

TECHNICAL SPECIFICATION

ITEM 02630

CONTROL OF EROSION AND EROSION CONTROL STRUCTURES

1.0 GENERAL

1.1 DESCRIPTION

Work to be performed under this item shall pertain to the protection of the bayou and laterals from erosion. The structures and protection shall be installed as shown on the plans or as directed by the Engineer at various locations and shall be so constructed as to protect the side slopes from erosion due to drainage of water from the berms or from lateral ditches entering the bayou. Structures will be constructed of corrugated metal pipe, concrete slope paving and sheet piling.

1.2 MEASUREMENT AND PAYMENT

In all items of work pertaining to erosion control structures, the Contractor shall furnish all materials, supplies, equipment, labor and supervision required to complete the work as indicated and to the satisfaction of the Engineer.

- a. Erosion-Control Structures. Erosion Control Structures shall be paid for at the unit bid price per each structure, complete in place. End sections, band couplers, fabricated bends, and required concrete will be included in the lump sum price.
- b. Concrete Slope Paving. Concrete slope paving will be paid for at the unit bid price per square yard of paving, complete in place, including all reinforcing steel.
- c. Sheet Piling. Sheet piling shall be paid for at the unit price per foot of pile installed.
- d. Other Work. No direct payment will be made for other work required to complete the structures and make the erosion control structures operate as planned.

2.0 PRODUCTS

2.1 MATERIALS

The materials to be used in erosion control structures shall be as follows:

- a. Corrugated Metal Pipe. Corrugated metal pipe for erosion control structures shall be of the size shown on the plans or as directed by the Engineer. The pipe shall be standard galvanized, corrugated metal pipe. The pipe shall be of the gauge specified on the plans or in the specifications.
- b. Band Couplers. Band Couplers shall be of the same diameter as the pipe and two (2) gages lighter material. All band couplers will be two-feet (2") long and shall be galvanized.

- c. Bends. Bends shall be fabricated from straight pipe of the same size and gage as other pipe in the structure. The angle of bend and length of each leg will be as required to fit the field conditions and these dimensions will be determined from field measurements. The bends will be galvanized.
- d. End Sections. End sections shall be standard end sections for corrugated metal pipe as manufactured by "Armco Steel Corporation" or equal. The end sections will be for the same size pipe as in other portions of the structure and shall be galvanized. Toe plates shall be furnished by the Contractor and installed by him and shall be of the depth shown on the plans or specified in the specifications.
- e. Slope Paving. Slope paving shall be four-inch (4") thick Class "A" concrete slope paving or six-inch (6") thick Class "A" concrete slope paving as specified on the plans and in accordance with this specification.
- f. Sheet Piles. Steel sheeting shall be made from steel conforming to ASTM A-569 or ASTM A-526. The sides of each piece of sheeting shall be furnished with an interlock that is continuous for the full length of the sheeting. The interlock shall have an opening of sufficient width to allow free slippage of the adjoining sheet.

The minimum gage shall be seven (7); the minimum section modulus shall be 4.71 in 3/ft.

3.0 EXECUTION

3.1 LOCATIONS

Erosion control structures and erosion control protection shall be provided at all lateral drainage arteries entering the bayou, at all backslope drains entering lateral ditches, and such other points as may be designated by the Engineer or shown on the plans. At locations where laterals enter the bayou and no structure is to be constructed, the Contractor shall perform such operations as may be necessary to dress the slopes of the lateral ditch to a uniform section of nice appearance.

3.2 BERM DRAINAGE AND BACKSLOPE DITCH

The intent of the District is to provide a means of collecting water along the berm of the bayou and providing inlets to the bayou at various points with the aim of preventing erosion of the slopes due to overland flow of water. This will be obtained by the following means:

- a. Erosion Control Structures. Structures for draining the berm into the bayou or lateral ditches will be constructed of corrugated metal pipe and concrete slope paving. The pipe will be of the size shown on the plans or specified in the specifications. The structure will be made up of straight pipe, band couplers, end sections and bends or a combination of these components. Slope paving will be used as shown on the drawings.
- b. Backslope Ditch. Where the right-of-way permits, the Contractor shall construct a "V" bottom drainage ditch along the right-of-way lines as directed. The ditch will be located as directed by the Engineer and will be constructed to the grades established in the field to drain to the drainage structures to be constructed under this contract. The Engineer will be the judge as to sufficiency of right-of-way for construction ditches.

- c. Grading of Berm. The Contractor shall grade the berm along the bayou to cause water that falls on the berm to drain into the backslope ditches. The berm shall be graded as indicated and in locations where the natural ground is low, the Contractor shall place fill material to bring the berm to a suitable grade. This fill material shall come from the channel excavation.

3.3 EXISTING OUTFALL PIPE

Where existing outfall drainage pipe enter the ditch, it will be the responsibility of the Contractor to rehabilitate the structure to make it meet the rectified channel of the stream. This work will take the form of extending the pipe to the new channel, cutting the pipe off to the new side slope or paving around the outlet end of the pipe. Should the pipe require extension, this extension shall be made with corrugated metal pipe of the size and length determined by the Engineer. The new pipe will be joined to the old by use of a concrete collar, as indicated on the plans. Slope paving will be placed as directed by the Engineer.

3.4 EROSION PROTECTION AT LATERAL DITCHES

The Contractor shall dress the side slopes and bottom of lateral ditches that enter the bayou in the reach to be improved under this contract to a uniform section as directed by the Engineer. The Contractor shall place erosion protection at the intersections of these ditches and the bayou as directed by the Engineer. The erosion protection may be a pipe structure, slope paving or a combination of the two.

3.5 RESPONSIBILITY OF THE CONTRACTOR FOR EROSION

The Contractor shall install erosion control works at the earliest possible time during construction along a section of the bayou. Erosion protection shall be provided at lateral ditches entering the bayou as soon as rough excavation passes the lateral. The Contractor shall dress the ditch and construct the erosion control works before moving from the location. If the Contractor fails to construct an erosion control structure after having been directed to do so by the Engineer, this shall be cause for stopping construction on all parts of the project if, in the opinion of the Engineer, the conditions warrant such action.

It shall be the responsibility of the Contractor to protect the slope of the bayou and lateral ditches entering the bayou from erosion during the course of this contract. In the event washouts of the side slopes and erosion damage should occur, the Contractor shall repair the damage to slopes and remove silt from channel at his expense. The damage shall be repaired in a manner satisfactory to the Engineer at no cost to the Owner.

3.6 INSTALLATION OF EROSION PROTECTION

The Contractor shall perform all necessary operations required to install erosion controls structures, such as excavation, grading and backfill.

The backfill around the structures shall be placed in layers and mechanically tamped. Where necessary, additional fill material shall be provided by the Contractor to backfill around structures to the grade of the surrounding ground. There being sufficient material in the channel excavation to make these fills, the Contractor will provide this fill at no additional cost to the Owner. Material shall be hauled to the structure sites if required.