**CLASS 'C' BEDDING & BACKFILL**

- **TRENCH INSTALLATION**: H ≤ 4'
  - Use Porous Backfill Bedding before placing culvert.
  - Natural Ground, ground line at time of pipe installation. When existing ground exceeds 5 feet depth over pipe, backfill and compaction by flooding is not required more than 5 feet above the pipe.
  - For culverts backfilled by flooding, place a cohesive soil plug at the inlet, outlet, and, when necessary, sides, prior to flooding.
  - Extend Porous Backfill through the outlet end soil plug when used for bedding.
  - Quantity calculations are based upon a 1:1 slope and minimum trench dimension. Actual slope of trench may vary based upon Contractor's operations.
  - Where a corrugated metal pipe culvert requiring elongation is to be installed (to counteract deformation caused by backfill), complete elongation using a means approved by the Engineer. Elongation may be developed either as part of shop fabrication or field installation. Install with elongated axis vertical.
  - Sand extends from the lower portion of pipe.

- **TYPICAL SECTION - SOIL PLUG**
  - Elongate D + 0.3 to 0.5 D (Variable).

**CLASS 'B' BEDDING & BACKFILL**

- **TRENCH INSTALLATION**: H > 4'
  - Use Porous Backfill Bedding before placing culvert.
  - Natural Ground, ground line at time of pipe installation. When existing ground exceeds 5 feet depth over pipe, backfill and compaction by flooding is not required more than 5 feet above the pipe.
  - For culverts backfilled by flooding, place a cohesive soil plug at the inlet, outlet, and, when necessary, sides, prior to flooding.
  - Extend Porous Backfill through the outlet end soil plug when used for bedding.
  - Quantity calculations are based upon a 1:1 slope and minimum trench dimension. Actual slope of trench may vary based upon Contractor's operations.
  - Where a corrugated metal pipe culvert requiring elongation is to be installed (to counteract deformation caused by backfill), complete elongation using a means approved by the Engineer. Elongation may be developed either as part of shop fabrication or field installation. Install with elongated axis vertical.
  - Sand extends from the lower portion of pipe.

**Possible Contract Items:**
- Flowable Mortar
- Flooded Backfill
- Excavation, Class 20

**Possible Tabulations:**
- 104-3
- 104-4

**DESIGNER INFORMATION**

Ref: DR-104 for minimum and maximum allowable cover for the particular kind of pipe culvert.

- The backfill adjacent to and above the pipe culvert may be placed in conjunction with normal embankment construction. Thoroughly tamp the embankment within the limits shown.
- Take extra care to ensure complete and satisfactory tamping of backfill material in the area immediately adjacent to the lower portion of pipe.
- Carefully shape excavation below groundline either using a template conforming to actual dimension and shape of the pipe or using other means. If using other means, check with a template conforming to the actual dimension and shape of the pipe.
- For culverts backfilled by flooding, place a cohesive soil plug at the inlet, outlet, and, when necessary, sides, prior to flooding.
- 4-inch Porous Backfill bedding. 2-inch Floodable Backfill bedding may be used under unsealed rigid pipe.
- Extend Porous Backfill through the outlet end soil plug when used for bedding.
- Elongation calculations are based upon a 1:1 slope and minimum trench dimension. Actual slope of trench may vary based upon Contractor's operations.
- Where a corrugated metal pipe culvert requiring elongation is to be installed (to counteract deformation caused by backfill), complete elongation using a means approved by the Engineer. Elongation may be developed either as part of shop fabrication or field installation. Install with elongated axis vertical.