I-64 GAP SEGMENT A WIDENING TECHNICAL PROPOSAL VOLUME I

VIRGINIA DEPARTMENT OF TRANSPORTATION

June 22, 2023

A DESIGN-BUILD PROJECT
State Project No.: 0064-063-623 P101, R201, C501, B601, B602
Federal Project No.: NHPP-064-3(545)
Contract ID Number: C00122166DB119

kokosing
CONSTRUCTION COMPANY, INC.
6235 WESTERVILLE ROAD
WESTERVILLE, OH 43081

4.1 | Letter of Submittal

kokosing
CONSTRUCTION COMPANY, INC.
12001 GUILFORD ROAD | ANNAPOLIS JUNCTION, MD 20701
PHONE 301.953.0900

4.1 | LETTER OF SUBMITTAL
ELECTRONICALLY VIA BID EXPRESS

June 22, 2023

Commonwealth of Virginia
Department of Transportation (VDOT)
Virginia Dept. of Transportation
1401 East Broad Street
Richmond, VA 23219
Attention: Suril R. Shah, P.E., DBIA (APD Division)

RE: Request for Proposals | Design-Build | I-64 GAP Segment A Widening | New Kent County, VA | State Project No.: 0064-063-623 P101, R201, C501, B601, B602 | Federal Project No.: NHPP-064-3(545) | Contract ID Number: C00122166DB119

Dear Suril:

4.1.1 Kokosing Construction Company, Inc. (Kokosing), 6235 Westerville Road, Westerville, OH 43081 is the legal entity who will execute the contract with Virginia Department of Transportation (VDOT).

4.1.2 Kokosing hereby declares that it is our intent, if selected, to enter into a contract with VDOT for the Project in accordance with the terms of the RFP.

4.1.3 Pursuant to Part 1, Section 8.2, Kokosing hereby declares that the offer represented by the Technical and Price Proposals will remain in full force and effect for one hundred twenty (120) days after the date the Price Proposal is actually submitted to VDOT.

4.1.4 Point of Contact	Secondary Point of Contact	4.1.5 Kokosing Principal Officer
Ryan Gorman, PE, DBIA Vice President of Alternative Delivery Kokosing Construction Co., Inc. 300 Arboretum Place, Suite 520 Richmond, VA 23236 804-400-4521 Cell 301-953-2611 Fax rgorman@kokosing.biz	Chris Rutkai, PE Sr. Area Manager Kokosing Construction Co., Inc. 300 Arboretum Place, Suite 520 Richmond, VA 23236 804-400-9400 Cell 301-953-2611 Fax crutkai@kokosing.biz	Gregory A. Hamilton, PE, DBIA Regional Sr. Vice President Kokosing Construction Co., Inc. 12001 Guilford Road Annapolis Junction, MD 20701 614-207-0716 Cell gah@kokosing.biz

4.1.6 Final Completion Date: July 30, 2027 **4.1.7** Unique Milestone Date: None

4.1.8 An executed Proposal Payment Agreement (Attachment 9.3.1) is in the Appendix.

4.1.9 Certification Regarding Debarment Forms (Attachments 11.8.6(a) and (b)) are signed and in the Appendix.

4.1.10 Kokosing is committed to achieving a 10% DBE participation goal for the entire value of the contract.

4.1.11 Kokosing confirms that all commercial and professional registration requirements set forth in Offeror's Statement of Qualifications, including, but not limited to those requirements of the Virginia State Corporation Commission (SCC) and the Virginia Department of Professional and Occupational Regulations (DPOR) are complete and accurate and Kokosing, and business entities on our team, remain in good standing with all applicable regulatory bodies and are eligible to provide the services required on the Project.

Sincerely,

KOKOSING CONSTRUCTION COMPANY, INC.

Gregory A. Hamilton, PE, DBIA
Regional Sr. Vice President

4.2 | Offeror's Qualifications

4.2 OFFEROR'S QUALIFICATIONS

4.2.1 SOQ ACCURACY CONFIRMATION STATEMENT

The Kokosing Team has received approval from Virginia Department of Transportation (VDOT) to replace Ryan Gorman with Chris Rutkai as Design-Build Project Manager, Aaron Rife with James Mann as Safety Manager, Kim Troiani with Mike Carosi as Public Relations Manager, and to add CES, ECS, and F&R in accordance with Part 1, Section 11.4 of the RFP. Our proposed deputy key personnel are designated with a ★ on our updated Organizational Chart and include Jake Leffler as Deputy Design-Build Project Manager, Cameron Rohrer, PE, Assoc. DBIA, as Deputy Design Manager, and Paul Moose, PE, CCM, as Deputy Quality Assurance Manager. We have modified Laura Rader-Dixon's title to include the Environmental Compliance Manager (ECM) position. Aside from these stated changes, Kokosing Construction Company, Inc. (Kokosing) hereby confirms the remaining information contained in our Statement of Qualifications (SOQ) remains true and accurate.

Updated Organizational Chart & Narrative: Figure 4.2.1-1 is our updated organizational chart from our submitted SOQ. Changes or additions to personnel or titles have been marked in red:

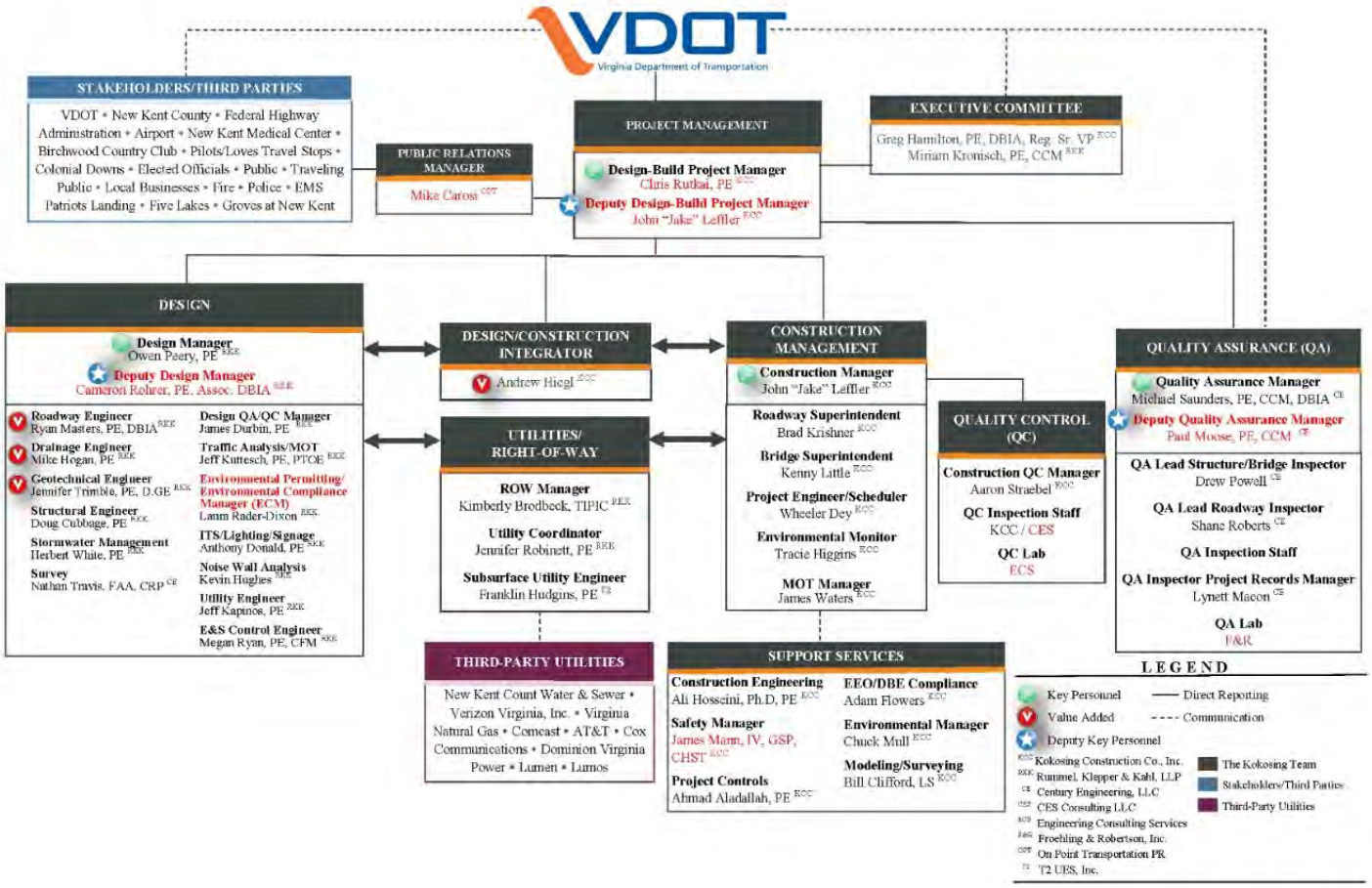


Figure 4.2.1-1: Updated Organizational Chart

Revised from SOQ: Design-Build Project Manager | Chris Rutkai, PE (Kokosing), who reports to our Executive Committee, will manage the design, construction, quality management, contract administration, material/equipment procurement, labor, and other contract services. He will coordinate stakeholders, public outreach, and public meetings, will work with VDOT to resolve any disputes, and meet Kokosing's obligations under the Contract. Chris brings over eight years of design-build experience, including previously widening 19 miles of I-64 and successfully delivering dozens of VDOT projects in the Richmond District on time/on budget. He has extensive local knowledge of the Richmond area including the stakeholders and traffic patterns of this project.

4.3 | Design Concept

4.3 DESIGN CONCEPT

Introduction: The Interstate 64 GAP Segment A Widening Project involves the addition of one travel lane and one shoulder on both the Eastbound and Westbound directions of the interstate; this Project is a segment of the larger I-64 Corridor Improvement Plan that is being implemented by VDOT. The I-64 is a highly utilized corridor that, according to studies completed by VDOT, sees over 925 incidents per year, with about 21,500 crashes over the last five years.

With the significance of the corridor at the forefront of our planning, the Kokosing Team focused on VDOT's project priority of producing an efficient design of the Project while meeting and/or exceeding the RFP requirements when developing our design concept for this project. Our design resulted from the dedicated collaboration of our Design-Build (DB) team (the Kokosing Team), **Kokosing Construction Company, Inc.** and **RK&K**, recognized leaders in the industry who together have completed some of VDOT's most challenging DB projects, most notably the Route 29 Solutions Design-Build Project, which was completed ahead of schedule.

During development of our design concept and the preparation of this technical proposal, the Kokosing Team met weekly to provide the highest quality project for VDOT using the safest and most cost-effective approach possible, while meeting and/or exceeding the requirements of the RFP.

Throughout our concept design development, the Kokosing Team made it a priority to achieve VDOT's goals for the Project and the I-64 Corridor Improvement Plan, including:

	COST	**Providing the best price for the scope of work and reduce future maintenance costs for VDOT**
	SAFETY	**Providing a safe design that will limit stakeholder risks and a safe work zone for the traveling public and workers during construction**
	OPERATIONS	**Streamlined highway network to improve traffic flow, reduce congestion, provide faster travel times, and a more reliable system of travel**
	SCHEDULE	**Adhere to a well-sequenced schedule built to minimize potential delays and delivers the project quickly and efficiently**
	PUBLIC ACCEPTANCE	**Design and construction delivery approach that maximizes public acceptance while preserving trees and limiting environmental risks**
	QUALITY	**Providing a rigorous approach to design and construction QA/QC that gives VDOT confidence in our program and reduces the need for oversight**
	FUTURE PLANNING	**Avoiding and minimizing impacts to design and construction of adjacent future I-64 GAP Segment B Widening project**

Our Team has developed a design concept that meets or exceeds all the requirements listed in the RFP Technical Requirements, provides a concept that requires no right of way (ROW) and does not require additional Design Exceptions and/or Design Waivers (DE/DW) beyond those identified or included in the RFP.

In developing our design concept, our Team identified and incorporated modifications and optimizations to the RFP plans which provides value added benefits to VDOT, as outlined in **Table 4.3-1** and **Figure 4.3-1**:

TABLE 4.3-1: DESIGN IMPROVEMENTS

Design Improvements	Benefits to VDOT and Traveling Public	VDOT Goals Met
Eliminated need for 960-ft. long retaining wall by realigning WB I-64 from Station 4978+50 to 5029+40	- Eliminates risk for environmental impact to hi-quality wetlands. - Reduces VDOT maintenance by eliminating the RFP concept's 960-ft. retaining wall	

4.3 DESIGN CONCEPT

TABLE 4.3-1: DESIGN IMPROVEMENTS

Design Improvements	Benefits to VDOT and Traveling Public	VDOT Goals Met
Eliminated existing box culvert retaining walls and associated guardrail hazards in the median clear zone at Station 4997+90 and 5012+70	- Provides a safer median with fewer roadside hazards - Reduces VDOT maintenance for guardrail and structures	
Eliminated need for MOT cross-over by widening toward median along I-64 WB from Station 4991+00 to 5030+50	- Allows construction activities, equipment, and material staging to remain within the median - Allows fewer traffic shifts and prevents construction zones on both sides of traffic	
Maintained existing alignment for I-64 WB Ramp from southbound Route 33	- Reduces MOT impacts and limits of pavement reconstruction	
Optimized Sequence of Construction by performing mainline pavement buildup and pavement repairs early in the project, and increasing initial shoulder strengthening section to 8-in.	- Improves safety by allowing all stages of construction to provide pavement that is flush across the roadway with no drop-offs - Provides improved temporary drainage by preventing a 1-in. lip to the intermediate surface of the median widening which would trap water on the roadway - Improves public acceptance by providing a new riding surface at beginning of the project, resulting in fewer potholes and reduced maintenance - Improves quality by preventing uneven pavement joints - Improves schedule by utilizing temporary lane closures	
Temporary reconfiguration of WB on-ramps for MOT during pavement reconstruction at Exit 205 (Rte. 33) Interchange	- Improves traffic operations on I-64 by eliminating lane merge condition - Avoids splitting traffic around construction, providing safer MOT - Provides wider shoulders through all phases than RFP minimums allow - Reduces pavement joints and number of construction phases, and fewer traffic shifts	
Removed over 18,000 liner feet of cable guardrail that is not warranted	- Significantly reduces VDOT maintenance burden while maintaining all safety standards for clear zone - Ensures that all guardrail within the project limits meets current MASH standards	
Provided over 40% increase in protected median forested areas from that required by the RFP	- Improves public acceptance and reduces environmental impact	
Lengthen proposed DMS signs to avoid constructing new guardrail hazards	- Improves public acceptance and safety, reduces VDOT maintenance	

4.3 DESIGN CONCEPT

TABLE 4.3-1: DESIGN IMPROVEMENTS

Design Improvements	Benefits to VDOT and Traveling Public	VDOT Goals Met
840 additional LF of MGS standard guardrail upgrade provided over the RFP Concept at west end of the project along I-64 WB	- Increases range along I-64 WB that will be protected with current MASH compliant guardrail, increasing safety for travelers and reducing VDOT maintenance of outdated barrier	
Optimized drainage conveyance design to bypass existing culverts in "less than good" condition	- Prevents the need to jack and bore new pipes under I-64 - Reduces VDOT maintenance with fewer pipes in the project's final drainage system	
Innovative Detention design utilizing linear detention swales	- Reduces construction schedule, costs, and future maintenance for VDOT while also increasing corridor safety by reducing the number of facilities and removing the embankment hazards in the median - Eliminates the RFP-proposed SWM pond in the southwest quadrant of the Exit 205 interchange, reducing environmental impacts from tree clearing and land disturbance	
MSE walls at three existing box culverts outside the clear zone	- Reduces permanent and temporary wetland and stream impacts that would occur with culvert extensions - Maintains full recoverable clear zone free of hazards	
Minimized longitudinal and transverse construction joints on bridges	- Reduces locations for water infiltration and VDOT maintenance in the future	
Flexible link slab and abutment deck overhangs creates a jointless superstructure and load path to the existing structure	- Eliminates expansion joints and future maintenance associated with expansion joint replacement, leaking, and associated corrosion to bridge elements below	
Mill, hydro-demolition, and overlay removes chloride contaminated concrete and creates a low permeability driving surface	- In addition to providing a lower permeability deck surface, the hydro-demolition process removes areas of unsound concrete and high chloride concentrations in the deck more efficiently than just milling the deck alone	
Re-using existing beam seats after any required repairs performed rather than reconstructing to lower seat elevations	- Less invasive to existing structure than jacking and blocking superstructure for extended period of time while existing seats are demolished, reinforcing lowered, and seats re-cast	
Raising superstructure to accommodate thicker, modern bearing assemblies	- Better aligns final superstructure profile with final roadway profile in addition to increased vertical clearance over Courthouse Rd.	
Additional shy distance, 2-ft. total each side, will be provided during all phases of bridge construction over the 1-ft. required in the RFP	- Increases safety of the traveling public and reduces risk to travelers and construction workers	
Minimize loads to the existing substructure	- Eliminates need for existing foundation strengthening or modifications	

Design Concept Overview

NORTH

DESIGN IMPROVEMENT
Eliminated outside widening and RFP-proposed retaining wall to avoid environmental impacts to hi-quality wetlands, improve construction sequencing, and reduce VDOT maintenance

DESIGN IMPROVEMENT
Connected culverts and graded median to eliminate guardrail and barrier and provide a traversable median clear zone free of hazards

DESIGN IMPROVEMENT
Maintained existing ramp alignment, reducing MOT impacts and pavement reconstruction

DESIGN IMPROVEMENT
Exit 205 WB Temporary Ramp Reconfiguration prevents construction zone in split traffic and provides wider shoulders through all stages of construction

DESIGN IMPROVEMENT
Innovative Detention design reduces construction schedule, costs, and future maintenance for VDOT while also increasing corridor safety by reducing the number of facilities and removing the embankment hazards in the median

DESIGN IMPROVEMENT
Extended DMS length to provide 30' outside clear zone and eliminate the need for new guardrail

DESIGN IMPROVEMENT
Removing over 18,000 LF of sub-standard and un-warranted guardrail project-wide, reducing VDOT maintenance

DESIGN IMPROVEMENT
MSE walls at existing box culverts reduce wetland and stream impacts while maintaining clear zone

DESIGN IMPROVEMENT
Extended DMS length to provide 30' outside clear zone and eliminate the need for new guardrail

DESIGN IMPROVEMENT
Eliminated retaining walls, barrier and guardrail to provide traversable median clear zone without hazards

DESIGN IMPROVEMENT
840 additional LF of MASH standard guardrail provided over the RFP Concept

DESIGN IMPROVEMENT
Avoided tree clearing and additional disturbance by eliminating RFP-proposed SWM facility

DESIGN IMPROVEMENT
Improved drainage conveyance design bypasses existing culvert in "less than good" condition, avoiding the need to jack and bore a new pipe under I-64

DESIGN IMPROVEMENT
Improved drainage conveyance design bypasses existing culvert in "less than good" condition, avoiding the need to jack and bore a new pipe under I-64

DESIGN IMPROVEMENT
Improved drainage conveyance design bypasses existing culvert in "less than good" condition, avoiding the need to jack and bore a new pipe under I-64

DESIGN IMPROVEMENT
MSE walls at existing box culverts reduce wetland and stream impacts while maintaining clear zone

DESIGN IMPROVEMENT
Improved drainage conveyance design bypasses existing culvert in "less than good" condition, avoiding the need to jack and bore a new pipe under I-64

DESIGN IMPROVEMENT
Removing over 18,000 LF of sub-standard and un-warranted guardrail project-wide, reducing VDOT maintenance

DESIGN IMPROVEMENT
Improved drainage conveyance design bypasses existing culvert in "less than good" condition, avoiding the need to jack and bore a new pipe under I-64

DESIGN IMPROVEMENT
Extended DMS length to provide 30' outside clear zone and eliminate the need for new guardrail

DESIGN IMPROVEMENT
Improved drainage conveyance design bypasses existing culvert in "less than good" condition, avoiding the need to jack and bore a new pipe under I-64

DESIGN IMPROVEMENT
Provided over 40% increase in protected median forested areas from that required by the RFP

DESIGN IMPROVEMENT
MSE walls at existing box culverts reduce wetland and stream impacts while maintaining clear zone

DESIGN IMPROVEMENT
Improved drainage conveyance design bypasses existing culvert in "less than good" condition, avoiding the need to jack and bore a new pipe under I-64

BRIDGE DESIGN IMPROVEMENTS
- No additional longitudinal cold joint from a closure pour reduces VDOT maintenance
- Flexible link slab and abutment deck overhangs create a jointless superstructure and load path to the existing structure which eliminates maintenance associated with expansion joints
- Mill, hydrodemolition, and overlay removes chloride-contaminated concrete and creates a low permeability driving surface
- Re-using existing beam seats and jacking the existing bridge gains an additional 2" overhead clearance for Courthouse Road
- Shy distance of 2-ft total each side will be provided during all phases of bridge construction over the 1-ft required in the RFP, increasing safety of the traveling public and reducing risk to travelers and construction workers.
- Minimized loads to the existing substructure eliminates need for existing foundation strengthening or modifications.

COST	Providing the best price for the scope of work and reduce future maintenance costs for VDOT
SAFETY	Providing a safe design that will limit stakeholder risks and a safe work zone for the traveling public and workers during construction
OPERATIONS	Streamlined highway network to improve traffic flow, reduce congestion, provide faster travel times, and a more reliable system of travel
SCHEDULE	Adhere to a well-sequenced schedule built to minimize potential delays and delivers the project quickly and efficiently
PUBLIC ACCEPTANCE	Design and construction delivery approach that maximizes public acceptance while preserving trees and limiting environmental risks
QUALITY	Providing a rigorous approach to design and construction QA/QC that gives VDOT confidence in our program and reduces the need for oversight
FUTURE PLANNING	Avoiding and minimizing impacts to design and construction of adjacent future I-64 GAP Segment B Widening project

I-64 GAP SEGMENT A WIDENING

kokosing CONSTRUCTION COMPANY, INC. | RK&K

SCALE	PROJECT	SHEET NO.
0 1/3 mi 2/3 mi	0064-063-623	6

4.3 DESIGN CONCEPT

4.3.1 CONCEPTUAL ROADWAY PLANS

The Kokosing Team's Conceptual Roadway Plans are provided in **Volume II** of our Technical Proposal. We have developed our design to meet or exceed all design requirements in the RFP. No additional Design Exceptions (DE) / Design Waivers (DW) to the AASHTO/VDOT standards are required beyond what is identified in the RFP. Our conceptual design includes the VDOT-provided DE for reduced inside shoulder widths at the Exit 205 Interchange to avoid impacts to the existing bridge piers, as well as the VDOT-provided DW for a design and posted speed of 70 mph. Our design is fully contained within the existing Limited Access along the project and does not require any additional ROW. **Table 4.3-1** and **Figure 4.3-1** identify incorporated design optimizations. Details of these optimizations, and other design features, are further described in the subsections below and depicted on our Conceptual Roadway Plans in **Volume II**.

(a) General geometry including horizontal curve data and associated design speeds, the number and widths of lanes and shoulders: Our design provides three general purpose lanes, eastbound (EB) and westbound (WB) divided by a graded median and satisfies the design requirements listed in **Table 4.3.1-1**:

TABLE 4.3.1-1: GEOMETRIC CRITERIA

Roadway	Geometric Design Standard	Design Speed (MPS)	Number - Width of Lanes (each direction)	Inside (Median) Roadway Shoulder Width	Inside (Median) Paved Shoulder Width	Outside Roadway Shoulder Width	Outside Paved Shoulder Width	Clear Zone
I-64 (WB and EB)	GS-INT	70	3-ft. – 12-ft.	12-ft.	10-ft.	Match Existing	Match Existing	30-ft.
Ramp (Rte. 33 to I-64 WB)	GS-R	35	1-ft. – 16-ft.	6-ft.	4-ft.	10-ft.	8-ft.	12-ft.
Ramp (I-64 EB to Rte. 33)	GS-R	35	1-ft. – 16-ft.	6-ft.	4-ft.	10-ft.	8-ft.	14-ft.
Loop Ramp (Rte. 33 to I-64 WB)	GS-R	25	1-ft. – 16-ft.	6-ft.	4-ft.	10-ft.	8-ft.	12-ft.
Ramps (I-64 WB to Rte. 33), Rte. 609 Interchange, Rte. 155 Interchange, Rest Area	GS-R	Match Existing	1-ft. – 16-ft.	Match Existing	Match Existing	Match Existing	Match Existing	14-ft.

Our Conceptual Roadway Plans include detailing for horizontal curve data and associated design speeds, the number and width of lanes and shoulders, superelevation (meeting TC-5.11R for the design speed), and improvements to acceleration/deceleration ramps within the project limits.

(b) Horizontal alignments: After reviewing the horizontal alignments for I-64 and interchange ramps provided in the RFP Conceptual Plans, we have developed an OpenRoads 3D model of existing conditions and our proposed concept. Using this model, we were able to identify several design optimization locations. The focus of the project to widen to the inside also helps construction sequencing, safety, and schedule by concentrating the majority of the work into a single median work area. With these goals in mind, our Team has optimized the following horizontal alignments:

- WB I-64: from Station 4983+50 to 5027+50, we have shifted the alignment toward the median which provides several significant benefits. In **Figure 4.3.1-1** below, we contrast the cross section of I-64 as proposed in the RFP Plan to our design enhancement, which provides the following:

4.3 DESIGN CONCEPT

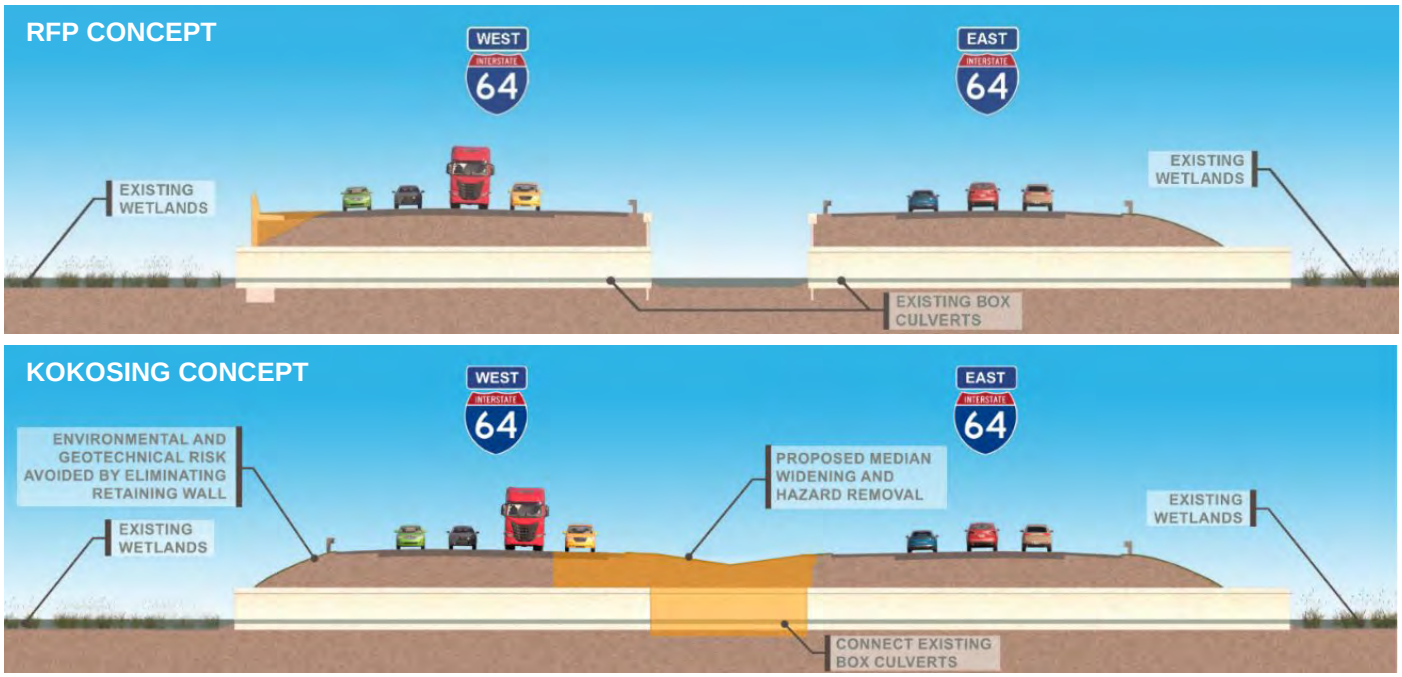


Figure 4.3.1-1: RFP Concept (top) and Kokosing Concept (bottom) at existing Quad Box Culvert at Sta 998+00

- I-64 WB On-Ramp 1: In conjunction with the alignment shift of I-64 WB noted above, the horizontal geometry of WB On-Ramp 1 has been revised to maintain the existing alignment. This reduces the limits of reconstruction necessary, reducing construction cost, time, and traffic impacts.
- WB I-64: Adjustment from Station 5040 to 5080 to follow the existing crown more closely, which increases the outside shoulder width and safety and public acceptance by avoiding placement of the roadway crown in the wheel path of traveling vehicles.

ALIGNMENT IMPROVEMENTS AND GOALS ACHIEVED:

- ✓ Provides a safer roadway section by eliminating multiple hazards from the median, including vertical drop-offs associated with two multi-cell box culverts and over 1,500-ft. of combined median guardrail and median barrier and associated maintenance pavement
- ✓ Significantly reduces long-term maintenance by removing two existing retaining walls in the median associated with the box culvert at Station 998+00 and avoiding placement of a retaining wall along the outside shoulder; reduces long-term maintenance associated with culvert outfall and inflow in the median
- ✓ Provides recoverable slopes in the median
- ✓ Eliminates the 960-ft. long retaining wall shown on the RFP plans, thereby eliminating likely impacts to high-quality wetlands north of WB I-64 and drastically reduces environmental and geotechnical risk
- ✓ Eliminates realignment of WB on-ramp which minimizes traffic impacts and reduces construction time
- ✓ Eliminates utility conflicts with 16-in. gas and recently installed conduit providing electrical service to the newly installed CCTV camera at Station 4982+50
- ✓ Concentrates construction in the median work area and eliminates temporary barrier on the outside of WB I-64 that is required by the RFP-proposed widening, benefitting safety during construction

(c) Maximum grade for all segments and connectors: Our Team evaluated the vertical grades for all alignments and utilized the LIDAR and bridge clearance information to validate the roadway buildup design for I-64. As shown in **Table 4.3.1-2**, our conceptual design meets the RFP requirements for maximum vertical grade:

TABLE 4.3.1-2: MAXIMUM VERTICAL GRADE

Alignment	Proposed Maximum Grade	Design Criteria Maximum Grade	Alignment	Proposed Maximum Grade	Design Criteria Maximum Grade
WB I-64	2.9	3.0	EB Off Ramp - 2	1.5	6.0
EB I-64	2.9	3.0	WB Off Ramp - 2	0.7	6.0
WB On Ramp -1	4.8	6.0	EB On Ramp - 2	0.9	6.0
EB Off Ramp - 1	0.7	6.0	EB Rest Area Off Ramp	2.7	6.0
WB On Ramp -1a	2.3	7.0	WB Rest Area On Ramp	1.8	6.0
WB Off Ramp - 1	2.6	6.0	EB Rest Area On Ramp - 1	1.1	6.0
EB On Ramp - 1	3.1	6.0	WB Rest Area Off Ramp - 1	1.6	6.0
WB On Ramp - 2	0.9	6.0	WB On Ramp - 3	0.9	6.0

MAXIMUM GRADE IMPROVEMENTS AND GOALS ACHIEVED:

✓ All the Kokosing Team's vertical grades are well below the Design Criteria Maximum Grades

(d) Typical sections of the roadway segments to include ramps, retaining walls, bridge structures and pavement sections: Detailed typical sections are included in Volume II.

Roadway: Our proposed roadway typical section is consistent with the RFP Conceptual Plan and the Attachment 2.2 Design Criteria. As shown in **Figure 4.3.1-3** below, the project adds one lane in the median for each direction of mainline I-64 within the project limits to provide a total of three 12-ft. lanes, both WB and EB. Pavement sections are in accordance with the RFP and are denoted in Volume II.

Figure 4.3.1-3: Proposed Roadway Typical Section

Understanding VDOT's priority to retain forested areas within the median, our typical section provides a 30-ft. clear zone with recoverable slopes while also providing additional forested areas that will be retained in the median.

4.3 DESIGN CONCEPT

Retaining Walls: Our design includes the use of small MSE retaining walls to avoid extending six double-box culverts into existing wetlands. These retaining walls are located outside the required recoverable shoulder area and will reduce environmental impacts on the project while maintaining a roadside free of hazards in the clear zone. Our Volume II Conceptual Roadway Plans depict these six proposed retaining wall locations.

PUBLIC ACCEPTANCE: Our Team provides VDOT with at least a 40% increase in total median protected forest area from that required by the RFP Concept Plan.

Ramps: Our Design Concept matches the RFP Conceptual design by primarily retaining existing ramp geometry (by allowing existing cross-slopes, curve radii, and shoulder widths to remain), with one exception where our Design Concept adjusts the alignment of WB On Ramp 1 at Exit 205 to match the shifted WB baseline. Our innovative design also retains the existing geometry for WB On Ramp 1 which reduces MOT impacts, accelerates the construction schedule, and eliminates future maintenance and inspection needs of two existing walls along with 1500' of median guardrail and barrier west of Station 5001.

Bridge Structures: The typical section for the bridge structures conforms to the VDOT Manual of Structure and Bridge Division and the RFP unless otherwise specified in an approved Design Waiver or Exception.

TYPICAL SECTION IMPROVEMENTS AND GOALS ACHIEVED:

- ✓ Use of small MSE retaining walls as headwall extensions to prevent wetland and stream impacts due to extending six double-box culverts
- ✓ Retains the existing geometry for WB on-ramp 1 which reduces MOT impacts, accelerates the construction schedule, and eliminates future maintenance and inspection needs of two existing walls along with 1500' of median guardrail and barrier

(e) Conceptual hydraulic and stormwater management design: Our Team's drainage and stormwater management (SWM) design meets or exceeds the requirements identified in the RFP, Virginia Stormwater Management Program (VSMP) regulations, and VDOT design criteria. Our innovative design will minimize construction costs, maintenance efforts, and environmental impacts while maximizing corridor safety. The drainage and SWM designs remain within the existing ROW and do not impact the areas identified as "forested areas to remain." Our hydraulic design concept is described further below:

Stormwater Management:

- **Quality:** This grandfathered project will be designed using Part IIC criteria of the VSMP regulations. Our BMP design meets VDOT Drainage Manual criteria and the 1999 Virginia Stormwater Management Handbook criteria and uses VDOT IIM-LD-195.13 Scenario 5 to optimize the SWM design by reducing the water quality requirements. The project is located within four Hydrologic Unit Codes (HUCs) and the performance-based computations for our conceptual design results in a combined phosphorus reduction requirement of less than 10-lb. per year across all four HUCs. The nutrient credits being purchased by VDOT will provide 100% of this nutrient reduction requirement. As a result, our design concept avoids the need for SWM water quality BMPs which minimizes construction costs and reduces long-term maintenance responsibilities for VDOT.
- **Quantity:** As required by Part IIC of the VSMP regulations, stormwater discharge for the project will meet Minimum

SCHEDULE, QUALITY, & SAFETY: Our design concept reduces construction schedule, costs, and future maintenance for VDOT while also increasing corridor safety by reducing the number of facilities and removing the embankment hazards from the RFP concept design.

Standard-19 outfall adequacy criteria. Thirty outfalls were identified including ten that discharge directly into FEMA floodplains. Our Team has analyzed the outfalls to ensure that these downstream channels convey the 2-year discharges at non-erosive velocities and have adequate capacity to contain the 2-year storm for natural channels and the 10-year storm for manmade outfalls in accordance with MS-19 criteria. Our design optimizes the drainage divides by diverting flow to locations that maintain existing peak discharges or to detention facilities to reduce peak flows to project outfall locations. Four linear detention swales are proposed to meet water quantity requirements. Our design solution provides significant improvement compared to the five SWM basin locations in the RFP plans. In addition to reducing the number of detention facilities, our design concept utilizes linear detention features within the median with reduced height embankments and flat, traversable embankment slopes (10:1). Maintenance requirements will be similar to those of a roadside ditch rather than requiring intensive inspection and maintenance associated with a large embankment and outlet structure of a traditional detention basin. Additionally, our Team's drainage design diverts all offsite flow away from the proposed BMP locations to optimize the detention of onsite flow which significantly minimizes detention volumes and facility sizes. The location and size of these facilities utilize existing topography to minimize excavation and reduce waste material.

Drainage: Storm drainage will be designed to convey runoff adequately and safely through the project while optimizing the system to facilitate construction, minimize environmental impacts, and reduce maintenance efforts and costs. Our design maximizes the use of shallow ditches in the median and minimizes the need for closed system elements. Existing drainage pipes found to be hydraulically inadequate will be replaced in such a manner as to minimize the number of proposed pipes required. We have evaluated the pipe inspections provided in the RFP and avoided the need to replace pipes in poor condition where alternate drainage routes were possible. Our Design Concept utilizes alternate surface drainage conveyance routes to avoid replacing 1,020 lf of existing pipe crossing I-64 in poor condition. Our proposed design utilizes roadside ditches to direct runoff to its ultimate outfall via surface flow and eliminates the need for replacing several existing culverts with new, costly jack and bored pipes. **Table 4.3.1-4** identifies the existing cross pipes being eliminated:

TABLE 4.3.1-4: EXISTING CULVERTS ELIMINATED

Roadway STA	Culvert Size	Culvert Length (ft)	Comments
1078+50	24-in	203	Reroute to downstream box culvert at Sa 1081+00
1109+00	24-in.	106	Reroute on outside of I-64 EB to outfall at Sta. 1105+00
1204+25	24-in.	147	Reroute to downstream box culvert at Sta. 1195+00
1225+30	24-in.	163	Reroute to proposed culvert at Sta. 1228+10
5368+25	24-in.	151	Reroute to downstream box culvert at Sta. 5372+00
5431+20	24-in.	160	Reroute to downstream culvert at Sta. 5435+00
1545+60	24-in.	90	Reroute to proposed culvert at Sta. 5529+50

Our drainage design also aims to reduce environmental impacts by using headwall extensions/MSE walls, where feasible, which also reduces construction costs. The MSE walls are located outside the required recoverable shoulder area and will reduce environmental impacts on the project while maintaining a roadside free of hazards in the clear zone.

Hydrologic and Hydraulic Analysis (H&HA): Our Team will perform H&HA, including scour analysis, for all major crossings impacted by this project as identified by crossings that have a 100-year design discharge greater

than 500 cfs or a crossing width of greater than 20-ft. Impacts to major crossings were unavoidable at two locations within the project corridor. Our Team's improvements at these two locations connect the existing culverts into a single culvert crossing. The proposed improvements will be designed to meet HW/D criteria for the design storm and ensure a less than 1-ft. rise in the FEMA Zone A floodplain in accordance with the VDOT Drainage Manual. A summary of the major culvert crossings within the project corridor is provided below in **Table 4.3.1-5**:

COST & QUALITY: Our Design Concept avoids impacts to the majority of these crossings and results in an increase in hydraulic performance at the two culverts impacted by proposed improvements.

TABLE 4.3.1-5: MAJOR CULVERT CROSSINGS

Roadway STA	Culvert Size	Zone A: FEMA Floodplain	Comments
997+50/4997+75	4-ft. – 6-ft. x 6-ft. Box	Chickahominy River	Proposed design closes in this crossing and will not increase HW elevation or increase the 100-year floodplain elevation
1144+90/5144+90	2-ft. – 7-ft. x 7-ft. Box	Crumps Swamp	Proposed design closes in this crossing and will improve the performance of the crossing and reduce the HW elevation
1194+75/5194+50	*2-ft. – 8-ft. x 8-ft. Box*	*Toe Ink Swamp Tributary*	*Not impacted by project – MSE extension of headwall*
1244+00/5244+50	*2-ft. – 8-ft. x 8-ft. Box*	*Allen's Run*	*Not impacted by project*
1309+75/5310+00	*2-ft. – 8-ft. x 8-ft. Box*	*Toe Ink Swamp*	*Not impacted by project – MSE extension of headwall*
1467+25/5467+00	*2-ft. – 10-ft. x 12-ft. Box*	*Rumley Marsh*	*Not impacted by project – MSE extension of headwall*

DRAINAGE IMPROVEMENTS AND GOALS ACHIEVED:

- ✓ Use of small MSE retaining walls as headwall extensions to prevent wetland and stream impacts due to extending six double-box culverts
- ✓ Optimizes the drainage divides by diverting flow to locations that maintain existing peak discharges or to detention facilities to reduce peak flows to project outfall locations
- ✓ Significantly improved stormwater management from five SWM basin locations to four linear detention swales
- ✓ Eliminated several costly jack and bored pipes through flow bypass via roadside ditches to direct runoff to its revised outfall

Erosion & Sediment Controls (ESC): A robust, multi-phase erosion and sediment control plan will be developed in accordance with the Virginia Erosion & Sediment control handbook and VDOT requirements. Our Team's ESC design will utilize sediment traps, check dams, temporary ditches, and diversion channels to their maximum capacity to reduce the need for sediment basins in the median. Use of these smaller ESC features will reduce temporary earthwork, reduce tree clearing needs, help maintain existing drainage divides during construction, and improve safety during temporary conditions. Temporary spread on bridges will be limited to the shoulder width and one half of the driving lane. To ensure proper design, implementation, and maintenance of the erosion and sediment control plan, our Team has VDEQ certified individuals who will, independently from

the designer, review and certify the ESC design. Additionally, our Team includes VDEQ certified inspectors/Responsible Land Disturber who will implement and maintain the ESC design and any additional measures determined necessary in the field.

(f) Proposed Right of Way limits i.e. shown as an overlay of the Offeror's proposed Right of Way limits and VDOT's RFP Conceptual Right of Way limits, highlighting the differences between the two: Our design concept has zero ROW impacts.

(g) Proposed utility impacts: Our innovative design concept avoids utility impacts to the greatest extent possible. We have eliminated the need for the retaining wall shown on the RFP conceptual plans west of Route 33, thus eliminating impacts to the existing electric line in this area. Also in this area, our design excludes the RFP Conceptual Plan's 16-ft. of outside widening and the associated excavation, which would significantly reduce cover over the 16-in. gas main crossing I-64. Eliminating this potential conflict reduces construction and schedule risk and construction duration. We have designed the project with utilities in mind and have designed the drainage system to minimize excavation at the subgrade utility crossings. The only potential utility impacts that the Kokosing Team proposes are listed in **Table 4.3.1-6**:

A table listing all utilities present along the project corridor, with potential impacts and proposed mitigation strategies, is included in **Section 4.4.2**.

TABLE 4.3.1-6: PROPOSED UTILITY IMPACTS WITH RELOCATION STRATEGIES

Utility/Type	WBL Station	EBL Station	Conflict / Impact	Relocation Strategies
Electric (VDOT)	N/A	1446+75 to 1448+20	- Guardrail	- Existing power to be relocated with light poles
Electric (VDOT)	5465+10 to 5469+55	N/A	- Guardrail	- Existing power to be relocated with light poles
Cable TV (Cox)	5516+95	1516+45	- Bridge foundation	- Relocate CATV
Telecommunications (VDOT)	5528+30 to 5538+40	N/A	- Guardrail	- To be replaced as part of this project's ITS work

UTILITY IMPACT IMPROVEMENTS AND GOALS ACHIEVED:

- ✓ Eliminated underground electric line impact and relocation by shifting horizontal alignment of I-64 west of Route 33
- ✓ Eliminated 16-in. gas main conflict at Station 5011+00 by not widening to the outside of existing roadway

(h) Noise barrier locations: Per RFP, at final design, our Team will analyze noise wall alignments to determine if any savings can be achieved with optimized wall alignments to further mitigate any potential utility impacts, ROW, environmental impacts; provide greater long-term value to VDOT; and minimize long term maintenance.

Our noise barrier concept is in accordance with the approximate noise barrier locations and heights shown in the RFP Conceptual Plans and will be designed in accordance with VDOT and AASHTO LRFD specifications and requirements in accordance with all technical requirements. This includes the architectural features of the Cardinal / Dogwood Panel theme specified in the Special Provision for Sound Barrier Walls.

The RFP design includes 118,067 SF of noise barrier wall as shown in **Table 4.3.1-7** that have been found to be feasible and reasonable in the Preliminary Noise Study. The final noise barrier and quantities will be adjusted based on the results of our Team's final approved Noise Abatement Design Report (NADR) and final VDOT approved noise barrier plan. At this time, our design concept plans in Volume II reflect the following noise barrier locations as depicted on the RFP plans:

TABLE 4.3.1-7: PROPOSED NOISE BARRIERS

Barrier	From Station	To Station	Baseline	Area (SF)	Height Range (FT)	Length (FT)
A	1046+00	1082+15	EB	71,994	12 to 26-ft.	3,560-ft.
A1	1104+55	1111+60	EB	1,591	12 to 30-ft.	713-ft.
B	5049+14	5067+29	WB	30,168	12 to 18-ft.	1,838-ft.

(i) Guardrail/Barrier: Our Team has reviewed the project area for existing and proposed clear zone hazards and proposed the use of guardrail / barrier where required. All proposed guardrail will be MASH compliant with the Midwest Guardrail System (MGS) standards. Existing, non-compliant, unnecessary guardrail within the project limits will be removed, including the 18,000 LF of existing cable guardrail. This will reduce VDOT's future maintenance.

Figure 4.3.1-4: Existing Hazards to be Eliminated

Our design concept will also remove over 1,500-ft. of existing guardrail and concrete barrier in the median between Stations 994+00 and 1101+00, which serve to protect box culverts such as the one illustrated in **Figure 4.3.1-4**. The existing box culverts in this station range will be connected and graded at recoverable slopes across the median to eliminate the need for barrier or guardrail, resulting in a clearer, safer median.

SAFETY & QUALITY:
Removing these clear zone hazards; the MSE walls, guardrail, and barriers will increase motorist safety and reduce the need for future inspection and maintenance.

In addition to removing existing guardrail, our Team has improved the design to eliminate new guardrail shown in the RFP Conceptual Plan for proposed DMS signs by providing span lengths that accommodate a minimum 30-ft. clear zone on one side. This prevents installation of new guardrail hazards that would not otherwise be required.

GUARDRAIL IMPROVEMENTS AND GOALS ACHIEVED:

- ✓ Removed over 1,500-ft. of existing roadside hazards in the median and replace with recoverable slopes resulting in a safer median.
- ✓ Providing DMS overhead sign with adequate length to eliminate need for guardrail to protect uprights.
- ✓ Eliminated 18,000 LF of unneeded guardrail

4.3 DESIGN CONCEPT

(j) Locations of Mill and Overlay/ Build-Up/ New Pavement including Pavement type: The plans depict the limits of mill and overlay and full depth pavement and comply with the RFP. Our design concept utilizes the flexible pavement alternative. The limits of paving on WB I-64 extend further to the west than the RFP Conceptual plan to accommodate the horizontal alignment shift discussed above. That enhancement eliminates the shift to the I-64 WB On-Ramp from southbound Route 33 and reduces the limits of reconstruction and paving necessary, reducing construction cost, time, and traffic impacts.

- All existing mainline travel lanes and outside shoulders will receive 3-in. net buildup (mill 2-in., pave 5-in.), in addition to all existing outside shoulders receiving an initial 7-in. mill/replace, with pavement layers in accordance with RFP minimum pavement sections. While our construction sequence will modify the 7-in. shoulder strengthening by initially placing 8-in., our design will provide the final configuration of 10-in. total pavement in compliance with the pavement layers and thicknesses required by the RFP. The additional inch of shoulder strengthening will provide a stronger pavement section for temporary travel as well as prevent a 1-in. drop-off that would be in the wheel-path of vehicles during Stage 2 construction.

SAFETY, OPERATIONS, & QUALITY: This pavement build-up thickness will enhance safety during construction, improve roadway drainage, and increase construction quality which provides VDOT greater confidence in the pavement's long-term performance and durability.

The RFP Conceptual Plans utilize the ACOT standard pavement transition at all underpasses to have zero build-up under each overpass. We evaluated each underpass and have provided pavement build-up under the bridges that have adequate clearance to do so, depicted in **Figure 4.3.1-2** below:

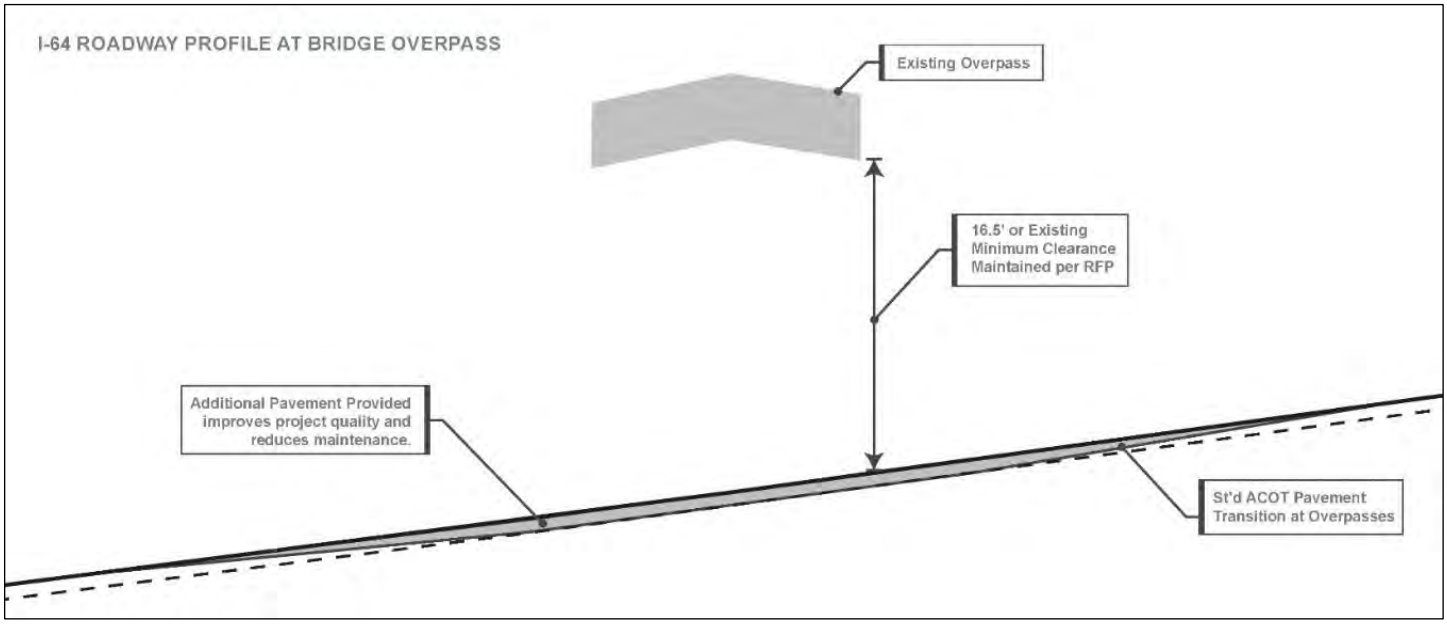


Figure 4.3.1-2: I-64 Roadway Profile at Bridge Overpass

Adding this buildup in locations not included in the RFP Conceptual Plans will increase pavement performance and durability and will reduce VDOT maintenance costs. The pavement build-up thickness will transition at each bridge with substandard clearance using the ACOT-1 standard where required, in addition to tapers at ramps and project limits to tie smoothly to the adjoining roadway surfaces. **Table 4.3.1-3** shows our pavement buildup under each overpass to maximize pavement strength and rideability while maintaining required minimum clearances:

TABLE 4.3.1-3: INTENDED PAVEMENT BUILDUP		
Bridge Crossing	**Pavement Build-up Provided by the Kokosing Team (in.)**	**Final I-64 Clearance (ft)**
WB I-64 Under 33 (New Kent)	3	17.6
EB I-64 Under 665 (Hen Peck)	1	16.5
WB I-64 Under 665 (Hen Peck)	2	16.5
EB I-64 Under 612 (Airport)	2	16.5
WB I-64 Under 612 (Airport)	3	16.5
EB I-64 Under 618 (Olivet Church)	3	17.0
WB I-64 Under 619 (Olivet Church)	3	17.1

PAVEMENT IMPROVEMENTS AND GOALS ACHIEVED:

- ✓ Early sequencing of mill/overlay and pavement patching maximizes safety for motorists
- ✓ Proving additional buildup under bridges without reducing minimum clearance will increase pavement performance and will reduce VDOT maintenance costs
- ✓ Increased limits of paving on WB I-64 further to the west than the RFP Conceptual plan to accommodate horizontal alignment shift

(k) ITS Infrastructure including but not limited to DMS, CCTV cameras etc. and any other key Project features: Our proposed design provides VDOT with a comprehensive ITS system to enable improved real-time monitoring of the corridor and enhanced abilities to provide information to motorists traveling through the corridor. The Kokosing Team will coordinate closely with VDOT to establish an ITS implementation plan to manage cutover and outages and keep VDOT aware of any impacts to ITS infrastructure during construction. Our ITS plan allows for continuous operation of existing assets, with only short-term outages allowed by the RFP Technical Requirements for cutover to new devices.

The proposed ITS system includes the following elements:

- **Fiber Optic Trunk Line:** Consisting of four 2-in. HDPE ITS conduits from the existing CCTV camera located at Station 4982+70 to a proposed junction box at the eastern project limits at Station 5570+00. The trunk line alignment has been offset away from the roadway where practical, while in front of the tree line, with junction boxes at a maximum spacing of 500-ft. A 96-fiber, single mode fiber optic cable has been provided with minimum 24-fiber cables used for connections to each proposed ITS device within the project limits; one exception is the proposed connection to the traffic signal at the I-64 EB ramp at Route 33 where a 48-fiber drop cable is proposed at this location. No other cables are proposed within the fiber optic trunk line conduit system; separate conduits for power connections have been provided for all devices.
- **Layer Managed Field Ethernet Switches (MFES) and Routers:** All switches and routers for proposed equipment meet the RFP requirements. SFP modules will be provided for each MFES to provide a fully functional communication network.
- **Dynamic Message Signs (DMS):** New full matrix, full color LED DMS signs (Type 2A) will be provided by the Kokosing Team at the following locations:
  - I-64 EB, approaching Exit 205 [Station 946+25]
  - I-64 EB, approaching Exit 211 [Station 1211+80]
  - I-64 EB, approaching Exit 214 [Station 1415+60]]

- I-64 WB, approaching Exit 211 [Station 5418+00]
- I-64 WB, approaching Exit 205 [Station 5113+50]
  - For the location shown in **Figure 4.3.1-3** approaching Exit 205 along I-64 WB, the existing DMS will remain in service until the new DMS is operational

Figure 4.3.1-3: Dynamic Message Sign Near Exit 205 I-64 WB

- **CCTVs:** We will provide new CCTV cameras as summarized below. Each new CCTV shall be high definition with pan, tilt, zoom (PTZ) capabilities and mounted on 80-ft. (minimum) poles with lowering devices and will resemble **Figure 4.3.1-4**. Pole mounted equipment cabinets will be provided with the work area oriented such that workers are facing the roadway while accessing the cabinet, providing improved safety for maintenance activities. A 10-ft. x 10-ft. maintenance pad will be provided at the base of each CCTV site. Cameras are proposed at the following locations:
  - Exit 205 Interchange [WB Shoulder, Station 5027+00]
  - Exit 211 Interchange [Median Station 1334+00/5534+00]
  - Exit 214 Interchange [EB Right Shoulder, Station 1515+10]
  - I-64 WB, near MM 207.0 [Station 5114+50]
  - I-64 Median, near MM 208.9 [Median Station 1213+50/5213+00]
  - I-64 WB, near MM 214 [Station 5491+70]

  We will also provide a connection to the proposed fiber optic network for the existing CCTV/continuous count station located at Station 5538+40.

Figure 4.3.1-4: CCTV Cameras

  We will carefully evaluate each proposed camera location during design and provide drone photography at the proposed camera location and mounting height to verify the provided viewsheds satisfy the contract requirements. The proposed locations at Exit 211 and Exit 214 are anticipated to also provide visibility along the arterial route, improving VDOT's ability to monitor the ramp terminal intersection and arterial operations. Maintenance access will be provided with a safe, stable location for maintenance vehicles to pull off and access the camera at each location.

- **Overheight Vehicle Detection System:** The Kokosing Team will maintain operations of the existing overheight vehicle detection system at Station 5127+50 and associated signage throughout construction, with no interruptions. We will provide a new sign with flashing beacons which activate when an overheight vehicle is detected by the system on the median shoulder as part of the project.
- **Continuous Count Stations:** The Kokosing Team will coordinate with VDOT for their removal of the existing continuous count station equipment removal early in the project. We will remove any obsolete

junction boxes and conduits and install new two 2-in. bored conduits and two new junction boxes (one in the median, one on the outside shoulder) at each proposed continuous count station location [Station 5174+10 and Station 1175+50]. We will also provide guardrail to protect continuous count equipment at Station 5467+70 or work with VDOT to identify a location outside the clear zone for this equipment to be installed by VDOT.

- **Power and Communications:** The Kokosing Team will coordinate with utility providers to provide power service to each proposed DMS and CCTV. In many cases, existing power services are available, but separate meter bases and supplemental disconnects will be provided. Uninterruptible power supplies with backup batteries will be provided for each device in accordance with Richmond District Operations special provisions.
- **Testing/Integration/System Acceptance:** The Kokosing Team will provide a project-specific Testing and Integration Program (TIP) which consists of individual test implementation and performance plans for each ITS device. The plan will include details for each step in the project process, including factory acceptance, pre-installation, field acceptance, traffic operations center integration test, and system acceptance. We will be responsible for planning, coordinating, conducting, and documenting all aspects of the TIP.
- **Lighting:** The Kokosing Team will replace any lighting impacted by the project with VDOT standard lighting equipment. The lighting will be designed in accordance with VDOT requirements. Lighting impacts are anticipated to include:
  - Three light poles between Stations 5465+50 and 5469+50—this will remove existing foundations from within the deflection distance of the guardrail
  - Two light poles between Stations 1446+80 and 1448+20

ITS DESIGN IMPROVEMENTS AND GOALS ACHIEVED:

- ✓ Lengthen proposed DMS signs to eliminate needing to add new roadside guardrail hazards
- ✓ Construct new fiber backbone outside the median consistent with IIM-LD-230.3

4.3.2 CONCEPTUAL STRUCTURAL PLANS

For the I-64 bridges: provide a description and structural concept for the bridge structure(s), horizontal and vertical clearances, the number and widths of lanes and shoulder, retaining wall(s), and major drainage structure(s) proposed.

I-64 GAP Segment A requires repairing, rehabilitating, and widening two structures I-64 EB and WB over Courthouse Road, repairing Route 33 over I-64, and installing barrier for pier protection systems (BPPS) adjacent to seven overhead bridges. Widening of the two mainline bridges over Courthouse Road will meet or exceed the requirements of the RFP Conceptual Plans with regards to the required configuration, minimum travel lanes, and shoulders on each structure and will be designed and detailed to ensure minimal maintenance and provide the maximum long-term durability. **Figure 4.3.2-1** below represents an elevation view of the completed structures.

The Kokosing Team is pleased to offer widened bridges that will contain three 12-ft. through travel lanes, one 11-ft. outside shoulder, and one 12-ft. inside shoulder adjacent to the median. Existing vertical clearances of 16-ft., 6-in. under I-64 EB and 16-ft., 7-in. under I-64 WB will be maintained during construction and in the final condition. Likewise, the minimum required clearances for overhead bridges will be maintained in the final condition. Traffic will be maintained during all stages of construction on both I-64 and Courthouse Road below.

Our bridge design has focused on using appropriate materials and methods to reduce the need for future inspection and maintenance thus reducing future life cycle maintenance costs. As such, our conceptual bridge rehabilitation and widening has incorporated unique elements as further described in the following sections.

4.3 DESIGN CONCEPT

Substructure Widening: The bridge widening will be designed to minimize increase in dead load or live load on the existing substructure and loads from the new Bulb-T girders will be supported by a widened substructure. A two-column pier and cap will be used founded on pile cap foundations to aesthetically complement the existing substructure elements. It will be constructed using standard construction details to simplify construction adjacent to the existing structure. New abutments on pile foundations will be built for the widened portion that are like the existing abutments other than the backwalls will accommodate buried approach slabs and deck extensions.

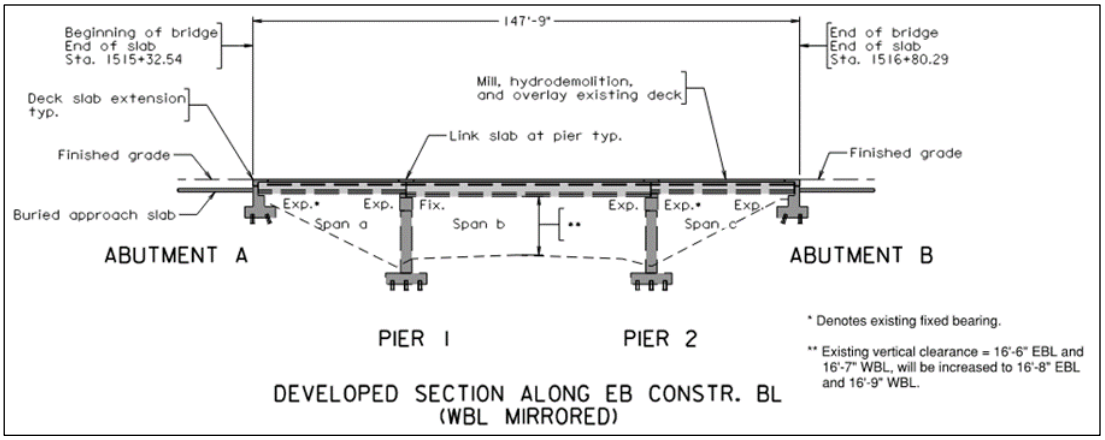


Figure 4.3.2-1: Bridge Elevation View

- Areas around bearings will be detailed to allow for future bearing maintenance jacking in accordance with the RFP.
- The new substructure will be constructed on deep foundations consisting of HP 14x73. The piles will extend 35-ft. below the abutment. Downdrag is not anticipated as minor fill, less than 5-ft. will be required to reach the abutment elevation. High Strain Dynamic Testing with Signal Matching will be performed on all production piles. If corrosive materials are identified during the supplemental subsurface investigations, the piles will be designed for section loss accordingly in accordance with Structure and Bridge Division, Part 2 (Design Guidelines) Chapter 23.
- We have analyzed the GER and do not anticipate that any downdrag will need to be considered in the pile.
- Because additional loads from the superstructure were minimized, additional strengthening of the existing substructure or existing foundations will not be required which will simplify construction and reduce expenses.

Superstructure Widening: The widened superstructure will be designed and constructed to be continuous at pier locations and use jointless bridge design details at the beginning and end of the bridges. They will contain three 12-ft. through travel lanes, one 11-ft. outside shoulder, and one 12-ft. inside shoulder adjacent to the median.

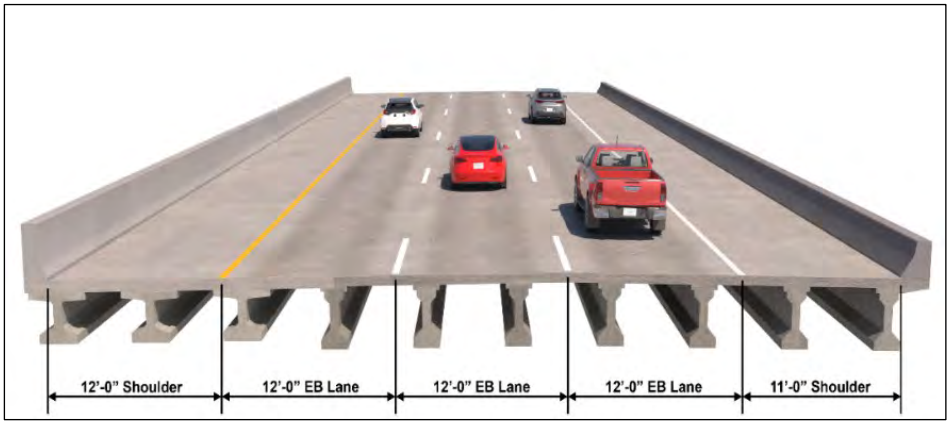


Figure 4.3.2-2: Proposed Bridge Final Condition

Bridge design and detailing focuses on minimizing future life cycle maintenance costs. As such, the proposed widening will incorporate the following items to reduce future maintenance:

- The widened portion of the bridge will utilize the 42-in. VDOT standard BPB-4.

4.3 DESIGN CONCEPT

- Longitudinal deck construction joints for the existing structures will be located over an existing beam/girder line. Longitudinal deck joints, if required, shall be placed out of the expected wheel path.
- The new and existing bridge deck shall be designed and constructed to be continuous at pier locations and use jointless bridge design details at the beginning and end of the bridge.
- Longitudinal deck construction joints for the existing structures will be located over an existing beam/girder line. Longitudinal deck joints in the overlay will be placed outside of the expected wheel paths.
- Clearance over Courthouse Road is improved by 2-in. on both the EB and WB directions of I-64. This design improvement allows for future paving of Courthouse Road as necessary.
- The widened portion of the bridge will utilize the 42-in. VDOT standard BPB-4 in accordance with the RFP.

Substructure Rehabilitation: The existing structure was designed according to AASHTO Standard Specifications for Highway Bridges, 1965, and therefore can be analyzed using the bridge design specifications in effect when the bridge was built per File 32.09-5 of the VDOT Manual of the Structure & Bridge Division and the requirements of this RFP. The bridge widening in this concept keeps the proposed loading to less than 5% of the existing loading per the 1965 specifications, so no strengthening of the existing foundations or substructure is required. This reduces risks associated with modifying the existing foundations or strengthening existing substructure elements.

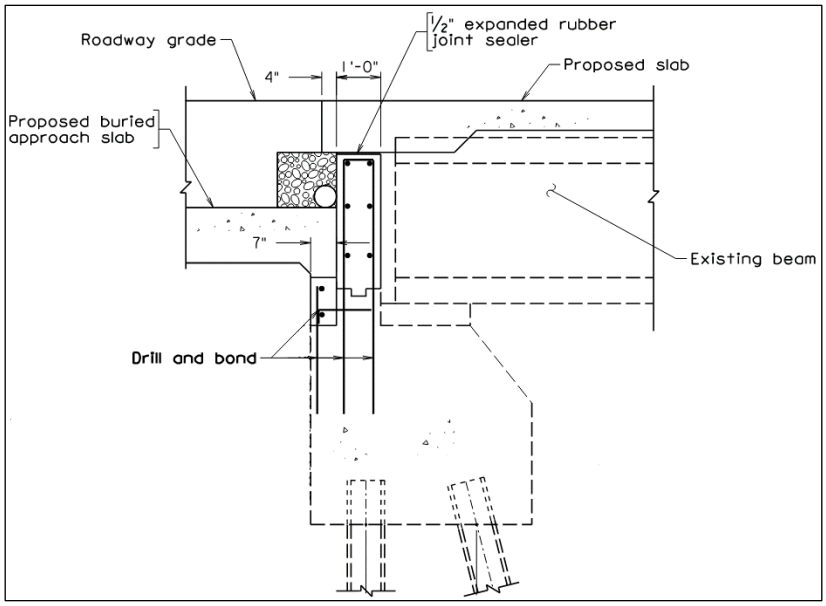


Figure 4.3.2-3: Abutment Modifications

The existing abutment backwalls will be modified to accept buried approach slabs and deck slab extensions like in **Figure 4.3.2-3** and be constructed through a phased approach to complete the modifications adjacent to existing traffic.

