

**BRIDGE NO. 48**  
 WEST RAIL ELEVATION  
 LOOKING AT FACE OF RAIL FROM CENTER OF ROAD  
 EAST RAIL ELEVATION SIMILAR LOOKING FROM CENTER OF ROAD  
 SW & SE APPROACHES TYPICAL  
 SEE SHEET 3 OF 6 FOR NW CORNER  
 SEE SHEET 4 OF 6 FOR NE CORNER

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

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

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

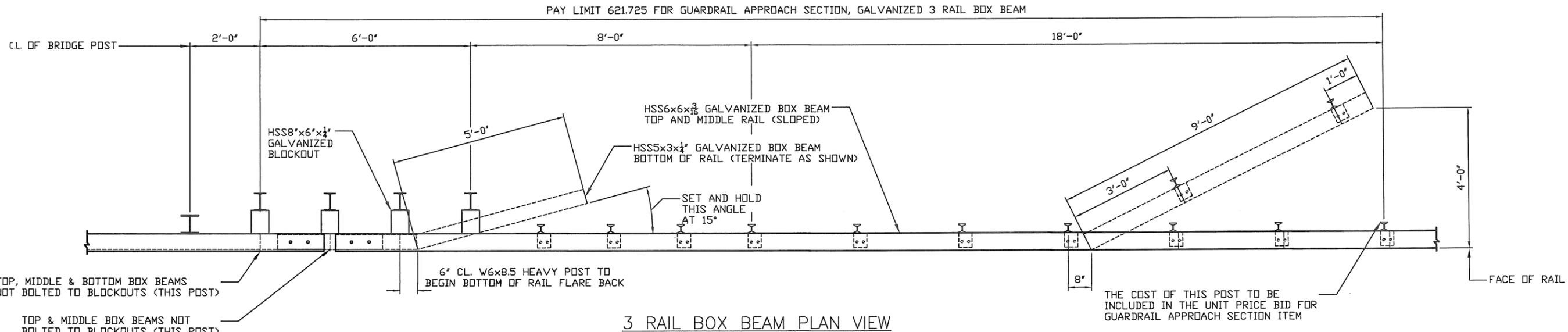
| No.       | Remarks           | Date    |
|-----------|-------------------|---------|
| 0         | Initial submittal | 2/16/14 |
| REVISIONS |                   |         |

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

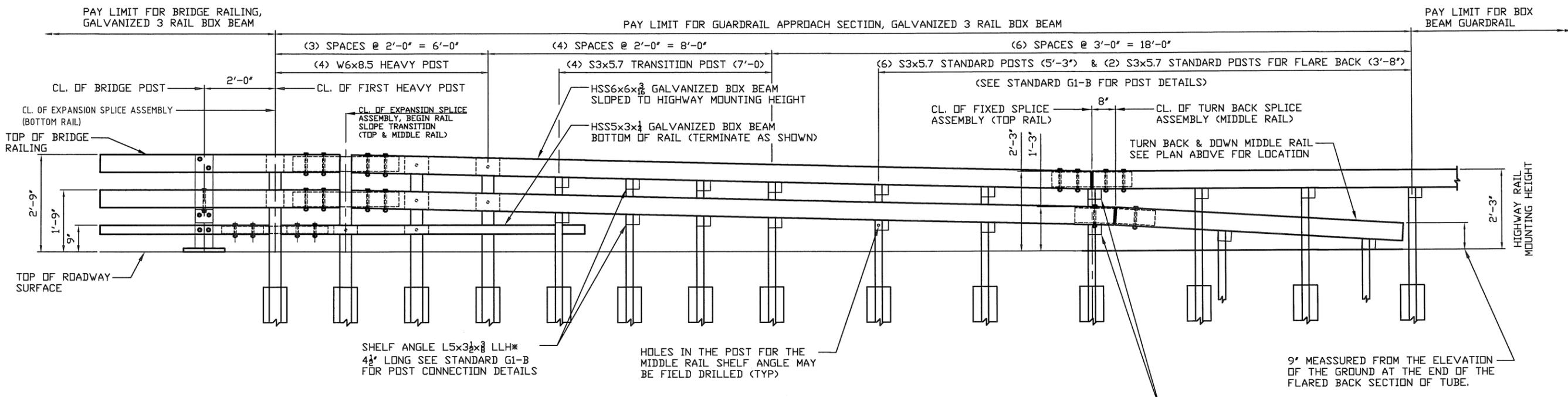
ITEM 525.335 3-RAIL BOX BEAM  
 TOWN OF ENOSBURG  
 COUNTY OF FRANKLIN  
 BOSTON POST ROAD T.H.2 CLASS 2  
 BRIDGE NO. 48  
 PROJECT NO. BRO 1448 (40)

