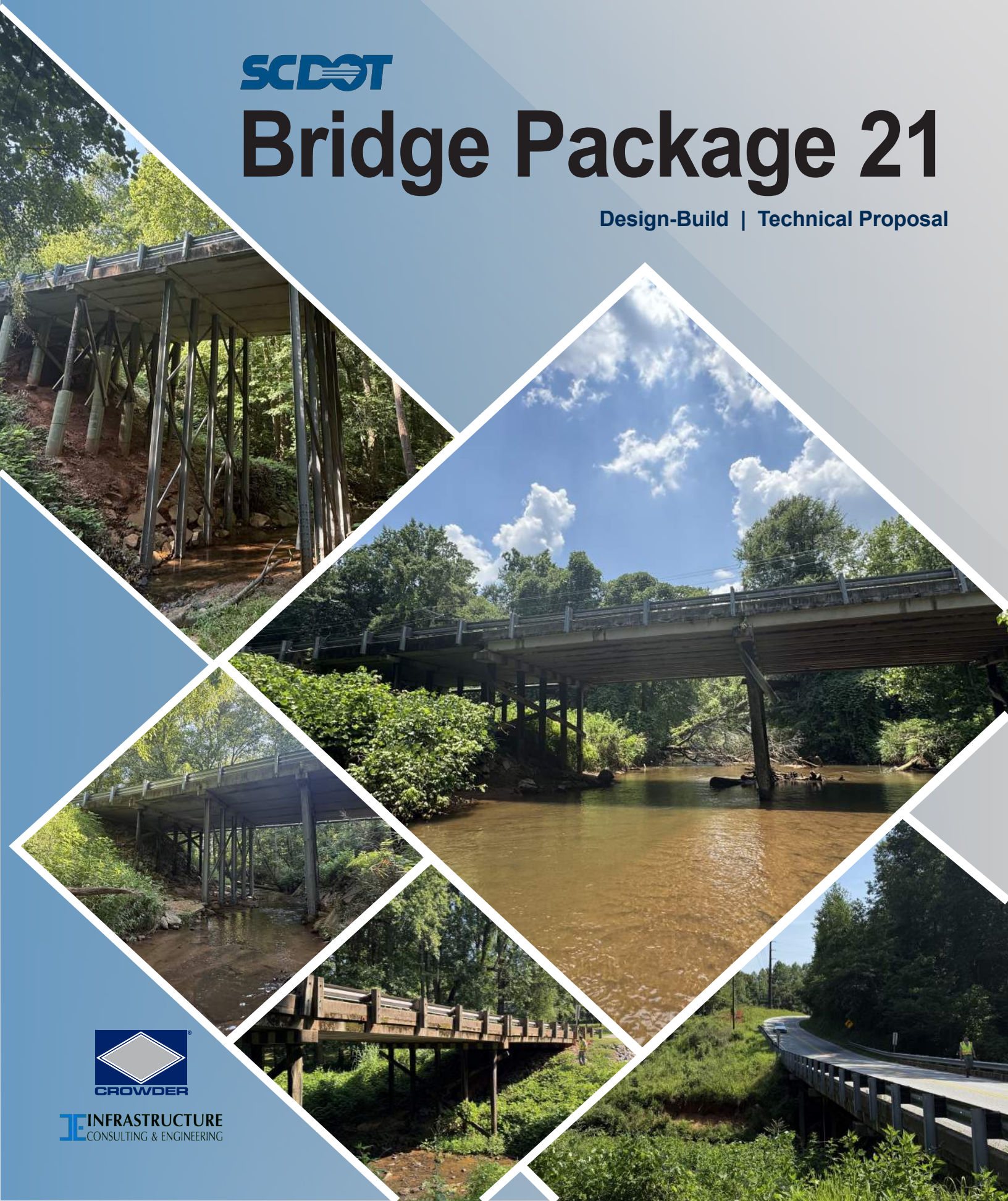




Bridge Package 21

Design-Build | Technical Proposal

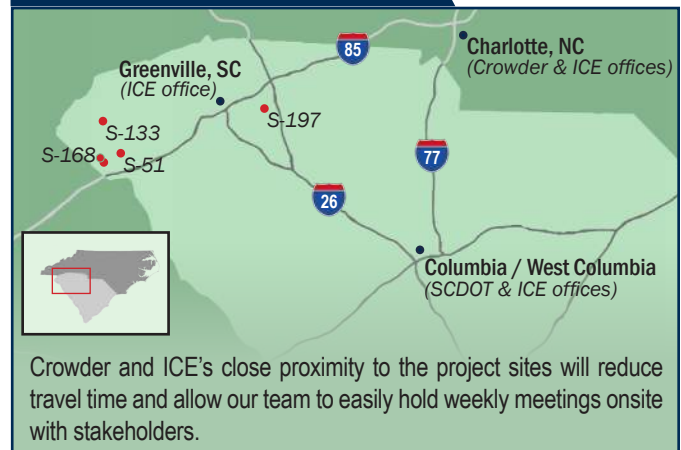


JE INFRASTRUCTURE
CONSULTING & ENGINEERING

TECHNICAL PROPOSAL NARRATIVE

Our design-build team for SCDOT Bridge Package 21 consists of Crowder Construction Company as the Prime Contractor and Infrastructure Consulting & Engineering, LLC (ICE) as the Design Engineer. Our design approach focuses on balancing schedule and cost to facilitate early utility relocations, material procurement, and construction activities together with producing design and plans. Our approach provides low-maintenance replacement bridges with prestressed girder/cored slab superstructures and drilled shaft/piles bents in full compliance with RFP requirements.

Project and Office Locations



Crowder will manage the project from our Charlotte, NC, office. Additionally, Crowder will mobilize a mobile project office space near the job sites to serve as the Construction Manager's office. ICE will perform all elements of design from its West Columbia, SC, office. Based on the proximity to SCDOT HQ, this will facilitate close coordination and responses of all design submittals to SCDOT. An ICE design management office in Charlotte also allows for convenient access to Crowder's base of operations for both office meetings and on-site meetings.

PROJECT DELIVERY

The Crowder+ICE Team will design and manage the project from Crowder's Heavy Civil Division Office in Charlotte, NC, and from ICE's Columbia and Greenville, SC, offices. The team will engage in effective communication, planning, and collaboration through virtual meetings and face-to-face meetings, when required. Immediately following the public announcement, Crowder will execute design subcontracts and initiate the design process. The design critical path begins with completing the geotechnical investigations, which are necessary to develop the final bridge plans for each site. Right-of-way plan development is also critical to allow property acquisitions and utility relocations to be completed in advance of the required bridge closures and detours. ICE is prepared to begin work on all of these activities immediately upon notice of award.



ASSURANCES AND ABILITY TO COMPLETE THE PROJECT WITHIN THE REQUIRED TIMEFRAME

Crowder has the necessary personnel, equipment, technological, and financial resources available to meet the needs of this project. Crowder's backlog is currently \$777 million with a total bonding capacity of \$1.5 billion. Crowder

Heavy Civil maintains 14 crews performing structures, roadway (grading/drainage) work, including associated equipment. In addition, Crowder maintains an in-house fleet of cranes, excavators, dozers, and other small equipment at our local equipment yard in Charlotte, NC. We also maintain strong relationships with key small and large equipment suppliers in all regions of our work area. Equipment sourcing is not a problem for our work crews.

A minimum of two (2) structures crews and one (1) roadway crew will be committed to this project with the option to add additional crews. Furthermore, Crowder will allocate additional resources as necessary to ensure any unforeseen schedule impacts are recovered so that the project is completed on time, or ahead of schedule, to meet SCDOT and public expectations.

In addition to Crowder's abundant construction resources, ICE will perform all tasks with the exception of right of way acquisition services with in house staff to fully ensure all submittals are made on time for this project.

Submittals related to both design and construction will get an internal QC review before submission to SCDOT to reduce the likelihood of errors, minimize comments, and eliminate extended reviews that may create schedule uncertainty. The Crowder+ICE SOQ-defined and committed Project Manager, Lead Design Engineer, and Construction Manager have been integrally involved with developing the best delivery approach to the project during the RFP process. The Crowder+ICE Team's project development and construction staff have positive and recent work experience through the SCDOT Bridge Package 29 Design-Build project, which was completed in June 2025.

Quality, safety, value, and constructability have consistently been at the forefront of our design decisions. Upon award, these same managers, engineers, and coordinators will finalize constructible designs and execute these designs on site, allowing for an expedient project start-up without introducing new management to the project. ICE's design team that developed the RFP design will also transition into the final design upon award of the contract to maintain continuity and quality in submittals to SCDOT.

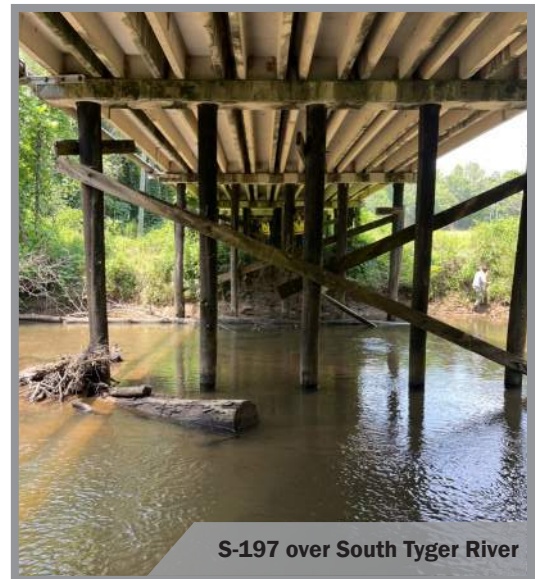
Crowder's Local Labor Resources

Crowder's available staff and equipment resources along with what we anticipate needing to complete this project.

Classification	On Staff	Required
Carpenters	35	6
Structures Foremen	18	2
Crane Operator	8	2
Carpenter Aids / Laborers	24	2
Piledriving Foreman	4	2
Equipment Operators	12	5
Cranes (90 - 300 ton)	10	2
Vibratory Hammers	1	1
Pile Impact Hammers	4	2
Manlifts	2	1
Dozers	5	2
Excavators	11	2

ICE's Available Resources

Discipline	Staff
Roadway	56
Drainage	32
Structures	46
Geotechnical	30



S-197 over South Tyger River

DESIGN APPROACH

For the S-168 sites, the Supplemental Design Criteria for Low Volume Bridge Replacement Projects criteria were applied, allowing the team to maintain the existing vertical and horizontal geometry where appropriate — specifically, where the existing alignment was within 15 mph of the required design speed. This approach minimized geometric realignment and the associated ROW needs. Hydraulic modeling and profile optimization further refined the designs by lowering the proposed low chords and shortening roadway approaches compared to the conceptual plans. These refinements eliminated the need to reconstruct two existing driveways on S-51 and avoided drainage-related ROW impacts that were anticipated under the conceptual layout. All designs comply with RFP guidance for ROW acquisition, which specifies 75 feet of ROW on each side of the centerline for a length of 75 feet from each bridge end, except where otherwise directed in the RFP.



Through coordination among bridge, roadway, hydraulic, and environmental design disciplines, the conceptual design plans included in our Technical Proposal Appendices represent approximately 70–80% ROW design completion. This level of design maturity provides a high degree of confidence in the accuracy of the ROW limits and supports the elimination of Preliminary Roadway and Bridge submittals as allowed in the RFP.

By integrating hydraulic optimization, careful geometric refinement, and constructability-focused solutions, the Crowder–ICE Design-Build Team successfully reduced overall ROW needs by more than one-quarter compared to the conceptual design. This approach delivers a more efficient, cost-effective, and environmentally responsible solution while fully meeting SCDOT’s design and performance criteria.

MINIMIZING NEED FOR NEW RIGHT-OF-WAY

The Crowder Construction and Infrastructure Consulting & Engineering (ICE) Design-Build Team approached project development with a strong emphasis on minimizing new right-of-way (ROW) acquisition while fully meeting SCDOT design, hydraulic, and constructability requirements. Our strategy was guided by lessons learned from previous SCDOT bridge packages and informed by the latest Bridge Design Memorandums and 2025 Standard Specifications.

Right-of-Way Reduction Summary			
ROUTE NO.	CROSSING	RFP CONCEPTUAL DESIGN (SF)	TECH PROPOSAL DESIGN (SF)
S-37-51	Snow Creek	12,546	5,025
S-37-168	Tributary to Choestoea Creek	32,889	17,647
S-37-133	Little Cane Creek	69,285	41,000
S-42-197	South Tyger River	22,507	22,507
S-37-168	Little Choestoea Creek	43,815	45,223
Total	—	181,042	131,402

Overall, the proposed designs achieve a 27% reduction in total ROW area compared to the conceptual plans, reflecting significant cost savings and reduced environmental and property impacts.

Approach for Utility Coordination

S-42-197 (Spartanburg Hwy)

LAURENS COUNTY ELECTRIC COOPERATIVE (LCEC)

- Overhead three-phase line crossing S-42-197 on the bridge north side.
- Requires relocation prior to bridge demolition and construction.
- Anticipated prior rights for a portion of the relocation.
- Will require new easements outside the new right-of-way.

CHARTER COMMUNICATIONS

- Facilities attached to the existing LCEC overhead pole line.
- Expected to coordinate relocation with LCEC.

PIEDMONT NATURAL GAS

- 4-inch plastic gas main along the north side of the project.
- Anticipated to be impacted.
- Relocation likely involves adjustment of the main's end location.

WOODRUFF WATER DISTRICT

- 8-inch water main attached to the existing bridge.
- Must be relocated prior to demolition.
- Expected to be included in the contract under Act 36 as a large utility.

