

SECTION 027418  
POLYPROPYLENE STORM WATER PIPE

1. DESCRIPTION

This specification shall govern all work necessary for furnishing and placing all polypropylene (PP) pipe (ASTM F2881 and AASHTO M330) for gravity-flow storm drainage as required to complete the project.

2. MATERIALS

2.1 PP pipe shall be made of impact modified copolymer meeting the material requirements of ASTM F2881, Section 5 and AASHTO M330, Section 6.1. PP pipe shall have a smooth interior and annular exterior corrugations and meet or exceed ASTM F2881 and AASHTO M330.

2.2 DIMENSIONS

Pipe size shall be as indicated in the drawings, minimum 18" to maximum 36" unless otherwise authorized by the OAR.

2.3 JOINTS

Pipe shall be joined with a gasketed integral bell and spigot joint meeting the requirements of ASTM F2881. The joint shall be watertight according to the requirements of ASTM D3212. Bell shall overlap a minimum of 2 corrugations of spigot end when fully engaged. Spigots shall have gaskets meeting the requirements of ASTM F477. Gasket shall be installed by the pipe manufacturer and covered with a removeable protective wrap to ensure the gasket is free from debris. A joint lubricant which has no detrimental effect on gasket or on pipe in accordance with the manufacturer's recommendations shall be used on the gasket and bell during joint assembly.

2.4 FITTINGS

Fittings shall conform to ASTM F2881 and AASHTO M330. Bell and spigot connections shall utilize a welded or integral bell and spigot and gaskets meeting ASTM F477. The bell and spigot fittings joint shall meet the watertight joint performance requirements of ASTM D3212.

3. INSTALLATION

Installation shall be installed open trench and in accordance with ASTM D2321, manufacturer recommendations and guidelines, and construction methods prescribed in 027402 "RCP Culverts", including CCTV inspection. Geotextile wrap of the watertight joints is not required. Pipe installation shall begin at the downstream end working upstream. The Contractor shall make such temporary provisions as necessary to ensure adequate drainage of the trench and bedding during the construction operation.

Minimum cover for 18" – 36" diameter pipe is 2'. No heavy earth moving equipment is allowed

over the pipe until a minimum of 2' of compacted fill (permanent or temporary) has been placed over the top of the pipe. Do not exceed manufacture's guidelines for loading during construction.

Evidence of local or unequal deformation caused by improper construction methods at any point during construction shall be cause for corrective measures as directed by the OAR.

Use of PP pipe is not allowed beneath the pavement footprint or within 1' clearance from the back of curb.

If any portion of the trench falls within 1' of the back of curb, backfill shall be as if the pipe is beneath the pavement, including cement stabilizing the top 3' of trench backfill.

Joints shall be properly aligned. Misaligned joints are not acceptable.

Deflections at joints shall be designed such that they not exceed 75% of the manufacturer's recommended maximum allowable joint deflection.

#### 4. MEASUREMENT AND PAYMENT

Unless otherwise specified in the Bid Form, PP pipe will be measured by the linear foot along the centerline for each size of pipe installed. Measurement of pipe shall be up to but not include the fittings, or up to the interior wall of connecting inlets, headwalls, catch basins, manholes, junction boxes, or other structures, but not include the interior dimension of the structure. For multiple pipes, the measured length will be the sum of the lengths of each barrel measured as prescribed above.

Payment shall be full compensation for furnishing, transporting, and installing the PP pipe, for bedding materials and bed preparation including compaction, for excavation and backfill, for all connections to existing and new structures (except as otherwise specified in the Bid Form), CCTV, and for all labor, materials, tools, equipment and incidentals required to complete the work as shown on the drawings and specified herein.