



**NOTES:**

1. MINIMUM SIZE OF CASING SHALL BE 12 IN. LARGER THAN THE NOMINAL PIPE DIAMETER.
2. CASING SHALL BE STEEL WITH A MINIMUM WALL THICKNESS OF:

INSIDE DIAMETER OF STEEL CASING PIPE		MINIMUM CASING WALL THICKNESS
GREATER THAN	UP TO AND INCLUDING	
12 IN.	18 IN.	5/16 IN.
18 IN.	22 IN.	3/8 IN.
22 IN.	28 IN.	7/16 IN.
28 IN.	34 IN.	1/2 IN.
34 IN.	42 IN.	9/16 IN.
42 IN.	48 IN.	5/8 IN.

3. THE MINIMUM THICKNESS FOR ALL CASINGS GREATER THAN 48 IN. DIA. SHALL BE DETERMINED BY THE ENGINEER OF RECORD, AND SUBMITTED FOR REVIEW AND APPROVAL BY THE CITY OF WACO PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION.
4. ALL PIPE IN CASING SHALL BE JOINT RESTRAINED.
5. ALL CASINGS WITH LESS THAN 24 IN. OF COVER SHALL BE PAINTED PER STANDARD SPECIFICATIONS AND AS REQUIRED BY RAILROAD AND SHALL BE COATED WITH TNEMEC PERMA-SHIELD SERIES 46H-413 COAL TAR EPOXY.
6. ALL CARRIER PIPE SHALL BE INSTALLED USING [GARLOCK PIPELINE SEAL & ISOLATOR/SPACER MODEL S8G-2 \(SIZES UP TO 24 IN.\) AND S12G-2 \(LARGER THAN 24 IN.\) REINFORCED RUNNERS](#) OR PRE-APPROVED EQUAL.
7. PLACE ISOLATORS/SPACERS AT NO MORE THAN 2 FT. FROM EACH JOINT AND A MINIMUM SPACING OF 5 FT. OR LESS AS PER MANUFACTURER'S RECOMMENDATION. IN ADDITION, ALSO PLACE AN ISOLATOR/SPACER WITHIN 1 FT. OF EACH END OF THE CASING.

**RAILROAD CROSSING BORE DETAILS**

(NO SCALE)



**ENGINEERING DIVISION**

**DISCLAIMER:** THE USE OF THIS STANDARD IS GOVERNED BY THE "TEXAS ENGINEERING PRACTICE ACT". NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF WACO FOR ANY PURPOSE WHATSOEVER. THE CITY OF WACO ASSUMES NO RESPONSIBILITY FOR THE CONVERSION OF THIS STANDARD TO OTHER FORMATS OR FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

REVISIONS			
NO.	COMMENTS	BY	DATE
1	MODIFY NOTES 1 & 6; MODIFY NOTE IN DETAIL FOR END SEALS; ADD NOTE 7	MZ	04/28/2025
##	DESCRIPTION	FL	MM/DD/YYYY

DATE  
11/15/2024

**G-18**