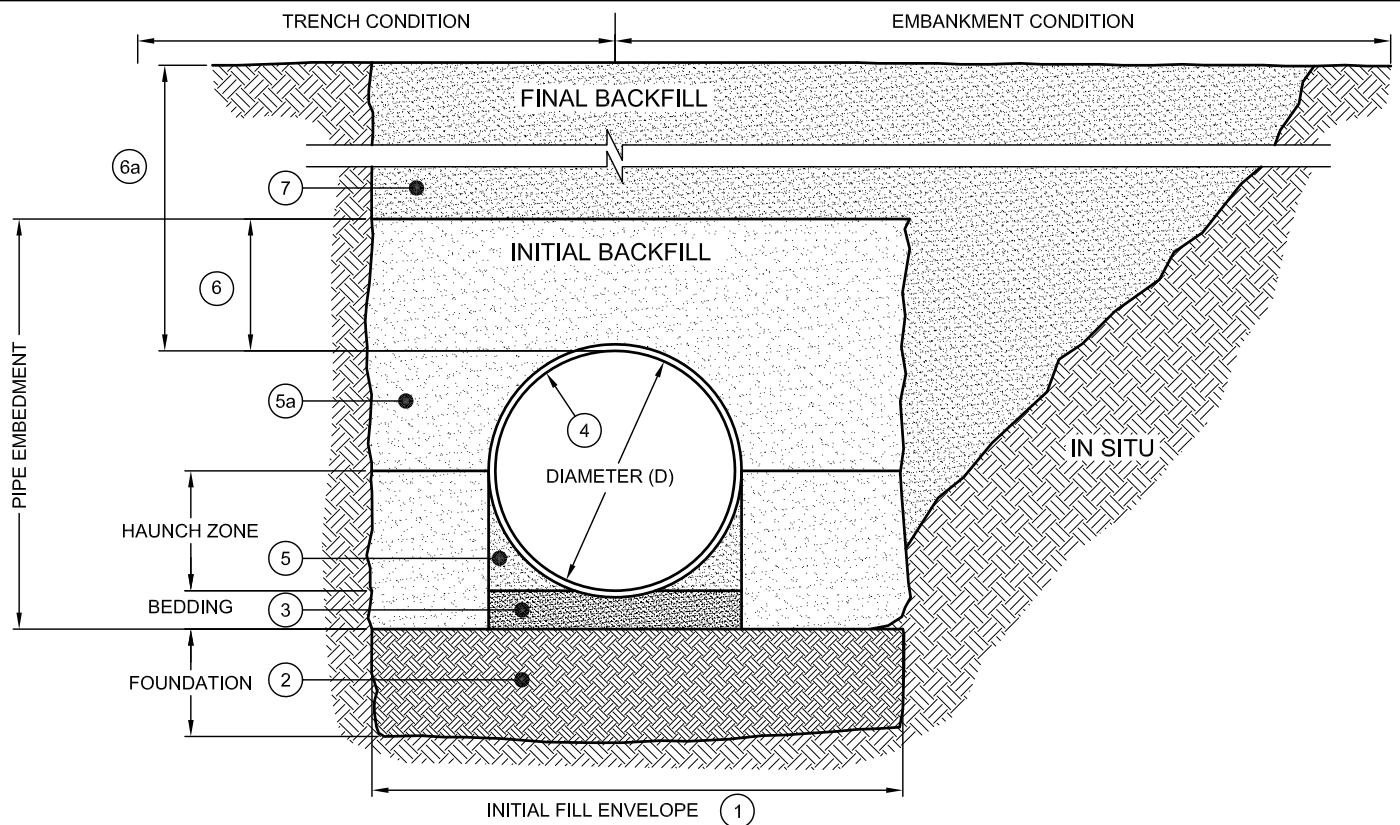




• **BACKFILL REQUIREMENTS FOLLOW THE GUIDELINES OF AREMA PART 4, CULVERTS**

- ① IN-SITU SOIL STRENGTH AND GROUND WATER ELEVATION MUST BE CONSIDERED IN ORDER TO DETERMINE THE INITIAL FILL ENVELOPE WIDTH. CONSULT A QUALIFIED GEOTECHNICAL ENGINEER FOR DESIGN AS REQUIRED (4.14.3). THE MANUFACTURER'S SUGGESTED MINIMUM VALUES ARE:
TRENCH = $1.5D + 12"$
EMBANKMENT = $3.0D$ BUT NOT LESS THAN $D + 4'-0"$.
- ② THE FOUNDATION UNDER THE PIPE AND SIDE BACKFILL SHALL BE ADEQUATE TO SUPPORT THE LOADS ACTING UPON IT (4.14.4).
- ③ BEDDING MATERIAL SHALL BE A RELATIVELY LOOSE MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE, AND SEVERAL INCHES IN THICKNESS (4.14.7).
- ④ CORRUGATED ALUMINUM PIPE (CAP) [CORLIX].
- ⑤ HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR SHOVEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION (FIGURE 1-4-24).
- ⑤a INITIAL BACKFILL FOR PIPE EMBEDMENT TO BE A WELL GRADED GRANULAR MATERIAL (4.14.7.b) COMPACTED TO 90% STANDARD PROCTOR PER ASTM D698. ALL LIFTS SHOULD BE PLACED IN A CONTROLLED MANNER. IT IS RECOMMENDED THAT LIFTS NOT EXCEED A 6"-8" UNCOMPACTED HEIGHT TO PREVENT UNEVEN LOADING (4.14.7.d).
- ⑥ INITIAL BACKFILL ABOVE PIPE MAY INCLUDE BALLAST MATERIAL IF THE MINIMUM COVER HEIGHT IS MET. THE MINIMUM COVER HEIGHT IS MEASURED FROM BASE OF CROSS TIE TO TOP OUTSIDE OF PIPE (SEE TABLES 1-4-33 THROUGH 1-4-38).
- ⑥a TOTAL HEIGHT OF COMPACTED COVER FOR COOPER E-80 LOADS IS MEASURED FROM BASE OF CROSS TIE TO TOP OUTSIDE OF PIPE (TABLE 1-4-24).
- ⑦ FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD (4.14.7.g).

NOTES:

- GEOTEXTILE SHOULD BE CONSIDERED FOR USE TO PREVENT SOIL MIGRATION INTO VARYING SOIL TYPES (4.14.7.b).
- FOR MULTIPLE BARREL INSTALLATIONS THE RECOMMENDED STANDARD SPACING BETWEEN PARALLEL PIPE RUNS SHALL BE PIPE DIA./2 BUT NO LESS THAN 12", OR 36" FOR PIPE DIAMETERS 72" AND LARGER (FIGURE 1-4-25).
- CONTACT YOUR CONTECH REPRESENTATIVE FOR NONSTANDARD SPACING.

251-CAP-STANDARD BACKFILL-ROUND-AREMA

CONTECH
ENGINEERED SOLUTIONS LLC
www.ContechES.com

9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH
PIPE SOLUTIONS

DATE DRAWN: 11/15/15

REV #: --

REV DATE: --

SCALE: N.T.S.

DRAWING TYPE: --

251 - CAP ROUND
STANDARD BACKFILL DETAIL
AREMA