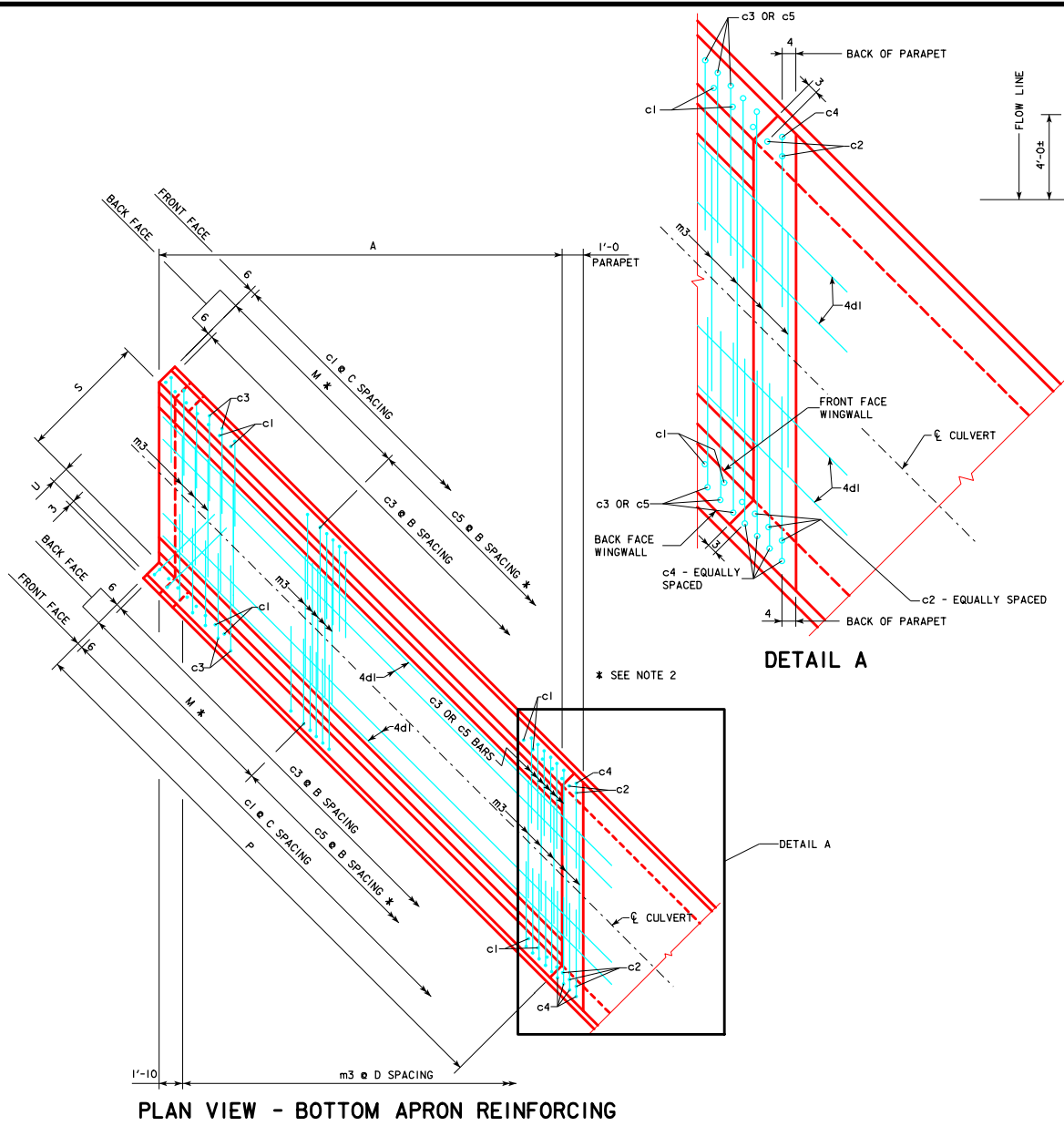
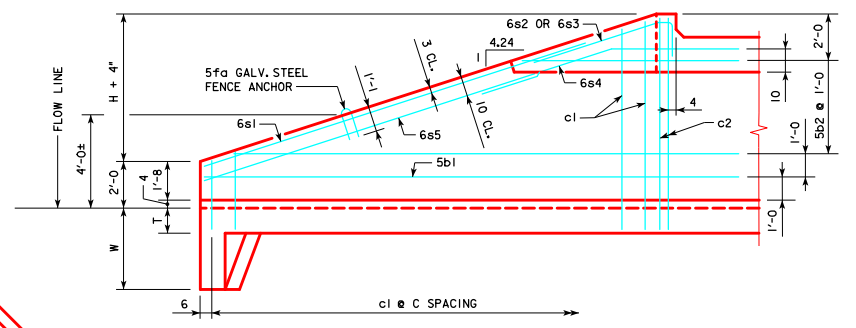


