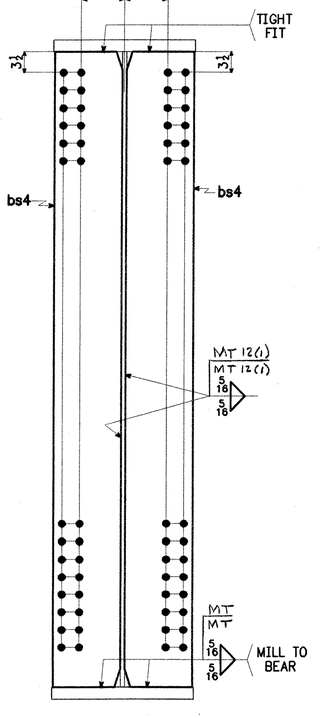
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-18 | B |

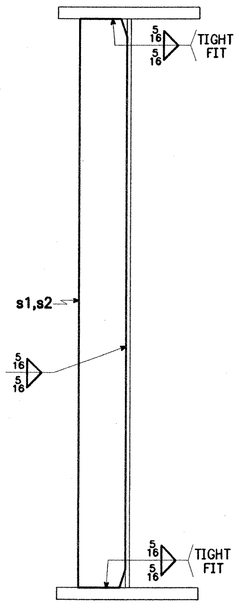
OK



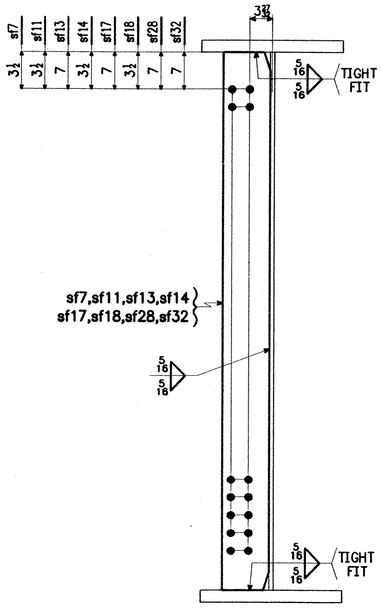

1 ~ GIRDER ~ G4B



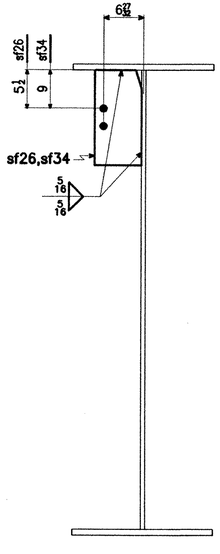

SECT. A




SECT. D




SECT. B




SECT. C

| SHIP MARK | NO. | MARK | SHAPE | LENGTH | | ITEM NO. | WT. | REMARKS |
|---|---|---|---|---|---|---|---|---|
| G4B | 1 | | GIRDER | | | | | |
| | 1 | tf1 | PL 2 1/4 x 24 | 44'-2 | S1/8 | 2 7 | 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 1 1/8 x 82 3/8 | 29'-5 7/8 | B/0 | 1 4 | X | CVN |
| | 1 | wp2 | PL 1 1/8 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 | sf7 | PL 1/2 x 8 | 6'-6 7/16 | S3/4 | 3 3 | 89 | |
| | 1 | sf11 | PL 1/2 x 8 | 6'-6 11/16 | | 3 5 | 89 | |
| | 1 | sf13 | PL 1/2 x 8 | 6'-6 7/16 | | 3 5 | 89 | |
| | 1 | sf14 | PL 1/2 x 8 | 7'-4 1/2 | | 3 6 | 100 | |
| | 1 | sf17 | PL 1/2 x 8 | 6'-6 11/16 | | 3 5 | 89 | |
| | 1 | sf18 | PL 1/2 x 8 | 7'-5 1/2 | ↓ | 3 6 | 101 | |
| | 1 | sf28 | PL 1/2 x 8 | 7'-4 1/2 | S3/14 | 3 6 | 150 | |
| | 1 | sf32 | PL 1/2 x 8 | 7'-5 1/2 | S3/14 | 3 10 | 152 | |
| | 10 | sf26 | PL 1/2 x 8 | 1'-4 | S3/2 | 3 8 | 181 | |
| | 10 | sf34 | PL 1/2 x 8 | 1'-4 | ↓ | 3 8 | 181 | |
| | 1 | s1 | PL 1/2 x 8 | 8'-1 7/8 | S3/14 | 3 17 | 167 | |
| | 1 | s2 | PL 1/2 x 8 | 8'-3 1/2 | S3/14 | 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 WBS 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 ~ G4B

FOR APPROVAL

| APPROVED: | | |
|---|---|---|
| PRINT DIST. | | |
| 5 | 4-7-01 | APPR. |
| ORIG. | | FAB. |
| 5 | 7-13-01 | APP'D |
| 5 | 8-24-01 | APP |
| CHECKED | TS | 3/01 |
| DRAWN | AV | 3/01 |

National Eastern Corporation
Plainville, Connecticut

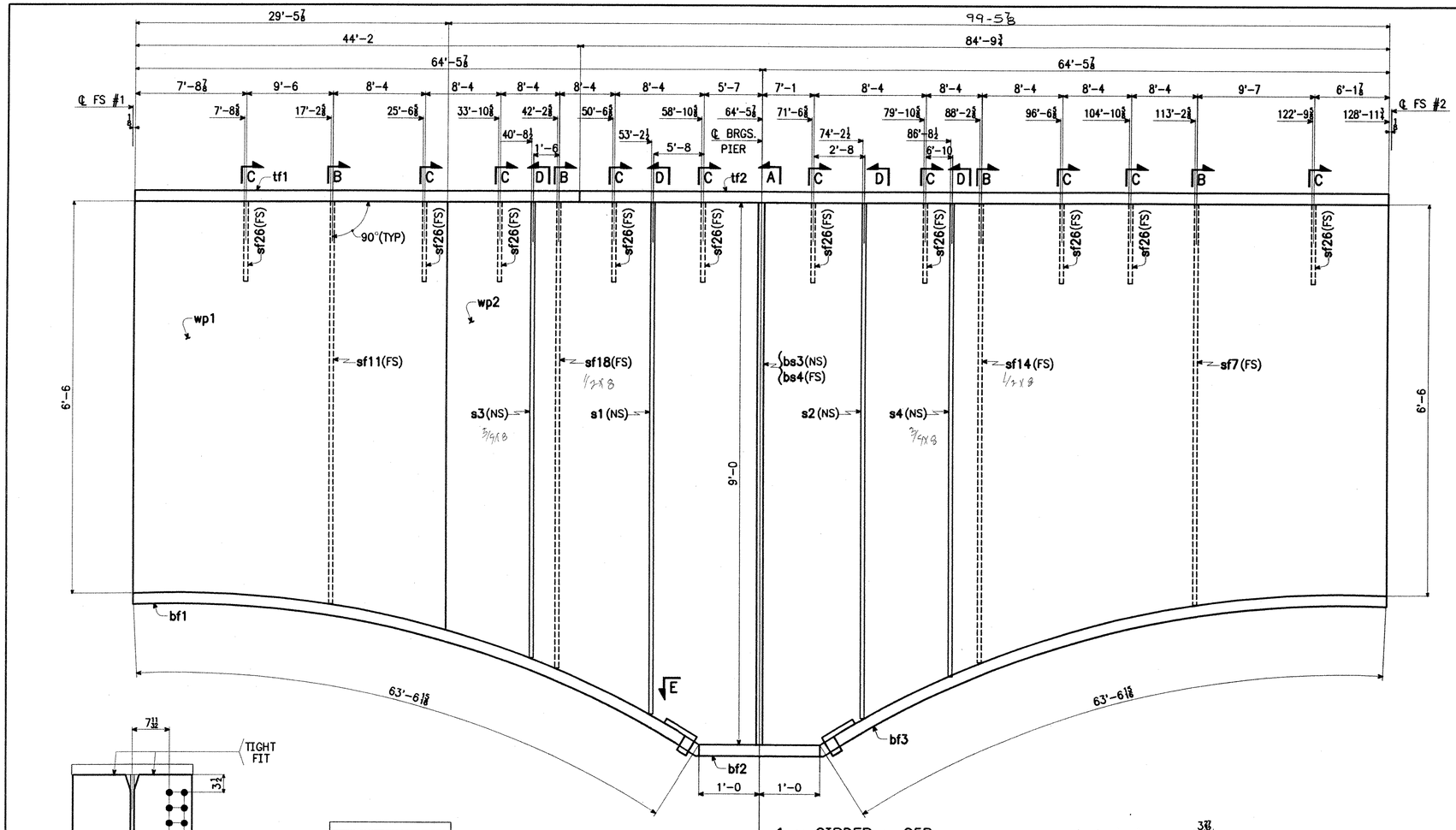
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

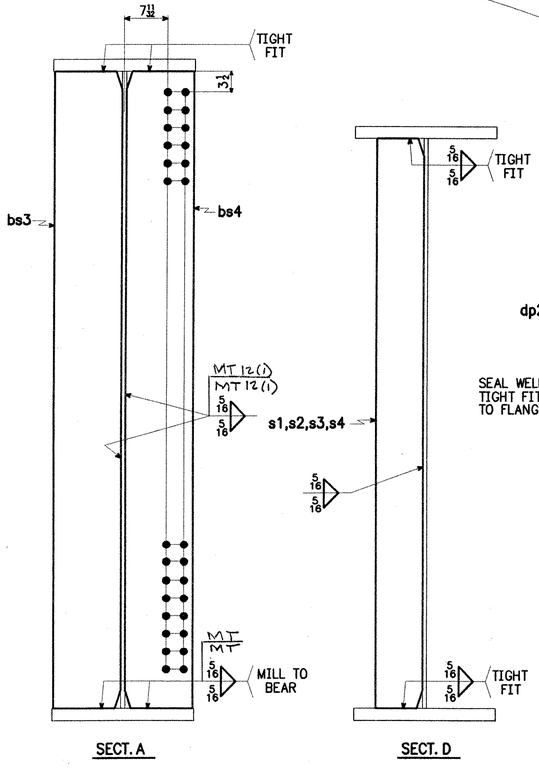
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-19 | B |

OK



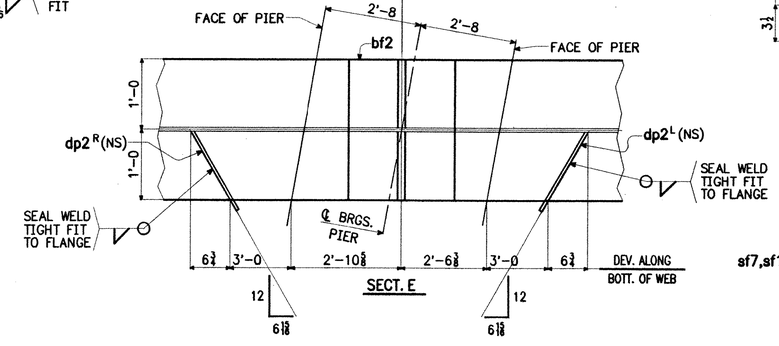




SECT. A

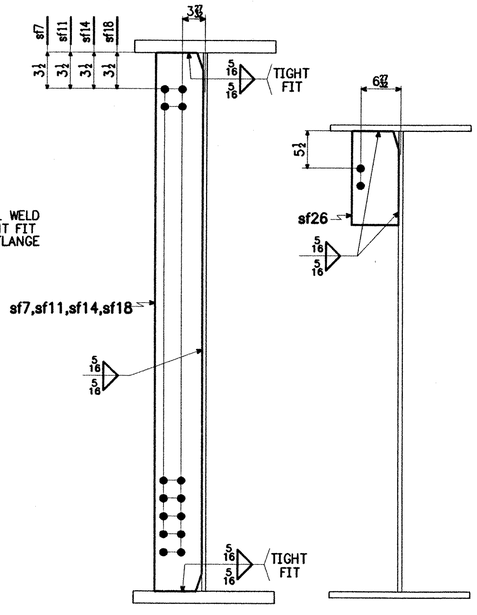



SECT. D

## 1 ~ GIRDER ~ G5B




SECT. E




SECT. B




SECT. C

| SHIP MARK | NO. | MARK | SHAPE | LENGTH | ITEM NO. | WT. | REMARKS |
|---|---|---|---|---|---|---|---|
| G5B | 1 | | GIRDER | | | | |
| | 1 | tf1 | PL 2 1/2 x 24 | 44'-2 | 1/16 2 2 | 8116 | CVN |
| | 1 | tf2 | PL 2 1/2 x 24 | 84'-9 3/4 | 1/2 2 3 | 15584 | CVN |
| | 1 | bf1 | PL 2 1/2 x 24 | 63'-6 15/16 | 1/4 2 4 | 11682 | CVN |
| | 1 | bf2 | PL 2 1/2 x 24 | 2'-0 | 2 5 | 368 | CVN |
| | 1 | bf3 | PL 2 1/2 x 24 | 63'-6 15/16 | 1/6 2 6 | 11682 | CVN |
| | 1 | wp1 | PL 1 1/16 x 82 3/8 | 29'-5 7/8 | B/O 1 4 | X | CVN |
| | 1 | wp2 | PL 1 1/16 x 108 | 99'-5 7/8 | 1 5 | 26140 | CVN |
| | 1 | bs3 | PL 1 1/2 x 11 1/2 | 9'-0 | 1/11 3 2 | 440 | M1E |
| | 1 | bs4 | PL 1 1/2 x 11 1/2 | 9'-0 | 3 2 | 440 | M1E |
| | 1 | sf11 | PL 1/2 x 8 | 6'-6 11/16 | 3 5 | 89 | |
| | 1 | sf18 | PL 1/2 x 8 | 7'-5 1/2 | 1/2 3 6 | 101 | |
| | 1 | sf14 | PL 1/2 x 8 | 7'-4 1/2 | 3 6 | 100 | |
| | 1 | sf7 | PL 1/2 x 8 | 6'-6 7/16 | 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 | 3/14 3 17 | 167 | |
| | 1 | s2 | PL 3/4 x 8 | 8'-3 1/2 | 3 17 | 169 | |
| | 1 | s3 | PL 3/4 x 8 | 7'-4 1/2 | 3 16 | 150 | |
| | 1 | s4 | PL 3/4 x 8 | 7'-5 1/2 | 3 16 | 152 | |
| | 1 | dp2R | PL 1/4 x 4 1/4 | 1'-3 5/8 | 3/10 3 11 | 5 | |
| | 1 | dp2L | PL 1/4 x 4 1/4 | 1'-3 5/8 | 3 11 | 5 | |
| | | | | | | 75660 | # |

BILL OF MATERIAL

WORK ORDER NO. 15873 | DRAWING NO. 12-20 | REV. B

**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 WJB3 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 |

National Eastern Corporation
Plainville, Connecticut

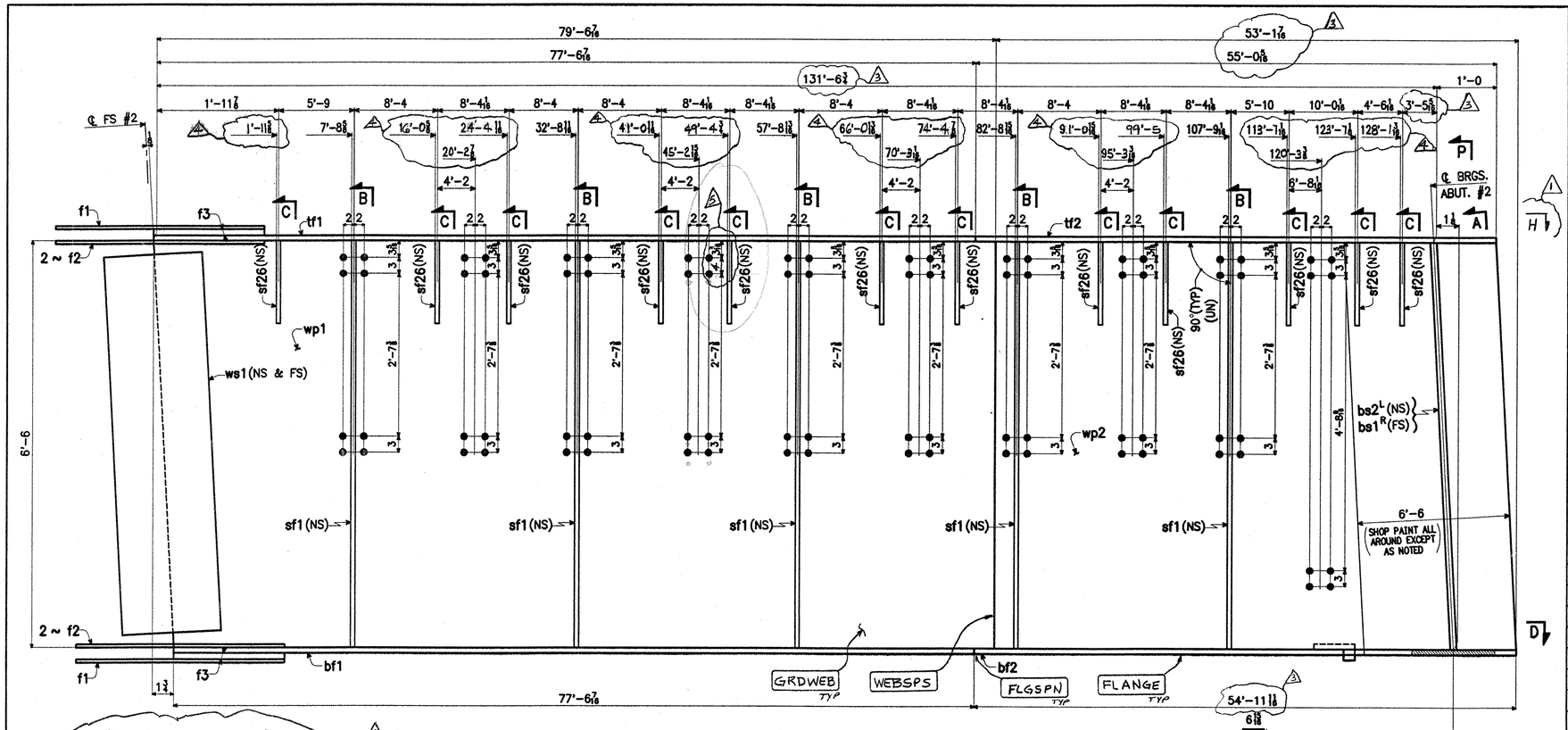
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

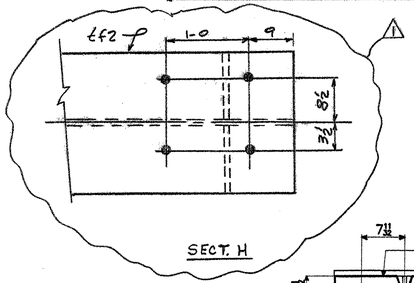
CUSTOMER: BECK & BELLUCCI, INC.

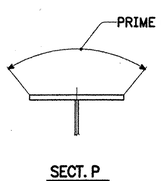
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

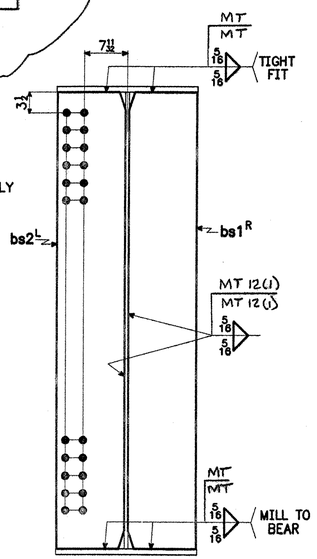
| | | | WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|---|---|---|
| CHECKED | TS | 3/01 | 15873 | 12-20 | B |
| DRAWN | AV | 3/01 | | | |

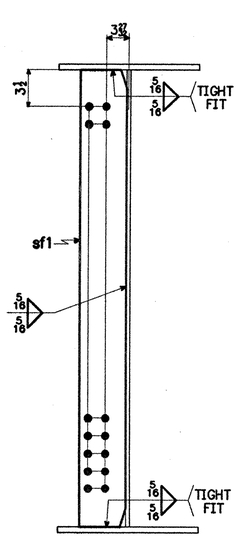
OK

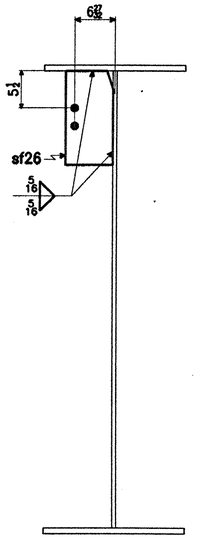


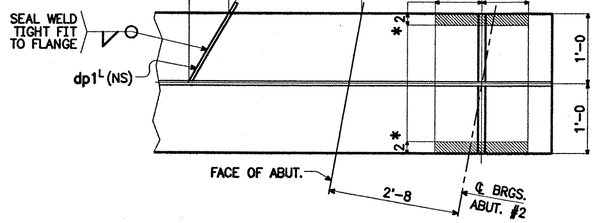




SECT. D

*PRIME COAT ONLY BOTT. OF BOTT. FLG. AND EDGES

**NOTES:**

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-3.
3. FOR GIRDER STANDARD DETAILS, SEE DWG. 12-9.
4. FOR FIELD SPLICE DETAIL, SEE DWG. 12-10.

RECEIVED
CK'D BY CPW OK'D BY
JAN 30 2002
RESUBMIT APPROVED X
BY CPW DATE 2/11/02

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

FAB 11 1-28-02
APP 5 1-28-02
FAB 5 1-15-02
11

## 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'-6⅞ | 5-1/4 | 1/14 | 6332 | CVN |
| | 1 | tf2 | PL 1" x 24 | 55'-0⅝ | 3 5-1/5 | 1/15 | 4494 | CVN |
| | 1 | bf1 | PL 1" x 24 | 77'-6⅞ | 5-1/4 | 1/16 | 6332 | CVN |
| | 1 | bf2 | PL 1" x 24 | 54'-11⅛ | 2 5-1/5 | 1/17 | 4490 | CVN |
| | 1 | wp1 | PL ⅜ x 78 | 79'-6⅞ | 5-3/2 | 1/6 | X | CVN |
| | 1 | wp2 | PL ⅜ x 78 | 53'-1⅞ | 5-1/3 | 1/7 | 24184 | CVN |
| | 1 | bs2L | PL 1¼ x 11½ | 6'-6⅛ | 5-1/11 | 3/2 | 318 | M1E |
| | 1 | bs1R | PL 1¼ x 11½ | 6'-6⅛ | ⌒ | 3/1 | 318 | M1E |
| | 5 | sf1 | PL ½ x 8 | 6'-6 | 5-3/16 | 3/4 | 442 | |
| | 12 | sf26 | PL ½ x 8 | 1'-4 | ⌒ | 3/8 | 218 | |
| | 1 | dp1L | PL ½ x 3 | 1'-3⅝ | 5-3/12 | 3/10 | 3 | |
| | 2 | f1 | PL ⅝ x 24 | 3'-4½ | 5-2/5 | 2/10 | 345 | CVN |
| | 4 | f2 | PL ⅝ x 10 | 3'-4½ | ⌒ | 2/11 | 287 | CVN |
| | 2 | f3 | PL 1½ x 24 | 1'-9⅝ | 5-1/2 | 2/13 | 368 | |
| | 2 | ws1 | PL ⅝ x 72½ | 1'-7½ | 5-3/5 | 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

| 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 |

REVISED

National Eastern Corporation
Plainville, Connecticut

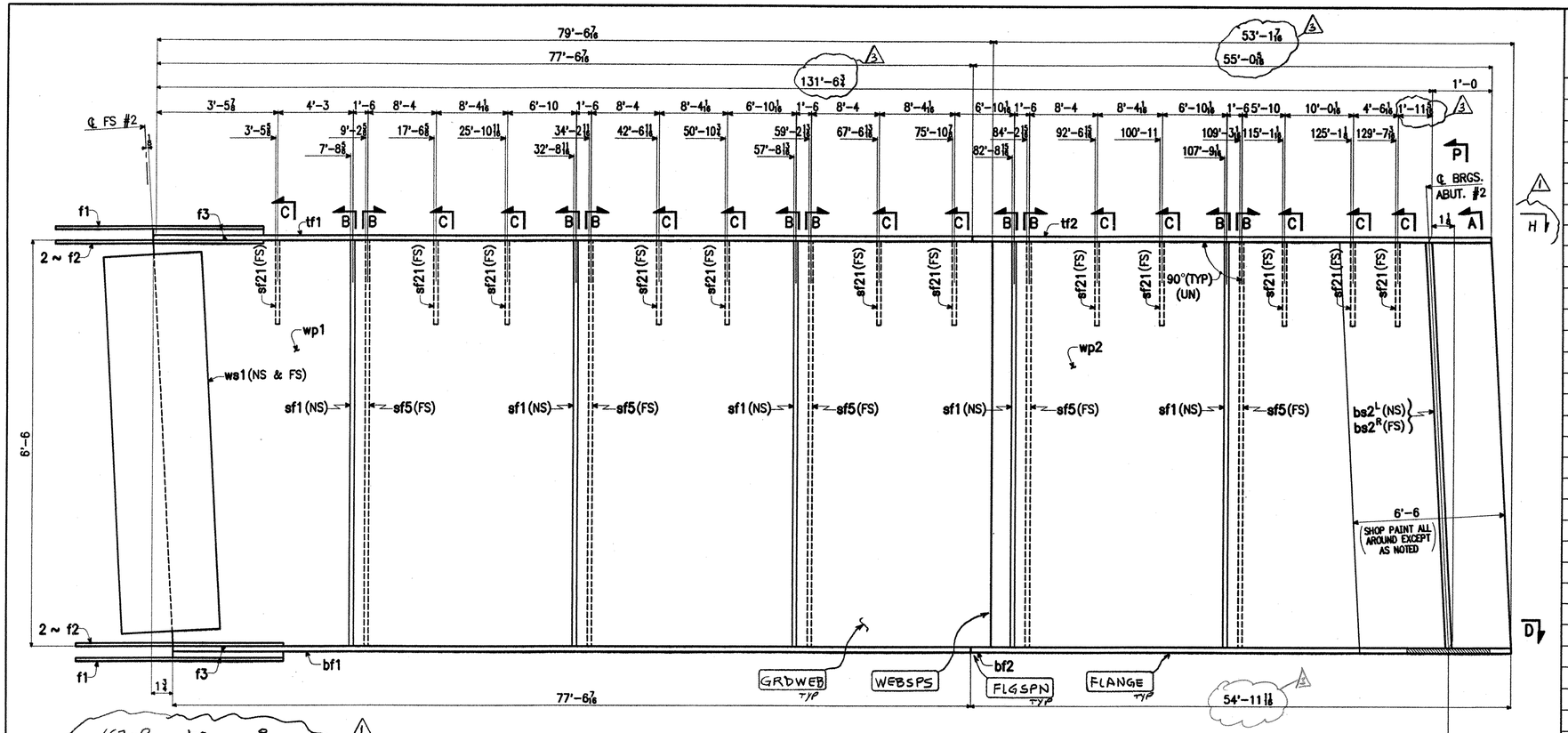
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

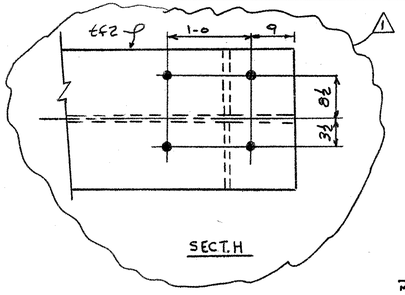
FOR APPROVAL

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

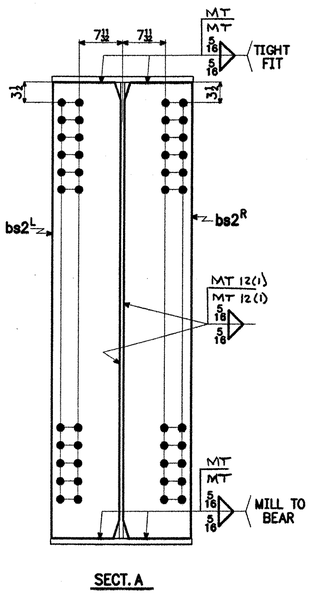
| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-21 | 5 |

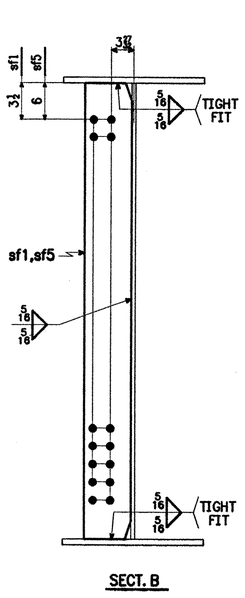


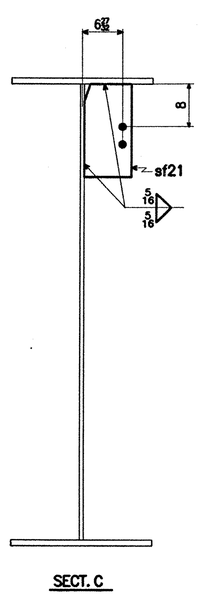




## 1 ~ GIRDER ~ G2C

GIRDER

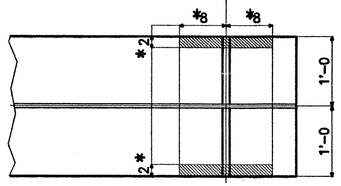









*PRIME COAT ONLY BOTT. OF BOTT. FLG. AND EDGES

**NOTES:**

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-4.
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
DEC 27 2001
RESUBMIT APPROVED As Noted
BY GPW 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 |
|---|---|---|---|---|---|---|---|---|
| G2C | 1 | | GIRDER | | | | | |
| | 1 | tf1 | PL 1" x 24 | 77'-6 7/8 | 5-1/4 | 1/14 | 6332 | CVN |
| | 1 | tf2 | PL 1" x 24 | 55'-0 5/8 | 2 5-1/5 | 1/15 | 4494 | CVN |
| | 1 | bf1 | PL 1" x 24 | 77'-6 7/8 | 5-1/4 | 1/16 | 6332 | CVN |
| | 1 | bf2 | PL 1" x 24 | 54'-11 7/8 | 3 5-1/5 | 1/17 | 4490 | CVN |
| | 1 | wp1 | PL 3/8 x 78 | 79'-6 7/8 | 5-3/2 | 1/6 | X | CVN |
| | 1 | wp2 | PL 1/8 x 78 | 53'-1 7/8 | 5-1/3 | 1/1 | 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 | |
| | 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 | # |

| | | |
|---|---|---|
| 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 | |
| SPECIAL PAINT: | | |
| SPECIAL CLEANING: | X 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 | 8-29-01 | 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

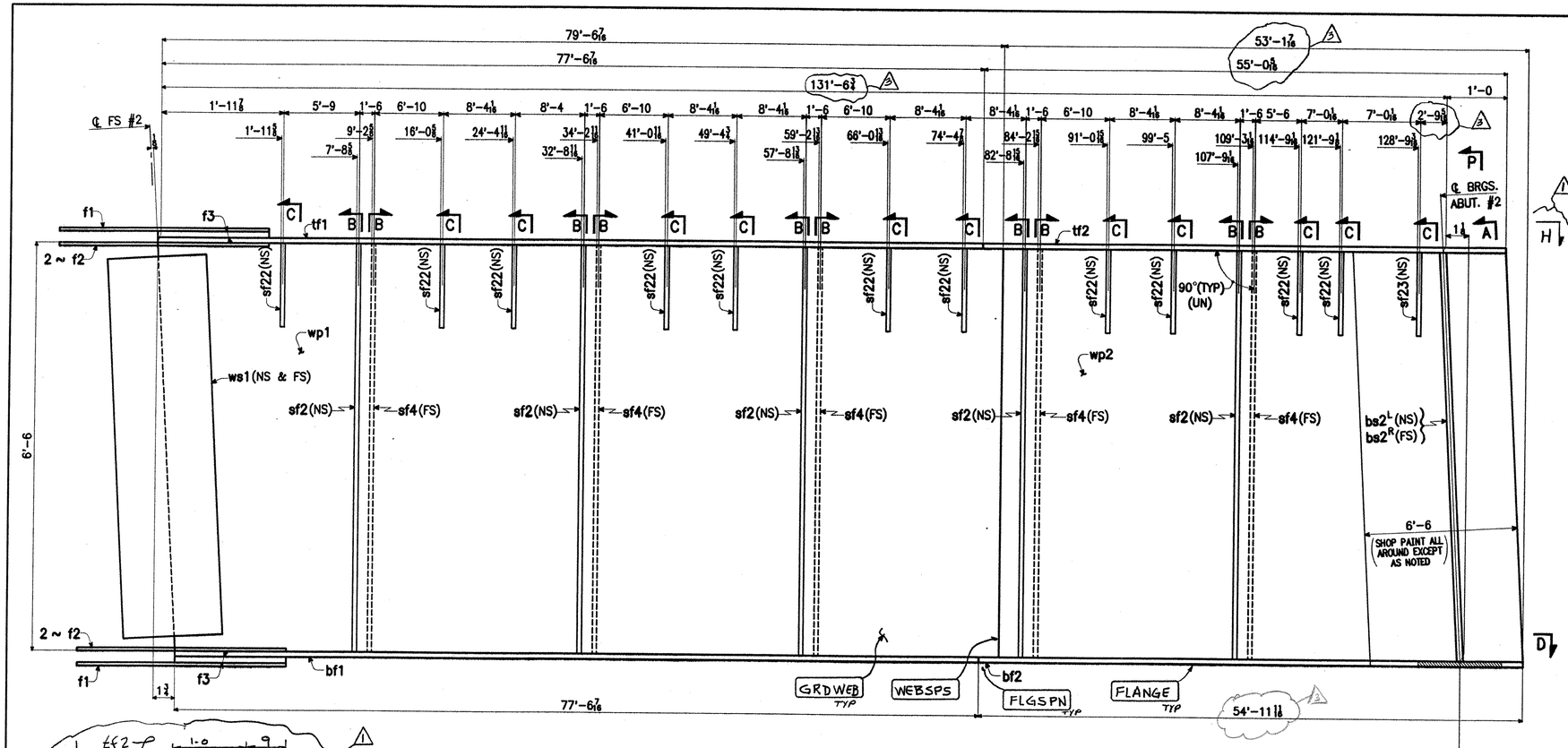
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

FOR APPROVAL
REVISED

CUSTOMER: BECK & BELLUCCI, INC.

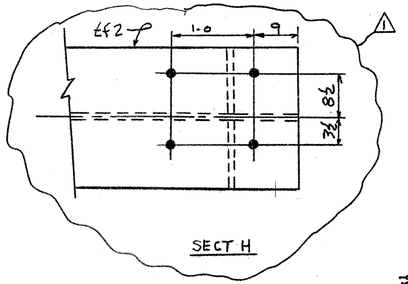
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

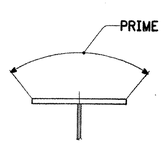
| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-22 | 3 |

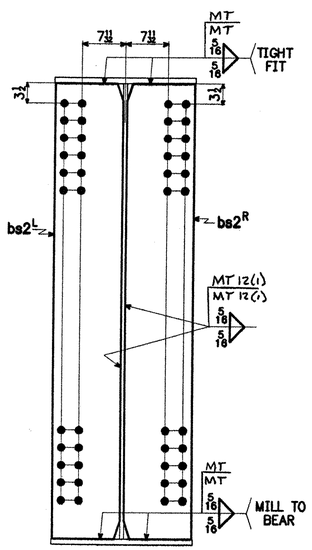


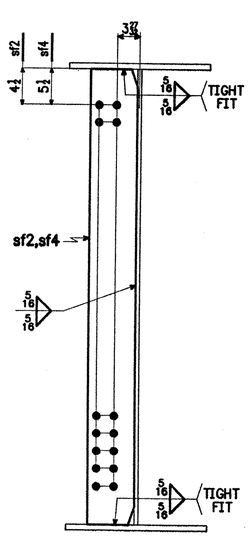

1 ~ GIRDER ~ G3C

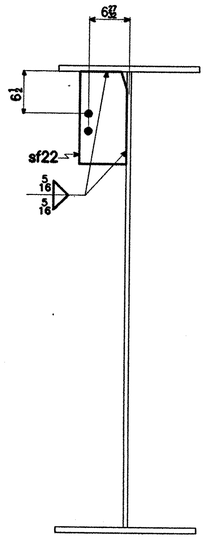
GIRDER

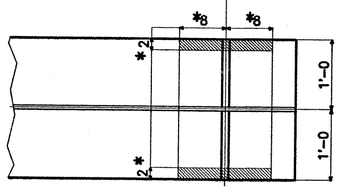



*PRIME COAT ONLY BOTT. OF BOTT. FLG. AND EDGES

**NOTES:**

1. FOR GENERAL NOTES, SEE SHT. GN1.
2. FOR GIRDER CAMBER DIAGRAM, SEE DWG. 12-4.
3. FOR GIRDER STANDARD DETAILS, SEE DWG. 12-9.
4. FOR FIELD SPLICE DETAIL, SEE DWG. 12-10.

RECEIVED
CK'D BY WJS 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

## BILL OF MATERIAL

WORK ORDER NO. 15873 | DRAWING NO. 12-23 | REV. 3

| SHIP MARK | NO. | MARK | SHAPE | LENGTH | | ITEM NO. | WT. | REMARKS |
|---|---|---|---|---|---|---|---|---|
| G3C | 1 | | GIRDER | | | | | |
| | 1 | tf1 | PL 1" x 24 | 77'-6 7/8 | | 5-1/14 | 6332 | CVN |
| | 1 | tf2 | PL 1" x 24 | 55'-0 5/8 | 3 | 5-1/15 | 4494 | CVN |
| | 1 | bf1 | PL 1" x 24 | 77'-6 7/8 | | 5-1/14 | 6332 | CVN |
| | 1 | bf2 | PL 1" x 24 | 54'-11 1/8 | 3 | 5-1/15 | 4490 | CVN |
| | 1 | wp1 | PL 11/16 x 78 | 79'-6 7/8 | | 5-1/2 | | CVN |
| | 1 | wp2 | PL 11/16 x 78 | 53'-1 7/8 | | 5-3/8 | 2418 4 | CVN |
| | 1 | bs2L | PL 1 1/4 x 11 1/2 | 6'-6 3/8 | | 5-11/11 | 318 | M1E |
| | 1 | bs2R | PL 1 1/4 x 11 1/2 | 6'-6 3/8 | | 〃 | 318 | M1E |
| | 5 | sf2 | PL 1/2 x 8 | 6'-6 | | 5-3/4 | 442 | |
| | 5 | sf4 | PL 1/2 x 8 | 6'-6 | | 〃 | 442 | |
| | 12 | sf22 | PL 1/2 x 8 | 1'-4 | | 〃 | 218 | |
| | 2 | f1 | PL 3/8 x 24 | 3'-4 1/2 | | 5-3/16 | 345 | CVN |
| | 4 | f2 | PL 3/8 x 10 | 3'-4 1/2 | | 〃 | 287 | CVN |
| | 2 | f3 | PL 1 1/4 x 24 | 1'-9 3/8 | | 5-1/12 | 368 | |
| | 2 | ws1 | PL 3/8 x 72 1/2 | 1'-7 1/2 | | 5-1/16 | 501 | CVN |

| | |
|---|---|
| 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 ~ 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

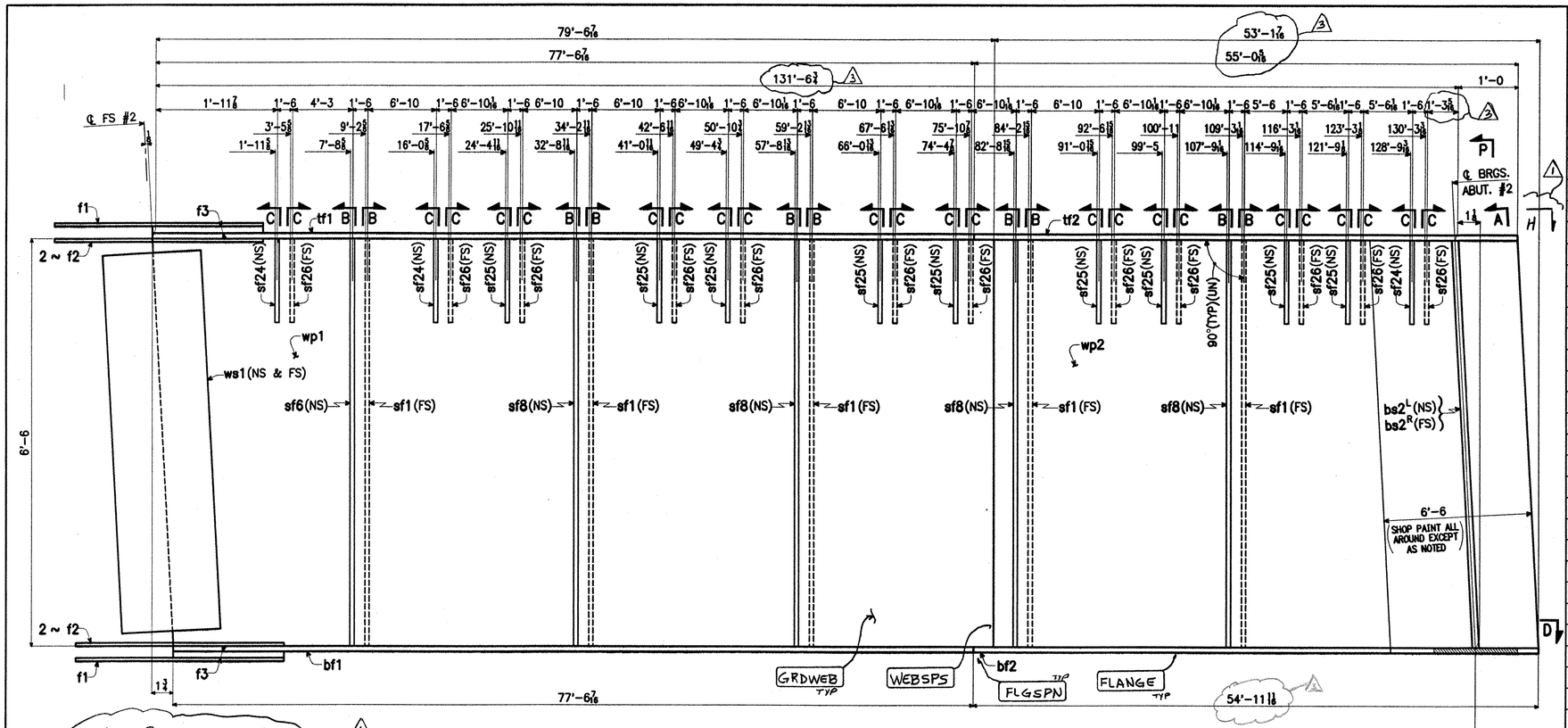
JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

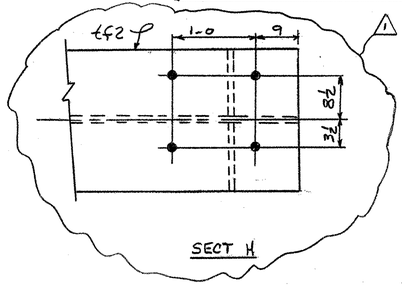
FOR APPROVAL
REVISED

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

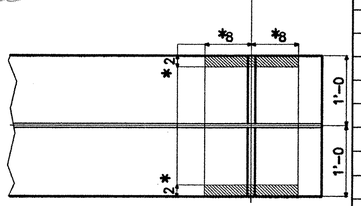
| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-23 | 3 |



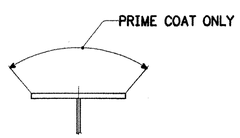

## 1 ~ GIRDER ~ G4C

GIRDER

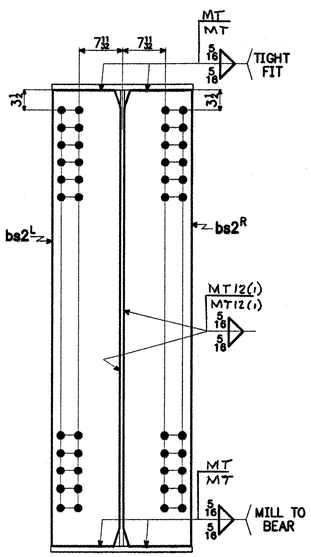



SECT. D

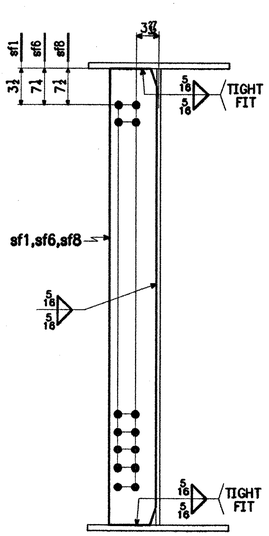
*PRIME COAT ONLY BOTT. OF BOTT. FLG. AND EDGES



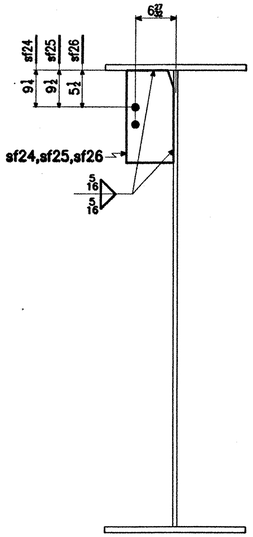

SECT. P




SECT. A




SECT. B




SECT. C

**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 WDS OK'D BY
DEC 27 2001
RESUBMIT APPROVED As Noted
BY GPW DATE 1/4/02

3 FLG, WEB & ENT 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 |
|---|---|---|---|---|---|---|---|---|
| G4C | 1 | | GIRDER | | | | | |
| | 1 | tf1 | PL 1" x 24 | 77'-6 7/16 | | 5-11/14 1 14 | 6332 | CVN |
| | 1 | tf2 | PL 1" x 24 | 55'-0 5/8 | 3 | 5-11/15 1 15 | 4494 | CVN |
| | 1 | bf1 | PL 1" x 24 | 77'-6 7/16 | | 5-11/14 1 16 | 6332 | CVN |
| | 1 | bf2 | PL 1" x 24 | 54'-11 11/16 | 3 | 5-11/15 1 17 | 4490 | CVN |
| | 1 | wp1 | PL 1 1/16 x 78 | 79'-6 7/16 | | 5-12/2 1 6 | X | CVN |
| | 1 | wp2 | PL 1 1/16 x 78 | 53'-1 7/16 | | 5-8/8 1 7 | 24184 | CVN |
| | 1 | bs2L | PL 1 1/2 x 11 1/2 | 6'-6 1/8 | | 5-11/11 3 12 | 318 | M1E |
| | 1 | bs2R | PL 1 1/2 x 11 1/2 | 6'-6 1/8 | | 〃 3 12 | 318 | M1E |
| | 5 | sf1 | PL 1/2 x 8 | 6'-6 | | 5-3/4 3 4 | 442 | |
| | 1 | sf6 | PL 1/2 x 8 | 6'-6 | | 5-3/4 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 | | 5-5/5 2 10 | 345 | CVN |
| | 4 | f2 | PL 5/8 x 10 | 3'-4 1/2 | | 〃 2 11 | 287 | CVN |
| | 2 | f3 | PL 1 1/2 x 24 | 1'-9 3/8 | | 5-11/12 2 13 | 368 | |
| | 2 | ws1 | PL 5/8 x 72 1/2 | 1'-7 1/2 | | 5-3/5 2 10 | 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 | 8-29-01 | 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

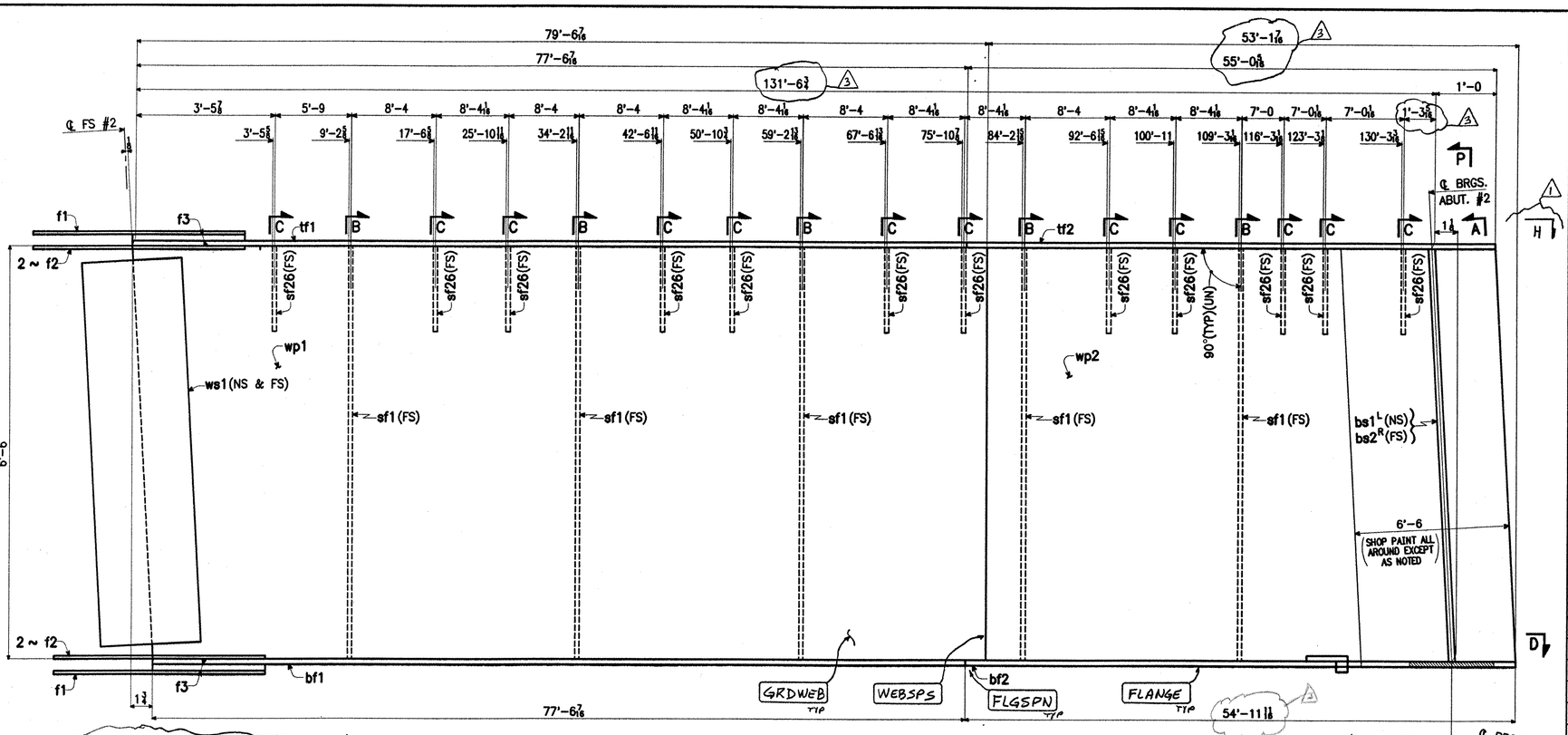
FOR APPROVAL

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

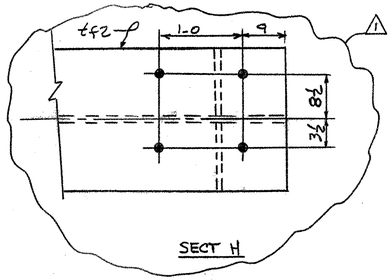
REVISED

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-24 | 3 |

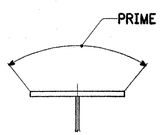



1 ~ GIRDER ~ G5C

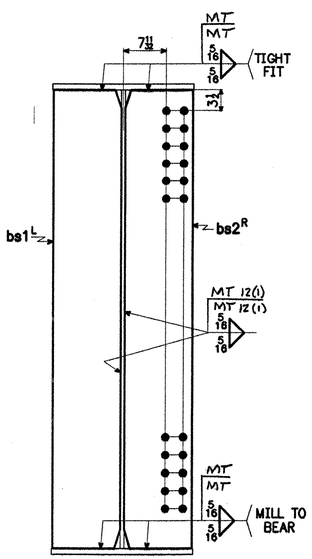
GIRDER



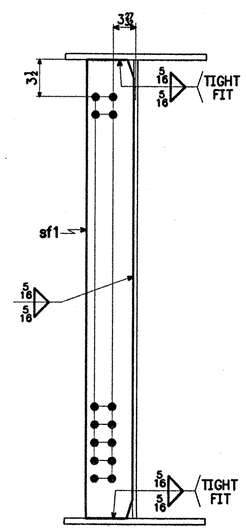

SECT. H



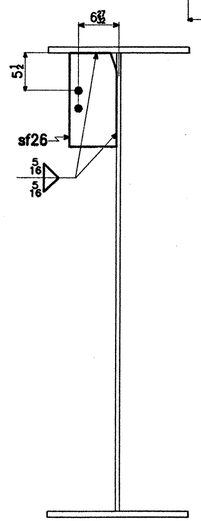

SECT. P



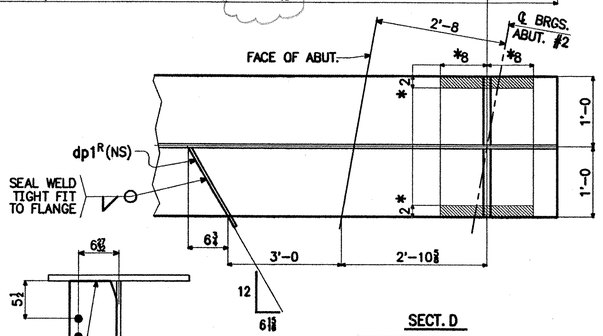

SECT. A




SECT. B




SECT. C




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 WBS OK'D BY
DEC 27 2001
RESUBMIT APPROVED As Noted
BY JCW 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

## BILL OF MATERIAL

WORK ORDER NO. 15873 | DRAWING NO. 12-25 | REV. 3

| 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 | 6332 | CVN |
| | 1 | tf2 | PL 1" x 24 | 55'-0 5/8 | 3 | 5-1/15 | 4494 | CVN |
| | 1 | bf1 | PL 1" x 24 | 77'-6 7/16 | | 5-1/14 | 6332 | CVN |
| | 1 | bf2 | PL 1" x 24 | 54'-11 11/16 | 3 | 5-1/15 | 4490 | CVN |
| | 1 | wp1 | PL 15/16 x 78 | 79'-6 7/16 | | 5-1/2 | | CVN |
| | 1 | wp2 | PL 11/16 x 78 | 53'-1 7/16 | | 5-3/3 | 24184 | CVN |
| | 1 | bs1L | PL 1 1/4 x 11 1/2 | 6'-6 3/8 | | 5-1/11 | 318 | M1E |
| | 1 | bs2R | PL 1 1/4 x 11 1/2 | 6'-6 3/8 | | | 318 | M1E |
| | 5 | sf1 | PL 1/2 x 8 | 6'-6 | | 5-3/4 | 442 | |
| | 12 | sf26 | PL 1/2 x 8 | 1'-4 | | | 218 | |
| | 1 | dp1R | PL 1/4 x 3 | 1'-3 5/8 | | 5-3/12 | 3 | |
| | 2 | f1 | PL 5/8 x 24 | 3'-4 1/2 | | 5-5/8 | 345 | CVN |
| | 4 | f2 | PL 5/8 x 10 | 3'-4 1/2 | | | 287 | CVN |
| | 2 | f3 | PL 1 1/4 x 24 | 1'-9 5/8 | | 5-1/12 | 368 | |
| | 2 | ws1 | PL 5/8 x 72 1/2 | 1'-7 1/2 | | 5-5/8 | 501 | CVN |
| | | | | | 3 | | 48632 | |

| | | | |
|---|---|---|---|
| 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

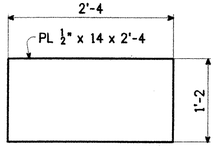
FOR APPROVAL
REVISED

CUSTOMER: BECK & BELLUCCI, INC.

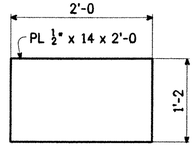
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 12-25 | 3 |

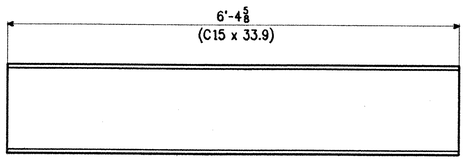
| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 20-1 | A |



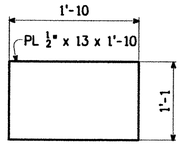

DETAIL OF p1
(8 REQ'D)
(ABUT. CF)



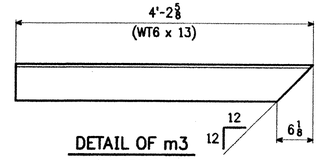

DETAIL OF p8
(4 REQ'D)
(PIER CF)



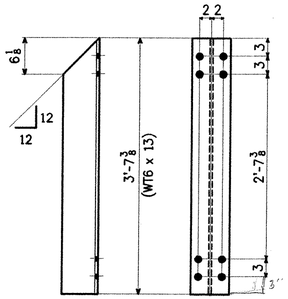

DETAIL OF m1
(16 REQ'D)
(ABUT. & PIER CF)



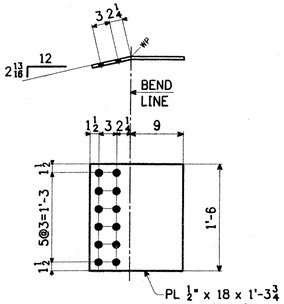

DETAIL OF p9
(56 REQ'D)
(INT. CF)



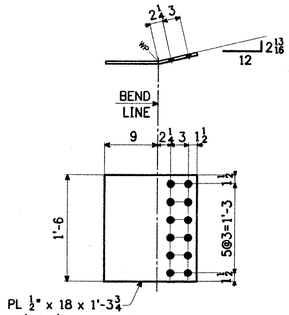

DETAIL OF m3
(26 REQ'D)
(BRKT)



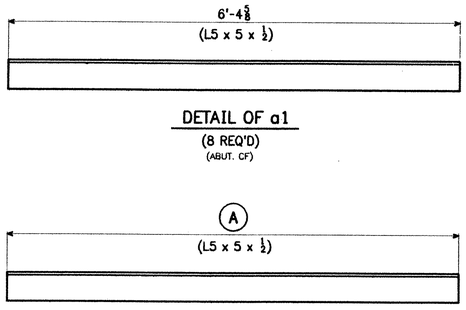

DETAIL OF m4
(26 REQ'D)
(BRKT)




DETAIL OF p2
(12 REQ'D)
(ABUT. & PIER CF)



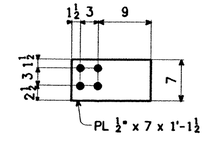

DETAIL OF p3
(12 REQ'D)
(ABUT. & PIER CF)



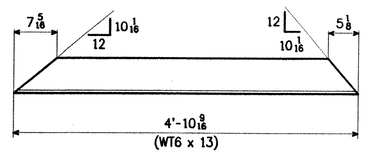

DIAGONALS
(ABUT., PIER & INT. CF)

| | MARK | NO. REQ'D | A |
|---|---|---|---|
| ABT. | a2 | 1 | 4'-2⅜ |
| ABT. | a3 | 1 | 3'-11⅝ |
| ABT. | a4 | 1 | 4'-1⅜ |
| 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 |

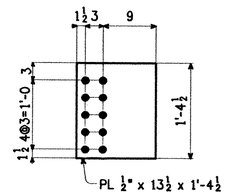
| | MARK | NO. REQ'D | A |
|---|---|---|---|
| ABT. | a13 | 2 | 3'-11 11/16 |
| ABT. | a14 | 1 | 4'-0⅝ |
| ABT. | a15 | 1 | 4'-1⅜ |
| PR. | a16 | 1 | 5'-10 9/16 |
| PR. | a17 | 1 | 5'-7 3/16 |
| PR. | a18 | 1 | 5'-10⅛ |
| PR. | a19 | 1 | 5'-8 3/16 |
| PR. | a20 | 1 | 5'-8¼ |
| PR. | a21 | 1 | 5'-9¼ |
| INT. | a22 | 96 | 4'-11 11/16 |
| INT. | a23 | 16 | 5'-7⅜ |
| | a24 | 1 | 5'-10 5/16 |
| | a25 | 1 | 5'-8 1/16 |



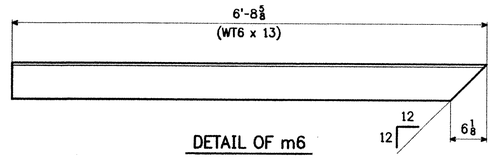

DETAIL OF p10
(112 REQ'D)
(INT. CF)



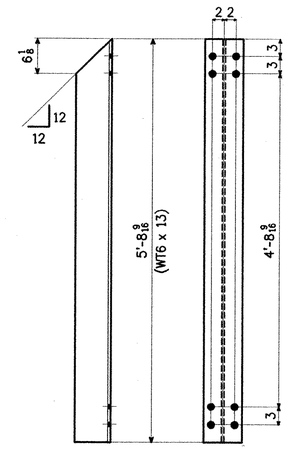

DETAIL OF m5
(26 REQ'D)
(BRKT)



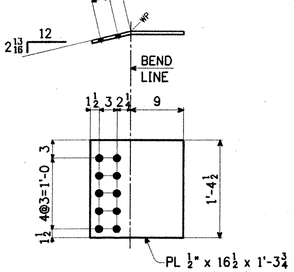

DETAIL OF p11
(112 REQ'D)
(INT. CF)



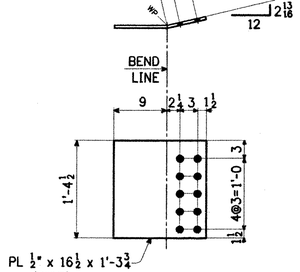

DETAIL OF m6
(4 REQ'D)
(BRKT)



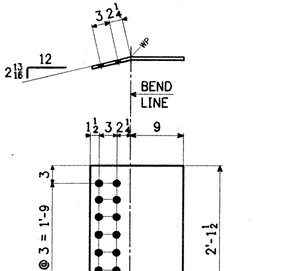

DETAIL OF m7
(4 REQ'D)
(BRKT)



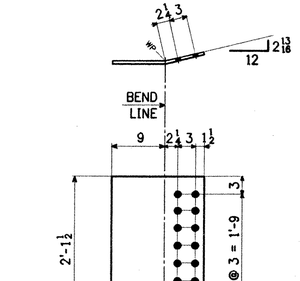

DETAIL OF p4
(8 REQ'D)
(ABUT. CF)



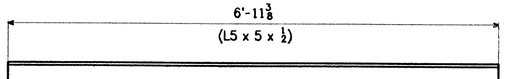

DETAIL OF p5
(8 REQ'D)
(ABUT. CF)



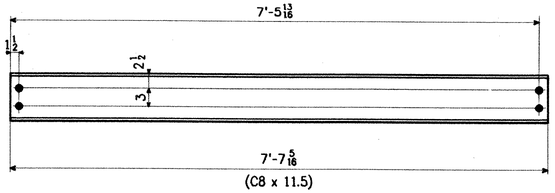

DETAIL OF p6
(4 REQ'D)
(PIER CF)



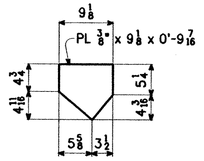

DETAIL OF p7
(4 REQ'D)
(PIER CF)



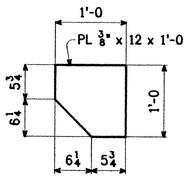

DETAIL OF a24
(112 REQ'D)
(INT. CF)



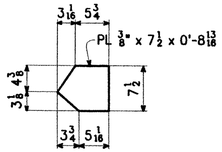

DETAIL OF m2
(98 REQ'D)
(UTIL. SUPP.)



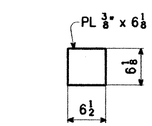

DETAIL OF p12
(60 REQ'D)
(BRACKET)




DETAIL OF p13
(60 REQ'D)
(BRACKET)




DETAIL OF p14
(60 REQ'D)
(BRACKET)




DETAIL OF p15
(60 REQ'D)
(BRACKET)

NOTE:
ALL HOLES TO BE 15/16"ø

RECEIVED
CK'D BY GWS OK'D BY
AUG 27 2001
RESUBMIT APPROVED
BY GPW 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 |

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

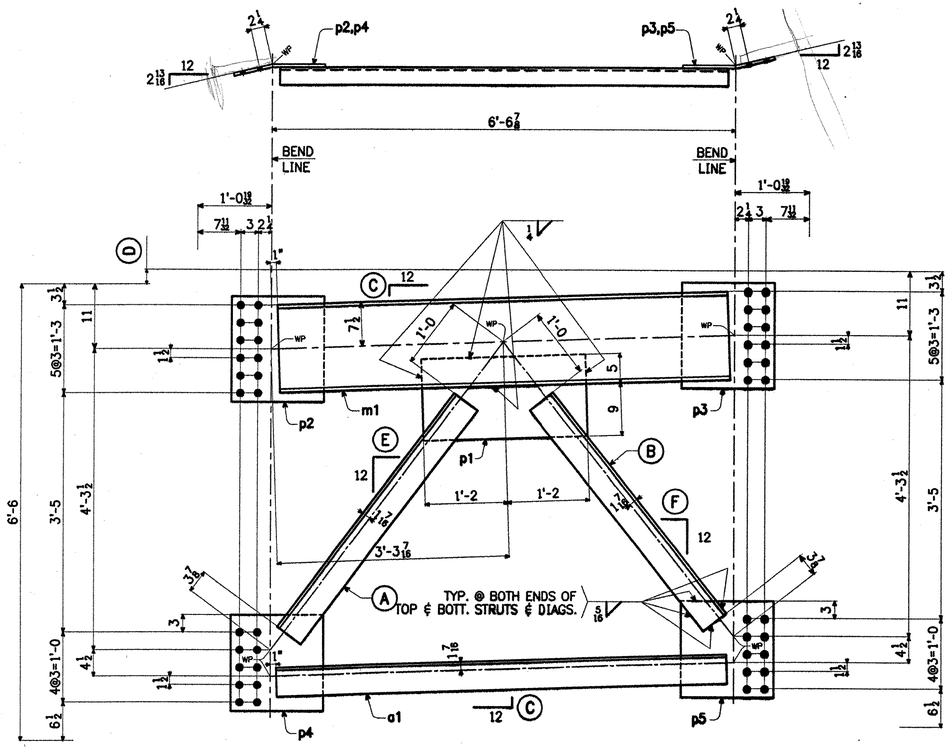
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| CHECKED | TS | 3/01 |
|---|---|---|
| DRAWN | AV | 3/01 |

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 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 |

⚠ EDCSKW

## 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 | S1 | 216 | |
| | 1 | a1 | L5 x 5 x 1/2 | 6'-4 5/8 | S4/2 | S4 | 103 | |
| | 1 | a2 | L5 x 5 x 1/2 | 4'-2 3/8 | | S2 | 68 | |
| | 1 | a3 | L5 x 5 x 1/2 | 3'-11 5/8 | | S3 | 64 | |
| | 1 | p1 | PL 1/2 x 14 | 2'-4 | S4/7 | S7 | 56 | |
| | 1 | p2 | PL 1/2 x 18 | 1'-3 3/4 | | S5 | 40 | BENT |
| | 1 | p3 | PL 1/2 x 18 | 1'-3 3/4 | | S5 | 40 | BENT |
| | 1 | p4 | PL 1/2 x 16 1/2 | 1'-3 3/4 | | S6 | 37 | BENT |
| | 1 | p5 | PL 1/2 x 16 1/2 | 1'-3 3/4 | | S6 | 37 | BENT |
| F2 | 1 | | CROSSFRAME | | | | | 661 |
| | 1 | m1 | C15 x 33.9 | 6'-4 5/8 | S4/8 | S1 | 216 | |
| | 1 | a1 | L5 x 5 x 1/2 | 6'-4 5/8 | S4/2 | S4 | 103 | |
| | 1 | a4 | L5 x 5 x 1/2 | 4'-1 13/16 | | S2 | 67 | |
| | 1 | a5 | L5 x 5 x 1/2 | 4'-0 1/4 | | S3 | 65 | |
| | 1 | p1 | PL 1/2 x 14 | 2'-4 | S4/7 | S7 | 56 | |
| | 1 | p2 | PL 1/2 x 18 | 1'-3 3/4 | | S5 | 40 | BENT |
| | 1 | p3 | PL 1/2 x 18 | 1'-3 3/4 | | S5 | 40 | BENT |
| | 1 | p4 | PL 1/2 x 16 1/2 | 1'-3 3/4 | | S6 | 37 | BENT |
| | 1 | p5 | PL 1/2 x 16 1/2 | 1'-3 3/4 | | S6 | 37 | BENT |
| F5 | 1 | | CROSSFRAME | | | | | 661 |
| | 1 | m1 | C15 x 33.9 | 6'-4 5/8 | S4/8 | S1 | 216 | |
| | 1 | a1 | L5 x 5 x 1/2 | 6'-4 5/8 | S4/2 | S4 | 103 | |
| | 1 | a10 | L5 x 5 x 1/2 | 4'-2 | | S2 | 67 | |
| | 1 | a11 | L5 x 5 x 1/2 | 4'-0 | | S3 | 65 | |
| | 1 | p1 | PL 1/2 x 14 | 2'-4 | S4/7 | S7 | 56 | |
| | 1 | p2 | PL 1/2 x 18 | 1'-3 3/4 | | S5 | 40 | BENT |
| | 1 | p3 | PL 1/2 x 18 | 1'-3 3/4 | | S5 | 40 | BENT |
| | 1 | p4 | PL 1/2 x 16 1/2 | 1'-3 3/4 | | S6 | 37 | BENT |
| | 1 | p5 | PL 1/2 x 16 1/2 | 1'-3 3/4 | | S6 | 37 | BENT |
| F6 | 1 | | CROSSFRAME | | | | | 661 |
| | 1 | m1 | C15 x 33.9 | 6'-4 5/8 | S4/8 | S1 | 216 | |
| | 1 | a1 | L5 x 5 x 1/2 | 6'-4 5/8 | S4/2 | S4 | 103 | |
| | 1 | a8 | L5 x 5 x 1/2 | 4'-0 3/16 | | S2 | 67 | |
| | 1 | a9 | L5 x 5 x 1/2 | 4'-1 13/16 | | S3 | 65 | |
| | 1 | p1 | PL 1/2 x 14 | 2'-4 | S4/7 | S7 | 56 | |
| | 1 | p2 | PL 1/2 x 18 | 1'-3 3/4 | | S5 | 40 | BENT |
| | 1 | p3 | PL 1/2 x 18 | 1'-3 3/4 | | S5 | 40 | BENT |
| | 1 | p4 | PL 1/2 x 16 1/2 | 1'-3 3/4 | | S6 | 37 | BENT |
| | 1 | p5 | PL 1/2 x 16 1/2 | 1'-3 3/4 | | S6 | 37 | BENT |

2644#

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] SEESHT 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

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 |

FOR APPROVAL

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

REVISED

CUSTOMER: BECK & BELLUCCI, INC.

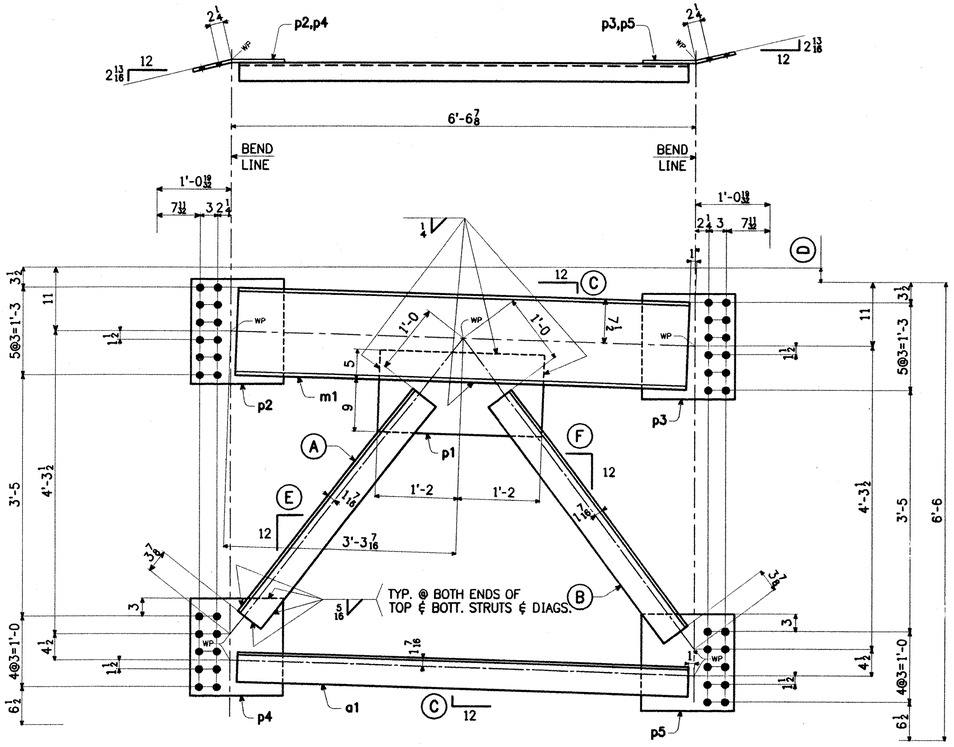
DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| DRAWN | TS | 3/01 |
|---|---|---|
| CHECKED | AV | 3/01 |

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 20-2 | 2 |

RECEIVED
DFD BY WBS DND BY
NOV 21 2001
RESUBMIT APPROVED ✓
BY CPW DATE 11/30/01

⚠2 PAINT NOTE 11-19-01 JCM
⚠1 REVISED PC. MK. a8 & a9 A.V. 9-20-01




## 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 | 5/1 | 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 | 5/1 | 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 | 5/1 | 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 | 5/1 | 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 | 8-28-01 | APP |

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

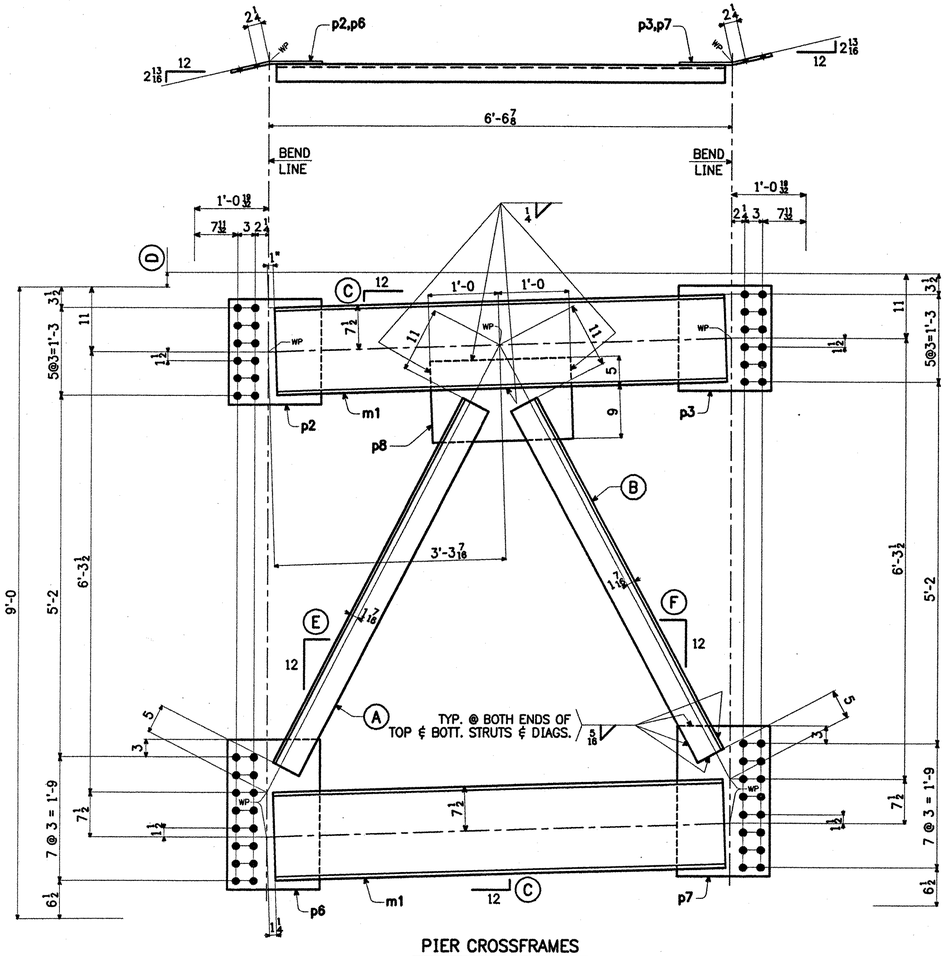
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| | | | WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|---|---|---|
| DRAWN | TS | 3/01 | 15873 | 20-3 | A |
| CHECKED | AV | 3/01 | | | |

RECEIVED
CK'D BY WBS OK'D BY
AUG 27 2001
RESUBMIT APPROVED
BY CPW DATE 8/30/01

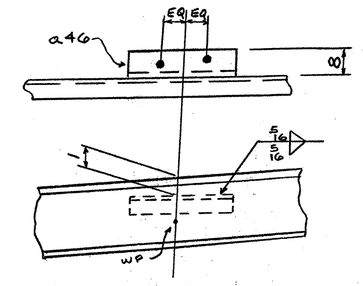
OK



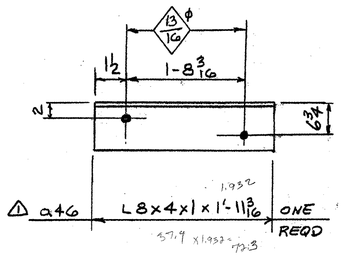

PIER CROSSFRAMES

| | MARK | NO. REQ'D | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| PIER | F9 | 1 | a16 | a17 | 1/2 | 3 1/8 | 6 1/8 | 6 3/8 |
| PIER | F10 | 1 | a21 | a20 | 3/16 | 1 3/16 | 6 1/4 | 6 5/16 |

EDC SKW




⚠1 PARTIAL DETAIL FOR F9




| SHIP MARK | NO. | MARK | SHAPE | LENGTH | | ITEM NO. | WT. | REMARKS |
|---|---|---|---|---|---|---|---|---|
| F9 | 1 | | CROSSFRAME | | ⚠ | | | 933 |
| | 2 | m1 | C15 x 33.9 | 6'-4 5/8 | S4/8 | 5/10 | 433 | |
| | 1 | a16 | L5 x 5 x 1/2 | 5'-10 9/16 | S4/2 | 5/11 | 95 | |
| | 1 | a17 | L5 x 5 x 1/2 | 5'-7 3/16 | | 5/11 | 91 | |
| | 1 | p2 | PL 1/2 x 18 | 1'-3 3/4 | S2/4 | 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 | a46 | L 8x4x1 | 1-11 3/16 | ⚠ S4/ | 6/13 | 72 | |
| F10 | 1 | | CROSSFRAME | | | | | 860 |
| | 2 | m1 | C15 x 33.9 | 6'-4 5/8 | S4/8 | 5/10 | 433 | |
| | 1 | a20 | L5 x 5 x 1/2 | 5'-8 1/4 | S4/2 | 5/11 | 92 | |
| | 1 | a21 | L5 x 5 x 1/2 | 5'-9 1/4 | | 5/11 | 93 | |
| | 1 | p2 | PL 1/2 x 18 | 1'-3 3/4 | S2/4 | 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 | |
| | | | | | | | 1793 | # |

RECEIVED
CKD BY WAS DWG BY
NOV 21 2001
ENGINEER APPROVED
BY CPW DATE 12/3/01

⚠ ADDED a46 11-14-01 JCM

| | | | |
|---|---|---|---|
| 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

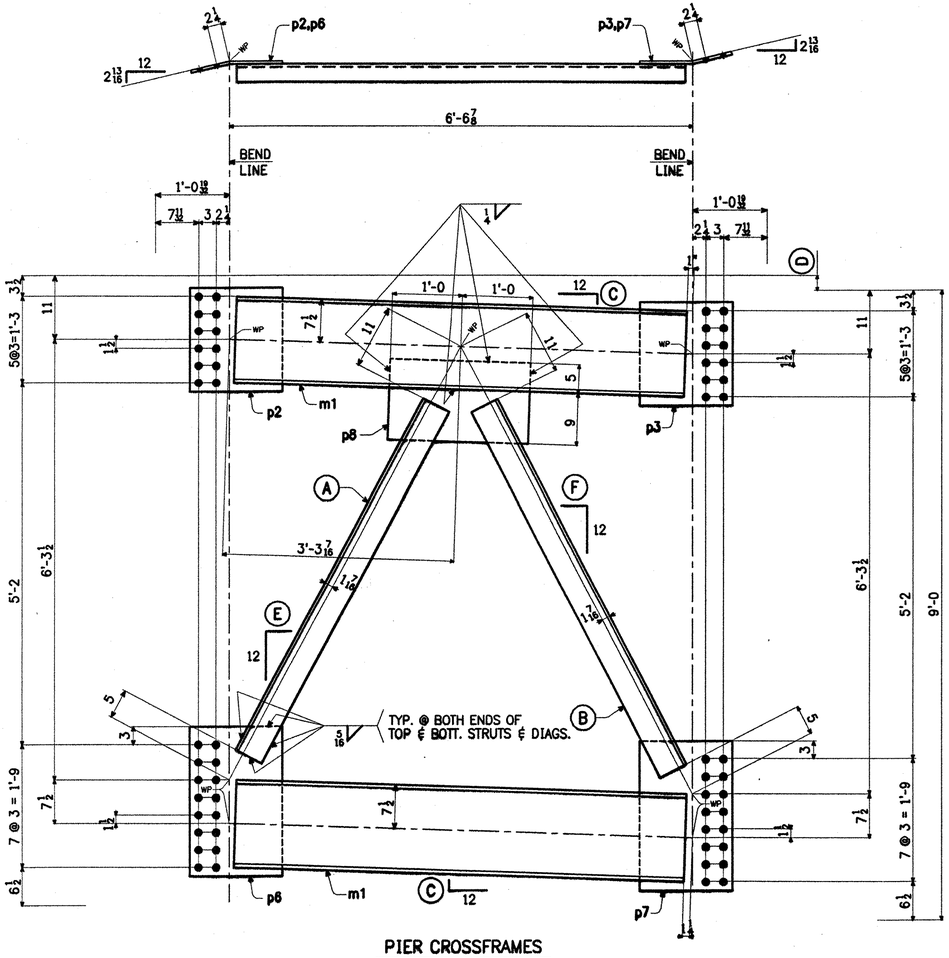
REVISED

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| | | | WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|---|---|---|
| DRAWN | TS | 3/01 | 15873 | 20-4 | 1 |
| CHECKED | AV | 3/01 | | | |

OK

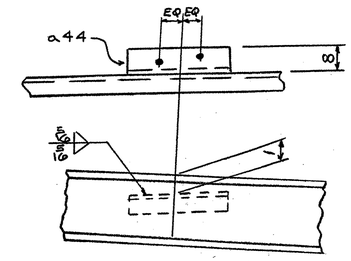



## PIER CROSSFRAMES

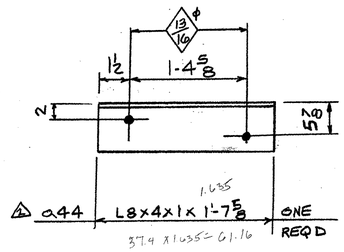
| | MARK | NO. REQ'D | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| PIER | F11 | 1 | a19 | a18 | 5/16 | 2 3/16 | 6 3/8 | 6 3/16 |
| PIER | F12 | 1 | a25 | a24 | 3/8 | 2½ | 6 3/8 | 6 3/16 |

Telephone

⚠ EDCSKW




⚠2 PARTIAL DETAIL FOR F12




| SHIP MARK | NO. | MARK | SHAPE | LENGTH | | ITEM NO. | WT. | REMARKS |
|---|---|---|---|---|---|---|---|---|
| F11 | 1 | | CROSSFRAME | | | | | BOZ |
| | 2 | m1 | C15 x 33.9 | 6'-4⅝ | | 5/10 | 433 | |
| | 1 | a18 | L5 x 5 x ½ | 5'-10⅛ | | 5/11 | 95 | |
| | 1 | a19 | L5 x 5 x ½ | 5'-8 3/16 | | 5/11 | 92 | |
| | 1 | p2 | PL ½ x 18 | 1'-3¾ | | 5/12 | 40 | BENT |
| | 1 | p3 | PL ½ x 18 | 1'-3¾ | | 5/12 | 40 | BENT |
| | 1 | p6 | PL ½ x 25½ | 1'-3¾ | | 5/13 | 57 | BENT |
| | 1 | p7 | PL ½ x 25½ | 1'-3¾ | | 5/13 | 57 | BENT |
| | 1 | p8 | PL ½ x 14 | 2'-0 | | 5/7 | 48 | |
| F12 | 1 | | CROSSFRAME | | ⚠2 | | | 919 |
| | 2 | m1 | C15 x 33.9 | 6'-4⅝ | | 5/10 | 433 | |
| | 1 | a24 | L5 x 5 x ½ | 5'-10 5/16 | | 5/11 | 92 | |
| | 1 | a25 | L5 x 5 x ½ | 5'-8 1/16 | | 5/11 | 95 | |
| | 1 | p2 | PL ½ x 18 | 1'-3¾ | | 5/12 | 40 | BENT |
| | 1 | p3 | PL ½ x 18 | 1'-3¾ | | 5/12 | 40 | BENT |
| | 1 | p6 | PL ½ x 25½ | 1'-3¾ | | 5/13 | 57 | BENT |
| | 1 | p7 | PL ½ x 25½ | 1'-3¾ | | 5/13 | 57 | BENT |
| | 1 | p8 | PL ½ x 14 | 2'-0 | | 5/7 | 48 | |
| | 1 | a44 | L8x4x1 | 1-7⅝ | ⚠2 | 6/13 | 57 | LLLB |
| | | | | | | | 1781# | |

RECEIVED
CK'D BY LWBS CK'D BY
NOV 21 2001
RESUBMIT 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

| | |
|---|---|
| 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

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 |

FOR APPROVAL

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

REVISED

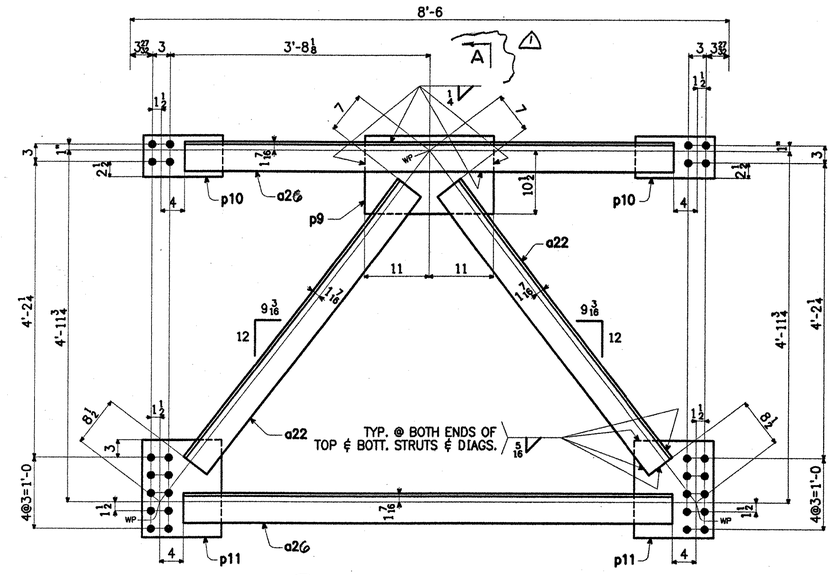
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| DRAWN | TS | 3/01 |
|---|---|---|
| CHECKED | AV | 3/01 |

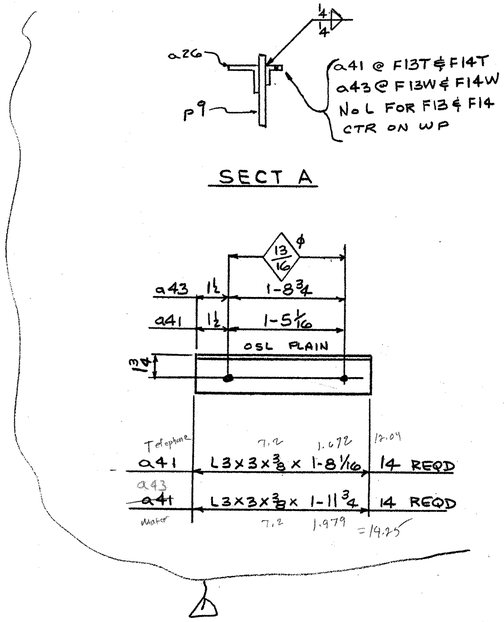
| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 20-5 | 2 |

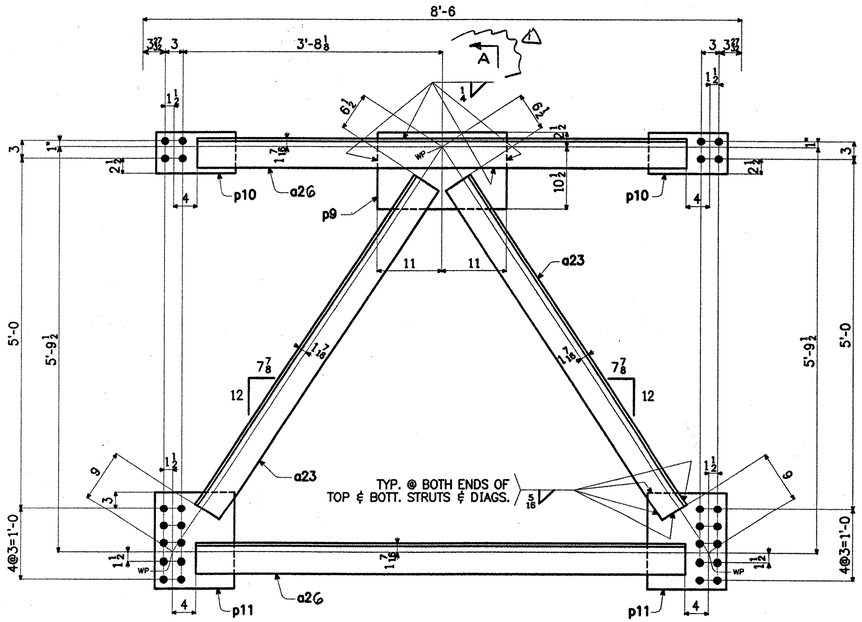
OK




24 - INT. CROSSFRAMES - F13
12 - INT CROSSFRAMES - F13T
12 - INT CROSSFRAMES - F13W

ICFSTR




4 - INT. CROSSFRAMES - F14
2 - INT CROSSFRAMES - F14T
2 - INT CROSSFRAMES - F14W

ICFSTR

| SHIP MARK | NO. | MARK | SHAPE | LENGTH | | ITEM NO. | WT. | REMARKS |
|---|---|---|---|---|---|---|---|---|
| F13 | 24 | | CROSSFRAME | | ⚠ | | | 12402 |
| F13T | 12 | | CROSSFRAME | | ⚠ | | | 6345 |
| F13W | 12 | | CROSSFRAME | | ⚠ | | | 6372 |
| | 96 | a22 | L5x5x½ | 4-11 11/16 | | 54/2 | 6/3 7735 | |
| | 96 | a26 | L5x5x½ | 6-11⅜ | | ⌒ | 6/2 10805 | |
| | 48 | P9 | PL ½ x 13 | 1-0 | | 53/7 | 6/7 1946 | |
| | 96 | P10 | PL ½ x 7 | 1-1½ | | 53/4 | 6/5 1286 | |
| | 96 | P11 | PL ½ x 13½ | 1-4½ | | 53/7 | 6/6 3032 | |
| | 12 | a41 | L3x3x⅜ | 1-8 1/16 | ⚠ | 59/13 | 6/A 144 | FOR F13T |
| | 12 | a43 | L3x3x⅜ | 1-11¾ | ⚠ | ⌒ | 6/A 171 | FOR F13W |
| F14 | 4 | | CROSSFRAME | | ⚠ | | | 2153 |
| F14T | 2 | | CROSSFRAME | | ⚠ | | | 1100 |
| F14W | 2 | | CROSSFRAME | | ⚠ | | | 1094 |
| | 16 | a23 | L5x5x½ | 5-7⅝ | | 54/2 | 6/4 1461 | |
| | 16 | a26 | L5x5x½ | 6-11⅜ | | ⌒ | 6/2 1801 | |
| | 8 | P9 | PL ½ x 13 | 1-10 | | 53/7 | 6/7 324 | |
| | 16 | P10 | PL ½ x 7 | 1-1½ | | 53/4 | 6/5 214 | |
| | 16 | P11 | PL ½ x 13½ | 1-4½ | | 53/7 | 6/6 505 | |
| | 2 | a41 | L3x3x⅜ | 1-8 1/16 | ⚠ | 59/13 | 6/A 24 | FOR F14T |
| | 2 | a43 | L3x3x⅜ | 1-11¾ | ⚠ | ⌒ | 6/A 18 | FOR F14W |
| | | | | | ⚠ | | | 29446# |

BILL OF MATERIAL — WORK ORDER NO. 15873 — DRAWING NO. 20-6 — REV. 1

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 OK AN

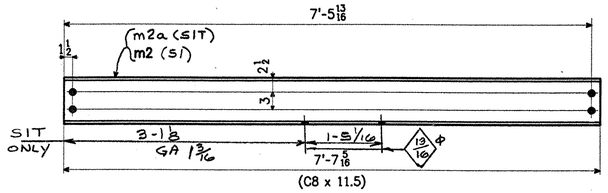
CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| | | | WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|---|---|---|
| DRAWN | TS | 3/01 | 15873 | 20-6 | 1 |
| CHECKED | AV | 3/01 | | | |

RECEIVED
DWD BY LWS DWD BY
NOV 21 2001
BRIDGE APPROVED As Noted
BY CPW DATE 12/3/01

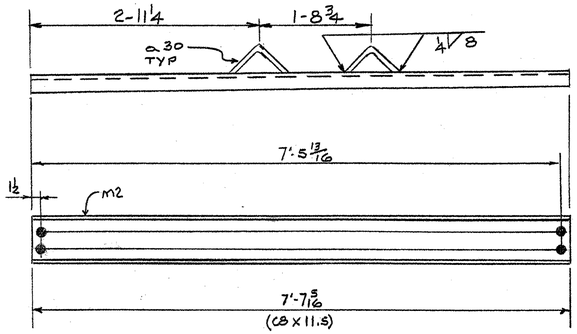
⚠ ADDED UTIL SUPPORT 11-15-01 JCM




34 - UTILITY SUPPORTS - S1

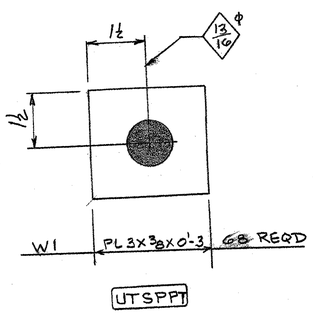
34 - UTILITY SUPPORTS - S1T

UTSPPT

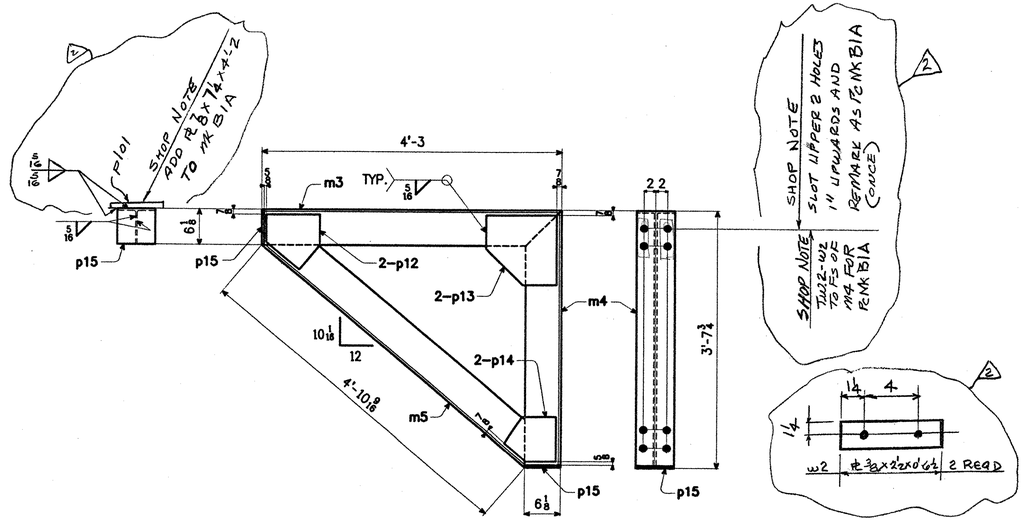



34 - UTILITY SUPPORTS - S1W

UTSPPT

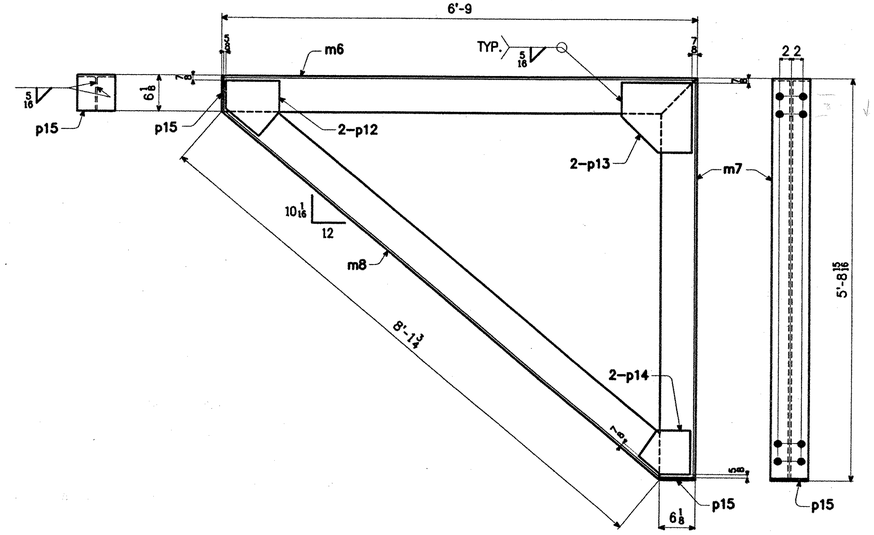



UTSPPT




26 - SIDEWALK BRACKETS - B1

BKSPPT




4 - SIDEWALK BRACKETS - B2

BKSPPT

RECEIVED
JAN 30 2002
CK'D BY GPW OK'D BY
RESUBMIT APPROVED
BY GPW DATE 2/11/02

2 MK B1A 1-28-02 JCM
1 UTILITY SUPPORTS 11-15-01 JCM

| SHIP MARK | NO. | MARK | SHAPE | LENGTH | | ITEM NO. | WT. | REMARKS |
|---|---|---|---|---|---|---|---|---|
| | | | BILL OF MATERIAL | | WORK ORDER NO. 15873 | | DRAWING NO. 20-7 | REV. 2 |
| 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 3/8 | S4/5 | 4/9 | 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 | S4/9 | 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 3/8 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 | 4/3 | 349 | |
| | 4 | m7 | WT6 x 13 | 5'-8 9/16 | | 4/4 | 297 | |
| | 4 | m8 | WT6 x 13 | 8'-1 3/4 | | 4/5 | 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 |
| | 34 | m2a | C8 x 11.5 | 7-7 5/16 | 1 S-9/11 | 6/11 | 2975 | Telephone |
| S1W | 34 | | UTIL SUPP | | 1 | | | 3161 Water |
| | 34 | m2 | C8 x 11.5 | 7-7 5/16 | 1 S4/11 | 6/11 | 2975 | |
| | 68 | a30 | L2 1/2 x 2 1/2 x 1/4 | 0-8 | 1 S4/15 | 10/10 | 186 | |
| W1 | 68 | | PL WASHER | | 1 | | | 65 |
| Water-line only | 68 | p50 | PL 3 x 3/8 | 0-3 | 1 S4/17 | 10/10 | 65 | |
| | | | | | 1 2 | | 16780 | # |

2-14-02

| | | | |
|---|---|---|---|
| STEEL: ASTM | A709-36 | A709-50 | X A709-50W |
| WELDING ELECTRODE: | X E70 | See Welding Proc. | None |
| HOLES: | 13/16 | X 15/16 | Unless Noted |
| 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 | 8-28-01 | APP |
| 5 | 11-19-01 | APP |
| 11 | 11-19-01 | FAB |
| 5 | 1-28-02 | APP |
| 11 | 1-28-02 | FAB |
| DRAWN | TS | 3/01 |
| CHECKED | AV | 3/01 |

REVISED

National Eastern Corporation
Plainville, Connecticut

JOB: T.H. 1 OVER THE WHITE RIVER
ROYALTON, VERMONT

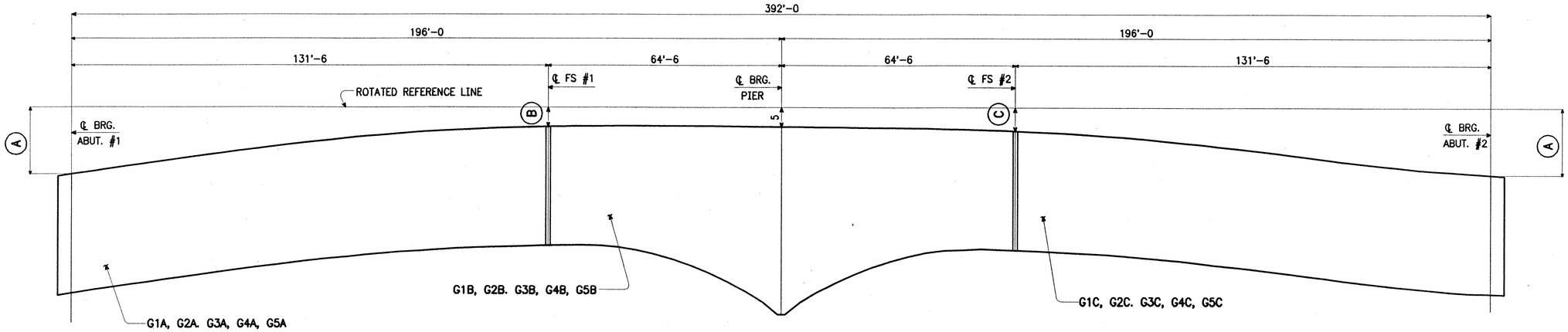
FOR APPROVAL

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 20-7 | 2 |

| 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'-2¼ | 5 13/16 | 9 11/16 |
| 2 | 4'-2½ | 6 3/16 | 9½ |
| 3 | 4'-2 11/16 | 6½ | 9 5/16 |
| 4 | 4'-2 7/8 | 6 9/16 | 9 1/16 |
| 5 | 4'-3 3/16 | 7½ | 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 WSS 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: | | | 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. 70-1 / REV. A |
| DRAWN | AV | 3/01 | | |

OK

# FIELD BOLTS

WORK ORDER NO. 15873

DWG. NO. 99-1 ⚠

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 | | | | | | | |
| INT. CROSSFRAME TO GDR. CONN. PLT. | | 1120 | | | | | | | | | |
| INT CROSSFRAME TO GDR CONN PLT | | 336 224 | 224 | | | | | | | | |
| UTIL. SUPPORT TO GDR. CONN. PLT. | 408 | | | | | | | | | | |
| SIDEWALK BRKT. TO GDR. WEB | | | 240 | | | | | | | | |
| ⚠ do @ MK 81A | | | | | | | | | | | 2 |
| LENGTH | 2 | 2¼ | 2½ | 3 | 3¼ | | 4¾ | | | | 2¾ |
| SUBTOTAL | 408 | 1344 | 464 | 576 | 1440 | | 1040 | | | | 2 |
| ADD 2% (MIN. 10) | 10 | 27 | 10 | 12 | 29 | | 21 | | | | 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 # | |

FOR "A" & "C" GIRDERS
FOR "B" GIRDERS

334/8 = 9 X-Frames

**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 CK'D BY
JAN 30 2002
RESUBMIT APPROVED X
BY CPW DATE 2/11/02

2-14-02

⚠ ADDED 2¾ø BOLTS 1-28-02 JCM

| | | |
|---|---|---|
| ITEM NO. 506.55 | BR. NO. 3 | PROJ. NO. BRZ 1444(22) |

TITLE: FIELD BOLTS

APPROVED: 9-5-01

| PRINT DIST. | | |
|---|---|---|
| 5 | 4-2-01 | APPR. |
| ORIG. | 9-5-01 | FAB. |
| 5 | 7-13-01 | APP |
| 5 | 8-24-01 | APP |
| 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

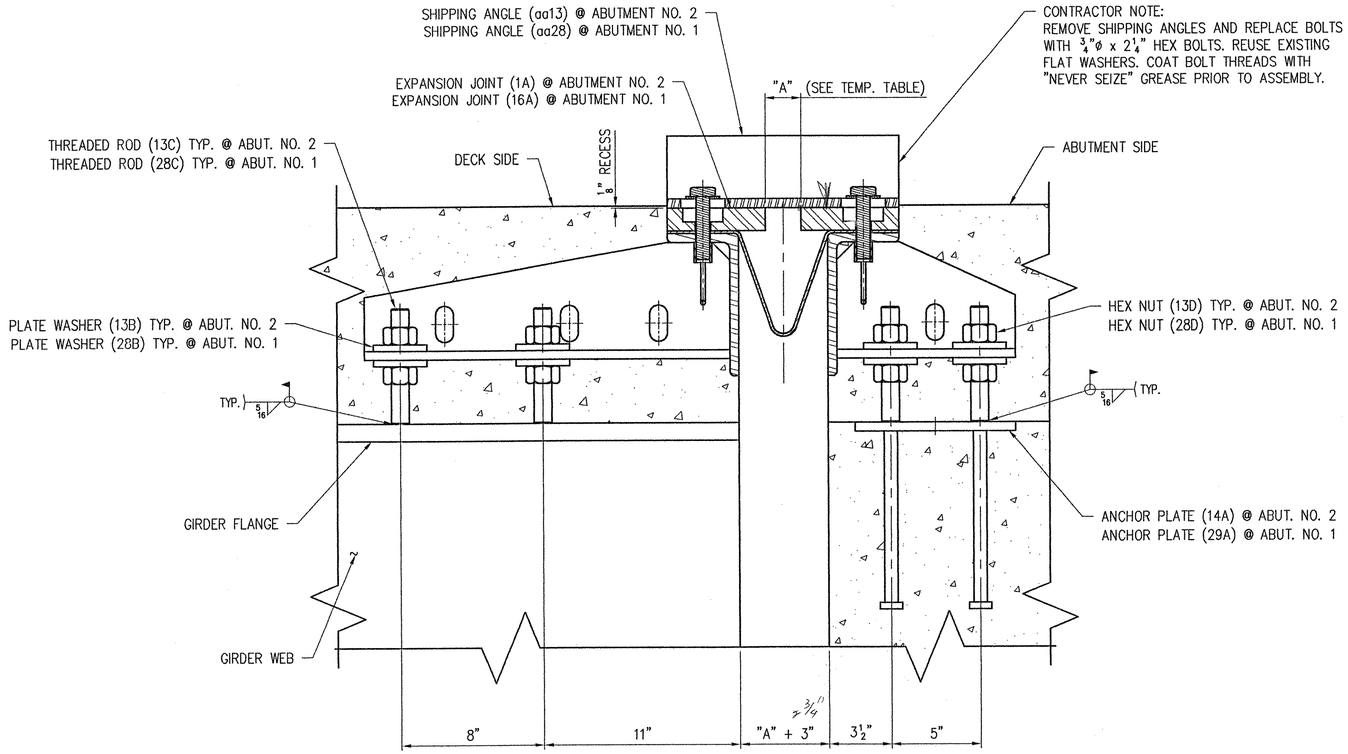
FOR APPROVAL

CUSTOMER: BECK & BELLUCCI, INC.

DESIGNER: VERMONT AGENCY OF TRANSPORTATION

| | | |
|---|---|---|
| CHECKED | TS | 3/01 |
| DRAWN | AV | 3/01 |

| WORK ORDER NO. | DRAWING NO. | REV. |
|---|---|---|
| 15873 | 99-1 | 1 |




## TYPICAL SECTION THRU JOINT @ GIRDER

| TEMP. TABLE | |
|---|---|
| TEMP. | "A" |
| 0° F | 2 15/16" |
| 15° F | 2 11/16" |
| 30° F | 2½" |
| 45° F | 2¼" |
| 60° F | 2" |
| 75° F | 1 13/16" |
| 90° F | 1 9/16" |
| 105° F | 1⅜" |

"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.

RECEIVED
CK'D BY LWBS OK'D BY
JAN 11 2002
RESUBMIT APPROVED ✓
BY JPW DATE 1/11/02

| | | |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| SHOP | | |
| | | |
| | | |
| | | |
| APPROVAL | | |
| | | |
| DIST. | | |
| | | |
| CUST. | | |
| FOR PRINTS ISSUED | 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

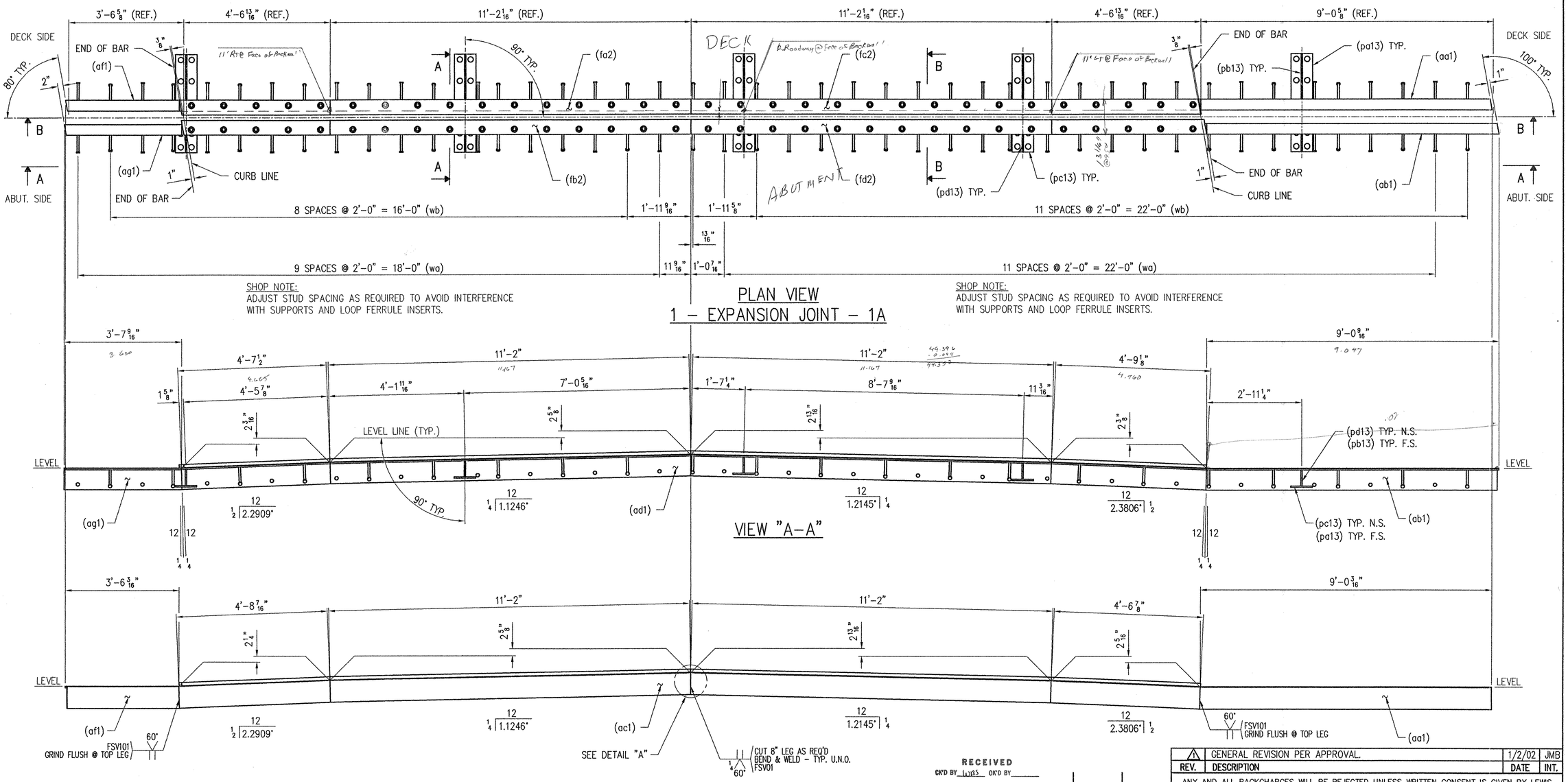
PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT ERECTION ABUTMENT NO. 1 & 2

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.

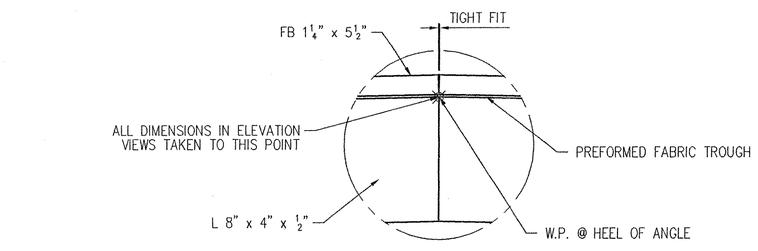
## PLAN VIEW
## 1 – EXPANSION JOINT – 1A

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 LWIS OK'D BY
JAN 11 2002
RESUBMIT APPROVED
BY DPW 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.

| | |
|---|---|
| SHOP | |
| APPROVAL | |
| DIST. | |
| CUST. | |
| FOR PRINTS ISSUED | 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.

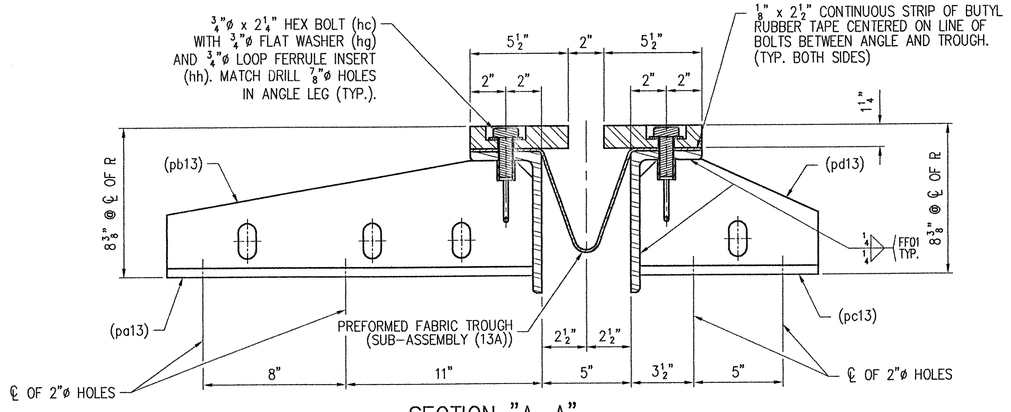
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

| | | |
|---|---|---|
| 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 |

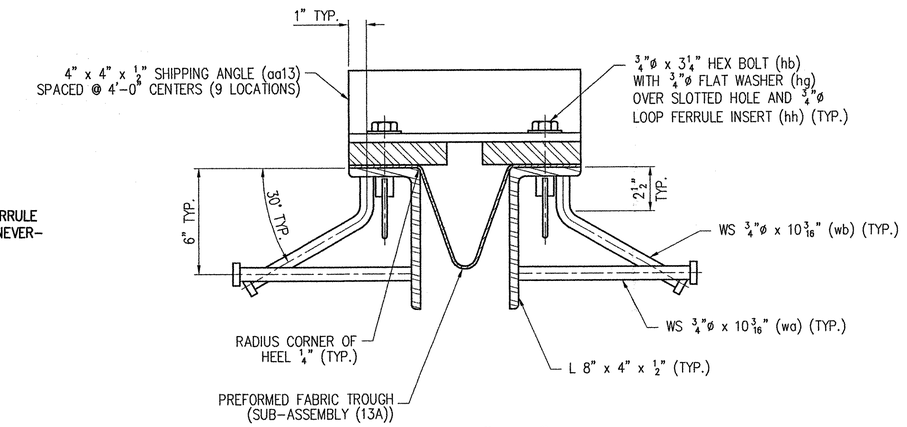
Orig.

| | |
|---|---|
| W.P. chk'd | |
| 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

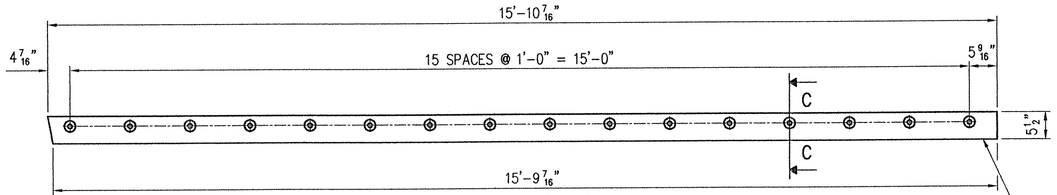



SECTION "A-A"

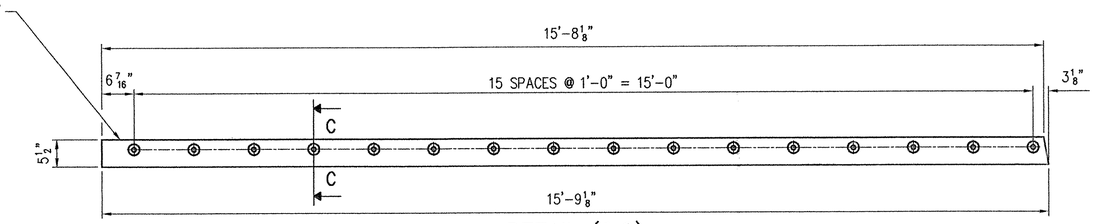



SHOP NOTE:
COAT BOLT & FERRULE THREADS WITH "NEVER-SEIZE" GREASE.

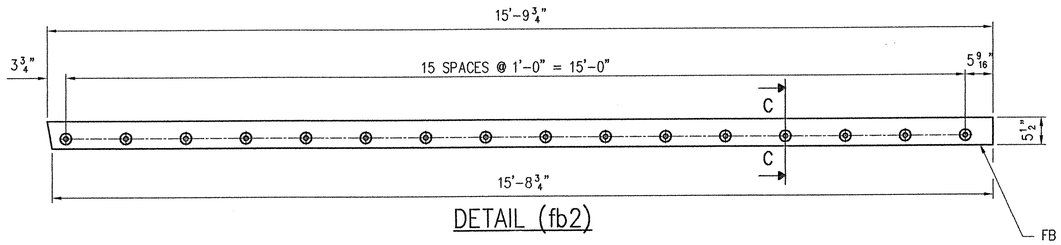
SECTION "B-B"



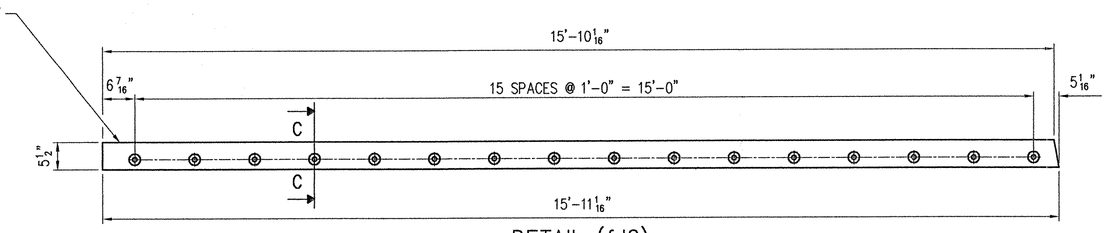

DETAIL (fa2)



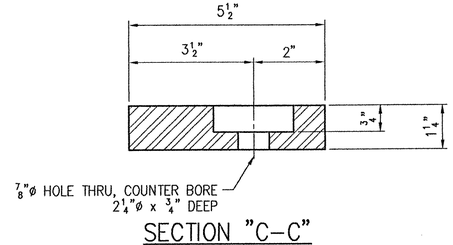

DETAIL (fc2)




DETAIL (fb2)




DETAIL (fd2)




SECTION "C-C"

SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 1.

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JAN 11 2002
RESUBMIT. APPROVED
BY CPW DATE 1/11/02

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| REV. | DESCRIPTION | DATE | INT. |
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| 1 | GENERAL REVISION PER APPROVAL. | 1/2/02 | JMB |

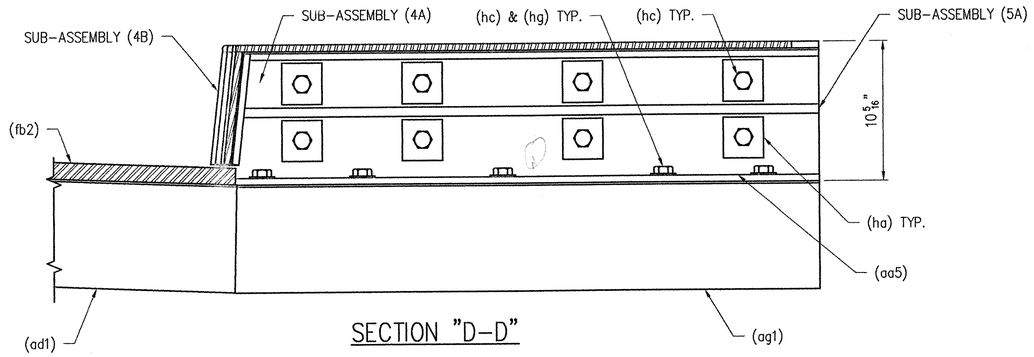
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

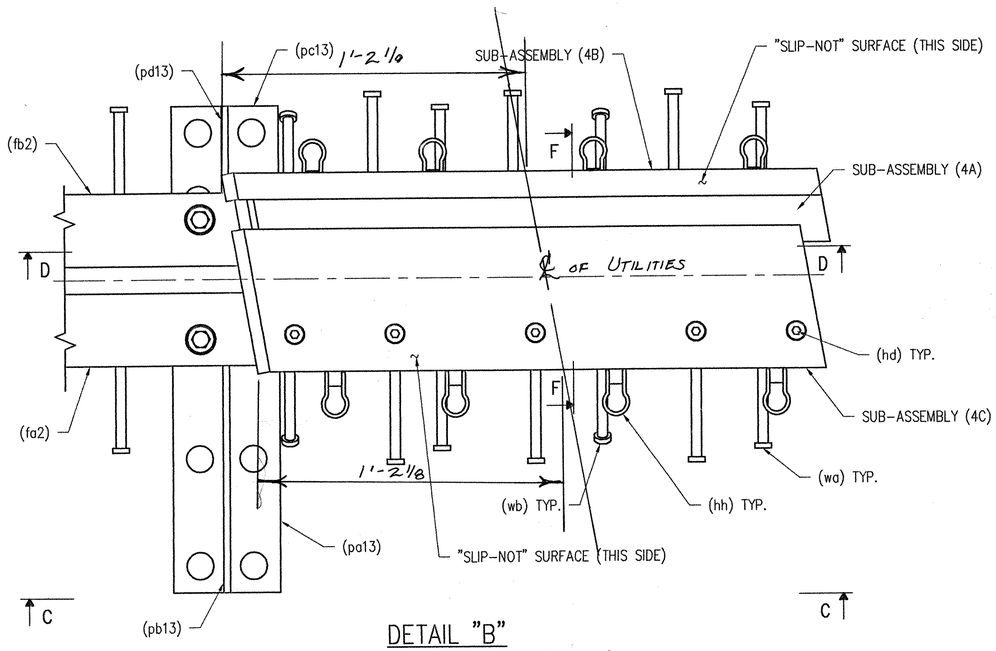
| | | |
|---|---|---|
| PROJECT | — | ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3 |
| STATE PROJECT | — | AC BRZ 1444(22) |
| FEDERAL PROJECT | — | |
| CUSTOMER | — | BECK & BELLUCCI, INC. |
| LOCATION | — | WINDSOR COUNTY, VT |
| DESCRIPTION | — | EXPANSION JOINT DETAILS ABUTMENT NO. 2 |

Orig.

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| W.P. chk'd | |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 12/5/01 |

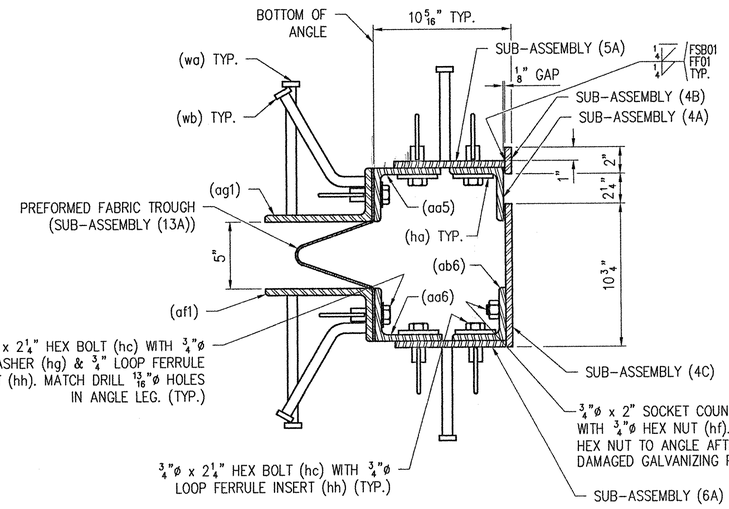



SECTION "D-D"

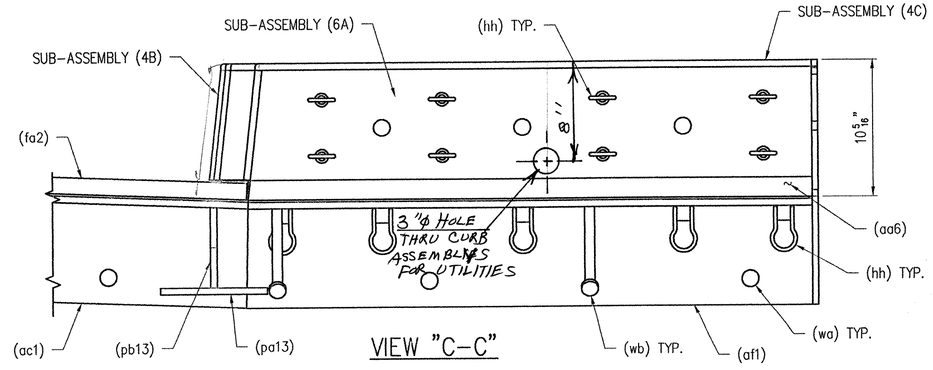



DETAIL "B"

(ROTATED 180° FROM THAT SHOWN ON SHEET NO. 1)




SECTION "F-F"




VIEW "C-C"

RECEIVED
CK'D BY LWBS OK'D BY
JAN 11 2002
RESUBMIT APPROVED
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SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 1, 4, 5, 6 & 7.

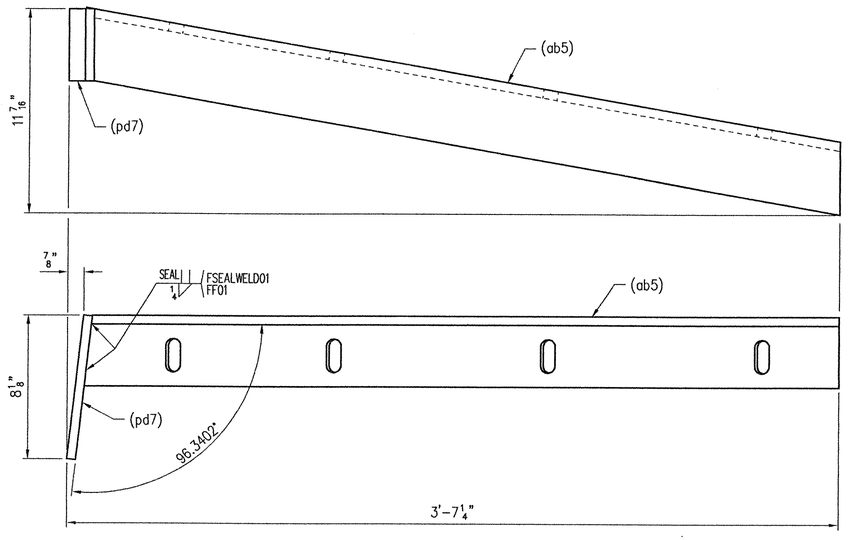
| REV. | DESCRIPTION | DATE | INT. |
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| 1 | GENERAL REVISION PER APPROVAL. | 1/2/02 | JME |

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LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

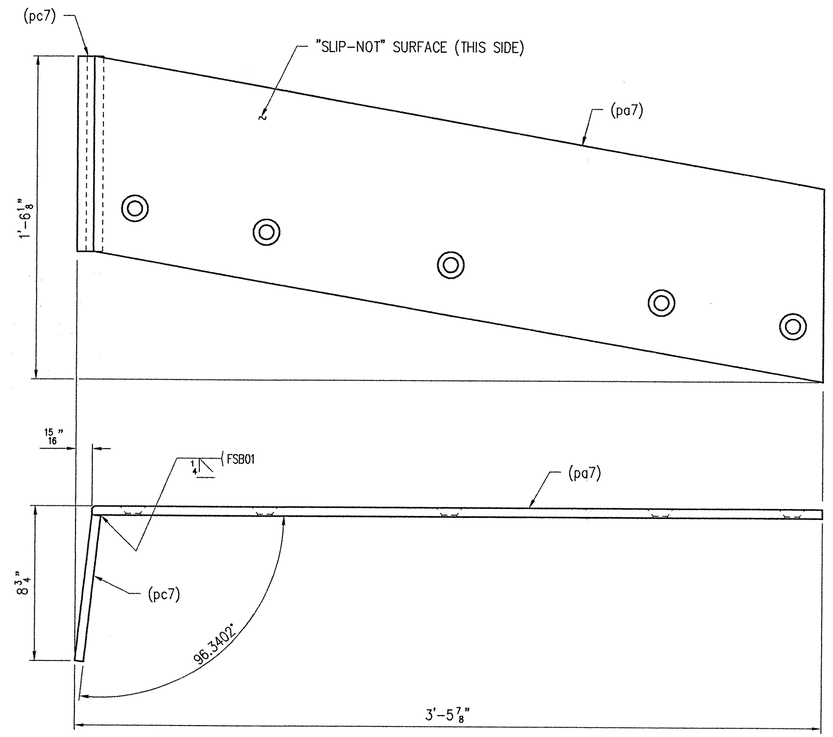
PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS ABUTMENT NO. 2

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| W.P. chk'd | Orig. |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 12/5/01 |

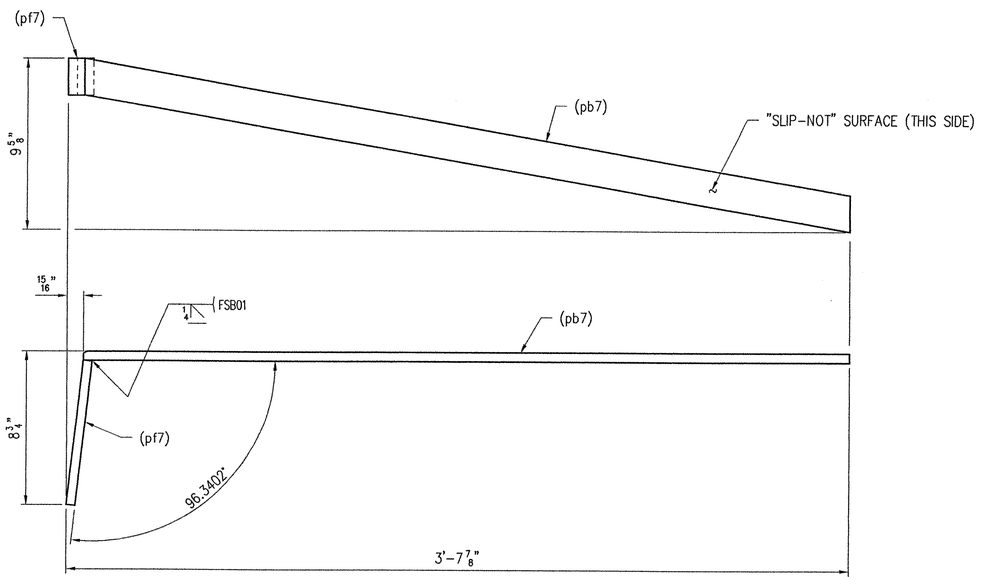



1 – SUB-ASSEMBLY – 4A

(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 |

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LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

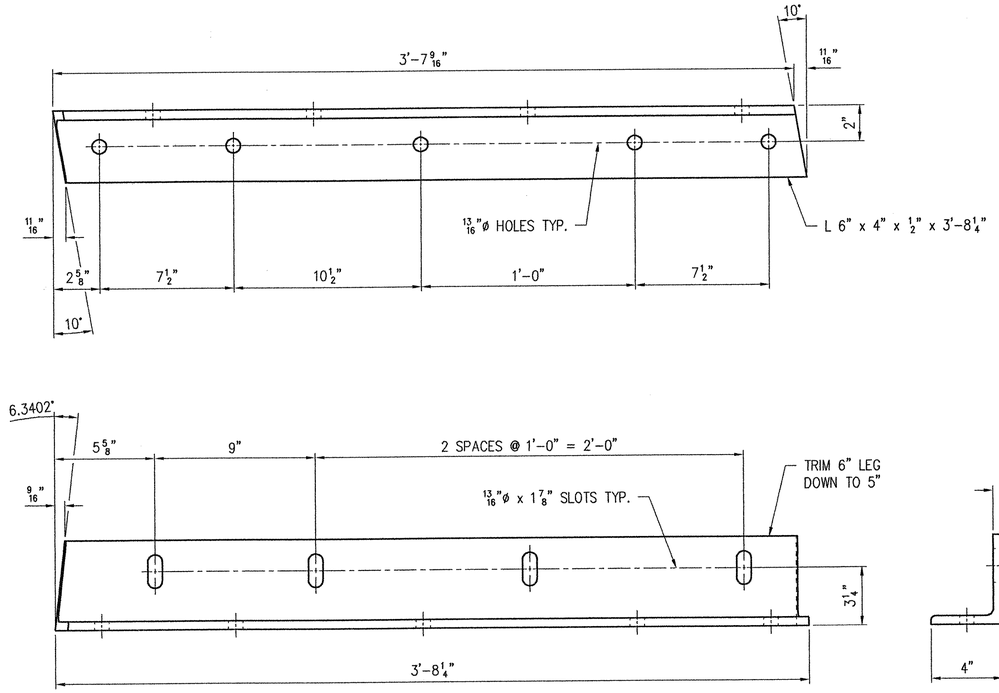
RECEIVED
CK'D BY LWS OK'D BY
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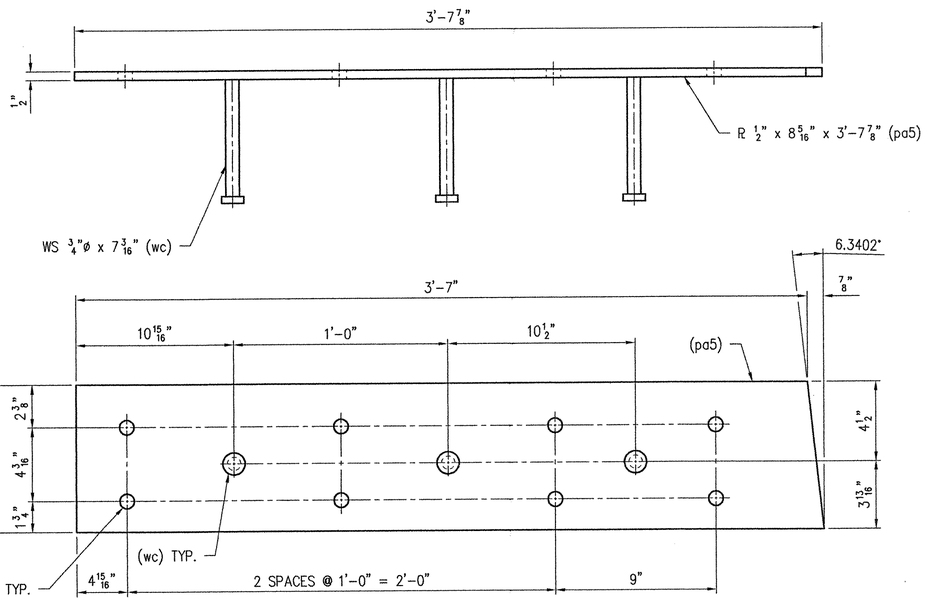
PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS ABUTMENT NO. 2

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

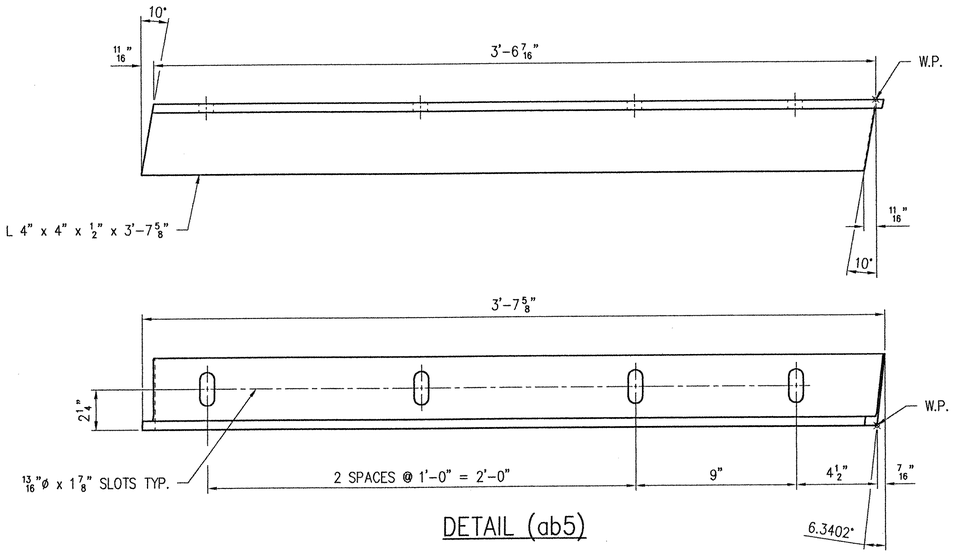
L.E.C. 4 OF 30 | SHEET NO. 4 OF 15 | Job. No. : 2034.1042.1




DETAIL (aa5)




1 – SUB-ASSEMBLY – 5A




DETAIL (ab5)

SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 3, 4, 6 & 7.

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BY CPW DATE 1/11/02

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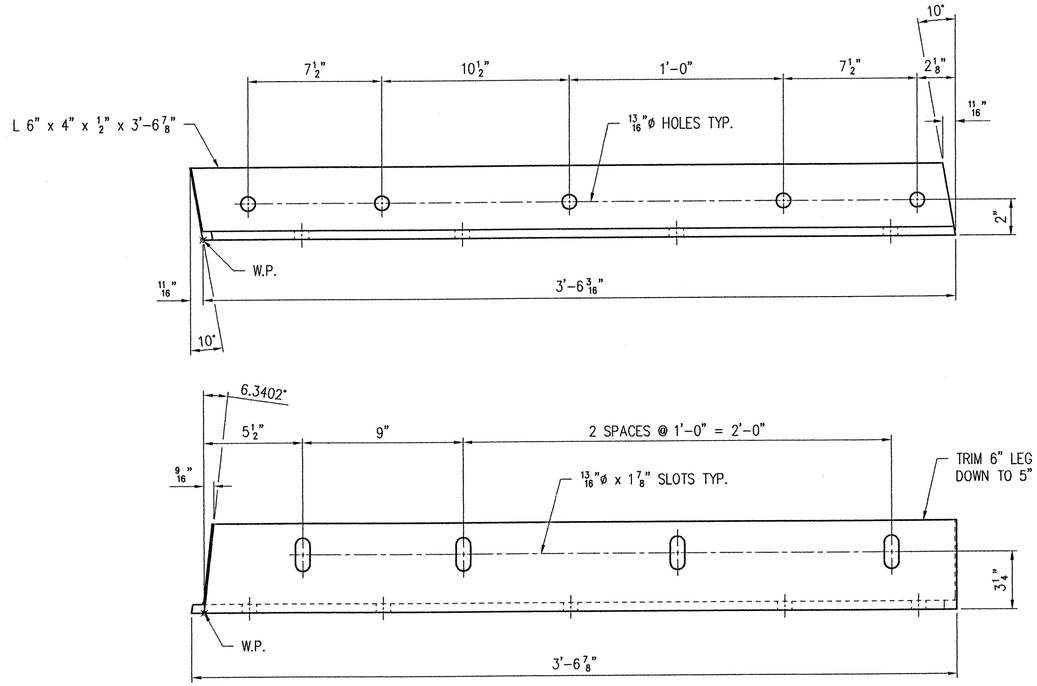
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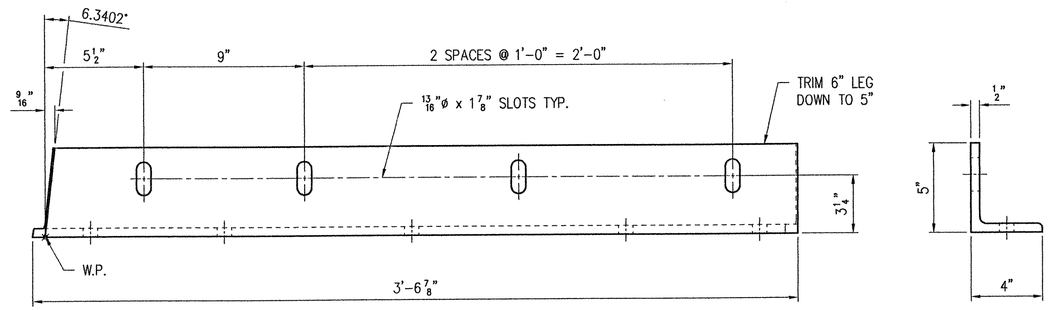
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

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|---|---|---|
| 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 |

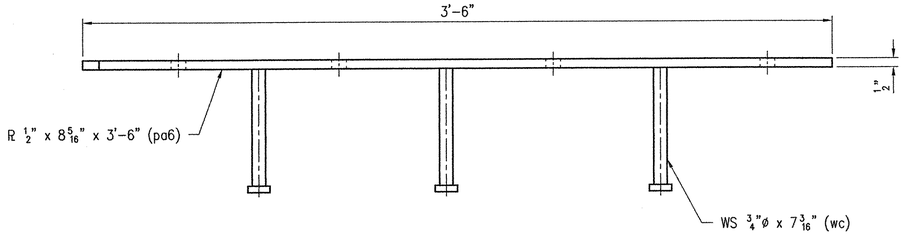
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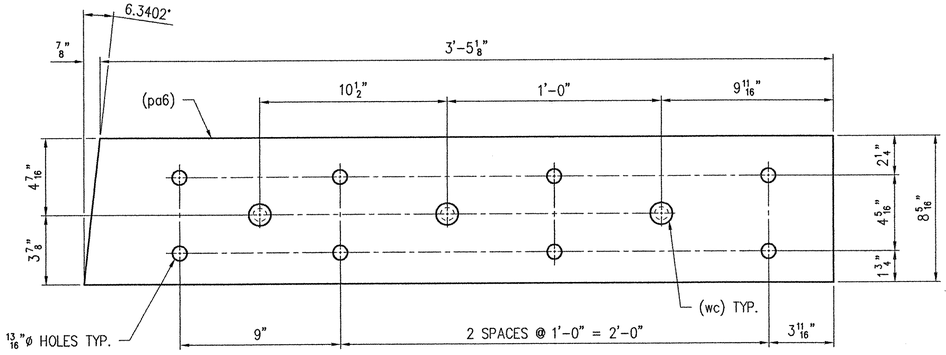
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| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 12/5/01 |



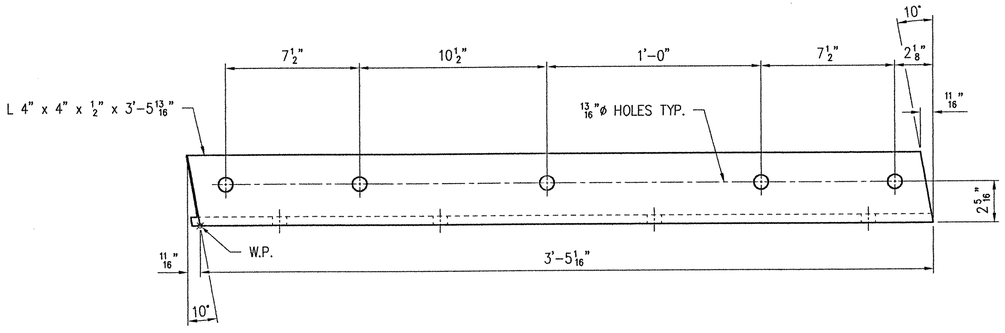



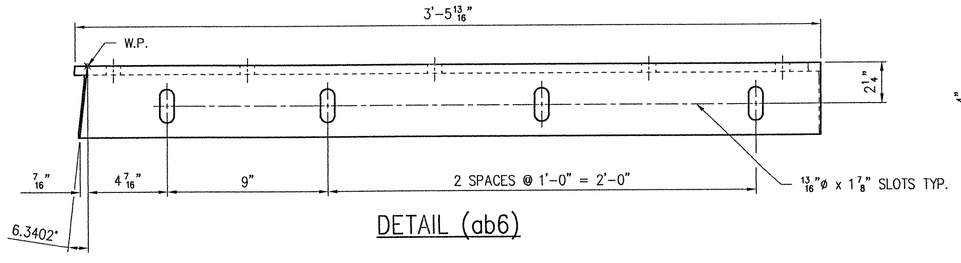

DETAIL (aa6)




1 – SUB-ASSEMBLY – 6A




DETAIL (ab6)

SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 3, 4, 5 & 7.

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JAN 11 2002
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LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

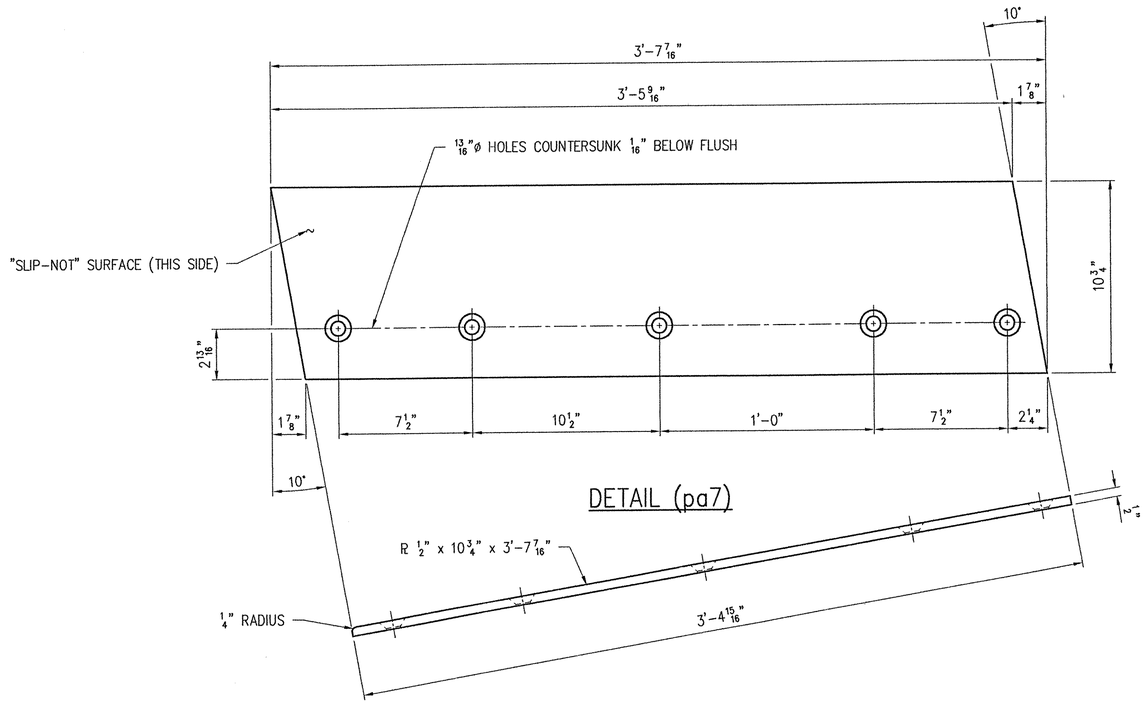
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|---|---|---|
| PROJECT | — | ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3 |
| STATE PROJECT | — | AC BRZ 1444(22) |
| FEDERAL PROJECT | — | |
| CUSTOMER | — | BECK & BELLUCCI, INC. |
| LOCATION | — | WINDSOR COUNTY, VT |
| DESCRIPTION | — | EXPANSION JOINT DETAILS ABUTMENT NO. 2 |

Orig.

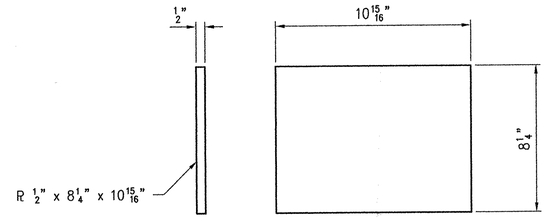
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| W.P. chk'd | |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 12/5/01 |

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| FOR PRINTS ISSUED | DATE |

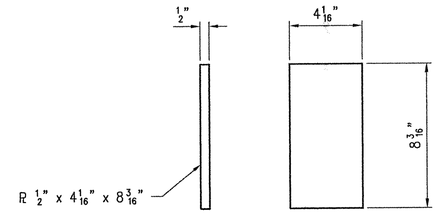
L.E.C. 6 OF 30 | SHEET NO. 6 OF 15 | Job. No. : 2034.1042.1



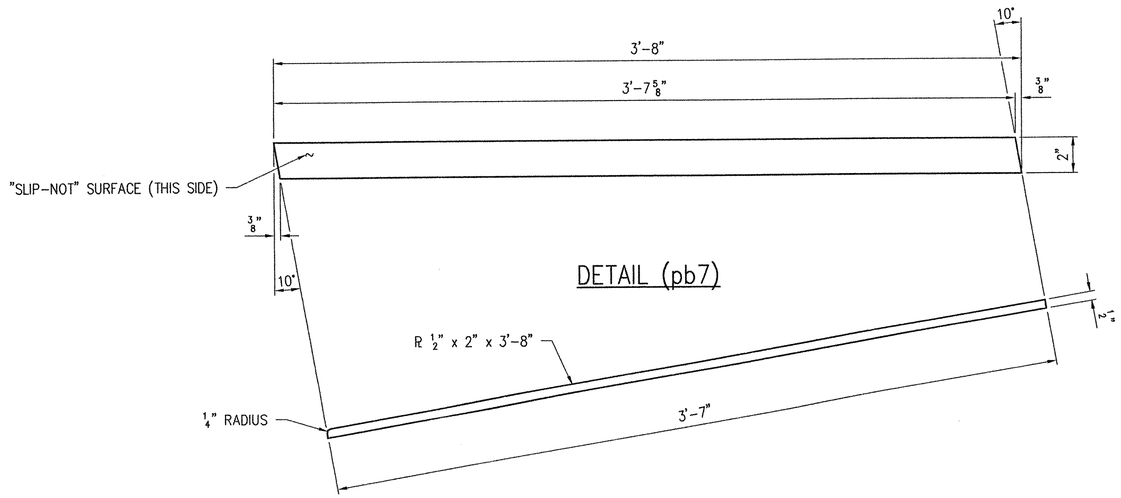

DETAIL (pa7)



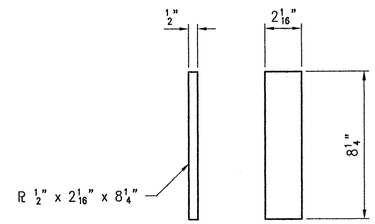

DETAIL (pc7)




DETAIL (pd7)




DETAIL (pb7)




DETAIL (pf7)

SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 3, 4, 5 & 6.

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JAN 11 2002
RESUBMIT APPROVED ✓
BY GPW DATE 1/11/02

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| FOR PRINTS ISSUED | DATE |

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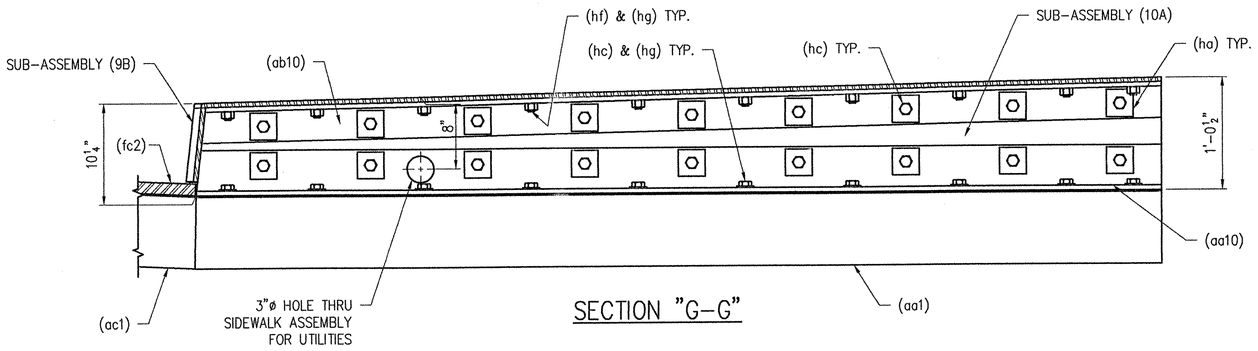
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

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|---|---|---|
| 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 |

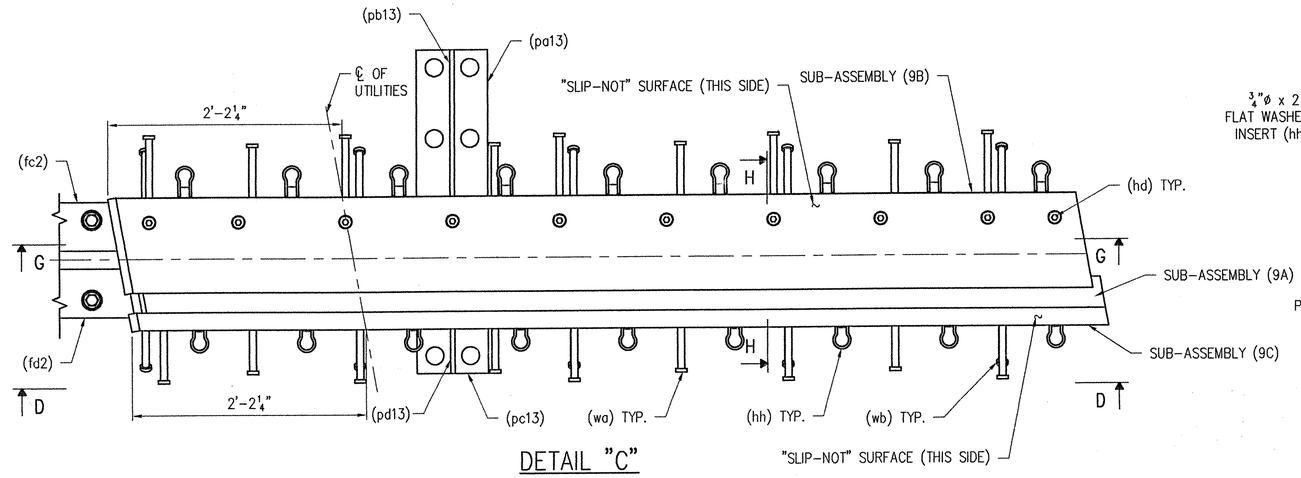
Orig.

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| W.P. chk'd | |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 12/5/01 |

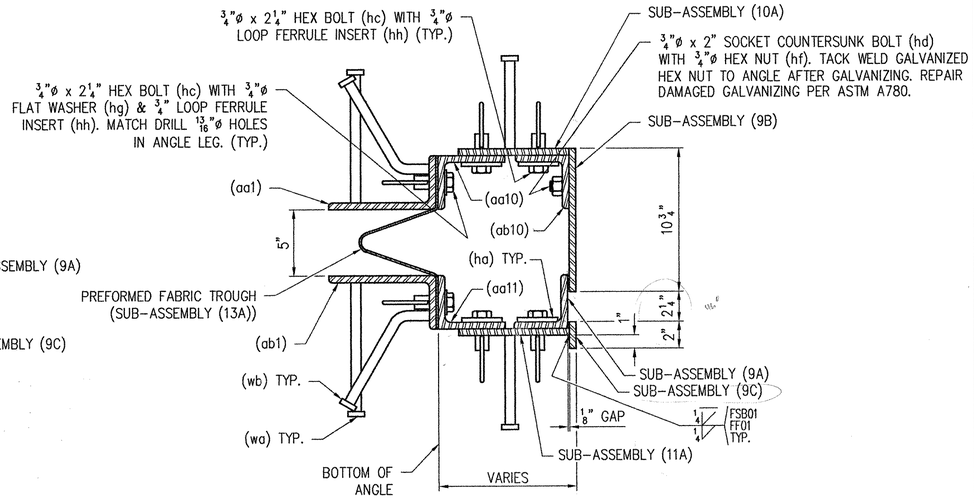
L.E.C. 7 OF 30 | SHEET NO. 7 OF 15 | Job. No. : 2034.1042.1



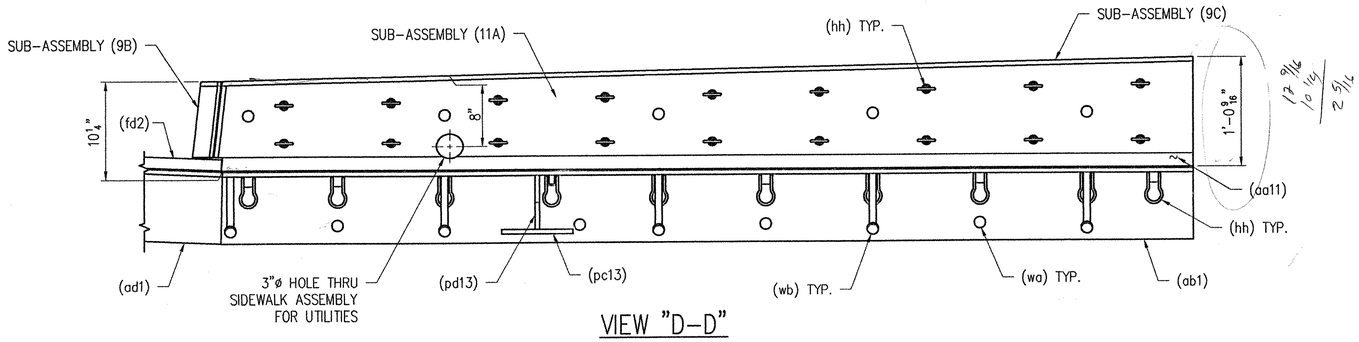

SECTION "G-G"




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 |

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LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

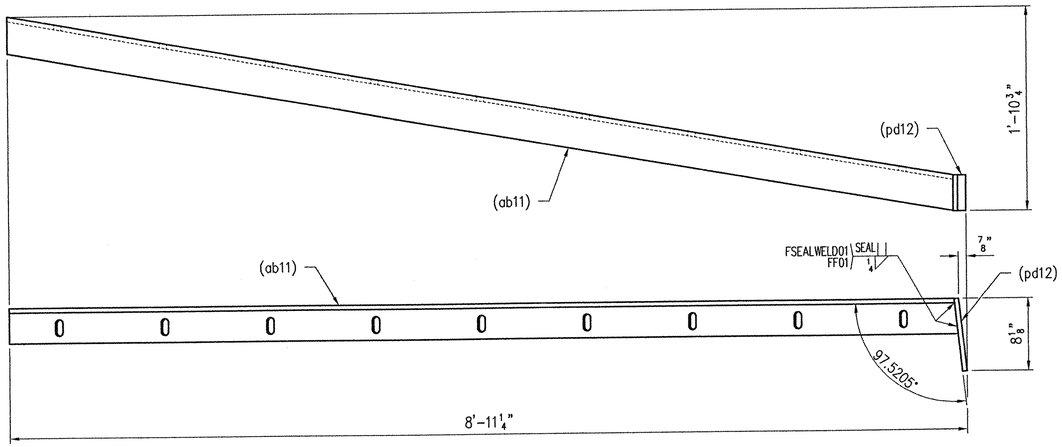
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JAN 11 2002
RESUBMIT BY cpw APPROVED DATE 1/11/02

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|---|---|---|
| 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 |

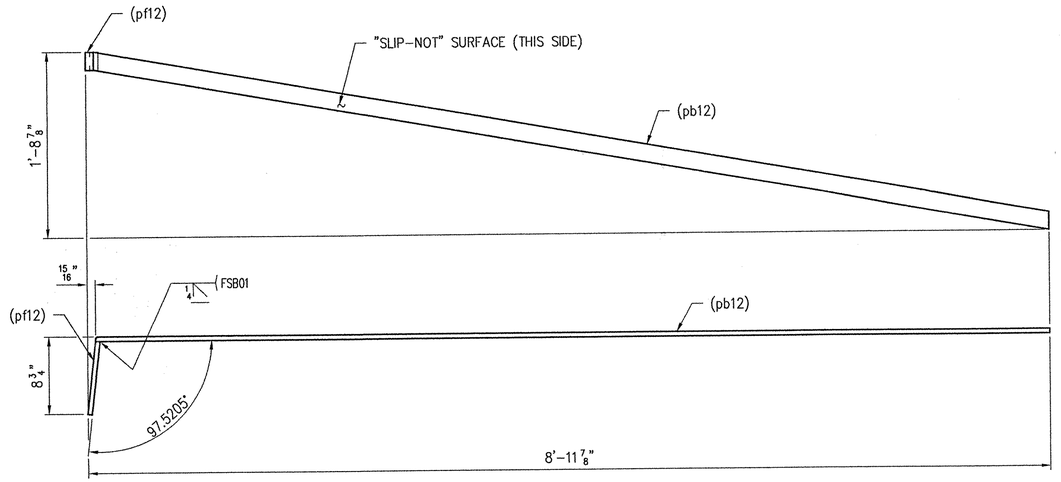
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| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 12/5/01 |

L.E.C. 8 OF 30 | SHEET NO. 8 OF 15 | Job. No. : 2034.1042.1

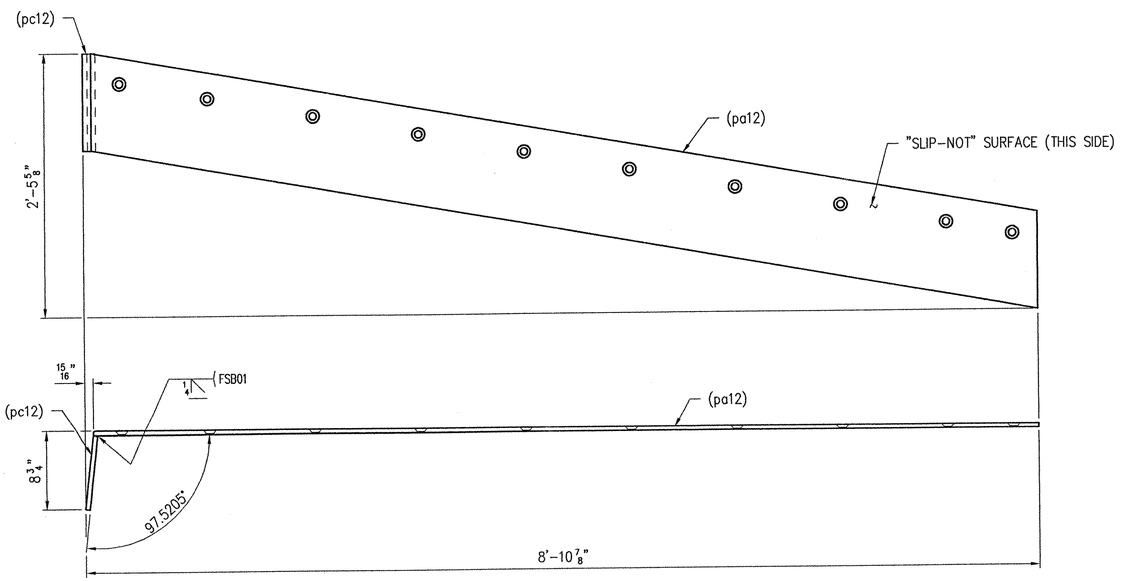



1 – SUB–ASSEMBLY – 9A

(SOME HIDDEN LINES REMOVED FOR CLARITY)




1 – SUB–ASSEMBLY – 9C




1 – SUB–ASSEMBLY – 9B

SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 8, 10, 11 & 12.

RECEIVED
CK'D BY LWS DK'D BY
JAN 11 2002
RESUBMIT APPROVED
BY CPW DATE 1/11/02

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| SHOP | |
| APPROVAL | |
| DIST. | |
| CUST. | |
| FOR PRINTS ISSUED | DATE |

| REV. | DESCRIPTION | DATE | INT. |
|---|---|---|---|
| 1 | GENERAL REVISION PER APPROVAL. | 1/3/02 | JMB |

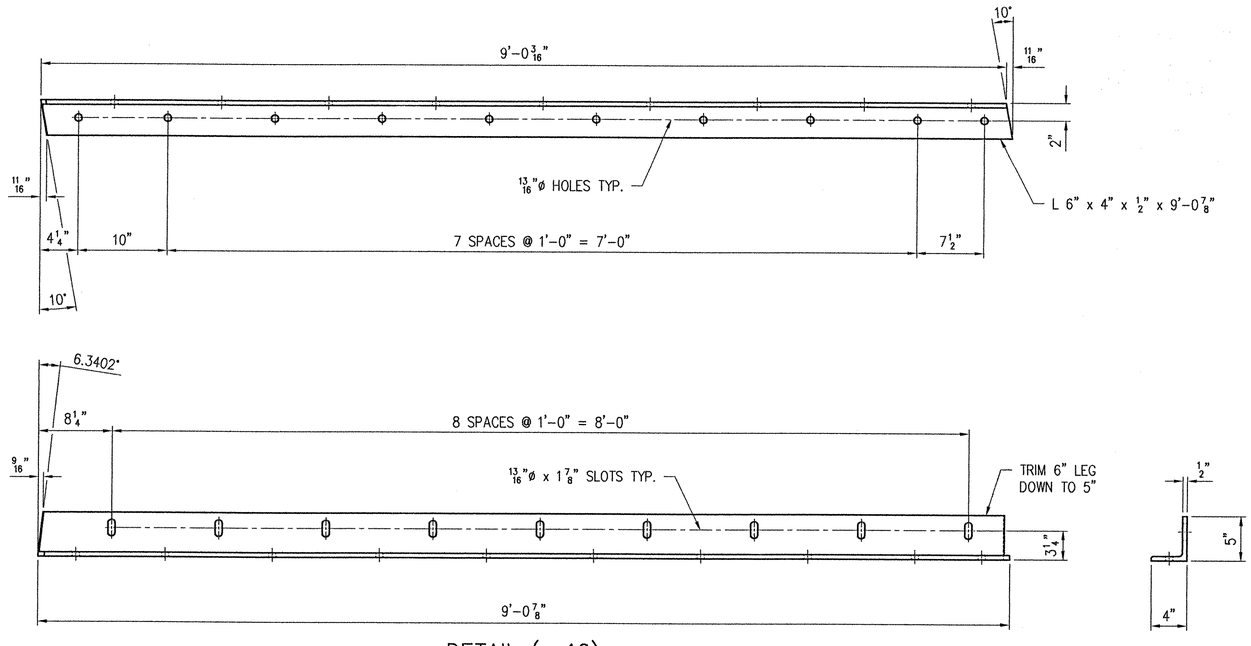
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

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 |

Dcby.

| | |
|---|---|
| W.P. chk'd | |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 12/5/01 |

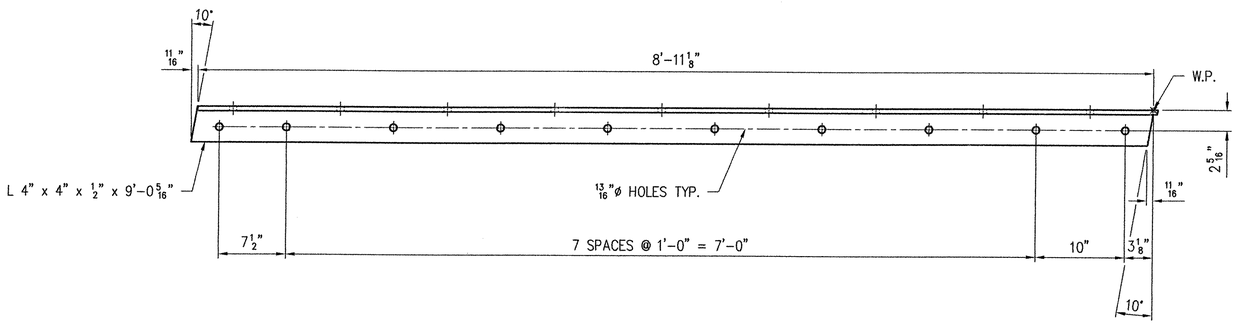


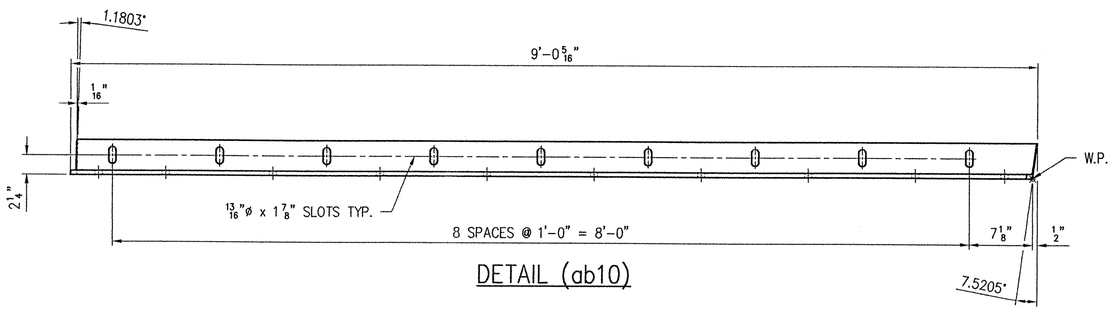




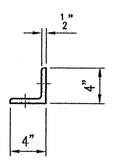


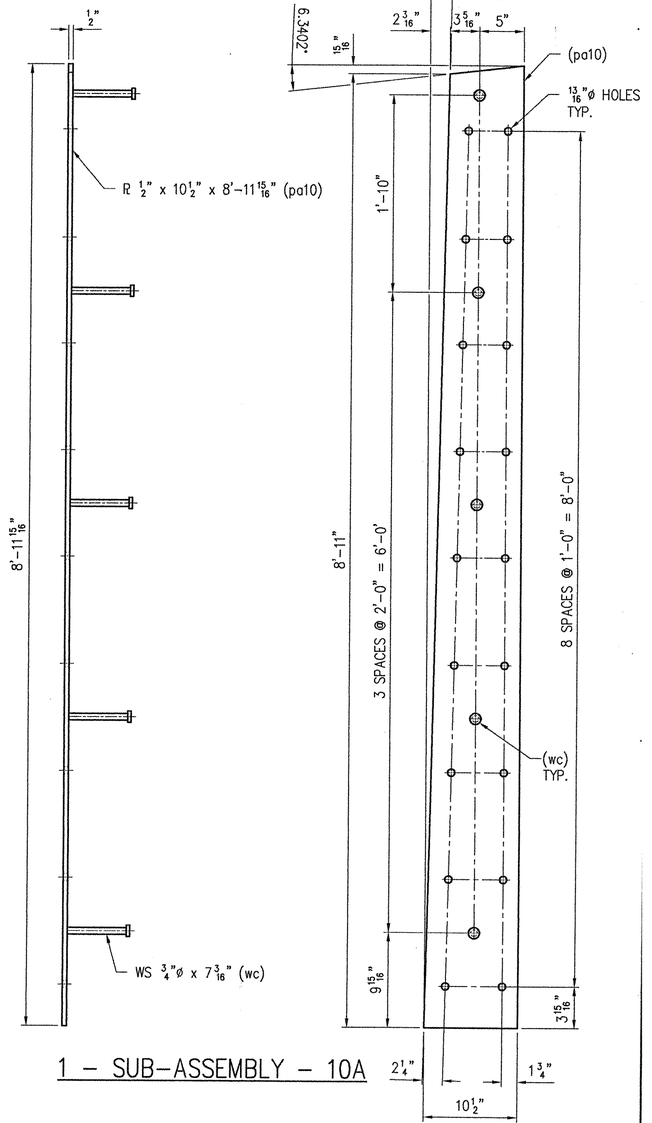

DETAIL (aa10)




DETAIL (ab10)




1 - SUB-ASSEMBLY - 10A

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| SHOP | |
| APPROVAL | |
| DIST. | |
| CUST. | |
| FOR | DATE |
| PRINTS ISSUED | |

| REV. | DESCRIPTION | DATE | INT. |
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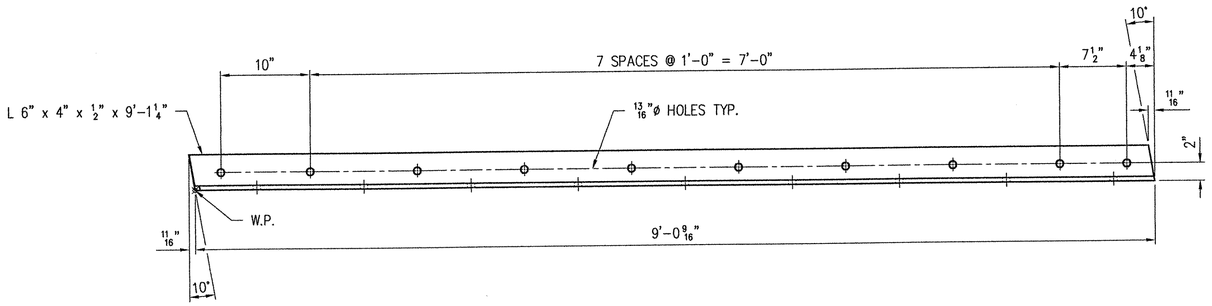
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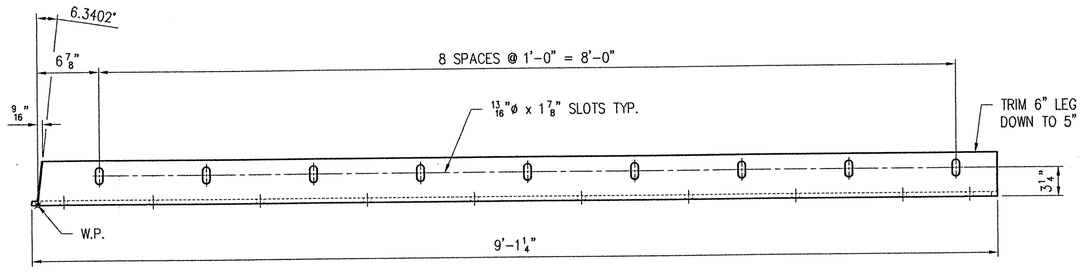
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (952) 368-3000

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

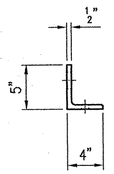
Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

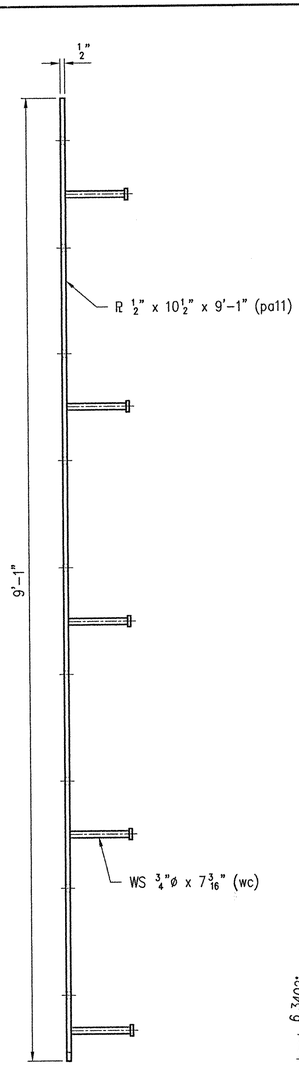
L.E.C. 10 OF 30 | SHEET NO. 10 OF 15 | Job. No. : 2034.1042.1

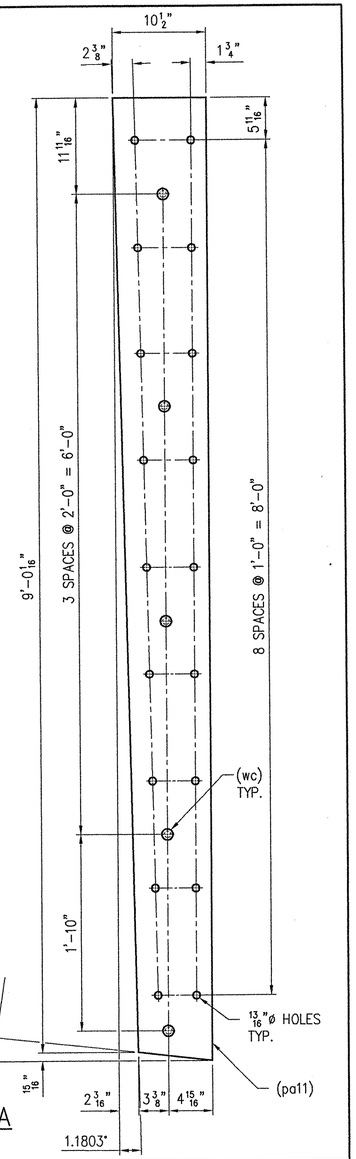


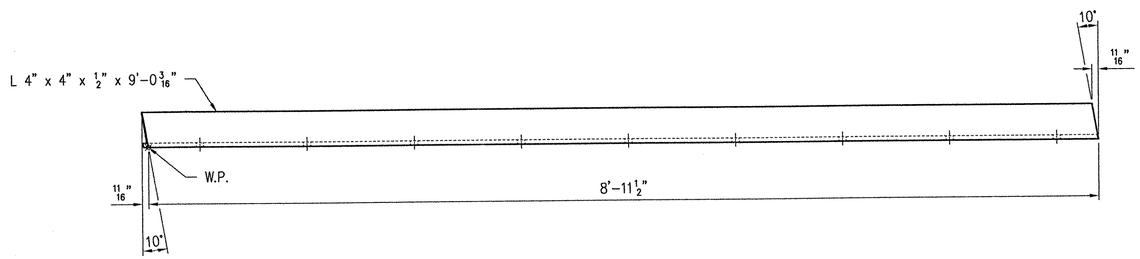

DETAIL (aa11)

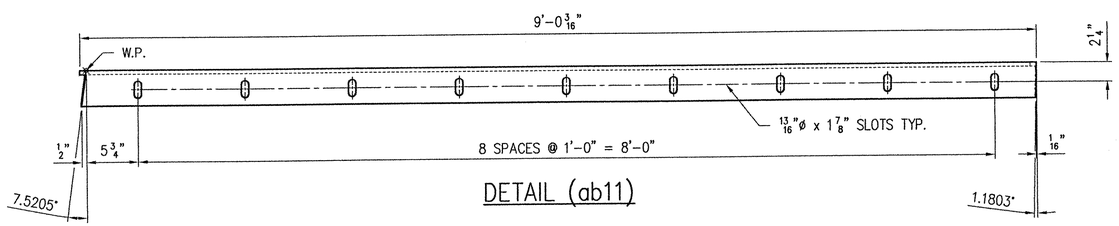


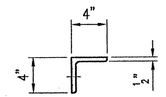




1 - SUB-ASSEMBLY - 11A




DETAIL (ab11)




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BY GPW DATE 1/11/02

SEE SHEET NO. 15 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 8, 9, 10 & 12.

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| SHOP | |
| APPROVAL | |
| DIST. | |
| CUST. | |
| FOR PRINTS ISSUED | DATE |

| REV. | DESCRIPTION | DATE | INT. |
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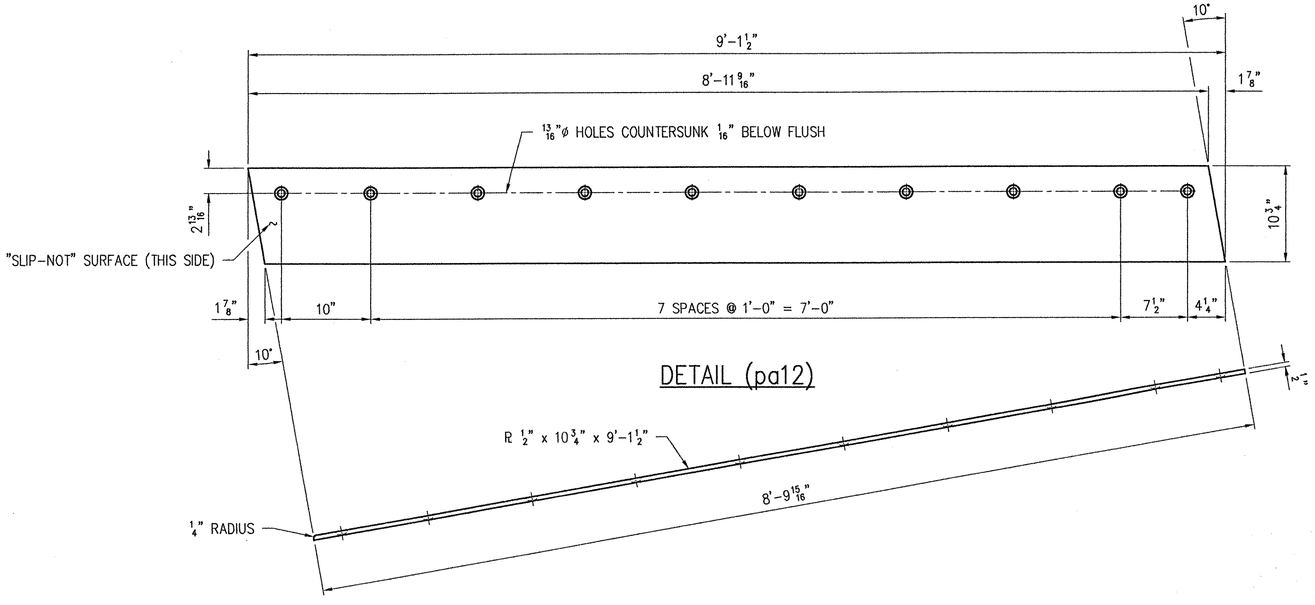
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LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (952) 368-3000

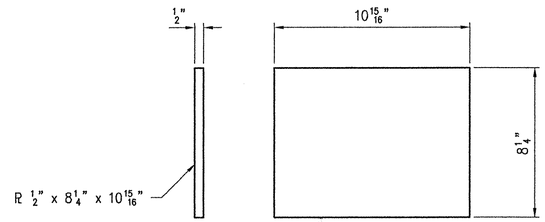
PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS ABUTMENT NO. 2

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

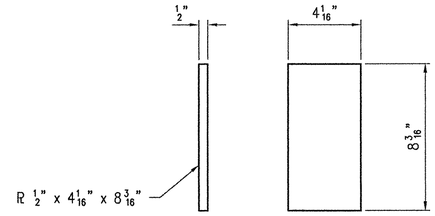
L.E.C. 11 OF 30 | SHEET NO. 11 OF 15 | Job. No. : 2034.1042.1



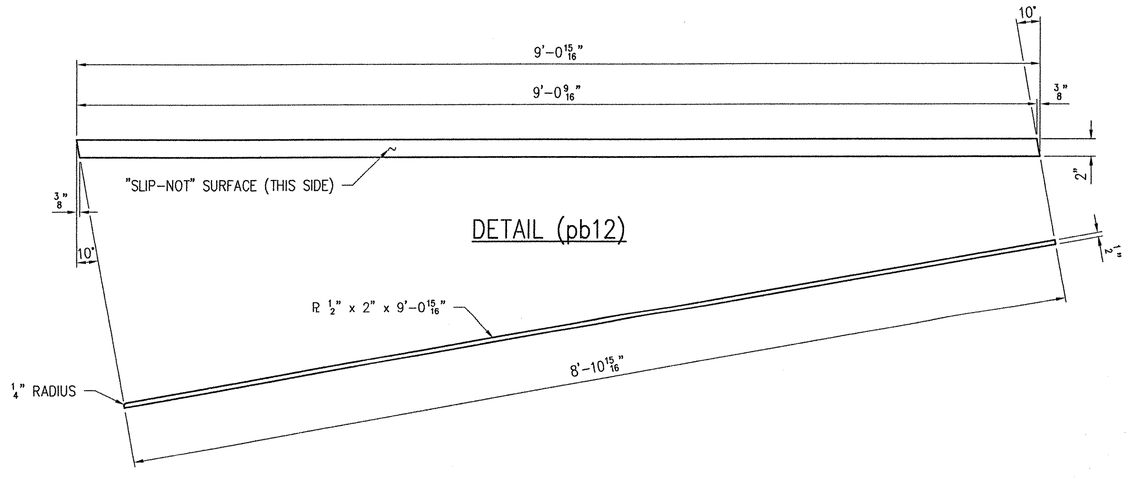

DETAIL (pa12)



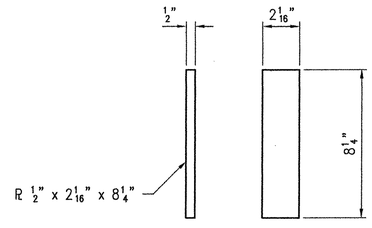

DETAIL (pc12)




DETAIL (pd12)




DETAIL (pb12)




DETAIL (pf12)

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RECEIVED
CK'D BY WGS OK'D BY
JAN 11 2002
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BY GPW DATE 1/11/02

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| SHOP | |
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| FOR PRINTS ISSUED | DATE |

| REV. | DESCRIPTION | DATE | INT. |
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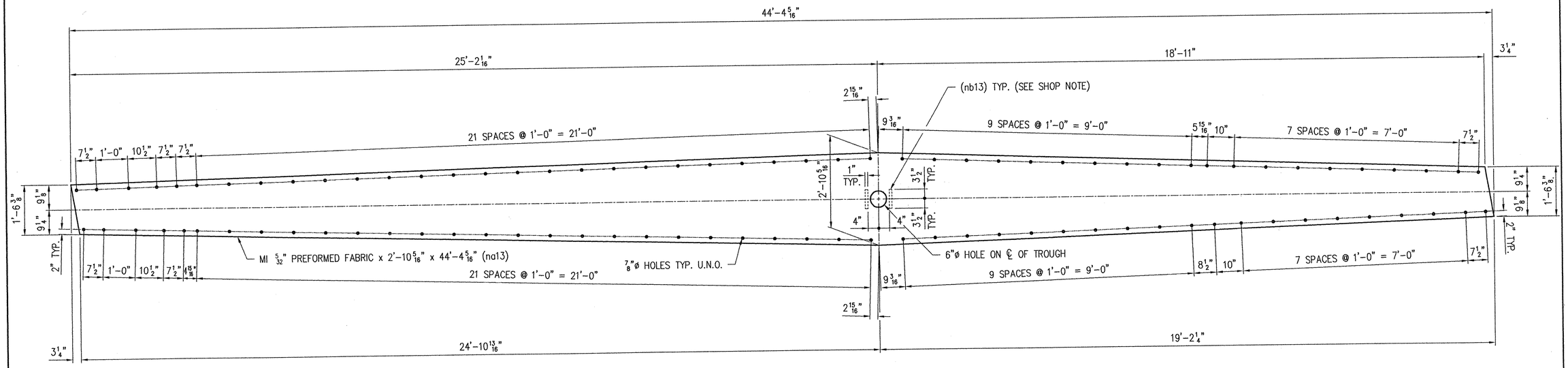
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4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

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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

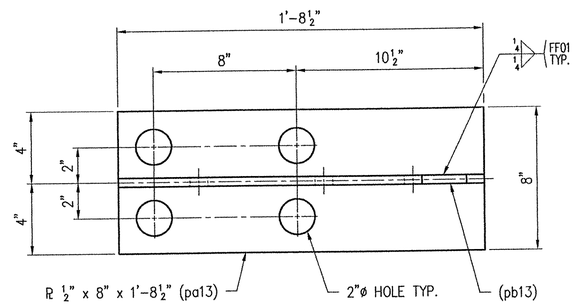
L.E.C. 12 OF 30 | SHEET NO. 12 OF 15 | Job. No. : 2034.1042.1

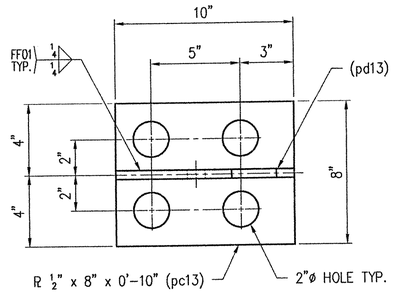


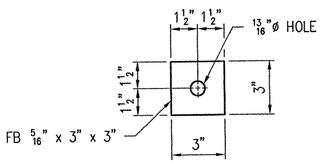

## 1 – SUB–ASSEMBLY – 13A

SHOP NOTE:
SEE SHEET NO. 15 OF 15 FOR FOLDED TROUGH END DETAILS.

