# STORM SPECIAL PROVISIONS

## GENERAL REQUIREMENTS

### DIVISION 7
### DRAINAGE STRUCTURES & STORM SEWERS

**7-04 STORM SEWERS**
**Construction Requirements 7-04.3**

**Section 7-04.3(1); Cleaning and Testing**
This section is supplemented with the following:

Testing and T.V.'ing shall be performed after completion of the top coarse of rock and prior to paving.

**Deflection Test for Thermoplastic Pipe**
The requirements of Section 7-17.3(2)G shall apply to storm sewers. Costs shall be incidental to placement of the storm sewer.

**Television Inspection**
The requirements of Section 7-17.3(2)H shall apply to storm sewers. Costs shall be incidental to placement of the storm sewer.

**7-07 CLEANING EXISTING DRAINAGE STRUCTURES**
**Section 7-07.3; Construction Requirements**
This section is supplemented with the following:

All material collected as a result of cleaning existing drainage structures shall be disposed of at an approved landfill or by other methods as approved by the Engineer.

**7-08 GENERAL PIPE INSTALLATION REQUIREMENTS**
**Construction Requirements 7-08.3**
**LayingPipe 7-08.3(2)**
**Section 7 - 08.3(2)B; Pipe Laying – General**
Paragraph 3 is replaced with the following:

Pipe shall be laid to a true line and grade at the invert of the pipe and the Contractor shall exercise care in matching pipe joints for concentricity and compatibility. In no case shall two pipes be joined together with ends having the maximum manufacturer's tolerance. The invert line may vary from the true line and grade provided such variance does not exceed the following requirements:

- No flat or reverse grades are created.
- Invert elevations at junctions (manholes, catch basins, clean outs) are within 0.03 feet of plan elevations.
- No bellies of greater than 0.03 feet in depth are created in the line between junctions.Checking of the invert elevation of the pipe may be made by calculations from measurements on the top of the pipe.

# DIVISION 9
# MATERIALS

## 9-05 DRAINAGE STRUCTURES, CULVERTS, AND CONDUITS

**Concrete Storm Sewer Pipe 9-05.7**
**Section 9-05.7(1); Plain Concrete Storm Sewer Pipe**
This section is replaced with the following:

Plain concrete storm sewer pipe shall conform to the requirements of AASHTO M 86, Class 3.

Section 9-05.20; Corrugated Polyethylene Storm Sewer Pipe
This section is supplemented with the following:

Pipe and joints shall be water tight and air-testable meeting the requirements of ASTM D3212.

Section 9-05.21; HDPE Pipe
This additional section shall include the following:

**Material**
High Density Polyethylene (HDPE) profile wall pipe shall be manufactured in accordance with ASTM F 894. The pipe resin shall be made of HDPE plastic compound having a cell classification of 335444C or higher in accordance with ASTM D 3350. Clean rework Material generated by the manufacturer's production may be used so long as the pipe produced meets all the requirements of this section.

**Pipe and Fittings**
Ring Stiffness Class (RSC) per ASTM F 894 for the pipe and fittings shall be shown on the contract drawings. Pipe and fittings shall be manufactured by the continuous winding of an extruded or closed profile onto suitably sized mandrels with no external welding between the individual profiles.

**Joining**
Pipe joining shall be effected by compressing a gasket between a bell and a spigot, which are integrally wound onto the pipe wall with no external weld or fusion. The gasket shall be contained in a machine groove on the pipe spigot except

for pipe used to connect to HDPE manholes, fittings, and structures. Pipe connecting to HDPE manholes, fittings, and structures shall have a smooth surface suitable for gasket sealing. Ends of closed profile pipe shall be factory sealed, to prevent leakage through the profile channel. Field cutting of closed - profile pipe (except solid wall pipe) shall not be permitted.

Alternatively, the HDPE pipes shall be assembled by an extrusion-weld process. Providing a watertight joint. Technicians certified by the manufacturer, using equipment approved by the pipe manufacturer, shall perform the welding. The high-density, polyethylene welding rod shall be compatible HDPE of cell class 345434, as defined by ASTM D3350.

**Pipe Inside Diameter**
The average inside diameter shall be true to the specified pipe diameter and within the tolerances given in table 1 of ASTM F 894. Except for mandrel breakout lines running in the direction of flow and mold marks, the inner wall of the pipe shall be smooth and have no visible circumferential weld seams, so as to provide a typical Manning N factor of .010 for clean water. Per ASTM F 894, slight line and mold marks are permissible provided that they do not result in variation of the inside diameter of more than 1/8 in. from that obtained on adjacent unaffected portions of the surface.

**Minimum Wall Thickness**
The combined thickness of the inner and outer walls of closed profile wall pipe shall be equal to at least the minimum waterway wall thickness specified in Table 1 or F 894 for open profile pipe. For direct buried pipe, the minimum bell thickness for both open and closed profile pipes shall equal the minimum bell thickness specified in Table 1 or F 894 for open profile pipe.

**Pipe Length**
The standard laying length for pipe up through 72” diameter shall be 20 feet ±2” and the standard laying length for pipes greater than 72” diameter shall be 19 feet ±2”.