



VOLUME 1
PROPOSAL FOR
**ROUTE 220 CORRIDOR
SAFETY IMPROVEMENTS**
PHASES 1, 2 AND 3

State Project No.: 0220-011-786 | Federal Project No.: NH-5128(326) | Contract ID Number: C00105543DB88

January 18, 2017

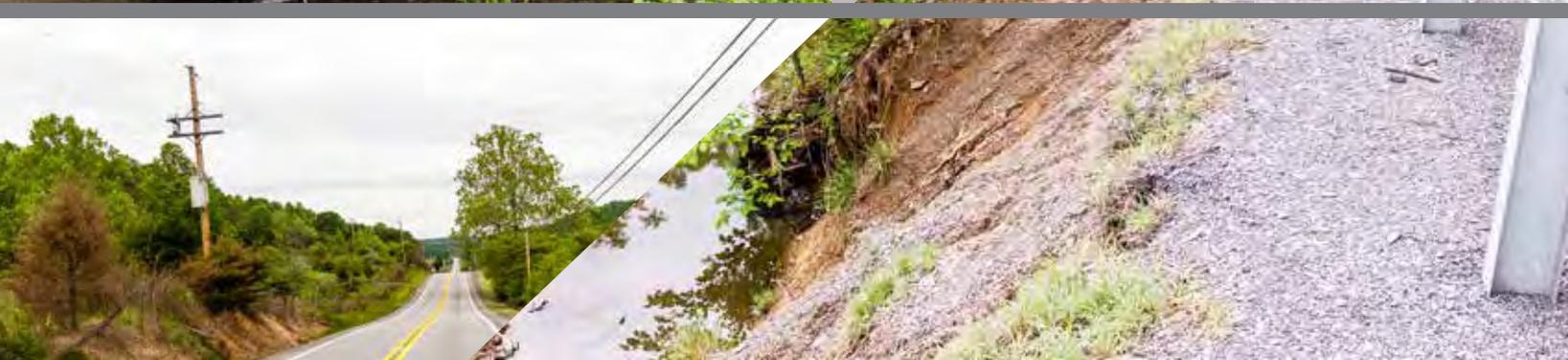


Submitted by

FAULCONER
CONSTRUCTION COMPANY

with

ch2mSM



FAULCONER

CONSTRUCTION COMPANY

January 18, 2017

Commonwealth of Virginia
Department of Transportation (VDOT)
Central Office Mail Center
Loading Dock Entrance
1401 E. Broad Street
Richmond, Virginia 23219
Attention: Joseph A. Clarke, PE (APD Division)

Subject: State Project No.: 0220-011-786; Federal Project No.: NH-5128(326); Contract ID Number C00105543DB88

Dear Mr. Clarke:

The following items address the Request for Proposal (RFP) response criteria. Required forms follow this letter.

4.1.1 Letter of Submittal

This Letter of Submittal is on the Offeror's letterhead and identifies the full legal name and address of the Offeror (Faulconer Construction Company). It is signed in ink by an authorized representative of Faulconer.

4.1.2 Offeror's Intent

It is Faulconer's intent, if selected, to enter into a contract with VDOT for the Project in accordance with the terms of this RFP.

4.1.3 Offer Remains in Full force and Effect

Faulconer declares that the offer represented by our Technical and Price Proposals will remain in full force and effect for one hundred twenty (120) days after the date the Technical Proposal is actually submitted to VDOT.

4.1.4 Point Of Contact for the Offeror

Faulconer Construction's official representative and point of contact relative to this submittal is: **Mr. Edwin F. Stelter**, LEED AP, DBIA, Director of Innovative Pursuits, Faulconer Construction Company, Inc.

Mailing Address: PO Box 7706, Charlottesville, VA 22906

Physical Address: 2496 Old Ivy Road, Charlottesville, VA 22906

Phone: 434.295.0033 Fax: 434.295.0508 Email: estelter@faulconerconstruction.com



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4.1.5 Principal Officer for the Offeror

Falconer Construction's principal officer relative to this submittal is:

Jack W. Sanford, President

Mailing Address: PO Box 7706, Charlottesville, VA 22906

Physical Address: 2496 Old Ivy Road, Charlottesville, VA 22906

Phone: 434.295.0033

4.1.6 Final Completion Date

Falconer Construction Co., Inc. commits to a Final Completion date of 08/31/2021 as represented by our Proposal Schedule (Section 4.7.1).

4.1.7 Executed Proposal Payment Agreement or Executed Waiver of Proposal Payment

This submittal includes an executed Proposal Payment Agreement, in the form set forth in Attachment 9.3.1.

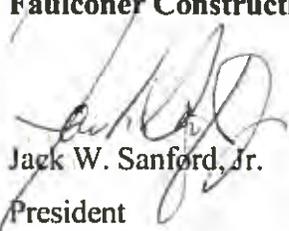
4.1.8 Certification Regarding Debarment Forms

This submittal includes the Certification Regarding Debarment Forms as set forth in Part 1, Section 11.8.6.

If you have any questions regarding this Technical Proposal, please contact me at your convenience. We look forward to the next stage of project procurement and continuing to share our experiences with the Department's selection panel.

Respectively Submitted,

Falconer Construction Company, Inc.



Jack W. Sanford, Jr.

President



Our organization effectively integrates design and construction staff to assure active constructor involvement in design, and designer involvement in construction, resulting in a solution that is cost effective, meets VDOT's design requirements, and delivers the quality VDOT requires. This integration enables both the Design Manager and Construction Manager to assign resources quickly. Our approach ensures quality delivery on an aggressive schedule.

4.2.1 Affirmation/Amendment of SOQ Information

The Faulconer Construction Company, Incorporated (Faulconer) team confirms that the information contained in our SOQ remains true and accurate.

4.2.2 Organizational Chart

Our organizational chart, Exhibit 1, presents the "chain of command" of companies, including individuals responsible for pertinent disciplines, proposed on the Offeror's team. We have added BT Thomas, PhD, of CH2M, an acid-producing materials (APM) resource who will support Lee Daniels, PhD, and the team to address the critical area of APM. Lee and BT have a 20-year history of working on and solving APM issues. Adding BT does not alter the chain of command as presented in our SOQ. BT's bio appears at the bottom of this page. Our Lead Contractor, Lead Designer, Key Personnel, and other individuals identified in the SOQ have not changed.

Our organizational chart shows a clear separation and independence between the quality assurance (QA) and quality control (QC) programs for construction activities, including separation between QA and QC inspection and field/laboratory testing in accordance with VDOT's Minimum Requirements for Quality Assurance and Quality Control on Design-Build and P3 Projects, January 2012. For this project, Faulconer will be the Prime Contractor, and CH2M will be the lead designer. NXL will provide the QA Manager and will serve as the independent firm responsible for the QA inspection and testing. This organization is similar to that of the I-81 Project and will function similarly as a fully integrated team. **Faulconer offers a fully integrated team led by our Design-Build Project Manager, Fran Burke, who will serve as a single point of contact and accountability. Fran Burke, serving as the Design-Build Project Manager,** will direct and oversee all design and construction activities. The **Design Manager, Stephanie Hart,** and **Construction Manager, Josh Williamson,** will report directly to Fran. Stephanie will manage the design disciplines and be responsible for all design-related tasks, and Josh Williamson will oversee and manage the construction disciplines and delivery of construction activities. Because of the significant importance of QA, safety, public relations, environmental permitting and compliance, and project scheduling, these functions will also report directly to Fran. **Joe Hamed, our team's QA Manager** will report directly to Fran.

BT Thomas, PhD, APM Specialist. BT has over 20 years of experience addressing APM on both transportation projects and in the mining industry. He is experienced in treating APM using the methods that will be employed on this project. BT has been involved in the design and development of treatment technologies for acid rock drainage in the United States, Europe, and Southeast Asia. BT has developed innovative substrate for passive wetland treatment of acid rock drainage, and has expertise in aqueous geochemistry, stable isotope geochemistry, and geomicrobiology. His experience includes (1) Acid rock drainage mitigation and design of a passive treatment system for runoff at a remote, high-elevation, cold-climate road cut on the Trans-Canadian Highway, Pennask Creek, British Columbia, (2) Design of a passive treatment system for acid rock drainage at an inactive coal mine, confidential commercial mining client, Pacific Northwest, (3) Technical lead, design of a passive treatment system for potential leachate treatment following installation of a leachate collection system at a pyrite waste rock basin, confidential commercial mining client, Tuscany, Italy.

SECTION 4.2 Offeror's Qualifications

EXHIBIT 1

Organizational Chart



Third-party Stakeholders

- Public
- Police
- Botetourt County
- Botetourt County Schools
- Fire & EMS
- Regulatory Agencies
- Trucking Industry (7% trucks)
- Business Owners
- VSP & County Sheriff

Design-Build Project Manager

Fran Burke

Key Personnel

Public Information Officer

Steve Bowers (Velocity Park)

Environmental Permitting and Compliance

Carolyn Washburn, PhD
Paul Kohler
Keisha Voigt

Senior Advisors

Jack Sanford
Ed Stelter, LEED AP, DBIA
Mark MacIntire, PE
Steve Tyler, CCM

Safety Officer

Matthew Martin

Design Manager

Stephanie Hart, PE

- Geotechnical Engineer
Emad Farouz, PE
- Acid-Producing Materials Specialist
W. Lee Daniels, PhD
BT Thomas, PhD
- Roadway L&D Lead
Marlon Smoker, PE
- Maintenance of Traffic Lead
Brian Dearing, PE
- Drainage/Stormwater/Hydraulics Lead
Susan With, PE
- Bridge & Structures Lead
Jason Cawrse, PE
- Utility Design Coordinator
Adnan Hashmi, PE
- Right-of-Way Coordinator
Bob Cassada, PE
- Subconsultants
 - Geotechnical Exploration
Froehling & Robertson, Inc
 - Right-of-Way Aquisition Services
KDR

Construction Manager

Josh Williamson

- Construction Engineer
- QC Manager
 - QC Inspectors
 - QC Testing Firm
 - QC Materials Testing Firm
- Roadway Superintendent
- Structures Superintendent
- Utilities Superintendent
- Subcontractors

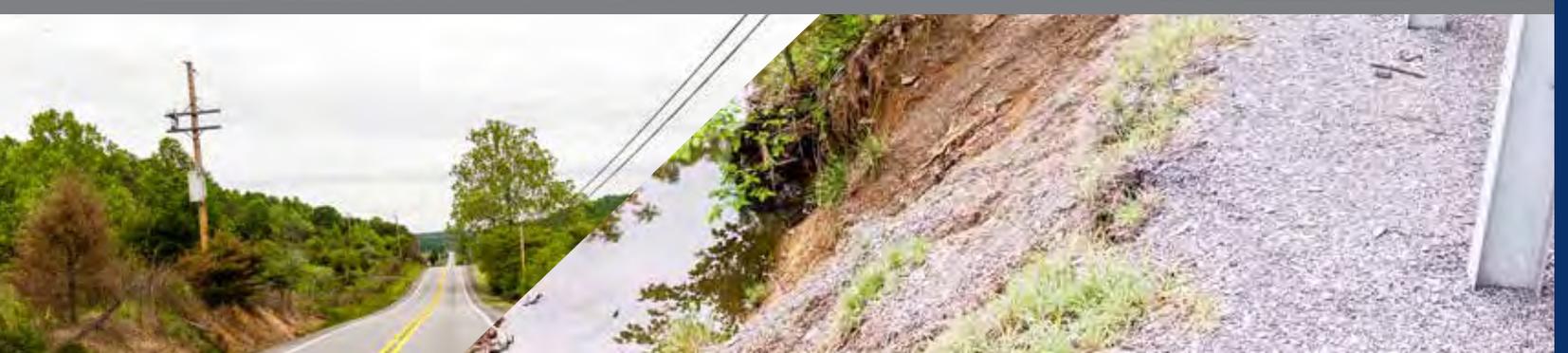
Quality Assurance Manager

Joe Hamed, PE, CCM, PMP, DBIA

- QA Inspection, Testing Technicians
- QA Materials Testing

Continuous Team Coordination including Environmental, Senior Advisors, Public Involvement, and Safety.

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4.3 Design Concept

Safety, earthwork, and permitting drove our design. Another significant factor in the design is addressing the acid-producing material (APM) and the shale material present in the project area. Our optimizations of the proposed alignment reduce excavation and better balance cuts and fills in each of the phases. The Faulconer team's designers worked with Faulconer's construction staff in construction and design development sessions to develop the best plan for completing the earthwork concurrently with other key tasks that affect the schedule. The Faulconer team's Design Concept will meet or exceed all of the RFP requirements. Our Technical Proposal Volume 2 drawings is our conceptual design to date and provides VDOT with significant design details that demonstrate our thorough consideration of design aspects of the project to date. The plans will serve as the basis for our final design. Exhibit 2 presents highlights of our Design concept. The Faulconer team's design meets or exceeds all requirements listed in the Design Criteria Table included the RFP Technical Requirements (Part 2) as Attachment 2.2. The limits of construction include all stormwater management facilities within the existing/proposed right-of-way limits shown in the RFP Conceptual Plans with the exception of permanent and temporary easements and our design does not include design elements that require Design Exceptions and/or Design Waivers.

4.3.1 Conceptual Roadway Plans

a) General Geometry Including the Number and Widths of Lanes and Shoulders

Route 220 is a rural principal arterial with a rolling terrain and a 60-mile-per-hour (mph) design speed. Following AASHTO GS-1 Geometric Design Standards, the following lane/shoulder layout is proposed for this project. A 12.5-foot lane in each direction, with a modified rumble strip between the two lanes, is proposed. Additionally, 12-foot turn lanes are proposed at Narrow Passage Road in Phase 2 South; Route 622 (Gala Loop Road) in Phase 2 North; Prices Bluff Road, Buhrman Road, and Locust Bottom Road in Phase 1. Along the corridor, an 8-foot proposed shoulder is composed of a 4-foot paved shoulder and a 4-foot aggregate stabilized shoulder. In areas of large fill where a guardrail is required, an additional 3 feet is proposed for the guardrail before the shoulder break.

Design Concept Technical Proposal Evaluation Criteria Highlights

- Meet and exceed design criteria table**
 - ✓ Improves vertical sight distance
 - ✓ Enhances passing zones
- Limits of construction within RFP ROW limits**
 - ✓ Except in Phase 2 north and Phase 3 North our design we have the ability to flatten slopes without additional ROW impacts
 - ✓ Potentially reduces Right-of-Way impacts by approximately 4 acres, including environmentally sensitive and APM areas.
- Meets or exceeds project scope**
 - ✓ Reduced impacts to intersections while maintaining proposed safety improvements
 - ✓ Reduces need for special E&S measures to protect Mud Creek
 - ✓ Provides grade improvements to commercial and residential entrances
 - ✓ In emergencies the roadway can be quickly cleared of impediments
 - ✓ Eliminates proposed alignment crossovers which improves sight distances
 - ✓ Accelerates construction mobilization and provides early positive public perception and acceptance – early safety improvements
 - ✓ Substantially balances earthwork and reduces on-road trucking both within and outside the project limits
- Reduces need for future maintenance**
 - ✓ Reduces cut slope height and long-term maintenance and safety concerns
 - ✓ BMP access exceeds minimum requirements and provides easier maintenance
- Maximizes clear zone, Minimizes guard rail**
 - ✓ Notably reduces the amount of guardrail
 - ✓ Except in phase 2 North and Phase 3 North has the ability to provide traversable slopes within the defined clear zone

SECTION 4.3 Design Concept

EXHIBIT 2

Construction Phasing – Notable Highlights for Phases

Notable Highlights for Phases

Phase 2 – South

- Requires placement of fill in flood plain
- Ability to offset other areas for stormwater management requirements

Phase 2 – North

- Address access management—highest concentration of commercial and residential access in project
- Veiwshed sensitivity

Phase 1

- Focus on Access Management for residential, commercial, and construction and related safety issues
- Notable reduction in planned right-of-way and utility impacts
- Plan for addressing APM and slope stability issues

Phase 3 – South

- Not constrained by Joint Permit Application requirements

Phase 3 – North

- Jack and bore for 48-inch pipe with 60-inch casing under railroad requiring coordination with CSXT for plan approval and vibration and settlement control during construction
- High fill operation Sta 704 to Sta 721 for widening

Excavation, Station – Station, Cut/Fill

Sta 105 – Sta 117, 2/17
Sta 117 – Sta 124, 1/3
Sta 220 – Sta 227, 0/38

Sta 227 – Sta 253, 1/39
Sta 254 – Sta 267, 1/1

Total Phase 2 Cut/Fill 5/98 kCY

Sta 349 – Sta 371, 0/78
Sta 371 – Sta 384, 53/16
Sta 384 – Sta 402, 37/28

Sta 402 – Sta 422, 36/6
Sta 422 – Sta 439, 30/36
Sta 439 – Sta 450, 92/4

Sta 450 – Sta 474, 12/9
Sta 474 – Sta 500, 9/11
Sta 500 – Sta 520, 9/7

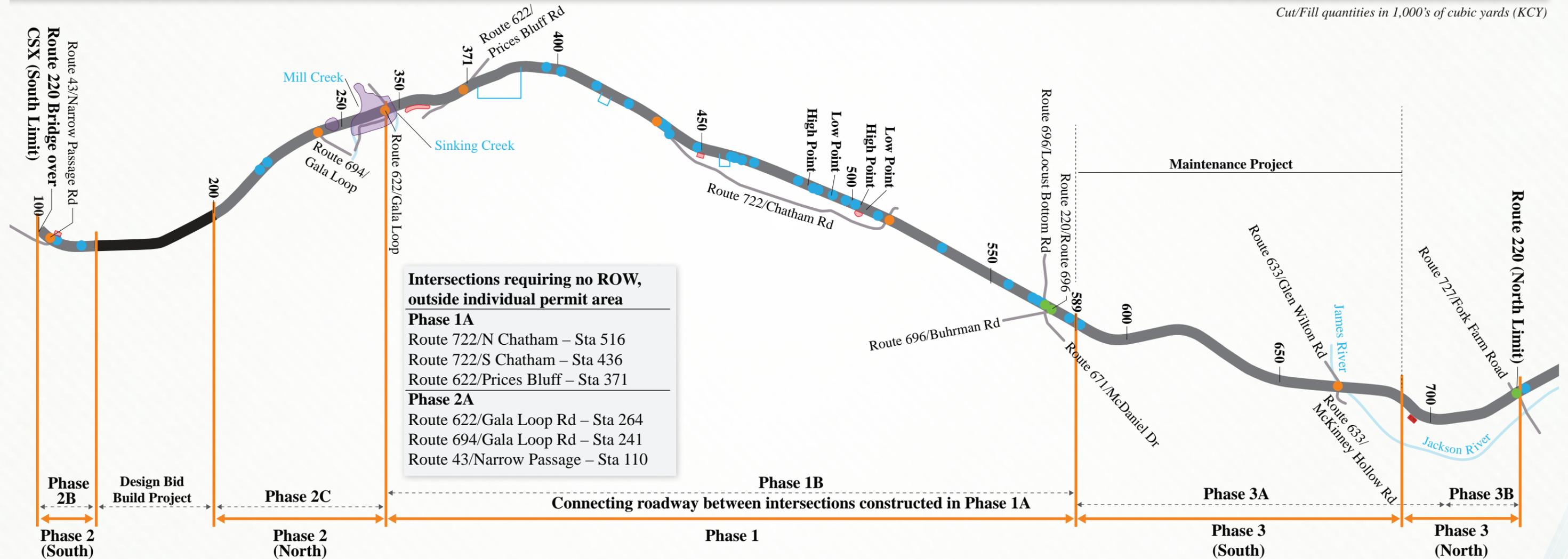
Sta 520 – Sta 537, 8/6
Sta 537 – Sta 636, 7/6
Sta 563 – Sta 589, 3/4

Total Phase 1 Cut/Fill 296/211 kCY

Sta 690 – Sta 707, 1/2
Sta 707 – Sta 724, 1/18

Total Phase 3 Cut/Fill 2/20 kCY

Cut/Fill quantities in 1,000's of cubic yards (kCY)



Intersections requiring no ROW, outside individual permit area

Phase 1A
Route 722/N Chatham – Sta 516
Route 722/S Chatham – Sta 436
Route 622/Prices Bluff – Sta 371

Phase 2A
Route 622/Gala Loop Rd – Sta 264
Route 694/Gala Loop Rd – Sta 241
Route 43/Narrow Passage – Sta 110

- Legend**
- Waters of the United States
 - Intersections outside permit area/no ROW
 - Intersections inside permit area
 - Historic resources
 - Stormwater Management BMPs
 - Acid-Producing Material as identified in the RFP

Sequence of Construction

Year 1 Construction	Year 1 Construction if desired or Year 2	Year 2 or later Construction
P3A – STA 589 to 704	P2A – see intersection chart above	P1B – STA 348 to 589
P1A – see intersection chart above	P2B* – STA 103 to 124	P3B – STA 704 to 734
	P2C* – STA 200 to 267	

*State Program General Permit approval for these phases expected 5 months after NTP

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b) Horizontal Alignments with Extents of Proposed Cut and Fill

In Phase 2 South, the proposed Route 220 alignment will remain on the existing alignment with widening provided for the proposed lane configuration. The proposed alignment through Phase 2 North will shift to the west off existing alignment, which will require fill along the west side. The proposed alignment will merge back to the existing alignment prior to the Mill Creek bridge crossing. The Route 220 alignment continues north of the Mill Creek bridge crossing and remains on the existing alignment through transition to Phase 1 and just north of the Sinking Creek bridge crossing where it shifts to the west of the existing alignment. The rolling terrain and the shifting of the alignment to the west will require large areas of significant cut along the west side of Route 220, the largest cut occurring between Station 440 and 450. The proposed alignment will merge back to the existing alignment the last mile of Phase 1. Through Phase 3 North, the proposed alignment will primarily follow the existing alignment, except in the area of the horizontal curve starting at Station 715, where the alignment is shifted to the west to improve the substandard horizontal curve. The proposed alignment then shifts back to the existing alignment to the project termination.

c) Vertical Profile for the Phase 1 Portion of the Alignment

Given the rolling terrain along the corridor through Phase 1, the vertical profile is composed of a number of vertical curves, with the overall elevation increasing from south to north. In the proposed design, the horizontal alignment has been shifted to the west to allow for greater potential to balance the project, reduce impacts to existing utilities, as well as maintain traffic on the existing alignment during construction. As this is primarily a safety project, particular care was taken to ensure adequate vertical sight distance and bring to standard all vertical and horizontal curves. This was especially a concern in areas where both horizontal and vertical curves occur where horizontal and vertical site distance can be an increased issue.

d) Maximum Grade for all Segments and Connectors

Following the AASHTO Design Guide for 60-mph design speed, a maximum grade of 4 percent is adhered to for the mainline. The proposed grade of Route 220 closely matches the existing grade at the intersections to minimize impact to the connections and allow for realignment of skewed intersections.

e) Typical Sections of the Roadway Segments to Include Retaining Walls

There are two locations along the project length where retaining walls will be used, both in Phase 1. A short retaining wall may be used in the area of Station 445 on the east side of Route 220. The retaining wall would eliminate the impact to Mud Run Creek, which is designated under the Waters of the United States rule. Another retaining wall may be used in the area from Station 461 to 464 along the west side due to the widening and to stay within proposed right-of-way. Retaining walls may be used in other project areas as an option if APM material is present.

f) Conceptual Hydraulic and Stormwater Management Design

Post-Construction Stormwater Management. The Route 220 Project inclusive of all three segments (Phase 1, Phase 2, and Phase 3) extends across a total of five 6th-order Hydrologic Unit Codes (HUCs) all located within the Upper James River Watershed. The land disturbance associated with Phase 1 and Phase 2 of the Project are grandfathered under the Part IIC or “old” criteria of the Virginia Stormwater Management Program (VSMP) regulations and therefore use a performance-based analysis to determine phosphorus nutrient removal requirements. QC criteria are dictated by adherence to Minimum Standard 19 (MS-19) for flood and channel protection. The Phase 3 segment of the Project uses Part IIB of VSMP regulations. The phosphorus nutrient removal requirement is determined by the Virginia Runoff Reduction Method. Channel and flood protection are dictated by the minimum standards set forth in 9VAC25-870-66 of the VSMP Regulations.

A comprehensive stormwater management approach is appropriate since the land-disturbing activity resulting from the Route 220 Project discharges entirely to the same watershed. However, given the use of the two

SECTION 4.3 Design Concept

separate criteria, it is necessary to analyze and address the treatment requirements of the Phase 1 and Phase 2 Project Segments separately from the Phase 3 Project Segment.

Phase 3 South (mill and overlay). There will be no ground-disturbing activity in the Phase 3 South project limits. All pavement improvements will be confined within the limits of the existing pavement, with no exposure of the existing subgrade. The language within the RFP is explicit and mirrors the language found within VDOT IIM-LD-195.9, which specifically excludes the Phase 3 South mill and overlay operation described within the RFP as a routine maintenance activity and therefore exempt from the Virginia Stormwater Management Act. No proposed drainage design is anticipated within Phase 3 South. Potential drainage improvements will be limited to ditch-cleaning operations and potential pipe cleaning or rehabilitation that will maintain the purpose of the original hydraulic capacity and roadway design. It is also anticipated that any land disturbance that may occur will not exceed the threshold of 10,000 square feet; therefore, no erosion and sediment control measures will be required. We understand that no disposal areas will be provided within the right-of-way for Phase 3 South.

We will maintain proper documentation of the original conditions prior to commencing with the routine maintenance activities of the Phase 3 South portion of the Project. The documentation will be submitted to VDOT and will include old plans, photographs, and any other documents that define the original line and grade, hydraulic capacity, or purpose of the original facility.

Phase 3 North. We understand that the critical element of the drainage design for Phase 3 North will be ensuring that additional stormwater runoff generated by the roadway widening and shoulder improvements will be redirected away from the CSXT right-of-way to the maximum extent practicable and avoid the occurrence of ponding water adjacent to the CSXT tracks. The topography, negative impacts to private property owners, and the presence of the CSXT rail right-of-way necessitate holding the existing alignment and profile. The proposed jack and bore operation for the pipe under the CSXT rails will remain. The size, location, cover, and inverts will be confirmed to ensure that it will convey the 100-year event with an HW/D of 1.

Phase 3 North will be analyzed separately from Phase 1 and Phase 2 South for stormwater management requirements since Phase 3 North must comply with Part IIB of the Virginia Stormwater Management Program (VSMP Regulations). Preliminary computations using the Virginia Runoff Reduction Redevelopment Spreadsheet indicates a phosphorus nutrient reduction requirement of only about 1.5 pounds per year based upon the regulated disturbed areas produced by the roadway widening. A single best management practice (BMP) facility is located in Phase 3 North to address both water quality and quantity requirements at that drainage outfall.

Phase 1. A critical element of the drainage design for Phase 1 will be addressing the specific handling instructions for the pyritic or APM. The preliminary drainage design we developed includes isolating the surface runoff from disturbed areas based upon APM locations that were encountered and identified within the preliminary VDOT geotechnical investigations. Berm ditches are used above the cut slopes within APM segments to isolate the clean runoff from the APM-tainted runoff and direct it to separate stormwater conveyance systems. The stormwater runoff from excavated cuts will be isolated for treatment within limestone-lined ditches and sent to settling basins as needed. Our hydraulic, roadway, and geotechnical engineers will coordinate closely and incorporate needed modifications to the roadway drainage design and stormwater management plan based upon a more complete geotechnical investigation and any APM field conditions encountered during construction activities.

Phase 2 South. Phase 2 holds the existing alignment and grade. Drainage improvements to culverts will meet the requirements of the RFP. Where needed on high fill locations where the shoulder has been widened through the safety enhancement areas, asphalt curbing is used and facilitates collection of stormwater for a planned stormwater management basin, an enhanced extended detention facility placed on the west side (left side)

SECTION 4.3 Design Concept

of the roadway baseline. Proper ingress and egress from the facility for access by the VDOT maintenance in accordance with the RFP requirements has been confirmed. The proposed stormwater management facility will also serve to meet water quantity requirements in accordance with Minimum Standard 19 (MS-19).

Phase 2 North. Phase 2 north generally holds the existing alignment and grade with lane width and shoulder widening improvements. Asphalt curb is added along high-fill locations. The storm sewer is used where needed to combine drainage outfalls discharging at locations where permanent drainage easement is provided to direct the outfall flows to adequate channels hence ensuring compliance with MS-19. No available locations were determined for placement of stormwater management facilities within the Phase 2 North Segment of the Project. An inspection report will be provided to VDOT certifying structural adequacy, based upon the results of the inspection, otherwise it will be replaced.

g) Proposed Right-of-Way Limits (i.e., shown as an overlay of the Offeror's proposed right-of-way limits and VDOT's RFP conceptual right-of-way limits, highlighting the differences between the two)

The proposed right-of-way limits from the RFP were strictly adhered to. Potential reduction of right-of-way is possible through the optimization of the Phase 1 design.

h) Proposed Utility Impacts

The Falconer team has a fully integrated, three-pronged partnering approach of discipline experts in design, coordination, and construction to coordinate with utilities from Project inception to final acceptance. We have already begun coordination with all utilities within the project corridor to eliminate or minimize impacts to utilities during the development of our team's conceptual plan development. The Falconer team has performed a utility conflict analysis of all utilities within the Project corridor and has developed an initial conflict resolution strategy to accommodate those utilities. In addition to a design concept that eliminates many utility conflicts, our schedule coordinates construction activities with needed utility locations in a manner that allows for both to occur in concert with one another, creating schedule efficiencies. Our conceptual design to date results in the following potential impacts. The potential impacts will be refined, and opportunities will be sought for further mitigation.

- Phase 1 electric – 8,480 linear feet (LF) on 29 poles
- Phase 1 telephone – 5,225 LF (major impact) + 2,300 LF (minor impact) = 7,525 LF on total of 37 poles
- Phase 2 electric – 1,285 LF (minor impacts) on 10 poles
- Phase 2 telephone – 0 impact
- Phase 3 electric/telephone (on same poles) – 1,900 LF on 11 poles

A key component to the Falconer team's mitigation strategy is effective communication with all affected parties. Our team will fully utilize our partnering process to ensure the proactive and efficient resolution of utility conflicts. Our team will delineate utilities in the field, and our Project Safety Officer will hold orientation sessions with our field staff so that everyone is fully aware of utility locations in order to avoid unplanned impacts. We will provide 72 hours of notice to utility owners prior to working in close proximity to their facilities and welcome them to be on the project as they deem necessary to monitor our construction activities. Further details regarding utilities are provided in Section 4.4.2, Utilities.

i) Any Other Key Project Features

Option 1 design. Option 1A design to include two-way left-turn lane with curb and gutter in Phase 2 North, through Gala. With the addition of curb and gutter, a closed storm sewer system will be proposed to convey stormwater through this segment.



We will deliver a design that can be efficiently reviewed and approved so construction can begin without delay. From our work on the I-81 Corridor Safety Improvements project and other VDOT projects, the Faulconer team understands VDOT’s design review approach. Our designer, CH2M, provides a designer’s and a contractor’s, perspective to design- build delivery. CH2M also brings a VDOT perspective to design-build delivery from its work representing VDOT’s interest on numerous design-build projects. Our Faulconer team will not cut corners, and we will manage this project working cooperatively with VDOT to get it right the first time.

4.4 Project Approach

Our project delivery process—a combination of our design-build integrated delivery approach and VDOT’s Concurrent Engineering Process (Exhibit 3)—reduces risk because designers and constructors solve problems and develop design and construction concepts together, while adhering to VDOT’s review process. Our approach includes identifying and mitigating risks early. The foundation of our project management and delivery process is VDOT’s Concurrent Engineering Process. Our design, construction, and QA/QC staff collaborate throughout to ensure constructability, traffic maintenance, and schedule coherence, while reducing project risks.

The Faulconer team uses a fully integrated process that incorporates internal construction and QA/QC staff reviews during design development to ensure constructability and schedule coherence. First and foremost, our design is based on the realities of the project, including permitting, excavation, and hauling. In addition to the RFP – required kickoff meeting, we will hold a formal design kickoff and chartering session with our designers, constructors, VDOT, and key stakeholders to ensure that everyone clearly understands the strategy behind the designs, the project goals, and their respective roles and responsibilities. Early input from VDOT will minimize the need for involvement beyond regularly scheduled reviews.

4.4.1 Environmental Management

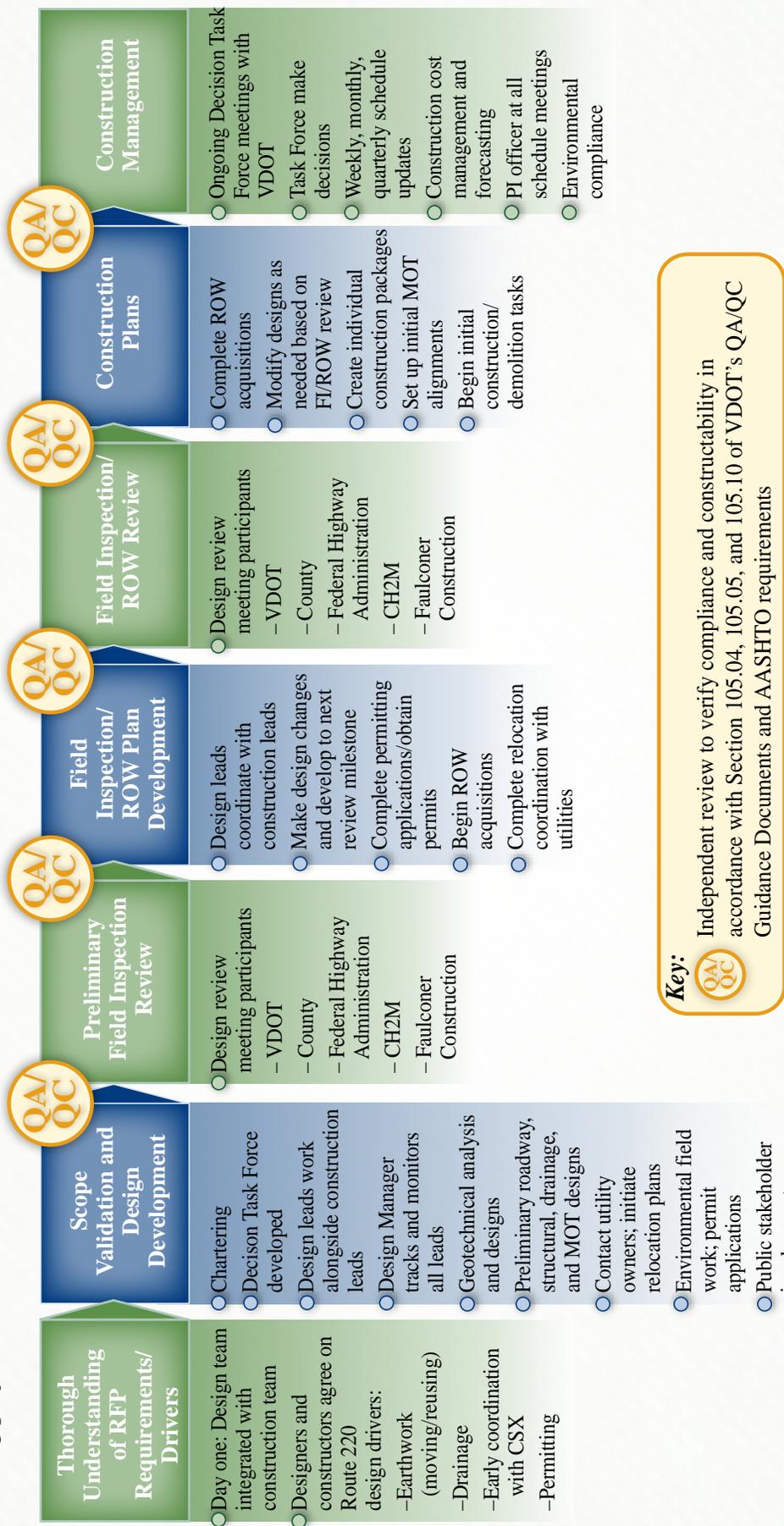
Our team will implement environmental commitments for the design and construction of the project, as required by the National Environmental Policy Act (NEPA), Section 106 of the National Historic Preservation Act, Clean Water Act, Endangered Species Act, and their corresponding terms in approvals, authorizations, or permits issued. To manage the environmental compliance of the project, the first step our team completes is to identify and consolidate all environmental commitments into a table, as shown in Table 1. This table is an effective tool to communicate the steps required to maintain environmental compliance for the project. The requirements in this table will be coordinated with the engineering design and construction team members, as well as VDOT and the agencies noted below. These activities are also included in our team schedule.

Environmental Management Evaluation Criteria Highlights

- **Integrated approach to environmental risk management during design and construction—anticipate and mitigate potential delays**
 - ✓ Year 1 construction not dependent on Federal permits
 - ✓ Approach accounts for all agency issues of concern and required actions for permits
 - ✓ Same design and construction staff as I-81 Salem District Corridor Safety Improvements Design-Build Project

Exhibit 3
Project Delivery Process

The foundation of our project management and delivery process is VDOT's Concurrent Engineering Process. Our design, construction, QA/QC staff, and task force leaders collaborate throughout to ensure constructability, traffic maintenance, and schedule coherence, while reducing project risks.



Continuous Internal QA/QC reduces VDOT Formal Review Time.
Decision Task Forces involved throughout to reduce risk, improve efficiency.

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SECTION 4.4 Project Approach

Table 1

Issue of Concern	Oversight Agency	Environmental Commitment	Required Action/Permits
Waters of the United States	U.S. Army Corps of Engineers	Compliance with Section 404 of the Clean Water Act (33 U.S.C. §1344) for impacts to Waters of the U.S. and wetlands.	Prepare Joint Permit Application (JPA) and attain authorization. Two JPAs may be submitted if a 2017 safety project would impact jurisdictional resources.
	Virginia Department of Environmental Quality (VDEQ)	Compliance with Section 401 of the Clean Water Act (33 U.S.C. §1341), under State Water Control Law (Code of Virginia Title 62.1), and Virginia Administrative Code Regulations 9VAC25-210 et seq., 9VAC25-660 et seq., 9VAC25-670 et seq., 9VAC25-680 et seq., and 9VAC25-690 et seq. for impacts to state waters and wetlands.	First JPA would request a State Program General Permit (SPGP) to authorize impacts for immediate safety project in 2017. Second JPA would request an Individual Permit (IP) to authorize impacts for the remaining improvements for 2018 and 2019 construction.
	Virginia Marine Resources Commission (VMRC)	Compliance with Code of Virginia Title 28.2, Chapters 12, 13, and 14 for impacts to state-owned submerged lands, tidal wetlands, and dunes/beaches.	All mitigation would propose purchase of credits from the Virginia Aquatic Resources Trust Fund, in either the Released or Advanced Credits based on availability for the Upper James Basin and U.S. Army Corps of Engineers approval. Endangered Species Act Section 7 and National Historic Preservation Action consultation will be confirmed prior to SPGP or IP authorizations.
Rare, Threatened, and Endangered Species	U.S. Fish and Wildlife Service (USFWS); Virginia Department of Game and Inland Fisheries; Virginia Department of Conservation and Recreation – Natural Heritage.	Compliance with Endangered Species Act and state resource laws.	Consultation with USFWS regarding appropriate conditions for protected bats. Coordinate regarding best practices for Migratory Bird Treaty Act compliance.
Nesting Birds	USFWS; Virginia Department of Conservation and Recreation.	Migratory Bird Treaty Act.	Vegetation will be cleared from the project site outside of the nesting bird season. If for some reason vegetation will need to be removed within the nesting period, then a site survey would be conducted to determine if nesting birds are present, prior to vegetation removal.
Historic & Archaeological Resources/Section 106/Section 4(f)	Virginia Department of Historic Resources (VDHR).	National Historic Preservation Act, Section 106.	Coordination with VDHR for Phase 2 Segment eligible historic properties. Confirm Phase 3 results with VDOT. Confirm status of staging areas, as noted below.
Hazardous Waste	VDEQ; EPA.	All solid waste, hazardous waste, and hazardous materials will be managed according to applicable federal, state, and local environmental regulations.	Falconer to conduct work in accordance with site assessment recommendations impacted.
Staging Areas	VDOT, VDHR	National Historic Preservation Act, Section 106.	Confirm staging, borrow/disposal are not proposed to be located on or within the viewshed of historic properties.
Utility Relocations	VDOT	Project description and existing environmental commitments.	Confirm utility relocation areas are included within approved project impact area.

Waters of the United States Permits

The project is expected to affect several unnamed tributaries that flow into the James River. To determine the quantities of the impacts, VDOT completed wetland delineations for Phases 1, 2, and 3 of the project. This delineation was submitted to the U.S. Army Corps of Engineers (USACE) on May 17, 2016, and December 12, 2016. The preliminary Jurisdictional Determination from USACE is still pending. VDOT has indicated that an Individual Permit would be required for Phase 1, Phase 2 North and Phase 2 South, and Phase 3.

To further define the location of resources, we will follow up on the prior work and validate the existing or conduct a formal delineation of waters and wetlands for new areas (perhaps for utility relocations) immediately upon Notice of Intent to award to address any areas that have not been previously delineated. Obtaining this information at the beginning of the project will afford the best opportunity for impact avoidance. Impacts that cannot be avoided will be further minimized, and mitigated, as part of the permitting process. We will complete and submit the JPA to the VMRC, who will then distribute materials to USACE and VDEQ for their concurrent review. As suggested in the RFP materials, an IP would be expected for the project because of the quantity of the impacts. However, immediate safety improvements could be constructed in 2017 in a few key areas to benefit the traveling public more quickly. To allow this construction to occur in 2017, a State Program General Permit (SPGP) would be requested to be authorized for certain locations proposed to be constructed in 2017. The team will be mindful to verify that the project description proposed for this action would represent an activity considered to have logical termini and independent utility. Then, a second JPA would be submitted requesting an IP to authorize the work planned in 2018 and 2019 for the remainder of the project. The mitigation for all impacts to the project would propose purchase of credits from the Virginia Aquatic Resources Trust Fund, in either the Released or Advanced Credits based on availability for the Upper James Basin and USACE approval.

It is expected that USACE will also conduct Section 7 and Section 106 consultation to confirm requirements for listed species and cultural resources have been met. The objective is to attain all permits before construction to minimize risk, and to construct the project in the most efficient and compliant method.

Construction Oversight

Oversight Before and During Construction

Our team understands it will be responsible for compliance with pre-construction, construction-related permit conditions, as well as post-construction monitoring and reporting. Project-specific conditions will be identified in the permit authorizations by the regulatory agencies. All authorized work will conform to the permit conditions and regulatory approvals. We will provide copies of all permits, documentation, and correspondence with regulatory agencies to the VDOT project manager. Construction activities will not affect regulated areas until all permit authorizations have been issued and VDOT's project manager releases the work in writing. We recognize that VDOT's project manager may release part or all of such work not within jurisdictional areas.

Rare, Threatened, and Endangered Species

Threatened and endangered species include federal and state-listed James spiny mussel (*Pleurobema collina*), Indiana bat (*Myotis sodalis*), and Northern Long-eared bat (*Myotis septentrionalis*); and state-listed Orangefin madtom (*Noturus gilberti*), Atlantic pigtoe mussel (*Fusconaia masoni*), Little brown bat (*Myotis lucifugus*), and Tri-colored bat (*Perimyotis subflavus*), referenced in Table 2.

Table 2

Species	Phase 1 Additional Coordination or Surveys Required	Phase 2 Additional Coordination or Surveys Required	Phase 3 Additional Coordination or Surveys Required
James Spinymussel (<i>Pleurobema collina</i>)	NO	NO	NO
Indiana Bat (<i>Myotis sodalis</i>)	NO Bridge inspections prior to construction activities.	NO Bridge inspections prior to construction activities.	Confirm VDOT results on mist net survey and coordination on release from time-of-year restriction (TOYR).
Northern Long-Eared bat (<i>Myotis septentrionalis</i>)	NO Bridge inspections prior to construction activities.	NO Bridge inspections prior to construction activities.	Confirm VDOT results on mist net survey and coordination on release from TOYR.
Orangefin madtom (<i>Noturus gilberti</i>)	NO	NO TOYR will not be required outside of its native range.	NO
Atlantic pigtoe mussel (<i>Fusconaia masoni</i>)	NO	YES Further coordination with Virginia Department of Game and Inland Fisheries (DGIF) will be required.	NO
Little brown bat (<i>Myotis lucifugus</i>)	NO	MAYBE (Need confirmation that project will not intersect or is within the 0.5 buffer of hibernaculum.)	NO
Tri-colored bat (<i>Perimyotis subflavus</i>)	NO	MAYBE (Need confirmation that project will not intersect or is within the 0.5 buffer of hibernaculum.)	NO

Bats

A mist net survey was completed in 2016 for the Indiana and Northern Long-Eared bats. No threatened or endangered bats were captured during the survey. Based on this survey, the USFWS concurred that the project is not likely to adversely affect these species, and subsequently confirmed that a TOYR is not applicable for Phase 1 and 2. Direction on the TOYR for Phase 3 has not yet been provided by VDOT. In addition, if Option 1 of the project would be implemented, the Special Provision “Limitation of Operations Protection of Bats in Buildings for Design Build Contracts” will be required.

Per the DGIF mapping tool, the entire Phase 2 south segment of the project is within the 5.5-mile buffer of tri-colored and little brown hibernaculum, and the Phase 2 north segment intersects the 5.5-mile buffer of tri-colored and little brown hibernaculum. However, per guidance from DGIF, coordination is only required if a project intersects or is within the 0.5-mile buffer of tri-colored and little brown hibernaculum and involves tree removal, prescribed fire, or land-disturbing activities. Upon notice of intent to award, we will confirm that the project will not intersect or is within the 0.5-foot buffer of hibernaculum. If this is the case, no additional agency coordination would be required for these species.

Prior to construction activities, bridge structures 1021, 1022, 1023, 1071, and 1072 will be visually examined for evidence of bat usage in accordance with the Special Provision for “Limitation of Operations Protection of

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Bats on Bridges for Design Build Contracts,” initially within 1 year of the proposed work. If bats are observed roosting on a structure, we follow the notification requirements, per the RFP.

Aquatic Species

VDOT conducted a mussel habitat assessment in October 2015 and did not observe suitable habitat or any mussels present within the Mud Run and two unnamed tributaries to Big Creek within Phase 1; and Sinking Creek, Mill Creek, and three unnamed tributaries within Phase 2. USFWS concurred with VDOT that the project is not likely to adversely affect the federally and state-listed James spinymussel. Additional coordination will be initiated with the USFWS and DGIF regarding these species, and aquatic surveys will be performed, if required, before the JPA submittal.

For the Phase 1 segment, the state-only listed Atlantic pigtoe mussel and Orangefin madtom, had no documented collections within the 2-mile search radius. Therefore, these species are not anticipated to be impacted.

For the Phase 2 segment, the Atlantic pigtoe mussel is located within separate drainages to the James River from the project. However, because there is documented collection within the James River approximately 1 stream mile downstream of the beginning of the south section, we will initiate additional coordination for this species with DGIF prior to the JPA submittal. The Orangefin madtom was found to be present with no impacts. Therefore, TOYR will not be required outside of its native range.

Migratory Bird Treaty Act

To avoid impacts to nesting migratory birds, construction activities will be scheduled so that any vegetation clearing would occur outside of the nesting period for migratory birds. This procedure would be adhered to in each construction season. If, for some reason, any additional vegetated areas would be required to be cleared within the nesting period, a survey of the area would be conducted prior to the clearing to validate that no nesting birds are present.

Historic and Archaeological Resources/Section 106

The project team understands that portions of the two sites VDHR, No. 44BO0048 and VDHR No. 44BO0065, located within the Phase 2 North Segment’s project limits do not contribute to the eligibility of the sites and that improvements proposed in the Conceptual Plans will have no adverse effect on the historic properties. Portions of both sites that are either listed on the National Register of Historic Places (NRHP) (site VDHR No. 44BO0048) or considered potentially eligible for listing on the NRHP (site VDHR No. 44BO0065). During the design phase of the project, historic properties will be considered as design constraints and will be avoided. There are no historic properties present or affected by Phases 1 and 3 segment designs.

In the event that there are any changes to the design, alignment, right-of-way limits, or easements shown on the Conceptual Plans for the Phase 1, Phase 2 North, Phase 2 South Segments, Phase 3, or any additions to the Project such as stormwater management facilities, wetland mitigation sites, or noise walls, that would affect historic properties, the project team will notify VDOT to coordinate any additional cultural resources studies and/or coordination with the Virginia State Historic Preservation Office.

In the event that a previously unidentified archaeological resource is discovered during ground-disturbing activities associated with the construction of the Project, we will immediately stop all construction work involving subsurface disturbance in the area of the resource and in the surrounding areas where additional subsurface remains can reasonably be expected to occur and notify the VDOT Project Manager. We will ensure that construction work within the affected area does not proceed until the appropriate treatment measures are developed and implemented or the determination is made that the located resource is not eligible for inclusion on the NRHP.

Hazardous Waste

VDOT performed studies in advance to determine the potential for hazardous materials and/or contamination within the Project area. In the Phase 2 project segments, two properties, Columbia Gas and Kelly's Market, were identified for additional investigation to determine the presence or absence of adverse impacts to the properties. Based on the findings, we anticipate that no special management provisions to the construction contract should apply for soil disturbed for the roadway and drainage footprints proposed for Columbia Gas.

Residual-phase petroleum impacts were detected in one soil boring within the area right-of-way acquisition for Kelly's Market. In the event there is a proposed drainage or roadway/utility that will trend to depths that approach 5 feet below ground surface in this portion of the site, a note will be included on the applicable plan sheet to indicate the potential to encounter petroleum-impacted soil. Any petroleum-impacted soil encountered in this portion of the site could likely go back into the excavation from which it came (i.e., 9VAC20-81-95C.7.d) and/or be managed as fill material at the site/project area in accordance with the location restrictions of the Virginia Solid Waste Management Regulations (i.e., 9VAC20-81-660D.2.d).

In Phase 3, two properties, Tucker's 220 Market and Tyree Property, were identified as recognized environmental concerns. Tucker's 220 Market may require additional investigation for potential petroleum-impacted soils if the proposed drainage improvements/modifications is required. In addition, if any right-of-way acquisition is required, there is the potential for orphaned underground storage tanks (USTs) and associated subsurface appurtenances onsite for both sites. In this case, we would need to conduct additional investigations to determine if any special management provisions for soil and UST removals would need to be included in the construction contract.

Prior to construction, a Spill Prevention, Control, and Countermeasures Plan will be prepared and submitted to the VDOT Project Manager for approval. All solid waste, hazardous waste, and hazardous materials will be managed according to applicable federal, state, and local environmental regulations and RFP requirements.

If hazardous materials are discovered during construction, where hazardous waste is suspected, or in any other area, the VDOT Project Engineer will be notified, and all work in the area will cease until the appropriate response action is defined.

Asbestos

In June and July 2016, VDOT completed asbestos inspections for bridge structures 1020, 1022, 1023, 1071, and 1072. No asbestos was detected in bridge structures; therefore, no special provisions for asbestos abatement for these bridges are necessary, with the exception of bridge structure 1022. The pier tops were not accessible for bridge structure 1022. This portion of the bridge would need to be inspected for asbestos prior to demolition/renovation activities. Copies of all asbestos inspection, monitoring, and disposal records shall be provided to the VDOT Project Manager. For asbestos waste and other nonhazardous materials, Faulconer will be the co-generator and will prepare hazardous waste shipping manifest(s) for the VDOT representative's signature, as consistent with the signatory requirement under Section 411 of the VDOT Road and Bridge Specifications.

4.4.2 Utilities

The Faulconer team intends to use a fully integrated, three-pronged partnering approach of discipline experts in design, coordination, and construction to coordinate with utilities from Project inception to final acceptance. In fact, our team has already begun active coordination with all utilities within the project corridor to eliminate or minimize impacts to utilities during the development of our team's conceptual plan development.

Design: Our CH2M Design Manager Stephanie Hart and Utility Design Coordinator Marlon Smoker have extensive experience working with utilities to minimize or eliminate potential utility conflicts by treating the utilities as a project partner rather than a project opponent. On CH2M's Sudley Manor Drive/Linton Hall Road

Utility Evaluation Criteria Highlights

Knowledge and experience working with known or similar utilities: mitigate unexpected conflicts, avoid conflicts, minimize impacts where conflicts cannot be avoided. Account for coordination, adjustments and relocations in construction sequencing to that impacts of any delay risk is minimized

- ✓ Same design and construction staff as I-81 Salem District Corridor Safety Improvements Design-Build Project
- ✓ Current design concept significantly reduces RFP plan utility impacts
- ✓ Year 1 construction not dependent on any utility relocations
- ✓ Orientation sessions for all field staff to familiarize with utility locations to avoid unplanned impacts

Projects, they successfully coordinated with Colonial Pipeline and Transcontinental Gas Pipeline Corporation to avoid the need to perform costly relocations of major gas transmission lines that would have caused significant schedule delays. A win-win situation was created for all parties by proactively working together.

Coordination: Performing coordination early and often has proven to be a winning combination in the past, and we will work to achieve it again for this project. We will use a multi-pronged approach for our coordination efforts. First, our design team is already hard at work communicating with utilities within the corridor, determining potential conflicts, and working to eliminate or minimize the conflicts. Second, in addition to working closely with our designers now, our field personnel will continue our proactive coordination approach during construction. We will work closely with each utility, sharing our design plans and reviewing and addressing each utility's comments or concerns. Our construction staff have extensive experience installing underground utilities, as well as working around overhead utilities. They will work together with all utilities to ensure that proper protective practices are followed to avoid any negative impacts to in-place utilities.

Construction: The Faulconer field staff are familiar with the installation and protection of utilities and will work closely with area utilities to determine cost-effective and time-considerate utility relocations, which also considers and minimizes any impacts to the utility's end users. The Faulconer team will ensure the proper protection of all utilities, including septic-line drain fields and wells.

