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Design-Build Project for

# Route 29 Solutions

## Albemarle County, Virginia

Contract ID No. C00077383DB80

**SKANSKA**



# Volume I

Technical Proposal | January 6, 2015



1. Letter of Submittal / Executive Summary (4.1)



*VDOT's goals are our goals.*

January 6, 2015

Mr. John Daoulas, P.E.  
Alternate Project Delivery Office  
Virginia Department of Transportation (VDOT)  
1401 East Broad Street  
Richmond, VA 23219

**RE: Skanska-Branch A Joint Venture Technical Proposal** for Design-Build Project for  
Route 29 Solutions, Albemarle County, Virginia, Contract ID No: C00077383DB80

Dear Mr. Daoulas:

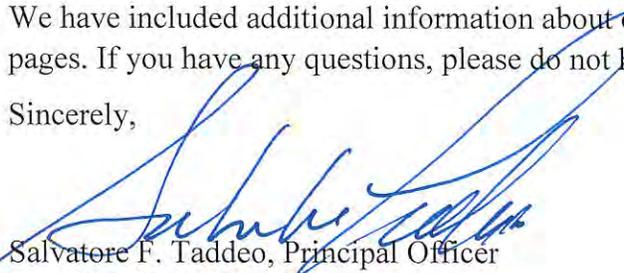
**Skanska-Branch A Joint Venture (SBJV)** is pleased to submit our Technical Proposal for the VDOT Design-Build Project for Route 29 Solutions (Route 29 Solutions).

In accordance with the Section 4.1 requirements of the Request for Proposal, we are submitting the following information, with additional information provided in the attachments.

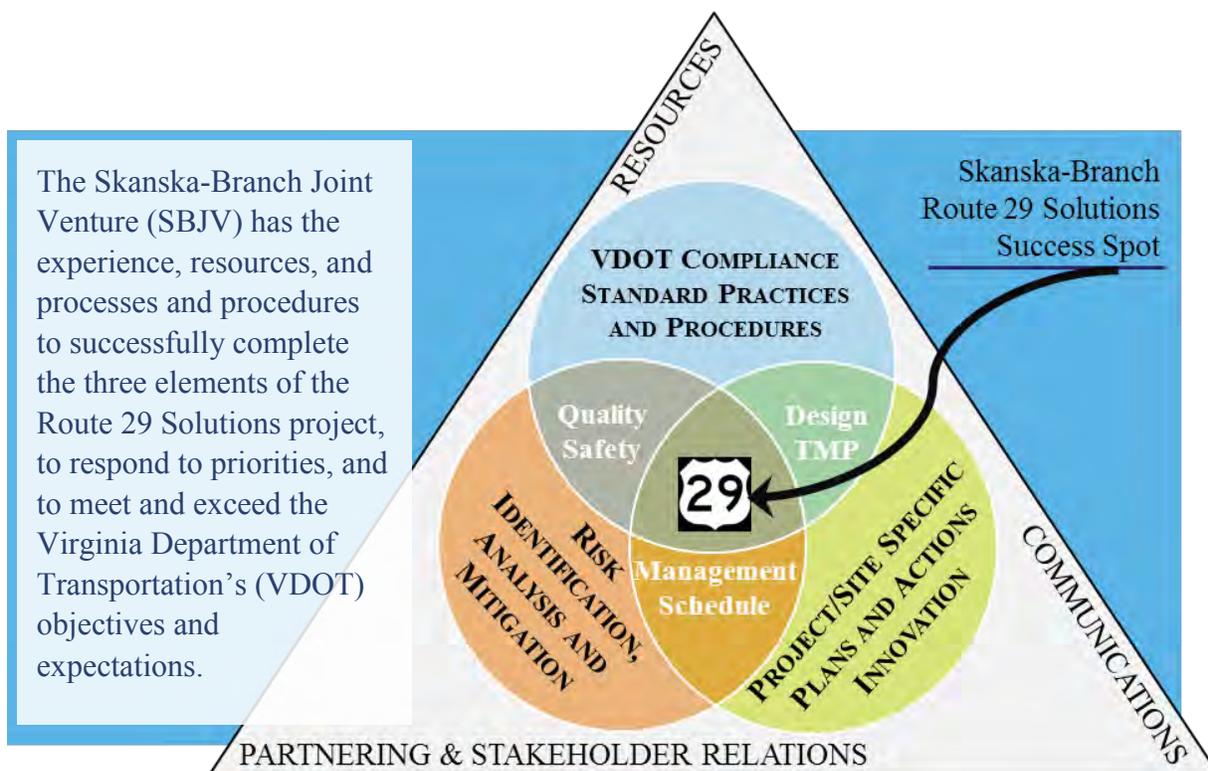
- ☐ **Authorized Representative's Signature (4.1.1)** - Mr. Salvatore F. Taddeo, an Authorized Representative of Skanska-Branch JV, has signed this Letter of Submittal.
- ☐ **Offeror's Intent (4.1.2)** – SBJV has every intention of entering into a contract with VDOT for the Project in accordance with the terms of this RFP.
- ☐ **Offer's Term (4.1.3)** – The SBJV Technical and Price Proposal offers will remain in full force and effect for 120 days following the submission of this Technical Proposal to VDOT.
- ☐ **Point of Contact (4.1.4)** – Mr. Stephen Davis, Attorney in Fact for the SBJV. His contact information is: 295 Bendix Rd., Suite 400, Virginia Beach, VA 23452; T 757.420.4140 x184; F 757.420.3551; and stephen.davis@skanska.com
- ☐ **Principal Officer Information (4.1.5)** Mr. Salvatore F. Taddeo, Principal Officer of SBJV. His contact information is 295 Bendix Road, Suite 400, Virginia Beach, VA 23452 T 757.420.4140 x141 / F 757.420.3551 salvatore.taddeo@skanska.com
- ☐ **Proposal Payment Agreement (4.1.6)** – An executed Proposal Payment Agreement form (Attachment 9.3.1) is included in Appendix A of this technical proposal volume.
- ☐ **Debarment Forms (4.1.7)** – Team members have executed Certification Regarding Debarment Forms Attachment 11.8.6. All of these forms are in Appendix B.
- ☐ **Responsible Charge Engineer (4.1.8)** – VDOT has approved Thomas Fulton, P.E. to hold both Design-Build Project Manager and Responsible Charge Engineer positions.
- ☐ **Final Completion Date (4.1.9)** – SBJV's is proposing a final completion date of July 1, 2017.

We have included additional information about our plans and benefits to VDOT on the next two pages. If you have any questions, please do not hesitate to contact me or Mr. Davis.

Sincerely,



Salvatore F. Taddeo, Principal Officer  
Skanska-Branch A Joint Venture



Beginning with the award of the Route 29 Bypass contract in 2012, SBJV has worked in partnership with VDOT to improve transportation mobility, access and safety for drivers and those who live and work along the Route 29 corridor.

We will develop a project-specific solution that is based upon our understanding of VDOT project requirements, our in-place practices and procedures, and utilization of our extensive resources. Through our design, construction and management expertise and innovative practices, we will ensure that the management team, schedule and means and methods allow us to meet VDOT's objectives. Our approach will also identify, analyze/manage and mitigate risk and impacts as well as maintain safety, traffic, and keep the public informed of progress on the site.

Successful delivery requires a coordinated team effort both within the SBJV team, and with VDOT, stakeholders and those affected by the project. Each team member has a specific role to play in meeting VDOT's project objectives.

### Minimize Congestion

**Design** - Incorporation of temporary structures into final structure minimizes length of shutdowns and detours.

**Construction** - Construct roadways and structures out of traffic. Work at times of lower traffic count (at night).

**Transportation Management Plan (TMP)** - Minimized shifts and detours. Clearly marked detours, with regular review of effectiveness of detours.

**Management** - Communications plan to provide advance notification of detours, closures and lane shifts.

**Benefits** - Driver distractions are limited by minimal traffic changes and by construction away from traffic. Combined with clearly marked detours and lane changes, safety is improved and congestion minimized.

Maintain Accessibility

Construction - Ensure access for businesses and other entities is maintained.

TMP - Ensure clear signage is provided (especially on detours) to new access points. Review accessibility on a regular basis.

Management - Provide timely and accurate information on project activities, road conditions, and detours and closures to VDOT and the traveling public.

29 Benefits - Maintaining access was one of our starting points in planning, to ensure that the project had minimal impact on businesses.

Schedule

Management/Team - Our planning/starting point was reaching incentives to meet VDOT's objectives.

Construction - Additional resources provided during Interim Milestone period.

Management - Additional schedulers are assigned during Interim Milestone Period to allow more precise schedule adjustments. Daily schedule review. Independent Critical Paths for each element.

29 Benefits - By aggressive schedule management, SBJV supports reaching project goals and shortening construction time, reducing project impacts to the community.

US 29 & Rio Road Grade Separated Intersection (GSI)

Design - Structural engineer team dedicated to underpass design. Design plan maximizes use of time, space and local resources.

Construction - Provide additional resources (including quality and management) during Interim Milestone Period. Use rolling 4/12 shifts.

TMP - TMP Plan considers access for businesses, emergency response, public transit, pedestrians and bicyclists.

Management - Maximum use of Phases 1-3 and shutdown period to accomplish work, minimize disruption and reach incentives.

29 Benefits - By maximizing use of the time available before the Interim Milestone Period, we can use the shutdown time to greatest benefit by mitigating the impact of this most visible and disruptive element of the project, resulting in time savings and improved community/stakeholder relations.

Whole Project

Team - Supplemented original Route 29 Bypass team with additional team members to support new and unique elements of this project. Co-location of team at project site improves communication flow and interaction with VDOT and stakeholders.

Design - Pool of design resources available to all elements to facilitate design process.

Construction/Management - Dedicated management teams for each element ensure acquisition of needed resources and schedule maintenance.

TMP - Plan coordinates lane closures and detours for project elements, particularly the US 29 & Rio Road GSI and the US 29 Widening.

29 Benefits - SBJV will apply resources to design and construct all three elements at the same time, leading to lessened impacts through schedule maintenance.

Stakeholder Relations

Management - Senior team members, with Public Relations Manager, charged with developing cordial and informative stakeholder relations. We will work closely with VDOT to support communications

efforts. Active attendance at community events and with groups such as the Project Development Advisory Panel (PDAP). Provide support to VDOT through presentations and disseminating project information/communication.

**29** **Benefits** - Communicating project status and (with VDOT) actively soliciting input from the community provides “ownership” and engagement in the project for stakeholders.

**Resource Allocation**

**Construction** - Identification of resources needed to meet project objectives. Innovative scheduling of work crews to best utilize time.

**Management** - SBJV can call on extensive resources of manpower, equipment and materials, allowing us to commit to supporting all three elements, even for the US 29 & Rio Road GSI Interim Milestone Period.

**29** **Benefits** - Our team’s available resources allow us to easily staff and equip the US 29 & Rio Road GSI Interim Milestone Period while maintaining schedules on the other element. We will complete the entire project in a timely and cost-effective manner.

**Limiting Impacts**

**Design** - Design within existing Right-of-Way and easements.

**Construction** - Work out of traffic and at night. Phasing construction to eliminate traffic/construction conflicts.

**TMP** - Plans designed to maintain traffic and accessibility with clearly marked detours.

**Management** - In-place plans for quality, safety, environment and incident recovery (utilities, and unknown conditions) will ensure

minimized impact and quick resumption of normal operations.

**29** **Benefits** - Maintaining schedule, design and construction progress means “no surprises” and fewer impacts to drivers, businesses and stakeholders.

**Planning for the Future**

*(Increased capacity and improved safety)*

**Design** - Improved sight lines and analysis of traffic flow to improve design. Design development of smaller structures. Use of concrete box beams for long life and reduced maintenance.

**Construction** - Procurement of high quality, long lasting materials.

**Management** - Quality program ensures quality is built in.

**29** **Benefits** - Planning and use of long-lasting materials lessens the need and cost of long-term maintenance, a saving of time and money, with less impact on drivers in the future. Drivers benefit from a safer road, too.

**Conclusion**

**29** The SBJV team is committed to partnering with VDOT to deliver a successful project that accomplishes VDOT’s goals of improving transportation mobility, while providing access and safety for drivers and those who live and work along the Route 29 corridor.

SBJV’s experience with VDOT, local knowledge and experience gained from the Route 29 Bypass project, available equipment and resources, and relationships with local subcontractors allow us to provide a best value solution for VDOT.



2. Offeror's Qualifications (4.2)



*VDOT's goals are our goals.*



**2.1 | ACCURACY OF SOQ (4.2.1)**

The SBJV confirms that information provided in our SOQ submittal remains true and accurate except for our VDOT approved change in key personnel, substituting Jake Hensley for Greg Suttle as Construction Manager (CM) and the addition of the Responsible Charge Engineer (RCE) key personnel position per Addendum No. 1, dated 11/5/14. Please see *Appendix C* for a copy of our Approved Request for Change in Key Personnel letter, dated 11/14/14. VDOT has approved Thomas Fulton, PE to hold both Design-Build Project Manager (DBPM) and RCE positions per Addendum No. 2, dated 12/5/14, and Proprietary Meeting 2.

**2.2 | UPDATES TO OUR SOQ (4.2.2)**

Updates to our SOQ organizational chart and narrative are marked in red. *Exhibit 2-01: Organizational Chart* shows the “chain of command” and identifies major functions and reporting relationships.

**Functional Relationship of Participants**

The SBJV team is committed to undertaking the development, design, construction of the

US 29 project in a manner that provides the best value for VDOT. Our structure provides an open partnering relationship that provides VDOT a superior management team that started during the statement of qualifications, continued through this Proposal period, and will remain intact through substantial completion and transition to VDOT. Our Team approach is organized by function, with clear objectives and responsibilities, stressing the need for an adaptable, flexible structure capable of responding to the specific demands posed by each major Project activity and interim milestones. Our project management system will provide the specific ingredients for a successful Project, which includes:

- 29 DBPM/RCE - Thomas Fulton, PE** will perform dual roles; responsible for the overall project design, construction quality management and contract administration. Also responsible for reviewing, approving and rejecting design documents and construction operations; SBJV’s obligations under the VDOT contract; empowered by the SBJV Executive Advisory Board to commit all the resources, financial, staff and

equipment to complete the project on-time; manage any dispute resolution; final closing and shut down of the project if necessary.

29 **CM - Jake Hensley** will be assigned full time upon Intent to Award; and will have four direct reports consisting of the three Element Superintendents and Construction Quality Control Manager.

29 **Safety Manager - James Concannon** reports directly to the DBPM and has authority to stop operations.

29 **Design Manager - William Schaub, PE** will implement a management approach that integrates managers from the Design Team to prepare an optimized design.

29 **D-B Coordinator – Damian Ruppert** will assure the design/environmental team has construction documents approved by VDOT in a timely fashion, and will implement constructability reviews prior to issuance to each Element Manager.

29 **QAM – Lawrence Brown, PE** will be independent and work directly for DBPM.

29 **Design Quality Manager - Robert Reed, PE** and our Peer Review Team will provide and independent review of all documents.

29 The introduction of **Fire Protection Engineers and Element Project Engineers** to the team. Element Project Engineers are further discussed in *Section 3 – Design Concepts*.

Our organizational chart *Exhibit 2-01* reflects the management structure, key personnel, and reporting hierarchy of the SBJV design, construction and quality management operations. Our approach ensures the integration of VDOT and facilitates transparency and accountability.

The SBJV team will partner with VDOT and multiple US 29 stakeholders to form a cohesive team focused on delivering project solutions quickly and efficiently. We will establish an environment that applies proven project systems and tools from some of the largest construction projects on the east coast including Skanska’s current work on the \$375M District DOT 11<sup>th</sup> Street Corridor Design-Build project and the \$2B VDOT Elizabeth River Tunnels P3 project.

**Design Organization**

Led by Design Manager William Schaub, PE (JMT), our design team is structured to deliver the design on time, incorporate lessons learned from previous projects, and provide the best value to VDOT with the least public impact.

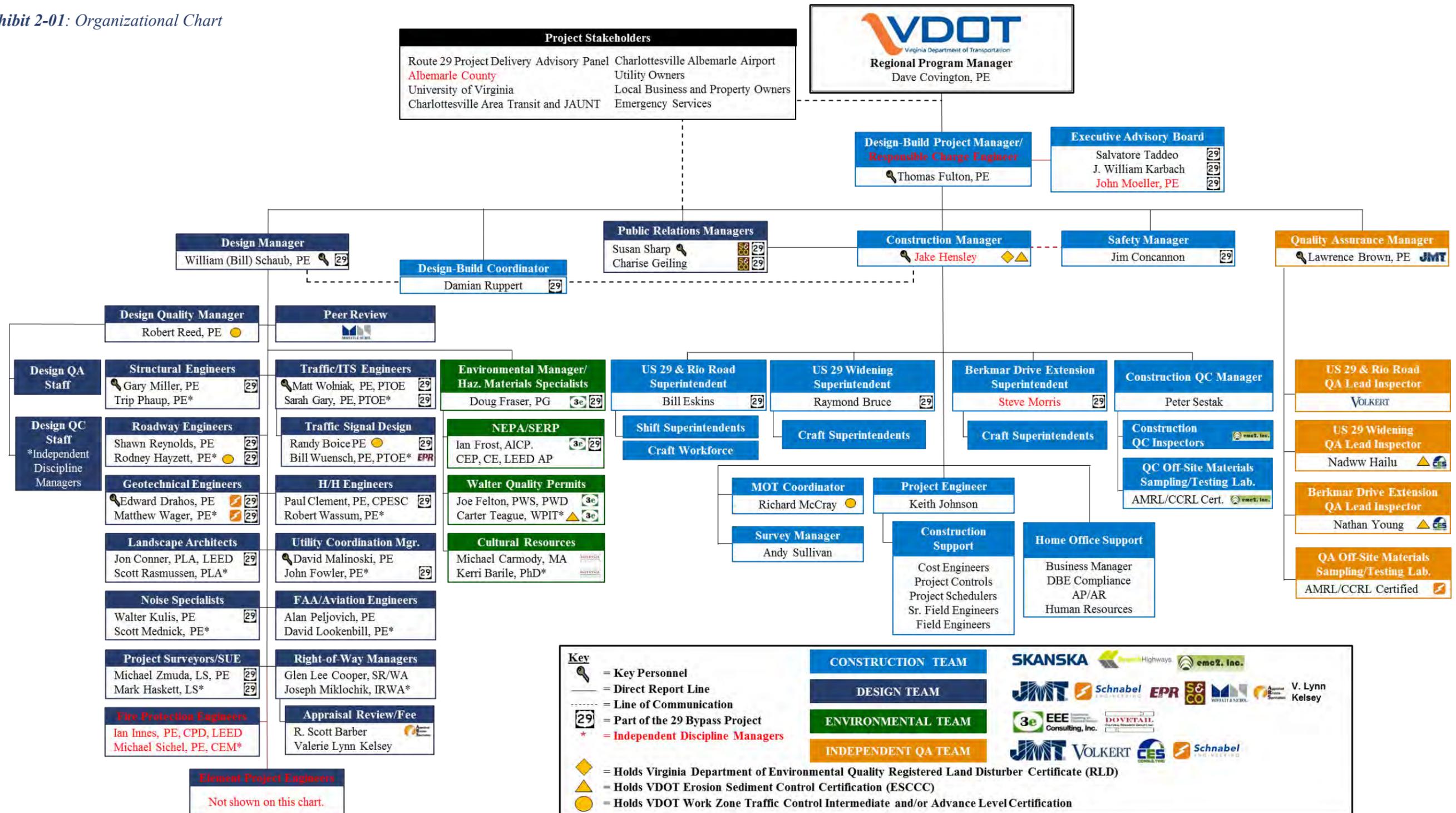
**Construction Organization**

SBJV has developed a seamless construction organization based on proven process and procedures that will be responsive and attentive to VDOT while actively supporting our plan to facilitate timely project completion and realize incentives.

**Benefits to VDOT and Stakeholders**

29	<b>Element Superintendents</b> have been assigned segments based on their relevant work history and Design-Build expertise.
29	<b>Functional Managers</b> for each major work element kept under a single party, promoting coordinated work efforts and a safer, efficient and streamlined project.
29	Incorporated <b>lessons learned and best practices</b> to ensure continuity of construction practices and environmental compliance project-wide, resulting in an improved schedule and more effective utilization of resources.

Exhibit 2-01: Organizational Chart



**CERTIFICATE OF COMMITMENT TO:** Increase Capacity and Mobility; Improve Safety & Operational Deficiencies; Minimize Construction Impacts; Provide MOT & Accessibility; Develop Effective Communication Strategies; and Meet Milestone Dates

Thomas J. Fulton, PE (D-B Project Mgr./Responsible Charge Engineer) |
 Lawrence Brown, PE (Quality Assurance Mgr.) |
 William (Bill) Schaub, PE (Design Manager) |
 Jake Hensley (Construction Manager) |
 Gary Miller, PE (Lead Structural Engineer) |
 Matt Wolniak, PE, PTOE (Lead Traffic Engineer) |
 Edward G. Drahos, PE (Lead Geotechnical Engr.) |
 David Malinoski, PE (Lead Utility Coord. Mgr.) |
 Susan Sharp (Public Relations Mgr.)



3. Design Concepts (4.3)



US 29 & Rio Road GSI



US 29 Widening



Berkmar Drive Extension

**JMT | DESIGN COMMITMENT**



*JMT is committed to providing the necessary resources to promptly deliver innovative and constructible solutions for all project elements. Our Team solutions will meet or exceed the design requirements of the RFP, with the common goal of cost effective solutions that improve safety and operations of the facilities while accommodating future inspections, minimizing impacts and maximizing public acceptance today and for the future.*

**John A. Moeller, PE, President**  
Johnson, Mirmiran & Thompson, Inc.

**Total Design Personnel Resources**

To advance the project, JMT's Design Manager William Schaub, PE, and the SBJV have assigned distinct project engineers for each of the three Project Elements. The Element Project Engineers will be managed by the overall project discipline leaders shown in the organization chart. This division of the project design into elements will allow concurrent expedited completion of certain schedule critical engineering components with

the overall project discipline leaders ensuring consistency between elements.

Based upon our schedule proposed in Section 7, the following **Exhibit 3-01** is an estimate of the design staffing expected at peak, and the total resources available by our design team members.

**Exhibit 3-01: Adequate Design Resources to Execute Design all Three Project Elements**

Disciplines	Personnel	
	Project	Total
Highway/Structural Engineers	18	>150
H/H Engineers	10	>80
Environmental Scientists	18	>50
ITS / Electrical Engineers	5	10
Utility Designers/Coordinators	4	10
Traffic Engineers(MOT/Signing/Striping)	7	70
Landscape Architects	3	15
Geotechnical/Pavement Engineers	10	>50
Quality Control Engineers	10	30
Surveyors/Right-of-Way (ROW) Specialists	8	>30
Fire Protection Engineers	2	5
<b>TOTAL (Exclusive of Key Personnel)</b>	<b>95</b>	<b>&gt;500</b>

**Design Coordination to Ensure Project Success-Partnering, Collocation & Meetings**

In SBJV's previous Design-Build (D-B) projects, collaboration through Partnering has been an essential component of each project's

success. Our team is unique in that it is comprised of design firms that already have established a strong D-B relationship and relevant project experience from working on the Route 29 Bypass project. SBJV's designer, JMT, has provided Design-Build services for VDOT on the Route 3 Widening Project in the Culpeper District and for Fairfax County Parkway, Mark Center, Route 61 and Route 15/460.

These projects have been successful due to an extensive reliance on face-to-face communication, "over-the-shoulder" reviews and input, and team cooperation with a goal to get the job done together.

Given the complexities and schedule constraints associated with this project, SBJV recognizes that a structured organization with clearly defined goals, criteria and lines of communication will be essential to ensure success of the project. To augment our organization for the final design, the SBJV looks forward to including VDOT and other Stakeholders in our processes with full intent towards a complete Partnering approach that includes building trust and openness to solve the complex issues that will arise on this project. This Partnership will focus on how the project team can work together collaboratively to satisfy clearly established goals for each design element, including:

- 29 Minimizing impacts to the environment, particularly along the Rivanna River.
- 29 Reducing adverse impacts to the operation of congested roadways.
- 29 Coordinating with concurrent and future design elements and construction phases.
- 29 Schedule and phasing needs to meet overall project schedules.
- 29 Reducing costs, including life cycle costs.

- 29 Meeting or exceeding maintenance requirements.
- 29 Conforming to specifications with no additional design exceptions
- 29 Context Sensitive Solutions strategies to minimize adverse impacts on ROW, adjacent property owners, the traveling public/community, and consistent project aesthetics.

The SBJV team understands the importance VDOT places upon collocation to achieve the projects goals. We are committed to establishing a facility that is sufficiently sized within two miles of the project site, and staffing it with key SBJV personnel, both design and construction as well as VDOT personnel. We envision our co-located staff having regular, if not daily, conversations with VDOT's key decision makers, allowing project issues or challenges to be immediately discussed, evaluated and decisions by VDOT made promptly.

Skanska/JMT's co-location office with DDOT Representatives on the \$375M 11<sup>th</sup> Street Corridor D-B project in DC allowed for an atmosphere of open communication and dialogue that resulted in schedule acceleration and cost savings.

The project goals will be communicated to the full D-B team in formal and informal meetings (*Exhibit 3-02*) and used as a basis of review during all project discussions, "over-the-shoulder" reviews, formal QC reviews, and the implementation of Task Force Groups (TFG). TFGs consists of discipline designers, estimators, field operations and VDOT representatives to continuously refine the design and construction approach, and to quickly resolve any unforeseen conditions. A large portion of our plan to ensure the proper management of the design and coordination is

through the establishment of following meetings occurring on a regular basis at the collocation office.

*Exhibit 3-02: Types of Design Meetings*

<b>Tuesday Morning Internal Team Meetings</b>
Ensures coordination of design/construction. Element design teams will interact/coordinate on a regular basis with the D-B Coordinator and DBPM/Responsible Charge Engineer to ensure proper integration of design/ construction as well as conformance with quality goals.
<b>Wednesday Morning Meetings (VDOT and SBJV)</b>
Led by the D-B Coordinator to include DBPM/Responsible Charge Engineer, these meetings will allow the team to review the Project's progress and the upcoming week's activities. The Design Discipline and Construction Managers will actively lead specific discussions as appropriate.
<b>Informal "Over-The-Shoulder" Reviews</b>
Meetings where issues are addressed as they arise between the appropriate stakeholders. This interaction is key to the success of the D-B project and will be a daily occurrence over the life of the project.
<b>Task Force Group (TFG)</b>
Meetings will be held as necessary and for specific project requirements. A Management and Oversight TFG will address project critical issues with decision makers present and with the goal to keep the project moving ahead.

Due to the importance of maintaining smooth traffic flow on US 29, Rio Road, Berkmar Drive and several local roads, our Lead Traffic Engineer and MOT Manager will attend the Wednesday meetings and hold additional regular TFG reviews during the design phase with the element designers. These meetings will identify potential impacts that both the completed project and temporary construction have on the entire roadway network impacted by construction.

**Conceptual Plans and Description**

The SBJV team has reviewed the RFP requirements including the design criteria and design criteria tables to provide a quality preliminary design that meets these

requirements and allows the project objectives and goals to be met. The SBJV team reviewed the RFP requirements including Design Criteria Tables to develop the horizontal and vertical geometry of the roadways for the three project elements.

**(a) Horizontal Alignments - Exhibit 3-03** below provides a summary of the horizontal geometry of the roadways within the project and the Functional Classification and Design Speeds used in the SBJV team's design solution.

*Exhibit 3-03: Meeting Horizontal Geometry and Functional Classification*

Project Elements	Functional Classification	Design Speeds (MPH)
US 29 & Rio Road GSI	Urban Other Principal Arterial (US 29)/Urban Minor Arterial (Rio Road)	45 MPH (US 29) / 40 MPH (Rio Road)
US 29 Widening	Urban Other Principal Arterial	45 MPH (Unless specified otherwise)
Berkmar Drive Extension	Urban Collector	40 MPH

The Team has revised the horizontal geometry for the US 29 Widening and Berkmar Drive Extension to provide cost effective and efficient design while still meeting the RFP requirements. The US 29 mainline for the US 29 Widening element was shifted to allow for a more efficient Maintenance of Traffic (MOT) sequencing and a reduction in the required construction time. The Berkmar Drive Extension alignment was shifted, reducing earthwork requirements, utility impacts, and project footprint, as well as to provide for a tangent bridge alignment across the Rivanna River.

**(b) Vertical Geometry - Exhibit 3-04**

provides a summary of the maximum grades for each roadway element within the project. The SBJV team has adjusted the provided profiles, using the required grades for the roadway classification, such that it meets *AASHTO / VDOT Road Design Manual* requirements and to optimize the design and minimize impacts.

*Exhibit 3-04: Meeting Vertical Geometry and Functional Classification*

Project Elements	Functional Classification	Max. Grades
US 29 & Rio Road GSI	Urban Other Principal Arterial (US 29)/Urban Minor Arterial (Rio Road)	7% (US 29) / 8% (Rio Road)
US 29 Widening	Urban Other Principal Arterial	6%
Berkmar Drive Extension	Urban Collector	8%

The SBJV team identified a grade issue in the northwest quadrant of the US 29 & Rio Road Grade Separate Intersection (GSI). The design team studied the grades in this area extensively and developed a detailed plan to adjust the grades so that impacts to the traveling public are minimized during construction, the project footprint will remain nearly the same, and the proposed solution will provide a compliant final design. The SBJV team has also made substantial revisions to the US 29 Depressed Roadway at the GSI, reducing the project's footprint and work while still meeting all of the requirements defined in the RFP.

**(c) Typical Sections of the Roadway Segments**

The SBJV team has developed the proposed roadway typical sections in accordance with the RFP requirements. The required minimum lane widths and super-

elevation standards were utilized for each the roadway for the applicable design speeds.

**(d) Design Exceptions/Waivers** - The following is a list of the required design waivers associated with the GSI and which have been identified in the RFP plans.

- 29 **Design Waiver No. 1** - US 29 Left Shoulder 2' Width & Right Shoulder 8' Width for Depressed Thru Lanes.
- 29 **Design Waiver No. 2** - US 29 Left Shoulder 2' Width for the Local Lanes.
- 29 **Design Waiver No. 3** - Elimination of 4' Sidewalk Buffer along US 29 & Rio Road GSI within the limits of the GSI.

The SBJV has experience in preparing waiver requests for VDOT. Our team will prepare the requests and is confident that through Partnering with VDOT the waivers can be processed in an expedited manner. SBJV design has not identified any other Design Exceptions or Waivers for the GSI, the US 29 Widening or Berkmar Drive Extension projects.

**Conceptual Hydraulic and SWM Design**

The drainage design is in accordance with the *VDOT Drainage Manual* and other applicable criteria and regulations. The SWM design utilizes *Part IIB Technical Criteria in Section 9VAC25-870-62 et seq.* of the VSMP Regulations.

SBJV team has modified the proposed drainage layout to address our revisions to the geometric design elements. Our team has performed extensive drainage calculations and storm drain pipe sizing to ensure that the storm drain systems design is in accordance with the RFP. The following matrix, *Exhibit 3-05*, outlines each of the major roadway's drainage design criteria by classification and appropriate storm frequency:

Exhibit 3-05: Meeting Hydraulic Design Criteria

Road	Classification	Design Speed (MPH)	Culverts	Design Criteria					
				Inlets				Storm Pipes	
				w/shoulder		w/o shoulder		w/shoulder	w/o shoulder
On Grade	Sag	On Grade	Sag						
US 29 & Rio Road GSI	Urban Other Principal Arterial/Urban Minor Arterial	45/40	25 year	10 year	10 year	4 in/hr	4 in/hr	25 year	10 year
				4 in/hr	4 in/hr	4 in/hr	4 in/hr	10 year	10 year
US 29 Widening	Urban Other Principal Arterial	45	25 year	10 year	10 year	4 in/hr	4 in/hr	25 year	10 year
Berkmar Drive Extension	Urban Collector	40	25 year	4 in/hr	4 in/hr	4 in/hr	4 in/hr	10 year	10 year

SBJV design efforts to date have determined that the ROW and/or easements shown for the US 29 & Rio Road GSI and US 29 Widening elements of the project provided in the VDOT RFP plans are adequate to accommodate the requirements for drainage and stormwater management (SWM). Using this determination, we will submit our drainage and SWM design for these elements to VDOT shortly after NTP. These plans and report information will be the basis for the ROW plan development submittal to seek early approval to begin ROW acquisition. For the Berkmar Drive Extension, additional ROW and/or drainage easements will be required to accommodate the proposed SWM. Our team is prepared to investigate and document the environmental resources of these sites per the requirements of the RFP. The layout of the storm drainage systems and SWM is provided in *Volume II – Offeror’s Conceptual Plans*.

The drainage design consists of, but not limited to, cross culverts, ditches, channels, drop inlets and enclosed storm drain systems as necessary to accommodate project completion. The storm drain systems will be designed for spread and pick-up criteria, hydraulic grade line and sized per the *VDOT Drainage Manual*. Drainage structures have

also located to provide access for maintenance and to provide an outlet for any under-drain (UD’s) outfall systems. Priority will be given to the location of any new storm drainage systems relative to their locations regarding constructability, construction phasing and maintenance issues. Storm drain locations will be optimized, to the greatest extent practical, to maintain the existing conveyance pattern of stormwater runoff and to convey runoff to proposed SWM Best Management Practices (BMPs) as needed to meet the SWM Quantity and Quality requirements for this project.

Per the RFP, the SBJV assumes the existing drainage pipes and culverts within the project limits, which are functional components of the proposed drainage design, are structurally deficient and will be either plugged and abandoned, removed, or replaced with adequate drainage components. As noted above, replaced drainage components will have priority given to constructability and maintenance issues. Following project award the SBJV will investigate the serviceability and functionality of the affected existing pipes and culverts. If SBJV finds existing pipes or culverts in usable or repairable condition, the Team will only utilize these existing pipes or culverts with VDOT approval.

In order to obtain a Virginia Storm Water Management Program (VSMP) permit for each element of the project, SBJV will demonstrate that the design has adequately met the quantitative and qualitative management requirements of the *VDOT Drainage Manual* and *IIM-LD-195.8 "Post-Development SWM."* SBJV will perform SWM analysis and design to manage both the quantity and quality of the stormwater runoff from the project site. Effective management will minimize adverse effects downstream of the project drainage systems. The SWM analysis and design, where applicable, will be in accordance with the appropriate project design criteria.

■ **US 29 & Rio Road GSI** - The SBJV drainage design directs runoff toward the three proposed Underground SWM Easements. Underground detention structures within the easements will be used to meet the water quantity requirements. These facilities are located outside the roadway which will alleviate maintenance access issues. This project location is highly urban with numerous utilities above and below ground, has limited surface ROW, and only underground SWM easements. Due to these constraints and specific BMP exclusions in the RFP, few SWM practices are feasible; namely tree boxes and water quality inlets along US 29. The maintenance requirements of these BMPs coupled with the high vehicular and pedestrian traffic in this area make these BMPs impractical.

The US 29 & Rio Road GSI element will meet project requirements for quantity using underground facilities and for quality, nutrient credits will be purchased.

Utilizing the underground detention structures for water quantity and quality treatment is

inadvisable because the primary water quality treatment mechanism would be infiltration. Soils within highly urban and commercial settings tend to be compacted which hinders infiltration; even if infiltratable soils are present. The resulting groundwater recharge could potentially have deleterious effects on foundations, the depressed roadway section and adjacent commercial properties. Therefore, the appropriate design approach to meet the water quality requirements are through the purchase of nutrient credits. The *RFP Re-Development Technical Criteria* and the *Virginia Runoff Reduction Method Re-Development Worksheet* will be used to determine the required nutrient credits.

■ **US 29 Widening** - The SBJV drainage and SWM design meets the water quantity and quality requirements on-site and within the RFP ROW and SWM easements.

A combination of Enhanced-Extended Detention Basins, Bioretention Basins/Filters, and Filterra facilities will be used for the US 29 Widening element.

■ **Berkmar Drive Extension** - The SBJV proposed roadway and bridge designs reduce the roadway length and project area which also reduces the SWM requirements. Water quantity requirements for this project will be met through the use of wet ponds and underground detention. Underground SWM southeast of the bridge is necessary to meet the required channel protection. Per the RFP, *New Development Technical Criteria* and the *Virginia Runoff Reduction Method New Development Worksheet* will be used to determine the water quality requirements.

Proposed SWM BMPs for the Berkmar Drive Extension element include Level I Wet Ponds, and Level II Bioretention facilities.

Utilizing multiple BMP types in series will create a treatment train approach which will help to maximize the treatment potential within the project area. The project area is characterized by wooded rolling terrain. The proposed BMPs are located for quantity management and then designed for quality purposes as well. The facilities at these locations do not meet the water quality requirements. Additional BMPs to meet the quality deficit would require the clearing of large wooded areas for the facility footprint and slope tie-ins; this contradicts the intent of the water quality regulations. Using a combination of on-site treatment and nutrient credit purchases is the appropriate design approach to meet the water quality requirements.

#### **Stormwater Pollution Prevention/ Erosion and Sediment Control (E&S) Plans**

The SBJV will develop these plans for each element of the project, which will meet or exceed the requirements of the *Virginia Erosion and Sediment Control Regulations (VESCR)* and *VDOT's Annual Erosion and Sediment Control Standards and Specifications*. BMP Practices will guide this process where applicable. The nineteen (19) minimum standards in the *VESCR Handbook*, *VDOT's 2002 Drainage Manual*, *Road Design & Standards*, *Instructional & Informational Memoranda*, and *Road Design Manual* will be utilized in the preparation of the E&S Plan.

This E&S Plan will provide a narrative and design plan employing various E&S practices as required to stabilize the disturbed areas while retaining the sediment on the construction site. The MS-19 Analysis will be performed for each drainage outfall of the project to limit erosion and flooding in these areas. At a minimum, the 2 and 10-year

frequency storms will be used in preparing this analysis. The roadway drainage will also have temporary elements to handle the various construction phases to minimize traffic safety hazards associated with flooding risks and ponding of water.

All analysis and design will be completed in accordance with the policies, procedures and criteria contained in the *VDOT Drainage Manual*, and other directives, as appropriate.

#### **Structure Design (US 29 & Rio Road GSI and Berkmar Drive Extension)**

**Proposed Structural Design Methodology and Design Parameters** - The bridges will be designed in accordance with the General Notes, AASHTO and VDOT requirements as shown in *Volume II – Offeror's Conceptual Plans*.

Numerous retaining walls are shown in the RFP documents at various locations along the roadway alignments. During final design, SBJV will continue to evaluate eliminating retaining walls in an effort to reduce long-term VDOT maintenance requirements.

**US 29 & Rio Road GSI** - SBJV has evaluated numerous structural concepts associated with this element. Our design includes the use of precast adjacent box beams supporting a cast-in-place concrete deck bridge that will span the proposed depressed roadway. The box beams will rest on cast-in-place concrete abutment caps founded on deep foundations. The box beams are designed to carry the traffic loading and to act as a strut to brace the abutment walls resulting in efficient design sections for the deep foundation and soil retaining system. The box beams include additional concrete cover over the bottom prestressing strands that address the requirements for fire protection. Beyond the bridge abutment, the depressed roadway

retaining walls are designed, as freestanding walls comprised of piles and steel sheets between the piles to retain soils. Precast wall panels will cover the piling and sheets to provide not only the required aesthetic treatment but also act as the sacrificial element required for fire protection.

Fire protection measures for the depressed highway and roadway tunnel include:

- Installation of a dry standpipe system.
- Traffic control devices.
- Protection of main structural members.
- CCTV fire detection.

Our design for the retaining walls that support the local roadways includes a cast-in-place concrete cap that is designed to act as a moment slab and resist the requisite vehicle impact loading.

**Berkmar Drive Extension** - SBJV has evaluated numerous structural concepts and span arrangements associated with the bridge on Berkmar Drive over the South Fork of the Rivanna River. The proposed bridge will be a 4-span continuous steel girder bridge. Laminated elastomeric bearing pads will be used at piers and abutments.

Both abutments will be cast-in-place reinforced concrete Virginia Alternate Abutments founded on plumb steel HP piles. The abutments will be located behind mechanically stabilized earth (MSE) walls serving as the main abutment wall and wing walls to retain the approach fill.

The piers will consist of low permeability cast-in-place concrete circular columns supporting a concrete cap, on drilled shaft foundations.

Approach slabs to span the abutment backfill zone will be reinforced, cast-in-place concrete slabs. For additional details, see the

Conceptual Structural Plans provided in *Volume II – Offeror's Conceptual Plans*.

#### Benefits of the Proposed Design Concepts

SBJV has evaluated numerous design concepts associated with the US 29 & Rio Road GSI, US 29 Widening and the Berkmar Drive Extension elements.

The evaluations have focused on innovative solutions that will benefit VDOT and the end user by:

- Minimizing risk to VDOT and SBJV.
- Remaining within the ROW.
- Minimize environmental impacts.
- Accommodating utility relocations.
- Improving safety and operations.
- Minimizing construction impacts.
- Meeting public expectations.
- Providing the opportunity to realize the full GSI incentive.

The evaluation also confirms the overall project priorities of costs and efficient design that meet or exceed the requirements of the RFP.

The tables shown below provide a summary of the Benefits the SBJV innovative design features provide to VDOT and End Users as they related to the key elements of VDOT's goals for the projects:

- 29 Safety and Operations.
- 29 Construction impacts and public acceptance.
- 29 Types of materials and construction methods.
- 29 Reduction of future inspection and maintenance.
- 29 Long-term asset performance and durability.

Please refer to *Volume II – Offeror's Conceptual Plans*. All plans meet or exceed RFP technical requirements. *Exhibit 3-06* on the next page provides the innovative features and realized benefits for each project element.

**Exhibit 3-06: Innovative Features and Realized Benefits of Each Project Elements****US 29 & Rio Road GSI (Vol. II Pages 41-55 Roadway /Pages 56-59 Structural Plans)**

The team evaluated numerous concepts associated with this complex project element. A great deal of emphasis has been put on design validity, constructability and schedule for the GSI design. As a result, we have developed an innovative approach to the design and construction of the GSI that will meet or exceed the RFP requirements and provides the opportunity for the project element to meet interim milestones and final completion while minimizing impacts to the motoring public and local businesses.

**1. Bridge beams acting as struts to brace abutment wall system.**

- Reduces construction impact associated with larger piles and/or tieback systems.
- Better public acceptance and earlier construction start by maintaining ROW shown.
- Galvanized materials (piles/sheets) provides long-term asset performance & durability.
- Allows expedited construction and reduced initial construction costs.

**2. Innovative trench design and construction technique.**

- Allows early construction start of time critical project components.
- Majority of abutments and walls constructed during night operations and prior to shut down period.
- Provides opportunity for full incentive realization.

**3. Free Standing Wall Systems.**

- Reduces time critical construction impacts associated with utility conflicts and tie-backs.
- Maintains VDOT delineated ROW, eliminates ROW concerns associated with tie-backs, and aids in public acceptance and earlier construction start.
- Removes construction/inventory inspection uncertainty associated with buried tie-backs and connections.
- Galvanized materials (piles/sheets) provides long-term asset performance and durability.
- Provides time and location for utility relocations, resulting in well-defined construction integration and operations of utility relocations.

**4. Modifications to US 29 Depressed Roadway Profile.**

- Shorter length walls and bridge deck areas which reduces long-term maintenance and extent of inspections.
- Reduces associated life cycle costs of longer walls and tunnel (larger bridge) and initial construction costs
- Increases safety and improves public acceptance by reducing the depressed roadway length, which increases roadway length available to accommodate SB traffic weave south of the depressed roadway.
- Reduces fire protection requirements; associated maintenance by reducing bridge deck and wall areas; and associated drainage allows use of alternate pipe materials such as HDPE pipe, which speeds up construction.

**5. Modifications to US 29 Depressed Roadway Profile - Drainage**

- Allows underground SWM to be concentrated in the two northern easements.
- Reduces the south easement requirements, reduces area needs by 1/2.
- Results in refined SWM that decreases maintenance requirements of Underground SWM facilities.
- Results in better public acceptance and earlier construction start by maintaining ROW shown.
- Results in reduction of construction impacts.

**6. No additional design exceptions or waivers introduced in SBJV concept design.**

- Increases safety and provides better public acceptance and improves operations of the intersection.

**US 29 Widening (Vol. II Pages 60-93 Roadway Plans)**

The team evaluated numerous design concepts. Our design concepts focused on correcting substandard vertical curve geometry throughout the corridor, minimizing impacts to the motoring public, staying within the ROW provided, accommodating utility relocations and balancing earthwork. The evaluations also confirmed the overall project priorities of costs and efficient design concepts that meet or exceed the requirements of the RFP.

**1. Adjusted vertical profile to minimize earthwork and impacts to the environment.**

- Increases safety and enhances public acceptance by reducing material hauls along public roads and reduces initial construction costs.

**2. Adjusted sequence of construction that allows for a more efficient MOT plan.**

- Reduces initial construction costs, improves operations and impacts to the motoring public during construction.

**3. Adjusted vertical profiles to eliminate substandard sag curves at multiple locations along the alignment.**

- Increases safety by improving site distance, which should reduce accidents along the corridor, and provide greater public acceptance.

**4. Storm Drain/SWM concepts that minimize pipe runs, and provides requisite water quantity requirements. Alternate pipe material use to speed up construction.**

- Reduces initial construction costs, improves operations and further maintenance and life cycle costs.

**5. No additional design exceptions or waivers introduced in concept design.**

- Improves operations and safety of the corridor.

**Berkmar Drive Extension (Vol. II Pages 94-117 Roadway / Pages 118- 120 Structural Plans)**

The team evaluated numerous design concepts focusing on minimizing earthwork and eliminating the curved bridge over the Rivanna River. Our concept eliminates the curved girder bridge and stays within the 200' wide study corridor as defined in the RFP except for locations where SWM needs dictate and some minor grading impacts. We acknowledge that evaluations of the potential impacts to environmental resources will be required for SWM areas. Our team will proceed with all environmental evaluations as required by the RFP and understand that it is the team's responsibility to secure all approvals and permits. Keeping the overall project priorities of costs and efficient design in mind during an evaluation process it is our team's opinion that the tangent bridge structure will provide a better solution for VDOT and the end users.

**1. Adjusted alignment to eliminate horizontally curved bridge over the Rivanna River.**

- Reduces initial construction costs and future maintenance costs.
- Tangent bridge structure is safer, especially in inclement weather, which increases public acceptance.

**2. Avoids impacts to Wetlands #40, 41 and 42 and Streams #26 and 27.**

- Minimizes environmental impacts by avoiding impacts to targeted resources and increases public and regulatory agency acceptance.

**3. Adjusted intersection layout at Berkmar Drive and Rio Road intersection to eliminate roundabout and provide Signalized T Intersection.**

- Reduces earthwork and initial construction costs and better accommodates future widening of Berkmar Drive.

**4. Shorter tangent bridge reduces time required to build structure**

- Reduces initial construction costs and schedule to provide facility to public sooner and reduces future maintenance concerns related to curved bridges.
- Provides a decrease in deck area and associated long term maintenance.

**5. Using a 4-span structure eliminates one pier & reduces total number of bearings.**

- Reduces initial construction and future maintenance costs.
- Minimizes impacts to the environment, which increases public and regulatory agency acceptance.

**6. Allows for alternate pipe materials, such as HDPE**

- Reduces initial construction costs and improves construction operations.

**7. Tangent Bridge reduces total roadway length, which reduces SWM requirements.**

- Reduces initial construction costs, ROW and minimizes impacts to the environment, which increases public and regulatory agency acceptance.

**8. SWM design utilizes treatment train (multi-BMP) approach to maximize water quality treatment potential within the provided easement areas**

- Reduces initial construction costs, nutrient credit purchases, and ROW.
- Maximizes use of natural SWM nutrient reduction methodology, which increases public and regulatory agency acceptance.

**9. Uses LRFD design methodology.**

- Promotes long-term asset performance and durability.

**10. Use of caisson foundations for piers.**

- Reduces environmental impacts when compared to spread footings, which improves public and regulatory agency acceptance.

**11. Use of low permeability concrete and corrosion resistant reinforcing steel.**

- Construction materials that provide long-term asset performance and durability.

**12. Use of ASTM A 709 Grade 50W fabricated structural steel.**

- Reduces future VDOT maintenance costs.

**13. Use of laminated elastomeric bearing pads.**

- Reduces future VDOT maintenance costs when compared to steel bearings.



4. Approach to Construct the US 29 & Rio Road  
Grade Separated Intersection (GSI) (4.4)

4. Approach to Construct the  
US 29 & Rio Road GSI (4.4)

**SKANSKA**



*VDOT's goals are our goals.*

## 4. Approach to Construct the US 29 & Rio Road Grade Separated Intersection (GSI)

*VDOT's goals are our goals.*



### SBJV | GSI COMMITMENT



*SBJV commits to allocating personnel and equipment resources to the US 29 and Rio Road Grade Separated Intersection to meet or beat VDOT's Interim Milestone Period. We understand and respect the sensitivity of this project and will plan and execute to the highest standards to ensure success.*

**Salvatore Taddeo, Exec. Vice President**  
Skanska USA Civil Southeast Inc.

VDOT's priorities are to construct the US 29 and Rio Road GSI while limiting impacts, disruptions and risks. Our innovative design solution (including the use of Building Information Modeling (BIM)), construction methodology and comprehensive Transportation Management Plan (TMP) support these priorities. Our plan to construct the major portion of the widening, approaches and underpass and address utility coordination prior to the Interim Milestone Period, allows us to achieve the maximum incentive.

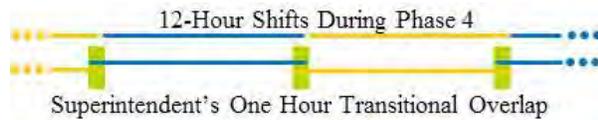
### Approach to Construction Phasing

Our approach to construction phasing incorporates our proposed schedule, well planned construction activities, and competent personnel with specific safety and quality requirements and goals. For each individual work task, we will develop and execute comprehensive implementation work plans that ensure the means and methods for each element of the project meet or exceed contract requirements, including:

- Scope of Work
- Safety
- Appropriate Plans/Specifications
- Task-Specific Procedures
- Labor
- Material Resources
- Schedule
- Equipment
- Environmental
- Quality

These task plans serve as a critical link for our construction teams during the Interim Milestone Period. Each Superintendent will arrive an hour before their start of shift to determine what has been completed and risks that may have developed during the previous shift. At the end of the shift, the superintendent will brief their counterpart, as shown in **Exhibit 4-01**. The task plans are critical for ensuring continuity and maintaining quality standards during this critical construction period.

*Exhibit 4-01: Superintendents' Shift Transition During Phase 4*



4.1 | **SEQUENCE OF CONSTRUCTION (4.4.1)**

Our sequence of activities revolves around the Interim Milestone Period. A summary of activities in these periods are included in *Exhibit 4-02*.

*Exhibit 4-02: Construction Activities*

Before Interim Milestone Period	
<b>Day:</b> No lane or shoulder closings.	<b>Night:</b> Traffic shifted from work zone.
Utility, curb and gutter, drainage and other minor road work.	Construct Support of Excavation (SOE) for the underpass, including pile cap and bridge abutments.
Interim Milestone Period	
Roads Closed, Traffic detoured	
Underpass excavation, drainage, bridge superstructure, above grade barrier walls, grade separation, median barriers, lighting, signals and roadway surface up to the intermediate course.	
Following Interim Milestone Period	
<b>Day:</b> No work	<b>Night:</b> Lane closure(s).
	Final completion of walls, surface course paving, permanent pavement markings.

We divided project construction into five phases. Work is further categorized by SOE Type solutions, which is dependent upon a geographical location and the barrier being installed. SOE Type solutions and installation sequence are described following the discussion of phases.

**Phases 1-3** - Our goal during these first three phases (*shown on Exhibit 4-03*), is to complete as much work as possible and to allow us to meet the maximum incentive attached to the Interim Milestone Period.

By limiting temporary structures and utilizing innovative construction techniques that make maximum use of nightly closures, we meet VDOT's objective of minimizing disruption and achieving the maximum incentive.

Activities during each phase, including traffic shifts and construction activities, include:

- 29 **Phase 1** - Shift traffic to the US 29 SB lanes. Construct east walls between SOE Type solution 2 and 3 on both sides of Rio Road, allowing for utility relocations.
- 29 **Phase 2** - Shift traffic to US 29 NB lanes and construct the west SOE Type solution 2 and 3 on both sides of Rio Road and then SOE Type solution 4 on the west side after the dry utilities have been relocated from the intersection.
- 29 **Phase 3** - Shift traffic to the US 29 SB lane. Construct the SOE Type solution 4 east wall. SBJV plans to shift all vehicles completely out of the construction zone at night during before the Interim Milestone period. This is a safe and efficient means to protect the traveling public and workers.

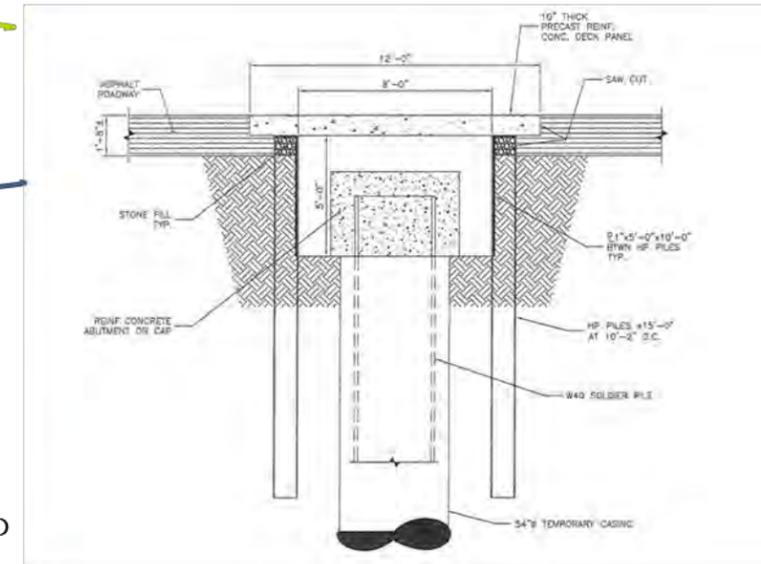
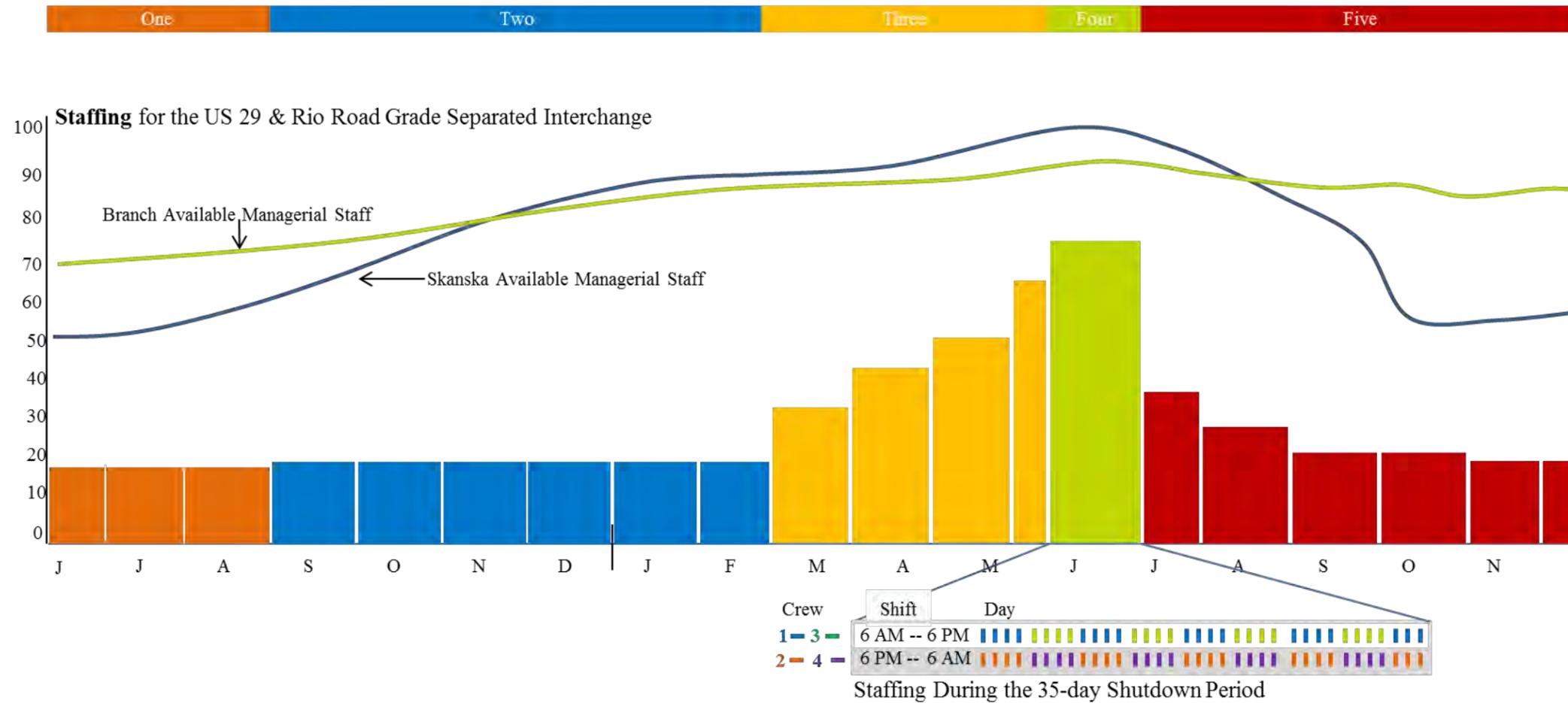
Phase 1 SB lanes will have signage during nighttime work for two NB lanes and two SB lanes (in a contra-flow pattern). NB lanes will be diverted onto the southbound lanes. Rio Road will be configured with one lane in each direction on either WB or EB lanes as needed for the contra flow pattern. This will be repeated in Phase 2. Please refer to **Section 4.2** and to **Volume II**, pages 41-42.

**Phase 4: Interim Milestone Period** - All Phase 4 activities will occur during the Interim Milestone Period. In Phase 4, we excavate for and then construct the underpass roadway, followed by the GSI bridge superstructure and the wall-top barrier.

**4. Approach to Construct the US 29 & Rio Road Grade Separated Intersection (GSI)**

*VDOT's goals are our goals.*

*Exhibit 4-03: Phasing and Stages--Rio Road Route 29 GSI Element at a Glance, Phasing, Staffing and Sequences*



Typical trench cross section for nighttime SOE installation.

**Sequence of Construction: Phase Locations and SOE Types**

West Wall		Bridge		East Wall	
SOE Type 1	SOE Type 2	SOE Type 3	SOE Type 4	SOE Type 3	SOE Type 2

At the beginning of Phase 4, traffic will be moved away from the work area. We will excavate to subgrade outside the Rio Road Bridge structure in SOE Type solutions 1 through 3. In SOE Type solution 4, the excavation for the bridge structure will stop twelve feet below the existing surface.

The bridge box beams will be installed, connected to the abutment and locked into place, and provide a strut to support the cantilever SOE in SOE Type solution 4. We will then remove the material from under the bridge to the subgrade level.

Roadway drainage, base course, intermediate paving and the median barrier will be installed. The barrier on the wall top will be placed, and barriers and the concrete median will be installed. Following minor paving along the upper barrier, the underpass will be opened to traffic.

**Phase 5** - Phase 5 activities will occur following the-Interim Milestone Period. By this time, most of the major work has been completed, and only surfaces will need to be finished.

During Phase 5, we will complete the underpass walls, final asphalt paving and pavement markings.

**SOE Type Solutions** - To respond to time and space constraints, our chosen solution will utilize SOE Type solutions for constructing the GSI. As shown in *Exhibit 4-03* we are proposing four SOE Type solutions, grouped according to construction and structures. Construction will begin at the southern end of the construction zone and proceed to the north, and will provide a time-effective means to construct SOE structure with the least intrusive means and methods.

**SOE Type Solution 1** - Construct a raised concrete median at the surface with standard barrier that transitions into a median barrier wall.

**SOE Type Solution 2** - Construct the underpass wall with cantilever sheet piling and a reinforced cast-in-place concrete pile cap. We will face the wall with a precast concrete panel that meets aesthetic requirements.

**SOE Type Solution 3** - Construct a cantilever supported wall with soldier piles and sheet pile lagging. The top of the wall will be constructed with reinforced cast-in-place concrete pile caps and barriers. No tiebacks will be required.

A typical sequence of construction that we will use in SOE Type solution 3 includes:

1. Mill out existing asphalt pavement to establish a slot and bench to support the concrete deck panels.
2. Install precast concrete deck panel in slot.
3. Remove panel, saw cut two parallel lines in the asphalt ten inches deep on a line eighteen inches in from the primary cut.
4. Install H-pile and lagging (trench support) while excavating trench to the bottom of pile cap.
5. Install guide frame, temporary casing and auger out casing.
6. Install secondary guide frame. Place flanged soldier pile.
7. Place concrete at base of pile and fill the balance of casing with sand to bottom of pile cap.
8. Remove guide frame, casing and install sheet pile lagging between soldier piles.
9. Install formwork, reinforcing steel, bar couplers, place concrete pile cap and cure.

10. Remove formwork, backfill sides of pile cap; remove SOE, backfill top of cap with stone and temporary asphalt.

Concrete deck panels will be installed at the end of each shift and the road open to traffic.

SOE Type solutions 2 and 4 will be constructed with a similar sequence as SOE Type solution 3.

A video card depicting the animation of the construction sequence for SOE Type 3 the underpass walls of the GSI is included as part of Section 7, Schedule Narrative.

- 29 **SOE Type Solution 4** - Where Rio Road crosses US 29, we will use precast concrete box beams and cantilever soldier piles and sheet pile lagging with a reinforced cast-in-place concrete pile cap. The pile cap will be the abutment for the bridge. The box beams and abutment are designed to act as a permanent strut between the wall sections. Additional details of the bridge underpass wall installation are in *Volume II*, pages 56-59.

- 29 **SOE Type Solutions 3, 2, 1 north of SOE Type Solution 4** - Will continue the same construction methods but in reverse order.

### Use of Available Resources

**Personnel** - Skanska and Branch have both analyzed availability of personnel over the course of the entire project, particularly during the “spike” during the Interim Milestone Period. Both companies will have available the management and craft personnel needed to fully staff the rolling four-twelve construction period.

During the Interim Milestone Period, to reach the maximum incentive, SBJV will utilize “rolling four-twelves,” where the team will

greatly escalate the number of personnel on site. **Exhibit 4-03** shows the anticipated staffing, as well as both Skanska’s and Branch Highways’ available management personnel, to support construction on the project. Each shift—one twelve-hour shift during the day, and one twelve-hour shift at night, will work four days, as shown in Exhibit 4-03. They will be replaced by two different crews who will work for four days. Each shift will be supported by a full complement of management, engineering, safety, quality and professional personnel to ensure that the project schedule is not impacted.

We are committed to provide the resources needed to help VDOT reach its objectives on this element. Our available resources include:

- 29 **Equipment** - SBJV has determined the equipment it will need for the phases of construction for the GSI intersection, as shown in **Exhibit 5-01** on page 33. During the Interim Milestone Period, we will ensure ready availability of mechanics and parts in case of equipment problems.

- 29 **Materials** - We are currently soliciting bids for materials from local and regional vendors. We are also planning to enter into arrangements with “secondary” vendors, who will be able to provide materials on short notice if there is an interruption in the primary flow of materials. Long lead items include:

- Galvanized wide flange beams
- Galvanized sheet piling
- Precast concrete box beams
- BR-27 Bridge railing

### Safety for the Public and Operations

For SBJV, safety is the foundational principle of our operations. For an overview of our program, please see **Section 5.1**. Our five phases of construction detailed above assures VDOT that our approach to construction and traffic management provides the utmost safety for the traveling public and our crews working in the construction zone.

During Phases 1-3, we will execute three major traffic shifts prior to the Interim Milestone Period. We will shift traffic every night 6 days a week starting in July of 2015 to build the wall by May of 2016. We will have nightly shutdowns of the underpass to finish the walls and final paving from the end of the Milestone period of June 28, 2016 until completion, planned for Dec 2, 2016.

Our plan keeps the public completely out of the work zone. There will be no lifting over traffic, limited movement of materials through traffic, and no chances of drivers going through the work zone or near workers.

Our chosen construction means and methods and TMP design takes into consideration the safety of the traveling public, minimizing disruptions to local residence and business and the safety of the construction work forces.

Public safety is a major consideration of our TMP, described in Section 4.2, where we address vehicles, pedestrians, cyclists, and incident management. Our goals are to keep people safe through planning and limiting disruptions to traffic, to businesses, and to public transportation in the work area. We pay special attention to providing support for **first responders (fire, police, EMS and others)**. We will hold a site visit/meeting/site

walk at the beginning of the project to review the construction schedule, detours and alternative routes, and will keep first responders informed of changes in traffic flow. When establishing detours and lane closures, we will also ensure access to emergency facilities.

**Other Considerations** - Our plans to address project-wide issues such as geotechnical, environmental impacts right-of-way acquisition, staging and storage, public involvement and stakeholder coordination are provided in Section 5.