The Kokosing Team is well versed in working with VDOT on rehabilitation of existing structures, using a team approach with VDOT to identify deteriorated areas that need to be repaired. Hammer sounding will be performed on both superstructure and substructure elements to identify areas in need of repair. The bridge substructure repair quantities shown in **Table 4.3.2-1** were used for proposal purposes and will be revised after the structures are sounded and jointly inspected with VDOT inspectors to identify all deterioration requiring repair.

TABLE 4.3.2-1: BRIDGE SUBSTRUCTURE REPAIR QUANTITIES

Item	Units	B601 Quantities	B602 Quantities	Rte. 33 Quantities
Concrete Substructure Surface Repair	SY	7	15	40*
Embedded Galvanic Anodes	EA	53	115	320
Crack Repair Type B	LF	59	48	-
Reconstruct Bridge Seat	EA	28	28	-
Replace Anchor Bolt	EA	84	84	-
Pier Concrete Surface Color Coating	SY	316	312	-
Repair Existing Slope Protection	SY	27	27	-

*Repairs shall be limited to columns adjacent to pier protection

Superstructure Rehabilitation: The improvements to the portion of the existing

superstructure to remain will include 0.5-in. mill, 0.5-in. hydro-demolition, and 1.25-in. to 1.75-in. latex modified concrete overlay of the existing bridge decks, parapet modifications for joint removal and repairs, superstructure surface repairs, beam end and diaphragm repairs and bearing replacement.

- The improvements to the portion of the existing superstructure to remain include 0.5-in. mill, 0.5-in. hydro-demolition, and 1.25-in. to 1.75-in. latex modified concrete overlay of the existing bridge deck, parapet modifications for joint removal and repairs, superstructure surface repairs, beam end and diaphragm repairs.
- All bearings and bearing components will be replaced. Low profile PTFE bearings will be provided to allow thermal movement of the superstructure while minimizing the required jacking of the existing bridge.
- A flexible link slab (see **Figure 4.3.2-4**) will be used to both eliminate joints and to limit additional live loads onto the substructure. Superstructures continuous for live load increase the loading onto the pier, which will could necessitate strengthening of the existing foundations. By maintaining the existing and new beams as simple spans, but with flexible link slabs, the loads to the existing substructure are not increased.
- The bridge superstructure repair quantities shown in **Table 4.3.2-2** were used for proposal purposes and will be revised after the structures are sounded and jointly inspected with VDOT inspectors to identify all deterioration to be repaired to extend the service life of the existing superstructures.

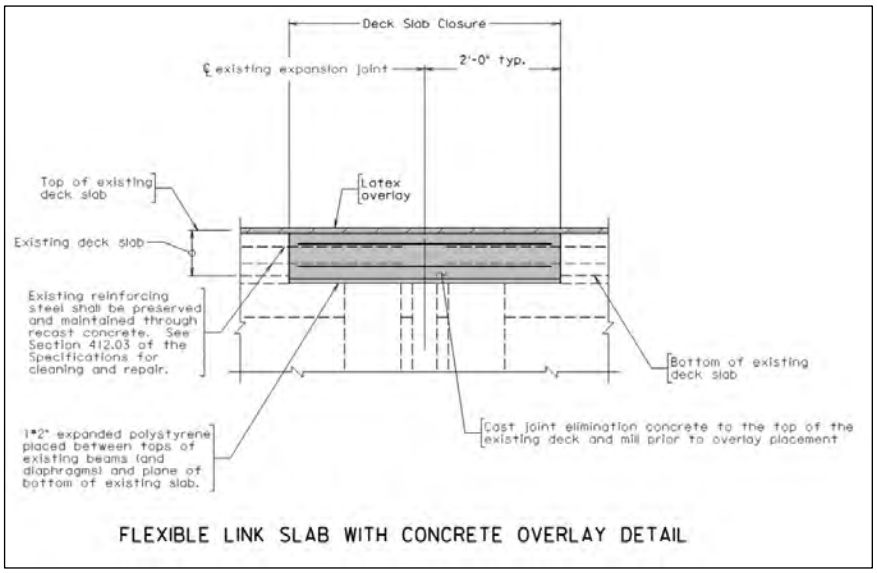


Figure 4.3.2-4: Flexible Link Slab with Concrete Overlay Detail

TABLE 4.3.2-2: BRIDGE SUPERSTRUCTURE REPAIR QUANTITIES

Item	Units	B601 Quantities	B602 Quantities
Beam End Type A Surface Repair (3')	EA	20	28
Superstructure Surface Repair Type C	SY	3	4
Superstructure Surface Repair Type B	SY	3	4
Embedded Galvanic Anodes	EA	58	82
Concrete Parapet Penetrant Sealer	SY	110	110
Replace Bearing Assembly	EA	42	42
Crack Repair (Type B)	LF	25	25

Pier protection systems will be provided at the required overpass structures and detailed and installed in accordance with VDOT guidelines set forth in the Manual of the Structure and Bridge Division. The Kokosing Team will design and install BPPS will be provided at the following locations:

- Rte. 33 (New Kent Highway) over I-64
- Rte. 665 (N. Hen Peck Road) over I-64
- Rte. 612 (Airport Road) over I-64 WB
- Rte. 612 (Airport Road) over I-64 EB
- Rte. 106 (Emmaus Church Road) over I-64
- Rte. 618 (Olivet Church Road) over I-64 WB
- Rte. 618 (Olivet Church Road) over I-64

4.3 DESIGN CONCEPT

Retaining Walls: MSE headwall extensions are provided in the median at three sets of box culverts (six total) but are otherwise not required along the widening. The MSE walls are located outside the clear zone, so no parapet or guardrail fixed objects are being introduced. MSE walls will be from manufacturers approved lists, in accordance with the RFP, and provided where necessary. Fill material for MSE walls will utilize crushed aggregate in accordance with VDOT's Special Provision for MSE Walls. MSE design submittals from the wall supplier on internal stability will be provided for design builder and VDOT review. Inventoried box culverts that will use MSE retaining walls as headwall extensions are summarized in **Table 4.3.1-3**.

TABLE 4.3.1-3: RETAINING WALLS – MSE HEADWALL EXTENSIONS

Roadway STA	Federal ID	Culvert D#	Box Culvert Size
5194+30	12681	D606	2-ea. – 8-ft. x 8-ft.
1195+25	12682	D607	2-ea. – 8-ft. x 8-ft.
1309+60	12684	D609	2-ea. – 8-ft. x 8-ft.
5309+90	12685	D610	2-ea. – 8-ft. x 8-ft.
5466+90	12696	D613	2-ea. – 10-ft. x 12-ft.
1467+25	12697	D614	2-ea. – 10-ft. x 12-ft.

Major Drainage Structures: Inventoried box culverts that will be extended or connected will be built to the current box culvert details in the Road and Bridge Standards. Box culverts will be extended or connected as shown in the **Table 4.3.1-4**:

TABLE 4.3.1-4: MAJOR BOX CULVERT CROSSING MODIFICATIONS

Roadway STA	Federal ID	Culvert D#	Culvert Size	Extension Length (ft)	Comments
997+25 / 4998+00	–	–	4-ea. – 6-ft. x 6-ft.	52	Connect EB/WB Box Culverts
1012+50 / 5013+00	12660	D602	3-ea. – 5-ft. x 6-ft.	42	Connect EB/WB Box Culverts
5144+00	12679	D604	2-ea. – 7-ft. x 7-ft.	49	Connect EB/WB Box Culverts
1145+50	12680	D605	2-ea. – 7-ft. x 7-ft.		
1395+30	12686	D611	6-ft. x 7-ft.	11	Extend Culvert and replace Headwall
5369+25	12687	D612	6-ft. x 7-ft.	14	Extend Culvert and replace Headwall
1468+90	12688	D615	7-ft. x 10-ft.	14	Extend Culvert and replace Headwall
5495+00	12689	D616	7-ft. x 10-ft.	15	Extend Culvert and replace Headwall

BRIDGE IMPROVEMENTS AND GOALS ACHIEVED:

- ✓ Additional 2-in. of vertical clearance is achieved over Courthouse Road by re-using existing bearing seats and jacking the bridge upward to fit new bearings underneath
- ✓ New piers and widened abutments limit loads onto existing foundations and preclude the need for strengthening
- ✓ Additional construction phase shy distances increase worker and traveling public safety
- ✓ Only one longitudinal cold joint at the widened section reduces areas for water infiltration and simplifies construction
- ✓ Flexible link slabs are proposed over the piers and deck slab overhangs at the abutments to eliminate existing deck joints
- ✓ Milling and hydro-demolition of the existing deck removes chloride contaminated concrete and creates a low permeability driving surface

4.4 | Project Approach

4.4 PROJECT APPROACH

4.4.1 ENVIRONMENTAL MANAGEMENT

Describe the approach to environmental management for the Project, including planned efforts during design and construction to avoid protected properties and minimize Project impacts to environmental resources. Describe the approach and potential solutions for addressing recognized environmental conditions/areas of concern within the Project footprint. Demonstrate that all aspects of environmental management are well integrated into the Project schedule so as to minimize the possibility of delays.

Tailored Environmental Approach: The Kokosing Team includes an Environmental Compliance Manager and staff to manage permit acquisition and to work concurrently alongside the design and construction teams to avoid protected properties and minimize environmental resource impacts. We recognize that environmental management and compliance is a significant component of schedule, budget, and overall project success. As such, we have tailored our approach to the specific requirements of this Project.

Environmental Compliance Manager (ECM), Laura Rader-Dixon (RKK), has been a natural resource professional for over twenty years. Her experience has ranged from forest management and plant ecology to wetland delineation and permitting. She was an environmental compliance consultant for VDOT on I-64 Phase III Design-Build and a Compliance Ecologist for the Georgia Department of Transportation.

The Kokosing Team prioritizes identification of environmental constraints and impact avoidance during design which allows Laura the opportunity to integrate environmental considerations into project design. Setting clear environmental boundaries while designing the project produces reliable plans, specifications, and clear details. Incidentally, working together in this way creates the framework for open communication with design and construction staff.

To underscore the importance of environmental compliance, Laura will hold an Environmental Pre-Construction meeting prior to the start of any clearing or construction activities associated with environmental commitments/water quality permits to educate the appropriate construction staff on the environmental permit requirements and commitments and to identify Laura as a team member with the authority to stop work. She is a key member of the project staff and will provide compliance assistance whenever needed. All construction staff will have access to our ECM.

Design: Essential environmental management began at the concept of this project as VDOT performed due diligence and resources surveys in the project area. The Kokosing Team is poised to take the baton from VDOT and to integrate this information into the next stage of environmental authorization.

From the beginning of this process our ECM has been a key member in planning this project. Laura has been an advisor to design changes and is involved in weekly project discussions. She is currently working with Mike Hogan, Lead Drainage Engineer, Megan Ryan, Lead E&S Control Engineer, and Ryan Masters, Lead Roadway Engineer, to establish environmental constraints and eliminate design schedule risks caused by environmental revisions. By acknowledging construction needs, such as surplus excavation, drainage, construction access, for cut/and fill storage (formal name) and limited enclosure of drainage crossings, the environmental team has developed a permitting strategy to incorporate environmental impacts for the life of the project. Our design concept strategy starts with environmental impact avoidance to the maximum extent possible.

Shifting the roadway widening toward the median is not only better for safety and construction but it has the environmental advantage of preserving the wetland continuity of a high priority wetland.

One example of the direct benefits of this early collaboration within our Team is that of the WB I-64 alignment shift at the west end of the project. As discussed in **Section 4.3.1(b)**, by shifting the work to the median, the outside widening along I-64 WB (which is part of Pelham

Swamp and the Chickahominy River) is eliminated. The RFP Design included widening of the outside shoulder along I-64 WB and constructing a retaining wall and associated erosion control less than five feet from the limit of the wetland boundary. This significant construction within close proximity to the wetland would have likely had a detrimental effect on this environmentally sensitive area. Since this wetland is located outside of the highway, and not in the median, it is a part of the dominant wetland ecosystem. A summary of our Team's design concept innovations that have resulted in significant environmental impact avoidances as identified below in **Table 4.1.1-1**:

TABLE 4.4.1-1: DESIGN IMPROVEMENTS THAT AVOID ENVIRONMENTAL IMPACTS

Environmental Feature	Location	Design Innovation	Environmental Benefit
Median Forested Areas	Corridor-wide	Strategically balanced earthwork zones to avoid additional forested areas not identified in the RFP	Increase of at least a 40% in total median protected forest area compared to RFP Design
Median Wetlands @ Cross Culverts	Sta. 1195+50 / 5194+50 Sta. 1309+75 / 5309+75 Sta. 1467+00 / 5467+00	Providing MSE walls at existing cross culverts to prevent fill slope impacts	Wetland impact reduction
High-Quality Wetlands @ Pelham Swamp	Sta. 4994+00 – 5003+00	WB I-64 alignment shift	Reduce high-quality wetland impact risk and increase permitting certainty
Waters of the US (WUS)	Sta. 1195+50 / 5194+50 Sta. 1309+75 / 5309+75 Sta. 1467+00 / 5467+00	Providing MSE walls at existing cross culverts to prevent fill slope impacts	WUS impact reduction

In addition to the design enhancement coordination, Laura has had weekly discussions with the design and construction team related to permitting requirements, permit acquisition timeframes, and permit requirements such as time-of-year restrictions to ensure that our Team's schedule appropriately accounts for permitting needs to reduce the risk of schedule delays. Examples of this early collaboration that will continue after NTP to set our team up to deliver on our incorporated construction schedule include:

- Establishing design milestones that coincide with environmental coordination. Clear indication to interact between sections outside of meeting and formal discussion.
- Working with designers to ensure BMP coverage for interim stages of construction such as open soil in between fill lifts.
- Working in the background to have an NWP-6 secured for the Geotechnical team to begin studies as soon as the NTP is released.
- Cross checking with stormwater and E&S design to secure the permit impact plates as the ECM closely monitors permit applications and authorizations.
- Providing feedback to the construction schedule for time of year restrictions (e.g., Indiana Bat TOYR).
- Reviewing and suggesting modifications to designs pertaining to E&S and Environmental Compliance to reduce environmental risk during construction.

Laura has had weekly discussions with the design and construction team related to permit acquisition timeframes, and permit requirements such as time-of-year restrictions to ensure that our Team's schedule appropriately accounts for permitting needs to reduce the risk of schedule delays. For example, the avoidance, minimization, and mitigation strategy is integrated into the design as well as the schedule. The USFWS coordination for the northern long-eared bat is not complete. To minimize impact to the schedule, the Kokosing Team has established

a clearing schedule with Early Work Packages to maximize the inactive season of the bat. All upfront coordination has been appropriately integrated into our CPM Schedule to minimize schedule risks after NTP. The Environmental Permits portion of our CPM Schedule is illustrated in **Figure 4.4.1-1** below:

After NTP, our Team will verify the natural resource locations, work with designers to support avoidance and minimization opportunities, and ensure that all environmental commitments are incorporated into the final design. These efforts include:

Environmental Permits		334	29-Aug-23	19-Dec-24
54	Preparation of NWP 6 - Geotechnical Work	40	29-Aug-23	24-Oct-23
48	USM Stream Credit Calculations and Mitigation Credit Coordination	10	09-Oct-23	20-Oct-23
49	Single Use Permit - Geotechnical Work	15	09-Oct-23	27-Oct-23
50	Single Use Permit - Early Works Package #1	15	09-Oct-23	27-Oct-23
55	Pre-Application Meeting	10	01-Mar-24	14-Mar-24
56	Preparation of Joint Permit Application (JPA)	15	15-Mar-24	04-Apr-24
57	QA/QC Joint Permit Application (JPA)	7	05-Apr-24	15-Apr-24
58	Submit JPA	1	16-Apr-24	16-Apr-24
59	Agency Review and Permit Issuance (USACE/DEQ/VMRC)	135	17-Apr-24	25-Oct-24
52	VPDES CGP - Early Works Package #3	60	31-May-24	23-Aug-24
53	VDPES CGP - Final Design Package	60	26-Sep-24	19-Dec-24

Figure 4.4.1-1: Environmental Permits Portion of CPM Schedule

1. Coordination with VDOT on environmental documentation
2. Cultural Resources general locations outside of LOD
3. List of waters likely to be impacted and avoidance measures
4. Threatened and Endangered Species checklist and options
5. Permit acquisition

As the design progresses after NTP, the team will prepare an Environmental Resource Inventory Table (ERIT) which will be the focus of the environmental agenda during weekly meetings. The Kokosing environmental staff mirrors the VDOT reauthorization and environmental documents process at each major design milestone. All environmental disciplines are reviewed compared to the current design to ensure coordination remains valid and complete. Our design, environmental, and construction teams collaborate regularly to develop appropriate permitting strategies which conserve resources and meet development requirements for construction standards and safety. As project design progresses, Laura and her team will concurrently develop and update the environmental and permitting information in advance of permit submittals. Upon Permit acquisition, Laura and her team will develop an Environmental Management Plan meeting the requirements of the RFP for submittal to VDOT for review.

Additionally, we will schedule a kick-off meeting with the Regulatory Agencies to introduce the project and the Team, our anticipated design, submittal, and construction schedules, and our initial expected resource impacts and avoidance measures. After the kick-off meeting, will we schedule monthly progress meetings to provide continuous updates to the agencies so they are up to date on design progress to reduce the schedule risk associated with permitting and ensure that the permits are obtained on time.

Transition from Design to Construction/Pre-Construction Coordination: The ERIT that has been a tool for final design resource identification will be included within the EMP for use by the construction team to understand the regulations and commitments of each resource. The team will transition the information gained in the design phase by presenting environmental resources located by station numbers and other terminology in line with daily construction work.

It is integral that construction staff understand the importance of protecting environmental resources. To achieve this understanding, Laura will hold an Environmental Pre-Construction meeting prior to the start of any clearing or construction activities associated with environmental commitments/water quality permits to educate the appropriate construction staff on the environmental permit requirements and commitments and to identify Laura as a team member with the authority to stop work. This meeting will include information included within the

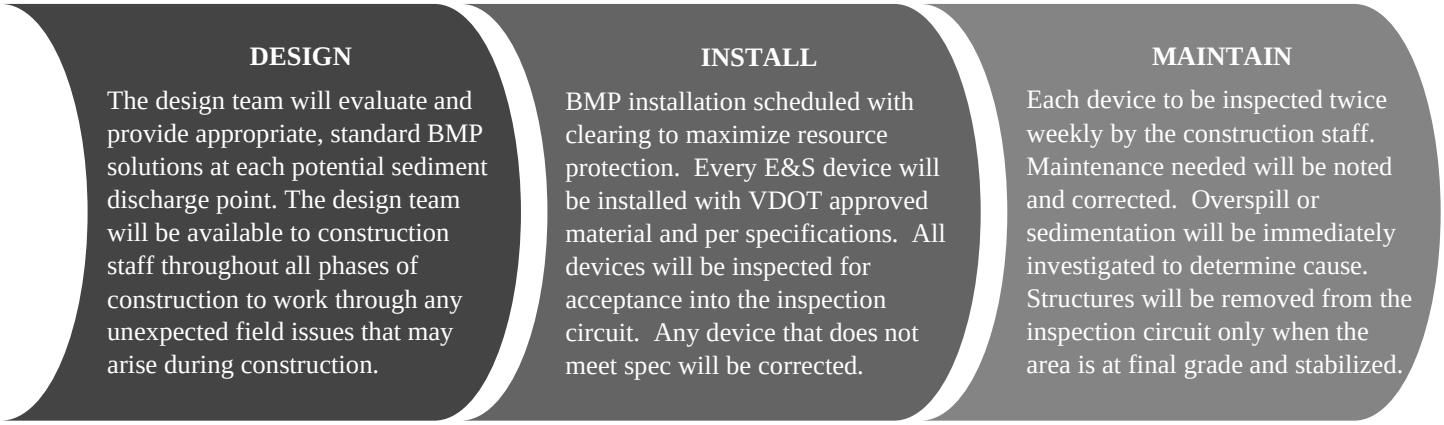
EMP (e.g., environmental resources within the project limits, the commitments required, the measures to avoid harm, protocol for communication, where to get assistance, if needed, etc.). Setting expectations, working together, and expecting success are the goals of the meetings.

Construction:

Weekly Updates: During weekly schedule meetings, Laura and/or other qualified environmental personnel identified in the EMP will be available to the construction staff to discuss and advise on the upcoming work as it relates to environmental commitments, and/or E&S construction/maintenance requirements.

Management of Erosion Control: The Kokosing Team will defend the environmental resources on site by following the commitments established in design. The BMPs for ESC will be approached as the critical element to avoid non-compliance and delays. ESC will be designed to the appropriate standards. Design-build projects allow the opportunity to touch back to designers on any ESC issues. The structures will be installed according to the specifications and inspected for compliance. Finally, all structures will be maintained to confirm they are working properly. During construction, if any plan changes are required that impact the E&S measures, the ECM will review for conformance to the environmental commitments set during permitting.

DEFENDING ENVIRONMENTAL CONCERNS WITH BEST MANAGEMENT PRACTICES



ECM Team Availability to Construction Staff: An environmental representative identified in the EMP will meet regularly with the Construction Manager to discuss planned and recent land disturbance, progress on current construction, and stabilization status. During these meetings, environmental compliance and construction representatives will discuss BMP conditions, the inspection circuit, scheduling of new areas of disturbance, weather concerns, and be available for any questions that arise. The team approach to compliance will keep the staff up to date and establish ownership and achievable goals. During major predicted weather events, the ECM Team representative will be available to consult construction staff on "buttoning up" disturbed areas prior to event. Doing so will reduce the risk of project delays because of noncompliance. Laura's experience in compliance will be a particular asset as a second set of eyes focused on environmental conditions and understanding risk areas.

Environmental Inspection Management: Laura or a qualified representative will inspect the project for compliance within the timeframes identified by the permit requirements or more regularly based upon a specific area's susceptibility to impact. Inspection checklists and reports will be completed during each inspection and the appropriate construction representative will be notified if structures are not installed correctly or need maintenance. In the event of an impact to surface water or other incident of environmental commitment non-compliance, Laura will notify the VDOT Project Manager and notify regulatory points of contact within the required permit timeframes. The EMP will be kept onsite and reviewed/updated as the project progresses or semi-annually, at a minimum. Laura will accompany regulatory authorities for planned inspections.

4.4.2 UTILITIES

Describe the approach for utility coordination, adjustments, and relocations.

Our Team's ability to manage utility coordination and conflicts is based upon our highly experienced staff and their long-standing relationships with utilities throughout the Commonwealth, including representatives from Dominion Energy, Verizon, and New Kent County Utilities. Utility impacts can significantly threaten the project schedule and increase costs, especially if unforeseen.

The Kokosing Team completed a comprehensive review of the RFP and has coordinated with each utility owner to obtain all available records and discuss potential impacts and mitigation strategies. After NTP, communication will continue throughout the project. Our standard approach is to design the project to avoid utilities to the maximum extent possible. Where utilities cannot be avoided, we will coordinate and assist each utility with their relocation design and phase the project to complete all relocations early in construction, minimizing delays to the project schedule. Where possible, Kokosing may self-perform a relocation to reduce the risk of a delay. If that is not feasible, we will work with the owner to coordinate details, update schedules, and their crew has safe access to the area to complete their relocation.

Identify which utilities are believed to conflict with the design and potential solutions for accommodating those utilities.

Public and private utilities, owned by several different entities, are present along the project alignment. These include underground electric and telecommunications lines along the roadway shoulders (primarily at interchanges) and perpendicular utility crossings that span I-64. We have verified that most utility conflicts can be avoided but need to be tracked and managed effectively to reduce project risk to cost and schedule.

Based on our coordination with the utility owners and our analysis of available information, including test hole results and drawings provided by the utilities, we have identified several potential utility conflicts in the project area and possible mitigation opportunities to minimize or eliminate them. Further modifications to the design will be implemented following supplemental utility designation and test holes performed after NTP.

One of our design improvements detailed in **Section 4.3** noted eliminating outside widening along I-64 WB between the beginning of the project and Route 33. This avoids impact to the existing electric line along the outside shoulder. It also eliminates the outside widening and cut slope excavation that would impact or significantly reduce cover over the 16-in. gas main that crosses I-64 at Station 5010+50. Eliminating this potential conflict reduces risk, construction duration, and cost.

The existing water and sanitary sewer facilities crossing I-64 are encased within steel casing pipe and appear to be deep enough to avoid conflict with the proposed improvements; however, test holes will be performed to confirm the depth at each water and sanitary sewer crossing. The drainage design will be adjusted, if necessary, to maintain adequate vertical cover. In areas where new guardrails or sound barriers cross water and sanitary sewer mains, our design will require these features to be installed which centers the utility line between the below-grade posts.

Most of the potential impacts are with VDOT and Dominion-owned electrical cables and privately-owned telecommunications and fiber optic lines. These utilities exist at many of the ramps and are at risk of being impacted by minor grading and/or when installing new guardrail. Where possible, our design minimizes work along the road shoulder, reducing impacts to these facilities. Minor adjustments to junction boxes and conduit runs will be implemented where feasible to reduce the need for extensive linear relocations. Kokosing may self-perform these minor adjustments and maintain control of the schedule risk. Overhead power and telecommunications lines cross I-64 at several locations. Our Team has coordinated with Dominion and the owners of their joint use attachments to verify that adequate minimum vertical clearance is maintained.

4.4 PROJECT APPROACH

A Cox cable TV line at the Courthouse Road crossing is in direct conflict with construction of the proposed bridge foundation. We have coordinated with Cox to relocate this line in a single long section spanning WB and EB I-64, so it can be completed more quickly vs. two short relocations. This takes place well ahead of the bridge widening construction so that it is out of the way.

Table 4.4.2-1 below lists all utilities present along the project route, along with mitigation strategies for potential conflicts:

TABLE 4.4.2-1: UTILITIES & POTENTIAL CONFLICTS

Utility/Type	WBL Station	EBL Station	Potential Impacts	Mitigation Strategies
Electric (Dominion)	4988+50 to 5010+50	N/A	- Retaining wall along WB I-64 - Guardrail	- Design eliminates retaining wall shown in RFP conceptual plans - Replace guardrail in its existing location to avoid conflict
16-in. Gas Main (Virginia Natural Gas)	5010+75	1010+10	- Grading in median - Guardrail	- Design eliminates conflict with RFP Conceptual Plan's 16-ft. of outside roadway widening along WB I-64, along with the excavation that reduced cover over the gas main - Perform test hole in median to confirm depth; replace in kind if in conflict - Span gas main with guardrail posts
Overhead Electric (Dominion)	5010+30	1010+10	N/A	- Utility not in conflict with proposed design
Fiber Optic (Segra)	5035+00	1035+10	- Grading in median	- Perform test hole in median to confirm depth; replace in kind if in conflict
6-in. Sanitary Sewer Force Main (New Kent County)	5050+75	1050+65	- Sound barrier - Grading in median	- Span force main between sound barrier posts - Design adjusts grading in median to avoid impacts to force main
12-in. Water Main (New Kent County)	5050+85	1050+75	- Sound barrier - Grading in median	- Span water main between sound barrier posts - Design adjusts grading in median to avoid impacts to water main
Telecommunications (Verizon)	5055+80	1055+800	- Sound barrier - Grading in median	- Span telecom between sound barrier posts - Perform test hole in median to confirm depth; replace in kind if in conflict
Telecommunications (Verizon)	5110+70 to 5113+10	N/A	N/A	- Utility not in conflict with proposed design
Telecommunications (Verizon)	5110+120	1111+70	N/A	- Utility not in conflict with proposed design
Electric	5111+60 to 5127+45	N/A	N/A	- Utility not in conflict with proposed design
Overhead Electric (Dominion)	5111+90	1112+50	N/A	- Utility not in conflict with proposed design
Electric	5166+10 to 5170+05	N/A	N/A	- Utility not in conflict with proposed design
Electric (Overhead)	5166+30	1167+15	N/A	- Utility not in conflict with proposed design
Telecommunications (Verizon)	5167+10	1168+10	N/A	- Utility not in conflict with proposed design
Telecommunications (Verizon)	5213+90	1213+85	N/A	- Utility not in conflict with proposed design

TABLE 4.4.2-1: UTILITIES & POTENTIAL CONFLICTS

Utility/Type	WBL Station	EBL Station	Potential Impacts	Mitigation Strategies
Overhead Electric (Dominion)	5213+25	1213+35	N/A	- Utility not in conflict with proposed design
Electric (Dominion)	N/A	1213+35 to 1222+85	N/A	- Utility not in conflict with proposed design
Telecommunications	N/A	1213+35 to 1222+85	N/A	- Utility not in conflict with proposed design
Overhead Electric (Dominion)	5260+70	1260+95	N/A	- Utility not in conflict with proposed design
Electric (Dominion)	5345+80	1345+70	- Grading in median	- Perform test hole in median to confirm depth; replace in kind if in conflict
8-in. Gas Main (Virginia Natural Gas)	5347+05	1346+85	- Grading in median	- Design adjusts grading in median to avoid impacts to gas main
12-in. Water Main (New Kent County)	5347+15	1347+00	- Grading in median	- Design adjusts grading in median to avoid impacts to water main
8-in. Force Main (New Kent County)	5348+00 (Approx.)	1348+00 (Approx.)	- Grading in median	- Design adjusts grading in median to avoid impacts to force main
Electric (VDOT)	N/A	1392+40 to 1417+00	N/A	- Utility not in conflict with proposed design
Telecommunications (VDOT)	N/A	1392+40 to 1417+00	N/A	- Utility not in conflict with proposed design
Overhead Electric (Dominion)	5417+25	1417+10	N/A	- Utility not in conflict with proposed design
Electric (VDOT)	N/A	1446+75 to 1448+20	- Guardrail	- Relocate existing power with light poles
Electric	N/A	1449+60 to 1451+20	N/A	- Utility not in conflict with proposed design
12-in. Water Man (New Kent County)	5451+05	1451+10	- Guardrail	- Span water main between guardrail posts
Electric	5456+45	1458+95	- Guardrail	- Span utility between guardrail posts
Electric	5485+50	1458+65	- Guardrail	- Span utility between guardrail posts
Telecommunications	5464+55	1465+40	- Guardrail	- Span utility between guardrail posts
6-in. Sanitary Sewer Force Main (New Kent County)	5465+50	1466+00	- Guardrail	- Span utility between guardrail posts
Electric (VDOT)	5465+10 to 5469+55	N/A	- Guardrail	- Relocate existing power with light poles
Telecommunications (Verizon)	5516+85	1516+25	- Guardrail	- Replace existing guardrail in the current location to avoid conflict
Cable TV (Cox)	5516+95	1516+45	- Bridge foundation	- Relocate
Telecommunications (VDOT)	5528+30 to 5538+40	N/A	- Guardrail	- To be replaced as part of this project's ITS work
Electric	5538+55 to 5538+40	N/A	N/A	- Utility not in conflict with proposed design
Overhead Electric (Dominion)	5539+50	1539+60	N/A	- Utility not in conflict with proposed design

4.4 PROJECT APPROACH

Describe mitigation strategies to offset the potential impacts of utility relocations exceeding estimated timeframes or unidentified/non-located utilities being discovered during construction.

The primary tactic to mitigate risks associated with utility conflicts is to develop a design that avoids in-place utilities. Avoidance not only limits the work and utility company involvement, it also is key in demonstrating value in our relationships with VDOT and the utility companies and gives the utilities a vested interest in making the project a success. Open, ongoing communication with the impacted utilities fosters our relationships and reputation that we have established in the industry over the years and allows us to make any necessary utility relocations as smooth and non-disruptive as possible.

Schedule risk from relocations will be mitigated by beginning utility coordination activities immediately after NTP. Completing plans for the utilities to review and hosting a utility review meeting as soon as possible will maximize the amount of time that the utility company has to relocate an impact. Our team will follow VDOT's standard utility relocation process, starting with a Utility Field Inspection, and will develop a detailed utility tracking matrix which will be maintained throughout the duration of the project. When utility relocations begin, our team will hold monthly project status meetings to monitor the progress of the relocations and estimated completion dates. If a utility anticipates a delay, our team will work with the utility to find solutions to recover lost time and get back on schedule.

Due to the nature of this project's location along a limited access highway, the likelihood of finding unknown or unmarked utilities is low; however, our team will perform a thorough investigation of the project area for signs of unknown utilities such as cleared areas or pavement patches. Our team has verified with Lumen/Qwest that no government-owned "black lines" fall within the project route.

Kokosing will make use of the VA811 Location Enhanced Ticket Search to ensure that all tickets are cleared before proceeding with any excavation work. If a new utility facility is discovered or if work damages an existing facility, work in the area will be halted immediately. We will work to promptly identify the owner and provide all assistance necessary to ensure that services are quickly restored.

Demonstrate that the utility coordination, adjustments, and relocations are well integrated into the Project sequencing as to minimize the possibility of schedule delays.

Utility Relocation/Coordination		266	09-Oct-23	23-Oct-24
71	Obtain Letter authorizing DB to coordinate utility relocations	5	09-Oct-23	13-Oct-23
72	Preliminary Plans to Utilities	10	16-Oct-23	27-Oct-23
73	VDOT Coordination Meeting	10	30-Oct-23	10-Nov-23
74	Preliminary Review Meeting with Utility Owners	10	13-Nov-23	28-Nov-23
75	Utility and DB "Master Agreements" completed	30	29-Nov-23	11-Jan-24
76	Prepare UT9 Forms	20	12-Jan-24	08-Feb-24
77	Preliminary Utility Status Report	85	09-Feb-24	07-Jun-24
78	Distribute UFI Plans	1	01-Mar-24	01-Mar-24
79	Hold UFI	10	04-Mar-24	15-Mar-24
80	Utilities prepare and submit plan and estimate (P&E)	55	18-Mar-24	03-Jun-24
81	Utility P&E approval	15	04-Jun-24	24-Jun-24
82	Utility Relocation	85	25-Jun-24	23-Oct-24

Figure 4.4.2-1: Anticipated Schedule for Utility Coordination

Our team has integrated all utility coordination and relocations into the project schedule to allow adequate time for utility relocation design, approvals, easement acquisition, material procurement, construction of the relocations, and final as-builts of their relocated facilities. Throughout design and construction, our team will continue to communicate regularly with each utility owner on their schedules and progress. **Figure 4.4.2-1** outlines our anticipated schedule for utility coordination, from preliminary engagement with the utilities through utility relocations. Our schedule has budgeted three months for utility relocations, which provides ample time to coordinate any unanticipated utility relocations that may arise.

Currently, the relocation that we need completed first is the Cox utility line along Route 155. Kokosing will be constructing a work area between these bridges and will ensure that the crew relocating the line has adequate access and staging area. The bridge construction work has been scheduled to maximize the time that Cox needs

to relocate the line. As mentioned earlier, most of the potential utility impacts are with VDOT and Dominion-owned electrical cables and privately-owned telecommunications and fiber optic lines. Most of these are located along the shoulder or at ramps and any adjustment needed is likely to be minor. Kokosing will self-perform these minor adjustments and maintain control of the schedule risk.

4.4.3 GEOTECHNICAL

Describe the approach to identifying and mitigating geotechnical risks through knowledgeable application of geotechnical design and analysis practices and construction methods.

Our Team has reviewed the information provided in the RFP, Geotechnical Data Report (GDR), Geotechnical Pavement Report (GPR), published geologic maps, and publicly available data in the vicinity of the project. We are extremely familiar with the coastal plain physiographic province, the challenges, and risks this geologic region brings from our work on the adjacent section of I-64 (MM 200 to 205) where this design-build project was completed ahead of schedule and under budget despite historic flooding and rain. Thus, we have developed a comprehensive geotechnical design and construction approach that results in low-risk, safe, and efficient design while minimizing the long-term maintenance requirements, supports the construction sequencing, reduces traffic impacts, and improves safety.

Our geotechnical team has been engaged identifying geotechnical risks and mitigation measures since development of the SOQ. The geotechnical team will continue to be involved throughout the project, RFP design, scope validation, final design and through completion of construction. They will perform supplemental investigations and testing to evaluate pavements, embankments, fill slopes, cut slopes, culverts, sign structures, noise barrier, and bridge widening. The subsurface investigations will be prioritized to confirm design parameters and construction methods. We recognize the inherent challenges associated with working around existing foundations, maintaining traffic, and minimizing impacts to environmental resources.

Our Team recognizes mitigating geotechnical risk during design and construction involves:

- Identifying issues early
- Progressing design with construction means/methods in mind
- Open communication between design and construction team members
- Geotechnical engineers involved during construction

Subsurface Conditions: Based on the information available in the GDR and GPR, the general subsurface stratigraphy is as follows:

- Depth of topsoil in unpaved areas ranged from 1-in. to 10-in., averaging 3-in.
  - **Alluvium:** This stratum was typically encountered underneath surficial material or fill. Alluvium was heterogeneous and consisted of mixed and unsorted coarse-grained and fine-grained layers. Soft, loose, highly plastic, and/or organic material was frequently encountered. This stratum is generally wet but above the groundwater level.
  - **Upper Yorktown Formation:** This stratum was typically encountered underneath alluvium, at or near the water table, and was identified as "marine" in the boring logs. This stratum generally consisted of very soft to medium stiff, medium to highly plastic, fine-grained soil (CH, MH, CL, ML, SC, SM).
  - **Lower Yorktown Formation:** This stratum was typically encountered underneath the softer, upper Yorktown deposits and extended to the termination depths of the borings. Lower Yorktown formation soils were generally homogenous, coarse-grained, and medium dense to very dense (SP, SP-SM, SM).
- Intermediate Geo-Material (IGM) is not anticipated

- Bedrock is not anticipated
- Groundwater, where encountered raged from a depth of 0.5-in. to 48.5-ft. below the ground surface
- The existing pavement section:
  - Shoulder: Asphalt 5-in. to 13.5-in. with 6.5-in. to 13-in. of base
  - Mainline: Asphalt 2.75-in. to 13.75-in.
    - Concrete 7.5-in. to 10-in.
    - ABC 4-in. to 8-in. or Cement Treated/Stabilized Aggregate 3-in. to 7-in.
- Corrosivity testing presented in the GDR indicates that a potentially corrosive environment exists based on the requirements in VDOT's Manual of The Structure and Bridge Division, Part 2 (Design Guidelines) Chapter 23 with a pH ranging from 2.95 to 6.87 and resistivity testing 590 to 73,700 ohm-cm. Chloride and sulfate testing were not conducted for any samples in the GDR.

Key Geotechnical Issues: Our project team identified, discussed, and developed an approach to mitigate geotechnical risk. We preliminarily evaluated the following geotechnical project elements utilizing the data in the GDR and GPR:

- Strength of subgrade materials
- Unsuitable soil delineation and remediation
- Embankment Stability of cut and fill slopes
- Settlement of embankment fill
- Corrosion potential for structures
- Axial capacity of driven piles
- Temporary pavement design and shoulder strengthening
- Pavement patching (full or partial depth) and limits of full depth pavement

Our Team's geotechnical design approach supports the overall design by identifying and managing these geotechnical risks which could impact the design/construction schedule, traffic sequencing, and public safety. Design and construction solutions for potential risks are summarized in **Table 4.4.3-1**.

TABLE 4.4.3-1: GEOTECHNICAL RISK AND MITIGATIONS THROUGH DESIGN, ANALYSIS, AND CONSTRUCTION

Geotechnical Condition	Risk/Impact	Mitigation Strategy
Unsuitable soil delineation and remediation	Schedule MOT/Public Safety Earthwork Quantities Long-term Serviceability QA/QC Needs	- Confirm and delineate accurate lateral and depth extents of the unsuitable soil in the areas already identified using the available subsurface information - Perform additional subsurface investigations and laboratory testing to determine options for subgrade mitigation (undercut and replacement with FDR or RAP, chemical stabilization, or moisture conditioning) - Finalize Soils Remediation Plan prior to construction - Ensure schedule impacts are accounted for in the CPM schedule - Confirm areas of moisture-sensitive soils identified with the available subsurface information and supplemental investigation - Denote the locations of these soils on the final Project Plans - Protect soils from the elements once exposed - Schedule earthwork operations to limit the exposure of the moisture sensitive soils

TABLE 4.4.3-1: GEOTECHNICAL RISK AND MITIGATIONS THROUGH DESIGN, ANALYSIS, AND CONSTRUCTION

Geotechnical Condition	Risk/Impact	Mitigation Strategy
Embankment stability of cut or fill slopes	Schedule Long-term Serviceability MOT/Public Safety Earthwork Quantities	- Complete reliability assessments along with slope stability analyses to confirm designs will have a probability of success of 99 percent or greater - Obtain additional shear strength test data to support slope stability and settlement design
Settlement	Schedule Serviceability MOT/Public Safety Earthwork Quantities	- Perform thorough subsurface investigations consisting of borings, in situ testing, and laboratory testing - Evaluate expected settlement and mitigate through design to avoid impacting existing infrastructure - Mitigate, if required, effects of settlement on new construction by sequencing construction for settlement to occur prior to final grading and paving
Corrosivity	Long-term Serviceability	- Conduct additional geotechnical investigations and corrosivity testing at locations of new deep foundations - Incorporate requirements of Chapter 23 in pile design - Select pipe types corresponding to corrosion potential in accordance with VDOT Standard PC-1
Pile Driving	Schedule MOT/Public Safety Damage to Structures or Utilities	- Relocate a cable TV line that will conflict with installation of the piles required for the bridge foundation - Evaluate sensitivity to vibration of infrastructure identified - Develop a monitoring plan and mitigation methods to limit vibration to tolerable levels - Evaluate drivability to avoid overstressing
Temporary Pavement Design	MOT/Public Safety	- Coordinate duration of each SOC phase - Verify pavement design for SOC phase - Minimize maintenance, repairs, and impacts to the public
Pavement Patching and Limits of Full Depth Pavement	MOT/Public Safety Long-term Serviceability Schedule	- Determine during the scope validation period location of full depth pavement - Utilize subsurface investigation, pavement cores, FWD, step frequency GPR data, and visual inspection to determine patching locations - Incorporate recommendations into the Pavement Geotechnical Report - Coordinate with the QAM locations of patches to minimize impacts to the public during full or partial depth repairs

Subsurface Investigations and Laboratory Testing Program: To supplement the GDR and GPR information provided, address the risk identified above, and meet the geotechnical requirements of the RFP, we will immediately mobilize drill rigs to complete the subsurface investigations following NTP and approval of the Subsurface Investigation Plan by VDOT. The geotechnical team will coordinate boring locations in areas that require a Nationwide 6 permit with ECM Laura Rader-Dixon. We will develop, execute, and implement our final subsurface investigation and laboratory program which will meet/exceed the requirements of Chapters 3 and 6 of the VDOT Manual of Instructions for Materials Division (MOI), AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017, and VDOT Modifications, and Section 700.05(c) of the 2020 VDOT Roads and Bridge Specifications.

The geotechnical investigations program will be tailored to address the real geotechnical and pavement issues relative to the proposed design, with emphasis on near-surface subgrade soil suitability, moisture-sensitivity of existing soils, properties of the existing fill material, existing pavement section/subgrade, noise barriers, sign foundations, CCTV, and geotechnical construction considerations. All additional investigations and testing will

be performed in support of the required final design level Geotechnical Engineering Report (GER). Full-time geotechnical engineers or geologists will oversee the drilling activities to identify the subsurface conditions and allow for adjustments to the supplemental subsurface investigation program (depth, location, additional samples, or borings) as the work progresses. Our team's field staff are also FHWA National Highway Institute drill rig certified. The supplemental field investigation effort will be conducted in sequence utilizing multiple drill rigs to complete the supplemental borings. Sampling and testing of in-situ soils will be focused on delineating the extent of embankment Fill from the construction of I-64, highly plastic, excessively wet, and California Bearing Ratio (CBR) or Resilient Modulus (Mr) value soils at the proposed subgrade elevation. Cone Penetration Tests will be used to characterize the soil behavior types at the fill areas to help establish soil parameters for settlement, consolidation evaluation, and corrosivity of in situ material. Soil parameters will be developed for design of noise barriers and sign foundations.

Shelby tube sampling will also be conducted so that direct shear and consolidation testing can be performed on undisturbed samples. The shear strength and consolidation test results will be used to develop the engineering parameters for each soil stratum. The sampling and testing will be scheduled to expedite obtaining the parameters that are critical in confirming our preliminary evaluations of settlement rates and magnitudes, supporting the external and global stability analyses, and foundation designs.

An AASHTO-accredited laboratory will conduct testing on selected samples to determine the natural moisture content, grain size, Atterberg limits, corrosivity, shear strength, consolidation, Proctor, CBR, corrosivity, and organic content. The laboratory testing program will run concurrently with the subsurface investigation program.

Geotechnical Analysis and Design: The geotechnical design and recommendations will be completed in accordance with AASHTO LRFD, VDOT, and MOI requirements. The GERs will be prepared per the MOI to provide recommendation and analysis for project elements.

Bridge Widening: Based on the anticipated structural loads, the proposed bridge widening will be founded on deep foundations consisting of HP 14x73. The piles will extend 35-ft. below the abutment. Downdrag is not anticipated as minor fill, less than 5-ft. will be required to reach the abutment elevation. Based on our preliminary WEAP analysis, the piles will not be overstressed during design if driven with a D19 hammer. Predrilling for installation of the piles is not anticipated. High Strain Dynamic Testing with Signal Matching will be performed on all production piles. If corrosive materials are identified during the supplemental subsurface investigations, the piles will be designed for section loss accordingly in accordance with Structure and Bridge Division, Part 2 (Design Guidelines) Chapter 23.

Embankment Slopes: Construction will require 2(H):1(V) fill embankments in the median of I-64. These embankments will require about 12-ft. of new fill to create up to 39-ft. high slopes. These embankments will be constructed through areas that are wet or within delineated wetlands. Stabilization of the embankment toe or flattening the proposed slopes will be required in select locations to provide a design that meets the required factor of safety and reliability analysis. Additional shear strength testing is required to meet the requirements of the RFP and VDOT MOI Chapter 3. Where construction of a rock toe to provide global stability is required, it will consist of No. 2 stone wrapped in a Class 2 separation geotextile. Our preliminary design anticipates if flatten slopes are required they will be between 2.5(H):1(V) and 3(H):1(V). Our design and subsurface exploration will include further delineation of areas where embankments will be constructed. fill slopes will require benching into the exiting slopes to key the new fill in and prevent surficial sluffing. Cut slopes will be constructed with 2(H):1(V) slopes.

Unsuitable Soils: During design we will develop options for the construction team to implement for "known" and "unknown" poor geotechnical conditions are found that were not anticipated and to meet the criteria of Section 2.6.4 Unsuitable Materials as defined in the RFP. This would include such options as:

- Undercut and replace will dirt
- Moisture conditioning (drying and recompacting)
- Undercut and replace with recycled concrete or RAP
- Chemical stabilization for subgrade stabilization improvements such as cement/lime treatment

The key to the success of mitigating unsuitable materials encountered on site is to be able to adjust the construction activities efficiently to the conditions encountered. Our Team will coordinate with the CM, geotechnical engineer, and QAM to ensure that there are no delays to the schedule, filed operations, or impacts to the public.

Pavements: Our Team has developed a temporary pavement design, where required, and has verified the requirements for shoulder strengthening to accommodate MOT during construction. Supplemental geotechnical investigations, pavement cores, and laboratory testing will verify the minimum RFP pavement sections by also incorporating the results of the FWD and Step Frequency GPR data. Our Team will verify the subgrade for all final pavements meet the requirements of RFP Section 2.6.4 including a CBR of 8. Construction of the final pavement section will include an underdrain, UD-4, which will aid in minimizing saturated subgrades and preserving the pavement integrity.

Culverts: The RFP-phase borings indicated loose, and/or wet soils at most locations and bearing elevations for proposed culvert extensions and pipe extensions greater than 4-ft. diameter. To achieve the required bearing resistance and settlement requirements, undercutting and backfilling will be required to provide a stable working platform for the proposed drainage structures. This will consist of undercutting 2-ft. below the bearing elevation, installation of a geotextile separation fabric (Class 2), backfilling with 20-in. No. 57 Stone and choking/capping it with 4-in. No. 25 or 26 Aggregate to prevent water flowing below the culvert.

In areas where culverts will not be extended, MSE walls will be constructed to minimize impacts to wetlands. These walls will be located behind the existing culvert head walls and optimized to reduce embankment fills. Backfill for MSE walls will consist of No. 57 Stone. The MSE walls will be embedded a minimum of 2-ft. and have a 4-ft. horizontal offset between the ground surface and the front face of wall with either a bench or a slope that meets these requirements.

Waste Area: Construction will require disposal of surplus FILL material and creation of additional FILL embankments in the median of I-64. It is anticipated that this embankment material will be used to flatten slopes and fill in valley within the project limits. Our design and subsurface exploration will include further delineation of areas where waste embankments will be constructed. We will also evaluate the impacts of these median embankments on the proposed construction.

Construction Methods: Our Team's geotechnical engineers will be an integral part of the project's construction phase, specifically as required in the RFP Part 2 Section 2.14. The geotechnical team's involvement during construction will reduce risk, overall costs, streamline the schedule by reducing response time to RFIs and provide a better product to VDOT. The geotechnical engineer will provide certification that the work was subjected to the necessary testing and inspection requirements and meets the RFP design.

4.4.4 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Describe the Offeror's approach to QA/QC during design and construction.

Approach To QA/QC During Design: The Kokosing Team's Design Manager, Owen Perry, PE of RK&K, is responsible for managing the design QA/QC for the design team. As part of the project's QA/QC plan, we will develop a specific Design Quality Management Plan (DQMP) which is an extension of RK&K's established QA/QC procedures. DM Owen Peery and Design Quality Manger (DQM) Jim Durbin, PE are independent of the Design QC activities. Working under Owen is a leader in each discipline area and for each subconsultant on the project. Each discipline leader certifies that proper QA/QC procedures have been implemented before submitting any deliverable. Periodic audits of the process are completed by Jim. These reviews are then verified by Owen to confirm procedures are being followed. Our DQMP is the framework by which RK&K conducts their independent deliverable reviews. The design phase quality management process will be transparent to VDOT. RK&K follows this 9-Step Review Process:

STEP 1 – Originator: Prepares the deliverable to be checked and is accountable for accuracy/adequacy per design code requirements. It is not intended that the Originator rely on the checking process to complete the deliverable.

STEP 2 – Checker: Independent of the Originator and checks the deliverable. Reviews every aspect, including input for design programs that are a part of the calculation set. Marks up the stamped deliverable set with comments and returns it to the Originator.

STEP 3 – Back-Checker: Reviews the checked deliverable, confirms items marked for revision are justifiable, and that corrections noted are appropriate. If the Back-checker disagrees with a Checker's correction, they must resolve it before the next step.

STEP 4 – Corrector: Addresses comments marked on the check print (original deliverable). This can be either the Originator or a CAD Technician.

STEP 5 – Verifier: Reviews the corrected deliverable against the check print and verifies corrections marked on the plan sheet or calculation sheet were addressed. The Verifier is also the Checker.

STEP 6 – Interdisciplinary Review: Once the design deliverable is checked, the DM and D/CI organize the lead discipline engineers (roadway, structural, drainage, utilities, etc.) to review the submittal.

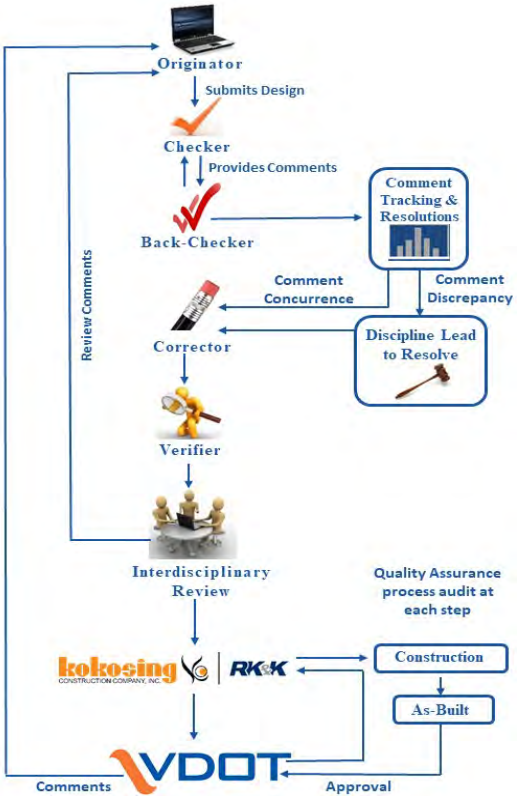


Figure 4.4.4-1: Design QA/QC Workflow Diagram

STEP 7 – Contractor Review: At this point in the review process and concurrent with the Interdisciplinary Review, Kokosing and the construction team review the plans for constructability, conformance to anticipated means and methods, and completeness of comment responses which is led by D/CI Andrew Hiegl. If there are comments from the Interdisciplinary or Contractor Reviews, the checking procedure starts from the beginning for the affected portions of the deliverable.

STEP 8 – Quality Assurance: Our design QA/QC manager audits/ensures the design team is following the QC checking process. In addition to the QA/QC design process outlined above, the design QA/QC manager and the DM may direct a design peer review on a discipline by a senior technical team member. Comments from this review will also be addressed by following the QC checking process.

STEP 9 – Submit to VDOT: The lead discipline engineer signs a form for each milestone deliverable that QC efforts are compliant and transmits it to the DM who signs off on it with the design QA/QC manager. VDOT (or other reviewing agencies) review the design and submit comments to the Kokosing Team. Comments are addressed by incorporating changes into the design for the next milestone submittal. This continues until final plans are submitted to VDOT and approved for construction. Final deliverables are signed and sealed by the lead discipline engineer (a Virginia PE), the DM, and the DBPM submits them to VDOT to be signed and Released for Construction.

RK&K's success in delivering quality well-structured and easily audited plans on fast-paced design-build projects is attributed to weekly design discipline meetings. Our design team will hold weekly meetings that provide an opportunity for design disciplines and construction staff to coordinate between multiple design disciplines. This keeps us on track and ahead of potential issues and solves them before they become design or schedule conflicts.

RK&K Testament: On VDOT's Route 29 Solutions design-build project in Albemarle County, there were countless hardscapes and paving details critical to constructing the Rio Road grade-separated intersection. RK&K's Design Team provided special design details that resulted in VDOT's acceptance of the work while allowing Kokosing's preferred methods of construction to be used. RK&K's Design QA/QC Plan and quality submissions facilitated quick VDOT reviews and approvals. Although VDOT committed to a nine-day submittal review average, VDOT's average submittal review rate was actually five days. This undoubtedly contributed to completing this segment ahead of schedule.

Having this success in their project portfolios, the Kokosing Team will bring this same dedication to this project which will minimize VDOT's review time and effort.

Approach To QA/QC During Construction: DBPM Chris Rutkai will ultimately be responsible for the quality of the project. Reporting to Chris will be the QAM, Mike Saunders, who will be responsible for the implementation and management of the QA program. Kokosing's CM John "Jake" Leffler will be responsible for overall Quality Control. The QC team will be led by Aaron Straebel as depicted in the organization chart in **Section 4.4.4(3)**. In compliance with VDOT's Minimum Requirements for Quality Assurance and Quality Control on Design-Build and Public-Private Transportation Act Projects, issued July 2018, the QA personnel will be distinct and separate from the QC staff and construction production staff. All key personnel performing QA or QC functions will be exclusively designated to their unique responsibilities and will not be assigned to perform conflicting duties or production work. Our Construction QA/QC Plan will establish clear procedures to inspect the construction and testing of materials. Our QA/QC plan will contain the following components at a minimum:

- **Staffing Plan:** A project specific staffing plan that identifies the names, roles, resumes, certifications, anticipated hours per month, and organizational chart showing lines of authority and reporting responsibilities.
- **Inspection Plan:** An inspection plan that identifies the work items to be constructed, characteristics of what will be inspected, acceptance criteria or tests required for the work, and which staff will be required to perform the inspection.
- **Testing Plan:** The testing plan will be developed for each material type based on the minimum frequencies of testing and the quantities contained on the project plans. It will also define the process for tracking the delivery of the materials used and documentation of the materials in the materials notebook for the project.
- **Construction Inspection Checklists:** Our QA/QC plan will contain inspection checklists for all anticipated construction operations. Each checklist will have the construction requirements stated for that work activity.

Open and frequent communications are key to an effective QA/QC program. Proper planning and project meetings contribute significantly to success including:

4.4 PROJECT APPROACH

- **Daily Plan:** During construction, the QAM and QCM communicate daily with their key staff to confirm the appropriate inspections and testing for the planned work is covered. The QC and QA staff also communicate each day with the crew supervisors to coordinate the fine details required for testing and inspections.
- **Preparatory Inspection Meetings:** Prior to starting any new work scopes, the QAM leads these meetings to confirm project personnel understands the upcoming work. The objective is to coordinate/communicate among Kokosing's production, QA, and QC personnel, as well as VDOT's independent assurance and verification sampling and testing (OIA/OVST) personnel.
- **Weekly QA/QC Meetings:** The CM, QCM, QAM, and the senior QA and QC inspectors discuss work progress and address any issues/concerns. Minutes are prepared and any outstanding issues are tracked until resolved. The VDOT project manager has an open-door invitation to attend.
- **Monthly Project Progress Meetings:** QCM and QAM join these meetings to update attendees on the QA/QC Program and provide an overview of the Three Week Look Ahead (TWLA) schedule as well as the status of construction and any issues or discrepancies that need to be discussed.

Inspectors will document and, when applicable, take photographs the work taking place, testing types, locations, inspections and results, weather conditions, communications, delays, MOT/safety issues, any deficiencies, or non-conforming work with corrective actions. Other documentation includes inspection checklists, materials testing reports, frequency of testing matrices, work zone checklists, ESC checklists, as-builts, updates for Stormwater Pollution Prevention Plans (SWPPPs), and information for deficiency and non-conforming report logs. QA/QC documentation is maintained electronically online accessible to project personnel using Bentley's ProjectWise System and PlanGrid. The QAM monitors the QC and QA staff for document control, reviews the inspection staffs' daily diaries, and makes them available for the VDOT project manager to review.

1. Provide a staffing plan with a quantitative representation of QA staffing on the project correlated to the Proposal Schedule submission. The plan should demonstrate personnel commitments with sufficient granularity to compare to the proposal schedule work breakdown structure and/or specific activities. The submission should include the QAM, office engineers or ancillary personnel, Lead QA Inspectors, QA Inspectors, and supplementary Materials Testing Technicians: Our staffing plan's organizational structure is shown in **Figure 4.4.4-3** below in **Section 4.4.4(3)**. Additionally, we have included a QA staffing plan below in **Figure 4.4.4-2** that shows anticipated QA staffing levels in correlation to our Proposal Summary Schedule:

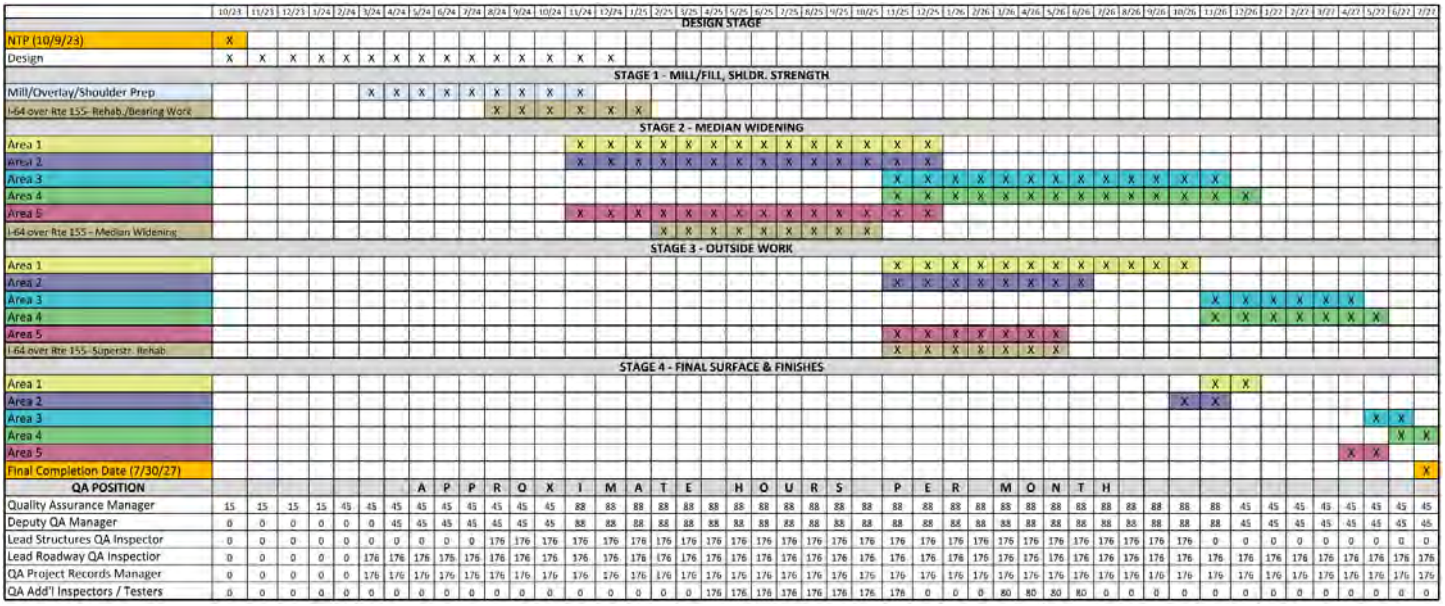


Figure 4.4.4-2: QA Staffing Plan

4.4 PROJECT APPROACH

NXL (a division of Kleinfelder, parent company to Century Engineering) will manage its own QA staff and subconsultants, QA Lab. subconsultant, Froehling & Robertson, Inc. (F&R). Each subconsultant's role, including NXL, and who they will report to is illustrated in the QA/QC organization chart. QA Lab will be required to abide by the QA Plan as detailed in the QA/QC Plan, which will be submitted to and approved by VDOT. Prior to construction, the QA Inspector's qualification matrix will be submitted to VDOT for approval. Should the agreed upon matrix require any revisions throughout the project, the changes will be documented and resubmitted for approval.

Our QAM has assigned Lead QA Inspectors to supervise construction activities for the roadway and bridge operations. The Lead QA Inspectors, assisted by the QA Staff, will also be responsible for observing all QC activities. They will be assigned to the project full-time for the duration of all activities related to roadway and bridge construction. An Office Engineer will be appointed full-time and charged with managing all QA/QC records for the project.

For a project of this size, scope, and complexity, our QA/QC staff must be experienced to deliver a final product that meets/exceeds the requirements. Our DBPM ensures that project policies are implemented and that our Team is staffed with knowledgeable and dedicated professionals who are committed to designing and constructing this project. Implementing QA/QC as prescribed by our Team eliminates the need for VDOT to augment the quality effort.

2. Provide a narrative regarding the QAM's individual supervisory approach to the project inclusive of the approximate QAM hourly commitments on-site and remotely per week for the life of the Project, and hourly commitment to ensure design QA requirements are being met. Describe the proposed supervisory structure and management procedures for QA staff to demonstrate appropriate delegation and oversight by the QAM in accordance with the Contract and Reference Documents: QAM Mike Saunders, has a "shirt sleeve manage" individual supervisory approach, meaning he is engaged on-site, each week, with his QA staff, the Kokosing Team, and VDOT, that is the basis of his superb historical performance as a Quality Assurance Manager. Mike will ensure attention to quality is being given and resolve issues. His stance is to resolve concerns and issues at the lowest level and not let them drag out. He wants things done right the first time and is empowered to use his "Stop Work Authority" to achieve compliance.

Mike will be engaged during design developing the Construction QA/QC plan, performing constructability reviews of the design packages, attending monthly progress meetings, and verifying design work packages submitted for payment have been certified by the DM. We estimate this hourly commitment during design to be approximately 15 hours/month to meet QA requirements. During construction, we estimate Mike's on-site commitments to this project to be approximately 20 hours per week. During construction, Mike will be assisted by his Deputy QAM who we estimate will be on-site approximately 20 hours per week. These levels are subject to change as the project gets underway and as needed to ensure as effective quality assurance program is provided.

The Kokosing Team has collaborated with NXL to jointly develop a proposed supervisory structure to ensure quality levels meet or exceed the contract requirements. As shown in our QA/QC Organization Chart in **Figure 4.4.4-3,** Mike will report to the DBPM. Deputy QAM Paul Moose will report to Mike and will assist in the responsibilities for administering the QA Plan. Paul will be engaged in field meetings and be responsible for administering various meetings throughout the project. The QA team's primary role will be assuring the work performed adheres to the "approved for construction" plans and VDOT specifications. Our assurance process includes reviewing the QC inspection and testing data, and performing independent sampling, testing, and inspections to verify the QC test results. All QC documentation will be turned in daily to the QA Project Records Manager, *Lynette Macon,* who will review them for accuracy and completion. The Lead QA Inspectors will report directly to Mike, with Paul's assistance, and manage the QA inspection and testing process throughout the project,

as it applies to roadway and bridge operations. The Lead QA Inspectors will be supported by an adequate number of QA Inspectors to cover the volume of work being put in place. The QA Team will operate independently of all other contractor QC functions, allowing them to provide an unbiased opinion in their evaluation of the work.

QAM Mike Saunders will lead the Construction QA team using NXL's proven management procedures with the primary role of confirming the work conforms to the approved plans and VDOT specifications by reviewing QC data and performing their own verification inspections and testing in accordance with the VDOT Quality Manual. He is responsible for the independent QA inspection and testing of materials used and work performed to include monitoring our QC program. He will maintain the Project's Materials Book in accordance with the VDOT's Materials Division requirements.

