

# CONSTRUCTION NOTES

## GENERAL:

These structures are designed for Cooper E80 Live Load with impact, and cover as shown in Table I.

Table I indicates the minimum required thickness.

## INSTALLATION:

Installation of Smooth Steel Pipe (SSP) shall conform to the current American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering, Chapter 1, Part 4. Culvert lengths are to be based on standard mainline roadbed sections.

## JACKING:

Where indicated, pipe to be bored and jacked into place. Bore hole diameter shall be essentially the same as the outside diameter of the pipe. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe by more than 1 inch, notify the Office of AVP Engineering Design. Boring operations shall not be stopped if such a stoppage would be detrimental to the railroad. A survey crew shall continually monitor the elevation and alignment of the railroad track(s) above during the jacking procedures. If track movement or loss of ballast exceeds 1/4 inch during jacking or boring operations, all work must stop and the Railroad notified. The Railroad may take any action necessary to ensure safe passage of trains. The contractor must immediately submit a corrective plan of action to the Railroad for review and approval. The Railroad must review and approve the proposed repair procedure. The finished repair must be inspected by the Railroad before the track can be placed back into service, and the construction proceed.

## BORED AND JACKED TOLERANCE:

The permitted tolerance of a true line is +/- 2". Adjustment to the line and level should be gradual to ensure that the pipe manufacture's stated angular deflection is not exceeded at any joint.

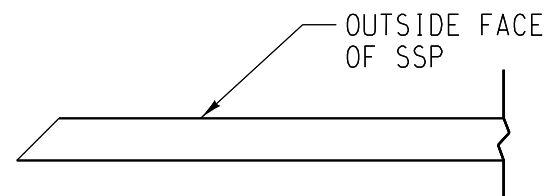
## FIELD WELDING:

Welders must possess valid certification.

## MATERIALS:

Pipe shall be in accordance with ASTM International A139. Pipe to be Grade B and steel shall have a minimum yield strength of 35 ksi. A hydrostatic test is not required.

Smooth steel pipe shall have a welded straight longitudinal seam. The ends of each section of pipe shall be square cut. One end shall be suitably beveled for field welding sections together.

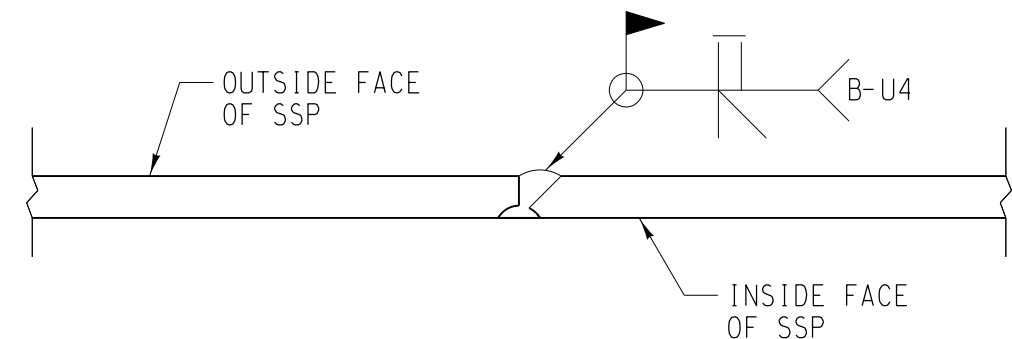


PIPE END BEVEL DETAIL

TABLE I - ROUND SMOOTH STEEL PIPE (SSP)

OUTSIDE PIPE DIAMETER	THICKNESS (IN.)	WEIGHT (LB./FT.)	COVER *		20'-0" LENGTH	
			MIN. (FT.)	MAX. (FT.)	STORE ITEM NUMBERS	WEIGHT (LB.)
12"	3/16	24	1'-6"	18'-0"	-	480
18"	1/4	48	1'-6"	18'-0"	-	960
21"	5/16	69	1'-6"	18'-0"	-	1,380
24"	5/16	80	1'-6"	18'-0"	-	1,600
30"	3/8	119	1'-6"	18'-0"	-	2,380
36"	1/2	190	1'-6"	18'-0"	510-3285	3,800
42"	1/2	222	1'-6"	18'-0"	-	4,440
48"	5/8	317	1'-6"	18'-0"	510-3293	6,340
60"	3/4	475	1'-6"	18'-0"	-	9,500
72"	7/8	666	1'-6"	18'-0"	-	13,320
84"	1	888	1'-6"	18'-0"	-	17,760
96"	1 1/4	1,267	1'-6"	18'-0"	-	25,340

\* COVER TO BE MEASURED FROM BASE OF RAIL TO TOP OF PIPE



PIPE END WELD DETAIL

REVISIONS		
DATE	LTR.	DESCRIPTION
/		
/		
/		
/		
/		
/		

DESIGN BY: CLJ    DRAWN BY: KDM    CHECKED BY: CLJ

APPROVED:

*George J. Meyer* 4/4/08

UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN



**BRIDGE STANDARDS**

**CONSTRUCTION NOTES AND TABLE FOR SMOOTH STEEL PIPE CULVERTS**

FILE OWNER: UPRR    DATE: \_\_\_\_\_  
 PLAN NO.: 680010    SHEET: 1 OF 1