Among these items, there are certain aspects that are unique to the GSI. These include:

**Geotechnical** - Our review of the Geotechnical reports and our own investigations have resulted in our use of a two system; cantilever sheet pile, freestanding beam and sheet pile lagging system to act as the SOE when excavating the underpass. These will remain as part of the final retaining wall.

Both of these systems will remain in place. Leaving the SOE as part of the final structure will eliminate settlement issues of the roadway surface in the future.

In developing and choosing this solution, we considered several alternatives. Constructing the GSI and approaches using secant pile walls presented problems with work hour availability, slurry cleanup, and starter wall construction procedures would not meet VDOT priorities. A tangent pile system had the same constructability issues. An H-pile wall using tie backs or dead man anchors had geotechnical issues, utility conflicts, and required additional right of way.

**Environmental Impacts** - There are no significant environmental considerations for

the GSI. The SBJV Environmental/Safety Manager will conduct regular inspections of installed protective devices such as silt fences.

**Right-of-Way (ROW) Acquisition** - Our plan does not require the acquisition of any additional right of way to complete the GSI.

### Staging and Storage

Prior to the Interim Milestone Period, SBJV will establish a laydown yard between the beginning of the southern portion of the Berkmar Drive Extension and the southern abutment of the new bridge over the Rivanna River (as shown in *Exhibit 5-04* on page 37). During this period, major construction equipment will be staged in the US 29 temporary easements adjacent to the GSI.

### Public Involvement and Stakeholder Coordination

SBJV, through our Public Relations Manager Susan Sharp, will maintain regular outreach and contact with local stakeholder organizations, such as the PDAP, and individuals. A special focus of our outreach efforts will be working with businesses in or near the GSI construction zone. As Public Involvement is a project-wide activity, we are providing additional details about our communication activities in Section 5.1

#### 4.2 | TRANSPORTATION MANAGEMENT PLAN (4.4.2)

The SBJV team's approach to coordination includes the detailed development of a Transportation Management Plan (TMP). In the TMP, we analyze potential impacts and plan safe and effective minimization of disruptions to motorized and non-motorized traffic, which protects workers and equipment located within work zones. The TMP includes comprehensive incident management

protocols, with special attention paid to first responders and maintaining access for local businesses and residents.

We will also rely upon a robust communication plan that provides full support for VDOT activities and informing motorists and residents of changed traffic patterns, detours, and other construction activities.

### Approach to Maintaining Traffic and Access to Businesses

A Major (Type C) TMP will be developed for this project and will be based on the *VDOT Instructional and Informational Memorandum I&IM-241/TE-351, TED 351.3*. Steps to minimizing inconvenience include:

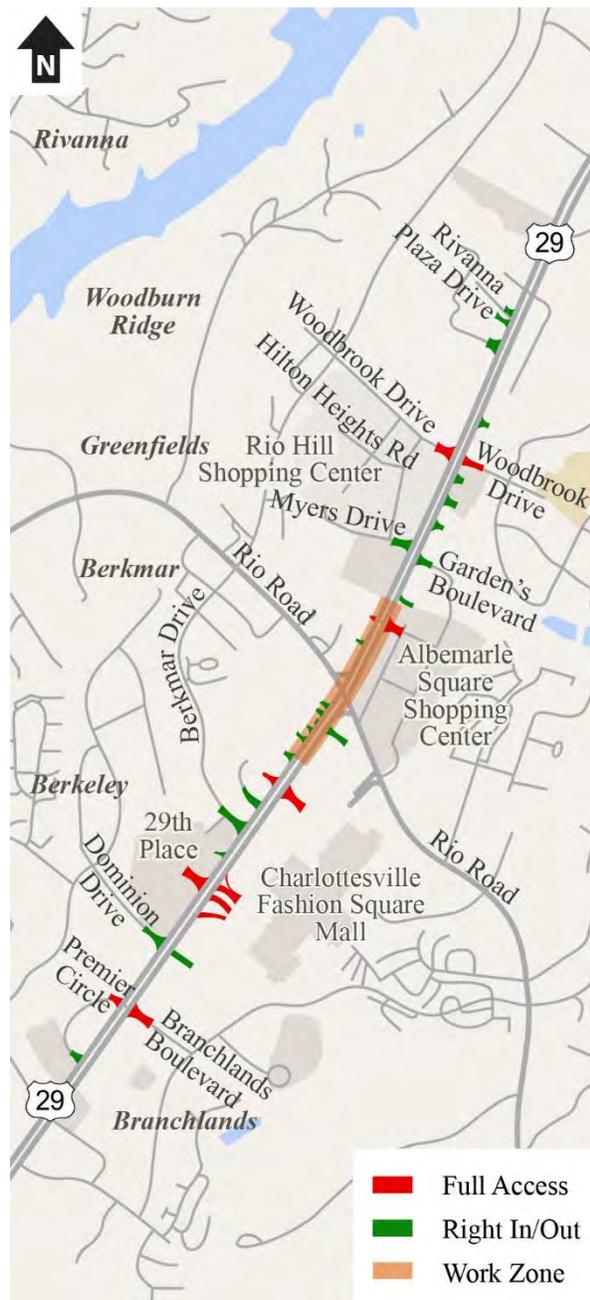
- 29 Work out of traffic and work at times of lower traffic volume (such as night).
- 29 Schedule workers and shifts for all available hours during major intersection construction (the Rolling 4-12 schedule).
- 29 Provide signage that directs traffic through the work zone.
- 29 Provide clear directions to customers to new entrances to businesses.
- 29 Work closely with transit officials, schools, and other mass transit providers to keep them apprised of construction activities, detours and lane closures.
- 29 Workers will park in the easement during Phase 4 (shutdown), in available space at the central management office or at the element office.

Our team will work to minimize any long-term closures throughout US 29 corridor during the construction of the GSI. As shown on *Exhibit 4-04* below, our team's TMP will allow for full access or right in/out access to all business driveways during construction.

#### 4. Approach to Construct the US 29 & Rio Road Grade Separated Intersection (GSI)

*VDOT's goals are our goals.*

*Exhibit 4-04: Maintaining Access During the Day to Local Businesses*



#### Proposed Detours and Alternative Routes

Detours will be developed as part of the Temporary Traffic Control Plan (TTCP). Our proposed detour plan *Exhibit 4-05* (shown below), provides alternate routes for adjacent roadways or U-turns along US 29. The detour plan will be used during Phase 4, when Rio Road, Fashion Square and Albemarle Square are accessed only by right turns from US 29. Large vehicles such as trucks may not be able to perform U-turns, and we will provide a truck detour, instructing drivers to use Woodbrook Drive or Berkmar Drive to access businesses along Rio Road West and Hillsdale Drive to access businesses on Rio Road East.

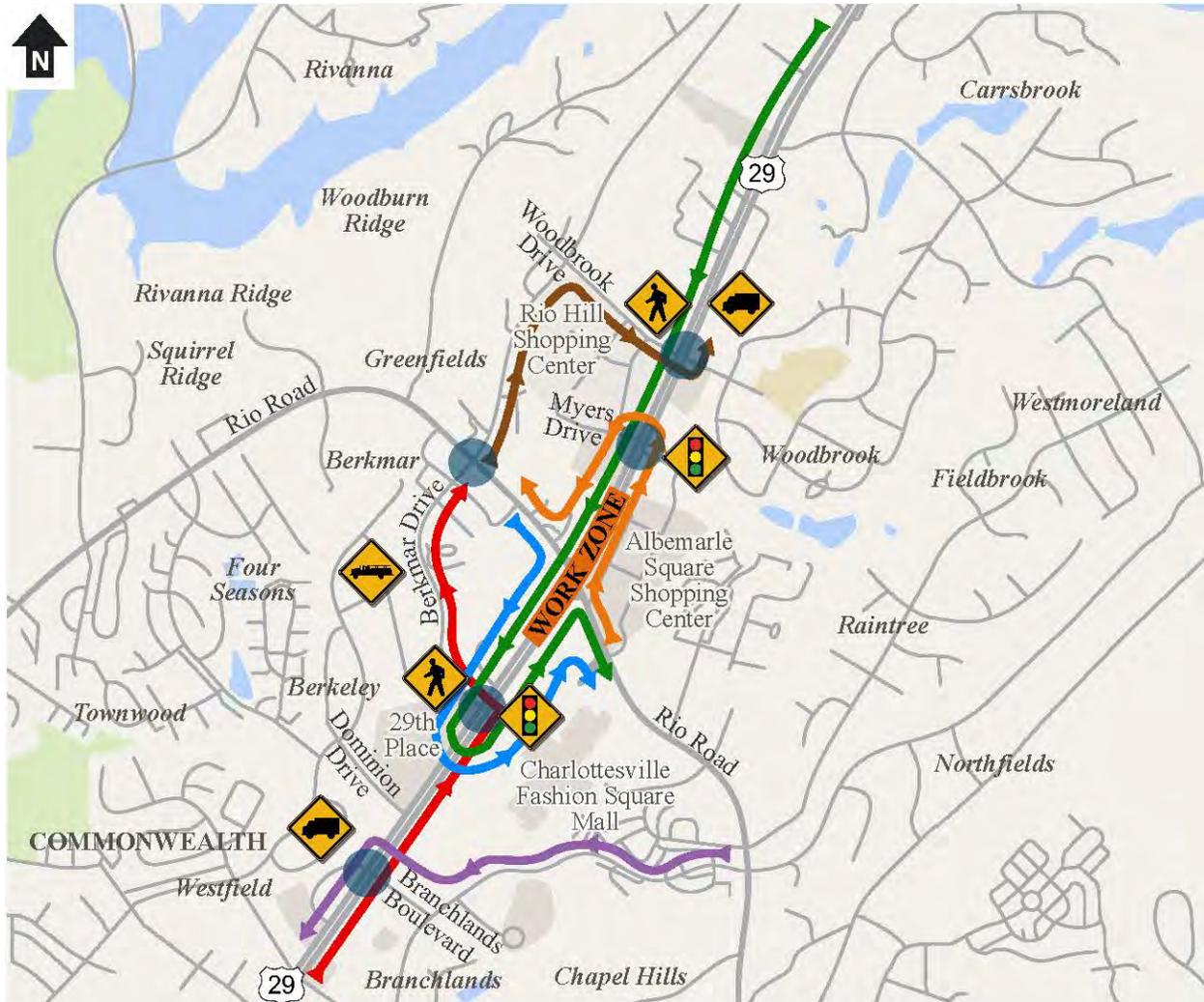
Detour signs will be placed along US 29 south of Hydraulic Drive to encourage motorists destined to areas outside the vicinity of the study area to use alternative routes. This detour will reduce the volume of traffic through the work zone.

A smart phone app will be developed and made available to the traveling public to show interactive detour routes. The user will be able to input their current location and destination and the app will recommend 2-3 potential alternate routes.

#### 4. Approach to Construct the US 29 & Rio Road Grade Separated Intersection

*VDOT's goals are our goals.*

*Exhibit 4-05: Proposed Detour Plans during Phase 4 (Interim Milestone Period)*



- |   |                                   |   |                       |
|---|-----------------------------------|---|-----------------------|
|  | Rio Road East to Rio Road West    |  | Truck Detour          |
|  | US 29 Northbound to Rio Road West |  | Pedestrian Crossing   |
|  | Rio Road West to Rio Road East    |  | Proposed Signal       |
|  | US 29 Southbound to Rio Road East |  | Fire Station          |
|  | Rio Road East to US 29 Southbound |  | Critical Intersection |
|  | Rio Road West to US 29 Northbound |   |                       |

### Work Zone Traffic Impacts

A Major (Type C) TMP requirement for this project involves assessing the Work Zone Traffic Impact using an operational level traffic analysis software simulation program. The current design of the MOT phases will require lane closures during non-peak travel periods. The operations of the MOT phases will be analyzed and modeled using HCM and Synchro software to assess impacts and to highlight areas where alternative construction methods or a revised TTCP may need to be employed.

Measures of Effectiveness such as approach level of service and queuing information along local roadways, as applicable, will also be provided to offer a complete profile of the expected conditions under construction.

A preliminary analysis was conducted for the impacted intersections using peak hour PM traffic data from the summer of 2014. The volume movement most impacted by the detour will be the US 29 SB left turn to Rio Road during the PM peak hour with a volume of 529 vehicles per hour (vph), with greatest impact at the detour route intersections. Some of the following mitigation measures will be implemented as needed:

- 29 Retime signalized intersections along the detour route.
- 29 Provide intersection modifications where needed. Possible critical locations include:
  - o **Rio Road West/Berkmar Drive** - Provide two EB Rio Road left turn lanes by converting the inside thru lane to a left turn lane. Change EB left turn phasing to exclusive left turn phasing. Modify Berkmar Drive north of the intersection to receive two receiving lanes.

- o **Provide a temporary, full-access signalized intersections** at US 29/ Berkmar Drive and a partial signal at US 29/Myers Drive to allow for a protected northbound US 29 U-turn.
- o **Reconfigure Fashion Square Mall south entrance** so US 29 SB left-turning motorists have the right-of-way to US 29 NB right turning traffic. Increase US 29 southbound left turn storage bays.
- o **Branchlands Boulevard/Hillsdale Drive** intersection control should be changed to an all-way stop.

We will develop base travel times by conducting GPS travel time runs prior to detours and supplement this with INRIX data. We will use traffic simulation models to determine if any detour travel times exceed the prescribed pre-construction travel times, of the route detoured.

Detour travel times will be minimized through signal retiming and by alerting the public of congestion, and minor improvements to existing intersections.

### Incident Management

SBJV will work closely with first responders in the case of traffic incidents. The Transportation Operation Plan provides a process to notify the VDOT Staunton Traffic Operations Center (NWRO TOC) to place detour and lane closure information on the 511 system. A list of local emergency response agencies will be included in the plan along with procedures to respond to traffic incidents that may occur in the work zone. The TMP will include several strategies including notifying the Northwest Regional Operations Traffic Engineer, provide contact list of local emergency response agencies, and

#### 4. Approach to Construct the US 29 & Rio Road Grade Separated Intersection

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procedures to respond to traffic incidents that may occur in the work zone. During long-term construction periods, a wrecker will be available.

The Seminole Trail Fire Department is located along Berkmar Drive. With a full access intersection at US 29/Berkmar Drive, these services will have minimal additional travel time or congestion to manage.

##### Modifications to Business Entrances

The SBJV team will develop an access management plan that will address access to the surrounding businesses.

- 29 For larger businesses such as Fashion Square Mall, a detour plan will be put in place. The north US 29 entrance to the mall will be closed and motorists will be detoured to use the south entrance. Directive signage will be provided.
- 29 Construction will occur in the US 29 median, therefore smaller businesses along US 29 will maintain a right in/right out access along US 29 or along Rio Road, and trucks will retain access for deliveries for businesses.

##### Street/Ramp Closures, Temporary Detours and Time of Day Restrictions

All closures will be in accordance with VDOT requirements for duration and scheduling. Detours lasting more than 20 minutes will have detour plans.

##### Flagging Operations

Certified, trained flaggers will be used for all flagging operations.

##### Minimum Lane Widths

At least one 11-foot travel lane will be maintained in each direction of US 29 at all

times for large vehicles. The minimum travel lane width will be 10 feet.

##### Safe and Efficient Operations for All Users

Our TMP will promote safe and efficient operations for all users including:

- 29 **Emergency Medical Services** – Please see the discussion of first responders in *Section 4.1 on page 23.*
- 29 **School Buses** - Local school systems will be notified of routing changes. Most access reductions will take place during the summer months when school is not in session. Bus operations are not expected to be significantly impacted.
- 29 **Transit Vehicles** - The 35-day closure of Rio Road will impact transit operations. The Charlottesville Area Transit (CAT) presently operates the number 5 bus route along Rio Road as a through movement at the US 29 intersection. At present, this route travels into Albemarle Square. According to CAT Transit Manager, Mr. John Jones, after February 15, 2015, the transit route will change and the stop at Albemarle Square will be eliminated. At this time, his preferred alternative for Rio Road East is to use Branchlands Blvd to Hillsdale Drive to access Fashion Square. The detour would consist of Berkmar Drive to Woodbrook Drive, stop at Rio Hill Center, to US 29 southbound and continue along Branchlands Boulevard.
- 29 **Trucks** – Special truck detours will be developed to accommodate size, wide turns, and to ensure access to local businesses. Truck traffic will be kept off residential streets.

#### 4. Approach to Construct the US 29 & Rio Road Grade Separated Intersection

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**29 Bicycles/Pedestrians** - There is no existing bicycle signing along US 29 or Rio Road. Bicyclists will be informed through the detour route signing and work area signing. While there are existing curb ramps, there are no pedestrian crosswalks or pedestrian signal heads at the GSI. Sidewalks will be maintained along at least one side of US 29 and along at least one side of Rio Road. Pedestrians and bicyclists along US 29 will be detoured to the closest signalized intersection at Berkmar Drive to Rio Road West or Mall Drive to the east of along Rio Road East. Pedestrians across US 29 will be able to cross at Shoppers World Court to the south of Rio Road or Woodbrook Road to the north of Rio Road. During the holiday season, all sidewalks will remain open.

#### 4.3 | UTILITIES (4.4.3)

##### Approach for Utility Coordination, Adjustments, and Relocations

SBJV's approach to utility coordination on this project has been to meet with the utility companies in order to identify all of the utilities which may be in conflict with our proposed design. We have strived to design around as many of the existing utilities as possible and still provide the finished project per the RFP requirements. SBJV has met with all known utility companies located within the project limits with the exception of National Network Services and Fiberlight to plan our approach in coordinating the required utility relocations due to conflicts with the construction activities. SBJV will use ground penetrating radar (*Exhibit 4-06*) and vacuum trucks to verify horizontal and vertical locations.

*Exhibit 4-06: Ground Penetrating Radar provides precise location of utilities.*



All of the conflicting utilities will need to be relocated prior to construction. The utility relocations will be performed during allowable lane closure times so traffic is not affected. Known utility conflicts include Rivanna Water & Sewer Authority (RWSA), Albemarle County Service Authority (ACSA), Charlottesville Gas, Century Link, Qwest, Fiberlight, Comcast, VDOT ITS, Lumos, Verizon Business, National Network Services and Virginia Power. Planned relocations for utility conflicts are provided below. For additional detail, please see *Volume II – Offeror's Conceptual Plans*.

The **existing RWSA water line** in the center of US 29 will be relocated to the east. All of the services on the east side of US 29 will be tied into the relocated 18" and 24" water lines. A new service for businesses on the west side of US 29 will be installed from the existing ACSA 8" water line.

The **Charlottesville Gas 6"** line in the center of US 29 will be relocated to the west side of US 29. Existing services on the west side will be tied into the relocated line. A new 4" gas line will branch off the existing 6" gas line crossing US 29 to the east, and tie into the existing service.

#### 4. Approach to Construct the US 29 & Rio Road Grade Separated Intersection

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The **National Network Services** line that is in conflict on the west side of US 29 will be relocated to the west of US 29 and tie into the existing line.

**Virginia Power** has several poles in conflict with our project design. Several poles to the north at Rio Road on the west side of US 29 will be shifted to make room for the new roadway alignment. The overhead crossing of US 29 will be relocated to the north of the GSI construction area. The power line and communication lines will be moved to an underground easement running along US 29 to the north. At a point north of the GSI construction area, the lines will return to overhead poles in order to cross US 29.

**CenturyLink's** duct bank crossing US 29 at Rio Road interchange will need to be relocated along the east side of US 29. Other communications duct banks (owned by Comcast and Verizon) where in conflict will be relocated as necessary.

#### Unknown Utilities

For previously unidentified or non-located utilities that we encounter during construction, we plan to identify the utility and contact the responsible utility company to determine the status of said line, request relocation if required, and work with the utility to avoid or mitigate the conflict.

Should a utility service be disrupted by our construction, we shall immediately contact the utility owner and request a shutdown of the lines if necessary to complete repair work. Depending on the type of utility disrupted, SBJV will either perform the necessary repair work themselves or contact the affected utility immediately for emergency repair. If the utility presents a danger to residents or business, SBJV will immediately contact

responsible emergency services personnel to manage the event.

#### Relocation Impacts on Schedule

We plan to have all utility relocations completed by November 25, 2015. The SBJV team will be responsible for water and sewer relocation, which is scheduled for completion by September 30, 2015. Gas line relocation will be complete by November 25, 2015. Other utilities such as electric and communications are responsible for their own relocation work, will have six months to complete their relocations (until November 25, 2015).

Following award, the SBJV Utility Manager will continue to maintain regular communication (meetings, phone, e-mail) with the affected utilities to ensure they have the support they need to complete their relocations on time.

#### Benefits to VDOT and Stakeholders

29	Committed, resource-rich team ensures ability to meet completion targets and achieve goals.
29	Construction method that minimizes disruptions for the traveling public and businesses.
29	Proven management processes that ensure contract requirements are met or exceeded.
29	Active communication program keeps VDOT, stakeholders and public informed.
29	Responsive team ready to provide solutions to mitigate risk from unknown utilities.
29	TMP focused on public safety and worker safety.



## 5. Approach to Construct the Entire Project (4.5)

**SKANSKA**



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SBJV's access to resources, materials, and supervisory capabilities will benefit VDOT by allowing design and construction of all three project elements on time and budget, limiting potential impacts and risk, meeting Project objectives and final completion dates, which allows us to realize the maximum incentive for early completion of the entire Project.



Route 58 Widening PPTA  
(Hillsville Bypass)  
Phase 2  
Hillsville, VA

**SBJV | ENTIRE PROJECT COMMITMENT**



*SBJV recognizes the project's history of unique challenges to VDOT, surrounding communities, and stakeholders. We accept the challenge to deliver the right solutions with our considerable and qualified resources.*

*Will Karbach*  
**Will Karbach, President & CEO**  
Branch Highways, Inc.

**Anticipated Means and Methods**

We have used our proven policies, procedures and best practices in developing our Project Management Plan (PMP), which guides our activities for the entire project and defines the organizational structure, management approach and work execution to make the Route 29 Solutions project a success.

The plan, based on our in place, proven processes and procedures, and built upon plans prepared for the Route 29 Bypass project, details our standards for safety, stakeholder engagement, quality, work plans, scheduling, cost management, forecasting and reporting, field administration, environmental, personnel, procurement and purchasing polices, equipment procedures, tool room,

warehousing, engineering, document control and other project requirements.

Aligned with VDOT's plan, our PMP divides the Project into the three elements of self-contained construction projects, each managed by an Element Superintendent supported by a supervisory team (see the Organizational Chart in Section 2), element-dedicated laborers, equipment and inspectors.

The project management team coordinates the three project element teams from a central project office that includes the Design-Build Project Manager (DBPM), Design-Build Coordinator, Construction Manager, Quality Assurance Manager, Safety Manager, Construction Quality Control Manager, survey crews, and other project-wide support team members. Members of the design team will also be co-located at the central project office, which will also contain space for VDOT project personnel.

Our schedule-driven, integrated design and construction approach ensures VDOT's objectives will be achieved.

Project element management, including quality assurance inspectors and element crews, will be located in two "satellite" facilities with easy access to the central

project office. Each Element Superintendent is responsible for the safety, quality, production and schedule aspects of his project element, with the support of the project management team.

The core PMP regulates all elements and ensures coordination among design and project elements.

Members of the SBJV team are successfully using this same “Hub & Element” approach on the Elizabeth River Tunnels Project in Portsmouth, VA, which is divided into five elements, with a “hub” management team coordinating all operations. One element is a grade separated intersection in a congested urban area; another is located in Sparrows Point, MD, 180 miles from the main site. This division of resources with central coordination promotes effective management and development of elements and ensures that each element receives the resources and maintains the focus it needs.

The PMP ensures that the entire project is managed under one set of plans and procedures, providing a consistent approach.

**Coordination and communication for all elements** - Our project management team is responsible for coordinating elements to realize efficiencies in the successful delivery of the entire project.

Following award, our team will finalize the PMP, prepare site-specific plans, schedules and documentation and submit them to VDOT for review and approval. Thomas Fulton, PE, our DBPM/Responsible Charge Engineer, will oversee plan and documentation development, operations, safety and quality programs, and will serve as the point of contract for VDOT.

The PMP schedule incorporates regular Project meetings to ensure communications among project elements, safety, quality, resources, and schedule. VDOT representatives are encouraged to attend and participate in these routine meetings. Additional meetings will be conducted as needed with VDOT involvement, including technical issue resolution, design workshops, partnering, permit resource agency coordination, local government coordination, utility coordination, and incident management, in addition to regular project reports and meetings, as part of our partnering relationship.

VDOT will receive regular updates on key performance indicators including stakeholder issues, worker and public safety, QA/QC, design/construction progress, critical and environmental compliance issues.

### Allocation of Resources

Our Construction Manager, Jake Hensley, will coordinate the element teams. Each element of the project will have a dedicated management, QA/QC team, craft work force and equipment contingent to construct that portion of the Project. As situations arise, Jake will assess progress or changed conditions of the project, and working with the DBPM (Thomas Fulton, PE) and the element superintendents, he will arrange for additional resources or reallocation of existing resources as required to maintain schedules. Resource allocation for the three project elements is presented in *Exhibit 5-01*. Numbers and duration will vary over time, depending upon the work stage. For US 29 & Rio Road GSI staffing variations, see *Exhibit 4-03* on page 20.

*Exhibit 5-01: Planned Resource Allocation for project elements.*

Minimum resource allocation for each element.	GSI	US 29	Berkmar
Element Superintendents	1	1	1
Specialty Superintendents	Spec		Bridge
Project Engineers	1		
Field Engineers	3	2	2
Craft Foremen	9	6	8
QA Supervisor	1	1	1
QC Inspectors	2	2	3
MOT Crews	2	1	
Survey Team	1	shared	shared
Bauer Drill Rig	2		1
Crawler Cranes	2		2
Hydraulic Cranes	2	1	4
Bulldozers	1	2	3
Hydraulic Excavators	2	4	3
Track Loader	1	1	1
Wheel Loader	1	1	1
Roller Compactors	1	2	2
Scrapers			1
Off-road trucks			2
Paving spread	1	1	1
Motor Grader	1	1	1
Schedule	Varies	6 day/ 9 hour	6 day/ 9 hour

**5.1 | SEQUENCE OF CONSTRUCTION FOR THE ENTIRE PROJECT (4.5.1)**

SBJV’s Project Management Plan (PMP) includes activity-specific work plans for each element. These are necessary because each element has unique conditions that must be addressed in planning and in daily work orientation meetings. This provides for the proper attention to detail for each work activity or task to ensure that all of the project goals and objectives are met or exceeded.

This planning will combine item details including task-specific work plans, work area diagrams, work instructions, safety/activity hazard analyses, quality control testing and inspection requirements and schedule into one

document that provides direction for each work activity.

Our sequencing plans have been developed to ensure that we will meet the maximum incentives for the both the Interim Milestone Completion for the US 29 & Rio Road GSI and the Early Completion of the Entire Project. Our preliminary schedule and sequence of work is outlined in Section 7 of this proposal. SBJV’s plan incorporates limitation of potential impacts and risks for stakeholders while meeting project objectives. Following is the key sequence of construction for the three project elements:

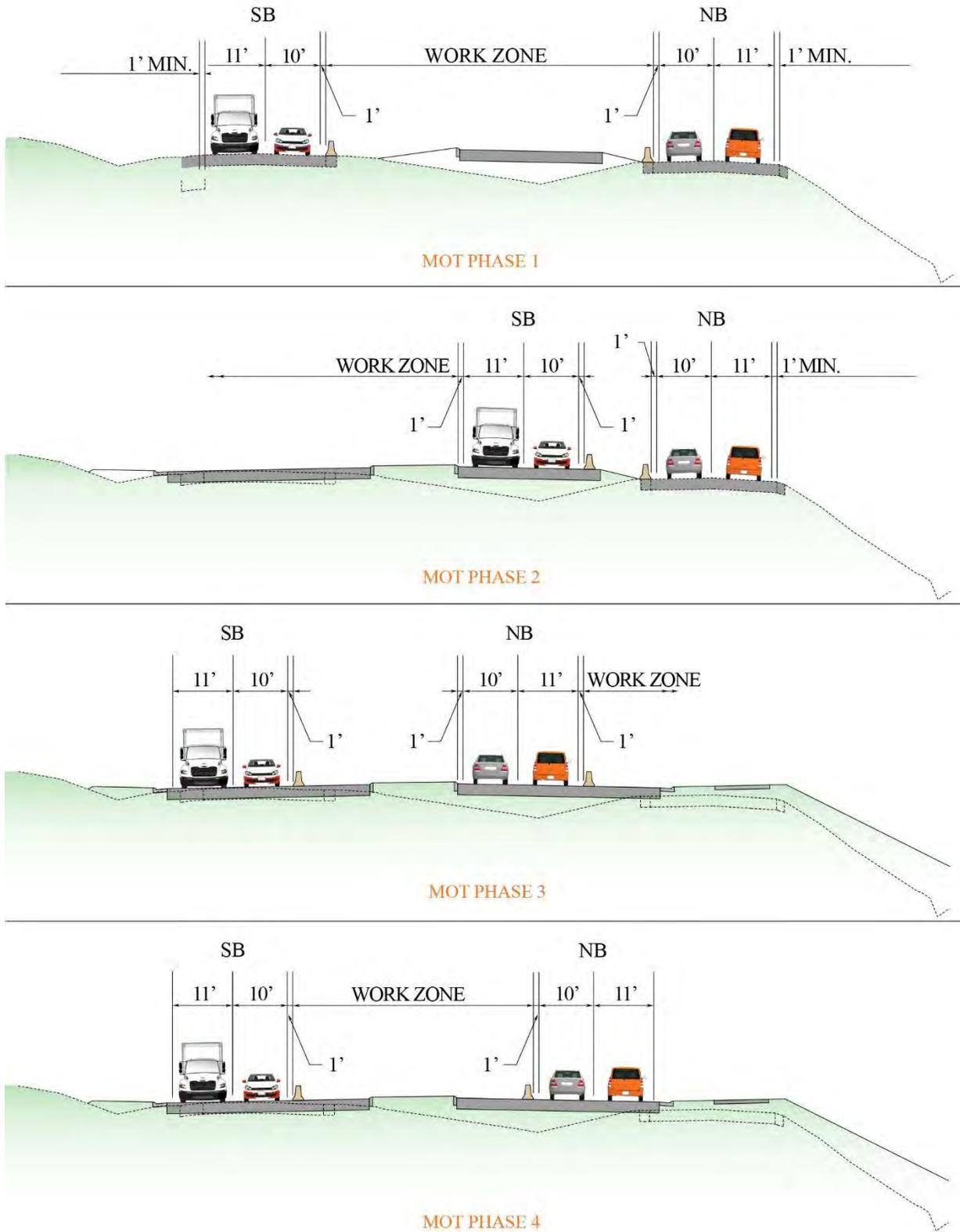
**■ US 29 & Rio Road GSI** - Details about resource allocation, phasing, and sequencing for this element is included in Section 4.1.

**■ US 29 Widening** - Our design and construction methods for constructing the US 29 Widening incorporate the available ROW limitations, geotechnical information, environmental requirements, staging and storage areas, utility conflicts and the work hours for this element. Limiting disruption to the traveling public, maintaining access to local businesses, and promoting public safety are the key drivers in developing both the Transportation Management Plan (TMP) and the PMP for this project element.

By maximizing the use of the existing medians, we reduce the total construction time and minimize the number of lane shifts and disruption. Our sequence of work is shown in *Exhibit 5-02*.

**Phase 1** - construct two new lanes in the existing median minimizing the need for lane or shoulder closings. Drivers, pedestrians, bicyclists and local businesses will be separated from the construction area minimizing impacts for these stakeholders.

Exhibit 5-02: MOT/Sequencing on US 29 Widening



**Phase 2** - Southbound traffic is moved to the two new lanes in the median to allow for reconstruction of the existing southbound lanes again minimizing the need for lane or shoulder closures. **Phase 3** – Southbound traffic is moved to its final configuration. Northbound traffic is moved to the median lanes and the existing northbound lanes are reconstructed. **Phase 4** – Northbound traffic is moved to final configuration and finish work is completed. Our sequence of construction greatly reduces impacts to the traveling public, maintains the same number of lanes currently available and provides access for first responders and public transportation systems.

**Berkmar Drive Extension** – Our sequence of construction for this element is shown in *Exhibit 5-03* and described as follows. For all three phase areas the typical sequence of construction will consist of installation of initial erosion control measures, clearing operations, deep drainage, excavation, surface drainage, pavement section and other finish work. Suitable surplus excavation from the other elements will be used for embankment.

Multiple starting points reduce impacts on drivers on Rio Mills Road.

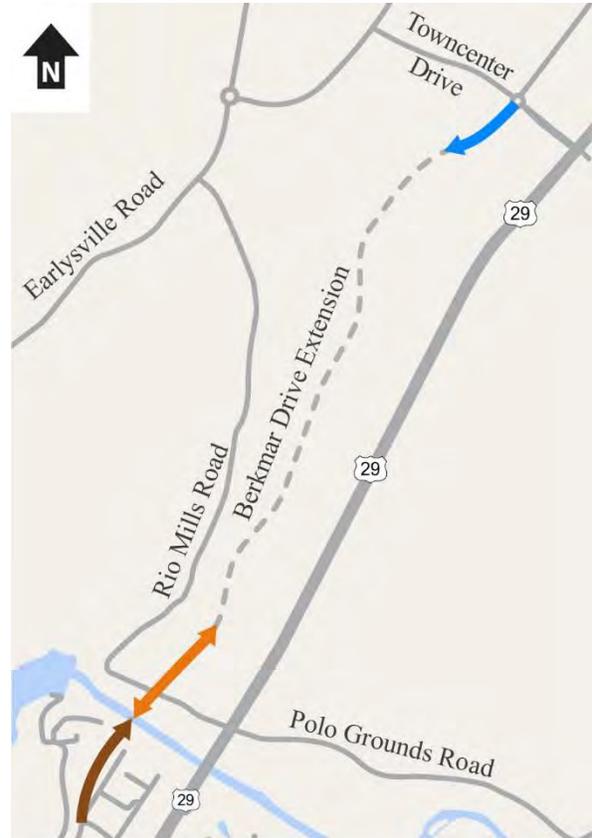
**Phase 1** work will commence with access from the south extension terminus to allow for bridge embankments and foundation work.

**Phase 2** work will begin at the northern terminus of Berkmar Drive and proceed south towards the bridge. **Phase 3** work will begin with access coming from existing Rio Mills Road and proceeding south toward the new bridge and north towards Towncenter Drive.

We plan to utilize areas of this element for laydown and storage yards for the US 29 & Rio Road GSI element.

We anticipate bridge construction to start in April 2016 and be completed in 14 months.

*Exhibit 5-03: Construction Starting Points for the Berkmar Drive Extension*



Direction of Construction:

■ Phase 1 ■ Phase 2 ■ Phase 3

For the benefit of VDOT and stakeholders, and as a standard part of our means and measures, we include the following in our planning for the project.

**Safety**

SBJV will prepare and submit a site-specific safety plan for VDOT’s approval. This plan will include our procedures to ensure the safety of our workers and travelers, residents and businesses that come in contact with the construction zone. The plan includes procedures training, documentation and reporting, and root cause analysis for both

incidents and near-misses. SBJV holds subcontractors to the same safety standards that we observe. Our TMPs (*Section 4.2 and 5.2*), are aligned with our safety program. We work out of traffic and minimize lane shifts to reduce hazards and distractions for drivers.

### **Environmental**

The proposal design plans minimize potential impacts to both natural and cultural resources within and in close proximity to the three project elements. We recognize the significance of completing the project in accordance with the environmental commitments and permitting requirements and are committed to proactively coordinating all environmental issues with the Virginia Department of Historic Resources (VA DHR), U.S. Army Corps of Engineers (USACE), the Virginia Department of Environmental Quality (VA DEQ), and other stakeholders. Environmental considerations include mitigation activities to protect water, soil, air, protected species, and areas of archeological interest.

### **Right-of-Way (ROW)**

ROW will be acquired before the start of construction, except for areas where ROW is already under VDOT ownership. The preliminary SBJV design plans keep construction activities within VDOT's proposed ROW and easements.

### **Proposed Staging and Storage Areas**

Establishing laydown yards and potential haul routes is an essential element in the

development of our Sequence of Construction of the overall project. Key to achieving VDOT's priorities are establishing haul routes that are least disruptive to the traveling public along the entire corridor. *Exhibit 5-04* identifies potential laydown yards and haul routes for all three project elements.

### **Public Involvement and Stakeholder Coordination**

This project has a very high priority for VDOT, with very high visibility in the community. SBJV will, through our Public Relations Manager Susan Sharp:

- 29 **Provide support** for all VDOT and US 29 Advisory Committee activities, including preparing project presentations and other materials as needed.
- 29 **Attend community functions** including Route 29 Project Delivery Advisory Panel meetings to receive community input on the project, and to reaffirm our commitment to being good neighbors.
- 29 **Regularly communicate** with University of Virginia, government and elected officials, major employers, homeowners' associations, businesses and communities to keep them apprised of project progress and changes that will affect their travel or operations.
- 29 **Work with local organizations** such as schools to provide learning opportunities for students in areas such as engineering.

Exhibit 5-04: Potential Laydown Yards and Haul Routes



SBJV will provide information to VDOT about construction activities for use in local media (TV, radio and newspapers), signage, e-mail, social media and a smartphone “app.” We will regularly survey businesses to determine what impacts the project may have, and work with the affected businesses to develop plans and mitigation strategies.

### Governmental Approvals

Upon Notice to Proceed, the SBJV will start to contact the various Governmental permitting agencies, prepare permit applications, and submit them to the appropriate agencies for processing. Team members responsible for working with the permitting organizations have extensive experience and can expedite the application process.

#### 5.2 | TRANSPORTATION MANAGEMENT PLAN (TMP) ENTIRE PROJECT (4.5.2)

A Type C TMP will be developed for the US 29 & Rio Road GSI element while the US 29 Widening and Berkmar Drive Extension elements will require a Type A and C TMP, respectively. The TMP’s will be based on the *VDOT Instructional and Informational Memorandum I&IM-241/TE-351, TED 351.3.*

### Proposed Alternative Routes and Detours

Proposed detour routes or lane closures will not impact other portions of the project. Any lane shifts or closures will not be carried through one work zone to the next. Any lane shifts or closures at the US 29 & Rio Road GSI will transition to main lanes before reaching the widening project. This will simplify coordination between work crews working on the two different elements.

■ **US 29 & Rio Road GSI** - A detailed detour plan is shown on Exhibit 4-05.

■ **US 29 Widening** – Construction will require several lane shifts and shoulder closures but no lane closures. Two each northbound and southbound travel lanes will be maintained along US 29 at all times. The first phase of construction will shift traffic on the outside lane to the shoulder for use as a travel lane. This will allow work to take place in the median. Traffic will then be shifted onto the new construction so that work can take place on the outside of the roadway, as shown in *Exhibit 5-02*. Finally, NB traffic will be shifted to the center to allow reconstruction of the NB lanes.

A critical safety component will be the removal of the crest vertical curve and queues from the Ashwood Boulevard intersection.

■ **Berkmar Drive Extension** -The Berkmar Drive Extension is primarily new alignment and the MOT will be relatively non-impactive, except at tie-ins and crossings. There will be no detour routes or lane closures required for this element.

If the Berkmar Drive Extension is completed before the US 29 Widening, motorists may divert to the new roadway to lessen demand through the other elements.

### Street/Ramp Closures, Temporary Detours, Time of Day Restrictions/Lane Closures

All closures and time of day restrictions will be in accordance with VDOT requirements for duration and scheduling. Detours lasting more than 20 minutes will have detour plans. Lane closures will occur during the US 29 & Rio Road GSI construction.

There will be no long-term closures for the US 29 Widening or Berkmar Drive Extension. There may be short-term lane closures during certain construction activities for these elements.

**Flagging Operations**

Certified flaggers will be used for flagging operations. No flagging operations are anticipated for the Berkmar Drive Extension.

**Minimum Lane Widths**

At least one 11-foot travel lane will be maintained in each direction of US 29 at all times for large vehicles. The minimum travel lane width will be 10 feet.

**Safe and Efficient Operations for All Users**

Our TMP will promote safe and efficient operations, including:

**29 Emergency Medical Services and Incident Management** - The Transportation Operation Plan provides a process to notify the VDOT Staunton Traffic Operations Center (TOC) to place detour and lane closure information on the 511 system. SBJV will work closely with first responders in the case of traffic incidents, including procedures for notifying the Northwest Regional Operations Traffic Engineer, contacting local emergency response agencies and procedures to respond to traffic incidents that occur in the work zone.

**29 School Buses** - Detours and lane closures will take place during the summer months when school is not in session. Bus operations will not be significantly impacted. We will, however, notify local school systems of any traffic changes.

**29 Transit** - Transit operations will only be impacted during the US 29 & Rio Road

GSI construction. No bus routes will be impacted by the US 29 Widening or the Berkmar Drive Extension construction.

**29 Trucks** - The US 29 & Rio Road GSI detour plan includes U-turn movements, which may be difficult for trucks to maneuver. Therefore a separate detour plan will be provided for trucks. Berkmar Drive extension construction and the US 29 Widening will not impact truck operations.

**29 Bicycles and Pedestrians - US 29 & Rio Road GSI** - Accommodations for bicyclists and pedestrians are described in Section 4.2.

**US 29 Widening** - One shoulder, where available, will remain open at all times, which can be used by pedestrians and bicyclists, with alerts to shoulder closures at the nearest signalized intersection north and south of the element area.

**Berkmar Drive Extension** - No existing pedestrian facilities will be impacted since this roadway will be constructed along new alignment.

**Benefits to VDOT and Stakeholders**

- 29** Independent schedules merged into one resource loaded master schedule mitigate risk of resource conflicts.
- 29** Focus on minimization of traffic shifts and working out of traffic lessens disruption and improves traffic safety.
- 29** Planning that includes lessening disruption and maintaining access to businesses keeps the Corridor vibrant.
- 29** Familiarity with Rivanna River crossing area; provide mature designs that respond to local needs and conditions.



6. Disadvantaged Business Enterprise (DBE) (4.6)



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### DBE Commitment

SBJV is committed to meeting or exceeding the thirteen percent (13%) DBE participation goal during the design and construction of the Route 29 Solutions project. Additionally, our Team's formal subcontracting program will ensure maximum use of Small, Women-owned, and Minority-owned Business (SWaM) firms as required by the Governor's Executive Order No. 33.

To ensure success, we will utilize our proven processes and procedures to provide meaningful participation for DBE businesses. We will appoint a site-specific DBE Compliance Officer who will report to VDOT; provide support for DBE firms; conduct regular and continuing outreach to the DBE community, especially in the Albemarle County area; prepare scopes of work tailored to DBE and SWaM capabilities; and work closely with the Virginia Department of Minority Business Enterprise and other agencies.

### Recent DBE Success

SBJV and JMT are committed to DBE participation on our projects. Recent success stories include:

- 29 **Skanska/JMT Design-Build Team - on target to exceed the \$40.2M DBE goal by \$1.6M** for the 11<sup>th</sup> Street Corridor Design-Build project. This is the largest construction project to date in the District Department of Transportation's history (\$375M).
- 29 **Branch Highways - exceeded their DBE goal by at least 20% on their last four VDOT projects** including more than doubling the DBE goal on the Port Republic Road project in VDOT's Staunton District.

### Benefits to VDOT and Stakeholders

- 29 Established relationships with qualified local DBE firms (from Route 29 Bypass).
- 29 On-site DBE coordinator provides support for DBE firms and shows our commitment to program and businesses.



7. Proposal Schedule (4.7)

## 7. Proposal Schedule

*VDOT's goals are our goals.*

We have developed a preliminary baseline master schedule that coordinates the three elements. Our schedule is based on experience, our ability to allocate resources, permitting, right-of-way acquisition, and presents a realistic assessment of achievable goals with flexibility built in to respond to changes in conditions and needs.

Activity ID	Activity Name	Orig Dur	Calendar	Early Start	Early Finish	Total Float	2015	2016	2017																		
							Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
147	Design QA/QC Review of Final Landscaping Plans	5	5 Day No Weather w/ Holidays	02-Jul-15	10-Jul-15	193																					
148	Submit Final Landscaping Plans	1	5 Day No Weather w/ Holidays	10-Jul-15	13-Jul-15	193																					
149	VDOT/FHWA & Advisory Board Review of Landscaping Plans	14	7 Day No Weather No Holidays	13-Jul-15	27-Jul-15	282																					
150	VDOT/FHWA Approval of Landscaping Plans	30	5 Day No Weather w/ Holidays	27-Jul-15	08-Sep-15	193																					
151	Address Review Comments & Receive VDOT/FHWA Approval of Landscaping Plans	1	5 Day No Weather w/ Holidays	08-Sep-15	09-Sep-15	193																					
152	Final Landscaping Plans - Submit to VDOT	1	5 Day No Weather w/ Holidays	09-Sep-15	14-Sep-15	158																					
153	Develop 30% H & HA Analysis	30	5 Day No Weather w/ Holidays	11-Mar-15	21-Apr-15	104																					
154	Design QA/QC of 30% H & HA and Submit	5	5 Day No Weather w/ Holidays	22-Apr-15	28-Apr-15	104																					
155	VDOT/FHWA Review of 30% H & HA	14	7 Day No Weather No Holidays	29-Apr-15	12-May-15	149																					
156	Develop 50% H & HA Analysis	40	5 Day No Weather w/ Holidays	24-Jun-15	04-Jul-15	104																					
157	Design QA/QC of 50% H & HA and Submit	5	5 Day No Weather w/ Holidays	25-Jun-15	01-Jul-15	104																					
158	VDOT/FHWA Review of 50% H & HA	14	7 Day No Weather No Holidays	02-Jul-15	15-Jul-15	154																					
159	Develop 100% H & HA Analysis	45	5 Day No Weather w/ Holidays	02-Jul-15	03-Sep-15	104																					
160	Design QA/QC 100% H & HA and Submit	5	5 Day No Weather w/ Holidays	04-Sep-15	11-Sep-15	104																					
161	VDOT/FHWA Review and Approval of 100% H & HA - Hold Point	14	7 Day No Weather No Holidays	12-Sep-15	25-Sep-15	158																					
162	Drainage & SWM Design, Post Construction SWM Plan and MS 19 Analysis	35	5 Day No Weather w/ Holidays	04-Mar-15	21-Apr-15	102																					
163	Final ESC and Post-Construction SWM & SWPPP - Entire Element	1	5 Day No Weather w/ Holidays	04-Mar-15	04-Mar-15	102																					
164	VDOT Review Concept ESC and Post-Construction SWM & SWPPP - Entire Element	14	7 Day No Weather No Holidays	05-Mar-15	18-Mar-15	146																					
165	Multi-Phased ESC Plans & Narrative & SWPPP	45	5 Day No Weather w/ Holidays	18-Mar-15	20-May-15	102																					
166	Design QA/QC Review of Preliminary Drainage, SWM and ESC Plans	2	5 Day No Weather w/ Holidays	20-May-15	22-May-15	102																					
167	Preliminary Drainage, SWM and ESC Plans Submittal	3	5 Day No Weather w/ Holidays	22-May-15	28-May-15	102																					
168	VDOT/FHWA Review of Preliminary Drainage, SWM & ESC	14	7 Day No Weather No Holidays	29-May-15	11-Jun-15	202																					
169	Submit Final Drainage, SWM and ESC Plans and Certification Form VDOT	20	5 Day No Weather w/ Holidays	31-Jul-15	28-Aug-15	102																					
170	Develop Photometric Lighting Analysis and Calculations, QA/QC and Submit to VDOT/FHWA	20	5 Day No Weather w/ Holidays	11-Mar-15	07-Apr-15	193																					
171	Develop Existing Sign Inventory Plan	15	5 Day No Weather w/ Holidays	18-Mar-15	08-Apr-15	194																					
172	VDOT/FHWA Review & Approval of Photometric Lighting Analysis and Calculations	14	7 Day No Weather No Holidays	08-Apr-15	21-Apr-15	282																					
173	Signage, Pavement Marking, Lighting, Signal Design, ITS, MOT Plans & Draft TMP-Prereq. Submittal	30	5 Day No Weather w/ Holidays	13-Apr-15	22-May-15	192																					
174	Design QA/QC Review of Preliminary Documents and Submit	10	5 Day No Weather w/ Holidays	26-May-15	08-Jun-15	192																					
175	VDOT/FHWA Review Preliminary Signage, Pavement Marking, Lighting, Signal Design, ITS, MOT Plan	14	7 Day No Weather No Holidays	19-Jun-15	02-Jul-15	272																					
176	Address Preliminary Review Comments & Develop Final Signage, Pavement Marking, Lighting, S	40	5 Day No Weather w/ Holidays	19-Jun-15	14-Aug-15	184																					
177	Design QA/QC of Final Documents and Submit	10	5 Day No Weather w/ Holidays	17-Aug-15	28-Aug-15	184																					
178	VDOT/FHWA Review Final Signage, Pavement Marking, Lighting, Signal Design, ITS, MOT A	14	7 Day No Weather No Holidays	28-Aug-15	11-Sep-15	271																					
179	Address Final Review Comments and Receive Approval on RFC Signage, Pavement Mark	20	5 Day No Weather w/ Holidays	08-Sep-15	05-Oct-15	179																					
180	Final TMP Plan Approved	0	5 Day No Weather w/ Holidays	06-Oct-15	06-Oct-15	179																					
181	Complete ROW Plan and Profile, Diffs, Right of Way Data Sheet Per Form RW	5	5 Day No Weather w/ Holidays	04-Mar-15	10-Mar-15	20																					

Effective scheduling is an essential component in planning and controlling any project activity. Our integrated approach to project controls management provides the design-build project manager project specific data directly to help him track project progress and coordinate specific project tasks. This assures VDOT that project issues are communicated and resolved as they occur.

### 7.1 | PROPOSAL SCHEDULE (4.7.1)

The Proposal Schedule is located in Volume II, Tab 4 (in accordance with Addendum 2).

### 7.2 | PROPOSAL SCHEDULE NARRATIVE (4.7.2)

For reference, we have included an Executive Summary Schedule as **Exhibit 7-01**.

The Proposal Schedule meets the maximum incentive for the Interim Milestone and final completion date for the US 29 & Rio Road Grade Separated Intersection (GSI) and the Final Completion Date of the Entire Project meets those listed in Part 1, Section

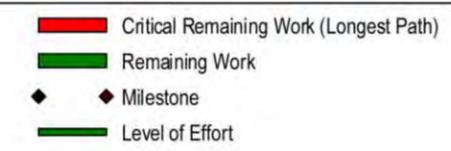
2.3.1 and with Attachment to Part 3 Article 5 of the RFP Documents. The schedule is developed from the top down during the proposal phase. Milestone targets and conceptual approaches are finalized during the estimate pricing using estimated durations based on past experience. A more detailed schedule is developed from that point.

For our proposal phase schedule, we have created a comprehensive, 1,000-plus item activity and construction schedule in accordance with our Transportation Management Plan (TMP) and concept design. The construction activities for all major types of work are scheduled in the appropriate construction phase. The duration for these activities are based on proven production rates and preliminary quantities calculated from our proposed design. We include appropriate relationships between construction activities in our schedule to ensure logical progression of the work.

Exhibit 7-01: Executive Summary Schedule

Activity ID	Activity Name	Orig Dur	Calendar	Early Start	Early Finish	Total Float	2015												2016												2017											
							A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A							
<b>Route 29 Solutions - Technical Schedule</b>																																										
<b>Milestones</b>																																										
<b>Milestones</b>																																										
MS100100	NTP (03/04/2015)	0	7 Day No Weather No Holidays	04-Mar-15		0	NTP (03/04/2015)																																			
MS100105	MOBILIZATION - COLOCATED OFFICE (60 DAYS FROM NTP)	60	7 Day No Weather No Holidays	04-Mar-15	02-May-15	23	MOBILIZATION - COLOCATED OFFICE (60 DAYS FROM NTP)																																			
MS100115	MOBILIZATION - US 29 & RIO RD	30	7 Day No Weather No Holidays	03-May-15	01-Jun-15	23	MOBILIZATION - US 29 & RIO RD																																			
MS100125	MOBILIZATION - US 29 WIDENING	30	7 Day No Weather No Holidays	03-May-15	01-Jun-15	129	MOBILIZATION - US 29 WIDENING																																			
MS100135	MOBILIZATION - BERKMAR DR EXTENSION	30	7 Day No Weather No Holidays	03-May-15	01-Jun-15	227	MOBILIZATION - BERKMAR DR EXTENSION																																			
MS100145	DEMOBILIZATION - US 29 & RIO RD	30	7 Day No Weather No Holidays	02-Jun-15	01-Jul-15	520	DEMOBILIZATION - US 29 & RIO RD																																			
MS100155	DEMOBILIZATION - US 29 WIDENING	30	7 Day No Weather No Holidays	02-Jun-15	01-Jul-15	731	DEMOBILIZATION - US 29 WIDENING																																			
MS100165	DEMOBILIZATION - BERKMAR DR EXTENSION	30	7 Day No Weather No Holidays	02-Jun-15	01-Jul-15	731	DEMOBILIZATION - BERKMAR DR EXTENSION																																			
MS100200	PERMITS ISSUED / START CONSTRUCTION US 29 & RIO RD	0	7 Day No Weather No Holidays	24-Jun-15	24-Jun-15	1	PERMITS ISSUED / START CONSTRUCTION US 29 & RIO RD																																			
MS100210	PERMITS ISSUED / START CONSTRUCTION US 29 WIDENING	0	7 Day No Weather No Holidays	10-Dec-15	10-Dec-15	222	PERMITS ISSUED / START CONSTRUCTION US 29 WIDENING																																			
MS100300	INTERIM MILESTONE ONE START (05/23/16)	0	7 Day No Weather No Holidays	23-May-16		0	INTERIM MILESTONE ONE START																																			
MS100220	PERMITS ISSUED / START CONSTRUCTION BERKMAR DR EXTENSION	0	7 Day No Weather No Holidays	25-May-16	25-May-16	59	PERMITS ISSUED / START CONSTRUCTION BERKMAR DR EXTENSION																																			
MS100310	INTERIM MILESTONE ONE COMPLETION "A" (06/28/16)	0	7 Day No Weather No Holidays		28-Jun-16	0	INTERIM MILESTONE ONE COMPLETION "A" (06/28/16)																																			
MS100320	INTERIM MILESTONE ONE COMPLETION "B" (08/05/16)	0	7 Day No Weather No Holidays		28-Jun-16	4	INTERIM MILESTONE ONE COMPLETION "B" (08/05/16)																																			
MS100330	INTERIM MILESTONE ONE COMPLETION "C" (09/02/16)	0	7 Day No Weather No Holidays		28-Jun-16	4	INTERIM MILESTONE ONE COMPLETION "C" (09/02/16)																																			
MS100340	US 29 & RIO RD FINAL COMPLETION (12/02/16)	0	7 Day No Weather No Holidays		28-Nov-16	4	US 29 & RIO RD FINAL COMPLETION (12/02/16)																																			
MS100400	EARLY PROJECT COMPLETION (7/01/2017)	0	7 Day No Weather No Holidays		01-Jul-17	0	EARLY PROJECT COMPLETION (7/01/2017)																																			
MS100500	FINAL PROJECT COMPLETION (10/30/2017)	0	7 Day No Weather No Holidays		01-Jul-17	120	FINAL PROJECT COMPLETION (10/30/2017)																																			
<b>Design and Permitting</b>																																										
<b>Quality Assurance and Quality Control (QA/QC) Plan for Design</b>																																										
<b>VDOT Regional Utility Office Meeting</b>																																										
<b>Public Involvement / Public Relations</b>																																										
<b>Design, Right-of-Way &amp; Permitting</b>																																										
<b>US 29 &amp; Rio Road Grade Separated Intersection</b>																																										
<b>US 29 Widening</b>																																										
<b>Berkmar Drive Extension</b>																																										
<b>Procurement</b>																																										
<b>Construction</b>																																										
<b>US 29 &amp; Rio Road Grade Separated Intersection</b>																																										
<b>Phase 1</b>																																										
<b>Phase 2</b>																																										
<b>Phase 3</b>																																										
<b>Phase 4</b>																																										
<b>Phase 5</b>																																										
<b>US 29 Widening</b>																																										
<b>Phase 1</b>																																										
<b>Phase 2</b>																																										

Route 29 Solutions - Technical Schedule





The schedule displays a higher level of refinement, as both Skanska and Branch have prior experience working closely with our designer JMT, and have developed an understanding and appreciation of each other's capabilities and work habits. This will benefit VDOT in having a smooth start and quick development of the project baseline schedule, a critical component in achieving success on this project with a very constrained schedule.

### Work Breakdown Structure

The Work Breakdown Structure (WBS) developed during early review of project requirements represents basic project tasks and guides our work logic, schedule, and cost development. Our primary scheduling management tool, Primavera™ Project Planner v.6, helps the project management team track and forecast project performance from the milestone level to the smallest work activity, including those items on the critical path. All project activities are scheduled to allow precursor tasks to be completed on time so as not to delay or impact subsequent tasks. The proposal schedule will serve as the basis of the Baseline Schedule that we will use to coordinate both onsite and offsite project management tasks following project award. The Baseline Schedule will meet the requirements for a design-build project schedule as outlined in the *VDOT Special Provision, Exhibit 11.1*.

The schedule was shaped in great part by prioritizing right-of-way and permits acquisition, particularly the U.S. Army Corps of Engineers (USACE) 404 permit, prior to construction start. Other elements of our approach that affect the schedule include assuring the safety of the traveling public as well as our workers; minimizing disruptions for the traveling public, residents, and local

businesses; and maintaining efficient (effective) construction methods which best utilize resources on the project, including equipment and personnel.

We considered several factors in developing the proposal schedule, including:

- 29 VDOT's project goals
- 29 Design
- 29 Weather
- 29 Manpower
- 29 Procurement of critical equipment and materials
- 29 Coordination of work and approvals

A detailed Work Breakdown Structure is included as *Exhibit 7-02*.

### Sequencing

The WBS was organized by the major phases of the project, including:

- 29 Milestones
- 29 Design Requirements
  - Internal Plan Reviews
  - VDOT Plan Reviews and Approvals
- 29 ROW Acquisition
- 29 Utility Relocations
- 29 Environmental Permitting
- 29 Environmental Constraints
- 29 Procurement
  - Purchase
  - Submittal Review
  - Submittal Approval
  - Delivery
- 29 Construction
  - US 29 & Rio Road Grade Separated Intersection (five phases)
  - US 29 Widening (four phases)
  - Berkmar Drive Extension (three phases)
- 29 QA/QC Inspection and Testing
- 29 Public Involvement

7. Proposal Schedule

VDOT's goals are our goals.

Exhibit 7-02: SBJV Work Breakdown Structure

Milestones	US 29 Widening				
Milestones	Scope Validation Period	Geotechnical Engineering, Analysis & Reports	175000: Lighting, Signals, ITS	175000: Lighting, Signals, ITS	380000: Barrier, Fencing, Guardrail
Design and Permitting	Develop Line & Grade, LOD	Environmental and Permits	180000: Barrier, Fencing, Guardrail	180000: Barrier, Fencing, Guardrail	385000: Signing & Pavement Markings
General	Design Exceptions and Waivers, if Required	Prepare Property Owner Letter for Environmental Surveys	185000: Signing & Pavement Markings	185000: Signing & Pavement Markings	<b>Phase 3</b>
Quality Assurance and Quality Control (QA/QC) Plan for Design	Supplemental Field Surveys	Threatened and Endangered Species	<b>Phase 2</b>	<b>Phase 5</b>	301000: Demolition & Removals
VDOT Regional Office	Utilities Delineation, SUE	Environmental Site Assessments (ESA) and Hazardous Material Investigations	101000: Demolition & Removals	101000: Demolition & Removals	310000: Utility Work
Public Involvement/Public Relations	Utility Relocation Design	Cultural Resources	110000: Utility Work	110000: Utility Work	315000: Environmental Work
Design, Right-of-Way & Permitting	Geotechnical Engineering and Subsurface Investigations	Water Quality Permitting	115000: Environmental Work	115000: Environmental Work	320000: Earthwork
<b>US 29 &amp; Rio Road GSI</b>	Geotechnical Engineering, Analysis & Reports	Stormwater Permitting	120000: Earthwork	120000: Earthwork	330000: Drainage
Scope Validation Period	Environmental and Permits	Roadway Design	130000: Drainage	130000: Drainage	345000: Pavements
Develop Line & Grade, LOD	Prepare Property Owner Letter for Environmental Surveys	Bridge	140000: Subbase & Base Courses	140000: Subbase & Base Courses	340000: Subbase & Base Courses
Design Exceptions and Waivers, if Required	Threatened and Endangered Species	Retaining Walls	150000: Retaining Walls	150000: Retaining Walls	350000: Retaining Walls
Supplemental Field Surveys	Environmental Site Assessments (ESA) and Hazardous Material Investigations	Architectural Treatments & Landscaping	145000: Pavements	145000: Pavements	370000: Maintenance of Traffic
Utilities Delineation, SUE	Water Quality Permitting and Stormwater Monitoring	Hydraulic Design, SWM & ESC	160000: Structures - Rio Rd Bridge	160000: Structures - Rio Rd Bridge	375000: Lighting, Signals, ITS
Utility Relocation Design	Stormwater Permitting	Hydraulic and Drainage Design	170000: Maintenance of Traffic	170000: Maintenance of Traffic	380000: Barrier, Fencing, Guardrail
Geotechnical Engineering and Subsurface Investigations	Roadway Design	Drainage Design, SWM and ESC Plans and MS 19 Analysis	175000: Lighting, Signals, ITS	175000: Lighting, Signals, ITS	385000: Signing & Pavement Markings
Geotechnical Engineering, Analysis & Reports	Culverts	Traffic Engineering	180000: Barrier, Fencing, Guardrail	180000: Barrier, Fencing, Guardrail	<b>Berkmar Drive Extension</b>
Environmental and Permits	Retaining Walls	Right of Way	185000: Signing & Pavement Markings	185000: Signing & Pavement Markings	501000: Demolition & Removals
Prepare Property Owner Letter for Environmental Surveys	Hydraulic Design, SWM & ESC	Acquisition & Relocation Procedures	<b>Phase 3</b>	<b>US 29 Widening</b>	510000: Utility Work
Environmental Site Assessments (ESA) and Hazardous Material Investigations	Hydraulic and Drainage Design	<b>Procurement</b>	101000: Demolition & Removals	<b>Phase 1</b>	515000: Environmental Work
Water Quality Permitting and Stormwater Monitoring	Drainage Design, SWM and ESC Plans and MS 19 Analysis	Purchase	110000: Utility Work	301000: Demolition & Removals	520000: Earthwork
Stormwater Permitting	Traffic Engineering	Submittal Review	115000: Environmental Work	310000: Utility Work	530000: Drainage
Roadway Design	Right of Way	Delivery	120000: Earthwork	315000: Environmental Work	540000: Subbase & Base Courses
Fire Protection For Depressed Highway and Bridge Structure	Acquisition & Relocation Procedures	Submittal Approval	130000: Drainage	320000: Earthwork	545000: Pavements
Bridge	<b>Berkmar Drive Extension</b>	<b>Construction</b>	140000: Subbase & Base Courses	330000: Drainage	550000: Retaining Walls
Retaining Walls	Scope Validation Period	<b>US 29 &amp; Rio Road GSI</b>	150000: Retaining Walls	345000: Pavements	560000: Structures - Rivanna River Bridge
Architectural Treatments & Landscaping	Develop Line & Grade, LOD	<b>Phase 1</b>	145000: Pavements	340000: Subbase & Base Courses	Substructure
Hydraulic Design, SWM & ESC	Design Exceptions and Waivers, if Required	101000: Demolition & Removals	160000: Structures - Rio Rd Bridge	350000: Retaining Walls	Abutment B
Hydraulic and Drainage Design	Supplemental Field Surveys	110000: Utility Work	170000: Maintenance of Traffic	370000: Maintenance of Traffic	Pier 3
Drainage Design, SWM & ESC Plans and MS 19 Analysis	Design Exceptions and Waivers, if Required	115000: Environmental Work	175000: Lighting, Signals, ITS	375000: Lighting, Signals, ITS	Pier 2
Traffic Engineering	Utilities Delineation, SUE	120000: Earthwork	180000: Barrier, Fencing, Guardrail	380000: Barrier, Fencing, Guardrail	Pier 1
Right of Way	Utility Relocation Design	130000: Drainage	185000: Signing & Pavement Markings	385000: Signing & Pavement Markings	Abutment A
Acquisition & Relocation Procedures	Geotechnical Engineering and Subsurface Investigations	140000: Subbase & Base Courses	<b>Phase 4</b>	<b>Phase 2</b>	Superstructure
		150000: Retaining Walls	101000: Demolition & Removals	301000: Demolition & Removals	Span D
		145000: Pavements	110000: Utility Work	310000: Utility Work	Span C
		160000: Structures - Rio Rd Bridge	115000: Environmental Work	315000: Environmental Work	Span B
		170000: Maintenance of Traffic	120000: Earthwork	320000: Earthwork	Span A
			130000: Drainage	330000: Drainage	Approach Slab & Toppings
			140000: Subbase & Base Courses	345000: Pavements	570000: Maintenance of Traffic
			150000: Retaining Walls	340000: Subbase & Base Courses	575000: Lighting, Signals, ITS
			145000: Pavements	350000: Retaining Walls	580000: Barrier, Fencing, Guardrail
			160000: Structures - Rio Rd Bridge	370000: Maintenance of Traffic	585000: Signing & Pavement Markings
			170000: Maintenance of Traffic	375000: Lighting, Signals, ITS	

**Key Assumptions**

SBJV developed the schedule using a variety of construction calendars.