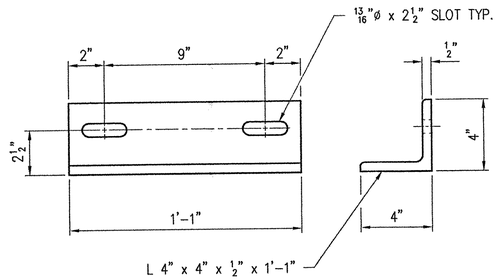
SHOP NOTE:
A 1/4" x 1" x 7" STRIP OF PREFORMED FABRIC (nb13) SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH. USE AN ADHESIVE APPROVED BY THE MANUFACTURER. THIS WILL SERVE AS A DRIP BEAD.



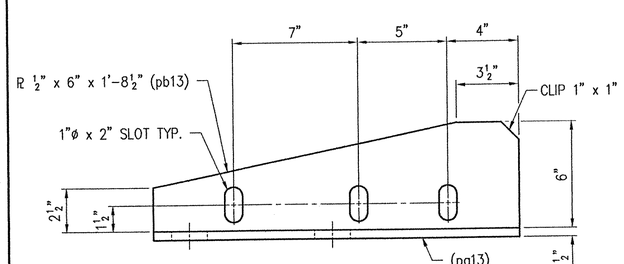



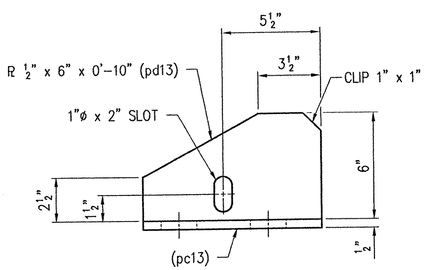

DETAIL (ha)



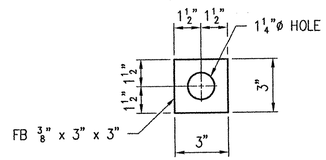

DETAIL (aa13)




DETAIL (pa13) & (pb13)




DETAIL (pc13) & (pd13)




## 80 – PLATE WASHER(S) – 13B

SEE SHEET NO. 15 FOR GENERAL NOTES.

| REV. | DESCRIPTION | DATE | INT. |
|---|---|---|---|
| 1 | GENERAL REVISION PER APPROVAL. | 1/3/02 | JMB |

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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.

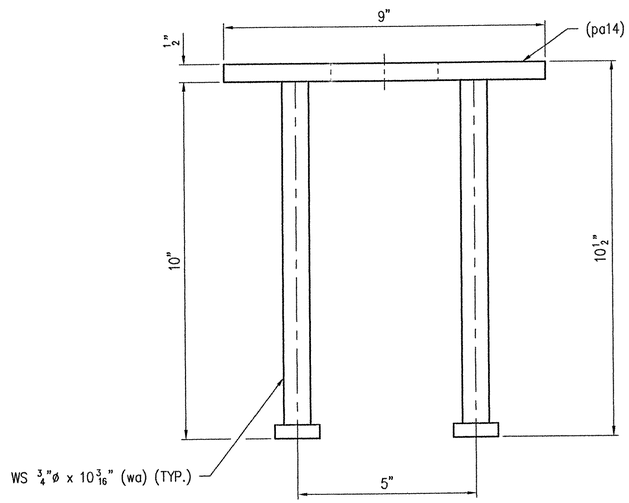
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|---|---|
| W.P. chk'd | |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 12/5/01 |

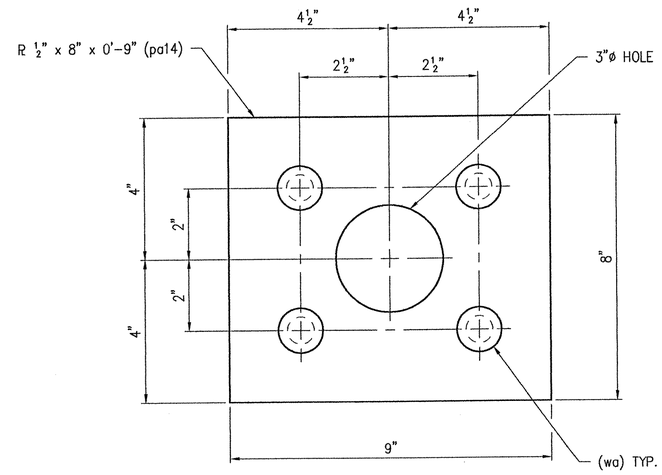
| SHOP | | |
|---|---|---|
| APPROVAL | | |
| DIST. | | |
| CUST. | | |
| FOR PRINTS ISSUED | DATE | |

RECEIVED
CK'D BY LWIS CK'D BY
JAN 11 2002
RESUBMIT APPROVED
BY CPW DATE 1/11/02

L.E.C. 13 OF 30 | SHEET NO. 13 OF 15 | Job. No. : 2034.1042.1

| 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

SEE SHEET NO. 15 FOR GENERAL NOTES.

RECEIVED
CK'D BY LWW OK'D BY
JAN 11 2002
RESUBMIT APPROVED
BY CPW DATE 1/11/02

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| DIST. | |
| | |
| CUST. | |
| FOR | DATE |
| PRINTS ISSUED | |

| REV. | DESCRIPTION | DATE | I |
|---|---|---|---|

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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

L.E.C. 14 OF 30 | SHEET NO. 14 OF 15 | Job. No. : 2034.104

## 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.

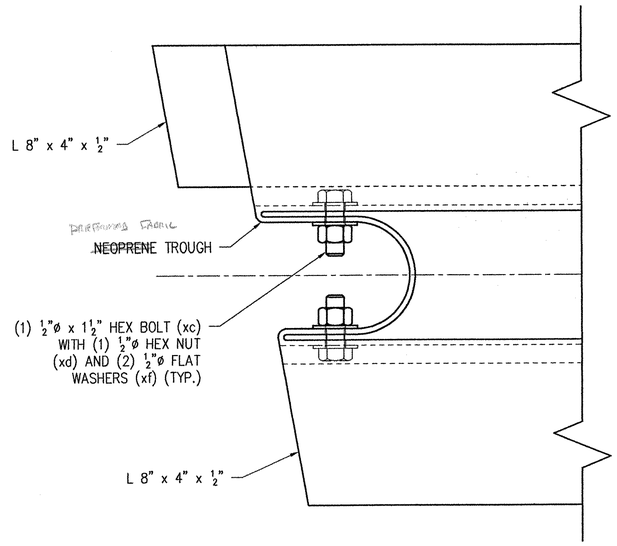
8.) BUTYL RUBBER TAPE SHALL CONFORM TO AASHTO M198 TYPE II.

9.) SHOP INSPECTION TO BE DONE BY VAOT.

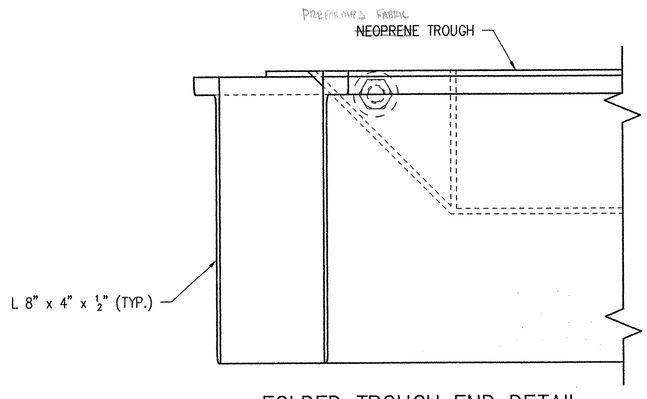
10.) PRIOR TO GALVANIZING, ALL CORNERS AND EDGES OF STEEL PLATES SHALL BE GROUND TO $\frac{1}{16}$" RADIUS.

11.) THE JOINT SHALL BE SHOP ASSEMBLED AND SHIPPED AS ONE UNIT.

12.) SEAL WELD ALL ACCESSIBLE JOINTS PRIOR TO GALVANIZING.




SHOP NOTE: PREFORMED FABRIC
FOLD NEOPRENE TROUGH AS SHOWN. DRILL $\frac{9}{16}$"ø HOLES THRU AND FASTEN AS SHOWN WITH ½"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 ½" A36 | 9'-0 3/8" | aa1 | | 15-10 |
| 3 | 1 | L 8" x 4" x ½" A36 | 9'-0 3/4" | ab1 | | 15-10 |
| 4 | 1 | L 8" x 4" x ½" A36 | 31'-7 11/16" | ac1 | | 15-10 |
| 5 | 1 | L 8" x 4" x ½" A36 | 31'-9" | ad1 | | 15-10 |
| 6 | 1 | L 8" x 4" x ½" A36 | 3'-6 3/8" | af1 | | 15-10 |
| 7 | 1 | L 8" x 4" x ½" A36 | 3'-7 3/4" | ag1 | | 15-10 |
| 8 | 1 | FB 1¼" x 5½" A36 | 15'-10 15/16" | fa2 | | 16-16 |
| 9 | 1 | FB 1¼" x 5½" A36 | 15'-9 3/4" | fb2 | | 16-16 |
| 10 | 1 | FB 1¼" x 5½" A36 | 15'-9 7/8" | fc2 | | 16-16 |
| 11 | 1 | FB 1¼" x 5½" A36 | 15'-11 1/16" | fd2 | | 16-16 |
| 12 | 1 | L 6" x 4" x ½" A36 | 3'-8 1/4" | aa5 | TRIM 6" LEG DOWN TO 5" | 15-8 |
| 13 | 1 | L 4" x 4" x ½" A36 | 3'-7 5/8" | ab5 | | 15-6 |
| 14 | 1 | R ½" x 8 5/16" A36 | 3'-7 7/8" | pa5 | SHAPE CUT | 19-1 |
| 15 | 1 | L 6" x 4" x ½" A36 | 3'-6 7/8" | aa6 | TRIM 6" LEG DOWN TO 5" | 15-8 |
| 16 | 1 | L 4" x 4" x ½" A36 | 3'-5 13/16" | ab6 | | 15-6 |
| 17 | 1 | R ½" x 8 5/16" A36 | 3'-6" | pa6 | SHAPE CUT | 19-1 |
| 18 | 1 | R ½" x 10¼" A36 | 3'-7 1/16" | pa7 | SLIP-NOT GRIP PLATE/SHAPE CUT | |
| 19 | 1 | R ½" x 2" A36 | 3'-8" | pb7 | SLIP-NOT GRIP PLATE/SHAPE CUT | |
| 20 | 1 | R ½" x 8¼" A36 | 0'-10 15/16" | pc7 | | 19-1 |
| 21 | 1 | R ½" x 4 1/16" A36 | 0'-8 3/16" | pd7 | | 19-1 |
| 22 | 1 | R ½" x 2 1/16" A36 | 0'-8¼" | pf7 | | 19-1 |
| 23 | 1 | L 6" x 4" x ½" A36 | 9'-0 7/8" | aa10 | TRIM 6" LEG DOWN TO 5" | 15-8 |
| 24 | 1 | L 4" x 4" x ½" A36 | 9'-0 5/16" | ab10 | | 15-6 |
| 25 | 1 | R ½" x 10½" A36 | 8'-11 15/16" | pa10 | SHAPE CUT | 19-1 |
| 26 | 1 | L 6" x 4" x ½" A36 | 9'-1¼" | aa11 | TRIM 6" LEG DOWN TO 5" | 15-8 |
| 27 | 1 | L 4" x 4" x ½" A36 | 9'-0 3/16" | ab11 | | 15-6 |
| 28 | 1 | R ½" x 10½" A36 | 9'-1" | pa11 | SHAPE CUT | 19-1 |
| 29 | 1 | R ½" x 10¾" A36 | 9'-1½" | pa12 | SLIP-NOT GRIP PLATE/SHAPE CUT | |
| 30 | 1 | R ½" x 2" A36 | 9'-0 15/16" | pb12 | SLIP-NOT GRIP PLATE/SHAPE CUT | |
| 31 | 1 | R ½" x 8¼" A36 | 0'-10 15/16" | pc12 | | 19-1 |
| 32 | 1 | R ½" x 4 1/16" A36 | 0'-8 3/16" | pd12 | | 19-1 |
| 33 | 1 | R ½" x 2 1/16" A36 | 0'-8¼" | pf12 | | 19-1 |
| 34 | 9 | L 4" x 4" x ½" A36 | 1'-1" | aa13 | SHIPPING DEVICE | 15-6 |
| 35 | 1 | MI 59/32 PREFORMED FABRIC x 34 5/16" | 44'-4 5/16" | na13 | 3-PLY/SEE NOTE NO. 7 | |
| 36 | 2 | MI ¼" PREFORMED FABRIC x 1" | 0'-7" | nb13 | DRIP BEAD | |
| 37 | 5 | R ½" x 8" A36 | 1'-8½" | pa13 | | 19-1 |
| 38 | 5 | R ½" x 6" A36 | 1'-8½" | pb13 | SHAPE CUT | 19-1 |
| 39 | 5 | R ½" x 8" A36 | 0'-10" | pc13 | | 19-1 |
| 40 | 5 | R ½" 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 ¾"ø x 3½" A325 HDG | | hb | SHIPPING HARDWARE | 23-13 |
| 43 | 128 | HB ¾"ø x 2¼" A325 HDG | | hc | | 23-11 |
| 44 | 15 | MG ½"ø x 2" SOKT CTSK F835 HDG | | hd | | |
| 45 | 15 | HN ¾"ø HVY A563DH HDG | | hf | | 25- |
| 46 | 94 | FW ¾"ø F436 HDG | | hg | | 27- |
| 47 | 146 | MI ¾"ø FERRULE LOOP INSERT ZP | | hh | DAYTON/RICHMOND F-42 | 35- |
| 48 | 44 | WS ¾"ø x 10 3/16" A108 | | wa | | 29-1 |
| 49 | 44 | WS ¾"ø x 10 3/16" A108 | | wb | BEND @ 30° | 29-1 |
| 50 | 16 | WS ¾"ø x 7 3/16" A108 | | wc | | 29-1 |
| 51 | 4 | MI ⅛" x 2½" BUTYL RUBBER TAPE | 8 YD. ROLL | xa | MCMASTER CARR #76385A16 | |
| 52 | 1 | MI NEVER-SEIZE GREASE | | xb | | |
| 53 | 4 | HB ½"ø x 1½" A325 HDG | | xc | | 23- |
| 54 | 4 | HN ½"ø HVY A563DH HDG | | xd | | 25- |
| 55 | 8 | FW ½"ø F436 HDG | | xf | | 27- |
| 56 | 80 | PLATE WASHERS | | 13B | HDG | |
| 57 | 80 | FB ⅜" x 3" A36 | 0'-3" | 13B | | 16-7 |
| 58 | 45 | RB 1"ø CONT. THRD. A36 | 0'-6½" | 13C | 40 / HDG | 18-2 |
| 59 | 85 | HN 1"ø HVY A563DH HDG | | 13D | 80 | 25-1 |
| 60 | 20 | HB ¾"ø x 2¼" 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

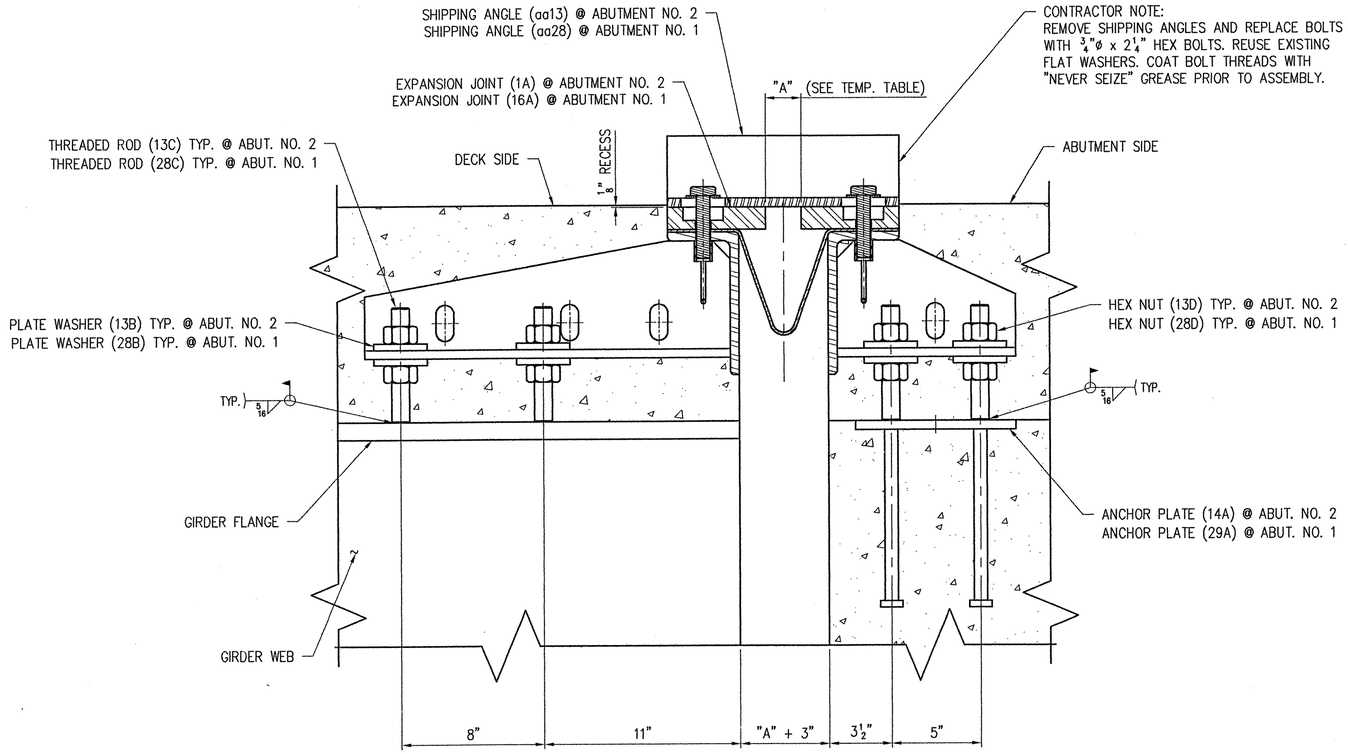
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CK'D BY WBS OK'D BY
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BY CPW DATE 1/11/02

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| 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 | BILL OF MATERIAL & GENERAL NOTES ABUTMENT NO. 2 |

Orig
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

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 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

SEE SHEET NO. 15 FOR GENERAL NOTES.
SEE PLAN VIEWS ON SHEET NO. 1 & 16 FOR ORIENTATION OF JOINTS.

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| DIST. | |
| CUST. | |
| FOR | DATE |
| PRINTS ISSUED | |

| REV. | DESCRIPTION | DATE | INT. |
|---|---|---|---|
| 1 | GENERAL REVISION PER APPROVAL. | 1/2/02 | JMB |

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4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

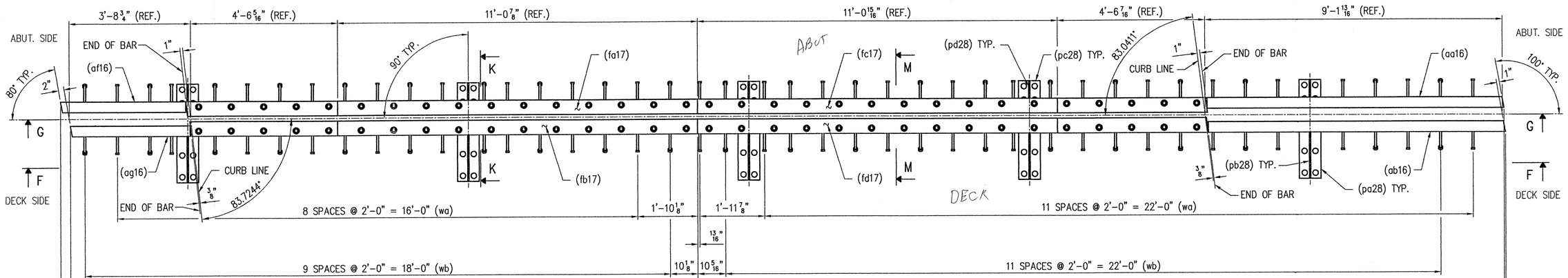
PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT ERECTION ABUTMENT NO. 1 & 2

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

L.E.C. E1 OF 1 | SHEET NO. E1 OF 1 | Job. No. : 2034.1042.1

NOTE: SEE SHEET NO. 18 FOR CURB ASSEMBLY ON THIS SIDE.

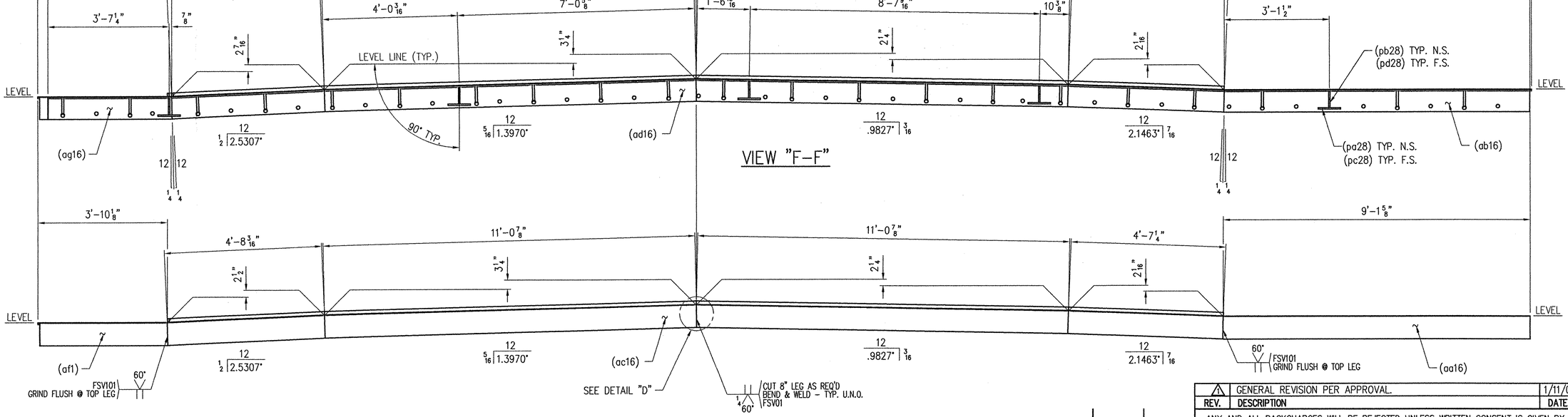
NOTE: SEE SHEET NO. 23 FOR CURB ASSEMBLY ON THIS SIDE.




SHOP NOTE:
ADJUST STUD SPACING AS REQUIRED TO AVOID INTERFERENCE WITH SUPPORTS AND LOOP FERRULE INSERTS.

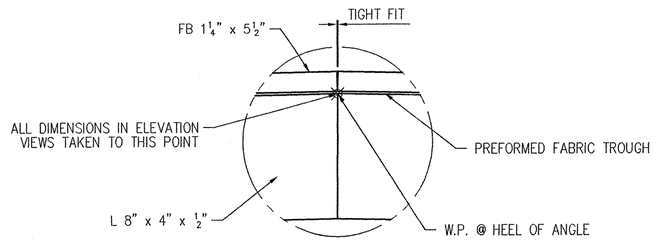
## PLAN VIEW
## 1 – EXPANSION JOINT – 16A

SHOP NOTE:
ADJUST STUD SPACING AS REQUIRED TO AVOID INTERFERENCE WITH SUPPORTS AND LOOP FERRULE INSERTS.




## VIEW "F–F"

## VIEW "G–G"




## 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.

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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 1/2".
-FOR SECTION "K–K" AND SECTION "M–M" SEE SHEET NO. 17.

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| REV. | DESCRIPTION | DATE | INT. |
|---|---|---|---|
| 1 | GENERAL REVISION PER APPROVAL. | 1/11/02 | JMB |

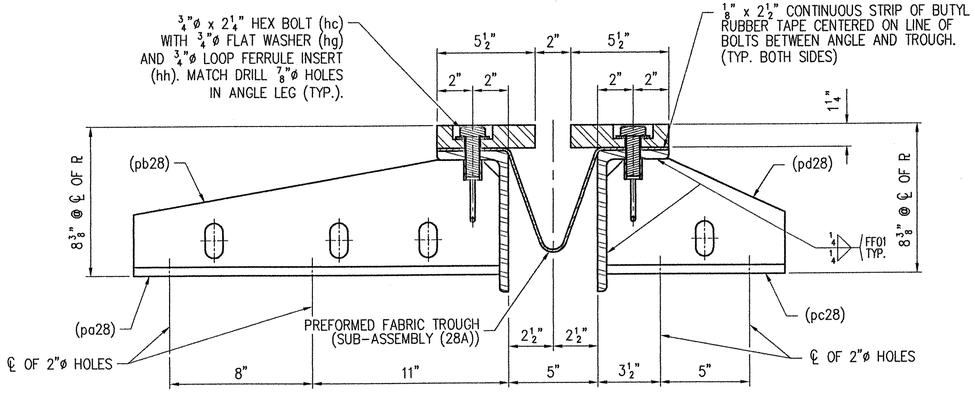
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

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4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

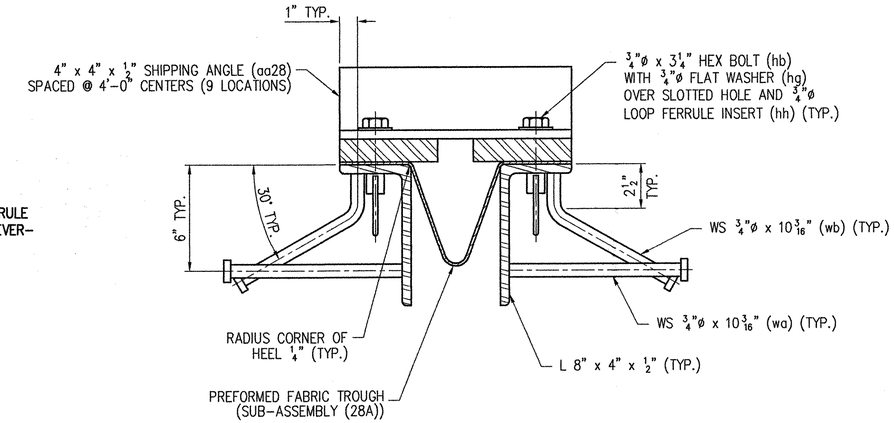
| | | |
|---|---|---|
| PROJECT | — | ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3 |
| STATE PROJECT | — | AC BRZ 1444(22) |
| FEDERAL PROJECT | — | |
| CUSTOMER | — | BECK & BELLUCCI, INC. |
| LOCATION | — | WINDSOR COUNTY, VT |
| DESCRIPTION | — | EXPANSION JOINT DETAILS ABUTMENT NO. 1 |

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

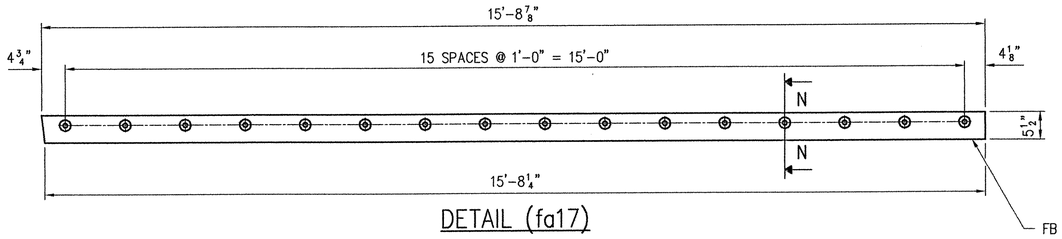



SECTION "K-K"

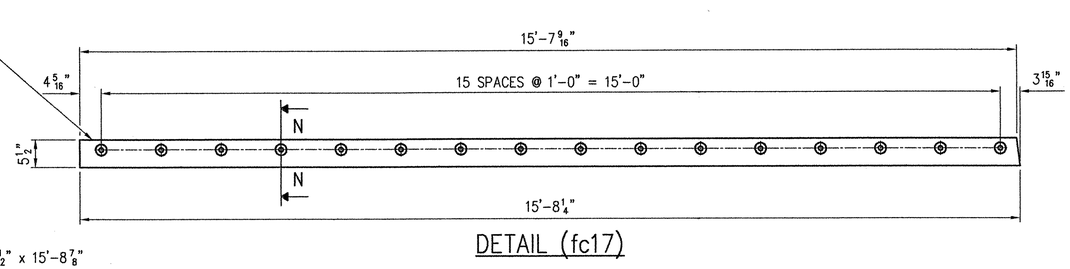



SHOP NOTE:
COAT BOLT & FERRULE THREADS WITH "NEVER-SEIZE" GREASE.

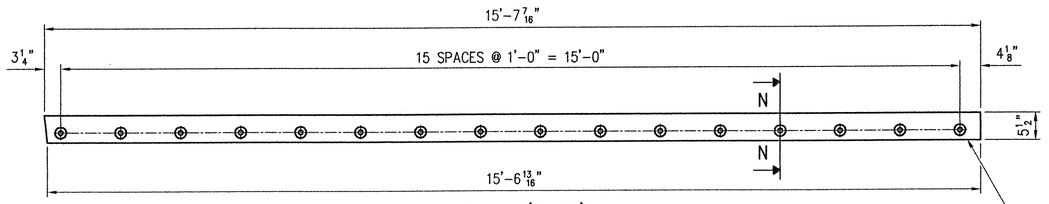
SECTION "M-M"



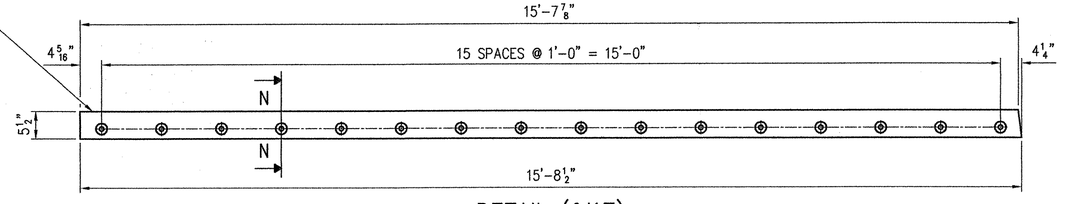

DETAIL (fa17)



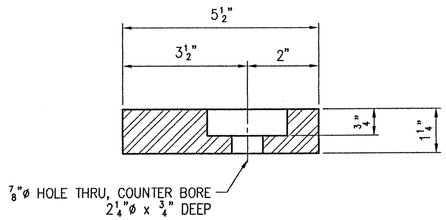

DETAIL (fc17)




DETAIL (fb17)




DETAIL (fd17)




SECTION "N-N"

SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 16.

| REV. | DESCRIPTION | DATE | INT. |
|---|---|---|---|
| 1 | GENERAL REVISION PER APPROVAL. | 1/11/02 | JMB |

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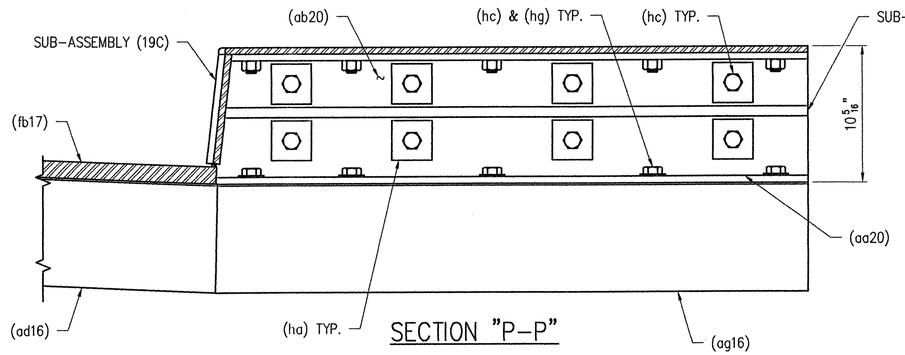
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| DIST. | |
| CUST. | |
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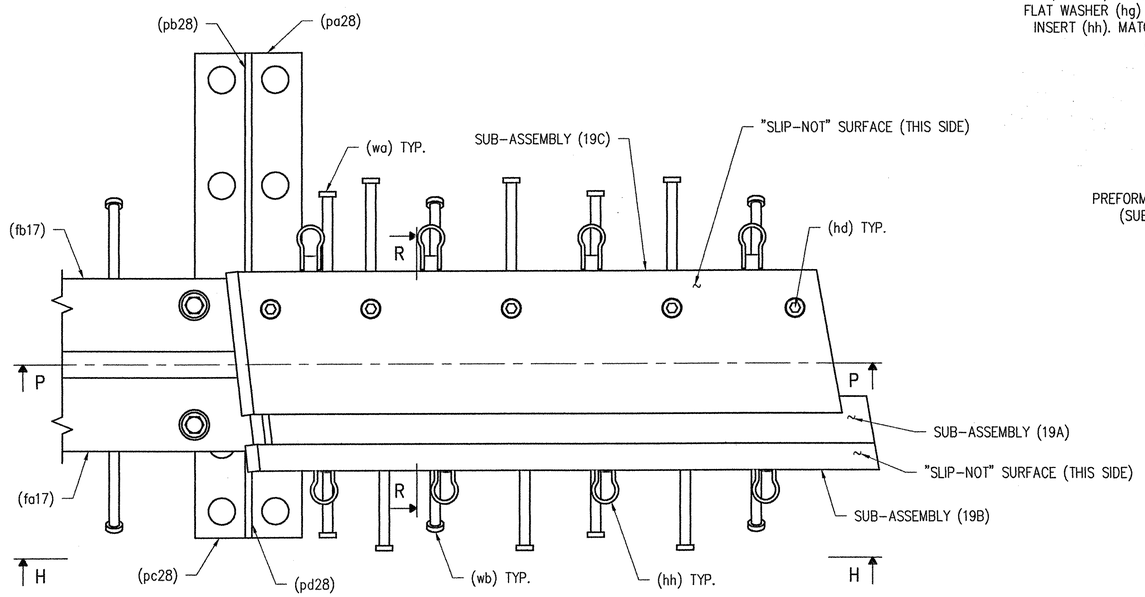

| | | |
|---|---|---|
| PROJECT | — | ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3 |
| STATE PROJECT | — | AC BRZ 1444(22) |
| FEDERAL PROJECT | — | |
| CUSTOMER | — | BECK & BELLUCCI, INC. |
| LOCATION | — | WINDSOR COUNTY, VT |
| DESCRIPTION | — | EXPANSION JOINT DETAILS ABUTMENT NO. 1 |

Orig.

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|---|---|
| W.P. chk'd | |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 12/20/01 |

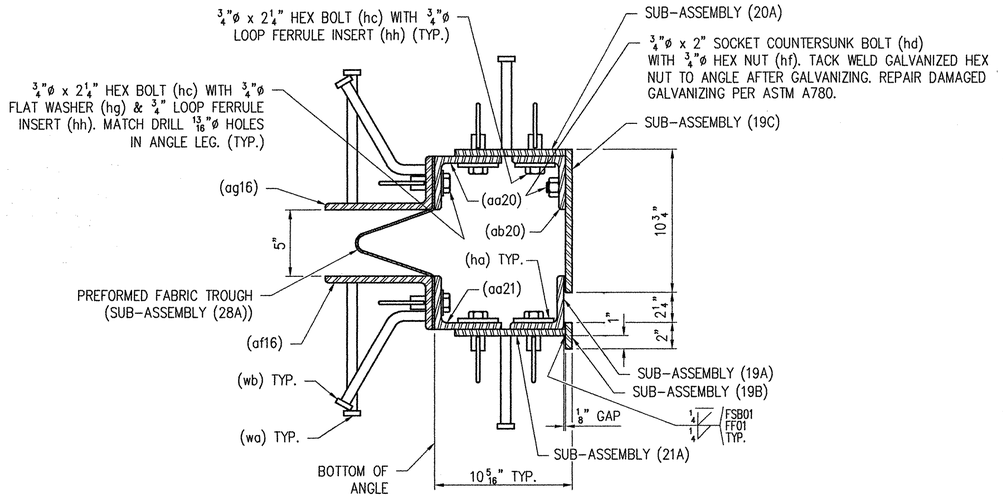



SECTION "P-P"

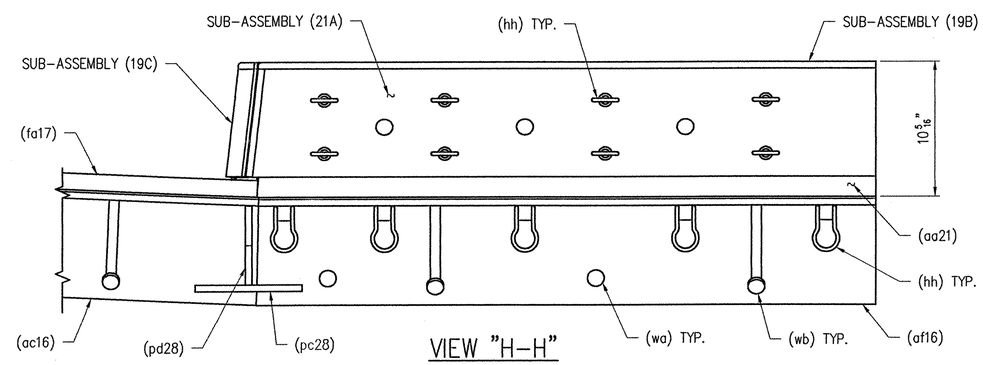



DETAIL "F"

(ROTATED 180° FROM THAT SHOWN ON SHEET NO. 1)




SECTION "R-R"




VIEW "H-H"

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| DIST. | |
| CUST. | |
| FOR PRINTS ISSUED | DATE |

SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 16, 19, 20, 21 & 22.

| REV. | DESCRIPTION | DATE | INT. |
|---|---|---|---|
| 1 | GENERAL REVISION PER APPROVAL. | 1/11/02 | JMB |

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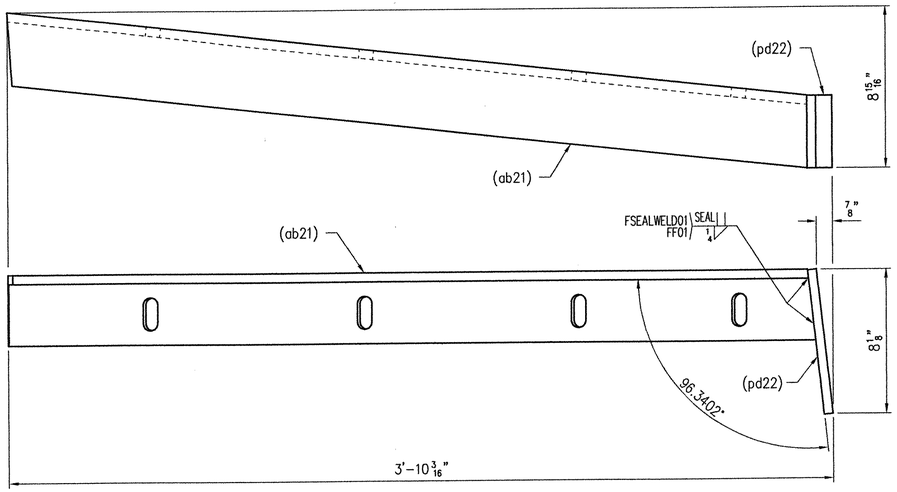
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

| | | |
|---|---|---|
| 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.

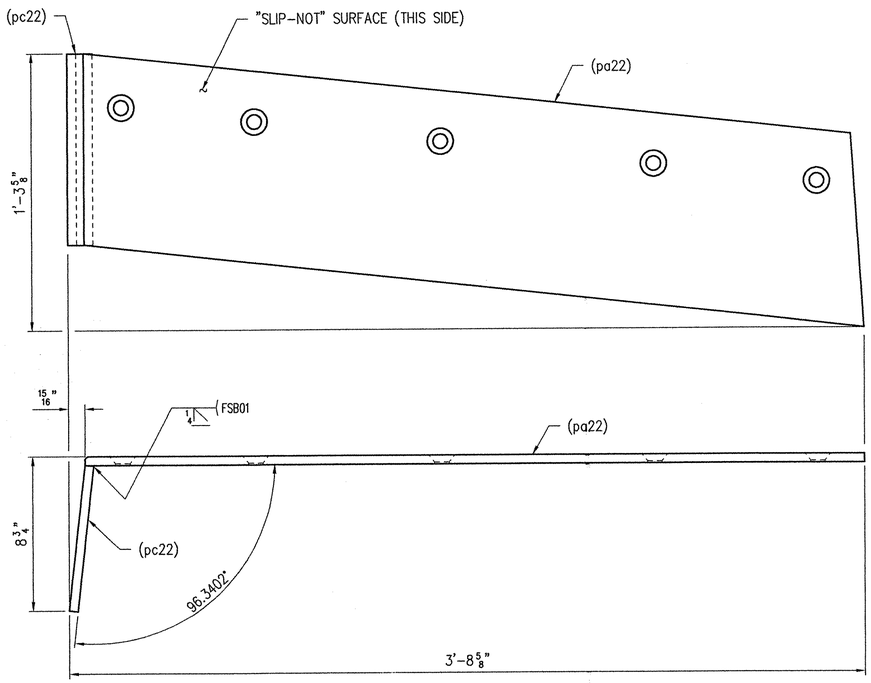
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| W.P. chk'd | |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 12/20/01 |

L.E.C. 18 OF 30 | SHEET NO. 3 OF 15 | Job. No. : 2034.1042.1

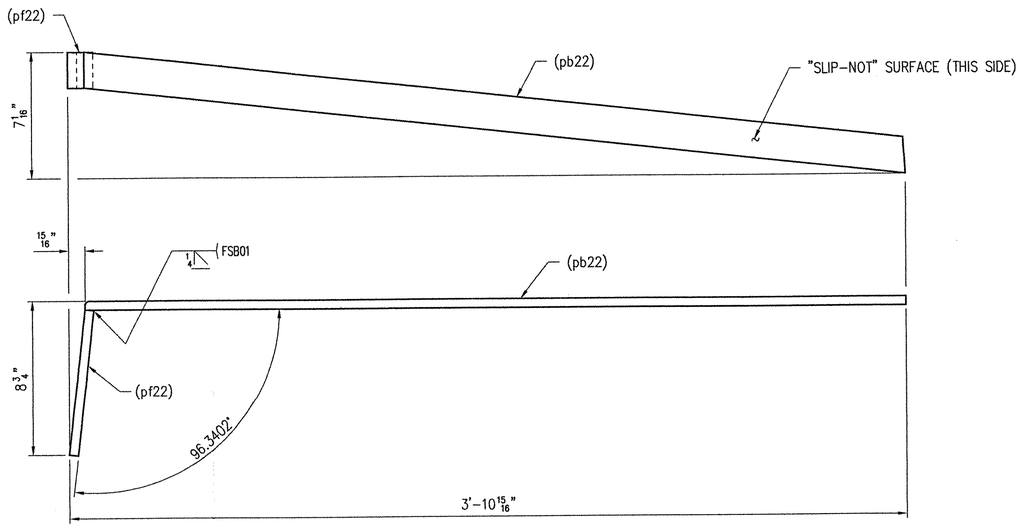



1 – SUB–ASSEMBLY – 19A

(SOME HIDDEN LINES REMOVED FOR CLARITY)




1 – SUB–ASSEMBLY – 19C




1 – SUB–ASSEMBLY – 19B

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

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RESUBMIT APPROVED
BY CPW DATE 1/24/02

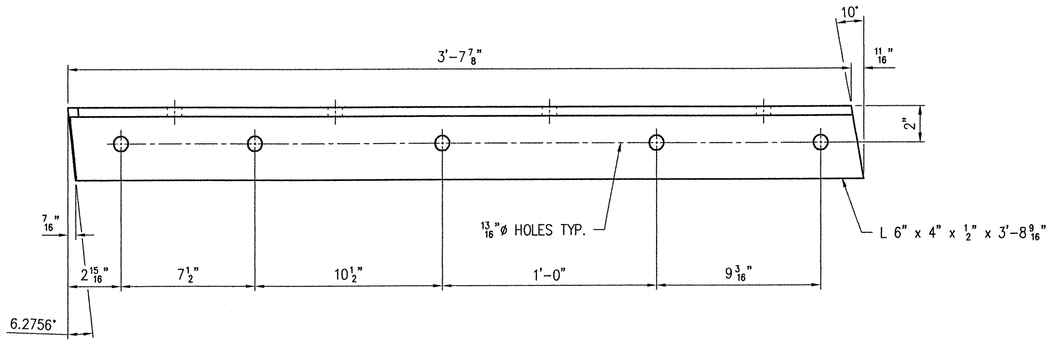
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| FOR PRINTS ISSUED | DATE |

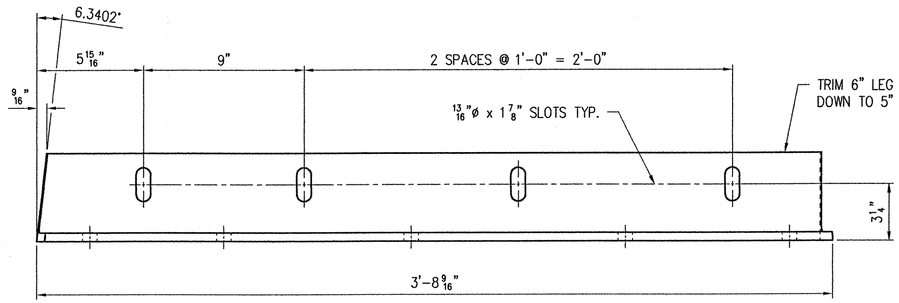
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368–3000

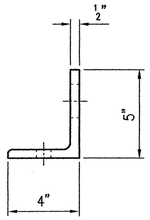
| | | |
|---|---|---|
| PROJECT | — | ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3 |
| STATE PROJECT | — | AC BRZ 1444(22) |
| FEDERAL PROJECT | — | |
| CUSTOMER | — | BECK & BELLUCCI, INC. |
| LOCATION | — | WINDSOR COUNTY, VT |
| DESCRIPTION | — | EXPANSION JOINT DETAILS ABUTMENT NO. 1 |

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| Drawn By | J |
| Chk'd. By | T |
| Date: | 12/20, |

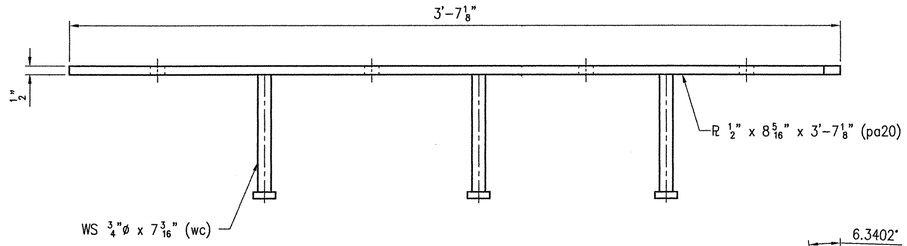
L.E.C. 19 OF 30 | SHEET NO. 4 OF 15 | Job. No. : 2034.10

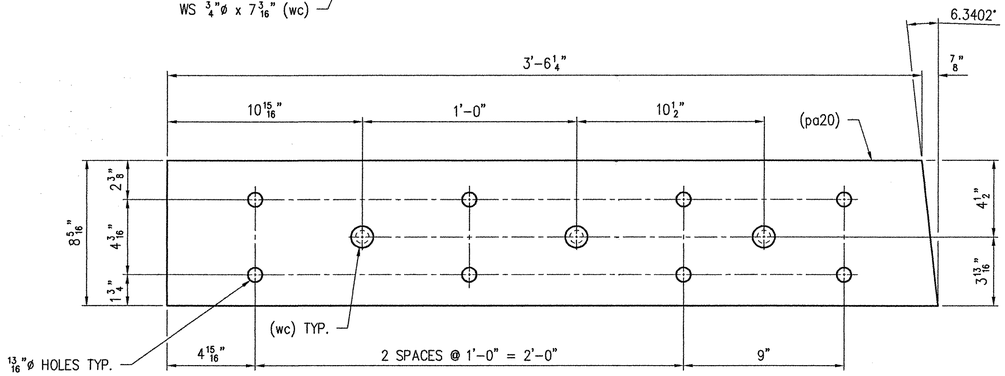


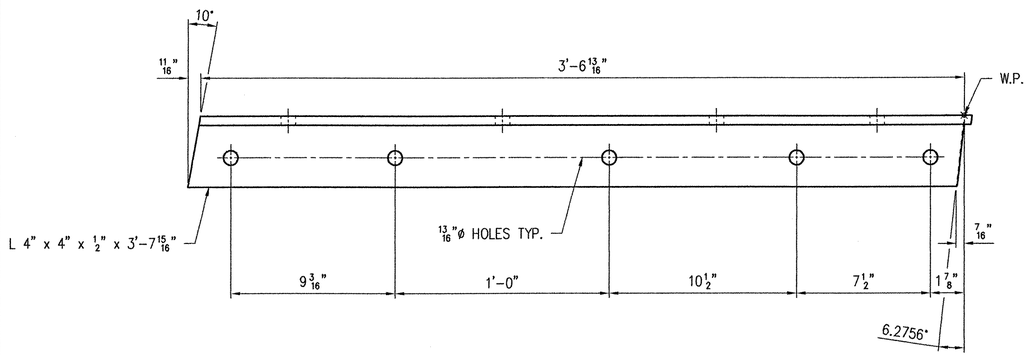



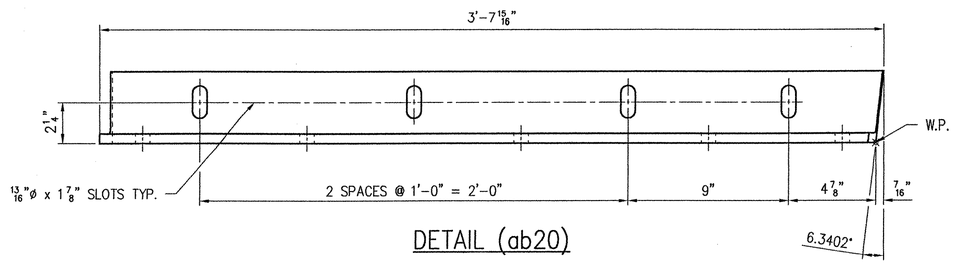

DETAIL (aa20)

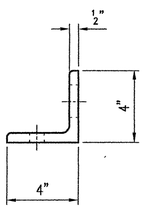



1 - SUB-ASSEMBLY - 20A




DETAIL (ab20)

SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 18, 19, 21 & 22.

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JAN 2 1 2002
RESUBMIT APPROVED
BY AP W DATE 1/24/02

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| FOR PRINTS ISSUED | DATE |

| REV. | DESCRIPTION | DATE | INT. |
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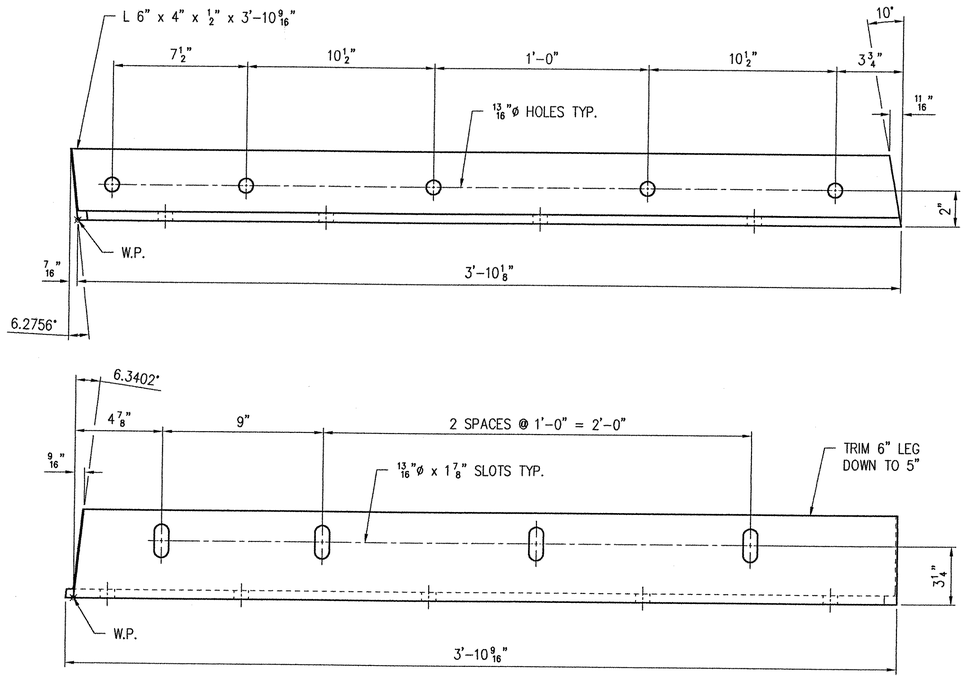
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

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

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| W.P. chk'd | Orig. |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 12/20/01 |

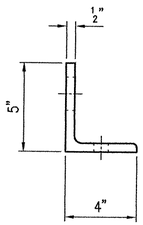
L.E.C. 20 OF 30 | SHEET NO. 5 OF 15 | Job. No. : 2034.1042.1

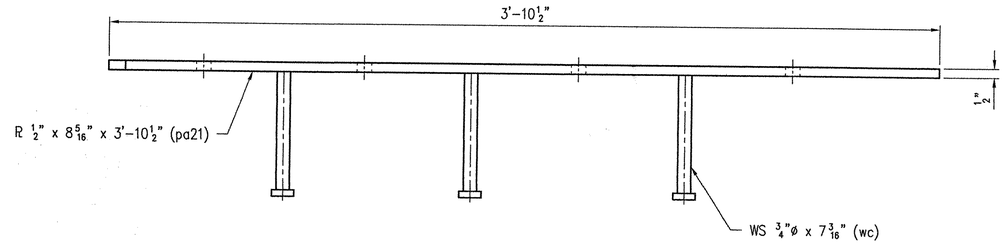


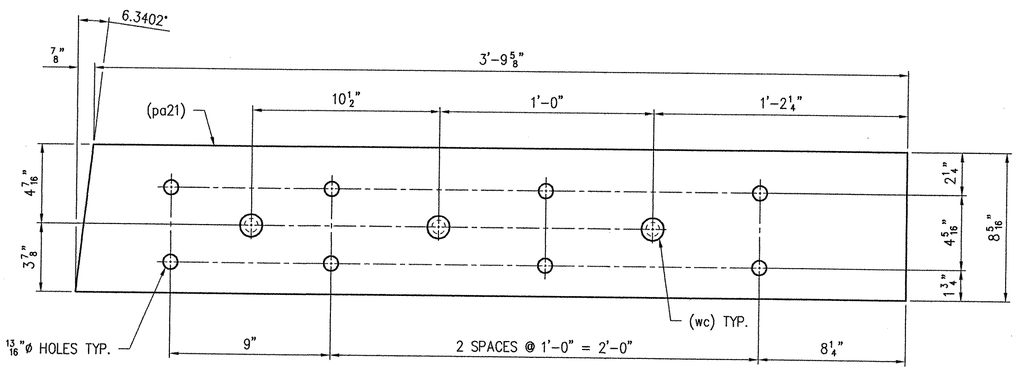




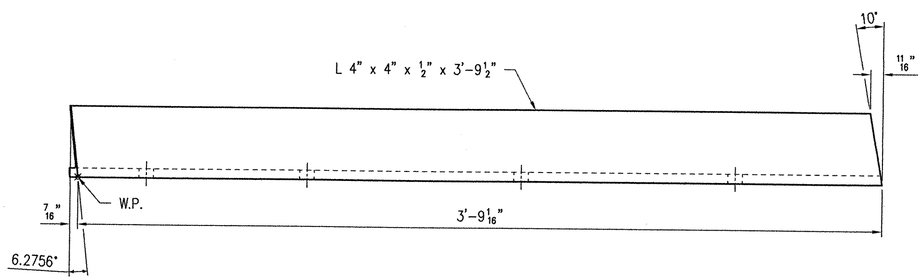
DETAIL (aa21)

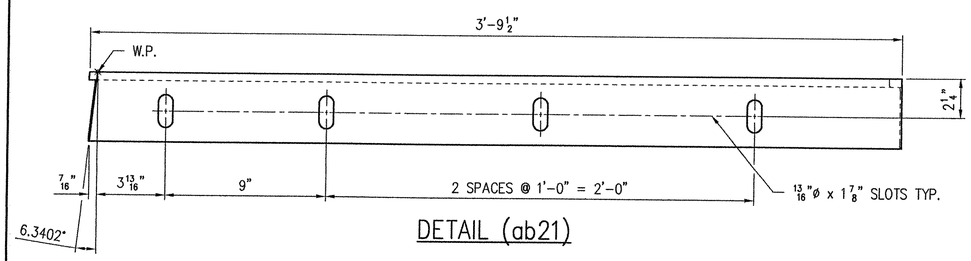


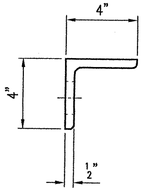




1 – SUB-ASSEMBLY – 21A




DETAIL (ab21)




SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 18, 19, 20 & 22.

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JAN 2 1 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/24/02

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| CUST. | |
| FOR | DATE |
| PRINTS ISSUED | |

| REV. | DESCRIPTION | DATE | INT. |
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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.

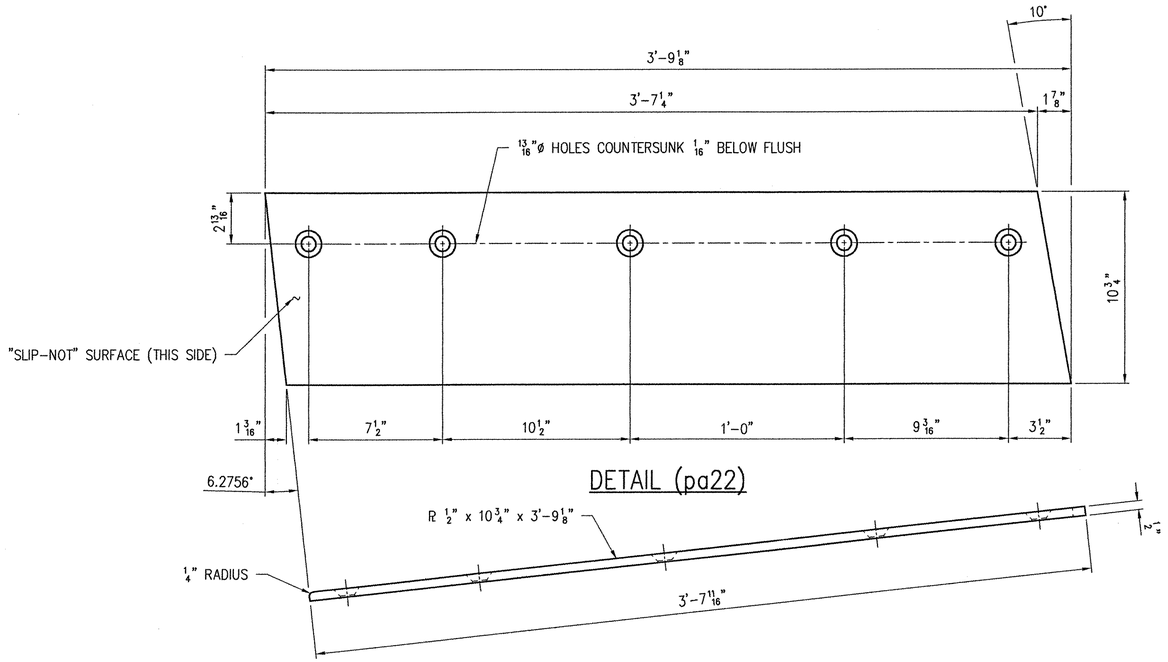
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

| | | |
|---|---|---|
| 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 |

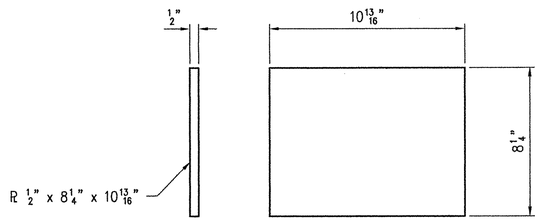
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| W.P. chk'd | |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 12/20/01 |

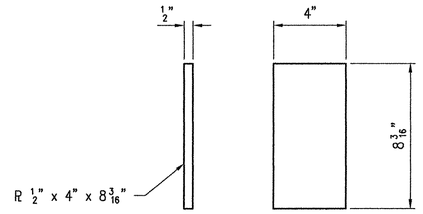
L.E.C. 21 OF 30 | SHEET NO. 6 OF 15 | Job. No. : 2034.1042.1



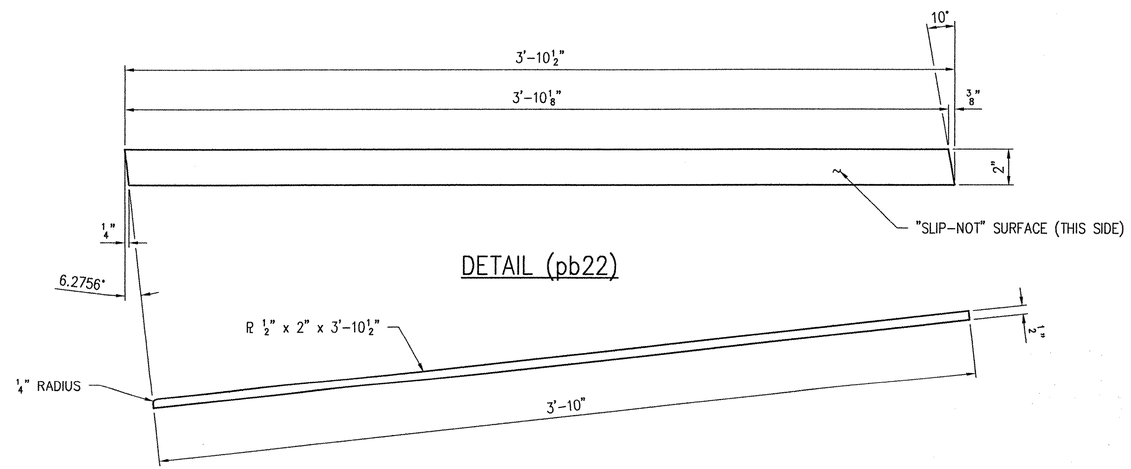

DETAIL (pa22)



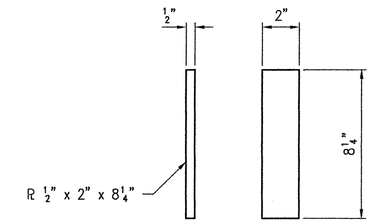

DETAIL (pc22)




DETAIL (pd22)




DETAIL (pb22)




DETAIL (pf22)

SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 18, 19, 20 & 21.

