SECTION 333000

SANITARY SEWERAGE UTILITIES

*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\**

***NOTE TO SPECIFIER***

*Use this Specification Section for Mail Processing Facilities.*

***This is a Type 1 Specification with completely editable text; therefore, any portion of the text can be modified by the A/E preparing the Solicitation Package to suit the project.***

*For Design/Build projects, do not delete the Notes to Specifier in this Section so that they may be available to Design/Build entity when preparing the Construction Documents.*

*For the Design/Build entity, this specification is intended as a guide for the Architect/Engineer preparing the Construction Documents.*

*The MPF specifications may also be used for Design/Bid/Build projects. In either case, it is the responsibility of the design professional to edit the Specifications Sections as appropriate for the project.*

*Text shown in brackets must be modified as needed for project specific requirements.* *See the “Using the USPS Guide Specifications” document in Folder C for more information.*

*The last date that USPS revised this standard specification section occurs in two places, at the end of this section and in the Table of Contents. If the date in this section matches the date in the Table of Contents, then you are using the latest version. Do not delete or revise the “last revised” date at the end of the section during the development of the Project Manual.*

*The footer in this section should be edited to replace the text, “USPS MPF SPECIFICATION” with the project name, and the blank date in the center should be replaced with the submission date, for interim design reviews, or the issue date of the completed Project Manual.*

*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\**

1. GENERAL
	1. SUMMARY
		1. Section Includes:
			1. Sanitary sewer drainage piping, fittings, accessories and bedding.
			2. Connection of project sanitary drainage system to the municipal sanitary sewer system.
			3. Clean-out and access structures.
		2. Related Documents: The Contract Documents, as defined in Section 011000 - Summary of Work, apply to the Work of this Section. Additional requirements and information necessary to complete the Work of this Section may be found in other Documents.
		3. Related Sections:
			1. Section 312300- Excavation and Fill: Earthwork for utilities.
			2. Section 033000 - Cast-In-Place Concrete: Concrete for cleanout and manhole base pads.
	2. REFERENCES
		1. American Association of State Highway and transportation Officials (AASHTO):
			1. AASHTO M294 - Corrugated Polyethylene Pipe, 300-1200 mm Diameter.
			2. AASHTO M252 - Corrugated Polyethylene Drainage Pipe.
		2. American National Standards Institute (ANSI):
			1. ANSI A21.14 - Ductile Iron Fittings, 3-Inch Through 24-Inch, for Gas.
		3. American Society for Testing and Materials (ASTM):
			1. ASTM C 12 ‑ Practice for Installing Vitrified Clay Pipe Lines.
			2. ASTM C 14 ‑ Specification for Concrete Sewer, Storm Drain, and Culvert Pipe.
			3. ASTM C 76 ‑ Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
			4. ASTM C 425 ‑ Specification for Compression Joints for Vitrified Clay Pipe and Fittings.
			5. ASTM C 443 ‑ Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.
			6. ASTM D 3034 ‑ Specification for Type PSM Polyvinyl Chloride (PVC) Sewer Pipe and Fittings.
			7. ASTM A 746 ‑ Specification for Ductile Iron Gravity Sewer Pipe.
			8. ASTM C 700 ‑ Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength and perforated.
			9. ASTM F 477 - Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
	3. DEFINITIONS
		1. Bedding: Fill placed under, beside and directly over pipe, prior to subsequent backfill operations.
	4. SUBMITTALS
		1. Section 013300 - Submittal Procedures: Procedures for submittals.
			1. Product Data: Data for each type of pipe and pipe accessory specified.
		2. Section 017704 - Closeout Procedures and Training: Procedures for closeout submittals.
			1. Project Record Documents: Accurately record the following.
				1. Actual locations of pipe runs, connections, manholes, cleanouts, and invert elevations.
				2. Identify and describe unexpected variations to subsoil conditions and location of uncharted utilities.
	5. QUALITY ASSURANCE
		1. Regulatory Requirements: Perform work in accordance with utility company requirements and applicable health codes and authority having jurisdiction requirements.
2. PRODUCTS

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**NOTE TO SPECIFIER**

Edit PIPE MATERIALS paragraph below for type of pipe used for this Project.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

* 1. PIPE MATERIALS
		1. Polyvinyl Chloride (PVC) Pipe:
			1. ASTM D 3034, Rated SDR 35 unless otherwise required by local utility having jurisdiction. Continuously mark pipe with manufacturer's name, pipe size, cell classification, SDR rating, and ASTM D 3034 classification.
			2. ASTM D 3034, Table 2; pipe joints with integrally molded bell ends and factory supplied elastomeric gaskets and lubricant.
		2. Corrugated Polyethylene (CPP) Pipe:
			1. Pipe: AASHTO designation #M294 and #M252; smooth interior, 4 inches through 18 inches as indicated on Drawings.
			2. Fittings: ASTM D 3034, rated SDR 35; with thermo-molded PVC.
			3. Gaskets: ASTM F 477; with thermo-molded PVC fittings and CPP pipe joint assembly.
		3. Vitrified Clay (VCP) Pipe:
			1. Pipe: ASTM C 700.
			2. Joints: ASTM C 425.
			3. Gaskets: ASTM C 425; high grade vulcanized elastomeric compound consisting of basic natural or synthetic rubber. Provide gaskets manufactured in compliance with Rubber Manufacturer's Association tolerances for gaskets.
			4. Lubricant: Suitable for lubricating joint components; no deteriorating effects on gasket or pipe material, will not support growth of fungi or bacteria, and of type recommended by gasket manufacturer.
		4. Ductile Iron Pipe:
			1. Pipe: ASTM A 746; Extra Heavy type, inside nominal diameter as indicated on Drawings with bell and spigot end.
			2. Pipe Joint: ANSI A21.14, rubber gasket joint devices.
		5. Concrete Pipe:
			1. Pipe: ASTM C 14, Class 1, 2, or 3; bell and spigot pipe with inside nominal diameter as indicated on Drawings.
			2. Pipe Joint: ASTM C 443; rubber compression gasket joint devices.
		6. Reinforced Concrete Pipe:
			1. Reinforced Concrete: ASTM C 76, Class I, II, III, IV, or V as indicated on Drawings, with Wall type A, B, or C; mesh reinforcement; inside nominal diameter as indicated with bell and spigot end.
			2. Reinforced Concrete: ASTM C 443; rubber compression gasket joint devices.
	2. PIPE ACCESSORIES
		1. Pipe Joints: Mechanical clamp ring type, stainless steel expanding and contracting sleeve, neoprene ribbed gasket for positive seal.
		2. Fittings: Same material as pipe molded or formed to suit pipe size and end design, in required tee, bends, elbows, cleanouts, reducers, traps and other configurations required.
		3. Trace Wire: Magnetic detectable conductor, clear brightly colored plastic covered, imprinted with "SEWER SERVICE" in large letters.
	3. CLEANOUTS AND MANHOLES
		1. Lid and Frame: Heavy duty cast iron with removable lid as indicated on Drawings.
		2. Shaft Construction: Cast Iron shaft of internal diameter as indicated on Drawings with 2500 psi concrete collar for cleanouts.
		3. Base Pad: Concrete specified in Section 033000.
1. EXECUTION
	1. EXAMINATION
		1. Section 017300 - Execution: Verification of existing conditions before starting work.
		2. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive Work.
			1. Verify trench cut, excavations, dimensions, and elevations are as indicated on Drawings.
		3. Report in writing to Contracting Officer prevailing conditions that will adversely affect satisfactory execution of the Work of this Section. Do not proceed with Work until unsatisfactory conditions have been corrected.
		4. By beginning Work, Contractor accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost to the United States Postal Service.
	2. PREPARATION
		1. Hand trim excavations to required elevations. Correct over excavation with fine aggregate.
		2. Remove large stones or other hard matter which could damage pipe or impede consistent backfilling or compaction.
	3. BEDDING
		1. Excavate pipe trench and place bedding material in accordance with Section 312300 for work of this Section.
		2. Place bedding material at trench bottom, level materials in continuous layer not exceeding 6 inches compacted depth, each layer. Place compacted bedding material to elevation of paving subgrade as indicated on Drawings.
		3. Maintain optimum moisture content of bedding material to attain required compaction density.
		4. Remove excess backfill and excavated material from site.
	4. INSTALLATION ‑ PIPE
		1. Install pipe, fittings, and accessories in accordance with ASTM C 12, ASTM C 14, manufacturer's published instructions and state or local requirements. Seal joints watertight.
		2. Install pipe on minimum 4 inch bedding as specified in Section 312300.
		3. Lay pipe to slope gradients indicated on Drawings.
		4. Refer to Section 312300 for trenching requirements. Do not displace or damage pipe when compacting.
		5. Connect to building sanitary sewer outlet and municipal sewer system as indicated on Drawings.
		6. Install trace wire continuous over top of pipe buried 6 inches below finish grade, above pipe line.
	5. INSTALLATION ‑ CLEANOUTS
		1. Form bottom of excavation clean and smooth to elevation indicated on Drawings.
		2. Form and place cast‑in‑place concrete base pad, with provision for sanitary sewer pipe to be placed at required elevations.
		3. Mount lid and frame level in grout, secured to top section at elevation indicated.
	6. SERVICE CONNECTIONS
		1. Coordinate the Work with termination of sanitary sewer connection outside building including connection to municipal sanitary sewer system.
		2. Connect to existing municipal sanitary sewer system in compliance with utility requirements for new service connections.
	7. FIELD QUALITY CONTROL
		1. Section 014000 - Quality Requirements: Field testing and inspection.
		2. Site Tests:
			1. Perform inspections prior to and immediately after placing bedding.
			2. Compaction: Specified in Section 312300.
				1. If tests indicate Work does not meet specified requirements, remove Work, replace and retest.
				2. Frequency of Tests: One test for each 50 lineal feet of trench.
			3. Perform the following tests in accordance with applicable local Public Works Department Standard Specifications and requirements.
				1. Pressure Test.
				2. Infiltration Test
				3. Deflection Test

END OF SECTION

USPS MPF Specification Last Revised: 10/1/2022