

September 9, 1993

TO: All Holders of the City of Salem Design Standards

EFFECTIVE DATE: October 1, 1993

SUBJECT: **DEVELOPMENT BULLETIN #9**

The following information is distributed as a public service to the Salem development community of contractors, builders, and developers to make them aware of any changes in the City permit and plan approval process or design standards which may have an impact on their operations:

STORMWATER DESIGN STANDARDS

HDPE STORM DRAIN PIPE

Following are changes to the Stormwater Design Standards to add exterior annular corrugated, interior smooth wall, high density polyethylene as an acceptable pipe material, without case-by-case special review by the City Engineer.

(Note that on May 16, 1991, these stormwater design Standards were previously modified to add aluminum and polyvinyl-chloride as acceptable pipe materials.)

Page 18 - Section 2.12 PIPE MATERIALS

Add to the list of pipe materials in the first paragraph . . . high density polyethylene . . .

Add to the list of abbreviations:

HDPE—High Density Polyethylene

CHDPE—Corrugated High Density Polyethylene

Corrugated High Density Polyethylene shall be exterior annular corrugated with a smooth interior wall conforming to AASHTO M-252 for 10-inch and smaller pipe and conforming to AASHTO M-294 Type S for 12- to 36-inch pipe. The pipe shall have watertight joints. Pressure testable fittings shall meet the requirements of ASTM F 1336. O-Ring gaskets shall meet the requirements of ASTM F 477. Installation shall be per ASTM D 2321.

(Note: Pipes meeting these requirements are currently marketed as “N-12” by Advanced Drainage Systems and “Hi-Q TiteLine” by Hancor. There may be others on the market.)

Page 20—Section 2.14 MINIMUM GRADE

Grade will be as shown for at least 2.5 feet per second with a Manning “n” of 0.013.

Page 20—Section 2.15 ALIGNMENT

CHDPE pipe shall be laid on straight alignment only.

Page 21—Section 2.17 COVER REQUIREMENTS

For CHDPE and PVC pipe, minimum cover shall be 30 inches above the top of the pipe. (This modifies the minimum cover requirements for PVC pipe shown in the May 16, 1991, letter.)

Page 21—Section 2.18 LOCATION

CHDPE pipe may be used for closed storm drain systems. It shall not be used for roadway crossing culverts, driveway culverts, outfalls to creeks, or other locations that have exposed ends. (This is due to the potential for combustibility and deterioration due to prolonged exposure to ultraviolet radiation.)

STANDARD CONSTRUCTION SPECIFICATIONS

The following are special provisions that will be required in order to use HDPE pipe. These supplement the City of Salem Standard Construction Specifications (SCS). These specifications must be included with each project until such time as the City's SCS is modified to include this information.

402.2.05 HDPE PIPE

Use Corrugated High Density Polyethylene (CHDPE) pipe conforming to AASHTO M-252 for 10-inch and smaller pipe and conforming to AASHTO M-294 Type S for 12- to 36-inch pipe. This is an exterior annular corrugated pipe with a smooth interior wall. The pipe shall have watertight joints. Pressure testable fittings shall meet the requirements of ASTM F 1336. O-Ring gaskets shall meet the requirements of ASTM F 477. Installation shall be per ASTM D 2321.

402.2.16 JOINTING MATERIALS

402.2.16G HDPE Pipe

Use only lubricants and joining materials as approved by the manufacturer.

402.2.19 PROOF TESTS

402.2.19H HDPE Pipe

Conduct proof tests per AASHTO M-252 for 10-inch and smaller pipe and conforming to AASHTO M-294 Type S for 12- to 36-inch pipe.

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402.2.20 FITTINGS

402.2.20H HDPE Pipe

Use fittings which conform to ASTM D 3350.

402.3.15 DEFLECTION TEST FOR PVC, ABS, AND HDPE PIPE

HDPE is added to the section title and the following is added to this section:

Deflection testing may be required for storm drains constructed of HDPE pipe. The testing shall be done in the same manner as for PVC and ABS pipe.

OTHER

For more information, please contact the Public Works Department Permit Application Center at (503) 588-6211.

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