RECEIVED
OK'D BY (WS) OK'D BY _____
JAN 2 1 2002
RESUBMIT _____ APPROVED ✓
BY CPW DATE 1/24/02

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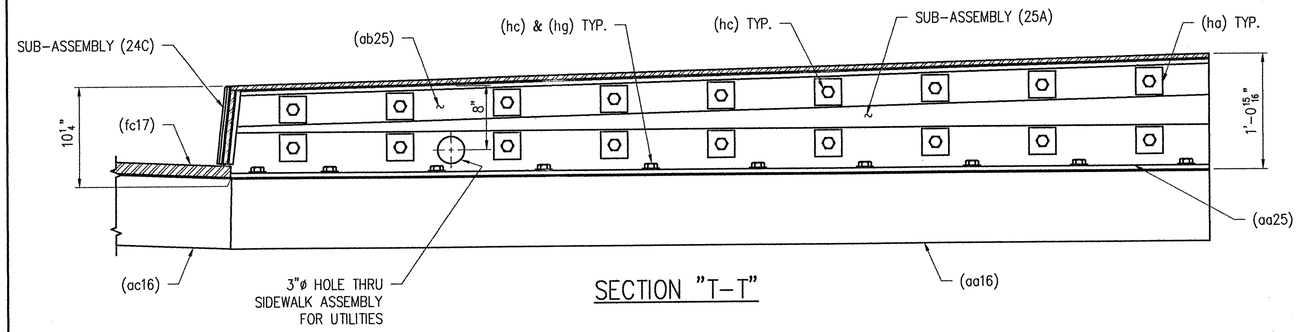
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

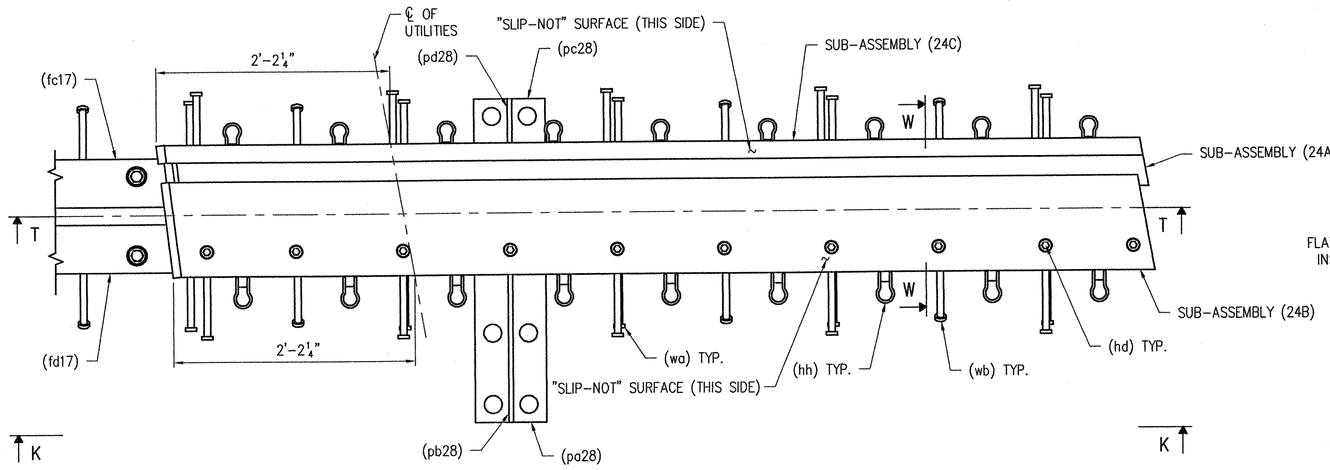
PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — EXPANSION JOINT DETAILS ABUTMENT NO. 1

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/20/01

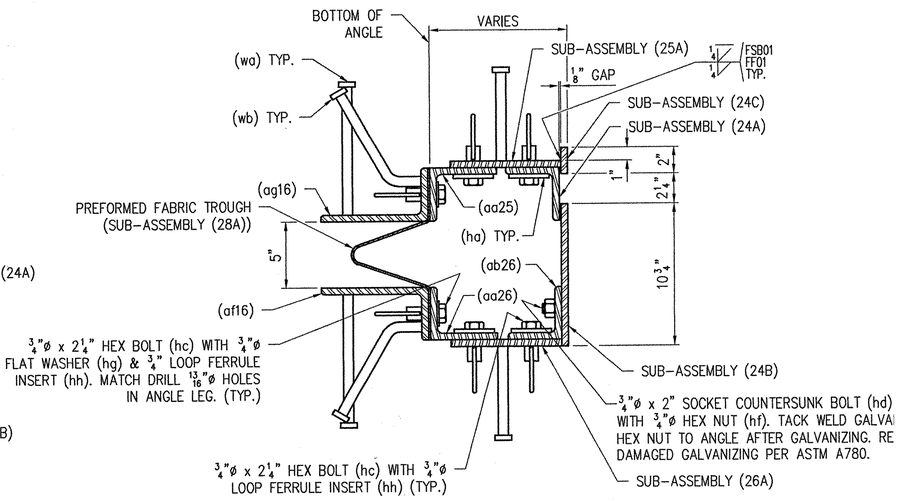
L.E.C. 22 OF 30 | SHEET NO. 7 OF 15 | Job. No. : 2034.1042.1



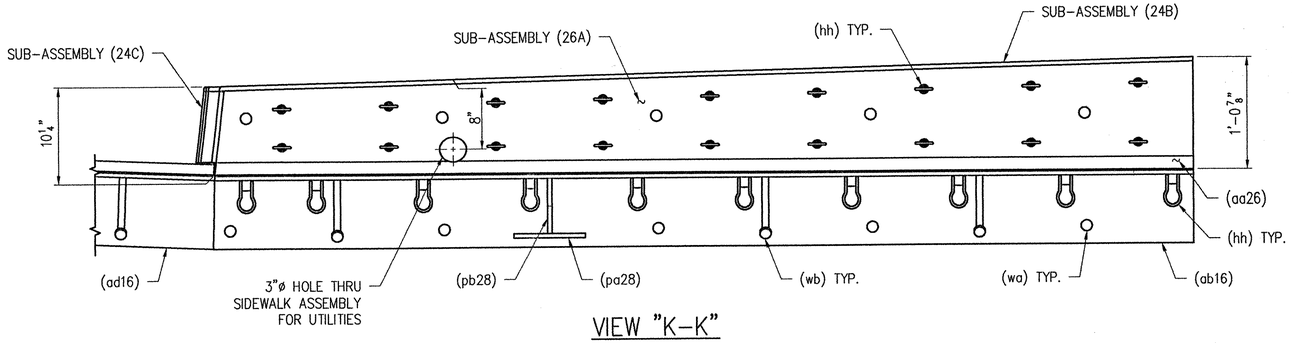

SECTION "T-T"




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

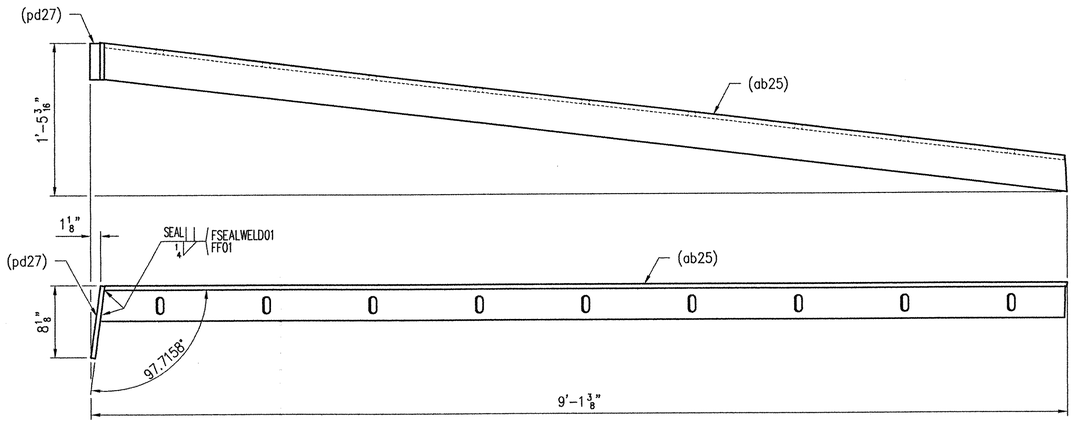
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

| | |
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| 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 |

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| Date: | 12/20 |

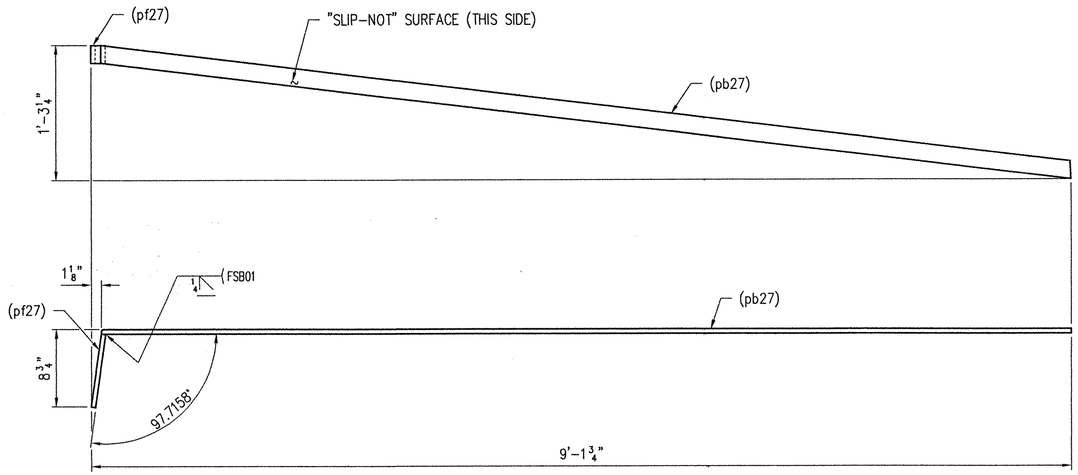
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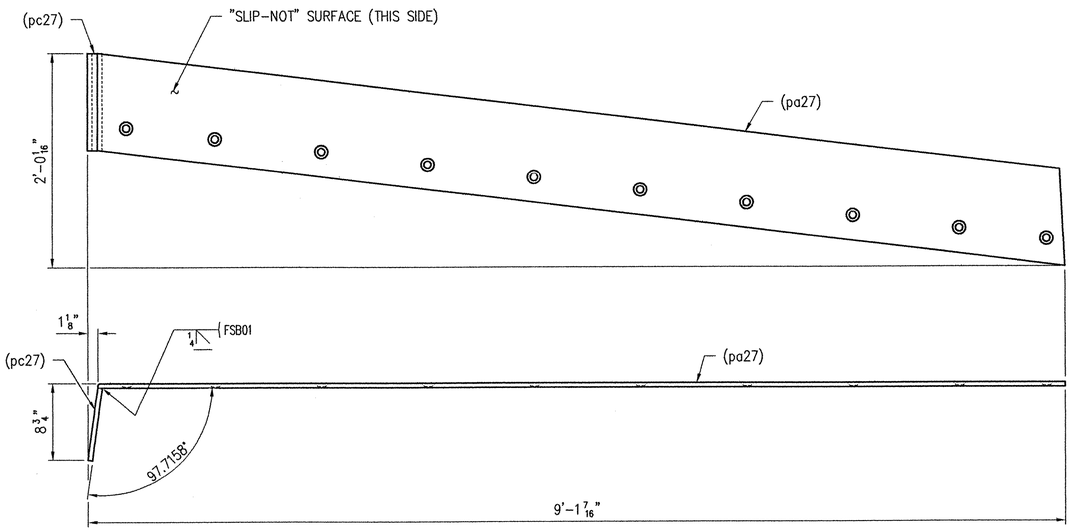



1 – SUB–ASSEMBLY – 24A

(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 |

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OK'D BY WRS OK'D BY
JAN 2 1 2002
RESUBMIT APPROVED ✓
BY CPW DATE 1/24/02

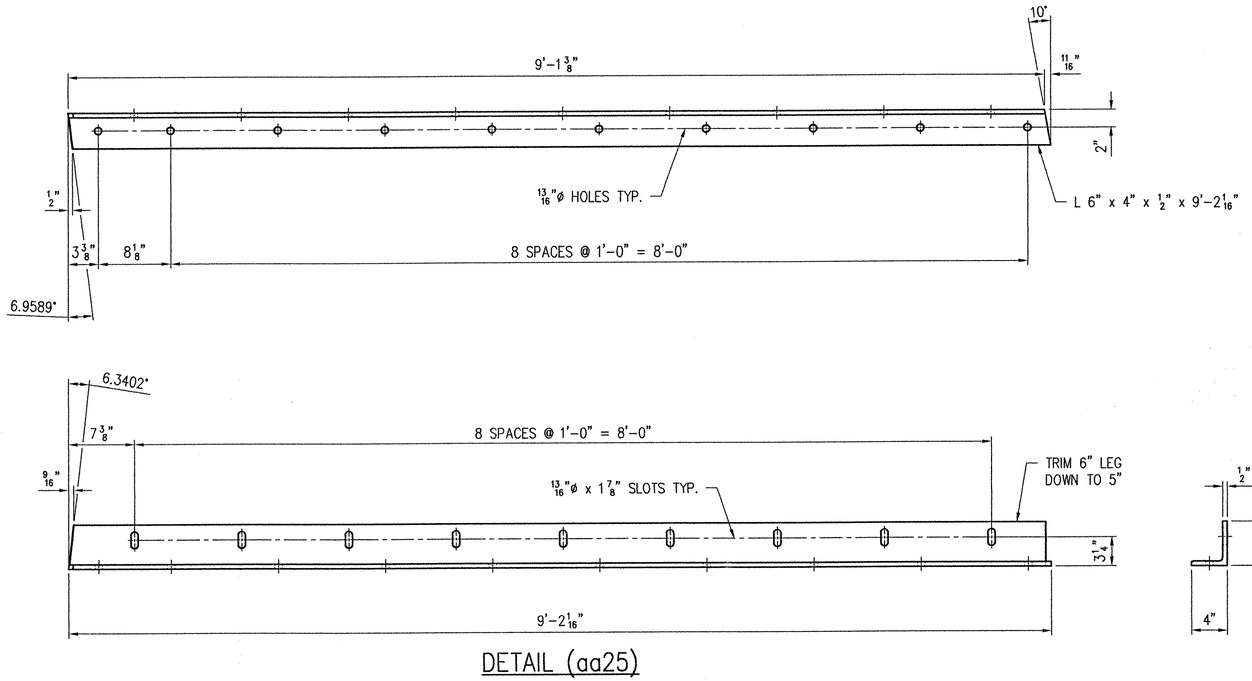
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| CUST. | |
| FOR PRINTS ISSUED | DATE |

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

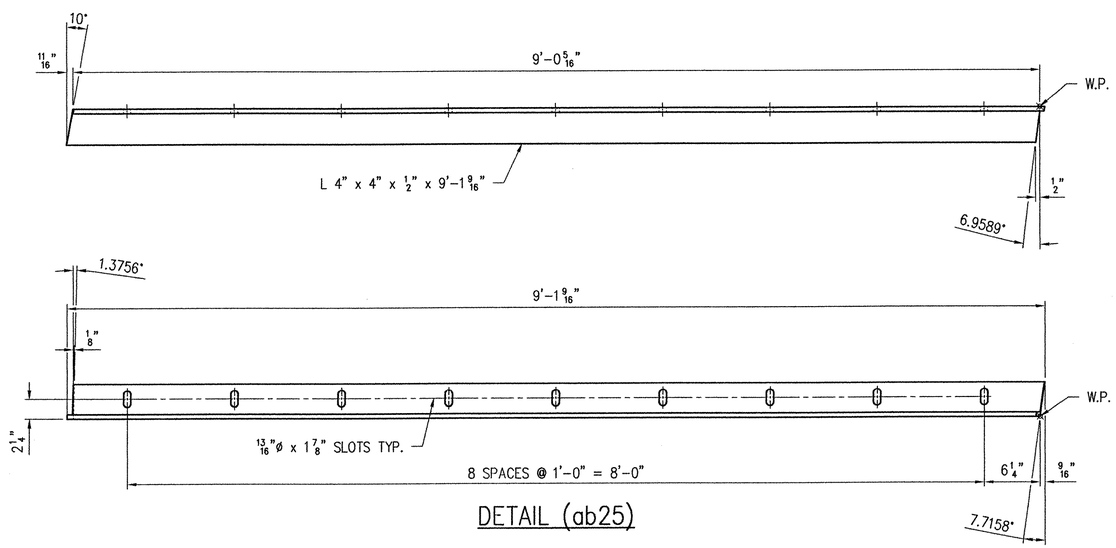
L.E.C. 24 OF 30 | SHEET NO. 9 OF 15 | Job. No. : 2034.1042.1

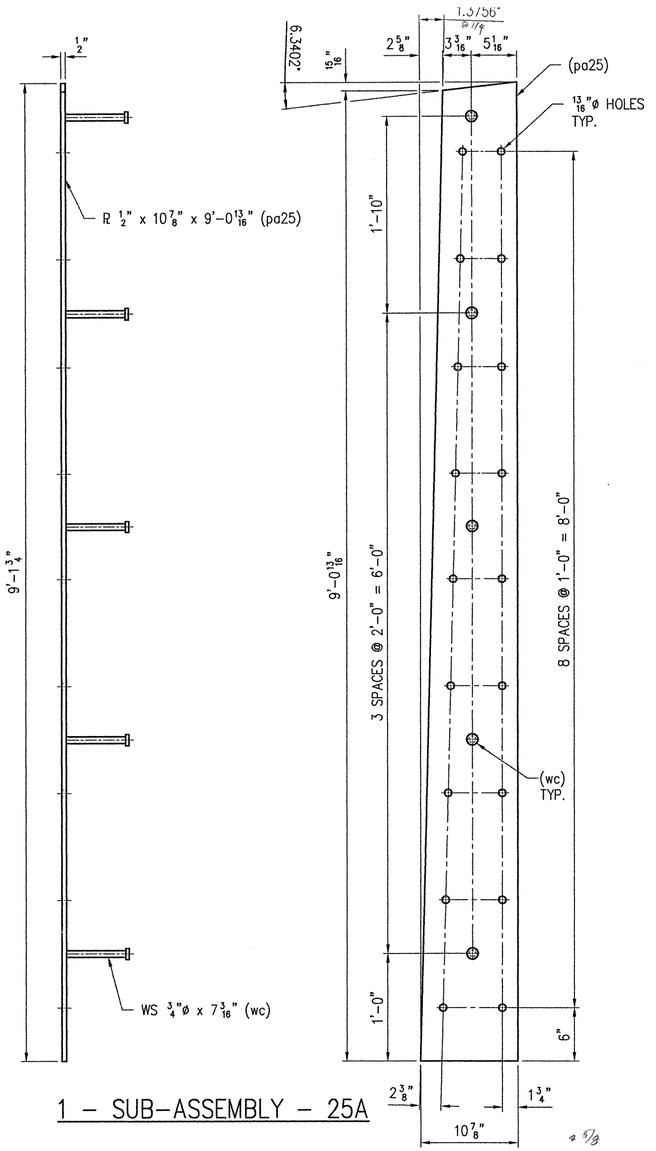



DETAIL (aa25)



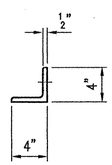

DETAIL (ab25)




1 - SUB-ASSEMBLY - 25A

SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 23, 24, 26 & 27.




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BY OPW DATE 1/24/02

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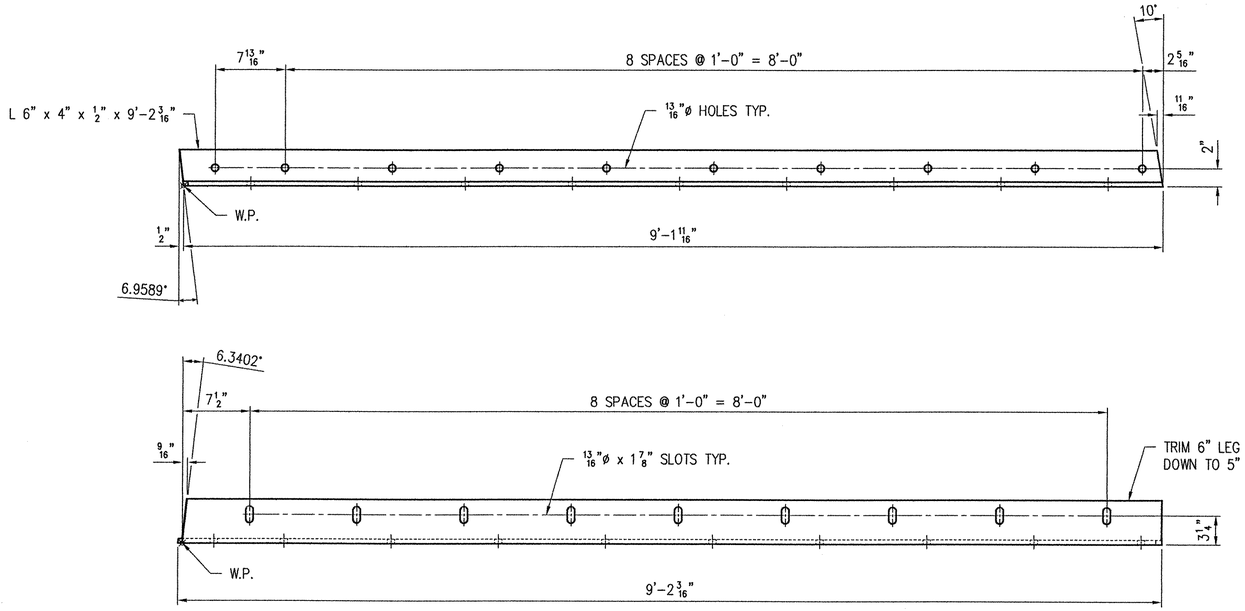
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LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

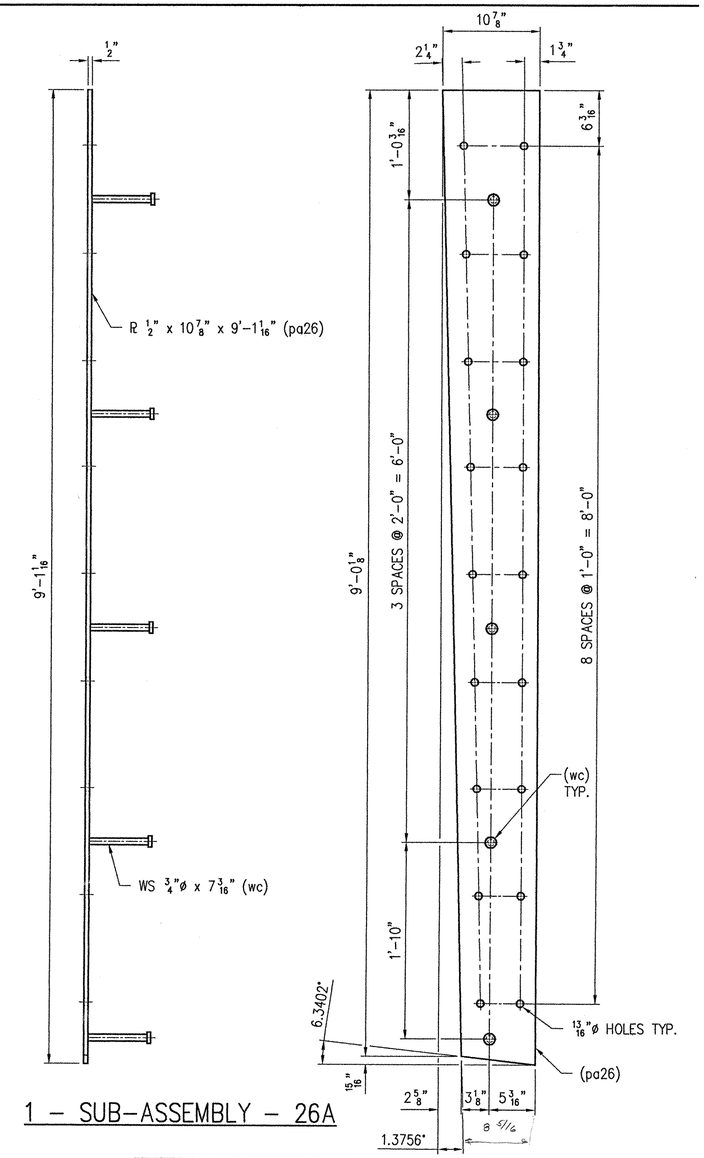
| | | |
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| PROJECT | — | ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3 |
| STATE PROJECT | — | AC BRZ 1444(22) |
| FEDERAL PROJECT | — | |
| CUSTOMER | — | BECK & BELLUCCI, INC. |
| LOCATION | — | WINDSOR COUNTY, VT |
| DESCRIPTION | — | EXPANSION JOINT DETAILS ABUTMENT NO. 1 |

Orig
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/20/01

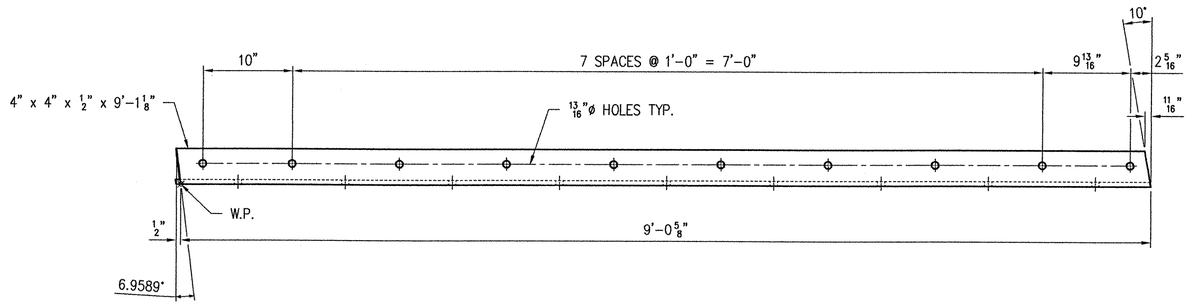
L.E.C. 25 OF 30 | SHEET NO. 10 OF 15 | Job. No. : 2034.1042

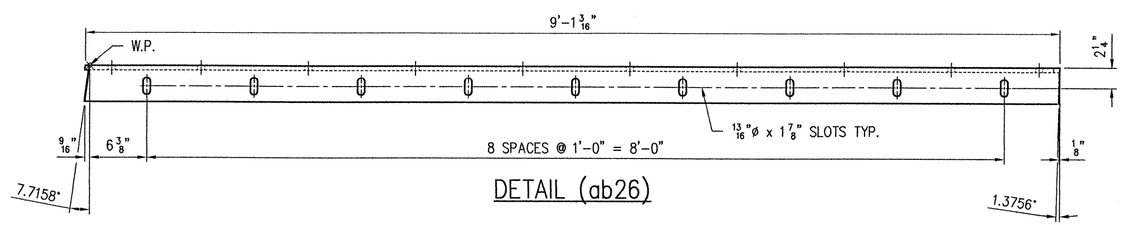



DETAIL (aa26)

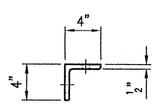



1 – SUB-ASSEMBLY – 26A




DETAIL (ab26)




RECEIVED
GK'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, 25 & 27.

| | |
|---|---|
| SHOP | |
| APPROVAL | |
| DIST. | |
| CUST. | |
| FOR PRINTS ISSUED | DATE |

| REV. | DESCRIPTION | DATE | INT. |
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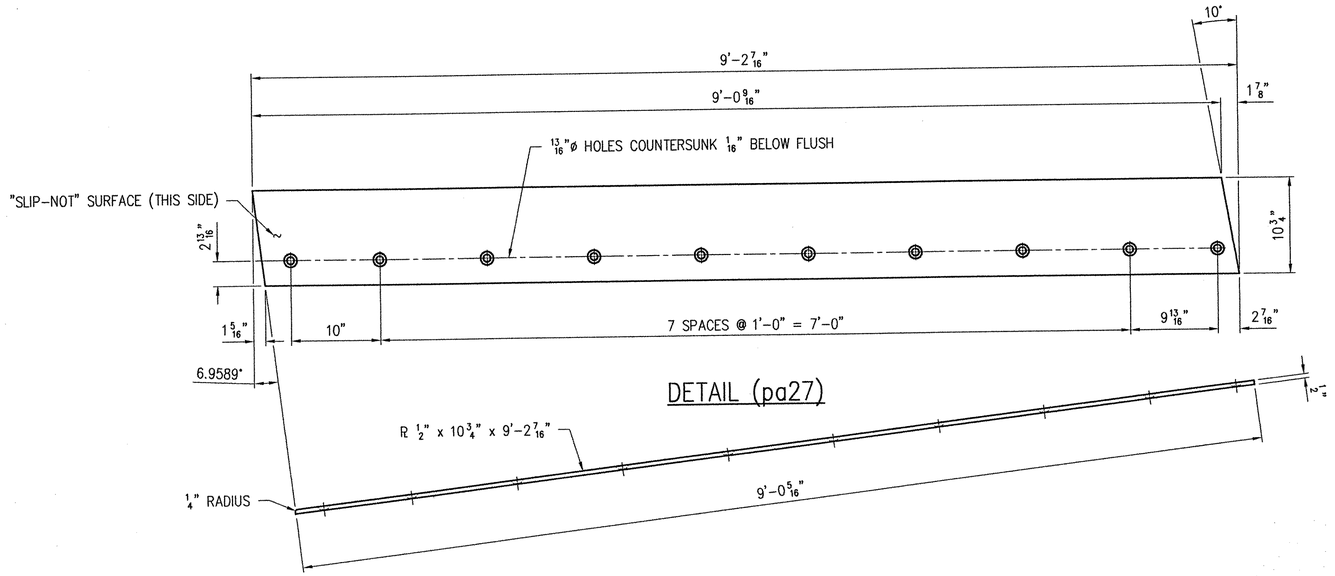
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

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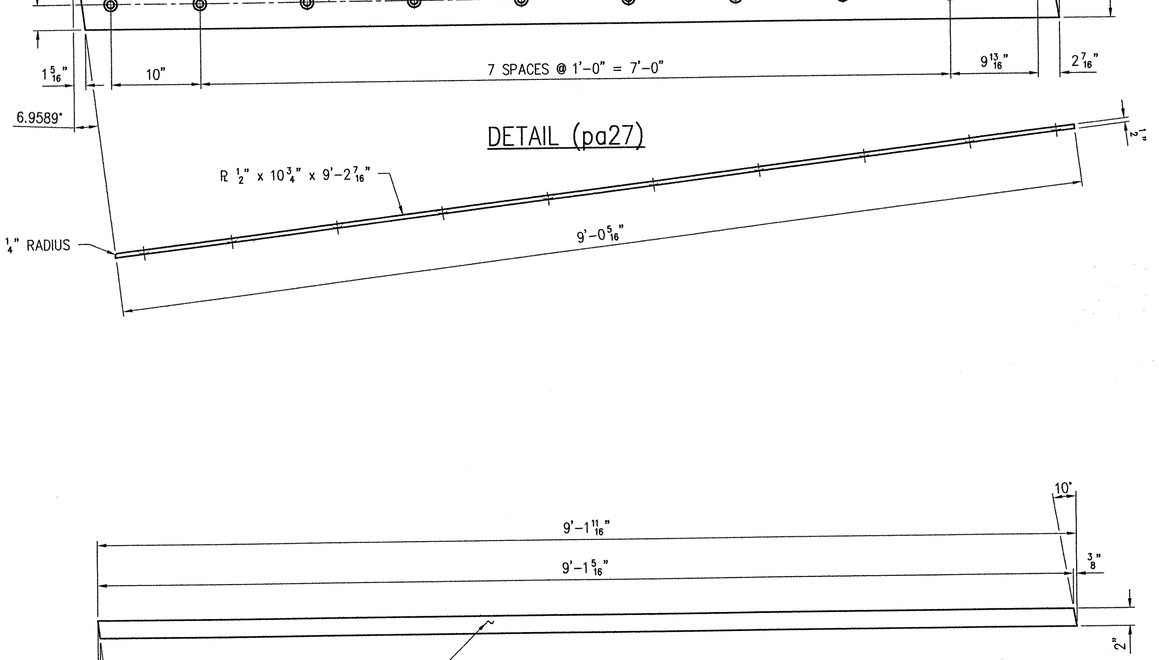
| | | |
|---|---|---|
| PROJECT | — | ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3 |
| STATE PROJECT | — | AC BRZ 1444(22) |
| FEDERAL PROJECT | — | |
| CUSTOMER | — | BECK & BELLUCCI, INC. |
| LOCATION | — | WINDSOR COUNTY, VT |
| DESCRIPTION | — | EXPANSION JOINT DETAILS ABUTMENT NO. 1 |

Orig.

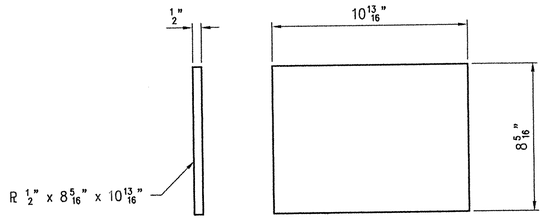
| | |
|---|---|
| W.P. chk'd | |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 12/20/01 |



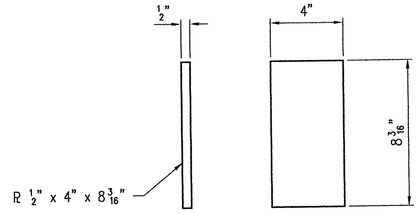

DETAIL (pa27)



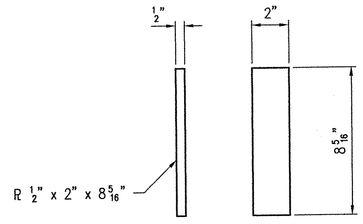

DETAIL (pb27)




DETAIL (pc27)




DETAIL (pd27)




DETAIL (pf27)

SEE SHEET NO. 30 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 23, 24, 25 & 26.

RECEIVED
CK'D BY LWS CK'D BY
JAN 2 1 2002
RESUBMIT APPROVED
BY OPW DATE 1/24/02

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|---|---|
| SHOP | |
| APPROVAL | |
| DIST. | |
| CUST. | |
| FOR PRINTS ISSUED | DATE |

| REV. | DESCRIPTION | DATE |
|---|---|---|

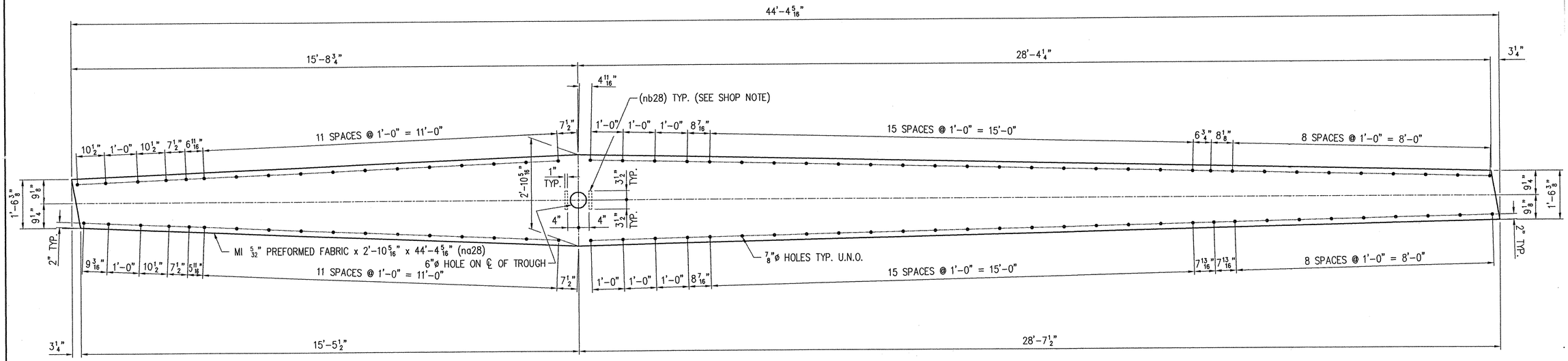
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEW ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTIO MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BAC

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| | | |
|---|---|---|
| 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/

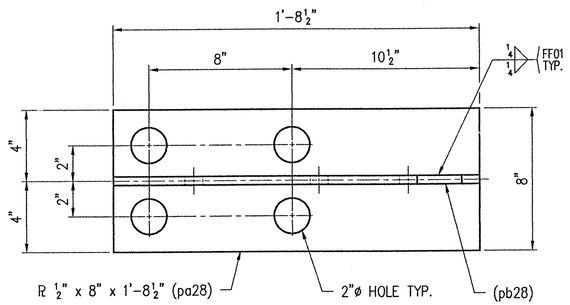
L.E.C. 27 OF 30 | SHEET NO. 12 OF 15 | Job. No. : 2034.104

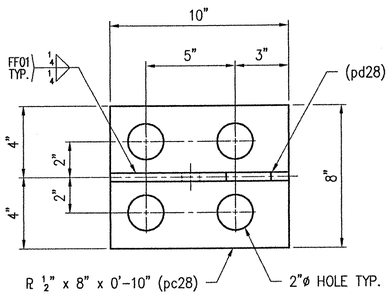


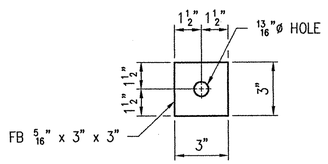

## 1 – SUB-ASSEMBLY – 28A

SHOP NOTE:
SEE SHEET NO. 15 OF 15 FOR FOLDED TROUGH END DETAILS.

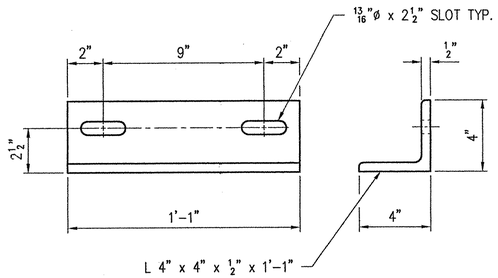
SHOP NOTE:
A 1/4" x 1" x 7" STRIP OF PREFORMED FABRIC (nb28) SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH. USE AN ADHESIVE APPROVED BY THE MANUFACTURER. THIS WILL SERVE AS A DRIP BEAD.



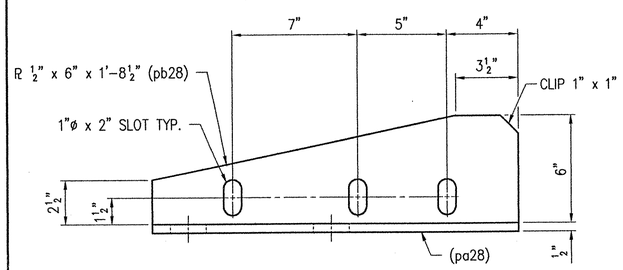



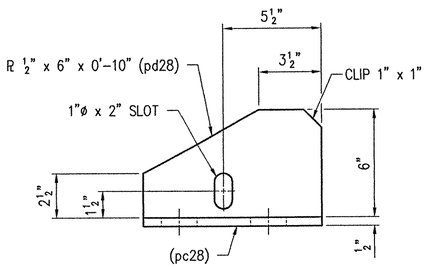

DETAIL (ha)



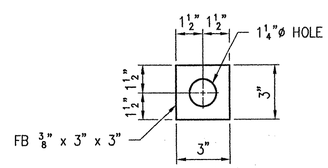

DETAIL (aa28)




DETAIL (pa28) & (pb28)




DETAIL (pc28) & (pd28)




## 80 – PLATE WASHER(S) – 28B

RECEIVED
CK'D BY Lewis OK'D BY
JAN 2 1 2002
RESUBMIT APPROVED
BY GW DATE 1/24/02

SHOP
APPROVAL
DIST.
CUST.
FOR DATE
PRINTS ISSUED

SEE SHEET NO. 30 FOR GENERAL NOTES.

| REV. | DESCRIPTION | DATE | INT. |
|---|---|---|---|
| 1 | GENERAL REVISION PER APPROVAL. | 1/11/02 | JME |

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.

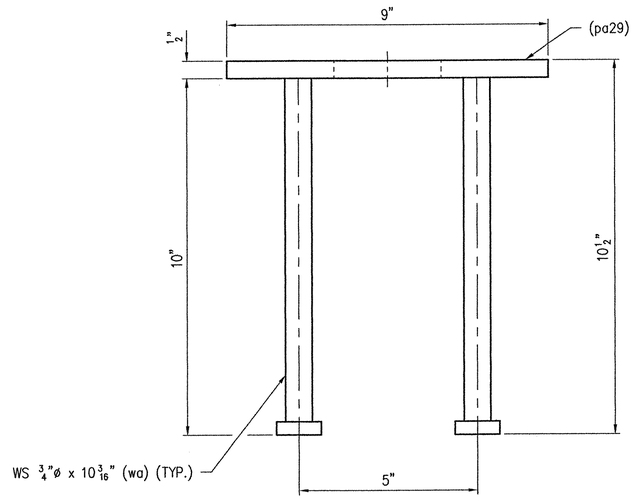
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

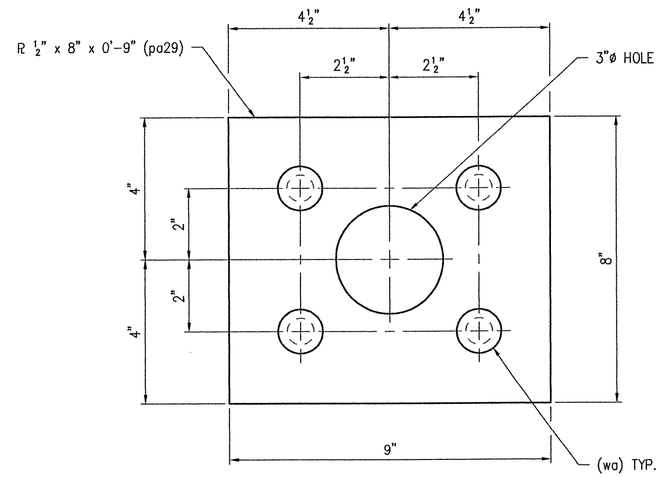
| | | |
|---|---|---|
| PROJECT | — | ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3 |
| STATE PROJECT | — | AC BRZ 1444(22) |
| FEDERAL PROJECT | — | |
| CUSTOMER | — | BECK & BELLUCCI, INC. |
| LOCATION | — | WINDSOR COUNTY, VT |
| DESCRIPTION | — | EXPANSION JOINT DETAILS ABUTMENT NO. 1 |

Orig.

| | |
|---|---|
| W.P. chk'd | |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 12/20/01 |

| LINE | NO. REQ'D. | DESCRIPTION | LENGTH | MK | REMARKS | PART NO. |
|---|---|---|---|---|---|---|
| 1 | 5 | ANCHOR PLATES | | 29A | HDG | |
| 2 | 5 | R 1" x 8" A36 | 0'-9" | pa29 | | 19-16 |
| 3 | 20 | WS $\frac{3}{4}$"ø x $10\frac{3}{16}$" A108 | | wa | | 29-19 |




5 - ANCHOR PLATES - 29A

SEE SHEET NO. 30 FOR GENERAL NOTES.

RECEIVED
OK'D BY WS OK'D BY
JAN 2 1 2002
RESUBMIT APPROVED
BY CPW DATE 1/24/02

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|---|---|
| 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

| | |
|---|---|
| W.P. chk'd | Orig. |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 12/20/01 |

## 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.

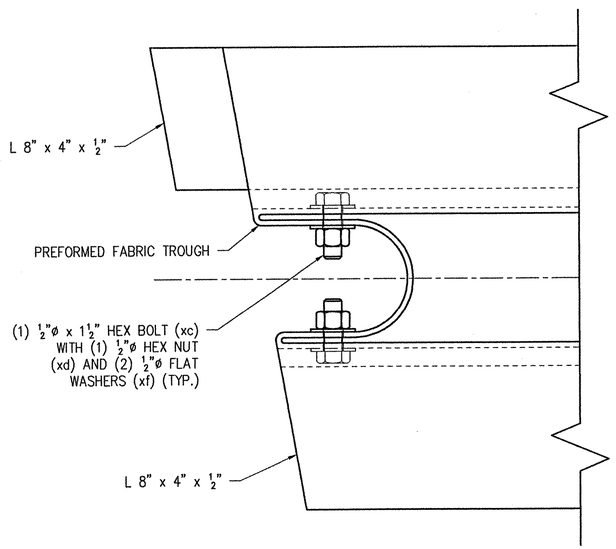
8.) BUTYL RUBBER TAPE SHALL CONFORM TO AASHTO M198 TYPE II.

9.) SHOP INSPECTION TO BE DONE BY VAOT.

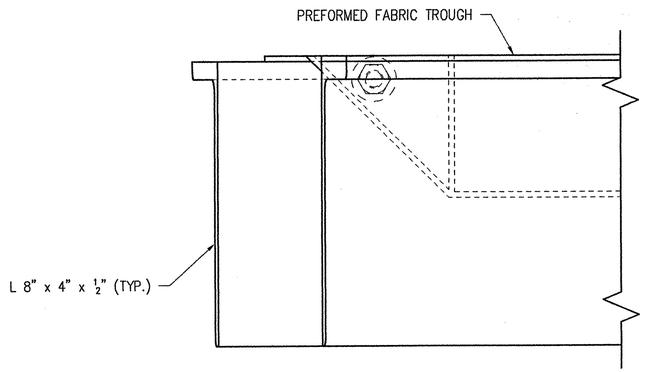
10.) PRIOR TO GALVANIZING, ALL CORNERS AND EDGES OF STEEL PLATES SHALL BE GROUND TO $\frac{1}{16}$" RADIUS.

11.) THE JOINT SHALL BE SHOP ASSEMBLED AND SHIPPED AS ONE UNIT.

12.) SEAL ALL ACCESSIBLE JOINTS FOR GALVANIZING (FSEALWELD01).




SHOP NOTE:
FOLD PREFORMED FABRIC TROUGH AS SHOWN. DRILL $\frac{9}{16}$"ø HOLES THRU AND FASTEN AS SHOWN WITH $\frac{1}{2}$"ø HARDWARE.




FOLDED TROUGH END DETAIL
(TYPICAL @ BOTH ENDS OF TROUGH)

| 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'-11 1/16" | 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 1/8" | 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 7/8" | 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 59/32"PREFORMED FABRIC x 34 5/16" | 44'-4 3/16" | 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" SQKT 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 |

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RECEIVED
CK'D BY LWS OK'D BY
JAN 21 2002
RESUBMIT APPROVED
BY CPW DATE 1/24/02

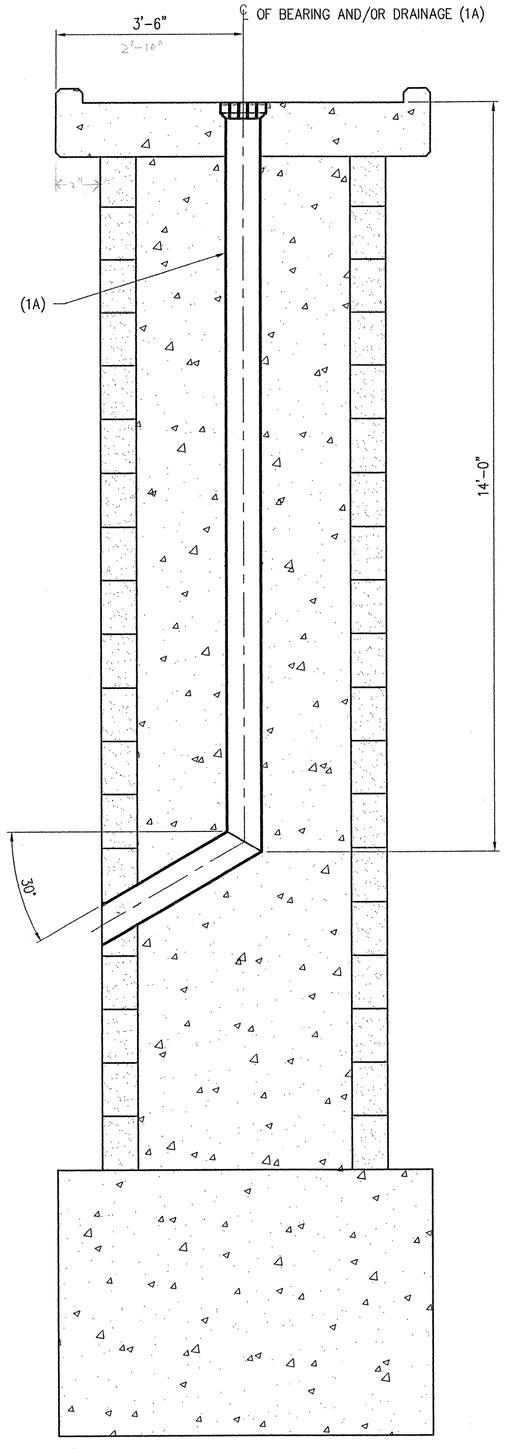
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| SHOP | |
| APPROVAL | |
| DIST. | |
| CUST. FOR PRINTS ISSUED | DATE |

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (952) 368-3000

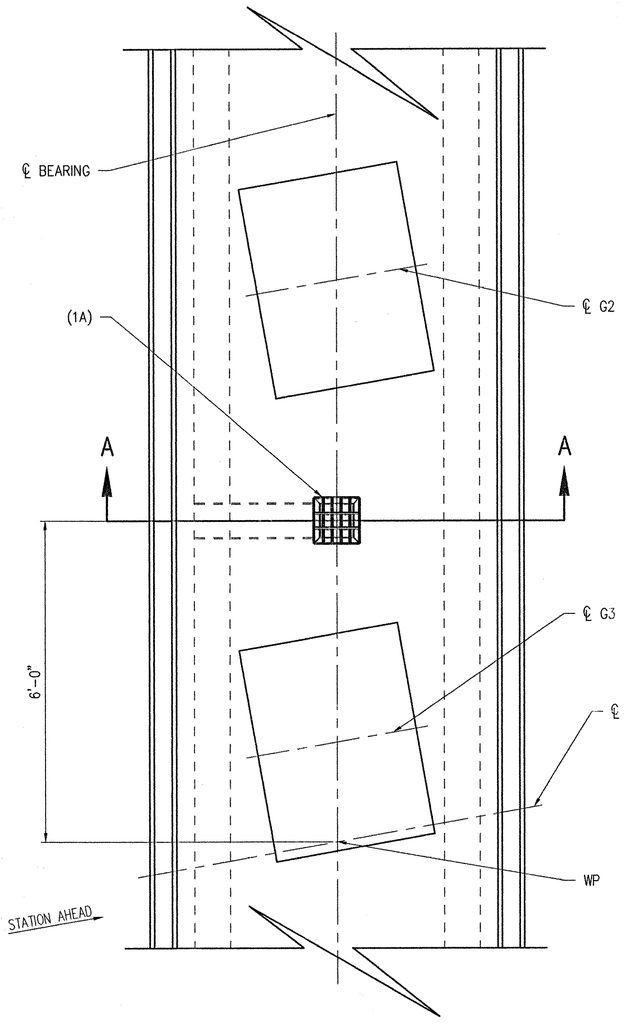
PROJECT — ROYALTON / RTE. NO. TH 1, CL 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT —
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — BILL OF MATERIAL & GENERAL NOTES ABUTMENT NO. 1

Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 12/20/01

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 LWMS
JUN 11 2001
RESUBMIT _____ APPROVED As Noted
BY CPW DATE 7/3/01

| SHOP | |
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| CUST. | |
| FOR PRINTS ISSUED | DATE |

| REV. | DESCRIPTION | DATE | INT. |
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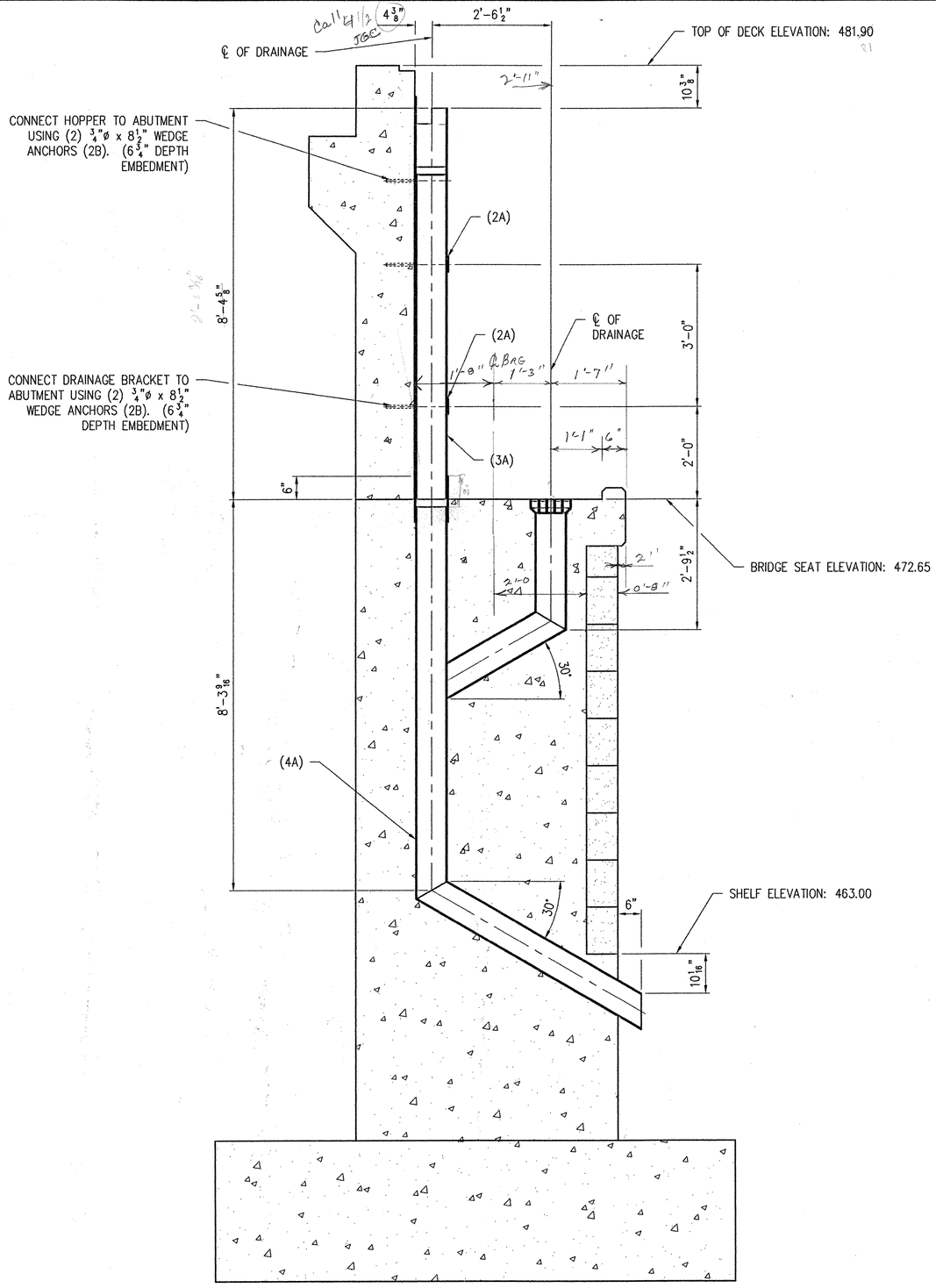
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (612) 368-3000

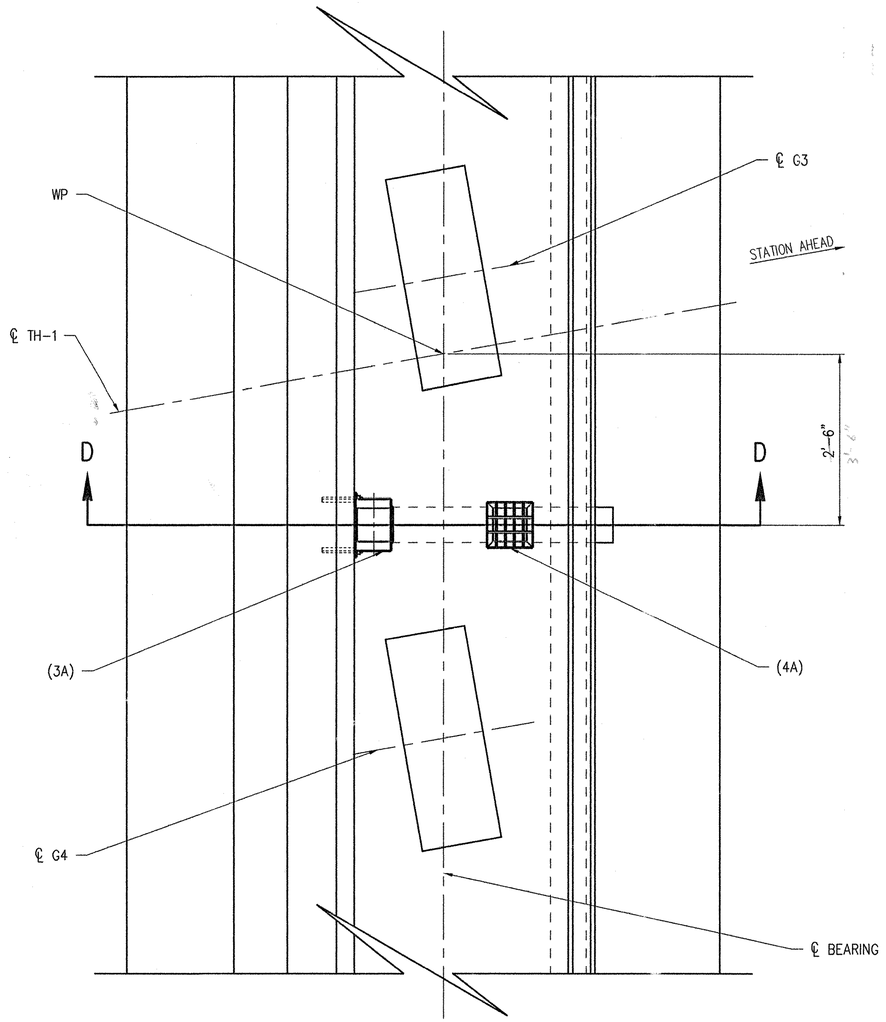
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|---|---|---|
| PROJECT | — | ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3 |
| STATE PROJECT | — | AC BRZ 1444(22) |
| FEDERAL PROJECT | — | - |
| CUSTOMER | — | BECK & BELLUCCI, INC. |
| LOCATION | — | WINDSOR COUNTY, VT |
| DESCRIPTION | — | SCUPPER(S) ERECTION PLAN @ PIER |

| | |
|---|---|
| W.P. chk'd | Orig |
| 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.

RECEIVED
CK'D BY ____ OK'D BY LWS
JUN 11 2001
RESUBMIT ____ APPROVED As Noted
BY OPW DATE 7/3/01

| SHOP | |
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| APPROVAL | |
| DIST. | |
| CUST. | |
| FOR PRINTS ISSUED | DATE |

| REV. | DESCRIPTION | DATE | INT. |
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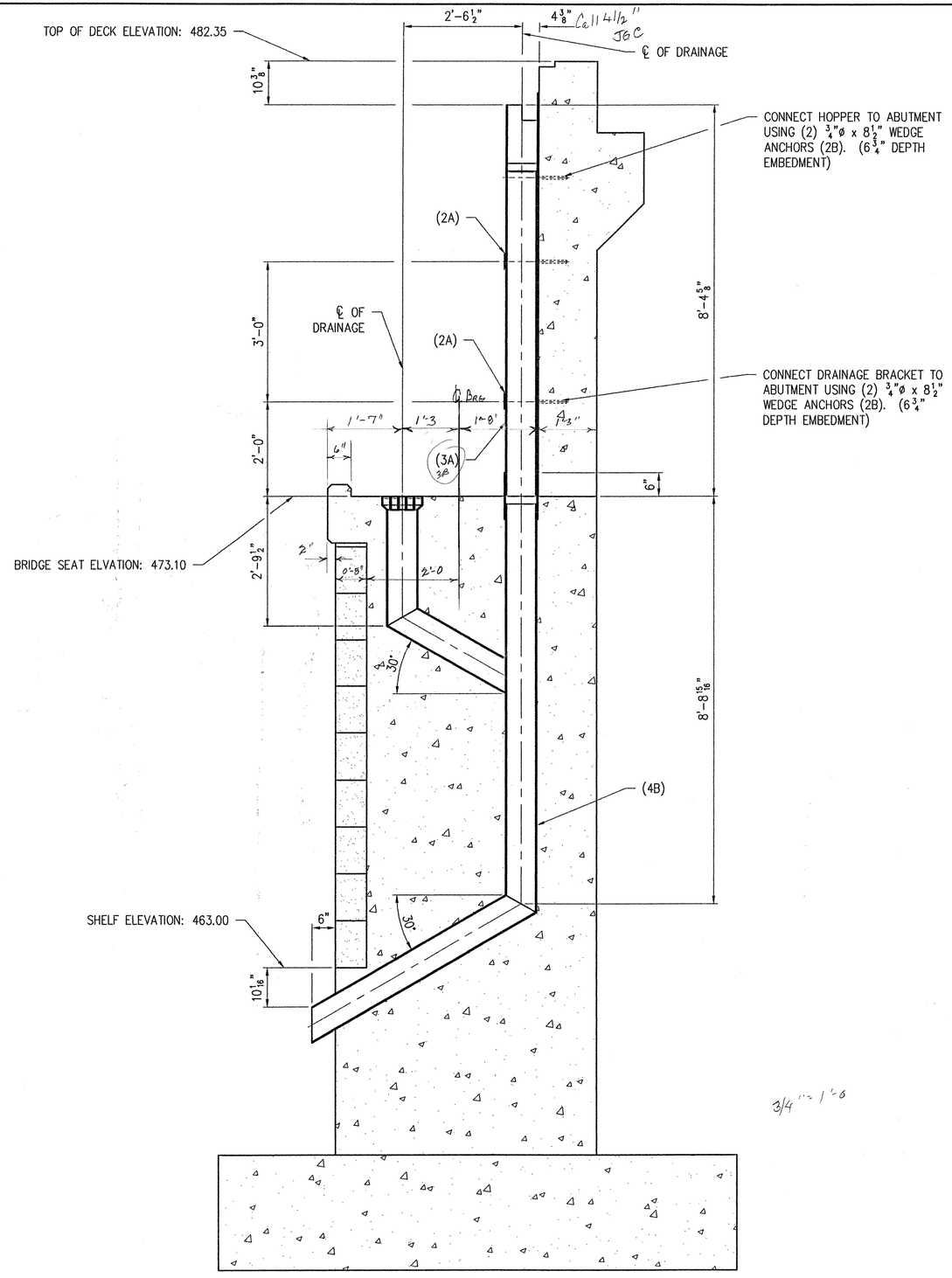
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

| | | |
|---|---|---|
| PROJECT | — | ROY[illegible]TON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3 |
| STATE PROJECT | — | AC ERZ 1444(22) |
| FEDERAL PROJECT | — | – |
| CUSTOMER | — | BECK & BELLUCCI, INC. |
| LOCATION | — | WINDSOR COUNTY, VT |
| DESCRIPTION | — | SCUPPER(S) ERECTION PLAN @ ABUT. NO. 1 |

Orig.

