





# APPENDIX – N PROJECT SCHEDULE, REV 1

I-64 Hampton Roads Bridge-Tunnel Expansion Project

Hampton Roads Connector Partners 240 Corporate Blvd. 4<sup>th</sup> floor Norfolk, VA 23502

Hampton-Norfolk, Virginia

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# **DOCUMENT HISTORY**

Issue Date	Description	Ву	Revision
<b>December 19, 2019</b>	Minor modifications to schedule	C Benson	1

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# N. PROJECT SCHEDULE

### N.1 INTRODUCTION

The Hampton Roads-Bridge Tunnel Expansion Project (Project) will widen I-64 for approximately 9.9 miles along I-64 from Settlers Landing Road in Hampton, Virginia to the I-64/I-564 interchange in Norfolk, Virginia. The Project will create an eight lane facility with six consistent use lanes. The expanded facility will include four general purpose lanes, two new HOT lanes, and two new drivable (hard-running) shoulders to be used as HOT lanes during peak usage.

The Project will include full replacement of the North and South Trestle Bridges, two new parallel tunnels constructed using a Tunnel Boring Machine (TBM), expansion of the existing portal islands, and widening of the Willoughby Bay Trestle Bridges, Bay Avenue Trestle Bridges, and Oastes Creek Trestle Bridges. Also, onshore portions of I-64 will be widened to accommodate the additional lanes, the Mallory Street Bridge will be replaced, and the I-64 overpass bridges will be improved.

A linear construction schedule is provided as Figure N-2 in this appendix illustrating the areas of activity and expected time frame for the work in those areas. This is done by approximating geographic stationing on the x-axis, and the schedule of these activities on the y-axis. In addition, a Gantt type construction schedule has been included as Figure N-3 for a more traditional type schedule.

The project is divided into five design segments, defined as: (1) Hampton, (2) Tunnel, (3) Willoughby, (4) Norfolk-Navy, and (5) I-564 Interchange. The five segments are further sub-divided into nine design sub-segments as described below and shown in Figure N-1.

#### Segment 1 - Hampton

- Segment #1a (Hampton)
- Segment #1b (North Trestle-Bridge)

#### Segment 2 - Tunnel

Segment #2a (Tunnel)

#### Segment 3 – Willoughby

- Segment #3a (South Trestle-Bridge)
- Segment #3b (Willoughby Spit)
- Segment #3c (Willoughby Bay Trestle-Bridge)
- Segment #3d (4th View Street Interchange)

#### Segment 4 - Norfolk-Navy

Segment #4a (Norfolk-Navy)

#### Segment 5 – I-564 Interchange

Segment #5a (I-564 Interchange)

LEGEND HRBT CL SEGMENT MATCHLINE SUB-SEGMENT MATCHLINE SEGMENT(#1b) (NORTH TRESTLES) SEGMENTI#2a [TÜNNEL] SEGMENT/#3b WILLOUGHBY/SPIT] SEGMENT(#30 WILL'OUGHBY TRESTLES) SEGMENT/#3a [SOUTH TRESTLE] SEGMENT #3d [4TH|VIEW|INTERCHANGE AT MASON CREEK ROA SEGMENT #4a INORFOLK-NAVYI

Figure N-1: HRBT Design Segments and Key Map

## N.2 PHASING OF CONSTRUCTION

Currently, HRBT Project construction is planned to begin in the second quarter of 2020 and continue until 2025. In order to complete the project by October of 2025, marine and onshore construction activities will occur concurrently. For greater detail on the construction activities, the reader should refer to Appendix E – Project Description and Appendix L – Material Management Plan (Section L.1.3 – L.1.5). Design segments noted on the linear construction schedule include the following:

#### N.1.1.1 HAMPTON DESIGN SEGMENTS: #1A, #1B

The Hampton Design Segments include both onshore construction work (land based) and marine based construction work. Both will require extensive traffic control coordination to allow for lane improvements and lane widening. This is especially true with the marine construction for Section #1B which will require the demolition of the existing bridges and replacement with new bridges. The linear construction schedule shows that this work will begin in 2020 and extend through the duration of the Project.

The construction of the trestle bridges leading to the approach structures on the North Island will require dredging and the expansion of the North Island.

