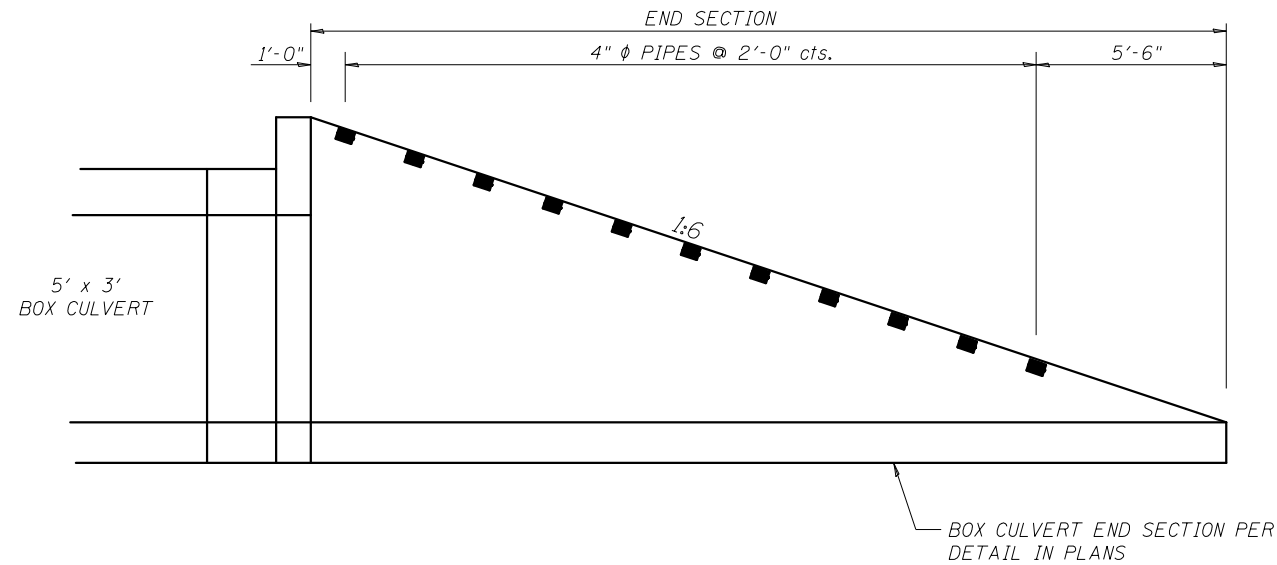


# TRAVERSABLE PIPE GRATE FOR PARALLEL BOX CULVERT END SECTION

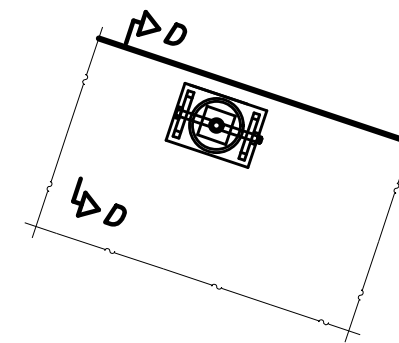
## 5'x3' BOX CULVERT ON A 1:6 SLOPE

### GENERAL NOTES

- Length and number of steel pipes shall be determined by the Contractor in accordance with the spacing limits shown. All steel pipe shall be standard weight (Sch. 40) unless otherwise noted.
- All components of the Steel Pipe Grate System shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable.
- Fabrication of the Steel Pipe Grate System shall conform to the requirements in Section 505 of the Standard Specifications unless noted otherwise.
- Structural steel shapes and plates shall conform to the requirements of Article 1006.04 of the Standard Specifications. Steel pipes shall conform to the requirements of ASTM A 53 (Type E or S), Grade B.
- Anchor rods shall conform to the requirements of ASTM F1554, Grade 105. Anchor rods shall be drilled and epoxy grouted according to the requirements of Section 584 of the Standard Specifications. The chemical adhesive system shall be capable of achieving a minimum proof load of 5000 pounds and an ultimate shear capacity of 8000 pounds per anchor.
- Bolts and thru bolts shall conform to the requirements of Article 1006.08 of the Standard Specifications except threaded rods conforming to the requirements of ASTM F1554, Grade 105 may be used for the thru bolts.
- The minimum edge distance from the center of a hole to the free edge of a structural shape or plate shall be  $1\frac{1}{2}$ " unless noted otherwise.
- Bolts and anchor rods shall be snug tightened by a few impacts of an impact wrench or the full force of a worker using an ordinary spud wrench.
- All cost associated with fabricating, furnishing, and installing the Steel Pipe Grate System including the steel pipes, steel plates, bolts, nuts and washers shall be included in the contract unit price "Foot" for Traversable Pipe Grates.
- This standard shall only be used on concrete end sections not skewed more than +15 degrees from parallel with mainline roadway.
- The minimum distance from the center of a hole to the free edge of a structure shape or plate shall be  $1\frac{1}{2}$ " unless noted otherwise.