HSC JOB NO. **1976**  
 SHEET NO. **1 of 6**

GENERAL CONTRACTOR: \_\_\_\_\_  
 SUB CONTRACTOR: **LAFAYETTE**  
 DRAWN: **BJB** CHECKED: \_\_\_\_\_ DATE: **3-4-14** SCALE: **NONE** SIZE: **D**



3 RAIL BOX BEAM PLAN VIEW



3 RAIL BOX BEAM ELEVATION

BILL OF MATERIAL - APPROACH (4 TOTAL)

| Qty | mk | Description  | Spec.           |
|-----|----|--|-----------------|
| 4   |    | 6 X 6 BM BM TOP @ 20'-9.5" EXP   | A500 gr B       |
| 4   |    | 6 X 6 BM BM BOTT @ 21'-5" EXP  | A500 gr B       |
| 16  |    | W6 X 8.5 POST @ 7'-0" W/SPADE  | A992/A709 GR.50 |
| 12  |    | 3" I POST @ 7'-0" W/2-8" SPADE   | A36             |
| 24  |    | 3" I POST @ 5'-3" W/SPADE STD  | A36             |
| 8   |    | 3" I POST @ 3'-11" W/SPADE   | A36             |
| 32  |    | TUBE BLOCKOUT 6" X 8" X 6" LONG  | A500 gr B       |
| 8   |    | TUBE BLOCKOUT 6" X 8" X 3" LONG  | A500 gr B       |
| 4   |    | 9" BX BM TRANS FLAREBACK END   | A500 gr B       |
| 4   |    | 5 X 5 DOUBLE BEND SPLICE TUBE  | A500 gr B       |
| 4   |    | 5 X 5 FIXED TUBE SPLICE 27"  | A500 gr B       |
| 8   |    | 5 X 5 EXP TUBE SPLICE 36"  | A500 gr B       |
| 68  |    | BOX BEAM CLIP ANGLE STD  | A36             |
| 4   |    | BOX BEAM END ANGLE STD   | A36             |
| 32  |    | 3/4 X 8 CARR BOLT - N FW LW (2 per heavy post)                               | A307            |
| 4   |    | 3/4 X 8 HEX BOLT - N 2FW (1 per 9'-0" flareback)                             | A307            |
| 72  |    | 1/2 X 1 1/2 HEX BOLT - N FW (1 per shelf / end angle)                        | A307            |
| 80  |    | 1/2 X 1 1/2 HEX BOLT - N 2FW LW (2 per tube block)                           | A307            |
| 72  |    | 3/8 X 7 1/2 HEX BOLT - N 2FW (1 per shelf angle)                             | A307            |
| 48  |    | 3/4 X 7 1/2 HEX BOLT W/ HN & 2 FW (A325) (4 per 6x6 splice)                  | A325            |
| 8   |    | 3/4 X 7 1/2 HEX BOLT W/ HN & 2 FW & LW (A325) (2 per angled turnback splice) | A325            |
| 4   |    | RETROREFLECTIVE DELINEATOR with fastening hardware (provided by others)      |                 |

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

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

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

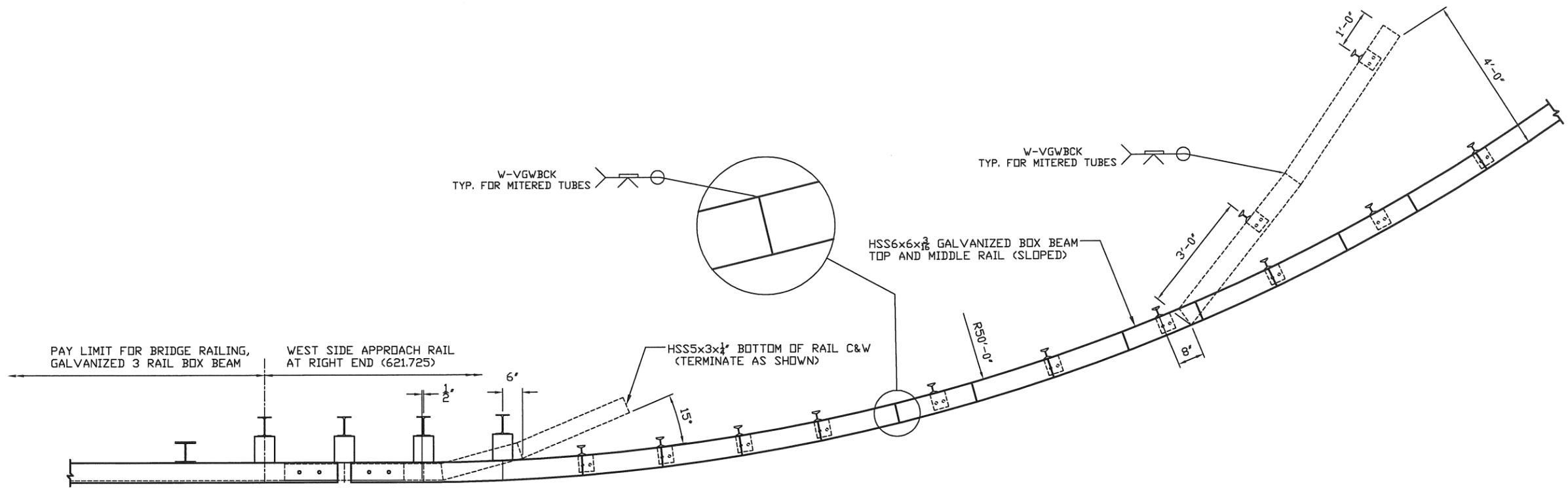
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TOWN OF ENOSBURG  
COUNTY OF FRANKLIN  
BOSTON POST ROAD T.H.2 CLASS 2  
BRIDGE NO. 48  
PROJECT NO. BRO 1448 (40)