- ☒ 7 Day No Weather No Holiday
- ☒ 5 Day No Weather w/ Holidays
- ☒ 6 Day w/ Weather w/ Holidays
- ☒ 5 Day w/ Weather w/ Holidays
- ☒ 7 Day w/ Weather w/ Holidays
- ☒ 6 Day Cold Weather w/ Weather w/ Holidays Mid Dec - Mid March

included cold weather, weather and holidays was added to construction activities (such as asphalt paving) that could not be performed during the cold weather months. The calendars, which factored in weather and holidays, were based on the NOAA 10 year average/0.50-inch of rain per day, as shown in *Exhibit 7-03*.

*Exhibit 7-03: Monthly Number of Days Precipitation > 0.5" for Charlottesville, VA*

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2005	1	0	3	2	2	2	2	2	0	5	4	2	25
2006	1	2	0	0	1	6	0	3	5	4	4	2	28
2007	2	1	3	3	0	3	2	2	0	4	0	2	22
2008	1	2	2	6	2	1	3	1	4	1	3	1	27
2009	1	0	1	2	3	4	3	2	3	2	5	6	32
2010	3	1	4	1	1	1	1	2	3	3	3	1	24
2011	1	1	3	3	4	1	3	2	4	3	3	4	32
2012	1	2	M	1	3	1	2	2	4	5	1	2	M
2013	4	1	3	3	3	5	5	4	1	2	1	5	37
2014	3	2	3	4	2	3	2	4	2	4	4	M	M
<b>Mean</b>	2	1	2	3	2	3	2	2	3	3	3	3	28
<b>Max</b>	4	2	4	6	4	6	5	4	5	5	5	6	37
	2014	2014	2010	2008	2011	2006	2013	2014	2006	2012	2009	2009	2013
<b>Min</b>	1	0	0	0	0	1	0	1	0	1	0	1	22
	2012	2009	2006	2006	2007	2012	2006	2008	2007	2008	2007	2010	2007

A seven-day calendar (excluding holidays and weather) was assigned to all project milestones, establishing the 850-calendar day project duration from an anticipated NTP to final completion. The 7-Day No Weather No Holiday calendar is used for all VDOT review activities. A five-day workweek calendar (excluding weather days but including holidays) was tied to all procurement activities and activities not affected by weather. A six-day calendar, which factored weather and holidays, was added to all of the construction activities directly impacted by weather. Another six-day calendar, which

**Other Elements**

Within the schedule, SBJV created procurement activities to specifically tie the purchase, submittal and approval process, fabrication and the delivery of materials and equipment to design and installation.

SBJV's schedule incorporates other activities, including:

- ☒ QA/QC Testing Review
- ☒ Meeting Reporting Requirements
- ☒ Community Outreach
- ☒ Hold points/witness points

### Plan to Accomplish Work

Based on the activity relationships and project sequencing, SBJV has been able to identify critical elements throughout the design, procurement, and construction of the project, while optimizing project resources. These activities will be included in our Baseline Schedule.

**Design Sequence** - Design will begin immediately, at the SBJV team's risk, upon Notice of Intent (NOI) to award. The design phase includes:

- 29 Investigative activities such as supplemental field surveys, geotechnical borings and laboratory analysis, supplemental wetland delineations and jurisdictional determinations, cultural resources research and surveys, subsurface utility engineering designations and test holes, and environmental site assessments.
- 29 Preparation of roadway, bridge, fire protection, retaining wall, traffic, architectural and landscaping plans including preliminary engineering, final development, hydrologic and hydraulic analysis, drainage and stormwater management design.
- 29 Development of the TMP.
- 29 Over the shoulder and QA/QC reviews, and VDOT review and approval of plans and reports, and the release for construction plans.

Following receipt of Notice to Proceed (NTP), the design and construction teams will work with VDOT on scope validation. We will be able to complete this earlier than the 120 days from NTP shown in the schedule, since we are undertaking activities necessary for scope validation upon NOI at our own risk.

Regulatory Agency coordination of construction permits will begin, including the USACE and Virginia Department of Environmental Quality.

Once VDOT reviews and approves right-of-way plans, acquisition will begin in conjunction with the development of final construction documents. At this time, final details will be included in the documentation for each permit, and construction permits will be obtained. The traffic management plan and maintenance of traffic plans will correspond to the flow of work for the entire project, as well as for each of the three project elements.

The design development process and review are further described in Section 3.

**Construction Sequence** - The construction sequence starts immediately following contract award, with the development of required plans and procedures, including our quality plan, environmental plan, communications plan and safety plan. We will be able to build upon plans developed for the Route 29 Bypass under existing VDOT specifications (for example, quality assurance and control). This will provide a benefit in accelerating early stages of the project. Plans will be submitted to the VDOT Program Manager for review and approval.

We have developed our sequencing plan for the entire project to ensure that we will meet the Final Completion Date. To do this, we developed an independent schedule and sequence for each element and then optimized the elements in our master proposal schedule. SBJV's plan took into consideration limiting potential impacts and risks for stakeholders while meeting Project objectives. The Construction Sequence for the GSI is outlined in detail in Section 4 and briefly as follows:

■ **US 29 & Rio Road GSI** - GSI sequence is broken down into five phases of construction. In Phase 1, traffic is shifted to the US 29 SB lanes to relocate utilities and to construct the east retaining walls. In Phase 2, traffic is shifted to US 29 NB lanes to construct the west retaining walls and complete remaining utility relocations. In Phase 3, east and west intersection retaining walls will be completed.

Phase 4 is the start of the Interim Milestone Period. Work will begin with excavation of the depressed area and barrier walls. The bridge will be constructed during the excavation phase. Once the bridge is installed and secured, excavation activities can proceed. Once excavation is completed, storm drain and the dry fire protection piping system will be installed, followed by road base and intermediate coarse asphalt. While roadway construction is proceeding, barriers on the bridge and overlay will be completed. During Phase 5, the remaining retaining wall panels will be installed and stained, and final asphalt paving and pavement markings, permanent installation of ITS and lighting, and landscaping will be completed.

The Construction Sequence for both US 29 Widening and Berkmar Drive Extension is outlined in Section 5 and briefly as follows:

■ **US 29 Widening** - Our construction sequence for the US 29 Widening incorporated the available ROW limitations, geological information, environmental requirements, utility conflicts and the work hours for the element. Limiting disruption to the traveling public, maintaining access to local businesses, and promoting public safety are the key drivers in developing the TMP and other plans for this element.

This construction sequence is outlined in detail in Section 5 of this Technical Proposal.

In Phase 1, we will construct two new lanes in the existing median. This will minimize the need for lane or shoulder closings. Drivers, pedestrians, bicyclists and local businesses will be isolated from the construction area and will see few impacts on their daily routine.

In the second phase of construction we will shift the southbound (SB) lanes onto the two new lanes in the median and reconstruct the existing SB lanes, minimizing requirements for lane and shoulder closures. After the SB lanes have been reconstructed, SB traffic will be moved to its permanent location. The northbound (NB) lanes will now be relocated to the median lanes, and the existing NB lanes will be reconstructed. This sequence of construction will greatly reduce the impacts to the traveling public, maintains the same number of lanes currently available and maintain access for first responders and public transportation systems.

■ **Berkmar Drive Extension** -The Berkmar Drive Extension will begin with construction of the new roadway and Rivanna River Bridge, with access from the south extension terminus. Construction access will be developed to construct the pier next to the river, and sufficient embankment material will be placed to construct the south abutment. Foundation construction will start at the south piers and proceed north. A second phase of construction will start at the northern terminus and will proceed south towards the bridge. Access will be developed at Rio Mills Road for the new bridge and the roadway to the north. Clearing and grubbing operations will begin off Rio Mills Road and proceed toward the river to provide access to the bridge. Embankment material will be placed at the north abutment and roadway construction will proceed to the north.

### Managing the Schedule

Accountability and discipline is important to managing and analyzing the vast amount of information each month. Our team recognizes the critical role of the Project schedulers and our SBJV management staff will provide the oversight to ensure the proper attention to detail is provided to this mission critical project management tool.

The Project schedule is the tool our Project team uses for coordination. Managers use schedule updates to review progress and coordinate our efforts. Because of the importance of the schedule to the Rio Road intersection, we will assign a scheduler to this element during the Interim Milestone period.

In addition to the required monthly schedule updates, the schedule is reviewed and updated weekly as part of our four-week look-ahead schedule review to ensure that the work is progressing as required to ensure timely completion.

SBJV incorporates extensive design review as part of the design schedule. JMT has a robust internal design review program that features extensive independent review, but we have supplemented our design review process by adding independent outside design reviewer Moffat & Nichol. The process includes:

- ☐ Internal independent design review
- ☐ Design QA/QC
- ☐ VDOT plan reviews
- ☐ Formal and informal over-the shoulder review by VDOT and construction team
- ☐ Incorporation of construction review by our Design-Build Coordinator and DBPM.

As part of our preparation, we have conducted preliminary risk analysis. We will continue to develop risk mitigation plans and monitor project activities for risk. We will develop

project-specific risk mitigation plans, which will be incorporated into our four week look-ahead schedule and reviewed at least weekly for effectiveness.

If changes or unforeseen circumstances occur that impact the Project schedule, we will immediately notify VDOT and other appropriate stakeholders, and begin incorporating changes into the “live” CPM schedule. If changes to any task or phase result in schedule impacts, Jake Hensley, our Construction Manager, will perform a root cause analysis to determine its cause and develop a path forward.

We will develop and implement a recovery plan to return the element or the project to its schedule. Progress will be tracked in real time by comparing the schedule to the previously accepted schedule. Our SBJV management staff will evaluate mitigation strategies such as adding manpower, equipment, or multiple shifts and coordinating subcontractor activities. If recovery actions are required, Our DBPM Tom Fulton, PE has the authority to commit additional resources or implement measures to recover the Project schedule. The importance of schedule assurance will be communicated to all parties, including subcontractors.

Reports will be submitted to the QA Manager and VDOT each month. The schedule will be discussed at each progress meeting. Concerns will be addressed and solutions proposed. Our schedule process allows us to provide timely information to the public about traffic pattern changes and overall project progress.

SBJV understands that VDOT needs accurate schedule information. Our schedule management process will provide accurate and realistic information on the Project status.

**Plan to Meet/Attain Incentives**

SBJV is building its proposal schedule to ensure that our schedule meets VDOT’s incentive structure for all three elements. Strategies include hourly scheduling plans during the Interim Milestone Period on the US 29 & Rio Road Intersection. During periods of high criticality, we will hold schedule meetings at least daily at the beginning of each shift to ensure the schedule is being met, and to plan recovery if there has been schedule slippage. This focused examination of schedule will allow us to quickly address issues or problems that could negatively affect the schedule. Our team will also monitor “near critical” activities to ensure they do not control the schedule.

**Description of Critical Path**

Each project element has its own schedule, with its own critical path. The overall project schedule included as part of this proposal shows the US 29 Widening element, the element with the longest duration, as the project critical path. See *Exhibit 7-03 (pages 11-13)* for the critical path.

**Proposed Means and Methods**

A critical part of our initial planning includes incorporating risk management strategies to respond to delays caused by unknown conditions or utilities. Our PMP will incorporate a number of proven procedures to manage potential schedule disruptions.

We have included a video at the end of this section that shows the sequence of construction for one part of the Rio Road grade separated intersection. We used this animation to aid in development of detailed construction activities incorporated into the project schedule.

A significant component of our Project Management Plan (PMP) is dealing with the unexpected such as weather. We have developed multiple calendars to factor in schedule impacts from severe weather (described above). As part of our ongoing scheduling reviews and updates, we will implement recovery plans to handle other events including unexpected delays from utility relocations and their impacts.

**Other Key Assumptions**

The SBJV schedule and PMP are predicated upon certain assumptions, many of which are described in our Statement of Qualifications. Major schedule assumptions are based upon discussions with VDOT and information from the RFP and Addendums. These include:

- 29 Sufficient inspection and staffing from VDOT to provide rapid response to questions and to approve construction, particularly during the Interim Milestone.
- 29 Utilities cooperation.
- 29 VDOT obtaining utility easements for relocation.
- 29 Regulatory Agencies approvals.
- 29 FHWA approvals.
- 29 Timely VDOT review and approvals.
- 29 Cooperation from local businesses and other stakeholders.
- 29 Right-of-Way acquisition without condemnation.

**Benefits to VDOT and Stakeholders**

- |    |   |
|----|---|
| 29 | Balance between elements and master project schedule lessens risk of conflicts and resource misallocations. |
| 29 | Short schedule review cycles for GSI to rapidly recover from issues and keep schedule on track.             |
| 29 | Schedule transparency through partnering with VDOT.   |

7. Proposal Schedule

VDOT's goals are our goals.

Exhibit 7-03: SBJV Critical Path

Activity ID	Activity Name	Orig Dur	Calendar	Early Start	Early Finish	Total Float	2015												2016												2017											
							A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A							
<b>Route 29 Solutions - Technical Schedule</b>																																										
<b>Milestones</b>																																										
<b>Milestones</b>																																										
MS100100	NTP (03/04/2015)	0		04-Mar-15		0	NTP (03/04/2015)																																			
MS100400	EARLY PROJECT COMPLETION (7/01/2017)	0			01-Jul-17	0	◆ EA																																			
MS100500	FINAL PROJECT COMPLETION (10/30/2017)	0			01-Jul-17	120	◆ FIN																																			
<b>Design and Permitting</b>																																										
<b>Design, Right-of-Way &amp; Permitting</b>																																										
<b>US 29 Widening</b>																																										
<b>Supplemental Field Surveys</b>																																										
217	Prepare Property Owner Notification Letters for Surveys	1	5 Day No Weather w/ Holidays	04-Mar-15	04-Mar-15	0	Prepare Property Owner Notification Letters for Surveys																																			
219	Stake Geotechnical Boring Locations	10	5 Day No Weather w/ Holidays	17-Mar-15	30-Mar-15	0	Stake Geotechnical Boring Locations																																			
<b>Geotechnical Engineering and Subsurface Investigations</b>																																										
245	Prepare & Send Property Owner Notification Letters for Geotech. Investigations	1	5 Day No Weather w/ Holidays	09-Mar-15	09-Mar-15	0	Prepare & Send Property Owner Notification Letters for Geotech. Investiga																																			
247	Subsurface Investigations	30	5 Day No Weather w/ Holidays	31-Mar-15	11-May-15	0	■ Subsurface Investigations																																			
249	Boring Logs and Lab Work	30	5 Day No Weather w/ Holidays	14-Apr-15	26-May-15	0	■ Boring Logs and Lab Work																																			
<b>Geotechnical Engineering, Analysis &amp; Reports</b>																																										
253	Geotech Design, QA/QC & Submit Report - Roadway, Utility and Slopes	30	5 Day No Weather w/ Holidays	05-May-15	16-Jun-15	0	■ Geotech Design, QA/QC & Submit Report - Roadway, Utility and S																																			
258	Agency Review Report - Roadway, Utility and Slopes	9	7 Day No Weather No Holidays	17-Jun-15	25-Jun-15	0	■ Agency Review Report - Roadway, Utility and Slopes																																			
263	Resolve Review Comments - Complete, QA/QC & Submit Final Report - Roadway, Utility and Slopes	25	5 Day No Weather w/ Holidays	17-Jun-15	22-Jul-15	0	■ Resolve Review Comments - Complete, QA/QC & Submit Final																																			
<b>Roadway Design</b>																																										
288	Submit Preliminary Roadway Plans	1	5 Day No Weather w/ Holidays	23-Jul-15	23-Jul-15	0	Submit Preliminary Roadway Plans																																			
289	VDOT/FHWA Review Preliminary Roadway Plans	14	7 Day No Weather No Holidays	24-Jul-15	06-Aug-15	0	■ VDOT/FHWA Review Preliminary Roadway Plans																																			
290	Address Review Comments and Prepare Final Roadway Plans	50	5 Day No Weather w/ Holidays	24-Jul-15	02-Oct-15	0	■ Address Review Comments and Prepare Final Roadway																																			
291	Design QA/QC Review of Final Roadway Plans	5	5 Day No Weather w/ Holidays	05-Oct-15	09-Oct-15	0	Design QA/QC Review of Final Roadway Plans																																			
292	Submit Final Roadway Plans	1	5 Day No Weather w/ Holidays	13-Oct-15	13-Oct-15	0	Submit Final Roadway Plans																																			
293	VDOT/FHWA Review Final Roadway Plans	14	7 Day No Weather No Holidays	14-Oct-15	27-Oct-15	0	■ VDOT/FHWA Review Final Roadway Plans																																			
294	Address Review Comments and Receive VDOT/FHWA Approval on RFC Roadway Plans	25	5 Day No Weather w/ Holidays	14-Oct-15	18-Nov-15	0	■ Address Review Comments and Receive VDOT/FHW																																			
295	Released For Construction (RFC) Roadway Plans-Submit to VDOT	1	5 Day No Weather w/ Holidays	19-Nov-15	19-Nov-15	0	Released For Construction (RFC) Roadway Plans-Su																																			
<b>Construction</b>																																										
<b>US 29 Widening</b>																																										
<b>Phase 1</b>																																										
<b>310000: Utility Work</b>																																										
310000.1010	Relocate Gas Lines	25	5 Day w/ Weather w/ Holidays	20-Nov-15	04-Jan-16	0	■ Relocate Gas Lines																																			
<b>315000: Environmental Work</b>																																										
317000.1050	Temp Seed	2	6 Day w/ Weather w/ Holidays	12-Apr-16	13-Apr-16	0	Temp Seed																																			
<b>320000: Earthwork</b>																																										
320000.1000	Cut-to-Fill	25	6 Day Cold Weather w/ Weather w Holidays	20-Nov-15	23-Mar-16	0	■ Cut-to-Fill																																			
320000.1010	Haul-to-Waste	15	6 Day Cold Weather w/ Weather w Holidays	05-Dec-15	23-Mar-16	0	■ Haul-to-Waste																																			
320000.1020	Excavate and Haul Rock	10	6 Day Cold Weather w/ Weather w Holidays	11-Dec-15	23-Mar-16	0	■ Excavate and Haul Rock																																			

Route 29 Solutions - Technical Schedule

- Critical Remaining Work (Longest Path)
- Remaining Work
- ◆ Milestone
- ▬ Level of Effort



7. Proposal Schedule

VDOT's goals are our goals.

Activity ID	Activity Name	Orig Dur	Calendar	Early Start	Early Finish	Total Float	2015												2016												2017											
							A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A							
<b>310000: Utility Work</b>																																										
310000.3000	Install Water Main	23	6 Day Cold Weather w/ Weather w Holidays	23-Mar-17	21-Apr-17	0																																				
<b>315000: Environmental Work</b>																																										
317000.3010	Silt Fence for Fill Sections	4	6 Day w/ Weather w/ Holidays	21-Nov-16	28-Nov-16	0																																				
317000.3040	Inlet Protection	1	6 Day w/ Weather w/ Holidays	28-Nov-16	29-Nov-16	0																																				
317000.3030	Check Dams	2	6 Day w/ Weather w/ Holidays	30-Nov-16	01-Dec-16	0																																				
317000.3050	Temp Seed	1	6 Day w/ Weather w/ Holidays	03-May-17	04-May-17	0																																				
<b>320000: Earthwork</b>																																										
328000.3000	Strip Topsoil	5	6 Day Cold Weather w/ Weather w Holidays	02-Dec-16	08-Dec-16	0																																				
320000.3000	Cut-to-Fill	10	6 Day Cold Weather w/ Weather w Holidays	09-Dec-16	22-Mar-17	0																																				
320000.3010	Haul-to-Waste	5	6 Day Cold Weather w/ Weather w Holidays	17-Mar-17	22-Mar-17	0																																				
320000.3020	Excavate and Haul Rock	5	6 Day Cold Weather w/ Weather w Holidays	17-Mar-17	22-Mar-17	0																																				
320000.3030	Rough Grade Slopes	5	6 Day Cold Weather w/ Weather w Holidays	22-Apr-17	27-Apr-17	0																																				
320000.3040	Rough Grade Mainline	10	6 Day Cold Weather w/ Weather w Holidays	22-Apr-17	03-May-17	0																																				
<b>330000: Drainage</b>																																										
330000.3000	Install Storm Drain	23	6 Day Cold Weather w/ Weather w Holidays	23-Mar-17	21-Apr-17	0																																				
<b>340000: Subbase &amp; Base Courses</b>																																										
341000.3000	Fine Grade Slopes	10	6 Day Cold Weather w/ Weather w Holidays	04-May-17	18-May-17	0																																				
341000.3010	Fine Grade Main Line	20	6 Day Cold Weather w/ Weather w Holidays	04-May-17	31-May-17	0																																				
342000.3000	Place and Fine Grade Aggregate Base Course	25	6 Day Cold Weather w/ Weather w Holidays	18-May-17	20-Jun-17	0																																				
<b>345000: Pavements</b>																																										
345000.3000	Place Asphalt Paving	30	6 Day Cold Weather w/ Weather w Holidays	18-May-17	26-Jun-17	0																																				
<b>375000: Lighting, Signals, ITS</b>																																										
377000.3000	Install Traffic Signals	2	6 Day w/ Weather w/ Holidays	29-Jun-17	01-Jul-17	0																																				
<b>385000: Signing &amp; Pavement Markings</b>																																										
388000.3000	Apply Pavement Markings	2	6 Day w/ Weather w/ Holidays	26-Jun-17	28-Jun-17	0																																				
387000.3000	Install Traffic Signage	2	6 Day w/ Weather w/ Holidays	28-Jun-17	30-Jun-17	0																																				

**Construction Means and Methods for the US 29 & Rio Road  
Grade Separated Intersection Prior to Interim Milestone Period**

**Video Animation  
Included on CD-ROM**



Appendices

**ATTACHMENT 4.0.1.1**

**Design-Build Project for Route 29 Solutions, C00077383DB80**

**TECHNICAL PROPOSAL CHECKLIST AND CONTENTS**

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

<b>Technical Proposal Component</b>	<b>Form (if any)</b>	<b>RFP Part 1 Cross Reference</b>	<b>Included within page limit?</b>	<b>Technical Proposal Page Reference</b>
<b>Technical Proposal Checklist and Contents</b>	Attachment 4.0.1.1	Section 4.0.1.1	no	N/A
<b>Acknowledgement of RFP, Revisions, and/or Addenda</b>	Attachment 3.6 (Form C-78-RFP)	Sections 3.6, 4.0.1.1	no	N/A
<b>Letter of Submittal</b>	NA	Sections 4.1		1-4
Letter of Submittal on Offeror's letterhead	NA	Section 4.1.1	yes	1
Identify the full legal name and address of Offeror	NA	Section 4.1.1	yes	1
Authorized representative's original signature	NA	Section 4.1.1	yes	1
Declaration of intent	NA	Section 4.1.2	yes	1
120 day declaration	NA	Section 4.1.3	yes	1
Point of Contact information	NA	Section 4.1.4	yes	1
Principal Officer information	NA	Section 4.1.5	yes	1
Proposal Payment Agreement or Waiver of Proposal Payment	Attachment 9.3.1 or 9.3.2	Section 4.1.6	no	Appendix A
Certification Regarding Debarment Forms	Attachment 11.8.6(a) Attachment 11.8.6(b)	Section 4.1.7	no	Appendix B
Key Personnel Resume Form – Responsible Charge Engineer, <b>if applicable</b>	Attachment 4.1.8	Section 4.1.8	no	Appendix C
<b>Final Completion date no later than October 30, 2017</b>	<b>NA</b>	<b>Section 4.1.9</b>	<b>yes</b>	<b>1</b>
<b>Offeror's Qualifications</b>	NA	Section 4.2		5-7
Confirmation that the information provided in the SOQ submittal remains true and accurate or indicates that any	NA	Section 4.2.1	yes	5

**ATTACHMENT 4.0.1.1**

**Design-Build Project for Route 29 Solutions, C00077383DB80**

**TECHNICAL PROPOSAL CHECKLIST AND CONTENTS**

<b>Technical Proposal Component</b>	<b>Form (if any)</b>	<b>RFP Part 1 Cross Reference</b>	<b>Included within page limit?</b>	<b>Technical Proposal Page Reference</b>
requested changes were previously approved by VDOT				
Revised Organizational chart that includes the Responsible Charge Engineer, <b>if applicable</b> , with any other updates since the SOQ submittal clearly identified	NA	Section 4.2.2	yes	7
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.2	yes	5-6
<b>Design Concept</b>	NA	Section 4.3		Vol. I - 8-17
<b>US 29 &amp; Rio Road Grade Separated Intersection</b>	NA	Section 4.3.1		Vol. II - Tab 1
Conceptual Roadway Plans and description	NA	Section 4.3.1.1	yes	Vol. II - 44-55
Conceptual Structural Plans and description	NA	Section 4.3.1.2	yes	Vol. II - 56-59
<b>US 29 Widening</b>	NA	Section 4.3.2		Vol. II - Tab 2
Conceptual Roadway Plans and description	NA	Section 4.3.2.1	yes	Vol. II - 60-93
<b>Berkmar Drive Extension</b>	NA	Section 4.3.3		Vol. II - Tab 3
Conceptual Roadway Plans and description	NA	Section 4.3.3.1	yes	Vol. II - 94-117
Conceptual Structural Plans and description	NA	Section 4.3.3.2	yes	Vol. II - 118-120
<b>Approach to Construct the US 29 &amp; Rio Road Grade Separated Intersection</b>	NA	Section 4.4		18-30
Sequence of Construction	NA	Section 4.4.1	yes	19-24
Transportation Management Plan	NA	Section 4.4.2	yes	24-29
Utilities	NA	Section 4.4.3	yes	29-30

**ATTACHMENT 4.0.1.1**

**Design-Build Project for Route 29 Solutions, C00077383DB80**

**TECHNICAL PROPOSAL CHECKLIST AND CONTENTS**

<b>Technical Proposal Component</b>	<b>Form (if any)</b>	<b>RFP Part 1 Cross Reference</b>	<b>Included within page limit?</b>	<b>Technical Proposal Page Reference</b>
<b>Approach to Construct the Entire Project</b>	NA	Section 4.5		31-39
Sequence of Construction	NA	Section 4.5.1	yes	33-38
Transportation Management Plan	NA	Section 4.5.2	yes	38-39
<b>Disadvantaged Business Enterprises (DBE)</b>	NA	Section 4.6		40
Written statement of percent DBE participation	NA	Section 4.6	yes	40
<b>Proposal Schedule</b>	NA	Section 4.7		Vol. I - Sect. 7: 1-14
Proposal Schedule	NA	Section 4.7	no	Vol. II - Tab 4
Proposal Schedule Narrative	NA	Section 4.7	no	Vol. I - 1-14
Proposal Schedule in electronic format (CD-ROM)	NA	Section 4.7	no	Enclosed in Original
				Vol. I - Sect. 7

**ATTACHMENT 3.6****COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF TRANSPORTATION**CONTRACT ID NO.: C00077383DB80PROJECT NOS.: 0029-002-091, 0029-002-135, 9999-002-900**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 October 2, 2014 – RFP  
(Date)
2. Cover letter of November 5, 2014 – RFP Addendum No. 1  
(Date)
3. Cover letter of December 5, 2014 – RFP Addendum No. 2  
(Date)
4. Cover letter of December 19, 2014 – RFP Addendum No. 3  
(Date)



SIGNATURE

January 6, 2015

DATE

Stephen Davis

PRINTED NAME

Authorized Representative

TITLE

Appendix A

Proposal Payment Agreement  
Attachment 9.3.1

**ATTACHMENT 9.3.1**  
**PROPOSAL PAYMENT AGREEMENT**

**THIS PROPOSAL PAYMENT AGREEMENT** (this "Agreement") is made and entered into as of this 6th day of January, 2015 by and between the Virginia Department of Transportation ("VDOT"), and Skanska-Branch A Joint Venture ("Offeror").

**WITNESSETH:**

**WHEREAS**, Offeror is one of the entities who submitted Statements of Qualifications ("SOQs") pursuant to VDOT's July 24, 2014 Request for Qualifications ("RFQ") and was invited to submit proposals in response to a Request for Proposals ("RFP") for the **Design-Build Project for Route 29 Solutions, Project Nos. 0029-002-091, 0029-002-135, 9999-002-900** ("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 **One Hundred Thousand and 00/100 Dollars (\$100,000.00)** ("Proposal Payment"), which payment constitutes payment in full to Offeror for the conveyance of Offeror's Intellectual Property to VDOT in accordance with this Agreement. Payment of the Proposal Payment is conditioned upon: (a) Offeror's Proposal being, in the sole discretion of VDOT, responsive to the RFP; (b) Offeror complying with all other terms and conditions of this Agreement; and (c) either (i) Offeror is not awarded the Design-Build Contract, or (ii) VDOT cancels the procurement or decides not to award the Design-Build Contract to any Offeror.

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

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

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

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

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

9. **Miscellaneous.**

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

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

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

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

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

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

VIRGINIA DEPARTMENT OF TRANSPORTATION

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

*[Insert Offeror's Name]* Skanska-Branch A Joint Venture

By:  \_\_\_\_\_

Name: Salvatore Taddeo

Title: Authorized Representative

Appendix B

Certification Regarding Debarment Forms  
Attachments 11.8.6 (a) & (b)

**ATTACHMENT 11.8.6(a)**  
**CERTIFICATION REGARDING DEBARMENT**  
**PRIMARY COVERED TRANSACTIONS**

**Project Name: Design-Build Project for Route 29 Solutions**  
**Contract ID No.: C00077383DB80**

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.

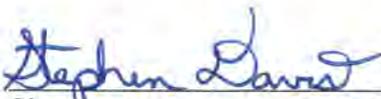
b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under 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.

 11/3/14      Assistant Secretary  
Signature                      Date                      Title

Skanska USA Civil Southeast Inc.  
Name of Firm

**ATTACHMENT 11.8.6(a)**  
**CERTIFICATION REGARDING DEBARMENT**  
**PRIMARY COVERED TRANSACTIONS**

**Project Name: Design-Build Project for Route 29 Solutions**  
**Contract ID No.: C00077383DB80**

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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.

 10/27/14 Vice President  
Signature Date Title

Branch Highways, Inc.  
Name of Firm

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

**Project Name: Design-Build Project for Route 29 Solutions**  
**Contract ID No.: C00077383DB80**

- 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.



October 27, 2014

Vice President

Signature

Date

Title

Johnson, Mirmiran & Thompson, Inc.

Name of Firm

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

**Project Name: Design-Build Project for Route 29 Solutions**  
**Contract ID No.: C00077383DB80**

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

 _____ Signature	10/27/2014 _____ Date	President _____ Title
CES CONSULTING LLC _____ Name of Firm		

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

**Project Name: Design-Build Project for Route 29 Solutions**  
**Contract ID No.: C00077383DB80**

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

Sevin de Leigh      10/27/14      PRESIDENT  
Signature                      Date                      Title

EMC2, INC.  
Name of Firm

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

**Project Name: Design-Build Project for Route 29 Solutions**  
**Contract ID No.: C00077383DB80**

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

<u>Edward G. Drach</u>	<u>10/28/14</u>	<u>Senior Reviewer</u>
Signature	Date	Title

Schnabel Engineering Consultants, Inc.  
Name of Firm



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

**Project Name: Design-Build Project for Route 29 Solutions**  
**Contract ID No.: C00077383DB80**

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



Signature

October 27, 2014  
Date

President  
Title

EEE Consulting, Inc.  
Name of Firm

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

**Project Name: Design-Build Project for Route 29 Solutions**  
**Contract ID No.: C00077383DB80**

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

	11/03/2014	President
Signature	Date	Title

Dovetail Cultural Resource Group  
Name of Firm

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

**Project Name: Design-Build Project for Route 29 Solutions**  
**Contract ID No.: C00077383DB80**

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

<u>C E B L</u>	<u>10/23/2018</u>	<u>BUSINESS UNIT LEADER</u>
Signature	Date	Title

MOFFATT + NICHOL

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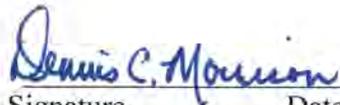
Name of Firm

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

**Project Name: Design-Build Project for Route 29 Solutions**  
**Contract ID No.: C00077383DB80**

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Signature

10/27/2014  
Date

Senior Vice President  
Title

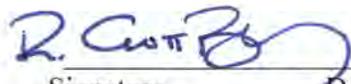
Volkert, Inc.  
Name of Firm

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

**Project Name: Design-Build Project for Route 29 Solutions**  
**Contract ID No.: C00077383DB80**

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

 October 29, 2014 Managing Partner  
Signature                      Date                      Title

Appraisal Review Specialists, LLC  
Name of Firm

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

**Project Name: Design-Build Project for Route 29 Solutions**  
**Contract ID No.: C00077383DB80**

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

 _____ Signature	<u>10/27/2014</u> _____ Date	<u>Appraiser</u> _____ Title
<u>V. Lynn Kelsey</u> _____ Name of Firm		

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

**Project Name: Design-Build Project for Route 29 Solutions**  
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 _____ Signature	10/24/14 _____ Date	President _____ Title
 _____ Name of Firm		

Appendix C

Change in Key Personnel Approval Letter



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, VIRGINIA 23219 2000

**Charles A. Kilpatrick, P.E.**  
Commissioner

November 14, 2014

Mr. Stephen Davis  
Skanska-Branch a Joint Venture  
295 Bendix Road, Suite 400  
Virginia Beach, Virginia 23452

**Subject: Design Build Project for Route 29 Solutions  
Albemarle County, Virginia  
Project Nos. 0029-002-091; 0029-002-135; 9999-002-900  
Contract ID Number: C00077383DB80  
Request for Change in Key Personnel**

Mr. Davis:

Thank you for your request to substitute Mr. Jake Hensley for Mr. Greg Suttles as the Construction Manger (CM) for the above referenced project. Mr. Suttle is currently serving as the Construction Manager for the Route 3 Widening Design-Build project which has a Final Completion Date of May 4, 2017. Therefore, Mr. Suttle will not be available to perform the role as Construction Manager for the Design Build Project for Route 29 Solutions. After careful consideration and review of Mr. Hensley's resume and work experience provided in your request, VDOT has determined it will grant the substitution of Mr. Hensley for Mr. Suttle. Please make reference to this approval in your Technical Proposal in accordance with Section 4.2 of the RFP.

Sincerely,

A handwritten signature in blue ink that reads "John Daoulas".

John Daoulas, P.E.  
Senior Project Delivery Engineer  
Alternate Project Delivery Office

**SKANSKA**



295 Bendix Road, Suite 400  
Virginia Beach, VA 23452  
Phone: 757.420.4140



Artist Rendering

Design-Build Project for

# Route 29 Solutions

## Albemarle County, Virginia

Contract ID No. C00077383DB80



## Volume II

Offeror's Conceptual Plans | January 6, 2015



Artist Rendering

3.1 US 29 & Rio Road Grade Separated Intersection Conceptual Plans (4.3.1)

Conceptual Roadway Plans

# SEQUENCE OF CONSTRUCTION TYPICAL SECTIONS

US 29 MAINTENANCE OF TRAFFIC AT RIO ROAD INTERSECTION

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	1K(1)

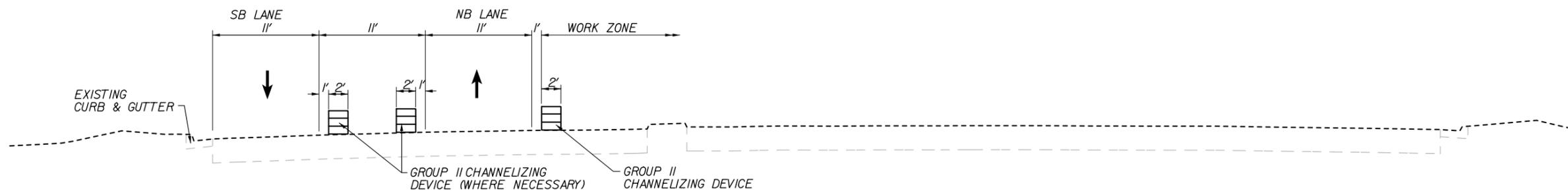
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

**NOTES:**

1. THIS SEQUENCE OF CONSTRUCTION AND MAINTENANCE OF TRAFFIC IS CONCEPTUAL IN NATURE. FINAL PHASING AND SEQUENCING INCLUDING TYPES OF REQUIRED TEMPORARY TRAFFIC CONTROL DEVICES WILL BE DEVELOPED DURING FINAL DESIGN.
2. TURN LANES TO BE PROVIDED IF NECESSARY.
3. DRIVEWAYS TO BE MAINTAINED AS NECESSARY.



NIGHTTIME MOT OPERATIONS WITH SB ROADWAY WORK ZONE



NIGHTTIME MOT OPERATIONS WITH NB ROADWAY WORK ZONE

PRELIMINARY  
PLANS  
JAN. 6, 2015

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



PROJECT 0029-002-091	SHEET NO. 41 of 120
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# SEQUENCE OF CONSTRUCTION TYPICAL SECTIONS

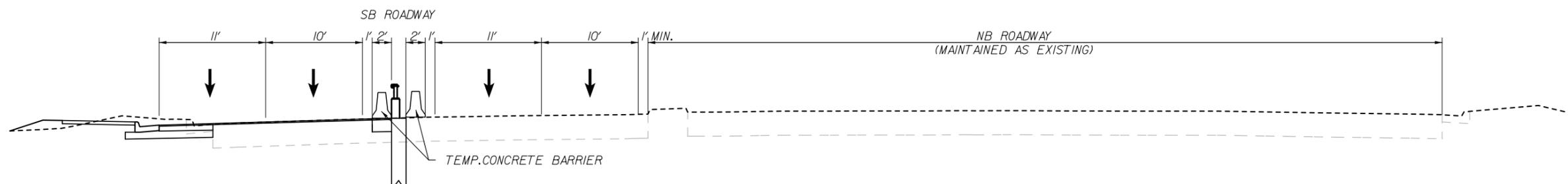
REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	1K(2)

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

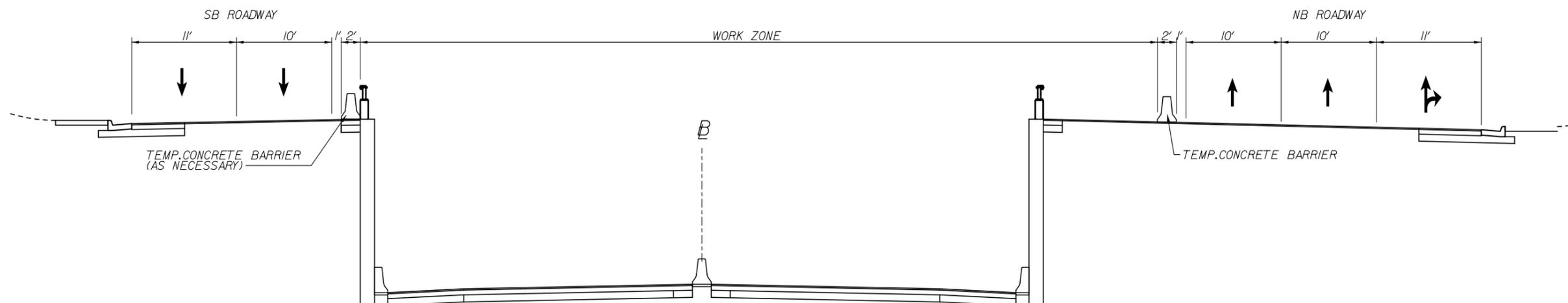
## US 29 MAINTENANCE OF TRAFFIC AT RIO ROAD INTERSECTION

**NOTES:**

1. THIS SEQUENCE OF CONSTRUCTION AND MAINTENANCE OF TRAFFIC IS CONCEPTUAL IN NATURE. FINAL PHASING AND SEQUENCING INCLUDING TYPES OF REQUIRED TEMPORARY TRAFFIC CONTROL DEVICES WILL BE DEVELOPED DURING FINAL DESIGN.
2. TURN LANES TO BE PROVIDED IF NECESSARY.
3. DRIVEWAYS TO BE MAINTAINED AS NECESSARY.



DAYTIME MOT OPERATIONS FOR CONSTRUCTION OF THE BR-27 BARRIER ON THE SOUTHWEST RETAINING WALL (PRIOR TO THE INTERSECTION CLOSURE PERIOD)



DAYTIME MOT OPERATIONS DURING INTERSECTION CLOSURE PERIOD

PRELIMINARY  
PLANS  
JAN. 6, 2015

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



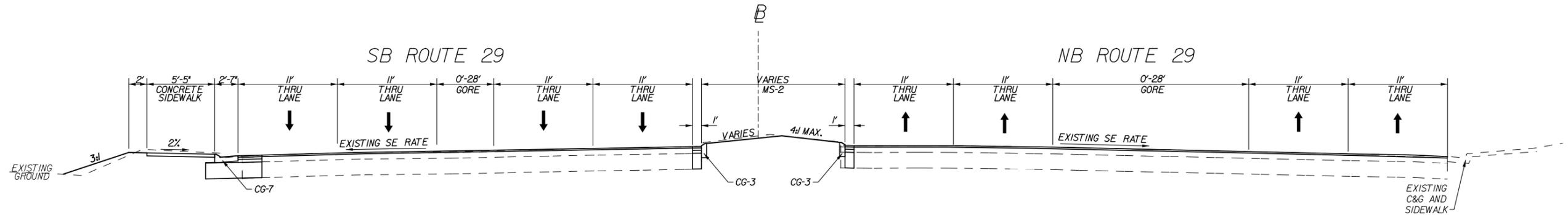
PROJECT: 0029-002-091  
SHEET NO.: 42 of 120

# TYPICAL SECTIONS

STA. 48+75 TO STA. 53+00  
STA. 68+00 TO STA. 73+00  
URBAN OTHER PRINCIPAL ARTERIAL GS-5 (DS=45 MPH)  
ROUTE 29

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	2A(1)

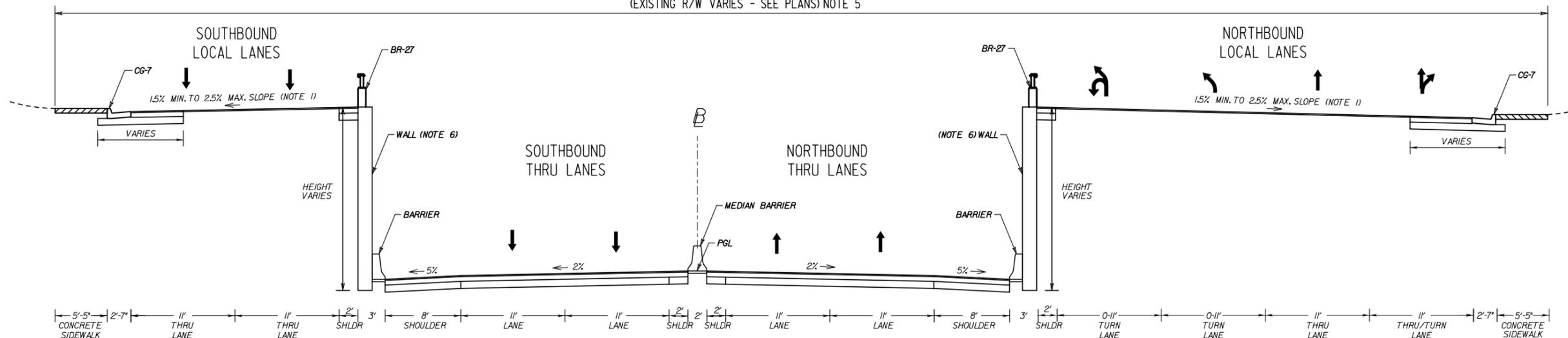
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



# STA. 53+00 TO STA. 59+45.50

URBAN OTHER PRINCIPAL ARTERIAL GS-5 (DS=45 MPH)  
ROUTE 29

(EXISTING R/W VARIES - SEE PLANS) NOTE 5



**NOTES:**

1. Adjust existing grades on local lanes as needed to meet ties to existing.
2. Proposed pavement shall be per RFP Section 2.6J.
3. Project elements that require a Design Waiver/Design Exception are as Identified In the RFP Section 2.I3.
4. See plans for location and length of turn lanes.
5. Proposed Right-of-Way requirements are less than or equal to the RFP Conceptual Plans. Proposed Easement requirements for the roadway construction are shown on the plans.
6. Proposed Retaining Walls along the depressed roadway to transition to a VDOT Std. MB-8A Concrete Median Barrier where the depressed roadway approaches existing grade.
7. Limits of proposed curb, curb and gutter, barrier, retaining walls, and sidewalk are shown on the plans.
8. See Structural Plans for proposed section from Sta. 59+45.50 to Sta. 62+26.00.

PRELIMINARY  
PLANS  
JAN. 6, 2015

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



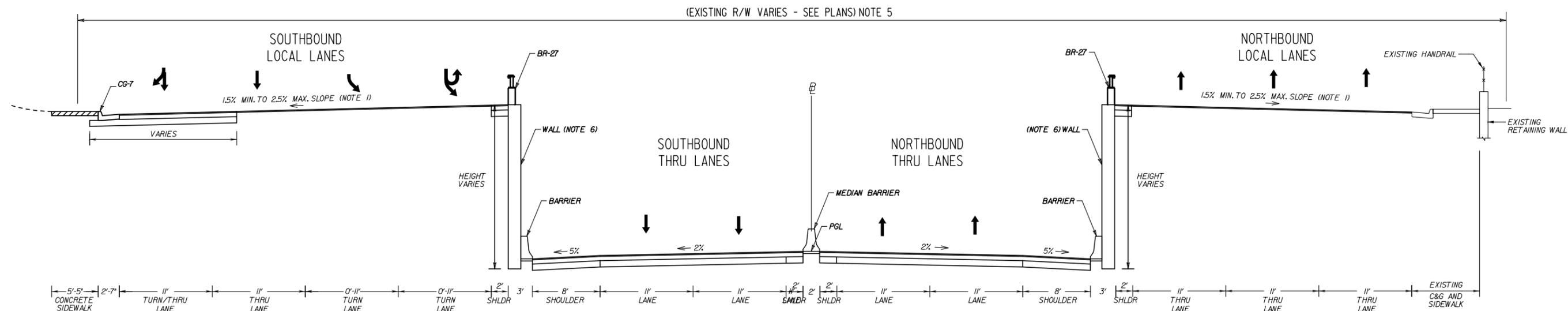
PROJECT	SHEET NO.
0029-002-091	43 of 120

# TYPICAL SECTIONS

STA. 62+26 TO STA. 68+00  
URBAN OTHER PRINCIPAL ARTERIAL GS-5 (DS-45 MPH)  
ROUTE 29

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	2A(2)

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



**NOTES:**

1. Adjust existing grades on local lanes as needed to meet ties to existing.
2. Proposed pavement shall be per RFP Section 2.6J.
3. Project elements that require a Design Waiver/Design Exception are as identified in the RFP Section 2.13.
4. See plans for location and length of turn lanes.
5. Proposed Right-of-Way requirements are less than or equal to the RFP Conceptual Plans. Proposed Easement requirements for the roadway construction are shown on the plans.
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7. Limits of proposed curb, curb and gutter, barrier, retaining walls, and sidewalk are shown on the plans.
8. See Structural Plans for proposed section from Sta. 59+45.50 to Sta. 62+26.00.

PRELIMINARY  
PLANS  
JAN. 6, 2015

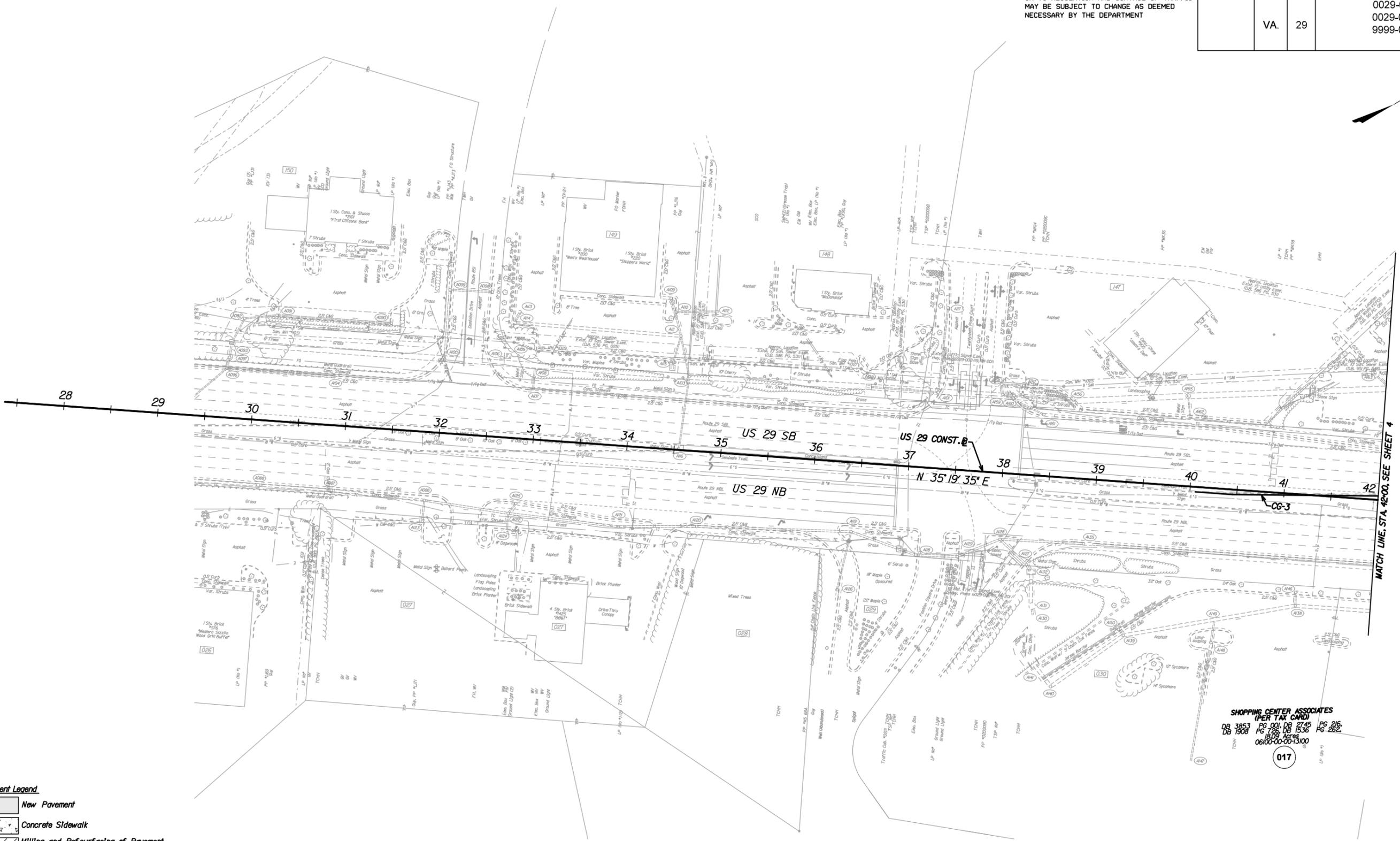
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.



PROJECT	SHEET NO.
0029-002-091	44 of 120

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		SHEET NO.
		ROUTE	PROJECT	
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	3



MATCH LINE STA. 42+00 SEE SHEET 4

**SHOPPING CENTER ASSOCIATES**  
(PER TAX CARD)  
DB 3853 PG 001 DB 2745 PG 216  
DB 1908 PG 726 DB 1536 PG 262  
06/00-00-00-1000  
017

- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

**NOTE:**  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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

**SKANSKA** BranchHighways **JM**

SCALE 0 50' 100'

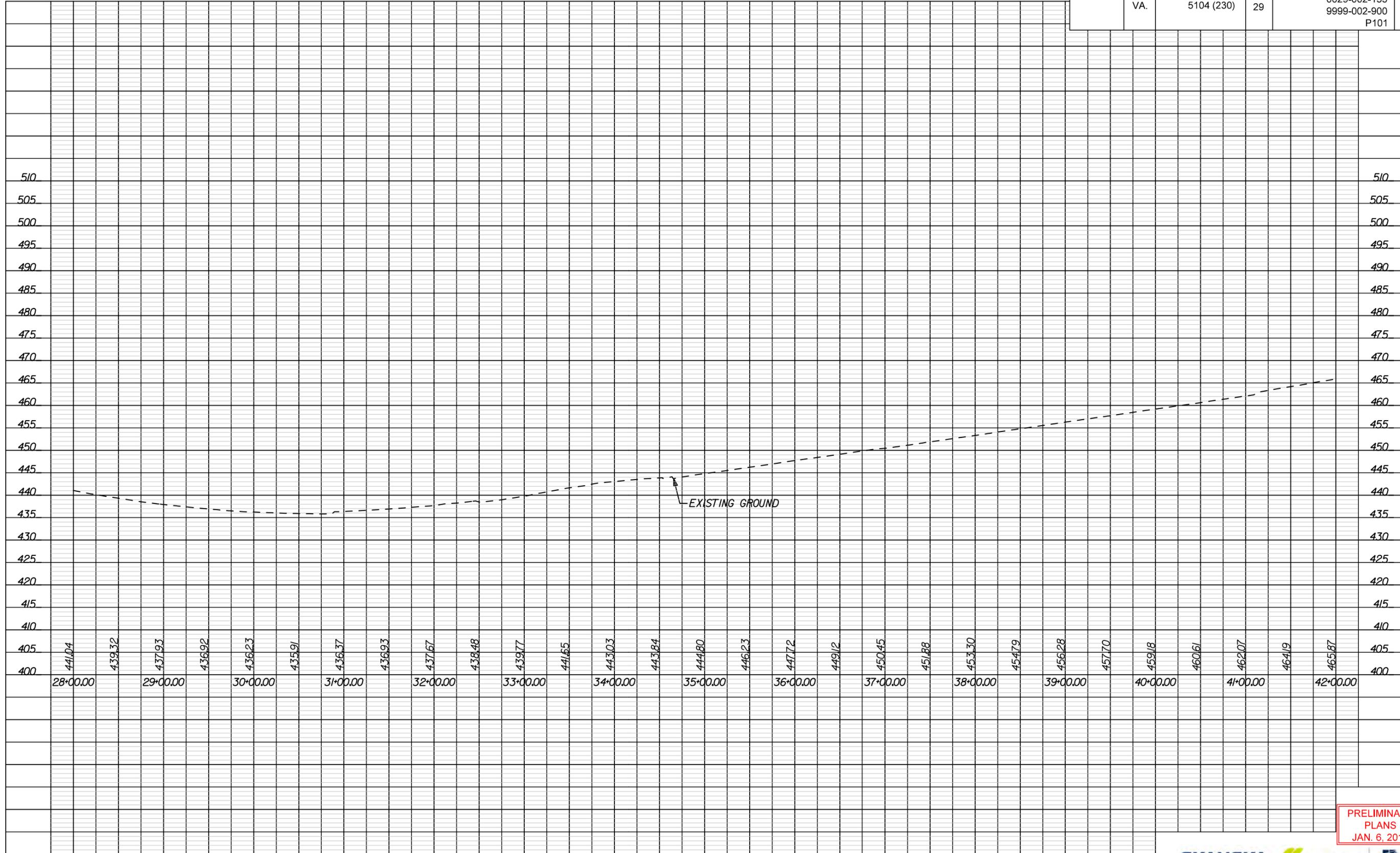
PROJECT 0029-002-091 SHEET NO. 45 of 120

**PRELIMINARY PLANS**  
JAN. 6, 2015

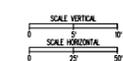
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wisner

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	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	3A



US 29 (45 MPH)



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

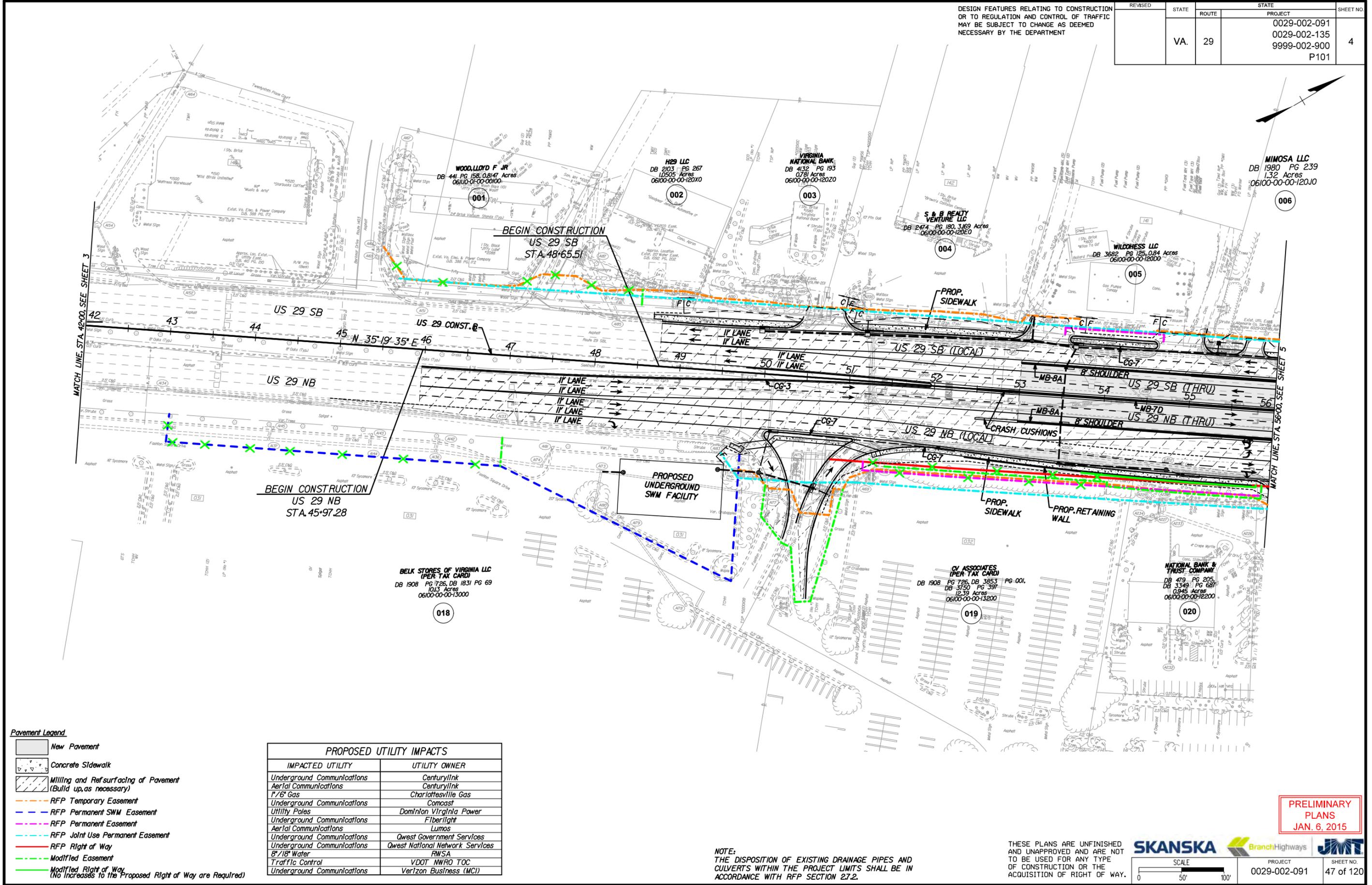
PRELIMINARY PLANS  
JAN. 6, 2015



PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-091	46 of 120

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	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	4



**Pavement Legend**

- New Pavement
- Concrete Sidewalk
- Milling and Resurfacing of Pavement (Build up, as necessary)
- RFP Temporary Easement
- RFP Permanent SWM Easement
- RFP Permanent Easement
- RFP Joint Use Permanent Easement
- RFP Right of Way
- Modified Easement
- Modified Right of Way (No Increases to the Proposed Right of Way are Required)

PROPOSED UTILITY IMPACTS	
IMPACTED UTILITY	UTILITY OWNER
Underground Communications	CenturyLink
Aerial Communications	CenturyLink
1/6" Gas	Charlottesville Gas
Underground Communications	Comcast
Utility Poles	Dominion Virginia Power
Underground Communications	Fiberlight
Aerial Communications	Lumos
Underground Communications	Qwest Government Services
Underground Communications	Qwest National Network Services
8"/18" Water	RWSA
Traffic Control	VDOT MWRO TOC
Underground Communications	Verizon Business (MCI)

PRELIMINARY  
PLANS  
JAN. 6, 2015

NOTE:  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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

**SKANSKA** BranchHighways **JMT**

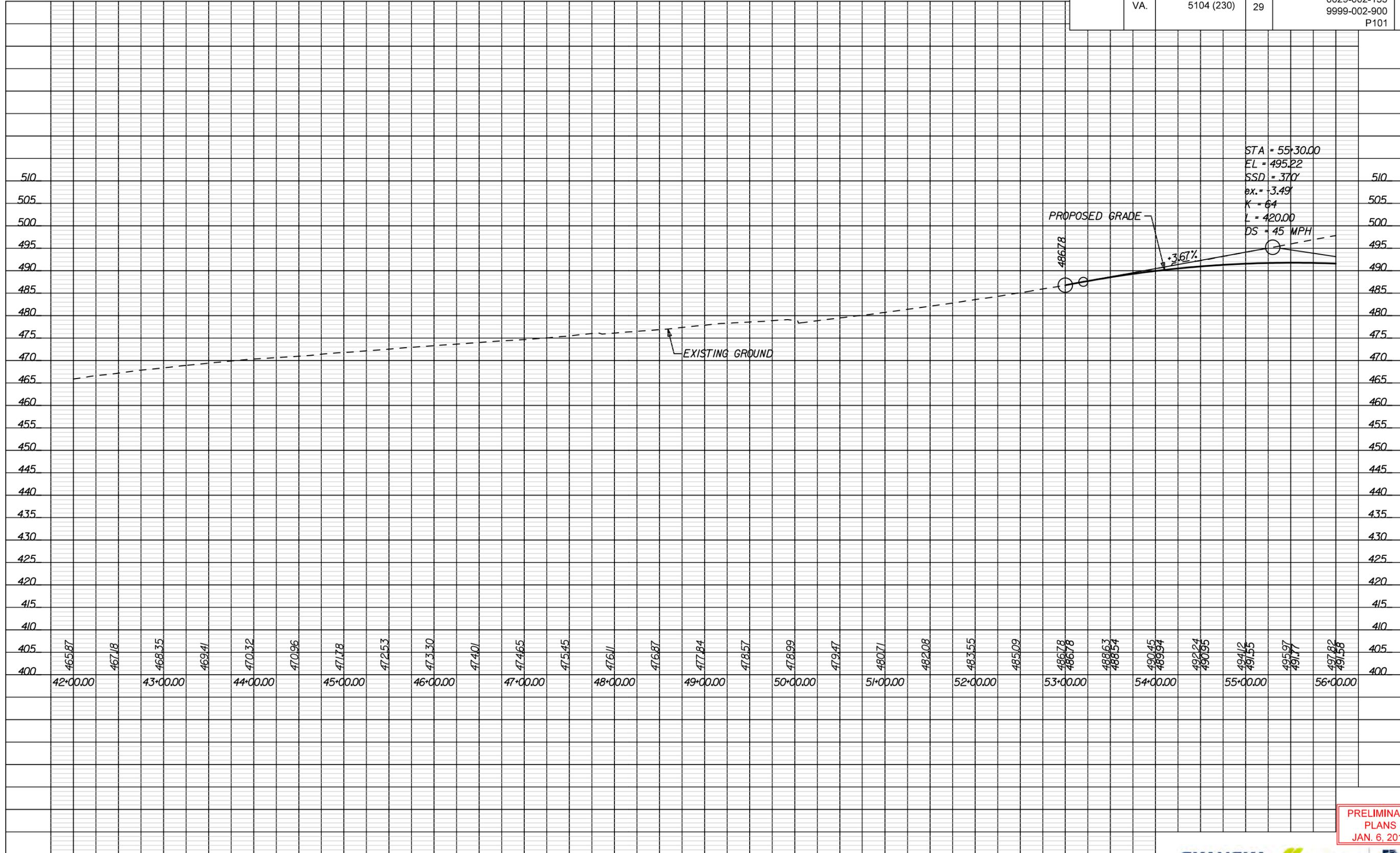
SCALE: 0 50' 100'

PROJECT: 0029-002-091 SHEET NO.: 47 of 120

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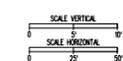
DESIGN FEATURES RELATING TO CONSTRUCTION  
OR TO REGULATION AND CONTROL OF TRAFFIC  
MAY BE SUBJECT TO CHANGE AS DEEMED  
NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	4A



STA = 55+30.00  
EL = 495.22  
SSD = 370'  
ex. = -3.49'  
K = 64  
L = 420.00  
DS = 45 MPH

US 29 (45 MPH)