S-37-133 (Burns Mill Rd)

CENTRAL ELECTRIC TRANSMISSION

- 44kV transmission pole line along the north side of the bridge.
- Intent is to avoid any impact due to schedule and cost implications.
- Located within a private easement.

BLUE RIDGE ELECTRIC COOPERATIVE

- 3-phase (3PH) distribution line attached to the transmission line.
- Will need to be temporarily offset or protected during construction.
- May require de-energization.

UPCOUNTRY FIBER

- Fiber cable crossing overhead on the north side of the bridge.
- Transitions to underground beyond the bridge on both sides.
- Expected to require relocation prior to construction.

S-37-51 (Snow Creek Rd)

FORT HILL NATURAL GAS (FHNG)

- 2-inch plastic gas main inside 4-inch carrier pipe.
- Located underground on the west side of the bridge.
- Appears far enough to remain in place during construction.

PIONEER WATER DISTRICT

- No water line crossing at the bridge.
- Underground water mains terminate before the bridge.
- Possible minor impacts to meter boxes or valves.
- Work to be performed in-contract under Act 36 as a small utility.

AT&T

- Copper pedestal on southwest side of the bridge determined to be abandoned.
- Attached cable may be removed during construction.

BLUE RIDGE ELECTRIC COOPERATIVE

- 3-phase (3PH) line parallel to the roadway.
- 1-phase (1PH) line crossing S-37-51 just south of the bridge.
- Both crossing and parallel lines require relocation prior to construction.

UPCOUNTRY FIBER

- Attached to the existing overhead line.
- Will relocate in coordination with any pole alignment changes.

S-37-168 (Little Choestoea Creek)

BLUE RIDGE ELECTRIC COOPERATIVE

- 1-phase (1PH) overhead line crossing S-37-168 (east to west on north side).
- Requires relocation prior to bridge demolition and construction.
- Expected to follow a box-out alignment around the new right-of-way.

UPCOUNTRY FIBER

- Attached to Blue Ridge Electric's 1PH overhead line.
- Will relocate in coordination with the electric relocation.

PIONEER WATER DISTRICT

- 2-inch water main transitioning from underground to bridge attachment.
- Returns to underground on opposite side.
- Requires relocation prior to bridge demolition.
- Expected to be relocated in-contract under Act 36 as a small utility.

S-37-168 (Tributary to Choestoea Creek)

BLUE RIDGE ELECTRIC COOPERATIVE

- Single-phase (1PH) overhead line crossing from west to east over the bridge.
- Requires relocation prior to bridge demolition and construction.
- Relocation expected ahead of demolition, following a box-around path consistent with the new right-of-way.

BRIDGE AND HYDRAULIC DESIGN

ROW minimization began with a detailed analysis of bridge hydraulics at each crossing. By optimizing the hydraulic performance, our team identified opportunities to lower bridge profiles and, where possible, shorten spans while maintaining compliance with RFP requirements for design storm, backwater, and freeboard.

Bridge types were selected to balance constructability, fabrication availability, and minimal site disturbance. To increase the number of available fabricators and streamline delivery, beam types with common formwork were selected while avoiding box beams, which are more labor-intensive. Single-span bridges were prioritized to reduce bents allowing for better creek/river hydrology while reducing potential debris loads resulting from significant storm events, except at S-37-133, where girder delivery limitations necessitated a multi-span configuration.

Preliminary Bridge Details

ROAD NO.	CROSSING	SUPERSTRUCTURE TYPE	FOUNDATION TYPE	LENGTH (FT.)	WIDTH (FT.)	SPAN ARRANGEMENT
S-37-51	Snow Creek	BT-65	Steel H Piles	120	36.25	120' Simple Span
S-37-168	Tributary to Choestoea Creek	AASHTO Type IV	Steel H Piles	114	30.25	114' Simple Span
S-37-133	Little Cane Creek	21" Cored Slabs/36" Cored Slabs	Steel H Piles / Drilled Shafts / Micro Piles (End Bent 1)	176	36	40'-96'-40'
S-42-197	South Tyger River	21" Cored Slabs / 36" Cored Slabs / 24" Cored Slabs	Steel H Piles / Drilled Shafts	205	36	50'-95'-60'
S-37-168	Little Choestoea Creek	36" Cored Slab	Steel H Piles	98	30	98' Simple Span

ROADWAY DESIGN

The roadway approaches were designed to achieve compliance with design standards while minimizing geometric and environmental impacts. The lower bridge profiles achieved through hydraulic refinement reduced approach grades, fill slopes, guardrail requirements, and drainage limits. These adjustments directly decreased construction disturbance areas, resulting in reduced ROW acquisition and fewer impacts to adjacent properties and environmental resources.

FIELD EVALUATION AND INTEGRATION OF SITE CONSTRAINTS

During field inspections, the design team evaluated existing site conditions including utilities, hydraulic characteristics, right-of-way limits, environmental constraints, roadway geometry, tie-down locations, and constructability factors. Each of these considerations was incorporated into the roadway and bridge designs to reduce the need for additional ROW while maintaining safety and constructability standards.



PROPOSED DESIGN SUBMITTAL PROCESS

The Crowder+ICE Team has developed a CPM schedule that summarizes the preparation and submittal of all required design deliverables, SCDOT reviews, ROW acquisitions, and permit submittals. Shortly after award, the Design Team will submit this schedule with a Gantt chart along with the Design QC Plan as Submittal 000. To ensure efficient and complete reviews we will follow the steps listed in the table below.

Key Features of Our Design Submittal Process

- ✓ Independent QA/QC for all design submittals prior to submission to SCDOT to ensure RFP compliance and minimize SCDOT review comments.
- ✓ Comprehensive constructability review by the Contractor to improve design and minimize RFIs during construction.
- ✓ All design submittals will be uploaded to SCDOT's ProjectWise system in PDF format. Plan submissions will be sized at 11"x17" so that they may be printed on a standard printer or any plotter at a specific scale.
- ✓ The design submission schedule will be posted to SCDOT's ProjectWise site and updated monthly.
- ✓ Facilitate monthly design meeting/conference call to allow for status updates of the design, to provide a forum for asking questions related to the design during review, and to use as an opportunity for clarification/discussion of comments.

Only one new submittal package will be uploaded to SCDOT ProjectWise within five business days. SCDOT develops a Bluebeam Studio session for the review of the submittal and the Department will have 15 business days to complete the review. SCDOT review comments/access to the Bluebeam Session will be provided to Crowder, who will respond to comments in the form of Bluebeam reply within five business days. No additional submittals will be sent during this response time. Crowder and ICE will respond to all comments within five business days of receipt. Our team has developed the CPM schedule to submit revised verification plans at the end of the five-day comment response period. In the event that a comment requires a significant design revision that cannot be addressed in the given five-day response period, SCDOT will be notified in writing within two days of receipt of comment and details of the verification set will be coordinated with the Department's Project Manager. Once all comments have been verified and closed, the design team will advance to the next package submittal until RFC plans are approved, signed, and provided to the contractor for construction.

To clearly define project tasks, dependencies and deliverables, our design schedule uses the following Work Breakdown Structure (WBS):

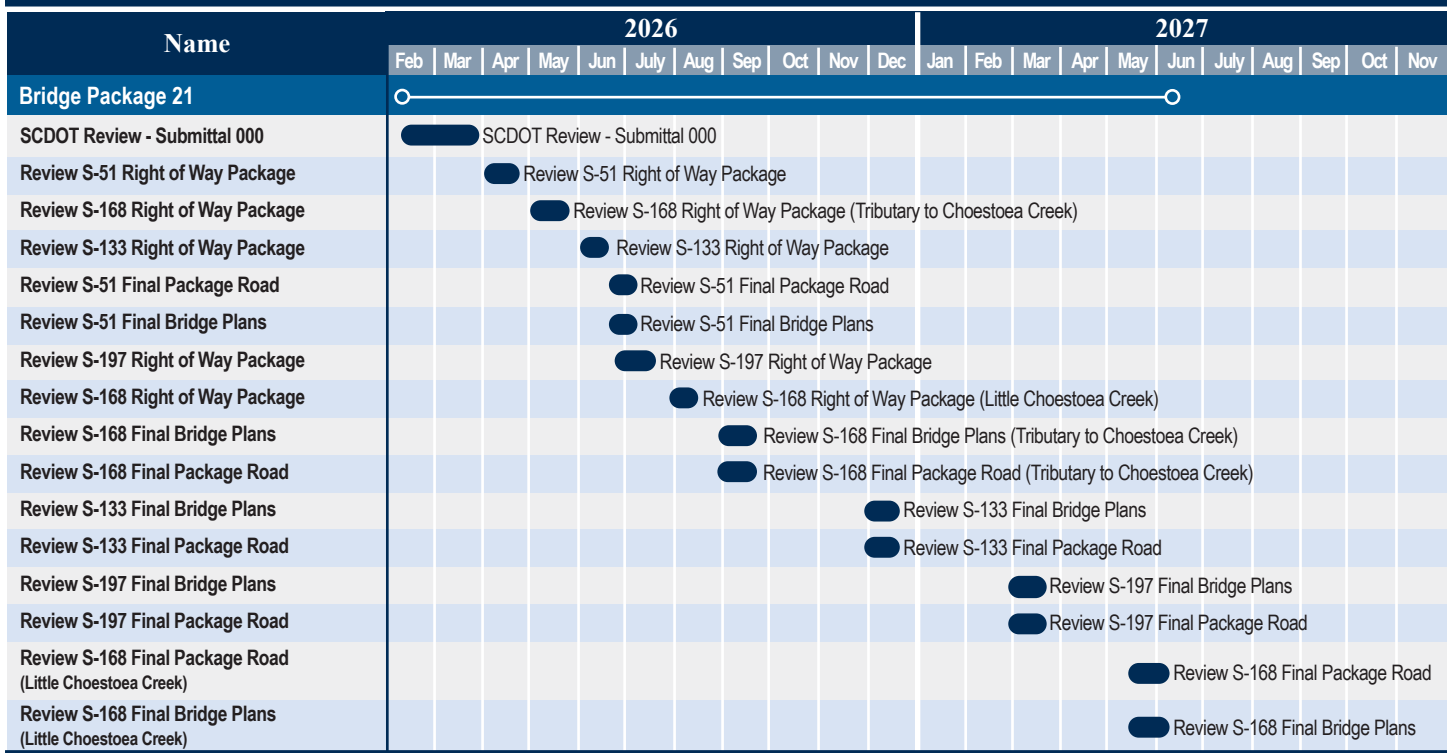
5368980.1	Milestones	5368980.2.2.5	Review Final Design Bridge Package
5368980.1.1.1	Design Review Submittal Package 000	5368980.2.2.6	Final Package Road
5368980.2	Bridge 1 - 5	5368980.2.2.7	Review Final Package Road
5368980.2.2.1	Geotechnical Investigation	5368980.2.2.8	ROW Acquisitions
5368980.2.2.2	Right of Way Package	5368980.2.2.9	SCDES NOI
5368980.2.2.3	Review Right of Way Package	5368980.2.2.10	WOTUS Permit
5368980.2.2.4	Final Design Bridge Package		

Our CPM schedule (Appendix A.3) lists the submittal package contents by package type. We have elected to eliminate Preliminary Roadway and Bridge package submittals at our own risk and begin with Right of Way and Final Bridge packages for each site because of the design effort during the proposal phase as note in our Technical

Proposal Appendices. This also reduces the efforts by SCDOT staff needed to review a preliminary plan submittal. For our first roadway submittal packages, we have included any appropriate information required with a preliminary submittal in the Right of Way packages as allowed by RFP Exhibit 4z.

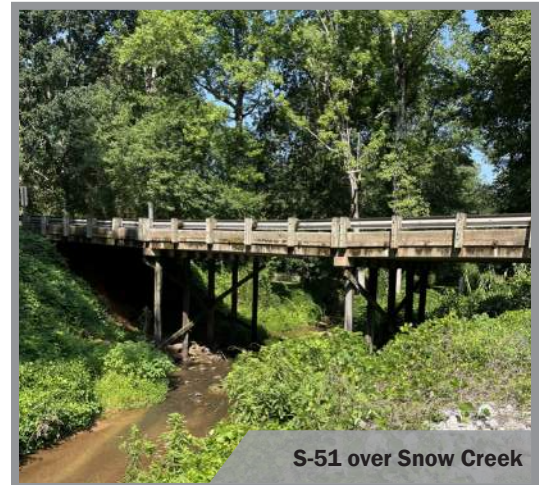
In order to fast track the delivery of RFC bridge plans the sites with the least number of tracts requiring ROW will be submitted first and the two sites that require MOA's be developed for water line relocations will be submitted last. The flow of the design reviews is shown in the Gantt chart below.

Gantt Chart



CONSTRUCTION APPROACH

The CROWDER+ICE Team understands that starting construction is dependent on design submittals, utilities, and permitting. Early clearing packages to allow for utility relocations once Right of Way or Right of Entries are obtained are planned to provide the groundwork for bridge and roadway construction. Crowder will mobilize adequate construction equipment and dedicate an appropriate number of field personnel. All work items can either be self-performed, or performed by a subcontractor with whom Crowder has an established relationship with, which will ensure that the work progresses smoothly and expeditiously.

