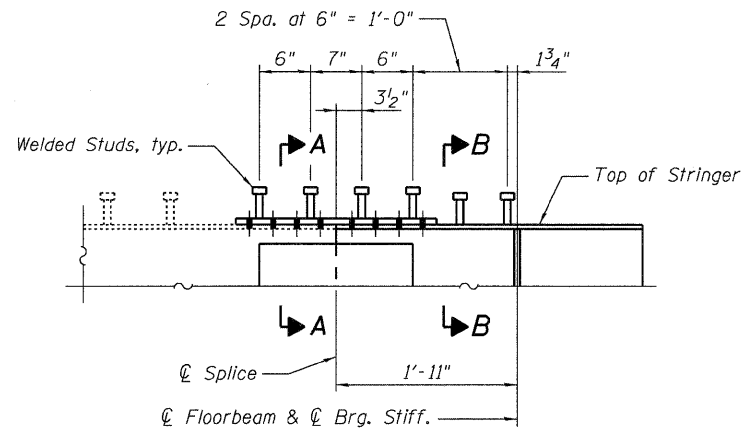
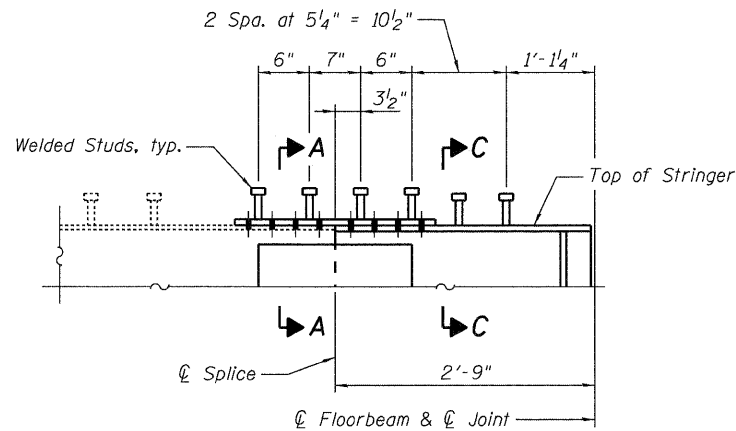


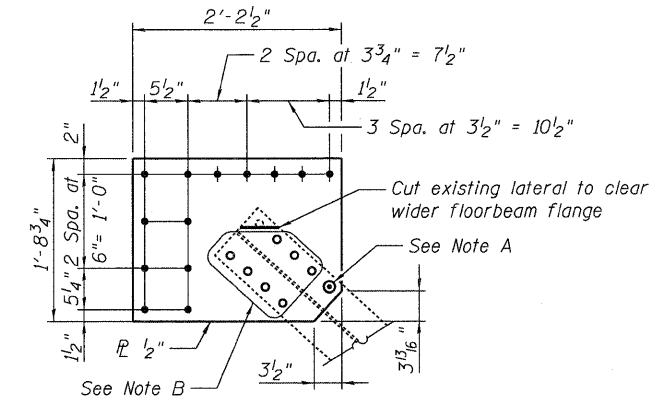
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**ELEVATION SHEAR CONNECTORS FOR  
STRINGER END LINES 1, 2, 7 AND 8  
AT HINGES 12, 13, 14, 15 AND AT PIERS 8 & 24**  
18 Studs required per stringer end



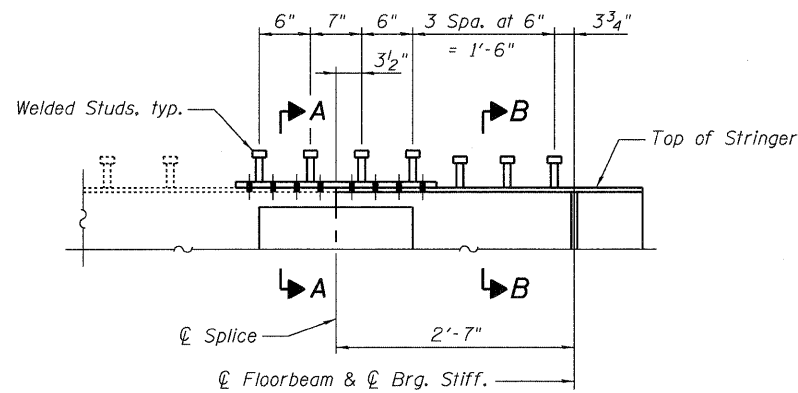
**ELEVATION SHEAR CONNECTORS FOR  
STRINGER END LINES 1, 2, 7 AND 8  
AT RELIEF JOINT EXPANSION SIDE**  
16 Studs required per stringer end