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

PRELIMINARY  
PLANS  
JAN. 6, 2015



PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-091	48 of 120

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

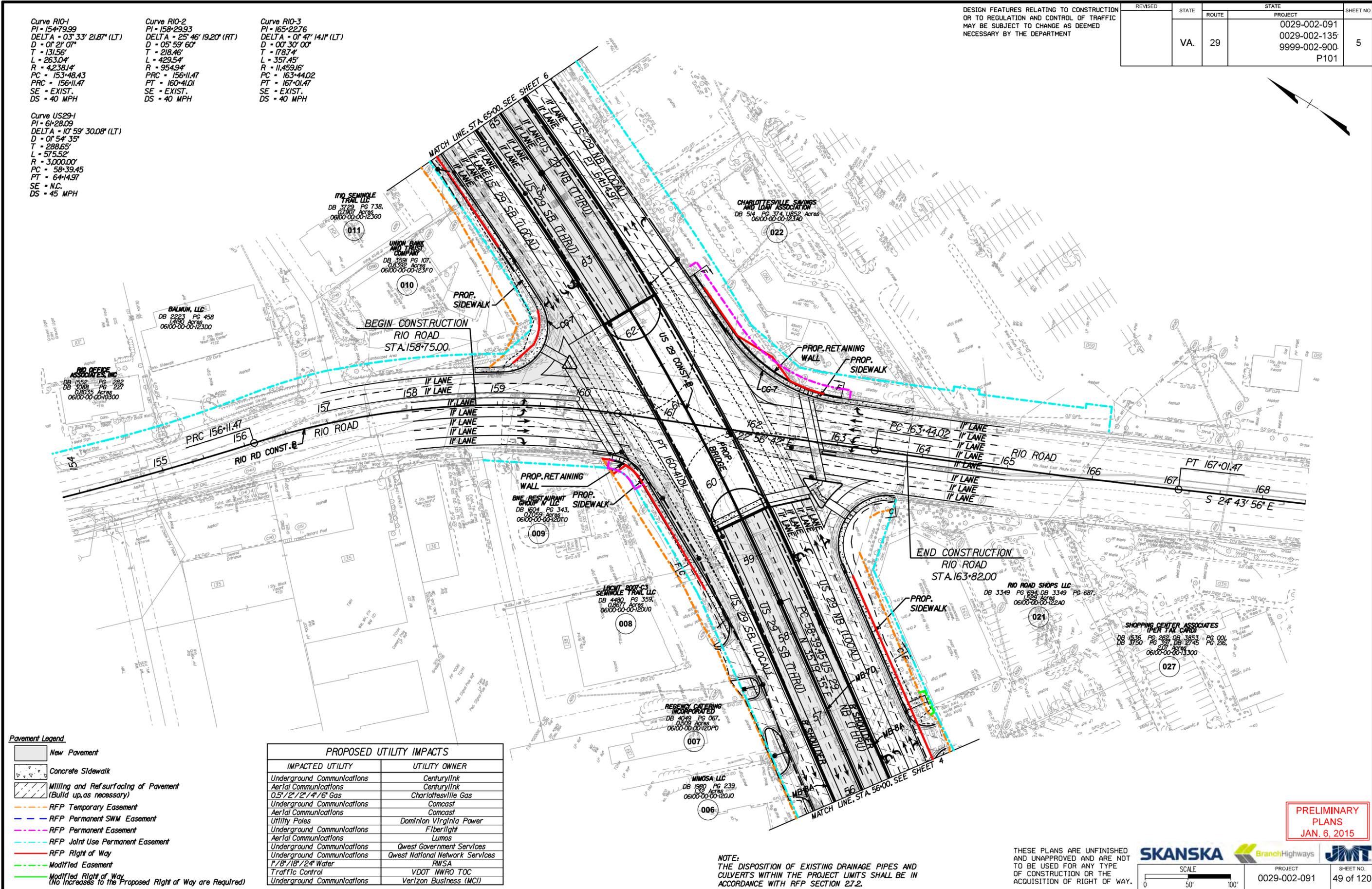
REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	5

**Curve RIO-1**  
PI = 154+79.99  
DELTA = 0° 33' 21.87" (LT)  
D = 0' 2' 07"  
T = 131.56'  
L = 263.04'  
R = 4238.14'  
PC = 153+48.43  
PRC = 156+11.47  
SE = EXIST.  
DS = 40 MPH

**Curve RIO-2**  
PI = 158+29.93  
DELTA = 25° 46' 19.20" (RT)  
D = 0° 5' 59' 60"  
T = 218.46'  
L = 429.54'  
R = 954.94'  
PC = 156+11.47  
PT = 160+41.01  
SE = EXIST.  
DS = 40 MPH

**Curve RIO-3**  
PI = 165+22.76  
DELTA = 0° 47' 14.11" (LT)  
D = 0° 0' 30' 00"  
T = 178.74'  
L = 357.45'  
R = 11,459.16'  
PC = 163+44.02  
PT = 167+01.47  
SE = EXIST.  
DS = 40 MPH

**Curve US29-1**  
PI = 6+28.09  
DELTA = 10° 59' 30.08" (LT)  
D = 0° 5' 4' 35"  
T = 288.65'  
L = 575.52'  
R = 3,000.00'  
PC = 58+39.45  
PT = 64+14.97  
SE = N.C.  
DS = 45 MPH



**Pavement Legend**

- New Pavement
- Concrete Sidewalk
- Milling and Resurfacing of Pavement (Build up, as necessary)
- RFP Temporary Easement
- RFP Permanent SWM Easement
- RFP Permanent Easement
- RFP Joint Use Permanent Easement
- RFP Right of Way
- Modified Easement
- Modified Right of Way (No Increases to the Proposed Right of Way are Required)

PROPOSED UTILITY IMPACTS	
IMPACTED UTILITY	UTILITY OWNER
Underground Communications	CenturyLink
Aerial Communications	CenturyLink
0.5"/2"/2"/4"/6" Gas	Charlottesville Gas
Underground Communications	Comcast
Aerial Communications	Comcast
Utility Poles	Dominion Virginia Power
Underground Communications	Fiberlight
Aerial Communications	Lumos
Underground Communications	Qwest Government Services
Underground Communications	Qwest National Network Services
1"/8"/18"/24" Water	RWSA
Traffic Control	VDOT MWRO TOC
Underground Communications	Verizon Business (MCI)

PRELIMINARY PLANS  
JAN. 6, 2015

NOTE:  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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

SKANSKA BranchHighways JMT

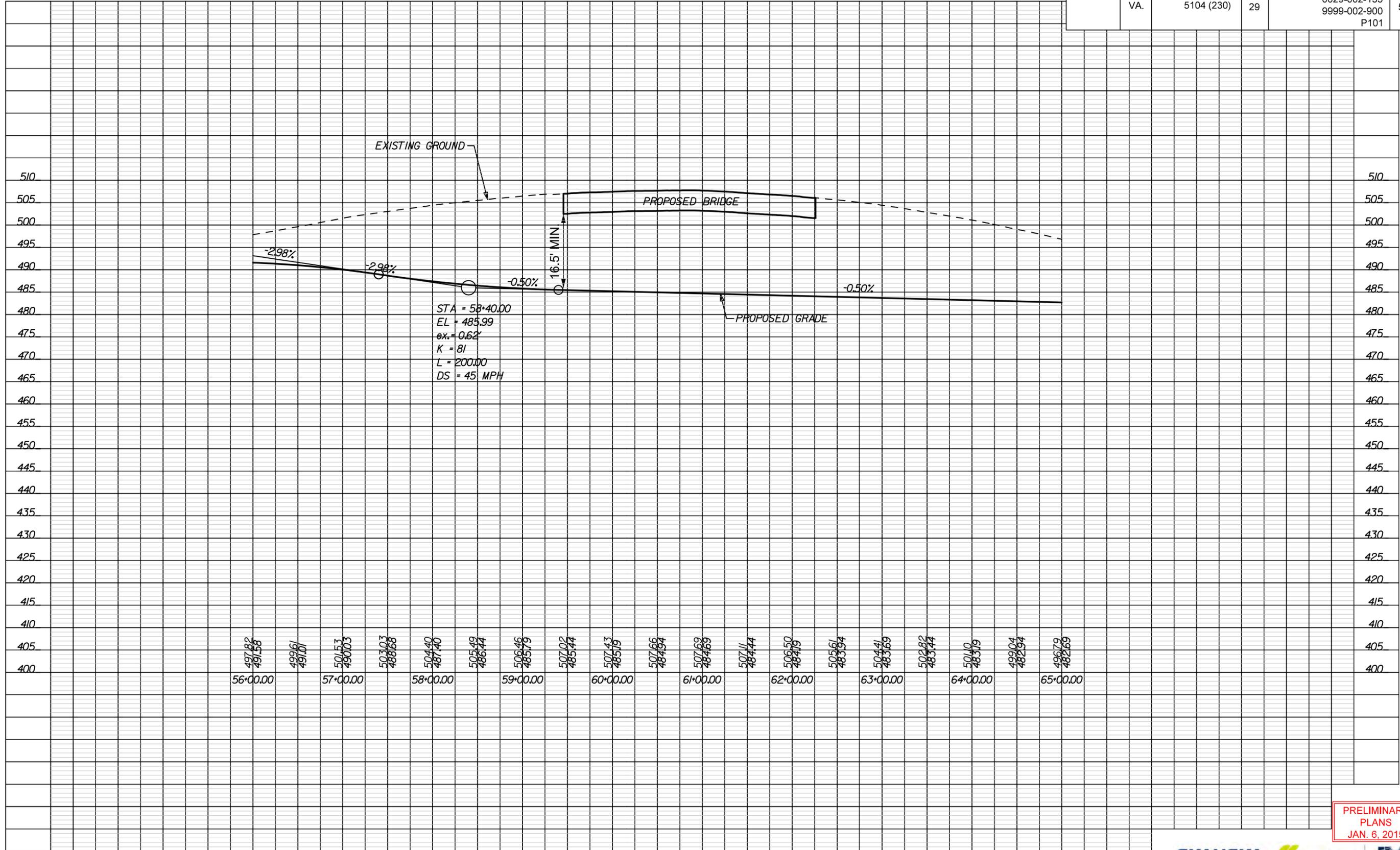
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PROJECT 0029-002-091 SHEET NO. 49 of 120

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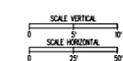
DESIGN FEATURES RELATING TO CONSTRUCTION  
OR TO REGULATION AND CONTROL OF TRAFFIC  
MAY BE SUBJECT TO CHANGE AS DEEMED  
NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	5A



STA = 58+40.00  
EL = 485.99  
eX = 0.62'  
K = 81  
L = 200.00  
DS = 45 MPH

US 29 (45 MPH)



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

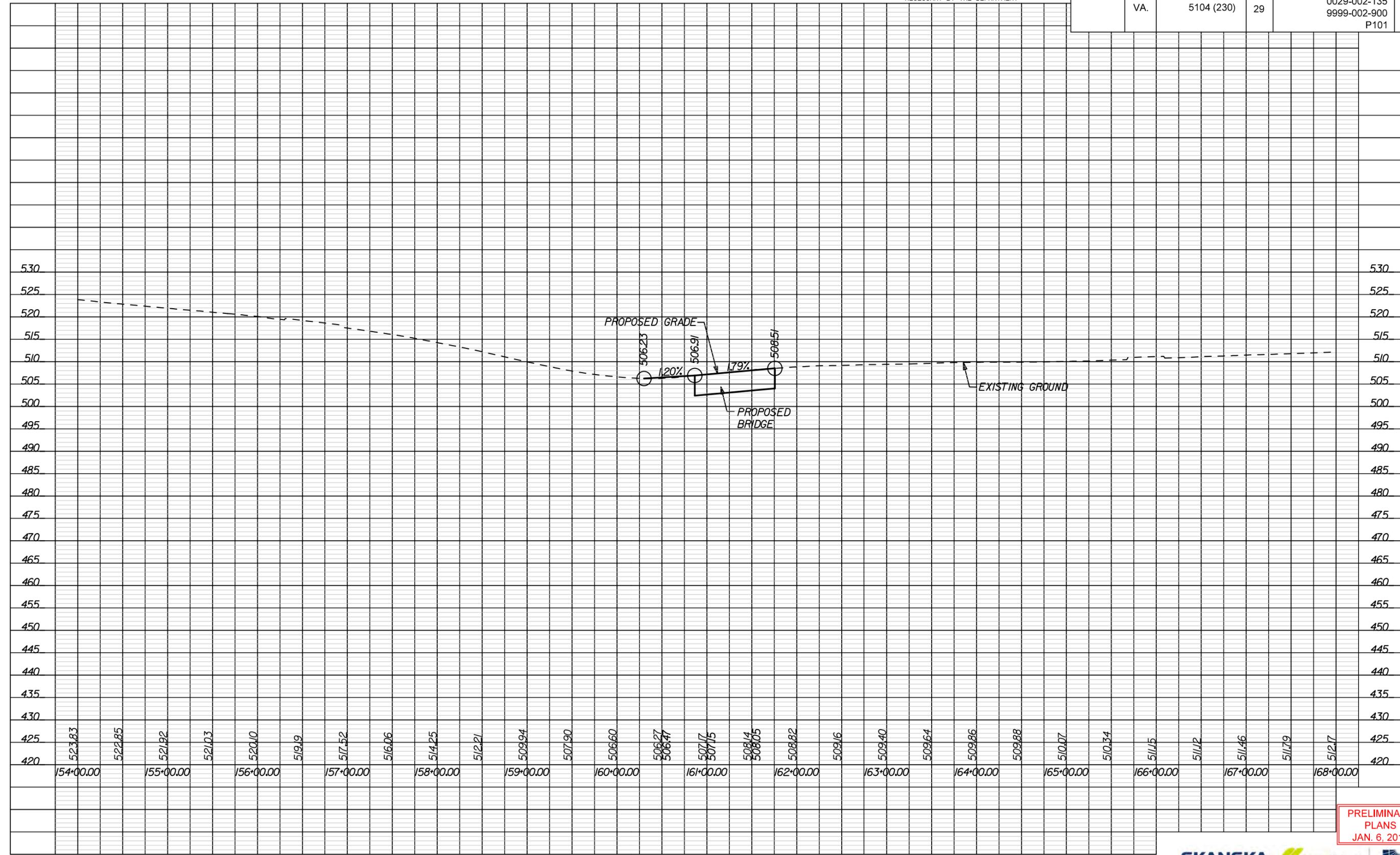
PRELIMINARY  
PLANS  
JAN. 6, 2015



PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-091	50 of 120

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	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	5B



RIO ROAD (40 MPH)

SCALE VERTICAL  
1" = 10'  
SCALE HORIZONTAL  
1" = 40'

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

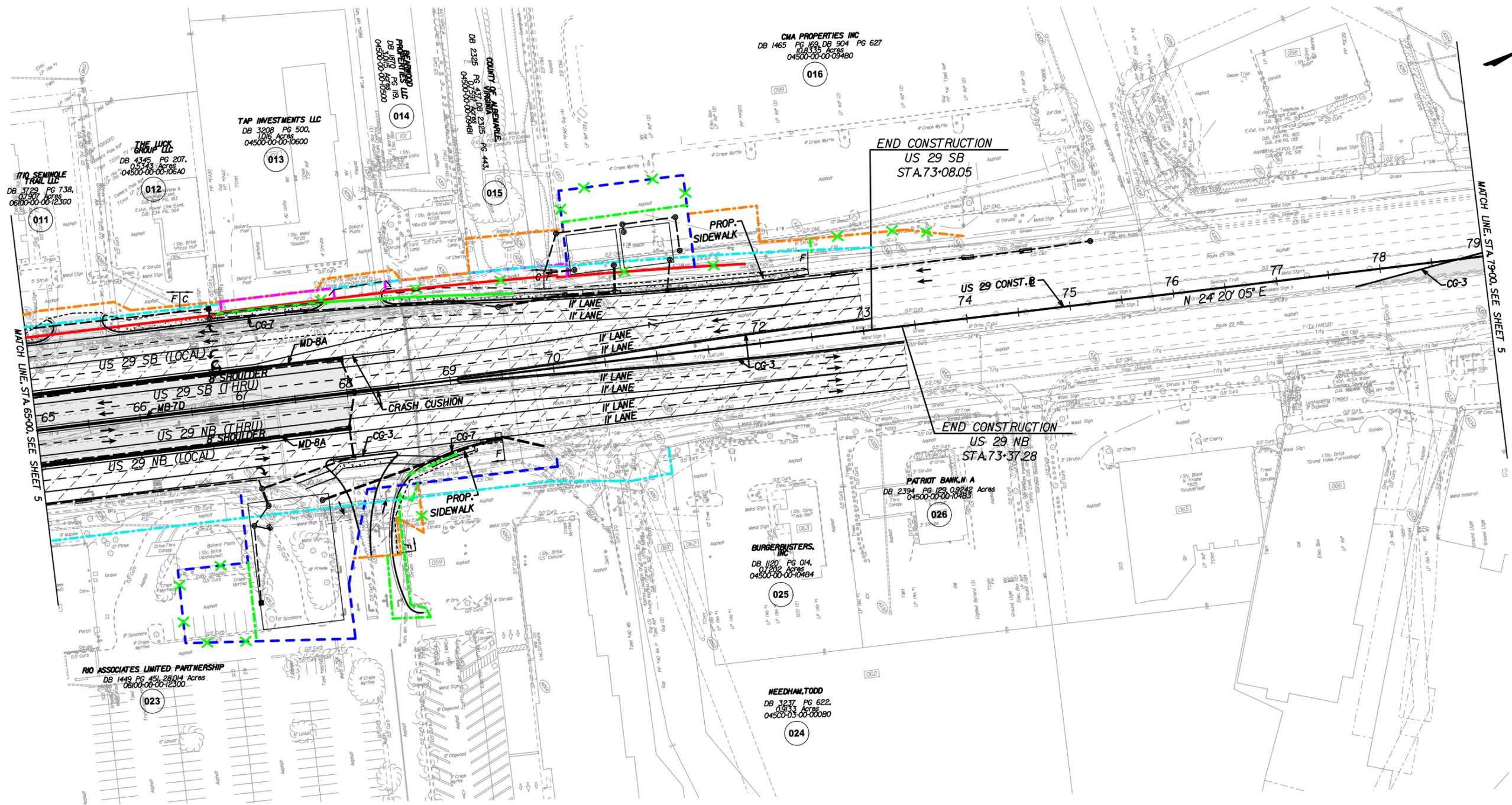
PRELIMINARY PLANS  
JAN. 6, 2015



PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-091	51 of 120

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	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	6



**Pavement Legend**

- New Pavement
- Concrete Sidewalk
- Milling and Resurfacing of Pavement (Build up, as necessary)
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- RFP Permanent SWM Easement
- RFP Permanent Easement
- RFP Joint Use Permanent Easement
- RFP Right of Way
- Modified Easement
- Modified Right of Way (No Increases to the Proposed Right of Way are Required)

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IMPACTED UTILITY	UTILITY OWNER
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Aerial Communications	CenturyLink
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Aerial Communications	Comcast
Utility Poles	Dominion Virginia Power
Underground Communications	Fiberlight
Aerial Communications	Lumos
Underground Communications	Qwest Government Services
Underground Communications	Qwest National Network Services
8"/24" Water	RWSA
Traffic Control	VDOT MWRO TOC
Underground Communications	Verizon Business (MCI)
Aerial Communications	Verizon Business (MCI)

PRELIMINARY PLANS  
JAN. 6, 2015

NOTE:  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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**SKANSKA** BranchHighways **JMT**

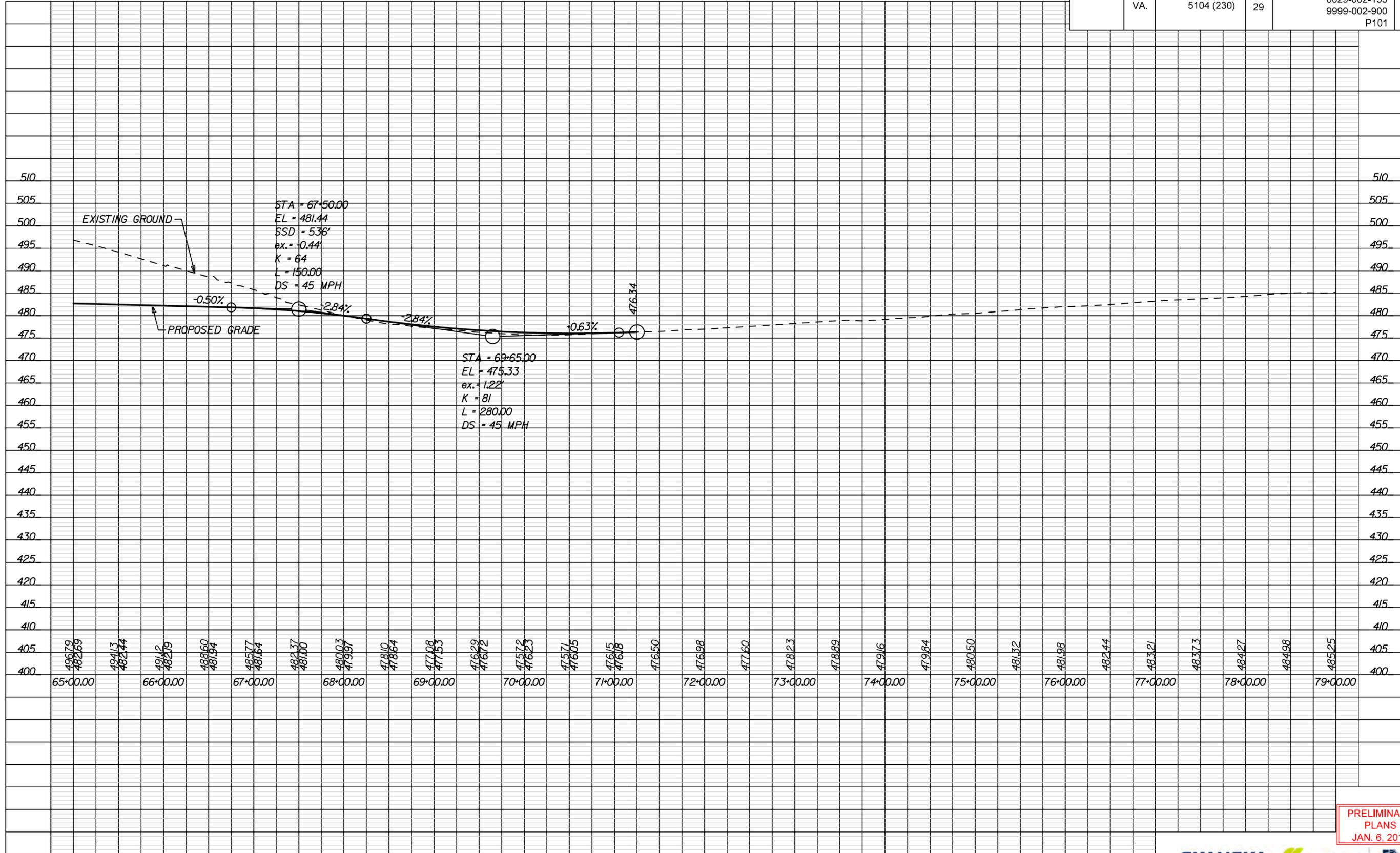
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PROJECT: 0029-002-091 SHEET NO.: 52 of 120

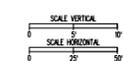
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DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	6A



US 29 (45 MPH)



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

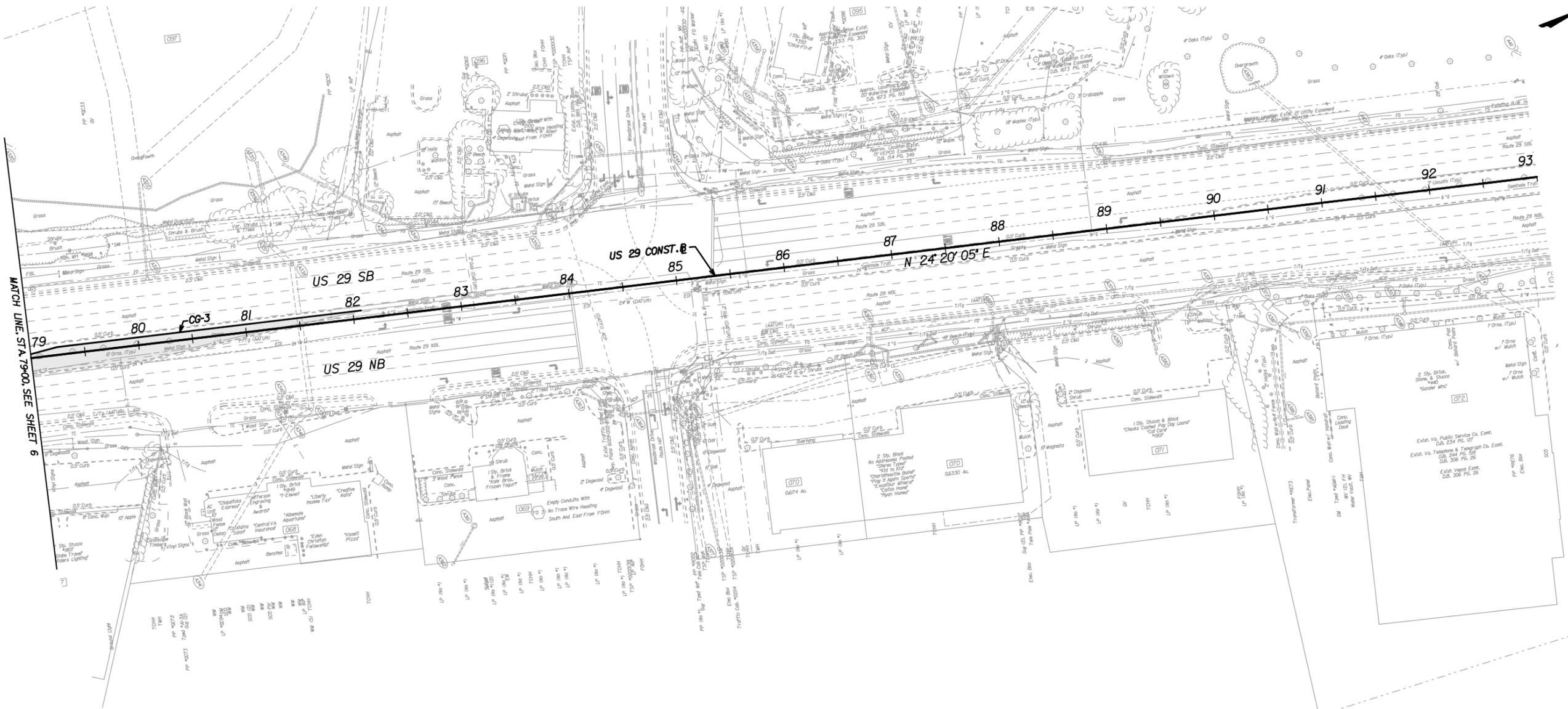
PRELIMINARY PLANS  
JAN. 6, 2015



PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-091	53 of 120

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	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	7



- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

NOTE:  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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**SKANSKA** BranchHighways **JM**

SCALE: 0 50' 100'

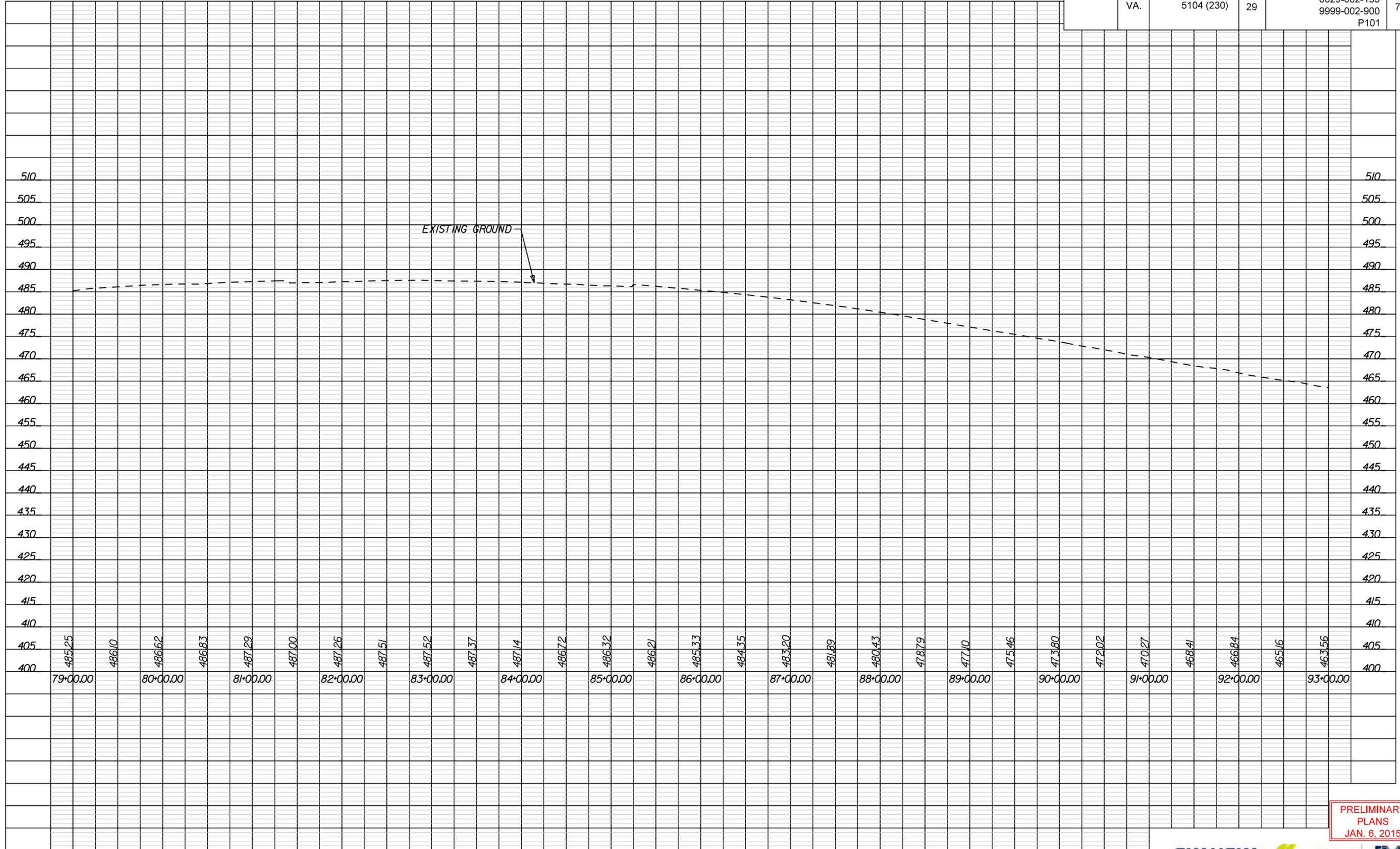
PROJECT: 0029-002-091 SHEET NO.: 54 of 120

PRELIMINARY PLANS  
JAN. 6, 2015

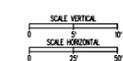
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DESIGN FEATURES RELATING TO CONSTRUCTION  
OR TO REGULATION AND CONTROL OF TRAFFIC  
MAY BE SUBJECT TO CHANGE AS DEEMED  
NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	7A



US 29 (45 MPH)



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ACQUISITION OF RIGHT OF WAY.

PRELIMINARY  
PLANS  
JAN. 6, 2015



PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-091	55 of 120

Conceptual Structural Plans

STATE	FEDERAL AID	STATE	SHEET
ROUTE	PROJECT	ROUTE	PROJECT
VA.	NHPP-002-7(045)	29	0029-002-091, B651
NBIS Number:		UPC No.	106136
Federal Oversight Code:	N/A	FHWA Construction and Scour Code:	X781-SN

**DESIGN EXCEPTION(S):**

None.

**GENERAL NOTES:**

Width: 1'-0" Rail, Roadway width 278'-6", 1'-0" Rail.

Span layout: 76'-0"

Capacity: HL-93 loading.  
Additional planter loading (as shown and as per the Special Provision for Landscape).

**Specifications:**

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

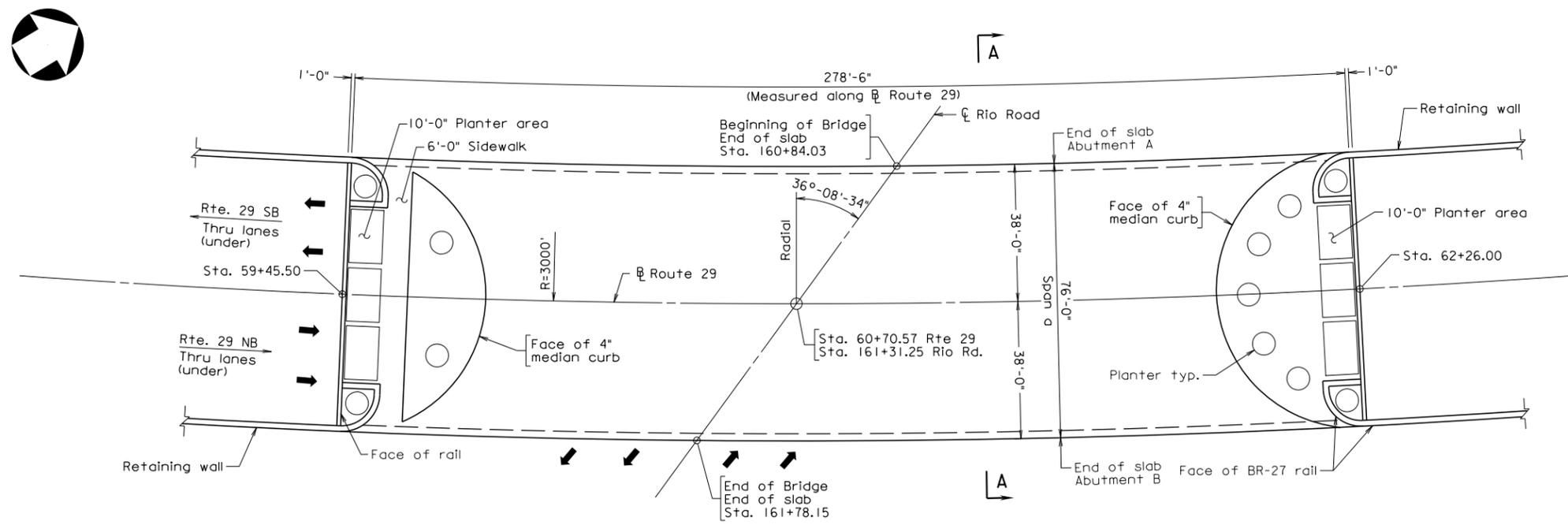
Design: AASHTO LRFD Bridge Design Specifications, 6th Edition, 2012; and VDOT Modifications.

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

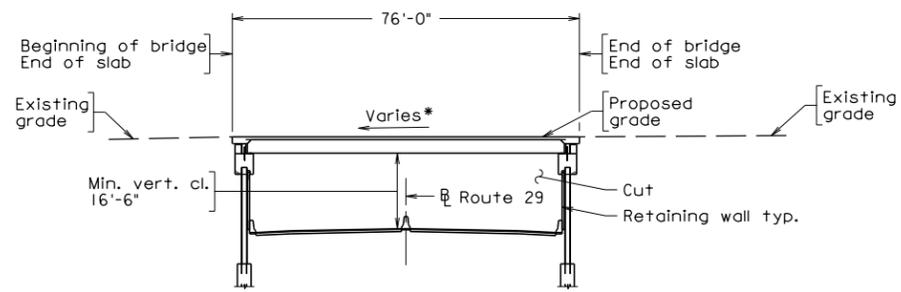
These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.

**PRELIMINARY PLANS**  
**THESE PLANS NOT TO BE USED FOR CONSTRUCTION**

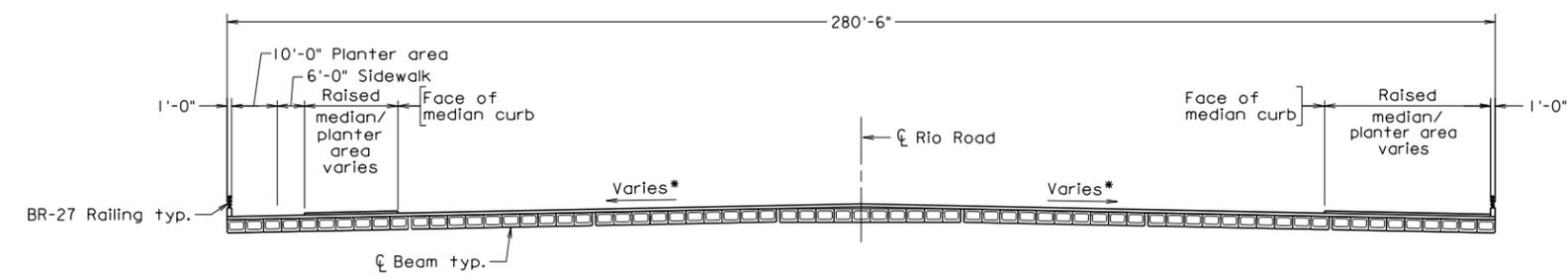
Note:  
SBJV continues to evaluate options associated with the layout of the bridge abutments and reserves the option to make future modifications.



**PLAN**  
Scale: 1" = 20'-0"



**ABUTMENT A ABUTMENT B**  
**DEVELOPED SECTION A-A**



**TRANSVERSE SECTION**

\* Finished deck grades will vary to meet existing adjacent roadway grades. See Rio Road Profile.

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

**VDOT**  
**COMMONWEALTH OF VIRGINIA**  
**DEPARTMENT OF TRANSPORTATION**

**PROPOSED BRIDGE ON**  
**RIO ROAD AT ROUTE 29**  
**ALBEMARLE COUNTY**  
**PROJ. 0029-002-091, B651**

Recommended for Approval: \_\_\_\_\_  
State Structure and Bridge Engineer Date

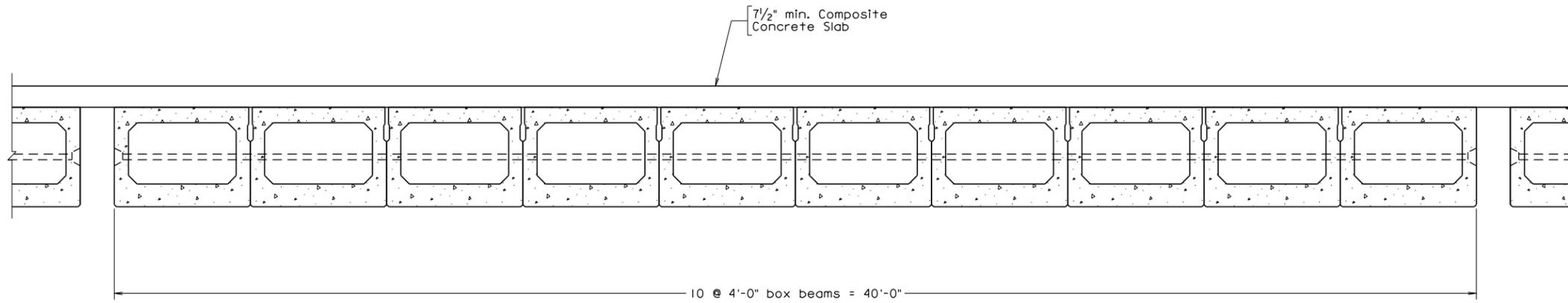
Approved: \_\_\_\_\_  
Chief Engineer Date

b:106136056.dgn

VDOT S&B DIVISION RICHMOND, VA STRUCTURAL ENGINEER
PLANS BY:
COORDINATED:
SUPERVISED:
DESIGNED:
DRAWN:
CHECKED:



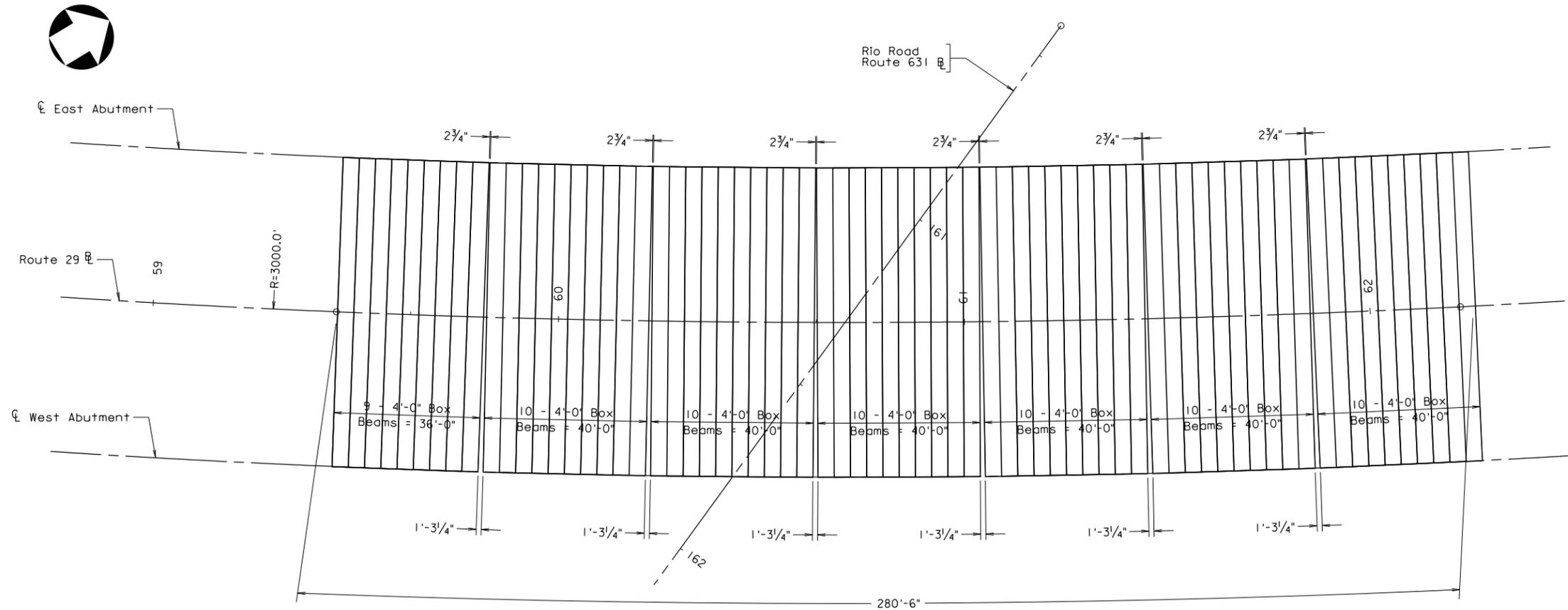
STATE	FEDERAL AID	STATE	SHEET NO.
ROUTE	PROJECT	ROUTE	PROJECT
VA.	NHPP-002-7(045)	29	0029-002-091, B651



PARTIAL TRANSVERSE SECTION

Notes:

The shear keys shall be filled in accordance with a special provision for fiber reinforced shear key concrete.



ERECTION DIAGRAM

PRELIMINARY PLANS  
 THESE PLANS NOT TO BE USED  
 FOR CONSTRUCTION



COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION STRUCTURE AND BRIDGE DIVISION					
TRANSVERSE SECTION AND ERECTION DIAGRAM					
No.	Description	Date	Designed: EPV	Date	Plan No.
			Drawn: TPA	Jan. 2015	-
			Checked: ...		57 of 120
Revisions					

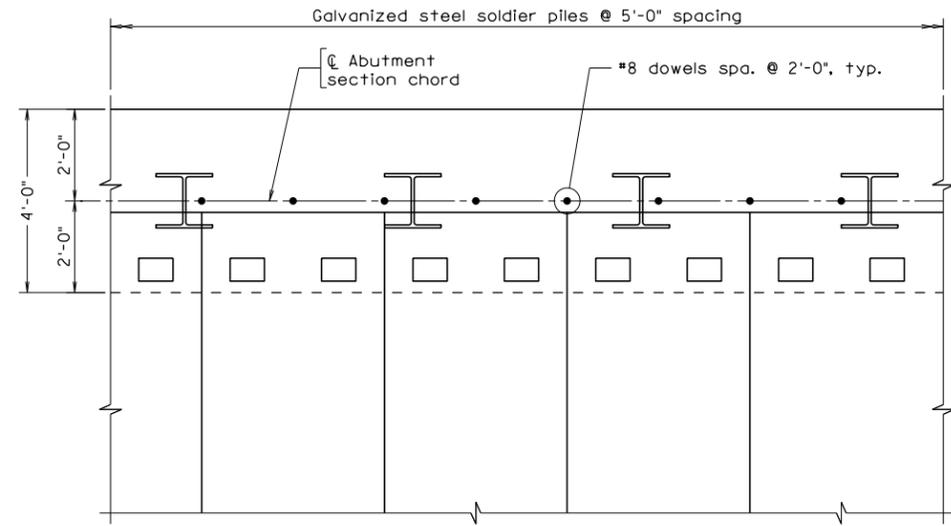
MOFFATT AND NICHOL  
 RICHMOND, VA  
 STRUCTURAL ENGINEER

Scale: 1/16" = 1'-0" unless otherwise noted

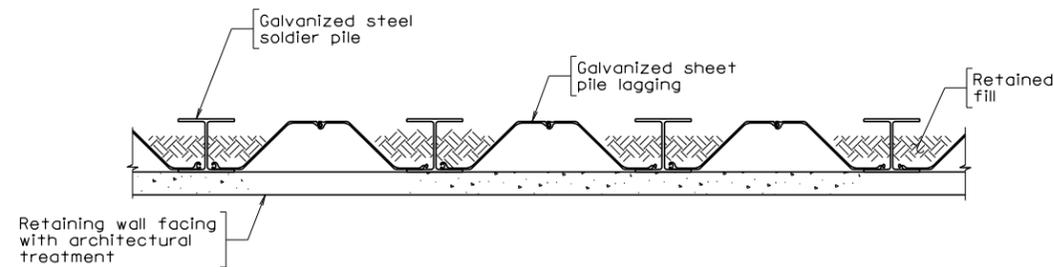
© 2015, Commonwealth of Virginia

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STATE	FEDERAL AID	STATE	SHEET
ROUTE	PROJECT	ROUTE	NO.
VA.	NHPP-002-7(045)	29	58
		0029-002-091, B651	

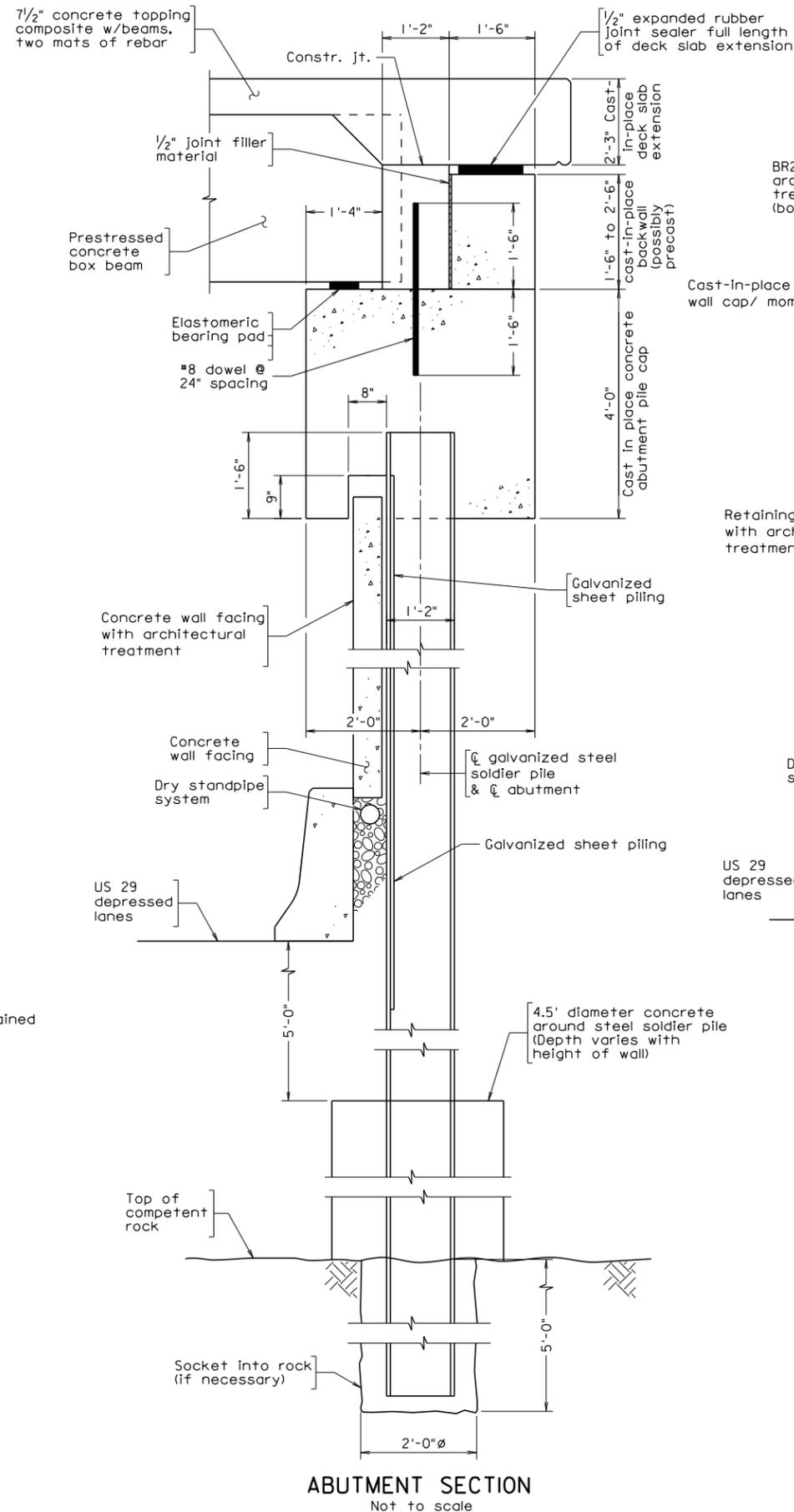


PARTIAL ABUTMENT CAP PLAN



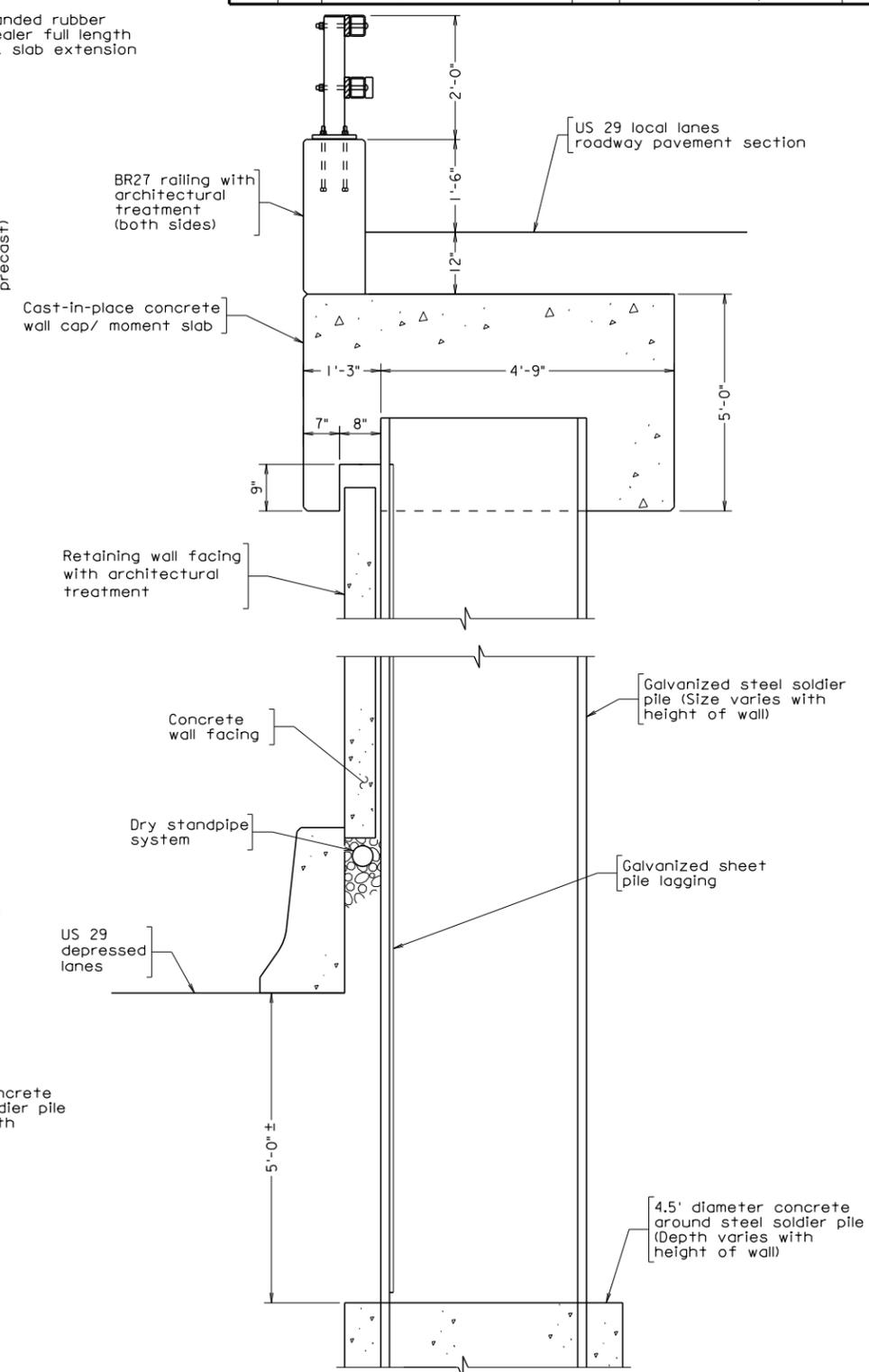
PARTIAL ABUTMENT WALL PLAN

**PRELIMINARY PLANS**  
 THESE PLANS NOT TO BE USED  
 FOR CONSTRUCTION



ABUTMENT SECTION  
 Not to scale

Scale: 1/2" = 1'-0" unless otherwise noted



RETAINING WALL HEIGHT 5' TO 24'  
 Not to scale

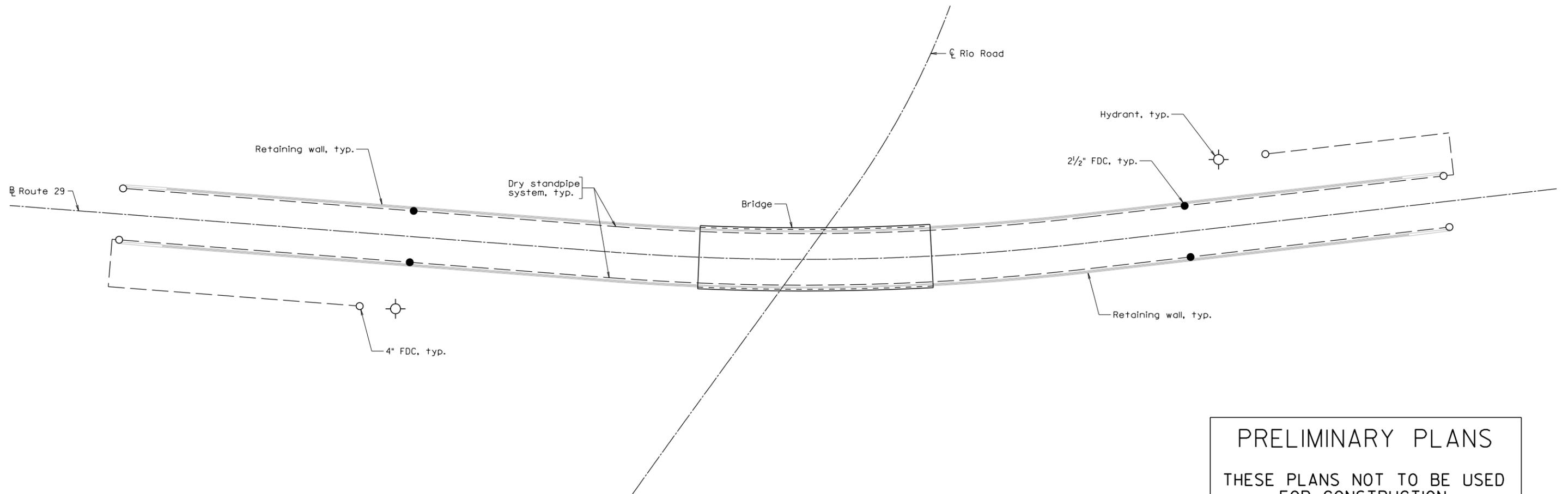
COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION					
STRUCTURE AND BRIDGE DIVISION					
<b>ABUTMENT AND WALL TYPICAL SECTIONS</b>					
No.	Description	Date	Designed: EPV	Date	Plan No.
			Drawn: NPS	Jan. 2015	-
			Checked: NPS		58 of 120
Revisions					

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STATE	FEDERAL AID		STATE		SHEET
ROUTE	PROJECT		ROUTE	PROJECT	NO.
VA.	NHPP-002-7(045)		29	0029-002-091, B651	59

Note:  
 Air release valves to be provided as required.  
 Fire Department Connections (FDC) to be provided as required.



PRELIMINARY PLANS  
 THESE PLANS NOT TO BE USED  
 FOR CONSTRUCTION

SCHEMATIC LAYOUT

b:106136059.dgn

MOFFATT AND NICHOL  
 RICHMOND, VA  
 STRUCTURAL ENGINEER

Scale: 1" = 60' unless otherwise noted

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COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION					
STRUCTURE AND BRIDGE DIVISION					
TRENCH FIRE PROTECTION SCHEMATIC LAYOUT					
No.	Description	Date	Designed: EPV Drawn: NPS Checked: MXX	Date	Plan No.
				Jan. 2015	-
Revisions					Sheet No. 59 of 120



Artist Rendering

3.2 US 29 Widening Conceptual Plans (4.3.2)

Conceptual Roadway Plans

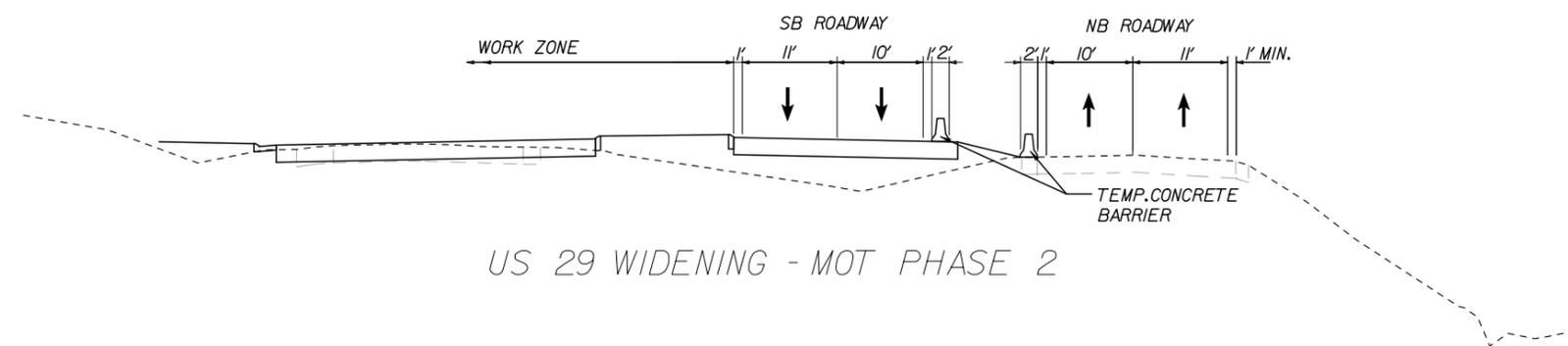
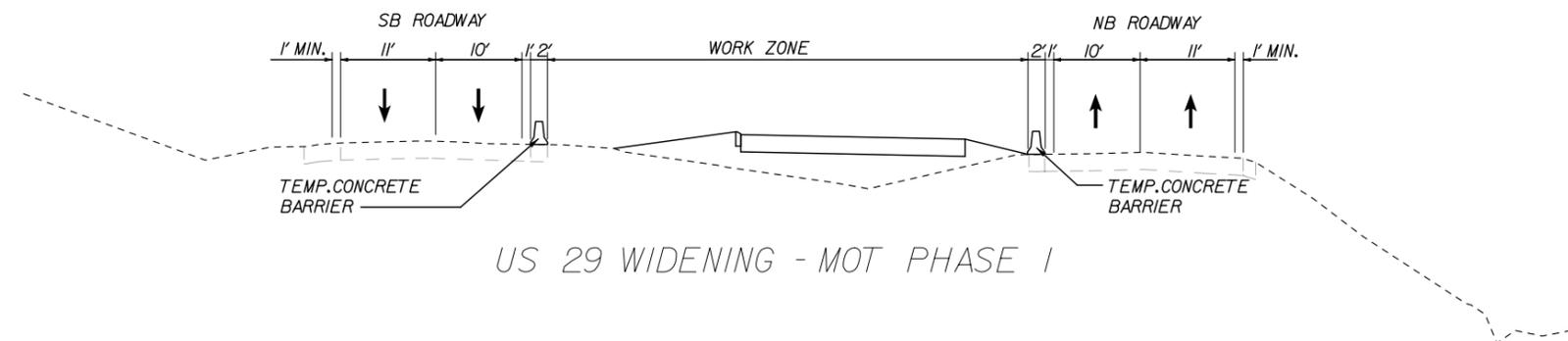
# SEQUENCE OF CONSTRUCTION TYPICAL SECTIONS

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	1K(1)

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

**NOTES:**

1. THIS SEQUENCE OF CONSTRUCTION AND MAINTENANCE OF TRAFFIC IS CONCEPTUAL IN NATURE. FINAL PHASING AND SEQUENCING INCLUDING TYPES OF REQUIRED TEMPORARY TRAFFIC CONTROL DEVICES WILL BE DEVELOPED DURING FINAL DESIGN.
2. TURN LANES TO BE PROVIDED AS REQUIRED.
3. DRIVEWAYS TO BE MAINTAINED AS NECESSARY.



PRELIMINARY  
PLANS  
JAN. 6, 2015

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<b>SKANSKA</b>	<b>BranchHighways</b>	<b>JMT</b>
PROJECT		SHEET NO.
0029-002-135		60 of 120

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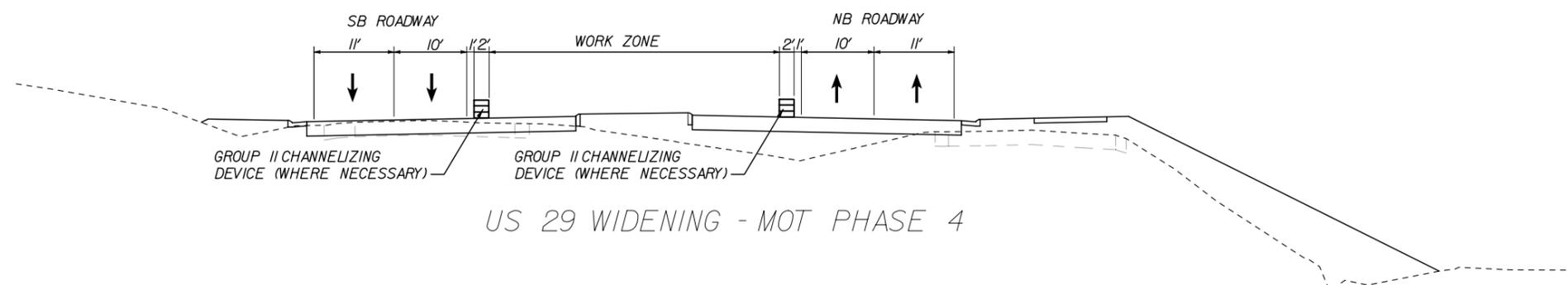
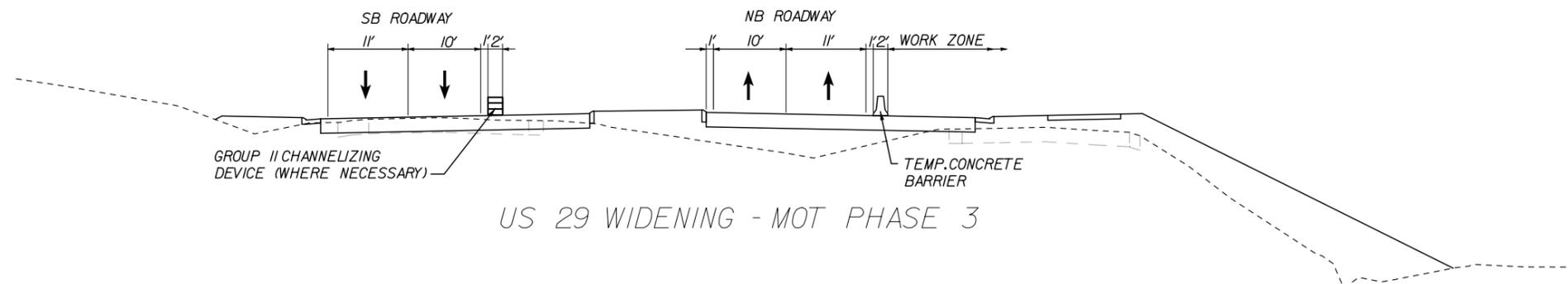
# SEQUENCE OF CONSTRUCTION TYPICAL SECTIONS

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	1K(2)

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

**NOTES:**

1. THIS SEQUENCE OF CONSTRUCTION AND MAINTENANCE OF TRAFFIC IS CONCEPTUAL IN NATURE. FINAL PHASING AND SEQUENCING INCLUDING TYPES OF REQUIRED TEMPORARY TRAFFIC CONTROL DEVICES WILL BE DEVELOPED DURING FINAL DESIGN.
2. TURN LANES TO BE PROVIDED AS REQUIRED.
3. DRIVEWAYS TO BE MAINTAINED AS NECESSARY.



PRELIMINARY  
PLANS  
JAN. 6, 2015

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



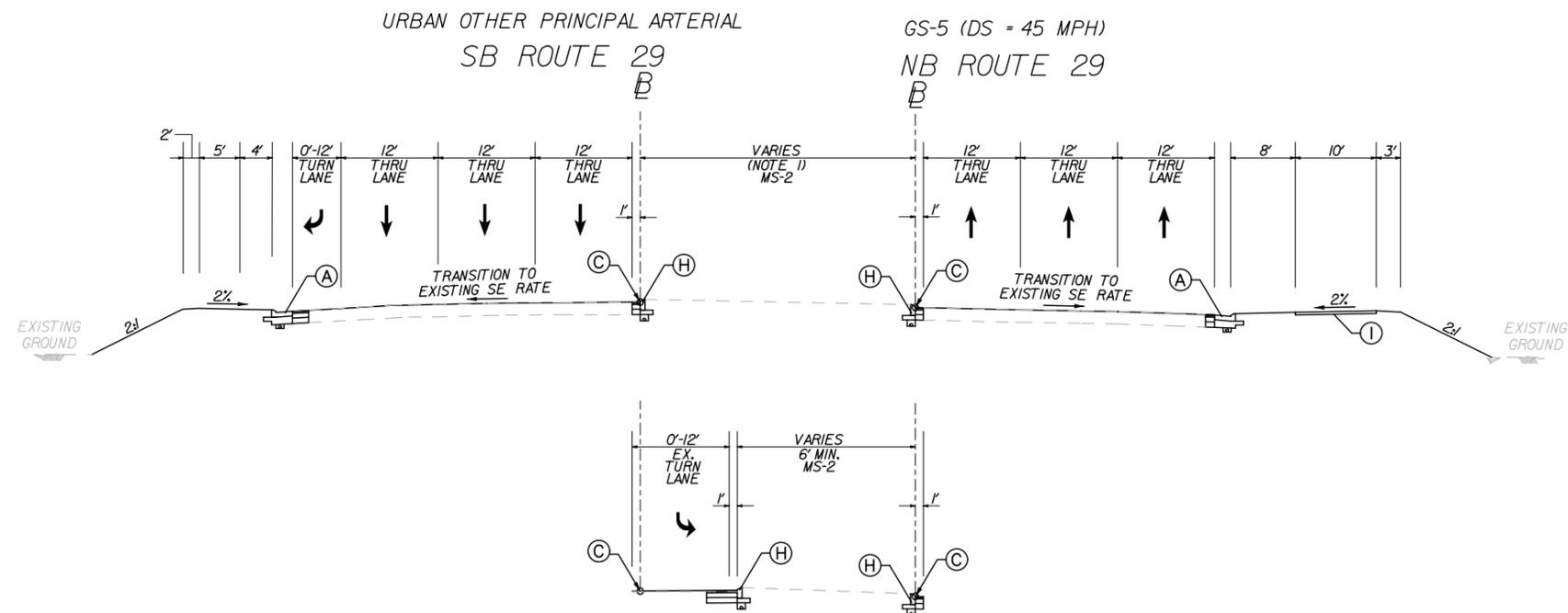
PROJECT	SHEET NO.
0029-002-135	61 of 120

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REVISED	STATE		PROJECT		SHEET NO.
	STATE	ROUTE	PROJECT		
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101		2A(1)

# TYPICAL SECTIONS

NB STA. 1609+90 - STA. 1613+75  
SB STA. 609+90 - STA. 613+75



## LEGEND

- (A) Curb & Gutter, Std. CG-7 Req'd.
- (B) 4" Hydraulic Cement Concrete Sidewalk (Where Indicated on Plans)
- (C) Profile Grade Line (PGL)
- (D) Retaining Wall In Fill (Where Indicated on Plans)
- (E) Hand Rail, Std. HR-1 Req'd.
- (F) Retaining Wall In Cut (Where Indicated on Plans)
- (G) Guardrail, Std. GR-2 Req'd. (Where Indicated on Plans)
- (H) Curb, Std. CG-3 Req'd.
- (I) Asphalt Shared Use Path (Where Indicated on Plans)

- NOTES:
- Proposed median minimum width of 16' face of curb to face of curb (4' at left turn lanes, 8' at locations specified in Section 2.2.2 of the RFP).
  - Proposed pavement sections shall be per RFP Section 2.6.1.
  - See plans for limits of Roadway Mill and Overlay and Full Depth Pavement.

PRELIMINARY  
PLANS  
JAN. 6, 2015

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



PROJECT: 0029-002-135  
SHEET NO.: 62 of 120

# TYPICAL SECTIONS

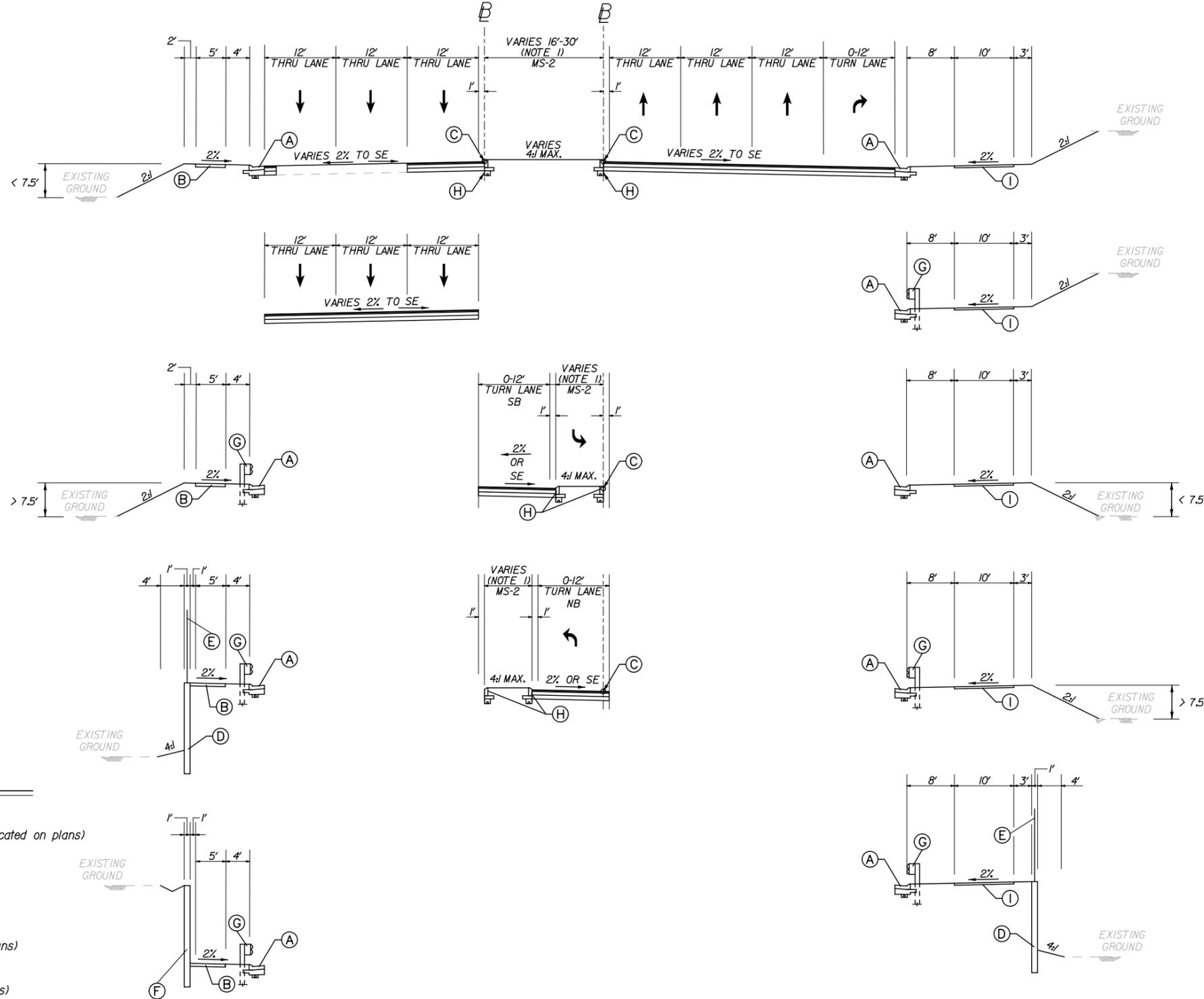
NB STA. 1613+75 - STA. 1697+80

SB STA. 613+75 - STA. 697+80

URBAN OTHER PRINCIPAL ARTERIAL GS-5 (DS = 45 MPH)  
SB ROUTE 29 NB ROUTE 29

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	2A(2)

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



## LEGEND

- (A) Curb & Gutter, Std. CG-7 Req'd.
- (B) 4' Hydraulic Cement Concrete Sidewalk (Where Indicated on plans)
- (C) Profile Grade Line (PGL)
- (D) Retaining Wall In Fill (Where Indicated on Plans)
- (E) Hand Rail, Std. HR-1 Req'd.
- (F) Retaining Wall In Cut (Where Indicated on Plans)
- (G) Guardrail, Std. GR-2 Req'd. (Where Indicated on Plans)
- (H) Curb, Std. CG-3 Req'd.
- (I) Asphalt Shared Use Path (Where Indicated on plans)

## NOTES:

1. Proposed median minimum width of 16' face of curb to face of curb (4' at left turn lanes; 8' at locations specified in Section 2.2.2 of the RFP).
2. Proposed pavement sections shall be per Section 2.6J.
3. See plans for limits of Roadway Mill and Overlay and Full Depth Pavement.

PRELIMINARY  
PLANS  
JAN. 6, 2015

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

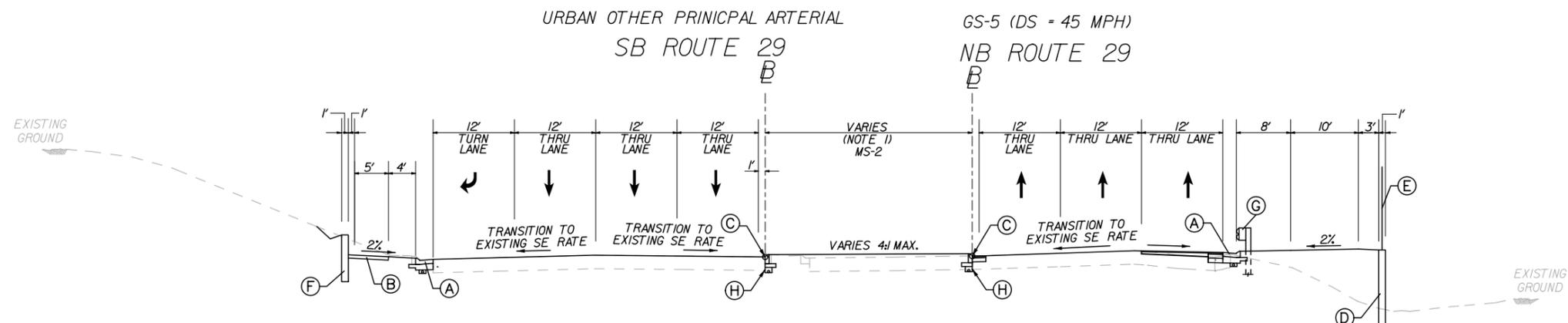
**SKANSKA** BranchHighways **JMT**

PROJECT	SHEET NO.
0029-002-135	63 of 120

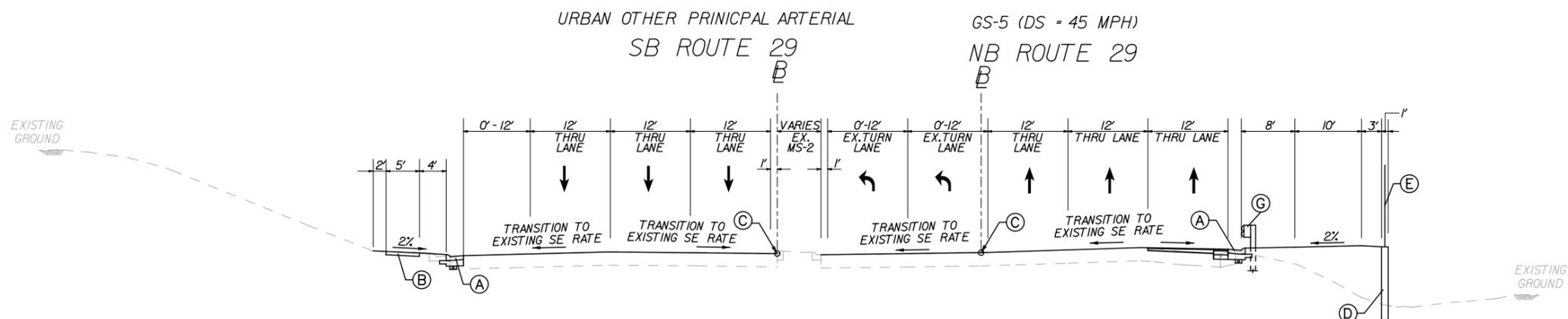
REVISED	STATE		PROJECT		SHEET NO.
	STATE	ROUTE	PROJECT		
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101		2A(3)

# TYPICAL SECTIONS

NB STA. 1697+80 - STA. 1699+10  
SB STA. 697+80 - STA. 699+10



NB STA. 1699+10 - STA. 1707+80  
SB STA. 699+10 - STA. 707+85



## LEGEND

- (A) Curb & Gutter, Std. CG-7 Req'd.
- (B) 4" Hydraulic Cement Concrete Sidewalk (Where Indicated on plans)
- (C) Profile Grade Line (PGL)
- (D) Retaining Wall In Fill (Where Indicated on Plans)
- (E) Hand Rail, Std. HR-1 Req'd.
- (F) Retaining Wall In Cut (Where Indicated on Plans)
- (G) Guardrail, Std. GR-2 Req'd. (Where Indicated on Plans)
- (H) Curb, Std. CG-3 Req'd.
- (I) Asphalt Shared Use Path (Where Indicated on plans)

### NOTES:

1. Proposed median minimum width of 16' face of curb to face of curb (4' at left turn lanes; 8' at locations specified in Section 2.2.2 of the RFP).
2. Proposed pavement sections shall be per RFP Section 2.6J.
3. See plans for limits of Roadway Mill and Overlay and Full Depth Pavement.

PRELIMINARY  
PLANS  
JAN. 6, 2015

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



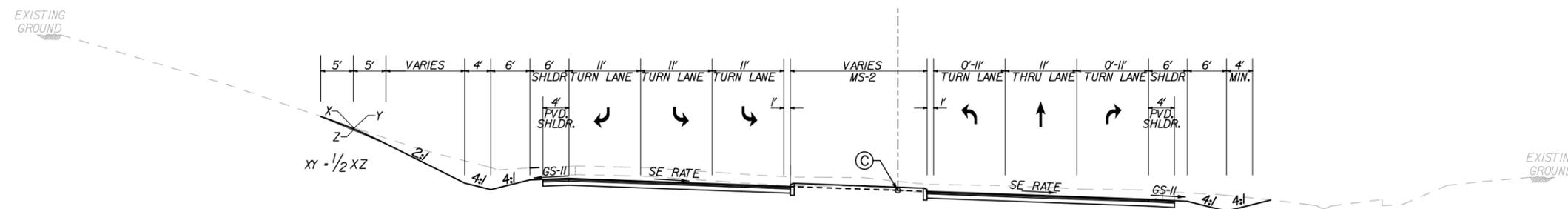
PROJECT	SHEET NO.
0029-002-135	64 of 120

# TYPICAL SECTIONS

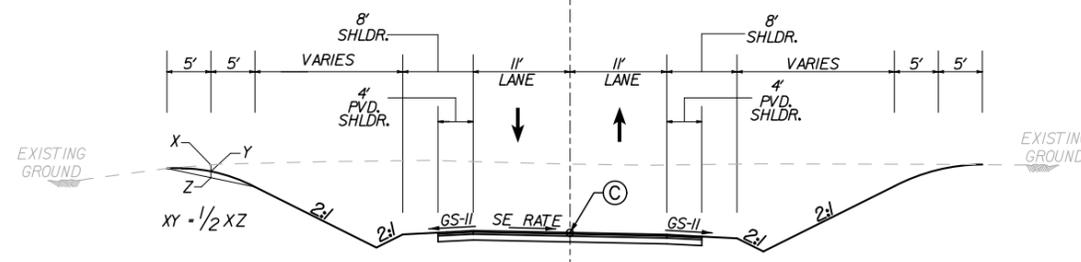
REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	2A(4)

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

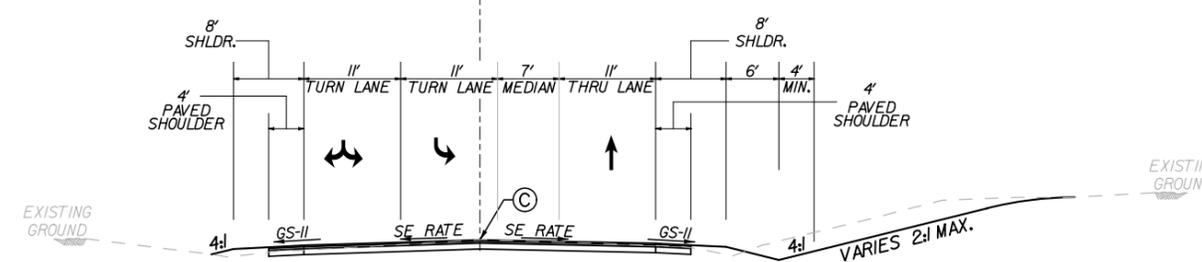
URBAN COLLECTOR GS-7 (DS = 40 MPH)  
ASHWOOD BOULEVARD



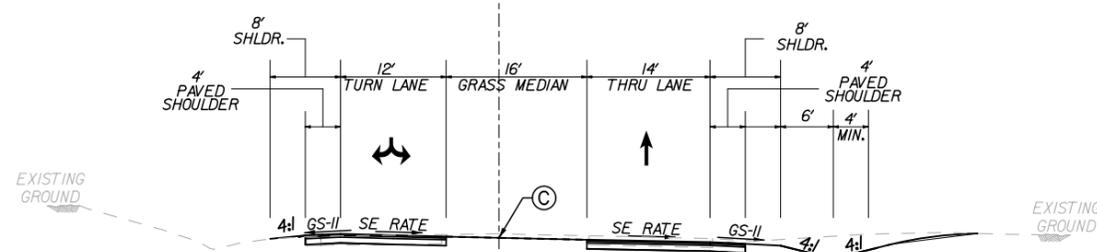
PRIVATE ROAD (DS = 20 MPH)  
RIDGEWOOD DRIVE



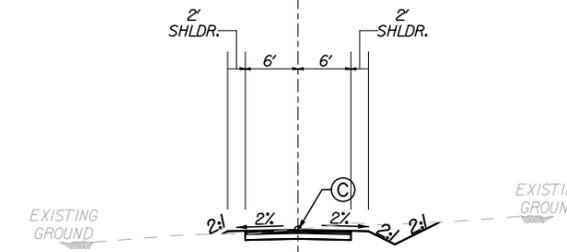
URBAN COLLECTOR GS-7 (DS = 30 MPH) RIGHT-OF-WAY VARIES  
NORTH HOLLYMEAD DRIVE



URBAN COLLECTOR GS-7 (DS = 30 MPH) RIGHT-OF-WAY VARIES  
SOUTH HOLLYMEAD DRIVE



PRIVATE ENTRANCES



## LEGEND

- (A) Curb & Gutter, Std. CG-7 Req'd.
- (B) 4" Hydraulic Cement Concrete Sidewalk
- (C) Profile Grade Line (PGL)
- (D) Retaining Wall In Fill (Where Indicated on Plans)
- (E) Hand Rail, Std. HR-1 Req'd.
- (F) Retaining Wall In Cut (Where Indicated on Plans)
- (G) Guardrail, Std. GR-2 Req'd. (Where Indicated on Plans)
- (H) Curb, Std. CG-3 Req'd.

## NOTES:

1. Proposed pavement sections shall be per RFP Section 2.6.1.
2. See plans for limits of Roadway Mill and Overlay and Full Depth Pavement.

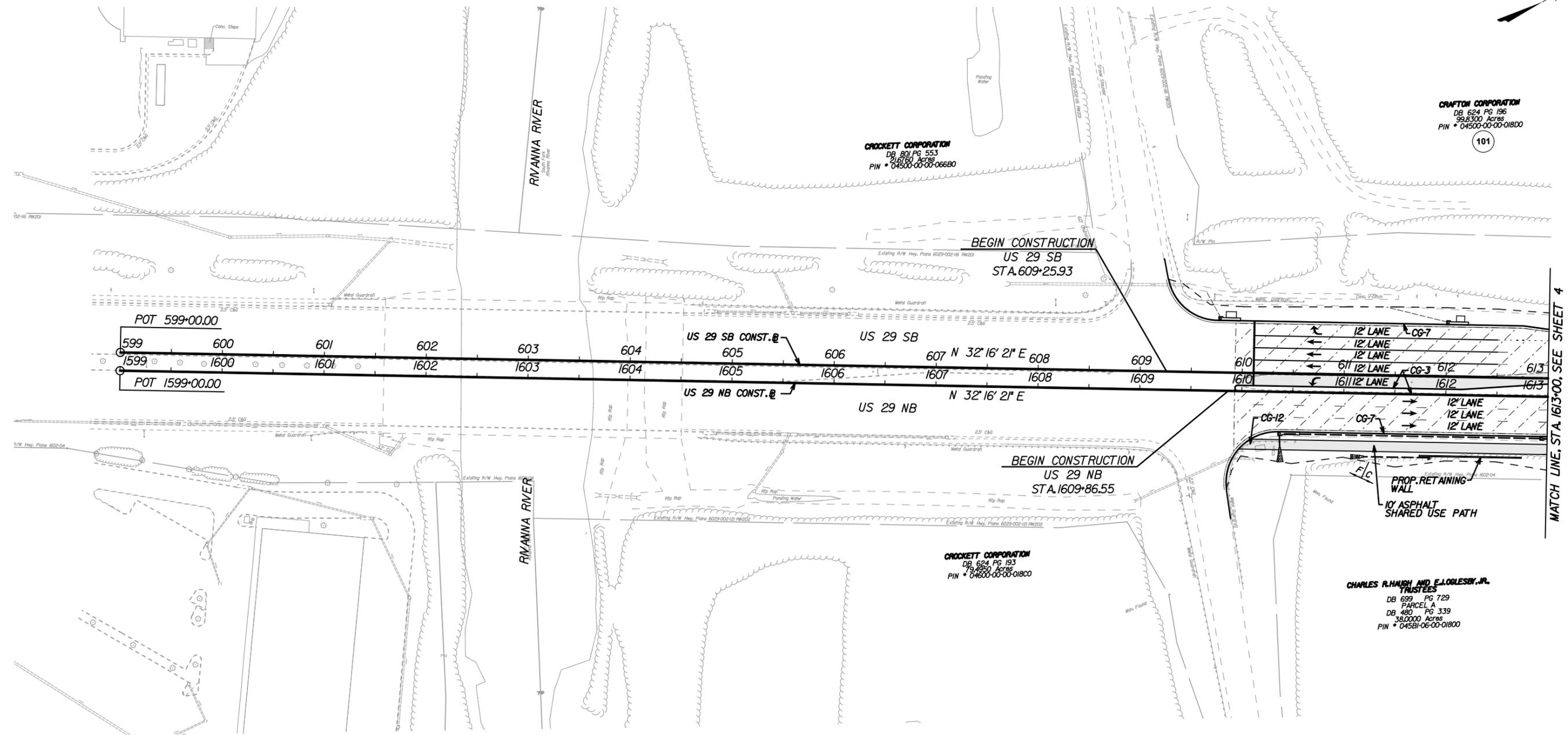
PRELIMINARY  
PLANS  
JAN. 6, 2015

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

<b>SKANSKA</b>	<b>BranchHighways</b>	<b>JMT</b>
PROJECT	0029-002-135	SHEET NO.
		65 of 120

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	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	3

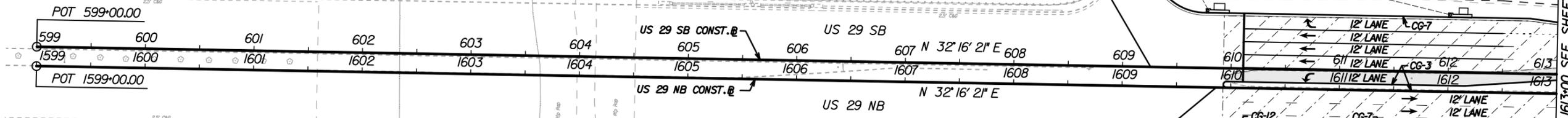


**CRAFTON CORPORATION**  
DB 624 PG 196  
59,830.00 Acres  
PIN \* 04500-00-00-018D0

**CROCKETT CORPORATION**  
DB 801 PG 553  
21,170.00 Acres  
PIN \* 04500-00-00-066B0

**CROCKETT CORPORATION**  
DB 624 PG 193  
79,250.00 Acres  
PIN \* 04500-00-00-018C0

**CHARLES R. HAUGH AND E. LOGLESBY, JR. TRUSTEES**  
DB 699 PG 729  
PARCEL A  
DB 480 PD 339  
38,000.00 Acres  
PIN \* 045B1-06-00-01800



- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

PROPOSED UTILITY IMPACTS	
IMPACTED UTILITY	UTILITY OWNER
Underground Communications	CenturyLink
6" Gas	Charlottesville Gas
12" Water	RWSA
Traffic Control	VDOT NWRO TOC

**NOTE:**  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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

**SKANSKA** BranchHighways **JMT**

SCALE: 0 50' 100'

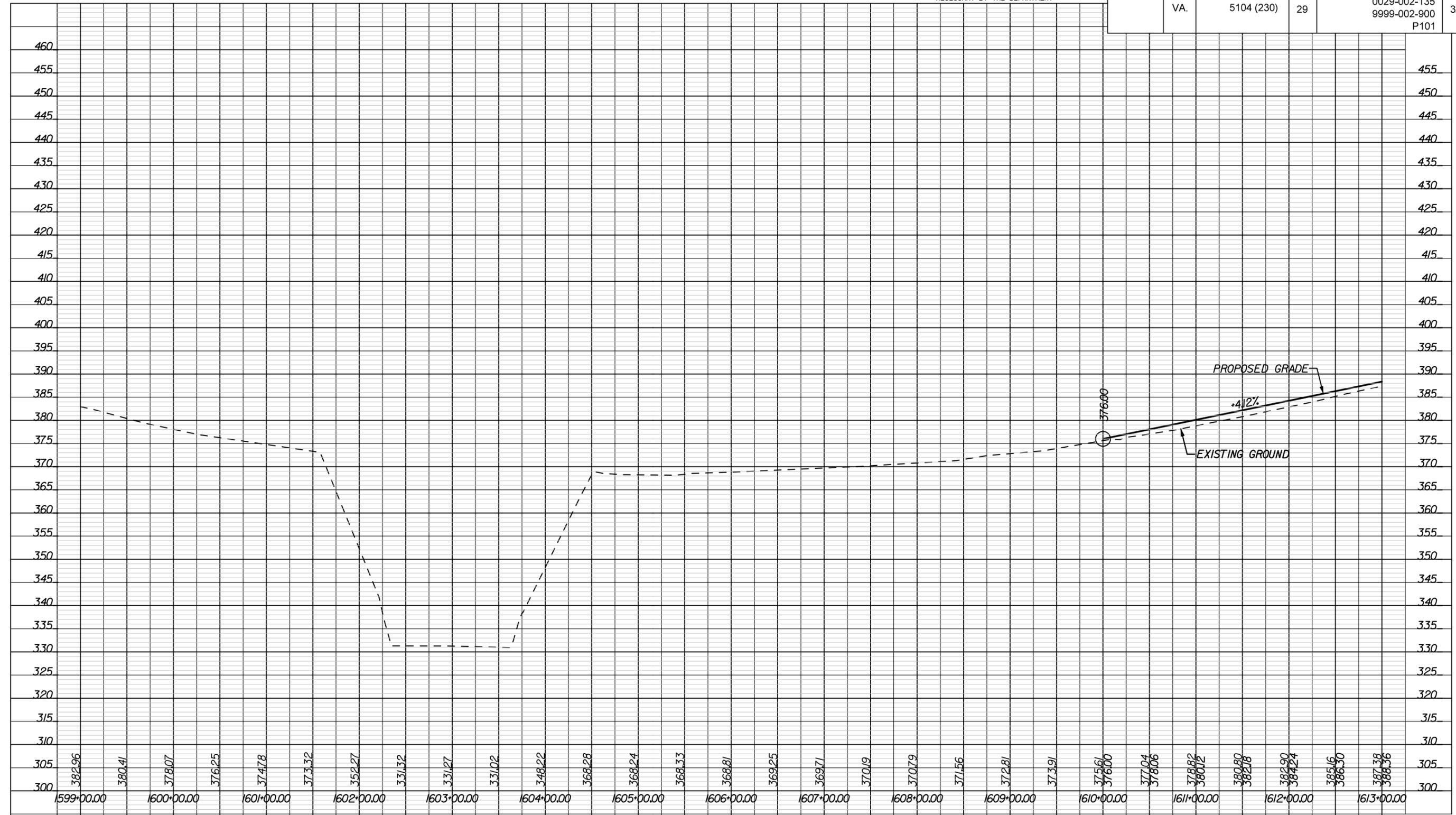
PROJECT: 0029-002-135 SHEET NO.: 66 of 120

**PRELIMINARY PLANS**  
JAN. 6, 2015

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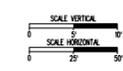
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	3A



PRELIMINARY  
PLANS  
JAN. 6, 2015

**US 29 NB (45 MPH)**  
(NOTE: 50 MPH STOPPING SIGHT DISTANCE MET PER RFP REQUIREMENTS)



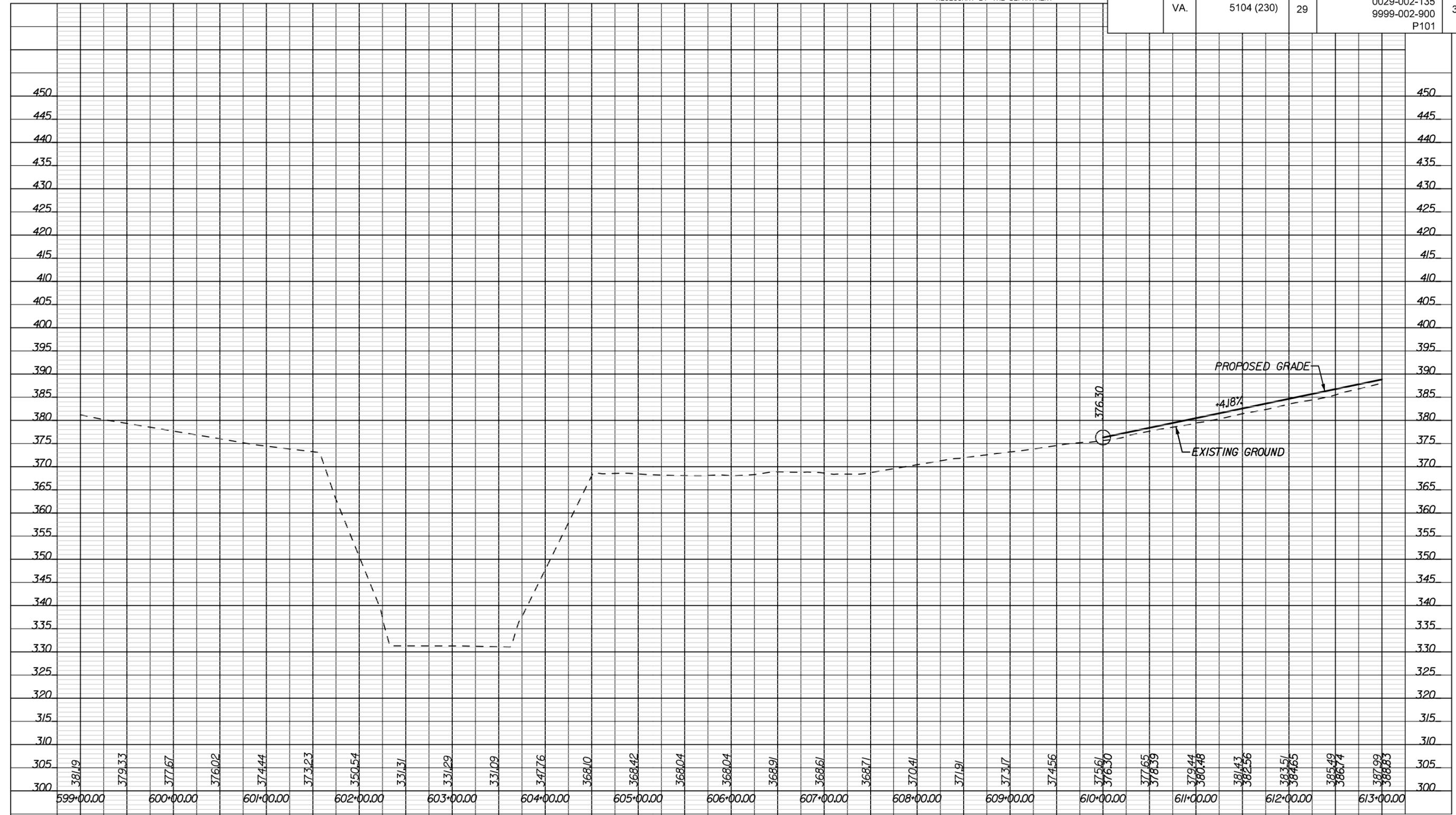
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

**SKANSKA** BranchHighways **JMT**

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-135	67 of 120

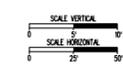
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	3B



**US 29 SB (45 MPH)**

(NOTE: 50 MPH STOPPING SIGHT DISTANCE MET PER RFP REQUIREMENTS)



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PRELIMINARY PLANS  
JAN. 6, 2015



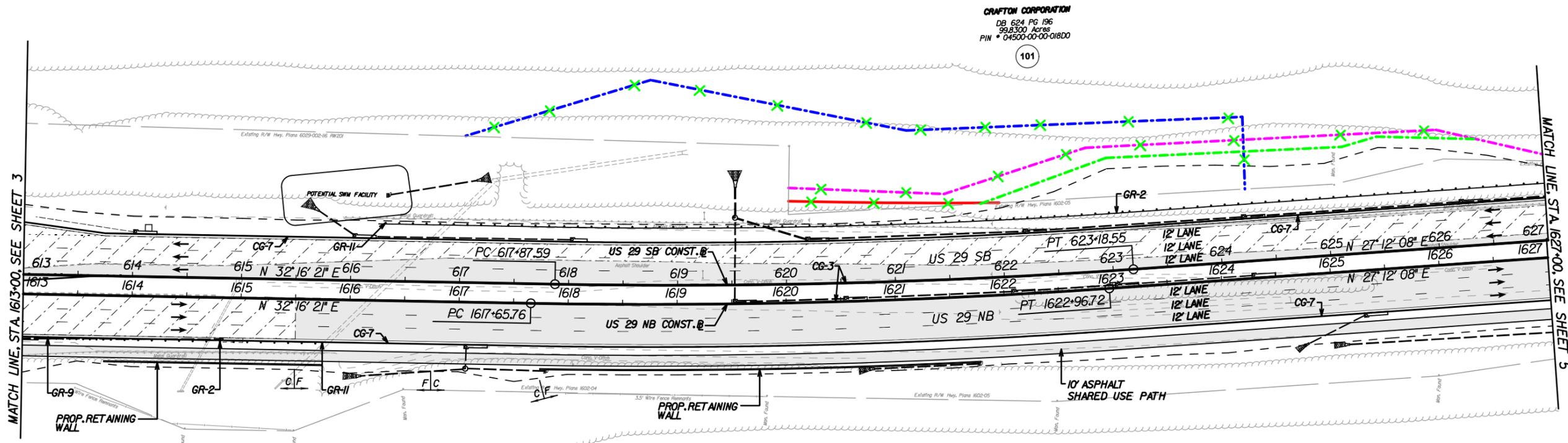
PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-135	68 of 120

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	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	4

Curve 29NB-1  
PI = 1620+31.41  
DELTA = 5° 04' 12.99" (LT)  
D = 0' 57" 18"  
T = 265.65'  
L = 530.96'  
R = 6,000.00'  
PC = 1617+65.76  
PT = 1622+96.72  
SE = 2.0%  
DS = 50 MPH

Curve 29SB-1  
PI = 620+53.25  
DELTA = 5° 04' 12.99" (LT)  
D = 0' 57" 18"  
T = 265.65'  
L = 530.96'  
R = 6,000.00'  
PC = 617+87.59  
PT = 623+18.55  
SE = 2.0%  
DS = 50 MPH



CRAFTON CORPORATION  
DB 624 PG 196  
99,8300 Acres  
PIN = 04500-00-00-018D0  
101

CHARLES R. HAIGH AND E. LOLESBY, JR.  
TRUSTEES  
DB 699 PG 729  
PARCEL A  
DB 480 PG 339  
38,000 Acres  
PIN = 04581-06-00-01800

- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

PROPOSED UTILITY IMPACTS	
IMPACTED UTILITY	UTILITY OWNER
Underground Communications	CenturyLink
6" Gas	Charlottesville Gas
Underground Communications	FiberLight
Underground Communications	Qwest Government Services
Underground Communications	Qwest National Network Services
12" Water	RWSA

PRELIMINARY PLANS  
JAN. 6, 2015

NOTE:  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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

SKANSKA BranchHighways JMT

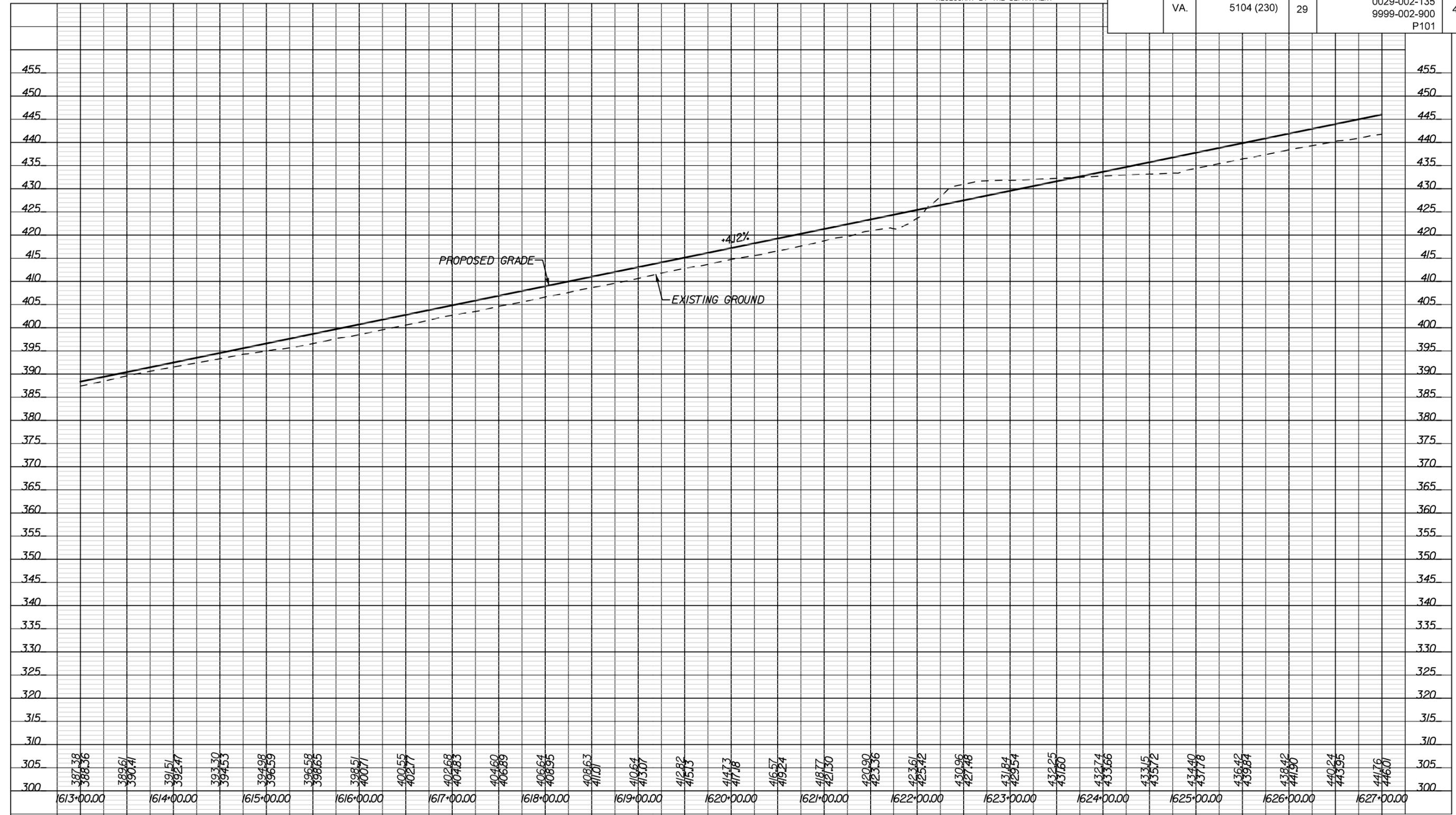
SCALE 0 50' 100'

PROJECT 0029-002-135 SHEET NO. 69 of 120

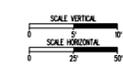
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DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	4A



**US 29 NB (45 MPH)**  
(NOTE: 50 MPH STOPPING SIGHT DISTANCE MET PER RFP REQUIREMENTS)



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

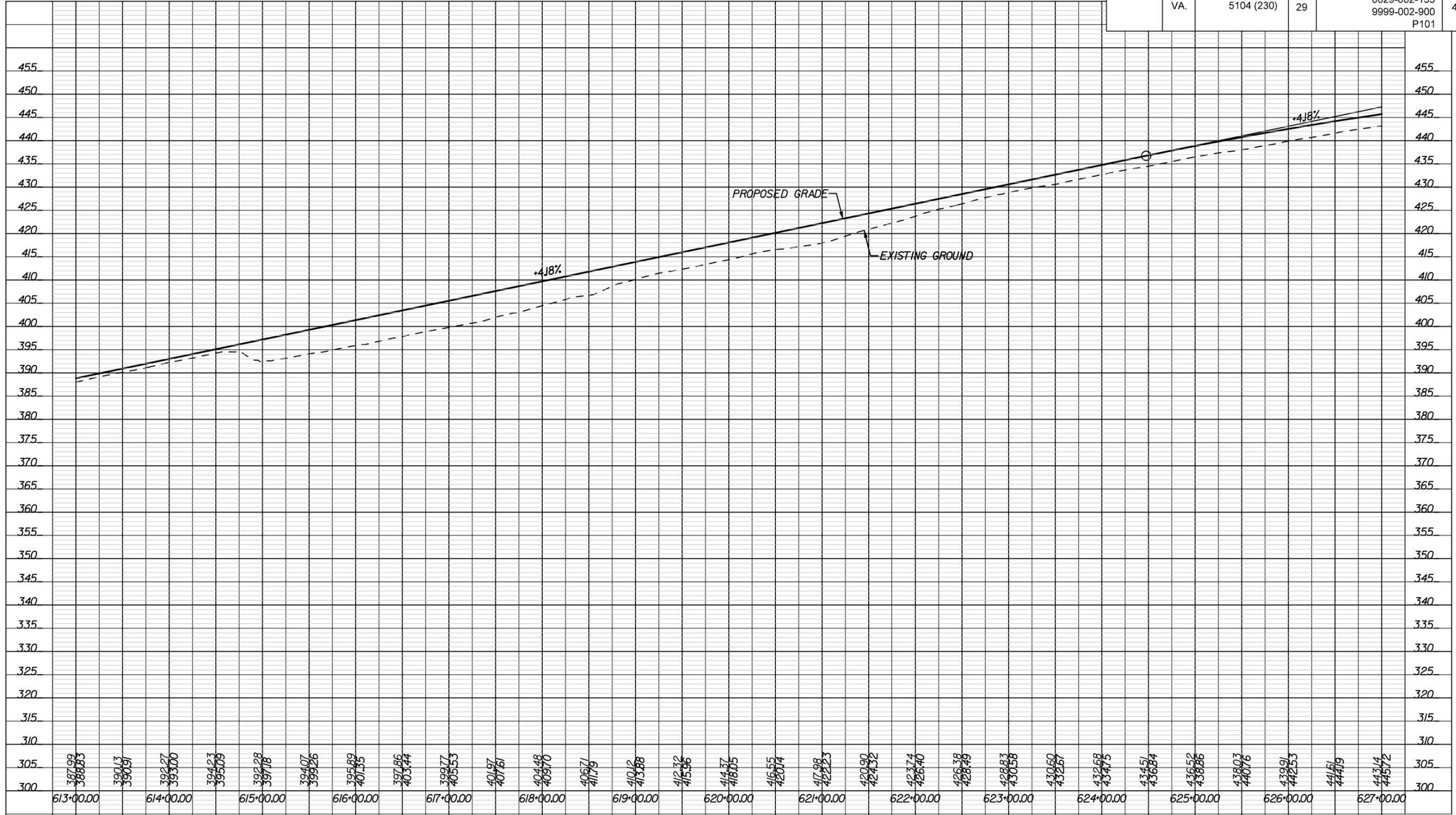
PRELIMINARY PLANS  
JAN. 6, 2015

**SKANSKA** BranchHighways **JMT**

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-135	70 of 120

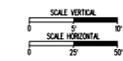
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	4B



US 29 SB (45 MPH)

(NOTE: 50 MPH STOPPING SIGHT DISTANCE MET PER RFP REQUIREMENTS)



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

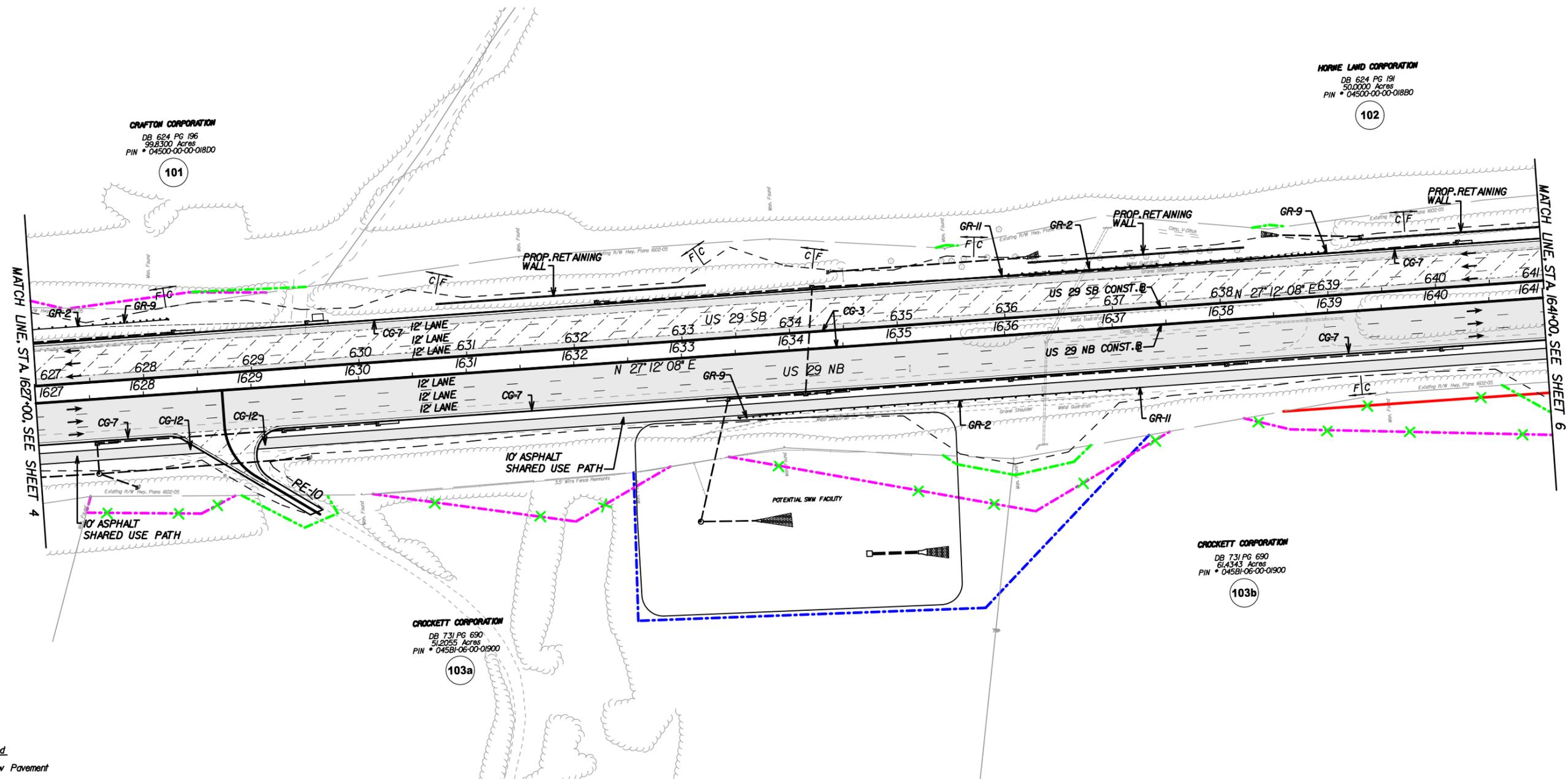
PRELIMINARY PLANS  
JAN. 6, 2015



PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-135	71 of 120

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	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	5



- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

PROPOSED UTILITY IMPACTS	
IMPACTED UTILITY	UTILITY OWNER
Underground Communications	CenturyLink
6" Gas	Charlottesville Gas
Underground Communications	Fiberlight
Underground Communications	Qwest Government Services
Underground Communications	Qwest National Network Services
12" Water	RWSA
Traffic Control	VDOT NWRO TOC
Underground Communications	Verizon Business (MCI)

**NOTE:**  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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

**SKANSKA** BranchHighways **JMT**

SCALE: 0 50' 100'

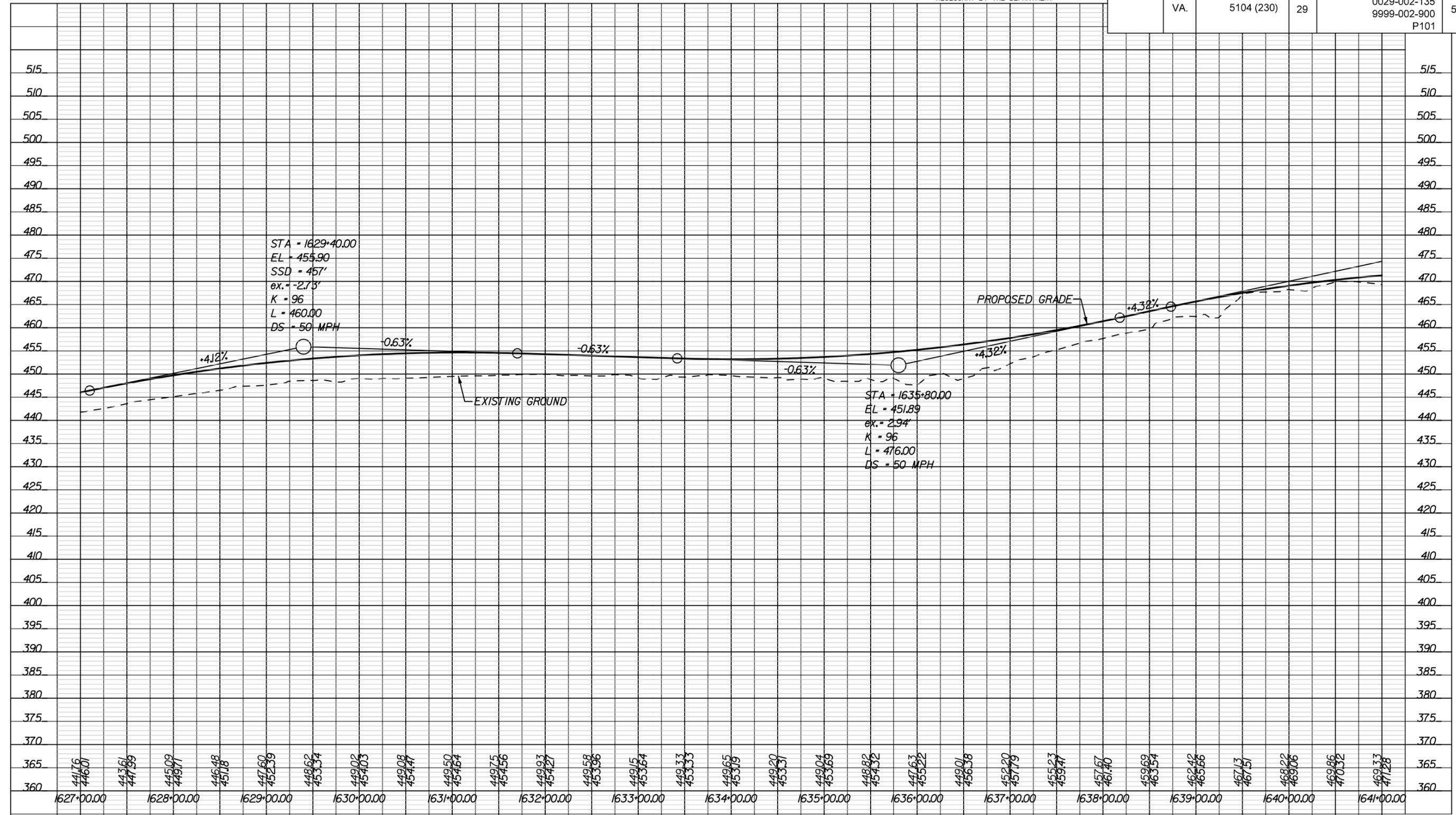
PROJECT: 0029-002-135 SHEET NO.: 72 of 120

**PRELIMINARY PLANS**  
JAN. 6, 2015

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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

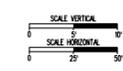
REVISED	STATE	FEDERAL AID	ROUTE	STATE	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	5A



PRELIMINARY  
PLANS  
JAN. 6, 2015

US 29 NB (45 MPH)

(NOTE: 50 MPH STOPPING SIGHT DISTANCE MET PER RFP REQUIREMENTS)



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

SKANSKA | BranchHighways | JMT

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-135	73 of 120

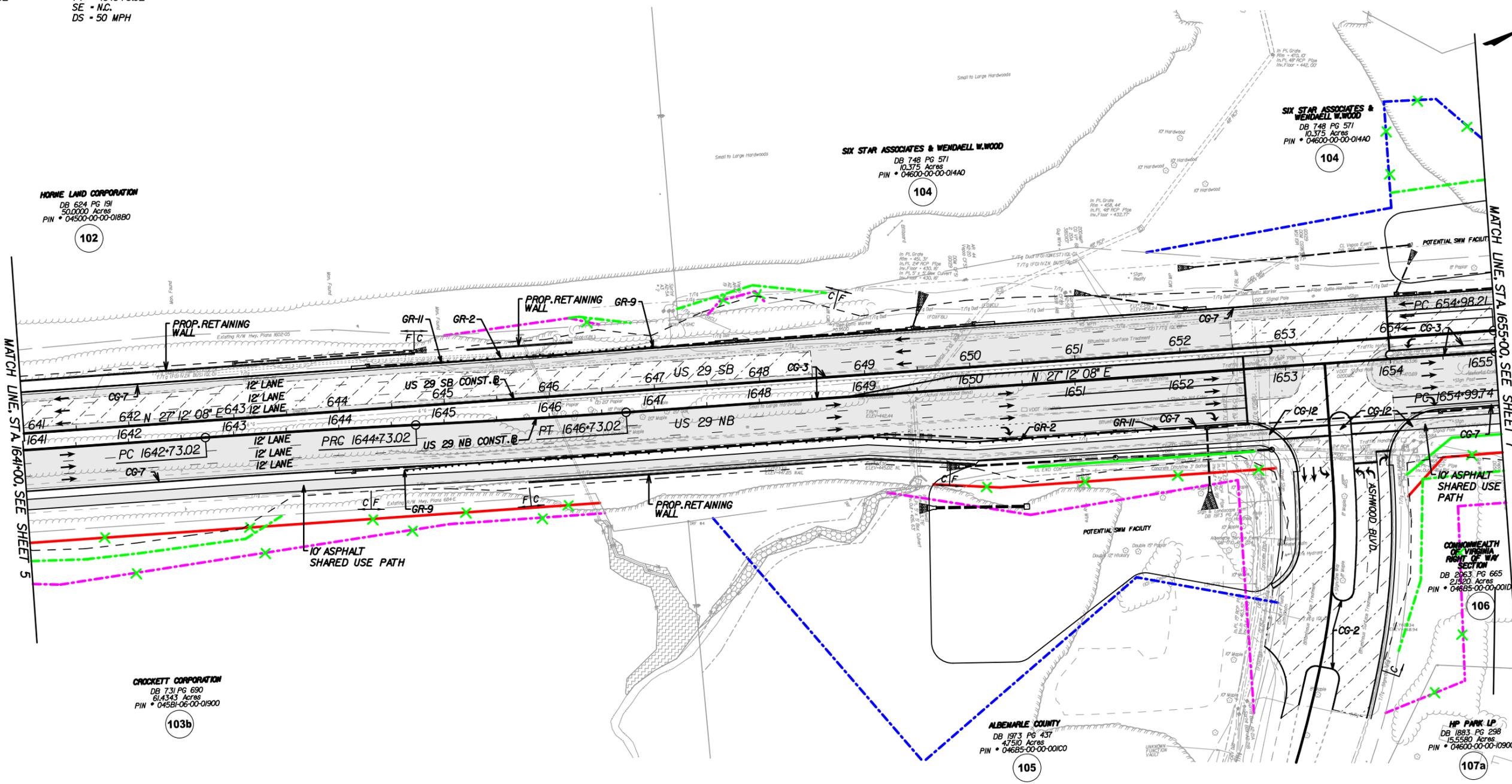


DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	29		0029-002-091 0029-002-135 9999-002-900 P101	6

**Curve 29NB-2**  
PI = 1643+73.02  
DELTA = 1 08' 45.36" (RT)  
D = 0' 34' 23"  
T = 100.00'  
L = 200.00'  
R = 10,000.00'  
PC = 1642+73.02  
PT = 1644+73.02  
SE = N.C.  
DS = 50 MPH

**Curve 29NB-3**  
PI = 1645+73.02  
DELTA = 1 08' 45.36" (LT)  
D = 0' 34' 23"  
T = 100.00'  
L = 200.00'  
R = 10,000.00'  
PC = 1644+73.02  
PT = 1646+73.02  
SE = N.C.  
DS = 50 MPH



- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

PROPOSED UTILITY IMPACTS	
IMPACTED UTILITY	UTILITY OWNER
Underground Communications	CenturyLink
4"/6" Gas	Charlottesville Gas
Underground Communications	Comcast
Utility Pole	Dominion Virginia Power
Underground Communications	Fiberlight
Underground Communications	Qwest Government Services
Underground Communications	Qwest National Network Services
12" Water	RWSA/ACSA
Traffic Control	VDOT NWRO TOC
Underground Communications	Verizon Business (MCI)

**NOTE:**  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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

**SKANSKA** BranchHighways **JM**

SCALE: 0 50' 100'

PROJECT: 0029-002-135 SHEET NO.: 75 of 120

**PRELIMINARY PLANS**  
JAN. 6, 2015

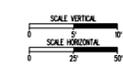
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DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	6A



**US 29 NB (45 MPH)**  
 (NOTE: 50 MPH STOPPING SIGHT DISTANCE MET PER RFP REQUIREMENTS)



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

PRELIMINARY PLANS  
JAN. 6, 2015

**SKANSKA** BranchHighways **JMT**

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-135	76 of 120



Curve 29NB-4  
PI = 1656+60.74  
DELTA = 0° 55' 24.1" (RT)  
D = 0' 17" 12"  
T = 161.00'  
L = 321.99'  
R = 19,980.00'  
PC = 1654+99.74  
PT = 1658+217.3  
SE = N.C.  
DS = 50 MPH

Curve 29NB-5  
PI = 1659+81.87  
DELTA = 1° 50' 05.55" (LT)  
D = 0' 34' 23"  
T = 160.14'  
L = 320.25'  
R = 10,000.00'  
PC = 1658+217.3  
PT = 1663+14.81  
SE = N.C.  
DS = 50 MPH

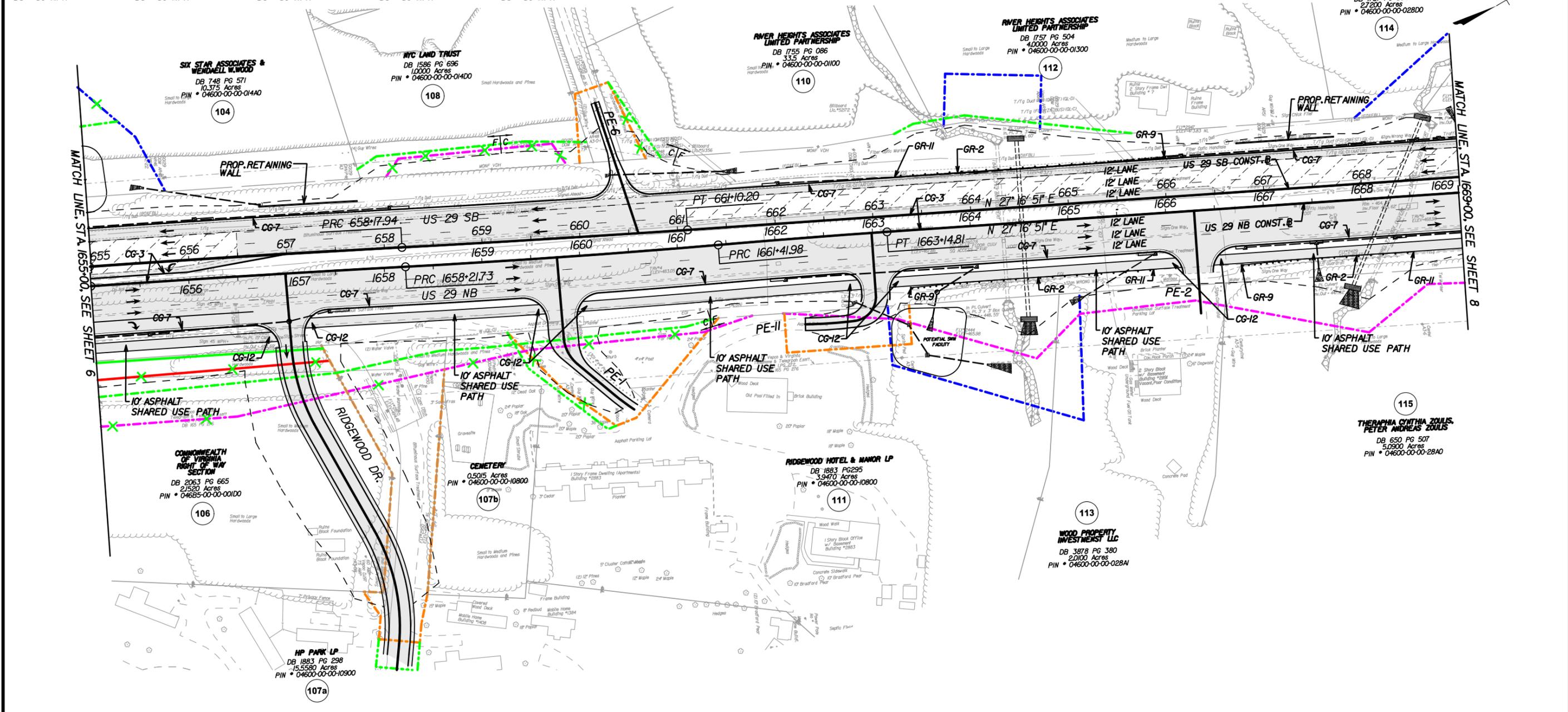
Curve 29NB-6  
PI = 1662+28.40  
DELTA = 0° 53' 24.87" (RT)  
D = 0' 34' 23"  
T = 86.42'  
L = 172.83'  
R = 10,000.00'  
PC = 1661+41.98  
PT = 1663+14.81  
SE = N.C.  
DS = 50 MPH

Curve 29SB-2  
PI = 656+58.08  
DELTA = 0° 54' 57.52" (RT)  
D = 0' 17" 11"  
T = 159.87'  
L = 319.74'  
R = 20,000.00'  
PC = 654+98.21  
PT = 658+17.94  
SE = N.C.  
DS = 50 MPH

Curve 29SB-3  
PI = 659+64.07  
DELTA = 0° 50' 14.09" (LT)  
D = 0' 17" 11"  
T = 146.13'  
L = 292.25'  
R = 20,000.00'  
PC = 658+17.94  
PT = 661+0.20  
SE = N.C.  
DS = 50 MPH