Utilities in Conflict with the Design and Potential Solutions

The Faulconer team has performed a utility conflict analysis of all utilities within the Project corridor and has developed an initial conflict resolution strategy to accommodate those utilities. In addition to a design concept that eliminates many utility conflicts, our schedule coordinates construction activities with needed utility locations in a manner that allows for both to occur in concert with one another, creating schedule efficiencies.

- **Craig-Botetourt Electric Cooperative (CBE):** CBE has an existing distribution line that essentially runs the entire length of the project corridor. For the majority of the project, the main circuit line, as well as multiple residential/business service lines, are not in conflict with the project. However, there are several locations, predominately towards the north end of Phase 1 and several locations in Phase 3, which conflict with VDOT's preliminary plans. The Faulconer team is coordinating with CBE as we advance our conceptual design to minimize impacts to the existing utility's infrastructure.
- **Dominion Virginia Power (DVP):** DVP has a transmission line that crosses the project's alignment in Phase 1 at approximate Station 400+00. Our team has coordinated with DVP, and this facility is not in conflict with the project. DVP also has distribution lines near Eagle Rock and Iron Gate which is not anticipated to be impacted by the project.
- **Columbia Gas of Virginia (CGV):** CGV has a significant number of facilities ranging in size from a 1.25-inch service line up to a 6-inch transmission line. The facilities run the length of the project corridor and cross the roadway at a number of different locations. It is anticipated that some of the locations where gas facilities cross the roadway will require relocation; however, we are working with CGV to minimize these

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occurrences. The most significant conflict with CGV is in Phase 1 between Stations 355+00 and 369+00. In this area, CGV 6-inch main crosses a proposed drainage ditch several times and falls within the limits of the proposed new roadway alignment in several instances. Our team is currently coordinating with CGV and working on a conceptual design to minimize the project impacts to these facilities.

- **TransCanada:** TransCanada has a single 20-inch, high-pressure transmission line that crosses the project alignment in Phase 2 North at approximately Station 263+10. Based on our coordination with TransCanada, it is anticipated that the existing steel casing for this facility is long enough to accommodate the project's planned roadway improvements.
- **Roanoke Gas Company (RGC):** The Faulconer team has coordinated with RGC and determined that no RGC facilities will be impacted by the project.
- **Lumos Networks (LMS):** Similar to CBE, LMS has facilities that essentially run the length of the project corridor. LMS has facilities on its own poles, as well as on CBE poles in a number of areas. Through coordination with LMS, we believe that the majority of conflicts that are related to existing poles being in the new alignment can be resolved by setting new poles outside of the proposed alignment but in line with the LMS facilities in order that the existing communication lines can simply be switched to the new poles. There are several locations in Phase 1 that will require both new poles and new wire to be installed to resolve the conflict. Additionally, there are several underground facilities that will most likely need to be relocated.
- **Wells and Sanitary Facilities:** Currently, there are no wells anticipated to be in conflict with the project. There are several sanitary drain fields that are shown to be in the proximity of either the cut/fill limits or the Option 1 proposed right-of-way limits. Our team will ensure that neither of these drain fields is impacted by the project.

Mitigation Strategies

We have already begun this important process with the utility owners and will establish biweekly utility coordination meetings immediately upon receipt of our Notice to Proceed. We will share our design plans with the utility companies and address their comments and any concerns they may have. We will work collaboratively with all parties to avoid utility impacts when possible or to relocate if it is more prudent to do so.

Our team will delineate utilities in the field, and our Project Safety Officer will hold orientation sessions with our field staff so everyone is fully aware of utility locations in order to avoid unplanned impacts. We will provide 72 hours of notice to utility owners prior to working in close proximity to their facilities and welcome them to be on the project as they deem necessary to monitor our construction activities. As a result of our continuous coordination with all utilities, our team will work in non-utility-conflicted areas while relocations are in process and will be able to adjust our planned operations if an unplanned relocation is necessary.

4.4.3 Geotechnical

Our comprehensive geotechnical design approach will result in a low risk, safe, and efficient design that minimizes the long-term maintenance requirements, while simplifying the construction sequencing and reducing the impact to traffic.

Geologic Hazards and Risk Mitigation Strategy

Acid-Producing Material

To mitigate and minimize the risk associated with the APM, we have optimized the design and adjusted the alignment of Route 220 to minimize disturbance of the areas where the APM exceeds the NP (i.e., in areas where the cut would be net acidic). The Faulconer team includes Dr. Lee Daniels as our APM specialist.

Geotechnical Evaluation Criteria Highlights

● **Competence in geotechnical design and risk management: identify, manage, mitigate, and dispose of APM, widening and utilization of existing pavement, minimize geotechnical and geological impacts**

- ✓ CH2M Geotechnical team worked on I- 95/Route 630 Design-Build Project which had APM issues
- ✓ Current design concept reduces potential APM impacts
- ✓ Aggressive and detailed subsurface exploration plan to identify APM material and quantify material stability prior to excavation
- ✓ Design consultant in-house APM specialist and local subconsultant APM specialist improves risk management, accountability, and competence
- ✓ Current design concept increases utilization of existing pavement

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Dr. Daniels is a well known expert in treating the APM and will work with our lead Geotechnical Engineer to develop the exploration program. Our APM-handling program will include the following:

- The APM program and handling will be delivered per the RFP requirements
- We will locate the APM during the scope validation boring program
- Based on the information gathered during the boring program, we will identify areas of APM material prior to excavation
- During excavation, we will identify the various categories of APM per the RFP
- The material that requires treatment per the RFP will be remediated in accordance with the contract documents

Exhibit 4 presents the fundamentals of our work plan to manage the APM. As shown, the plan considers three options to manage Category 1 APM:

- **Option 1:** Excavate, treat, and place material per RFP requirements
- **Option 2:** Excavate and dispose at offsite permitted landfill
- **Option 3:** Avoid disturbance of Category 1 by using a cut wall system

Karst Terrain

Our geology understanding is enhanced by our extensive and practical experience in designing and constructing projects in karst terrain. Karst terrain poses significant challenges for the project corridor, requiring careful evaluation. Limestone rock contains karst features such as air-or water-filled voids, weak, gouge, and soil-infilled zones and steep sloping and pinnacled rock surfaces. Based on the GDR, none of the borings show any sign of Karst feature. We will verify the karst finding during the Scope Validation Period.

Shale Fill and Embankments Stability

The GDR indicates that some existing slopes with slope ratio steeper than 2H: 1V are experiencing stability issues. This is due to the presence of shale fill, which according to GDR and the RFP has loss of cementation and degradation over time. However, the GDR indicates that the existing embankment fill source is unknown. Therefore, during the exploration program, one of the priorities is to identify the shale fill location and perform fully softened friction angle tests on samples from existing and proposed cut slopes. Based on the GDR, the average fully softened friction angle test is 25 degrees, which has significant impacts because using this material as roadway fill may require a slope ratio of 3H:1V or flatter to meet the global stability criteria.

Most of the fill slopes are considered to be critical slopes because they are 25 feet or higher. Therefore, a global stability factor of safety of 1.5 is required per the RFP. If the additional laboratory or field testing confirms the shale fill material low shear strength, and where the right-of-way permits, a slope ratio of 3H: 1V or flatter may be used. Where the ROW or other project constrains will not allow such a flat slope ratio, higher strength fill material, treatment, or augmentation of the shale material may be used to increase the shear strength adequately

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to achieve the 2H: 1V slope ratio and meet the design criteria. However, to minimize the cost and reduce the borrow material that might be needed, where geometry allows, we may use the shale fill in the core of the proposed embankment and cap it with higher - strength borrow material that has higher shear strength.

Some areas within the existing fill embankment are sloped at 2H: 1V or steeper. However, based on the RFP, there are no or limited grading changes within these locations such as Phase 3 South where there is only pavement mill and overlay. Therefore, we assume that these slopes do not require stability analyses as the proposed work does not significantly impact these slopes.

Subsurface Explorations and Geotechnical Analysis

We will develop and execute a final design subsurface exploration program to augment the geotechnical information completed to date and the explorations completed during scope validation. The geotechnical exploration will be performed to meet or exceed Chapter 3 of the VDOT Manual of Instructions for Materials Division, AASHTO LRFD Highway Bridge Design Specifications, 2014.

Specialty Subconsultant. The invaluable expertise of Dr. Daniels will greatly enhance the quality and reliability of the subsurface exploration program during the scope validation period and design-build period and allow for a reliable and cost effective design while minimizing the risk.

Borings. Boreholes will be advanced at each culvert and along Route 220 to better characterize the subsurface conditions. Boreholes will also be drilled at embankment fill areas, cut slopes, retaining wall, and for pavement and drainage design. Additional borings will be drilled if deemed necessary. Boring spacing will meet or exceed the RFP and MOI requirement for adequate exploration.

We will supplement borings at stormwater management ponds to meet the VDOT requirement of at least two borings per pond. An observation well will be installed at each stormwater management pond and monitored monthly for 12 months.

As part of our geotechnical QA/QC process, our geotechnical or geological engineers will be onsite full time to log boreholes and document other significant observations.

We will comply with the VDOT Manual of Instructions for the number of borings and total drilling length required for scope validation and final design phase, respectively. Soil and rock samples will be collected and classified per VDOT guidelines. Four soil samples will be collected in the top 10 feet and at 5-foot intervals thereafter using standard penetration test (samplers and Shelby Tube samplers). Bulk samples will also be collected at selected depths.

Laboratory Testing. The geotechnical laboratory-testing procedures will be selected in order to identify project challenges and risks, as well as appropriate risk mitigation strategies. As noted in the RFP documents, we will perform adequate number of fully softened friction angle test and perform these test at Virginia Tech Geotechnical Research Laboratory, which is run by Dr. Bernardo Castellanos who is an expert in fully softened friction angle.

In addition to the ABA analyses, the laboratory program will also include the following:

- Standard penetration tests
- Corrosivity tests for rock
- Shale durability test
- Strength and compressibility laboratory tests
- Compaction and California Bearing Ratio tests
- Unconfined compressive strength for rock

Geotechnical Analysis and Design

Pavement

We will perform a verification pavement design and follow all minimum pavements section requirements in accordance with the RFP. Changes will be limited to increasing the thickness of the base or sub-base layers where necessary due to poor subgrade. We will comply with all minimum pavement sections, designed to provide a pavement structure capable of supporting existing and future traffic loadings for Route 220, and lateral drainage for the pavement and subsurface drainage for Route 220. We will confirm the adequacy of the pavement design by performing confirmatory analyses based on the projected average daily traffic (ADT) of 6,200 and truck percentage of 9 percent presented in Attachment 2.2 of the RFP, and based on the GDR and the supplemental exploration data.

Culvert Foundations and Abutment Walls

Geotechnical issues associated with the karst terrain may pose risks to the foundation and abutment walls design. To mitigate these risks, we may use the remediation measures discussed in Section 4.4.2 to mitigate the risks associated with the karst terrain.

Settlement

Design and construction of pavements, subgrades, and embankments will meet the post-construction settlement thresholds stated in the RFP. In design and construction, total and differential settlement criteria in RFP will be used in the design and construction of the structures to ensure the integrity of structures.

Settlement may present a risk for the pavements in fill sections fill embankments, and retaining walls. However, the risk is low because the competent materials, such as highly weathered rock or rock, are generally shallow, and clay layers are highly over-consolidated according to the consolidation tests provided in the GDR. If thick, soft clay is encountered under the proposed pavements and retaining walls, overexcavation and replacement, or other mitigation measures will be used to limit post-construction settlement. If needed, surcharge programs with holding period, and settlement plate monitoring will be used to limit the post-construction settlement.

Roadway Retaining Walls

Retaining walls, if used, will be designed and constructed as required by the RFP and contract documents. Because of the presence of APM in the project corridor, we may use cut wall in lieu of the 2H: 1V slope cut to minimize APM cuts.

Fill Slope

Per the GDR, soft soils are within the Project limits and in some areas consist of a layer of soft compressible clay. The risk generally associated with soft compressible clays is long-term consolidation settlement. To identify the limits of this material, we will perform laboratory and in site testing to evaluate shear strength and consolidation parameters of the existing clay soils. Based on the available data, construction without some type of treatment/modification of soft compressible clays may result in long-term settlement and subsequent pavement distress. Based on the test results provided in the GDR, a surcharge fill with a few months of holding period will work for these areas. However, during scope validation, we will investigate and identify embankment fills with weak soils at the embankment toe that may require further analyses and possibly soil replacement during construction. If soft materials are encountered under the embankments, these materials will be over excavated and replaced with competent materials, or constructed in stages.

Cut Slopes

The majority of the rock cut slopes will be on fractured or decomposed rock or shale, intermediate geomaterial, or residuum. Based on the GDR, such material has adequate shear strength as indicated from the SPT-N values of 30 to 100 bpf and that most of existing cut slopes are sloped at 2H: 1V or steeper. Therefore, for cut slopes,

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we will use the RFP minimum slope ratio of 2H: 1V and locally flatten ratio in weak zone. We may also stabilize the weak areas using steel wire mesh or shotcrete only if needed. This will secure the rock slope and provide adequate stability and reduce long-term maintenance cost.

Based on available data, most of the excavation will not require blasting except encountered below auger refusal or top of rock as indicated in the boring logs as shown on the soil profile.

Geotechnical Considerations for Stormwater Management Basins

We will design stormwater management basins in accordance with the RFP. Design of stormwater management ponds will consider the effect on and influence of karst terrain. The entire project corridor is underlain by carbonate rock that is susceptible to solution by acidic water. Runoff captured in and effluent from stormwater management basins may affect subsurface flows and features. Our design will employ liners where required by design, and in other locations as necessary to contain runoff.

Scour Analysis

Our team will obtain representative samples from the soils in the vicinity of the proposed culverts No. 1071 and 1072, and will perform hydrometer analysis to estimate D50 and D90 values. We will then evaluate the scour potential in accordance with Hydraulic Engineering Circular No. 18. The results of the analysis will provide a more accurate understanding of the soil conditions within the vicinity of these structures. This analysis will be combined with the as-built information from the existing structures to ensure proposed substructure designs account for anticipated scour.

Maintaining Existing Structures

The RFP plans show significant fill proposed adjacent to existing structures. Soft compressible soils may present within the vicinity of these existing bridges, which could introduce concerns associated with settlement of individual piles or pile groups during placing of new fill. The team will consider damage to surrounding existing structures caused by vibrations or ground heave, or ground settlement, and mitigation of these impacts will require a comprehensive subsurface investigation.

Geotechnical Reporting

We will submit to VDOT geotechnical design and construction memoranda and reports summarizing pertinent subsurface explorations, test, and geotechnical engineering analyses, evaluations, and recommendations used in support of our design-build documents. We will provide supplemental technical specifications for construction methods not addressed in the Standard Specifications.

Our QA/QC plan will document how each specific geotechnical recommendation or requirement will be addressed in the final design and construction documentation. The results of the geotechnical exploration and laboratory results will support design and construction efforts to meet the requirements outlined in this section.

Scope Validation Subsurface Explorations

CH2M will supplement the available subsurface information during the scope validation period using a three-pronged subsurface exploration program that will be conducted within the scope validation schedule.

- Perform targeted geological survey which consist of both office study and field inspection.
- Complete a targeted subsurface program, and identify anomalous areas indicating karst features or APM area.
- Geotechnical drilling and sampling to investigate the karst features identified early if any, along with confirmation drilling. We will also perform drilling and testing to better characterize the subsurface conditions along the corridor. Our team subcontractor, Froehling & Robertson, will provide drilling and laboratory-testing services for the exploration.

SECTION 4.4 Project Approach

- Investigate and identify cut slopes that have significant overburden (indicating potential instability) or soil in-filled cavities. We will confirm the assumptions made on the soil profiles for the retaining walls and fill slopes stability evaluation by performing more borings, as discussed early. Pavement coring will be performed on shoulders needing to be widened. We will conduct rock corrosivity tests. We will mobilize drill rigs, as needed, to complete the work within the allocated period.

4.4.4 Quality Assurance/Quality Control

NXL will provide independent QA management as part of the Faulconer team. NXL is a company founded on the principle of providing excellence in everything they do. *Joe Hamed, NXL's QA Manager for the Route 220 Project, will insist on the highest quality standards that VDOT expects.* NXL provided similar services to the Faulconer/CH2M team on the I-81 Project.

QA/QC Plan Summary

Our project-specific QA/QC plan incorporates the guidance in the MQA/QC to align our work practices with VDOT requirements. Separate plans defining the respective QA and QC measures to be employed during design and construction will be developed and approved for use. Checklists, daily reports, and inspection testing plans will be used to support the QA/QC program activities and document that quality objectives and standards are met. Testing plans will at least meet the requirements listed in Appendix 1 of the MQA/QC. QA/QC inspection staffing will be maintained to match the projected construction workload.

The Faulconer team will invite VDOT representatives to attend and participate in routine QA/QC meetings to discuss upcoming work, resolve any quality challenges, and ensure that inspection and testing staffing will meet work demands. Our team will maintain lines of communication among the design-build project manager, design manager, construction manager, QA manager, VDOT project manager, and all independent QA/QC inspection and testing personnel to ensure team understanding of all project quality concerns.

QA/QC Evaluation Criteria Highlights

QA/QC during design and construction including appropriate staff: staffing plan minimizes VDOT effort, design Quality Management produces easily reviewed design documents, and construction quality management requires minimal VDOT intervention

- ✓ Same design and construction staff as I-81 Salem District Corridor Safety Improvements Design-Build Project
- ✓ Use of small, discreet construction packages minimizes VDOT effort during 21-day review period
- ✓ Advanced over-the-shoulder reviews and submittal presentations similar to I-81 project produce easily reviewed design documents
- ✓ Staffing plan will designate discipline leads to interface directly with VDOT counterparts
- ✓ Proactive project leadership with proven record in Salem District aggressively resolves issues with minimal VDOT intervention
- ✓ Link quality management to risk management to target and focus resources to minimize VDOT intervention

Designed according to MQA/QC guidance, the structure gives the QA Manager complete independence from construction production forces. The following are specific responsibilities of key QA/QC staff:

- Design-Build Project Manager:** Fran Burke holds ultimate responsibility for the quality of the project design and construction delivered to VDOT. He will assign staff resources as needed to meet the requirements of the QA/QC plan and is responsible for its implementation.
- QA Manager:** In compliance with VDOT requirements, the QA Manager operates independently from the design and production staff. Joe Hamed of NXL Construction Co., Inc., will report directly to Fran Burke to ensure the complete independence of the construction QA oversight and auditing processes. Joe will provide over-the-shoulder reviews and attend constructability meetings to ensure that the design process and completed plans meet the QA/QC plan requirements. Joe is ultimately responsible for developing and

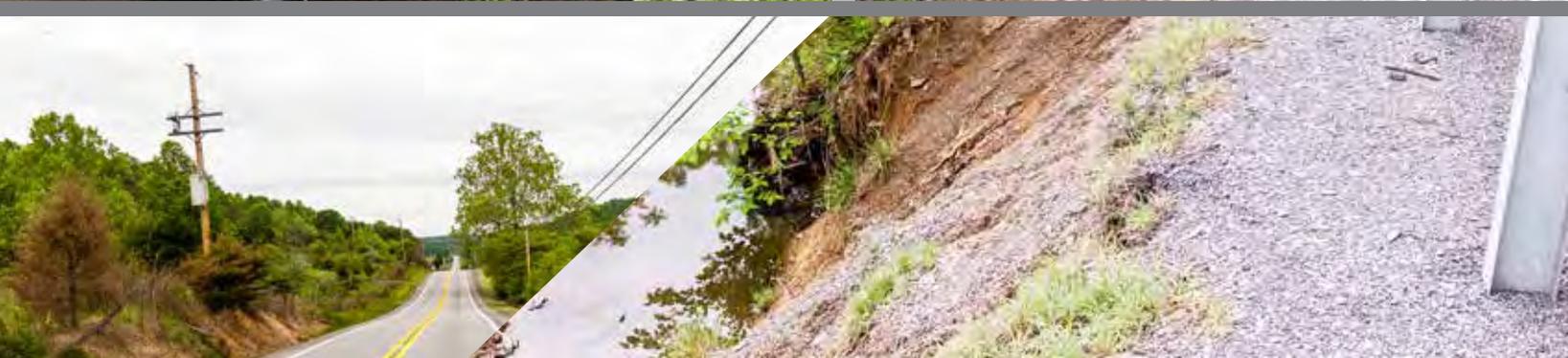
SECTION 4.4 Project Approach

implementing the project QA/QC plan, and he will submit it for VDOT approval 30 days after notice to proceed. He will communicate directly with VDOT if the design-build project manager does not adequately address quality concerns or nonconformance issues when informed of their existence.

NXL, an engineering and testing firm with an outstanding reputation, will perform field and laboratory QA testing of all materials incorporated into the project.

- **Design Manager:** In addition to leading and coordinating the activities of the design team, Stephanie Hart, PE, will implement the design QA/QC plan that will guide all internal design review and checking processes. Stephanie will ensure that the QA/QC procedures, documentation, reporting, and auditing instructions are consistent with MQA/QC guidance. She will also identify senior engineers to provide QA/QC reviews for each design discipline, and document the reviews, comments, and resolutions.
- **Construction Manager:** Josh Williamson will manage QC activities for all constructed work. He will be supported by a QC Manager who will manage field QC inspectors and whose sole job on the project is to perform construction QC inspections. Josh and the QC Manager will ensure that all design criteria and construction requirements are being met and will identify any nonconforming work or work practices that could adversely impact project quality. They will inspect all work zones daily to ensure compliance with the Virginia Work Zone Manual, and will inspect all erosion and siltation controls daily, whether rain falls or not, to ensure that environmental compliance is maintained at all times. The QC and QA managers will provide additional oversight regarding maintenance of traffic and environment as an added step in ensuring compliance in these two critical project aspects.

QC inspectors will be assigned to ensure proper inspection of installed work. One senior QC inspector will be assigned to the roadway and another to the structure/drainage facilities. Two additional QC inspectors with both roadway and structure experience will be used throughout the project as the work dictates. Additional QC inspectors will be assigned as needed at peak construction times or when critical tolerance work is performed. All QC inspectors will hold required VDOT, Department of Conservation and Recreation, and American Traffic Safety Services Association Intermediate/Traffic Control Supervisor certification.



Construction of the Project

Our approach to constructing the project addresses the significant construction risks with a phasing and staging plan that includes open communication with agencies, early start to permitting, minimal traffic shifts, and safe distances between construction activities and the traveling public. Risks to be mitigated by our construction approach include traffic management, CSX Railway coordination, agency coordination, environmental compliance, APM excavation and remediation, shale material, and hauling. To gain the greatest construction efficiencies, we have staged construction to match earthwork cut operations with the closest adjacent areas requiring fill material. Performing both cut and fill elements as a single task eliminates the need to stockpile on the right-of-way or at an offsite location, only to move the stockpiled material later to yet another work or waste area, and at potential increased disruption to the public.

4.5 Construction of the Project

Sequencing of Construction Activities

Mobilization and Staging

Immediately following NTP, the Faulconer team will mobilize our project team to finalize surveying, begin the permit acquisition process, perform geotechnical investigations, initialize utility relocations, and continue to advance improvements to our conceptual design. Generally, the Faulconer team will subdivide the three project phases into sub-phases, which will allow our team to begin utility relocation and construction work early in areas that are not affected by State Program General or individual USACE permitting requirements. This will allow our team to initiate construction activities faster. For example, improving most intersections within the project limits will provide the traveling public with much-needed safety improvements early in the project schedule. We will be providing local police and EMS officials with orientation sessions prior to each significant change in maintenance of traffic (MOT) operations to ensure effective response times if the need arises, and will communicate upcoming changes in MOT to the residents and travelling public who use the corridor regularly.

Environmental Protection

(Silt fences, stream protection, cultural resource protection during construction)

As soon as authorization to access the project is granted following NTP, our team of environmental experts will begin the necessary fieldwork and agency coordination needed to confirm/determine environmental impacts as an initial process to securing required permits. During this time, our environmental experts will work with our design and construction team and seek to make optimizations to the design that reduce overall environmental impacts. Additionally, our experts will use this time to work with our survey team and construction management team to delineate impact limits. Our team will then install orange fencing and wetland flagging to clearly delineate non-permitted environmental and cultural resource areas adjacent to the planned limits of disturbance to protect non-impact areas for the duration of the project. Once final vegetation has been established and all work in a specific area has been completed, the delineation markers will be completely removed.

All personnel working on the project will participate in an environmental orientation class prior to performing work in the field to ensure that non-permitted impacts are avoided. Additional orientation sessions will occur as additional areas of the project become available for construction activities to begin.

Prior to land-disturbing activities occurring in specific areas of work, erosion and sedimentation (E&S) control measures will be installed in accordance with our approved E&S control plans. E&S controls will be monitored and maintained in accordance with contract and permit requirements until work in the area has been completed and permanent vegetation has been established.

Earth Moving Operations

Due to the geological variability in general and APM specifically, our team's geotechnical engineers and APM specialists are integral parts of the Faulconer team. Continuing the geotechnical work begun during the pursuit phase, our geotechnical engineers and APM experts will continue assisting the team through design and throughout the duration of construction activities on the project to ensure the proper identification, handling, and treatment of pyritic materials. Using the knowledge gained during the geotechnical investigation performed during scope validation, our team will strive to isolate those areas containing APM, and will address per the RFP requirements so design optimization opportunities might be achieved in order to minimize overall impacts, reduce overall exposure, and allow for focused remediation efforts when avoidance is not a viable option.

Drainage Installation (Culvert replacement, BMP installation, etc.)

All drainage facilities will be installed in accordance with the standards, contract documents, and approved plans. During all land-disturbing activities, the Faulconer team will have personnel on the project who hold current VDEQ Responsible Land Disturber and VDOT Erosion and Sediment Control Contractor Certifications to ensure that all VDEQ and VDOT E&S control plan implementation requirements are met. Following establishment of permanent vegetation, drainage facilities will be cleaned as needed and E&S controls removed.

Base and Paving Operations

Following receipt of notice to proceed, the Faulconer team will photographically document the condition of existing pavement within and adjacent to the project limits. The documentation will be provided to VDOT prior to submission of final construction plans. All pavement milling and overlaying, or building up of existing pavement and installation of new pavement, will be performed in accordance with applicable standards and contract requirements. Any temporary pavement will be designed and installed in accordance with applicable standards and contract requirements and will be properly maintained for the duration of its use.

Striping and Signage

The Faulconer team will install and maintain pavement markings and pavement grooves in accordance with all applicable standards, contract requirements, approved MOT plans, approved Pavement Marking Plans, and the approved Traffic Management Plan (TMP). Pavement markings/markers will be adjusted as needed to properly delineate the work zones as work progresses and markings will be completely removed when no longer applicable. The Faulconer team will perform an existing sign inventory in accordance with the VDOT Traffic Engineering Design Manual following receipt of notice to proceed, and we will submit the completed inventory with the first plan submission for proposed signing. Construction signing will be installed in accordance with all applicable standards, the approved signing plans, and the approved TMP.

4.5.1 Sequence of Construction

Faulconer's approach provides effective construction sequencing activities that address safety and operations, as well as geotechnical constraints. Our approach minimizes environmental impacts and right-of-way acquisition. Staging and storage areas will be identified to minimize impacts to the traveling public. We will also provide the requisite public involvement/stakeholder coordination. Our permitting experts have worked with the regulators in the Salem District on the I-81 Corridor Safety Improvements project and this experience will ensure timely governmental approvals. Our team will anticipate and mitigate potential delays to construction to meet the Final Completion of the Project by the date included in our Letter of Submittal.

Our construction phasing follows the RFP plans Phase 1, Phase 2 South and Phase 2 North, and Phase 3 South and Phase 3 North. Exhibit 2 in Section 4.3, presents the detailed sequencing described in this section.

Sequence of Construction Evaluation Criteria Highlights

- ✓ The construction sequencing builds discrete areas so large portions of the corridor are not under construction simultaneously thereby decreasing impacts to users and increasing safety
- ✓ Focusing on the intersections early and independently limits disruptions to adjacent facilities and creates safer entrance and exit to later construction phases
- ✓ Sequencing reduces installation of concrete barrier increasing user safety
- ✓ Sequencing delivers high priority safety improvements for the public early in the project

Construction Sequence

Year 1 construction will begin with Phase 3A (P3A) mill and overlay in Phase 3 South and construction of a portion of Phase 3. Construction of Phase 1A (P1A) intersections in Phase 1 outside of the permit area and do not require right-of-way may begin in Year 1 as well. Other Potential year 1 construction includes Phase 2A (P2A) intersections that are outside the permit area and do not require right-of-way. P1A and P2A intersection improvements provide significant early spot improvements and will accommodate larger vehicles and remove left-turning traffic from the through lanes. A State Program General Permit for Phase 2 South and Phase 2 North may be approved within 5 to 6 months from the time of application providing the opportunity to begin construction of P2B and P2C in Year 1, if desired. Year 2 and Later Construction Activities will include construction of Phase 1B (P1B) that will complete the intersections that are inside the permit area. See Exhibit 2 in Section 4.3 Design Concept.

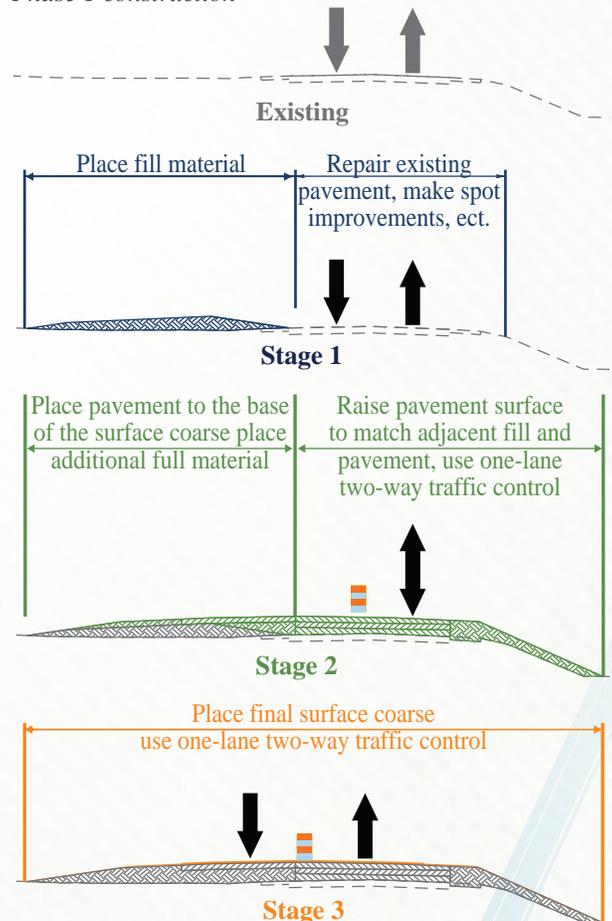
Construction Activities by Phase

Phase 1 (Station 340+00 to 589+59)

The P1A work on the project will begin by constructing the fill area outside the existing Route 220 facility having minimum impacts to existing traffic. After the fill material is in place, the existing asphalt will be repaired as needed, followed by placing lifts of asphalt on top of the existing asphalt to match the top of grade of fill material of the proposed roadway. The use of daily one-lane, two-way traffic operations will be necessary to complete the work. One-lane, two-way MOT operations are limited to daily closures utilizing flaggers and opened back up after the conclusion of daily construction operations. No vertical drop-offs will be exposed to traffic. A wedge will be installed at all locations where a vertical drop is present, in addition to using group two channelizing devices. Traffic will continue to be maintained in the existing configuration. The intermediate course of asphalt for the proposed roadway will be placed, and the riding surface of the existing roadway will continue to increase. The last step of this stage will shift traffic into its final alignment and place fill material on the outside of the pavement to eliminate any vertical drops and install permanent signing. This stage of construction would again use the one-lane, two-way traffic operations during work hours. The final stage of construction will place the surface course of asphalt and final pavement markings using one-lane, two-way traffic operations.

EXHIBIT 5

Phase 1 construction



SECTION 4.5 Construction of the Project

Once the appropriate permits are secured, P1B of the project will begin. The stages of P1B will following the same steps as P1A. P1B will tie together the work completed in P1A and complete any intersections not able to be completed in P1A. The typical stages of Phase 1 construction are shown in Exhibit 5.

Stage 1. Place fill material to the west of the existing roadway as needed. Using one-lane, two-way traffic control operations, existing pavement that is located within the proposed roadway footprint will be repaired and shoulders reconstructed as needed. Any new drainage that will extend across the proposed roadway or extend/modify existing drainage systems will be installed.

Stage 2. Using one-lane, two-way traffic control operations, existing pavement will be scarified and overlaid to bring the top-of-pavement elevation equal to the top-of-grade elevation of the proposed roadway as needed. Next, fill material will be placed to the west of the existing roadway to the top of finished earth grade, wedge material will be placed as necessary to the eastern side of the existing road to eliminate any vertical drop-offs, and intermediate asphalt will be placed to raise the roadway surface to the bottom of the final surface course of the proposed roadway. Upon completion of the intermediate asphalt course, traffic will be shifted into its final alignment, any portion of the existing roadway that should not remain will be removed, and fill material will be placed to eliminate any vertical drop-offs. Lastly, final signage will be placed.

Stage 3. Using one-lane, two-way traffic control operations, final surface asphalt will be placed, minor grading will be completed to ensure that no drop-offs exist, and final pavement markings will be placed.

Phase 2 (Station 102+71 to 340+00)

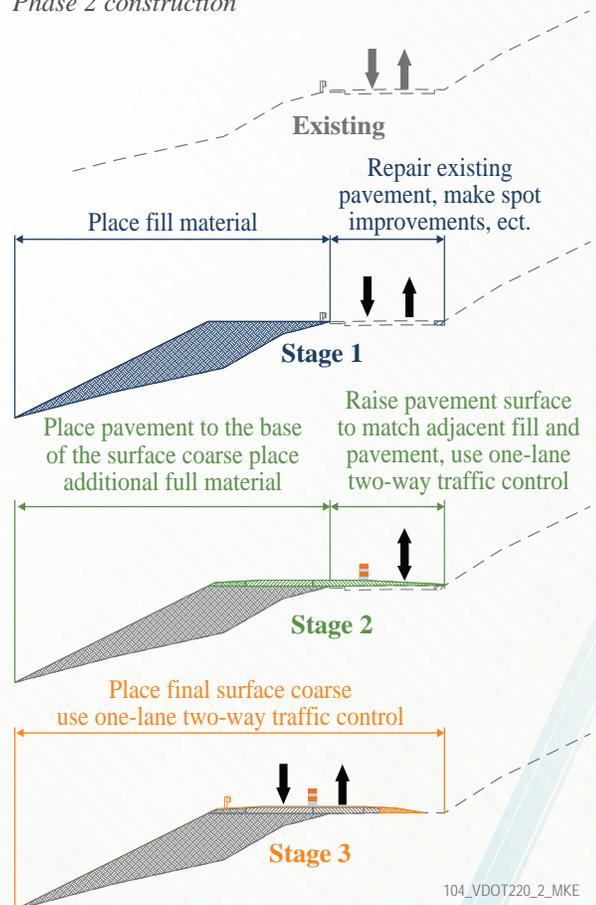
The work will proceed similar to Phase 1. Traffic will be maintained in the existing travel lanes as the fill material is placed to the west of the existing Route 220 facility. The existing roadway will be repaired as needed. The east shoulder will be rebuilt as required by the design. After the fill material is in place, the base and intermediate asphalt will be placed to the bottom of the surface mix elevation, and the new guardrail will be installed. Where the proposed roadway overlaps with the existing roadway, the existing surface will be scarified and asphalt placed using a one-lane, two-way traffic control operation. At this time, traffic will be placed into its final alignment using temporary pavement markings on the intermediate asphalt surface. Finally, the surface mix will be placed using one-lane, two-way traffic control operations along with the final pavement markings.

Stage 1. Fill material to the west of the existing roadway will be placed as needed. Using one-lane, two-way traffic control operations, existing pavement located within the proposed roadway footprint will be repaired and shoulders reconstructed as needed. Any new drainage that will extend across the proposed roadway or extend/modify existing drainage systems will be installed. The typical stages of Phase 2 are shown in Exhibit 6.

Stage 2. Using one-lane, two-way traffic control operations, existing pavement will be scarified and overlaid to bring the top-of-pavement elevation equal to the top-of-grade elevation of the proposed roadway as needed. Fill material will be placed to the west of the existing roadway to top of finished earth grade. Wedge material will be placed as necessary to the eastern side

EXHIBIT 6

Phase 2 construction



SECTION 4.5 Construction of the Project

of the existing road to eliminate any vertical drop-offs. Intermediate asphalt will be placed to raise the roadway surface to the bottom of the final surface course of the proposed roadway. Upon completion of the intermediate asphalt course, traffic will be shifted into its final alignment. Any portion of the existing roadway that is not to remain will be removed, fill material will be placed to eliminate any vertical drop-offs, and final signage will be placed.

Stage 3. Using one-lane, two-way traffic control operations, final surface asphalt will be placed, minor grading will be completed to ensure that no drop-offs exist, and final pavement markings will be placed.

Phase 3 (Station 589+59 to 724+53)

Both the P3A and P3B of the project will be completed using one-lane, two-way traffic closures to saw cut and remove existing pavement to complete grading and placing of any fill material, to install the base/intermediate/final asphalt courses of asphalt, and to install guardrail. It will be necessary to complete this as a single operation and to open the roadway at the end of each work period, which will limit the length of the work zone daily. At no point will blunt ends of guardrail be exposed to traffic, and no vertical drop-offs greater than 2 inches will be exposed to traffic when the work zone is unmanned. After completion of all activities discussed above, the traffic will be placed into its final alignment. At this point, the existing pavement will be milled, and temporary pavement markings will be placed on the milled surface to channelize traffic. Upon completion of the milling, the final asphalt surface and final pavement markings will be placed. The typical stages of Phase 3 are shown in Exhibit 7.

Stage 1 (P3A). Using a one-lane, two-way traffic control operation, existing pavement on the western half of Route 220 will be removed/ repaired. Work will be completed in the direction of traffic, and guardrail will be installed/replaced as required.

Stage 2 (P3A). Using one-lane, two-way traffic control operation, existing pavement on the eastern half of Route 220 will be removed/ repaired. Work will be completed in the direction of traffic, and guardrail will be installed/replaced as required.

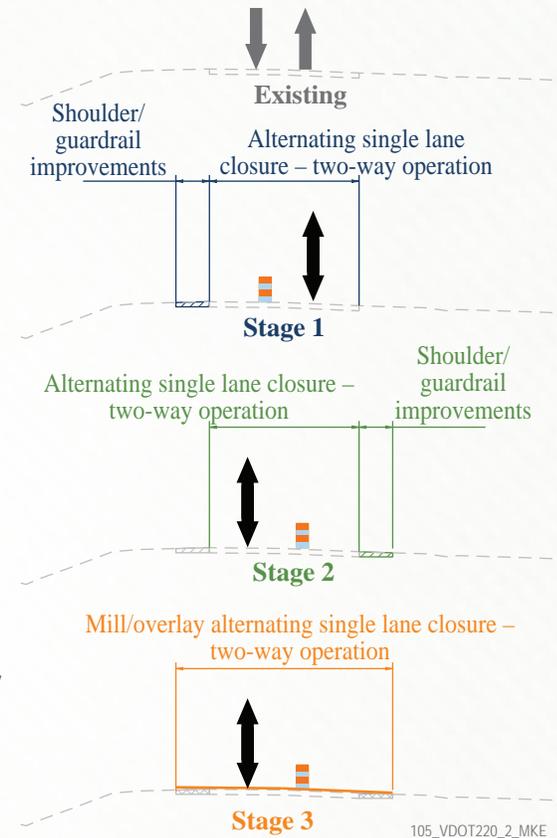
Stage 3 (P3A). Using one-lane, two-way traffic control operation, the existing roadway from Station 589+59 to Station 672+04 and from Station 682+09 to Station 724+53 will be milled/overlaid.

Stage 1 (P3B). Fill material will be placed to the east of the existing roadway as needed. Using one-lane, two-way traffic control operations, existing pavement that is located within the proposed roadway footprint will be repaired, and shoulders will be reconstructed as needed. Any new drainage that will extend across the proposed roadway or extend/modify existing drainage systems will be installed.

Stage 2 (P3B). Using one-lane, two-way traffic control operations, existing pavement will be scarified and overlaid as needed to bring the top of pavement elevation equal to the top of grade elevation of the proposed roadway. Fill material will be placed to the east of the existing roadway to top of finished earth grade. Wedge material will be placed to the western side of the existing road to eliminate any vertical drop-offs. Intermediate asphalt will be placed to raise the roadway surface to the bottom of the final surface course of the proposed roadway. Upon completion of the intermediate asphalt course, traffic will be shifted into its final alignment.

EXHIBIT 7

Phase 3 construction



SECTION 4.5 Construction of the Project

Any portion of the existing roadway that is not to remain will be removed, and fill material will be placed to eliminate any vertical drop-offs. Final signage will be placed at this time.

Stage 3 (P3B). Using one-lane, two-way traffic control operations, final surface asphalt will be placed, minor grading will be completed to ensure that no drop-offs exist, and final pavement markings will be placed.

4.5.2 Transportation Management Plans

As part of the TMP plan, prior to starting construction, we will hold a coordination meeting with first responders to perform a table-top response to familiarize for operations. This is a unique feature of our approach. We have used this approach on other VDOT design-build projects, and VDOT has begun requiring this on other VDOT design-build projects. We will coordinate daily with the Traffic Operations Center (TOC) to inform them when we are starting and stopping construction and when we will be working under flagging operations.

Transportation Management Plan Evaluation Criteria Highlights

- ✓ Plan to hold regular town hall meetings, similar to our I-81 approach to keep traveling public and stakeholders informed
- ✓ Plan to conduct table top exercise with first responders prior to construction phases to strategize response to emergencies both outside and within the work zones
- ✓ Plan to provide updates to VDOT for their website with latest project information for dissemination through their email and social media contact databases

Faulconer will develop a Type B, Category III TMP in accordance with VDOT IIM-241/TE-350, Transportation Management Plan Requirements. The TMP will define the temporary traffic control strategies, public communication strategies, and transportation operations strategies of the project.

The first step in developing the TMP will be to collect traffic data for the corridor to identify traffic patterns and demand for the facility. The data will identify peak travel hours, optimum time to perform lane closures/flagging operations, and predict traffic queuing (and other related impacts) associated with lane closure operations. In addition, the data will provide information about the users of the facility—heavy vehicles, transit vehicles, and non-motorized traffic (pedestrians and bicycles). A traffic analysis will also be completed to ensure that any planned operation will not result in traffic being stopped for more than 5 minutes at any one time, unless accommodations are made in advance with the regional traffic engineer. In addition, the traffic data will be used to determine maximum distances using one-lane, two-way traffic operations based on predicted traffic demand, and at no time shall that distance exceed 1,800 feet.

Prior to implementing any operation that impacts traffic, Faulconer will submit a request to VDOT at a minimum of 7 days in advanced of the planned activity and no later than Wednesday the week before. Each request will include the location, duration, time, date, and activity description. At no time will Route 220 be closed to traffic. It is the responsibility of Faulconer to coordinate all approved activities with the TOC prior to implementing any traffic control operation.

Portable changeable message signs (PCMS) will be used on this project. One PCMS will be placed outside of the project limits (four miles in advance) in each direction of Route 220 to alert traffic approaching the work zone. In addition, four other PCMS will be placed—two on I-81 in Daleville and two on I-64 in Clifton Forge—and shall have the capability of being remotely controlled.

The TMP will require that access to all driveways, cross-streets, and other access points be maintained at all times. The TMP will also lay out the process to communicate with property owners when construction activities will have an impact on a construction entrance. No entrance shall be closed or relocated until all stakeholders (the Department, property owner, etc.) are in agreement that a reasonable alternative is available.

SECTION 4.5 Construction of the Project

During construction activities, the use of Traffic Barrier Service Concrete (TBSC) will be minimized. At nearly all locations, traffic will be maintained on the existing pavement by placing fill material behind the existing guardrail or creating a 6:1 wedge to eliminate any vertical drop-offs. Should it be necessary to install TBSC, the traffic engineer will conduct analysis based on the Virginia Work Area Protection Manual criteria described in Appendix A, and designed so that the barrier is at least 2 feet offset from the travel lane.

An Incident Management Plan (IMP) will be developed as part of the TMP. Faulconer will work with emergency responders within the area to discuss processes for notification, working with the TOC, and work zone signing to assist with incident management response. Faulconer has used this approach previously (I-81 Truck Climbing Lane Design-Build), working closely with the schools, tow services, fire, police, and VDOT. The initial processes will be identified and initiated prior to beginning construction. After construction begins, the processes will be monitored and adjusted as needed. In addition, since a project of this scale will have multiple phases, Faulconer will notify all stakeholders of significant changes to traffic patterns (major traffic shifts) and modify the IMP as necessary. The IMP will identify emergency detour routes and equipment to be readily available in case of emergency and storage locations of such equipment. The IMP will the emergency contact for each primary stakeholder and contact information.

The TMP will identify the major stakeholders in the area and collect contact information. The list shall include, but not be limited to, property owners impacted by construction, local agencies, utilities, fire, police, and other emergency responders, local school districts, tow services, trash services, and area hospitals/urgent care centers. Major stakeholders will be notified by mail, email, and/or project messages (i.e., variable message boards).

As part of the construction strategies, traffic will be maintained in its existing alignment through the early activities of each phase. Then, rather than using multi-phased construction that shifts traffic left and right, traffic shall remain in its existing alignment until the proposed roadway is ready for surface mix. At this time, traffic will be shifted into its final alignment. Because multiple shifts in traffic are not required, drivers will not be required to adapt to multiple conditions. Another option we are considering that should help with the flow and safety of traffic is building the intersections first. The turn lanes will be introduced early in the project, reducing the risk of rear-end crashes, and improving the flow of traffic through the intersections.

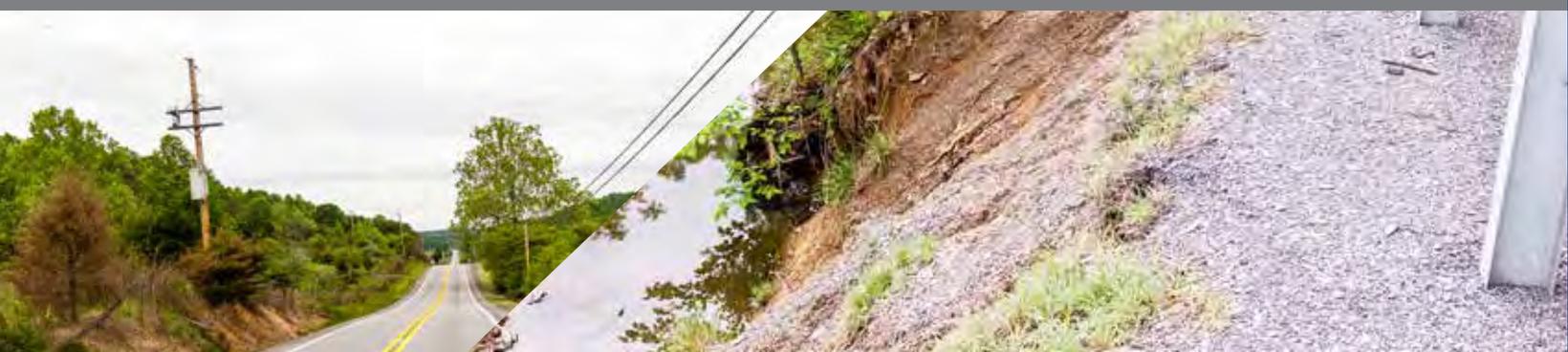
It is not anticipated that a speed reduction in traffic will be requested for this project unless it can be determined that a speed reduction will result in traffic obeying the posted speed limit. Typically, a successful reduction in speed is the result of the drivers interpreting the need to slow down, as well as the use enforcement. Faulconer does not want cause a higher variation in speeds among the drivers who use the facility, as this results in an increased safety risk.

Public Involvement/Stakeholder Coordination

Our Public Information and Outreach Plan will provide Route 220 users with accurate, timely information to maintain personal mobility, maximize safety in the highway corridor, and foster project acceptance. The plan will be delivered in accordance with the RFP. Our public information officer will work closely with Fran Burke and will coordinate, prepare, and release public information with VDOT's Salem District Office of Public Affairs. We will coordinate preparation and release of public information with VDOT during the design and construction phases. In accordance with our baseline schedule, VDOT will hold formal meetings and provide sufficient notice to the public in accordance with VDOT guidelines. We will hold informal meetings with affected local citizen groups and businesses. Meetings will be in accordance with the VDOT Policy Manual for Public Participation in Transportation Projects. We will provide written information about the project to VDOT, suitable for posting on its website. During the construction phase, we will provide written information to VDOT at least weekly about the project's effects on traffic (traffic updates) that it may use for issuing news releases to the public.



4.6 Disadvantaged
Business Enterprises (DBE)

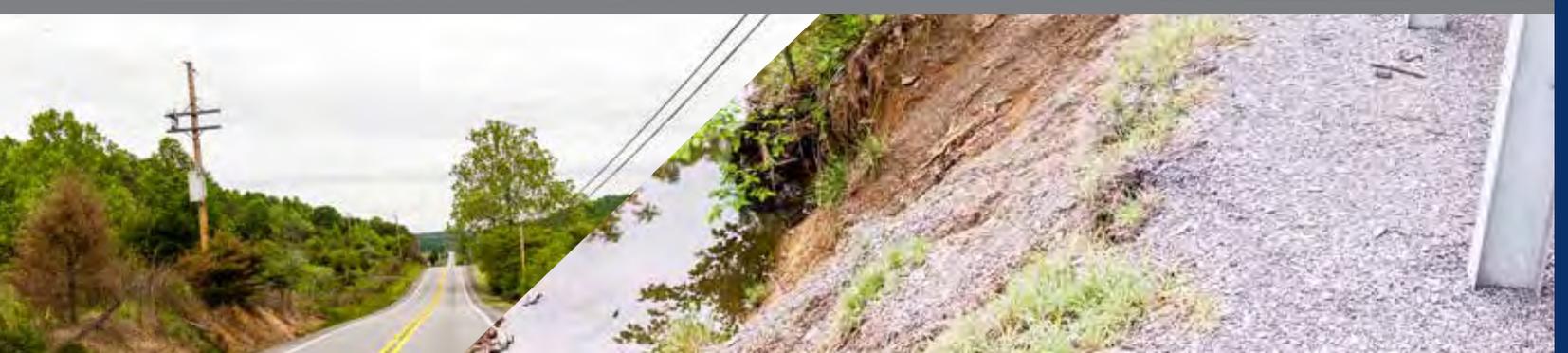


Disadvantaged Business Enterprises (DBE)

4.6 Disadvantaged Business Enterprises (DBE)

DBE Participation Commitment

Faulconer is committed to achieving a seven percent (7%) Disadvantaged Business Enterprise (DBE) participation goal for the entire value of the contract utilizing VDOT certified DBE firms. Faulconer will provide and ensure that qualified DBE firms are given fair opportunities to compete for the opportunity to provide goods and services on this Design-Build contract.



4.7.1 Proposal Schedule

See Volume 2.

4.7.2 Proposal Schedule Narrative

Our team believes that building, maintaining and working by a quality schedule is an essential driver to the overall success of any project. Great schedules benefit all stakeholders, including the owner, by monitoring the progress of the project and identifying potential problems or delays that may arise through the evolution of the project.

Utilizing Primavera Software and critical path method scheduling, our team has developed a Proposal Schedule, as provided in Volume II, Section 4.7.1, which represents our overall plan to accomplish the Work in accordance with the requirements set forth in the RFP. Our Proposal Schedule provides a Work Breakdown Structure (WBS) which breaks down large complex elements into simple, discrete activities, providing a comprehensive understanding of the project scope and a common framework for project planning, scheduling, budgeting, performance reporting, cost tracking, and forecasting. The Proposal Schedule illustrates our anticipated project critical path which takes into account tasks and activities required by VDOT, regulatory agencies, utility providers, suppliers, subcontractors, subconsultants and other involved parties as they pertain to and impact the schedule.

The Proposal Schedule as submitted will be further developed in greater detail as a Preliminary Schedule, submitted to VDOT within fifteen (15) days following Notice to Proceed (NTP) and further developed as a Baseline Schedule, submitted to VDOT within sixty (60) days after receipt of notice to proceed.

Proposal Schedule Evaluation Criteria Highlights

- ✓ Construction schedule shows interrelationships between plan development, obtaining necessary permits, right of way acquisition, and utility relocations
- ✓ Field investigations, laboratory work, agency coordination and review, public notice and interface periods are accounted for in the schedule

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Work Breakdown Structure

The hierarchical WBS enables easier identification of major components of work. Individual WBS's include sublevel WBS breakdown to further simplify schedule elements. Our team's Level 1 of the WBS groups are as follows:

- **Project Milestones:** Designated to assist the project team in monitoring, tracking, and meeting our commitment to execute and deliver the project.
- **Project Administration:** Includes activities related to project management and administration, project submittals and deliverables, project startup, QA/QC, and project closeout.
- **Scope Validation:** Includes mission critical activities which will allow our team to verify and validate our proposed design concept and identify any Scope Issues.
- **Engineering/Design:** Comprised of general design efforts and support, survey, subsurface investigations and engineering, plan development, hydraulic and hydrological analysis, QA/QC reviews, reviews by VDOT, and all other design related efforts needed to achieve final plan approval.
- **Public Involvement:** Designated for activities related to the Project's interaction with the public.
- **Environmental Permitting:** Includes coordination and confirmation with design, utilities and construction activities, delineations and assessments, permit management and preparation, mitigation, permit submissions, reviews and approvals.
- **Right-of-Way:** Comprised of activities related to the efforts needed to acquire right of way, utility, and temporary construction easements, including title searches, property inspections, appraisals, offers, negotiations, and closings.