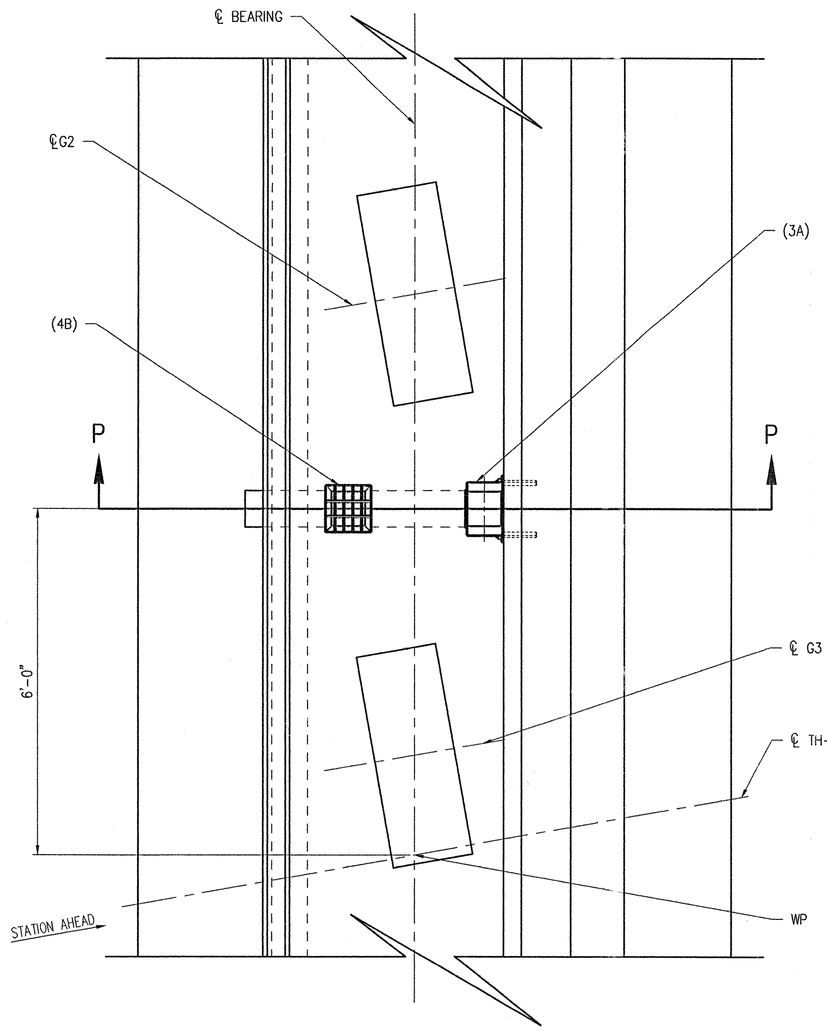
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|---|---|
| W.P. chk'd | |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 5/25/01 |

SHEET NO. E2 OF 3 | Job. No. : 2034.1236.1




SECTION P–P

3/4" = 1'-0




PLAN VIEW OF DRAINAGE @ ABUTMENT NO. 2

SOME HIDDEN LINES REMOVED FOR CLARITY.
SEE SHEET NO. 2 FOR GENERAL NOTES.

RECEIVED
CK'D BY ___ OK'D BY (WS)
JUN 11 2001
RESUBMIT ___ APPROVED ✓
BY OPW DATE 7/3/01

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| DIST. | |
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| CUST. | |
| FOR | DATE |
| PRINTS ISSUED | |

| REV. | DESCRIPTION | DATE | INT. |
|---|---|---|---|

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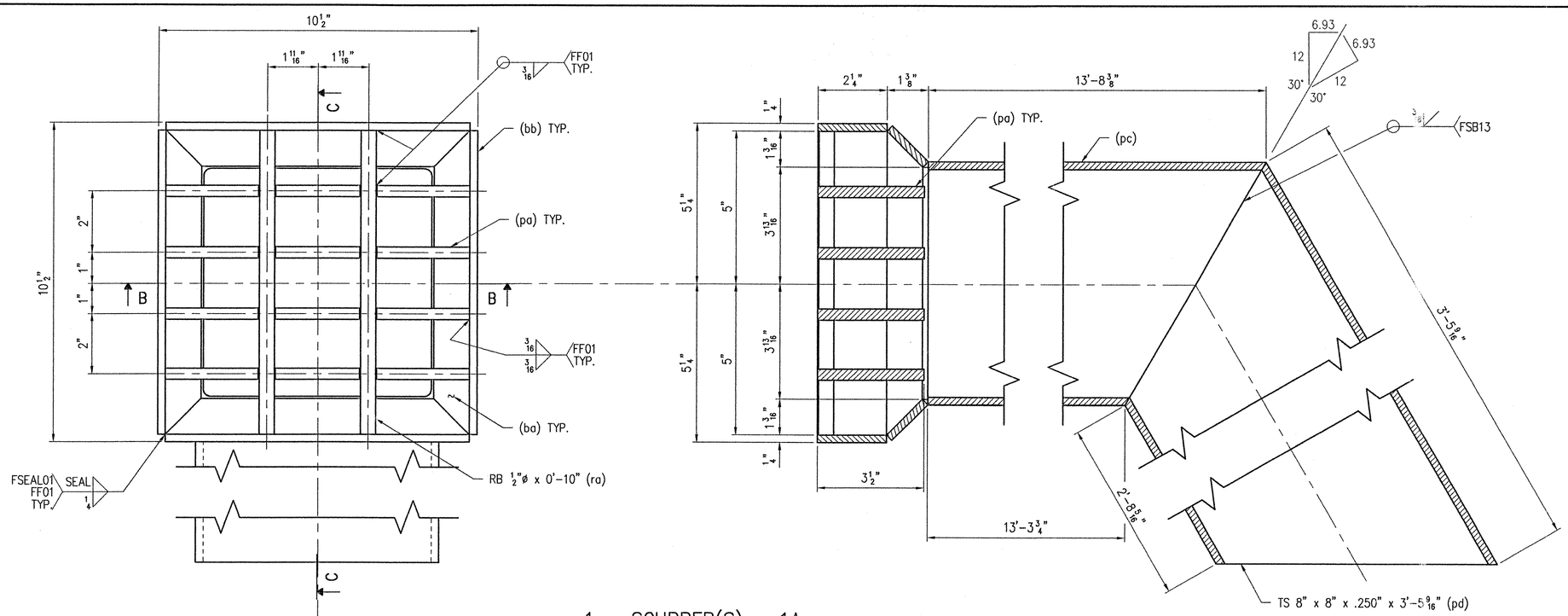
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

| | | |
|---|---|---|
| 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

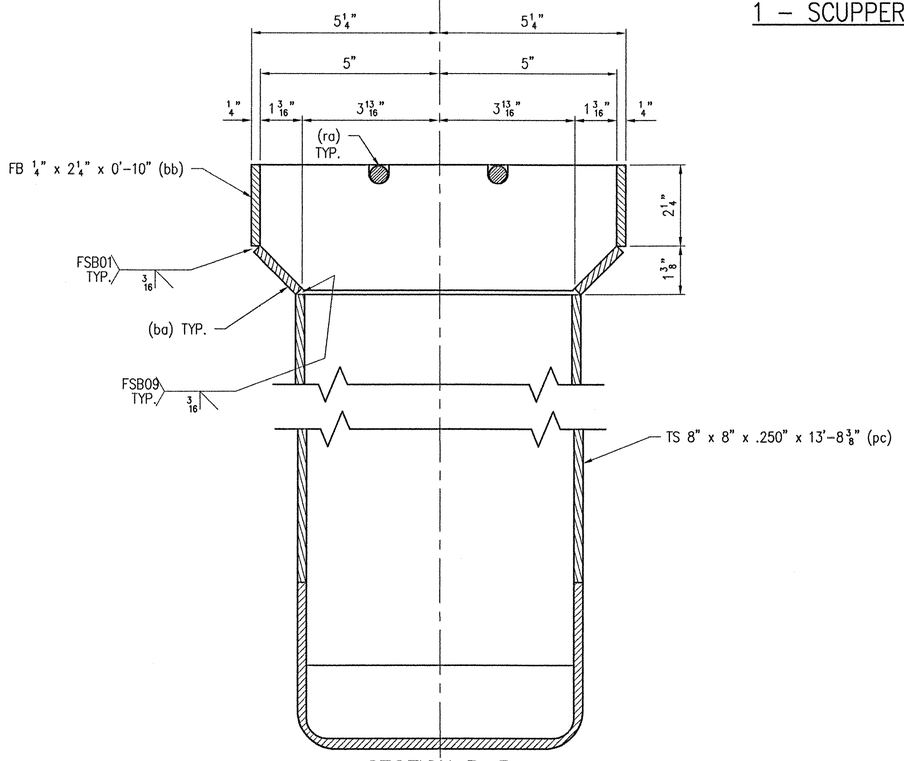
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| W.P. chk'd | |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 5/25/01 |

SHEET NO. E3 OF 3 | Job. No. : 2034.1236.1




SECTION C-C

1 - SCUPPER(S) - 1A




SECTION B-B

| 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.

RECEIVED
CK'D BY KLF OK'D BY LWS
JUN 11 2001
RESUBMIT APPROVED ✓
BY CPW DATE 7/2/01

SHOP NOTE:
SEAL WELD ALL ACCESSIBLE JOINTS FOR GALVANIZING.

| | |
|---|---|
| SHOP | |
| APPROVAL | |
| DIST. | |
| CUST. FOR PRINTS ISSUED | DATE |

| REV. | DESCRIPTION | DATE | INT. |
|---|---|---|---|

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LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (612) 368-3000

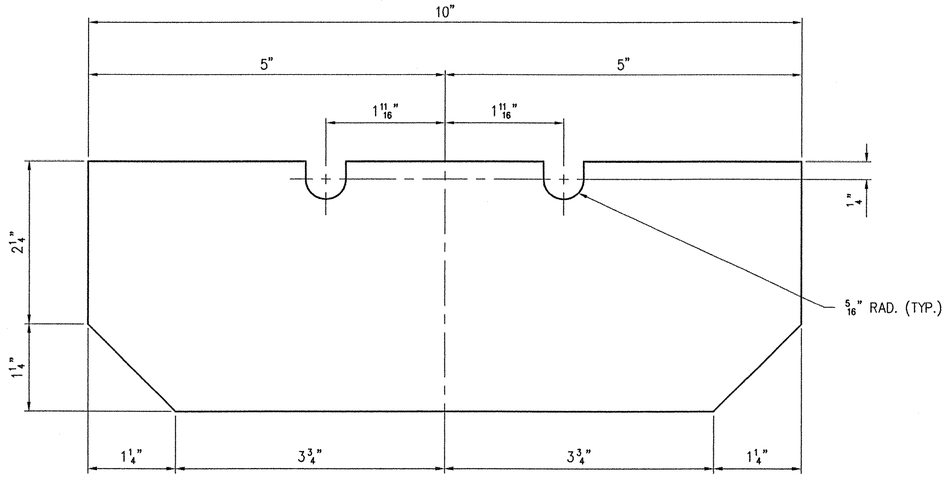
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|---|---|---|
| PROJECT | — | ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3 |
| STATE PROJECT | — | AC BRZ 1444(22) |
| FEDERAL PROJECT | — | - |
| CUSTOMER | — | BECK & BELLUCCI, INC. |
| LOCATION | — | WINDSOR COUNTY, VT |
| DESCRIPTION | — | SCUPPER(S) DETAILS |

Orig.

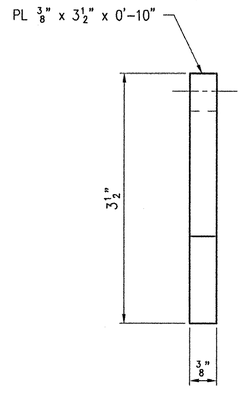
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| W.P. chk'd | |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 5/25/01 |

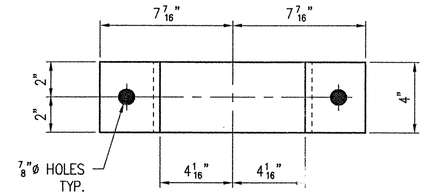
SHT NO. 1 OF 5 | Job. No. : 2034.1236.1

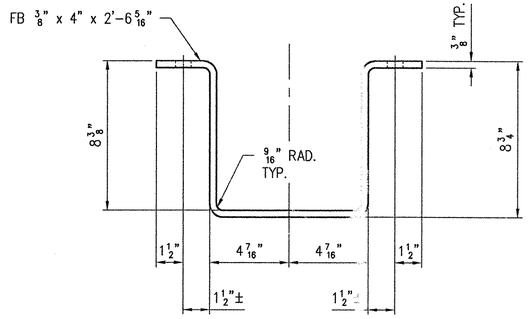
| LINE | NO. REQ'D. | DESCRIPTION | LENGTH | MK | REMARKS | PART NO. |
|---|---|---|---|---|---|---|
| 1 | 4 | BRACKET(S) | | 2A | HDG | |
| 2 | 4 | FB $\frac{3}{8}$" x 4" A36 | 2'-6$\frac{5}{16}$" | 2A | BEND | 16-76 |
| 3 | | | | | | |
| 4 | | FIELD BOLT : | | | | |
| 5 | 12 | MI $\frac{3}{4}$"Ø WEDGE ANCHOR MG | 0'-8$\frac{1}{2}$" | 2B | RAWL #7748 | 30-27 |



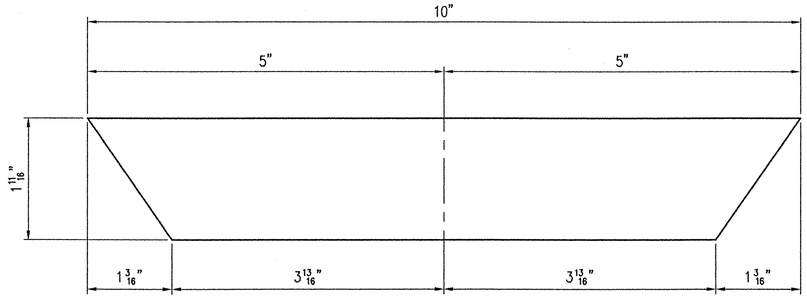

DETAIL (pa)



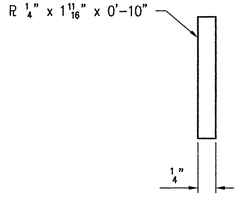




4 - BRACKET(S) - 2A 13.40lbs each weighed on site DGB 8/28/01




DETAIL (ba)




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 $\frac{1}{16}$ INCH RADIUS.

RECEIVED
CK'D BY RJW OK'D BY LWS
JUN 11 2001
RESUBMIT APPROVED ✓
BY GPW DATE 7/5/01

| REV. | DESCRIPTION | DATE | INT. |
|---|---|---|---|

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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 |

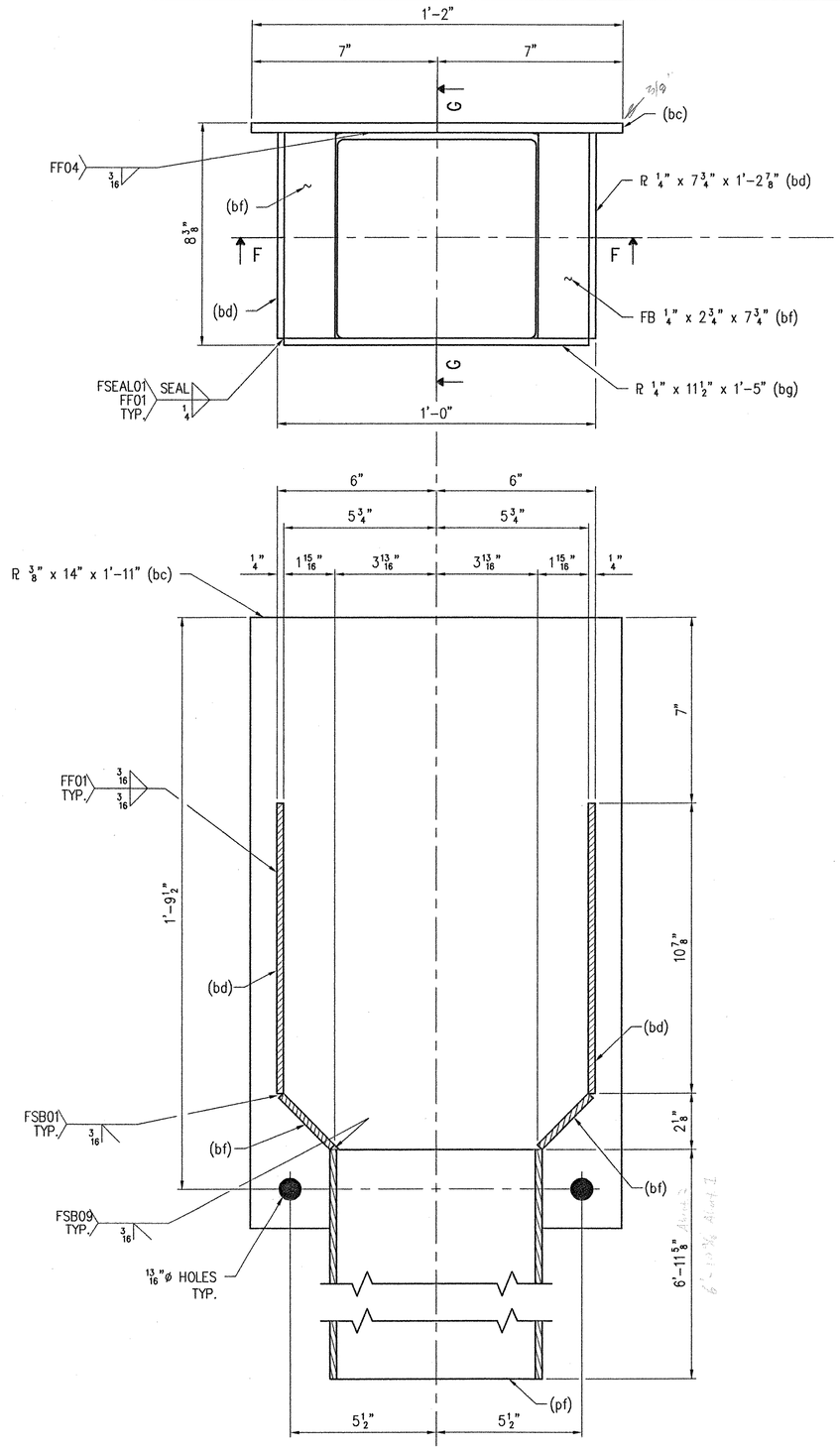
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| W.P. chk'd | |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 5/25/01 |

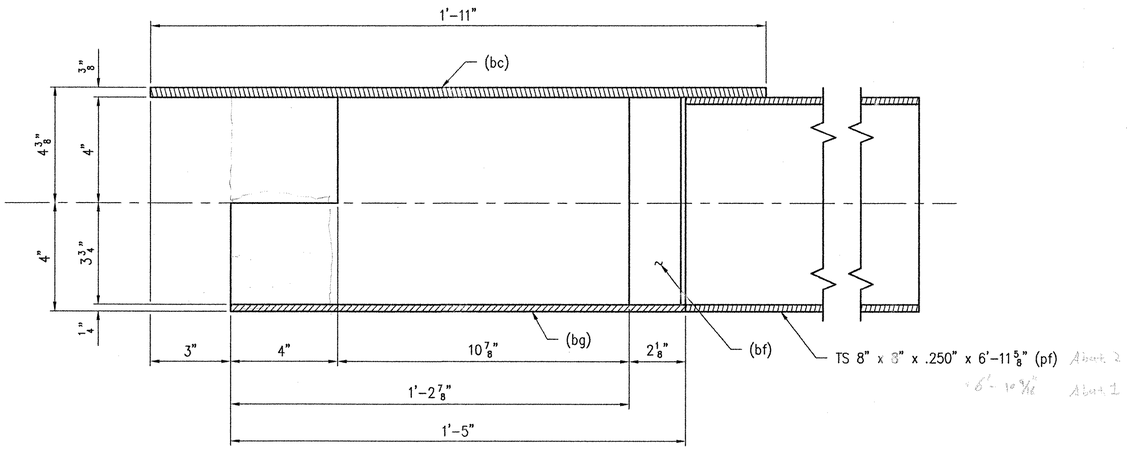
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| FOR PRINTS ISSUED | DATE |



Job. No. : 2034.1236.1

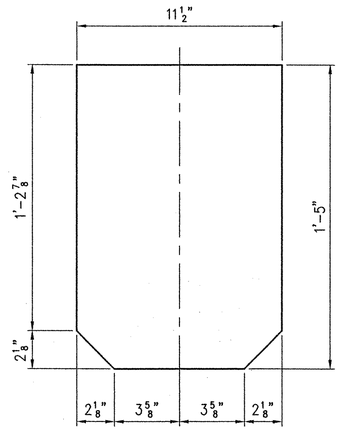



SECTION F-F




SECTION G-G

## 2 - HOPPER(S) - 3A




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
OK'D BY _____ OK'D BY Lewis
JUN 11 2001
RESUBMIT _____ APPROVED As Noted
BY opw DATE 7/3/01

SHOP NOTE:
SEAL WELD ALL ACCESSIBLE JOINTS FOR GALVANIZING.

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|---|---|
| SHOP | |
| APPROVAL | |
| DIST. | |
| CUST. | |
| FOR | DATE |
| PRINTS ISSUED | |

| REV. | DESCRIPTION | DATE | INT. |
|---|---|---|---|

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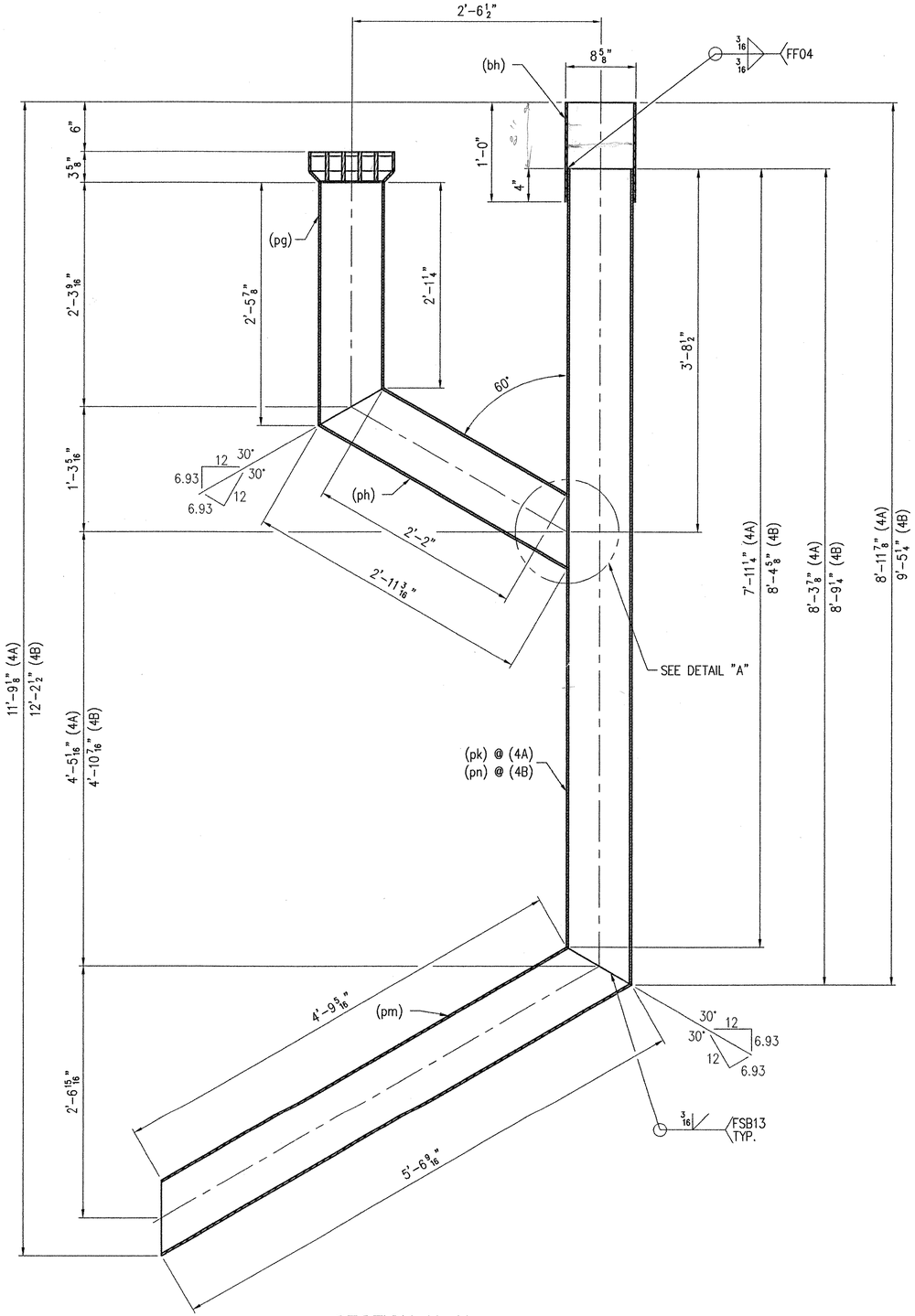
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (612) 368-3000

| | | |
|---|---|---|
| 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 |

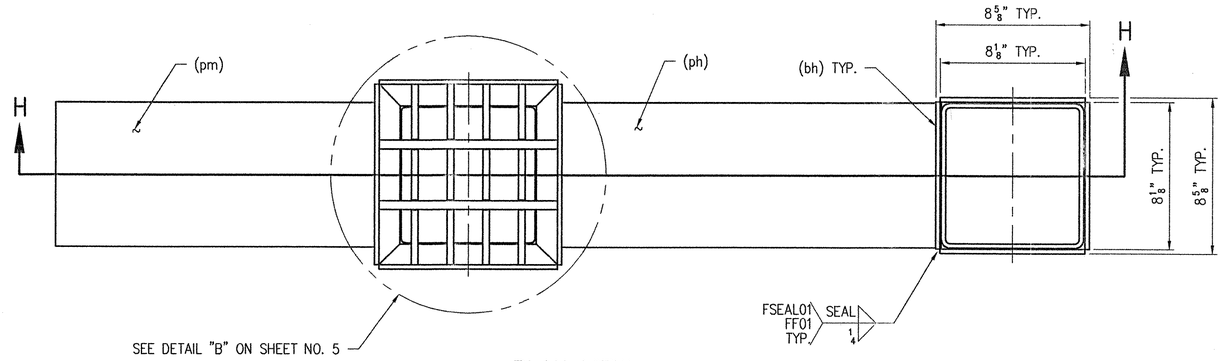
Orig.
W.P. chk'd
Drawn By JMB
Chk'd. By TSF
Date: 5/25/01



Job. No. : 2034.1236.1

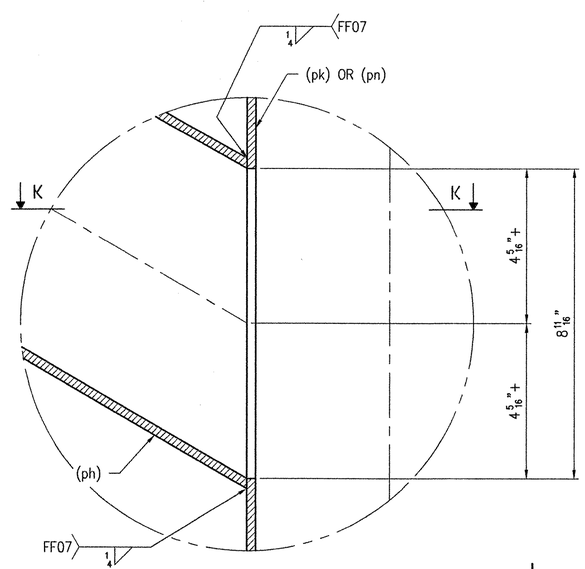



SECTION H-H

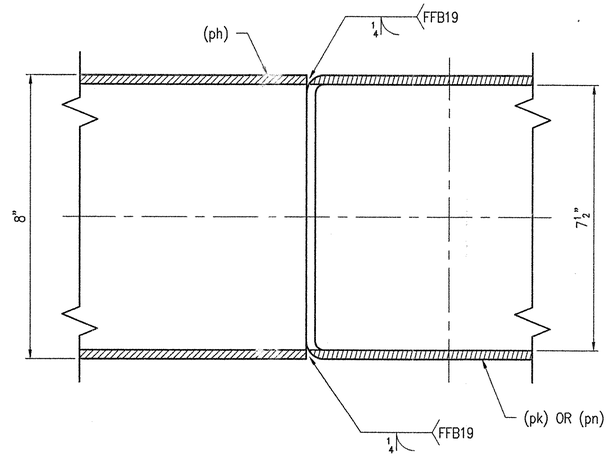



PLAN VIEW

1 - DOWNSPOUT(S) - 4A
1 - DOWNSPOUT(S) - 4B




DETAIL "A"




SECTION K-K

SEE SHEET NO. 2 FOR GENERAL NOTES.

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.

| | |
|---|---|
| SHOP | |
| APPROVAL | |
| DIST. | |
| CUST. | |
| FOR PRINTS ISSUED | DATE |

| REV. | DESCRIPTION | DATE | INT. |
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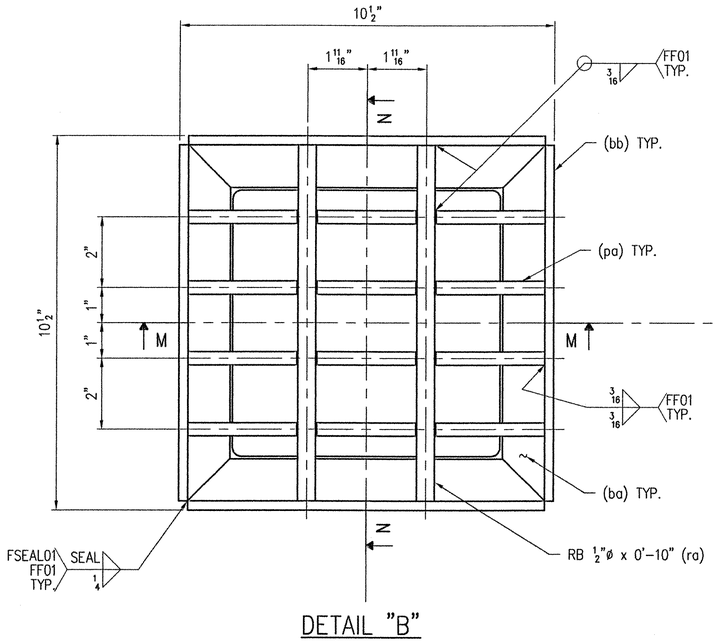
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (612) 368-3000

| | | |
|---|---|---|
| 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 |

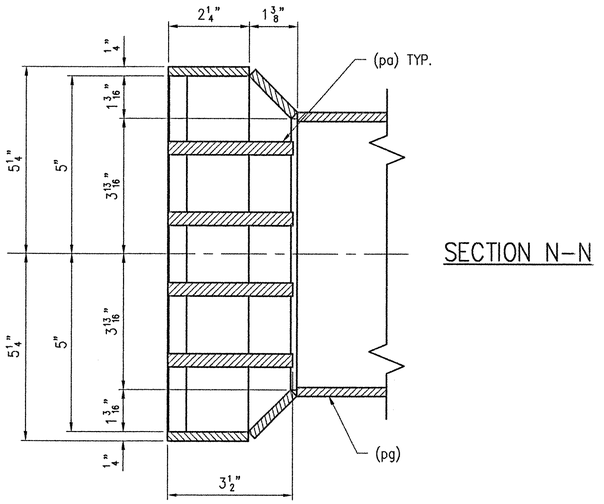
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| Chk'd. By | TSF |
| Date: | 5/25/01 |

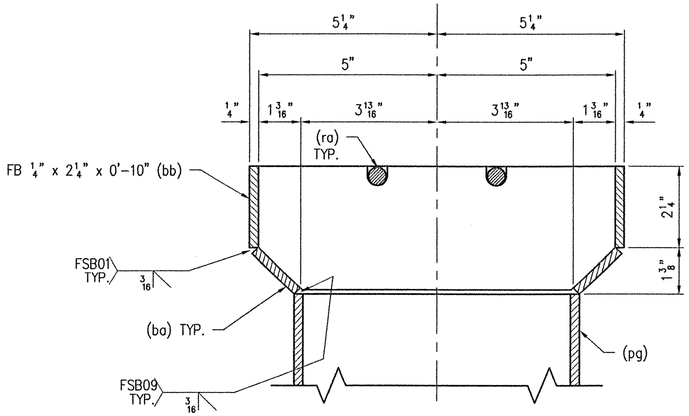
SHEET NO. 4 OF 5 | Job. No. : 2034.1236.1




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 | R ¼" x 1 11/16" | A36 | 0'-10" | ba | SHAPE CUT | 19-12 |
| 3 | 4 | FB ¼" x 2¼" | A36 | 0'-10" | bb | | 16-30 |
| 4 | 4 | R ⅜" x 3½" | A36 | 0'-10" | pa | SHAPE CUT | 19-14 |
| 5 | 2 | RB ½"ø | A36 | 0'-10" | ra | | 18-3 |
| 6 | 4 | R ¼" x 8⅛" | A36 | 1'-0" | bh | | 19-12 |
| 7 | 1 | TS 8" x 8" x .250" | A500-B | 2'-5⅞" | pg | | 22-5 |
| 8 | 1 | TS 8" x 8" x .250" | A500-B | 2'-11 3/16" | ph | | 22-5 |
| 9 | 1 | TS 8" x 8" x .250" | A500-B | 8'-3⅜" | pk | | 22-5 |
| 10 | 1 | TS 8" x 8" x .250" | A500-B | 5'-6 9/16" | pm | | 22-5 |
| 11 | | | | | | | |
| 12 | 1 | DOWNSPOUT(S) | | 12'-2½" | 4B | HDG | |
| 13 | 4 | R ¼" x 1 11/16" | A36 | 0'-10" | ba | SHAPE CUT | 19-12 |
| 14 | 4 | FB ¼" x 2¼" | A36 | 0'-10" | bb | | 16-30 |
| 15 | 4 | R ⅜" x 3½" | A36 | 0'-10" | pa | SHAPE CUT | 19-14 |
| 16 | 2 | RB ½"ø | A36 | 0'-10" | ra | | 18-3 |
| 17 | 4 | R 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 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 9/16" | pm | | 22-5 |

SEE SHEET NO. 2 FOR GENERAL NOTES.
WORK THIS SHEET WITH SHEET NO. 2.

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CK'D BY ____ OK'D BY LMS
JUN 11 2001
RESUBMIT____ APPROVED ✓
BY CPW DATE 7/3/01

SHOP NOTE:
SEAL WELD ALL ACCESSIBLE JOINTS FOR GALVANIZING.

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| SHOP | |
| APPROVAL | |
| DIST. | |
| CUST. | |
| FOR PRINTS ISSUED | DATE |

| REV. | DESCRIPTION | DATE | INT. |
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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

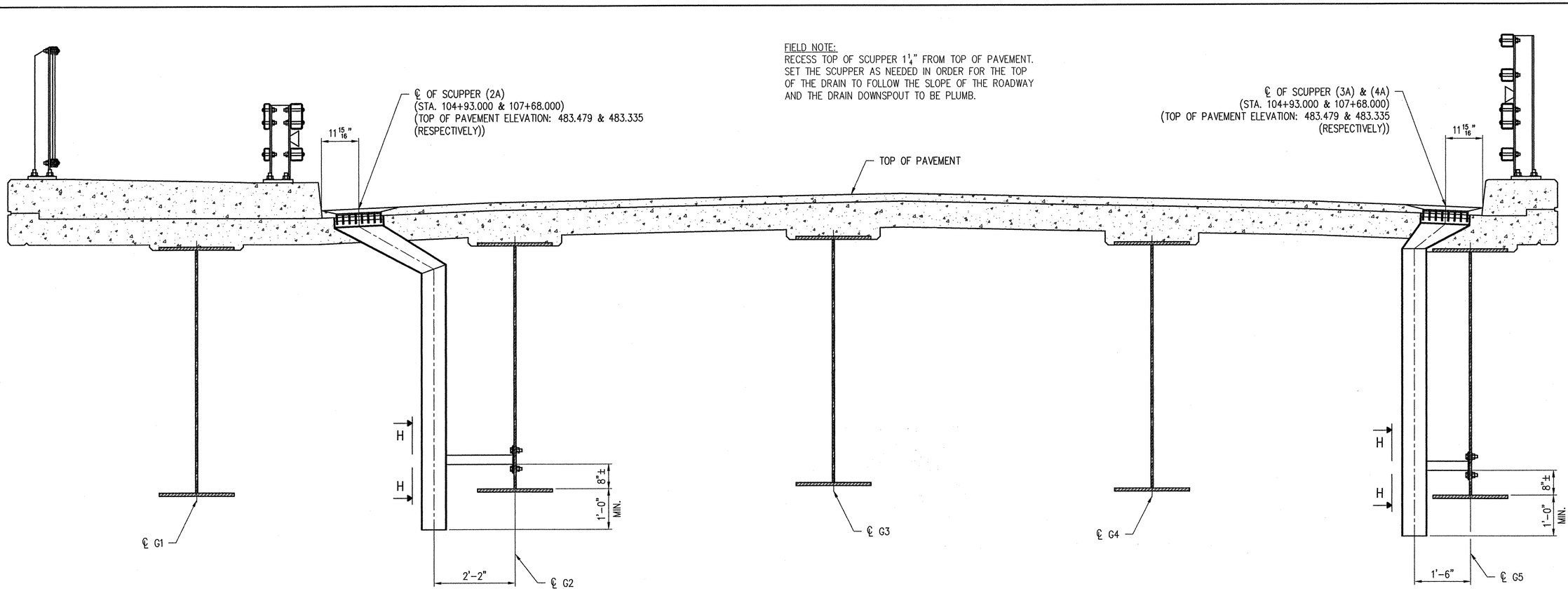
| | | |
|---|---|---|
| PROJECT | — | ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3 |
| STATE PROJECT | — | AC BRZ 1444(22) |
| FEDERAL PROJECT | — | – |
| CUSTOMER | — | BECK & BELLUCCI, INC. |
| LOCATION | — | WINDSOR COUNTY, VT |
| DESCRIPTION | — | SCUPPER(S) DETAILS |

Orig.

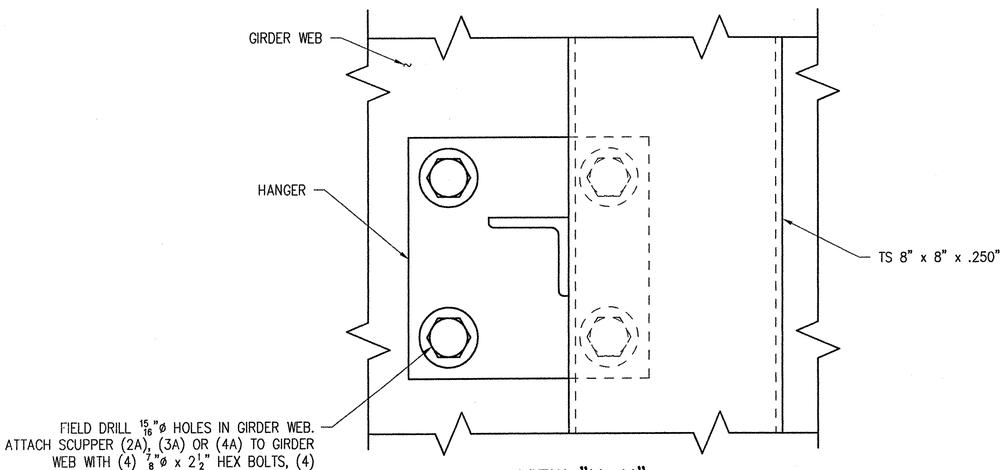
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| W.P. chk'd | |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 5/25/01 |

SHEET NO. 5 OF 5 | Job. No. : 2034.1236.1

FIELD NOTE:
RECESS TOP OF SCUPPER $1\frac{1}{4}$" FROM TOP OF PAVEMENT. SET THE SCUPPER AS NEEDED IN ORDER FOR THE TOP OF THE DRAIN TO FOLLOW THE SLOPE OF THE ROADWAY AND THE DRAIN DOWNSPOUT TO BE PLUMB.




## SECTION THRU BRIDGE @ ℄ OF SCUPPERS
(LOOKING NORTH)




## VIEW "H-H"
(TYPICAL FOR (2A), (3A) & (4A))

RECEIVED
CK'D BY WJG OK'D BY
DEC 12 2001
RESUBMIT APPROVED ✓
BY CPW DATE 12/21/01

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| SHOP | |
| APPROVAL | |
| DIST. | |
| CUST. | |
| FOR PRINTS ISSUED | DATE |

| REV. | DESCRIPTION | DATE | INT. |
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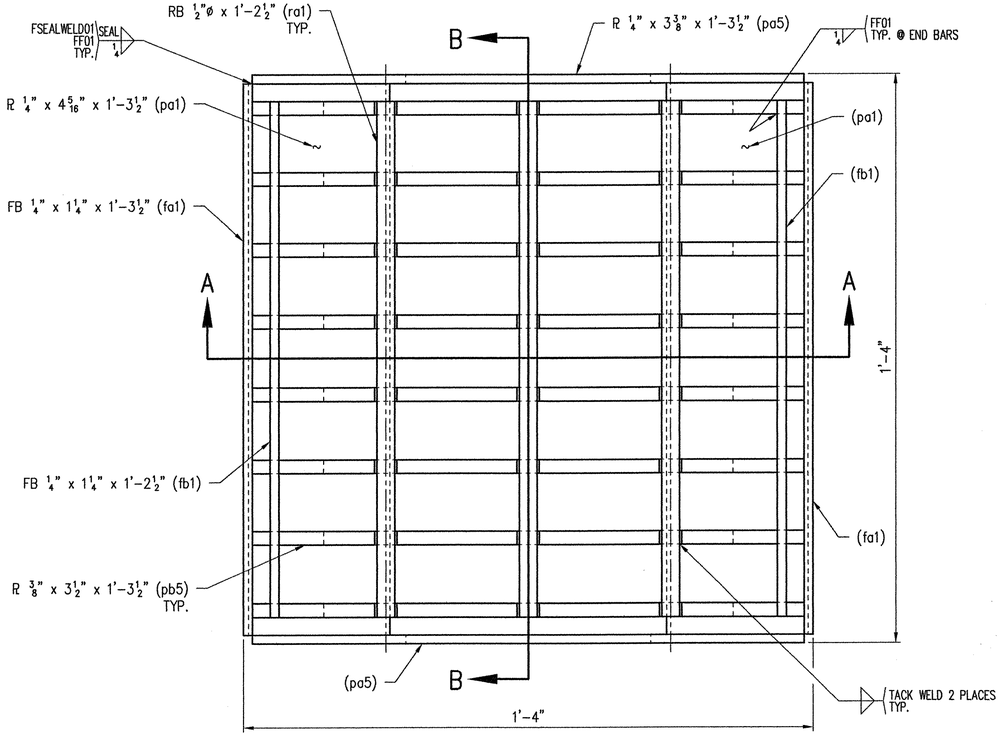
ANY AND ALL BACKCHARGES WILL BE REJECTED UNLESS WRITTEN CONSENT IS GIVEN BY LEWIS ENGINEERING COMPANY PRIOR TO ANY WORK PERFORMED FOR OUR ACCOUNT. SUCH REJECTION MEANS THAT INVOICES WILL NOT BE HONORED OR DEDUCTIONS FROM PAYMENT WILL BE CHARGED BACK.

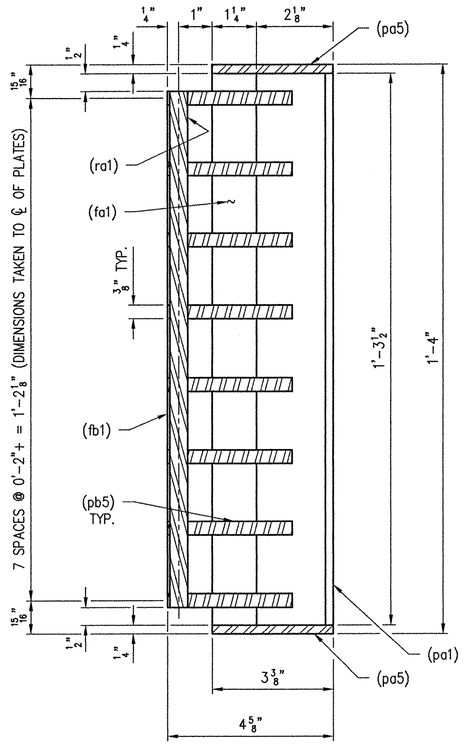
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

| | | |
|---|---|---|
| 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 |

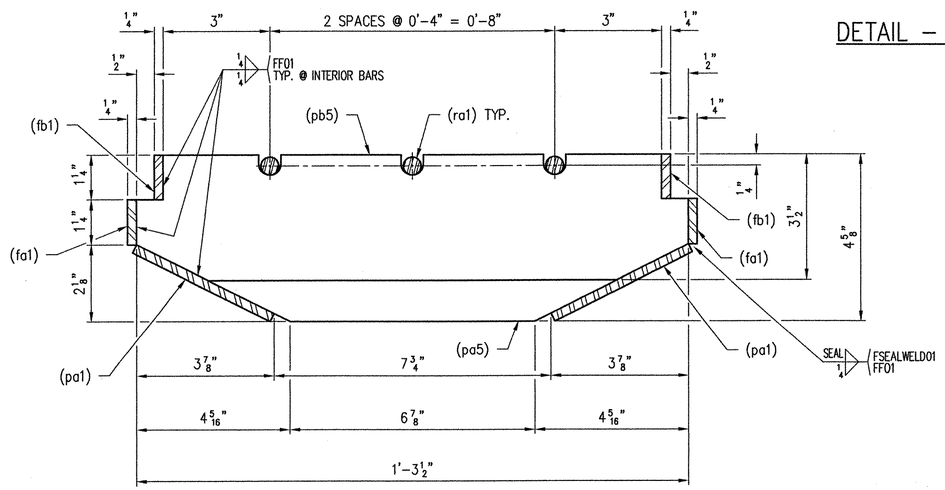
| | |
|---|---|
| W.P. chk'd | Orig. |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 12/5/01 |

SHEET NO. E1 OF 1 | Job. No. : 2034.1236.2




SECTION "B–B"




SECTION "A–A"

## DETAIL – UPPER ASSEMBLY

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 1/16 INCH RADIUS.

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RESUBMIT APPROVED
BY CPW DATE 12/21/01

SHOP NOTE:
SEAL WELD ALL ACCESSIBLE JOINTS FOR GALVANIZING.

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| CUST. | |
| FOR PRINTS ISSUED | DATE |

| REV. | DESCRIPTION | DATE | INT. |
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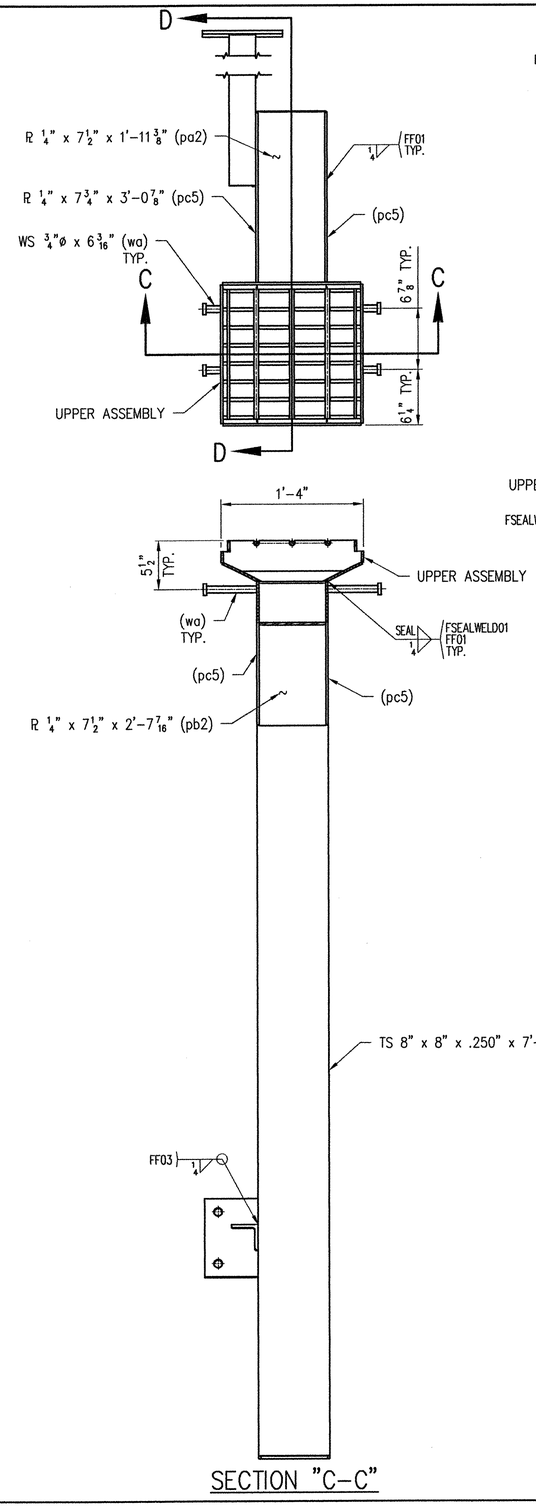
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4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368–3000

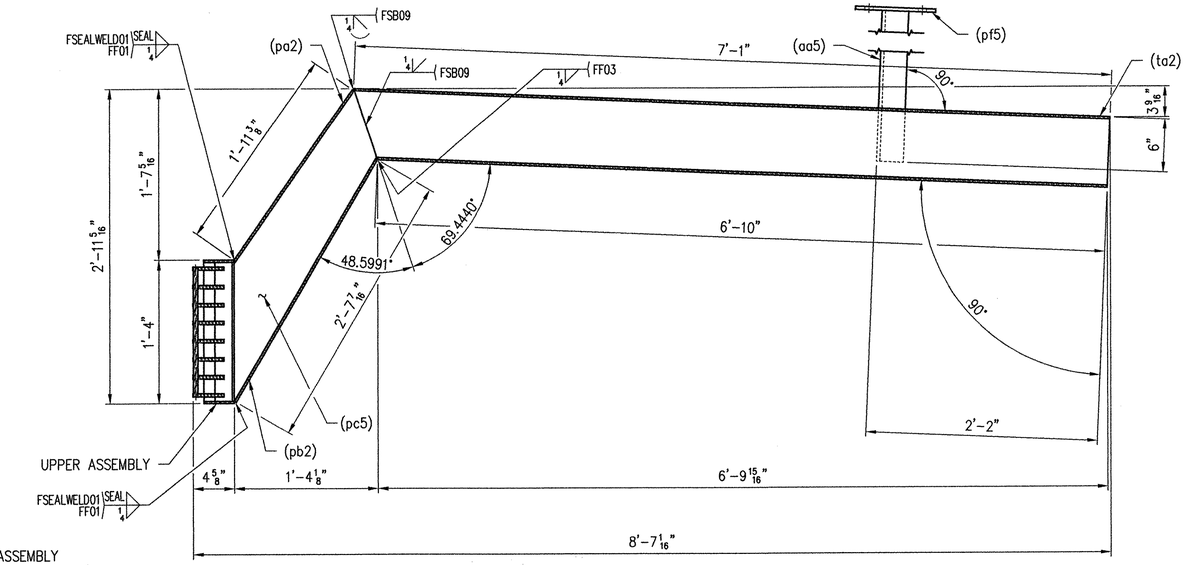
PROJECT — ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT — –
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — SCUPPER(S) DETAILS

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 LWGS OK'D BY
DEC 12 2001
RESUBMIT APPROVED
BY GPW DATE 12/21/01

SHOP NOTE:
SEAL WELD ALL ACCESSIBLE JOINTS FOR GALVANIZING.

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| DIST. | |
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| FOR PRINTS ISSUED | DATE |

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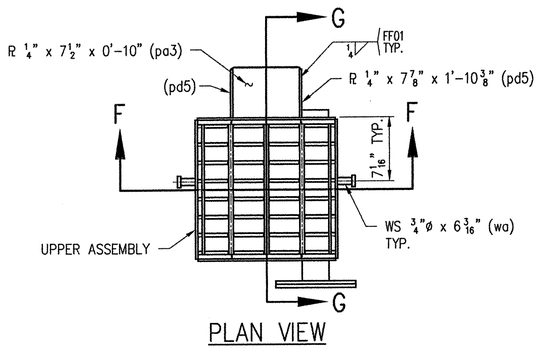
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4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (612) 368-3000

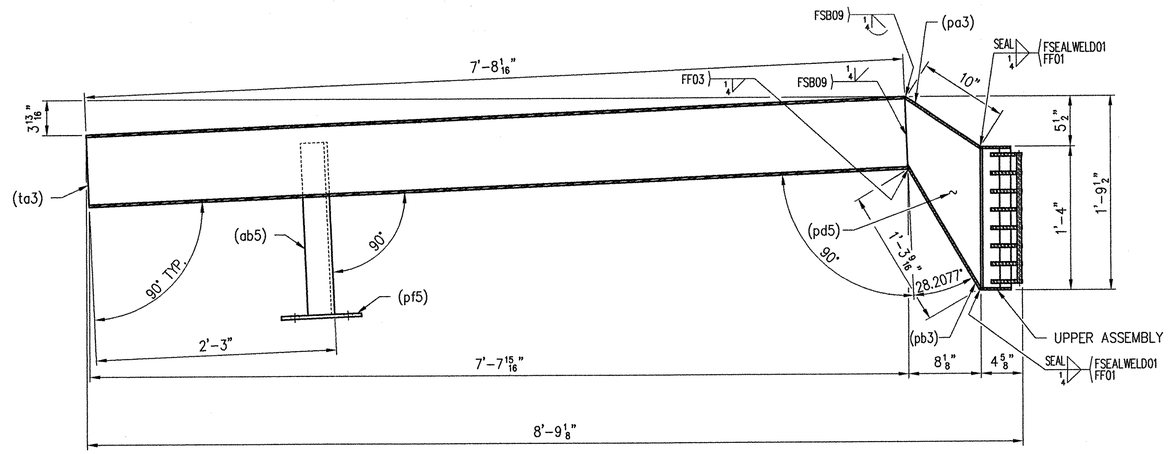
PROJECT — ROYALTON ~ ROUTE NO. T.H. 1 ~ C.L. 1 BRIDGE NO. 3
STATE PROJECT — AC BRZ 1444(22)
FEDERAL PROJECT — -
CUSTOMER — BECK & BELLUCCI, INC.
LOCATION — WINDSOR COUNTY, VT
DESCRIPTION — SCUPPER(S) DETAILS

Orig.
W.P. chk'd TSF
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01

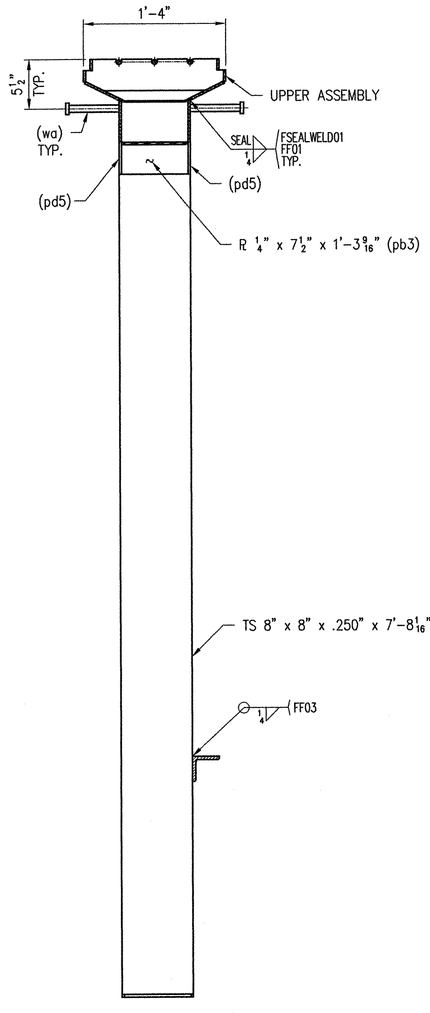

Job. No. : 2034.1236.2




PLAN VIEW




SECTION "G-G"




SECTION "F-F"

# 1 - DOWNSPOUT SCUPPER(S) - 3A

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 WMS OK'D BY
DEC 12 2001
RESUBMIT APPROVED ✓
BY CPW DATE 12/21/01

SHOP NOTE:
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| SHOP | |
| APPROVAL | |
| DIST. | |
| CUST. | |
| FOR | DATE |
| PRINTS ISSUED | |

| REV. | DESCRIPTION | DATE | INT |
|---|---|---|---|

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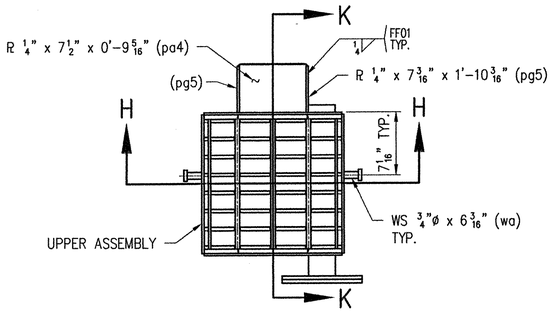
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4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (612) 368-3000

| | | |
|---|---|---|
| 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 |

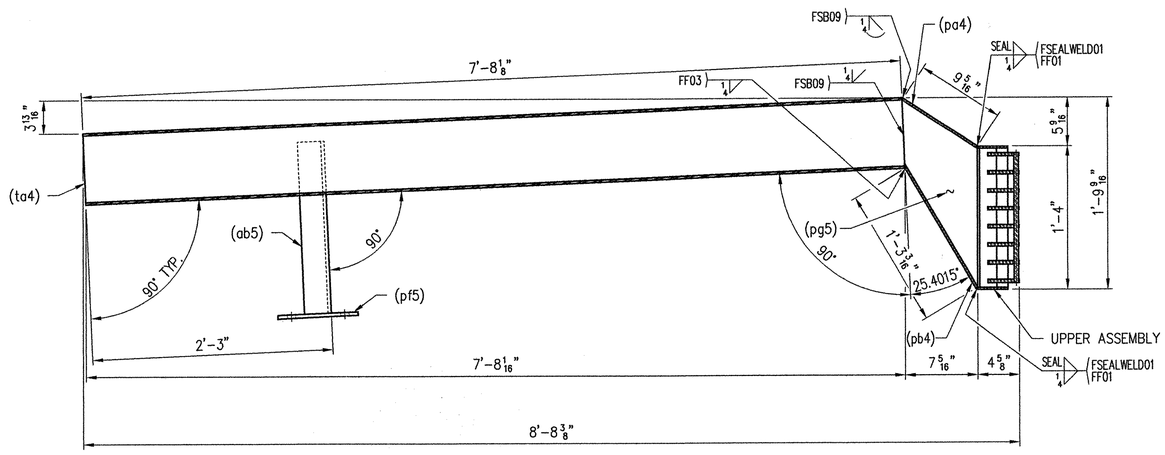
Orig.
W.P. chk'd TSF
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01



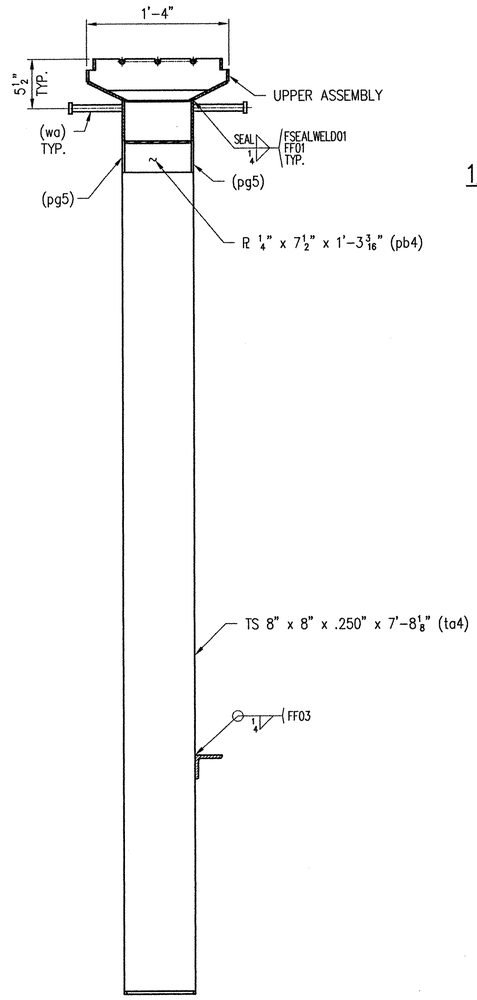
Job. No. : 2034.1236.2




PLAN VIEW




SECTION "K-K"




SECTION "H-H"

## 1 - DOWNSPOUT SCUPPER(S) - 4A

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 WLS OK'D BY
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BY GPW DATE 12/11/01

SHOP NOTE:
SEAL WELD ALL ACCESSIBLE JOINTS FOR GALVANIZING.