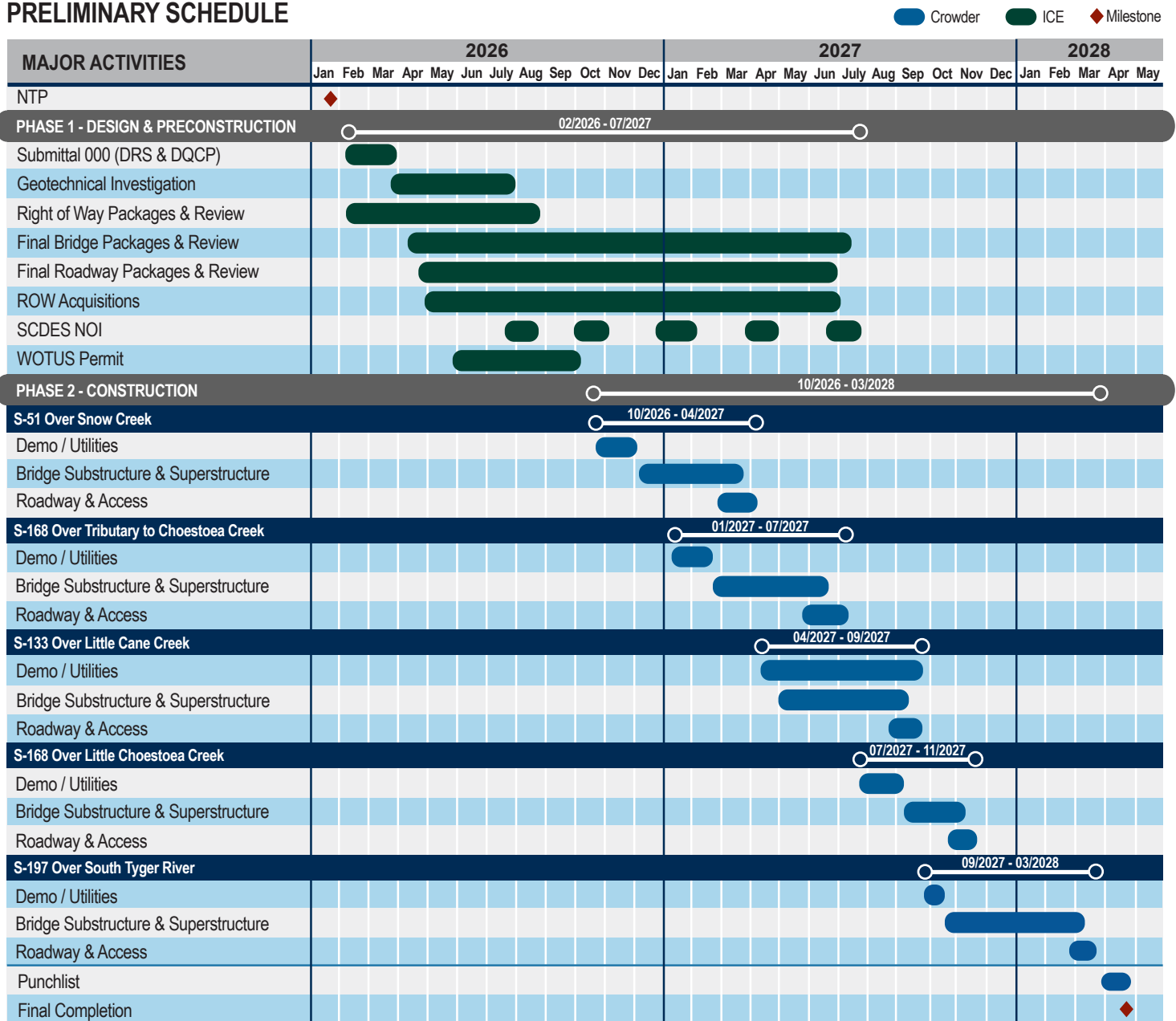


The CPM schedule has been sequenced to start the design and construction at the sites with the least amount of utility relocations and third party conflicts first. This methodology will allow for construction to begin as soon as possible. Furthermore, the sites have been broken in two groups where Crowder can sequence two sets of pile

driving, grading, and concrete crews to perform work sequentially inside each of the two groups of sites.

Crowder will self-perform approximately 85% of the total contract to maintain schedule control. Crowder plans to work up to five 10-hour days per week as needed based on scheduling and available resources. Crowder will develop a cost loaded project schedule which will include all construction activities and materials delivery and establish the critical risk components to stay abreast and manage the schedule, effectively eliminating the risk of schedule slippage. The master schedule will include subcontractor schedules and Crowder will communicate often with subcontractors and suppliers to maintain an expedited completion of this project. The CPM schedule has been developed to account for permit packages submitted as early as possible to get the Package 21 projects operational as quickly and safely as possible. The CROWDER+ICE Team understands the requirements of the RFP and has planned for, and committed staff and equipment to complete the project within the required timeline.

PRELIMINARY SCHEDULE



QUALITY CONTROL

Our Quality Control (QC) programs will provide an integrated approach that meets this project's required standards and specifications. The basis of the design QC plan includes check prints stamped to confirm that each sheet was checked, reviewed, back checked, and approved in compliance with the RFP. ICE's Design Quality Management Plan (DQMP) is a two-tier review process. The first-tier reviews are internal peer reviews with design team members. The second-tier reviews will be conducted by an Independent Design Quality Review (IDQR) Team not involved with production. These reviews will include checking plans, spreadsheets, calculations, and other software methods or outputs used in the development of the design and construction plans. Our Design Quality Process incorporates a Quality Audit prior to every submittal. These QA reviews, coupled with a comprehensive constructability review performed by the Project Manager and Construction Manager, will be completed prior to submitting to SCDOT. Comments will be assimilated/addressed, and plans will be revised/resubmitted expeditiously until approval of RFC plans.

With the role of Quality Acceptance being performed by the SCDOT Resident Construction Engineer (RCE), we understand that close coordination with SCDOT will be necessary to incorporate the results of independent testing into the quality program. The SCDOT Construction Manager will oversee acceptance testing, independent assurance testing, and materials certification. The Crowder+ICE Team Quality Control Manager will establish clear lines of communication in the Quality Control Plan. Sampling and testing personnel shall be SCDOT-certified and/or have the appropriate specialized certification prior to performing any work. Crowder+ICE will perform QC testing, as needed, to ensure that all workmanship and materials are compliant with the RFP contract requirements.

The Quality Control Manager's responsibilities will include both administrative and technical procedures to ensure that the work is inspected and tested to verify compliance with the released-for-construction plans, approved shop drawings, specifications, and any other contract documents. Quality Acceptance will be separate from the Contractor's QC program. However, contractor-performed QC test results for material testing will be used in the acceptance decision if they are validated and/or verified by the Owner Verification test results.

SCDOT, Stakeholder Input, and Design Standards

DESIGN CRITERIA

SCDOT SUBMITTALS	TECH PROPOSAL PLANS	Technical Proposal Plans <ul style="list-style-type: none"> • Concept validation • IDQR identifies challenges early • Constructability Review identifies issues & methods to incorporate into design • Field visits confirm concept with site • Quality audit prior to submittal
		Right of Way Plan Review <ul style="list-style-type: none"> • Checks Right of Way Plans • IDQR review details/interfaces • Constructability Review identifies issues & methods to incorporate into design • Field visits confirm concept with site • Quality audit prior to submittal • Submittal of ROW Plans
	FINAL PLANS	Final Design Review <ul style="list-style-type: none"> • Check final design • IDQR review confirms compatibility and details/interfaces • Confirms constructability • Field visit confirms compatibility of completed design • Quality audit and certification
	RFC PLANS	RFC Design Review <ul style="list-style-type: none"> • Confirm final comments are incorporated • Design discussion with SCDOT • Initial submission to SCDOT • Resolution of comments & page turn for compliance • Submittal of verification package • Submittal of RFC Plans

INNOVATION AND ADDED VALUE

The Crowder+ICE Team submitted six Alternative Technical Concepts (ATCs) that were all approved by SCDOT with the exception of ATC #4, which SCDOT provided addendum #2 addressing it. The innovation and added value for each bridge site via the approved ATCs is addressed below as well as the overall general project innovation.

In general, the Crowder+ICE Design reduces the total right-of-way footprint of 181,042 square feet as noted on the RFP Conceptual Plans by 27 percent to 131,042 square feet as noted on the technical proposal plans. This reduction reduces overall project costs to SCDOT as well as provides more schedule certainty to the Crowder+ICE Team. ATC #1 allows the Crowder+ICE team to use span increments less than 10-feet for both cored slab and box beam spans. The Crowder+ICE chose to only use cored slabs in spans less than 100-feet which allows for a more consistent construction plan and a single superstructure vendor.

Site-Specific Innovations

S-37-168 over Tributary to Choestoea Creek

ATC #4 requested approval to reduce the original bridge length. However, SCDOT released addendum #2 that reduced the bridge length to 114-feet. The Crowder+ICE Team plans to construct a 114-foot simple span bridge with AASHTO Type IV girders. This bridge type reduces long term maintenance by providing a 40-year deck riding surface. In addition, our roadway profile mirrors existing conditions reducing right-of-way impacts by approximately 53% from 32,889 square feet (RFP Conceptual Plans) to 17,647 square feet (Crowder+ICE Proposal Plans). Finally, ATC #4 and addendum #2 eliminated an interior bent providing better creek hydrology and reducing potential debris accumulation at an interior bent.

S-37-168 over Little Choestoea Creek

ATC #5 was approved revising the bridge configuration to a 98-foot simple span cored slab bridge while ATC #1 allows for the use of span increments less than 10-feet. The Crowder+ICE Team is using cored slab superstructure types on all bridges with spans less than 100-feet. This allows for a more consistent construction plan and for a single superstructure vendor.

S-37-51 over Snow Creek

ATC #2 was approved revising the bridge configuration to a 120-foot simple span with BT-65 girders from the RFP Conceptual design of a 2-span (40'-100') cored slab/box beam. This ATC reduces the bridge length by 20-feet and eliminates an interior bent. The elimination of the interior bent provides better creek hydrology, less scour susceptibility, and reduces potential debris accumulation at an interior bent. This bridge type reduces long term maintenance by providing a 40-year deck riding surface. Finally, our design reduces right-of-way impacts by approximately 40% from 12,546 square feet (RRP Conceptual Plans) to 5,025 square feet (Crowder+ICE Proposal Plans).

S-37-133 over Little Cane Creek

ATC #1 and ATC #3 were both approved where ATC #1 allowed the use of span increments less than 10-feet and ATC #3 allowed for a revised bridge length and skew angle. The Crowder+ICE Team proposal includes a 3-span (40'-96'-40') cored slab bridge reducing the overall bridge length by 24-feet and using the same superstructure type for all three spans. This allows for less construction set-up and a single superstructure vendor ensuring schedule certainty. In addition, this same superstructure type provides a more streamline biannual bridge inspection process and reporting. Our design reduces right-of-way impacts by approximately 59% from 69,285 square feet (RRP Conceptual Plans) to 41,000 square feet (Crowder+ICE Proposal Plans). Finally, the Crowder+ICE Team proposes the use of micro piles at end bent 1 negating the impact to the Central Electric overhead transmission line and potential relocation saving SCDOT approximately \$1 Million and providing a schedule savings of approximately 18 months.

S-42-197 over South Tyger River

ATC #6 was approved reducing the total bridge length from 210-feet to 205-feet. The Crowder+ICE Team proposes a 3-span (50'-95'-60') cored slab bridge reducing the overall bridge length by 5-feet and using the same superstructure type for all three spans. This allows for less construction set-up and single superstructure vendor ensuring more schedule certainty. In addition, this same superstructure type provides a more streamline biannual bridge inspection process and reporting.

APPENDIX

CONCEPTUAL PLANS



A.1 CONCEPTUAL ROADWAY PLANS

GENERAL NOTES:

SEE PLANS AND CROSS SECTIONS FOR LOCATIONS OF DITCH AND FILL SECTIONS

TIE TO EXISTING TRAFFIC LANE AND SHOULDER WIDTHS

SHOULDER WIDTH VARIES AT GUARDRAIL LOCATIONS. SEE "TYPICAL GUARDRAIL SECTION FOR OUTSIDE SHOULDER". SEE PLANS FOR GUARDRAIL LOCATIONS.

SECTION NOTES:

VARIABLE - SEE CROSS SECTIONS FOR REQUIRED SLOPE VALUES
PROVIDE SMOOTH TRANSITIONS BETWEEN SLOPE CHANGES

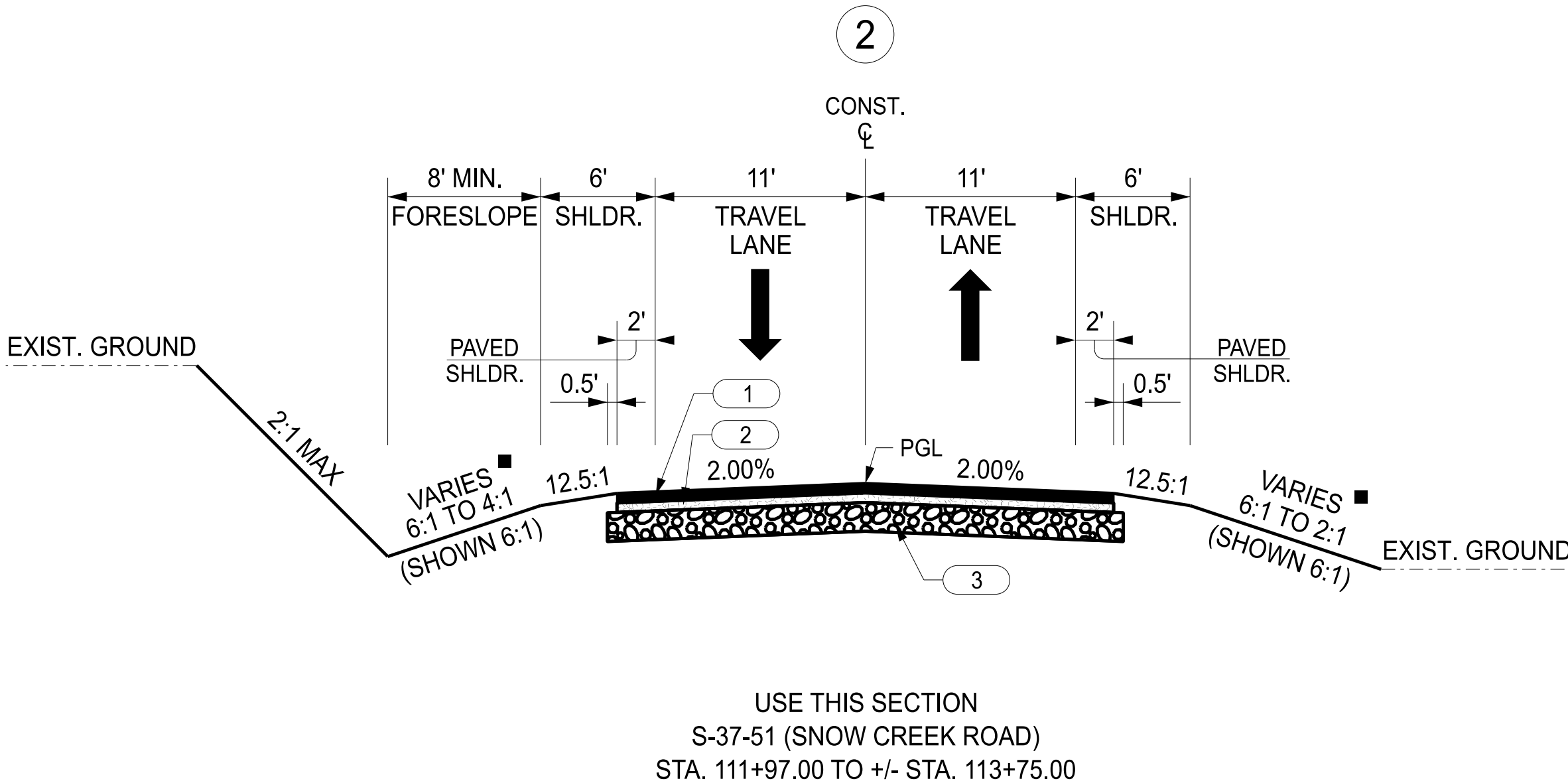
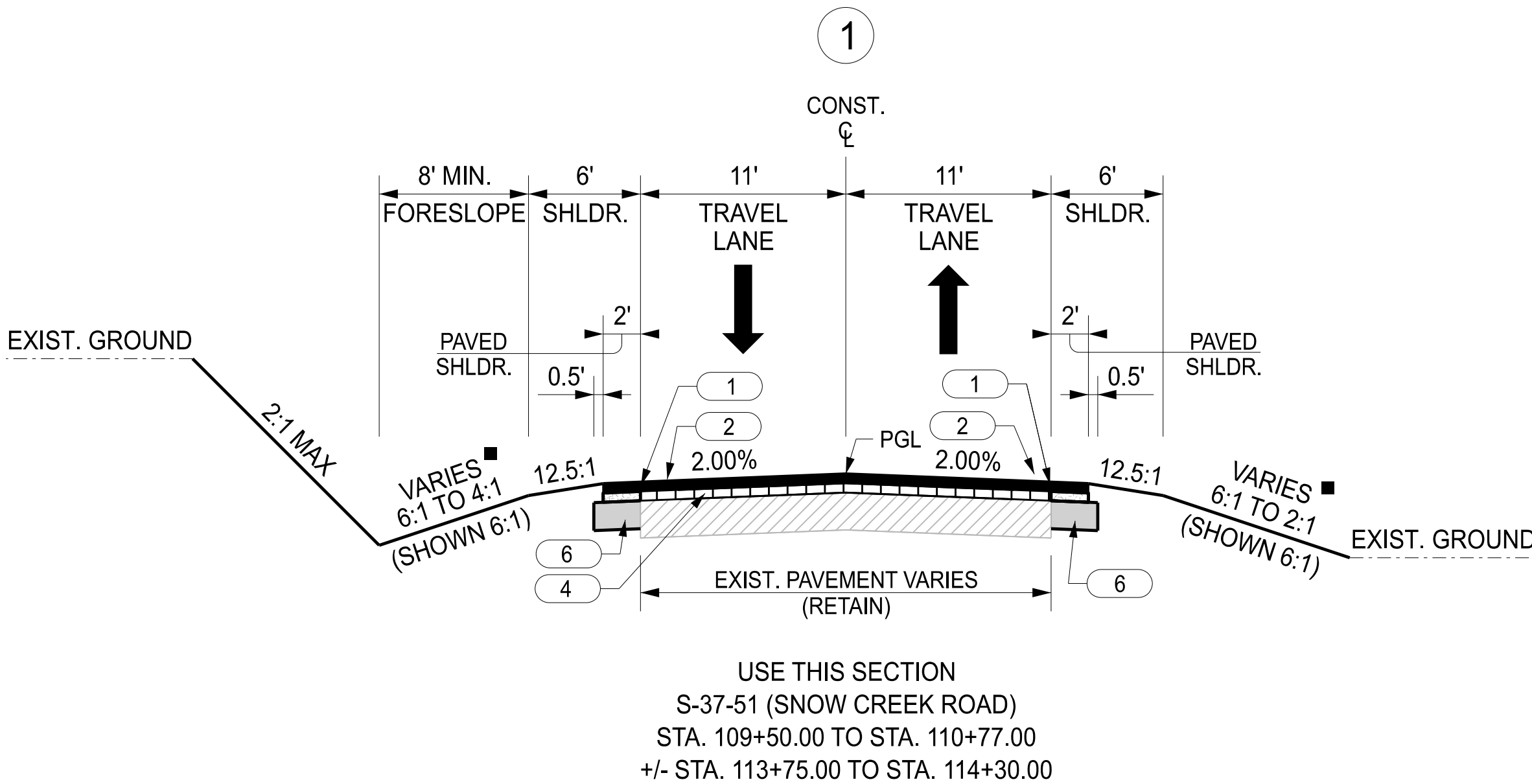
- 6:1 SLOPE 0'-5' FILL HEIGHT
- 4:1 SLOPE 5'-10' FILL HEIGHT
- 2:1 MAX SLOPE >10' FILL HEIGHT AND AT BRIDGE ENDS

DITCH SLOPES MAY BE VARIED WHEN A DEEPER DITCH IS NECESSARY FOR DRAINAGE PURPOSES, USING A MINIMUM SLOPE OF 12:1 AND A MAXIMUM SLOPE OF 4:1. WHERE A DEEPER DITCH PROVIDED BY A 4:1 SLOPE IS NECESSARY, THE DITCH SHALL BE PLACED FURTHER FROM THE CENTERLINE CONTINUING THE 4:1 SLOPE TO PROVIDE THE NECESSARY DEPTH.

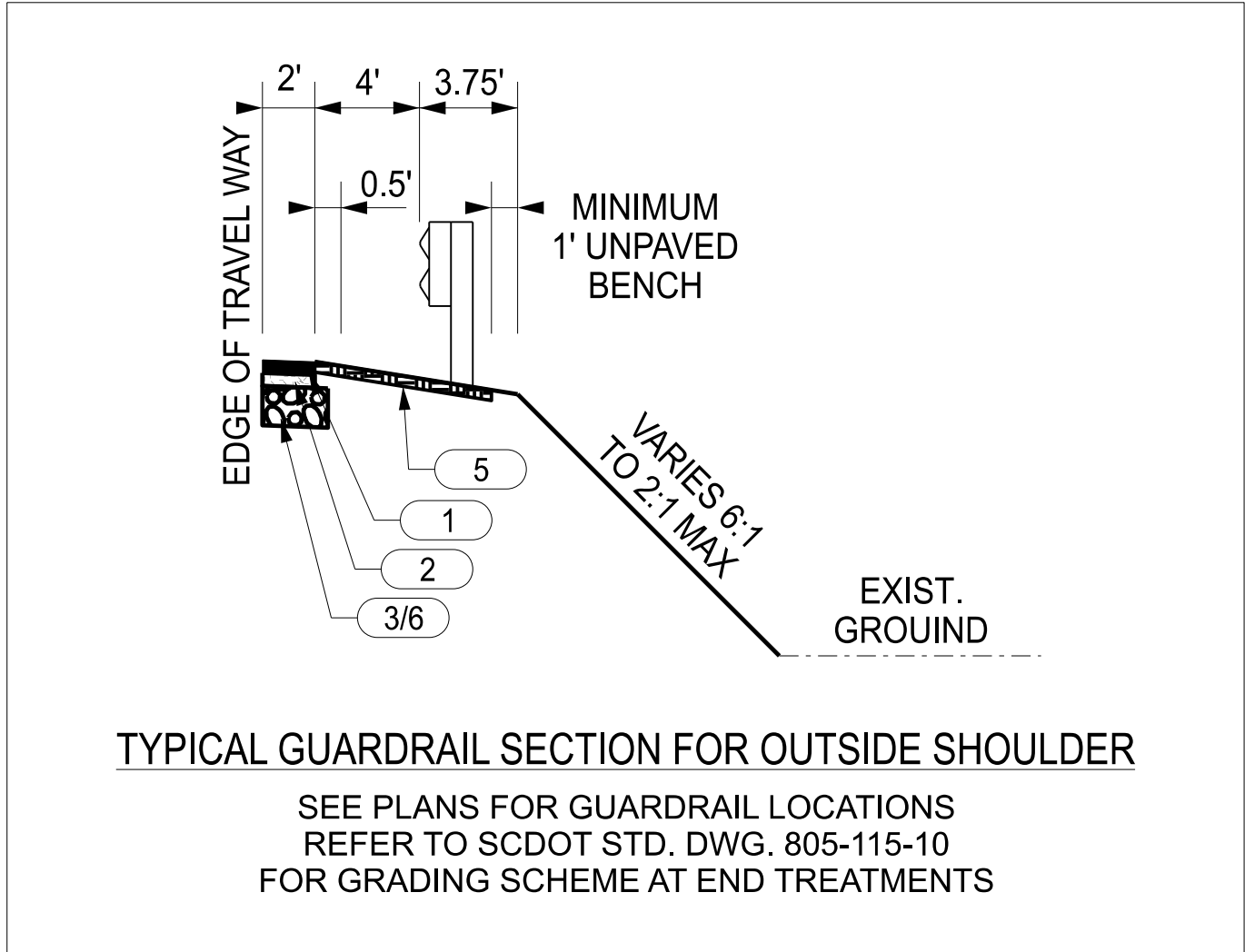
TYPICAL SECTION OF IMPROVEMENT

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

COLUMBIA, S.C.



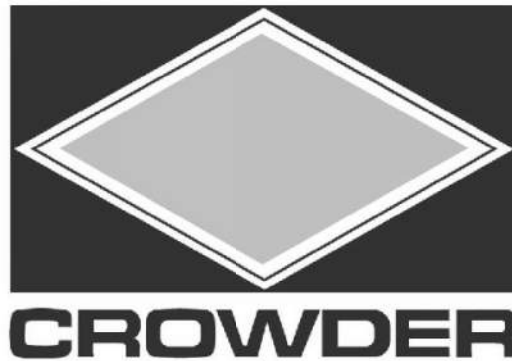
- 1 HOT MIX ASPHALT SURFACE COURSE TYPE C - 175 LBS. PER S.Y.
- 2 HOT MIX ASPHALT INTERMEDIATE COURSE TYPE C - 200 LBS. PER S.Y.
- 3 HOT MIX ASPHALT BASE COURSE TYPE B - 850 LBS. PER S.Y.
- 4 VARIABLE HOT MIX ASPHALT FOR BUILD-UP
HOT MIX ASPHALT SURFACE TYPE E (LESS THAN OR EQUAL TO 1.5")
HOT MIX ASPHALT INTERMEDIATE TYPE B (GREATER THAN 1.5")
- 5 4" HOT MIX ASPHALT SURFACE COURSE (NON-MOW STRIP)
- 6 SHOULDER WIDENING MATERIAL - 600 LBS. PER S.Y.



TYPICAL GUARDRAIL SECTION FOR OUTSIDE SHOULDER

SEE PLANS FOR GUARDRAIL LOCATIONS
REFER TO SCDOT STD. DWG. 805-115-10
FOR GRADING SCHEME AT END TREATMENTS

\$\$\$USER\$\$\$ \$\$\$\$DATE\$\$\$ \$\$\$\$TIME\$\$\$
\$\$\$FILE\$\$\$



NO. S-37-51
FUNCTIONAL CLASSIFICATION RURAL - MAJOR COLLECTOR

DESIGN SPEED
MPH 40
FROM STA. 109+50.00
TO STA. 114+30.00

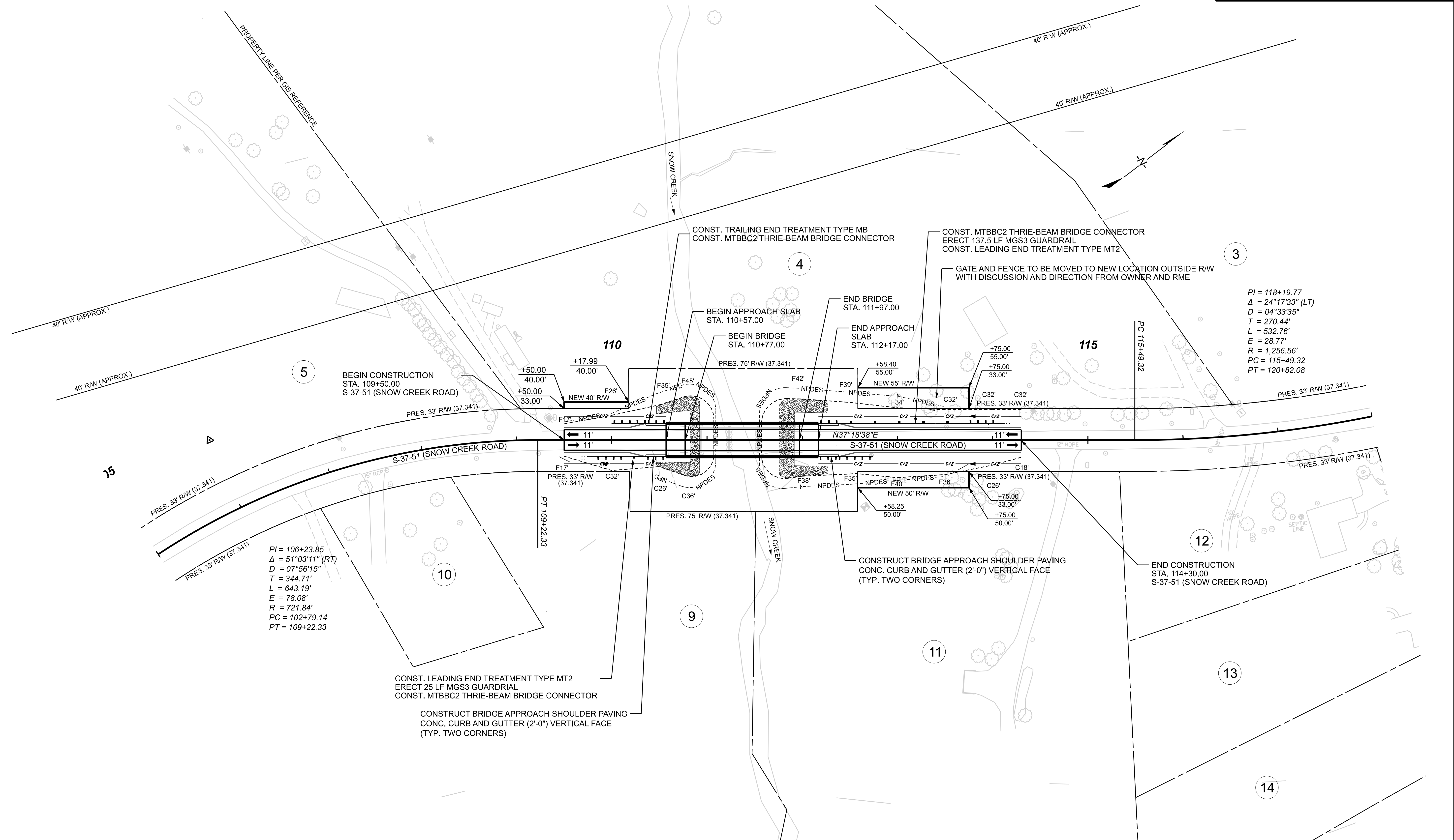


SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

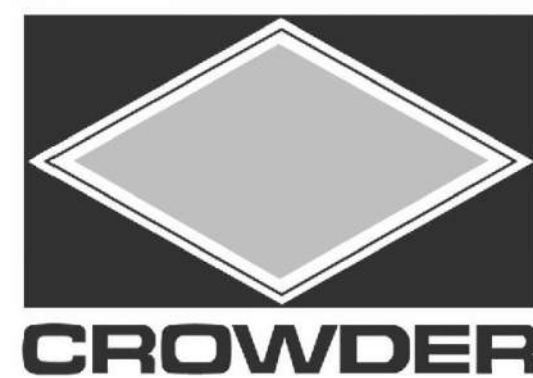
S-37-51 (SNOW CREEK ROAD)
OVER SNOW CREEK
TYPICAL SECTION SHEET

SCALE = N.T.S.

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-51	6



\$\$\$USER\$\$ \$DATE\$ \$TIME\$\$
 \$\$\$FILE\$



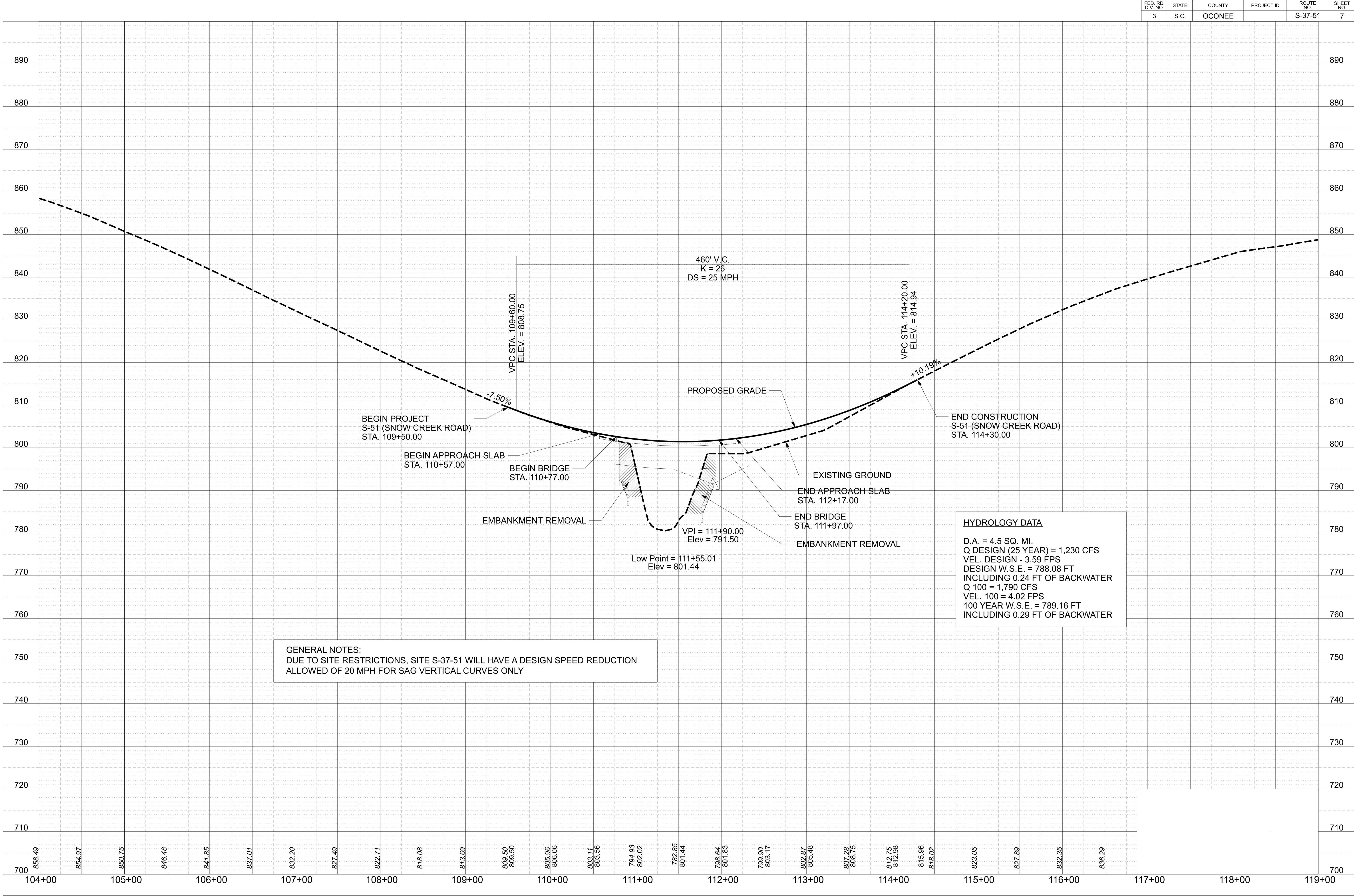
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REV. NO.	BY	DATE	DESCRIPTION OF REVISION

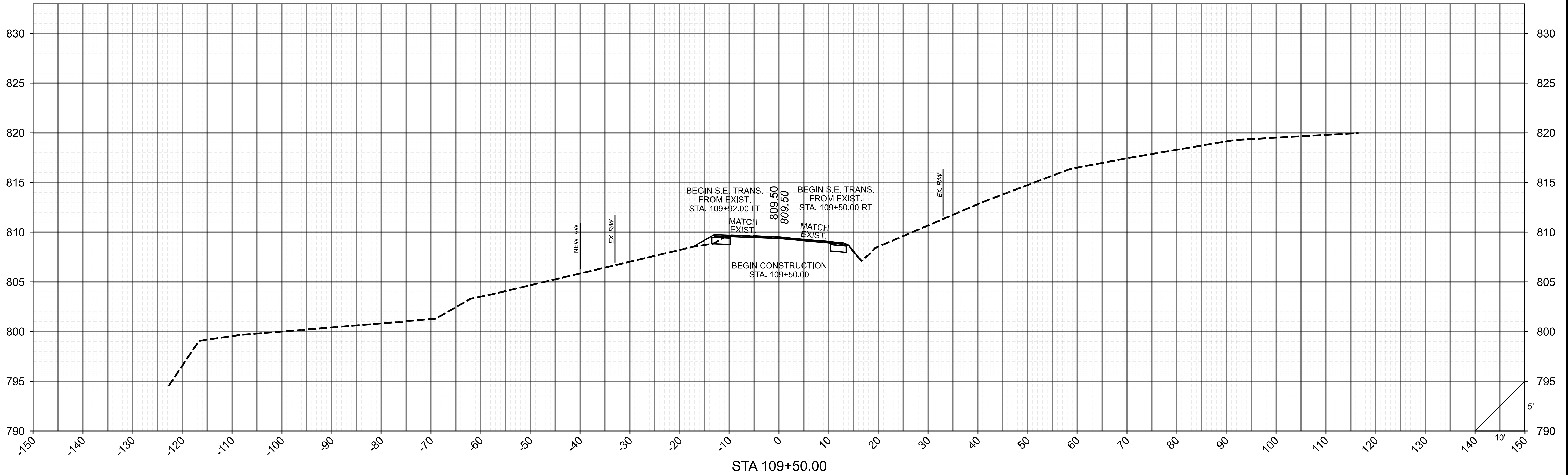
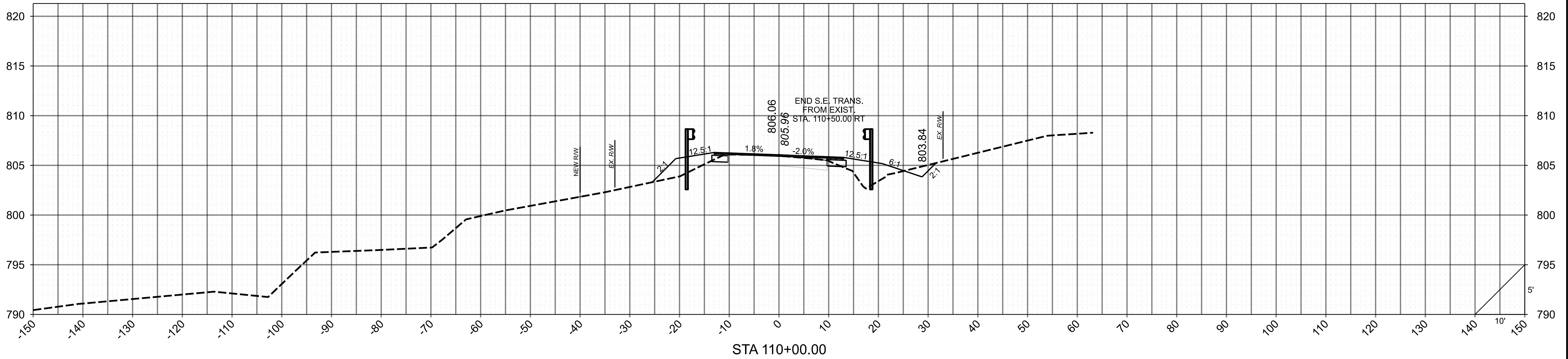
SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

S-37-51 (SNOW CREEK ROAD)
OVER SNOW CREEK
PLAN SHEET

SCALE 1" = 50'