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	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	29		0029-002-091 0029-002-135 9999-002-900 P101	7



- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

PROPOSED UTILITY IMPACTS	
IMPACTED UTILITY	UTILITY OWNER
Underground Communications	CenturyLink
Utility Pole	CenturyLink
0.5"/6" Gas	Charlottesville Gas
Utility Pole	Dominion Virginia Power
Underground Communications	FiberLight
Underground Communications	Lumos
Underground Communications	Qwest Government Services
Underground Communications	Qwest National Network Services
1"/8"/12" Water	RWSA/ACSA
Traffic Control	VDOT NWRO TOC
Underground Communications	Verizon Business (MCI)

PRELIMINARY  
PLANS  
JAN. 6, 2015

**NOTE:**  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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**SKANSKA** BranchHighways **JMT**

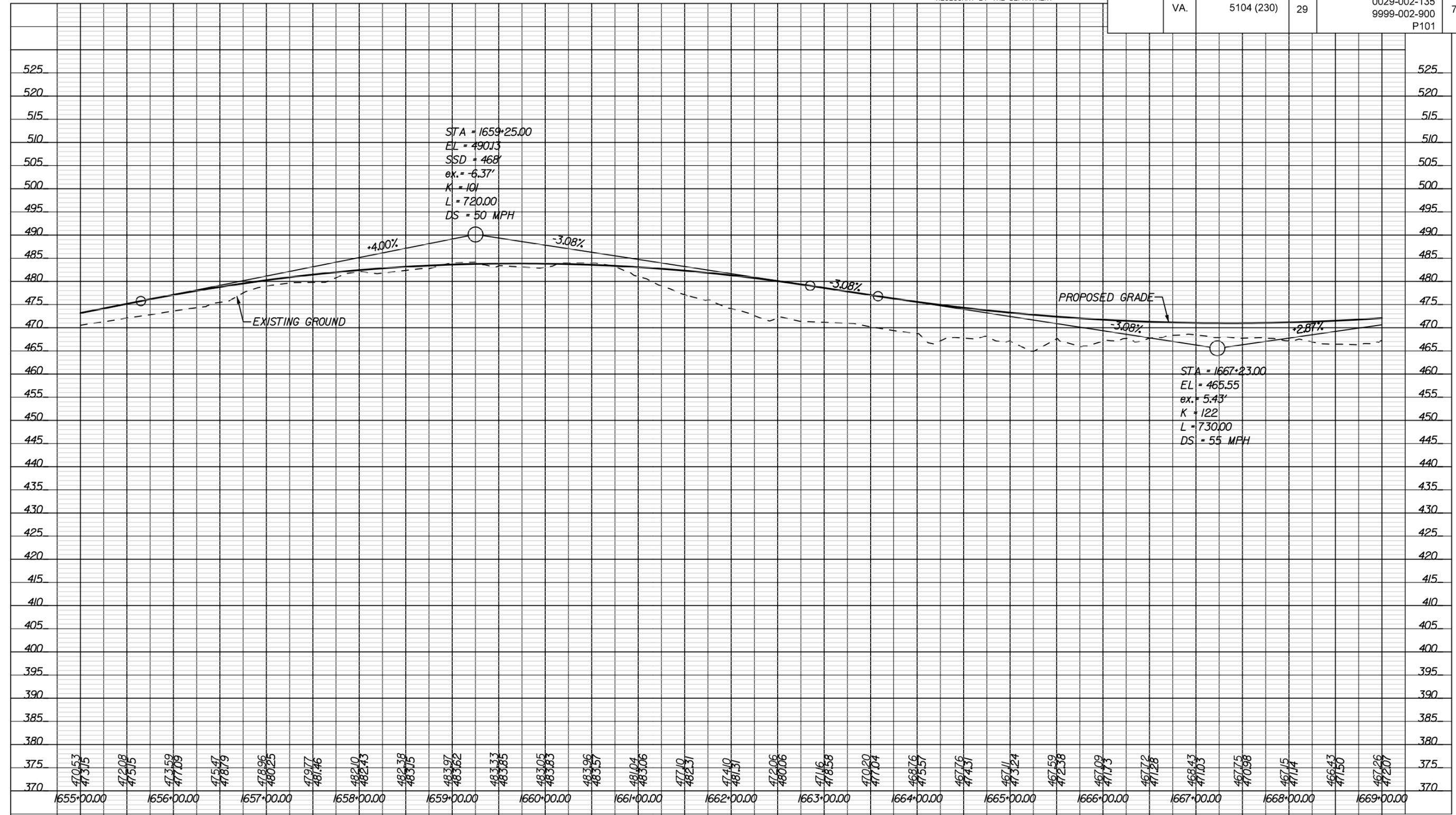
SCALE: 0 50' 100'

PROJECT: 0029-002-135 SHEET NO.: 78 of 120

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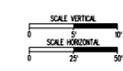
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	7A



PRELIMINARY PLANS  
JAN. 6, 2015

**US 29 NB (45 MPH)**  
(NOTE: 50 MPH STOPPING SIGHT DISTANCE MET PER RFP REQUIREMENTS)



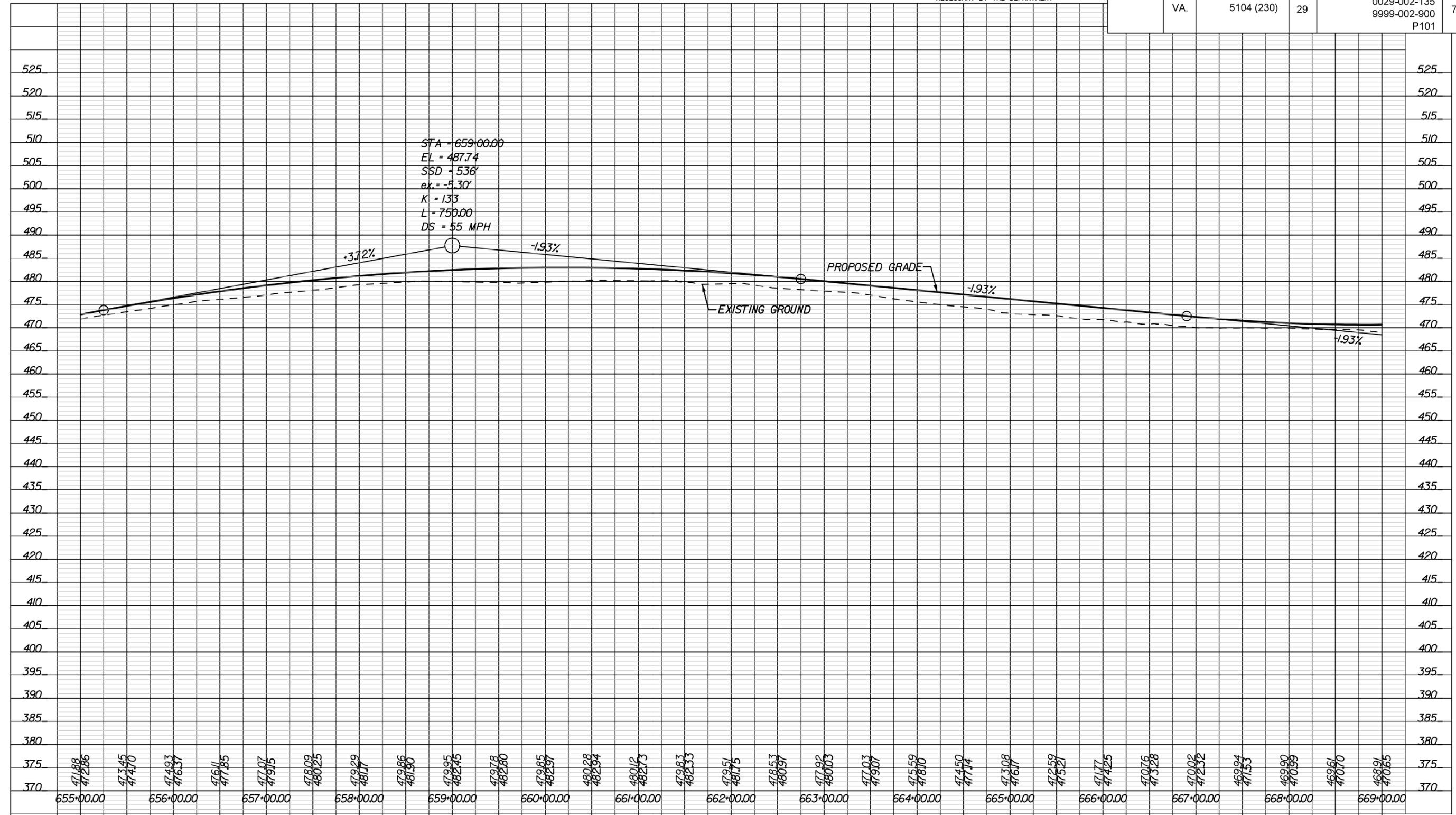
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

**SKANSKA** BranchHighways **JMT**

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-135	79 of 120

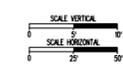
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	5104 (230)	29		0029-002-091 0029-002-135 9999-002-900 P101	7B



### US 29 SB (45 MPH)

(NOTE: 50 MPH STOPPING SIGHT DISTANCE MET PER RFP REQUIREMENTS)



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

PRELIMINARY PLANS  
JAN. 6, 2015

**SKANSKA** BranchHighways **JMT**

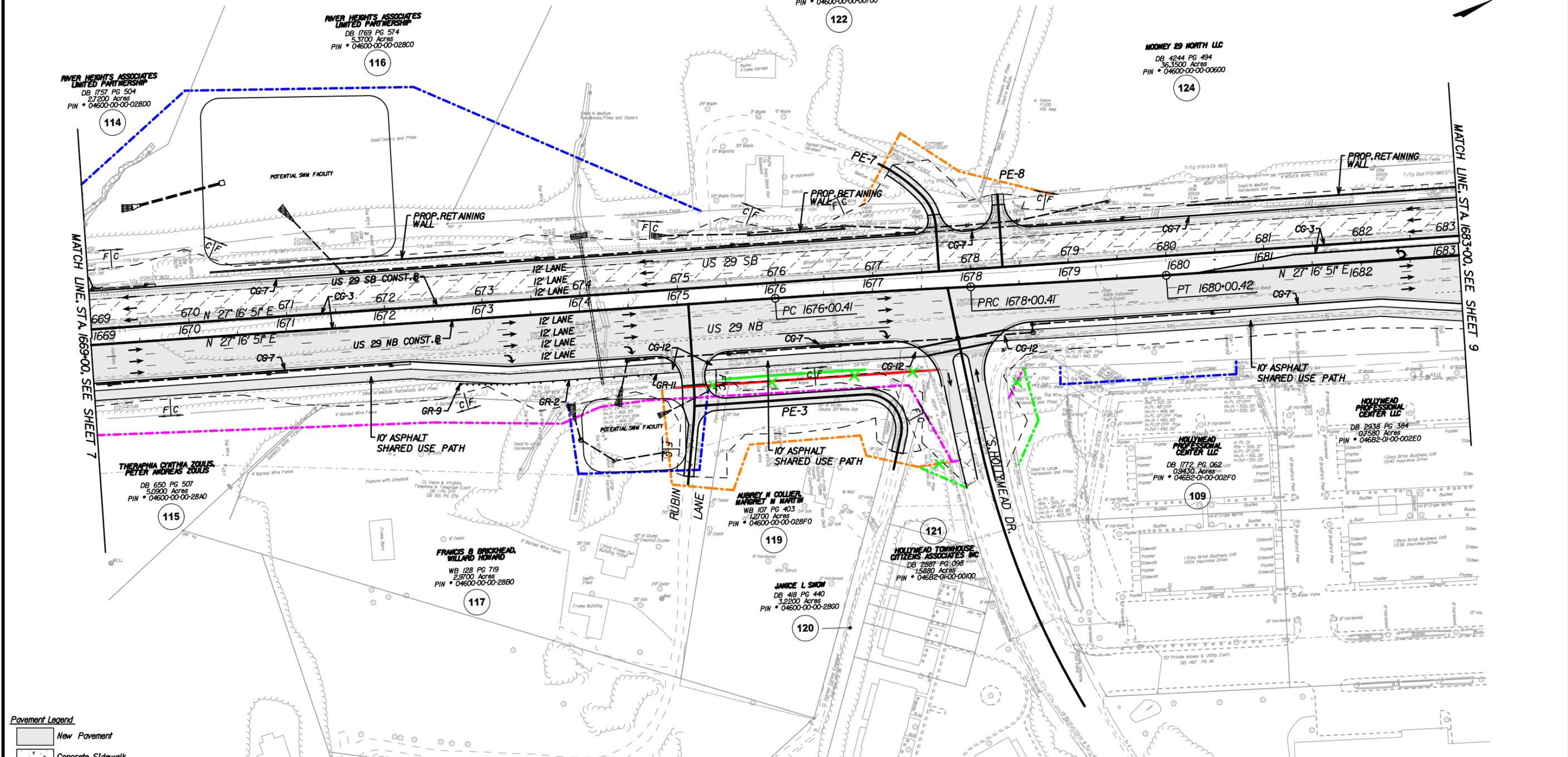
PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-135	80 of 120

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	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	29		0029-002-091 0029-002-135 9999-002-900 P101	8

Curve 29NB-7  
PI = 1677+00.41  
DELTA = 1°08' 45.36" (RT)  
D = 0' 34" 23"  
T = 100.00'  
L = 200.00'  
R = 10,000.00'  
PC = 1676+00.41  
PT = 1678+00.41  
SE = N.C.  
DS = 50 MPH

Curve 29NB-8  
PI = 1679+00.42  
DELTA = 1°08' 45.36" (LT)  
D = 0' 34" 23"  
T = 100.00'  
L = 200.00'  
R = 10,000.00'  
PC = 1678+00.41  
PT = 1680+00.42  
SE = N.C.  
DS = 50 MPH



- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

PROPOSED UTILITY IMPACTS	
IMPACTED UTILITY	UTILITY OWNER
Underground Communications	CenturyLink
Utility Pole	CenturyLink
2"/6" Gas	Charlottesville Gas
Underground Communications	FiberLight
Underground Communications	Lumos
Underground Communications	Qwest Government Services
Underground Communications	Qwest National Network Services
12" Water	RWSA
Underground Communications	Verizon Business (MCI)

NOTE:  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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**SKANSKA** BranchHighways **JMT**

SCALE: 0 50' 100'

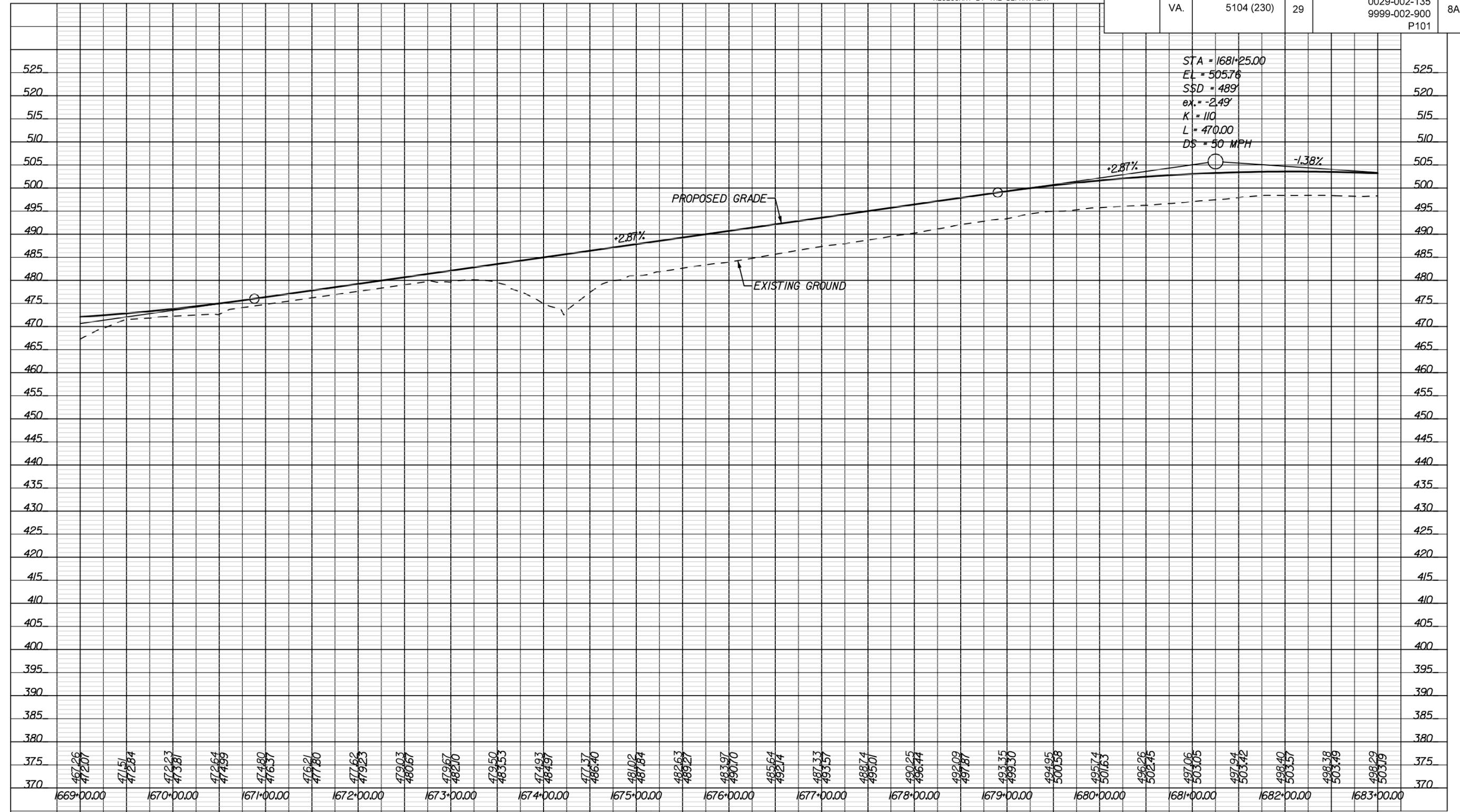
PROJECT: 0029-002-135 SHEET NO.: 81 of 120

PRELIMINARY PLANS  
JAN. 6, 2015

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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	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	8A



STA = 1681+25.00  
EL = 505.76  
SSD = 489'  
ex. = -2.49'  
K = 110  
L = 470.00  
DS = 50 MPH

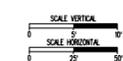
PROPOSED GRADE

EXISTING GROUND

PRELIMINARY PLANS  
JAN. 6, 2015

US 29 NB (45 MPH)

(NOTE: 50 MPH STOPPING SIGHT DISTANCE MET PER RFP REQUIREMENTS)



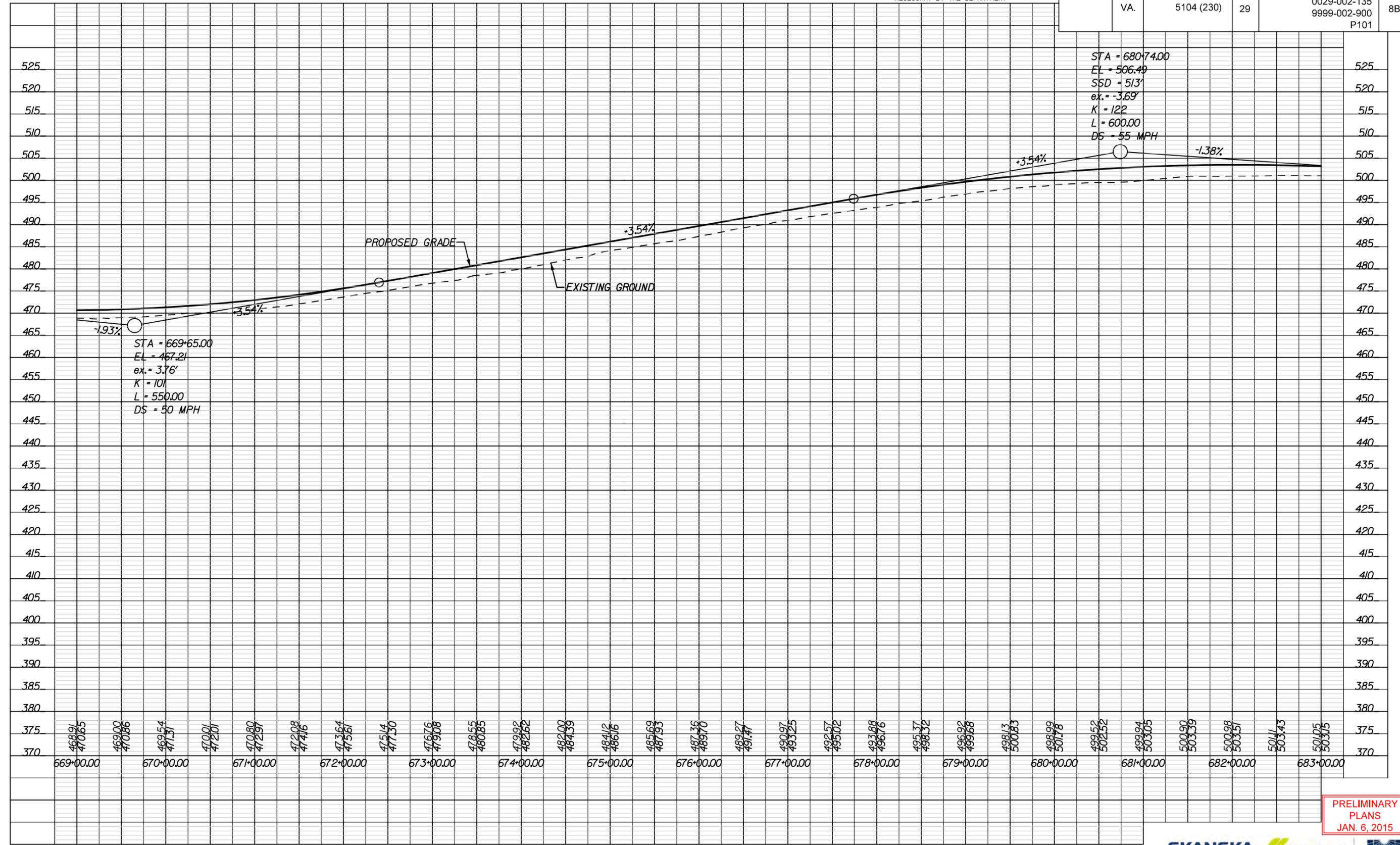
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

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PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-135	82 of 120

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

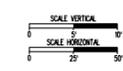
REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	8B



PRELIMINARY PLANS  
JAN. 6, 2015

US 29 SB (45 MPH)

(NOTE: 50 MPH STOPPING SIGHT DISTANCE MET PER RFP REQUIREMENTS)



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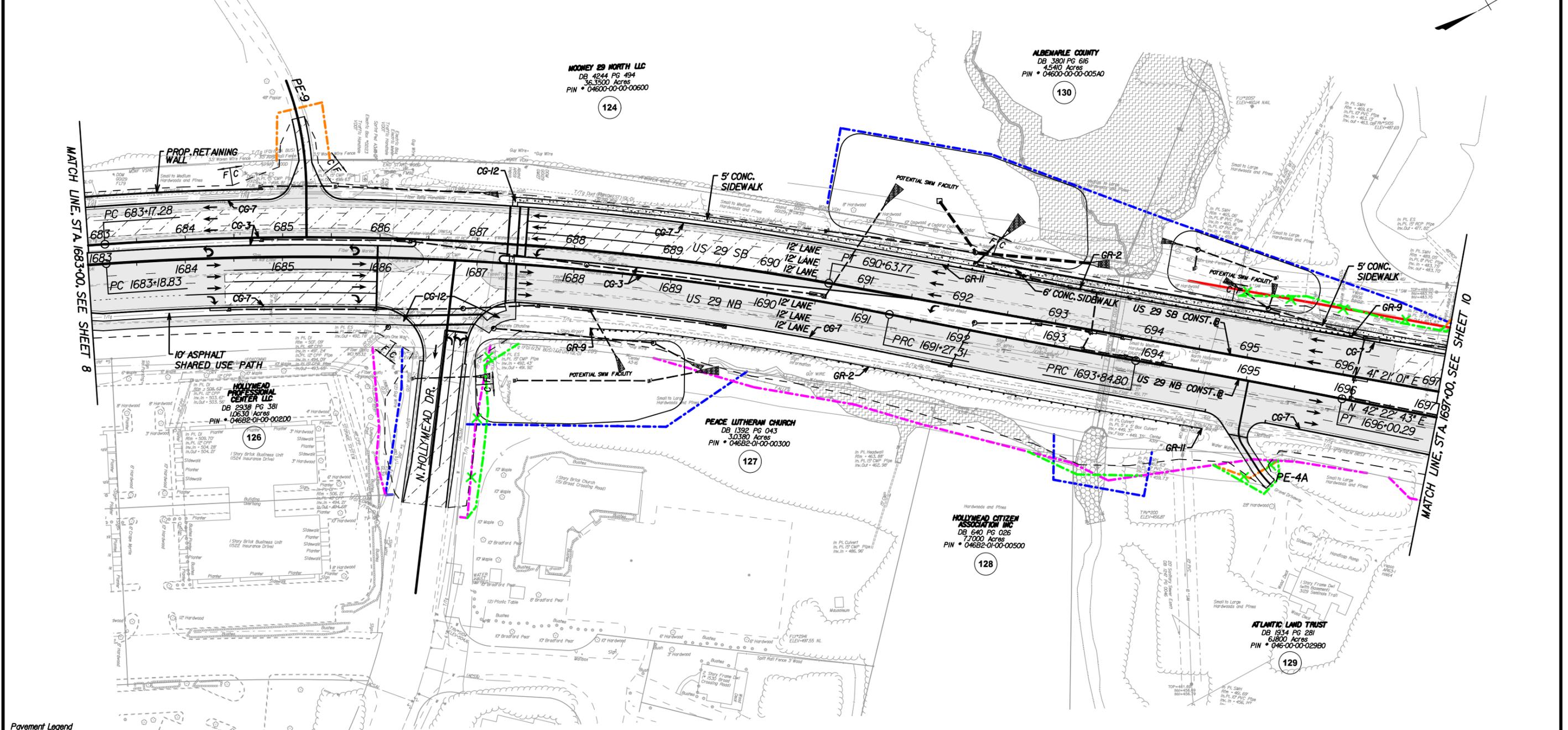
SKANSKA | BranchHighways | JMT

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-135	83 of 120

<p>Curve 29NB-9 PI = 1687+25.50 DELTA = 15° 20' 19.05" (RT) D = 1' 53' 50" T = 406.67' L = 808.48' R = 3,020.00' PC = 1683+18.83 PT = 1691+27.31 SE = 2.70% DS = 50 MPH</p>	<p>Curve 29NB-10 PI = 1692+56.06 DELTA = 1° 28' 31.20" (LT) D = 0' 34' 23" T = 128.75' L = 257.49' R = 10,000.00' PC = 1691+27.31 PT = 1693+84.80 SE = N.C. DS = 50 MPH</p>	<p>Curve 29NB-11 PI = 1694+92.55 DELTA = 1° 14' 04.62" (RT) D = 0' 34' 23" T = 107.74' L = 215.45' R = 10,000.00' PC = 1693+84.80 PT = 1696+00.29 SE = N.C. DS = 50 MPH</p>	<p>Curve 29SB-4 PI = 686+92.42 DELTA = 14° 04' 09.57" (RT) D = 1' 53' 05" T = 375.13' L = 746.49' R = 3,040.00' PC = 683+17.28 PT = 690+63.77 SE = 2.70% DS = 50 MPH</p>	<p>Curve 29SB-5 PI = 693+43.50 DELTA = 0' 53' 57.98" (LT) D = 0' 11' 28" T = 235.48' L = 470.95' R = 30,000.00' PC = 691+08.02 PT = 695+78.97 SE = N.C. DS = 50 MPH</p>
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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	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	29		0029-002-091 0029-002-135 9999-002-900 P101	9



**Pavement Legend**

- New Pavement
- Concrete Sidewalk
- Milling and Resurfacing of Pavement (Build up, as necessary)
- RFP Temporary Easement
- RFP Permanent SWM Easement
- RFP Permanent Easement
- RFP Joint Use Permanent Easement
- RFP Right of Way
- Modified Easement
- Modified Right of Way (No Increases to the Proposed Right of Way are Required)

PROPOSED UTILITY IMPACTS	
IMPACTED UTILITY	UTILITY OWNER
Underground Communications	CenturyLink
Utility Pole	CenturyLink
6" Gas	Charlottesville Gas
Underground Communications	FiberLight
Underground Communications	Lumas
Underground Communications	Qwest Government Services
Underground Communications	Qwest National Network Services
F/8"/12" Water	RWSA/ACSA
Underground Communications	Verizon Business (MCI)

**NOTE:**  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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**SKANSKA** BranchHighways **JMT**

SCALE: 0 50' 100'

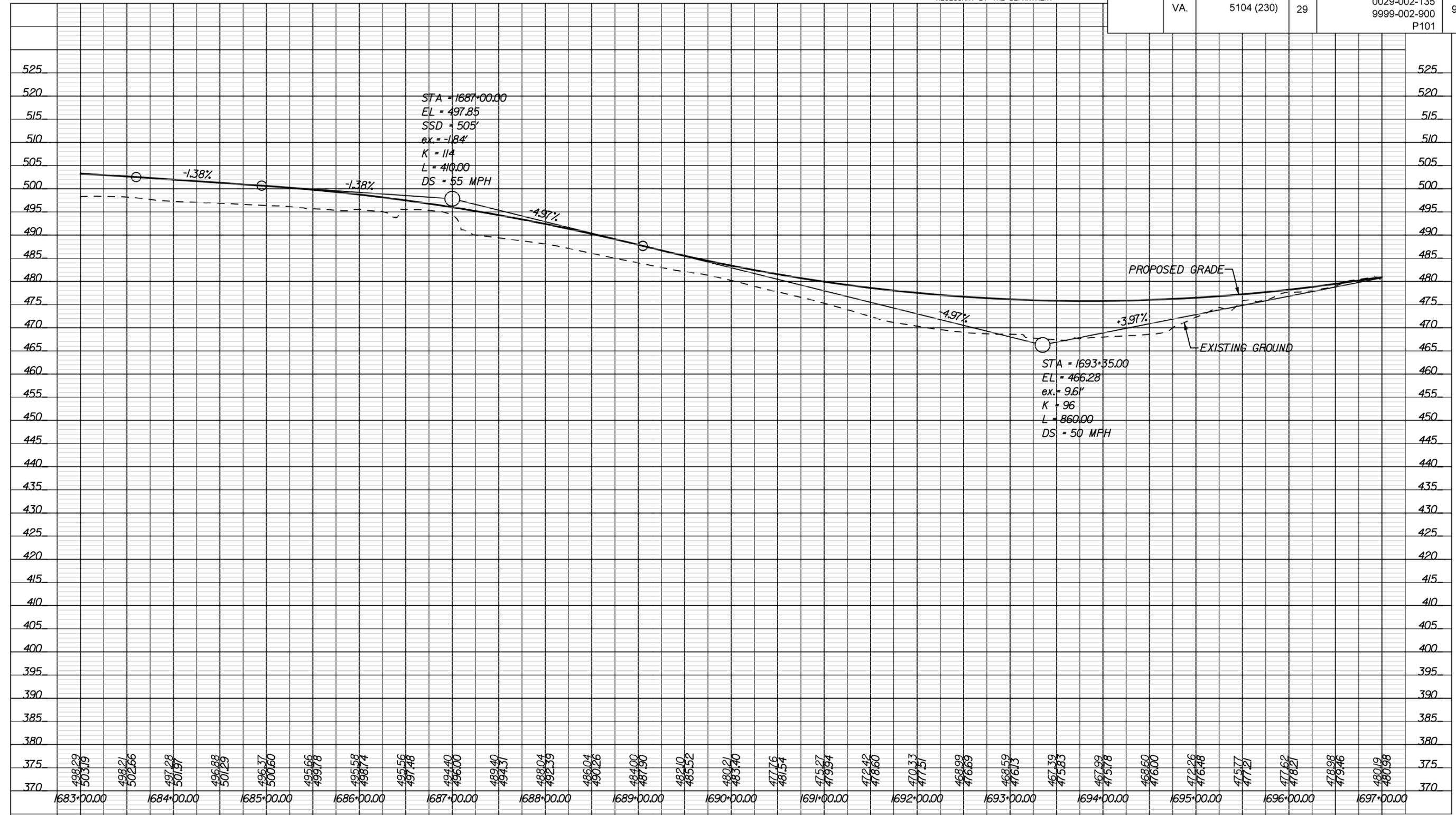
PROJECT: 0029-002-135 SHEET NO.: 84 of 120

PRELIMINARY  
PLANS  
JAN. 6, 2015

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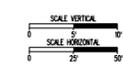
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	9A



PRELIMINARY PLANS  
JAN. 6, 2015

**US 29 NB (45 MPH)**  
(NOTE: 50 MPH STOPPING SIGHT DISTANCE MET PER RFP REQUIREMENTS)



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**SKANSKA** **BranchHighways** **JMT**

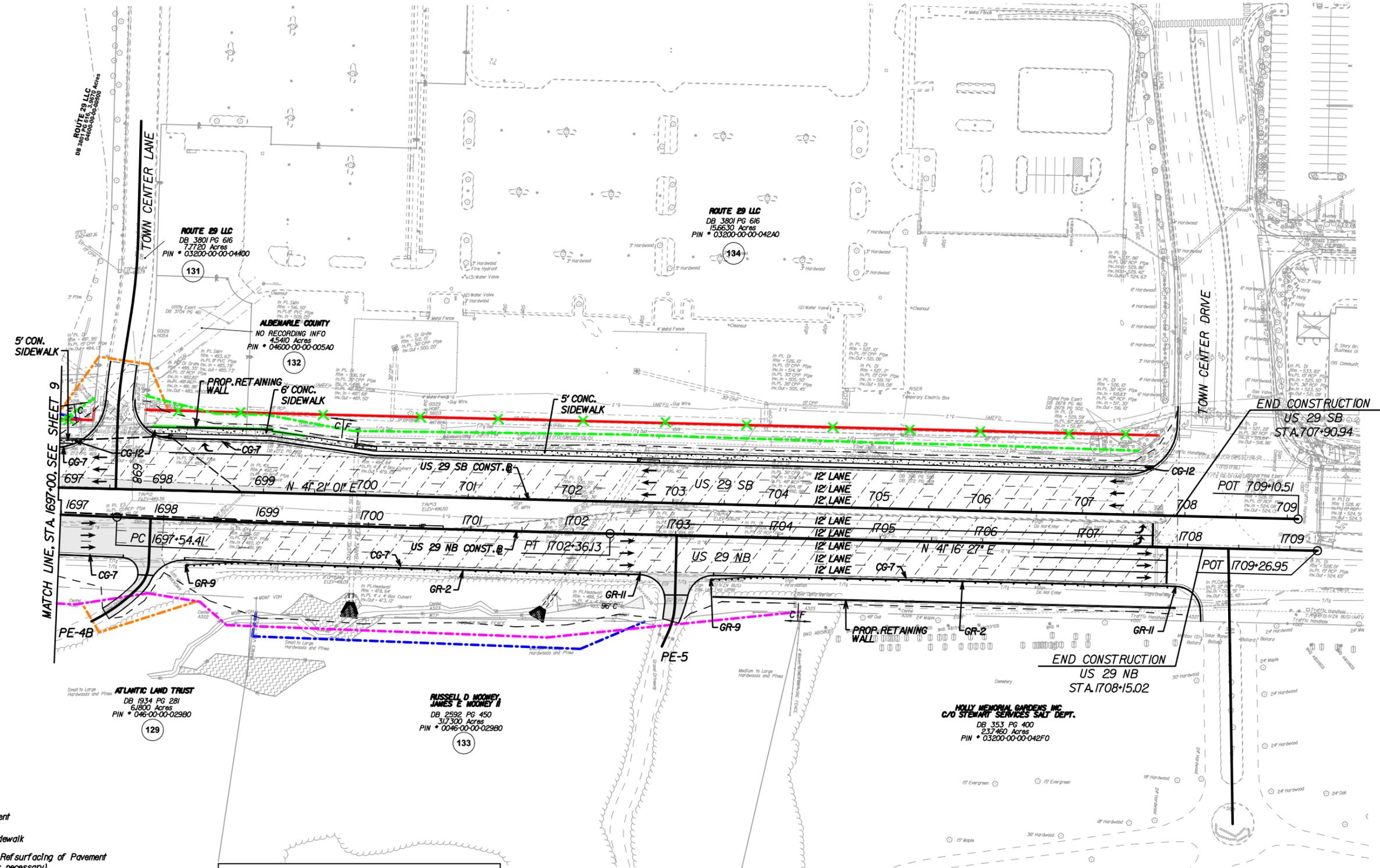
PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-135	85 of 120



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	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	29		0029-002-091 0029-002-135 9999-002-900 P101	10

Curve 29NB-12  
PI = 1699+95.28  
DELTA = 1°06'16.57" (LT)  
D = 0'13'45"  
T = 240.87'  
L = 481.72'  
R = 24,987.00'  
PC = 1697+54.41  
PT = 1702+36.13  
SE = N.C.  
DS = 50 MPH



MATCH LINE, STA. 1697+00, SEE SHEET 9

END CONSTRUCTION  
US 29 SB  
STA. 707+90.94

END CONSTRUCTION  
US 29 NB  
STA. 1708+15.02

- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

PROPOSED UTILITY IMPACTS	
IMPACTED UTILITY	UTILITY OWNER
Underground Communications	CenturyLink
Utility Pole	CenturyLink
6" Gas	Charlottesville Gas
Underground Communications	Fiberlight
Underground Communications	Qwest Government Services
Underground Communications	Qwest National Network Services
Underground Communications	Verizon Business (MCI)

**NOTE:**  
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**SKANSKA** BranchHighways **JMT**

SCALE: 0 50' 100'

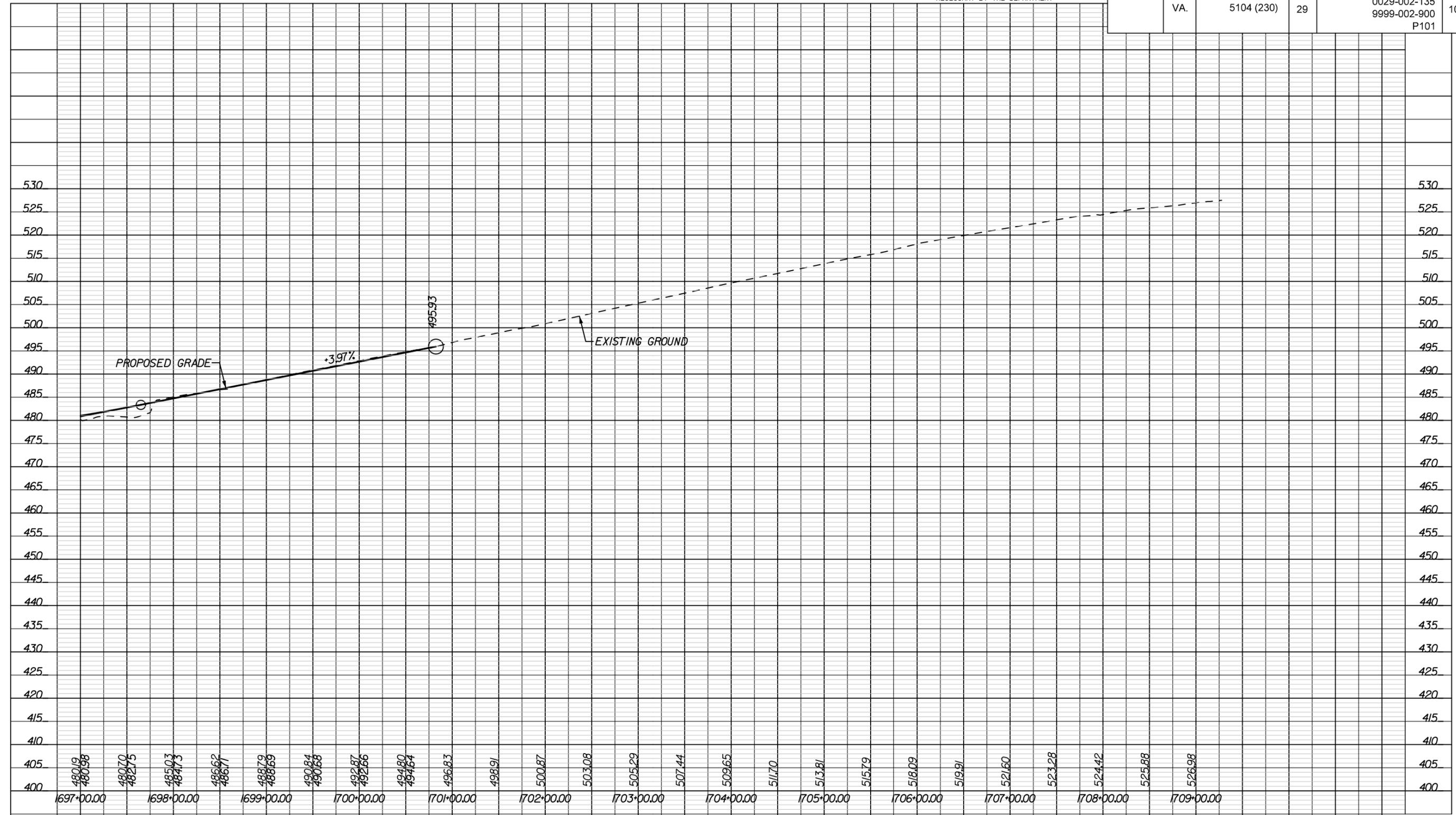
PROJECT: 0029-002-135 SHEET NO.: 87 of 120

PRELIMINARY  
PLANS  
JAN. 6, 2015

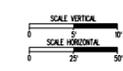
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DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	10A



**US 29 NB (45 MPH)**  
(NOTE: 50 MPH STOPPING SIGHT DISTANCE MET PER RFP REQUIREMENTS)



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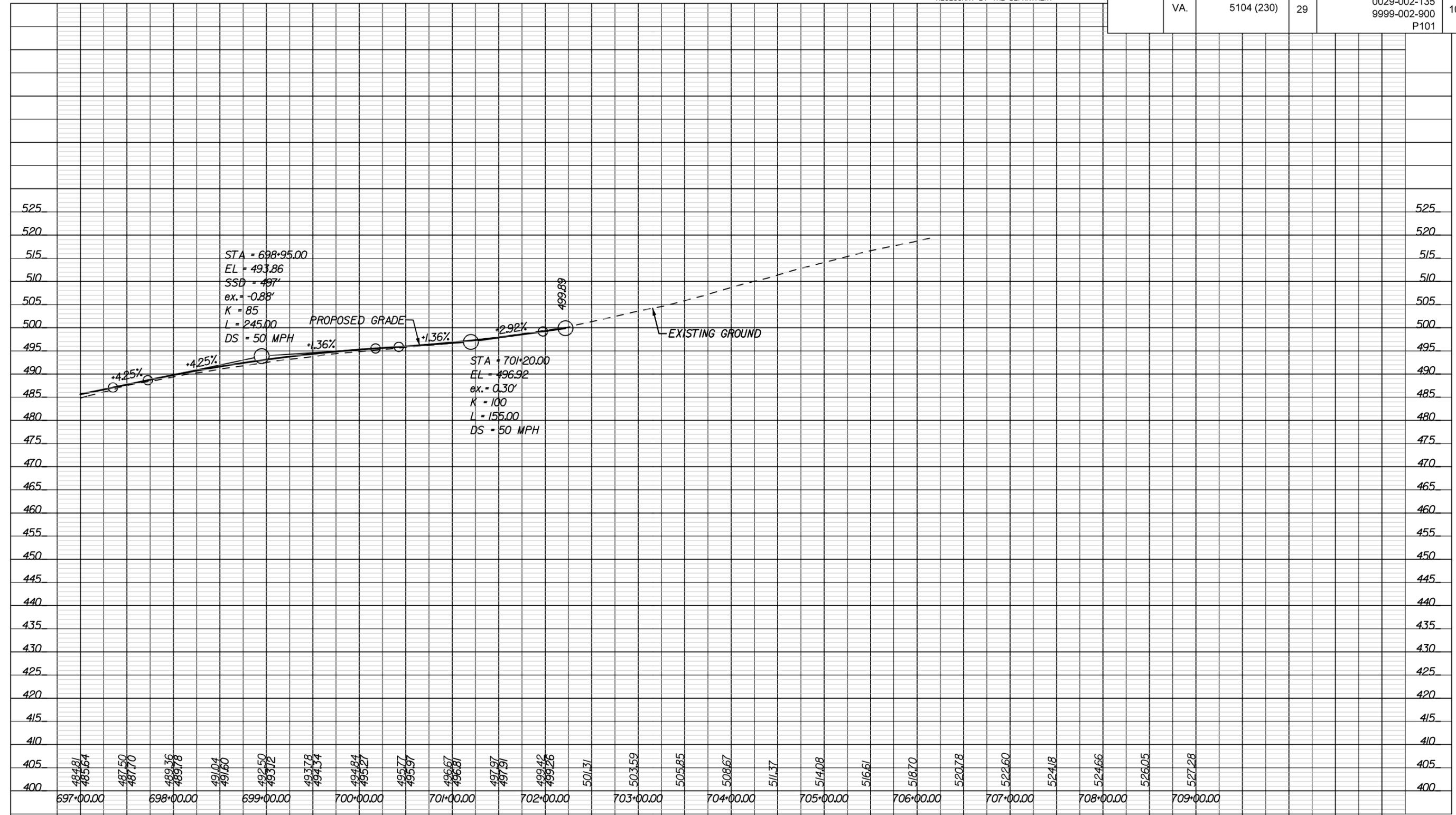
PRELIMINARY PLANS  
JAN. 6, 2015

**SKANSKA** **BranchHighways** **JMT**

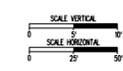
PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-135	88 of 120

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	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	10B



**US 29 SB (45 MPH)**  
(NOTE: 50 MPH STOPPING SIGHT DISTANCE MET PER RFP REQUIREMENTS)



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

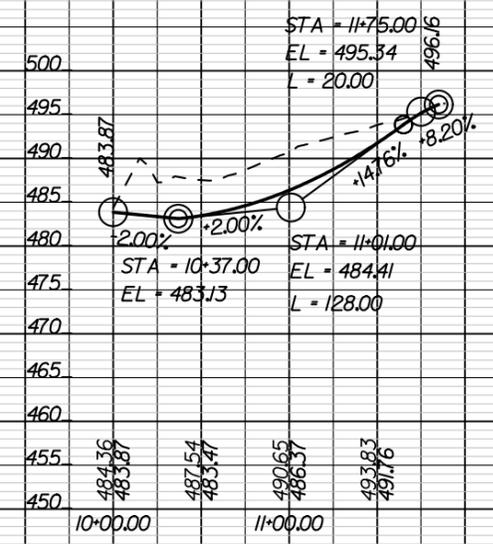
PRELIMINARY PLANS  
JAN. 6, 2015

**SKANSKA** **BranchHighways** **JMT**

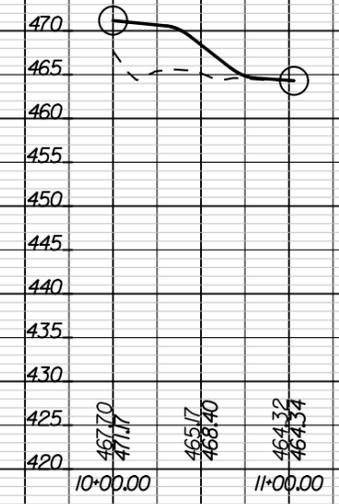
PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-135	89 of 120

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

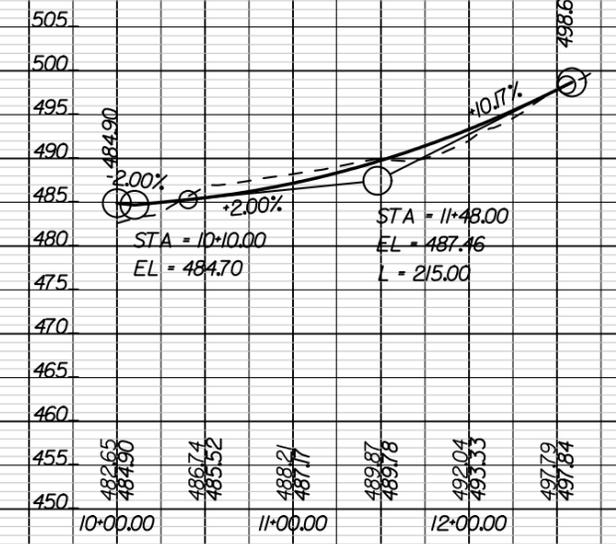
REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	10C



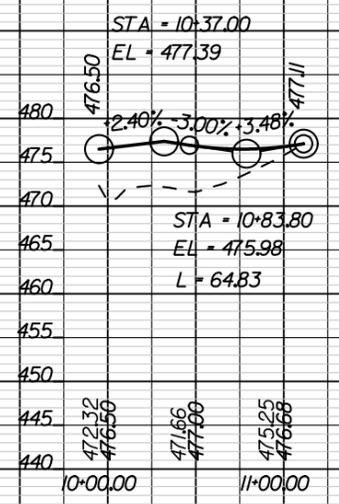
PE-1



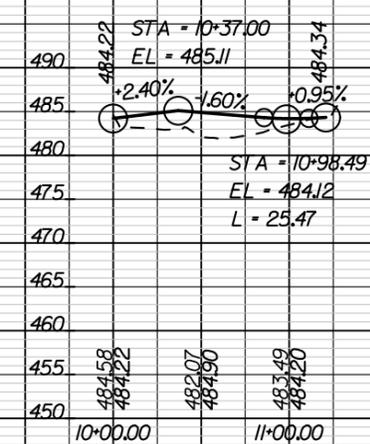
PE-2



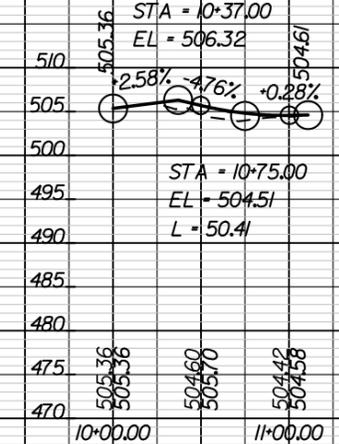
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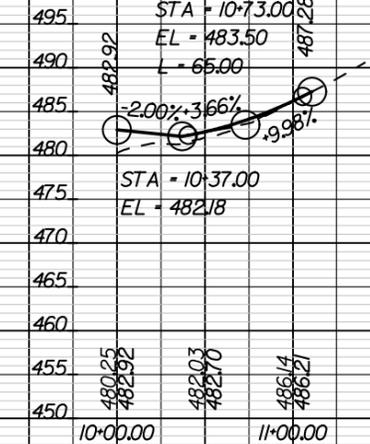
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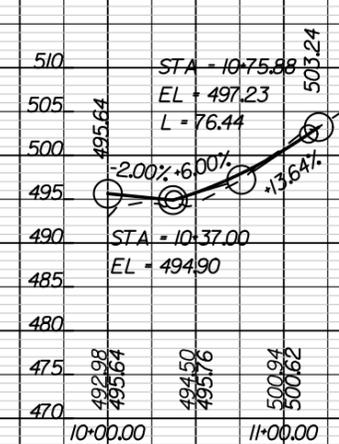
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PE-5

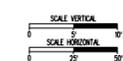


PE-6



PE-7

PRELIMINARY PLANS  
JAN. 6, 2015



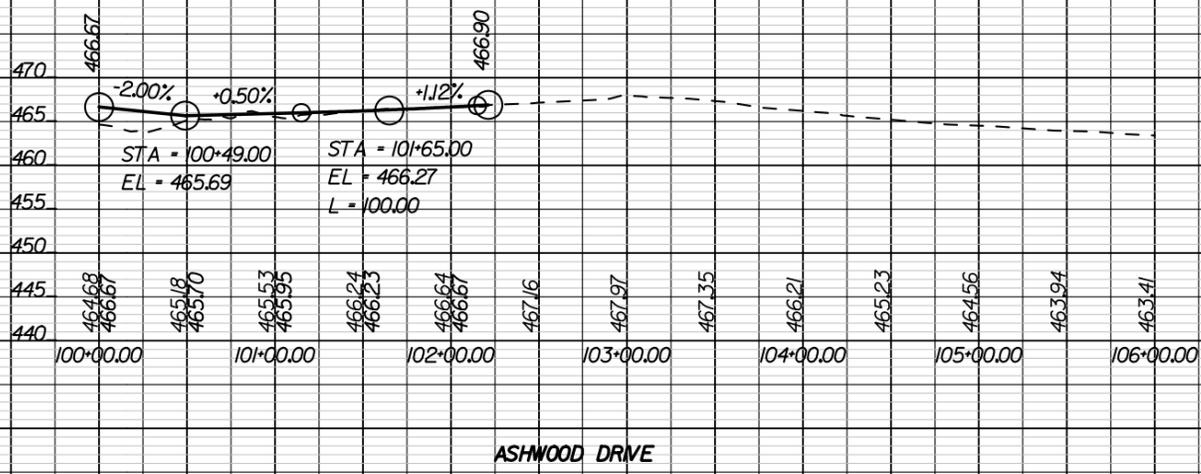
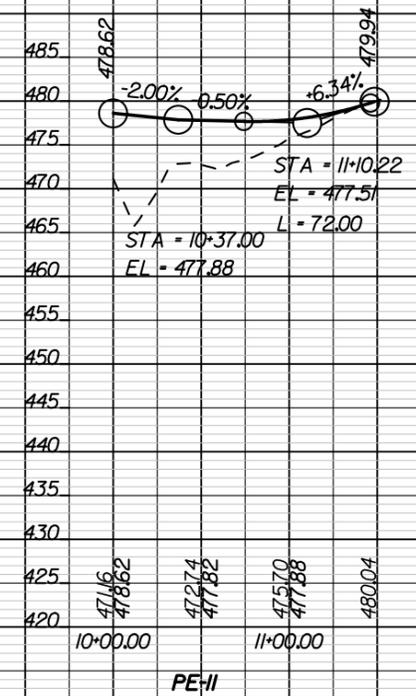
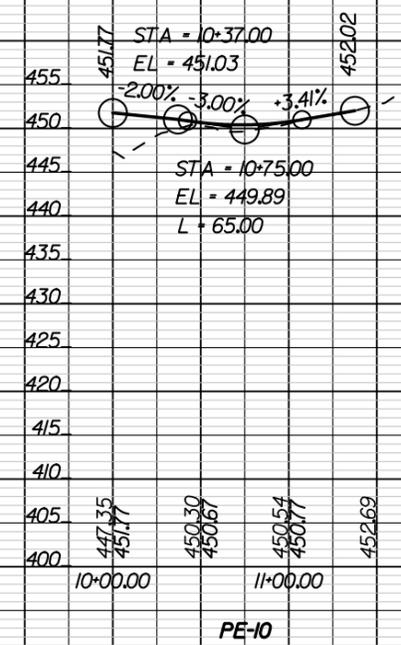
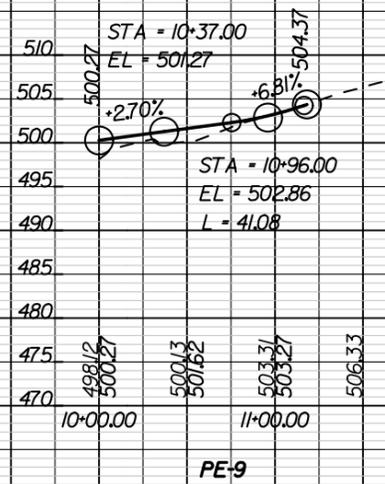
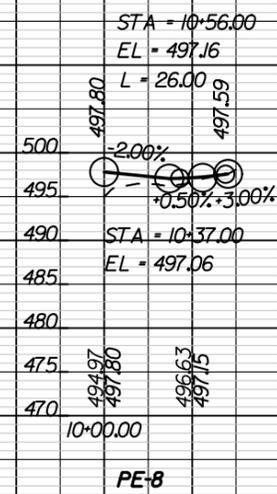
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.



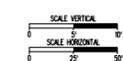
PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-135	90 of 120

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	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	10D



PRELIMINARY PLANS  
JAN. 6, 2015



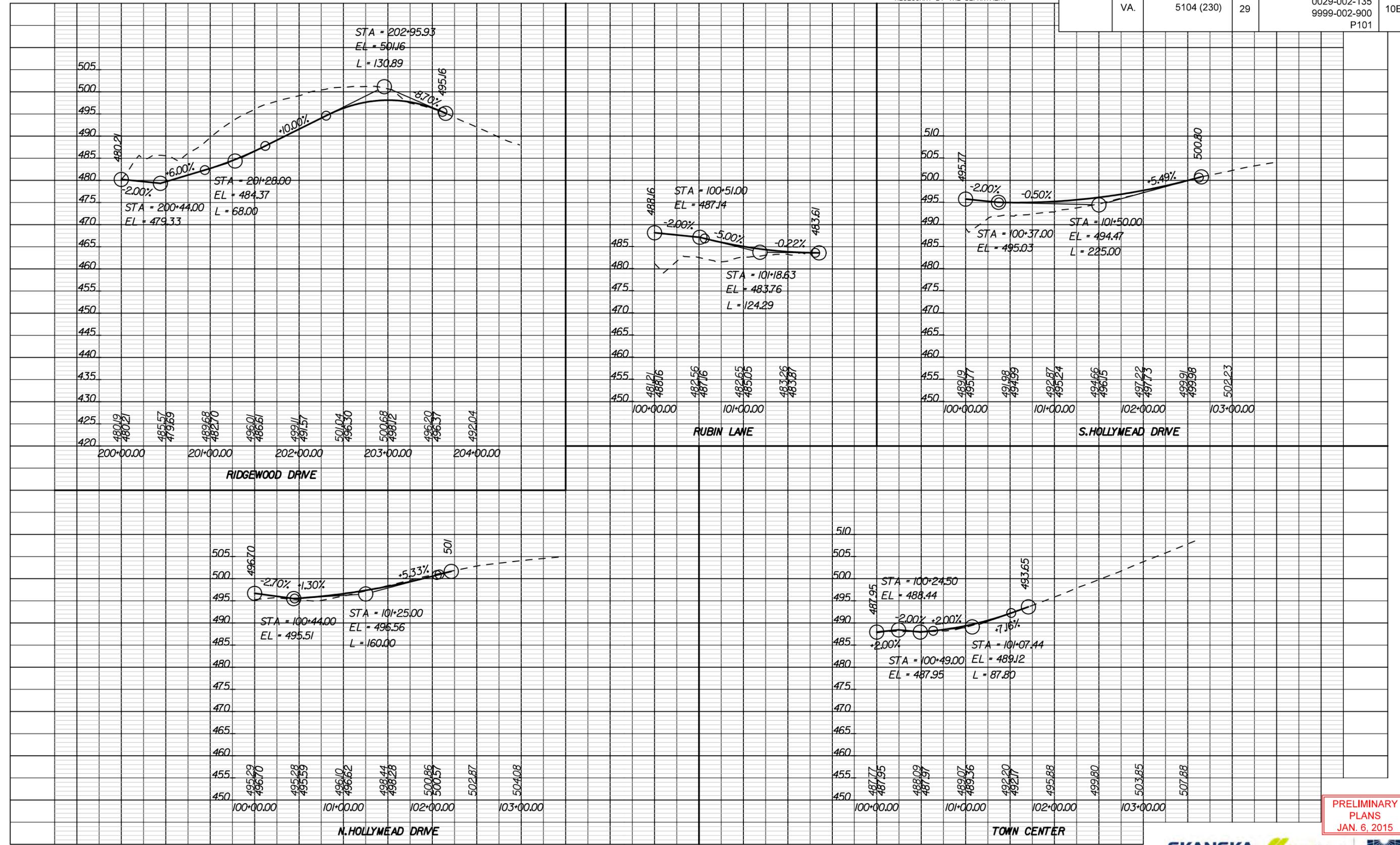
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

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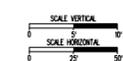
PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-135	91 of 120

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	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	10E



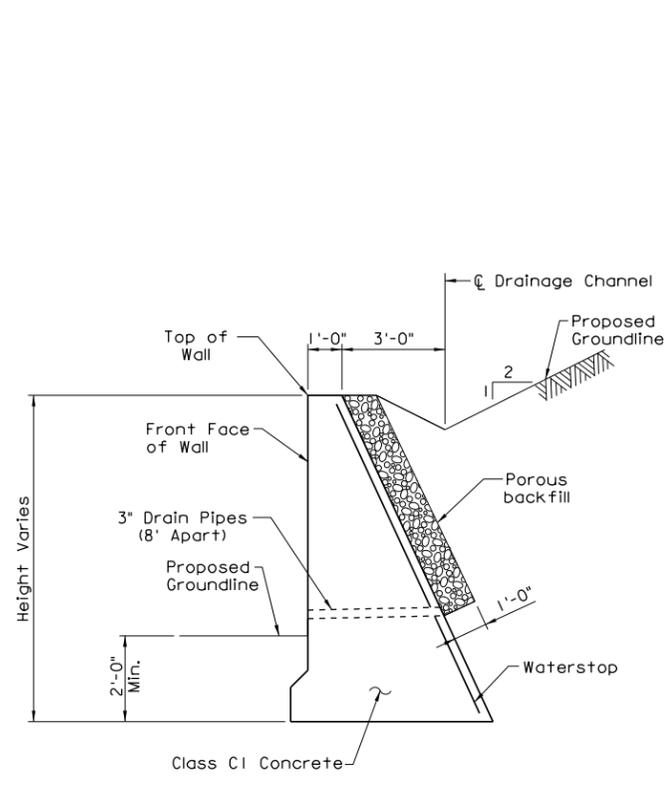
PRELIMINARY PLANS  
JAN. 6, 2015



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

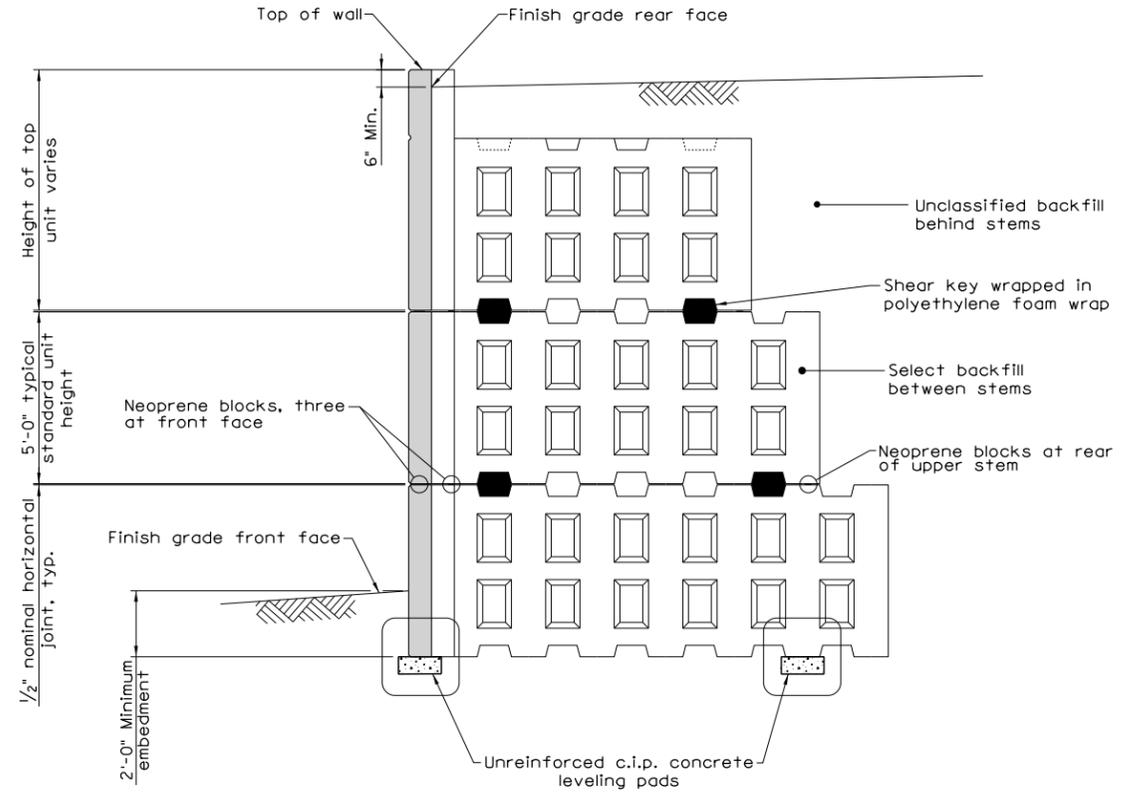
SKANSKA BranchHighways JMT

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		0029-002-135	92 of 120



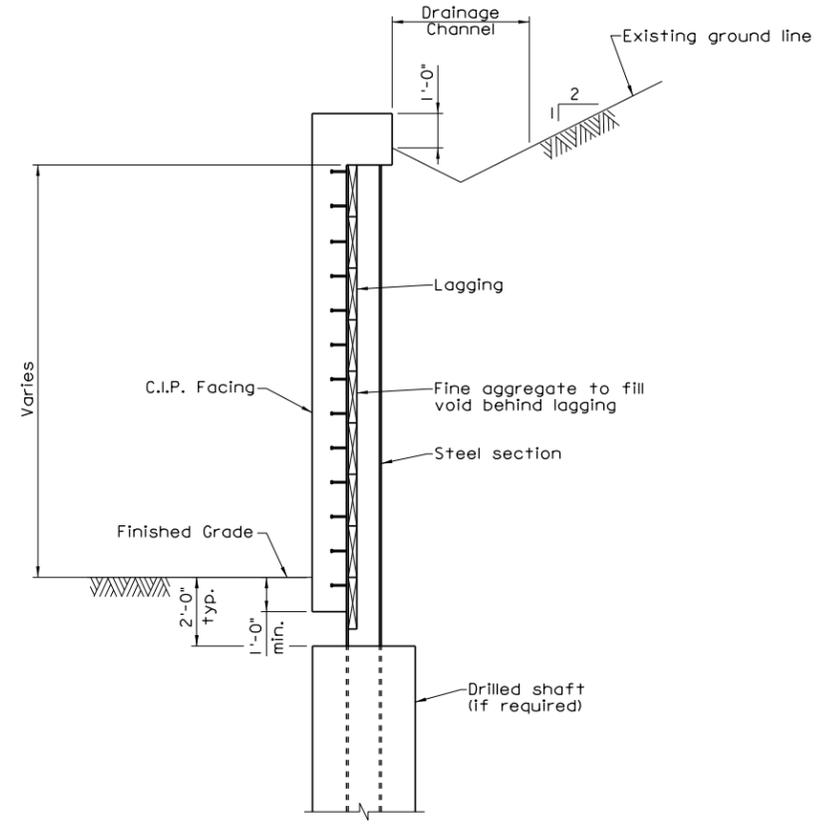
**TYPICAL SECTION  
CONCRETE GRAVITY RETAINING WALL**  
Scale: 3/8" = 1'-0"

Note:  
Refer to VDOT Concrete Gravity Retaining Wall RW-2 and RW-3 standards for additional information.



