

# 5135 Old Hickory Blvd Culvert Replacement

## Existing Conditions

### Description:

The culvert structure consists of a 48' long 42" CMP culvert located adjacent to the feature address, 5135 Old Hickory Boulevard. The roadway is in critical condition because of significant settlement and cracking. Additionally, the embankment has three collapsed areas, which have been filled with small riprap. The corrugated metal pipe has areas of heavy sediment and large stone, surface cession, section loss, and seam separation. Additionally, there is an area of roadway failure that has been mitigated by the installation of a large steel road plate.

**Spans:** 1

**Length:** 48'

**Width:** 42"

**Rise:** 42"

### Reasons for replacement:

- ✓ Roadway Failure
- ✓ Headwall Failures
- ✓ Pipe Collapse
- ✓ Steel Road Plate
- ✓ Pipe Seam Separation
- ✓ Section Loss
- ✓ Embankment Erosion



**Erosion @ Inlet Headwall**



**Pipe Section Loss**



**Roadway Failure w/ Steel Road Plate**

# 5135 Old Hickory Blvd Culvert Replacement

## Proposed Conditions

### Description:

The proposed culvert construction will include a precast 6'x4' Reinforced Concrete Box Culvert with cast in-place reinforced concrete wingwalls, inlet/outlet tie-ins, roadway reconstruction, and site restoration to ensure proper functionality. The utility relocation work and box culvert installation shall be completed in Three Phases: Phase 1 – Water Main Relocation under intermittent lane closures (One Week), Phase 2 – Precast Box Culvert installation under road closure (One Week), & Phase 3 – Cast In-Place inlet and outlet tie-ins (Two & a Half Months). Due to the depth/width of excavation as well as the use of a crane to set the precast box culvert segments, the road will need to be closed to through traffic for one week to install the precast box segments. All other work shall be completed under intermittent lane closures.

**Spans:** 1

**Length:** 43'

**Width:** 6'

**Rise:** 4'

**Opinion of Probable Cost:** \$360,000

**Anticipated Construction Duration:** 3 Months

**Anticipated Schedule for Construction:**

February 21<sup>st</sup> through May 12<sup>th</sup>

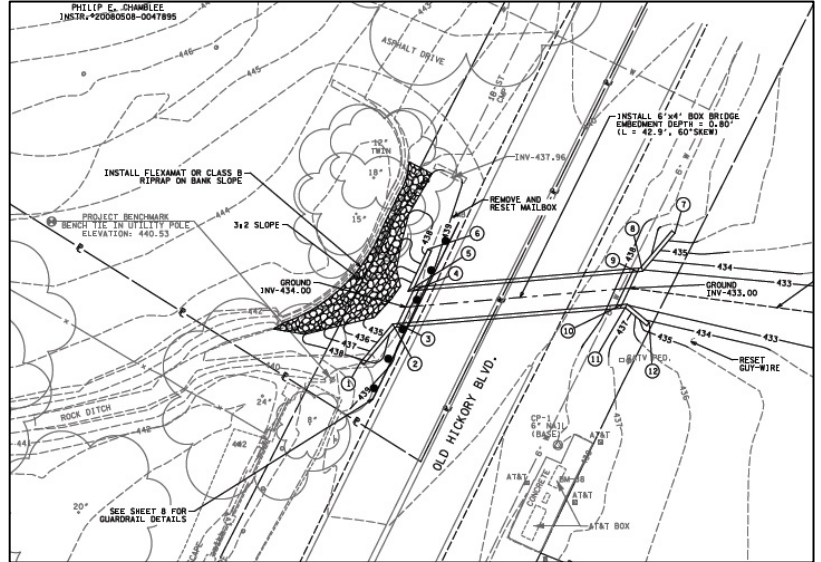
**Anticipated Road Closures:**

April 3<sup>rd</sup> through April 7<sup>th</sup>

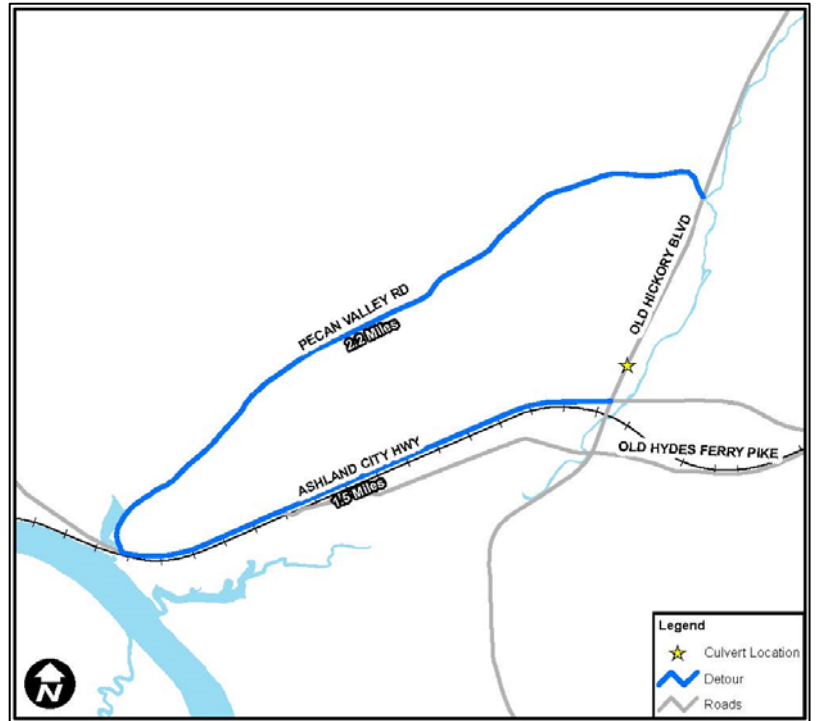
**Project Status:** Ready for construction

### Construction Challenges:

- ✓ Waterline Relocation
- ✓ Setting precast structures w/ overhead power lines
- ✓ Maintenance of Traffic



Project Plan View



Detour Map