

San Antonio Water System Standard Specifications for Construction

ITEM NO. 858

CONCRETE ENCASEMENT, CRADLES, SADDLES AND COLLARS

858.1 DESCRIPTION: This item shall govern the placement of concrete encasements, cradles, saddles, collars on either existing or proposed water/sewer mains, when specified in the contract documents, or as directed by the Engineer or Inspector.

858.2 REFERENCE STANDARDS: Reference standards cited in this Specification Item No. 858 refer to the current reference standard published at the time of the latest revision date logged at the end of this Specification Item No. 858, unless a date is specifically cited.

1. San Antonio Water System (SAWS):
 - a. Specifications for Water and Sanitary Sewer Construction
 - b. SAWS Materials Specifications
2. City Of San Antonio (COSA) Standard Specifications for Construction
3. Texas Commission of Environmental Quality (TCEQ)
 - a. Chapter 217 Design Criteria for Domestic Wastewater Systems.
4. American Society for Testing and Materials (ASTM)
 - a. ASTM C 138. Standard Test Method for Unit Weight, Yield and Air Content (Gravimetric) of Concrete.
 - b. ASTM C 144. Standard Specification for Aggregate for Masonry Mortar.
 - c. ASTM C 150. Standard Specification for Portland Cement.
 - d. ASTM C 494. Standard Specification for Chemical Admixture for Concrete.
 - e. ASTM C 618. Standard Specification for Coal Fly Ash and Raw or Calcinated Natural Pozzolan for use as Mineral Admixture in Portland Cement Concrete.
 - f. ASTM C 869. Standard Specification for Foaming Agents Used in Making Preformed Foam for Cellular Concrete.
 - g. ASTM C 937. Standard Specification for Grout Fluidifier for Pre-placed Aggregate Concrete.
 - h. ASTM C 942. Standard Test Method for Compressive Strength of Grout for Pre-placed Aggregate Concrete into Laboratory.
 - i. ASTM C 1017. Standard Specification for Chemical Admixture for Use in Producing Flowing Concrete.

858.3 MATERIALS: All concrete shall conform to the provisions of Item No. 300, "Concrete (Class B)," or as noted otherwise in the contract documents.

858.4 CONSTRUCTION:

1. Concrete Encasement: When concrete encasement is shown in the contract documents, or when directed by SAWS Engineer or Inspector, the trench shall be excavated and fine graded to a depth conforming to details and sections shown therein, or as per Standard Drawings DD-858 Series.
2. The main shall be supported by precast concrete blocks of the same strength as the concrete for encasement and securely tied down to prevent floatation.

San Antonio Water System Standard Specifications for Construction

3. Encasement shall then be placed to a depth and width conforming to the details and sections shown in the contract documents or per the referenced standard drawings.
4. Concrete Cradles: When concrete cradles are shown in the contract documents or when called for by the Engineer or Inspector, the trench shall be prepared and the main supported in the same manner as described in this Specification, and shall be constructed in accordance with details and sections shown in the contract documents. Straps/Tie Downs shall be a minimum of No. 4 diameter rebar.
5. Concrete Saddles: When shown in the contract documents or when directed by the Engineer or Inspector, the main to receive concrete saddles shall be backfilled in accordance with Specification Item 804, "Excavation, Trenching and Backfill" to the spring line and concrete placed for a depth and width conforming with details and sections shown in the contract documents.
6. Concrete Collars: When shown in the contract documents or when directed by the Engineer or Inspector, concrete collars shall be constructed in accordance with details and sections shown in the contract documents.

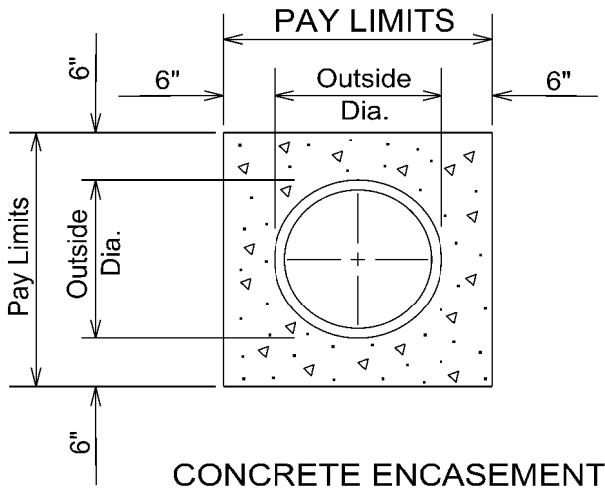
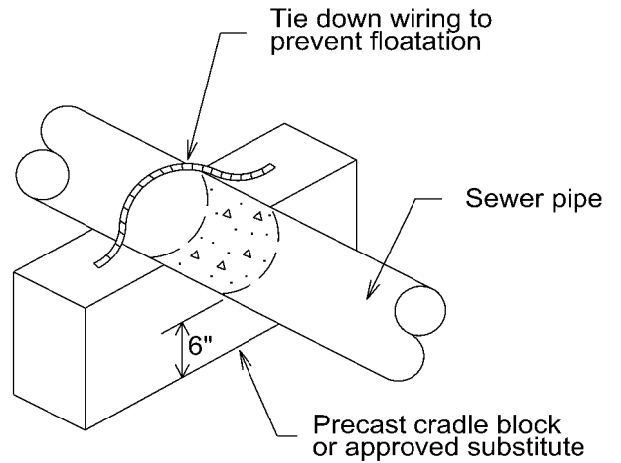
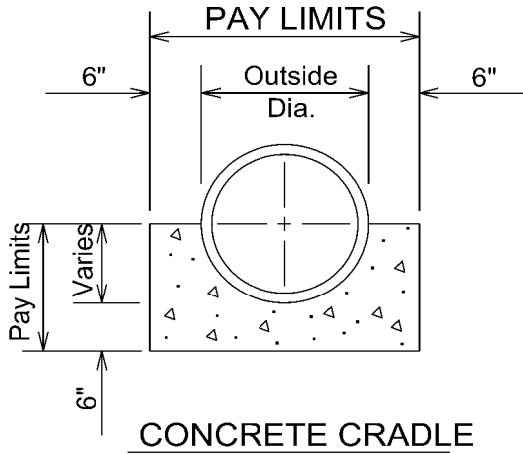
858.5 MEASUREMENT: Concrete Encasement, Cradles, Saddles, and Collars will be measured by the cubic yard of accepted work, complete in place.

1. Reinforcing, if required by the Engineer or Inspector, shall not be measured for payment.

858.5 PAYMENT: Concrete Encasement, Cradles, Saddles and Collars will be paid for at the unit price bid per cubic yard, which price shall be full compensation for furnishing and placing all materials, manipulation, labor, tools, equipment and incidentals necessary to complete the work.

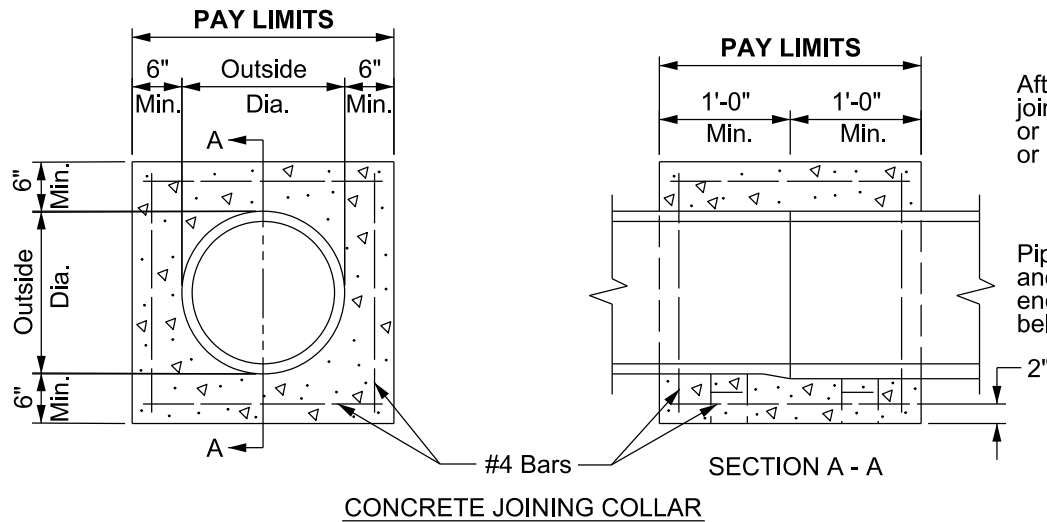
1. Payment for concrete encasement shall consist of 6 inches of concrete around the pipe where required (as per Standard Drawings DD-858 Series), minus manholes, structures, etc.
2. No additional quantities will be made due to over excavation, trench slides, caving.

