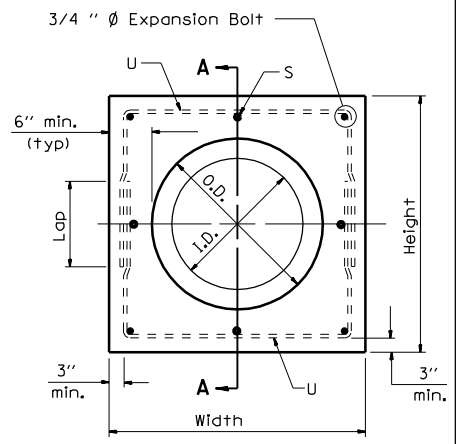
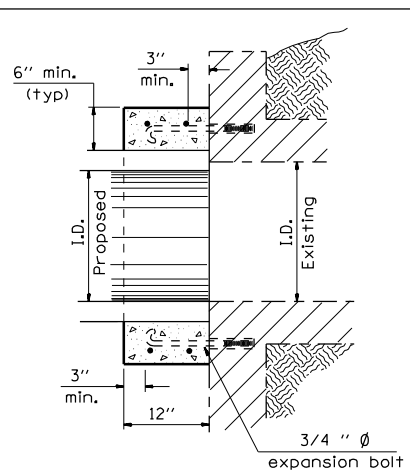


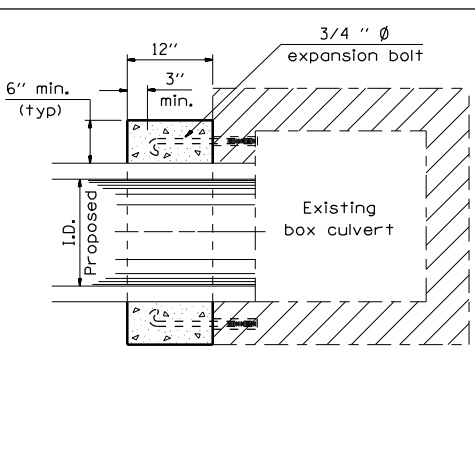
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*	11RS-8	ADAMS	64	52
STA. 2312+30.40		TO STA. 2324+85.00		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
* 7810 & 7825 (IL 96)				



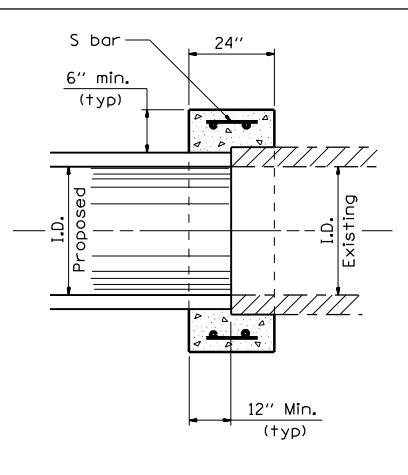
PIPE CULVERT EXTENSION COLLAR



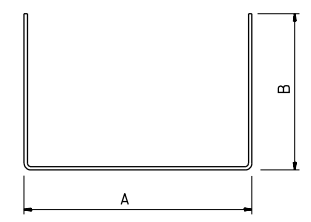
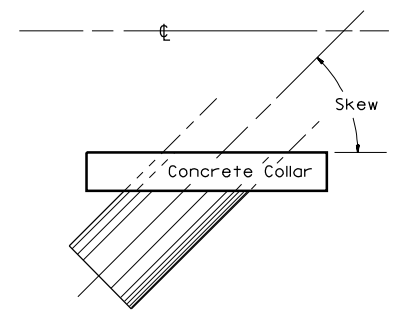
Section Type A  
(Box end extension)



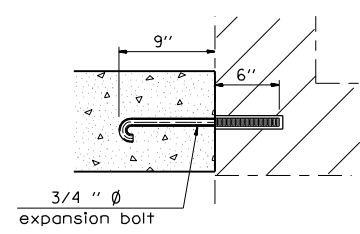
Section Type B  
(Pipe in side extension)



Section Type C  
(Pipe end to pipe end extension  
No expansion bolts required)



#4 U - bar

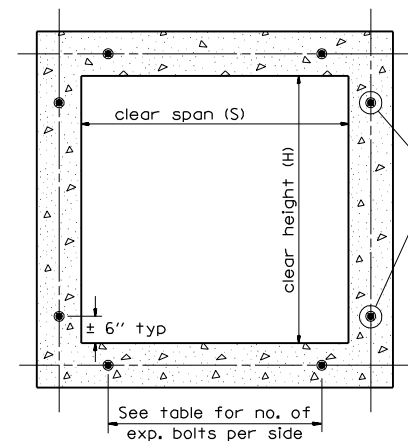


Expansion Bolt Detail

Notes:

- Expansion bolts shall consist of self drilling expansion shields and 3/4" Ø hooked bolts. Hooked bolts shall extend a minimum of 9" into new concrete. Minimum Certified Proof Load - 4,080 lbs.
- Use minimum of 1 (one) expansion bolt at each corner.

BOX CULVERT POURED IN PLACE EXTENSION



Section Thru Barrel

EXPANSION BOLTS REQUIRED FOR CULVERT EXTENSIONS

H or S	No. Expansion Bolts Req'd. Per Side			
	Extension ≤ 15ft		Extension > 15ft	
	No.	Spacing	No.	Spacing
24"	*	*	*	*
30"	2	18"	2	18"
36"	2	24"	2	24"
48"	3	18"	3	18"
60"	4	16"	3	24"
72"	5	15"	4	20"
84"	5	18"	4	24"
96"	6	17"	5	21"
108"	6	19"	5	24"
120"	7	18"	6	21"
132"	8	17"	6	24"
144"	8	19"	7	22"

Note: Number of expansion bolts in table based on non-skewed culverts.  
\* Use minimum 1 (one) expansion bolt in each corner.

Station	Section Type	Skew	Existing Culvert Size	Proposed Culvert I.D.	Proposed Culvert O.D.	Collar		Reinforcement Bars								Expansion Bolts 3/4" Each	Class SI Concrete Collar yd <sup>3</sup>		
						Height	Width	S bar				U bar							
								No.	Size	Length	lb	No.	Size	A	B			Lap	Length
2312+30.4 RT	C	----	24" Dia	24"	(CMP)	3'-6"	3'-6"	8	#4	1'-6"	4	#4	3'-0"	2'-0"	12"	7'-0"	27	---	0.4
2324+85.0 RT	C	19.1595°	2'x2'	24"	30"	4'-0"	4'-0"	8	#4	1'-6"	4	#4	3'-6"	2'-3"	12"	8'-0"	30	---	0.5
Total																	57		0.9

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

**CONCRETE COLLAR AND CULVERT EXTENSION DETAILS**

SCALE: VERT. HORIZ. DATE: JULY 19, 2007

DRAWN BY: RSC  
CHECKED BY: