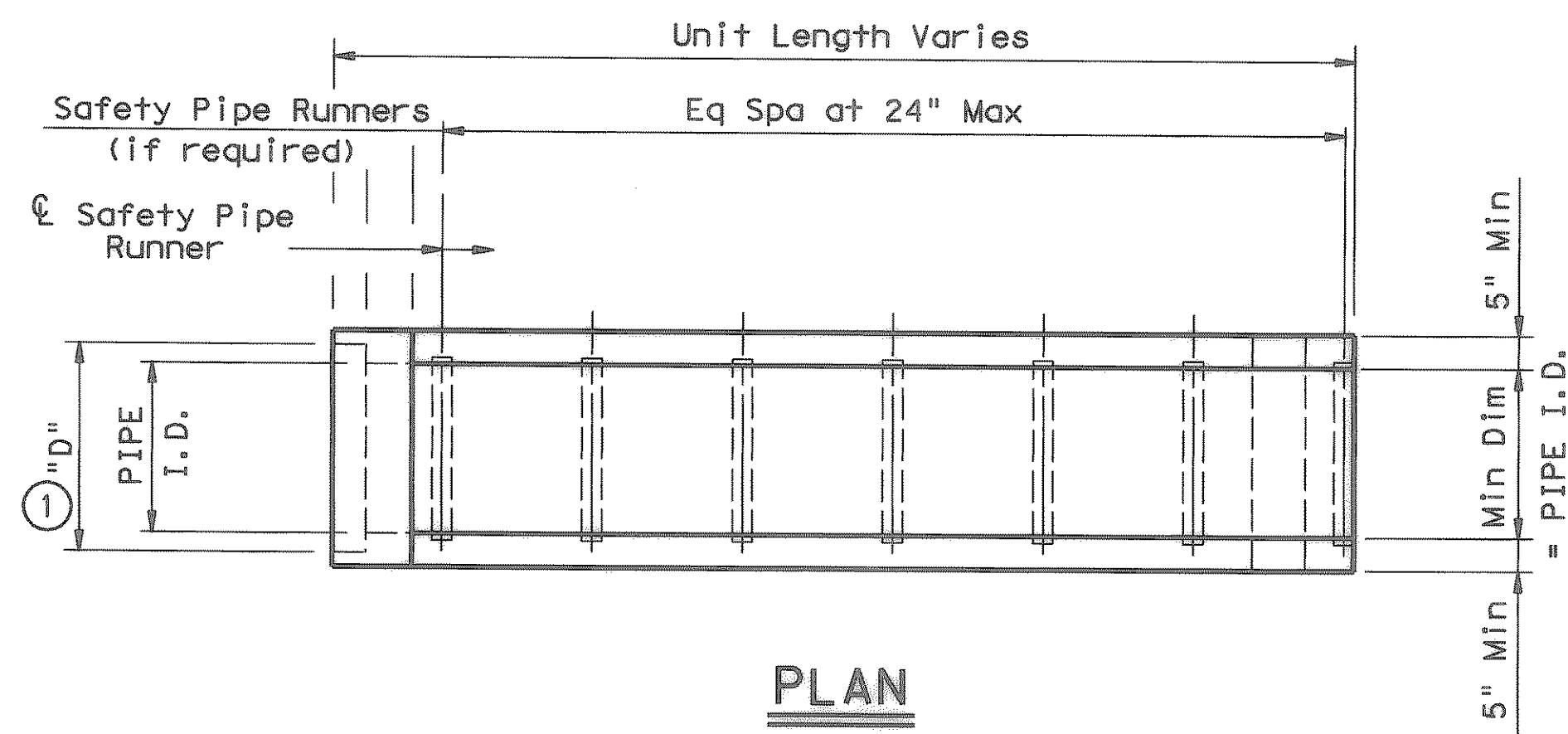
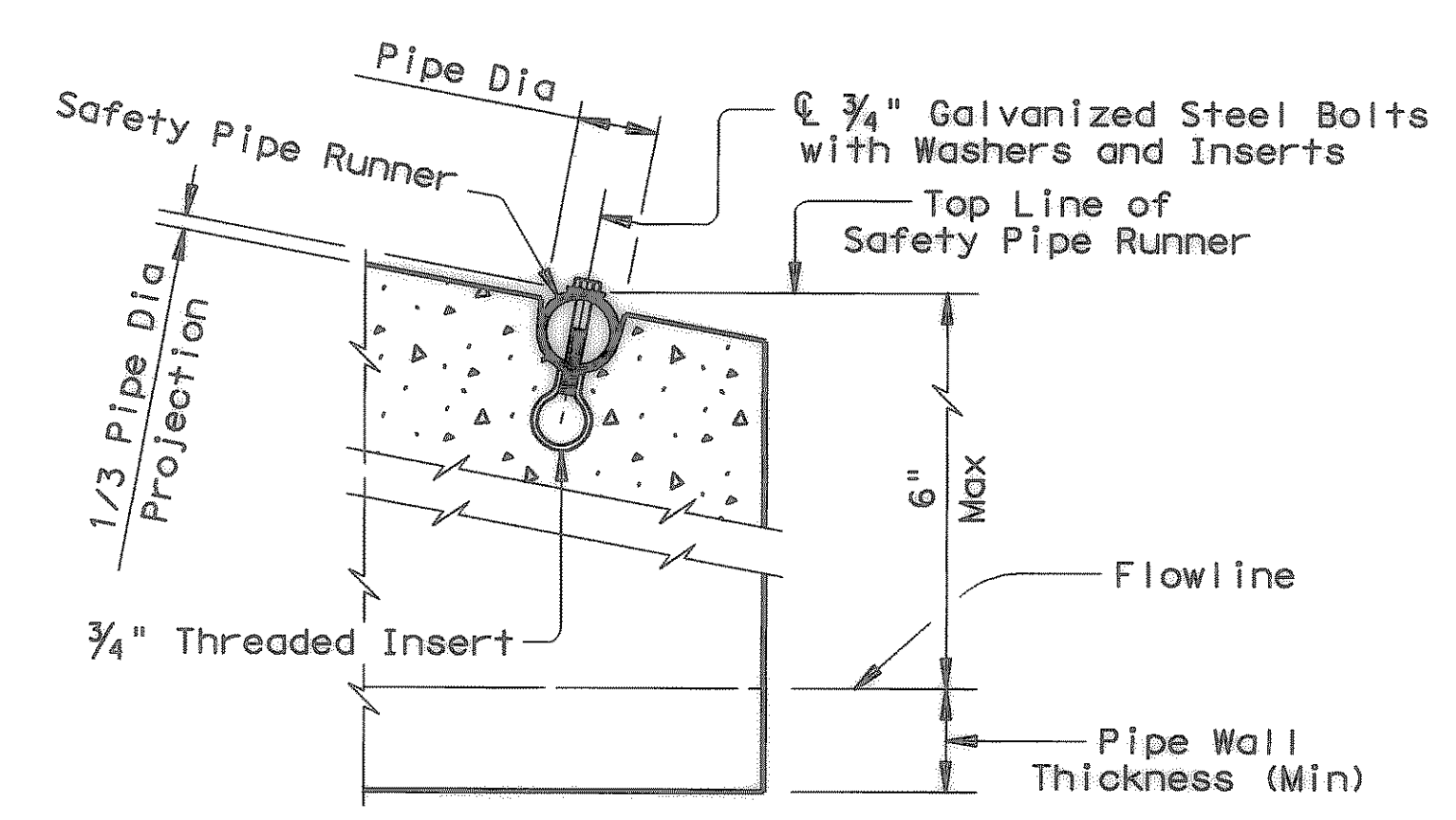