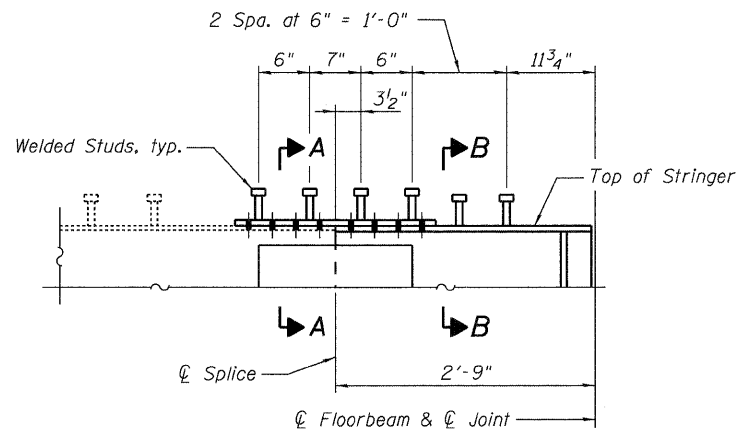
**LATERAL CONNECTOR P**  
At Spans 9, 19 and 22  
No. Req'd. 8

Note A:  
Field drill hole maintaining a minimum of 1/2" from the edge of steel.

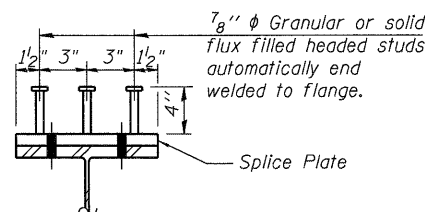
Note B:  
Field drill holes using existing holes in lateral as template. Remainder of holes may be shop drilled.



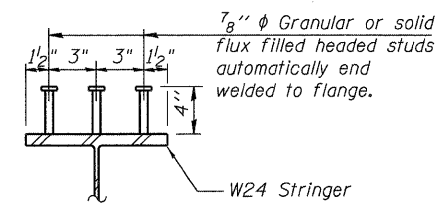
**ELEVATION SHEAR CONNECTORS FOR  
STRINGER END LINES 1, 2, 7 AND 8  
AT PIER 19**  
21 Studs required per stringer end



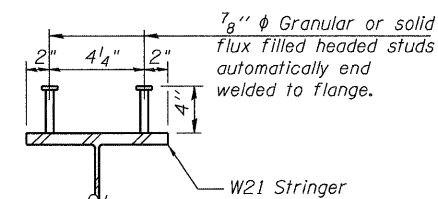
**ELEVATION SHEAR CONNECTORS FOR  
STRINGER END LINES 1, 2, 7 AND 8  
AT RELIEF JOINT FIXED SIDE**  
Stringer lines 1 and 8 without lateral  
18 Studs required per stringer end



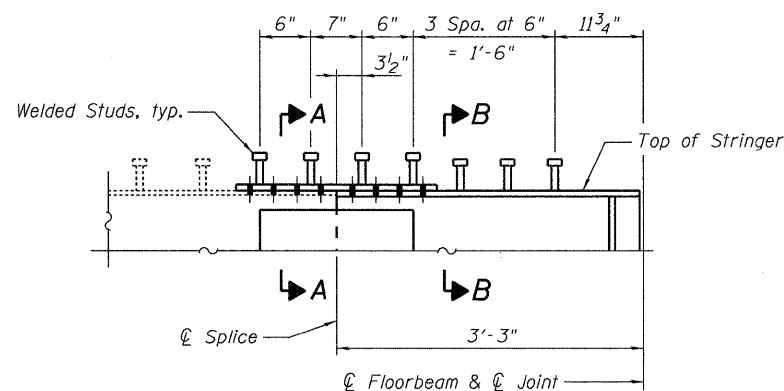
**SECTION A-A**



**SECTION B-B**



**SECTION C-C**



**SHEAR CONNECTORS FOR  
STRINGER END LINES 1 AND 8  
AT RELIEF JOINT FIXED SIDE WITH LATERAL**  
21 Studs required per stringer end

**TABLE OF SHEAR  
CONNECTOR QUANTITIES**

| LOCATION        | NO. STUDS |
|-----------------|-----------|
| Pier 8          | 72        |
| Hinge 12        | 144       |
| Hinge 13        | 144       |
| Hinge 14        | 144       |
| Hinge 15        | 144       |
| Pier 19         | 168       |
| Pier 24         | 72        |
| Relief Jt. Exp. | 1600      |
| Relief Jt. Fix  | 1656      |
| Relief Jt. Fix* | 168       |

\*with Lateral connection

Notes:  
1 5/16"  $\phi$  Holes unless noted otherwise.  
For Bill of Material, see Sheet No. 11 of 33.

**STRINGER END REPAIR DETAILS - 5**  
**I-80 OVER**  
**MISSISSIPPI RIVER**  
**STRUCTURE NO. 081-0011**

|          |     |
|----------|-----|
| DESIGNED | YSS |
| CHECKED  | ACK |
| DRAWN    | PRC |
| CHECKED  | YSS |
| 09/17/09 |     |



|   |             |            |                    |              |           |
|---|-------------|------------|--------------------|--------------|-----------|
| SHEET NO. 15<br>33 SHEETS                       | F.A.I. RTE. | SECTION    | COUNTY             | TOTAL SHEETS | SHEET NO. |
|   | 80          | (81-1B)M-4 | ROCK ISLAND        | 75           | 42        |
| SN 081-0011                                     |             |            | CONTRACT NO. 64F31 |              |           |
| FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT |             |            |                    |              |           |