End of Specification

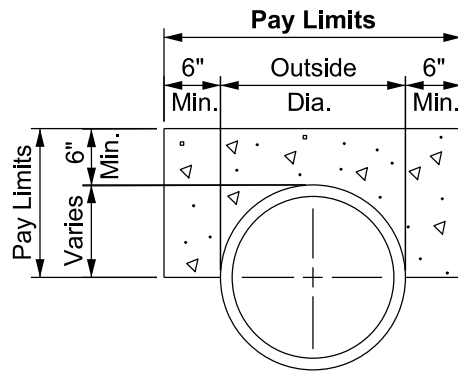


Notes:

- 1) All concrete encasement shall be poured at a plane 6" above the pipe between excavated trench walls.
- 2) All sewer pipe with less than 3' of cover to subgrade shall be concrete encased.
- 3) All Force mains shall be provided with thrust blocks, where changes in direction occur, at Tees, Bends, Crosses, changes in size, stops, or as directed by SAWS.



CONCRETE JOINING COLLAR

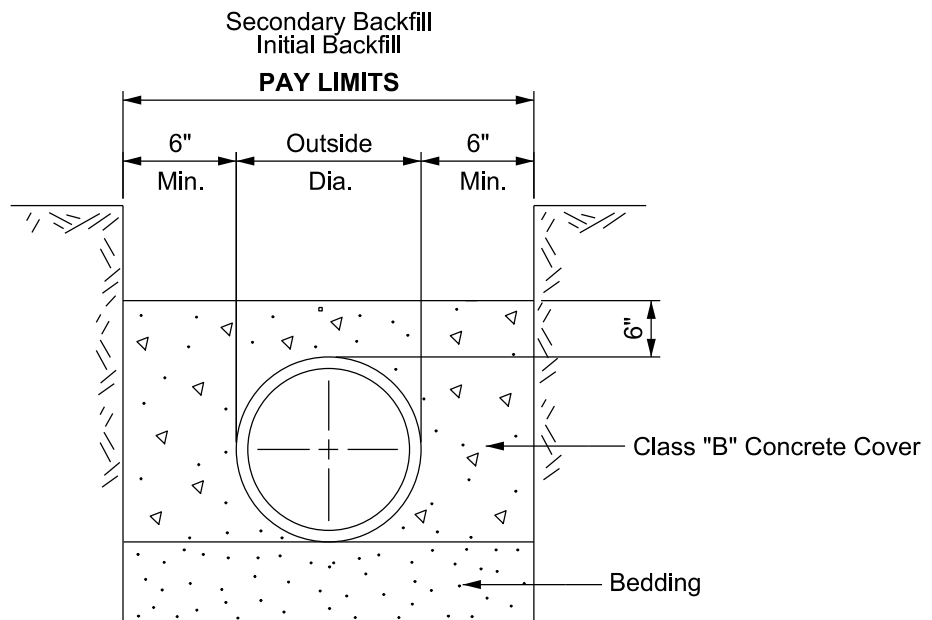


TYPICAL CONCRETE SADDLE

After centering pipe ends, wrap joints with 3" wide polyvinyl tape or rubber adapter, Can-Tex.1-70A or equal.

Pipe sections to be blocked and supported similar to the encasement detail shown below, (subject to approval)

Note:
All concrete encasement shall be poured at a plane 6" above trench walls



CONCRETE COVER FOR FLEXIBLE PIPE

To Be Used Wherever Trench Width is Greater Than Two Feet (2') Plus O.D.