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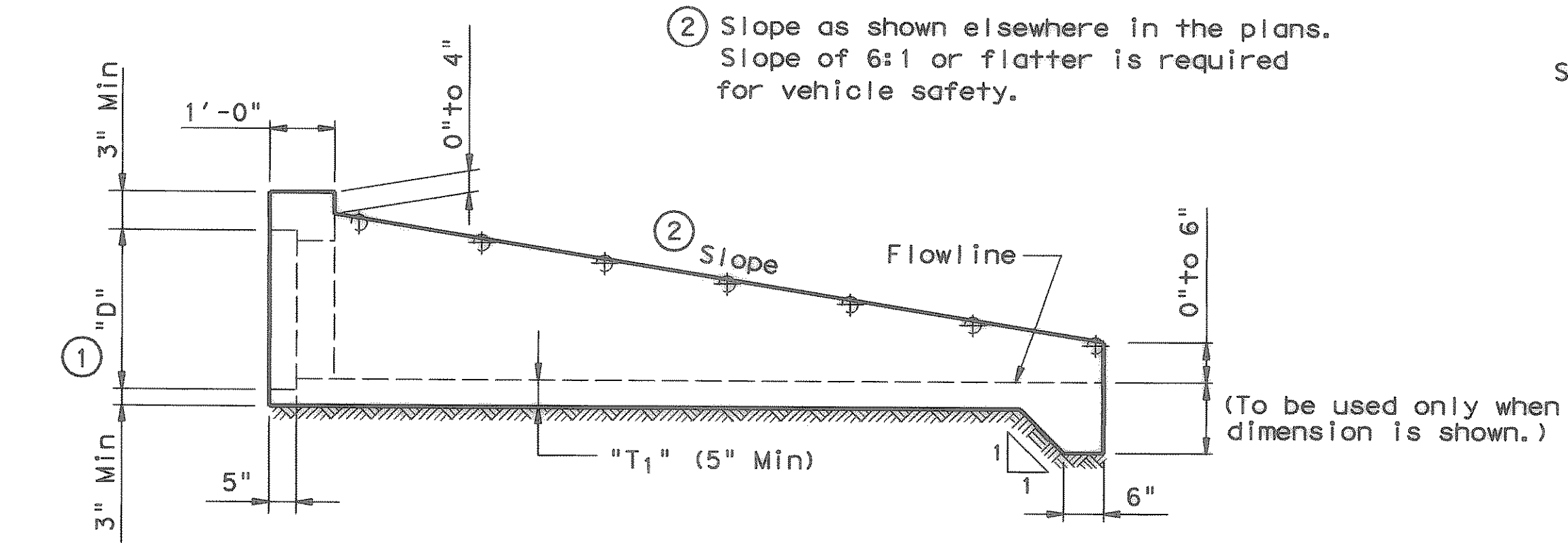
LEVELS DISPLAYED: PATH:



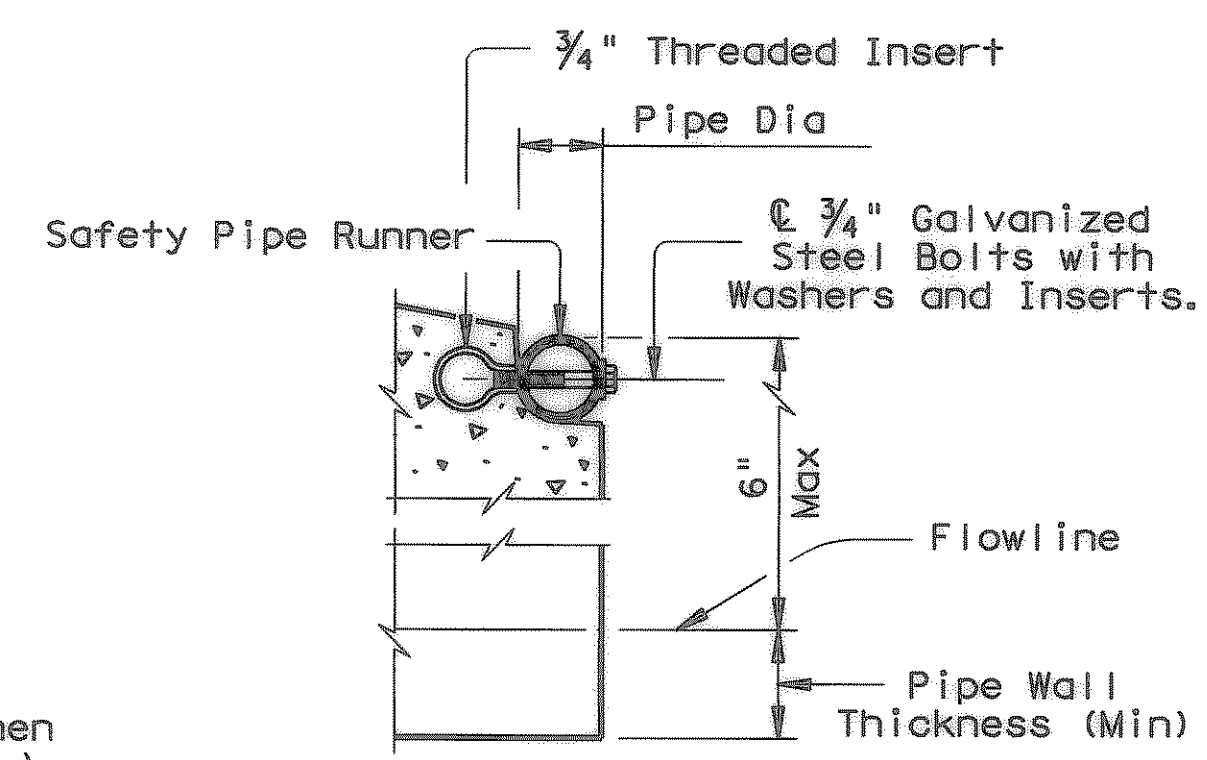
**PLAN**



**END DETAILS FOR INSTALLATION OF SAFETY PIPE RUNNERS**



**LONGITUDINAL ELEVATION**



**INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS**

PIPE I.D.	PIPE WALL "B" THICKNESS	"D" <sup>①</sup>	MAXIMUM SLOPE	MINIMUM LENGTH OF UNIT	PIPE RUNNERS REQUIRED		REQUIRED PIPE RUNNER SIZES		
					SINGLE PIPE	MULTIPLE PIPE	NOMINAL DIA.	O.D.	I.D.
12"	2"	17"	6:1	4'-9"	No	Yes, for >2 pipes	3" STD	3.500"	3.068"
15"	2 1/4"	20 1/2"	6:1	6'-5"	No	Yes, for >2 pipes	3" STD	3.500"	3.068"
18"	2 1/2"	24"	6:1	8'-0"	No	Yes, for >2 pipes	3" STD	3.500"	3.068"
24"	3"	31"	6:1	11'-3"	No	Yes, for >2 pipes	3" STD	3.500"	3.068"
30"	3 1/2"	38 1/2"	6:1	14'-8"	No	Yes	4" STD	4.500"	4.026"
36"	4"	45 1/2"	6:1	17'-11"	Yes	Yes	4" STD	4.500"	4.026"
42"	4 1/2"	52 1/2"	6:1	21'-2"	Yes	Yes	4" STD	4.500"	4.026"

① Dimension "D" is based on ASTM C-76, Class III, Wall "B" thickness. If any other wall thickness is used, dimension "D" must be adjusted accordingly.