**TYPICAL SECTION  
PRECAST REINFORCED CONCRETE WALL SYSTEM**  
Scale: 3/8" = 1'-0"

Note:  
Other VDOT Approved Retaining Wall Systems may be utilized.



**TYPICAL SECTION  
SOLDIER PILE RETAINING WALL**  
Scale: 3/8" = 1'-0"

Note:  
Barriers, Railings and Architectural Treatments not shown.

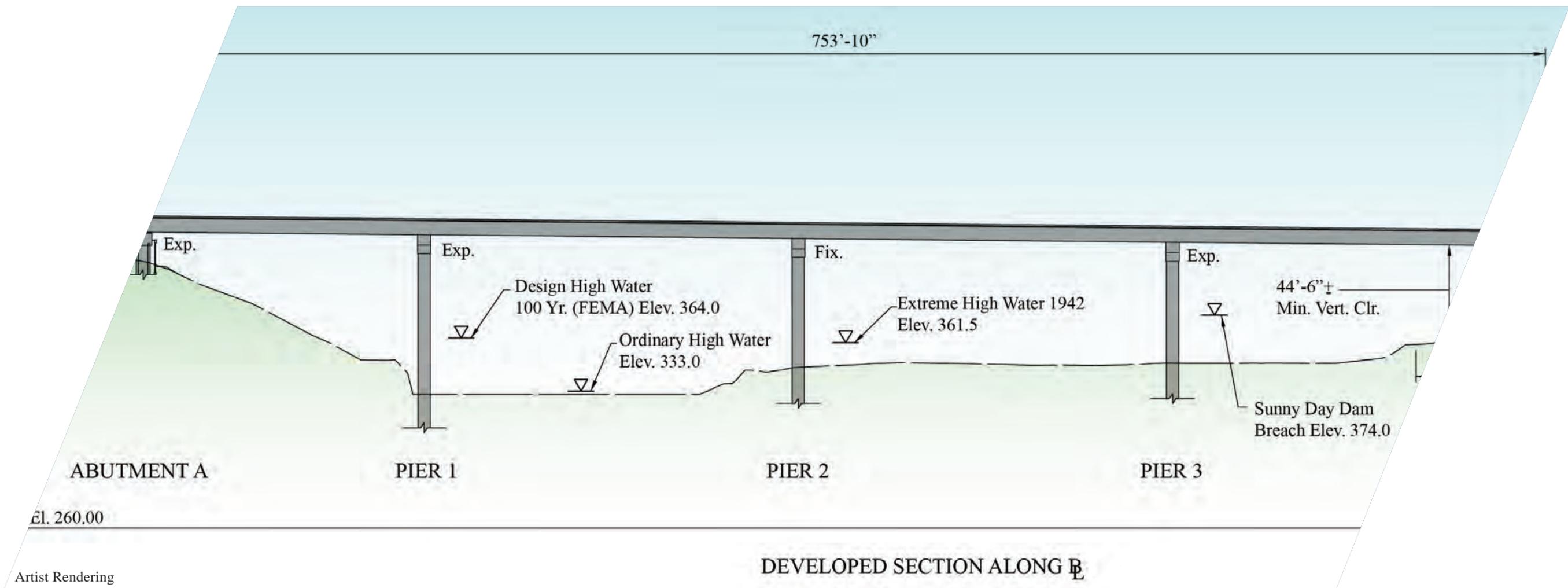
**PRELIMINARY PLANS**  
 THESE PLANS NOT TO BE USED  
 FOR CONSTRUCTION



COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
STRUCTURE AND BRIDGE DIVISION			
ROUTE 29 WIDENING			
<b>RETAINING WALL TYPICAL SECTIONS</b>			
No.	Description	Date	Designed: .....
			Drawn: .....
			Checked: .....
Revisions		Date	Plan No.
		Jan. 2015	Sheet No.
			93 OF 120

10/5/2015 4:25:44 PM G:\SMD\140897\_201\_US\_23\_Solutions\_Dns\CADD\US23\Widening\07783\07783-typical-section.dgn

JOHNSON, MIRMIRAN & THOMPSON  
 RICHMOND, VA  
 STRUCTURAL ENGINEER



3.3 Berkmar Drive Extension Conceptual Plans (4.3.3)

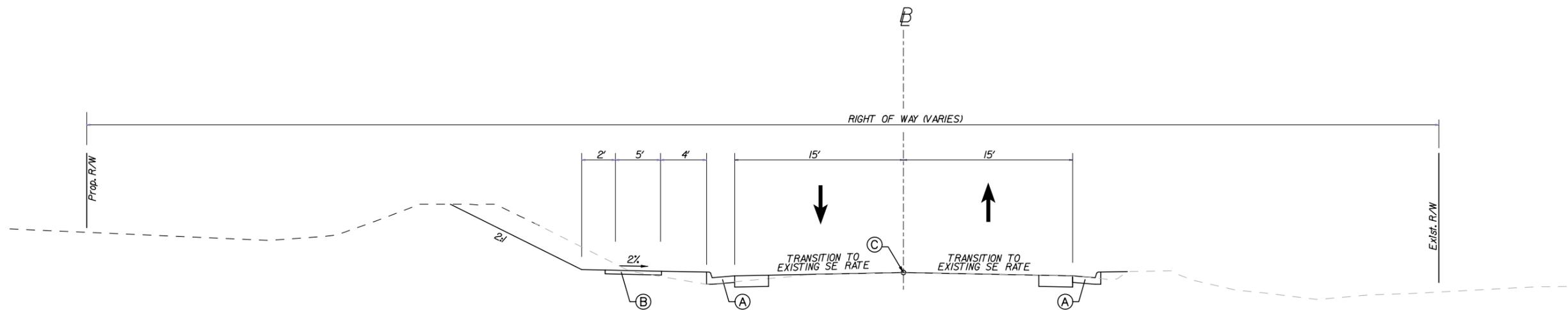
Conceptual Roadway Plans

# TYPICAL SECTIONS

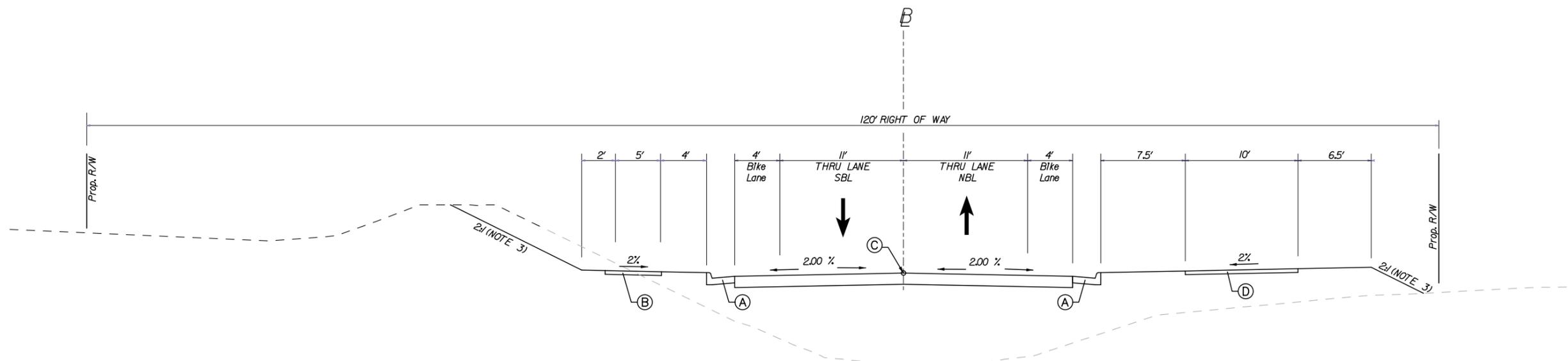
REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	2A(1)

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

STA.101+75 TO STA.106+10  
URBAN COLLECTOR GS-7 (DS= 40 MPH)  
BERKMAR DRIVE



STA.106+10 TO STA.235+00  
URBAN COLLECTOR GS-7 (DS= 40 MPH)  
BERKMAR DRIVE



## LEGEND

- (A) Curb & Gutter, Std. CG-6 Req'd.
- (B) 4" Hydraulic Cement Concrete Sidewalk (Where Indicated on plans)
- (C) Profile Grade Line (PGL)
- (D) Asphalt Shared Use Path (Where Indicated on plans)

### Notes:

1. Proposed pavement sections shall be per RFP Section 2.6.J.
2. See plans for limits of full depth pavement and mill and overlay.
3. Slopes of 3:1 or flatter shall be utilized on parcels 209, 213 & 217.

PRELIMINARY  
PLANS  
JAN. 6, 2015

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



PROJECT 9999-002-900 SHEET NO. 94 of 120

Curve HILTON J  
PI = 0+96.10  
DELTA = 25° 39' 27.45" (LT)  
D = 13° 34' 38"  
T = 96.10'  
L = 188.98'  
R = 422.00'  
PC = 0+00.00  
PT = 1+88.98  
SE = E.X.  
DS = 40 MPH

Curve BERKMAR-1  
PI = 103+79.72  
DELTA = 28° 38' 06.89" (LT)  
D = 7° 09' 43"  
T = 204.18'  
L = 399.82'  
R = 800.00'  
PC = 101+75.54  
PT = 105+75.37  
SE = N.C.  
DS = 40 MPH

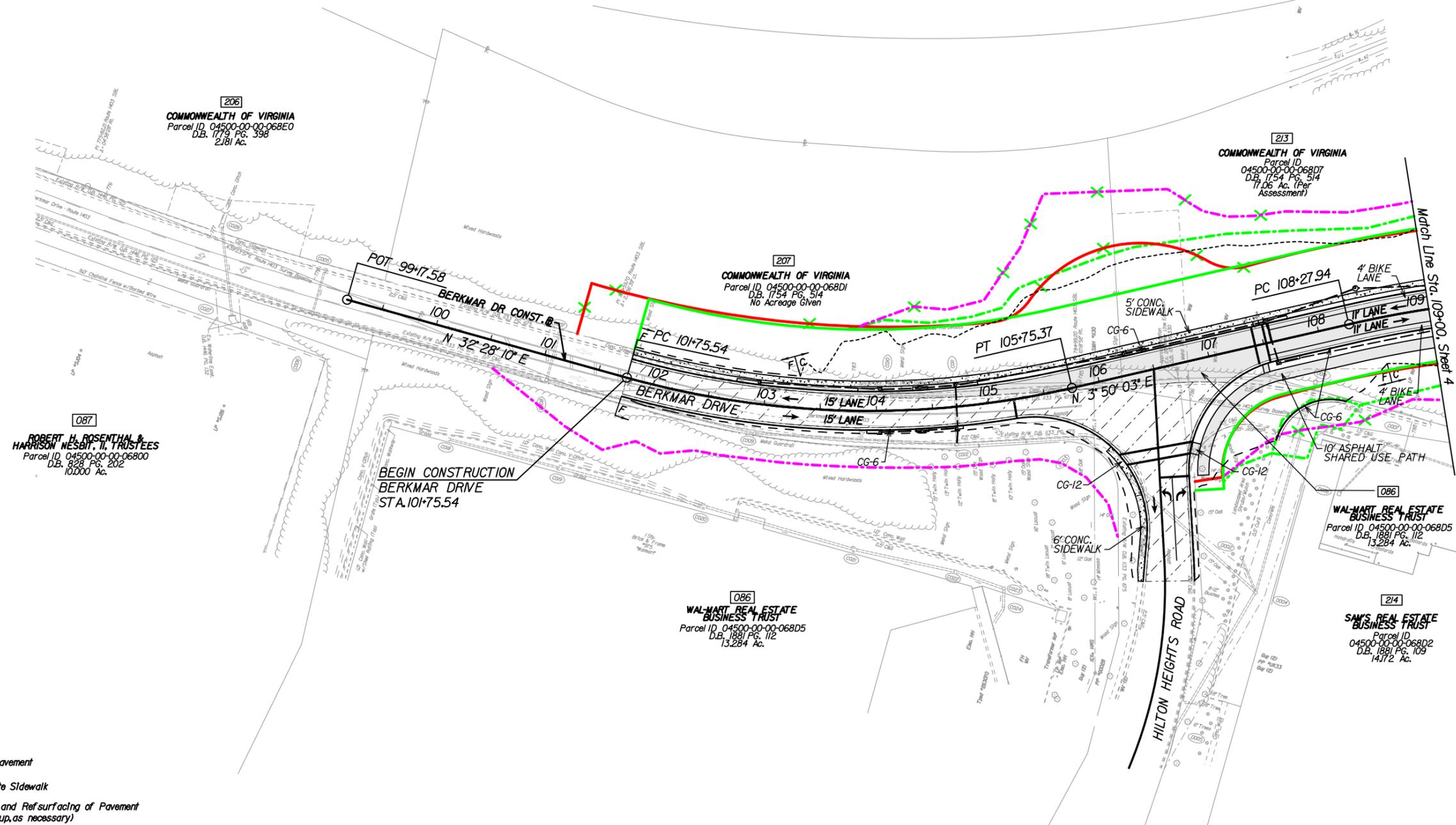
Curve BERKMAR-2  
PI = 110+81.32  
DELTA = 28° 26' 14.74" (RT)  
D = 5° 43' 46"  
T = 253.39'  
L = 496.33'  
R = 1000.00'  
PC = 108+27.94  
PT = 113+24.27  
SE = N.C.  
DS = 40 MPH

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	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	3



MAINTENANCE OF TRAFFIC NOTE:  
CONSTRUCTION OF PROPOSED ROADWAY WILL REQUIRE PHASED CONSTRUCTION OF THE INTERSECTION. TRAFFIC TO BE MAINTAINED INCLUDING ACCESS TO SAM'S CLUB PARKING LOT.



087  
ROBERT H. ROSENTHAL &  
HARRISON NESBIT, II, TRUSTEES  
Parcel ID 04500-00-00-06800  
D.B. 828 Pg. 202  
10.000 Ac.

206  
COMMONWEALTH OF VIRGINIA  
Parcel ID 04500-00-00-06800  
D.B. 1779 Pg. 398  
2.181 Ac.

207  
COMMONWEALTH OF VIRGINIA  
Parcel ID 04500-00-00-06801  
D.B. 1754 Pg. 514  
No Acreage Given

213  
COMMONWEALTH OF VIRGINIA  
Parcel ID 04500-00-00-06807  
D.B. 1754 Pg. 514  
17.06 Ac. (Per Assessment)

086  
WAL-MART REAL ESTATE  
BUSINESS TRUST  
Parcel ID 04500-00-00-06805  
D.B. 1881 Pg. 112  
13.284 Ac.

086  
WAL-MART REAL ESTATE  
BUSINESS TRUST  
Parcel ID 04500-00-00-06805  
D.B. 1881 Pg. 112  
13.284 Ac.

214  
SAM'S REAL ESTATE  
BUSINESS TRUST  
Parcel ID 04500-00-00-06802  
D.B. 1881 Pg. 109  
14.172 Ac.

- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

**PROPOSED UTILITY IMPACTS**

IMPACTED UTILITY	UTILITY OWNER
8" Sanitary Sewer	ACSA
10" Water	ACSA

NOTE:  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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

**SKANSKA** BranchHighways **JMT**

SCALE 0 50' 100'

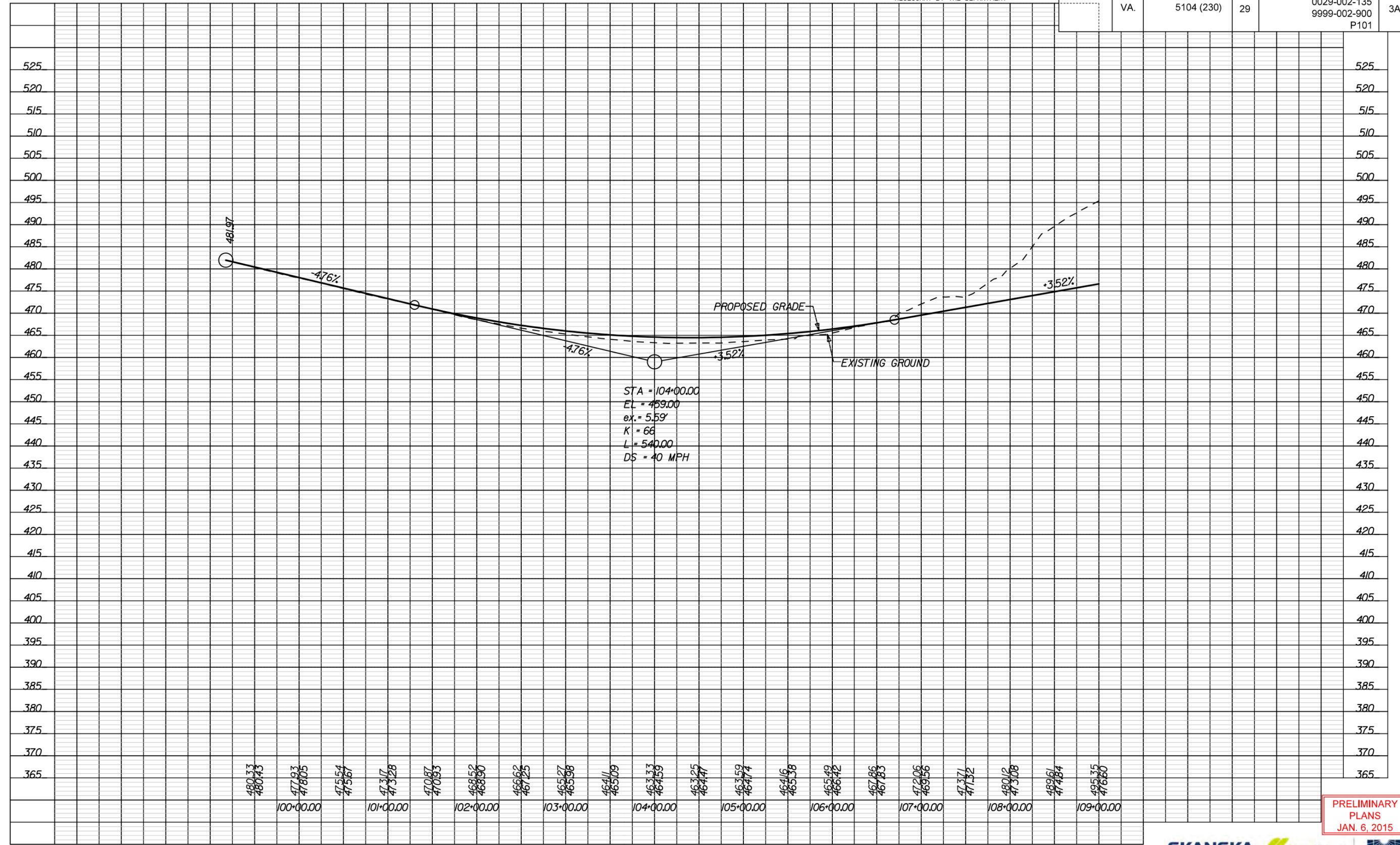
PROJECT 9999-002-900 SHEET NO. 95 of 120

**PRELIMINARY PLANS**  
JAN. 6, 2015

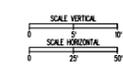
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DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	3A



BERKMAR DRIVE (40 MPH)



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

PRELIMINARY PLANS  
JAN. 6, 2015

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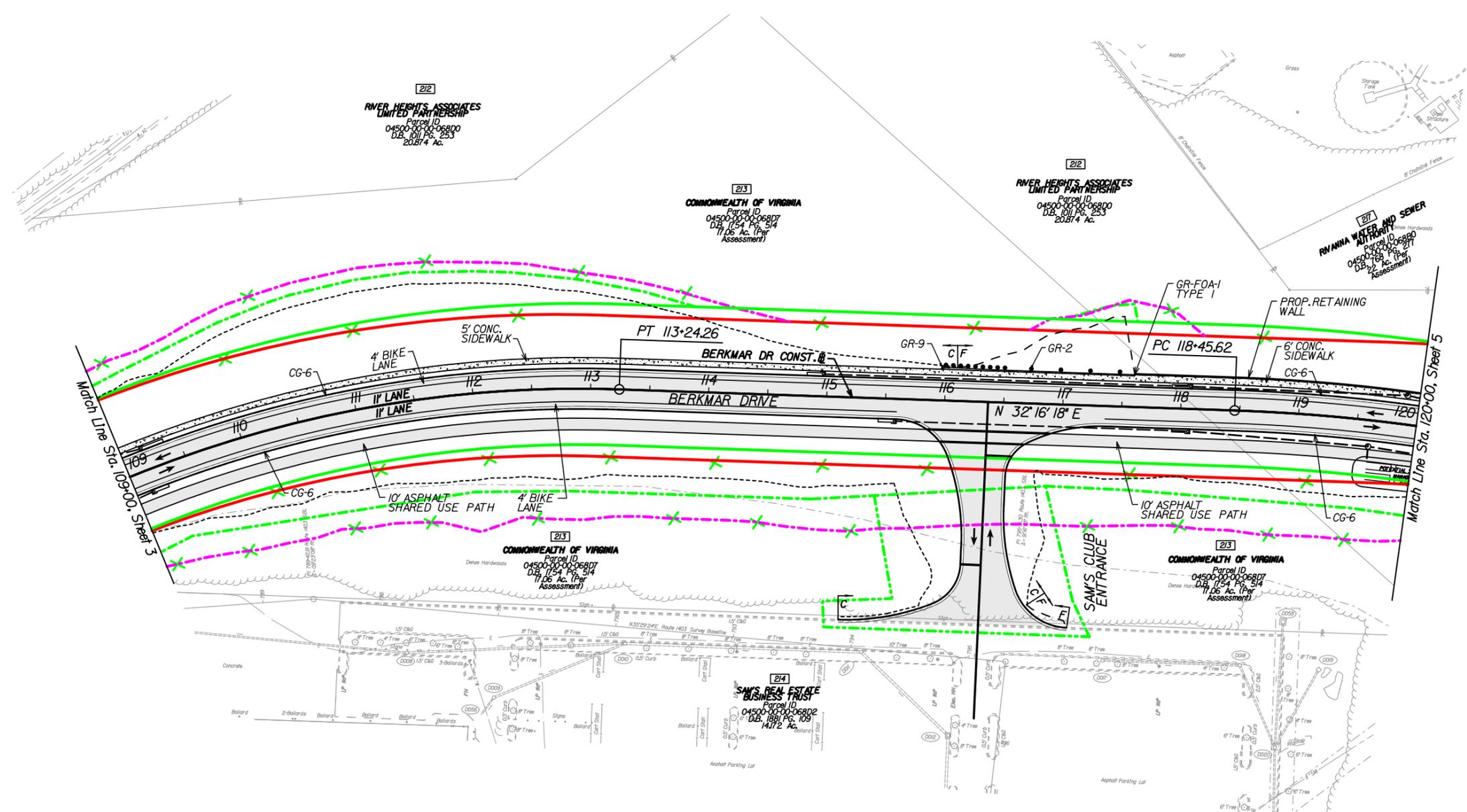
PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		9999-002-900	96 of 120

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	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	4

**Curve BERKMAR-2**  
 PI = 110+81.32  
 DELTA = 28° 28' 14.7" (RT)  
 D = 5' 43" 46"  
 T = 253.39'  
 L = 496.33'  
 R = 1,000.00'  
 PC = 108+27.94  
 PT = 113+24.26  
 SE = N.C.  
 DS = 40 MPH

**Curve BERKMAR-3**  
 PI = 119+85.74  
 DELTA = 10° 40' 25.37" (RT)  
 D = 3' 49' 11"  
 T = 140.12'  
 L = 279.44'  
 R = 1,500.00'  
 PC = 118+45.62  
 PT = 121+25.06  
 SE = N.C.  
 DS = 40 MPH



- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

NOTE:  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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

**SKANSKA** BranchHighways **JMT**

SCALE 0 50' 100'

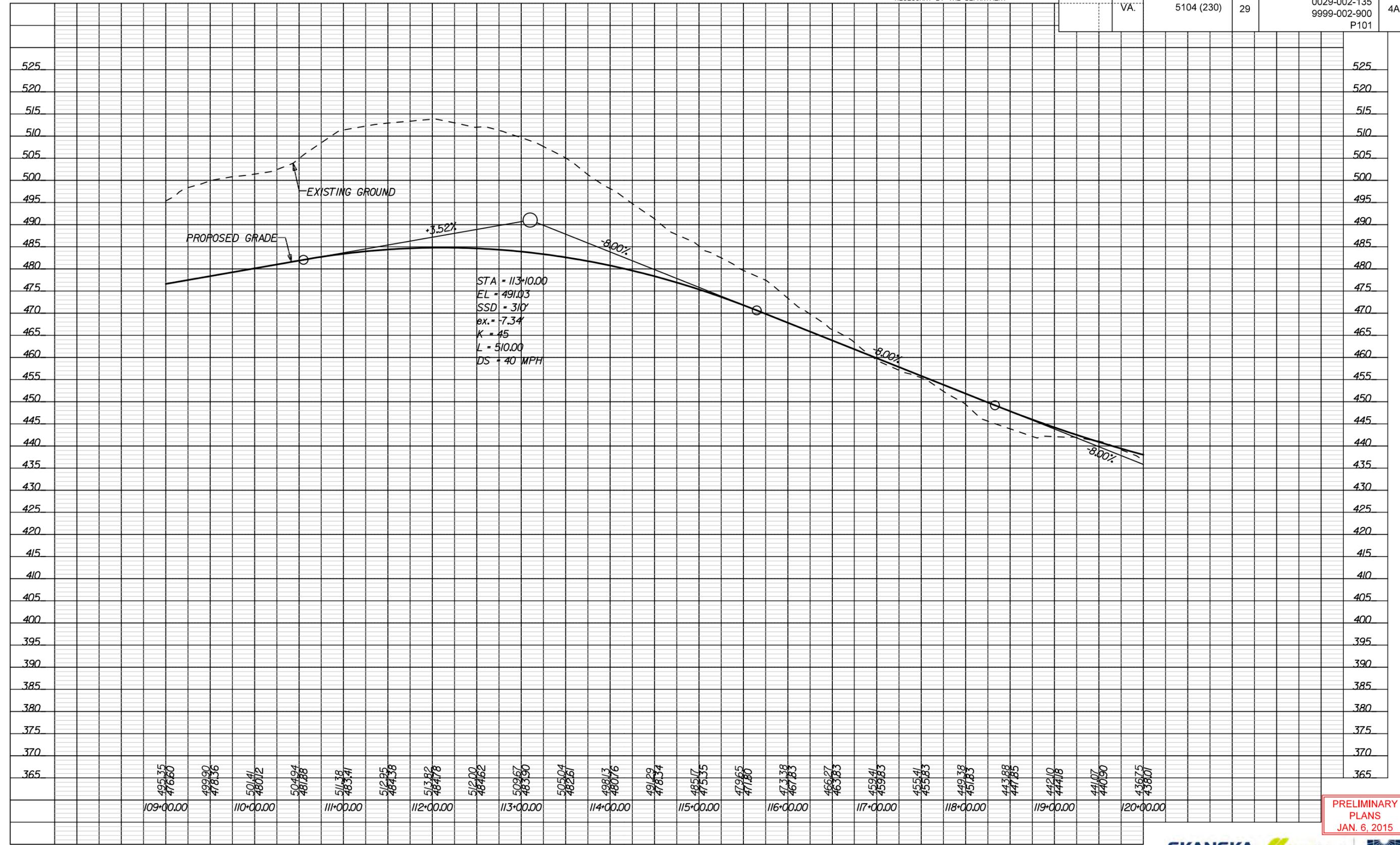
PROJECT 9999-002-900 SHEET NO. 97 of 120

PRELIMINARY  
PLANS  
JAN. 6, 2015

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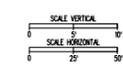
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	4A



STA = 113+10.00  
EL = 491.03  
SSD = 310'  
e.x. = -7.34  
K = 45  
L = 510.00  
DS = 40 MPH

BERKMAR DRIVE (40 MPH)



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PRELIMINARY PLANS  
JAN. 6, 2015

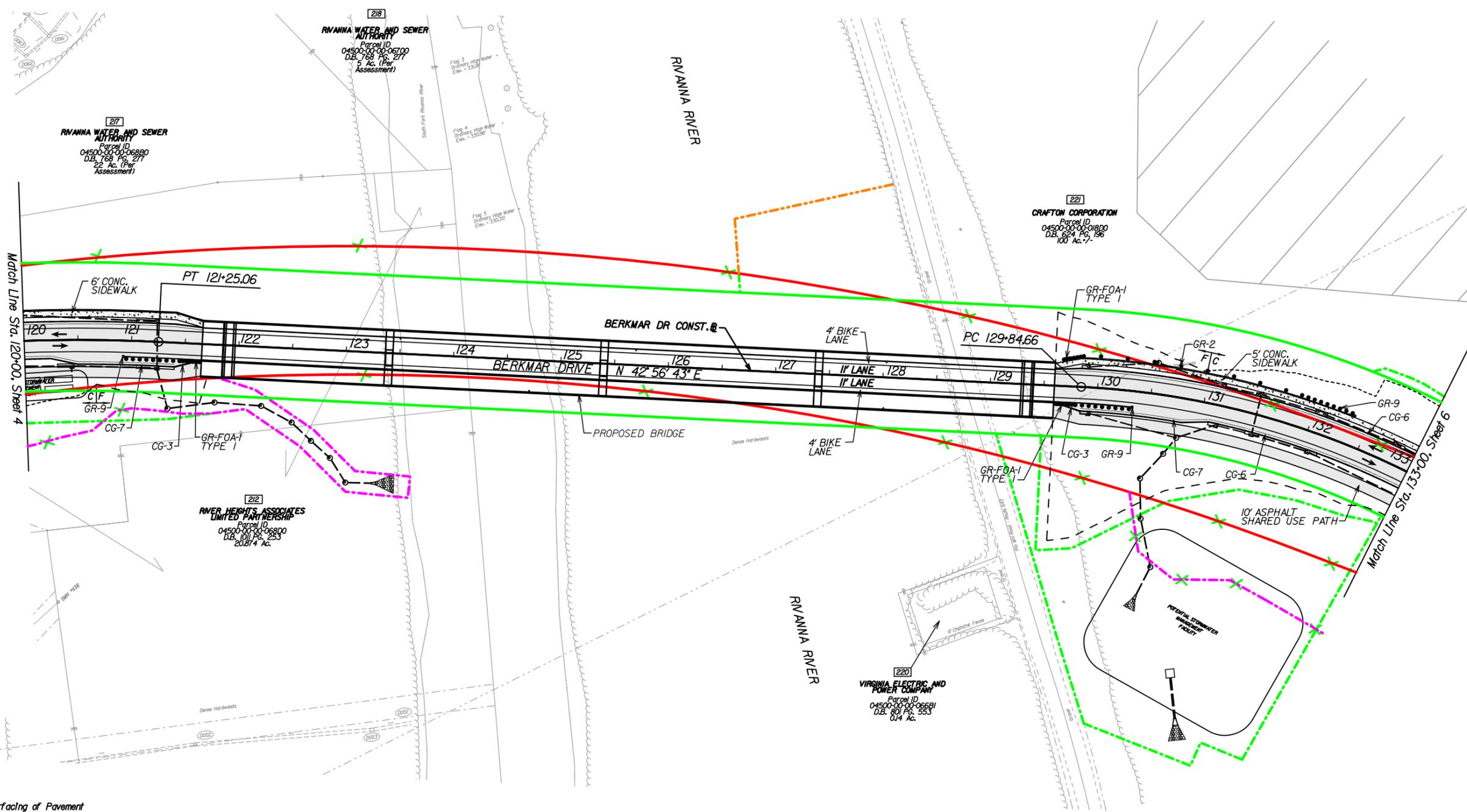
SKANSKA | BranchHighways | JMT

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		9999-002-900	98 of 120

Curve BERKMAR-4  
PI = 131+56.92  
DELTA = 25° 28' 35.84" (RT)  
D = 7' 31" 09"  
T = 172.26'  
L = 338.82'  
R = 762.00'  
PC = 129+84.66  
PT = 133+23.49  
SE = N.C.  
DS = 40 MPH

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	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	29		0029-002-091 0029-002-135 9999-002-900 P101	5



- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

PROPOSED UTILITY IMPACTS	
IMPACTED UTILITY	UTILITY OWNER
Aerial Power	Dominion Virginia Power

NOTE:  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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

**SKANSKA** BranchHighways **JMT**

SCALE: 0 50' 100'

PROJECT	9999-002-900	SHEET NO.	99 of 120
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PRELIMINARY PLANS  
JAN. 6, 2015

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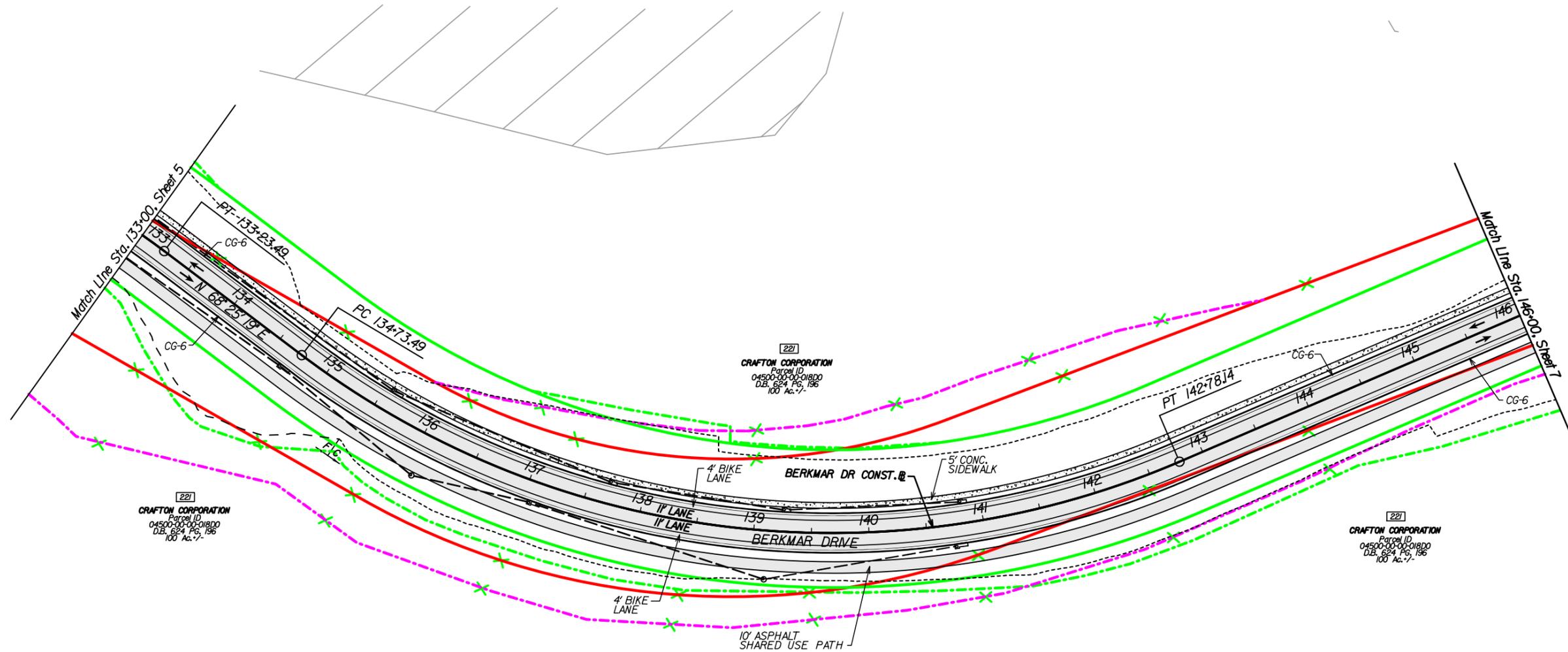


Curve BERKMAR-4  
PI = 131+56.92  
DELTA = 25° 28' 35.84" (RT)  
D = 7' 31" 09"  
T = 172.26'  
L = 338.82'  
R = 762.00'  
PC = 129+84.66  
PT = 133+23.49  
SE = N.C.  
DS = 40 MPH

Curve BERKMAR-5  
PI = 139+17.90  
DELTA = 60° 30' 10.47" (LT)  
D = 7' 31" 09"  
T = 444.41'  
L = 804.65'  
R = 762.00'  
PC = 134+73.49  
PT = 142+78.14  
SE = N.C.  
DS = 40 MPH

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	ROUTE	STATE	PROJECT	SHEET NO.
			PROJECT		
	VA.	29	0029-002-091	0029-002-135	6
			9999-002-900	P101	



- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

NOTE:  
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SKANSKA BranchHighways JMT

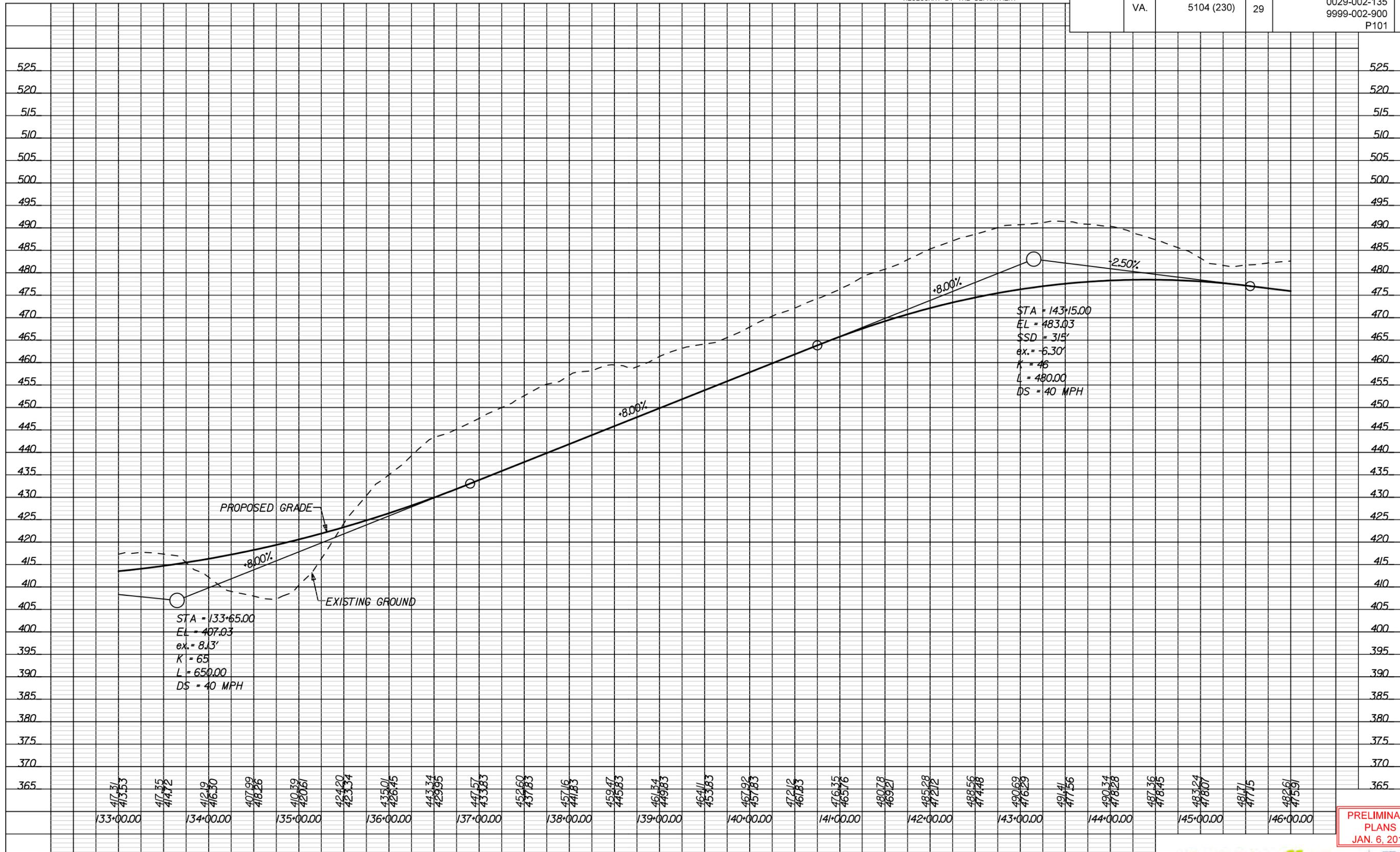
PROJECT 9999-002-900 SHEET NO. 101 of 120

SCALE 0 50' 100'

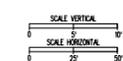
PRELIMINARY PLANS  
JAN. 6, 2015

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	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	6A



**BERKMAR DRIVE (40 MPH)**



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**PRELIMINARY PLANS  
JAN. 6, 2015**

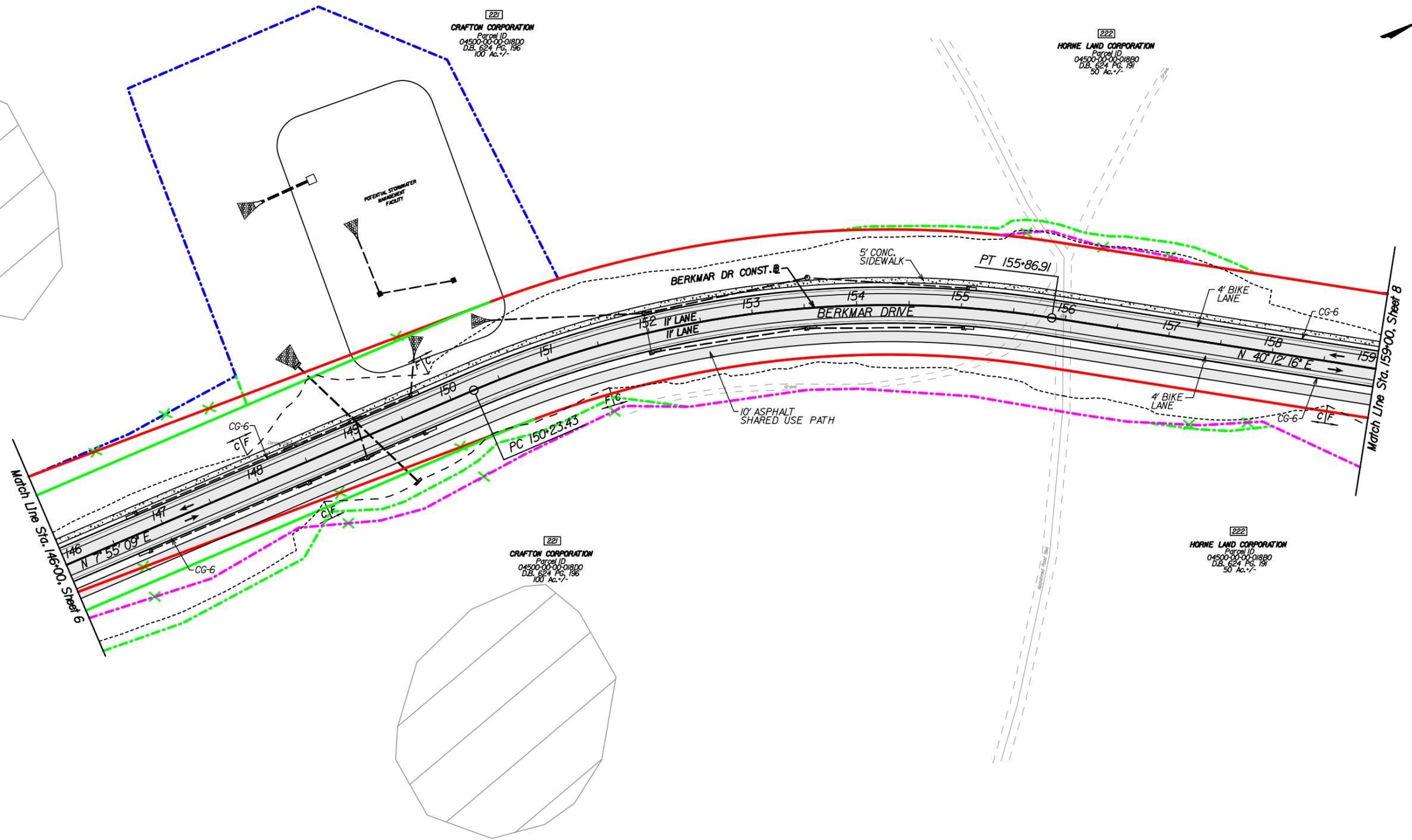
**SKANSKA** BranchHighways **JMT**

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		9999-002-900	102 of 120

Curve BERKMAR-6  
 PI = 153+12.87  
 DELTA = 32° 17' 07.4" (RT)  
 D = 5' 43" 46"  
 T = 289.44'  
 L = 563.49'  
 R = 1,000.00'  
 PC = 150+23.43  
 PT = 155+86.91  
 SE = N.C.  
 DS = 40 MPH

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	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	7



- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

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

**SKANSKA** BranchHighways **JMT**

PROJECT: 9999-002-900 SHEET NO.: 103 of 120

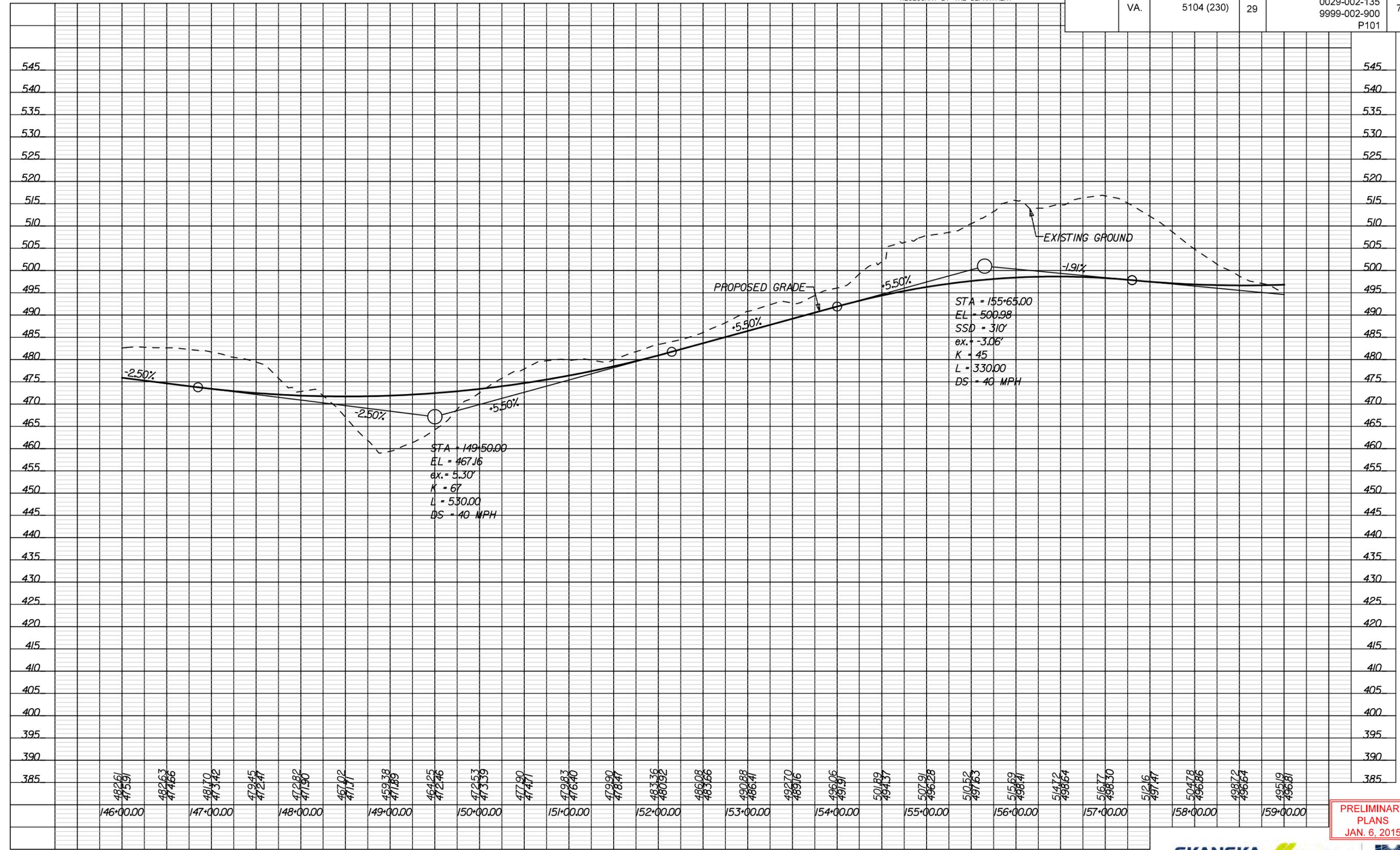
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PRELIMINARY PLANS  
 JAN. 6, 2015

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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

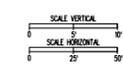
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	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	7A



STA = 149+50.00  
EL = 467.16  
ex. = 5.30'  
K = 67  
L = 330.00  
DS = 40 MPH

STA = 155+65.00  
EL = 500.98  
SSD = 310'  
ex. = -3.06'  
K = 45  
L = 330.00  
DS = 40 MPH

BERKMAR DRIVE (40 MPH)



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

PRELIMINARY PLANS  
JAN. 6, 2015

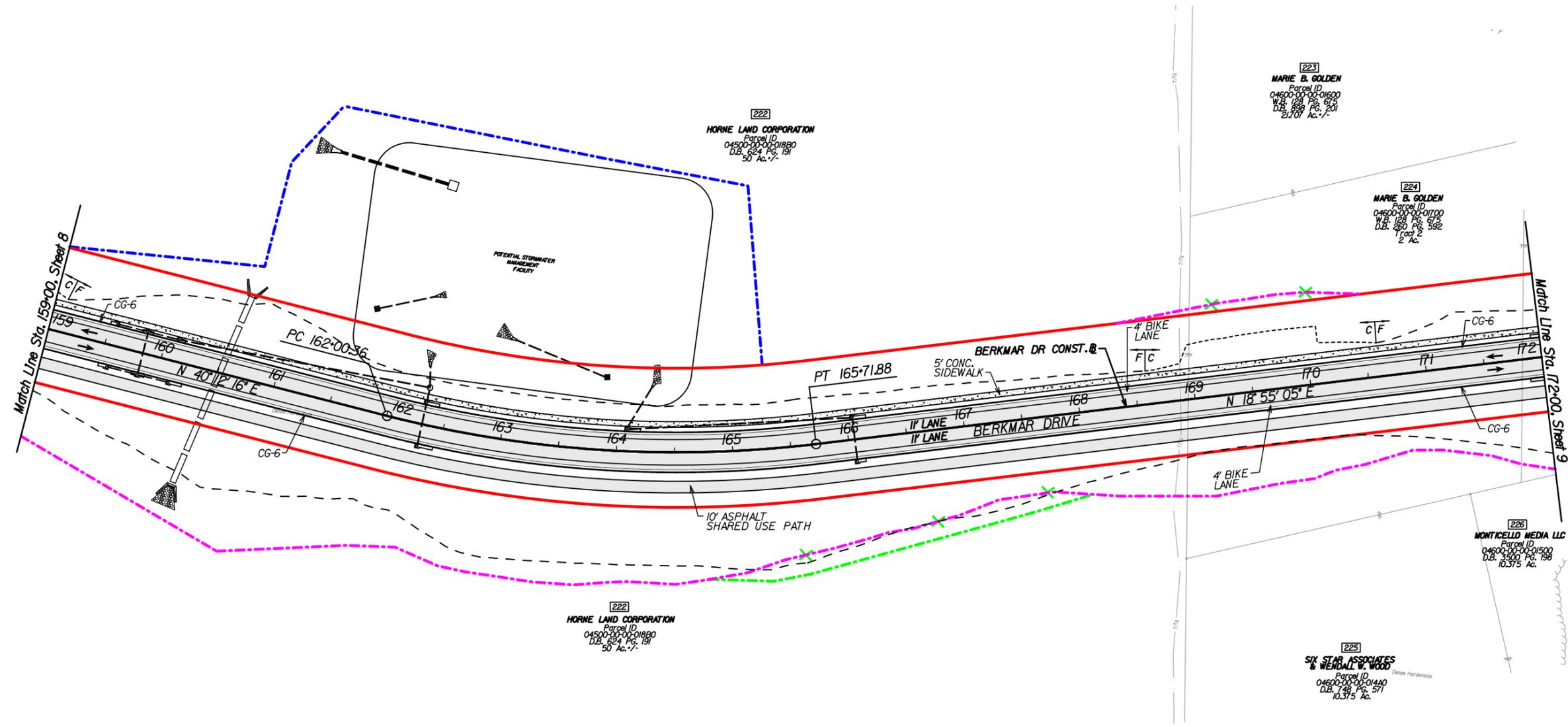
SKANSKA | BranchHighways | JMT

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		9999-002-900	104 of 120

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	ROUTE	STATE	PROJECT	SHEET NO.
			PROJECT		
	VA.	29	0029-002-091	0029-002-135	8
			9999-002-900	P101	

Curve BERKMAR-7  
PI = 163+88.28  
DELTA = 21°17'11.02" (LT)  
D = 5°43'46"  
T = 187.93'  
L = 371.52'  
R = 1,000.00'  
PC = 162+00.36  
PT = 165+71.88  
SE = N.C.  
DS = 40 MPH



**Pavement Legend**

- New Pavement
- Concrete Sidewalk
- Milling and Resurfacing of Pavement (Build up, as necessary)
- RFP Temporary Easement
- RFP Permanent SWM Easement
- RFP Permanent Easement
- RFP Joint Use Permanent Easement
- RFP Right of Way
- Modified Easement
- Modified Right of Way (No Increases to the Proposed Right of Way are Required)

PRELIMINARY  
PLANS  
JAN. 6, 2015

NOTE:  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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

**SKANSKA** BranchHighways **JMT**

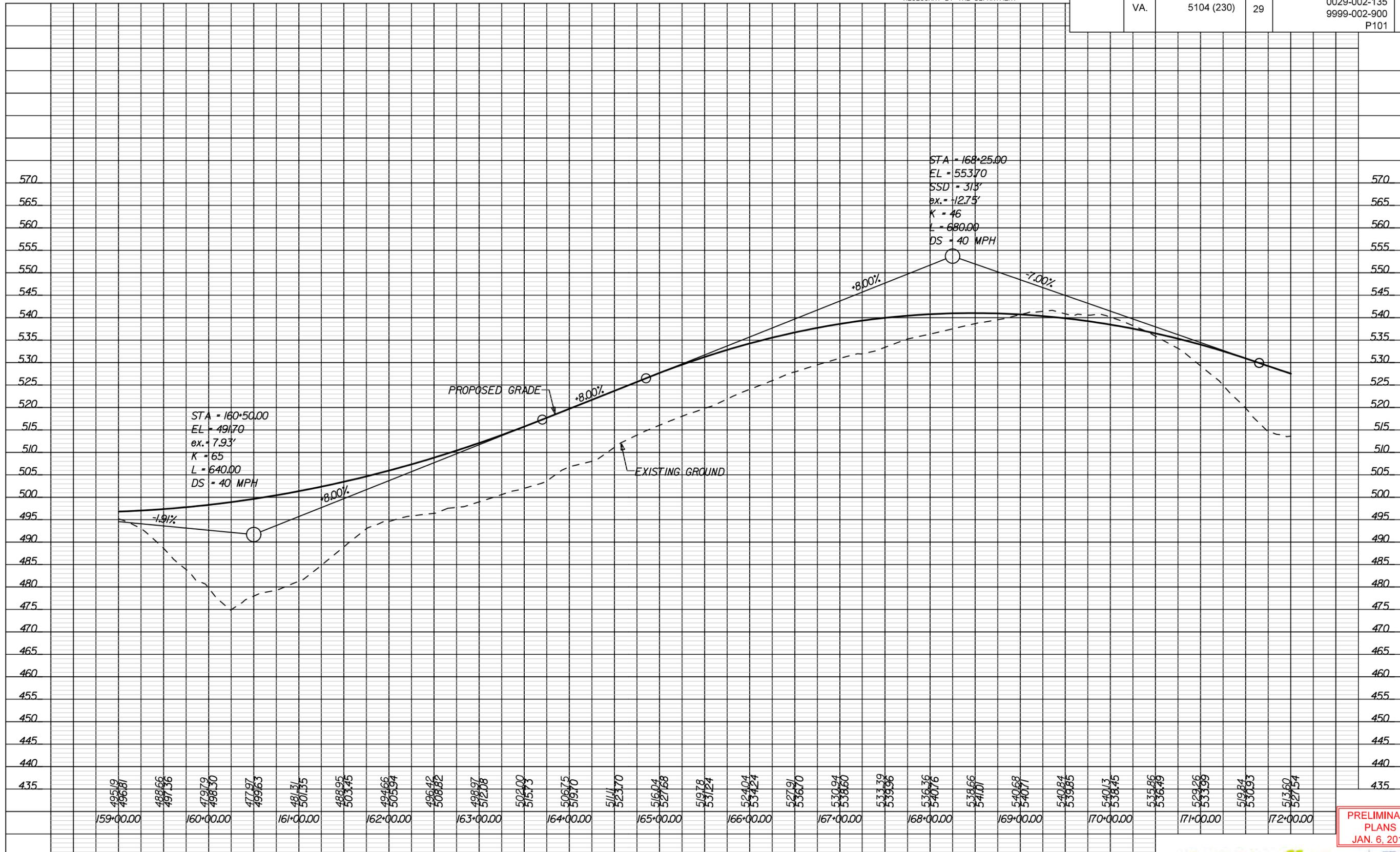
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PROJECT	9999-002-900	SHEET NO.	105 of 120
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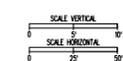
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DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	8A



BERKMAR DRIVE (40 MPH)



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

PRELIMINARY PLANS  
JAN. 6, 2015

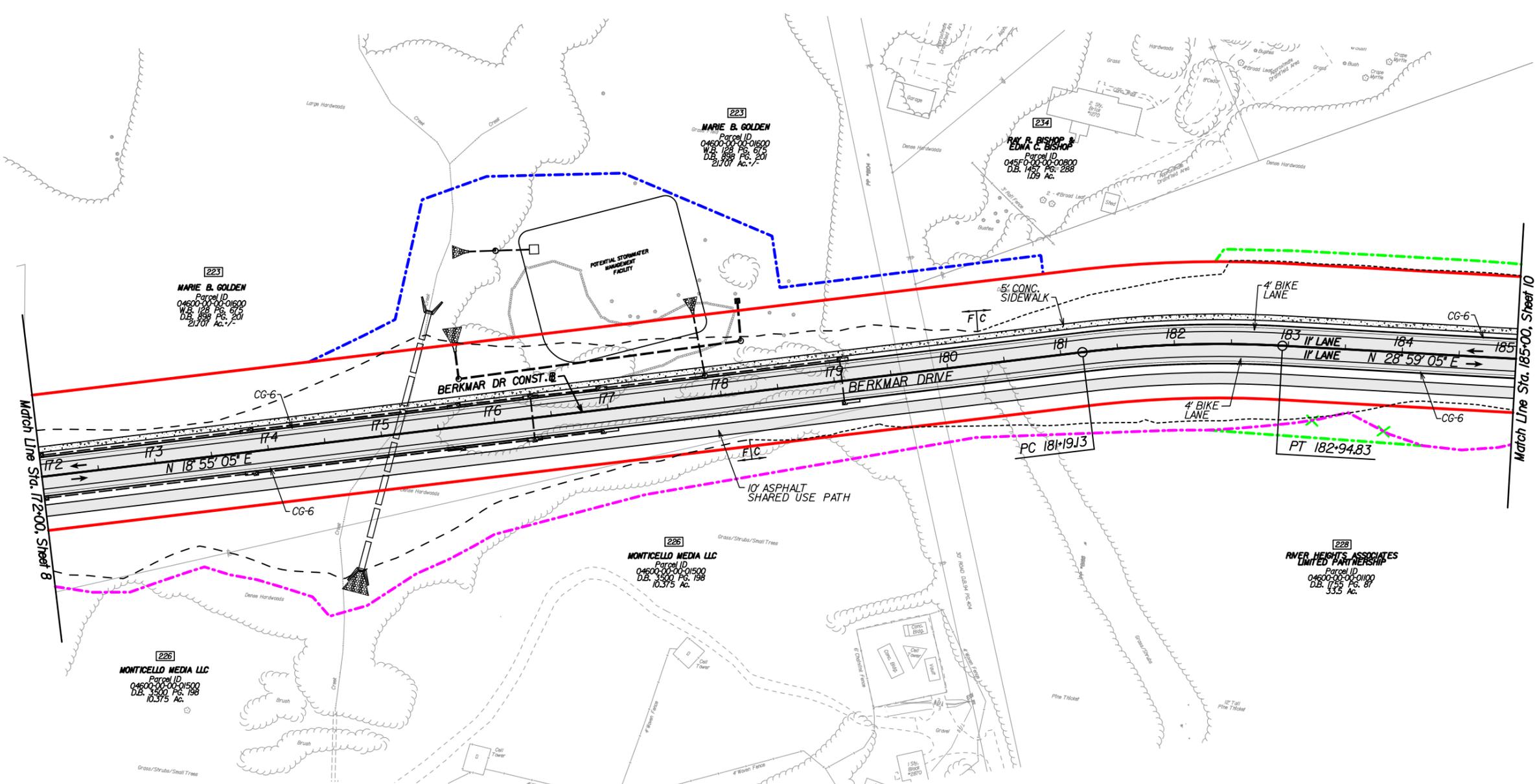
SKANSKA | BranchHighways | JMT

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		9999-002-900	106 of 120

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	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	9

Curve BERKMAR-8  
PI = 182+07.21  
DELTA = 10° 04' 00.28" (RT)  
D = 5' 43' 46"  
T = 88.08'  
L = 175.70'  
R = 1,000.00'  
PC = 181+19.13  
PT = 182+94.83  
SE = N.C.  
DS = 40 MPH



- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

NOTE:  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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

**SKANSKA** BranchHighways **JMT**

SCALE: 0 50' 100'

