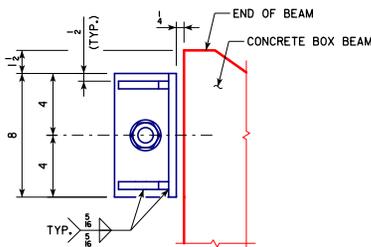
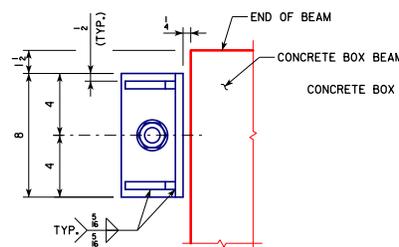


**SECTION NEAR ABUTMENT WITH SHEET PILE WINGS**

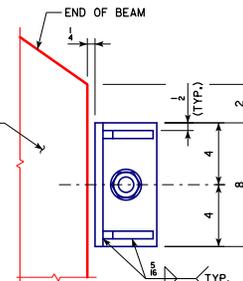
**SECTION NEAR ABUTMENT WITH CONCRETE WINGS**



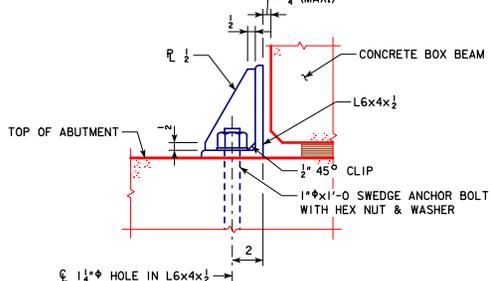
**PLAN (SHOWING SKEWED CASE AT ACUTE CORNER)**



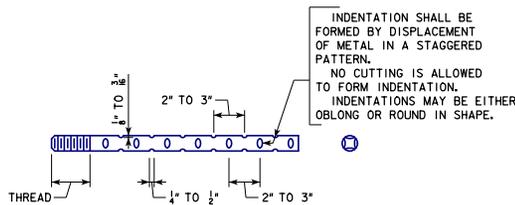
**PLAN (SHOWING 0° SKEW CASE)**



**PLAN (SHOWING SKEWED CASE AT OBTUSE CORNER)**



**RETAINER ANGLE DETAIL ELEVATION**



**ANCHOR BOLT SWEDGE DETAIL**

**RETAINER ANGLE NOTES:**

ANCHOR BOLTS, NUTS AND WASHERS SHALL MEET THE REQUIREMENTS OF IM 453.08 AND SHALL BE GRADE 36 AND GALVANIZED.  
 ANGLES AND PLATES SHALL COMPLY WITH ASTM A709, GRADE 36.  
 ANCHOR BOLTS SHALL BE SET IN ACCORDANCE WITH ARTICLE 2405.03, H, 2 OF THE STANDARD SPECIFICATIONS.  
 RETAINER ANGLE ASSEMBLIES SHALL BE GALVANIZED. ALL WELDING SHALL BE COMPLETED PRIOR TO GALVANIZING. GALVANIZING SHALL BE IN ACCORDANCE WITH ASTM A123 AND ARTICLE 4100.07, E OF THE STANDARD SPECIFICATIONS.  
 ALL COSTS FOR FURNISHING AND INSTALLING THE RETAINER ANGLES AND ANCHOR BOLTS SHALL BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL STEEL".  
 WEIGHT FOR FOUR RETAINER ANGLE ASSEMBLIES = 72 LBS.

|                      |                 |  |
|----------------------|-----------------|--|
| LATEST REVISION DATE |                 | STANDARD DESIGN - 24'-0 ROADWAY, SINGLE SPAN<br><b>CONCRETE BOX BEAM BRIDGES</b> |
|                      | DECEMBER, 2016  |  |
|                      | TYPICAL SECTION | B24-06-16  |

APPROVED BY BRIDGE ENGINEER  
*Thomas E. McQuill*