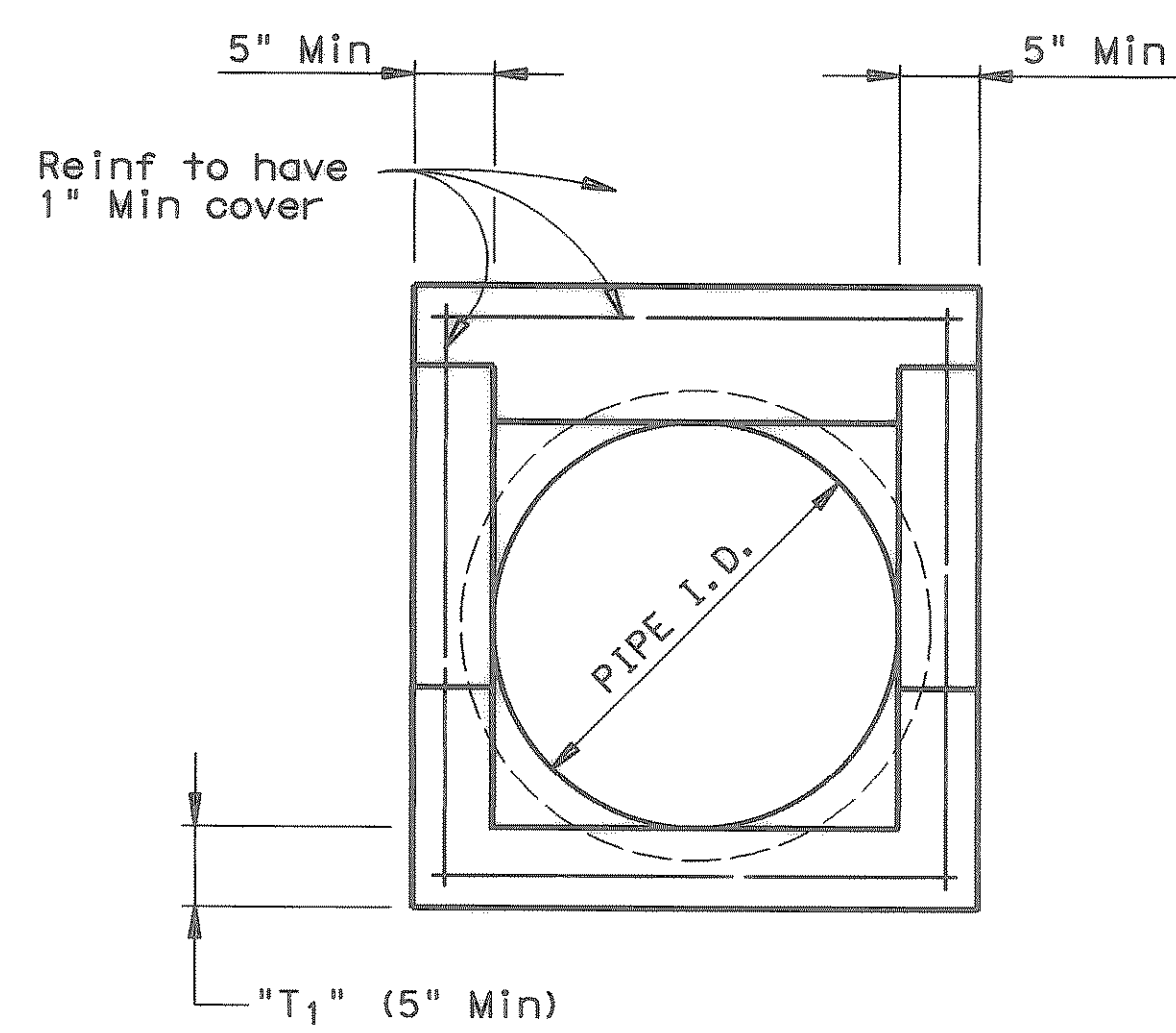
**GENERAL NOTES:**

Precast safety end treatment for reinforced concrete pipe may be used for TYPE II end treatment as specified in Item "Safety End Treatment". Manufacture of this product shall conform to requirements of Item "Safety End Treatment" except as noted below:

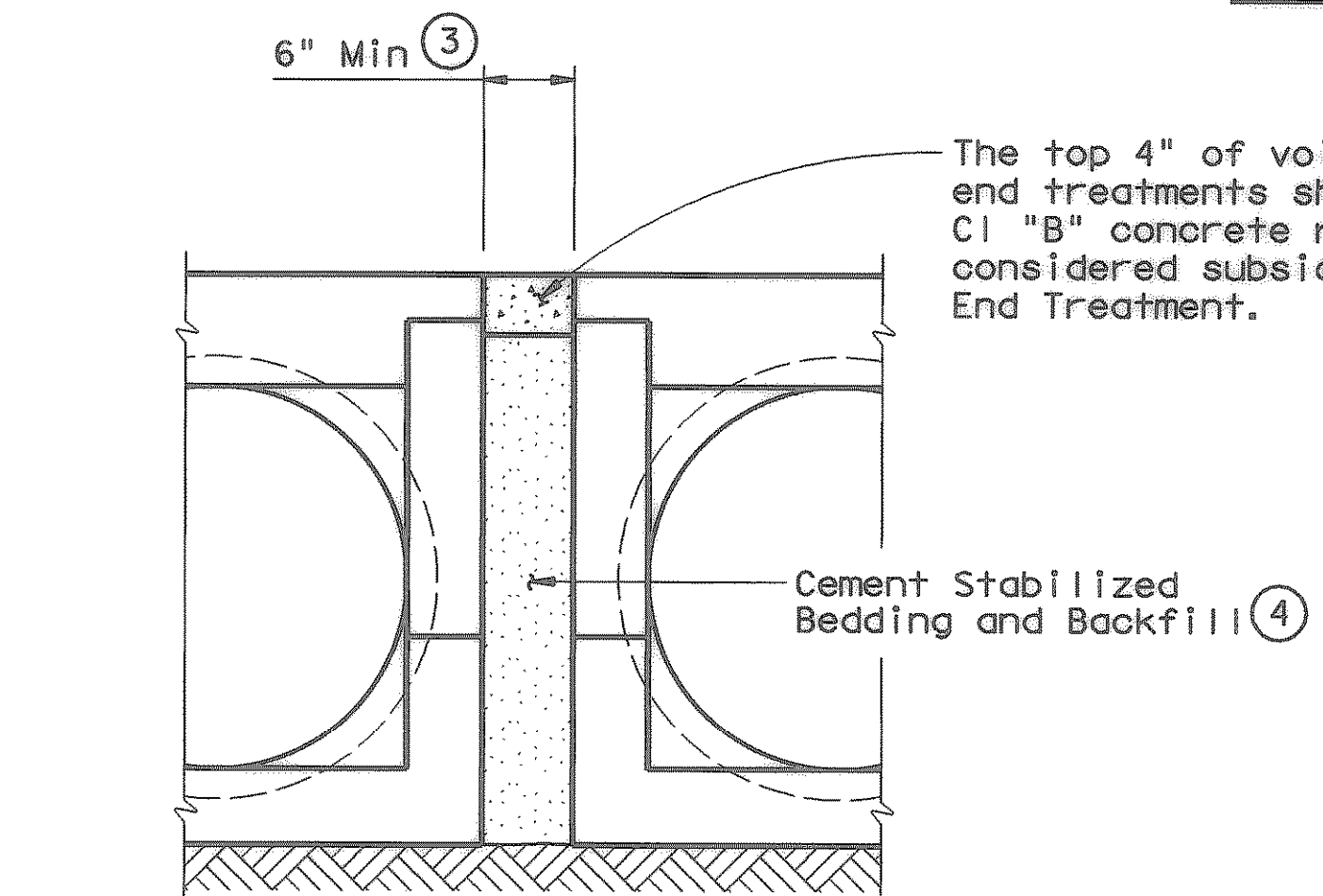
- A. Minimum reinforcing shall be #4 at 6" (Grade 40) or #4 at 9" (Grade 60) each way or 6 x 6 - W12 x W12 or 5 x 5 - W10 x W10 welded wire fabric.
- B. Concrete for precast (steel formed) sections shall be CI. "A"

At the option and expense of the Contractor the next larger size of Safety End Treatment may be furnished, as long as the "D" dimension cast is that of the required size of pipe. Pipe Runners are designed for a traversing load of 10,000 Lbs at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981. Pipe Runners shall conform to the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52. All steel components except reinforcing, shall be galvanized after fabrication. Galvanizing damaged during transport or construction shall be repaired in accordance with the specifications.

