

FHWA REGION NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	54-87 K-6657-01	2002	399	1122

**GENERAL NOTES**

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

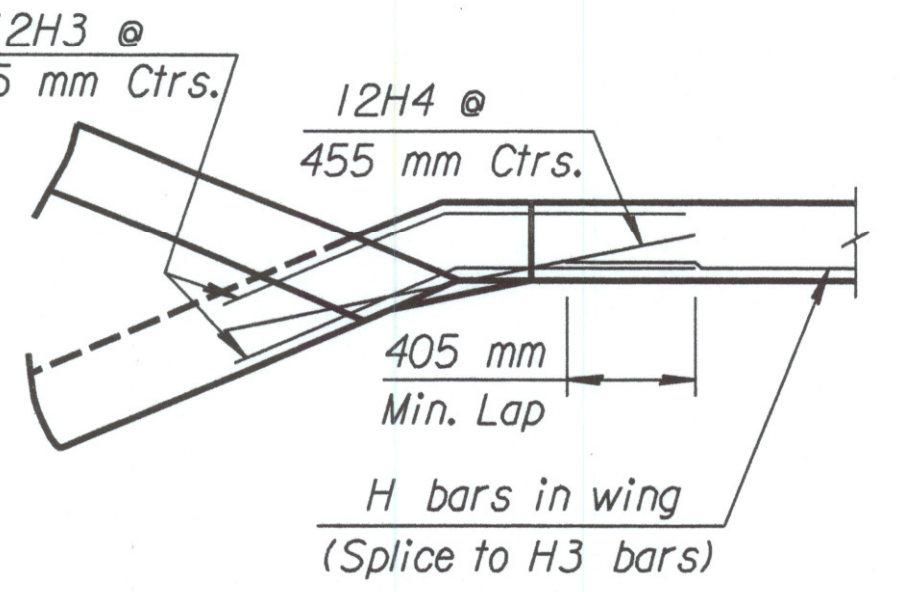
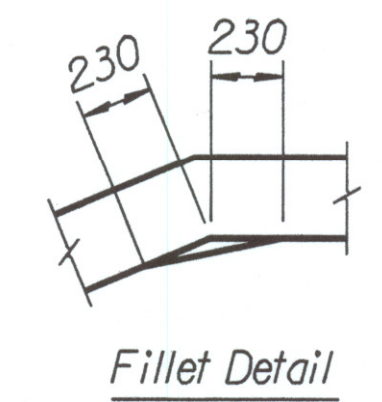
**CONCRETE:** Class AAA Concrete shall be used throughout. Bevel all exposed edges with a 20 mm triangular moulding.

