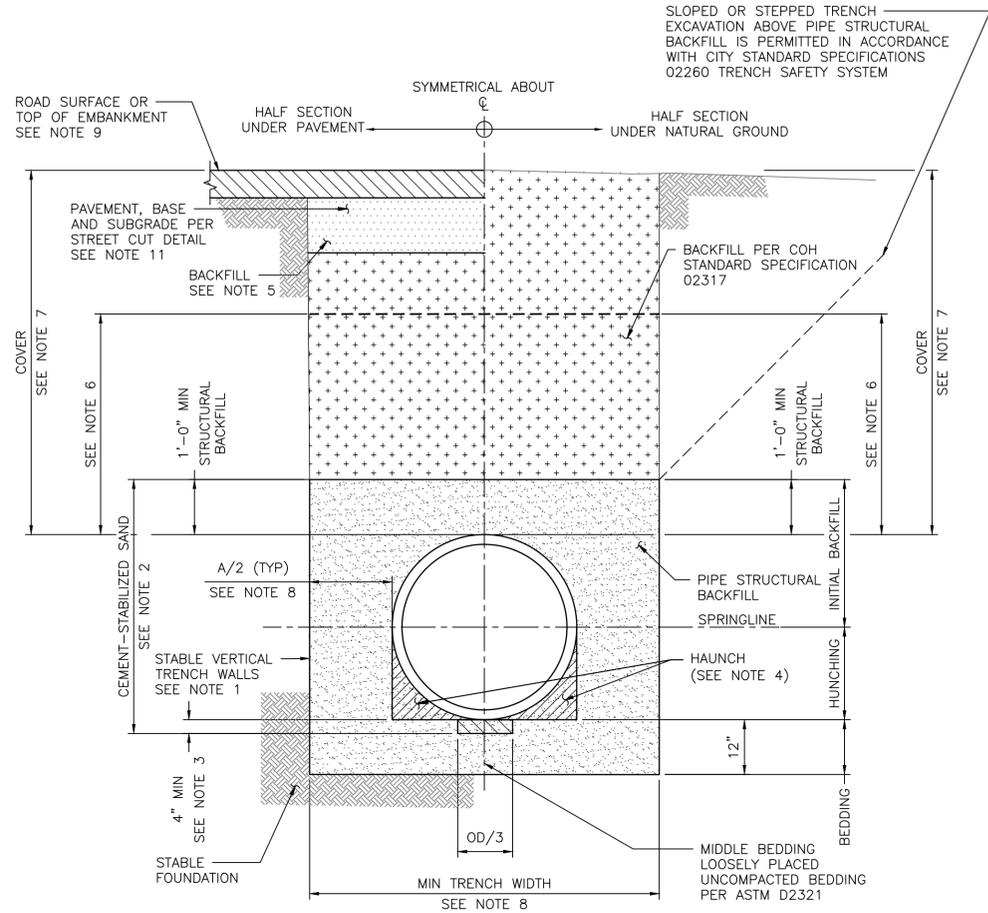
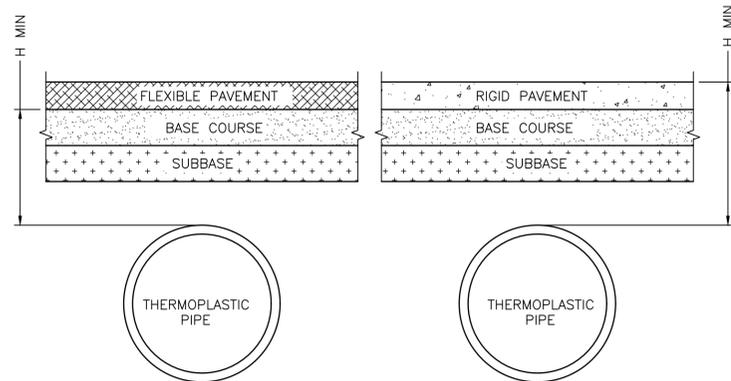


DISCLAIMER: THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THE USE OF THIS STANDARD. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICABILITY, ADEQUACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.



