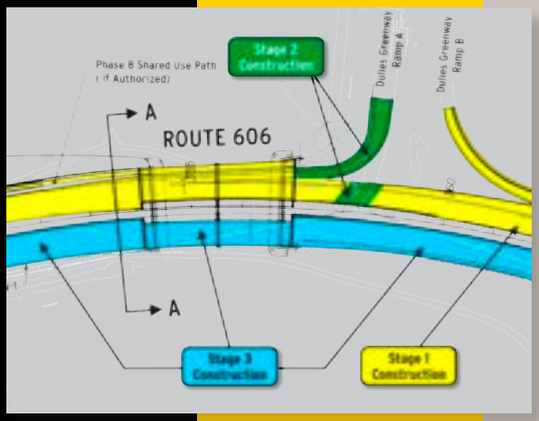
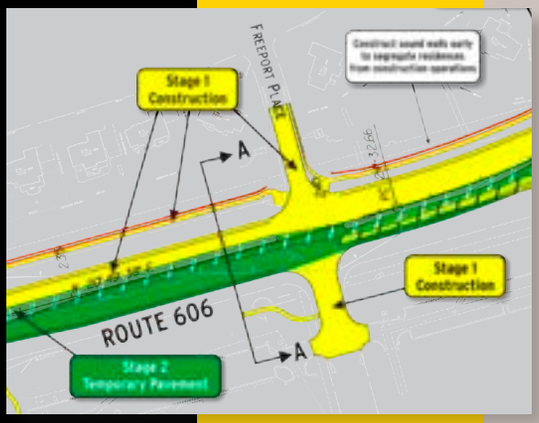
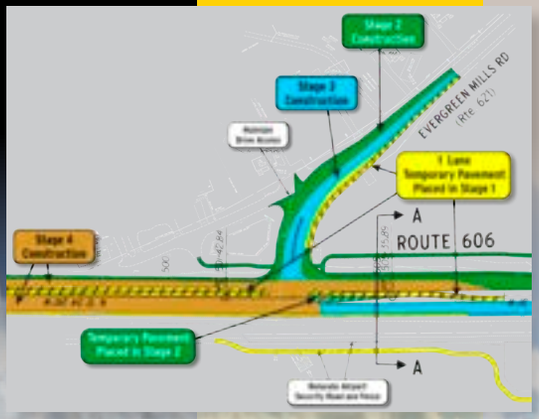






VDOT
Virginia Department of Transportation

Technical Proposal – Volume I

A DESIGN-BUILD PROJECT

Route 606 Loudoun County Parkway/Old Ox Road Reconstruction and Widening

From: 0.265 Miles South of Route 621 Evergreen Mills Road

To: 0.073 Miles South of Route 267 Dulles Greenway

Loudoun County, Virginia

State Project No.: 0606-053-983

Federal Project No.: FPN 5A01(165)

Contract ID No.: C00097529DB64

Date: March 24, 2014

American Infrastructure

RK&K

4.0.1.1 Technical Proposal Checklist

ATTACHMENT 4.0.1.1

ROUTE 606 LOUDOUN COUNTY PARKWAY/OLD OX ROAD RECONSTRUCTION AND WIDENING

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

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

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Technical Proposal Checklist and Contents	Attachment 4.0.1.1	Section 4.0.1.1	no	i-iii
Acknowledgement of RFP, Revisions, and/or Addenda	Attachment 3.6 (Form C-78-RFP)	Sections 3.6, 4.0.1.1	no	iv
Letter of Submittal	NA	Sections 4.1		1-2
Letter of Submittal on Offeror's letterhead	NA	Section 4.1.1	yes	1-2
Offeror's official representative information	NA	Section 4.1.1	yes	2
Authorized representative's original signature	NA	Section 4.1.1	yes	2
Declaration of intent	NA	Section 4.1.2	yes	2
120 day declaration	NA	Section 4.1.3	yes	2
Offeror's Point of Contact Information	NA	Section 4.1.4	yes	2
Principal Officer Information	NA	Section 4.1.5	yes	2
Final Completion Date	NA	Section 4.1.6	yes	2
Proposal Payment Agreement or Waiver of Proposal Payment	Attachment 9.3.1 or 9.3.2	Section 4.1.7	no	Appx. 4.1.7
Certification Regarding Debarment Forms	Attachment 11.8.6(a) Attachment 11.8.6(b)	Section 4.1.8	no	Appx. 4.1.8
Written statement Technical Proposal fully compliant with RFP requirements	NA	Section 4.1.9	yes	2

ATTACHMENT 4.0.1.1

ROUTE 606 LOUDOUN COUNTY PARKWAY/OLD OX ROAD RECONSTRUCTION AND WIDENING

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Certification of ROW limits and Design Waivers/Exceptions	NA	4.1.9	yes	2
Offeror's Qualifications	NA	Section 4.2		3-4
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	4
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.2	yes	3-4
Design Concept	NA	Section 4.3		5-17, Vol II 1-20
Conceptual Roadway Plans and description	NA	Section 4.3.1.1	yes	5-16, Vol II 1-15
Conceptual Structural Plans and description	NA	Section 4.3.1.2	yes	16-17, Vol II 16-20
Project Approach	NA	Section 4.4		18-33
Utilities	NA	Section 4.4.1	yes	18-22
Geotechnical	NA	Section 4.4.2	yes	22-27
Quality Assurance/ Quality Control (QA/QC)	NA	Section 4.4.3	yes	28-33

ATTACHMENT 4.0.1.1

ROUTE 606 LOUDOUN COUNTY PARKWAY/OLD OX ROAD RECONSTRUCTION AND WIDENING

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Construction of Project	NA	Section 4.5		34-49
Sequence of Construction	NA	Section 4.5.1	yes	34-43
Transportation Management Plan	NA	Section 4.5.2	yes	43-46
Dam Construction	NA	Section 4.5.3	yes	46-49
Disadvantaged Business Enterprises (DBE)	NA	Section 4.6		50
Written statement of percent DBE participation	NA	Section 4.6	yes	50
DBE subcontracting narrative	NA	Section 4.6	yes	50
Proposal Schedule	NA	Section 4.7		Section 4.7
Proposal Schedule	NA	Section 4.7	no	n/a
Proposal Schedule Narrative	NA	Section 4.7	no	n/a
Proposal Schedule in electronic format (CD-ROM)	NA	Section 4.7	no	n/a

Attachment 3.6
Form C-78-RFP

Form C-78-RFP

ATTACHMENT 3.6

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

RFP NO. C00097529DB64

PROJECT NO.: 0606-053-983

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 November 26,2013 (Date)
2. Cover letter of February 21, 2014 (Date)
3. Cover letter of March 10, 2014 (Date)

SIGNATURE

03/24/2014
DATE

AMERICAN INFRASTRUCTURE-VA, INC.

By: Aaron T. Myers, Vice President/General Manager

4.1 Letter of Submittal

301 Concourse Boulevard, Suite 300
Glen Allen, VA 23059
Phone: 804-290-8500 Fax: 804-418-7935
www.americaninfrastructure.com

March 24, 2014

John C. Daoulas, P.E.
Virginia Department of Transportation
Alternative Project Delivery Office
1401 East Broad Street
Annex Building, 8th Floor
Richmond, VA 23219

Letter of Submittal/Technical Proposal:
Route 606 Loudoun County Parkway/Old Ox Road
Reconstruction and Widening
State Project No. 0606-053-983
Federal Project No.: FPN 5A01 (165)
Contract ID Number: C00097529DB64

Dear Mr. John Daoulas:

The Team of American Infrastructure (AI) and Rummel, Klepper, & Kahl (RK&K) appreciate being short-listed by the Virginia Department of Transportation (VDOT) for the Route 606 Loudoun County Parkway/Old Ox Road Reconstruction and Widening Project (the Project). This short-list provides us with an excellent opportunity to present our technical approach to the Project. Through our investigations, studies, assessments and preliminary design, we have endeavored to present a cost-effective solution which addresses the scope of work outlined in the Request for Proposal (RFP). Although our Team realizes our cost-effective solution will play a significant role in VDOT's evaluation of our submission, we would like to point out that our Team has spent a considerable amount of time developing strategies to address and mitigate the inherent Project risks for all stakeholders, specifically how we would minimize construction impacts to local residents, the traveling public, and stakeholders at large. The entire AI/RK&K Team is excited to partner with VDOT on this Project and will work diligently to safely deliver a quality product on-time, within budget, and that exceeds expectations of our mutual customer base, the travelling public.

AI and RK&K have been delivering successful Projects to VDOT and the local communities throughout Northern Virginia (NOVA) for many years. We have hands-on experience in both design and construction of large scale transportation improvement projects in NOVA utilizing various project delivery methods. By combining our resources for this design-build project, VDOT and its constituents will realize the benefits of our successes, specifically in minimization of possible construction related disruptions to everyday life. Our proof of this statement is reflected in the following design and construction advances we have applied to the RFP which will economize the design, minimize construction costs and durations, provide a safe working environment for construction personnel and stakeholders, and minimize long-term maintenance needs:

- Reductions of the roadway vertical profile to limit the amount of material traveling to and from the construction site. Fewer dump trucks on adjacent roadways during construction will yield a safer environment for all, especially local residents;
- Development of a concise Transportation Management Plan/ Sequence of Construction coupled with a proactive and comprehensive public outreach will aid in communication and limit surprises. Local residents and the traveling public will be able to plan for upcoming traffic shifts and avoid delays;
- Implementation of a five-phased concurrent construction plan will streamline construction activities and the duration of construction. The duration of impacts to all stakeholders will be limited as the construction periods will be minimized; and

- Establishment of a partnership between VDOT and the AI/RK&K Team will streamline the design/construction process, presenting cost-effective solutions and resulting in more available construction funds for priority NOVA Projects.

SUBMITTAL REQUIREMENTS – Our Team submits the information as requested in Section 4.1 of the RFP:

4.1.1 The full legal name and address of American Infrastructure – VA, Inc. (AI-VA) is as follows:
American Infrastructure – VA, Inc., 301 Concourse Boulevard, Suite 300, Glen Allen, VA 23059

4.1.2 American Infrastructure – VA, Inc. intends to enter into a contract with VDOT for the Project in accordance with the terms of the RFP.

4.1.3 The offer represented by the Technical and Price Proposals will remain in full force and effect for one hundred and twenty days after the Technical Proposal is submitted to VDOT on March 24, 2014.

4.1.4 Design-Build Project Manager, Kevin Ott is the primary point of contact for the AI/RK&K Team and is responsible for the oversight of the entire AI/RK&K Team. We are committed to keeping Kevin, as well as the other key personnel for the Route 606 Project, intact for the duration of design and construction of the Project. Kevin and the majority of his staff are located in Northern Virginia; AI is currently fitting out a new and expanded Northern Virginia office that will be available in April 2014. During procurement of the Project, Kevin's official correspondence should be sent to our Virginia headquarters office, in Glen Allen.

Kevin Ott, Design-Build Project Manager
301 Concourse Boulevard, Suite 300
Glen Allen, VA 23059

571-247-2833 (Telephone)
804-418-7935 (Fax)
kevin.ott@americaninfrastructure.com

Effective April 17, 2014 for official correspondence, our Northern Virginia Office address will be:
12500 Fair Lake Circle, Suite 150
Fairfax, VA 22033

4.1.5 The principal officer of AI-VA with whom a design-build contract with VDOT would be written is:

Aaron Myers, Vice President/General Manager
301 Concourse Boulevard, Suite 300
Glen Allen, VA 23059

804.290.8500 (Telephone)
804.418.7935 (Fax)
aaron.myers@americaninfrastructure.com

4.1.6 The Final Completion date of September 8, 2017 is reflected in the Proposal Schedule and meets the planned Completion Date identified by Section 2.3.1 of the RFP.

4.1.7 An executed Proposal Payment Agreement (Attachment 9.3.1) is included in Appendix 4.1.7.

4.1.8 Certification Regarding Debarment Forms are included in Appendix 4.1.8 for Primary Covered Transactions (Attachment 11.8.6(a)) and Lower Tier Covered Transactions (Attachment 11.8.6(b)).

4.1.9 This Technical Proposal is fully compliant with the Roadway and Dam Design Criteria and all other requirements of the RFP. The proposed limits of construction are within the ROW limits allowed by the RFP and Addenda. The design concept does not require any Design Exceptions, Design Waivers, or Access Management Waivers not identified or included in the RFP or Addendum.

We appreciate your consideration of our Technical Proposal and trust your review will find our approach is in alignment with VDOT's priorities for the Project.

Respectfully,

Aaron T. Myers, Vice President/General Manager
American Infrastructure – VA, Inc.

4.2 Qualifications

CONFIRMATION OF SOQ INFORMATION

In accordance with Section 11.4 of the RFP, the information contained in our SOQ remains true and accurate. The AI/RK&K Team is committed to keeping the eight key personnel identified in our SOQ intact throughout the duration of design and construction of the Project. Our key personnel's experience on roadway widening and high hazard dams provides a strong team to manage the risks associated with the Route 606 Project.

Design-Build Project Manager (DBPM), Kevin Ott: Kevin has 17 years of experience and managed the I-95 at Contee Road Interchange and Inter-County Connector design-build projects. As a resident of Loudoun County, Kevin has the ability and will respond promptly to any concerns VDOT's Northern Virginia (NOVA) District may have throughout design and construction of the Route 606 Project.

Quality Assurance Manager (QAM), Miriam Kronisch, P.E., CCM: Miriam (Mimi) has 17 years of experience including 12 years of Construction Management representing VDOT on large transportation projects, including the Fairfax County Parkway/ Fair Lakes Interchange project. Mimi is local to Northern Virginia and is familiar with Loudoun County's Erosion and Sediment Control and Grading permit process.

Design Manager (DM), Owen Peery, P.E.: Owen has 30 years of design experience and leads RK&K's transportation efforts throughout Virginia. He has managed approximately 150 VDOT project assignments over the past 15 years, including many related to design-build projects, and is currently managing the I-64 Widening design-build project in Richmond, for which the design will be complete by Spring 2014.

Construction Manager (CM), Robert Rube: Robert (Bob) has 31 years of construction experience and 8 years of experience constructing large-scale transportation projects similar to the Route 606 Project. Bob managed construction of the $171M PA Turnpike widening and $80M SR 476 design-build projects. His High Hazard dam construction experience includes the Pine and Rapp Run High Hazard dams in PA.

Lead Geotechnical Engineer (LGE), Cari Beenenga, P.E.: Cari has 25 years of experience, including 15 years of experience as a LGE on projects including the Lyman Run High Hazard Dam Replacement project. She has been involved in the planning, design, and construction of multiple high hazard dams.

Dam Designer, Boyd Howard, P.E.: Boyd has 24 years of experience and has designed 24 dam projects, including the Hunting Run High Hazard Dam and Reservoir in Spotsylvania County, VA which included a new 2,400-foot-long, 90-foot-high combined roller-compacted concrete/ embankment dam.

Dam Construction Coordinator, Jerry Risser: Jerry has 32 years of construction experience and was the Superintendent for construction of the Lyman Run High Hazard Dam Rehabilitation project. He has extensive experience as a structures superintendent for bridges and retaining wall construction.

Dam Inspector, Timothy Johnson, P.E.: Timothy has 38 years of experience and has inspected over 60 dams, including 15 in Virginia. He inspected the Lyman Run High Hazard Dam during construction and is currently performing design services for upgrades to Virginia DCR's Briery Branch Dam.

ORGANIZATIONAL CHART AND NARRATIVE

Our organizational structure remains unchanged since submission of the SOQ.

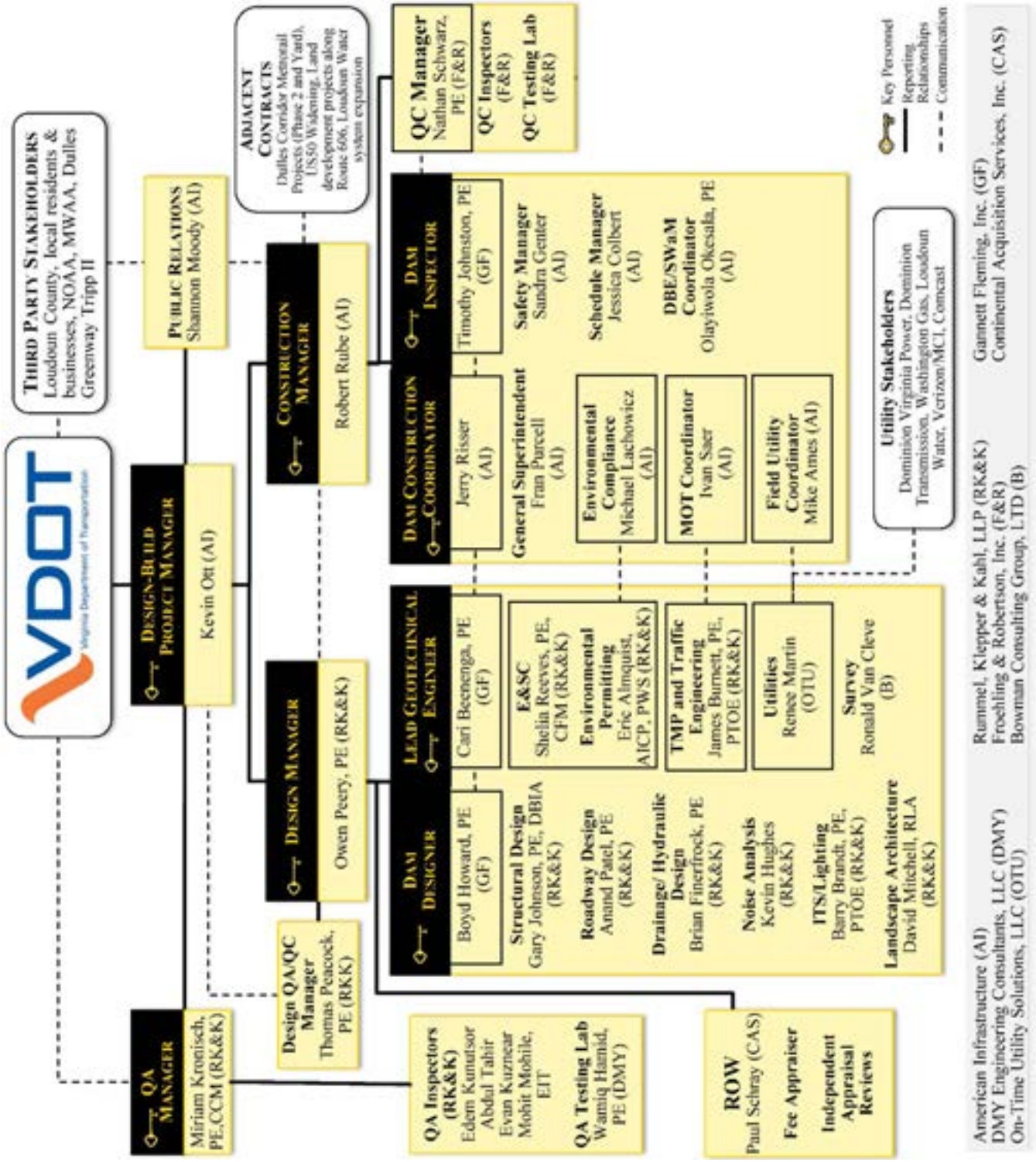
VDOT – VDOT will coordinate directly with Kevin Ott (DBPM) as the primary contact for the Project. Open lines of communication between Mimi Kronisch (QAM) and VDOT will assist with monitoring QA oversight. VDOT's oversight and support is anticipated in coordination efforts with project stakeholders, which will be managed by Shannon Moody (PR Manager).

Design-Build Management – Reporting to the Kevin Ott (DBPM) are four primary reports; the QAM, DM, CM, and PR Manager. This structure will ensure the design, construction, dam coordination, and environmental compliance efforts remain on-schedule and in conformance with VDOT commitments.

Quality Assurance – Mimi Kronisch (QAM) will report to Kevin Ott (DBPM) with independent oversight by VDOT. QA Inspectors and Labs will report through Mimi, who will also monitor Construction QC to ensure all work and materials incorporated into the Project are in accordance with all applicable requirements.

Design – Owen Peery (DM) will report to Kevin Ott (DBPM). Owen will coordinate with Bob Rube (CM) to develop an efficient and constructible design and confirm field conditions meet design assumptions. The Design QA/QC Manager will report to Owen. Gannett Fleming, Continental Field Services, On-Time Utility Solutions, Bowman, and DMY will subcontract with RK&K and their discipline leads will report to Owen.

Construction– Bob Rube (CM) will report to Kevin Ott (DBPM) and will coordinate with Owen Peery (DM) to ensure construction is consistent with the project design. He will coordinate with adjacent projects and Shannon Moody (PR Manager) to provide construction progress updates. F&R will oversee Construction QC.



4.3 Design Concept

The AI/RK&K Team thoroughly investigated the project site and we understand and accept the requirements of the RFP. Our Team members have visited the site on several occasions and at various times of the day over the past eight months to review conditions and observe how the existing road operates. The proposed design meets or exceeds all of the technical requirements presented in the RFP. Our design approach focused on an optimization of the well-thought-out preliminary plans that were prepared for the widening of Route 606. In our analysis, several opportunities were identified to offer alternative solutions that meet the project requirements while reducing costs, minimizing impacts to the traveling public during construction, and providing for facilitated future improvements for the corridor. The design optimizations that are being proposed include the following:

- Bifurcating the profile to conform to the topography of the area while meeting all of the project criteria, including the ability for crossovers in the future, and ensuring that potential new intersection locations can be incorporated into the roadway;
- Lowering the profile to reduce borrow requirements while providing appropriate connections to side streets and driveway (reduces dump trucks carrying borrow material and improves safety);
- Rotating the superelevation about the center of travel lanes to reduce the elevation differences across the roadway section;
- Employing a variety of stormwater management options to appropriately convey and treat stormwater runoff from the roadway based on the adjusted profile;
- Optimizing the Cabin Branch culvert crossing to reduce construction cost and facilitate maintenance of traffic during construction; and
- Ensuring that the current design does not require major redesign/construction to accommodate future drainage installations, median crossovers or superelevation requirements.

DESIGN CRITERIA

The AI/RK&K Team proposal meets or exceeds all of the design criteria indicated for the Project as detailed in the RFP. No deviations from those criteria are proposed, nor do we propose any Design Waivers, Design Exceptions or Access Management Waivers beyond those permitted in the RFP. The required lane configurations presented in the RFP plans have been followed, and the road will function at a level of service required by the RFP. In addition, the Horsepen Dam improvements were studied in detail by our Team. We fully understand that VDOT has identified that this area is to be bid as detailed in the plans.

4.3.1 CONCEPTUAL ROADWAY PLANS

Volume II of this Technical Proposal contains the 11” x 17” graphics that illustrate our Conceptual Project Plans. Callout boxes throughout the plans demonstrate how the proposed design complies with the RFP requirements and benefits VDOT in future improvements to the roadway. To explain our concept and each benefit to the Project, we have narratively addressed each element (Items “a” through “h”) from the RFP.

(a) GENERAL GEOMETRY

With respect to the geometry, the specifications provided in the RFP designate the geometry and configuration of each of the roadways included in the design package. We noted that the design to be completed under this contract shall be compatible with future improvements, including the addition of third and fourth lanes in each direction of Route 606, the future access to the WMATA Rail Maintenance Yard and the future connection with Loudoun County Parkway. *Table 4.3.1 Roadway Geometry* shows the geometric standards to be used in the development of the proposed roadway facility.

Table 4.3.1 Roadway Geometry

ROADWAY	GS ST'D	NUMBER AND WIDTH OF LANES	WIDTHS OF SHOULDERS OR CURB & GUTTER	WIDTH OF SIDEWALKS/ SHARED USE PATHS
Rte 606	GS-6	4 – 12' travel lanes with provisions for ultimate 8 lanes	8'/10' paved/total Outside Shoulders; 4'/10' paved/total Inside Shoulders [(1)]	10' Shared Use Path (SUP) Left side (Phase B [(2)]); Future 10' SUP RT
Rte 621 Evergreen Mills Rd	GS-7	5 – 12' travel lanes at intersection, 2 – 12' travel lanes west	St'd CG-6 outside; St'd CG-2/St'd MS-2 median	N/A
Rte 842 Arcola Rd Route 857 Bears School Rd Thunder Rd	GS-4	2 – 9-12' travel lanes 2 – 9-12' travel lanes 2 – 12' Lanes	2' Paved/4' total	N/A
Pebble Run Dr Overland Dr	GS-8	4 – 12' travel lanes	St'd CG-6	N/A
Rte 614– Beaver Meadow Rd	GS-8	2 – 12-13' travel lanes	St'd CG-6; 12 foot paved flush median	N/A
Freeport Pl Trade Center Pl Stukely Dr Weather Service Rd	GS-8	2 – 16' travel lanes 4 – 12' travel lanes 2 – 16' travel lanes 2 – 16' travel lanes	St'd CG-6	N/A
Ladbrook Dr Mercure Circle Commerce Center Ct	GS-8	4 – 12-12.7' travel lanes 4 – 12-13' travel lanes 4 – 12' travel lanes	St'd CG-6; St'd CG-2 with St'd MS-2 median.	N/A
Rte 267 Ramp A	GS-R	1 – 32.35-13.86' travel lane	8'/8' paved/total, St'd CG-7 RT/4' /10' LT	10' Shared Use Path Right side (Phase B)
Rte 267 Ramp B	GS-R	1 – 16' travel lane	8'/12' total RT 4' /10' LT	N/A
Rte 267 Ramp C	GS-R	1 – 16' travel lane	8'/8' paved/total, St'd CG-7 RT/4'/10' LT	N/A

[(1)] Where left turn lanes are constructed, inside shoulder is replaced with St'd CG-3 Curb and Gutter, offset 2' from turn lane.
[(2)] Left side Shared Use Path to be constructed if authorized by VDOT within 6 months of project award.

(b) HORIZONTAL AND VERTICAL ALIGNMENTS

After reviewing and testing alternatives, we implemented enhancements that modified the RFP design concept to improve safety and reduce construction costs while maintaining flexibility for future improvements. These enhancements are described in *Table 4.3.2 Proposed Horizontal and Vertical Alignment Benefits*.

Table 4.3.2 Proposed Horizontal and Vertical Alignment Benefits

DESIGN FEATURE	SOLUTION	BENEFIT
Roadway Typical Section	Construct middle two lanes in each direction of ultimate typical section first; provide for future improvements.	▪ Facilitates future improvements ▪ Provides flexibility for MOT ▪ Complies with approved NEPA footprint
Vertical Alignment Adjustments	Create independent profiles for EB and WB roadway, while allowing flexibility for future crossovers.	▪ Reduces earthwork ▪ Fewer trucks on the road (improves safety) ▪ Enhances drainage system.

The proposed improvements comply with the requirements of the RFP plans. In reviewing the alignment as well as available documentation, we concluded that the horizontal alignment of the roadway as defined in the RFP is cost-effective. Further, by complying with the alignment set in the RFP plans, we ensure that the road will fit within the planned right-of-way as established by VDOT and complies with the environmental footprint defined by the NEPA documentation. Therefore, by complying with VDOT's established alignment, we have a cost-effective solution that requires minimal environmental permitting effort.

Segments of the Project – When evaluating construction phasing, the AI/RK&K Team separated the Project into the five areas shown on *Figure 4.3.1 – Segments of the Project*. *Section 4.5.1* of this proposal provides a detailed description of each segment.

Figure 4.3.1 – Segments of the Project

Roadway Typical Section – The AI/RK&K Team studied alternatives to the initial construction plan developed by VDOT. After considering options such as constructing the innermost lanes first, we opted to remain with the RFP configuration where the initial construction will become the middle two lanes in each direction of the ultimate eight-lane section. We determined this was the best option as it was consistent with the RFP plans and provides a cost-effective design.

The ultimate road configuration was also studied, including superelevation and potential future intersections so that future improvements will not require rework of the roadway and will avoid design exceptions or waivers. Our design is context-sensitive and accommodates future improvements that will not require design exceptions/ waivers or create major impacts for the travelling public. In the vicinity of the future Loudoun County Parkway, additional median width was noted to provide for the future reconfiguration of Route 606 at Loudoun County Parkway. The design concept presented preserves the intent of this widened median area.

Accommodating Future Improvements *Adjustments to the roadway typical section reflected in our design concept does not preclude VDOT's ability to construct future improvements.*

Vertical Alignment Adjustments – Minimizing the earthwork required to construct this net-borrow Project is important to reduce construction costs, minimize the duration of construction, and limit the number of trucks on the road to haul fill material. *Table 4.3.3 Earthwork Optimization* demonstrates how modifying the profile has optimized the earthwork. The proposed profile is more efficient without precluding future improvements to the roadway. With the profile closer to existing grades, support of excavation measures will be reduced.

Table 4.3.3 Earthwork Optimization

Roadway Section	Location	VDOT RFP		AI/RK&K Team		Difference	
	Sta. to Sta.	Cut	Fill	Cut	Fill	Cut	Fill
Segment A: Evergreen Mills Road to 400' west of Cabin Branch	489+06 to 155+00	43,900	55,500	86,400	26,400	42,500	<29,100>
Segment B: Cabin Branch to 200' west of Bears School Road	155+00 to 199+00	4,200	115,100	94,000	23,700	89,800	<91,400>
Segment C: Bears School Road to 1200' east of Stukely Drive	199+00 to 262+00	11,000	73,500	19,000	92,900	8,000	19,400
Segment D: 1200' east of Stukely Dr. to 400' west of Commerce Center Ct.	262+00 to 334+00	12,500	146,000	22,900	100,900	10,400	<45,100>
Segment E: 400' west of Commerce Center Ct. to Rte. 267 Dulles Greenway	334+00 to 366+75	11,100	171,000	11,100	169,200	0	<1800>
Totals		**82,700**	**561,100**	**233,400**	**413,100**	**150,700**	**<148,000>**
Net Cut/Fill		**<478,400>**		**<179,700>**		**<298,700>**	

The earthwork reduction demonstrated by *Table 4.3.3* is the result of independent baselines and a bifurcated profile for eastbound and westbound traffic. The RFP plans employed a single baseline and developed the profile grades and superelevation from that line. Where superelevation was required, the RFP design rotated the superelevation about the centerline. This configuration resulted in a difference in elevation between the left and right sides of the road. The independent baselines utilized in the AI/RK&K design extend from the beginning of the Project at Route 621 – Evergreen Mills Road (Sta. 503+00) to Commerce Center Court (Sta. 338+00). As required by the RFP, bifurcating the profile was not considered through the Horsepen Dam area.

By bifurcating the roadway where allowable by the RFP, the grade of each roadway was set independently of the other to better conform to the existing terrain. To maintain future flexibility, we reviewed the plans with respect to the VDOT Access Management Standards and the existing intersection/driveway locations. Where new intersections are possible, the independent profile was set to allow an intersection to be constructed without exceeding allowable standards for median grades or cross slope rollover.

In addition, the superelevation was rotated about the center of the eastbound and westbound pavements, minimizing the elevation difference across the roadway sections. The overall earthwork and borrow excavation was reduced by employing lower profiles, bifurcations, and revising superelevations. The grades and superelevation were analyzed for the ultimate typical section to ensure that the road can be widened without major reconstruction.

(c) Maximum Grades for all Segments and Connectors

The Route 606 improvements will be built in accordance with the requirements of the RFP, including roadway grades. The proposed grade for each roadway is at or below the maximum allowable grades as demonstrated in *Table 4.3.4 Maximum Roadway Grades*. Minor Streets Group A include Pebble Run Place, Overland Drive, Route 614 Beaver Meadow Road, Freeport Place, Weather Service Road, Trade Center Place, Stukely Drive, Ladbrook Drive, Mercure Drive and Commerce Center Court. Minor Streets Group B includes Route 857 Bears School Road and Thunder Road.

Table 4.3.4 Maximum Roadway Grades

Roadway	Proposed Maximum Grade %	Allowable Maximum Grade %
Route 606	4.00	6 (GS-6)
Route 621	1.93	10 (GS-7)
Route 842	Future	6 (GS-6)
Minor Streets Group A	7.60	15 (GS-8)
Minor Streets Group B	7.60	11 (GS-4)
Ramp A	2.60	8 (GS-R)
Ramp B	2.80	7 (GS-R)
Ramp C	4.00	7 (GS-R)

(d) Typical Sections of the Roadway Segments

The typical roadway sections included in Volume II on Page 2 reflect constructing the two “middle” lanes of the ultimate typical section for Route 606 without precluding future improvements to the roadway. As stated above, employing independent profiles and lowering the roadway for the eastbound and westbound lanes allows us to design profiles that better conform to the topography of the route while reducing the borrow requirements. This approach benefits the project immediately by providing:

- A vertical alignment that more closely follows the topography and reduces earthwork for the Project;
- Typical sections that address required correlation between the travel lane elevations and consider future crossovers;
- Flexibility for the future widening of the Project to ensure that additional lanes can be added without major road reconstruction; and
- An environmental footprint consistent with the NEPA documentation.

(e) Hydraulic and Stormwater Management Design

Stormwater Management Design – Our approach to stormwater management (SWM) is balanced to ensure compliance with the FAA circulars for wildlife attractants, minimize ROW acquisition, account for high water tables, avoid wetlands and FEMA zones, adhere to the VA Department of Environmental Quality (DEQ) pollutant removal requirements, and not preclude future widening. The Project creates a significant increase

in impervious area over the existing condition which presents the need for numerous SWM facilities to meet VDOT/DEQ requirements and is required to comply with the performance-based water quality approach.

A preliminary analysis of SWM indicates the Project crosses two DEQ Hydrologic Unit Code (HUC) watersheds: VAHUC PL-17 (Horsepen Run) and VAHUC PL-18 (Broad Run). Coincidentally, the analysis shows the need to provide 37.8 lbs of phosphorus removal in each of the two watersheds. In accordance with VDOT IIM-195.7, we comply with the treatment needs within the same watershed divide.

The RFP plans show four SWM facilities in the Horsepen Run watershed (PL-17) and nine SWM basins in the Broad Run watershed (PL-18). Due to the proximity of the basins to Airport operations, all of the basins will be designed and constructed in compliance with FAA Advisory Circulars (ACs) related to hazardous wildlife attractants. Specifically, the design and construction will be guided by advisory circular AC No. 150/5200-33B, 150/5370-2F, 150/5370-2F, 150/5300-13A, and 150/5370-10F. The FAA ACs require limiting the amount of standing water on the proposed SWM basins. Preliminary water table elevations indicate a shallow water table exists at basin K (4 feet), basin D (1.6 feet), and basin I (3.0 feet). Our SWM approach includes best management practices (BMPs) to limit standing water and not attract wildlife.

Table 4.3.5 SWM Analysis Results per RFP Facility

BMP ID	TYPE	EFFICIENCY	POLLUTANT REMOVAL (LBS/YR)
WQ Credits	N/A	N/A	9.4
Basin A	Retention Basin III	65%	5.1
Basin B	Retention Basin III	65%	6.8
Basin C	Retention Basin III	65%	4.0
Basin D	Retention Basin III	65%	6.6
Basin E	Retention Basin III	65%	12.9
Basin F	Retention Basin III	65%	3.9
Basin G	Retention Basin III	65%	7.3
Basin H	Retention Basin III	65%	16.0
Basin I	Retention Basin III	65%	9.6
Bio N	Bioretention	50%	1.3
BROAD RUN (PL-16) REQUIRED REMOVAL 37.8 LBS/YR TOTAL POSSIBLE PROPOSED REMOVAL 82.9 LBS/YR			
WQ Credits	N/A	N/A	9.4
Horsepen Lake	N/A	N/A	15.3
Basin J	Extended Detention Basin	35%	5.6
Basin K	Extended Detention Basin	35%	5.4
Basin L	Extended Detention Basin	35%	6.6
Basin M	Extended Detention Basin	35%	1.2
HORSEPEN RUN (PL-17)- REQUIRED REMOVAL 37.8 LBS/YEAR TOTAL POSSIBLE PROPOSED REMOVAL 43.5 LBS/YR			

The results of our current SWM analysis of the RFP plans is detailed in *Table 4.3.5 SWM Analysis Results per RFP Facility*. The analysis summary indicates 43.5 lbs/year of the 37.8 lbs/year require pollutant removal was possible for the Horsepen Run watershed. Further, the analysis shows 82.9 lbs/year of the 37.8 lbs/year of pollutant removal for the Broad Run watershed. With a surplus of pollutant removal available in both watersheds, our Team will continue to evaluate the following potential reductions in SWM BMPs:

- Eliminating Basins B and C and conveying stormwater runoff to a resized Basin D, thus eliminating storm drain pipe to those basins, reducing the required ROW acquisition, and creating an opportunity for potential joint use of Basin B and C locations with the future Loudoun County Parkway improvements
- Shifting Basin D further away from Cabin Branch and reducing Basins K and I as the shallow groundwater elevations will likely limit the use of the excavated material for roadway construction.
- Utilizing bioretention facilities near station 523+00, 87+00, and 276+00 and outfalling to nearby natural outfall locations to eliminate storm drain pipe while maintaining the profile at a lower elevation.
- Utilizing VDOT approved Filterra-type manufactured BMP units along the roadway with a closed drain system between stations 192+00 to 250+00 and conveying stormwater runoff to nearby existing storm

drain systems to eliminate storm drain pipe, maintain a lower roadway profile, and reduce the required size of Basin H.

- Reducing the amount of runoff and required storm drain and conveying stormwater to Basin J. Runoff between stations 268+00 to 282+00 will outfall to an existing storm drain system at Ladbrook Drive which allows the profile to be lowered approximately 4 feet.

Hydraulic Design – The topography within the project limits is relatively flat, which creates challenges for designing storm drainage systems that require roadway runoff to be collected and conveyed to stormwater management facilities, bypassing more natural outfall locations. Carrying drainage over long linear distances requires careful planning of the roadway profile to ensure sufficient elevation provides the required pipe cover. Our proposed drainage system will primarily be comprised of an open drainage system utilizing a system of ditches and cross culverts, and then conveying the runoff to stormwater management facilities in shorter storm drain networks. *Table 4.3.6 Drainage System Configuration* details where we are proposing open and closed drainage systems.

Table 4.3.6 Drainage System Configuration

PROJECT STATION	SYSTEM CONFIGURATION	DESCRIPTION
489+06 to 192+00	Open drainage	Designed to be converted to closed drainage system with future widening
192+00 to 250+00	Closed drainage with Filterras	Closed system near residences at Freeport Place allows outfall to natural drainage course.
250+00 to 366+75	Open drainage	Designed to be converted to closed drainage system with future widening. Consistent with RFP plans at Horsepen Dam

As discussed above in Section (b) Horizontal and Vertical Alignments, we carefully coordinated the roadway profile with the drainage system to not preclude future roadway improvements relative to grade and cross section. Additionally, we designed all of our closed-system trunk lines and collection pipes to accommodate the discharge from the future improvements. Our vertical profile modifications will not require VDOT to reconstruct the road or drainage system to accommodate the planned future widening. With the previously noted excess pollutant removal available, many storm drain connections will tie directly to offsite storm drain systems or natural outfall locations, further reducing the linear foot quantity of pipe and pipe size required. These improvements in the hydraulic design are presented in the Conceptual Roadway Plans in Volume II.

(f) RIGHT OF WAY LIMITS

The AI/RK&K Team, supported by Paul Schray of Continental Field Services, will act as an agent on behalf of the Commonwealth of Virginia, providing all right-of-way (ROW) acquisition and relocation services for acquisition of fee ROW and permanent, temporary and utility easements with the following RFP conditions:

- The MWAA Board has approved Project ROW impacts of up to 40 acres, exclusive of an additional 6.802 acres for VDOT Transportation Access. We understand that if our total MWAA impacts exceed 40 acres, then MWAA Board action is required;
- VDOT will negotiate and obtain ROW and easements from Parcel 042, owned by the United States of America. We acknowledge that this acquisition is scheduled to take 9-12 months and the inherent risk will be borne by the design-build team. To manage this risk, our Team will advance and submit the Parcel 042 appraisal package immediately following FI/ROW Plan approval to expedite ROW Authorization. Concurrently, our Team will request VDOT to facilitate an access agreement which allows construction activities to commence while negotiations proceed.
- Acquisition of easements from Parcel 061 will be by others and, as stated in Section 2.13 of Part II of the RFP, our Team anticipates that access will be granted to the easement for the duration of construction activities.

As we have segmented the Project for the management of the construction activities, our approach to development and management of ROW acquisition will follow a similar segmentation. Following FI/ROW

Plans approval and Chief Engineer signature, we will submit completed appraisal packages consistent with the five construction segments noted in *Table 4.3.7 ROW and Easement Acquisition by Construction Segment.* These manageable appraisal packages will be prioritized to reduce VDOT's staffing requirements and provide a systematic approach to the overall acquisition process. We will use RUMS to input and track the ROW acquisition process, working closely with VDOT staff to manage ROW risks. As the Project's ROW acquisition is straightforward (no relocations; no cost-to-cure issues such as loss of parking; and only a few property access modifications/consolidations), we have developed a schedule that allows for phased segment construction based on cleared acquisition per segment. As Segment E is identified as the critical path, ROW efforts in that Segment will progress initially.

Table 4.3.7 ROW and Easement Acquisition by Construction Segment

Segment	Parcels Requiring Acquisition	Phase A			Phase B		
		Fee R/W	Perm. Esmt.	Temp Esmt.	Fee R/W	Perm. Esmt.	Temp Esmt.
A	6	3	2	4	1	0	1
B	7	7	5	7	5	0	4
C	13	11	9	11	3	0	3
D	11	9	5	11	9	0	9
E	4	1	4	3	0	0	0
Total	**41**	**31**	**25**	**36**	**18**	**0**	**17**

While the project is divided into two phases (Phase A and Phase B), our approach and schedule assumes that acquisition will start concurrently on both phases. With concurrence from VDOT, both packages will be shown on the FI/ROW Plans independently and all pre-acquisition activities will be completed for both Phases. All Phase B acquisitions also require acquisitions for Phase A of the Project (total parcels affected is 41 for both Phase A and B) the incremental preparation efforts for Phase B acquisitions is minimal. The following are various types of property acquisitions that will be acquired for the Project:

Total Take – There is one total take parcel (Segment A - 0.2 acres +/-) which severed from its parent parcel with a past ROW acquisition. Due to its size and no apparent active use by the owner, acquisition should be straightforward.

Utility Easements – The Proposal Schedule shows pre-UFI and UFI preceding FI/ROW Plan approval so that utility design/easement identification will be completed prior to acquisition activities for partial acquisition parcels. All utility easements will be included as part of the ROW needs and not acquired separately at a later date as re-approaching a landowner following negotiation of prior interests' only increase costs and adversely impact the construction schedule. All utility easement requirements will be included with any other parcel impact acquisition requirements and appraised concurrently. For utility easements exclusive of parcel impacts, the schedule allocates 120 days for clearance.

Partial Acquisitions (Private and Commercial Landowners) – Partial acquisitions include parcels owned by both private and commercial landowners and present special risks related to changes to parcel access, landscaping, fencing, and general security. To minimize cost to cure, acquisition timing and other risks will be identified. Commercial landowners/homeowners associations, such as Loudoun Valley Estates HOA, may require Board resolutions. As Boards meet periodically, settlement ratification introduces schedule risk; therefore, the baseline schedule will address this risk by allowing 120 days for partial acquisitions.

MWAA Property and SWM Facility Modifications – As noted in *Section 4.3(e)* of this proposal, optimization of the SWM design provides opportunities for reduction of the permanent roadway easement requirement. Although conceptual in nature, our approach, as detailed in *Table 4.3.8 ROW Adjustments* below, highlights opportunities to minimize commercial ROW requirements for the Project, reduce and/or redistribute MWAA Boards 40 acre allocation, and translate into potential VDOT savings in acquisition costs.

Table 4.3.8 ROW Adjustments

ROW DEVIATION	IMPACT	DESCRIPTION
Parcel 003 – Evergreen Commerce Center LLP	Reduce 2.3 acres R/W Reduce 0.4 acres proposed permanent roadway easement	Elimination of Basin B (see SWM Management Design discussion).
Parcel 004 – Creighton Road LLC	Reduce 1.7 acres R/W	Elimination of access to Basin C (See SWM design discussion).
Parcel 005 – Dulles International Airport MWAA	Reduce 4.7 acres proposed permanent roadway easement	Elimination of Basin C (see SWM Management Design discussion).
Parcel 005 – Dulles International Airport MWAA	Increase 0.8 acres proposed permanent roadway easement	Enlarge Basin D (see Stormwater Management Design discussion).

(g) SOUND WALL LOCATIONS

The RFP plans propose sound walls along Route 606 in the vicinity of Freeport Place and Stukely Drive defined as 'CNE A' in the noise report dated November 2013. Our Team concurs with the noise abatement recommendation approved by the Chief Engineer, specifically Sound Wall A is warranted, feasible and reasonable while neither Sound Wall B nor C are likely to be warranted, feasible and reasonable. To minimize the impacts of construction for surrounding residents, sound walls will be constructed as early in the Project as practical. Since no major relocations or site preparations are needed for the installation of the sound walls, early grading at the sound wall sites and installation of the sound walls will be performed early to protect the residential neighborhood at Freeport Place and Stukely Drive. We have included the potential for early sound wall construction in our Proposal Schedule and will further refine in the baseline following Notice to Proceed (NTP).

In final design, the locations of the sound walls are expected to be along the same limits as in the RFP plans. However, because the project final design roadway profile will differ from the preliminary roadway alignment assessed for the noise report dated November 2013, the AI/RK&K Team will amend the sound wall vertical profiles to meet or exceed the predicted acoustic performance of the previous analysis. A Final Design Noise Analysis Report (FDNAR) will be completed that documents safety, barrier height, topography, drainage, utilities, maintenance, and access considerations. With the exception of the Viewpoint Survey already completed by VDOT, our Team will conduct all aspects of the FDNAR.

In conjunction with the required preparation of the FDNAR, a revised traffic noise and abatement analysis will be performed and reflective of the final design. The relevant issues with respect to existing utilities will be addressed to accommodate construction of the practicable sound walls. *Table 4.3.9 Sound Walls* identified the limits of Sound Wall A expected to be included in the Project, which are consistent with the RFP.

Table 4.3.9 Sound Walls

WALL	LOCATION	DESCRIPTION
A-1	Route 606 Sta. 221+97 LT to Sta. 239+44 LT	~1,750' long sound wall adjacent to Summerstown Place south of Freeport Place
A-2	Route 606 Sta. 239+95 LT to Sta. 249+65 LT	~970' long sound wall adjacent to Rogerdale Place from Freeport Place to Stukely Drive
A-3	Route 606 Sta. 250+17 LT to Sta. 258+48 LT	~830' long sound wall adjacent to Rogerdale Place north of Stukely Drive

(h) OTHER KEY PROJECT FEATURES

ENVIRONMENTAL – The experience and leadership of our design and construction leads for Environmental Permitting (Eric Almquist) and Compliance (Mike Lachowicz) and with support from Ricky Woody (former VDOT Natural Resources Program Section Manager) will ensure that environmental issues, permits, and compliance do not introduce unmanageable risks into the project schedule. As shown in the Proposal Schedule, all required environmental clearances and permits will be obtained expeditiously and associated environmental commitments will be carried through construction.

Environmental National Environmental Policy Act (NEPA) Document: The proposed design is within the NEPA study area for the Project, but extends outside the designated Preferred Build Alternative impact area as defined in the November 20, 2013 Environmental Assessment/Finding of No Significance (EA/FONSI). We will perform a NEPA Reevaluation, which will describe potential changes in impacts to the natural and human environments attributable to the proposed design. The changes in impacts are anticipated to be minor and would result in no further NEPA documentation.

Cultural/Section 4(f) Resources: According to the EA, archaeological resource investigations were completed within a 300-foot-wide corridor along the Preferred Build Alternative centerline and within SWM areas. Due to design modifications, additional archaeological studies will be necessary where the proposed design extends outside the previous studies. We will coordinate with VDOT and the Virginia Department of Historic Resources (DHR) on a "no affect" determination for cultural resources (CR). It is anticipated that a "no use" of Section 4(f) resources will be maintained. Our Team is aware of the known archaeology sites at proposed SWM basin F & G. We will confirm that the design complies with the DHR clearance. If compliance is lacking, requisite CR assessments will be performed and acceptance will be gained from VDOT/DHR to ensure all CR clearances are in place prior to the Approved for Construction (AFC) submission.

Threatened and Endangered (T&E) Species: The EA included a preliminary determination that the Project will have no effect on T&E species. Upon NTP, our Team will review the US Fish and Wildlife Service (USFWS) IPaC database, VA Department of Game and Inland Fisheries (DGIF) VA Fish and Wildlife Information Service (VaFWIS) and DCR Division of Natural Heritage (DCR-DNH) Natural Heritage Data Explorer. T&E letters will be prepared and submitted to USFWS, DGIF and DCR-DNH to request recent T&E data and confirm that T&E species are not present within the Project limits. If T&E species are identified, the Team will perform habitat assessments and gain concurrence of finds from the regulatory agencies.

Hazardous Materials (ESA): To complete due diligence prior to Authorization to Commence ROW Acquisition, our Team will conduct Phase I ESA's for SWM basins, other acquisitions not completed by VDOT, and perform asbestos inspection for the existing water sampling station building. If hazardous materials are identified, immediate notification to VDOT will be completed.

Water Quality Permits and Mitigation: We anticipate water quality permits being obtained in May 2015, within 11 months from NTP as reflected in our Proposal Schedule. Water quality permits are anticipated to apply at the follow locations:

- Crossing of Cabin Creek (quadruple 72" pipe culvert) and tributary to Broad Run (84" pipe culvert);
- Four crossings of tributaries to Stallion Branch (pipe extensions, replacements and culverts);
- Box culvert extension on Horsepen Run and fill for bridge over the spillway of Horsepen Dam because it does have fill below ordinary high water (OHW) of Horsepen Run; and
- Lateral fill encroachment into wetlands throughout and along the project alignment.

As the Project has impacts to waters of the U.S., including wetlands, their delineations and a resulting Jurisdictional Determination (JD) will be secured from the US Army Corps of Engineers (USACE). Wetland delineations will be performed pursuant to the USACE Wetland Delineation Manual, Technical Report Y-87-1 (1987), the USACE April 2012 Regional Supplement to the COE Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0) (2012), and subsequent regulatory guidance. Streams and wetlands will be classified according to Cowardin and others (1979) and the USACE/DEQ Unified Stream Methodology (USM) will be used to assess the impacts to streams and mitigation needs.

Water Quality Permits Required

- USACE Individual permit
- DEQ Virginia Water Protection Permit and 401 Certification
- VMRC permit
- DEQ Virginia Stormwater Management Program Permits

Our initial investigations identified more wetlands will be impacted by the Project than indicated in the EA/FONSI. These investigations include review of soil survey maps to assess the presence of hydric soils, NWI mapping, and site visits within the Project. Confirmation of this assessment can only be achieved through completion of the JD. Thus, following receipt of the JD and further avoidance minimization efforts through the design, our environmental staff will work closely with VDOT to resolve any inconsistencies that may be present.

Regardless, we anticipate that the Projects mitigation needs will be met through the purchase of mitigation bank credits for unavoidable impacts to wetlands and streams. The project is located within the eight digit hydrologic unit code (HUC) 02070008 Middle Potomac – Catoctin and several wetlands and stream banks have sufficient credits or credits available in the Project timeframe to meet our needs:

- Bender Farm Wetland Bank – Northern Virginia Stream Restoration Bank
- Howser's Branch Wetland Bank – Loudon County Stream Bank
- Grasslands Wetland / Stream Bank – Kettle Run Wetland / Stream Bank

Environmental Compliance: Environmental Compliance is discussed in detail in *Section 4.4.3*.

Air Quality: We do not anticipate changes to the scope or footprint requiring environmental air quality technical studies, analysis, or evaluation. As a result, construction will adhere to the limitations outlined in the RFP special provisions for Volatile Organic Compound Emissions Control and the appropriate DEQ air pollution regulations dealing with open burning, cutback asphalt, and fugitive dust precautions.

TRAFFIC SIGNAL DESIGN – Traffic signal design will conform to the 2009 Manual on Uniform Traffic Control Devices (MUTCD), the 2011 Virginia Supplement to the MUTCD, the 2011 VDOT Traffic Engineering Design Manual, the 2007 VDOT Road and Bridge Specifications, the 2008 VDOT Road and Bridge Standards, and all VDOT traffic memoranda and special provisions. Signal design will be closely coordinated between the road design, pavement marking design, and pedestrian/bicycle facilities. The existing flashing beacon will be removed at Commerce Center Court and not replaced. Signal poles will be placed with maximum visibility of the signal heads while maintaining the geometric layout of the intersection and providing for future widening of the road. *Table 4.3.10 Traffic Signals* is an inventory of the existing and proposed traffic signals. For the Project, five intersections will be signalized along Route 606.

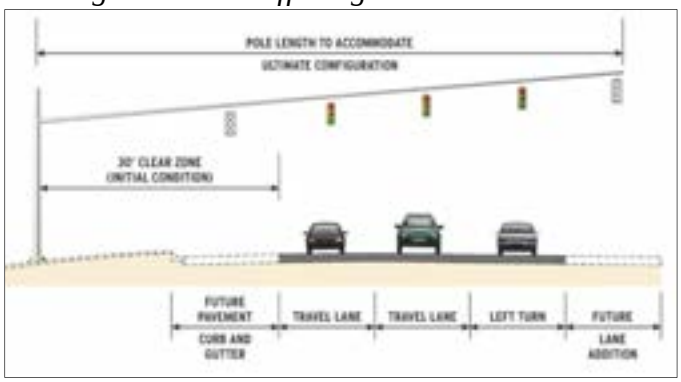
Table 4.3.10 Traffic Signals

INTERSECTION	SIGNAL TYPE	APPROACHES	DESCRIPTION
Evergreen Mills Road	Mast Arm	3	Three lane SB approach from Evergreen Mills Road. May reuse existing pole for SB movement.
Overland Drive	Mast Arm	3	Two lane SB approach from shopping center.
Trade Center Place/Freeport Place	Mast Arm	4	Two lane SB approach from residential area. Two lane NB approach from business park.
Ladbrook Drive	Mast Arm	3	Two lane SB approach from business park
Mercure Circle (E)	Mast Arm	4	Two lane SB approach from business park. One lane NB approach from future development.

With the proposed intersection widening, mast arm lengths will be reviewed carefully to ensure the signal heads are within proper view of the appropriate lanes in accordance with federal and state guidelines. Presence and advance loops will be installed for vehicle detection. New signals will be phased to allow the optimal number of movements to safely occur during each phase. As VDOT requires 2070 controllers, new signals will utilize approved controllers. Signal head configurations will be designed carefully to communicate and accommodate all traffic modes, including pedestrians and bicyclists. All power and communications will be coordinated with the respective agencies involved. Poles and footings will be designed to accommodate future longer mast arms and placed outside of the clear zone. *Figure 4.3.2 Traffic Signal Pole Placement* shows the typical layout for the signal pole installation along Route 606 with a 30 foot clear zone.

SIGNING AND PAVEMENT MARKING – The 2009 MUTCD and 2011 Virginia Supplement to the MUTCD will be used for designing traffic control device size, shape, color and messages to produce a clear meaning for the traveling public. Our focus will center on uniformity in design and placement of the control devices to maximize user safety.

Figure 4.3.2 Traffic Signal Pole Placement



Pavement Marking: Our pavement marking design will provide appropriate pavement definition and delineation thereby, encouraging safe and efficient operation. Special attention is given to pedestrian markings (crosswalks) and the shared use path to ensure the safety of all road users. All pavement markings including edge lines, & center line markings, will be supplemented with snow-plowable RPMs.

Signing: An existing sign inventory was completed by our Team on Old Ox Road (north and south of the project limits), Lee Jackson Highway (Route 50), Dulles Greenway, and Airport operated roadways (where accessible). From this inventory, a careful assessment was performed to determine which signs will be removed, relocated, or upgraded to the latest standards. Special attention was given to guide signs located on Dulles Greenway and Old Ox Road to ensure the signs inform motorists of important destinations and provide appropriate lane information (auxiliary lanes) consistent with the project improvements. *Table 4.3.11 Impacted Guide Signs* list identifies which signs will be impacted and replaced.

Table 4.3.11 Impacted Guide Signs

SIGN #	SIGN MESSAGE	STRUCTURE	DIRECTION	LOCATION	CONDITION	SIGN LIGHTING	PROPOSED DESIGN IMPACT
1	267 Toll West Leesburg (exit arrow)	OH Cantilever	Old Ox EB	.09 Miles west of Moran Road	Good	YES	NO
2 / 4	267 Toll West, Leesburg, Exit 1/4 Mile 267 Toll East, Washington (exit arrow)	OH Cantilever	Old Ox WB	.09 Miles west of Moran Road .50 Miles west of Moran Road	Good	YES	YES
3	267 Toll East Washington (exit arrow)	OH Cantilever	Old Ox WB	. 42 Miles west of Moran Road	Good	YES	NO
5 / 6	Ladbrook Dr NEXT SIGNAL	Ground Mount	Old Ox EB Old Ox WB	STA 277+00 STA 287+00	Good	NO	YES
7 / 8	Overland Dr NEXT SIGNAL	Ground Mount	Old Ox WB	STA 199+00 STA 225+00	Fair	NO	YES
9 / 10	Evergreen Mills Rd NEXT SIGNAL	Ground Mount	Old Ox EB Old Ox WB	STA 490+00 STA 508+00	Good Fair	NO	NO YES
11	Leesburg (ahead arrow) Washington (right arrow)	Ground Mount	Old Ox EB	STA 356+00	Good	NO	YES

Intelligent Transportation System (ITS) – With the proposed roadway widening, there is an ideal opportunity to install ITS infrastructure in support of future devices or communications. Thus, the Project will include design and installation of conduit bank and junction boxes within the project limits. Fiber Optic Marker Balls or similar technology and Locator Tape will be placed in all trenched or plowed conduit runs. The conduit runs and junction boxes will be located to accommodate ultimate roadway section and features. The conduit runs will be able to support future installation of ITS equipment by building the infrastructure to support Fiber Optic cables, power to ITS devices, and communication to future ITS equipment.

PUBLIC INVOLVEMENT/PUBLIC RELATIONS – A variety of stakeholders will be impacted by the Route 606 Project requiring a highly-effective public outreach program. The AI/RK&K Team's approach to external communication is a critical function to the success of the Project. To ensure that all stakeholders remain fully informed throughout the duration of the Project, our Team is fully committed to maintaining a constant flow of communication to reach the following goals:

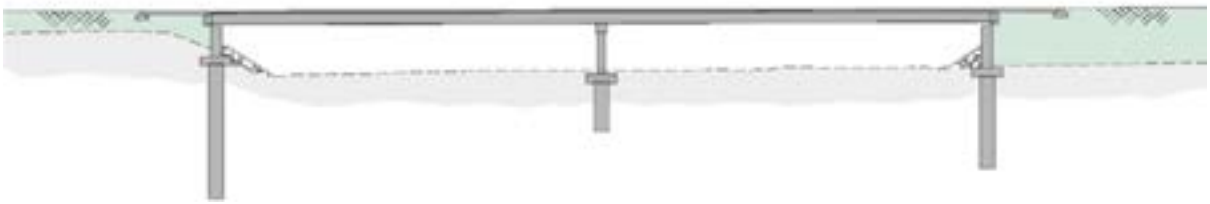
- Effectively engage the community in the design and construction of the Project to minimize negative impacts and maximize positive outcomes;
- Maintain a successful partnership and communication between VDOT, Loudoun County, and the greater community; and
- Proactively manage project risk by anticipating and addressing community issues that may impact the project schedule.

4.3.2 CONCEPTUAL STRUCTURAL PLANS

ROUTE 606 BRIDGE OVER THE HORSEPEN DAM EMERGENCY SPILLWAY

As required by the RFP, our proposal is based on the design presented in the RFP Plans with respect to the Route 606 profile, the hydraulic opening of the emergency spillway, and the typical roadway section of the dam. Per Section 2.3.7 of the RFP, movement of retaining walls that tie in to the abutments was not implemented. The AI/RK&K Team is proposing a bridge design that is fully compliant with the RFP conceptual plans. *Figure 4.3.3* is an image of the elevation of the bridges, which are similar in elevation view.

Figure 4.3.3 Bridge Elevation View



Our bridge is fully compliant with the RFP and was designed based on AASHTO LRFD Bridge Design Specifications, 6th Edition and VDOT Modifications. We have selected details that will reduce the long-term maintenance requirements of the bridge by utilizing a continuous structure and semi-integral abutments. The available structure depth is limited, based on the profile required as part of RFP Part II section 2.8.1 and the hydraulic requirements of section 2.8.3. Based on these parameters, concrete beams are not feasible and steel beams are proposed. Weathering steel will be utilized, following Technical Advisory T5140.22. The proposed bridge has structural approach slabs that will provide a smooth transition from the bridge to the approach roadway, a drainage system to control and drain water from the deck, and meets all hydraulic, scour, and serviceability requirements.

The superstructure and substructure are designed to withstand the Probable Maximum Flood (PMF) event that will exert significant loads on the structure. This load is an Extreme Event II load. The bridge design was checked for the Strength I limit state and the Service I limit state. Details are provided that will anchor the superstructure to the substructure, such as concrete internal diaphragms at the abutments, in order to transfer this hydraulic load. To reduce buoyancy loads, the addition of holes in the webs will be investigated as outlined in AASHTO's "Guide Spec for Bridges Vulnerable to Coastal Storms."

The substructure will be designed and constructed to accommodate the Phase B superstructure. The substructure will also be designed and constructed for the future lane that is planned for in the median. A wall pier is anticipated to be utilized to meet these requirements as well as to meet hydraulic requirements.

The foundation system will be large diameter drilled shafts that will extend to the required elevations outlined in Section 2.7.5 of Part II of the RFP, which list the estimated scour elevations during a PMF event. At this time, there is not enough information available to clearly show that solid rock (>50% RQD) will be

encountered prior to reaching these depths. Utilizing steel piles as shown in the RFP plans proved challenging with respect to accommodating for the unbraced length and slenderness issues during the design scour event. Our Team mitigated this issue by utilizing large diameter drilled shafts.

Designing for the Future – Our design and construction teams revisited the framing plan and beam spacing to ensure that the future widening, whether conducted by AI or another contractor, can be efficiently accomplished. All overhang requirements have been met (30% of the beam spacing) during each phase of the Project, as well as plan for the tie-in from new widening to the existing bridge without compromising constructability. *Table 4.3.12 Bridge Design Features* highlights the benefit of our proposed design.

Table 4.3.12 Bridge Design Features

BRIDGE DESIGN FEATURE	BENEFIT
Semi-integral abutments	▪ No joints at the abutments
Continuous spans	▪ No joint at the pier
Weathering Steel	▪ Little to no painting maintenance
Deck drainage with galvanized components	▪ Remove water from the deck – less maintenance
Structural approach slabs and sleeper pads	▪ Provide a smooth riding surface
Corrosion Resistant Reinforcement	▪ Reduce or eliminate spalling issues
Drilled shafts to competent rock or depth	▪ Greater scour protection
Fully following the RFP and VDOT Standards	▪ No issues with design acceptance
Low permeability Concrete	▪ Increased resistance to water intrusion and spalling

RETAINING WALLS – In accordance with RFP Section 2.3.7, Retaining Walls 1, 3, and 5 will be cast-in-place concrete cantilever walls with design elevations and locations as shown in the RFP plans. In addition, the RFP plans show a retaining wall west of Commerce Center Ct. that is required to locate the shared use path per the requirements of Part II Section 2.2 of the RFP. This wall was not identified in RFP structural plans and is referred to as Retaining Wall 5 in our proposal. The RFP Plans show this wall with a curved end to the east. We have realigned this wall to be straight to aesthetically align with the adjacent Retaining Wall 2. We are also proposing this wall to be a mechanically stabilized (MSE) wall for consistency with Retaining Wall 2. *Table 4.3.13 Retaining Walls* summarizes the walls shown on the Conceptual Plans included in Volume II.

Table 4.3.13 Retaining Walls

Retaining Wall	Location	Type
Retaining Wall 1	South of bridge at Abutment A	Cast-in-Place
Retaining Wall 2	East of Commerce Center Court	Mechanically Stabilized Earth (MSE)
Retaining Wall 3	North of bridge at Abutment A	Cast-in-Place
Retaining Wall 4	Adjacent to sampling station	Cast-in-Place
Retaining Wall 5	East of Commerce Center Court	Mechanically Stabilized Earth (MSE)

MAJOR DRAINAGE STRUCTURES – The AI/RK&K Team has identified three major drainage structures within the project limits that convey more than 500 cfs for the 100-year storm event: the Cabin Branch crossing, the 84" Cross Culvert at Sta 179+50, and the principal spillway pipe through the Horsepen Lake Dam.

Cabin Branch – Construction of a quadruple line of 72" pipe is proposed to convey Cabin Branch under Route 606. A double line of 72" pipe is proposed to be placed under the airport security road. The reduction in the number of proposed pipes is directly related to the design storm required at the airport security road (10-year) versus Route 606 (25-year). The severe skew of the pipes has been reduced and a minor natural channel designed relocation is included. All pipes will be countersunk, and VDOT standard rock weirs will be constructed on two barrels to ensure the USACE countersinking requirements are met.

84" Cross Culvert at Sta. 179+50 – An 84" culvert is proposed for an unnamed tributary to Broad Run.

Horsepen Dam Principal Outlet Pipe – Rehabilitation of a portion of the principal outlet culvert and extension of the culvert is proposed and described in *Sections 4.4.2 and 4.5.3* of this proposal.

4.4 Project Approach

4.4.1 UTILITIES

APPROACH TO UTILITY COORDINATION

The AI/RK&K Team has developed a strategic approach to utility coordination for the Route 606 Project based on our VDOT and design-build experience on projects with significant utility impacts. Successfully managing utility coordination and relocations is critical to the delivery of the Project on-time and on-budget.

THE AI/RK&K TEAM APPROACH TO UTILITY COORDINATION	
✓ *Provide a team of expert utility coordinators.*	✓ *Develop and implement a Utility Project Management Plan.*
✓ *Initiate coordination during the Proposal Phase.*	✓ *Integrate utility tasks into the project schedule.*
✓ *Identify potential conflicts and avoid/ minimize design impacts.*	✓ *Accomplish relocations/ conflict resolutions on schedule.*

Expert Utility Coordinators – Our Utility Team has longstanding relationships and frequently works with the utility companies having facilities within the project area, including Loudoun County, Loudoun Water, MWAA, Dominion Virginia Power (DVP), Columbia Gas, DC Water's Potomac Interceptor, Verizon/Verizon South, AT&T, and Cox Communications. As illustrated on our Organizational Chart, Renee Martin will lead the utility efforts coordinating construction with Field Utility Coordinator, Mike Ames, and Construction Manager, Robert Rube. Our Design Team's recent relevant experience includes the I-64 Widening design-build project in Richmond and the US 250/McIntire Road interchange project in Charlottesville where most of the same franchise utilities have the same type of utilities present.

Coordination during the Proposal Phase – During this pre-award phase, contacts were made with utilities / providers that currently have facilities within the project limits. Meetings generated detailed discussions about their utilities, specific features, utility maps, as-built drawings, and relocation criteria, where applicable. This coordination included:

- Developing a Utility Matrix listing the known and potential utilities and utility providers within the project limits of disturbance;
- Obtaining drawings of the utility's facilities;
- Identifying each utility point of contact(s); and
- Obtaining additional information; such as, as-built drawings with profiles, elevation data, materials, procedures for managing relocations from design through construction and acceptance.

Utility Coordination during the Proposal Phase *During this Proposal Phase, the AI/RK&K Team has proactively met the utilities identified and made personal contact with ALL known utilities in the corridor, integrating data from these contacts into our Team's Conceptual Plans and Proposal Schedule.*

Identification of Conflicts and Avoidance/Minimization of Design Impacts – Potential utility conflicts have been identified to determine where avoidance is possible, could be mitigated through design changes, or requires relocation. Utility avoidance will be practiced throughout the design and construction of the Project. Where conflicts are unavoidable, the relocation scope was determined and costs incorporated into the proposal pricing. These conflicts are detailed in the *Table 4.4.2 Utility Matrix* on page 20.

Development and Implementation of a Utility Project Management Plan – After Notice to Proceed (NTP) and during the Design Phase, the Utility Matrix will be converted into a Utility Project Management Plan to prioritize, define, schedule, and manage the design and construction of each task. Further coordination with the utility companies during design development will resolve issues, may eliminate additional conflicts, and confirm relocation plans and schedules. During the Design Phase, the AI/RK&K Team will:

- Determine precise utility locations and maintain in the Master Utility Database through Miss Utility services, utility designation services, coordination of VDOT-owned utility (such as ITS and signal

lines), and test pitting (vacuum/excavate). Exact locations for each utility will be surveyed and documented and then transferred to the roadway and structural design plans;

- Coordinate roadway and structural design plans with the confirmed utility locations from the Master Utility Database;
- Meet with VDOT's Regional Utilities Office within 45 days of NTP to review what is required with each utility submittal. Preparation for the meeting includes a thorough review of the concerns relative to the Project to be addressed;
- Submit a Preliminary Utility Status Report within 120 days of NTP that identified utilities within the project limits, the conflicts and proposed resolutions, time impacts, cost responsibilities, and supporting documentation;
- Conduct a UFI as soon as practical to discuss the Project with all utility owners. UT-9 forms will be prepared for each utility owner as a means of resolving any questions about relocations required and responsibility for the relocation cost;
- Submit relocation plans to VDOT for review and approval prior to the start of the relocation.

Integration of Utility Tasks into the Project Schedule – Managing the schedule impacts of utility relocations starts with identifying each potential utility conflict and confirming the schedule for necessary relocations. Utility construction, ROW acquisition and project segmentation need to work together to ensure that the Project can advance without delay. Due to the construction duration required to complete Segment E, utility relocations required for construction to begin in this area will be top priority. Priority of relocation efforts will move linearly down station to Segments D, C, B and A. With the ROW secured, we will be able to begin construction of the road and utility relocations together. The Proposal Schedule, included in *Section 4.7*, incorporated the utility activities and milestones highlighted in *Table 4.4.1 Utility Schedule Overview*.

Table 4.4.1 Utility Schedule Overview

ACTIVITY	SCHEDULE
Utilities to provide documentation of prior rights and easement request.	30 days from UFI
Utilities to provide P&E's (Plan and Estimates)	90 days from UFI
Construction of Utility relocation *(Pending ROW Acquisition)*	30 day after submission of P&E
Utility Field Inspection (UFI)	180 days from NTP
Construction Duration	6 months to 1 year
Filing of any necessary permits and outstand cost	Upon completion of construction

Accomplish Relocations / Conflict Resolutions on Schedule – Resources of the utility companies, AI, or both will complete any potential relocations per the approved design. If the affected utility companies are not available to quickly relocate their utilities, the AI/RK&K Team will, with the utilities' approval, relocate the utilities and keep the Project moving forward on-schedule. Disruptions to the public in the work area will be minimized by management of the schedule, materials, traffic control, outages, and all other elements of required relocations. Upon completion, as-builts will be submitted per VDOT and utility owner requirements. Our Team will also assist any utility with final billing and permitting to complete the Project.

UTILITY CONFLICTS AND SOLUTIONS

The Route 606 Project is congested with multiple utilities such as Loudoun Water, DVP, Columbia Gas, DC Water's Potomac Interceptor, Verizon/Verizon South, AT&T, and Cox Communications. The RFP Concept Plans identified utilities that require relocation. Initial communication and coordination with each individual utility representative in conflict on the Project has generated creative ideas to minimize utility relocations. Solutions we are investigating include one common duct bank systems; one common utility corridor; completing the installation of the conduit for the providers; and designing and constructing the installation of all water, storm water, and sewer facilities/betterments in accordance with VDOT and Utility standards.

These ideas have been successfully implemented on other design-build projects including Route 29 and Gallows Road, Loudoun County Interchange Improvement, and Waxpool Road Widening projects.

Throughout the design phase, our Team will further review grade changes, storm drain locations, signal pole locations, bridge footings, retaining walls and potential easements locations to assist in the relocations of the utilities. The Utility Matrix identifies area of concern throughout the project limits. Because the Project is heavily congested with utilities, generating a common utility corridor will reduce costs and as well as ROW impacts. Once NTP is issued and the design is refined, the location of the corridor will be defined through collaboration with the Utility representatives and VDOT. After viable solutions for utility relocation are agreed upon by all parties, utility construction for relocations will follow sequence of construction demonstrated by the Proposal Schedule.

Table 4.4.2 Utility Matrix

Utility Owner	Side of Roadway or Crossing	Facility Type	OH/ UG	Parallel/ Crossing/ Service	Begin or Crossing Station	End Station	Relocation Length within Project Limits
Loudoun Water	LT	16" Water	UG	Parallel	300+00	304+00	420 FT
Loudoun Water	LT/RT	16" Water	UG	Parallel	340+00	358+00	1960 FT
Loudoun Water	LT	20" Water	UG	Parallel	505+00	85+50	3235 FT
Loudoun Water	LT	20" Water	UG	Parallel	155+00	300+00	13605 FT
Loudoun Water	LT	24" Water	UG	Parallel	500+00	505+00	440 FT
Loudoun Water	LT	24" Water	UG	Parallel	532+00	535+00	500 FT
Loudoun Water	LT	6" Water	UG	Crossing	205+00	205+00	50 FT
Loudoun Water	LT/RT	Water	UG	Crossing	299+25	299+25	135 FT
Loudoun Water	LT/RT	12" Water	UG	Crossing	300+50	300+50	145 FT
Loudoun Water	LT/RT	12" Water	UG	Crossing	323+50	Crossing	280 FT
Loudoun Water	LT	16" Water	UG	Parallel	324+00	335+00	1245 FT
Columbia Gas	LT	2" Gas	UG	Parallel	207+00	209+00	300 FT
Columbia Gas	LT	6" Gas	UG	Parallel	224+00	256+00	3280 FT
Columbia Gas	LT	6" Gas	UG	Parallel	274+00	278+00	410 FT
Verizon/VZ South	Center	Duct Bank	UG	Parallel	508+00	87+00	2875 FT
Verizon/VZ South	Center	Duct Bank	UG	Parallel	149+00	180+00	3155 FT
Verizon/VZ South	Center	Duct Bank	UG	Parallel	180+00	189+00	960 FT
Verizon/VZ South	LT	Duct Bank	UG	Parallel	194+00	257+00	6310 FT
Verizon/VZ South	LT	Duct Bank	UG	Parallel	257+00	292+50	3550 FT
Verizon/VZ South	LT	Duct Bank	UG	Parallel	297+00	358+00	6110 FT
AT&T Local/Long	Center	Duct Bank	UG	Parallel	149+00	162+00	1315 FT
AT&T Local/Long	Center	Duct Bank	UG	Parallel	167+00	179+00	1195 FT
AT&T Local/Long	LT	Duct Bank	UG	Parallel	180+00	189+00	975 FT
AT&T Local/Long	RT	Duct Bank	UG	Parallel	187+50	202+00	1580 FT
AT&T Local/Long	RT	Duct Bank	UG	Parallel	235+00	267+00	3225 FT
AT&T Local/Long	RT	Duct Bank	UG	Parallel	273+00	358+00	8585 FT
AT&T Local/Long	LT	Duct Bank	UG	Parallel	324+00	335+00	1245 FT
DC WASA	LT/RT	42" SAN	UG	Crossing	356+00	356+00	No Conflict
DVP	LT	Pole	OH	Parallel	153+00	227+25	7425 FT
DVP	LT	Pole	OH	Parallel	246+75	256+75	1000 FT
DVP	LT/RT	Service	UG	Crossing	239+00	239+00	220 FT
DVP	LT/RT	Pole	OH	Parallel	267+30	301+00	3410 FT
DVP	LT/RT	Service	UG	Crossing	282+00	282+00	175 FT
DVP Trans.	RT	Transmission	OH	Parallel	161+00	259+00	No Conflict

UTILITY AVOIDANCE AND BETTERMENTS

The AI/RK&K Team design concept has been able to avoid impacts to Cox Communications lines, DVP lines, and DC Water's existing and proposed Potomac Interceptor. Through communication with Loudoun Water, we understand that they desire to increase the size of their line along Route 606 to 24". We will work collaboratively during design and construction to incorporate their betterment into the Project; this cost will be negotiated between Loudoun Water and AI and the betterment cost will not be passed on to VDOT. Once awarded the contract, we will coordinate with each utility owners to determine any additional betterments or enhancements that should be incorporated into the Project. Any betterments will be performed without cost to VDOT.

Utility Betterments within Schedule
The AI Design-Build Team worked with the City of Newport News and Hampton Roads Sanitation District to add a betterment to the Middle Ground Blvd project that provides the City with a system that accommodates future growth in the area while maintaining the original project completion date.

SCHEDULE MANAGEMENT

Since utility coordination and relocations are on the critical path for the Route 606 Project, close coordination and attention to the schedule development is critical. The key to schedule management is to be proactive and not reactive. Progress with each utility owner will be tracked by our Utilities Lead with updates provided to the DBPM and VDOT on a bi-weekly basis. This tracking updates all utility milestone events to facilitate design and relocation on a regimented schedule. Routine meetings with all utility owners will continue throughout the relocation phase to ensure adequate progress is being made, and to allow for continuous exchange of information between the Construction Team and utility owners. Identifying utility relocation schedule impacts early will assist in sequencing construction to minimize schedule impacts.

Our construction sequencing, as described in detail in Section 4.5.1, identifies possibilities for concurrent work and provides the advantage that unexpected utility conflicts discovered in one area will not affect progress in other priority areas. Construction of utility relocations will occur concurrently with construction of the roadway to ensure that time frame are not impacted. Additional mitigation strategies include overlapping relocation work of several utility companies to include common excavation for utilities in the same easement and reduce schedule and traffic impacts.

UNIDENTIFIED/NON-LOCATED UTILITIES

Our Utility Team will proactively search for additional unknown utilities through initial field walks. Telltale signs can be unmarked valves or pull boxes, cleared tree lines or long narrow strips of replaced asphalt. If any of these signs are recognized, additional research and exploration will be conducted prior to the plan submittal for this area. Additionally, Miss Utility design tickets will be utilized to mark the utilities within the Project limits.

Even though the majority of the work is being performed along an existing alignment, our Construction Team will exercise extreme care during the initial stages of construction when unknown facilities are most likely to be encountered. This is especially true at the crossroads where the roadway will be widened and new traffic signals and storm drains will be installed. To assist in avoiding utilities, once again, Miss Utility will be called to provide updated markings based on the conditions at the time of construction. Measures to locate known utilities will include soft digging and hand excavation in areas where known utilities exist.

Field Engineering Solves Unknown Utility Conflicts
Our Design Team utilized field engineering to resolve unknown conflicts with fiber utilities and maintain the relocation schedule for the Route 7 Traffic Improvements project in Loudoun County.

If unidentified utilities are encountered, VDOT's PM will be contacted and operations will be ceased until an impact assessment has been performed. The location of the utility will be as-built to determine the extent of the potential conflict. The project schedule will be updated to integrate any additional relocations and may use float time and/or acceleration process to mitigate adverse scheduling impacts.

EXPERIENCE WITH UTILITY OWNERS

AI has been responsible for utility coordination on ten design-build projects, including the Richmond Airport Connector Road design-build project. In addition, RK&K handled the utility coordination for the I-64 Widening design-build project. Our Team has experience with every utility owner for the Route 606 Project and following are a few examples of this experience:

Waxpool Road Widening: Utility coordination included a study of the existing utilities located within the project limits and provided Loudoun County with several budget plans for relocating all existing utilities in conflict with the widening of approximately 3,300 LF of roadway. Coordination with ***Dominion Virginia Power, Verizon, Comcast,*** *Washington Gas, Abovenet, and Openband* for both design and construction was accomplished within the County's twelve month schedule and saved 40% of the original utility budget cost.

Route 7 and 607 Interchange: Coordinated the utility work on this project which required seven fiber companies to relocate outside the interchange limits into a joint easement area provided by the County. To simplify the installation of these seven companies, our Team developed the plan to place all of the utilities in a joint trench. The solid working relationships we have with all the carriers, including ***Verizon,*** was key to this successful project.

Presidential Golf Course: This development project, located in the Broad Run area of Loudoun County, called for the realignment of the existing Loudoun Water 20" diameter sewer main and the realignment of the 16" diameter water main. Working with the developer our Team members addressed the impacts and reduced them by 30 percent. The resulting cost savings to the developer was approximately $150,000. In addition to relocating ***Loudoun Water*** facilities, the project required new utilities such as *Washington Gas,* ***Dominion Virginia Power, and Verizon*** to be provided as services to their new building site.

4.4.2 GEOTECHNICAL

GEOTECHNICAL APPROACH

The existing subsurface data, test boring logs, rock core box photos, and laboratory testing results provided in the RFP were reviewed in preparation of this Technical Proposal. Upon award, a design- level subsurface exploration program will be completed to validate and augment available data. The exploration program will be performed in compliance with Chapter 3 of VDOT Materials Division Manual of Instructions. Geotechnical design and construction will be completed in accordance with the standards specifications and details included in the RFP.

GEOTECHNICAL RISKS

The existing subsurface data, test boring, and laboratory testing results provided in the RFP were reviewed and utilized to identify the geotechnical risks for the Project. The following risks were identified based on the information provided in the RFP because they present the potential for impacts to quality, schedule, cost, and safety.

- Installation of Foundations
- Extension of the Existing Principal Spillway Culverts
- Removal and Replacement of the Control Gate
- Maintaining Existing Structures
- Maintaining or Reconstructing Existing Slopes
- Unsuitable Soils
- Borrow Source
- Rock
- Settlement

Mitigation strategies for each of these risks have been developed collaboratively by our geotechnical engineer and Construction Team to develop our approach to manage the design and construction challenges associated with the roadway reconstruction and widening and modifications to Horsepen Dam. These mitigation strategies are highlighted below and summarized in *Table 4.4.3 Geotechnical Risks.*

Table 4.4.3 Geotechnical Risks

Risk Description	Impact	Risk Rating	Mitigation Strategy
Installation of foundations	Safety, Dam Stability	Medium	▪ Monitor vibrations during installation to ensure no damage to the Horsepen Dam and existing utilities.
Extension of the existing principal spillway culverts	Safety, Dam Stability	High	▪ Support excavation with the use of rock-socketed soldier beams and lagging. ▪ Install a temporary diversion system. ▪ Schedule construction during low reservoir levels.
Removal and replacement of the control gate	Safety, Dam Stability	High	▪ Utilize temporary diversion system to dewater the surrounding area. ▪ Schedule construction during low reservoir levels. ▪ Complete before downstream work.
Maintaining existing structures	Safety	Medium	▪ Install piezometers prior to commencement of excavation. ▪ Monitor soil pore pressures during construction.
Maintaining or reconstructing existing slopes	Safety Dam Stability	Low	▪ Provide proper compaction and slope geometry.
Unsuitable soils	Schedule, Cost	High	▪ Perform additional design-level subsurface exploration. ▪ Confirm areas where unsuitable materials are anticipated to be present. ▪ Develop an unsuitable soils remediation plan prior to the start of construction. ▪ Bridge unsuitable soils >3' below the bottom of the pavement section. ▪ Remove or condition unsuitable soils <3' below the bottom of the pavement. ▪ Over-excavate ponds, where possible, to provide an on-site location for unsuitable clays to be placed. ▪ Over-excavate unsuitable soils present within footprint of triple culvert to permit proper compaction of bedding and backfill materials.
Borrow source	Quality, Schedule, Cost	Medium	▪ Select borrow soils will have a minimum CBR value of five. ▪ Test and obtain approval for multiple borrow sources. ▪ Identify on-site borrow locations. ▪ Test pit borrow locations to confirm suitability of material.
Rock	Cost, Schedule	Low	▪ Investigate rock locations and quality for foundations. ▪ Confirm rock elevations for drainage systems during preconstruction. ▪ Avoid encountering rock through design modifications where possible.
Settlement	Quality, Schedule	Low	▪ Select a borrow source that meets the requirements. ▪ Monitor fill placement at the retaining walls. ▪ Monitor post-construction settlement.

Installation of Foundations

Bridge Foundations – Deep foundations, large diameter drilled shafts, will be designed for the bridge over the Horsepen Dam spillway. These foundations will be founded on bedrock or to a minimum of one foot below the scour depths indicated in the RFP and settlement is not anticipated. The bedrock has been described as hard to very hard, massive and intensely jointed diabase. Driven piles are not appropriate due to high probability of encountering hard boulders located above "competent" rock in the thick weathered zone that will not be penetrated by driven piling and would create difficulty in achieving pile embedment below scour depths. Furthermore, the large diameter drilled shafts are designed to accommodate the 30-feet plus unbraced length anticipated upon scour activation. Driven piling, micropiles, or piles socketed into 3-foot diameter predrilled holes are not feasible due to the reduction in axial capacity from the unbraced lengths during the design scour event.

Vibrations during drilled shaft installation are anticipated to present a low risk. However, vibrations will be monitored during deep foundation installation to document no damage to Horsepen Dam and the buried 42-inch diameter concrete sanitary sewer pipe located at Station 356+21, between the pier and Abutment B. Our Team has successfully installed foundations for a spillway bridges over the Lyman Run High Hazard Dam project in Pennsylvania.

Retaining Wall Foundations – Foundations for Retaining Walls 1, 3, and 4 will be spread footings designed with a key extended to 10 feet below finished grade to address the scour requirements indicated in the RFP. Water is anticipated in the excavations. Sumps and pumps will be utilized to maintain a dry foundation during construction. Any rock encountered when excavating for the foundations will be removed using a hoe-ram to eliminate the risk of excessive vibration in the vicinity of the dam.

Remove and Replacement of the Control Gate – Diversion of reservoir inflow will be required during the replacement of the control gate. Temporary pipe culverts will be installed to carry the reservoir inflow underneath Route 606 in the area of the emergency spillway. The diversion will outfall downstream of the limits of the spillway extension and will be designed to withstand a minimum 10 year rain event per DCR standards. In addition to the diversion, a cofferdam will be utilized to replace the control gate. Most traditional cofferdams are either not feasible or less than ideal at this location, so an innovative solution has been developed.

A three-sided steel box will be designed and fabricated to fit against the structure and extend above the weir elevation. The coffer box will be set with a crane and diver and sealed. Once set, the inside will be dewatered and work will begin on the control valve. Replacement of the control gate will be completed prior to the extension of the spillway downstream. This operation will be scheduled for July and August, when reservoir levels will be at their lowest. *Figure 4.4.1 Expected Monthly Stream Flow* is representative of the anticipated low flow months for Horsepen Run. Regardless, storm tracks will be monitored during construction to schedule appropriately and minimize the risk of flooding the work site. Flooding will be managed by completing sensitive activities and closing critical excavations prior any flooding event.

Figure 4.4.1 Expected Monthly Stream Flow

Extension of the Principal Spillway Culverts – The replacement of the culvert will be staged following replacement of the gate on the riser structure. The diversion described for replacement of the control valve will also be used during the spillway construction. This work will also be sequenced for July and August, when reservoir levels are expected to be low and risk of large storm tracks are minimized and storm tracks will be monitored to provide adequate opportunity to minimize the risk of flooding the work site. An additional cofferdam downstream of the work limits will also be installed to prevent any backflow. Any residual water seepage into the excavations will be managed with sump pumps.

Excavation and replacement of the double box culvert in Horsepen Dam will be constructed utilizing soldier beams embedded into rock and lagging. Use of an anchored support of excavation (SOE), such as tie-backs, would create preferential seepage paths sacrificing the integrity of the dam and is not recommended. Open cut excavation is not recommended as the side slopes will be subject to detrimental erosion and presents a significant risk. The SOE design will consider deflections and will be monitored during installation and construction to preclude damage to Horsepen Dam.

Excavation to rock will be required, per the RFP, to found the culvert on rock. If rock is encountered above the culvert base, it will be removed though use of hoe mounted pneumatic hammer (blasting of rock will not be permitted). Excavation as deep as 10 feet below culvert grade is anticipated in selected areas to expose rock and replace soil with A3 concrete. The SOE system will be designed to provide safety to personnel and the dam, during excavation to the required depth.

Maintaining Existing Structures – The integrity of Horsepen Dam will be monitored during construction, as described in the Horsepen Dam Monitoring narrative on page 27. Construction activities will be staged and monitored to confirm that piping, migration of fines, slope movement and settlement do not occur. Furthermore, Horsepen Dam's ability to serve as flood retention and storage during construction will not be compromised. The crest will not be lowered, nor will the auxiliary grass-lined spillway be compromised by construction activities without proper temporary erosion control measures. Additional design features will be added to Horsepen Dam, including seepage diaphragm and graded filter prior to embankment fill placement. These features will prevent piping of embankment fill, provide longevity and safe function of Horsepen Dam into the future. Utility relocation and installation at Horsepen Dam will use impervious soils as trench backfill to avoid a preferential seepage path that would be detrimental to the dam.

Maintaining or Reconstructing Existing Slopes – Reconstruction of the existing slopes at Horsepen Dam will be performed in accordance with geotechnical and construction requirements defined in the RFP. During design, stability analyses for normal steady state seepage conditions will be performed in accordance with Virginia DCR Regulation VAC 50-20-320. The maximum downstream slope analyzed will be 2H:1V and seepage conditions will be considered at normal pool as well as the maximum surcharge pool.

The seepage model used for design analysis will be based on data collected in the piezometers installed by our Team. Compaction benches will be cut into the existing slope in accordance with VDOT's Road and Bridge specifications and proof-rolled prior to placing fill. Where dam widening is to occur against the existing rock rip rap shell, the existing shell will be separated from new fill by placing a natural filter meeting the requirements of FEMA's Filters for Embankment Dams, Best Practices for Design and Construction. A three foot thick internal drainage blanket will be installed. Embankment material will meet all criteria of the RFP including soil classification, strength, particle size, lift thickness, and compaction.

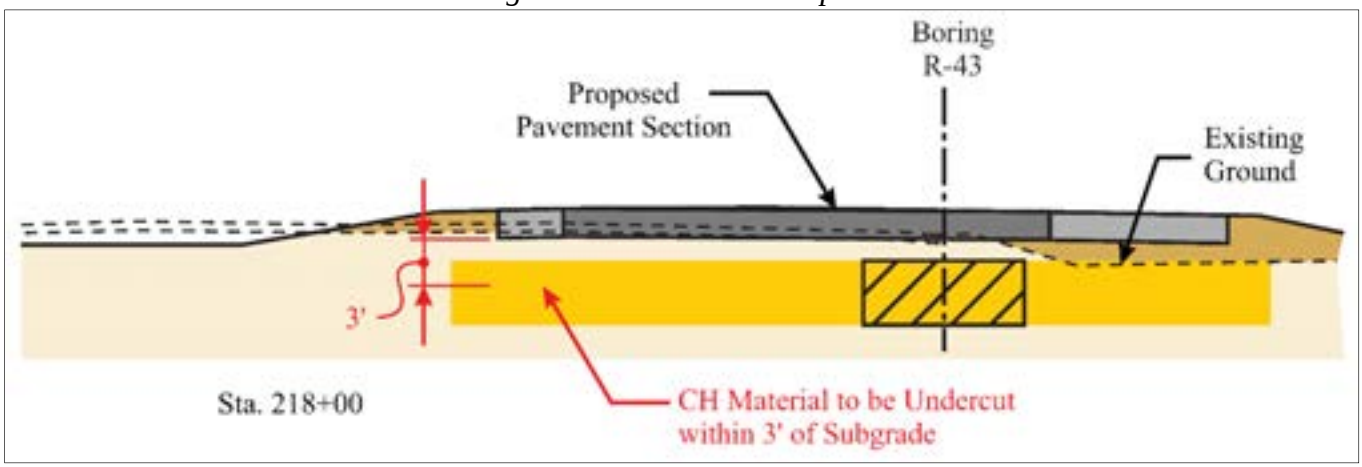
Unsuitable Soils – When optimizing the roadway profile, careful consideration was given to areas where unsuitable soils are anticipated. The locations of unsuitable soils are noted on the profiled in Volume II of this proposal and select areas where undercutting is anticipated has been highlighted in *Table 4.4.4 Representative Locations of Unsuitable Soils*. Our proposed design will result in the majority of unsuitable soils on the Project being bridged by placing three feet thickness or greater of engineered fill, as permitted by the RFP documents. The design started with a higher profile to "bridge" all unsuitable soils, which created the need for a large quantity of borrow. Since there is minimal borrow available on-site, the roadway profile was lowered and optimized to reduce the required borrow quantity while minimizing unsuitable soil removal. This optimization includes a balance of bridging and removal of unsuitable soils.

The means and methods in which unsuitable soils will be handled will be dependent on several factors including quantity, severity, and potential schedule impacts. Per the RFP requirements, unsuitable soils will be removed where they are located within three feet of the bottom of the pavement section. *Figure 4.4.2* is an example of removal template. Additionally, unsuitable soils will also be removed where encountered within 2 feet of bedding of minor structures.

Table 4.4.4 – Representative Locations of Unsuitable Soils

SEGMENT	STATION LIMITS	MITIGATION STRATEGY
A	82+00 to 84+00	Undercut 1'
A	150+00 to 152+00	Undercut 2'
B	168+50 to 170+75	Undercut 2'
B	194+50 to 197+00	Undercut 1'
C	215+00 to 219+00	Undercut 3'
C	223+00 to 227+00 Left of Centerline	Undercut 2'
D	264+00 to 265+75	Undercut 3'
D	287+00 to 290+00	Undercut 3'
D	290+00 to 292+00 Right of Centerline	Undercut 1'

Figure 4.4.2 Removal Template



Excavated site soils will consist of unsuitable removal in areas where bridging or conditioning is not possible. Therefore, it is anticipated that these soils will generally not be suitable for re-use in compacted highway embankments. Unsuitable soils are those with USCS classifications of CH, MH, OH and OL and those which exhibit swell index of five percent or greater. We have tabulated the presence of these soils, mapped them on the cross-sections and identified these soils exist in several strata including: Fill or Possible Fill, Alluvium or Possible Alluvium and the Upper Zone Residuum.

During the design phase of the Project, a geotechnical investigation will be completed that will further identify areas where unsuitable soils will be encountered. This information supplemented by additional test pitting of soils will be utilized to create an Unsuitable Soils Plan. This plan will identify areas where unsuitable soils are most likely to be encountered, if the soils are in a cut or fill section, methods to be used for field identification of unsuitable soils, and various means and methods to be implemented to mitigate the soils. The plan will be reviewed during preparatory inspection meetings for earthwork and embankment operations, and distributed and reviewed with all QA/QC inspectors and construction Field Managers. Aligning to an Unsuitable Soils Plan with our Team's Geotechnical Engineer and VDOT prior to encountering unsuitable soils will minimize potential schedule impacts.

Conditioning of wet or soft soils with addition of lime, soil cement, or harrowing /air drying will also be exercised as permitted by schedule. Where unsuitable soils are not able to be mitigated in place, they will be removed and disposed of. As part of the disposal plan, our Team anticipates over excavating strategic areas (i.e. basins) that will generate suitable fill and create an area that soils unsuitable for roadway embankment can be placed to improve schedule control.

Borrow Source – Approximately 180,000 cy of borrow soils will be required to complete construction of the Project. In accordance with the RFP, embankment material will be free from fibrous organic material, construction debris, frozen soil, highly plastic soils (USCS classification CH and MH), excessively wet soils, and exhibit a minimum CBR value of five. The CBR value of five will provide adequate stable foundation for the minimum pavement thickness identified by the RFP. Thorough testing and investigation of approved borrow sources will be conducted to identify any possible changes in soil properties of the proposed excavated material. This testing will limit the chances of an unexpected change in soil properties that could negatively impact both quality and schedule. Material to be utilized for the dam embankment will undergo further testing; either direct shear tests or triaxial consolidated undrained tests with pore pressure measurements as required by the Construction Requirements for Horsepen Dam Modifications included in the RFP. A minimum of two strength tests will be performed for each material tested.

Our Team will identify, test, and obtain approval of multiple borrow sources to reduce the potential schedule impacts or quality issues that may arise from off-site sources. In addition, potential on-site borrow

locations will be tested for use as embankment material. Having on-site borrow will provide for a location to place unsuitable materials removed from the roadway and reduce truck traffic on the local road network.

Rock – Durable rock is not anticipated to be encountered in the project excavations. Weathered rock will be encountered in locations of the retaining wall, bridge, stormwater basin, and pipe trench excavations. The weathered rock will be removed through ripping with a properly equipped dozer or excavator. An excavator equipped with pneumatic hammer will also be available on-site, if needed, yielding rock excavation a low risk to the project schedule, cost, quality and safety. A thorough evaluation of the locations rock can be anticipated will be conducted shortly after NTP during the geotechnical investigation. Where rock cannot be designed around, means and methods for rock excavation will be determined in conjunction with our Geotechnical Engineer.

Settlement – Settlement of roadway embankments occur when foundation soils are inadequate to support the embankment load, fill materials do not meet proper engineering parameters, or fill is not placed and compacted properly. To address the risk of unacceptable settlements, borrow soils provided to construct the Project will be tested to document compliance with VDOT standards and specifications included in the RFP. QC procedures of fill placement will document proper compaction techniques and results; unsuitable foundation soil removal, and areas where bridging or conditioning material is necessary. QC Procedures are further detailed in *Section 4.4.3 Construction QC for Embankment and Excavation*.

The maximum embankment thickness on the Project will be in the area of Horsepen Dam. The potential for settlement of the dam embankment during placement of additional fill will be evaluated. The dam embankment was built on weathered bedrock, of well-compacted soils, and placed in controlled lifts. Therefore, settlement is not anticipated due to embankment fill placement at Horsepen Dam.

HORSEPEN DAM MONITORING

Instrumentation Monitoring Program – The instrumentation monitoring program will address risks associated with the function of Horsepen Dam during construction activities as well as settlement/ movement of retaining walls and excavation support systems. The RFP requires the installation of six monitoring wells following construction of dam modifications. The installation of standpipe piezometers prior to excavation into the dam will be completed to manage risk associated with uncontrolled seepage. Piezometers will be constructed to measure pore pressures in specific target areas within the dam. Water levels in piezometers are directly related to soil pore pressures which relate to soil stress and strength, providing advance warning to slope stability detrimental to the health and integrity of the dam embankment.

The standpipe piezometers will be installed a minimum of one month prior to any construction activities to allow equilibrium to be established. A minimum of two standpipe piezometers will be installed. The piezometers will be read daily and results evaluated by the Lead Geotechnical Engineer, following commencement of construction activities within the footprint of Horsepen Dam. Inclinometers and surface monuments on the dam face, as well as on the SOE for the principal spillway conduit extension, will be established and surveyed daily to document successful installation and operation of the SOE components. Retaining wall settlements will be monitored and reported as required by VDOT's Chapter 10 – Earth Retaining Structures, File No. 10.11-1.

Role of the Lead Geotechnical Engineer – The Lead Geotechnical Engineer will provide direction and review all efforts of the Geotechnical Engineering design staff. Means and methods of construction will be reviewed with the Lead Geotechnical Engineer in order to identify risks and management of risks for each construction operation. The Lead Geotechnical Engineer will coordinate geotechnical design elements for full compliance with VDOT standards, specifications, and details as referenced in the RFP. The Lead Geotechnical Engineer will also provide design documentation to VDOT, MWAA and VADCR Dam Safety regarding all aspects of Horsepen Dam modifications. The Lead Geotechnical Engineer will also communicate design details to WR&A, MWAA's engineer, as requested by VDOT.

4.4.3 Quality Assurance/ Quality Control (QA/QC)

Approach to QA/QC

The AI/RK&K Team's approach to QA/QC is to create a partnership between VDOT, the Design Team, Construction staff, QC inspectors/testers, and QA staff. Forming this partnering culture with a proactive QC testing and inspection policy and a well-organized and disciplined level of QA is the key to a high-performing QA/QC Program. Our QA/QC program will be developed and executed in compliance with VDOT's Minimum Requirements for Quality Assurance and Quality Control on Design Build and Public-Private Transportation Act Projects, January 2012 (VDOT's QA/QC Guide).

Integrated Quality Assurance Management – The AI/RK&K Team has identified Mimi Kronisch, PE, CCM as the Quality Assurance Manager (QAM) for the Project. As an employee of the Lead Designer, her daily integration with the design development will ensure the approved design is understood by the QA staff and is implemented during construction. Since 2003, Mimi has exceeded the expectations of VDOT's NOVA District through her understanding and application of VDOT's requirements for meeting Road and Bridge Specifications/Standards. She also has established relationships and experience working with the Design Team and stakeholders in the NOVA district who will be administering this contract.

QA Leadership that Exceeds VDOT Expectations
Under Mimi's leadership, the Fairfax County Parkway/ Fair Lakes Interchange and WWB's Telegraph Road Interchanges exceeded VDOT's goal of 92.5% by receiving Construction Quality Improvement Program (CQIP) scores of 93.7% and 95.3% respectively.

Specific Lessons Learned – Our approach and specific lessons learned from previous design-build projects will be implemented on the Route 606 Project to deliver high quality construction services while limiting the need for additional VDOT involvement. Our experience has reinforced our commitment to:

- Incorporate Quality Management into project meetings with VDOT and other stakeholders;
- Focus on identifying and resolving *"rocks in the road"* toward achieving quality goals;
- Assign qualified inspection staff and integrate QA/QC staff into the project team;
- Support QC or QA staff actions on the project level and organizationally;
- Include QA and QC staff in scheduling to facilitate proper inspection and oversight;
- Ensure appropriate QC effort for each work discipline and operation;
- Maintain and protect completed work;
- Follow-up and complete punch list items in a timely manner; and
- Provide timely and complete QC/QA documentation.

Design QA/QC

RK&K's Design QA/QC procedures provide quality designs and plans with a focus on complete and error-free design plans through effective communication with all design and construction staff involved in the design process. Before design commences, the DBPM along with the DM, lead discipline engineers, and Design QA/QC Manager will review and comprehend the design criteria and establish checklists for each design element. Over-the-shoulder reviews will solicit input from all stakeholders to gain alignment on the design and discuss any potential barriers to constructing the current design. Constructability reviews will be conducted by experienced construction personnel to identify issues that may arise in the field.

Design Process and Staffing Plan – Design QA/QC Staff has been selected based on their qualifications and experience as they relate to the requirements of the plan and the specific needs of the Route 606 Project.

Checking Design Deliverables: Design deliverables will show complete and clear fabrication and construction requirements/details. The processes/procedures defined in the QA/QC Plan will be strictly enforced and thoroughly documented to minimize VDOT reviews.

Design Preparation: Design deliverables will be prepared under the Lead Discipline Engineers. Weekly meetings will be held throughout the design process, led by the DM, and include the Lead Discipline Engineers, QC staff, and the CM or responsible construction representative(s). VDOT will receive advanced notification meeting schedules to encourage participation in these meetings and reduce design review time by providing input and feedback during the design development. Reviewing each deliverable follows the steps indicated in *Table 4.4.5 Design QA/QC Roles and Responsibilities*.

Table 4.4.5 Design QA/QC Roles and Responsibilities

TEAM MEMBER	DESIGN QA/QC ROLE AND RESPONSIBILITY
Design Discipline Leads	A registered P.E. in their area of expertise will be responsible for the initial preparation of the deliverable to be checked. Design Discipline Leaders are accountable for accuracy of their work and ensuring that it is prepared in accordance with the requirements outlined in the applicable design standards and codes.
Checker	Reviews every aspect, including input required for design programs that are a part of the calculation set. The checker marks up the stamped deliverable set with comments and returns the set to the originator.
Back-checker (Design Discipline Lead)	Responsible for reviewing the checked deliverable and confirming the items marked for revision are justifiable, and that the corrections noted are correct. The back-checker is also the Design Discipline Lead. If the Discipline Lead does not disagree with a correction from the checker, they must coordinate and resolve the issue prior to the next step. If agreement cannot be reach, the DM will resolves the issue.
Corrector	Responsible for ensuring that the changes marked on the check print are addressed and revised on the original deliverable. The corrector is either the Design Discipline Lead or their designee.
Verifier	Responsible for reviewing the corrected deliverable against the check print and verifying the corrections marked have been properly addressed/incorporated.
Interdisciplinary Reviewers	The DM organizes all discipline leads 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.
Design QA/QC Manager, Tommy Peacock, PE	Responsible for QA/QC Plan development and implementation of the plan. Ensures all QA/QC procedures are being followed and audits the process at each submission or milestone.
QAM, Mimi Kronisch, PE, CCM	The QAM is responsible for auditing that the quality control checking process is being followed by the Design Team. In addition, when required, a design peer review will be performed by a senior technical member of the Design Team.
DBPM, Kevin Ott	As part of the final review, prior to submitting to VDOT, the Construction Team will again review for constructability and conformance to anticipated means and methods.

Submitting to VDOT – The QAM will certify that all QA/QC efforts are in accordance with the required procedure and the DM and DBPM will sign-off on their acceptance. At this time, the deliverables will be signed and sealed by the Design Discipline Leads and the DBPM will submit the documents to VDOT for review and approval. VDOT reviews the design and returns any comments to DBPM to be addressed in the final approved plans that will be issued for construction of the Project.

Design Changes during Construction – Design changes during construction will be reviewed using the same process as the original design. Changes, such as field design changes and nonconformance evaluations, will be maintained in a database to track revisions and update the as-built documents.

Records – The QAM will verify that all quality control procedures were performed for the individual disciplines. Copies of each submittal, including revisions, will be kept for the duration of the Project. Final design records of the required forms and check prints are maintained by the DM in the project files.

CONSTRUCTION QA/QC

Kevin Ott (DBPM), will establish a culture where the Construction Team and QC staff understand their responsibilities and take ownership of construction quality to assertively address quality concerns and prevent non-compliance issues from arising. A Construction QC Plan (QC Plan) will be developed to measure quality characteristics and inspect activities at a time when corrective action could be taken to decrease the likelihood of non-conforming materials being incorporated into the Project. The QC Plan will include an organizational chart, staffing plan, and resumes for inspection staff. The QC Plan will also:

- Designate individuals on each crew responsible for performing daily field inspections;
- Define inspection and hold points;
- Ensure that elements that do not conform to all requirements are not used or installed;
- Define the inspections and tests to be performed for individual items of work;
- Control the material and equipment management to prevent damage or deterioration;
- Ensure Nonconforming Work is promptly identified and corrected; and
- Control documents to ensure the approved documents are used for the prescribed work.

Construction QC Process and Staffing Plan – AI's construction operation planning incorporates safety, quality, and production in a comprehensive process specific to each operation. Quality and safety action items are identified and tracked in an operation planning checklist and activities are not scheduled to begin until each item has been addressed. This detailed planning ensures quality elements are included into each operation and tasks are followed through to completion. Roles and responsibilities of the construction QC and QA staff are defined in *Table 4.4.6 Construction QA/QC Roles and Responsibilities*.

Table 4.4.6 Construction QA/QC Roles and Responsibilities

TEAM MEMBER	QA/QC ROLE AND RESPONSIBILITY
DBPM, Kevin Ott	Responsible for the overall project design and construction quality management and will provide direct oversight of quality assurance.
QAM, Mimi Kronisch, PE, CCM	Responsible for the QA inspection and testing of all materials used and work performed on the Project, oversight of the construction QC operations, and maintenance of the Materials Notebook.
QA Inspectors	The Lead QA Inspector will be on-site throughout the duration of construction and will be supported by additional inspection staff as needed. QA Inspectors will initiate actions to prevent the occurrence of any non-conformities and will verify the implementation of solutions for nonconforming work.
Independent QA Lab	A certified testing lab will provide independent QA testing for materials.
CM, Robert Rube	Responsible for ensuring the construction services provided conform to the requirements of the contract documents and appropriate rules and regulations contained therein.
Construction Team	Will support detailed construction operation planning that identifies QA/QC requirements, and coordinate with inspection staff for witness and hold points.
Field Personnel	Responsible for ensuring all work performed and materials incorporated meet VDOT standards and will coordinate daily with inspection staff for construction operations.
QC Manager, Nathan Schwarz, PE	Responsible for construction inspection, sample, and testing in accordance with all requirements. Responsible for the processes, methods, procedures, and documentation of QC for the Project.
QC Inspectors	The Lead/Senior QC Inspector will be dedicated to the Project for the duration and will have one or more supporting QC Inspectors and Materials Testing Technicians. Inspection staff will hold current VDOT materials certifications for the types of materials testing they are assigned to perform.
Independent QC Lab	A certified testing lab will provide independent QC testing for materials.

Project Document Control and Maintenance: QA and QC staff will follow VDOT's QA/QC Guide and Construction Manual and Materials Manual. The QAM will monitor the QC preparation and submission of daily records, including inspection and material test reports. A master set of QA documents (hard and electronic) with submittal, RFI, and photo logs, will be maintained by the QAM to include preparatory meeting minutes, completed QC and QA inspection checklists/test reports, Materials Notebook entries, and back up documentation including corresponding materials tests reports, invoices, and TL weigh sheets.

QC Inspection – The QC Manager will be responsible for monitoring construction activities for compliance with the contract requirements and providing the necessary documentation. He will determine the QC staffing requirements to properly monitor the work based on the construction work activities. Inspections will be conducted in accordance with the VDOT Inspection Manual and shall be performed during all phases of the Project from notice-to-proceed to final acceptance in order to assure that the work meets, and is being performed in accordance with the Contract. Inspections of a work activity or product will take place in 3 phases – preparatory inspection, intermediate inspection, and completion inspection. A fourth inspection will be made to develop a Punch list. *Table 4.4.7 Construction Inspections* describes of each of these inspection phases.

Table 4.4.7 Construction Inspections

INSPECTION PHASE	DESCRIPTION
Preparatory Inspections	Preparatory inspections ensure all items, certifications, and requirements necessary to begin an operation are completed and available. The QCM will attend each Preparatory Inspection Meeting and work with the QAM to identify and develop the quality and technical requirements of each feature of the work, including the acceptable workmanship requirements, to the supervisor for the item of work.
Intermediate Inspections	Intermediate inspections ensure that the methods and procedures established in the preparatory inspection phase are followed and maintained. Intermediate inspections will be held according to the information developed from the preparatory inspection meeting, and based on VDOT's QA/QC Guide.
Completion Inspections	Completion inspections will allow VDOT's PM to verify that all necessary and supporting documentation is available. Completion inspection documentation will include deficiencies observed and corrective actions taken.
Punch-Out Inspections	The punch list will be a working document with items added and closed throughout the construction phase. Inspection will be based on the approved construction plans, specifications, and other related construction documents and any discrepancies will be noted. The QAM will maintain the punch list and the CM will oversee completion of each item."

Non-Compliance – Deficiencies and non-conforming work will be prevented through control of the activities affecting quality. Any nonconformance issues that arise will be reviewed by the QAM, who will prepare the Nonconformance Report and issue it for disposition. The QCM will assist the QAM and provide any necessary documentation. Upon discovery of non-compliant work, an investigation into the root cause of the issue will result in corrective actions to prevent further instances prior to continuation of the affected work. Revised QC procedures will then be documented in the QC Plan.

UNIQUE PROJECT ELEMENT CRITICAL TO DESIGN – ENVIRONMENTAL PERMITTING AND COMPLIANCE

The timely acquisition of environmental permits and compliance with the environmental commitments contained therein is a critical element of the Route 606 Project. With a widening project along an existing alignment, some impacts to natural resources are unavoidable and require consultation and compliance with federal, state and local regulatory authority's requirements and conditions. Our relationships with the regulatory and resource agencies will assist to achieve consensus on appropriate avoidance measures and minimization in compensation opportunities, and ultimately secure the required permits using limits of construction that are both feasible and cost effective.

Our Environmental Team has established QA/QC processes for environmental resource data collection, environmental permitting and environmental commitment compliance to ensure that environmental issues do not introduce unmanageable risks into the project schedule. The AI/RK&K Team has demonstrated success in efficient permitting on projects such as the Hampton Roads Bridge Tunnel and I-64 Widening Henrico/Goochland County design-build project. Our Environmental Team consists of permitting specialists, NEPA specialists, designers, and construction experts who will ensure the appropriate environmental clearances are obtained expeditiously and all associated environmental commitments are complied with during construction. Our staff is experienced at monitoring project delivery for environmental compliance and will participate in regularly scheduled communication and coordination points throughout project development and construction to promote environmental compliance. This team includes the following individuals:

- **Environmental Permitting Lead** – Eric Almquist has 17 years of management and technical experience in environmental planning, specializing in transportation projects throughout the Mid-Atlantic region. He has served as the Environmental Permitting Lead on more than 60 projects and as contract manager for several multi-million dollar open-end contracts for transportation clients.

- **Environmental Permit QA Reviewer** – Ricky Woody has 26 years of experience in securing and managing natural resource clearances and environmental permits in Virginia. He led VDOT's Natural Resources Programs for 17 years and developed the implementing manuals, federal and state streamlining agreements, and standard operating procedure to meet legal and regulatory requirements.
- **Construction Compliance** – Michael Lachowicz has 8 years of experience managing environmental compliance during construction. He holds Virginia DCR Responsible Land Disturber certification and is a certified preparer of Stormwater Pollution Prevention Plans.

QA/QC Milestone Reviews for Permit Acquisition

- Resource Data Collection and Reporting
- Application Preparation
- Pre-Application Submittal
- Application Submittal
- Per-Permit Issuance
- Permit Issuance

The Environmental Team will perform environmental QA/QC design reviews during the design development and provide an Environment Commitments Database (ECD) and ArcGIS resource data layers to communicate all of the environmental commitments at PFI, FI/ROW, and AFC submissions. This ECD and ArcGIS will document the environmental resource location and provide each environmental clearance with associated commitments for Air, Noise, Cultural Resources, Section 4(f) Resources, T&E Species, Hazardous Materials, Water Quality Permits, and Compensatory Mitigation. All the results of our compliance verifications will be provided to VDOT for final authorization prior to releasing the Project for construction. During construction, the ECD/data layers will be used to ensure construction compliance is maintained with special focus on the SWPP permit conditions related to erosion and sediment control, noise and dust. In conclusion, our Environmental Team will:

- Meet formally and informally with the regulatory and resource agencies to present and secure comments on avoidance and minimization opportunities;
- Use an active peer-review process to perform periodic QA reviews of draft and final products supporting the permit application;
- Prepare letters of instruction discussing the environmental commitments to disseminate information to design and contractor personnel;
- Communicate with design and construction personnel regarding the implementation of environmental commitments at weekly meetings;
- Establish an environmental clearance and commitment tracking database and monitoring protocols;
- Perform periodic QA reviews to confirm adherence to environmental commitments; and
- Regularly follow up on previously identified deficiencies with the DBPM.

Unique Project Element Critical to Construction – Embankment and Excavation

While considering which element was the most critical to the construction of the Project, we identified the construction of the bridge over Horsepen Dam, modification/extension of the existing primary spillway, and earthwork as critical elements of construction. After evaluation, embankment and earthwork was selected because it will create the greatest quality challenges, take place over long durations, and have a significant impact on the quality of other elements of work such as MOT, erosion control, and paving. Assuming 180,000 cubic yards of import as detailed in *Section 4.3*, we estimate we will have approximately 18,000 trucks entering and exiting the work zone between October of 2015 and January of 2017.

The QA/QC process for embankment will begin well before any soil placement takes place. Potential borrow sources will be thoroughly tested in accordance with the contract and/or VDOT's 2007 Road and Bridge Specifications Section 106.03 to confirm suitability of each potential source. In addition to the typical VDOT Road and Bridge Specifications, the material will need to meet additional requirements if it will be used in Horsepen Dam. Our QAM, Geotechnical Engineer, and VDOT will review and approve each source.

A thorough geotechnical investigation of the site during preconstruction will confirm the presence of unsuitable materials. A preliminary plan for managing unsuitable materials will be prepared prior to the start

of construction and reviewed by construction and QA/QC supervisors. QC and QA staff will follow the testing requirements in VDOT's QA/QC Guide for Moisture Density Relations and In-Place Density Tests for all embankments placed. Critical elements related to embankment that will be monitored include grade preparation for fill placement, lift thickness and uniformity across the grade, compaction, haul routes and construction entrances, erosion and sediment control, and verification of approved material placed on-site. Construction inspections for embankment and excavation will follow the preparatory, intermediate, completion stages shown in *Table 4.4.8 Inspection of Embankment and Excavation Operations*.

Table 4.4.8 Inspection of Embankment and Excavation Operations

INSPECTION PHASE	DESCRIPTION
Preparatory Inspection	Conducted a minimum of one week prior to the start of earthwork/embankment operations. A separate preparatory meeting will be held for embankment within Horsepen Dam area due to the sensitivity and additional requirements. The preparatory meeting will review the following: ▪ Scope of work/sequence of work/schedule; ▪ Erosion Control/MOT/Safety; ▪ AFC plans and specifications; ▪ Geotechnical Report/Unsuitables Plan; ▪ Approved borrow sources, properties, and test results for borrow material; ▪ Roles and responsibilities; ▪ Testing requirements and frequencies for QC/QA/IA/IV; ▪ Inspection checklists/documentation/materials notebook; and ▪ Process for documentation and correction of deficiencies.
Intermediate Inspections	▪ Verify proper lift depths and density tests are being performed as required; ▪ Review TL-124's weekly during fill operations to verify appropriate testing frequency; ▪ Monitor that nuclear density gauges have been calibrated within the last 12 months; and ▪ Ensure that the plan set up by the preparatory inspection meeting is met.
Completion Inspections	▪ Review TL124 to verify frequency and location of testing for Completion Inspections; and ▪ Verify all testing was completed in accordance with the contract and all non-conformance items have been corrected.

Safety and Environmental Compliance – Safety and Environmental compliance are a top priority during this operation and will be discussed with the Construction Team, QA and QC staff, VDOT and the Safety Manager on a routine basis. Specific measures will include:

- Back-up alarms and proper signage on tailgates for all dump trucks;
- Personal Protective Equipment to include hard hats and vests for all truck drivers;
- Orange reflective triangles on any equipment working adjacent to travel lanes;
- Proper maintenance of construction entrances;
- Methods to prevent dust and mud from being tracked onto the road;
- Inlet protection for structures along haul roads or near entrances;
- MOT devices such as "Truck Entering Highway" signs will be installed;
- Safety checks for fills along phase line; and
- Daily visual inspections during embankment placement at Horsepen dam.

Non-Conformance – Non-conformance will be discussed in the Preparatory Meeting to review the process for failing test results and any nonconformance. Earthwork activities not meeting the required specifications will be documented by both QA and QC inspectors in the field. This information will immediately be relayed to the CM so that corrective actions can be taken. The QA Inspector will document corrective actions taken and confirm that the final results are within specification. Should there be a dispute in the field over quality, it shall be brought to the attention of the QAM and CM for resolution. If there is still a dispute, resolution will be elevated to the DBPM. All disputes will be documented and distributed to VDOT to provide complete transparency in implementation of the QA/QC Program.

VDOT
Virginia Department of Transportation

4.5 Construction of Project

American Infrastructure

RK&K

4.5.1 SEQUENCE OF CONSTRUCTION

The AI/RK&K Team's construction phasing and sequence of activities were developed to minimize the overall duration of construction and provide schedule flexibility. Aggressive schedule management and partnering with N stakeholders have proven to be successful strategies for anticipating and mitigating potential delays and expediting construction schedules, as evidenced by AI's early delivery of both the Richmond Airport Connector Road and Tye River Bridge design-build projects. Partnering success is realized when each stakeholder puts the needs of the Project ahead of any one individual's interests. This team approach fosters an atmosphere of transparency, creativity, innovation, and collaboration.

APPROACH TO CONSTRUCTION PHASING

The construction phasing was developed by optimizing the roadway profile and section to minimize impacts to the public and limit the temporary measures required for construction. By taking into account the vertical and horizontal alignment of the existing roadway, as much of the new roadway as possible will be built while utilizing the existing roadway to limit temporary pavement and support of excavation between phases.

Limiting traffic pattern changes during construction will make a more predictable drive for the travelling public. Continuous access will be provided to both residential and commercial properties, with particular sensitivity to maintaining access for emergency vehicles, pedestrians, residents, and local businesses. Maintaining uninterrupted access requires temporary paving in some areas due to the alignment of the existing and proposed roadway, as well as grade differences and temporary crossovers.

Construction activities will begin with the relocation of utilities that are in conflict throughout the corridor. In general, utility relocation will begin at the east end of the Project and proceed west. This will allow for utilities in the most complicated segment of the Project to be relocated first. Prerequisite operations such as clearing, installation of erosion controls, and installation of MOT measures will then take place, preparing the way for road construction to begin. We have identified many areas where utility relocation and construction can be concurrent, which reduces schedule dependence on the utility relocations. Waterline relocations are anticipated to be completed with AI crews. This will provide the schedule control necessary to minimize the potential for delays for utility construction.

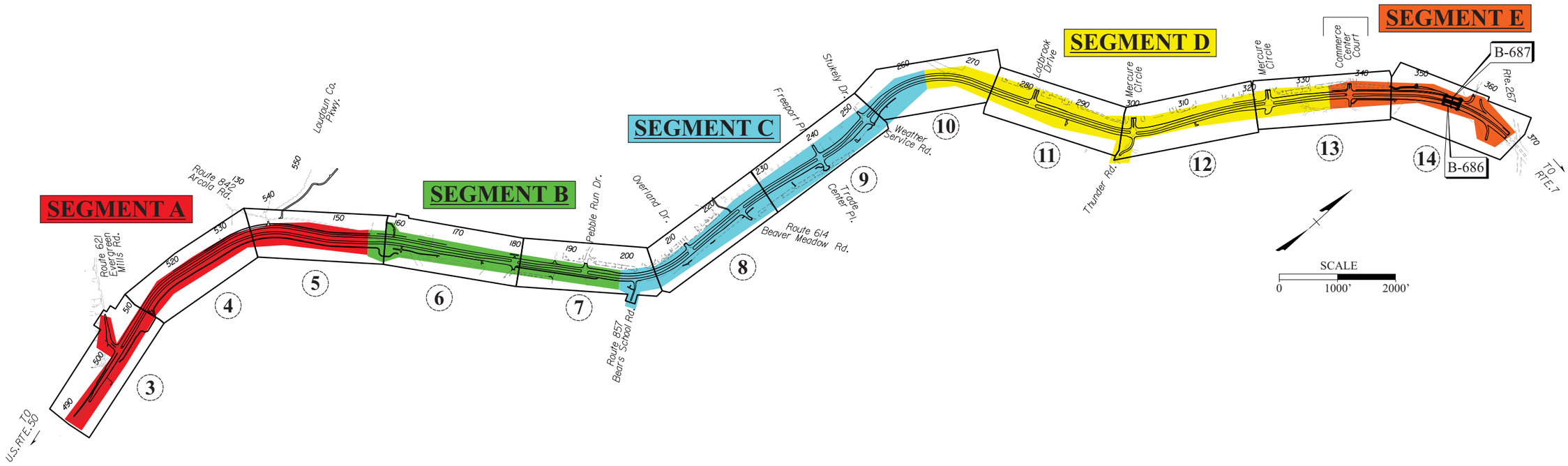
The majority of the Project will be completed in two stages. In general, Stage 1 will construct the proposed westbound lanes. Once completed, traffic will be diverted to the new lanes while the Stage 2 eastbound lanes are constructed. There are portions of the Project, such as at Horsepen Dam and the intersection with Evergreen Mills Road that are more complex and will be constructed in multiple stages.

SEGMENTS OF THE PROJECT/ SEQUENCE OF CONSTRUCTION

When evaluating construction phasing, the AI/RK&K Team separated the Project into the five areas shown on *Figure 4.5.1 – Segments of the Project* on page 35 highlights the keys to success and sequence of construction in each project segment. The areas were divided where construction activities could be performed independent from the adjacent segment while maintaining traffic. Phasing construction independently in each of these segments minimizes the potential delays to construction should one segment experience unexpected delays (such as right-of-way, permitting, or utility relocation issues). A discussion of the keys to successfully construct each segment is provided on page 40 and expands on critical sequence elements to mitigate potential schedule risks.

Each segment of the Project has also been broken down further into areas to facilitate detailed planning and scheduling by the Construction Team. These areas are reflected in the Proposal Schedule and Narrative in *Section 4.7*. Although the Project has been divided into several areas for maximum schedule flexibility, construction of each area will be optimized concurrently with one another in order to maximize efficiency and compress the overall project schedule. Further details on the sequencing of work are included in the Proposal Schedule and Narrative in *Section 4.7*.

Figure 4.5.1 Segments of the Project



SEGMENT A
STA. 489+06 TO STA. 155+00

Key to Success

- MOT at Evergreen Mills Rd. See Figure 4.5.2 for detailed construction sequencing.
- Mitigate unsuitable soils anticipated from stations 82+00 to 84+00 and 150+00 to 152+00.

Construction Sequence

- Relocate airport fencing as needed and build SWM basin A.
- Maintain existing lanes and construct EB traffic from Sta. 80+00 to Sta.155+00.
- Place temporary asphalt at Evergreen Mills
- Shift traffic to new lanes and construct new WB lanes.
- Construct Shared Use Path (Phase B) if awarded.
- Shift traffic to new roadway and construct EB lanes.

SEGMENT B
STA. 155+00 TO STA. 199+00

Key to Success

- MOT during construction of the culvert at Cabin Branch. See Figure 4.5.3 for detailed construction sequencing. Undercuts are anticipated between station 168+50 and 170+75, and 194+50 to 197+00.

Construction Sequence

- Relocate airport fencing as needed and build SWM Basins D, E, F & G.
- Maintain traffic on existing roadway and construct new WB Lanes.
- Install quadruple culvert at Cabin Branch.
- Construct Shared Use Path (Phase B) if awarded.
- Shift traffic to new WB Lanes and construct EB lanes.

SEGMENT C
STA. 199+00 TO STA. 262+00

Keys to Success

- Minimizing construction impacts to residents by prioritizing soundwall construction.
- MOT at Freeport Place and Stukely Drive. See Figure 4.5.4 for detailed construction sequencing.
- Relocation of multiple utilities.
- Mitigate unsuitable soils anticipated from stations 215+00 to 219+00 and 223+00 to 227+00.

Construction Sequence

- Construct noise walls bordering Loudoun Valley Estates.
- Install temporary pavement from Sta 230+00 to 258+00.
- Construct WB lanes and Shared Use Path (Phase B) if awarded.
- Shift traffic to new WB lanes and construct EB lanes.

SEGMENT D
STA. 262+00 TO STA. 334+00

Keys to Success

- MOT at Mercure Circle.
- Coordination with the future Metrorail yard project.
- Relocation of utilities.
- ROW acquisition or ROE for parcel 042 (NOAA).
- Mitigation of unsuitable soils from stations 264+00 to 265+75, 287+00 to 292+00, 275+00 to 284+00, and 305+00 to 313+00.
- Retaining deep fills along phase line during staged construction.

Construction Sequence

- Construct EB lanes from Sta. 275+00 to Sta. 315+00 and crossovers to existing roadway under MOT Plan.
- Shift traffic and construct WB lanes and Shared Use Path (If Phase B is awarded).
- Shift all traffic to WB lanes and construct EB lanes.

SEGMENT E
STA. 334+00 TO STA. 366+75

Keys to Success

- Construction of Horsepen Dam modifications. See Figure 4.5.6 for detailed construction sequencing at Horsepen Dam.
- Timely ROW acquisition to allow for a summer 2015 start of construction of primary spillway modifications.
- AFC complete and start construction of dam modifications in Summer 2015.

Construction Sequence

- Maintain traffic on the existing roadway.
- Construct retaining walls, stream monitoring station, principal spillway outfall extension, WB bridge, embankment, WB roadway, and Shared Use Path (Phase B) if awarded.
- Construct Ramp A connection.
- Shift traffic to new WB roadway and construct remaining EB retaining walls, bridge, embankment, and roadway pavements.

Figure 4.5.2 Construction Sequence At Evergreen Mills Road

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STAGE 1 CONSTRUCTION

- Construct relocated airport security road. Relocate airport security fence.
- Remove existing curb and construct EB widening from project beginning to Sta. 507+10±
- Remove existing median curb and construct temporary pavement in median from Sta. 491+00 to Evergreen Mills Road intersection. Construct 1 lane temporary pavement in median from Evergreen Mills Road to Sta. 508+00±
- Construct widening along north side of Evergreen Mills Road. Construct 1 lane temporary pavement and remove channelization islands along Evergreen Mills Road.

STAGE 2 CONSTRUCTION

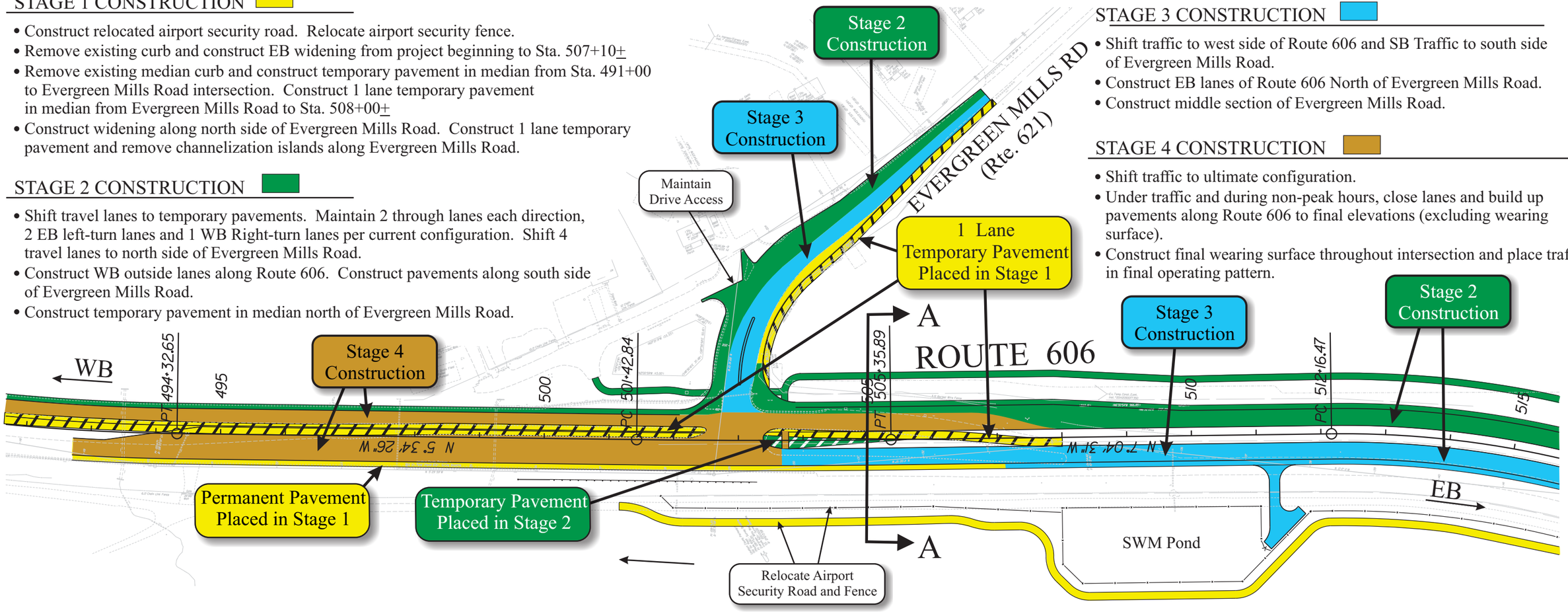
- Shift travel lanes to temporary pavements. Maintain 2 through lanes each direction, 2 EB left-turn lanes and 1 WB Right-turn lanes per current configuration. Shift 4 travel lanes to north side of Evergreen Mills Road.
- Construct WB outside lanes along Route 606. Construct pavements along south side of Evergreen Mills Road.
- Construct temporary pavement in median north of Evergreen Mills Road.

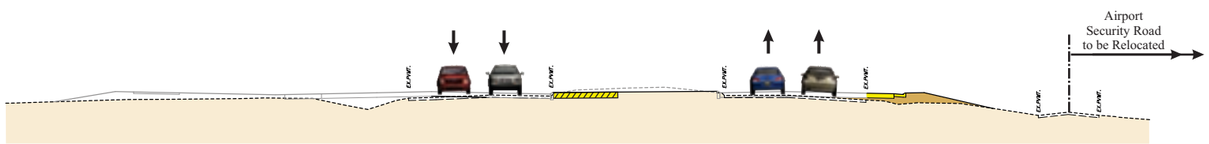
STAGE 3 CONSTRUCTION

- Shift traffic to west side of Route 606 and SB Traffic to south side of Evergreen Mills Road.
- Construct EB lanes of Route 606 North of Evergreen Mills Road.
- Construct middle section of Evergreen Mills Road.

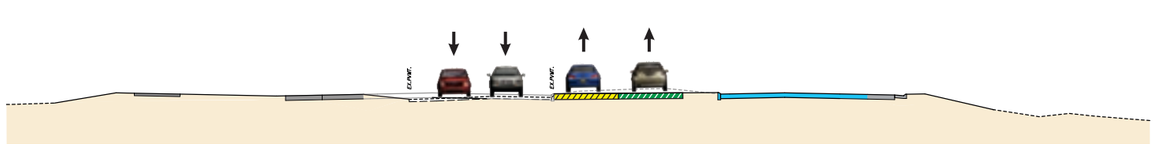
STAGE 4 CONSTRUCTION

- Shift traffic to ultimate configuration.
- Under traffic and during non-peak hours, close lanes and build up pavements along Route 606 to final elevations (excluding wearing surface).
- Construct final wearing surface throughout intersection and place traffic in final operating pattern.

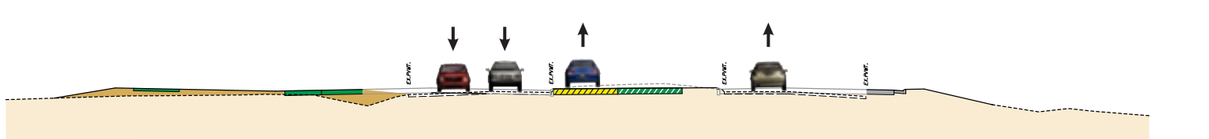




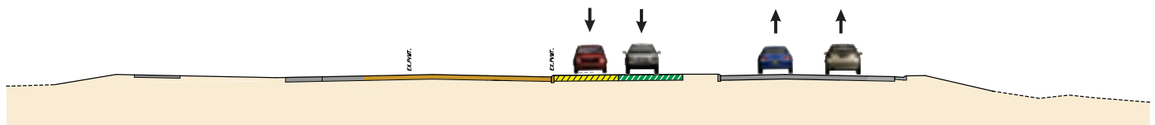
SECTION A-A - STAGE 1



SECTION A-A - STAGE 3



SECTION A-A - STAGE 2



SECTION A-A - STAGE 4 *

** Prior to Traffic shifting to ultimate lane configuration*

Figure 4.5.3 Construction Sequence At Four Barrel Culvert At Cabin Branch

STAGE 1 CONSTRUCTION

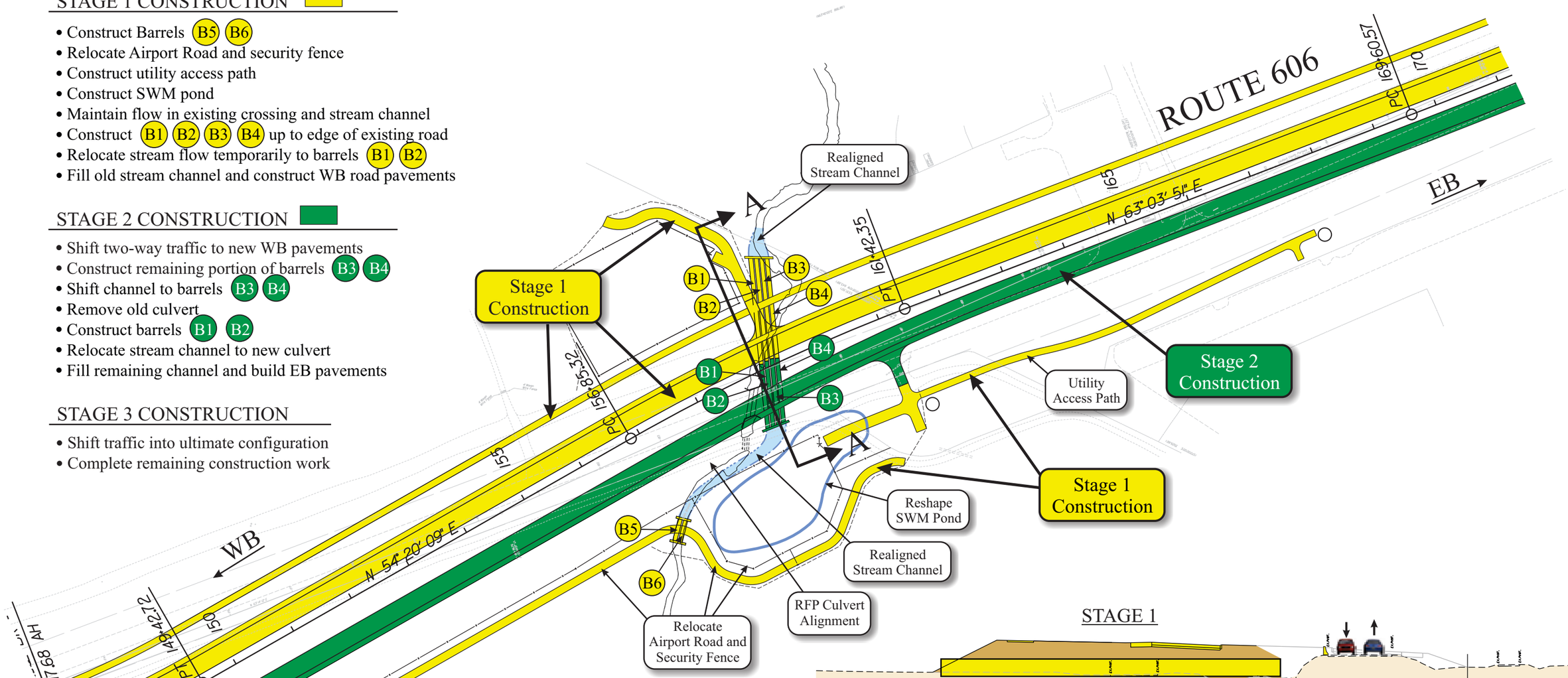
- Construct Barrels (B5) (B6)
- Relocate Airport Road and security fence
- Construct utility access path
- Construct SWM pond
- Maintain flow in existing crossing and stream channel
- Construct (B1) (B2) (B3) (B4) up to edge of existing road
- Relocate stream flow temporarily to barrels (B1) (B2)
- Fill old stream channel and construct WB road pavements

STAGE 2 CONSTRUCTION

- Shift two-way traffic to new WB pavements
- Construct remaining portion of barrels (B3) (B4)
- Shift channel to barrels (B3) (B4)
- Remove old culvert
- Construct barrels (B1) (B2)
- Relocate stream channel to new culvert
- Fill remaining channel and build EB pavements

STAGE 3 CONSTRUCTION

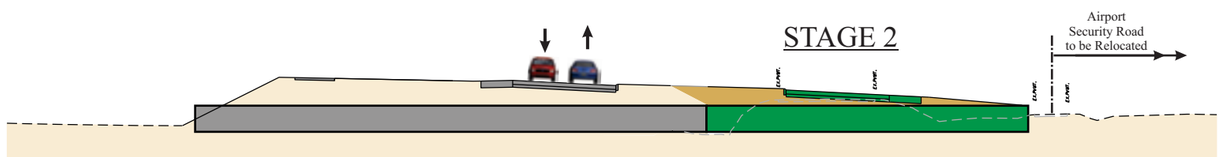
- Shift traffic into ultimate configuration
- Complete remaining construction work



STAGE 1

SECTION A-A

STAGE 2

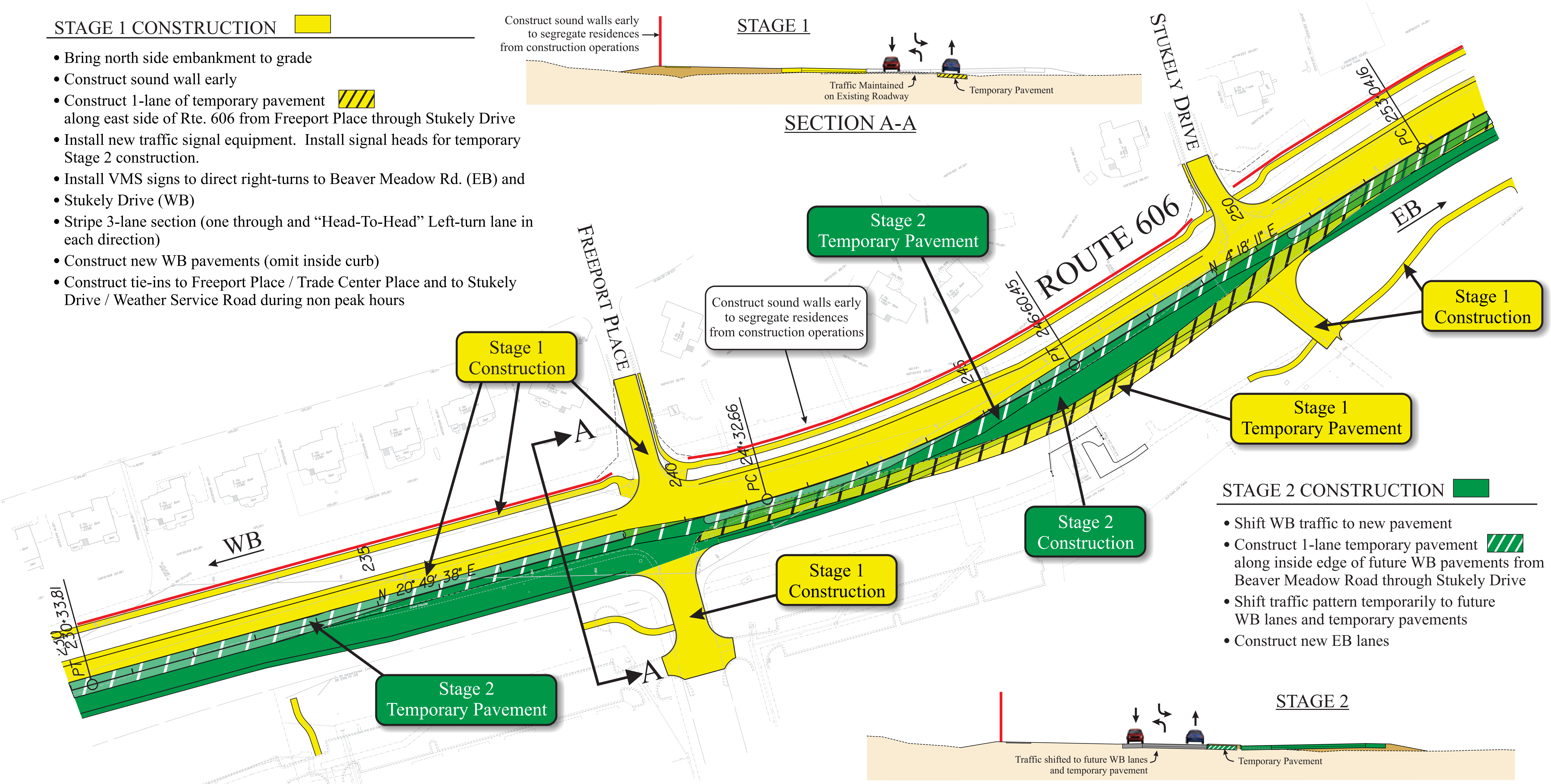


SECTION A-A

Figure 4.5.4 Construction Sequence At Freeport Place

STAGE 1 CONSTRUCTION

- Bring north side embankment to grade
- Construct sound wall early
- Construct 1-lane of temporary pavement along east side of Rte. 606 from Freeport Place through Stukely Drive
- Install new traffic signal equipment. Install signal heads for temporary Stage 2 construction.
- Install VMS signs to direct right-turns to Beaver Meadow Rd. (EB) and
- Stukely Drive (WB)
- Stripe 3-lane section (one through and "Head-To-Head" Left-turn lane in each direction)
- Construct new WB pavements (omit inside curb)
- Construct tie-ins to Freeport Place / Trade Center Place and to Stukely Drive / Weather Service Road during non peak hours



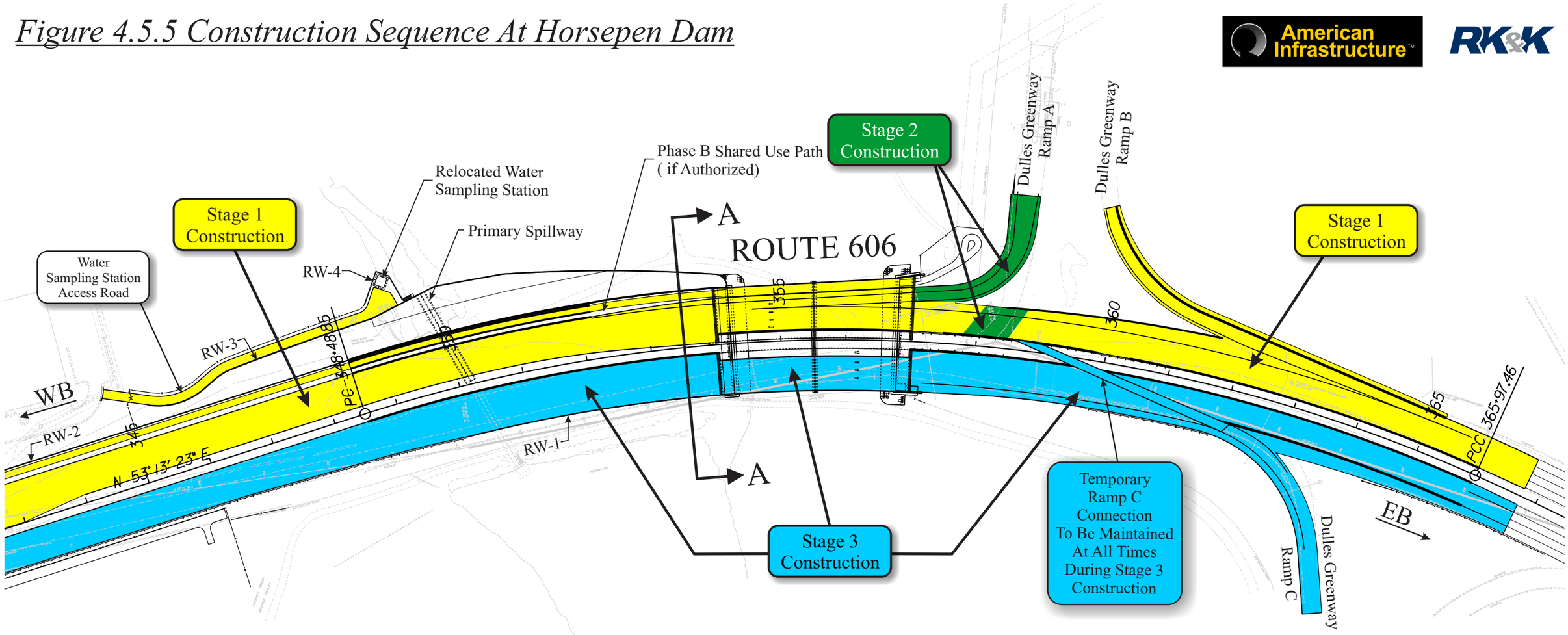
STAGE 2 CONSTRUCTION

- Shift WB traffic to new pavement
- Construct 1-lane temporary pavement along inside edge of future WB pavements from Beaver Meadow Road through Stukely Drive
- Shift traffic pattern temporarily to future WB lanes and temporary pavements
- Construct new EB lanes

STAGE 3 CONSTRUCTION

- Shift traffic to ultimate configuration
- Adjust signal heads and detectors for ultimate locations
- Complete tie-ins

Figure 4.5.5 Construction Sequence At Horsepen Dam



STAGE 1 CONSTRUCTION

- Maintain traffic on existing road
- Extend primary spillway structure
- Construct retaining walls 2, 3, 4
- Relocate stream monitoring station
- Build 1/2 of bridge (future westbound)
- Construct new embankment (WB)
- Construct water sampling station access road
- Construct Phase B shared use path (if authorized)
- Construct new pavement (WB)

STAGE 2 CONSTRUCTION

- Under traffic, construct new Ramp A connection
- Shift Ramp A traffic to new lane on westbound bridge

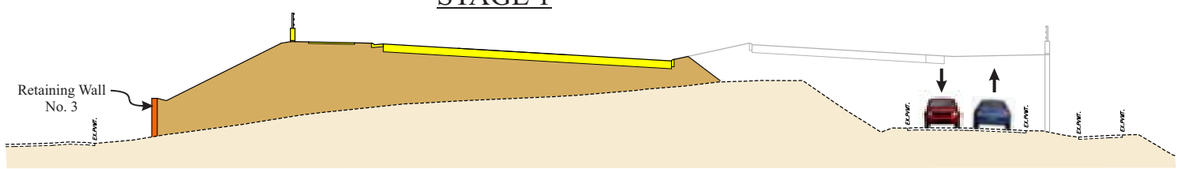
STAGE 3 CONSTRUCTION

- Shift two-way traffic to new bridge & Phase 1 construction
- Construct temporary connection to Ramp C
- Construct retaining wall No. 1
- Obliterate old road bed
- Construct remaining EB bridge
- Construct new embankment (EB)
- Construct new pavements (EB)

STAGE 4 CONSTRUCTION

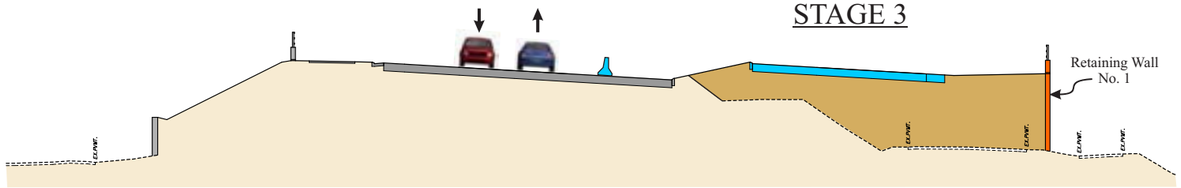
- Complete all remaining construction
- Shift traffic to ultimate configuration
- Place final wearing surface under traffic

STAGE 1



SECTION A-A

STAGE 3



SECTION A-A

Segment A – To safely convey traffic during construction, expedited construction between Sta. 80+00 and Sta. 155+00 and associated crossovers to the existing roadway is required. Divergence of the existing roadway from the proposed roadway allows for unimpeded construction of the proposed eastbound lanes. To minimize potential traffic flow disruption, a detailed construction phasing plan of the LC Parkway/ Evergreen Mills Road intersection is shown on *Figure 4.5.2* on Page 36. Further complicating construction is the need to undercut and replace unsuitable soils (Sta. 82+00 to 84+00 and Sta. 150+00 to 152+00) based on RFP borings that revealed highly plastic clays within 3' of the proposed subgrade.

Segment B – A two-staged construction effort for the Cabin Branch culvert installation improves constructability and reduces potential impacts to the traveling public. A detailed plan of this phased culvert construction is provided on *Figure 4.5.3* on page 37. Construction of SWM Basins D, E, F and G appear to provide an opportunity for needed borrow materials and perhaps over excavation of suitable soils and backfill with less suitable Project generated clay soils. Undercut and replacement of unsuitable soils from Sta. 168+50 to 170+75 and Sta. 194+50 to 197+00 may be placed within the borrow sites at SWM Basins D, E, F and G .

Segment C – Construction sequencing focuses on the early noise wall construction along Loudoun Valley Estates and the proposed westbound roadway lanes. Early noise wall construction, coupled with relocating LCSA waterline conflicts, will separate the work zone from adjacent residential area, thus improving safety and minimizing neighborhood inconveniences. Prior to beginning roadway construction, temporary pavement will be placed from Sta. 230+00 to 258+00 as shown in detail on *Figure 4.5.4* on page 38. Potential traffic impacts require proactive outreach to minimize confusion of local and regional users during construction. Earthwork challenges including unsuitable soils from Sta. 215+00 to 219+00 and Sta. 223+00 to 227+00 which will require replacement with suitable soils. Deep fills along the construction phase line will require a wire-wall retaining structure from Sta. 199+00 to 202+50 and Sta. 243+00 to 246+00.

Segment D – Schedule management will focus on utility relocation, Parcel 042 Right of Entry and/or acquisition and proactive coordination with the DMR Project. Initially, eastbound lanes will be constructed (Sta. 275+00 to 315+00) and crossovers on either end to the existing roadway. Once completed, existing traffic will be shifted to the eastbound lanes to allow for the westbound lanes to be constructed. Similar to Segment C, undercut and replacement of unsuitable clays and the retention of proposed fills along the phase line is required. Undercuts are expected from Sta. 264+00 to 265+75 and Sta. 287+00 to 292+00 and a wire-wall retaining structure is planned from Sta. 274+00 to 281+00 and Sta. 325+00 to 330+00.

Segment E – Segment E contains the most schedule critical work on the Project and has the longest construction duration. To manage the schedule risk, ROW and utility relocation will be expedited with completion by May 2015. To fully utilize dry conditions during the summer months, Stage 1 modification of the principle spillway/riser (SOE, pipe demolition and extension) will begin in June 2015. Roadway construction will commence with the westbound lanes and run concurrently with the riser, spillway, retaining walls and bridge. The embankment will be retained by a wire-wall from Sta. 355+00 to 360+00. Stage 2 includes constructing the Ramp A Greenway tie-in to the new westbound lanes while Stage 3 will construct the eastbound lanes and the Ramp C Greenway tie-in. *Figure 4.5.5* on page 39 shows the Horsepen Dam sequence of construction and *Section 4.5.3* of this proposal discusses construction risks and means/methods.

EARTHWORK OPTIMIZATION

As noted above and in *Sections 4.3 and 4.5.3* of this proposal, earthwork optimization and streamlining earthwork operations is critical to the success of the Project. Through the preliminary design and construction planning to date, we have adjusted the roadway profile to significantly reduce off-site borrow requirements. Following selection, our earthwork optimization will continue with a focus on efficiently moving and re-using suitable on-site material and identifying practicable borrow sources. As off-site borrow will still be required, we will submit multiple potential borrow sites to minimize potential schedule delays when alternative sources are needed. Through our optimization to date, our Team has identified potential on-site borrow locations and

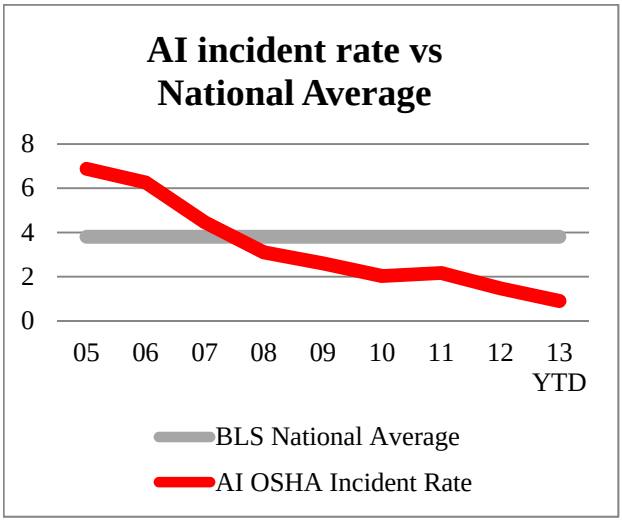
potential over excavation at SWM Basins D, F, G and H. This over excavation will provide suitable material for roadway fill and locations for on-site placement of unsuitable soils. This combined approach minimizes dependence on outside sources for both borrow and disposal of unsuitable soils. Further, AI is currently contracted to haul over 100,000 CY of material off-site from other local NOVA Projects which could further reduce the schedule risk of importing fill material.

Safety and Operations

At AI, safely is recognized as an inseparable element of each construction operation just as much as efficiency, quality, productivity, environmental and social responsibility, or any other criteria of excellence. Safety of the travelling public is of paramount importance to our Team. To us, safety is a relationship with the people that work on our projects and travel through our work zones that requires us to do everything necessary to send them home safely every day *Home Safe Tonight.*

Home Safe Tonight is a commitment, both personal and organizational, to create an existence absent of incident and injury. It is a mindset intolerant of any level, frequency, or severity of injury where safety is value-based, as well as priority based. Since the implementation of *Home Safe Tonight* in 2008, AI has reduced its recordable incident rate by 70% to a *Best in Class* rate below a 1.0 as shown in *Figure 4.5.6.*

Figure 4.5.6 AI Incident Rates since 2005



Our Team has identified potential construction impacts to vehicular, pedestrian and bicycle traffic and public transportation. Since there are no existing formal pedestrian traffic (including a worn paths), bicycle facilities, or public transportation along the Project, the main impact to public safety will be vehicular traffic travelling through the work zone during construction.

Accordingly, we have initiated development of a project-specific Health and Safety Plan. Further, we will develop and implement an extensive and effective TMP Plan to limit traffic disruptions through the work zone will help avoid traffic incidents due to construction. The public will be made aware of upcoming in traffic patterns and all traffic control devices will be set up in the appropriate locations and clearly marked. Our MOT/TMP design leads and construction crews and supervisors are certified through ATSSA and VDOT's Work Zone Safety Traffic Control Training Programs. Through AI's *Home Safe Tonight* initiative, safety is planned into every phase and work operation in the construction process.

Geotechnical Constraints

Geotechnical constraints, including unsuitable soils, have been accounted for in the sequence of construction and schedule. To mitigate potential unsuitable soil schedule delays, we will continue to refine our strategy for improving soil conditions prior to the commencement of construction. Considerations for soil remediation will include mechanical drying, installation of geotextile fabrics, lime stabilization, soil cement, and removal and replacement with suitable material. Unsuitable soils are anticipated in Segments A, B, C and D; however are more prominent in Segments C and D. *Section 4.4.2* identifies the locations where unsuitable soils are anticipated to be encountered. Other important aspects of optimizing the earthwork operations will be:

- Including an Unsuitable Soils Plan in our VDOT approved Preliminary and Final GDR so it is in place and usable prior to encountering unsuitable soils;
- Developing detailed cut-fill maps to sequence earth movement between Segments, areas, and stages;
- Creating GPS models and uploading to both hand held rovers and GPS units on heavy equipment to maximize efficiency of operations.

ENVIRONMENTAL IMPACTS

Construction will not commence until we obtain any and all regulatory permits and approvals and confirm the AFC Plans address all NEPA environmental commitments. Since the Project will require permits for the unavoidable impacts to jurisdictional Waters (including wetlands), the Proposal Schedule includes all environmental activities to obtain the Joint Permit Application Approval from VMRC, USACE and DEQ. All related activities are front-loaded with early and active pre-application agency coordination and obtaining a JD of wetlands to inform the avoidance & minimization design process. Additionally, a VSMP certification that includes an erosion sediment control plan, a stormwater management plan and the Stormwater Pollution Prevention Plan (SWPPP) sheets is included in the schedule. Obtaining these two permit approvals, clearing ROW acquisition and AFC Plan approvals, will allow the construction activities to commence. As the critical path runs through ROW acquisition, the project segments will allow flexibility in construction once ROW has been cleared. Further, the schedule for each construction Segment contains AFCs for "Work Packages", specifically clearing /Grubbing, TMP/MOT, Grading / Drainage / Noise Walls, B656 Bridge Plans (substructure and superstructure) and others. This approach will allow maximum construction flexibility throughout the Project and help to mitigate environmental risks, should they occur.

The schedule has been built upon a common goal, one permit issued in advance of AFC approval and all permit commitments included in the commitments database (ECD) that will be used during construction to monitor compliance. To that end, our Team has dedicated Michael Lachowicz (AI) as the Construction Compliance Manager. His role is to ensure that all ECD conditions are carried through in construction. These may include weekly, monthly and post-storm event E/SC devise monitoring/repair, protection of wetlands not directly impacted and time of year restriction, if any. Mike will work directly with Bob Rube (CM) to ensure that construction compliance is maintained and environmental risks are mitigated.

RIGHT OF WAY ACQUISITION

The Proposal Schedule clearly shows that Right of Way (ROW) Acquisition is on the critical path and cascades into utility relocations and all activities related to the Horsepen Dam modifications. To mitigate potential acquisition risk and spill over to other elements, the schedule and sequence of construction were developed to streamline the ROW acquisition effort including the following specific ROW activities:

- Early initiation of Title Searches, ESA's, survey and other pre-ROW Acquisition activities such that survey and title work starts 17 days following distribution of Property Owner Notification letters which immediately follows NTP;
- Pre-UFI and UFI has been advanced so that they occur in advance of the FI/ROW Submittal. In this manner all utility relocation and associated easements are included within the ROW submittal and ultimate Chief Engineer approval of the ROW plans;
- Appraisal are initiated with submission of the FI/ROW submittal as they are accurate for 60 days prior to Notice to Commence ROW. If the 60 day period is exceeded, then individual appraisals will be refreshed prior to submitting the appraisal for review and approval by VDOT.
- Parcel 042 is owned by the United States of America. Per the RFP, VDOT will negotiate and obtain all ROW and easements; however, this process may take 9 to 12 months. As access to Parcel 042 is integral to our keys to success in Segment C and D, we will need access to this Parcel by March 2015. To manage this risk, our Team will advance and submit the Parcel 042 appraisal package immediately following FI/ROW Plan approval to expedite ROW Authorization. As noted in the RFP, our Team will request construction access while negotiations progress.
- As Parcel 061 acquisition is by others and out of our Team's control, we are concerned with schedule risk. To mitigate this risk, we will request construction access approval for the duration of construction activities in to ensure timely and continuous access while negotiations progress.

Integration of these risk mitigation measure will assist in streamlining the ROW acquisition process and managing this critical path activity.

STAGING AND STORAGE AREAS – Potential staging and storage areas have been identified in Segment A at Conceptual Basin B & C locations. In addition, our Team has had preliminary discussions with the owner of the Antigone Property to utilize this property for staging and storage. Additional potential staging locations have been identified such as adjacent to Basins F & G, adjacent to Basins I & J. For these locations to be used, agreements would have to be reached with private land owners and NOAA respectively.

PUBLIC INVOLVEMENT/STAKEHOLDER COORDINATION AND GOVERNMENT APPROVALS

The AI/RK&K Team will communicate with stakeholders and government entities continuously and transparently throughout the design and construction of the Route 606 Project. Feedback on the design concept will be requested through over-the-shoulder reviews to streamline approvals. The participation of VDOT, Loudoun County, MWAA, and DCR will requested in a formal partnering process facilitated by our Team. Formal partnering will promote routine and open communication and assist to create an atmosphere of trust between VDOT, our Team, and the project stakeholders. Partnering workshops provide the opportunity to identify and discuss potential schedule impacts as a Team, and align to an approach that supports the project goals while ensuring the schedule is met. A highly-effective public outreach effort will proactively anticipate and address community issues that may impact the project schedule. *Section 4.5.2* of this proposal further discusses our Team's approach to Stakeholder Coordination and *Section 4.5.3* discussed coordination of Horsepen Dam Modifications with the appropriate agencies.

4.5.2 TRANSPORTATION MANAGEMENT PLAN

Impacts to traffic based on construction means and methods have been defined for each area of the Project. Traffic will be maintained through all phases of construction, with the majority of traffic disruptions occurring during traffic switches, girder erection, and final paving. These operations will be performed at night and any temporary closures will be removed prior to peak traffic hours. The public will be notified in advance of any traffic impacts and updated as construction progresses. TMP/MOT Coordinator, James Burnett, P.E. will work closely with AI's MOT Coordinator to ensure the design reflects the construction sequence and that the work can be implemented safely. All work will be designed and performed in accordance with the *FHWA Manual of Uniform Traffic Control Devices (MUTCD)* and the current version of the *Virginia Work Area Protection Manual (VWAPM).*

Earthwork Optimization Reduces Truck Traffic
The AI/RK&K Team design concept has eliminated over 16,000 truckloads of offsite borrow from the local road network.

MAINTENANCE OF TRAFFIC (MOT) AND CONSTRUCTION IMPACTS

A detailed MOT plan will be prepared in accordance with the requirements of VDOT and the RFP. In preparation of this Technical Proposal, preliminary MOT plans were developed for Route 606 as well as the critical areas of the Project. One of the advantages of constructing the middle lanes of the proposed ultimate eight-lane section is that it provides the opportunity for traffic to utilize the existing roadway during construction of proposed lanes. Throughout the majority of the corridor, construction of the westbound lanes can occur while traffic remains in its current location. After construction of the westbound lanes, traffic can be switched to travel in those lanes while the eastbound lanes are constructed.

On Route 606, minimum travel lane widths will be 12 feet, with an additional 2' "shy line" separation provided from Concrete Traffic Barriers or Group II Channelization Devices. On all other roadways, a minimum 11 foot travel lane will be utilized for the maintenance of traffic. Lane closures may be employed during off-peak hours for some of the work activities. These activities will be limited to those hours allowed by VDOT NRO and as presented in Section 2.11.2 of the RFP document. Our investigation of the site found that there are no bike lanes, sidewalks or public transportation facilities that need to be accommodated during construction. *Table 4.5.1 Traffic Impacts by Segment by Stage* identifies the traffic impacts that are anticipated in each segment of the Project, including maintenance and upgrading of the three existing traffic signals along the project alignment.

Temporary Paving – Temporary asphalt will be necessary at the intersection with Evergreen Mills Road, between stations 230+00 to 258+00, between stations 334+00 to 342+00, and in the vicinity of the Dulles Greenway Access Ramps. In addition to this temporary asphalt, there are two locations where the eastbound lanes will be constructed prior to the westbound lanes and temporary crossovers to the existing roadway will be utilized. Crossovers from the existing roadway to the westbound lanes will be needed in Segment A as well as in Segment D.

Table 4.5.1 Traffic Impacts by Segment and Stage

Segment	Stage	Temporary Signals	Group 2 Devices	Concrete Barrier	Single Lane Closure	Temporary Pavement	SOE/ Wire Wall	State Police	PCMS
A	1		✓		✓	✓			✓
A	2		✓			✓			✓
B	1		✓	✓					✓
B	2		✓	✓					✓
C	1		✓	✓	✓	✓	✓		✓
C	2	✓	✓	✓					✓
D	1	✓	✓	✓	✓	✓	✓		✓
D	2	✓	✓	✓					✓
E	1		✓	✓	✓	✓	✓	✓	✓
E	2		✓	✓		✓		✓	✓

Support of Excavation – Wire retaining walls or steepened slopes will be installed to retain fill between the stages. Significant fills in Segments C, D and E require for fill to be retained along the phase line so that the proposed roadway can be constructed while maintaining traffic in its current location. Anticipated locations include between stations 199+00 to 202+50, 274+00 to 281+00, and 355+00 to 360+00. Concrete barrier will be used at the bottom of the walls in stage 1 and at the top of the walls in stage 2 to ensure the safety of the traveling public. Concrete barrier will also be used where traffic will be traveling near significant excavations such as the culvert crossing at Cabin Branch.

Critical Areas of the Project

Preliminary MOT plans have been developed for the critical areas of the Project that require multiple stages to maintain traffic during construction. These areas include Route 606 at Evergreen Mills Boulevard (*Figure 4.5.2*), Route 606 at Cabin Branch (*Figure 4.5.3*), Route 606 at Freeport Place (*Figure 4.5.4*), and Route 606 at Horsepen Dam and Dulles Greenway (*Figure 4.5.5*). Construction was sequenced at these locations to accomplish the following goals for the Project:

- Completing construction without impacting traffic wherever possible;
- Maintaining all existing traffic lanes during construction;
- Minimizing traffic disruptions through multiple phases of construction;
- Avoiding detouring traffic by utilizing short-duration lane closures and one-lane roads as necessary;
- Reducing the skew of the Cabin Branch culvert to improve safety;
- Isolating construction from residences by constructing sound walls early;
- Maintaining all turning movements during construction through the use of temporary paving; and
- Maintaining continuous access to Dulles Greenway through close coordination.

Stakeholders Impacts and Public Acceptance

The Route 606 Project presents another opportunity for VDOT and its project partners to provide exceptional service and proactive communication surrounding a congestion relief and increased capacity. A variety of stakeholders will be impacted by the Route 606 Project requiring a highly-effective public outreach program. The AI/RK&K Team's involvement efforts focus on continuous outreach and collaboration. Our Team will remain mindful of the local environment and work collaboratively with VDOT to amend and update any plans as needed. To ensure that all stakeholders remain fully informed throughout the Project, our Team will be fully committed to maintaining a constant flow of communication to reach the following goals:

1. Effectively engage the community in the design and construction of the Project to minimize negative impacts and maximize positive outcomes by:
   - Increasing the number of residents who have a greater understanding of the Project;

- Creating a trust level with the key stakeholders through a transparent and open environment of information sharing; and
- Offering two-way communications channels.

2. Maintaining a successful partnership and communication between VDOT, Loudoun County, and the greater community by:
   - Committing to formal and informal information sharing with project partners and stakeholders; and
   - Ensuring that stakeholders have or can access information regarding the Project easily and quickly,
3. Proactively manage project risk by anticipating and addressing community issues that may impact the project schedule by:
   - Anticipating challenges and working together to reach a successful solution;
   - Promoting open and transparent communication protocols and practices; and
   - Providing multiple opportunities for community input and track input for trends and key messages.

The stakeholders, construction impacts, and communication strategies are detailed in *Table 4.5.2 Stakeholder Coordination Approach*.

Table 4.5.2 Stakeholder Coordination Approach

STAKEHOLDER	IMPACTS	COMMUNICATION STRATEGIES	BENEFITS
VDOT	Coordination/ information	▪ Weekly meetings ▪ Notification of traffic impacts ▪ Assist with updates to the Lane Closure and Maintenance System	▪ Reporting to public and supervisors ▪ Increased awareness of lane closures and traffic switches ▪ Consistent public information
Loudoun County	Coordination/ information	▪ Inclusion in planning sessions to provide input into the construction schedule ▪ Cooperatively addressing impacts to local businesses and property owners	▪ Avoidance of significant impacts through flexible scheduling ▪ Consistent public information
MWAA (Dulles Airport)	Access and coordination	▪ Stakeholder, design, and construction meetings ▪ Identifying a single point of contact	▪ Reporting to board ▪ Increased awareness of lane closures and traffic switches
Local Residents and Businesses[(1)]	Access and noise	▪ Website and social media ▪ Quarterly (at minimum) stakeholder outreach meetings ▪ Informative outreach materials	▪ Awareness of impacts ahead of time ▪ Understanding of direct construction impacts for each individual stakeholder ▪ Community awareness of construction progress
Motoring Public	Commute timing/ driving comfort	▪ VDOT 511 ▪ Website and social media ▪ Informative outreach materials	▪ Awareness of impacts ahead of time ▪ Understanding of direct construction impacts for each individual stakeholder ▪ Community awareness of construction progress
Pedestrians	Access and ease	▪ Website and social media ▪ Public meetings	▪ Awareness of impacts ahead of time
EMS/Fire/Police	Access and Timing, Public Safety	▪ Monthly Incident Management Forums ▪ Incident Management Guidebook that includes contact information for our Team and all key stakeholders ▪ Notification prior to changes in traffic patterns	▪ Timely response ▪ Responder understanding of routes to avoid construction work zones ▪ Accurate contact information for emergency situations ▪ Improved public safety
Utility Owners	Relocation and end user notifications	▪ Weekly meetings	▪ Avoid delays
Concurrent Construction Projects	Information sharing and coordination	▪ Monthly/weekly coordination meetings ▪ MOU established if necessary	▪ Avoid delays ▪ Create network

Our Team will coordinate with VDOT's NOVA district and Loudoun County throughout the design and construction phases to deliver an accurate and consistent message to all stakeholders. The protocols and guidelines described in VDOT's *Policy Manual for Public Participation in Transportation Projects* will be used as the source for handling matters that center around public information and communication. In addition to the coordination with VDOT and Loudoun County, the Project will require substantial coordination with the MWAA related to MWAA property impacts, Airport aviation restrictions, Horsepen Dam, and the Dulles Rail Phase 2 Project. Local residential communities and commercial centers include Loudoun Valley Estates, Mercure Business Park, Dulles Trade Center, Bryant Dulles Industrial Park, Arcola Center.

Coordinating closely with the Virginia State Police, as well as Loudoun County Police and Fire Departments for efficient/ effective MOT is critical. Regular public outreach meetings and calls with adjacent projects is essential to staying coordinated and keeping cumulative public impacts to a minimum. Early, consistent and open communication with utility agencies will ensure utility lines are handled safely and with minimal impact.

Coordination will be required with concurrent construction projects including the Dulles Corridor Metrorail Project Phase 2; Dulles Corridor Metro Rail Yard; US50 Widening; Loudoun County Parkway extension (potential); Dulles Airport Access Improvements (potential); US50 Interchange at Loudoun County Parkway (potential); MWAA Western Lands Expansion Aviation Support Roadway (potential); Land development projects along Route 606; Loudoun Water system expansion. In addition to those projects already identified, any other development projects that will come along the corridor during the project construction phase that will also be coordinated with appropriate agencies and the County. We will also make official inquires to VDOT, Loudoun County and the MWAA for any future development projects.

Internet and social media tools are the primary means by which the public seeks information about any given transportation project. Our Team will create and provide clear, current, frequent, and accessible content, including visuals, images and key milestones for the VDOT project webpage and social media tools such as VDOT's Facebook, Twitter, and Instagram sites. This information may also be linked to the Loudoun County and MWAA websites and social media tools. These outreach tools will be especially important through construction for traffic alerts. All project media will be coordinated with VDOT to ensure project messages are thoroughly and accurately presented to the media.

4.5.3 Construction of Dam Modifications

Approach to Horsepen Dam Construction

The AI/RK&K Team's approach to constructing the modifications to Horsepen Dam were established based on our Team's experience with the design, construction, and inspection of High Hazard Dams including the Lyman Run High Hazard Dam project in Pennsylvania. Risks from construction modifications to an active dam primarily occur as a result of dam destabilization and flood events. Destabilization risk is a function of existing dam conditions, weather during construction and protective measures employed. Installation and regular reading of monitoring devices will include inclinometers, monitoring wells, piezometers and tell-tales or targets on SOE structures to gage the status of the existing dam. Efforts that will be employed to minimize the risk of dam destabilization are detailed in *Table 4.5.3 Dam Construction Risks and Mitigation Strategies*.

All modifications to the existing Horsepen Dam will be performed in accordance with applicable sections of the VDOT's Road and Bridge Specifications, VDOT Road and Bridge Standards, DCR Permit requirements, US Army Corps Of Engineering (USACE) Dam Publications and Design Standards, Federal Emergency Management Agency (FEMA) Best Practices Guidance Documents Part 2 of the RFP requirements to include the RFP Conceptual Plans and the requirements herein.

Table 4.5.3 Dam Construction Risks and Mitigation Strategies

RISK DESCRIPTION	MITIGATION STRATEGY
Dam Stability	Develop monitoring and action plan to be utilized during principal spillway culvert construction. Monitor instrumentation (piezometers, inclinometers, monitoring wells, tell-tales or targets) daily. Changes to seepage regime will be monitored with respect to the action plan.
Support of Excavation	Designed specifically for site conditions, minimizing impact to the existing dam (e.g. reducing vibrations, eliminating tie-backs into the dam, design to reduce deflections, monitor actual deflections).
Control of Groundwater	Utilize and monitor outflow of localized sumps.
Duration of Construction	Schedule proactively to minimize the duration of exposure of the clay core during extension of the primary spillway culvert including extended work hours and potential double-shifting where appropriate.
Flood Events	Monitor the weather and prepare the site for potential flood events during construction.
Timing of Construction	Schedule during July and August when reservoir levels will be at their lowest.

CONSTRUCTION MEANS AND METHODS

Installation of a New Control Gate for the Dam Riser Structure – Replacement of the inlet riser structure control gate will occur prior to the extension of the spillway culvert to allow control of flow during that work. Additionally, this work will be scheduled for July and August to take advantage of the lower reservoir levels and lower precipitation volumes. As described in *Section 4.4.2*, temporary diversion pipes will be designed for use as a means to bypass the flow of water from Horsepen Lake during construction. Design of the diversion will include size and number of pipes, as well as additional erosion and scour protection to be installed to protect the outfall location of the diversion pipes. Once approved by VDOT and DCR, the diversion system will be installed.

During the construction of temporary diversion, a three-sided steel box will be fabricated for use as a cofferdam for replacement of the control valve. The coffer box will be designed so that the bottom of the box will sit between the wings of the riser structure, and the open side of the box will be placed against the riser structure. Prior to the installation of the coffer box, the bottom area where the box is to sit will be desilted as necessary in order for the box to be properly installed. Silt will be tested for contaminants and properly disposed of as necessary. The box will be placed in Horsepen Lake using a crane and divers to secure and seal the box to the riser structure. Once installed and sealed, replacement of the control valve and thimble (if needed) can begin. If the thimble does need to be replaced, the required concrete repairs will also be performed to the structure at this time. The new valve assembly will be tested for functionality by flooding the coffer box as well as visual inspection.

Extension of the Principal Spillway Culverts – Work on the spillway will immediately follow the control gate installation. The diversion used during the work on the riser structure will continue to be used during construction of the spillway. An additional coffer dam will be placed just downstream of where the culvert extension ends to prevent backflow of the diverted water. In order to minimize the duration of the exposure to potential flooding during the modifications to the spillway and control gate, activities leading up to the demolition of the existing culvert, including installation of shoring, installation of bracing (if necessary) and excavation along the principal spillway would occur prior to the completion of the control gate replacement. The surrounding dam embankment will be supported with socketed soldier pile and lagging along both sides of the existing culvert and turning into the existing culvert just upstream of the limit of demolition. AI utilized a three-sided shoring approach for a culvert extension on the I-95 Widening project as shown in *Figure 4.5.7*.

Deflections of the SOE will be considered during design, controlled by design elements as needed, and monitored during installation and construction to insure that the integrity of the dam is maintained. Monitoring will be completed using tell-tales and targets established on the lagging as well as monitoring wells installed.

Monitoring will be done daily with results recorded by QC staff and results shall be provided to Owner's Representative within 24 hours of reading.

Figure 4.5.7 Culvert Shoring on the I-95 Widening project in Baltimore County, MD

The existing culvert downstream of the construction limit will be demolished with hydraulic processors and impact hammers mounted on excavators. The structure to remain will be isolated by sawcutting through the structure prior to demolition. The bottom of the excavation will be excavated down to rock. The rock will be thoroughly cleaned and any over excavation will be filled to subgrade of the culvert using A3 concrete. The culvert extension will be completed using precast box culvert sections. The tie in of the precast section to the existing section will be via a connection pour. A graded aggregate filter seepage diaphragm will be designed in accordance with USACE and FEMA criteria. The seepage diaphragm will be installed to surround the existing culvert just upstream of the tie in with the pre-cast culvert. This location of the seepage diaphragm will intercept seepage flow along the face of the concrete structure and safely collect and filter seepage traveling through the dam embankment and foundation soils. Expansive water stop will be placed between the A3 concrete slab and precast sections as needed. Precast sections are being utilized to limit exposure to water infiltration and potential flooding conditions.

Once the culvert has been installed, it will then be backfilled using material and equipment that meets the specifications provided. SOE will be left in place at the completion of construction, and cut off at the elevation required below final grades. Any water encountered during construction will be handled using localized sumps. In addition to using the precast culvert sections, as a means of further minimizing the duration of this construction, additional shifts will be used, as permitted by contract. The critical inspection hold points, detailed in RFP Attachment 2.5 – Construction Requirements for Horsepen Dam Modifications, make proactive communication with VDOT and MWAA a critical feature of this work.

Bridges Crossing the Emergency Spillway – The emergency spillway bridge will be constructed in stages as two separate structures as per the requirements of the MOT plan. During construction of the first structure, traffic will be maintained on the existing Route 606. SOE will be installed as needed to support the existing roadway while the new substructure is being constructed. SOE will remain in place and cut-off below grade as required.

Minimizing Impacts of Shoring on the Existing Dam
The SOE system will be used to support the approach roadway and abutments of the newly constructed bridge, while the second phase of the substructure is constructed.

Substructure construction will commence at Abutment A, proceed to Abutment B, and finish at the center pier. The substructure elements will be excavated to the bottom of the pile cap elevation to begin construction of the deep foundations. Any water encountered will be controlled with localized sumps. Construction of the concrete pile cap, pier, and abutments will follow. During the construction of each substructure element, the emergency spillway area will be kept free of debris and other materials that would impede flow should a flood event occur. If a storm event that could inundate the emergency spillway is forecast, construction equipment and materials will be relocated as necessary. Superstructure beams and diaphragms will be erected with a crane, followed by bridge deck and parapets.

When the westbound bridge and roadway are complete, traffic will be diverted onto the new alignment. When westbound bridge and roadway are complete, traffic will be diverted onto the new alignment and the eastbound bridge will be constructed in the same sequence as the westbound bridge as described above.

Crane height restrictions during construction will adhere to FAR Part 77, and will not penetrate restricted Washington Dulles International Airport surfaces.

Construction of Foundations – Foundations for bridge abutments and piers will be installed as noted under the bridge crossing the emergency spillway. Foundations for retaining walls will be spread footings and shallow enough for open cut excavation. Construction of the foundation for Retaining Walls 1 and 3 will require monitoring of excavations because of their location on the dam. Ground water, if encountered, will be controlled using localized sumps. Water pumped through the sumps will be monitored to confirm absence of fines. Fines traveling in the pumped water is a dam safety concern. If the water volume is too large to be managed through the use of sumps, or if fines migration exceeds allowable limits other water handling methods such as screened wells will be employed.

Maintaining Existing Structures – Existing structures to remain will be isolated or protected in order to preserve their structural integrity and ensure that they function as originally intended after construction is complete. Particular attention has been paid to the Horsepen Dam, the dam's culvert extension and the riser structure rehabilitation. For the dam, SOE methods, such as soldier pile and lagging minimize the disturbance to the dam's core and do not rely on tie-backs into the dam. Digging boxes will be used for utilities and drainage construction to minimize disturbances. Sawcutting through the existing culvert at the demolition limit will eliminate the impact of demolition on the existing structure. Installing a steel cofferdam at the riser structure will allow close inspection of the existing structure and thimble, possibly eliminating the need to replace the thimble and reduce the impact on the structure.

Maintaining or Reconstructing Existing Slopes – Prior to fill placement, the existing slopes to be filled upon at Horsepen Dam will be stripped of all unsuitable material, including topsoil and root matter. A three foot thick graded filter drainage blanket will be placed over the existing downstream toe from existing toe up to El 242.0 along with a rock rip rap shell as shown in Detail C of RFP Plans. All fill material will be tested prior to placement and will meet all requirements in Attachments 2.4 and 2.5 of the RFP. During placement of materials, the QC Inspector will monitor compaction, lift thicknesses, and particle size for compliance. *Section 4.4.2* of this proposal further discusses the maintaining and reconstructing the existing slopes at Horsepen Dam.

Figure 4.5.8 shows concurrent placement of select fills and drain fills on the Lyman Run High Hazard Dam project. Four of our Team's eight key personnel were involved with the design and construction of this earthen dam embankment rehabilitation.

Figure 4.5.8 Lyman Run High Hazard Dam Fill Placement

COORDINATION WITH VDOT, MWAA, AND DCR

The final plans including the dam modifications will be submitted to VDOT for approval. It is understood that MWAA and WR&A will review and approve the final dam modification plans for submittal to DCR to obtain the dam alteration permit. Construction at the dam will progress once the dam alteration permit is received from DCR. Construction inspection at the dam will be coordinated with both VDOT and WR&A, as MWAA's representative to ensure the dam is built according to the final stamped and signed plans. Verification that critical elements have been properly constructed will be coordinated with MWAA's Representative. At each critical hold point identified in Table 2.5.1 Critical Inspection Checklist from RFP Attachment 2.5 Construction Requirements for Horsepen Dam will be followed. These critical hold points include the principal spillway, retaining walls, MSE walls, and embankment preparation.

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4.6 Disadvantaged Business Enterprises

American Infrastructure

RK&K

DISADVANTAGED BUSINESS ENTERPRISES

COMMITMENT TO DBE PARTICIPATION GOAL

The AI/RK&K Team is committed to achieving a fourteen percent (14%) DBE participation goal for the entire value of the contract. The following DBE subcontracting narrative outlines the procedures to achieve this goal for design and construction.

DBE SUBCONTRACTING NARRATIVE

Our Team is consistent in meeting and exceeding DBE participation goals. In selecting subconsultants, the AI/RK&K Team will select qualified and skilled DBE firms to achieve the Project goal of fourteen percent (14%). AI will be utilizing their standard DBE subcontracting plan for the Project to facilitate meeting the DBE. A summary of the plan is provided below specifying the means of soliciting DBE firms during the pre-construction phase. Our SWaM/DBE Coordinator will be responsible for assisting our estimating department in the solicitation of DBE firms and the compliance to the DBE goals and standards set forth by the Commonwealth.

Overview – For each project with contract-mandated DBE requirements, AI will:

- Determine items which may be subcontracted and quantify based on estimated dollar amounts.
- Identify a pool of DBE subcontractors/suppliers certified by the Owner/governing agency.
- Validate the qualifications and assess the expertise of certified DBE subcontractors/suppliers to determine if they are capable of performing the scopes of work identified in the contract.
- Direct and assist certified and capable DBE subcontractors/suppliers to complete the AI subcontractor pre-qualification process if they are not already prequalified through previous projects with AI.
- Solicit price/scope quotes from certified and capable DBE subcontractors/ suppliers while determining AI pre-qualification status.
- Document the DBE solicitation process for Good Faith purposes including all modes of communication such as phone, fax, email, visits and pre-bid solicitation meetings.
- The project's Lead Estimator, in cooperation with the SWaM/DBE Coordinator, is responsible for:
  - Ensuring that DBE participation is solicited, recorded and documented in accordance with AI Minority/DBE Compliance and Utilization Policy defined policies and procedures.
  - Investigating all contract provisions to identify all requirements to satisfy Municipal, County, State or Federal obligations, including training and reporting..
  - Ensuring AI's commitment to proactively utilizing certified DBEs and to using all reasonable efforts to meet or exceed mandated DBE requirements is upheld.

DBE Solicitation – AI's Estimating Team solicits price/scope quotes from certified and capable DBE subcontractors/suppliers while determining jurisdictional pre-qualification status. Certified and capable DBE subcontractors/suppliers will be identified through searching DBE Directory web sites, attending project pre-bid meeting, and mass advertisements. The following elements will be included in the solicitation, or in any advertisement placed as a general solicitation to DBEs:

- The company name, address, telephone number, fax number and email address.
- The project location and a description of the work for which the bid is being solicited.
- Our FTP Site for Subcontractors to view plans and specifications.
- The name of the Lead Estimator and SWaM/DBE Coordinator who will be available to answer questions about the Project.
- How to respond to the solicitation.
- The date, time, and location where bids are to be submitted.

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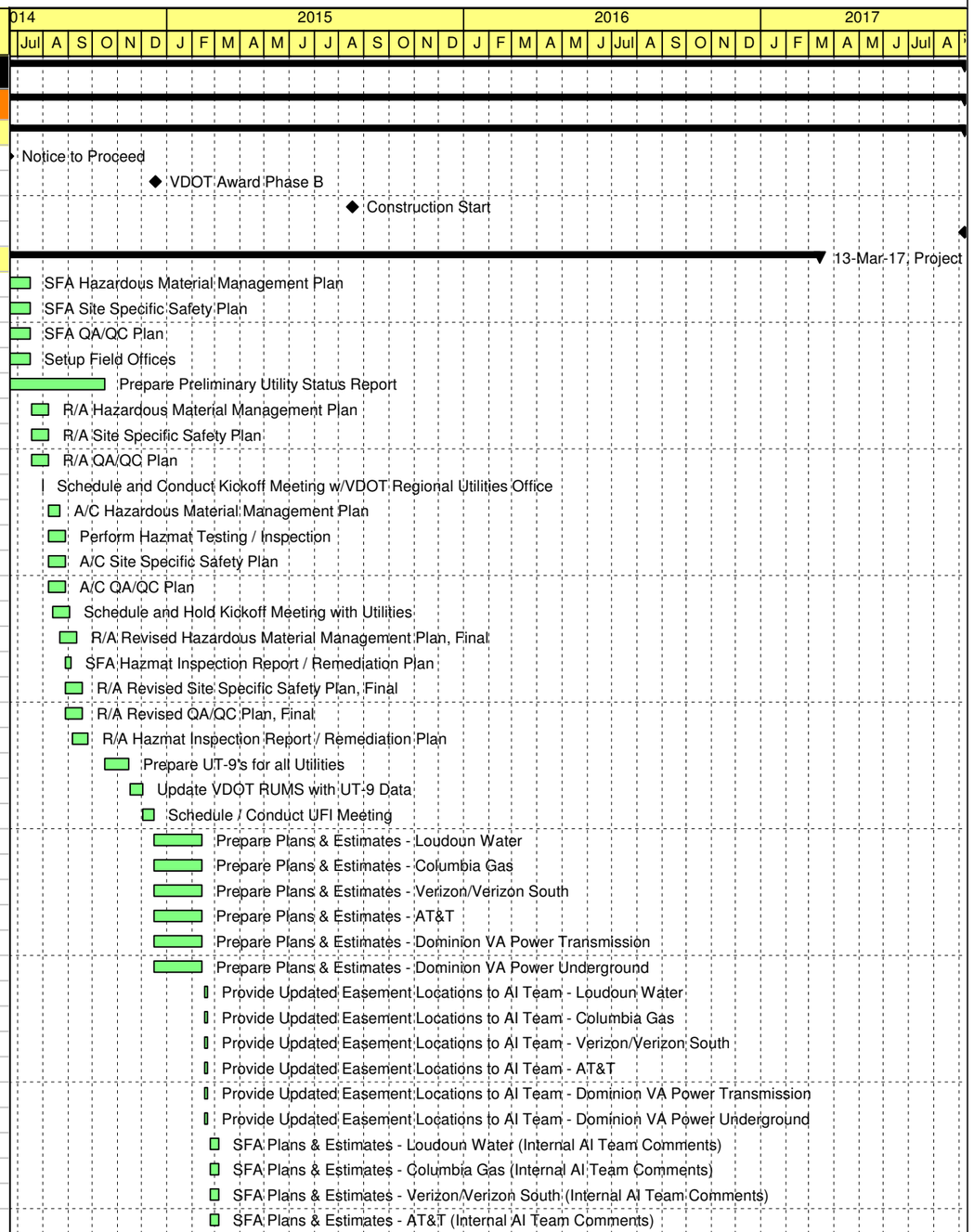
4.7 Proposal Schedule

American Infrastructure

RK&K

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
Route 606 Loudoun County Parkway / Old Ox Road Reconstructio...		832	0	19-Jun-14	08-Sep-17	
Pre-Construction Activities		832	0	19-Jun-14	08-Sep-17	
Project Milestones		832	0	19-Jun-14	08-Sep-17	
GO1000000	Notice to Proceed	0	0	19-Jun-14		7-Day
GO1000020	VDOT Award Phase B	0	13		17-Dec-14	7-Day
GO1000010	Construction Start	0	56	17-Aug-15		5-Day Pre-Con
GO1999999	Project Completion	0	0		08-Sep-17	5-Day Pre-Con
Project Management		703	93	19-Jun-14	13-Mar-17	
GO2000100	SFA Hazardous Material Management Plan	20	280	19-Jun-14	17-Jul-14	5-Day Pre-Con
GO2000200	SFA Site Specific Safety Plan	20	285	19-Jun-14	17-Jul-14	5-Day Pre-Con
GO2000300	SFA QA/QC Plan	20	285	19-Jun-14	17-Jul-14	5-Day Pre-Con
GO2009010	Setup Field Offices	20	329	19-Jun-14	17-Jul-14	5-Day Pre-Con
GO2001030	Prepare Preliminary Utility Status Report	120	53	19-Jun-14	16-Oct-14	7-Day
GO2000110	R/A Hazardous Material Management Plan	21	404	18-Jul-14	07-Aug-14	7-Day
GO2000210	R/A Site Specific Safety Plan	21	411	18-Jul-14	07-Aug-14	7-Day
GO2000310	R/A QA/QC Plan	21	411	18-Jul-14	07-Aug-14	7-Day
GO2001010	Schedule and Conduct Kickoff Meeting w/VDOT Regional Utilities Off...	1	74	01-Aug-14	01-Aug-14	5-Day Pre-Con
GO2000120	A/C Hazardous Material Management Plan	10	289	08-Aug-14	21-Aug-14	5-Day Pre-Con
GO2000140	Perform Hazmat Testing / Inspection	15	279	08-Aug-14	28-Aug-14	5-Day Pre-Con
GO2000220	A/C Site Specific Safety Plan	15	284	08-Aug-14	28-Aug-14	5-Day Pre-Con
GO2000320	A/C QA/QC Plan	15	284	08-Aug-14	28-Aug-14	5-Day Pre-Con
GO2001020	Schedule and Hold Kickoff Meeting with Utilities	15	67	13-Aug-14	03-Sep-14	5-Day Pre-Con
GO2000130	R/A Revised Hazardous Material Management Plan, Final	21	418	22-Aug-14	11-Sep-14	7-Day
GO2000150	SFA Hazmat Inspection Report / Remediation Plan	5	279	29-Aug-14	05-Sep-14	5-Day Pre-Con
GO2000230	R/A Revised Site Specific Safety Plan, Final	21	411	29-Aug-14	18-Sep-14	7-Day
GO2000330	R/A Revised QA/QC Plan, Final	21	411	29-Aug-14	18-Sep-14	7-Day
GO2000160	R/A Hazmat Inspection Report / Remediation Plan	21	403	06-Sep-14	26-Sep-14	7-Day
GO2001040	Prepare UT-9's for all Utilities	30	53	17-Oct-14	15-Nov-14	7-Day
GO2001050	Update VDOT RUMS with UT-9 Data	10	33	17-Nov-14	01-Dec-14	5-Day Pre-Con
GO2001060	Schedule / Conduct UFI Meeting	10	33	02-Dec-14	15-Dec-14	5-Day Pre-Con
GO2001100	Prepare Plans & Estimates - Loudoun Water	60	65	16-Dec-14	13-Feb-15	7-Day
GO2001200	Prepare Plans & Estimates - Columbia Gas	60	191	16-Dec-14	13-Feb-15	7-Day
GO2001300	Prepare Plans & Estimates - Verizon/Verizon South	60	51	16-Dec-14	13-Feb-15	7-Day
GO2001400	Prepare Plans & Estimates - AT&T	60	58	16-Dec-14	13-Feb-15	7-Day
GO2001500	Prepare Plans & Estimates - Dominion VA Power Transmission	60	181	16-Dec-14	13-Feb-15	7-Day
GO2001600	Prepare Plans & Estimates - Dominion VA Power Underground	60	233	16-Dec-14	13-Feb-15	7-Day
GO2001110	Provide Updated Easement Locations to AI Team - Loudoun Water	5	45	16-Feb-15	20-Feb-15	5-Day Pre-Con
GO2001210	Provide Updated Easement Locations to AI Team - Columbia Gas	5	133	16-Feb-15	20-Feb-15	5-Day Pre-Con
GO2001310	Provide Updated Easement Locations to AI Team - Verizon/Verizon ...	5	35	16-Feb-15	20-Feb-15	5-Day Pre-Con
GO2001410	Provide Updated Easement Locations to AI Team - AT&T	5	40	16-Feb-15	20-Feb-15	5-Day Pre-Con
GO2001510	Provide Updated Easement Locations to AI Team - Dominion VA Po...	5	127	16-Feb-15	20-Feb-15	5-Day Pre-Con
GO2001610	Provide Updated Easement Locations to AI Team - Dominion VA Po...	5	162	16-Feb-15	20-Feb-15	5-Day Pre-Con
GO2001120	SFA Plans & Estimates - Loudoun Water (Internal AI Team Comments)	10	45	23-Feb-15	06-Mar-15	5-Day Pre-Con
GO2001220	SFA Plans & Estimates - Columbia Gas (Internal AI Team Comments)	10	133	23-Feb-15	06-Mar-15	5-Day Pre-Con
GO2001320	SFA Plans & Estimates - Verizon/Verizon South (Internal AI Team Co...	10	35	23-Feb-15	06-Mar-15	5-Day Pre-Con
GO2001420	SFA Plans & Estimates - AT&T (Internal AI Team Comments)	10	40	23-Feb-15	06-Mar-15	5-Day Pre-Con

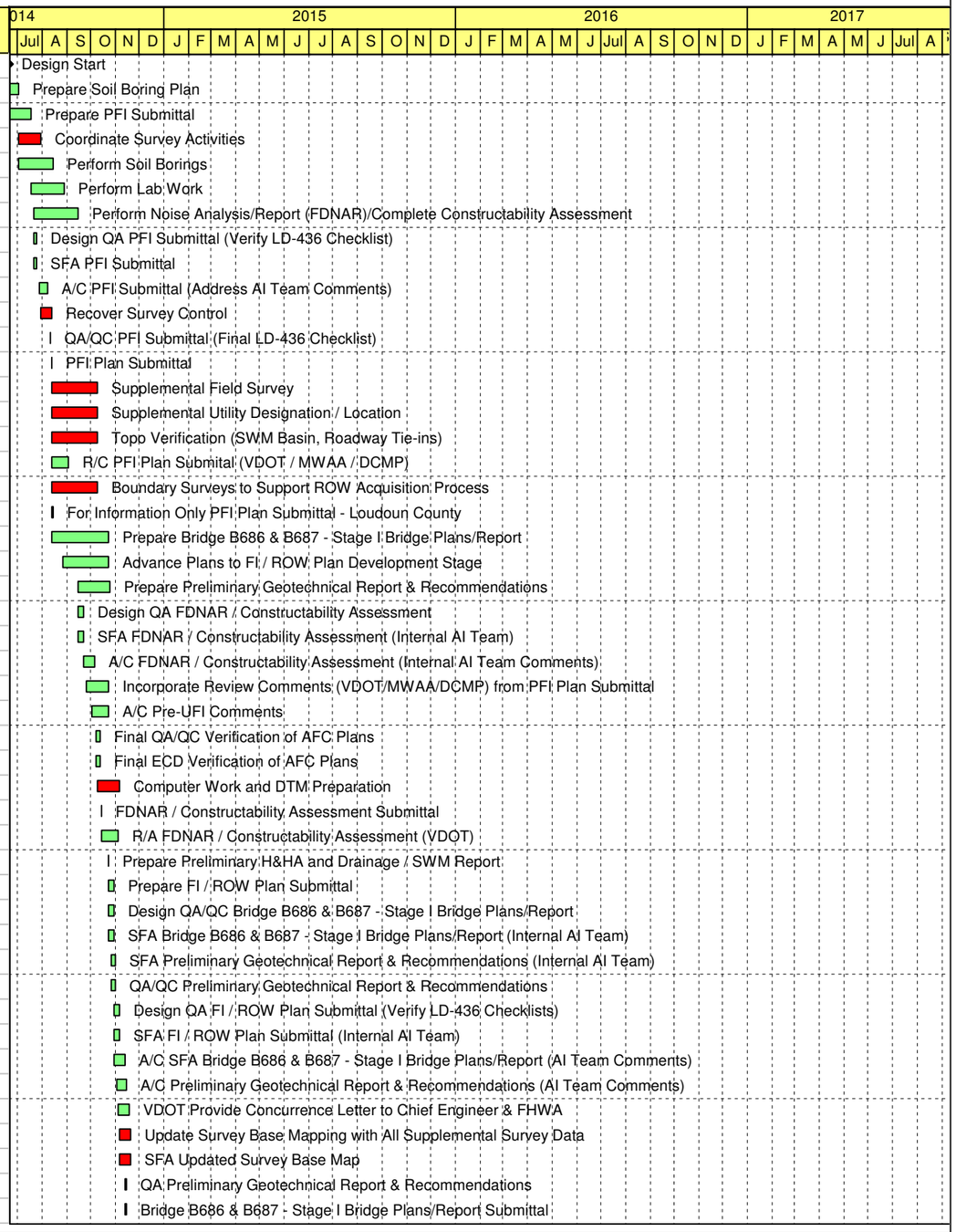


Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
GO2001520	SFA Plans & Estimates - Dominion VA Power Transmission (Internal ...	10	127	23-Feb-15	06-Mar-15	5-Day Pre-Con
GO2001620	SFA Plans & Estimates - Dominion VA Power Underground (Internal ...	10	162	23-Feb-15	06-Mar-15	5-Day Pre-Con
GO2001130	A/C Plans & Estimates - Loudoun Water (Address AI Team Comments)	10	45	09-Mar-15	20-Mar-15	5-Day Pre-Con
GO2001230	A/C Plans & Estimates - Columbia Gas (Address AI Team Comments)	10	133	09-Mar-15	20-Mar-15	5-Day Pre-Con
GO2001330	A/C Plans & Estimates - Verizon/Verizon South (Address AI Team Co...	10	35	09-Mar-15	20-Mar-15	5-Day Pre-Con
GO2001430	A/C Plans & Estimates - AT&T (Address AI Team Comments)	10	40	09-Mar-15	20-Mar-15	5-Day Pre-Con
GO2001530	A/C Plans & Estimates - Dominion VA Power Transmission (Address ...	10	127	09-Mar-15	20-Mar-15	5-Day Pre-Con
GO2001630	A/C Plans & Estimates - Dominion VA Power Underground (Address ...	10	162	09-Mar-15	20-Mar-15	5-Day Pre-Con
GO2001140	R/A Plans & Estimates - Loudoun Water (VDOT)	21	66	21-Mar-15	10-Apr-15	7-Day
GO2001240	R/A Plans & Estimates - Columbia Gas (VDOT)	21	192	21-Mar-15	10-Apr-15	7-Day
GO2001340	R/A Plans & Estimates - Verizon/Verizon South (VDOT)	21	51	21-Mar-15	10-Apr-15	7-Day
GO2001440	R/A Plans & Estimates - AT&T (VDOT)	21	58	21-Mar-15	10-Apr-15	7-Day
GO2001540	R/A Plans & Estimates - Dominion VA Power Transmission (VDOT)	21	184	21-Mar-15	10-Apr-15	7-Day
GO2001640	R/A Plans & Estimates - Dominion VA Power Underground (VDOT)	21	233	21-Mar-15	10-Apr-15	7-Day
GO2001150	Update VDOT RUMS with Notice to Commence Construction - Loudo...	5	45	13-Apr-15	17-Apr-15	5-Day Pre-Con
GO2001250	Update VDOT RUMS with Notice to Commence Construction - Colu...	5	133	13-Apr-15	17-Apr-15	5-Day Pre-Con
GO2001350	Update VDOT RUMS with Notice to Commence Construction - Verizo...	5	34	13-Apr-15	17-Apr-15	5-Day Pre-Con
GO2001450	Update VDOT RUMS with Notice to Commence Construction - AT&T	5	39	13-Apr-15	17-Apr-15	5-Day Pre-Con
GO2001550	Update VDOT RUMS with Notice to Commence Construction - Domi...	5	127	13-Apr-15	17-Apr-15	5-Day Pre-Con
GO2001650	Update VDOT RUMS with Notice to Commence Construction - Domi...	5	161	13-Apr-15	17-Apr-15	5-Day Pre-Con
GO2002190	Preparatory Meeting - Retaining Walls	1	0	07-Jul-15	07-Jul-15	5-Day Pre-Con
GO2002030	Preparatory Meeting - Structure Backfill	1	0	13-Aug-15	13-Aug-15	5-Day Pre-Con
GO2002020	Preparatory Meeting - MOT	1	56	14-Aug-15	14-Aug-15	5-Day Pre-Con
GO2009000	Mobilize for Construction	10	56	17-Aug-15	28-Aug-15	5-Day Pre-Con
GO2002010	Preparatory Meeting - Clear & Grub	1	56	21-Aug-15	21-Aug-15	5-Day Pre-Con
GO2002200	Preparatory Meeting - Soundwalls	1	115	25-Aug-15	25-Aug-15	5-Day Pre-Con
GO2002000	Preparatory Meeting - Erosion & Sedimentation Control	1	57	28-Aug-15	28-Aug-15	5-Day Pre-Con
GO2002100	Preparatory Meeting - Bridge Substructure	1	61	24-Sep-15	24-Sep-15	5-Day Pre-Con
GO2002090	Preparatory Meeting - Drilled Shafts	1	61	28-Sep-15	28-Sep-15	5-Day Pre-Con
GO2002040	Preparatory Meeting - Storm Drainage	1	120	24-Nov-15	24-Nov-15	5-Day Pre-Con
GO2002060	Preparatory Meeting - Subgrade & Aggregate Base	1	121	04-Dec-15	04-Dec-15	5-Day Pre-Con
GO2002130	Preparatory Meeting - Underdrain	1	75	22-Feb-16	22-Feb-16	5-Day Pre-Con
GO2002080	Preparatory Meeting - Asphalt Pavement	1	75	26-Feb-16	26-Feb-16	5-Day Pre-Con
GO2002050	Preparatory Meeting - Stabilization & Embankment	1	75	03-Mar-16	03-Mar-16	5-Day Pre-Con
GO2002160	Preparatory Meeting - Topsoil & Seeding	1	75	03-Mar-16	03-Mar-16	5-Day Pre-Con
GO2002180	Preparatory Meeting - Concrete Curb & Sidewalk	1	112	04-Mar-16	04-Mar-16	5-Day Pre-Con
GO2002140	Preparatory Meeting - Guardrail	1	75	09-Mar-16	09-Mar-16	5-Day Pre-Con
GO2002110	Preparatory Meeting - Bridge Deck	1	31	22-Mar-16	22-Mar-16	5-Day Pre-Con
GO2002120	Preparatory Meeting - Girder Erection	1	31	22-Mar-16	22-Mar-16	5-Day Pre-Con
GO2002070	Preparatory Meeting - Signalization	1	85	13-Mar-17	13-Mar-17	5-Day Pre-Con
GO2002150	Preparatory Meeting - Pavement Markings	1	90	13-Mar-17	13-Mar-17	5-Day Pre-Con
GO2002170	Preparatory Meeting - Signage	1	85	13-Mar-17	13-Mar-17	5-Day Pre-Con
Scope Validation Period		124	37	19-Jun-14	15-Dec-14	
GO3000010	Scope Validation Period	120	59	19-Jun-14	16-Oct-14	7-Day
GO3000020	Scope Validation Negotiations	60	59	17-Oct-14	15-Dec-14	7-Day
GO3000030	Scope Validation Agreement Reached	0	39		15-Dec-14	5-Day Pre-Con
Design		260	255	19-Jun-14	01-Jul-15	

Remaining Level of Effort | Actual Work | Critical Remaining Work | Summary
Actual Level of Effort | Remaining Work | Milestone

TASK filter: All Activities

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
GO4000000	Design Start	0	21	19-Jun-14		5-Day Pre-Con
GO4000110	Prepare Soil Boring Plan	10	21	19-Jun-14	02-Jul-14	5-Day Pre-Con
GO4001000	Prepare PFI Submittal	30	16	19-Jun-14	18-Jul-14	7-Day
GO4000010	Coordinate Survey Activities	20	0	02-Jul-14	30-Jul-14	5-Day Pre-Con
GO4000120	Perform Soil Borings	30	21	03-Jul-14	14-Aug-14	5-Day Pre-Con
GO4000130	Perform Lab Work	30	21	18-Jul-14	28-Aug-14	5-Day Pre-Con
GO4010000	Perform Noise Analysis/Report (FDNAR)/Complete Constructability A...	40	57	21-Jul-14	15-Sep-14	5-Day Pre-Con
GO4001010	Design QA PFI Submittal (Verify LD-436 Checklist)	5	10	21-Jul-14	25-Jul-14	5-Day Pre-Con
GO4001020	SFA PFI Submittal	5	10	21-Jul-14	25-Jul-14	5-Day Pre-Con
GO4001030	A/C PFI Submittal (Address AI Team Comments)	10	10	28-Jul-14	08-Aug-14	5-Day Pre-Con
GO4000020	Recover Survey Control	10	0	31-Jul-14	13-Aug-14	5-Day Pre-Con
GO4001040	QA/QC PFI Submittal (Final LD-436 Checklist)	2	10	11-Aug-14	12-Aug-14	5-Day Pre-Con
GO4001050	PFI Plan Submittal	1	10	13-Aug-14	13-Aug-14	5-Day Pre-Con
GO4000030	Supplemental Field Survey	40	0	14-Aug-14	09-Oct-14	5-Day Pre-Con
GO4000040	Supplemental Utility Designation / Location	40	0	14-Aug-14	09-Oct-14	5-Day Pre-Con
GO4000050	Topo Verification (SWM Basin, Roadway Tie-ins)	40	0	14-Aug-14	09-Oct-14	5-Day Pre-Con
GO4001060	R/C PFI Plan Submital (VDOT / MWAA / DCMP)	21	17	14-Aug-14	03-Sep-14	7-Day
GO4000060	Boundary Surveys to Support ROW Acquisition Process	40	0	14-Aug-14	09-Oct-14	5-Day Pre-Con
GO4001070	For Information Only PFI Plan Submittal - Loudoun County	1	39	14-Aug-14	14-Aug-14	5-Day Pre-Con
GO4007000	Prepare Bridge B686 & B687 - Stage I Bridge Plans/Report	50	63	14-Aug-14	23-Oct-14	5-Day Pre-Con
GO4001080	Advance Plans to FI / ROW Plan Development Stage	40	10	28-Aug-14	23-Oct-14	5-Day Pre-Con
GO4000140	Prepare Preliminary Geotechnical Report & Recommendations	30	21	15-Sep-14	24-Oct-14	5-Day Pre-Con
GO4010010	Design QA FDNAR / Constructability Assessment	5	57	16-Sep-14	22-Sep-14	5-Day Pre-Con
GO4010020	SFA FDNAR / Constructability Assessment (Internal AI Team)	5	57	16-Sep-14	22-Sep-14	5-Day Pre-Con
GO4010030	A/C FDNAR / Constructability Assessment (Internal AI Team Comme...	10	57	23-Sep-14	06-Oct-14	5-Day Pre-Con
GO4001090	Incorporate Review Comments (VDOT/MWAA/DCMP) from PFI Plan ...	20	10	26-Sep-14	23-Oct-14	5-Day Pre-Con
GO4001100	A/C Pre-UFI Comments	15	10	03-Oct-14	23-Oct-14	5-Day Pre-Con
GO4010040	Final QA/QC Verification of AFC Plans	5	57	07-Oct-14	13-Oct-14	5-Day Pre-Con
GO4010050	Final ECD Verification of AFC Plans	5	57	07-Oct-14	13-Oct-14	5-Day Pre-Con
GO4000070	Computer Work and DTM Preparation	20	0	10-Oct-14	06-Nov-14	5-Day Pre-Con
GO4010060	FDNAR / Constructability Assessment Submittal	1	57	14-Oct-14	14-Oct-14	5-Day Pre-Con
GO4010070	R/A FDNAR / Constructability Assessment (VDOT)	21	86	15-Oct-14	04-Nov-14	7-Day
GO4001110	Prepare Preliminary H&HA and Drainage / SWM Report	1	10	23-Oct-14	23-Oct-14	5-Day Pre-Con
GO4001120	Prepare FI / ROW Plan Submittal	5	10	24-Oct-14	30-Oct-14	5-Day Pre-Con
GO4007010	Design QA/QC Bridge B686 & B687 - Stage I Bridge Plans/Report	5	63	24-Oct-14	30-Oct-14	5-Day Pre-Con
GO4007020	SFA Bridge B686 & B687 - Stage I Bridge Plans/Report (Internal AI T...	5	63	24-Oct-14	30-Oct-14	5-Day Pre-Con
GO4000160	SFA Preliminary Geotechnical Report & Recommendations (Internal ...	5	21	27-Oct-14	31-Oct-14	5-Day Pre-Con
GO4000150	QA/QC Preliminary Geotechnical Report & Recommendations	5	21	27-Oct-14	31-Oct-14	5-Day Pre-Con
GO4001130	Design QA FI / ROW Plan Submittal (Verify LD-436 Checklists)	5	10	31-Oct-14	06-Nov-14	5-Day Pre-Con
GO4001140	SFA FI / ROW Plan Submittal (Internal AI Team)	5	10	31-Oct-14	06-Nov-14	5-Day Pre-Con
GO4007030	A/C SFA Bridge B686 & B687 - Stage I Bridge Plans/Report (AI Tea...	10	63	31-Oct-14	13-Nov-14	5-Day Pre-Con
GO4000170	A/C Preliminary Geotechnical Report & Recommendations (AI Team ...	10	21	03-Nov-14	14-Nov-14	5-Day Pre-Con
GO4010080	VDOT Provide Concurrence Letter to Chief Engineer & FHWA	10	57	05-Nov-14	18-Nov-14	5-Day Pre-Con
GO4000080	Update Survey Base Mapping with All Supplemental Survey Data	10	0	07-Nov-14	20-Nov-14	5-Day Pre-Con
GO4000090	SFA Updated Survey Base Map	10	0	07-Nov-14	20-Nov-14	5-Day Pre-Con
GO4000180	QA Preliminary Geotechnical Report & Recommendations	2	21	13-Nov-14	14-Nov-14	5-Day Pre-Con
GO4007040	Bridge B686 & B687 - Stage I Bridge Plans/Report Submittal	1	63	14-Nov-14	14-Nov-14	5-Day Pre-Con



Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
GO4000190	Submit Preliminary Geotechnical Report & Recommendations	1	21	17-Nov-14	17-Nov-14	5-Day Pre-Con
GO4000200	R/C Preliminary Geotechnical Report & Recommendations (VDOT / ...	21	43	18-Nov-14	08-Dec-14	7-Day
GO4000220	Prepare Final Geotechnical Report & Recommendations	30	21	18-Nov-14	05-Jan-15	5-Day Pre-Con
GO4007050	R/C Bridge B686 & B687 - Stage I Bridge Plans/Report (VDOT/MWA...	21	93	18-Nov-14	08-Dec-14	7-Day
GO4007060	FIO Bridge B686 & B687 - Stage I Bridge Plans/Report - Loudoun Co...	1	76	18-Nov-14	18-Nov-14	5-Day Pre-Con
GO4000100	QA Updated Survey Base Map	2	0	19-Nov-14	20-Nov-14	5-Day Pre-Con
GO4010090	Prepare and Mail Letters to Benefitted Receptors	5	57	19-Nov-14	25-Nov-14	5-Day Pre-Con
GO4001150	A/C FI / ROW Plan Submittal (Address AI Team Comments)	10	0	21-Nov-14	05-Dec-14	5-Day Pre-Con
GO4010100	Public Outreach with Benefitted Receptors (AI Team)	15	57	26-Nov-14	17-Dec-14	5-Day Pre-Con
GO4001160	QA/QC FI / ROW Plan Submittal (Final LD-436 Checklist)	2	0	04-Dec-14	05-Dec-14	5-Day Pre-Con
GO4001170	FI / ROW Plan Submittal (Including H&HA and Drainage / SWM Rep...	1	0	08-Dec-14	08-Dec-14	5-Day Pre-Con
GO4002000	Advance SWPPP & Design Clear & Grub / E&S Plans for AFC Submi...	30	133	09-Dec-14	23-Jan-15	5-Day Pre-Con
GO4001180	R/C FI / ROW Plan Submitall (VDOT/MWAA/DCMP)	21	0	09-Dec-14	29-Dec-14	7-Day
GO4000210	A/C Preliminary Geotechnical Report & Recommendations (VDOT/M...	10	27	09-Dec-14	22-Dec-14	5-Day Pre-Con
GO4001190	For Information Only FI / ROW Plan Submittal - Loudoun County	1	12	09-Dec-14	09-Dec-14	5-Day Pre-Con
GO4003000	Prepare TMP & Design Maintenance of Traffic Plans	50	108	09-Dec-14	20-Feb-15	5-Day Pre-Con
GO4004000	Prepare Grading, Drainage & Noise Wall Plans	50	4	09-Dec-14	20-Feb-15	5-Day Pre-Con
GO4007070	A/C Bridge B686 & B687 - Stage I Bridge Plans/Report (VDOT/MWA...	10	63	09-Dec-14	22-Dec-14	5-Day Pre-Con
GO4008000	Prepare SOE / Primary Spillway Demo Plan	30	189	09-Dec-14	23-Jan-15	5-Day Pre-Con
GO4009000	Prepare Retaining Wall / Primary Spillway Extension Plan	40	18	09-Dec-14	06-Feb-15	5-Day Pre-Con
GO4010110	Prepare Memorandum Summarizing Outreach to Benefitted Receptors	10	57	18-Dec-14	06-Jan-15	5-Day Pre-Con
GO4007080	QA/QC Bridge B686 & B687 - Stage I Bridge Plans/Report (Final LD-...	2	87	19-Dec-14	22-Dec-14	5-Day Pre-Con
GO4007090	Resubmit Bridge B686 & B687 - Stage I Bridge Plans/Report	1	87	23-Dec-14	23-Dec-14	5-Day Pre-Con
GO4007100	R/A Bridge B686 & B687 - Stage I Bridge Plans (VDOT)	21	127	24-Dec-14	13-Jan-15	7-Day
GO4001200	A/C FI / ROW Plan (VDOT/MWAA/DCMP)	10	0	30-Dec-14	14-Jan-15	5-Day Pre-Con
GO4001230	QA/QC FI / ROW Plan Submittal (Final LD-436 Checklist)	2	8	30-Dec-14	31-Dec-14	5-Day Pre-Con
GO4001210	A/C Preliminary H&HA and Drainage / SWM Report	10	0	30-Dec-14	14-Jan-15	5-Day Pre-Con
GO4001220	A/C UFI Comments / Update Utility Easements	10	0	30-Dec-14	14-Jan-15	5-Day Pre-Con
GO4000240	SFA Final Geotechnical Report & Recommendations (Internal AI Team)	5	21	06-Jan-15	12-Jan-15	5-Day Pre-Con
GO4000230	QA/QC Final Geotechnical Report & Recommendations	5	21	06-Jan-15	12-Jan-15	5-Day Pre-Con
GO4010120	SFA Memorandum Summarizing Outreach to Benefitted Receptors	5	57	07-Jan-15	13-Jan-15	5-Day Pre-Con
GO4010130	QA Memorandum Summarizing Outreach to Benefitted Receptors	5	57	07-Jan-15	13-Jan-15	5-Day Pre-Con
GO4000250	A/C Final Geotechnical Report & Recommendations (AI Team Comm...	10	21	13-Jan-15	26-Jan-15	5-Day Pre-Con
GO4010140	Memorandum Summarizing Outreach to Benefitted Receptors Submit...	5	57	14-Jan-15	20-Jan-15	5-Day Pre-Con
GO4001240	FI / ROW Plan Submittal (VDOT)	1	0	15-Jan-15	15-Jan-15	5-Day Pre-Con
GO4002010	Incorporate Comments from FI / ROW Plans (VDOT/MWAA/DCMP)	10	130	15-Jan-15	28-Jan-15	5-Day Pre-Con
GO4001250	R/A FI / ROW Plans	21	7	16-Jan-15	05-Feb-15	7-Day
GO4004020	Advance Preliminary H&HA and Drainage / SWM Report to Final Rep...	30	0	16-Jan-15	26-Feb-15	5-Day Pre-Con
GO4005000	Prepare Signing/Marking/Signalization Plans	30	275	16-Jan-15	26-Feb-15	5-Day Pre-Con
GO4006000	Prepare Pavement Plans	30	268	16-Jan-15	26-Feb-15	5-Day Pre-Con
GO4010150	R/A Noise Analysis Citizen Feedback (VDOT)	21	79	21-Jan-15	10-Feb-15	7-Day
GO4000260	QA Final Geotechnical Report & Recommendations	2	21	23-Jan-15	26-Jan-15	5-Day Pre-Con
GO4004010	Incorporate Comments from FI / ROW Plans (VDOT/MWAA/DCMP)	20	4	26-Jan-15	20-Feb-15	5-Day Pre-Con
GO4004030	Verify FDNAR with AFC Grading, Drainage & Noise Wall Plans	20	4	26-Jan-15	20-Feb-15	5-Day Pre-Con
GO4008010	Design QA SOE / Primary Spillway Demo Plan	5	189	26-Jan-15	30-Jan-15	5-Day Pre-Con
GO4000270	Submit Final Geotechnical Report & Recommendations	1	21	27-Jan-15	27-Jan-15	5-Day Pre-Con
GO4000280	R/A Final Geotechnical Report & Recommendations (VDOT / MWAA ...	21	29	28-Jan-15	17-Feb-15	7-Day

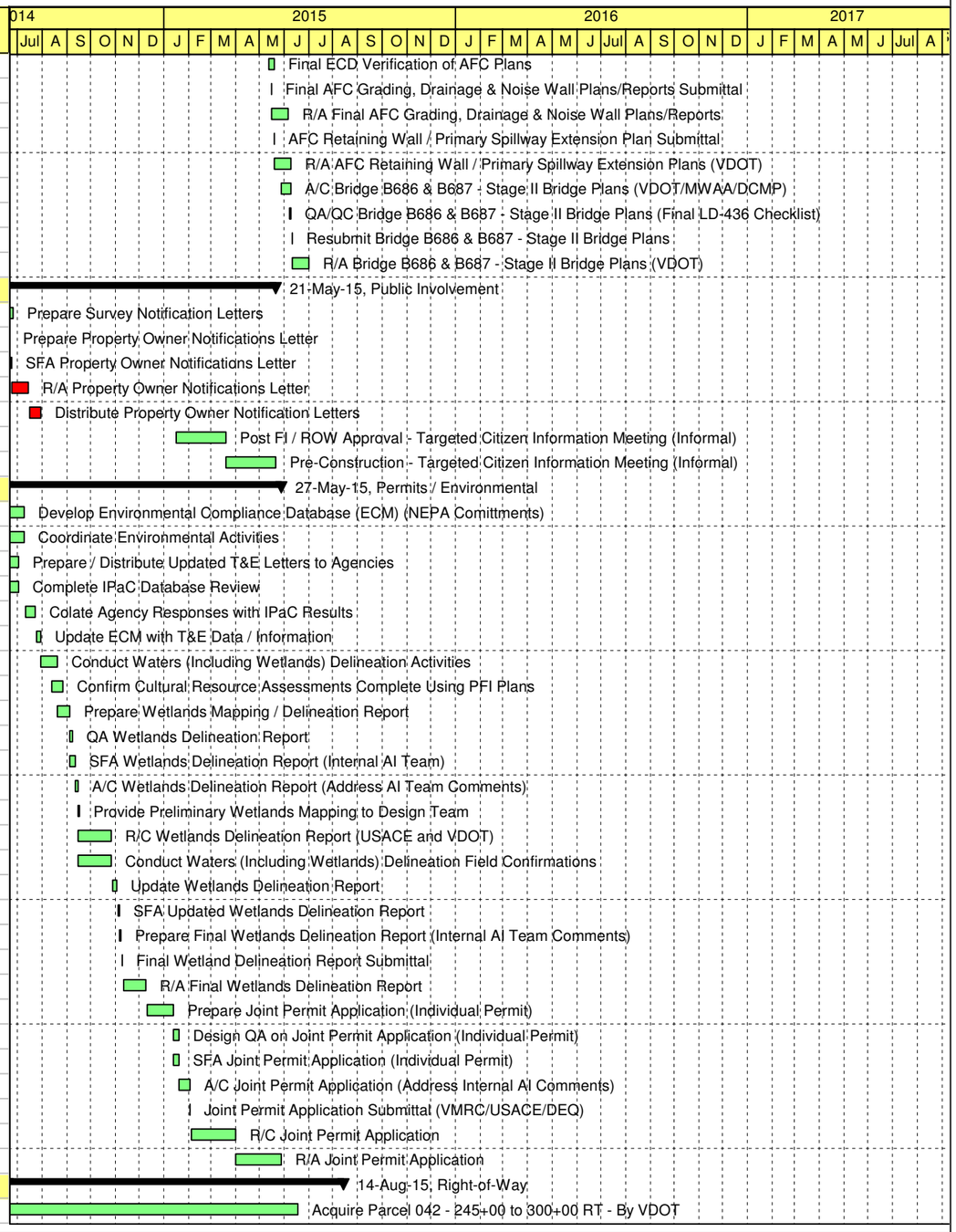
Remaining Level of Effort | Actual Work | Critical Remaining Work | Summary
Actual Level of Effort | Remaining Work | Milestone

TASK filter: All Activities

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
GO4002020	Design QA SWPPP & Design Clear & Grub / E&S AFC Plans (Verify ...	5	130	29-Jan-15	04-Feb-15	5-Day Pre-Con
GO4002030	SFA SWPPP & Design Clear & Grub / E&S AFC Plans (Internal AI Te...	5	130	29-Jan-15	04-Feb-15	5-Day Pre-Con
GO4003010	Incorporate Comments from FI / ROW Plans (VDOT/MWAA/DCMP)	15	108	02-Feb-15	20-Feb-15	5-Day Pre-Con
GO4008020	SFA SOE / Primary Spillway Demo Plan (Internal AI Team)	5	189	02-Feb-15	06-Feb-15	5-Day Pre-Con
GO4002040	A/C AFC SWPPP & Clear & Grub / E&S AFC Plans (Address AI Tea...	10	130	05-Feb-15	18-Feb-15	5-Day Pre-Con
GO4001260	VDOT (Chief Engineers) Provides Signature of FI / ROW Plans	5	7	06-Feb-15	10-Feb-15	7-Day
GO4005010	Incorporate Comments from FI / ROW Plans (VDOT/MWAA/DCMP)	15	275	06-Feb-15	26-Feb-15	5-Day Pre-Con
GO4006010	Incorporate Comments from FI / ROW Plans (VDOT/MWAA/DCMP)	15	268	06-Feb-15	26-Feb-15	5-Day Pre-Con
GO4009010	Design QA Retaining Wall / Primary Spillway Extension Plan	5	18	09-Feb-15	13-Feb-15	5-Day Pre-Con
GO4007110	Prepare Bridge B686 & B687 - Stage II Bridge Plans	40	32	10-Feb-15	06-Apr-15	5-Day Pre-Con
GO4010160	Provide Concurrence Letter for FDNAR and Noise Wall Locations (V...	10	57	11-Feb-15	24-Feb-15	5-Day Pre-Con
GO4009020	SFA Retaining Wall / Primary Spillway Extension Plan (Internal AI Te...	5	18	16-Feb-15	20-Feb-15	5-Day Pre-Con
GO4008030	A/C SFA SOE / Primary Spillway Demo Plan (AI Team Comments)	10	182	18-Feb-15	03-Mar-15	5-Day Pre-Con
GO4002050	Final QA/QC Verification of AFC Plans	5	130	19-Feb-15	25-Feb-15	5-Day Pre-Con
GO4002060	Final ECD Verification of AFC Plans	5	130	19-Feb-15	25-Feb-15	5-Day Pre-Con
GO4003020	Design QA of AFC TMP & Design Maintenance of Traffic AFC Plans (...	5	108	23-Feb-15	27-Feb-15	5-Day Pre-Con
GO4003030	SFA AFC TMP & Design Maintenance of Traffic AFC Plans (Internal ...	5	108	23-Feb-15	27-Feb-15	5-Day Pre-Con
GO4009030	A/C SFA Retaining Wall / Primary Spillway Extension Plan (AI Team ...	10	18	23-Feb-15	06-Mar-15	5-Day Pre-Con
GO4002070	AFC SWPPP & Clear & Grub / E&S AFC Plan Submittal	1	130	26-Feb-15	26-Feb-15	5-Day Pre-Con
GO4002080	R/A SWPPP and Clear & Grub / E&S AFC Plans - (VDOT/MWAA/DC...	21	213	27-Feb-15	19-Mar-15	7-Day
GO4004040	Design QA of AFC Grading, Drainage & Noise Walls Plans/Reports	5	0	27-Feb-15	05-Mar-15	5-Day Pre-Con
GO4004050	SFA AFC Grading, Drainage & Noise Walls Plans/Reports (Internal A...	5	0	27-Feb-15	05-Mar-15	5-Day Pre-Con
GO4005020	Design QA of AFC Signing/Marking/Signalization AFC Plans (Verify L...	5	275	27-Feb-15	05-Mar-15	5-Day Pre-Con
GO4005030	SFA AFC Signing/Marking/Signalization AFC Plans (Internal AI Team)	5	275	27-Feb-15	05-Mar-15	5-Day Pre-Con
GO4006020	Design QA of AFC Pavement AFC Plans (Verify LD-436 Checklist)	5	268	27-Feb-15	05-Mar-15	5-Day Pre-Con
GO4006030	SFA AFC Pavement AFC Plans (Internal AI Team)	5	268	27-Feb-15	05-Mar-15	5-Day Pre-Con
GO4003040	A/C AFC TMP & Maintenance of Traffic AFC Plans (Address AI Tea...	10	108	02-Mar-15	13-Mar-15	5-Day Pre-Con
GO4008040	SOE / Primary Spillway Demo Plan Submittal	1	182	04-Mar-15	04-Mar-15	5-Day Pre-Con
GO4008050	R/C SOE / Primary Spillway Demo Plan (VDOT/MWAA/DCMP)	21	259	05-Mar-15	25-Mar-15	7-Day
GO4008060	FIO SOE / Primary Spillway Demo Plan - Loudoun County	1	195	05-Mar-15	05-Mar-15	5-Day Pre-Con
GO4008070	Prepare AFC SOE / Primary Spillway Demo Plan	20	186	05-Mar-15	01-Apr-15	5-Day Pre-Con
GO4004060	A/C AFC Grading, Drainage & Noise Walls Plans/Reports (Internal AI...	15	0	06-Mar-15	26-Mar-15	5-Day Pre-Con
GO4005040	A/C AFC Signing/Marking/Signalization AFC Plans (Address AI Team...	10	275	06-Mar-15	19-Mar-15	5-Day Pre-Con
GO4006040	A/C AFC Pavement AFC Plans (Address AI Team Comments)	10	268	06-Mar-15	19-Mar-15	5-Day Pre-Con
GO4009040	Retaining Wall / Primary Spillway Extension Plan Submittal	1	18	09-Mar-15	09-Mar-15	5-Day Pre-Con
GO4009050	R/C Retaining Wall / Primary Spillway Extension Plan (VDOT/MWAA/...	21	31	10-Mar-15	30-Mar-15	7-Day
GO4009060	FIO Retaining Wall / Primary Spillway Extension Plan - Loudoun County	1	37	10-Mar-15	10-Mar-15	5-Day Pre-Con
GO4009070	Prepare AFC Retaining Wall / Primary Spillway Extension Plan	30	18	10-Mar-15	20-Apr-15	5-Day Pre-Con
GO4003050	Final QA/QC Verification of AFC Plans	5	108	16-Mar-15	20-Mar-15	5-Day Pre-Con
GO4003060	Final ECD Verification of AFC Plans	5	108	16-Mar-15	20-Mar-15	5-Day Pre-Con
GO4002090	Prepare VSMP Certification of Conformity Letter	10	148	20-Mar-15	02-Apr-15	5-Day Pre-Con
GO4005050	Final QA/QC Verification of AFC Plans	5	275	20-Mar-15	26-Mar-15	5-Day Pre-Con
GO4005060	Final ECD Verification of AFC Plans	5	275	20-Mar-15	26-Mar-15	5-Day Pre-Con
GO4006050	Final QA/QC Verification of AFC Plans	5	268	20-Mar-15	26-Mar-15	5-Day Pre-Con
GO4006060	Final ECD Verification of AFC Plans	5	268	20-Mar-15	26-Mar-15	5-Day Pre-Con
GO4003070	AFC TMP & Design Maintenance of Traffic AFC Plan Submittal	1	108	23-Mar-15	23-Mar-15	5-Day Pre-Con
GO4003080	R/C TMP & Maintenance of Traffic AFC Plans - (VDOT/MWAA/DCMP)	21	154	24-Mar-15	13-Apr-15	7-Day

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
GO4003090	For Information Only AFC TMP & Maintenance of Traffic Plans - Loud...	1	121	24-Mar-15	24-Mar-15	5-Day Pre-Con
GO4008080	Incorporate SOE / Primary Spillway Demo Plan Comments (VDOT/M...	10	181	26-Mar-15	08-Apr-15	5-Day Pre-Con
GO4004070	Final QA/QC Verification of AFC Plans	5	0	27-Mar-15	02-Apr-15	5-Day Pre-Con
GO4004080	Final ECD Verification of AFC Plans	5	0	27-Mar-15	02-Apr-15	5-Day Pre-Con
GO4005070	AFC Signing/Marking/Signalization AFC Plan Submittal	1	275	27-Mar-15	27-Mar-15	5-Day Pre-Con
GO4006070	AFC Pavement AFC Plan Submittal	1	268	27-Mar-15	27-Mar-15	5-Day Pre-Con
GO4005080	R/C Signing/Marking/Signalization AFC Plans - (VDOT/MWAA/DCMP)	21	395	28-Mar-15	17-Apr-15	7-Day
GO4006080	R/C Pavement AFC Plans - (VDOT/MWAA/DCMP)	21	384	28-Mar-15	17-Apr-15	7-Day
GO4005090	For Information Only AFC Signing/Marking/Signalization Plans - Loud...	1	289	30-Mar-15	30-Mar-15	5-Day Pre-Con
GO4006090	For Information Only AFC Pavement Plans - Loudoun County	1	282	30-Mar-15	30-Mar-15	5-Day Pre-Con
GO4004090	R/C AFC Grading, Drainage & Noise Walls Plans/Reports Submittal -...	21	0	03-Apr-15	23-Apr-15	7-Day
GO4002100	Distribute VSMP Certification of Conformity Letter to VDOT / VDEQ	2	148	03-Apr-15	06-Apr-15	5-Day Pre-Con
GO4004100	FIO AFC Grading, Drainage & Noise Walls Plans/Reports Submittal -...	1	14	03-Apr-15	03-Apr-15	5-Day Pre-Con
GO4007120	Design QA/QC Bridge B686 & B687 - Stage II Bridge Plans (Verify L...	5	32	07-Apr-15	13-Apr-15	5-Day Pre-Con
GO4007130	SFA Bridge B686 & B687 - Stage II Bridge Plans (Internal AI Team)	5	32	07-Apr-15	13-Apr-15	5-Day Pre-Con
GO4009080	Incorporate Retaining Wall / Primary Spillway Extension Plan Comme...	10	18	07-Apr-15	20-Apr-15	5-Day Pre-Con
GO4008090	Design AFC QA SOE / Primary Spillway Demo Plan	5	181	09-Apr-15	15-Apr-15	5-Day Pre-Con
GO4008100	SFA AFC SOE / Primary Spillway Demo Plan (Internal AI Team)	5	181	09-Apr-15	15-Apr-15	5-Day Pre-Con
GO4007140	A/C SFA Bridge B686 & B687 - Stage II Bridge Plans (AI Team Com...	10	32	14-Apr-15	27-Apr-15	5-Day Pre-Con
GO4003100	A/C AFC TMP & Maintenance of Traffic Plans	10	107	14-Apr-15	27-Apr-15	5-Day Pre-Con
GO4003110	QA/QC Final AFC TMP & Maintenance of Traffic Plans (Final LD-436...	2	115	14-Apr-15	15-Apr-15	5-Day Pre-Con
GO4008110	A/C AFC SOE / Primary Spillway Demo Plan (AI Team Comments)	10	181	16-Apr-15	29-Apr-15	5-Day Pre-Con
GO4005100	A/C AFC Signing/Marking/Signalization Plans	10	275	20-Apr-15	01-May-15	5-Day Pre-Con
GO4005110	QA/QC Final AFC Signing/Marking/Signalization Plans (Final LD-436 ...	2	283	20-Apr-15	21-Apr-15	5-Day Pre-Con
GO4006100	A/C AFC Pavement Plans	10	268	20-Apr-15	01-May-15	5-Day Pre-Con
GO4006110	QA/QC Final AFC Pavement Plans (Final LD-436 Checklist)	2	276	20-Apr-15	21-Apr-15	5-Day Pre-Con
GO4009090	Design AFC QA Retaining Wall / Primary Spillway Extension Plan	5	18	21-Apr-15	27-Apr-15	5-Day Pre-Con
GO4009100	SFA AFC Retaining Wall / Primary Spillway Extension Plan (Internal ...	5	18	21-Apr-15	27-Apr-15	5-Day Pre-Con
GO4004110	A/C AFC Grading, Drainage & Noise Wall Plans/Reports	15	0	24-Apr-15	14-May-15	5-Day Pre-Con
GO4004120	QA/QC AFC Grading, Drainage & Noise Wall Plans/Reports (Final L...	2	13	24-Apr-15	27-Apr-15	5-Day Pre-Con
GO4007190	FIO Bridge B686 & B687 - Stage II Bridge Plans - Loudoun County	1	51	28-Apr-15	28-Apr-15	5-Day Pre-Con
GO4003120	Final AFC TMP & Maintenance of Traffic Plan Submittal	1	107	28-Apr-15	28-Apr-15	5-Day Pre-Con
GO4007150	Final QA/QC Verification of AFC Plans	5	32	28-Apr-15	04-May-15	5-Day Pre-Con
GO4007160	Final ECD Verification of AFC Plans	5	32	28-Apr-15	04-May-15	5-Day Pre-Con
GO4009110	A/C AFC Retaining Wall / Primary Spillway Extension Plan (AI Team ...	10	18	28-Apr-15	11-May-15	5-Day Pre-Con
GO4003130	R/A AFC TMP & Maintenance of Traffic Plan Submittal (VDOT)	21	154	29-Apr-15	19-May-15	7-Day
GO4008120	Final QA/QC Verification of AFC Plans	5	181	30-Apr-15	06-May-15	5-Day Pre-Con
GO4008130	Final ECD Verification of AFC Plans	5	181	30-Apr-15	06-May-15	5-Day Pre-Con
GO4005120	Final AFC Signing/Marking/Signalization Plan Submittal	1	275	04-May-15	04-May-15	5-Day Pre-Con
GO4006120	Final AFC Pavement Plan Submittal	1	268	04-May-15	04-May-15	5-Day Pre-Con
GO4005130	R/A AFC Signing/Marking/Signalization Plan Submittal (VDOT)	21	394	05-May-15	25-May-15	7-Day
GO4006130	R/A AFC Pavement Plan Submittal (VDOT)	21	384	05-May-15	25-May-15	7-Day
GO4007170	AFC Bridge B686 & B687 - Stage II Bridge Plans	1	32	05-May-15	05-May-15	5-Day Pre-Con
GO4007180	R/C Bridge B686 & B687 - Stage II Bridge Plans (VDOT/MWAA/DCMP)	21	47	06-May-15	26-May-15	7-Day
GO4008140	AFC SOE / Primary Spillway Demo Plan Submittal	1	181	07-May-15	07-May-15	5-Day Pre-Con
GO4008150	R/A AFC SOE / Primary Spillway Demo Plans (VDOT)	21	263	08-May-15	28-May-15	7-Day
GO4009120	Final QA/QC Verification of AFC Plans	5	18	12-May-15	18-May-15	5-Day Pre-Con

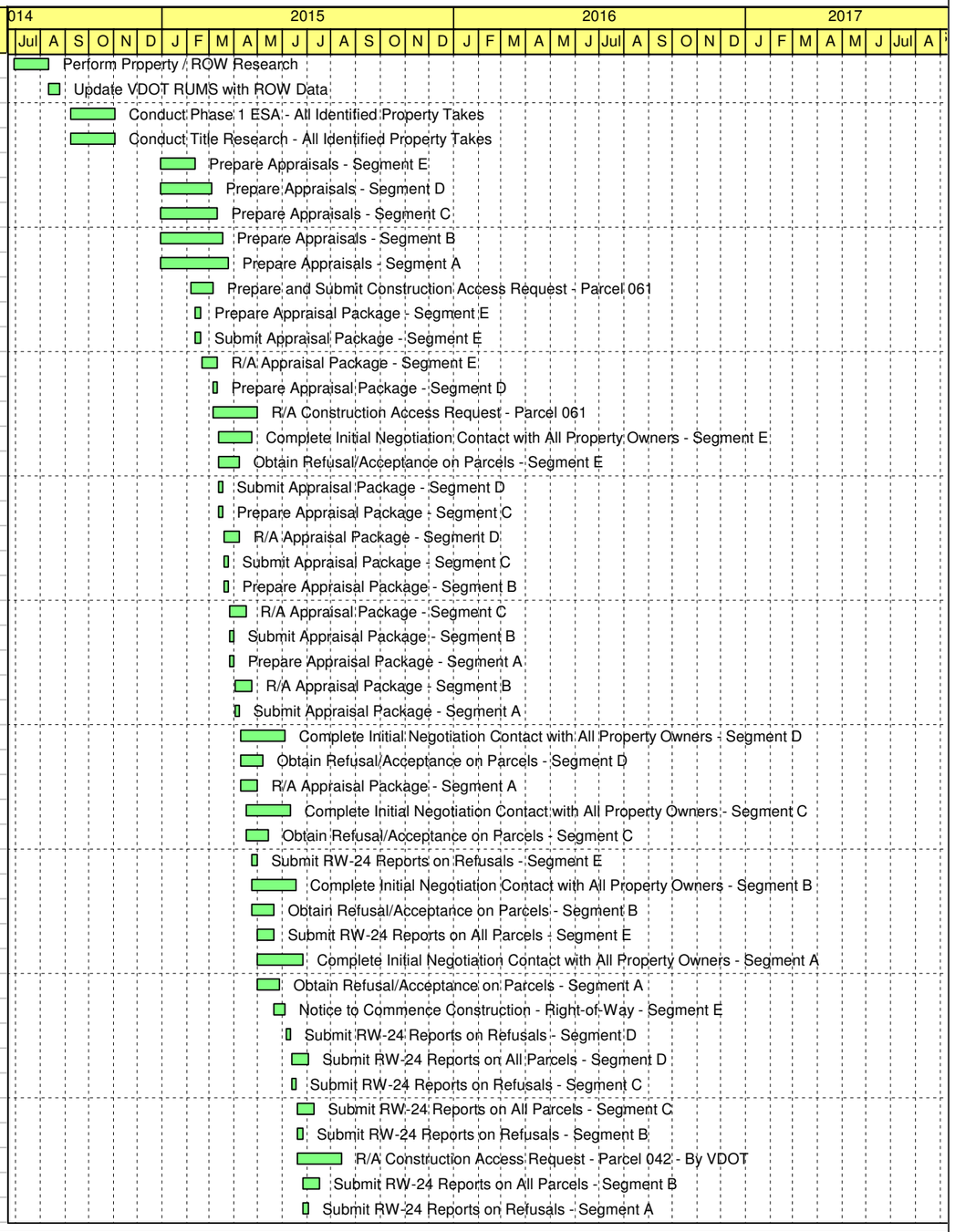
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
GO4009130	Final ECD Verification of AFC Plans	5	18	12-May-15	18-May-15	5-Day Pre-Con
GO4004130	Final AFC Grading, Drainage & Noise Wall Plans/Reports Submittal	1	0	15-May-15	15-May-15	5-Day Pre-Con
GO4004140	R/A Final AFC Grading, Drainage & Noise Wall Plans/Reports	21	2	16-May-15	05-Jun-15	7-Day
GO4009140	AFC Retaining Wall / Primary Spillway Extension Plan Submittal	1	18	19-May-15	19-May-15	5-Day Pre-Con
GO4009150	R/A AFC Retaining Wall / Primary Spillway Extension Plans (VDOT)	21	27	20-May-15	09-Jun-15	7-Day
GO4007200	A/C Bridge B686 & B687 - Stage II Bridge Plans (VDOT/MWAA/DCMP)	10	32	27-May-15	09-Jun-15	5-Day Pre-Con
GO4007210	QA/QC Bridge B686 & B687 - Stage II Bridge Plans (Final LD-436 Ch...	2	36	08-Jun-15	09-Jun-15	5-Day Pre-Con
GO4007220	Resubmit Bridge B686 & B687 - Stage II Bridge Plans	1	36	10-Jun-15	10-Jun-15	5-Day Pre-Con
GO4007230	R/A Bridge B686 & B687 - Stage II Bridge Plans (VDOT)	21	53	11-Jun-15	01-Jul-15	7-Day
Public Involvement		231	118	19-Jun-14	21-May-15	
GO5000000	Prepare Survey Notification Letters	5	24	19-Jun-14	25-Jun-14	5-Day Pre-Con
GO5000010	Prepare Property Owner Notifications Letter	2	0	19-Jun-14	20-Jun-14	5-Day Pre-Con
GO5000020	SFA Property Owner Notifications Letter	2	0	23-Jun-14	24-Jun-14	5-Day Pre-Con
GO5000030	R/A Property Owner Notifications Letter	21	0	25-Jun-14	15-Jul-14	7-Day
GO5000040	Distribute Property Owner Notification Letters	15	0	16-Jul-14	30-Jul-14	7-Day
GO5000050	Post FI / ROW Approval - Targeted Citizen Information Meeting (Infor...	45	115	16-Jan-15	19-Mar-15	5-Day Pre-Con
GO5000060	Pre-Construction - Targeted Citizen Information Meeting (Informal)	45	115	20-Mar-15	21-May-15	5-Day Pre-Con
Permits / Environmental		235	62	19-Jun-14	27-May-15	
GO6000010	Develop Environmental Compliance Database (ECM) (NEPA Comitt...	15	278	19-Jun-14	10-Jul-14	5-Day Pre-Con
GO6000020	Coordinate Environmental Activities	15	268	19-Jun-14	10-Jul-14	5-Day Pre-Con
GO6000030	Prepare / Distribute Updated T&E Letters to Agencies	10	273	19-Jun-14	02-Jul-14	5-Day Pre-Con
GO6000040	Complete IPaC Database Review	10	273	19-Jun-14	02-Jul-14	5-Day Pre-Con
GO6000050	Colate Agency Responses with IPaC Results	10	268	11-Jul-14	24-Jul-14	5-Day Pre-Con
GO6000060	Update ECM with T&E Data / Information	5	268	25-Jul-14	31-Jul-14	5-Day Pre-Con
GO6000080	Conduct Waters (Including Wetlands) Delineation Activities	15	7	31-Jul-14	20-Aug-14	5-Day Pre-Con
GO6000070	Confirm Cultural Resource Assessments Complete Using PFI Plans	10	10	14-Aug-14	27-Aug-14	5-Day Pre-Con
GO6000090	Prepare Wetlands Mapping / Delineation Report	10	7	21-Aug-14	04-Sep-14	5-Day Pre-Con
GO6000100	QA Wetlands Delineation Report	2	10	05-Sep-14	08-Sep-14	5-Day Pre-Con
GO6000110	SFA Wetlands Delineation Report (Internal AI Team)	5	7	05-Sep-14	11-Sep-14	5-Day Pre-Con
GO6000120	A/C Wetlands Delineation Report (Address AI Team Comments)	2	7	12-Sep-14	15-Sep-14	5-Day Pre-Con
GO6000130	Provide Preliminary Wetlands Mapping to Design Team	2	70	16-Sep-14	17-Sep-14	5-Day Pre-Con
GO6000140	R/C Wetlands Delineation Report (USACE and VDOT)	30	7	16-Sep-14	27-Oct-14	5-Day Pre-Con
GO6000150	Conduct Waters (Including Wetlands) Delineation Field Confirmations	30	7	16-Sep-14	27-Oct-14	5-Day Pre-Con
GO6000160	Update Wetlands Delineation Report	5	7	28-Oct-14	03-Nov-14	5-Day Pre-Con
GO6000170	SFA Updated Wetlands Delineation Report	2	7	04-Nov-14	05-Nov-14	5-Day Pre-Con
GO6000180	Prepare Final Wetlands Delineation Report (Internal AI Team Comm...	2	7	06-Nov-14	07-Nov-14	5-Day Pre-Con
GO6000190	Final Wetland Delineation Report Submittal	1	7	10-Nov-14	10-Nov-14	5-Day Pre-Con
GO6000200	R/A Final Wetlands Delineation Report	20	7	11-Nov-14	09-Dec-14	5-Day Pre-Con
GO6000210	Prepare Joint Permit Application (Individual Permit)	20	7	10-Dec-14	12-Jan-15	5-Day Pre-Con
GO6000220	Design QA on Joint Permit Application (Individual Permit)	5	7	13-Jan-15	19-Jan-15	5-Day Pre-Con
GO6000230	SFA Joint Permit Application (Individual Permit)	5	7	13-Jan-15	19-Jan-15	5-Day Pre-Con
GO6000240	A/C Joint Permit Application (Address Internal AI Comments)	10	7	20-Jan-15	02-Feb-15	5-Day Pre-Con
GO6000250	Joint Permit Application Submittal (VMRC/USACE/DEQ)	1	7	03-Feb-15	03-Feb-15	5-Day Pre-Con
GO6000260	R/C Joint Permit Application	40	7	04-Feb-15	31-Mar-15	5-Day Pre-Con
GO6000270	R/A Joint Permit Application	40	7	01-Apr-15	27-May-15	5-Day Pre-Con
Right-of-Way		292	57	19-Jun-14	14-Aug-15	
GO7010000	Acquire Parcel 042 - 245+00 to 300+00 RT - By VDOT	365	81	19-Jun-14	18-Jun-15	7-Day



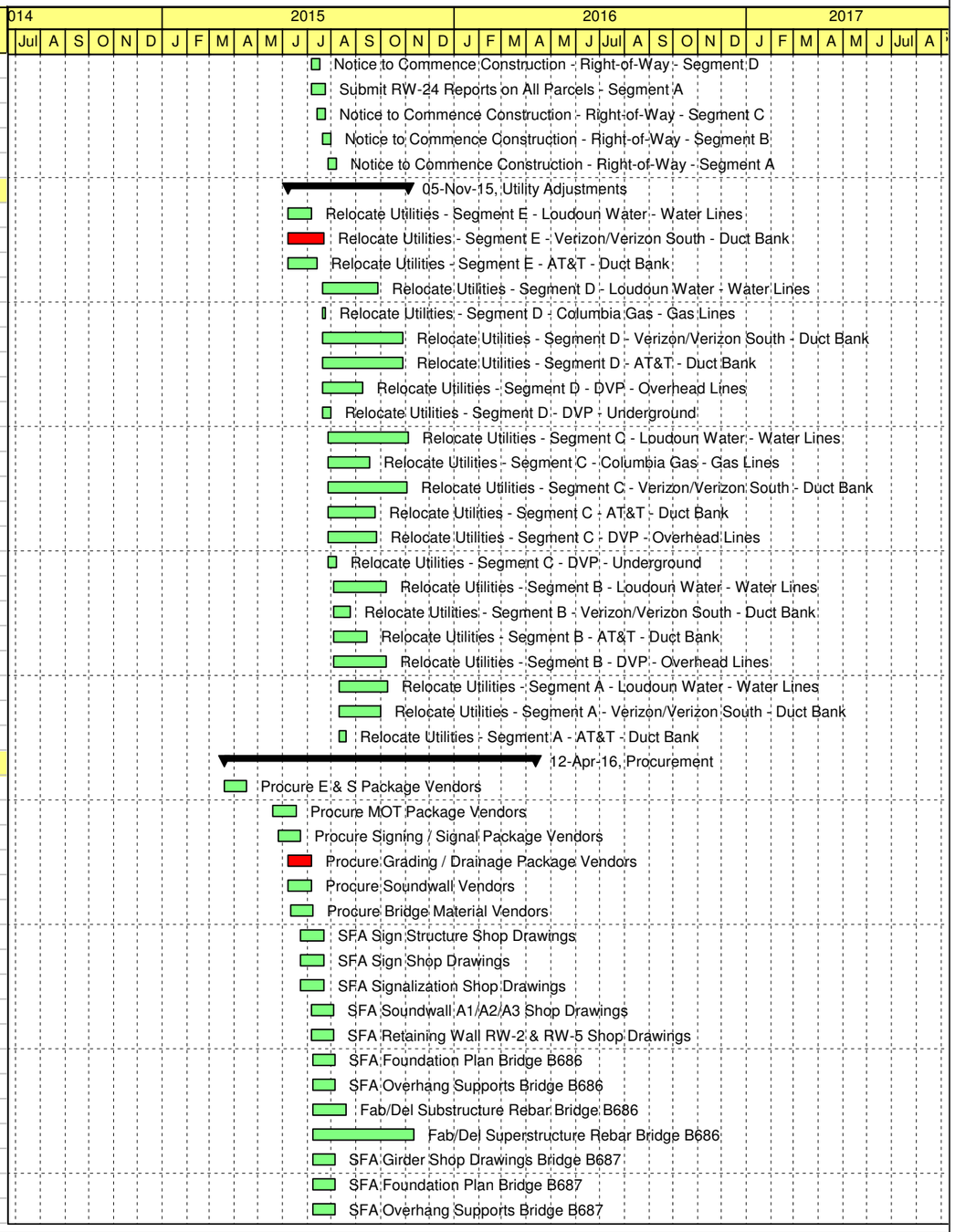
Remaining Level of Effort | Actual Work | Critical Remaining Work | Summary
Actual Level of Effort | Remaining Work | Milestone

TASK filter: All Activities

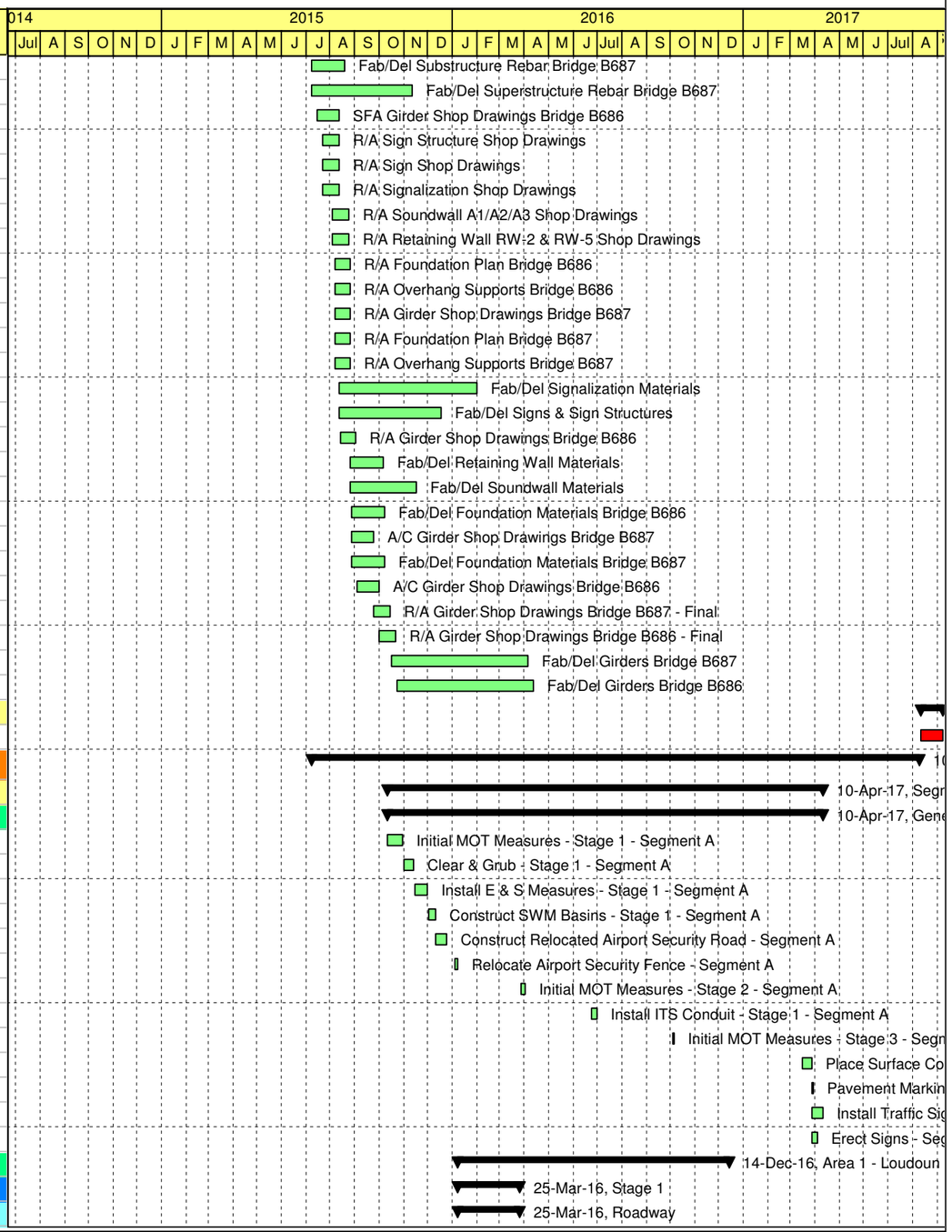
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
GO7000010	Perform Property / ROW Research	30	32	30-Jun-14	11-Aug-14	5-Day Pre-Con
GO7000020	Update VDOT RUMS with ROW Data	10	32	12-Aug-14	25-Aug-14	5-Day Pre-Con
GO7000030	Conduct Phase 1 ESA - All Identified Property Takes	40	13	09-Sep-14	03-Nov-14	5-Day Pre-Con
GO7000040	Conduct Title Research - All Identified Property Takes	40	13	09-Sep-14	03-Nov-14	5-Day Pre-Con
GO7001000	Prepare Appraisals - Segment E	30	1	30-Dec-14	11-Feb-15	5-Day Pre-Con
GO7002000	Prepare Appraisals - Segment D	45	48	30-Dec-14	04-Mar-15	5-Day Pre-Con
GO7003000	Prepare Appraisals - Segment C	50	31	30-Dec-14	11-Mar-15	5-Day Pre-Con
GO7004000	Prepare Appraisals - Segment B	55	59	30-Dec-14	18-Mar-15	5-Day Pre-Con
GO7005000	Prepare Appraisals - Segment A	60	42	30-Dec-14	25-Mar-15	5-Day Pre-Con
GO7006000	Prepare and Submit Construction Access Request - Parcel 061	20	130	06-Feb-15	05-Mar-15	5-Day Pre-Con
GO7001010	Prepare Appraisal Package - Segment E	5	1	12-Feb-15	18-Feb-15	5-Day Pre-Con
GO7001020	Submit Appraisal Package - Segment E	5	1	12-Feb-15	18-Feb-15	5-Day Pre-Con
GO7001030	R/A Appraisal Package - Segment E	21	1	19-Feb-15	11-Mar-15	7-Day
GO7002010	Prepare Appraisal Package - Segment D	5	48	05-Mar-15	11-Mar-15	5-Day Pre-Con
GO7006010	R/A Construction Access Request - Parcel 061	40	130	06-Mar-15	30-Apr-15	5-Day Pre-Con
GO7001040	Complete Initial Negotiation Contact with All Property Owners - Segm...	30	1	12-Mar-15	22-Apr-15	5-Day Pre-Con
GO7001050	Obtain Refusal/Acceptance on Parcels - Segment E	20	11	12-Mar-15	08-Apr-15	5-Day Pre-Con
GO7002020	Submit Appraisal Package - Segment D	5	48	12-Mar-15	18-Mar-15	5-Day Pre-Con
GO7003010	Prepare Appraisal Package - Segment C	5	31	12-Mar-15	18-Mar-15	5-Day Pre-Con
GO7002030	R/A Appraisal Package - Segment D	21	69	19-Mar-15	08-Apr-15	7-Day
GO7003020	Submit Appraisal Package - Segment C	5	31	19-Mar-15	25-Mar-15	5-Day Pre-Con
GO7004010	Prepare Appraisal Package - Segment B	5	59	19-Mar-15	25-Mar-15	5-Day Pre-Con
GO7003030	R/A Appraisal Package - Segment C	21	43	26-Mar-15	15-Apr-15	7-Day
GO7004020	Submit Appraisal Package - Segment B	5	59	26-Mar-15	01-Apr-15	5-Day Pre-Con
GO7005010	Prepare Appraisal Package - Segment A	5	42	26-Mar-15	01-Apr-15	5-Day Pre-Con
GO7004030	R/A Appraisal Package - Segment B	21	84	02-Apr-15	22-Apr-15	7-Day
GO7005020	Submit Appraisal Package - Segment A	5	42	02-Apr-15	08-Apr-15	5-Day Pre-Con
GO7002040	Complete Initial Negotiation Contact with All Property Owners - Segm...	40	48	09-Apr-15	04-Jun-15	5-Day Pre-Con
GO7002050	Obtain Refusal/Acceptance on Parcels - Segment D	20	68	09-Apr-15	06-May-15	5-Day Pre-Con
GO7005030	R/A Appraisal Package - Segment A	21	61	09-Apr-15	29-Apr-15	7-Day
GO7003040	Complete Initial Negotiation Contact with All Property Owners - Segm...	40	30	16-Apr-15	11-Jun-15	5-Day Pre-Con
GO7003050	Obtain Refusal/Acceptance on Parcels - Segment C	20	50	16-Apr-15	13-May-15	5-Day Pre-Con
GO7001060	Submit RW-24 Reports on Refusals - Segment E	5	1	23-Apr-15	29-Apr-15	5-Day Pre-Con
GO7004040	Complete Initial Negotiation Contact with All Property Owners - Segm...	40	58	23-Apr-15	18-Jun-15	5-Day Pre-Con
GO7004050	Obtain Refusal/Acceptance on Parcels - Segment B	20	78	23-Apr-15	20-May-15	5-Day Pre-Con
GO7001070	Submit RW-24 Reports on All Parcels - Segment E	15	1	30-Apr-15	20-May-15	5-Day Pre-Con
GO7005040	Complete Initial Negotiation Contact with All Property Owners - Segm...	40	42	30-Apr-15	25-Jun-15	5-Day Pre-Con
GO7005050	Obtain Refusal/Acceptance on Parcels - Segment A	20	62	30-Apr-15	28-May-15	5-Day Pre-Con
GO7001080	Notice to Commence Construction - Right-of-Way - Segment E	10	1	21-May-15	04-Jun-15	5-Day Pre-Con
GO7002060	Submit RW-24 Reports on Refusals - Segment D	5	48	05-Jun-15	11-Jun-15	5-Day Pre-Con
GO7002070	Submit RW-24 Reports on All Parcels - Segment D	15	48	12-Jun-15	02-Jul-15	5-Day Pre-Con
GO7003060	Submit RW-24 Reports on Refusals - Segment C	5	30	12-Jun-15	18-Jun-15	5-Day Pre-Con
GO7003070	Submit RW-24 Reports on All Parcels - Segment C	15	30	19-Jun-15	10-Jul-15	5-Day Pre-Con
GO7004060	Submit RW-24 Reports on Refusals - Segment B	5	58	19-Jun-15	25-Jun-15	5-Day Pre-Con
GO7010010	R/A Construction Access Request - Parcel 042 - By VDOT	40	56	19-Jun-15	14-Aug-15	5-Day Pre-Con
GO7004070	Submit RW-24 Reports on All Parcels - Segment B	15	58	26-Jun-15	17-Jul-15	5-Day Pre-Con
GO7005060	Submit RW-24 Reports on Refusals - Segment A	5	42	26-Jun-15	02-Jul-15	5-Day Pre-Con



Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
GO7002080	Notice to Commence Construction - Right-of-Way - Segment D	10	48	06-Jul-15	17-Jul-15	5-Day Pre-Con
GO7005070	Submit RW-24 Reports on All Parcels - Segment A	15	42	06-Jul-15	24-Jul-15	5-Day Pre-Con
GO7003080	Notice to Commence Construction - Right-of-Way - Segment C	10	30	13-Jul-15	24-Jul-15	5-Day Pre-Con
GO7004080	Notice to Commence Construction - Right-of-Way - Segment B	10	58	20-Jul-15	31-Jul-15	5-Day Pre-Con
GO7005080	Notice to Commence Construction - Right-of-Way - Segment A	10	42	27-Jul-15	07-Aug-15	5-Day Pre-Con
Utility Adjustments		109	46	08-Jun-15	05-Nov-15	
GO8000050	Relocate Utilities - Segment E - Loudoun Water - Water Lines	20	11	08-Jun-15	06-Jul-15	5-Day Pre-Con
GO8000240	Relocate Utilities - Segment E - Verizon/Verizon South - Duct Bank	31	0	08-Jun-15	21-Jul-15	5-Day Pre-Con
GO8000340	Relocate Utilities - Segment E - AT&T - Duct Bank	26	5	08-Jun-15	14-Jul-15	5-Day Pre-Con
GO8000040	Relocate Utilities - Segment D - Loudoun Water - Water Lines	50	71	20-Jul-15	28-Sep-15	5-Day Pre-Con
GO8000110	Relocate Utilities - Segment D - Columbia Gas - Gas Lines	5	116	20-Jul-15	24-Jul-15	5-Day Pre-Con
GO8000230	Relocate Utilities - Segment D - Verizon/Verizon South - Duct Bank	73	48	20-Jul-15	29-Oct-15	5-Day Pre-Con
GO8000330	Relocate Utilities - Segment D - AT&T - Duct Bank	73	48	20-Jul-15	29-Oct-15	5-Day Pre-Con
GO8000520	Relocate Utilities - Segment D - DVP - Overhead Lines	37	84	20-Jul-15	09-Sep-15	5-Day Pre-Con
GO8000610	Relocate Utilities - Segment D - DVP - Underground	10	111	20-Jul-15	31-Jul-15	5-Day Pre-Con
GO8000030	Relocate Utilities - Segment C - Loudoun Water - Water Lines	73	30	27-Jul-15	05-Nov-15	5-Day Pre-Con
GO8000100	Relocate Utilities - Segment C - Columbia Gas - Gas Lines	38	65	27-Jul-15	17-Sep-15	5-Day Pre-Con
GO8000220	Relocate Utilities - Segment C - Verizon/Verizon South - Duct Bank	70	33	27-Jul-15	02-Nov-15	5-Day Pre-Con
GO8000320	Relocate Utilities - Segment C - AT&T - Duct Bank	43	60	27-Jul-15	24-Sep-15	5-Day Pre-Con
GO8000510	Relocate Utilities - Segment C - DVP - Overhead Lines	44	59	27-Jul-15	25-Sep-15	5-Day Pre-Con
GO8000600	Relocate Utilities - Segment C - DVP - Underground	10	93	27-Jul-15	07-Aug-15	5-Day Pre-Con
GO8000020	Relocate Utilities - Segment B - Loudoun Water - Water Lines	48	58	03-Aug-15	08-Oct-15	5-Day Pre-Con
GO8000210	Relocate Utilities - Segment B - Verizon/Verizon South - Duct Bank	16	90	03-Aug-15	24-Aug-15	5-Day Pre-Con
GO8000310	Relocate Utilities - Segment B - AT&T - Duct Bank	30	76	03-Aug-15	14-Sep-15	5-Day Pre-Con
GO8000500	Relocate Utilities - Segment B - DVP - Overhead Lines	48	58	03-Aug-15	08-Oct-15	5-Day Pre-Con
GO8000010	Relocate Utilities - Segment A - Loudoun Water - Water Lines	44	42	10-Aug-15	09-Oct-15	5-Day Pre-Con
GO8000200	Relocate Utilities - Segment A - Verizon/Verizon South - Duct Bank	37	49	10-Aug-15	30-Sep-15	5-Day Pre-Con
GO8000300	Relocate Utilities - Segment A - AT&T - Duct Bank	7	79	10-Aug-15	18-Aug-15	5-Day Pre-Con
Procurement		278	337	20-Mar-15	12-Apr-16	
GO9005000	Procure E & S Package Vendors	20	161	20-Mar-15	16-Apr-15	5-Day Pre-Con
GO9005010	Procure MOT Package Vendors	20	107	20-May-15	17-Jun-15	5-Day Pre-Con
GO9005040	Procure Signing / Signal Package Vendors	20	379	26-May-15	22-Jun-15	5-Day Pre-Con
GO9005030	Procure Grading / Drainage Package Vendors	20	0	08-Jun-15	06-Jul-15	5-Day Pre-Con
GO9005050	Procure Soundwall Vendors	20	67	08-Jun-15	06-Jul-15	5-Day Pre-Con
GO9005020	Procure Bridge Material Vendors	20	32	10-Jun-15	08-Jul-15	5-Day Pre-Con
GO9000010	SFA Sign Structure Shop Drawings	20	409	23-Jun-15	21-Jul-15	5-Day Pre-Con
GO9000050	SFA Sign Shop Drawings	20	409	23-Jun-15	21-Jul-15	5-Day Pre-Con
GO9000100	SFA Signalization Shop Drawings	20	379	23-Jun-15	21-Jul-15	5-Day Pre-Con
GO9004000	SFA Soundwall A1/A2/A3 Shop Drawings	20	67	07-Jul-15	03-Aug-15	5-Day Pre-Con
GO9003100	SFA Retaining Wall RW-2 & RW-5 Shop Drawings	20	151	07-Jul-15	03-Aug-15	5-Day Pre-Con
GO9001100	SFA Foundation Plan Bridge B686	20	80	09-Jul-15	05-Aug-15	5-Day Pre-Con
GO9001200	SFA Overhang Supports Bridge B686	20	175	09-Jul-15	05-Aug-15	5-Day Pre-Con
GO9006110	Fab/Del Substructure Rebar Bridge B686	30	336	09-Jul-15	19-Aug-15	5-Day Pre-Con
GO9006130	Fab/Del Superstructure Rebar Bridge B686	90	346	09-Jul-15	12-Nov-15	5-Day Pre-Con
GO9002000	SFA Girder Shop Drawings Bridge B687	20	32	09-Jul-15	05-Aug-15	5-Day Pre-Con
GO9002100	SFA Foundation Plan Bridge B687	20	63	09-Jul-15	05-Aug-15	5-Day Pre-Con
GO9002200	SFA Overhang Supports Bridge B687	20	175	09-Jul-15	05-Aug-15	5-Day Pre-Con



Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
GO9006210	Fab/Del Substructure Rebar Bridge B687	30	149	09-Jul-15	19-Aug-15	5-Day Pre-Con
GO9006230	Fab/Del Superstructure Rebar Bridge B687	90	158	09-Jul-15	12-Nov-15	5-Day Pre-Con
GO9001000	SFA Girder Shop Drawings Bridge B686	20	135	16-Jul-15	12-Aug-15	5-Day Pre-Con
GO9000020	R/A Sign Structure Shop Drawings	21	587	22-Jul-15	11-Aug-15	7-Day
GO9000060	R/A Sign Shop Drawings	21	587	22-Jul-15	11-Aug-15	7-Day
GO9000110	R/A Signalization Shop Drawings	21	545	22-Jul-15	11-Aug-15	7-Day
GO9004010	R/A Soundwall A1/A2/A3 Shop Drawings	21	94	04-Aug-15	24-Aug-15	7-Day
GO9003110	R/A Retaining Wall RW-2 & RW-5 Shop Drawings	21	217	04-Aug-15	24-Aug-15	7-Day
GO9001110	R/A Foundation Plan Bridge B686	21	116	06-Aug-15	26-Aug-15	7-Day
GO9001210	R/A Overhang Supports Bridge B686	21	251	06-Aug-15	26-Aug-15	7-Day
GO9002010	R/A Girder Shop Drawings Bridge B687	21	47	06-Aug-15	26-Aug-15	7-Day
GO9002110	R/A Foundation Plan Bridge B687	21	90	06-Aug-15	26-Aug-15	7-Day
GO9002210	R/A Overhang Supports Bridge B687	21	251	06-Aug-15	26-Aug-15	7-Day
GO9006000	Fab/Del Signalization Materials	120	379	12-Aug-15	01-Feb-16	5-Day Pre-Con
GO9006010	Fab/Del Signs & Sign Structures	90	409	12-Aug-15	17-Dec-15	5-Day Pre-Con
GO9001010	R/A Girder Shop Drawings Bridge B686	21	195	13-Aug-15	02-Sep-15	7-Day
GO9006300	Fab/Del Retaining Wall Materials	30	151	25-Aug-15	06-Oct-15	5-Day Pre-Con
GO9006400	Fab/Del Soundwall Materials	60	66	25-Aug-15	17-Nov-15	5-Day Pre-Con
GO9006100	Fab/Del Foundation Materials Bridge B686	30	264	27-Aug-15	08-Oct-15	5-Day Pre-Con
GO9002020	A/C Girder Shop Drawings Bridge B687	20	32	27-Aug-15	24-Sep-15	5-Day Pre-Con
GO9006200	Fab/Del Foundation Materials Bridge B687	30	63	27-Aug-15	08-Oct-15	5-Day Pre-Con
GO9001020	A/C Girder Shop Drawings Bridge B686	20	135	03-Sep-15	01-Oct-15	5-Day Pre-Con
GO9002030	R/A Girder Shop Drawings Bridge B687 - Final	21	46	25-Sep-15	15-Oct-15	7-Day
GO9001030	R/A Girder Shop Drawings Bridge B686 - Final	21	194	02-Oct-15	22-Oct-15	7-Day
GO9006220	Fab/Del Girders Bridge B687	120	31	16-Oct-15	05-Apr-16	5-Day Pre-Con
GO9006120	Fab/Del Girders Bridge B686	120	216	23-Oct-15	12-Apr-16	5-Day Pre-Con
Project Closeout		21	0	11-Aug-17	08-Sep-17	
G10000010	Punchlist / De-mobilization	20	0	11-Aug-17	08-Sep-17	5-Day Constru...
Construction		547	0	08-Jul-15	10-Aug-17	
Segment A		391	88	12-Oct-15	10-Apr-17	
General		391	88	12-Oct-15	10-Apr-17	
CAG001010	Initial MOT Measures - Stage 1 - Segment A	15	41	12-Oct-15	30-Oct-15	5-Day Constru...
CAG001020	Clear & Grub - Stage 1 - Segment A	10	84	02-Nov-15	13-Nov-15	5-Day Constru...
CAG001030	Install E & S Measures - Stage 1 - Segment A	10	84	16-Nov-15	01-Dec-15	5-Day Constru...
CAG001040	Construct SWM Basins - Stage 1 - Segment A	7	84	02-Dec-15	10-Dec-15	5-Day Constru...
CAG001100	Construct Relocated Airport Security Road - Segment A	10	84	11-Dec-15	24-Dec-15	5-Day Constru...
CAG001110	Relocate Airport Security Fence - Segment A	4	84	04-Jan-16	07-Jan-16	5-Day Constru...
CAG002010	Initial MOT Measures - Stage 2 - Segment A	5	75	28-Mar-16	01-Apr-16	5-Day Constru...
CAG001050	Install ITS Conduit - Stage 1 - Segment A	7	75	23-Jun-16	01-Jul-16	5-Day Constru...
CAG003010	Initial MOT Measures - Stage 3 - Segment A	3	31	04-Oct-16	06-Oct-16	5-Day Constru...
CAG009010	Place Surface Course - Segment A	8	86	16-Mar-17	27-Mar-17	Surface Paving
CAG009020	Pavement Markings - Segment A	3	92	28-Mar-17	30-Mar-17	5-Day Constru...
CAG009030	Install Traffic Signal - Loudoun Co. Park. & Evergreen Mills Road	10	85	28-Mar-17	10-Apr-17	5-Day Constru...
CAG009040	Erect Signs - Segment A	5	90	28-Mar-17	03-Apr-17	5-Day Constru...
Area 1 - Loudoun Co. Parkway 489+06 to 510+00		244	153	08-Jan-16	14-Dec-16	
Stage 1		56	77	08-Jan-16	25-Mar-16	
Roadway		56	77	08-Jan-16	25-Mar-16	



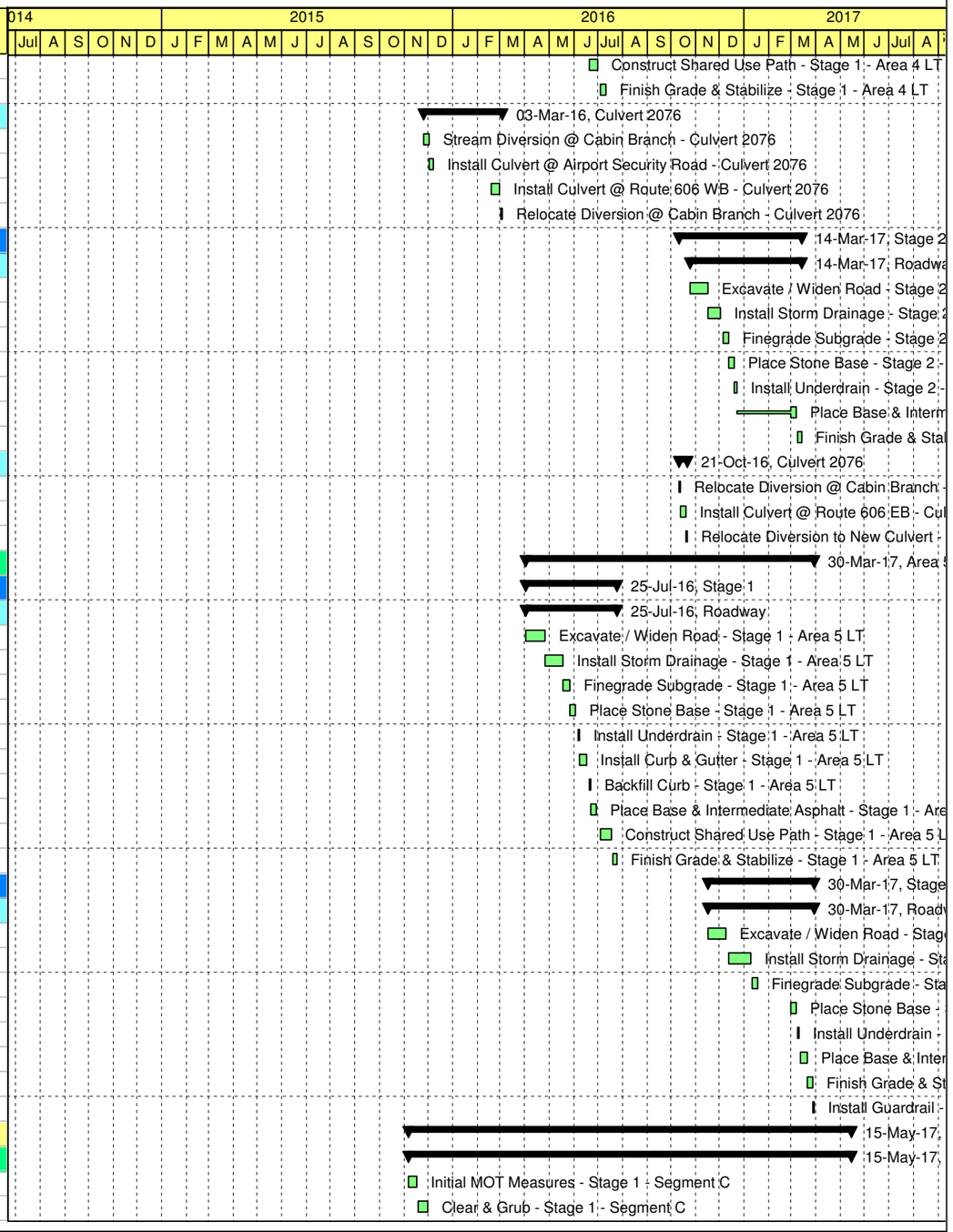
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
CA011R010	Excavate / Widen Road - Stage 1 - Area 1	17	84	08-Jan-16	01-Feb-16	5-Day Constru...
CA011R020	Install Storm Drainage - Stage 1 - Area 1	8	84	02-Feb-16	11-Feb-16	5-Day Constru...
CA011R030	Finegrade Subgrade - Stage 1 - Area 1	3	84	12-Feb-16	16-Feb-16	5-Day Constru...
CA011R040	Place Stone Base - Stage 1 - Area 1	5	75	01-Mar-16	07-Mar-16	Base Paving
CA011R050	Install Underdrain - Stage 1 - Area 1	4	75	08-Mar-16	11-Mar-16	5-Day Constru...
CA011R060	Place Base & Intermediate Asphalt / Temporary Paving- Stage 1 - Ar...	4	75	14-Mar-16	17-Mar-16	Base Paving
CA011R070	Finish Grade & Stabilize - Stage 1 - Area 1	4	75	18-Mar-16	23-Mar-16	5-Day Constru...
CA011R080	Install Guardrail - Stage 1 - Area 1	2	75	24-Mar-16	25-Mar-16	5-Day Constru...
Stage 2		65	97	04-Apr-16	01-Jul-16	
Roadway		65	97	04-Apr-16	01-Jul-16	
CA012R010	Excavate / Widen Road - Stage 2 - Area 1	18	79	04-Apr-16	27-Apr-16	5-Day Constru...
CA012R020	Install Storm Drainage - Stage 2 - Area 1	8	79	28-Apr-16	09-May-16	5-Day Constru...
CA012R030	Finegrade Subgrade - Stage 2 - Area 1	3	79	10-May-16	12-May-16	5-Day Constru...
CA012R040	Place Stone Base - Stage 2 - Area 1	5	79	13-May-16	19-May-16	Base Paving
CA012R050	Install Underdrain - Stage 2 - Area 1	3	79	20-May-16	24-May-16	5-Day Constru...
CA012R060	Install Curb & Gutter - Stage 2 - Area 1	6	79	25-May-16	02-Jun-16	5-Day Constru...
CA012R070	Backfill Curb - Stage 2 - Area 1	3	79	03-Jun-16	07-Jun-16	5-Day Constru...
CA012R080	Place Base & Intermediate Asphalt / Temporary Paving - Stage 2 - Ar...	4	79	08-Jun-16	13-Jun-16	Base Paving
CA012R090	Construct Shared Use Path - Stage 2 - Area 1 (Phase B)	10	79	14-Jun-16	27-Jun-16	5-Day Constru...
CA012R100	Finish Grade & Stabilize - Stage 2 - Area 1	4	95	28-Jun-16	01-Jul-16	5-Day Constru...
Stage 3		49	153	07-Oct-16	14-Dec-16	
Roadway		49	153	07-Oct-16	14-Dec-16	
CA013R010	Excavate / Widen Road - Stage 3 - Area 1	15	144	07-Oct-16	27-Oct-16	5-Day Constru...
CA013R020	Install Storm Drainage - Stage 3 - Area 1	5	144	28-Oct-16	03-Nov-16	5-Day Constru...
CA013R030	Finegrade Subgrade - Stage 3 - Area 1	3	144	04-Nov-16	08-Nov-16	5-Day Constru...
CA013R040	Place Stone Base - Stage 3 - Area 1	5	103	09-Nov-16	15-Nov-16	Base Paving
CA013R050	Install Underdrain - Stage 3 - Area 1	2	144	16-Nov-16	17-Nov-16	5-Day Constru...
CA013R060	Install Curb & Gutter - Stage 3 - Area 1	5	144	18-Nov-16	28-Nov-16	5-Day Constru...
CA013R070	Backfill Curb - Stage 3 - Area 1	2	144	29-Nov-16	30-Nov-16	5-Day Constru...
CA013R080	Place Base & Intermediate Asphalt - Stage 3 - Area 1	5	103	01-Dec-16	07-Dec-16	Base Paving
CA013R090	Finish Grade & Stabilize - Stage 3 - Area 1	5	144	08-Dec-16	14-Dec-16	5-Day Constru...
Area 2 - Loudoun Co. Parkway 510+00 to Rt. 606 Conn. 85+00		183	153	04-Apr-16	14-Dec-16	
Stage 1		80	82	04-Apr-16	22-Jul-16	
Roadway		80	82	04-Apr-16	22-Jul-16	
CA021R010	Excavate / Widen Road - Stage 1 - Area 2 LT	20	75	04-Apr-16	29-Apr-16	5-Day Constru...
CA021R020	Install Storm Drainage - Stage 1 - Area 2 LT	14	85	02-May-16	19-May-16	5-Day Constru...
CA021R030	Finegrade Subgrade - Stage 1 - Area 2 LT	4	85	20-May-16	25-May-16	5-Day Constru...
CA021R040	Place Stone Base - Stage 1 - Area 2 LT	5	85	26-May-16	02-Jun-16	Base Paving
CA021R050	Install Underdrain - Stage 1 - Area 2 LT	4	85	03-Jun-16	08-Jun-16	5-Day Constru...
CA021R060	Place Base & Intermediate Asphalt - Stage 1 - Area 2 LT	7	85	09-Jun-16	17-Jun-16	Base Paving
CA021R070	Construct Shared Use Path - Stage 1 - Area 2 LT (Phase B)	9	75	05-Jul-16	15-Jul-16	5-Day Constru...
CA021R080	Finish Grade & Stabilize - Stage 1 - Area 2 LT	5	81	18-Jul-16	22-Jul-16	5-Day Constru...
Stage 2		49	153	07-Oct-16	14-Dec-16	
Roadway		49	153	07-Oct-16	14-Dec-16	
CA022R010	Excavate / Widen Road - Stage 2 - Area 2 RT	15	133	07-Oct-16	27-Oct-16	5-Day Constru...
CA022R020	Install Storm Drainage - Stage 2 - Area 2 RT	10	144	28-Oct-16	10-Nov-16	5-Day Constru...
CA022R030	Finegrade Subgrade - Stage 2 - Area 2 RT	4	144	11-Nov-16	16-Nov-16	5-Day Constru...

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
CA022R040	Place Stone Base - Stage 2 - Area 2 RT	5	103	17-Nov-16	23-Nov-16	Base Paving
CA022R050	Install Underdrain - Stage 2 - Area 2 RT	3	144	28-Nov-16	30-Nov-16	5-Day Constru...
CA022R060	Place Base & Intermediate Asphalt - Stage 2 - Area 2 RT	5	103	01-Dec-16	07-Dec-16	Base Paving
CA022R070	Finish Grade & Stabilize - Stage 2 - Area 2 RT	5	144	08-Dec-16	14-Dec-16	5-Day Constru...
Area 3 - Rt. 606 Conn. 85+00 to Route 606 155+00		180	136	02-May-16	06-Jan-17	
Stage 1		66	76	02-May-16	01-Aug-16	
Roadway		66	76	02-May-16	01-Aug-16	
CA031R010	Excavate / Widen Road - Stage 1 - Area 3 LT	20	75	02-May-16	27-May-16	5-Day Constru...
CA031R020	Install Storm Drainage - Stage 1 - Area 3 LT	4	75	31-May-16	03-Jun-16	5-Day Constru...
CA031R030	Finegrade Subgrade - Stage 1 - Area 3 LT	4	75	06-Jun-16	09-Jun-16	5-Day Constru...
CA031R040	Place Stone Base - Stage 1 - Area 3 LT	6	75	10-Jun-16	17-Jun-16	Base Paving
CA031R050	Install Underdrain - Stage 1 - Area 3 LT	3	75	20-Jun-16	22-Jun-16	5-Day Constru...
CA031R060	Place Base & Intermediate Asphalt - Stage 1 - Area 3 LT	6	85	23-Jun-16	30-Jun-16	Base Paving
CA031R070	Construct Shared Use Path - Stage 1 - Area 3 LT (Phase B)	6	75	18-Jul-16	25-Jul-16	5-Day Constru...
CA031R080	Finish Grade & Stabilize - Stage 1 - Area 3 LT	5	75	26-Jul-16	01-Aug-16	5-Day Constru...
Stage 2		51	136	28-Oct-16	06-Jan-17	
Roadway		51	136	28-Oct-16	06-Jan-17	
CA032R010	Excavate / Widen Road - Stage 2 - Area 3 RT	16	133	28-Oct-16	18-Nov-16	5-Day Constru...
CA032R020	Install Storm Drainage - Stage 2 - Area 3 RT	4	133	21-Nov-16	28-Nov-16	5-Day Constru...
CA032R030	Finegrade Subgrade - Stage 2 - Area 3 RT	4	133	29-Nov-16	02-Dec-16	5-Day Constru...
CA032R040	Place Stone Base - Stage 2 - Area 3 RT	6	92	05-Dec-16	12-Dec-16	Base Paving
CA032R050	Install Underdrain - Stage 2 - Area 3 RT	3	133	13-Dec-16	15-Dec-16	5-Day Constru...
CA032R060	Place Base & Intermediate Asphalt - Stage 2 - Area 3 RT	5	92	16-Dec-16	22-Dec-16	Base Paving
CA032R070	Finish Grade & Stabilize - Stage 2 - Area 3 RT	5	133	23-Dec-16	06-Jan-17	5-Day Constru...
Segment B		394	80	19-Oct-15	20-Apr-17	
General		394	80	19-Oct-15	20-Apr-17	
CBG001010	Initial MOT Measures - Stage 1 - Segment B	10	47	19-Oct-15	30-Oct-15	5-Day Constru...
CBG001020	Clear & Grub - Stage 1 - Segment B	7	123	02-Nov-15	10-Nov-15	5-Day Constru...
CBG001030	Install E & S Measures - Stage 1 - Segment B	10	123	11-Nov-15	24-Nov-15	5-Day Constru...
CBG001050	Construct Relocated Airport Security Road - Segment B	8	123	08-Dec-15	17-Dec-15	5-Day Constru...
CBG001060	Relocate Airport Security Fence - Segment B	4	123	18-Dec-15	23-Dec-15	5-Day Constru...
CBG001070	Construct Utility Access Path - Segment B	5	123	24-Dec-15	07-Jan-16	5-Day Constru...
CBG001040	Construct SWM Basins - Stage 1 - Segment B	30	123	08-Jan-16	18-Feb-16	5-Day Constru...
CBG001080	Install ITS Conduit - Stage 1 - Segment B	7	156	09-Jun-16	17-Jun-16	5-Day Constru...
CBG002010	Initial MOT Measures - Stage 2 - Segment B	5	107	04-Oct-16	10-Oct-16	5-Day Constru...
CBG009010	Place Surface Course - Segment B	8	78	31-Mar-17	11-Apr-17	Surface Paving
CBG009020	Pavement Markings - Segment B	3	81	12-Apr-17	14-Apr-17	5-Day Constru...
CBG009030	Erect Signs - Segemnt B	7	77	12-Apr-17	20-Apr-17	5-Day Constru...
Area 4 - Route 606 155+00 to 177+00		340	92	25-Nov-15	14-Mar-17	
Stage 1		164	175	25-Nov-15	11-Jul-16	
Roadway		92	175	04-Mar-16	11-Jul-16	
CB041R010	Excavate / Widen Road - Stage 1 - Area 4 LT	20	123	04-Mar-16	31-Mar-16	5-Day Constru...
CB041R020	Install Storm Drainage - Stage 1 - Area 4 LT	12	154	01-Apr-16	18-Apr-16	5-Day Constru...
CB041R030	Finegrade Subgrade - Stage 1 - Area 4 LT	6	154	19-Apr-16	26-Apr-16	5-Day Constru...
CB041R040	Place Stone Base - Stage 1 - Area 4 LT	5	154	27-Apr-16	03-May-16	Base Paving
CB041R050	Install Underdrain - Stage 1 - Area 4 LT	3	154	04-May-16	06-May-16	5-Day Constru...
CB041R060	Place Base & Intermediate Asphalt - Stage 1 - Area 4 LT	6	154	09-May-16	16-May-16	Base Paving

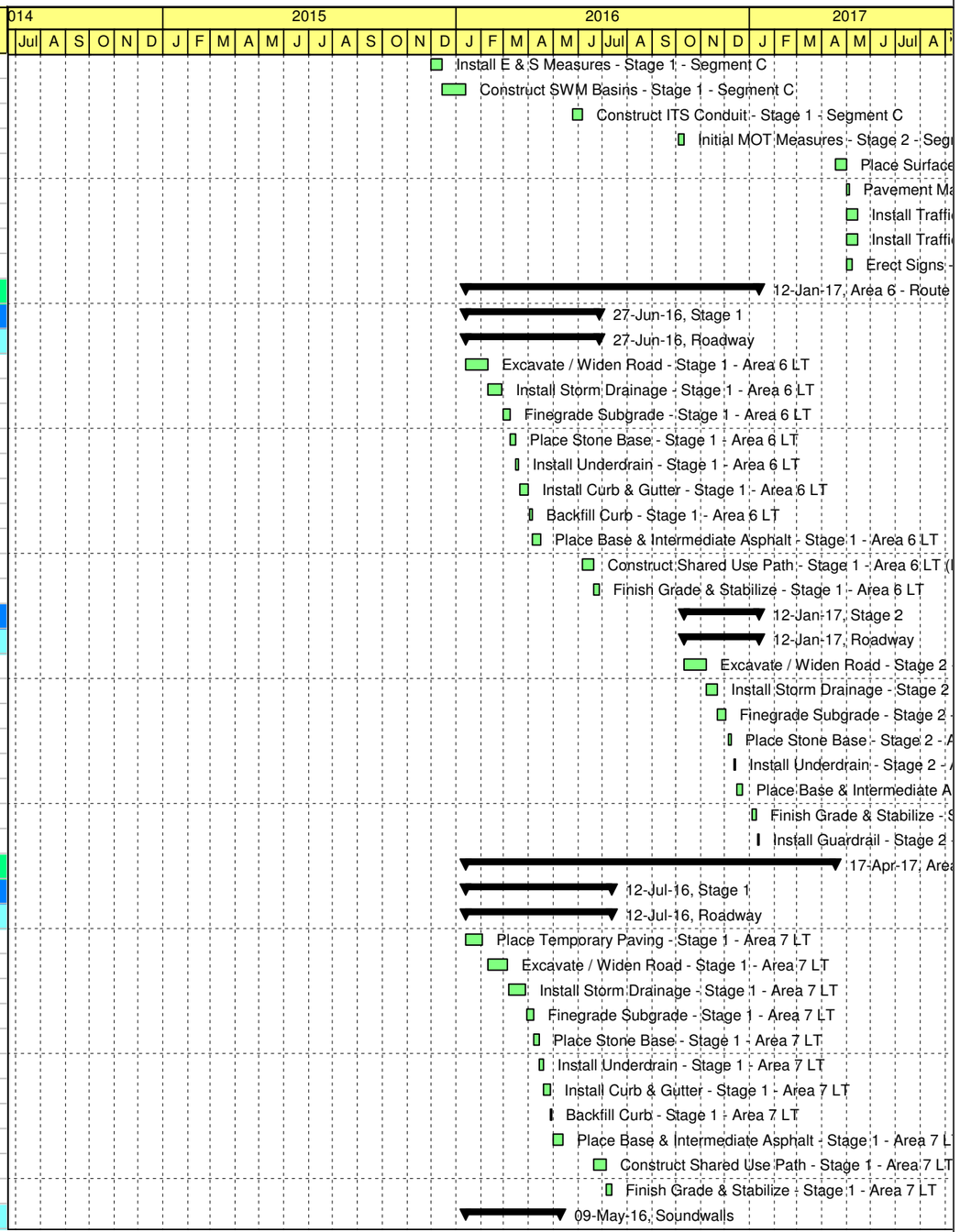
Remaining Level of Effort | Actual Work | Critical Remaining Work | Summary
Actual Level of Effort | Remaining Work | Milestone

TASK filter: All Activities

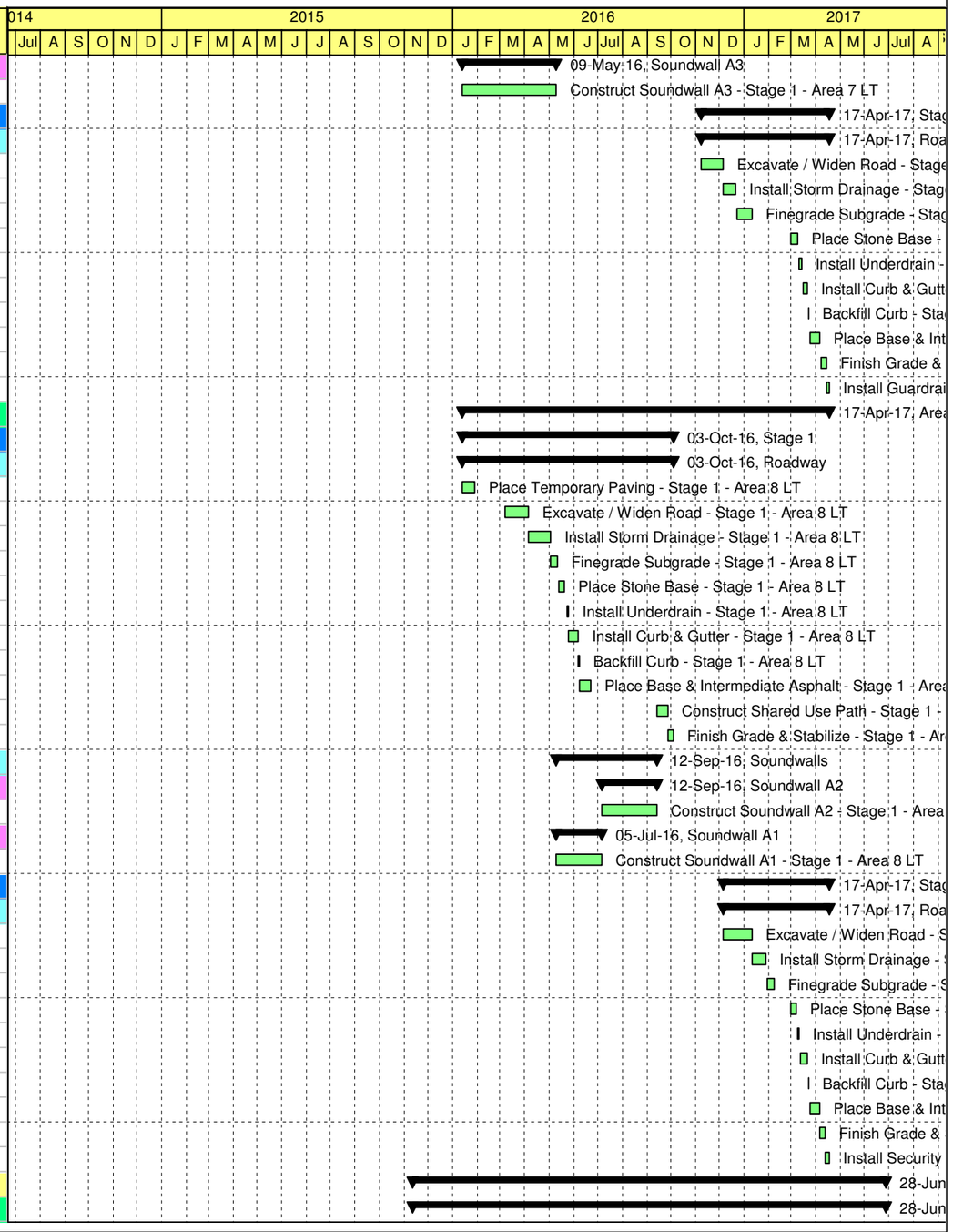
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
CB041R070	Construct Shared Use Path - Stage 1 - Area 4 LT (Phase B)	10	156	20-Jun-16	01-Jul-16	5-Day Constru...
CB041R080	Finish Grade & Stabilize - Stage 1 - Area 4 LT	5	166	05-Jul-16	11-Jul-16	5-Day Constru...
Culvert 2076		72	125	25-Nov-15	03-Mar-16	
CB041C010	Stream Diversion @ Cabin Branch - Culvert 2076	4	123	25-Nov-15	02-Dec-15	5-Day Constru...
CB041C020	Install Culvert @ Airport Security Road - Culvert 2076	3	123	03-Dec-15	07-Dec-15	5-Day Constru...
CB041C030	Install Culvert @ Route 606 WB - Culvert 2076	7	123	19-Feb-16	29-Feb-16	5-Day Constru...
CB041C040	Relocate Diversion @ Cabin Branch - Culvert 2076	3	123	01-Mar-16	03-Mar-16	5-Day Constru...
Stage 2		111	92	11-Oct-16	14-Mar-17	
Roadway		102	92	24-Oct-16	14-Mar-17	
CB042R010	Excavate / Widen Road - Stage 2 - Area 4 RT	18	107	24-Oct-16	16-Nov-16	5-Day Constru...
CB042R020	Install Storm Drainage - Stage 2 - Area 4 RT	10	130	17-Nov-16	02-Dec-16	5-Day Constru...
CB042R030	Finegrade Subgrade - Stage 2 - Area 4 RT	6	130	05-Dec-16	12-Dec-16	5-Day Constru...
CB042R040	Place Stone Base - Stage 2 - Area 4 RT	5	89	13-Dec-16	19-Dec-16	Base Paving
CB042R050	Install Underdrain - Stage 2 - Area 4 RT	3	130	20-Dec-16	22-Dec-16	5-Day Constru...
CB042R060	Place Base & Intermediate Asphalt - Stage 2 - Area 4 RT	6	89	23-Dec-16	07-Mar-17	Base Paving
CB042R070	Finish Grade & Stabilize - Stage 2 - Area 4 RT	5	89	08-Mar-17	14-Mar-17	5-Day Constru...
Culvert 2076		9	115	11-Oct-16	21-Oct-16	
CB042C010	Relocate Diversion @ Cabin Branch - Culvert 2076	2	107	11-Oct-16	12-Oct-16	5-Day Constru...
CB042C020	Install Culvert @ Route 606 EB - Culvert 2076	5	107	13-Oct-16	19-Oct-16	5-Day Constru...
CB042C030	Relocate Diversion to New Culvert - Culvert 2076	2	107	20-Oct-16	21-Oct-16	5-Day Constru...
Area 5 - Route 606 177+00 to 199+00		260	80	01-Apr-16	30-Mar-17	
Stage 1		82	165	01-Apr-16	25-Jul-16	
Roadway		82	165	01-Apr-16	25-Jul-16	
CB051R010	Excavate / Widen Road - Stage 1 - Area 5 LT	17	123	01-Apr-16	25-Apr-16	5-Day Constru...
CB051R020	Install Storm Drainage - Stage 1 - Area 5 LT	17	123	26-Apr-16	18-May-16	5-Day Constru...
CB051R030	Finegrade Subgrade - Stage 1 - Area 5 LT	6	123	19-May-16	26-May-16	5-Day Constru...
CB051R040	Place Stone Base - Stage 1 - Area 5 LT	5	123	27-May-16	03-Jun-16	Base Paving
CB051R050	Install Underdrain - Stage 1 - Area 5 LT	3	123	06-Jun-16	08-Jun-16	5-Day Constru...
CB051R060	Install Curb & Gutter - Stage 1 - Area 5 LT	7	123	09-Jun-16	17-Jun-16	5-Day Constru...
CB051R070	Backfill Curb - Stage 1 - Area 5 LT	2	123	20-Jun-16	21-Jun-16	5-Day Constru...
CB051R080	Place Base & Intermediate Asphalt - Stage 1 - Area 5 LT	6	123	22-Jun-16	29-Jun-16	Base Paving
CB051R090	Construct Shared Use Path - Stage 1 - Area 5 LT (Phase B)	10	156	05-Jul-16	18-Jul-16	5-Day Constru...
CB051R100	Finish Grade & Stabilize - Stage 1 - Area 5 LT	5	156	19-Jul-16	25-Jul-16	5-Day Constru...
Stage 2		96	80	17-Nov-16	30-Mar-17	
Roadway		96	80	17-Nov-16	30-Mar-17	
CB052R010	Excavate / Widen Road - Stage 2 - Area 5 RT	15	107	17-Nov-16	09-Dec-16	5-Day Constru...
CB052R020	Install Storm Drainage - Stage 2 - Area 5 RT	15	107	12-Dec-16	09-Jan-17	5-Day Constru...
CB052R030	Finegrade Subgrade - Stage 2 - Area 5 RT	6	107	10-Jan-17	17-Jan-17	5-Day Constru...
CB052R040	Place Stone Base - Stage 2 - Area 5 RT	5	77	01-Mar-17	07-Mar-17	Base Paving
CB052R050	Install Underdrain - Stage 2 - Area 5 RT	3	77	08-Mar-17	10-Mar-17	5-Day Constru...
CB052R060	Place Base & Intermediate Asphalt - Stage 2 - Area 5 RT	6	77	13-Mar-17	20-Mar-17	Base Paving
CB052R070	Finish Grade & Stabilize - Stage 2 - Area 5 RT	5	77	21-Mar-17	27-Mar-17	5-Day Constru...
CB052R080	Install Guardrail - Stage 2 - Area 5 RT	3	77	28-Mar-17	30-Mar-17	5-Day Constru...
Segment C		397	63	06-Nov-15	15-May-17	
General		397	63	06-Nov-15	15-May-17	
CCG001010	Initial MOT Measures - Stage 1 - Segment C	8	29	06-Nov-15	17-Nov-15	5-Day Constru...
CCG001020	Clear & Grub - Stage 1 - Segment C	7	29	18-Nov-15	30-Nov-15	5-Day Constru...



Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
CCG001030	Install E & S Measures - Stage 1 - Segment C	10	29	01-Dec-15	14-Dec-15	5-Day Constru...
CCG001040	Construct SWM Basins - Stage 1 - Segment C	15	29	15-Dec-15	12-Jan-16	5-Day Constru...
CCG001050	Construct ITS Conduit - Stage 1 - Segment C	7	77	26-May-16	06-Jun-16	5-Day Constru...
CCG002010	Initial MOT Measures - Stage 2 - Segment C	5	29	04-Oct-16	10-Oct-16	5-Day Constru...
CCG009010	Place Surface Course - Segment C	10	61	18-Apr-17	01-May-17	Surface Paving
CCG009020	Pavement Markings - Segment C	4	66	02-May-17	05-May-17	5-Day Constru...
CCG009030	Install Traffic Signal - Route 606 & Overland Drive	10	60	02-May-17	15-May-17	5-Day Constru...
CCG009040	Install Traffic Signal - Route 606 / Freeport Place / Trade Center Place	10	60	02-May-17	15-May-17	5-Day Constru...
CCG009050	Erect Signs - Segment C	5	65	02-May-17	08-May-17	5-Day Constru...
Area 6 - Route 606 199+00 to 221+00		262	130	13-Jan-16	12-Jan-17	
Stage 1		119	99	13-Jan-16	27-Jun-16	
Roadway		119	99	13-Jan-16	27-Jun-16	
CC061R010	Excavate / Widen Road - Stage 1 - Area 6 LT	20	77	13-Jan-16	09-Feb-16	5-Day Constru...
CC061R020	Install Storm Drainage - Stage 1 - Area 6 LT	13	112	10-Feb-16	26-Feb-16	5-Day Constru...
CC061R030	Finegrade Subgrade - Stage 1 - Area 6 LT	7	112	29-Feb-16	08-Mar-16	5-Day Constru...
CC061R040	Place Stone Base - Stage 1 - Area 6 LT	5	112	09-Mar-16	15-Mar-16	Base Paving
CC061R050	Install Underdrain - Stage 1 - Area 6 LT	3	112	16-Mar-16	18-Mar-16	5-Day Constru...
CC061R060	Install Curb & Gutter - Stage 1 - Area 6 LT	9	112	21-Mar-16	31-Mar-16	5-Day Constru...
CC061R070	Backfill Curb - Stage 1 - Area 6 LT	3	112	01-Apr-16	05-Apr-16	5-Day Constru...
CC061R080	Place Base & Intermediate Asphalt - Stage 1 - Area 6 LT	8	112	06-Apr-16	15-Apr-16	Base Paving
CC061R090	Construct Shared Use Path - Stage 1 - Area 6 LT (Phase B)	10	77	07-Jun-16	20-Jun-16	5-Day Constru...
CC061R100	Finish Grade & Stabilize - Stage 1 - Area 6 LT	5	97	21-Jun-16	27-Jun-16	5-Day Constru...
Stage 2		68	130	11-Oct-16	12-Jan-17	
Roadway		68	130	11-Oct-16	12-Jan-17	
CC062R010	Excavate / Widen Road - Stage 2 - Area 6 RT	20	75	11-Oct-16	07-Nov-16	5-Day Constru...
CC062R020	Install Storm Drainage - Stage 2 - Area 6 RT	10	127	08-Nov-16	21-Nov-16	5-Day Constru...
CC062R030	Finegrade Subgrade - Stage 2 - Area 6 RT	7	127	22-Nov-16	02-Dec-16	5-Day Constru...
CC062R040	Place Stone Base - Stage 2 - Area 6 RT	5	86	05-Dec-16	09-Dec-16	Base Paving
CC062R050	Install Underdrain - Stage 2 - Area 6 RT	3	127	12-Dec-16	14-Dec-16	5-Day Constru...
CC062R060	Place Base & Intermediate Asphalt - Stage 2 - Area 6 RT	7	86	15-Dec-16	23-Dec-16	Base Paving
CC062R070	Finish Grade & Stabilize - Stage 2 - Area 6 RT	5	127	03-Jan-17	09-Jan-17	5-Day Constru...
CC062R080	Install Guardrail - Stage 2 - Area 6 RT	3	127	10-Jan-17	12-Jan-17	5-Day Constru...
Area 7 - Route 606 221+00 to 241+00		329	63	13-Jan-16	17-Apr-17	
Stage 1		130	88	13-Jan-16	12-Jul-16	
Roadway		130	88	13-Jan-16	12-Jul-16	
CC071R010	Place Temporary Paving - Stage 1 - Area 7 LT	15	82	13-Jan-16	02-Feb-16	5-Day Constru...
CC071R020	Excavate / Widen Road - Stage 1 - Area 7 LT	18	77	10-Feb-16	04-Mar-16	5-Day Constru...
CC071R030	Install Storm Drainage - Stage 1 - Area 7 LT	16	102	07-Mar-16	28-Mar-16	5-Day Constru...
CC071R040	Finegrade Subgrade - Stage 1 - Area 7 LT	7	102	29-Mar-16	06-Apr-16	5-Day Constru...
CC071R050	Place Stone Base - Stage 1 - Area 7 LT	5	102	07-Apr-16	13-Apr-16	Base Paving
CC071R060	Install Underdrain - Stage 1 - Area 7 LT	3	102	14-Apr-16	18-Apr-16	5-Day Constru...
CC071R070	Install Curb & Gutter - Stage 1 - Area 7 LT	7	102	19-Apr-16	27-Apr-16	5-Day Constru...
CC071R080	Backfill Curb - Stage 1 - Area 7 LT	2	102	28-Apr-16	29-Apr-16	5-Day Constru...
CC071R090	Place Base & Intermediate Asphalt - Stage 1 - Area 7 LT	10	102	02-May-16	13-May-16	Base Paving
CC071R100	Construct Shared Use Path - Stage 1 - Area 7 LT (Phase B)	10	77	21-Jun-16	05-Jul-16	5-Day Constru...
CC071R110	Finish Grade & Stabilize - Stage 1 - Area 7 LT	5	87	06-Jul-16	12-Jul-16	5-Day Constru...
Soundwalls		84	30	13-Jan-16	09-May-16	



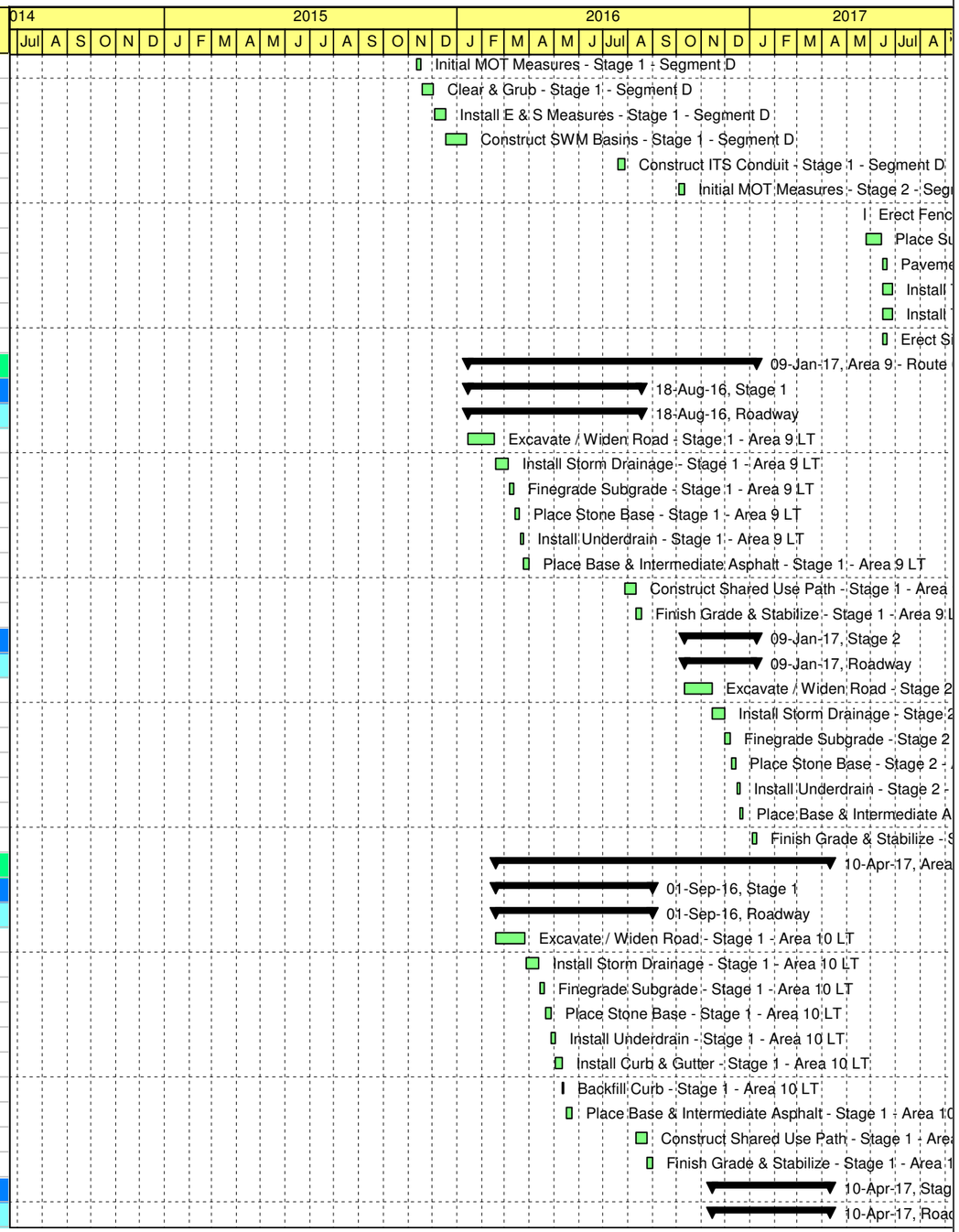
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
Soundwall A3		84	30	13-Jan-16	09-May-16	
CC071S310	Construct Soundwall A3 - Stage 1 - Area 7 LT	84	29	13-Jan-16	09-May-16	5-Day Constru...
Stage 2		115	63	08-Nov-16	17-Apr-17	
Roadway		115	63	08-Nov-16	17-Apr-17	
CC072R010	Excavate / Widen Road - Stage 2 - Area 7 RT	18	75	08-Nov-16	05-Dec-16	5-Day Constru...
CC072R020	Install Storm Drainage - Stage 2 - Area 7 RT	12	95	06-Dec-16	21-Dec-16	5-Day Constru...
CC072R030	Finegrade Subgrade - Stage 2 - Area 7 RT	8	95	22-Dec-16	10-Jan-17	5-Day Constru...
CC072R040	Place Stone Base - Stage 2 - Area 7 RT	7	60	01-Mar-17	09-Mar-17	Base Paving
CC072R050	Install Underdrain - Stage 2 - Area 7 RT	3	60	10-Mar-17	14-Mar-17	5-Day Constru...
CC072R060	Install Curb & Gutter - Stage 2 - Area 7 RT	5	60	15-Mar-17	21-Mar-17	5-Day Constru...
CC072R070	Backfill Curb - Stage 2 - Area 7 RT	2	60	22-Mar-17	23-Mar-17	5-Day Constru...
CC072R080	Place Base & Intermediate Asphalt - Stage 2 - Area 7 RT	10	60	24-Mar-17	06-Apr-17	Base Paving
CC072R090	Finish Grade & Stabilize - Stage 2 - Area 7 RT	5	60	07-Apr-17	13-Apr-17	5-Day Constru...
CC072R100	Install Guardrail - Stage 2 - Area 7 RT	2	60	14-Apr-17	17-Apr-17	5-Day Constru...
Area 8 - Route 606 241+00 to 262+00		329	63	13-Jan-16	17-Apr-17	
Stage 1		189	29	13-Jan-16	03-Oct-16	
Roadway		189	29	13-Jan-16	03-Oct-16	
CC081R010	Place Temporary Paving - Stage 1 - Area 8 LT	13	102	13-Jan-16	29-Jan-16	5-Day Constru...
CC081R020	Excavate / Widen Road - Stage 1 - Area 8 LT	21	77	07-Mar-16	04-Apr-16	5-Day Constru...
CC081R030	Install Storm Drainage - Stage 1 - Area 8 LT	20	77	05-Apr-16	02-May-16	5-Day Constru...
CC081R040	Finegrade Subgrade - Stage 1 - Area 8 LT	8	77	03-May-16	12-May-16	5-Day Constru...
CC081R050	Place Stone Base - Stage 1 - Area 8 LT	6	77	13-May-16	20-May-16	Base Paving
CC081R060	Install Underdrain - Stage 1 - Area 8 LT	3	77	23-May-16	25-May-16	5-Day Constru...
CC081R070	Install Curb & Gutter - Stage 1 - Area 8 LT	7	86	26-May-16	06-Jun-16	5-Day Constru...
CC081R080	Backfill Curb - Stage 1 - Area 8 LT	2	86	07-Jun-16	08-Jun-16	5-Day Constru...
CC081R090	Place Base & Intermediate Asphalt - Stage 1 - Area 8 LT	9	86	09-Jun-16	21-Jun-16	Base Paving
CC081R100	Construct Shared Use Path - Stage 1 - Area 8 LT (Phase B)	10	29	13-Sep-16	26-Sep-16	5-Day Constru...
CC081R110	Finish Grade & Stabilize - Stage 1 - Area 8 LT	5	29	27-Sep-16	03-Oct-16	5-Day Constru...
Soundwalls		90	29	10-May-16	12-Sep-16	
Soundwall A2		49	29	06-Jul-16	12-Sep-16	
CC081S210	Construct Soundwall A2 - Stage 1 - Area 8 LT	48	29	06-Jul-16	12-Sep-16	5-Day Constru...
Soundwall A1		41	29	10-May-16	05-Jul-16	
CC081S110	Construct Soundwall A1 - Stage 1 - Area 8 LT	39	29	10-May-16	05-Jul-16	5-Day Constru...
Stage 2		95	63	06-Dec-16	17-Apr-17	
Roadway		95	63	06-Dec-16	17-Apr-17	
CC082R010	Excavate / Widen Road - Stage 2 - Area 8 RT	20	75	06-Dec-16	10-Jan-17	5-Day Constru...
CC082R020	Install Storm Drainage - Stage 2 - Area 8 RT	13	75	11-Jan-17	27-Jan-17	5-Day Constru...
CC082R030	Finegrade Subgrade - Stage 2 - Area 8 RT	7	75	30-Jan-17	07-Feb-17	5-Day Constru...
CC082R040	Place Stone Base - Stage 2 - Area 8 RT	5	60	01-Mar-17	07-Mar-17	Base Paving
CC082R050	Install Underdrain - Stage 2 - Area 8 RT	3	60	08-Mar-17	10-Mar-17	5-Day Constru...
CC082R060	Install Curb & Gutter - Stage 2 - Area 8 RT	7	60	13-Mar-17	21-Mar-17	5-Day Constru...
CC082R070	Backfill Curb - Stage 2 - Area 8 RT	2	60	22-Mar-17	23-Mar-17	5-Day Constru...
CC082R080	Place Base & Intermediate Asphalt - Stage 2 - Area 8 RT	9	60	24-Mar-17	05-Apr-17	Base Paving
CC082R090	Finish Grade & Stabilize - Stage 2 - Area 8 RT	5	60	06-Apr-17	12-Apr-17	5-Day Constru...
CC082R100	Install Security Fence - Stage 2 - Area 8 RT	3	60	13-Apr-17	17-Apr-17	5-Day Constru...
Segment D		426	31	11-Nov-15	28-Jun-17	
General		426	31	11-Nov-15	28-Jun-17	



Remaining Level of Effort | Actual Work | Critical Remaining Work | Summary
Actual Level of Effort | Remaining Work | Milestone

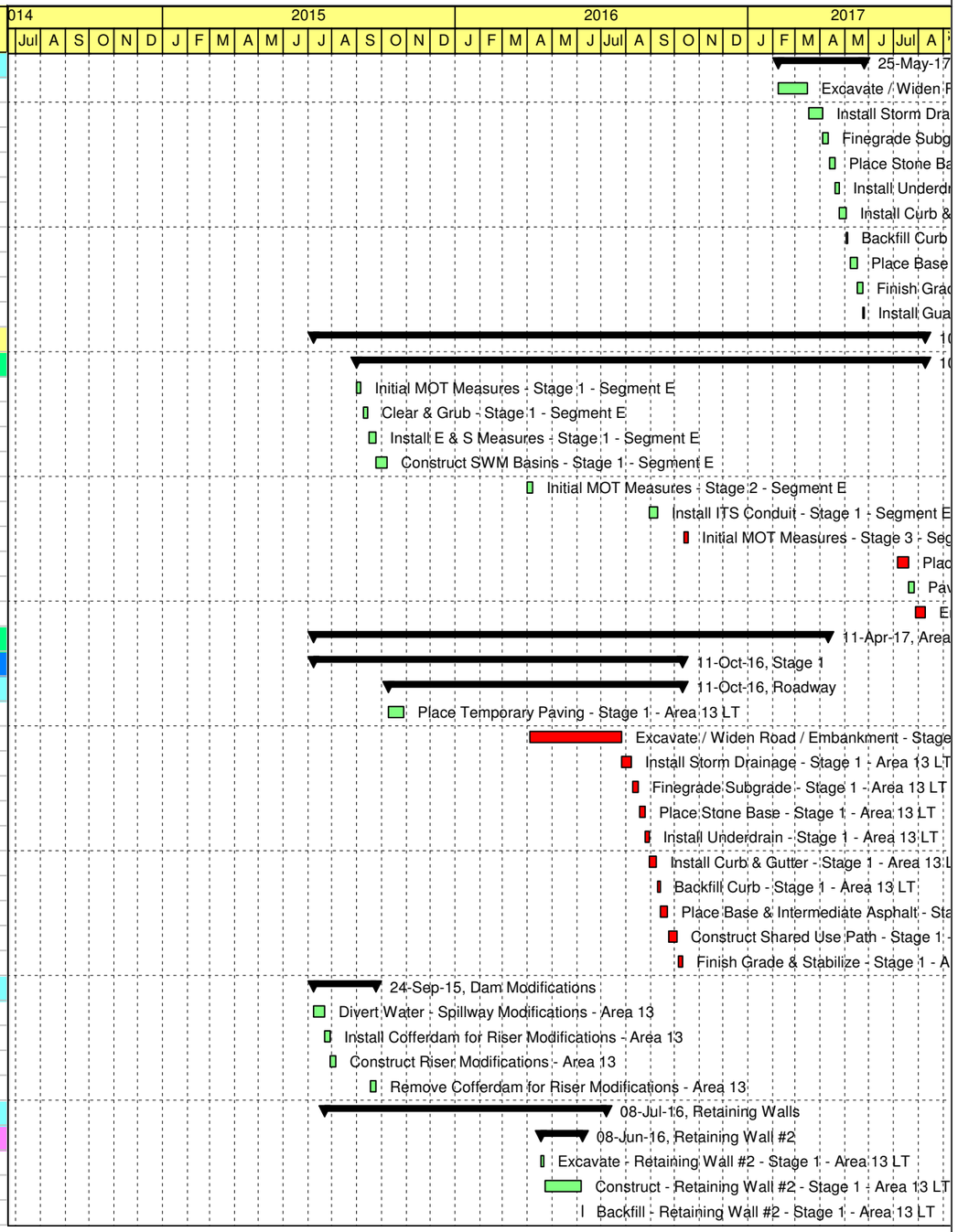
TASK filter: All Activities

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
CDG001010	Initial MOT Measures - Stage 1 - Segment D	5	35	11-Nov-15	17-Nov-15	5-Day Constru...
CDG001020	Clear & Grub - Stage 1 - Segment D	10	35	18-Nov-15	03-Dec-15	5-Day Constru...
CDG001030	Install E & S Measures - Stage 1 - Segment D	10	35	04-Dec-15	17-Dec-15	5-Day Constru...
CDG001040	Construct SWM Basins - Stage 1 - Segment D	13	35	18-Dec-15	13-Jan-16	5-Day Constru...
CDG001050	Construct ITS Conduit - Stage 1 - Segment D	7	35	20-Jul-16	28-Jul-16	5-Day Constru...
CDG002010	Initial MOT Measures - Stage 2 - Segment D	5	29	04-Oct-16	10-Oct-16	5-Day Constru...
CDG002020	Erect Fence - Segment D	1	53	24-May-17	24-May-17	5-Day Constru...
CDG009010	Place Surface Course - Segment D	13	30	26-May-17	14-Jun-17	Surface Paving
CDG009020	Pavement Markings - Segment D	5	34	15-Jun-17	21-Jun-17	5-Day Constru...
CDG009030	Install Traffic Signal - Route 606 & Ladbrook Drive	10	29	15-Jun-17	28-Jun-17	5-Day Constru...
CDG009040	Install Traffic Signal - Route 606 / Mercure Circle / Drive to Rail Yard	10	29	15-Jun-17	28-Jun-17	5-Day Constru...
CDG009050	Erect Signs - Segment D	5	34	15-Jun-17	21-Jun-17	5-Day Constru...
Area 9 - Route 606 262+00 to 280+00		258	130	14-Jan-16	09-Jan-17	
Stage 1		156	61	14-Jan-16	18-Aug-16	
Roadway		156	61	14-Jan-16	18-Aug-16	
CD091R010	Excavate / Widen Road - Stage 1 - Area 9 LT	25	35	14-Jan-16	17-Feb-16	5-Day Constru...
CD091R020	Install Storm Drainage - Stage 1 - Area 9 LT	12	117	18-Feb-16	04-Mar-16	5-Day Constru...
CD091R030	Finegrade Subgrade - Stage 1 - Area 9 LT	5	117	07-Mar-16	11-Mar-16	5-Day Constru...
CD091R040	Place Stone Base - Stage 1 - Area 9 LT	5	117	14-Mar-16	18-Mar-16	Base Paving
CD091R050	Install Underdrain - Stage 1 - Area 9 LT	3	117	21-Mar-16	23-Mar-16	5-Day Constru...
CD091R060	Place Base & Intermediate Asphalt - Stage 1 - Area 9 LT	5	119	24-Mar-16	30-Mar-16	Base Paving
CD091R070	Construct Shared Use Path - Stage 1 - Area 9 LT (Phase B)	10	35	29-Jul-16	11-Aug-16	5-Day Constru...
CD091R080	Finish Grade & Stabilize - Stage 1 - Area 9 LT	5	60	12-Aug-16	18-Aug-16	5-Day Constru...
Stage 2		65	130	11-Oct-16	09-Jan-17	
Roadway		65	130	11-Oct-16	09-Jan-17	
CD092R010	Excavate / Widen Road - Stage 2 - Area 9 RT	25	29	11-Oct-16	14-Nov-16	5-Day Constru...
CD092R020	Install Storm Drainage - Stage 2 - Area 9 RT	10	127	15-Nov-16	30-Nov-16	5-Day Constru...
CD092R030	Finegrade Subgrade - Stage 2 - Area 9 RT	5	127	01-Dec-16	07-Dec-16	5-Day Constru...
CD092R040	Place Stone Base - Stage 2 - Area 9 RT	5	86	08-Dec-16	14-Dec-16	Base Paving
CD092R050	Install Underdrain - Stage 2 - Area 9 RT	3	127	15-Dec-16	19-Dec-16	5-Day Constru...
CD092R060	Place Base & Intermediate Asphalt - Stage 2 - Area 9 RT	4	86	20-Dec-16	23-Dec-16	Base Paving
CD092R070	Finish Grade & Stabilize - Stage 2 - Area 9 RT	5	127	03-Jan-17	09-Jan-17	5-Day Constru...
Area 10 - Route 606 280+00 to 298+00		298	65	18-Feb-16	10-Apr-17	
Stage 1		141	51	18-Feb-16	01-Sep-16	
Roadway		141	51	18-Feb-16	01-Sep-16	
CD101R010	Excavate / Widen Road - Stage 1 - Area 10 LT	27	35	18-Feb-16	25-Mar-16	5-Day Constru...
CD101R020	Install Storm Drainage - Stage 1 - Area 10 LT	12	89	28-Mar-16	12-Apr-16	5-Day Constru...
CD101R030	Finegrade Subgrade - Stage 1 - Area 10 LT	5	89	13-Apr-16	19-Apr-16	5-Day Constru...
CD101R040	Place Stone Base - Stage 1 - Area 10 LT	6	89	20-Apr-16	27-Apr-16	Base Paving
CD101R050	Install Underdrain - Stage 1 - Area 10 LT	3	89	28-Apr-16	02-May-16	5-Day Constru...
CD101R060	Install Curb & Gutter - Stage 1 - Area 10 LT	7	90	03-May-16	11-May-16	5-Day Constru...
CD101R070	Backfill Curb - Stage 1 - Area 10 LT	2	90	12-May-16	13-May-16	5-Day Constru...
CD101R080	Place Base & Intermediate Asphalt - Stage 1 - Area 10 LT	7	90	16-May-16	24-May-16	Base Paving
CD101R090	Construct Shared Use Path - Stage 1 - Area 10 LT (Phase B)	10	35	12-Aug-16	25-Aug-16	5-Day Constru...
CD101R100	Finish Grade & Stabilize - Stage 1 - Area 10 LT	5	50	26-Aug-16	01-Sep-16	5-Day Constru...
Stage 2		105	65	15-Nov-16	10-Apr-17	
Roadway		105	65	15-Nov-16	10-Apr-17	

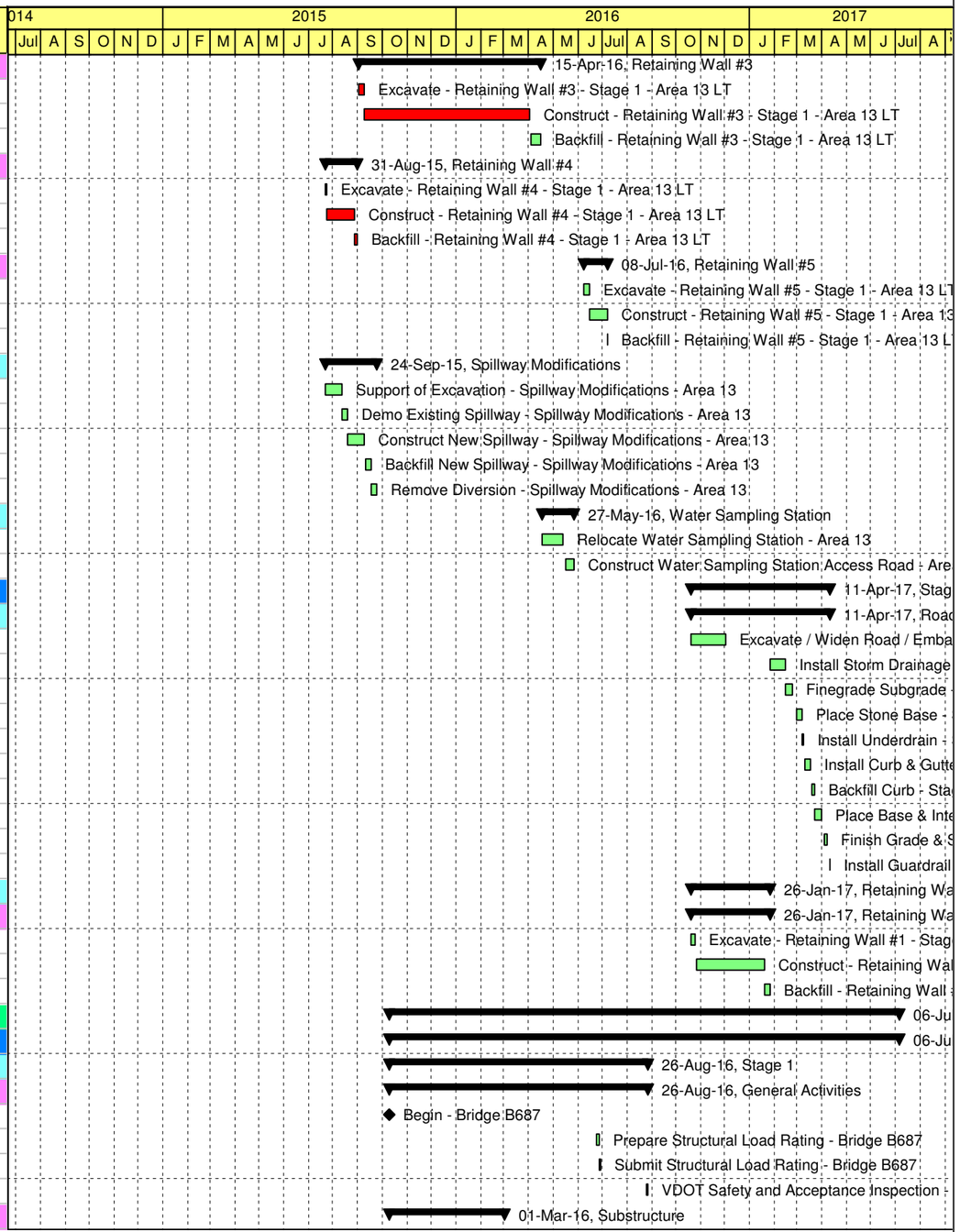


Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
CD102R010	Excavate / Widen Road - Stage 2 - Area 10 RT	25	29	15-Nov-16	21-Dec-16	5-Day Constru...
CD102R020	Install Storm Drainage - Stage 2 - Area 10 RT	14	87	22-Dec-16	18-Jan-17	5-Day Constru...
CD102R030	Finegrade Subgrade - Stage 2 - Area 10 RT	4	87	19-Jan-17	24-Jan-17	5-Day Constru...
CD102R040	Place Stone Base - Stage 2 - Area 10 RT	6	62	01-Mar-17	08-Mar-17	Base Paving
CD102R050	Install Underdrain - Stage 2 - Area 10 RT	3	62	09-Mar-17	13-Mar-17	5-Day Constru...
CD102R060	Install Curb & Gutter - Stage 2 - Area 10 RT	6	62	14-Mar-17	21-Mar-17	5-Day Constru...
CD102R070	Backfill Curb - Stage 2 - Area 10 RT	2	62	22-Mar-17	23-Mar-17	5-Day Constru...
CD102R080	Place Base & Intermediate Asphalt - Stage 2 - Area 10 RT	7	62	24-Mar-17	03-Apr-17	Base Paving
CD102R090	Finish Grade & Stabilize - Stage 2 - Area 10 RT	5	62	04-Apr-17	10-Apr-17	5-Day Constru...
Area 11 - Route 606 298+00 to 316+00		274	62	28-Mar-16	13-Apr-17	
Stage 1		123	42	28-Mar-16	14-Sep-16	
Roadway		123	42	28-Mar-16	14-Sep-16	
CD111R010	Excavate / Widen Road - Stage 1 - Area 11 LT	28	35	28-Mar-16	04-May-16	5-Day Constru...
CD111R020	Install Storm Drainage - Stage 1 - Area 11 LT	10	62	05-May-16	18-May-16	5-Day Constru...
CD111R030	Finegrade Subgrade - Stage 1 - Area 11 LT	6	62	19-May-16	26-May-16	5-Day Constru...
CD111R040	Place Stone Base - Stage 1 - Area 11 LT	6	62	27-May-16	06-Jun-16	Base Paving
CD111R050	Install Underdrain - Stage 1 - Area 11 LT	3	62	07-Jun-16	09-Jun-16	5-Day Constru...
CD111R060	Install Curb & Gutter - Stage 1 - Area 11 LT	7	73	10-Jun-16	20-Jun-16	5-Day Constru...
CD111R070	Backfill Curb - Stage 1 - Area 11 LT	2	73	21-Jun-16	22-Jun-16	5-Day Constru...
CD111R080	Place Base & Intermediate Asphalt - Stage 1 - Area 11 LT	7	73	23-Jun-16	01-Jul-16	Base Paving
CD111R090	Construct Shared Use Path - Stage 1 - Area 11 LT (Phase B)	8	35	26-Aug-16	07-Sep-16	5-Day Constru...
CD111R100	Finish Grade & Stabilize - Stage 1 - Area 11 LT	5	42	08-Sep-16	14-Sep-16	5-Day Constru...
Stage 2		81	62	22-Dec-16	13-Apr-17	
Roadway		81	62	22-Dec-16	13-Apr-17	
CD112R010	Excavate / Widen Road - Stage 2 - Area 11 RT	28	29	22-Dec-16	07-Feb-17	5-Day Constru...
CD112R020	Install Storm Drainage - Stage 2 - Area 11 RT	15	59	08-Feb-17	28-Feb-17	5-Day Constru...
CD112R030	Finegrade Subgrade - Stage 2 - Area 11 RT	5	59	01-Mar-17	07-Mar-17	5-Day Constru...
CD112R040	Place Stone Base - Stage 2 - Area 11 RT	5	59	08-Mar-17	14-Mar-17	Base Paving
CD112R050	Install Underdrain - Stage 2 - Area 11 RT	3	59	15-Mar-17	17-Mar-17	5-Day Constru...
CD112R060	Install Curb & Gutter - Stage 2 - Area 11 RT	6	59	20-Mar-17	27-Mar-17	5-Day Constru...
CD112R070	Backfill Curb - Stage 2 - Area 11 RT	2	59	28-Mar-17	29-Mar-17	5-Day Constru...
CD112R080	Place Base & Intermediate Asphalt - Stage 2 - Area 11 RT	6	59	30-Mar-17	06-Apr-17	Base Paving
CD112R090	Finish Grade & Stabilize - Stage 2 - Area 11 RT	5	59	07-Apr-17	13-Apr-17	5-Day Constru...
Area 12 - Route 606 316+00 to 334+00		276	32	05-May-16	25-May-17	
Stage 1		102	35	05-May-16	23-Sep-16	
Roadway		102	35	05-May-16	23-Sep-16	
CD121R010	Excavate / Widen Road - Stage 1 - Area 12 LT	28	35	05-May-16	14-Jun-16	5-Day Constru...
CD121R020	Install Storm Drainage - Stage 1 - Area 12 LT	9	35	15-Jun-16	27-Jun-16	5-Day Constru...
CD121R030	Finegrade Subgrade - Stage 1 - Area 12 LT	6	35	28-Jun-16	06-Jul-16	5-Day Constru...
CD121R040	Place Stone Base - Stage 1 - Area 12 LT	6	35	07-Jul-16	14-Jul-16	Base Paving
CD121R050	Install Underdrain - Stage 1 - Area 12 LT	3	35	15-Jul-16	19-Jul-16	5-Day Constru...
CD121R060	Install Curb & Gutter - Stage 1 - Area 12 LT	6	55	20-Jul-16	27-Jul-16	5-Day Constru...
CD121R070	Backfill Curb - Stage 1 - Area 12 LT	2	55	28-Jul-16	29-Jul-16	5-Day Constru...
CD121R080	Place Base & Intermediate Asphalt - Stage 1 - Area 12 LT	7	55	01-Aug-16	09-Aug-16	Base Paving
CD121R090	Construct Shared Use Path - Stage 1 - Area 12 LT (Phase B)	8	35	08-Sep-16	19-Sep-16	5-Day Constru...
CD121R100	Finish Grade & Stabilize - Stage 1 - Area 12 LT	4	35	20-Sep-16	23-Sep-16	5-Day Constru...
Stage 2		77	32	08-Feb-17	25-May-17	

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
Roadway		77	32	08-Feb-17	25-May-17	
CD122R010	Excavate / Widen Road - Stage 2 - Area 12 RT	27	29	08-Feb-17	16-Mar-17	5-Day Constru...
CD122R020	Install Storm Drainage - Stage 2 - Area 12 RT	12	29	17-Mar-17	03-Apr-17	5-Day Constru...
CD122R030	Finegrade Subgrade - Stage 2 - Area 12 RT	6	29	04-Apr-17	11-Apr-17	5-Day Constru...
CD122R040	Place Stone Base - Stage 2 - Area 12 RT	6	29	12-Apr-17	19-Apr-17	Base Paving
CD122R050	Install Underdrain - Stage 2 - Area 12 RT	3	29	20-Apr-17	24-Apr-17	5-Day Constru...
CD122R060	Install Curb & Gutter - Stage 2 - Area 12 RT	7	29	25-Apr-17	03-May-17	5-Day Constru...
CD122R070	Backfill Curb - Stage 2 - Area 12 RT	2	29	04-May-17	05-May-17	5-Day Constru...
CD122R080	Place Base & Intermediate Asphalt - Stage 2 - Area 12 RT	7	29	08-May-17	16-May-17	Base Paving
CD122R090	Finish Grade & Stabilize - Stage 2 - Area 12 RT	5	29	17-May-17	23-May-17	5-Day Constru...
CD122R100	Install Guardrail - Stage 2 - Area 12 RT	2	29	24-May-17	25-May-17	5-Day Constru...
Segment E		547	0	08-Jul-15	10-Aug-17	
General		509	0	31-Aug-15	10-Aug-17	
CEG001010	Initial MOT Measures - Stage 1 - Segment E	5	56	31-Aug-15	04-Sep-15	5-Day Constru...
CEG001020	Clear & Grub - Stage 1 - Segment E	5	56	08-Sep-15	14-Sep-15	5-Day Constru...
CEG001030	Install E & S Measures - Stage 1 - Segment E	8	56	15-Sep-15	24-Sep-15	5-Day Constru...
CEG001040	Construct SWM Basins - Stage 1 - Segment E	10	56	25-Sep-15	08-Oct-15	5-Day Constru...
CEG002010	Initial MOT Measures - Stage 2 - Segment E	5	85	31-Mar-16	06-Apr-16	5-Day Constru...
CEG001050	Install ITS Conduit - Stage 1 - Segment E	7	3	31-Aug-16	09-Sep-16	5-Day Constru...
CEG003010	Initial MOT Measures - Stage 3 - Segment E	5	0	12-Oct-16	18-Oct-16	5-Day Constru...
CEG009010	Place Surface Course - Segment E	10	0	07-Jul-17	20-Jul-17	Surface Paving
CEG009020	Pavement Markings - Segment E	4	11	21-Jul-17	26-Jul-17	5-Day Constru...
CEG009030	Erect Signs - Segment E	10	0	28-Jul-17	10-Aug-17	5-Day Constru...
Area 13 - Route 606 334+00 to 354+00		460	62	08-Jul-15	11-Apr-17	
Stage 1		330	0	08-Jul-15	11-Oct-16	
Roadway		263	0	09-Oct-15	11-Oct-16	
CE131R010	Place Temporary Paving - Stage 1 - Area 13 LT	15	103	09-Oct-15	29-Oct-15	5-Day Constru...
CE131R020	Excavate / Widen Road / Embankment - Stage 1 - Area 13 LT	80	0	04-Apr-16	26-Jul-16	5-Day Constru...
CE131R030	Install Storm Drainage - Stage 1 - Area 13 LT	9	0	27-Jul-16	08-Aug-16	5-Day Constru...
CE131R040	Finegrade Subgrade - Stage 1 - Area 13 LT	7	0	09-Aug-16	17-Aug-16	5-Day Constru...
CE131R050	Place Stone Base - Stage 1 - Area 13 LT	6	0	18-Aug-16	25-Aug-16	Base Paving
CE131R060	Install Underdrain - Stage 1 - Area 13 LT	3	0	26-Aug-16	30-Aug-16	5-Day Constru...
CE131R070	Install Curb & Gutter - Stage 1 - Area 13 LT	6	0	31-Aug-16	08-Sep-16	5-Day Constru...
CE131R080	Backfill Curb - Stage 1 - Area 13 LT	3	0	09-Sep-16	13-Sep-16	5-Day Constru...
CE131R090	Place Base & Intermediate Asphalt - Stage 1 - Area 13 LT	7	0	14-Sep-16	22-Sep-16	Base Paving
CE131R100	Construct Shared Use Path - Stage 1 - Area 13 LT (Phase B)	8	0	23-Sep-16	04-Oct-16	5-Day Constru...
CE131R110	Finish Grade & Stabilize - Stage 1 - Area 13 LT	5	0	05-Oct-16	11-Oct-16	5-Day Constru...
Dam Modifications		57	227	08-Jul-15	24-Sep-15	
CE131D010	Divert Water - Spillway Modifications - Area 13	10	140	08-Jul-15	21-Jul-15	5-Day Constru...
CE131D020	Install Cofferdam for Riser Modifications - Area 13	5	145	22-Jul-15	28-Jul-15	5-Day Constru...
CE131D030	Construct Riser Modifications - Area 13	5	145	29-Jul-15	04-Aug-15	5-Day Constru...
CE131D040	Remove Cofferdam for Riser Modifications - Area 13	5	217	18-Sep-15	24-Sep-15	5-Day Constru...
Retaining Walls		253	12	22-Jul-15	08-Jul-16	
Retaining Wall #2		38	12	18-Apr-16	08-Jun-16	
CE131W210	Excavate - Retaining Wall #2 - Stage 1 - Area 13 LT	4	12	18-Apr-16	21-Apr-16	5-Day Constru...
CE131W220	Construct - Retaining Wall #2 - Stage 1 - Area 13 LT	32	12	22-Apr-16	07-Jun-16	5-Day Constru...
CE131W230	Backfill - Retaining Wall #2 - Stage 1 - Area 13 LT	1	12	08-Jun-16	08-Jun-16	5-Day Constru...



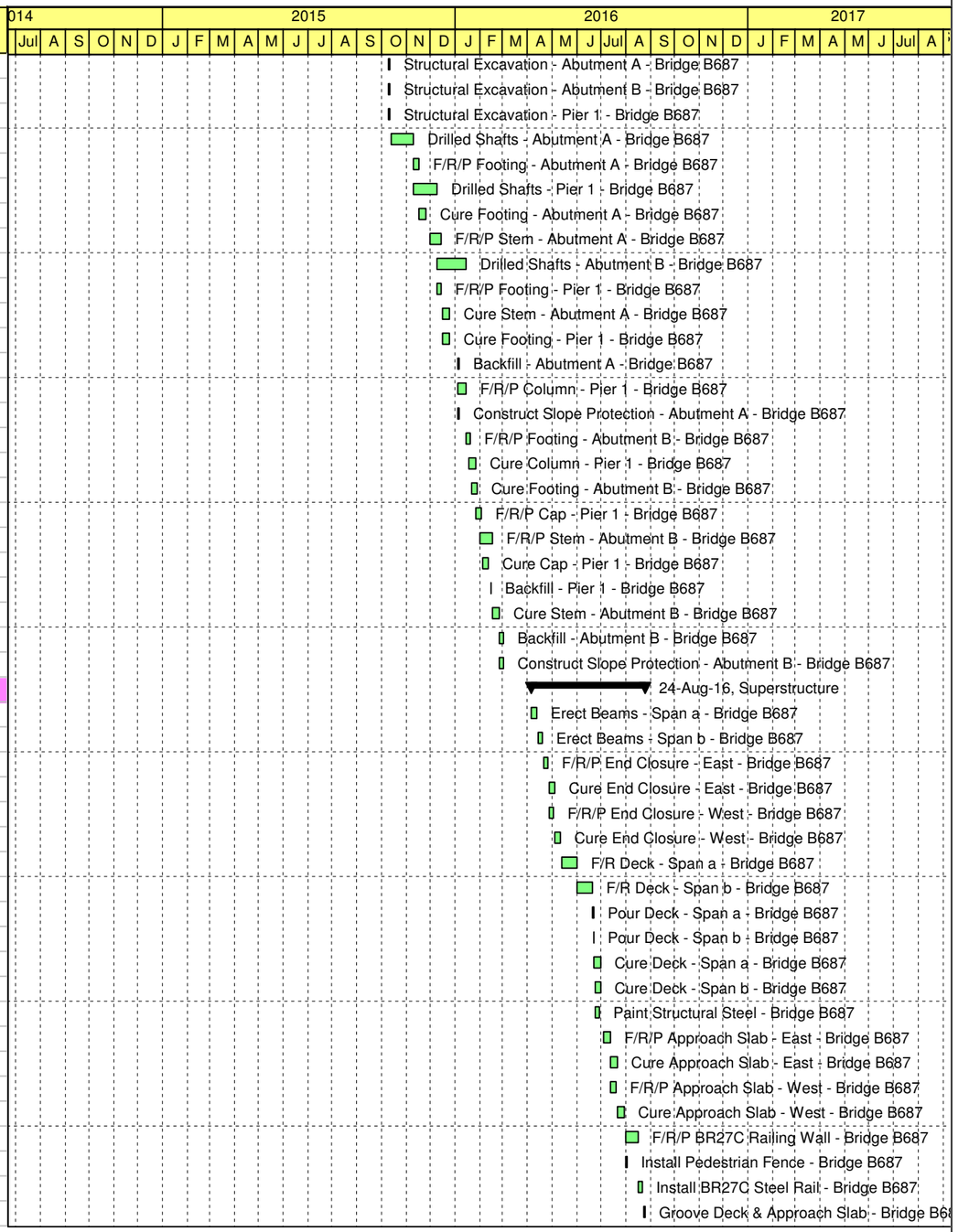
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
Retaining Wall #3		164	12	01-Sep-15	15-Apr-16	
CE131W310	Excavate - Retaining Wall #3 - Stage 1 - Area 13 LT	5	0	01-Sep-15	08-Sep-15	5-Day Constru...
CE131W320	Construct - Retaining Wall #3 - Stage 1 - Area 13 LT	140	0	09-Sep-15	01-Apr-16	5-Day Constru...
CE131W330	Backfill - Retaining Wall #3 - Stage 1 - Area 13 LT	10	12	04-Apr-16	15-Apr-16	5-Day Constru...
Retaining Wall #4		29	0	22-Jul-15	31-Aug-15	
CE131W410	Excavate - Retaining Wall #4 - Stage 1 - Area 13 LT	2	0	22-Jul-15	23-Jul-15	5-Day Constru...
CE131W420	Construct - Retaining Wall #4 - Stage 1 - Area 13 LT	25	0	24-Jul-15	27-Aug-15	5-Day Constru...
CE131W430	Backfill - Retaining Wall #4 - Stage 1 - Area 13 LT	2	0	28-Aug-15	31-Aug-15	5-Day Constru...
Retaining Wall #5		22	12	09-Jun-16	08-Jul-16	
CE131W510	Excavate - Retaining Wall #5 - Stage 1 - Area 13 LT	4	12	09-Jun-16	14-Jun-16	5-Day Constru...
CE131W520	Construct - Retaining Wall #5 - Stage 1 - Area 13 LT	16	12	15-Jun-16	07-Jul-16	5-Day Constru...
CE131W530	Backfill - Retaining Wall #5 - Stage 1 - Area 13 LT	1	12	08-Jul-16	08-Jul-16	5-Day Constru...
Spillway Modifications		47	148	22-Jul-15	24-Sep-15	
CE131S010	Support of Excavation - Spillway Modifications - Area 13	15	140	22-Jul-15	11-Aug-15	5-Day Constru...
CE131S020	Demo Existing Spillway - Spillway Modifications - Area 13	5	140	12-Aug-15	18-Aug-15	5-Day Constru...
CE131S030	Construct New Spillway - Spillway Modifications - Area 13	15	140	19-Aug-15	09-Sep-15	5-Day Constru...
CE131S040	Backfill New Spillway - Spillway Modifications - Area 13	6	140	10-Sep-15	17-Sep-15	5-Day Constru...
CE131S050	Remove Diversion - Spillway Modifications - Area 13	5	140	18-Sep-15	24-Sep-15	5-Day Constru...
Water Sampling Station		30	84	18-Apr-16	27-May-16	
CE131X100	Relocate Water Sampling Station - Area 13	20	81	18-Apr-16	13-May-16	5-Day Constru...
CE131X010	Construct Water Sampling Station Access Road - Area 13	10	81	16-May-16	27-May-16	5-Day Constru...
Stage 2		125	62	19-Oct-16	11-Apr-17	
Roadway		125	62	19-Oct-16	11-Apr-17	
CE132R010	Excavate / Widen Road / Embankment - Stage 2 - Area 13 RT	31	95	19-Oct-16	02-Dec-16	5-Day Constru...
CE132R020	Install Storm Drainage - Stage 2 - Area 13 RT	13	62	27-Jan-17	14-Feb-17	5-Day Constru...
CE132R030	Finegrade Subgrade - Stage 2 - Area 13 RT	7	62	15-Feb-17	23-Feb-17	5-Day Constru...
CE132R040	Place Stone Base - Stage 2 - Area 13 RT	4	59	01-Mar-17	06-Mar-17	Base Paving
CE132R050	Install Underdrain - Stage 2 - Area 13 RT	3	59	07-Mar-17	09-Mar-17	5-Day Constru...
CE132R060	Install Curb & Gutter - Stage 2 - Area 13 RT	6	59	10-Mar-17	17-Mar-17	5-Day Constru...
CE132R070	Backfill Curb - Stage 2 - Area 13 RT	3	59	20-Mar-17	22-Mar-17	5-Day Constru...
CE132R080	Place Base & Intermediate Asphalt - Stage 2 - Area 13 RT	7	59	23-Mar-17	31-Mar-17	Base Paving
CE132R090	Finish Grade & Stabilize - Stage 2 - Area 13 RT	5	59	03-Apr-17	07-Apr-17	5-Day Constru...
CE132R100	Install Guardrail - Stage 2 - Area 13 RT	2	59	10-Apr-17	11-Apr-17	5-Day Constru...
Retaining Walls		72	62	19-Oct-16	26-Jan-17	
Retaining Wall #1		72	62	19-Oct-16	26-Jan-17	
CE132W110	Excavate - Retaining Wall #1 - Stage 2 - Area 13 RT	5	62	19-Oct-16	25-Oct-16	5-Day Constru...
CE132W120	Construct - Retaining Wall #1 - Stage 2 - Area 13 RT	54	62	26-Oct-16	19-Jan-17	5-Day Constru...
CE132W130	Backfill - Retaining Wall #1 - Stage 2 - Area 13 RT	5	62	20-Jan-17	26-Jan-17	5-Day Constru...
Area 14 - 354+00 to 357+00 (Horsepen Dam Area)		455	0	09-Oct-15	06-Jul-17	
Bridge over Horsepen Dam		455	0	09-Oct-15	06-Jul-17	
Stage 1		231	32	09-Oct-15	26-Aug-16	
General Activities		231	32	09-Oct-15	26-Aug-16	
CE14B1A010	Begin - Bridge B687	0	56	09-Oct-15		5-Day Constru...
CE14B1A020	Prepare Structural Load Rating - Bridge B687	3	72	23-Jun-16	27-Jun-16	5-Day Constru...
CE14B1A030	Submit Structural Load Rating - Bridge B687	2	72	28-Jun-16	29-Jun-16	5-Day Constru...
CE14B1A040	VDOT Safety and Acceptance Inspection - Bridge B687	2	31	25-Aug-16	26-Aug-16	5-Day Constru...
Substructure		103	56	09-Oct-15	01-Mar-16	



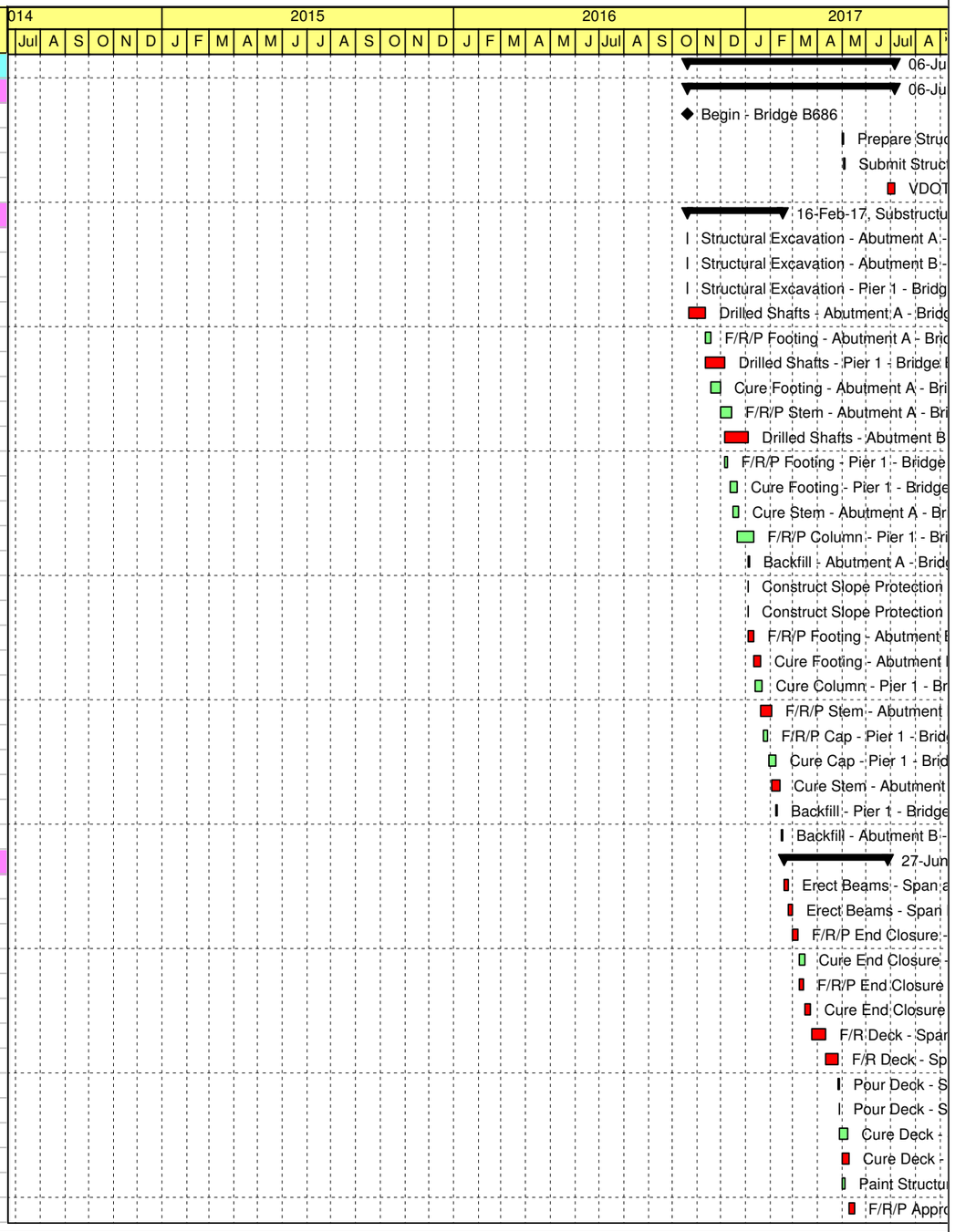
Remaining Level of Effort | Actual Work | Critical Remaining Work | Summary
Actual Level of Effort | Remaining Work | Milestone

TASK filter: All Activities

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
CE14B1BA(	Structural Excavation - Abutment A - Bridge B687	2	56	09-Oct-15	12-Oct-15	5-Day Constru...
CE14B1BB(	Structural Excavation - Abutment B - Bridge B687	2	96	09-Oct-15	12-Oct-15	5-Day Constru...
CE14B1BP1	Structural Excavation - Pier 1 - Bridge B687	2	76	09-Oct-15	12-Oct-15	5-Day Constru...
CE14B1BA1	Drilled Shafts - Abutment A - Bridge B687	20	56	13-Oct-15	09-Nov-15	5-Day Constru...
CE14B1BA2	F/R/P Footing - Abutment A - Bridge B687	5	95	10-Nov-15	16-Nov-15	5-Day Constru...
CE14B1BP2	Drilled Shafts - Pier 1 - Bridge B687	20	56	10-Nov-15	09-Dec-15	5-Day Constru...
CE14B1BA3	Cure Footing - Abutment A - Bridge B687	7	95	17-Nov-15	25-Nov-15	5-Day Constru...
CE14B1BA4	F/R/P Stem - Abutment A - Bridge B687	12	95	30-Nov-15	15-Dec-15	5-Day Constru...
CE14B1BB1	Drilled Shafts - Abutment B - Bridge B687	20	56	10-Dec-15	14-Jan-16	5-Day Constru...
CE14B1BP3	F/R/P Footing - Pier 1 - Bridge B687	4	67	10-Dec-15	15-Dec-15	5-Day Constru...
CE14B1BA5	Cure Stem - Abutment A - Bridge B687	7	95	16-Dec-15	24-Dec-15	5-Day Constru...
CE14B1BP4	Cure Footing - Pier 1 - Bridge B687	7	67	16-Dec-15	24-Dec-15	5-Day Constru...
CE14B1BA6	Backfill - Abutment A - Bridge B687	3	95	04-Jan-16	06-Jan-16	5-Day Constru...
CE14B1BP5	F/R/P Column - Pier 1 - Bridge B687	10	67	04-Jan-16	15-Jan-16	5-Day Constru...
CE14B1BA7	Construct Slope Protection - Abutment A - Bridge B687	3	95	04-Jan-16	06-Jan-16	5-Day Constru...
CE14B1BB2	F/R/P Footing - Abutment B - Bridge B687	4	56	15-Jan-16	20-Jan-16	5-Day Constru...
CE14B1BP6	Cure Column - Pier 1 - Bridge B687	7	67	18-Jan-16	26-Jan-16	5-Day Constru...
CE14B1BB3	Cure Footing - Abutment B - Bridge B687	7	56	21-Jan-16	29-Jan-16	5-Day Constru...
CE14B1BP7	F/R/P Cap - Pier 1 - Bridge B687	6	67	27-Jan-16	03-Feb-16	5-Day Constru...
CE14B1BB4	F/R/P Stem - Abutment B - Bridge B687	12	56	01-Feb-16	16-Feb-16	5-Day Constru...
CE14B1BP8	Cure Cap - Pier 1 - Bridge B687	7	67	04-Feb-16	12-Feb-16	5-Day Constru...
CE14B1BP9	Backfill - Pier 1 - Bridge B687	1	67	15-Feb-16	15-Feb-16	5-Day Constru...
CE14B1BB5	Cure Stem - Abutment B - Bridge B687	7	56	17-Feb-16	25-Feb-16	5-Day Constru...
CE14B1BB6	Backfill - Abutment B - Bridge B687	3	56	26-Feb-16	01-Mar-16	5-Day Constru...
CE14B1BB7	Construct Slope Protection - Abutment B - Bridge B687	3	56	26-Feb-16	01-Mar-16	5-Day Constru...
Superstructure		101	32	06-Apr-16	24-Aug-16	
CE14B1C01	Erect Beams - Span a - Bridge B687	5	31	06-Apr-16	12-Apr-16	5-Day Constru...
CE14B1C02	Erect Beams - Span b - Bridge B687	5	31	13-Apr-16	19-Apr-16	5-Day Constru...
CE14B1C03	F/R/P End Closure - East - Bridge B687	5	31	20-Apr-16	26-Apr-16	5-Day Constru...
CE14B1C04	Cure End Closure - East - Bridge B687	7	49	27-Apr-16	05-May-16	5-Day Constru...
CE14B1C05	F/R/P End Closure - West - Bridge B687	5	31	27-Apr-16	03-May-16	5-Day Constru...
CE14B1C06	Cure End Closure - West - Bridge B687	7	31	04-May-16	12-May-16	5-Day Constru...
CE14B1C07	F/R Deck - Span a - Bridge B687	13	31	13-May-16	01-Jun-16	5-Day Constru...
CE14B1C08	F/R Deck - Span b - Bridge B687	13	31	02-Jun-16	20-Jun-16	5-Day Constru...
CE14B1C09	Pour Deck - Span a - Bridge B687	1	31	21-Jun-16	21-Jun-16	Deck
CE14B1C10	Pour Deck - Span b - Bridge B687	1	31	22-Jun-16	22-Jun-16	Deck
CE14B1C11	Cure Deck - Span a - Bridge B687	7	38	22-Jun-16	30-Jun-16	5-Day Constru...
CE14B1C12	Cure Deck - Span b - Bridge B687	7	31	23-Jun-16	01-Jul-16	5-Day Constru...
CE14B1C21	Paint Structural Steel - Bridge B687	5	70	23-Jun-16	29-Jun-16	5-Day Constru...
CE14B1C16	F/R/P Approach Slab - East - Bridge B687	6	31	05-Jul-16	12-Jul-16	5-Day Constru...
CE14B1C17	Cure Approach Slab - East - Bridge B687	7	37	13-Jul-16	21-Jul-16	5-Day Constru...
CE14B1C18	F/R/P Approach Slab - West - Bridge B687	6	31	13-Jul-16	20-Jul-16	5-Day Constru...
CE14B1C19	Cure Approach Slab - West - Bridge B687	7	31	21-Jul-16	29-Jul-16	5-Day Constru...
CE14B1C13	F/R/P BR27C Railing Wall - Bridge B687	12	31	01-Aug-16	16-Aug-16	5-Day Constru...
CE14B1C15	Install Pedestrian Fence - Bridge B687	2	45	01-Aug-16	02-Aug-16	5-Day Constru...
CE14B1C14	Install BR27C Steel Rail - Bridge B687	4	31	17-Aug-16	22-Aug-16	5-Day Constru...
CE14B1C20	Groove Deck & Approach Slab - Bridge B687	2	31	23-Aug-16	24-Aug-16	5-Day Constru...



Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
Stage 2		187	0	19-Oct-16	06-Jul-17	
General Activities		187	0	19-Oct-16	06-Jul-17	
CE14B2A010	Begin - Bridge B686	0	0	19-Oct-16		5-Day Construc...
CE14B2A020	Prepare Structural Load Rating - Bridge B686	3	41	01-May-17	03-May-17	5-Day Construc...
CE14B2A030	Submit Structural Load Rating - Bridge B686	2	41	04-May-17	05-May-17	5-Day Construc...
CE14B2A040	VDOT Safety and Acceptance Inspection - Bridge B686	5	0	28-Jun-17	06-Jul-17	5-Day Construc...
Substructure		87	0	19-Oct-16	16-Feb-17	
CE14B2BA0	Structural Excavation - Abutment A - Bridge B686	2	0	19-Oct-16	20-Oct-16	5-Day Construc...
CE14B2BB0	Structural Excavation - Abutment B - Bridge B686	2	30	19-Oct-16	20-Oct-16	5-Day Construc...
CE14B2BP1	Structural Excavation - Pier 1 - Bridge B686	2	15	19-Oct-16	20-Oct-16	5-Day Construc...
CE14B2BA1	Drilled Shafts - Abutment A - Bridge B686	15	0	21-Oct-16	10-Nov-16	5-Day Construc...
CE14B2BA2	F/R/P Footing - Abutment A - Bridge B686	5	30	11-Nov-16	17-Nov-16	5-Day Construc...
CE14B2BP2	Drilled Shafts - Pier 1 - Bridge B686	15	0	11-Nov-16	05-Dec-16	5-Day Construc...
CE14B2BA3	Cure Footing - Abutment A - Bridge B686	7	30	18-Nov-16	30-Nov-16	5-Day Construc...
CE14B2BA4	F/R/P Stem - Abutment A - Bridge B686	10	30	01-Dec-16	14-Dec-16	5-Day Construc...
CE14B2BB1	Drilled Shafts - Abutment B - Bridge B686	15	0	06-Dec-16	03-Jan-17	5-Day Construc...
CE14B2BP3	F/R/P Footing - Pier 1 - Bridge B686	4	6	06-Dec-16	09-Dec-16	5-Day Construc...
CE14B2BP4	Cure Footing - Pier 1 - Bridge B686	7	6	12-Dec-16	20-Dec-16	5-Day Construc...
CE14B2BA5	Cure Stem - Abutment A - Bridge B686	7	30	15-Dec-16	23-Dec-16	5-Day Construc...
CE14B2BP5	F/R/P Column - Pier 1 - Bridge B686	10	6	21-Dec-16	11-Jan-17	5-Day Construc...
CE14B2BA6	Backfill - Abutment A - Bridge B686	3	30	03-Jan-17	05-Jan-17	5-Day Construc...
CE14B2BA7	Construct Slope Protection - Abutment A - Bridge B686	2	31	03-Jan-17	04-Jan-17	5-Day Construc...
CE14B2BB7	Construct Slope Protection - Abutment B - Bridge B686	2	31	03-Jan-17	04-Jan-17	5-Day Construc...
CE14B2BB2	F/R/P Footing - Abutment B - Bridge B686	5	0	04-Jan-17	10-Jan-17	5-Day Construc...
CE14B2BB3	Cure Footing - Abutment B - Bridge B686	7	0	11-Jan-17	19-Jan-17	5-Day Construc...
CE14B2BP6	Cure Column - Pier 1 - Bridge B686	7	6	12-Jan-17	20-Jan-17	5-Day Construc...
CE14B2BB4	F/R/P Stem - Abutment B - Bridge B686	10	0	20-Jan-17	02-Feb-17	5-Day Construc...
CE14B2BP7	F/R/P Cap - Pier 1 - Bridge B686	5	6	23-Jan-17	27-Jan-17	5-Day Construc...
CE14B2BP8	Cure Cap - Pier 1 - Bridge B686	7	6	30-Jan-17	07-Feb-17	5-Day Construc...
CE14B2BB5	Cure Stem - Abutment B - Bridge B686	7	0	03-Feb-17	13-Feb-17	5-Day Construc...
CE14B2BP9	Backfill - Pier 1 - Bridge B686	1	6	08-Feb-17	08-Feb-17	5-Day Construc...
CE14B2BB6	Backfill - Abutment B - Bridge B686	3	0	14-Feb-17	16-Feb-17	5-Day Construc...
Superstructure		93	0	17-Feb-17	27-Jun-17	
CE14B2C01	Erect Beams - Span a - Bridge B686	4	0	17-Feb-17	22-Feb-17	5-Day Construc...
CE14B2C02	Erect Beams - Span b - Bridge B686	4	0	23-Feb-17	28-Feb-17	5-Day Construc...
CE14B2C03	F/R/P End Closure - East - Bridge B686	5	0	01-Mar-17	07-Mar-17	5-Day Construc...
CE14B2C04	Cure End Closure - East - Bridge B686	7	17	08-Mar-17	16-Mar-17	5-Day Construc...
CE14B2C05	F/R/P End Closure - West - Bridge B686	5	0	08-Mar-17	14-Mar-17	5-Day Construc...
CE14B2C06	Cure End Closure - West - Bridge B686	7	0	15-Mar-17	23-Mar-17	5-Day Construc...
CE14B2C07	F/R Deck - Span a - Bridge B686	12	0	24-Mar-17	10-Apr-17	5-Day Construc...
CE14B2C08	F/R Deck - Span b - Bridge B686	12	0	11-Apr-17	26-Apr-17	5-Day Construc...
CE14B2C09	Pour Deck - Span a - Bridge B686	1	0	27-Apr-17	27-Apr-17	Deck
CE14B2C10	Pour Deck - Span b - Bridge B686	1	0	28-Apr-17	28-Apr-17	Deck
CE14B2C11	Cure Deck - Span a - Bridge B686	7	7	28-Apr-17	08-May-17	5-Day Construc...
CE14B2C12	Cure Deck - Span b - Bridge B686	7	0	01-May-17	09-May-17	5-Day Construc...
CE14B2C21	Paint Structural Steel - Bridge B686	5	36	01-May-17	05-May-17	5-Day Construc...
CE14B2C16	F/R/P Approach Slab - East - Bridge B686	6	0	10-May-17	17-May-17	5-Day Construc...



Remaining Level of Effort | Actual Work | Critical Remaining Work | Summary
Actual Level of Effort | Remaining Work | Milestone

TASK filter: All Activities

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish	Calendar
CE14B2C17	Cure Approach Slab - East - Bridge B686	7	6	18-May-17	26-May-17	5-Day Constru...
CE14B2C18	F/R/P Approach Slab - West - Bridge B686	6	0	18-May-17	25-May-17	5-Day Constru...
CE14B2C19	Cure Approach Slab - West - Bridge B686	7	0	26-May-17	06-Jun-17	5-Day Constru...
CE14B2C13	F/R/P BR27C Railing Wall - Bridge B686	10	0	07-Jun-17	20-Jun-17	5-Day Constru...
CE14B2C15	Install Pedestrian Fence - Bridge B686	2	11	07-Jun-17	08-Jun-17	5-Day Constru...
CE14B2C14	Install BR27C Steel Rail - Bridge B686	3	0	21-Jun-17	23-Jun-17	5-Day Constru...
CE14B2C20	Groove Deck & Approach Slab - Bridge B686	2	0	26-Jun-17	27-Jun-17	5-Day Constru...
Area 15 - Route 606 357+00 to 366+75		376	79	09-Oct-15	17-Mar-17	
Stage 1		124	87	09-Oct-15	30-Mar-16	
Roadway		124	87	09-Oct-15	30-Mar-16	
CE151R010	Place Temporary Paving - Stage 1 - Area 15	10	125	09-Oct-15	22-Oct-15	5-Day Constru...
CE151R020	Excavate / Widen Road / Embankment - Stage 1 - Area 15	32	125	23-Oct-15	09-Dec-15	5-Day Constru...
CE151R030	Install Storm Drainage - Stage 1 - Area 15	7	125	10-Dec-15	18-Dec-15	5-Day Constru...
CE151R040	Finegrade Subgrade - Stage 1 - Area 15	5	125	21-Dec-15	04-Jan-16	5-Day Constru...
CE151R050	Place Stone Base - Stage 1 - Area 15	6	85	01-Mar-16	08-Mar-16	Base Paving
CE151R060	Install Underdrain - Stage 1 - Area 15	3	85	09-Mar-16	11-Mar-16	5-Day Constru...
CE151R070	Place Base & Intermediate Asphalt - Stage 1 - Area 15	6	85	14-Mar-16	21-Mar-16	Base Paving
CE151R080	Finish Grade & Stabilize - Stage 1 - Area 15	5	85	22-Mar-16	28-Mar-16	5-Day Constru...
CE151R090	Install Guardrail - Stage 1 - Area 15	2	85	29-Mar-16	30-Mar-16	5-Day Constru...
Stage 2		125	9	07-Apr-16	28-Sep-16	
Roadway		125	9	07-Apr-16	28-Sep-16	
CE152R010	Place Temporary Paving - Stage 2 - Area 15	3	85	07-Apr-16	11-Apr-16	5-Day Constru...
CE152R020	Excavate / Widen Road - Stage 2 - Area 15	2	85	12-Apr-16	13-Apr-16	5-Day Constru...
CE152R030	Install Storm Drainage - Stage 2 - Area 15	4	85	14-Apr-16	19-Apr-16	5-Day Constru...
CE152R040	Finegrade Subgrade - Stage 2 - Area 15	3	85	20-Apr-16	22-Apr-16	5-Day Constru...
CE152R050	Place Stone Base - Stage 2 - Area 15	3	85	25-Apr-16	27-Apr-16	Base Paving
CE152R060	Install Underdrain - Stage 2 - Area 15	2	85	28-Apr-16	29-Apr-16	5-Day Constru...
CE152R070	Install Curb & Gutter - Stage 2 - Area 15	5	85	02-May-16	06-May-16	5-Day Constru...
CE152R080	Backfill Curb - Stage 2 - Area 15	2	85	09-May-16	10-May-16	5-Day Constru...
CE152R090	Place Base & Intermediate Asphalt - Stage 2 - Area 15	3	85	11-May-16	13-May-16	Base Paving
CE152R100	Construct Shared Use Path - Stage 2 - Area 15 (Phase B)	6	3	12-Sep-16	19-Sep-16	5-Day Constru...
CE152R110	Finish Grade & Stabilize - Stage 2 - Area 15	5	9	20-Sep-16	26-Sep-16	5-Day Constru...
CE152R120	Install Guardrail - Stage 2 - Area 15	2	9	27-Sep-16	28-Sep-16	5-Day Constru...
Stage 3		108	79	19-Oct-16	17-Mar-17	
Roadway		108	79	19-Oct-16	17-Mar-17	
CE153R010	Place Temporary Paving - Stage 3 - Area 15 RT	5	113	19-Oct-16	25-Oct-16	5-Day Constru...
CE153R020	Excavate / Widen Road / Embankment - Stage 3 - Area 15 RT	16	113	26-Oct-16	16-Nov-16	5-Day Constru...
CE153R030	Install Storm Drainage - Stage 3 - Area 15 RT	13	113	17-Nov-16	07-Dec-16	5-Day Constru...
CE153R040	Finegrade Subgrade - Stage 3 - Area 15 RT	4	113	08-Dec-16	13-Dec-16	5-Day Constru...
CE153R050	Place Stone Base - Stage 3 - Area 15 RT	3	72	14-Dec-16	16-Dec-16	Base Paving
CE153R060	Install Underdrain - Stage 3 - Area 15 RT	2	113	19-Dec-16	20-Dec-16	5-Day Constru...
CE153R070	Install Curb & Gutter - Stage 3 - Area 15 RT	5	113	21-Dec-16	04-Jan-17	5-Day Constru...
CE153R080	Backfill Curb - Stage 3 - Area 15 RT	2	113	05-Jan-17	06-Jan-17	5-Day Constru...
CE153R090	Place Base & Intermediate Asphalt - Stage 3 - Area 15 RT	6	76	01-Mar-17	08-Mar-17	Base Paving
CE153R100	Finish Grade & Stabilize - Stage 3 - Area 15 RT	5	76	09-Mar-17	15-Mar-17	5-Day Constru...
CE153R110	Install Guardrail - Stage 3 - Area 15 RT	2	76	16-Mar-17	17-Mar-17	5-Day Constru...

Remaining Level of Effort | Actual Work | Critical Remaining Work | Summary
Actual Level of Effort | Remaining Work | Milestone

TASK filter: All Activities

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
Route 606 Loudoun County Parkway / Old Ox Road Reconstruction Design/Build		832	0	19-Jun-14	08-Sep-17
Pre-Construction Activities		832	0	19-Jun-14	08-Sep-17
Project Milestones		832	0	19-Jun-14	08-Sep-17
GO1000000	Notice to Proceed	0	0	19-Jun-14	
GO1999999	Project Completion	0	0		08-Sep-17
GO1000020	VDOT Award Phase B	0	13		17-Dec-14
Project Management		28	0	07-Jul-15	13-Aug-15
GO2002030	Preparatory Meeting - Structure Backfill	1	0	13-Aug-15	13-Aug-15
GO2002190	Preparatory Meeting - Retaining Walls	1	0	07-Jul-15	07-Jul-15
Design		242	6	19-Jun-14	05-Jun-15
GO4000020	Recover Survey Control	10	0	31-Jul-14	13-Aug-14
GO4000030	Supplemental Field Survey	40	0	14-Aug-14	09-Oct-14
GO4000040	Supplemental Utility Designation / Location	40	0	14-Aug-14	09-Oct-14
GO4000050	Topo Verification (SWM Basin, Roadway Tie-ins)	40	0	14-Aug-14	09-Oct-14
GO4000070	Computer Work and DTM Preparation	20	0	10-Oct-14	06-Nov-14
GO4000010	Coordinate Survey Activities	20	0	02-Jul-14	30-Jul-14
GO4001150	A/C FI / ROW Plan Submittal (Address AI Team Comments)	10	0	21-Nov-14	05-Dec-14
GO4001160	QA/QC FI / ROW Plan Submittal (Final LD-436 Checklist)	2	0	04-Dec-14	05-Dec-14
GO4001170	FI / ROW Plan Submittal (Including H&HA and Drainage / SWM Report)	1	0	08-Dec-14	08-Dec-14
GO4001180	R/C FI / ROW Plan Submitall (VDOT/MWAA/DCMP)	21	0	09-Dec-14	29-Dec-14
GO4001200	A/C FI / ROW Plan (VDOT/MWAA/DCMP)	10	0	30-Dec-14	14-Jan-15
GO4000060	Boundary Surveys to Support ROW Acquisition Process	40	0	14-Aug-14	09-Oct-14
GO4000080	Update Survey Base Mapping with All Supplemental Survey Data	10	0	07-Nov-14	20-Nov-14
GO4000090	SFA Updated Survey Base Map	10	0	07-Nov-14	20-Nov-14
GO4000100	QA Updated Survey Base Map	2	0	19-Nov-14	20-Nov-14
GO4001240	FI / ROW Plan Submittal (VDOT)	1	0	15-Jan-15	15-Jan-15
GO4004090	R/C AFC Grading, Drainage & Noise Walls Plans/Reports Submittal - (VDOT/MWAA/DC...	21	0	03-Apr-15	23-Apr-15
GO4004040	Design QA of AFC Grading, Drainage & Noise Walls Plans/Reports	5	0	27-Feb-15	05-Mar-15
GO4004050	SFA AFC Grading, Drainage & Noise Walls Plans/Reports (Internal AI Team)	5	0	27-Feb-15	05-Mar-15
GO4004060	A/C AFC Grading, Drainage & Noise Walls Plans/Reports (Internal AI Team Comments)	15	0	06-Mar-15	26-Mar-15
GO4004070	Final QA/QC Verification of AFC Plans	5	0	27-Mar-15	02-Apr-15
GO4004080	Final ECD Verification of AFC Plans	5	0	27-Mar-15	02-Apr-15
GO4001210	A/C Preliminary H&HA and Drainage / SWM Report	10	0	30-Dec-14	14-Jan-15
GO4001220	A/C UFI Comments / Update Utility Easements	10	0	30-Dec-14	14-Jan-15
GO4004020	Advance Preliminary H&HA and Drainage / SWM Report to Final Report	30	0	16-Jan-15	26-Feb-15
GO4004110	A/C AFC Grading, Drainage & Noise Wall Plans/Reports	15	0	24-Apr-15	14-May-15
GO4004130	Final AFC Grading, Drainage & Noise Wall Plans/Reports Submittal	1	0	15-May-15	15-May-15
GO4004140	R/A Final AFC Grading, Drainage & Noise Wall Plans/Reports	21	2	16-May-15	05-Jun-15
GO4004000	Prepare Grading, Drainage & Noise Wall Plans	50	4	09-Dec-14	20-Feb-15
GO4004010	Incorporate Comments from FI / ROW Plans (VDOT/MWAA/DCMP)	20	4	26-Jan-15	20-Feb-15
GO4004030	Verify FDNAR with AFC Grading, Drainage & Noise Wall Plans	20	4	26-Jan-15	20-Feb-15
GO4001250	R/A FI / ROW Plans	21	7	16-Jan-15	05-Feb-15
GO4001260	VDOT (Chief Engineers) Provides Signature of FI / ROW Plans	5	7	06-Feb-15	10-Feb-15
GO4001230	QA/QC FI / ROW Plan Submittal (Final LD-436 Checklist)	2	8	30-Dec-14	31-Dec-14
GO4001010	Design QA PFI Submittal (Verify LD-436 Checklist)	5	10	21-Jul-14	25-Jul-14
GO4001020	SFA PFI Submittal	5	10	21-Jul-14	25-Jul-14
GO4001030	A/C PFI Submittal (Address AI Team Comments)	10	10	28-Jul-14	08-Aug-14
GO4001040	QA/QC PFI Submittal (Final LD-436 Checklist)	2	10	11-Aug-14	12-Aug-14
GO4001050	PFI Plan Submittal	1	10	13-Aug-14	13-Aug-14
GO4001080	Advance Plans to FI / ROW Plan Development Stage	40	10	28-Aug-14	23-Oct-14
GO4001090	Incorporate Review Comments (VDOT/MWAA/DCMP) from PFI Plan Submittal	20	10	26-Sep-14	23-Oct-14
GO4001120	Prepare FI / ROW Plan Submittal	5	10	24-Oct-14	30-Oct-14
GO4001130	Design QA FI / ROW Plan Submittal (Verify LD-436 Checklists)	5	10	31-Oct-14	06-Nov-14
GO4001140	SFA FI / ROW Plan Submittal (Internal AI Team)	5	10	31-Oct-14	06-Nov-14
GO4001100	A/C Pre-UFI Comments	15	10	03-Oct-14	23-Oct-14
GO4001110	Prepare Preliminary H&HA and Drainage / SWM Report	1	10	23-Oct-14	23-Oct-14
GO4001190	For Information Only FI / ROW Plan Submittal - Loudoun County	1	12	09-Dec-14	09-Dec-14
GO4004120	QA/QC AFC Grading, Drainage & Noise Wall Plans/Reports (Final LD-436 Checklist)	2	13	24-Apr-15	27-Apr-15
GO4004100	FIO AFC Grading, Drainage & Noise Walls Plans/Reports Submittal - Loudoun County	1	14	03-Apr-15	03-Apr-15
GO4001000	Prepare PFI Submittal	30	16	19-Jun-14	18-Jul-14

TASK filter: Near critical.

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
GO4001060	R/C PFI Plan Submital (VDOT / MWAA / DCMP)	21	17	14-Aug-14	03-Sep-14
GO4009000	Prepare Retaining Wall / Primary Spillway Extension Plan	40	18	09-Dec-14	06-Feb-15
GO4009010	Design QA Retaining Wall / Primary Spillway Extension Plan	5	18	09-Feb-15	13-Feb-15
GO4009020	SFA Retaining Wall / Primary Spillway Extension Plan (Internal AI Team)	5	18	16-Feb-15	20-Feb-15
GO4009030	A/C SFA Retaining Wall / Primary Spillway Extension Plan (AI Team Comments)	10	18	23-Feb-15	06-Mar-15
GO4009040	Retaining Wall / Primary Spillway Extension Plan Submittal	1	18	09-Mar-15	09-Mar-15
GO4009070	Prepare AFC Retaining Wall / Primary Spillway Extension Plan	30	18	10-Mar-15	20-Apr-15
GO4009080	Incorporate Retaining Wall / Primary Spillway Extension Plan Comments (VDOT/MWAA/D...	10	18	07-Apr-15	20-Apr-15
GO4009090	Design AFC QA Retaining Wall / Primary Spillway Extension Plan	5	18	21-Apr-15	27-Apr-15
GO4009100	SFA AFC Retaining Wall / Primary Spillway Extension Plan (Internal AI Team)	5	18	21-Apr-15	27-Apr-15
GO4009110	A/C AFC Retaining Wall / Primary Spillway Extension Plan (AI Team Comments)	10	18	28-Apr-15	11-May-15
GO4009120	Final QA/QC Verification of AFC Plans	5	18	12-May-15	18-May-15
GO4009130	Final ECD Verification of AFC Plans	5	18	12-May-15	18-May-15
GO4009140	AFC Retaining Wall / Primary Spillway Extension Plan Submittal	1	18	19-May-15	19-May-15
Public Involvement		29	0	19-Jun-14	30-Jul-14
GO5000010	Prepare Property Owner Notifications Letter	2	0	19-Jun-14	20-Jun-14
GO5000020	SFA Property Owner Notifications Letter	2	0	23-Jun-14	24-Jun-14
GO5000030	R/A Property Owner Notifications Letter	21	0	25-Jun-14	15-Jul-14
GO5000040	Distribute Property Owner Notification Letters	15	0	16-Jul-14	30-Jul-14
Permits / Environmental		206	7	31-Jul-14	27-May-15
GO6000080	Conduct Waters (Including Wetlands) Delineation Activities	15	7	31-Jul-14	20-Aug-14
GO6000090	Prepare Wetlands Mapping / Delineation Report	10	7	21-Aug-14	04-Sep-14
GO6000110	SFA Wetlands Delineation Report (Internal AI Team)	5	7	05-Sep-14	11-Sep-14
GO6000160	Update Wetlands Delineation Report	5	7	28-Oct-14	03-Nov-14
GO6000140	R/C Wetlands Delineation Report (USACE and VDOT)	30	7	16-Sep-14	27-Oct-14
GO6000150	Conduct Waters (Including Wetlands) Delineation Field Confirmations	30	7	16-Sep-14	27-Oct-14
GO6000120	A/C Wetlands Delineation Report (Address AI Team Comments)	2	7	12-Sep-14	15-Sep-14
GO6000170	SFA Updated Wetlands Delineation Report	2	7	04-Nov-14	05-Nov-14
GO6000180	Prepare Final Wetlands Delineation Report (Internal AI Team Comments)	2	7	06-Nov-14	07-Nov-14
GO6000200	R/A Final Wetlands Delineation Report	20	7	11-Nov-14	09-Dec-14
GO6000210	Prepare Joint Permit Application (Individual Permit)	20	7	10-Dec-14	12-Jan-15
GO6000190	Final Wetland Delineation Report Submittal	1	7	10-Nov-14	10-Nov-14
GO6000220	Design QA on Joint Permit Application (Individual Permit)	5	7	13-Jan-15	19-Jan-15
GO6000230	SFA Joint Permit Application (Individual Permit)	5	7	13-Jan-15	19-Jan-15
GO6000240	A/C Joint Permit Application (Address Internal AI Comments)	10	7	20-Jan-15	02-Feb-15
GO6000250	Joint Permit Application Submittal (VMRC/USACE/DEQ)	1	7	03-Feb-15	03-Feb-15
GO6000260	R/C Joint Permit Application	40	7	04-Feb-15	31-Mar-15
GO6000270	R/A Joint Permit Application	40	7	01-Apr-15	27-May-15
GO6000070	Confirm Cultural Resource Assessments Complete Using PFI Plans	10	10	14-Aug-14	27-Aug-14
GO6000100	QA Wetlands Delineation Report	2	10	05-Sep-14	08-Sep-14
Right-of-Way		185	1	09-Sep-14	04-Jun-15
GO7001000	Prepare Appraisals - Segment E	30	1	30-Dec-14	11-Feb-15
GO7001010	Prepare Appraisal Package - Segment E	5	1	12-Feb-15	18-Feb-15
GO7001020	Submit Appraisal Package - Segment E	5	1	12-Feb-15	18-Feb-15
GO7001030	R/A Appraisal Package - Segment E	21	1	19-Feb-15	11-Mar-15
GO7001040	Complete Initial Negotiation Contact with All Property Owners - Segment E	30	1	12-Mar-15	22-Apr-15
GO7001060	Submit RW-24 Reports on Refusals - Segment E	5	1	23-Apr-15	29-Apr-15
GO7001070	Submit RW-24 Reports on All Parcels - Segment E	15	1	30-Apr-15	20-May-15
GO7001080	Notice to Commence Construction - Right-of-Way - Segment E	10	1	21-May-15	04-Jun-15
GO7001050	Obtain Refusal/Acceptance on Parcels - Segment E	20	11	12-Mar-15	08-Apr-15
GO7000030	Conduct Phase 1 ESA - All Identified Property Takes	40	13	09-Sep-14	03-Nov-14
GO7000040	Conduct Title Research - All Identified Property Takes	40	13	09-Sep-14	03-Nov-14
Utility Adjustments		32	0	08-Jun-15	21-Jul-15
GO8000240	Relocate Utilities - Segment E - Verizon/Verizon South - Duct Bank	31	0	08-Jun-15	21-Jul-15
GO8000340	Relocate Utilities - Segment E - AT&T - Duct Bank	26	5	08-Jun-15	14-Jul-15
GO8000050	Relocate Utilities - Segment E - Loudoun Water - Water Lines	20	11	08-Jun-15	06-Jul-15
Procurement		21	0	08-Jun-15	06-Jul-15
GO9005030	Procure Grading / Drainage Package Vendors	20	0	08-Jun-15	06-Jul-15
Project Closeout		21	0	11-Aug-17	08-Sep-17
G10000010	Punchlist / De-mobilization	20	0	11-Aug-17	08-Sep-17
Construction		537	0	22-Jul-15	10-Aug-17

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
Segment E		537	0	22-Jul-15	10-Aug-17
General		247	0	31-Aug-16	10-Aug-17
CEG003010	Initial MOT Measures - Stage 3 - Segment E	5	0	12-Oct-16	18-Oct-16
CEG009010	Place Surface Course - Segment E	10	0	07-Jul-17	20-Jul-17
CEG009030	Erect Signs - Segment E	10	0	28-Jul-17	10-Aug-17
CEG001050	Install ITS Conduit - Stage 1 - Segment E	7	3	31-Aug-16	09-Sep-16
CEG009020	Pavement Markings - Segment E	4	11	21-Jul-17	26-Jul-17
Area 13 - Route 606 334+00 to 354+00		320	0	22-Jul-15	11-Oct-16
Stage 1		320	0	22-Jul-15	11-Oct-16
Roadway		137	0	04-Apr-16	11-Oct-16
CE131R020	Excavate / Widen Road / Embankment - Stage 1 - Area 13 LT	80	0	04-Apr-16	26-Jul-16
CE131R030	Install Storm Drainage - Stage 1 - Area 13 LT	9	0	27-Jul-16	08-Aug-16
CE131R040	Finegrade Subgrade - Stage 1 - Area 13 LT	7	0	09-Aug-16	17-Aug-16
CE131R050	Place Stone Base - Stage 1 - Area 13 LT	6	0	18-Aug-16	25-Aug-16
CE131R060	Install Underdrain - Stage 1 - Area 13 LT	3	0	26-Aug-16	30-Aug-16
CE131R090	Place Base & Intermediate Asphalt - Stage 1 - Area 13 LT	7	0	14-Sep-16	22-Sep-16
CE131R110	Finish Grade & Stabilize - Stage 1 - Area 13 LT	5	0	05-Oct-16	11-Oct-16
CE131R070	Install Curb & Gutter - Stage 1 - Area 13 LT	6	0	31-Aug-16	08-Sep-16
CE131R080	Backfill Curb - Stage 1 - Area 13 LT	3	0	09-Sep-16	13-Sep-16
CE131R100	Construct Shared Use Path - Stage 1 - Area 13 LT (Phase B)	8	0	23-Sep-16	04-Oct-16
Retaining Walls		253	12	22-Jul-15	08-Jul-16
Retaining Wall #2		38	12	18-Apr-16	08-Jun-16
CE131W210	Excavate - Retaining Wall #2 - Stage 1 - Area 13 LT	4	12	18-Apr-16	21-Apr-16
CE131W220	Construct - Retaining Wall #2 - Stage 1 - Area 13 LT	32	12	22-Apr-16	07-Jun-16
CE131W230	Backfill - Retaining Wall #2 - Stage 1 - Area 13 LT	1	12	08-Jun-16	08-Jun-16
Retaining Wall #3		164	12	01-Sep-15	15-Apr-16
CE131W310	Excavate - Retaining Wall #3 - Stage 1 - Area 13 LT	5	0	01-Sep-15	08-Sep-15
CE131W320	Construct - Retaining Wall #3 - Stage 1 - Area 13 LT	140	0	09-Sep-15	01-Apr-16
CE131W330	Backfill - Retaining Wall #3 - Stage 1 - Area 13 LT	10	12	04-Apr-16	15-Apr-16
Retaining Wall #4		29	0	22-Jul-15	31-Aug-15
CE131W410	Excavate - Retaining Wall #4 - Stage 1 - Area 13 LT	2	0	22-Jul-15	23-Jul-15
CE131W420	Construct - Retaining Wall #4 - Stage 1 - Area 13 LT	25	0	24-Jul-15	27-Aug-15
CE131W430	Backfill - Retaining Wall #4 - Stage 1 - Area 13 LT	2	0	28-Aug-15	31-Aug-15
Retaining Wall #5		22	12	09-Jun-16	08-Jul-16
CE131W510	Excavate - Retaining Wall #5 - Stage 1 - Area 13 LT	4	12	09-Jun-16	14-Jun-16
CE131W520	Construct - Retaining Wall #5 - Stage 1 - Area 13 LT	16	12	15-Jun-16	07-Jul-16
CE131W530	Backfill - Retaining Wall #5 - Stage 1 - Area 13 LT	1	12	08-Jul-16	08-Jul-16
Area 14 - 354+00 to 357+00 (Horsepen Dam Area)		187	0	19-Oct-16	06-Jul-17
Bridge over Horsepen Dam		187	0	19-Oct-16	06-Jul-17
Stage 2		187	0	19-Oct-16	06-Jul-17
General Activities		187	0	19-Oct-16	06-Jul-17
CE14B2A010	Begin - Bridge B686	0	0	19-Oct-16	
CE14B2A040	VDOT Safety and Acceptance Inspection - Bridge B686	5	0	28-Jun-17	06-Jul-17
Substructure		87	0	19-Oct-16	16-Feb-17
CE14B2BA00	Structural Excavation - Abutment A - Bridge B686	2	0	19-Oct-16	20-Oct-16
CE14B2BA10	Drilled Shafts - Abutment A - Bridge B686	15	0	21-Oct-16	10-Nov-16
CE14B2BB10	Drilled Shafts - Abutment B - Bridge B686	15	0	06-Dec-16	03-Jan-17
CE14B2BB20	F/R/P Footing - Abutment B - Bridge B686	5	0	04-Jan-17	10-Jan-17
CE14B2BB30	Cure Footing - Abutment B - Bridge B686	7	0	11-Jan-17	19-Jan-17
CE14B2BB40	F/R/P Stem - Abutment B - Bridge B686	10	0	20-Jan-17	02-Feb-17
CE14B2BB50	Cure Stem - Abutment B - Bridge B686	7	0	03-Feb-17	13-Feb-17
CE14B2BB60	Backfill - Abutment B - Bridge B686	3	0	14-Feb-17	16-Feb-17
CE14B2BP20	Drilled Shafts - Pier 1 - Bridge B686	15	0	11-Nov-16	05-Dec-16
CE14B2BP30	F/R/P Footing - Pier 1 - Bridge B686	4	6	06-Dec-16	09-Dec-16
CE14B2BP40	Cure Footing - Pier 1 - Bridge B686	7	6	12-Dec-16	20-Dec-16
CE14B2BP50	F/R/P Column - Pier 1 - Bridge B686	10	6	21-Dec-16	11-Jan-17
CE14B2BP60	Cure Column - Pier 1 - Bridge B686	7	6	12-Jan-17	20-Jan-17
CE14B2BP70	F/R/P Cap - Pier 1 - Bridge B686	5	6	23-Jan-17	27-Jan-17
CE14B2BP80	Cure Cap - Pier 1 - Bridge B686	7	6	30-Jan-17	07-Feb-17
CE14B2BP90	Backfill - Pier 1 - Bridge B686	1	6	08-Feb-17	08-Feb-17
CE14B2BP10	Structural Excavation - Pier 1 - Bridge B686	2	15	19-Oct-16	20-Oct-16

TASK filter: Near critical.

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
Superstructure		93	0	17-Feb-17	27-Jun-17
CE14B2C010	Erect Beams - Span a - Bridge B686	4	0	17-Feb-17	22-Feb-17
CE14B2C020	Erect Beams - Span b - Bridge B686	4	0	23-Feb-17	28-Feb-17
CE14B2C030	F/R/P End Closure - East - Bridge B686	5	0	01-Mar-17	07-Mar-17
CE14B2C050	F/R/P End Closure - West - Bridge B686	5	0	08-Mar-17	14-Mar-17
CE14B2C060	Cure End Closure - West - Bridge B686	7	0	15-Mar-17	23-Mar-17
CE14B2C070	F/R Deck - Span a - Bridge B686	12	0	24-Mar-17	10-Apr-17
CE14B2C080	F/R Deck - Span b - Bridge B686	12	0	11-Apr-17	26-Apr-17
CE14B2C090	Pour Deck - Span a - Bridge B686	1	0	27-Apr-17	27-Apr-17
CE14B2C100	Pour Deck - Span b - Bridge B686	1	0	28-Apr-17	28-Apr-17
CE14B2C120	Cure Deck - Span b - Bridge B686	7	0	01-May-17	09-May-17
CE14B2C160	F/R/P Approach Slab - East - Bridge B686	6	0	10-May-17	17-May-17
CE14B2C180	F/R/P Approach Slab - West - Bridge B686	6	0	18-May-17	25-May-17
CE14B2C190	Cure Approach Slab - West - Bridge B686	7	0	26-May-17	06-Jun-17
CE14B2C130	F/R/P BR27C Railing Wall - Bridge B686	10	0	07-Jun-17	20-Jun-17
CE14B2C140	Install BR27C Steel Rail - Bridge B686	3	0	21-Jun-17	23-Jun-17
CE14B2C200	Groove Deck & Approach Slab - Bridge B686	2	0	26-Jun-17	27-Jun-17
CE14B2C170	Cure Approach Slab - East - Bridge B686	7	6	18-May-17	26-May-17
CE14B2C110	Cure Deck - Span a - Bridge B686	7	7	28-Apr-17	08-May-17
CE14B2C150	Install Pedestrian Fence - Bridge B686	2	11	07-Jun-17	08-Jun-17
CE14B2C040	Cure End Closure - East - Bridge B686	7	17	08-Mar-17	16-Mar-17
Area 15 - Route 606 357+00 to 366+75		13	9	12-Sep-16	28-Sep-16
Stage 2		13	9	12-Sep-16	28-Sep-16
Roadway		13	9	12-Sep-16	28-Sep-16
CE152R100	Construct Shared Use Path - Stage 2 - Area 15 (Phase B)	6	3	12-Sep-16	19-Sep-16
CE152R110	Finish Grade & Stabilize - Stage 2 - Area 15	5	9	20-Sep-16	26-Sep-16
CE152R120	Install Guardrail - Stage 2 - Area 15	2	9	27-Sep-16	28-Sep-16

WBS Code	WBS Name	Start	Finish	Total Activities
C00097529DB64	Route 606 Loudoun County Parkway / Old Ox Road Reconstruction Design/...	19-Jun-14	08-Sep-17	908
C00097529DB64.GO	Pre-Construction Activities	19-Jun-14	08-Sep-17	438
C00097529DB64.GO.01	Project Milestones	19-Jun-14	08-Sep-17	4
C00097529DB64.GO.02	Project Management	19-Jun-14	13-Mar-17	80
C00097529DB64.GO.03	Scope Validation Period	19-Jun-14	15-Dec-14	3
C00097529DB64.GO.04	Design	19-Jun-14	01-Jul-15	197
C00097529DB64.GO.05	Public Involvement	19-Jun-14	21-May-...	7
C00097529DB64.GO.06	Permits / Environmental	19-Jun-14	27-May-...	27
C00097529DB64.GO.07	Right-of-Way	19-Jun-14	14-Aug-15	53
C00097529DB64.GO.08	Utility Adjustments	08-Jun-15	05-Nov-15	22
C00097529DB64.GO.09	Procurement	20-Mar-15	12-Apr-16	44
C00097529DB64.GO.10	Project Closeout	11-Aug-17	08-Sep-17	1
C00097529DB64.C	Construction	08-Jul-15	10-Aug-17	470
C00097529DB64.C.A	Segment A	12-Oct-15	10-Apr-17	70
C00097529DB64.C.A.G	General	12-Oct-15	10-Apr-17	13
C00097529DB64.C.A.01	Area 1 - Loudoun Co. Parkway 489+06 to 510+00	08-Jan-16	14-Dec-16	27
C00097529DB64.C.A.01.1	Stage 1	08-Jan-16	25-Mar-16	8
C00097529DB64.C.A.01.1.R	Roadway	08-Jan-16	25-Mar-16	8
C00097529DB64.C.A.01.2	Stage 2	04-Apr-16	01-Jul-16	10
C00097529DB64.C.A.01.2.R	Roadway	04-Apr-16	01-Jul-16	10
C00097529DB64.C.A.01.3	Stage 3	07-Oct-16	14-Dec-16	9
C00097529DB64.C.A.01.3.R	Roadway	07-Oct-16	14-Dec-16	9
C00097529DB64.C.A.02	Area 2 - Loudoun Co. Parkway 510+00 to Rt. 606 Conn. 85+00	04-Apr-16	14-Dec-16	15
C00097529DB64.C.A.02.1	Stage 1	04-Apr-16	22-Jul-16	8
C00097529DB64.C.A.02.1.R	Roadway	04-Apr-16	22-Jul-16	8
C00097529DB64.C.A.02.2	Stage 2	07-Oct-16	14-Dec-16	7
C00097529DB64.C.A.02.2.R	Roadway	07-Oct-16	14-Dec-16	7
C00097529DB64.C.A.03	Area 3 - Rt. 606 Conn. 85+00 to Route 606 155+00	02-May-...	06-Jan-17	15
C00097529DB64.C.A.03.1	Stage 1	02-May-...	01-Aug-16	8
C00097529DB64.C.A.03.1.R	Roadway	02-May-...	01-Aug-16	8
C00097529DB64.C.A.03.2	Stage 2	28-Oct-16	06-Jan-17	7
C00097529DB64.C.A.03.2.R	Roadway	28-Oct-16	06-Jan-17	7
C00097529DB64.C.B	Segment B	19-Oct-15	20-Apr-17	52
C00097529DB64.C.B.G	General	19-Oct-15	20-Apr-17	12
C00097529DB64.C.B.04	Area 4 - Route 606 155+00 to 177+00	25-Nov-15	14-Mar-17	22
C00097529DB64.C.B.04.1	Stage 1	25-Nov-15	11-Jul-16	12
C00097529DB64.C.B.04.1.R	Roadway	04-Mar-16	11-Jul-16	8
C00097529DB64.C.B.04.1.C	Culvert 2076	25-Nov-15	03-Mar-16	4
C00097529DB64.C.B.04.2	Stage 2	11-Oct-16	14-Mar-17	10
C00097529DB64.C.B.04.2.R	Roadway	24-Oct-16	14-Mar-17	7
C00097529DB64.C.B.04.2.C	Culvert 2076	11-Oct-16	21-Oct-16	3
C00097529DB64.C.B.05	Area 5 - Route 606 177+00 to 199+00	01-Apr-16	30-Mar-17	18
C00097529DB64.C.B.05.1	Stage 1	01-Apr-16	25-Jul-16	10
C00097529DB64.C.B.05.1.R	Roadway	01-Apr-16	25-Jul-16	10
C00097529DB64.C.B.05.2	Stage 2	17-Nov-16	30-Mar-17	8
C00097529DB64.C.B.05.2.R	Roadway	17-Nov-16	30-Mar-17	8
C00097529DB64.C.C	Segment C	06-Nov-15	15-May-...	74
C00097529DB64.C.C.G	General	06-Nov-15	15-May-...	11
C00097529DB64.C.C.06	Area 6 - Route 606 199+00 to 221+00	13-Jan-16	12-Jan-17	18
C00097529DB64.C.C.06.1	Stage 1	13-Jan-16	27-Jun-16	10
C00097529DB64.C.C.06.1.R	Roadway	13-Jan-16	27-Jun-16	10
C00097529DB64.C.C.06.2	Stage 2	11-Oct-16	12-Jan-17	8
C00097529DB64.C.C.06.2.R	Roadway	11-Oct-16	12-Jan-17	8
C00097529DB64.C.C.07	Area 7 - Route 606 221+00 to 241+00	13-Jan-16	17-Apr-17	22
C00097529DB64.C.C.07.1	Stage 1	13-Jan-16	12-Jul-16	12

WBS Code	WBS Name	Start	Finish	Total Activities
C00097529DB64.C.C.07.1.R	Roadway	13-Jan-16	12-Jul-16	11
C00097529DB64.C.C.07.1.S	Soundwalls	13-Jan-16	09-May-...	1
C00097529DB64.C.C.07.1.S.3	Soundwall A3	13-Jan-16	09-May-...	1
C00097529DB64.C.C.07.2	Stage 2	08-Nov-16	17-Apr-17	10
C00097529DB64.C.C.07.2.R	Roadway	08-Nov-16	17-Apr-17	10
C00097529DB64.C.C.08	Area 8 - Route 606 241+00 to 262+00	13-Jan-16	17-Apr-17	23
C00097529DB64.C.C.08.1	Stage 1	13-Jan-16	03-Oct-16	13
C00097529DB64.C.C.08.1.R	Roadway	13-Jan-16	03-Oct-16	11
C00097529DB64.C.C.08.1.S	Soundwalls	10-May-...	12-Sep-16	2
C00097529DB64.C.C.08.1.S.2	Soundwall A2	06-Jul-16	12-Sep-16	1
C00097529DB64.C.C.08.1.S.1	Soundwall A1	10-May-...	05-Jul-16	1
C00097529DB64.C.C.08.2	Stage 2	06-Dec-16	17-Apr-17	10
C00097529DB64.C.C.08.2.R	Roadway	06-Dec-16	17-Apr-17	10
C00097529DB64.C.D	Segment D	11-Nov-15	28-Jun-17	85
C00097529DB64.C.D.G	General	11-Nov-15	28-Jun-17	12
C00097529DB64.C.D.09	Area 9 - Route 606 262+00 to 280+00	14-Jan-16	09-Jan-17	15
C00097529DB64.C.D.09.1	Stage 1	14-Jan-16	18-Aug-16	8
C00097529DB64.C.D.09.1.R	Roadway	14-Jan-16	18-Aug-16	8
C00097529DB64.C.D.09.2	Stage 2	11-Oct-16	09-Jan-17	7
C00097529DB64.C.D.09.2.R	Roadway	11-Oct-16	09-Jan-17	7
C00097529DB64.C.D.10	Area 10 - Route 606 280+00 to 298+00	18-Feb-16	10-Apr-17	19
C00097529DB64.C.D.10.1	Stage 1	18-Feb-16	01-Sep-16	10
C00097529DB64.C.D.10.1.R	Roadway	18-Feb-16	01-Sep-16	10
C00097529DB64.C.D.10.2	Stage 2	15-Nov-16	10-Apr-17	9
C00097529DB64.C.D.10.2.R	Roadway	15-Nov-16	10-Apr-17	9
C00097529DB64.C.D.11	Area 11 - Route 606 298+00 to 316+00	28-Mar-16	13-Apr-17	19
C00097529DB64.C.D.11.1	Stage 1	28-Mar-16	14-Sep-16	10
C00097529DB64.C.D.11.1.R	Roadway	28-Mar-16	14-Sep-16	10
C00097529DB64.C.D.11.2	Stage 2	22-Dec-16	13-Apr-17	9
C00097529DB64.C.D.11.2.R	Roadway	22-Dec-16	13-Apr-17	9
C00097529DB64.C.D.12	Area 12 - Route 606 316+00 to 334+00	05-May-...	25-May-...	20
C00097529DB64.C.D.12.1	Stage 1	05-May-...	23-Sep-16	10
C00097529DB64.C.D.12.1.R	Roadway	05-May-...	23-Sep-16	10
C00097529DB64.C.D.12.2	Stage 2	08-Feb-17	25-May-...	10
C00097529DB64.C.D.12.2.R	Roadway	08-Feb-17	25-May-...	10
C00097529DB64.C.E	Segment E	08-Jul-15	10-Aug-17	189
C00097529DB64.C.E.G	General	31-Aug-15	10-Aug-17	10
C00097529DB64.C.E.13	Area 13 - Route 606 334+00 to 354+00	08-Jul-15	11-Apr-17	47
C00097529DB64.C.E.13.1	Stage 1	08-Jul-15	11-Oct-16	34
C00097529DB64.C.E.13.1.R	Roadway	09-Oct-15	11-Oct-16	11
C00097529DB64.C.E.13.1.D	Dam Modifications	08-Jul-15	24-Sep-15	4
C00097529DB64.C.E.13.1.W	Retaining Walls	22-Jul-15	08-Jul-16	12
C00097529DB64.C.E.13.1.W.2	Retaining Wall #2	18-Apr-16	08-Jun-16	3
C00097529DB64.C.E.13.1.W.3	Retaining Wall #3	01-Sep-15	15-Apr-16	3
C00097529DB64.C.E.13.1.W.4	Retaining Wall #4	22-Jul-15	31-Aug-15	3
C00097529DB64.C.E.13.1.W.5	Retaining Wall #5	09-Jun-16	08-Jul-16	3
C00097529DB64.C.E.13.1.S	Spillway Modifications	22-Jul-15	24-Sep-15	5
C00097529DB64.C.E.13.1.X	Water Sampling Station	18-Apr-16	27-May-...	2
C00097529DB64.C.E.13.2	Stage 2	19-Oct-16	11-Apr-17	13
C00097529DB64.C.E.13.2.R	Roadway	19-Oct-16	11-Apr-17	10
C00097529DB64.C.E.13.2.W	Retaining Walls	19-Oct-16	26-Jan-17	3
C00097529DB64.C.E.13.2.W.1	Retaining Wall #1	19-Oct-16	26-Jan-17	3
C00097529DB64.C.E.14	Area 14 - 354+00 to 357+00 (Horsepen Dam Area)	09-Oct-15	06-Jul-17	100
C00097529DB64.C.E.14.B	Bridge over Horsepen Dam	09-Oct-15	06-Jul-17	100
C00097529DB64.C.E.14.B.1	Stage 1	09-Oct-15	26-Aug-16	50

WBS Code	WBS Name	Start	Finish	Total Activities
C00097529DB64.C.E.14.B.1.A	General Activities	09-Oct-15	26-Aug-16	4
C00097529DB64.C.E.14.B.1.B	Substructure	09-Oct-15	01-Mar-16	25
C00097529DB64.C.E.14.B.1.C	Superstructure	06-Apr-16	24-Aug-16	21
C00097529DB64.C.E.14.B.2	Stage 2	19-Oct-16	06-Jul-17	50
C00097529DB64.C.E.14.B.2.A	General Activities	19-Oct-16	06-Jul-17	4
C00097529DB64.C.E.14.B.2.B	Substructure	19-Oct-16	16-Feb-17	25
C00097529DB64.C.E.14.B.2.C	Superstructure	17-Feb-17	27-Jun-17	21
C00097529DB64.C.E.15	Area 15 - Route 606 357+00 to 366+75	09-Oct-15	17-Mar-17	32
C00097529DB64.C.E.15.1	Stage 1	09-Oct-15	30-Mar-16	9
C00097529DB64.C.E.15.1.R	Roadway	09-Oct-15	30-Mar-16	9
C00097529DB64.C.E.15.2	Stage 2	07-Apr-16	28-Sep-16	12
C00097529DB64.C.E.15.2.R	Roadway	07-Apr-16	28-Sep-16	12
C00097529DB64.C.E.15.3	Stage 3	19-Oct-16	17-Mar-17	11
C00097529DB64.C.E.15.3.R	Roadway	19-Oct-16	17-Mar-17	11

Appendix 4.1.7
Proposal Payment Agreement

ATTACHMENT 9.3.1
PROPOSAL PAYMENT AGREEMENT

THIS PROPOSAL PAYMENT AGREEMENT (this "Agreement") is made and entered into as of this 24th day of March, 2014, by and between the Virginia Department of Transportation ("VDOT"), and American Infrastructure-VA, Inc. ("Offeror").

WITNESSETH:

WHEREAS, Offeror is one of the entities who submitted Statements of Qualifications ("SOQs") pursuant to VDOT's July 12, 2013 Request for Qualifications ("RFQ") and was invited to submit proposals in response to a Request for Proposals ("RFP") for the Route 606 Loudoun County Parkway/Old Ox Road Reconstruction and Widening, **Project No. 0606-053-983** ("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 **Forty Thousand and 00/100 Dollars ($40,000.00)** ("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: _____

AMERICAN INFRASTRUCTURE-VA, INC.

By: _____

Name: Aaron T. Myers

Title: Vice President/General Manager

Appendix 4.1.8
Certification Regarding Debarment Forms

ATTACHMENT 11.8.6(a)
CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS

Project No.: 0606-053-983

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.

3/21/14

Signature Aaron T. Myers Date

Vice President/General Manager
Title

AMERICAN INFRASTRUCTURE-VA, INC.
Name of Firm

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

Project No.: 0606-053-983

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.

Charles E. Powell 03/19/14 Principal

Signature Date Title

Charles E. Powell

Bowman Consulting Group

Name of Firm

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

Project No.: 0606-053-983

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.

Paul Schaaf 3-18-14 ROW PROGRAM MGR.

Signature Date Title

CONTINENTAL ACQUISITION SERVICES, INC.

Name of Firm

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

Project No.: 0606-053-983

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

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

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

Signature	3/18/2014 Date	President and CEO Title

DMY Engineering Consultants Inc.
Name of Firm

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

Project No.: 0606-053-983

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.

Samuel H. Kirby, Jr. 3/18/2014 President
Signature Date Title

Froehling & Robertson, Inc.
Name of Firm

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

Project No.: 0606-053-983

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

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

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

Signature	March 18, 2014 Date	Senior Vice President Title

Gannett Fleming, Inc.
Name of Firm

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

Project No.: 0606-053-983

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

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

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

Signature | Date | Title

3/19/14

On-Time Utility Solutions, LLC.

Name of Firm

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

Project No.: 0606-053-983

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

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

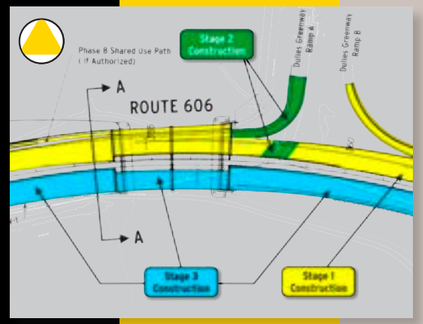
The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

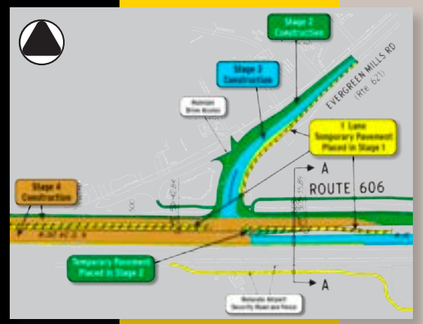
Signature	Date	Title
	3-18-14	DIRECTOR

RUMMEL, KLEPPER & KAHL, LLP
Name of Firm

American Infrastructure
301 Concourse Blvd.
Suite 300
Glen Allen, VA 23059
804-290-8500

Rummer Klepper & Kahl
10306 Eaton Place
Willow Wood II, Suite 240
Fairfax, VA 22030
703-246-0028





VDOT
Virginia Department of Transportation

Technical Proposal – Volume II

A DESIGN-BUILD PROJECT

Route 606 Loudoun County Parkway/Old Ox Road Reconstruction and Widening

From: 0.265 Miles South of Route 621 Evergreen Mills Road

To: 0.073 Miles South of Route 267 Dulles Greenway

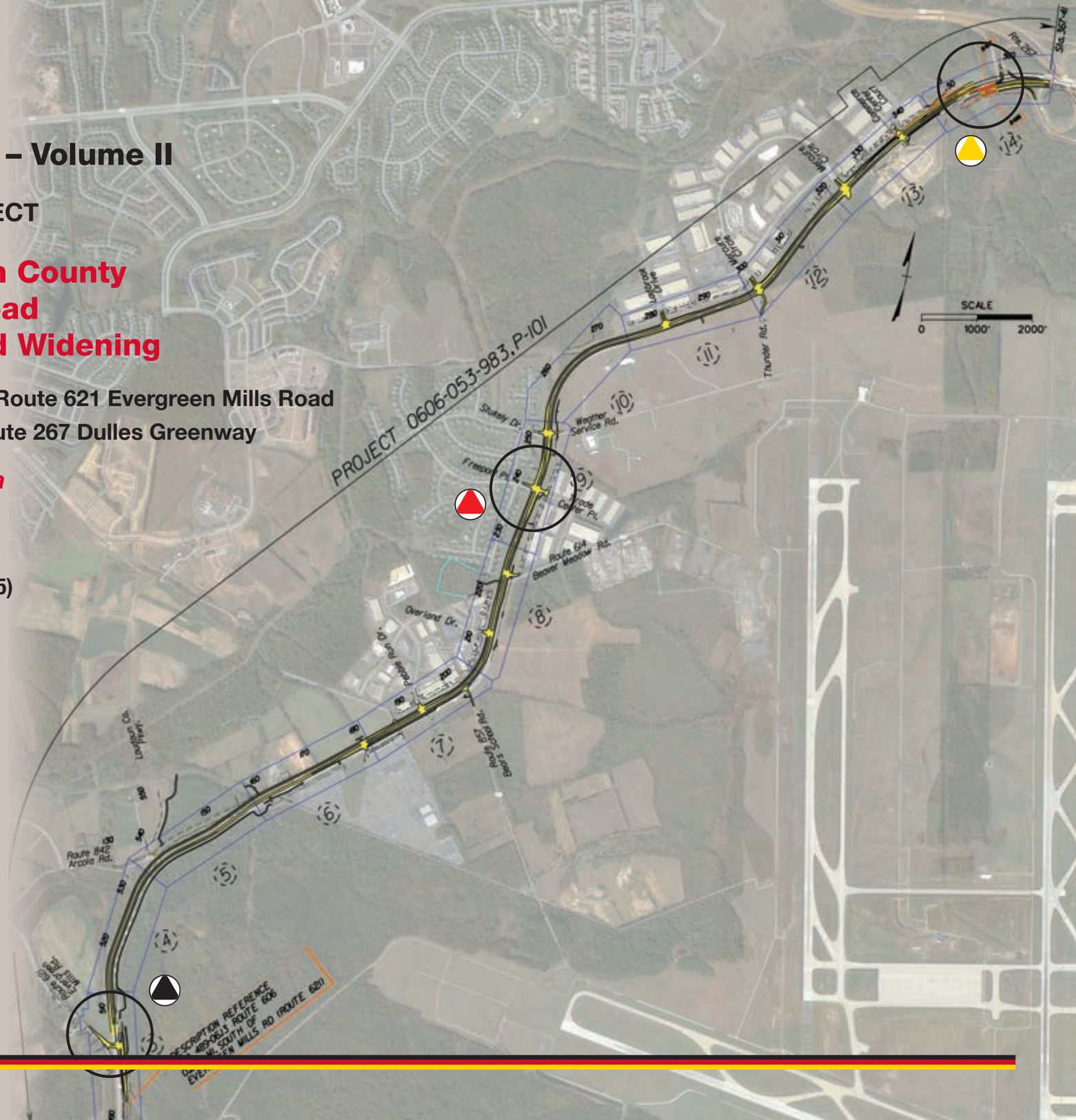
Loudoun County, Virginia

State Project No.: 0606-053-983

Federal Project No.: FPN 5A01(165)

Contract ID No.: C00097529DB64

Date: March 24, 2014



American Infrastructure

RK&K

4.3.1
Conceptual Roadway Plans

THIS PROJECT WAS DEVELOPED UTILIZING GEOPAK DESIGN SOFTWARE
GEOPAK COMPUTER IDENTIFICATION NO. 97529

FHWA 534 DATA 4H003

FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.		606	(NFO) 0606-053-983, P-101 See Tabulation Below For Section Numbers	1

CONVENTIONAL SIGNS

STATE LINE
COUNTY LINE
CITY,TOWN OR VILLAGE
RIGHT OF WAY LINE
FENCE LINE
UNFENCED PROPERTY LINE
FENCED PROPERTY LINE
WATER LINE
SANITARY SEWER LINE
GAS LINE
ELECTRIC UNDERGROUND CABLE
TRAVELED WAY
GUARD RAIL
RETAINING WALL
RAILROADS
LEVEE OR EMBANKMENT
BRIDGES
CULVERTS
DROP INLET
POWER POLES
TELEPHONE OR TELEGRAPH POLES
TELEPHONE OR TELEGRAPH LINES
HEDGE
TREES
HEAVY WOODS
GROUND ELEVATION
GRADE ELEVATION
BASE OR SURVEY LINE

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF PROPOSED STATE HIGHWAY

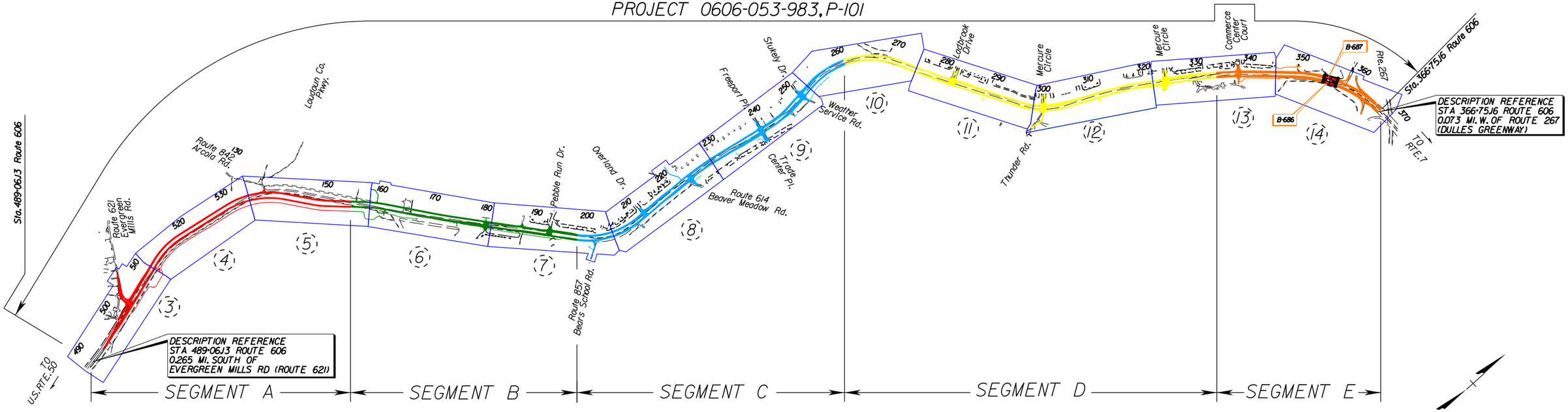
LOUDOUN COUNTY
ROUTE 606 LOUDOUN CO.PKWY./OLD OX RD. RECONSTRUCTION
FROM: 0.265 MI. S. OF EVERGREEN MILLS ROAD
TO: 0.073 MI. S. OF ROUTE 267 (DULLES GREENWAY)

PROJECT 0606-053-983, P-101

FUNCTIONAL CLASSIFICATION AND TRAFFIC DATA		
NON-NHS, URBAN MINOR ARTERIAL - ROLLING - 60 MPH DESIGN SPEED, VDOT STD. GS-6		
	Fr: 0.06 Mi. S. of Evergreen Mills Rd (Route 621) To: Loudoun Co. Pkwy. / Route 842 Arcola Rd.	Fr: Loudoun Co. Pkwy. / Route 842 Arcola Rd. To: Dulles Greenway (Route 267)
ADT 2013	22,500	24,500
ADT 2036	35,500	38,500
DHV	3,195	3,250
D (%) (design hour)	70%	65%
T (%) (design hour)	9%	12%
V (MPH)	*	*

* See Geometric Layout Sheets For Horizontal Design Speed. See Profile Sheets For Vertical Design Speed & Superelevation Transition.

All Traffic Data Provided By VDOT



SCALE
0 1000' 2000'

THE COMPLETE ELECTRONIC PDF VERSION OF THE PLAN ASSEMBLY AS AWARDED HAS BEEN SEALED AND SIGNED USING DIGITAL SIGNATURES AND THE OFFICIAL PLAN ASSEMBLY IN ELECTRONIC FORMAT IS STORED IN THE VDOT CENTRAL OFFICE PLAN LIBRARY, INCLUDING ALL SUBSEQUENT REVISIONS, WILL BE THE OFFICIAL CONSTRUCTION PLANS. FOR INFORMATION RELATIVE TO ELECTRONIC FILES AND LAYERED PLANS, SEE THE GENERAL NOTES.

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT.

THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT'S 2007 ROAD AND BRIDGE SPECIFICATIONS, 2008 ROAD AND BRIDGE STANDARDS, 2009 MUTCD, 2011 VIRGINIA SUPPLEMENT TO THE MUTCD, 2011 VIRGINIA WORK AREA PROTECTION MANUAL AND AS AMENDED BY CONTRACT PROVISIONS AND THE COMPLETE ELECTRONIC .PDF VERSION OF THE PLAN ASSEMBLY.

ALL CURVES ARE TO BE SUPERELEVATED, TRANSITIONED, AND WIDENED IN ACCORDANCE WITH STANDARD TC-5J1R EXCEPT WHERE OTHERWISE NOTED.

THE ORIGINAL APPROVED TITLE SHEET(S), INCLUDING ORIGINAL SIGNATURES, IS FILED IN THE VDOT CENTRAL OFFICE PLAN LIBRARY. ANY MISUSE OF ELECTRONIC FILES, INCLUDING SCANNED SIGNATURES, IS ILLEGAL AND ENFORCED TO THE FULL EXTENT OF THE LAW.

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

Loudoun County
Population 312,311 (2010 Census)

STATE PROJECT NO.	SECTION	FEDERAL AID PROJECT NO.	TYPE CODE	UPC NO.	EQUALITIES	LENGTH INCLUDING BRIDGE(S)		LENGTH EXCLUDING BRIDGE(S)		TYPE PROJECT	DESCRIPTION
					FEET	FEET	MILES	FEET	MILES		
0606-053-983	P-101			97529		27713.47	5.249	27457.47	5.200	Prel. Engineering	FR: 0.265 MI. S. OF EVERGREEN MILLS RD. (ROUTE 621) TO: 0.073 MI. W. OF ROUTE 267 (DULLES GREENWAY)

REVISED

American Infrastructure
RK&K
VDOT Virginia Department of Transportation

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
	0606-053-983		1 of 20

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

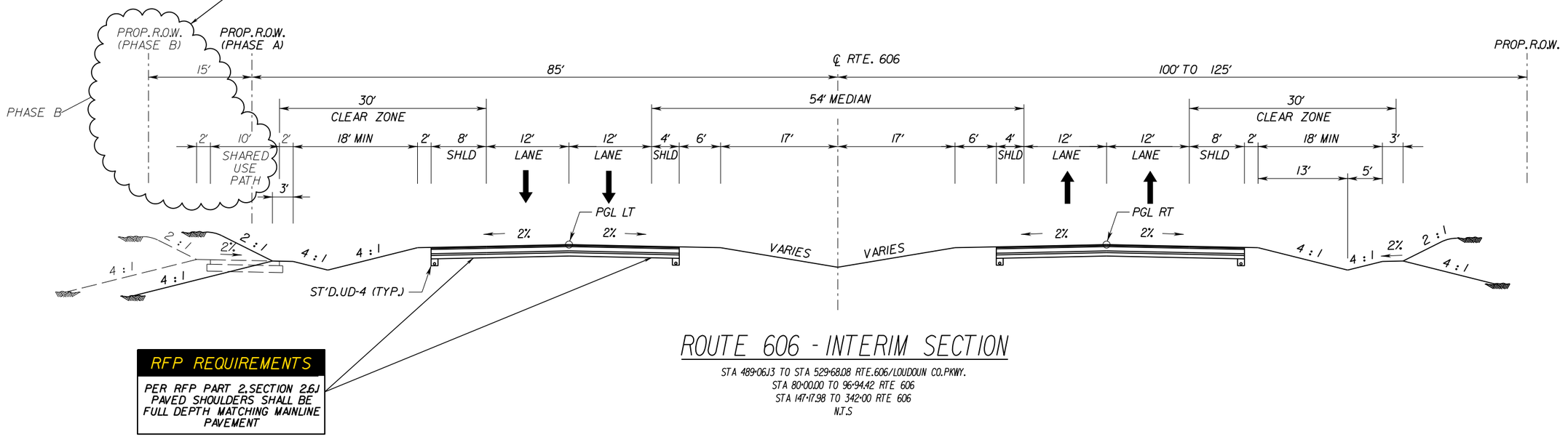
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	606	0606-053-983	2

TYPICAL SECTIONS

DESIGN SPEED = 60 MPH
URBAN MINOR ARTERIAL (GS-6)

RFP REQUIREMENTS

PER RFP PART 2,SECTION 12 PHASE B DESIGN IS INCLUDED WITH PHASE A AS STAND-ALONE PLANS.PHASE B CONSTRUCTION TO BE UNDERTAKEN IF AUTHORIZED BY VDOT WITHIN 6 MONTHS OF NTP

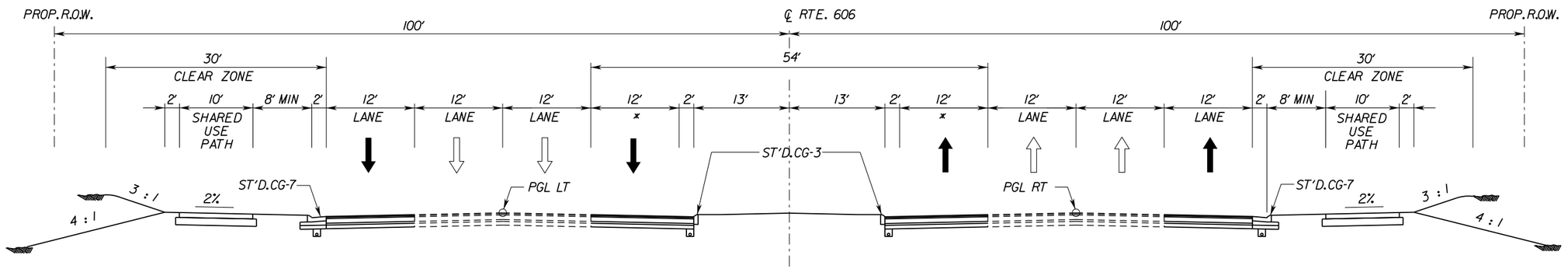


ROUTE 606 - INTERIM SECTION

STA 489+06.13 TO STA 529+68.08 RTE.606/LOUDOUN CO.PKWY.
STA 80+00.00 TO 96+94.42 RTE 606
STA 147+17.98 TO 342+00 RTE 606
N.T.S

RFP REQUIREMENTS

PER RFP PART 2,SECTION 2.6J PAVED SHOULDERS SHALL BE FULL DEPTH MATCHING MAINLINE PAVEMENT



* POTENTIAL MULTIMODAL USE

ROUTE 606 - ULTIMATE SECTION

(NOT IN CONTRACT - FOR INFORMATION ONLY)

NOTE:TYPICAL SECTIONS FOR SIDE ROADS ARE AS PER RFP PACKAGE

3/21/2014

	PROJECT	SHEET NO.
	0606-053-983	2 of 20

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	606	0606-053-983	3

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

LEGEND

- PHASE A ROADWAY IMPROVEMENTS
- PHASE B SHARED USE PATH
- PROPOSED SWM FACILITY
- PROPOSED SOUND WALL
- PROPOSED GUARDRAIL
- PROPOSED R/W
- PROPOSED EASEMENT
- LIMITS OF CONSTRUCTION
- PROPOSED RETAINING WALL
- EXISTING ELECTRIC TRANSMISSION POLE

NOTE: TEMPORARY CONSTRUCTION EASEMENTS NOT SHOWN

SCALE 0 80' 160'

ROUTE 621 - EVERGREEN MILLS ROAD

RFP REQUIREMENTS
PER RFP PART I, SECTION I.3 SHARED USE PATH TO BE DESIGNED AS SEPARATE PLAN PACKAGE. CONSTRUCTION IF PHASE B AUTHORIZED

DESIGN CONCEPT
SEE TECHNICAL PROPOSAL VOLUME I FOR CONSTRUCTION SEQUENCE

PROP. 10' SHARED USE PATH (PHASE B)

MATCH LINE - STA 487+50.00

CL RTE.606/LOUDOUN CO.PKWY.

PC 490+53.03

PT 494+32.65

PC 501+42.84

PT 505+35.89

CURVE NO.15

N 70° 04' 45" E

N 54° 26' W

N 70° 04' 31" W

EXIST.R/W

PGL LT

48'

PROP.R/W

ROUTE 606 W.B.

ROUTE 606 E.B.

36'

24'

48'

PROP.GUARDRAIL

PROP.PERM.ROADWAY ESM'T.

PGL RT

CURVE NO.16

EXIST.R/W

BASIN A

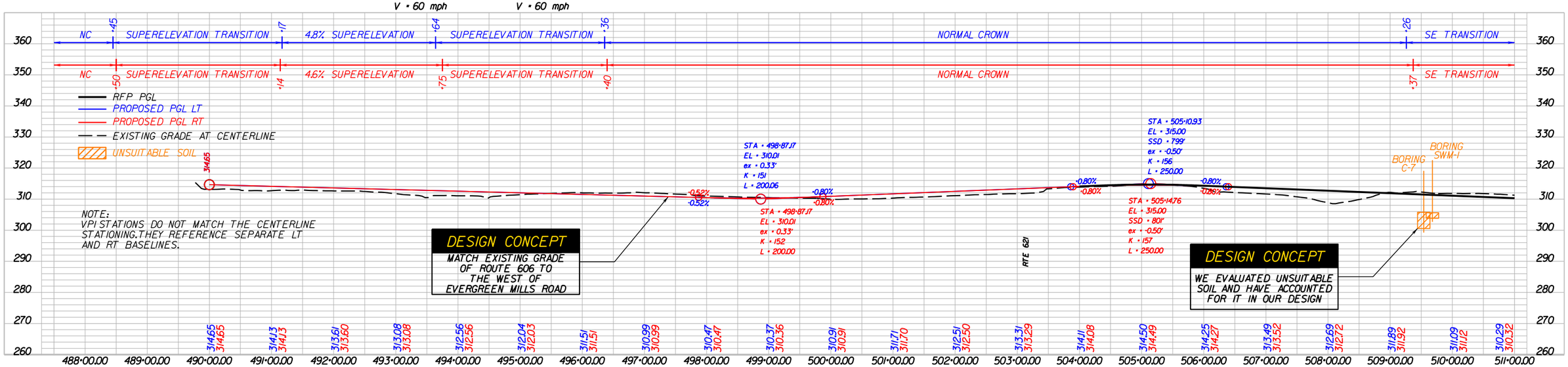
RELOCATED AIRPORT SECURITY ROAD

MATCH LINE - STA 511+00.00

BEGIN PROJECT
(NFO) 0606-053-983
STA 489+06.13 ROUTE 606
MATCH EXIST. PAVEMENT

Curve No.15
PI STA 492+43.05
Radius = 3269'
Degree = 1°45'09.03"
Delta = 6°39'10.65"
Length = 380'
S.E. = 4.70%
V = 60 mph

Curve No.16
PI STA 503+39.37
Radius = 15000'
Degree = 0°22'55.10"
Delta = 1°30'04.85"
Length = 393'
S.E. = NC
V = 60 mph



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PROJECT	SHEET NO.
0606-053-983	3 of 20

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	606	0606-053-983	4

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

American Infrastructure

RK&K

LEGEND

- PHASE A ROADWAY IMPROVEMENTS
- PHASE B SHARED USE PATH
- PROPOSED SWM FACILITY
- PROPOSED SOUND WALL
- PROPOSED GUARDRAIL
- PROPOSED R/W
- PROPOSED EASEMENT
- LIMITS OF CONSTRUCTION
- PROPOSED RETAINING WALL
- EXISTING ELECTRIC TRANSMISSION POLE

NOTE: TEMPORARY CONSTRUCTION EASEMENTS NOT SHOWN

SCALE 0 80' 160'

003 EVERGREEN COMMERCE CENTER, LP Inst.# 20060503-0039069 41.6619 AC. PIN: 162-29-8191

002 DULLES INTERNATIONAL AIRPORT METROPOLITAN WASHINGTON AIRPORTS AUTHORITY Inst.# Tax# 067-37-9924-001

RFP REQUIREMENTS
PER RFP PART 2, SECTION 1J TYPICAL SECTION AND SUPERELEVATION TRANSITION LENGTHS ARE DESIGNED TO ACCOMMODATE THE FUTURE WIDENING

PC 512+16.47

PT 519+16.98

EXIST.R/W

PROP. R/W

PROP. 10' SHARED USE PATH (PHASE B)

PGL LT

EQUATION:
Sta 529+68.08 BK =
PC Sta 80+00.00 AH

ARCOLA ROAD

33'

MATCH LINE - STA.511+00.00

N 70° 04' 30" W

24'

BIO-BI

N 20° 00' 00" E

ROUTE 606 W.B.

ROUTE 606 E.B.

MATCH LINE - STA.84+50.00

PGL RT

CURVE NO.17

EXIST.R/W

RELOCATED AIRPORT SECURITY ROAD

PROP.PERM.ROADWAY ESM'T.

DESIGN CONCEPT
BIORETENTION FACILITIES ADDED TO TREAT RUNOFF BEFORE DISCHARGING TO NATURAL OUTFALL LOCATIONS ALLOWS FOR LOWER VERTICAL PROFILE

CL RTE.606/LOUDOUN CO.PKWY.

CURVE NO.19

SWM ACCESS DRIVEWAY

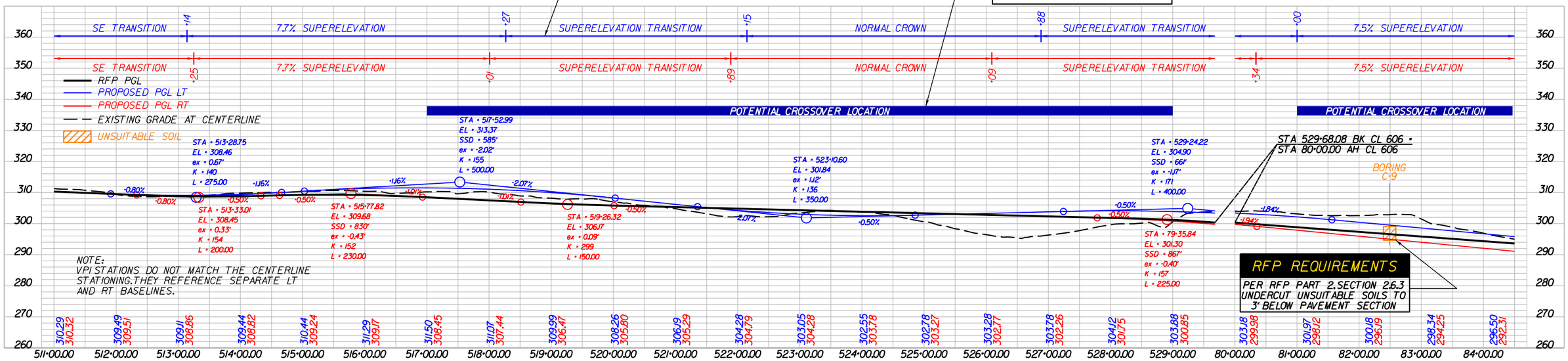
BASIN A

RFP REQUIREMENTS
PER RFP PART 2, SECTION 1J TYPICAL SECTION AND SUPERELEVATION TRANSITION LENGTHS ARE DESIGNED TO ACCOMMODATE FUTURE VDOT WIDENING

RFP REQUIREMENTS
PER RFP PART 2, SECTION 2.2 PROJECT TO BE DESIGNED TO ACCOMMODATE FUTURE MEDIAN CROSSOVERS THROUGHOUT. PER VDOT ACCESS MANAGEMENT CRITERIA, SEE OUR TECHNICAL PROPOSAL SECTION 4.3 FOR A DISCUSSION ON HOW WE ACCOMMODATED THIS REQUIREMENT

Curve No.17
PI STA. 515+73.39
Radius = 1482'
Degree = 3°51'54.34"
Delta = 27°04'30.82"
Length = 701'
S.E. = 7.70%
V = 60 mph

Curve No.19
PI STA. 86+08.31
Radius = 1547'
Degree = 3°42'13.21"
Delta = 42°55'53.80"
Length = 1159.16'
S.E. = 7.50%
V = 60 mph



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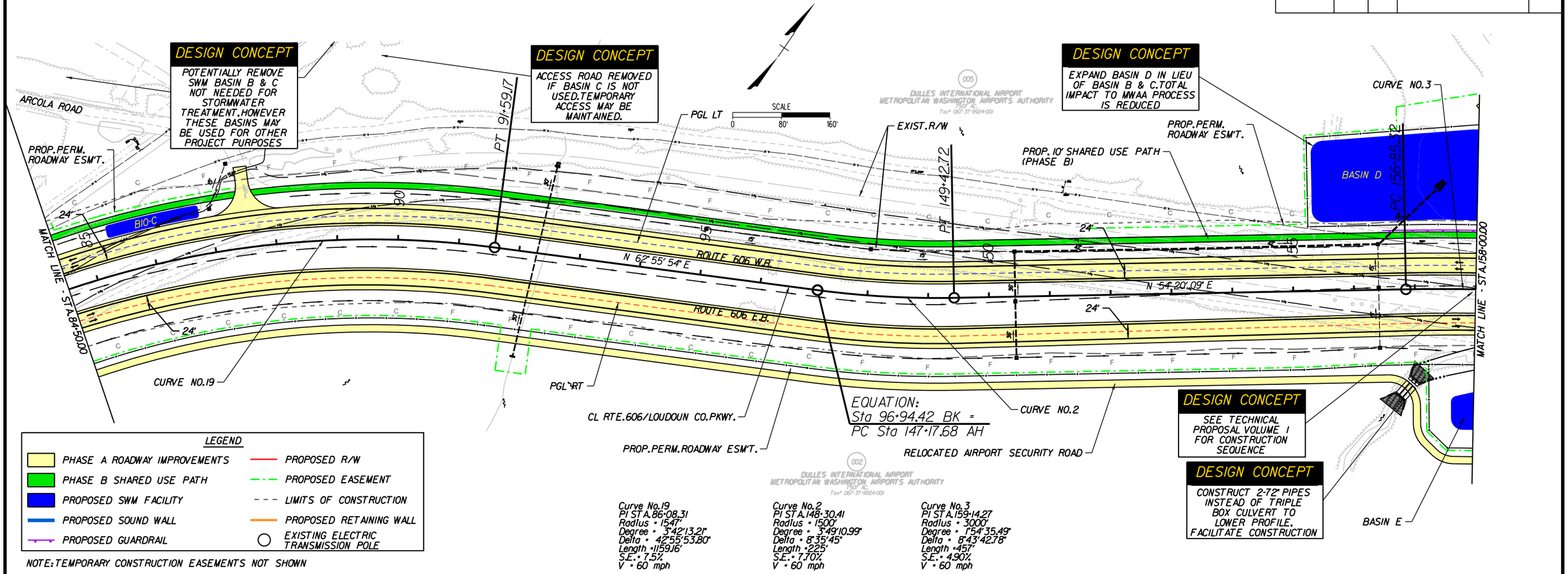
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	606	0606-053-983	5

American Infrastructure

RK&K



LEGEND

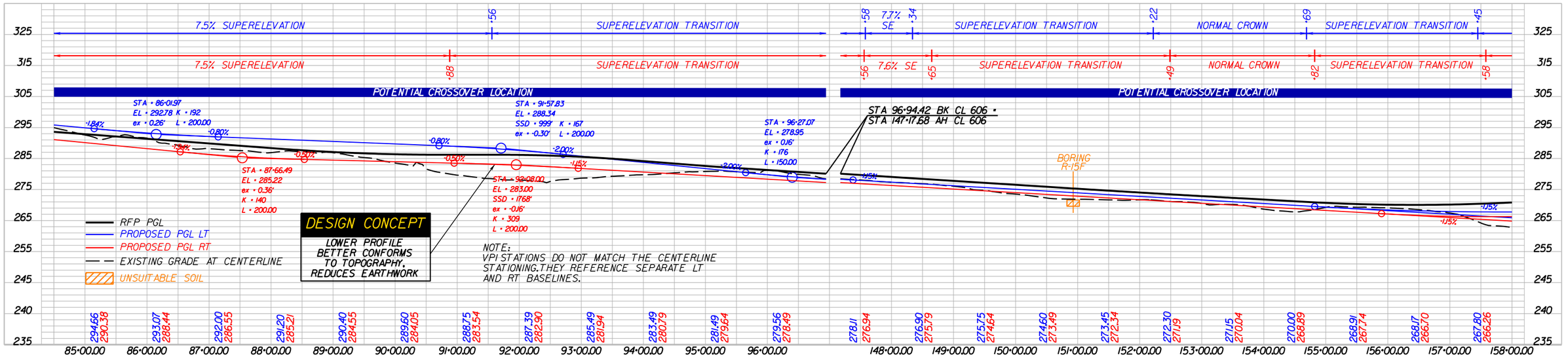
- PHASE A ROADWAY IMPROVEMENTS
- PHASE B SHARED USE PATH
- PROPOSED SWM FACILITY
- PROPOSED SOUND WALL
- PROPOSED GUARDRAIL
- PROPOSED R/W
- PROPOSED EASEMENT
- LIMITS OF CONSTRUCTION
- PROPOSED RETAINING WALL
- EXISTING ELECTRIC TRANSMISSION POLE

NOTE:TEMPORARY CONSTRUCTION EASEMENTS NOT SHOWN

Curve No.19
PI STA.86+08.31
Radius = 1547'
Degree = 3°42'13.21"
Delta = 42°55'53.80"
Length =1159.16'
S.E.: 7.5%
V = 60 mph

Curve No.2
PI STA.148+30.41
Radius = 1500'
Degree = 3°49'10.99"
Delta = 8°35'45"
Length =225'
S.E.: 7.70%
V = 60 mph

Curve No.3
PI STA.159+14.27
Radius = 3000'
Degree = 1°54'35.49"
Delta = 8°43'42.78"
Length =457'
S.E.: 4.90%
V = 60 mph



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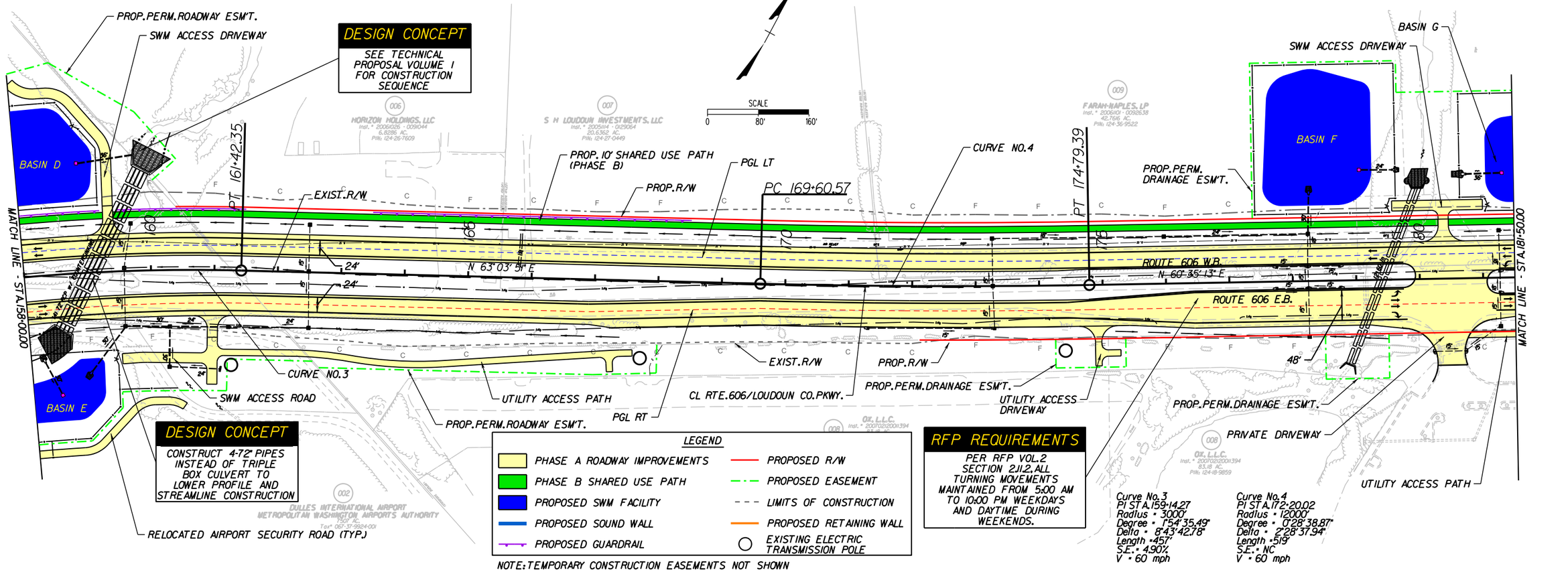
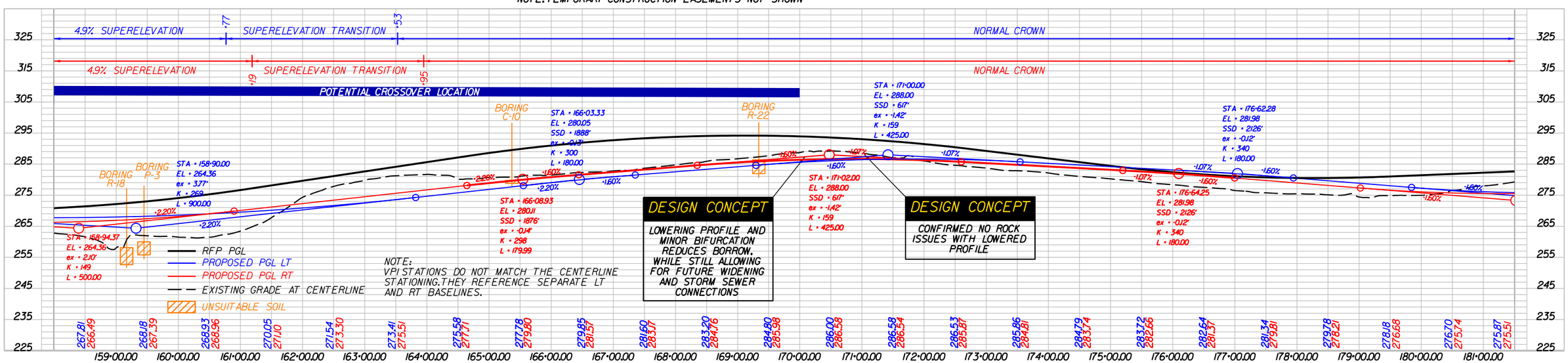
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	606	0606-053-983	6





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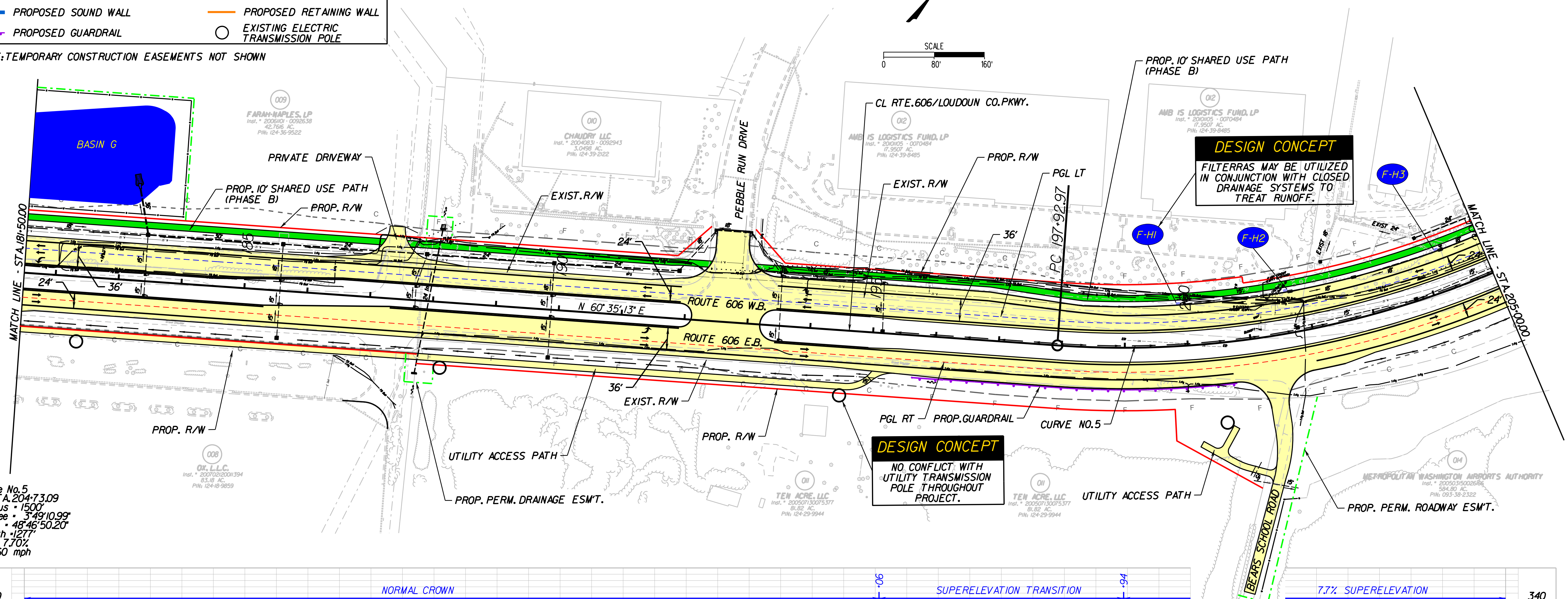
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	606	0606-053-983	7

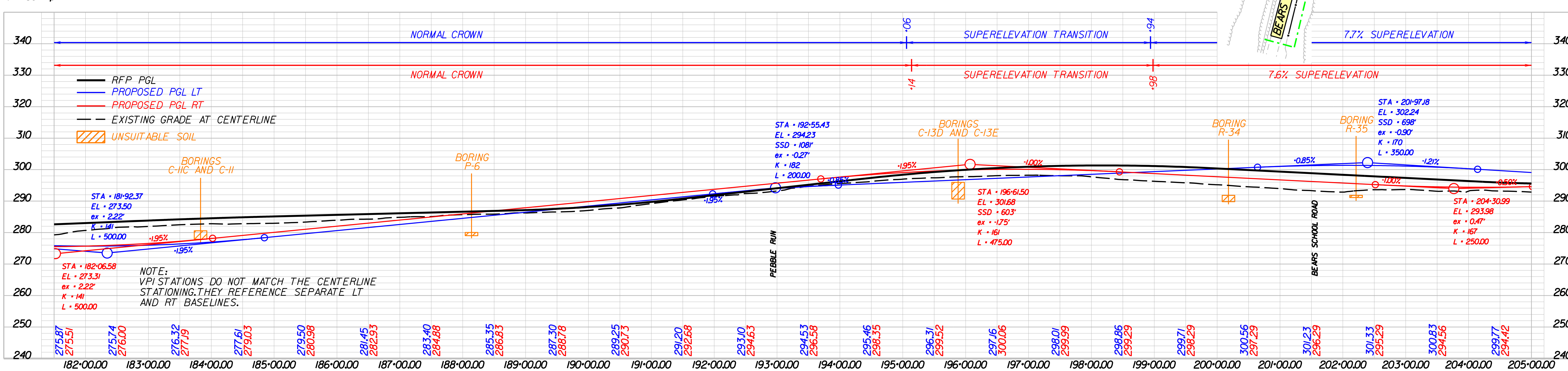
LEGEND

(yellow)	PHASE A ROADWAY IMPROVEMENTS	(red line)	PROPOSED R/W
(green)	PHASE B SHARED USE PATH	(green dash-dot)	PROPOSED EASEMENT
(blue)	PROPOSED SWM FACILITY	(dashed)	LIMITS OF CONSTRUCTION
(blue line)	PROPOSED SOUND WALL	(orange line)	PROPOSED RETAINING WALL
(purple line)	PROPOSED GUARDRAIL	○	EXISTING ELECTRIC TRANSMISSION POLE

NOTE: TEMPORARY CONSTRUCTION EASEMENTS NOT SHOWN



Curve No.5
PI STA.204+73.09
Radius = 1500'
Degree = 3°49'10.99"
Delta = 48°46'50.20"
Length =1277'
S.E.= 7.70%
V = 60 mph



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REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	606	0606-053-983	8

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

LEGEND

- PHASE A ROADWAY IMPROVEMENTS
- PHASE B SHARED USE PATH
- PROPOSED SWM FACILITY
- PROPOSED SOUND WALL
- PROPOSED GUARDRAIL
- PROPOSED R/W
- PROPOSED EASEMENT
- LIMITS OF CONSTRUCTION
- PROPOSED RETAINING WALL
- EXISTING ELECTRIC TRANSMISSION POLE

NOTE: TEMPORARY CONSTRUCTION EASEMENTS NOT SHOWN

SCALE 0 80' 160'

MATCH LINE THIS SHEET

SWM ACCESS DRIVEWAY

BASIN H

BIO N

SWM ACCESS DRIVEWAY

BEGIN PROP. SOUND WALL A-3 STA 221+96

PROP. SOUND WALL

PROP. R/W

EXIST. R/W

PROP. PERM. ROADWAY ESM'T.

DESIGN CONCEPT

SOUND WALLS INSIDE OF PROPOSED R/W

PROP. 10' SHARED USE PATH (PHASE B)

PROP. R/W

EXIST. R/W

PGL LT

PAVED DITCH

OVERLAND DRIVE

PT 210+70.05

MATCH LINE - STA 205+00.00

F-H4

36'

24'

ROUTE 606 W.B.

N 11° 48' 23" E

ROUTE 606 E.B.

PC 221+20.63

CURVE NO.5

CURVE NO.6

UTILITY ACCESS PATH

PROP. PERM. ROADWAY ESM'T.

CL RTE.606/LOUDOUN CO.PKWY.

PGL RT

BEAVER MEADOW ROAD

MATCH LINE - STA 228+50.00

MATCH LINE THIS SHEET

BASIN H

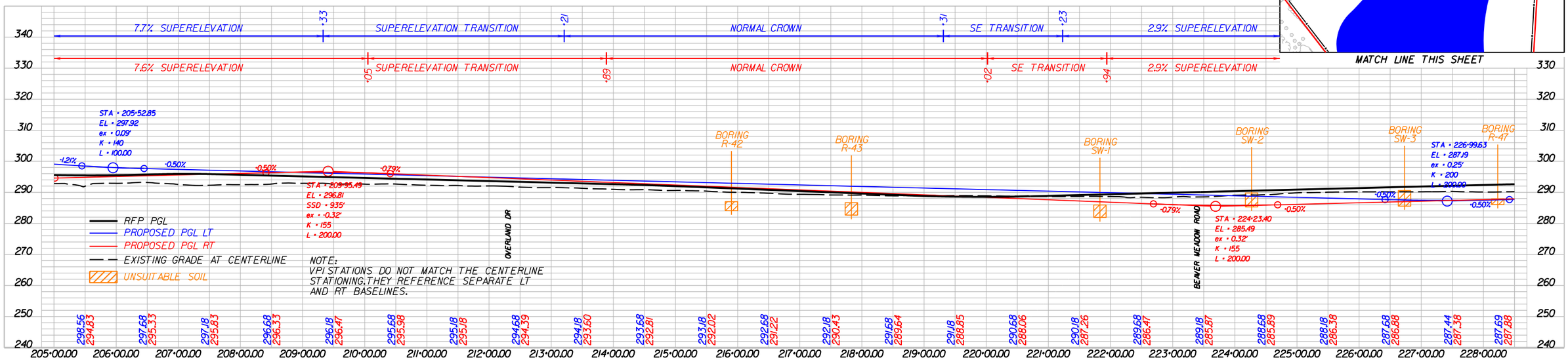
PROP. R/W

RFP REQUIREMENTS

PER RFP PART 2.SECTION 2.4.8, NOISE BARRIERS WILL BE PROVIDED IN WARRANTED LOCATIONS AND AS APPROVED BY THE VDOT CHIEF ENGINEER

Curve No.5
PI STA. 204+73.09
Radius = 1500'
Degree = 3°49'10.99"
Delta = 48°46'50.20"
Length = 1277'
S.E. = 7.70%
V = 60 mph

Curve No.6
PI STA. 225+78.16
Radius = 5800'
Degree = 0°59'16.29"
Delta = 9°01'15.26"
Length = 913'
S.E. = 2.90%
V = 60 mph



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DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	606	0606-053-983	9

LEGEND

- PHASE A ROADWAY IMPROVEMENTS
- PHASE B SHARED USE PATH
- PROPOSED SWM FACILITY
- PROPOSED SOUND WALL
- PROPOSED GUARDRAIL
- PROPOSED R/W
- PROPOSED EASEMENT
- LIMITS OF CONSTRUCTION
- PROPOSED RETAINING WALL
- EXISTING ELECTRIC TRANSMISSION POLE

NOTE: TEMPORARY CONSTRUCTION EASEMENTS NOT SHOWN

SCALE 0 80' 160'

DESIGN CONCEPT
EARLY EARTHWORK & SOUND WALL CONSTRUCTION TO PROTECT RESIDENCES FROM CONSTRUCTION NOISE

DESIGN CONCEPT
WE WILL INVESTIGATE THE USE OF THE EXISTING STORM DRAINS IN FREEPORT PLACE TO REDUCE THE NEED TO CONVEY RUNOFF TO ADJACENT PONDS

DESIGN CONCEPT
SEE VOLUME I FOR CONSTRUCTION SEQUENCE

MATCH LINE - STA 228+50.00

END PROP. SOUND WALL A-3 STA 239+44

BEGIN PROP. SOUND WALL A-2 STA 239+95

END PROP. SOUND WALL A-2 STA 249+65

BEGIN PROP. SOUND WALL A-1 STA 250+17

MATCH LINE - STA 252+00.00

PROP. 10' SHARED USE PATH (PHASE B)

PROP. PERM. ROADWAY ESM'T.

PROP. R/W

EXIST. R/W

CL RTE. 606/LOUDOUN CO. PKWY.

FREEPORT PLACE

STUKELY DRIVE

PC 241+32.66

PT 246+60.45

PT 230+33.81

CURVE NO. 6

CURVE NO. 7

ROUTE 606 W.B.

ROUTE 606 E.B.

N 20° 49' 38" E

N 71° 18' 11" E

24'

48'

PROP. GUARDRAIL

UTILITY ACCESS PATH

TRADE CENTER PLACE

PGL LT

PGL RT

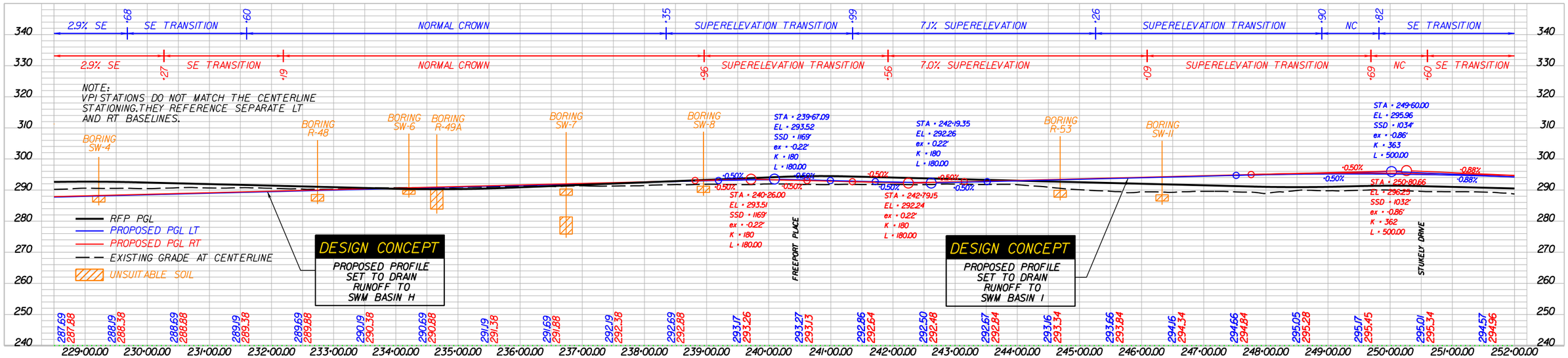
DRIVEWAY FOR EXIST. UTILITY BLDG.

WEATHER SERVICE ROAD

PROP. PERM. ROADWAY ESM'T.

Curve No. 6
PI STA. 225+78.16
Radius = 5800'
Degree = 0°59'16.29"
Delta = 9°01'15.26"
Length = 913'
S.E. = 2.90%
V = 60 mph

Curve No. 7
PI STA. 243+98.39
Radius = 1830'
Degree = 3°07'51.30"
Delta = 16°31'27.87"
Length = 528'
S.E. = 7.00%
V = 60 mph



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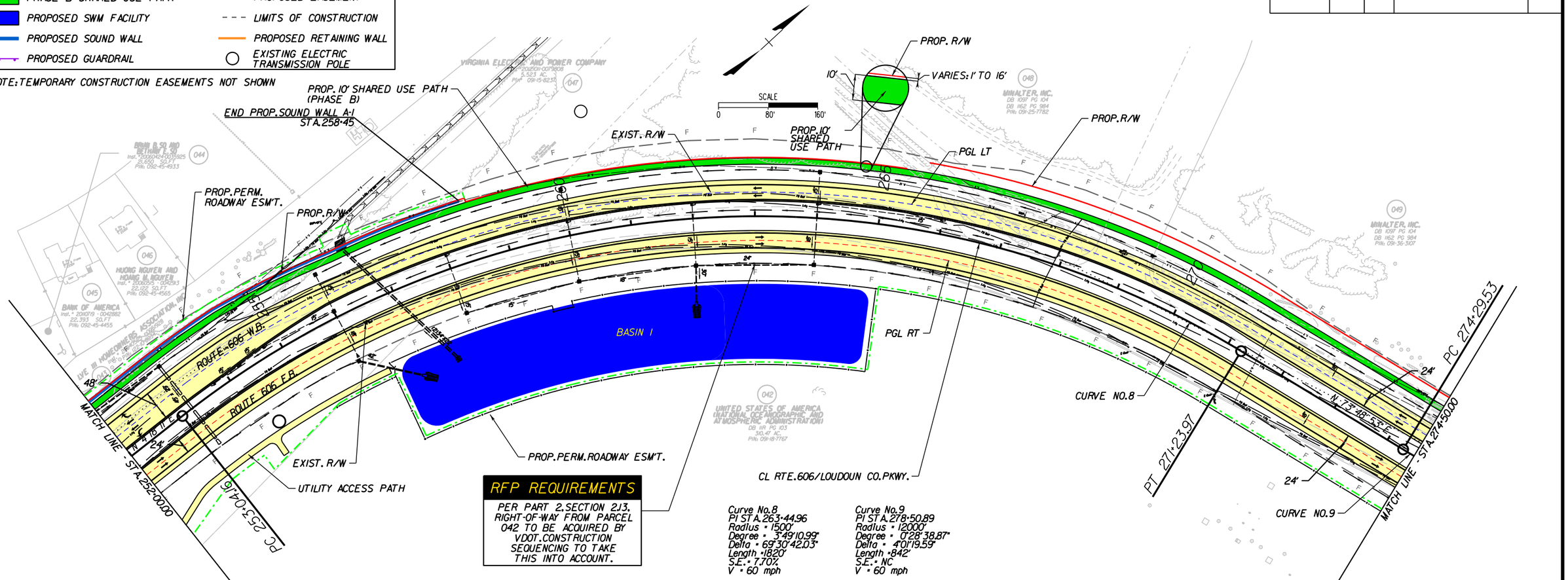
	VA.	606	0606-053-983	10

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

LEGEND

- PHASE A ROADWAY IMPROVEMENTS
- PHASE B SHARED USE PATH
- PROPOSED SWM FACILITY
- PROPOSED SOUND WALL
- PROPOSED GUARDRAIL
- PROPOSED R/W
- PROPOSED EASEMENT
- LIMITS OF CONSTRUCTION
- PROPOSED RETAINING WALL
- EXISTING ELECTRIC TRANSMISSION POLE

NOTE: TEMPORARY CONSTRUCTION EASEMENTS NOT SHOWN

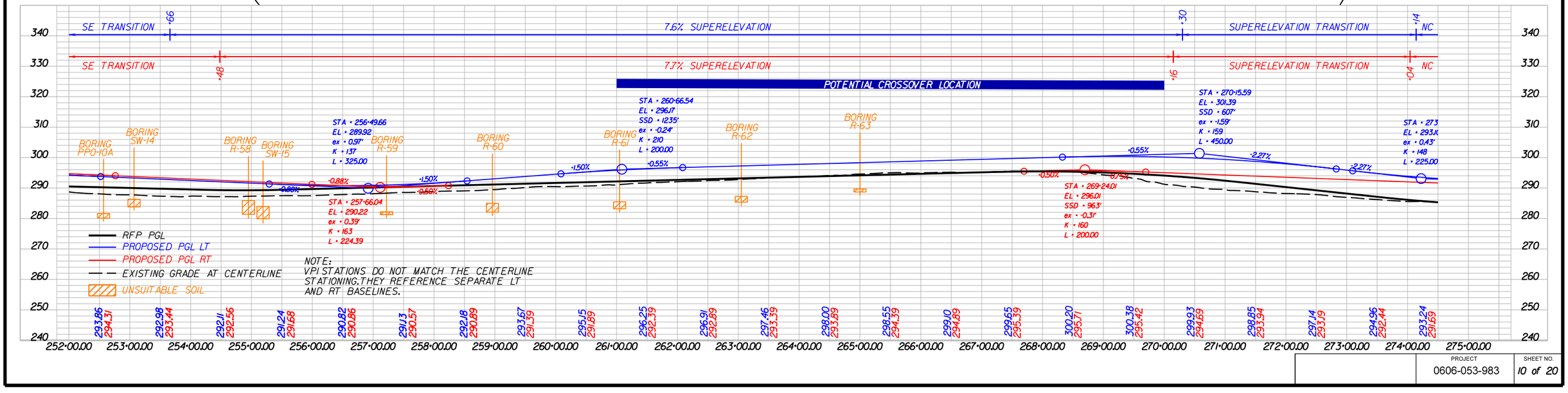


RFP REQUIREMENTS

PER PART 2, SECTION 2J3, RIGHT-OF-WAY FROM PARCEL 042 TO BE ACQUIRED BY VDOT. CONSTRUCTION SEQUENCING TO TAKE THIS INTO ACCOUNT.

Curve No.8
PI STA. 263+44.96
Radius = 1500'
Degree = 3°49'10.99"
Delta = 69°30'42.03"
Length = 1820'
S.E.: 7.70%
V = 60 mph

Curve No.9
PI STA. 278+50.89
Radius = 12000'
Degree = 0°28'38.87"
Delta = 40°19.59"
Length = 842'
S.E.: NC
V = 60 mph



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	PROJECT	SHEET NO.
	0606-053-983	10 of 20

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	606	0606-053-983	11

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

LEGEND

- PHASE A ROADWAY IMPROVEMENTS
- PHASE B SHARED USE PATH
- PROPOSED SWM FACILITY
- PROPOSED SOUND WALL
- PROPOSED GUARDRAIL
- PROPOSED R/W
- PROPOSED EASEMENT
- LIMITS OF CONSTRUCTION
- PROPOSED RETAINING WALL
- EXISTING ELECTRIC TRANSMISSION POLE

NOTE: TEMPORARY CONSTRUCTION EASEMENTS NOT SHOWN

DESIGN CONCEPT

IN FINAL DESIGN, WE WILL EVALUATE THE LADBROOK DRIVE STORM DRAIN SYSTEM TO DETERMINE IF RUNOFF CAN BE DISCHARGED INTO THIS SYSTEM.

051 NORTHWOODS PHASE I, LLC Inst.# 200812290071474 PIN: 091-37-8784

052 MERCURE BUSINESS PARK I, LLC DB 1850 PG 458 9.0356 AC. PIN: 091-28-8991

042 UNITED STATES OF AMERICA (NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION) DB 1IR PG 103 310.47 AC. PIN: 091-18-7767

SCALE 0 80' 160'

MATCH LINE - STA 274+50.00

EXIST. R/W

PGL LT

PROP. R/W

24'

BIO-J3

BIO-J4

ROUTE 606 E.B.

BIO-J1

BIO-J2

36'

EXIST. R/W

PGL RT

CURVE NO.9

LADBROOK DRIVE

PT 282+71.92

EXIST. R/W

PROP. PERM. DRAINAGE ESM'T.

ROUTE 606 W.B.

N 69° 47' 33" E

CL RTE.606/LOUDOUN CO.PKWY.

SWM ACCESS DRIVEWAY

BASIN J

PROP. PERM. ROADWAY ESM'T.

PROP. PERM. DRAINAGE ESM'T.

PROP. 10' SHARED USE PATH (PHASE B)

PROP. R/W

EXIST. R/W

24'

36'

CURVE NO.10

PC 295+54.26

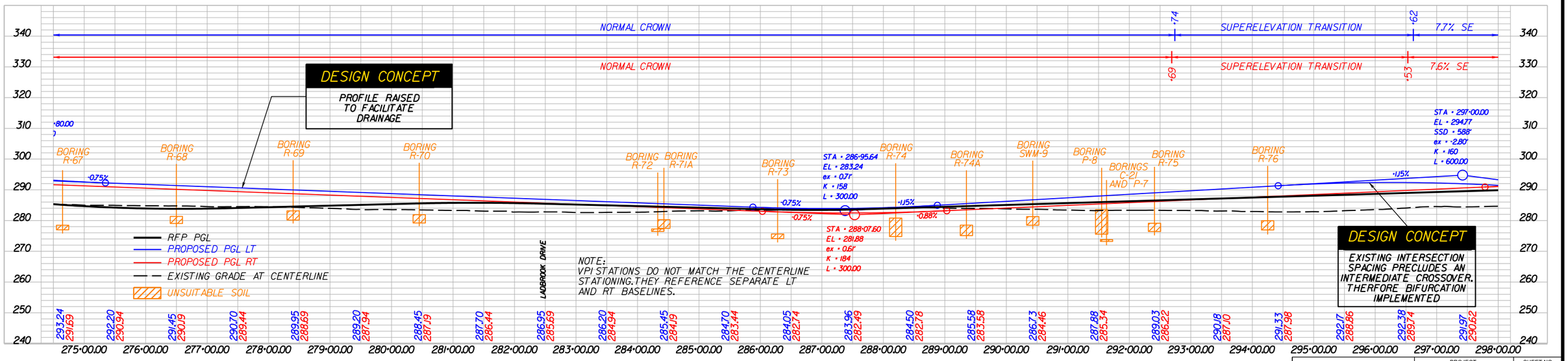
MATCH LINE - STA 298+00.00

RFP REQUIREMENTS

PER RFP PART 2, SECT. 2.7.3 PONDS EAST OF STA 283+00 SHALL BE DESIGNED AS "DRY" BASINS. THIS APPLIES TO BASINS J, K, L, M

Curve No.9
PI STA. 278+50.89
Radius = 12000'
Degree = 0°28'38.87"
Delta = 4°01'19.59"
Length = 842'
S.E. = NC
V = 60 mph

Curve No.10
PI STA. 300+16.09
Radius = 1500'
Degree = 3°49'10.99"
Delta = 34°13'33.90"
Length = 896'
S.E. = 7.70%
V = 60 mph



3/21/2014

	PROJECT	SHEET NO.
	0606-053-983	11 of 20

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	606	0606-053-983	12

LEGEND

- PHASE A ROADWAY IMPROVEMENTS
- PHASE B SHARED USE PATH
- PROPOSED SWM FACILITY
- PROPOSED SOUND WALL
- PROPOSED GUARDRAIL
- PROPOSED R/W
- PROPOSED EASEMENT
- LIMITS OF CONSTRUCTION
- PROPOSED RETAINING WALL
- EXISTING ELECTRIC TRANSMISSION POLE

NOTE: TEMPORARY CONSTRUCTION EASEMENTS NOT SHOWN

SCALE 0 80' 160'

DESIGN CONCEPT

FILTERRAS MAY BE UTILIZED IN CONJUNCTION WITH CLOSED DRAINAGE SYSTEMS TO TREAT RUNOFF.

MATCH LINE - STA. 298+00.00

EXIST. R/W

PROP. R/W

MERCURE CIRCLE

CURVE NO.10

PROP. R/W

F-K1

F-K2

F-K3

F-K4

WESTDULLES II AT MERCURE CONDOMINIUM Inst. # 200409290105501

MERC IT A, LLC Inst. # 200406090058074 DB 1045 PG 800 3.96763 AC. PIN: 091-39-8985

MERCURE BUSINESS PARK COMMERCIAL CONDOMINIUM Inst. # 200700400007I DB 1045 PG 800 4.18682 AC. PIN: 091-40-1119

THE DAVEY TREE EXPERT COMPANY Inst. # 201062200157459 4.21687 AC. PIN: 091-40-6949

PC 312+72.26

PROP. 10' SHARED USE PATH (PHASE B)

PGL LT

EXIST. R/W

PROP. R/W

24'

PT 320+31.71

MATCH LINE - STA. 321+50.00

N 44° 12' 00" E

ROUTE 606 E.B.

ROUTE 606 W.B.

N 35° 33' 59" E

36'

EXIST. R/W

THUNDER ROAD

PROP. PERM. ROADWAY ESM'T.

24'

EXIST. R/W

PT 304+50.30

BASIN K

SWM ACCESS DRIVEWAY

PGL RT

PROP. PERM. ROADWAY ESM'T.

CL RTE.606/LOUDOUN CO.PKWY.

CURVE NO.11

EXIST. R/W

48'

UNITED STATES OF AMERICA (NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION) DB 111 PG 103 310.47 AC. PIN: 091-18-7767

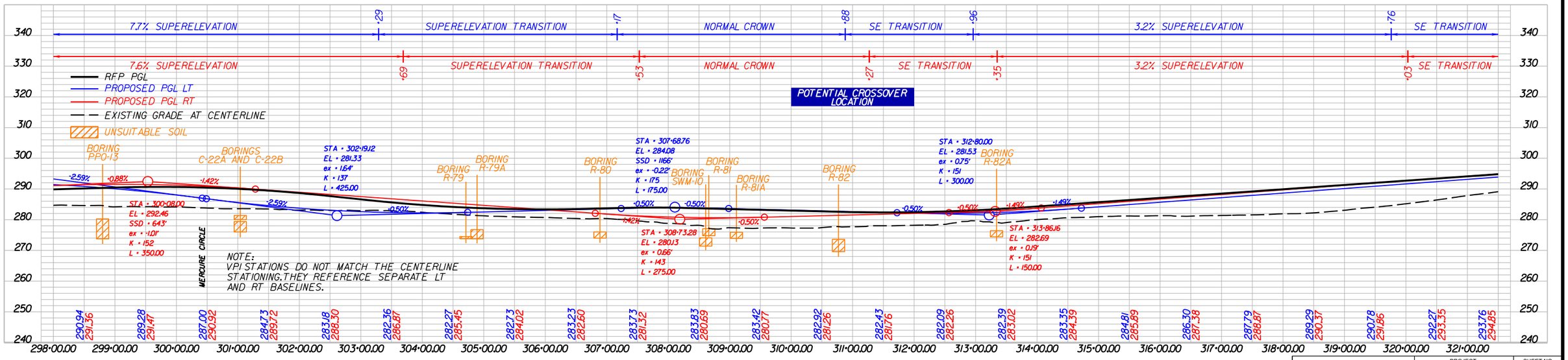
METROPOLITAN WASHINGTON AIRPORTS AUTHORITY DB 1253 PG 748 1.41 AC. PIN: 091-30-1327

METROPOLITAN WASHINGTON AIRPORTS AUTHORITY DB 1090 PG 976 137.0749 AC. PIN: 064-35-8989

PROP. PERM. ROADWAY ESM'T.

Curve No.10
PI STA. 300+16.09
Radius = 1500'
Degree = 3°49'10.99"
Delta = 34°13'33.90"
Length = 896'
S.E. = 7.70%
V = 60 mph

Curve No.11
PI STA. 316+52.70
Radius = 5040'
Degree = 1°08'12.56"
Delta = 8°38'00.90"
Length = 759'
S.E. = 3.20%
V = 60 mph

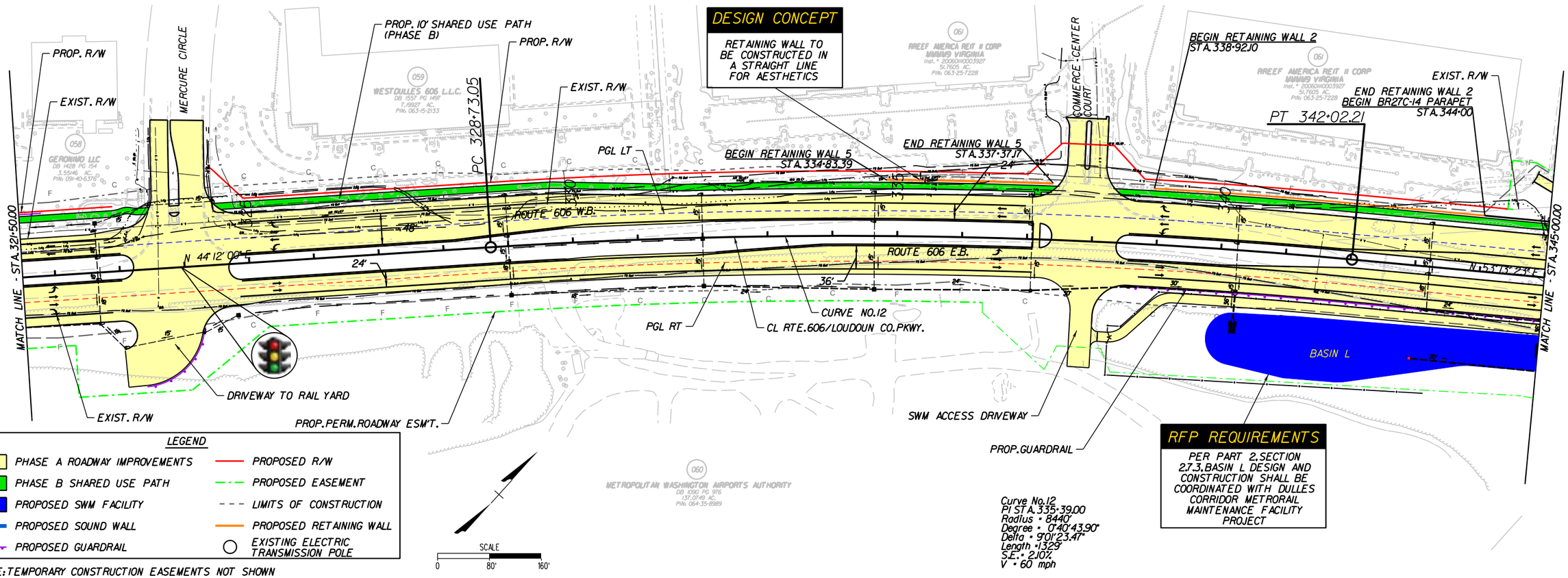


3/21/2014

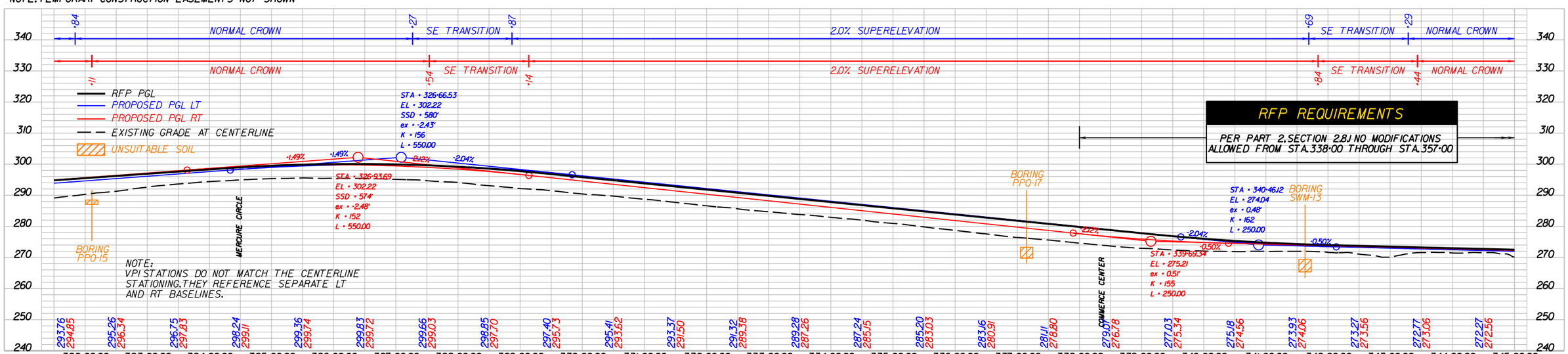
PROJECT	SHEET NO.
0606-053-983	12 of 20

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	606	0606-053-983	13



NOTE: TEMPORARY CONSTRUCTION EASEMENTS NOT SHOWN



3/21/2014

PROJECT	SHEET NO.
0606-053-983	13 of 20

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	606	0606-053-983	14

American Infrastructure

RK&K

RELOCATED WATER SAMPLING STATION

CONST. AND MAINT. ACCESS BY AGREEMENT W/ MWAA

PROP. PERM. ROADWAY ESM'T.

BEGIN RETAINING WALL 4 STA. 348+94.95

END RETAINING WALL 3 STA. 354+06.40

END RETAINING WALL 4 STA. 349+63.46

END BR27C-14 PARAPET STA. 354+07

BEGIN RETAINING WALL 3 STA. 345+36.23

OUTLET EXTENSION

BR27C-14 PARAPET ON GRAVITY SLAB

PC 348+48.85

EXIST. R/W

ROUTE 606 W.B.

ROUTE 606 E.B.

PROP. GUARDRAIL

END RETAINING WALL 1 STA. 354+07.92

CURVE NO. 13

REPLACE DAM RISER STRUCTURE VALVE

BEGIN RETAINING WALL 1 STA. 349+90.01

EXIST. R/W

PROP. GUARDRAIL

BASIN L

MATCH LINE - STA. 345+00.00

N 53°13'23"E

38'

24'

36'

RFP REQUIREMENTS

PER RFP PART 1, SECTION 1.3 CONSTRUCT BRIDGE FOR SHARED USE PATH, IF PHASE B AUTHORIZED

DESIGN CONCEPT

MAINTAIN EXISTING AIRPORT SECURITY ROAD

DESIGN CONCEPT

SEE TECHINCAL PROPOSAL VOLUME I FOR CONSTRUCTION SEQUENCE

DESIGN CONCEPT

SEE BRIDGE PLANS IN THIS VOLUME FOR DETAILS

CONST. AND MAINT. ACCESS BY AGREEMENT W/ MWAA

RAMP A

RAMP B

CURVE NO. B-1

PGL LT

PGL RT

PROP. GUARDRAIL

RAMP C

BASIN M

PROP. PERM. ROADWAY ESM'T.

PCC 365+97.46

ROUTE 267 - DULLES GREENWAY

CURVE NO. 14

PROP. PERM. ROADWAY ESM'T.

END PROJECT (NFO) 0606-053-983 STA. 366+75.16 ROUTE 606 MATCH EXIST. PAVEMENT

Curve No. 13
PI STA. 357+64.00
Radius = 2400'
Degree = 2°23'14.37"
Delta = 41°44'42.33"
Length = 1749'
S.E. = 5.90%
V = 60 mph

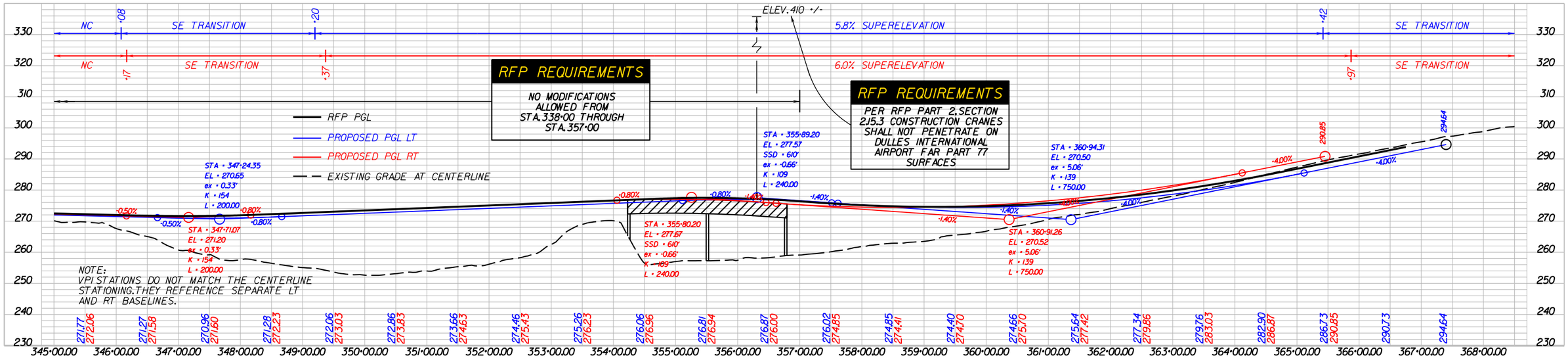
Curve No. 14
PI STA. 368+77.24
Radius = 3600'
Degree = 1°35'29.58"
Delta = 8°53'15.91"
Length = 558'
S.E. = 4.00%
V = 60 mph

LEGEND

- PHASE A ROADWAY IMPROVEMENTS
- PHASE B SHARED USE PATH
- PROPOSED SWM FACILITY
- PROPOSED SOUND WALL
- PROPOSED GUARDRAIL
- PROPOSED R/W
- PROPOSED EASEMENT
- LIMITS OF CONSTRUCTION
- PROPOSED RETAINING WALL
- EXISTING ELECTRIC TRANSMISSION POLE

NOTE: TEMPORARY CONSTRUCTION EASEMENTS NOT SHOWN

SCALE 0 80' 160'



3/21/2014

PROJECT	SHEET NO.
0606-053-983	14 of 20

4.3.2
Conceptual Structural Plans

STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	——		606	0606-053-983, B686, B687	15
NBIS Number: 0000000000XXXXX			UPC No. 97529		
Federal Oversight Code: NFO			FHWA Construction and Scour Code:	X071-S8	

DESIGN EXCEPTION(S):

None.

GENERAL NOTES:

B686 Eastbound bridge
B687 Westbound bridge

Widths: B687: 14'-0" shared use path, roadway width varies 55'-0" to 65'-4" face-to-face of rails.
B686: 52'-0" face-to-face of rails.

Span layout: 128'-128' continuous steel spans.

Capacity: HL-93 loading.

Specifications:

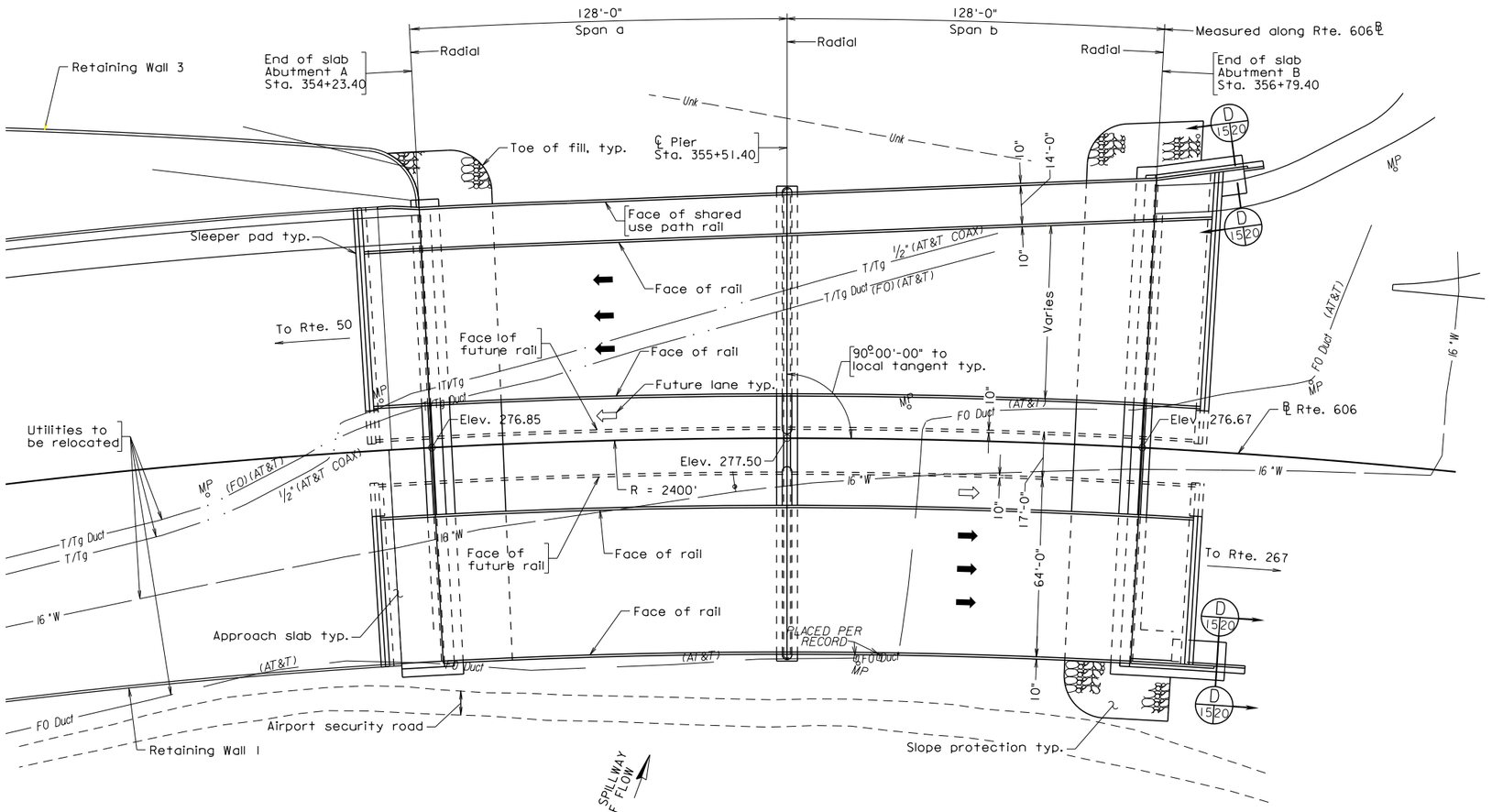
Construction: Virginia Department of Transportation Road and Bridge Specifications, 2007.

Design: AASHTO LRFD Bridge Design Specifications, 6th Edition, 2012; and VDOT Modifications.

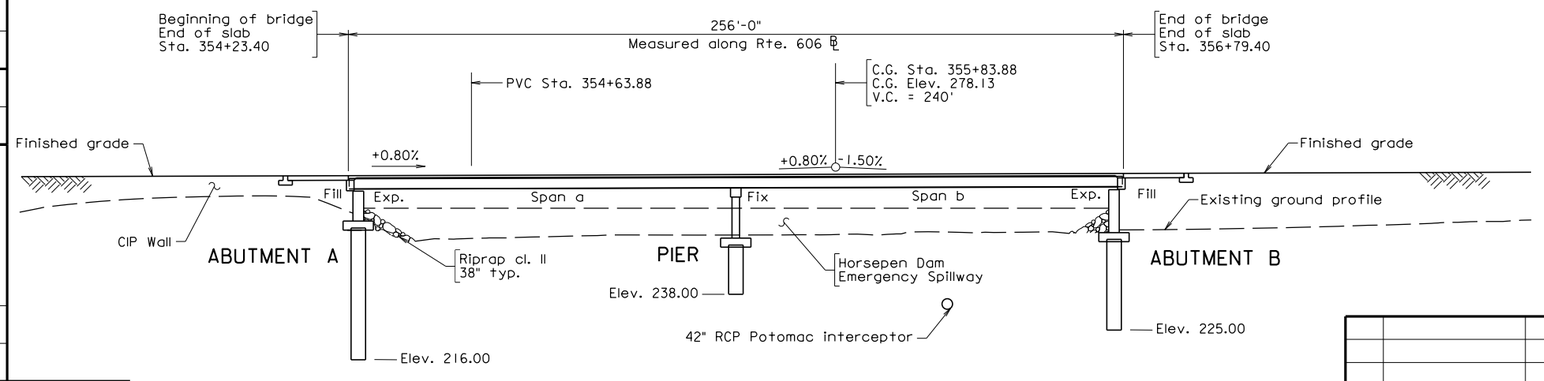
Standards: Virginia Department of Transportation Road and Bridge Standards, 2008.

RFP REQUIREMENTS

FOUNDATION EXTEND TO DEPTHS REQUIRED IN RFP PART 2, SECTION 2.7.5



PLAN



DEVELOPED SECTION ALONG ℄

Scale 1" = 20'

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

CONCEPTUAL PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

b9752905.dgn

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION	
VDOT PROJECT MANAGER	
DISTRICT CONSTRUCTION MANAGER	
RK&K RICHMOND, VA STRUCTURAL ENGINEER	
PLANS BY:	RK&K
COORDINATED:	
SUPERVISED:	Gary S. Johnson
DESIGNED:	Sagar P. Adivarekar
DRAWN:	Jill R. Boxley
CHECKED:	Gary S. Johnson

VDOT

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSED BRIDGE ON

RTE. 606 OVER HORSEPEN DAM EMERGENCY SPILLWAY
LOUDOUN CO. 0.30 MI. WEST RTE. 267
PROJ. 0606-053-983, B686, B687

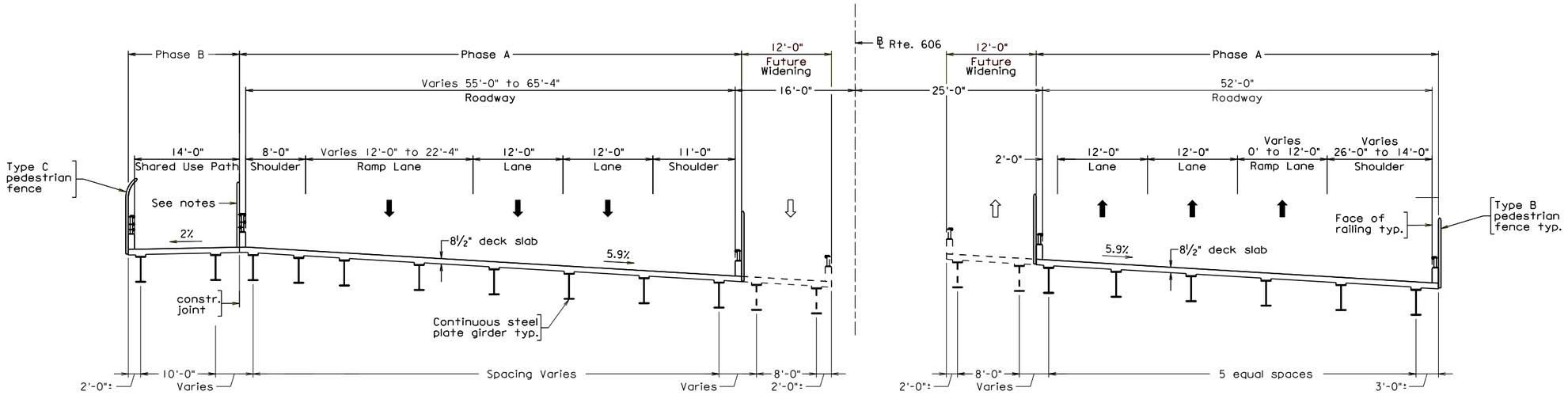
Recommended for Approval: _____ D.B. Project Manager Date

Approved: _____ Chief Engineer Date

XXX-XX

Date: March 7, 2014

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—		606	0606-053-983, B686, B687	16



TRANSVERSE SECTION

DESIGN CONCEPT

VDOT BEAM SPACING AND OVERHANG REQUIREMENTS ARE MET

CONCEPTUAL PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

b97529016.dgn

RK&K
RICHMOND, VA
STRUCTURAL ENGINEER

Scale 1/8" = 1'-0"

No.	Description	Date
	Revisions	

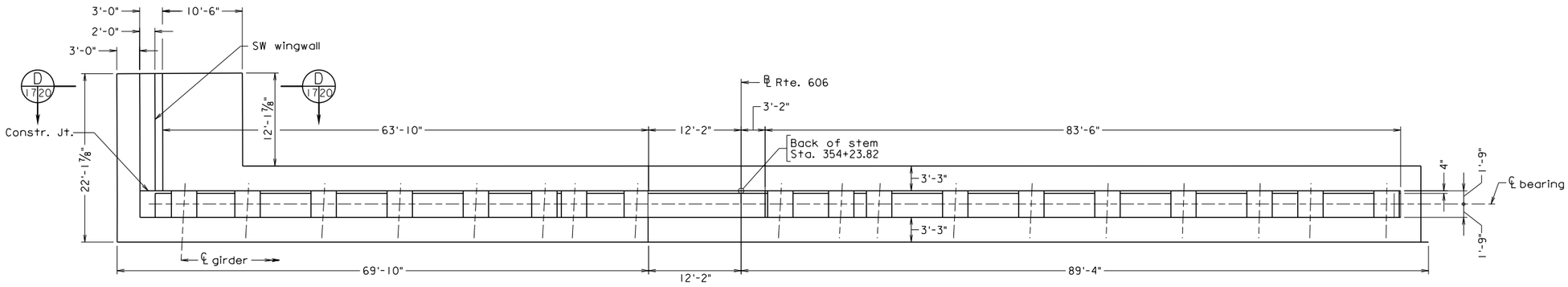
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

TRANSVERSE SECTION

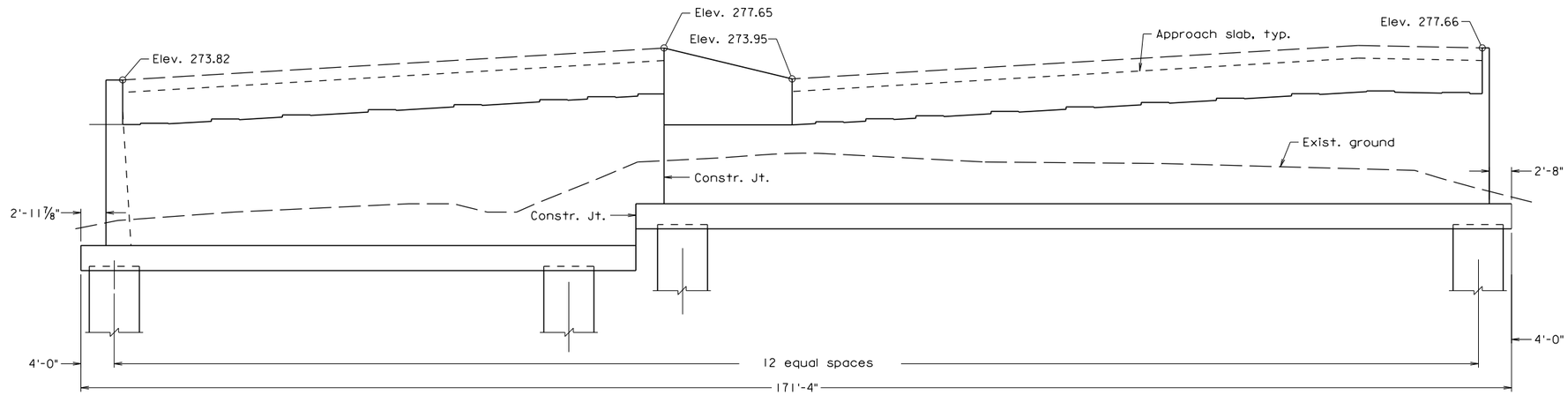
Designed: SPA	Date	Plan No.	Sheet No.
Drawn: JRR	Mar. 2014	XXX-XX	16 of 20
Checked: CSW			

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—		606	0606-053-983, B686, B687	17



PLAN

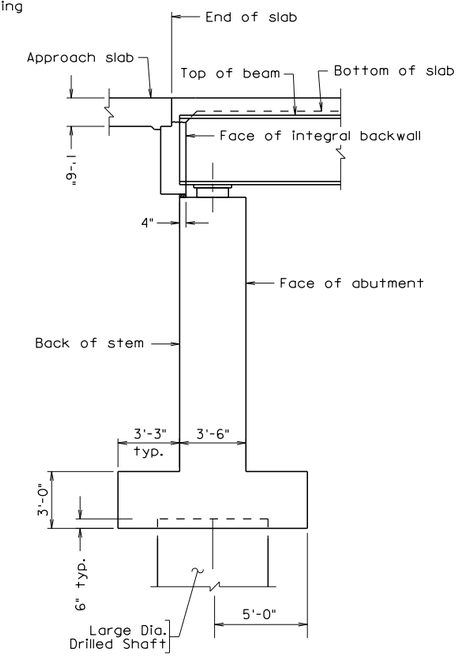
Note: All dimensions measured radial to ℄ Rte. 606



ELEVATION

Note: All dimensions measured radial to ℄ Rte. 606

Abutment A shown, Abutment B similar



SECTION

Scale: ¼" = 1'-0"

b9752907.dgn

RK&K
RICHMOND, VA
STRUCTURAL ENGINEER

CONCEPTUAL PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

Scale ⅛" = 1'-0" unless otherwise noted

No.	Description	Date
	Revisions	

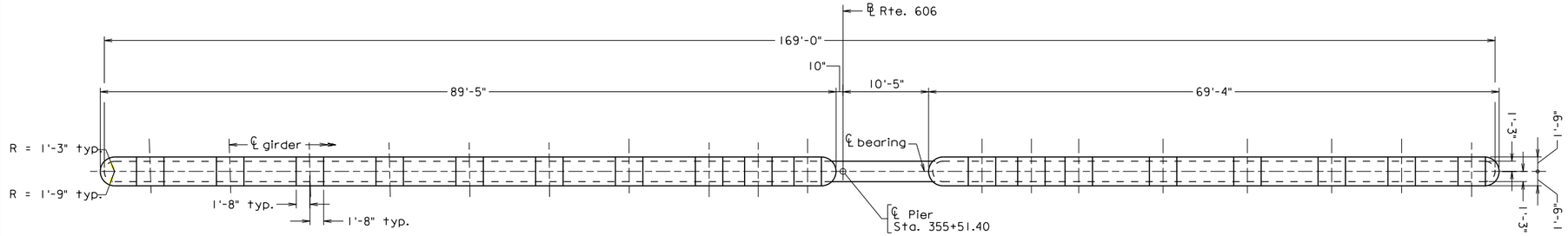
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

ABUTMENTS

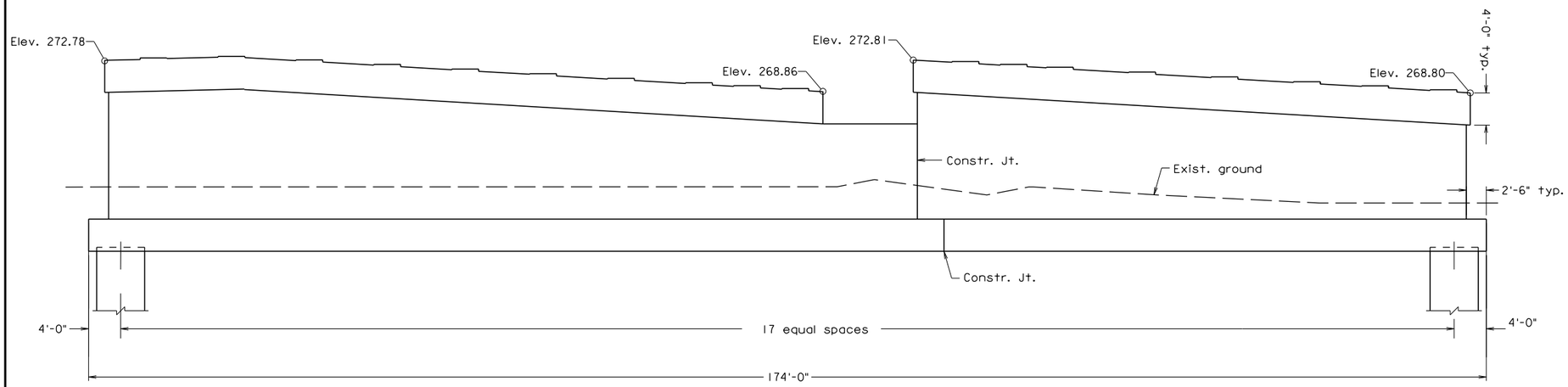
Designed: SPA	Date	Plan No.	Sheet No.
Drawn: JRB			
Checked: GSJ	Mar. 2014	XXX-XX	17 of 20

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—		606	0606-053-983, B686, B687	18



PLAN

Note: All dimensions measured radial to ℄ B Rte. 606

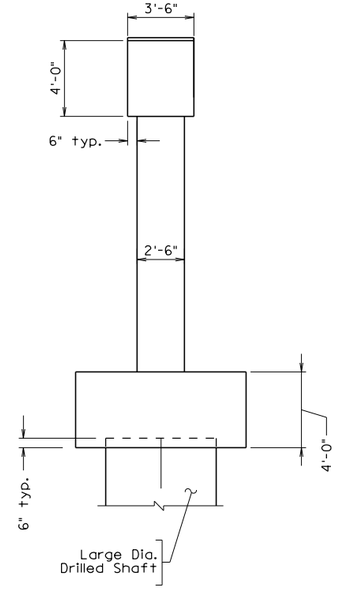


ELEVATION

Note: All dimensions measured radial to ℄ B Rte. 606

Note:

Large diameter drilled shafts may be staggered to meet minimum spacing requirements



TYPICAL PIER SECTION

Scale: 1/4" = 1'-0"

b9752901B.dgn

RK&K
RICHMOND, VA
STRUCTURAL ENGINEER

CONCEPTUAL PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

Scale 1/8" = 1'-0" unless otherwise noted

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

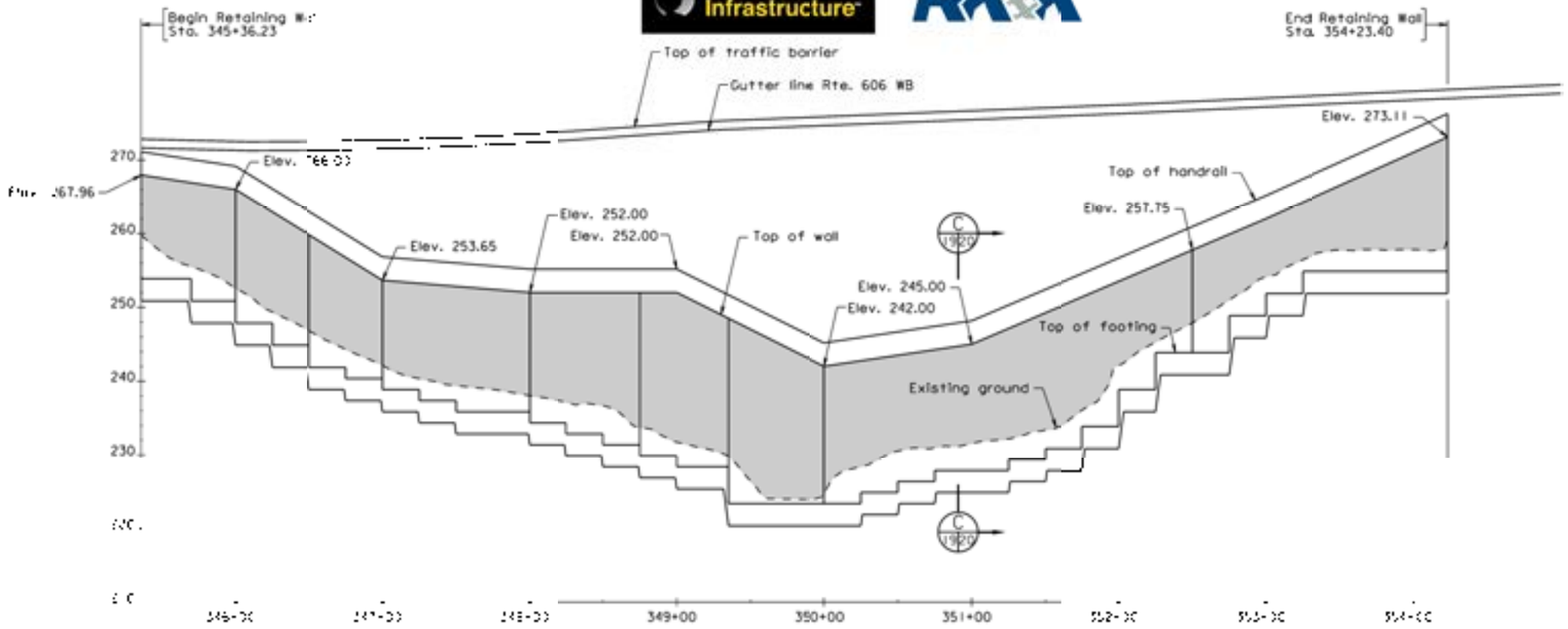
STRUCTURE AND BRIDGE DIVISION

PIER

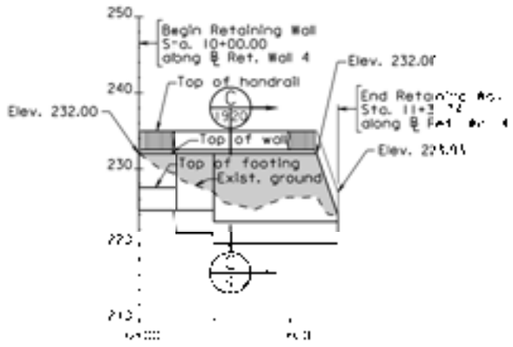
Designed: SPA	Date	Plan No.	Sheet No.
Drawn: JRR	Mar. 2014	XXX-XX	18 of 20
Checked: GSJ			

American Infrastructure

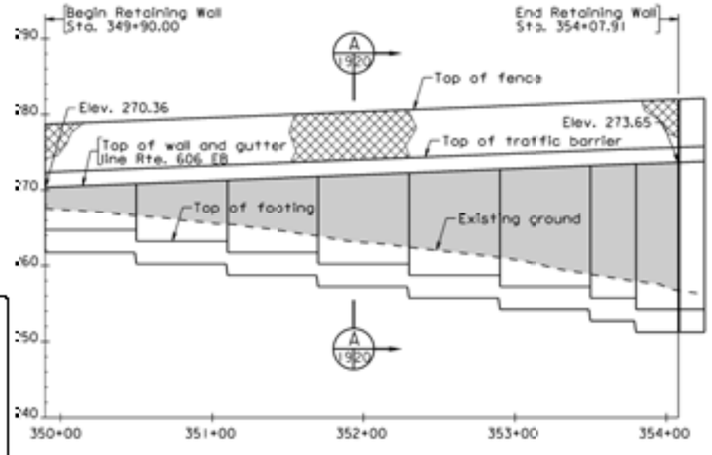
RK&K



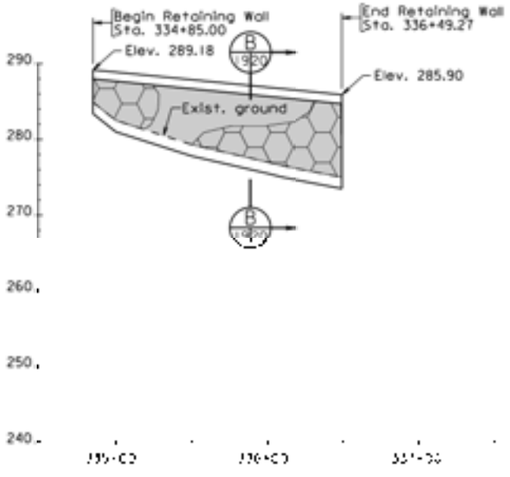
RETAINING WALL 3



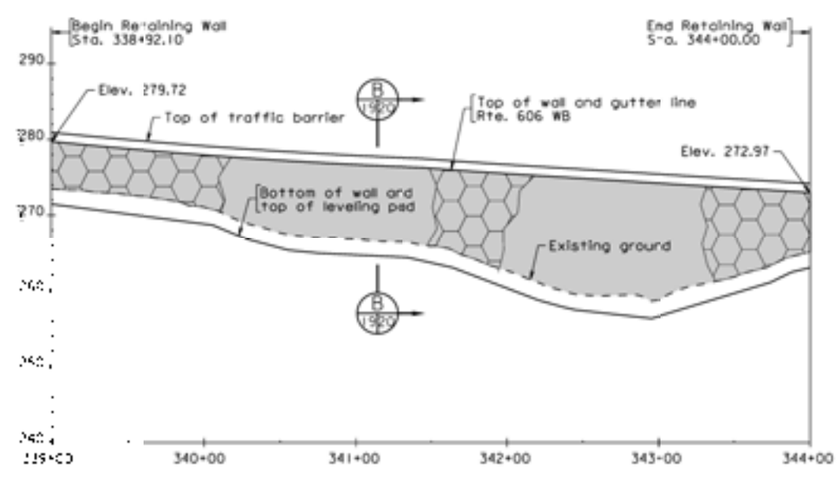
RETAINING WALL 4



RETAINING WALL 1



RETAINING WALL 5



RETAINING WALL 2

RFP REQUIREMENTS

RETAINING WALLS 1, 3, AND 4 ARE AS PER RFP PLANS IN CONFORMANCE WITH RFP PART II, SECTION 2.3.7

DESIGN CONCEPT

1. RETAINING WALL 5 IS MSE TO MATCH THE ADJACENT RETAINING WALL 2.
2. REALIGNED TO BE STRAIGHT

CONCEPTUAL PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

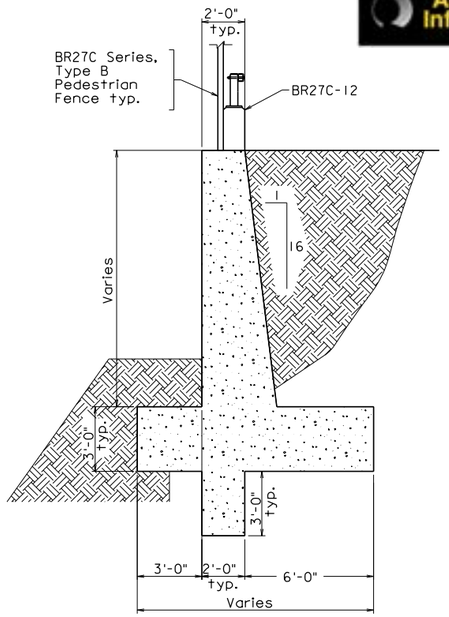
CONSTRUCTION OF VARIOUS COMMUNITY OF "PLACEMAKING"

STRUCTURE AND BRIDGE DIVISION

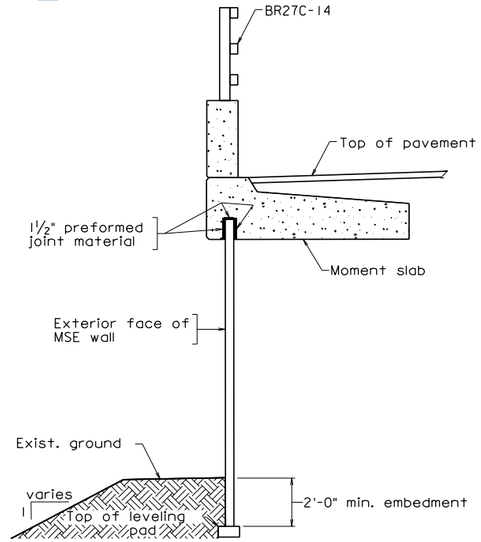
RETAINING WALL ELEVATIONS

XXX-XX

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	——		606	0606-053-983, B686, B687	20



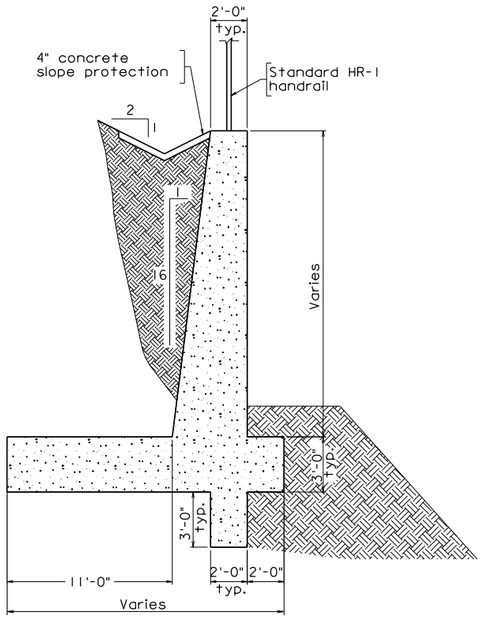
SECTION A 19 20



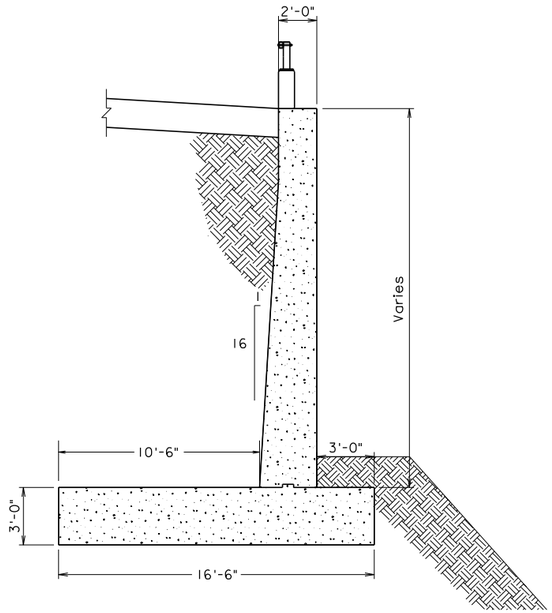
SECTION B 19 20

RFP REQUIREMENTS

RETAINING WALLS 1, 3, AND 4 ARE AS PER RFP PLANS IN CONFORMANCE WITH RFP PART II, SECTION 2.3.7



SECTION C 19 20



SECTION D 15 20

CONCEPTUAL PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

b97529020.dgn

RK&K
RICHMOND, VA
STRUCTURAL ENGINEER

Scale: 1/4" = 1'-0"

No.	Description	Date
Revisions		

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

RETAINING WALL SECTIONS

Designed: SPA	Date	Plan No.	Sheet No.
Drawn: JRR	Mar. 2014		20 of 20
Checked: GSJ			

American Infrastructure
301 Concourse Blvd.
Suite 300
Glen Allen, VA 23059
804-290-8500

Rummer Klepper & Kahl
10306 Eaton Place
Willow Wood II, Suite 240
Fairfax, VA 22030
703-246-0028