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| FOR | DATE |
| PRINTS ISSUED | |

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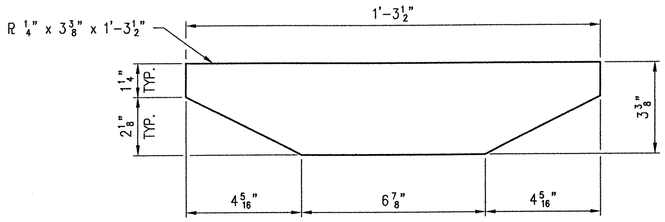
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE - CHASKA, MINNESOTA 55318 - (612) 368-3000

| | | |
|---|---|---|
| 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 |

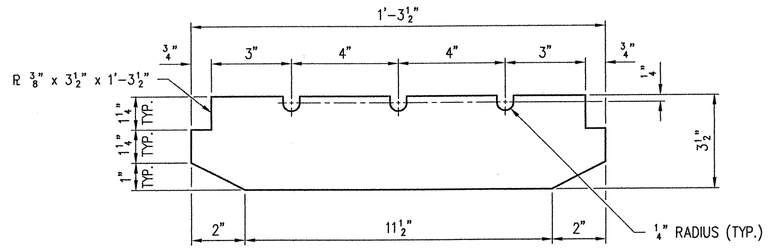
Orig.
W.P. chk'd TSF
Drawn By JMB
Chk'd. By TSF
Date: 12/5/01



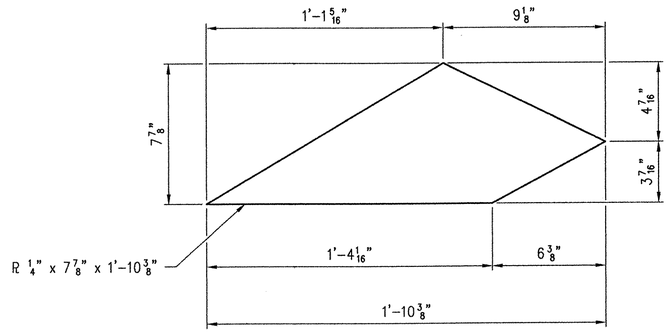
Job. No. : 2034.1236.2



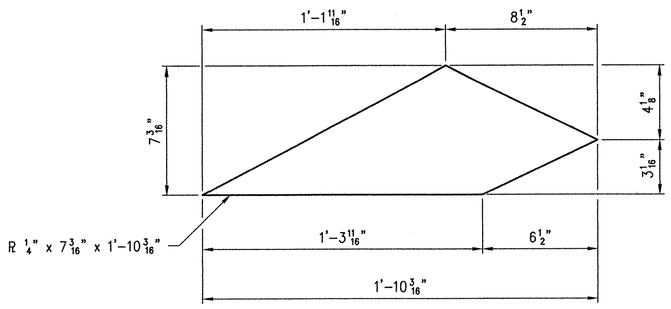

DETAIL (pa5)



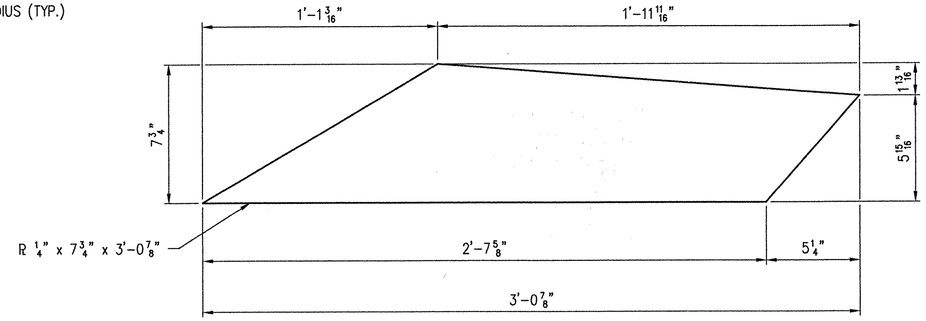

DETAIL (pb5)



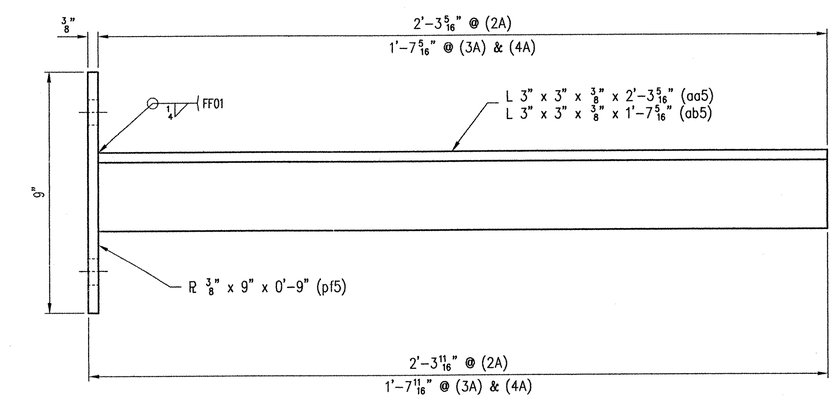

DETAIL (pd5)



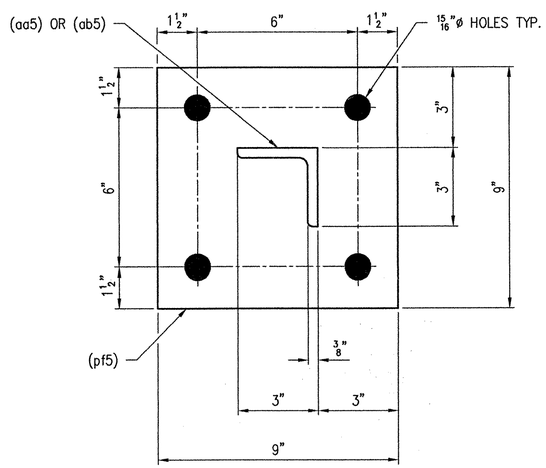

DETAIL (pg5)




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 | |

SEE SHEET NO. 1 FOR GENERAL NOTES.

RECEIVED
CK'D BY ____ OK'D BY ____
DEC 12 2001
RESUBMIT ____ APPROVED ✓
BY ____ DATE 12/21/01

| 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 PRINTS ISSUED | DATE |

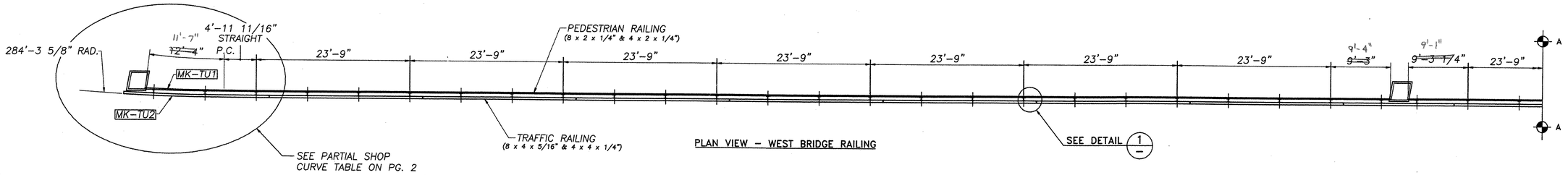
LEWIS ENGINEERING COMPANY
4201 NOREX DRIVE – CHASKA, MINNESOTA 55318 – (612) 368-3000

| | | |
|---|---|---|
| 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 |

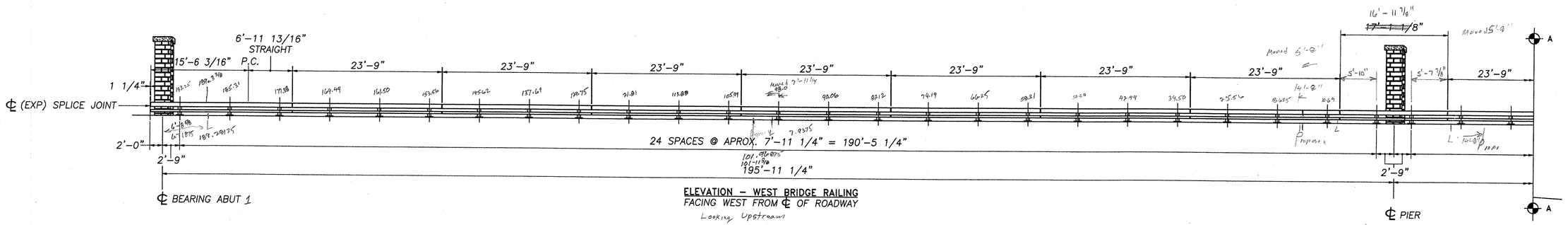
Orig. TSF

| | |
|---|---|
| W.P. chk'd | TSF |
| Drawn By | JMB |
| Chk'd. By | TSF |
| Date: | 12/5/01 |

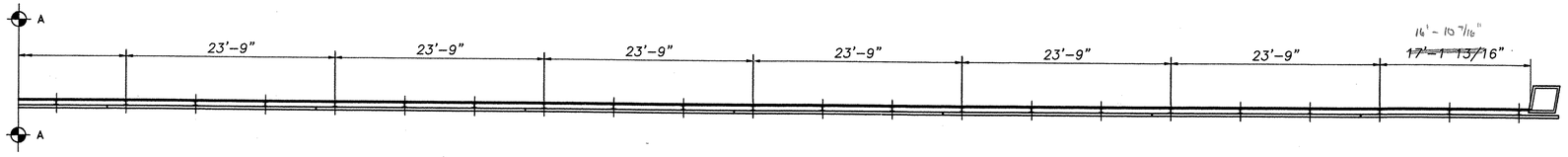
SHEET NO. 5 OF 5 | Job. No. : 2034.1236.2



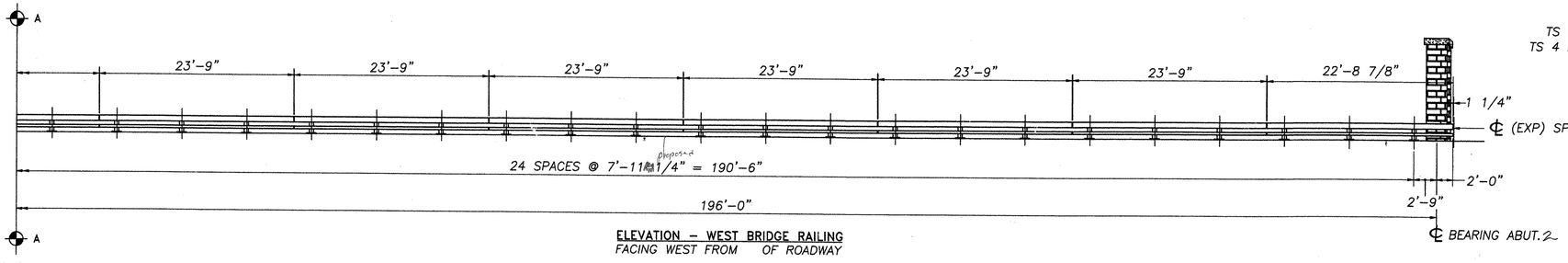

PLAN VIEW – WEST BRIDGE RAILING



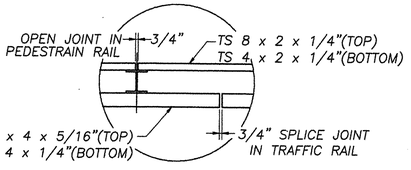

ELEVATION – WEST BRIDGE RAILING
*FACING WEST FROM ℄ OF ROADWAY*
*Looking Upstream*




PLAN VIEW – WEST BRIDGE RAILING




ELEVATION – WEST BRIDGE RAILING
*FACING WEST FROM OF ROADWAY*




1/1 DETAIL

RECEIVED
OK'D BY WBS OK'D BY RSF
APR 2 3 2002
RESUBMIT ____ APPROVED As noted
BY CPW DATE 4/30/02

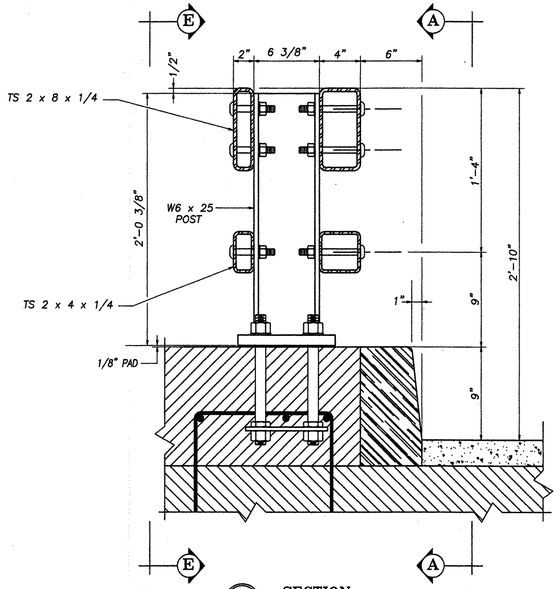
| REVISIONS | | |
|---|---|---|
| No. | Remarks | Date |
| 0 | Initial submittal | 10/16/01 |
| | Second Submittal | 3/18/01 |
| | Third Submittal | 4/17/02 |

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

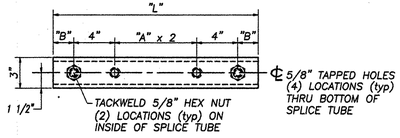
ITEM 525.33 – BRIDGE RAIL – NETC 2 RAIL
PROJECT No. AC BRZ 1444(22)
TOWN OF ROYALTON
TH1 OVER THE WHITE RIVER
(BRIDGE No. 3) WINDSOR COUNTY

GENERAL CONTRACTOR
SUB CONTRACTOR F. R. LAFAYETTE, INC.

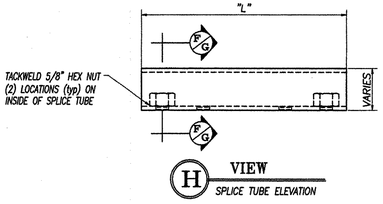
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|---|---|
| DRAWN | J. Ruiz |
| CHECKED | |
| DATE | 10/15/01 |
| SCALE | 1/8 : 12 |
| HSC REFERENCE NO. | 1240 |
| SIZE | D |
| REVISION | 0 |
| SHEET NO. | 1 of 2 |



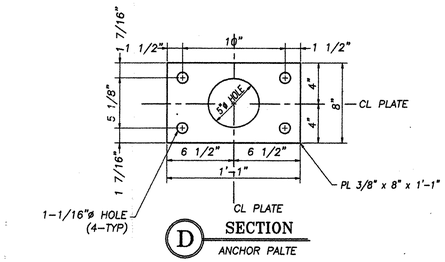

B SECTION



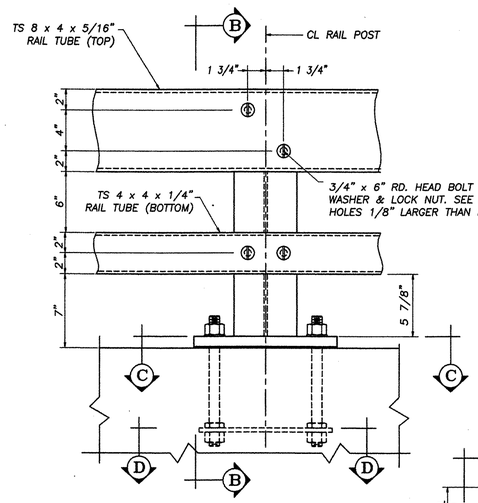

3 DETAIL
SPLICE TUBE – BOTTOM VIEW
(SEE CHART FOR DIMENSIONS)



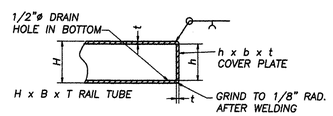

H VIEW
SPLICE TUBE ELEVATION




D SECTION
ANCHOR PALTE

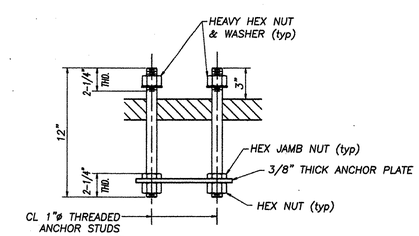



A ELEVATION
(TRAFFIC SIDE)

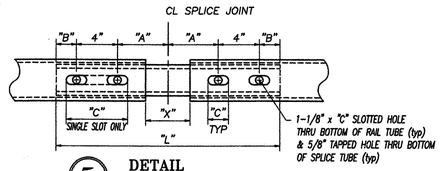



| RAIL TUBE | COVER PLATE |
|---|---|
| 8" x 2" x 1/4" | 7 5/8" x 1 5/8" x 1/4" |
| 4" x 2" x 1/4" | 3 5/8" x 1 5/8" x 1/4" |

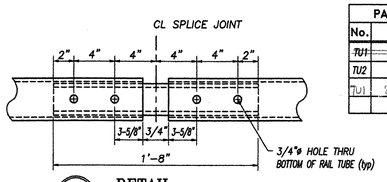
END COVER PLATE DETAIL




6 DETAIL
RAIL POST ANCHORAGE




5 DETAIL
EXPANSION JOINT – BOTTOM VIEW
HARDWARE NOT SHOWN FOR CLARITY

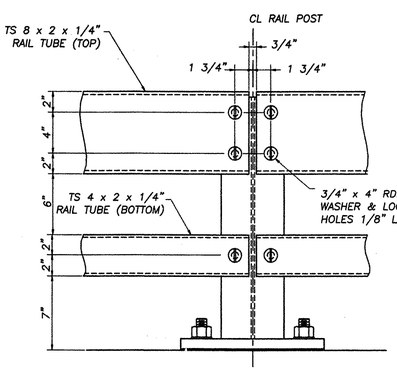



4 DETAIL
SPLICE JOINT – BOTTOM VIEW
HARDWARE NOT SHOWN FOR CLARITY

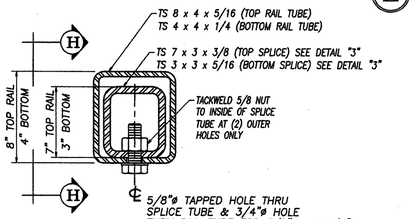
| PARTIAL SHOP CURVE TABLE | | | |
|---|---|---|---|
| No. | RISE | CURVED LENGTH | STRAIGHT LENGTH |
| TU1 | 3 1/8" | 12'-4" | 4'-11 11/16" |
| TU2 | 5 1/8" | 15'-6 3/16" | 6'-11 13/16" |
| TU1 | 2 7/8" | 11'-7" | 4'-11 11/16" |
| | | | |

| 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" |

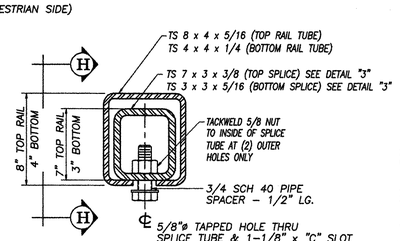
"T" = TOTAL REQUIRED MOVEMENT * = SINGLE SLOT



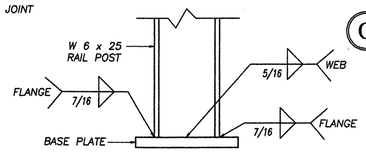

E ELEVATION
(PEDESTRIAN SIDE)



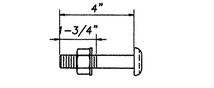

F SECTION
THRU FIXED SPLICE JOINT



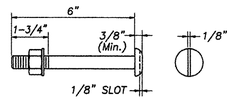

G SECTION
THRU EXPANSION SPLICE JOINT



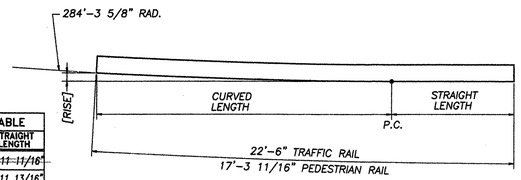

— DETAIL
POST & BASE WELD



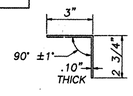

(POST BOLT FOR PEDESTRIAN SIDE)

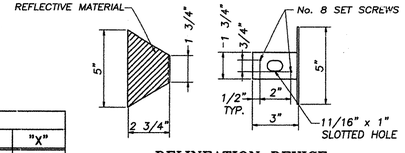



1 DETAIL
(POST BOLT FOR TRAFFIC SIDE)
3/4"ø M164 (TYPE I) ROUND HEAD
BOLT WITH WASHER & LOCKNUT (typ).




7 PARTIAL SHOP CURVE




DELINEATION DEVICE
PROVIDED BY OTHERS
SEE NOTE 13

| REVISIONS | | |
|---|---|---|
| No. | Remarks | Date |
| 0 | Initial submittal | 10/16/01 |
| | Second Submittal | 3/18/02 |
| | Third Submittal | 4/17/02 |

| 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) PEDESTRIAN 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.

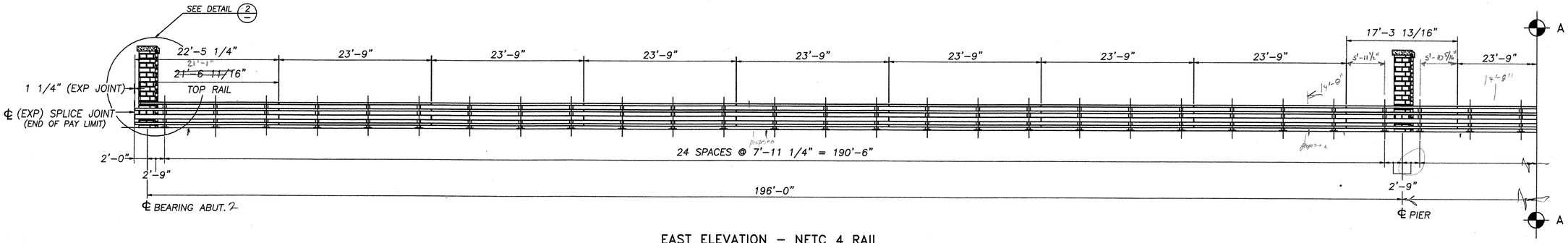
RECEIVED
CK'D BY Wiss CK'D BY RSY
APR 2 3 2002
RESUBMIT APPROVED
BY CPW DATE 4/30/02

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.

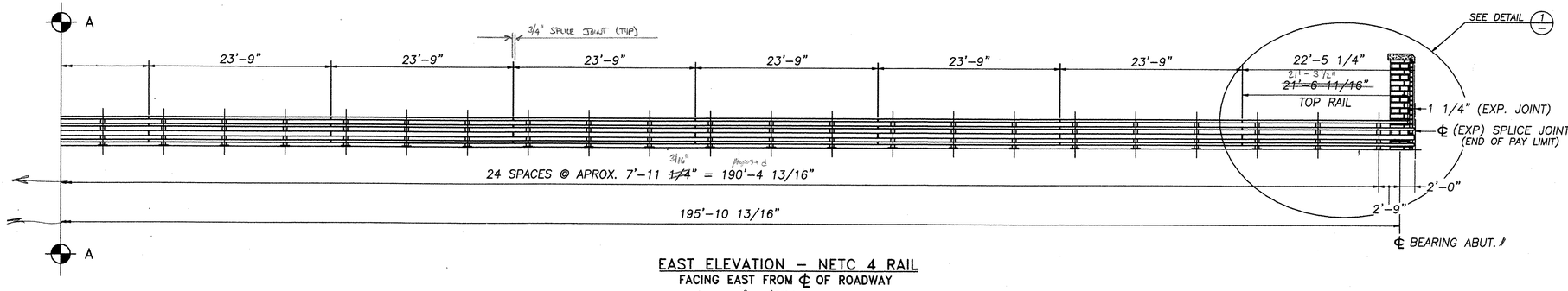
DRAWN J. Ruiz
CHECKED Paul Ruiz
DATE 10/15/01
SCALE N.T.S
HSC. REFERENCE NO. 1240
SIZE D REVISION 0
SHEET NO. 2 of 2




EAST ELEVATION – NETC 4 RAIL

FACING EAST FROM ℄ OF ROADWAY

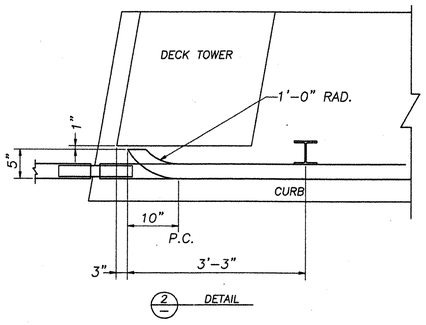
Looking Downstream



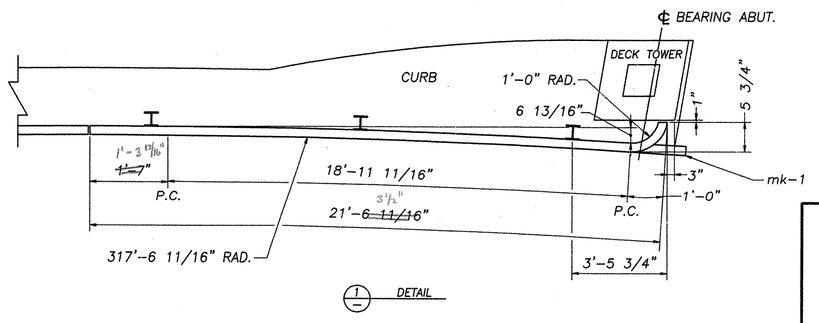

EAST ELEVATION – NETC 4 RAIL

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
APR 2 3 2002
RESUBMIT
BY OPW

OK'D BY WAS OK'D BY RSY
APPROVED As noted
DATE 4/30/02

# HIGHWAY SAFETY CORP.

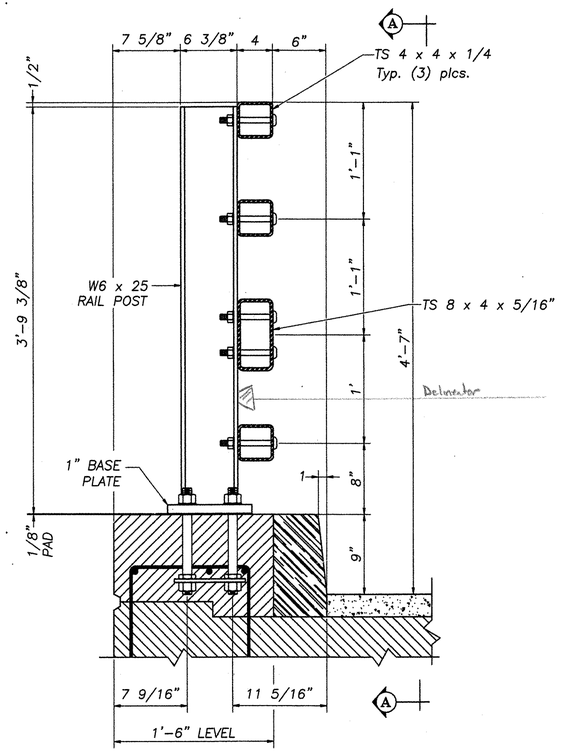
GLASTONBURY, CT

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

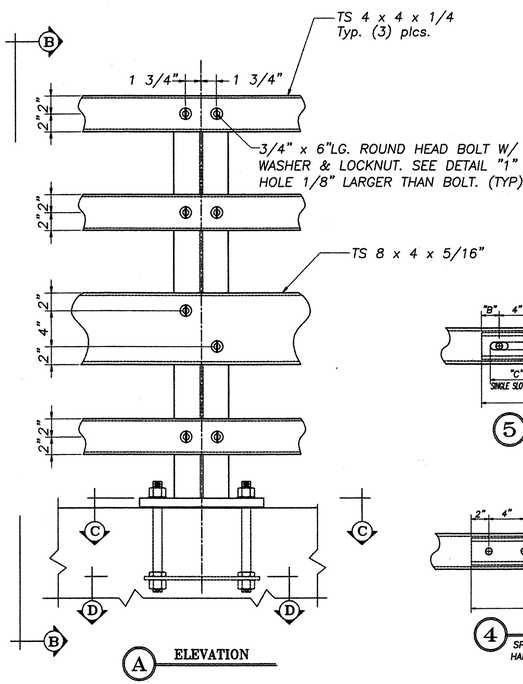
GENERAL CONTRACTOR

SUB CONTRACTOR
F. R. LAFAYETTE, INC.

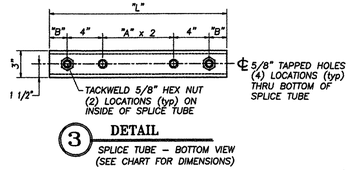
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| DRAWN | J. Ruiz |
| CHECKED | |
| DATE | 10/15/01 |
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| HSC REFERENCE NO. | 1241 |
| SIZE | D |
| REVISION | 0 |
| SHEET NO. | 1 of 2 |



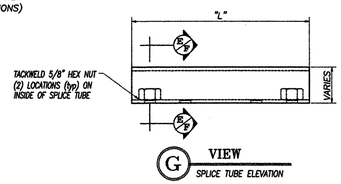

A SECTION



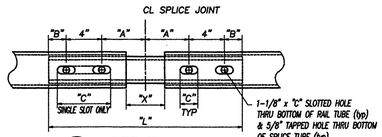

ELEVATION



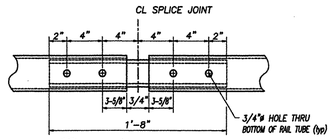

3 DETAIL
SPLICE TUBE – BOTTOM VIEW
(SEE CHART FOR DIMENSIONS)



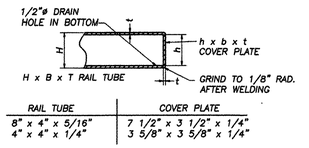

G VIEW
SPLICE TUBE ELEVATION




5 DETAIL
EXPANSION JOINT – BOTTOM VIEW
HARDWARE NOT SHOWN FOR CLARITY




4 DETAIL
SPLICE JOINT – BOTTOM VIEW
HARDWARE NOT SHOWN FOR CLARITY



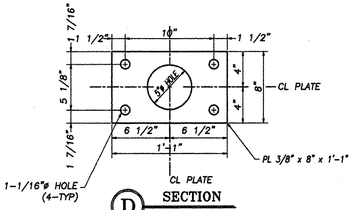

| RAIL TUBE | COVER PLATE |
|---|---|
| 8" x 4" x 5/16" | 7 1/2" x 3 1/2" x 1/4" |
| 4" x 4" x 1/4" | 3 5/8" x 3 5/8" x 1/4" |

END COVER PLATE DETAIL

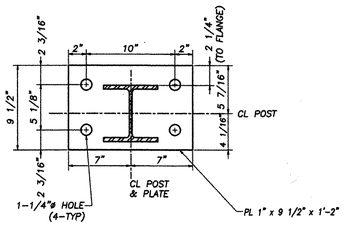
| BILL OF MATERIAL | | |
|---|---|---|
| Mk. | Qty. | Description |
| | 50 | W6 x 25 POST W/BASE PLATE (3'-9 3/8" OAH) |
| | 14 | TS 8 x 4 x 5/16" (23'-9" OAL) |
| | 42 | TS 4 x 4 x 1/4" (23'-9" OAL) |
| | 1 | TS 8 x 4 x 5/16" (22'-5 1/4" OAL) |
| | 2 | TS 4 x 4 x 1/4" (22'-5 1/4" OAL) |
| TU1 | 1 | 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

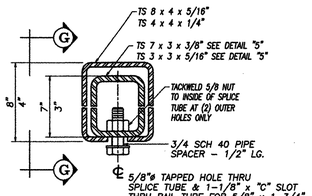
1. All work and materials shall conform to the provisions of Section 525 – Railings of the Vermont Standard Specifications for Construction.
2. Tubing & posts shall meet the requirements of Section 732 – Railing materials of the Standard Specifications for Construction.
3. All exposed cut or sheared 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.



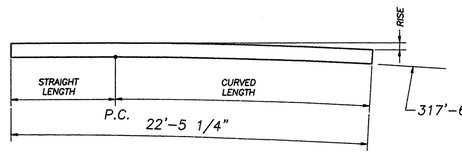

D SECTION
ANCHOR PALTE




C SECTION
RAIL POST & BASE PLATE
SEE DETAIL "F" FOR POST-BASE WELD



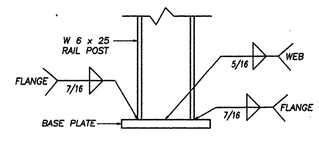

F SECTION
THRU EXPANSION SPLICE JOINT



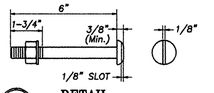

7 DETAIL
PARTIAL SHOP CURVE

| PARTIAL SHOP CURVE TABLE | | | |
|---|---|---|---|
| No. | RISE | STRAIGHT LENGTH | CURVED LENGTH |
| ~~TU1~~ | ~~2 3/8"~~ | ~~1'-3 13/16"~~ | ~~21'-11 11/16"~~ |
| TU-1 | 8 7/16" | 1'-3 13/16" | 21'-11 11/16" |
| | | | |
| | | | |

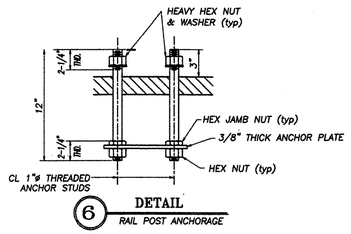
~~LENGTH OF CURVED TUBING TO BE DETERMINED BY CONTRACTOR PRIOR TO SHOP FABRICATION~~



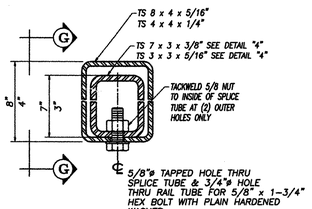

2 DETAIL
POST-BASE WELD



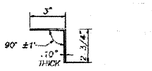

1 DETAIL
3/4"ø M164 (TYPE I) ROUND HEAD
BOLT WITH WASHER & LOCKNUT (typ).

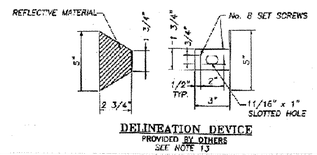



6 DETAIL
RAIL POST ANCHORAGE




E SECTION
THRU FIXED SPLICE JOINT




DELINEATION DEVICE
PROVIDED BY OTHERS
SEE NOTE 13

## 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 delineaetion devices shall conform to ASTM specification F880, condition CW, alloy type 304.

| 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 | 4/29/02 |

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APR 2 3 2002
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BY CPW DATE 4/30/02

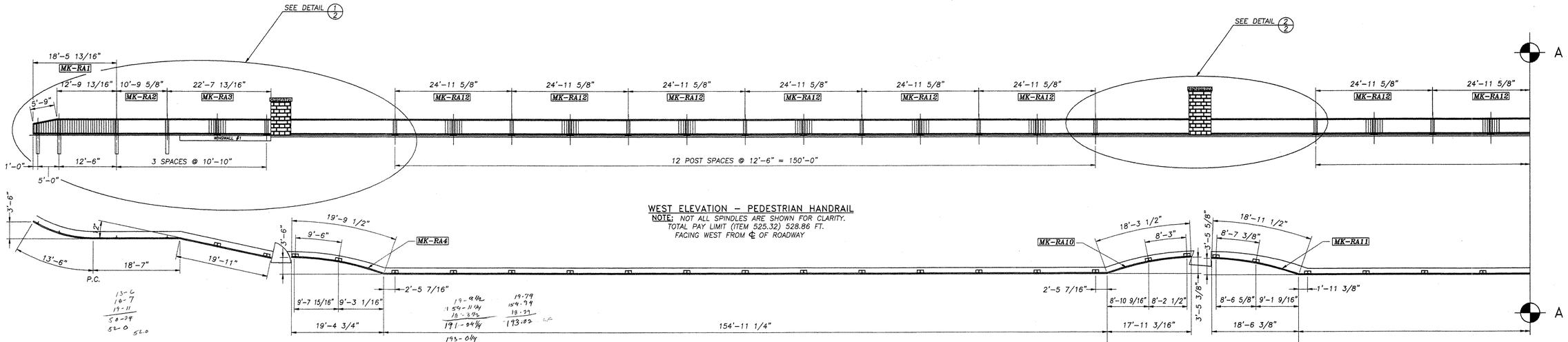
HIGHWAY SAFETY CORP.
GLASTONBURY, CT

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.

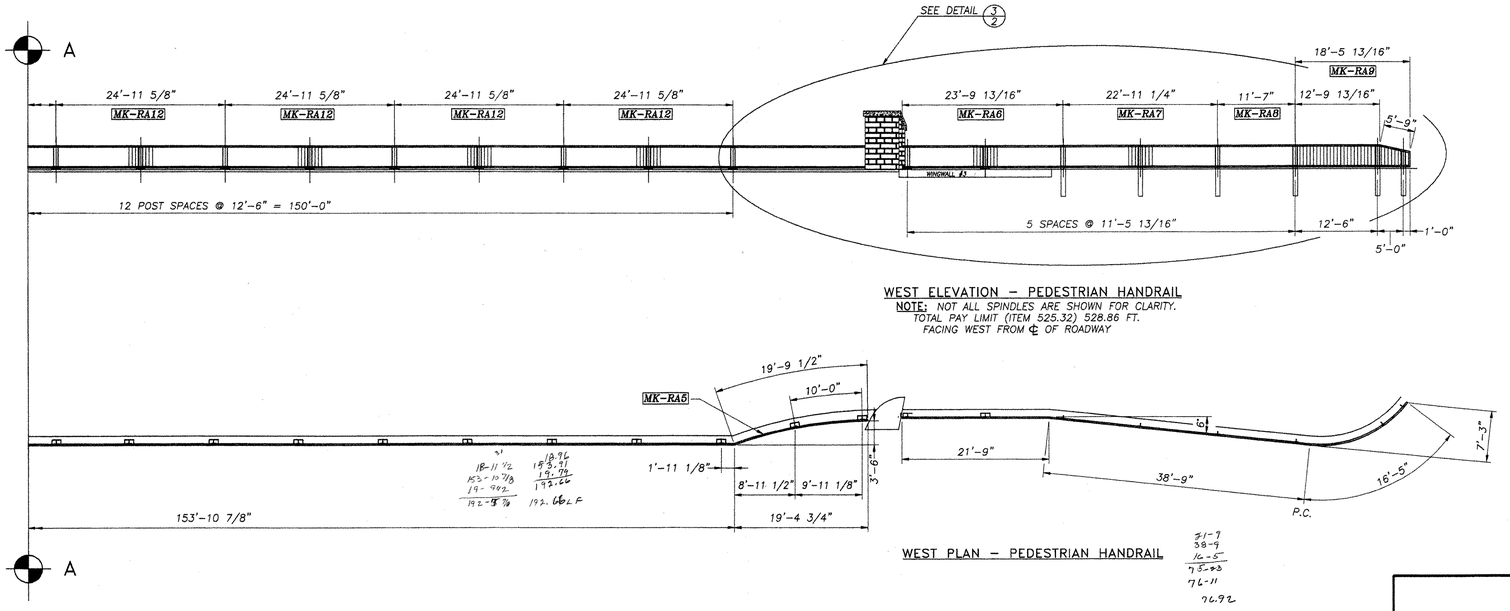
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CHECKED Paul K
DATE 10/15/01
SCALE N.T.S
HSC REFERENCE NO. 1241
SIZE D REVISION 0
SHEET NO. 2 of 2




WEST ELEVATION – PEDESTRIAN HANDRAIL

NOTE: NOT ALL SPINDLES ARE SHOWN FOR CLARITY.
TOTAL PAY LIMIT (ITEM 525.32) 528.86 FT.
FACING WEST FROM ℄ OF ROADWAY

WEST PLAN – PEDESTRIAN HANDRAIL




WEST ELEVATION – PEDESTRIAN HANDRAIL

NOTE: NOT ALL SPINDLES ARE SHOWN FOR CLARITY.
TOTAL PAY LIMIT (ITEM 525.32) 528.86 FT.
FACING WEST FROM ℄ OF ROADWAY

WEST PLAN – PEDESTRIAN HANDRAIL

RECEIVED
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RESUBMIT APPROVED
BY GPW DATE 5/20/02

| REVISIONS | | |
|---|---|---|
| No. | Remarks | Date |
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| | Second submittal | 3/18/02 |
| | Third submittal | 4/17/02 |
| | Fourth submittal | 5/8/02 |

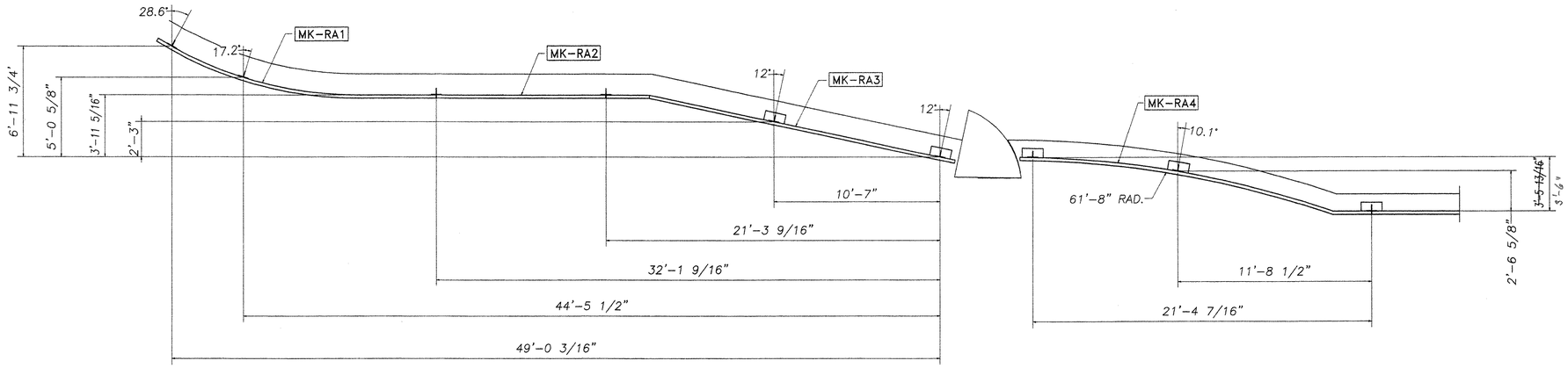
HIGHWAY SAFETY CORP.
GLASTONBURY, CT

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

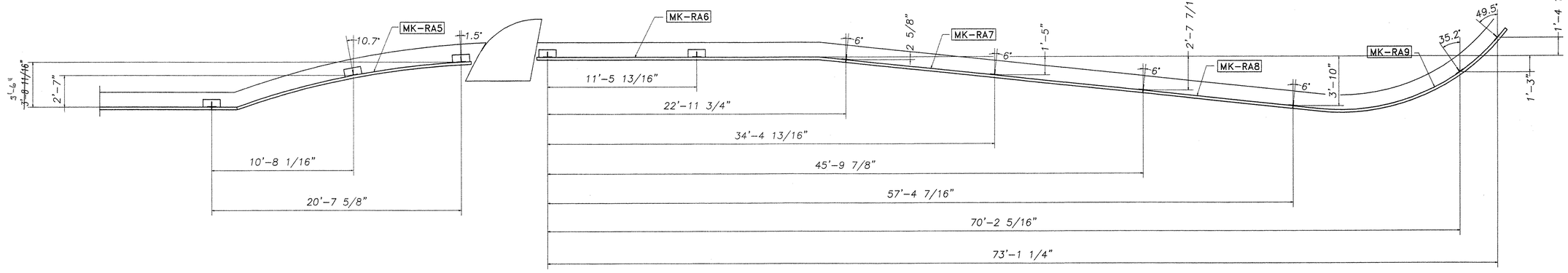
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SUB CONTRACTOR F. R. LAFAYETTE, INC.

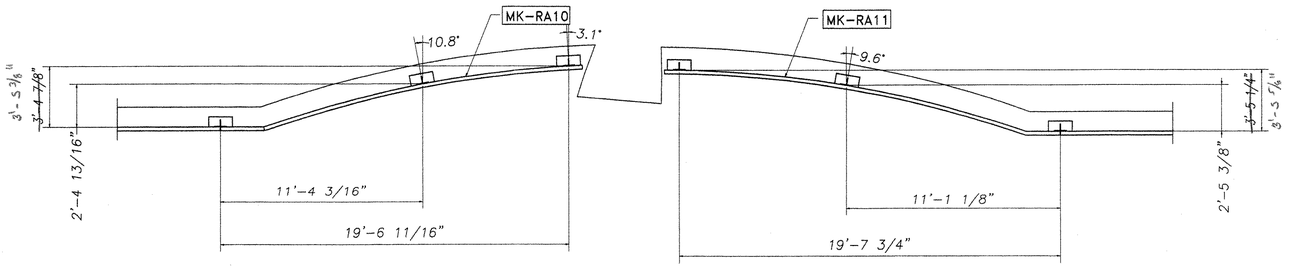
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| DRAWN | J. Ruiz |
| CHECKED | |
| DATE | 10/15/01 |
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| HSC REFERENCE NO. | 1242 |
| SIZE | D |
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| SHEET NO. | 1 of 5 |



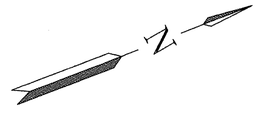

1/1 DETAIL
PARTIAL PLAN VIEW




3/1 DETAIL
PARTIAL PLAN VIEW




2/1 DETAIL
PARTIAL PLAN VIEW




| 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 |

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RESUBMIT APPROVED As noted
BY OPW DATE 5/20/02

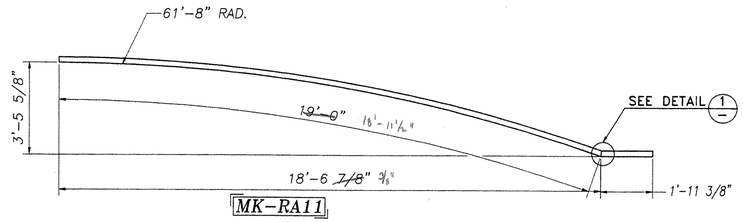
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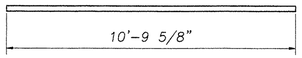
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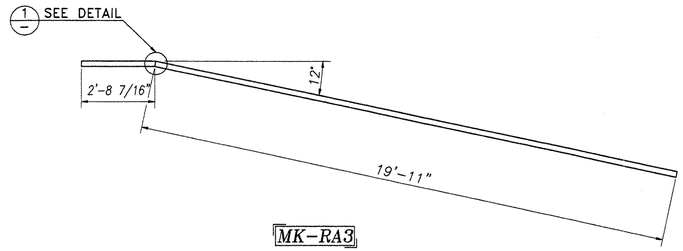
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DATE 4/15/02
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SHEET NO. 2 of 5



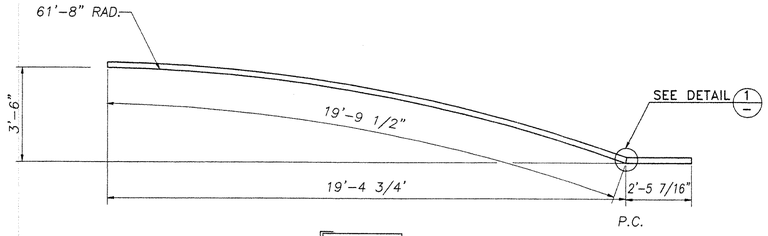

MK-RA11



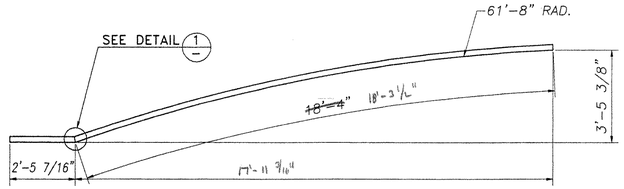

MK-RA2



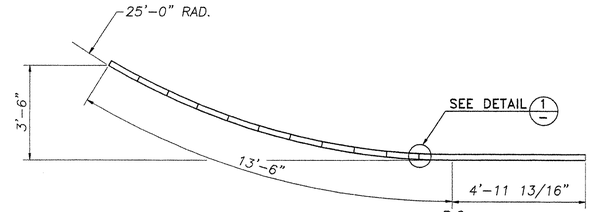

MK-RA3



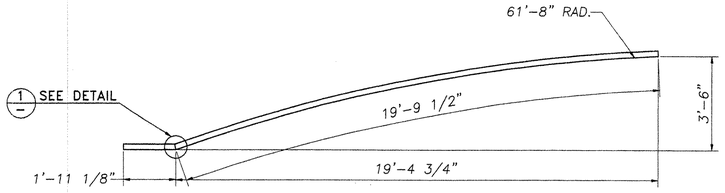

MK-RA4



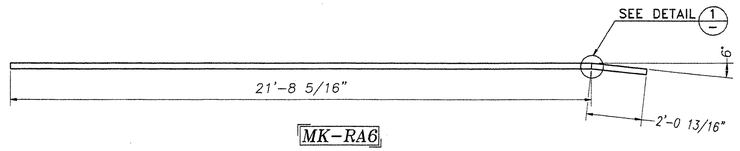

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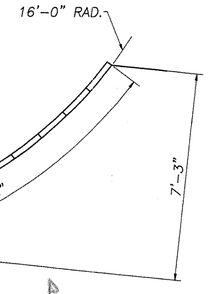

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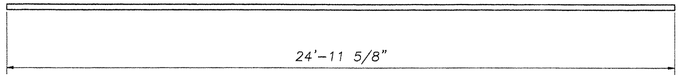

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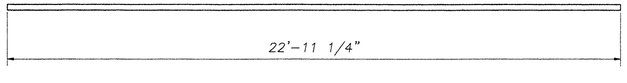

MK-RA6



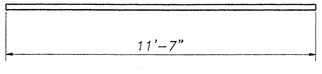

MK-RA9



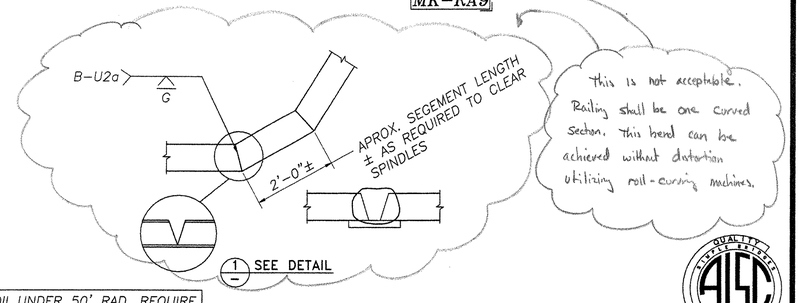

MK-RA12




MK-RA7




MK-RA8




TUBE RADII UNDER 50' RAD. REQUIRE CUT & WELD TUBE FABRICATION

| 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 |

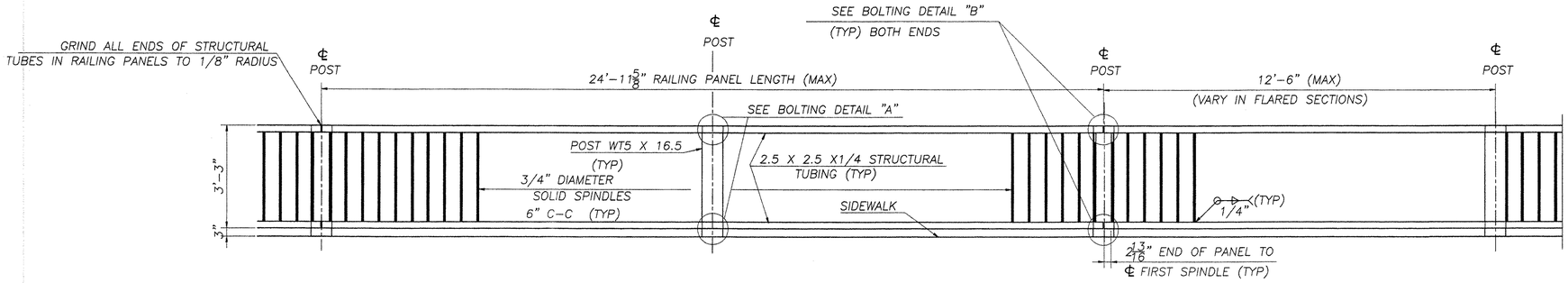
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RESUBMIT APPROVED As noted
BY CPW DATE 5/20/02

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

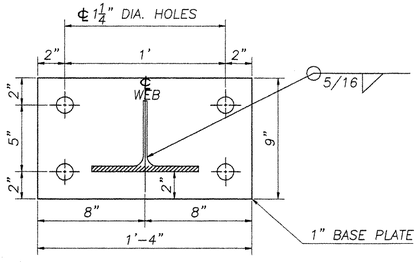
ITEM 525.32 PEDESTRIAN RAIL (MOD)
PROJECT No. AC BRZ 1444(22)
TOWN OF ROYALTON
TH1 OVER THE WHITE RIVER
(BRIDGE No. 3) WINDSOR COUNTY

GENERAL CONTRACTOR
SUB CONTRACTOR F.R. LAFAYETTE, INC.

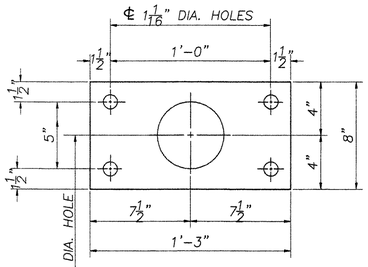
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CHECKED
DATE 4/15/02
SCALE NONE
HSC REFERENCE NO. 1242
SIZE D REVISION 0
SHEET NO. 3 of 5



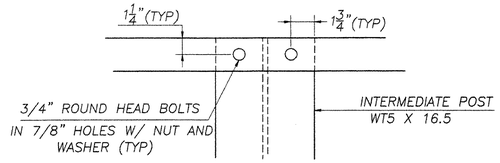

ELEVATION PEDESTRIAN RAILING



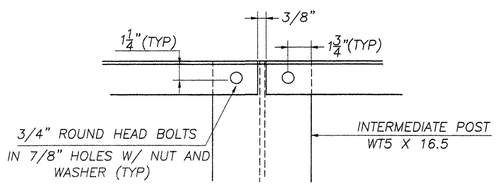

POST & BASE PLATE
SIDEWALK AND WINGWALL MOUNTED POSTS



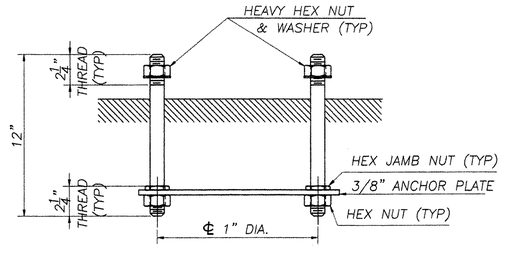

ANCHOR PLATE
SIDEWALK AND WINGWALL MOUNTED POSTS



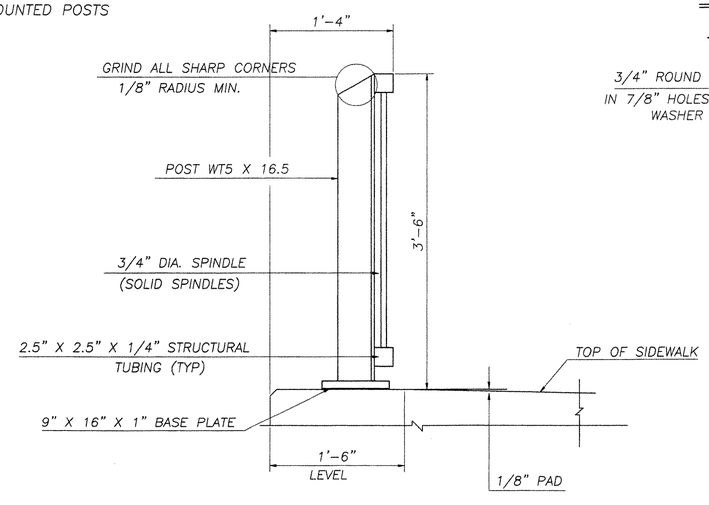

BOLTING DETAIL "A"




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 |

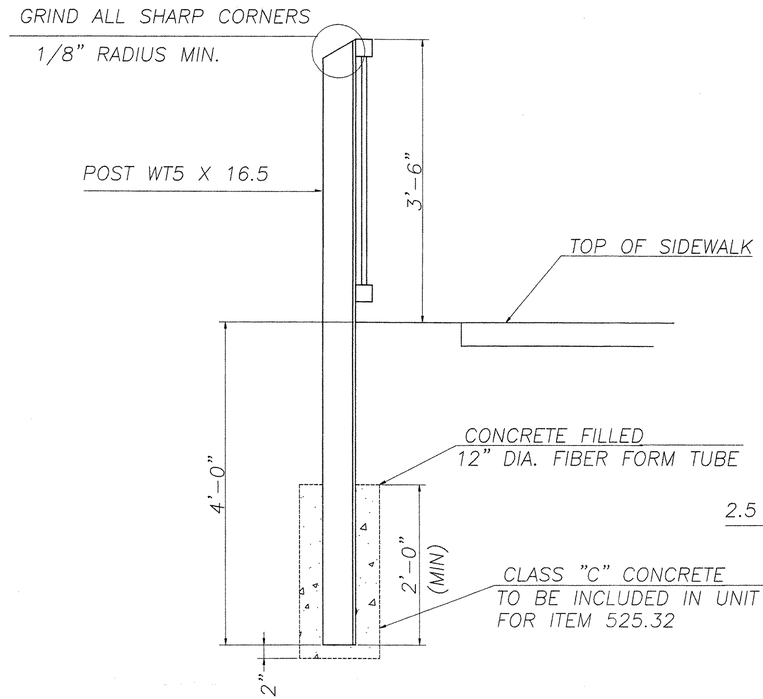
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MAY 15 2002
RESUBMIT APPROVED
BY CPW DATE 5/20/02

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

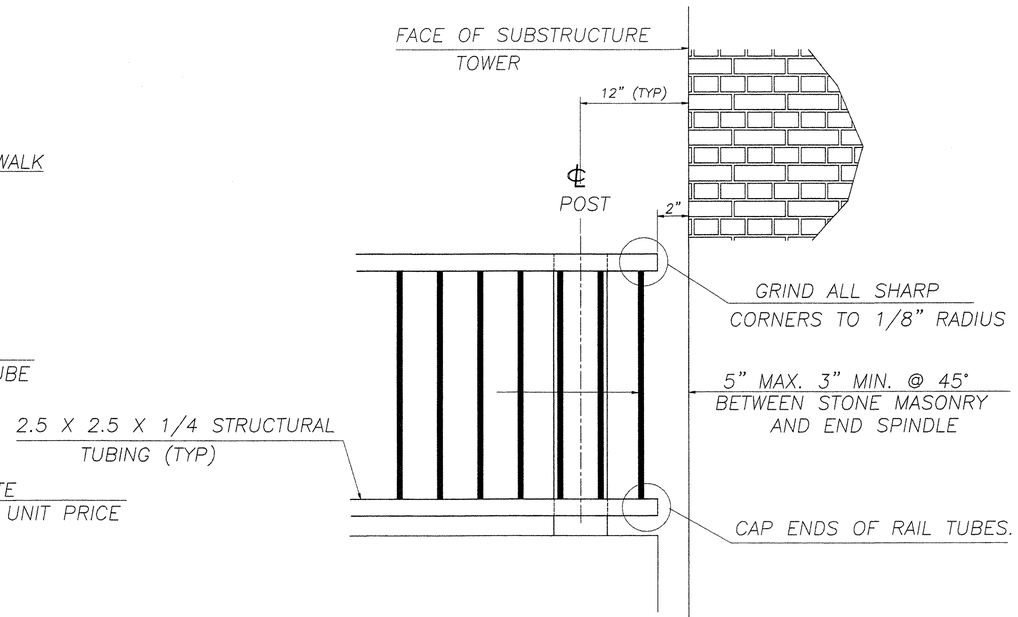
ITEM 525.32 PEDESTRIAN RAIL (MOD)
PROJECT No. AC BRZ 1444(22)
TOWN OF ROYALTON
TH1 OVER THE WHITE RIVER
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GENERAL CONTRACTOR
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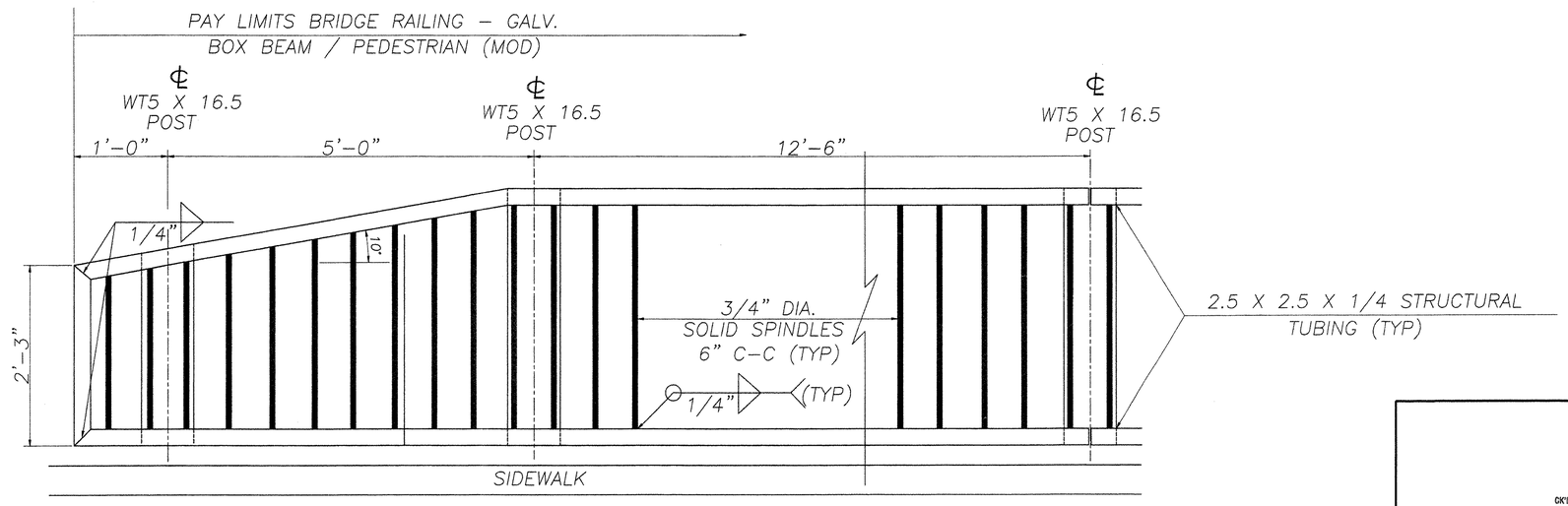
DRAWN J. Ruiz
CHECKED
DATE 10/15/01
SCALE N.T.S
HSC REFERENCE NO. 1242
SIZE D REVISION 0
SHEET NO. 4 of 5




PEDESTRIAN RAIL
APPROACH SECTION
(POST INSTALLED IN SOIL)




PEDESTRIAN RAIL
TERMINATION @ TOWER




PEDESTRIAN RAIL APPROACH END SECTION

| 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 |

| REVISIONS | | |
|---|---|---|
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| 0 | Initial submittal | 10/16/01 |
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| | Third submittal | 4/17/02 |
| | Fourth submittal | 5/3/02 |

RECEIVED
CK'D BY WRS OK'D BY
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RESUBMIT APPROVED ✓
BY CPW DATE 5/20/02

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

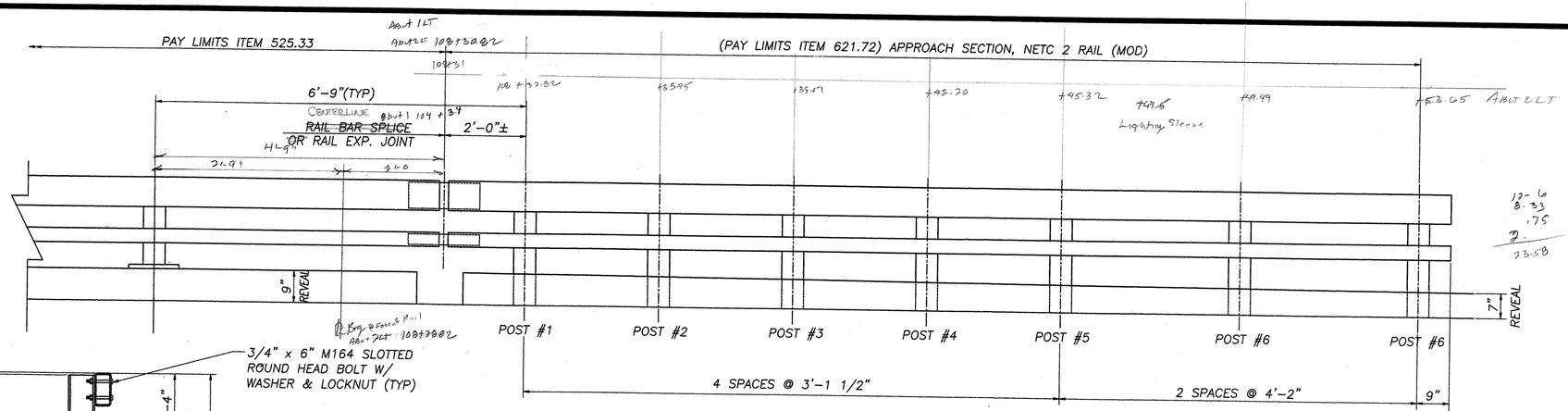
ITEM 525.32 PEDESTRIAN RAIL (MOD)
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GENERAL CONTRACTOR
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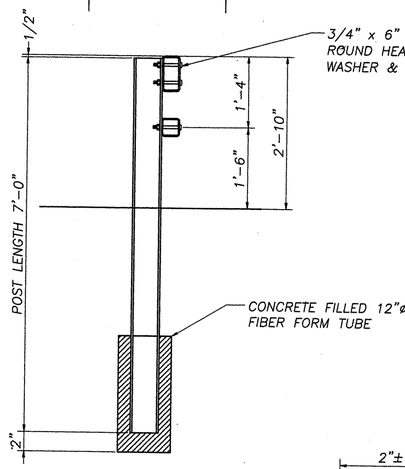
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CHECKED Pat K.
DATE 10/15/01
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HSC REFERENCE NO. 1242
SIZE D REVISION 0
SHEET NO. 5 of 5

