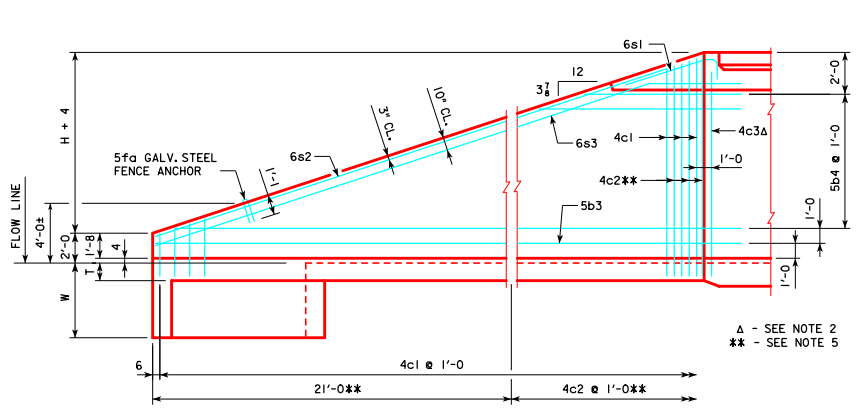
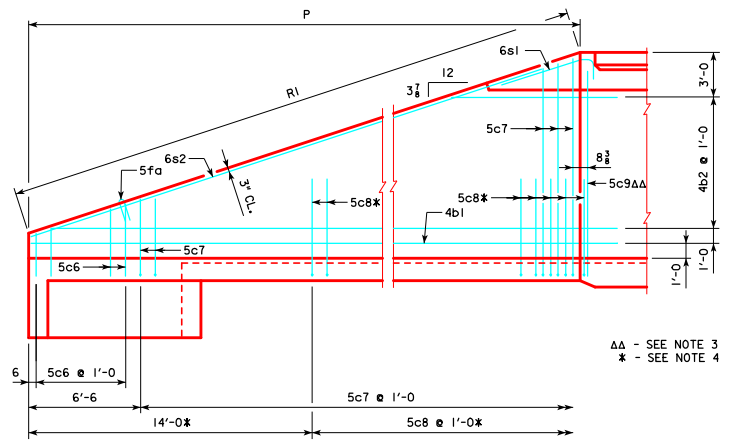


REVISED 05-13 - CHANGED 19'-0\*\* DIMENSION TO 21'-0\*\* IN TYPICAL VIEW - FRONT FACE REINFORCING DETAIL.  
 REVISED 07-2016 - REMOVED 1'-8" VERTICAL DIMENSION FROM 6s3 BAR TO TOP OF PARAPET. THIS ALLOWS FOR THE VARIABLE VERTICAL LOCATION OF THE HORIZONTAL LEG IN THE SLAB.  
 ENGLISH DESIGN INC./CULVERTS.DENVER, CO. 80202. TWH 0-3-12 - THIS SHEET ISSUED 04-12.

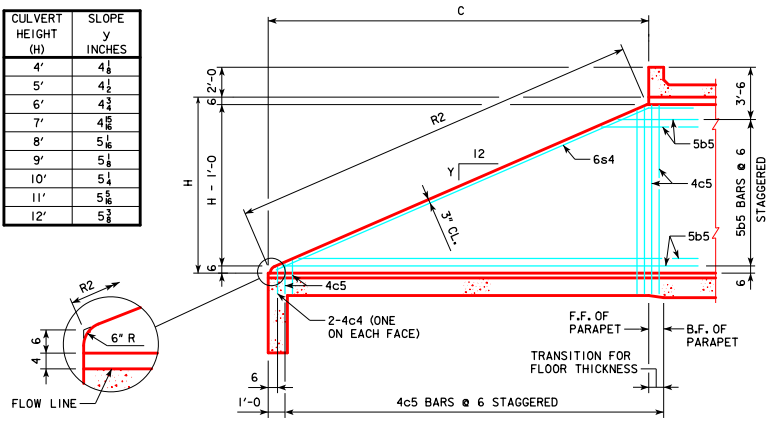


TYPICAL VIEW - FRONT FACE REINFORCING

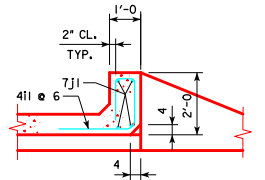


TYPICAL VIEW - BACK FACE REINFORCING

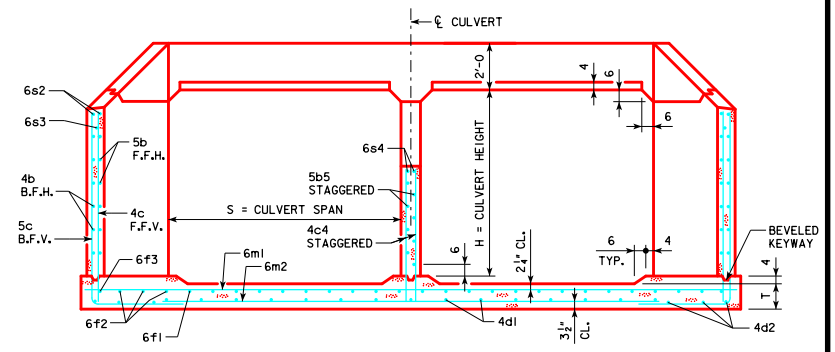
CULVERT HEIGHT (H)	SLOPE Y INCHES
4'	4 1/2
5'	4 1/2
6'	4 3/4
7'	4 7/8
8'	5 1/8
9'	5 1/4
10'	5 1/2
11'	5 5/8
12'	5 3/4



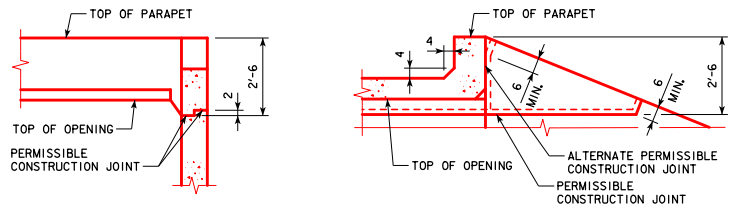
TYPICAL VIEW - INTERIOR WALL



SECTION THRU PARAPET



TYPICAL SECTION - NEAR CENTER OF APRON



TOP OF WINGWALL DETAILS

**NOTES:**

1. BAR SPACING AND POSITIONS SHOWN ARE SIMILAR FOR ALL SIZES OF HEADWALL IN THIS STANDARD.
2. TWO 4c3 BARS FOR 4', 5', 11' & 12' HEIGHT HEADWALLS. ONE 4c3 BAR FOR 6' THRU 10' HEIGHT HEADWALLS.
3. TWO 5c9 BARS FOR 4', 5', 11' & 12' HEIGHT HEADWALLS. ONE 5c9 BAR FOR 6' THRU 10' HEIGHT HEADWALLS.
4. NOT APPLICABLE FOR 4' & 5' HEIGHT HEADWALLS.
5. NOT APPLICABLE FOR 4' THRU 8' HEIGHT HEADWALLS.
6. FOR DIMENSION TABLE SEE SHEET TWH 0-1-12.

07-2016  
 LATEST REVISION DATE  
 Approved by Bridge Engineer  
 APPROVED BY BRIDGE ENGINEER

Iowa Department of Transportation  
 Highway Division  
 STANDARD DESIGN  
**TWIN REINFORCED CONCRETE BOX CULVERTS**  
 APRIL, 2012  
**FLARED WING HEADWALLS**  
 0° SKEW  
**TWH 0-3-12**