SECTION 4.7 **Schedule**

- **Utility Relocation:** Includes all utility coordination and planning, field inspections, meetings, Plan and Estimates (P&E), and temporary and final utility relocations.
- **Construction:** Includes all components of construction needed to complete the approved design. Activities include MOT, erosion control, grading, drainage, roadway structure, through to final stabilization. This section includes multiple sub-tiered WBS's which segment the work into geographical work packages.

Calendars

The following project specific calendars have been developed to account for the various restrictions and assumptions that must be taken into account while planning the sequence of Work. .

- **7 Day:** Calendar assumes seven days per week. Activities assigned to this calendar are based on calendar days. (Example: certain review tasks or activities that carry a calendar day duration.)
- **5 Day Office:** Calendar assumes five days per week except state holidays. No activities assigned to this calendar are weather dependent. (Example: design, right of way, administrative)
- **5 Day Field:** Calendar assumes five days per week except state holidays. Also includes standard weather days based on normal weather patterns. (Example: utility relocation, drainage, grading, guardrail)
- **5 Day Winter:** Calendar assumes five days per week except state holidays. In addition to standard weather days, this calendar is assigned to activities that may be affected by temperatures. Temperature dependent work performed between December 15th and March 15th. (Example: paving, pavement markings)

Overall Sequencing

The projects overall sequencing shall follow our project approach and construction of the project sequencing as described and illustrated in Sections 4.4 and 4.5, and Exhibit 2 of Section 4.3 of Volume 1 of our RFP response.

Critical Path

In accordance with VDOT Specifications, critical path is defined as the Longest Path. The Longest Path, as represented in our Proposal Schedule, includes the following activities in order of progression from Notice to Proceed (NTP) on 04/21/17 through Final Completion on 08/31/21:

- Notice to Proceed
- Area 3A/1A/2A and 1B Geotechnical Work
- VDOT Review of Boring Plan
- Geotechnical Report
- Phase 1A Plan Development
- Phase 1B Plan Development through Approval
- Phase 1, Stations 371-450 erosion control, clearing and grading activities
- Phase 1, Stations 353-371 erosion control, clearing and grading activities
- Phase 1, Stations 348-353 erosion control, clearing and grading activities
- Phase 1, Stations 540-589 erosion control, clearing and grading activities
- Phase 1, Stations 450-485 construction
- Project Punchlist and Demobilization

Our project approach creates multiple individual and independent work areas which allows similar concurrent operations while creating some schedule flexibility. The Baseline Schedule will be resource loaded with equipment and crew assignments to aid in the final development of our detailed schedule approach. Properly managing resources through our schedule and monthly schedule updates will allow us to mitigate schedule risks and closely manage critical path and near critical path activities.

Means and Methods

The durations and orders of operations were analyzed and evaluated based on estimated quantities calculated at the time of this proposal as well as average productions of similar activities in similar environments based on historical production information. Furthermore, as a litmus test, field operations, including project superintendents, foreman and safety personnel, were engaged throughout the process in order to assess our managers, estimators and designers approaches to the Work. This exercise often flushes out constructability challenges and hurdles prior to design development.

Throughout the course of nearly all phases and stages of construction activities several major features of work are required. Each distinctive feature of work may require unique means and methods of construction that collectively provide the framework for the projects means and methods analysis. The following is a general summary of the major construction related work activities encompassed by the schedule:

- **Maintenance of Traffic:** First and foremost, keeping the traveling public safe as they approach and travel through work zones and keeping project personnel safe while working within the work zones are the most important imperatives on this project. This feature of work will primarily consist of the phased deployment of a well-designed MOT plan. Personnel overseeing the setup, installation of work zones shall be Work Zone Traffic Control (WZTC) trained. In addition, they will also provide monitoring to ensure safe work zones.
- **Erosion and Sediment Control:** The basic principles of erosion and sediment control installation is for the comprehensive and immediate control of potential siltation run-off from the project limits to surrounding areas but most notably to existing water conveyance channels. The first step in this process is the establishment of the perimeter controls which most often run concurrently with clearing and demolition operations required to facilitate install of additional controls. After the perimeter controls are in place and functional, more extensive clearing and demolition operations may require additional controls, as needed, once areas of water concentration are identified. The most critical elements of this aspect of work are the preliminary installation of high quality controls and the constant management and timely maintenance of the controls as the work progresses. The progress schedule addresses the initial steps of erosion control directly through the installation of silt fence, filter barrier, diversion dike, sediment traps/basins and as storm drainage progresses in the installation of check dams and outlet protections. Regular maintenance of the controls is critical as well and is incorporated into the succeeding work activities for each phase and stage of work.
- **Demolition and Clearing:** This feature of work is directly tied to the installation and maintenance of the erosion controls and will run concurrently throughout the schedule. As perimeter controls are established for each phase and stage of work bulk clearing of the sections will then be facilitated to open the door for the succeeding work activities. Trees and brush are removed to predetermined burn, disposal or processing locations which are constantly monitored and maintained to insure 100 percent safety and efficient disposal. When possible, demolition of a given feature will be delayed until absolutely necessary due to the impact they sometimes have to the work area. Demolished materials are disposed of in numerous ways depending on the type of material, to include burning, haul-off, or wasting in an approved disposal area.
- **Storm Drainage:** This feature of work provides the foundation for almost all portions of the phases and stages of work. Generally, Storm Drainage will directly follow the Clearing and Demolition activities where the existing grades allow. However, sometimes it is necessary to achieve all or a portion of the earthwork cut to fills to achieve the specified drainage network. Storm Drainage provides the mechanism for controlling water as the new grade is established and therefore becomes the driver for most work. Storm Drainage systems are typically installed from the downstream to upstream end of the network with outfall channels to allow for the immediate control of any conveyance that occurs in the network. Also, whenever possible all networks are installed as a complete package of work to insure their functionality. The progress schedule addresses the entire Storm Drainage package required for the project over all phases and stages of work and is driven by many of the

SECTION 4.7 **Schedule**

preceding features of work and can be tied to other features as the specific area dictates. Time for installation of storm drainage assumes a complete installation from start to finish, except when staged installation is necessitated, including all outfall establishment, structure and pipe installation, backfill, and inlet protection where applicable.

- **Excavation:** This feature of work includes all of the blasting/cut/fill/borrow/waste of material for roadway section and the handling and management of APM. This feature of work is tied to many other features to include storm drainage and utility relocation, and will run concurrently with many of the specific activities as the work area dictates. As the storm drainage is installed in each phase and stage of work, the cut to fill/waste or borrow/fill of material in that stage will then be achieved to provide the final roadway alignment. In some stages, APM material management will act as a driver or constraint for the progress of the work within that stage or other stages as necessary. Activities within each stage will also encompass many ancillary work items such as topsoil stripping or placement as well as minor excavations for utilities and walls as required. Coordination with proceeding and succeeding work is the critical element of this feature of work and will directly dictate the specific progress of activities. The progress schedule identifies the excavation activities as bulk activity that includes many small work items that do not always progress in a complete, systematic manner and may be weather dependent. Where possible progress on earthwork activities will be driven through to completed but in other cases may be progressed incrementally over the stage of work. Our Baseline Schedule will include more detail and will identify these separations, particularly where something is driving a succeeding activity.
- **Roadway Construction:** As work progresses through each phase and stage of work and final roadway sections are established, roadway construction to include underdrains, aggregate base, asphalt, and site feature establishment will commence. Several aspects of this feature of work will be done by subcontractors to include, asphalt and asphalt curb, guardrail and final sign installation. For many of the phases the subcontractor work for each stage will progress linearly from stage to stage and will be scheduled to maximize the amount of finished roadway construction that can be completed and minimize the number of mobilizations for the specialty subcontractors. The Baseline Schedule will outline in detail the many activities that directly apply to this feature of work and will progress in a linear fashion with some overlap in sub-contractor activities when the work area allows in an effort to maximize the productivity of the work. Coordination with sub-contractors is the key element of this feature of work and will require constant and extensive attention. As sections of roadway are completed they will be maintained and preserved until the final acceptance.
- **Ditch and Shoulder Grading:** Portions of this feature of work will be run in conjunction with the Roadway Construction where the work area allows. Final establishment of the shoulders and ditch lines in some cases, however, must wait to be finalized after the completion of proceeding work such as, asphalt, asphalt curb and guardrail placement. As the Roadway Construction work progresses and opportunity allows the ditches and shoulders, as well as applicable existing roadway obscuring will be progressed in an effort to maximize the speed in which roadway sections can be completed. The progress schedule outlines bulk activities for this feature of work which encompass several small work items required to finish the outer edges of the roadway. This feature of work also drives the final stabilization of the section and the potential removal of erosion and sediment controls following the establishment of permanent vegetation. Critical to the success of this feature of work are the preservation of the Roadway Construction and the finalization of any outstanding work items necessary to achieve final stabilization of the work area.
- **Close Out:** Once the roadway sections are completed and finalized the remaining aspects of work are tied to the establishment of the final roadway asphalt course, rumble strip installation, final stripping, and remaining permanent sign installation. Also encompassed by this phase of work is the removal of erosion and sediment controls where applicable and the completion of final punch list of work items for storm drainage and utilities.

SECTION 4.7 **Schedule**

The Baseline Schedule will identify these feature of work in numerous activities that generally fall between the substantial completion and final completion milestones. Critical to the success of this feature of work are the proceeding management of work features and the minimization of punch list items requiring attention.

Summary

The Proposal Schedule as submitted by our team clearly illustrates our overall sequence of work and durations required to complete the work by the Final Completion date of 08/31/2021. The schedule is organized using a WBS broken down into major phases of work and clearly depicts our anticipated critical path. Review by the Department, agencies, and work by subcontractors, private utility providers and other involved parties is shown. Furthermore, the Schedule Narrative clearly describes and explains the critical path, proposed means and methods, and other key assumptions on which our Proposal Schedule is based.



ATTACHMENT 4.0.1.1
ROUTE 220 CORRIDOR SAFETY IMPROVEMENTS, PHASES 1 - 3
TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

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

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Technical Proposal Checklist and Contents	Attachment 4.0.1.1	Section 4.0.1.1	no	Appendices, Item 1
Acknowledgement of RFP, Revisions, and/or Addenda	Attachment 3.6 (Form C-78-RFP)	Sections 3.6, 4.0.1.1	no	Appendices, Item 2
Letter of Submittal	NA	Sections 4.1		1
Letter of Submittal on Offeror's letterhead	NA	Section 4.1.1	yes	1
Identify the full legal name and address of Offeror	NA	Section 4.1.1	yes	1
Authorized representative's original signature	NA	Section 4.1.1	yes	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	2
Final Completion Date	NA	Section 4.1.6	yes	2
Proposal Payment Agreement or Waiver of Proposal Payment	Attachment 9.3.1 or 9.3.2	Section 4.1.7	no	Appendices, Item 3
Certification Regarding Debarment Forms	Attachment 11.8.6(a) Attachment 11.8.6(b)	Section 4.1.8	no	Appendices, Item 4
Offeror's Qualifications	NA	Section 4.2		3

ATTACHMENT 4.0.1.1

ROUTE 220 CORRIDOR SAFETY IMPROVEMENTS, PHASES 1 - 3

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Confirmation that the information provided in the SOQ submittal remains true and accurate or indicates that any requested changes were previously approved by VDOT	NA	Section 4.2.1	yes	3
Organizational chart with any updates since the SOQ submittal clearly identified	NA	Section 4.2.2	yes	4
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.2	yes	3
Design Concept	NA	Section 4.3		5
Conceptual Roadway Plans and description	NA	Section 4.3.1.1	yes	5
Project Approach	NA	Section 4.4		10
Environmental Management	NA	Section 4.4.1	yes	10
Utilities	NA	Section 4.4.2	yes	16
Geotechnical	NA	Section 4.4.3	yes	18
Quality Assurance/ Quality Control (QA/QC)	NA	Section 4.4.4	yes	24
Construction of Project	NA	Section 4.5		26
Sequence of Construction	NA	Section 4.5.1	yes	27
Transportation Management Plan	NA	Section 4.5.2	yes	31

ATTACHMENT 4.0.1.1
ROUTE 220 CORRIDOR SAFETY IMPROVEMENTS, PHASES 1 - 3
TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Disadvantaged Business Enterprises (DBE)	NA	Section 4.6		33
Written statement of percent DBE participation	NA	Section 4.6	yes	33
Proposal Schedule	NA	Section 4.7		S-1
Proposal Schedule	NA	Section 4.7	no	Volume 2
Proposal Schedule Narrative	NA	Section 4.7	no	S-1
Proposal Schedule in electronic format (CD-ROM)	NA	Section 4.7	no	Included with submittal

ATTACHMENT 3.6**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION**

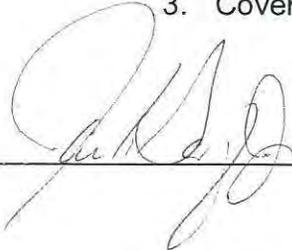
PROJECT: Route 220 Corridor Safety Improvements, Phases 1 - 3
RFP NO.: C000105543DB88
PROJECT NO.: 0220-011-786

ACKNOWLEDGEMENT OF RFP, REVISION AND/OR ADDENDA

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

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

1. Cover letter of RFP – September 28, 2016
(Date)
2. Cover letter of RFP Addendum 1 – November 4, 2016
(Date)
3. Cover letter of RFP Addendum 2 – December 20, 2016
(Date)



SIGNATURE

01/12/2017

DATE

Jack W. Sanford, Jr.

PRINTED NAME

President

TITLE

ATTACHMENT 9.3.1
PROPOSAL PAYMENT AGREEMENT

THIS PROPOSAL PAYMENT AGREEMENT (this “Agreement”) is made and entered into as of this 12th day of January, 2017, by and between the Virginia Department of Transportation (“VDOT”), and Falconer Construction Co., Inc. (“Offeror”).

WITNESSETH:

WHEREAS, Offeror is one of the entities who submitted Statements of Qualifications (“SOQs”) pursuant to VDOT’s April 25, 2016 Request for Qualifications (“RFQ”) and was invited to submit proposals in response to a Request for Proposals (“RFP”) for the **Route 220 Corridor Safety Improvements, Phases 1-3** project, **Project No. 0220-011-786** (“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 **Fifty Thousand and 00/100 Dollars (\$50,000.00)** ("Proposal Payment"), which payment constitutes payment in full to Offeror for the conveyance of Offeror's Intellectual Property to VDOT in accordance with this Agreement. Payment of the Proposal Payment is conditioned upon: (a) Offeror's Proposal being, in the sole discretion of VDOT, responsive to the RFP; (b) Offeror complying with all other terms and conditions of this Agreement; and (c) either (i) Offeror is not awarded the Design-Build Contract, or (ii) VDOT cancels the procurement or decides not to award the Design-Build Contract to any Offeror.

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

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

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

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

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

9. **Miscellaneous.**

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

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

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

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

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

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

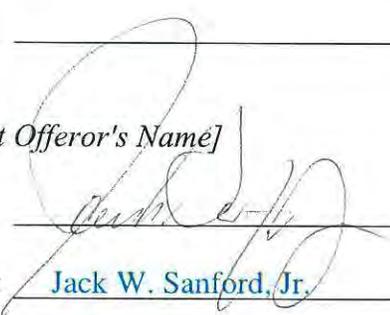
VIRGINIA DEPARTMENT OF TRANSPORTATION

By: _____

Name: _____

Title: _____

[Insert Offeror's Name]

By:  _____

Name: Jack W. Sanford, Jr.

Title: President

ATTACHMENT NO. 11.8.6(a)

**CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS**

Project No.: 0220-011-786

Contract ID: C00105543DB88

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.

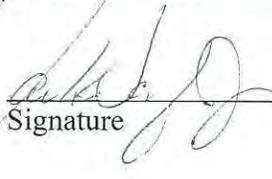
b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under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

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>01/12/2017</u>	<u>President</u>
Signature	Date	Title

Faulconer Construction Company, Incorporated
Name of Firm

ATTACHMENT NO. 11.8.6(b)

**CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0220-011-786

Contract ID: C00105543DB88

- 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 form.

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

Michael T. Kuley 1/13/2017 PRESIDENT
Signature Date Title

NXL CONSTRUCTION SERVICES, INC.
Name of Firm

ATTACHMENT NO. 11.8.6(b)

**CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0220-011-786

Contract ID: C00105543DB88

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 form.

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.

W. Lee King 1/13/17 OWNER
Signature Date Title

TERRA SCIENCE LLC
Name of Firm

ATTACHMENT NO. 11.8.6(b)

**CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0220-011-786

Contract ID: C00105543DB88

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 form.

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.

	1/13/2017	PRESIDENT
Signature	Date	Title
<u>KDR REAL ESTATE SERVICES</u>		
Name of Firm		

ATTACHMENT NO. 11.8.6(b)

**CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0220-011-786

Contract ID: C00105543DB88

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.

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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.

Quell J. Dyer 7/16/17 President
Signature Date Title

Froehling & Robertson, Inc.
Name of Firm

ATTACHMENT NO. 11.8.6(b)

**CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0220-011-786
Contract ID: C00105543DB88

- 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 form.

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.

 4/15/17 PRESIDENT
Signature Date Title
VELOCITY PARK PUBLIC AFFAIRS
Name of Firm



For additional information, please contact

Fran Burke

Executive Vice President

2496 Old Ivy Road
Charlottesville, VA 22903

Office: 434-295-0033

Mobile: 434-906-5390

fburke@faulconerconstruction.com



FAULCONER
CONSTRUCTION COMPANY

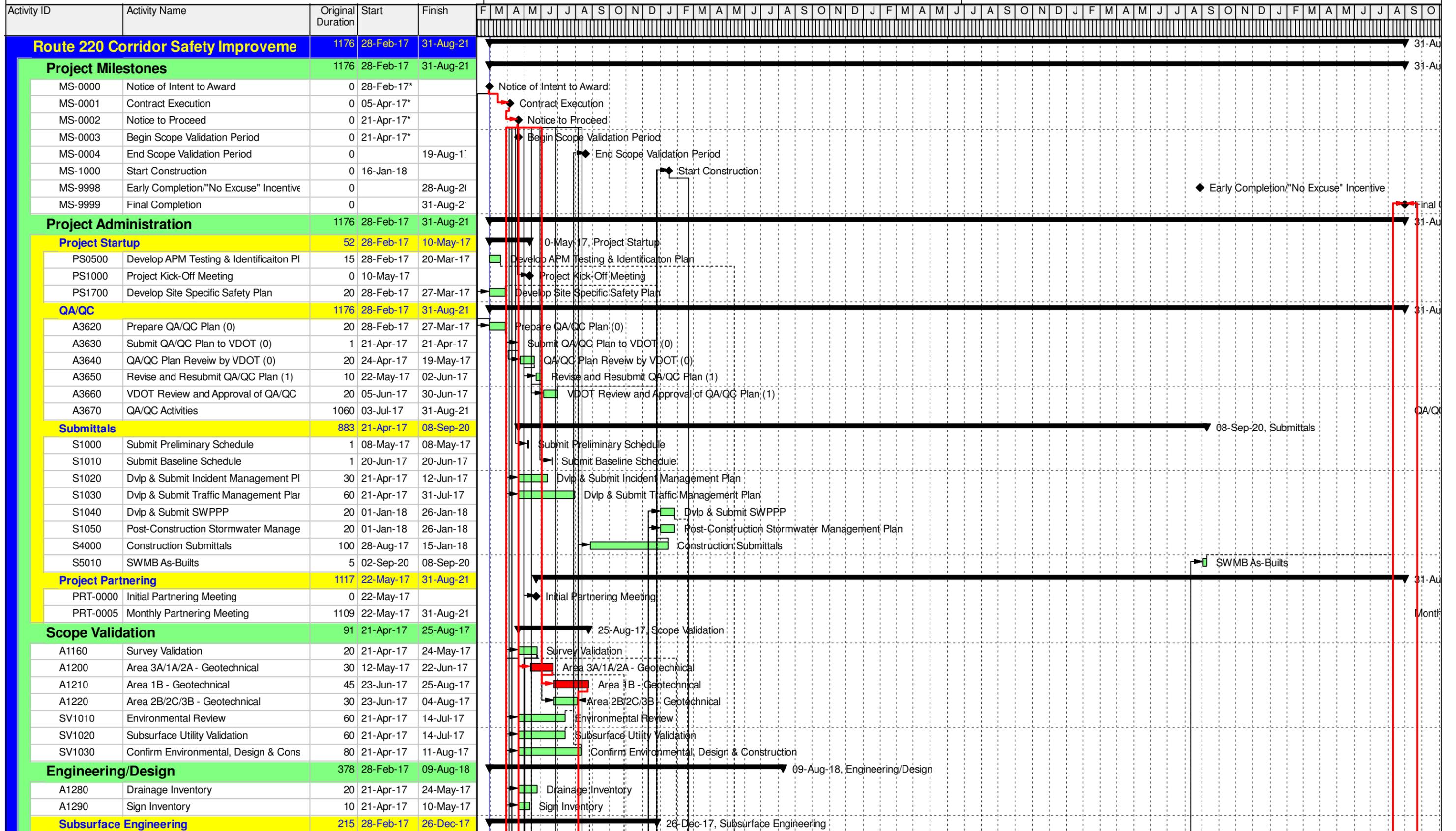
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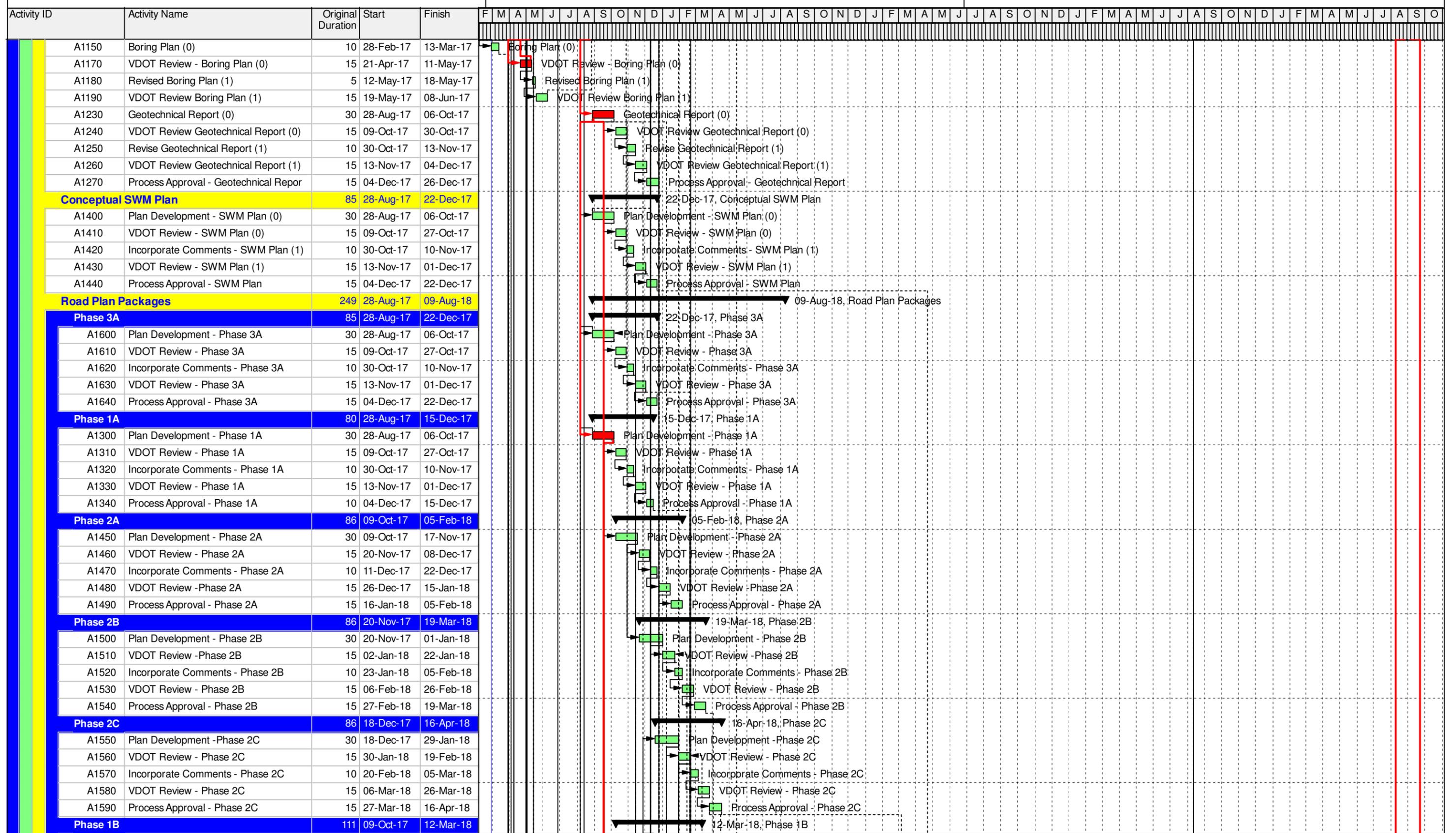
VOLUME 2
PROPOSAL FOR
**ROUTE 220 CORRIDOR
SAFETY IMPROVEMENTS**
PHASES 1, 2 AND 3

State Project No.: 0220-011-786 | Federal Project No.: NH-5128(326) | Contract ID Number: C00105543DB88

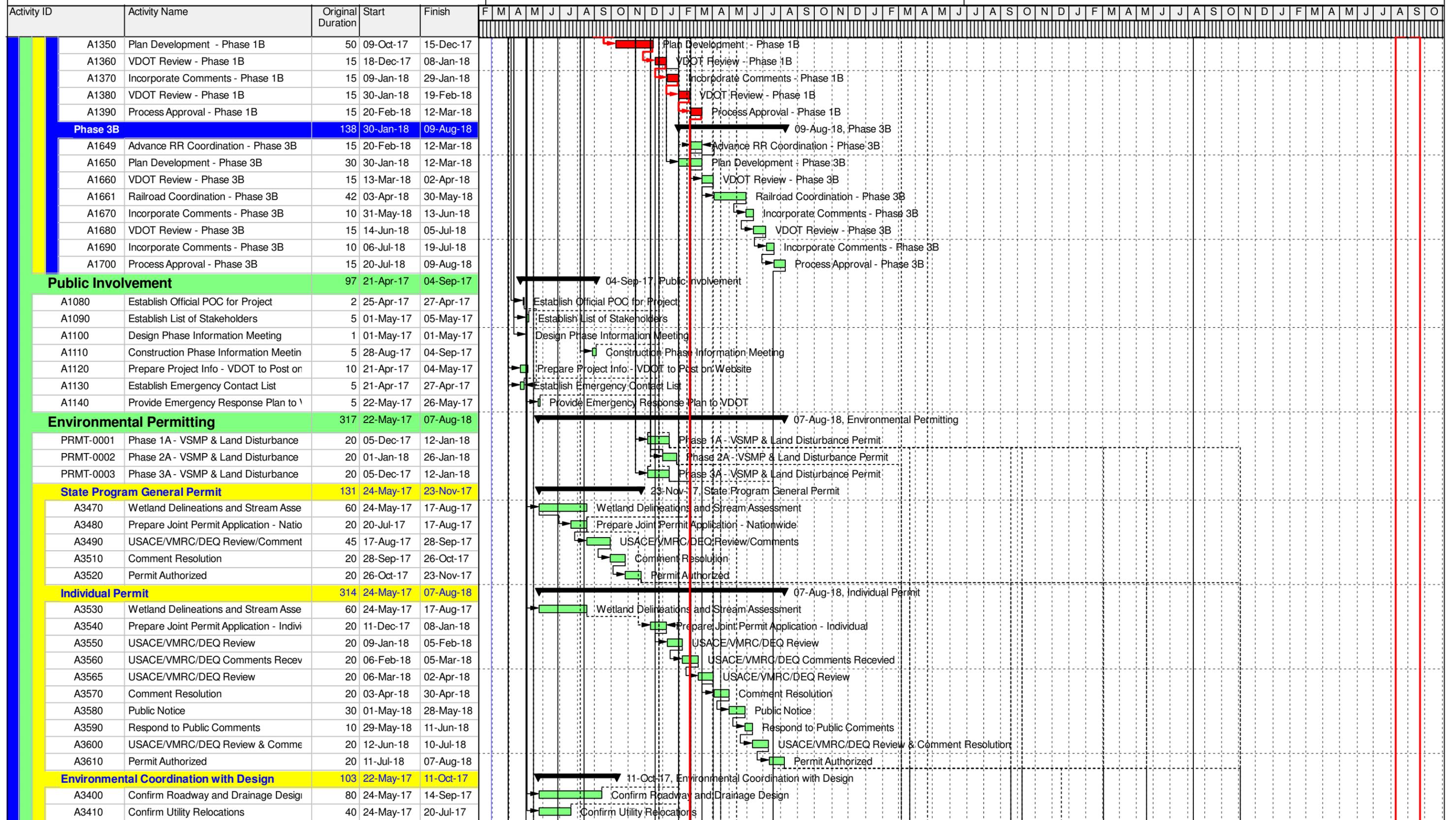
January 18, 2017



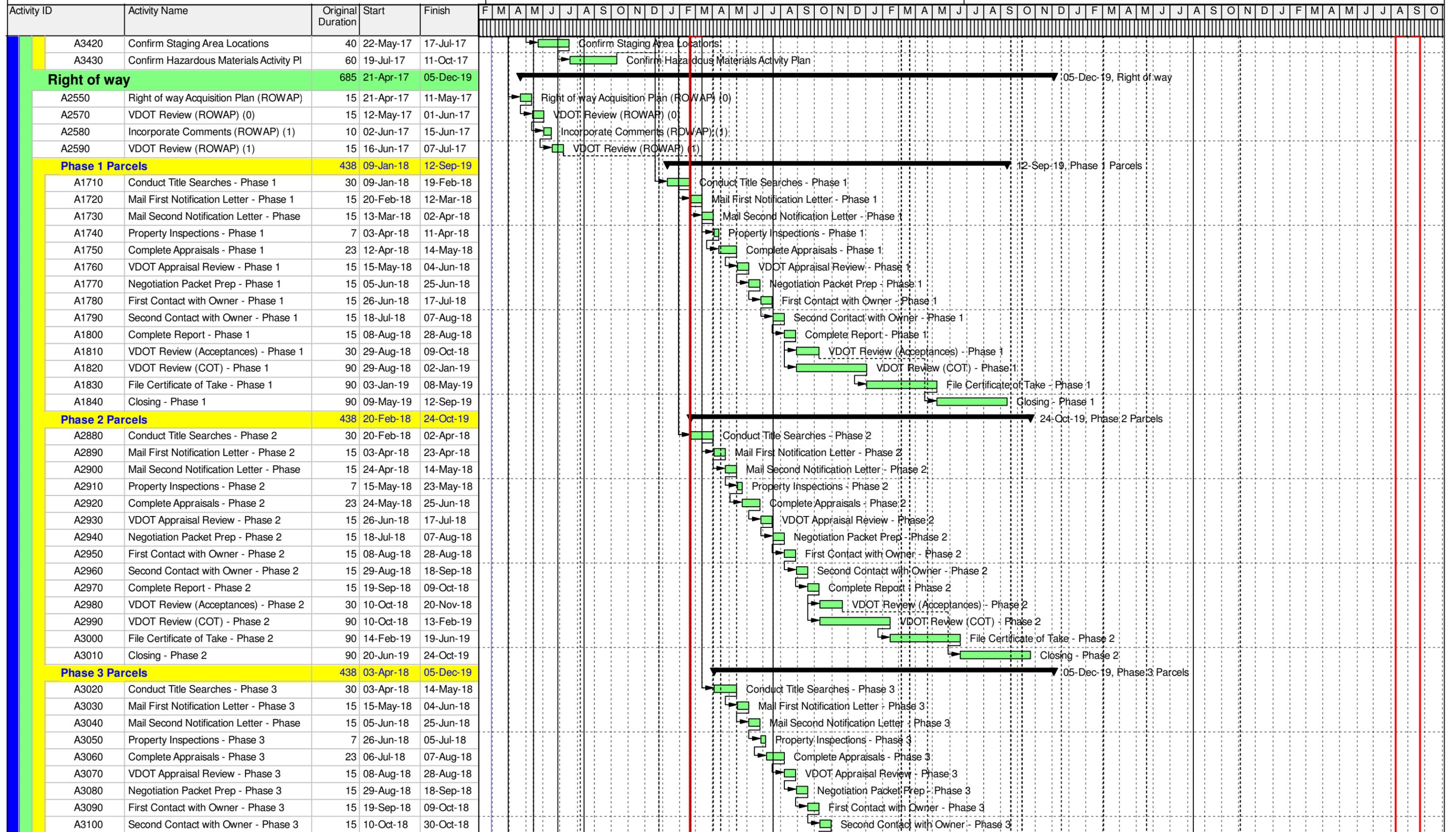
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 ■ Critical Remaining Work
 ▶ Summary
 ■ Remaining Work
 ◆ Milestone



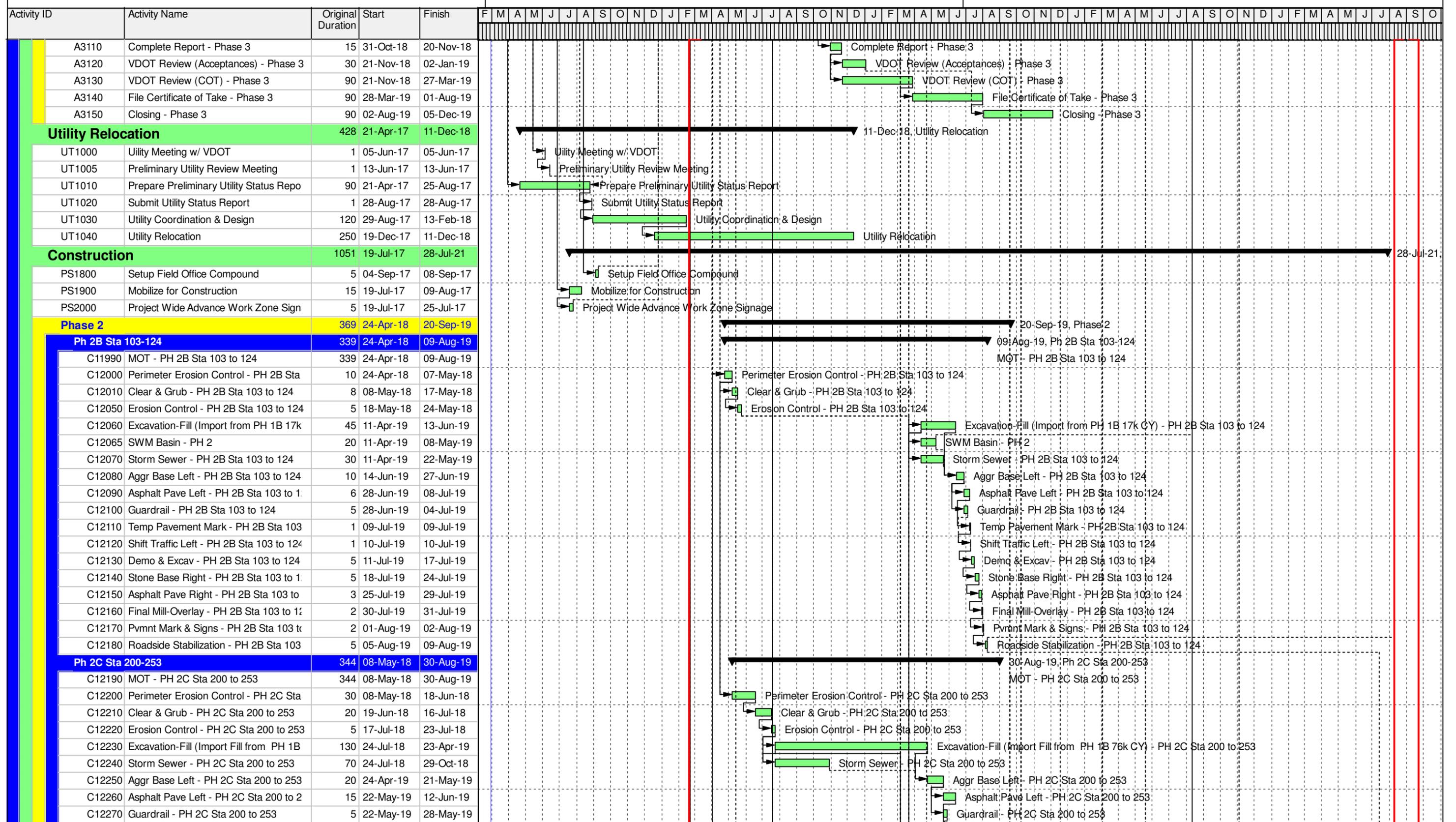
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 ▶ Summary
█ Remaining Work
 ◆ Milestone



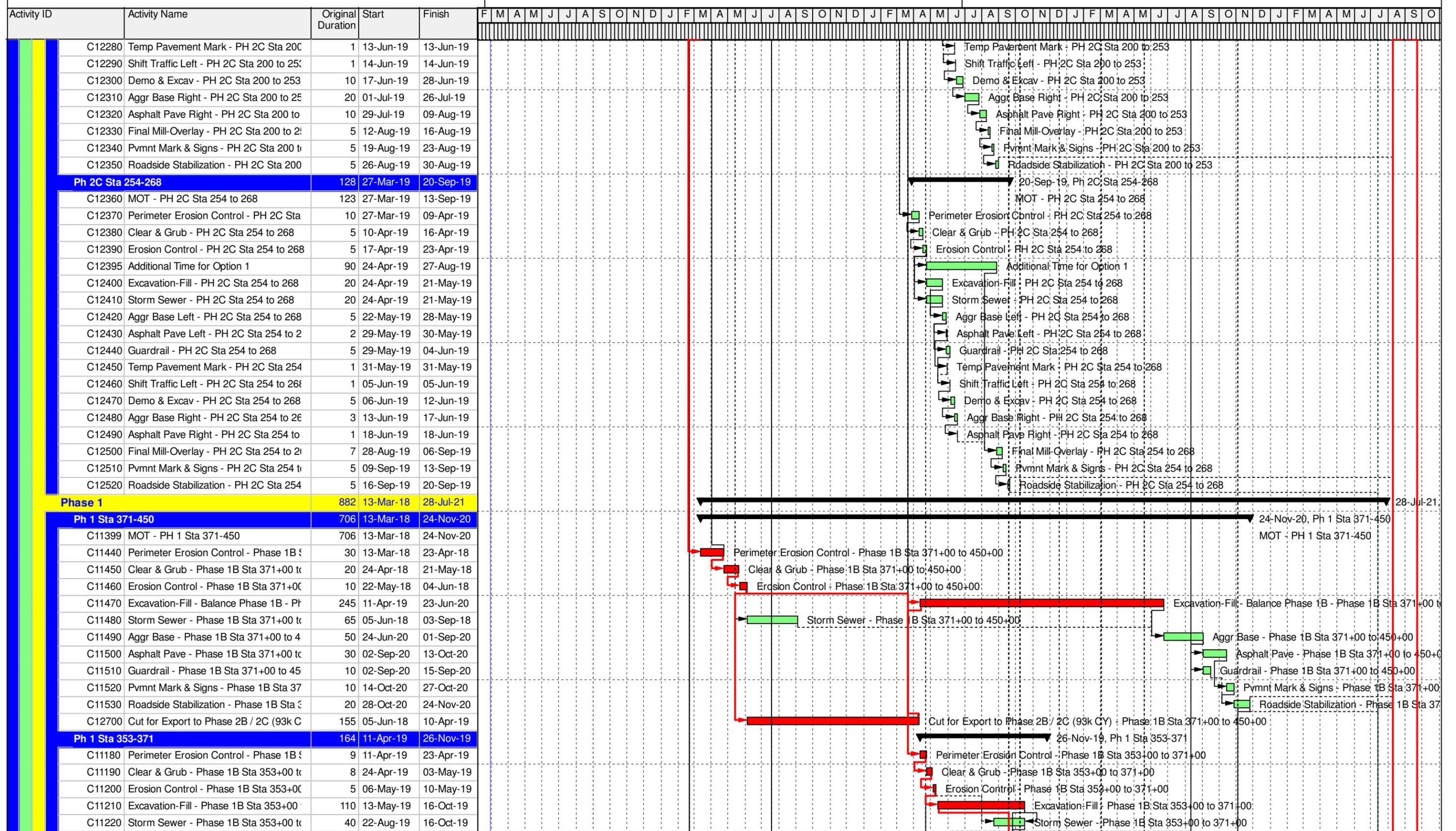
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 █ Critical Remaining Work
 ▶ Summary
█ Remaining Work
 ◆ Milestone



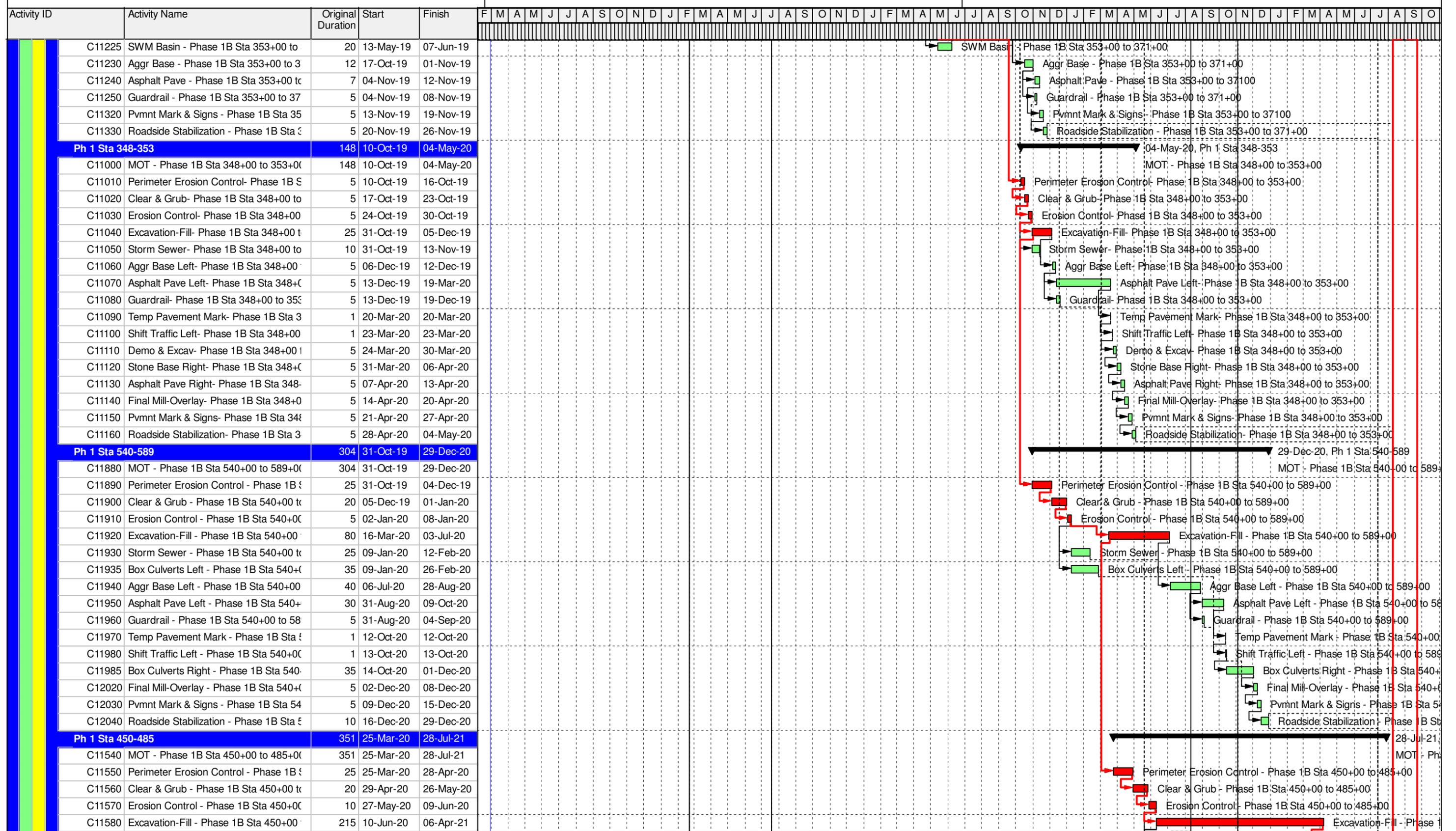
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 ▶ Summary
█ Remaining Work
 ◆ Milestone



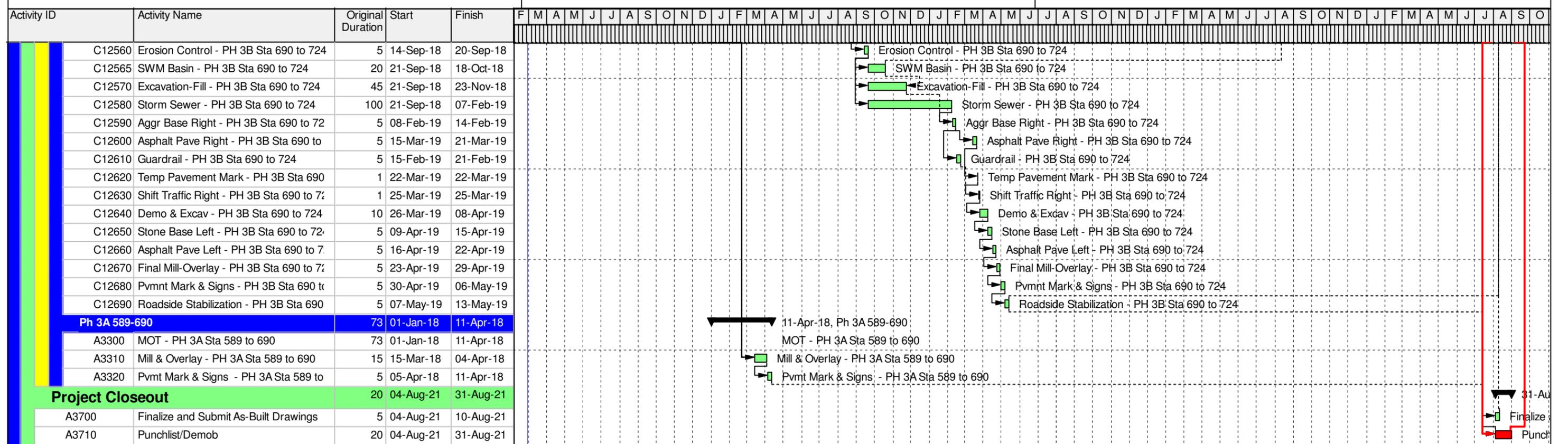
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█ Remaining Work
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█ Actual Work
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 ▶ Summary
█ Remaining Work
 ◆ Milestone



█ Actual Work
 █ Critical Remaining Work
 ▬ Summary
█ Remaining Work
 ◆ Milestone



█ Actual Work
 █ Critical Remaining Work
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█ Remaining Work
 ◆ Milestone

PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

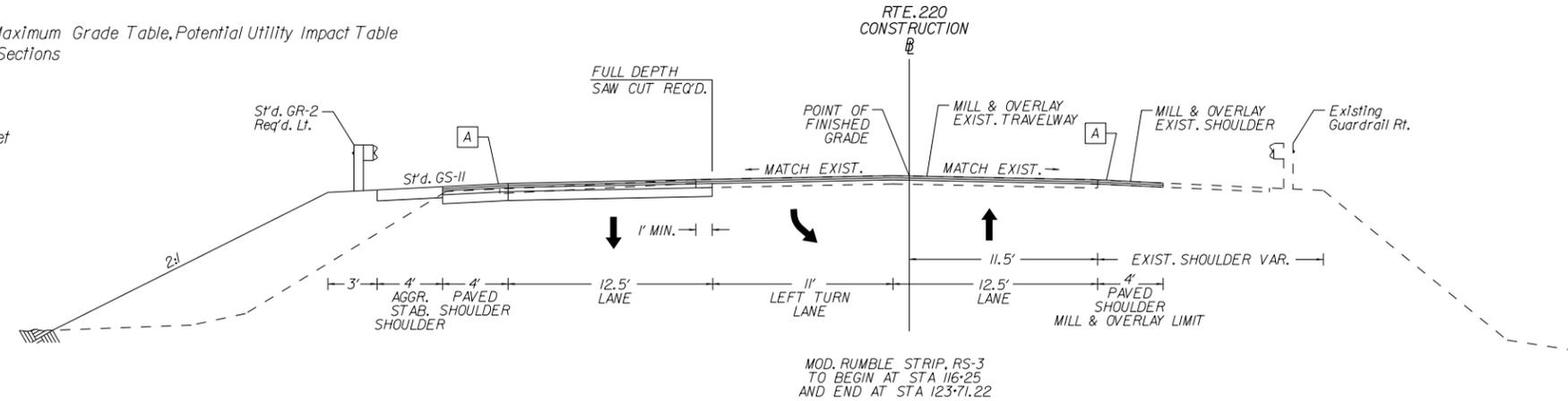
PRELIMINARY TYPICAL SECTIONS

REVISED	STATE	STATE		SHEET NO.
	ROUTE	PROJECT		
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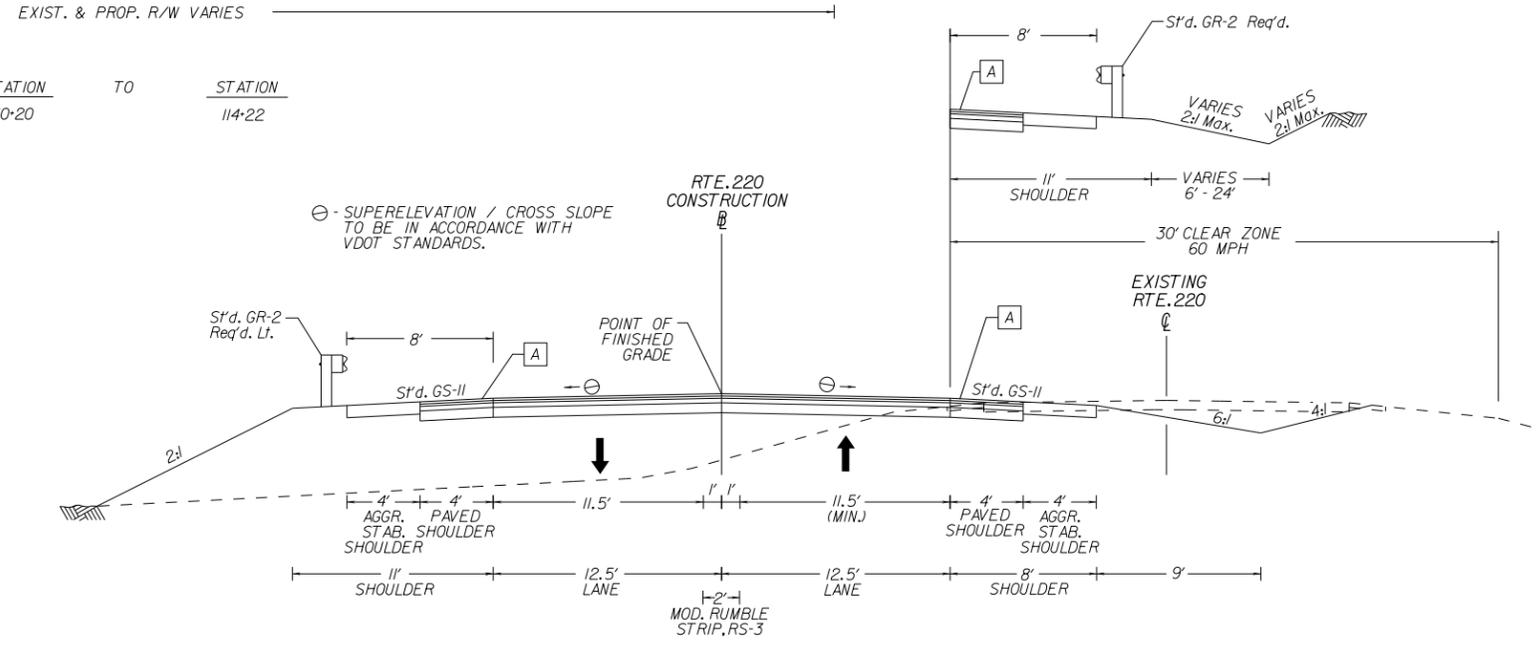
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

INDEX

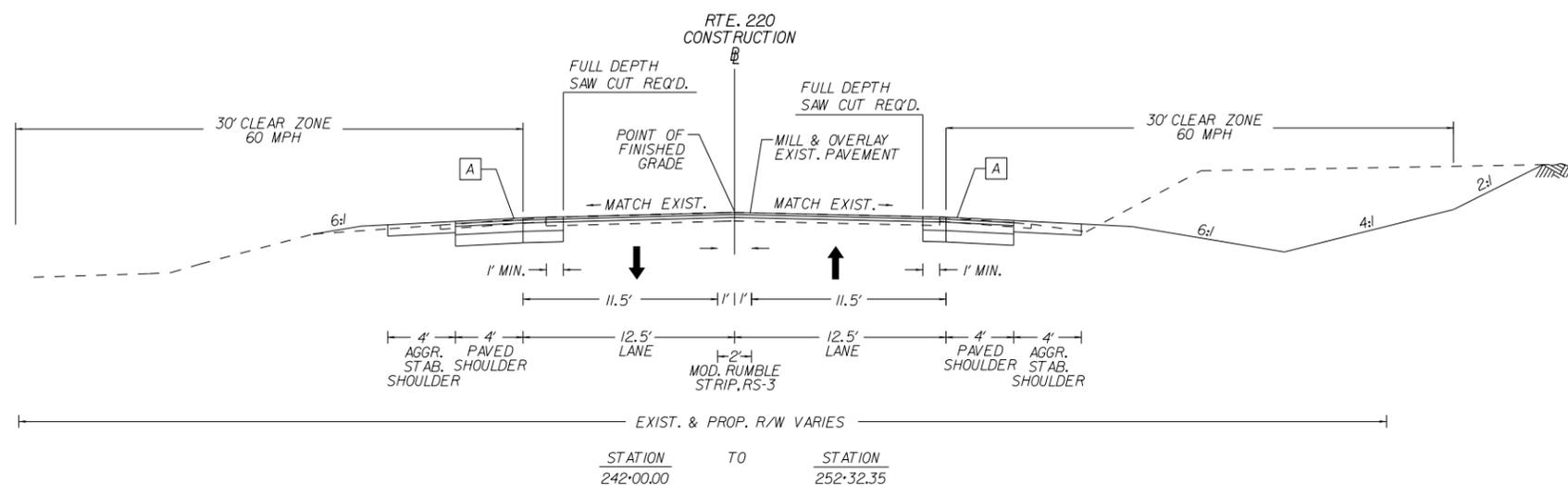
Sheet No.	Description
2A(01) - 2A(03)	Mainline Typical Sections
2A(04)	Connection Typical Section, Maximum Grade Table, Potential Utility Impact Table
2A(05)	Special Design Wall Typical Sections
3 - 37	Phase 1, 2, & 3 Plan Sheets
9A - 27A	Phase 1 Profile Sheets
38, 39	Connection Profile Sheets
40	Option I Typical Section Sheet
41	Option I Plan Sheet
42	Option I Profile Sheet



STATION	TO	STATION
110+20		114+22



STATION	TO	STATION
200+00.00		242+00.00



STATION	TO	STATION
242+00.00		252+32.35

CONCEPTUAL PLANS



NOT TO SCALE

PROJECT	0220-011-786	SHEET NO.	2A(01)
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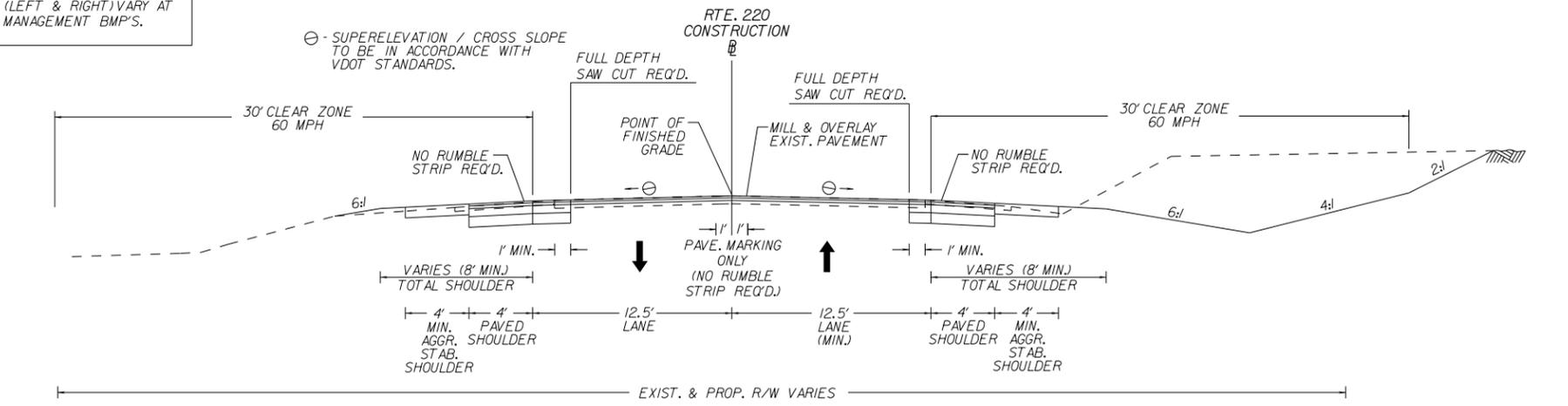
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SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

PRELIMINARY TYPICAL SECTIONS

REVISED	STATE	STATE		SHEET NO.
		ROUTE	PROJECT	
	VA.	220	0220-011-786	2A(02)

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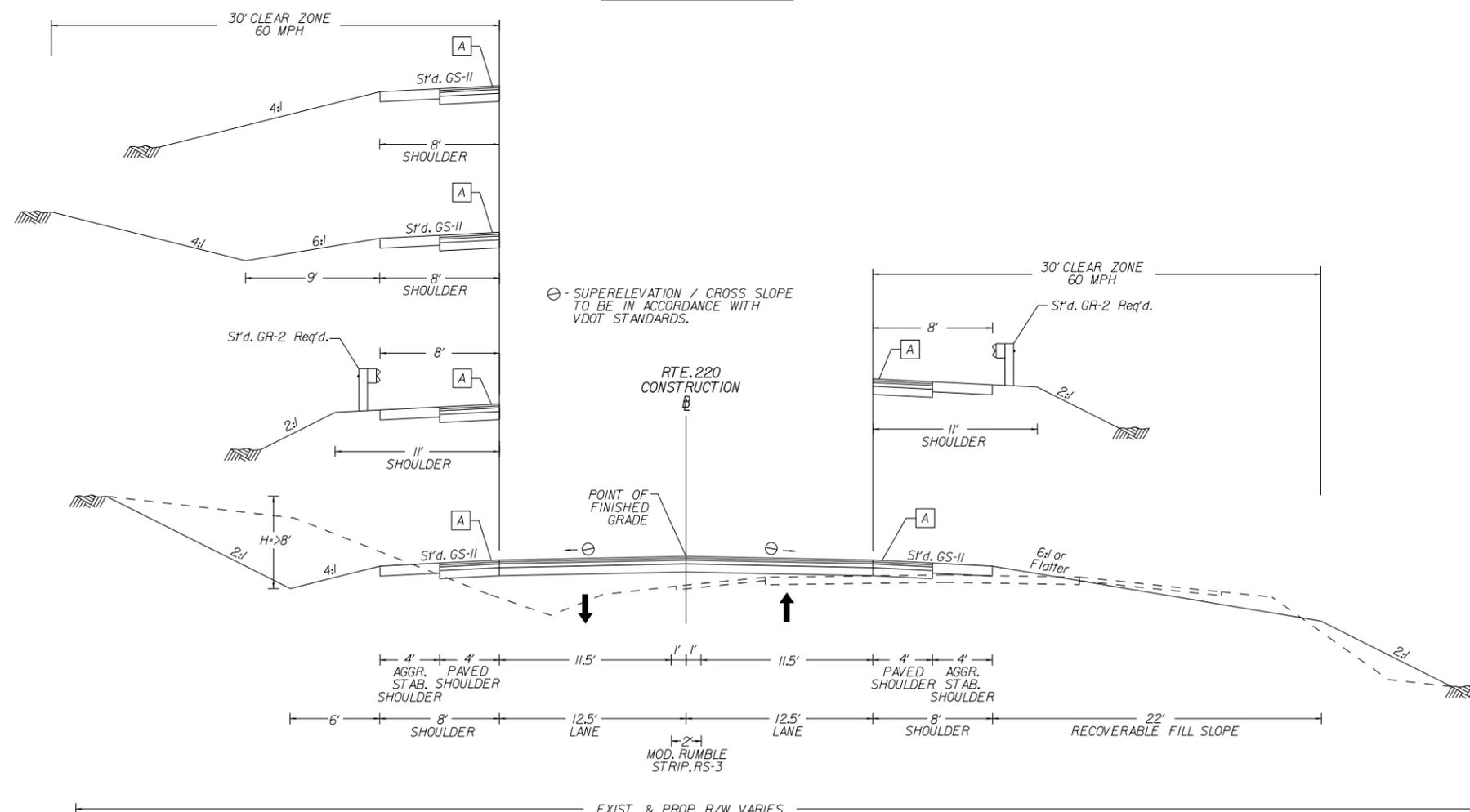
NOTE: SIDE SLOPES (LEFT & RIGHT) VARY AT STORMWATER MANAGEMENT BMP'S.