Abut 1 104+34
Abut 2 108+76

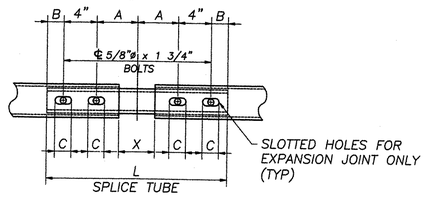
| BILL OF MATERIAL | | |
|---|---|---|
| Mk. | Qty. | Description |
| | 2 | TS 8 x 4 x 5/8" RAIL TUBE (23'-4 1/2" OAL) W/SHOP CURVE & END CAP |
| | 2 | TS 4 x 4 x 1/4" RAIL TUBE (23'-4 1/2" OAL) W/SHOP CURVE & END CAP |
| | 2 | TS 7 x 3 x 3/8" SPLICE BAR 20" LG. W/(2) TACKWELDED 5/8" ø HEX NUT |
| | 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 |



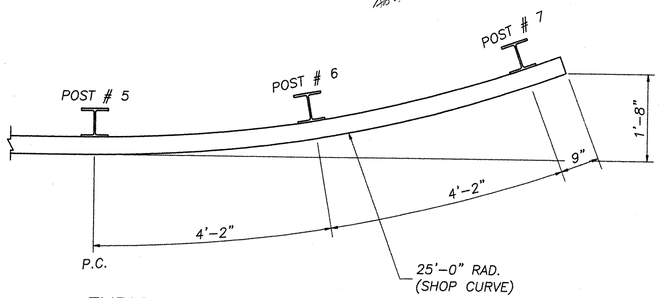

RAILING TRANSITION ELEVATION



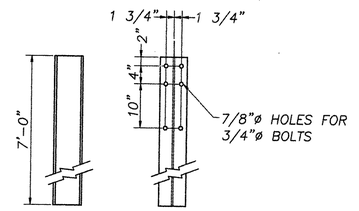

TYPICAL SECTION

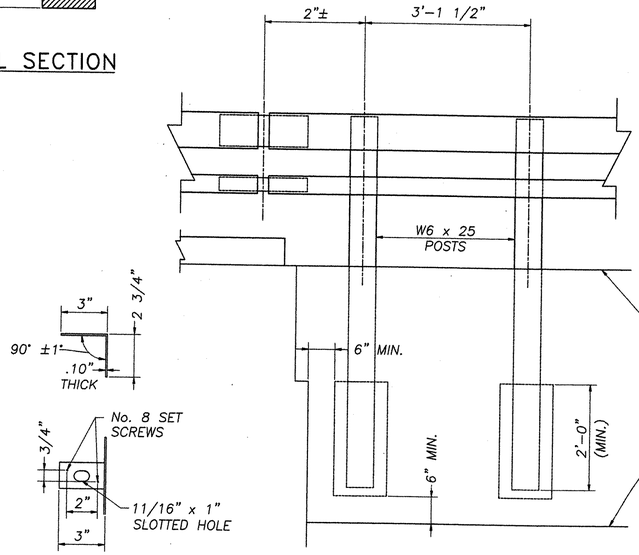



RAIL BAR SPLICE & EXP. JOINT DETAIL



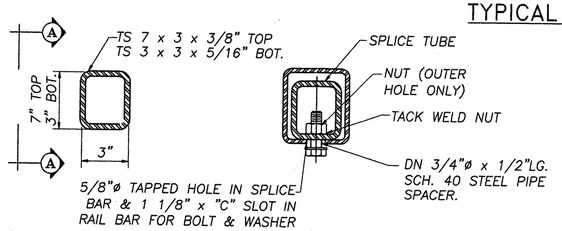

TYPICAL 2 RAIL NETC FLARE




ELEVATION

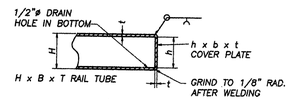
DELINEATION DEVICE
PROVIDED BY OTHERS




EXPANSION JOINT SECTION

| 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" |

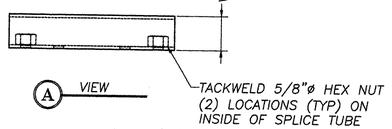
"T" = TOTAL REQUIRED MOVEMENT * = SINGLE SLOT

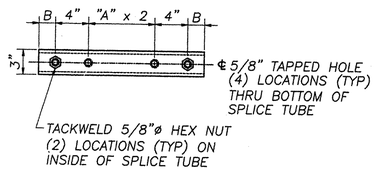



| RAIL TUBE | COVER PLATE |
|---|---|
| 8" x 4" x 5/16" | 7 1/2" x 3 1/2" x 1/4" |
| 4" x 4" x 1/4" | 3 5/8" x 3 5/8" x 1/4" |

END COVER PLATE DETAIL

RAIL POST




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.

| REVISIONS | | |
|---|---|---|
| No. | Remarks | Date |
| 0 | Initial submittal | 10/16/01 |
| | Second Submittal | 3/12/02 |
| | Third Submittal | 4/17/02 |

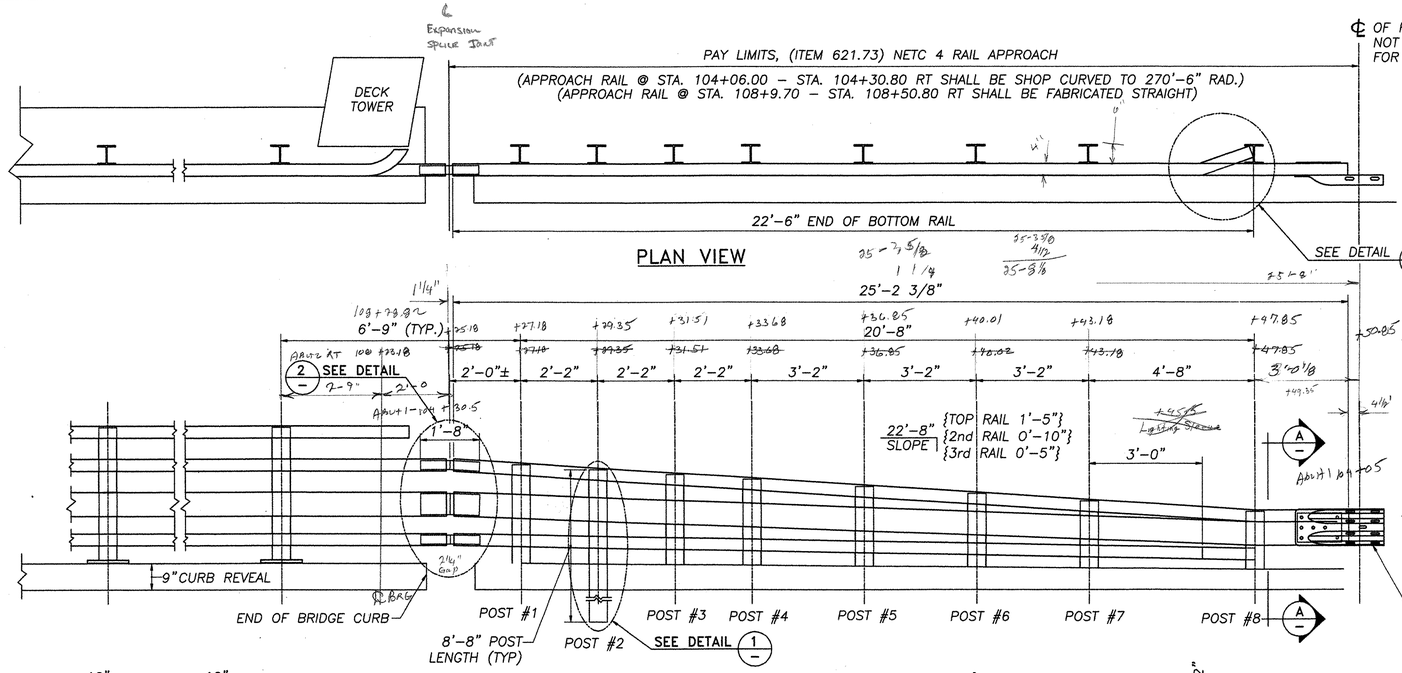
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BY CPW DATE 4/30/02

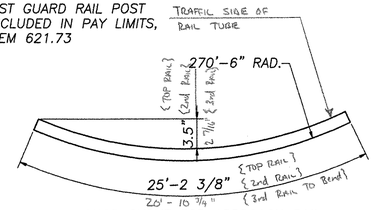
HIGHWAY SAFETY CORP.
GLASTONBURY, CT

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
DATE 10/15/01
SCALE N.T.S
HSC REFERENCE NO. 1270
SIZE D REVISION 0
SHEET NO. 1 of 1

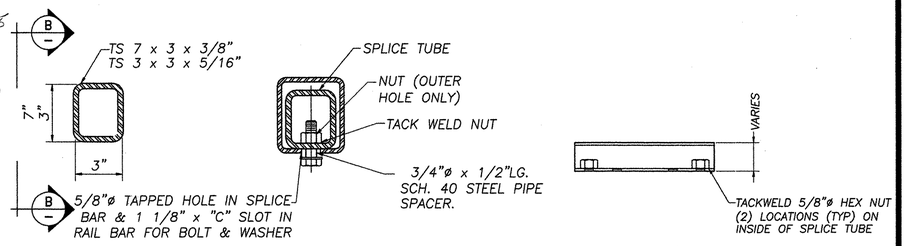


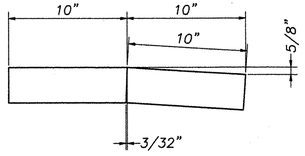

SHOP CURVE FOR APPROACH RAIL
STA. 104+06.00 – STA. 104+30.80

| BILL OF MATERIAL | | |
|---|---|---|
| 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 |

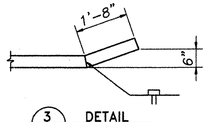
NOTE: SEE NOTES ON SHEET 2 of 2, BRIDGE RAIL – NETC 4 RAIL FOR MATERIAL AND CONSTRUCTION REQUIREMENTS.



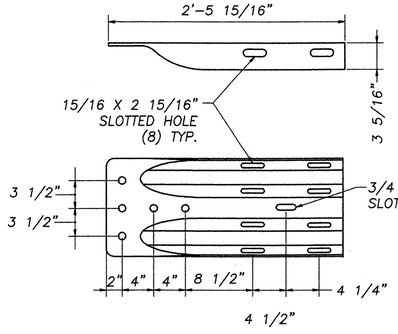

EXPANSION JOINT



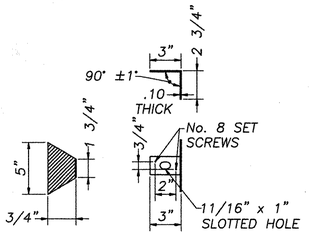

BENT SPLICE TUBE DETAIL



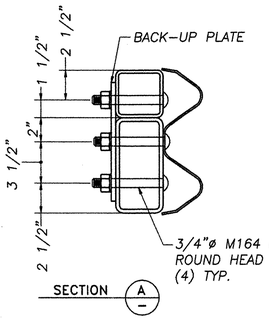

2 DETAIL
3 DETAIL
BOTTOM RAIL




TERMINAL CONNECTION

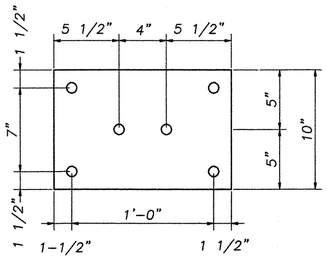



DELINATION DEVICE
PROVIDED BY OTHERS

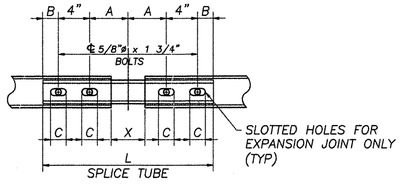



SECTION A

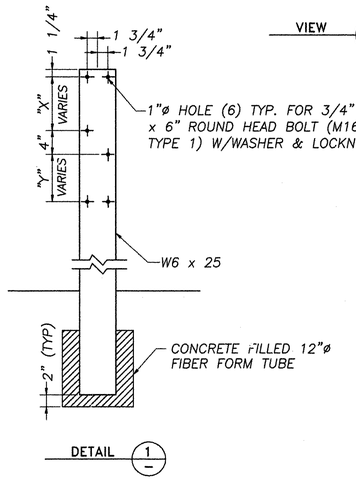
| # POST | "X" | "Y" |
|---|---|---|
| 1 | 10 3/8" | 9 9/16" |
| 2 | 9 3/4" | 9 1/8" |
| 3 | 9" | 8 5/8" |
| 4 | 8 3/8" | 8 1/4" |
| 5 | 7 3/8" | 7 1/2" |
| 6 | 6 7/16" | 6 13/16" |
| 7 | 5 7/16" | 6 1/8" |
| 8 | 4" | 5 3/16"" |




BACK–UP PLATE



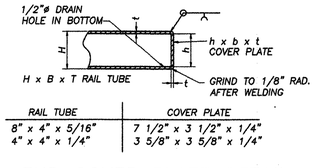

RAIL BAR SPLICE JOINT DETAIL




VIEW A

DETAIL 1

RAIL POST




| 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 | 4/30/02 |

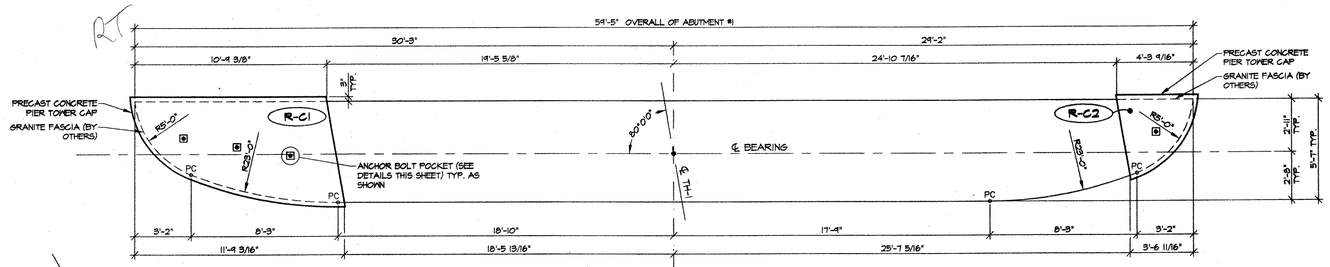
RECEIVED
CK'D BY WRS OK'D BY RST
APR 2 3 2002
RESUBMIT APPROVED As noted
BY CPW DATE 4/30/02

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

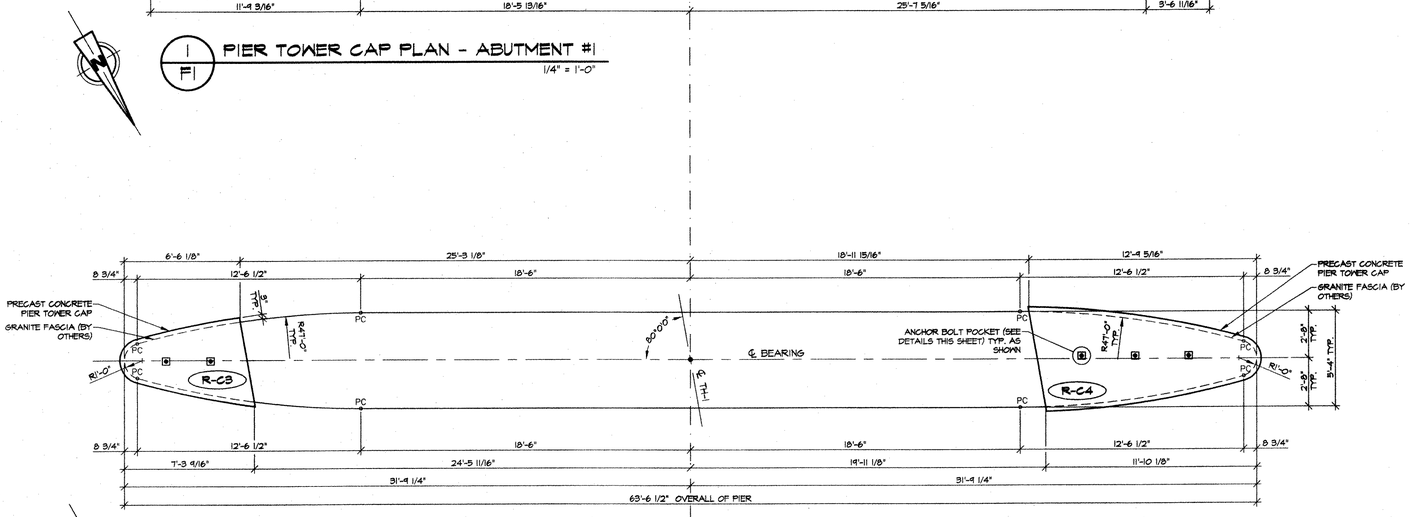
GENERAL CONTRACTOR
SUB CONTRACTOR F.R. LAFAYETTE

DRAWN J. Ruiz
CHECKED
DATE 10/15/01
SCALE N.T.S
HSC REFERENCE NO. 1271
SIZE D REVISION 0
SHEET NO. 1 of 1



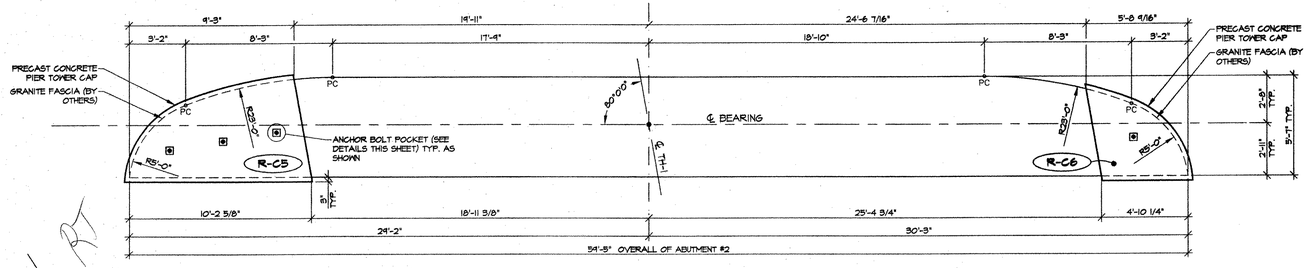

1 / F1 PIER TOWER CAP PLAN - ABUTMENT #1

1/4" = 1'-0"



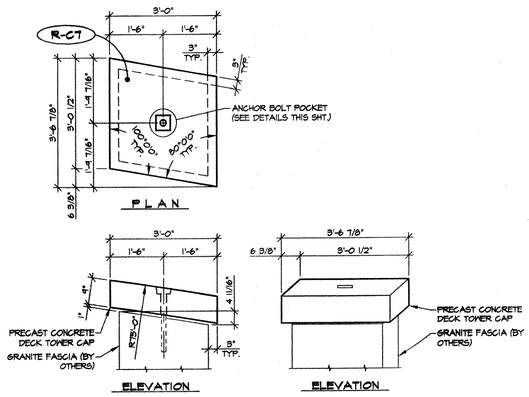

2 / F1 PIER TOWER CAP PLAN - PIER

1/4" = 1'-0"

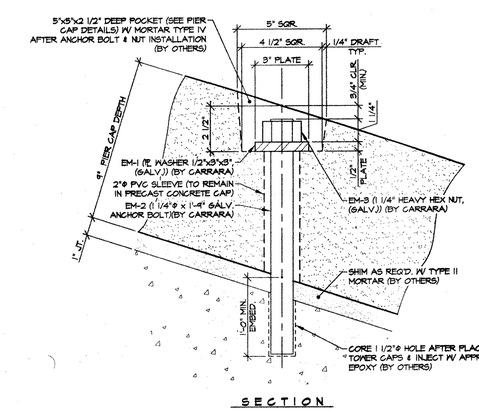



3 / F1 PIER TOWER CAP PLAN - ABUTMENT #2

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 LWS OK'D BY
APR 26 2001
RESUBMIT APPROVED ✓
BY DPW DATE 5/29/01

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| 1 | 4-5-01 | RESUBMITTED FOR APPROVAL | B.L. |

DRAWN: B.M. LOPEZ
DESIGNED: E.J. BROD
CHECKED:
APPROVED:

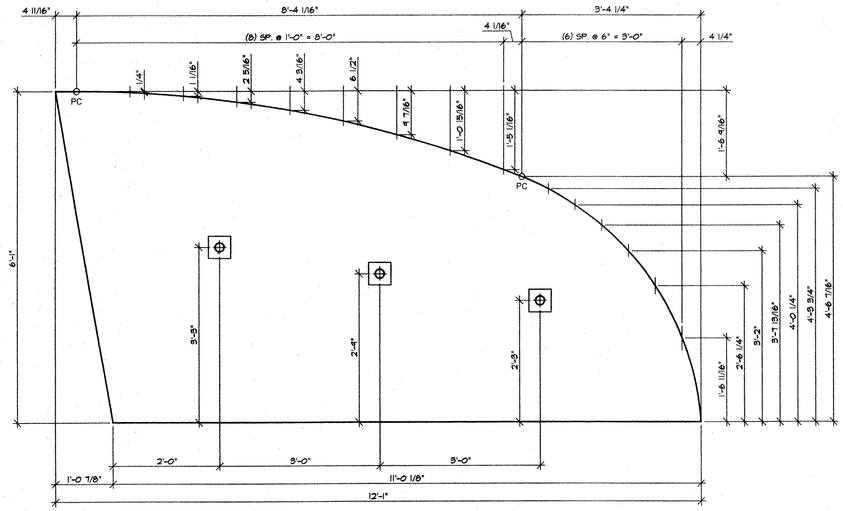
J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2484 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-5361
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

BECK & BELLUCCI, INC.
10 SALISBURY ROAD, PO BOX 429
FRANKLIN, NEW HAMPSHIRE 03235

Project Name:
ROYALTON BRIDGE
BRZ 1444 (22)
ROYALTON, VERMONT

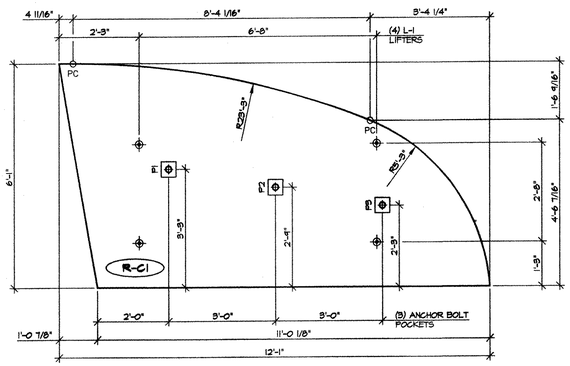
TOWER CAP LAYOUT
PLANS & DETAILS

| SCALE: | JOB #: |
|---|---|
| NOTED | 23111-00 |
| DATE: | SHEET #: |
| 2-20-01 | F1 |



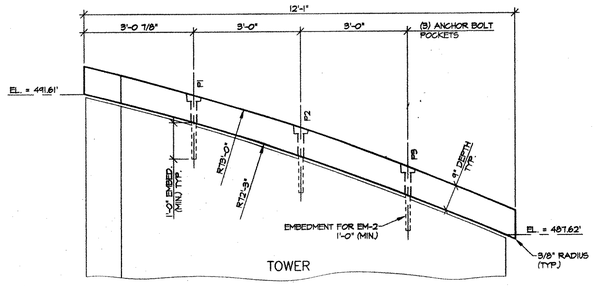

ABUTMENT #1 TOWER CAP - GEOMETRY PLAN

3/4" = 1'-0"



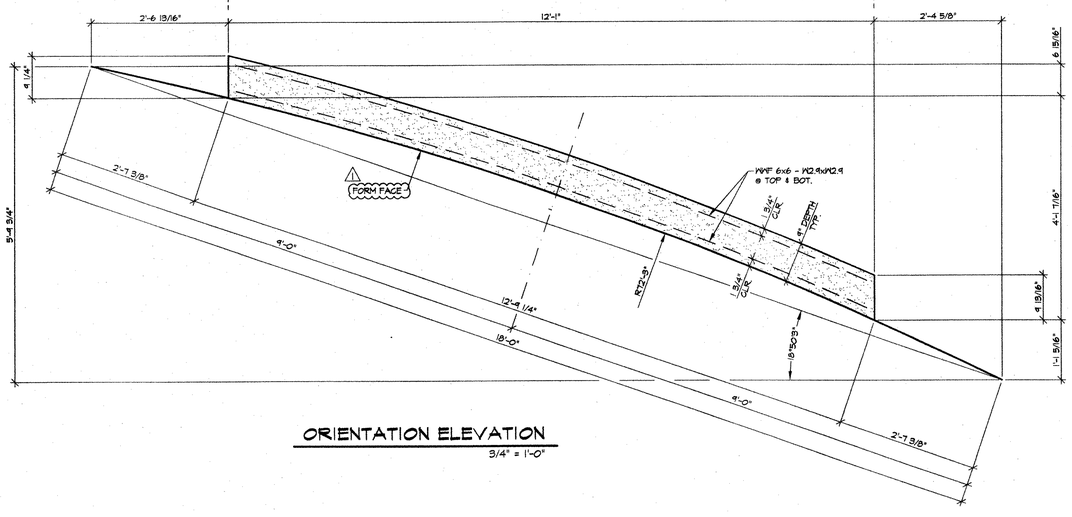

ABUTMENT #1 TOWER CAP - TRUE PLAN

1/2" = 1'-0"



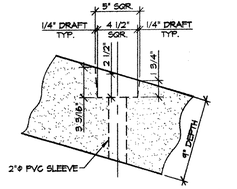

ABUTMENT #1 TOWER CAP ELEVATION

1/2" = 1'-0"



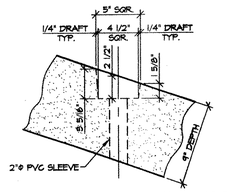

ORIENTATION ELEVATION

3/4" = 1'-0"



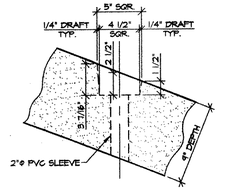

POCKET DETAIL - P1

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 LWBS OK'D BY_____

APR 2 6 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-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'-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: _____

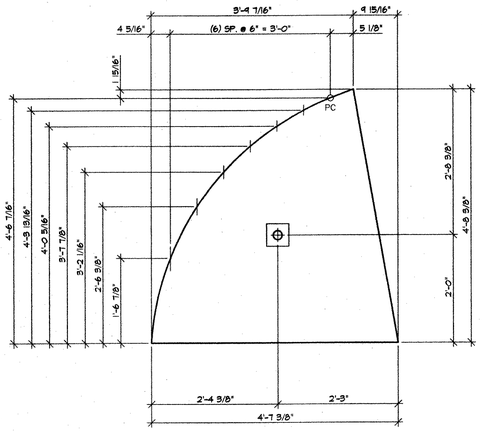

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2484 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-8361
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

BECK & BELLUCCI, INC.
10 SALISBURY ROAD, PO BOX 429
FRANKLIN, NEW HAMPSHIRE 03235


Project Name:
ROYALTON BRIDGE
BRZ 1444 (22)
ROYALTON, VERMONT

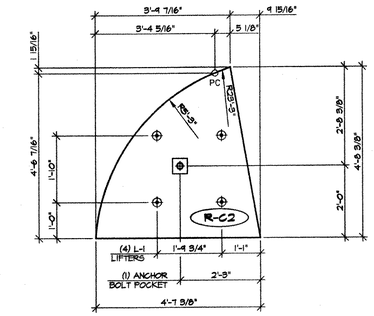
PIER TOWER CAP DETAILS

| SCALE: | JOB #: |
|---|---|
| NOTED | 2311I-00 |
| DATE: | SHEET #: |
| 2-20-01 | PC1 |



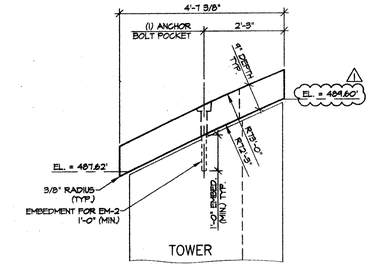

## ABUTMENT #1 TOWER CAP - GEOMETRY PLAN

3/4" = 1'-0"



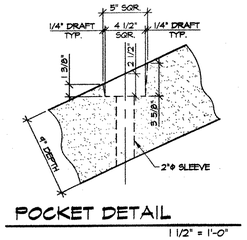

## ABUTMENT #1 TOWER CAP - TRUE PLAN

1/2" = 1'-0"



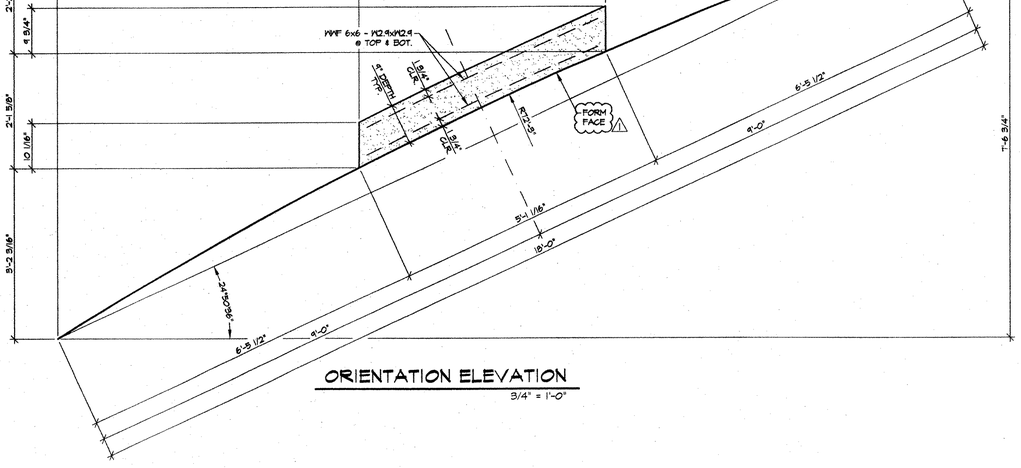

## ABUTMENT #1 TOWER CAP ELEVATION

1/2" = 1'-0"




## 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 CPW DATE 5/29/01

**SHOP NOTE:**
f'c1 = 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 | 12" WASHER 1/2"x9"x9" (AASHTO 183, GR. 36) W/ (1) 1 1/2"ø HOLE (GALV.) | FOR ERECTION |
| 2 | EM-2 | 1 | 1 1/4"ø 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 | 11" 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 501.06(a)2.
2. ALL EDGES OF PRECAST CAPS SHALL BE FABRICATED TO BE VERTICAL IN THE FINAL ERECTED POSITION.

| NO. | DATE | REVISION |
|---|---|---|
| 1 | 4-9-01 | REVISED FOR APPROVAL B.L. |

DRAWN: B.M. LOPEZ
DESIGNED: E.J. BROD
CHECKED:
APPROVED:

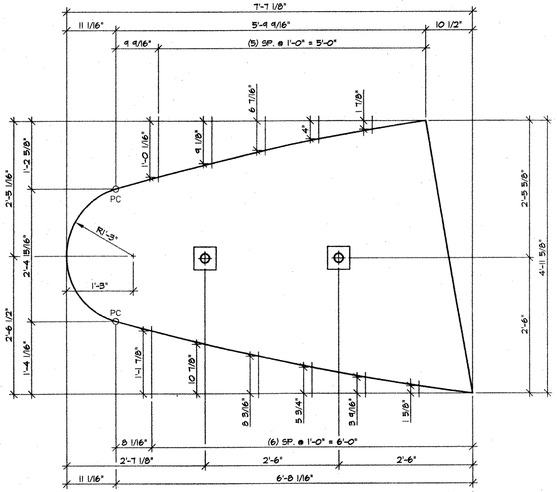

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-6361
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Double-Tees Hollow-Core Plank Flat Panels

BECK & BELLUCCI, INC.
10 SALISBURY ROAD, PO BOX 429
FRANKLIN, NEW HAMPSHIRE 03235


Project Name:
ROYALTON BRIDGE
BRZ 1444 (22)
ROYALTON, VERMONT

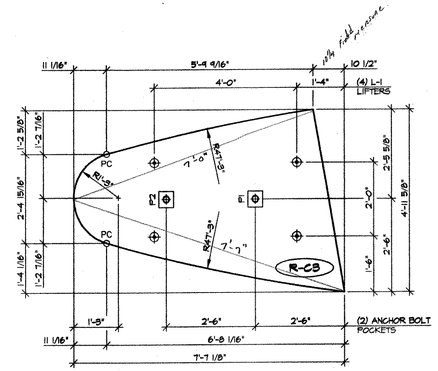
PIER TOWER CAP DETAILS

| SCALE: | JOB #: |
|---|---|
| NOTED | 23111-00 |
| DATE: | SHEET #: |
| 2-20-01 | PC2 |



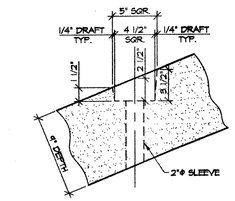

## PIER TOWER CAP - GEOMETRY PLAN

3/4" = 1'-0"



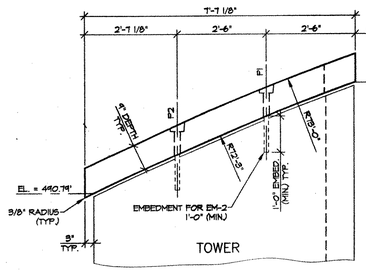

## PIER TOWER CAP - TRUE PLAN

1/2" = 1'-0"



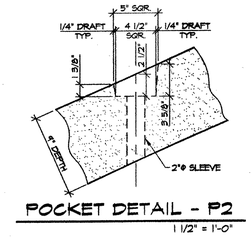

## POCKET DETAIL - P1

1 1/2" = 1'-0"



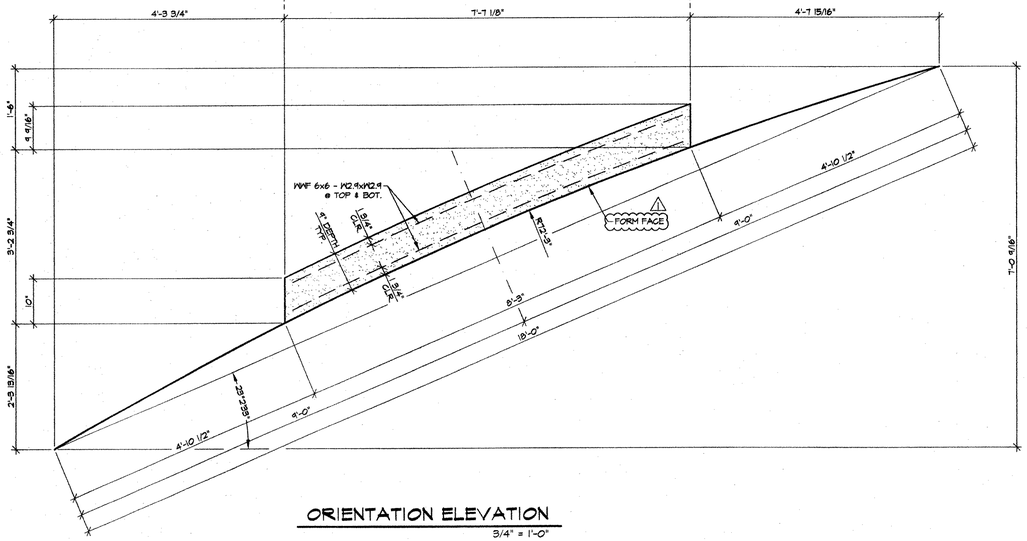

## PIER TOWER CAP ELEVATION

1/2" = 1'-0"




## POCKET DETAIL - P2

1 1/2" = 1'-0"




## ORIENTATION ELEVATION

3/4" = 1'-0"

RECEIVED
CK'D BY WHS OK'D BY
APR 26 2001
RESUBMIT APPROVED ✓
BY cpw DATE 5/29/01

**SHOP NOTE:**
f'c1 = 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 | 8" WASHER 1/2"x3"x3" (AASHTO 183, GR. 36) W/ (1) 1 1/2"ø HOLE (GALV.) | FOR ERECTION |
| 2 | EM-2 | 2 | 1 1/4"ø x 1'-4" 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 | 17 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:

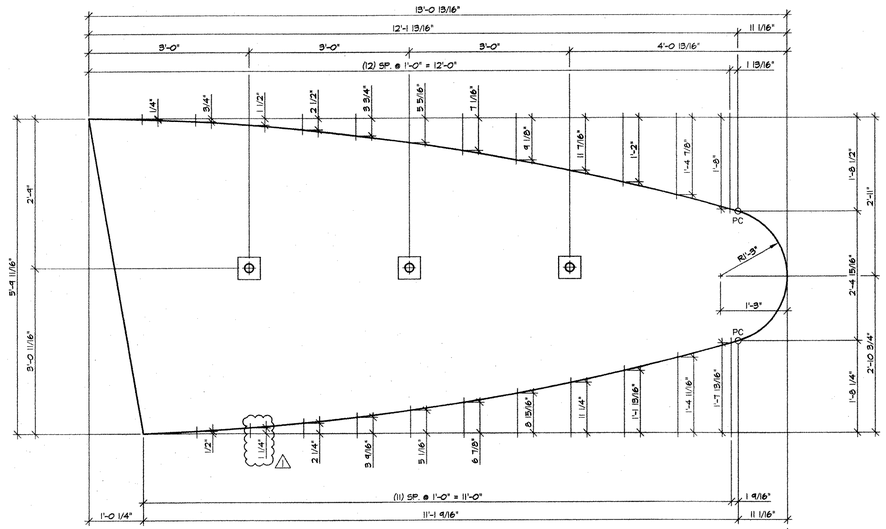

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2484 CASE STR., MIDDLEBURY, VERMONT 05753
Phone:(802)388-6361
Fax:(802)388-9010
Double-Tees Hollow-Core Plank Flat Panels

BECK & BELLUCCI, INC.
10 SALISBURY ROAD, PO BOX 429
FRANKLIN, NEW HAMPSHIRE 03235


Project Name:
ROYALTON BRIDGE
BRZ 1444 (22)
ROYALTON, VERMONT

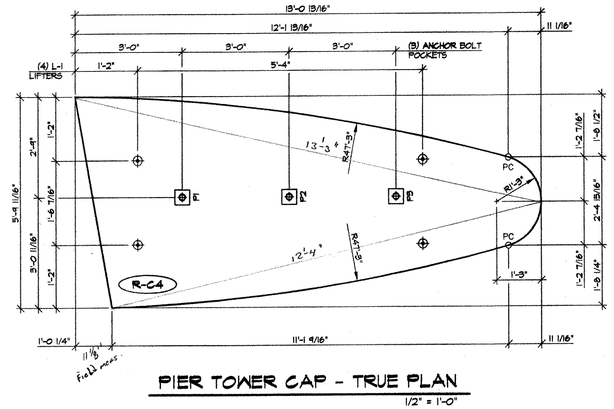
PIER TOWER CAP DETAILS

| SCALE: | JOB #: |
|---|---|
| NOTED | 23111-00 |
| DATE: | SHEET #: |
| 2-20-01 | PC3 |



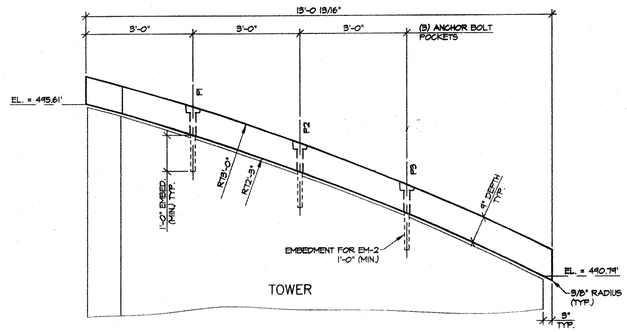

## PIER TOWER CAP - GEOMETRY PLAN

3/4" = 1'-0"



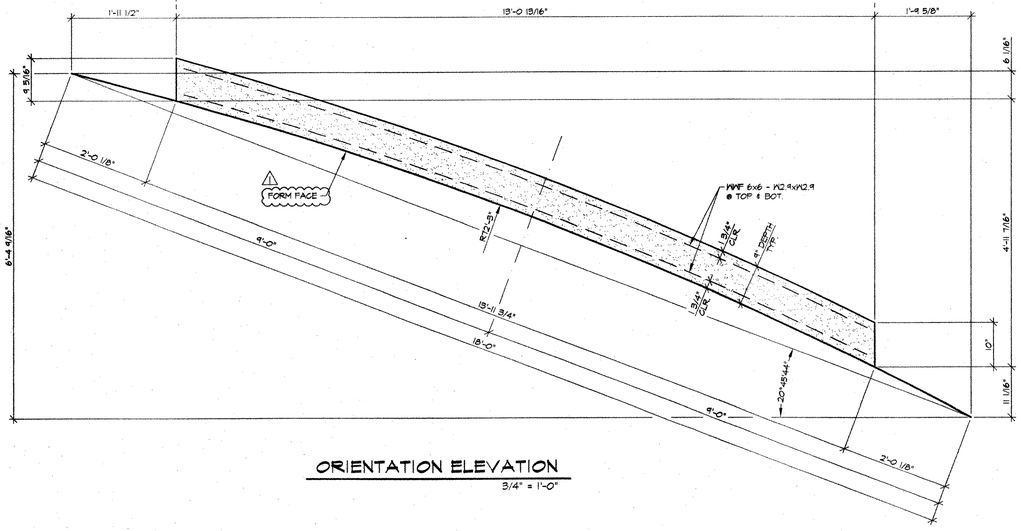

## PIER TOWER CAP - TRUE PLAN

1/2" = 1'-0"



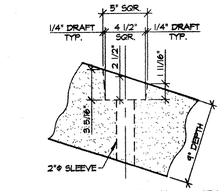

## PIER TOWER CAP ELEVATION

1/2" = 1'-0"



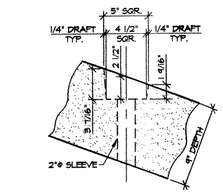

## ORIENTATION ELEVATION

3/4" = 1'-0"



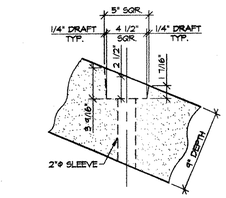

## POCKET DETAIL - P1

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 26 2001
RESUBMIT APPROVED ✓
BY CPW DATE 5/24/01

**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"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 | 17 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:

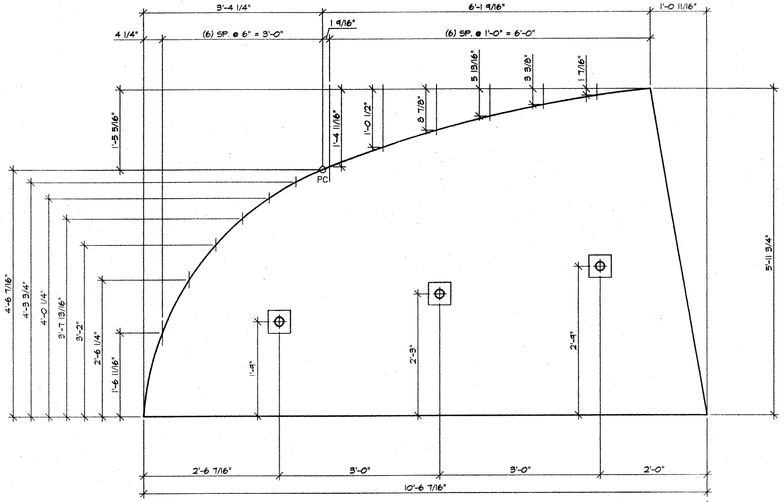

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
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10 SALISBURY ROAD, PO BOX 429
FRANKLIN, NEW HAMPSHIRE 03235


Project Name:
ROYALTON BRIDGE
BRZ 1444 (22)
ROYALTON, VERMONT

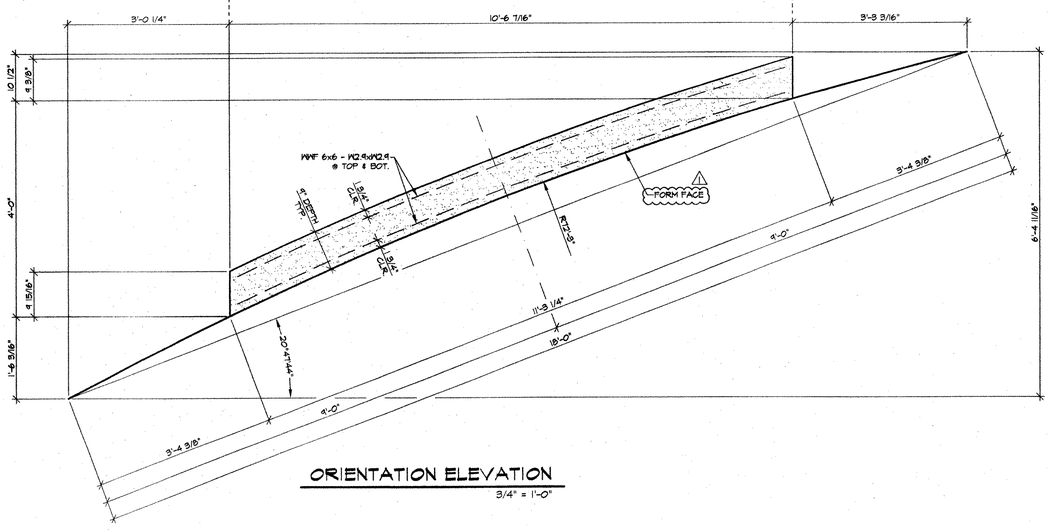
PIER TOWER CAP DETAILS

| SCALE: | JOB #: |
|---|---|
| NOTED | 23111-00 |
| DATE: | SHEET #: |
| 1-10-01 | PC4 |



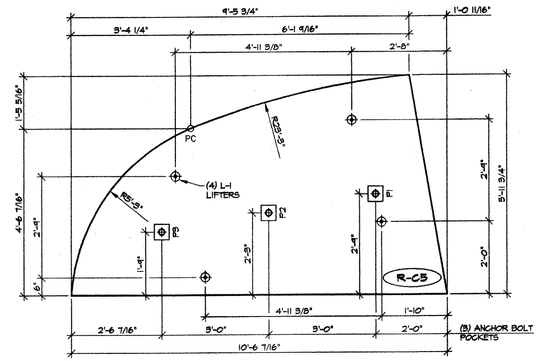

## ABUTMENT #2 TOWER CAP - GEOMETRY PLAN

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



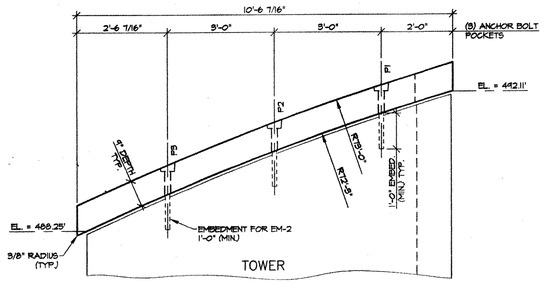

## ORIENTATION ELEVATION

3/4" = 1'-0"



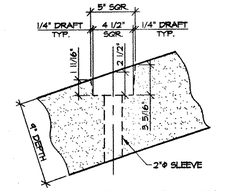

## ABUTMENT #2 TOWER CAP - TRUE PLAN

1/2" = 1'-0"



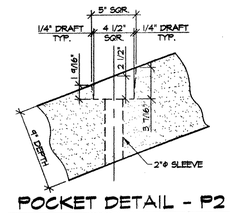

## ABUTMENT #2 TOWER CAP ELEVATION

1/2" = 1'-0"



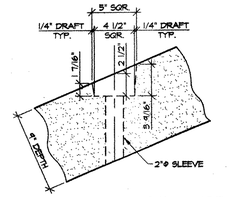

## POCKET DETAIL - P1

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 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-C5 | QTY.: 1 | WT./TONS: 2.70 | CU. YDS.: 1.33 |
|---|---|---|---|

### MATERIALS LIST

| ITEM | MARK | QTY. | DESCRIPTION | REMARKS |
|---|---|---|---|---|
| 1 | EM-1 | 8 | PL WASHER 1/2"x8"x8" (AASHTO 183, GR. 36) W/ (1) 1 1/2"ø HOLE (GALV.) | FOR ERECTION |
| 2 | EM-2 | 8 | 1 1/4"ø x 1'-9" ANCHOR BOLT (GALV.) (ASTM A307, GR. C) | FOR ERECTION |
| 3 | EM-3 | 8 | 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:

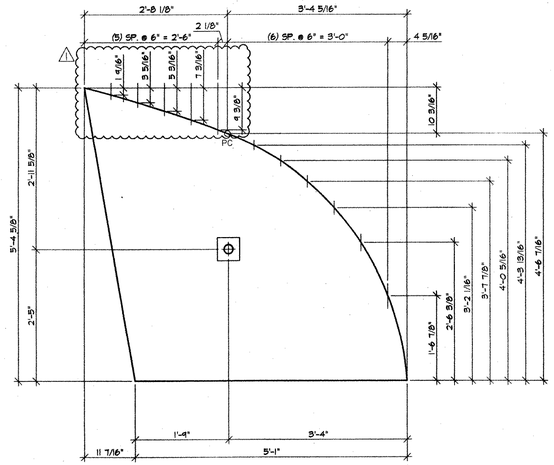

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
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Double-Tees Hollow-Core Plank Flat Panels

BECK & BELLUCCI, INC.
10 SALISBURY ROAD, PO BOX 429
FRANKLIN, NEW HAMPSHIRE 03235


Project Name:
ROYALTON BRIDGE
BRZ 1444 (22)
ROYALTON, VERMONT

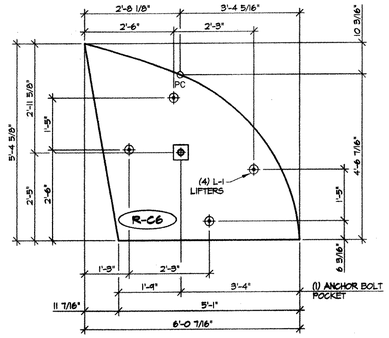
PIER TOWER CAP DETAILS

| SCALE: | JOB #: |
|---|---|
| NOTED | 2311-00 |
| DATE: | SHEET #: |
| 2-20-01 | PC5 |



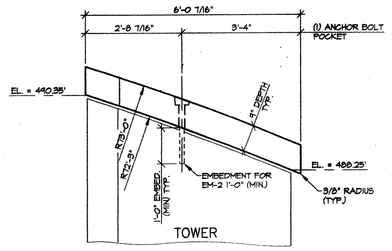

## ABUTMENT #2 TOWER CAP - GEOMETRY PLAN

3/4" = 1'-0"



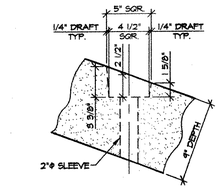

## ABUTMENT #2 TOWER CAP - TRUE PLAN

1/2" = 1'-0"



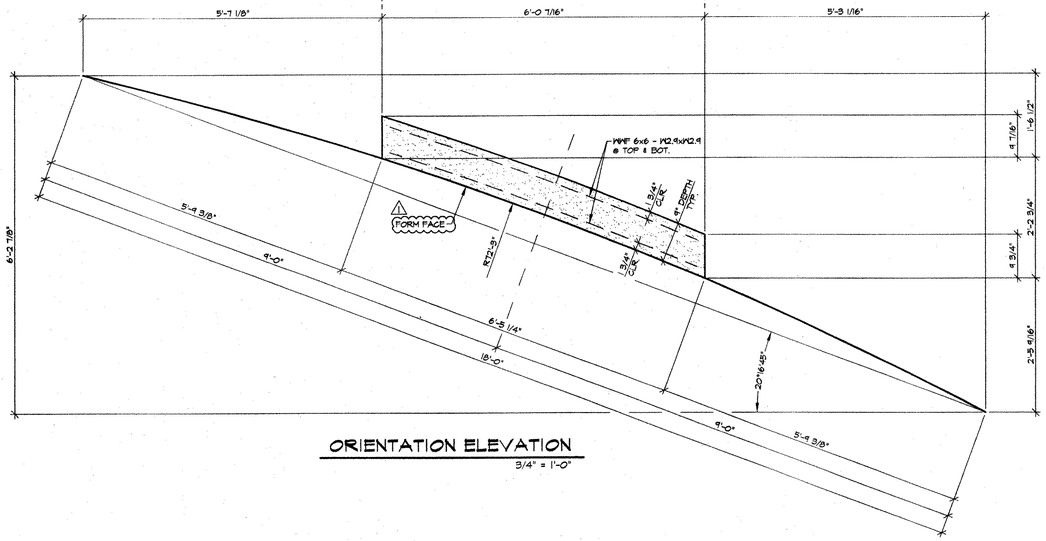

## ABUTMENT #2 TOWER CAP ELEVATION

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 CPW DATE 5/24/01

**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"x8"x8" (AASHTO 183, GR. 36) W/ (1) 1 1/2"ø HOLE (GALV.) | FOR ERECTION |
| 2 | EM-2 | 1 | 1 1/4"ø 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 | 4-9-01 | 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

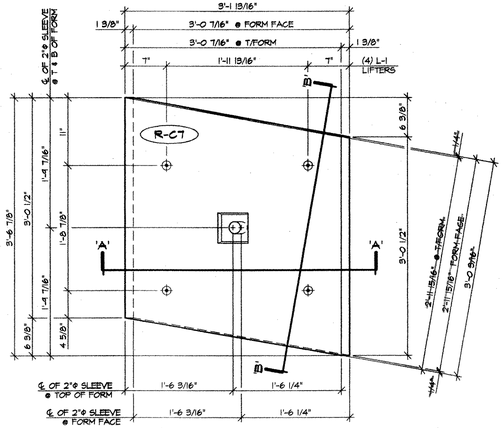
BECK & BELLUCCI, INC.
10 SALISBURY ROAD, PO BOX 429
FRANKLIN, NEW HAMPSHIRE 03235


Project Name:
ROYALTON BRIDGE
BRZ 1444 (22)
ROYALTON, VERMONT

PIER TOWER CAP DETAILS

| SCALE: | JOB #: |
|---|---|
| NOTED | 23111-00 |
| DATE: | SHEET #: |
| 2-20-01 | PC6 |

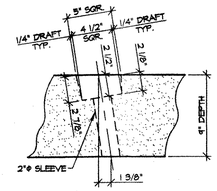
1 bag portland
1 bag Lime
3x shovelsful of sand




DECK TOWER CAP - PLAN VIEW IN FORM

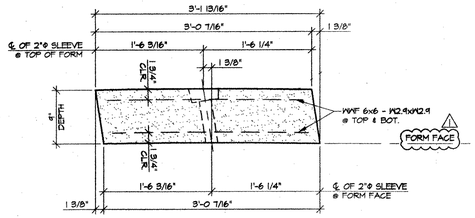
1" = 1'-0"

REMOVE 1/4" DRAFT



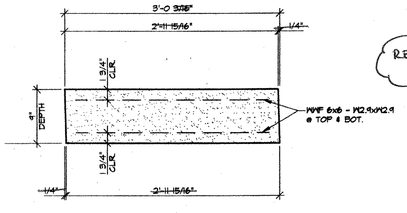

POCKET DETAIL

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 WBS CK'D BY_____
APR 26 2001
RESUBMIT_____ APPROVED As Noted
BY CPW DATE 5/24/01

**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 | 8" WASHER 1/2"x8"x8" (AASHTO 183, GR. 36) W/ (1) 1 1/2"Ø HOLE (GALV.) | FOR ERECTION |
| 2 | EM-2 | 1 | 1 1/4"Ø 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 | 4-9-01 | REVISED FOR APPROVAL B.M.L. |

DRAWN: B.M. LOPEZ
DESIGNED: E.J. BROD
CHECKED: _____
APPROVED: _____

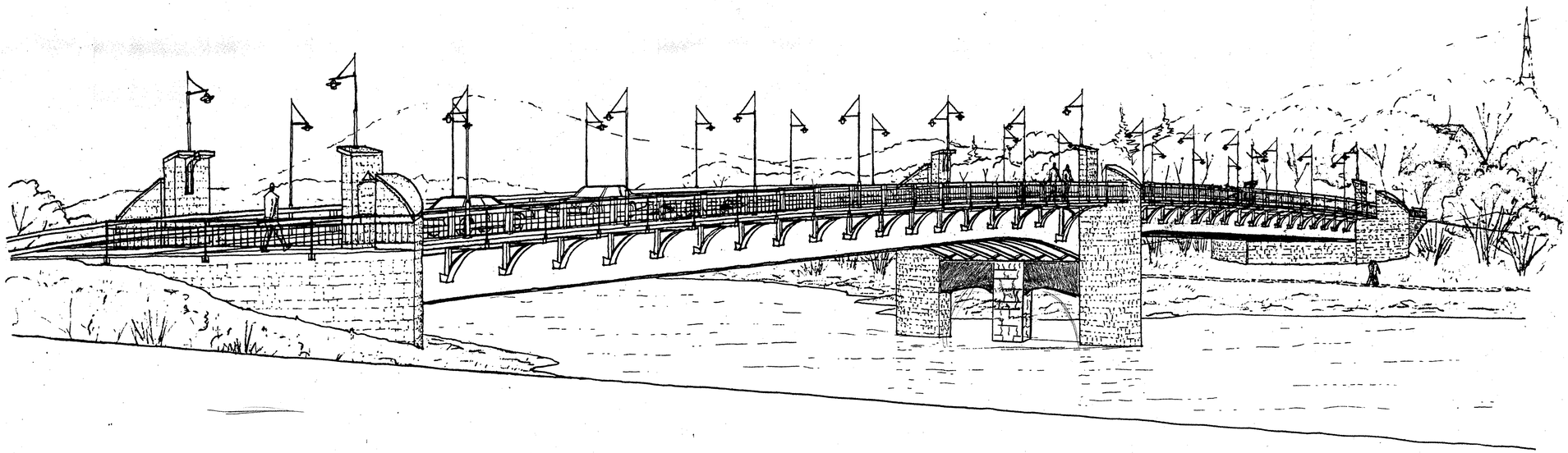

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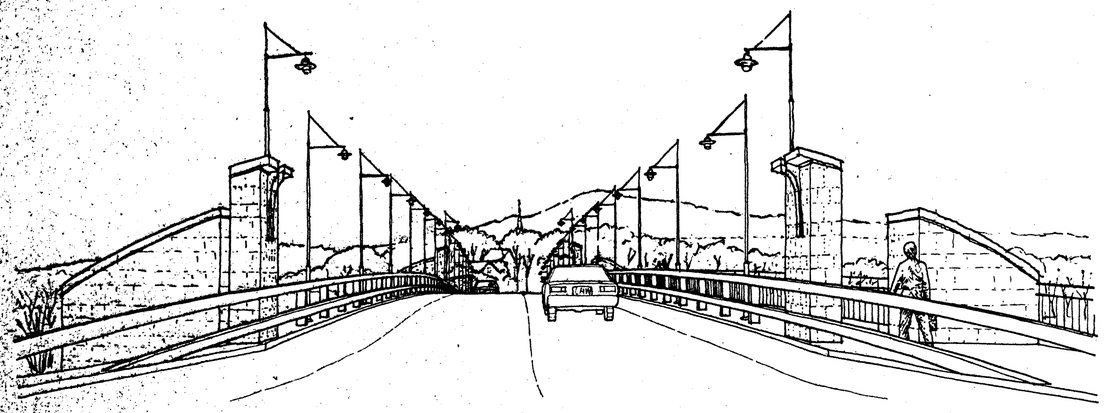

Project Name:
ROYALTON BRIDGE
BRZ 1444 (22)
ROYALTON, VERMONT

DECK TOWER CAP DETAILS

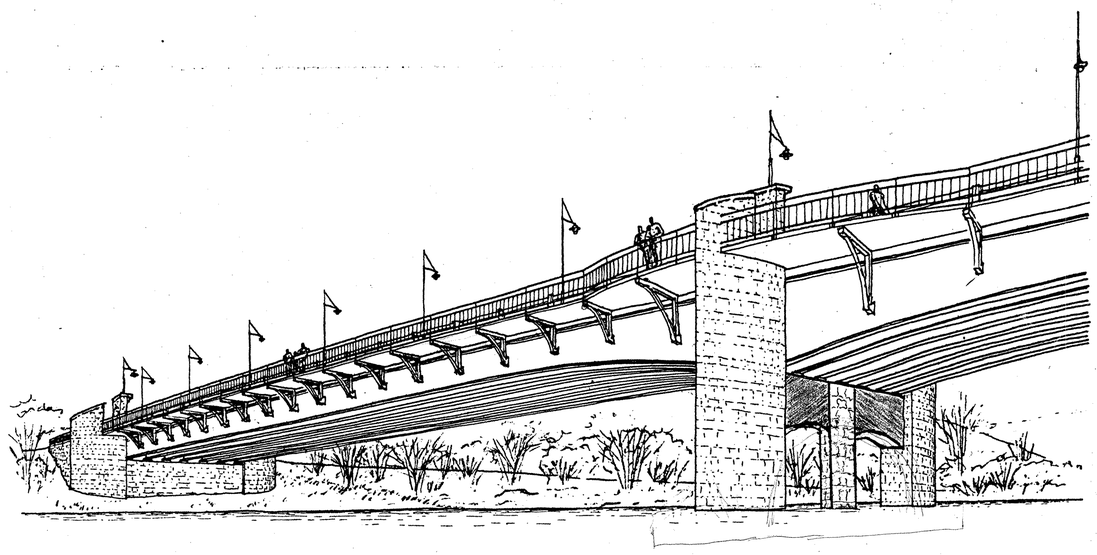
| SCALE: | JOB #: |
|---|---|
| NOTED | 23111-00 |
| DATE: | SHEET #: |
| 2-20-01 | PC7 |



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