**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.

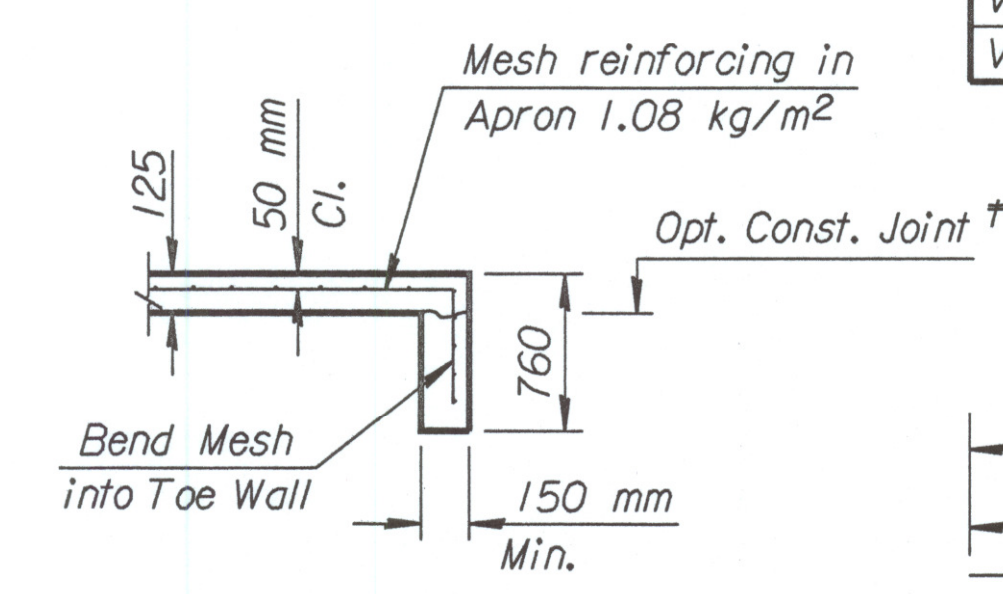


**DETAIL OF 230 mm x 230 mm FILLET**  
(Plan View)

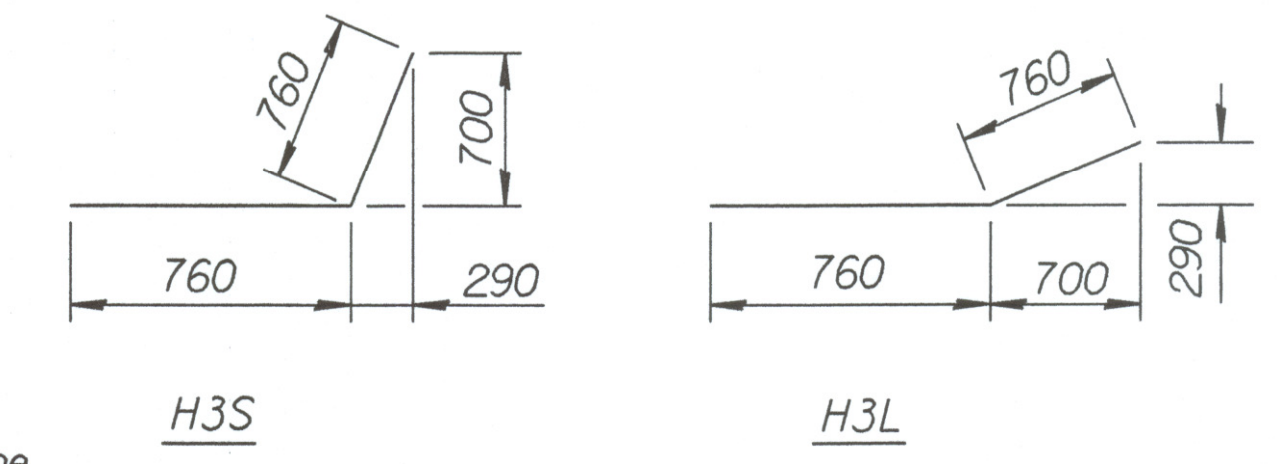
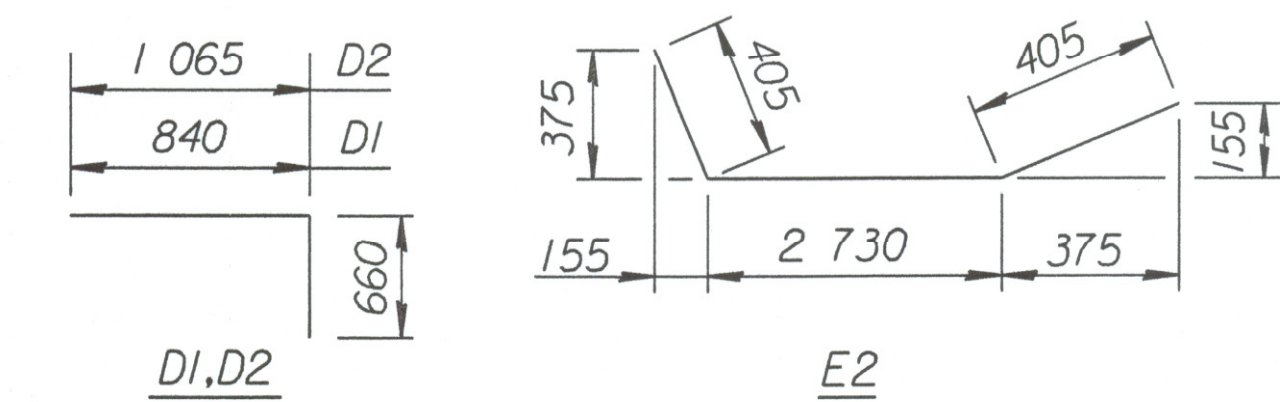
† NOTE: Const. Jt. may be used at Contractor's option when approved by the Engineer. DI bars or mesh may be spliced thus: Minimum overlap shall be 380 mm. No increase in quantities or cost shall be allowed when Contractor elects this option.

