<table>
<thead>
<tr>
<th>CITY OF ANN ARBOR UTILITY MATERIAL REQUIREMENTS</th>
<th>CONTRACTOR TO PROVIDE</th>
<th>DELIVERED YES/NO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WATER</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ductile Iron Pipe</td>
<td>Pressure Class 350 or Greater; Thickness Class 50 or Greater (w/ polywrap)</td>
<td></td>
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<tr>
<td>HDPE Water Main Pipe</td>
<td>HDPE SDR 7.5; AWWA C906 and approved for use with potable water under ANSI/NSF Standard 14. AWWA C906 and NSF 14 identifications must appear on exterior wall print line.</td>
<td></td>
</tr>
<tr>
<td>HDPE Pipe &amp; Fittings</td>
<td>HDPE pipe, restraining collar, reducer and ductile iron to HDPE transition adaptor shall be industrial polyethylene pipe size (IPS) and meet AWWA C906 and ANSI/NSF Standard 14.</td>
<td></td>
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<tr>
<td>Push-On Restrained Joint Gaskets</td>
<td>American Pipe “Fast Grip” Gasket System</td>
<td></td>
</tr>
<tr>
<td>Fire Hydrants</td>
<td>EJIW-Br/C WaterMaster Br 250 w/ the 4” Storz Connection</td>
<td></td>
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<tr>
<td>Water Hydrant Extensions</td>
<td>East Jordan Iron Works Hydrant Model 5-14 Extension Kit</td>
<td></td>
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<tr>
<td>Tapping Sleeves</td>
<td>Claw No. F-5205</td>
<td></td>
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<tr>
<td>Gate Valves</td>
<td>American Flow Control Double Disc (open to the right, push-on only)</td>
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<tr>
<td>Butterfly Valves</td>
<td>Henry Pratt “Groundhog”</td>
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<tr>
<td>Solid Sleeves</td>
<td>Shall be long sleeves</td>
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<tr>
<td>Fittings</td>
<td>ANSI/AWWA C110/A21.10 or C153/A21.53 w/ Cement Mortar Lining &amp; Asphaltec Seal Coat per ANSI/AWWA C104/A21.4 &amp; Asphaltec Coating on Outside per ANSI/AWWA C110/A21.10 or C153/A21.53</td>
<td></td>
</tr>
<tr>
<td>Mechanical Joints for Hydrants &amp; Solid Sleeves</td>
<td>EBAA Mega Lug Series 1100 Joint Restrainer System; Bolts to be High Strength, Low Alloy Steel</td>
<td></td>
</tr>
<tr>
<td>Valve Boxes</td>
<td>Tyler 6860 Buffalo type, size D, screw type 3-piece, 5 1/4 inch shaft and a #6 base for a valve 8 inch and less and #8 base for 10 and 12 inch valves</td>
<td></td>
</tr>
<tr>
<td>Curb Boxes</td>
<td>Tyler 6500</td>
<td></td>
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<tr>
<td>Sampling Station</td>
<td>Eclipse No. 88 Sampling Station</td>
<td></td>
</tr>
<tr>
<td><strong>SEWER/DRAINAGE</strong></td>
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</tbody>
</table>
Concrete Pipe
- Reinforced ASTM Designation C-76 Class IV
- Reinforced Elliptical - ASTM Designation C-507
- Non-Reinforced ASTM Designation C-14

Concrete Pipe Joints
- ASTM C-443

HDPE Pipe
- ADS N-12
- Hazocor Pipeline Meeting AASHTO M-294 or ASTM F-892

Steel Casing Pipe
- Diameter of Pipe --> Wall thickness (minimum)
  - Under 14" --> 0.250"
  - 14", 16", 18" --> 0.312"
  - 18" --> 0.375"
  - 20", 22" --> 0.375"
  - 24", 26", 28", 30" --> 0.500"
  - 32", 34" --> 0.563"
  - 36", 38", 40", 42", 48" --> 0.625"
- non-spiral, minimum yield strength 35,000psi, leakproof joints, continuous welds; ASTM A53, Type E or S, Grade B
- Midway Structural Pipe and Supply ASTM A-139, Grade B, 35,000 PSI
  - Minimum Yield Strength

HDPE Sewer Pipe Joints
- ASTM D-3212

Vitrified Clay Pipe
- ASTM C700, Extra Strength

Vitrified Clay Pipe Joints
- ASTM C-425

Ductile Iron Sewer Pipe
- Griffin H2Sewer Safe
- American Pipe with Protecto 401 Lining

PVC Pipe
- ASTM D3034-83 Minimum SDR-35

PVC Pipe Joints
- ASTM D 3212-81

Edgedrain/Underdrain
- except PVC plastic, shall conform with ASTM D3033; Geotextile wrapping

Precast Manholes
- ASTM C-478

Concrete Masonry Units
- ASTM C139 (only for use on storm sewer manholes)

Concrete Brick
- ASTM C-55, Grade N-1

Frames and Covers
- Cast Iron ASTM A 48, Class No. 30 per Casting Schedule (SD-GU-5 in PSSS); Note: 2 Pick holes allowed, not 3

AGGREGATES/BACKFILL MATERIAL

City of Ann Arbor Class II Sand
- Conforms to MDOT Class II with exceptions: 100% Passes 2" Sieve, Uniformity Coefficient = 6.0 or Greater

2TAA
- Conforms to MDOT Sec. 8.02, Except Max. Loss by Wash is 8%

6A Crushed Limestone
- Required Bedding & Initial Backfill for PVC Sewer Pipe

JNS
- Required Bedding & Backfill for Road Underdrain/Edgedrain

Additional Items:
- Concrete Mix design and sieve analysis on aggregates
- Bituminous Paving Materials Mix design and sieve analysis on aggregates
- Concrete Pipe Pipe certification letter
- Concrete Manhole Component part cut sheet for precast structures
- Water Pipe Pipe certification letter
- Silt Fence Catalogue cut sheet
- Inlet Filters Catalogue cut sheet
- Aggregates Each gradation for drainage system (3 different material certifications)
- Porous Paver Blocks Catalogue cut sheet and sample
- Perforated Pipe Catalogue cut sheet
- Underdrain Catalogue cut sheet
- Plant materials Seed source certification

LAST UPDATED: 07/30/2012 MB