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Standards Update Transmittal

Reference Number: 2024-11
Standards: Standard Construction Specifications, Section 38

Update:

1. Modification to Standard Construction Specifications:
 - a. Section 38-3, "Excavation and Bedding" adding bedding and backfill to section.
 - b. Section 38-4, "Laying Pipe" minor grammar edit.
 - c. Section 38-5, Storm Drain Inlet Laterals" minor grammar edit.
 - d. Section 38-7.01, "Storm Drain Pipe" adding reference to City Standard Drawings.
 - e. Section 38-8 "Backfilling Pipe Trenches" adding SD-6-2 reference.

Effect of Update:

1. This modification is as follows:
 - a. Updating language to reference appropriate sections in the Standard Specification, update references to Standard Drawings and correct punctuation and format.

Request for Update Initiated By: Standards Review Committee 09/30/2022

Update Reviewed for Conformity and Consistency to Standards:

Shoab Ahrary 4/25/2024 | 10:57 AM PDT
Shoab Ahrary, PE, ESD Manager Date

Update to Standards Approved:

Jeffrey R. Werner 4/29/2024 | 5:54 AM PDT
Jeffrey R. Werner, PE, City Engineer Date

Section 38 – Storm Drain Construction

38-3 EXCAVATION AND BEDDING

Trench excavation, bedding and backfill for all storm drain pipe construction shall conform to Section 19, "Trench Excavation, Bedding and Backfill", of these Specifications.

The Contractor shall expose the end of existing pipe to be extended, and verify alignment and elevation for the City, prior to trenching for any pipe that may be affected.

38-4 LAYING PIPE

Pipe laying shall proceed after the trench for the pipe has been brought to the proper line and grade. Pipe laying shall proceed upgrade with the bell or groove end of the pipe placed upstream. Each section of pipe shall be laid true to line and grade and in such a manner as to form a watertight, concentric joint with the adjoining pipe. The interior of the pipe shall be cleared of all dirt and debris as the work progresses. Pipe shall not be laid when the condition of the trench or the weather is unsuitable, in the opinion of the City, because of water or mud that may interfere with proper jointing. All open ends of pipe and fittings shall be closed whenever the work is discontinued. For remedial maintenance or improvement projects in established areas, the Contractor shall coordinate the work so that storm drain systems are fully operational at the end of each Working Day. No runoff shall be allowed to flow uncontained through any trenches or excavations without approval of the City.

Circular reinforced concrete pipe with elliptical reinforcement shall be placed with the minor axis of the reinforcement in a vertical position.

All pipe shall be laid in strict conformity to the prescribed line and grade with grade bars set and each pipe length checked to the top grade line. Three consecutive points on the same grade of slope shall be used at all times to detect any variation from a straight grade. In case any discrepancy exists, the work shall be stopped, and the discrepancy immediately reported to the City. In addition, when requested by the City, a string line shall be used in the bottom of the trench to insure a straight grade and alignment of the pipe.

The Contractor may elect to furnish a laser beam system for grade and alignment control. Such laser beam shall have a minimum accuracy of ± 0.01 foot per one hundred feet (100') on line; and a minimum visible range of one thousand feet (1000') and shall comply with OSHA requirements. The laser system shall have good visibility when used with suitable target material. The laser system shall be of the self-leveling type so that the laser beam is automatically compensated for small grade disturbances. The laser system shall also have an early warning system that warns when the laser is off grade.

Grade tolerance of the flow line of pipe shall not exceed ± 0.03 feet. In addition, the total variation plus and minus from flow line grade shall not exceed 0.03 feet in any twenty-five-foot (25') length. Contractor to verify in the presence of the Inspector.

Mortar or brick plugs shall be installed in existing manholes as directed by the City in order to prevent surface water, ground water, and debris from entering existing storm drain systems during construction. Inflatable plugs will be considered on a case-by-case basis. Care shall be exercised in installing plugs to avoid interrupting service to existing storm drain services. Plugs shall be removed upon completion of testing as provided in Section 38-10, "Testing of Pipe", in this Section of these Specifications.

The Contractor is responsible for avoiding all utility, service, or other conflicting lines that are not in direct physical conflict with the facility under construction. The Contractor may arrange with the owner of the utility to temporarily disconnect house service lines or other facilities along the

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line of work for the Contractor's convenience. The Contractor is responsible for all costs for disconnecting and restoring such utilities.

Utility or other lines which are in direct physical conflict with the structural section of the facility being constructed or appurtenant structures, and which cannot be avoided by rerouting the facility being constructed, or for which relocation is not provided in the Plans and Specifications, will be relocated by the owner of the utility prior to or during construction in accordance with Section 42, "Relocation and Maintenance of Utility Facilities", of these Specifications.

Should it become necessary to reroute the facility being constructed to avoid an existing utility or other obstruction and such rerouting is ordered by the City, compensation for the installation of such rerouted line shall be made at the unit price bid for the installation of said facility and no additional compensation will be made except as provided in Section 9, "Changes and Claims", of these Specifications. When indicated on the Plans or directed by the City, storm drain pipes and structures shall be abandoned in conformance with Section 15-1.04, "Abandonment of Conduits and Structures", of these Specifications.

38-5 STORM DRAIN INLET LATERALS

Unless otherwise shown on the Plans or in the Special Provisions, storm drain inlet laterals shall be a minimum of eighteen inches (18") in diameter and materials for inlet laterals shall conform to the requirements of Section 50, "Construction Materials", of these Specifications for each respective type and class of pipe. Connections of laterals to manholes and inlets shall be water and soil tight, and shall conform to Section 39, "Manholes", and Section 27-13, "Drop Inlets and Catch Basins", of these Specifications.

All inlet laterals shall be inspected by lamping conforming to Section 38-9.05, "Lamping of Storm Drain Inlet Laterals", in this Section of these Specifications or television inspection. When the radius or length of the lateral exceeds thirty feet (30'), a television inspection is required conforming to Section 38-9.04, "Television Video Inspection (TVI) – Storm Drains", in this Section of these Specifications. Other proposed methods of inspection may be approved by the City.

38-6 PIPE JOINTS

Joints in pipe shall conform to the requirements of Section 50, "Construction Materials", of these Specifications for the type of pipe being installed.

Care shall be used to prevent chipping or cracking of either end of the pipe during installation.

All joints for concrete pipe shall be rubber gasketed joints. All joint surfaces shall be cleaned before joints are made.

38-7 PROTECTIVE COVERING

38-7.01 Storm Drain Pipe

Unless otherwise shown in the Plans, storm drain pipe laid in trenches at such an elevation that the top of the pipe bell has less than twelve (12") inches to the bottom of subgrade shall be protected with a concrete cap or fully encased in slurry as shown on Standard Drawing SD-6.1. Unless otherwise shown on the Plans or the Standard Drawings, the concrete used in making the cap shall be Class "C" concrete conforming to Section 50-5, "Portland Cement Concrete", of these Specifications. Unless otherwise shown on the Plans, slurry encasement shall consist of controlled density fill (CDF) conforming to Section 50-15.01, "Controlled Density Fill (CDF)", of these specifications.

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38-8 BACKFILLING PIPE TRENCHES

Backfill of all storm drain pipes shall conform to the requirements in Section 19, “Trench Excavation, Bedding and Backfill”, of these Specifications. Bedding and backfill for drain pipes shall be in accordance with Standard Drawings SD-6.0, SD-6.1 and SD-6.2.