3. Provide a QA & QC specific organizational chart indicating all intended QA and QC personnel to be utilized on the project and their reporting relationships. Include a narrative describing the role and project specific commitment of any value added personnel such as office engineers and other professional engineer or specialty inspection personnel. Also, discuss the lead QA Inspectors' role in the management and utilization of other QA inspectors:

QA/QC Organizational Chart:

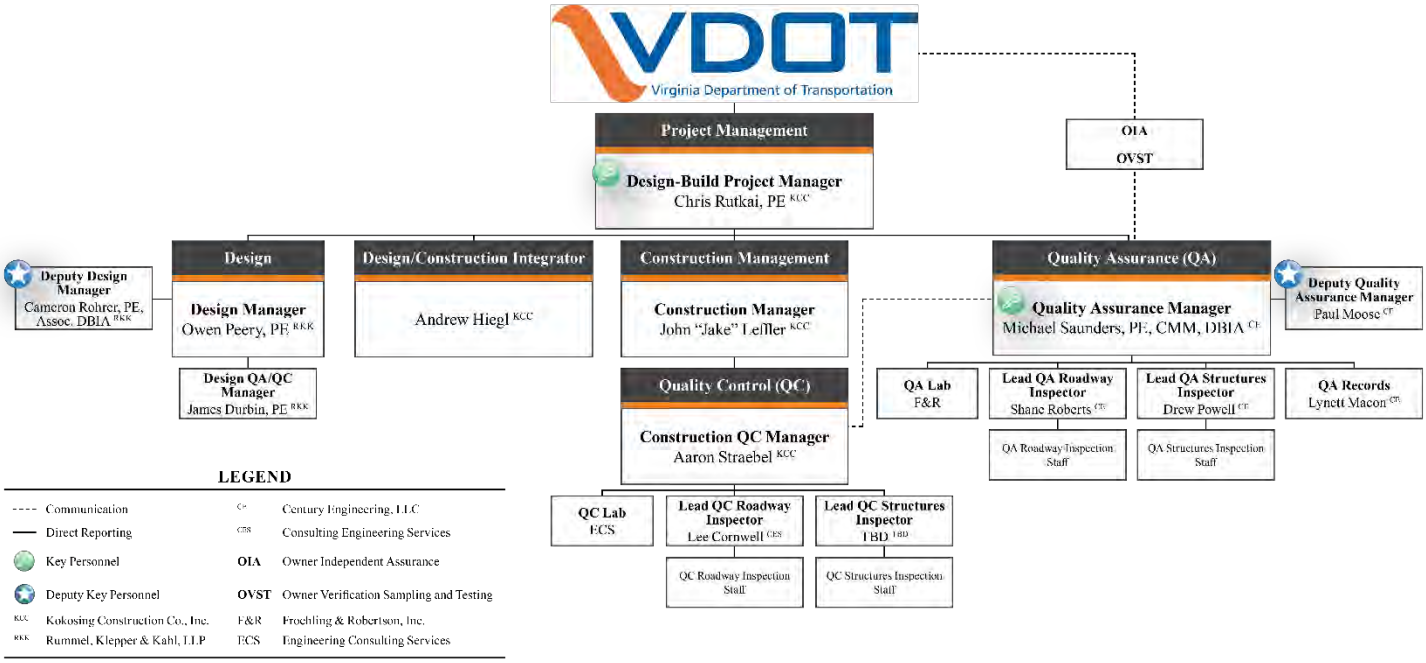


Figure 4.4.4-3: QA/QC Organizational Chart

Value-Added QA/QC Personnel Narratives:

- **Design/Construction Integrator (D/CI), Andrew Heigl (KCC)**, who reports to our DBPM, will coordinate and enhance communication between the construction and designer staff which benefits VDOT by having a cohesive team working towards delivering a quality, compliant project.
- **Lead Structures Staffing QA Inspector, Drew Powell (CE)** has been working on VDOT projects over the past twelve years throughout the Richmond and Hampton Roads areas. Drew was the Lead QA Inspector for the adjoining I-64 200-205 Widening design-build project with Kokosing where he was responsible for the QA testing requirements as well as project documentation.
- **Lead Roadway QA Inspector, Shane Roberts (CE)** has been working on VDOT projects over the past ten years throughout the state. Shane is currently the Lead QA Inspector for Kokosing on a design-build bridge replacement and road improvements project within the Richmond District.

4.4 PROJECT APPROACH

- **QA Project Records Manager, Lynett Macon (CE)** has been working on VDOT projects over the past twelve years throughout the Richmond and Hampton Roads area with a specialty focus on project documentation. Lynett is currently the Lead QA Inspector for Kokosing on the Richmond Bridge Bundle design-build project where she is responsible for the QA testing requirements as well as project documentation.
- **Construction QC Manager, Aaron Straebel (KCC)** was specifically chosen for this project because of his experience with similar projects. Aaron worked diligently to ensure all QC requirements were met for VDOT's I-64 200-205 widening design-build project.
- **Lead QC Inspector, Lee Cornwell (CES)** has partnered with VDOT over the past twelve years on more than five major projects throughout the Commonwealth of Virginia. Lee has worked on several complex interstate widening projects, new bridge construction, as well as bridge widening projects, including widening projects on I-64.
- **QA Lab Manager, Jessica Behmke, PG (F&R)** has more than twenty years of experience in construction materials testing and is F&R's Richmond, Virginia Construction Materials Testing Laboratory manager.
- **QC Lab Manager, David Stinnette, PE (ECS)** has over thirty-four years of experience and serves as the Construction Materials Testing Laboratory manager for ECS's Richmond office.

QA Inspectors' Management: The Quality Assurance Inspection efforts will be led by our Lead Roadway QA Inspector, Shane Roberts, and Lead Bridge QA Inspector, Drew Powell. These lead inspectors, along with the QAM, will monitor the project's three-week look ahead (TWLA) to determine if additional staff is needed to cover the anticipated upcoming operations. Additional QA Inspectors on the project will possess the needed certifications to cover their operations. The Lead QA Inspectors will direct the supplemental inspectors to cover work areas and be involved in decision making. Both Lead QA Inspectors will communicate daily to ensure no conflicts arise.

QA/QC Summary: Our team has curated a carefully thought-out QA/QC approach that leverages our team's unique skillsets and experiences to ensure all QA/QC contractual requirements are met through clear lines of communication, value-added personnel, and proactively determine if additional staff will be needed.

Our QA/QC team consists of professionals who individually have extensive backgrounds partnering with VDOT to deliver successful projects. Many of the team members have worked together on previous VDOT projects, giving them a preexisting trust in one another that leads to better collaboration and provides a proven record of successful teaming.

Established lines of communication, expert personnel, and continuous QA monitoring are the major efforts we will use in QA/QC approach to minimize the need for additional QA/QC efforts by VDOT, while simultaneously working to ensure that all VDOT's contractual QA/QC requirements are satisfied.

4.5 | Construction of the Project

4.5 CONSTRUCTION OF THE PROJECT

4.5.1 SEQUENCE OF CONSTRUCTION

Describe approach to construction phasing including the general sequence of activities required to complete the Project by the Final Completion date or the earlier proposed Final Completion date:

Throughout the development of our Technical Proposal, the Kokosing Team focused on a sequence of construction (SOC) to complete the project safely and efficiently. The collaborative process of our Team included optimizing the sequence of work to achieve VDOT's goals of:

	COST	**Providing the best price for the scope of work and reduce future maintenance costs for VDOT**
	SAFETY	**Providing a safe design that will limit stakeholder risks and a safe work zone for the traveling public and workers during construction**
	OPERATIONS	**Streamlined highway network to improve traffic flow, reduce congestion, provide faster travel times, and a more reliable system of travel**
	SCHEDULE	**Adhere to a well-sequenced schedule built to minimize potential delays and delivers the project quickly and efficiently**
	PUBLIC ACCEPTANCE	**Design and construction delivery approach that maximizes public acceptance while preserving trees and limiting environmental risks**
	QUALITY	**Providing a rigorous approach to design and construction QA/QC that gives VDOT confidence in our program and reduces the need for oversight**
	FUTURE PLANNING	**Avoiding and minimizing impacts to design and construction of adjacent future I-64 GAP Segment B Widening project**

Our Team's Proposal Schedule provided in **Section 4.5.3**, was developed through a collaborative process including input from all disciplines including design, permitting, utilities, ROW, QA/QC, and construction. We provide the following enhancements:

TABLE 4.5.1-1: SEQUENCE OF CONSTRUCTION BENEFITS

Project Enhancements	Benefits	VDOT Goals Met
Targeted early works design packages	- Maximizes the amount of work that can be built while final design and permitting is completed - Reduces schedule risk and potential for delays completing the project	
Early performance of partial and full depth pavement repairs under temporary lane closures	- Prevents unsafe drop-offs and unnecessary traffic shifts - Allows repairs to be completed without disrupting regular daytime traffic	
Complete mainline mill/fill (mill 2-in./pave 3-in. IM) early in conjunction with shoulder strengthening	- Takes this extensive portion of work completing it early on and eliminates the difference in pavement height (widening thickness 1-in. higher than existing mainline pavement) - Reduces schedule risk and addresses key safety concerns with ponding along the median widening - Reduces risk of potholes and provides a fresh riding surface for the public during construction	
Provide additional thickness of initial shoulder strengthening (mill 7-in./pave 8-in.)	- Matches mainline mill/fill height - Prevents 1-in. drop-off in a travel lane wheel path during Stage 2 construction	

TABLE 4.5.1-1: SEQUENCE OF CONSTRUCTION BENEFITS		
Project Enhancements	**Benefits**	**VDOT Goals Met**
	- Provides stronger pavement section resulting in less maintenance	
Temporarily reconfigure the ramps to WB I-64 from Route 33	- Provides wider shoulders through all phases of construction - Prevents work zone in split traffic and results in fewer construction phases - Improves operations on I-64 by eliminating merge condition, allowing free-flow to third lane	
Early completion of EB/WB lanes at the eastern end of the project (assume holding off on surface course to allow for lane shifts)	- Minimizes conflicts with MOT for adjacent Segment B project	
Early opening of EB/WB third lanes at western end of the project (988+89 to 1158+00)	- Allows travelling public access to third lane prior to project completion	
Logical segmentation of project into five Work Areas	- Allows construction management teams to narrow focus and takes into account earthwork balances and construction access and egress	

By advancing as much preliminary work as possible, the Kokosing Team ensures that the project will get out to a fast start and hit the ground running. Early Works Packages are utilized in the design phase to ensure this work can be completed during the first construction season including any clearing for the construction entrances. Our plan is to complete the mill/fill on the mainline with the intermediate course of asphalt in conjunction with completing shoulder strengthening work. By completing the mainline mill/fill (mill 2-in./pave 3-in. IM) as part of an early works package, we complete a substantial amount of work in the first construction season while final designs are being completed and permits are being issued. If this work was completed *after* the median widening, it would severely compress the schedule towards the end of the project. Our SOC eliminates this schedule risk and ensures the project is completed on time.

Additionally, once the inside widening work is complete, there will be a uniform course of intermediate asphalt across all lanes and shoulders eliminating the potential for drainage issues or pavement tie-in issues by eliminating the 1-in. difference between the new pavement section and the existing mainline pavement.

Median construction entrances will be constructed early as well and will be built using the permanent pavement section. This will allow work in the median to commence without delay and avoids costly temporary pavement installation and removal.

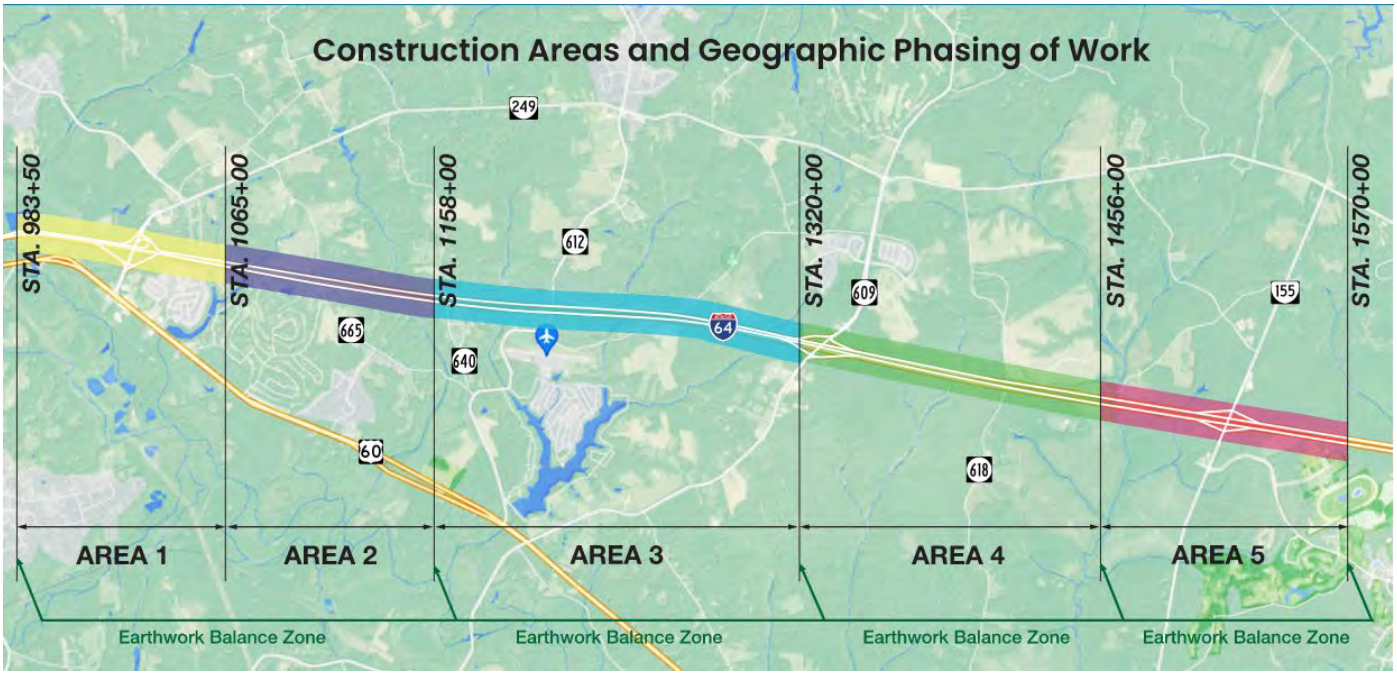
Project Work Areas: To efficiently execute construction, the project has been broken into five major roadway Work Areas shown in **Figure 4.5.1-1** below. Our goal is to design a project that is balanced from an earthwork standpoint where no excess material needs to be hauled off-site. Our Team has identified four Earthwork Balance Zones in **Table 4.5.1-2** where any excess material from the median widening construction can be placed in the median while minimizing the haul distance for this excess material. The Work Areas are divided by logical break points based on the Earthwork Balance Zones allowing for efficient, effective sequencing of construction. The Work Areas are depicted and described below, but as they relate to the balance zones, the Work Area segments were developed in conjunction with our Temporary Traffic

TABLE 4.5.1-2 EARTHWORK BALANCE ZONES

Balance Zone	Work Area	Cut (CY)	Fill (CY)	Net Cut/(Fill)
Zone 1	Area 1	63,000	9,000	54,000
	Area 2	102,000	156,000	(54,000)
Zone 2	Area 3	67,000	67,000	0
Zone 3	Area 4	39,000	46,000	(7,000)
Zone 4	Area 5	8,100	1,100	7,000

4.5 CONSTRUCTION OF THE PROJECT

Control Plan and will allow for distinct management and oversight of each individual segment as work will be constructed in Work Areas concurrently. This maximizes the efficient use of resources and oversight of construction from a safety and quality standpoint.



4.5.1-1: Five Major Roadway Work Areas

Area 1: Station 988+89 to 1065+00 (4983+34 to 5065+00) 7611 LF

This area encompasses the Rte. 33 interchange and extends to a natural earthwork breakpoint at Station 1065+00. Earthwork Balance Zone 1 extends from 988+89 to 1158+00 with the majority of area that can accept fill toward the east end of this zone. Excess material west of 1065+00 (Area 1) will be hauled to the fill areas in Area 2 utilizing on-road trucks due to the length of haul. Additionally, there is a substantial amount of work centered around the Rte. 33 interchange with full depth mainline and ramp pavement replacement and noise wall construction.

Area 2: Station 1065+00 to 1158+00 (5065+00 to 5158+00) 9300 LF

This area terminates at the end of Earthwork Balance Zone 1 with the excess material from widening construction able to be hauled utilizing off-road trucks to fill/waste areas within the zone. Areas 1 and 2 contain potential noise barriers as well.

Area 3: Station 1158+00 to 1320+00 (5158+00 to 5320+00) 16200 LF

Area 3 starts and ends at the limits of Earthwork Balance Zone 2 with all excess material to be hauled utilizing off-road dump trucks to fill/waste areas within the zone.

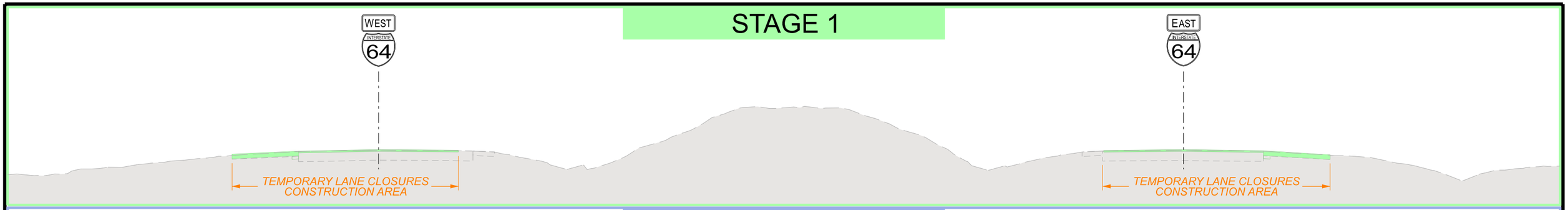
Area 4: Station 1320+00 to 1456+00 (5320+00 to 5456+00) 13600 LF

Area 4 starts and ends at the limits of Earthwork Balance Zone 3 with all excess material to be hauled utilizing off-road dump trucks to fill/waste areas within the zone.

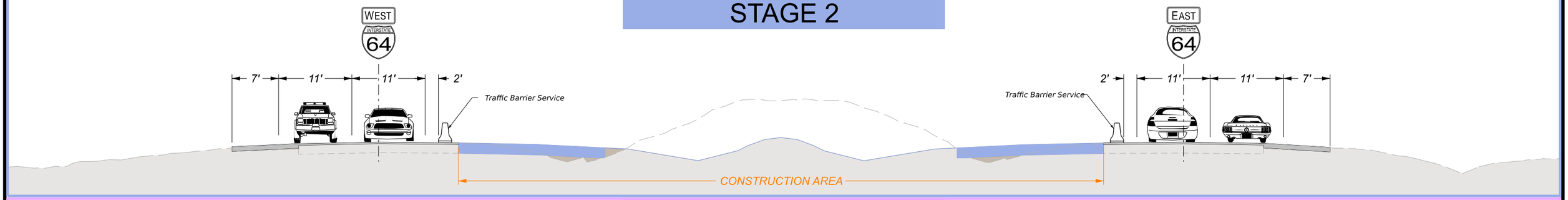
Area 5: Station 1456+00 to 1570+00 (5456+00 to 5570+00) 11400 LF

This area starts and ends at the limits of Earthwork Balance Zone 4 and also contains the mainline bridges over Courthouse Road. This area is also critical in that it interfaces with the western end of the adjacent Segment B project. A small surplus of earth material will be hauled to Area 4 using on-road trucks.

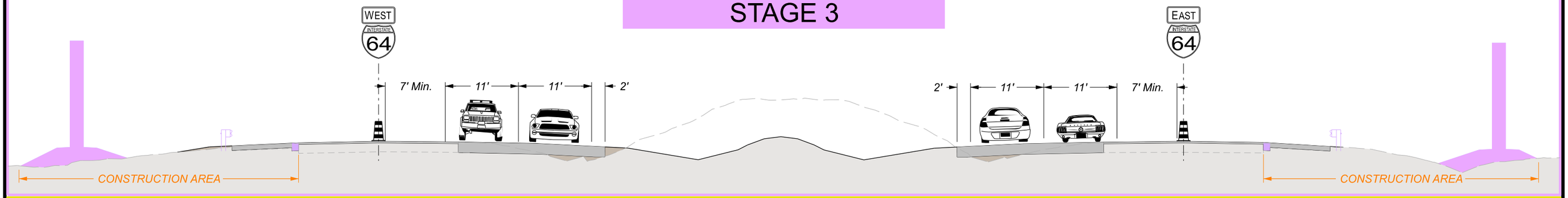
STAGE 1



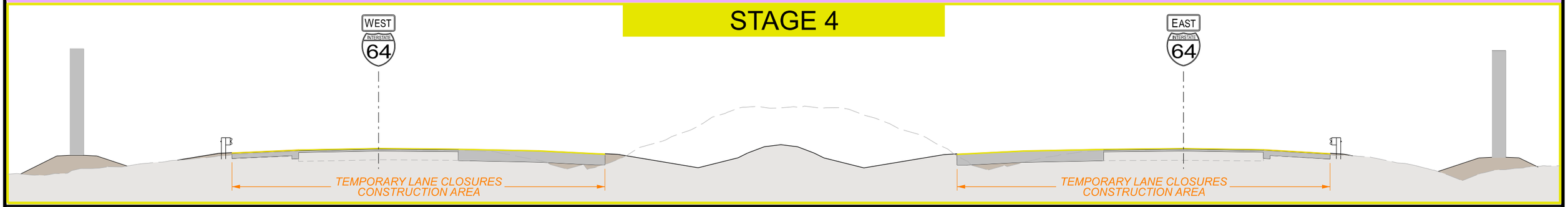
STAGE 2



STAGE 3



STAGE 4



CONSTRUCTION ACTIVITIES - STAGE 1

- Complete upland median tree clearing for construction entrances
- Perform mill/overlay of mainline lanes up to intermediate course
- Construct shoulder strengthening
- Place temporary pavement markings
- Complete I-64 EB and WB bridge substructure rehabilitation
- Place traffic barrier prior to Stage 2

KEY MOT FEATURES - STAGE 1

- Installation of Project Limit signing
- Utilize temporary lane closures and Group 2 Channelizing Devices to perform construction activities
- Shift traffic to the outside for placement of traffic barrier service

CONSTRUCTION ACTIVITIES - STAGE 2

- Install temporary pavement for Exit 205 Ramp Reconfiguration
- Extend or connect culvert pipes
- Construct median widening and associated guardrail & BPPS
- Reconstruct first half of I-64 EB and WB pavement at Exit 205
- Construct I-64 EB and WB bridge widenings
- Construct new median crossovers

KEY MOT FEATURES - STAGE 2

- Upon completion, remove barrier & shift traffic toward the median
- Reconfigure ramp movement: NB Rte 33 traffic to utilize WB On Ramp-1 for I-64 WB access

CONSTRUCTION ACTIVITIES - STAGE 3

- Construct noise barriers
- Complete I-64 EB and WB bridge superstructure rehabilitation
- Install new overhead signs and associated guardrail
- Complete installation of DMS, install CCTV fiber, etc
- Complete full depth reconstruction of I-64 EB and WB at Exit 205
- Complete installation of outside shoulder underdrain system
- Complete I-64 EB BPPS at Exit 205 bridge

KEY MOT FEATURES - STAGE 3

- Utilize Group 2 Channelizing Devices while maintaining 30-foot clear zone to construction activities, materials, and equipment
- Traffic barrier service to be installed at required locations
- Ramp reconfiguration for Southbound Rte 33 traffic to utilize WB On-Ramp 1A (loop) at Stage 3B

CONSTRUCTION ACTIVITIES - STAGE 4

- Place all surface asphalt, permanent pavement markings, and final signs

KEY MOT FEATURES - STAGE 4

- Utilize temporary lane closures and Group 2 Channelizing Devices to perform construction activities
- Removal of Project Limit signing

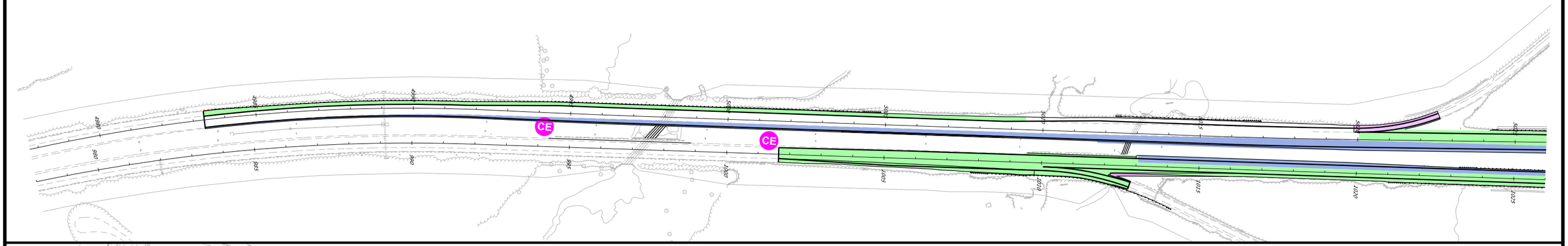
SEQUENCE OF CONSTRUCTION
MAINTENANCE OF TRAFFIC
TYPICAL SECTIONS

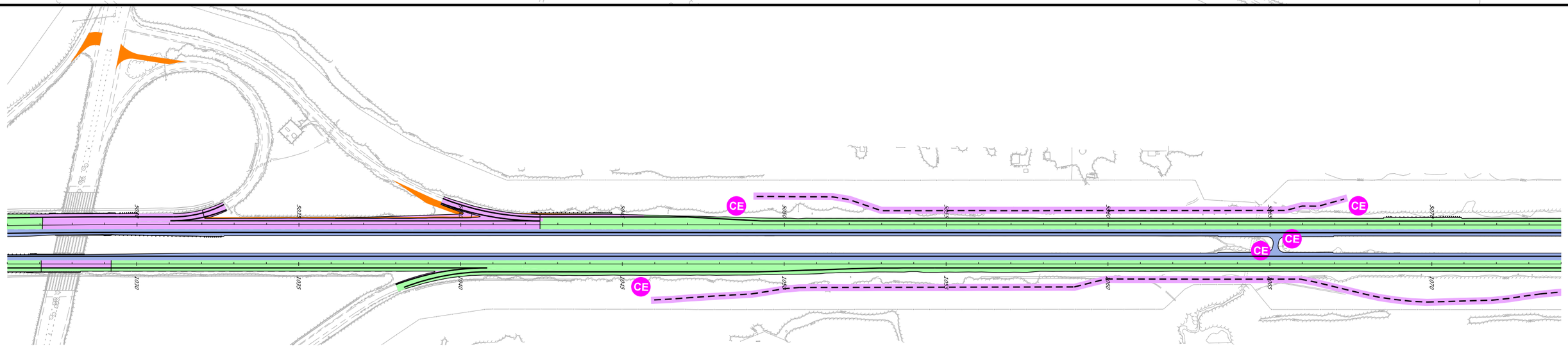
I-64 GAP SEGMENT A WIDENING

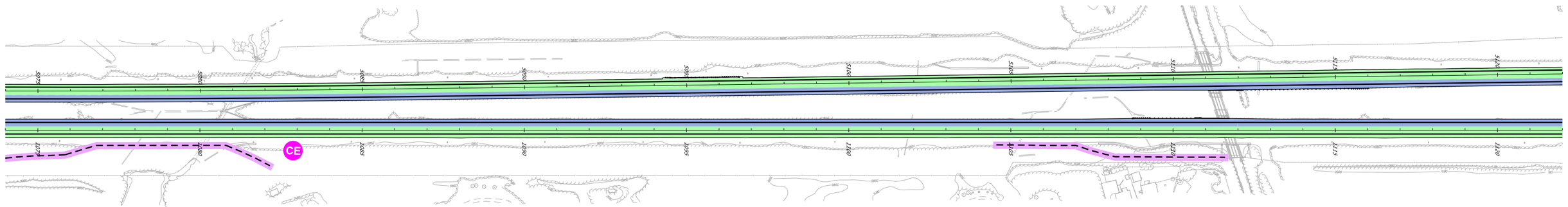
kokosing CONSTRUCTION COMPANY, INC. | RK&K

NOT TO SCALE	PROJECT 0064-063-623	SHEET NO.

CONCEPTUAL SEQUENCE OF CONSTRUCTION PLAN







LEGEND

CE CONSTRUCTION ENTRANCE

STAGE 1 CONSTRUCTION

STAGE 2 CONSTRUCTION

STAGE 3 CONSTRUCTION

TEMPORARY PAVEMENT

I-64 GAP SEGMENT A WIDENING

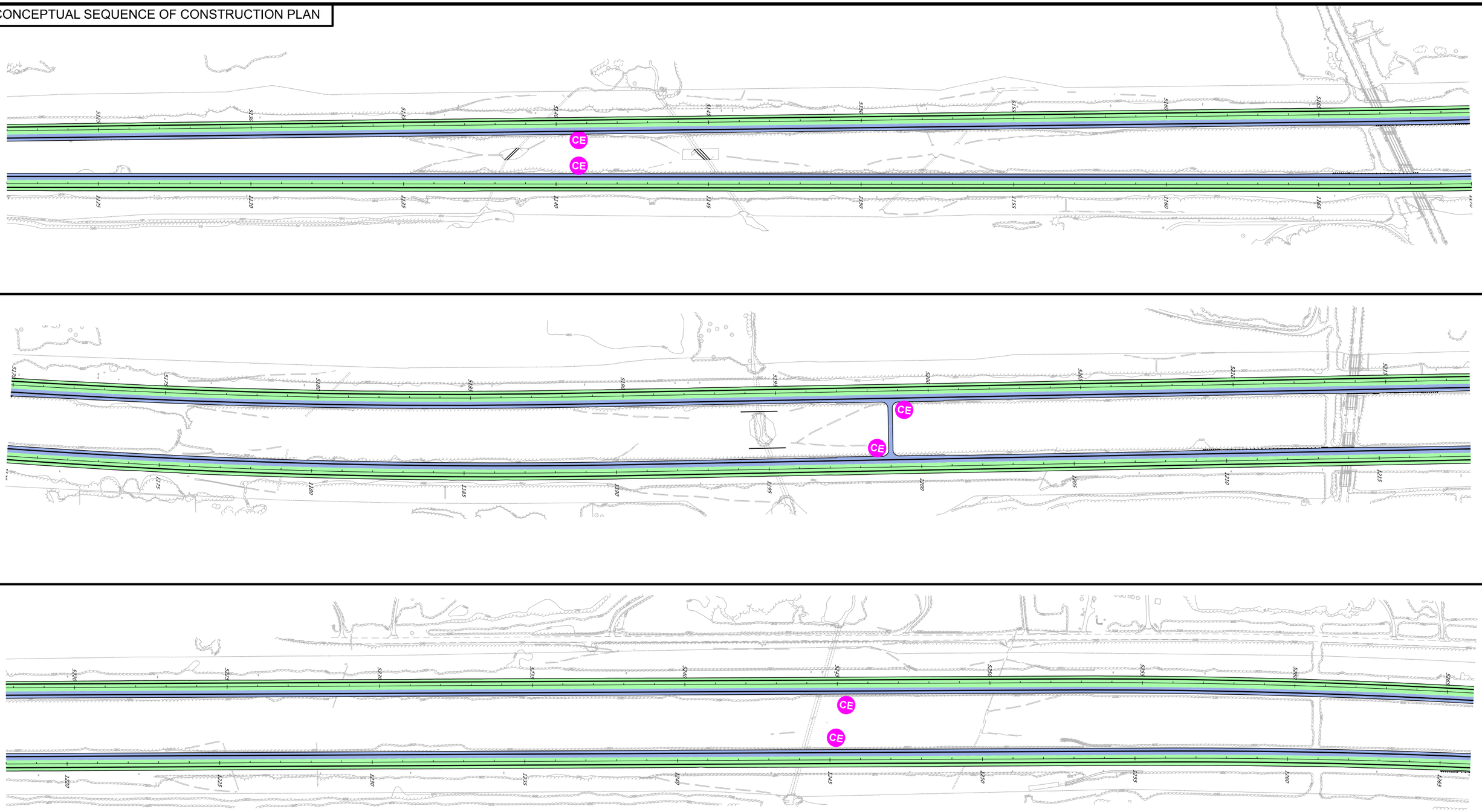
kokosing CONSTRUCTION COMPANY, INC. | RK&K

SCALE 0 150' 300'

PROJECT 0064-063-623

SHEET NO.

CONCEPTUAL SEQUENCE OF CONSTRUCTION PLAN



LEGEND

CE CONSTRUCTION ENTRANCE

STAGE 1 CONSTRUCTION
STAGE 2 CONSTRUCTION
STAGE 3 CONSTRUCTION

TEMPORARY PAVEMENT

I-64 GAP SEGMENT A WIDENING

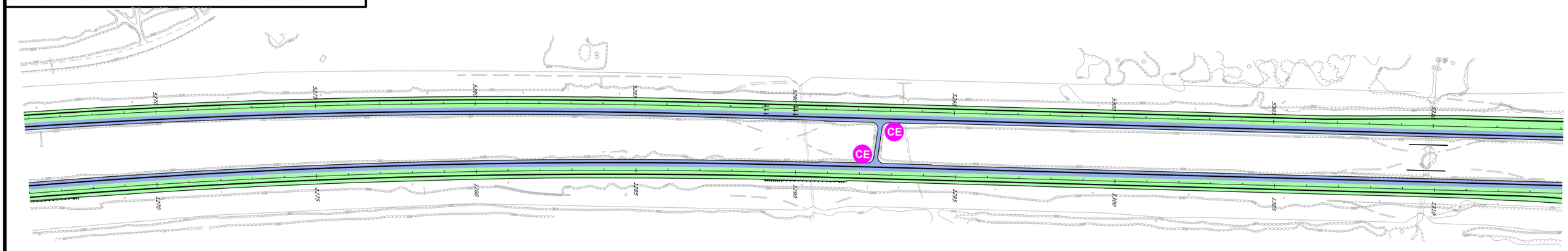
kokosing CONSTRUCTION COMPANY, INC. | RK&K

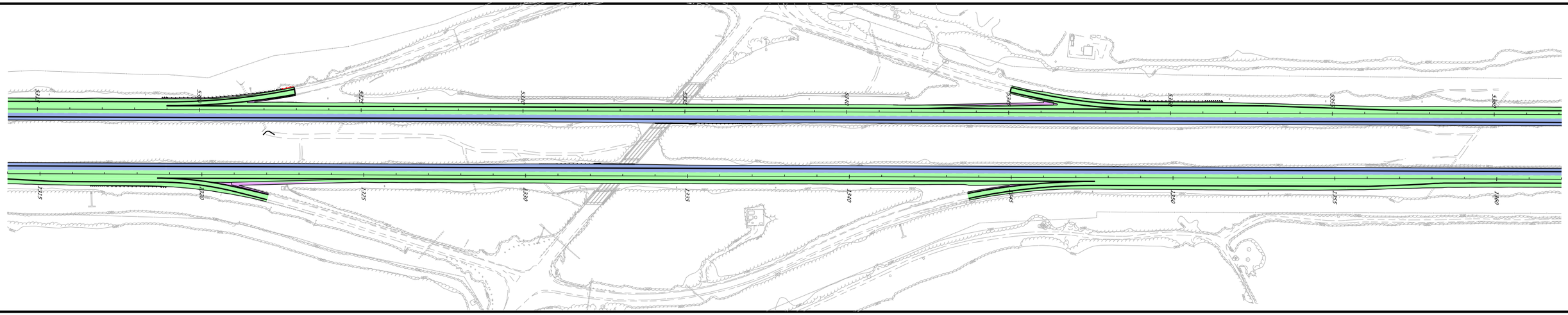
SCALE 0 150' 300'

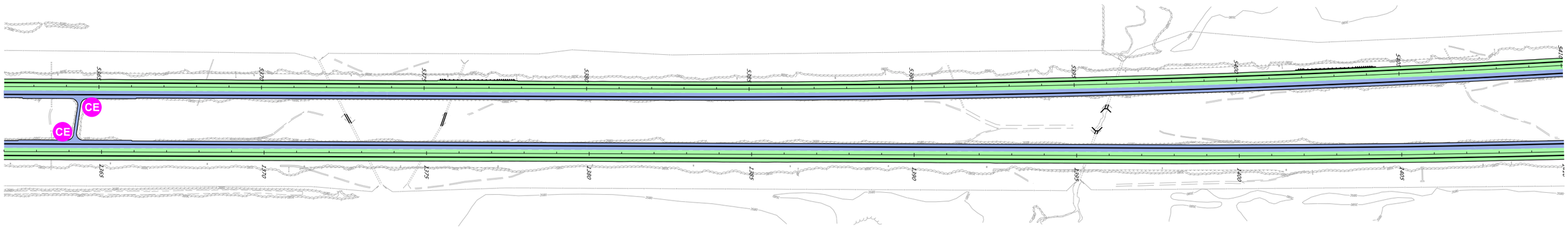
PROJECT 0064-063-623

SHEET NO.

CONCEPTUAL SEQUENCE OF CONSTRUCTION PLAN







LEGEND

CE CONSTRUCTION ENTRANCE

STAGE 1 CONSTRUCTION

STAGE 2 CONSTRUCTION

STAGE 3 CONSTRUCTION

TEMPORARY PAVEMENT

I-64 GAP SEGMENT A WIDENING

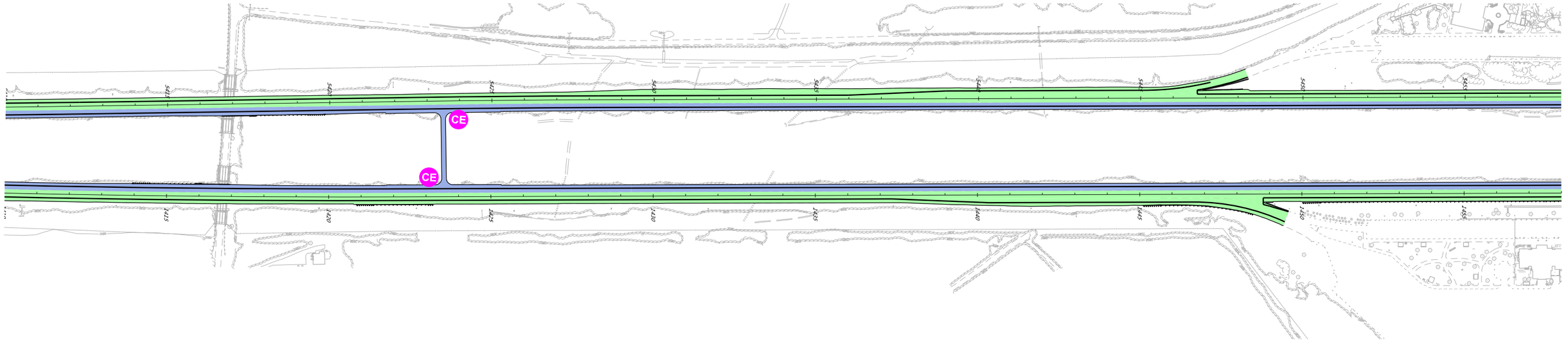
kokosing CONSTRUCTION COMPANY, INC. | RK&K

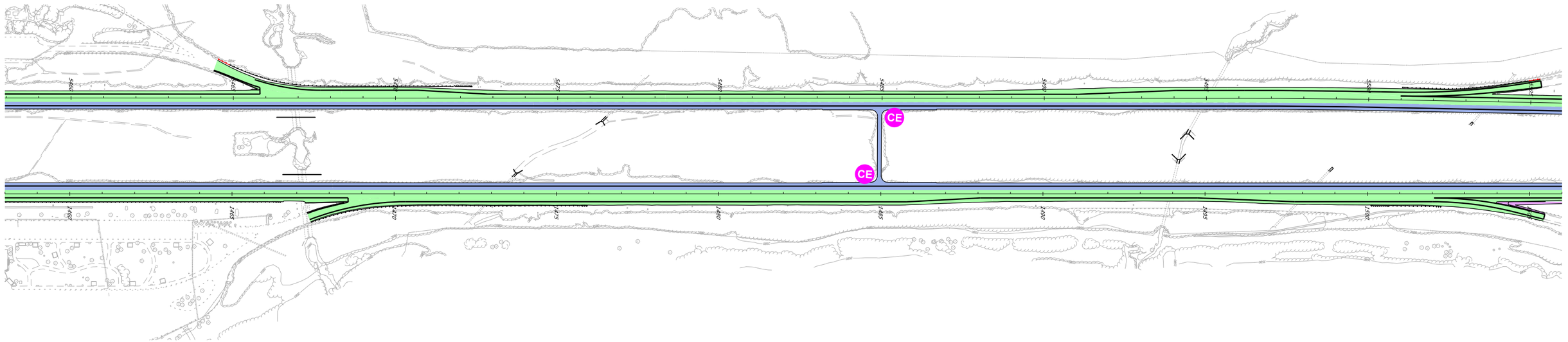
SCALE 0 150' 300'

PROJECT 0064-063-623

SHEET NO.

CONCEPTUAL SEQUENCE OF CONSTRUCTION PLAN





LEGEND

CE CONSTRUCTION ENTRANCE

STAGE 1 CONSTRUCTION
STAGE 2 CONSTRUCTION
STAGE 3 CONSTRUCTION

TEMPORARY PAVEMENT

I-64 GAP SEGMENT A WIDENING

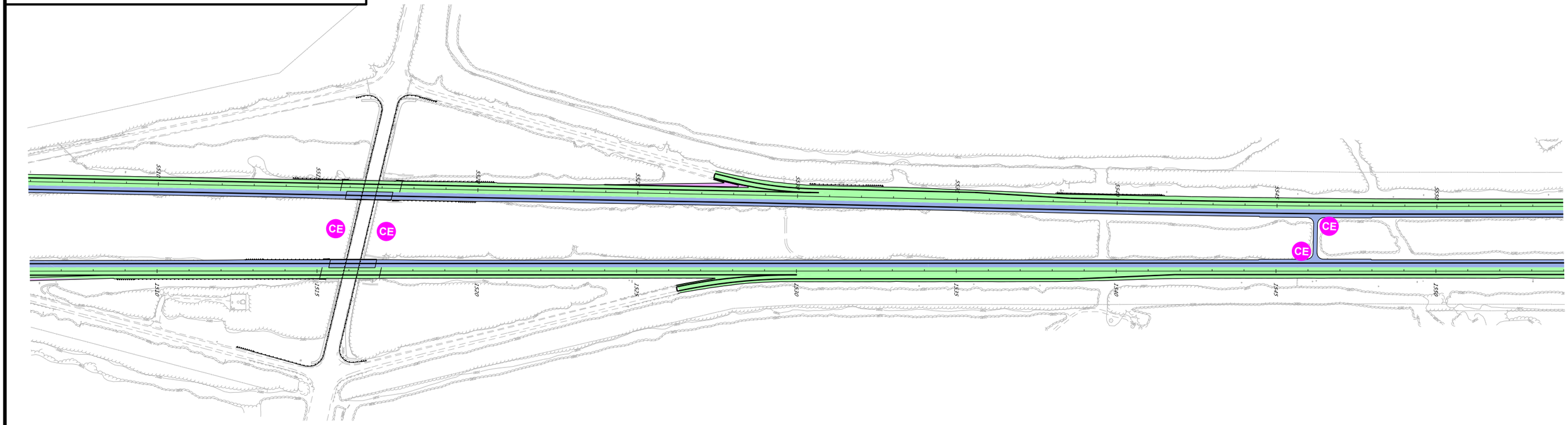
kokosing CONSTRUCTION COMPANY, INC. | RK&K

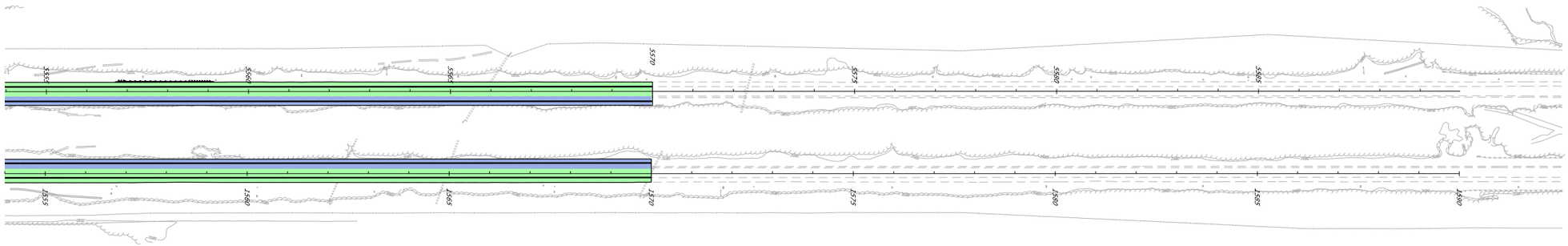
SCALE 0 150' 300'

PROJECT 0064-063-623

SHEET NO.

CONCEPTUAL SEQUENCE OF CONSTRUCTION PLAN





LEGEND

CE CONSTRUCTION ENTRANCE

STAGE 1 CONSTRUCTION

STAGE 2 CONSTRUCTION

STAGE 3 CONSTRUCTION

TEMPORARY PAVEMENT

I-64 GAP SEGMENT A WIDENING

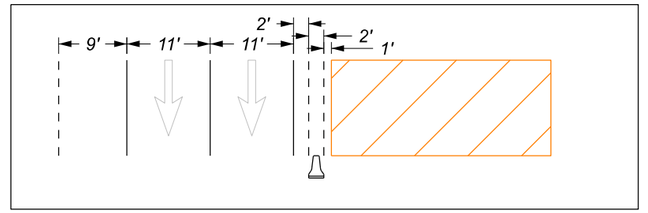
kokosing CONSTRUCTION COMPANY, INC. | RK&K

SCALE 0 150' 300'

PROJECT 0064-063-623

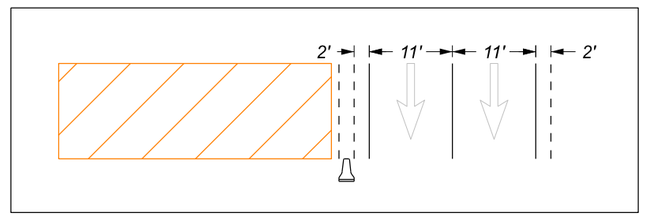
SHEET NO.

Temporary Ramp Reconfiguration
WB I-64 at Exit 205
Stage 2



I-64 WB MOT AT RTE 33 BRIDGE UNDERPASS

Temporary Ramp Reconfiguration
WB I-64 at Exit 205
Stage 3A



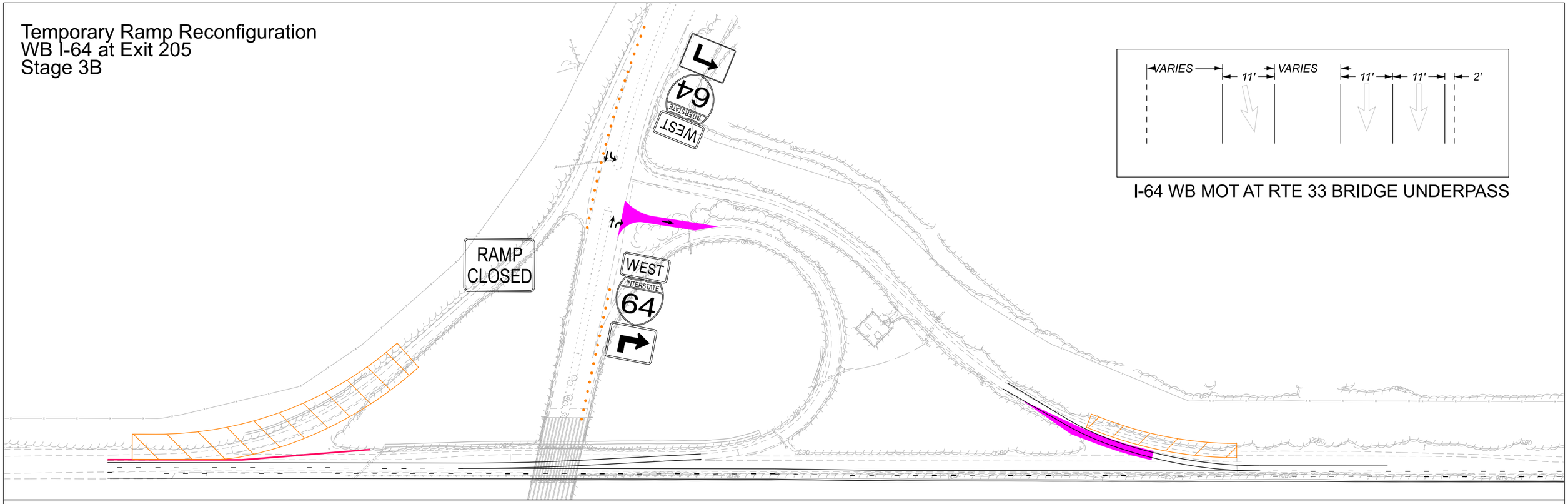
I-64 WB MOT AT RTE 33 BRIDGE UNDERPASS

I-64 GAP SEGMENT A WIDENING

kokosing CONSTRUCTION COMPANY, INC. | RK&K

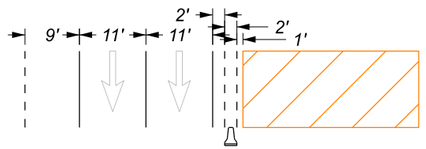
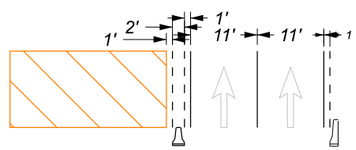
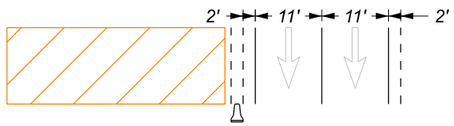
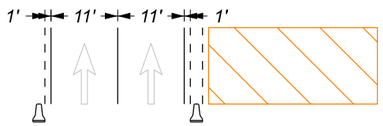
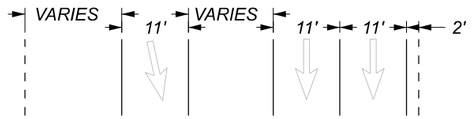
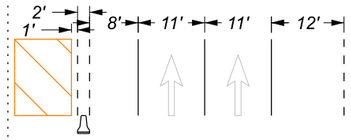
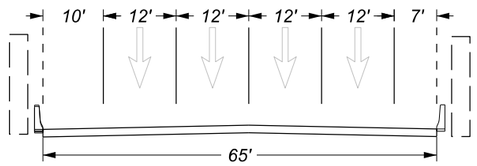
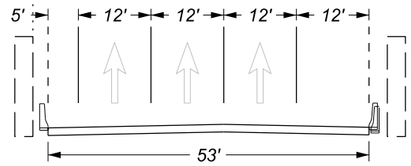
SCALE 0 200' 400' | PROJECT 0064-063-623 | SHEET NO.

Temporary Ramp Reconfiguration
WB I-64 at Exit 205
Stage 3B



I-64 WB MOT AT RTE 33 BRIDGE UNDERPASS

I-64 MOT at Exit 205 (Rte 33) Interchange

	WB I-64	EB I-64
STAGE 2		
STAGE 3A		
STAGE 3B		
STAGE 4 / FINAL		

I-64 GAP SEGMENT A WIDENING

kokosing CONSTRUCTION COMPANY, INC. | RK&K

SCALE 0 200' 400' | PROJECT 0064-063-623 | SHEET NO.

4.5 CONSTRUCTION OF THE PROJECT

Construction Sequence: The Kokosing Team proposes four major stages of roadway construction corresponding to the Transportation Management Plan (TMP) detailed in **Section 4.5.2**. Work will occur concurrently along the 11-mile project in Work Areas shown in **Figure 4.5.1-1**. A summary of the construction staging is as follows:

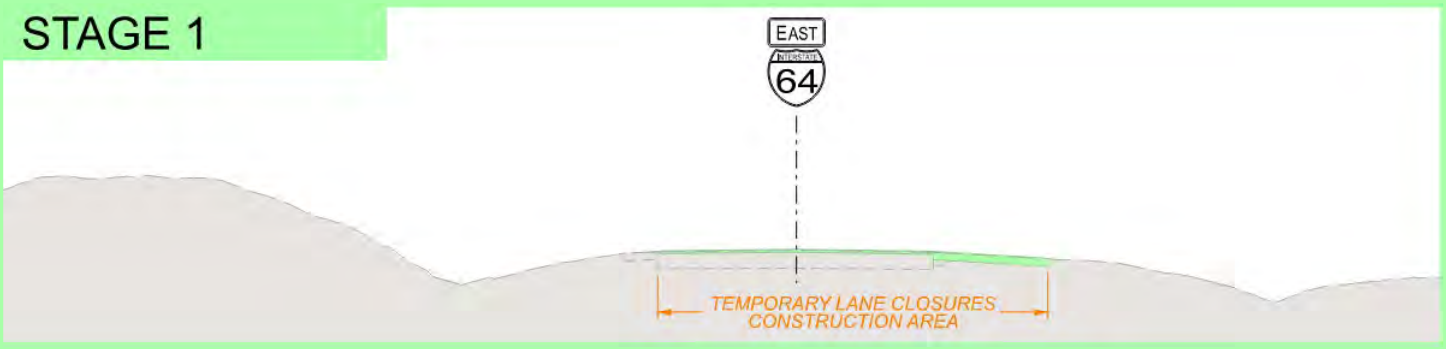


Figure 4.5.1-1: TMP Typical Sections, Stage 1

- Begin upland median tree clearing minimizing land disturbance during the 2023-2024 time-of-year-restriction (TYOR) clearing window, focusing on any clearing that is needed for construction entrances.
- Perform mill/overlay of mainline lanes up to intermediate course of asphalt.
- Construct shoulder strengthening.
- Place temporary pavement markings and shift traffic toward the outside allowing placement of traffic barrier service.
- Complete I-64 EB and WB over Courthouse Road bridge substructure rehabilitation, bridge raising, and bearing replacement.

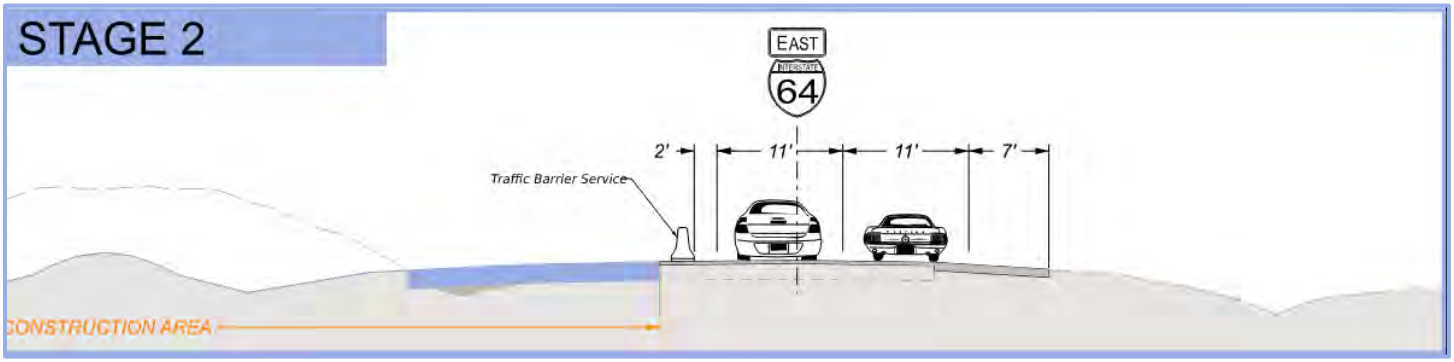


Figure 4.5.1-2: TMP Typical Sections, Stage 2

- With MOT staging per **Figure 4.5.1-2**, extend or connect culvert pipes.
- Construct median widening.
- Construct I-64 EB and WB bridge widenings over Courthouse Road and new approach slabs.
- Upon completion, shift traffic towards the median.

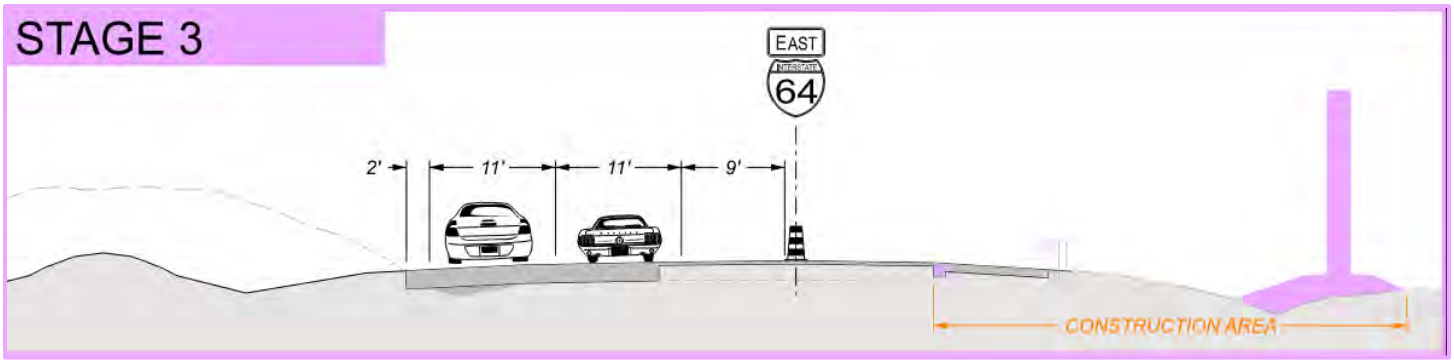


Figure 4.5.1-3: TMP Typical Sections, Stage 3

- With MOT staging per **Figure 4.5.1-3**, construct noise walls.
- Perform I-64 EB and WB over Courthouse Road bridge superstructure rehabilitation.
- Install new overhead signs and associated guardrail.
- Complete installation of DMS.
- Install CCTV fiber and ITS facilities.
- Complete full depth reconstruction areas at Exit 205.
- Complete remaining full depth pavement locations at Interchange Ramps.

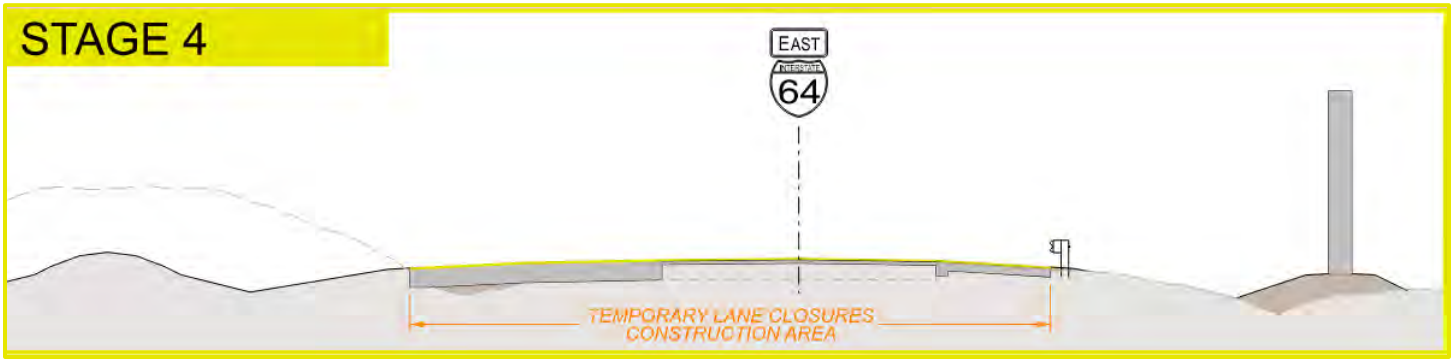


Figure 4.5.1-4: TMP Typical Sections, Stage 4

- With MOT staging per **Figure 4.5.1-4**, place all surface asphalt, permanent pavement markings, install rumble strips and final signs

Sequence of Construction Priorities: Although construction will be completed in Work Areas concurrently, the schedule is sequenced with the following priorities:

1. Complete Area 5 as soon as possible to minimize conflict with the adjacent I-64 Gap Segment B Widening project
2. Complete Stage 2 widening in Areas 1 and 2 as soon as possible so that an interim traffic shift can occur to being Stage 3 construction on the noise walls at the earliest possible date
3. Complete Stage 2 in all Areas to access ITS/signage/guardrail work at the earliest possible date

The Kokosing Team fully understands VDOT's commitment in completing not just Segment A, but all the "Close the Gap" projects and commits to expediting work at the east end of the project and fully cooperating with the Segment B contractor when the time comes to stay out of their way. By prioritizing work at the east end of Segment A, we minimize impacting Segment B construction.

4.5 CONSTRUCTION OF THE PROJECT

As depicted in the attached schedule, Stage 1 work will be completed during the first construction season allowing traffic to be shifted in time for the 2024-2025 TOYR tree clearing window. Stage 2 work will be completed in Areas 1, 2, and 5 during the second construction season with traffic eventually shifted to Stage 3. Traffic will remain in its existing alignment in Areas 3 and 4 during the first season and Stage 2 work in Areas 3 and 4 will occur concurrently with Stage 3 work in Areas 1, 2, and 5. Stage 3 work in Areas 3 and 4 will occur after Areas 1, 2, and 5 are complete.

Our SOC prioritizes the east and west end of the project while breaking up the project into manageable sections so traffic is only shifted where work will be taking place. It provides the flexibility to overcome unforeseen delays to any specific location with multiple options to shift resources to other areas of the project that can continue independently from the affected location. Our strategy allows flexibility during construction to mitigate delays and impacts to the travelling public.

Stage 4 work (final surface and striping) will occur first in Areas 1 and 2. It is assumed that final surface will be delayed in Area 5 to allow traffic shifts to occur for Segment B without damaging final surface pavement. Thus, the last items of work on the project will be final surface and pavement markings for Areas 3, 4, and 5.

Anticipating and Mitigating Potential Delays: The primary method our Team will utilize to anticipate potential delays during construction is by closely monitoring updates of the Project Schedule in conjunction with the three-week look-ahead schedules. Progress that is behind or disruptions to the planned sequence of work are indicators that the schedule is being impacted. Additionally, short-term internal, interim milestone dates are established and tracked on a weekly basis by the project team. If these milestone dates are not achieved and activities are taking longer than planned, this is a clear indication of slippage. Additionally, the Kokosing Team monitors self-performance production rates for all activities on a weekly basis. If expected production rates are not achieved, this is another indication of potential schedule slippage. When any of these key performance indicators are identified as a concern, the DBPM and CM will immediately review the causes and determine appropriate recovery actions. Mitigation strategies include adding resources, increasing hours worked per shift, working additional days each week and double-shifting activities if feasible.

Procurement of the main bridge components will be advanced upon NTP through prioritized design. It is a top priority to complete the existing bridge rehabilitation during the early stages of the project and then to complete the inside bridge widening and roadwork leading up to the bridge expeditiously enabling the traffic shift to the inside which will facilitate the remaining bridge rehabilitation work as soon as possible.

Additionally, during the early stages of the project, the Kokosing Team will expedite the design, submittals, and shop drawings for the ITS and signage work. This will involve completing preliminary geotechnical investigations with temporary lane closures to expedite the designs of the DMS and signage foundation work so that these items can be procured well in advance of needing them on the project. The Kokosing Team is committed to getting out in front and staying out in front of potential procurement and fabrication issues.

As stated above, work on the east and west ends will be prioritized to expedite switching traffic to the inside to enable access to the outside work (noise barriers and bridge work). By prioritizing these sections, time is maximized to complete the extensive work along the outside lane in these areas.

Describe in detail the approach to addressing safety, operations, staging, and storage areas during construction.

Safety and Operations: Our core value, ***Safety First!*** is paramount in every task we do. It is conditioned that every team member is a safety leader who acts to identify, correct and/or report unsafe conditions; stops any unsafe act; takes personal responsibility for their and fellow team member safety; and works incident free. The

drive to have safe work zones, prevent injuries, illness, and other incidents of loss commits us to Zero At-Risk Behaviors, which are fostered by:

- Treating every team member with respect, building trust, listening to understand their safety and health issues, and supporting each other to work safely and healthily.
- Going beyond compliance with applicable rules and regulations to promote a Zero At-Risk Behavior culture.
- Providing training that provides each team member with the knowledge, skills, and abilities to perform their assigned work.
- Operating with leadership with safety heading the pack in all that we do.
- Encouraging each other to be safety and health champions on and off the job (Safety 24/7).
- Holding each other accountable for superior safety and health practices and providing the leadership and resources to achieve our vision.

Every team member is empowered with authority to act by suspending or stopping work to prevent injury, occupational illness, or other incident of loss. No project task nor schedule deadline is more important than working safely. The Kokosing Team will ensure that balance exists and the work is performed safely while meeting project production and schedule goals.

The Kokosing Team recognizes that every project poses unique and challenging safety hazards. Prior to construction, we will prepare a site-specific safety plan and orientation which is developed with input from our health safety and environment manager, DBPM, CM, superintendents, and engineers, and will meet/exceed regulatory agency and VDOT requirements and policies. Once completed, anyone who enters the project must attend our safety orientation and abide by the rules and practices. No one will work on this project that does not abide by the project safety program.

Safety performance is closely monitored; any injuries and near misses are investigated, documented, and reviewed by Safety Manager James Mann, IV, CSP, CHST. Lessons learned safety briefings/corrective actions will occur with all personnel on the project concerning near misses and accidents to prevent repeat occurrences.

Activity plans determine and identify any hazards inherent to work activities and provide information to protect the employee. Employees participating in this activity are oriented before starting work and includes the following:

- Working in traffic (including safely installing lane closure setups)
- Working in confined spaces (including asphalt paving near the temporary concrete barrier)
- Work zone ingress and egress (for material haulers, supervisors, subcontractors, etc.)
- Work zone maintenance and protecting traffic
- No cell phone usage in the work zone

Due to the nature of the work involved, the Kokosing Team employs the following safety and operational considerations, at a minimum:

4.5 CONSTRUCTION OF THE PROJECT

Protection of traveling public in the work zone: Our traffic control plan provides safe ingress and egress to construction work zones. We located access points outside of ramps to avoid areas of heavy inflow of vehicles entering the corridor:

- Construction deliveries (inflow and outflow) are scheduled outside of peak hours as much as practical.
- Safe access points are supported by advanced warning signage and space to facilitate deceleration/acceleration for trucks entering or exiting a work zone.
- Our Team communicates and notifies stakeholders along the corridor to ensure public schools, police, and emergency management personnel are updated on traffic shifts and phasing through the project.

We will establish work zone access locations to develop VDOT Work Area Protection Manual compliant clear zones within each ingress or egress area. When not feasible, we will provide temporary guardrail or barrier within the area.

Documenting new MOT patterns and conducting regular drive-through video inspections verify conformity and operational acceptance/excellence.

Signage, deceleration/acceleration space in and out of the work zone, positive separation of traffic, extensive MOT planning, and public outreach notifications offer protection throughout the work zones. For the safest and most efficient MOT, our Team documents and monitors all new MOT patterns to verify conformity and operational acceptance/excellence. Throughout the life of the project, we will conduct regular drive-through video inspections and review work zones for compliance with the approved traffic control plans and confirm work zones are set up properly.

Per RFP Section 2.10.1, six (6) temporary CCTV cameras will be utilized during construction, and their locations will be based on the phase of work, lane closures, and MOT configuration during operations.

Existing ITS Assets will be maintained at the current locations and continue to be operational during and after construction. The advance notice of a minimum of 4-weeks will be provided to VDOT for any actions impacting the existing ITS assets. Any loss of CCTV communications will also be reestablished within the timeframes dictated in the RFP.

Working within construction areas of restricted movement: Narrow work zones create “pinch points” where safety can be compromised. Employee orientations educate and emphasize recognizing and avoiding these areas when possible. Daily Toolbox Talks remind equipment operators of the dangers of these zones; the mandatory daily “walk-around” inspection of their equipment and confirmation of a functioning back-up alarm. Activity pre-planning identifies operations requiring “vehicle movement spotters” to safely complete the work. All equipment onsite is evaluated for “blind spots” to determine if rear mounted cab cameras need to be installed.

Night work: A safety program tailored for night work will be implemented. Pre-shift planning requires an evaluation of how much portable lighting is required for each operation and positioning to minimize glare to oncoming traffic. Foremen must test and mobilize lighting equipment prior to darkness to always ensure adequate lighting. Specific back-up lighting equipment is made available as needed. Toolbox Talks are geared towards hazards typically encountered for nighttime operations.