EXIST. & PROP. R/W VARIES
STATION 253+82.19 TO STATION 267+18.83

NOTE: SEE PLANS FOR LOCATION OF TURN LANES AND TRANSITIONS

EXISTING BRIDGE
STA. 252+35.25 TO 253+82.19



EXIST. & PROP. R/W VARIES
STATION 348+87.36 TO STATION 589+59.77

NOTE: 10' SLOPE ROUNDING REQUIRED AT ALL CUT SECTIONS. SEE APPLICABLE CS ST'D. FOR DETAIL.

NOTE: SEE PLANS FOR LOCATION OF GUARDRAIL AND TURN LANES & TRANSITIONS.

A - INTERMITTENT SHOULDER RUMBLE STRIP (MODIFIED TYPE RS-5) REQ'D.

CONCEPTUAL PLANS



NOT TO SCALE

PROJECT 0220-011-786 SHEET NO. 2A(02)

PROJECT MANAGER _____
 SURVEYED BY, DATE _____
 DESIGN BY _____
 SUBSURFACE UTILITY BY, DATE _____

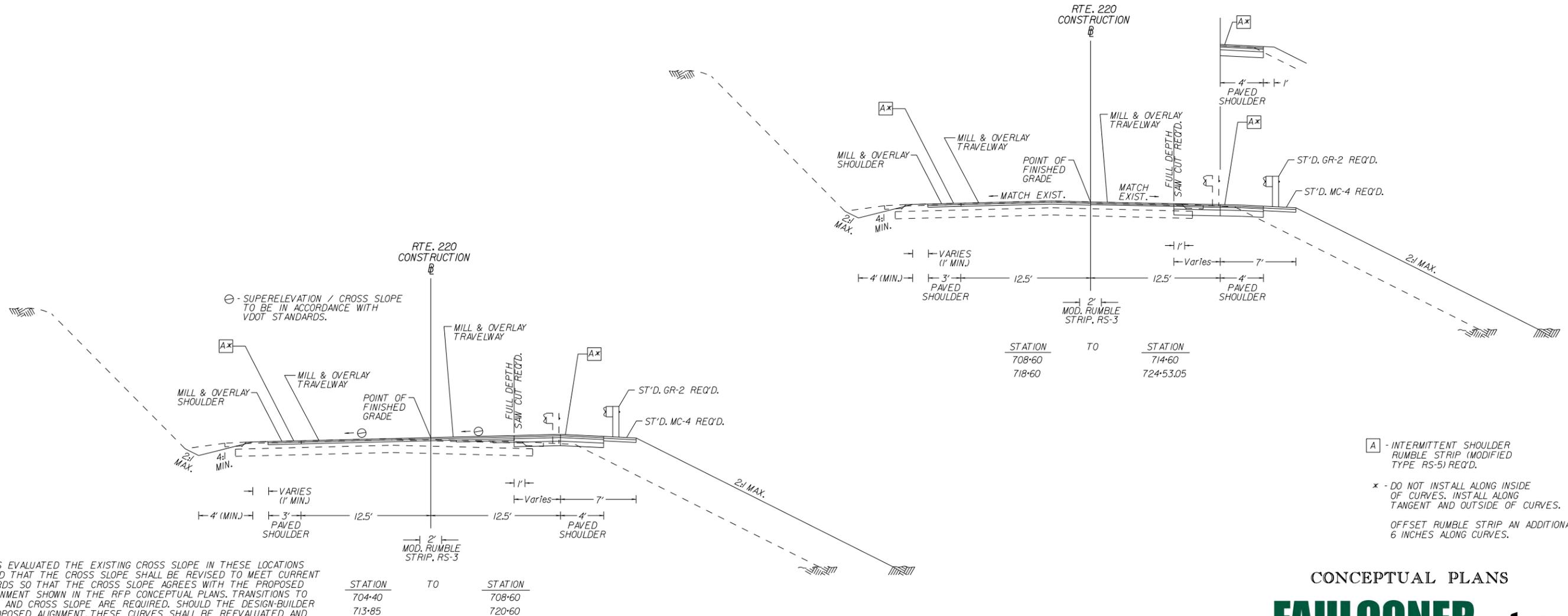
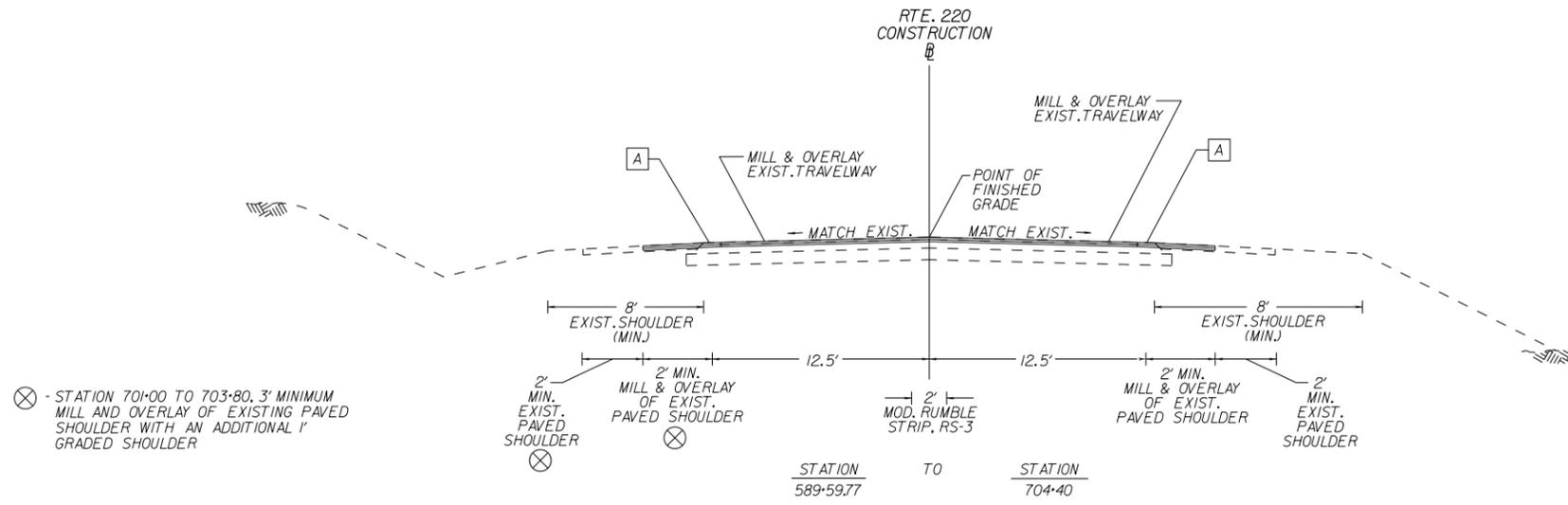
PRELIMINARY TYPICAL SECTIONS

REVISED	STATE	STATE		SHEET NO.
		ROUTE	PROJECT	
	VA.	220	0220-011-786	2A(03)

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

NOTE: 10' SLOPE ROUNDING REQUIRED AT ALL CUT SECTIONS. SEE APPLICABLE CS ST'D. FOR DETAIL.

PHASE 3 PASSING ZONES: CONTRACTOR SHALL MAINTAIN EXISTING PASSING ZONES



NOTE: VDOT HAS EVALUATED THE EXISTING CROSS SLOPE IN THESE LOCATIONS AND DETERMINED THAT THE CROSS SLOPE SHALL BE REVISED TO MEET CURRENT DESIGN STANDARDS SO THAT THE CROSS SLOPE AGREES WITH THE PROPOSED HORIZONTAL ALIGNMENT SHOWN IN THE RFP CONCEPTUAL PLANS. TRANSITIONS TO EXISTING GRADE AND CROSS SLOPE ARE REQUIRED. SHOULD THE DESIGN-BUILDER ALTER THE PROPOSED ALIGNMENT, THESE CURVES SHALL BE REEVALUATED AND THE DESIGN-BUILDER SHALL BE RESPONSIBLE FOR ADDITIONAL CROSS SLOPE CORRECTION TO BRING THE FINAL DESIGN UP TO CURRENT DESIGN STANDARDS FOR THE REVISED ALIGNMENT.

CONCEPTUAL PLANS

FAULCONER **ch2m**

CONSTRUCTION COMPANY

PROJECT 0220-011-786 SHEET NO. 2A(03)

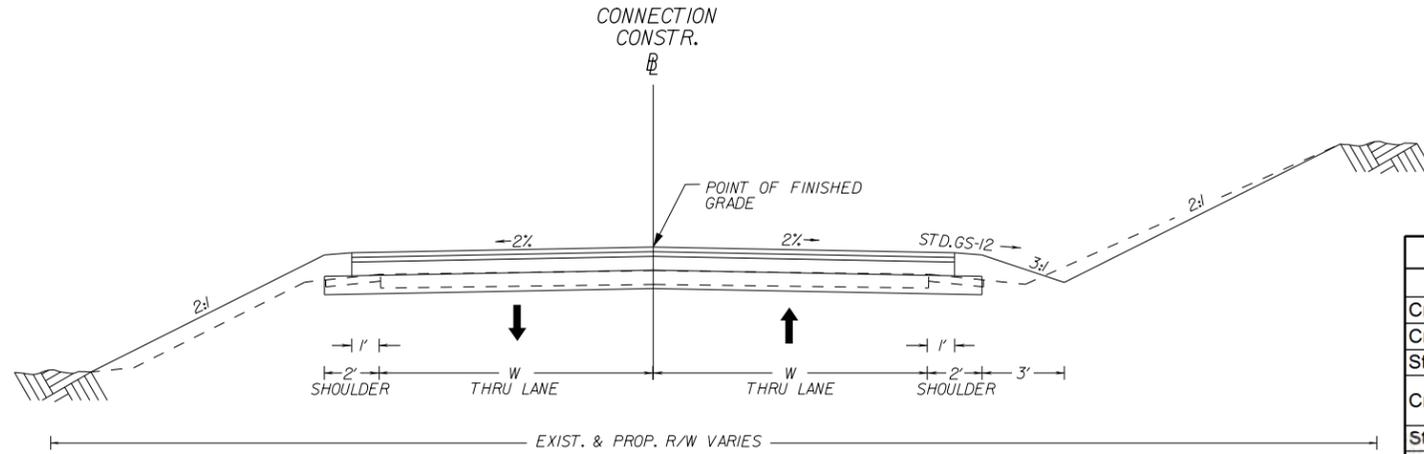
NOT TO SCALE

PROJECT MANAGER _____
 SURVEYED BY, DATE _____
 DESIGN BY _____
 SUBSURFACE UTILITY BY, DATE _____

PRELIMINARY TYPICAL SECTIONS

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	2A(04)

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



RTE.694 (GALA LOOP RD.)

RTE.622 (PRICES BLUFF RD.)

RTE.722 SOUTH (CHATHAM RD.)

RTE.722 NORTH (CHATHAM RD.)

RTE.696 WEST (LOCUST BOTTOM RD.)

RTE.696 EAST (BUHRMAN RD.)

NOTE: SEE PLANS FOR TRANSITION LENGTHS TO TIE TO EXIST. CONDITION.

NOTE: 10' SLOPE ROUNDING REQUIRED AT ALL CUT SECTIONS. SEE APPLICABLE CS STD. FOR DETAIL.

ROUTE 220 DESIGN MAXIMUM GRADE TABLE

ROADWAY	FUNCTIONAL CLASSIFICATION	MINIMUM DESIGN SPEED	AASHTO MAXIMUM GRADE (%) FOR SPECIFIED DESIGN SPEED (MPH)	ACTUAL DESIGN MAXIMUM GRADE (%) FOR SPECIFIED DESIGN SPEED (MPH)
RTE. 220 (PHASE 1)	RURAL PRINCIPLE ARTERIAL (OTHER) (GS-1)	60 MPH	4%	4%
RTE. 220 (PHASE 2)	RURAL PRINCIPLE ARTERIAL (OTHER) (GS-1)	60 MPH	4%	4%
RTE. 220 (PHASE 3)	RURAL PRINCIPLE ARTERIAL (OTHER) (RRR)	60 MPH / 45 MPH / 40 MPH	4% / 6% / 6%	4% / 6% / 6%
RTE. 694 (GALA LOOP RD.)	RURAL LOCAL (GS-4)	* 55 MPH / 45 MPH	7%	6.8%
RTE. 622 (PRICES BLUFF RD.)	RURAL LOCAL (GS-4)	* 55 MPH / 45 MPH	7%	3%
RTE. 722 (CHATHAM RD.)	RURAL LOCAL (GS-4)	35 MPH	10%	5.7%
RTE. 696 (LOCUST BOTTOM RD.)	RURAL LOCAL (GS-4)	35 MPH	10%	6.7%
RTE. 696 (BUHRMAN RD.)	RURAL LOCAL (GS-4)	35 MPH	10%	4.1%

* 55 MPH / 45 MPH (CAR / TRUCK)

POTENTIAL UTILITY IMPACT TABLE

PHASE II			
Location	Utility Owner	LF	Type of Impact
Crosses roadway station 263+-40	TransCanada	75	20" gas main
Crosses roadway station 263+-75	CGV	85	1 1/4" gas service
Station 263+00 to station 264+00	CGV	UNK	Accessing property beyond chain link fencing - Impact still TBD
Crosses entrance Lt CI station 264+-25 to 264+50	CGV	50	6" gas main
Station 242+00 to station 244+50	CBEC	250	Powerline poles may be impacted by cut/fill areas
Crosses roadway station 242+00	CBEC	100	Powerline poles may be impacted by cut/fill areas
Station 254+00 to station 258+00	CBEC	250	Powerline poles may be impacted by fill areas
Station 259+50 to station 263+50	CBEC	550	Powerline poles may be impacted by cut/fill areas
PHASE I			
Location	Utility Owner	LF	Type of Impact
Station 358+00 to station 363+00	CGV	500	6" gas main
Crosses entrance Rt CI station 367+00	CGV	50	gas service
Station 367+25 to station 368+00	CGV	75	6" gas main
Crosses roadway at station 368+25	CGV	100	gas service
Crosses roadway at station 369+25	CGV	100	6" gas main
Route 722 crosses over gas	CGV	50	6" gas main
522+25 entrance Rt CI crosses over gas facility	CGV	50	6" gas main
Route 696 drainage ditch grading over gas facility	CGV	50	6" gas main
Station 364+00 to station 368+00	CBEC	400	Powerline poles may be impacted by fill areas
Crosses from station 368+00 to station 370+75	CBEC	275	Powerline poles may be impacted by fill areas
Station 459+75 to station 463+50	CBEC	375	Powerline pole may be impacted by cut area
Crossing at station 515+00	CBEC	100	Powerline pole in new alignment
Crossing at station 522+00	CBEC	100	Powerline pole in new alignment
Crossing at station 536+25	CBEC	100	Powerline pole in new alignment
Station 517+00 to station 569+50	CBEC	5835	Powerline poles in new alignment or may be impacted by cut area
Crossing station 574+25 to station 575+25	CBEC	420	Powerline poles within grading area
Station 575+25 to station 584+50	CBEC	925	Powerline poles within grading area
Crosses roadway stations 385+50 and 387+50	LMS	150	Telephone - Guy wires and guy poles
Crosses roadway stations 389+25 and 391+25	LMS	150	Telephone - Guy wires and guy poles
Station 444+00 to station 480+75	LMS	3675	Telephone Poles may be impacted by cut/fill areas
Station 539+50 to station 544+00	LMS	450	Telephone Poles may be impacted by fill areas
Station 546+25 to station 572+75	LMS	2550	Telephone Poles may be impacted by fill areas
Station 574+50 to station 580+25	LMS	575	Telephone Poles may be impacted by cut/fill areas
PHASE III			
Location	Utility Owner	LF	Type of Impact
Crosses roadway 590+00	CGV	75	2" gas service
Station 704+00 to station 724+50	CBEC/LMS	1900	Power line & Phone lines on shared poles which may be impacted by fill areas

CONCEPTUAL PLANS



NOT TO SCALE

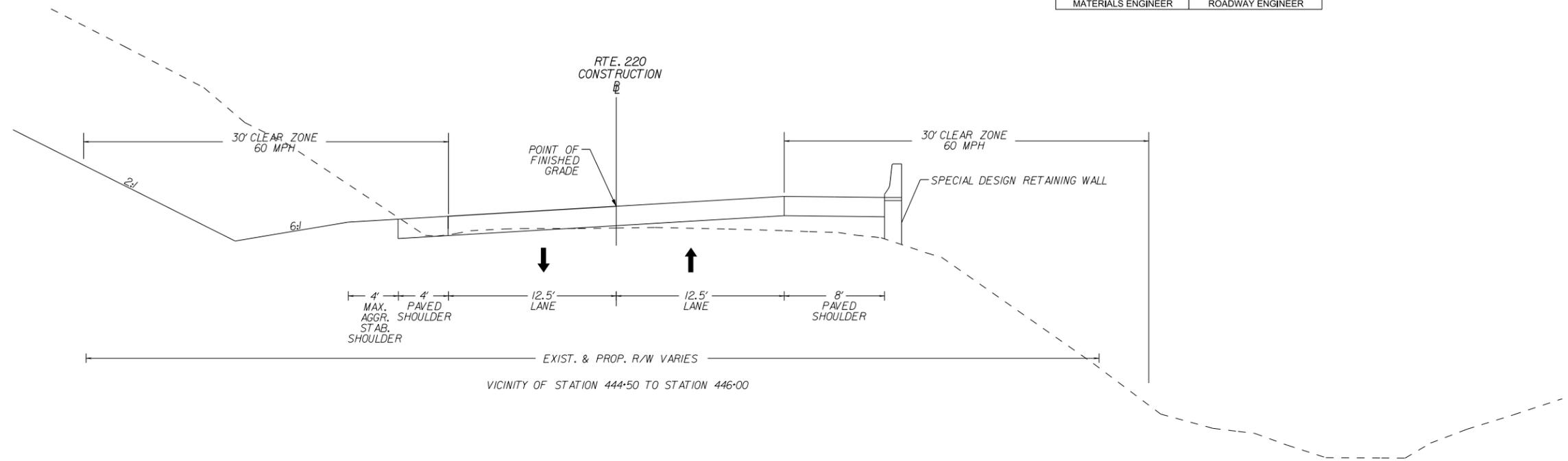
PROJECT
0220-011-786

SHEET NO.
2A(04)

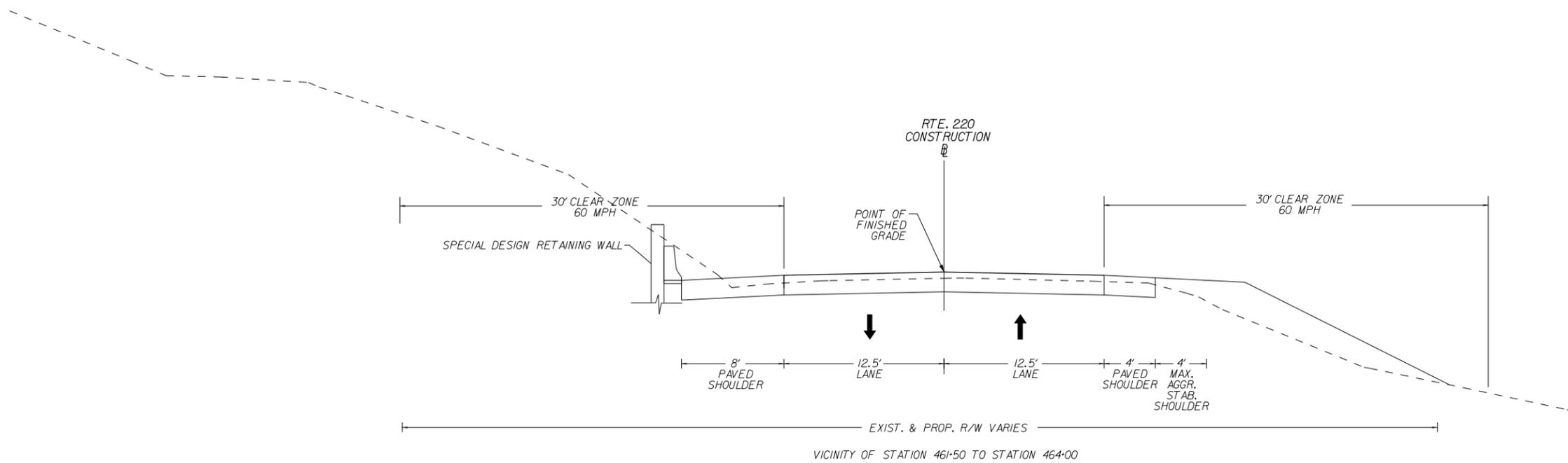
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SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

PRELIMINARY TYPICAL SECTIONS SPECIAL DESIGN WALLS

REVISED	STATE	STATE		SHEET NO.
	ROUTE	PROJECT		
	VA.	220	0220-011-786	2A(05)
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT				
MATERIALS ENGINEER		ROADWAY ENGINEER		



NOTE: TYPICAL SECTIONS ARE NOT INTENDED TO DEPICT A SPECIFIC WALL TYPE. IF A WALL IS NEEDED, THE WALL WILL BE DESIGNED IN ACCORDANCE WITH THE TECHNICAL REQUIREMENTS IN THE RFP.
SEE SHEET 2A(02) FOR ROADWAY TYPICAL SECTION.



CONCEPTUAL PLANS

FAULCONER **ch2m**
CONSTRUCTION COMPANY

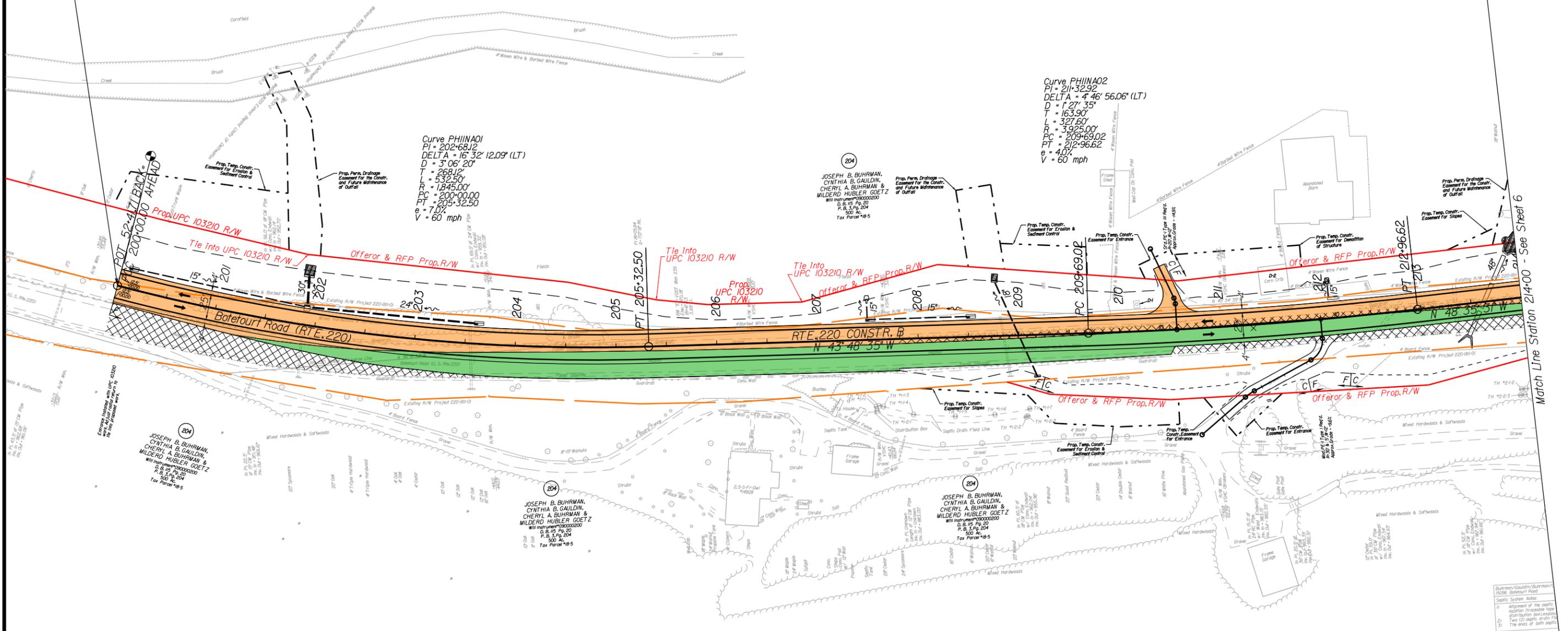
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DESIGN BY <Designer_Name_1000> 000-0000 (District) ---
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_1000> 000-0000 (District) ---

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	5

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

Tie Into Project 0220-011-743, C-501 (UPC 103210)
End Project Exception / Begin Phase 2 North
Sta. 200+00.00 RTE. 220 CONSTR. B
Sta. 52+41.71 RTE. 220 CONSTR. B (UPC 103210)



Match Line Station 214+00 - See Sheet 6

Notes:
1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
2. Construction limits account for guardrail in required areas.

SCALE
0 100' 200'

Legend:

- Existing Right of Way
- Proposed Right of Way
- Proposed Temporary Easement
- Proposed Permanent Easement
- Mill and Overlay
- Full Depth Proposed Pavement
- Pavement Demolition or Obscuring
- Denotes Construction Limits In Cuts
- Denotes Construction Limits In Fills

CONCEPTUAL PLANS

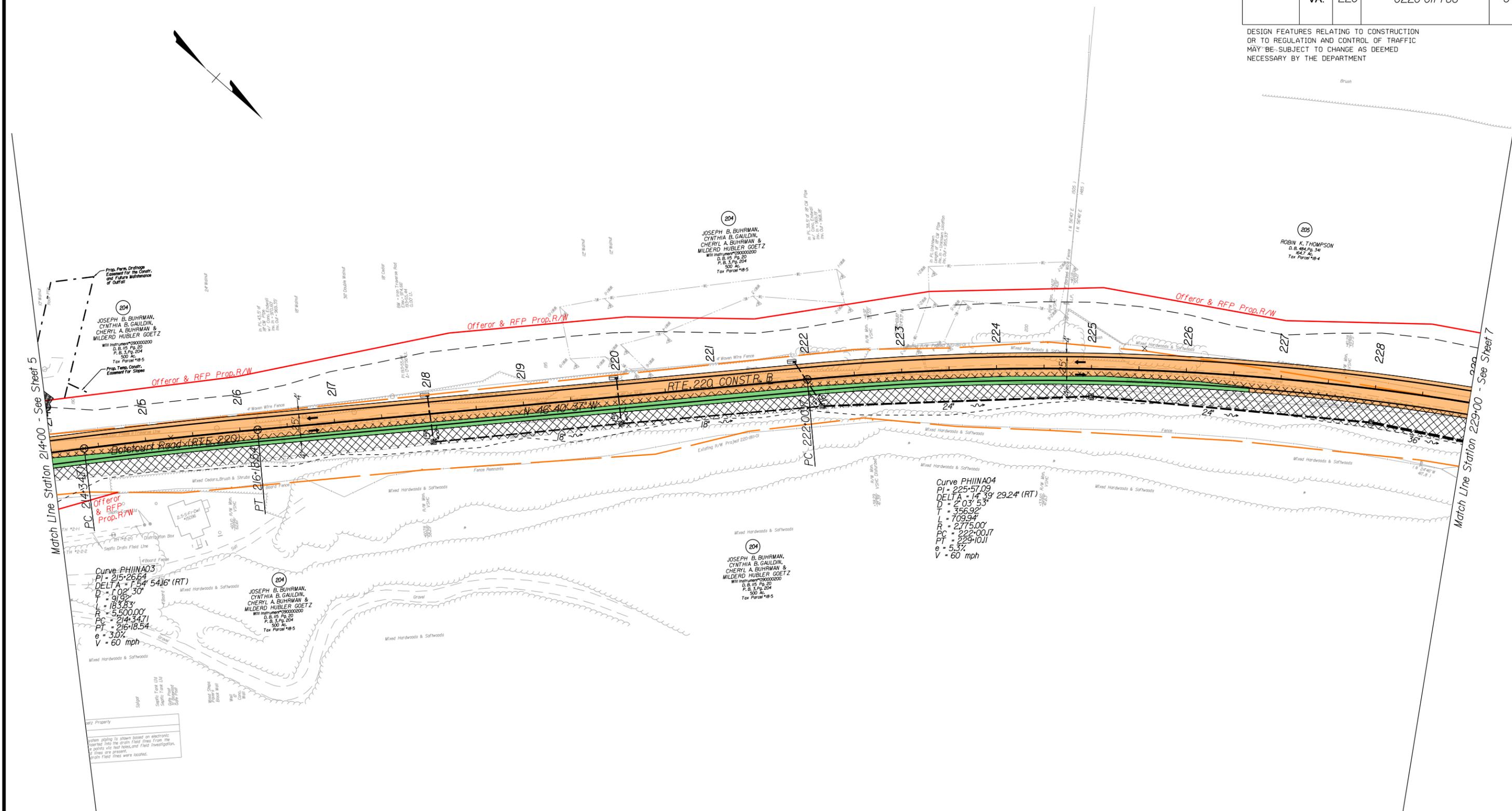


PROJECT	SHEET NO.
0220-011-786	5

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SURVEYED BY, DATE <Surveyor_Name> (000-0000) (District) ---
DESIGN BY <Designer_Name> (000-0000) (District) ---
SUBSURFACE UTILITY BY, DATE <Surveyor_Name> (000-0000) (District) ---

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	6

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. See Typical Sheet 2A(04) for Proposed utility Impacts table.
2. Construction limits account for guardrail in required areas.



- Legend:
- Existing Right of Way
 - Proposed Right of Way
 - Proposed Temporary Easement
 - Proposed Permanent Easement
 - Mill and Overlay
 - Full Depth Proposed Pavement
 - Pavement Demolition or Obscuring
 - Denotes Construction Limits in Cuts
 - Denotes Construction Limits in Fills

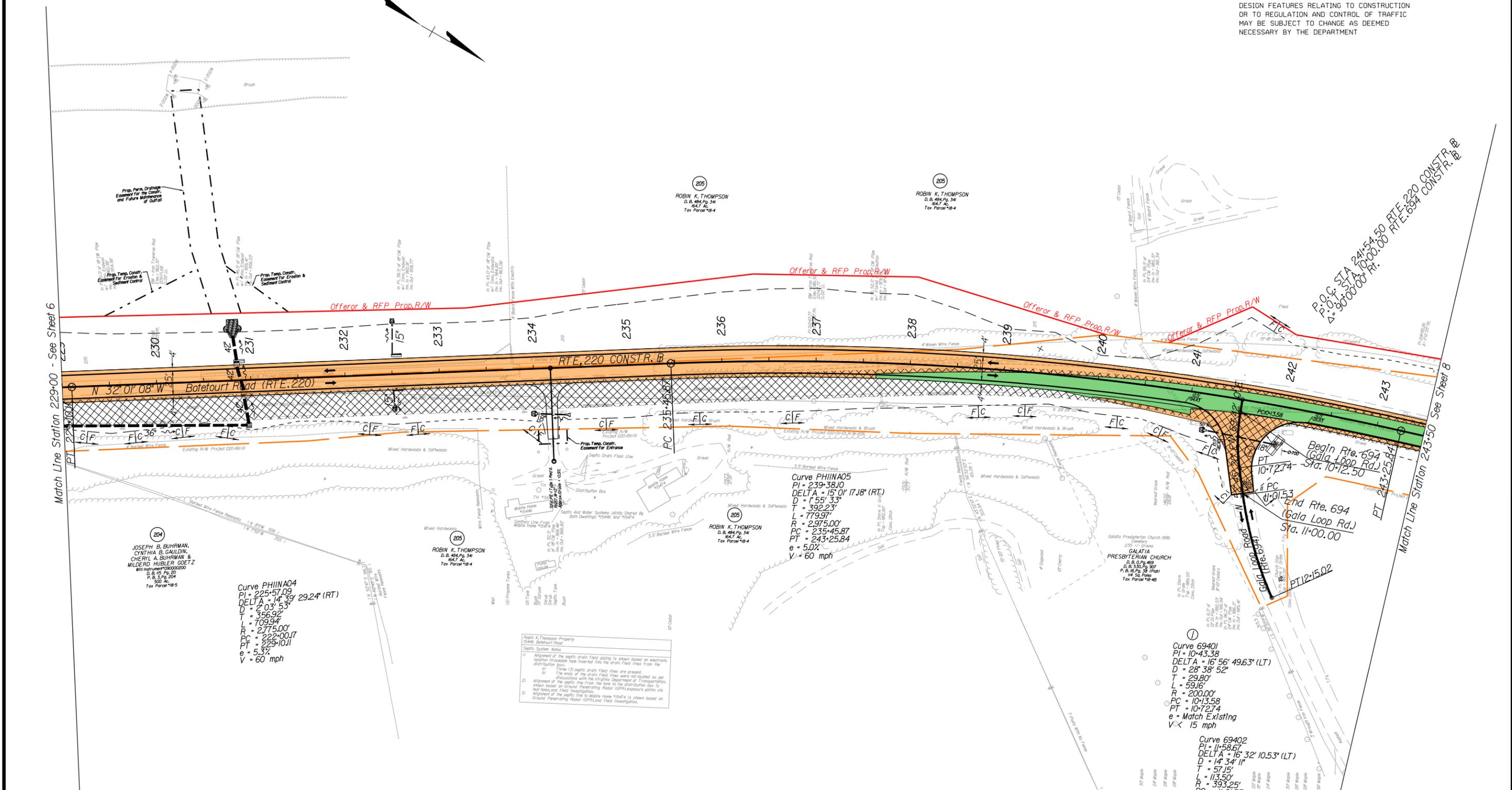
CONCEPTUAL PLANS



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DESIGN BY <Designer_Name_0000> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_0000> 000-0000 (District)

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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



Curve PHIINA04
PI = 225-57.09
DELTA = 14° 39' 29.24" (RT)
D = 2' 03" 53"
T = 356.92'
L = 709.94'
R = 2775.00'
PC = 222-00.17
PT = 229-10.11
e = 5.3%
V = 60 mph

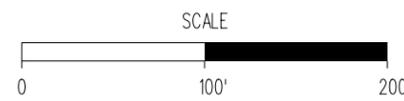
Curve PHIINA05
PI = 239-38.10
DELTA = 15° 01' 17.18" (RT)
D = 1' 55" 33"
T = 392.23'
L = 779.37'
R = 2975.00'
PC = 235-45.87
PT = 243-25.84
e = 5.0%
V = 60 mph

Curve 69401
PI = 10-43.38
DELTA = 16° 56' 49.63" (LT)
D = 28' 38" 52"
T = 29.80'
L = 59.16'
R = 200.00'
PC = 10-13.58
PT = 10-72.74
e = Match Existing
V < 15 mph

Curve 69402
PI = 11-58.67
DELTA = 16° 32' 10.53" (LT)
D = 14' 34" 11"
T = 57.15'
L = 113.50'
R = 393.25'
PC = 11-01.53
PT = 12-15.02
e = Match Existing
V < 15 mph

Notes:
1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
2. Construction limits account for guardrail in required areas.

- Legend: Existing Right of Way, Proposed Right of Way, Proposed Temporary Easement, Proposed Permanent Easement, Mill and Overlay, Full Depth Proposed Pavement, Pavement Demolition or Obscuring, Denotes Construction Limits In Cuts, Denotes Construction Limits In Fills



CONCEPTUAL PLANS

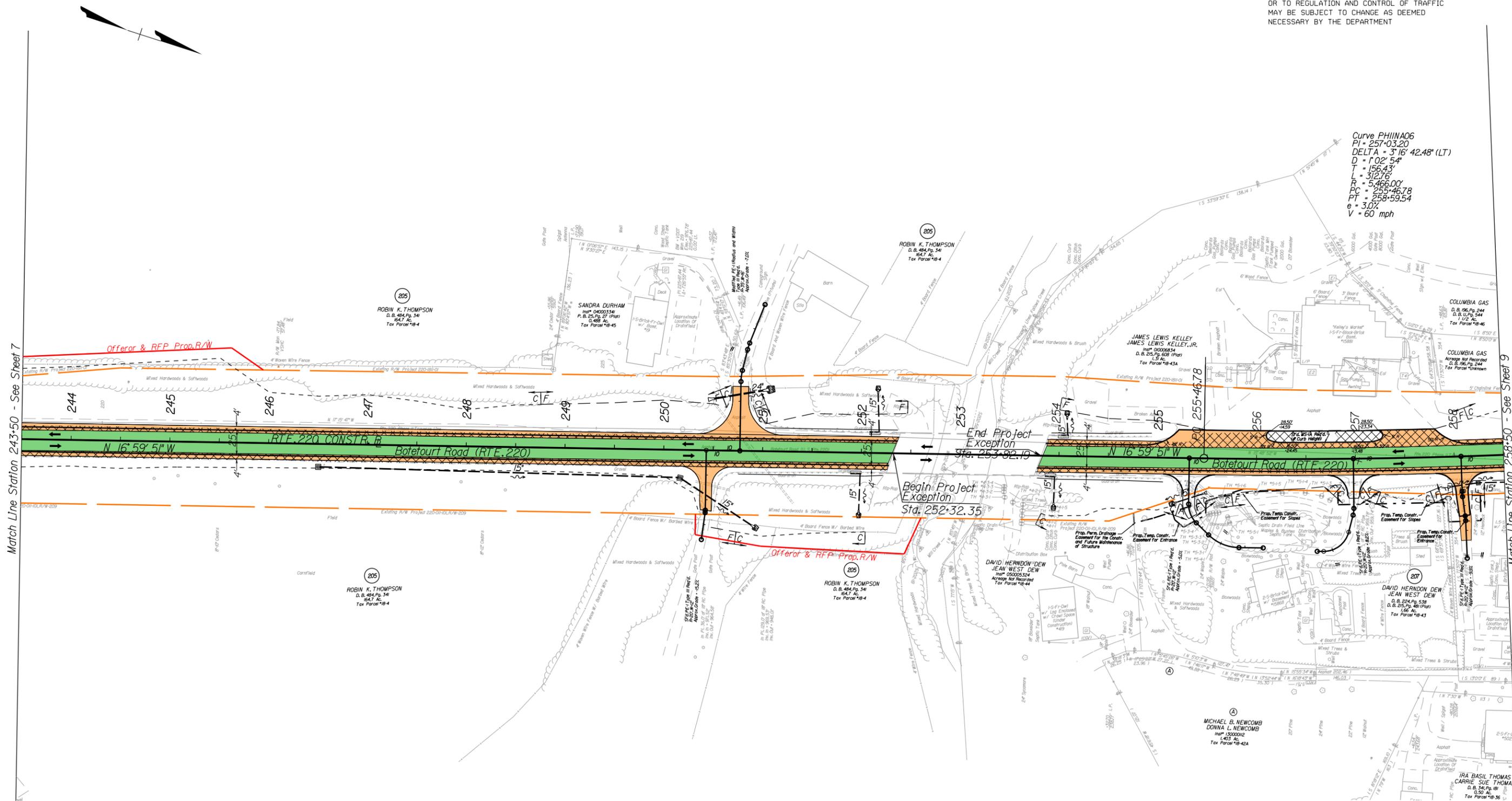


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DESIGN BY <Designer_Name_0000> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_0000> 000-0000 (District)

Table with columns: REVISED, STATE, ROUTE, PROJECT, SHEET NO. Values: VA, 220, 0220-011-786, 8

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

Curve PHINA06
PI = 257+03.20
DELTA = 3°16'42.48" (LT)
D = 1°02'54"
T = 156.43'
L = 312.76'
P = 5466.00'
PC = 254+46.78
PT = 258+59.54
e = 3.0%
V = 60 mph



Match Line Station 243+50 - See Sheet 7

Match Line Station 258+50 - See Sheet 9

Notes:
1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
2. Construction limits account for guardrail in required areas.
SCALE
0 100' 200'

Legend:
Existing Right of Way
Proposed Right of Way
Proposed Temporary Easement
Proposed Permanent Easement
Mill and Overlay
Full Depth Proposed Pavement
Pavement Demolition or Obscuring
Denotes Construction Limits in Cuts
Denotes Construction Limits in Fills

CONCEPTUAL PLANS



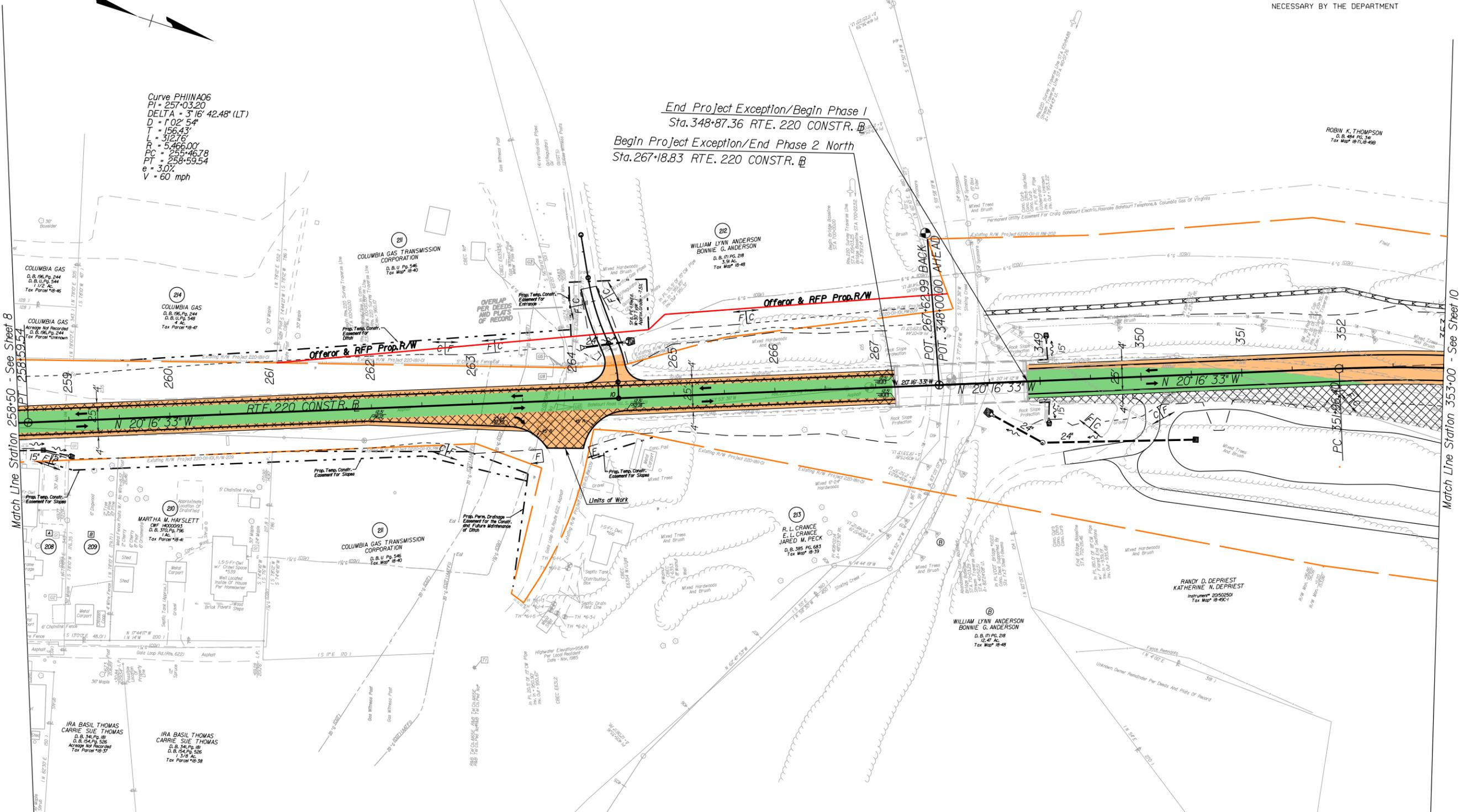
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DESIGN BY <Designer_Name_1000> 000-0000 (District) ---
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_1000> 000-0000 (District) ---

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	9

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

Curve PH11NA06
PI = 257+03.20
DELTA = 3°16'42.48" (LT)
D = 1'02'54"
T = 156.43'
L = 312.76'
R = 5466.00'
PC = 255+46.78
PT = 258+59.54
e = 3.07%
V = 60 mph

End Project Exception/Begin Phase 1
Sta. 348+87.36 RTE. 220 CONSTR. @
Begin Project Exception/End Phase 2 North
Sta. 267+18.83 RTE. 220 CONSTR. @



Match Line Station 258+50 - See Sheet 8

Match Line Station 353+00 - See Sheet 10

- 208 JACQUELINE H. FRIDLEY
DANNIE L. FRIDLEY
Inst# 130002076
1 AC
Tax Parcel #8-42
- 209 JACQUELINE H. FRIDLEY
DANNIE L. FRIDLEY
Inst# 130002076
0.96 AC
Tax Parcel #8-4A

Notes:
1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
2. Construction Limits account for guardrail in required areas.

