

Standard Operating Procedure: Culvert & Approach Checklist

City of Smithville Public Works Department

Updated: 5/8/2026

Culvert Installation - Inspector Evaluation Checklist

Purpose: To ensure consistent, code-compliant installation of culverts beneath driveways that maintain stormwater flow, structural integrity, and public safety.

Scope: Applies to all residential and commercial driveway culvert installations impacting public right-of-way or drainage systems.

1. Minimum Specifications

Item	Specification
Minimum Pipe Diameter	15 inches
Pipe Material	RCP, HDPE, or approved equivalent
Pipe Length	Driveway width + required side slopes
Side Slopes	3:1 max (horizontal: vertical)
Bedding Material	6 inches of compacted $\frac{3}{4}$ " crushed stone under pipe
Cover Over Pipe	Minimum 6 inches of concrete above pipe
Driveway Surface	6 inches of KCMMB 4000 PSI concrete mix (See Driveway Construction Specs)

2. Installation Procedure (Inspector Checklist)

2.1. Trench Preparation

- Excavation follows approved alignment and depth
- Trench bottom is firm, uniform, and free of loose debris

2.2. Pipe Bedding

- Minimum 6 inches of compacted crushed stone under the full length of the pipe

Pipe is fully supported along its bottom - no voids or high points

2.3. Pipe Placement

Pipe is installed to correct grade and centered in trench

Joints (if any) are sealed properly

Minimum slope of 1% unless otherwise engineered

2.4. Backfill and Cover

Backfill material compacted in 6 to 8-inch lifts

Minimum 6 inches of KCM MB 4000 PSI concrete placed over pipe

Concrete evenly distributed and consolidated - no voids or bridging

Concrete thickness verified prior to driveway pour

2.5. Driveway Surface

Driveway constructed with 6-inch KCM MB 4000 concrete mix

Concrete finish and grading direct water toward culvert

Control joints per city driveway specifications

Transition to street or curb is flush, with no trip hazard

Curing and finishing meet city standards

3. Site Grading and Drainage

Ends of culvert are flared or beveled (or fitted with end sections)

Ditch profile matches or improves existing flow

No obstructions (posts, landscaping, etc.) within 10 feet of culvert ends

Right-of-way fully restored (topsoil, seed/straw, sod as needed)

Confirm compliance with specs and document any deviations

Reference "Driveway Construction Detail" sheet as needed for finish requirements