TRENCH AND BEDDING DIAGRAM



MIN COVER ORIENTATION DETAIL

TABLE-1

| LOCATION | MINIMUM COVER (H MIN) BASED ON PIPE DIAMETER (D) | | NOTES |
|---|--|-----------|-------|
| | D ≤ 36-IN | D > 36-IN | |
| UNDER PAVED ROADWAYS (THOROUGHFARES AND MAJOR COLLECTORS) | 24-IN | 24-IN | 1, 2 |
| UNDER PAVED ROADWAYS (MINOR COLLECTORS, LOCAL STREETS) | 18-IN | 24-IN | 1, 2 |
| DRIVEWAYS ON ROADWAYS WITH OPEN DITCHES (COMMERCIAL DRIVEWAYS) | 18-IN | 24-IN | 1, 2 |
| DRIVEWAYS ON ROADWAYS WITH OPEN DITCHES (RESIDENTIAL DRIVEWAYS) | 12-IN | 18-IN | 1, 2 |
| UNDER UNPAVED NON-ROADWAY AREAS WITH POTENTIAL FOR RUTTING | 18-IN | 24-IN | 3, 6 |
| UNDER UNPAVED AREAS | 12-IN | 12-IN | 3, 6 |

TABLE-1 NOTES:

- FOR RIGID PAVEMENT, DEPTH OF COVER IS FROM TOP OF PIPE TO TOP OF PAVEMENT. (SEE MIN COVER ORIENTATION DETAIL).
- FOR FLEXIBLE PAVEMENT, DEPTH OF COVER IS FROM TOP OF PIPE TO BOTTOM OF PAVEMENT. (SEE MIN COVER ORIENTATION DETAIL).
- FOR UNPAVED AREAS, DEPTH OF COVER IS FROM TOP OF PIPE TO GROUND SURFACE.
- WHERE RUTTING DUE TO LIVE LOADING IS A DESIGN CONSIDERATION, THE AMOUNT OF RUTTING SHALL NOT BE PERMITTED TO REDUCE THE COVER LESS THAN 12-INCHES.
- TOPSOIL AND EROSION CONTROL PRODUCTS ARE NOT INCLUDED IN MINIMUM COVER DEPTH.
- WHERE GROUNDWATER AND FULLY SATURATED SOIL CONDITIONS ARE ANTICIPATED, THE MINIMUM COVER SHALL BE 4 FT UNLESS JUSTIFIED BY BUOYANCY CALCULATIONS.
- FOR MINIMUM COVER FOR CONSTRUCTION LOADS SEE NOTE 6 AND COORDINATE WITH THE ENGINEER OF RECORD.

NOTES:

