

SECTION 33 05 29.11**STREAM CROSSING****PART 1: GENERAL****1.01 SCOPE**

- A. Furnish all labor, materials, and equipment necessary to install the stream crossings as shown on the Drawings and described in the Construction Documents.
- B. Install the stream crossings in such a manner as to protect the mains from erosion and to restore, as much as practicable, the stream banks. The bottom of the stream bank shall be restored to the original condition and in compliance with requirements of the regulating agency.
- C. Protect the main from erosion by concrete encasement around the pipe or by a sufficient depth of compacted backfill as shown on the Drawings.

1.02 PROFILES AND TOPOGRAPHY

- A. Contours, topography and profiles of the ground shown on the Drawings are believed to be reasonable approximations and are not guaranteed.
- B. The Subcontractor accepts the construction site with the conditions that existed at the time of bidding.

PART 2: PRODUCTS**2.01 MATERIALS**

- A. Excavation, fill and concrete materials shall be as specified in Specification Sections 31 23 23, 31 23 33, and 03 30 00.

PART 3: EXECUTION**3.01 CONSTRUCTION PROCEDURE**

- A. Comply with construction procedures if provided as a condition of the permitting process. Provide and submit the required documentation, construction plan and procedures as stated in the permit to the AW Project Manager and all Federal, State, and local authorities having jurisdiction over the stream crossing for their review and approval.
- B. All concrete encasement work shall be in accordance with Section - Cast-In-Place Concrete.

3.02 STREAM BANK RESTORATION

- A. Restore the stream banks by backfilling the main trench with mechanically compacted backfill of earth or rip rap, approved by the AW Project Manager and in compliance with regulatory requirements, to the original ground surface (unless new contours are shown on Drawings). The limits of compaction shall extend from the top of bank to top of bank on each side of the crossing as determined by the AW Project Manager.
- B. Immediately following the completion of a stream crossing, place straw bales or silt-fence along the trench excavation on each stream bank from within 2 feet of the edge of water to beyond the limits of the excavated trench width as per straw bale and fabric fence detail. Straw bales or silt-fence shall remain in place until after the stream banks have been fine graded, fertilized and seeded, and the seeding has grown sufficiently to protect the stream banks from erosion.

3.03 STREAM BOTTOM RESTORATION

- A. If the Drawings call for open cut across the stream bottom, backfill the trench within the stream bottom (high water to high water) mechanically compacted earth or rip-rap that has been approved by the AW Project Manager and meeting regulatory requirements. Rip-rap placement must be flush with stream bottoms from upstream to downstream.

END OF SECTION 33 05 29.11