Bar	Incrmts.
VIS	90
VIL	30

Var. 990 mm to 1 450 mm by equal incre. (See Table)



**SECTION B-B**



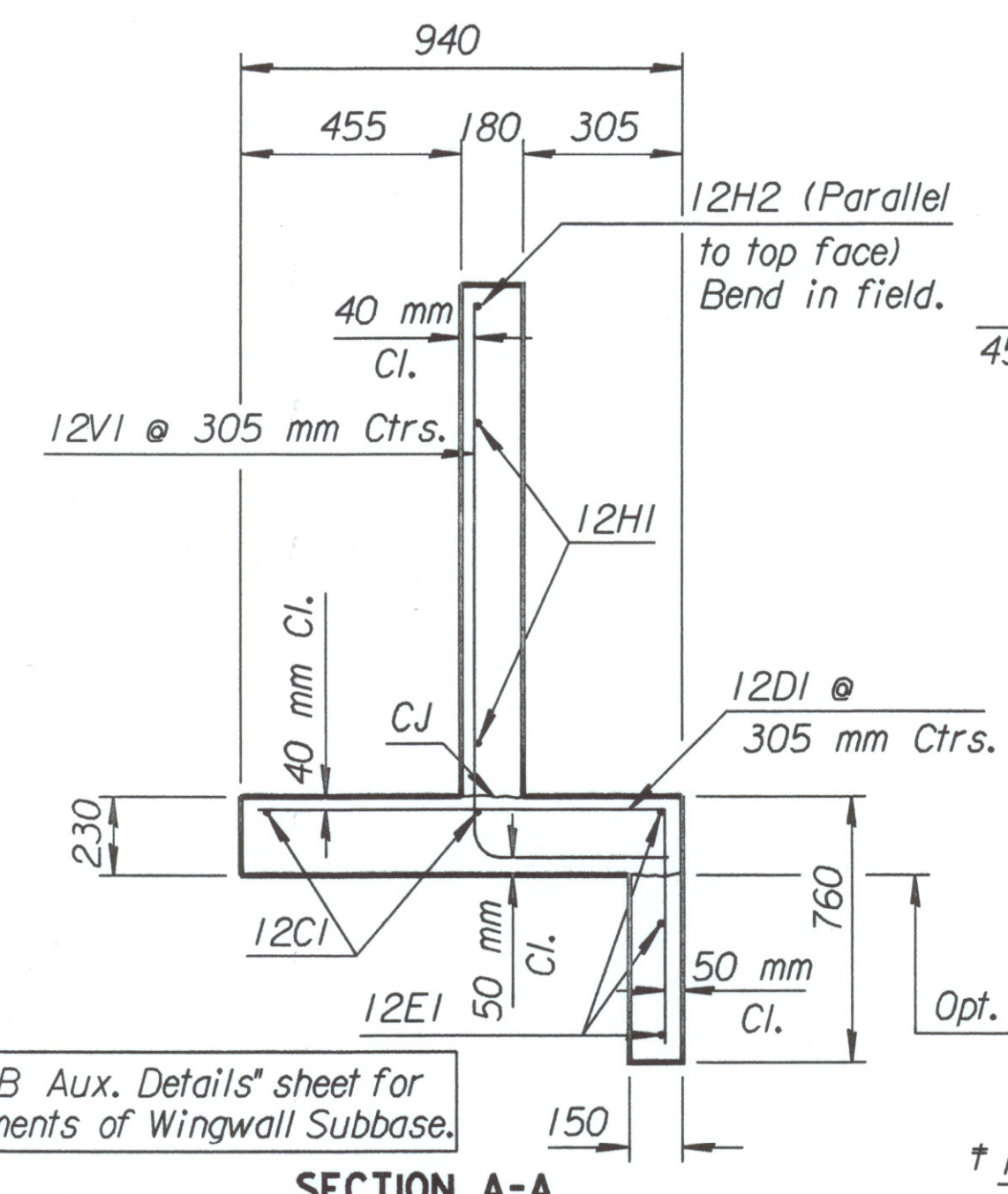
Quantities listed below are included in the Summary of Quantities shown on the RCB details.

