Construction joints may not be shown for simplicity; see standard plans for details.

If any part of the barrel is exposed, the roadway fill shall be warped to provide 12 inches minimum cover. (Roadway Item)

If unsuitable material is encountered, excavation of unsuitable material and furnishing and placing of granular backfill shall be in accordance with Sec 206.

If any part of the barrel is exposed, the roadway fill shall be warped to provide 12 inches minimum cover. (Roadway Item)

1. **Granular Backfill Limits**
   - **Flow** shall be geotechnically designed and placed.
   - **Granular Backfill** shall be compacted to a minimum of 90% maximum dry density.
   - **Top of Backfill** shall be grade-controlled to the elevation of the roadway.

2. **Hydrologic Data**
   - **Discharge area** shall be calculated.
   - **Design Flood Discharge** shall be calculated.
   - **Base Flood Elevation** shall be calculated.
   - **Base Flood Discharge** shall be calculated.
   - **Overtopping Flood Discharge** shall be calculated.
   - **Outlet Velocity** shall be calculated.
   - **Estimated Backwater** shall be calculated.

3. **General Elevation A-A**
   - **Elevations** shall be grade-controlled to the elevation of the roadway.
   - **Roadway Overtopping** shall be calculated.
   - **Overtopping Flood Discharge** shall be calculated.
   - **Estimated Backwater** shall be calculated.
   - **Flood Elevation** shall be calculated.

4. **Fill Heights**
   - **Max {3~4" or (BS + 12")}**
   - **HT + TS - 12"**
   - **2A + B + C + 2E**
   - **3S + 2TX + 2TI**
   - **2V**
   - **HT + TS - 12"**

5. **Estimated Quantities**
   - **Flood Elevation** shall be calculated.
   - **Overtopping Flood Discharge** shall be calculated.
   - **Outlet Velocity** shall be calculated.
   - **Estimated Backwater** shall be calculated.
   - **Flood Elevation** shall be calculated.

6. **General Notes**
   - **Design Specifications**
     - **Reinforcing Steel (Grade 60) fy = 60,000 psi**
     - **Class B-1 Concrete (Box Culvert) f'c = 4,000 psi**
   - **Design Loading**
     - **Vehicular = HL-93 minus lane load, Earth = 120 lb/cf**
     - **Equivalent Fluid Pressure = 30 lb/cf (min.), 60 lb/cf (max.)**
   - **Reinforcement and dimensions for wings and headwalls shall be in accordance with Sec 206.
   - **Precast Concrete Box used**
   - **Cast-in-Place Concrete Box used**
   - **Removal of Bridges**
     - **Pr. Gr. at Tie Sta. =**
     - **Upstream (Elev. 1) =**
   - **Structure to be closed during construction. Traffic to be maintained on slips during construction. See roadway plans for traffic control.**
   - **Removal of Bridges**
   - **Design Specifications**
     - **Interim Revisions**
     - **General Notes**
     - **Construction Notes**
     - **Miscellaneous:**
       - **703.37, 703.80, 703.86, 703.87**
     - **Standard Plans:**
       - **105 West Capitol, Jefferson City, MO 65102**
       - **1-888-ASK-MODOT (1-888-275-6636)**

7. **LOCATION SKETCH**
   - **3( 'x' ) CONCRETE BOX CULVERT**
   - **LOCATION SKETCH**
   - **PLAN OF LAYOUT DIMENSIONS**
   - **GENERAL ELEVATION A-A**
   - **Hydrologic Data**
   - **Fill Heights**
   - **Estimated Quantities**
   - **General Notes**
   - **LOCATION SKETCH**