DEVELOPMENTAL SPECIFICATIONS
FOR
SLIPLINING EXISTING PIPE CULVERTS

Effective Date
February 15, 2022

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING
MODIFICATIONS AND ADDITIONS. THESE ARE DEVELOPMENTAL SPECIFICATIONS AND THEY
PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

15090.01 DESCRIPTION.
Furnish and install liner pipe at locations specified in the contract documents.

15090.02 MATERIALS.

A. Furnish liner pipe meeting the material requirements for the type of pipe specified.

1. **Solid Wall HDPE Pipe with Integral Joint.**
   Comply with requirements of ASTM F 714 (SDR 32.5) and ASTM D 3350 (cell classification
   334433C or higher).

2. **Profile Wall HDPE Pipe with Integral Joint.**
   Comply with requirements of ASTM F 894, ASTM D 2412 (minimum RSC of 160 at 3%
   deflection), and ASTM D 3350 (cell classification 334433C or higher).

3. **Profile Machine Spiral Wound PVC Pipe with Integral Joint.**
   Comply with requirements of ASTM F 1697 and provide a pipe stiffness as defined in ASTM
   F 1741 using a safety factor of 2.0.

4. **Profile Wall PVC Pipe with Integral Joint.**
   Comply with requirements of ASTM F 949 or F 1803.

5. **Corrugated Steel Pipe (CSP).**
   Comply with requirements of Article 4141.02 of the Standard Specifications and Standard
   Road Plan DR-104.

6. **Polypropylene Pipe (PP).**
   Comply with requirements of ASTM F 2764 or F 2736.

7. **Steel Reinforced Polyethylene (SRPE)**
   Comply with requirements of ASTM F 2562, Class 1.
**B. Pipe Connections.**
Use liner pipe capable of being joined into a continuous length. Ensure joints are adequate for pushing or pulling the liner pipe through the existing pipe.

**C. Pipe Dimension Table.**
Use liner pipe meeting dimensions as shown in Table DS-15090.02-1. Verify there is enough clearance in existing pipe to ensure adequate room for liner pipe installation (based on manufacturer’s dimensions) and grouting.

<table>
<thead>
<tr>
<th>Existing Pipe, Nominal Size, Inches</th>
<th>Liner Pipe, Nominal Size, Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Profile Wall HDPE(a)</td>
</tr>
<tr>
<td>24</td>
<td>18</td>
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<tr>
<td>30</td>
<td>24</td>
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<td>36</td>
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<td>72</td>
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<td>90</td>
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<td>96</td>
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</tr>
</tbody>
</table>

(a) ASTM or AASHTO standard nominal size is based on inside diameter.
(b) ASTM standard nominal size is based on outside diameter.

**D. Annular Space Grouting**
Use foamed cellular concrete meeting the requirements of Section 2506 of the Standard Specifications. Alternate Mix Designs are allowed when quantity for annular space grouting is estimated to be less than 10 cubic yards for the contract.

**15090.03 CONSTRUCTION.**

A. Prior to sliplining, clean the existing pipe of obstructions or debris that will prevent the insertion of the liner.

B. Secure the liner pipe to prevent floating during grouting and ensure minimum change in flowline, especially on the inlet end.

C. Annular Space Grouting.
Comply with construction requirements in Section 2506 of the Standard Specifications.

**15090.04 METHOD OF MEASUREMENT.**
Measurement for Sliplining Existing Culverts will be the linear feet shown in the contract documents for each culvert.

**15090.05 BASIS OF PAYMENT.**
Payment per linear foot includes all costs to inspect and clean the existing culvert and all labor, equipment, and materials for sliplining, securing the liner pipe in the existing culvert, and annular space
grouting. If Contractor demonstrates the grouting is greater than 120% of the estimated amount to fill the annular space, the grouting volume greater than 120% of the estimate will be paid for as extra work as provided in Article 1109.03, B of the Standard Specifications.