WINGWALL QUANTITIES	
Class AAA Concrete:	
Wingwalls (Lt. or Rt.)	3.7 m <sup>3</sup>
Apron (Rt.)	1.6 m <sup>3</sup>
Soil Saver & Apron (Left Only)	2.2 m <sup>3</sup>
Reinforcing Steel (Wingwalls Rt. or Lt.) 163.5 kg	
Reinforcing Steel (Soil Saver)	51.9 kg
Welded Wire Fabric (@ Soil Saver)	7.3 kg
Welded Wire Fabric (Apron Rt.)	13.6 kg

**BENDING DIAGRAM**

(All dimensions are out to out of bars.)

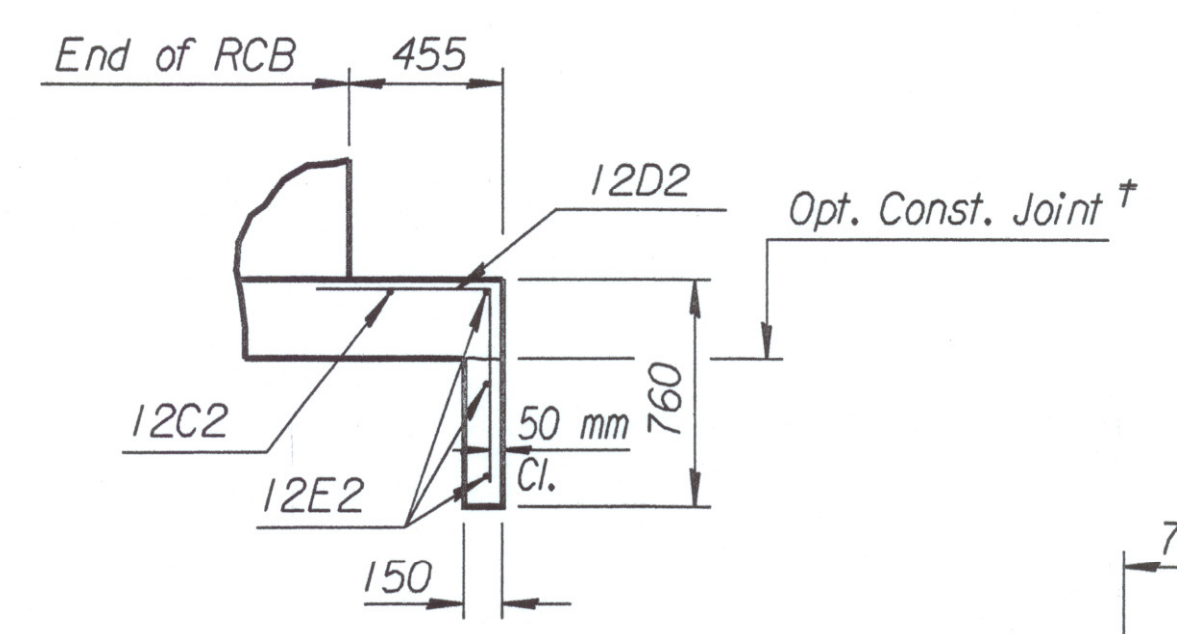
NO.	DATE	REVISIONS	BY	APP'D
KANSAS DEPARTMENT OF TRANSPORTATION				
Br. No. 54-87-(003)		Sta. 15+407.000		
FLARED WINGWALLS 0.915 m Rise (45°SKEW)				
BR 10.45.03 SI		Sedgwick		
FHWA APPROVAL	6-5-91	APP'D	KENNETH F. HURST	
DESIGNED	DETAILED	QUANTITIES	TRACED	
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.	