Public awareness: Public awareness is essential before the start of construction and continually updated throughout the life of the project to maintain safety for the traveling public, VDOT staff, and project personnel. The Kokosing Team works with VDOT to develop a comprehensive public awareness program that informs the traveling public ahead of any traffic impacts or shifts. This will include messages on the existing DMS structures, display boards, media outreach, and website updates. Pardon our dust meetings or project update meetings will be attended by the DBPM and appropriate staff.

4.5 CONSTRUCTION OF THE PROJECT

Traffic control measures: Traffic control measures are used where work encroaches upon or is in proximity to traveled roadways, complying with VDOT standards for the Manual for Uniform Traffic Control Devices (MUTCD). Barricades, warning, and directional signs will be placed in advance of the work zone to alert the public of any lane closures and/or other traffic control measures. Flaggers, in addition to barricades and signs, will be utilized at equipment crossings and construction entrances as needed to control traffic.

Bridge demolition: The RFP requires bridge repairs and widening of two mainline existing bridges within the project limits. Our Demolition Policy mandates demolition operations to be completed in accordance with OSHA 29 CFR 1926.850. Prior to any demolition, a Site-Specific Demolition Plan is prepared which outlines in detail the following:

- Policies and procedures to ensure public and employee safety
- Procedures to identify and remove hazardous materials
- Site controls including protecting the public and adjacent structures plus daily inspection procedures
- Methods to demolish the structure
- Equipment for demolition operations
- Fire protection methods
- Removing material from the site
- Approved silica protection plans identifying mitigation risk procedures

Incident Management Plan (IMP): The Kokosing Team will develop an IMP to define our response and management of incidents that meets or exceeds the requirements of RFP Section 2.10.2, including detours and wrecker service. The IMP is developed in coordination with VDOT, local EMS, and other stakeholders to identify the protocols pertaining to those parties that are contacted in case of an incident, including coordination with the police. It will be submitted for review and approval by VDOT before any work zones and/or lane closures become active. This plan details our response and support for the type of incident, estimated duration and defines key project team members, "what if" scenarios for how to deal with the nature and duration of the incident (i.e. – potential detours to be put in place if a traffic restriction will exist for more than 60 minutes, etc.), EMS, and the procedures to clear the incidents. The IMP will contain names and contact information for all emergency services identified and the agencies to be notified. It demonstrates that our construction team has control of any incidents that occur within the project limits. We will augment this team with our designated Incident Management Commander and a 24/7 point of contact for emergency notification of incident by the Traffic Operations Center (TOC).

Construction Access: The Transportation Management Plan (TMP) Section addresses construction access and the vital role it plays for the location of lane widening, temporary pavement and safe construction ingress and egress to and from the work zone. Existing median crossovers will be maintained throughout construction and were selected as construction entrances. Additionally, the locations where new median crossovers will be constructed were selected as construction entrances. Two additional locations were selected in between existing or proposed crossovers such that, along with the ends of the project, eleven median construction access locations are currently proposed. The existing and proposed crossover locations were selected as median construction entrances to allow construction vehicles to switch directions on the highway without utilizing existing interchanges.

Where needed and adequate room exists, construction entrances will have acceleration and deceleration lanes which provides the safest access to the work and eliminates the need for the Trucks Entering Highway Warning System. This approach, as shown in Figure 4.5.2-7, provides an enhanced measure of project safety that exceeds RFP requirements.

Additional construction entrances are located on the outside as needed to access the work in Stage 3.

The location of proposed construction entrances is depicted in the **Volume II** Sequence of Construction Plans.

Staging and Storage Areas: Construction projects of this length can be challenging from a logistical perspective. Staging personnel/equipment and coupling those resources with material deliveries are critical issues to be addressed by the Kokosing Team. Strategic planning is a must in determining the correct approach that can affect the project schedule and other factors, such as public/worker safety. Our approach includes a central project office location with a primary material staging area coupled with several local site adjacent staging areas. The following key issues were considered in developing our approach:

- **Safe Ingress/Egress:** All staging/storage areas will consider vehicle entrance site distance for the safe movement of people, equipment, and materials to/from the site.
- **Operational Efficiency:** Staging personnel, equipment and material near individual work areas will lead to an efficient construction plan.
- **Clear Zone Issues:** Removal from the travel ways when prohibited during non-working hours.
- **Environmental Constraint Considerations:** The staging/storage locations must address environmental risks associated with the potential for spills and other pollutant-related incidents. Best management practices will be employed per local/state regulatory requirements.
- **Zoning/Local Land Use Restrictions:** Local land use regulations will be accounted for in our staging/storage approach.
- **Site Security:** The locations of staging/storage will also consider site security, including fencing and a security gate coupled with the ability to monitor.

Primary staging/storage areas will be fenced with temporary office trailers or storage containers. The areas will have a stabilized entrance to reduce tracking mud onto public roads. Erosion & sediment controls will be installed/maintained. Upon completion, staging/storage areas will be converted as shown on the final plans in the vicinity of the work area and off-project areas will be restored in accordance with lease requirements.

Central Project Office Locations/Interim Storage/Staging Areas: To meet the contract Field Office requirements and to provide locations advantageous for staging and storage, our Team investigated and initiated contact with landowners at various locations along the project including adjacent properties and business facilities. Numerous options exist to provide the staging and storage needed for the project. **Figure 4.5.1-5** represents one such property off Emmaus Church Road just south of the interchange with I-64.

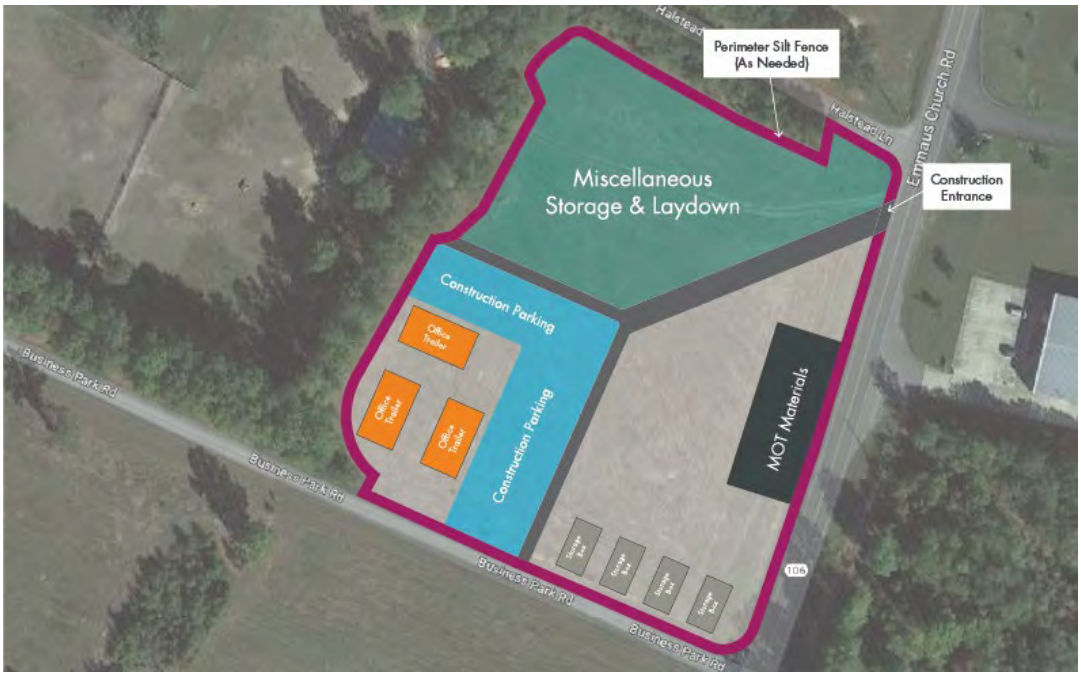


Figure 4.5.1-5: Potential Staging and Storage Area Off Emmaus Church Road

4.5 CONSTRUCTION OF THE PROJECT

We have received a proposal from the property owner for this property and will continue discussions after award.

Regarding off-site storage, the Kokosing Team also uses a just-in-time delivery strategy to reduce space requirements onsite. Long-lead and schedule critical materials are procured early and staged at the manufacturer's facility or our yard in South Chesterfield, Virginia for delivery at the jobsite when needed. Materials are conveniently on hand which eliminates the risk of damage or loss.

Short-duration laydown areas will be established within the limits of disturbance (LOD) to support immediate work activities. They will be compliant with environmental protection best practices and will be more transitory through the site as work progresses. Any work within the clear zone of any highway will be protected by temporary concrete barrier for public/construction worker safety or be outside the clear zone.

4.5.2 TRANSPORTATION MANAGEMENT PLAN (TMP)

Explain maintenance of traffic through all phases of construction.

Our Team focused on minimizing impacts to the traveling public and stakeholders during each phase of construction. Our TMP and MOT plans will place an emphasis on safety through sound engineering design, provide constant communication with involved parties, and accommodate changing conditions to account for all facets of construction. Public mobility and minimizing construction delays are goals that the Kokosing Team is committed to delivering on for project success. **Figure 4.5.2-1** illustrates our Sequence of Construction Stages by Area which are described in greater detail later in this section.

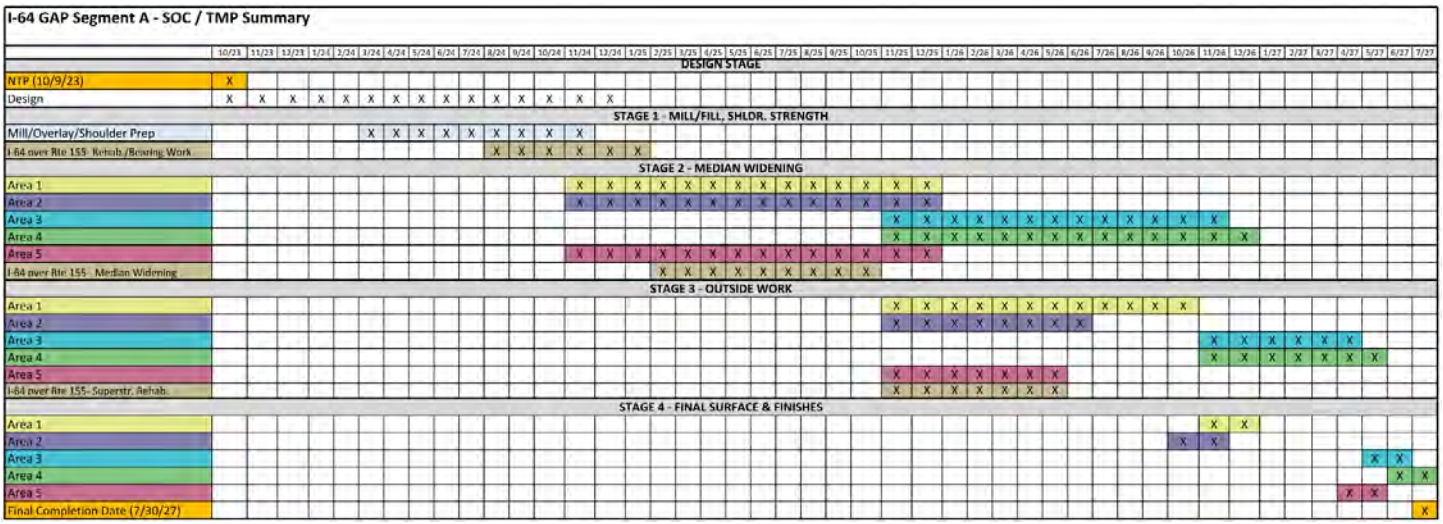


Figure 4.5.2-1: SOC/TMP Summary

To facilitate construction, a Type C, Category V TMP will be developed in accordance with I&IM-241.7/TE-351.5 and designed to the methodology provided in the Virginia Work Area Protection Manual, Revised September 2019; the Manual on Uniform Traffic Control Devices, Revisions 1 and 2 of May 2012; and the Virginia Supplement to MUTCD, Revision 1 of September 2013.

Our TMP will have an Incident Management Plan (IMP) as discussed in **Section 4.5.1**. Team members involved in the design and implementation of the work zones are experienced with interstate widening projects throughout Virginia and are certified with VDOT Advanced Work Zone Traffic Control Training.

Maintaining Traffic Through All Construction Phases: To mitigate potential delays, we structured our SOC to be flexible, which enables the Team to address unforeseen circumstances. As further outlined in our TMP, we have identified mitigation measures for several potential challenges. Any necessary revisions will be implemented.

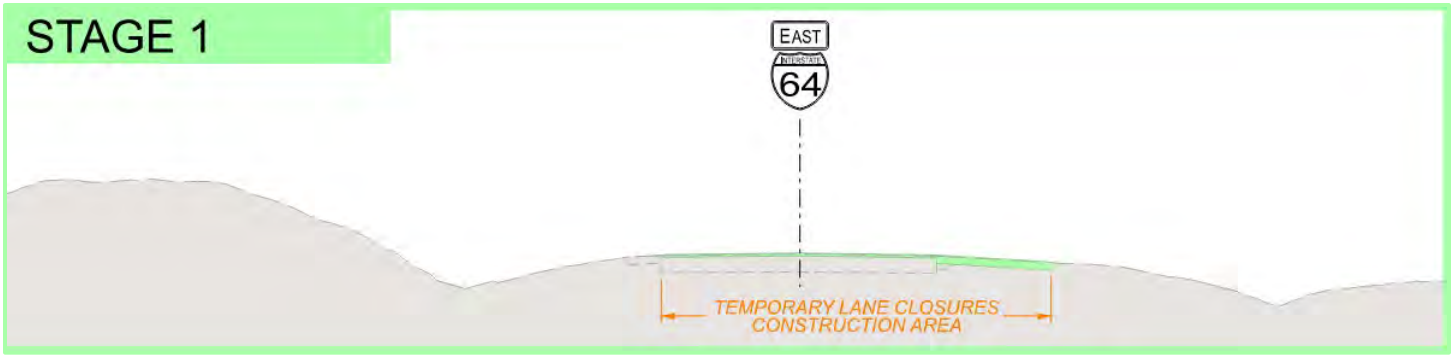


Figure 4.5.2-2: TMP Typical Sections, Stage 1

- **Key Work:** Outside shoulder strengthening and mill/overly of existing lanes, bridge substructure rehabilitation, raising of the existing bridges and bearing replacement.
- **MOT:** Work along I-64 will be performed using temporary lane and shoulder closures as depicted in **Figure 4.5.2-1** in accordance with the allowable restrictions in the RFP. Work on the bridge along Route 155 will be performed behind a temporary barrier to separate construction from the traveling public. The existing pavement markings will be modified to accommodate the barrier.

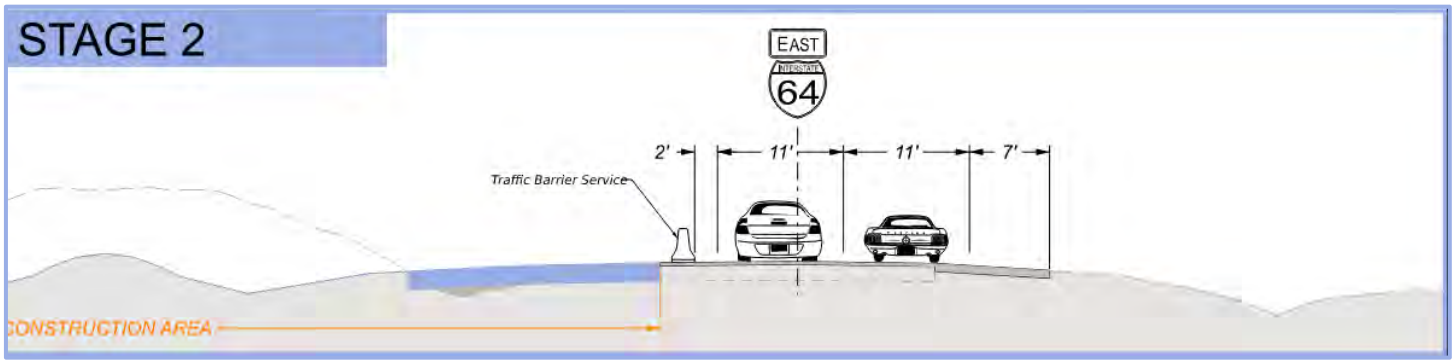


Figure 4.5.2-3: TMP Typical Sections, Stage 2

- **Key Work:** Construct median improvements and bridge widening after shifting traffic to the newly strengthened outside shoulders.
- **MOT:** Temporary concrete barrier service will be installed along the median side of the I-64 travel lanes to safely separate construction from the traveling public as depicted in **Figure 4.5.2-3**. Work on the bridge widening along Route 155 will continue behind temporary barrier service.

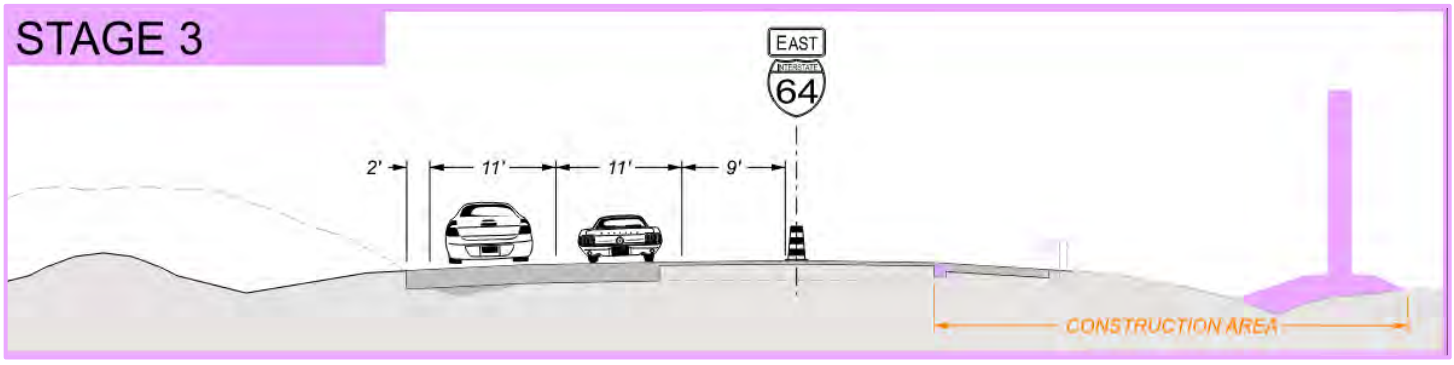


Figure 4.5.2-4: TMP Typical Sections, Stage 3

- **Key Work:** Construct improvements along the outside shoulder such as noise walls, ITS, bridge superstructure work, guardrail replacement, and remaining full depth pavement.

- **MOT:** Once the median widening is constructed, travel lanes will be shifted to the new median pavement as depicted in **Figure 4.5.2-4**, thereby increasing the offset between the travel lanes and construction activities along the outside shoulder. Temporary barrier service will be utilized to separate construction from travel lanes in the few locations where work or equipment will be located within the clear zone.

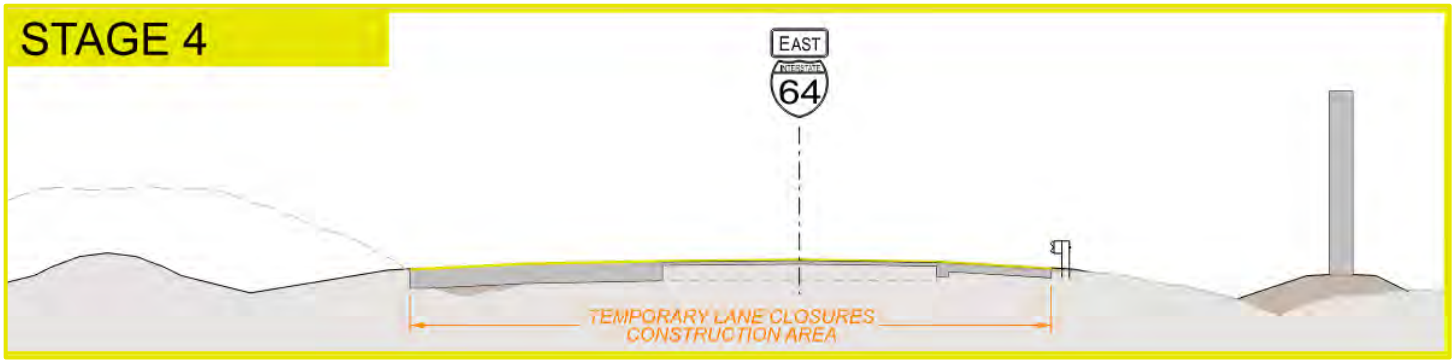


Figure 4.5.2-5: TMP Typical Sections, Stage 4

- **Key Work:** Final paving, markings, and sign installation.
- **MOT:** Work along I-64 will be performed using temporary lane and shoulder closures as depicted in **Figure 4.5.2-5** in accordance with the allowable restrictions in the RFP.

As discussed in **Section 4.5.1**, Kokosing is committed to minimizing impacts to the adjacent I-64 GAP Segment B Widening Project. Part of our approach is to advance construction in Areas 1, 2, and 5. Advancing construction in these three areas will allow them to be completed more quickly than if we focused on completing a single stage of construction over the entire 11-mile project before switching to the next stage. This approach also mitigates impacts to the traveling public because it means that the temporary median barrier utilized in Stage 2 will not be continuous along the entire project length at any given time. We will complete Stage 2 work in Areas 1, 2, and 5 before the middle 5.6 miles in Areas 3 and 4 are changed from Stage 1 to 2. Traffic shifts required between areas in different stages of work will be designed to 70 mph and meet all RFP and VAWAPM requirements.

Describe any proposed lane or ramp closures, temporary detours, time of day restrictions, flagging operations, minimum lane widths and work zone speed reductions required using the Sequence of Construction.

Lane or Ramp Closures: Our approach to MOT includes minimizing the need for lane or ramp closures by phasing work behind temporary traffic barriers as much as possible. Work that must be completed with temporary lane closures will be detailed in the TMP and coordinated closely with VDOT. All temporary lane and shoulder closures will comply with the requirements in Part 2, Section 2.10.3 of the RFP. Short duration road closures of Courthouse Road (off peak hours, 15 minutes at a time) are used for setting beams during bridge construction and are coordinated with stakeholders, the public and emergency responders. A queue detection and warning system will be installed at each end of the work zone to increase safety and will work in combination with the DMS and PCMS devices to enhance communication with the traveling public.

Temporary Detours: No off-site temporary detours are anticipated because of construction. Detour routes that may be needed due to a crash or emergency situation will be developed as part of our IMP and pre-staged detour equipment and materials will be available to deploy when needed. **The Kokosing Team has included an innovative approach to avoid the need to detour traffic at the WB Exit 205 ramps.** The temporary changes to the Exit 205 ramps are detailed below at the end of **Section 4.5.2**.

Time-of-Day Restrictions: Our Team will comply with the RFP for time-of-day restrictions regarding allowable short-term lane, shoulder, and total closures. This information is coordinated with VDOT's TOC and Project Manager for scheduling purposes, as well as discussed in the Public Communication and IMP.

Flagging Operations: Flagging operations will be required on the side streets to the interstate. These will be for short duration and spot improvement operations where access to the construction area is restricted. Flaggers will be certified by VDOT as required.

Minimum Pavement Widths: We conform to the RFP's lane and shoulder requirements by maintaining at least 11-ft. temporary travel lanes and 2-ft. shoulders to any traffic barrier for the mainline roadway segments, with 1-ft. shoulders permitted under the Route 33 bridges and on I-64 over Route 155. With our innovative approach to maintain ramp traffic at Exit 205 (shown later in **Figure 4.5.2-6**), **we provide wider than minimum shoulders through all construction phases for the pavement reconstruction on WB I-64 under the Route 33 bridges, providing enhanced safety for travelers**.

TABLE 4.5.2-1: PAVED SHOULDER WIDTHS AT I-64 WB UNDER ROUTE 33 (EXIT 205) BRIDGE

Construction Stage	RFP Min Paved Shoulder (ft.)	Kokosing Outside Paved Shoulder (ft.)	Kokosing Inside Paved Shoulder (ft.)
2	1	9	2
3	1	2	2
4	1	9+	2

We also will provide temporary pull-off areas as required when a continuous 9-ft. paved shoulder cannot be provided. All roadway widths are designed to accommodate WB-67 design vehicle turning movements.

Work Zone Speed Reductions: Our Team does not expect any work zone speed reductions. All temporary lane shifts, merges, acceleration/deceleration lanes, and temporary alignments for diversions meet the standards for 70 mph as indicated in the RFP.

Identify major Project Stakeholders and discuss how they will be impacted by the Sequence of Construction.

TABLE 4.5.2-2: STAKEHOLDERS

Stakeholder	Potential Impacts	Mitigation Strategies
VDOT	- Perceptions/issues raised by residents, traveling public, and business owners	- Hold weekly coordination meetings - Notification on traffic impacts / incident to the Richmond TOC
New Kent County	- Perceptions/issues raised by residents, traveling public, and business owners	- Advanced notification of impacts to minor roads and temporary ramp reconfigurations - Cooperatively address outreach and responses to businesses and property owners - Notification on impacts / incidents to the County
EMS, Police, Fire & Rescue	- Reduced shoulders and congestion along I-64 - Short term roadway stoppages for girder erection	- Well-defined Incident Management Plan - Provide adequate lane/shoulder widths for first responders - Hold coordination meetings prior to implementing detour routes - Notification on impacts / incidents to police/EMS
Utility Companies	- Possible impacts to facilities within the corridor	- Early coordination during the design process to avoid and/or design relocations advantageous for both parties
Colonial Downs	- Possible delays for attendees for events and day-to-day activities	- Provide advance notice and coordination of lane closures - Develop work activities/schedule around major events
Trucking Industry	- Delays attributed to construction activities and/or work zone geometry	- Provide adequate lane/shoulder widths on I-64 to accommodate WB-67 vehicles, including ramp movements - Ensure closures are reported as required to LCAMS and VA Traffic
Port of Virginia	- Impacts to supporting trucking industry	- Ensure closures are reported as required to LCAMS and VA Traffic

TABLE 4.5.2-2: STAKEHOLDERS		
Stakeholder	**Potential Impacts**	**Mitigation Strategies**
Historic Triangle & Hampton Roads Tourism Industries	- Public perception of traffic impacts along I-64	- Implement successful PCIP campaign to effectively communicate project information

Describe approach to public outreach including keeping stakeholders informed during all phases of the Project.

VDOT has engaged the community through the study phase. Our strategy is to build on those communications to enhance the relationships and assist VDOT to create a comprehensive environment of public awareness, participation, and support for the project among stakeholders, motorists, and the public. This will start with the preparation of a detailed Public Information and Communications Plan (PICP) to define our strategy for providing key information to inform the public in a consistent manner throughout the life of the project.

Our PICP will identify key stakeholders that can help communicate the project messaging throughout target audiences as well as a communications plan that will create an environment of sustained, region-wide public and motorist awareness. To achieve this objective, our communications team will work closely with VDOT to inform key stakeholders, the public and motorists about project progress, notable construction activities, traffic shifts, detours, closures, and openings. Additional messaging will focus on safety awareness for motorists and residents. Important key stakeholders will include regional tourism and vacation destinations such as Visit Williamsburg, Colonial Williamsburg, Colonial Downs, Busch Gardens, Water County USA, Visit Virginia Beach, and other identified leisure destinations. Additional stakeholders will include local major employers and businesses, as well as trucking and freight carriers. In collaboration with VDOT, community outreach efforts will build and maintain partnerships with key stakeholders to provide on-going project updates throughout construction.

Our PCIP will also contain a detailed crisis communications and risk management plan, including the procedures for coordination with VDOT Communications and responsiveness to the media during an emergency. The Kokosing Team will develop processes for managing communication surrounding emergency management and recovery operations. An Emergency Contact List of project personnel, as well as a multi-tiered emergency response plan for all incidents within the work zone will be made available to VDOT for review in accordance with IIM-LD-241.

The Kokosing Team will develop our IMP as part of our TMP which will contain information providing a list of possible alternative routes and detours including designated resources to assist with project information communication and potential project traffic impacts during construction. An important component of the IMP is hosting first responder meetings to present the proposed work zone, discuss project specifics and review the proposed plan. Follow on first responder meetings will be held ahead of critical traffic shifts to ensure they have advance notice of the coming MOT changes.

We anticipate VDOT will be a communication partner throughout the project and manage communications with High-Level stakeholders such as elected officials and New Kent County leadership and departments. Additionally, any coordination the Kokosing Team performs with local agencies will be coordinated in conjunction with VDOT. The Kokosing Team will coordinate with the adjacent I-64 widening projects to ensure consistent messaging is being used for all projects in the corridor.

Some of the communication tools, tactics, and strategies to be employed during the Project as part of the PCIP include:

- Participating in communication coordination meetings with VDOT and New Kent County communication teams from Notice to Proceed throughout the design and construction phases of the project.

- Collaborating with VDOT to engage commuters, motorists, key stakeholders, businesses, hospitals, schools, first responders, tourists, and residents with messaging and public engagement throughout the project's concept, planning, and construction.
- Through outreach efforts and contacts, such as meetings with stakeholders and the public, emailed questions, or phone inquiries, we will compile and maintain a log of questions, kudos, complaints, and comments along with dates received, responses generated, and how/when the issues or concerns are addressed.
- Providing VDOT project updates, information, as well as traffic alerts to be posted on VDOT's website and social media platforms. Information includes project overview, plan of work, schedule, safety awareness, components and features or activities that may cause potential public/motorist impacts, such as lane and shoulder closures, surface milling and other construction activities. Our team has extensive experience working with VDOT to provide comprehensive website updates and dynamic social media content that keep the target audience engaged and informed. We can also expand social media engagement through partnerships with key stakeholders to further audience reach and project awareness. A photographic record of project progress will be maintained and available for review.
- Holding information meetings with affected stakeholders as needed and as directed by and approved by VDOT to present traffic impacts, the proposed limits of clearing, the stormwater management design and improvements, and the Final Noise Analysis results. All stakeholders shall be provided with advanced notice of the meetings.
- Working closely with VDOT, our team will establish a comprehensive news media relations strategy to keep local news outlets engaged and informed. We will assist to enhance relationships with the news media in both the Hampton Roads and Richmond markets to expand audience reach and further project awareness before and during construction. Our team will also assist in managing news media inquiries. All communications will adhere to VDOT standards and protocols.
- Developing Traffic Advisories for VDOT for beginning and end of construction, new traffic phase changes, and any additional press releases as deemed necessary by VDOT.
- Creating tailored marketing and communications collateral tailored for relevant stakeholder groups such as the general traveling public, tourism, and trucking industries. All collateral material will utilize VDOT brand standards and guidelines and approved by VDOT prior to distribution.

The Kokosing Team will develop an advertising and marketing campaign that will include regular, equal coverage in print media, radio, social media advertising, as well as online/interactive media. We will utilize proven online geo-fence strategies to identify all mobile device IDs for motorists passing through the project corridor. Targeted motorists are served online mobile ads that deliver project awareness and safety messaging, as well as invite the audience to stay informed and sign-up for project updates. Similar strategies were successfully utilized for previous I-64 Widening Segments I, II, III and Bottoms Bridge, as well as for Improve 95 in Fredericksburg. The campaigns achieved millions of online impressions, successfully expanding audience reached and project awareness. Additional multi-media advertising strategies can also focus on seasonal vacation travelers to the Richmond region, Hampton Roads, and the greater Washington area markets. The proven strategy informs vacation travelers to the region and creates an environment of awareness that enhances safety and mitigates impacts. The campaign will provide advanced notice of construction beginning and ending as well as any changes to traffic patterns during construction, as well as any pertinent detour information.

Describe how the approach has considered public safety and has included measures to limit disruptions to vehicular and pedestrian traffic through the work area and adjacent public transportation facilities/roadways.

Temporary Ramp Configuration at Exit 205: Our innovative approach to reconfiguring the ramp movements at the Exit 205 interchange allows I-64's full depth pavement reconstruction to proceed without the need to detour ramp traffic to a secondary road or another interchange. The proposal includes a temporary signal and temporary pavement to consolidate ramp movements as shown in **Figure 4.5.2-6** below.

4.5 CONSTRUCTION OF THE PROJECT

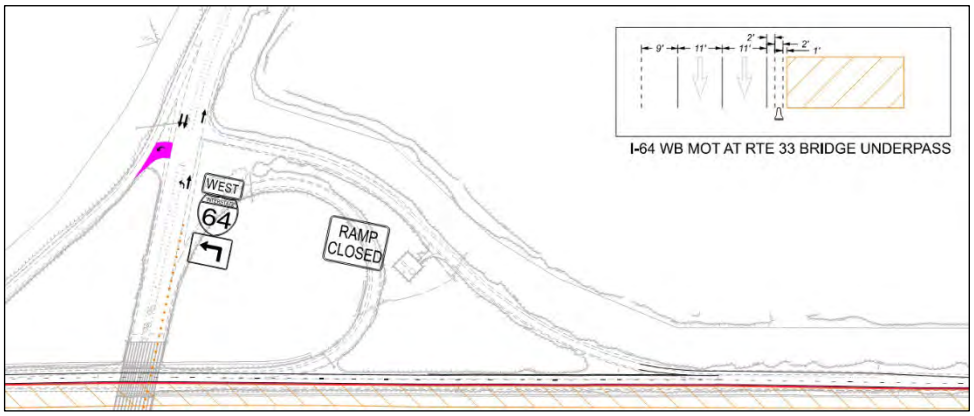


Figure 4.5.2-6: I-64 WB Ramp Configuration during Stage 3 Construction at Exit 205

Our Team has analyzed the traffic operations at the temporary signalized intersection and confirmed that it provides level of service B operations. It also increases safety by eliminating a stage of construction with motorists on both sides of a narrow work zone under the Route 249/33 overpass and provides wider shoulders through all phases of construction. This design innovation will improve safety, reduce disruptions to stakeholders and vehicular traffic through the work area, and accelerate construction. The proposed temporary signal would also provide additional operational flexibility for managing traffic during incidents.

Temporary Drainage: A major concern on limited access highways is hydroplaning and water spreading onto the travel lanes, particularly on bridges. Our Team has evaluated the corridor and determined that scuppers will not be necessary on the bridges. Our TTCP will include details to address unacceptable spread where the temporary barrier service may impede runoff during temporary conditions. Details may range from providing wider shoulders to overlapping the ends of the barrier service and will ensure the safety of the traveling public and provide adequate drainage.

As discussed in **Section 4.5.1**, our approach to SOC included one key change that will prevent a temporary drainage problem from developing as the median widening is constructed. If the median widening is constructed to the top of the pavement intermediate layer it will be 1-in. higher than the existing mainline pavement for the entire length of the project. That 1-in. “lip” will cause water to pond on both sides of the temporary concrete barrier because runoff won’t be able to flow to the median ditches. Our plan is to complete the 2-in. mill and 3-in. of intermediate course overlay on the existing travel lanes in Stage 1 so that the top of the pavement surface of the proposed widening will be flush with the surface of the existing lanes at the end of Stage 2 when the temporary barrier is removed. This also includes placing 8-in. of the overall shoulder strengthening in Stage 1 of construction to ensure all pavement surfaces align without a drop-off or ponding. Our approach mitigates impacts to the traveling public because it provides proper drainage, a higher quality pavement joint, and prevents pavement drop-off along the entire project.

Construction Access Points: As discussed in **Section 4.5.1**, our Team has evaluated the corridor to determine the safest locations for construction entrances while considering the proposed work, maximizing sight distance, emergency vehicle access, and other factors. The construction entrances will be detailed with acceleration and deceleration lanes as depicted in **Figure 4.5.2-7** and where space allows to provide the safest access and eliminate the need for the Trucks Entering Highway Warning System. This is one aspect of providing the traveling public with a safe and simple work zone with less distractions.

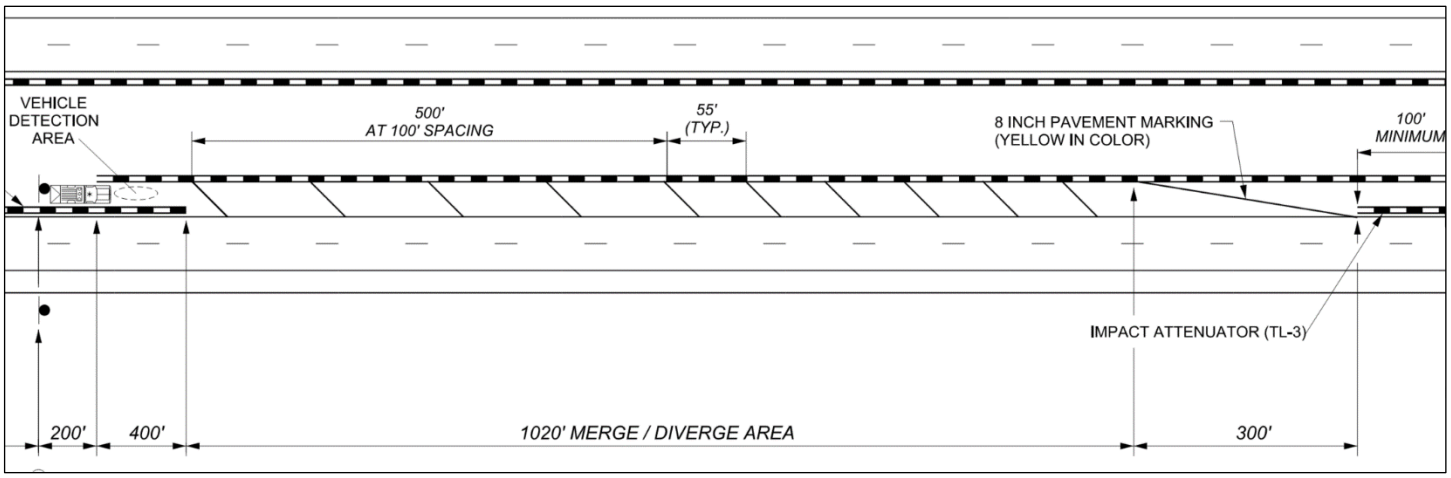


Figure 4.5.2-7: Example Construction Access Point

Work Zone Speed: Our Team does not expect any work zone speed reductions**.** However, we will explore the feasibility of a reduction in the posted speed limit during construction with VDOT during final design. Whether or not VDOT approves a speed reduction, the Kokosing Team will deploy Dynamic Speed Limit signs on the project to raise driver awareness and increase public safety.

The Kokosing Team uses Hill & Smith VSL 1000 Variable Speed Limit Signs that enhance transportation, improve public safety, and increase mobility in work zones. The LED display allows for optimum viewing for varying highway speeds. With the use of wireless communication through a modem, the speed limit sign can be controlled remotely by VDOT to immediately change the posted speed limit to help control traffic due to an incident or inclement weather. The result is a much safer work zone environment for the traveling public and the Kokosing Team work zone personnel.

Figure 4.5.2-8 shows an image of the type of Dynamic Speed Limit Sign the Kokosing Team will use during construction.

Figure 4.5.2-8: Dynamic Speed Limit Sign

Our TMP will enhance motorist safety by ensuring that it details how all existing ITS device functionality is maintained during construction and the timing of new and replacement equipment discussed in **Section 4.3.1(k)**. It will also include specific guidance on how to integrate all temporary ITS devices, like the queue detection and warning systems at each end of the work, temporary CCTVs, and PCMS's to limit disruptions, ensure continuous monitoring, and enhance detection and response time to potential incidents.

Incident Management Plan (IMP): The TMP will establish the Traffic Operations/IMP to detail the response to incidents, weather impacts such as accommodating the hurricane evacuation plan, special events, establishing emergency detour routes and more. The IMP will have a plan in place for all events, exceed the requirements in Part 2, Section 2.10, and coordinate with the appropriate VDOT, emergency personnel, and other stakeholders to ensure their ideas and suggestions are sought and incorporated into the plan. I-64 is a primary hurricane evacuation route for the Hampton Roads region, and it will be important to ensure that the IMP for this project is fully coordinated with the existing hurricane evacuation plans. Our Team will work with VDOT to identify any locations that may require modifications to the evacuation plan or the construction project if necessary.

4.5.3 PROPOSAL SCHEDULE

4.5.3.1 PROPOSAL SCHEDULE

The Kokosing Team thoroughly understands the requirements and complexities of this project and developed a solution to deliver it on time. Our project schedule in **Volume II** and the following narrative explain how we will successfully complete this project.

4.5.3.2 PROPOSAL SCHEDULE NARRATIVE

Describe the proposed overall plan to accomplish the Work including the overall sequencing, a description and explanation of the Critical Path, proposed means and methods, and other key assumptions on which the Proposal Schedule is based.

Plan to Accomplish the Work: Kokosing developed the proposal schedule detailing our plan to successfully accomplish the work in accordance with the contract documents. Our narrative explains the sequencing, description, critical path, proposed means and methods, and other key assumptions on which our schedule is based. We used Primavera P6 Professional and developed a Critical Path Method (CPM) schedule based on the RFP information, available resources, design concepts, and construction means we have chosen.

TABLE 4.5.3.2-1: CONTRACT AND SCHEDULE MILESTONES

Contract and Schedule Milestones	Date
Notice of Intent to Award	August 15, 2023
CTB Approval / Notice of Intent to Award	September 20, 2023
Design-Build Contract Execution	October 4, 2023
Notice to Proceed	October 9, 2023
Project Completion	July 30, 2027
Key Dates	**Date**
Begin Stage 1 Construction	March 21, 2024
Begin Stage 2 Construction	November 27, 2024
Begin Stage 3 Construction	December 27, 2025
Begin Stage 4 Construction	October 29, 2026
East End Complete (except final surface)	June 4, 2026
West End Complete (incl. final surface)	December 8, 2026

Design: Design phase includes preparation, QA/QC reviews, and submitting Intermediate, Final, and Approved for Construction (AFC) design stages of structural, MOT, and roadway project elements. Included are the 21-day periods for VDOT reviews. Supporting plan preparation are survey coordination and mapping, geotechnical investigation, and utility designations. There are activities for field investigations, reports, and VDOT's review of the Geotechnical Report prior to submitting the final bridge and roadway packages.

The design phase will start immediately upon Notice to Award to begin advancing the Concept Plans to the intermediate stage.

We plan to complete each design package prior to commencing construction of that package, with a priority being placed on Early Work Packages #1, #2 and #3 (EWP) which will include the design of the ESC, MOT, and clearing activities required at the start of construction. The EWPs will also include mill and fill on the mainline and shoulder strengthening completed in Stage 1. This package will be followed by the roadway and structural plans. In the event non-critical (such as signage, striping, etc.) design elements may hold up the roadway plans, the less critical elements may be held back for a final AFC plan submission, allowing the critical design elements to be submitted, approved and construction to commence.

4.5 CONSTRUCTION OF THE PROJECT

Field Investigations and Geotechnical: Upon receiving NTP, our design and construction teams start working on Scope Validation while field survey updates take place, including evaluating property information, validating existing pavement elevations/limits, and locating existing underground utilities. Concurrent with the field survey, geotechnical investigations start with submitting a Boring Plan and for VDOT informational purposes and staking out the boring locations in the field. Roadway design also begins concurrently with the survey update and the geotechnical investigations and will be adjusted as necessary to accommodate results of the field work.

Environmental Permitting: Our schedule contains environmental and permitting activities and allows time for information to be developed as needed for the permit submittal process and the environmental site assessment. We will obtain VDPES and USACE/DEQ/VMRC permits based on a conservative estimate of the disturbed project area and preliminary plans as allowed by the regulations. All permitted construction activities will be a **hold point** to ensure no work is performed without permits in place. In general, the only areas where wetlands are anticipated are in the lowland median areas. Actual wetland areas will be determined when we perform the official delineation post-award. The schedule shows work starting in upland areas prior to obtaining the Water Quality Permits, with the approval of VDPES and SWPPP as part of the EWP.

ROW Acquisition and Utility Relocations: These will be coordinated to begin at the NTP date, using the RFP and design concept plans to start work immediately. This gives the maximum amount of time for negotiations and allows the utility owners as much time as possible to develop the most optimized relocation plans based on the project's proposed bridge plans and sequencing. The Kokosing Team has already held preliminary meetings with the utility companies that require relocation pre-bid to get a handle on scope and complexity.

Final Design: While the work shown on the EWP plans is ongoing, final structural, roadway, and any non-critical roadway elements will be developed and submitted to VDOT for review. This will allow AFC plans to be approved prior to when full-scale construction activities are scheduled to begin.

Quality Assurance/Quality Control (QA/QC): QA/QC activities are performed as per contract and relevant tasks are included in our proposal schedule including:

- QA/QC Plan submittal
- QA/QC Plan presentation
- QA/QC review of design packages
- Preparatory Inspection Meetings
- Witness and hold points
- VDOT inspections

Construction: Our work schedule/sequencing is shown in our project schedule in Volume II. The Sequence of Construction has been described in previous sections with priorities identified, along with how the sequence relates to traffic shifts described in the TMP. The approach to construction of the project involves a divide and conquer strategy breaking the project down into areas and elements where work can be accomplished concurrently. Examples of this strategy are as follows:

- **STAGE 1 –** Much of the work involves asphalt milling and paving (mainline and shoulder strengthening) which will require multiple subcontractor crews. This work is divided into logical station ranges rather than utilizing the Work Areas detailed previously since the work is not in the median and unrelated to earthwork or other constraints. The work is sequenced to start at the Western end of the Eastbound side with mainline mill and fill in conjunction with pavement repairs. Once this operation is completed in the Eastbound direction, mill/fill will progress to the Westbound lanes starting at the Eastern end. Concurrently with

Westbound mill/fill, Eastbound shoulder strengthening will occur. Once the Westbound mill/fill is complete, it will be followed by Westbound shoulder strengthening.

Rehabilitation and raising of the existing I-64 bridges over Courthouse Road including bearing replacement will be completed during this stage, taking this work off the critical path and ultimately enabling the bridge work to be completed early in subsequent stages.

- **STAGE 2 –** Areas 1, 2, and 5 will be prioritized and were selected based on earthwork balances. The earth cut to waste quantities are substantially greater on the west end of the project in Areas 1 and 2 (Earthwork Balance Zone 1) than in the other Areas and will be completed concurrently. The main waste area for Earthwork Balance Zone 1 is at the east end of Area 2. A substantial amount of earth will be hauled from Area 1 to this waste area utilizing on-road dump trucks. Concurrent with this operation, the Kokosing Team will utilize its fleet of off-road dump trucks to haul the substantial earth cut from Area 2 to the waste area allowing the earthwork in Areas 1 and 2 to happen concurrently.

  Bridge widening work (I-64 EB and WB over Courthouse Road) will be expedited at the beginning of Stage 2 concurrently with earthwork operations in Area 5. Area 5 has a small amount of dirt waste material left over after the cut to fill operation and this material will be hauled utilizing on-road trucks to a waste area in Area 4.

  The earthwork quantities in Area 3 are balanced as are the quantities in Area 4; these areas in effect are their own earthwork balance zones enabling the use of off-road dump trucks. Kokosing will work in these two areas simultaneously.

- **STAGE 3 –** It is anticipated that Stage 3 will be underway in Areas 1, 2, and 5 concurrently with Stage 2 for Areas 3 and 4. Stage 3 work in Areas 1 and 2 is substantial in that it potentially involves lengthy noise barriers; one of the reasons work in Areas 1 and 2 is prioritized. Concurrent with noise barrier construction, Kokosing's earthwork crews will be completing Stage 2 work in Areas 3 and 4 and switching to Stage 3. Additionally, superstructure repair work on the I-64 over Courthouse Road bridges will be completed at this time allowing the bridge work to be fully completed early in the project. ITS facilities, overhead signage, and DMS work happens concurrently in this stage as well.

  There are two interim phases in Stage 3 relative to the Bottoms Bridge interchange and the full-depth pavement replacement on the ramps and on I-64. Stage 3A will have traffic shifted to the outsides of both the on and off ramps to Rte. 33 with the loop ramp closed. This allows the majority of I-64 Westbound mainline pavement to be replaced along with the inside portions of the ramps. In Stage 3B, the loop ramp will be opened and the Westbound on-ramp will be closed along with the Eastbound off-ramp shifted to the inside allowing the remaining full-depth pavement to be constructed.

- **STAGE 4** – By prioritizing work in definitive Areas in previous stages, final paving and striping will be completed in sections allowing the traveling public the full use of sections of the project well before the final completion date.

Critical Path: The critical path starts with Geotechnical work and the approval of the Early Work Package #2 and as construction begins in Stage 1, flows through the milling of the existing pavement, installation of intermediate course asphalt for the entire alignment. As the mainline overlay completes, the critical path moves to the shoulder strengthening operation and lane shifts/barrier service installation as the project moves into Stage 2. The critical path moves to clearing and grubbing in multiple Areas of the project and ultimately flows through Stage 2 work in Areas 3 and 4. The critical path of constructing Areas 3 and 4 highlights the prioritization of the West and East ends of the project (Areas 1, 2, and 5) as discussed previously. Stage 3 critical path work flows through Areas 3 and 4 as well ultimately leading up to Stage 4, the final asphalt surface and striping in these areas.

Area 5 surface asphalt and striping is shown as critical as well with the assumption that these activities will be delayed allowing the required traffic shifts for Segment B without scarring the final surface pavement.

Work Breakdown Structure (WBS): This is a multi-level, hierarchical arrangement of the work to be completed. The Kokosing Team has laid out the WBS to break down the major phases of the project by *Type of Work* and *Locations.* All elements of the design-build process are shown under the Level 1 WBS and are described below along with **Table 4.5.3.2-2** showing the Level 2 – Level 5 WBS used on the project.

1. **Project Milestones:** As per the RFP, the major project milestones are included, including contractual, such as NTP and Project Completion.
2. **Key Dates:** This section contains activities for the beginning of construction stages as well as for completion of sections of the project.
3. **General Conditions:** Work activities associated with our contractual obligation to administer the project. QC and QA efforts to meet VDOT minimum requirements for design-build are included here, along with any contractual hold points.
4. **Engineering and Design:** All design efforts with their respective submission and review/approval timeline are included. Further breakdown of this division is shown in **Table 4.5.3.2-2**.
5. **Construction:** This section depicts construction activities grouped by *Type of Work* and *Locations* (see further breakdowns in **Table 4.5.3.2-2**).

TABLE 4.5.3.2-2: TYPE OF WORK AND LOCATIONS

Level 1 WBS	Level 2 - Level 5 WBS
Project Milestones	Project Milestones
Key Dates	Key Dates
General Conditions	Scope Validation Quality Assurance/Quality Control ▪ Hold Points ▪ Preparatory Meetings Public Relations
Engineering and Design	Survey Geotechnical ▪ Geotechnical – Noise Walls Environmental Permits Final Noise Study and Report Utility Relocation/Coordination Bridge Maintenance and Repair Plans Bridge Design Stage I Bridge Design Stage II Early Works Package #1: Advanced Tree Clearing Construction Entrances Early Works Package #2: Advanced MOT, Mainline Mill & Overlay and Outside Shoulder Work Early Works Package #3: Median ESC/Drainage (60% Plans) Final Design

TABLE 4.5.3.2-2: TYPE OF WORK AND LOCATIONS

Level 1 WBS	Level 2 - Level 5 WBS

Construction	Shop Drawings, Submittals and Procurement
	▪ Roadway
	▪ Structures
	Project General Items
	Roadway
	▪ Stage 1 Mill/Fill, Shoulder Strengthening, Lane Shift
	  ▪ I-64 Eastbound
	  ▪ Sta. 988+89 to 1094+80 (10591 LF)
	  ▪ Sta. 1094+80 to 1200+40 (10560 LF)
	  ▪ Sta. 1200+40 to 1306+00 (10560 LF)
	  ▪ Sta. 1306+00 to 1411+60 (10560 LF)
	  ▪ Sta. 1411+00 to 1517+20 (10560 LF)
	  ▪ Sta. 1517+20 to 1570+00 (5280)
	  ▪ I-64 Westbound
	  ▪ Sta. 5570+00 to 5464+40 (10560 LF)
	  ▪ Sta. 5464+40 to 5358+80 (10560 LF)
	  ▪ Sta. 5358+80 to 5253+20 (10560 LF)
	  ▪ Sta. 5253+20 to 5147+60 (10560 LF)
	  ▪ Sta. 5147+60 to 5042+00 (10560 LF)
	  ▪ Sta. 5042+00 to 4988+83 (5317 LF)
	  ▪ Bottoms Bridge Interchange
	▪ Stage 2
	  ▪ Area 1 988+89 to 1065+00 (7611 LF)
	  ▪ Area 2 1065+00 to 1158+00 (9300 LF)
	  ▪ Area 3 1158+00 to 1320+00 (16200 LF)
	  ▪ Area 4 1320+00 to 1456+00 (13600 LF)
	  ▪ Area 5 1456+00 to 1570+00 (11400 LF)
	▪ Stage 3
	  ▪ Area 1 988+89 to 1065+00 (7611 LF)
	  ▪ Bottoms Bridge Interchange
	  ▪ Area 2 1065+00 to 1158+00 (9300 LF)
	  ▪ Area 3 1158+00 to 1320+00 (16200 LF)
	  ▪ Area 4 1320+00 to 1456+00 (13600 LF)
	  ▪ Area 5 1456+00 to 1570+00 (11400 LF)
	  ▪ Noise Walls
	  ▪ Sound Barrier A Sta. 1046+00 to 1082+00 (3600 LF)
	  ▪ Sound Barrier A1 Sta. 1104+50 to 1111+50 (700 LF)
	  ▪ Sound Barrier B Sta. 5067+00 to 5049+00 (1800 LF)
	▪ Stage 4
	  ▪ Area 1 988+89 to 1065+00 (7611 LF)
	  ▪ Area 2 1065+00 to 1158+00 (9300 LF)
	  ▪ Area 3 1158+00 to 1320+00 (16200 LF)

TABLE 4.5.3.2-2: TYPE OF WORK AND LOCATIONS	
Level 1 WBS	**Level 2 - Level 5 WBS**
	▪ Area 4 1320+00 to 1456+00 (13600 LF) ▪ Area 5 1456+00 to 1570+00 (11400 LF) Bridges ▪ I-64 Eastbound Over Courthouse Road ▪ Stage 1 Existing Bridge Substructure Rehab ▪ Stage 2 Inside Lane and Shoulder Widening ▪ Stage 3 Existing Bridge Superstructure Rehab ▪ I-64 Westbound Over Courthouse Road ▪ Stage 1 Existing Bridge Substructure Rehab ▪ Stage 2 Inside Lane and Shoulder Widening ▪ Stage 3 Existing Bridge Superstructure Rehab ▪ Rte. 33 Bridge Overpass

Calendars: The following project calendars were used in the schedule:

1. **64 Gap 7-Day No Holidays -** Based on seven days per week. This is used for VDOT and other agency review periods and other activities whose durations are defined as calendar days in the contract. This is also used for some long duration utility and permitting activities.
2. **64 Gap 5-Day with Holidays -** Based on five working days per week and includes holiday restrictions. Used for most design activities and other work not impacted by adverse weather.
3. **64 Gap 5-Day with Holidays and Weather -** Based on five working days per week, accounting for holiday restrictions and anticipated weather days. See **Table 4.5.3.2-3** below for the assumptions used to determine weather days. This calendar was used for most construction activities.
4. **64 Gap 6-Day with Holidays and Weather (Clearing) –** Based on working six days per week, accounting for holiday restrictions and anticipated weather days with the clearing Time of Year Restriction of November 15 through April 1, non-working days for the period outside this window.
5. **64 Gap 5-Day with Holidays and Weather (Paving) –** Similar to Calendar 3 with the exception that no work can occur from the start of December through March. This is used for subgrade improvements, stabilized subgrade material installation, paving and striping activities that have temperature restrictions.

Weather days were estimated using the 30-Year Climate Normals Average from locally available NOAA data. This data is updated every 10 years (updated this year, so we are using 1991-2020 Normals) (see **Table 4.5.3.2-3**).

TABLE 4.5.3.2-3: ESTIMATED MONTHLY WEATHER DAYS ALLOWED												
Average Precipitation Greater than 0.25-in.												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Working Days (Mon-Fri) Lost	4	5	5	4	5	5	5	5	4	3	3	4

Saturdays will be utilized to make up lost days due to weather when the number of days is exceeded or as a tool to get ahead of schedule.

Schedule Management

Implementation: Our proposal schedule will be updated and submitted to VDOT within 15 days of NTP as our preliminary schedule. The baseline schedule will be finalized/submitted to VDOT within 90 calendar days of NTP and includes cost and resource loading, all submittals required by the contract documents, and a definable

critical path. Key personnel represented by all disciplines (design, construction, safety, quality, controls, and procurement) will engage and start in-depth planning of the project activities and schedule refinement.

Our schedule will be constantly reviewed/maintained to avoid slippage, as well as impacts discussed as part of the monthly partnering process and finalize mitigation and recovery solutions, if needed. Systems to manage the design and construction sequencing will be clear/concise and include:

- Weekly design/construction scheduling and coordination meetings during design phase.
- Permit tracking sheets during design and construction phases.
- Weekly construction scheduling meeting during construction phase.
- Utility relocation tracking sheets during design and construction phases.
- Review/approval tracking spreadsheets of design element submittals.
- Shop drawings status tracking sheets.
- Material submittals and delivery schedules.
- Non-conformance logs by QC and QA for design and construction.
- RFI logs.
- Monthly progress/partnering meetings with major stakeholders, including VDOT, Kokosing Team's designers, major subcontractors/vendors and local businesses. Affected utilities will be invited for the current stage of work.

At internal weekly meetings, issues/concerns are identified using the above tracking aids and action items and assigned to someone who can resolve it. Three-week and long-term look-ahead schedules are prepared and discussed to analyze schedule and quality impacts. Similar information is discussed, and action items assigned at the Monthly Progress/Partnering meetings with key stakeholders. Other stakeholders may be invited for anticipated issues during upcoming schedule activities.

Updating Process: Each month, starting with the month following NTP, the preliminary schedule is updated as we prepare, submit, and receive approval on the baseline schedule. Once approved, it is updated/submitted to VDOT for approval monthly until project final completion. Each update is accompanied by a narrative report and tables as prescribed in the Design-Build Project Schedule special provision. The updated schedule and narrative reflect:

- Activities started or completed during the period
- Actual start and finish dates
- Ongoing activities during the period
- Remaining duration for ongoing activities
- Modified relationships to correct out-of-sequence progress
- Modified relationships to reflect our plan for completing remaining work
- Change orders
- Relief events
- Compensation events

Schedule Recovery: If changes or unforeseen circumstances arise during the project that impact the schedule, we will immediately notify VDOT (and other appropriate stakeholders) and set up a schedule recovery plan to recoup lost time, including increasing work shifts, adding crews/resources to construct critical path activities

concurrently, changing MOT schemes or modifying the design to remove activities from the critical path. If the impact is early on, schedule recovery may need adjustments by any or all of the discipline managers, including design, permitting, right-of-way, utility relocations, and construction. In the event all other design-build disciplines have completed their tasks, re-sequencing the construction schedule by the CM will be the primary focus to mitigate impacts.

Mitigating Risks: The experience the Kokosing Team obtained in working on similar projects will be critical to the timeliness of resolving design and construction hurdles as they occur. We have successfully used a rolling design process on other jobs that enables critical construction phases and activities requiring normally long lead times to be under production simultaneously with final designs. We pride ourselves in solving construction and design issues rapidly without sacrificing quality. Based on our preliminary knowledge of the proposed scope of work and our experience on similar projects, the following risks or issues may cause schedule delay and may need to be mitigated:

- **Design Approvals:** The design approval process could exceed what is anticipated in our CPM schedule which can shorten the time available for construction.

  Mitigation: To fully take advantage of the design-build process, we must develop the construction plans in a manner conducive to staying one step ahead of construction. Since plans must be approved and signed for construction by VDOT before anything can start, our plans will be developed/submitted to VDOT as detailed on our CPM. By breaking up the design into packages, we can obtain signature for construction sooner to avoid delays.

- **Environmental Impacts and Permits:** Permit review period restrictions can extend the approval period causing a delay in the schedule. Early submission for permits is vital to allow as much time as possible for approvals. Acquiring permits from affected agencies takes diligence by the team and VDOT.

  Mitigation: A proactive approach will help to incorporate those agencies as stakeholders and generate a partnering approach.

- **Subcontractor Scheduling:** There is a high workload for priority subcontractors and scheduling must be completed well in advance to avoid schedule delays.

  Mitigation: We will mitigate potential delays via a partnering approach of open/constant communication with subcontractors.

Material Lead Time: The Kokosing Team identified schedule critical elements associated with longer lead time materials (i.e., girders, signage, ITS components) and has shown when they are needed to prioritize design of these elements. This will also expedite the shop drawing process to ensure there are no project schedule delays.

Commitment: The Kokosing Team developed a proposal schedule and narrative that demonstrates our understanding of the complexities and interrelationships of the technical elements of the project. Our schedule considers internal plan reviews, VDOT plan reviews/approvals, environmental permitting, ROW acquisitions, utility relocations, and construction activities.

We are committed to continuously fine tune our schedule to better serve VDOT, stakeholders, and motorists. Once we receive Notice to Proceed, we will band together to work and make this project a success for VDOT and the citizens of Virginia.

Appendix

ATTACHMENT 4.0.1.1

I-64 GAP Segment A Widening

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Offerors shall furnish a copy of this Technical Proposal Checklist, with the page references added, with the Technical Proposal.

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Technical Proposal Checklist and Contents	Attachment 4.0.1.1	Section 4.0.1.1	no	V. I | 111-113
Acknowledgement of RFP, Revisions, and/or Addenda	Attachment 3.6 (Form C-78-RFP)	Sections 3.6, 4.0.1.1	no	V. I | 114
Letter of Submittal	NA	Sections 4.1		V. I | 1
Letter of Submittal on Offeror's letterhead	NA	Section 4.1.1	yes	V. I | 1
Identify the full legal name and address of Offeror	NA	Section 4.1.1	yes	V. I | 1
Authorized representative's original signature	NA	Section 4.1.1	yes	V. I | 1
Declaration of intent	NA	Section 4.1.2	yes	V. I | 1
120 day declaration	NA	Section 4.1.3	yes	V. I | 1
Point of Contact information	NA	Section 4.1.4	yes	V. I | 1
Principal Officer information	NA	Section 4.1.5	yes	V. I | 1
Interim Milestone and Final Completion Date(s)	NA	Section 4.1.6	yes	V. I | 1
Unique Milestone Date(s) introduced by the Offeror	NA	Section 4.1.7		V. I | 1
Proposal Payment Agreement or Waiver of Proposal Payment	Attachment 9.3.1 or 9.3.2	Section 4.1.8	no	V. I | 115-118
Certification Regarding Debarment Forms	Attachment 11.8.6(a) Attachment 11.8.6(b)	Section 4.1.9	no	V. I | 119-126
Commitment to achieve ten percent (10%) DBE goal	NA	Section 4.1.10	no	V. I | 1

ATTACHMENT 4.0.1.1

I-64 GAP Segment A Widening

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Confirmation on commercial and professional registration requirements	NA	Section 4.1.11	no	V. I | 1
Offeror's Qualifications	NA	Section 4.2		V. I | 2
Confirmation that the information provided in the SOQ submittal remains true and accurate or indicates that any requested changes were previously approved by VDOT	NA	Section 4.2.1	yes	V. I | 2
Organizational chart with any updates since the SOQ submittal clearly identified	NA	Section 4.2.1	yes	V. I | 2
Organizational chart shall identify the names of the individuals selected for the positions of Deputy Key Personnel (if applicable), and Environmental Compliance Manager.	NA	Section 4.2.1	yes	V. I | 2
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.1	yes	V. I | 2
Design Concept	NA	Section 4.3		V. I | 3-22 V. II | 23-44
Conceptual Roadway Plans and description	NA	Section 4.3.1.1	yes	V. I | 7-18 V. II | 23-38
Conceptual Structural Plans and description	NA	Section 4.3.1.2	yes	V. I | 18-22 V. II | 39-44
Project Approach	NA	Section 4.4		V. I | 45-63
Environmental Management	NA	Section 4.4.1	yes	V. I | 45-48

ATTACHMENT 4.0.1.1

I-64 GAP Segment A Widening

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Utilities	NA	Section 4.4.2	yes	V. I | 49-53
Geotechnical	NA	Section 4.4.3	yes	V. I | 53-57
Quality Assurance/ Quality Control (QA/QC)	NA	Section 4.4.4	yes	V. I | 58-63
Construction of Project	NA	Section 4.5		V. I | 64-110
Sequence of Construction	NA	Section 4.5.1	yes	V. I | 64-82
11" x 17" graphics demonstrating proposed Sequence of Construction.	NA	Section 4.5.1	yes	V. I | 67-74
Transportation Management Plan	NA	Section 4.5.2	yes	V. I | 82-89
11" x 17" graphics demonstrating proposed MOT for each phase of Sequence of Construction.	NA	Section 4.5.2	yes	V. I | 67-74
Proposal Schedule	NA	Section 4.5.3	no	V. II | 90-102
Proposal Schedule Narrative	NA	Section 4.5.3	no	V. I | 103-110
Proposal Schedule in electronic format	NA	Section 4.5.3	no	N/A

ATTACHMENT 3.6

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

RFP NO. C00122166DB119

PROJECT NO.: 0064-063-623, P101, R201, C501, B601, B602

ACKNOWLEDGEMENT OF RFP, REVISION AND/OR ADDENDA

Acknowledgement shall be made of receipt of the Request for Proposals (RFP) and/or any and all revisions and/or addenda pertaining to the above designated project which are issued by the Department prior to the Letter of Submittal submission date shown herein. Failure to include this acknowledgement in the Letter of Submittal may result in the rejection of your proposal.

By signing this Attachment 3.6, the Offeror acknowledges receipt of the RFP and/or following revisions and/or addenda to the RFP for the above designated project which were issued under cover letter(s) of the date(s) shown hereon:

1. Cover letter of RFP – March 22, 2023 (Date)
2. Cover letter of RFP Addendum #1 – April 28, 2023 (Date)
3. Cover letter of RFP Addendum #2 – May 24, 2023 (Date)
4. Cover letter of RFP Addendum #3 – June 5, 2023 (Date)
4. Cover letter of RFP Addendum #4 – June 12, 2023 (Date)

SIGNATURE

6/21/2023
DATE

Gregory A. Hamilton
PRINTED NAME

Regional Sr. Vice President
TITLE

ATTACHMENT 9.3.1
PROPOSAL PAYMENT AGREEMENT

THIS PROPOSAL PAYMENT AGREEMENT (this "Agreement") is made and entered into as of this ____ day of _____, 20__, by and between the Virginia Department of Transportation ("VDOT"), and Kokosing Construction Company, Inc. ("Offeror").