#### N.1.1.2 TUNNEL DESIGN SEGMENTS: #2A

The following on-island activities are expected to occur in support of the tunnel access and excavation:

- South Island
  - Slurry Walls & Jet Grouting
  - On Shore Ground Improvement
  - o Off Shore Ground Improvement
  - South Portal Excavation (pile driving, dredging, sheet pile, backfill)
  - o South Island Expansion
  - Building Construction
- North Island
  - Island Expansion
  - North Portal Slurry walls and Jet Grouting
  - North Portal Excavation (sheet pile wall, dredging, backfilling, etc)
  - Building Construction

The following tunneling activities are expected to occur when the South Island portal shaft work is completed:

- TBM delivery, assembly, lowering, and launch
- West bound tunnel construction
- TBM U-turn on at North Island Shaft
- East bound tunnel construction
- TBM break-out, removal, and disassembly

#### N.1.1.3 WILLOUGHBY DESIGN SEGMENTS: #3A, #3B, #3C, #3D

Similar to the Hampton Design Segments, the Willoughby Design Segments include both onshore construction work (land based) and marine based construction work. Extensive traffic control coordination will be required to allow for lane improvements and lane widening. Work in these segments is also expected to begin at the onset of the project (May 2020) and extend through the

project duration. The construction of the marine bridge section of the roadway (including demolition activities) is expected to occur over a 3 to 4 year period.

#### N.1.1.4 NORFOLK-NAVY DESIGN SEGMENT: #4A

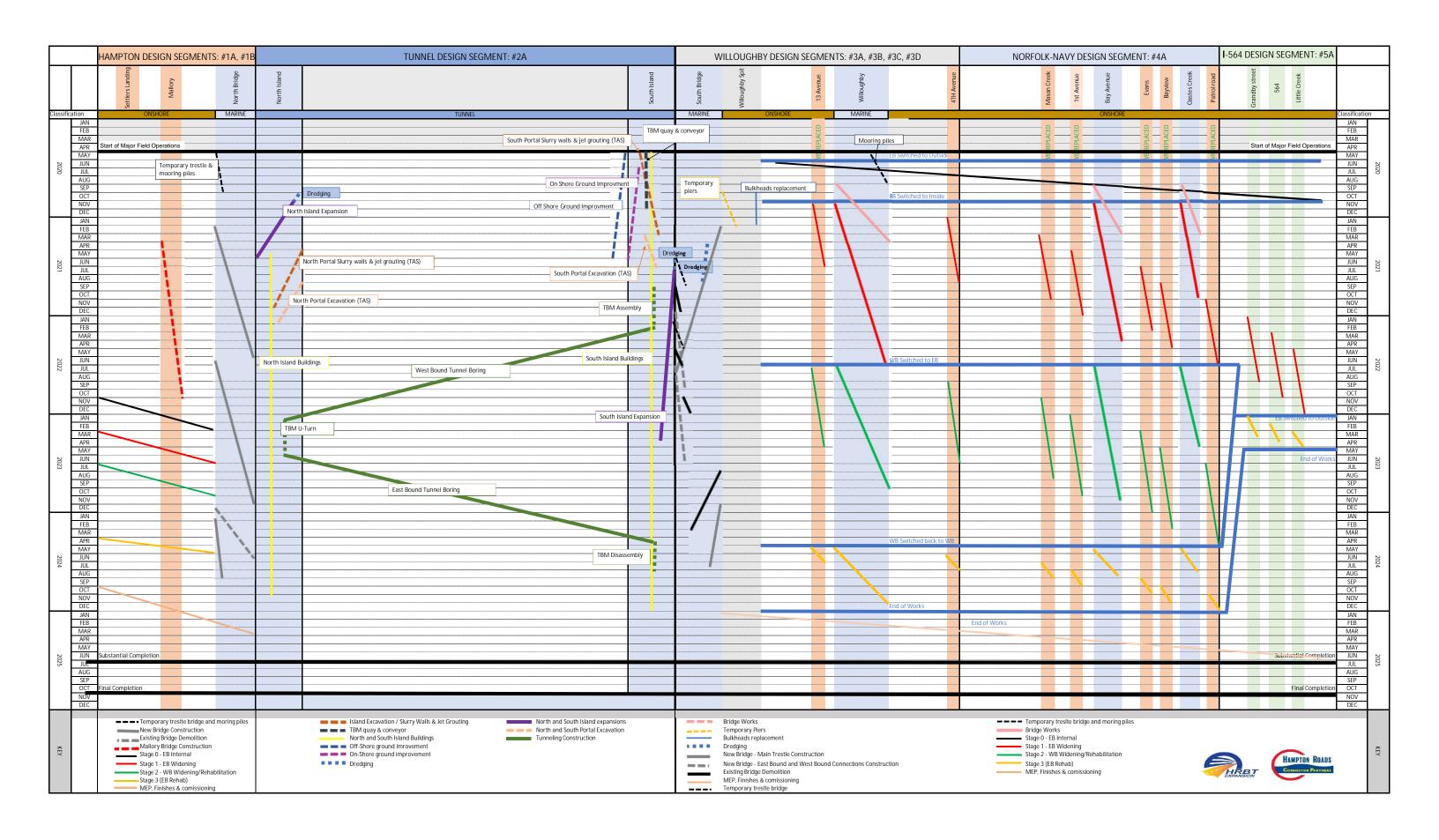
This onshore roadway work is expected to start in the later part of 2020 and will extend through the project duration.

