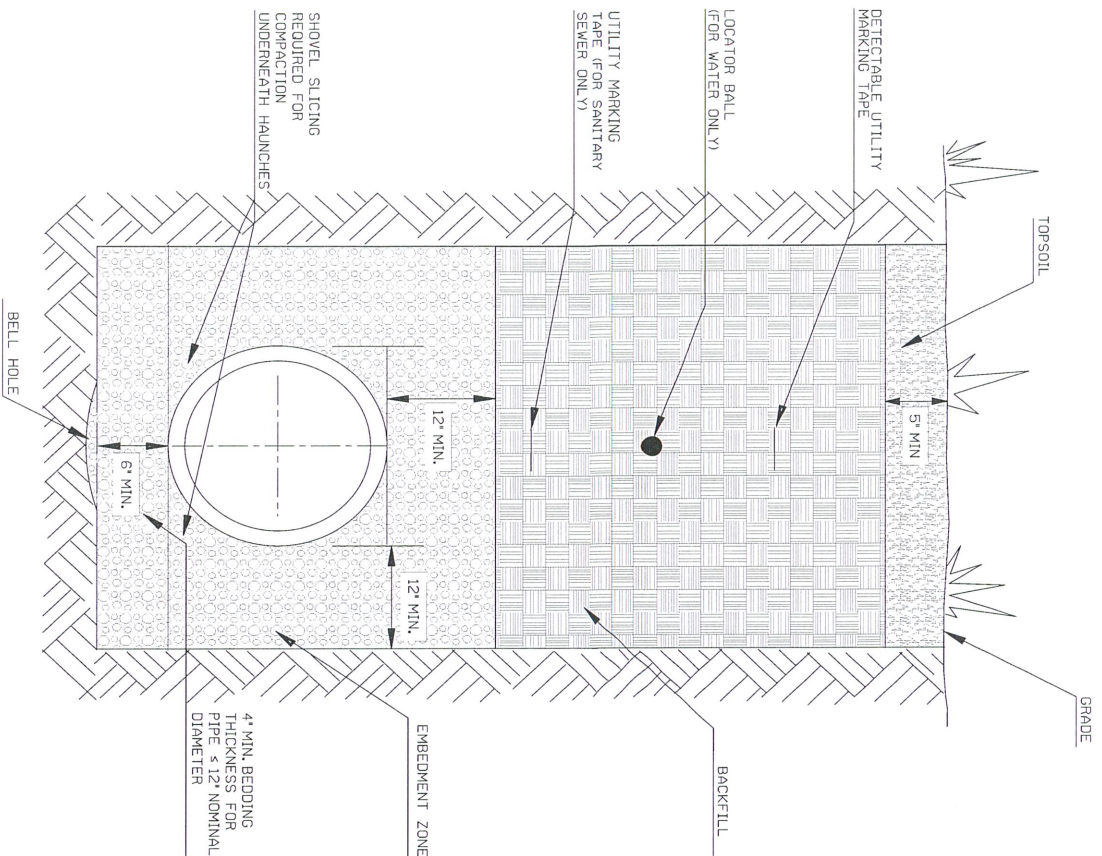




GENERAL NOTES:

1. THIS STANDARD APPLIES TO NOMINAL PIPE SIZES ≤ 24 INCHES AND DEPTHS OF COVER ≤ 10 FEET FROM GRADE TO CROWN OF PIPE. FOR INSTALLATIONS THAT DO NOT MEET THIS CRITERIA, A PROJECT-SPECIFIC EMBEDMENT DESIGN INCLUDED WITH THE CONSTRUCTION DOCUMENTS SHALL TAKE PRECEDENCE.
2. FLEXIBLE PIPE INCLUDES:
 - A. DUCTILE IRON PIPE (DIP) - ANSI/AWWA C151/A21.51
 - B. POLYVINYL CHLORIDE (PVC) PIPE - ANSI/AWWA C900 (OR 14), ASTM 3034 (SDR 26)
 - C. HIGH DENSITY POLYETHYLENE (HDPE) PIPE - ANSI/AWWA C906
 - D. STEEL PIPE - ANSI/AWWA C200
 - E. CORRUGATED POLYPROPYLENE (CPP) PIPE - ASTM F2881, AASHTO M330
 - F. FIBERGLASS REINFORCED POLYMER MORTAR (FRPM) PIPE - ASTM D3262, ASTM D3754
 - G. GLASS-FIBER REINFORCED PLASTIC (GRP) PIPE - ASTM D3262, ASTM D3754
3. EMBEDMENT ZONE MATERIAL SHALL BE COMPACTED 3/4-INCH TO NO.4 CLEAN CRUSHED STONE (ASTM C33 NO. 57 OR NO.67), PLACED IN 12-INCH MAX LOOSE LIFTS AND FREE FROM ORGANIC MATTER, TRASH, AND OTHER DELETERIOUS MATERIALS. SHOVEL SLICING IS REQUIRED FOR COMPACTION UNDERNEATH PIPE HAUNCHES.
4. BACKFILL SHALL BE SUITABLE NATIVE MATERIAL OR IMPORTED MATERIAL APPROVED BY ENGINEER, PLACED IN 12-INCH MAX LOOSE LIFTS COMPACTED TO 90% STANDARD PROCTOR DENSITY AS DETERMINED BY ASTM D698 AND AASHTO T99, AND FREE FROM ORGANIC MATTER, TRASH, AND OTHER DELETERIOUS MATERIALS. ROCKS LARGER THAN 3 INCHES SHALL NOT BE ALLOWED WITHIN 15 INCHES BELOW FINISHED GRADE OR WITHIN 18 INCHES ABOVE THE PIPE CROWN.
5. TOPSOIL TO BE SEGREGATED AND RESTORED TO A 5-INCH MINIMUM PLATE-COMPACTED DEPTH AND FREE OF BRUSH, ROCK, SHALE, AND OTHER DELETERIOUS MATERIALS.
6. SOD TO BE CUT IN AND LEVEL WITH SURROUNDING GRADE.
7. UPPER DETECTABLE UTILITY MARKER TAPE TO BE INSTALLED AT A MAXIMUM 10-INCH DEPTH BELOW GRADE AND IMPRINTED WITH "CAUTION - (SEWER/ WATER) PIPE BELOW". MARKER TAPE COLOR TO BE BLUE FOR WATER, AND GREEN FOR SANITARY SEWER OR STORM SEWER.
8. FOR WATER LINES ONLY: LOCATOR BALLS TO BE INSTALLED PER CITY OF TULSA STANDARD NO. 322.
9. FOR SANITARY SEWER ONLY: LOWER UTILITY MARKING TAPE TO BE INSTALLED 12 INCHES MINIMUM TO 18 INCHES MAXIMUM ABOVE THE CROWN OF PIPE.
10. FOR INSTALLATIONS UNDER PAVEMENT, SEE CITY OF TULSA STANDARD NO. 713.
11. WHERE A WATER TABLE GRADE IS REQUIRED TO PREVENT SOIL MIGRATION AND/OR STABILIZE PIPE FOUNDATION, SEE CITY OF TULSA STANDARD NO. 367.
12. CLEAN CRUSHED STONE SHALL BE COMPACTED TO 80% RELATIVE DENSITY AS DETERMINED BY ASTM D4253 AND ASTM D4254.
13. WHEN SPECIFIED, AGGREGATE BASE SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY AS DETERMINED BY ASTM D698 AND AASHTO T99.

PIPE SIZE (NOM. DIA.)	STANDARD TRENCH WIDTH
$< 24"$	OD + 2'-0"
$\geq 24", < 48"$	OD + 3'-0"
$\geq 48"$	OD + 4'-0"

NOTE: THE STANDARD TRENCH WIDTHS IN THIS TABLE SHALL BE USED TO ESTIMATE EXCAVATION AND BACKFILL QUANTITIES.

TRENCH & BEDDING DETAIL (NON-PAVED AREAS)-FLEXIBLE PIPE		
CITY OF TULSA		
DRAWN BY: D.J.N.	APPROVED	
CHECKED BY: <i>T99</i>		
DATE: AUGUST 2025		
NOT TO SCALE	STANDARD NO. 305	