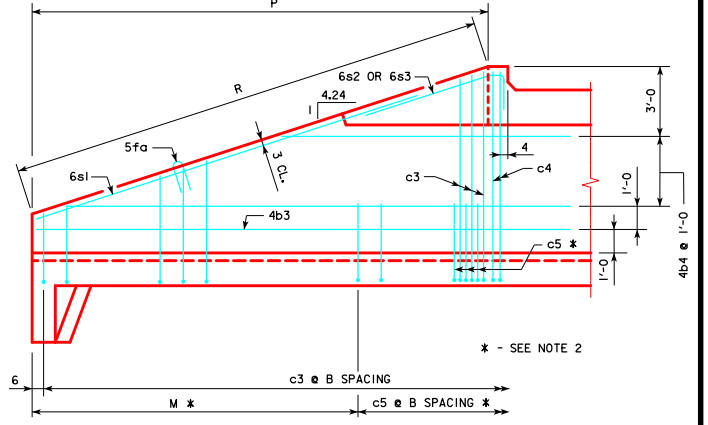
REVISED 07-2016 - CHANGED 10" VERTICAL DIMENSION FROM PERMISSIBLE WALL CONSTRUCTION JOINT TO 6s4 BAR. (DIMENSION WAS 1'-8" VERTICAL FROM TOP OF PARAPET TO 6s4 BAR.) ENGLISH/SHRFDISIGNSDS/ING/CULVERTS.DGN - PWH 45-3-12 - THIS SHEET ISSUED 04-12.



PLAN VIEW - BOTTOM APRON REINFORCING

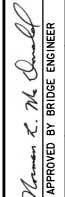



TYPICAL VIEW - FRONT FACE WINGWALL REINFORCING



TYPICAL VIEW - BACK FACE WINGWALL REINFORCING

- NOTES :**
1. BAR SPACINGS AND POSITIONS SHOWN ARE SIMILAR FOR ALL SIZES OF HEADWALLS IN THIS STANDARD.
 2. NOT APPLICABLE FOR THE FOLLOWING HEADWALL SIZES: 8x4, 6x6, 6x5, 6x4, 6x3, 5x6, 5x5, 5x4, AND 5x3.
 3. FOR HEADWALL DIMENSIONS AND BAR SPACING SEE DRAWING PWH 45-1-12.
 4. WINGWALL BARS CONSISTENTLY REFERENCED FROM END OF WING FOR ALL WINGWALLS.
 5. APRON m3 BARS ARE TO BE CENTERED ON CULVERT.
 6. B.F.V. (c4) AND F.F.V. (c2) BARS ARE APPROXIMATELY 4" FROM THE BACK OF PARAPET FOR ALL HEADWALLS.

LATEST REVISION DATE 07-2016 APPROVED BY BRIDGE ENGINEER 	 Iowa Department of Transportation Highway Division	
	STANDARD DESIGN - SINGLE REINFORCED CONCRETE BOX CULVERTS PARALLEL WING HEADWALLS	
	APRIL, 2012	
WINGWALL ELEVATIONS & BOTTOM APRON REINFORCING 45° SKEW		PWH 45-3-12