**CERTIFIED FABRICATOR**

GENERAL CONTRACTOR: \_\_\_\_\_  
SUB CONTRACTOR: LAFAYETTE

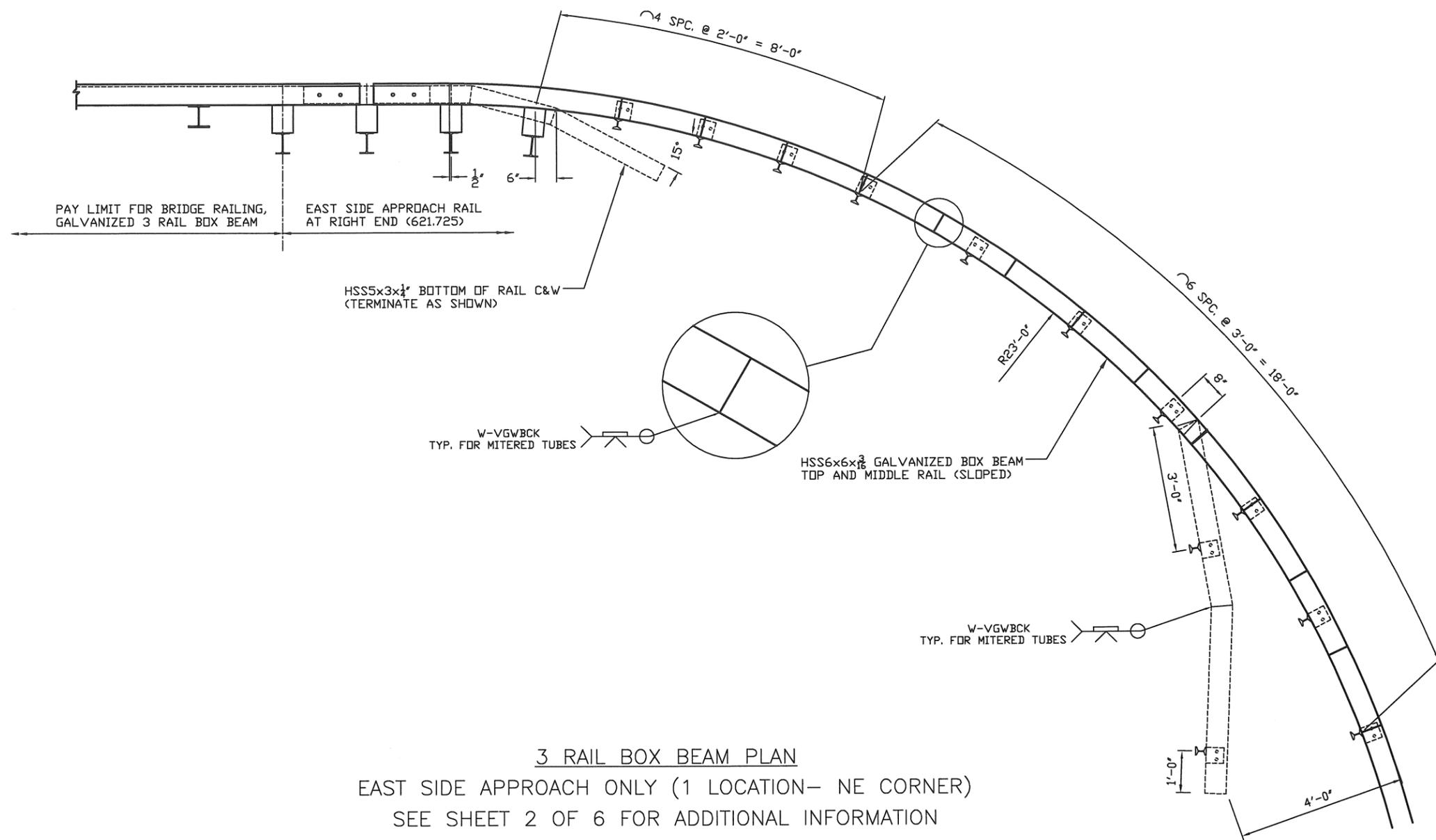
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SCALE: NONE  
SIZE: D