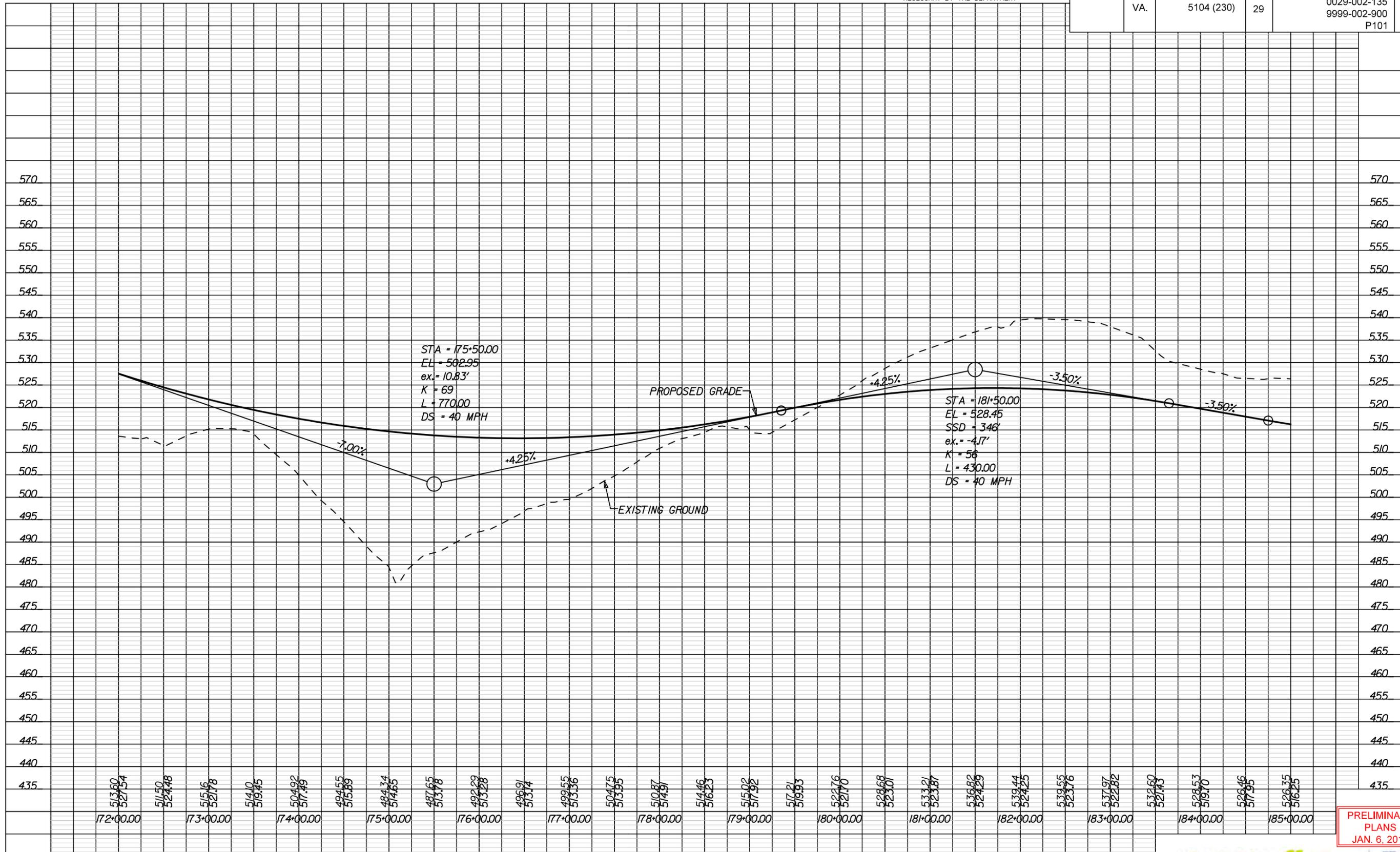
PROJECT: 9999-002-900 SHEET NO.: 107 of 120

PRELIMINARY PLANS  
JAN. 6, 2015

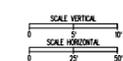
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DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	9A



BERKMAR DRIVE (40 MPH)



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

SKANSKA | BranchHighways | JMT

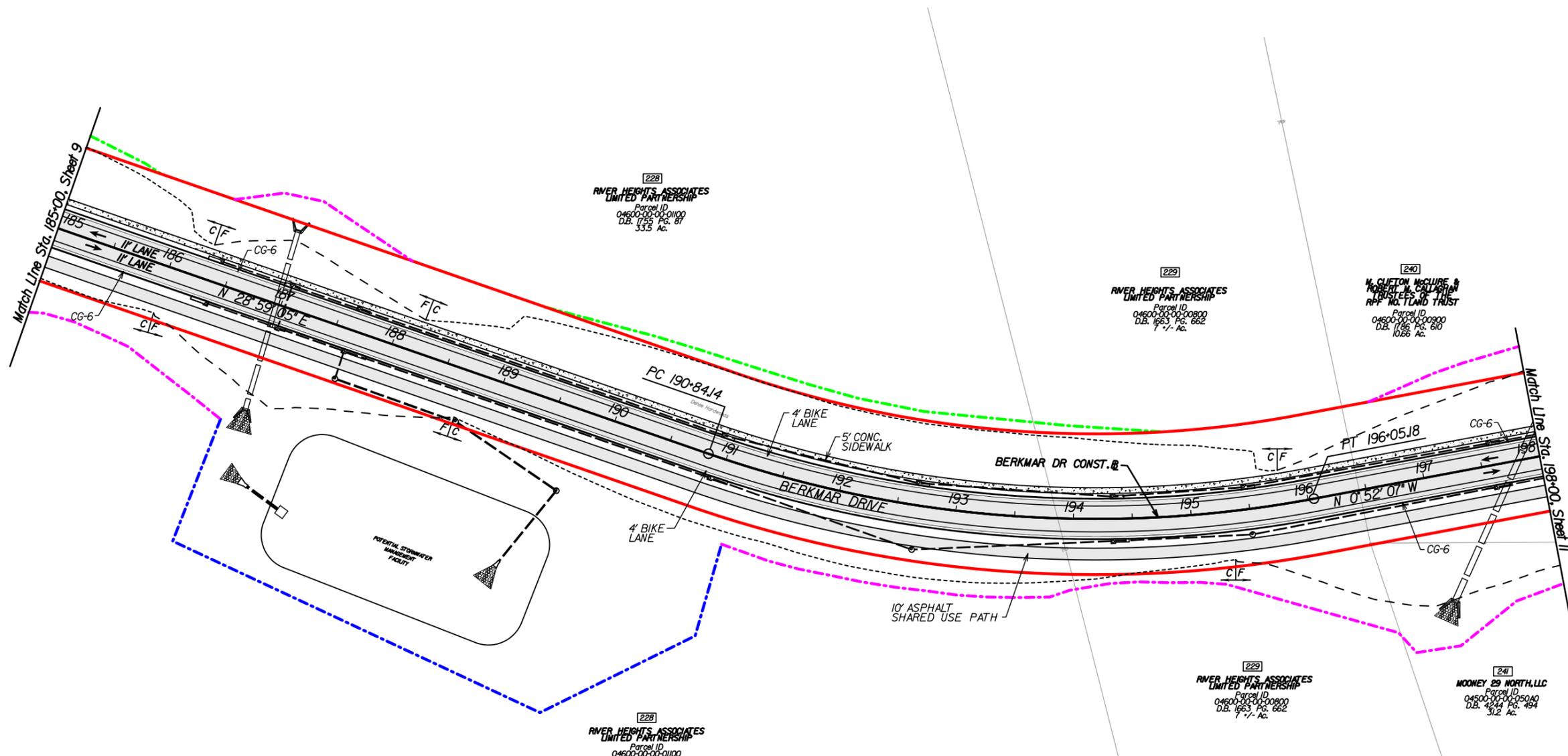
PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		9999-002-900	108 of 120

PRELIMINARY PLANS  
JAN. 6, 2015

Curve BERKMAR-9  
PI = 193+50.72  
DELTA = 29° 51' 12.5" (LT)  
D = 5' 43' 46"  
T = 266.58'  
L = 521.04'  
R = 1,000.00'  
PC = 190+84.14  
PT = 196+05.18  
SE = N.C.  
DS = 40 MPH

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	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	10



- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

PRELIMINARY  
PLANS  
JAN. 6, 2015

NOTE:  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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

SCALE: 0 50' 100'

PROJECT 9999-002-900	SHEET NO. 109 of 120
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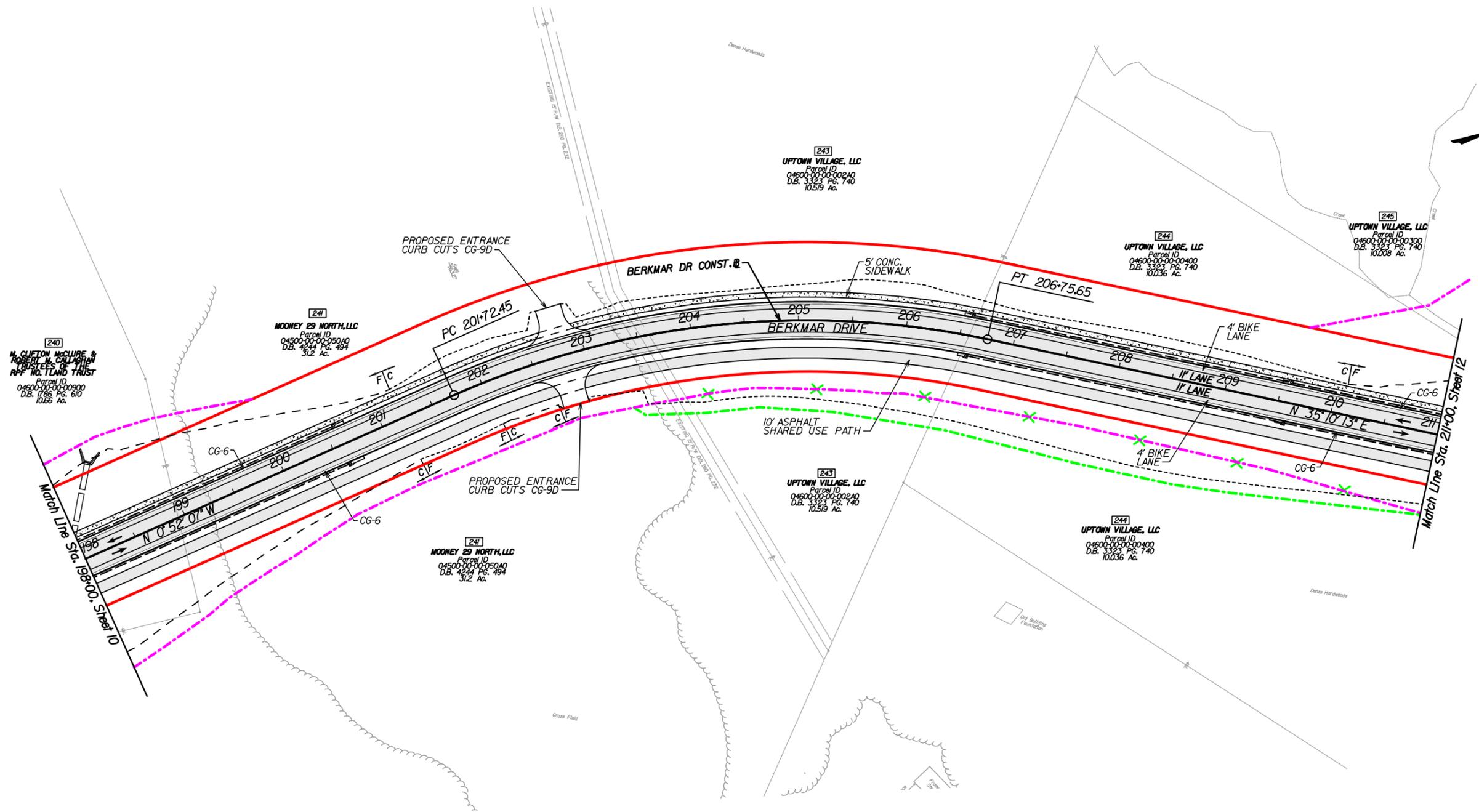
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 wlsner



Curve BERKMAR-10  
 PI = 204+32.69  
 DELTA = 36° 02' 20.35" (RT)  
 D = 7° 09' 43"  
 T = 260.24'  
 L = 503.20'  
 R = 800.00'  
 PC = 201+72.45  
 PT = 206+75.65  
 SE = N.C.  
 DS = 40 MPH

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	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	11



- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

PRELIMINARY  
PLANS  
JAN. 6, 2015

NOTE:  
THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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SKANSKA BranchHighways JMT

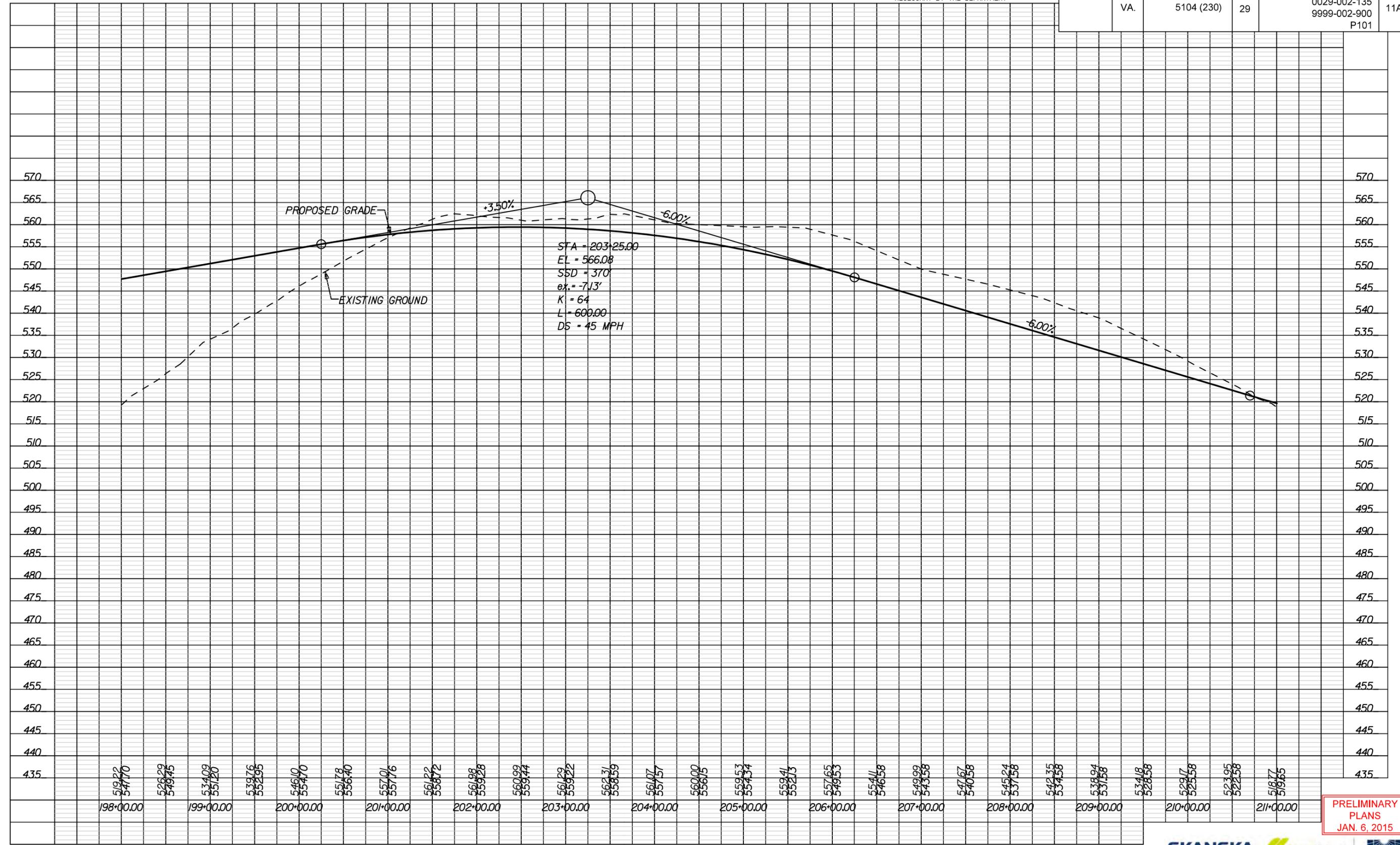
SCALE 0 50' 100'

PROJECT 9999-002-900 SHEET NO. 111 of 120

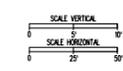
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DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	11A



BERKMAR DRIVE (40 MPH)



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PRELIMINARY PLANS  
JAN. 6, 2015

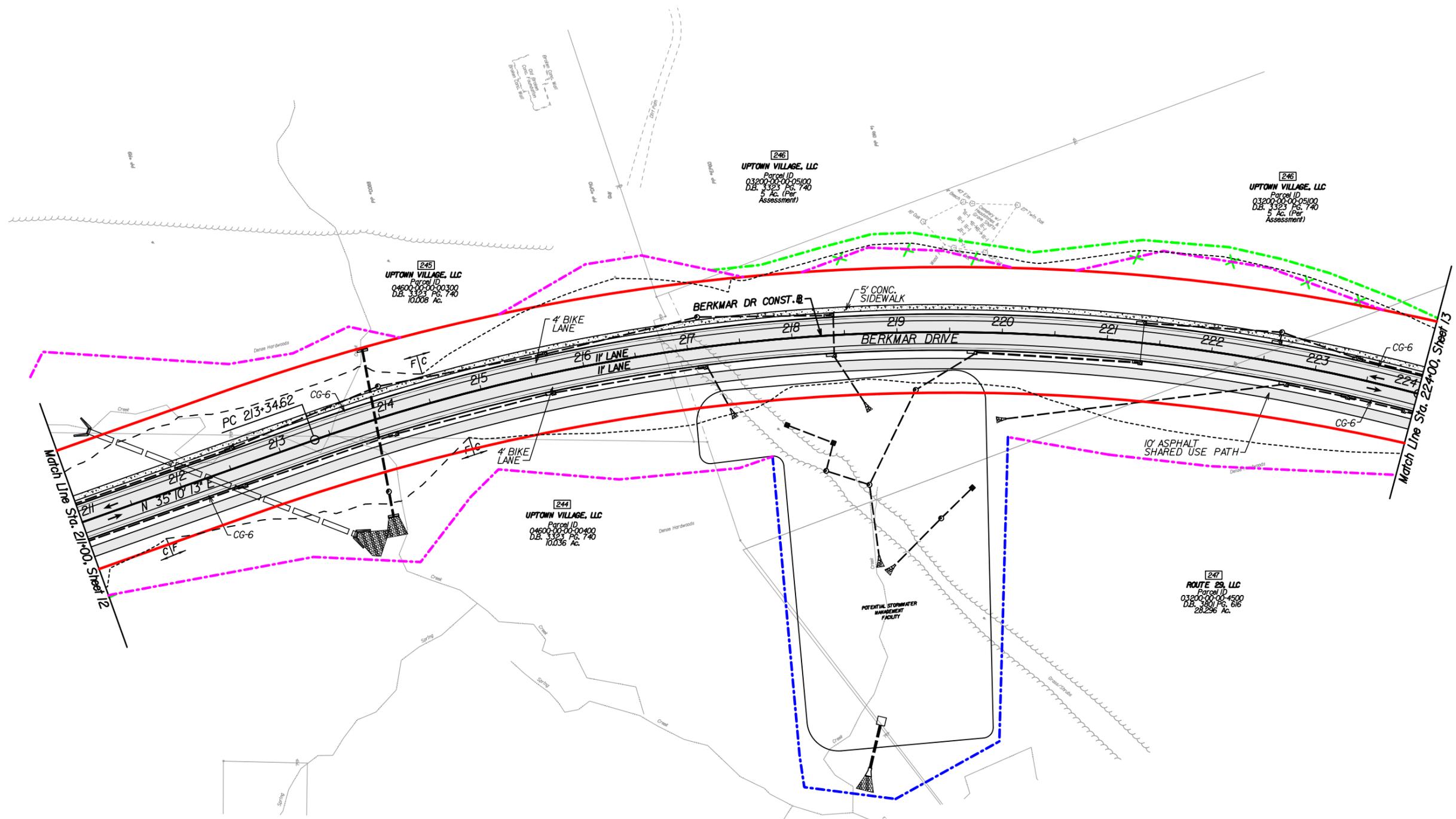
SKANSKA | BranchHighways | JMT

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		9999-002-900	112 of 120

Curve BERKMAR-II  
 PI = 218+84.32  
 DELTA = 34° 24' 50.5" (RT)  
 D = 3' 13" 4"  
 T = 549.69'  
 L = 1066.13'  
 R = 1775.00'  
 PC = 213+34.62  
 PT = 224+00.76  
 SE = N.C.  
 DS = 40 MPH

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	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	12



- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

NOTE:  
 THE DISPOSITION OF EXISTING DRAINAGE PIPES AND CULVERTS WITHIN THE PROJECT LIMITS SHALL BE IN ACCORDANCE WITH RFP SECTION 27.2.

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**SKANSKA** BranchHighways **JMT**

PROJECT: 9999-002-900 SHEET NO.: 113 of 120

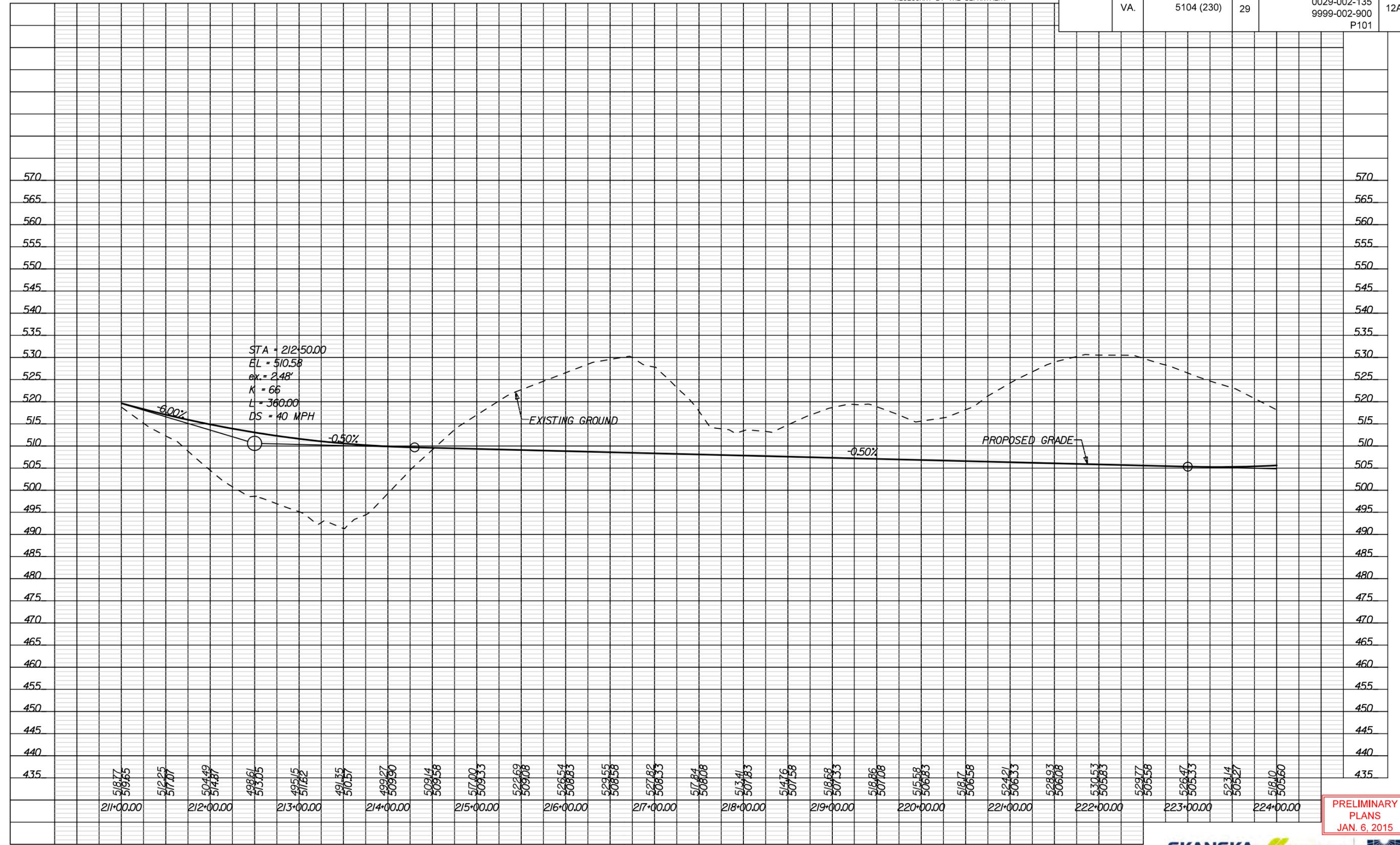
SCALE: 0 50' 100'

PRELIMINARY PLANS  
 JAN. 6, 2015

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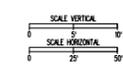
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	12A



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BERKMAR DRIVE (40 MPH)



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

PRELIMINARY PLANS  
JAN. 6, 2015

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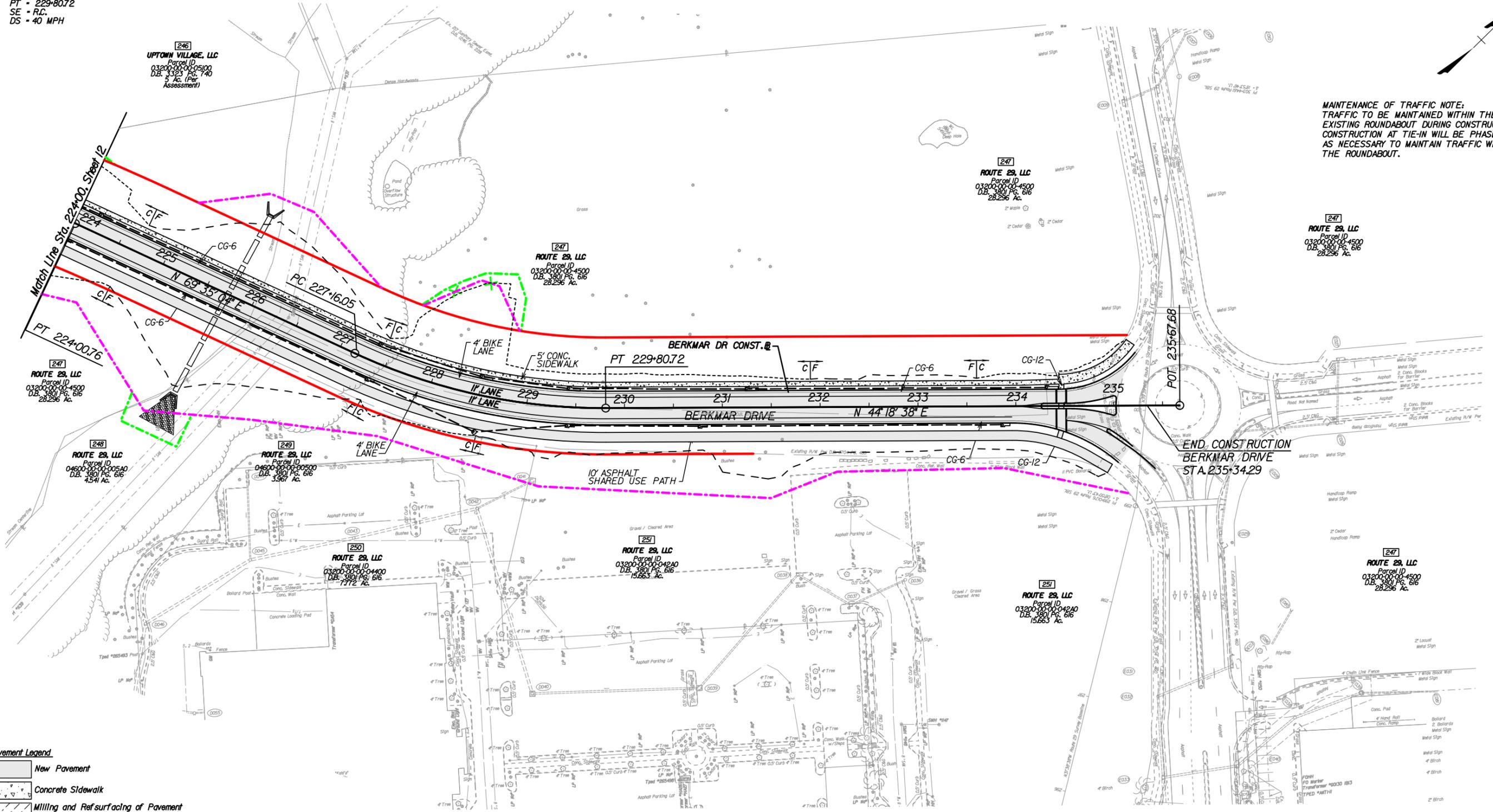
PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		9999-002-900	114 of 120

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	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-091 0029-002-135 9999-002-900 P101	13

Curve BERKMAR-12  
PI = 228+50.57  
DELTA = 25° 16' 25.86" (LT)  
D = 09° 32' 57"  
T = 134.52'  
L = 264.67'  
R = 600.00'  
PC = 227+16.05  
PT = 229+80.72  
SE = R.C.  
DS = 40 MPH

MAINTENANCE OF TRAFFIC NOTE:  
TRAFFIC TO BE MAINTAINED WITHIN THE EXISTING ROUNDABOUT DURING CONSTRUCTION. CONSTRUCTION AT TIE-IN WILL BE PHASED AS NECESSARY TO MAINTAIN TRAFFIC WITHIN THE ROUNDABOUT.



- Pavement Legend**
- New Pavement
  - Concrete Sidewalk
  - Milling and Resurfacing of Pavement (Build up, as necessary)
  - RFP Temporary Easement
  - RFP Permanent SWM Easement
  - RFP Permanent Easement
  - RFP Joint Use Permanent Easement
  - RFP Right of Way
  - Modified Easement
  - Modified Right of Way (No Increases to the Proposed Right of Way are Required)

PROPOSED UTILITY IMPACTS	
IMPACTED UTILITY	UTILITY OWNER
8" Sanitary Sewer	ACSA

NOTE:  
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**SKANSKA** BranchHighways **JMT**

SCALE: 0 50' 100'

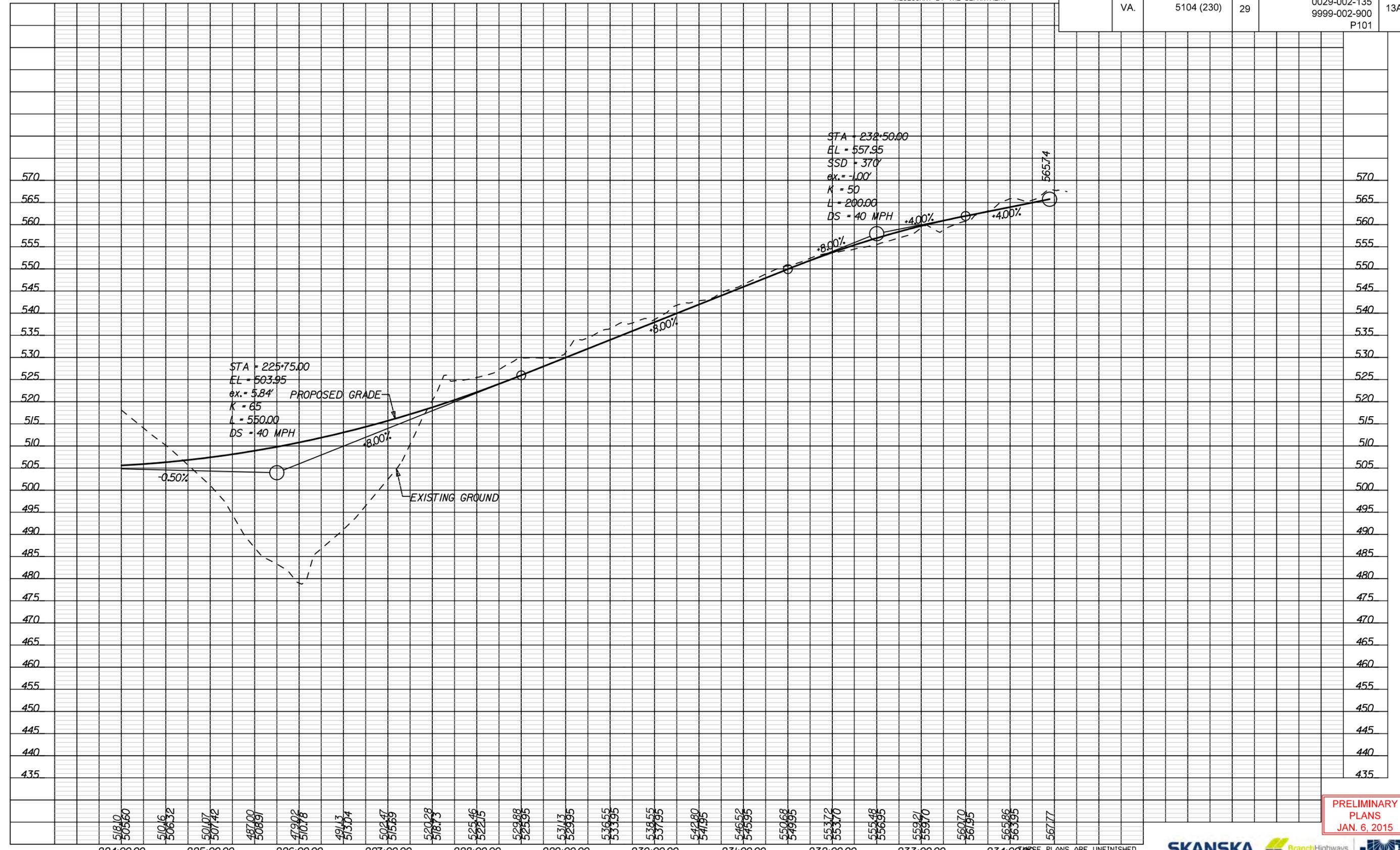
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SHEET NO.	115 of 120

PRELIMINARY PLANS  
JAN. 6, 2015

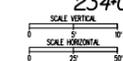
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DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	13A



### BERKMAR DRIVE (40 MPH)



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

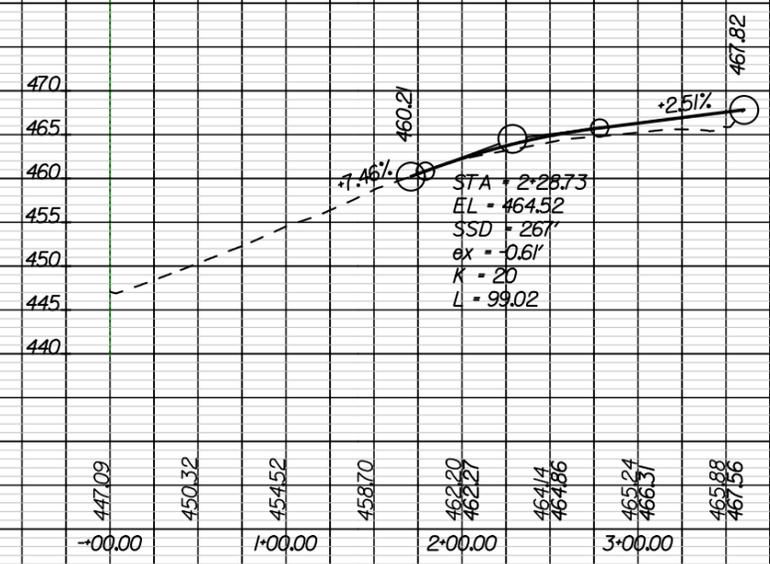
PRELIMINARY PLANS  
JAN. 6, 2015



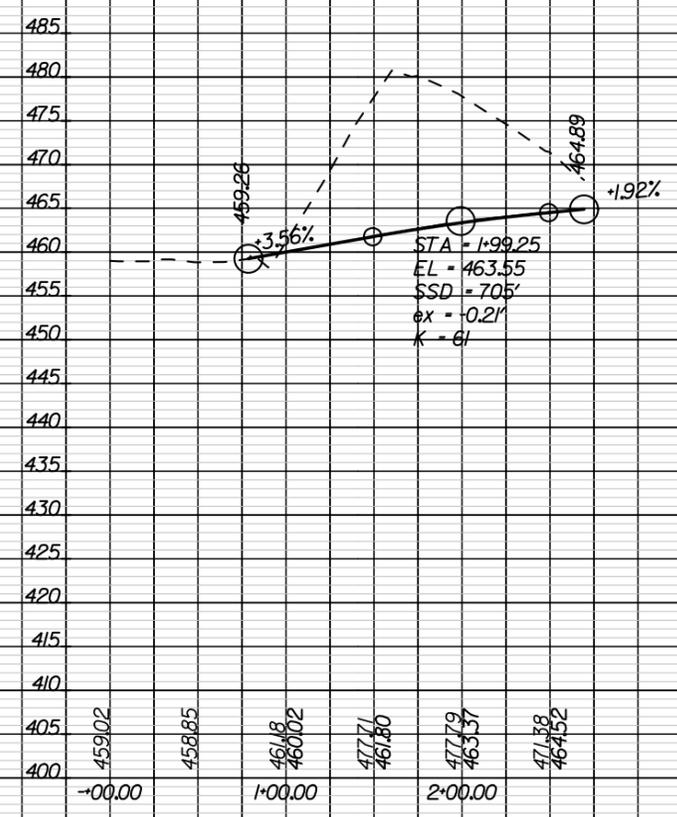
PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		9999-002-900	116 of 120

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

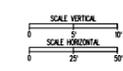
REVISED	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	VA.	5104 (230)	29	0029-002-091 0029-002-135 9999-002-900 P101	13B



HILTON HEIGHTS ROAD



SAM'S CLUB ENTRANCE



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

PRELIMINARY PLANS  
JAN. 6, 2015

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		9999-002-900	117 of 120

Conceptual Structural Plans



STATE	FEDERAL AID	STATE	SHEET NO.
VA.	PROJECT	ROUTE	PROJECT
		1403	9999-002-900, BXXX
NBIS Number:		UPC No.	106137
Federal Oversight Code: N/A		FHWA Construction and Scour Code: X471-S-	

**DESIGN EXCEPTION(S):**

None

**GENERAL NOTES:**

Width: 6'-0" Sidewalk, 30'-0" Roadway, 1'-0" Barrier, 14'-0" Shared Use Path  
Overall width 51'-0" face-to-face of rails.

Span layout: 152'-6" - 200' - 200' - 198'

Capacity: HL-93 loading.

Drainage area: 264 sq. mi.

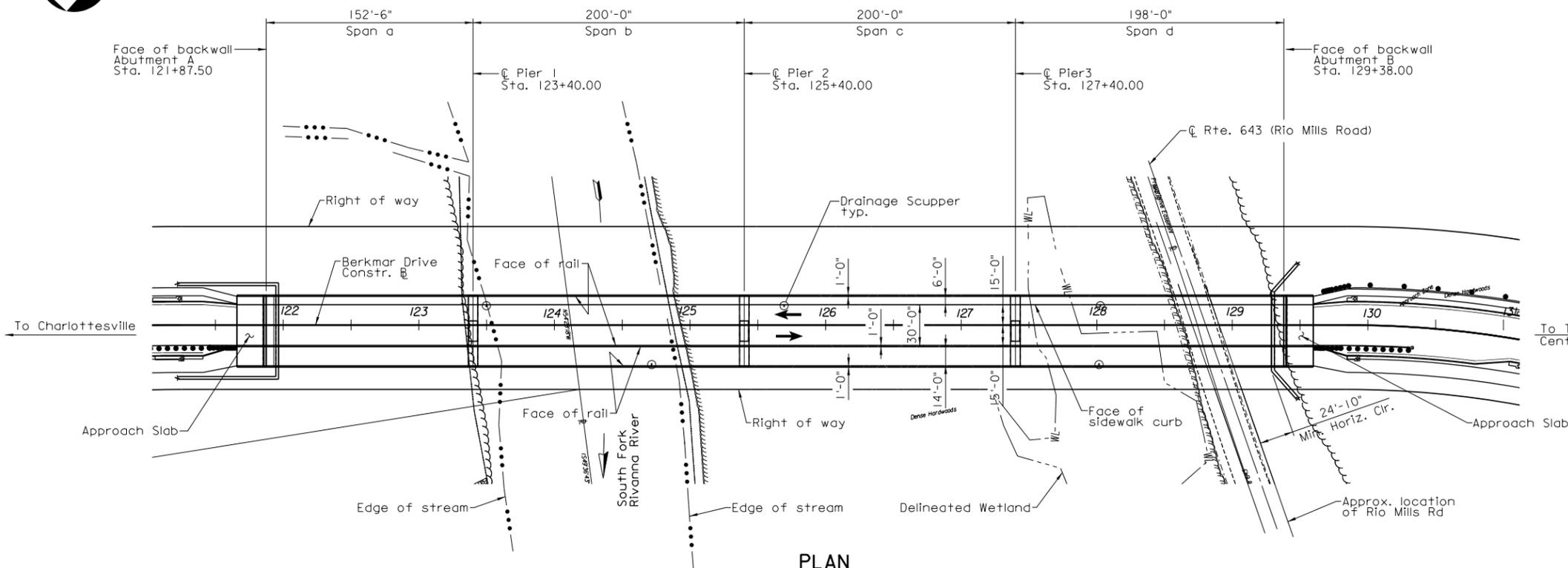
Specifications:

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

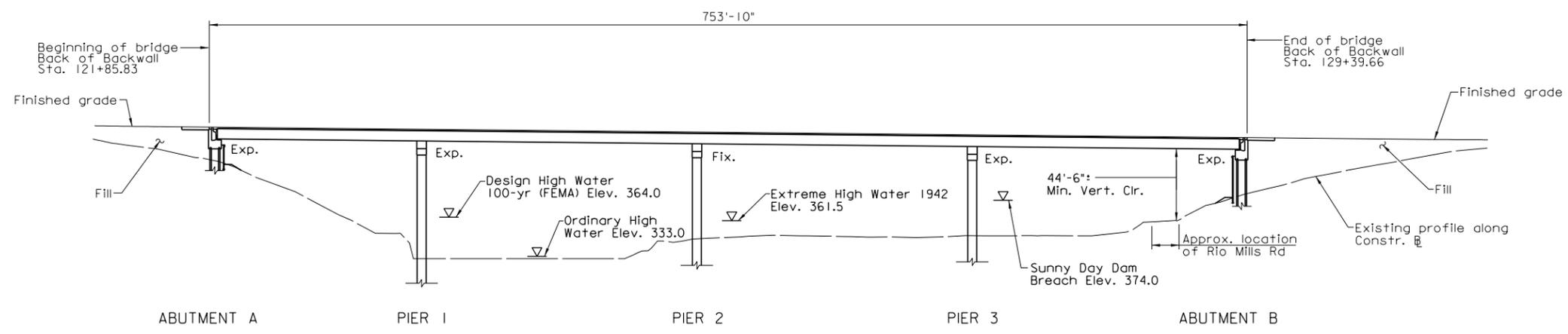
Design: AASHTO LRFD Bridge Design Specifications, 6th Edition, 2012; and VDOT Modifications.

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

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



**PLAN**  
Scale: 1" = 50'-0"



**DEVELOPED SECTION ALONG  $\mathcal{B}$**   
Scale: 1" = 50'-0"

**PRELIMINARY PLANS**  
 THESE PLANS NOT TO BE USED  
 FOR CONSTRUCTION



**COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF TRANSPORTATION**

**PROPOSED BRIDGE ON  
 RTE. 1403 (BERKMAR DRIVE)  
 OVER THE SOUTH FORK RIVANNA RIVER  
 ALBERMARLE CO. 1.4 MI. N. RTE. 631  
 PROJ. 9999-002-900, BXXX**

Recommended for Approval: \_\_\_\_\_ Date \_\_\_\_\_

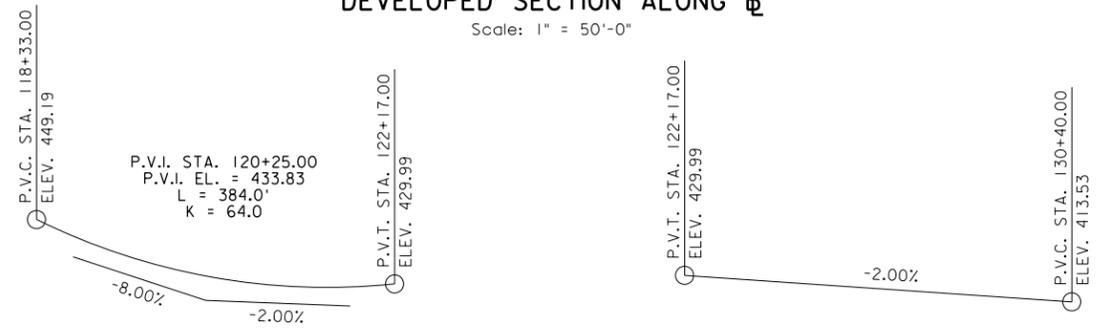
Approved: \_\_\_\_\_ Date \_\_\_\_\_  
 Chief Engineer

b106137-straight-bridge-plan.dgn

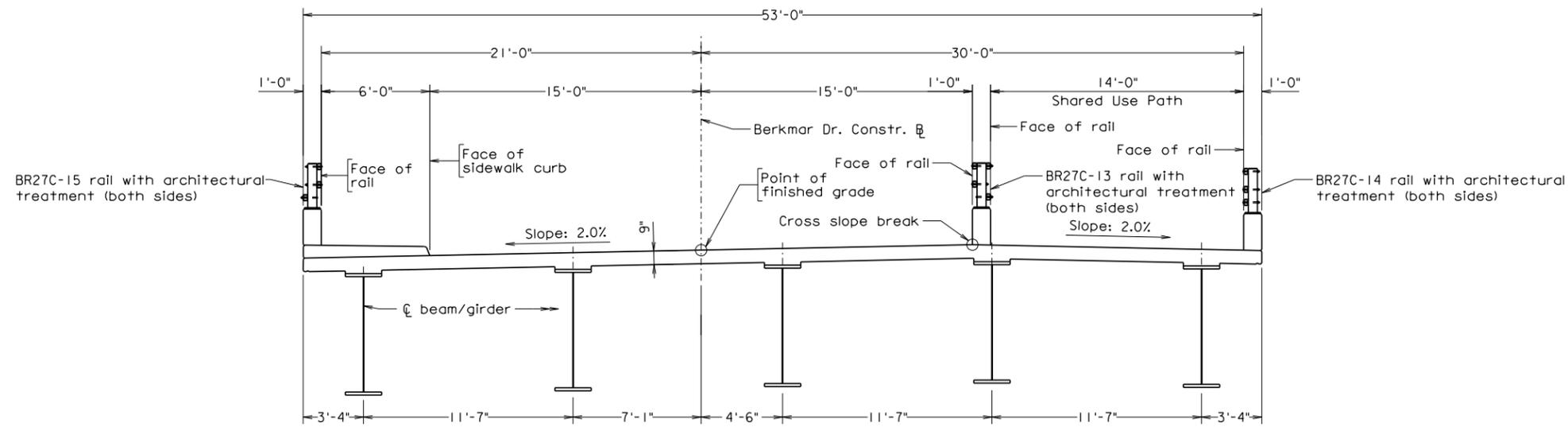
VDOT S&B DIVISION RICHMOND, VA STRUCTURAL ENGINEER
PLANS BY:
COORDINATED:
SUPERVISED:
DESIGNED:
DRAWN:
CHECKED:



**VERTICAL GRADE GEOMETRY**  
N.T.S.



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



TRANSVERSE SECTION  
Scale 1/4" = 1'-0"

PRELIMINARY PLANS  
THESE PLANS NOT TO BE USED  
FOR CONSTRUCTION

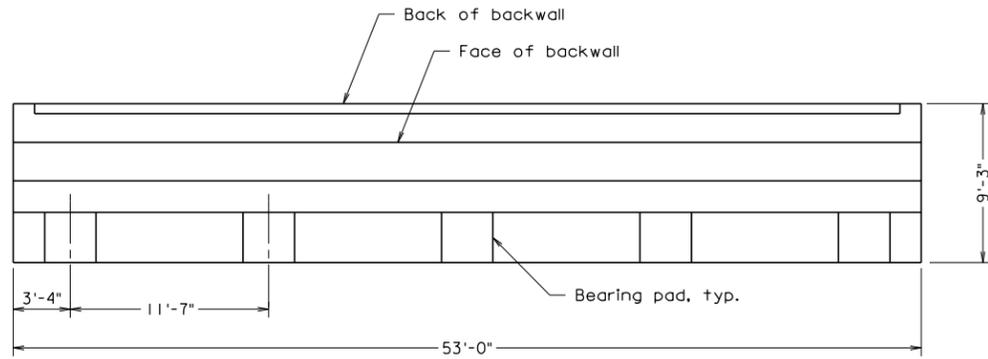


COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION		STRUCTURE AND BRIDGE DIVISION	
<b>TRANSVERSE SECTION</b>			
No.	Description	Date	Designed: .....
			Drawn: .....
			Checked: .....
Revisions		Date	Plan No.
		Jan. 2015	119 of 120

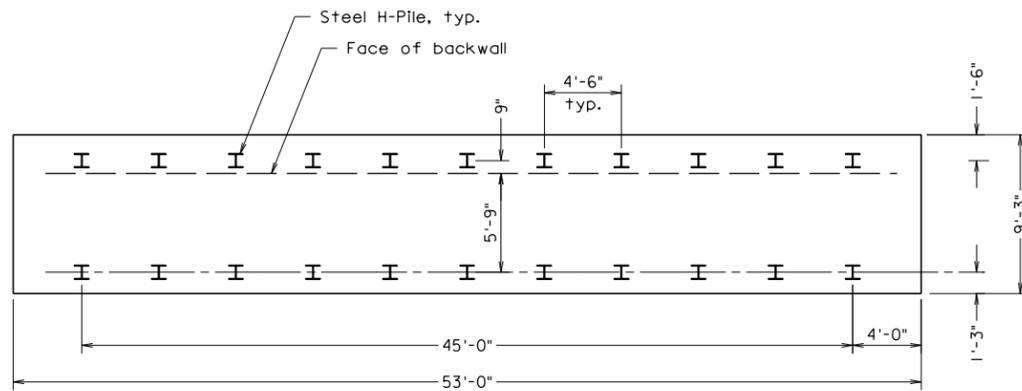
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JOHNSON, MIRMIRAN & THOMPSON  
RICHMOND, VA  
STRUCTURAL ENGINEER

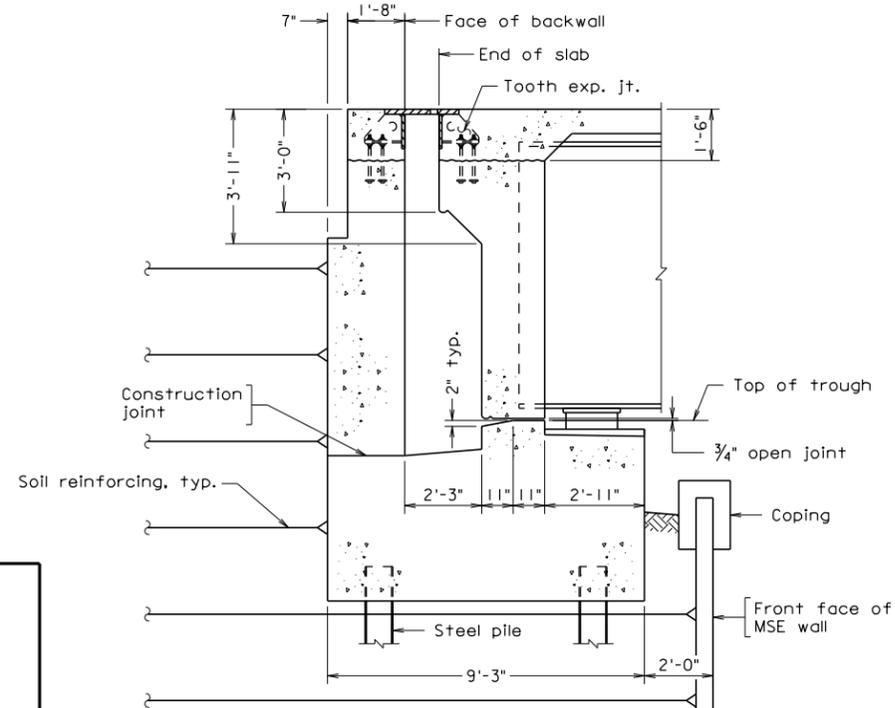
STATE	FEDERAL AID		STATE		SHEET
ROUTE	PROJECT		ROUTE	PROJECT	NO.
VA.			1403	9999-002-900, BXXX	120



TYPICAL ABUTMENT PLAN

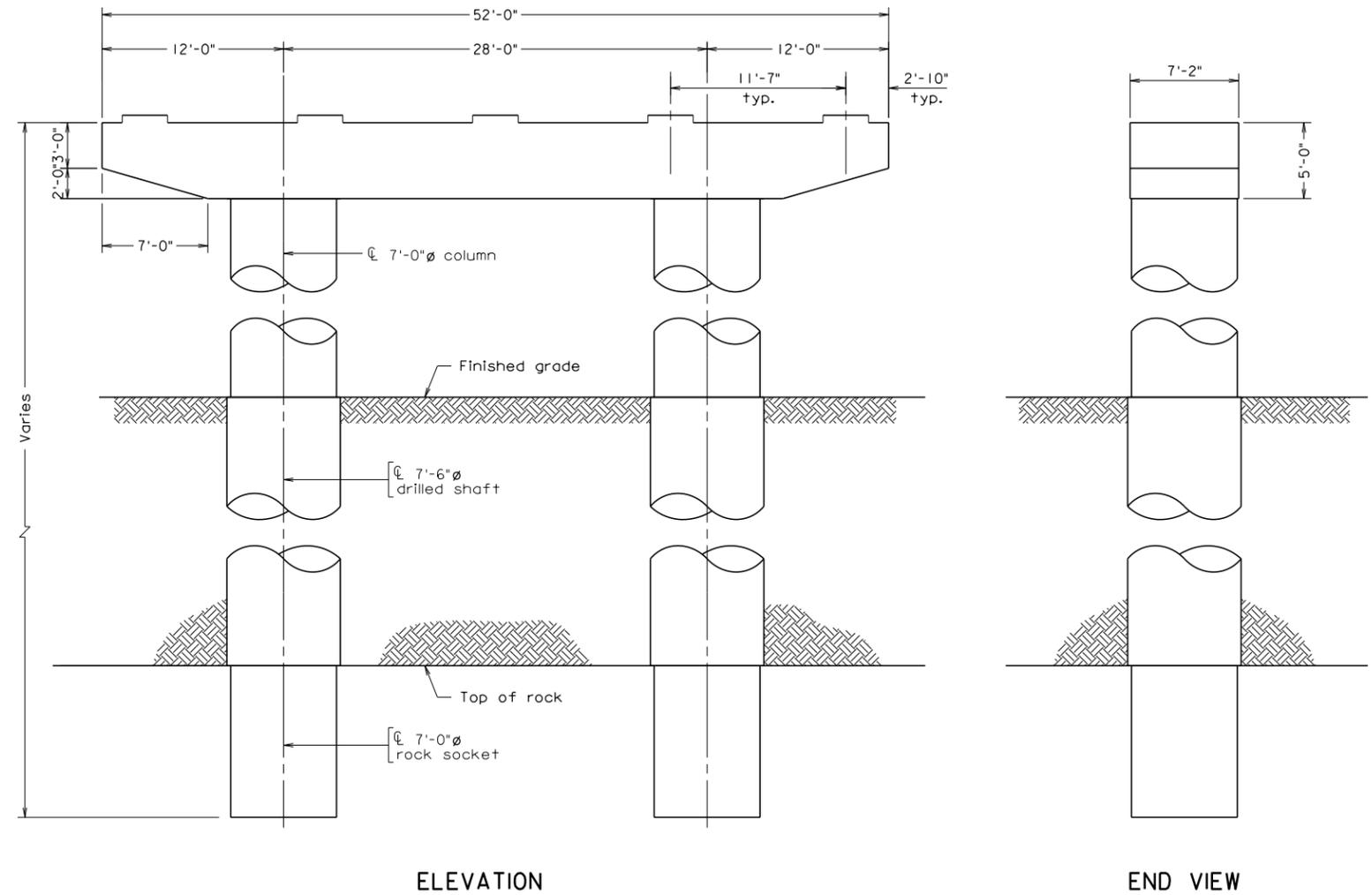


TYPICAL ABUTMENT PILE PLAN



TYPICAL ABUTMENT SECTION

Scale: 3/8" = 1'-0"



ELEVATION

END VIEW

TYPICAL DRILLED SHAFT PIER

PRELIMINARY PLANS  
THESE PLANS NOT TO BE USED  
FOR CONSTRUCTION

Scale: 3/16" = 1'-0" unless otherwise noted

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b106137120.dgn

MOFFATT & NICHOL  
RICHMOND, VA  
STRUCTURAL ENGINEER



COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
STRUCTURE AND BRIDGE DIVISION			
ABUTMENT AND PIER TYPICAL SECTIONS			
No.	Description	Date	Designed: EPV Drawn: TPA Checked: JPA
			Date: Jan. 2015
			Plan No.
			Sheet No. 120 of 120













Activity ID	Activity Name	Orig Dur	Calendar	Early Start	Early Finish	Total Float	2015												2016												2017											
							A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A							
<b>Design Exceptions and Waivers, if Required</b>																																										
212	Complete Exceptions/Waiver Application & Submit	15	5 Day No Weather w/ Holidays	25-Mar-15	14-Apr-15	39	■ Complete Exceptions/Waiver Application & Submit																																			
213	Agency Review and Meeting if Required	14	7 Day No Weather No Holidays	15-Apr-15	28-Apr-15	56	■ Agency Review and Meeting if Required																																			
214	Update and Resubmit Exceptions/Waiver	10	5 Day No Weather w/ Holidays	29-Apr-15	12-May-15	39	■ Update and Resubmit Exceptions/Waiver																																			
215	Agency Review and Approval of Exception/Waiver	14	7 Day No Weather No Holidays	13-May-15	26-May-15	57	■ Agency Review and Approval of Exception/Waiver																																			
<b>Supplemental Field Surveys</b>																																										
217	Prepare Property Owner Notification Letters for Surveys	1	5 Day No Weather w/ Holidays	04-Mar-15	04-Mar-15	0	■ Prepare Property Owner Notification Letters for Surveys																																			
221	Set ROW Monumentation Prior to Contract Completion	30	5 Day No Weather w/ Holidays	04-Mar-15	14-Apr-15	555	■ Set ROW Monumentation Prior to Contract Completion																																			
219	Stake Geotechnical Boring Locations	10	5 Day No Weather w/ Holidays	17-Mar-15	30-Mar-15	0	■ Stake Geotechnical Boring Locations																																			
218	Supplemental Field Surveys	20	5 Day No Weather w/ Holidays	26-Mar-15	22-Apr-15	34	■ Supplemental Field Surveys																																			
220	Prepare Updated Survey File	20	5 Day No Weather w/ Holidays	02-Apr-15	29-Apr-15	34	■ Prepare Updated Survey File																																			
<b>Utilities Delineation, SUE</b>																																										
223	Prepare Utility Owner Notification Letters for Subsurface Utility Engineering (SUE)	1	5 Day No Weather w/ Holidays	04-Mar-15	04-Mar-15	156	■ Prepare Utility Owner Notification Letters for Subsurface Utility Engineering																																			
224	Perform SUE Designations & Test Holes	20	5 Day No Weather w/ Holidays	26-Mar-15	22-Apr-15	156	■ Perform SUE Designations & Test Holes																																			
225	Prepare Test Hole Data Sheets, UT-9's, Initial Prior Rights	15	5 Day No Weather w/ Holidays	02-Apr-15	22-Apr-15	156	■ Prepare Test Hole Data Sheets, UT-9's, Initial Prior Rights																																			
227	Determine Prior Rights, Update UT-9's, Update RUMS	15	5 Day No Weather w/ Holidays	23-Apr-15	14-May-15	140	■ Determine Prior Rights, Update UT-9's, Update RUMS																																			
229	Prepare and Submit Updated Subsurface Utility Information & UT-9's	15	5 Day No Weather w/ Holidays	14-May-15	05-Jun-15	215	■ Prepare and Submit Updated Subsurface Utility Information & UT-9's																																			
228	Prepare Prelim Utility Status Report 120 days after NTP	25	5 Day No Weather w/ Holidays	27-May-15	01-Jul-15	132	■ Prepare Prelim Utility Status Report 120 days after NTP																																			
226	Utility Field Inspection (UFI)/Meet with Utility Owners	5	5 Day No Weather w/ Holidays	01-Jul-15	09-Jul-15	132	■ Utility Field Inspection (UFI)/Meet with Utility Owners																																			
<b>Utility Relocation Design</b>																																										
231	Dominion Virginia Power - Plan & Estimate (By Others)	60	5 Day No Weather w/ Holidays	09-Jul-15	02-Oct-15	132	■ Dominion Virginia Power - Plan & Estimate (By Others)																																			
232	Century Link Plan & Estimate (By Others)	60	5 Day No Weather w/ Holidays	09-Jul-15	02-Oct-15	132	■ Century Link Plan & Estimate (By Others)																																			
233	Verizon Business (Formerly MCI) Plan & Estimate (By Others)	60	5 Day No Weather w/ Holidays	09-Jul-15	02-Oct-15	132	■ Verizon Business (Formerly MCI) Plan & Estimate (By Others)																																			
234	Fiberlight Plan & Estimate (By Others)	60	5 Day No Weather w/ Holidays	09-Jul-15	02-Oct-15	132	■ Fiberlight Plan & Estimate (By Others)																																			
235	Lumos Networks Plan & Estimate (By Others)	60	5 Day No Weather w/ Holidays	09-Jul-15	02-Oct-15	132	■ Lumos Networks Plan & Estimate (By Others)																																			
236	Comcast Plan & Estimate (By Others)	60	5 Day No Weather w/ Holidays	09-Jul-15	02-Oct-15	132	■ Comcast Plan & Estimate (By Others)																																			
237	City of Charlottesville Public Utilities Division-Gas Plan & Estimate	60	5 Day No Weather w/ Holidays	09-Jul-15	02-Oct-15	132	■ City of Charlottesville Public Utilities Division-Gas Plan & Estimate																																			
238	Rivanna Water & Sewer Authority Plan & Estimate	60	5 Day No Weather w/ Holidays	09-Jul-15	02-Oct-15	132	■ Rivanna Water & Sewer Authority Plan & Estimate																																			
239	Albemarle County Service Authority Plan & Estimate	60	5 Day No Weather w/ Holidays	09-Jul-15	02-Oct-15	132	■ Albemarle County Service Authority Plan & Estimate																																			
240	Qwest Government (CenturyLink Government) Plan & Estimate (By Others)	60	5 Day No Weather w/ Holidays	09-Jul-15	02-Oct-15	132	■ Qwest Government (CenturyLink Government) Plan & Estimate (By Others)																																			
241	Review Utility P & E and Issue Letter of No Conflict with Proposed Design	5	5 Day No Weather w/ Holidays	02-Oct-15	09-Oct-15	132	■ Review Utility P & E and Issue Letter of No Conflict with Proposed Design																																			
242	DB Team Received Written Approval from VDOT to Commence Relocations	9	7 Day No Weather No Holidays	10-Oct-15	18-Oct-15	196	■ DB Team Received Written Approval from VDOT to Commence Relocations																																			
<b>Geotechnical Engineering and Subsurface Investigations</b>																																										
244	Complete Boring Location Plan	1	5 Day No Weather w/ Holidays	04-Mar-15	04-Mar-15	3	■ Complete Boring Location Plan																																			
246	Secure Permits & Clear Utilities as Required	15	5 Day No Weather w/ Holidays	05-Mar-15	25-Mar-15	3	■ Secure Permits & Clear Utilities as Required																																			
245	Prepare & Send Property Owner Notification Letters for Geotech. Investigations	1	5 Day No Weather w/ Holidays	09-Mar-15	09-Mar-15	0	■ Prepare & Send Property Owner Notification Letters for Geotech. Investigations																																			
247	Subsurface Investigations	30	5 Day No Weather w/ Holidays	31-Mar-15	11-May-15	0	■ Subsurface Investigations																																			
248	Boring Logs and Lab Work for Scope Validation	15	5 Day No Weather w/ Holidays	07-Apr-15	27-Apr-15	53	■ Boring Logs and Lab Work for Scope Validation																																			
249	Boring Logs and Lab Work	30	5 Day No Weather w/ Holidays	14-Apr-15	26-May-15	0	■ Boring Logs and Lab Work																																			
<b>Geotechnical Engineering, Analysis &amp; Reports</b>																																										
251	Geotech Design, QA/QC & Submit Report - Culverts	15	5 Day No Weather w/ Holidays	21-Apr-15	11-May-15	185	■ Geotech Design, QA/QC & Submit Report - Culverts																																			
252	Geotech Design, QA/QC & Submit Report - Retaining Walls	30	5 Day No Weather w/ Holidays	28-Apr-15	09-Jun-15	27	■ Geotech Design, QA/QC & Submit Report - Retaining Walls																																			
253	Geotech Design, QA/QC & Submit Report - Roadway, Utility and Slopes	30	5 Day No Weather w/ Holidays	05-May-15	16-Jun-15	0	■ Geotech Design, QA/QC & Submit Report - Roadway, Utility and Slopes																																			
255	Geotech Design, QA/QC & Submit Report - Storm Water	30	5 Day No Weather w/ Holidays	05-May-15	16-Jun-15	187	■ Geotech Design, QA/QC & Submit Report - Storm Water																																			
254	Geotech Design, QA/QC & Submit Report - Pavement	20	5 Day No Weather w/ Holidays	12-May-15	09-Jun-15	5	■ Geotech Design, QA/QC & Submit Report - Pavement																																			
256	Agency Review Structure Report -Culverts	9	7 Day No Weather No Holidays	12-May-15	20-May-15	303	■ Agency Review Structure Report -Culverts																																			
261	Resolve Review Comments- Complete, QA/QC & Submit Final Structure Report - Culverts	25	5 Day No Weather w/ Holidays	12-May-15	16-Jun-15	206	■ Resolve Review Comments- Complete, QA/QC & Submit Final Structure Report - Culverts																																			
257	Agency Review Structure Report - Retaining Wall Structure Reports	9	7 Day No Weather No Holidays	10-Jun-15	18-Jun-15	40	■ Agency Review Structure Report - Retaining Wall Structure Reports																																			













