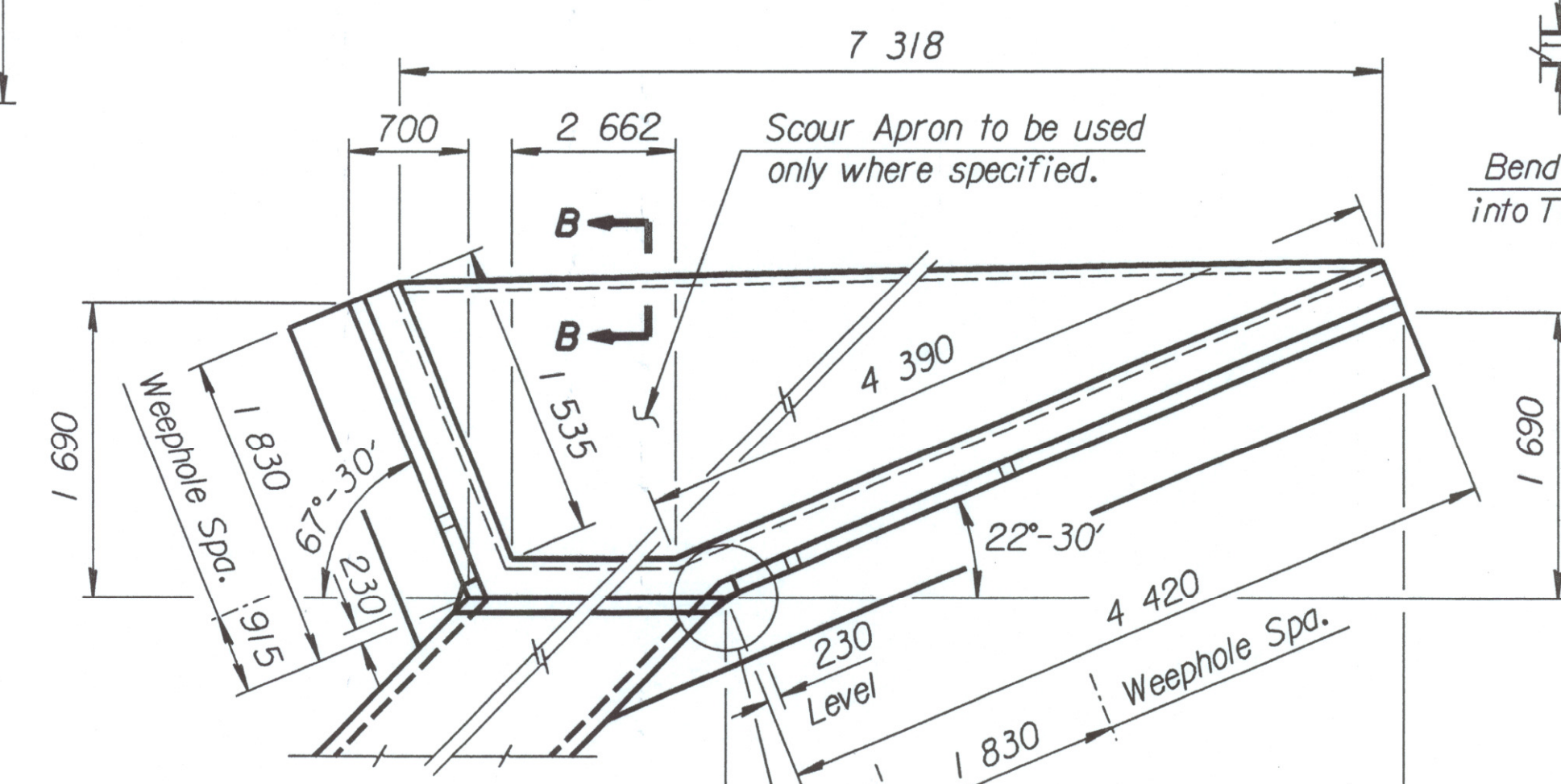
**SECTION A-A**

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