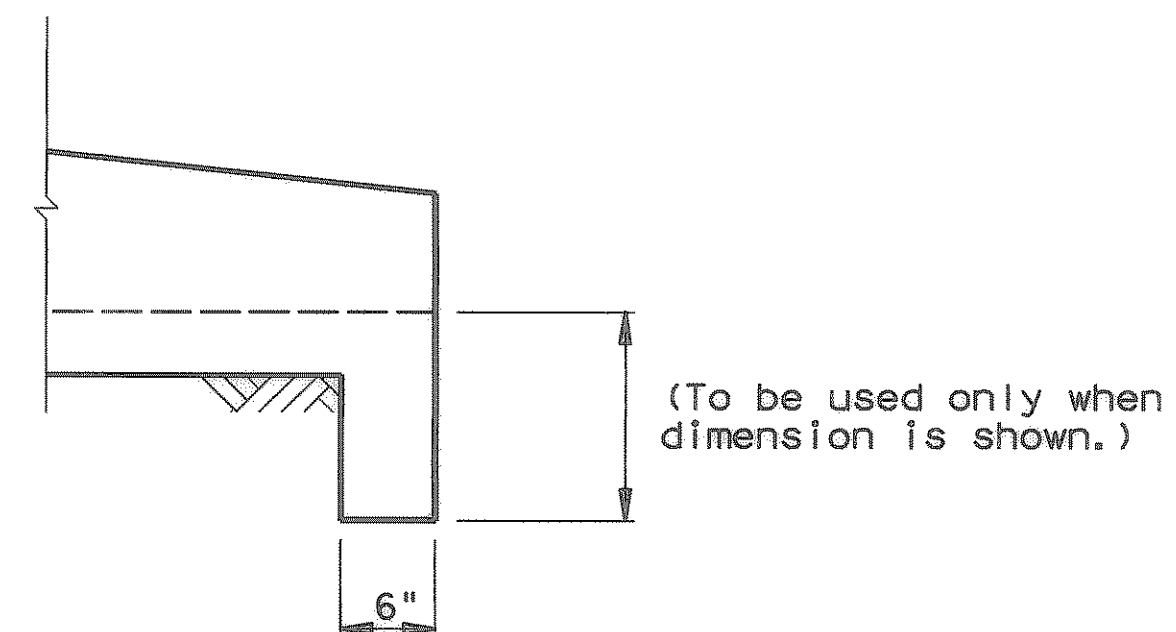
- ③ Clear distance between pipes shall be adjusted to provide for the minimum distance between safety end treatments.
- ④ Cement stabilized bedding and backfill shall be in accordance with the Item, "Excavation and Backfill for Structures". Bedding and backfill shall be considered subsidiary to the Item "Safety End Treatment". When concrete riprap is specified around the safety end treatment backfill shall be as directed by Engineer.



**END ELEVATION**



**MULTIPLE PIPE INSTALLATION**



**OPTIONAL TOEWALL DETAIL**

RECORD DRAWINGS  
 These record drawings have been prepared using information provided by the Construction Contractor and/or Owner. The seal and signature below only signifies that the plans have been revised in accordance with the information provided and does not guarantee that these plans accurately show every detail of the constructed project.  
 Signature: *[Signature]* Date: 4-2-02

Texas Department of Transportation  
 Bridge Division  
**PRECAST SAFETY END TREATMENT**  
 TYPE II ~ PARALLEL DRAINAGE  
**PSET-SP**

FILE: psetspse.dgn	DN: RLW	CK: KLR	DW: JTR	CK: GAF
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