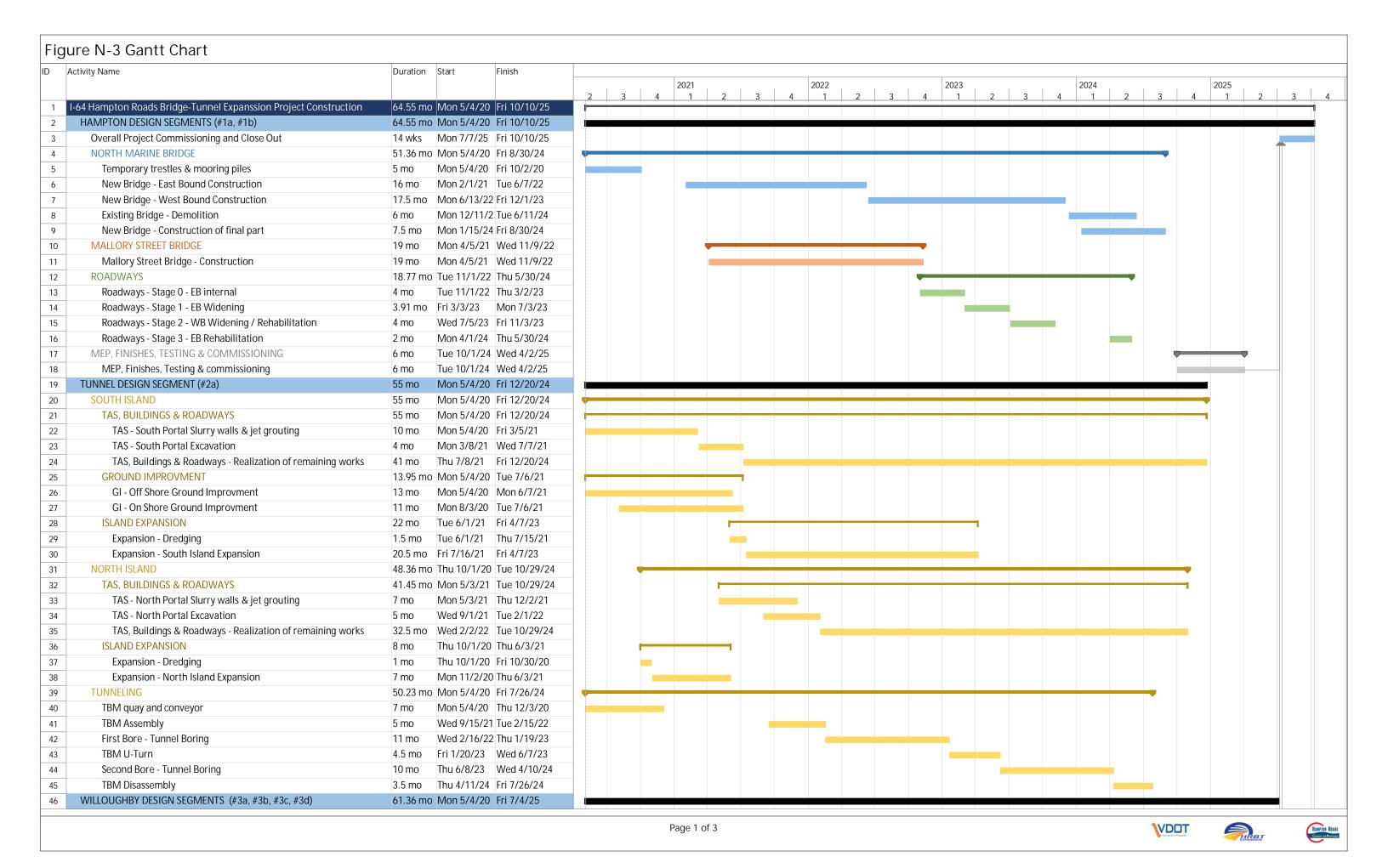
#### N.1.1.5 I-564 DESIGN SEGMENT: #5A

Onshore roadway work is expected starting in 2020 and will extend through the project duration.