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



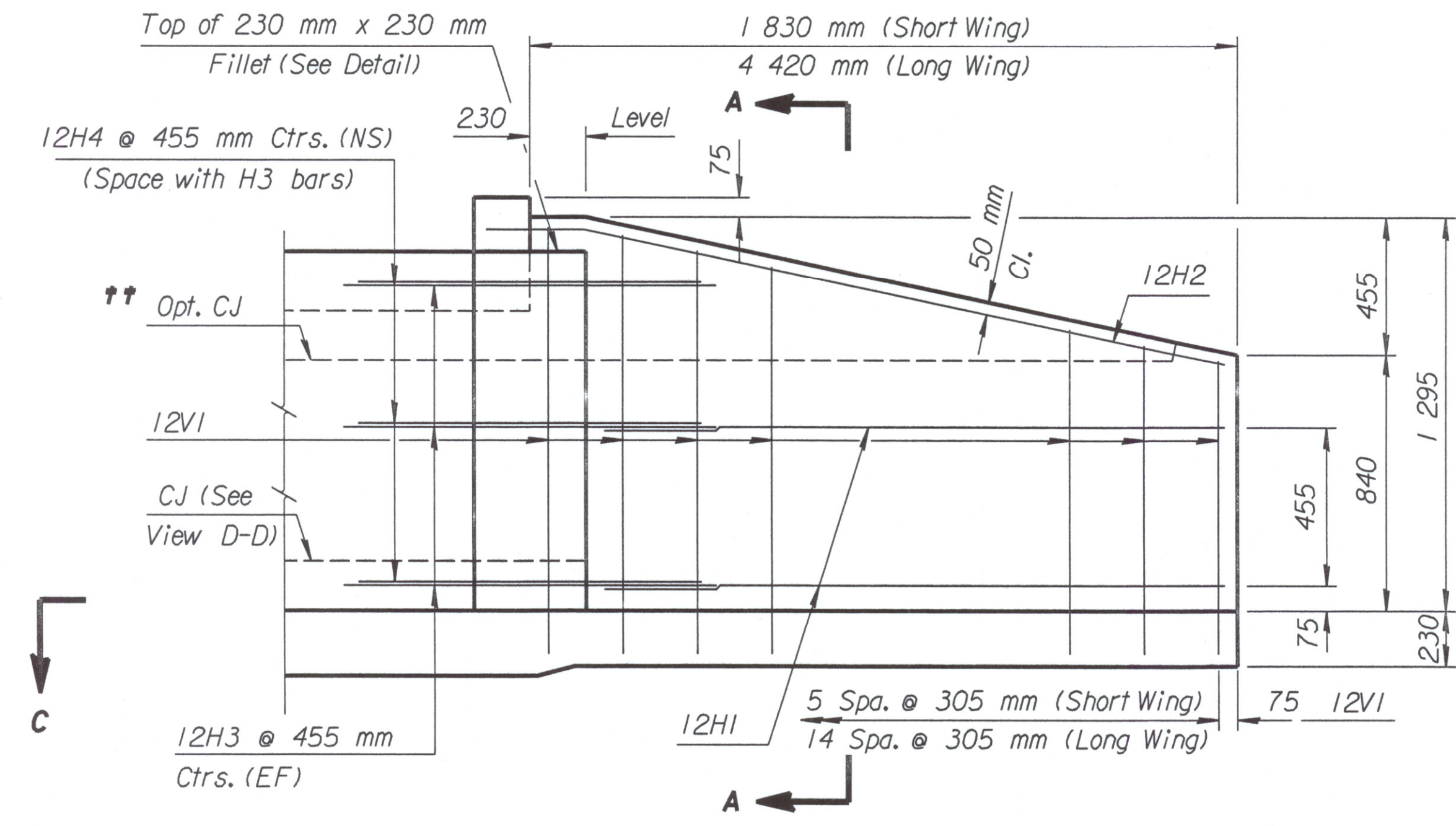
**SECTION E-E**



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

