

**GENERAL NOTES**

**UNIT STRESSES:** Class AAA Concrete;  $f'_c = 28 \text{ MPa}$   
Reinforcing Steel;  $f_y = 420 \text{ MPa}$

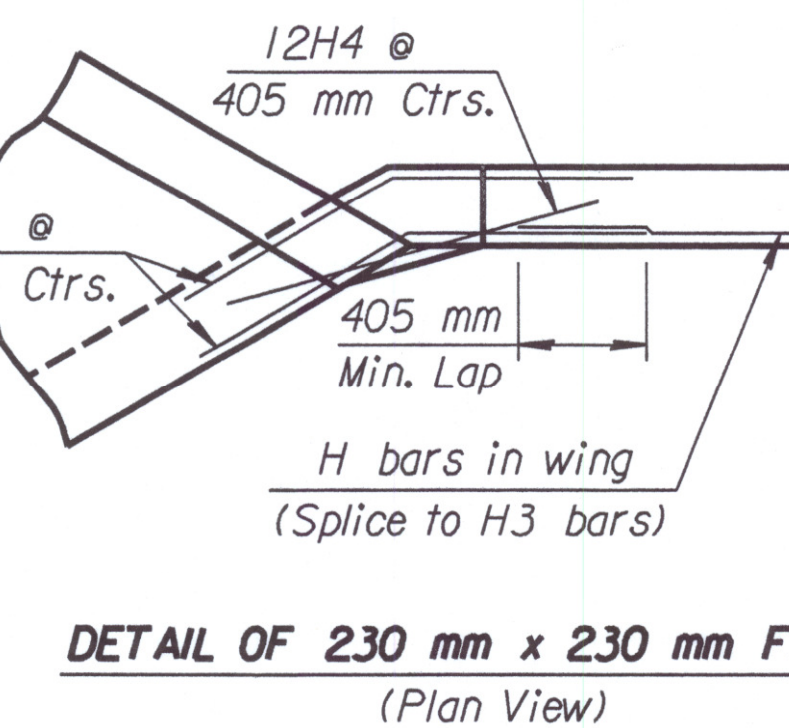
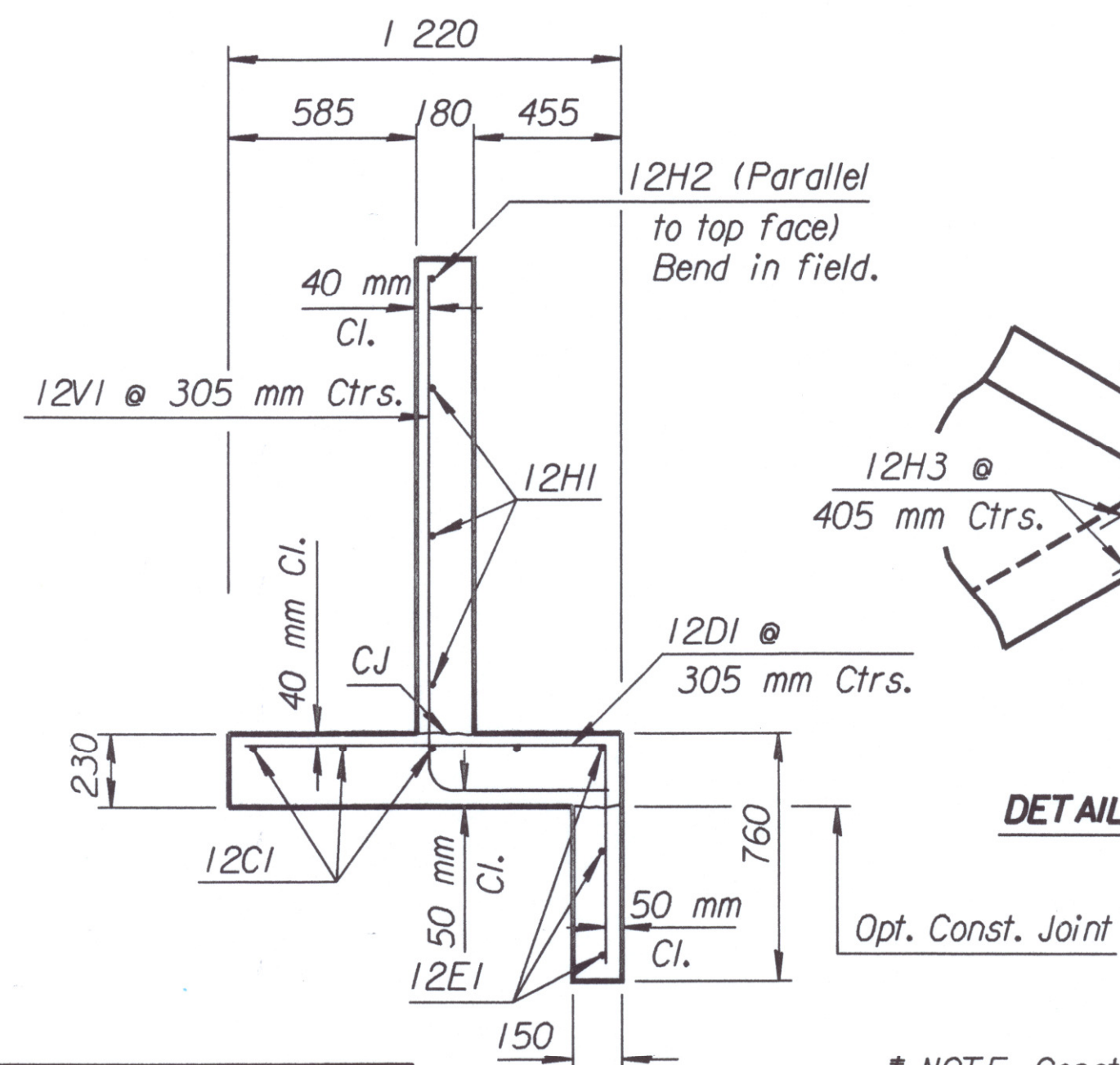
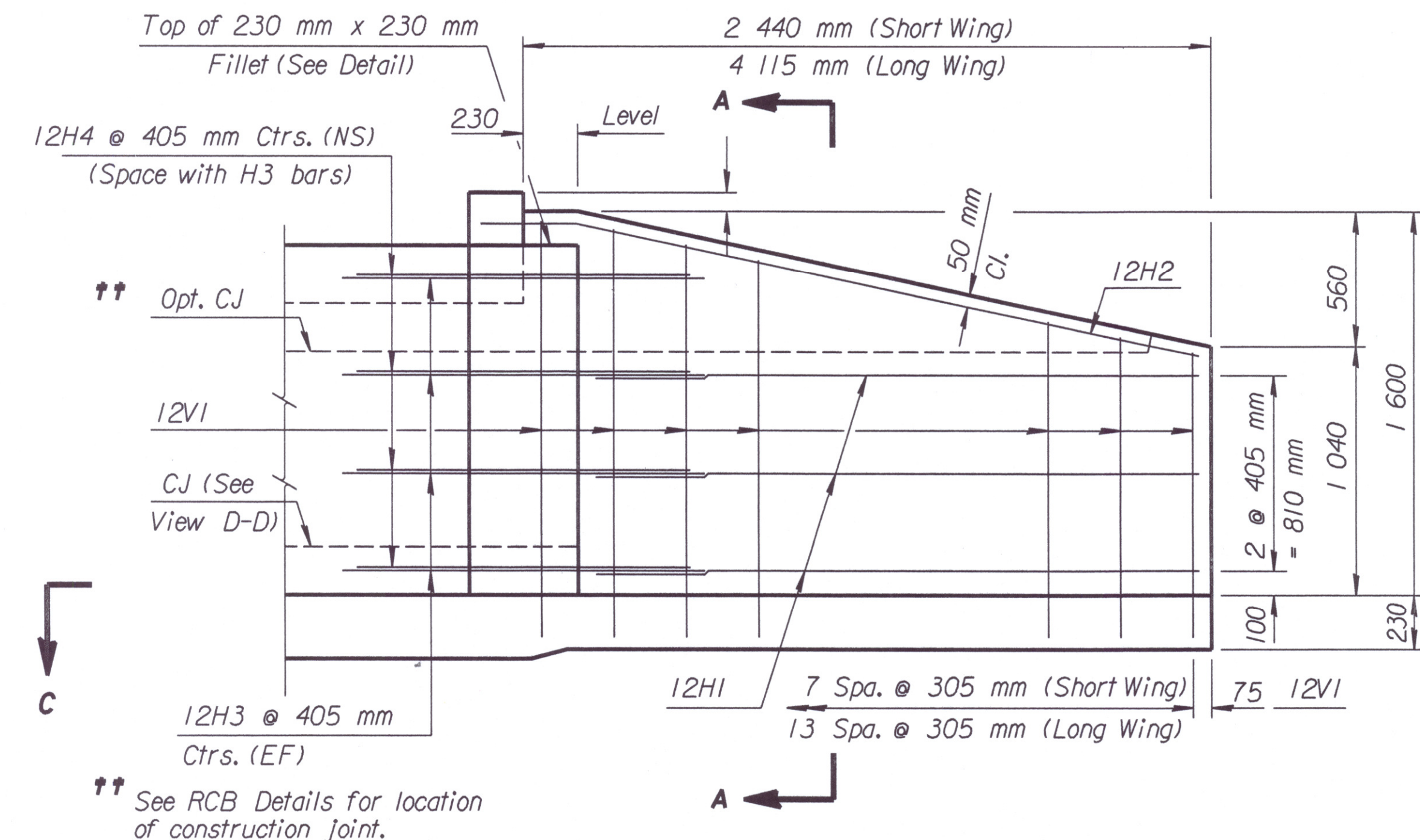
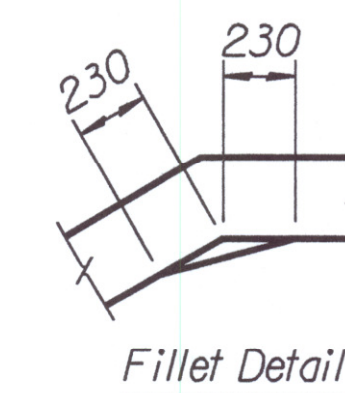
**CONCRETE:** Class AAA Concrete shall be used throughout. Bevel all exposed edges with a 20 mm triangular moulding.

