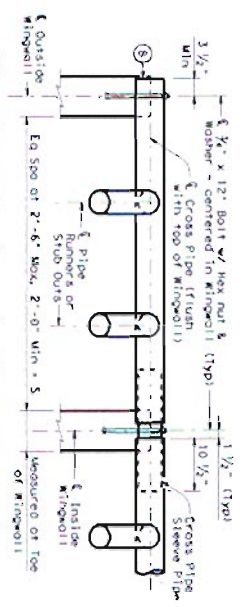


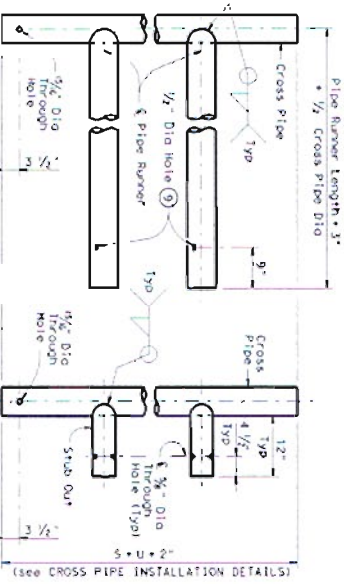


DISCLAIMER:  
The use of this standard is governed by the Texas Engineering Practice Act. No warranty of any kind is made by TSDI for any purpose whatsoever. TSDI shall not be responsible for the consequences of the use or misuse of this standard or for incorrect results or damages resulting from its use.

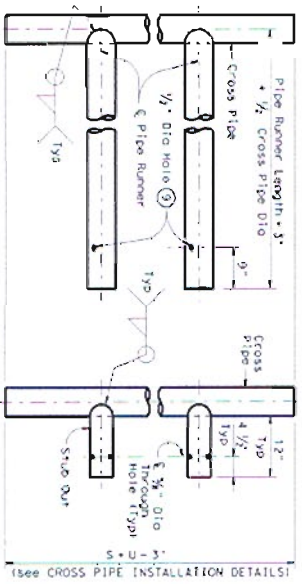


NOTE: At Contractor's option, the Cross Pipe may be made continuous across the WINGWALLS. If such option is selected, the Sleeve Pipe shall be omitted and a 3/4\"/>

**CROSS PIPE INSTALLATION DETAILS**

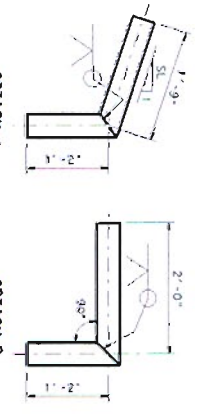


OPTION A1  
FOR USE IN OUTSIDE CULVERT BAY

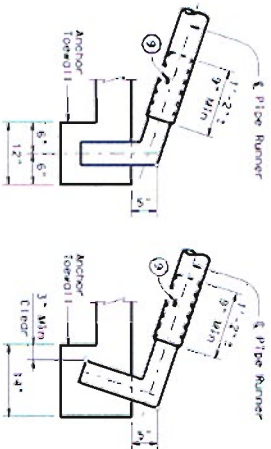


OPTION A2  
FOR USE IN INSIDE CULVERT BAY

**CROSS PIPE AND CONNECTIONS DETAILS**



OPTION A  
BOTTOM ANCHOR PIPE DETAILS



OPTION B2  
BOTTOM ANCHOR TOEWALL DETAILS

**CROSS PIPE SLEEVE PIPE DETAILS**



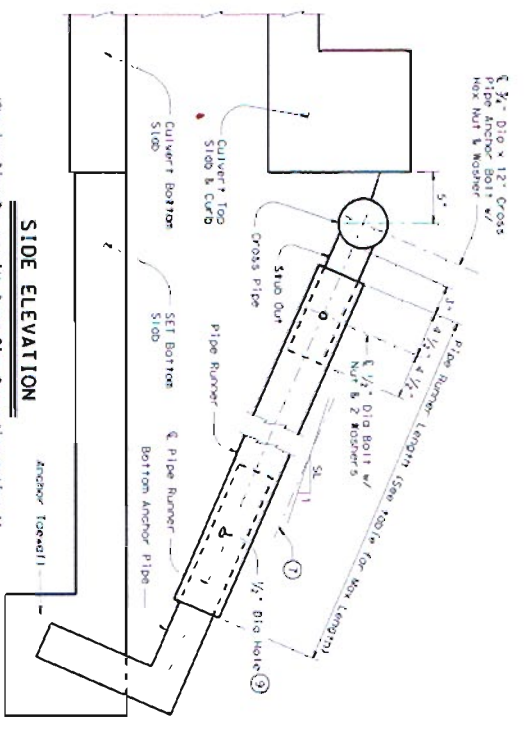
NOTE: The separate Pipe Runner shown is required when Cross Pipe connection Option A1 is used.

**PIPE RUNNER DETAILS**

- ⑥ Cross Pipe shall be the same size as the Pipe Runner. Cross Pipe Stud Out shall be the same size as the Anchor Pipe.
- ⑦ Note that actual slope of Safety Pipe Runner may vary slightly from Side Slope.
- ⑧ Core shall be taken to ensure that Riprap concrete does not flow into the Cross Pipe so as to permit disassembly of the bolted connection to allow clear-out occurs.
- ⑨ After installation, the 1/2" Hole shall be inspected to ensure the Pipe Runner, Safety Pipe Runner & the Bottom Anchor Pipe is adequate.
- ⑩ At Contractor's option, a bent bend to a smooth 5" radius or a manufacturer's elbow (of the same material as the Runner) may be substituted for the mitered and welded joint in the Bottom Anchor Pipe.

**MAXIMUM PIPE RUNNER LENGTHS & REQUIRED PIPE RUNNER AND ANCHOR PIPE SIZES**

Maximum Pipe Runner Length	Required Pipe Runner Size			Required Anchor Pipe Size		
	Pipe Size	I.D.	Length	Pipe Size	I.D.	Length
10'-0"	3" STD	3.500"	3.068'	2" STD	2.315"	2.057'
19'-8"	4" STD	4.500"	4.026'	3" STD	3.500"	3.068'
38'-2"	5" STD	5.563"	5.047'	4" STD	4.500"	4.026'



**SIDE ELEVATION**

**Texas Department of Transportation**  
Bridge Division

**SAFETY END TREATMENT FOR 0° SKEW BOX CULVERTS (MAXIMUM HW = 7'-0") TYPE I - CROSS DRAINAGE**

**SETB-CD**

DATE:	APPROVED:	NO. OF SETB-CD'S:	SCALE:
DATE:	DESIGNED:	NO. OF SETB-CD'S:	SCALE:
DATE:	CHECKED:	NO. OF SETB-CD'S:	SCALE:
DATE:	DESIGNED:	NO. OF SETB-CD'S:	SCALE: