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VDOT
Virginia Department of Transportation

VOLUME I | TECHNICAL PROPOSAL

A Design-Build Project

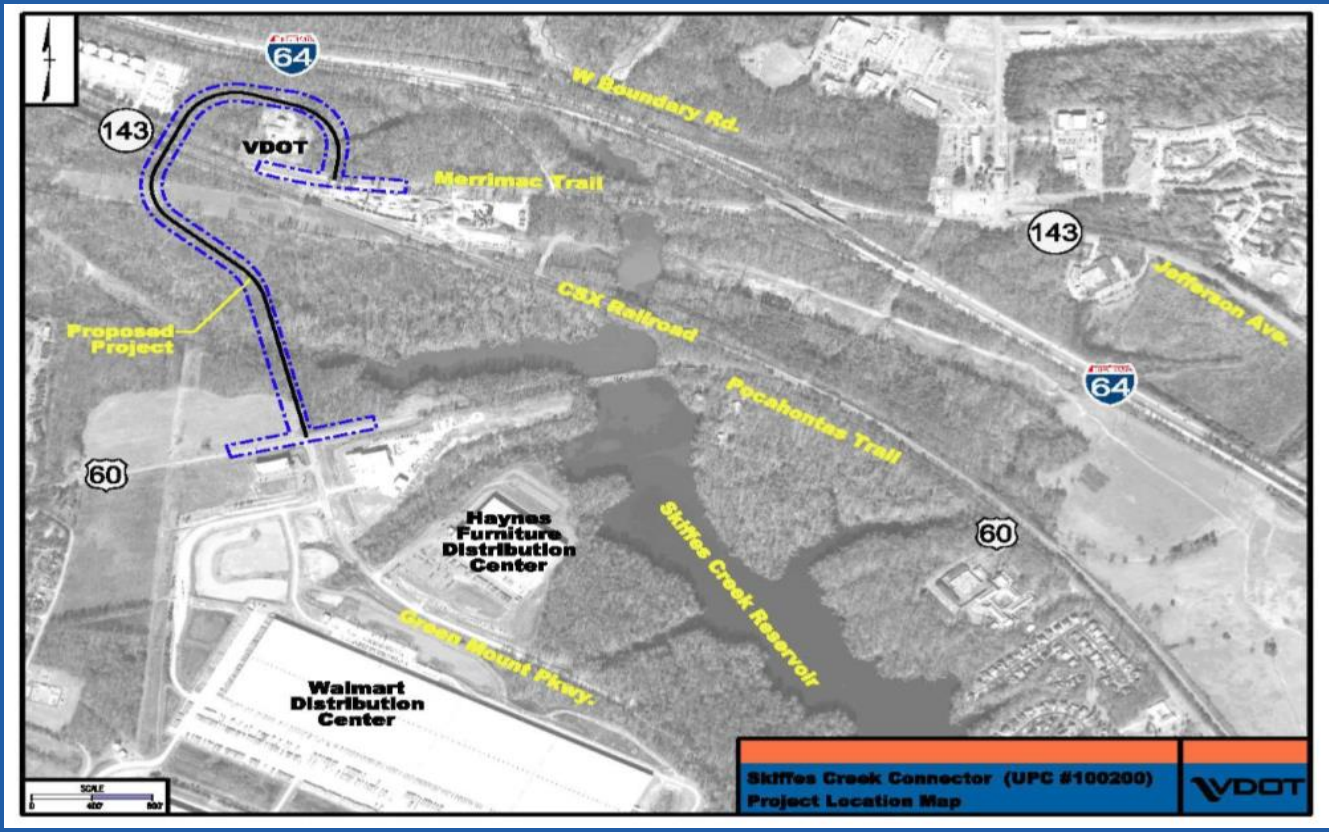
Skiffes Creek Connector

From: Route 60 (Pocahontas Trail)
To: Route 143 (Merrimac Trail)
James City County, Virginia

State Project Number: 0060-047-627, P101, R201, C501, B619, B620

Federal Project Number: STP-5A03(455) | STP-5A03(972)

Contract ID Number: C00100200DB104



In association with

CORMAN KOKOSING | PARSONS

November 5, 2019

4.1 Letter of Submittal

CORMAN KOKOSING

12001 GUILFORD ROAD | ANNAPOLIS JUNCTION, MD 20701
BALTIMORE 410.792.9400 | WASHINGTON, DC 301.953.0900
FAX 301.953.0384

November 5, 2019

Sudha Mudgade, P.E., PMP, DBIA
Alternative Project Delivery Division
Virginia Department of Transportation
1401 East Broad Street
Richmond, VA 23219

RE: Letter of Submittal | Design Build | Skiffes Creek Connector | James City County, VA
State Project No.: 0060-047-627, P101, R201, C501, B619, B620
Federal Project No.: STP-5A03(455) | STP-5A03(972)
Contract ID Number: C00100200DB104

Dear Ms. Mudgade:

4.1.1 Corman Kokosing Construction Company (Corman), 12001 Guilford Road, Annapolis Junction, MD 20701, is the legal entity who will execute the contract with VDOT and submits the following:

- Ten identical copies of our Technical Proposal.
- One CD-ROM containing the entire proposal in a single cohesive Adobe PDF file.

4.1.2 Corman hereby declares our intent, if selected, to enter into a contract with Virginia Dept. of Transportation (VDOT) for the project per the RFP.

4.1.3 Pursuant to Part 1, Section 8.2, Corman hereby declares that the offer represented by the Technical and Price Proposals will remain in full force and effect for 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 Principal Officer
Lou Robbins, PE, DBIA **Vice President Business Development** Corman Kokosing Construction Company 12001 Guilford Road Annapolis Junction, MD 20701 703-772-8566 Cell 301-953-0384 Fax lrobbins@cormanconstruction.com	**Chris Clark** **Design-Build Project Manager** Corman Kokosing Construction Company 1403 Greenbrier Parkway, Suite 575 Chesapeake, VA 23320 757-620-5654 - Cell 757-227-3066 - Fax cclark@cormanconstruction.com	**Greg Hamilton, PE, DBIA** **Sr. Vice President** Corman Kokosing Construction Company 12001 Guilford Road Annapolis Junction, MD 20701 410-792-9400 gah@kokosing.biz

4.1.6 Final Completion Date: 10/27/22.

4.1.7 Unique Milestone Dates: None proposed.

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

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

4.1.10 Corman is committed to achieving a thirteen percent (13%) DBE participation goal for the entire value of the contract.

Sincerely,

CORMAN KOKOSING CONSTRUCTION COMPANY

Gregory Hamilton, PE, DBIA
Sr. Vice President

4.2 Qualifications

4.2 QUALIFICATIONS

4.2.1 Corman hereby confirms the information contained in our Statement of Qualifications (SOQ) remains true and accurate to include the following approved changes in Section 4.2.2 below.

4.2.2 The following is our revised organizational chart from our submitted SOQ which clearly indicates our team member changes in red and which were previously approved by VDOT in accordance with Part 1, Section 11.4:

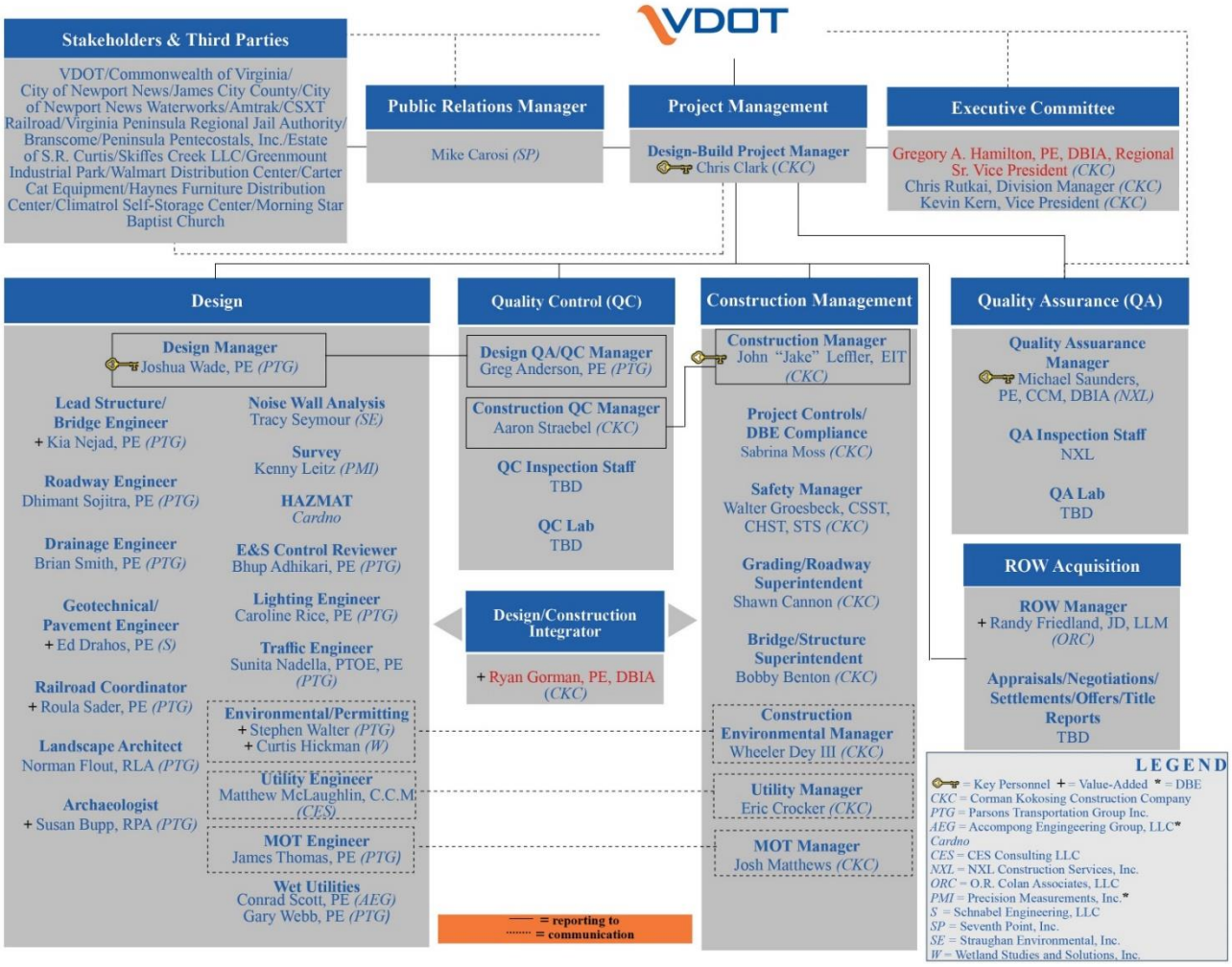


Figure 4.2-1: Organizational chart

Revised excerpt from our SOQ Narrative: Design-Build/Construction Integrator: Ryan Gorman, PE, DBIA (Corman) will coordinate the construction and designer staff and meet VDOT's requirements. Ryan is extremely familiar with this role having performed it on multiple VDOT Design-Build projects including the highly successful Route 29 Solutions and the recently completed I-64 Bottoms Bridge which were both completed ahead of schedule. He is currently performing in this role on the $409 Million High Rise Bridge project where Parsons is the lead designer. The same key Parsons design staff he is working with there will be assigned to this project. Ryan has been involved with VDOT design-build projects since 1996, has 24 years of highway and bridge construction experience, and is currently President of VTCA and on their Design-Build subcommittee. Ryan will review design submittals for conformance to requirements, constructability and specific scheduling needs. He will report to the design-build project manager.

4.3 Design Concept

4.3 DESIGN CONCEPT

The Corman | Parsons Design-Build Team is enthusiastic about further enhancing the Commonwealth's transportation network. Through our review of the RFP, site visits and meetings with VDOT, the utility companies and our knowledge of the area, we have revised and optimized the proposed solution to:

- Meet the project priorities by reducing costs while providing a design that exceeds the RFP's requirements.
- Provide the most efficient and least impactful construction means and methods.
- Provide a project approach that limits/eliminates potential stakeholder risks.
- Meet all schedule requirements.

This project presents an opportunity to formulate creative ideas that enhance mobility and economic development while reducing costs to the Commonwealth of Virginia. We evaluated the RFP concept and alternatives developed by VDOT's preliminary engineering team and several design enhancements with the VDOT team through the one-on-one meeting. As discussed at our Proprietary Meeting and approved in the subsequent *Meeting Minutes*, should further geotechnical investigation prove positive, we may be including the two approved Alternative Technical Concepts (ATCs) in our design:

1. Culvert options 1 and 2 at STA. 52+50 from Item 3.5 of our Proprietary Meeting.
2. Mill and overlay approach discussed in Geotechnical Question 24.

Based on VDOT's feedback through the Proprietary Meeting, we have developed several design enhancements **(See Table 4.3-1).** They provide value-added benefits to the project, VDOT, and multiple stakeholders by reducing project and future maintenance costs, and by reducing the temporary/permanent impacts to the stakeholders and adjacent landowners. Details are included in Sections 4.3.1 Conceptual Roadway Plans, 4.3.2 Conceptual Structural Plans and in Volume II. Our technical proposal and concept are fully compliant with the RFP and accomplish the following:

- Meet/exceed all Design Criteria Table requirements.
- Ensure that the limits of construction to include all stormwater management facilities are within the existing/proposed right-of-way limits of I-64 or as shown in the RFP Conceptual Plans with the exception of permanent/temporary easements
- Does not include design elements that require Design Exceptions and/or Design Waivers unless they are identified or included as such in the RFP or Addendum

4.3.1 CONCEPTUAL ROADWAY PLANS

SKIFFES CREEK CONNECTOR (INCLUDING ALL CONNECTOR ROADS AND ROADWAY CROSSINGS): Design/construction will be performed per the RFP (as amended), VDOT and AASHTO, specifications, and reference documents listed in the RFP, Part 2, Section 2.1, and per our Conceptual Roadway Plans in Volume II of our Technical Proposal.

TABLE 4.3-1 ROADWAY DESIGN ENHANCEMENTS

	DESIGN ENHANCEMENT	VALUE
R1	Lowered CSX Bridge.	Reduced height of retaining walls at abutments and ensure no impacts outside of environmental corridor, while maintaining minimum vertical clearances at CSX tracks (existing/future) and Route 143.

	DESIGN ENHANCEMENT	VALUE
R2	Lowered Skiffes Creek Bridge.	Eliminated retaining walls at abutments and ensure no impacts outside of environmental corridor.
R3	Reduced vertical grades along Skiffes Creek Connector from a maximum of 9% to below 5% where possible, including from STA. 37+43.00 to STA. 48+80.00 from RFP design of 4.31% to 3.93%. Reduced vertical grade between STA. 20+00.00 to STA. 25+50.00 from 4.00% (RFP) to 2.79% (Concept).	Reduced truck operation impacts, which are significant with the projected high volume of trucks using the new road. Reduce noise impacts due to trucks, bus, and other heavy vehicles negotiating the 9% grade.
R4	Adjusted profile to increase cut and reduce fill along Skiffes Creek Connector.	Allows flatter grades and balances grading to reduce cost and time for construction. Less disruption to adjacent roadways impact by importing fill via on-road trucks.
R5	Lowered profile along Route 143 (POTENTIAL ATC).	Reduces need for full depth pavement along the corridor which reduces the amount of traffic shifts required for construction.
R6	Eliminated need for two stormwater management ponds shown in the RFP Concept Plans.	Reduces construction cost/long-term maintenance.
R7	Leveraged existing I-64 stormwater management pond asset.	Reduces construction cost/long-term maintenance through leveraging an existing asset.
R8	Eliminated pier protection wall along EB Route 143 by designing CSX Bridge pier for train collision force.	Reduces construction cost/long-term maintenance.
R9	Eliminated retaining walls from STA. 15+74 to STA. 16+07, STA. 18+84 to STA. 19+40, from STA. 21+30 to STA. 22+30 and from STA. 52+22 to STA. 52+78 by adjusting the vertical profile on Skiffes Creek Connector.	Reduces construction cost/long-term maintenance.
R10	Weir walls as stormwater outlets.	Reduces future maintenance and eliminates the siltation tendency that comes with riser outfall pipes.

(a) General geometry including horizontal curve data, super-elevation data, and associated design speeds, the number and widths of lanes and shoulders: Our design concept constructs the new Skiffes Creek Connector which will connect Route 60 with Route 143. Roadways are categorized/designed as shown in **Table: 4.3-2**:

TABLE 4.3-2: ROADWAYS

ROADWAY	CATEGORY	GEOMETRIC STANDARD	DESIGN SPEED
Skiffes Creek Connector	Urban Collector Street System	GS-7	35 mph
Route 60	Urban Principal Arterial System	GS-5	50 mph
Route 143	Urban Principal Arterial System	GS-5	60 mph

(b) Horizontal/vertical alignments: The horizontal geometry generally matches what was shown in the RFP Conceptual Plans. The Corman | Parsons Design-Build Team reviewed stopping sight distance around the curves

and at the intersections to ensure VDOT/AASHTO requirements have been met with the placement of guardrail, signals, signs and other possible obstructions throughout the corridor. A WB-67 design truck checked all left/ right turn movements and adjustments made as necessary. Curves widened at the two curves adjacent to the CSX bridge as required by the RFP Addendum # 1.

Vertical alignments on our design meet the minimum/maximum design criteria. Proposed profiles are shown in the Conceptual Plans. On Routes 60/143, the grades were designed to match existing as much as possible to reduce the limits of pavement reconstruction and variable depth overlay. Vertical alignment at the Skiffes Creek Bridge is designed with 1-ft. of freeboard above the 100-year storm. Vertical alignment at CSX Bridge provides 23-ft.-1-in. clearance to the current/future railroad tracks and 17-ft. 6-in. clearance to Route 143, which is above the 16-ft.-6-in. clearance required by the RFP. Both clearances are measured from the bottom of the future CSX Bridge widening by one lane in each direction.

(c) Maximum grade for all segments/connectors: Vertical alignments were designed to meet and/or exceed the Design Criteria as shown in **Table: 4.3-3**:

TABLE 4.3-3: VERTICAL ALIGNMENTS

ROADWAY	RFP MIN. GRADE	MIN. GRADE PROVIDED	RFP MAX. GRADE	MAX. GRADE PROVIDED
Skiffes Creek Connector	0.5%	0.5%	9.0%	5.93%
Route 60	Existing	Existing	6.0%	3.19%
Route 143	Existing	Existing	5.0%	1.51%

INNOVATION: *Reduced maximum grades by 34% on the connector allowing better operation for the truck traffic using the roadway.*

(d) Typical sections of the roadway segments and bridge structures: Typical sections include all features required by the RFP and the proposed minimum pavement sections are per RFP requirements. The Skiffes Creek Connector will be constructed to accommodate one lane in each direction with curb and gutter along the entire limits. Routes 60 and 143 will be widened to include an 8-ft. wide shoulder within the project limits. A 10-ft. shared-use path will be constructed on the southwest side of the Route 60 and Green Mount Parkway intersection from the corner to the existing bus stop.

(e) Conceptual hydraulic and stormwater management design: The Corman | Parsons Design-Build Team will perform the hydrologic/hydraulic analyses for the Skiffes Creek using approved methodologies by VDOT as described in VDOT drainage manuals and the reference materials identified in the RFP. Although the classification of the Skiffes Creek Connector requires the Skiffes Creek Bridge design be based on the 25-year flood analysis, our conceptual hydraulic design of the bridge is for the 100-year flood. It still meets the RFP requirements that the abutments are located outside the wetlands. The new structure will pass the 100-year flood without any adverse bridge impacts. The output from hydraulic analysis will be used to perform the scour analysis for the design and placement of pier sizes and depths, using the 100-year flood as a check flood. We analyzed the deck drainage, and our proposed drainage inlets are located outside the bridge limits, so there will be no need for the drainage inlets and/or scuppers on the bridge deck.

Storm drainage analysis for the Skiffes Creek Connector and for project area along Routes 60 and 143 will be performed using the VDOT guidelines and criteria. We will use a combination of drainage inlets and channels to

reduce project cost and improve the environment. Our conceptual storm drainage captures flow in a curb-gutter system. Storm drainage pipes and stormwater management grassed channels will be designed to carry flow to the outfalls. Using grassed channels provides environmental benefits and reduces project cost. Crossroad culverts, including culvert at STA. 52+30, will be designed following the VDOT guidelines and site requirements. Our conceptual drainage design also ensures the stream restoration areas and other areas identified in the RFP, are not impacted adversely with our storm drainage design, as well as with our stormwater management designs.

Stormwater management BMPs will be designed using the criteria/requirements of VDOT and City of Newport News reservoir operation requirements. We identified three locations for wet pond construction, the preferred stormwater management BMP of the City of Newport News, for treatment of impervious runoff from the connector. This is a reduction of two stormwater management ponds from the five shown on the RFP Concept Plans. In addition, a portion of impervious runoff from the connector will be discharged into the I-64 wet pond, as has been allowed in Addendum 1. The impervious runoff to the I-64 pond will be discharged first into the grassed ditch channel along the connector, and then into the pretreatment sediment bay of I-64 wet pond. The nutrient credit for the Level-1 I-64 wet pond has been computed and subtracted from the total phosphorous project requirements. We have proposed grassed channel stormwater management BMPs at other locations within the project to make it more environmentally friendly. It is anticipated that not all the phosphorous removal requirement of 9.77 lbs. will be met by proposed BMPs due to the limited available right of way outside of the wetlands. Our preliminary calculations show that 5.87 lbs. of phosphorous will be removed using the available and new BMPs. The requirements of remaining 3.90 lbs. of phosphorous removal will be met by purchasing the nutrient credits, following the VDOT guidelines. Stormwater Pollution Prevention Plans, which includes an Erosion & Sediment Control Plan, will be developed/implemented to ensure sediments and other pollutants are not transported to receiving waters to comply with relevant DEQ and VDOT regulations, and Chesapeake Bay TMDL requirements. To perform stormwater management, the Corman | Parsons Design-Build Team chose wet ponds on account of site context, since the Tidewater topography is conducive to wet ponds and since high groundwater will sustain a permanent pool. Wet ponds capably remove phosphorous mass from stormwater runoff, carrying a high removal efficiency (45% or greater) as compared to lower efficiencies provided by grass channels and extended detention ponds. Commensurate with Virginia Stormwater Design Specification No. 14, the Corman | Parsons Design-Build Team substantiated the design by water balance testing/verifying that sufficient inflows compensate for infiltration and evaporation losses during extended dry period, such as a 30-day drought. Clogging of orifice/pipes within the wet ponds are prevented by using the weir walls as outlets instead of riser structures with outfall pipes, which is one of our drainage enhancements. Using weir walls as a stormwater management facility outlet reduces VDOT's future maintenance needs and eliminates siltation tendency that comes with riser outfall pipes. Weir walls have commendable precedent, per our successful use of them for other Hampton Roads District projects and throughout Virginia.

INNOVATION: *The Corman / Parsons Design-Build Team eliminated two stormwater management ponds from the five shown on the RFP Concept Plans which reduces current construction and future VDOT maintenance costs.*

(f) Proposed right of way limits (i.e., shown as an overlay of our proposed right of way limits and VDOT's RFP conceptual right of way limits, highlighting the differences between the two): The project has been designed to lie entirely within the proposed right of way of I-64 and as shown on the RFP Conceptual Plans. As permitted by the RFP, temporary construction easements have been provided for grading that lies outside of the proposed right of way. Existing utilities impacted by construction that are in an existing right of

way will be relocated inside of the new right of way. Stormwater management basins are inside of the existing or proposed right of way. There are 12 parcels for construction as shown on the RFP Concept Plans and 11 require right of way and/or easements. As allowed by the RFP our proposal does not show temporary construction and drainage easements.

(g) Proposed utility impacts: Revised the CSX Bridge to move the southern abutment outside of the 30-ft. Virginia Natural Gas easement and eliminate any impact to the existing 16-in. gas line. Along Route 60, the westbound right turn lane has been reduced which greatly minimized impact to the overhead power lines that run along the northside of the roadway.

The fiberoptic and 12-in. water line running along the northside of Route 143 will be relocated where impacted adjacent to the north abutment for the CSX Bridge.

Our vertical alignment for the connector maintains the 30-ft. vertical clearance to the overhead transmission lines that run along the southside of the tracks and cross Skiffes Creek Connector south of the CSX Bridge.

Our team met with all utility owners (except HRSD who declined to meet with any of the teams) along the project limits in the field to determine approximate locations of utilities and potential impacts. We evaluated mitigations to design around the facilities and understand the precautions to be taken to protect them in place or identify the facilities that need to be relocated. This coordination effort has provided our team with a thorough understanding of the existing utility systems and potential impacts.

Locations will be verified by test pitting before developing roadway and structural plans to relocate these facilities. Further investigations and additional test holes will be completed just prior to any actual construction to reduce the risk to the utilities, thereby avoiding *utility surprises* which could cause cost/schedule impacts. While the project presents utility challenges, there is nothing anticipated that our team has not undertaken successfully on other local complex VDOT projects. Our approach is based on identifying/mitigating utility conflicts from pre-investigation through design development and scheduling construction operations to not conflict with existing utilities and avoid potential relocations.

(h) 3-D Modeling – Open Roads: The Corman | Parsons Design-Build Team developed a 3-D model of our design to review alternatives, optimize geometry, and coordinate between disciplines to enhance it. We resolved complex grading issues, utility conflicts, and eliminated potential constructability concerns. It optimizes Parsons and Corman communication in the field. We developed an enhanced workflow for VDOT design-build projects using this model to improve construction, geospatial construction surveying and automated machine guidance.

4.3.2 CONCEPTUAL STRUCTURAL PLANS

SKIFFES CREEK CONNECTOR BRIDGES OVER SKIFFES CREEK AND CSXT RAILWAY: Our enhanced bridge designs were designed per AASHTO Load and Resistance Factor Design (LRFD) Bridge Design Specifications, 8th Edition, 2017 and VDOT Modifications (IIM-S&B-80); and VDOT Structure and Bridge Manual, revised 10/31/18. We considered multiple bridge arrangements to develop a design that provides a safe and economical bridge that meets the project goals and RFP requirements. To optimize the beam design for serviceability, Parsons performed refined analysis using LARSA 4-D; Structural and Earthquake Engineering Integrated Analysis and Design Software package. LARSA 4-D's robust staged construction analysis capability allows for evaluation of staged construction activities with time-dependent variables, use of refined prestress loss models, and refined deflection estimates using the finite element method. We have demonstrated that deflection and camber values using refined analysis in LARSA 4-D are compliant with AASHTO and VDOT requirements.

Skiffes Creek Connector over Skiffes Creek | B619: The proposed bridge length has been reduced by 23-ft. compared to the RFP concept minimizing long-term maintenance/construction cost. Abutment locations have been relocated towards the creek and are outside of the wetlands and 100-Year floodplain. The proposed type and layout for the Skiffes Creek Connector over Skiffes Creek is a four-span continuous prestressed concrete bridge. The structure cross section is composed of four 37-in. precast concrete bulb tees (PCBT) beams spaced at 8-ft.-4-in on center.

PRIMARY DESIGN ENHANCEMENT: *Used four 69-ft.+/- spans as opposed to two 149-ft.-4-in. spans which reduces total bridge depth and allows more economical smaller/lighter precast elements. Bridge includes reduced abutment and backfill heights, is jointless, and features fully integral abutments and three fixed pile bents, improving durability/reducing maintenance. We implemented hydraulic and scour analysis results in the substructure design. Pile bents composed of one row of four 18-in. prestressed concrete driven piles.*

Skiffes Creek Connector over Route 143 and CSX | B620: The proposed bridge type and layout for the Skiffes Creek Connector over Route 143 and CSX is a two-span continuous prestressed concrete bridge. The structure's cross section is composed of four 69-in. precast concrete bulb tees (PCBT) beams spaced at 8-ft. 4-in. We have evaluated the 69-in. bulb tee beams for the proposed bridge layout and they meet AASHTO and VDOT for strength and service limit state requirements and will rate in AASHTO software.

PRIMARY DESIGN ENHANCEMENT: *Used a longer span to clear the natural gas easements on the bridge's south end. To maintain total bridge length, we reduced Span B length, thereby eliminating relocating the 12-in. water line and several telephone and fiber optic lines on the north side of Route 143. These enhancements reduce construction schedule and risk due to the utility location and conflicts. It eliminates the need for a cantilever retaining wall in front of Abutment A, reducing cost/construction schedule. MSE retaining walls are used at each abutment allowing quick, economical construction and long-term low maintenance durability.*

Our bridge design enhancements result in a cost-effective structure that reduces the initial construction cost and reduces long-term maintenance costs/risks during construction and long term.

TABLE 4.3-4 STRUCTURAL DESIGN ENHANCEMENTS

	DESIGN ENHANCEMENT	VALUE
S1	Reduced Skiffes Creek Bridge length by 23-ft.	Reduces construction costs, schedule risks, long-term maintenance.
S2	Reduced structure depth of both bridges.	Reduces structure depth, construction/ maintenance costs, and improved construction, such as smaller cranes needed resulting in less construction clearance, and environmental improvements.

	DESIGN ENHANCEMENT	VALUE
S3	Lowered profile of both bridges.	Reduces abutment/backfill heights, retaining walls, construction/ maintenance costs, and environmental impacts due to less truck traffic hauling materials, including fill dirt/retaining wall panels.
S4	Modified span arrangement Skiffes Creek Bridge.	Reduces deck thickness, reducing crane size and temporary impacts from larger causeway needed adjacent to proposed bridge alignment. Reduction in deck thickness also reduces long-term maintenance costs.
S5	Modified span arrangement CSX Bridge.	Span of the gas line and easement improves schedule and reduces risks of settlement on this critical project element, eliminated cantilevered retaining wall in front of Abutment A reducing costs/future maintenance and MSE walls at each abutment reducing construction/maintenance costs.
S6	PCBT beams in both bridges.	Reduces long-term maintenance.
S7	Potential use of lightweight concrete (LWC) deck and parapets in CSX Bridge.	Improves design efficiency, increases service life, has less cracking, is less permeable and reduces long-term maintenance.
S8	Utilized integral abutments on both bridges.	Reduces long-term maintenance.
S8	LARSA 4-D refine analysis and design of PCBT-69 beams for CSX Bridge allows for shallow beams in CSX Bridge.	Reduces approach fill heights and walls further reducing long-term maintenance.
S9	Crashworthy wall pier for CSX Bridge.	Reduces long-term maintenance, removes the crash wall and eliminates the BPPS-54-in. at the roadside reducing potential obstacles/hazards.
S10	LARSA 4-D refine analysis and design of PCBT-69 beams for CSX Bridge allows for shallow beams in the bridge.	Reduces approach fill heights and walls further reducing long-term maintenance.
S11	Utilized *open rail* parapet.	Railings on both structures along the corridor are consistent.
S12	Eliminated retaining walls at Skiffes Creek Bridge.	Reduces bridge construction costs, schedule risks, long-term maintenance.

4.4 Project Approach

VDOT
Virginia Department of Transportation

4.4 PROJECT APPROACH

4.4.1 ENVIRONMENTAL MANAGEMENT

ENVIRONMENTAL MANAGEMENT APPROACH: The Corman | Parsons Design-Build Team will implement an Environmental Management Plan (EMP) that outlines environmental goals/commitments, ensures timely issuance of permits and agency coordination, tracks the satisfaction of permit conditions, and institutes robust procedures for compliance, monitoring, reporting, and continuous improvement of our processes. Our plan focuses on avoiding/minimizing environmental impacts during design/construction and proactively working with VDOT and the regulatory agencies to address any changes that arise as construction progresses. Our approach to environmental management is founded on the following:

- Understanding that environmental compliance is critical to project success.
- Recognizing environmental conditions/areas of concern.
- Collaborative relationship with the regulatory agencies for proactive, regular, and timely coordination.
- Focusing on complying with permit conditions and environmental commitments made in the National Environmental Policy Act (NEPA) documents.
- As utilized on past projects a culture that dictates site maintenance during construction is everyone's responsibility and we will not let it take a back seat to the typical *"Construction first – environmental maintenance second"* approach.

The EMP will be integrated in the Project Management Plan (PMP) as an integral component of design/ construction processes and schedules consisting of:

- Environmental goals and commitments, consistent with the approved permit conditions and the approved NEPA documentation.
- Roles/responsibilities.
- Synopsis of environmental issues/concerns.
- Monitoring plan/process (including Environmental Commitment Checklist and an Environmental Management Database).
- Reporting plan/process (explicitly addressing responsibilities of quality assurance (QA) and quality control (QC)).
- Continual learning/improvement through communication/lessons learned.

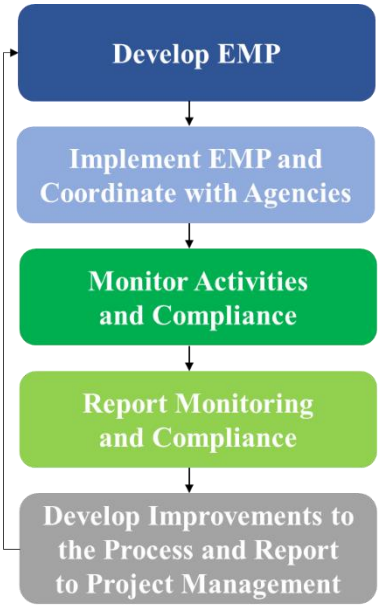


Figure 4.4-1: Environmental Management Process

Key steps in EMP implementation/management are illustrated in **Figure 4.4-1.** Corman has successfully used this process on other design-build projects, including VDOT's Military Highway Continuous Flow Interchange (CFI) and I-64 Widening Exit 200 to Exit 205 which was completed ahead of schedule and under budget.

The Corman | Parsons Design-Build Team assigned WSSI's Curtis Hickman and Parsons' Stephen Walter to lead the Environmental Management and Compliance Team each offering over 30 years of environmental management of major transportation projects in Virginia and having successfully served in this same role for projects in the district, such as Military Highway CFI and separately for projects, such as the award-winning Virginia Ave. Tunnel for CSX, in the historic areas of Capitol Hill, Washington, DC. Together, they will oversee including environmental requirements in project designs, as well as with

environmental commitment compliance during construction. To ensure compliance, our team will develop and update the EMP and work with the design and construction teams to successfully implement it. Drawing from their extensive background, Curtis will also be responsible for agency and permit coordination, while Steve will oversee NEPA compliance and preparation of any subsequent environmental documentation. Jointly, they will ensure environmental issues are coordinated regularly with the construction manager, design manager, task leads, VDOT environmental staff, and key regulatory agencies, such as the US Army Corps of Engineers (USACE), Virginia Dept. of Environmental Quality (DEQ), and Virginia Marine Resource Commission (VMRC). Details of Curtis and Steve's roles and that of Environmental Management Team key members are presented in **Table 4.4-1:**

TABLE 4.4-1: ENVIRONMENTAL TEAM ROLES | RESPONSIBILITIES

Team Member	Roles | Responsibilities
Curtis Hickman and Steve Walter Environmental Management & Compliance	• Develop/implement EMP. • Coordinate with federal, state, local environmental resource agencies. • Ensure environmental requirement and commitments compliance per NEPA and related documents and in environmental permits. • Ensure compliance with mitigation requirements. • Develop reports and corrective actions for environmental management.
Curtis Hickman Environmental Permitting	• Develop/submit environmental permit applications. • Coordinate with federal, state, local permitting/review agencies to obtain permits. • Respond to agency requests for additional information to speed up reviews. • Manage permit application process.
Stephen Walter NEPA	• Lead NEPA reviews/documentation. • Provide NEPA re-evaluations or other supplemental documentation. • Coordinate with federal/state environmental agencies. • Lead development/revisions of environmental documents.
Bhup Adhikari, PE Erosion & Sediment (E&S) Control Designer	• As a certified DEQ SWM Reviewer, ensure SWPPP complies with statutory, permitting, contract requirements. • As a certified DEQ E&S Control Plan Reviewer, develop comprehensive E&S controls. • Plans and revise/update as needed.
Wheeler Dey III Construction Environmental Manager (CEM)	• Maintain DEQ Responsible Land Disturber and VDOT E&S Control certifications. • Manage construction portion of EMP, plus SWPPP compliance. • Conduct/track C-107 inspections to ensure correct E&S control installation/maintenance. • Monitor/document compliance with TOYR and protections for endangered species. • Lead environmental portion of QC Preparatory Meetings involving ground disturbance. • Prepare a Hurricane Preparedness Plan ensuring plans are in place (including checklists) to mitigate severe weather event impacts. • Ensure borrow/waste activities comply with VDOT requirements.
QA and QC E&S Control Inspectors	• Maintain DEQ E&S Control Inspector certification. • Participate in preparatory meetings for activities requiring ground disturbance. • Verify adherence to permitting hold points and TOYR in project schedule. • Conduct twice weekly E&S control inspections to verify SWPPP compliance.

The Corman | Parsons Design-Build Team has a solid understanding of the environmental tasks in support of this project. We have reviewed the environmental documentation/commitments, stipulations and requirements included in the NEPA documents. Based on this review, we compiled a database of over 50 requirements/ commitments. We identified the most sensitive environmental requirements and progressed solutions with the team's subject matter experts to ensure the project is designed and constructed in keeping with the intent of VDOT and the regulators. Upon project initiation, the commitments will be entered into PAR-PRO®, a Parsons' proprietary software program that effectively tracks/records environmental requirements, commitments and specifications through project closeout. PAR-PRO® has been used for design-build projects across the country including Downtown/Midtown/Martin Luther King Expansion P3 and the Intercounty Connector in Maryland.

Environmental Permitting: Receiving environmental permits/approvals on schedule while meeting the environmental commitments is critical to project success. Our experienced team of environmental consultants know the permitting process, local regulators, regulatory policies, protected species coordination, and associated regulatory timelines. This understanding and familiarity will help mitigate project schedule risks due to environmental issues. Our team has extensive experience permitting impacts to wetlands/streams for roads, bridges and residential developments in James City County, including with the Upper and Lower Powhatan Creek Perennial Stream Assessments, Environmental Engineering Annual Services Contract and Perennial Stream Protocol Workgroup with the county. We also held contracts with the Yorktown Naval Weapons Station for protected species surveys and wetland delineations.

Our Environmental Team will leverage existing relationships with key agencies to rapidly apply for and secure permits using the least cumbersome permits. We understand that compliance with NEPA, Section 106 of the National Historic Preservation Act, Section 7 of the Endangered Species Act, and related environmental laws and regulations are prerequisites for permit issuance.

Our team has reviewed the Environmental Assessment (EA)/Finding of No Significant Impact (FONSI), its appendices, and the wetland delineation reports in detail, and created a database of environmental resources, which is being used to develop Geographic Information System (GIS) for maps/analysis. Based on this review/ analysis, we identified key environmental permits needed for this project and their timeline for acquisition, as shown in **Table 4.4-2**. We will use the Joint Permit Application (JPA) process to apply for wetlands/stream permits and will submit the Coastal Zone Consistency Determination request early to expedite the JPA process.

ENVIRONMENTAL EXPERIENCE: *Corman environmental leads will draw on their solid local relationships/experience obtaining environmental permits from USACE, DEQ, and VMRC for projects throughout the Commonwealth, including James City County Environmental On-Call and these recent design-build projects: Military Highway CFI and I-64 Widening MP 200 to 205.*

TABLE 4.4-2: ENVIRONMENTAL PERMITS

Permit	Permitting Agency	Description	Timeline
Clean Water Act (CWA) Section 404	USACE	Individual permit for impacts to Waters of the US and wetlands.	200 Days*
Dept. of Environmental Quality (DEQ) CWA Section 401, Water Quality Certification	DEQ	Virginia Water Protection (VWP) individual permit.	220 Days*
Federal Consistency Certification with the Coastal Zone Management Act	DEQ	Coastal Zone Consistency Determination – Required to obtain a USACE individual permit.	90 Days
Virginia Pollution Discharge Elimination System (VPDES) Stormwater General Permit (CWA Section 402)	DEQ	General VPDES permit for discharges of stormwater from construction activities.	90 Days

** Timelines will be reduced if DEQ VWP-3 General Permit for Linear Transportation Projects and the USACE State Programmatic General Permit (SPGP) is used in lieu of Individual Permits.*

Wetland/stream impacts are estimated in the EA to be 0.85 acres and 673 LF respectively. Bridging of Skiffes Creek will reduce the amount of permanent stream/wetland impacts. Permanent conversion of forested wetlands under the bridge to scrub shrub wetlands may be required if these wetlands need to be permanently maintained

without trees due to the height of the bridge. The USACE has issued a Jurisdictional Determination which confirms the limits of wetland/streams within the project area. However, the compensation requirement for stream impacts needs to be determined using the Unified Stream Methodology (USM). USM field assessments which we will use to calculate the compensation ratio for stream impacts.

Based on a review of the RFP Concept Plans, permanent impacts are estimated to be approximately: 0.30 acres of forested wetlands, most of which are permanent conversion of forested wetlands to scrub shrub wetlands, 0.1 acres of impacts to a freshwater pond, and 150 LF of stream impacts.

Using these impact estimates the project should qualify for coverage under DEQ VWP-3 General Permit for Linear Transportation Projects and the USACE State Programmatic General Permit (SPGP) in lieu of Individual Permits. This could potentially reduce the permitting timeline by nearly two months.

The Corman | Parsons Design-Build Team will complete the Joint Permit Application (JPA) to apply for permits to authorize unavoidable impacts to wetlands/streams. As noted above, we will also develop/submit an early letter request to the DEQ to secure the Coastal Zone Consistency Determination required by the USACE to issue their permit. We will identify and track mitigation credit availability to ensure they are available when needed to satisfy permit conditions. Wetland/stream mitigation credits are currently available in the project watershed (HUC 02080206).

Our design reduced wetland impacts by 0.70 acres and stream impacts by 488 LF from the EA allowing use of DEQ and USACE general permits.

Our experience steered us in identifying the critical permitting steps. The following will be implemented to obtain permits per the project schedule:

- Hold a Pre-Application meeting with the permitting agencies to discuss issues, propose solutions and listen for opportunities.
- Expedite permits using weekly task force meetings and meetings with agencies to communicate timelines/resolve concerns.
- Coordinate with reviewing agencies regarding State and Federal Protected Species to manage potential for surveys or Time-of-Year restrictions.
- Prepare a focused Joint Permit Application that makes it easy for the agency to find the information they need for decision making documentation.
- Facilitate the permitting agencies review of the JPA by providing information they need before they ask for it and maintain contact to keep the project in their purview.
- Ensure sufficient approved wetland/stream mitigation credits are available for purchase to meet the compensatory mitigation conditions of both permits.
- Work expeditiously to complete any supplemental NEPA reviews and coordination if any project activities need to extend outside of the current NEPA study boundaries.

Early agency coordination through a pre-application meeting and regular agency communication will be utilized to navigate the permitting process efficiently. This coordination will help identify any concerns the agencies may

have early in the process so we can quickly address them. Our environmental, planning, and engineering teams will collectively develop/discuss solutions so that all are informed and speak with one voice.

Our team has the experience to successfully navigate the regulatory process to secure approvals timely while setting the stage for a successful construction project that meets the environmental commitments.

Section 106 | Cultural Resources regulated by the NHPA are present within and adjacent to the project corridor. A Programmatic Agreement (PA) has been executed to mitigate potential impacts to these resources. The Final Design Plans will reflect the design constraints associated with the PA and avoid impacts to them beyond what is shown in the RFP Conceptual Plans. In addition, it is understood that Corman is responsible for conducting any additional cultural resource investigations for any proposed changes to the RFP Conceptual Plans that involve expansion or addition of right-of-way or easements. Reports will be provided to VDOT who is responsible for coordinating with the SHPO. Our cultural resource specialists offer more than 30 years of experience in Section 106 coordination with the Virginia Dept. of Historic Resources (the Virginia SHPO).

Protected Species: Proactive coordination with the resource management agencies responsible for managing State or Federally protected species, such as Dept. of Game & Inland Fisheries (DGIF), US Fish and Wildlife Service (USFWS), and Dept. of Conservation & Recreation (DCR) is also on the critical path to receiving permit authorization. Potential habitat for the following State and Federal protected species has been identified within or near the project area: Northern long-eared bat, little brown bat, tri-colored bat, and Maybee's salamander.

Figure 4.4-2: Northern long-eared bat, little brown bat, tri-colored bat, and maybee's salamander

We do not anticipate the need for presence or absence studies for these species due to the lack of specific habitats located within the general proximity of the project area's limits of disturbance. A search of the DCR databases indicate there are no hibernacula or roost trees within the vicinity of the project which is considered protected habitat for the three-bat species. These databases are relied on by the FWS and DCR to determine if further study is required. We will coordinate our findings with the UFWS and DCR using the Information for Planning and Conservation system (IPaC).

The maybee's salamander is not likely to be a concern within the project area. They require intermittent isolated ponds without fish to support their lifecycle. A review of LIDAR data shows there are no depressions indicative of intermittent ponds or vernal pools within 300-ft. of the project area, which would support the maybee's salamander lifecycle. Typically, these intermittent pools are considered wetlands and would be evident in the confirmed wetland delineation. We will coordinate with the reviewing agencies to confirm our findings as part of the permitting process.

Initial database reviews indicated the potential for presence of Essential Fish Habitat (EFH), the Atlantic Sturgeon, and anadromous fish species in the general project area. We do not anticipate the need for surveys associated with these species as all waterbodies within the immediate project area are upstream of an

impoundment which would preclude the presence of any EFH, sturgeon, or anadromous fish. In addition, National Oceanic and Atmospheric Administration (NOAA) and National Marine Fisheries Service (NMFS) indicated in correspondence within the EA that no further coordination with their agency will be required.

APPROACH/POTENTIAL SOLUTIONS FOR ADDRESSING RECOGNIZED ENVIRONMENTAL CONDITIONS/AREAS OF CONCERN WITHIN THE PROJECT FOOTPRINT: **Design Efforts to Avoid/Minimize Environmental Resources Impacts:** The Corman | Parsons Design-Build Team has made avoiding/minimizing environmental resource impacts a priority. We understand that avoiding/ minimizing impacts to the greatest extent practicable is a critical aspect of project success as outlined in **Table 4.4-3**. Our environmental team will work closely with the design team to avoid/minimize wetland/stream impacts to allow the permitting agencies to accept the plan as the Least Environmentally Damaging Practicable Alternative (LEDPA). Our team will develop a GIS database to track spatial environmental resource data, which can be used to overlay design files to facilitate planning, permitting, evaluation of alternatives, and potential concerns as the design process progresses.

Environmental commitments require that the project avoid impacts to the Skiffes Creek Stream Restoration project and the dry swale BMP at the VDOT Skiffes Creek Area Headquarters. Stormwater management facilities will not be constructed within jurisdictional areas and the bridge superstructure will span the wetlands within Skiffes Creek. Environmental commitments also require that design is compliant with the Programmatic Agreement between FHWA, VDOT and the Virginia SHPO to avoid adverse impacts to historic resources.

TABLE 4.4-3: OVERVIEW OF OUR DESIGN APPROACH TO AVOID/MINIMIZE ENVIRONMENTAL RESOURCE IMPACTS

Environmental Concern	Design Approach
Limiting Overall Environmental Impact	• Limit impacts to equal or less than approved in the EA/FONSI. • Manage project footprint to ensure *no adverse effect* on Section 106 properties. • Manage project footprint for *no use* or *de minimis use* of Section 4(f) properties. • Use existing ROW for stormwater management consistent with NEPA documents.
Wetlands and Streams	• Avoid/minimize wetland/stream impacts to the greatest extent practicable. • Design embankments and refine grading limits to reduce impacts. • Design Skiffes Creek crossing to minimize impacts. • Provide for control of surface water runoff during construction.
Section 4(f) Resources	• Incorporate specified minimization/mitigation measures to be consistent with de minimis impact finding.
Section 106 Resources	• Coordinate with SHPO to ensure designs avoid impacts beyond what is shown in RFP Conceptual Plans.
Least Environmentally Damaging Practicable Alternative (LEDPA)	• Coordinate with USACE and DEQ early/often. • Keep wetland impacts within NEPA and RFP Concept Plan boundaries. • Minimize/mitigate impacts to wetlands/waters by construction within existing ROW. and by using design/construction best practices.
Noise Analysis and Monitoring	• Complete noise analysis/monitoring in compliance with Virginia State Noise Abatement Policy and Highway Traffic Noise Impact Analysis Guidance Manual.
Hazardous Materials	• Perform Phase I Environmental Site Assessment in Skiffes Creek Trail Area. Headquarters and any properties to be acquired as project right-of-way.

Construction Efforts to Avoid/Minimize Environmental Resource Impacts: Corman | Parsons Design-Build Team's EMP details restrictions and controls put in place to avoid/minimize impacts to environmentally sensitive areas during construction. It incorporates and implements mitigation measures and commitments made in the EA/FONSI document and environmental approval processes and establishes protocols for reporting compliance to VDOT.

The CEM will compile a project-specific environmental checklist and conduct weekly inspections for environmental compliance during construction. It will be consistent with PAR-PRO®, the Environmental Compliance Tracking Database the design team uses to document/track permitting and compliance milestones. The CEM will participate in preparatory meetings in advance of construction activities, communicate the environmental compliance requirements to all team members, including the importance of reporting any unanticipated non-compliance issues, and ensure environmental considerations are routinely addressed during work planning/execution.

The CEM will assist with developing/monitoring implementation of the SWPPP. A copy of the SWPPP will be kept in the jobsite office, as it is the governing document for managing/documenting environmental compliance. The CEM will also assist with preparation of other E&S control-related plans.

During construction, Corman | Parsons Design-Build Team will implement these best practices/methods to enhance environmental compliance and stewardship:

- ✓ Integrate permit compliance and E&S control activities into the project schedule, allowing for rain events and inclement weather.
- ✓ Conduct E&S control inspections supplemented by QA inspections that occur bi-weekly.
- ✓ Install E&S control measures to address on-site conditions.
- ✓ Maintain E&S control on a routine basis, within seven days of noted deficiency or prior to next anticipated measurable storm event.
- ✓ Delineate environmentally sensitive areas, such as wetlands or protected habitat as required by the permits and prior to starting work and review these areas with crews as part of pre-activity planning.
- ✓ Prepare for storm events, particularly summer thunderstorms, hurricanes and other severe weather and expedite storm impact remediation.
- ✓ Use spill prevention measures, such as double-wall fuel containers, metal gas cans, and designated fueling and concrete wash-out areas (and stock cleanup materials).
- ✓ Plan/execute maintenance of equipment to prevent petroleum products and other pollutants from spilling/leaking.
- ✓ Address environmental issues in pre-activity planning with crews to promote awareness/compliance.

DUE DILIGENCE: *Performing the above activities is a great start, however, without the watchful eye of Design-Build Project Manager Chris Clark to ensure they are carried out, it is only a plan. Chris displayed on VDOT's Military Highway design-build project that protecting the environment by being a good member of the community is a Corman core value, as well as his own. He will regularly evaluate environmental control compliance and hold team members responsible for their installation/maintenance accountable for proper functionality.*

INTEGRATING ENVIRONMENTAL MANAGEMENT AND PERMITTING INTO THE SCHEDULE: Corman developed a timeline for acquiring environmental permits (See **Table 4.4-1 on Page 10).** The permit acquisition timeline is integrated with the baseline schedule, including key meetings, incremental submittals, agency review efforts, and hold points for design/construction. Our team performed an in-depth review of the permitting processes needed for the project, developing realistic permit application timelines, allocating adequate

agency review time, and incorporating each step of agency review protocols. We will assign a permit tracker to work with the project scheduler to track anticipated and actual dates for submittals.

***FACT:** We used realistic time for permit durations based on our previous experience in Hampton Roads and integrated them in our project schedule.*

Timeline and Challenges: On VDOT's Military Highway project, Corman and Parsons completed permits from USACE, VMRC, and DEQ within 10 months from NTP and six months of JPA submittal. Tools used included:

- ✓ Scheduling/tracking each agency's regulatory review process.
- ✓ Pre- and post-application agency meetings with an emphasis on cooperation and schedule agreement for permit reissuance.
- ✓ Internal schedule reviews/updates communicated to the permitting agencies.

On our Southside Widening and High-Rise Bridge project for VDOT, the design-build team secured all permits within 12 months of NTP and nine months of JPA submittal. Addressed several challenges including:

- ✓ Securing Section 408 certification from the USACE Operations Branch for alterations to the Federal Navigation Channel.
- ✓ Coordinating with NOAA National Marine Fisheries for the Atlantic Sturgeon.
- ✓ Coordinating with the Virginia Dept. of Game and Inland Fisheries (DGIF) to eliminate TOYRs for work near a peregrine falcon nest on the adjacent bridge.
- ✓ Eliminating in-water TOYRs through approval of a confined bubble curtain structure to limit aquatic species impacts from pile driving.

On VDOT's Route 7 and Battlefield Parkway Interchange project, the design-build team worked with the USACE to exclude 0.80 acres of wetlands, found within a constructed BMP, from regulation. This resulted in the project qualifying for a USACE State Programmatic General Permit (SPGP) rather than an Individual Permit which was originally anticipated. This action reduces the permitting schedule by at least two months.

The time needed to obtain the required permits and perform the environmental management tasks described above in this section have been incorporated into our project schedule. The overall program is intended to ensure our team prioritizes environmental management, meets the project commitments and minimizes project impacts during design/construction. Following our program as described above and keeping proper documentation ahead of construction activities will result in an environmentally friendly project, clean DEQ reviews and ensure a successful project thus minimizing the possibility of delays.

4.4.2 UTILITIES

UTILITY COORDINATION, ADJUSTMENTS, AND RELOCATIONS APPROACH: This project is near Williamsburg, VA and creates a connector roadway between Routes 60 and 143. Affected utilities are Dominion Energy Transmission and Distribution, Verizon, Cox Communications, AT&T, CenturyLink/Level 3/Qwest, Sprint, Metro Fiber Networks/Cable Associates, Newport News Waterworks, Virginia Natural Gas, James City Service Authority and the Hampton Roads Service Authority. The following is a breakdown on where the systems are located, what utilities are in conflict, and how they will be managed:

ROUTE 60 SIDE OF THE PROJECT

Dominion Energy Overhead Distribution System: The Dominion Energy distribution pole system on the north side of Route 60 creates a moderate project risk. There are three poles in conflict on the northeast side of the intersection with proposed roadway. They will have to be relocated away from the roadway and into the proposed ROW. The other carriers that are attached on the poles are Verizon and Cox Communications: Verizon has two fiber optic cables attached to the poles and they will be transferred to the relocated pole system. There is no slack close to this location, so fiber cables have to be spliced into the systems to allow for them to be transferred. Cox Communications has an inactive coax cable attached to the poles. Their fiber optic system will be transferred to the new poles. The specific location of the poles will be determined when the final roadway geometry is finalized. The distribution poles on the northwest side of the intersection are not in conflict.

Mitigation: Prioritize the affected parcels, and as soon as the land rights have been obtained, place the fill material to install the poles. Dominion Energy then installs the new pole system. After completed, Verizon performs their relocations. They will allow for space on the poles if Cox Communications decides to place cables on the new poles. These relocations will be completed while the bridges are being constructed and prior to construction on Route 60.

Verizon and Cox Cables at Traffic Signal: Existing Verizon cables at Route 60/Green Mount Parkway intersection are under the traffic signal mast arm.

Mitigation: Options include installing the temporary signal, disconnecting the mast arm to allow the cables to swing to the new poles or Verizon adds additional cable to transfer to the new poles. Actual resolution determined when project phasing is completed.

Dominion Energy Underground System: There are Dominion Energy underground cables on the south side of Route 60 that will not be affected and are not considered to be in conflict. Test holes will determine their exact horizontal/vertical location so the system can be protected in place.

Verizon Underground System: Verizon has a large diameter copper cable on the north side of Route 60. It is not in conflict, but the three pedestals will be an issue. There is also a large diameter copper cable on the south side that is not in conflict. Test holes on these systems will determine their exact horizontal/vertical locations so the facility can be protected in place.

Mitigation: Place load bearing manholes at the locations.

Cox Communications Underground System: Cox Communications has an underground cable drop from a pole on the northwest side of the intersection of Route 60 and proposed connector roadway. The pole is not in conflict, but the design for relocating the three Dominion poles that are in conflict may require adjusting the pole. Cox also has underground cables on the south side of the roadway that are not in conflict. Test pits on the cable will determine the exact horizontal/vertical location so the system can be protected in place.

Mitigation: Regarding the design for relocating the three Dominion poles that are in conflict that may require adjusting the pole, move the drop to one of the newly relocated pole.

Level 3/CenturyLink Underground System: Level 3/CenturyLink has an underground system on the north side of Route 60 running parallel to the Verizon cable. The cable is not in conflict. Test holes on the cable will determine the exact horizontal/vertical location so the system can be protected in place.

Mitigation: If the pull boxes are an issue, they will be adjusted in place by moving them away from the roadway improvements.

Virginia Natural Gas Underground System: Virginia Natural Gas has gas mains under the existing roadway. The 16-in. main is possibly in conflict with the grade cut in the roadway. In discussion with VNG, they stated they would not relocate this distribution line if the depth is found to be a minimum of 29-in. from the top of roadway grade. Based on the information provided in the RFP, the existing line appears to be at a minimum depth of 36-in. and our Route 60 profile is a maximum of 7-in. below existing grades at this location.

Mitigation: Test holes will determine actual horizontal/vertical location of the main to confirm if the conflict exists and to develop mitigation strategies. The last option is to relocate the facility lower to provide the required depth of cover. Proposed drainage will also create possible conflicts. After test holes are performed, drainage options will be evaluated to determine what the best mitigation strategy is to resolve. Relocating the gas main is not anticipated.

Newport News Waterworks Underground System: Newport News Waterworks has a large diameter water main under the existing Route 60 for most of the roadway section. There is also a smaller diameter water main that spurs under Green Mount Parkway. The 30-in. DIP is in the area where there is a 7-in. finished grade cut on Route 60.

Mitigation: Test holes will determine actual horizontal/vertical location of the main so mitigation strategies can be developed. The last option will be to relocate the water main. Proposed drainage will also create possible conflicts. After test holes are performed, drainage options will be evaluated to determine the best mitigation strategy. Relocating the water main is the last option.

James City Service Authority Underground System: James City Service Authority has a small diameter private sanitary sewer force main on the southeast side of Route 60 and continues beside/under Green Mount Parkway which is not in conflict. Test holes will determine its exact horizontal/vertical location so the system can be protected in place.

Hampton Roads Sanitary District (HRSD) Underground System: HRSD indicated in writing they will not meet with the proposers. From other available records and site visits, we established the following potential scenario for their facilities:

HRSD has a large diameter sanitary sewer force main currently located on the north side of Route 60 and adjacent to the existing roadway. It is not expected to conflict with the proposed roadway improvements. Requirements/ restrictions to build the pavement section over the force main will be determined by HRSD. Test holes will determine exact horizontal/vertical location of the sanitary force main so it can be protected in-place.

Mitigation: After test holes are performed, proposed drainage system will be designed to avoid conflicts. Relocating the facility is not anticipated, however, we are unable to confirm this as HRSD is not discussing the project.

ROUTE 143 SIDE OF THE PROJECT

Dominion Energy Overhead/Underground Distribution System: Dominion Energy has a distribution pole system on the northwest side of the intersection with Route 143 and the proposed connector road. This overhead facility across the intersection has an underground system that runs parallel to the north side of the roadway and

under the proposed fill to the terminus of the project. There is also an overhead system that crosses Route 143. The overhead distribution system on this side of the project is not expected to be in conflict. The overhead clearance with the proposed connector road will be verified. The Dominion Energy underground system that runs parallel to Route 143 will conflict with the excessive fill.

Mitigation: Construct a new conduit system parallel to the existing system with a splice box placed on each side. An extra conduit will be placed as a spare. After the conduit system is constructed, Dominion Energy installs their conductor and energizes the system.

Verizon Underground System: Verizon has large diameter copper and fiber optic cables on the north side of Route 143 and run parallel and adjacent to the existing roadway. The underground system has one cable in conduit and the other is direct bury.

Mitigation: The telephone facilities under the proposed bridge foundation are in conflict and will be relocated. The bridge foundation will be staked in the field and test holes are performed on the cables to determine their actual horizontal/vertical location. This will define how the conflict will be resolved by either adjusting in place or a total rebuild. These relocations will take place at the beginning stage of the project since the facilities are within the existing ROW.

There are cables under the Route 143 intersection and the proposed connector road.

Mitigation: If they conflict with the pavement section, they will be lowered in place. Test holes will determine their exact horizontal/vertical location.

Metro Fiber Network/Cable Associates Underground System: Metro Fiber cable is on the north side of Route 143 running parallel and outside the roadway shoulder. It is not in conflict with the proposed bridge foundation but will be under the fill area.

Mitigation: The facility is in conduit so test holes will determine actual horizontal/vertical location and the system will be protected in place. The utility company will be given the option to add additional conduits in this area.

Newport News Waterworks Underground System: Newport News Waterworks has two extremely old distribution systems mostly under the roadway and are not considered to be in direct conflict. The exact horizontal/vertical locations of these water mains will be determined by performing test holes so they can be protected in place. They are under the proposed pavement for the intersection of Route 143 and the proposed connector roadway, as well as the bridge.

Mitigation: Special precautions while constructing the roadway and the proposed bridge foundation may be required and will be determined by the Newport News Waterworks.

There is a small 12-in. diameter water main parallel to Route 143 that stops on the west side of the bridge and there are two 2-in. water services that are tapped off the end of the 12-in. main that may have to be relocated. The services supply water to the Branscome Plant and the VDOT Building.

Mitigation: Their specific location will be determined and extent of the relocation will be based upon final alignment of the bridge foundation. This may include removing approximately 20-ft. of the 12-in. water main and relocating the 2-in. water services. This will be field verified when the relocations are performed.

Virginia Natural Gas Underground System: Virginia Natural Gas has a small diameter gas main on the north side of the roadway and is near/under the existing edge of pavement. It is not in conflict with the pavement improvements, so no adjustments are required. The system will be designated to determine its exact horizontal/ vertical location so it can be protected in place. The gas main is under the pavement section for the Route 143 intersection and the proposed connector roadway. This area will be test pitted to determine its exact horizontal/vertical location. Special precautions will be determined by Virginia Natural Gas to construct this section of the pavement.

AT&T Underground System: AT&T fiber optic system is within the railroad ROW and is on the north side of the tracks. It is not in conflict.

Sprint Underground System: Sprint fiber optic system is within the railroad ROW and is on the south side of the tracks. It is not in conflict.

Cox Communications Underground System: Cox has two cables on north side of the roadway.

Mitigation: Their facilities will conflict with the proposed bridge foundation. They are in conduits with slack in the adjacent pull boxes, so the cables will be relocated in place. Bridge foundation will be staked in the field and test pits will determine how far the system must be moved. This relocation will be completed at the beginning stages of the project since the facility is within the existing ROW.

SKIFFES CREEK CONNECTOR ROAD

Dominion Energy Overhead Transmission System: Dominion Energy Transmission is currently constructing new overhead systems to include new towers. It crosses the new roadway from approximate STA. 32+00 to approximate STA. 34+00. An overhead profile has been provided and the specific clearances specified by Dominion Energy will be honored between the finished grade of the roadway and the energized conductors. Dominion's relocation is scheduled to be completed by June 2020.

Dominion Energy Overhead Distribution System: Dominion Energy Distribution is currently relocating the overhead system at approximately STA. 32+33. It crosses the proposed roadway and the overhead profile has been provided. The required separation will be honored between the finished grade of the roadway and the energized conductors. This work is scheduled to be completed in August 2019.

Unknown Underground Gas System: There is a gas main on the RFP plans on the south side of the Dominion Energy easement. According to VNG, they do not have a gas main in the Dominion Energy easement. Dominion Energy does not have any record of this facility. It appears from the designation that it crosses the proposed connector road. If this is a natural gas transmission main or liquefied petroleum main and excessive fill is placed over it, then some type of the relocation is required; either a total relocation or installation of a sleeve over the facility. The line could also designate an old abandoned line. There is not enough information to make a determination at this time. This line will need to be investigated during the Scope Validation period and determined if it still exists and in service or has been abandoned and the impacts it poses to the construction of the new roadway. Note that this gas line is shown in the original RFP Conceptual Plan and the Addendum 1 revision provided by VDOT but is not shown in the SU file provided at both milestones.

Virginia Natural Gas Transmission System: There is a large diameter transmission main on the south side of the railroad tracks. The RFP bridge foundation design places a high fill over this line.

Mitigation: To avoid a potential settlement issue, we will lengthen the bridge at the west end to span the easement. Should the actual settlement, as determined allowable by VNG, permit placement of the fill, we will re-evaluate need to lengthen the bridge. Special precautions may be required by VNG for bridge foundation construction.

INTEGRATING UTILITY COORDINATION/ADJUSTMENTS/RELOCATIONS INTO PROJECT SEQUENCING TO MINIMIZE SCHEDULE DELAYS: All described utility impacts were incorporated into the project's scheduling/sequencing and into the project schedule to minimize delays and mitigate known risks.

4.4.3 GEOTECHNICAL

IDENTIFYING GEOTECHNICAL RISKS: The Corman | Parsons Design-Build Team's approach to identifying geotechnical risks included reviewing the RFP's Geotechnical Data Report (GDR), conceptual plans, special provisions and technical requirements, and site visits to observe existing site conditions. The report had boring logs, cone penetrometer test soundings (CPTs), and laboratory classification, compressibility, strength and CBR test results.

Our design approach is comprised of additional borings and in-situ CPT soundings with pore-pressure dissipation testing to identify the Yorktown Formation and to develop soil parameters for design of PVDs. The borings and soundings will fill in the gaps between exploration data points in the GDR and those required for a final GER in Chapter III Geotechnical Engineering of the VDOT Materials Manual of Instructions (MMOI). The final GER will also include additional consolidation tests to evaluate foundation and embankment settlement, shear strength tests needed for foundation design and slope stability evaluations, and Mechanistic-Empirical Pavement Design Guide (MEPDG) required testing to evaluate the minimum pavement sections.

Based on the existing data, our preliminary assessment of the project's geotechnical risks with accompanying mitigation strategies are included in **Table 4.4-4** below:

TABLE 4.4-4: GEOTECHNICAL RISKS

BRIDGE FOUNDATION

	RISK	MITIGATION
The report did not identify the Yorktown Formation on the boring logs. This is the typical bearing stratum for deep foundations in the site vicinity and its identification within the soil profile is critical for evaluating deep foundation lengths.	Piles must be re-sized or driven deeper to achieve required geotechnical resistance.	Drill borings and CPT soundings as required by MMOI to evaluate subsurface conditions for deep foundation design. The borings will be logged by experienced geologist or engineering personnel qualified to identify the Yorktown Formation. Analyze results of the CPT soundings to estimate shear strength and compressibility parameters for foundation design. Use laboratory strength and compressibility parameters to calibrate the CPT soundings.

UNSUITABLE MATERIALS

	RISK	MITIGATION
Unsuitable materials per the RFP include high plasticity soils, organic soils, soils that swell, and soils too wet for support of embankments, pavements and minor structures. Materials within the uppermost 3-ft. of a pavement subgrade that exhibit a CBR value less than 10 are also considered unsuitable. We reviewed the GDR to assess potential for unsuitable soil on this site. Based on the GDR borings, the soils at potential pavement subgrade level appear to have suitable CBR classifications but are wet/soft in some areas. In addition, a culvert with a reinforced soils slope will be built at approximate STA. 52+50. Soils in this area include very loose, saturated sand with a layer of very soft clay to a depth of approximately 8-ft. that are considered unsuitable.	The extent of unsuitable soils between pavement borings and at the culvert are currently unknown.	Perform borings and testing as required by MMOI to evaluate presence of unsuitable soils to mitigate more extensive unsuitable soil. The boring spacing will be closer than the minimum required by the MMOI in areas where unsuitable soils have been identified or suspected. Undercut the unsuitable soils and replace them with compacted structural fill. Use cement and/or lime modification or stabilization in situations where undercutting may not be feasible or cost effective.

SITE ACCESS TO BRIDGE B619 OVER SKIFFES CREEK

	RISK	MITIGATION
The single GDR boring drilled in the Skiffes Creek floodplain indicates approximately 5-ft. of very soft clay over 4-ft. of extremely loose sand at the ground surface. These soils are expected to be too weak to support the construction equipment to build the bridge.	These soils are more extensive than disclosed at a single boring location, and that access conditions in the floodplain will vary depending on precipitation at time of construction.	Drill a series of borings across the Skiffes Creek floodplain to obtain the depth and consistency of the very soft clay encountered in the GDR boring at this location. This information will be used to design a causeway needed to construct the bridge.

EMBANKMENT SETTLEMENT AT BRIDGE B620 OVER ROUTE 143 AND CSX RAILROAD

	RISK	MITIGATION
GDR borings indicate soils below the bridge site consist of sand with two layers of soft, compressible clay. Up to about 29-ft. of fill is needed to construct the approach embankments at this bridge. This fill will cause significant settlement of the underlying soils and settlements will take months to complete. There are utilities below the bridge that could also be affected by embankment settlements, including a 16-in. gas line and a 48-in. water line.	Construction schedule will be impacted by the length of time for settlements to dissipate, and the utilities will be damaged due to settlements associated with embankment construction.	If utilities beneath the bridge can tolerate some settlement, we will use prefabricated vertical drains and a surcharge to accelerate embankment settlement. Design surcharge fill to account for the anticipated long-term (secondary) consolidation settlement. If utilities are expected to settle more than a tolerable amount, embankment can be supported on rigid inclusions (i.e., column-supported embankment) to avoid utility settlement. An alternative is lightweight fill to reduce utility settlement. Spanning the Columbia Gas line and easement with a longer western end span removes this risk for this most sensitive asset. Additional borings are needed for approach embankments to obtain samples for strength/compressibility testing to meet MMOI requirements and to analyze settlement of a deeper clay layer that was not tested for the GDR. Although GDR included Cone Penetrometer Test soundings (CPTs), pore pressure dissipation testing was not obtained which is critical to evaluating time rate of embankment settlement when using prefabricated vertical drains to accelerate embankment settlement. Pore-pressure dissipation tests will be performed in the additional CPT soundings.

EMBANKMENT SETTLEMENT AND STABILITY FOR CULVERT AT APPROXIMATE STA. 52+50

	RISK	MITIGATION
Up to about 13-ft. of fill will be required to construct the embankment at this location where a culvert and reinforced soil slope are planned. Embankment and culvert settlement and global instability of the slopes are likely due to the presence of approximately 8-ft. of very loose, saturated sand and very soft clay disclosed by the single GDR boring at this location.	Extent of unsuitable soils at the culvert are currently unknown.	Construction of the culvert and retaining walls at this location will result in significant settlement. One mitigation method is to excavate and replace the unsuitable soils at this location that extend to a depth of approximately 8-ft. according the single GDR boring drilled at this location. Potential drawbacks include having to excavate below the ground water table and environmental considerations. Another mitigation method is to oversize the culvert, stabilize the subgrade and backfill the culvert allowing settlements to dissipate. This could also include using reinforced soil slopes (RSS) so that the embankment can be built within current space limitations and to eliminate the retaining walls that may not be able to tolerate settlement. We plan to drill more borings than required by MMOI in this area to evaluate differential settlement of the culvert if variable soil conditions are present. The reinforcing in the RSS will be lengthened as needed to achieve acceptable factors of safety regarding slope stability.

4.4.4 RAILROAD COORDINATION

Parsons has renowned experience with CSX Transportation (CSX) project development, planning, design and construction phases for their own progressive design-build projects, as well as the process for outside parties' constructing, rehabilitating, or replacing bridges over their Class 1 railroad main tracks and sidings. They have successfully completed their own direct contracts, such as double-track/double-stack facility and Virginia Avenue Tunnel Reconstruction and National Gateway Initiative (NGI-II) Track-Lowering Contract in southeast-southwest quadrants of Washington, DC, along with indirect projects for outside parties, such as Southeast Boulevard, Anacostia Freeway, Barney Circle and John Phillips Sousa Bridge. As the lead designer on two Corman joint venture projects, Parsons recently completed the Military Highway Continuous Flow Intersection (CFI) and I-64 Southside Widening and High Rise Bridge Phase 1 projects which had significant railroad interactions that required coordination and design reviews/approvals.

The team is well conversant with, not only the CSX Criteria for Overhead Bridges, but also with their Public Project Information Manual for Construction and Improvement Projects, Maintenance of Way Instruction Manual, CSX Standard Drawings and Details, Clearance Diagrams/Plates, Design and Construction Specifications for Division 1 – General Requirements, Division 2 – Site Work, Siding Tracks, Pipelines, as well as Wirelines Occupancies, Valuation Maps (Val-Map), and Track Charts.

RAILROAD COORDINATION PLAN:

During Design

Training: Our first order of business is to train the field survey crew and subsurface utilities locaters, design and construction staff for CSX Contractor Safety and Roadway Worker Protection (RWP). Roula Sadar, our CSX coordinator, will ensure the right coordination and training is obtained. Fortunately, for this project, we already the have an in-house CSX certified instructor (train-the trainer), Frank Blachly, PE, who will assure that all the staff needs to access CSX tracks are RWP trained successfully. Safety is our number one priority, and we make it personal.

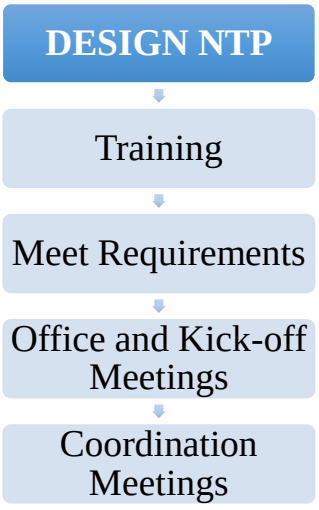


Figure 4.4-3: Design Notice to Proceed

Meet the Requirements: Prior to starting any field survey task on CSX tracks, the Corman | Parsons Design-Build Team will make sure that all requirements specified in the contract bid documents and agreement between VDOT and CSX (Skiffes Creek Connector Project 0060-047-627, C501, B620 Overhead Bridge, VDOT UPC 100200 CSX OP#VA0526), are met, and, as necessary, we will submit New Facility/Right-of-Entry and Temporary Right-of-Entry Forms.

Office and Kick-off Meetings: Within the first 60 days of the contract, office and field kick-off meetings at the new bridge crossing near CSX Milepost CA-29.85 (DOT# 973578D) are arranged with VDOT and CSX representatives and designated CSX Engineer, AECOM. Amtrak representation will also be invited. Proposed preliminary bridge layout and approaches with respect to the existing mainline tracks, future tracks alignments, existing railroad signal and communication lines, as well as any future planned third-party utility lines, and other site-specific restrictions will be discussed. Agenda items include:

- ✓ Proposed bridge construction means and methods.
- ✓ Erection procedure.
- ✓ General requirements.
- ✓ Temporary/permanent protective fencings.
- ✓ Support of excavation.
- ✓ Pile driving.

- ✓ Temporary/permanent construction easements.
- ✓ Protection from active mainline tracks during construction.
- ✓ Acceptable ballast protection system.
- ✓ Need for temporary railroad crossing.
- ✓ Needs/arrangement for flagging services.
- ✓ Site-specific safety plans.

Meeting minutes are prepared/submitted. After the meeting, bridge layout is refined/updated to meet requirements and constraints. Unless a legal easement is granted, the Corman | Parsons Design-Build Team intends to keep the permanent bridge structure clear beyond the CSX required clearance envelope from their existing and future tracks. These updated/refined plans will be reviewed first with VDOT and their representative and upon their approval, proposed plans are then submitted to CSX for their sign off, and to make it as a part of the executed agreement.

Detail Bridge B602 and approaches design will be carried forward based on this executed contractual agreement, additional bid contract documents requirements and documented understanding from the kickoff meeting. Our order of business in dealing with existing railroad and their third-party utilities is to avoid/protect-in-place, minimize impact, and as a last resort relocate as minimum as physically possible, and avoid multiple utility relocations.

Coordination Meetings: In coordination meetings with the CSX team, the project schedule, along with the milestone design reviews incorporating sufficient review period, are reviewed for understanding/acceptance of all parties. Reviews will occur at milestones, such as 60%, 90% and 100% submittals. Approvals at each of these stages are documented for future reference. Over-the-shoulder and concurrent reviews will be considered to assist in accelerating the schedule.

During Construction

In addition to the above coordination efforts during the preconstruction phases of work, the Corman | Parsons Design-Build Team will:

- ✓ Provide CSX insurance coverage as specified in the agreement between CSX and VDOT including Commercial General Liability, Statutory Worker's Compensation and Employers Liability, Commercial Automobile Liability, and Railroad Protective Liability.
- ✓ Provide CSX Contractor Safety and Roadway Worker Protection (RWP) training for Corman and subcontractor construction crews working within CSX right-of-way by our in-house safety personnel who are qualified to teach the RWP safety training.
- ✓ Ensure a CSX flagger is on-site whenever construction is within 25-ft. of the centerline of the railroad tracks so that construction operations are properly coordinated with CSX train traffic.
- ✓ Submit for approval our design and methods for performing any work on CSX right-of-way. This includes any required pier footing temporary shoring with the railroad track's zone of influence, pier pile driving adjacent to the railroad tracks, superstructure girder erection over the tracks, and deck formwork over the CSX right-of-way.
- ✓ Coordinate with CSX to install/remove a temporary crossing of the existing tracks to provide access for Corman to cross the tracks with construction equipment to construct the project.
- ✓ Establish an emergency contact system with CSX in case of an issue occurring during construction that will include responsible persons and response times to address the issue(s) on-site.

4.4.5 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

QA/QC APPROACH DURING DESIGN/CONSTRUCTION:

Design Quality

Design QA/QC Approach: To kick-off QA/QC prior to design, the Design Manager, Lead Discipline Engineers, Design/Construction Integrator and Design QA/QC Manager provide criteria/checklists for each design element to staff engineers. They audit it to ensure correct standards are followed, checklists are used, and the work is documented. Regular *All Hands* meetings, stressing importance of quality in the design, keep the quality culture in check. It is also a forum for the Lead Construction and Design firm principals to offer lessons learned on past design-build projects and perspectives on the role quality plays in project success.

Key to project success is an integrated QA/QC process that includes the QC staff, designers, contractors, and the design team's QC checkers. During design, plans are reviewed, not only by the design QC staff, but by the design/construction integrator, construction and QC staff for constructability and ease and efficiency of resulting means and methods. This especially holds true for the impact the design will have on MOT. Items, such as material delivery/storage, workforce accessibility, field office, and crane/other equipment placement will be reviewed to minimize traffic impacts. Plan review checklists will be prepared during constructability reviews and comment sheets will be rechecked for the action taken prior to the plans being issued for construction**.** VDOT Form LD-436 will be filled out/submitted along with the plans for each milestone design submittal. ***Focus will be on temporary drainage and potential sight distance impacts resulting from temporary traffic controls during construction.***

The mission is providing quality designs and construction in the fast-paced delivery of a design-build project. What drives success is communication among everyone involved: owner, permitting agencies, designer, constructor, subcontractors and the construction team. QA/QC design procedure goals:

- ✓ Designs that are safe and meet VDOT guidelines/requirements.
- ✓ Conform to RFP, Part 2, Section 2.1.1.
- ✓ Design infrastructure that meets requirements, are constructible, durable, economical, and minimize maintenance.
- ✓ Meet design schedule, budget, and construction staging requirements.
- ✓ Minimize design costs by working efficiently and avoiding rework.
- ✓ Provide an organized and indexed set of design calculations, including design criteria and assumptions.
- ✓ Minimize VDOT and other agency reviews.

Checking Design Deliverables: It is essential that design deliverables show complete and clear fabrication and construction requirements/details. The Design QA/QC Manager will develop/implement a QA/QC Plan. Processes/procedures will be enforced and documented to minimize VDOT reviews.

Design Preparation: Design deliverables will be prepared under the Lead Discipline (roadway, structural, drainage, geotechnical, etc.) Engineers. Weekly meetings led by the DCI will be held throughout design with the Design Manager, Lead Discipline Engineers, QC staff, Construction Manager and key construction team member representatives, such as the fabricator and erector. VDOT is welcome to participate. These meetings reduce design and VDOT review times by coordinating design and construction requirements during design, not just at scheduled milestones.

Checking design deliverables come in the form of drawings and calculations. Review starts within the discipline before the deliverable is reviewed by the Design QA & QC Lead, Design Manager, etc. Reviewing each deliverable follows the steps outlined below. At the end of each step, the check print stamp is signed which is required on each plan sheet for the drawings and on the cover sheet on each set of calculations.

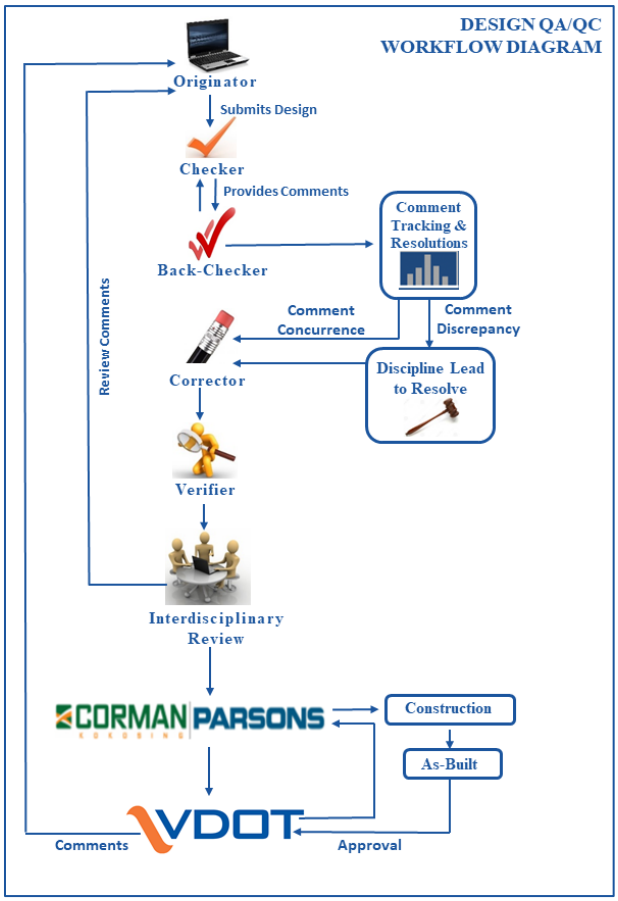


Figure 4.4-4: Design QA/QC Workflow

- → ***Originator:*** Prepares the deliverable to be checked and is accountable for accuracy and adequacy per design code requirements. It is not intended that the Originator rely on the checking process to complete the deliverable.
- → ***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. This is a senior staff member with the experience to check the design of the discipline they are reviewing.
- → ***Back-checker:*** Reviews the checked deliverable, confirms the 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 prior to the next step. If it cannot be resolved, the Lead Discipline Engineer or Design Manager resolves it.
- → ***Corrector:*** Addresses comments marked on the check print (original deliverable). This can be either the Originator or a CAD Technician.
- → ***Verifier:*** Reviews the corrected deliverable against the check print and verifies the corrections marked on the plan sheet or calculation sheet were addressed. The Verifier is also the Checker.
- → ***Interdisciplinary Review:*** Once the design deliverable is checked, the Design Manager and Design/ Construction Integrator organizes the Lead Discipline Engineers (roadway, structural, drainage, utilities, etc.) to review the submittal. Concurrently, the Construction Manager and QC group reviews the submittal for constructability. If there are comments from the Interdisciplinary Review, the checking procedure starts from the beginning for the affected portions of the deliverable.
- → ***Quality Assurance:*** The Design QA/QC Manager audits and ensures the quality control checking process is being followed by the design team. In addition to the QA/QC design process outlined above, the Design QA/QC Manager and the Design Manager 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 quality control checking process.
- → ***Contractor Review:*** As a final deliverable review before submitting to VDOT, the Corman | Parsons Design-Build Team again reviews the plans for constructability, conformance to anticipated means and methods, and completeness of comment responses. This will be led by our Design/Construction Integrator (D/CI), Ryan Gorman, as he performed on the Route 29 Solutions and I-64 Bottoms Bridge Design-Build projects.

→ ***Submit to VDOT:*** The Lead Discipline Engineer signs a form for each milestone deliverable that QC efforts are compliant and transmits it to the Design Manager and D/CI who signs off on it with the QA/QC Manager. Final deliverables are now ready to be signed and sealed by the Lead Discipline Engineer (a Virginia PE) and the DBPM submits it to VDOT for review and/or approval. VDOT (or other reviewing agency) reviews the design and submits comments to the Corman | Parsons Design-Build Team. Comments are addressed by incorporating changes into the design for the next milestone submittal. This continues throughout design until final plans are submitted to VDOT and approved for construction.

Design changes during construction will be reviewed the same way as the original design. Modifications, such as field-authorized design changes and nonconformance evaluations, will be maintained in a database or marked up and dated on a set of *Approved for Construction* plans to track revisions and update the as-built documents.

Records: The Lead Engineer verifies quality control procedures were completed for each discipline. The Design QA/QC Manager and Design Manager are responsible for Design Quality Assurance. Copies of each submittal, including revisions, will be kept throughout the project. The Design Manager maintains final design records of the forms and check prints in the project files.

The Design QC's role in evaluating design includes reviewing computations, technical accuracy, and conformance to contract documents, form, content and coordination with other disciplines, including roadway, traffic, geotechnical and construction. The Design QA process evaluates whether the designers assessed the design parameters appropriately, applied the correct analyses, and that the designs are by qualified personnel. Design QA will also ensure that the proposed solution meets contract requirements and contract work is completed by applying skill and experience. The Design QA/QC Plan will include discipline-specific design checklists, in addition to VDOT Form LD-436, at all major milestone submissions. Constructability reviews will be by the Construction Manager who will consider how the phasing of construction activities affect maintenance of traffic.

TEAMWORK: *The Design QC Plan will include Corman as an integral part of the design quality process.*

Construction Quality

The Corman | Parsons Design-Build Team's QA/QC approach creates a partnering environment between VDOT, our field staff and QC inspectors/testers, and NXL's QA staff. Forming this partnership with a proactive/robust QC/QA testing *and* inspection program starts with a QA/QC Plan tailored for the project at hand – and not one off the shelf. It is in every stakeholder's best interest that the QC:

1. Reduces/eliminates contractor or designer rework.
2. Keeps QA efforts focused and targeted.
3. Limits VDOT's need to assign valuable resources.
4. Assures VDOT of a well-maintained, safe construction site with construction and materials meeting specifications.

Our DBPM will instruct QC staff early on that their job extends beyond keeping records and testing materials. It includes traditional duties of a VDOT inspector and being assertive if anything is non-compliant. *It also includes ensuring compliance with approved E&S plans.* Catching work items not being completed correctly early sparks instant correction minimizing cost and schedule impacts.

Our QA/QC program will be per *VDOT's Minimum Requirements for Quality Assurance and Quality Control on Design Build and Public-Private Transportation Act Projects, January 2012* and include:

1. Integrating design and construction team during design | **VALUE:** Minimizes rework during design/ construction.
2. Stressing importance of the QC team being involved in environmental compliance. Work closely as an extension of the Construction Environmental Manager's staff | **VALUE:** Environment is protected.
3. Involving the designers with construction. Designer attends monthly progress meetings during construction and visits the site regularly | **VALUE:** Involving designers in inspecting and resolving construction issues minimizes rework.
4. Constructability reviews of temporary drainage during design and by QC during construction | **VALUE:** Minimizes safety risks with water or ice standing on the roadway.
5. Identifying sight distance and design speed issues brought on by temporary construction facilities, traffic controls or staging by rigorous QC during design/construction | **VALUE:** Minimizes safety risks to the traveling public.
6. Explaining project team members' roles/responsibilities so they understand QA/QC is everyone's obligation and that no work items or inspections are left unassigned | **VALUE:** Raises the bar in making everyone responsible for the quality of their work.
7. Holding *All Hands* meetings with design and construction teams to review lessons learned and stress importance of a strategic/coordinated quality product – Lessons learned are taken from this and other projects VDOT, Parsons or Corman were involved with | **VALUE:** Eliminates repeated mistakes.
8. Identifying the 20% of issues on past projects that caused 80% of the cost or delay – Continuously review progress and plans to eliminate rocks in the road early before causing delay or rework | **VALUE:** Perform QC on the items that pose the greatest risk.
9. Setting the stage for partnering between VDOT reviewers, designers, quality checkers and construction staff | **VALUE:** Produces a compliant product and limits rework and/or costly review delays.
10. Developing Design Criteria Compliance checklists for design elements early and reviewing designs for compliance regularly | **VALUE:** Minimizes/eliminates rework and ensures compliance with RFP and VDOT requirements.
11. Using construction checklists so managers, QC inspectors, and foreman can easily track compliance. Checklists developed by the QA, QC, design and construction staff based upon standard VDOT CEI checklists expanded and customized for this project | **VALUE:** Minimizes/eliminates rework and ensures RFP/VDOT compliance.
12. Involving stakeholders (VDOT, public, County, EMS, transit, utilities, etc.) in meetings early on | **VALUE:** Enables us to tackle their concerns head on instead of engaging them when plans reach 60% or higher making it more difficult to accommodate even simple requests without additional cost or delay.

At the present time, we expect the maximum QC staffing on the project to consist of one QC Manager, two senior inspectors (one roadway; one bridge) and two inspectors/testers. If there is night work, staffing would be modified to account for the multiple shifts.

4.5 Construction of the Project

4.5 CONSTRUCTION OF THE PROJECT

4.5.1 SEQUENCE OF CONSTRUCTION

The Corman | Parsons Design-Build Team has evaluated our project approach and sequence of construction while considering many factors that have the potential to affect the successful outcome of this project. Public/worker safety, environmental impacts, utility relocation/coordination and ROW acquisition were areas we focused on to minimize impacts. We evaluated several approaches to phasing and maintenance of traffic (MOT) and our approach addresses these items effectively while offering more flexibility in the project schedule to keep construction moving and providing the best value to VDOT.

Construction Phasing Approach including general sequence of activities to complete the project by the final completion date: The following is a summary of the key sequence and construction activities:

1. Design submission packages/permits.
2. ROW acquisition and utility relocations, specifically along the northside of Route 60.
3. Install temporary MOT on Route 60/Route 143 and install entrances along the new connector where it crosses existing roads and establish onsite storage areas.
4. Construct temporary access over CSX railroad and Skiffes Creek.
5. Install project drainage and retaining walls that support roadway at low areas.
6. Construct new connector roadway; finishing concurrently with the CSX Bridge substructure.
7. Construct Bridge over Skiffes Creek.
8. Construct MSE walls/substructure supporting CSX Bridge; finishing concurrently with connector roadway.
9. Construct CSX Bridge superstructure.
10. Route 60 improvements, including signage/signals.
11. Route 143 improvements, including signage/signals and any build-up/reconstruction to achieve required cross-slopes.
12. Final landscaping, punchlist and final project dress up.

The Corman | Parsons Design-Build Team will prioritize the design packages to facilitate starting construction in areas that are on the critical path and do not have long-lead time ROW acquisition or environmental permitting requirements. These include MOT, erosion & sediment, and the roadway plans, as well as priority ROW acquisitions and all of the environmental permitting.

Construction begins concurrently on the connector with establishment of construction entrances at four locations:

1. North (WB) side of Route 143 where the future connector will tie in at grade.
2. North (WB) side of Route 143 where the new bridge will cross.
3. South (EB) side of Route 143 where connector will cross over Route 143 and CSX.
4. North (WB) side of Route 60.

The three WB entrances will be constructed either with daytime flagging operations/lane closures, or during the Phase 1 MOT of Route 60/143 when traffic has been shifted towards the south. Once the entrances have been installed, onsite storage areas will be set up along the connector alignment near each entrance. Next, a temporary crossing will be installed at the CSX railroad at the edge of the project ROW as far from the new bridge as possible. This will take extensive coordination with CSX and VDOT during crossing design, approval, and

construction and requires day lane closures on the EB lanes of Route 143, as the crossing becomes a stabilized construction entrance as it ties into existing roadway.

Once these entrances have been installed, temporary access will be installed across Skiffes Creek. This will be accomplished by setting up perimeter erosion & sediment controls from the construction entrance off of Route 60 down through the stream area. Once in place, clearing will occur as needed leading up to bridge areas to allow materials and equipment down to the bridge area. Our temporary access across Skiffes Creek consist of crushed rock placed on geotextile with CMP culvert pipes in the two small creeks to ensure no more than 50% of the streams are blocked. The Skiffes Creek crossing allows access to the connector work areas between the Skiffes Creek Bridge and CSX railroads.

The above activities are needed to provide access throughout the project; after they are completed, the project will break out into five sections:

1. Skiffes Creek Connector.
2. Skiffes Creek Bridge.
3. Bridge over CSX Railroad/Route 143.
4. Route 143 Improvements.
5. Route 60 Improvements.

Each section is broken out into further detail below:

SECTION 1 | SKIFFES CREEK CONNECTOR

Work on the Skiffes Creek Connector is broken into three segments:

Segment 1 | Between Route 60 and Skiffes Creek Bridge.

Segment 2 | Work between the two bridges.

Segment 3 | Work between CSX Bridge and the future intersection between the connector and Route 143.

Work begins primarily in Segments 1 and 3 with erosion & sediment control work, including installing sediment traps and basins, and clearing activities. Once clearing is complete, crews will access Segment 2, either through the temporary access at the CSX crossing or through the temporary access at Skiffes Creek and continue erosion & sediment control and clearing operations.

Roadway construction starts with drainage and retaining walls at culvert areas. These will be prioritized during the design, engineering, and procurement phases, so shop drawings for schedule critical activities can be released prior to 100% plan approval, and the materials can be released for fabrication immediately after RFC roadway plan approvals, in order to be onsite as needed in accordance with the construction schedule. Similar to the clearing operations, work begins in Segments 1 and 3, and then follow along to Segment 2 as work and access allows.

As the drainage and ROW work at the culvert areas continue, mass excavation operations will begin as the low areas become ready to receive material. Like the other activities above, work begins at Segments 1 and 3 first. Segment 1 is anticipated to be primarily cut, with the excess material sent to Segment 3 for the low-lying areas and mass-fill operation closer to the CSX Bridge. Work continues into Segment 2, where locations with large cuts are expected. These cuts will fill the low areas in Segment 2 and may also begin to fill the large mass fill areas near the CSX Bridge. It is expected the large mass fill areas approaching the CSX Bridge in Segments 2 and 3 will both require outside fill.

Once mass excavation operations have cleared an area, final roadwork operations start including fine grading and approval of subgrade, installing subbase and underdrain, and installing curb/barrier/drop inlets. Roadway drainage will be placed during this phase as well, as the project approached final grade. Once a signification section of curb has been installed, the subbase will be final graded and the BM and IM lifts of the asphalt will be placed. It is expected that the Skiffes Creek Bridge will be completed around the time of this work, so the asphalt will tie directly into the bridge approaches. However, in Segments 2 and 3, completion of the roadwork approaching the CSX Bridge is tied to the MSE walls/substructure work of the bridge and will not be completed until those structural items are completed first. Therefore, roadway work (both curb and asphalt) will stop near the base of the MSE walls in Segments 2 and 3, and then be completed later in the project as the CSX bridge progresses.

Following installation of the IM lifts, the outside shoulders will be final graded/dressed up against the curb, and the final ditch lines, signage, seeding, and landscaping work on the outside will be installed. Last, final surface and striping will be installed coinciding with Routes 60 and 143 resurfacing.

SECTION 2 | BRIDGE OVER SKIFFES CREEK

As previously mentioned, our bridge design concept for Skiffes Creek is a four-span structure to allow us to keep the pile and girders lighter and reduce the crane size needed. Once the Skiffes Creek temporary crossing is constructed, we will mobilize our crane and pile hammer to install the concrete test piles at the piers. While waiting for the concrete production pile to be cast, we will drive the H-pile at both abutments and cast the pile caps. Production concrete pile will then be driven for the piers using a two-stage pile template.

Once pile driving is complete, the piles are cut-off to grade and reinforcing dowels grouted in. The pier caps will be cast using friction collars and self-supporting steel plate girder forms. One set of forms will be cycled for the three pier caps.

Girder erection follows once concrete strength has been achieved on the substructure. They will be erected from one end of the bridge to the other from the temporary access road and will sit on their permanent bearing at the piers and on temporary bearing that will be cast in the backwalls at the abutments.

We then install the steel intermediate diaphragms, cast the abutment backwalls and form the pier closure diaphragms. Next, the deck is formed and poured, as well as the approach slabs. Lastly the parapets are cast. Upon completion of the Skiffes Creek Bridge the temporary crossing is removed and wetlands restored.

SECTION 3 | BRIDGE OVER CSX/ROUTE 143

Construction of the CSX/Route 143 Bridge begin with installing wick drains at each approach embankment. Simultaneously, we will drive the H-pile at each abutment using swinging leads. Once the wick drains and H-pile are driven, the MSE walls at Abutments A and B will be constructed and surcharged for the required settlement period. During MSE wall construction, our pile driving crew will move the pier location between the railroad and Route 143, install shoring, excavate, drive the H-pile, and complete forming/placing the pier concrete.

At the conclusion of the settlement periods for both abutments, the pile will be *re-striked* to eliminate any down drag forces as a result of the settlement. Pile caps will then be cast.

Girder erection follows and will sit on permanent bearing at the pier and temporary bearings at the abutments within the back wall. Close coordination with CSX is needed for the girder erection to ensure there is adequate track time to complete the erection.

We then install the steel intermediate diaphragms, cast the abutment backwalls and form the pier closure diaphragms. Next, the deck is formed/poured, as well as the approach slabs. Lastly the parapets are cast and pedestrian fence installed. Upon completion of the railroad bridge the temporary crossing is removed and ballast restored.

SECTION 4 | ROUTE 143 IMPROVEMENTS

Phase 1 of Route 143 construction involves shifting traffic to the south, allowing work to occur on the connector where it will connect to Route 143 in the future, as well as allow construction of a new full width shoulder WB and a new WB turn lane approaching the intersection. Some night work/day lane closures are expected as needs arise, but the majority of the work is expected to be accomplished behind barrels as afforded by the shifted traffic. The project will remain in Phase 1 during the entire connector construction and will enter Phases 2-4 once the connector work is complete and the lanes can be shifted farther north. All signal foundations and conduit are expected during this phase as well.

Phase 2 occurs when the lanes are pushed north, driving on the new turn lane/shoulder constructed in Phase 1. At the south side of Route 143, much of the existing roadway is over 18-in. too low due to an insufficient cross-slope on the existing roadway. Here, the roadway will be demolished, with a new road being constructed at the proper elevation, to go along with a new full width EB shoulder.

Phase 3 involves pushing traffic to the north and south, driving on the newly constructed shoulders in both directions. Here, the work occurs in the middle of the roadway and is a combination of building up asphalt on top of the existing roadway when the distance between the existing and proposed roadways allows or reconstructing the roadway when the change in elevation is too great. MOT restrictions may require this phase to be split into two separate configurations (Phases 3A and 3B) to perform the work. The new signals should also be energized during this phase for traffic to be placed in the final configuration during Phase 4.

Phase 4 involves the remaining build up to tie Phases 1-3 into each other, and final surface and striping, coinciding the final surface on the connector, final grading outside of the shoulders, as well as seeding/landscaping and signage as traffic is placed in the final configuration.

SECTION 5 | ROUTE 60 IMPROVEMENTS

Similar to the work on Route 143, Phase 1A of constructing Route 60 involves shifting traffic to the south, allowing work not only to occur on the connector where it will connect to Route 60 at the northside of the current intersection, but will also allow the fill material to be placed at the northeast corner, which is needed for the Dominion utility relocations. Once Dominion completes their relocations, construction continues with a new full width shoulder WB both approaching and leaving the intersection. Some night work/day lane closures are expected as needs arise, but the majority of the work is expected to be accomplished behind barrels as afforded by the shifted traffic. The project will remain in Phase 1A during entire construction of the connector and will enter later phases once the connector work is complete and the lanes can be shifted farther north. During this phase, it is expected that temporary signals will be installed so as to allow to removal of the existing signals. Proposed signal foundations and conduit are expected during this phase as well.

Phase 1B occurs when the lanes are pushed north, driving on the new turn lane/shoulder constructed in Phase 1A. This allows the existing insufficient EB shoulder to be removed/replaced.

Phase 2 replaces a roadway section east of the intersection due to an insufficient sight distance. Work involves a series of short traffic configurations (Phases 2A, 2B, and 2C), including flagging, night work, and temporary pavement to route traffic around the work. New signals will be energized for traffic to be placed in the final configuration during Phase 3.

Phase 3 involves final surface and striping, coinciding the final surface on the connector and Route 143, final grading outside the shoulders, seeding/landscaping and signage as traffic is placed in the final configuration.

Public Safety: The Corman | Parsons Design-Build Team has a proven track record in planning/executing work safely, and we have developed an approach that will combine each firm's extensive experience to address any safety concerns early and aggressively. Designs will be measured against public impacts, as well as cost and construction operations. Corman and Parsons have well-deserved reputations for being good neighbors -- this project will be no exception. Our MOT designs will be continuously evaluated for effectiveness to minimize impacts. Upon Notice of Award, we will meet individually with stakeholders, including local emergency responders, VDOT, and businesses along Route 143 and/or Green Mount Parkway to discuss their concerns and solicit input that could be incorporated into the project's Traffic Management Plan (TMP), Incident Management Plan, and construction sequencing. We will ensure key team members are present at these meetings to brainstorm ideas to minimize impacts to each entities' operations while opening lines of communication for early identification/mitigation of potential impacts.

Safety training will be required of all workers to include discussions on being good neighbors and the need to minimize impacts whether it be from noise, keeping access open to commercial/residential facilities, or the simple policing of trash generated on the worksite. Additionally, our team will develop a Site-Specific Safety Plan to address hazards associated with the project and will use this as a baseline to which all design and construction will be coordinated. Part of this plan will include using beginning and end of shift meetings for each crew called *Huddles.* This proven form of communication is led by each crew foreman and is a forum for crew members to raise safety concerns and incorporate mitigation measures into each day's work plan.

Staging and storage areas during construction: The location of our proposed staging and storage areas is critical to project success in this congested area. Key issues we will address include:

- ✓ Traveling public safety (vehicle and pedestrian).
- ✓ Safe ingress/egress for construction vehicles, workers, and equipment to/from the construction site, as well as for the huge quantity of material, equipment, and supplies that require a temporary home.
- ✓ In proximity to the individual work areas for operations efficiency.
- ✓ Removal from the travel ways when prohibited during non-work hours.
- ✓ Separation from local business and other commercial/residential establishments.
- ✓ Adequate size to operate efficiently.
- ✓ Environmental controls as required for the material/equipment stored.

It is assumed small staging sites will be required near actual work areas, mainly along the new connector alignment, both north and south of Skiffes Creek, to minimize construction traffic crossing through the creek area during bridge construction, and on both sides of Route 143, to minimize the need for CSX flagmen, in the event they are either not available and/or to minimize the total number of flagger hours required. As per Addendum 1, Part 2, we will place a construction trailer in the southeast corner of the VDOT yard on Route 143. This corner will likely also be used for employee parking, as well as potential storage of minor, non-erodible materials, such

as MOT devices. If additional storage is needed, preference is given to using existing VDOT property wherever possible, supplemented with private leases from local landowners.

Yards will be screened, with a nominal number of temporary trailers or storage containers. Since night work is anticipated, storage areas will also be lit up, either by power drops from nearby Dominion Power poles or with portable generators. The properties will have stone entrances to eliminate tracking mud onto the public roads. Sediment & erosion controls will be installed/maintained. Upon completion, on-project locations will be converted as shown on the final plans, and off-project properties will be restored in accordance with the specific lease requirements. The southeast corner of the VDOT yard will be restored to existing conditions once the trailers have been removed following project completion.

4.5.2 TRANSPORTATION MANAGEMENT PLAN

The Corman | Parsons Design-Build Team has developed a Transportation Management Plan (TMP) and Temporary Traffic Control (TTC) Plans that maximize safety for motorists, pedestrians, bicyclists and construction personnel while also minimizing travel delays. The TMP includes Temporary Traffic Control, Public Information, Incident Management, and Traffic Operations Plans, in accordance with IIM L&D-241/TE-351 for Type B, Category II Projects. Temporary Traffic Control Plans will be developed per VDOT's I&IM LD-241.7, the latest *Virginia Work Area Protection Manual* (VAWAPM), the *Manual on Uniform Traffic Control Devices (MUTCD),* and VDOT's *Transportation Management Plan Design Checklist*.

The TMP is a living document that will get updated over the project's lifecycle. Prior to construction, impacts will be analyzed and used to develop appropriate traffic mitigation strategies. However, adjustments to the plan are typically required during construction to address actual conditions that develop which could not have been predicted. The Corman | Parsons Design-Build Team has constructed many successful projects throughout the area using VDOT's *Guidelines for TMP Performance Assessment*, including the *Post-Construction Transportation Management Plan Performance Assessment*, and developed lessons learned that guide us in our mission to continually provide safer work zones.

The Corman | Parsons Design-Build Team will prioritize traveling public safety/mobility through our design and construction effort. Prior to construction, risks related to anticipated construction phasing/sequencing will be identified/evaluated. Those that cannot be eliminated through further design refinements will be mitigated in the TMP approach. Examples of potential mitigation efforts include:

- Preparing communication tools, such as travel advisories and social media/website updates to alert the public about traffic pattern changes and encourage using alternate routes to decrease volume through the work zone.
- Developing a comprehensive advertising campaign plan in partnership with VDOT.
- Formulating contingency plans that include pre-approved detours that can be quickly implemented should an incident occur within the project limits.
- Reducing number of traffic shifts and lane closures.

Lane Closures: The Corman | Parsons Design-Build Team developed a Temporary Traffic Control Plan that maintains existing traffic lanes during construction along Routes 60 and 143. Lanes will be closed during allowable closure hours to place temporary concrete barrier, construct outside pavement widening, temporary pavement, and to shift traffic.

Route 60: As discussed in Section 4.5.1 Sequence of Construction, Route 60 will be constructed in three phases. Phase 1 widens the pavement in both directions using flaggers and closing lanes during the RFP allowable lane closure hours. Safety wedging, barrels and/or temporary concrete barriers will be used outside the existing lanes to protect areas where significant drop-offs, fixed objects in the clear zone and any other situations as identified in Appendix A of the VA WAPM. Phase 1A will use a permanent WB shoulder closure; Phase 1B will use a permanent EB shoulder closure. Temporary signals will be used at the Green Mount Parkway intersection during all phases to ensure the intersection functions the same as in the existing condition.

Phase 2 will use short-term traffic shifts to protect traffic during crest curve reconstruction between STA. 413+50 and 416+50.

Phase 2A shifts both directions of traffic to the south and uses temporary pavement along EB Route 60 to construct the north side of the crest curve.

Phase 2B shifts the WB traffic to the north and creates a work zone in the middle between EB and WB.

Phase 2C shifts EB to the north, adjacent to WB, and creates a work zone on the southside of the roadway.

Temporary concrete barrier will create a separation between the work zone and travel lanes in all Phase 2 shifts.

Phase 3 energizes the new traffic signals and places traffic into permanent configuration for final surface/striping.

Maintenance of traffic elements will be designed to meet the posted speed limit for Route 60. During all of the phases, existing through and turn lanes along Route 60 within the project limits will be maintained at a minimum width of 11-ft., except during allowable lane closure hours as described in the RFP.

Route 143 will be constructed in four phases:

Phase 1 focuses on widening the pavement and tying in the new connector along WB Route 143. Widening the pavement in this phase allows the Corman | Parsons Design-Build Team to reduce the amount of temporary pavement needed for shifting traffic in later phases. This work will be accomplished with a permanent shoulder closure along WB Route 143 accompanied by closing lanes during the RFP allowable lane closure hours as necessary. All of the permanent traffic signal items north of Route 143 will be built during this phase.

Phase 2 shifts EB and WB traffic to the north to widen along EB Route 143. All of the permanent traffic signal items south of Route 143 will be built during this phase. In Phase 3A, WB traffic remains in the same alignment as in Phase 2 and the outside lane of EB traffic will be shifted onto the outside widening that was constructed in Phase 2. This traffic shift creates the room needed to reconstruct the existing outside lane on EB Route 143. Phase 3B shifts the second EB lane onto the outside widening and reconstruction of the existing inside lane on EB Route 143 takes place. To meet the goal of reducing the amount of traffic shifts and temporary pavement markings required, the Corman | Parsons Design-Build Team designed the Route 143 MOT to maintain the same alignment for WB traffic during Phases 2-3.

Phase 4 energizes the new traffic signals and places traffic into the permanent configuration for final surface/striping.

Existing entrances along Route 143 will be maintained in all phases and any required entrance closures will be coordinated with the property owners to ensure alternative access is in place prior to it being closed. All MOT elements will be designed to meet the posted speed limit for Route 143. During all phases, existing through and

turn lanes along Route 143 within the project limits will be maintained at a minimum width of 11-ft., except during allowable lane closure hours as described in the RFP.

Skiffes Creek Connector will be constructed entirely outside of existing traffic; however construction access will be from Routes 60 and 143. Construction access points will be signed to alert motorists of trucks entering and exiting the roadway and flaggers will be used as needed to ensure safe interaction between construction traffic and other motorists.

CSX Railroad: Access for area between Skiffes Creek and Route 143 will largely occur through CSX ROW. As a result, we will work with CSX throughout design/construction for an uninterrupted flow of rail traffic through the project limits. Whenever workers are within CSX ROW, CSX flaggers will be used. Frequent communication with CSX will keep project on schedule by identifying concerns/conflicts early and mitigating potential construction delays. Construction sequencing will be developed with trail traffic safety/mobility as top concerns.

Time-of-Day Restrictions: Corman | Parsons Design-Build Team will follow RFP requirements for time-of-day restrictions for short-term lane and shoulder closures. This will be included in the Public Communication and Incident Management Plans.

Flagging Operations will be conducted whenever workers are present within CSX ROW or if construction traffic is crossing the tracks. Flagging required within railroad ROW will be coordinated with and performed by CSX. Flagging will be used when installing temporary pavement/pavement widening along outside of Routes 60/143.

Minimum Lane Widths: Minimum 11-ft. lane widths will be maintained on Routes 60/143 during construction.

Work Zone Speed Reductions: Existing posted speed along Routes 60/143 will be maintained. All elements for our TMP, and specifically any temporary alignments, lane closures and lane shifts will be designed for the posted speed limit per the Virginia Work Area Protection Manual.

Major Stakeholders: We will develop a comprehensive community landscape identifying key local stakeholders to include residents, communities, businesses, manufacturing, distribution centers, and others as listed. The following stakeholders will be included. This is an initial list and additional stakeholders can be added as identified. We will work with VDOT to confirm all stakeholders are identified and engaged.

TABLE 4.5.-1

TOP TIER STAKEHOLDERS		
VDOT/Commonwealth of Virginia	City of Newport News	James City County Government/Schools
James City County Police/Fire	City of Newport News Waterworks	Amtrak
CSXT Railroad	Naval Weapons Station Yorktown	Virginia Peninsula Regional Jail Authority
Merrimac Juvenile Detention Center	James River Elementary School	Hampton Roads Transit
Williamsburg Area Transit Authority	City of Williamsburg	

LOCAL KEY STAKEHOLDERS		
Branscome, Inc.	Peninsula Pentecostals, Inc	Carters Village (Neighborhood)
Estate of S.R. Curtiss	Skiffes Creek, LLC	Greenmount Industrial Park
Walmart Distribution Center	Carter Cat Equipment	Haynes Furniture Distribution Center
Climatrol Self Storage	Morning Star Baptist Church	Anheuser-Busch Brewery
Ball Corporation	Coresix Precision Glass	Greystone of Virginia
Lumber Liquidators	Nicewood Enterprises	Owens & Minor
Owens-Illinois Glass	Printpack, Inc.	Grove Christian Outreach Center
The Williamsburg Winery	Busch Gardens Williamsburg	Lee Hall Mansion
Lee Hall Baptist Church	Diamond Resorts	Eastern State Hospital
Jamestown-Yorktown Foundation Education and Living-History Museums	Kingsmill	Riverside Regional Medical Center
Williamsburg Landing	Williamsburg Plantation	

How stakeholders will be impacted by our sequence of construction: The goal of the TMP is to mitigate motorist/key stakeholder impacts and ensure safety during construction. The TMP will align with our communications strategy and be developed in collaboration with our public involvement process. Through effective communications, and in close collaboration with VDOT, our team will engage motorists/stakeholders. We have identified and listed all significant stakeholders within the project corridor **(See Section 4.5.2. Transportation Management Plan (TMP))**. Prior to construction, we will engage stakeholders to raise awareness, hear concerns and respond on behalf of VDOT. During construction, we will keep our stakeholders informed of progress, milestones and special considerations as needed. Using the methodologies and tactics from VDOT's Military Highway CFI and High Rise Bridge design-build projects, we will build a database and reach our targeted stakeholders through email and public/individual meetings. Communications will be reinforced through a designated communications specialist and supported by project website updates.

Figure 4.5-1: Project website for High Rise Bridge

In addition to the surrounding residential communities, schools and churches, the corridor is a vital commercial route supporting distribution centers, manufacturing, municipal/government and retail activity. Through key messaging and direct engagement, we will collaborate with VDOT to deliver awareness, enhance safety and mitigate impacts. Our communications strategy and tactics will create public acceptance and build trust between VDOT, the stakeholders, our team and the public.

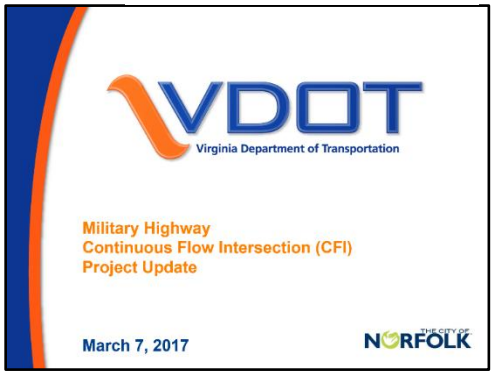


Figure 4.5-2: Project update presentation for Military Highway

During construction, the Branscome, Inc. Lee Hall-Plant entrances will be impacted. While two of the four entrances will be removed in the final configuration, the Corman | Parsons Design-Build Team has designed a sequence of construction that will maintain access to all entrances for as long as possible before closing two of them in the final condition. Existing turning movements on Route 60 will be maintained during all construction phases which will allow uninterrupted access to businesses along Green Mount Parkway.

CSX is considered a top tier stakeholder. They are not only impacted by construction of the new bridge over their railroad tracks, but construction of Skiffes Creek Connector east of Skiffes Creek will be accessed by crossing their tracks via a temporary crossing. Frequent communication with CSX will keep the project on schedule and address their concerns promptly. We will use flaggers at all times when working inside of CSX right of way.

Public Outreach Approach: Building Public Awareness and Community Support through Public Involvement: As an integral component of the Skiffes Creek Connector project, the Corman | Parsons Design-Build Team will collaborate with Seventh Point Transportation PR to engage commuters, motorists, key stakeholders, businesses, hospitals, schools, first responders, tourists and residents with key messaging and public engagement throughout the project's concept, planning and construction. Corman, Parsons and Seventh Point have proven experience in conducting public outreach to deliver project awareness on behalf of VDOT.
Direct/effective public engagement is essential to project success to maintain efficient operations and safety through a heavily travelled commercial/residential corridor. Identifying potential motorist/trucker impacts through the corridor and relaying them timely minimizes consequences for residents, commuters, businesses, and visitors in the project area. We will use the project website and provide updated content, information and traffic alerts to communicate progress, milestones, lane closures, and other impacts. We will assist VDOT to gain public awareness, input and support for the project.

We will use strategic public engagement tactics including public meetings, direct stakeholder engagement, targeted social media, email, traffic alerts, local canvassing, dynamic collateral (project newsletters, fact sheets), interactive presentations, news media relations, as well as digital online and traditional media to reach the communities and motorists.

Our team will leverage our collaborative public involvement experience and successful tactics from projects, such as VDOT's High Rise Bridge design-build, and the recently completed Military Highway CFI design-build to assist VDOT with communications for this project. The High Rise Bridge and Military Highway CFI projects also demonstrate Seventh Point's experience with Corman and Parsons, as well as working with VDOT in Hampton Roads. They have extensive experience with VDOT Hampton Roads Communications, assisting with public involvement for HRBT, Bowers Hill, 64 Express Lanes, I-64/ 264 Interchange, Phase I, Pavement Rehabilitation, I-64 Widening on the Peninsula and others. Our goal is to deliver communications on behalf of VDOT that create a positive environment of awareness, mitigates impacts and delivers the project safely.

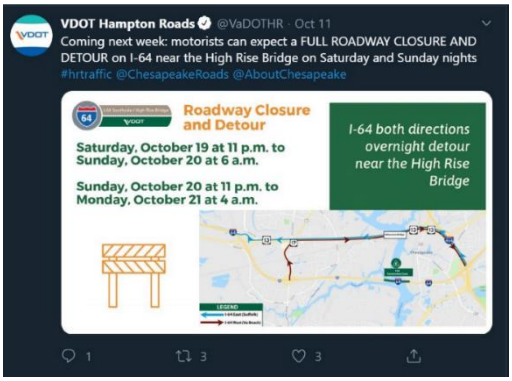


Figure 4.5-3: Traffic alerts

We will develop a communications plan to define key messages, project benefits and engagement strategies. All messages and direct engagement will be at the direction and approval of VDOT. Safety is a primary ongoing key message which will be developed in alignment with the TMP. We will also collaborate with James City County, incorporating their communications assets to extend our reach.

We understand 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.

We will provide a point of contact for the public to access information concerning project development and delivery. All public communications will be approved by VDOT.

Our team will submit a list of affected stakeholders in the project area which will be submitted to VDOT for review/approval. We will host public and direct stakeholder meetings as defined by the approved communications plan. Stakeholders will be notified in advance of meeting dates and locations.

We will provide VDOT project updates, information, as well as traffic alerts to be posted on the project website. Information can include project overview, benefits, schedule, components and project features or activities that may cause potential public and motorist impacts – such as lane and shoulder closures, surface milling and other construction activities. A photographic record of project progress will be maintained and will be available for review. Project updates and notifications will be made available to all stakeholders and motorists, as well as James City County. Our team will be responsible for compliance with all applicable county ordinances.

Figure 4.5-4: Public outreach

An Emergency Contact List of project personnel as well as a detailed, 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.

Through outreach efforts and contacts, such as meetings with stakeholders and the public, emailed questions or phone inquiries, our team will compile and maintain a database of questions, complaints and comments. A central database will be maintained where these issues will be addressed. The issues and responses will be made available on the applicable VDOT website.

All public meetings and engagements will be conducted in accordance with the guidelines established in the VDOT Public Involvement Manual.

4.6 Proposal Schedule

VDOT
Virginia Department of Transportation

4.6 PROPOSAL SCHEDULE

4.6.1 PROPOSAL SCHEDULE

The Corman | Parsons Design-Build Team thoroughly understands the requirements and complexities of this project and have developed a solution to deliver it on schedule. Our schedule in Volume II and the following narrative explain how we will successfully deliver this project.

4.6.2 PROPOSAL SCHEDULE NARRATIVE

Plan to Accomplish the Work: Corman has developed the Proposal Schedule detailing our plan to successfully accomplish the work in accordance with the contract documents. Our narrative explains the sequencing, description and critical path, proposed means and methods, and other key assumptions on which our schedule is based.

The Corman | Parsons Design-Build Team used Primavera scheduling software and developed a Critical Path Method (CPM) schedule based on the RFP information, available resources, design concepts and construction means we have chosen.

SCHEDULE OVERVIEW

Notice of Intent to Award:	12/12/2019
Notice to Proceed:	02/14/2020
Design Activities:	December 2019 – February 2021
Construction:	December 2020 – October 2022
Final Completion:	October 27, 2022

Design: Design phase includes preparation, QA/QC reviews, and submission of Intermediate, Final, and Ready for Construction (RFC) design stages of the roadway and structure project elements. Included are the 21-day periods for VDOT reviews and 45 days for VDOT/CSX joint reviews. Supporting plan preparation are survey coordination and mapping, geotechnical investigation, and utility designations. There are activities for geotechnical investigations, reports, and VDOT's review of the Geotechnical Report prior to submitting the final roadway packages. The design phase starts immediately upon CTB Approval/Notice to Award to begin advancing the concept plans to the intermediate stage. Design effort for each element is on the critical path, specifically the design of the roadway elements and ROW acquisition.

We will complete each design package prior to commencing construction of that package, with a priority on the roadway plans which include design of the erosion & sediment, maintenance of traffic and clearing activities required at the start of construction. The roadway package will also include access for temporary work areas at each of the bridge locations. In the event non-critical, i.e., landscaping, signals, striping, etc., design elements hold up the critical roadway plans, we may hold back less critical elements for a final RFC plan submission so the critical design elements can be submitted/approved, allowing construction to commence. We will obtain a VDPES permit based on a conservative estimate of the disturbed project area and preliminary plans as allowed by the regulations.

Field Investigations and Geotechnical: Upon receiving Notice to Proceed (NTP), our design and construction teams will 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 take place. Concurrent with the field survey, geotechnical investigations will start with submitting a Boring Plan and for

VDOT informational purposes and staking out the boring locations in the field. The roadway design also commences concurrently with the survey update and the geotechnical investigations and will be adjusted as necessary to accommodate the results of the field work.

Environmental Permitting: Our schedule contains environmental and permitting activities as required and allows time for information to be developed as needed for the permit submittal processes and the environmental site assessment. All permitted construction activities will be a hold point to ensure no work is performed without permits in place.

ROW Acquisition and Utility Relocation: These will be coordinated to start at the NTP date, utilizing 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, and to complete the work before impacting the new roadway construction. Corman and Parsons has already held preliminary meetings with the utility companies that will require relocation pre-bid to ensure our team has a handle on scope and complexity of the required relocations. As noted in the construction section later, all construction that is a prerequisite for utility relocations will be included in the prioritized roadway plans to keep relocations off of the critical path.

Final Design: While the work shown in the roadway plans is ongoing, final structural and any non-critical roadway elements will be developed/submitted to VDOT for review. This positions RFC plans to be approved by February 2021 when full scale construction activities are scheduled to begin.

Quality Assurance/Quality Control (QA/QC): QA/QC activities will be 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 point.
- ✓ VDOT inspections.

Construction: The first construction phase involves the work in the roadway plans, including erosion & sediment, clearing, bridge access, and all work that needs to be completed ahead of any utility relocations. This keeps relocations off the critical path and for structural and roadway work to start as soon as RFC plans have been accepted.

Construction is scheduled to take place with multiple crews with most of the work constructed simultaneously. Right at the start, work occurs on the connector at Route 60 and Route 143 and both bridge structures. As the project progresses, the on-grade portions of connector (STA. 11+00 to 31+00 and 48+00 to 55+00) segments will be completed first, along with the Skiffes Creek Bridge. The deep-fill MSE walls and the CSX overpass bridge follows next, ending with final site restorations and reconstruction of Routes 143 and 60, including signage, lighting and signals.

Our work schedule/sequencing is shown on our schedule in Volume II.

Critical Path: The critical path starts with the roadway design elements at the start of construction, notably, erosion & sediment, maintenance of traffic, and grading. Environmental Permitting and ROW acquisition. both of which are required to commence construction, are also near critical.

Once construction has started, the critical path runs through the roadway activities as the connector ties into Routes 60 and 143, is constructed through 2021 and early 2022, and synchs up with the completion of the CSX bridge, and then finally with the improvements to Routes 60 and 143 occurring in 2022 as the project is finishing up. Utility relocations, especially the relocated Dominion poles on Route 60, are also near critical.

Work Breakdown Structure (WBS): The WBS is a multi-level, hierarchical arrangement of the work to be completed. The Corman | Parsons Design-Build Team has laid out the WBS to break down the major phases of the project by *Type of Work* and *Locations.* Level 1 was given to the project name, Skiffes Creek Connector. A brief description of Level 2 is below, followed by a table showing the Level 2 – Level 4 WBS used on the project.

1. **Project Milestones** – As per the RFP, the major project milestones are included under this WBS, including contractual, such as NTP and Final Completion.
2. **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.
3. **Design** – Under this WBS all the design efforts with their respective submission and review/approval timeline is included. Further breakdown of this division is shown in the table below.
4. **Engineering and Procurement** – Includes approval and delivery of major offsite materials and construction support not provided by the designer.
5. **Construction** – This WBS section depicts the construction activities grouped by *Type of Work* and *Locations.* See further breakdowns in **Table 4.6-1**.

TABLE 4.6-1: TYPE OF WORK AND LOCATIONS

LEVEL 2 WBS	LEVEL 3 | LEVEL 4 WBS
PROJECT MILESTONES	Project Milestones
GENERAL CONDITIONS	General Conditions ✓ Scope Validation ✓ Project Management – Schedules ✓ Quality Control/Quality Assurance – Hold Points
DESIGN	Design ✓ Geotechnical ✓ Roadway ✓ Retaining Wall ✓ Drainage ✓ Civil ✓ MOT ✓ Structures – CSX Bridge

DESIGN (CONTINUED)	– Skiffes Creek Bridge ✓ Utilities – Verizon/Cox/Century Link – Dominion – Virginia Natural Gas – Newport News Waterworks – Hampton Roads Sanitary/James City Service ✓ Right of Way ✓ Environmental ✓ Traffic Engineering
ENGINEERING AND PROCUREMENT	Engineering and Procurement ✓ Skiffes Bridge ✓ CSX Bridge ✓ Roadway ✓ Signs and Signals
CONSTRUCTION	Construction ✓ Roadway – Segment 1 – Segment 2 – Segment 3 – Route 143 Improvements – Route 60 Improvements ✓ Skiffes Bridge – Substructure – Superstructure ✓ CSX Bridge – Substructure – Superstructure ✓ Signage and Signals ✓ Landscaping

Calendars: Four project calendars were used in the schedule and include:

1. **"Calendar Days"** – Based on seven days per week. This is used for VDOT and CSX review periods and other activities whose durations are defined as calendar days in the contract.
2. **"VDOT – Base 5-day with Holidays"** – Based on five working days per week and includes holiday restrictions. Used for design activities and work not impacted by adverse weather.
3. **"Skiffes – Standard 5-day with Holiday/Weather"** – Based on five working days per week, accounting for holiday restrictions and anticipated weather days. See below for the assumptions used to determine weather days. This calendar was used for most construction activities.
4. **"Skiffes – Standard 5-day with Winter Shutdown"** – Similar to the typical construction activity calendar, except it also does not allow work from the end of December through February. This is used for paving and striping activities that have temperature restrictions.

Weather Days were estimated using 30-Year Climate Normals Average from locally available NOAA data. This data is updated every ten years (last updated in 2010), so it does not include the dramatically wetter periods this

area experienced over the past ten years, so additional weather days were added to the calendar to account for this, as shown in **Table 4.6-2.**

TABLE 4.6-2: WEATHER DAYS

	Average Temp Below 32°F and/or Precip Greater than 0.5"											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Probability	0.4	0.3	0.5	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3
Work Days (Mon.-Sat.) Lost in Calendar Days	10.8	7.2	13.0	3.8	4.2	6.0	5.2	5.1	6.8	6.6	4.8	9.4
Nonworking Mon.-Sat. days shown in calendar due to weather	11	8	13	5	5	6	6	6	8	8	5	10

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 and submitted to VDOT within 90 calendar days of NTP and will include cost and resource loading, all submittals required by the contract documents as well as a definable critical path. Key personnel represented by all disciplines (design, construction, safety, quality, controls, and procurement) will engage and actively begin in-depth planning of the project activities and schedule refinement.

The 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 should they be needed. Systems to manage the design and construction sequencing will be clear and concise and include:

- Weekly design/construction scheduling and coordination meetings during design phase
- Weekly construction scheduling meeting during construction phase
- Utility relocation tracking sheets during design and construction phases
- ROW progress tracking spreadsheets (if needed) 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, the Corman|Parsons Design-Build 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 will be 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* will be prepared and discussed to analyze schedule and quality impacts. Similar information will be 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 will be updated as the Corman | Parsons Design-Build Team prepares, submits and receives approval on the Baseline Schedule. Once approved, it will be updated/submitted to VDOT for approval monthly until project final completion. Each update is accompanied with a narrative report and tables as prescribed in the Design-Build Project Schedule special provision. The updated schedule and narrative will 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 the Corman | Parsons Design-Build Team's plan for completing remaining work.
- ✓ Change orders.
- ✓ Relief events.
- ✓ Compensation events.

Schedule Recovery: If during the project, changes or unforeseen circumstances arise that impact the project schedule, the Corman | Parsons Design-Build Team 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 and 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 in the project, 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 construction manager will be the primary focus to mitigate impacts.

Mitigating Risks: The experience the Corman | Parsons Design-Build Team obtained in working on similar projects will be critical to the timeliness of resolving design and construction hurdles as they occur. The Corman | Parsons Design-Build Team has 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 of the project. 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:

Right of Way: Right-of-way acquisition/relocations can take several months to negotiate and if eminent domain is necessary, even longer. We will hit the ground running as soon as we receive NTP and aggressively complete the right-of-way and relocation process. In the event of delays in this area, we will shift the design focus to other areas of the project to avoid final project completion date impacts.

Utility Relocations: There is a risk in schedule delay if the utility companies take longer than anticipated to relocate their utilities. Early utility coordination is a must to mitigate potential damages. Our design team will aggressively work to design and coordinate the utility relocation process to avoid impacts to the project schedule.

CSX Coordination: to provide flagmen and construction crossings. Early coordination is a must to mitigate potential damages. We have many years of experience working with CSX and can manage this coordination to avoid delays.

Design Approvals: There is a risk that the design approval process could exceed what is anticipated in our CPM schedule which could shorten the time available for construction. To fully take advantage of the design-build

process, we feel it is necessary to 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/CSX 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 could extend the approval period thus 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. 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 will need to be done well in advance to avoid schedule delays. We will mitigate potential delays using a partnered approach of open and often communication with subcontractors.

Material Lead Time: The Corman | Parsons Design-Build Team identified schedule critical elements associated with longer lead time materials (i.e., girders, bridge pile, MSE wall panel) and has shown when they are needed to prioritize design of these items. This will also expedite the shop drawing process to ensure there are no delays to the project schedule.

COMMITMENT: *The Corman / Parsons Design-Build 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 takes into account internal plan reviews, VDOT/CSX 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 the traveling public. Once we receive NTP, our team will band together to work and make this project a success for VDOT and the citizens of Virginia.

Appendix

ATTACHMENT 4.0.1.1

SKIFFES CREEK CONNECTOR

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	80-82
Acknowledgement of RFP, Revisions, and/or Addenda	Attachment 3.6 (Form C-78-RFP)	Sections 3.6, 4.0.1.1	no	83
Letter of Submittal	NA	Sections 4.1		
Letter of Submittal on Offeror's letterhead	NA	Section 4.1.1	yes	1
Identify the full legal name and address of Offeror	NA	Section 4.1.1	yes	1
Authorized representative's original signature	NA	Section 4.1.1	yes	2
Declaration of intent	NA	Section 4.1.2	yes	1
120 day declaration	NA	Section 4.1.3	yes	1
Point of Contact information	NA	Section 4.1.4	yes	1
Principal Officer information	NA	Section 4.1.5	yes	1
Final Completion Date	NA	Section 4.1.6	yes	1
Unique Milestone Date(s)	NA	Section 4.1.7	yes	1
Proposal Payment Agreement or Waiver of Proposal Payment	Attachment 9.3.1 or 9.3.2	Section 4.1.8	no	84-87
Certification Regarding Debarment Forms	Attachment 11.8.6(a) Attachment 11.8.6(b)	Section 4.1.9	no	88-99
Written statement of percent DBE participation	NA	Section 4.1.10	yes	2

ATTACHMENT 4.0.1.1

SKIFFES CREEK CONNECTOR

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Offeror's Qualifications	NA	Section 4.2		
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	3
Organizational chart with any updates since the SOQ submittal clearly identified	NA	Section 4.2.2	yes	3
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.2	yes	3
Design Concept	NA	Section 4.3		
Conceptual Roadway Plans and description	NA	Section 4.3.1	yes	4-8 / 44-60
Conceptual Structural Plans and description	NA	Section 4.3..2	yes	8-10 / 44-60
Project Approach	NA	Section 4.4		
Environmental Management	NA	Section 4.4.1	yes	11 - 18
Utilities	NA	Section 4.4.2	yes	18 - 23
Geotechnical	NA	Section 4.4.3	yes	23 - 26
Railroad Coordination	NA	Section 4.4.4	yes	27 - 28
Quality Assurance/ Quality Control (QA/QC)	NA	Section 4.4.5	yes	29 - 32
Construction of Project	NA	Section 4.5		

ATTACHMENT 4.0.1.1

SKIFFES CREEK CONNECTOR

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Sequence of Construction	NA	Section 4.5.1	yes	33 - 38
Transportation Management Plan	NA	Section 4.5.2	yes	38 - 43
Proposal Schedule	NA	Section 4.6		
Proposal Schedule	NA	Section 4.6	no	61 - 72
Proposal Schedule Narrative	NA	Section 4.6	no	73 - 79
Proposal Schedule in electronic format (CD-ROM)	NA	Section 4.6	no	CD-ROM

ATTACHMENT 3.6

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

RFP NO. C00100200DB104

PROJECT NO.: 0060-047-627, P101, R201, C501, B619, B620

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 – August 1, 2019 (Date)
2. Cover letter of RFP Addendum No. 1 – October 11, 2019 (Date)
3. Cover letter of RFP Addendum No. 2 – October 22, 2019 (Date)
4. Cover letter of RFP Addendum No. 3 – October 29, 2019 (Date)

SIGNATURE

11/5/19
DATE

Lou Robbins, PE, DBIA
PRINTED NAME

Vice President
TITLE

ATTACHMENT 9.3.1
PROPOSAL PAYMENT AGREEMENT

THIS PROPOSAL PAYMENT AGREEMENT (this "Agreement") is made and entered into as of this 5th day of November, 2019, by and between the Virginia Department of Transportation ("VDOT"), and Corman Kokosing Construction Company ("Offeror").

WITNESSETH:

WHEREAS, Offeror is one of the entities who submitted Statements of Qualifications ("SOQs") pursuant to VDOT's February 27, 2019 (last addendum on April 19, 2019) Request for Qualifications ("RFQ") and was invited to submit proposals in response to a Request for Proposals ("RFP") for the **Skiffes Creek Connector, Project No. 0060-047-627, P101, R201, C501, B619, B620** ("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 **Thirty thousand and 00/100 Dollars ($30,000.00)** ("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: _____

[Insert Offeror's Name]

By: _____

Name: Gregory Hamilton

Title: Sr. Vice President

ATTACHMENT 11.8.6(a)
CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS

Project No.: 0060-047-627, P101, R201, C501, B619, B620

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 | 10/21/19 Date | Sr. Vice President Title

Corman Kokosing Construction Company
Name of Firm

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

Project No.: 0060-047-627, P101, R201, C501, B619, B620

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.

10/18/2019 Vice President

Signature Date Title

Parsons Transportation Group, Inc.

Name of Firm

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

Project No.: 0060-047-627, P101, R201, C501, B619, B620

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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 9/25/19 President
Title

Accompong Engineering Group, LLC

Name of Firm

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

Project No.: 0060-047-627, P101, R201, C501, B619, B620

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Signature	9-18-19 Date	Sr. Principal Title

Cardno, Inc.
Name of Firm

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

Project No.: 0060-047-627, P101, R201, C501, B619, B620

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Signature	Date	Title
[signature]	9/18/19	PRINCIPAL AND EXECUTIVE VICE-PRESIDENT

CES Consulting, LLC
Name of Firm

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

Project No.: 0060-047-627, P101, R201, C501, B619, B620

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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	9/18/2019	Senior Vice President
Signature	Date	Title

NXL, a Division of Century Engineering, Inc. (formally NXL Construction Services)
Name of Firm

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

Project No.: 0060-047-627, P101, R201, C501, B619, B620

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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	September 18, 2019	President
	Date	Title

O.R. Colan Associates, LLC

Name of Firm

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

Project No.: 0060-047-627, P101, R201, C501, B619, B620

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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	11/05/2019 Date	Vice President / Director of Operations Title

Precision Measurements, Inc.
Name of Firm

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

Project No.: 0060-047-627, P101, R201, C501, B619, B620

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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.

Edward G. Drahos 9/19/19 SR. V.P.

Signature Date Title

Schnabel Engineering, LLC

Name of Firm

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

Project No.: 0060-047-627, P101, R201, C501, B619, B620

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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.

October 30, 2019	President
Signature Date	Title

Seventh Point Transportation PR

Name of Firm

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

Project No.: 0060-047-627, P101, R201, C501, B619, B620

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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	September 18, 2019 Date	President and CEO Title

Straughan Environmental, Inc.

Name of Firm

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

Project No.: 0060-047-627, P101, R201, C501, B619, B620

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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	September 18, 2019 Date	Operations Manager Title

Wetland Studies and Solutions, Inc.

Name of Firm

ORIGINAL
Copy 1 of 10 Copies

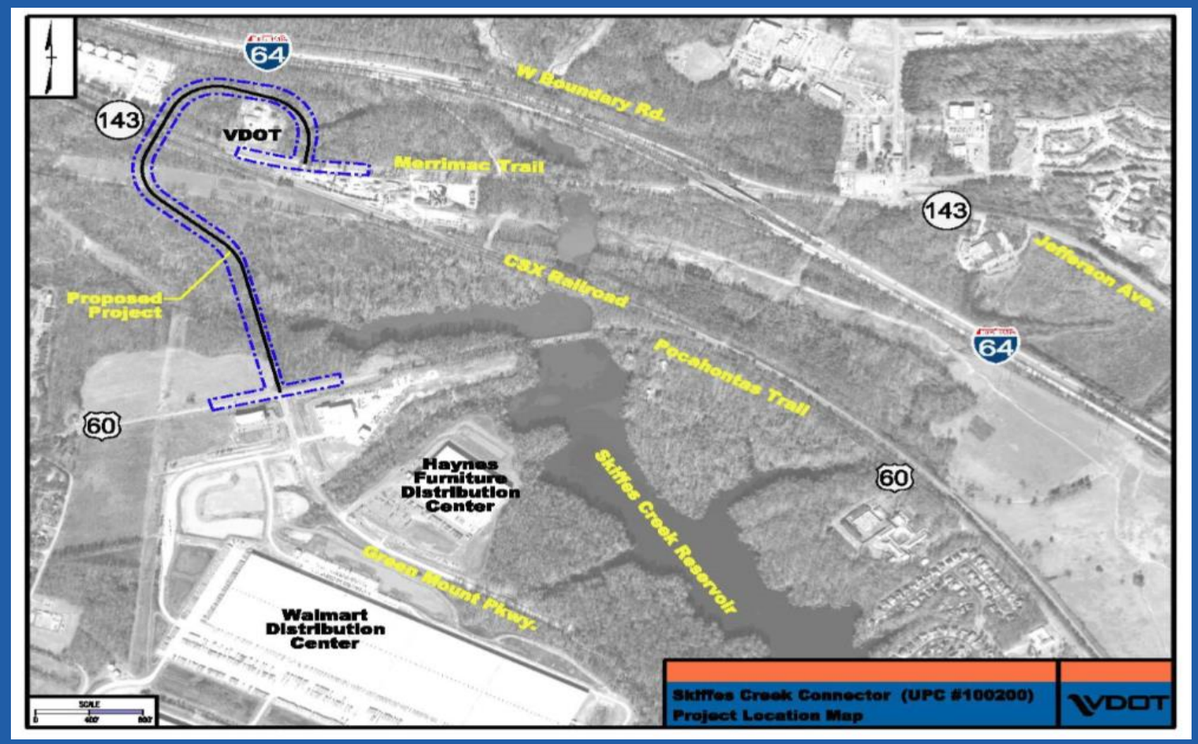
Volume II | Technical Proposal
A Design-Build Project

Skiffes Creek Connector

From: Route 60 (Pocahontas Trail)
To: Route 143 (Merrimac Trail)

James City County, Virginia

State Project Number: 0060-047-627, P101, R201, C501, B619, B620
Federal Project Number: STP-5A03(455) | STP-5A03(972)
Contract ID Number: C00100200DB104



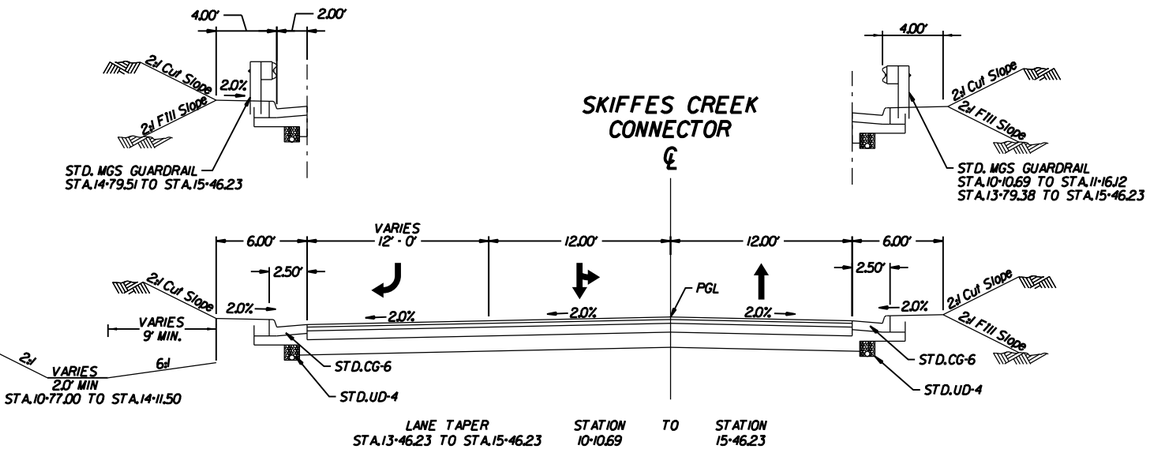
In association with

CORMAN KOKOSING | PARSONS

November 5, 2019

4.3 Design Concept | Conceptual Roadway and Structural Plans

REVISED	STATE	STATE ROUTE	STATE PROJECT	PAGE NO.
	VA.	·	0060 - 047 - 627	44

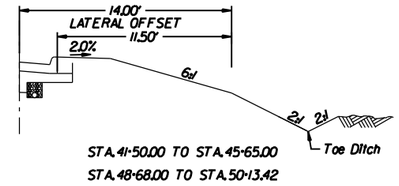


PAVEMENT LEGEND

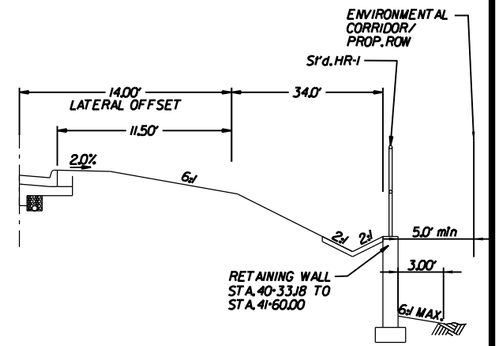
SURFACE	2 INCHES ASPHALT CONCRETE, TYPE SM-12.5D
INTERMEDIATE	2 INCHES ASPHALT CONCRETE, TYPE IM-19.0D
BASE	4 INCHES ASPHALT CONCRETE, BM-25.0A
DRAINAGE	2 INCHES ASPHALT OPEN GRADED DRAINAGE LAYER (OGDL)
SUBBASE	4 INCHES CEMENT TREATED AGGREGATE BASE MATERIAL, TY I, SIZE 21A, CONNECTED TO A STANDARD UD-4 EDGEDRAIN

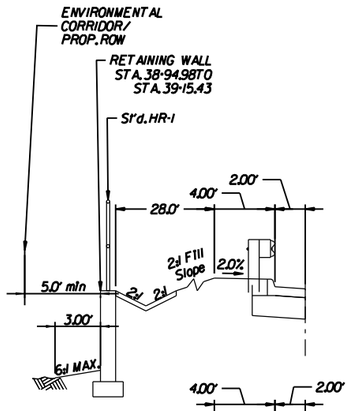
NOTES:

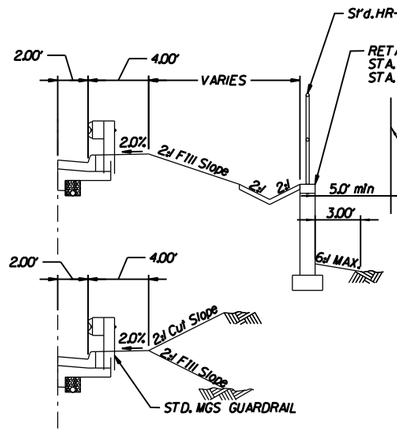
1. FOR A TANGENT MGS GUARDRAIL TERMINAL CURB OFFSET LAYOUT SEE VDOT RDM APPENDIX J FIGURE J-3-2.

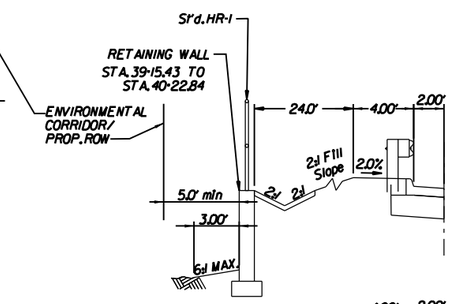


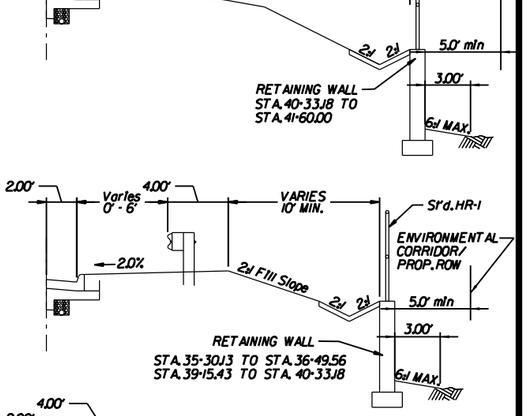
STA.41+50.00 TO STA.45+65.00
STA.48+68.00 TO STA.50+13.42

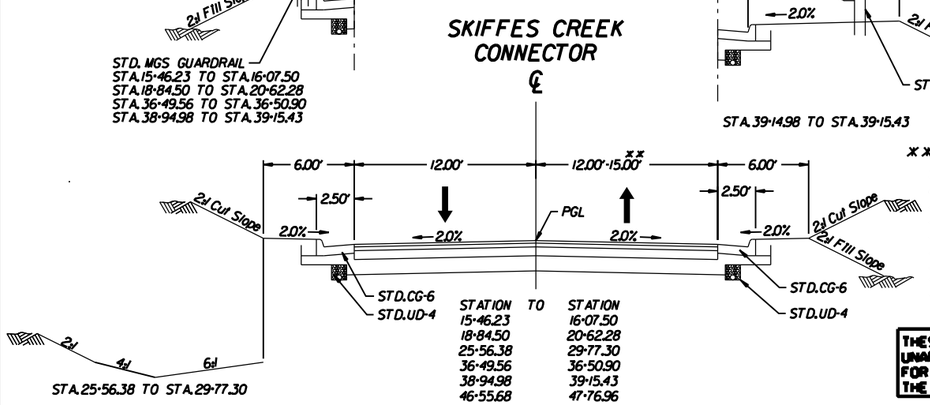






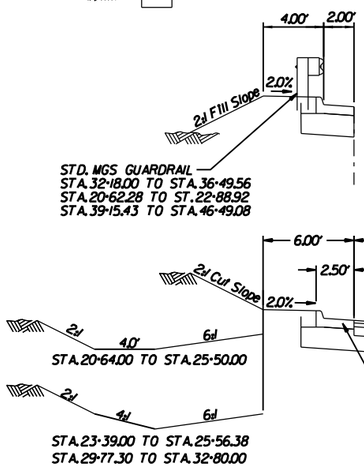


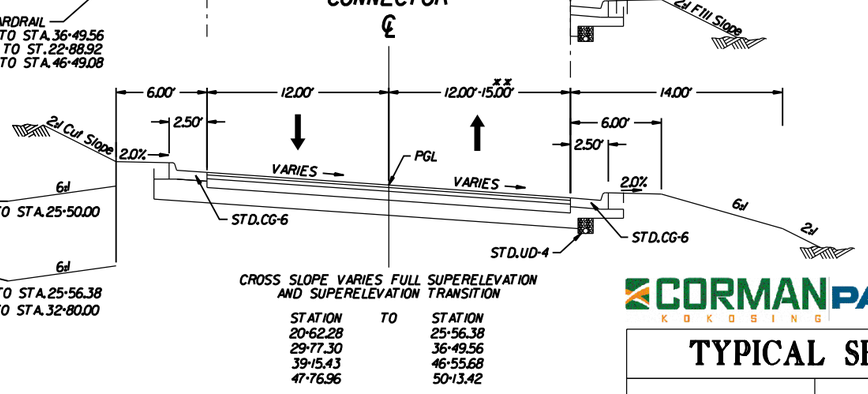




** RIGHT SIDE WIDENING

STATION	TO	STATION
29+63.30		30+68.30 (12.0' - 15.0')
30+68.30		35+31.00 (15.0')
35+31.00		36+84.81 (15.0'-12.0')
39+14.98		36+84.81 (12.0')
39+14.98		39+60.83 (12.0')
39+60.83		40+65.83 (12.0' - 15.0')
40+65.83		45+64.68 (15.0')
45+64.68		46+69.68 (15.0'-12.0')





CROSS SLOPE VARIES FULL SUPERELEVATION AND SUPERELEVATION TRANSITION

STATION	TO	STATION
20+62.28		25+56.38
29+77.30		36+49.56
39+15.43		46+55.68
47+76.96		50+13.42

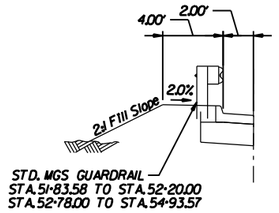
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

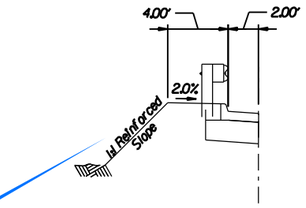
CORMAN PARSONS
KOKOSING

TYPICAL SECTION

NOT TO SCALE	PROJECT 0060 - 047 - 627	PAGE NO. 44

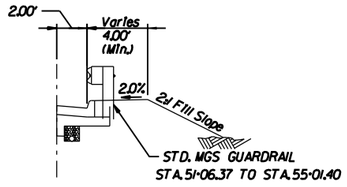
REVISED	STATE	STATE ROUTE	STATE PROJECT	PAGE NO.
	VA.	·	0060 - 047 - 627	45





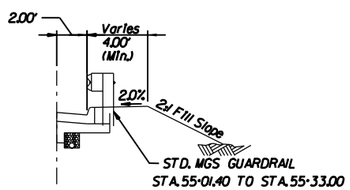
DESIGN ENHANCEMENT #R9

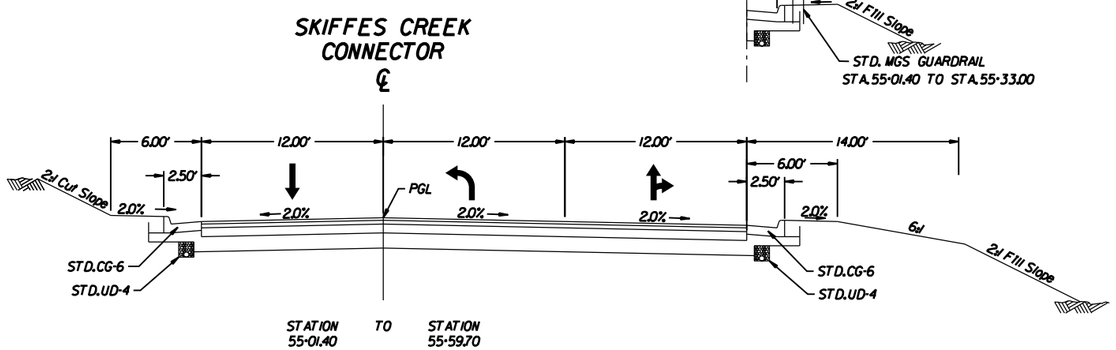
Eliminated retaining wall from Sta. 52+22 to 52+78.



CROSS SLOPE VARIES FULL SUPERELEVATION AND SUPERELEVATION TRANSITION

STATION 50+13.42 TO STATION 55+01.40





STATION 55+01.40 TO STATION 55+59.70

PAVEMENT LEGEND

SURFACE	2 INCHES ASPHALT CONCRETE, TYPE SM-12.5D
INTERMEDIATE	2 INCHES ASPHALT CONCRETE, TYPE IM-19.0D
BASE	4 INCHES ASPHALT CONCRETE, BM-25.0A
DRAINAGE	2 INCHES ASPHALT OPEN GRADED DRAINAGE LAYER (OGDL)
SUBBASE	4 INCHES CEMENT TREATED AGGREGATE BASE MATERIAL, TY I, SIZE 21A, CONNECTED TO A STANDARD UD-4 EDGEDRAIN

NOTES:

1. FOR A TANGENT MGS GUARDRAIL TERMINAL CURB OFFSET LAYOUT SEE VDOT RDM APPENDIX J FIGURE J-3-2.

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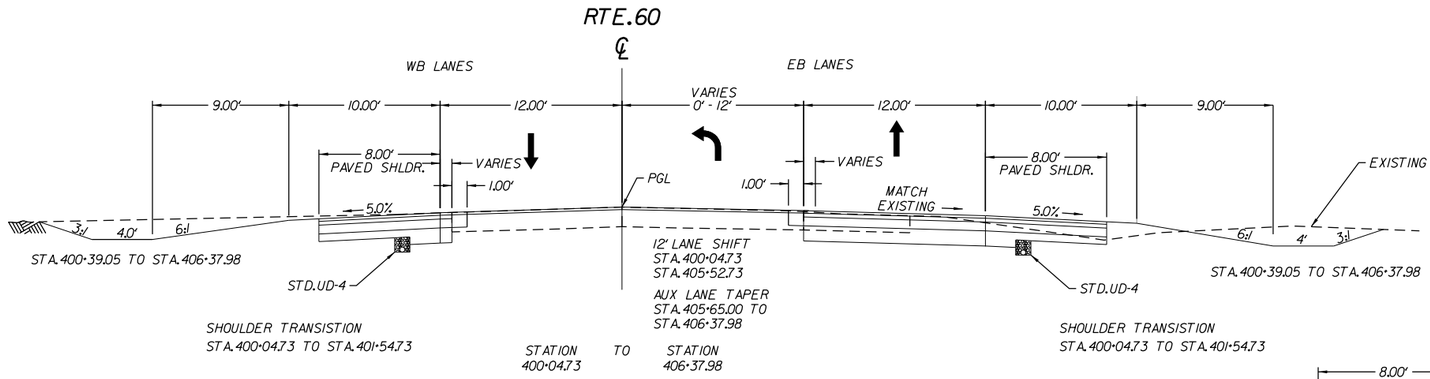
CORMAN PARSONS KOKOSING

TYPICAL SECTION

NOT TO SCALE	PROJECT 0060 - 047 - 627	PAGE NO. 45

REVISED	STATE	STATE ROUTE	STATE PROJECT	PAGE NO
	VA.		0060 - 047 - 627	46

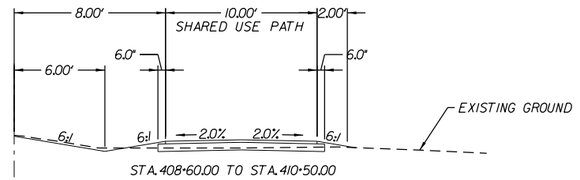


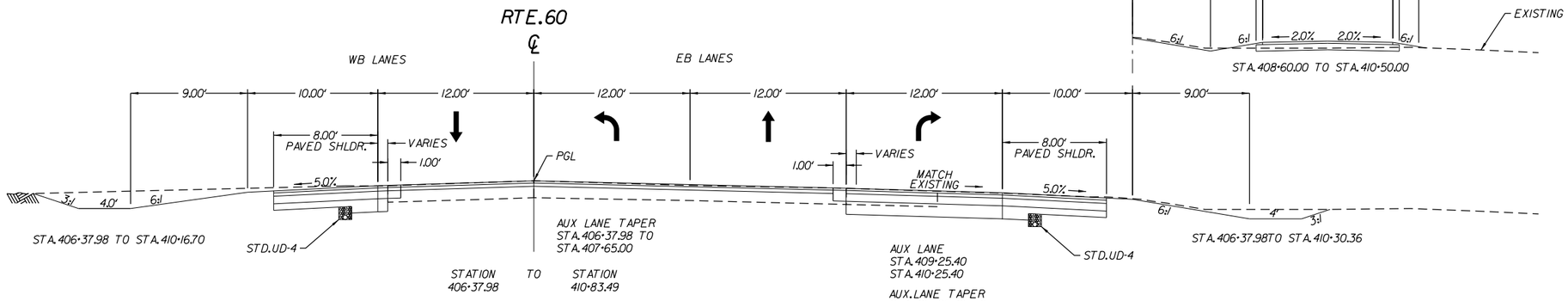
PAVEMENT LEGEND

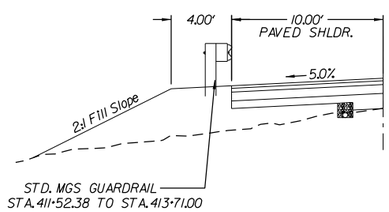
SURFACE	2 INCHES ASPHALT CONCRETE.TYPE SM-12.5D
INTERMEDIATE	2 INCHES ASPHALT CONCRETE.TYPE IM-19.0D
BASE	4 INCHES ASPHALT CONCRETE.BM-25.0A
SUBBASE	6 INCHES TO 11 INCHES (MATCH THE EXISTING PAVEMENT SECTION) AGGREGATE BASE MATERIAL,TY I,SIZE 21, CONNECTED TO A STANDARD UD-4 EDGEDRAIN

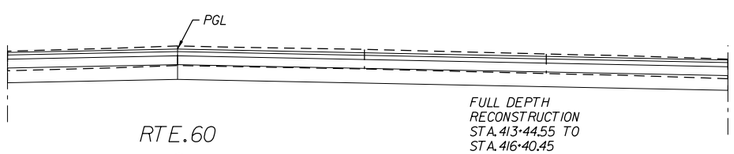
MILL AND OVERLAY

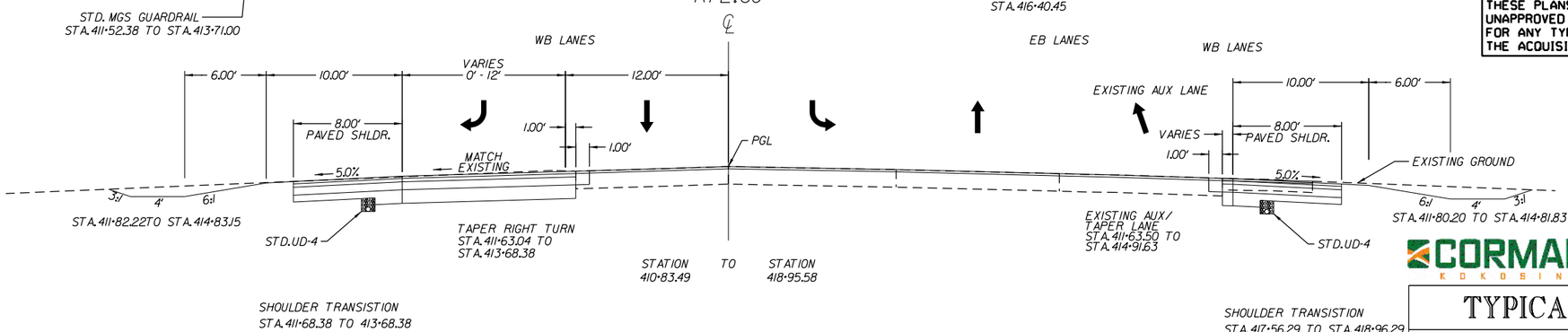
	2 INCHES MILL
SURFACE	2 INCHES ASPHALT CONCRETE.TYPE SM-12.5D











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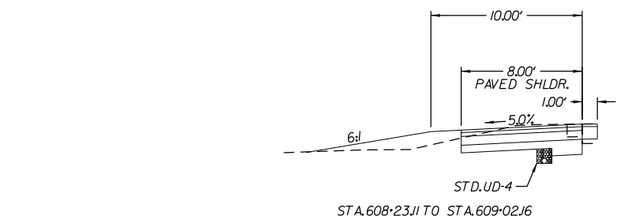
CORMAN PARSONS KOKOSING

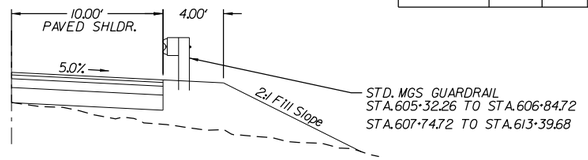
TYPICAL SECTION

NOT TO SCALE	PROJECT 0060 - 047 - 627	PAGE NO. 46

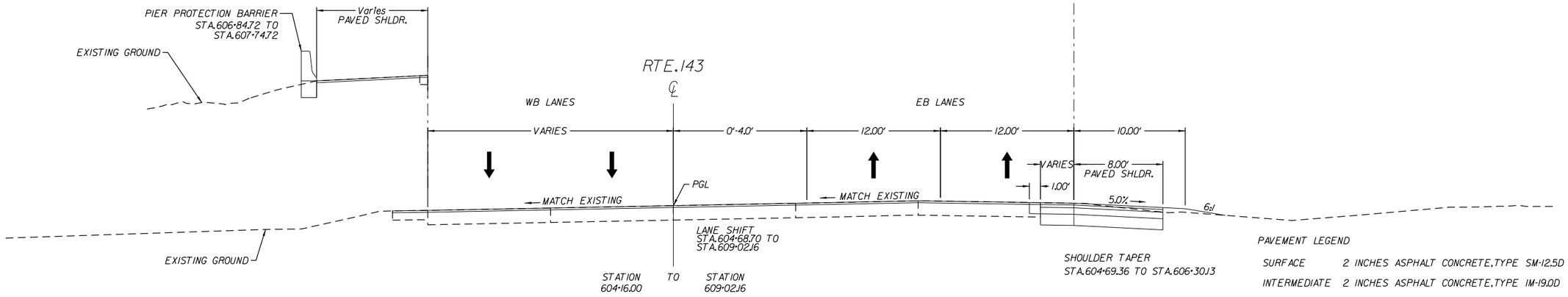
REVISED	STATE	STATE ROUTE	STATE PROJECT	PAGE NO
	VA.		0060 - 047 - 627	47

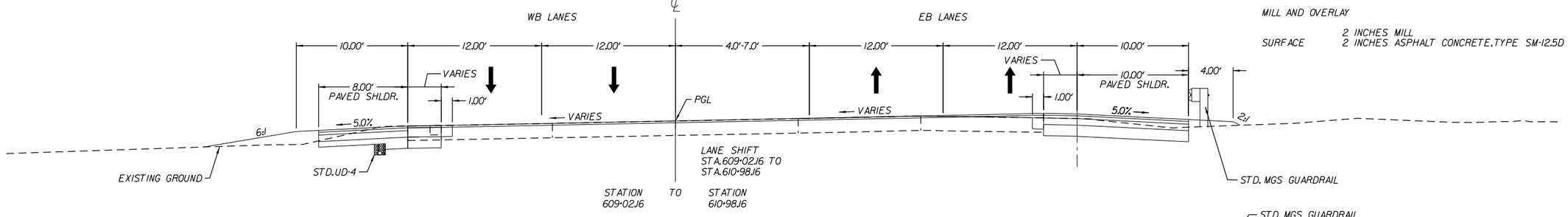


STA.608+23.11 TO STA.609+02.16

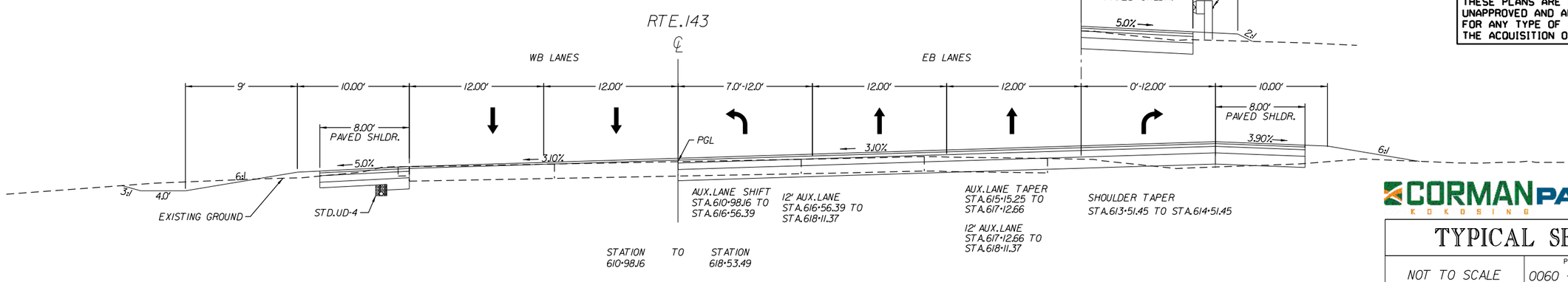


STD. MGS GUARDRAIL
STA.605+32.26 TO STA.606+84.72
STA.607+74.72 TO STA.613+39.68





STD. MGS GUARDRAIL
STA.610+98.16 TO STA.613+39.33



PAVEMENT LEGEND

SURFACE	2 INCHES ASPHALT CONCRETE,TYPE SM-12.5D
INTERMEDIATE	2 INCHES ASPHALT CONCRETE,TYPE IM-19.0D
BASE	4 INCHES ASPHALT CONCRETE,BM-25.0A
SUBBASE	10 INCHES TO 13 INCHES (MATCH THE EXISTING PAVEMENT SECTION) AGGREGATE BASE MATERIAL,TY I,SIZE 21, CONNECTED TO A STANDARD UD-4 EDGEDRAIN

MILL AND OVERLAY

	2 INCHES MILL
SURFACE	2 INCHES ASPHALT CONCRETE,TYPE SM-12.5D

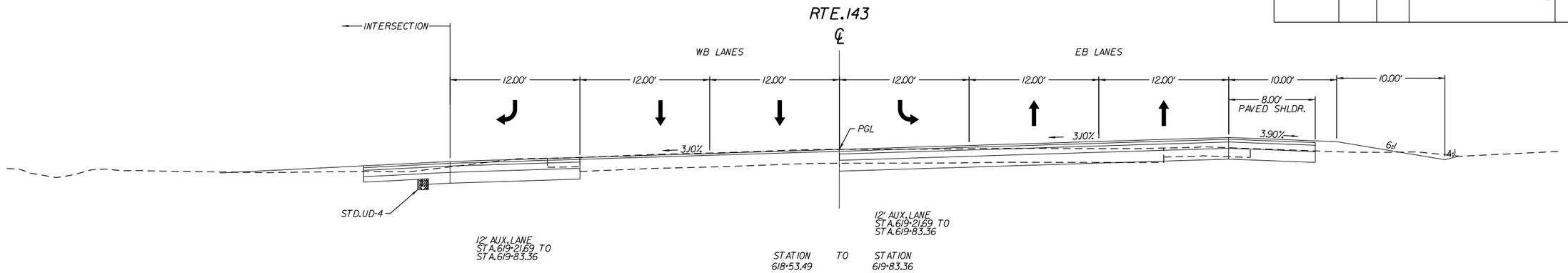
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

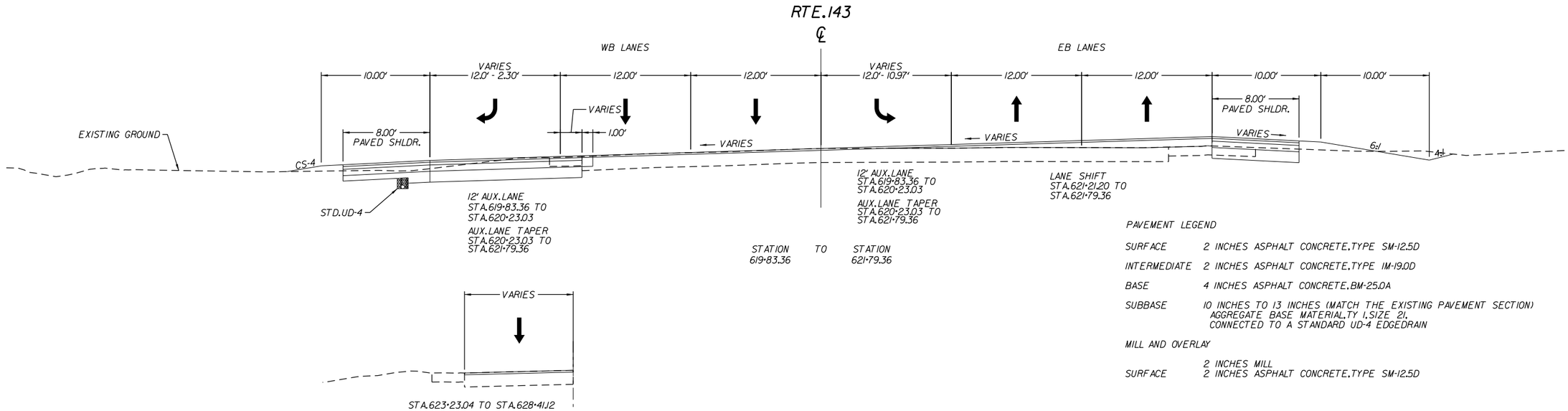
CORMAN PARSONS
KOKOSING

TYPICAL SECTION

NOT TO SCALE	PROJECT 0060 - 047 - 627	PAGE NO. 47

REVISED	STATE	STATE ROUTE	STATE PROJECT	PAGE NO
	VA.		0060 - 047 - 627	48





PAVEMENT LEGEND

SURFACE	2 INCHES ASPHALT CONCRETE,TYPE SM-12.5D
INTERMEDIATE	2 INCHES ASPHALT CONCRETE,TYPE IM-19.0D
BASE	4 INCHES ASPHALT CONCRETE,BM-25.0A
SUBBASE	10 INCHES TO 13 INCHES (MATCH THE EXISTING PAVEMENT SECTION) AGGREGATE BASE MATERIAL,TY I,SIZE 21, CONNECTED TO A STANDARD UD-4 EDGEDRAIN
MILL AND OVERLAY	
	2 INCHES MILL
SURFACE	2 INCHES ASPHALT CONCRETE,TYPE SM-12.5D

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CORMAN PARSONS
KOKOSING

TYPICAL SECTION

NOT TO SCALE	PROJECT 0060 - 047 - 627	PAGE NO. 48

REVISED	STATE	STATE ROUTE	STATE PROJECT	PAGE NO.
	VA.	·	0060 - 047 - 627	49

Match Line Sta. 406+50.00 (See This Page)

RWV SELF STORAGE II, LLC.
Inst.# 140007695
Inst.# 040020635 (Plat)
PB 81 PG 35
7.928 AC.
PARCEL ID# 60101000010A

US ROUTE 60

Exist. R/W

8' Paved Shoulder

10' Shared Use Path

Prop. R/W (RFP R/W)

Prop. Detectable Warning Surface

Sta. 10+00.00

N 76° 09' 04" E

PENINSULA PENTECOSTALS, INC.
Inst.# 150016466
23.52 +/- AC.
PARCEL ID# 60101000006

400 POT 400+00.00

US Route 60 Const. ℄

US ROUTE 60

Prop. R/W

Exist. R/W

8' Paved Shoulder

N 76° 09' 04" E

Prop. R/W (RFP R/W)

Begin Construction 0060-047-627
Sta. 400+04.73

Match Line Sta. 406+50.00 See This Page

PENINSULA PENTECOSTALS, INC.
Inst.# 150016466
10.49 +/- AC.
PARCEL ID# 60101000007

US ROUTE 60 Sta. 410+83.49
Skiffes Creek Connector
Sta. 10+00.00

SWM Basin
Wet Pond Level I

Prop. Perm. Drainage Easement

DESIGN ENHANCEMENT #R10
Weir walls as stormwater outlets reduces future maintenance and eliminates siltation tendency of riser outfall pipes.

DEPARTMENT OF PUBLIC UTILITES
CITY OF NEWPORT NEWS
DB 23 PG 228
PB 55 PG 85-93
150.84 +/- (Total) AC.
36.75 AC. (James City County)
11.49 AC. (Newport News)
Portion of
PARCEL ID# 60101000003

End Bridge
Sta. 18+84.50

DESIGN ENHANCEMENT #R2
Lowered Skiffes Creek Bridge to eliminate retaining walls.

SKIFFES CREEK, LLC
Inst.# 020023301
PB 36 PG 55
102.60 +/- AC.
PARCEL ID# 60101000004A

SWM Basin
Wet Pond Level I

Prop. Perm. Drainage Easement

Environmental Corridor

PC 21+51.95

Prop. R/W (RFP R/W)

Match Line Sta. 22+00.00 See Page 50

SKIFFES CREEK CONNECTOR

N 13° 38' 53" W

Environmental Corridor

PENINSULA PENTECOSTALS, INC.
Inst.# 150016466
4.82 +/- AC.
PARCEL ID# 60101000008

Begin Bridge
Sta. 16+07.50

Prop. R/W (RFP R/W)

ESTATE of S. R. CURTIS
DB 14 PG 360
PB 2 PG 25
Portion of
PARCEL ID# 60101000004A

Skiffes Creek Connector Const. ℄

Relocate Exist. Utility Poles

BEGIN CONSTRUCTION/BEGIN PROJECT
0060-047-627
Sta. 10+10.69

UTILITY CONFLICT
The distribution pole system is in conflict from Sta. 410+00 to Sta. 413+00 along WB Route 60.

DESIGN ENHANCEMENT #R9
Eliminated retaining walls from Sta. 15+74 to Sta. 16+07, Sta. 18+84 to Sta. 19+40, by adjusting the vetical profile on Skiffes Creek Connector

DESIGN ENHANCEMENT #R9
Eliminated retaining walls from Sta 21+30 to Sta. 22+30, by adjusting the vertical profile on Skiffes Creek Connector

Match Line Sta. 415+50.00 See This Page

End Constr.
418+96.29

Prop. R/W (RFP R/W)

Exist. R/W

US ROUTE 60

N 76° 09' 04" E

8' Paved Shoulder

Exist. R/W

US Route 60 Const. ℄

Exist. R/W

MEC-CARTER PROPERTIES, LLC.
Inst.# 150011716
Inst.# 030032887 (Plat)
226455 AC.
PARCEL ID# 60102000038

US Route 60 Const. ℄

Exist. R/W

Prop. R/W (RFP R/W)

Exist. R/W

CITY OF NEWPORT NEWS, VIRGINIA
Inst.# 090007191
7.17 +/- AC.
PARCEL ID# 60101000005

UTILITY CONFLICT
Potential underground utility conflict from Sta. 413+44 to Sta. 416+40.

Match Line Sta. 415+50.00 (See This Page)

LEGEND
- Proposed Full Depth Pavement
- Proposed Mill & Overlay
- Proposed Asphalt Pavement Demolition
- Proposed Bridge
- Proposed SWM Access Road
- Proposed Shared Use Path
- Limits Of Construction
- Proposed Sawcut
- Proposed Retaining Wall
- BMP Swale / Grass Channel
- Lighting Fixtures
- Traffic Signal Head
- Traffic Signal Foundation-Head-Mast Arm

INCIDENTAL LEGEND
1. Std. CG-3 Req'd.
2. Std. CG-6 Req'd.
3. Std. Radial CG-6 Req'd.
4. Std. GR-MGS1 Req'd.
5. Std. GR-MGS2 Req'd.
6. Std. GR-MGS3 Req'd.
7. Std. GR-FOA-5 Req'd.
8. Std. BPPS-1 Req'd.
9. Cable Barricade

CORMAN PARSONS KOKOSING

ROADWAY PLAN

SCALE	PROJECT	PAGE NO.
0 50' 100'	0060 - 047 - 627	49

REVISED	STATE	STATE ROUTE	STATE PROJECT	PAGE NO.
	VA.	·	0060 - 047 - 627	50

Limits of Field Verified LIDAR

Match Line Sta. 22+00.00 See Page 49

SWM Basin
Wet Pond Level I

PT 24+66.71

7
SKIFFES CREEK, LLC
Inst.# 020023301
PB 36 PG 55
102.60 +/- AC.
PARCEL ID# 60101000004A

Prop. R/W
(RFP R/W)

Environmental Corridor

SKIFFES CREEK CONNECTOR
N 49° 43' 05" W

Skiffes Creek Connector Const. ℄

Prop. R/W
(RFP R/W)

Environmental Corridor

Curve SCC1
PI = 23+14.74
DELTA = 36° 04' 11.86" (LT)
D = 11° 27' 33"
T = 162.80'
L = 314.77'
R = 500.00'
PC = 21+51.95
PT = 24+66.71
E = 3.9%
Lr = 76'
V = 35 mph

Curve SCC2
PI = 33+55.56
DELTA = 74° 54' 22.67" (RT)
D = 15° 16' 44"
T = 287.26'
L = 490.26'
R = 375.00'
PC = 30+68.30
PT = 35+58.56
E = 4.0%
Lr = 78'
V = 35 mph

PC 30+68.30

Prop. Retaining Wall

7
SKIFFES CREEK, LLC
Inst.# 020023301
PB 36 PG 55
102.60 +/- AC.
PARCEL ID# 60101000004A

Match Line Sta. 35+50.00 See Page 51

INCIDENTAL LEGEND

1	Std. CG-3 Req'd.
2	Std. CG-6 Req'd.
3	Std. Radial CG-6 Req'd.
4	Std. GR-MGS1 Req'd.
5	Std. GR-MGS2 Req'd.
6	Std. GR-MGS3 Req'd.
7	Std. GR-FOA-5 Req'd.
8	Std. BPPS-1 Req'd.
9	Cable Barricade

UTILITY CONFLICT

RFP Conceptual Plans show an unknown gas line within the Dominion Easement. More investigation required.

LEGEND

- Proposed Full Depth Pavement
- Proposed Mill & Overlay
- Proposed Asphalt Pavement Demo
- Proposed Bridge
- Proposed SWM Access Road
- Limits Of Construction
- Prop. Sawcut
- Prop. Retaining Wall
- Proposed BMP Swale / Grass Channel

CORMAN PARSONS KOKOSING

ROADWAY PLAN

SCALE	PROJECT	PAGE NO.
0 50' 100'	0060 - 047 - 627	50

dl0020005.dgn
8:02:02 AM

11/4/2019
Plotted By: p004405C

REVISED	STATE	STATE ROUTE	STATE PROJECT	PAGE NO.
	VA.	·	0060 - 047 - 627	51

INCIDENTAL LEGEND

1. Std. CG-3 Req'd.
2. Std. CG-6 Req'd.
3. Std. Radial CG-6 Req'd.
4. Std. GR-MGS1 Req'd.
5. Std. GR-MGS2 Req'd.
6. Std. GR-MGS3 Req'd.
7. Std. GR-FOA-5 Req'd.
8. Std. BPPS-1 Req'd.
9. Cable Barricade
10. Std. GR-FOA-2,Ty I Req'd.
11. Std. GR-FOA-2,Ty 2 Req'd.
12. Std. GR-MGS4 Req'd.

LEGEND

- Proposed Full Depth Pavement
- Proposed Mill & Overlay
- Proposed Asphalt Pavement Demo
- Proposed Bridge
- Limits Of Construction
- Prop. Sawcut
- Prop. Retaining Wall
- BMP Swale / Grass Channel

(10) **COMMONWEALTH OF VIRGINIA**
DB 739 PG 592
PB 62 PG 50-51
34.0548 AC.
PARCEL ID# 60101000012

(9) **VIRGINIA PENINSULA REGIONAL JAIL AUTHORITY**
DB 782 PG 63
PB 62 PG 50-51
15.2758 AC.
PARCEL ID# 60101000011

(8) **CSX RAILROAD**
Variable Width R/W
(Formerly Chesapeake and Ohio Railroad)
DB 4 PG 84
DB 4 PG 95
DB 10 PG 587

(7) **SKIFFES CREEK, LLC**
Inst.# 020023301
PB 36 PG 55
102.60 +/- AC.
PARCEL ID# 60101000004A

Curve SCC3
PI = 43+51.83
DELTA = 85°17' 40.10" (RT)
D = 15°16' 44"
T = 345.40'
L = 558.25'
R = 375.00'
PC = 40+06.43
PT = 45+64.68
E = 4.0%
Lr = 78'
V = 35 mph

Curve RTE1431
PI = 603+70.83
DELTA = 5°11' 53.29" (LT)
D = 1°03' 12"
T = 246.94'
L = 493.54'
R = 5,440.00'
PC = 601+23.89
PT = 606+17.43
E = Existing
Lr = N/A
V = 60 mph

Curve RTE1432
PI = 615+45.80
DELTA = 20°10' 09.73" (LT)
D = 2°05' 28"
T = 487.31'
L = 964.54'
R = 2,740.00'
PC = 610+58.49
PT = 620+23.03
E = 3.1%
Lr = N/A
V = 55 mph

DESIGN EXCEPTION (VA ROUTE 143)

Sta. To Sta.	Design Speed	Exception for:	Approval Date
609+02 To 621+79	60 MPH	Superelevation	08/06/2019

UTILITY CONFLICT
Newport News Waterworks 2" water services (not shown) to be relocated within the limits of the retaining walls.

DESIGN ENHANCEMENT # R8
Eliminated pier protection wall along EB Route 143 by designing CSX bridge pier for train collision force

DESIGN ENHANCEMENT # R1
Lowered CSX Bridge

SKIFFES CREEK CONNECTOR
Skiffes Creek Connector Const. ℄
Prop. R/W (RFP R/W)
Prop. Retaining Wall
Environmental Corridor
Prop. Perm. Drainage Easement
PC 40+06.43
PT 45+64.68
End Bridge Sta. 38+94.98
Begin Bridge Sta. 36+51.90
Begin Const. Sta. 604+16.00
PC 601+23.89
PT 606+17.43
PC 610+58.49
VA ROUTE 143
VA ROUTE 143 Const. ℄
S 69° 31' 02" E
S 64° 52' 00" E
N 25° 11' 18" E
Tie To Exist. GR
Exit. R/W
8' Paved Shoulder
10' Paved Shoulder
UNABLE TO OBTAIN ACCESS TO THIS UTILITY STRUCTURE.

Match Line Sta. 48+00.00 See Page 52
Match Line Sta. 615+50.00 See Page 52
Match Line Sta. 35+50.00 See Page 50

CORMAN PARSONS KOKOSING

ROADWAY PLAN

SCALE	PROJECT	PAGE NO.
0 50' 100'	0060 - 047 - 627	51

REVISED	STATE	STATE ROUTE	STATE PROJECT	PAGE NO.
	VA.	·	0060 - 047 - 627	52

Limits of required easement to be verified in final design

Existing I-64 SWM Basin Wet Pond Level I

Prop. Perm. Drainage Easement

Match Line Sta. 48+00.00 See Page 5I

S 69° 31' 02" E

Prop. R/W

Environmental Corridor

SKIFFES CREEK CONNECTOR

Curve SCC4
PI = 51+90.14
DELTA = 77° 41' 53.08" (RT)
D = 14° 19' 26"
T = 322.17'
L = 542.43'
R = 400.00'
PC = 48+67.96
PT = 54+10.40
E = 4.0%
Lr = 78'
V = 35 mph

Reinforced Slope

DESIGN ENHANCEMENT #R7

Leveraged existing I-64 SWM pond asset.

DESIGN ENHANCEMENT #R9

Eliminated retaining wall from Sta. 52+20 to Sta. 52+78 by adjusting the vertical profile on Skiffes Creek Connector

DESIGN ENHANCEMENT #R10

Weir walls as stormwater outlets reduces future maintenance and eliminates siltation tendency of riser outfall pipes

Skiffes Creek Connector Const. ℄

PT 54+10.40

SWM Basin Wet Pond Level I

S 8° 10' 51" W

END CONSTRUCTION/END PROJECT
0060-047-627
STA. 55+59.70

PT 620+23.03

Exist. R/W

8' Paved Shoulder

VA ROUTE 143

Match Line Sta. 615+50.00 See Page 5I

POT 55+83.70

CSX RAILROAD
Variable Width R/W
(Formerly Chesapeake and Ohio Railroad)
DB 4 PG 84
DB 4 PG 95
DB 10 PG 587

JOYCE B. HOCKADAY, TRUSTEE FOR BRANSCOME SHORT TERM TRUST
DB 212 PG 780
PB 36 PG 57
1.5636 AC.
Portion of
PARCEL ID# 6010100003A

DESIGN ENHANCEMENT #R5

Lowered profile along Route 143 and eliminated full depth reconstruction on WB lanes.

END CONST. STA. 629+25.43

S 85° 02' 10" E

VA Route 143 Const. ℄

BRANSCOME INC
Inst.# 010002489
DB 134 PG 79 (Plat)
8.845 AC.
Portion of
PARCEL ID# 6010100003A

COMMONWEALTH OF VIRGINIA
DB 739 PG 592
PB 62 PG 50-51
34.0548 AC.
PARCEL ID# 6010100012

DESIGN EXCEPTION (VA ROUTE 143)			
Sta. To Sta.	Design Speed	Exception for:	Approval Date
609+02 To 621+79	60 MPH	Superelevation	08/06/2019

LEGEND

- Proposed Full Depth Pavement
- Proposed Mill & Overlay
- Proposed Asphalt Pavement Demo
- Proposed Bridge
- Proposed SWM Access Road
- Limits Of Construction
- Prop. Sawcut
- Prop. Retaining Wall
- BMP Swale / Grass Channel
- Lighting Fixtures
- Traffic Signal Head
- Traffic Signal Foundation-Head-Mast Arm

INCIDENTAL LEGEND

1. Sf'd. CG-3 Req'd.
2. Sf'd. CG-6 Req'd.
3. Sf'd. Radial CG-6 Req'd.
4. Sf'd. GR-MGS1 Req'd.
5. Sf'd. GR-MGS2 Req'd.
6. Sf'd. GR-MGS3 Req'd.
7. Sf'd. GR-FOA-5 Req'd.
8. Sf'd. BPPS-1 Req'd.
9. Cable Barricade

CORMAN PARSONS KOKOSING

ROADWAY PLAN

SCALE	PROJECT	PAGE NO.
0 50' 100'	0060 - 047 - 627	52

REVISED	STATE	STATE ROUTE	STATE PROJECT	PAGE NO.
	VA.	·	0060 - 047 - 627	53

SKIFFES CREEK CONNECTOR PROFILE

Vertical Scale 20' 10' 0

Horizontal Scale 0 50' 100'

DESIGN ENHANCEMENT #R2

Lowered Skiffes Creek Bridge

46.99

-1.21%

BEGIN CONSTRUCTION / BEGIN PROJECT
0060-047-627
STA.10+10.69

STA = 12+05.00
EL = 44.54
SSD = 340'
ex = -0.52'
K = 29
L = 110.00
V = 35 MPH

-5.00%

-5.00%

STA = 14+43.00
EL = 32.64
ex = 1.29'
K = 51
L = 230.00
V = 35 MPH

-0.50%

Begin Bridge
Sta 16+07.50

Prop. Grade

End Bridge
Sta 18+84.50

-0.50%

2.79%

STA = 20+00.00
EL = 29.86
ex = 0.68'
K = 50
L = 165.00
V = 35 MPH

Exist. Ground

45.34 46.42 44.53 45.81 44.56 45.21 46.05 44.17 49.14 42.27 52.04 39.79 39.79 37.34 44.96 35.30 37.19 33.75 35.25 32.68 38.14 32.11 26.43 31.86 11.64 31.61 12.92 31.36 13.41 31.11 10.87 30.86 12.84 30.61 26.07 30.36 36.73 30.21 40.23 30.53 39.38 31.35 37.56 32.64 35.40 34.03 33.60 35.43

10+00.00 11+00.00 12+00.00 13+00.00 14+00.00 15+00.00 16+00.00 17+00.00 18+00.00 19+00.00 20+00.00 21+00.00 22+00.00

DESIGN ENHANCEMENT #R3

Reduced vertical grade between
Sta.20+00.00 to Sta 25+50.00
from 4.00% (RFP) to 2.79% (Concept)

47.00

STA = 25+50.00
EL = 45.18
SSD = 584'
ex = -0.64'
K = 98
L = 224.00
V = 50 MPH

2.79%

-0.50%

-0.50%

STA = 28+12.00
EL = 46.49
ex = 2.04'
K = 55
L = 300.00
V = 35 MPH

Exist. Ground

Prop. Grade

5.93%

OHE

OHE

19'-0"
21'-2"
25'-5"
24'-0"
21'-0"
20'-9"
22'-9"
21'-2"

Top of Proposed
Right Retaining wall

Bottom of Proposed
Right Retaining wall

DESIGN ENHANCEMENT #R4

Adjusted profile to increase cut and
reduced fill along Skiffes Creek Connector

33.60 35.43 34.27 36.82 35.74 38.21 39.16 39.61 42.09 41.00 45.22 42.39 48.40 43.59 51.75 44.54 55.19 45.23 59.56 45.87 63.86 46.06 65.09 46.38 64.07 48.16 63.65 49.88 63.31 52.06 62.60 54.69 63.16 57.65 62.54 60.61 62.32 63.58 63.00 66.55 64.35 69.52 65.80 72.48 66.71 75.45 67.78 78.42 68.54 81.39 68.75 84.35 68.79 87.32 68.68 90.29

22+00.00 23+00.00 24+00.00 25+00.00 26+00.00 27+00.00 28+00.00 29+00.00 30+00.00 31+00.00 32+00.00 33+00.00 34+00.00 35+00.00

CORMAN PARSONS KOKOSING

PROJECT	PAGE NO.
0060 - 047 - 627	53

REVISED	STATE	STATE ROUTE	STATE PROJECT	PAGE NO.
	VA.	·	0060 - 047 - 627	54

SKIFFES CREEK CONNECTOR PROFILE

Vertical Scale: 20' / 10' / 0

Horizontal Scale: 0 — 50' — 100'

DESIGN ENHANCEMENT #R1
Lowered CSX Bridge

DESIGN ENHANCEMENT #R3
Reduced vertical grades along Skiffes Creek Connector from a maximum of 9% to below 5% where possible, including from Sta. 37+43.00 to Sta. 48+80.00 from RFP design of 4.31% to 3.93%.

DESIGN ENHANCEMENT #R4
Adjusted profile to increase cut and reduced fill along Skiffes Creek Connector

STA = 37+14.00
EL = 100.02
SSD = 250'
ex = 3.53'
K = 29
L = 286.00
V = 35 MPH

Begin Bridge
Sta 36+51.90

End Bridge
Sta 38+94.98

-5.93%
-3.93%
-3.93%

23.08'
17.92'

Top of Proposed Left Retaining wall
Top of Proposed Right Retaining wall
Bottom of Proposed Left Retaining wall
Bottom of Proposed Right Retaining wall
Prop. Grade
Exist. Ground
Future CSX Tracks
Top of Proposed Right Retaining wall
Bottom of Proposed Right Retaining wall
Existing CSX Tracks
MP CA-29.85, DOT = 973578D
VA Route 143

90 80 70 60 50 40 30

35+00.00 36+00.00 37+00.00 38+00.00 39+00.00 40+00.00 41+00.00 42+00.00 43+00.00 44+00.00 45+00.00 46+00.00 47+00.00 48+00.00

68.68 90.29 | 68.96 93.11 | 68.66 95.15 | 7.61 96.32 | 65.22 96.63 | 66.90 96.08 | 69.41 94.56 | 67.24 92.70 | 65.91 90.74 | 65.01 88.77 | 65.49 86.80 | 64.10 84.84 | 63.43 82.87 | 62.93 80.90 | 62.64 78.94 | 62.47 76.97 | 61.89 75.00 | 61.94 73.04 | 61.25 71.07 | 60.27 69.10 | 59.41 67.14 | 58.36 65.17 | 56.81 63.20 | 55.58 61.24 | 56.24 59.27 | 54.33 57.37

END CONSTRUCTION / END PROJECT
0060-047-627
STA 55+59.70

59.16

Prop. Grade
-3.93%
0.86%
0.86%
-0.86%
.4.45%
VA Route 143
Exist. Ground

STA = 48+80.00
EL = 54.16
ex = 0.84'
K = 72
L = 220.00
V = 40 MPH

STA = 53+55.00
EL = 50.06
ex = 1.86'
K = 53
L = 280.00
V = 35 MPH

70 60 50 40 30

48+00.00 49+00.00 50+00.00 51+00.00 52+00.00 53+00.00 54+00.00 55+00.00

54.33 57.37 | 53.65 55.78 | 53.94 54.55 | 53.62 53.66 | 55.58 53.12 | 55.16 52.69 | 52.67 52.26 | 50.35 51.83 | 45.98 51.40 | 40.38 51.08 | 45.00 51.22 | 46.06 51.83 | 45.55 52.92 | 54.04 54.48 | 57.71 56.51 | 57.80 58.73

CORMAN PARSONS KOKOSING

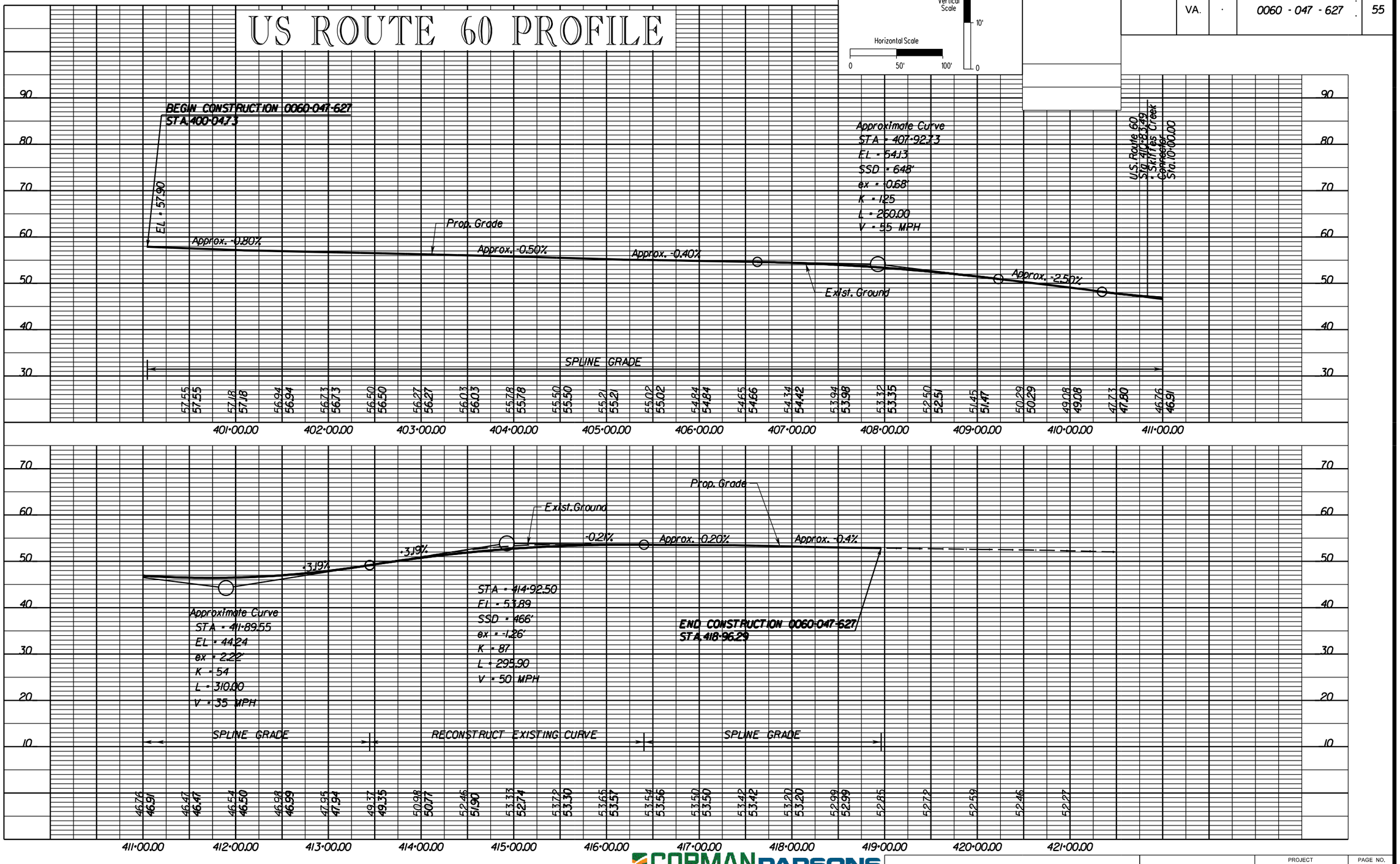
		PROJECT	PAGE NO.
	0060 - 047 - 627	·	54

REVISED	STATE	STATE ROUTE	STATE PROJECT	PAGE NO.
	VA.	·	0060 - 047 - 627	55

US ROUTE 60 PROFILE

Vertical Scale: 20' / 10' / 0

Horizontal Scale: 0 — 50' — 100'



CORMAN PARSONS KOKOSING

0060 - 047 - 627	PROJECT ·	PAGE NO. 55

REVISED	STATE	STATE ROUTE	STATE PROJECT	PAGE NO.
	VA.	·	0060 - 047 - 627	56

VA ROUTE 143 PROFILE

Vertical Scale: 20' / 10' / 0

Horizontal Scale: 0 50' 100'

STA = 605+40.00
EL = 72.37
SSD = 218.3'
ex = -0.12'
K = 349
L = 180.00
V = 75 MPH

73.60

0.99%

-1.51%

Exist. Ground

Prop. Grade

BEGIN CONSTRUCTION 0060-047-627
STA.604+16.00

STA = 612+44.00
EL = 61.74
ex = 0.82'
K = 452
L = 545.00
V > 80 MPH

1.51%

-0.30%

-0.30%

DESIGN ENHANCEMENT #R5

Lowered profile along Route 143

100 90 80 70 60 50

73.24 73.27 72.69 72.73 72.09 72.13 71.44 71.45 70.70 70.71 69.94 69.96 69.14 69.20 68.29 68.45 67.57 67.59 66.67 66.94 66.14 66.18 65.40 65.44 64.75 64.74 64.08 64.10 63.49 63.52 62.94 62.99 62.44 62.51 62.01 62.09 61.54 61.73 61.14 61.42 60.84 61.17 60.57 60.97 60.39 60.82 60.21 60.67 59.97 60.52 59.76 60.37

605+00.00 606+00.00 607+00.00 608+00.00 609+00.00 610+00.00 611+00.00 612+00.00 613+00.00 614+00.00 615+00.00 616+00.00 617+00.00

80 70 60 50 40 30

59.76 60.37 59.56 60.21 59.62 60.06 59.53 59.91 59.39 59.76 59.35 59.61 59.23 59.46 58.95 59.31 58.81 59.16 58.76 59.00 58.58 58.85 58.42 58.70 58.28 58.55 58.14 58.40 57.97 58.25 57.83 58.10 57.71 57.95 57.57 57.79 57.37 57.64 57.24 57.49 57.14 57.34 57.03 57.19 56.85 57.01 56.46 56.69 56.13 56.20

617+00.00 618+00.00 619+00.00 620+00.00 621+00.00 622+00.00 623+00.00 624+00.00 625+00.00 626+00.00 627+00.00 628+00.00 629+00.00

DESIGN ENHANCEMENT #R5

Lowered profile along Route 143

STA = 628+43.00
EL = 56.91
SSD = 123.3'
ex = -0.16'
K = 151
L = 140.00
V = 60 MPH

Prop. Grade

-0.30%

1.23%

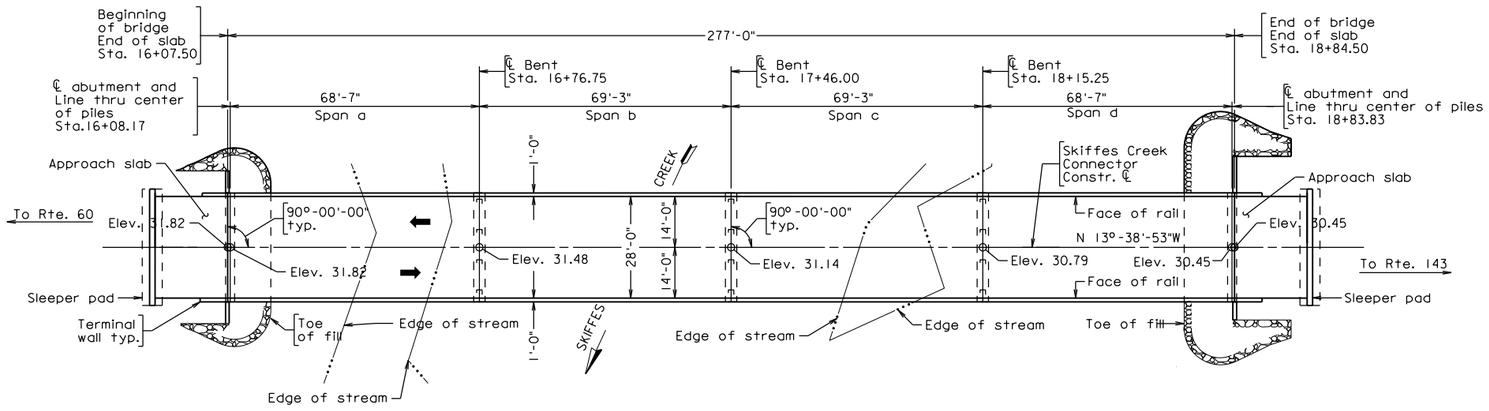
Exist. Ground

END CONSTRUCTION 0060-047-627
STA. 629+25.43

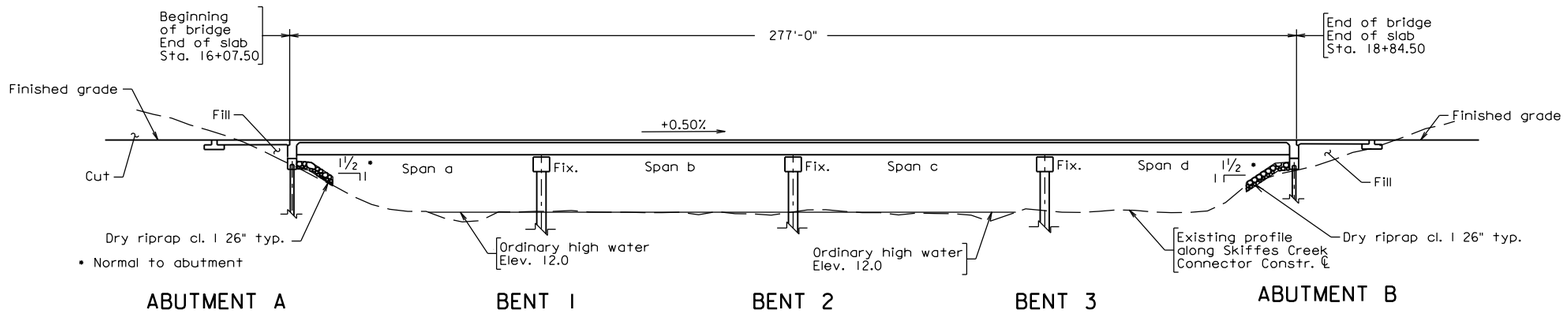
CORMAN PARSONS
KOKOSING

0060 - 047 - 627	PROJECT ·	PAGE NO. 56

STATE	FEDERAL AID		STATE		Page NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—	STP-5A03(455)	XXX	0060-047-627, B619	57
Federal Structure No. 000000000031225			FHWA Construction and Scour Code:	X081-S5	
Federal Stewardship and Oversight Code: NFO				UPC No. 100200	



PLAN



DEVELOPED SECTION ALONG CONSTRUCTION ℄

DESIGN EXCEPTION(S):

None.

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: 28'-0" face-to-face of rails.

Span layout: 68'-7" - 69'-3" - 69'-3" - 68'-7", prestressed concrete 37" deep bulb-T beam spans continuous for live load.

Capacity: HL-93 loading.

Drainage area: 1.98 sq. mi.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2016.

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 ENHANCEMENT #S1

Reduced Skiffes Creek Bridge length by 23-ft.
Reduces construction costs, schedule risks, long-term maintenance.

DESIGN ENHANCEMENT #S2

Reduced structural depth, construction/ maintenance costs, and improved construction, such as smaller cranes needed resulting in less construction clearance needs, and environmental impacts.

DESIGN ENHANCEMENT #S3

Lowered vertical profile
Reduced abutment/backfill heights, retaining walls, construction/maintenance costs, and environmental impacts due to less truck traffic hauling materials, including fill dirt/retaining wall panels.

DESIGN ENHANCEMENT #S4

Modified span arrangement and structural depth which allows for more economical, smaller, lighter precast elements and less maintenance.

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION	
VDOT PROJECT MANAGER	
DISTRICT CONSTRUCTION MANAGER	
PARSONS TRANSPORTATION GROUP INC. OF VIRGINIA BRIDGE ENGINEER	

PLANS BY:	PARSONS
COORDINATED:	Ryan Gorman
SUPERVISED:	Kia S. Nejad
DESIGNED:	Kia S. Nejad
DRAWN:	Eugene Malloy
CHECKED:	Nick Harris

CORMAN KOKOSING PARSONS

Scale: 1" = 20'

No.	Description	Date

REVISIONS

For Table of Revisions, see Sheet 2.

VDOT

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

PROPOSED BRIDGE ON
SKIFFES CREEK CONNECTOR OVER
SKIFFES CREEK
JAMES CITY COUNTY - 0.1 MI. N. OF RTE. 60
PROJ. 0060-047-0627, B619

Recommended for Approval: _____ Date

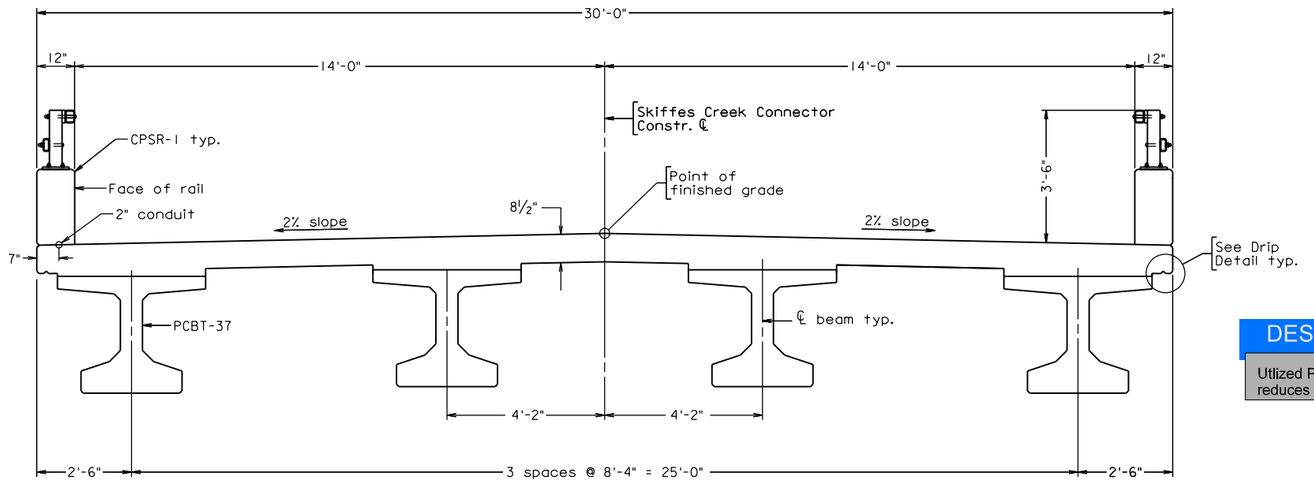
Approved: _____ Chief Engineer Date

XXX-XX

Date: _____

Skiffes-Creek_001_TS&L.dgn

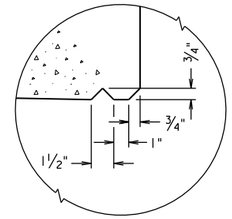
STATE	FEDERAL AID		STATE		PAGE NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA	—	———	XXX	0060-047-627, B619	58



TRANSVERSE SECTION

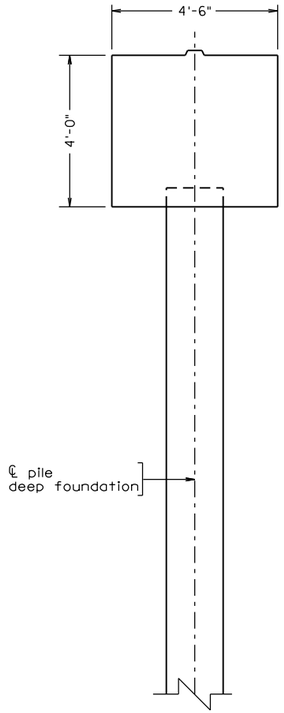
DESIGN ENHANCEMENT #S6

Utlized PCBT beams which reduces long-term maintenance.

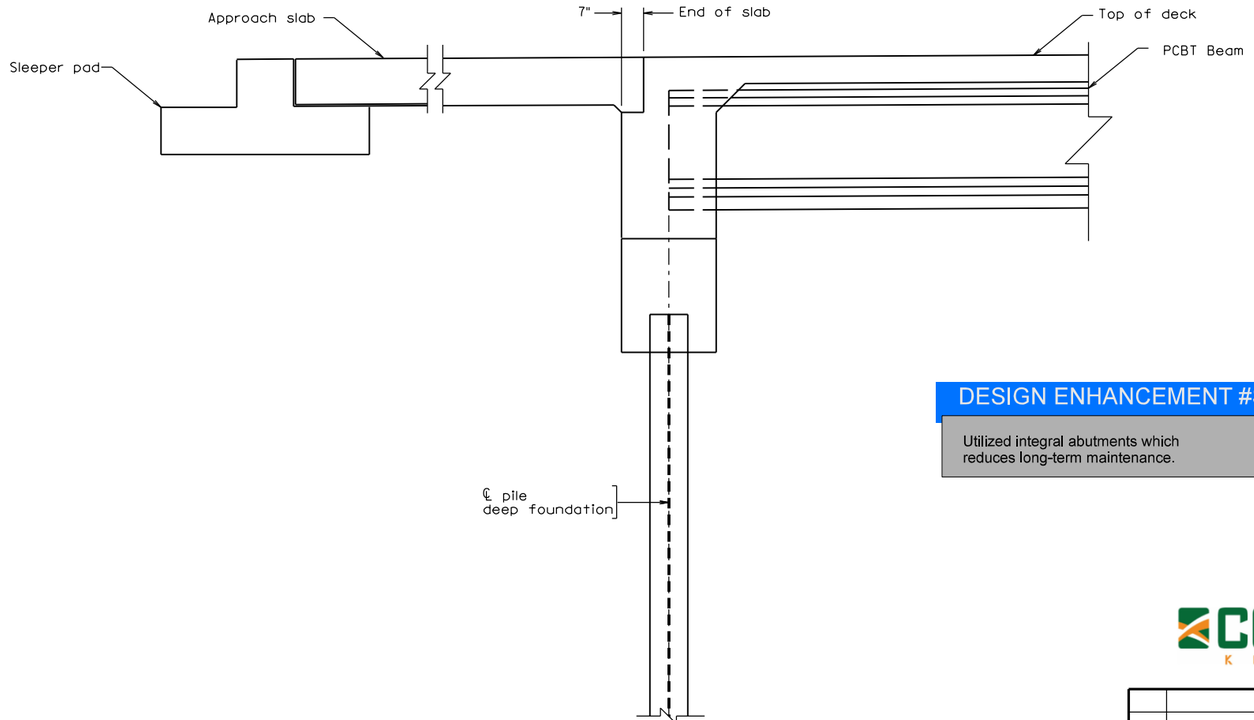


DRIP DETAIL

Not to scale



TYPICAL BENT



FULL INTEGRAL ABUTMENT

DESIGN ENHANCEMENT #S8

Utilized integral abutments which reduces long-term maintenance.

Skiffes-Creek_002_TS&L.dgn

PARSONS TRANSPORTATION GROUP INC. OF VIRGINIA

CORMAN KOKOSING PARSONS

No.	Description	Date
	Revisions	

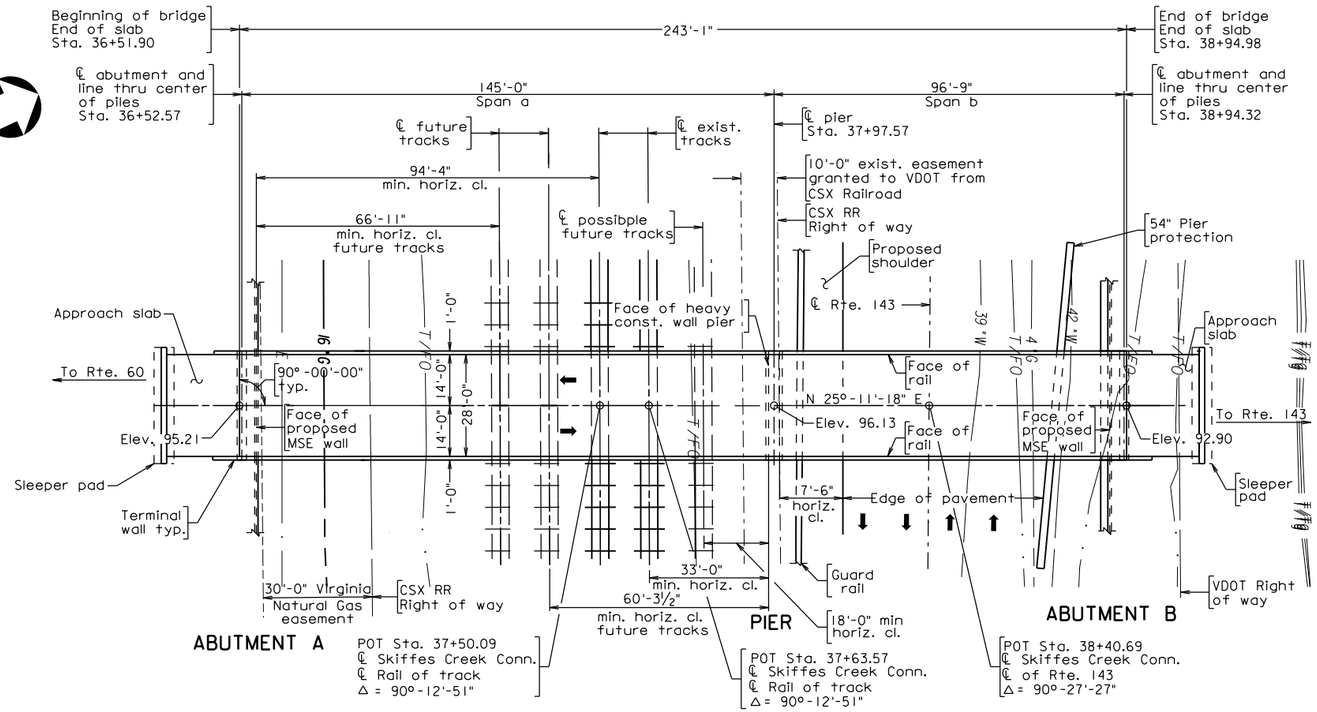
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

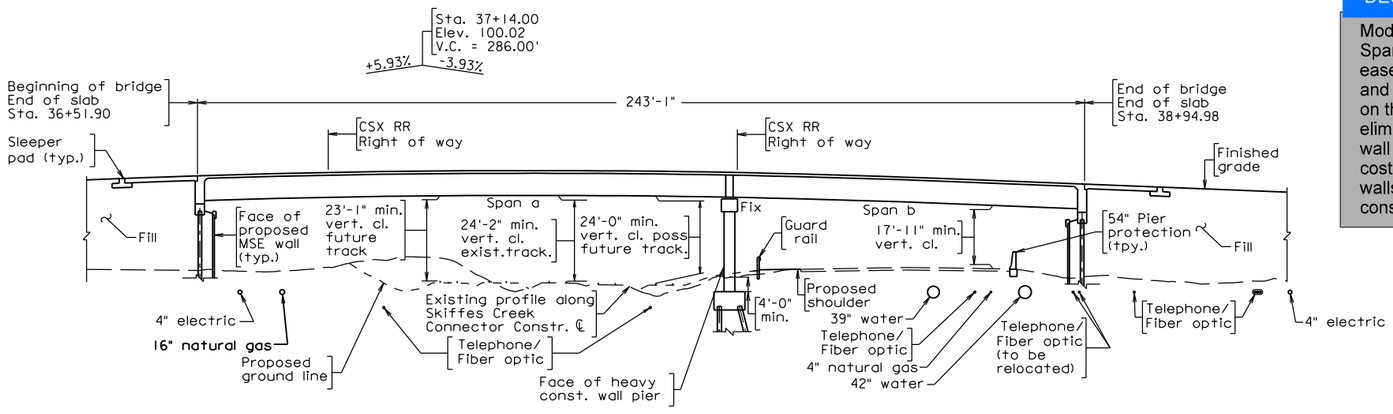
SKIFFES CREEK CONNECTOR OVER SKIFFES CREEK

Designed: KSN	Date	Plan No.	Page No.
Drawn: EJM		XXX-XX	58
Checked: NAH			

STATE	FEDERAL AID		STATE		PAGE
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—	STP-5A03(455)	xxx	0060-047-627, B620	59
Federal Structure No. 000000000031278			FHWA Construction and Scour Code:		X581-SN
Federal Stewardship and Oversight Code:		NFO		UPC No. 100200	



PLAN



Note: All utilities shown 3'-0" below existing profile along centerline in absence of exact elevation.

DEVELOPED SECTION ALONG CONSTRUCTION ℄

DESIGN EXCEPTION(S):

None

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: 28'-0" face-to-face of rails.

Span layout: 145'-0" - 96'-9", prestressed concrete 69" deep bulb-T beam spans continuous for live load.

Capacity: HL-93 loading.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2016.

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 ENHANCEMENT #S2

Reduced structural depth, construction/maintenance costs, and improved construction,such as smaller cranes needed resulting in less construction clearance needs, and environmental impacts.

DESIGN ENHANCEMENT #S3

Lowered vertical profile to reduce height of retaining walls and maintain vertical clearances to CSX and Route 143

DESIGN ENHANCEMENT #S5

Modified span arrangememts: Span of the gas line and easement improves schedule and reduces risks of settlement on this critical project element, eliminated cantilevered retaining wall in front of Abutment A, reducing costs/future maintenance and MSE walls at each abutment reducing construction/ maintenance costs.

DESIGN ENHANCEMENT #S7

Potential use of Lightweight concrete (LWC) deck and parapets, improves design efficiency, increase service life, less cracking, less permeable.

VDOT

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

PROPOSED BRIDGE ON
SKIFFES CREEK CONNECTOR OVER
RTE. 143 AND CSX RAILROAD
JAMES CITY COUNTY - 0.6 MI. WEST OF I-64/
RTE. 143 INTERCHANGE
PROJ. 0060-047-627, B620

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION
VDOT PROJECT MANAGER
DISTRICT CONSTRUCTION MANAGER
PARSONS TRANSPORTATION GROUP INC. OF VIRGINIA BRIDGE ENGINEER

PLANS BY:	PARSONS
COORDINATED:	Ryan Gorman
SUPERVISED:	Kia S. Nejad
DESIGNED:	Kia S. Nejad
DRAWN:	Eugene Malloy
CHECKED:	Nick Harris

CORMAN PARSONS KOKOSING

Scale: 1" = 25'

No.	Description	Date
	REVISIONS	
	For Table of Revisions, see Sheet 2.	

Recommended for Approval: _____ Date

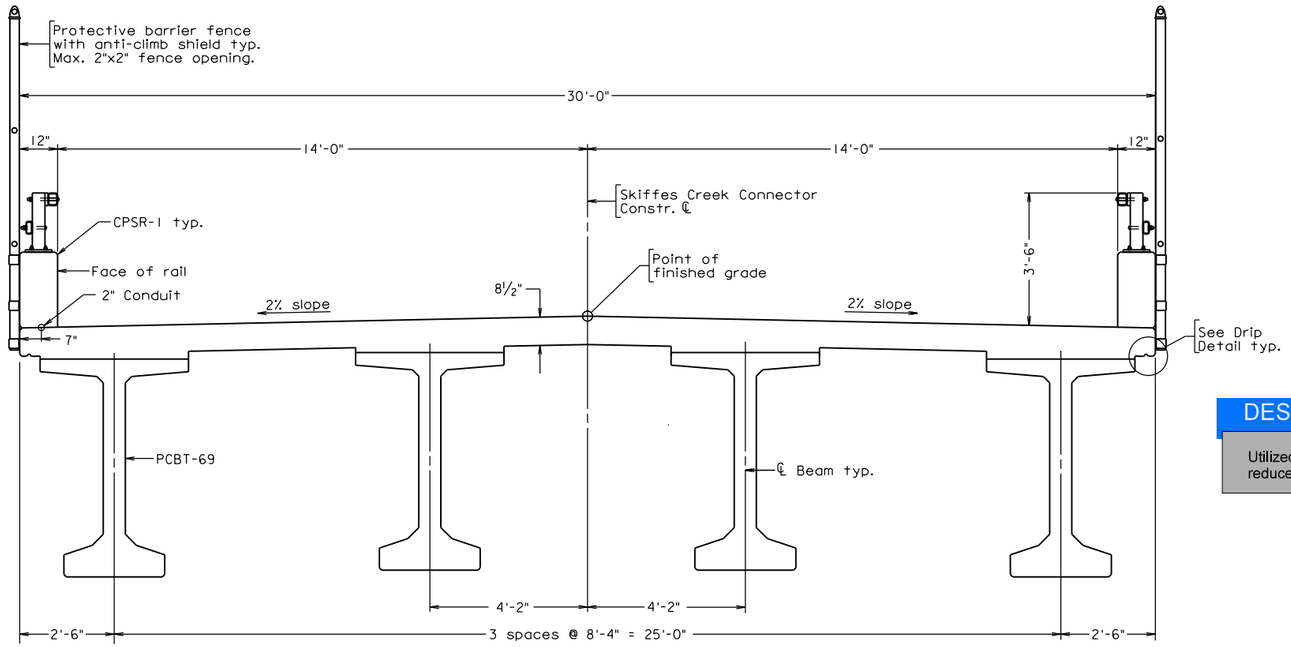
Approved: _____ Chief Engineer Date

XXX-XX

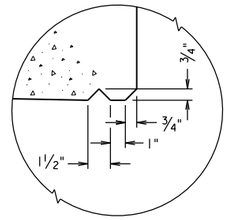
Date: _____

Skiffes-Creek_CSX_001_TS&L.dgn

STATE	FEDERAL AID		STATE		PAGE NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA	—	———	XXX	0060-047-627, B620	60



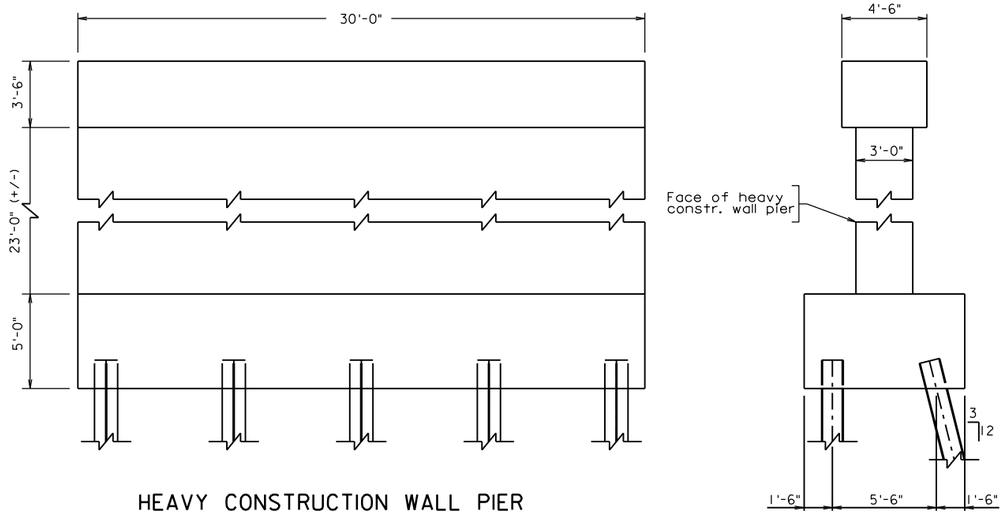
TYPICAL SECTION



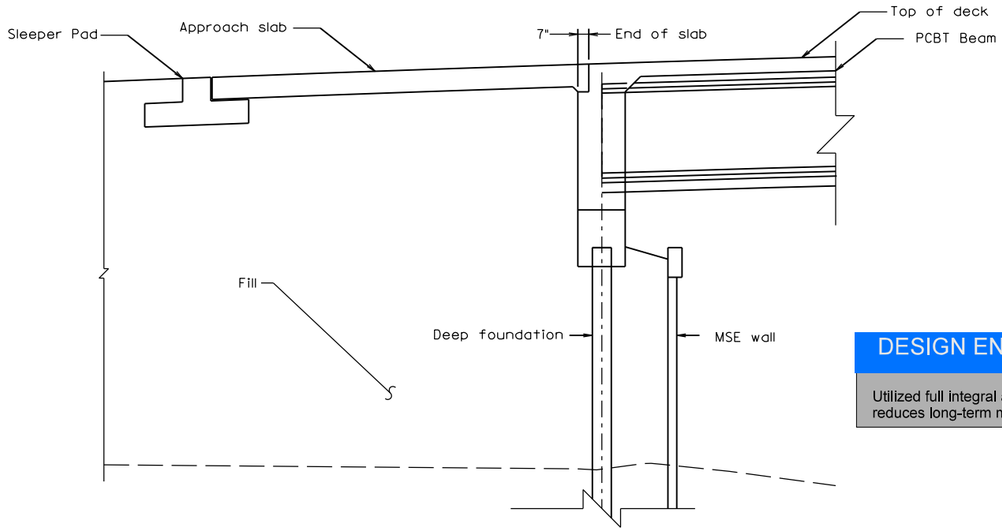
DRIP DETAIL
Not to scale

DESIGN ENHANCEMENT #S6

Utilized PCBT beams which reduces long-term maintenance.



HEAVY CONSTRUCTION WALL PIER



FULL INTEGRAL ABUTMENT

DESIGN ENHANCEMENT #S8

Utilized full integral abutments which reduces long-term maintenance.

DESIGN ENHANCEMENT #S9

Utilized crash worthy / heavy construction wall pier. Reduces long-term maintenance and eliminates the BPPS-54-in. at the roadside reducing potential obstacles/hazards and future maintenance.

PARSONS TRANSPORTATION GROUP INC. OF VIRGINIA

CORMAN KOKOSING PARSONS

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE AND BRIDGE DIVISION

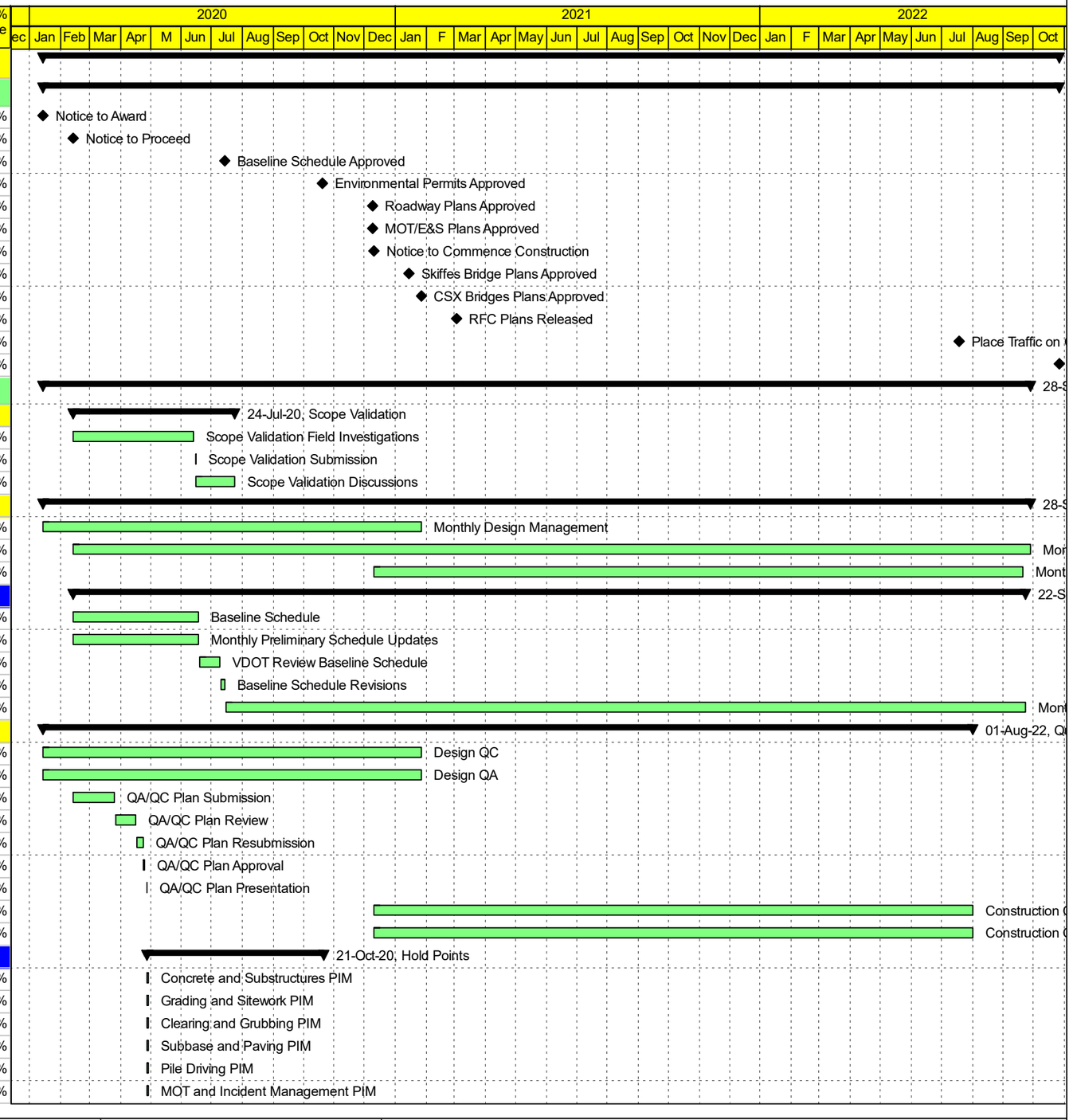
SKIFFES CREEK OVER CSX

Designed: KSN	Date	Plan No.	Page No.
Drawn: EJM		XXX-XX	60
Checked: NAH			

Skiffes-Creek_CSX_002_TS&L.dgn

4.6 Proposal Schedule

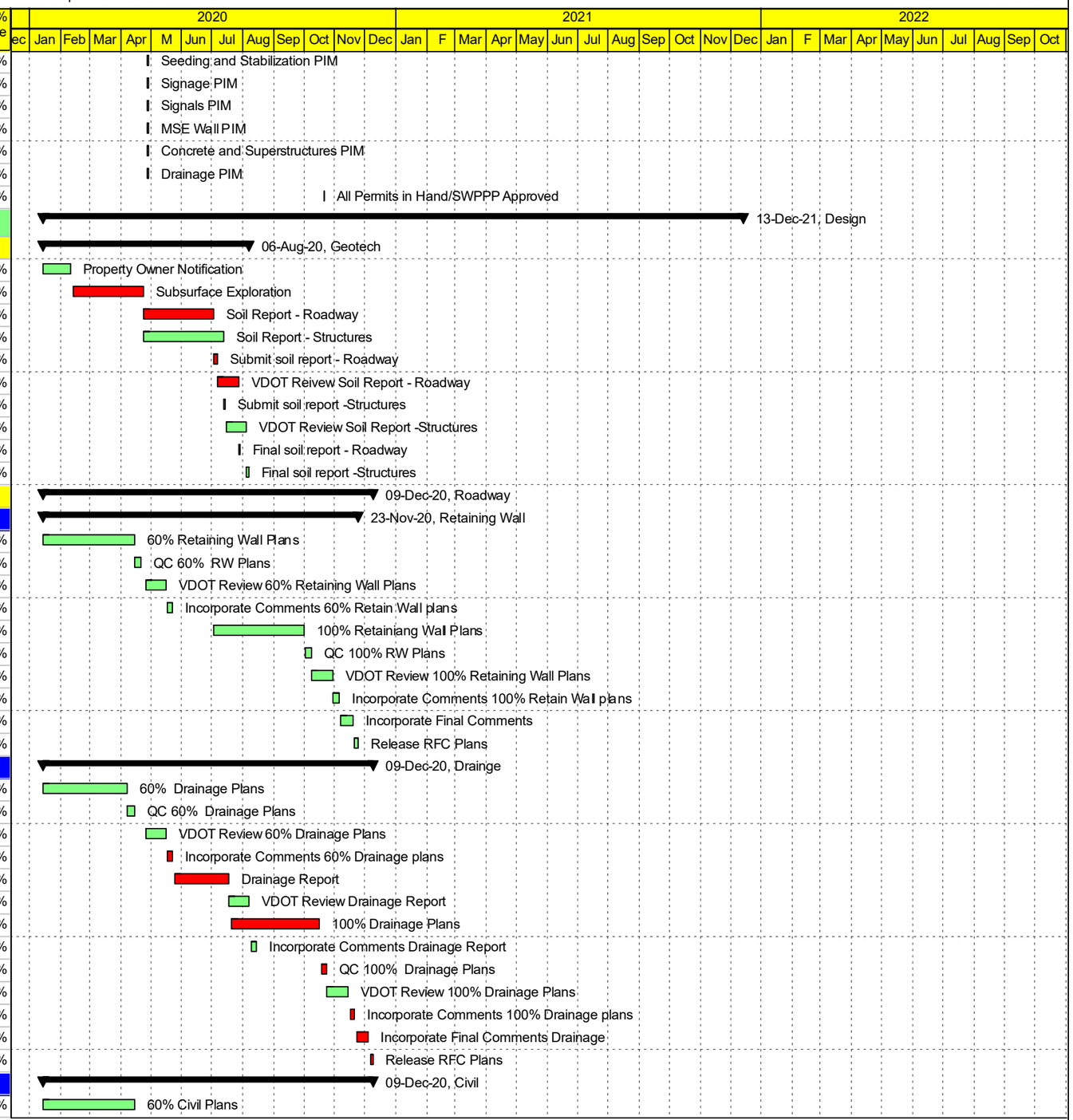
Activity ID	Activity Name	Remaining Duration	Original Duration	Start	Finish	Activity % Complete
Skiffes Creek Connector		726	726	15-Jan-20	26-Oct-22	
Milestones		726	726	15-Jan-20	26-Oct-22	
A4590	Notice to Award	0	0	15-Jan-20*		0%
A1000	Notice to Proceed	0	0	14-Feb-20*		0%
A1080	Baseline Schedule Approved	0	0		14-Jul-20	0%
A2700	Environmental Permits Approved	0	0		20-Oct-20	0%
A1310	Roadway Plans Approved	0	0		09-Dec-20	0%
A2600	MOT/E&S Plans Approved	0	0		09-Dec-20	0%
A2610	Notice to Commence Construction	0	0	10-Dec-20		0%
A1510	Skiffes Bridge Plans Approved	0	0		14-Jan-21	0%
A1300	CSX Bridges Plans Approved	0	0		26-Jan-21	0%
A5080	RFC Plans Released	0	0		03-Mar-21	0%
A3760	Place Traffic on Connector	0	0		18-Jul-22	0%
A1010	Final Completion	0	0		26-Oct-22*	0%
General Conditions		706	706	15-Jan-20	28-Sep-22	
Scope Validation		116	116	14-Feb-20	24-Jul-20	
A1020	Scope Validation Field Investigations	120	120	14-Feb-20	12-Jun-20	0%
A1030	Scope Validation Submission	0	0	15-Jun-20	15-Jun-20	0%
A1040	Scope Validation Discussions	30	30	15-Jun-20	24-Jul-20	0%
Project Management		706	706	15-Jan-20	28-Sep-22	
A3270	Monthly Design Management	270	270	15-Jan-20	26-Jan-21	0%
A3260	Monthly Project Management	958	958	14-Feb-20	28-Sep-22	0%
A3280	Monthly Construction Management	650	650	10-Dec-20	20-Sep-22	0%
Schedule		680	680	14-Feb-20	22-Sep-22	
A1050	Baseline Schedule	90	90	14-Feb-20	18-Jun-20	0%
A3290	Monthly Preliminary Schedule Updates	90	90	14-Feb-20	18-Jun-20	0%
A1060	VDOT Review Baseline Schedule	21	21	19-Jun-20	09-Jul-20	0%
A1070	Baseline Schedule Revisions	5	5	10-Jul-20	14-Jul-20	0%
A3300	Monthly Schedule Updates	800	800	15-Jul-20	22-Sep-22	0%
Quality Control/Quality Assurance		664	664	15-Jan-20	01-Aug-22	
A2980	Design QC	270	270	15-Jan-20	26-Jan-21	0%
A3010	Design QA	270	270	15-Jan-20	26-Jan-21	0%
A3210	QA/QC Plan Submission	30	30	14-Feb-20	26-Mar-20	0%
A3220	QA/QC Plan Review	21	21	27-Mar-20	16-Apr-20	0%
A3230	QA/QC Plan Resubmission	5	5	17-Apr-20	23-Apr-20	0%
A3240	QA/QC Plan Approval	2	2	24-Apr-20	25-Apr-20	0%
A3250	QA/QC Plan Presentation	1	1	27-Apr-20	27-Apr-20	0%
A2990	Construction QC	600	600	10-Dec-20	01-Aug-22	0%
A3000	Construction QA	600	600	10-Dec-20	01-Aug-22	0%
Hold Points		127	127	28-Apr-20	21-Oct-20	
A3020	Concrete and Substructures PIM	1	1	28-Apr-20	28-Apr-20	0%
A3030	Grading and Sitework PIM	1	1	28-Apr-20	28-Apr-20	0%
A3040	Clearing and Grubbing PIM	1	1	28-Apr-20	28-Apr-20	0%
A3050	Subbase and Paving PIM	1	1	28-Apr-20	28-Apr-20	0%
A3060	Pile Driving PIM	1	1	28-Apr-20	28-Apr-20	0%
A3070	MOT and Incident Management PIM	1	1	28-Apr-20	28-Apr-20	0%



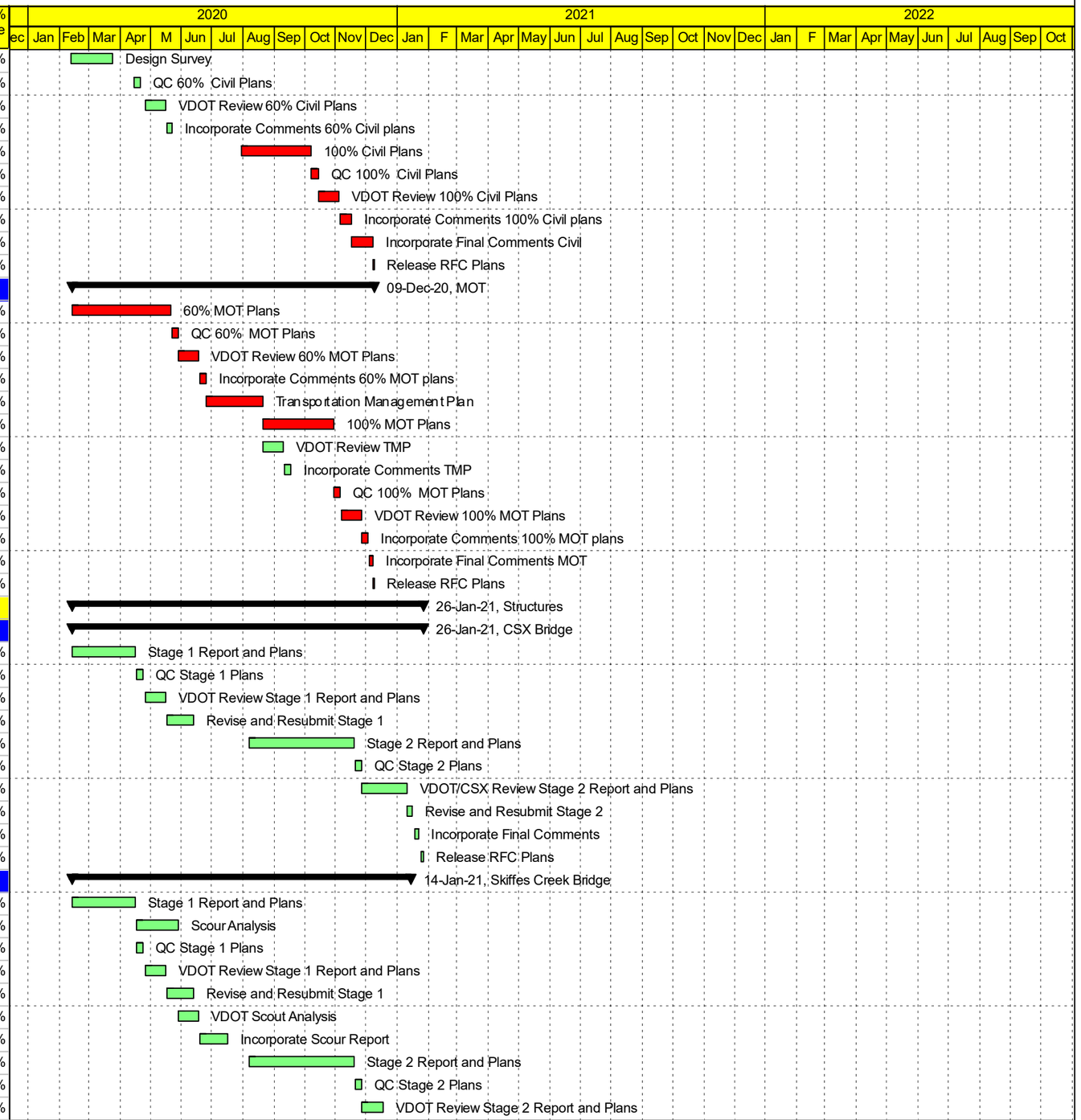
Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone

TASK filter: All Activities

Activity ID	Activity Name	Remaining Duration	Original Duration	Start	Finish	Activity % Complete
A3080	Seeding and Stabilization PIM	1	1	28-Apr-20	28-Apr-20	0%
A3090	Signage PIM	1	1	28-Apr-20	28-Apr-20	0%
A3100	Signals PIM	1	1	28-Apr-20	28-Apr-20	0%
A3110	MSE Wall PIM	1	1	28-Apr-20	28-Apr-20	0%
A3120	Concrete and Superstructures PIM	1	1	28-Apr-20	28-Apr-20	0%
A3130	Drainage PIM	1	1	28-Apr-20	28-Apr-20	0%
A5680	All Permits in Hand/SWPPP Approved	1	1	21-Oct-20	21-Oct-20	0%
Design		499	499	15-Jan-20	13-Dec-21	
Geotech		147	147	15-Jan-20	06-Aug-20	
A5160	Property Owner Notification	20	20	15-Jan-20	11-Feb-20	0%
A5170	Subsurface Exploration	50	50	14-Feb-20	23-Apr-20	0%
A5180	Soil Report - Roadway	70	70	24-Apr-20	02-Jul-20	0%
A5190	Soil Report - Structures	80	80	24-Apr-20	12-Jul-20	0%
A5210	Submit soil report - Roadway	2	2	03-Jul-20	06-Jul-20	0%
A5590	VDOT Reivew Soil Report - Roadway	21	21	07-Jul-20	27-Jul-20	0%
A5580	Submit soil report -Structures	2	2	13-Jul-20	14-Jul-20	0%
A5600	VDOT Review Soil Report -Structures	21	21	15-Jul-20	04-Aug-20	0%
A5610	Final soil report - Roadway	2	2	28-Jul-20	29-Jul-20	0%
A5620	Final soil report -Structures	2	2	05-Aug-20	06-Aug-20	0%
Roadway		236	236	15-Jan-20	09-Dec-20	
Retaining Wall		224	224	15-Jan-20	23-Nov-20	
A4600	60% Retaining Wall Plans	65	65	15-Jan-20	14-Apr-20	0%
A5790	QC 60% RW Plans	5	5	15-Apr-20	21-Apr-20	0%
A4610	VDOT Review 60% Retaining Wall Plans	21	21	26-Apr-20	16-May-20	0%
A4620	Incorporate Comments 60% Retain Wall plans	5	5	18-May-20	22-May-20	0%
A4630	100% Retainiang Wal Plans	65	65	03-Jul-20	01-Oct-20	0%
A5800	QC 100% RW Plans	5	5	02-Oct-20	08-Oct-20	0%
A4640	VDOT Review 100% Retaining Wall Plans	21	21	09-Oct-20	29-Oct-20	0%
A4650	Incorporate Comments 100% Retain Wall plans	5	5	30-Oct-20	05-Nov-20	0%
A4660	Incorporate Final Comments	10	10	06-Nov-20	19-Nov-20	0%
A4670	Release RFC Plans	2	2	20-Nov-20	23-Nov-20	0%
Drainge		236	236	15-Jan-20	09-Dec-20	
A4830	60% Drainage Plans	60	60	15-Jan-20	07-Apr-20	0%
A5780	QC 60% Drainage Plans	5	5	08-Apr-20	14-Apr-20	0%
A4840	VDOT Review 60% Drainage Plans	21	21	26-Apr-20	16-May-20	0%
A4850	Incorporate Comments 60% Drainage plans	5	5	18-May-20	22-May-20	0%
A4910	Drainage Report	40	40	25-May-20	17-Jul-20	0%
A4920	VDOT Review Drainage Report	21	21	18-Jul-20	07-Aug-20	0%
A4860	100% Drainage Plans	65	65	20-Jul-20	16-Oct-20	0%
A4930	Incorporate Comments Drainage Report	5	5	10-Aug-20	14-Aug-20	0%
A5810	QC 100% Drainage Plans	5	5	19-Oct-20	23-Oct-20	0%
A4870	VDOT Review 100% Drainage Plans	21	21	24-Oct-20	13-Nov-20	0%
A4880	Incorporate Comments 100% Drainage plans	5	5	16-Nov-20	20-Nov-20	0%
A4890	Incorporate Final Comments Drainage	10	10	23-Nov-20	04-Dec-20	0%
A4900	Release RFC Plans	3	3	07-Dec-20	09-Dec-20	0%
Civil		236	236	15-Jan-20	09-Dec-20	
A5050	60% Civil Plans	65	65	15-Jan-20	14-Apr-20	0%



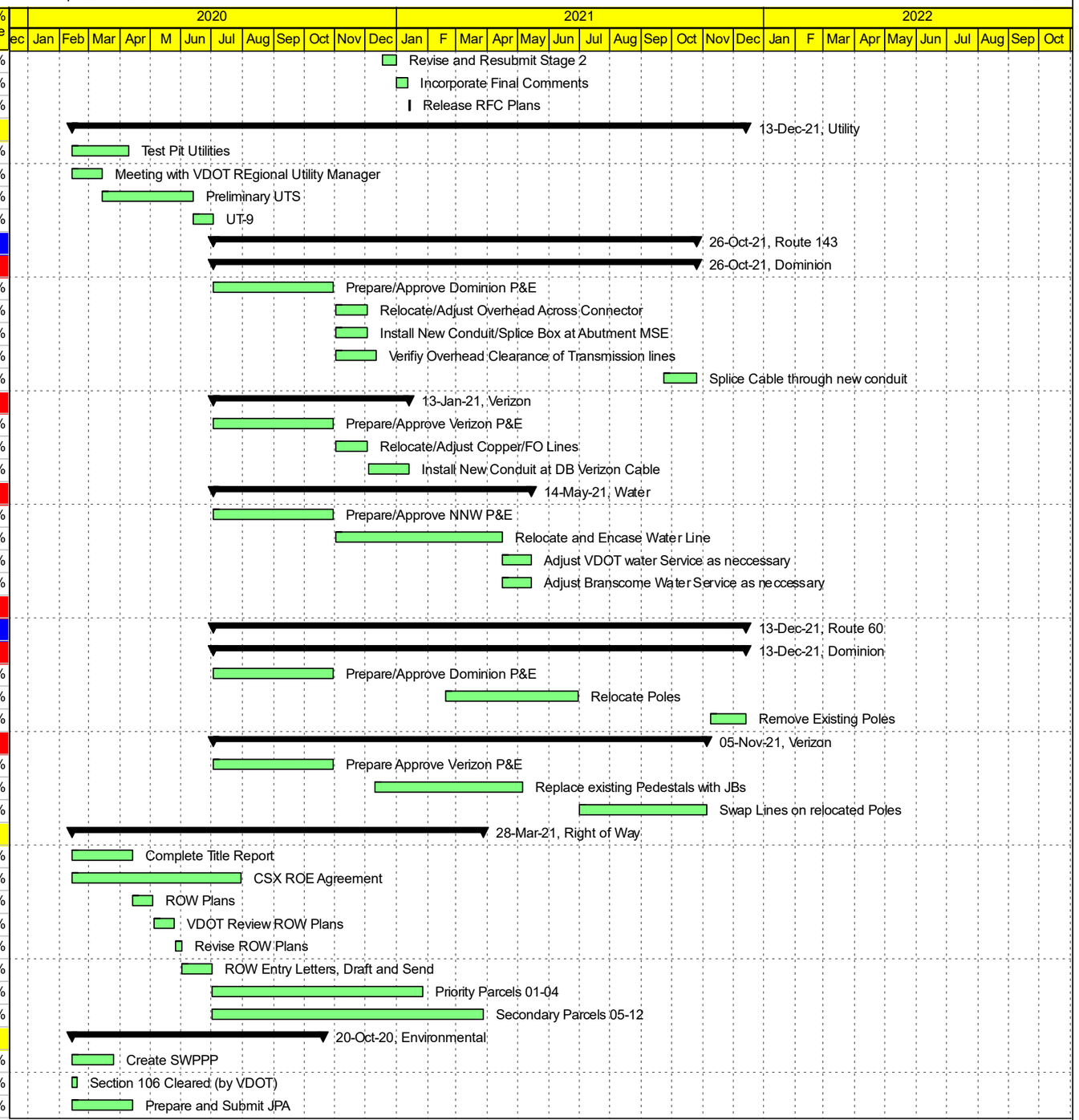
Activity ID	Activity Name	Remaining Duration	Original Duration	Start	Finish	Activity % Complete
A5410	Design Survey	30	30	12-Feb-20	24-Mar-20	0%
A5820	QC 60% Civil Plans	5	5	15-Apr-20	21-Apr-20	0%
A5060	VDOT Review 60% Civil Plans	21	21	26-Apr-20	16-May-20	0%
A5070	Incorporate Comments 60% Civil plans	5	5	18-May-20	22-May-20	0%
A5090	100% Civil Plans	50	50	30-Jul-20	07-Oct-20	0%
A5830	QC 100% Civil Plans	5	5	08-Oct-20	14-Oct-20	0%
A5120	VDOT Review 100% Civil Plans	21	21	15-Oct-20	04-Nov-20	0%
A5130	Incorporate Comments 100% Civil plans	8	8	05-Nov-20	16-Nov-20	0%
A5140	Incorporate Final Comments Civil	15	15	17-Nov-20	07-Dec-20	0%
A5150	Release RFC Plans	2	2	08-Dec-20	09-Dec-20	0%
MOT		214	214	14-Feb-20	09-Dec-20	
A4940	60% MOT Plans	70	70	14-Feb-20	21-May-20	0%
A5840	QC 60% MOT Plans	5	5	22-May-20	28-May-20	0%
A4950	VDOT Review 60% MOT Plans	21	21	29-May-20	18-Jun-20	0%
A4960	Incorporate Comments 60% MOT plans	5	5	19-Jun-20	25-Jun-20	0%
A4970	Transportation Management Plan	40	40	26-Jun-20	20-Aug-20	0%
A4980	100% MOT Plans	50	50	21-Aug-20	29-Oct-20	0%
A4990	VDOT Review TMP	21	21	21-Aug-20	10-Sep-20	0%
A5000	Incorporate Comments TMP	5	5	11-Sep-20	17-Sep-20	0%
A5850	QC 100% MOT Plans	5	5	30-Oct-20	05-Nov-20	0%
A5010	VDOT Review 100% MOT Plans	21	21	06-Nov-20	26-Nov-20	0%
A5020	Incorporate Comments 100% MOT plans	5	5	27-Nov-20	03-Dec-20	0%
A5030	Incorporate Final Comments MOT	2	2	04-Dec-20	07-Dec-20	0%
A5040	Release RFC Plans	2	2	08-Dec-20	09-Dec-20	0%
Structures		248	248	14-Feb-20	26-Jan-21	
CSX Bridge		248	248	14-Feb-20	26-Jan-21	
A4400	Stage 1 Report and Plans	45	45	14-Feb-20	16-Apr-20	0%
A5110	QC Stage 1 Plans	5	5	17-Apr-20	23-Apr-20	0%
A4410	VDOT Review Stage 1 Report and Plans	21	21	26-Apr-20	16-May-20	0%
A4420	Revise and Resubmit Stage 1	20	20	18-May-20	12-Jun-20	0%
A4430	Stage 2 Report and Plans	75	75	07-Aug-20	19-Nov-20	0%
A5860	QC Stage 2 Plans	5	5	20-Nov-20	26-Nov-20	0%
A4440	VDOT/CSX Review Stage 2 Report and Plans	45	45	27-Nov-20	10-Jan-21	0%
A4450	Revise and Resubmit Stage 2	5	5	11-Jan-21	15-Jan-21	0%
A4460	Incorporate Final Comments	5	5	18-Jan-21	22-Jan-21	0%
A4470	Release RFC Plans	2	2	25-Jan-21	26-Jan-21	0%
Skiffes Creek Bridge		240	240	14-Feb-20	14-Jan-21	
A4480	Stage 1 Report and Plans	45	45	14-Feb-20	16-Apr-20	0%
A4560	Scour Analysis	30	30	17-Apr-20	28-May-20	0%
A5870	QC Stage 1 Plans	5	5	17-Apr-20	23-Apr-20	0%
A4490	VDOT Review Stage 1 Report and Plans	21	21	26-Apr-20	16-May-20	0%
A4500	Revise and Resubmit Stage 1	20	20	18-May-20	12-Jun-20	0%
A4570	VDOT Scout Analysis	21	21	29-May-20	18-Jun-20	0%
A4580	Incorporate Scour Report	20	20	19-Jun-20	16-Jul-20	0%
A4510	Stage 2 Report and Plans	75	75	07-Aug-20	19-Nov-20	0%
A5880	QC Stage 2 Plans	5	5	20-Nov-20	26-Nov-20	0%
A4520	VDOT Review Stage 2 Report and Plans	21	21	27-Nov-20	17-Dec-20	0%



Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone

TASK filter: All Activities

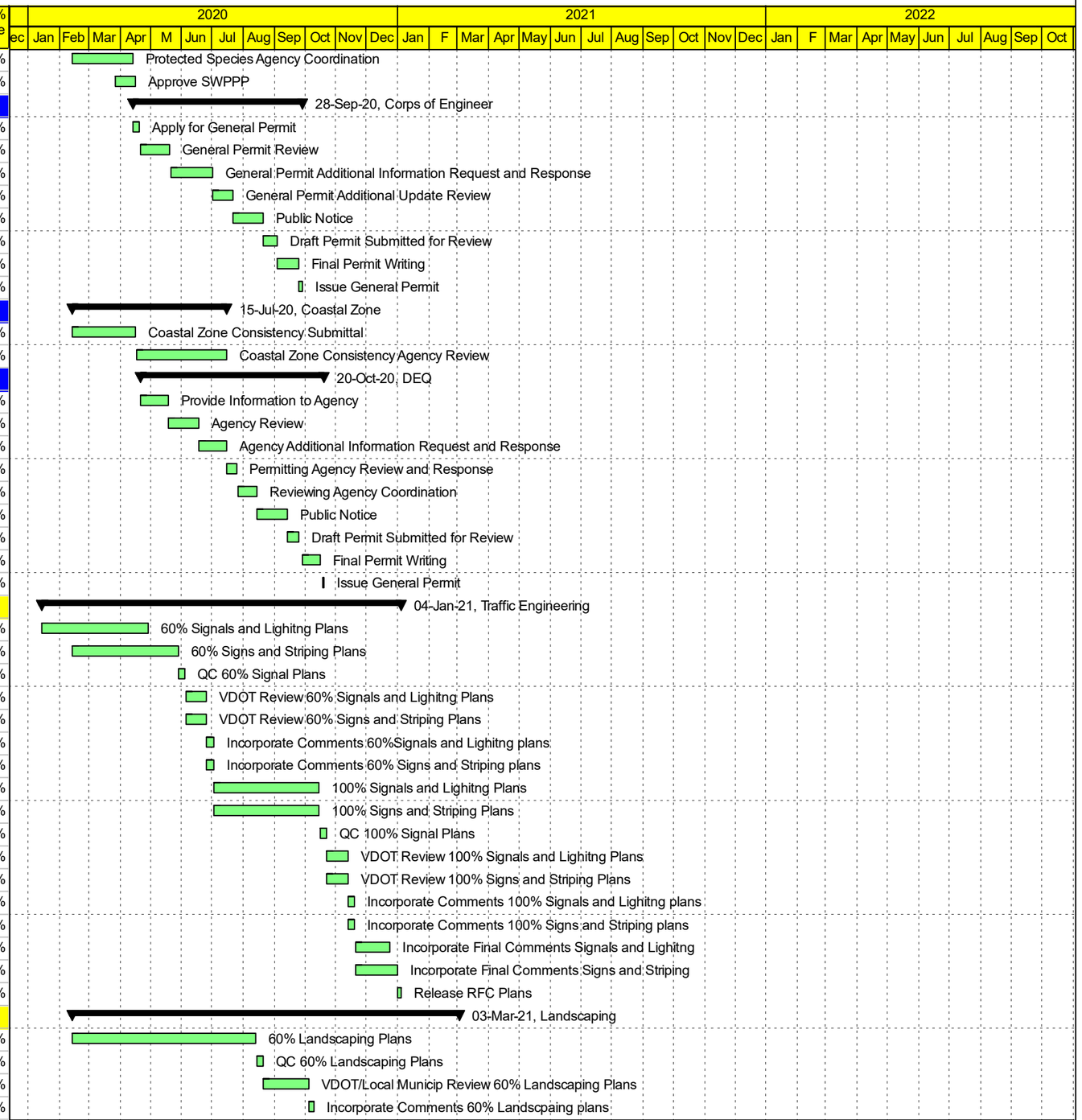
Activity ID	Activity Name	Remaining Duration	Original Duration	Start	Finish	Activity % Complete
A4530	Revise and Resubmit Stage 2	10	10	18-Dec-20	31-Dec-20	0%
A4540	Incorporate Final Comments	8	8	01-Jan-21	12-Jan-21	0%
A4550	Release RFC Plans	2	2	13-Jan-21	14-Jan-21	0%
Utility		477	477	14-Feb-20	13-Dec-21	
A2810	Test Pit Utilities	30	30	14-Feb-20	09-Apr-20	0%
A4270	Meeting with VDOT REgional Utility Manager	30	30	14-Feb-20	14-Mar-20	0%
A4280	Preliminary UTS	90	90	15-Mar-20	12-Jun-20	0%
A4300	UT-9	20	20	13-Jun-20	02-Jul-20	0%
Route 143		343	343	03-Jul-20	26-Oct-21	
Dominion		343	343	03-Jul-20	26-Oct-21	
A2830	Prepare/Approve Dominion P&E	120	120	03-Jul-20	30-Oct-20	0%
A2820	Relocate/Adjust Overhead Across Connector	20	20	02-Nov-20	03-Dec-20	0%
A2840	Install New Conduit/Splice Box at Abutment MSE	20	20	02-Nov-20	03-Dec-20	0%
A2860	Verifiy Overhead Clearance of Transmission lines	30	30	02-Nov-20	11-Dec-20	0%
A2850	Splice Cable through new conduit	20	20	23-Sep-21	26-Oct-21	0%
Verizon		139	139	03-Jul-20	13-Jan-21	
A2900	Prepare/Approve Verizon P&E	120	120	03-Jul-20	30-Oct-20	0%
A2870	Relocate/Adjust Copper/FO Lines	20	20	02-Nov-20	03-Dec-20	0%
A2880	Install New Conduit at DB Verizon Cable	20	20	04-Dec-20	13-Jan-21	0%
Water		226	226	03-Jul-20	14-May-21	
A2910	Prepare/Approve NNW P&E	120	120	03-Jul-20	30-Oct-20	0%
A2890	Relocate and Encase Water Line	90	90	02-Nov-20	15-Apr-21	0%
A2960	Adjust VDOT water Service as neccessary	20	20	16-Apr-21	14-May-21	0%
A2970	Adjust Branscome Water Service as neccessary	20	20	16-Apr-21	14-May-21	0%
VNG		0	0			
Route 60		377	377	03-Jul-20	13-Dec-21	
Dominion		377	377	03-Jul-20	13-Dec-21	
A2920	Prepare/Approve Dominion P&E	120	120	03-Jul-20	30-Oct-20	0%
A2760	Relocate Poles	80	80	19-Feb-21	30-Jun-21	0%
A2780	Remove Existing Poles	20	20	08-Nov-21	13-Dec-21	0%
Verizon		351	351	03-Jul-20	05-Nov-21	
A2930	Prepare Approve Verizon P&E	120	120	03-Jul-20	30-Oct-20	0%
A2790	Replace existing Pedestals with JBs	80	80	10-Dec-20	06-May-21	0%
A2770	Swap Lines on relocated Poles	80	80	01-Jul-21	05-Nov-21	0%
Right of Way		291	291	14-Feb-20	28-Mar-21	
A4340	Complete Title Report	60	60	14-Feb-20	13-Apr-20	0%
A5100	CSX ROE Agreement	120	120	14-Feb-20	30-Jul-20	0%
A4350	ROW Plans	15	15	14-Apr-20	04-May-20	0%
A4360	VDOT Review ROW Plans	21	21	05-May-20	25-May-20	0%
A4370	Revise ROW Plans	5	5	26-May-20	01-Jun-20	0%
A4330	ROW Entry Letters, Draft and Send	30	30	02-Jun-20	01-Jul-20	0%
A4380	Priority Parcels 01-04	210	210	02-Jul-20	27-Jan-21	0%
A4390	Secondary Parcels 05-12	270	270	02-Jul-20	28-Mar-21	0%
Environmental		178	178	14-Feb-20	20-Oct-20	
A2940	Create SWPPP	30	30	14-Feb-20	26-Mar-20	0%
A4310	Section 106 Cleared (by VDOT)	5	5	14-Feb-20	18-Feb-20	0%
A3770	Prepare and Submit JPA	60	60	14-Feb-20	13-Apr-20	0%



Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone

TASK filter: All Activities

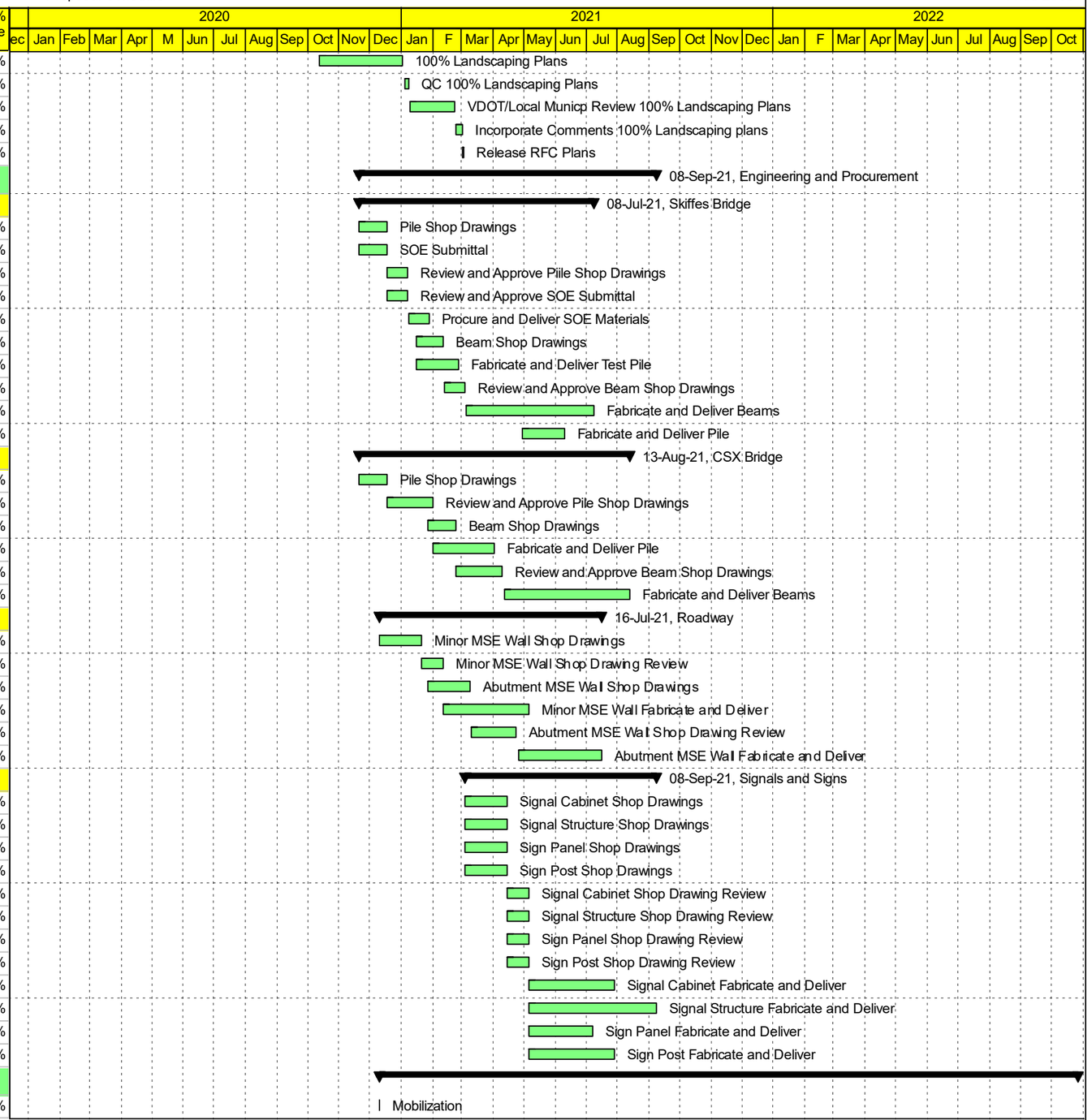
Activity ID	Activity Name	Remaining Duration	Original Duration	Start	Finish	Activity % Complete
A4290	Protected Species Agency Coordination	60	60	14-Feb-20	13-Apr-20	0%
A2950	Approve SWPPP	21	21	27-Mar-20	16-Apr-20	0%
Corps of Engineer		120	120	14-Apr-20	28-Sep-20	
A2680	Apply for General Permit	5	5	14-Apr-20	20-Apr-20	0%
A2690	General Permit Review	30	30	21-Apr-20	20-May-20	0%
A5440	General Permit Additional Information Request a	30	30	21-May-20	01-Jul-20	0%
A5450	General Permit Additional Update Review	20	20	02-Jul-20	21-Jul-20	0%
A5460	Public Notice	30	30	22-Jul-20	20-Aug-20	0%
A5470	Draft Permit Submitted for Review	10	10	21-Aug-20	03-Sep-20	0%
A5480	Final Permit Writing	15	15	04-Sep-20	24-Sep-20	0%
A5490	Issue General Permit	2	2	25-Sep-20	28-Sep-20	0%
Coastal Zone		109	109	14-Feb-20	15-Jul-20	
A5420	Coastal Zone Consistency Submittal	45	45	14-Feb-20	16-Apr-20	0%
A5430	Coastal Zone Consistency Agency Review	90	90	17-Apr-20	15-Jul-20	0%
DEQ		131	131	21-Apr-20	20-Oct-20	
A4320	Provide Information to Agency	20	20	21-Apr-20	18-May-20	0%
A5500	Agency Review	30	30	19-May-20	17-Jun-20	0%
A5510	Agency Additional Information Request and Res	20	20	18-Jun-20	15-Jul-20	0%
A5520	Permitting Agency Review and Response	10	10	16-Jul-20	25-Jul-20	0%
A5570	Reviewing Agency Coordination	15	15	27-Jul-20	14-Aug-20	0%
A5530	Public Notice	30	30	15-Aug-20	13-Sep-20	0%
A5540	Draft Permit Submitted for Review	10	10	14-Sep-20	25-Sep-20	0%
A5550	Final Permit Writing	15	15	28-Sep-20	16-Oct-20	0%
A5560	Issue General Permit	2	2	19-Oct-20	20-Oct-20	0%
Traffic Engineering		254	254	15-Jan-20	04-Jan-21	
A4680	60% Signals and Lighitng Plans	75	75	15-Jan-20	28-Apr-20	0%
A4760	60% Signs and Striping Plans	75	75	14-Feb-20	28-May-20	0%
A5260	QC 60% Signal Plans	5	5	29-May-20	04-Jun-20	0%
A4690	VDOT Review 60% Signals and Lighitng Plans	21	21	05-Jun-20	25-Jun-20	0%
A4770	VDOT Review 60% Signs and Striping Plans	21	21	05-Jun-20	25-Jun-20	0%
A4700	Incorporate Comments 60%Signals and Lighitng	5	5	26-Jun-20	02-Jul-20	0%
A4780	Incorporate Comments 60% Signs and Striping p	5	5	26-Jun-20	02-Jul-20	0%
A4710	100% Signals and Lighitng Plans	75	75	03-Jul-20	15-Oct-20	0%
A4790	100% Signs and Striping Plans	75	75	03-Jul-20	15-Oct-20	0%
A5270	QC 100% Signal Plans	5	5	16-Oct-20	22-Oct-20	0%
A4720	VDOT Review 100% Signals and Lighitng Plans	21	21	23-Oct-20	12-Nov-20	0%
A4800	VDOT Review 100% Signs and Striping Plans	21	21	23-Oct-20	12-Nov-20	0%
A4730	Incorporate Comments 100% Signals and Lighit	5	5	13-Nov-20	19-Nov-20	0%
A4810	Incorporate Comments 100% Signs and Striping	5	5	13-Nov-20	19-Nov-20	0%
A4740	Incorporate Final Comments Signals and Lighitn	25	25	20-Nov-20	24-Dec-20	0%
A4820	Incorporate Final Comments Signs and Striping	30	30	20-Nov-20	31-Dec-20	0%
A4750	Release RFC Plans	2	2	01-Jan-21	04-Jan-21	0%
Landscaping		274	274	14-Feb-20	03-Mar-21	
A5200	60% Landscaping Plans	130	130	14-Feb-20	13-Aug-20	0%
A5280	QC 60% Landscaping Plans	5	5	14-Aug-20	20-Aug-20	0%
A5220	VDOT/Local Municip Review 60% Landscaping I	45	45	21-Aug-20	04-Oct-20	0%
A5230	Incorporate Comments 60% Landscpaing plans	5	5	05-Oct-20	09-Oct-20	0%



Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone

TASK filter: All Activities

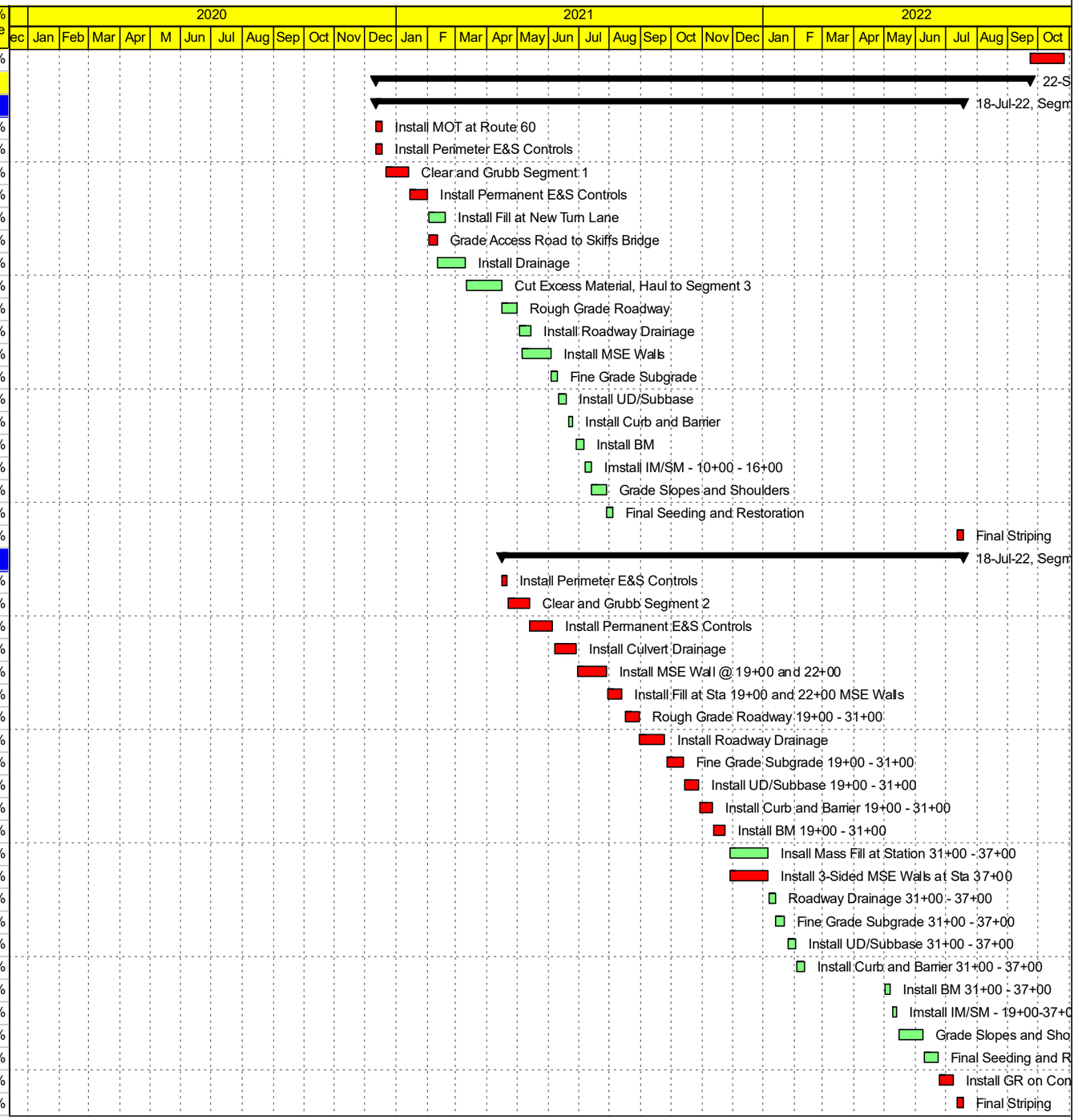
Activity ID	Activity Name	Remaining Duration	Original Duration	Start	Finish	Activity % Complete
A5240	100% Landscaping Plans	60	60	12-Oct-20	01-Jan-21	0%
A5300	QC 100% Landscaping Plans	5	5	04-Jan-21	08-Jan-21	0%
A5250	VDOT/Local Municp Review 100% Landscaping	45	45	09-Jan-21	22-Feb-21	0%
A5290	Incorporate Comments 100% Landscaping plan:	5	5	23-Feb-21	01-Mar-21	0%
A5340	Release RFC Plans	2	2	02-Mar-21	03-Mar-21	0%
Engineering and Procurement		209	209	20-Nov-20	08-Sep-21	
Skiffes Bridge		165	165	20-Nov-20	08-Jul-21	
A2540	Pile Shop Drawings	20	20	20-Nov-20	17-Dec-20	0%
A3150	SOE Submittal	20	20	20-Nov-20	17-Dec-20	0%
A2550	Review and Approve Piile Shop Drawings	21	21	18-Dec-20	07-Jan-21	0%
A3160	Review and Approve SOE Submittal	21	21	18-Dec-20	07-Jan-21	0%
A3170	Procure and Deliver SOE Materials	15	15	08-Jan-21	28-Jan-21	0%
A2070	Beam Shop Drawings	20	20	15-Jan-21	11-Feb-21	0%
A5630	Fabricate and Deliver Test Pile	30	30	15-Jan-21	25-Feb-21	0%
A2080	Review and Approve Beam Shop Drawings	21	21	12-Feb-21	04-Mar-21	0%
A2090	Fabricate and Deliver Beams	90	90	05-Mar-21	08-Jul-21	0%
A2560	Fabricate and Deliver Pile	30	30	30-Apr-21	10-Jun-21	0%
CSX Bridge		191	191	20-Nov-20	13-Aug-21	
A2570	Pile Shop Drawings	20	20	20-Nov-20	17-Dec-20	0%
A2580	Review and Approve Pile Shop Drawings	45	45	18-Dec-20	31-Jan-21	0%
A2100	Beam Shop Drawings	20	20	27-Jan-21	23-Feb-21	0%
A2590	Fabricate and Deliver Pile	45	45	01-Feb-21	02-Apr-21	0%
A2110	Review and Approve Beam Shop Drawings	45	45	24-Feb-21	09-Apr-21	0%
A2120	Fabricate and Deliver Beams	90	90	12-Apr-21	13-Aug-21	0%
Roadway		157	157	10-Dec-20	16-Jul-21	
A2620	Minor MSE Wall Shop Drawings	30	30	10-Dec-20	20-Jan-21	0%
A2630	Minor MSE Wall Shop Drawing Review	21	21	21-Jan-21	10-Feb-21	0%
A2650	Abutment MSE Wall Shop Drawings	30	30	27-Jan-21	09-Mar-21	0%
A2640	Minor MSE Wall Fabricate and Deliver	60	60	11-Feb-21	05-May-21	0%
A2660	Abutment MSE Wall Shop Drawing Review	45	45	10-Mar-21	23-Apr-21	0%
A2670	Abutment MSE Wall Fabricate and Deliver	60	60	26-Apr-21	16-Jul-21	0%
Signals and Signs		135	135	04-Mar-21	08-Sep-21	
A4120	Signal Cabinet Shop Drawings	30	30	04-Mar-21	14-Apr-21	0%
A4090	Signal Structure Shop Drawings	30	30	04-Mar-21	14-Apr-21	0%
A4180	Sign Panel Shop Drawings	30	30	04-Mar-21	14-Apr-21	0%
A4150	Sign Post Shop Drawings	30	30	04-Mar-21	14-Apr-21	0%
A4130	Signal Cabinet Shop Drawing Review	21	21	15-Apr-21	05-May-21	0%
A4100	Signal Structure Shop Drawing Review	21	21	15-Apr-21	05-May-21	0%
A4190	Sign Panel Shop Drawing Review	21	21	15-Apr-21	05-May-21	0%
A4160	Sign Post Shop Drawing Review	21	21	15-Apr-21	05-May-21	0%
A4140	Signal Cabinet Fabricate and Deliver	60	60	06-May-21	28-Jul-21	0%
A4110	Signal Structure Fabricate and Deliver	90	90	06-May-21	08-Sep-21	0%
A4200	Sign Panel Fabricate and Deliver	45	45	06-May-21	07-Jul-21	0%
A4170	Sign Post Fabricate and Deliver	60	60	06-May-21	28-Jul-21	0%
Construction		490	490	10-Dec-20	26-Oct-22	
A3140	Mobilization	1	1	10-Dec-20	10-Dec-20	0%



Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone

TASK filter: All Activities

Activity ID	Activity Name	Remaining Duration	Original Duration	Start	Finish	Activity % Complete
A2710	Punchlist and Closeout	20	20	23-Sep-22	26-Oct-22	0%
Roadway		465	465	11-Dec-20	22-Sep-22	
Segment 1 - Station 10+00 - 16+00		417	417	11-Dec-20	18-Jul-22	
A1090	Install MOT at Route 60	5	5	11-Dec-20	18-Dec-20	0%
A1100	Install Perimeter E&S Controls	5	5	11-Dec-20	18-Dec-20	0%
A1110	Clear and Grubb Segment 1	10	10	21-Dec-20	13-Jan-21	0%
A1120	Install Permanent E&S Controls	10	10	14-Jan-21	01-Feb-21	0%
A1130	Install Fill at New Turn Lane	10	10	02-Feb-21	18-Feb-21	0%
A1140	Grade Access Road to Skiffs Bridge	5	5	02-Feb-21	10-Feb-21	0%
A1150	Install Drainage	15	15	11-Feb-21	10-Mar-21	0%
A1160	Cut Excess Material, Haul to Segment 3	20	20	12-Mar-21	15-Apr-21	0%
A1170	Rough Grade Roadway	10	10	16-Apr-21	30-Apr-21	0%
A1790	Install Roadway Drainage	10	10	03-May-21	14-May-21	0%
A1210	Install MSE Walls	20	20	06-May-21	03-Jun-21	0%
A1180	Fine Grade Subgrade	5	5	04-Jun-21	10-Jun-21	0%
A1190	Install UD/Subbase	5	5	11-Jun-21	18-Jun-21	0%
A1200	Install Curb and Barrier	5	5	21-Jun-21	25-Jun-21	0%
A1220	Install BM	5	5	29-Jun-21	06-Jul-21	0%
A1470	Imstall IM/SM - 10+00 - 16+00	5	5	07-Jul-21	13-Jul-21	0%
A1480	Grade Slopes and Shoulders	10	10	14-Jul-21	28-Jul-21	0%
A1500	Final Seeding and Restoration	5	5	29-Jul-21	04-Aug-21	0%
A1490	Final Striping	5	5	12-Jul-22	18-Jul-22	0%
Segment 2 - Station 19+00 - 37+00		327	327	16-Apr-21	18-Jul-22	
A1520	Install Perimeter E&S Controls	4	4	16-Apr-21	21-Apr-21	0%
A1530	Clear and Grubb Segment 2	15	15	22-Apr-21	13-May-21	0%
A1540	Install Permanent E&S Controls	15	15	14-May-21	04-Jun-21	0%
A1550	Install Culvert Drainage	15	15	07-Jun-21	29-Jun-21	0%
A1560	Install MSE Wall @ 19+00 and 22+00	20	20	30-Jun-21	29-Jul-21	0%
A1570	Install Fill at Sta 19+00 and 22+00 MSE Walls	10	10	30-Jul-21	13-Aug-21	0%
A1580	Rough Grade Roadway 19+00 - 31+00	10	10	16-Aug-21	30-Aug-21	0%
A5660	Install Roadway Drainage	15	15	31-Aug-21	24-Sep-21	0%
A1590	Fine Grade Subgrade 19+00 - 31+00	10	10	27-Sep-21	13-Oct-21	0%
A1600	Install UD/Subbase 19+00 - 31+00	10	10	14-Oct-21	28-Oct-21	0%
A1610	Install Curb and Barrier 19+00 - 31+00	10	10	29-Oct-21	11-Nov-21	0%
A1620	Install BM 19+00 - 31+00	8	8	12-Nov-21	23-Nov-21	0%
A1630	Insall Mass Fill at Station 31+00 - 37+00	20	20	29-Nov-21	05-Jan-22	0%
A1640	Install 3-Sided MSE Walls at Sta 37+00	20	20	29-Nov-21	05-Jan-22	0%
A1800	Roadway Drainage 31+00 - 37+00	5	5	06-Jan-22	12-Jan-22	0%
A1650	Fine Grade Subgrade 31+00 - 37+00	5	5	13-Jan-22	21-Jan-22	0%
A1660	Install UD/Subbase 31+00 - 37+00	5	5	25-Jan-22	02-Feb-22	0%
A1670	Install Curb and Barrier 31+00 - 37+00	5	5	03-Feb-22	10-Feb-22	0%
A1680	Install BM 31+00 - 37+00	5	5	02-May-22	06-May-22	0%
A1690	Imstall IM/SM - 19+00-37+00	5	5	09-May-22	13-May-22	0%
A1700	Grade Slopes and Shoulders	15	15	16-May-22	08-Jun-22	0%
A1720	Final Seeding and Restoration	10	10	09-Jun-22	23-Jun-22	0%
A2800	Install GR on Connector (all 3 segements)	10	10	24-Jun-22	08-Jul-22	0%
A1710	Final Striping	5	5	12-Jul-22	18-Jul-22	0%



Actual Work | Critical Remaining Work | Summary
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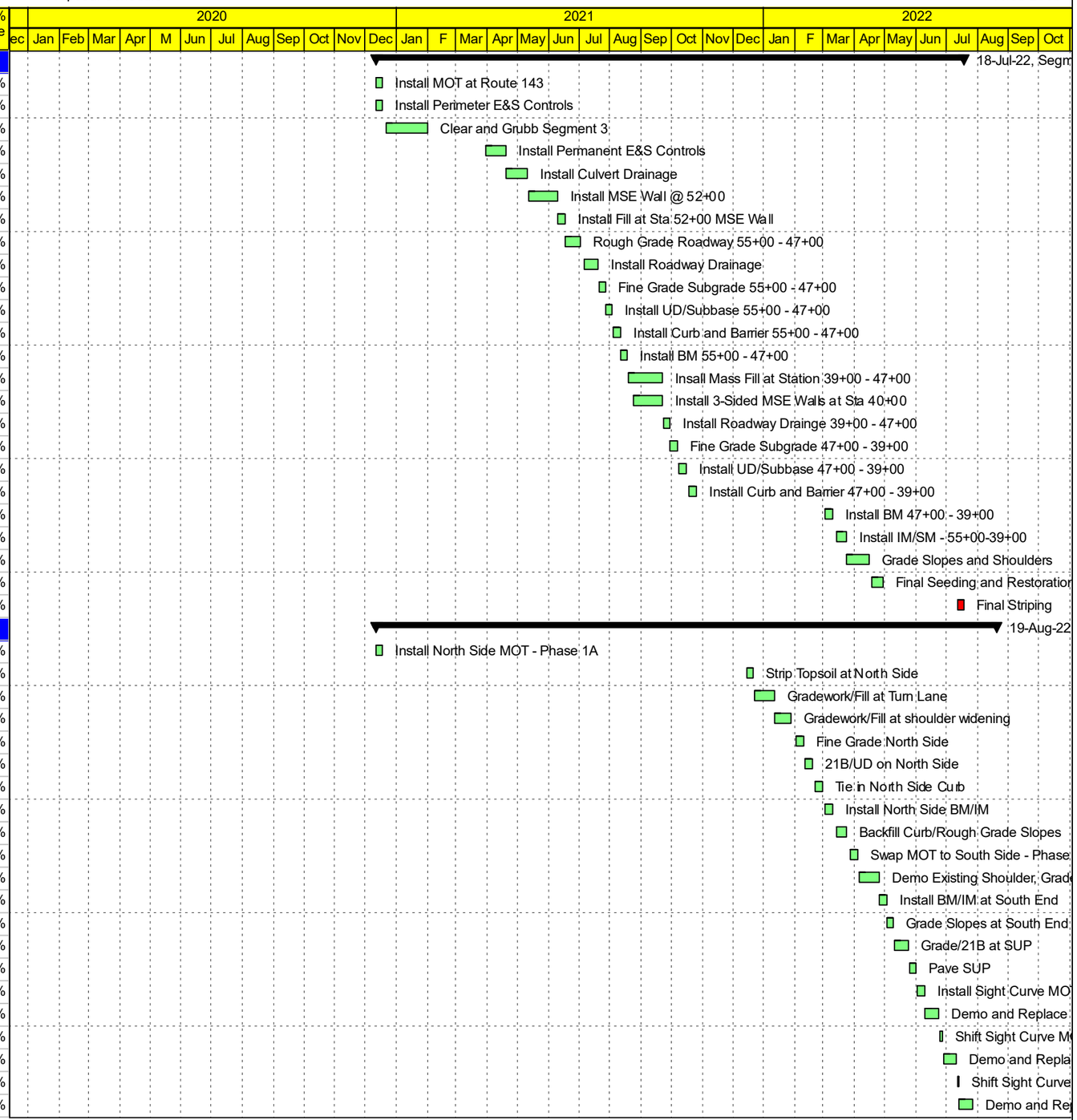
TASK filter: All Activities

Activity ID	Activity Name	Remaining Duration	Original Duration	Start	Finish	Activity % Complete
Segment 3 - Station 41+00 - 55+00		417	417	11-Dec-20	18-Jul-22	
A1230	Install MOT at Route 143	5	5	11-Dec-20	18-Dec-20	0%
A1240	Install Perimeter E&S Controls	5	5	11-Dec-20	18-Dec-20	0%
A1250	Clear and Grubb Segment 3	20	20	21-Dec-20	01-Feb-21	0%
A1260	Install Permanent E&S Controls	15	15	30-Mar-21	19-Apr-21	0%
A1290	Install Culvert Drainage	15	15	20-Apr-21	11-May-21	0%
A1270	Install MSE Wall @ 52+00	20	20	12-May-21	09-Jun-21	0%
A1280	Install Fill at Sta 52+00 MSE Wall	5	5	10-Jun-21	17-Jun-21	0%
A1320	Rough Grade Roadway 55+00 - 47+00	10	10	18-Jun-21	02-Jul-21	0%
A5670	Install Roadway Drainage	10	10	06-Jul-21	20-Jul-21	0%
A1330	Fine Grade Subgrade 55+00 - 47+00	5	5	21-Jul-21	27-Jul-21	0%
A1340	Install UD/Subbase 55+00 - 47+00	5	5	28-Jul-21	03-Aug-21	0%
A1350	Install Curb and Barrier 55+00 - 47+00	5	5	04-Aug-21	11-Aug-21	0%
A1360	Install BM 55+00 - 47+00	5	5	12-Aug-21	18-Aug-21	0%
A1370	Insall Mass Fill at Station 39+00 - 47+00	20	20	19-Aug-21	22-Sep-21	0%
A1380	Install 3-Sided MSE Walls at Sta 40+00	18	18	24-Aug-21	22-Sep-21	0%
A1870	Install Roadway Drainge 39+00 - 47+00	5	5	23-Sep-21	29-Sep-21	0%
A1390	Fine Grade Subgrade 47+00 - 39+00	5	5	30-Sep-21	07-Oct-21	0%
A1400	Install UD/Subbase 47+00 - 39+00	5	5	08-Oct-21	15-Oct-21	0%
A1410	Install Curb and Barrier 47+00 - 39+00	5	5	18-Oct-21	25-Oct-21	0%
A1420	Install BM 47+00 - 39+00	5	5	02-Mar-22	10-Mar-22	0%
A1430	Install IM/SM - 55+00-39+00	5	5	14-Mar-22	23-Mar-22	0%
A1440	Grade Slopes and Shoulders	15	15	24-Mar-22	15-Apr-22	0%
A1450	Final Seeding and Restoration	10	10	18-Apr-22	29-Apr-22	0%
A1460	Final Striping	5	5	12-Jul-22	18-Jul-22	0%
Improvements to Route 60		441	441	11-Dec-20	19-Aug-22	
A3390	Install North Side MOT - Phase 1A	5	5	11-Dec-20	18-Dec-20	0%
A3310	Strip Topsoil at North Side	5	5	15-Dec-21	21-Dec-21	0%
A3320	Gradework/Fill at Turn Lane	10	10	22-Dec-21	11-Jan-22	0%
A3330	Gradework/Fill at shoulder widening	10	10	12-Jan-22	28-Jan-22	0%
A3340	Fine Grade North Side	5	5	02-Feb-22	09-Feb-22	0%
A3350	21B/UD on North Side	6	6	10-Feb-22	18-Feb-22	0%
A3360	Tie in North Side Curb	5	5	21-Feb-22	28-Feb-22	0%
A3370	Install North Side BM/IM	5	5	02-Mar-22	10-Mar-22	0%
A3380	Backfill Curb/Rough Grade Slopes	6	6	14-Mar-22	24-Mar-22	0%
A3400	Swap MOT to South Side - Phase 1B	5	5	28-Mar-22	04-Apr-22	0%
A3410	Demo Existing Shoulder, Grade/Wedge 21B	15	15	05-Apr-22	25-Apr-22	0%
A3420	Install BM/IM at South End	5	5	26-Apr-22	02-May-22	0%
A3430	Grade Slopes at South End	5	5	03-May-22	09-May-22	0%
A3440	Grade/21B at SUP	10	10	10-May-22	24-May-22	0%
A3450	Pave SUP	5	5	25-May-22	01-Jun-22	0%
A3460	Install Sight Curve MOT - Phase 2A	5	5	02-Jun-22	09-Jun-22	0%
A3470	Demo and Replace Pavement WB	10	10	10-Jun-22	23-Jun-22	0%
A5700	Shift Sight Curve MOT - Phase 2B	2	2	24-Jun-22	27-Jun-22	0%
A5690	Demo and Replace Pavement Center	10	10	28-Jun-22	11-Jul-22	0%
A5710	Shift Sight Curve MOT - Phase 2C	2	2	12-Jul-22	13-Jul-22	0%
A3480	Demo and Replace Pavement, EB	10	10	14-Jul-22	27-Jul-22	0%



Actual Work | Critical Remaining Work | Summary
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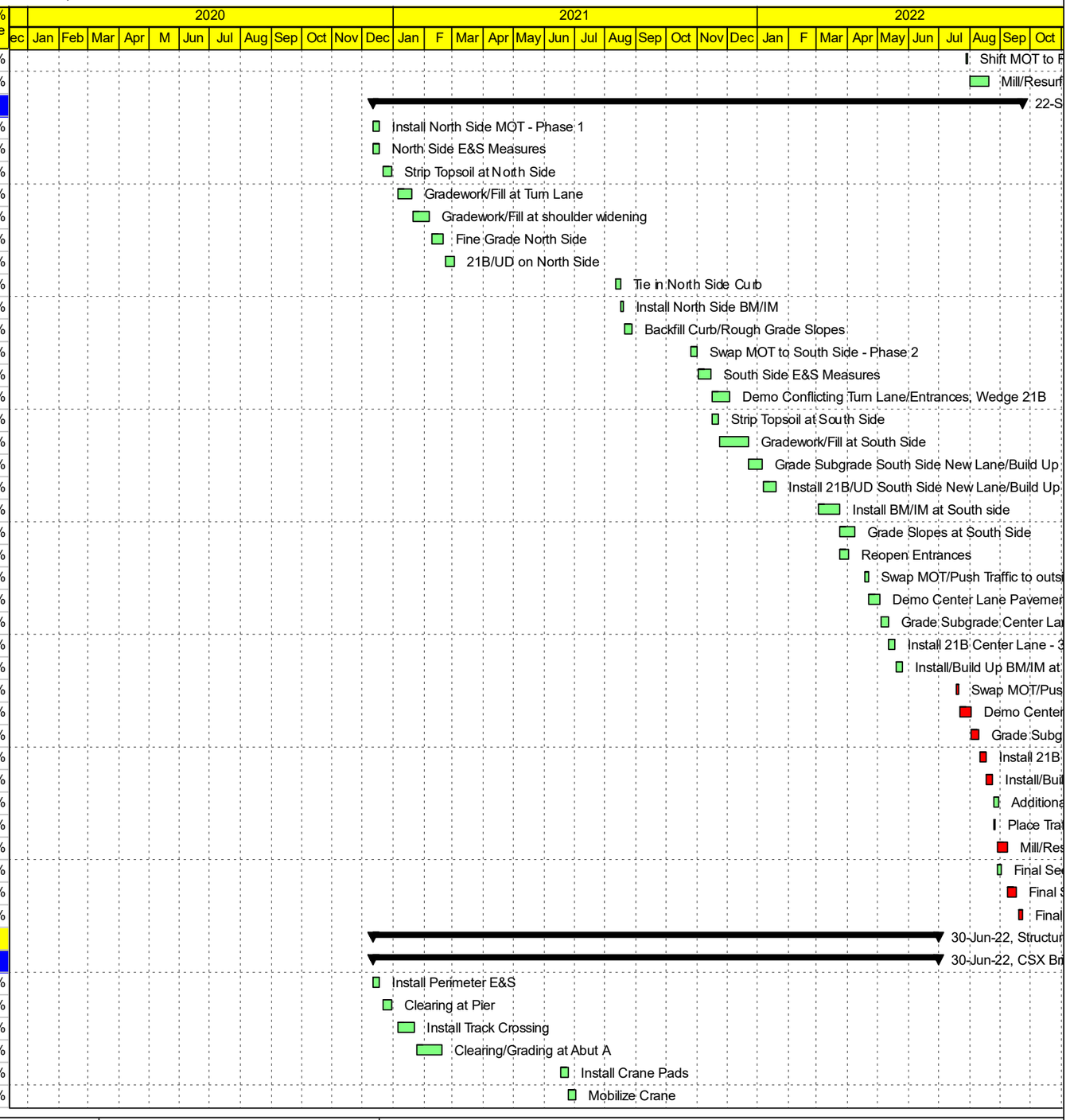
TASK filter: All Activities

Activity ID	Activity Name	Remaining Duration	Original Duration	Start	Finish	Activity % Complete
A5720	Shift MOT to Final Configuration - Phase 3	2	2	28-Jul-22	29-Jul-22	0%
A3490	Mill/Resurface/Stripe Route 60	15	15	01-Aug-22	19-Aug-22	0%
Improvements to Route 143		465	465	11-Dec-20	22-Sep-22	
A3630	Install North Side MOT - Phase 1	5	5	11-Dec-20	18-Dec-20	0%
A3820	North Side E&S Measures	5	5	11-Dec-20	18-Dec-20	0%
A3640	Strip Topsoil at North Side	5	5	21-Dec-20	30-Dec-20	0%
A3650	Gradework/Fill at Turn Lane	8	8	05-Jan-21	19-Jan-21	0%
A3660	Gradework/Fill at shoulder widening	10	10	21-Jan-21	05-Feb-21	0%
A3670	Fine Grade North Side	8	8	09-Feb-21	19-Feb-21	0%
A3680	21B/UD on North Side	6	6	22-Feb-21	03-Mar-21	0%
A3690	Tie in North Side Curb	3	3	12-Aug-21	16-Aug-21	0%
A3700	Install North Side BM/IM	3	3	17-Aug-21	19-Aug-21	0%
A3710	Backfill Curb/Rough Grade Slopes	5	5	20-Aug-21	27-Aug-21	0%
A3720	Swap MOT to South Side - Phase 2	5	5	26-Oct-21	01-Nov-21	0%
A3900	South Side E&S Measures	10	10	02-Nov-21	15-Nov-21	0%
A3730	Demo Conflicting Turn Lane/Entrances, Wedge :	10	10	16-Nov-21	03-Dec-21	0%
A3910	Strip Topsoil at South Side	5	5	16-Nov-21	22-Nov-21	0%
A3920	Gradework/Fill at South Side	15	15	23-Nov-21	22-Dec-21	0%
A3830	Grade Subgrade South Side New Lane/Build Up	10	10	23-Dec-21	05-Jan-22	0%
A3840	Install 21B/UD South Side New Lane/Build Up	10	10	06-Jan-22	19-Jan-22	0%
A3740	Install BM/IM at South side	10	10	02-Mar-22	23-Mar-22	0%
A3750	Grade Slopes at South Side	10	10	24-Mar-22	08-Apr-22	0%
A3850	Reopen Entrances	5	5	24-Mar-22	01-Apr-22	0%
A3780	Swap MOT/Push Traffic to outsides - Phase 3A	4	4	18-Apr-22	21-Apr-22	0%
A3860	Demo Center Lane Pavement - 3A	8	8	22-Apr-22	03-May-22	0%
A3870	Grade Subgrade Center Lane - 3A	6	6	04-May-22	11-May-22	0%
A3880	Install 21B Center Lane - 3A	5	5	12-May-22	18-May-22	0%
A3890	Install/Build Up BM/IM at Center Lane - 3A	4	4	19-May-22	25-May-22	0%
A5730	Swap MOT/Push Traffic to outsides - Phase 3B	3	3	19-Jul-22	21-Jul-22	0%
A5740	Demo Center Lane Pavement - 3B	8	8	22-Jul-22	02-Aug-22	0%
A5750	Grade Subgrade Center Lane - 3B	6	6	03-Aug-22	10-Aug-22	0%
A5760	Install 21B Center Lane - 3B	5	5	11-Aug-22	17-Aug-22	0%
A5770	Install/Build Up BM/IM at Center Lane - 3B	4	4	18-Aug-22	24-Aug-22	0%
A3930	Additional Build Up on North Side Lanes	4	4	25-Aug-22	30-Aug-22	0%
A3940	Place Traffic in Final Configuration - Phase 4	2	2	25-Aug-22	26-Aug-22	0%
A3810	Mill/Resurface Existing Route 143 Pavement	8	8	29-Aug-22	07-Sep-22	0%
A3970	Final Seeding	4	4	29-Aug-22	01-Sep-22	0%
A3950	Final Surface New Pavement	7	7	08-Sep-22	16-Sep-22	0%
A3960	Final Striping	4	4	19-Sep-22	22-Sep-22	0%
Structures		405	405	11-Dec-20	30-Jun-22	
CSX Bridge		405	405	11-Dec-20	30-Jun-22	
A2230	Install Perimeter E&S	5	5	11-Dec-20	18-Dec-20	0%
A2220	Clearing at Pier	5	5	21-Dec-20	30-Dec-20	0%
A2130	Install Track Crossing	10	10	05-Jan-21	22-Jan-21	0%
A2150	Clearing/Grading at Abut A	15	15	25-Jan-21	18-Feb-21	0%
A2160	Install Crane Pads	5	5	18-Jun-21	24-Jun-21	0%
A2140	Mobilize Crane	5	5	25-Jun-21	02-Jul-21	0%



Actual Work | Critical Remaining Work | Summary
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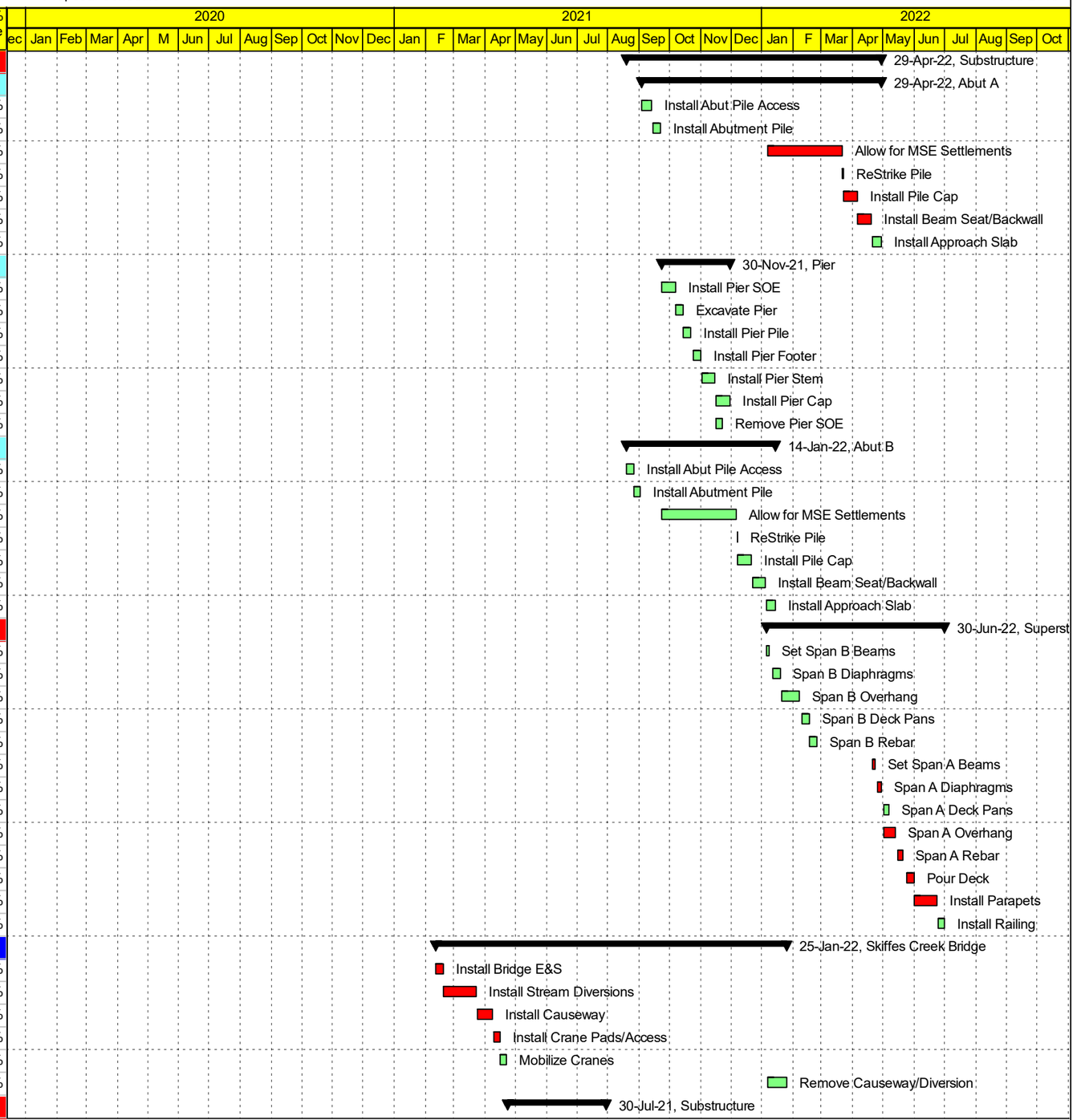
TASK filter: All Activities

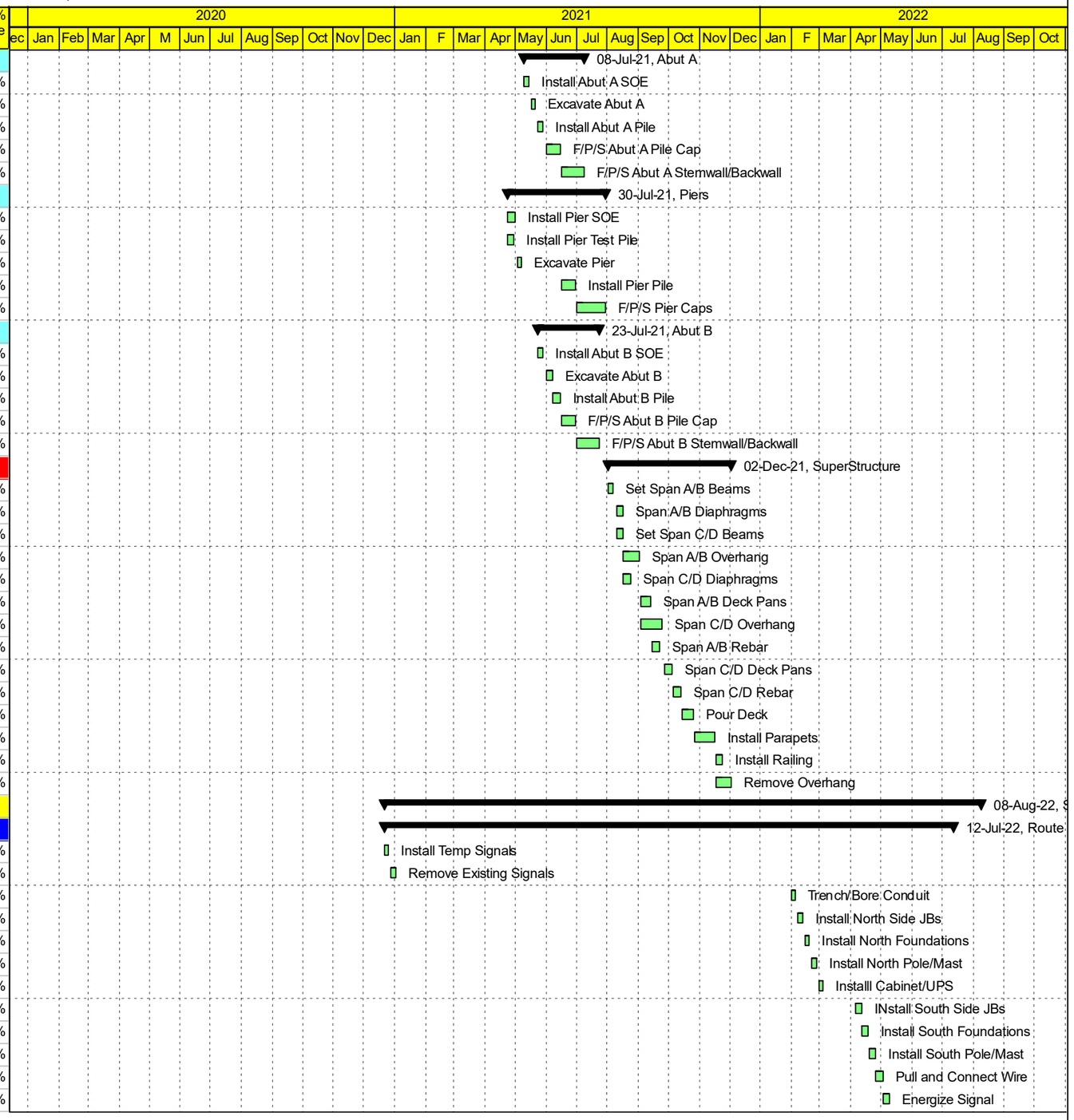
Activity ID	Activity Name	Remaining Duration	Original Duration	Start	Finish	Activity % Complete
Substructure		182	182	19-Aug-21	29-Apr-22	
Abut A		171	171	03-Sep-21	29-Apr-22	
A2270	Install Abut Pile Access	5	5	03-Sep-21	13-Sep-21	0%
A2290	Install Abutment Pile	5	5	15-Sep-21	22-Sep-21	0%
A2300	Allow for MSE Settlements	75	75	06-Jan-22	21-Mar-22	0%
A2330	ReStrike Pile	1	1	22-Mar-22	22-Mar-22	0%
A2310	Install Pile Cap	8	8	23-Mar-22	05-Apr-22	0%
A2320	Install Beam Seat/Backwall	10	10	06-Apr-22	19-Apr-22	0%
A2350	Install Approach Slab	8	8	20-Apr-22	29-Apr-22	0%
Pier		42	42	23-Sep-21	30-Nov-21	
A2170	Install Pier SOE	8	8	23-Sep-21	06-Oct-21	0%
A2180	Excavate Pier	5	5	07-Oct-21	14-Oct-21	0%
A2190	Install Pier Pile	5	5	15-Oct-21	22-Oct-21	0%
A2200	Install Pier Footer	6	6	25-Oct-21	01-Nov-21	0%
A2210	Install Pier Stem	10	10	02-Nov-21	15-Nov-21	0%
A2250	Install Pier Cap	8	8	16-Nov-21	30-Nov-21	0%
A2260	Remove Pier SOE	5	5	16-Nov-21	22-Nov-21	0%
Abut B		107	107	19-Aug-21	14-Jan-22	
A2340	Install Abut Pile Access	5	5	19-Aug-21	26-Aug-21	0%
A2360	Install Abutment Pile	5	5	27-Aug-21	02-Sep-21	0%
A5640	Allow for MSE Settlements	75	75	23-Sep-21	06-Dec-21	0%
A5650	ReStrike Pile	1	1	07-Dec-21	07-Dec-21	0%
A2390	Install Pile Cap	8	8	08-Dec-21	21-Dec-21	0%
A2400	Install Beam Seat/Backwall	10	10	22-Dec-21	04-Jan-22	0%
A3180	Install Approach Slab	8	8	05-Jan-22	14-Jan-22	0%
Superstructure		105	105	05-Jan-22	30-Jun-22	
A2460	Set Span B Beams	3	3	05-Jan-22	07-Jan-22	0%
A2470	Span B Diaphragms	5	5	11-Jan-22	18-Jan-22	0%
A2480	Span B Overhang	10	10	20-Jan-22	07-Feb-22	0%
A2490	Span B Deck Pans	5	5	09-Feb-22	16-Feb-22	0%
A2500	Span B Rebar	5	5	17-Feb-22	24-Feb-22	0%
A2410	Set Span A Beams	3	3	20-Apr-22	22-Apr-22	0%
A2420	Span A Diaphragms	5	5	25-Apr-22	29-Apr-22	0%
A2440	Span A Deck Pans	5	5	02-May-22	06-May-22	0%
A2430	Span A Overhang	10	10	02-May-22	13-May-22	0%
A2450	Span A Rebar	5	5	16-May-22	20-May-22	0%
A2510	Pour Deck	5	5	24-May-22	31-May-22	0%
A2520	Install Parapets	15	15	01-Jun-22	23-Jun-22	0%
A2530	Install Railing	5	5	24-Jun-22	30-Jun-22	0%
Skiffes Creek Bridge		249	249	11-Feb-21	25-Jan-22	
A1730	Install Bridge E&S	5	5	11-Feb-21	18-Feb-21	0%
A2720	Install Stream Diversions	15	15	19-Feb-21	23-Mar-21	0%
A2730	Install Causeway	10	10	24-Mar-21	08-Apr-21	0%
A1740	Install Crane Pads/Access	5	5	09-Apr-21	15-Apr-21	0%
A1750	Mobilize Cranes	5	5	16-Apr-21	22-Apr-21	0%
A2740	Remove Causeway/Diversion	10	10	06-Jan-22	25-Jan-22	0%
Substructure		71	71	23-Apr-21	30-Jul-21	



Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone

TASK filter: All Activities

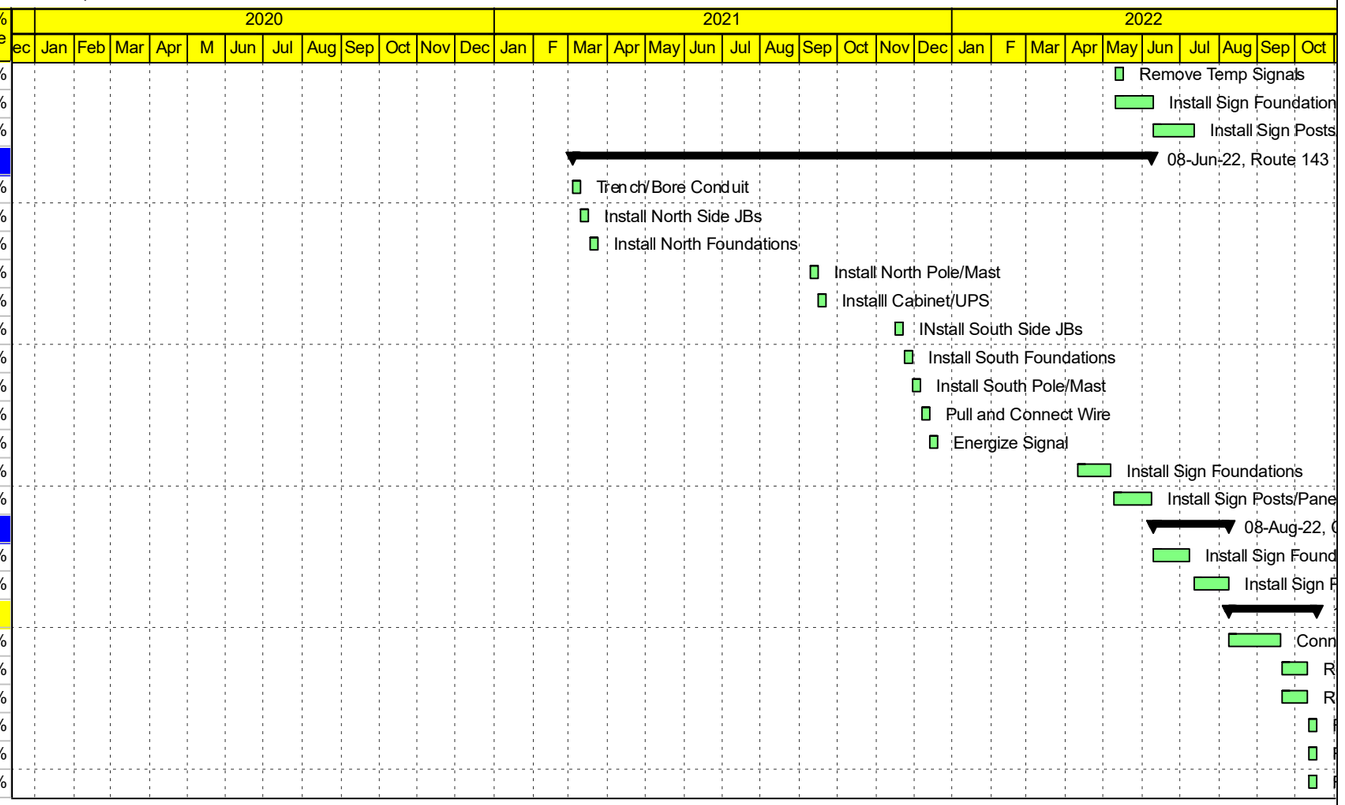
Activity ID	Activity Name	Remaining Duration	Original Duration	Start	Finish	Activity % Complete
Abut A		40	40	10-May-21	08-Jul-21	
A1820	Install Abut A SOE	5	5	10-May-21	14-May-21	0%
A1830	Excavate Abut A	5	5	17-May-21	21-May-21	0%
A1840	Install Abut A Pile	5	5	24-May-21	28-May-21	0%
A1850	F/P/S Abut A Pile Cap	10	10	01-Jun-21	15-Jun-21	0%
A1860	F/P/S Abut A Stemwall/Backwall	15	15	16-Jun-21	08-Jul-21	0%
Piers		71	71	23-Apr-21	30-Jul-21	
A1760	Install Pier SOE	5	5	23-Apr-21	30-Apr-21	0%
A3790	Install Pier Test Pile	5	5	23-Apr-21	29-Apr-21	0%
A1770	Excavate Pier	5	5	03-May-21	07-May-21	0%
A1780	Install Pier Pile	10	10	16-Jun-21	30-Jun-21	0%
A1810	F/P/S Pier Caps	20	20	01-Jul-21	30-Jul-21	0%
Abut B		40	40	24-May-21	23-Jul-21	
A1880	Install Abut B SOE	5	5	24-May-21	28-May-21	0%
A1890	Excavate Abut B	5	5	01-Jun-21	07-Jun-21	0%
A1900	Install Abut B Pile	5	5	08-Jun-21	15-Jun-21	0%
A1910	F/P/S Abut B Pile Cap	10	10	16-Jun-21	30-Jun-21	0%
A1920	F/P/S Abut B Stemwall/Backwall	15	15	01-Jul-21	23-Jul-21	0%
SuperStructure		75	75	02-Aug-21	02-Dec-21	
A1940	Set Span A/B Beams	5	5	02-Aug-21	06-Aug-21	0%
A1950	Span A/B Diaphragms	5	5	10-Aug-21	16-Aug-21	0%
A1990	Set Span C/D Beams	5	5	10-Aug-21	16-Aug-21	0%
A1970	Span A/B Overhang	12	12	17-Aug-21	02-Sep-21	0%
A2000	Span C/D Diaphragms	5	5	17-Aug-21	24-Aug-21	0%
A1960	Span A/B Deck Pans	5	5	03-Sep-21	13-Sep-21	0%
A2010	Span C/D Overhang	12	12	03-Sep-21	24-Sep-21	0%
A1980	Span A/B Rebar	5	5	15-Sep-21	22-Sep-21	0%
A2020	Span C/D Deck Pans	5	5	27-Sep-21	04-Oct-21	0%
A2030	Span C/D Rebar	5	5	06-Oct-21	13-Oct-21	0%
A2040	Pour Deck	8	8	14-Oct-21	26-Oct-21	0%
A2050	Install Parapets	15	15	27-Oct-21	16-Nov-21	0%
A2060	Install Railing	5	5	17-Nov-21	23-Nov-21	0%
A2750	Remove Overhang	8	8	17-Nov-21	02-Dec-21	0%
Signage and Signals		426	426	21-Dec-20	08-Aug-22	
Route 60		407	407	21-Dec-20	12-Jul-22	
A3610	Install Temp Signals	5	5	21-Dec-20	25-Dec-20	0%
A3600	Remove Existing Signals	5	5	28-Dec-20	01-Jan-21	0%
A3500	Trench/Bore Conduit	5	5	31-Jan-22	04-Feb-22	0%
A3510	Install North Side JBs	5	5	07-Feb-22	11-Feb-22	0%
A3530	Install North Foundations	5	5	14-Feb-22	18-Feb-22	0%
A3550	Install North Pole/Mast	5	5	21-Feb-22	25-Feb-22	0%
A3570	Installl Cabinet/UPS	5	5	28-Feb-22	04-Mar-22	0%
A3520	INstall South Side JBs	5	5	05-Apr-22	11-Apr-22	0%
A3540	Install South Foundations	5	5	12-Apr-22	18-Apr-22	0%
A3560	Install South Pole/Mast	5	5	19-Apr-22	25-Apr-22	0%
A3580	Pull and Connect Wire	5	5	26-Apr-22	02-May-22	0%
A3590	Energize Signal	5	5	03-May-22	09-May-22	0%



Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone

TASK filter: All Activities

Activity ID	Activity Name	Remaining Duration	Original Duration	Start	Finish	Activity % Complete
A3620	Remove Temp Signals	5	5	10-May-22	16-May-22	0%
A4250	Install Sign Foundations	20	20	10-May-22	09-Jun-22	0%
A4260	Install Sign Posts/Panels	20	20	10-Jun-22	12-Jul-22	0%
Route 143		330	330	04-Mar-21	08-Jun-22	
A3990	Trench/Bore Conduit	5	5	04-Mar-21	10-Mar-21	0%
A4000	Install North Side JBs	5	5	11-Mar-21	17-Mar-21	0%
A4010	Install North Foundations	5	5	18-Mar-21	24-Mar-21	0%
A4020	Install North Pole/Mast	5	5	09-Sep-21	15-Sep-21	0%
A4030	Installl Cabinet/UPS	5	5	16-Sep-21	22-Sep-21	0%
A4040	INstall South Side JBs	5	5	16-Nov-21	22-Nov-21	0%
A4050	Install South Foundations	5	5	23-Nov-21	29-Nov-21	0%
A4060	Install South Pole/Mast	5	5	30-Nov-21	06-Dec-21	0%
A4070	Pull and Connect Wire	5	5	07-Dec-21	13-Dec-21	0%
A4080	Energize Signal	5	5	14-Dec-21	20-Dec-21	0%
A4230	Install Sign Foundations	20	20	11-Apr-22	06-May-22	0%
A4240	Install Sign Posts/Panels	20	20	09-May-22	08-Jun-22	0%
Connector		40	40	09-Jun-22	08-Aug-22	
A4210	Install Sign Foundations	20	20	09-Jun-22	08-Jul-22	0%
A4220	Install Sign Posts/Panels	20	20	12-Jul-22	08-Aug-22	0%
Landscaping		50	50	09-Aug-22	17-Oct-22	
A5350	Connector Landscaping	30	30	09-Aug-22	19-Sep-22	0%
A5360	Route 60 Landscaping	15	15	20-Sep-22	10-Oct-22	0%
A5370	Route 143 Landscaping	15	15	20-Sep-22	10-Oct-22	0%
A5380	ReDress Connector	5	5	11-Oct-22	17-Oct-22	0%
A5390	ReDress Route 60	5	5	11-Oct-22	17-Oct-22	0%
A5400	Redress Route 143	5	5	11-Oct-22	17-Oct-22	0%



Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone

TASK filter: All Activities

In association with

CORMAN KOKOSING | PARSONS