WITNESSETH:

WHEREAS, Offeror is one of the entities who submitted Statements of Qualifications ("SOQs") pursuant to VDOT's December 16, 2022 Request for Qualifications ("RFQ") and was invited to submit proposals in response to a Request for Proposals ("RFP") for the **I-64 GAP Segment A Widening, Project No. 0064-063-623** ("Project"), under a design-build contract with VDOT ("Design-Build Contract"); and

WHEREAS, as part of the procurement process for the Project, Offeror has already provided and/or furnished to VDOT, and may continue to provide and/or furnish to VDOT, certain intellectual property, materials, information and ideas, including, but not limited to, such matters that are: (a) conveyed verbally and in writing during proprietary meetings or interviews; and (b) contained in, related to or associated with Offeror's proposal, including, but not limited to, written correspondence, designs, drawings, plans, exhibits, photographs, reports, printed material, tapes, electronic disks, or other graphic and visual aids (collectively "Offeror's Intellectual Property"); and

WHEREAS, VDOT is willing to provide a payment to Offeror, subject to the express conditions stated in this Agreement, to obtain certain rights in Offeror's Intellectual Property, provided that Offeror submits a proposal that VDOT determines to be responsive to the RFP ("Offeror's Proposal"), and either (a) Offeror is not awarded the Design-Build Contract; or (b) VDOT cancels the procurement or decides not to award the Design-Build Contract to any Offeror; and

WHEREAS, Offeror wishes to receive the payment offered by VDOT, in exchange for granting VDOT the rights set forth in this Agreement.

NOW, THEREFORE, in consideration of the mutual covenants and agreements set forth in this Agreement and other good and valuable consideration, the receipt and adequacy of which are acknowledged by the parties, the parties agree as follows:

1. VDOT's Rights in Offeror's Intellectual Property. Offeror hereby conveys to VDOT all rights, title and interest, free and clear of all liens, claims and encumbrances, in Offeror's Intellectual Property, which includes, without restriction or limitation, the right of VDOT, and anyone contracting with VDOT, to incorporate any ideas or information from Offeror's Intellectual Property into: (a) the Design-Build Contract and the Project; (b) any other contract awarded in reference to the Project; or (c) any subsequent procurement by VDOT. In receiving all rights, title and interest in Offeror's Intellectual Property, VDOT is deemed to own all intellectual property rights, copyrights, patents, trade secrets, trademarks, and service marks in Offeror's Intellectual Property, and Offeror agrees that it shall, at the request of VDOT, execute all papers and perform all other acts that may be necessary to ensure that VDOT's rights, title and interest in Offeror's Intellectual Property are protected. The rights conferred herein to VDOT include, without limitation, VDOT's ability to use Offeror's Intellectual Property without the obligation to notify or seek permission from Offeror.

2. Exclusions from Offeror's Intellectual Property. Notwithstanding Section 1 above, it is understood and agreed that Offeror's Intellectual Property is not intended to include, and Offeror does not convey any rights to, the Escrow Proposal Documents submitted by Offeror in accordance with the RFP.

3. Proposal Payment. VDOT agrees to pay Offeror the lump sum amount of **Two Hundred Fifteen Thousand and 00/100 Dollars ($ 215,000.00)** ("Proposal Payment"), which payment constitutes payment in full to Offeror for the conveyance of Offeror's Intellectual Property to VDOT in accordance with this Agreement. Payment of the Proposal Payment is conditioned upon: (a) Offeror's Proposal being, in the sole discretion of VDOT, responsive to the RFP; (b) Offeror complying with all other terms and conditions of this Agreement; and (c) either (i) Offeror is not awarded the Design-Build Contract, or (ii) VDOT cancels the procurement or decides not to award the Design-Build Contract to any Offeror.

4. Payment Due Date. Subject to the conditions set forth in this Agreement, VDOT will make payment of the Proposal Payment to the Offeror within forty-five (45) days after the later of: (a) notice from VDOT that it has awarded the Design-Build Contract to another Offeror; or (b) notice from VDOT that the procurement for the Project has been cancelled and that there will be no Contract Award.

5. Effective Date of this Agreement. The rights and obligations of VDOT and Offeror under this Agreement, including VDOT's ownership rights in Offeror's Intellectual Property, vests upon the date that Offeror's Proposal is submitted to VDOT. Notwithstanding the above, if Offeror's Proposal is determined by VDOT, in its sole discretion, to be nonresponsive to the RFP, then Offeror is deemed to have waived its right to obtain the Proposal Payment, and VDOT shall have no obligations under this Agreement.

6. Indemnity. Subject to the limitation contained below, Offeror shall, at its own expense, indemnify, protect and hold harmless VDOT and its agents, directors, officers, employees, representatives and contractors from all claims, costs, expenses, liabilities, demands, or suits at law or equity ("Claims") of, by or in favor of or awarded to any third party arising in whole or in part from: (a) the negligence or wilful misconduct of Offeror or any of its agents, officers, employees, representatives or subcontractors; or (b) breach of any of Offeror's obligations under this Agreement, including its representation and warranty under Section 8 hereof. This indemnity shall not apply with respect to any Claims caused by or resulting from the sole negligence or wilful misconduct of VDOT, or its agents, directors, officers, employees, representatives or contractors.

7. Assignment. Offeror shall not assign this Agreement, without VDOT's prior written consent, which consent may be given or withheld in VDOT's sole discretion. Any assignment of this Agreement without such consent shall be null and void.

8. Authority to Enter into this Agreement. By executing this Agreement, Offeror specifically represents and warrants that it has the authority to convey to VDOT all rights, title, and interest in Offeror's Intellectual Property, including, but not limited to, those any rights that might have been vested in team members, subcontractors, consultants or anyone else who may have contributed to the development of Offeror's Intellectual Property, free and clear of all liens, claims and encumbrances.

9. Miscellaneous.

a. Offeror and VDOT agree that Offeror, its team members, and their respective employees are not agents of VDOT as a result of this Agreement.

b. Any capitalized term used herein but not otherwise defined shall have the meanings set forth in the RFP.

c. This Agreement, together with the RFP, embodies the entire agreement of the parties with respect to the subject matter hereof. There are no promises, terms, conditions, or obligations other than those contained herein or in the RFP, and this Agreement shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties hereto.

d. It is understood and agreed by the parties hereto that if any part, term, or provision of this Agreement is by the courts held to be illegal or in conflict with any law of the Commonwealth of Virginia, validity of the remaining portions or provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain the particular part, term, or provisions to be invalid.

e. This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Virginia.

IN WITNESS WHEREOF, this Agreement has been executed and delivered as of the day and year first above written.

VIRGINIA DEPARTMENT OF TRANSPORTATION

By: _____

Name: _____

Title: _____

KOKOSING CONSTRUCTION COMPANY, INC.

By: _____

Name: Gregory A. Hamilton, PE, DBIA

Title: Regional Sr. Vice President

ATTACHMENT 11.8.6(a)
CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS

Project No.: 0064-063-623 P101, R201, C501, B601, B602

1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency.

b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; and have not been convicted of any violations of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification, or destruction of records, making false statements, or receiving stolen property;

c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1) b) of this certification; and

d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

Signature	5/11/2023 Date	Regional Sr. Vice President Title

Kokosing Construction Company, Inc.
Name of Firm

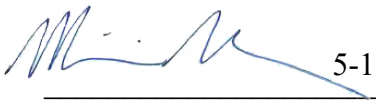
ATTACHMENT 11.8.6(b)
CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project No.: 0064-063-623 P101, R201, C501, B601, B602

1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.



5-11-23	Partner
Signature Date	Title

Rummel, Klepper & Kahl, LLP

Name of Firm

ATTACHMENT 11.8.6(b)
CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project No.: 0064-063-623 P101, R201, C501, B601, B602

1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

Michael W. Saunders 4/27/2023 Senior Vice President
Signature Date Title

Century Engineering, LLC
Name of Firm

ATTACHMENT 3.2.7(b)

CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project No.: 0064-063-623

1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

Signature	Date	Title
	6/15/2023	President

CES CONSULTING LLC
Name of Firm

ATTACHMENT 11.8.6(b)
CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project No.: 0064-063-623 P101, R201, C501, B601, B602

1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

Lincoln K. Swineford Digitally signed by Lincoln K. Swineford, PE Date: 2023.06.09 15:33:49 -04'00'

Signature Date

Principal/ CMT Dept. Mgr.
Title

ECS Mid-Atlantic, LLC
Name of Firm

ATTACHMENT 11.8.6(b)
CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project No.: 0064-063-623 P101, R201, C501, B601, B602

1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

6/7/2023	Branch Manager
Signature Date	Title

Froehling & Robertson, Inc.
Name of Firm

ATTACHMENT 3.2.7(b)

CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project No.: 0064-063-623

1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

	6.15.23	President
Signature	Date	Title

On Point Transportation PR
Name of Firm

ATTACHMENT 11.8.6(b)
CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project No.: 0064-063-623 P101, R201, C501, B601, B602

1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

April 24, 2023 — Branch Manager

Signature — Date — Title

T2 UES, Inc. dba T2 Utility Engineers

Name of Firm

ATTACHMENT 4.2.1

DEPUTY KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.

a. Name & Title: **John "Jake" Leffler | Project Manager**

b. Project Assignment: **Deputy Design-Build Project Manager**

c. Name of the Firm with which you are employed at the time of submitting Technical Proposal:
Kokosing Construction Co., Inc.

d. Employment History: With this Firm **13** Years With Other Firms **5** Years

Please list chronologically (most recent first) your employment history, position, general responsibilities, and duration of employment for the last fifteen (15) years. (NOTE: If you have less than 15 years of employment history, please list the history for those years you have worked. Project specific experience shall be included in Section (g) below):

Kokosing Construction Company, Inc. | Start Date: 2009 | End Date: Present | Position: Project Engineer/Sr. Project Engineer/Project Manager. Jake has been assigned to Design-Build/Design-Bid-Build bridge, roadway, and utility projects throughout Virginia as construction manager, construction QC manager, project manager, and project engineer. He manages project teams, schedule, budget, safety, and quality control, attends onsite progress meetings, negotiates change orders, provides material procurement, coordinates subcontractors, oversees field crews, identifies issues, and performs troubleshooting with minimal cost/schedule impacts.

Manhattan Construction Company | Start Date: 2005 | End Date: 2009 | Position: Project Engineer. Jake coordinated materials, labor, schedules, and methods to optimize construction on two vertical construction projects. He worked with subcontractors, clients, and architects to resolve issues timely/cost-effectively. Jake prepared, reviewed, and processed RFIs/submittals, submitted client billings, reviewed subcontractor payment applications, reviewed drawings for constructability/resolved conflicts, performed QC inspections and oversaw punch list operations.

e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization:
University of Virginia, School of Engineering & Applied Sciences, Charlottesville, VA | BS | 2005 | Civil Engineering

f. Active Registration: Year First Registered/ Discipline/VA Registration #:
2009 | VDOT Erosion & Sediment Control Contractor Certification | #1-05007
2009 | VA DEQ Responsible Land Disturber | RLD12161

g. Document the extent and depth of your experience and qualifications relevant to the Project.
1. *Note your role, responsibility, and specific job duties for each project, not those of the firm.*
2. *Note whether experience is with current firm or with other firm.*
3. *Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.*

(List only three (3) relevant projects for which you have performed a similar function. On-call contracts with multiple task orders (on multiple projects) should not be listed as a single project.

Design-Build I-64 Widening Exits 200-205, Henrico & New Kent Counties, VA, $46.6 Million, VDOT	
With Current Firm? Yes	Project Role: Construction Manager
Start Date: Aug. 2017	End Date: Aug. 2019

Construction Manager. Jake was responsible for the overall management of the project. Beginning in the preconstruction phase, he organized preconstruction meetings to set goals and assign responsibilities aimed at meeting project obligations. Once mobilized, he supervised all field operations including safety and quality control efforts, procuring the components necessary for successful delivery, maintaining the schedule, and overseeing project closeout. Jake leveraged his expertise to ensure construction was done per drawings and maintained as-built documents. He was integral in developing and upholding the project-specific safety program, work plans, and Job Hazard Analyses which aided in proactively avoiding the opportunity for disputes. Jake examined the scope and evaluated potential safety exposures and risks to identify vital specialized safety trainings. He administered weekly site and safety inspections, and was responsible for promptly submitting safety inspection reports. He applied his previous experience to procure labor, equipment, and subcontractors, while coordinating schedules and keeping the project on track. Jake oversaw management of quality control efforts to assure compliance. As construction manager, he was also responsible for the project's Erosion and Settlement Control Program, which incurred many improvements during construction, reflecting the challenges of building an interstate highway atop a swamp during the 2nd wettest recorded year in Virginia's history. This project widened five miles of I-64 from two to three travel lanes in each direction, including adding a 12-ft. wide travel lane and a 10-ft. wide inside shoulder within the median in both directions of the existing roadway. The widening involved construction of new permanent drainage, temporary and permanent sediment control devices, and sound barrier wall. It also widened eastbound/westbound 264-ft. bridges by 26-ft. to the inside over Chickahominy River and rehabilitated the existing concrete superstructure. There was an extremely narrow space in the median when widening the bridges. Since there was not enough width between the bridges for cranes, the foundations, piers, and girders were constructed from the middle out. PTFE bearings reduced the live loads to the existing foundations to remove the joints;

to support the new substructure, deep foundations were used. The critical path ran through bridge structures, so phased demolition and construction plans were synchronized to take advantage of the available access, crews, and equipment. The existing substructure and girders were reused rather than replacing them, which accelerated phase two. The project was completed ahead of schedule. It relieves traffic congestion, enhances safety, and adds capacity to the I-64 corridor.
Relevancy: *VDOT Design-Build; Interstate Roadway; Survey; Structures/Bridges; Environmental; Geotechnical; Hydraulics; Traffic Control Devices; TMP/MOT; ROW Acquisition; Utility Coordination/Relocation; Public Involvement/Relations; QA/QC; ITS Components; Construction Engineering/Inspection; Project Management*

Design-Build I-64 & Route 623 Widening & Improvements, Short Pump, VA, $34.7 Million, VDOT	
With Current Firm? Yes	Project Role: Deputy Construction Manager | Construction QC Manager
Start Date: May 2014	End Date: Dec. 2015

Deputy Construction Manager. Jake assisted the Construction Manager with oversight of the budget, safety efforts, and quality compliance, as well as ensured the project was completed per the contract. He closely monitored project schedules and spearheaded progress meetings. He managed construction, equipment and material procurement, work plans, budgets, and resources. He coordinated with subcontractors and issued contracts. Jake worked to minimize safety risks, mitigate issues, and implement resolutions. He also managed submittal procedures, was a secondary contact for operations and procedures, and participated in design development and reviews. As **Construction QC Manager**, Jake oversaw the QC team to ensure work met VDOT's Minimum Requirements for QA/QC on Design-Build and P3 Projects. He managed QC activities and ensured materials used, and work-performed, were contractually compliant and fit the construction plans and specifications. Jake provided QC inspection and testing, and assessed construction processes. He ensured that QA/QC inspections/materials testings were documented. Jake scheduled inspections and tests, held weekly QC meetings, coordinated preparatory meetings with the QAM, and maintained QC records for monthly submission. Jake was also responsible for maintaining compliance with the projects Erosion and Settlement control program.
This project involved inside widening 4.5 miles of I-64 from a four-lane to a six-lane divided highway, added a 12-ft. through lane and a 12-ft. paved shoulder to the inside of I-64 east/westbound. Traffic was maintained through the busy corridor while constructing the additional through lanes to the median and widening both directions of I-64. I-64/Route 623 interchange improvements included widening both off ramps from I-64 to Route 623 for additional turn lanes, adding a left turn lane on Route 623 to access I-64 eastbound, and upgrading the traffic signal. The additional through lanes reduce congestion/travel time. The original scope widened/replaced the bridge superstructure and widened/repaired the substructure. Given the inefficient span arrangement of the current bridges and concerns about overloading the existing piers, a complete bridge replacement was chosen. Twin replacement bridges were designed/constructed for I-64 over Little Tuckahoe Creek. The new 130-ft. simple span pre-stressed concrete girder bridges replaced the three-span steel girder bridges using pre-stressed concrete Bulb T girders and a deck slab extension. This provided VDOT with new, low maintenance structures, which had a 75-year design life, at a lower cost than the original rehabilitation option. Upgraded the pier protection barrier at overpasses to increase drive safety and collision protection to the substructure.
Relevancy: *VDOT Design-Build; Interstate Roadway; Survey; Structure/Bridge; Environmental; Geotechnical; Hydraulics; Traffic Control Devices; TMP/MOT; ROW; Public Involvement/Relations; QA/QC; ITS; Construction Engineering/Inspection; Project Management*

Design-Build Bridges over I-95 Bundle, Richmond, VA, $38.9 Million, VDOT	
With Current Firm? Yes	Project Role: Construction Manager
Start Date: Nov. 2021	End Date: Nov. 2024

Construction Manager. Jake was responsible for the overall management of the project. Beginning in the preconstruction phase, he organized preconstruction meetings to set goals and assign responsibilities aimed at assuring compliance with project obligations. Once mobilized, he supervised all field operations including safety and quality control efforts, procuring the components necessary for successful project delivery, maintaining the schedule and overseeing closeout. Jake leveraged his expertise to ensure construction was done per drawings and maintained as-built documents. He was integral in developing and upholding the project-specific safety program, work plans, and Job Hazard Analyses which aided in proactively avoiding the opportunity for disputes to arise. Jake examined the scope of work and evaluated potential safety exposures and risks to identify vital specialized safety trainings. He administered weekly site and safety inspections, and was responsible for the prompt submission of all safety inspection reports. Using his experience in managing projects, he procured labor, equipment, and subcontractors, while skillfully coordinating multiple schedules to keep the project on track. Jake oversaw management of QC efforts to assure project compliance.
This project includes five bridges over I-95 in downtown Richmond, VA with heavy pedestrian movement and reconfiguring traffic. Work included designing/replacing the bridge superstructures, including substructure repairs, demolishing the bridge deck and steel girders, replacing girders, deck and parapets, lighting, drainage, modifying traffic signals, and stormwater management. Roadwork on this project included widening the inside median of 4th Street to accommodate traffic crossovers to reconstruct the existing bridge over I-95 in two phases, widening the outside of 7th Street northbound to optimize alignment with I-95 on-ramp, widening 7th Street southbound for an additional turn lane into VCU parking garage (through coordination with VDOT, Virginia Commonwealth University (VCU), and the City of Richmond), and widening the I-64/I-95 on-ramp for an additional lane to accommodate exit from the parking garage.
Relevancy: *VDOT Design-Build; Roadway; Survey; Bridges, Environmental; Geotechnical; Traffic Control Devices; TMP/MOT; ROW; Utilities; Public Involvement/Relations; QA/QC; ITS; Construction Engineering/Inspection; Project Management*

ATTACHMENT 4.2.1

DEPUTY KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.

a. Name & Title: **Cameron Rohrer, PE, Assoc. DBIA | Technical Manager**

b. Project Assignment: **Deputy Design Manager**

c. Name of the Firm with which you are employed at the time of submitting Technical Proposal:
Rummel, Klepper & Kahl, LLP

d. Employment History: With this Firm **3** Years With Other Firms **9** Years

Please list chronologically (most recent first) your employment history, position, general responsibilities, and duration of employment for the last fifteen (15) years. (NOTE: If you have less than 15 years of employment history, please list the history for those years you have worked. Project specific experience shall be included in Section (g) below):

RK&K | Start Date: 2020 | End Date: Present | Position: Technical Manager. Cameron serves as lead Highway Engineer for Design-Build and traditionally procured transportation improvements including interchanges, roadway widening, pedestrian facilities, and roadside improvements. He is responsible for the technical aspects of roadway project designs, quality of deliverables, and multi-discipline coordination throughout the design process.

Whitman, Requardt & Associates, LLP | Start Date: 2017 | End Date: 2020 | Position: Project Engineer. Cameron led numerous design tasks for WRA as part of their on-call contract with Fairfax County DOT. He was also a primary roadway design engineer for larger VDOT and locality projects in Northern Virginia, including a new interchange design, two major roadway widening projects, and various intersection and pedestrian upgrade projects.

US Army Corps of Engineers | Start Date: 1/2016 | End Date: 12/2016 | Position: Project Manager. Cameron managed civil works projects on Fort Bragg (NC) by providing technical oversight and coordination during all phases from design concept to construction completion. He also conducted site investigations, prepared estimates, and led stakeholder engagements. With his technical background, he also performed in-house design functions and prepared drawings and plans for projects.

US Army | Start Date: 2014 | End Date: 2015 | Position: Captain. Cameron served as the Operations officer for a 400-employee organization, where he planned, resourced, and supervised all readiness movement requirements for over 100 personnel deploying to Iraq. He also managed and coordinated hundreds of unit taskings which provided critical support to the installation while balancing unit needs. He planned, organized, and supervised outload of combat equipment deploying in six aircraft to support Division assets in Iraq.

US Army | Start Date: 2010 | End Date: 2013 | Position: Lieutenant. Cameron served as a Platoon Leader (Manager for a team of 35 personnel) and then Executive Officer (Deputy Manager for a team of over 150 personnel) for the 615th Engineer Company in Fort Carson, Colorado. He was personally responsible for planning, resourcing, and training the organization to conduct heavy equipment construction operations, as well as to provide strategic response in support of combat operations around the world.

e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization:
Missouri University of Science & Technology, Rolla, MO | MS | 2014 | Civil Engineering, Transportation
United States Military Academy, West Point, NY | BS | 2010 | Civil Engineering

f. Active Registration: Year First Registered/ Discipline/VA Registration #:
2017 | Professional Engineer | VA #0402057571

g. Document the extent and depth of your experience and qualifications relevant to the Project.
1. *Note your role, responsibility, and specific job duties for each project, not those of the firm.*
2. *Note whether experience is with current firm or with other firm.*
3. *Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.*

(List only three (3) relevant projects for which you have performed a similar function. On-call contracts with multiple task orders (on multiple projects) should not be listed as a single project.

Transform 66 Outside the Beltway Design Build – Section 3B Nutley Street Interchange, Vienna, VA, $3.7B, VDOT	
With Current Firm? Yes	Project Role: Roadway Engineer
Start Date: April 2020	End Date: September 2022

Roadway Engineer. Cameron was responsible for client (VDOT and FAM Construction) and in-house design team (traffic and water resources) coordination, ensuring roadway geometric design complied with VDOT standards, and general plan preparation. Cameron also served as design quality manager for the release of deliverables for NDC (Notice of Design Change) submittals to FAM Construction, ensuring that quality control was performed and in compliance with the quality system management plan (QSMP) and the design quality management plan (DQMP). He was also responsible for design services including complex geometry for ramps, retaining walls, shared-use paths, drainage, and stormwater management facilities. In addition, he prepared a variance request to account for site limitations for minimum cover over a box culvert which received approval from VDOT, allowing the project to remain on schedule.

The Section 3B Nutley Street Interchange segment includes the reconstruction of the existing interchange over I-66 to a dual roundabout and included design of over one mile of the I-66 mainline interstate, interchange ramps, approach roadways, and shared use paths.

Relevancy: *VDOT Design-Build; Interstate Roadway; Structure/Bridge; Environmental; Geotechnical; Hydraulics; Erosion & Sediment Control; SWM; TMP/MOT; Soundwalls; ROW; Utilities; Signage, Lighting; QA/QC; Safety; Project Management*

I-695 from I-70 to MD 43 Transportation Systems Management and Operations (TSMO), Baltimore County, MD, $150M, MDOT SHA	
With Current Firm? Yes	Project Role: Roadway Engineer
Start Date: Jan 2021	End Date: April 2022

Roadway Engineer. Cameron was the primary 3D modeling design engineer for improvements along more than 20 miles of interstate highway, including design of part-time shoulder use lanes, widening, superelevation correction, maintenance pull-offs, and stormwater management facilities. His role included horizontal and vertical geometric design, cross section development, and plan development for the project. He worked closely with the hydraulics team to make necessary adjustments to the design to ensure positive drainage throughout the project.

This Transportation Systems Management and Operations (TSMO) fixed price/best value selection design-build project encompasses six of the top 15 congested roadway segments in the state of Maryland. With Maryland's population projected to increase by 600,000 by the year 2030 and passenger and truck traffic to increase by 15-20%, this project provides Part-Time Shoulder Use (PTSU) lanes necessary to reduce congestion and increase reliability within the project area.

Relevancy: *Design-Build; Interstate Roadway; Survey; Structures/Bridges; Environmental; Geotechnical; Hydraulics; Traffic Control Devices; TMP/MOT; Utility Coordination/Relocation; QA/QC; ITS Components; Soundwalls*

Richmond Highway, US 1 Widening, Fairfax County, VA, $415M, VDOT	
With Current Firm? Yes	Project Role: Roadway Engineer
Start Date: May 2022	End Date: Ongoing

Roadway Engineer. Cameron assisted in the design and 3D modeling of three miles of widening along US Route 1 from four to six lanes in a tight urban environment. He performed an alignment alternatives analysis at Little Hunting Creek to balance technical constraints and stakeholder needs. He prepared a design waiver for buffer widths to comply with VDOT policies and procedures.

The project includes the widening of nearly three miles of Richmond Highway from Jeff Todd Way/Mount Vernon Highway to Napper Road in Fairfax County, encompassing all the design improvements, including roadway, drainage, bridges, traffic, and public outreach. The project improves roadway capacity, safety, and provides a footprint for the future median running Bus Rapid Transit (BRT) line that Fairfax County is currently planning and designing. The final design facilitates the BRT flow, reduces vehicle conflicts, and improves safety. The project also features bicycle lanes and sidewalks along both sides of the road.

Relevancy: *VDOT, Roadway; Structure/Bridge; Environmental; Geotechnical; Drainage, Erosion & Sediment Control; SWM; ADA, TMP; ROW; Utilities; Signage, QA/QC; Safety; Project Management*

ATTACHMENT 4.2.1

DEPUTY KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.

a. Name & Title: **Paul Moose, PE, CCM | Locality Program Manager/Value Engineering (VE) Manager**

b. Project Assignment: **Deputy Quality Assurance Manager**

c. Name of the Firm with which you are employed at the time of submitting Technical Proposal: **Century Engineering, LLC (NXL, A Division of Kleinfelder)**

d. Employment History: With this Firm **4** Years With Other Firms **24** Years

Please list chronologically (most recent first) your employment history, position, general responsibilities, and duration of employment for the last fifteen (15) years. (NOTE: If you have less than 15 years of employment history, please list the history for those years you have worked. Project specific experience shall be included in Section (g) below):

Century Engineering, LLC (NXL, A Division of Kleinfelder) | Start Date: 2019 | End Date: Present | Position: Locality Program Manager/Value Engineering (VE) Manager. Paul serves as VE Manager for projects that exceed $15M in anticipated construction costs across the Commonwealth. He is responsible for leading a team that includes members from both state and local government, and the consultant industry in generating alternative concepts for the benefit of the project through quantitative (cost and schedule) and qualitative (constructability, environmental impacts, and operational performance) measures. Paul conducts a preliminary site visit to ensure familiarity with the proposed site, encourages team members to do the same, and ensures that they are supplied with the necessary documentation well in advance of the workshop. Paul's responsibilities include leading the project team through the VE process in an effective and efficient manner whilst encouraging alternative thought processes and maintaining adherence to the VE process to present the VE recommendations to the Department. Lastly, Paul actively tracks task order charges and attendance, takes workshop minutes, produces PDH certificates for applicable team members, and generates the final report in a timely manner for submission to VDOT's Chief Engineer. In addition, Paul oversees our locality contracts and provides LAP assistance and guidance to help ensure reimbursement.

Virginia Department of Transportation | Start Date: 2012 | End Date: 2019 | Position: Area Construction Engineer. Prior to Paul being appointed as ACE, VDOT's Central Construction Division did not exist. Beginning with a staff of only two part-time inspectors, he built the program that would be responsible for the oversight of all LAP Construction projects in the Hampton Roads district. In addition to his responsibilities as LAP ACE, he administered VDOT's Central Construction program valued at $200 million. Paul's administration was marked by a proactive, "always improving" maxim that allowed his division to do more with less. During his time as ACE, he employed sound engineering judgment to resolve construction challenges in the field in an expeditious manner.

Virginia Department of Transportation | Start Date: 2006 | End Date: 2012 | Position: Senior Construction Engineer. Paul was responsible for entire projects from advertisement to Final closeout, including management of Contract Budget, Resource Allocation, Construction Expenditure, tracking evaluations of Contractor's schedules (including CPM) and compliance with Road and Bridge Specifications and VDOT Standards. In addition, Paul has worked in an acting role as Special Projects Engineer where he was responsible for projects that did not fit the "norm" of what constitutes a VDOT construction project. Examples have included the removal of the sidewalk in the Hampton Roads bridge tunnel with known asbestos containing materials, the demolition of the Kings Highway bridge (which he evaluated in his time as Bridge design Engineer), and the paint removal and replacement of the James River bridge towers.

e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: **Old Dominion University | Norfolk, VA | BS | 1995 | Civil Engineering Technology**

f. Active Registration: Year First Registered/ Discipline/VA Registration #:
2004 | VA Professional Engineer (PE) | #04020338094
2021 | Certified Construction Manager (CCM) | #15212

g. Document the extent and depth of your experience and qualifications relevant to the Project.
1. *Note your role, responsibility, and specific job duties for each project, not those of the firm.*
2. *Note whether experience is with current firm or with other firm.*
3. *Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.*

(List only three (3) relevant projects for which you have performed a similar function. On-call contracts with multiple task orders (on multiple projects) should not be listed as a single project.

VDOT Construction Division Staff Augmentation Contract, I-81 Weyers Cave Truck Climbing Lanes, Weyers Cave, VA, $114.9 Million, VDOT	
With Current Firm? Yes	Project Role: Value Engineering Manager
Start Date: April 2022	End Date: March 2022

Value Engineering Manager. Paul was responsible for leading a team that included members from VDOT and the consultant industry in generating alternative concepts for the benefit of the project through quantitative (cost and

schedule) and qualitative (constructability, environmental impacts, and operational performance) measures. His responsibilities included researching contract documents, ensuring that the team was well-prepared for the VE workshop, coordinating with the Project Manager, facilitating the workshop, and generating the report for submission to VDOT.

This project on I-81 in the vicinity of Weyers Cave, VA provides 12' truck climbing lanes to the median side of the travel lanes and a 12' total width shoulder (4' paved). The NB and SB deceleration and the NB acceleration lane will be extended, and guardrail will be replaced. Replacement of existing guardrail and the widening of the NB and SB Bridges over Naked Creek are also part of the project. The length of the project in both directions is just over 3.5' (NB MM 234.1 to MM 237.7; SB MM 237.9 to MM 234.2).

Relevancy: *VDOT Design-Build; Interstate Roadway; Structures/Bridges; Environmental; Geotechnical; Hydraulics; Traffic Control Devices; TMP/MOT; Utility Coordination/Relocation; Public Involvement/Relations; ITS Components*

London Bridge Rd Interchange, Virginia Beach, VA, $10 Million, Virginia Department of Transportation	
With Current Firm? No	Project Role: Senior Construction Engineer
Start Date: May 2012	End Date: January 2014

Senior Construction Engineer. Paul was brought into this project during construction as a Senior Construction Engineer to remedy processes and metrics that were not being met. His responsibilities included review and approval of contractor payments, as well as preparation, review, and submission of change orders. He oversaw the direction/management of inspection staff and the preparation, response, and tracking of all contract documentation. Paul reviewed Daily Work Reports and Final Reports for project closeout generated by Inspectors.

This project involved adding an exit to the heavily traveled interstate 264 East and an on ramp from London Bridge Road to I-264 West in the city of Virginia Beach. Construction involved close proximity to environmental constraints, utility conflicts, the construction of a 20'+ gravity retaining wall, bridge widening, and close coordination with city representatives and stakeholders.

Relevancy: *VDOT Design-Bid-Build; Interstate Roadway; Structures/Bridges; Environmental; Geotechnical; Traffic Control Devices; TMP/MOT; ROW Acquisition; Utility Coordination/Relocation; Public Involvement/Relations; Construction Engineering/Inspection; Project Management*

I-664 THMACO and Concrete Pavement Repairs, Suffolk/ Chesapeake, $15 Million, Virginia Department of Transportation	
With Current Firm? No	Project Role: Construction Manager/Area Construction Engineer
Start Date: May 2010	End Date: October 2012

Construction Manager/Area Construction Engineer. Paul was responsible for reviewing the project QA/QC plan, conducting constructability and biddability reviews, generating and review of CEI budgets, interpreting and applying contracts, special provisions, and specifications, preparing detailed reports on review findings, and regularly presenting the status of this project before the District Engineer. Paul provided technical assistance and recommendations to Design Engineers and other disciplines with the intent of improving the project delivery process within the Department. Lastly, he was responsible for Notice of Intent (NOI) and claims analysis on this project.

This project involved the rehabilitation of the concrete pavement on I-664, both NB and SB lanes, from one-half mile north of Route 58 to the south side of the Monitor-Merrimac Memorial Bridge-Tunnel (approximately 12 miles). In addition to concrete patching, the project called for joint sealing, shoulder restoration, under-drain improvements, and a Thin Hot Mix Asphalt Concrete Overlay (THMACO) to extend the life of the roadway.

Relevancy: *VDOT Interstate Roadway; Traffic Control Devices; TMP/MOT; Public Involvement/Relations; ITS Components; Construction Engineering/Inspection; Project Management*

I-64 GAP SEGMENT A WIDENING TECHNICAL PROPOSAL VOLUME II

VIRGINIA DEPARTMENT OF TRANSPORTATION

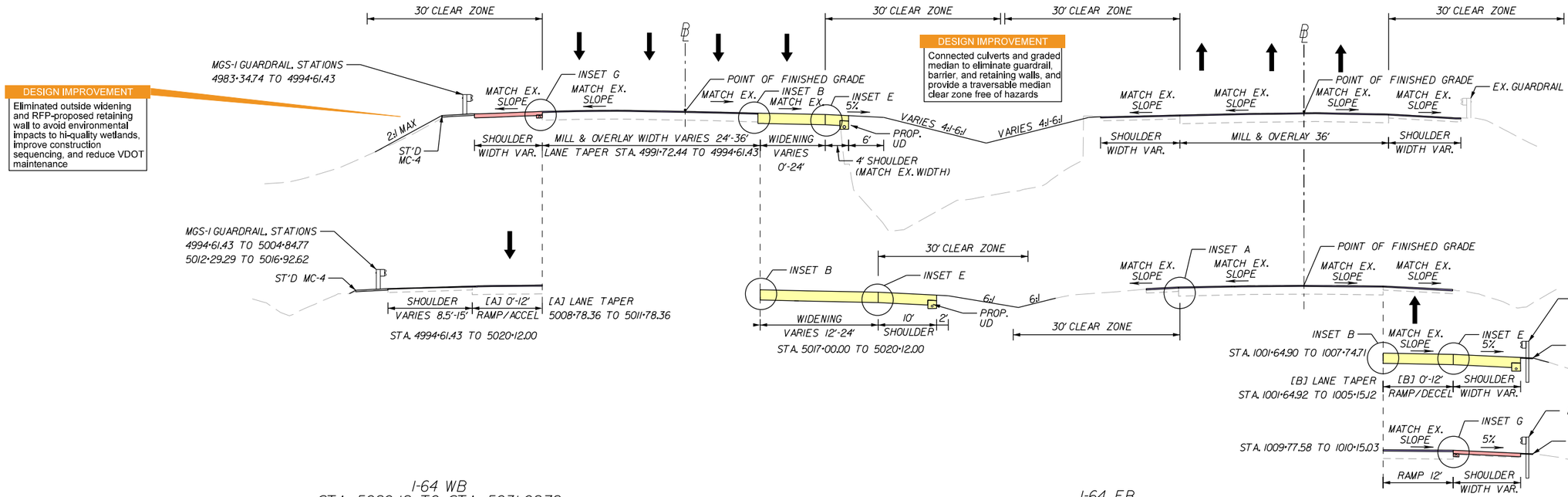
June 22, 2023

A DESIGN-BUILD PROJECT
State Project No.: 0064-063-623 P101, R201, C501, B601, B602
Federal Project No.: NHPP-064-3(545)
Contract ID Number: C00122166DB119

kokosing
CONSTRUCTION COMPANY, INC.
6235 WESTERVILLE ROAD
WESTERVILLE, OH 43081

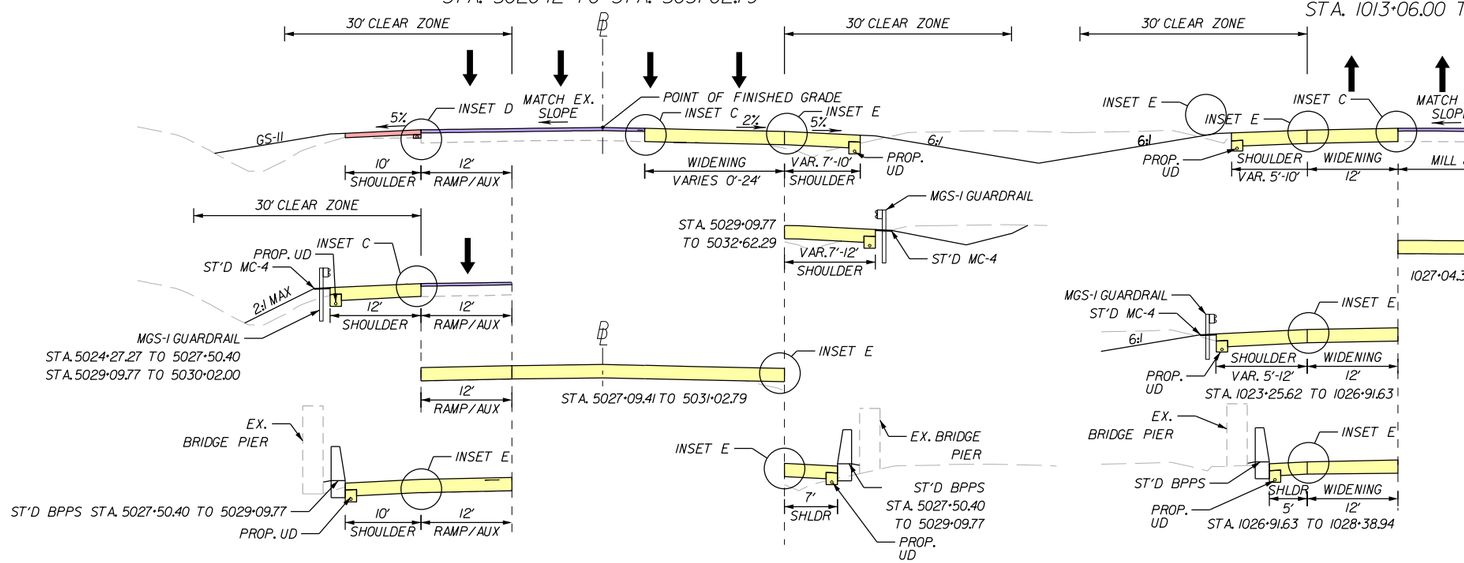
TYPICAL SECTIONS

I-64 WB
STA. 4983+34.73 TO STA. 5020+12.00

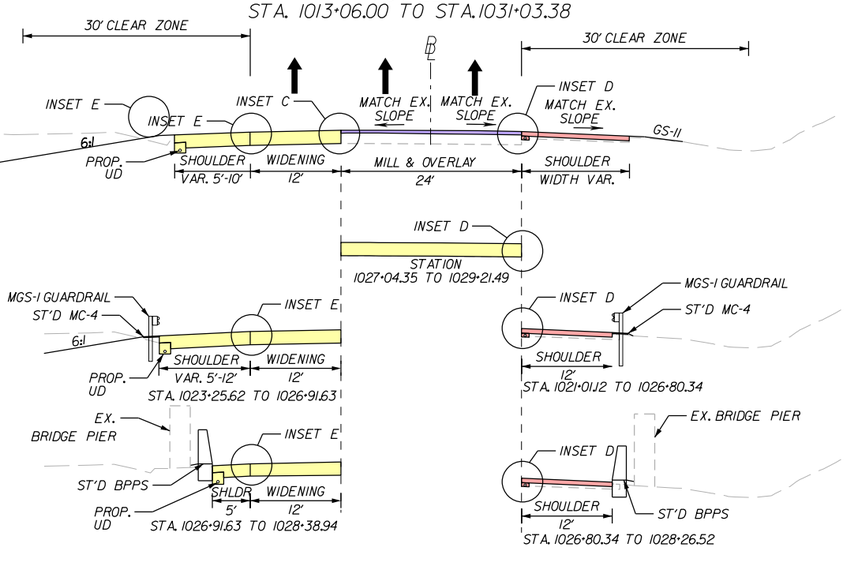


I-64 EB
STA. 996+64.33 TO STA. 1013+06.00

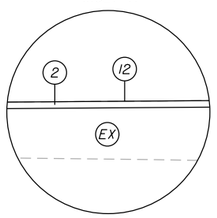
I-64 WB
STA. 5020+12 TO STA. 5031+02.79



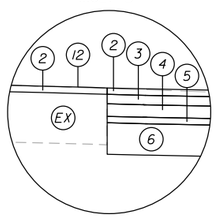
I-64 EB
STA. 1013+06.00 TO STA. 1031+03.38



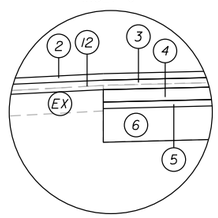
INSET A



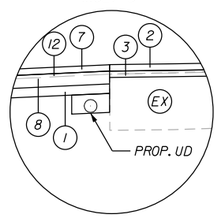
INSET B



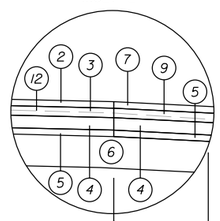
INSET C



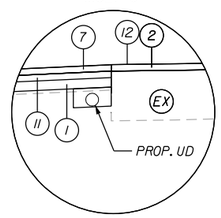
INSET D



INSET E



INSET G



LEGEND

- (EX) EXISTING PAVEMENT/BASE MATERIAL
- (1) 3 INCHES BM-25.0D
- (2) 2 INCHES SMA-12.5 (64E-22)
- (3) 3 INCHES SMA-19.0 (64E-22)
- (4) 4 INCHES BM-25.0D
- (5) 2 INCHES OF OPEN GRADED DRAINAGE LAYER
- (6) 10 INCHES SUBBASE PER RFP
- (7) 2 INCHES SM-12.5D
- (8) 5 INCHES IM-19.0D
- (9) 3 INCHES IM-19.0D
- (10) 6 INCHES BM-25.0D
- (11) 2 INCHES IM-19.0D
- (12) 2 INCHES MILLING

No Commitment on the type of minimum pavement structure being proposed

NOTE: CTA SUBBASE OPTION NOT DEPICTED, BUT IS BEING CONSIDERED FOR THE PROJECT, INCLUDING FOR CERTAIN AREAS SUCH AS CONSTRUCTION ENTRANCES.

I-64 GAP SEGMENT A WIDENING

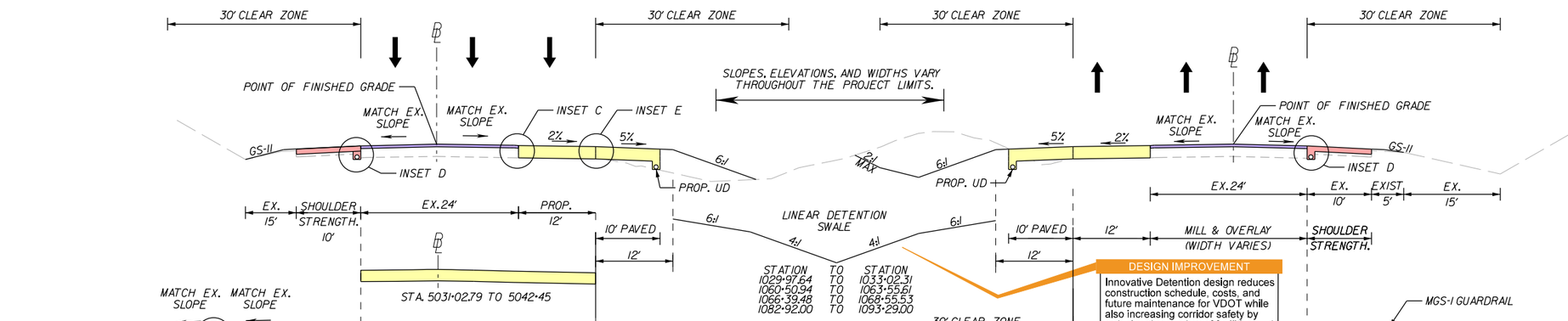
kokosing CONSTRUCTION COMPANY, INC. | RK&K

NOT TO SCALE	PROJECT 0064-063-623	SHEET NO. 2A(1)

TYPICAL SECTIONS

* PVD. SHLDR WIDTH VARIES (SEE PLANS)

I-64 WB
STA. 5031+02.79 TO STA. 5570+00.00



STATION	TO	STATION	STATION	TO	STATION
5047+00.00	TO	5049+28.83	5470+68.11	TO	5472+85.23
5307+88.09	TO	5310+58.74	5491+56.67	TO	5494+06.38
5352+90.94	TO	5356+87.16	5535+53.46	TO	5537+53.10
5346+55.71	TO	5439+00.00			

STATION	TO	STATION	STATION	TO	STATION
5042+44.77	TO	5047+00.00	5467+69.54	TO	5470+68.11
5310+58.74	TO	5318+99.66	5494+06.38	TO	5501+26.15
5349+39.59	TO	5352+90.94	5530+67.24	TO	5535+53.46
5439+00.00	TO	5445+08.45			

STATION	TO	STATION	STATION	TO	STATION
5042+19.09	TO	5044+68.50	5401+91.29	TO	5404+22.02
5068+58.98	TO	5070+89.58	5514+21.85	TO	5515+98.25
5094+34.73	TO	5096+65.30	5517+43.96	TO	5520+51.76
5349+07.12	TO	5351+62.22	5530+37.95	TO	5532+68.53
5375+49.48	TO	5377+80.06	5538+12.32	TO	5541+41.31
			5556+77.88	TO	5559+08.42

STATION	TO	STATION	STATION	TO	STATION
5111+94.27	TO	5116+03.34			
5166+87.78	TO	5170+01.62			
5214+56.77	TO	5216+72.66			
5335+12.28	TO	5337+25.65			
5417+51.35	TO	5419+87.07			
5515+47.60	TO	5515+85.72			
5517+29.47	TO	5519+95.53			

STATION	TO	STATION
5111+08.32	TO	5111+94.27
5213+71.99	TO	5214+56.77
5416+66.57	TO	5417+51.35

STATION	TO	STATION
5193+84.90	TO	5193+04.90
5309+26.45	TO	5310+46.45
5466+33.06	TO	5467+53.06

I-64 EB
STA. 1029+21.02 TO STA. 1570+00.00

STATION	TO	STATION	STATION	TO	STATION	STATION	TO	STATION
1265+02.56	TO	1267+52.23	1467+42.79	TO	1475+95.80			
1289+02.81	TO	1291+52.41	1450+01.71	TO	1466+50.74			
1316+53.18	TO	1318+90.44	1500+10.09	TO	1502+27.71			
1420+84.67	TO	1423+21.95	1508+72.96	TO	1515+28.51			
			1516+73.71	TO	1517+08.09			

STATION	TO	STATION	STATION	TO	STATION
1108+73.15	TO	1110+87.83			
1165+45.27	TO	1168+25.75			
1209+21.97	TO	1213+32.80			
1330+20.44	TO	1332+33.43			
1413+92.90	TO	1416+09.49			
1512+76.34	TO	1515+42.38			
1516+86.83	TO	1517+21.27			

STATION	TO	STATION
1110+87.73	TO	1111+73.55
1213+32.80	TO	1214+17.59
1416+09.49	TO	1416+94.28
1332+33.43	TO	1333+37.22

STATION	TO	STATION
1045+98.33	TO	1082+15.62
1105+55.49	TO	1111+60.34

STATION	TO	STATION
1029+97.64	TO	1033+02.31
1060+50.94	TO	1063+55.61
1066+39.48	TO	1068+55.53
1082+92.00	TO	1093+29.00

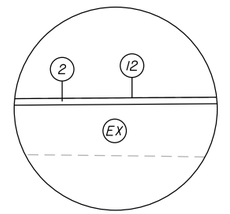
STATION	TO	STATION
1194+35.65	TO	1195+55.35
1309+12.52	TO	1310+35.52
1466+55.91	TO	1467+75.91

DESIGN IMPROVEMENT

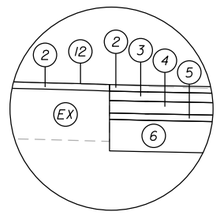
MSE walls at three existing box culvert locations reduce wetland and stream impacts while maintaining clear zone

NOTE: CTA SUBBASE OPTION NOT DEPICTED, BUT IS BEING CONSIDERED FOR THE PROJECT, INCLUDING FOR CERTAIN AREAS SUCH AS CONSTRUCTION ENTRANCES.

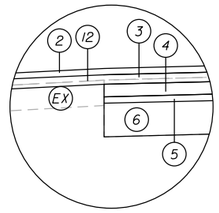
INSET A



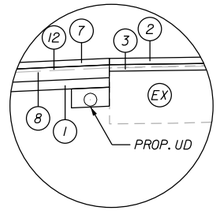
INSET B



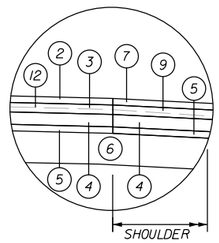
INSET C



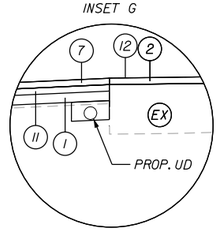
INSET D



INSET E



INSET G



LEGEND

EX	EXISTING PAVEMENT/BASE MATERIAL
1	3 INCHES BM-25.0D
2	2 INCHES SMA-12.5 (64E-22)
3	3 INCHES SMA-19.0 (64E-22)
4	4 INCHES BM-25.0D
5	2 INCHES OF OPEN GRADED DRAINAGE LAYER
6	10 INCHES SUBBASE PER RFP
7	2 INCHES SM-12.5D
8	5 INCHES IM-19.0D
9	3 INCHES IM-19.0D
10	6 INCHES BM-25.0D
11	2 INCHES IM-19.0D
12	2 INCHES MILLING

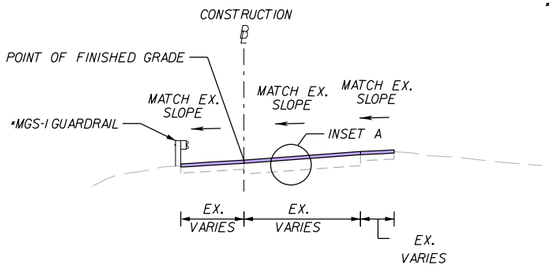
I-64 GAP SEGMENT A WIDENING

kokosing CONSTRUCTION COMPANY, INC. | RK&K

NOT TO SCALE	PROJECT 0064-063-623	SHEET NO. 2A(2)

TYPICAL SECTIONS

* SEE ROADWAY PLANS

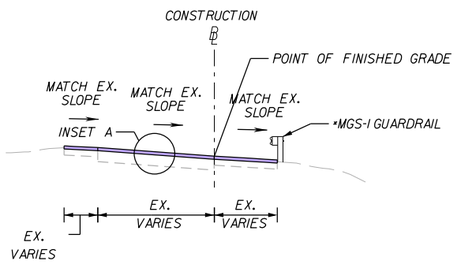


WB ON RAMP IA
STATION 532+05.00 TO STATION 532+75.82

WB REST AREA ON RAMP
STATION 306+08.45 TO STATION 308+17.81

WB REST AREA OFF RAMP
STATION 350+00.00 TO STATION 352+05.77

WB ON RAMP 3
STATION 19+01.46 TO STATION 21+27.11

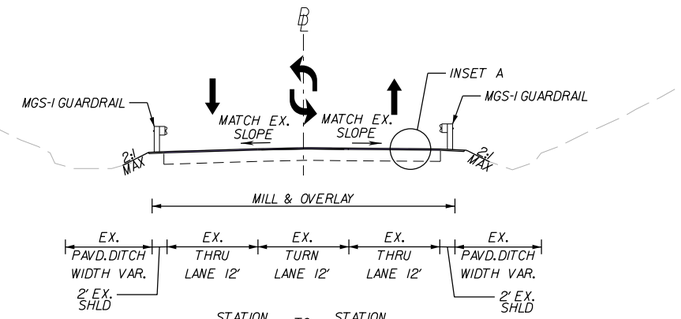


EB REST AREA OFF RAMP
STATION 400+00.00 TO STATION 409+20.25

EB REST AREA ON RAMP
STATION 450+00.00 TO STATION 468+86.23

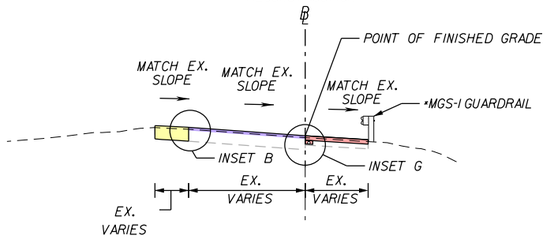
EB ON RAMP 3
STATION 70+00.00 TO STATION 82+59.41

RTE 155 CONSTR.



STATION 2001+51.31 TO STATION 2009+23.16

PARTIAL RAMP RECONSTRUCTION**



EB OFF RAMP 1
STATION 210+05.13 TO STATION 212+82.77

EB ON RAMP 1
STATION 438+19.45 TO STATION 440+82.09

WB ON RAMP 2
STATION 518+99.66 TO STATION 522+97.18

WB OFF RAMP 2
STATION 745+04.42 TO STATION 749+39.71

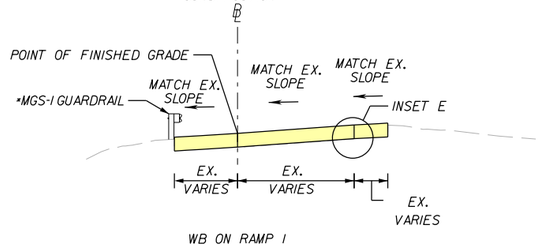
EB ON RAMP 2
STATION 843+66.10 TO STATION 856+04.71

EB OFF RAMP 2
STATION 167+92.92 TO STATION 174+29.92

WB OFF RAMP 3
STATION 50+00.00 TO STATION 53+12.62

EB OFF RAMP 3
STATION 30+00.00 TO STATION 37+87.25

FULL DEPTH RAMP CONSTRUCTION**



WB ON RAMP 1
STATION 109+90.31 TO STATION 112+61.41

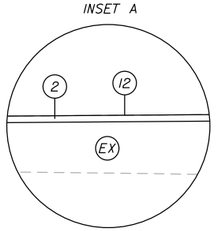
WB ON RAMP IA
STATION 531+11.67 TO STATION 532+05.00

WB OFF RAMP 1
STATION 339+38.10 TO STATION 342+46.59

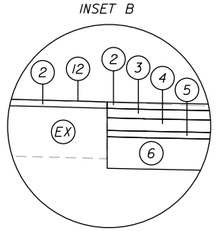
MEDIAN CROSSOVER

STATION 1065+15.92 (ST'D. CR-1)
STATION 1199+00.00 (ST'D. CR-1)
STATION 1292+43.98 (MATCH EXIST. WIDTH)
STATION 1364+10.00 (MATCH EXIST. WIDTH)
STATION 1546+20.79 (MATCH EXIST. WIDTH)

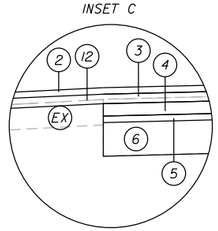
INSET A



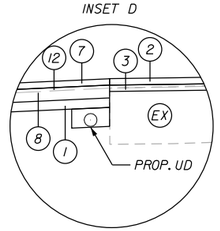
INSET B



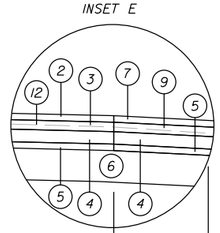
INSET C



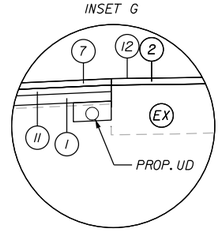
INSET D



INSET E



INSET G



LEGEND

- (EX) EXISTING PAVEMENT/BASE MATERIAL
- (1) 3 INCHES BM-25.0D
- (2) 2 INCHES SMA-12.5 (64E-22)
- (3) 3 INCHES SMA-19.0 (64E-22)
- (4) 4 INCHES BM-25.0D
- (5) 2 INCHES OF OPEN GRADED DRAINAGE LAYER
- (6) 10 INCHES SUBBASE PER RFP
- (7) 2 INCHES SM-12.5D
- (8) 5 INCHES IM-19.0D
- (9) 3 INCHES IM-19.0D
- (10) 6 INCHES BM-25.0D
- (11) 2 INCHES IM-19.0D
- (12) 2 INCHES MILLING

NOTE: CTA SUBBASE OPTION NOT DEPICTED, BUT IS BEING CONSIDERED FOR THE PROJECT, INCLUDING FOR CERTAIN AREAS SUCH AS CONSTRUCTION ENTRANCES.

* SEE PLANS FOR RAMP GUARDRAIL LOCATIONS
** SLOPE DEPICTION OF RAMP IS CONCEPTUAL AND NOT SHOWN INDIVIDUALLY FOR ALL RAMPS

I-64 GAP SEGMENT A WIDENING

kokosing CONSTRUCTION COMPANY, INC. | RK&K

NOT TO SCALE	PROJECT 0064-063-623	SHEET NO. 2A(3)

CONCEPTUAL ROADWAY PLAN

I-64 EASTBOUND
PI = 982+71.99
DELTA = 18°15'28.93" (RT)
D = 01°00'00"
T = 920.61'
L = 1,825.62'
R = 5,729.00'
PC = 973+51.38
PT = 991+77.00
e = 3.6 %
V = 70 MPH

I-64 WESTBOUND
PI = 4976+07.50
DELTA = 05°00'01.82" (RT)
D = 01°00'00"
T = 250.16'
L = 500.00'
R = 5,729.00'
PC = 4973+57.34
PT = 4978+57.34
e = 3.6%
V = 70 MPH

I-64 WESTBOUND
PI = 4985+48.69
DELTA = 14°14'02.87" (RT)
D = 01°02'05"
T = 691.34'
L = 1,375.57'
R = 5,537.00'
PC = 4978+57.34
PT = 4992+32.91
e = 3.7%
V = 70 MPH

I-64 WESTBOUND
PI = 4994+96.04
DELTA = 00°37'14.75" (LT)
D = 00°11'28"
T = 162.52'
L = 325.03'
R = 30,000.00'
PC = 4993+33.53
PT = 4996+58.56
e = NC
V = 70 MPH

BEGIN PROJECT 0064-063-623 P101, C501
I-64 WB STA. 4983+34.73
I-64 EB STA. 983+15.01

PI 4985+48.69

PI 982+71.99

PCC 4978+57.34

PROPOSED 300' TAPER

PC 4993+33.53

I-64 WB CONSTR. BASELINE

PT 4996+58.56

580°35'55"E
100.61'

PT 4992+32.91

PT 4994+96.04

581°19'58"E
1376.74'

PT 991+77.00

I-64 EB CONSTR. BASELINE

REMOVE EXIST. RETAINING WALLS, WING WALLS, AND GUARDRAIL

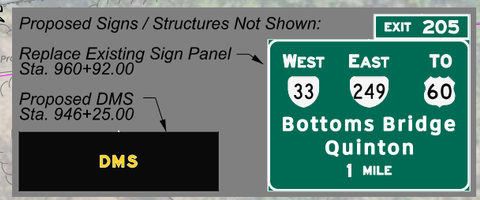
MATCH LINE STA. 1001+50 - SEE THIS SHEET

DESIGN IMPROVEMENT
840 additional LF of MASH standard guardrail provided over the RFP Concept

DESIGN IMPROVEMENT
Eliminated outside widening and RFP-proposed retaining wall to avoid environmental impacts to hi-quality wetlands, improve construction sequencing, and reduce VDOT maintenance

DESIGN IMPROVEMENT
Eliminated retaining walls and guardrail to provide traversable median clear zone without hazards

Proposed Signs / Structures Not Shown:
Replace Existing Sign Panel Sta. 960+92.00
Proposed DMS Sta. 946+25.00
DMS



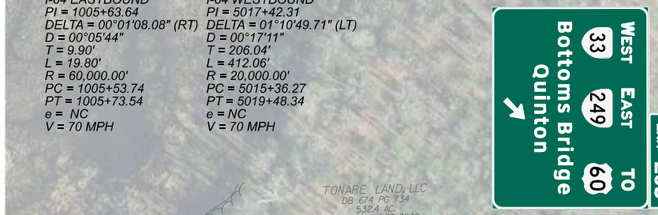
CONCEPTUAL ROADWAY PLAN

I-64 EASTBOUND
PI = 1005+63.64
DELTA = 00°01'08.08" (RT)
D = 00°05'44"
T = 9.90'
L = 19.80'
R = 60,000.00'
PC = 1005+53.74
PT = 1005+73.54
e = NC
V = 70 MPH

I-64 WESTBOUND
PI = 5017+42.31
DELTA = 01°10'49.71" (LT)
D = 00°17'11"
T = 206.04'
L = 412.06'
R = 20,000.00'
PC = 5015+36.27
PT = 5019+48.34
e = NC
V = 70 MPH

WB ONRAMP -1
PI = 107+43.04
DELTA = 01°10'49.71" (LT)
D = 00°17'13"
T = 205.67'
L = 411.32'
R = 19,964.00'
PC = 105+37.37
PT = 109+48.69
e = MATCH EX.
V = MATCH EX.

WB ONRAMP -1
PI = 111+27.53
DELTA = 21°52'38.00" (LT)
D = 08°04'11"
T = 137.22'
L = 271.10'
R = 710.00'
PC = 109+90.31
PT = 112+61.41
e = MATCH EX.
V = MATCH EX.



BEGIN WB ONRAMP - 1
STA. 101+79.45

END WB ONRAMP - 1
STA. 112+61.41

BEGIN WB ONRAMP - 1A
STA. 521+50.00

PROPOSED 2500' ACCEL. LANE

PROPOSED 300' TAPER

PROPOSED 780' ACCEL. LANE

I-64 WB CONSTR. BASELINE

PT 5019+48.34

PT 109+48.69

PC 109+90.31

PT 112+61.41

POT 521+50.00

PI 111+27.53

PC 105+37.37

PC 5015+36.27

PI 107+43.04

POT 101+79.45

S81°13'10"E
1877.72'

S81°13'10"E
357.92'

S82°24'00"E
41.62'

S82°24'00"E
407.55'

S82°24'00"E
609.67'

S81°18'52"E
430.42'

350' TAPER

10' PAVED SHOULDER

I-64 EASTBOUND

I-64 EB CONSTR. BASELINE

PROP. 350' TAPER

PROP. 490' DECEL. LANE

BEGIN EB OFFRAMP - 1
STA. 204+74.71

END EB OFFRAMP - 1
STA. 212+82.77

POT 205+74.70

PC 1005+53.74

PC 1010+05.13

POT 212+82.76

PI 211+45.11

I-64 EB EXIT RAMP TO RTE 33

EB OFFRAMP -1
PI = 211+45.11
DELTA = 18°03'50.39" (RT)
D = 06°30'23"
T = 139.98'
L = 277.64'
R = 880.61'
PC = 210+05.13
PT = 212+82.76
e = MATCH EX.
V = MATCH EX.

