ROUTE 54 EMERGENCY
FORCE ACCOUNT
Hanover County, Summer 2018

Brian Ramsey, P.E.
Area Construction Engineer
Northern Region

Ryan Tibbs
Project Manager
Wagman Heavy Civil, Inc.

May 2, 2019
Route 54 is the dam for Luck’s Pond
Weir spillway with 2-24” RCP pipes conveying water under 54
Roadway failure caused by pipe deterioration and significant rainfall event May 17, 2018
1 of 20 washouts in the Ashland area
  • Multiple flooded roads

Minor arterial – 7,900 VPD
Emergency road closure
Substandard secondary detour
  • Failing shoulders, inadequate width for truck traffic
What Now?

Route 54 East and Westbound Lanes 200' West of Route 669 (Independence Road)
Hanover County

As a result of heavy rains during the evening of Thursday May 17th 2018 in Hanover County, the existing multiple bored drainage structure located on Route 54 (West Patrick Henry Road) approximately 200 feet west of Route 669 (Independence Road) experienced catastrophic failure. The entire roadway structure and embankment washed out on the east bound lane and partially under the west bound lane. Complicating this repair is the roadway serves as the dam for Luk’s Pond which is approximately 5 acres in size and the water’s edge is within 15 to 20 feet of the edge of pavement. Traffic has been detoured around the site with a one mile detour using Route 669 (Independence Road) to Route 54 (Blount Road). The detour serves east and west bound traffic and will remain effect until repairs are completed.

At this point the repairs will consist of replacing the drainage structure with new designed drainage structure, construct appropriate head wall, seal off and pump floodable fill in the failed existing drainage structure, replace entire fill section, replace pavement structure and replace damaged guard rail. This work is being awarded on an emergency force account basis.

Wagman Heavy Civil, Inc. of York, Pa. was then solicited due to their experience in large scale construction projects and availability of personnel and equipment to perform the work.

District Administrator

WE KEEP VIRGINIA MOVING
Utility Concerns

- Sanitary force main – 8” HDPE
- Water main – 16” D.I.P.
- Overhead power lines
  - Dominion will not sleeve the line
- Vertical clearance limits on shoring design
- Utility support for excavation
  - Significant coordination with…

Route 54 NB
Proposed Fix

Double barrel 6’x6’ precast box culvert
Class II EC-1 inlet and outlet protection
Support of Excavation

- Sheet piles not an option due to vertical clearance restraints
- Shoring design – Wagman utilizes a micro-pile system
  - Drilled steel pipe piles – 9” diameter
  - Comacchio MC5-D drill rig
  - Bolted timber lagging
  - H pile brace for pipe support
Shoring Design
Excavation

Limited working area – vertically and horizontally
Culvert Installation

Threading the needle…
Backfilled with inlet protection and armored slope

Paved and marked
I-64 WIDENING MM 200-205
First Segment in Richmond District

Scott Fisher, PE, CCM – VDOT, Richmond District
Justin Campbell – Branch Civil/CBJV

May 2, 2019
Project Overview

Roadway
- Addition of one 12-foot-wide travel lane and one 10-foot-wide shoulder (6’ graded/4’ paved) in each direction for 3.8 mi.
- Widening occurs to the median of the existing interstate (minimize R/W costs)
- Mill and Overlay all existing travel lanes
- Restripe entire length of project
- Acceleration/Deceleration lanes extended and lighting improvement at both Weigh Stations

Bridges
- Widening of two 4-span bridges (263 feet)
- Partial demolition, widening and modification of existing substructure (abutments and piers), full repairs to existing substructure and superstructure, and total deck replacement
- Lightweight low shrinkage Class A4 concrete and Corrosion Resistant Reinforcement

Soundwall
- Construct 7,000 linear feet

Drainage
- Extend Box Culverts (7 barrels)
- Extend/New Lining Pipe Culverts

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Virginia Department of Transportation
Challenging Conditions…

The Mighty Chickahominy!!!
Challenging Conditions...Tight Footprint
Challenging Conditions…
CONSTRUCTION – CRITICAL PROJECT ELEMENTS

PIER EXTENSIONS • SETTING BEAMS • DECK CONSTRUCTION • SOUNDWALL
Bridge Widening – Pier Extensions (6)
Bridge Widening – Pier Extensions (6)
Bridge Widening – Sequence of Construction
Bridge Deck – CRR
Bridge Deck (Tele-Belt)
Soundwall
Soundwall
Success from...Pre-Construction Planning?

...On-Site Management?
Success from…Collaborative Relationships

- Shared Office Space
- Weekly Meetings (Minimum)
- Common Goal
- Solution-Minded Team
Delivering Excellent Dashboard Results
City of Hopewell

**Districtwide**

**ON-TIME PERFORMANCE**

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(Target: 70% of Projects Complete Development Phase On-Time)

**ON-BUDGET PERFORMANCE**

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(Target: 74% of Projects Complete Development Phase On-Budget)

**City of Hopewell = Strong ownership and communication**

**ON-TIME PERFORMANCE**

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