SCALE
0 100' 200'

- Legend:
- Existing Right of Way
 - Proposed Right of Way
 - Proposed Temporary Easement
 - Proposed Permanent Easement
 - Mill and Overlay
 - Full Depth Proposed Pavement
 - Pavement Demolition or Obscuring
 - Denotes Construction Limits in Cuts
 - Denotes Construction Limits in Fills

CONCEPTUAL PLANS



PROJECT	SHEET NO.
0220-011-786	9

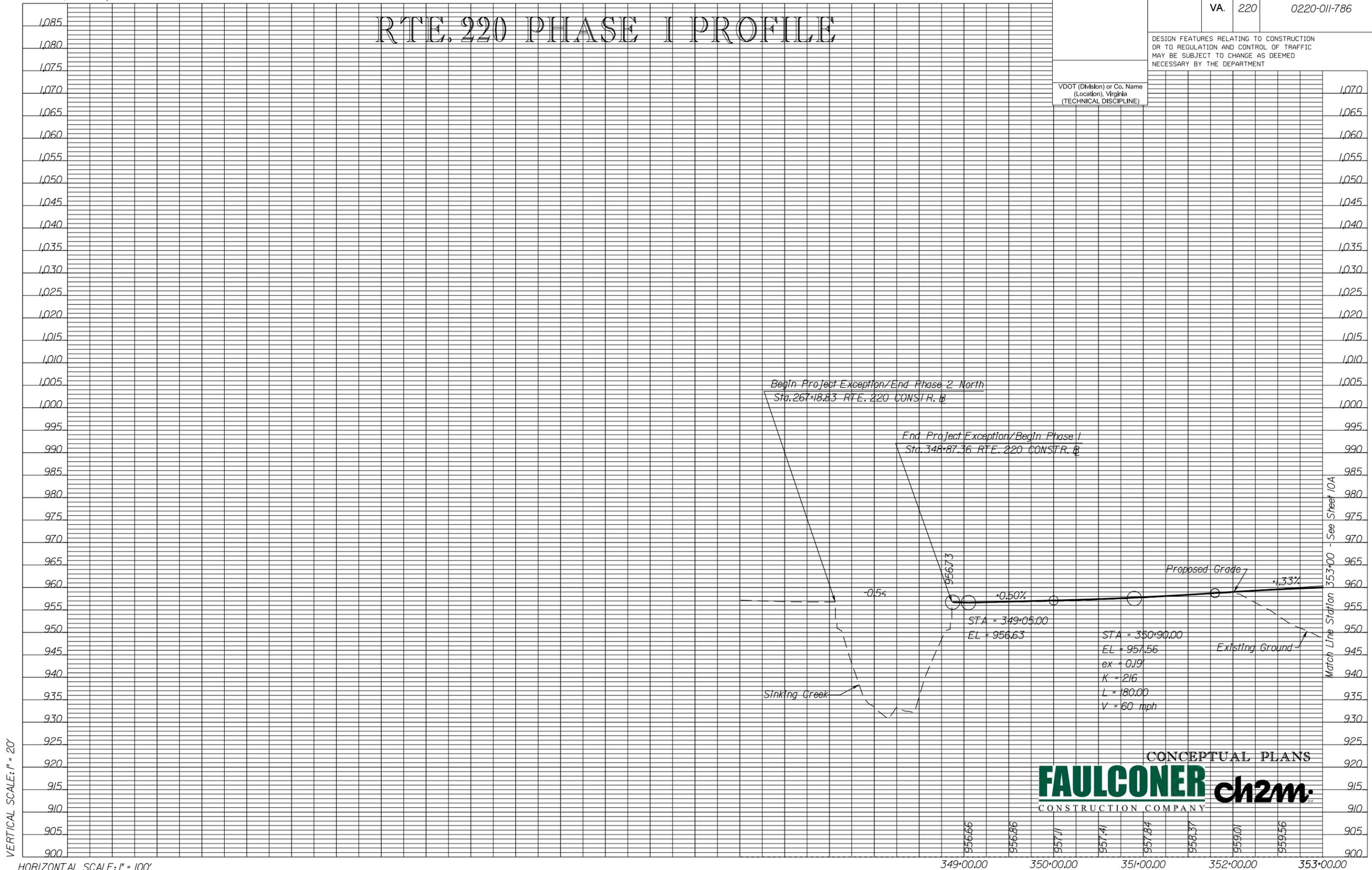
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SURVEYED BY, DATE <Surveyor Name (000) 000-0000 (District)> ---
DESIGN BY <Designer Name (000) 000-0000 (District)> ---
SUBSURFACE UTILITY BY, DATE <Surveyor Name (000) 000-0000 (District)> ---

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	220		0220-011-786	9A

RTE. 220 PHASE I PROFILE

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)



CONCEPTUAL PLANS
FAULCONER **ch2m**
 CONSTRUCTION COMPANY

HORIZONTAL SCALE: 1" = 100'

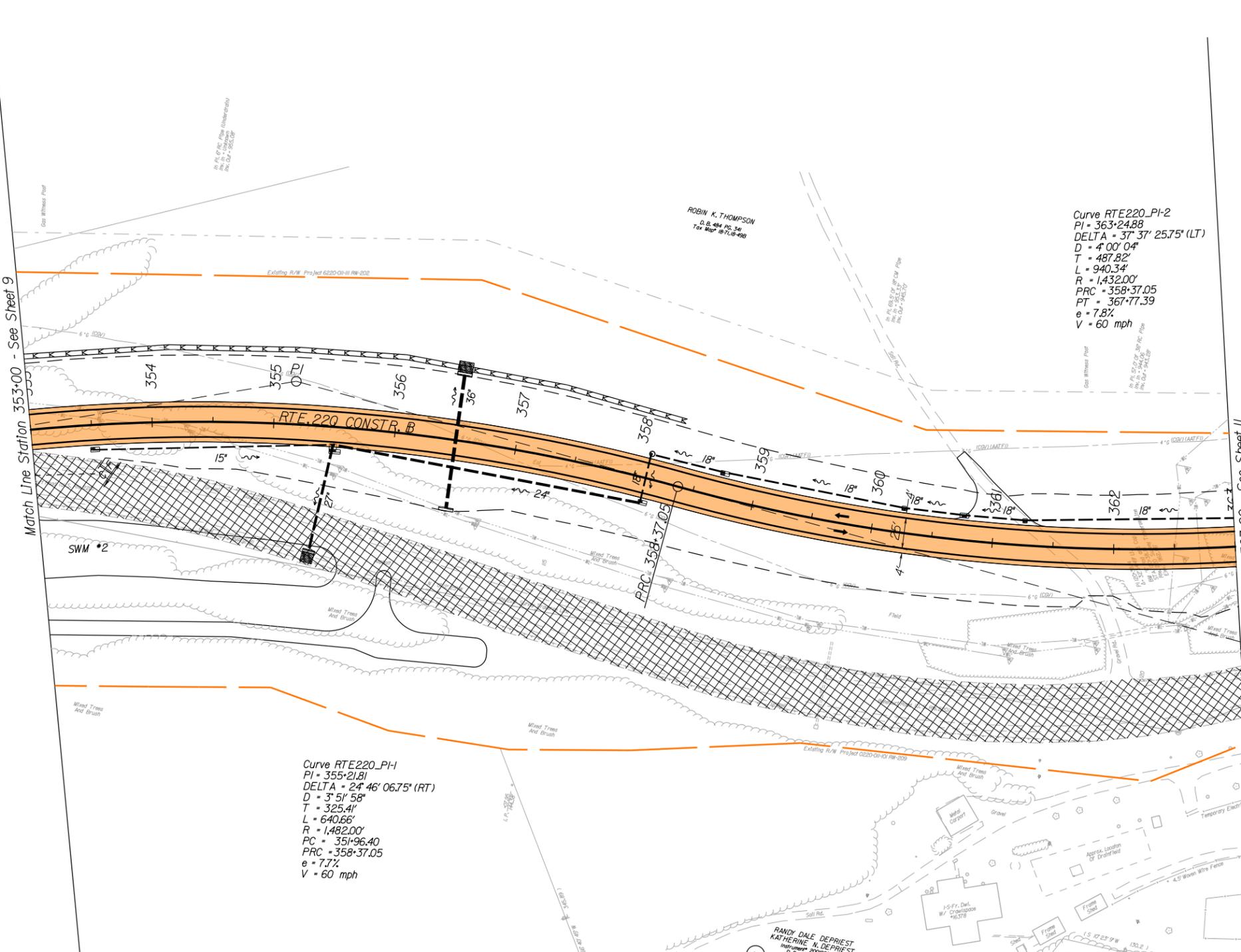
349+00.00 350+00.00 351+00.00 352+00.00 353+00.00

PROJECT 0220-011-786 SHEET NO. 9A

PROJECT MANAGER <Project_Mgr_Name_1000> 000-0000 (District)
SURVEYED BY, DATE <Surveyor_Name_1000> 000-0000 (District)
DESIGN BY <Designer_Name_1000> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_1000> 000-0000 (District)

REVISED	STATE	STATE		SHEET NO.
		ROUTE	PROJECT	
	VA.	220	0220-011-786	10

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



Curve RTE220-PI-2
 PI = 363+24.88
 DELTA = 37° 37' 25.75" (LT)
 D = 4' 00' 04"
 T = 487.82'
 L = 940.34'
 R = 1,432.00'
 PRC = 358+37.05
 PT = 367+77.39
 e = 7.8%
 V = 60 mph

Curve RTE220-PI-1
 PI = 355+21.81
 DELTA = 24° 46' 06.75" (RT)
 D = 3' 51' 58"
 T = 325.41'
 L = 640.66'
 R = 1,482.00'
 PC = 351+96.40
 PRC = 358+37.05
 e = 7.7%
 V = 60 mph

RANDY DALE DEPRIEST
 KATHERINE N. DEPRIEST
 Instrument 10000003
 D.B. 5/9 P.C. 08/2003
 P.B. 24 P.C. 12/2003
 3.58 A
 Tax Map 18-71-B-49B

Notes:
 1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
 2. Construction limits account for guardrail in required areas.

SCALE
 0 100' 200'

- Legend:
- Existing Right of Way
 - Proposed Right of Way
 - Proposed Temporary Easement
 - Proposed Permanent Easement
 - Mill and Overlay
 - Full Depth Proposed Pavement
 - Pavement Demolition or Obscuring
 - C Denotes Construction Limits In Cuts
 - F Denotes Construction Limits In Fills

CONCEPTUAL PLANS



PROJECT	SHEET NO.
0220-011-786	10

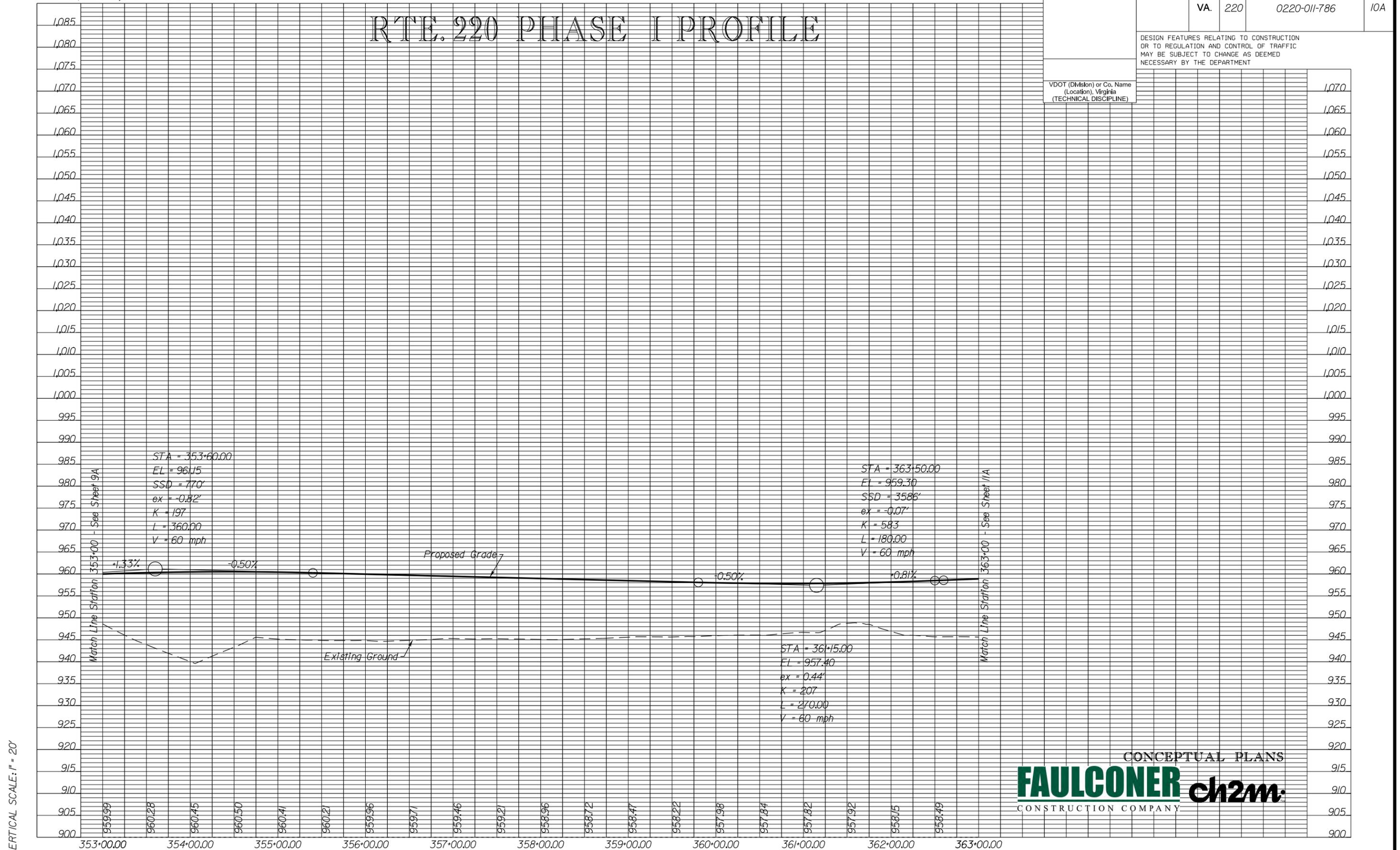
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 SURVEYED BY, DATE <Surveyor Name_(000) 000-0000 (District)> ---
 DESIGN BY <Designer Name_(000) 000-0000 (District)> ---
 SUBSURFACE UTILITY BY, DATE <Surveyor Name_(000) 000-0000 (District)> ---

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	220		0220-011-786	10A

RTE. 220 PHASE I PROFILE

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)



VERTICAL SCALE: 1" = 20'

HORIZONTAL SCALE: 1" = 100'

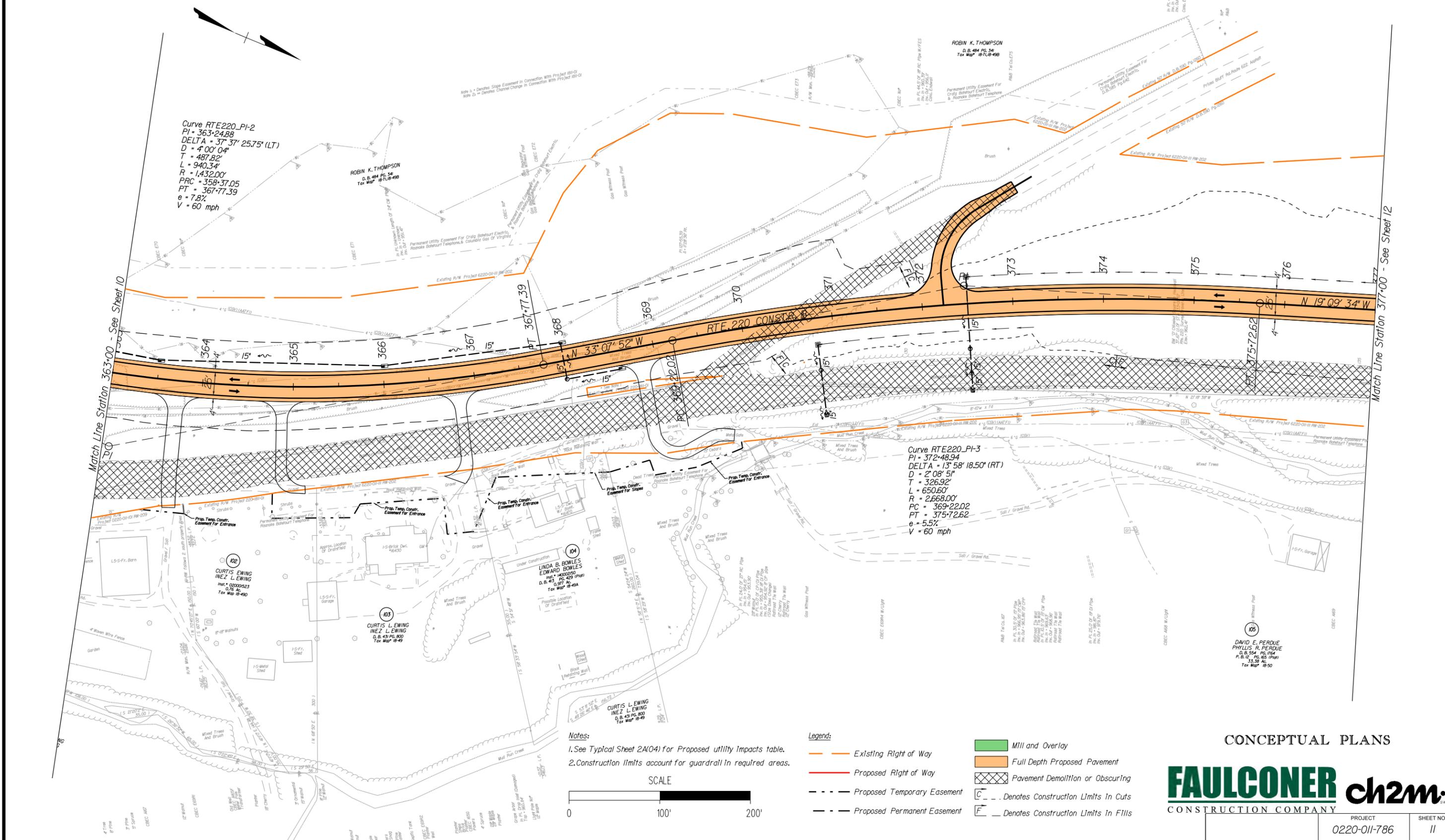


PROJECT	SHEET NO.
0220-011-786	10A

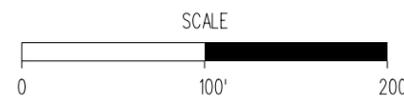
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SURVEYED BY, DATE <Surveyor_Name_1000> 000-0000 (District) ---
DESIGN BY <Designer_Name_1000> 000-0000 (District) ---
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_1000> 000-0000 (District) ---

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	11

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. See Typical Sheet 2A(04) for Proposed utility Impacts table.
2. Construction limits account for guardrail in required areas.



- Legend:
- Existing Right of Way
 - Proposed Right of Way
 - Proposed Temporary Easement
 - Proposed Permanent Easement
 - Mill and Overlay
 - Full Depth Proposed Pavement
 - Pavement Demolition or Obscuring
 - Denotes Construction Limits In Cuts
 - Denotes Construction Limits In Fills

CONCEPTUAL PLANS



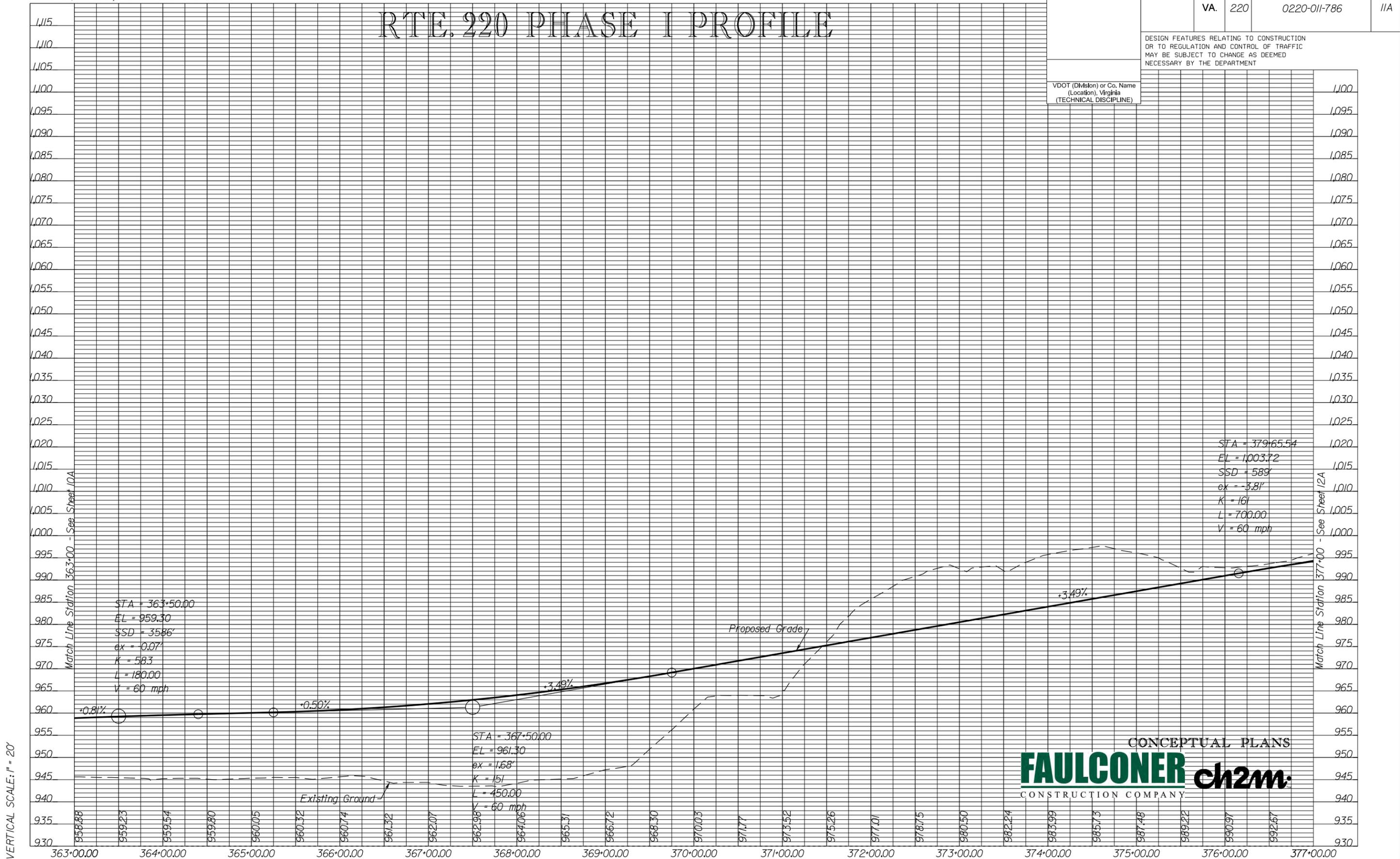
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SURVEYED BY, DATE <Surveyor Name_1000> 000-0000 (District) ---
DESIGN BY <Designer Name_1000> 000-0000 (District) ---
SUBSURFACE UTILITY BY, DATE <Surveyor Name_1000> 000-0000 (District) ---

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	220		0220-011-786	11A

RTE. 220 PHASE I PROFILE

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)



CONCEPTUAL PLANS
FAULCONER **ch2m**
 CONSTRUCTION COMPANY

VERTICAL SCALE: 1" = 20'

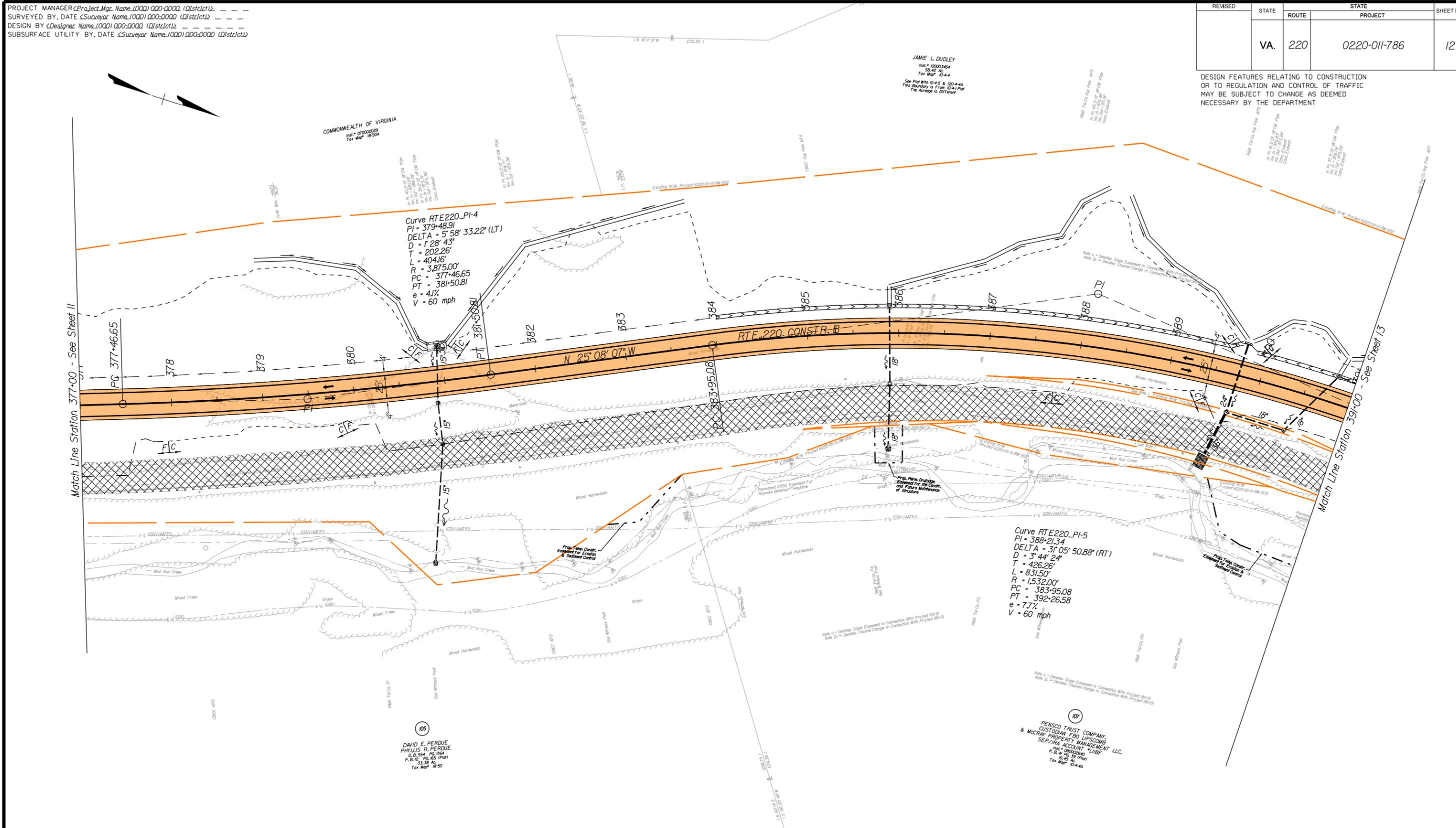
HORIZONTAL SCALE: 1" = 100'

PROJECT 0220-011-786 SHEET NO. 11A

PROJECT MANAGER <Project_Mgr_Name_000> 000-0000 (District)
SURVEYED BY, DATE <Surveyor_Name_000> 000-0000 (District)
DESIGN BY <Designer_Name_000> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_000> 000-0000 (District)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	12

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. See Typical Sheet 2A(04) for Proposed utility Impacts table.
 2. Construction limits account for guardrail in required areas.

Legend:

- Existing Right of Way
- Proposed Right of Way
- Proposed Temporary Easement
- Proposed Permanent Easement
- Mill and Overlay
- Full Depth Proposed Pavement
- Pavement Demolition or Obscuring
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills

SCALE
 0 100' 200'

CONCEPTUAL PLANS

FAULCONER ch2m
 CONSTRUCTION COMPANY

PROJECT: 0220-011-786
 SHEET NO.: 12

PROJECT MANAGER <Project_Mgr. Name_1000> 000-0000 (District) ---
SURVEYED BY, DATE <Surveyor Name_1000> 000-0000 (District) ---
DESIGN BY <Designer Name_1000> 000-0000 (District) ---
SUBSURFACE UTILITY BY, DATE <Surveyor Name_1000> 000-0000 (District) ---

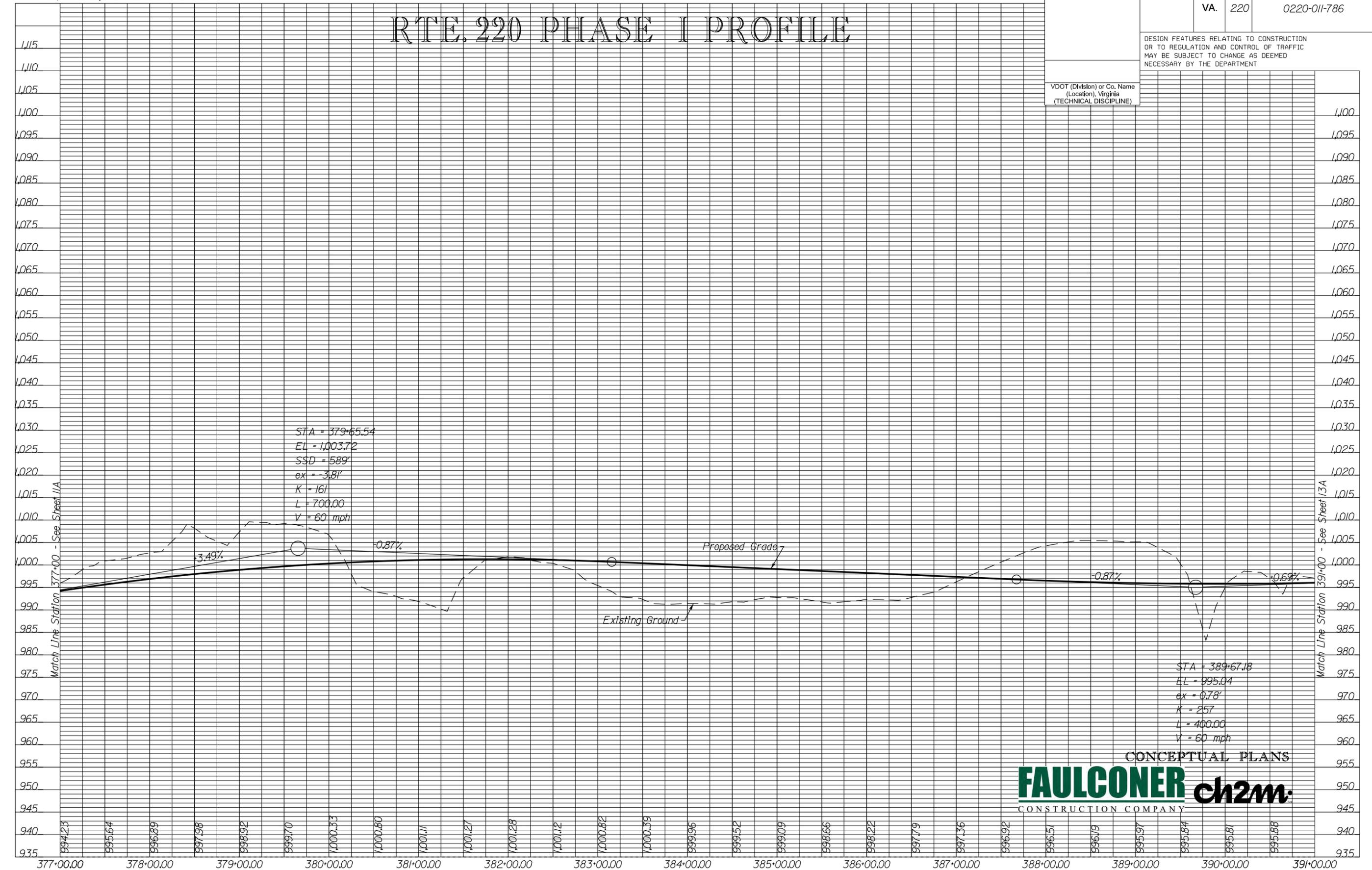
REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	12A

RTE. 220 PHASE I PROFILE

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)

VERTICAL SCALE: 1" = 20'



HORIZONTAL SCALE: 1" = 100'

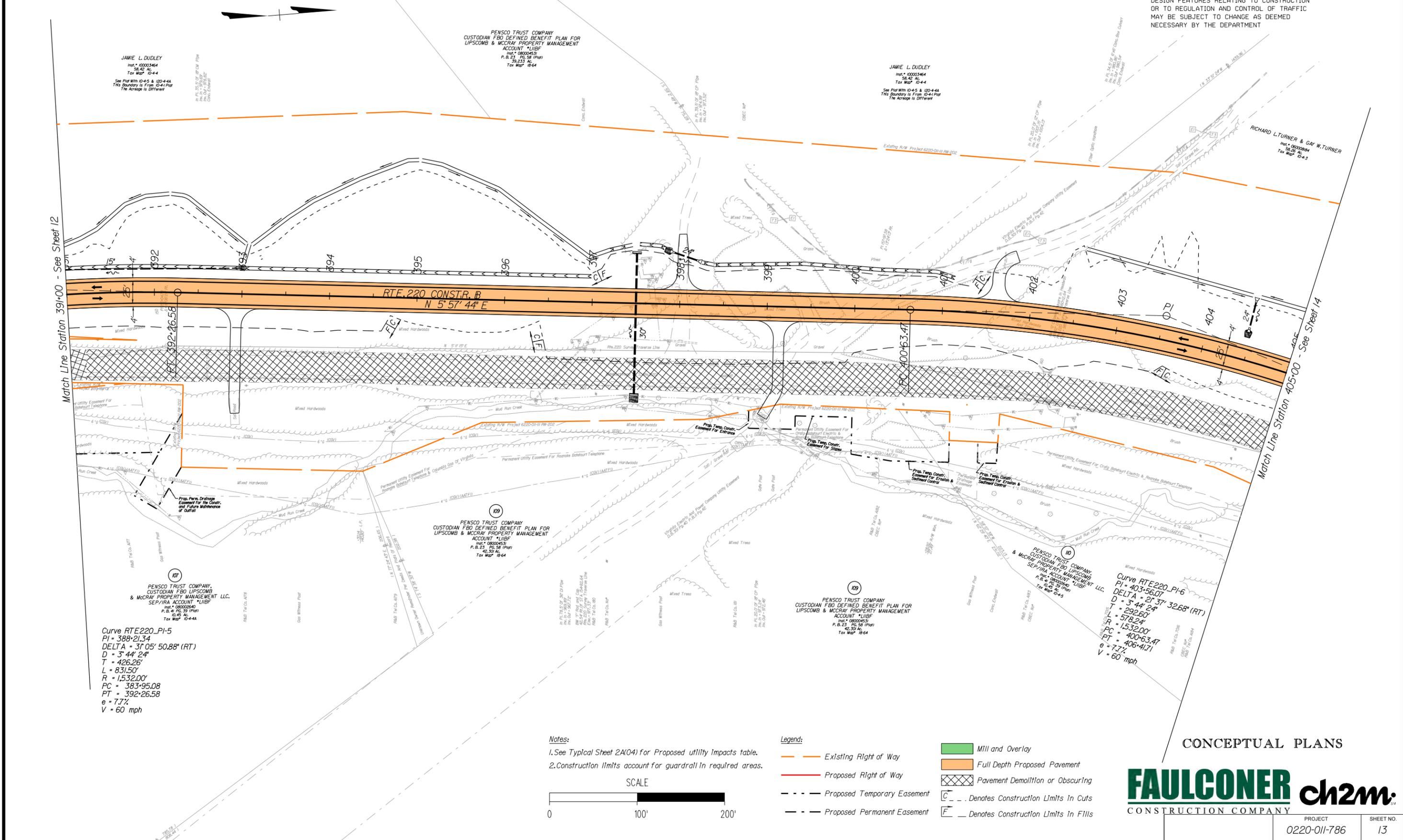
CONCEPTUAL PLANS
FAULCONER *ch2m*
 CONSTRUCTION COMPANY

PROJECT	0220-011-786	SHEET NO.	12A
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 SURVEYED BY, DATE <Surveyor_Name> 000-0000 (District)
 DESIGN BY <Designer_Name> 000-0000 (District)
 SUBSURFACE UTILITY BY, DATE <Surveyor_Name> 000-0000 (District)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	13

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



JAMIE L. DUDLEY
 Inst. # 00003464
 58.42 Ac.
 Tax Map 15-4-4
 See Plat With 10-4-5 & 10-4-44
 This Boundary is From 10-4-1 Plat
 The Acreage is Different

PENSCO TRUST COMPANY
 CUSTODIAN FBO DEFINED BENEFIT PLAN FOR
 LIFSCOMB & MCCRAY PROPERTY MANAGEMENT
 ACCOUNT *LUBF
 Inst. # 08000453
 P. B. 23 PC. 58 (Pigt)
 42.30 Ac.
 Tax Map 18-64

JAMIE L. DUDLEY
 Inst. # 00003464
 58.42 Ac.
 Tax Map 15-4-4
 See Plat With 10-4-5 & 10-4-44
 This Boundary is From 10-4-1 Plat
 The Acreage is Different

RICHARD L. TURNER & GAY W. TURNER
 Inst. # 0000884
 58.42 Ac.
 Tax Map 10-4-3

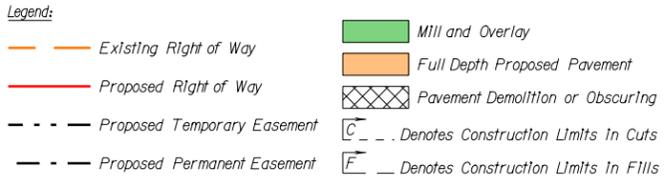
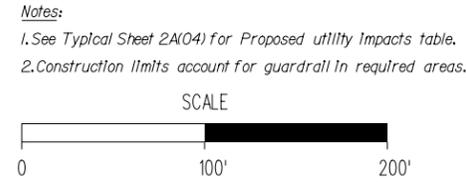
PENSCO TRUST COMPANY,
 CUSTODIAN FBO LIFSCOMB
 & MCCRAY PROPERTY MANAGEMENT LLC.
 SEP/IRA ACCOUNT *LUBF
 Inst. # 08000264
 P. B. 4 PC. 39 (Pigt)
 0.45 Ac.
 Tax Map 10-4-44

PENSCO TRUST COMPANY
 CUSTODIAN FBO DEFINED BENEFIT PLAN FOR
 LIFSCOMB & MCCRAY PROPERTY MANAGEMENT
 ACCOUNT *LUBF
 Inst. # 08000453
 P. B. 23 PC. 58 (Pigt)
 42.30 Ac.
 Tax Map 18-64

PENSCO TRUST COMPANY
 CUSTODIAN FBO DEFINED BENEFIT PLAN FOR
 LIFSCOMB & MCCRAY PROPERTY MANAGEMENT
 ACCOUNT *LUBF
 Inst. # 08000453
 P. B. 23 PC. 58 (Pigt)
 42.30 Ac.
 Tax Map 18-64

PENSCO TRUST COMPANY,
 CUSTODIAN FBO LIFSCOMB
 & MCCRAY PROPERTY MANAGEMENT LLC.
 SEP/IRA ACCOUNT *LUBF
 Inst. # 08000264
 P. B. 4 PC. 39 (Pigt)
 0.45 Ac.
 Tax Map 10-4-44

Curve RTE220-PI-6
 PI = 403+56.07
 DELTA = 21° 37' 32.68" (RT)
 D = 3' 44' 24"
 T = 292.60'
 L = 576.24'
 R = 1532.00'
 PC = 383+95.08
 PT = 392+26.58
 e = 7.7%
 V = 60 mph



CONCEPTUAL PLANS



PROJECT	SHEET NO.
0220-011-786	13

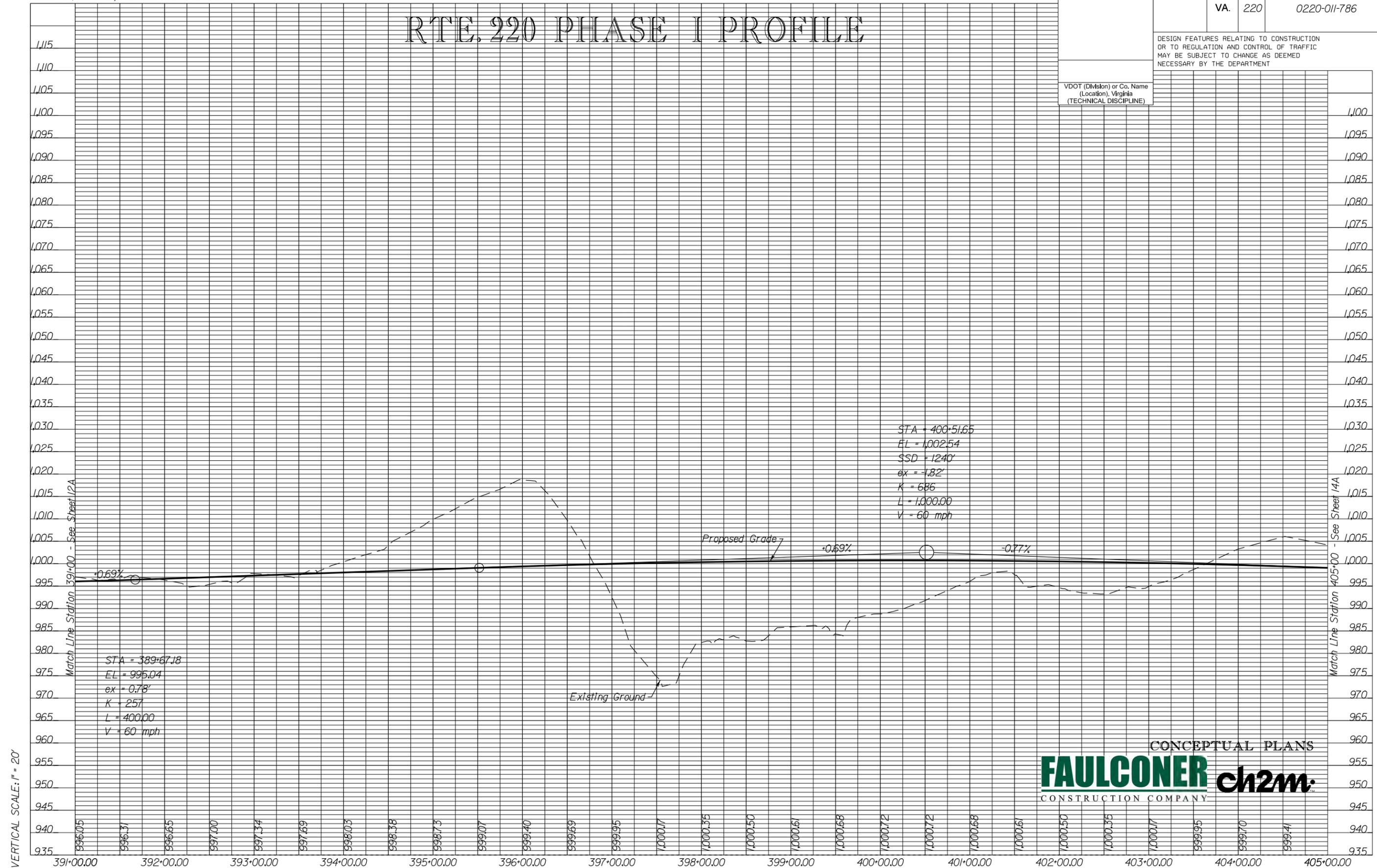
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 SURVEYED BY, DATE <Surveyor Name (000) 000-0000 (District)> ---
 DESIGN BY <Designer Name (000) 000-0000 (District)> ---
 SUBSURFACE UTILITY BY, DATE <Surveyor Name (000) 000-0000 (District)> ---

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	220		0220-011-786	13A

RTE. 220 PHASE I PROFILE

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)



CONCEPTUAL PLANS
FAULCONER **ch2m**
 CONSTRUCTION COMPANY

VERTICAL SCALE: 1" = 20'

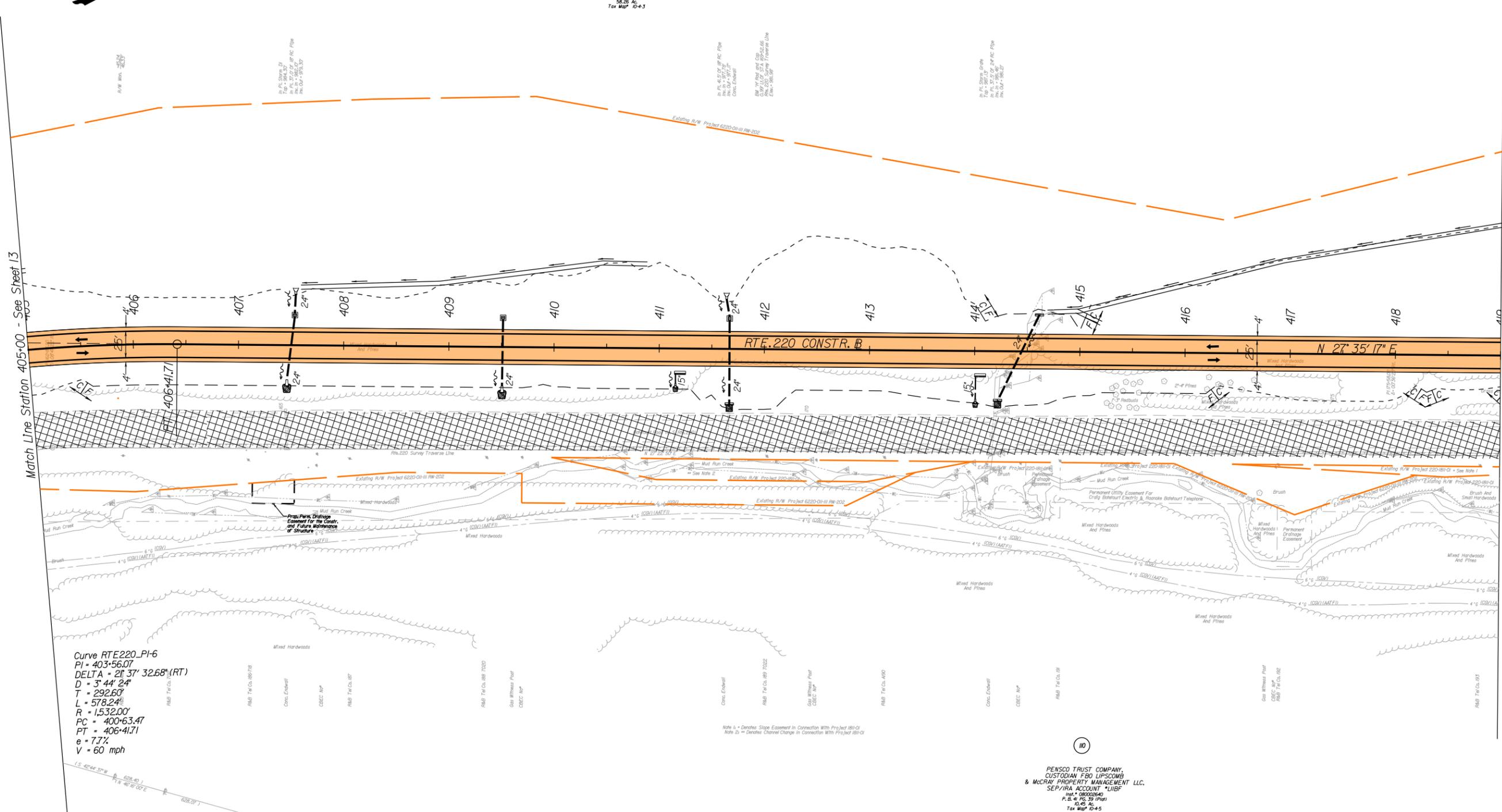
HORIZONTAL SCALE: 1" = 100'

PROJECT MANAGER <Project_Mgr_Name_1000> 000-0000 (District)
SURVEYED BY, DATE <Surveyor_Name_1000> 000-0000 (District)
DESIGN BY <Designer_Name_1000> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_1000> 000-0000 (District)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	14

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

RICHARD L.TURNER & GAY W.TURNER
Inst. # 06000884
58.26 AC
Tax Map: G-4-3



Notes:
 1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
 2. Construction limits account for guardrail in required areas.

SCALE
 0 100' 200'

- Legend:
- Existing Right of Way
 - Proposed Right of Way
 - Proposed Temporary Easement
 - Proposed Permanent Easement
 - Mill and Overlay
 - Full Depth Proposed Pavement
 - Pavement Demolition or Obsolete
 - Denotes Construction Limits in Cuts
 - Denotes Construction Limits in Fills

PENSICO TRUST COMPANY,
 CUSTODIAN FBO LIFSOMB
 & MCCRAY PROPERTY MANAGEMENT, LLC.
 SEP/IRA ACCOUNT *LJIB*
 Inst. # 06000884
 F.B.E. No. 32 (P&M)
 01-45, AC
 Tax Map: G-4-5

CONCEPTUAL PLANS

FAULCONER ch2m
 CONSTRUCTION COMPANY

PROJECT: 0220-011-786
 SHEET NO.: 14

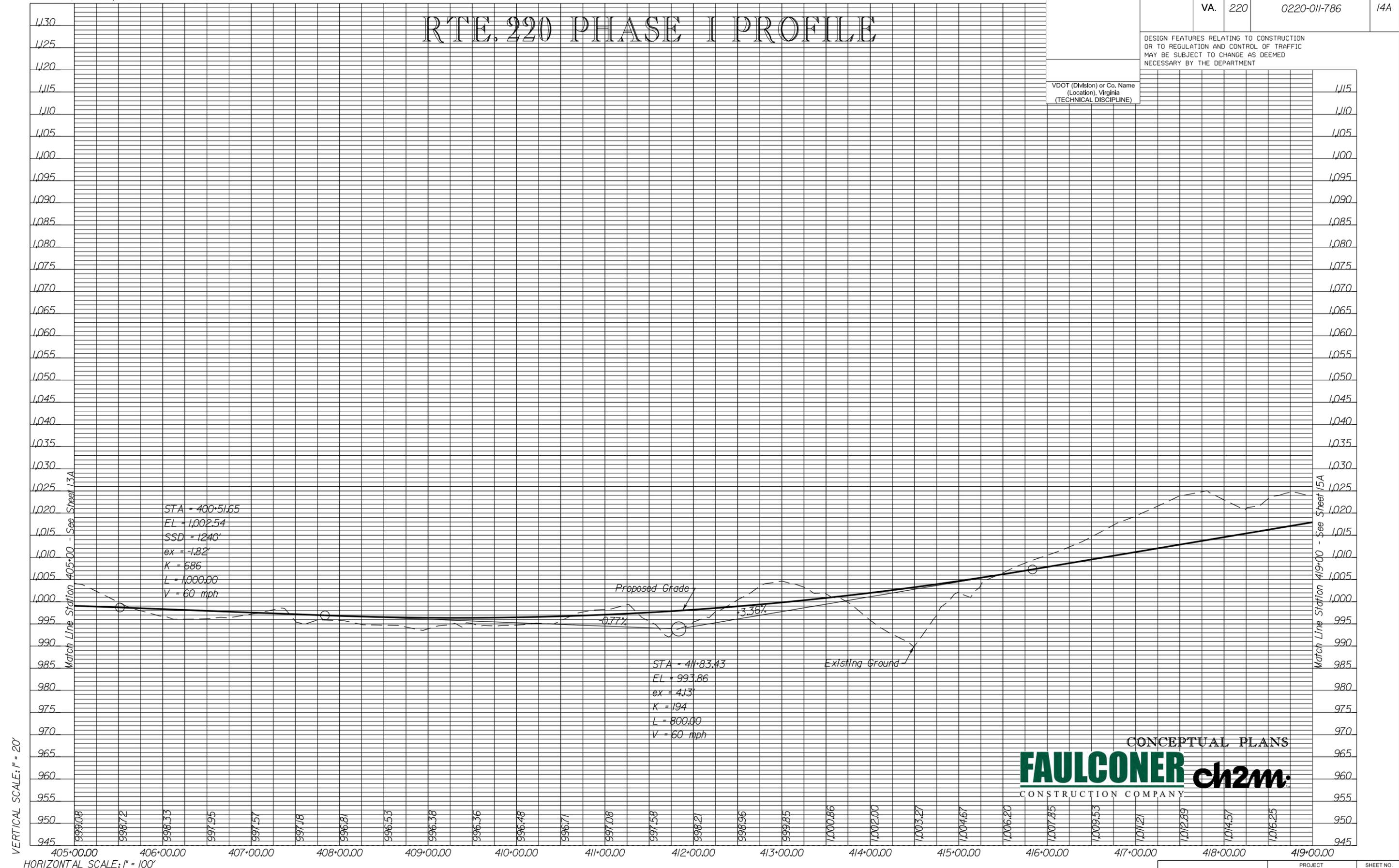
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SURVEYED BY, DATE <Surveyor Name (000) 000-0000 (District)> ---
DESIGN BY <Designer Name (000) 000-0000 (District)> ---
SUBSURFACE UTILITY BY, DATE <Surveyor Name (000) 000-0000 (District)> ---

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	220		0220-011-786	14A

RTE. 220 PHASE I PROFILE

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)



STA - 400+51.65
 EL = 1,002.54
 SSD = 1240'
 ex = -1.82'
 K = 686
 L = 1,000.00
 V = 60 mph

STA - 411+83.43
 EL = 993.86
 ex = 4.13'
 K = 194
 L = 800.00
 V = 60 mph

CONCEPTUAL PLANS
FAULCONER *ch2m*
 CONSTRUCTION COMPANY

VERTICAL SCALE: 1" = 20'

HORIZONTAL SCALE: 1" = 100'

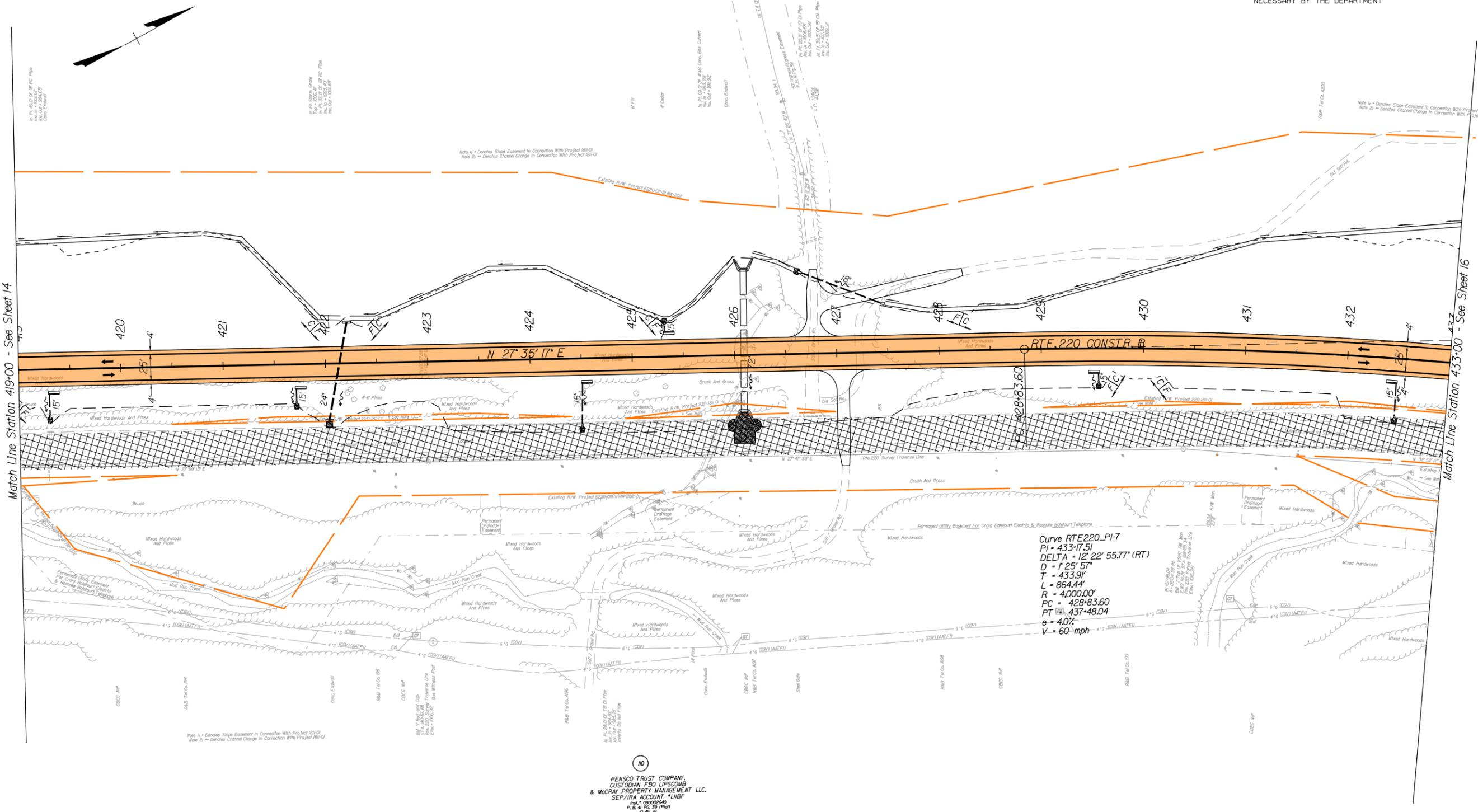
PROJECT 0220-011-786 SHEET NO. 14A

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DESIGN BY <Designer_Name_0000> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_0000> 000-0000 (District)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	15

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

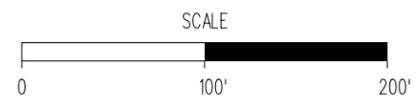
RICHARD L. TURNER & GAY W. TURNER
Inst 506200884
58.26 AC
Tax Map 10-4-3



Curve RTE 220-PI-7
 PI = 433+17.51
 DELTA = 12° 22' 55.77" (RT)
 D = 125' 57"
 T = 433.91'
 L = 864.44'
 R = 4000.00'
 PC = 428+83.60
 PT = 437+48.04
 e = 4.0%
 V = 60 mph

10
 PENSICO TRUST COMPANY,
 CUSTODIAN FBO LIFSCOMB
 & MCCRAW PROPERTY MANAGEMENT LLC.
 SEP/IRA ACCOUNT *LIIBF
 Inst = 080002640
 P. B. # 4, PG. 39 (Plan)
 10.45 AC
 Tax Map 10-4-3

Notes:
 1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
 2. Construction limits account for guardrail in required areas.



