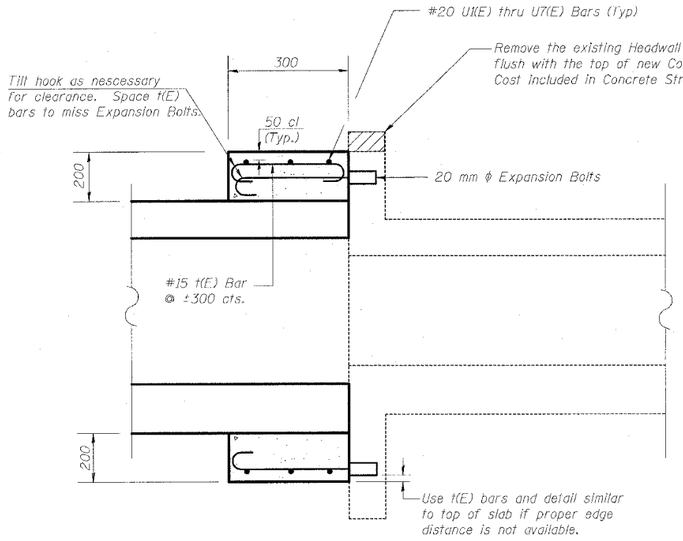
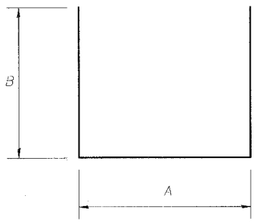
CONTRACT NO.

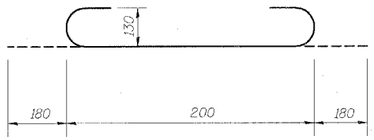
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
781	1YRS, 2ZRS-1	CRAWFORD	378	198
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



LONGITUDINAL SECTION



U1(E) THRU U7(E) BARS



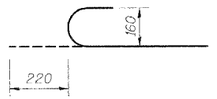
t(E) BAR

DIMENSIONS & BAR LIST

Box Culvert No.	S* (mm)	R* (mm)	Expansion Bolts				U1(E) thru U7(E) Bars				t(E) Bars	
			Top Slab	Bottom Slab	Each Wall	Total	Designation	A*(m)	B*(m)	No. Req'd	Top Slab	v bars
1	1500	1175**	3	3	3	21	U1(E)	1.40	0.94	9	6	6
4	1200	1325	3	3	3	24	U2(E)	1.10	1.01	12	5	
8	3900	2550	8	8	5	52	U3(E)	3.80	1.62	12	14	
10	1200	1050	3	3	2	20	U4(E)	1.10	0.87	12	5	
11	1500	1325**	3	3	3	21	U5(E)	1.40	1.01	9	6	6
15	1200	1175	3	3	3	24	U6(E)	1.10	0.94	12	5	
16	1500	1050	3	3	2	20	U7(E)	1.40	0.87	12	6	
17	1200	1325	3	3	3	24	U2(E)	1.10	1.01	12	5	

* Contractor to verify dimension based on actual culvert size provided by fabricator.

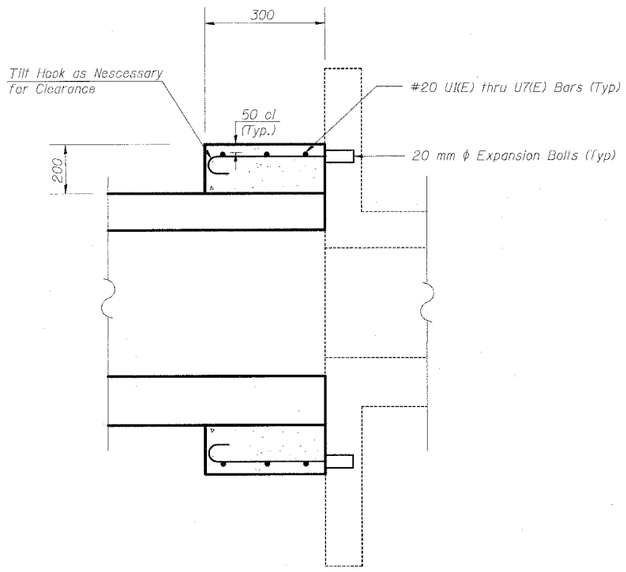
** Modify this dimension to accommodate the steel plate. (See Sheet S18 of 19)