SHEET NO. 2 of 6  
1976



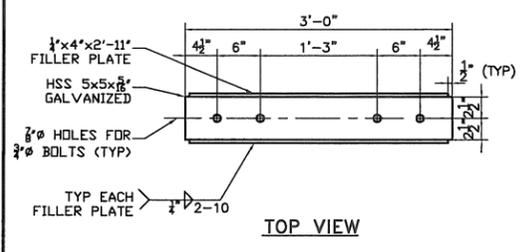
3 RAIL BOX BEAM PLAN  
 WEST SIDE APPROACH ONLY (1 LOCATION- NW CORNER)  
 SEE SHEET 2 OF 6 FOR ADDITIONAL INFORMATION

|   |   |                                 |   |   |
|---|---|---------------------------------|---|---|
| <b>HIGHWAY SAFETY CORP</b><br>GLASTONBURY, CT<br>860-633-9445   |   |                                 |   |   |
| ITEM 621.725 APPROACH SECTION<br>TOWN OF ENOSBURG<br>COUNTY OF FRANKLIN<br>BOSTON POST ROAD T.H.2 CLASS 2<br>BRIDGE NO. 48<br>PROJECT NO. BRO 1448 (40) |   |                                 |   |   |
| GENERAL CONTRACTOR<br><br>SUB CONTRACTOR<br>LAFAYETTE   | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;"> <b>CERTIFIED<br/>FABRICATOR</b> </td> </tr> <tr> <td style="text-align: center;"> <small>HSC JOB NO.</small><br/> <b>1976</b> </td> </tr> <tr> <td style="text-align: center;"> <small>SHEET NO.</small><br/> <b>3 of 6</b> </td> </tr> </table> | <b>CERTIFIED<br/>FABRICATOR</b> | <small>HSC JOB NO.</small><br><b>1976</b> | <small>SHEET NO.</small><br><b>3 of 6</b> |
| <b>CERTIFIED<br/>FABRICATOR</b>   |   |                                 |   |   |
| <small>HSC JOB NO.</small><br><b>1976</b>   |   |                                 |   |   |
| <small>SHEET NO.</small><br><b>3 of 6</b>   |   |                                 |   |   |
| <small>DRAWN</small> BJB  | <small>CHECKED</small>  | <small>DATE</small> 3-4-14      | <small>SCALE</small> NONE                 | <small>SIZE</small> D                     |

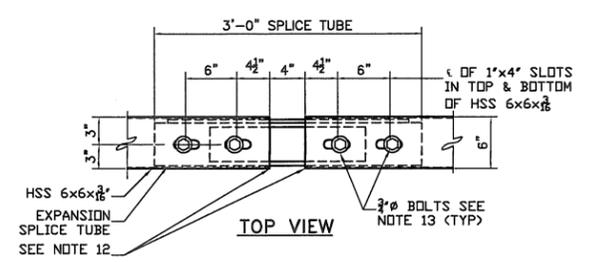


3 RAIL BOX BEAM PLAN  
 EAST SIDE APPROACH ONLY (1 LOCATION- NE CORNER)  
 SEE SHEET 2 OF 6 FOR ADDITIONAL INFORMATION

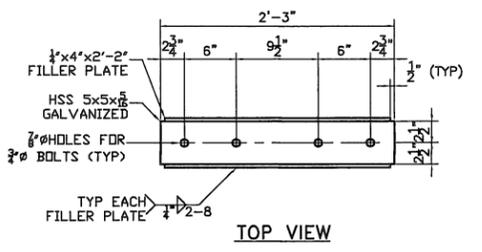
|   |         |                             |
|---|---------|-----------------------------|
|  <b>HIGHWAY SAFETY CORP</b><br>GLASTONBURY, CT<br>860-633-9445     |         | <b>CERTIFIED FABRICATOR</b> |
|   |         |                             |
| ITEM 621.725 APPROACH SECTION<br>TOWN OF ENOSBURG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