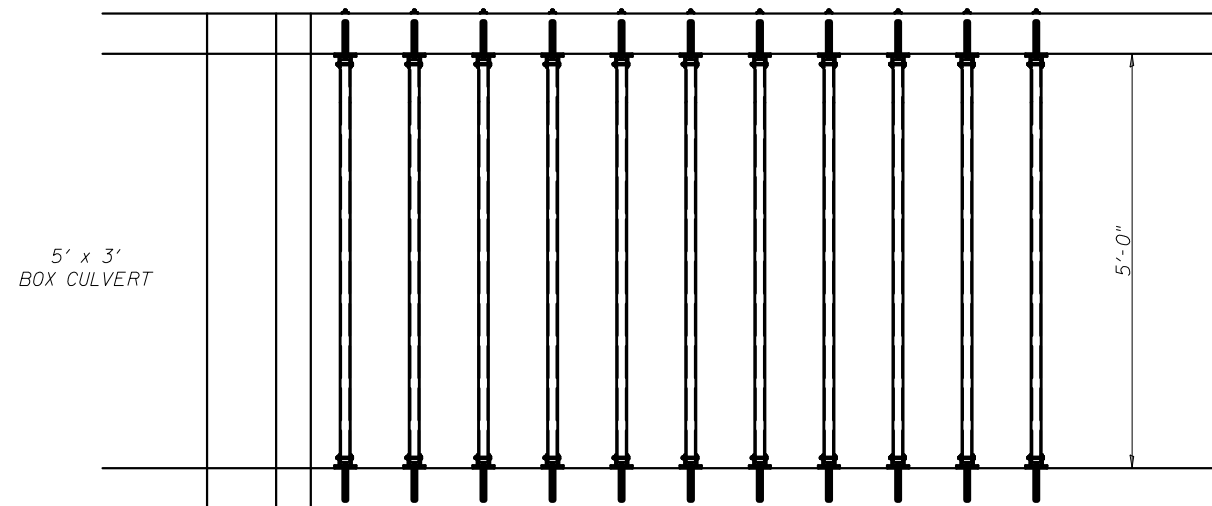


**LONGITUDINAL SECTION**

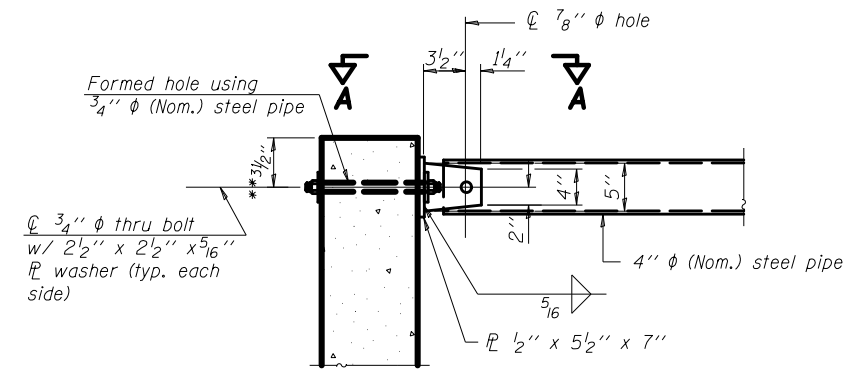


**SECTION C-C**

(See Detail A for dimensions and details not shown.)

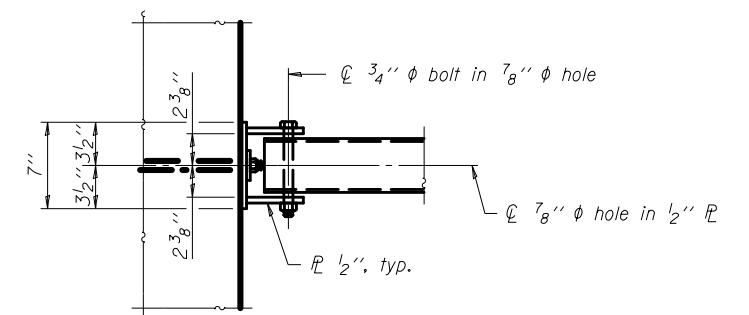


**PLAN VIEW**



**SECTION D-D**

\*\* Measured perpendicular to top of culvert wall. In addition, formed hole shall be located a minimum of 6" measured horizontally from any vertical joints necessary for construction of the culvert end section.



**VIEW A-A**

FILE NAME =	USER NAME = \$USER*	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAVERSABLE PIPE GRATE DETAILS			F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*FILEL\$		DRAWN -	REVISED -		9128	28-R-1	MADISON	64	52			
	PLOT SCALE = \$SCALE*	CHECKED -	REVISED -		CONTRACT NO. 76F11							
	PLOT DATE = \$DATE*	DATE -	REVISED -		ILLINOIS FED. AID PROJECT							
				SCALE: NTS	SHEET 1	OF 2 SHEETS	STA.	TO STA.				