Factsheet August 2016

VERMONT
AGENCY OF TRANSPORTATION

I-89 Culvert Replacement

GEORGIA

Interior of existing northbound culvert

GEORGIA I-89 CULVERTS IM CULV(25)

Culverts 83-1N and 83-1S between Exit 17 and Exit 18

Project Location: This project is located in the Town of Georgia in Franklin County, Vermont, approximately 1.3 miles south of I-89's Exit 18 and about one half mile north of the Georgia/Milton town line.

Project Description: The Vermont Agency of Transportation (VTrans) will replace two existing culverts carrying an unnamed tributary of Stonebridge Brook under Interstate 89. The existing steel pipe culverts are under a 40-foot embankment and were built in 1963 as part of the construction of I-89. The culverts are six feet wide and vary in length. The culvert under the northbound lanes is 176 feet long while the southbound culvert is 214 feet. Based on annual inspections, VTrans determined the culverts are at the end of their 50-year service life and in serious condition. Replacement was recommended.

Subsequently, VTrans hired a design/build team to design and construct the replacement culverts project. The team will use trenchless tunneling technology to excavate under the highway to install the new culverts. The concrete base of the culvert will be cast in place and pre-cast concrete arch structures will be placed onto the base. The new culverts will be 15 feet wide, with native stone and fill placed on the bottom slab of the culvert to provide an improved environment for the passage of aquatic organisms. The new culverts are designed to have a 100-year service life.

Throughout construction, there will be a posted speed limit of 55 mph for the 11,000 vehicles that use I-89 daily. Two travel lanes will be open during peak hours. At other times I-89 will be reduced to one-lane travel. There will be periods when traffic on Old Stage Road will be limited to one-lane to enable the contractor to build and remove access roads to the work site. One-lane travel on Old Stage Road will occur at the beginning and end of the project – in the fall of 2016 and 2017.

PROJECT LOCATION

PROJECT MILESTONES

Design/Build team selected
Summer 2015

Project Design & Workplan finalized
Spring/Summer 2016

Access roads completed
Fall 2016 (Antic.)

Culverts installed
Spring/Summer 2017 (Antic.)

Project completed
Fall 2017 (Antic.)

Ends of existing culverts in median

What is "Trenchless Tunneling"?

Trenchless technology (Sequential Excavation Method or SEM) will be used to mine two tunnels through the roadway embankments under the interstate, which will allow the new culverts to be put in place without disrupting the highway. The tunnels will be created mostly by hand and small equipment. During excavation the surrounding soil will be stabilized by driving pieces of tubing and rebar into the soil. Then excavation takes place in small segments of 4 feet or so, followed by application of a layer of "shotcrete" to stabilize the surface of the soil. Shotcrete is formed when compressed air forces or "shoots" mortar or concrete through a hose and nozzle onto a surface at a high velocity. Once the shotcrete is sprayed, the excavation continues further into the bank beneath the highway. After the tunnel daylights on the other side, the precast arch can be rolled into place. Tunneling will take about 2 months for each culvert.

Example of trenchless construction

View of I-89 over southbound culvert

PROJECT DETAILS

Project ID: Georgia I-89 Culverts IM CULV(25) Culverts 83-1N and 83-1S between Exit 17 and Exit 18

Contractor: J.A. McDonald/Stantec

VTrans Project Manager: Mahendra Thilliyar
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VTrans Resident Engineer: Greg Wilcox
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Project Outreach Coordinator: Jill Barrett
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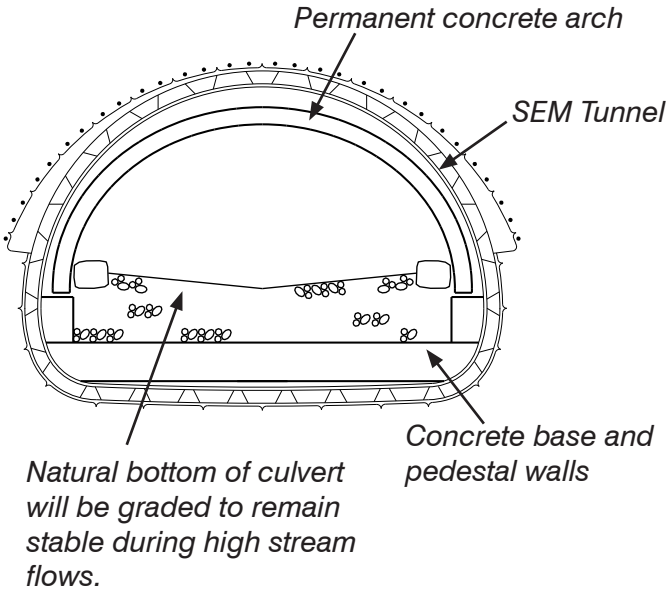
Project telephone: (802) 272-1248

24-hour traffic info: www.newengland511.org

Construction Cost: $8,083,000

CULVERT STRUCTURE



www.i89sbgculverts.vtransprojects.vermont.gov

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