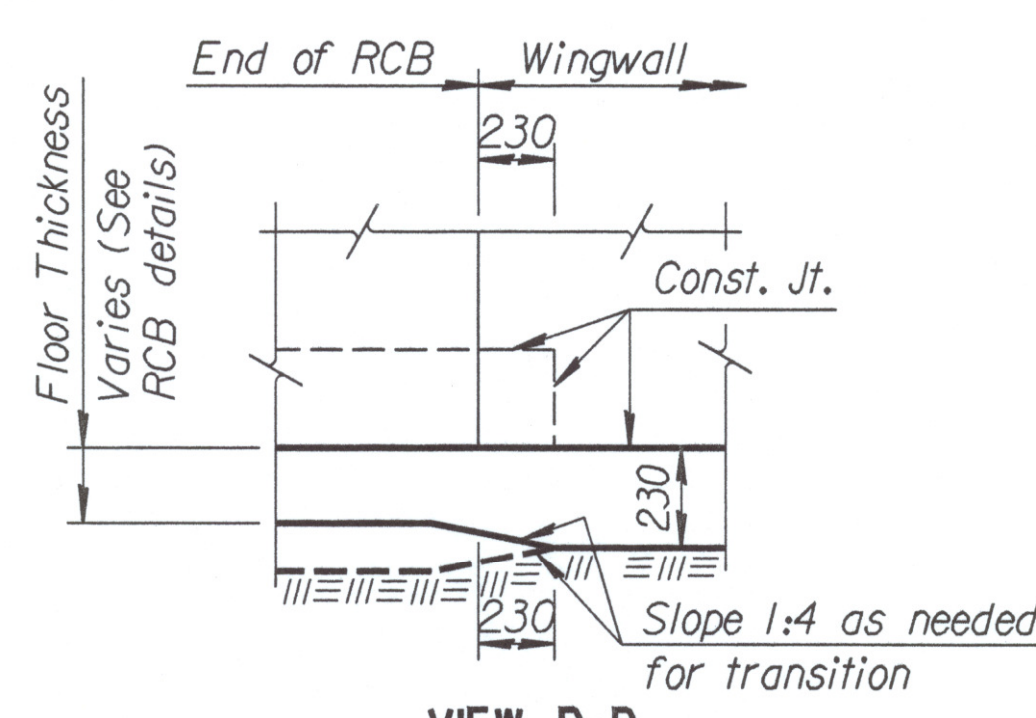
**WING DIMENSIONS FOR 45° SKEWED BOX**

(1:3.5 Embankment Slope)