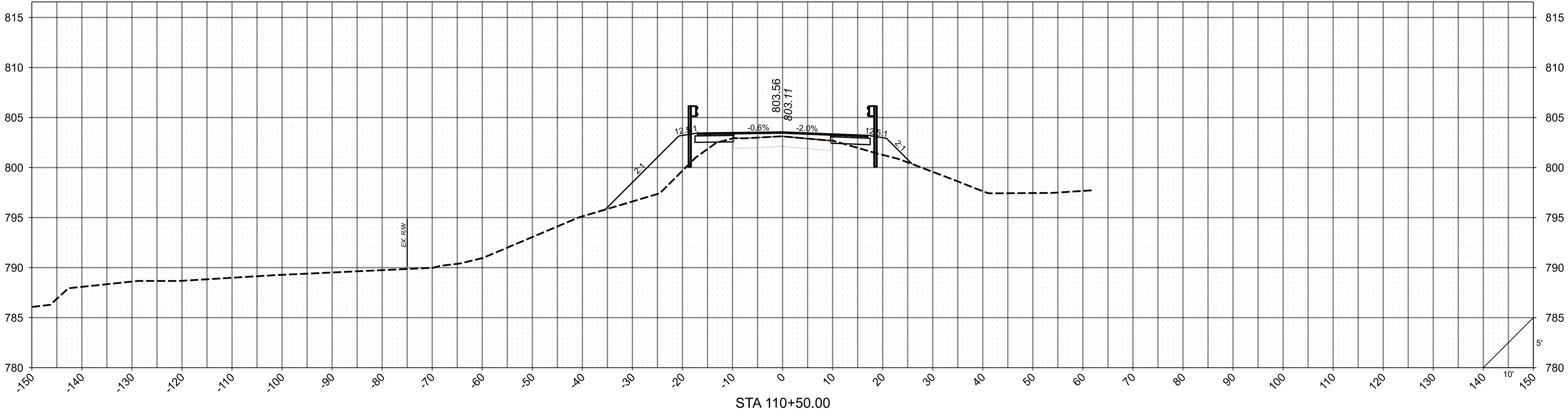
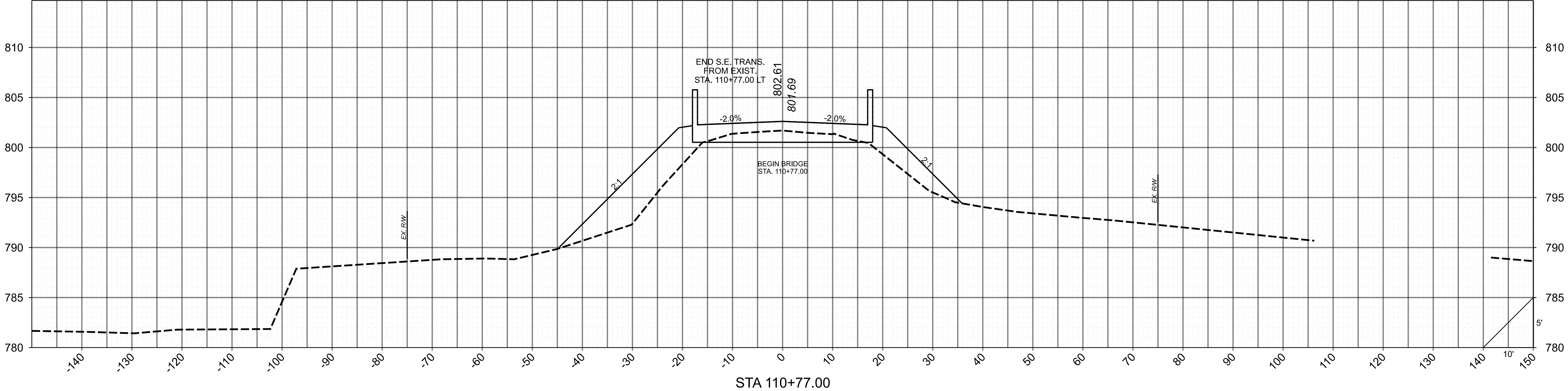
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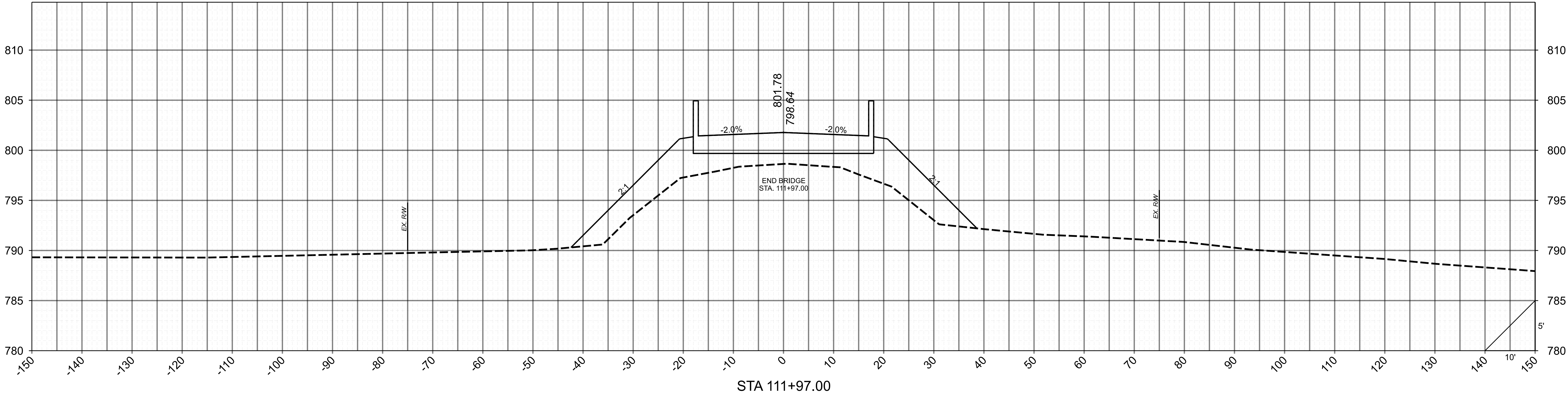
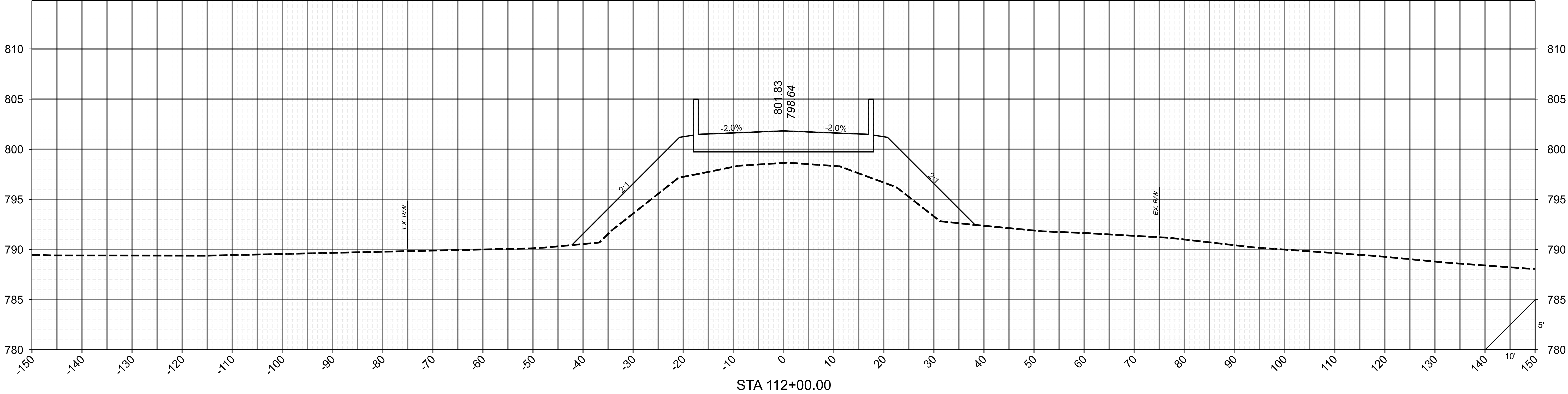


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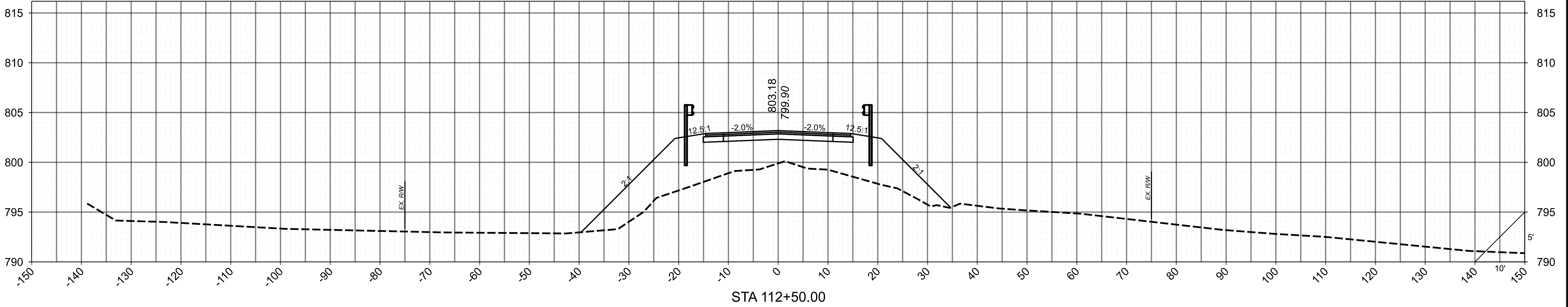
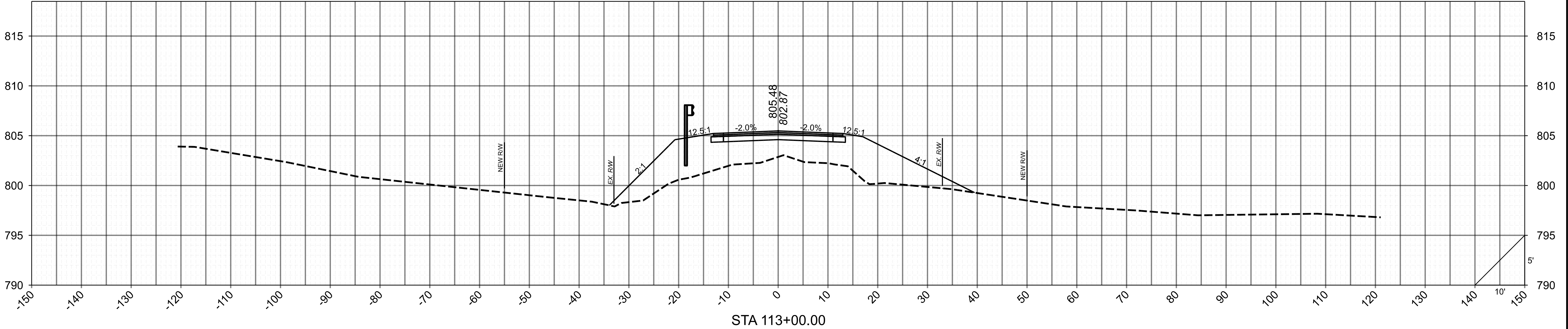
FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-51	X2