I-64 WB ENT. RAMP FROM RTE 33 SB

MATCH LINE STA. 1001+50 - SEE THIS SHEET

MATCH LINE STA. 1025+50 - SEE NEXT SHEET

DESIGN IMPROVEMENT
Connected culverts and graded median to eliminate guardrail and barrier and provide a traversable median clear zone free of hazards

DESIGN IMPROVEMENT
Maintained existing ramp alignment, reducing MOT impacts and pavement reconstruction

DESIGN IMPROVEMENT
Avoided tree clearing and additional disturbance by eliminating RFP-proposed SWM facility

LEGEND

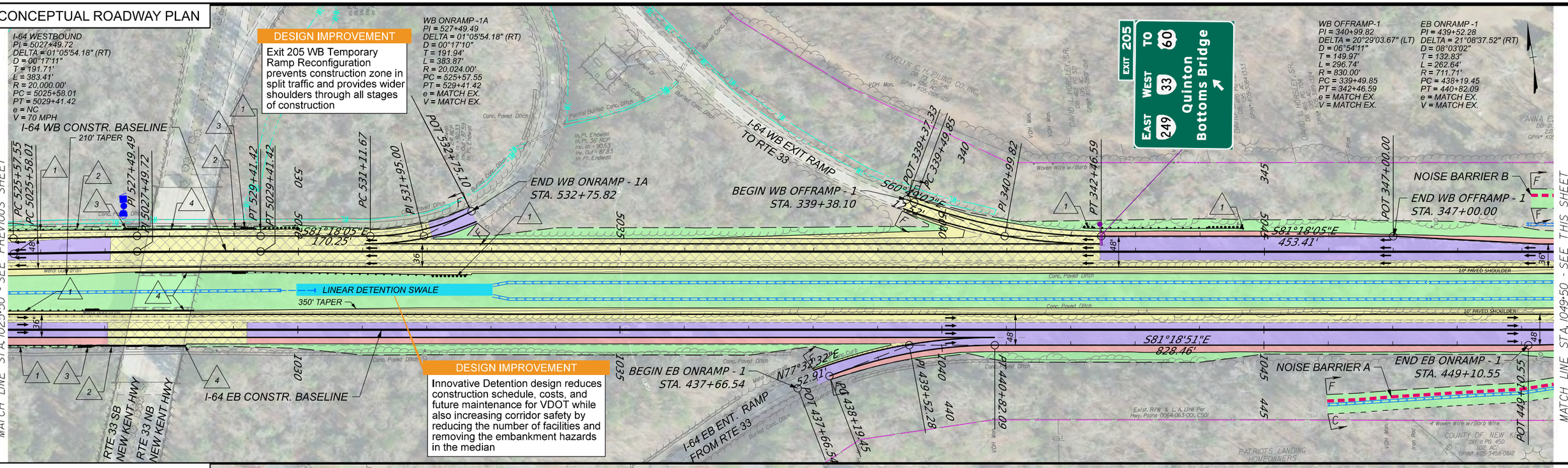
- FULL DEPTH PAVEMENT
- MILL & OVERLAY/BUILDUP
- SHOULDER STRENGTHENING
- PAVEMENT DEMOLITION
- BRIDGE WIDENING
- MEDIAN CROSSOVER
- GRADING
- PROPOSED DETENTION SWALE
- SWM ACCESS ROAD
- FORESTED AREA TO REMAIN
- ADDITIONAL FORESTED AREA TO REMAIN
- EXISTING LIMITED ACCESS
- PROPOSED NOISE BARRIER
- LIMITS OF CONSTRUCTION IN CUT
- LIMITS OF CONSTRUCTION IN FILL
- 1 PROPOSED STANDARD GR-MGS
- 2 REMOVE EXISTING GUARDRAIL
- 3 PROPOSED STANDARD GR-FOA
- 4 PROPOSED STANDARD BPPS
- 5 PROPOSED MSE WALL
- PROPOSED OVERHEAD SIGN STRUCTURE
- PROPOSED ITS DEVICE

I-64 GAP SEGMENT A WIDENING

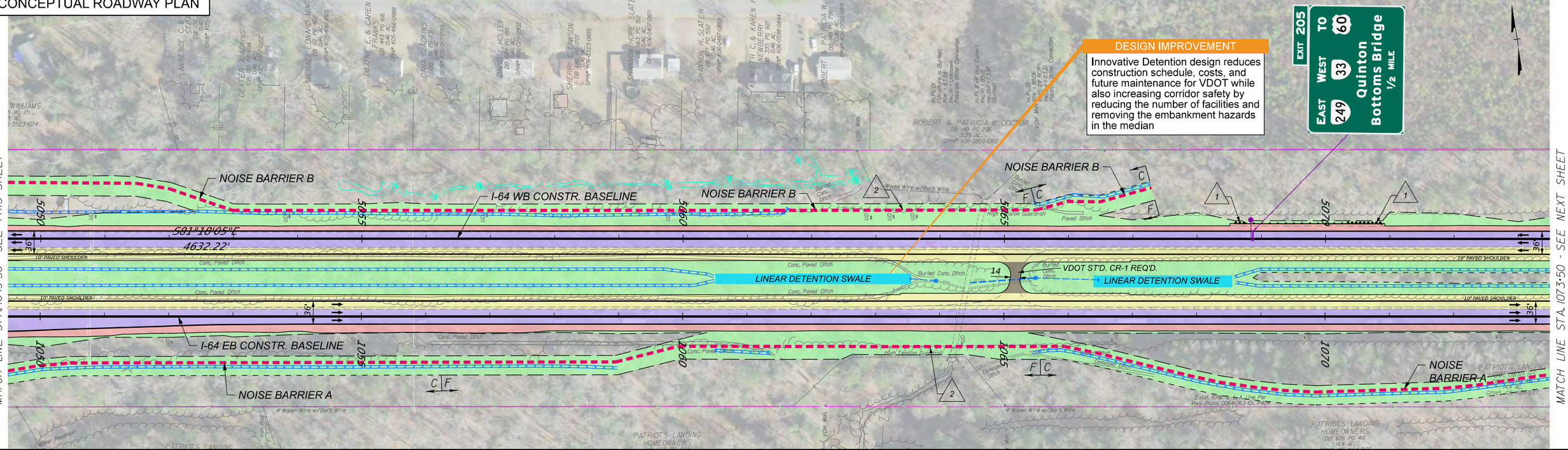
kokosing CONSTRUCTION COMPANY, INC. | RK&K

SCALE 0 75' 150' | PROJECT 0064-063-623 | SHEET NO. 03

CONCEPTUAL ROADWAY PLAN



CONCEPTUAL ROADWAY PLAN



LEGEND

- FULL DEPTH PAVEMENT
- MILL & OVERLAY/BUILDUP
- SHOULDER STRENGTHENING
- PAVEMENT DEMOLITION
- BRIDGE WIDENING
- MEDIAN CROSSOVER
- GRADING
- PROPOSED DETENTION SWALE
- SWM ACCESS ROAD
- FORESTED AREA TO REMAIN
- ADDITIONAL FORESTED AREA TO REMAIN
- EXISTING LIMITED ACCESS
- PROPOSED NOISE BARRIER
- LIMITS OF CONSTRUCTION IN CUT
- LIMITS OF CONSTRUCTION IN FILL
- 1 PROPOSED STANDARD GR-MGS
- 2 REMOVE EXISTING GUARDRAIL
- 3 PROPOSED STANDARD GR-FOA
- 4 PROPOSED STANDARD BPPS
- 5 PROPOSED MSE WALL
- PROPOSED OVERHEAD SIGN STRUCTURE
- PROPOSED ITS DEVICE

I-64 GAP SEGMENT A WIDENING

kokosing CONSTRUCTION COMPANY, INC. | RK&K

SCALE	PROJECT	SHEET NO.
0 75' 150'	0064-063-623	04

CONCEPTUAL ROADWAY PLAN

I-64 WESTBOUND
PI = 5080+98.67
DELTA = 00°45'07.34" (LT)
D = 00°04'18"
T = 525.03'
L = 1,050.04'
R = 80,000.00'
PC = 5075+73.64
PT = 5086+23.68
e = NC
V = 70 MPH

EXIT 205
EAST 249
WEST 33
TO 60
Quinton Bottoms Bridge
1 MILE

LEON B. BOWERY TRUST
DB 628 PG 512
103.58 AC
GPIN# K06-2414-1462

PC 5075+73.64
PI 5080+98.67
PT 5086+23.68

I-64 WB CONSTR. BASELINE
I-64 EB CONSTR. BASELINE
LINEAR DETENTION SWALE
S81°18'50"E
16021.75'

10' PAVED SHOULDER
36'
Gravel Shoulder
Buried Conc. Ditch
Paved Ditch
Conc. Flume
High Tension Guardrail
Woven Wire w/Barb Wire
Conc. Paved Ditch
Exist. R/W & L.A. Line Per Hwy. Plans 0064-063-101, P404
VDH Mon.

NOISE BARRIER A

DESIGN IMPROVEMENT
Improved drainage conveyance design bypasses existing culvert in "less than good" condition, avoiding the need to jack and bore a new pipe under I-64

DESIGN IMPROVEMENT
Innovative Detention design reduces construction schedule, costs, and future maintenance for VDOT while also increasing corridor safety by reducing the number of facilities and removing the embankment hazards in the median

MATCH LINE STA. 1073+50 - SEE PREVIOUS SHEET
MATCH LINE STA. 1097+50 - SEE THIS SHEET

CONCEPTUAL ROADWAY PLAN

DESIGN IMPROVEMENT
Extended DMS length to provide 30' outside clear zone and elminate the need for new guardrail

DMS

EMMA L. BOWERY TRUSTEE
DB 648, PG 1373
91.9 AC.
GPIN# K07-0602-4570

DIANE F. WEAVER
DB 509 PG 27
1/2 AC.
GPIN# K07-1348-0163

TIMOTHY DEPRIEST
DB 1151 PG 54
1/2 AC.
GPIN# K07-1339-0382

JONATHAN X. OZOVEK
DB 691 PG 972
4 AC.
GPIN# K07-1821-0210

SAM A. & SHARON T. EL-DADA
DB 354 PG 184
4 AC.
GPIN# K07-2228-0158

ALAN KEITH HELMS
DB 688 PG 1888
4 AC.
GPIN# K07-2571-0945

TIMOTHY O. SR. & DIANE W. HARRIS
DB 392, PG 629
8.469 AC.
GPIN# 307-20182-4159

BTE 685 N HEN RECORD

I-64 WB CONSTR. BASELINE
I-64 EB CONSTR. BASELINE

140' TAPER

NOISE BARRIER A1

DESIGN IMPROVEMENT
Improved drainage conveyance design bypasses existing culvert in "less than good" condition, avoiding the need to jack and bore a new pipe under I-64

Conc. Paved Ditch
Conc. Paved Ditch Divider
Overhead Sign
Woven Wire w/Barb Wire
Exist. R/W & L.A. Line Per Hwy. Plans 0064-063-101, P404

MATCH LINE STA. 1097+50 - SEE THIS SHEET
MATCH LINE STA. 1121+50 - SEE NEXT SHEET

LEGEND

- FULL DEPTH PAVEMENT
- MILL & OVERLAY/BUILDUP
- SHOULDER STRENGTHENING
- PAVEMENT DEMOLITION
- BRIDGE WIDENING
- MEDIAN CROSSOVER
- GRADING
- PROPOSED DETENTION SWALE
- SWM ACCESS ROAD
- FORESTED AREA TO REMAIN
- ADDITIONAL FORESTED AREA TO REMAIN
- EXISTING LIMITED ACCESS
- PROPOSED NOISE BARRIER
- LIMITS OF CONSTRUCTION IN CUT
- LIMITS OF CONSTRUCTION IN FILL
- 1 PROPOSED STANDARD GR-MGS
- 2 REMOVE EXISTING GUARDRAIL
- 3 PROPOSED STANDARD GR-FOA
- 4 PROPOSED STANDARD BPPS
- 5 PROPOSED MSE WALL
- PROPOSED OVERHEAD SIGN STRUCTURE
- PROPOSED ITS DEVICE

I-64 GAP SEGMENT A WIDENING

kokosing CONSTRUCTION COMPANY, INC. | RK&K

SCALE 0 75' 150'
PROJECT 0064-063-623
SHEET NO. 05

CONCEPTUAL ROADWAY PLAN

MATCH LINE STA. 1121+50 - SEE PREVIOUS SHEET

MATCH LINE STA. 1145+50 - SEE THIS SHEET

JAMES W. LAWSON JR. TRUSTEE
DB 683 PG 1086
5.099 AC.
GPIN# 307-3727-4551

WARNER F. EBERLY JR.
DB 665 Pg. 111
10.216 AC.
GPIN# 307-3602-4595

ANN H. SEITZ
DB 649 PG 1475
2.25 AC.
GPIN# 308-1904-4564

STEPHEN N. & GAYLE D. SCHUMAN
DB 412 PG 872
20.766 AC.

TYRON & LAUREEN S. TOWNSEND
DB 275 PG 763
6.388 AC.
GPIN# 308-0713-3570

I-64 WB CONSTR. BASELINE

S82°03'13"E
8067.20'

I-64 EB CONSTR. BASELINE

5125 5130 5135 5140 5145

1125 1130 1135 1140 1145

10' PAVED SHOULDER

36'

4' Woven Wire w/Barb Wire

Exist. R/W & L.A. Line Per Hwy. Plans 0064-063-101, P404

Conc. Paved Ditch

Buried Conc. Ditch

Grassed Ditch

High Tension Guardrail

W.O.U.S.

CONCEPTUAL ROADWAY PLAN

MATCH LINE STA. 1145+50 - SEE THIS SHEET

MATCH LINE STA. 1169+50 - SEE NEXT SHEET

ANN H. SEITZ
DB 36 PG 300
6.7/8 AC.
GPIN# 308-1925-3270

DONALD J. HOLMES
DB 615 Pg 1323
6.13 AC.
GPIN# 308-1061-3394

& LYNN E. MARKS
506 Pg 24
2.71 AC.
308-1931-3234

I-64 EASTBOUND
PI = 1178+18.09
DELTA = 06°06'30.58" (LT)
D = 00°15'00"
T = 1,222.80'
L = 2,443.27'
R = 22,917.16'
PC = 1165+95.29
PT = 1190+38.57
e = NC
V = 70 MPH

I-64 WESTBOUND
PI = 5177+65.85
DELTA = 05°22'16.18" (LT)
D = 00°15'00"
T = 1,074.97'
L = 2,148.36'
R = 22,917.16'
PC = 5166+90.88
PT = 5188+39.24
e = NC
V = 70 MPH

PC 1165+95.29

PC 5166+90.88

RTE 640

RTE 640 OLD RICHMOND RD

140' TAPER

I-64 WB CONSTR. BASELINE

I-64 EB CONSTR. BASELINE

5150 5155 5160 5165

1150 1155 1160 1165

DESIGN IMPROVEMENT

Removing over 18,000 LF of sub-standard and un-warranted guardrail project-wide, reducing VDOT maintenance

LEGEND

- FULL DEPTH PAVEMENT
- MILL & OVERLAY/BUILDUP
- SHOULDER STRENGTHENING
- PAVEMENT DEMOLITION
- BRIDGE WIDENING
- MEDIAN CROSSOVER
- GRADING
- PROPOSED DETENTION SWALE
- SWM ACCESS ROAD
- FORESTED AREA TO REMAIN
- ADDITIONAL FORESTED AREA TO REMAIN
- EXISTING LIMITED ACCESS
- PROPOSED NOISE BARRIER
- LIMITS OF CONSTRUCTION IN CUT
- LIMITS OF CONSTRUCTION IN FILL
- 1 PROPOSED STANDARD GR-MGS
- 2 REMOVE EXISTING GUARDRAIL
- 3 PROPOSED STANDARD GR-FOA
- 4 PROPOSED STANDARD BPPS
- 5 PROPOSED MSE WALL
- PROPOSED OVERHEAD SIGN STRUCTURE
- PROPOSED ITS DEVICE

I-64 GAP SEGMENT A WIDENING

kokosing CONSTRUCTION COMPANY, INC. | RK&K

SCALE 0 75' 150'

PROJECT 0064-063-623

SHEET NO. 06

CONCEPTUAL ROADWAY PLAN

I-64 EASTBOUND
PI = 1178+18.09
DELTA = 06°06'30.58" (LT)
D = 00°15'00"
T = 1,222.80'
L = 2,443.27'
R = 22,917.16'
PC = 1165+95.29
PT = 1190+38.57
e = NC
V = 70 MPH

I-64 WESTBOUND
PI = 5177+65.85
DELTA = 05°22'16.18" (LT)
D = 00°15'00"
T = 1,074.97'
L = 2,148.36'
R = 22,917.16'
PC = 5166+90.88
PT = 5188+39.24
e = NC
V = 70 MPH

DESIGN IMPROVEMENT
Provided over 40% increase in protected median forested areas from that required by the RFP

MATCH LINE STA. 1169+50 - SEE PREVIOUS SHEET

MATCH LINE STA. 1193+50 - SEE THIS SHEET

I-64 WB CONSTR. BASELINE

I-64 EB CONSTR. BASELINE

PT 5188+39.24

PI 5177+65.85

PI 1178+18.09

PT 1190+38.57

10' PAVED SHOULDER

36'

140' TAPER

4' Woven Wire w/Barb Wire

Conc. Paved Ditch

Buried Conc. Ditch

High Tension Guardrail

Cable Guardrail

Exist. R/W & L. A. Line Per Hwy. Plans 0064-063-101, P404

DOUGLAS RICE
DB 601 PG 611
9.23 AC.
GPIN# 308-3724-4001

NORMAN E. SR. & TRIVERR L. GRAY
DB 450 PG 1088
15 AC.
GPIN# 309-0018-4059

ERIC C. CRAVER
DB 1674 PG 300
29.096 AC.
GPIN# 309-1016-0456

STEVEN M. DAY
DB 642 PG 441
5.39 AC.
GPIN# 308-3573-3052

JAN C. FRANCK
WB 18 PG 103

STONE PROPERTY, LLC
NO DEED REFERENCE
5.04 AC.
GPIN# 309-0386-2923

KENNETH N. & SHIRLEY A. WHITE

CHARLES EDGAR WRIGHT JR. TRUST
DB 661 PG 244
6.55 AC.

ROBERT W. & BRENDA OLGERS
DB 161 PG 391
5.14 AC.

CONCEPTUAL ROADWAY PLAN

DESIGN IMPROVEMENT
MSE walls at existing box culverts reduce wetland and stream impacts while maintaining clear zone

I-64 WB CONSTR. BASELINE

I-64 EB CONSTR. BASELINE

RTE 612 AIRPORT RD

VDOT STD. CR-1 REQ'D.

14'

140' TAPER

DMS

DESIGN IMPROVEMENT
Improved drainage conveyance design bypasses existing culvert in "less than good" condition, avoiding the need to jack and bore a new pipe under I-64

DESIGN IMPROVEMENT
Extended DMS length to provide 30' outside clear zone and eliminate the need for new guardrail

KENNETH N. JOHNSON
DB 669 PG 167
15.12 AC.
GPIN# 309-1224-4309

PATRICIA L. & JAMES E. ANKROM
DB 181 PG 558
19.79 AC.
GPIN# 309-1224-3878

KAYLA S. ISAAC
NO DEED REFERENCE
25.55 AC.
GPIN# 309-1395-3657

BRUCE A. & CHERYL C. HALSEY

LEGEND

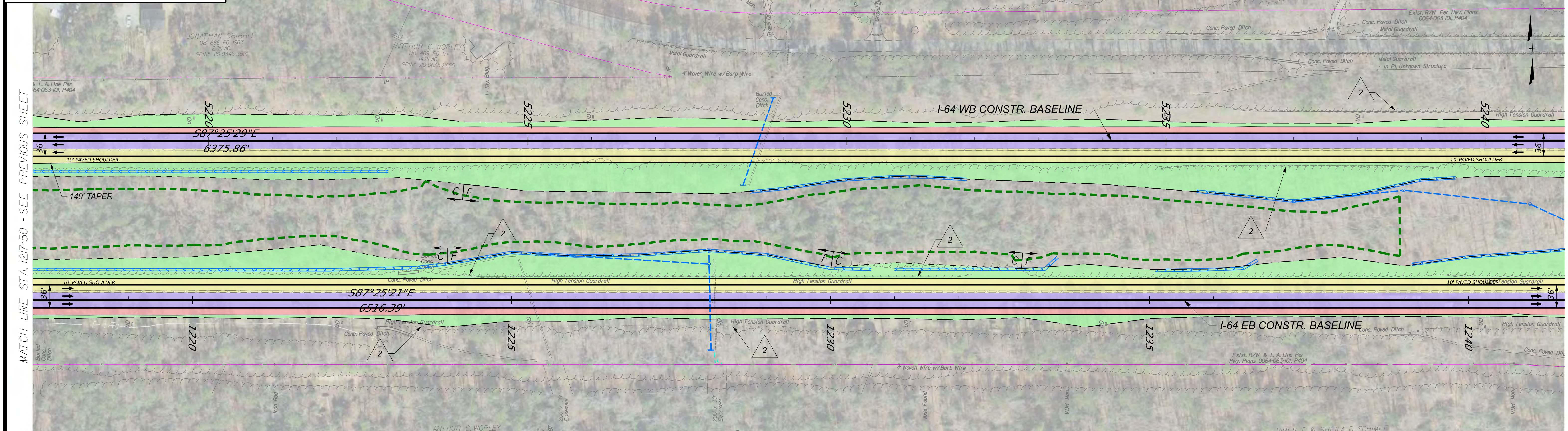
- FULL DEPTH PAVEMENT
- MILL & OVERLAY/BUILDUP
- SHOULDER STRENGTHENING
- PAVEMENT DEMOLITION
- BRIDGE WIDENING
- MEDIAN CROSSOVER
- GRADING
- PROPOSED DETENTION SWALE
- SWM ACCESS ROAD
- FORESTED AREA TO REMAIN
- ADDITIONAL FORESTED AREA TO REMAIN
- EXISTING LIMITED ACCESS
- PROPOSED NOISE BARRIER
- LIMITS OF CONSTRUCTION IN CUT
- LIMITS OF CONSTRUCTION IN FILL
- 1 PROPOSED STANDARD GR-MGS
- 2 REMOVE EXISTING GUARDRAIL
- 3 PROPOSED STANDARD GR-FOA
- 4 PROPOSED STANDARD BPPS
- 5 PROPOSED MSE WALL
- PROPOSED OVERHEAD SIGN STRUCTURE
- PROPOSED ITS DEVICE

I-64 GAP SEGMENT A WIDENING

kokosing CONSTRUCTION COMPANY, INC. | RK&K

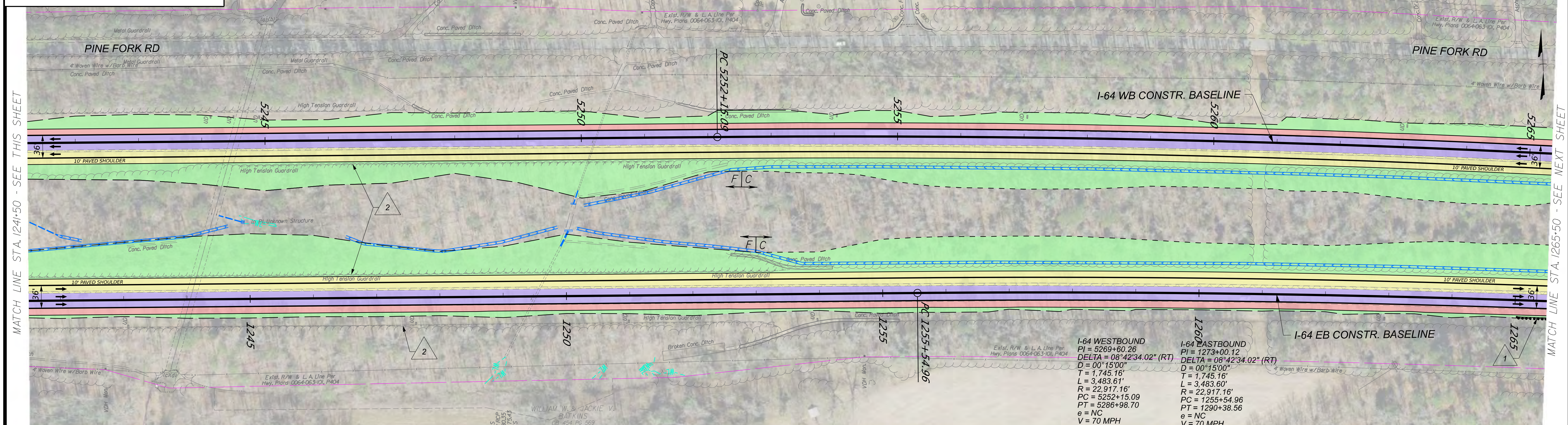
SCALE 0 75' 150' | PROJECT 0064-063-623 | SHEET NO. 07

CONCEPTUAL ROADWAY PLAN



MATCH LINE STA. 1217+50 - SEE PREVIOUS SHEET
I-64 WB CONSTR. BASELINE
S87°25'29"E
6375.86'
140' TAPER
10' PAVED SHOULDER
S87°25'21"E
6516.39'
I-64 EB CONSTR. BASELINE
5220
5225
5230
5235
5240
1220
1225
1230
1235
1240
High Tension Guardrail
Conc. Paved Ditch
4' Woven Wire w/Barb Wire
MATCH LINE STA. 1241+50 - SEE THIS SHEET

CONCEPTUAL ROADWAY PLAN



MATCH LINE STA. 1241+50 - SEE THIS SHEET
PINE FORK RD
I-64 WB CONSTR. BASELINE
PC 5252+15.09
PC 1255+54.96
I-64 EB CONSTR. BASELINE
5245
5250
5255
5260
5265
1245
1250
1255
1260
1265
10' PAVED SHOULDER
High Tension Guardrail
Conc. Paved Ditch
I-64 WESTBOUND
PI = 5269+60.26
DELTA = 08°42'34.02" (RT)
D = 00°15'00"
T = 1,745.16'
L = 3,483.61'
R = 22,917.16'
PC = 5252+15.09
PT = 5286+98.70
e = NC
V = 70 MPH
I-64 EASTBOUND
PI = 1273+00.12
DELTA = 08°42'34.02" (RT)
D = 00°15'00"
T = 1,745.16'
L = 3,483.60'
R = 22,917.16'
PC = 1255+54.96
PT = 1290+38.56
e = NC
V = 70 MPH
MATCH LINE STA. 1265+50 - SEE NEXT SHEET

LEGEND

- FULL DEPTH PAVEMENT
- MILL & OVERLAY/BUILDUP
- SHOULDER STRENGTHENING
- PAVEMENT DEMOLITION
- BRIDGE WIDENING
- MEDIAN CROSSOVER
- GRADING
- PROPOSED DETENTION SWALE
- SWM ACCESS ROAD
- FORESTED AREA TO REMAIN
- ADDITIONAL FORESTED AREA TO REMAIN
- EXISTING LIMITED ACCESS
- PROPOSED NOISE BARRIER
- C — LIMITS OF CONSTRUCTION IN CUT
- F — LIMITS OF CONSTRUCTION IN FILL
- 1 PROPOSED STANDARD GR-MGS
- 2 REMOVE EXISTING GUARDRAIL
- 3 PROPOSED STANDARD GR-FOA
- 4 PROPOSED STANDARD BPPS
- 5 PROPOSED MSE WALL
- PROPOSED OVERHEAD SIGN STRUCTURE
- PROPOSED ITS DEVICE

I-64 GAP SEGMENT A WIDENING

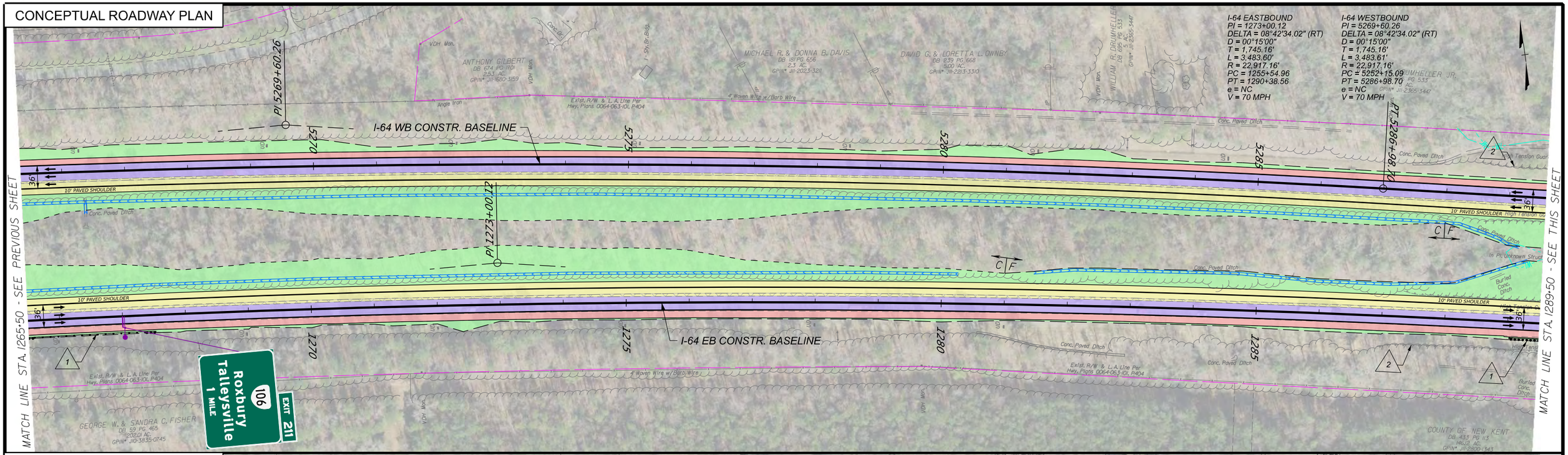
kokosing CONSTRUCTION COMPANY, INC. | RK&K

SCALE 0 75' 150'

PROJECT 0064-063-623

SHEET NO. 08

CONCEPTUAL ROADWAY PLAN



CONCEPTUAL ROADWAY PLAN

LEGEND

- FULL DEPTH PAVEMENT
- MILL & OVERLAY/BUILDUP
- SHOULDER STRENGTHENING
- PAVEMENT DEMOLITION
- BRIDGE WIDENING
- MEDIAN CROSSOVER
- GRADING
- PROPOSED DETENTION SWALE
- SWM ACCESS ROAD
- FORESTED AREA TO REMAIN
- ADDITIONAL FORESTED AREA TO REMAIN
- EXISTING LIMITED ACCESS
- PROPOSED NOISE BARRIER
- C — LIMITS OF CONSTRUCTION IN CUT
- F — LIMITS OF CONSTRUCTION IN FILL
- 1 PROPOSED STANDARD GR-MGS
- 2 REMOVE EXISTING GUARDRAIL
- 3 PROPOSED STANDARD GR-FOA
- 4 PROPOSED STANDARD BPPS
- 5 PROPOSED MSE WALL
- PROPOSED OVERHEAD SIGN STRUCTURE
- PROPOSED ITS DEVICE

I-64 GAP SEGMENT A WIDENING

kokosing CONSTRUCTION COMPANY, INC. | RK&K

SCALE	PROJECT	SHEET NO.
0 75' 150'	0064-063-623	09

CONCEPTUAL ROADWAY PLAN

MATCH LINE STA. 1313+50 - SEE PREVIOUS SHEET

WB ONRAMP -2
PI = 520+98.13
DELTA = 11°41'16.06" (LT)
D = 02°56'18"
T = 199.58'
L = 397.78'
R = 1,950.00'
PC = 518+98.55
PT = 522+96.33
e = MATCH EX.
V = MATCH EX.

I-64 WB CONSTR. BASELINE

S78°42'55"E
840.66'

PC 518+98.55

PI 520+98.13

POT 522+96.33

END WB ONRAMP - 2
STA. 522+97.18

I-64 WB ENT. RAMP
FROM RTE 609

S78°42'55"E
9558.05'

140' TAPER

140' TAPER

I-64 EB CONSTR. BASELINE

S78°42'47"E
281.07'

BEGIN EB OFFRAMP - 2
STA. 167+92.92

POT 167+92.92

PC 170+84.89

S64°40'46"E
95.23'

PT 173+34.69

POT 174+29.92

I-64 EB EXIT RAMP
TO RTE 609

END EB OFFRAMP - 2
STA. 174+29.92

EB OFFRAMP -2
PI = 172+10.42
DELTA = 14°02'00.13" (RT)
D = 05°37'04"
T = 125.53'
L = 249.80'
R = 1,019.90'
PC = 170+84.89
PT = 173+34.69
e = MATCH EX.
V = MATCH EX.

Roxbury
Talleysville
106
EXIT 211

DESIGN IMPROVEMENT
Provided over 40% increase in protected median forested areas from that required by the RFP

RTE 609 EMMAUS CHURCH RD

MATCH LINE STA. 1337+50 - SEE NEXT SHEET

CONCEPTUAL ROADWAY PLAN

MATCH LINE STA. 1337+50 - SEE THIS SHEET

I-64 WB EXIT RAMP
TO RTE 609

BEGIN WB OFFRAMP - 2
STA. 745+04.42

140' TAPER

POT 752+90.93

POT 752+40.70

PI 750+48.97

PC 748+55.64

N78°42'55"W
351.22'

POT 745+04.42

END WB OFFRAMP - 2
STA. 752+90.93

I-64 WB CONSTR. BASELINE

I-64 EB CONSTR. BASELINE

S78°42'47"E
1069.79'

S78°42'47"E
845.69'

WB OFFRAMP -2
PI = 750+48.97
DELTA = 12°45'30.49" (RT)
D = 03°18'48"
T = 193.33'
L = 385.06'
R = 1,729.24'
PC = 748+55.64
PT = 752+40.70
e = MATCH EX.
V = MATCH EX.

EB ONRAMP -2
PI = 845+63.31
DELTA = 12°15'44.09" (RT)
D = 03°07'15"
T = 197.21'
L = 392.92'
R = 1,835.95'
PC = 843+66.10
PT = 847+59.02
e = MATCH EX.
V = MATCH EX.

I-64 EB ENT. RAMP
FROM RTE 609

PI 845+63.31

PT 847+59.02

POT 843+66.10

BEGIN EB ONRAMP - 2
STA. 843+66.10

ACCESS RD

END EB ONRAMP - 2
STA. 856+04.71

ACCES

MATCH LINE STA. 1361+50 - SEE NEXT SHEET

LEGEND

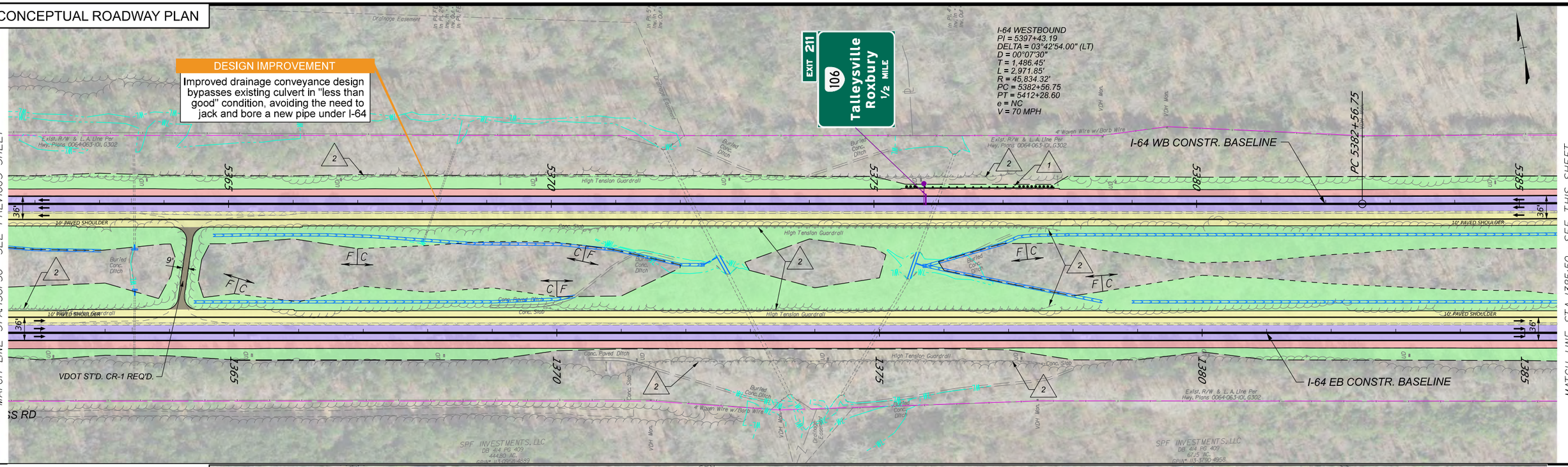
- FULL DEPTH PAVEMENT
- MILL & OVERLAY/BUILDUP
- SHOULDER STRENGTHENING
- PAVEMENT DEMOLITION
- BRIDGE WIDENING
- MEDIAN CROSSOVER
- GRADING
- PROPOSED DETENTION SWALE
- SWM ACCESS ROAD
- FORESTED AREA TO REMAIN
- ADDITIONAL FORESTED AREA TO REMAIN
- EXISTING LIMITED ACCESS
- PROPOSED NOISE BARRIER
- LIMITS OF CONSTRUCTION IN CUT
- LIMITS OF CONSTRUCTION IN FILL
- 1 PROPOSED STANDARD GR-MGS
- 2 REMOVE EXISTING GUARDRAIL
- 3 PROPOSED STANDARD GR-FOA
- 4 PROPOSED STANDARD BPPS
- 5 PROPOSED MSE WALL
- PROPOSED OVERHEAD SIGN STRUCTURE
- PROPOSED ITS DEVICE

I-64 GAP SEGMENT A WIDENING

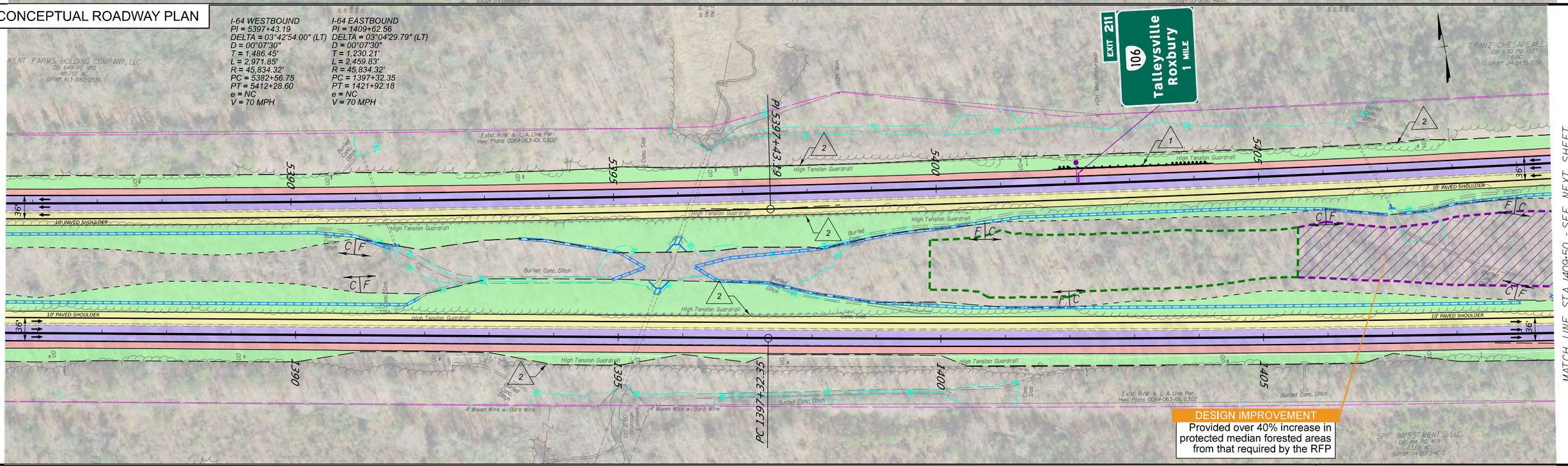
kokosing CONSTRUCTION COMPANY, INC. | RK&K

SCALE	PROJECT	SHEET NO.
0 75' 150'	0064-063-623	10

CONCEPTUAL ROADWAY PLAN



CONCEPTUAL ROADWAY PLAN



LEGEND							
FULL DEPTH PAVEMENT	PAVEMENT DEMOLITION	PROPOSED DETENTION SWALE	EXISTING LIMITED ACCESS	1 PROPOSED STANDARD GR-MGS	5 PROPOSED MSE WALL	I-64 GAP SEGMENT A WIDENING	
MILL & OVERLAY/BUILDUP	BRIDGE WIDENING	SWM ACCESS ROAD	PROPOSED NOISE BARRIER	2 REMOVE EXISTING GUARDRAIL	PROPOSED OVERHEAD SIGN STRUCTURE	kokosing CONSTRUCTION COMPANY, INC.	RK&K
SHOULDER STRENGTHENING	MEDIAN CROSSOVER	FORESTED AREA TO REMAIN	C LIMITS OF CONSTRUCTION IN CUT	3 PROPOSED STANDARD GR-FOA	PROPOSED ITS DEVICE	SCALE 0 75' 150'	PROJECT 0064-063-623
	GRADING	ADDITIONAL FORESTED AREA TO REMAIN	F LIMITS OF CONSTRUCTION IN FILL	4 PROPOSED STANDARD BPPS			SHEET NO. //

CONCEPTUAL ROADWAY PLAN

MATCH LINE STA. 1409+50 - SEE PREVIOUS SHEET

MATCH LINE STA. 1433+50 - SEE THIS SHEET

I-64 WB CONSTR. BASELINE

I-64 EB CONSTR. BASELINE

RTE 618

CHURCH RD

OLIVET

DESIGN IMPROVEMENT
Extended DMS length to provide 30' outside clear zone and eliminate the need for new guardrail

DESIGN IMPROVEMENT
Extended DMS length to provide 30' outside clear zone and eliminate the need for new guardrail

DESIGN IMPROVEMENT
Improved drainage conveyance design bypasses existing culvert in "less than good" condition, avoiding the need to jack and bore a new pipe under I-64

DMS

140' TAPER

VDOT ST'D. CR-1 REQ'D

155 Providence Forge New Kent CH 1½ MILES EXIT 214

I-64 WESTBOUND	I-64 EASTBOUND	I-64 WESTBOUND
PI = 5397+43.19	PI = 1409+62.56	PI = 5425+44.62
DELTA = 03°42'54.00" (LT)	DELTA = 03°04'29.79" (LT)	DELTA = 00°39'36.98" (RT)
D = 00°07'30"	D = 00°07'30"	D = 00°07'00"
T = 1,486.45'	T = 1,230.21'	T = 282.96'
L = 2,971.85'	L = 2,459.83'	L = 565.92'
R = 45,834.32'	R = 45,834.32'	R = 49,108.22'
PC = 5382+56.75	PC = 1397+32.35	PC = 5422+61.66
PT = 5412+28.60	PT = 1421+92.18	PT = 5428+27.57
e = NC	e = NC	e = NC
V = 70 MPH	V = 70 MPH	V = 70 MPH

CONCEPTUAL ROADWAY PLAN

MATCH LINE STA. 1433+50 - SEE THIS SHEET

MATCH LINE STA. 1457+50 - SEE NEXT SHEET

CRISS CROSS RD

BEGIN WB REST AREA ONRAMP - 1 STA. 300+00.00

I-64 WB CONSTR. BASELINE

S82°25'49"E 1033.06'

S81°46'12"E 608.45'

END WB REST AREA ONRAMP - 1 STA. 308+17.81

WB REST AREA ONRAMP -1
PI = 307+71.71
DELTA = 20°24'50.94" (LT)
D = 06°19'08"
T = 163.26'
L = 323.06'
R = 906.73'
PC = 306+08.45
PT = 309+31.51
e = MATCH EX.
V = MATCH EX.

DESIGN IMPROVEMENT
Provided over 40% increase in protected median forested areas from that required by the RFP

BEGIN EB REST AREA OFFRAMP - 1 STA. 400+00.00

I-64 EB CONSTR. BASELINE

S81°47'16"E 630.15'

UTILITY RELOCATION (VDOT ELEC)

END EB REST AREA OFFRAMP - 1 STA. 409+20.25

EB REST AREA OFFRAMP -1
PI = 407+77.52
DELTA = 24°52'13.97" (RT)
D = 08°34'23"
T = 147.37'
L = 290.10'
R = 668.38'
PC = 406+30.15
PT = 409+20.25
e = MATCH EX.
V = MATCH EX.

LEGEND

- FULL DEPTH PAVEMENT
- MILL & OVERLAY/BUILDUP
- SHOULDER STRENGTHENING
- PAVEMENT DEMOLITION
- BRIDGE WIDENING
- MEDIAN CROSSOVER
- GRADING
- PROPOSED DETENTION SWALE
- SWM ACCESS ROAD
- FORESTED AREA TO REMAIN
- ADDITIONAL FORESTED AREA TO REMAIN
- EXISTING LIMITED ACCESS
- PROPOSED NOISE BARRIER
- LIMITS OF CONSTRUCTION IN CUT
- LIMITS OF CONSTRUCTION IN FILL
- 1 PROPOSED STANDARD GR-MGS
- 2 REMOVE EXISTING GUARDRAIL
- 3 PROPOSED STANDARD GR-FOA
- 4 PROPOSED STANDARD BPPS
- 5 PROPOSED MSE WALL
- PROPOSED OVERHEAD SIGN STRUCTURE
- PROPOSED ITS DEVICE

I-64 GAP SEGMENT A WIDENING

kokosing CONSTRUCTION COMPANY, INC. | RK&K

SCALE 0 75' 150' | PROJECT 0064-063-623 | SHEET NO. 12

CONCEPTUAL ROADWAY PLAN

MATCH LINE STA.1457+50 - SEE NEXT SHEET

MATCH LINE STA.1481+50 - SEE THIS SHEET

I-64 WB CONSTR. BASELINE

BEGIN WB REST AREA OFFRAMP - 1 STA. 350+00.00

PC 350+00.00

PT 353+31.02

PI 351+69.19

UTILITY RELOCATION (VDOT ELEC)

DESIGN IMPROVEMENT

MSE walls at existing box culverts reduce wetland and stream impacts while maintaining clear zone

S81°46'12"E 6790.35'

S81°46'12"E 299.17'

END WB REST AREA OFFRAMP - 1 STA. 355+04.95

I-64 WB CONSTR. BASELINE

10' PAVED SHOULDER

S81°47'16"E 8850.13'

S81°47'16"E 1543.85'

I-64 EB CONSTR. BASELINE

Providence Forge New Kent CH 1/2 MILE

155

EXIT 214

WB REST AREA OFFRAMP -1
PI = 351+69.19
DELTA = 01°04'59.59" (LT)
D = 08°49'53"
T = 169.19'
L = 331.02'
R = 648.77'
PC = 350+00.00
PT = 353+31.02
e = MATCH EX.
V = MATCH EX.

EB REST AREA ONRAMP -1
PI = 451+52.92
DELTA = 21°04'08.33" (RT)
D = 06°58'03"
T = 152.92'
L = 302.38'
R = 822.32'
PC = 450+00.00
PT = 453+02.38
e = MATCH EX.
V = MATCH EX.

PI 451+52.92

POT 450+00.00

PT 453+02.38

CRISS CROSS PROPERTIES, LLC DB 629 PG 1988 128 AC. +/-

30' Standard Utility Easement For Va Electric & Power Company & Chesapeake & Potomac Co Of Va

50' Easement For Maintenance Of Proper Drainage Ditch

CONCEPTUAL ROADWAY PLAN

DESIGN IMPROVEMENT

Provided over 40% increase in protected median forested areas from that required by the RFP

BEGIN WB ONRAMP - 3 STA. 10+00.00

POT 10+00.00

PC 12+12.40

PC 5496+17.93

PI 5498+27.55

PT 5500+37.16

PC 16+88.11

END WB ONRAMP - 3 STA. 21+27.11

POT 21+27.11

PT 21+13.50

PI 19+01.46

212.40' S81°46'12"E

S80°41'13"E 1136'

N88°20'12"E 1136'

VDOT ST'D. CR-1 REQ'D

12'

10' PAVED SHOULDER

EXIST. 260' TAPER

END EB REST AREA ONRAMP - 1 STA. 468+86.23

POT 468+46.23

S81°47'16"E 424.70'

END EB OFFRAMP - 3 STA. 30+00.00

POT 30+00.00

Providence Forge New Kent CH

155

EXIT 214

EB OFFRAMP -3
PI = 35+48.37
DELTA = 13°48'29.06" (RT)
D = 05°36'36"
T = 123.66'
L = 246.13'
R = 1,021.30'
PC = 34+24.70
PT = 36+70.83
e = MATCH EX.
V = MATCH EX.

PI 35+48.37

PT 36+70.83

WB ONRAMP -3
PI = 14+22.25
DELTA = 01°04'59.10" (RT)
D = 00°15'29"
T = 209.85'
L = 419.69'
R = 22,201.90'
PC = 12+12.40
PT = 16+32.09
e = MATCH EX.
V = MATCH EX.

WB ONRAMP -3
PI = 19+01.46
DELTA = 10°58'35.00" (LT)
D = 02°34'49"
T = 213.35'
L = 425.39'
R = 2,220.50'
PC = 16+88.11
PT = 21+13.50
e = MATCH EX.
V = MATCH EX.

I-64 WESTBOUND
PI = 5498+27.55
DELTA = 01°04'59.10" (RT)
D = 00°15'30"
T = 209.62'
L = 419.24'
R = 22,177.90'
PC = 5496+17.93
PT = 5500+37.16
e = NC
V = 70 MPH

LEGEND

- FULL DEPTH PAVEMENT
- MILL & OVERLAY/BUILDUP
- SHOULDER STRENGTHENING
- PAVEMENT DEMOLITION
- BRIDGE WIDENING
- MEDIAN CROSSOVER
- GRADING
- PROPOSED DETENTION SWALE
- SWM ACCESS ROAD
- FORESTED AREA TO REMAIN
- ADDITIONAL FORESTED AREA TO REMAIN
- EXISTING LIMITED ACCESS
- PROPOSED NOISE BARRIER
- LIMITS OF CONSTRUCTION IN CUT
- LIMITS OF CONSTRUCTION IN FILL
- 1 PROPOSED STANDARD GR-MGS
- 2 REMOVE EXISTING GUARDRAIL
- 3 PROPOSED STANDARD GR-FOA
- 4 PROPOSED STANDARD BPPS
- 5 PROPOSED MSE WALL
- PROPOSED OVERHEAD SIGN STRUCTURE
- PROPOSED ITS DEVICE

I-64 GAP SEGMENT A WIDENING

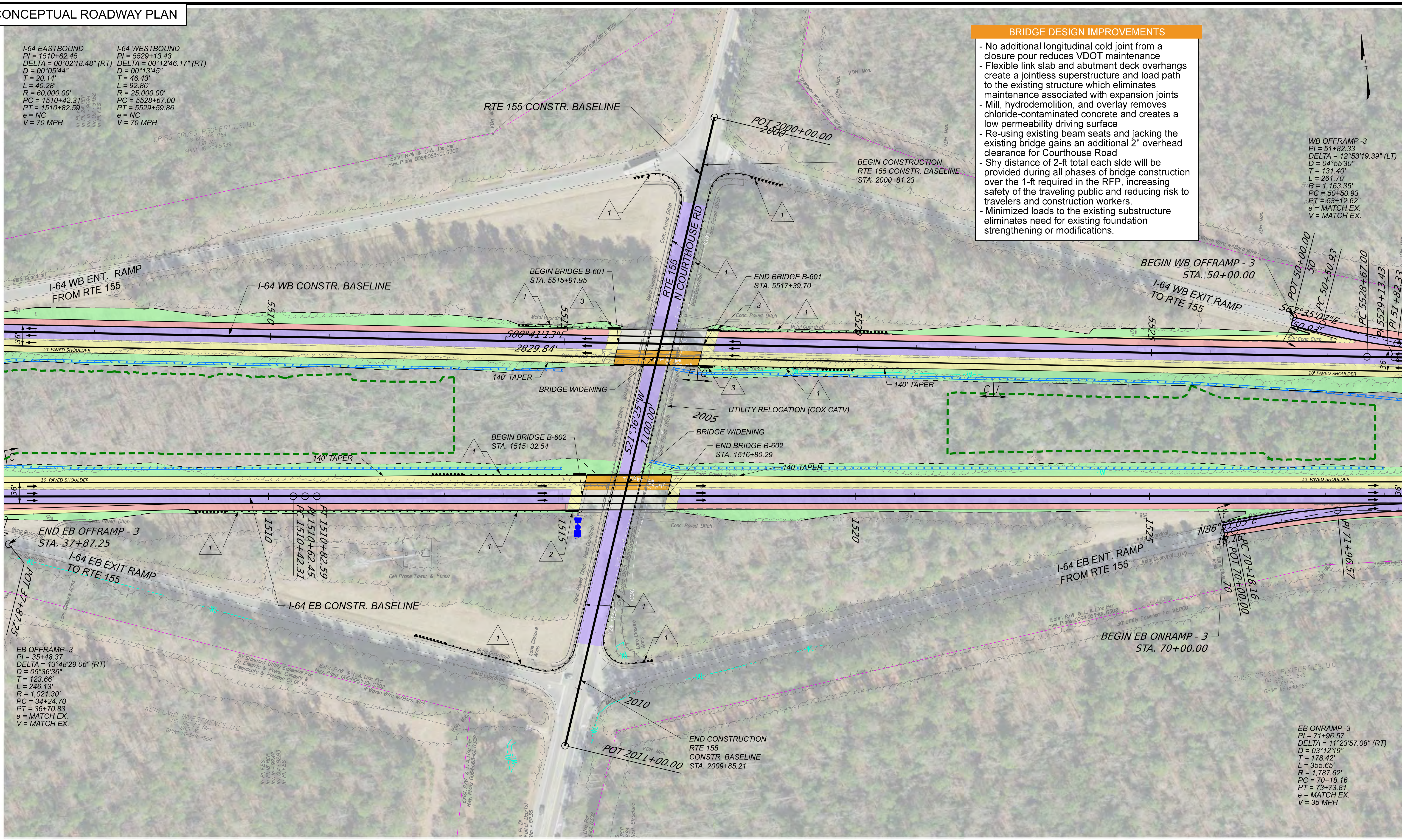
kokosing CONSTRUCTION COMPANY, INC. | RK&K

SCALE 0 75' 150'

PROJECT 0064-063-623

SHEET NO. 13

CONCEPTUAL ROADWAY PLAN



I-64 EASTBOUND
PI = 1510+62.45
DELTA = 00°02'18.48" (RT)
D = 00°05'44"
T = 20.14'
L = 40.28'
R = 60,000.00'
PC = 1510+42.31
PT = 1510+82.59
e = NC
V = 70 MPH
I-64 WESTBOUND
PI = 5529+13.43
DELTA = 00°12'46.17" (RT)
D = 00°13'45"
T = 46.43'
L = 92.86'
R = 25,000.00'
PC = 5528+67.00
PT = 5529+59.86
e = NC
V = 70 MPH
BRIDGE DESIGN IMPROVEMENTS
- No additional longitudinal cold joint from a closure pour reduces VDOT maintenance
- Flexible link slab and abutment deck overhangs create a jointless superstructure and load path to the existing structure which eliminates maintenance associated with expansion joints
- Mill, hydrodemolition, and overlay removes chloride-contaminated concrete and creates a low permeability driving surface
- Re-using existing beam seats and jacking the existing bridge gains an additional 2" overhead clearance for Courthouse Road
- Shy distance of 2-ft total each side will be provided during all phases of bridge construction over the 1-ft required in the RFP, increasing safety of the traveling public and reducing risk to travelers and construction workers.
- Minimized loads to the existing substructure eliminates need for existing foundation strengthening or modifications.
RTE 155 CONSTR. BASELINE
POT 2000+00.00
BEGIN CONSTRUCTION
RTE 155 CONSTR. BASELINE
STA. 2000+81.23
WB OFFRAMP -3
PI = 51+82.33
DELTA = 12°53'19.39" (LT)
D = 04°55'30"
T = 131.40'
L = 261.70'
R = 1,163.35'
PC = 50+50.93
PT = 53+12.62
e = MATCH EX.
V = MATCH EX.
I-64 WB ENT. RAMP
FROM RTE 155
I-64 WB CONSTR. BASELINE
BEGIN BRIDGE B-601
STA. 5515+91.95
END BRIDGE B-601
STA. 5517+39.70
RTE 155
N COURTHOUSE RD
BEGIN WB OFFRAMP - 3
STA. 50+00.00
I-64 WB EXIT RAMP
TO RTE 155
S80°41'13"E
2829.84'
140' TAPER
BRIDGE WIDENING
UTILITY RELOCATION (COX CATV)
S21°36'25"W
1100.00'
BEGIN BRIDGE B-602
STA. 1515+32.54
END BRIDGE B-602
STA. 1516+80.29
10' PAVED SHOULDER
MATCH LINE STA. 1505+50 - SEE PREVIOUS SHEET
MATCH LINE STA. 1529+50 - SEE PREVIOUS SHEET
END EB OFFRAMP - 3
STA. 37+87.25
I-64 EB EXIT RAMP
TO RTE 155
I-64 EB CONSTR. BASELINE
I-64 EB ENT. RAMP
FROM RTE 155
BEGIN EB ONRAMP - 3
STA. 70+00.00
EB OFFRAMP -3
PI = 35+48.37
DELTA = 13°48'29.06" (RT)
D = 05°36'36"
T = 123.66'
L = 246.13'
R = 1,021.30'
PC = 34+24.70
PT = 36+70.83
e = MATCH EX.
V = MATCH EX.
END CONSTRUCTION
RTE 155
CONSTR. BASELINE
STA. 2009+85.21
POT 2011+00.00
EB ONRAMP -3
PI = 71+96.57
DELTA = 11°23'57.08" (RT)
D = 03°12'19"
T = 178.42'
L = 355.65'
R = 1,787.62'
PC = 70+18.16
PT = 73+73.81
e = MATCH EX.
V = 35 MPH

LEGEND

FULL DEPTH PAVEMENT	PAVEMENT DEMOLITION
MILL & OVERLAY/BUILDUP	BRIDGE WIDENING
SHOULDER STRENGTHENING	MEDIAN CROSSOVER
	GRADING
PROPOSED DETENTION SWALE	EXISTING LIMITED ACCESS
SWM ACCESS ROAD	PROPOSED NOISE BARRIER
FORESTED AREA TO REMAIN	LIMITS OF CONSTRUCTION IN CUT
ADDITIONAL FORESTED AREA TO REMAIN	LIMITS OF CONSTRUCTION IN FILL
1 PROPOSED STANDARD GR-MGS	5 PROPOSED MSE WALL
2 REMOVE EXISTING GUARDRAIL	PROPOSED OVERHEAD SIGN STRUCTURE
3 PROPOSED STANDARD GR-FOA	PROPOSED ITS DEVICE
4 PROPOSED STANDARD BPPS	

I-64 GAP SEGMENT A WIDENING

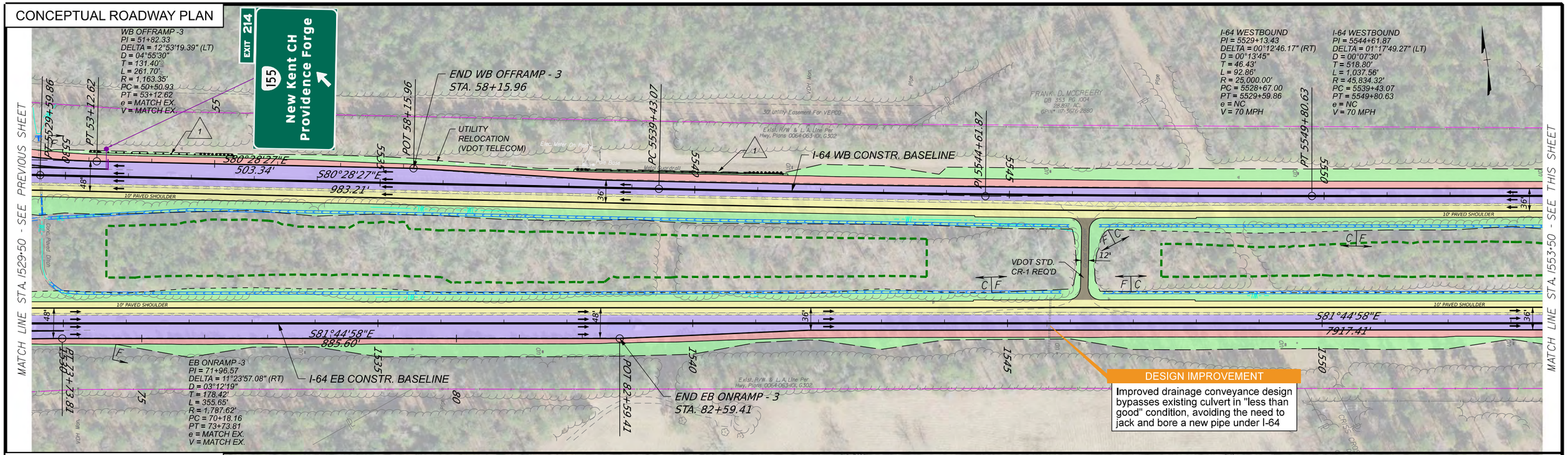
kokosing CONSTRUCTION COMPANY, INC. | RK&K

SCALE 0 75' 150'

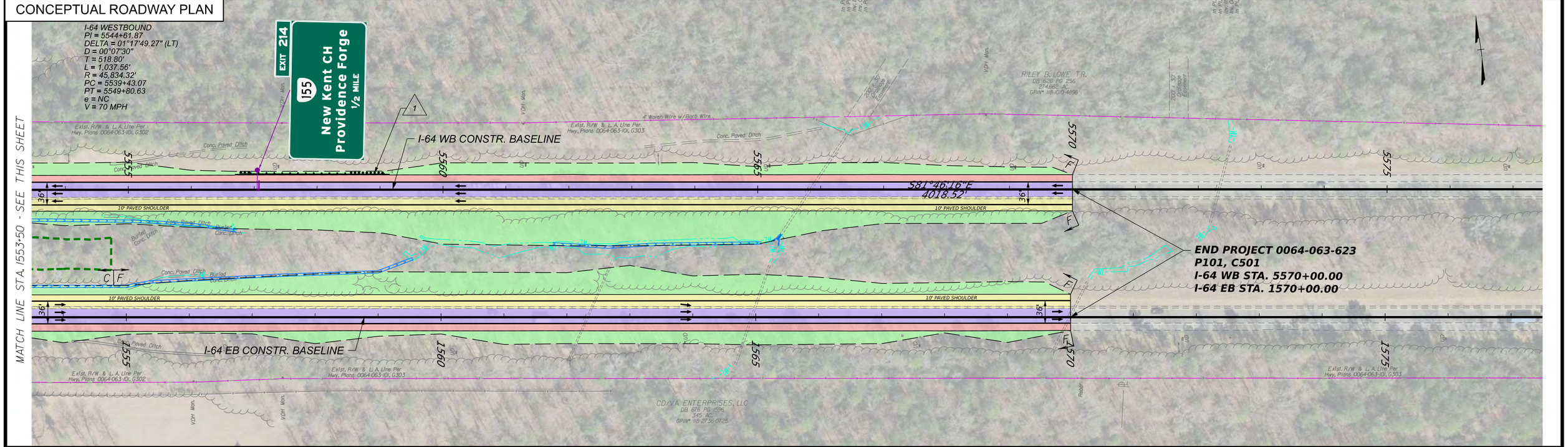
PROJECT 0064-063-623

SHEET NO. 14

CONCEPTUAL ROADWAY PLAN



CONCEPTUAL ROADWAY PLAN



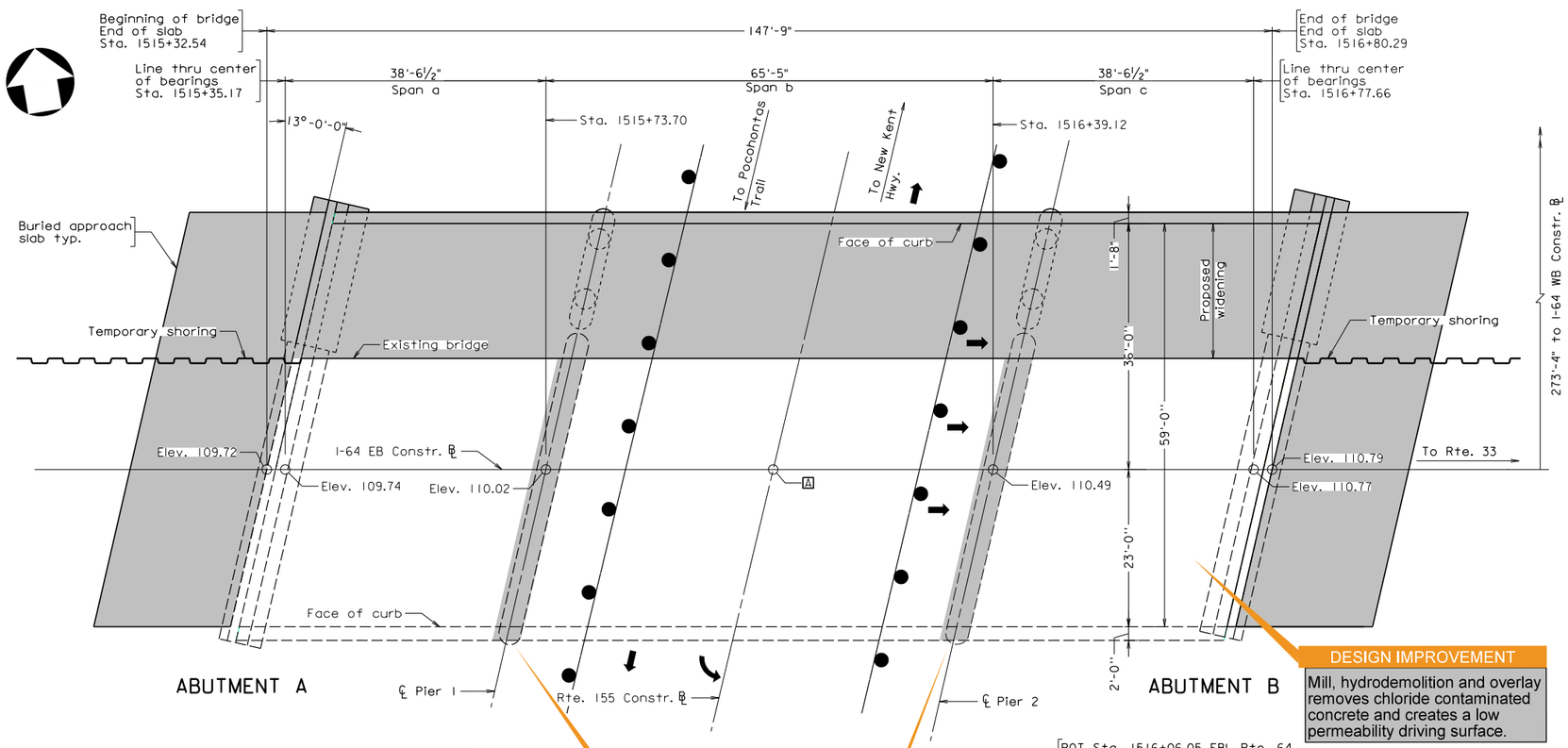
LEGEND

- FULL DEPTH PAVEMENT
- MILL & OVERLAY/BUILDUP
- SHOULDER STRENGTHENING
- PAVEMENT DEMOLITION
- BRIDGE WIDENING
- MEDIAN CROSSOVER
- GRADING
- PROPOSED DETENTION SWALE
- SWM ACCESS ROAD
- FORESTED AREA TO REMAIN
- ADDITIONAL FORESTED AREA TO REMAIN
- EXISTING LIMITED ACCESS
- PROPOSED NOISE BARRIER
- LIMITS OF CONSTRUCTION IN CUT
- LIMITS OF CONSTRUCTION IN FILL
- 1 PROPOSED STANDARD GR-MGS
- 2 REMOVE EXISTING GUARDRAIL
- 3 PROPOSED STANDARD GR-FOA
- 4 PROPOSED STANDARD BPPS
- 5 PROPOSED MSE WALL
- PROPOSED OVERHEAD SIGN STRUCTURE
- PROPOSED ITS DEVICE

I-64 GAP SEGMENT A WIDENING

kokosing CONSTRUCTION COMPANY, INC. | RK&K

SCALE 0 75' 150' | PROJECT 0064-063-623 | SHEET NO. 15



b109885_001.dgn

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—	NHPP-064-3(545)	64	0064-063-623, B601, B602	1
Federal Structure No. 000000000012671 000000000012669			FHWA Construction and Scour Code:		X281-SN
Federal Stewardship and Oversight Code:		FO		UPC No.	12285

DESIGN EXCEPTION(S):

GENERAL NOTES:

The original approved sheet, including original signatures, is filed in the VDOT Central Office. Any misuse of electronic files, including scanned signatures is illegal. Violators will be prosecuted to the full extent of the applicable laws.

Width: 59'-0" face-to-face of curb EB & WB. Includes widening of 19'-9" on left of traffic EB & WB.

Span layout: 38'-6½" - 65'-5" - 38'-6½" EB & WB

Capacity: HL-93 loading for widened portion of structure. HS-20 loading and alternate military loading for existing structure.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.

Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017; and VDOT Modifications.

Standards: Virginia Department of Transportation Road and Bridge Standards, 2016; including all current revisions.

These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.

Design loading includes 20 psf allowance for construction tolerances and construction methods for widened portion of structure.

Concrete in widened superstructure, parapets, deck slab extensions in existing structure, and link slabs in existing structure shall be Low Shrinkage Class A4 Modified in accordance with Section 217.12(a); in piers and abutments in widened structure, Class A3.

Prestressed concrete in widened structure shall be Class A5 having a minimum compressive cylinder strength at 28 days equal to 8,000 psi and a minimum compressive cylinder strength at time of release of strands equal to 6,000 psi.

Permeability testing does not apply to this project.

Concrete surface color coating shall be XXXXX, similar to Federal Standard Color No. 595-XXXXX.

All reinforcing steel shall be deformed and shall conform to ASTM A615, Grade 60 except for steels noted as Corrosion Resistant Reinforcing (CRR) which shall conform to Section 223 of the Specifications. All reinforcing bar dimensions on the detailed drawings are to centers of bars except where otherwise noted and are subject to fabrication and construction tolerances.

Prestressing strands shall be uncoated, seven-wire, low-relaxation steel strands conforming to ASTM A416 Grade 270.

Piles in the widened structure shall be ASTM A709 Grade 50 steel. All piles shall be driven to the required nominal axial resistance.

Bridge No. of existing bridge is 2008 (EB) and 2009 (WB). Existing Plan No. is 202-19.