### N.3 LINEAR CONSTRUCTION SCHEDULE AND GANTT CHART

The attached linear construction schedule has been included as Figure N-22 and a construction Gantt chart has been included as Figure N-3.





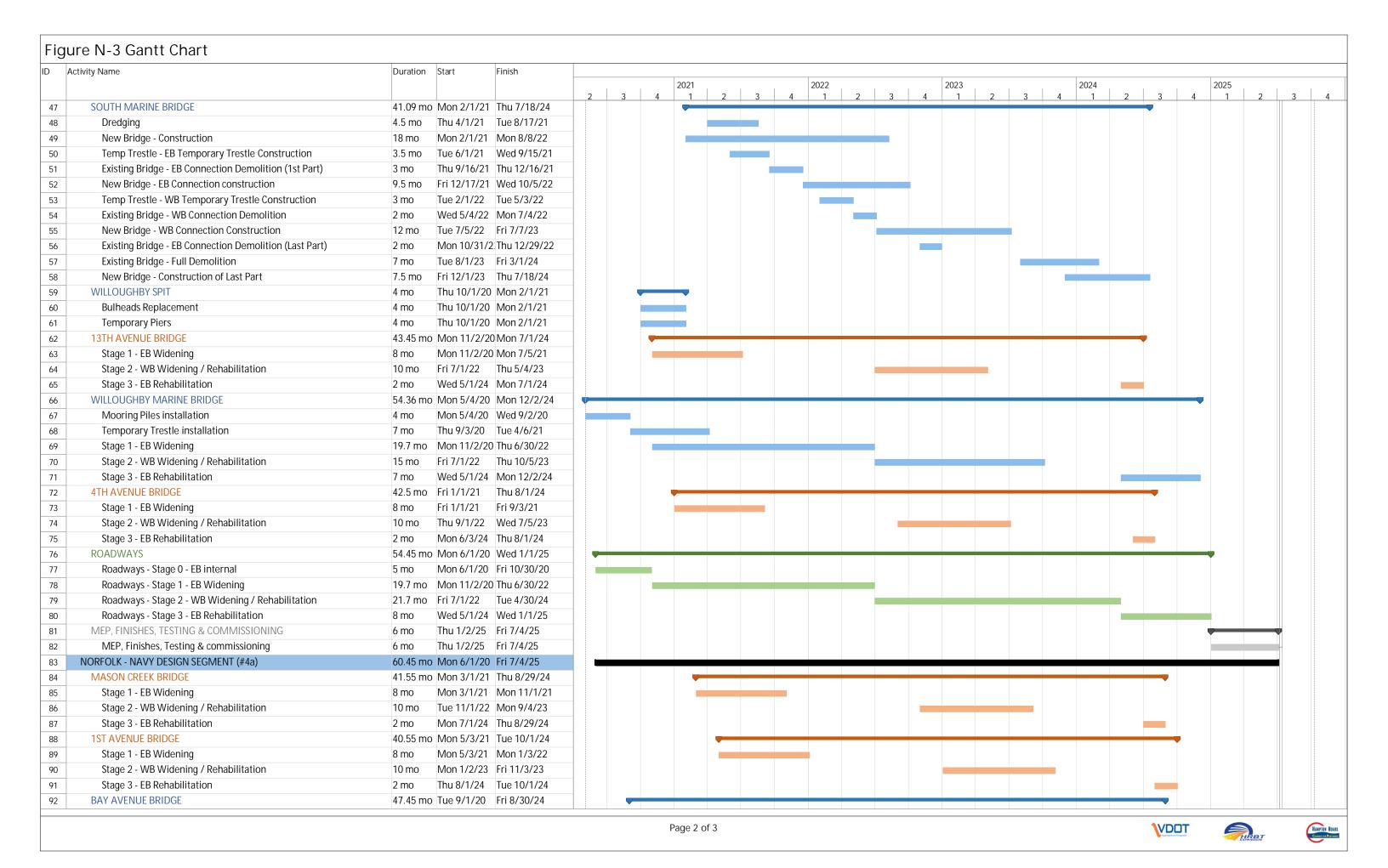


Figure N-3 Gantt Chart Activity Name Duration Start Finish Temporary Trestle installation Tue 9/1/20 Wed 3/3/21 93 Stage 1 - EB Widening Mon 11/2/20 Thu 4/7/22 94 17 mo Stage 2 - WB Widening / Rehabilitation 95 Fri 7/1/22 Tue 11/21/23 96 Stage 3 - EB Rehabilitation Wed 5/1/24 Fri 8/30/24 4 mo 97 **EVANS STREET BRIDGE** 39.59 mo Thu 7/1/21 Thu 10/31/24 8 mo 98 Stage 1 - EB Widening Thu 7/1/21 Thu 3/3/22 Stage 2 - WB Widening / Rehabilitation 99 10 mo Wed 3/1/23 Tue 1/2/24 100 Stage 3 - EB Rehabilitation 2 mo Mon 9/2/24 Thu 10/31/24 **BAYVIEW BOULEVARD BRIDGE** 38.55 mo Wed 9/1/21 Fri 11/29/24 101 Stage 1 - EB Widening 102 Wed 9/1/21 Wed 5/4/22 103 Stage 2 - WB Widening / Rehabilitation 10 mo Mon 5/1/23 Fri 3/1/24 Stage 3 - EB Rehabilitation 104 Tue 10/1/24 Fri 11/29/24 2 mo 105 OASTES CREEK BRIDGE 46.45 mo Tue 9/1/20 Wed 7/31/24 Temporary Trestle installation 106 Tue 9/1/20 Wed 3/3/21 107 Stage 1 - EB Widening Mon 11/2/20 Thu 11/4/21 12 mo 108 Stage 2 - WB Widening / Rehabilitation 10 mo Fri 7/1/22 Thu 5/4/23 Stage 3 - EB Rehabilitation 109 3 mo Wed 5/1/24 Wed 7/31/24 110 PATROL ROAD BRIDGE 49.45 mo Mon 11/2/20 Wed 1/1/25 Stage 1 - EB Widening Mon 11/2/20 Mon 7/5/21 111 8 mo 112 Stage 2 - WB Widening / Rehabilitation 10 mo Wed 6/28/23 Tue 