**REINFORCING:** All reinforcing shall conform to ASTM A615M-96, Grade 420. Welded Wire Fabric shall conform to ASTM A185M. All dimensions relative to reinforcing steel shall be to center-line of bar unless otherwise noted.

**QUANTITIES:** Wingwall Quantities include all quantities outside the neat lines of the box, excluding the hubguard.

**APRON:** A 125 mm concrete slab shall be constructed between the downstream wings in locations subject to scour only when specified on the plans or by the Engineer. Wire Reinforcing mesh shall be electrically welded and shall be composed of 150x150-MW10xMW10 welded wire fabric and shall be classified as kilograms of reinforcing.

**FOUNDATION AND BACKFILL MATERIAL:** Soils judged as high plasticity clays, fat clays, expansive clays, or organic clays are unsuitable for foundation and/or backfill material for wingwalls and will not be used. Where these conditions exist, Foundation Stabilization and/or Granular Backfill (Wingwalls) shall be used as determined by the Engineer. See "RCB Auxiliary Details" sheet for additional details.

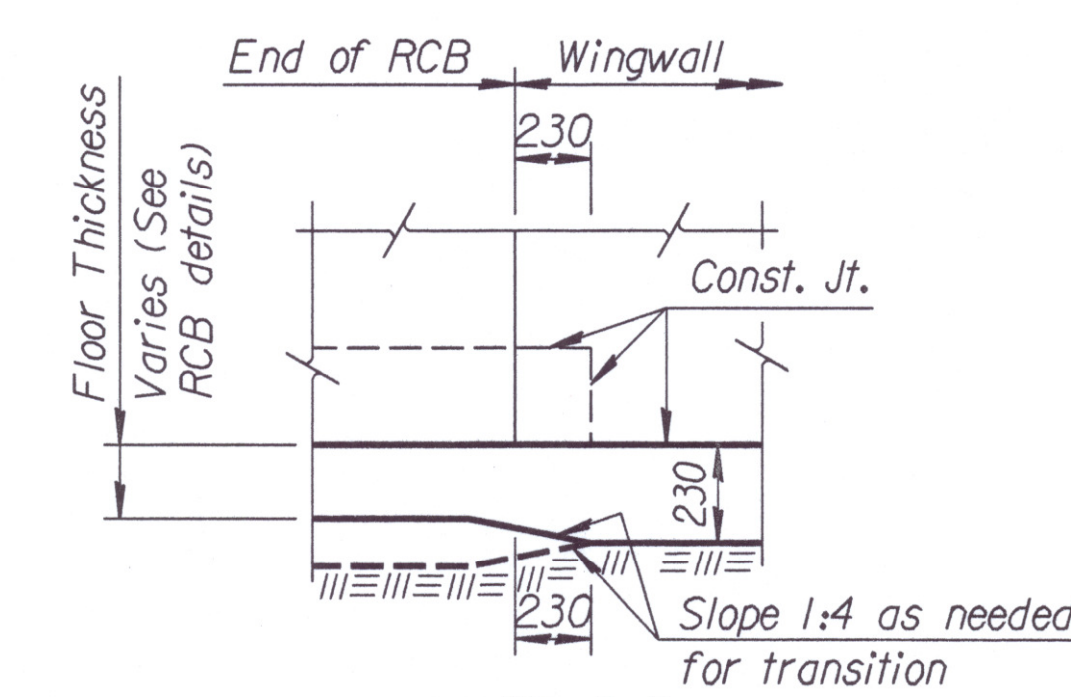


**DETAIL OF 230 mm x 230 mm FILLET**  
(Plan View)

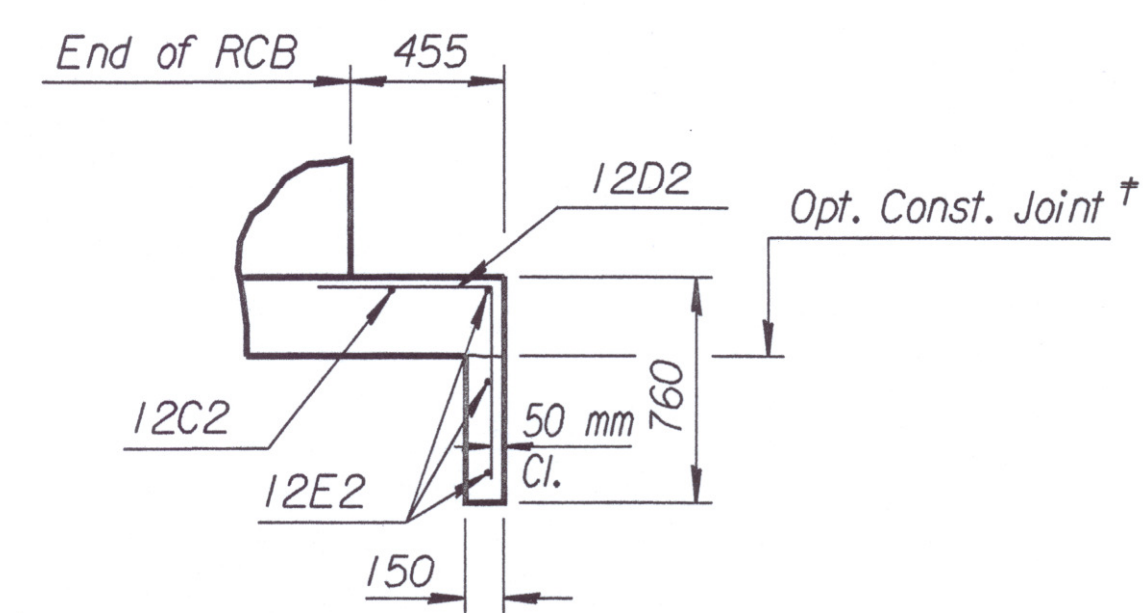
See "RCB Aux. Details" sheet for requirements of Wingwall Subbase.