- Legend:
- Existing Right of Way
 - Proposed Right of Way
 - Proposed Temporary Easement
 - Proposed Permanent Easement
 - Mill and Overlay
 - Full Depth Proposed Pavement
 - Pavement Demolition or Obscuring
 - Denotes Construction Limits In Cuts
 - Denotes Construction Limits In Fills

CONCEPTUAL PLANS



PROJECT	SHEET NO.
0220-011-786	15

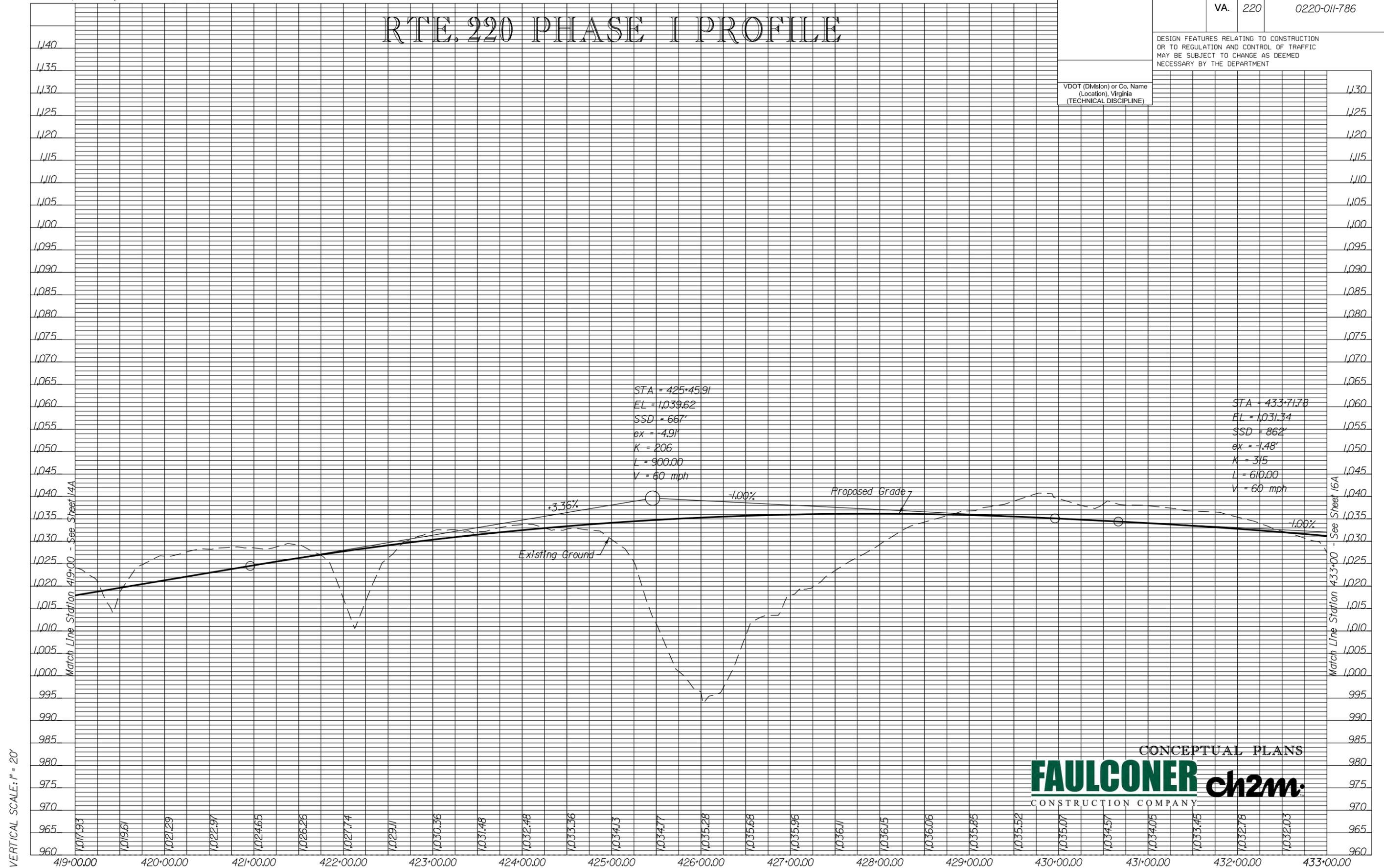
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SURVEYED BY, DATE <Surveyor Name (000) 000-0000 (District)> ---
DESIGN BY <Designer Name (000) 000-0000 (District)> ---
SUBSURFACE UTILITY BY, DATE <Surveyor Name (000) 000-0000 (District)> ---

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	15A

RTE. 220 PHASE I PROFILE

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)



VERTICAL SCALE: 1" = 20'

HORIZONTAL SCALE: 1" = 100'

CONCEPTUAL PLANS

FAULCONER *ch2m*

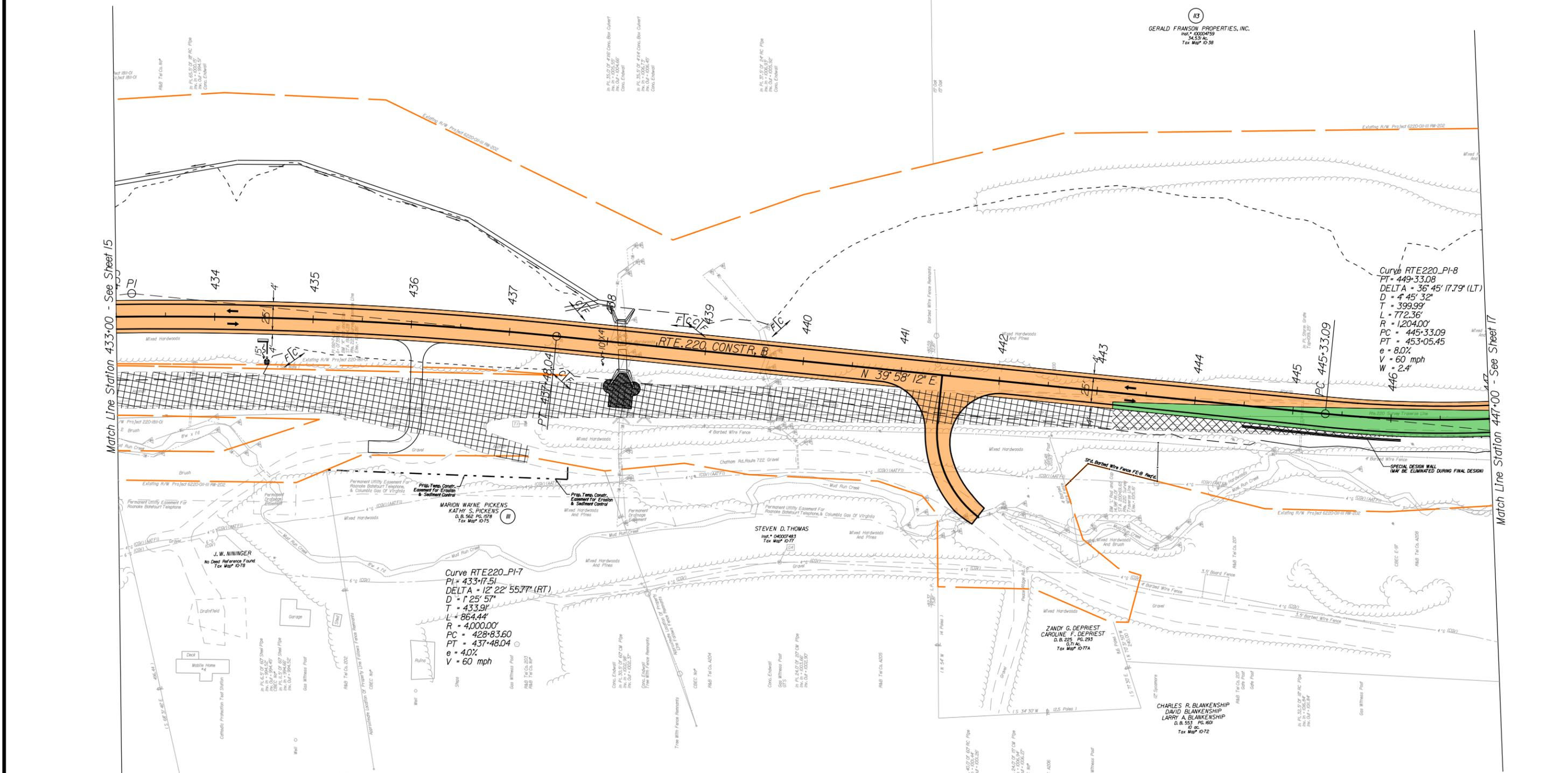
CONSTRUCTION COMPANY

PROJECT	SHEET NO.
0220-011-786	15A

PROJECT MANAGER <Project_Mgr_Name_1000> 000-0000 (District) ---
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DESIGN BY <Designer_Name_1000> 000-0000 (District) ---
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_1000> 000-0000 (District) ---

REVISED	STATE	ROUTE	STATE		SHEET NO.
			PROJECT		
	VA.	220	0220-011-786		16

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. See Typical Sheet 2A(04) for Proposed utility Impacts table.
 2. Construction limits account for guardrail in required areas.

Legend:

- Existing Right of Way
- Proposed Right of Way
- Proposed Temporary Easement
- Proposed Permanent Easement
- Mill and Overlay
- Full Depth Proposed Pavement
- Pavement Demolition or Obscuring
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills

SCALE
 0 100' 200'

CONCEPTUAL PLANS

FAULCONER ch2m
 CONSTRUCTION COMPANY

PROJECT	0220-011-786	SHEET NO.	16
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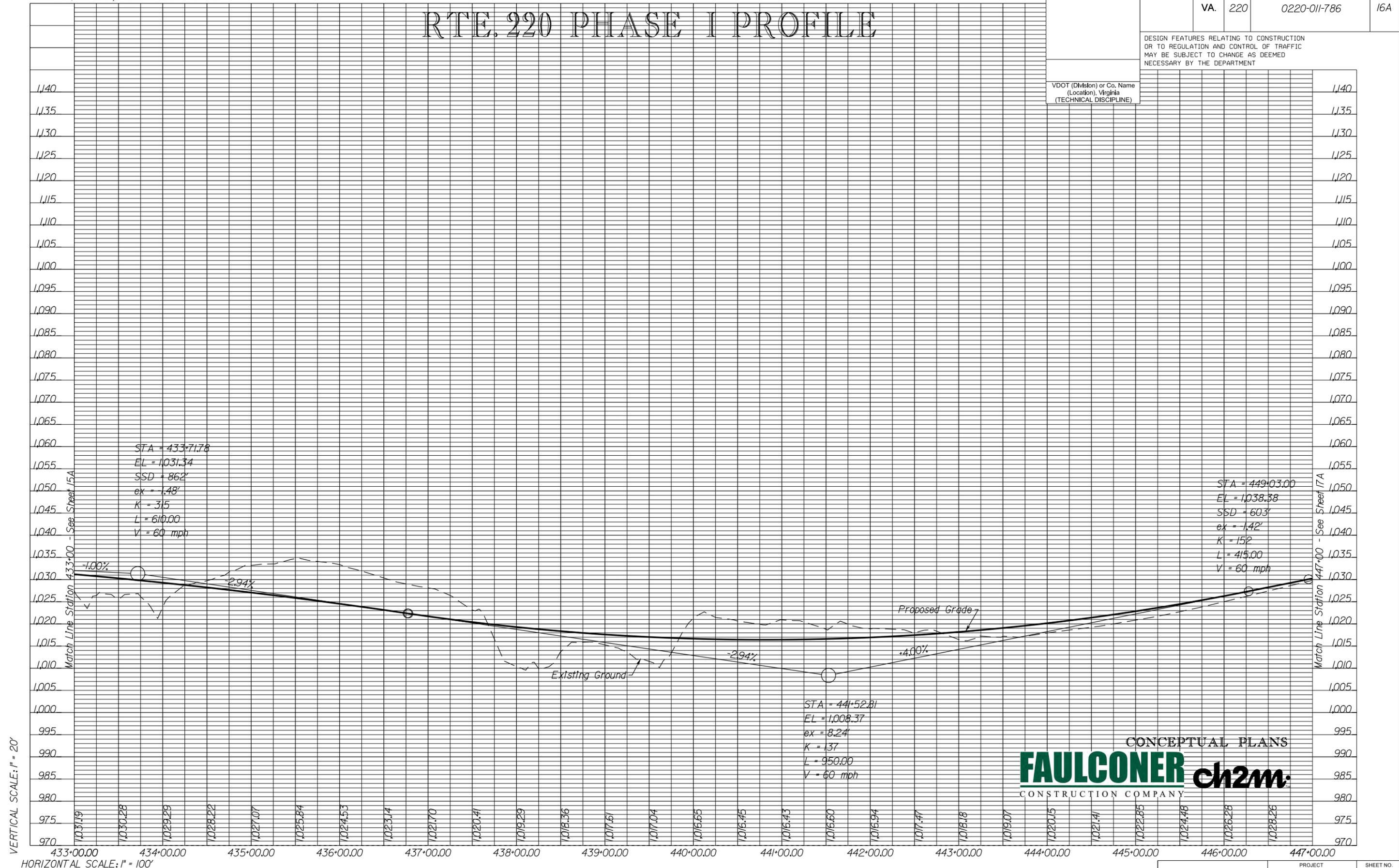
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SURVEYED BY, DATE <Surveyor Name (000) 000-0000 (District)> ---
DESIGN BY <Designer Name (000) 000-0000 (District)> ---
SUBSURFACE UTILITY BY, DATE <Surveyor Name (000) 000-0000 (District)> ---

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	220		0220-011-786	16A

RTE. 220 PHASE I PROFILE

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)



VERTICAL SCALE: 1" = 20'

HORIZONTAL SCALE: 1" = 100'

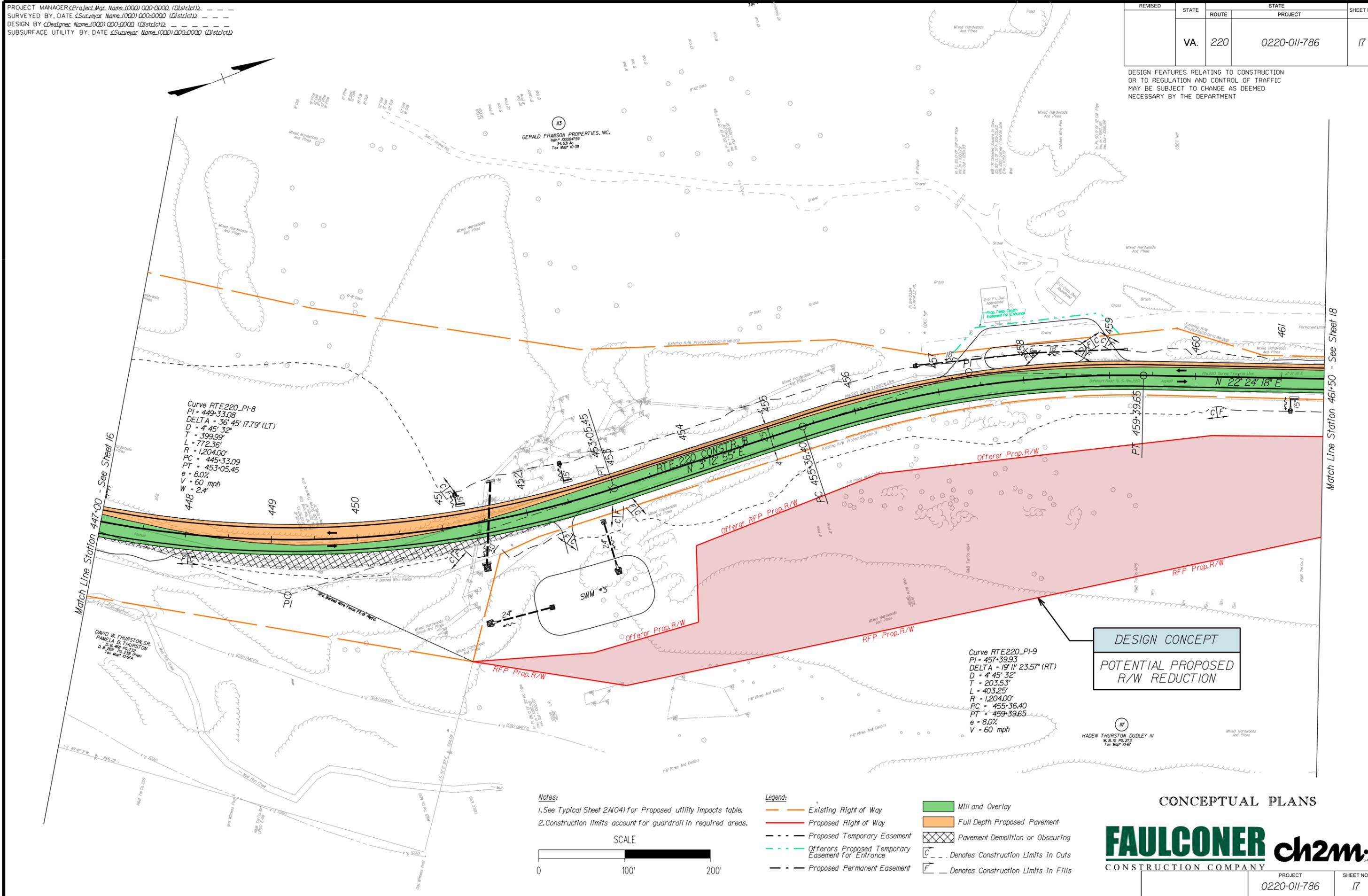
CONCEPTUAL PLANS
FAULCONER *ch2m*
 CONSTRUCTION COMPANY

PROJECT	0220-011-786	SHEET NO.	16A
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PROJECT MANAGER <Project_Mgr_Name_0000000000 (District)>
SURVEYED BY, DATE <Surveyor_Name_0000000000 (District)>
DESIGN BY <Designer_Name_0000000000 (District)>
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_0000000000 (District)>

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	17

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



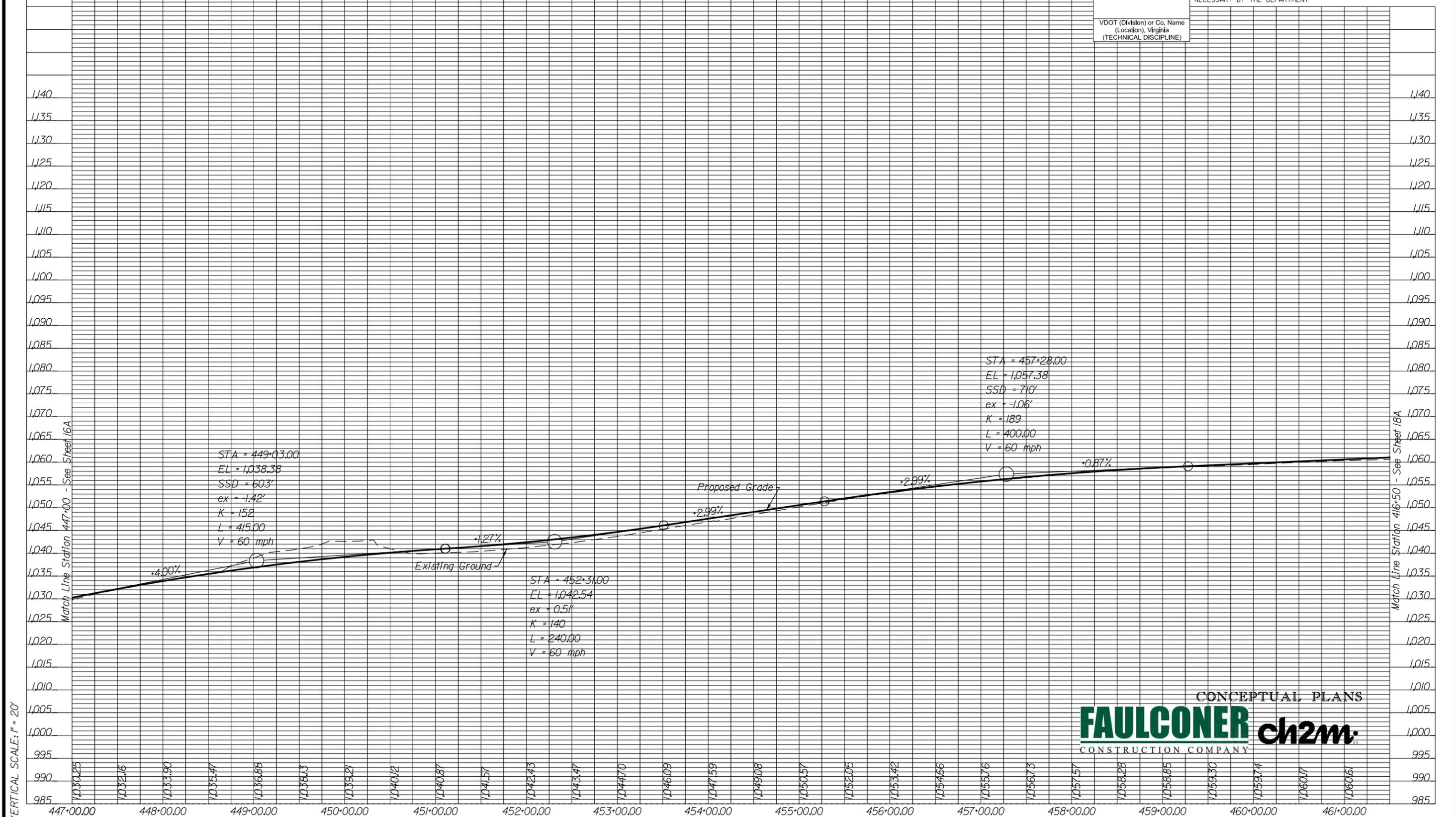
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SURVEYED BY, DATE <Surveyor Name (000) 000-0000 (District)> ---
DESIGN BY <Designer Name (000) 000-0000 (District)> ---
SUBSURFACE UTILITY BY, DATE <Surveyor Name (000) 000-0000 (District)> ---

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	17A

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)

RTE. 220 PHASE I PROFILE



CONCEPTUAL PLANS
FAULCONER **ch2m**
 CONSTRUCTION COMPANY

VERTICAL SCALE: 1" = 20'

HORIZONTAL SCALE: 1" = 100'

PROJECT MANAGER <Project_Mgr_Name_0000> 000-0000 (District)
SURVEYED BY, DATE <Surveyor_Name_0000> 000-0000 (District)
DESIGN BY <Designer_Name_0000> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_0000> 000-0000 (District)

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	220		0220-011-786	18

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

WENDY S. FAIRBURN
MELANIE S. SPANGLER
SHARON M. PUGH
Inst. # 9950300
S.T. AS
Tax Map 10-43

CLARE D. WEIDMAN &
PATRICIA A. WEIDMAN
D.B. 540 PG. 278
1.50 AC
Tax Map 10-38A

JEROME L. HARLOW & DEBORAH F. HARLOW
D.B. 535 PG. 251
1.68 AC
Tax Map 10-40A

JOSEPH D. CAMPBELL
D.B. 587 PG. 309
3.00 AC
Tax Map 10-39

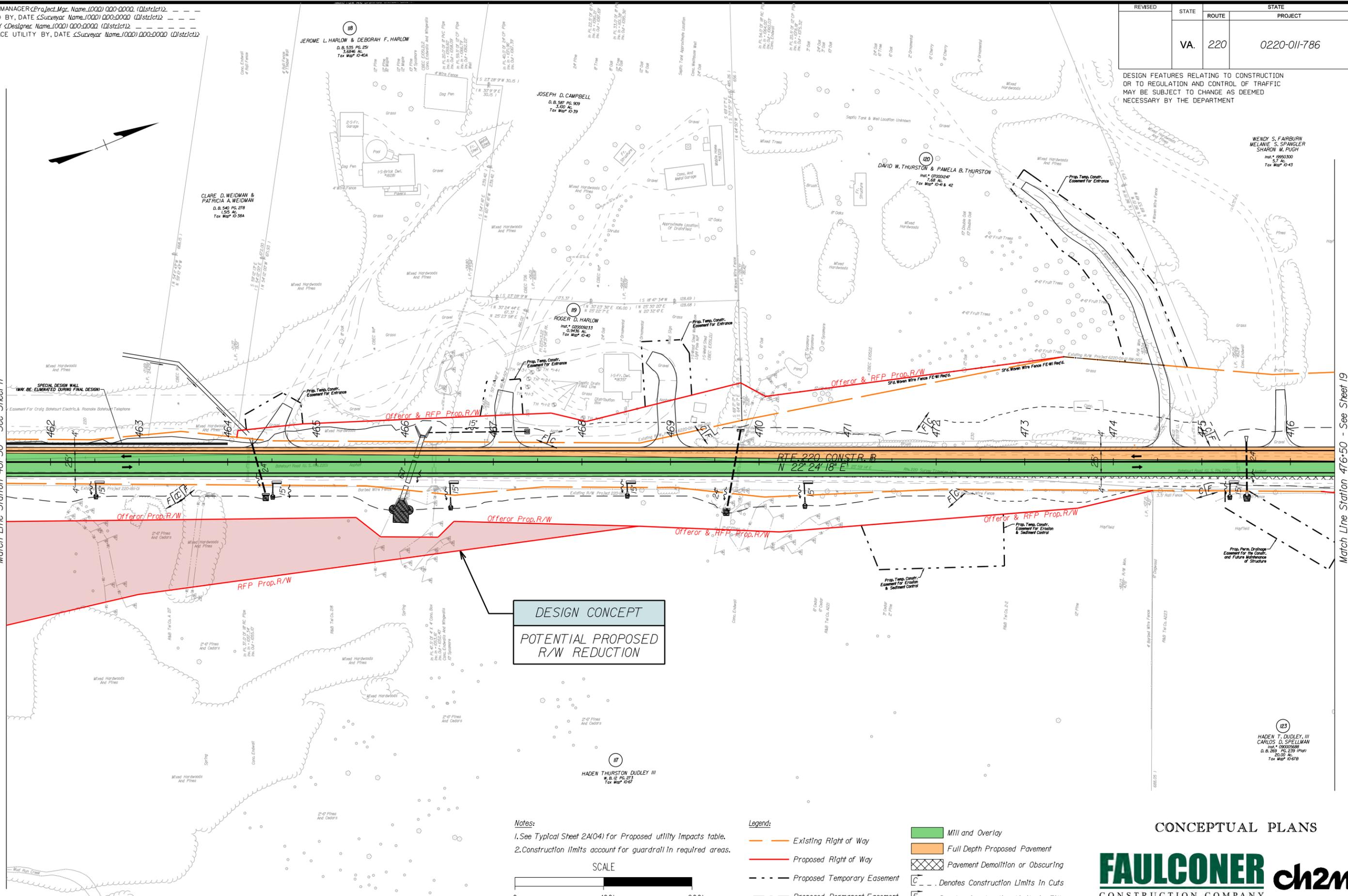
DAVID W. THURSTON & PAMELA B. THURSTON
Inst. # 02000247
1.68 AC
Tax Map 10-41 & 42

ROGER D. HARLOW
Inst. # 02000213
0.9435 AC
Tax Map 10-40

HADEN T. DUDLEY, III
CARLOS D. SPELLMAN
Inst. # 02000588
D.B. 289 PG. 279 (Part)
0.00 AC
Tax Map 10-67B

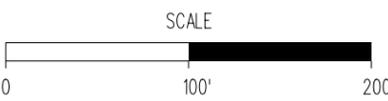
Match Line Station 461+50 - See Sheet 17

Match Line Station 476+50 - See Sheet 19



DESIGN CONCEPT
POTENTIAL PROPOSED
R/W REDUCTION

Notes:
1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
2. Construction limits account for guardrail in required areas.



- Legend:
- Existing Right of Way
 - Proposed Right of Way
 - Proposed Temporary Easement
 - Proposed Permanent Easement
 - M/I/I and Overlay
 - Full Depth Proposed Pavement
 - Pavement Demolition or Obscuring
 - Denotes Construction Limits In Cuts
 - Denotes Construction Limits In Fills

CONCEPTUAL PLANS



PROJECT	SHEET NO.
0220-011-786	18

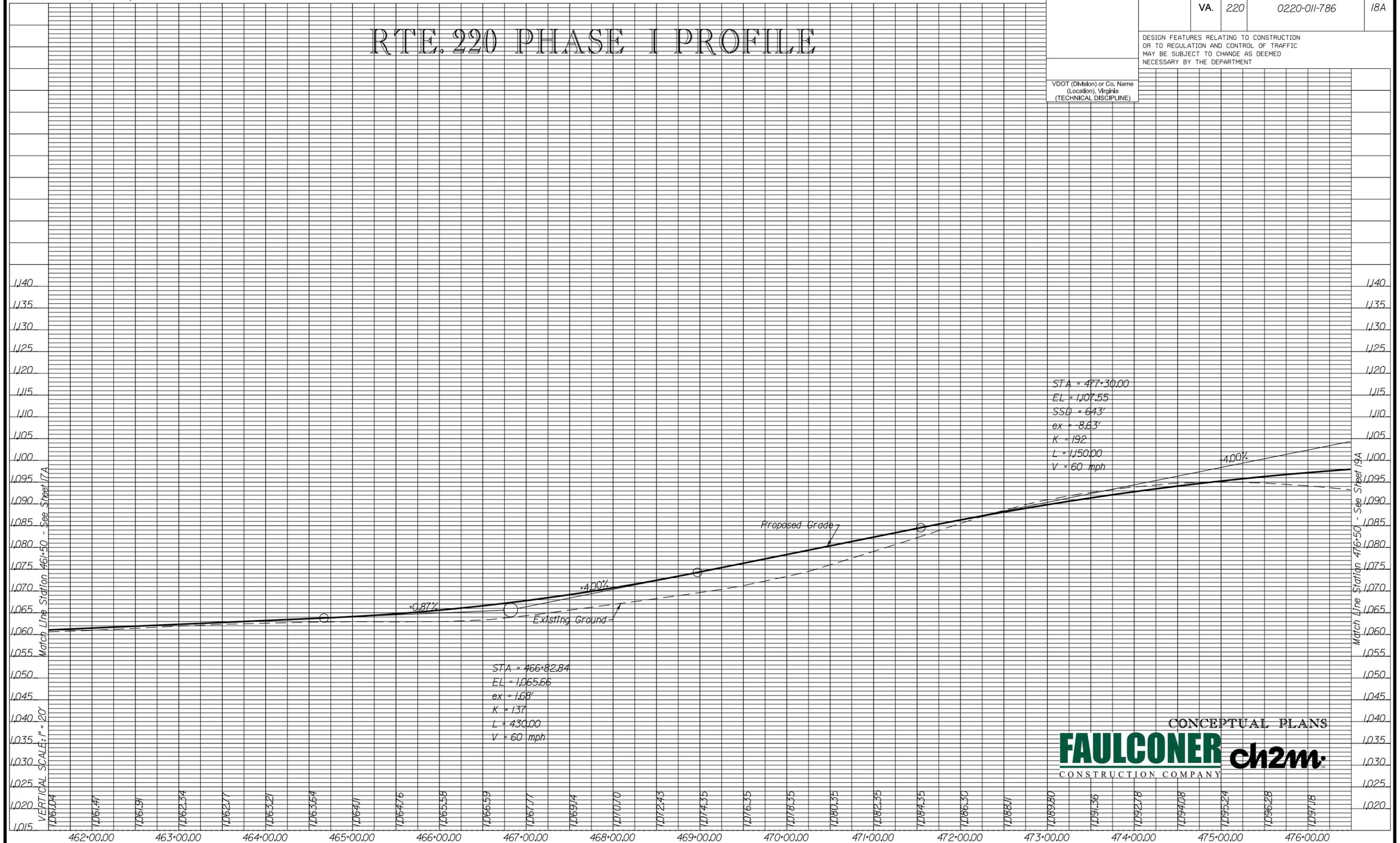
PROJECT MANAGER <Project Mgr. Name_1000> 000-0000 (District) ---
 SURVEYED BY, DATE <Surveyor Name_1000> 000-0000 (District) ---
 DESIGN BY <Designer Name_1000> 000-0000 (District) ---
 SUBSURFACE UTILITY BY, DATE <Surveyor Name_1000> 000-0000 (District) ---

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	18A

RTE. 220 PHASE I PROFILE

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

VDOT (Division) or Co. Name
(Location), Virginia
(TECHNICAL DISCIPLINE)



CONCEPTUAL PLANS
FAULCONER ch2m
 CONSTRUCTION COMPANY

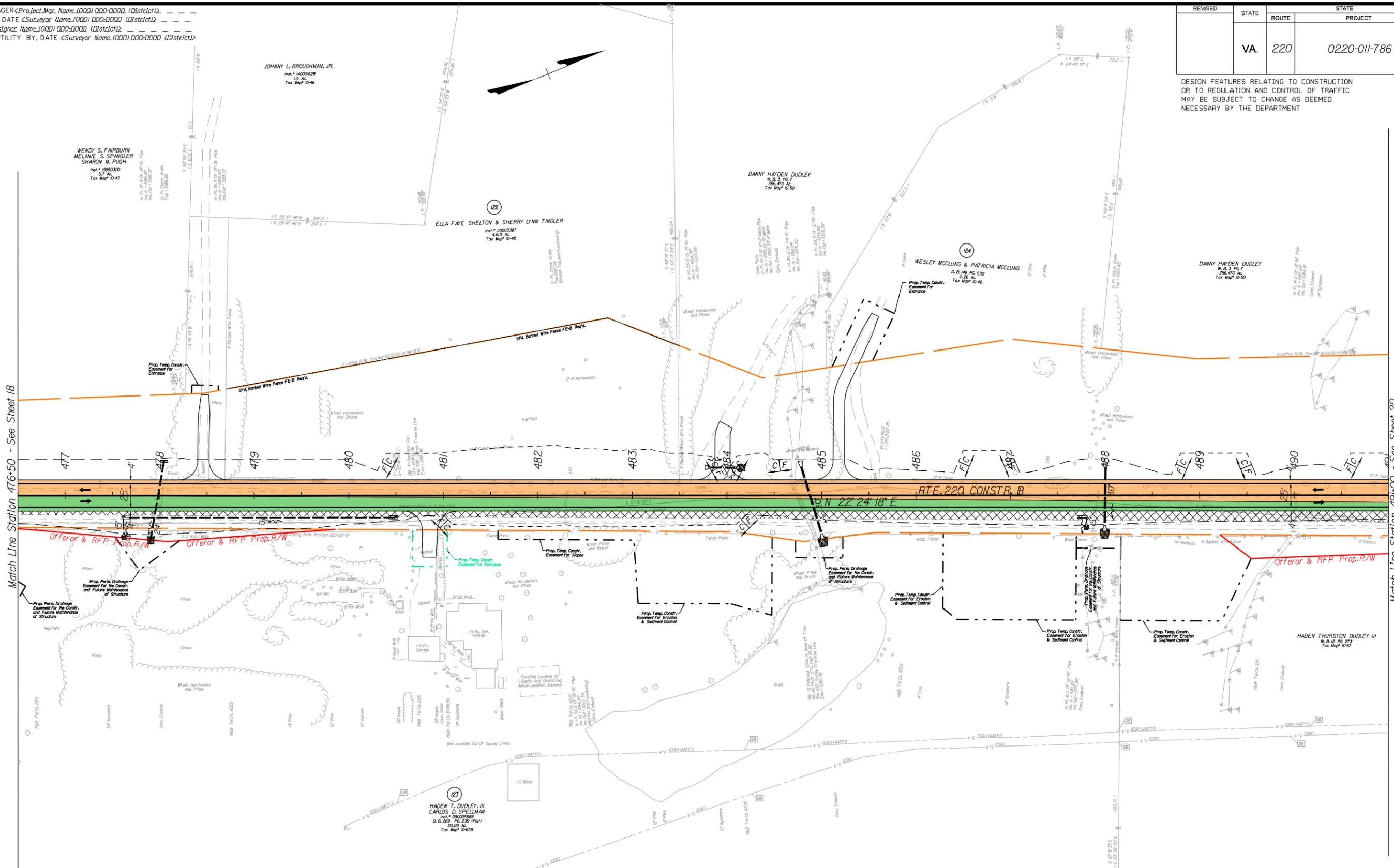
PROJECT MANAGER <Project_Mgr_Name_000> 000-0000 (District)
SURVEYED BY, DATE <Surveyor_Name_000> 000-0000 (District)
DESIGN BY <Designer_Name_000> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_000> 000-0000 (District)

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	220		0220-011-786	19

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

Match Line Station 476+50 - See Sheet 18

Match Line Station 491+00 - See Sheet 20



Notes:

- 1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
- 2. Construction limits account for guardrail in required areas.

Legend:

- Existing Right of Way
- Proposed Right of Way
- Proposed Temporary Easement
- Offeror's Proposed Temporary Easement for Entrance
- Proposed Permanent Easement
- Mill and Overlay
- Full Depth Proposed Pavement
- Pavement Demolition or Obscuring
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills

SCALE



CONCEPTUAL PLANS



PROJECT 0220-011-786 SHEET NO. 19

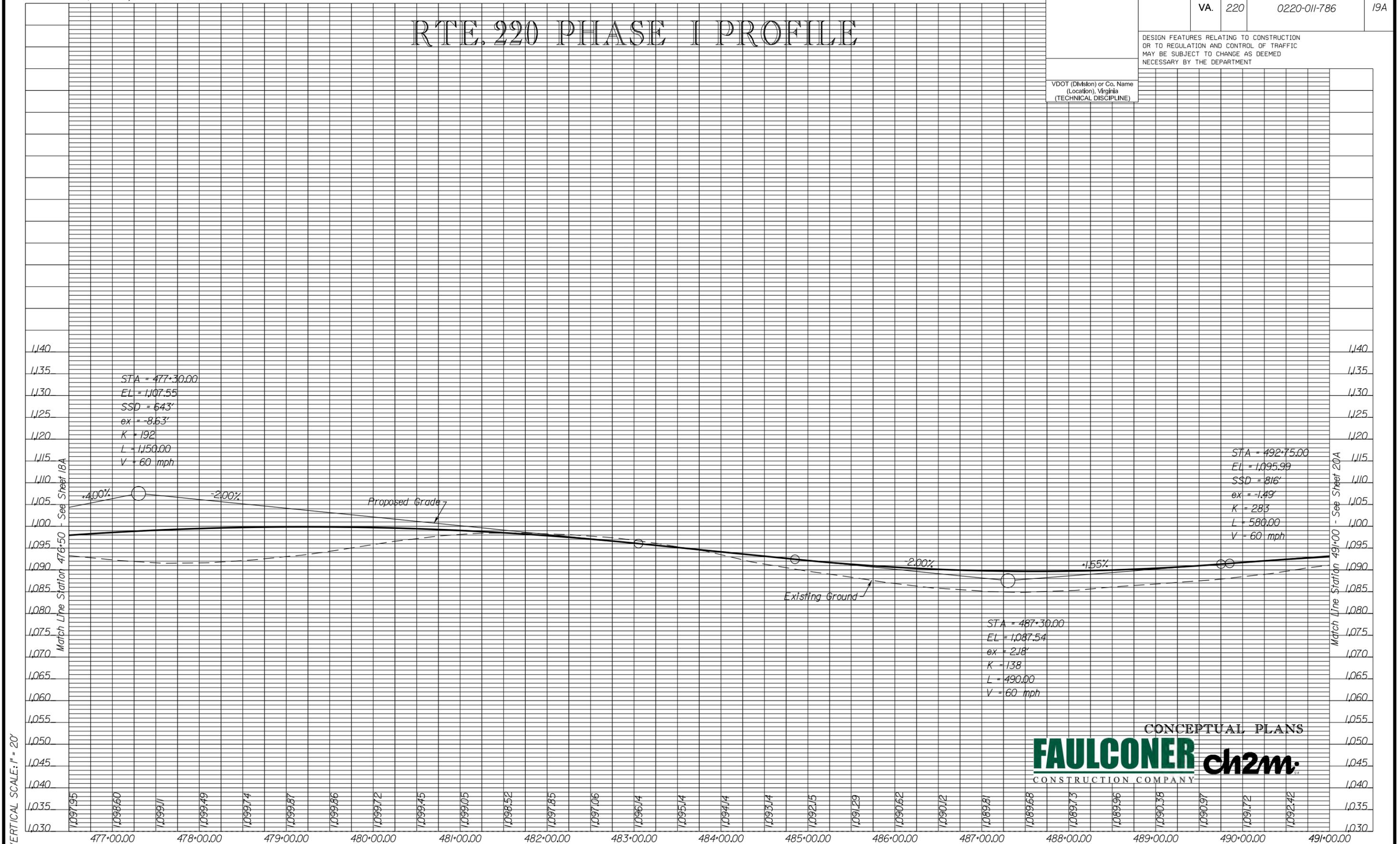
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 DESIGN BY <Designer Name (000) 000-0000 (District)> ---
 SUBSURFACE UTILITY BY, DATE <Surveyor Name (000) 000-0000 (District)> ---

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	19A

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)

RTE. 220 PHASE I PROFILE



VERTICAL SCALE: 1" = 20'

HORIZONTAL SCALE: 1" = 100'

CONCEPTUAL PLANS
FAULCONER **ch2m**
 CONSTRUCTION COMPANY

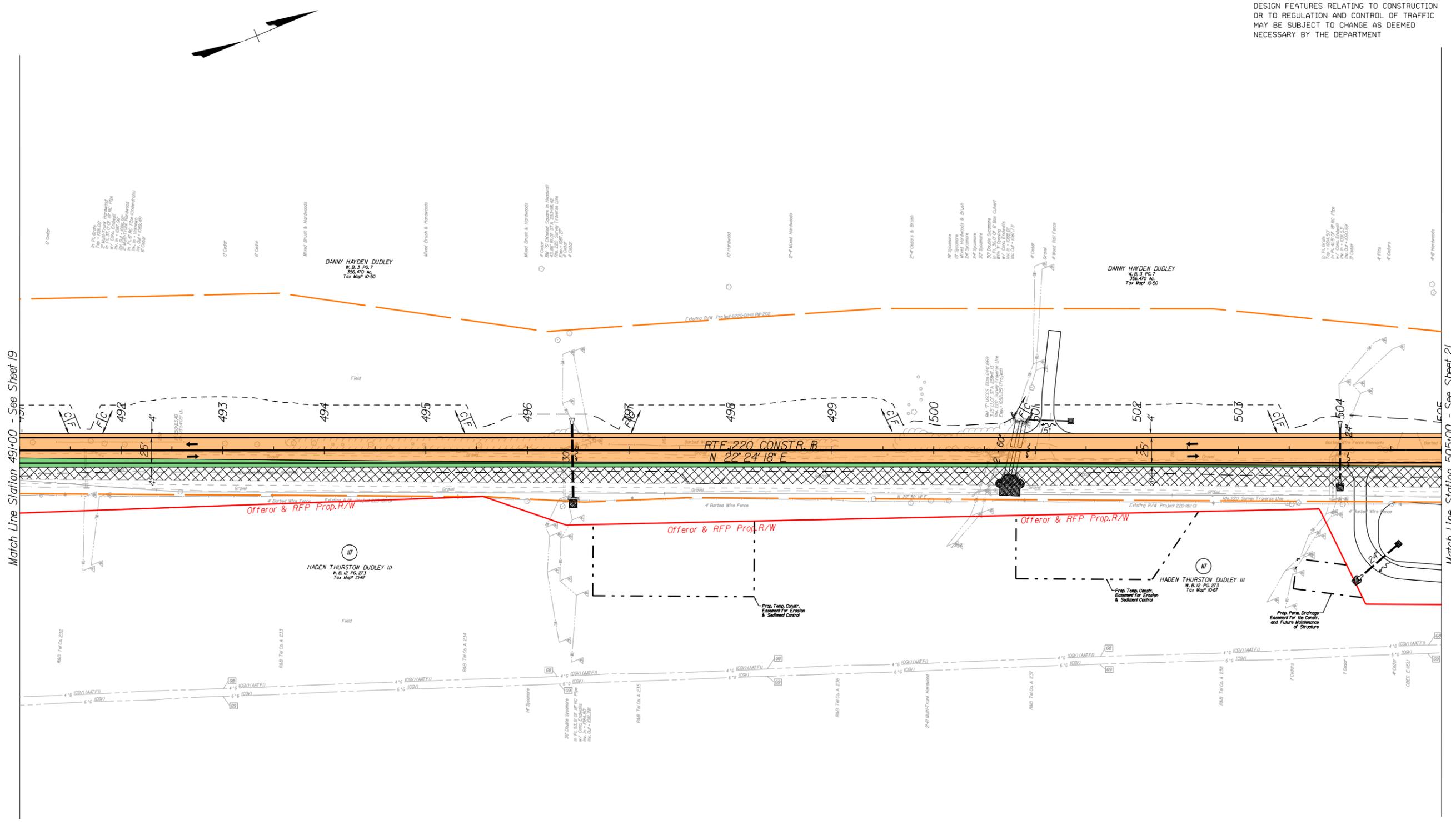
PROJECT	0220-011-786	SHEET NO.	19A
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1/14/2017 5:17:46 PM

PROJECT MANAGER <Project_Mgr_Name_1000> 000-0000 (District)
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DESIGN BY <Designer_Name_1000> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_1000> 000-0000 (District)

REVISED	STATE	STATE		SHEET NO.
		ROUTE	PROJECT	
	VA.	220	0220-011-786	20

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



Match Line Station 491+00 - See Sheet 19

Match Line Station 505+00 - See Sheet 21

Notes:

- 1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
- 2. Construction limits account for guardrail in required areas.



Legend:

- Existing Right of Way
- Proposed Right of Way
- - - Proposed Temporary Easement
- - - Proposed Permanent Easement
- Mill and Overlay
- Full Depth Proposed Pavement
- ▨ Pavement Demolition or Obscuring
- C - - - Denotes Construction Limits in Cuts
- F - - - Denotes Construction Limits in Fills

CONCEPTUAL PLANS



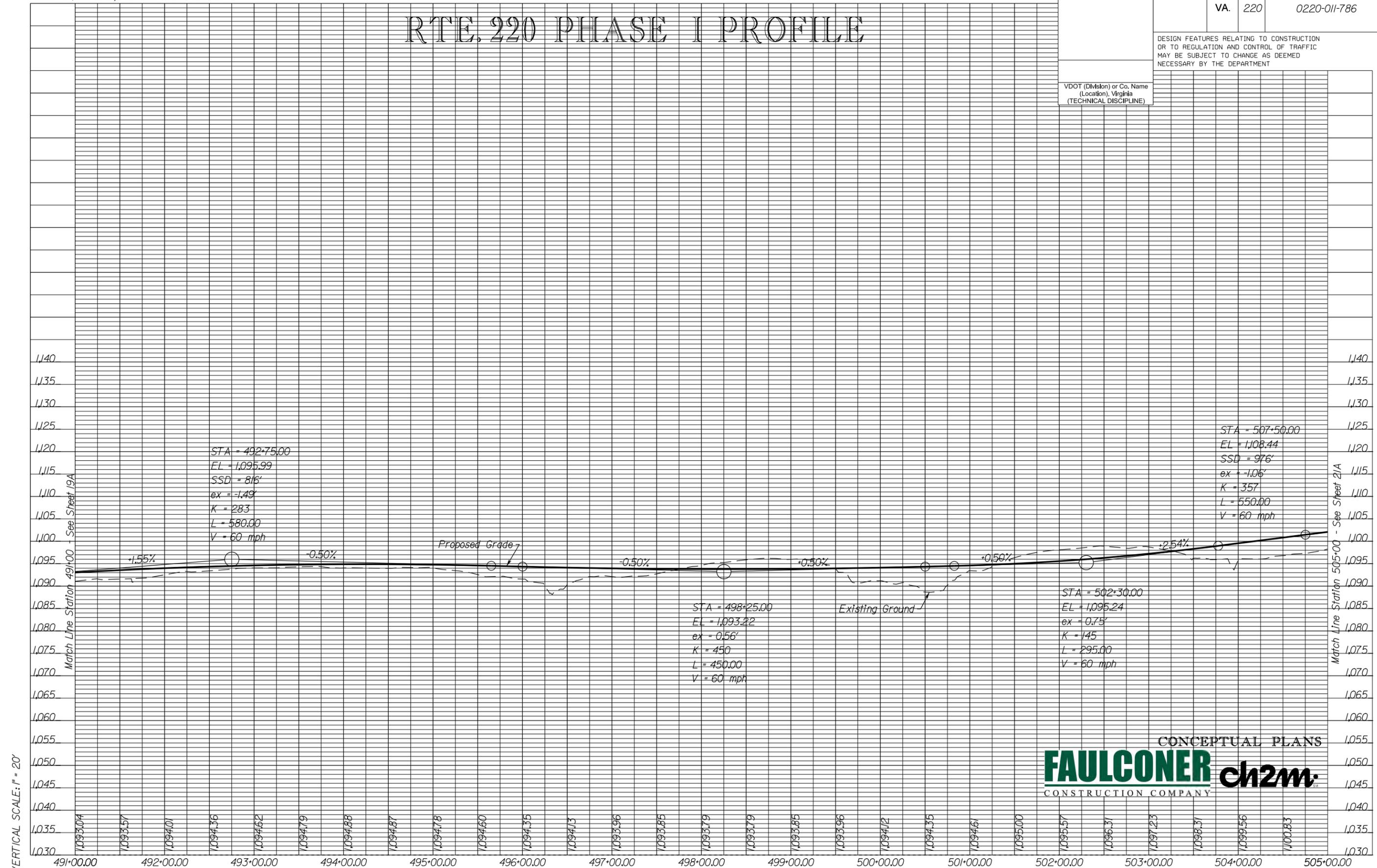
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 DESIGN BY <Designer Name_(000) 000-0000 (District)> ---
 SUBSURFACE UTILITY BY, DATE <Surveyor Name_(000) 000-0000 (District)> ---

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	20A

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)

RTE. 220 PHASE I PROFILE



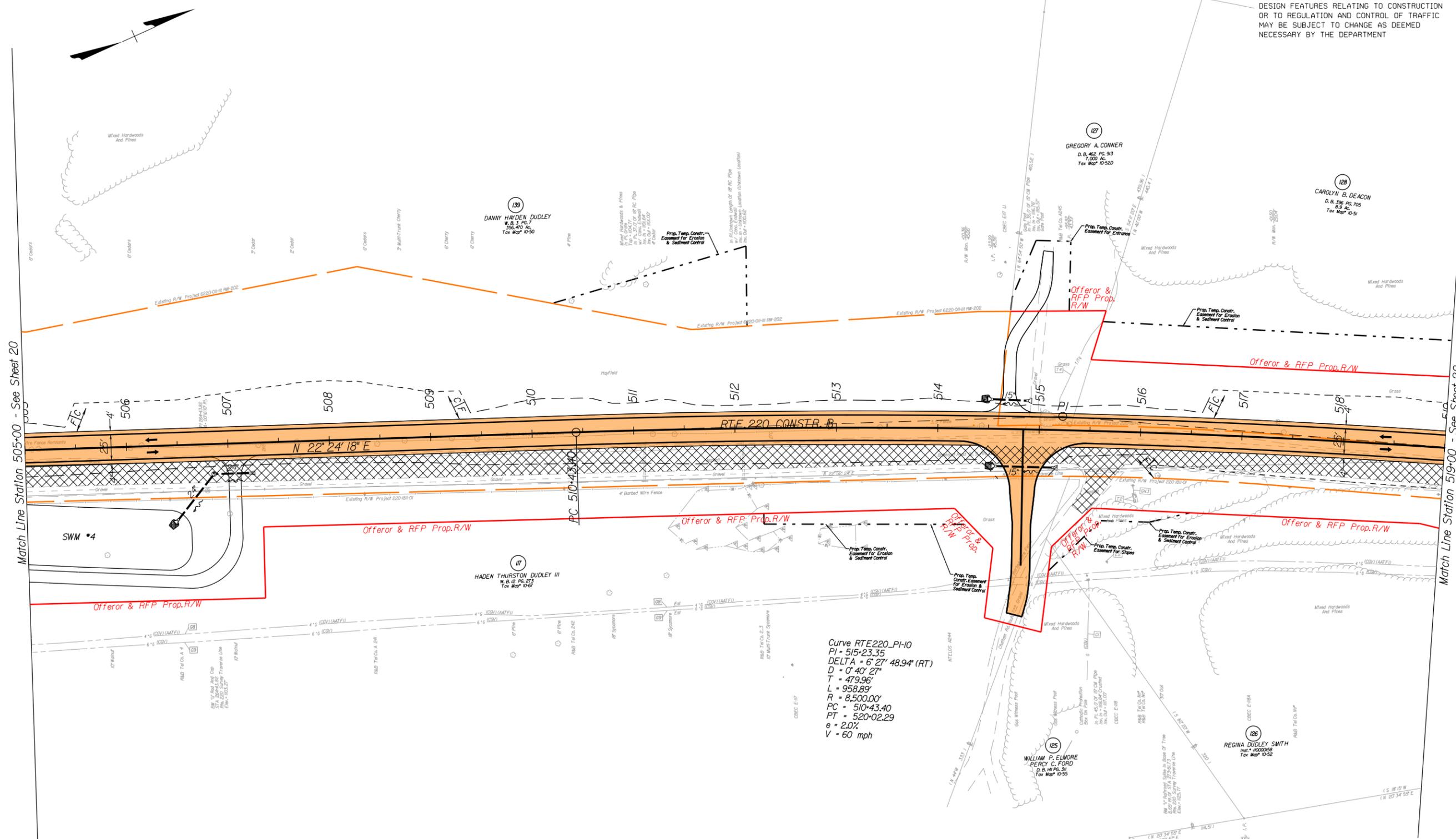
VERTICAL SCALE: 1" = 20'

HORIZONTAL SCALE: 1" = 100'

PROJECT MANAGER <Project_Mgr_Name_0000> 000-0000 (District)
SURVEYED BY, DATE <Surveyor_Name_0000> 000-0000 (District)
DESIGN BY <Designer_Name_0000> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_0000> 000-0000 (District)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	21

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. See Typical Sheet 2A(04) for Proposed utility Impacts table.
- 2. Construction limits account for guardrail in required areas.

