

## SECTION 02400 - DRAINAGE

### PART 1 - GENERAL

#### 1.01 SECTION INCLUDE:

- A. Furnish materials, labor, and equipment necessary to install complete drainage system as indicated on the drawings and as herein specified.

#### 1.02 SUBMITTALS:

- A. Certificates. Before installation, submit to the Engineer affidavits from the manufacturers or suppliers of pipe, pipe coating and fittings proposed to be furnished and installed under this section certifying that such materials delivered to the project conform to the requirements of these specifications.
- B. As-built drawings: Prepare and submit as-built drawings of the installation as specified in the General Conditions.

### PART 2 - PRODUCTS

#### 2.01 MATERIALS:

- A. Asbestos Prohibition: No asbestos containing materials shall be used under this section. The Contractor shall insure that all materials incorporated in the project are asbestos-free unless specifically approved in writing by the Engineer.
- B. Materials for drainage system shall be in accordance with the below-listed sections of the "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE, 2005" and its amendments, STANDARD PLANS FOR STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION dated 2008 and its amendments, and STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION dated September 1984 and its amendments as revised, except as amended in the plans and/or specifications herewith. (Paragraphs concerning Measurements and Payments in the Sections are not applicable to this project.)

- 1. Drain Pipes.....Section 706
- 2. Manholes, Inlets and Catch Basins.....Section 604
- 3. Structural Concrete.....Section 601
- 4. Reinforcing Steel.....Section 709
- 5. Aggregates.....Section 703

## PART 3 - EXECUTION

### 3.01 INSTALLATION:

#### A. Location of Utility Lines.

1. The Contractor shall be responsible for precisely laying out the various storm drain lines shown on the drawings.
2. Prior to the actual work of constructing the drain system, the Contractor shall excavate and expose all utility facilities which will be crossed by the new drain and verify their elevations with respect to the new drain grades. Elevation of inverts of new drain lines to be connected to the existing drain shall be verified at their points of connections under this requirement.
3. Should the actual elevation of any existing utility show a possible discrepancy which may affect the alignment and grade of the new drain, the Contractor shall immediately notify the Engineer of his findings and shall not proceed with the drain construction until authorized to do so by the Engineer.
4. In performing all work the Contractor shall exercise due care and caution necessary to avoid any damage to, and impairment in the use of any existing utility line. Any damage to existing lines resulting from the Contractor's operations shall be immediately repaired and restored as approved by the Engineer at the Contractor's expense.

#### B. Excavation and Backfill: Trench excavation and backfill for the laying and installation of drain pipes, to the required line and grade, shall be governed by the following provisions of the "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE, 2005" and its amendments and STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION dated September, 1984 and its amendments except as amended in the plans and/or specifications herewith. (Paragraphs concerning Measurements and Payments in the Sections are not applicable to this project.)

1. Trench Excavation and backfill for Drainage.....Section 206

#### C. Storm drainage Piping and Drainage Structures: Installation shall be in accordance with the applicable sections noted hereinbefore.

3.02 FINAL INSPECTION:

- A. At the time of final inspection of the work performed under the contract, the utilities covered by this section shall be complete in every respect and operating as designed. All surplus materials of every character resulting from the work of this section shall have been removed. Drainage lines and manholes shall be free from sand, silt or other obstructions. Any defects discovered in the utilities subsequent to this inspection shall be corrected prior to final acceptance.

END OF SECTION