† NOTE: Const. Jt. may be used at Contractor's option when approved by the Engineer. DI bars or mesh may be spliced thus: Minimum overlap shall be 380 mm. No increase in quantities or cost shall be allowed when Contractor elects this option.

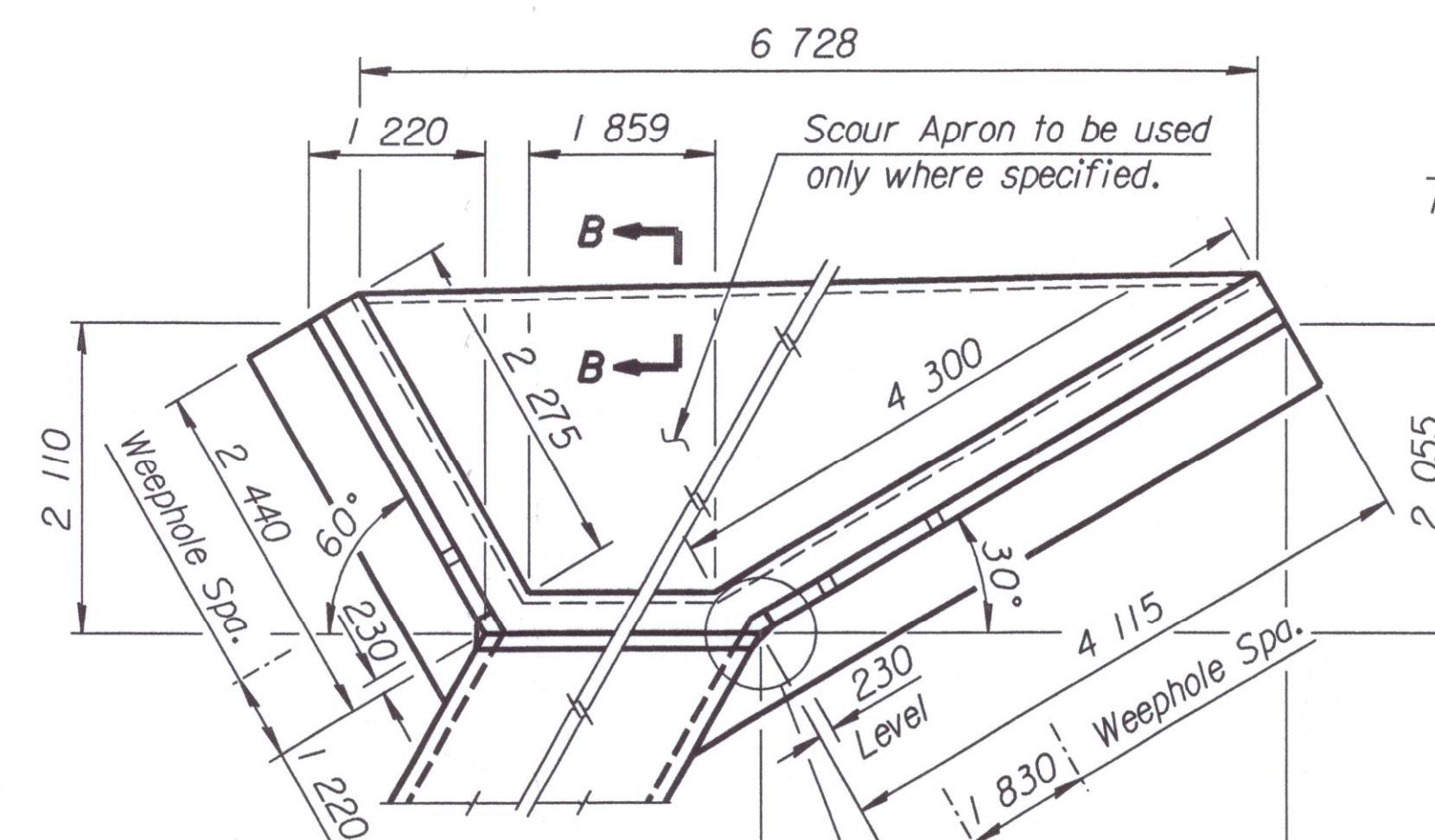
NOTE:  
EF = Each Face  
NS = Near Side  
FS = Far Side  
CJ = Const. Joint