SCALE



Legend:

- Existing Right of Way
- Proposed Right of Way
- Proposed Temporary Easement
- Proposed Permanent Easement
- M/I/I and Overlay
- Full Depth Proposed Pavement
- Pavement Demolition or Obscuring
- Denotes Construction Limits In Cuts
- Denotes Construction Limits In Fills

CONCEPTUAL PLANS



PROJECT	SHEET NO.
0220-011-786	21

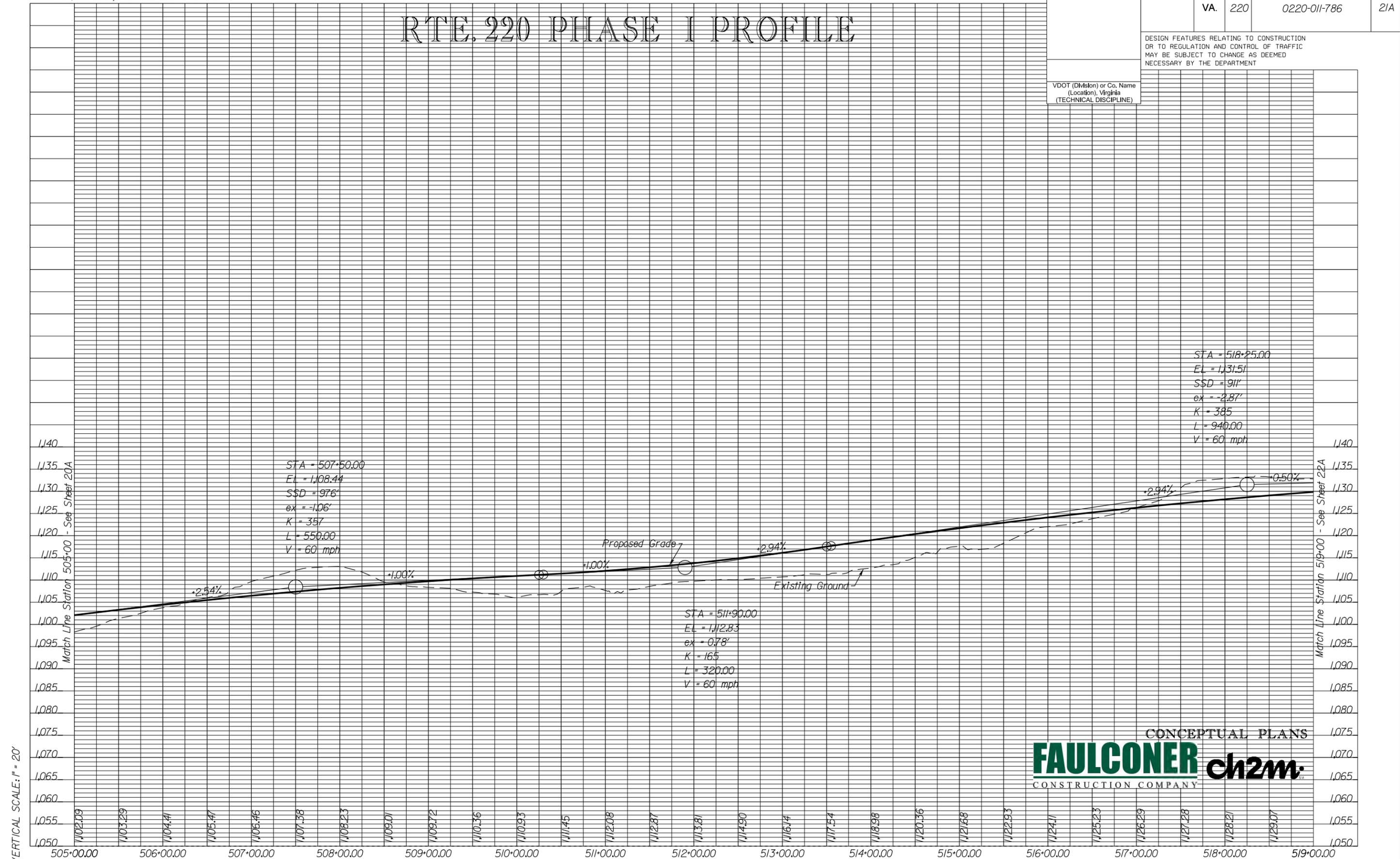
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 DESIGN BY <Designer Name_1000> 000-0000 (District) ---
 SUBSURFACE UTILITY BY, DATE <Surveyor Name_1000> 000-0000 (District) ---

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	220		0220-011-786	2/A

RTE. 220 PHASE I PROFILE

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)



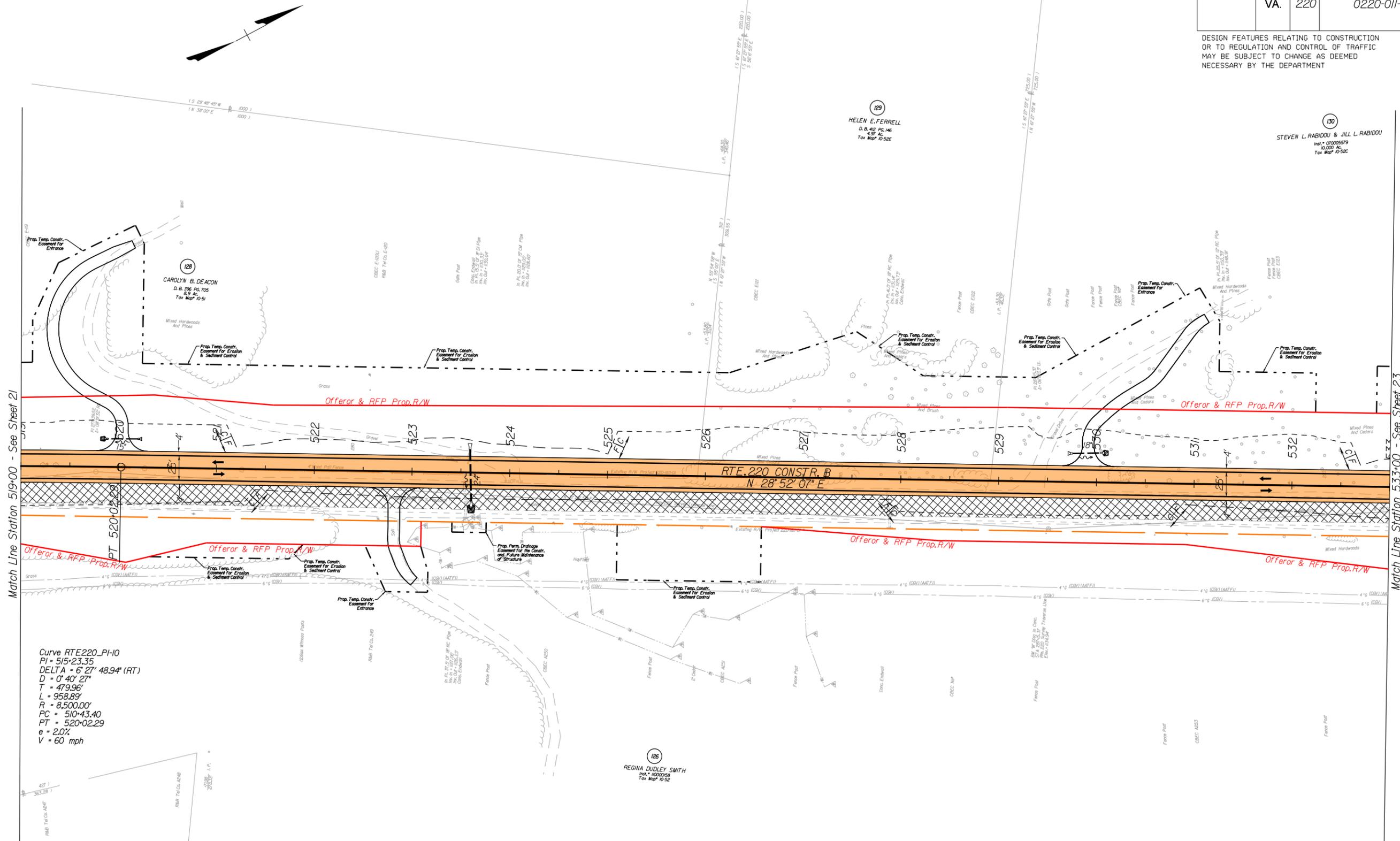
VERTICAL SCALE: 1" = 20'

HORIZONTAL SCALE: 1" = 100'

PROJECT MANAGER <Project_Mgr_Name> 000-0000 (District)
SURVEYED BY, DATE <Surveyor_Name> 000-0000 (District)
DESIGN BY <Designer_Name> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name> 000-0000 (District)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	22

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



Match Line Station 519+00 - See Sheet 21

Match Line Station 533+00 - See Sheet 23

Curve RTE220_PH0
 PI = 515+23.35
 DELTA = 6° 27' 48.94" (RT)
 D = 0° 40' 27"
 T = 479.96'
 L = 958.89'
 R = 8,500.00'
 PC = 510+43.40
 PT = 520+02.29
 e = 2.0%
 V = 60 mph

Notes:
 1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
 2. Construction limits account for guardrail in required areas.

SCALE
 0 100' 200'

Legend:

- Existing Right of Way
- Proposed Right of Way
- Proposed Temporary Easement
- Proposed Permanent Easement
- Mill and Overlay
- Full Depth Proposed Pavement
- Pavement Demolition or Obscuring
- Denotes Construction Limits In Cuts
- Denotes Construction Limits In Fills

CONCEPTUAL PLANS



PROJECT	SHEET NO.
0220-011-786	22

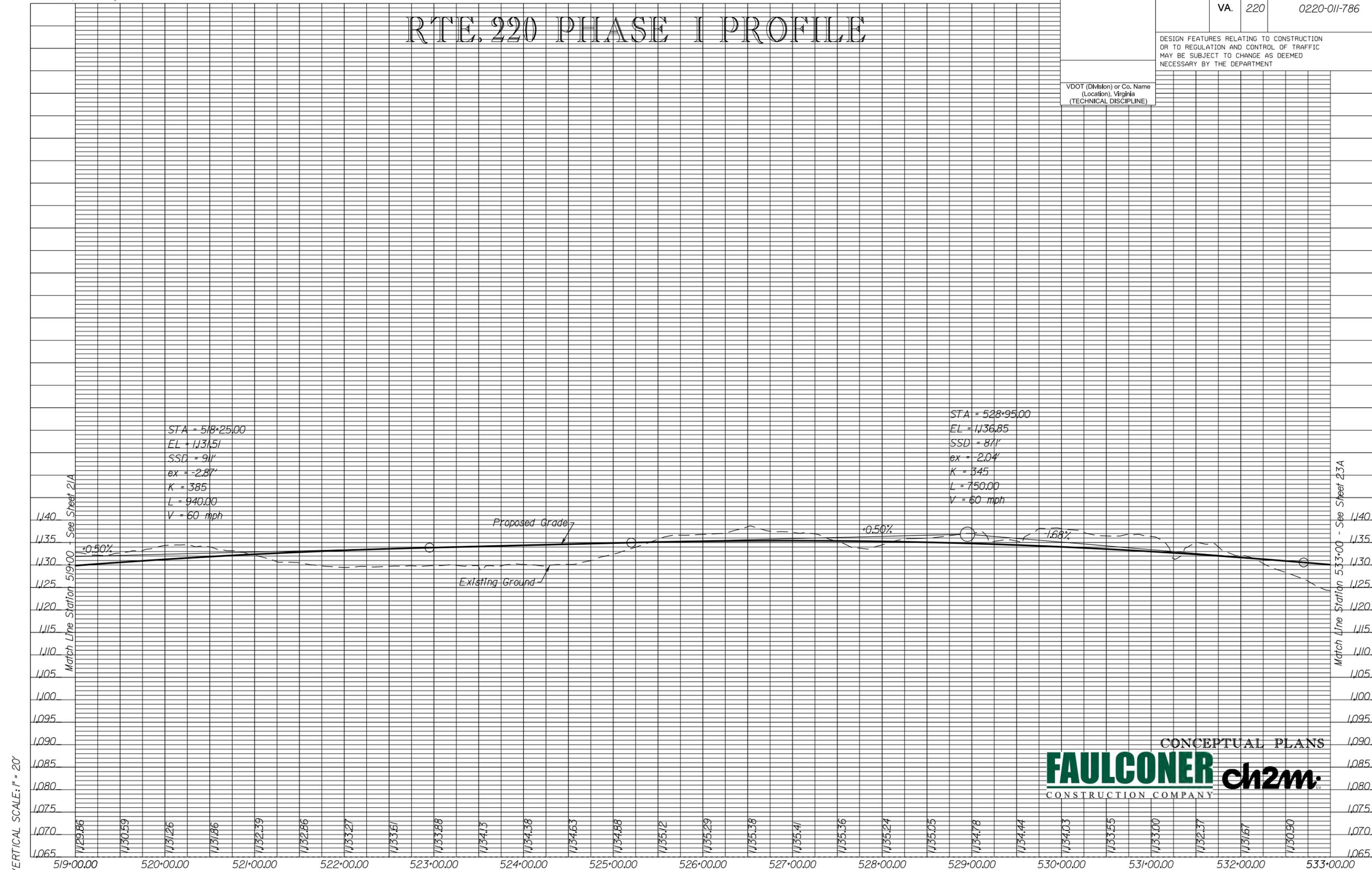
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 SURVEYED BY, DATE <Surveyor Name_1000> 000-0000 (District) ---
 DESIGN BY <Designer Name_1000> 000-0000 (District) ---
 SUBSURFACE UTILITY BY, DATE <Surveyor Name_1000> 000-0000 (District) ---

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	22A

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)

RTE. 220 PHASE I PROFILE



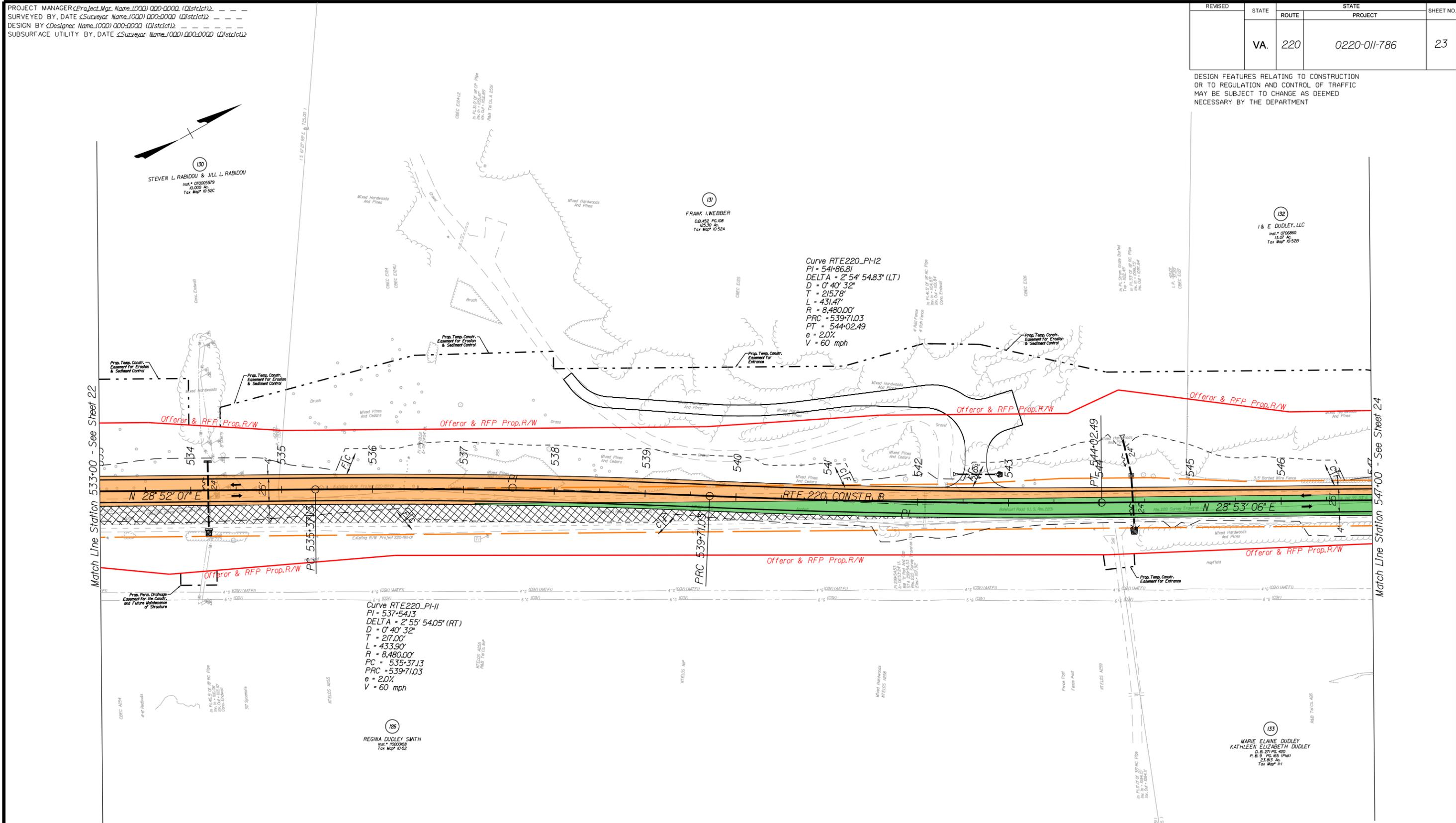
VERTICAL SCALE: 1" = 20'

HORIZONTAL SCALE: 1" = 100'

PROJECT MANAGER <Project_Mgr_Name_0000> 000-0000 (District)
SURVEYED BY, DATE <Surveyor_Name_0000> 000-0000 (District)
DESIGN BY <Designer_Name_0000> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_0000> 000-0000 (District)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	23

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



Curve RTE220-PI-11
 PI = 537+54.13
 DELTA = 2° 55' 54.05" (RT)
 D = 0° 40' 32"
 T = 217.00'
 L = 433.90'
 R = 8,480.00'
 PC = 535+37.13
 PRC = 539+71.03
 e = 2.0%
 V = 60 mph

Curve RTE220-PI-12
 PI = 541+86.81
 DELTA = 2° 54' 54.83" (LT)
 D = 0° 40' 32"
 T = 215.78'
 L = 431.47'
 R = 8,480.00'
 PRC = 539+71.03
 PT = 544+02.49
 e = 2.0%
 V = 60 mph

Notes:
 1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
 2. Construction limits account for guardrail in required areas.

SCALE
 0 100' 200'

Legend:

- Existing Right of Way
- Proposed Right of Way
- Proposed Temporary Easement
- Proposed Permanent Easement
- M/I/I and Overlay
- Full Depth Proposed Pavement
- Pavement Demolition or Obscuring
- Denotes Construction Limits In Cuts
- Denotes Construction Limits In Fills

CONCEPTUAL PLANS



PROJECT MANAGER <Project Mgr. Name (000) 000-0000 (District)> ---
 SURVEYED BY, DATE <Surveyor Name (000) 000-0000 (District)> ---
 DESIGN BY <Designer Name (000) 000-0000 (District)> ---
 SUBSURFACE UTILITY BY, DATE <Surveyor Name (000) 000-0000 (District)> ---

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	220		0220-011-786	23A

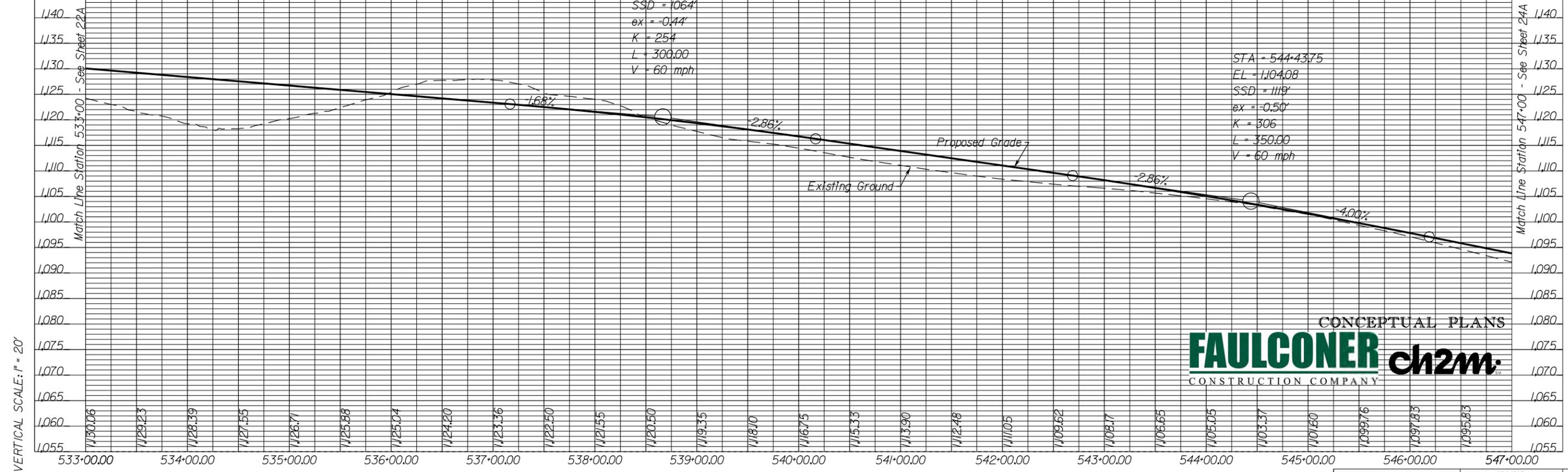
RTE. 220 PHASE I PROFILE

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)

STA = 538+66.50
 EL = 1120.57
 SSD = 1064'
 ex = -0.44'
 K = 254
 L = 300.00
 V = 60 mph

STA = 544+43.75
 EL = 1104.08
 SSD = 1119'
 ex = -0.50'
 K = 306
 L = 350.00
 V = 60 mph



VERTICAL SCALE: 1" = 20'

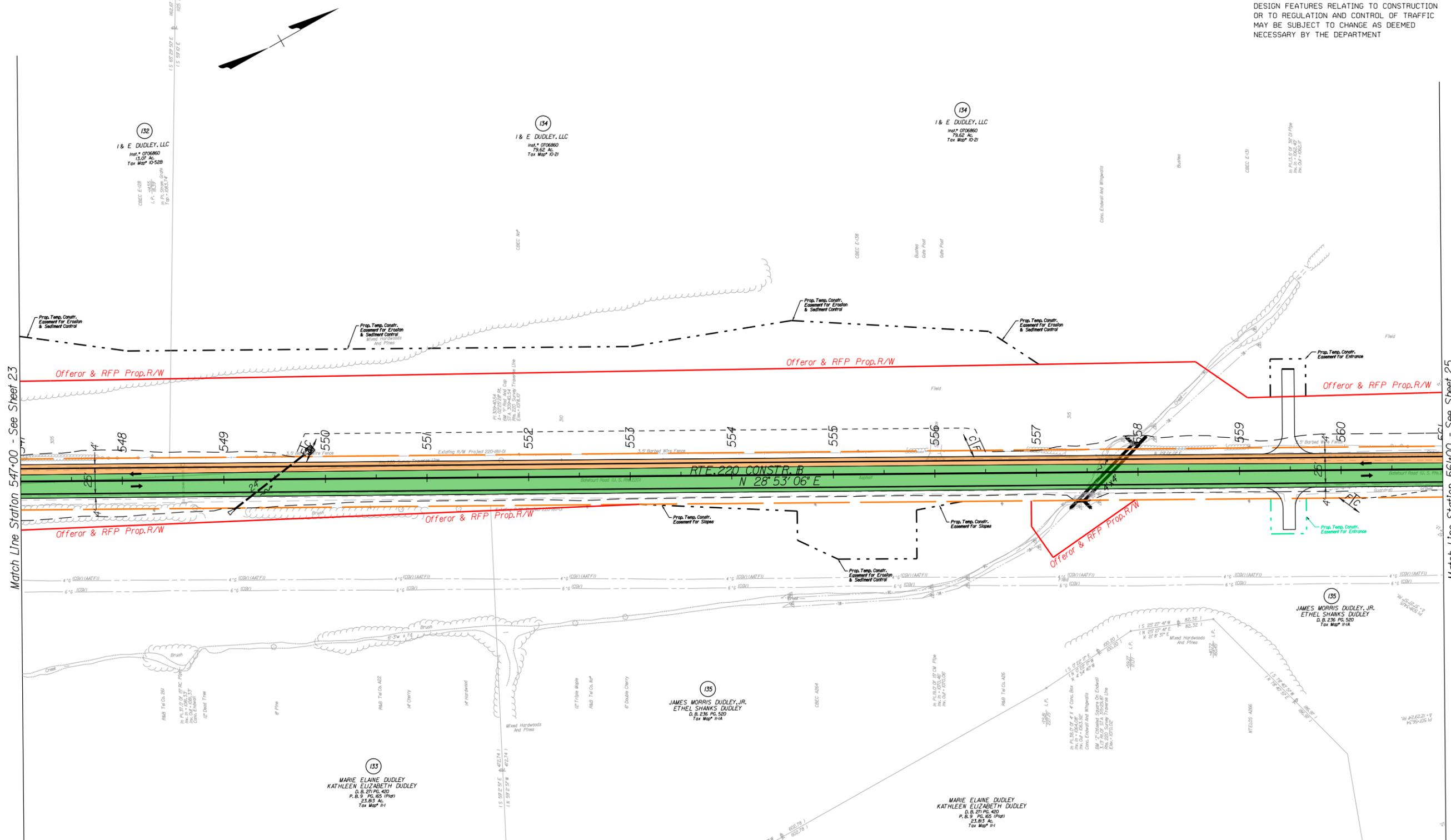
HORIZONTAL SCALE: 1" = 100'

CONCEPTUAL PLANS
FAULCONER ch2m
 CONSTRUCTION COMPANY

PROJECT MANAGER <Project_Mgr_Name_000> 000-0000 (District)
SURVEYED BY, DATE <Surveyor_Name_000> 000-0000 (District)
DESIGN BY <Designer_Name_000> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_000> 000-0000 (District)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	24

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



Match Line Station 547+00 - See Sheet 23

Match Line Station 561+00 - See Sheet 25

Notes:
 1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
 2. Construction limits account for guardrail in required areas.

SCALE
 0 100' 200'

Legend:

- Existing Right of Way
- Proposed Right of Way
- Proposed Temporary Easement
- Offeror's Proposed Temporary Easement for Entrance
- Proposed Permanent Easement
- Mill and Overlay
- Full Depth Proposed Pavement
- Pavement Demolition or Obstructing
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills

CONCEPTUAL PLANS



PROJECT	SHEET NO.
0220-011-786	24

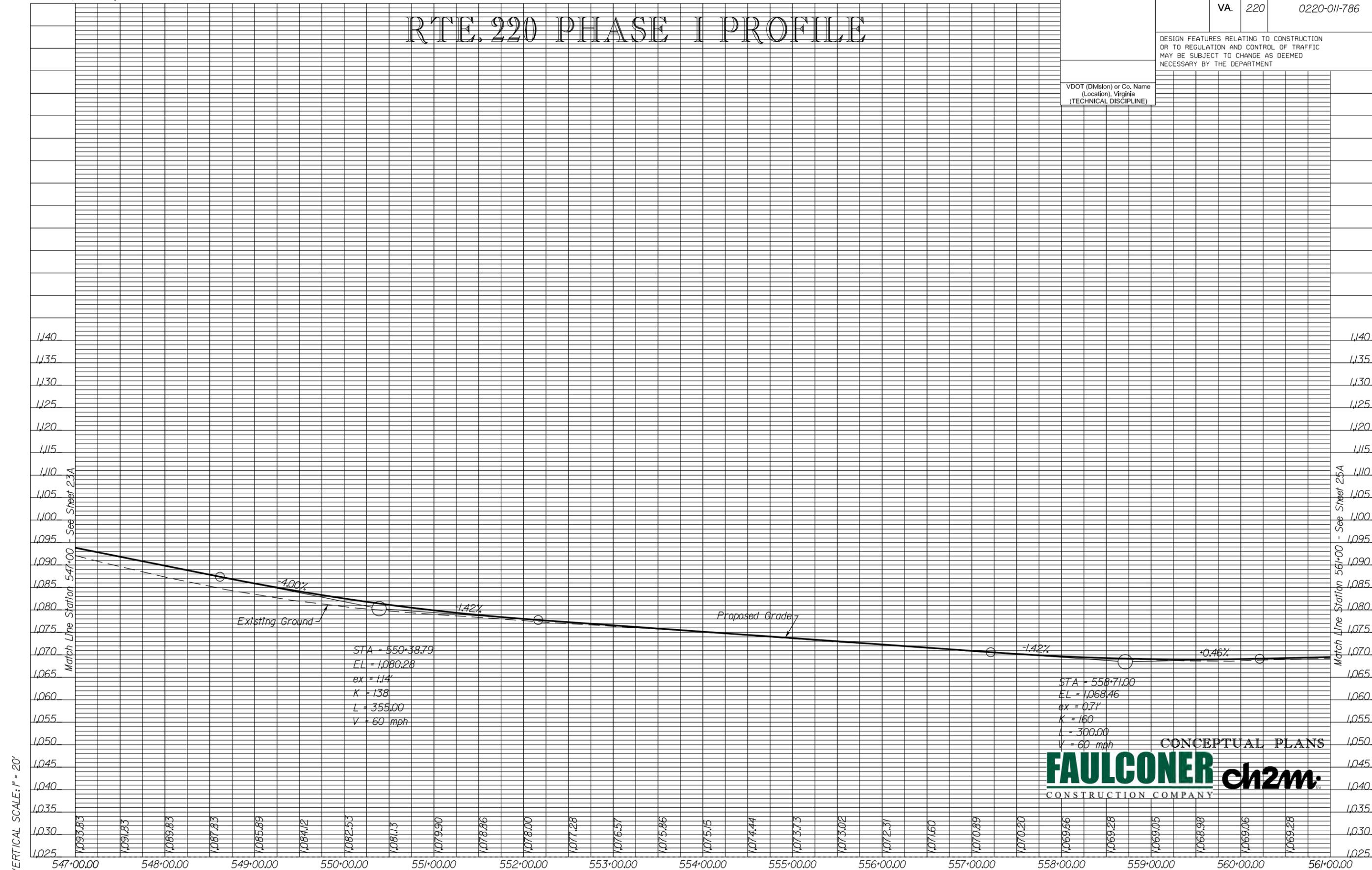
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 SURVEYED BY, DATE <Surveyor Name_(000) 000-0000 (District)> ---
 DESIGN BY <Designer Name_(000) 000-0000 (District)> ---
 SUBSURFACE UTILITY BY, DATE <Surveyor Name_(000) 000-0000 (District)> ---

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	24A

RTE. 220 PHASE I PROFILE

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

VDOT (Division) or Co. Name
(Location), Virginia
(TECHNICAL DISCIPLINE)



CONCEPTUAL PLANS
FAULCONER **ch2m**
 CONSTRUCTION COMPANY

VERTICAL SCALE: 1" = 20'

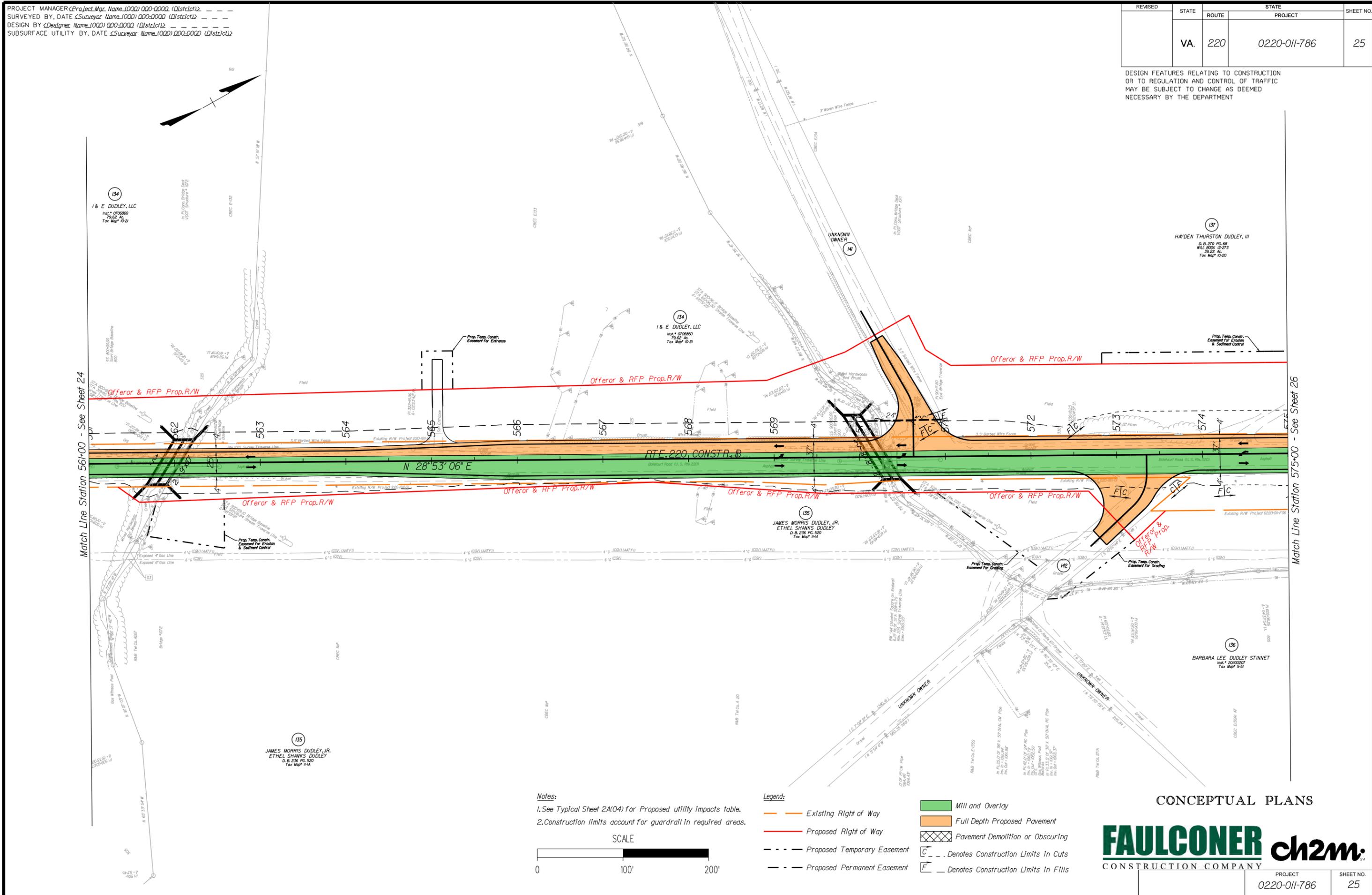
HORIZONTAL SCALE: 1" = 100'

PROJECT	0220-011-786	SHEET NO.	24A
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PROJECT MANAGER <Project_Mgr_Name> 000-0000 (District)
SURVEYED BY, DATE <Surveyor_Name> 000-0000 (District)
DESIGN BY <Designer_Name> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name> 000-0000 (District)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	25

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



Match Line Station 561+00 - See Sheet 24

Match Line Station 575+00 - See Sheet 26

Notes:
1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
2. Construction limits account for guardrail in required areas.

SCALE
0 100' 200'

Legend:

- Existing Right of Way
- Proposed Right of Way
- Proposed Temporary Easement
- Proposed Permanent Easement
- Mill and Overlay
- Full Depth Proposed Pavement
- Pavement Demolition or Obscuring
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills

CONCEPTUAL PLANS



PROJECT	SHEET NO.
0220-011-786	25

PROJECT MANAGER <Project_Mgr_Name_1000> 000-0000 (District) ---
 SURVEYED BY, DATE <Surveyor_Name_1000> 000-0000 (District) ---
 DESIGN BY <Designer_Name_1000> 000-0000 (District) ---
 SUBSURFACE UTILITY BY, DATE <Surveyor_Name_1000> 000-0000 (District) ---

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	25A

RTE. 220 PHASE I PROFILE

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)



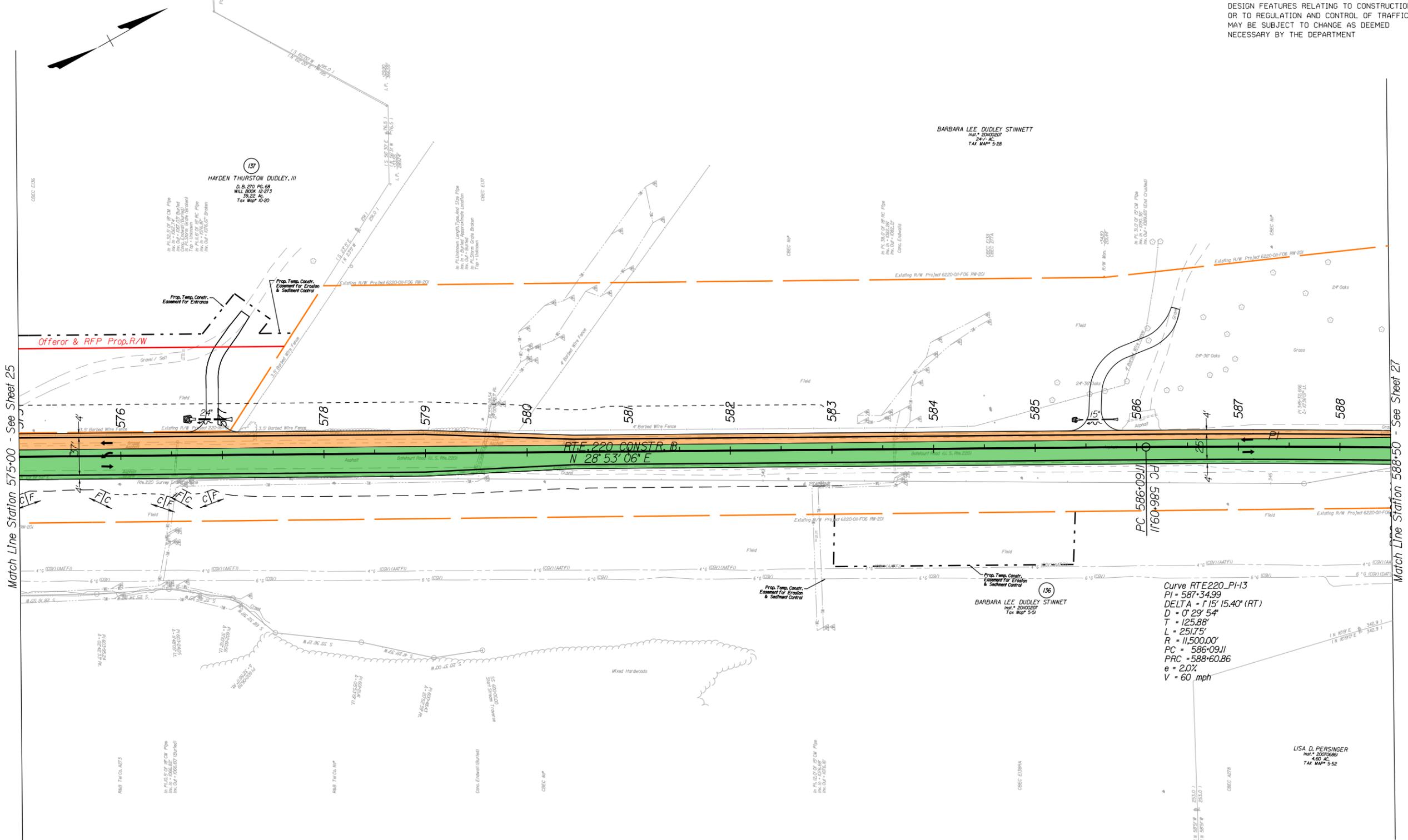
VERTICAL SCALE: 1" = 20'

HORIZONTAL SCALE: 1" = 100'

PROJECT MANAGER <Project_Mgr_Name_1000> 000-0000 (District)
SURVEYED BY, DATE <Surveyor_Name_1000> 000-0000 (District)
DESIGN BY <Designer_Name_1000> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_1000> 000-0000 (District)

REVISED	STATE	STATE		SHEET NO.
		ROUTE	PROJECT	
	VA.	220	0220-011-786	26

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



Match Line Station 575+00 - See Sheet 25

Match Line Station 588+50 - See Sheet 27

Notes:
 1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
 2. Construction limits account for guardrail in required areas.

Legend:

- Existing Right of Way
- Proposed Right of Way
- Proposed Temporary Easement
- Proposed Permanent Easement
- M/I/I and Overlay
- Full Depth Proposed Pavement
- Pavement Demolition or Obscuring
- Denotes Construction Limits In Cuts
- Denotes Construction Limits In Fills

SCALE
 0 100' 200'

Curve RTE220-PI-3
 PI = 587+34.99
 DELTA = 115° 15.40' (RT)
 D = 0° 29' 54"
 T = 125.88'
 L = 251.75'
 R = 11,500.00'
 PC = 586+09.11
 PRC = 588+60.86
 e = 2.0%
 V = 60 mph

CONCEPTUAL PLANS

FAULCONER ch2m
 CONSTRUCTION COMPANY

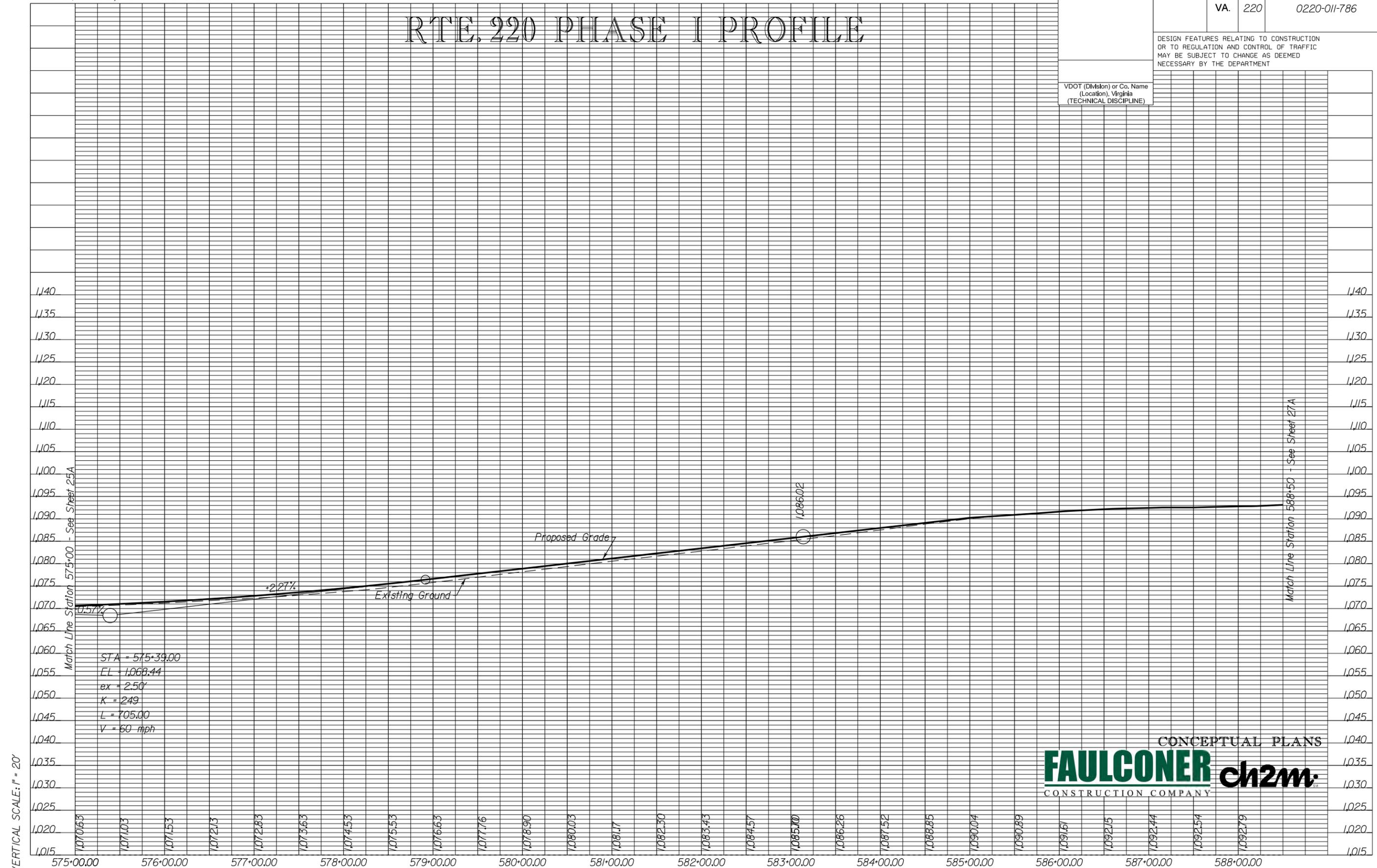
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 SURVEYED BY, DATE <Surveyor Name_(000) 000-0000 (District)> ---
 DESIGN BY <Designer Name_(000) 000-0000 (District)> ---
 SUBSURFACE UTILITY BY, DATE <Surveyor Name_(000) 000-0000 (District)> ---

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	220		0220-011-786	26A

RTE. 220 PHASE I PROFILE

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)



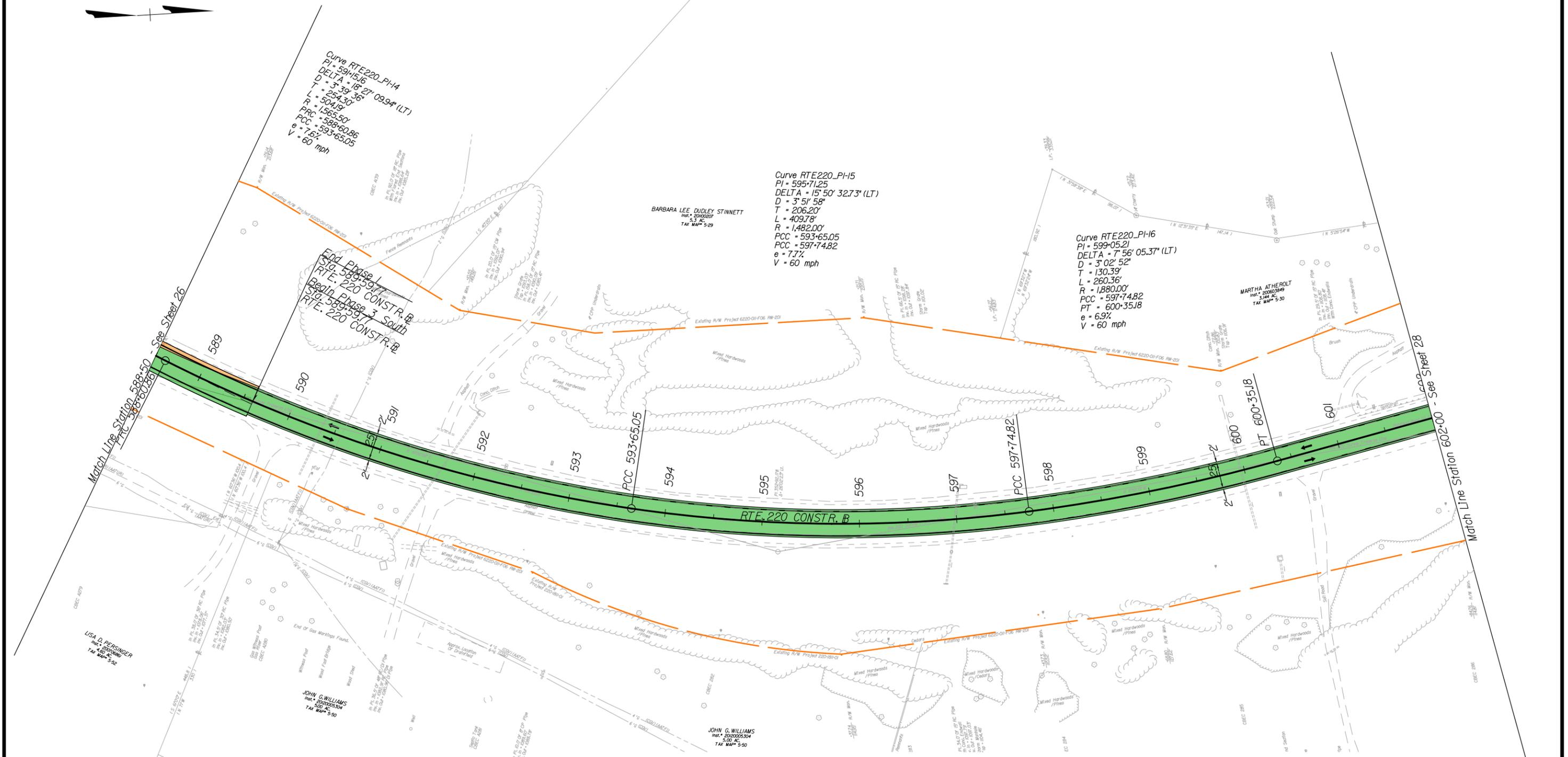
VERTICAL SCALE: 1" = 20'

HORIZONTAL SCALE: 1" = 100'

PROJECT MANAGER <Project_Mgr_Name_0000_0000_0000 (District)>
SURVEYED BY, DATE <Surveyor_Name_0000_0000_0000 (District)>
DESIGN BY <Designer_Name_0000_0000_0000 (District)>
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_0000_0000_0000 (District)>

REVISED	STATE	STATE		SHEET NO.
	ROUTE	PROJECT		
	VA.	220	0220-011-786	27

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. See Typical Sheet 2A(04) for Proposed utility Impacts table.
- 2. Construction limits account for guardrail in required areas.