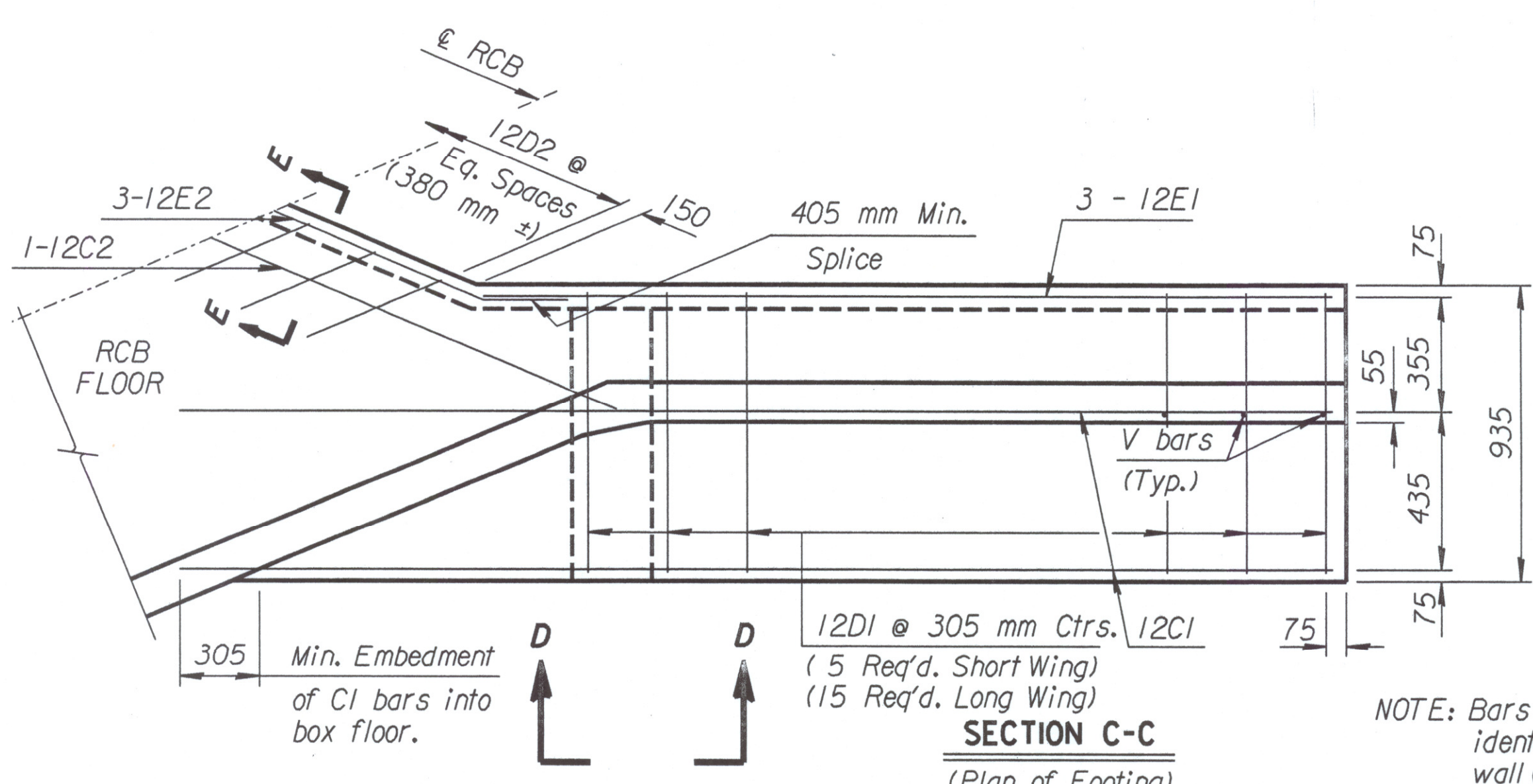


**ELEVATION OF WINGWALL**  
(Backface Shown)

†† See RCB Details for location of construction joint.



**VIEW D-D**



**SECTION C-C**  
(Plan of Footing)

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 wing-wall ('L') or short wing-wall ('S'); ie. 12H2L, 12H2S, etc.

\* See Bending Diagram

45° Skew	Mark	12C1S	12C1L	12D1	12E1S	12E1L	12C2	12D2	12E2	12V1S	12V1L	12H1S	12H1L	12H2S	12H2L	12H3S	12H3L	12H4S	12H4L
		Number	2	2	20*	3	3	1	7*	3*	6	15	2	2	1	1	6*	6*	3
	Length	2 285	5 640	1 500	1 450	4 320	3 070	1 725	3 540	*	*	1 475	4 065	2 030	4 575	1 520	1 520	760	1 220

DATE	BY	CHKD	DATE	BY	CHKD

Plotted By: wll Scale: 1:1 000 12/1997/97362/001/rcb/15407.dgn Last Rev. 10-10-2001