4/30/24 113 Stage 3 - EB Rehabilitation 2 mo Fri 11/1/24 Wed 1/1/25 **ROADWAYS** 114 54.45 mo Mon 6/1/20 Wed 1/1/25 Roadways - Stage 0 - EB internal Mon 6/1/20 Fri 10/30/20 115 116 Roadways - Stage 1 - EB Widening 19.7 mo Mon 11/2/20 Thu 6/30/22 117 Roadways - Stage 2 - WB Widening / Rehabilitation 21.7 mo Fri 7/1/22 Tue 4/30/24 118 Roadways - Stage 3 - EB Rehabilitation 8 mo Wed 5/1/24 Wed 1/1/25 119 MEP, FINISHES, TESTING & COMMISSIONING Thu 1/2/25 Fri 7/4/25 6 mo 120 MEP, Finishes, Testing & commissioning Thu 1/2/25 Fri 7/4/25 6 mo 121 I-564 DESIGN SEGMENT (#5a) 52.5 mo Mon 6/1/20 Fri 11/1/24 122 **GRANDBY STREET BRIDGE** 13.82 mo Mon 1/3/22 Thu 3/2/23 123 Stage 1 - EB Widening 8 mo Mon 1/3/22 Mon 9/5/22 124 Stage 3 - EB Rehabilitation 2 mo Mon 1/2/23 Thu 3/2/23 I-564 BRIDGE 125 12.95 mo Tue 3/1/22 Mon 4/3/23 Stage 1 - EB Widening Tue 3/1/22 Tue 11/1/22 126 8 mo 127 Stage 3 - EB Rehabilitation Wed 2/1/23 Mon 4/3/23 2 mo LITTLE CREEK ROAD BRIDGE 128 11.86 mo Mon 5/2/22 Mon 5/1/23 129 Stage 1 - EB Widening Mon 5/2/22 Mon 1/2/23 130 Stage 3 - EB Rehabilitation Wed 3/1/23 Mon 5/1/23 2 mo **ROADWAYS** 131 46.5 mo Mon 6/1/20 Wed 5/1/24 Roadways - Stage 0 - EB internal 132 5 mo Mon 6/1/20 Fri 10/30/20 133 Roadways - Stage 1 - EB Widening 12 mo Tue 12/28/21 Fri 12/30/22 134 Roadways - Stage 3 - EB Rehabilitation Mon 1/1/24 Wed 5/1/24 4 mo 135 MEP, FINISHES, TESTING & COMMISSIONING Thu 5/2/24 Fri 11/1/24 6 mo MEP, Finishes, Testing & commissioning Thu 5/2/24 Fri 11/1/24 136