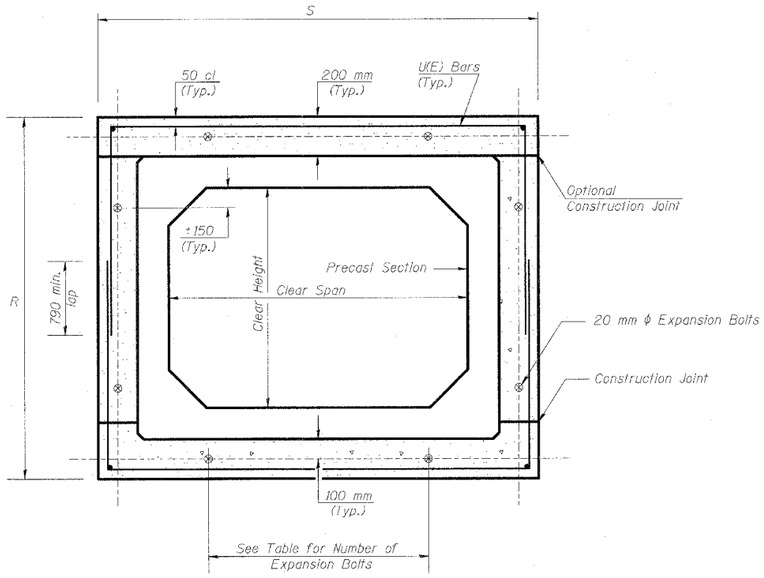
EXPANSION BOLT HOOK

BAR DETAILS

Bar	No.	Size	Length (m)	Shape
t(E)	52	#15	0.56	
U1(E)	9	#20	3.28	
U2(E)	24	#20	3.12	
U3(E)	12	#20	7.04	
U4(E)	12	#20	2.84	
U5(E)	9	#20	3.42	
U6(E)	12	#20	2.98	
U7(E)	12	#20	3.14	
v(E)	12	#20	0.90	

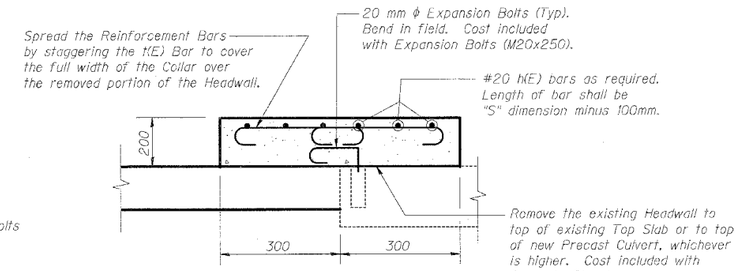


PLAN



CROSS SECTION THRU BARREL

See Sheet S18 of 19 when Steel Plate is required.



ALTERNATE FOR TOP COLLAR

If the Headwall is spalled or has unsound concrete, remove the Headwall flush with Top Slab and extend the top portion of new Collar to cover the area of Headwall. Anchor the top portion of Collar to Top Slab of Existing Culvert.

SHEET S17 OF 19

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

BOX CULVERT EXTENSIONS
CAST-IN-PLACE COLLAR DETAILS

SCALE NONE DRAWN BY MLB

DATE DECEMBER 10, 2006 CHECKED BY MTH

LIN NO. 9803

PLOT DATE = 3/20/2008
FILE NAME = H:\4428\4428.5 (Lin Eng\Design Files 12-19-2006\S-17.dgn