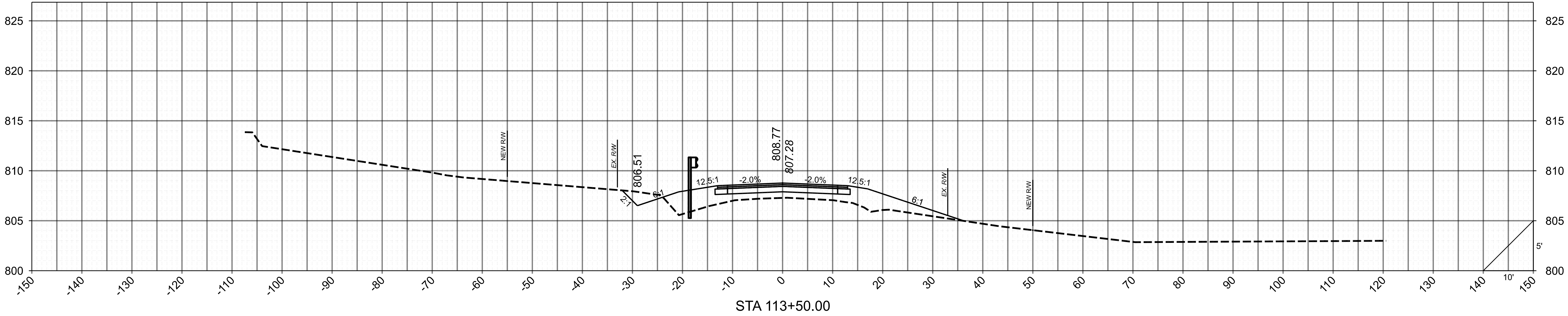
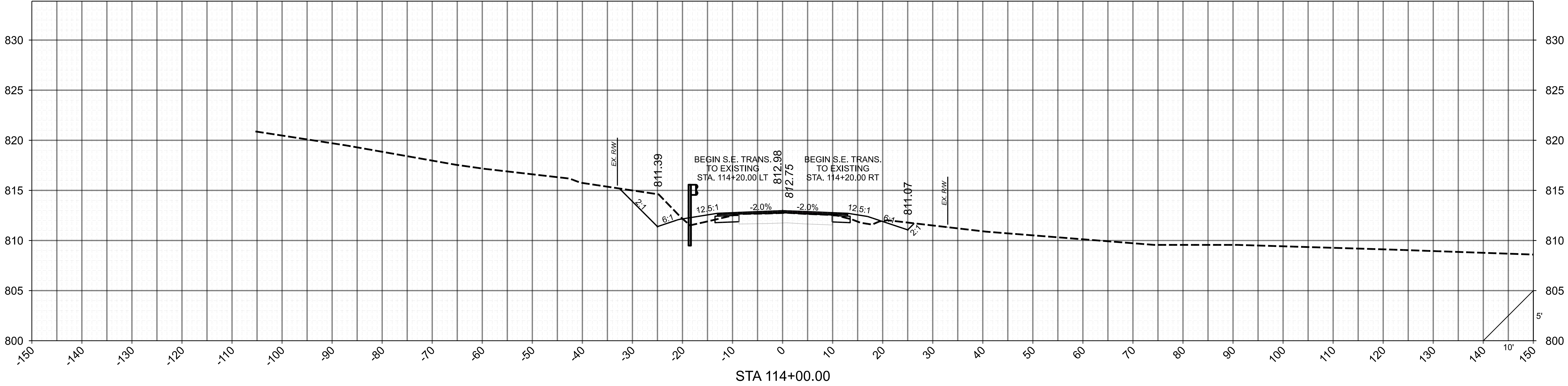
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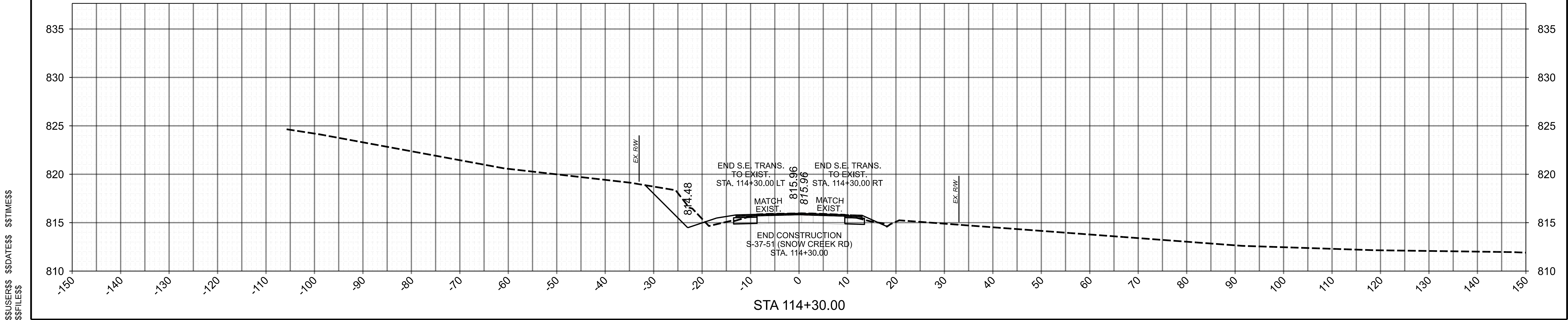
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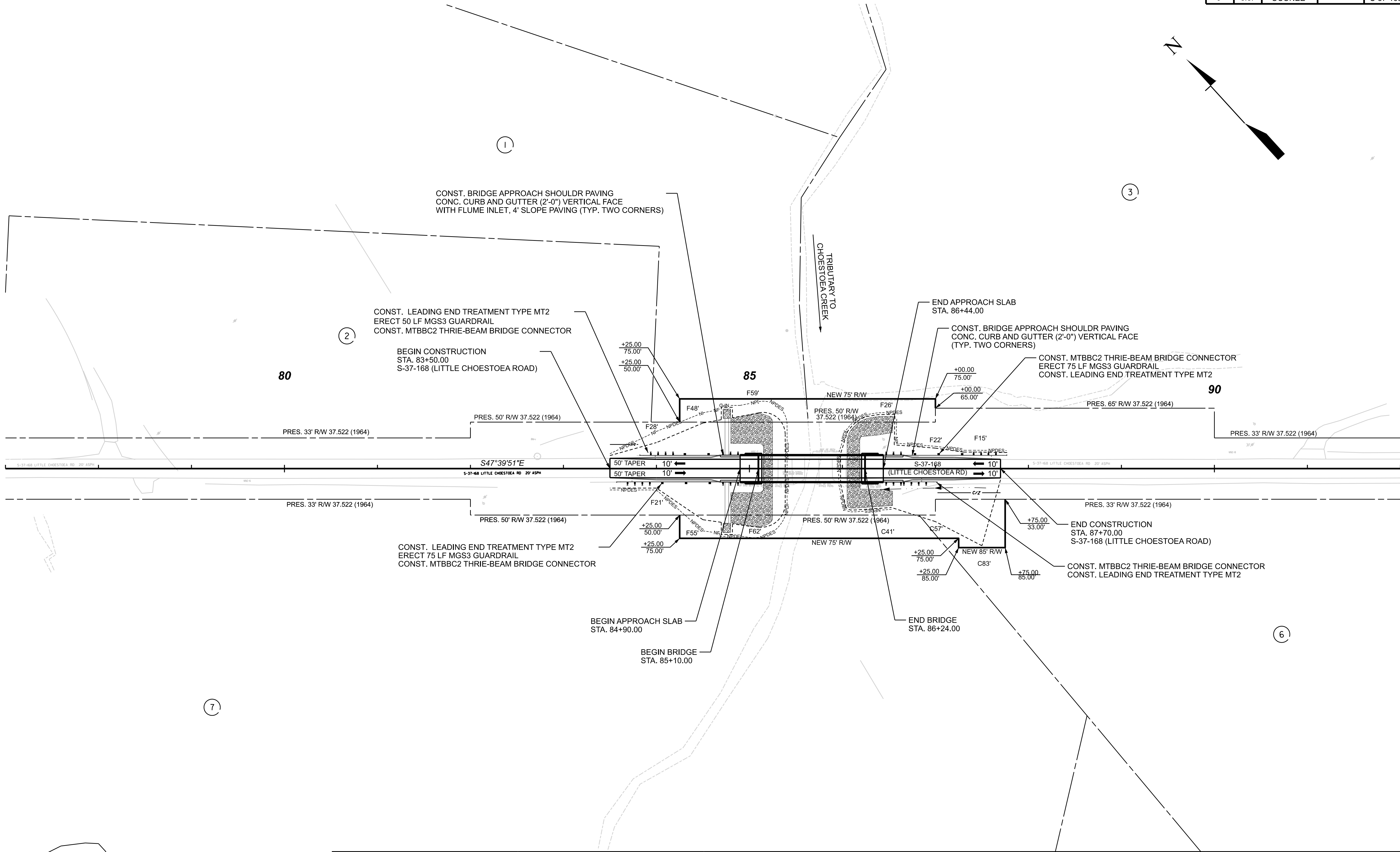
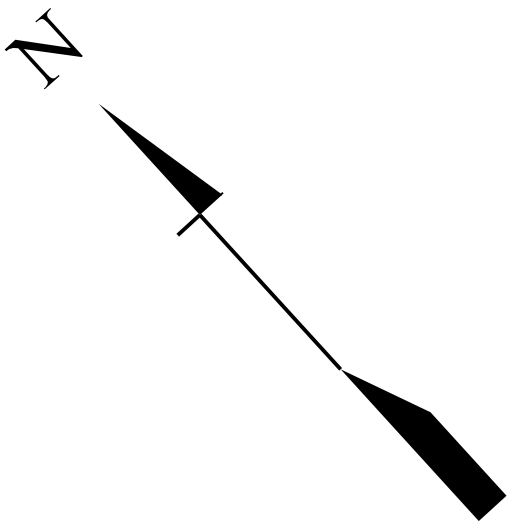
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\$\$\$DATE\$\$\$
\$\$\$TIME\$\$\$

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-51	X6



FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-168	6



\$\$\$USERS\$ \$SDATE\$\$\$ \$STIME\$\$\$
\$\$\$FILE\$\$\$

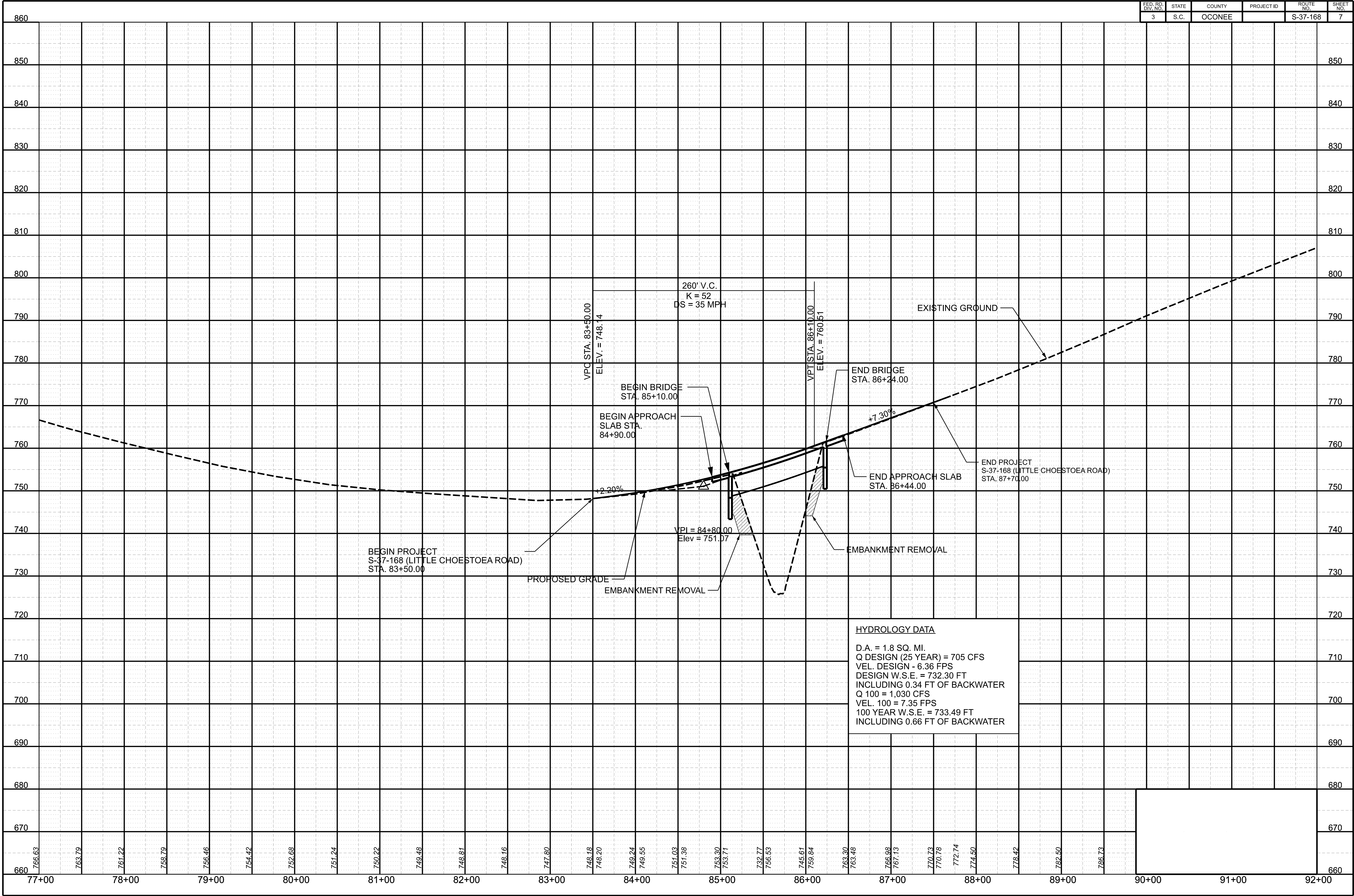


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REV. NO.	BY	DATE	DESCRIPTION OF REVISION

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

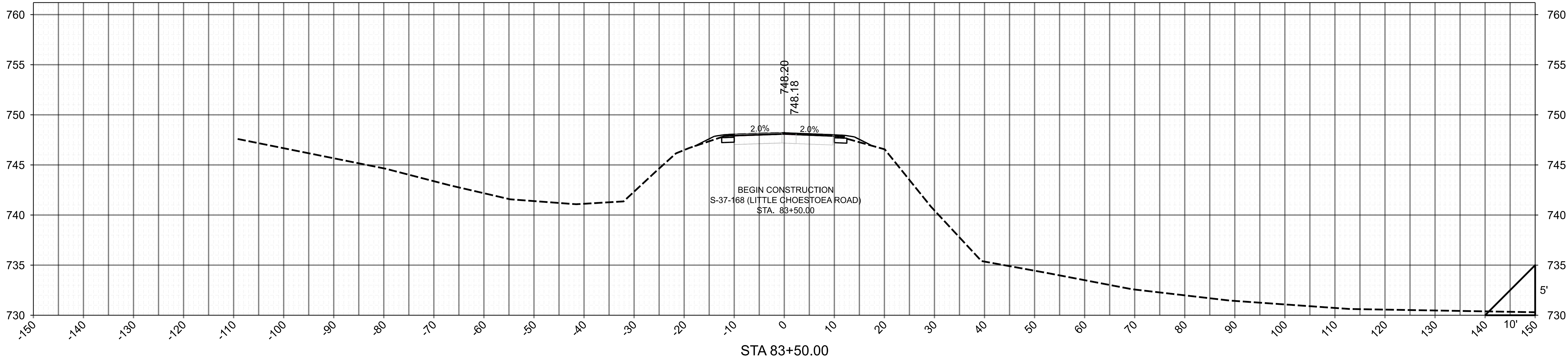
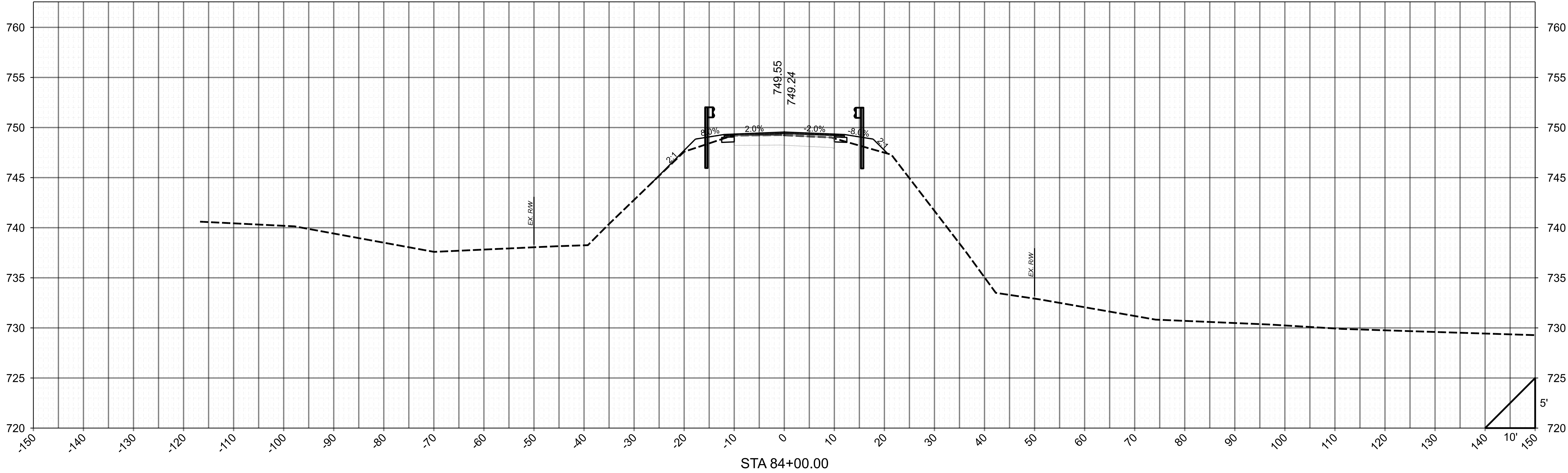
S-37-168 (LITTLE
CHOESTOE A) OVER
CHOESTOE A CREEK
TRIBUTARY PLAN SHEET