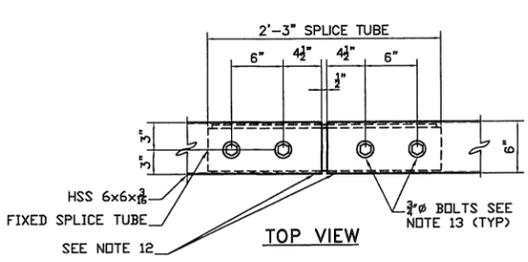
TOP VIEW



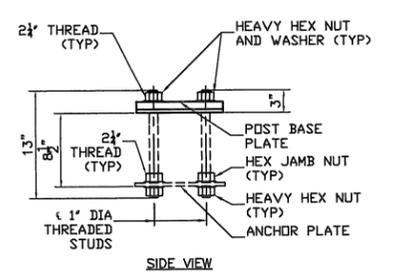
TOP VIEW



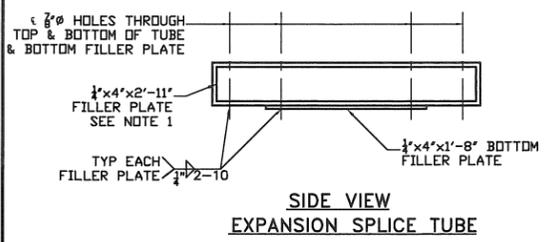
TOP VIEW



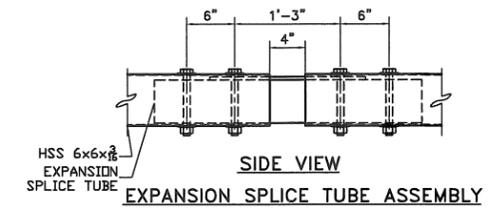
TOP VIEW



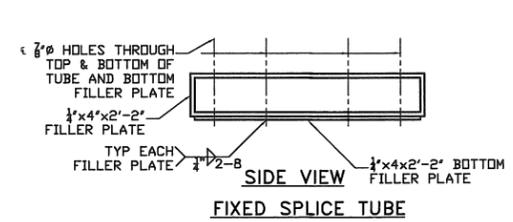
RAILING POST ANCHORAGE



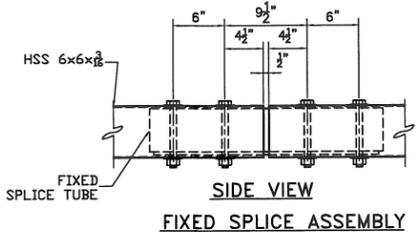
SIDE VIEW  
EXPANSION SPLICE TUBE



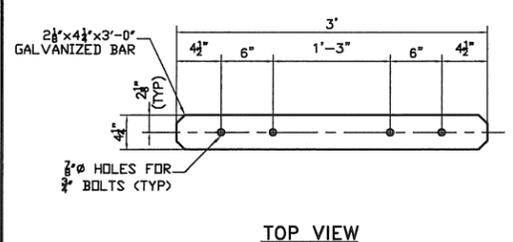
SIDE VIEW  
EXPANSION SPLICE TUBE ASSEMBLY