VDOT

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PROPOSED BRIDGE WIDENING ON I-64 WB AND EB OVER RTE. 155 (N. COURTHOUSE RD.) NEW KENT CO. - 3.44 MI. TO RTE. 106 PROJ. 0064-063-623, B601, B602

kokosing CONSTRUCTION COMPANY, INC. | RK&K

Recommended for Approval: _____ District Project Development Engineer Date

Approved: _____ District Administrator Date

Date: June 16, 2023

Sheet 1 of 6

RK&K, LLP
RICHMOND, VA
STRUCTURAL ENGINEER

PLANS BY:	Consultant
COORDINATED:	
SUPERVISED:	Doug Cubbage
DESIGNED:	Will Lynes
DRAWN:	Madison Rose, Will Lynes
CHECKED:	Doug Cubbage

No.	Description	Date
	REVISIONS	

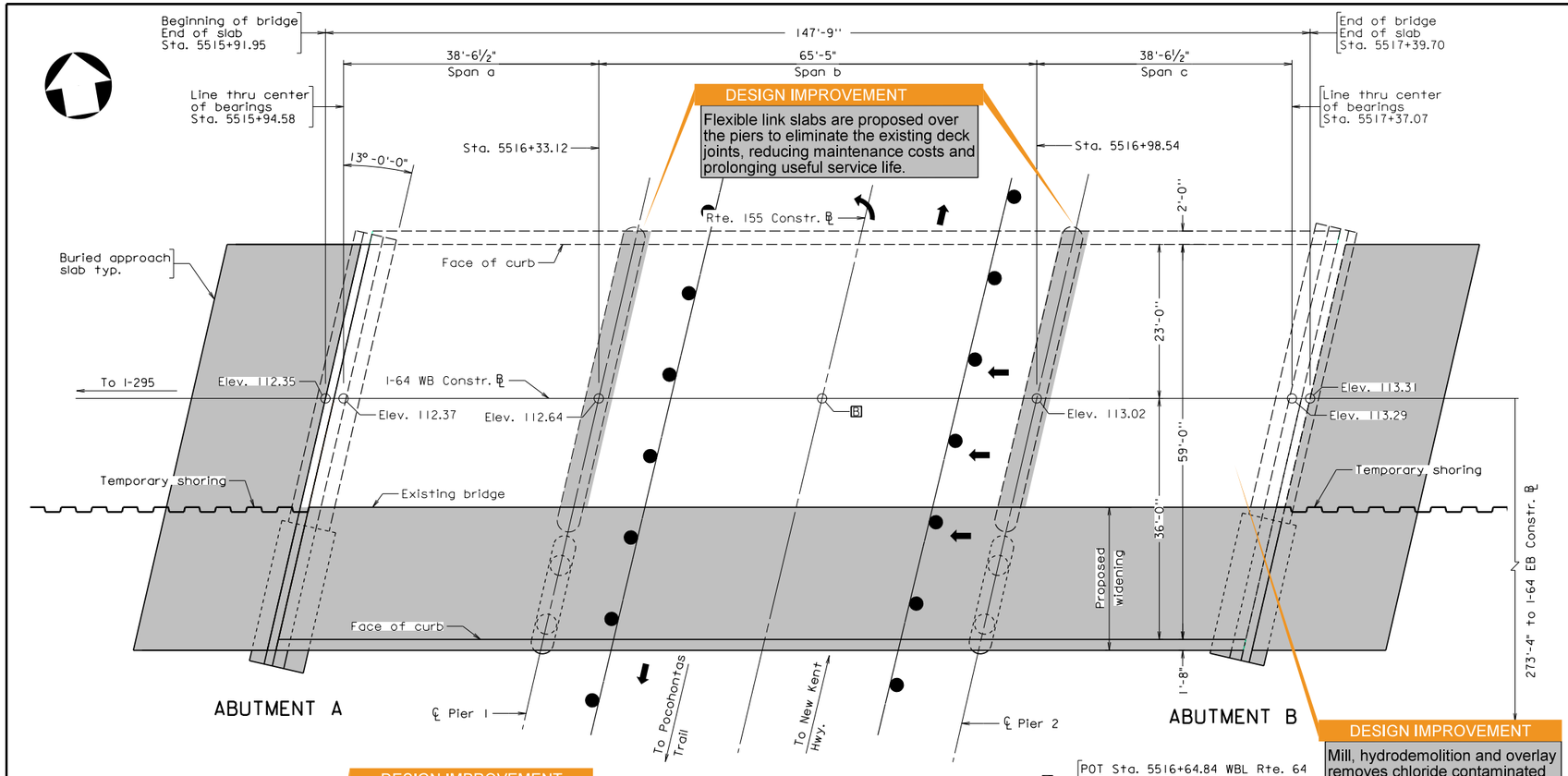
For Table of Revisions, see Sheet 2.

PRELIMINARY PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—		64	0064-063-623, B601, B602	2

For general notes, see Sheet 1



DEVELOPED SECTION ALONG WB CONSTR. ℄

Scale: 1" = 10'

CONCEPTUAL PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

Rummel, Klepper & Kahl, LLP
Richmond, Virginia
Structural Engineer

kokosing CONSTRUCTION COMPANY, INC. | RK&K

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

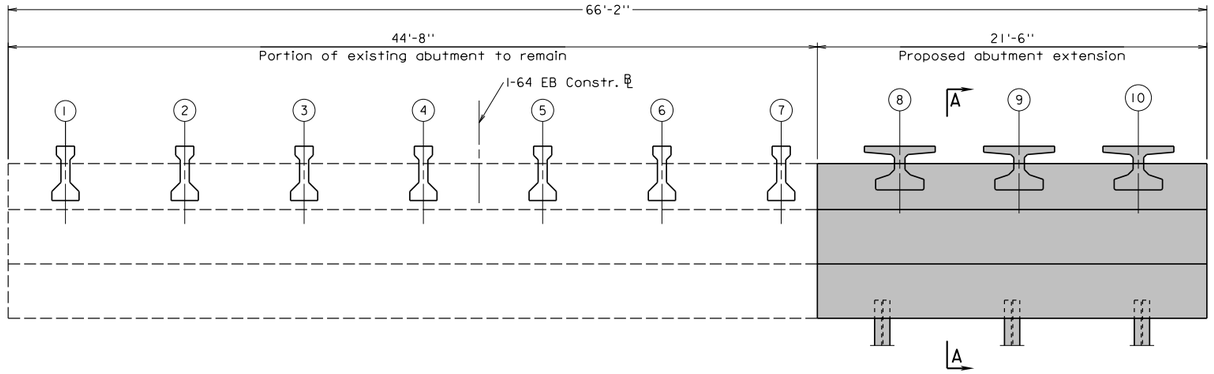
STRUCTURE AND BRIDGE DIVISION

I-64 WB OVER RTE. 155 PLAN AND DEVELOPED SECTION ALONG CONSTR. ℄

Designed: WJL
Drawn: WJL, MNR
Checked: DAC

Date	Plan No.	Sheet No.
June 2023	202-19A	2 of 6

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—		64	0064-063-623, B601, B602	3

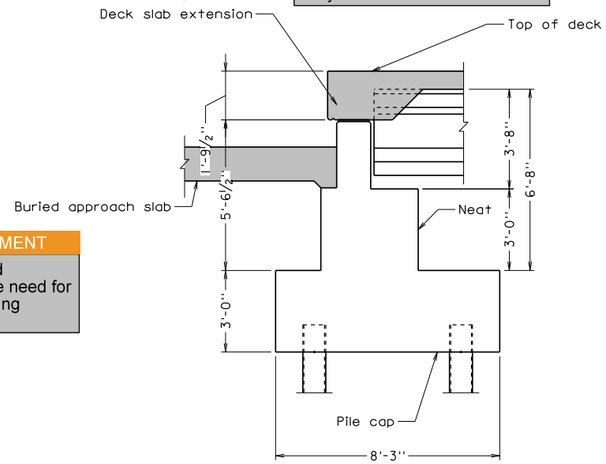


ABUTMENT EXTENSION ELEVATION

Abutment A Eastbound (looking west at abutment)
Scale: 1/4" = 1'

DESIGN IMPROVEMENT

VDOT Deck slab extension detail eliminates the deck joint at each abutment. Elimination of the deck joint extends the service life of the bridge and reduces maintenance costs over its lifecycle.

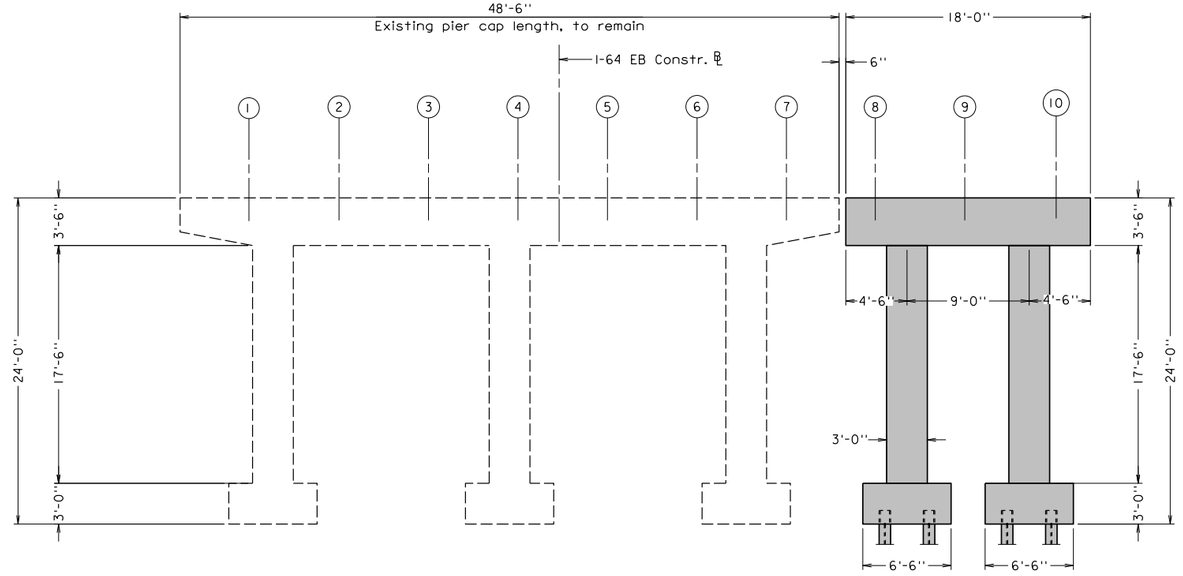


SECTION A-A

WIDENED ABUTMENT SECTION
Scale: 3/8" = 1'

DESIGN IMPROVEMENT

New piers and widened abutments preclude the need for strengthening the existing foundation.



PIER ELEVATION

Pier 1 Eastbound (looking west at pier)
Scale: 3/16" = 1'

DESIGN IMPROVEMENT

Re-using existing beam seats and jacking the existing bridge gains an additional 2" over clearance for Courthouse Road.

CONCEPTUAL PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

b109885_003.dgn

Rummel, Klepper & Kahl, LLP
Richmond, Virginia
Structural Engineer

kokosing CONSTRUCTION COMPANY, INC. | RK&K

No.	Description	Date
	Revisions	

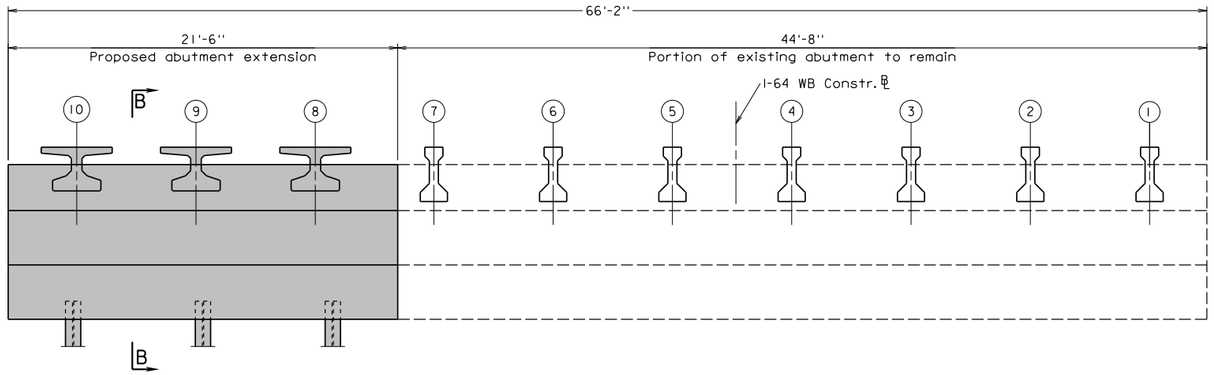
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

WIDENED ABUTMENT AND PROPOSED PIER DETAILS EASTBOUND

Designed: WJL	Date	Plan No.	Sheet No.
Drawn: WJL MNR	June 2023	202-19A	3 of 6
Checked: RAC			

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—		64	0064-063-623, B601, B602	4

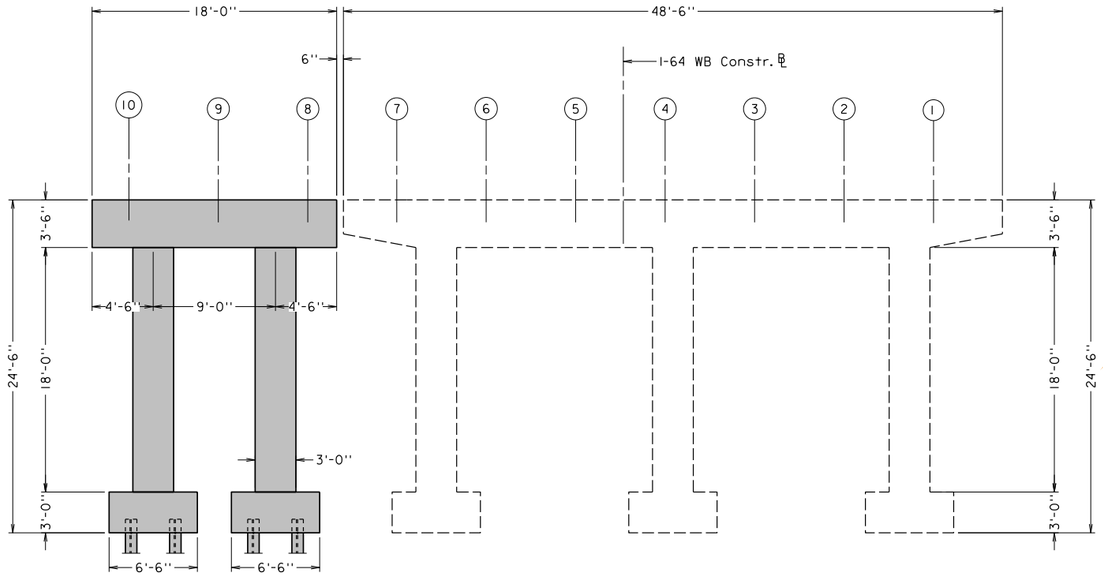


ABUTMENT EXTENSION ELEVATION

Abutment A Westbound (looking west at abutment)
Scale: 1/4" = 1'

DESIGN IMPROVEMENT

New piers and widened abutments preclude the need for strengthening the existing foundation.



PIER ELEVATION

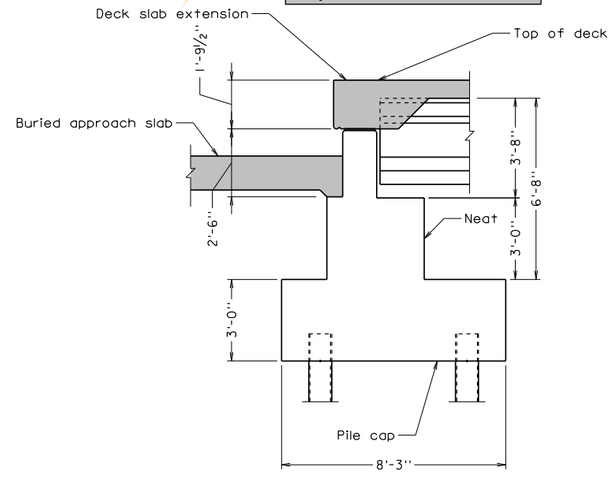
Pier 1 Westbound (looking west at pier)
Scale: 3/16" = 1'

DESIGN IMPROVEMENT

Re-using existing beam seats and jacking the existing bridge gains an additional 2" over clearance for Courthouse Road.

DESIGN IMPROVEMENT

VDOT Deck slab extension detail eliminates the deck joint at each abutment. Elimination of the deck joint extends the service life of the bridge and reduces maintenance costs over its lifecycle.



SECTION B-B

WIDENED ABUTMENT SECTION

Scale: 3/8" = 1'

b109885_004.dgn

Rummel, Klepper & Kahl, LLP
Richmond, Virginia
Structural Engineer

CONCEPTUAL PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

kokosing CONSTRUCTION COMPANY, INC. | RK&K

No.	Description	Date
	Revisions	

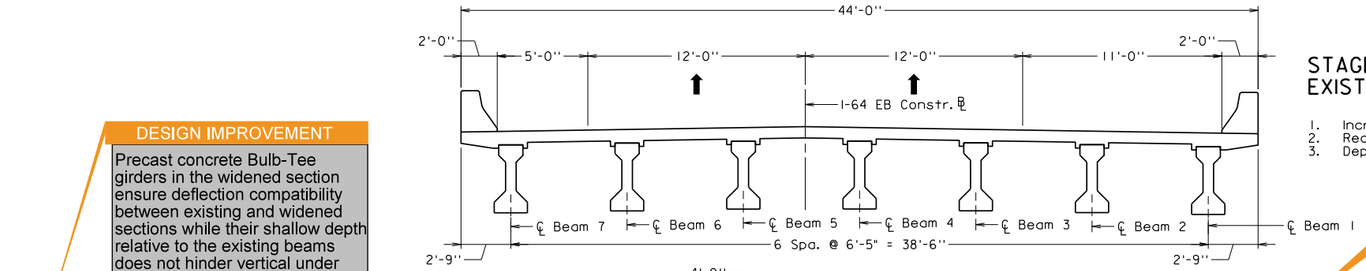
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

WIDENED ABUTMENT AND PROPOSED PIER DETAILS WESTBOUND

Designed: W.H.	Date	Plan No.	Sheet No.
Drawn: W.H. MAR	June 2023	202-19A	4 of 6
Checked: RAC			

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	——		64	0064-063-623, B601, B602	5

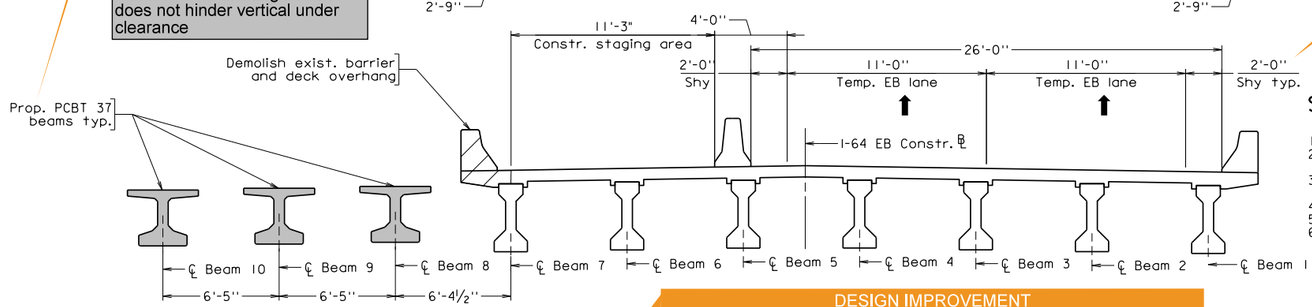


DESIGN IMPROVEMENT

Precast concrete Bulb-Tee girders in the widened section ensure deflection compatibility between existing and widened sections while their shallow depth relative to the existing beams does not hinder vertical under clearance

STAGE 1 CONSTRUCTION AND EXISTING TRANSVERSE SECTION

1. Incrementally jack and support entire spans sequentially.
2. Reconstruct beam seats and replace & block bearings for temporary movement.
3. Depressurize jacks and seat beams on new bearings.



DESIGN IMPROVEMENT

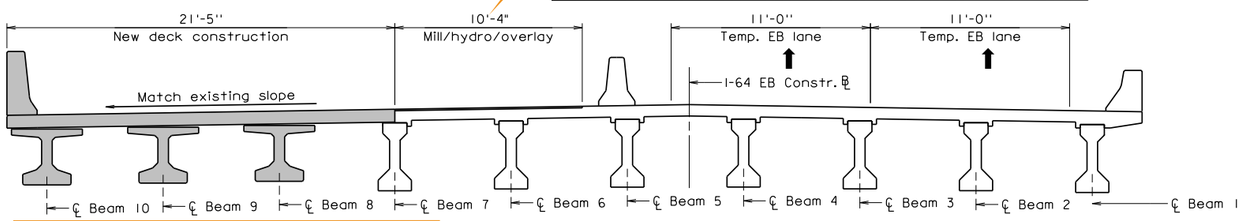
Additional shy distance, 2' total, increases construction safety for workers and travelers (1' required).

STAGE 2 CONSTRUCTION

1. Minimum 11'-0" temporary lanes allowable per RFP.
2. Demolish and remove hatched portion of the existing inside bridge barrier and deck.
3. Construct proposed abutments and piers (not shown) and erect proposed beams as shown.
4. Construct proposed deck and bridge barrier.
5. Mill, hydro-demolish, and overlay existing deck where shown.
6. Patch and touch up concrete wearing surface overlay.

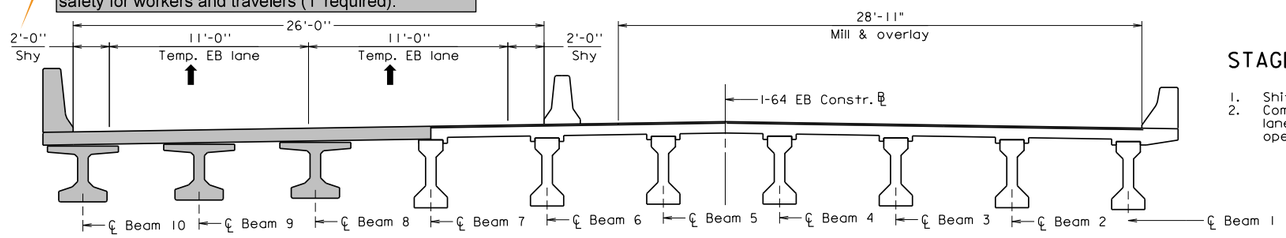
DESIGN IMPROVEMENT

No additional longitudinal cold joint from a closure pour, which reduces locations for water infiltration and reduces maintenance costs.



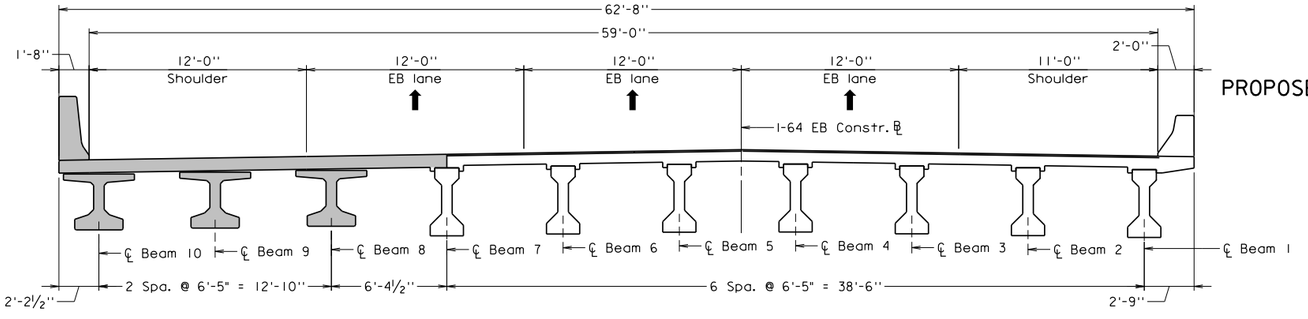
DESIGN IMPROVEMENT

Additional shy distance, 2' total, increases construction safety for workers and travelers (1' required).



STAGE 3 CONSTRUCTION

1. Shift traffic to newly constructed section of bridge.
2. Complete milling, hydrodemolition, and overlay operations of existing lanes. Allow for up to 2' of overlap between milling/hydro/overlay operations for tie-in and riding surface finishing.



PROPOSED TRANSVERSE SECTION

Scale: ¼" = 1'-0" Unless stated otherwise

CONCEPTUAL PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

kokosing CONSTRUCTION COMPANY, INC. | RK&K

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

TRANSVERSE SECTIONS AND STAGED CONSTRUCTION DETAILS EASTBOUND (WESTBOUND MIRRORED)

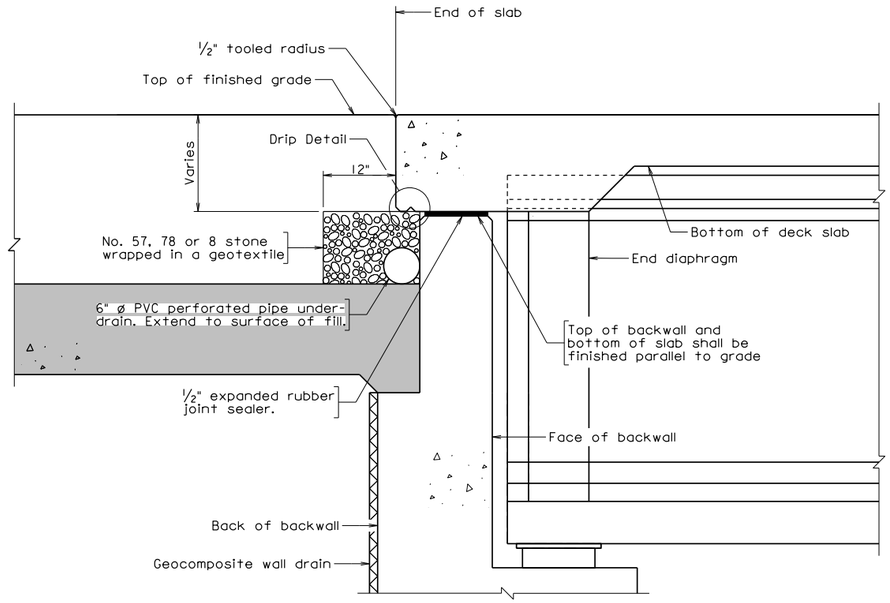
No.	Description	Date
	Revisions	

Designed: WJL
Drawn: WJL MNR
Checked: DAC

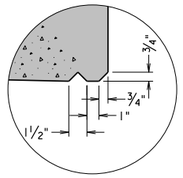
Date: June 2023
Plan No.: 202-19A
Sheet No.: 5 of 6

b109885_005.dgn

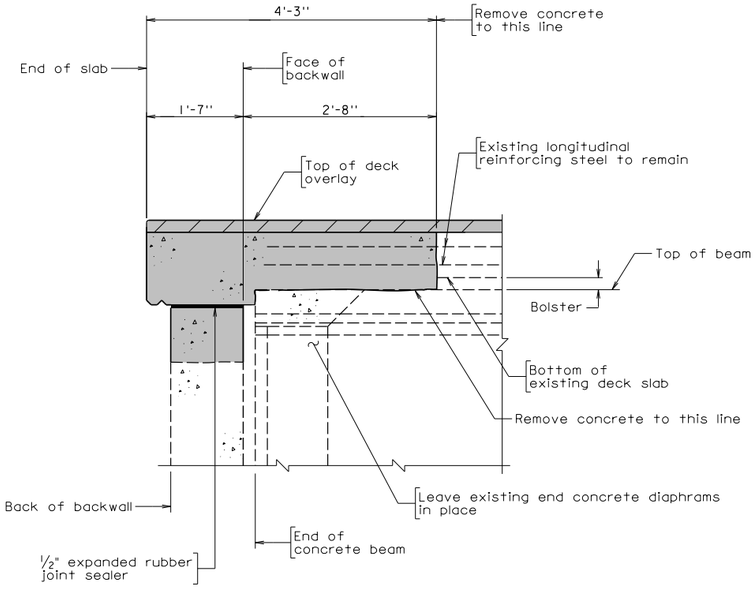
STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—		64	0064-063-623, B601, B602	6



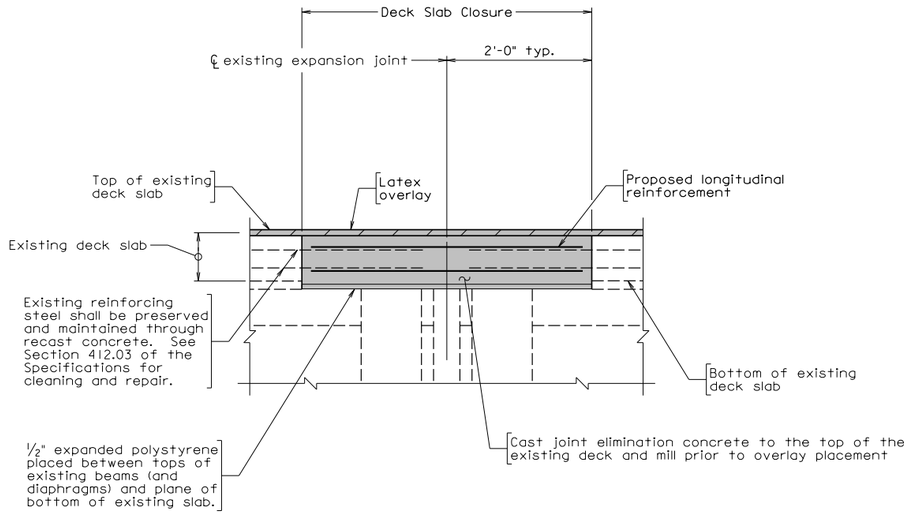
APPROACH SLAB DETAIL
Widened section



DRIP DETAIL
Scale: 1½" = 1'-0"



DECK EXTENSION DETAIL (CONCRETE BEAM)
Existing section



FLEXIBLE LINK SLAB WITH CONCRETE OVERLAY DETAIL

b109885_006.dgn

Rummel, Klepper & Kahl, LLP
Richmond, Virginia
Structural Engineer

Scale: 1" = 1'-0" unless otherwise noted

CONCEPTUAL PLANS
THESE PLANS NOT TO BE USED FOR CONSTRUCTION

kokosing CONSTRUCTION COMPANY, INC. | RK&K

No.	Description	Date
	Revisions	

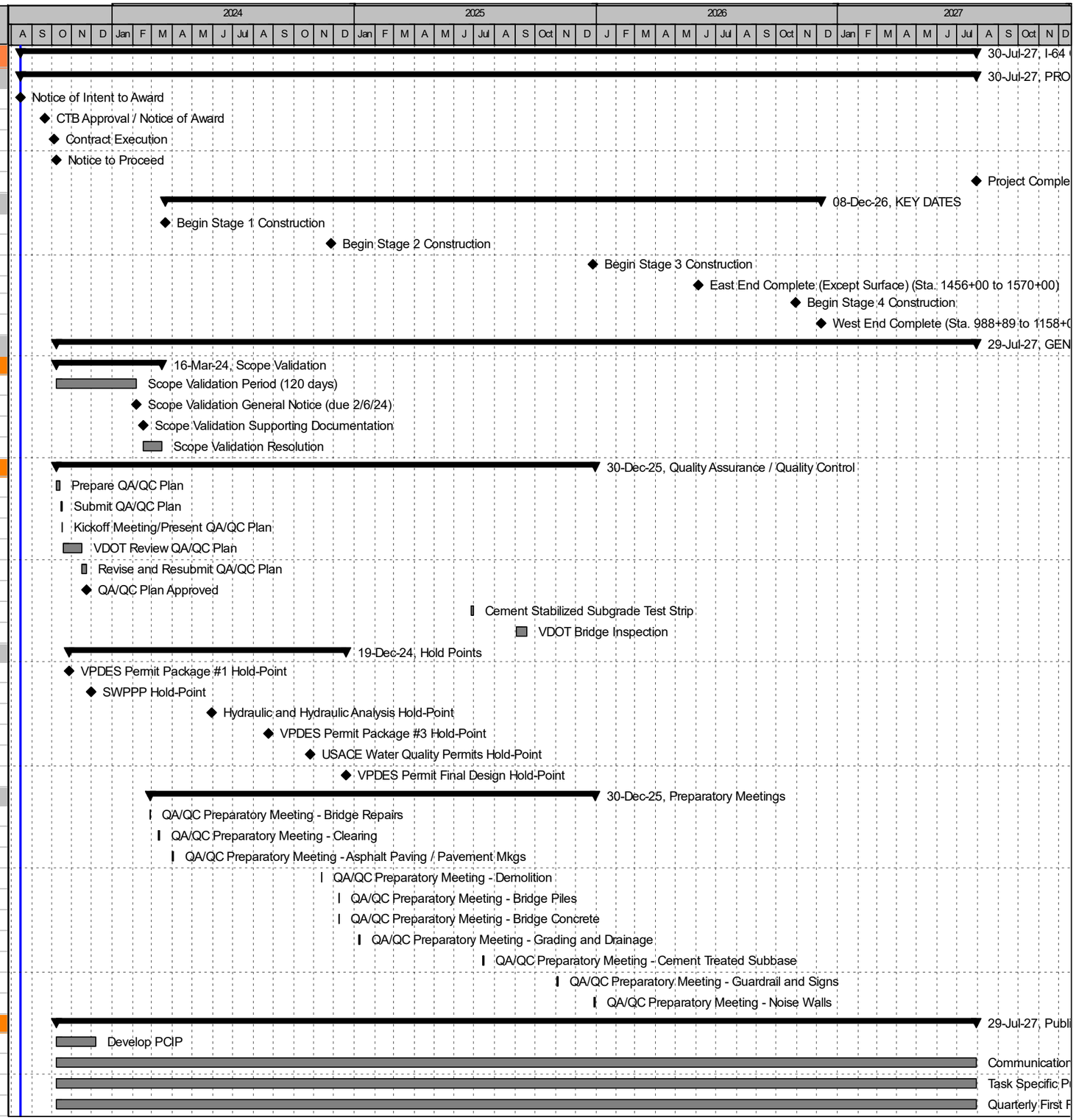
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

APPROACH SLAB, DECK SLAB EXTENSION, AND LINK SLAB DETAILS

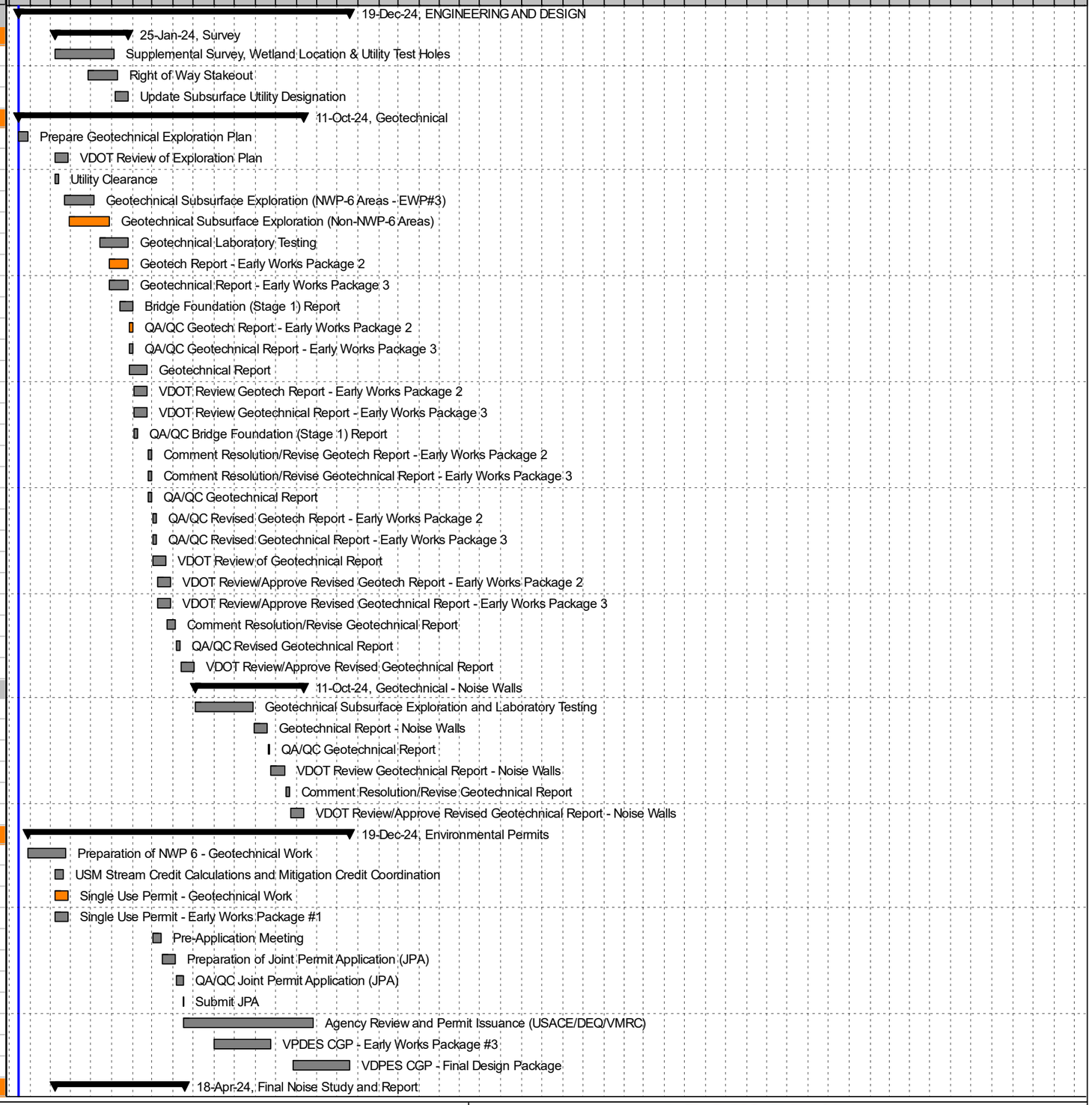
Designed: WJL	Date	Plan No.	Sheet No.
Drawn: WJL, MNR	June 2023	202-19A	6 of 6
Checked: DAC			

Activity ID	Activity Name	Original Duration	Start	Finish
I-64 Close the Gap Segment A Proposal Schedule		801	15-Aug-23	30-Jul-27
PROJECT MILESTONES		801	15-Aug-23	30-Jul-27
1	Notice of Intent to Award	0	15-Aug-23	
200	CTB Approval / Notice of Award	0	20-Sep-23	
201	Contract Execution	0	04-Oct-23*	
2	Notice to Proceed	0	09-Oct-23*	
300	Project Completion	0		30-Jul-27*
KEY DATES		992	21-Mar-24	08-Dec-26
202	Begin Stage 1 Construction	0	21-Mar-24	
203	Begin Stage 2 Construction	0	27-Nov-24	
204	Begin Stage 3 Construction	0	27-Dec-25	
205	East End Complete (Except Surface) (Sta. 1456+00 to 1570+00)	0		04-Jun-26
206	Begin Stage 4 Construction	0	29-Oct-26	
207	West End Complete (Sta. 988+89 to 1158+00)	0		08-Dec-26
GENERAL CONDITIONS		771	09-Oct-23	29-Jul-27
Scope Validation		160	09-Oct-23	16-Mar-24
3	Scope Validation Period (120 days)	120	09-Oct-23	05-Feb-24
208	Scope Validation General Notice (due 2/6/24)	0	06-Feb-24	
209	Scope Validation Supporting Documentation	0	16-Feb-24	
210	Scope Validation Resolution	30	16-Feb-24	16-Mar-24
Quality Assurance / Quality Control		453	09-Oct-23	30-Dec-25
5	Prepare QA/QC Plan	5	09-Oct-23	13-Oct-23
6	Submit QA/QC Plan	1	16-Oct-23	16-Oct-23
211	Kickoff Meeting/Present QA/QC Plan	1	17-Oct-23	17-Oct-23
7	VDOT Review QA/QC Plan	21	18-Oct-23	15-Nov-23
8	Revise and Resubmit QA/QC Plan	5	16-Nov-23	22-Nov-23
212	QA/QC Plan Approved	0		22-Nov-23
213	Cement Stabilized Subgrade Test Strip	2	26-Jun-25	30-Jun-25
214	VDOT Bridge Inspection	10	03-Sep-25	18-Sep-25
Hold Points		291	27-Oct-23	19-Dec-24
215	VPDES Permit Package #1 Hold-Point	0		27-Oct-23
216	SWPPP Hold-Point	0		29-Nov-23
217	Hydraulic and Hydraulic Analysis Hold-Point	0		30-May-24
218	VPDES Permit Package #3 Hold-Point	0		23-Aug-24
219	USACE Water Quality Permits Hold-Point	0		25-Oct-24
220	VPDES Permit Final Design Hold-Point	0		19-Dec-24
Preparatory Meetings		469	27-Feb-24	30-Dec-25
221	QA/QC Preparatory Meeting - Bridge Repairs	1	27-Feb-24	27-Feb-24
222	QA/QC Preparatory Meeting - Clearing	1	11-Mar-24	11-Mar-24
223	QA/QC Preparatory Meeting - Asphalt Paving / Pavement Mkgs	1	01-Apr-24	01-Apr-24
224	QA/QC Preparatory Meeting - Demolition	1	12-Nov-24	12-Nov-24
225	QA/QC Preparatory Meeting - Bridge Piles	1	09-Dec-24	09-Dec-24
226	QA/QC Preparatory Meeting - Bridge Concrete	1	09-Dec-24	09-Dec-24
227	QA/QC Preparatory Meeting - Grading and Drainage	1	08-Jan-25	08-Jan-25
228	QA/QC Preparatory Meeting - Cement Treated Subbase	1	14-Jul-25	15-Jul-25
229	QA/QC Preparatory Meeting - Guardrail and Signs	1	03-Nov-25	04-Nov-25
230	QA/QC Preparatory Meeting - Noise Walls	1	29-Dec-25	30-Dec-25
Public Relations		1390	09-Oct-23	29-Jul-27
231	Develop PCIP	60	09-Oct-23	07-Dec-23
232	Communication Coordination Meetings	1390	09-Oct-23	29-Jul-27
233	Task Specific Public Information Meetings	1390	09-Oct-23	29-Jul-27
234	Quarterly First Responder Meetings	1390	09-Oct-23	29-Jul-27



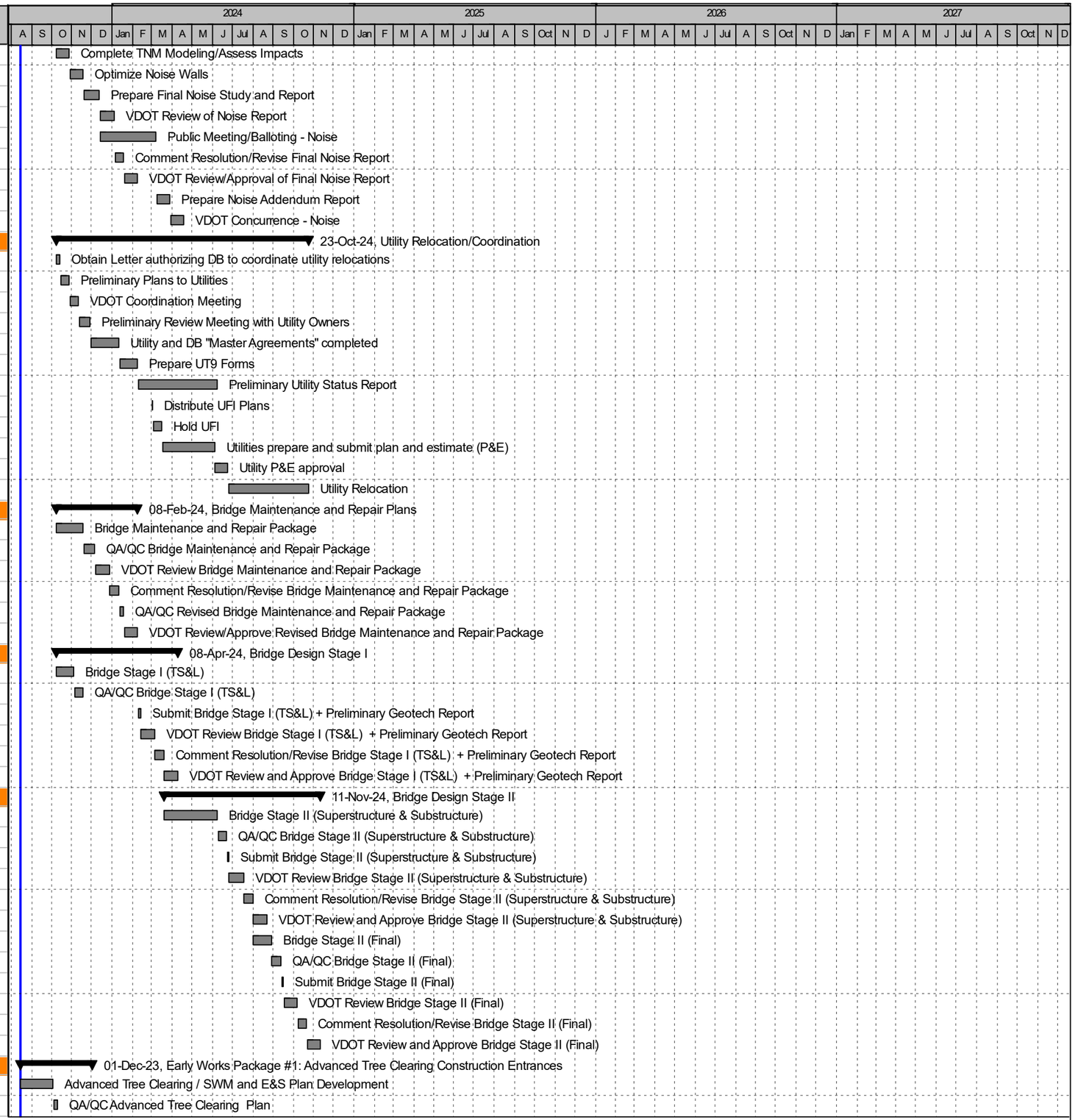
Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

Activity ID	Activity Name	Original Duration	Start	Finish
ENGINEERING AND DESIGN		344	15-Aug-23	19-Dec-24
Survey		75	09-Oct-23	25-Jan-24
10	Supplemental Survey, Wetland Location & Utility Test Holes	60	09-Oct-23	04-Jan-24
12	Right of Way Stakeout	30	27-Nov-23	09-Jan-24
11	Update Subsurface Utility Designation	15	05-Jan-24	25-Jan-24
Geotechnical		296	15-Aug-23	11-Oct-24
14	Prepare Geotechnical Exploration Plan	10	15-Aug-23	28-Aug-23
15	VDOT Review of Exploration Plan	15	09-Oct-23	27-Oct-23
16	Utility Clearance	5	09-Oct-23	13-Oct-23
18	Geotechnical Subsurface Exploration (NWP-6 Areas - EWP#3)	30	23-Oct-23	05-Dec-23
17	Geotechnical Subsurface Exploration (Non-NWP-6 Areas)	40	30-Oct-23	27-Dec-23
19	Geotechnical Laboratory Testing	30	13-Dec-23	25-Jan-24
20	Geotech Report - Early Works Package 2	20	28-Dec-23	25-Jan-24
26	Geotechnical Report - Early Works Package 3	20	28-Dec-23	25-Jan-24
32	Bridge Foundation (Stage 1) Report	15	12-Jan-24	01-Feb-24
21	QA/QC Geotech Report - Early Works Package 2	5	26-Jan-24	01-Feb-24
27	QA/QC Geotechnical Report - Early Works Package 3	5	26-Jan-24	01-Feb-24
34	Geotechnical Report	20	26-Jan-24	22-Feb-24
22	VDOT Review Geotech Report - Early Works Package 2	15	02-Feb-24	22-Feb-24
28	VDOT Review Geotechnical Report - Early Works Package 3	15	02-Feb-24	22-Feb-24
33	QA/QC Bridge Foundation (Stage 1) Report	5	02-Feb-24	08-Feb-24
23	Comment Resolution/Revise Geotech Report - Early Works Package 2	5	23-Feb-24	29-Feb-24
29	Comment Resolution/Revise Geotechnical Report - Early Works Packa	5	23-Feb-24	29-Feb-24
35	QA/QC Geotechnical Report	5	23-Feb-24	29-Feb-24
24	QA/QC Revised Geotech Report - Early Works Package 2	5	01-Mar-24	07-Mar-24
30	QA/QC Revised Geotechnical Report - Early Works Package 3	5	01-Mar-24	07-Mar-24
36	VDOT Review of Geotechnical Report	15	01-Mar-24	21-Mar-24
25	VDOT Review/Approve Revised Geotech Report - Early Works Packag	15	08-Mar-24	28-Mar-24
31	VDOT Review/Approve Revised Geotechnical Report - Early Works Pac	15	08-Mar-24	28-Mar-24
37	Comment Resolution/Revise Geotechnical Report	10	22-Mar-24	04-Apr-24
38	QA/QC Revised Geotechnical Report	5	05-Apr-24	11-Apr-24
39	VDOT Review/Approve Revised Geotechnical Report	15	12-Apr-24	02-May-24
Geotechnical - Noise Walls		113	03-May-24	11-Oct-24
41	Geotechnical Subsurface Exploration and Laboratory Testing	60	03-May-24	29-Jul-24
42	Geotechnical Report - Noise Walls	15	30-Jul-24	19-Aug-24
43	QA/QC Geotechnical Report	3	20-Aug-24	22-Aug-24
44	VDOT Review Geotechnical Report - Noise Walls	15	23-Aug-24	13-Sep-24
45	Comment Resolution/Revise Geotechnical Report	5	16-Sep-24	20-Sep-24
46	VDOT Review/Approve Revised Geotechnical Report - Noise Walls	15	23-Sep-24	11-Oct-24
Environmental Permits		334	29-Aug-23	19-Dec-24
54	Preparation of NWP 6 - Geotechnical Work	40	29-Aug-23	24-Oct-23
48	USM Stream Credit Calculations and Mitigation Credit Coordination	10	09-Oct-23	20-Oct-23
49	Single Use Permit - Geotechnical Work	15	09-Oct-23	27-Oct-23
50	Single Use Permit - Early Works Package #1	15	09-Oct-23	27-Oct-23
55	Pre-Application Meeting	10	01-Mar-24	14-Mar-24
56	Preparation of Joint Permit Application (JPA)	15	15-Mar-24	04-Apr-24
57	QA/QC Joint Permit Application (JPA)	7	05-Apr-24	15-Apr-24
58	Submit JPA	1	16-Apr-24	16-Apr-24
59	Agency Review and Permit Issuance (USACE/DEQ/VMRC)	135	17-Apr-24	25-Oct-24
52	VPDES CGP - Early Works Package #3	60	31-May-24	23-Aug-24
53	VDPES CGP - Final Design Package	60	26-Sep-24	19-Dec-24
Final Noise Study and Report		135	09-Oct-23	18-Apr-24



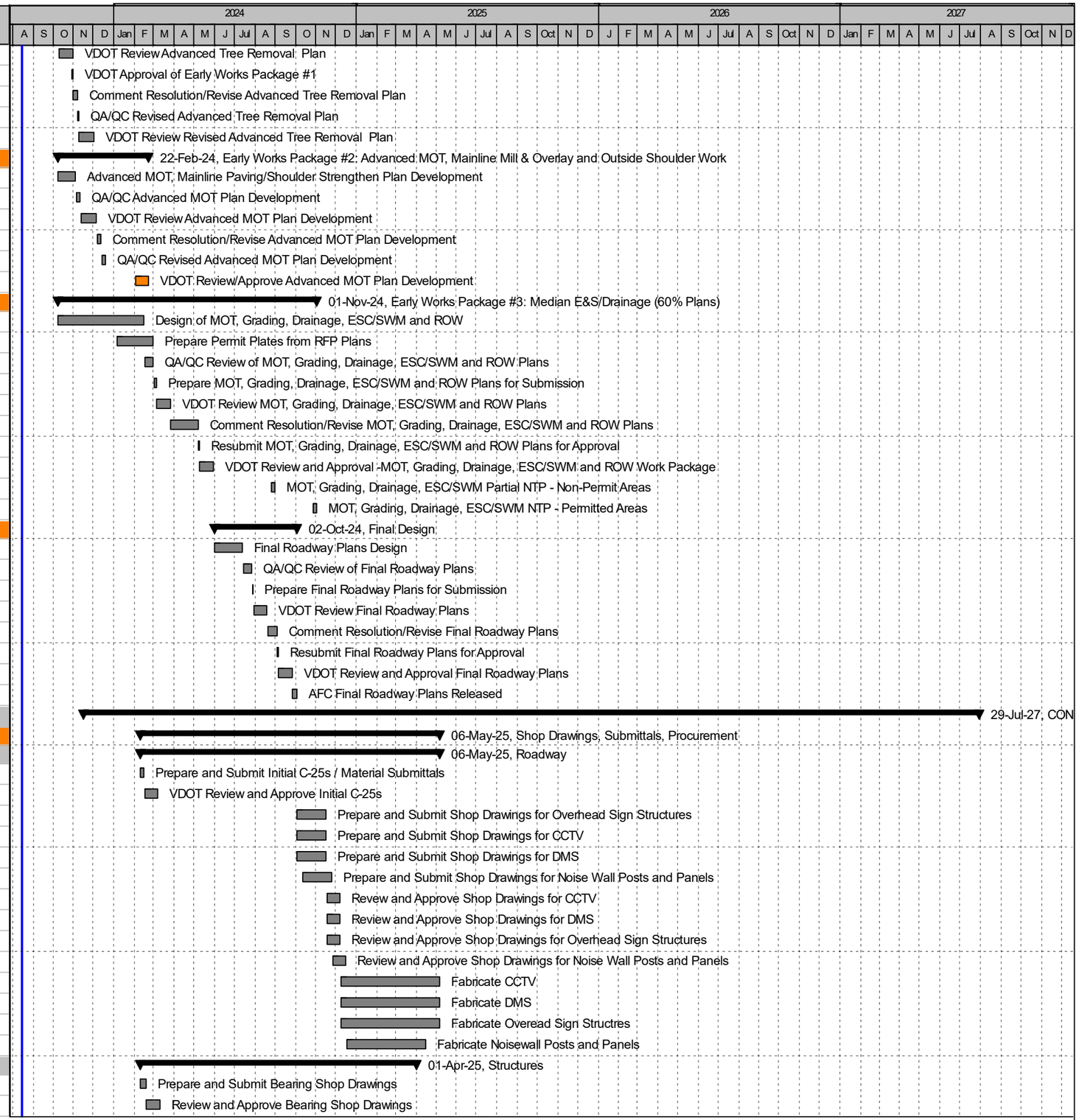
Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

Activity ID	Activity Name	Original Duration	Start	Finish
61	Complete TNM Modeling/Assess Impacts	15	09-Oct-23	27-Oct-23
62	Optimize Noise Walls	15	30-Oct-23	17-Nov-23
63	Prepare Final Noise Study and Report	15	20-Nov-23	12-Dec-23
64	VDOT Review of Noise Report	15	13-Dec-23	04-Jan-24
67	Public Meeting/Balloting - Noise	60	13-Dec-23	07-Mar-24
65	Comment Resolution/Revise Final Noise Report	10	05-Jan-24	18-Jan-24
66	VDOT Review/Approval of Final Noise Report	15	19-Jan-24	08-Feb-24
68	Prepare Noise Addendum Report	15	08-Mar-24	28-Mar-24
69	VDOT Concurrence - Noise	15	29-Mar-24	18-Apr-24
Utility Relocation/Coordination		**266**	**09-Oct-23**	**23-Oct-24**
71	Obtain Letter authorizing DB to coordinate utility relocations	5	09-Oct-23	13-Oct-23
72	Preliminary Plans to Utilities	10	16-Oct-23	27-Oct-23
73	VDOT Coordination Meeting	10	30-Oct-23	10-Nov-23
74	Preliminary Review Meeting with Utility Owners	10	13-Nov-23	28-Nov-23
75	Utility and DB "Master Agreements" completed	30	29-Nov-23	11-Jan-24
76	Prepare UT9 Forms	20	12-Jan-24	08-Feb-24
77	Preliminary Utility Status Report	85	09-Feb-24	07-Jun-24
78	Distribute UFI Plans	1	01-Mar-24	01-Mar-24
79	Hold UFI	10	04-Mar-24	15-Mar-24
80	Utilities prepare and submit plan and estimate (P&E)	55	18-Mar-24	03-Jun-24
81	Utility P&E approval	15	04-Jun-24	24-Jun-24
82	Utility Relocation	85	25-Jun-24	23-Oct-24
Bridge Maintenance and Repair Plans		**85**	**09-Oct-23**	**08-Feb-24**
84	Bridge Maintenance and Repair Package	30	09-Oct-23*	17-Nov-23
85	QA/QC Bridge Maintenance and Repair Package	10	20-Nov-23	05-Dec-23
86	VDOT Review Bridge Maintenance and Repair Package	15	06-Dec-23	27-Dec-23
87	Comment Resolution/Revise Bridge Maintenance and Repair Package	10	28-Dec-23	11-Jan-24
88	QA/QC Revised Bridge Maintenance and Repair Package	5	12-Jan-24	18-Jan-24
89	VDOT Review/Approve Revised Bridge Maintenance and Repair Packa	15	19-Jan-24	08-Feb-24
Bridge Design Stage I		**127**	**09-Oct-23**	**08-Apr-24**
91	Bridge Stage I (TS&L)	20	09-Oct-23	03-Nov-23
92	QA/QC Bridge Stage I (TS&L)	10	06-Nov-23	17-Nov-23
93	Submit Bridge Stage I (TS&L) + Preliminary Geotech Report	2	09-Feb-24	12-Feb-24
94	VDOT Review Bridge Stage I (TS&L) + Preliminary Geotech Report	15	13-Feb-24	04-Mar-24
95	Comment Resolution/Revise Bridge Stage I (TS&L) + Preliminary Geo	10	05-Mar-24	18-Mar-24
96	VDOT Review and Approve Bridge Stage I (TS&L) + Preliminary Geote	15	19-Mar-24	08-Apr-24
Bridge Design Stage II		**167**	**19-Mar-24**	**11-Nov-24**
98	Bridge Stage II (Superstructure & Substructure)	58	19-Mar-24	07-Jun-24
99	QA/QC Bridge Stage II (Superstructure & Substructure)	10	10-Jun-24	21-Jun-24
100	Submit Bridge Stage II (Superstructure & Substructure)	2	24-Jun-24	25-Jun-24
101	VDOT Review Bridge Stage II (Superstructure & Substructure)	15	26-Jun-24	17-Jul-24
102	Comment Resolution/Revise Bridge Stage II (Superstructure & Substru	10	18-Jul-24	31-Jul-24
103	VDOT Review and Approve Bridge Stage II (Superstructure & Substruc	15	01-Aug-24	21-Aug-24
104	Bridge Stage II (Final)	20	01-Aug-24	28-Aug-24
105	QA/QC Bridge Stage II (Final)	10	29-Aug-24	12-Sep-24
106	Submit Bridge Stage II (Final)	2	13-Sep-24	16-Sep-24
107	VDOT Review Bridge Stage II (Final)	15	17-Sep-24	07-Oct-24
108	Comment Resolution/Revise Bridge Stage II (Final)	10	08-Oct-24	21-Oct-24
109	VDOT Review and Approve Bridge Stage II (Final)	15	22-Oct-24	11-Nov-24
Early Works Package #1: Advanced Tree Clearing Construction Entrances		**76**	**15-Aug-23**	**01-Dec-23**
111	Advanced Tree Clearing / SWM and E&S Plan Development	35	15-Aug-23	03-Oct-23
112	QA/QC Advanced Tree Clearing Plan	4	04-Oct-23	09-Oct-23



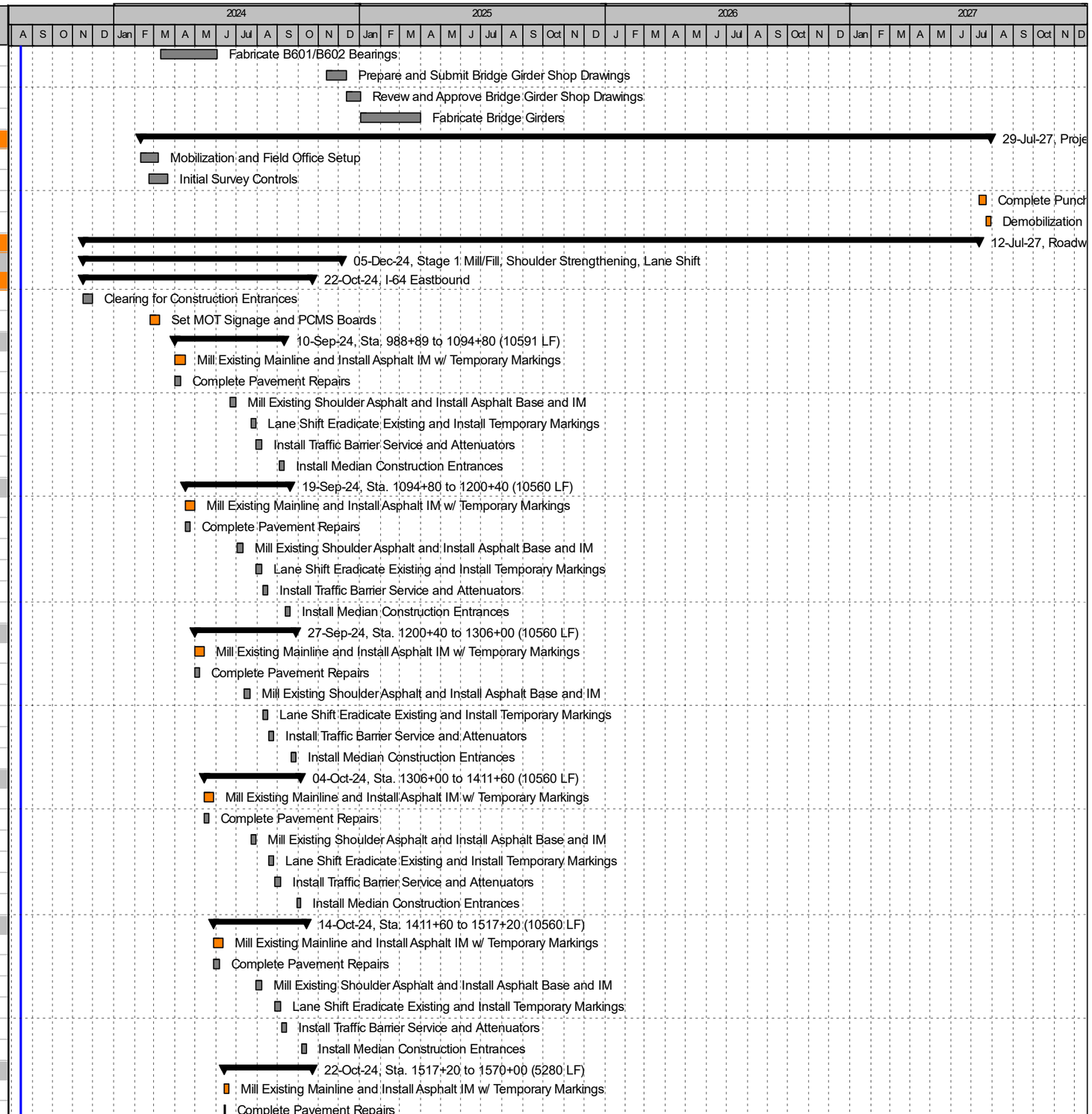
Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

Activity ID	Activity Name	Original Duration	Start	Finish
113	VDOT Review Advanced Tree Removal Plan	15	10-Oct-23	30-Oct-23
117	VDOT Approval of Early Works Package #1	1	30-Oct-23	30-Oct-23
114	Comment Resolution/Revise Advanced Tree Removal Plan	5	31-Oct-23	06-Nov-23
115	QA/QC Revised Advanced Tree Removal Plan	2	07-Nov-23	08-Nov-23
116	VDOT Review Revised Advanced Tree Removal Plan	15	09-Nov-23	01-Dec-23
Early Works Package #2: Advanced MOT, Mainline Mill & Overlay and Outside Shoulde		**95**	**09-Oct-23**	**22-Feb-24**
119	Advanced MOT, Mainline Paving/Shoulder Strengthen Plan Developm	20	09-Oct-23	03-Nov-23
120	QA/QC Advanced MOT Plan Development	5	06-Nov-23	10-Nov-23
121	VDOT Review Advanced MOT Plan Development	15	13-Nov-23	05-Dec-23
122	Comment Resolution/Revise Advanced MOT Plan Development	5	06-Dec-23	12-Dec-23
123	QA/QC Revised Advanced MOT Plan Development	5	13-Dec-23	19-Dec-23
124	VDOT Review/Approve Advanced MOT Plan Development	15	02-Feb-24	22-Feb-24
Early Works Package #3: Median E&S/Drainage (60% Plans)		**273**	**09-Oct-23**	**01-Nov-24**
127	Design of MOT, Grading, Drainage, ESC/SWM and ROW	90	09-Oct-23	15-Feb-24
126	Prepare Permit Plates from RFP Plans	40	05-Jan-24	29-Feb-24
128	QA/QC Review of MOT, Grading, Drainage, ESC/SWM and ROW Plan	10	16-Feb-24	29-Feb-24
129	Prepare MOT, Grading, Drainage, ESC/SWM and ROW Plans for Subr	2	01-Mar-24	04-Mar-24
130	VDOT Review MOT, Grading, Drainage, ESC/SWM and ROW Plans	15	05-Mar-24	25-Mar-24
131	Comment Resolution/Revise MOT, Grading, Drainage, ESC/SWM and	30	26-Mar-24	06-May-24
132	Resubmit MOT, Grading, Drainage, ESC/SWM and ROW Plans for Apr	2	07-May-24	08-May-24
133	VDOT Review and Approval -MOT, Grading, Drainage, ESC/SWM and	15	09-May-24	30-May-24
134	MOT, Grading, Drainage, ESC/SWM Partial NTP - Non-Permit Areas	5	26-Aug-24	30-Aug-24
135	MOT, Grading, Drainage, ESC/SWM NTP - Permitted Areas	5	28-Oct-24	01-Nov-24
Final Design		**87**	**31-May-24**	**02-Oct-24**
137	Final Roadway Plans Design	30	31-May-24	12-Jul-24
138	QA/QC Review of Final Roadway Plans	10	15-Jul-24	26-Jul-24
139	Prepare Final Roadway Plans for Submission	1	29-Jul-24	29-Jul-24
140	VDOT Review Final Roadway Plans	15	30-Jul-24	19-Aug-24
141	Comment Resolution/Revise Final Roadway Plans	10	20-Aug-24	03-Sep-24
142	Resubmit Final Roadway Plans for Approval	1	04-Sep-24	04-Sep-24
143	VDOT Review and Approval Final Roadway Plans	15	05-Sep-24	25-Sep-24
144	AFC Final Roadway Plans Released	5	26-Sep-24	02-Oct-24
CONSTRUCTION		**748**	**16-Nov-23**	**29-Jul-27**
Shop Drawings, Submittals, Procurement		**453**	**09-Feb-24**	**06-May-25**
Roadway		**453**	**09-Feb-24**	**06-May-25**
A4820	Prepare and Submit Initial C-25s / Material Submittals	7	09-Feb-24	15-Feb-24
A4830	VDOT Review and Approve Initial C-25s	21	16-Feb-24	07-Mar-24
A4850	Prepare and Submit Shop Drawings for Overhead Sign Structures	45	03-Oct-24	16-Nov-24
A4860	Prepare and Submit Shop Drawings for CCTV	45	03-Oct-24	16-Nov-24
A4870	Prepare and Submit Shop Drawings for DMS	45	03-Oct-24	16-Nov-24
A4840	Prepare and Submit Shop Drawings for Noise Wall Posts and Panels	45	12-Oct-24	25-Nov-24
A4900	Revew and Approve Shop Drawings for CCTV	21	17-Nov-24	07-Dec-24
A4910	Review and Approve Shop Drawings for DMS	21	17-Nov-24	07-Dec-24
A4920	Review and Approve Shop Drawings for Overhead Sign Structures	21	17-Nov-24	07-Dec-24
A4880	Review and Approve Shop Drawings for Noise Wall Posts and Panels	21	26-Nov-24	16-Dec-24
A4930	Fabricate CCTV	150	08-Dec-24	06-May-25
A4940	Fabricate DMS	150	08-Dec-24	06-May-25
A4950	Fabricate Overead Sign Structres	150	08-Dec-24	06-May-25
A4890	Fabricate Noisewall Posts and Panels	120	17-Dec-24	15-Apr-25
Structures		**418**	**09-Feb-24**	**01-Apr-25**
A2680	Prepare and Submit Bearing Shop Drawings	10	09-Feb-24	18-Feb-24
A2700	Review and Approve Bearing Shop Drawings	21	19-Feb-24	10-Mar-24



