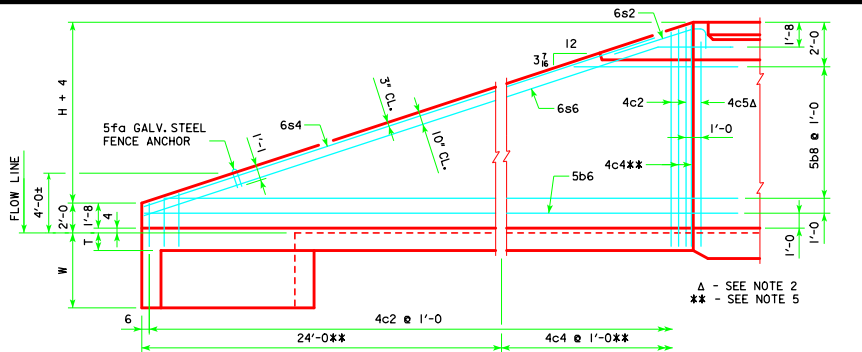
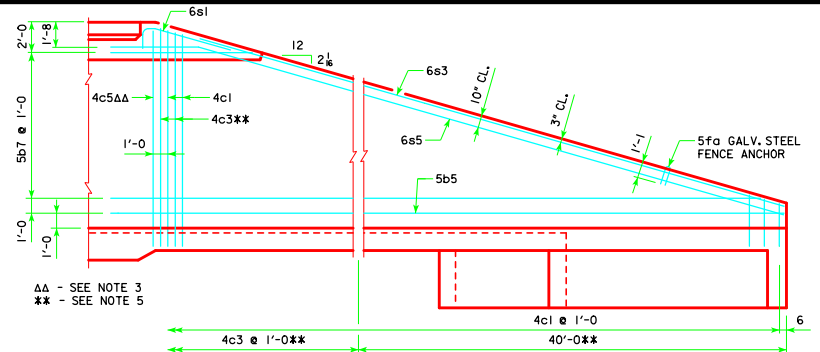


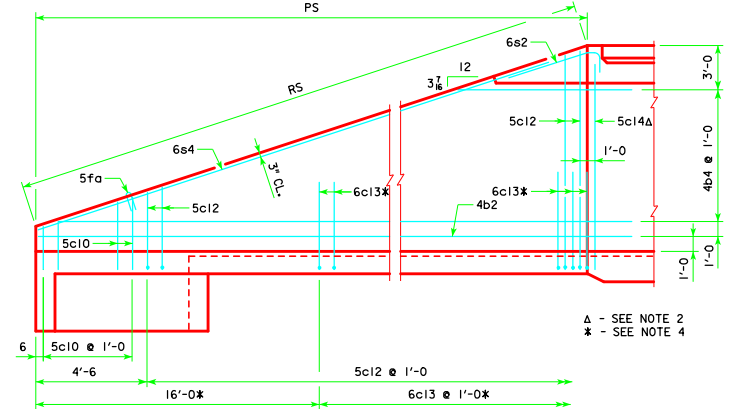
REVISED 05-13 - CHANGED DIMENSIONS WHEN TO BEGIN PLACING BARS 4c3, 4c4, 5c11, 5c12, & 6c13 IN WINGWALLS. FROM FISH REPAIRS TO INITIAL CONSTRUCTION. TWH 45-6-12. THIS SHEET ISSUED 04-12.



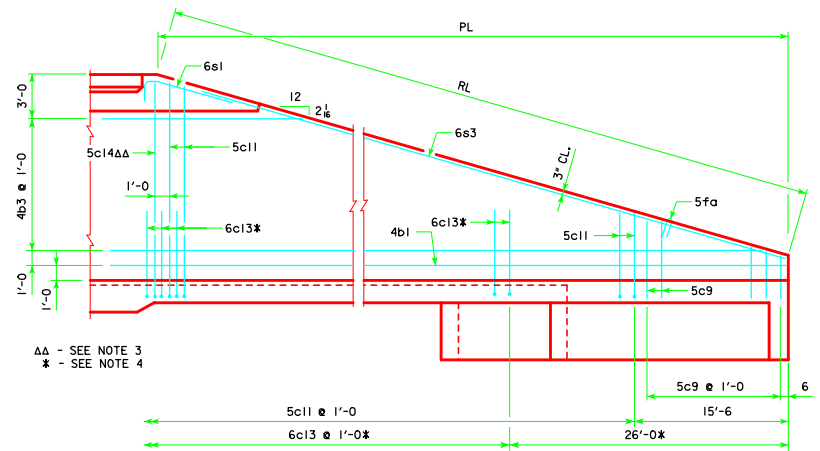
TYPICAL VIEW - FRONT FACE REINFORCING SHORT WINGWALL



TYPICAL VIEW - FRONT FACE REINFORCING LONG WINGWALL

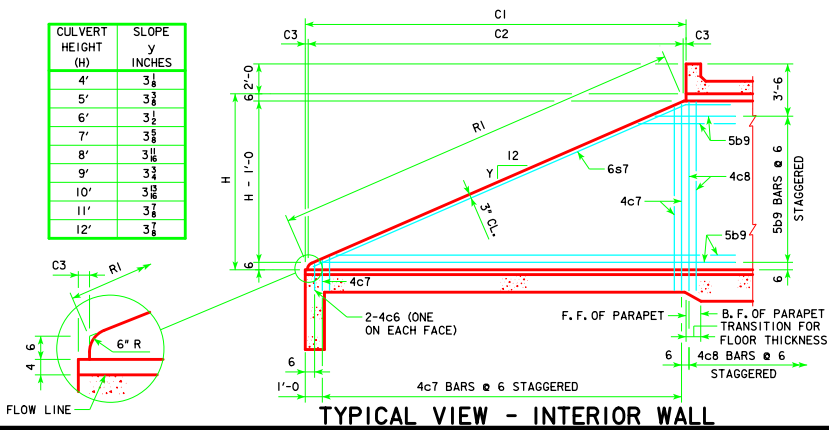


TYPICAL VIEW - BACK FACE REINFORCING SHORT WINGWALL



TYPICAL VIEW - BACK FACE REINFORCING LONG WINGWALL

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



TYPICAL VIEW - INTERIOR WALL

**NOTES:**

1. BAR SPACINGS AND POSITIONS SHOWN ARE SIMILAR FOR ALL SIZES OF HEADWALLS IN THIS STANDARD.
2. TWO 4c5 & TWO 5c14 BARS FOR 4', 6', 8', 10' & 12' HEIGHT HEADWALLS. ONE 4c5 & ONE 5c14 BAR FOR 5', 7', 9' & 11' HEIGHT HEADWALLS.
3. TWO 4c5 & TWO 5c14 BARS FOR 4', 5', 9', 10' & 11' HEIGHT HEADWALLS. ONE 4c5 & ONE 5c14 BAR FOR 6', 7', 8' & 12' HEIGHT HEADWALLS.
4. NOT APPLICABLE FOR 4' & 5' HEADWALLS.
5. NOT APPLICABLE FOR 4' THRU 8' HEIGHT HEADWALLS.
6. FOR DIMENSION TABLE SEE SHEET TWH 45-2-12.

LATEST REVISION DATE 05-13 APPROVED BY BRIDGE ENGINEER 	<p>Iowa Department of Transportation Highway Division</p>
	STANDARD DESIGN <b>TWIN REINFORCED CONCRETE BOX CULVERTS</b> APRIL, 2012
	<b>FLARED WING HEADWALLS</b> 45° SKEW

TWH 45-6-12