Legend:

- Existing Right of Way
- Proposed Right of Way
- Proposed Temporary Easement
- Proposed Permanent Easement
- Mill and Overlay
- Full Depth Proposed Pavement
- Pavement Demolition or Obscuring
- Denotes Construction Limits In Cuts
- Denotes Construction Limits In Fills

SCALE



CONCEPTUAL PLANS



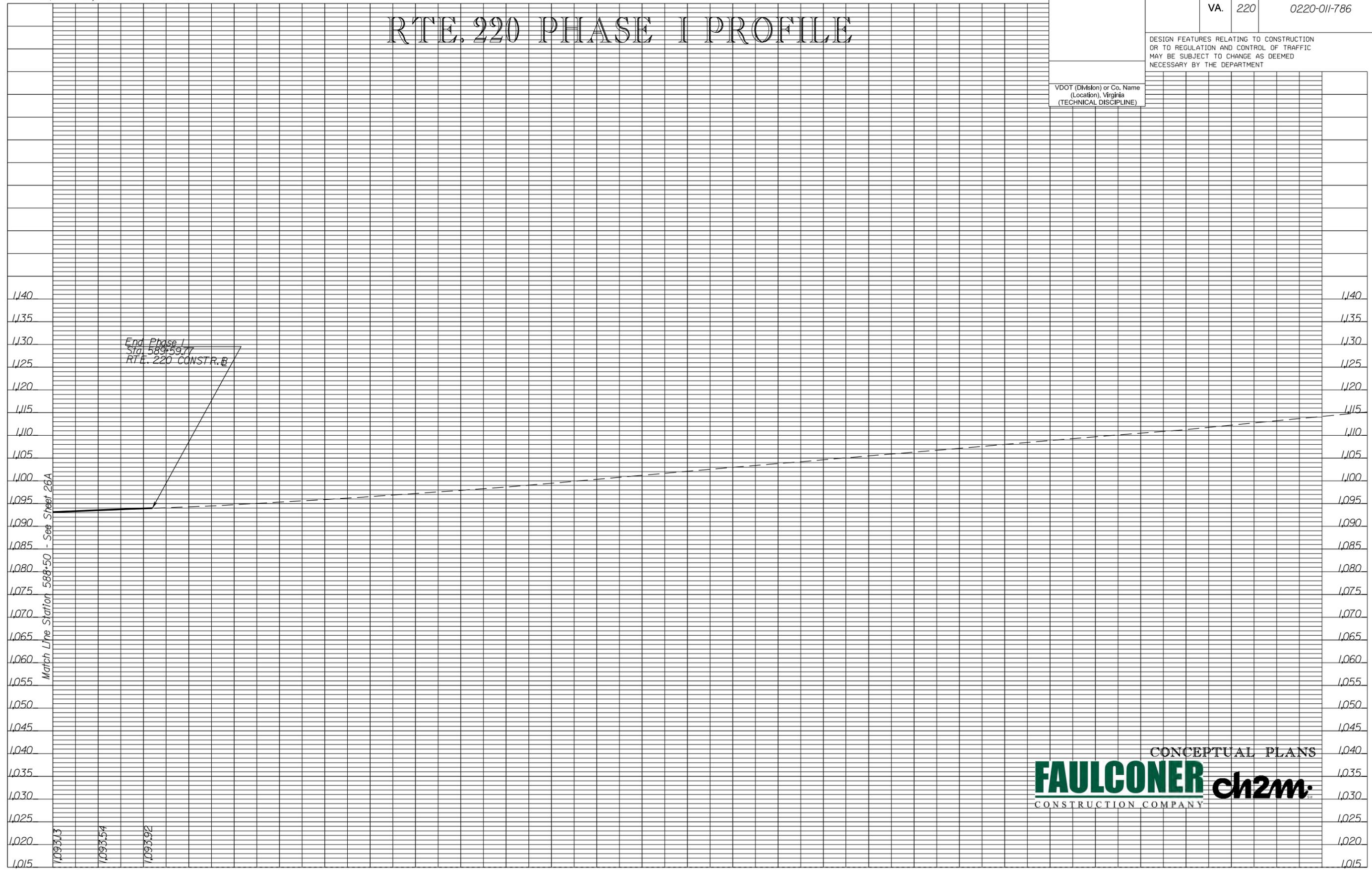
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SURVEYED BY, DATE <Surveyor Name (000) 000-0000 (District)> ---
DESIGN BY <Designer Name (000) 000-0000 (District)> ---
SUBSURFACE UTILITY BY, DATE <Surveyor Name (000) 000-0000 (District)> ---

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	27A

RTE. 220 PHASE I PROFILE

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)



VERTICAL SCALE: 1" = 20'

HORIZONTAL SCALE: 1" = 100'

PROJECT	SHEET NO.
0220-011-786	27A

PROJECT MANAGER <Project_Mgr_Name_00000000 (District)>
SURVEYED BY, DATE <Surveyor_Name_00000000 (District)>
DESIGN BY <Designer_Name_00000000 (District)>
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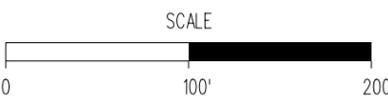
REVISED	STATE	STATE		SHEET NO.
		ROUTE	PROJECT	
	VA.	220	0220-011-786	28

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. See Typical Sheet 2A(04) for Proposed utility Impacts table.
- 2. Construction limits account for guardrail in required areas.



Legend:

- Existing Right of Way (orange line)
- Proposed Right of Way (red line)
- Proposed Temporary Easement (dashed line)
- Proposed Permanent Easement (dash-dot line)
- Mill and Overlay (green shaded area)
- Full Depth Proposed Pavement (orange shaded area)
- Pavement Demolition or Obscuring (cross-hatched area)
- Denotes Construction Limits In Cuts (C symbol)
- Denotes Construction Limits In Fills (F symbol)

CONCEPTUAL PLANS



PROJECT MANAGER <Project_Mgr_Name_000> 000-0000 (District)
SURVEYED BY, DATE <Surveyor_Name_000> 000-0000 (District)
DESIGN BY <Designer_Name_000> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_000> 000-0000 (District)

REVISED	STATE	STATE		SHEET NO.
	ROUTE	PROJECT		
	VA.	220	0220-011-786	29

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



Curve RTE220_PI-19
 PI = 618+21.20
 DELTA = 39° 35' 23.53" (RT)
 D = 4° 30' 41"
 T = 457.10'
 L = 877.54'
 R = 1,270.00'
 PCC = 613+64.10
 PCC = 622+41.64
 e = 8.0%
 V = 60 mph

Curve RTE220_PI-20
 PI = 622+97.04
 DELTA = 2° 40' 01.67" (RT)
 D = 2° 24' 27"
 T = 55.40'
 L = 110.79'
 R = 2,380.00'
 PCC = 622+41.64
 PT = 623+52.43
 e = 6.0%
 V = 60 mph

Notes:

- 1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
- 2. Construction limits account for guardrail in required areas.



Legend:

- Existing Right of Way
- Proposed Right of Way
- Proposed Temporary Easement
- Proposed Permanent Easement
- Mill and Overlay
- Full Depth Proposed Pavement
- Pavement Demolition or Obscuring
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills

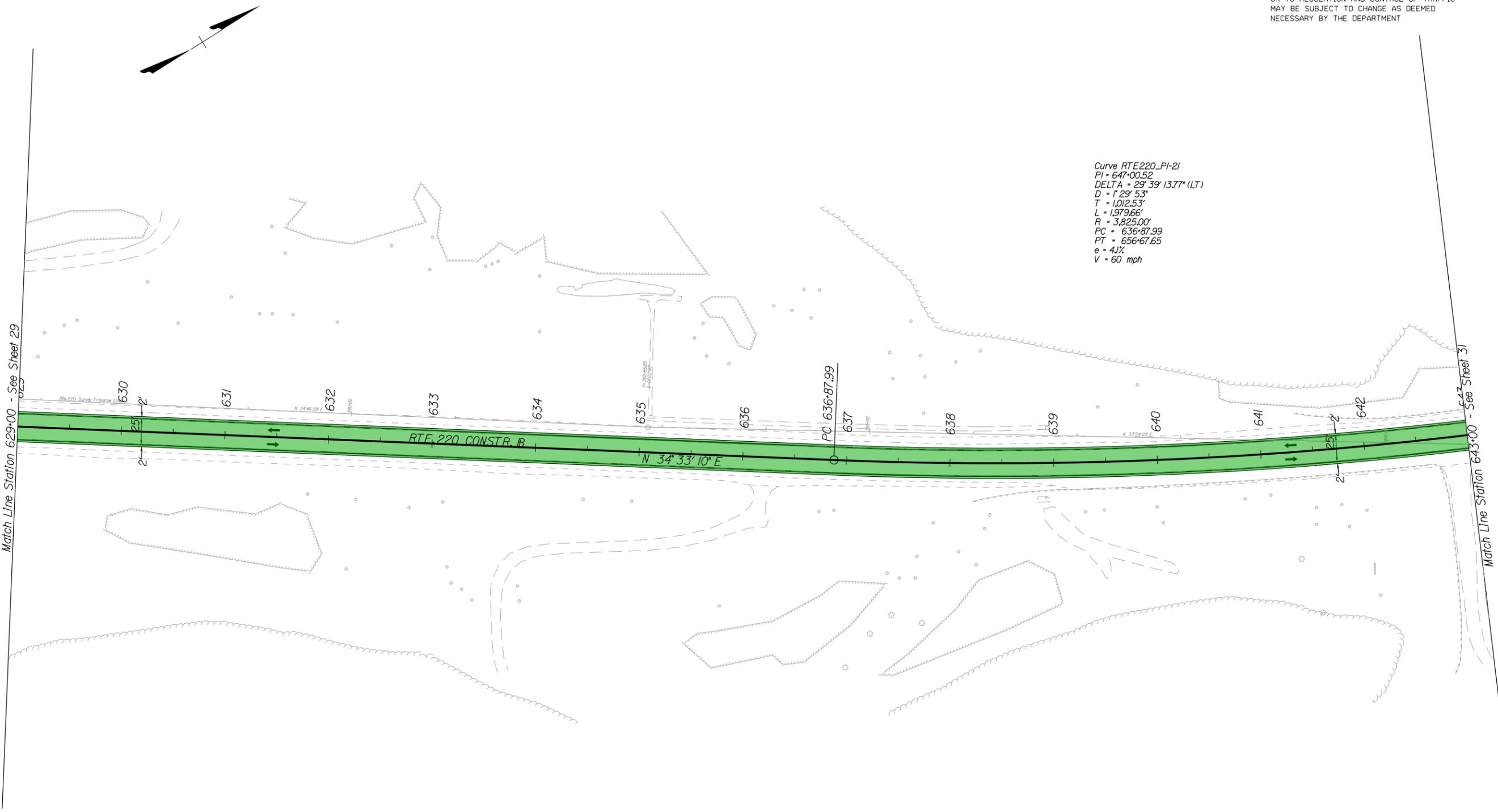
CONCEPTUAL PLANS



PROJECT MANAGER <Project_Mgr_Name_(000) 000-0000 (District)>
SURVEYED BY, DATE <Surveyor_Name_(000) 000-0000 (District)>
DESIGN BY <Designer_Name_(000) 000-0000 (District)>
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_(000) 000-0000 (District)>

REVISED	STATE	STATE		SHEET NO.
	ROUTE	PROJECT		
	VA.	220	0220-011-786	30

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. See Typical Sheet 2A(04) for Proposed utility Impacts table.
 2. Construction Limits account for guardrail in required areas.

SCALE
 0 100' 200'

- Legend:
- Existing Right of Way
 - Proposed Right of Way
 - - - Proposed Temporary Easement
 - - - Proposed Permanent Easement
 - Mill and Overlay
 - Full Depth Proposed Pavement
 - Pavement Demolition or Obscuring
 - Denotes Construction Limits in Cuts
 - Denotes Construction Limits in Fills

CONCEPTUAL PLANS



PROJECT MANAGER <Project_Mgr_Name_(000) 000-0000 (District)> ---
SURVEYED BY, DATE <Surveyor_Name_(000) 000-0000 (District)> ---
DESIGN BY <Designer_Name_(000) 000-0000 (District)> ---
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_(000) 000-0000 (District)> ---

REVISED	STATE	STATE		SHEET NO.
	ROUTE	PROJECT		
	VA.	220	0220-011-786	31

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

Curve RTE220-PI-21
 PI = 647+00.52
 DELTA = 29° 39' 13.77" (LT)
 D = 1° 29' 53"
 T = 1012.53'
 L = 1979.66'
 R = 3,825.00'
 PC = 636+87.99
 PT = 656+67.65
 e = 4.1%
 V = 60 mph



Notes:
 1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
 2. Construction limits account for guardrail in required areas.

SCALE
 0 100' 200'

- Legend:
- Existing Right of Way
 - Proposed Right of Way
 - - - Proposed Temporary Easement
 - - - Proposed Permanent Easement
 - Mill and Overlay
 - Full Depth Proposed Pavement
 - Pavement Demolition or Obscuring
 - Denotes Construction Limits in Cuts
 - Denotes Construction Limits in Fills

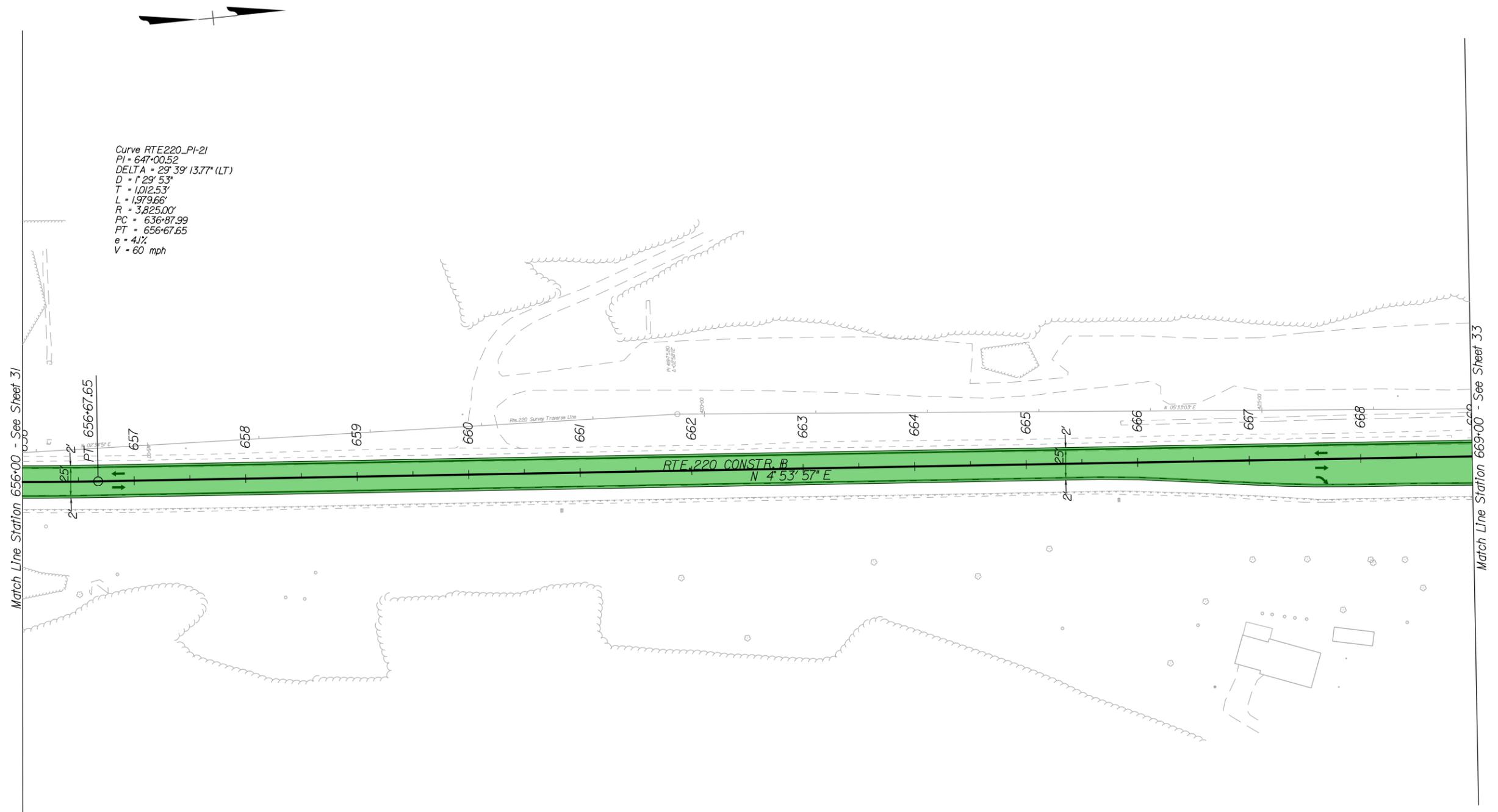
CONCEPTUAL PLANS



PROJECT MANAGER <Project_Mgr_Name_(000) 000-0000 (District)> ---
SURVEYED BY, DATE <Surveyor_Name_(000) 000-0000 (District)> ---
DESIGN BY <Designer_Name_(000) 000-0000 (District)> ---
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_(000) 000-0000 (District)> ---

REVISED	STATE	STATE		SHEET NO.
	ROUTE	PROJECT		
	VA.	220	0220-011-786	32

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. See Typical Sheet 2A(04) for Proposed utility Impacts table.
2. Construction limits account for guardrail in required areas.

SCALE
0 100' 200'

- Legend:
- Existing Right of Way
 - Proposed Right of Way
 - Proposed Temporary Easement
 - Proposed Permanent Easement
 - Mill and Overlay
 - Full Depth Proposed Pavement
 - Pavement Demolition or Obscuring
 - Denotes Construction Limits in Cuts
 - Denotes Construction Limits in Fills

CONCEPTUAL PLANS

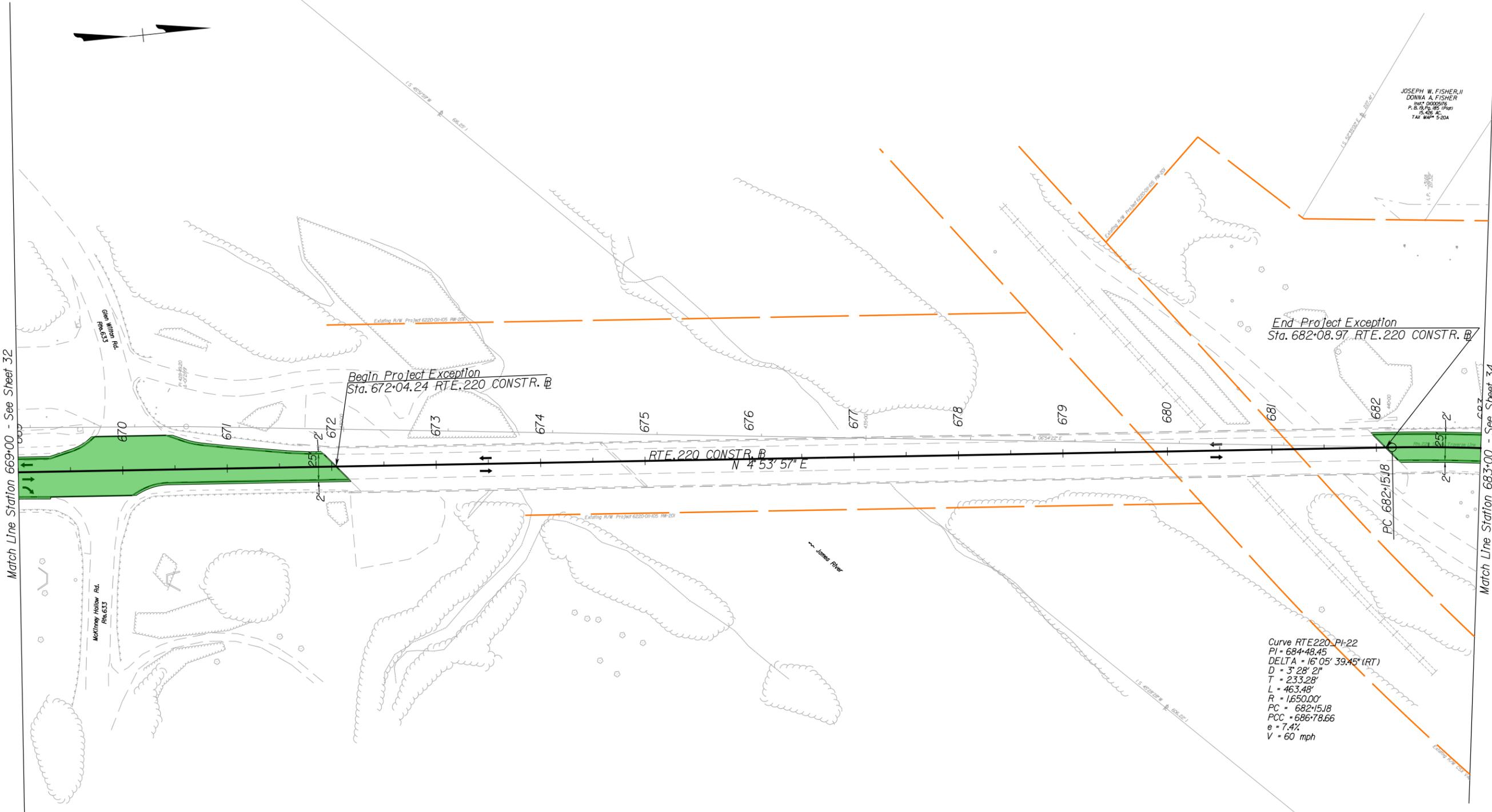
FAULCONER *ch2m*
CONSTRUCTION COMPANY

PROJECT 0220-011-786	SHEET NO. 32
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PROJECT MANAGER <Project_Mgr_Name> (000) 000-0000 (District)
SURVEYED BY, DATE <Surveyor_Name> (000) 000-0000 (District)
DESIGN BY <Designer_Name> (000) 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name> (000) 000-0000 (District)

REVISED	STATE	STATE		SHEET NO.
	ROUTE	PROJECT		
	VA.	220	0220-011-786	33

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. See Typical Sheet 2A(04) for Proposed utility Impacts table.
 2. Construction limits account for guardrail in required areas.

SCALE
 0 100' 200'

- Legend:
- Existing Right of Way
 - Proposed Right of Way
 - Mill and Overlay
 - Full Depth Proposed Pavement
 - Pavement Demolition or Obsolete
 - Proposed Temporary Easement
 - Proposed Permanent Easement
 - Denotes Construction Limits In Cuts
 - Denotes Construction Limits In Fills

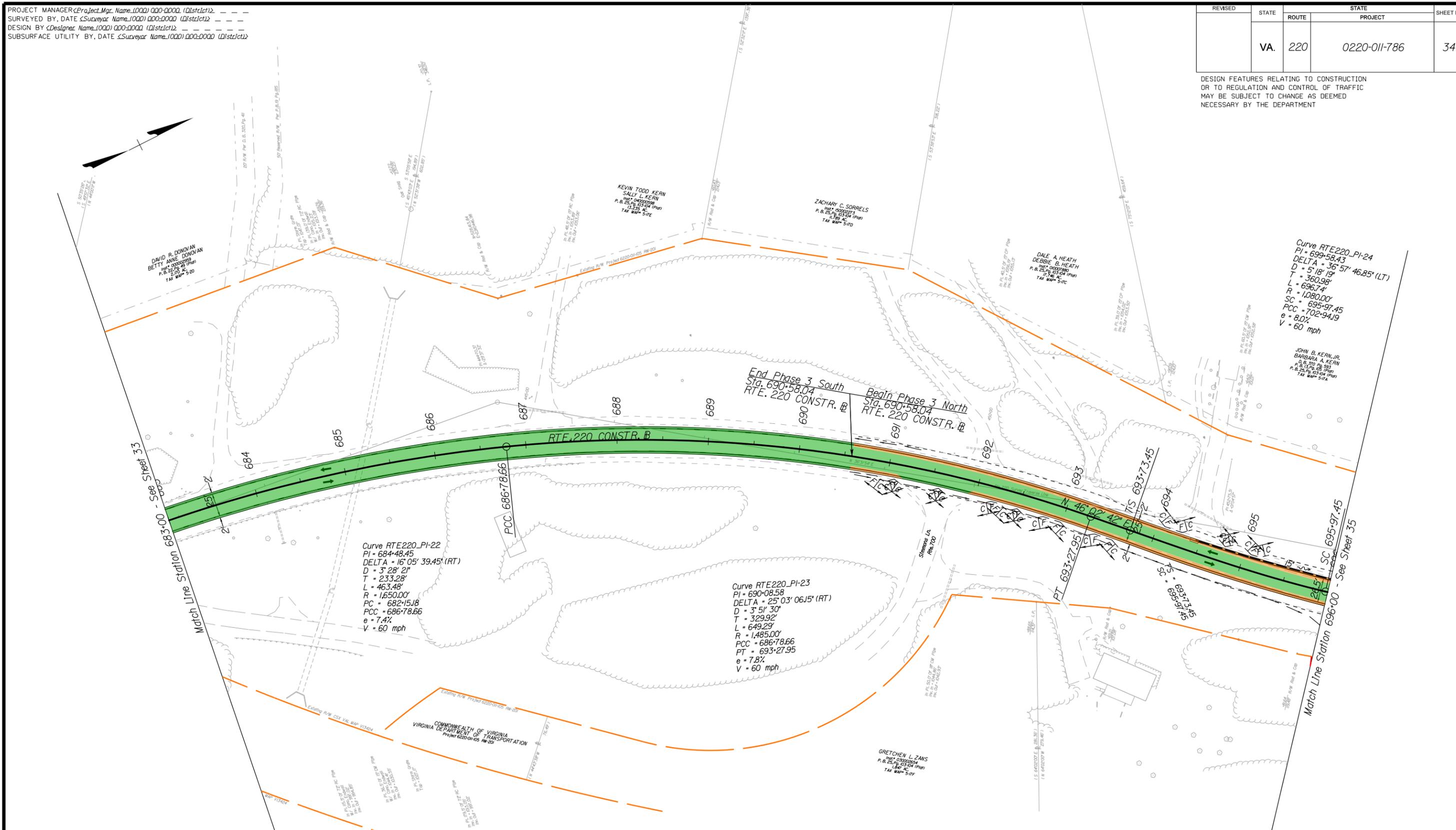
CONCEPTUAL PLANS



PROJECT MANAGER <Project_Mgr_Name_000> 000-0000 (District)
SURVEYED BY, DATE <Surveyor_Name_000> 000-0000 (District)
DESIGN BY <Designer_Name_000> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_000> 000-0000 (District)

REVISED	STATE	STATE		SHEET NO.
	ROUTE	PROJECT		
	VA.	220	0220-011-786	34

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



Notes:

- See Typical Sheet 2A(04) for Proposed utility Impacts table.
- Construction limits account for guardrail in required areas.



Legend:

- Existing Right of Way
- Proposed Right of Way
- Proposed Temporary Easement
- Proposed Permanent Easement
- Mill and Overlay
- Full Depth Proposed Pavement
- Pavement Demolition or Obscuring
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills

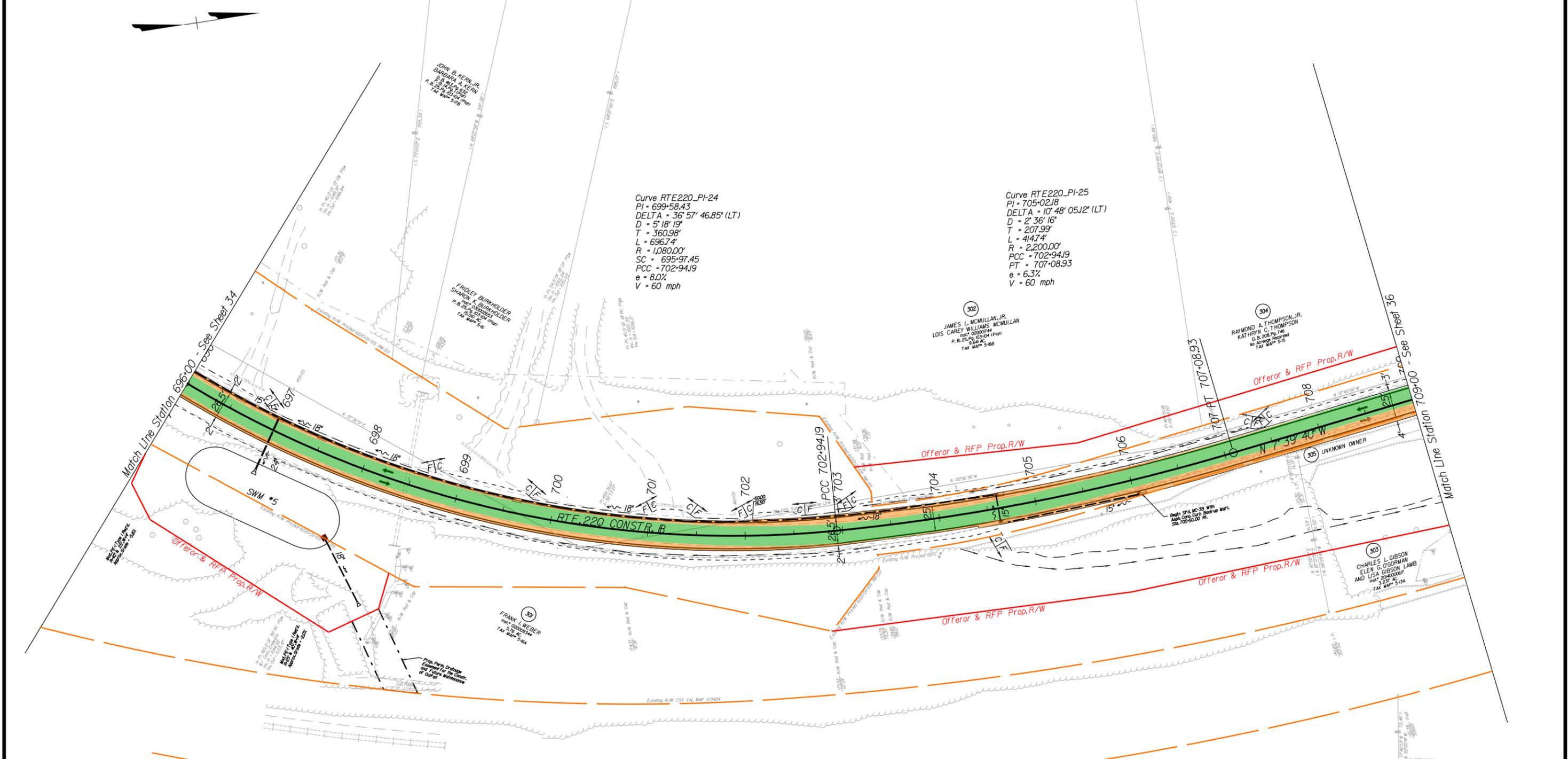
CONCEPTUAL PLANS



PROJECT MANAGER <Project_Mgr_Name_0000> 000-0000 (District)
SURVEYED BY, DATE <Surveyor_Name_0000> 000-0000 (District)
DESIGN BY <Designer_Name_0000> 000-0000 (District)
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_0000> 000-0000 (District)

REVISED	STATE	STATE		SHEET NO.
		ROUTE	PROJECT	
	VA.	220	0220-011-786	35

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. See Typical Sheet 2A(04) for Proposed utility Impacts table.
 2. Construction limits account for guardrail in required areas.

SCALE
 0 100' 200'

Legend:

- Existing Right of Way
- Proposed Right of Way
- Proposed Temporary Easement
- Proposed Permanent Easement
- Mill and Overlay
- Full Depth Proposed Pavement
- Pavement Demolition or Obscuring
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills

CONCEPTUAL PLANS

FAULCONER ch2m
 CONSTRUCTION COMPANY

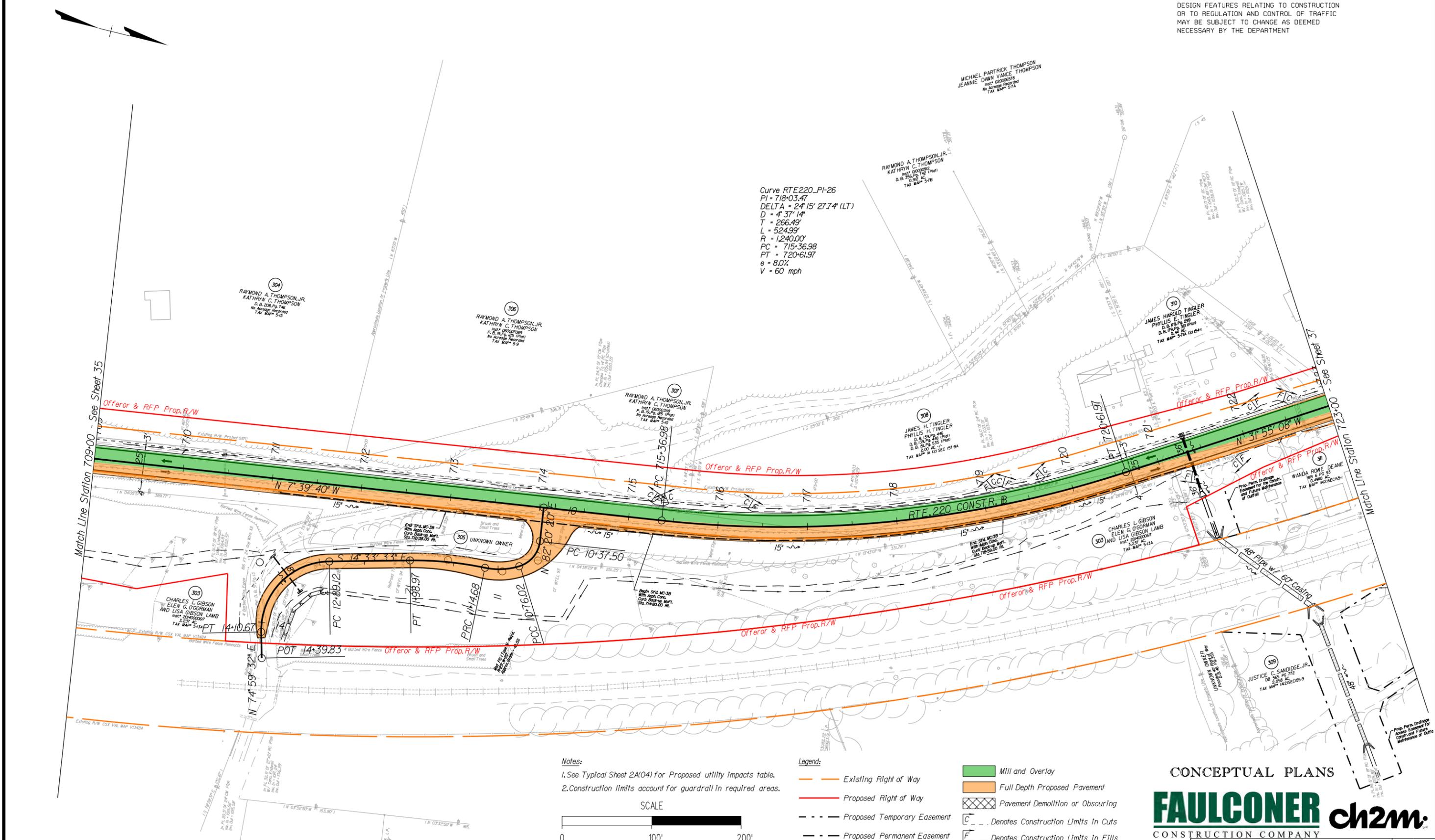
PROJECT	0220-011-786	SHEET NO.	35
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REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	220		0220-011-786	36

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

PROJECT MANAGER <Project_Mgr_Name_0000> 000-0000 (District)
 SURVEYED BY, DATE <Surveyor_Name_0000> 000-0000 (District)
 DESIGN BY <Designer_Name_0000> 000-0000 (District)
 SUBSURFACE UTILITY BY, DATE <Surveyor_Name_0000> 000-0000 (District)

Curve RTE220_PI-26
 PI = 718+03.47
 DELTA = 24°15' 27.74" (LT)
 D = 4° 37' 14"
 T = 266.49'
 L = 524.99'
 R = 1240.00'
 PC = 715+36.98
 PT = 720+61.97
 e = 8.0%
 V = 60 mph



Notes:
 1. See Typical Sheet 2A(04) for Proposed utility Impacts table.
 2. Construction limits account for guardrail in required areas.

SCALE
 0 100' 200'

Legend:

- Existing Right of Way
- Proposed Right of Way
- Proposed Temporary Easement
- Proposed Permanent Easement
- Mill and Overlay
- Full Depth Proposed Pavement
- Pavement Demolition or Obscuring
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills

CONCEPTUAL PLANS

FAULCONER ch2m

CONSTRUCTION COMPANY

PROJECT MANAGER <Project_Mgr_Name_1000> 000-0000 (District) ---
SURVEYED BY, DATE <Surveyor_Name_1000> 000-0000 (District) ---
DESIGN BY <Designer_Name_1000> 000-0000 (District) ---
SUBSURFACE UTILITY BY, DATE <Surveyor_Name_1000> 000-0000 (District) ---

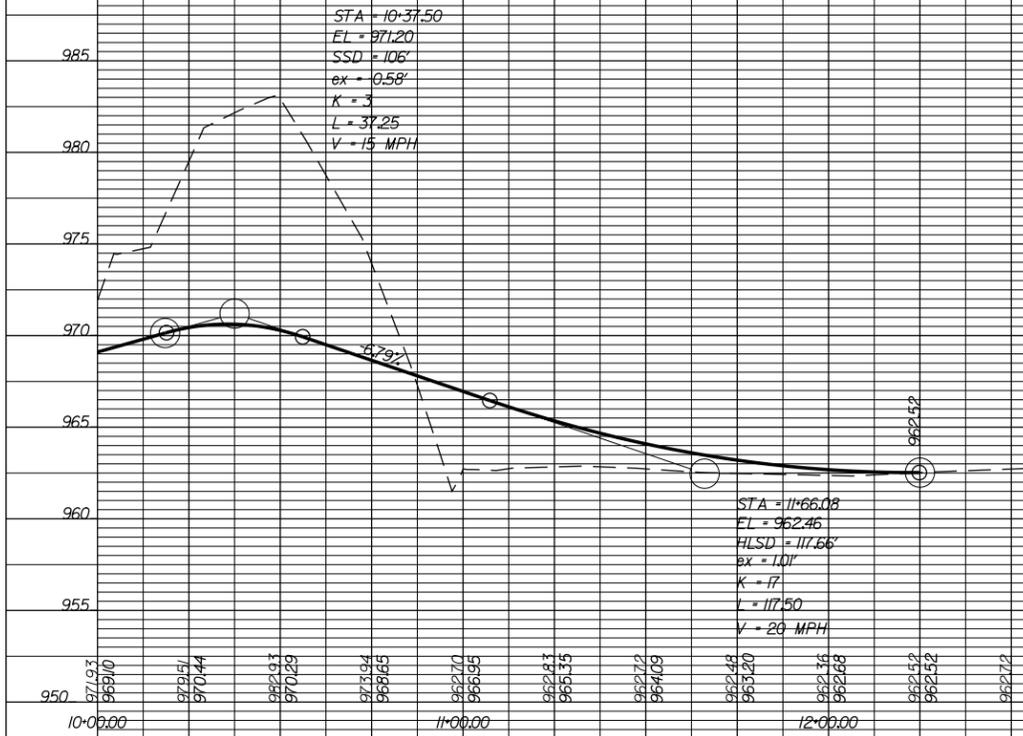
REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	220		0220-011-786	38

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

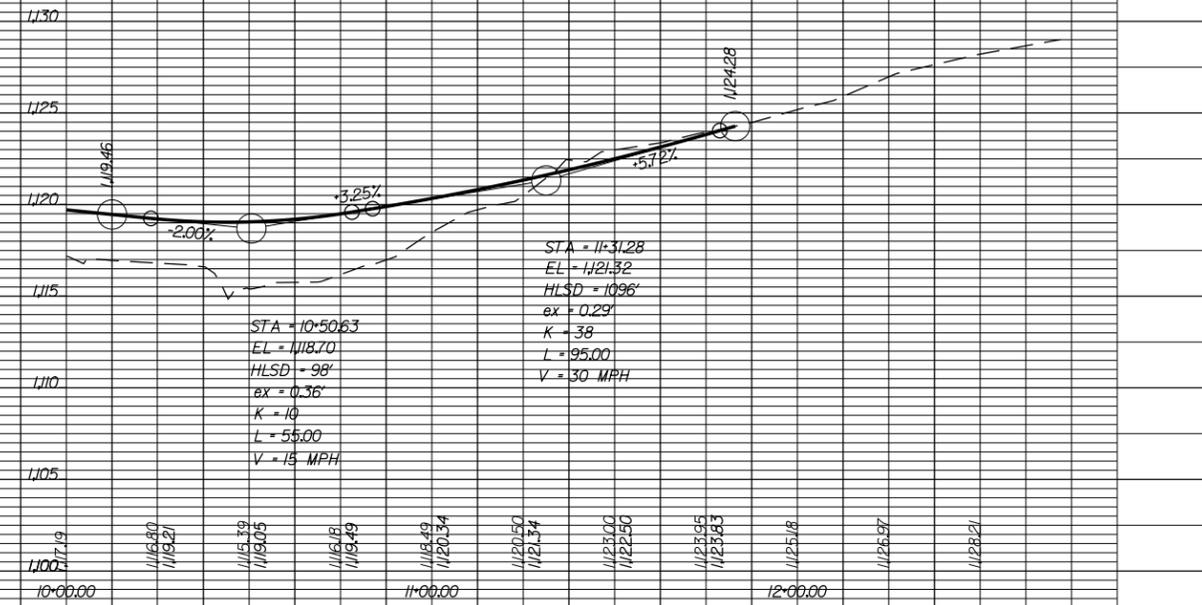
VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)

CONNECTION PROFILES

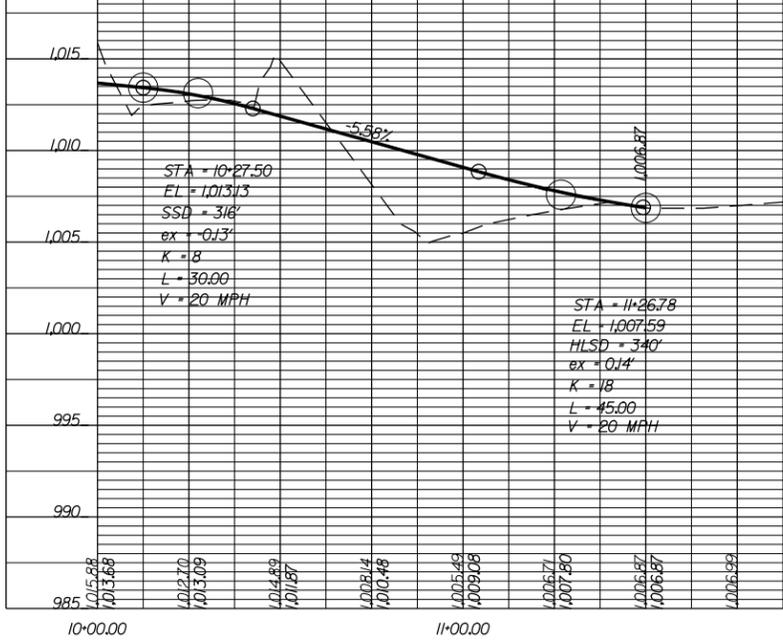
ROUTE 622



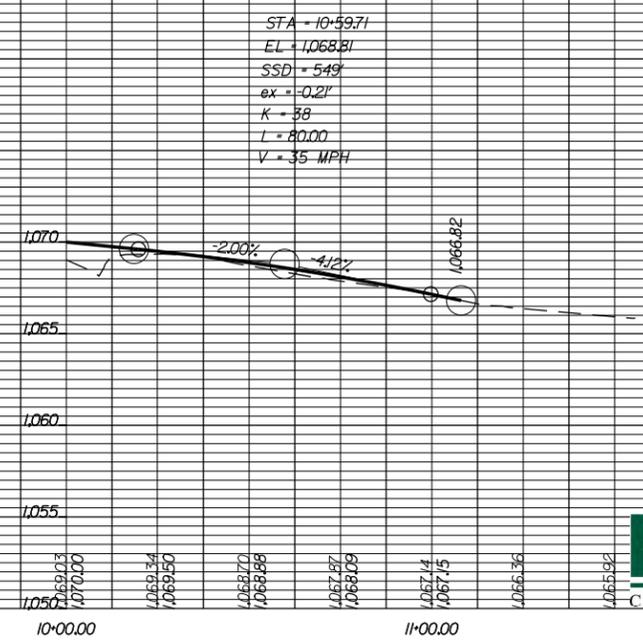
ROUTE 722 (NORTH)



ROUTE 722 (SOUTH)



ROUTE 696 (EAST)



CONCEPTUAL PLANS



PROJECT MANAGER: *Project_Mgr_Name_(000)000-0000 (District)* -
SURVEYED BY: *Surveyor_Name_(000)000-0000 (District)* -
DESIGNER: *Designer_Name_(000)000-0000 (District)* -
SUBSURFACE UTILITY BY: *Surveyor_Name_(000)000-0000 (District)*

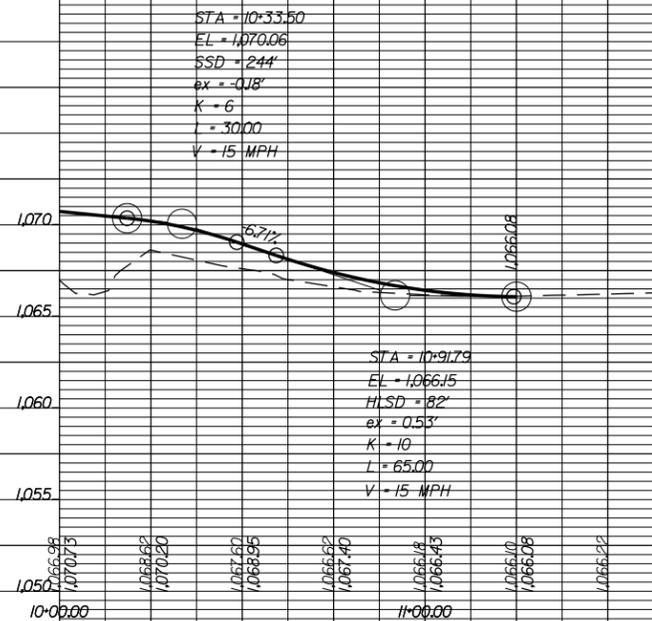
REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	39

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

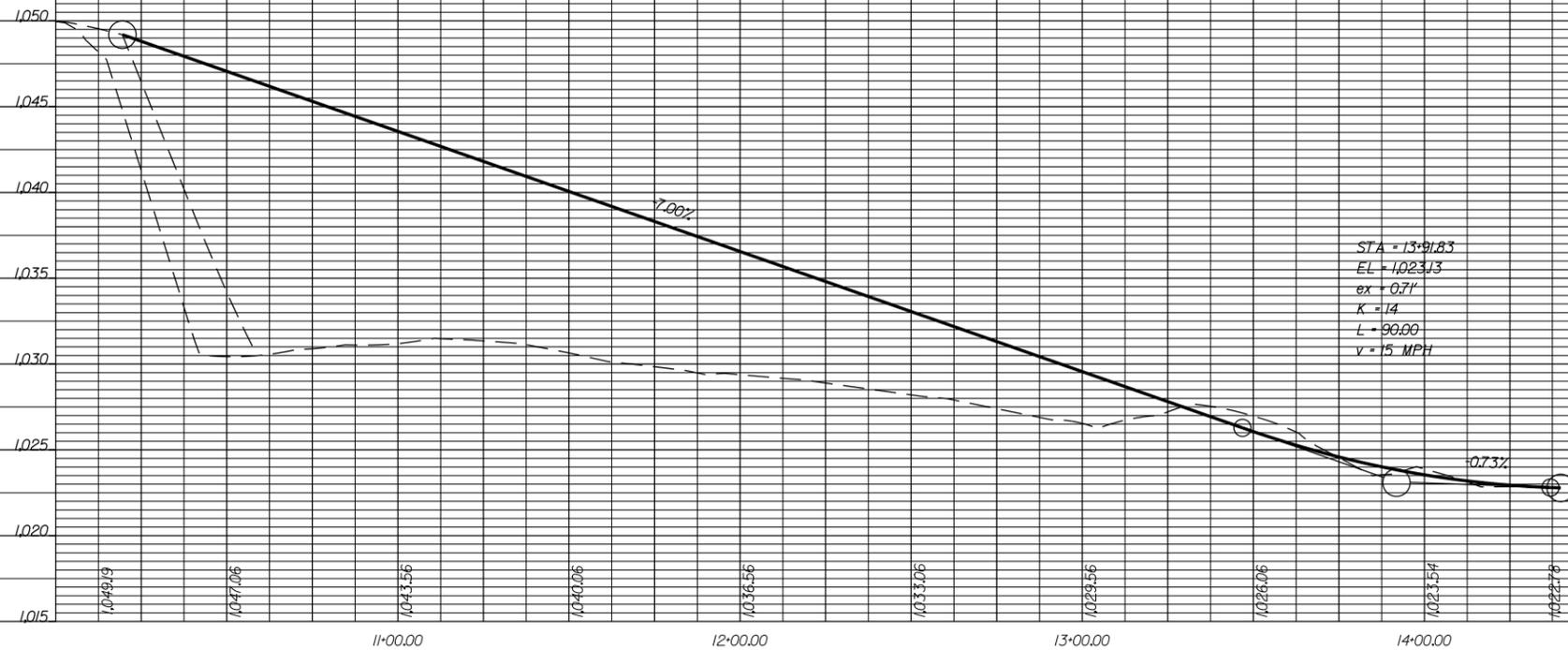
VDOT (Division) or Co. Name
(Location), Virginia
(TECHNICAL DISCIPLINE)

CONNECTION PROFILES

ROUTE 696 (WEST)



HEAD OF THE JAMES

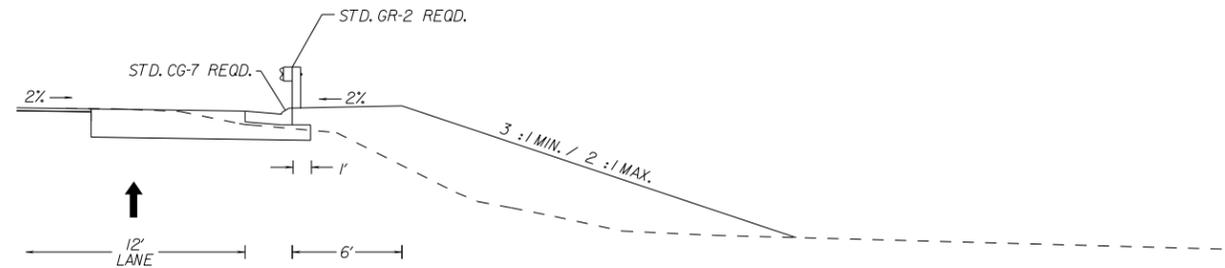
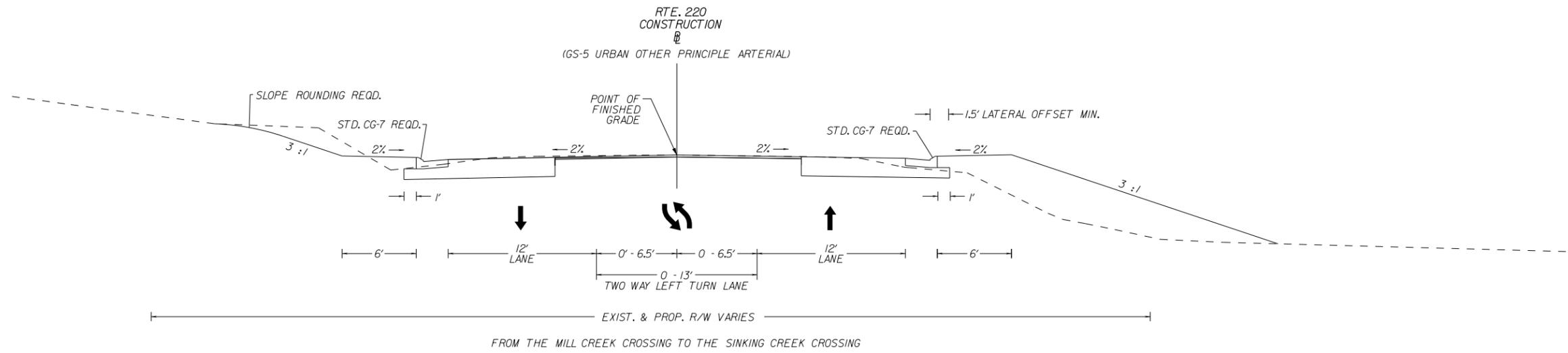


PROJECT	SHEET NO.
0220-011-786	39

PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

PRELIMINARY TYPICAL SECTION OPTION I (GALA LOOP ROAD)

	REVISED	STATE	STATE	SHEET NO.
		ROUTE	PROJECT	
	VA.	220	0220-011-786	40
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT				
MATERIALS ENGINEER	ROADWAY ENGINEER			



1/14/2017 5:09:40 PM

CONCEPTUAL PLANS
FAULCONER **ch2m**
 CONSTRUCTION COMPANY

PROJECT	SHEET NO.
0220-011-786	40

NOT TO SCALE

PROJECT MANAGER <Project_Mgr. Name_1(000) 000-0000 (District)> ---
 SURVEYED BY, DATE <Surveyor Name_1(000) 000-0000 (District)> ---
 DESIGN BY <Designer Name_1(000) 000-0000 (District)> ---
 SUBSURFACE UTILITY BY, DATE <Surveyor Name_1(000) 000-0000 (District)> ---

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	220	0220-011-786	42

RTE. 220 OPTION 1 PROFILE (GALA LOOP ROAD)

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)



VERTICAL SCALE: 1" = 20'

HORIZONTAL SCALE: 1" = 100'



PROJECT	SHEET NO.
0220-011-786	42



For additional information, please contact

Fran Burke

Executive Vice President

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Charlottesville, VA 22903

Office: 434-295-0033

Mobile: 434-906-5390

fburke@faulconerconstruction.com

FAULCONER
CONSTRUCTION COMPANY

ch2m