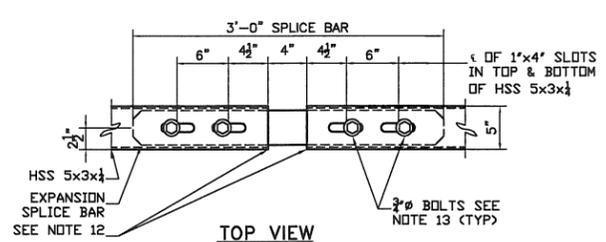
SIDE VIEW  
FIXED SPLICE TUBE



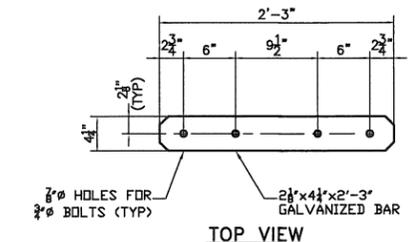
SIDE VIEW  
FIXED SPLICE ASSEMBLY



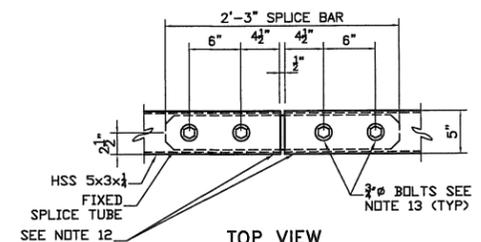
TOP VIEW



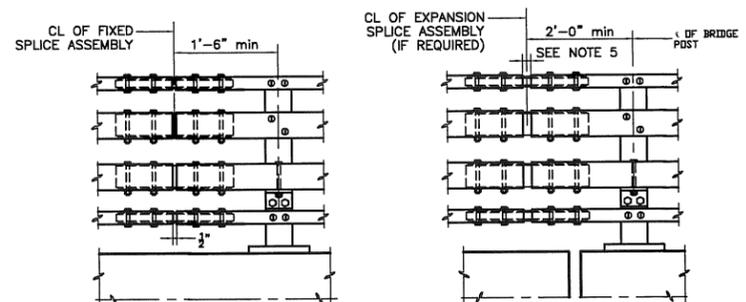
TOP VIEW



TOP VIEW



TOP VIEW

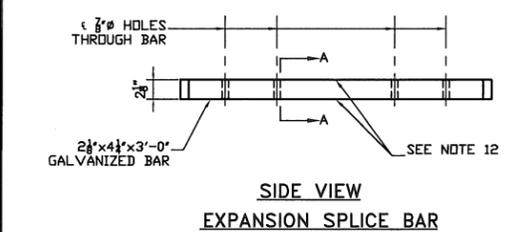


FIXED SPLICE

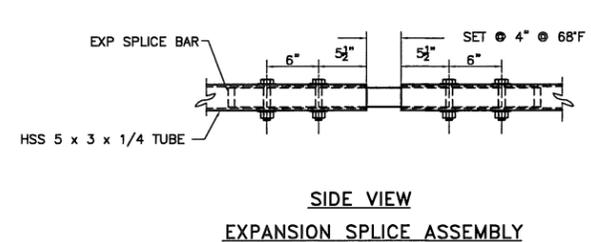
EXPANSION SPLICE

RAILING SPLICE DETAIL ELEVATION

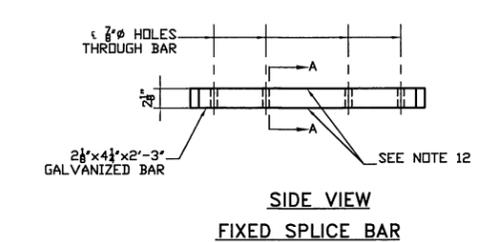
A RAILING EXPANSION SPLICE IS REQUIRED IN ANY POST SPACING THAT CONTAINS A SUPERSTRUCTURE EXPANSION JOINT.



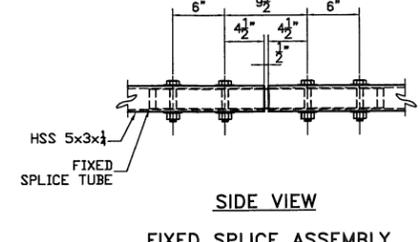
SIDE VIEW  
EXPANSION SPLICE BAR



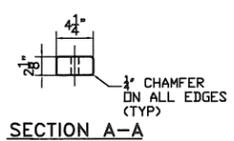
SIDE VIEW  
EXPANSION SPLICE ASSEMBLY



SIDE VIEW  
FIXED SPLICE BAR



SIDE VIEW  
FIXED SPLICE ASSEMBLY



SECTION A-A

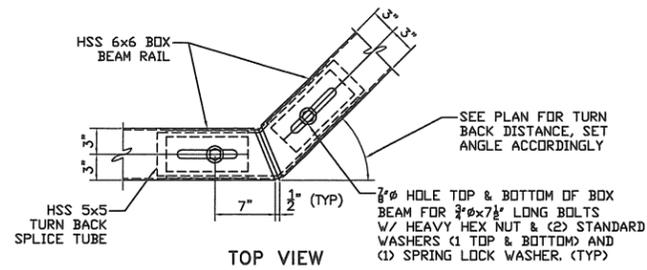
NOTES:

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

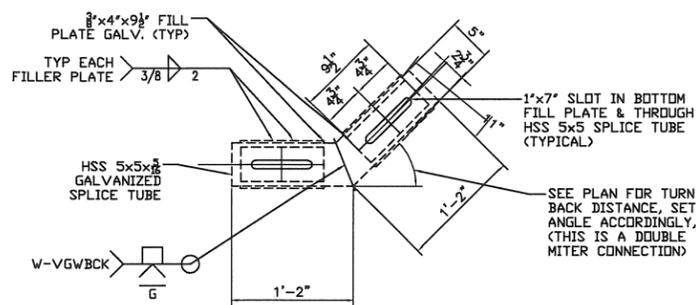
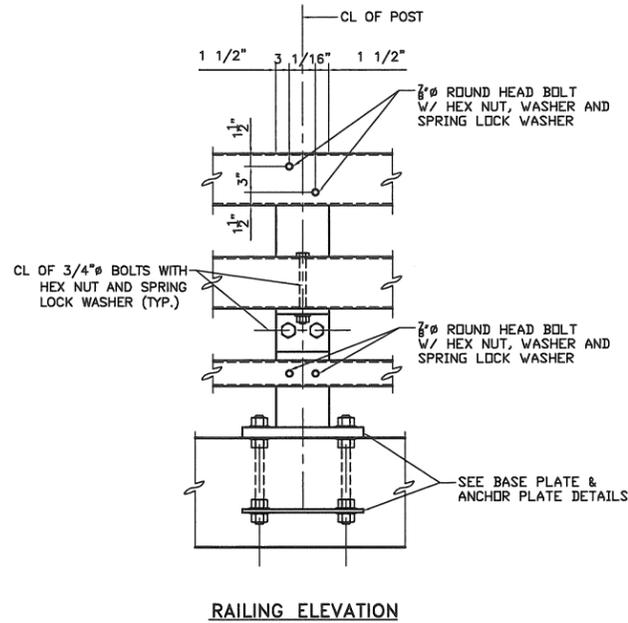
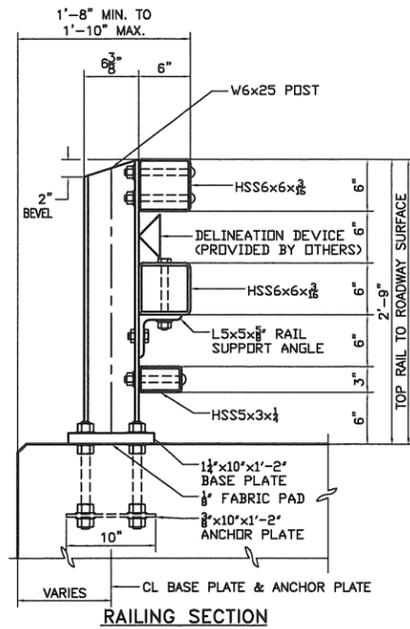
NOTES:

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

|                                 |         |   |               |
|---------------------------------|---------|---|---------------|
|                                 |         | <b>CERTIFIED FABRICATOR</b>   |               |
| GLASTONBURY, CT<br>860-633-9445 |         | BRIDGE RAIL DETAILS 525.335 & 621.725<br>TOWN OF ENOSBURG, COUNTY OF FRANKLIN<br>BOSTON POST ROAD T.H.2 CLASS 2<br>BRIDGE NO. 48<br>PROJECT NO. BRO 1448 (40) |               |
| GENERAL CONTRACTOR              |         | 1976  |               |
| SUB CONTRACTOR<br>LAFAYETTE     |         | 5 of 6  |               |
| DRAWN<br>BJB                    | CHECKED | DATE<br>3-4-14  | SCALE<br>NONE |
|                                 |         | SIZE<br>D   |               |

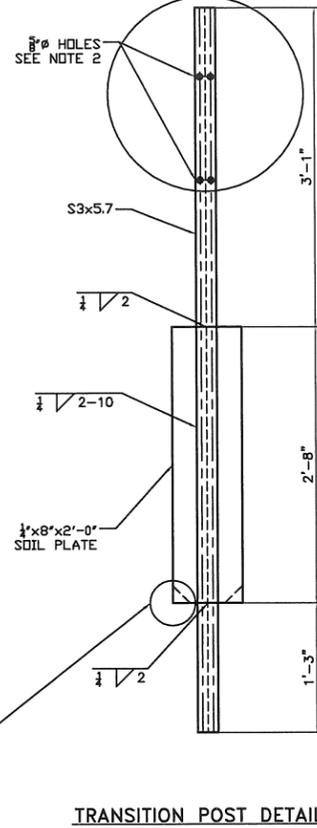
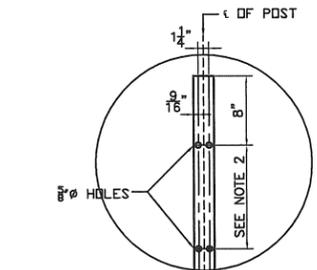
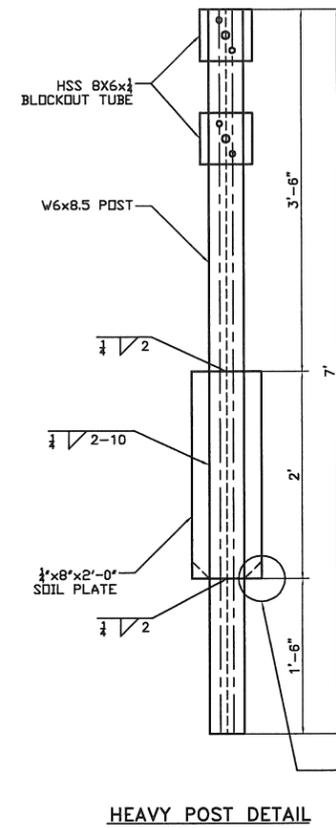
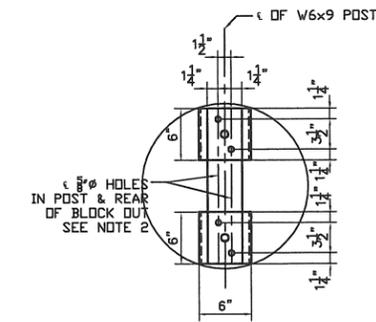
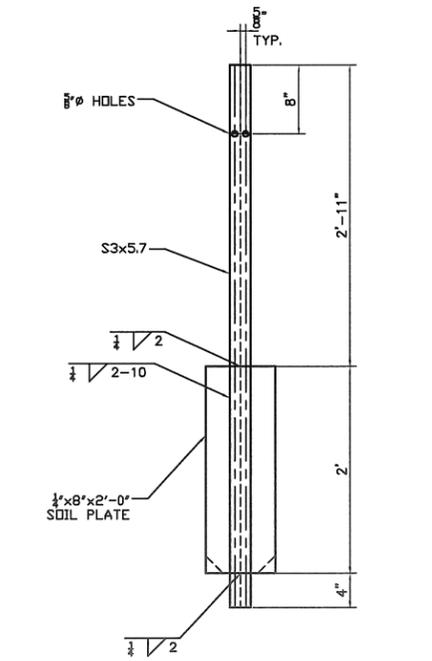
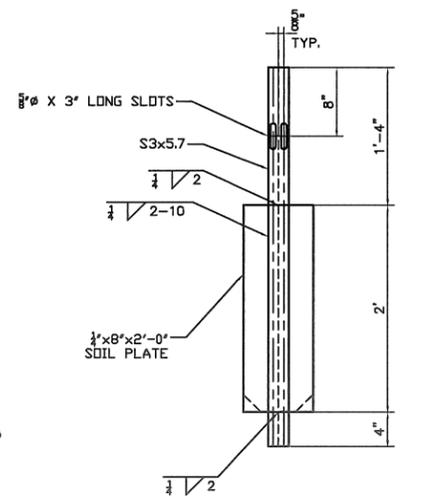
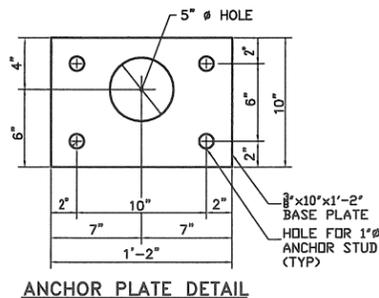
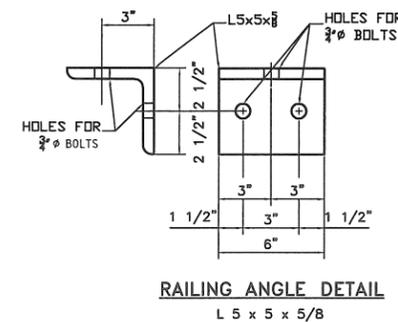
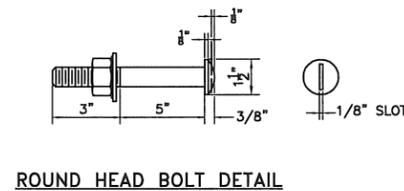
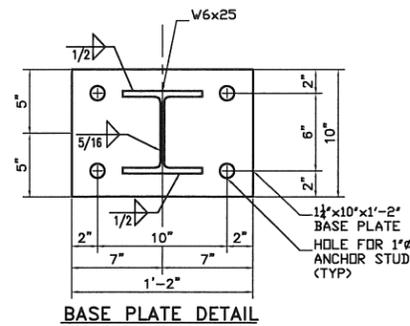
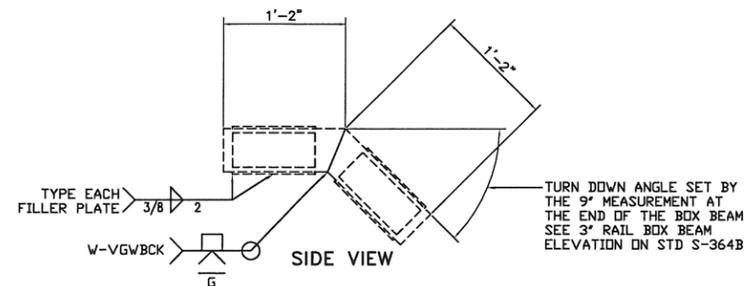


TURN BACK SPLICE TUBE ASSEMBLY



TURN BACK SPLICE TUBE DETAIL

TURN BACK & TURN TUBE JOINT



HEAVY POST DETAIL

TRANSITION POST DETAIL 7'-0"

2"x2" CLIP ON BOTH CORNERS PERMITTED (TYP)

SEE ALL NOTES ON SHEET 5 OF 6 FOR ADDITIONAL INFORMATION

|                                       |                      |
|---------------------------------------|----------------------|
| <b>HIGHWAY SAFETY CORP</b>            |                      |
| GLASTONBURY, CT<br>860-633-9445       |                      |
| BRIDGE RAIL DETAILS 525.335 & 621.725 |                      |
| TOWN OF ENOSBURG, COUNTY OF FRANKLIN  |                      |
| BOSTON POST ROAD T.H.2 CLASS 2        |                      |
| BRIDGE NO. 48                         |                      |
| PROJECT NO. BRO 1448 (40)             |                      |
| GENERAL CONTRACTOR                    | CERTIFIED FABRICATOR |
| SUB CONTRACTOR                        | HSC JOB NO.          |
| LAFAYETTE                             | 1976                 |
| DATE                                  | SHEET NO.            |
| 3-4-14                                | 6 of 6               |
| DRAWN                                 | SCALE                |
| BJB                                   | NONE                 |
| CHECKED                               | SIZE                 |
|                                       | D                    |