**VIEW D-D**

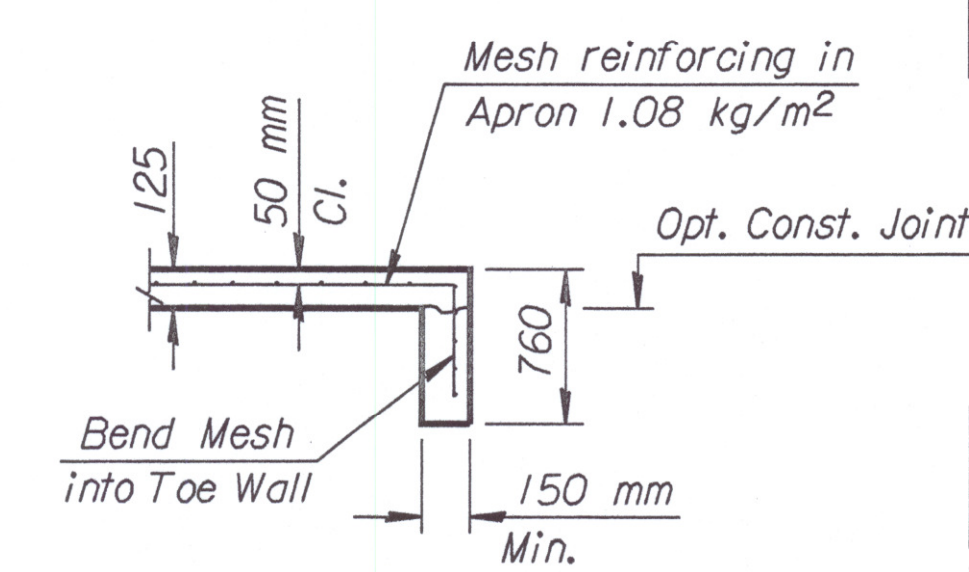


**SECTION E-E**

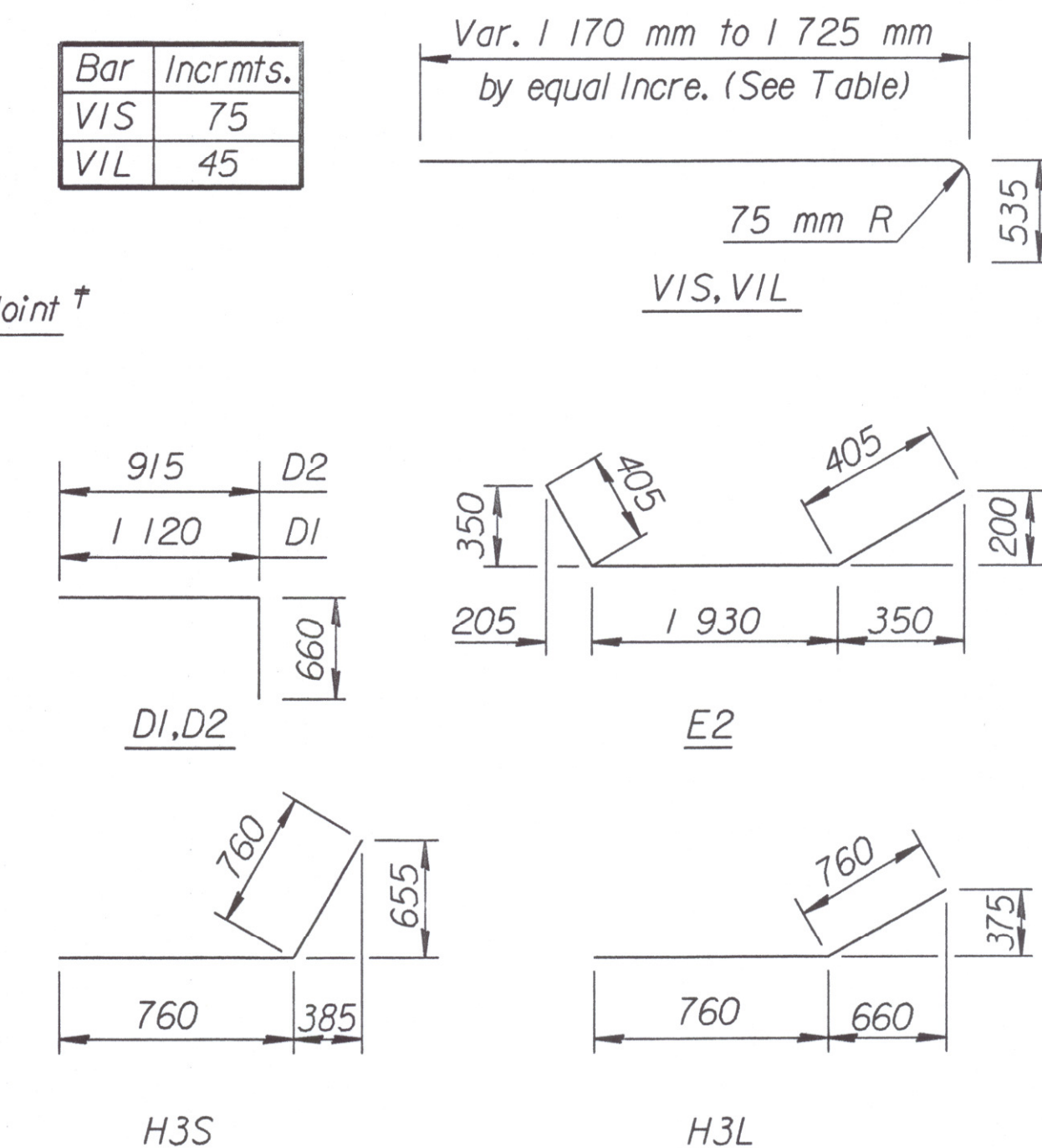


**WING DIMENSIONS FOR 30° SKEWED BOX**  
(1:3.5 Embankment Slope)

NOTE: Space weepholes to clear reinforcing steel. See "RCB Aux. Details" sheet for additional weephole details.



**SECTION B-B**



**BENDING DIAGRAM**

(All dimensions are out to out of bars.)

WINGWALL QUANTITIES		(One End Only)	
Class AAA Concrete:			
Wingwalls	-----	4.50	m <sup>3</sup>
Apron	-----	1.74	m <sup>3</sup>
Soil Saver	-----		m <sup>3</sup>
Reinforcing Steel		211.3	kg
Welded Wire Fabric		14.1	kg

NO.	DATE	REVISIONS	BY	APP'D
KANSAS DEPARTMENT OF TRANSPORTATION				
Sta. 4+146.000				
FLARED WINGWALLS				
1.22 m RISE (30° SKEW)				
BR				
FHWA APPROVAL		6-5-91 APP'D		KENNETH F. HURST
DESIGNED	DETAILED	QUANTITIES	TRACED	
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.	

NOTE: Reinforcing Bar List is for both wings at one end of box only.

NOTE: Bars with an 'L' or 'S' designation identifies bars in the long wingwall ('L') or short wingwall ('S'); ie. 12H2L, 12H2S, etc.

\* See Bending Diagram

30° Skew	Mark	12C1S	12C1L	12D1	12E1S	12E1L	12C2	12D2	12E2	12V1S	12V1L	12H1S	12H1L	12H2S	12H2L	12H3S	12H3L	12H4S	12H4L
	Number	4	4	23*	3	3	1	5*	3*	8	14	3	3	1	1	8*	8*	4	4
	Length	2 995	5 260	1 780	2 210	4 265	2 710	1 575	2 740	*	*	2 085	3 760	2 690	4 345	1 520	1 520	840	1 065

PROJ.	COL. CHECK
DESIGN	DATE
QUANTITIES	DATE
TRACING	DATE
RETRACTED	DATE

Plotted By: rcs Scale: 1/1000  
11/1997/97362/001/rcb/4146.agn Last Rev. 2-11-2002