- EXCAVATE TO CREATE VERTICAL TRENCH WALL A MINIMUM HEIGHT EXTENDING 1 FT ABOVE THE TOP OF THE PIPE. THE TRENCH WALLS MUST BE FIRM, STABLE MATERIAL. IF THE TRENCH WALLS SLOUGH OR ARE UNSTABLE, WIDEN OR RESTORE TRENCH AS DIRECTED.
- WHEN PLACING PIPE IN AN EMBANKMENT, LIMIT TRENCH DEPTH TO 2 FT ABOVE PIPE TO ENSURE UNIFORMITY IN COMPACTION ABOVE PIPE, UNLESS OTHERWISE ALLOWED. SEE COH STANDARD SPECIFICATION 02260 TRENCH SAFETY SYSTEM.
- MINIMUM BEDDING THICKNESS IS 4" ON STABLE FOUNDATION. DO NOT COMPACT THE BEDDING DIRECTLY UNDER THE PIPE AS SHOWN.
- ENSURE BACKFILL COMPLETELY FILLS THE VOID BETWEEN THE BEDDING AND THE PIPE IN THE HAUNCH ZONE. COMPACT BACKFILL INTO HAUNCH AND BETWEEN CORRUGATIONS.
- BACKFILL ABOVE STRUCTURAL BACKFILL MAY BE OTHER EMBANKMENT AS SHOWN ON THE PLANS. SEE COH STANDARD SPECIFICATION 02317.
- DO NOT USE HEAVY EARTH-MOVING EQUIPMENT OVER THE STRUCTURE UNTIL A MINIMUM OF 4 FT OF PERMANENT OR TEMPORARY COMPACTED FILL IS PLACED OVER THE TOP OF THE STRUCTURE. UNLESS OTHERWISE SHOWN ON THE PLANS OR PERMITTED IN WRITING. SEE COH STANDARD SPECIFICATION 02317.
- PROVIDE A MINIMUM TOTAL COVER DEPTH TO ACCOMMODATE PAVEMENT STRUCTURE DEPTH AND 1'-0" MINIMUM PIPE STRUCTURAL BACKFILL. PROVIDE A MINIMUM TOTAL DEPTH OF COVER NOT LESS THAN REQUIRED IN TABLE-1.
- MAX FILL DEPTH IS 20 FT UNLESS OTHERWISE SHOWN ON PLANS OR PERMITTED IN WRITING BY THE ENGINEER OF RECORD. MAX FILL DEPTH IS MEASURED FROM THE TOP OF PIPE TO THE PAVEMENT SURFACE/GROUND SURFACE.
- PROVIDE ENOUGH TRENCH WIDTH FOR THE PIPE INSTALLATION TO ENSURE ADEQUATE WORKING ROOM TO PROPERLY AND SAFELY PLACE AND COMPACT MATERIALS PLACED UNDER HAUNCHES OF THE PIPE AND OTHER EMBEDMENT MATERIALS. PROVIDE SPACE BETWEEN THE PIPE AND TRENCH WALL THAT IS GREATER THAN THAT OF THE COMPACTION EQUIPMENT USED.

MIN TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE "A" FOR THE NOMINAL PIPE SIZE:

| NOMINAL PIPE SIZE | "A" |
|-------------------|-----|
| 30" OR LESS | 24" |
| 36" TO 42" | 36" |
| GREATER THAN 42" | 48" |

- MAX TRENCH WIDTH SHALL BE NOT GREATER THAN MIN TRENCH WIDTH PLUS 24", UNLESS OTHERWISE NOTED.
- PERFORM MANDREL TESTING IN THE PRESENCE OF THE PROJECT MANAGER OR INSPECTOR. PRIOR TO PLACING ROADWAY SURFACE. (SEE COH STANDARD SPECIFICATION 02533).
- PROVIDE APPROPRIATE MEASURES (E.G., HEADWALLS, SAFETY END TREATMENTS, RIPRAP, SLOPED PAVING, EARTHEN SLOPE PROTECTION, ETC.) IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- REFER TO THE COH STANDARD DETAILS 02951-01 THROUGH 05 FOR STREET CUT REQUIREMENTS.

GENERAL NOTES:

- THIS DETAIL MAY BE USED FOR DRY STABLE TRENCH CONDITIONS PER COH STANDARD. (SEE COH STANDARD SPECIFICATION FOR REQUIREMENTS IN OTHER CONDITIONS).
- SEE COH STANDARD SPECIFICATIONS 02631 AND 02317 STORM SEWERS, FOR PIPE REQUIREMENTS NOT REPEATED HERE.

| | |
|--|--|
| APPROVED BY:  18EBB22072F84DC | APPROVED BY:  BE403EF0DF454EB |
| CITY ENGINEER | DIRECTOR OF HOUSTON PUBLIC WORKS |
| EFF DATE: MAR-02-2026 | DWG NO: 02317-10G |

CITY OF HOUSTON
HOUSTON PUBLIC WORKS STANDARD

STORM SEWER BEDDING AND BACKFILL FOR THERMOPLASTIC PIPE IN DRY STABLE TRENCH

| | |
|---------------|------------------------------|
| | FOR CITY OF HOUSTON USE ONLY |
| DRAWING SCALE | |
| NOT TO SCALE | |
| | |
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