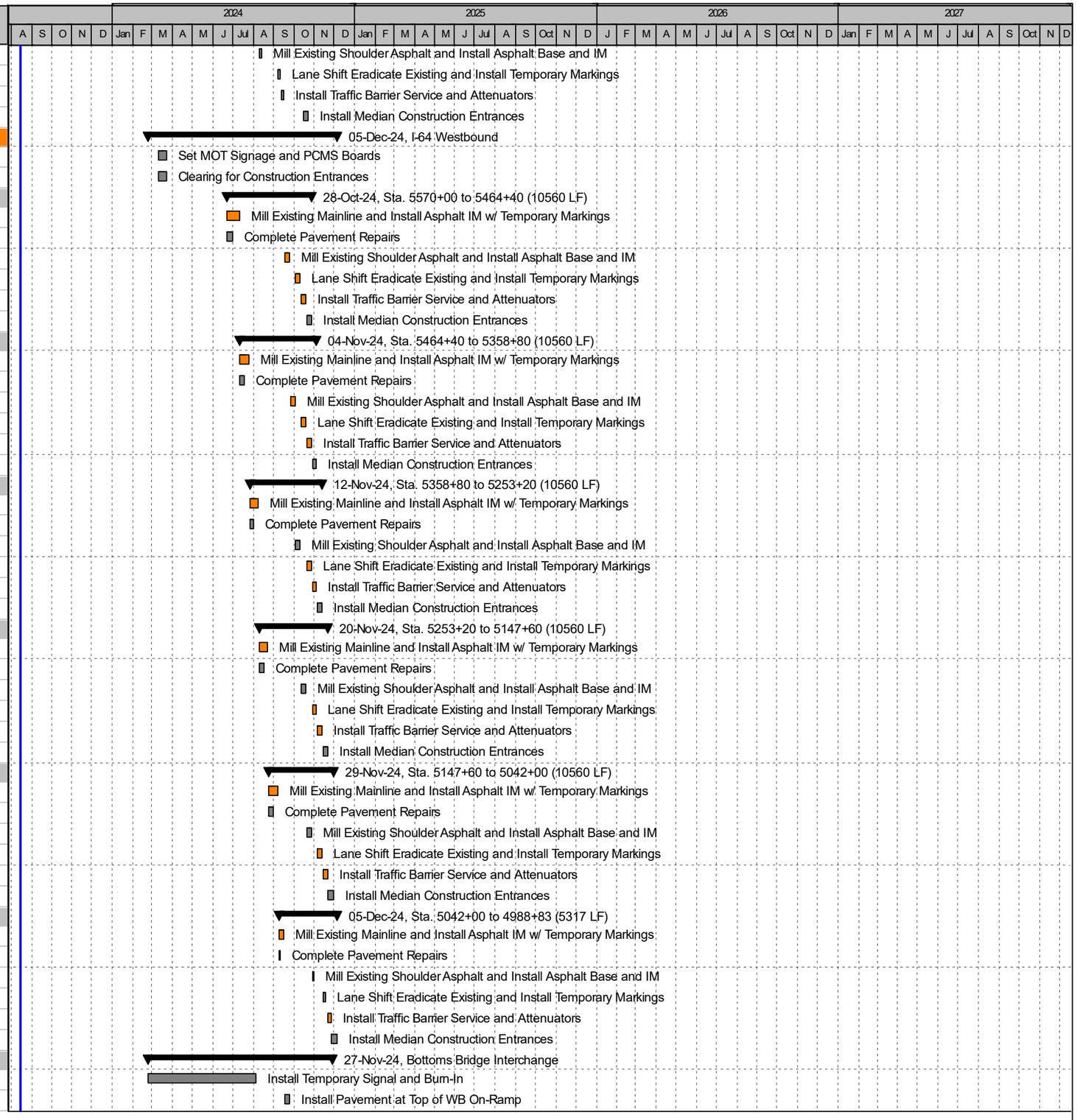
Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

Activity ID	Activity Name	Original Duration	Start	Finish
A2710	Fabricate B601/B602 Bearings	84	11-Mar-24	02-Jun-24
A4960	Prepare and Submit Bridge Girder Shop Drawings	30	12-Nov-24	11-Dec-24
A4970	Revew and Approve Bridge Girder Shop Drawings	21	12-Dec-24	01-Jan-25
A4980	Fabricate Bridge Girders	90	02-Jan-25	01-Apr-25
Project General Items		701	09-Feb-24	29-Jul-27
A1010	Mobilization and Field Office Setup	15	09-Feb-24	06-Mar-24
A1020	Initial Survey Controls	15	22-Feb-24	20-Mar-24
A4600	Complete Punchlist	5	13-Jul-27	22-Jul-27
A4610	Demobilization	4	23-Jul-27	29-Jul-27
Roadway		739	16-Nov-23	12-Jul-27
Stage 1 Mill/Fill, Shoulder Strengthening, Lane Shift		215	16-Nov-23	05-Dec-24
I-64 Eastbound		189	16-Nov-23	22-Oct-24
A4550	Clearing for Construction Entrances	10	16-Nov-23	29-Nov-23
A1050	Set MOT Signage and PCMS Boards	8	23-Feb-24	08-Mar-24
Sta. 988+89 to 1094+80 (10591 LF)		89	01-Apr-24	10-Sep-24
A1750	Mill Existing Mainline and Install Asphalt IM w/ Temporary Markings	9	01-Apr-24	15-Apr-24
A5440	Complete Pavement Repairs	5	01-Apr-24	08-Apr-24
A1070	Mill Existing Shoulder Asphalt and Install Asphalt Base and IM	5	21-Jun-24	01-Jul-24
A1080	Lane Shift Eradicate Existing and Install Temporary Markings	5	24-Jul-24	30-Jul-24
A1090	Install Traffic Barrier Service and Attenuators	5	31-Jul-24	07-Aug-24
A5850	Install Median Construction Entrances	5	03-Sep-24	10-Sep-24
Sta. 1094+80 to 1200+40 (10560 LF)		85	16-Apr-24	19-Sep-24
A1760	Mill Existing Mainline and Install Asphalt IM w/ Temporary Markings	8	16-Apr-24	29-Apr-24
A5450	Complete Pavement Repairs	5	16-Apr-24	23-Apr-24
A1110	Mill Existing Shoulder Asphalt and Install Asphalt Base and IM	5	02-Jul-24	11-Jul-24
A1120	Lane Shift Eradicate Existing and Install Temporary Markings	5	31-Jul-24	07-Aug-24
A1130	Install Traffic Barrier Service and Attenuators	5	09-Aug-24	16-Aug-24
A5860	Install Median Construction Entrances	5	12-Sep-24	19-Sep-24
Sta. 1200+40 to 1306+00 (10560 LF)		82	30-Apr-24	27-Sep-24
A1770	Mill Existing Mainline and Install Asphalt IM w/ Temporary Markings	8	30-Apr-24	13-May-24
A5460	Complete Pavement Repairs	5	30-Apr-24	07-May-24
A1150	Mill Existing Shoulder Asphalt and Install Asphalt Base and IM	5	12-Jul-24	22-Jul-24
A1160	Lane Shift Eradicate Existing and Install Temporary Markings	5	09-Aug-24	16-Aug-24
A1170	Install Traffic Barrier Service and Attenuators	5	19-Aug-24	26-Aug-24
A5870	Install Median Construction Entrances	5	20-Sep-24	27-Sep-24
Sta. 1306+00 to 1411+60 (10560 LF)		79	14-May-24	04-Oct-24
A1780	Mill Existing Mainline and Install Asphalt IM w/ Temporary Markings	8	14-May-24	28-May-24
A5470	Complete Pavement Repairs	5	14-May-24	21-May-24
A1190	Mill Existing Shoulder Asphalt and Install Asphalt Base and IM	5	24-Jul-24	30-Jul-24
A1200	Lane Shift Eradicate Existing and Install Temporary Markings	5	19-Aug-24	26-Aug-24
A1210	Install Traffic Barrier Service and Attenuators	5	27-Aug-24	05-Sep-24
A5880	Install Median Construction Entrances	5	30-Sep-24	04-Oct-24
Sta. 1411+60 to 1517+20 (10560 LF)		76	29-May-24	14-Oct-24
A1790	Mill Existing Mainline and Install Asphalt IM w/ Temporary Markings	8	29-May-24	11-Jun-24
A5480	Complete Pavement Repairs	5	29-May-24	06-Jun-24
A1230	Mill Existing Shoulder Asphalt and Install Asphalt Base and IM	5	31-Jul-24	07-Aug-24
A1240	Lane Shift Eradicate Existing and Install Temporary Markings	5	27-Aug-24	05-Sep-24
A1250	Install Traffic Barrier Service and Attenuators	5	06-Sep-24	13-Sep-24
A5890	Install Median Construction Entrances	5	07-Oct-24	14-Oct-24
Sta. 1517+20 to 1570+00 (5280 LF)		73	13-Jun-24	22-Oct-24
A1800	Mill Existing Mainline and Install Asphalt IM w/ Temporary Markings	5	13-Jun-24	19-Jun-24
A5490	Complete Pavement Repairs	2	13-Jun-24	14-Jun-24



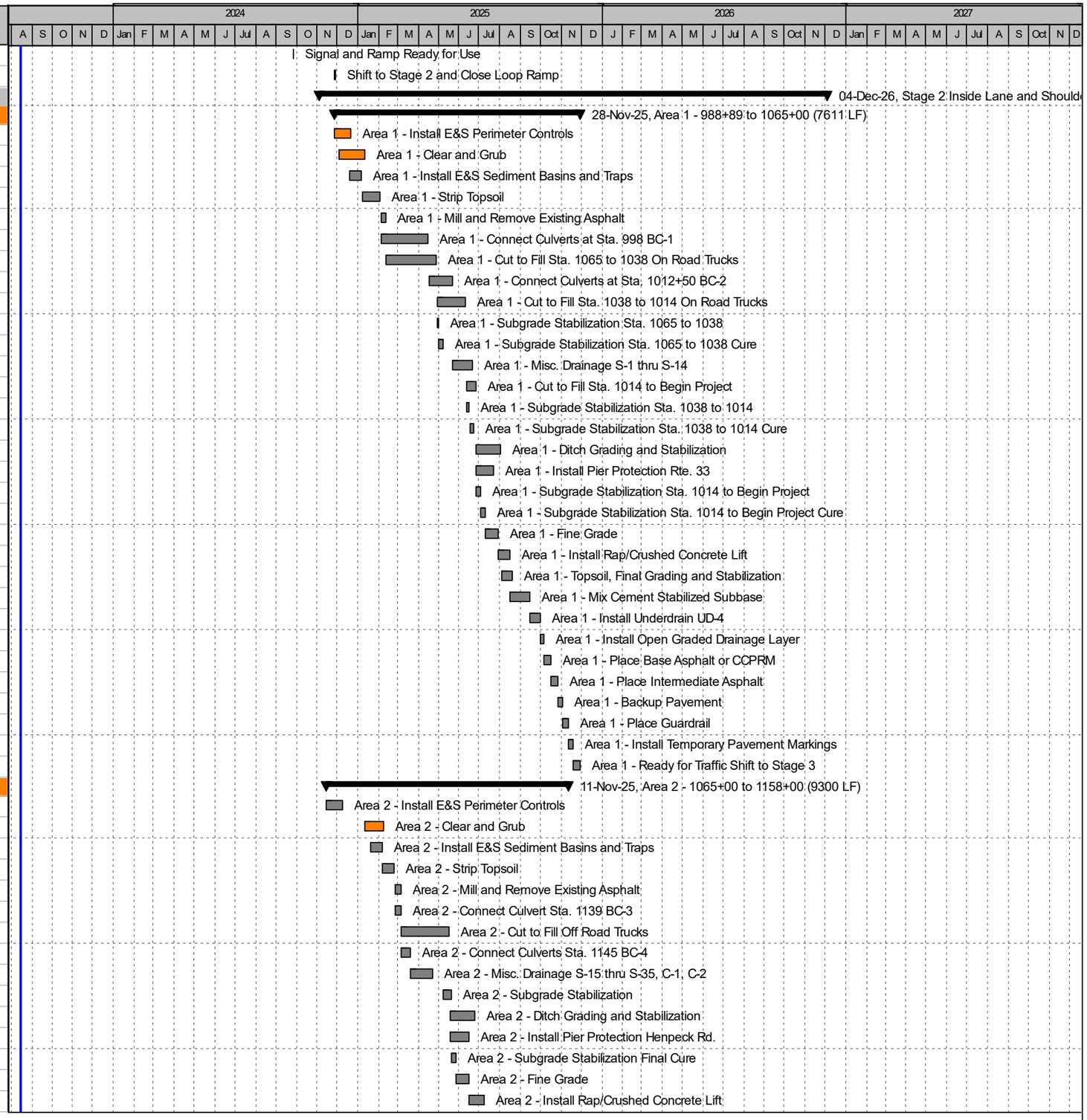
Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

Activity ID	Activity Name	Original Duration	Start	Finish
A1270	Mill Existing Shoulder Asphalt and Install Asphalt Base and IM	3	09-Aug-24	13-Aug-24
A1280	Lane Shift Eradicate Existing and Install Temporary Markings	3	06-Sep-24	10-Sep-24
A1290	Install Traffic Barrier Service and Attenuators	3	12-Sep-24	16-Sep-24
A5900	Install Median Construction Entrances	5	15-Oct-24	22-Oct-24
I-64 Westbound		160	23-Feb-24	05-Dec-24
A1540	Set MOT Signage and PCMS Boards	8	11-Mar-24	22-Mar-24
A4560	Clearing for Construction Entrances	10	11-Mar-24	23-Mar-24
Sta. 5570+00 to 5464+40 (10560 LF)		71	21-Jun-24	28-Oct-24
A1810	Mill Existing Mainline and Install Asphalt IM w/ Temporary Markings	9	21-Jun-24	10-Jul-24
A5500	Complete Pavement Repairs	5	21-Jun-24	01-Jul-24
A1310	Mill Existing Shoulder Asphalt and Install Asphalt Base and IM	5	17-Sep-24	24-Sep-24
A1320	Lane Shift Eradicate Existing and Install Temporary Markings	5	03-Oct-24	10-Oct-24
A1330	Install Traffic Barrier Service and Attenuators	5	11-Oct-24	18-Oct-24
A5910	Install Median Construction Entrances	5	21-Oct-24	28-Oct-24
Sta. 5464+40 to 5358+80 (10560 LF)		67	11-Jul-24	04-Nov-24
A1820	Mill Existing Mainline and Install Asphalt IM w/ Temporary Markings	8	11-Jul-24	25-Jul-24
A5510	Complete Pavement Repairs	5	11-Jul-24	18-Jul-24
A1350	Mill Existing Shoulder Asphalt and Install Asphalt Base and IM	5	26-Sep-24	02-Oct-24
A1360	Lane Shift Eradicate Existing and Install Temporary Markings	5	11-Oct-24	18-Oct-24
A1370	Install Traffic Barrier Service and Attenuators	5	21-Oct-24	28-Oct-24
A5920	Install Median Construction Entrances	5	29-Oct-24	04-Nov-24
Sta. 5358+80 to 5253+20 (10560 LF)		64	26-Jul-24	12-Nov-24
A1830	Mill Existing Mainline and Install Asphalt IM w/ Temporary Markings	8	26-Jul-24	07-Aug-24
A5520	Complete Pavement Repairs	5	26-Jul-24	01-Aug-24
A1390	Mill Existing Shoulder Asphalt and Install Asphalt Base and IM	5	03-Oct-24	10-Oct-24
A1400	Lane Shift Eradicate Existing and Install Temporary Markings	5	21-Oct-24	28-Oct-24
A1410	Install Traffic Barrier Service and Attenuators	5	29-Oct-24	04-Nov-24
A5930	Install Median Construction Entrances	5	06-Nov-24	12-Nov-24
Sta. 5253+20 to 5147+60 (10560 LF)		61	09-Aug-24	20-Nov-24
A1840	Mill Existing Mainline and Install Asphalt IM w/ Temporary Markings	8	09-Aug-24	22-Aug-24
A5530	Complete Pavement Repairs	5	09-Aug-24	16-Aug-24
A1430	Mill Existing Shoulder Asphalt and Install Asphalt Base and IM	5	11-Oct-24	18-Oct-24
A1440	Lane Shift Eradicate Existing and Install Temporary Markings	5	29-Oct-24	04-Nov-24
A1450	Install Traffic Barrier Service and Attenuators	5	06-Nov-24	12-Nov-24
A5940	Install Median Construction Entrances	5	14-Nov-24	20-Nov-24
Sta. 5147+60 to 5042+00 (10560 LF)		58	23-Aug-24	29-Nov-24
A1850	Mill Existing Mainline and Install Asphalt IM w/ Temporary Markings	8	23-Aug-24	06-Sep-24
A5540	Complete Pavement Repairs	5	23-Aug-24	30-Aug-24
A1470	Mill Existing Shoulder Asphalt and Install Asphalt Base and IM	5	21-Oct-24	28-Oct-24
A1480	Lane Shift Eradicate Existing and Install Temporary Markings	5	06-Nov-24	12-Nov-24
A1490	Install Traffic Barrier Service and Attenuators	5	14-Nov-24	20-Nov-24
A5950	Install Median Construction Entrances	5	22-Nov-24	29-Nov-24
Sta. 5042+00 to 4988+83 (5317 LF)		53	09-Sep-24	05-Dec-24
A1860	Mill Existing Mainline and Install Asphalt IM w/ Temporary Markings	5	09-Sep-24	16-Sep-24
A5550	Complete Pavement Repairs	2	09-Sep-24	10-Sep-24
A1510	Mill Existing Shoulder Asphalt and Install Asphalt Base and IM	3	29-Oct-24	31-Oct-24
A1520	Lane Shift Eradicate Existing and Install Temporary Markings	3	14-Nov-24	18-Nov-24
A1530	Install Traffic Barrier Service and Attenuators	3	22-Nov-24	26-Nov-24
A5960	Install Median Construction Entrances	5	27-Nov-24	05-Dec-24
Bottoms Bridge Interchange		156	23-Feb-24	27-Nov-24
A6040	Install Temporary Signal and Burn-In	90	23-Feb-24	05-Aug-24
A6030	Install Pavement at Top of WB On-Ramp	5	17-Sep-24	24-Sep-24



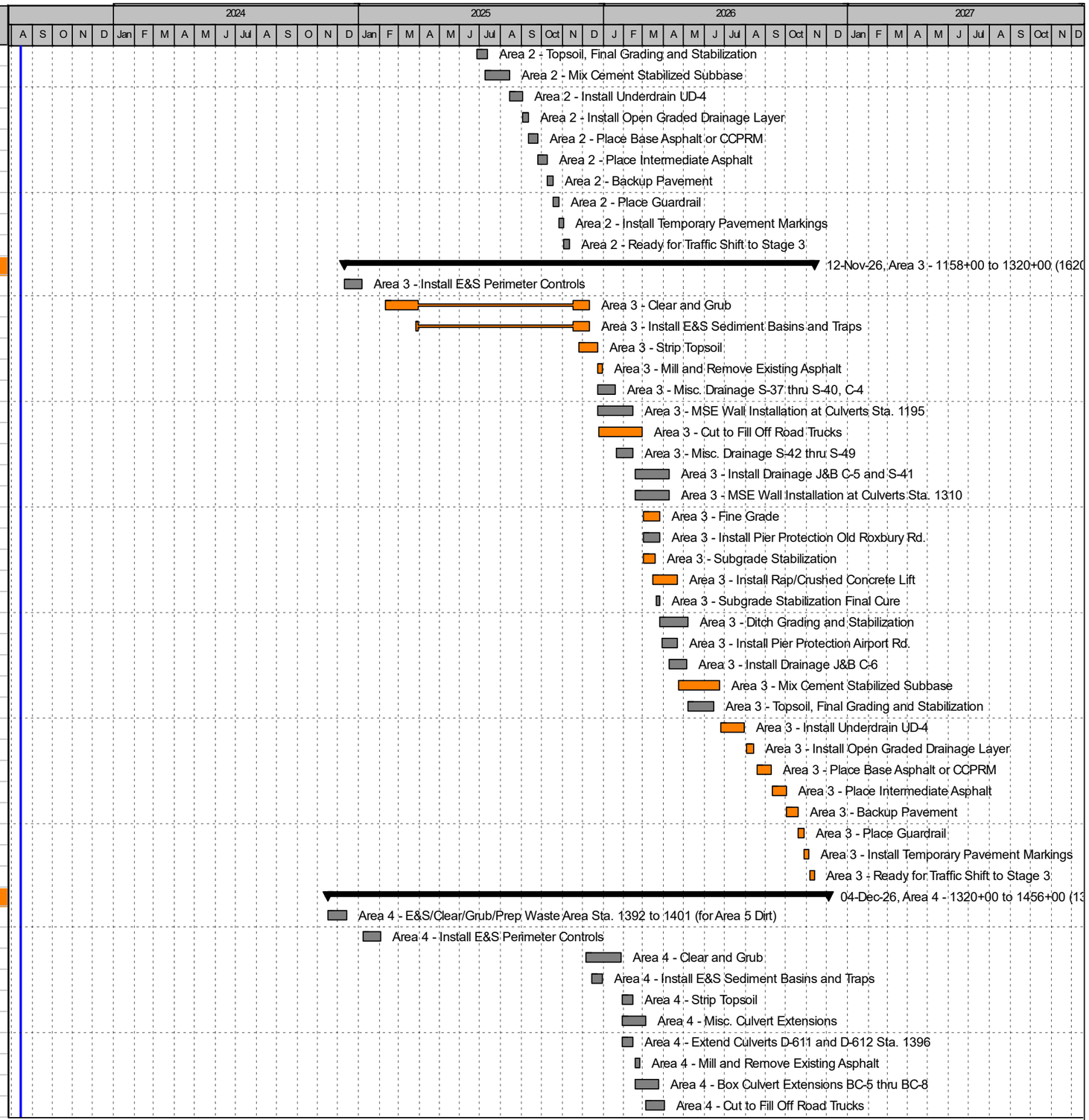
Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

Activity ID	Activity Name	Original Duration	Start	Finish
A6050	Signal and Ramp Ready for Use	1	26-Sep-24	26-Sep-24
A6060	Shift to Stage 2 and Close Loop Ramp	1	27-Nov-24	27-Nov-24
Stage 2 Inside Lane and Shoulder Widening		424	04-Nov-24	04-Dec-26
Area 1 - 988+89 to 1065+00 (7611 LF)		203	27-Nov-24	28-Nov-25
A1550	Area 1 - Install E&S Perimeter Controls	15	27-Nov-24	20-Dec-24
A1560	Area 1 - Clear and Grub	25	04-Dec-24	10-Jan-25
A1570	Area 1 - Install E&S Sediment Basins and Traps	10	20-Dec-24	06-Jan-25
A1580	Area 1 - Strip Topsoil	15	08-Jan-25	03-Feb-25
A1610	Area 1 - Mill and Remove Existing Asphalt	5	05-Feb-25	11-Feb-25
A3230	Area 1 - Connect Culverts at Sta. 998 BC-1	40	05-Feb-25	15-Apr-25
A5560	Area 1 - Cut to Fill Sta. 1065 to 1038 On Road Trucks	42	12-Feb-25	28-Apr-25
A3240	Area 1 - Connect Culverts at Sta. 1012+50 BC-2	20	17-Apr-25	22-May-25
A5570	Area 1 - Cut to Fill Sta. 1038 to 1014 On Road Trucks	23	30-Apr-25	11-Jun-25
A5590	Area 1 - Subgrade Stabilization Sta. 1065 to 1038	2	30-Apr-25	01-May-25
A5660	Area 1 - Subgrade Stabilization Sta. 1065 to 1038 Cure	7	02-May-25	08-May-25
A6090	Area 1 - Misc. Drainage S-1 thru S-14	15	23-May-25	20-Jun-25
A5580	Area 1 - Cut to Fill Sta. 1014 to Begin Project	8	13-Jun-25	26-Jun-25
A5600	Area 1 - Subgrade Stabilization Sta. 1038 to 1014	2	13-Jun-25	16-Jun-25
A5700	Area 1 - Subgrade Stabilization Sta. 1038 to 1014 Cure	7	17-Jun-25	23-Jun-25
A3250	Area 1 - Ditch Grading and Stabilization	20	27-Jun-25	01-Aug-25
A5320	Area 1 - Install Pier Protection Rte. 33	15	27-Jun-25	23-Jul-25
A5610	Area 1 - Subgrade Stabilization Sta. 1014 to Begin Project	5	27-Jun-25	03-Jul-25
A5690	Area 1 - Subgrade Stabilization Sta. 1014 to Begin Project Cure	7	04-Jul-25	10-Jul-25
A1630	Area 1 - Fine Grade	10	10-Jul-25	29-Jul-25
A1640	Area 1 - Install Rap/Crushed Concrete Lift	10	29-Jul-25	15-Aug-25
A3260	Area 1 - Topsoil, Final Grading and Stabilization	10	04-Aug-25	20-Aug-25
A1650	Area 1 - Mix Cement Stabilized Subbase	16	15-Aug-25	15-Sep-25
A1660	Area 1 - Install Underdrain UD-4	8	15-Sep-25	30-Sep-25
A1670	Area 1 - Install Open Graded Drainage Layer	4	30-Sep-25	06-Oct-25
A1680	Area 1 - Place Base Asphalt or CCPRM	6	06-Oct-25	16-Oct-25
A1690	Area 1 - Place Intermediate Asphalt	6	16-Oct-25	27-Oct-25
A1700	Area 1 - Backup Pavement	5	27-Oct-25	03-Nov-25
A1720	Area 1 - Place Guardrail	5	03-Nov-25	11-Nov-25
A1730	Area 1 - Install Temporary Pavement Markings	5	11-Nov-25	19-Nov-25
A1740	Area 1 - Ready for Traffic Shift to Stage 3	5	19-Nov-25	28-Nov-25
Area 2 - 1065+00 to 1158+00 (9300 LF)		201	14-Nov-24	11-Nov-25
A3320	Area 2 - Install E&S Perimeter Controls	15	14-Nov-24	09-Dec-24
A3330	Area 2 - Clear and Grub	20	11-Jan-25	08-Feb-25
A3340	Area 2 - Install E&S Sediment Basins and Traps	10	20-Jan-25	05-Feb-25
A3350	Area 2 - Strip Topsoil	10	06-Feb-25	24-Feb-25
A3370	Area 2 - Mill and Remove Existing Asphalt	5	25-Feb-25	05-Mar-25
A6100	Area 2 - Connect Culvert Sta. 1139 BC-3	5	25-Feb-25	05-Mar-25
A3410	Area 2 - Cut to Fill Off Road Trucks	41	07-Mar-25	16-May-25
A6110	Area 2 - Connect Culverts Sta. 1145 BC-4	8	07-Mar-25	20-Mar-25
A6120	Area 2 - Misc. Drainage S-15 thru S-35, C-1, C-2	20	21-Mar-25	22-Apr-25
A5710	Area 2 - Subgrade Stabilization	7	09-May-25	20-May-25
A3430	Area 2 - Ditch Grading and Stabilization	20	19-May-25	25-Jun-25
A5330	Area 2 - Install Pier Protection Henpeck Rd.	15	19-May-25	16-Jun-25
A5720	Area 2 - Subgrade Stabilization Final Cure	7	21-May-25	27-May-25
A3420	Area 2 - Fine Grade	10	27-May-25	16-Jun-25
A3440	Area 2 - Install Rap/Crushed Concrete Lift	13	16-Jun-25	09-Jul-25



Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

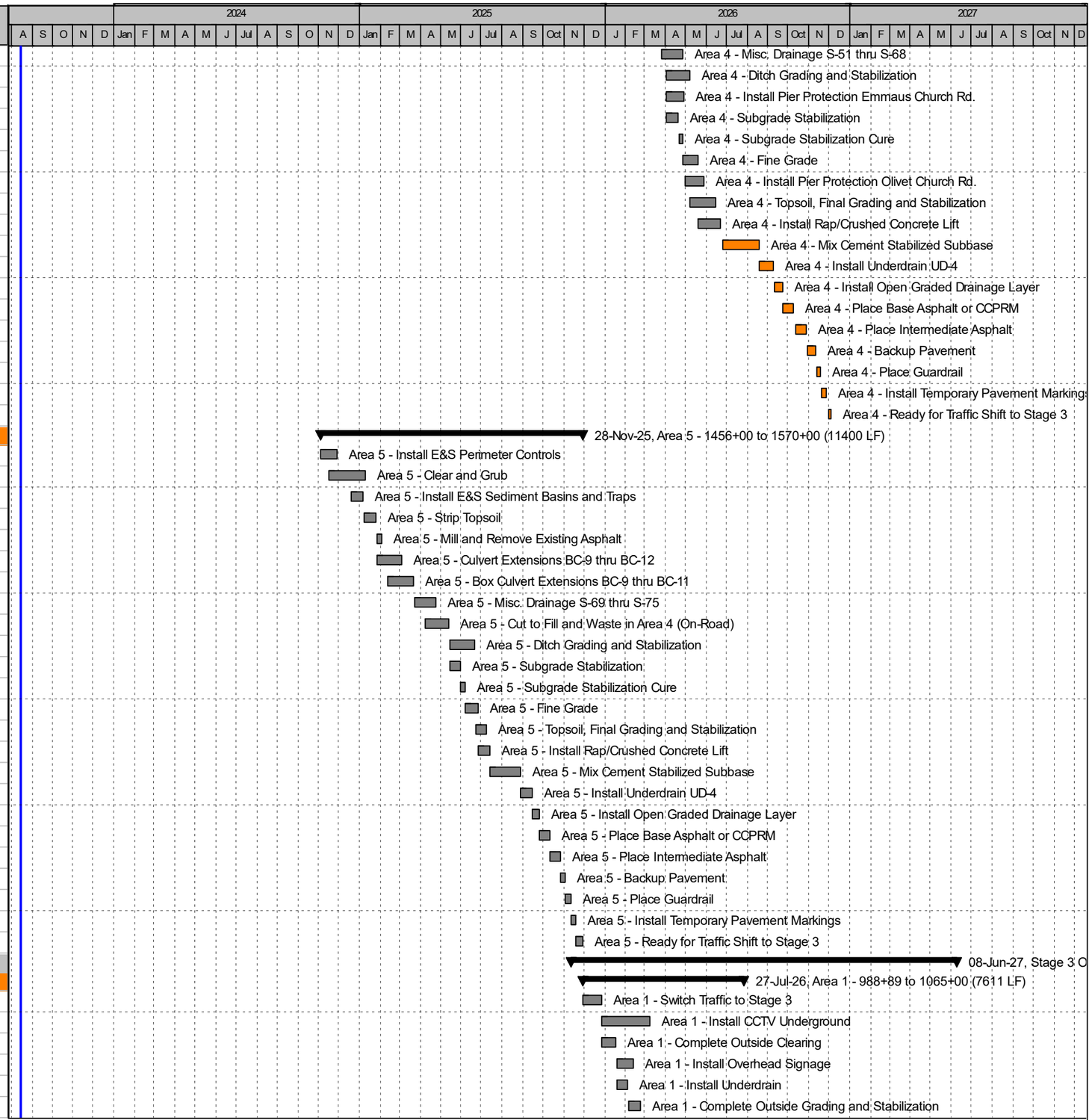
Activity ID	Activity Name	Original Duration	Start	Finish
A3460	Area 2 - Topsoil, Final Grading and Stabilization	10	26-Jun-25	11-Jul-25
A3450	Area 2 - Mix Cement Stabilized Subbase	20	09-Jul-25	14-Aug-25
A3470	Area 2 - Install Underdrain UD-4	10	14-Aug-25	03-Sep-25
A3480	Area 2 - Install Open Graded Drainage Layer	5	03-Sep-25	11-Sep-25
A3490	Area 2 - Place Base Asphalt or CCPRM	8	11-Sep-25	25-Sep-25
A3500	Area 2 - Place Intermediate Asphalt	8	25-Sep-25	09-Oct-25
A3510	Area 2 - Backup Pavement	5	09-Oct-25	17-Oct-25
A3520	Area 2 - Place Guardrail	5	17-Oct-25	27-Oct-25
A3530	Area 2 - Install Temporary Pavement Markings	5	27-Oct-25	03-Nov-25
A3540	Area 2 - Ready for Traffic Shift to Stage 3	5	03-Nov-25	11-Nov-25
Area 3 - 1158+00 to 1320+00 (16200 LF)		389	10-Dec-24	12-Nov-26
A3570	Area 3 - Install E&S Perimeter Controls	15	10-Dec-24	06-Jan-25
A3580	Area 3 - Clear and Grub	50	10-Feb-25	11-Dec-25
A3590	Area 3 - Install E&S Sediment Basins and Traps	20	28-Mar-25	11-Dec-25
A3600	Area 3 - Strip Topsoil	15	26-Nov-25	23-Dec-25
A3620	Area 3 - Mill and Remove Existing Asphalt	5	24-Dec-25	31-Dec-25
A3800	Area 3 - Misc. Drainage S-37 thru S-40, C-4	15	24-Dec-25	19-Jan-26
A6160	Area 3 - MSE Wall Installation at Culverts Sta. 1195	30	24-Dec-25	13-Feb-26
A3660	Area 3 - Cut to Fill Off Road Trucks	36	26-Dec-25	27-Feb-26
A5360	Area 3 - Misc. Drainage S-42 thru S-49	15	20-Jan-26	13-Feb-26
A6130	Area 3 - Install Drainage J&B C-5 and S-41	30	17-Feb-26	09-Apr-26
A6170	Area 3 - MSE Wall Installation at Culverts Sta. 1310	30	17-Feb-26	09-Apr-26
A3670	Area 3 - Fine Grade	14	02-Mar-26	26-Mar-26
A5340	Area 3 - Install Pier Protection Old Roxbury Rd.	15	02-Mar-26	27-Mar-26
A5780	Area 3 - Subgrade Stabilization	12	02-Mar-26	20-Mar-26
A3690	Area 3 - Install Rap/Crushed Concrete Lift	22	16-Mar-26	22-Apr-26
A5790	Area 3 - Subgrade Stabilization Final Cure	7	21-Mar-26	27-Mar-26
A3680	Area 3 - Ditch Grading and Stabilization	25	27-Mar-26	07-May-26
A5350	Area 3 - Install Pier Protection Airport Rd.	15	30-Mar-26	22-Apr-26
A6140	Area 3 - Install Drainage J&B C-6	15	10-Apr-26	06-May-26
A3700	Area 3 - Mix Cement Stabilized Subbase	34	23-Apr-26	23-Jun-26
A3710	Area 3 - Topsoil, Final Grading and Stabilization	20	08-May-26	15-Jun-26
A3720	Area 3 - Install Underdrain UD-4	20	25-Jun-26	31-Jul-26
A3730	Area 3 - Install Open Graded Drainage Layer	8	03-Aug-26	14-Aug-26
A3740	Area 3 - Place Base Asphalt or CCPRM	13	18-Aug-26	09-Sep-26
A3750	Area 3 - Place Intermediate Asphalt	13	11-Sep-26	01-Oct-26
A3760	Area 3 - Backup Pavement	10	02-Oct-26	19-Oct-26
A3770	Area 3 - Place Guardrail	5	20-Oct-26	27-Oct-26
A3780	Area 3 - Install Temporary Pavement Markings	5	28-Oct-26	04-Nov-26
A3790	Area 3 - Ready for Traffic Shift to Stage 3	5	05-Nov-26	12-Nov-26
Area 4 - 1320+00 to 1456+00 (13600 LF)		416	16-Nov-24	04-Dec-26
A5750	Area 4 - E&S/Clear/Grub/Prep Waste Area Sta. 1392 to 1401 (for Area	20	16-Nov-24	14-Dec-24
A3810	Area 4 - Install E&S Perimeter Controls	15	08-Jan-25	03-Feb-25
A3820	Area 4 - Clear and Grub	35	06-Dec-25	27-Jan-26
A3830	Area 4 - Install E&S Sediment Basins and Traps	10	15-Dec-25	31-Dec-25
A3840	Area 4 - Strip Topsoil	10	29-Jan-26	13-Feb-26
A3880	Area 4 - Misc. Culvert Extensions	20	29-Jan-26	05-Mar-26
A5380	Area 4 - Extend Culverts D-611 and D-612 Sta. 1396	10	29-Jan-26	13-Feb-26
A3860	Area 4 - Mill and Remove Existing Asphalt	5	17-Feb-26	24-Feb-26
A6180	Area 4 - Box Culvert Extensions BC-5 thru BC-8	20	17-Feb-26	24-Mar-26
A3890	Area 4 - Cut to Fill Off Road Trucks	16	06-Mar-26	02-Apr-26



Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

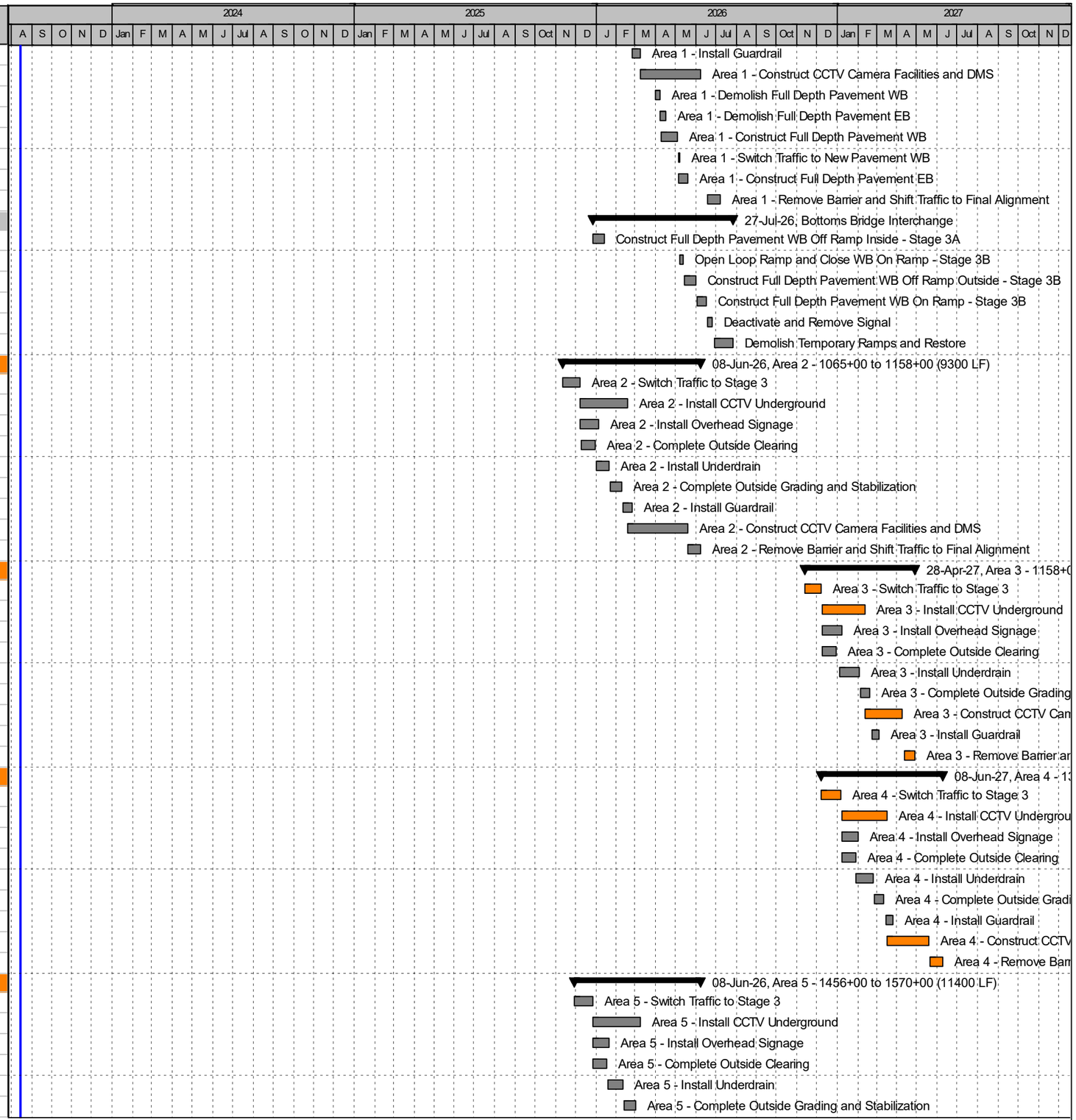
kokosing CONSTRUCTION COMPANY, INC. | RK&K

Activity ID	Activity Name	Original Duration	Start	Finish
A6190	Area 4 - Misc. Drainage S-51 thru S-68	20	26-Mar-26	27-Apr-26
A3910	Area 4 - Ditch Grading and Stabilization	20	03-Apr-26	07-May-26
A5370	Area 4 - Install Pier Protection Emmaus Church Rd.	15	03-Apr-26	28-Apr-26
A5760	Area 4 - Subgrade Stabilization	10	03-Apr-26	20-Apr-26
A5770	Area 4 - Subgrade Stabilization Cure	7	21-Apr-26	27-Apr-26
A3900	Area 4 - Fine Grade	12	27-Apr-26	19-May-26
A5390	Area 4 - Install Pier Protection Olivet Church Rd.	15	30-Apr-26	28-May-26
A3930	Area 4 - Topsoil, Final Grading and Stabilization	20	08-May-26	15-Jun-26
A3920	Area 4 - Install Rap/Crushed Concrete Lift	18	19-May-26	22-Jun-26
A3940	Area 4 - Mix Cement Stabilized Subbase	29	25-Jun-26	18-Aug-26
A3950	Area 4 - Install Underdrain UD-4	12	19-Aug-26	09-Sep-26
A3960	Area 4 - Install Open Graded Drainage Layer	7	11-Sep-26	22-Sep-26
A3970	Area 4 - Place Base Asphalt or CCPRM	11	23-Sep-26	09-Oct-26
A3980	Area 4 - Place Intermediate Asphalt	11	12-Oct-26	28-Oct-26
A3990	Area 4 - Backup Pavement	8	29-Oct-26	10-Nov-26
A4000	Area 4 - Place Guardrail	5	12-Nov-26	18-Nov-26
A4010	Area 4 - Install Temporary Pavement Markings	5	20-Nov-26	27-Nov-26
A4020	Area 4 - Ready for Traffic Shift to Stage 3	5	30-Nov-26	04-Dec-26
Area 5 - 1456+00 to 1570+00 (11400 LF)		217	04-Nov-24	28-Nov-25
A2420	Area 5 - Install E&S Perimeter Controls	15	04-Nov-24	27-Nov-24
A2430	Area 5 - Clear and Grub	35	16-Nov-24	08-Jan-25
A2440	Area 5 - Install E&S Sediment Basins and Traps	10	20-Dec-24	06-Jan-25
A2450	Area 5 - Strip Topsoil	10	08-Jan-25	24-Jan-25
A2480	Area 5 - Mill and Remove Existing Asphalt	5	27-Jan-25	03-Feb-25
A3090	Area 5 - Culvert Extensions BC-9 thru BC-12	20	27-Jan-25	04-Mar-25
A6200	Area 5 - Box Culvert Extensions BC-9 thru BC-11	20	12-Feb-25	21-Mar-25
A3100	Area 5 - Misc. Drainage S-69 thru S-75	20	24-Mar-25	23-Apr-25
A2490	Area 5 - Cut to Fill and Waste in Area 4 (On-Road)	20	09-Apr-25	13-May-25
A3120	Area 5 - Ditch Grading and Stabilization	20	15-May-25	20-Jun-25
A5730	Area 5 - Subgrade Stabilization	9	15-May-25	30-May-25
A5740	Area 5 - Subgrade Stabilization Cure	7	31-May-25	06-Jun-25
A2500	Area 5 - Fine Grade	10	06-Jun-25	26-Jun-25
A3130	Area 5 - Topsoil, Final Grading and Stabilization	10	23-Jun-25	09-Jul-25
A2510	Area 5 - Install Rap/Crushed Concrete Lift	10	26-Jun-25	14-Jul-25
A2520	Area 5 - Mix Cement Stabilized Subbase	24	14-Jul-25	28-Aug-25
A2530	Area 5 - Install Underdrain UD-4	10	28-Aug-25	15-Sep-25
A2540	Area 5 - Install Open Graded Drainage Layer	6	15-Sep-25	25-Sep-25
A2550	Area 5 - Place Base Asphalt or CCPRM	9	25-Sep-25	10-Oct-25
A2560	Area 5 - Place Intermediate Asphalt	9	10-Oct-25	27-Oct-25
A2570	Area 5 - Backup Pavement	5	27-Oct-25	03-Nov-25
A2590	Area 5 - Place Guardrail	5	03-Nov-25	11-Nov-25
A2600	Area 5 - Install Temporary Pavement Markings	5	11-Nov-25	19-Nov-25
A2610	Area 5 - Ready for Traffic Shift to Stage 3	5	19-Nov-25	28-Nov-25
Stage 3 Outside Lane Work		318	11-Nov-25	08-Jun-27
Area 1 - 988+89 to 1065+00 (7611 LF)		131	28-Nov-25	27-Jul-26
A3550	Area 1 - Switch Traffic to Stage 3	15	28-Nov-25	26-Dec-25
A4050	Area 1 - Install CCTV Underground	40	26-Dec-25	09-Mar-26
A4070	Area 1 - Complete Outside Clearing	15	26-Dec-25	17-Jan-26
A4060	Area 1 - Install Overhead Signage	15	19-Jan-26	12-Feb-26
A5800	Area 1 - Install Underdrain	10	19-Jan-26	04-Feb-26
A4080	Area 1 - Complete Outside Grading and Stabilization	10	05-Feb-26	23-Feb-26



Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

Activity ID	Activity Name	Original Duration	Start	Finish
A4090	Area 1 - Install Guardrail	8	24-Feb-26	09-Mar-26
A4100	Area 1 - Construct CCTV Camera Facilities and DMS	50	09-Mar-26	08-Jun-26
A4140	Area 1 - Demolish Full Depth Pavement WB	5	01-Apr-26	08-Apr-26
A4200	Area 1 - Demolish Full Depth Pavement EB	5	08-Apr-26	16-Apr-26
A4150	Area 1 - Construct Full Depth Pavement WB	15	09-Apr-26	04-May-26
A4160	Area 1 - Switch Traffic to New Pavement WB	2	06-May-26	07-May-26
A4210	Area 1 - Construct Full Depth Pavement EB	8	06-May-26	19-May-26
A4110	Area 1 - Remove Barrier and Shift Traffic to Final Alignment	10	19-Jun-26	08-Jul-26
Bottoms Bridge Interchange		116	26-Dec-25	27-Jul-26
A4130	Construct Full Depth Pavement WB Off Ramp Inside - Stage 3A	10	26-Dec-25	13-Jan-26
A4170	Open Loop Ramp and Close WB On Ramp - Stage 3B	2	08-May-26	12-May-26
A4190	Construct Full Depth Pavement WB Off Ramp Outside - Stage 3B	10	14-May-26	01-Jun-26
A4180	Construct Full Depth Pavement WB On Ramp - Stage 3B	10	03-Jun-26	17-Jun-26
A4220	Deactivate and Remove Signal	5	19-Jun-26	26-Jun-26
A4230	Demolish Temporary Ramps and Restore	15	29-Jun-26	27-Jul-26
Area 2 - 1065+00 to 1158+00 (9300 LF)		115	11-Nov-25	08-Jun-26
A3560	Area 2 - Switch Traffic to Stage 3	15	11-Nov-25	08-Dec-25
A4240	Area 2 - Install CCTV Underground	40	08-Dec-25	18-Feb-26
A4250	Area 2 - Install Overhead Signage	15	08-Dec-25	05-Jan-26
A4260	Area 2 - Complete Outside Clearing	15	09-Dec-25	31-Dec-25
A5810	Area 2 - Install Underdrain	12	02-Jan-26	21-Jan-26
A4270	Area 2 - Complete Outside Grading and Stabilization	10	23-Jan-26	09-Feb-26
A4280	Area 2 - Install Guardrail	8	10-Feb-26	24-Feb-26
A4290	Area 2 - Construct CCTV Camera Facilities and DMS	50	18-Feb-26	19-May-26
A4300	Area 2 - Remove Barrier and Shift Traffic to Final Alignment	10	19-May-26	08-Jun-26
Area 3 - 1158+00 to 1320+00 (16200 LF)		93	13-Nov-26	28-Apr-27
A4030	Area 3 - Switch Traffic to Stage 3	15	13-Nov-26	07-Dec-26
A4310	Area 3 - Install CCTV Underground	35	09-Dec-26	11-Feb-27
A4320	Area 3 - Install Overhead Signage	15	09-Dec-26	07-Jan-27
A4330	Area 3 - Complete Outside Clearing	15	09-Dec-26	30-Dec-26
A5820	Area 3 - Install Underdrain	18	04-Jan-27	03-Feb-27
A4340	Area 3 - Complete Outside Grading and Stabilization	10	04-Feb-27	19-Feb-27
A4360	Area 3 - Construct CCTV Camera Facilities and DMS	33	12-Feb-27	09-Apr-27
A4350	Area 3 - Install Guardrail	8	23-Feb-27	05-Mar-27
A4370	Area 3 - Remove Barrier and Shift Traffic to Final Alignment	10	12-Apr-27	28-Apr-27
Area 4 - 1320+00 to 1456+00 (13600 LF)		101	07-Dec-26	08-Jun-27
A4040	Area 4 - Switch Traffic to Stage 3	15	07-Dec-26	06-Jan-27
A4380	Area 4 - Install CCTV Underground	40	07-Jan-27	16-Mar-27
A4390	Area 4 - Install Overhead Signage	15	07-Jan-27	01-Feb-27
A4400	Area 4 - Complete Outside Clearing	15	07-Jan-27	28-Jan-27
A5830	Area 4 - Install Underdrain	15	29-Jan-27	24-Feb-27
A4410	Area 4 - Complete Outside Grading and Stabilization	10	25-Feb-27	12-Mar-27
A4420	Area 4 - Install Guardrail	8	15-Mar-27	26-Mar-27
A4430	Area 4 - Construct CCTV Camera Facilities and DMS	36	17-Mar-27	19-May-27
A4440	Area 4 - Remove Barrier and Shift Traffic to Final Alignment	10	21-May-27	08-Jun-27
Area 5 - 1456+00 to 1570+00 (11400 LF)		105	28-Nov-25	08-Jun-26
A2620	Area 5 - Switch Traffic to Stage 3	15	28-Nov-25	26-Dec-25
A3140	Area 5 - Install CCTV Underground	40	26-Dec-25	09-Mar-26
A3160	Area 5 - Install Overhead Signage	15	26-Dec-25	21-Jan-26
A3190	Area 5 - Complete Outside Clearing	15	26-Dec-25	17-Jan-26
A5840	Area 5 - Install Underdrain	14	19-Jan-26	10-Feb-26
A3170	Area 5 - Complete Outside Grading and Stabilization	10	12-Feb-26	02-Mar-26



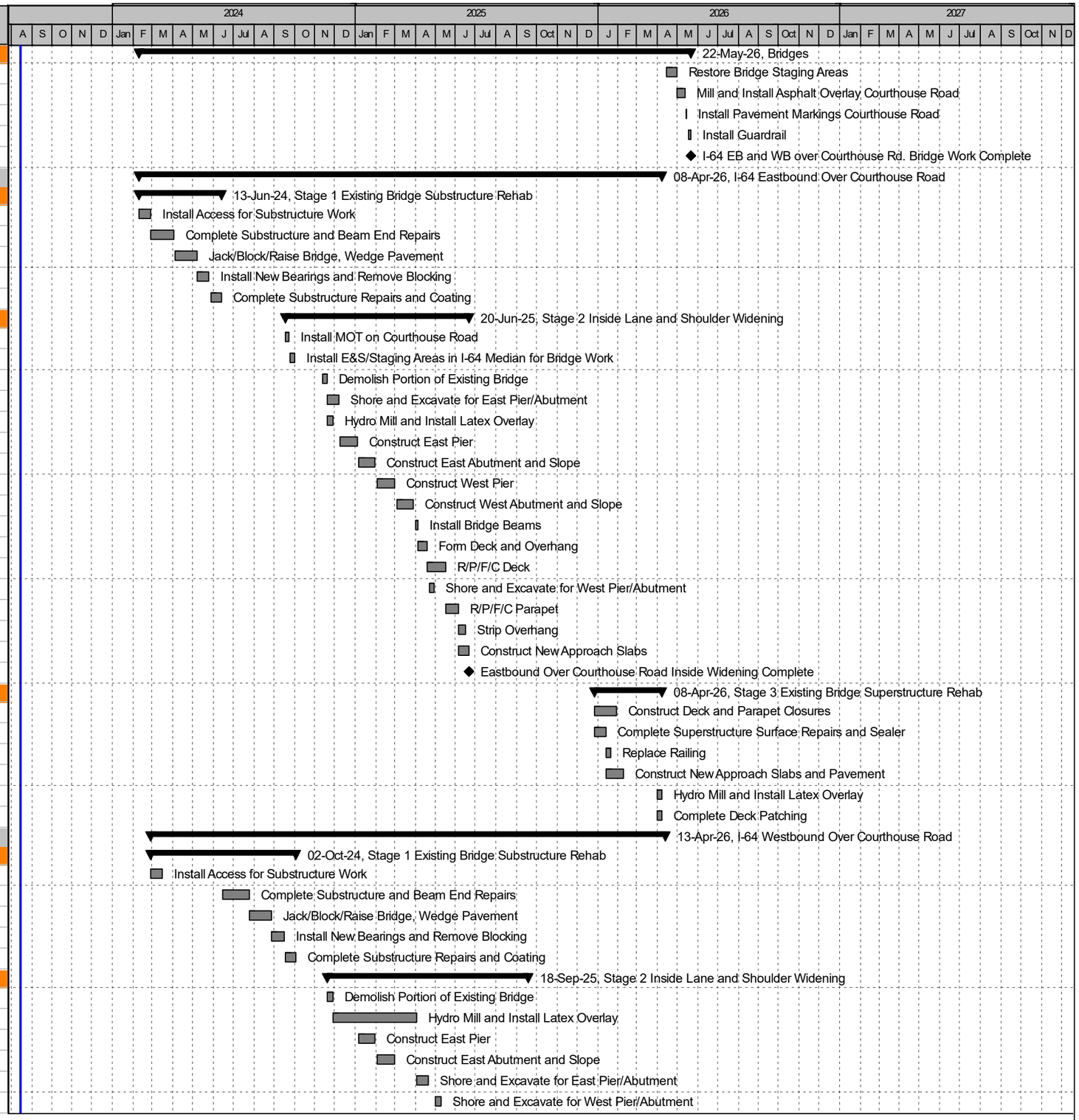
Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

kokosing CONSTRUCTION COMPANY, INC. | RK&K

Activity ID	Activity Name	Original Duration	Start	Finish
A3180	Area 5 - Install Guardrail	8	04-Mar-26	16-Mar-26
A3150	Area 5 - Construct CCTV Camera Facilities and DMS	50	09-Mar-26	08-Jun-26
A3210	Area 5 - Remove Barrier and Shift Traffic to Final Alignment	5	26-May-26	03-Jun-26
A3220	Area 5 - Work Complete to Avoid Conflict with Segment B	0		03-Jun-26
Noise Walls		171	08-Dec-25	15-Oct-26
Sound Barrier A Sta. 1046+00 to 1082+00 (3600 LF)		161	26-Dec-25	15-Oct-26
A4760	Install Perimeter E&S Controls	5	26-Dec-25	05-Jan-26
A4770	Clearing and Grubbing	15	07-Jan-26	27-Jan-26
A5090	Construct Access Road	18	29-Jan-26	02-Mar-26
A5100	Foundations and Set Posts	65	04-Mar-26	26-Jun-26
A5110	Pour Steps and Grade for Panels	30	22-May-26	16-Jul-26
A5120	Set Panels at Posts	40	29-Jun-26	11-Sep-26
A5130	Backfill Behind Wall and Ditch Grading	15	14-Sep-26	07-Oct-26
A5140	Grade in Front of Walls	15	14-Sep-26	07-Oct-26
A5150	Seed and Stabilize	5	08-Oct-26	15-Oct-26
Sound Barrier A1 Sta. 1104+50 to 1111+50 (700 LF)		54	08-Dec-25	16-Mar-26
A4780	Install Perimeter E&S Controls	2	08-Dec-25	11-Dec-25
A4790	Clearing and Grubbing	5	11-Dec-25	18-Dec-25
A5230	Construct Access Road	5	18-Dec-25	29-Dec-25
A5240	Foundations and Set Posts	16	29-Dec-25	26-Jan-26
A5250	Pour Steps and Grade for Panels	8	26-Jan-26	09-Feb-26
A5260	Set Panels at Posts	10	09-Feb-26	27-Feb-26
A5270	Backfill Behind Wall and Ditch Grading	4	27-Feb-26	06-Mar-26
A5280	Grade in Front of Walls	4	06-Mar-26	13-Mar-26
A5290	Seed and Stabilize	1	13-Mar-26	16-Mar-26
Sound Barrier B Sta. 5067+00 to 5049+00 (1800 LF)		116	26-Dec-25	27-Jul-26
A4800	Install Perimeter E&S Controls	5	26-Dec-25	05-Jan-26
A4810	Clearing and Grubbing	15	29-Jan-26	20-Feb-26
A5160	Construct Access Road	9	23-Feb-26	09-Mar-26
A5170	Foundations and Set Posts	32	10-Mar-26	04-May-26
A5180	Pour Steps and Grade for Panels	15	27-Apr-26	22-May-26
A5190	Set Panels at Posts	20	15-May-26	19-Jun-26
A5200	Backfill Behind Wall and Ditch Grading	8	22-Jun-26	06-Jul-26
A5210	Grade in Front of Walls	8	08-Jul-26	21-Jul-26
A5220	Seed and Stabilize	3	22-Jul-26	27-Jul-26
Stage 4 Final Overlay and Open Lanes		150	16-Oct-26	12-Jul-27
Area 1 - 988+89 to 1065+00 (7611 LF)		16	12-Nov-26	07-Dec-26
A4490	Area 1 - Install Surface Asphalt and Striping EB	8	12-Nov-26	24-Nov-26
A4500	Area 1 - Install Surface Asphalt and Striping WB	8	25-Nov-26	07-Dec-26
Area 2 - 1065+00 to 1158+00 (9300 LF)		16	16-Oct-26	10-Nov-26
A4470	Area 2 - Install Surface Asphalt and Striping EB	8	16-Oct-26	28-Oct-26
A4480	Area 2 - Install Surface Asphalt and Striping WB	8	29-Oct-26	10-Nov-26
Area 3 - 1158+00 to 1320+00 (16200 LF)		22	29-Apr-27	08-Jun-27
A4510	Area 3 - Install Surface Asphalt and Striping EB	11	29-Apr-27	18-May-27
A4520	Area 3 - Install Surface Asphalt and Striping WB	11	19-May-27	08-Jun-27
Area 4 - 1320+00 to 1456+00 (13600 LF)		18	10-Jun-27	12-Jul-27
A4530	Area 4 - Install Surface Asphalt and Striping EB	9	10-Jun-27	24-Jun-27
A4540	Area 4 - Install Surface Asphalt and Striping WB	9	25-Jun-27	12-Jul-27
Area 5 - 1456+00 to 1570+00 (11400 LF)		16	01-Apr-27	28-Apr-27
A4450	Area 5 - Install Surface Asphalt and Striping EB	8	01-Apr-27	13-Apr-27
A5300	Area 5 - Delay in Surface for Segment B Shifts	0	01-Apr-27*	
A4460	Area 5 - Install Surface Asphalt and Striping WB	8	15-Apr-27	28-Apr-27

Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

Activity ID	Activity Name	Original Duration	Start	Finish
Bridges		463	09-Feb-24	22-May-26
A5400	Restore Bridge Staging Areas	10	14-Apr-26	30-Apr-26
A5430	Mill and Install Asphalt Overlay Courthouse Road	6	01-May-26	12-May-26
A5410	Install Pavement Markings Courthouse Road	2	14-May-26	15-May-26
A5420	Install Guardrail	4	18-May-26	22-May-26
A3200	I-64 EB and WB over Courthouse Rd. Bridge Work Complete	0		22-May-26
I-64 Eastbound Over Courthouse Road		438	09-Feb-24	08-Apr-26
Stage 1 Existing Bridge Substructure Rehab		70	09-Feb-24	13-Jun-24
A2630	Install Access for Substructure Work	10	09-Feb-24	26-Feb-24
A2640	Complete Substructure and Beam End Repairs	20	27-Feb-24	02-Apr-24
A2650	Jack/Block/Raise Bridge, Wedge Pavement	20	04-Apr-24	07-May-24
A2720	Install New Bearings and Remove Blocking	10	08-May-24	24-May-24
A2670	Complete Substructure Repairs and Coating	10	28-May-24	13-Jun-24
Stage 2 Inside Lane and Shoulder Widening		155	17-Sep-24	20-Jun-25
A2080	Install MOT on Courthouse Road	4	17-Sep-24	23-Sep-24
A2090	Install E&S/Staging Areas in I-64 Median for Bridge Work	5	24-Sep-24	01-Oct-24
A2230	Demolish Portion of Existing Bridge	5	12-Nov-24	19-Nov-24
A2110	Shore and Excavate for East Pier/Abutment	10	20-Nov-24	06-Dec-24
A2950	Hydro Mill and Install Latex Overlay	5	20-Nov-24	27-Nov-24
A2120	Construct East Pier	15	09-Dec-24	03-Jan-25
A2130	Construct East Abutment and Slope	15	06-Jan-25	30-Jan-25
A2180	Construct West Pier	15	03-Feb-25	28-Feb-25
A2190	Construct West Abutment and Slope	15	04-Mar-25	28-Mar-25
A2250	Install Bridge Beams	3	01-Apr-25	04-Apr-25
A2260	Form Deck and Overhang	8	04-Apr-25	18-Apr-25
A2270	R/P/F/C Deck	15	18-Apr-25	16-May-25
A2170	Shore and Excavate for West Pier/Abutment	5	22-Apr-25	30-Apr-25
A2280	R/P/F/C Parapet	10	16-May-25	05-Jun-25
A2290	Strip Overhang	5	05-Jun-25	16-Jun-25
A2370	Construct New Approach Slabs	8	05-Jun-25	20-Jun-25
A2350	Eastbound Over Courthouse Road Inside Widening Complete	0		20-Jun-25
Stage 3 Existing Bridge Superstructure Rehab		57	26-Dec-25	08-Apr-26
A2790	Construct Deck and Parapet Closures	20	26-Dec-25	30-Jan-26
A2850	Complete Superstructure Surface Repairs and Sealer	10	26-Dec-25	13-Jan-26
A2860	Replace Railing	5	13-Jan-26	21-Jan-26
A6010	Construct New Approach Slabs and Pavement	15	13-Jan-26	09-Feb-26
A2800	Hydro Mill and Install Latex Overlay	5	01-Apr-26	08-Apr-26
A2810	Complete Deck Patching	5	01-Apr-26	08-Apr-26
I-64 Westbound Over Courthouse Road		431	27-Feb-24	13-Apr-26
Stage 1 Existing Bridge Substructure Rehab		120	27-Feb-24	02-Oct-24
A2730	Install Access for Substructure Work	10	27-Feb-24	15-Mar-24
A5970	Complete Substructure and Beam End Repairs	20	14-Jun-24	24-Jul-24
A5980	Jack/Block/Raise Bridge, Wedge Pavement	20	25-Jul-24	27-Aug-24
A5990	Install New Bearings and Remove Blocking	10	28-Aug-24	16-Sep-24
A6000	Complete Substructure Repairs and Coating	10	17-Sep-24	02-Oct-24
Stage 2 Inside Lane and Shoulder Widening		165	20-Nov-24	18-Sep-25
A2240	Demolish Portion of Existing Bridge	5	20-Nov-24	27-Nov-24
A2960	Hydro Mill and Install Latex Overlay	5	29-Nov-24	03-Apr-25
A2150	Construct East Pier	15	06-Jan-25	30-Jan-25
A2160	Construct East Abutment and Slope	15	03-Feb-25	28-Feb-25
A2140	Shore and Excavate for East Pier/Abutment	10	04-Apr-25	21-Apr-25
A2200	Shore and Excavate for West Pier/Abutment	5	01-May-25	09-May-25



Remaining Level of Effort | Actual Work | Critical Remaining Work
Actual Level of Effort | Remaining Work | Milestone

kokosing CONSTRUCTION COMPANY, INC. | RK&K

Activity ID	Activity Name	Original Duration	Start	Finish
A2210	Construct West Pier	15	12-May-25	06-Jun-25
A2220	Construct West Abutment and Slope	15	09-Jun-25	03-Jul-25
A2300	Install Bridge Beams	3	07-Jul-25	10-Jul-25
A2310	Form Deck and Overhang	8	11-Jul-25	25-Jul-25
A2320	R/P/F/C Deck	15	28-Jul-25	22-Aug-25
A2330	R/P/F/C Parapet	10	25-Aug-25	10-Sep-25
A2380	Construct New Approach Slabs	8	25-Aug-25	05-Sep-25
A2340	Strip Overhang	5	11-Sep-25	18-Sep-25
A2360	Westbound Over Courthouse Road Inside Widening Complete	0		18-Sep-25
Stage 3 Existing Bridge Superstructure Rehab		40	30-Jan-26	13-Apr-26
A2820	Construct Deck and Parapet Closures	20	30-Jan-26	09-Mar-26
A2870	Complete Superstructure Surface Repairs and Sealer	10	30-Jan-26	18-Feb-26
A2880	Replace Railing	5	18-Feb-26	27-Feb-26
A6020	Construct New Approach Slabs and Pavement	15	09-Mar-26	03-Apr-26
A2830	Hydro Mill and Install Latex Overlay	5	06-Apr-26	13-Apr-26
A2840	Complete Deck Patching	5	06-Apr-26	13-Apr-26
Rte. 33 Bridge Overpass		30	27-Nov-24	21-Jan-25
A4570	Install Substructure Access	10	27-Nov-24	13-Dec-24
A4580	Complete Substructure Surface Repairs	15	16-Dec-24	13-Jan-25
A4590	Demobilize	5	14-Jan-25	21-Jan-25