SCALE 1"=50'



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FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-168	X1

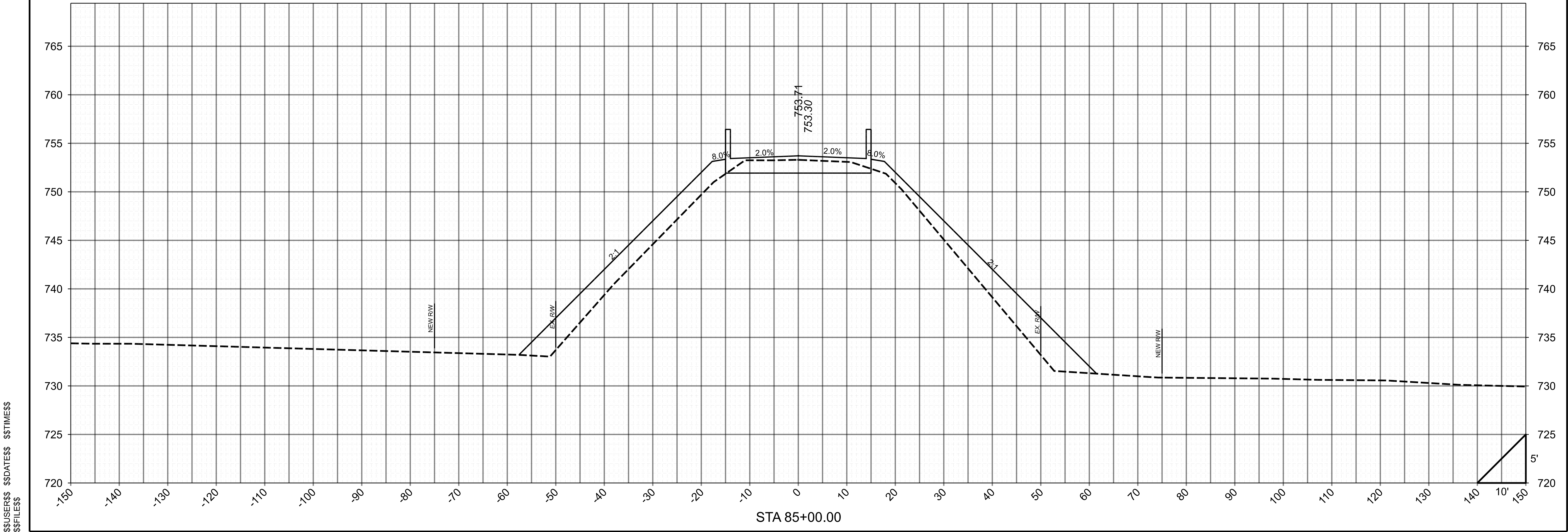


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FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-168	X2

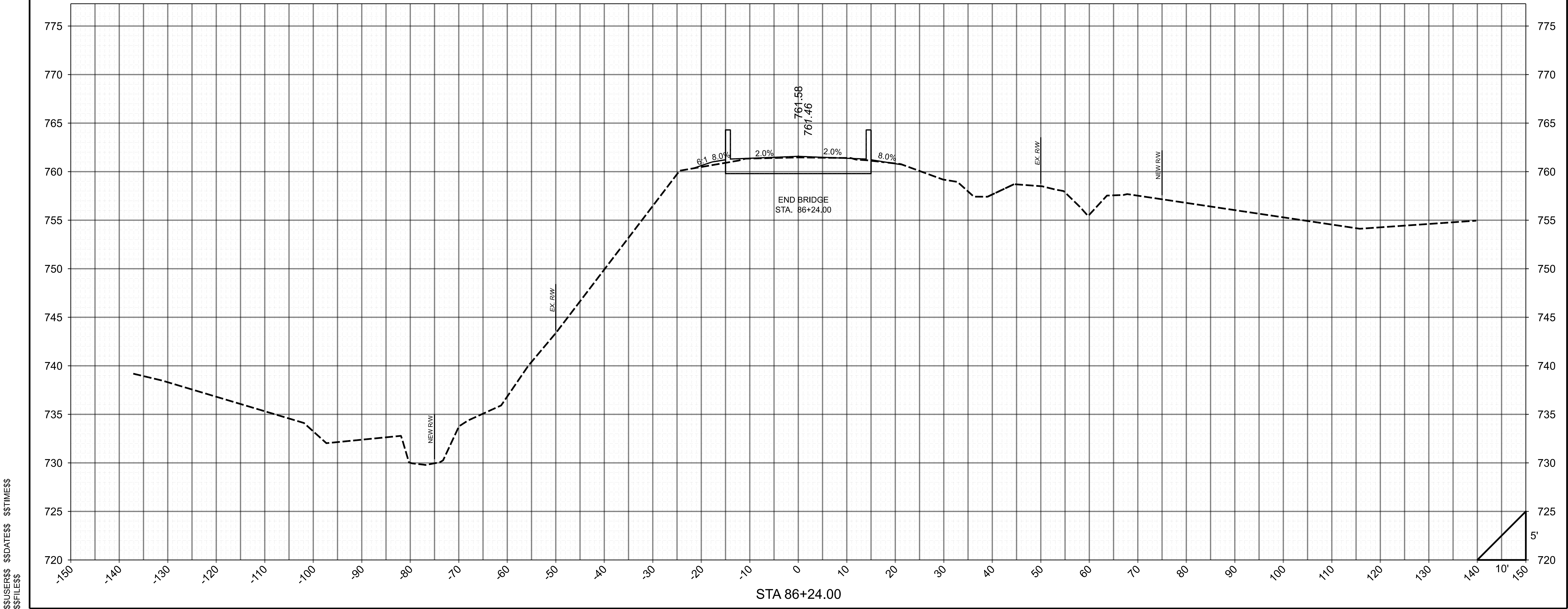


FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-168	X3

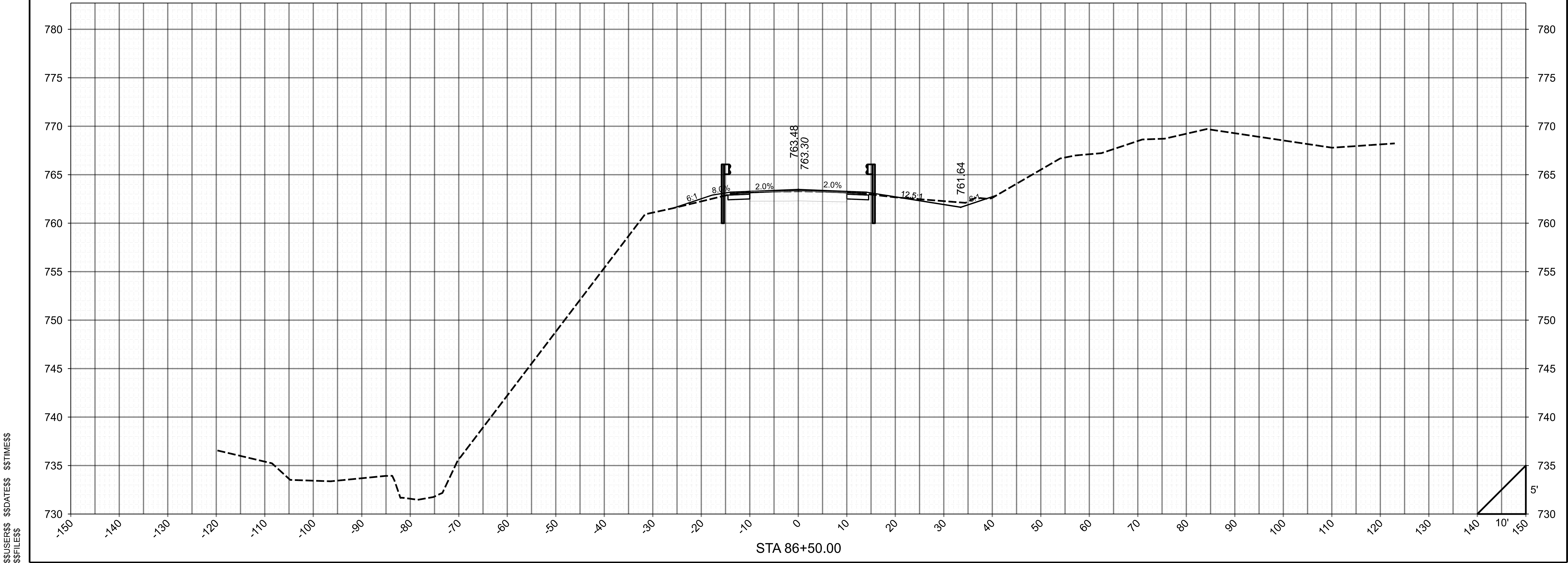


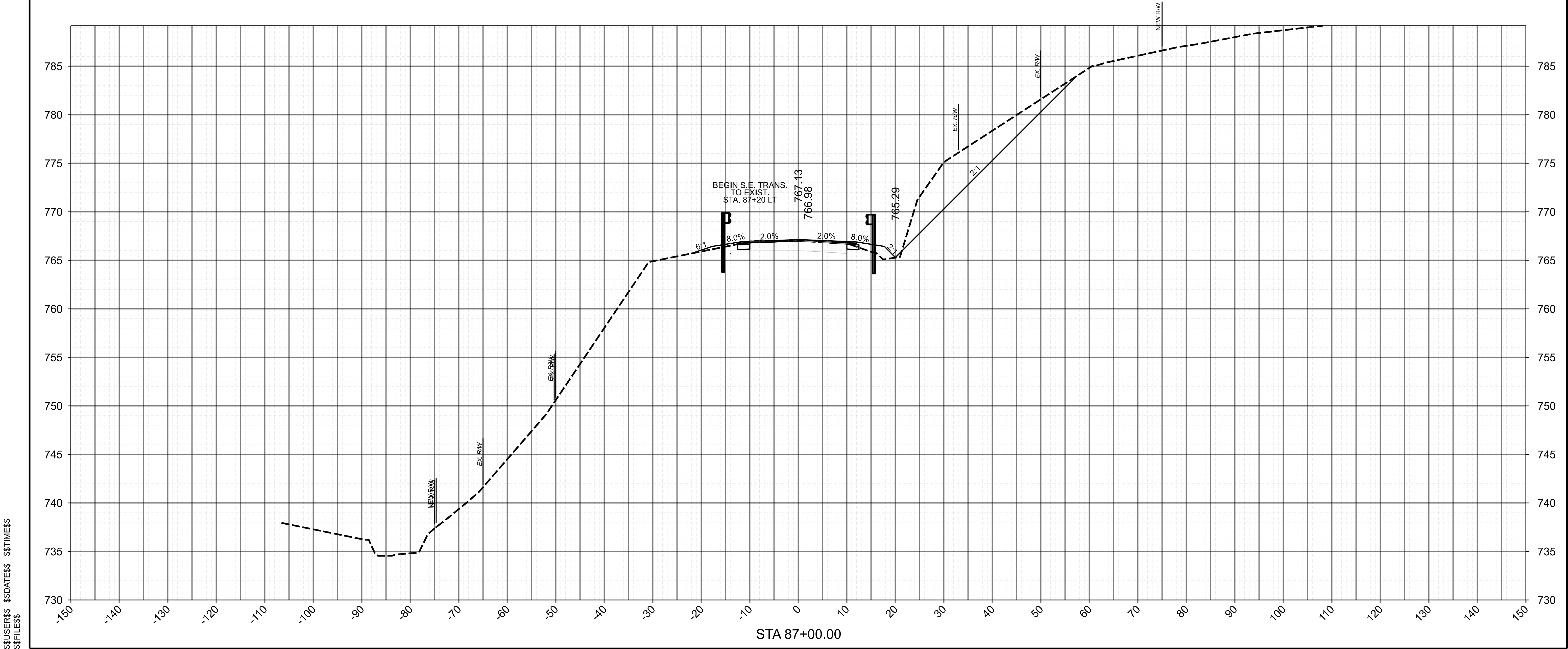


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3	S.C.	OCONEE		S-37-168	X5

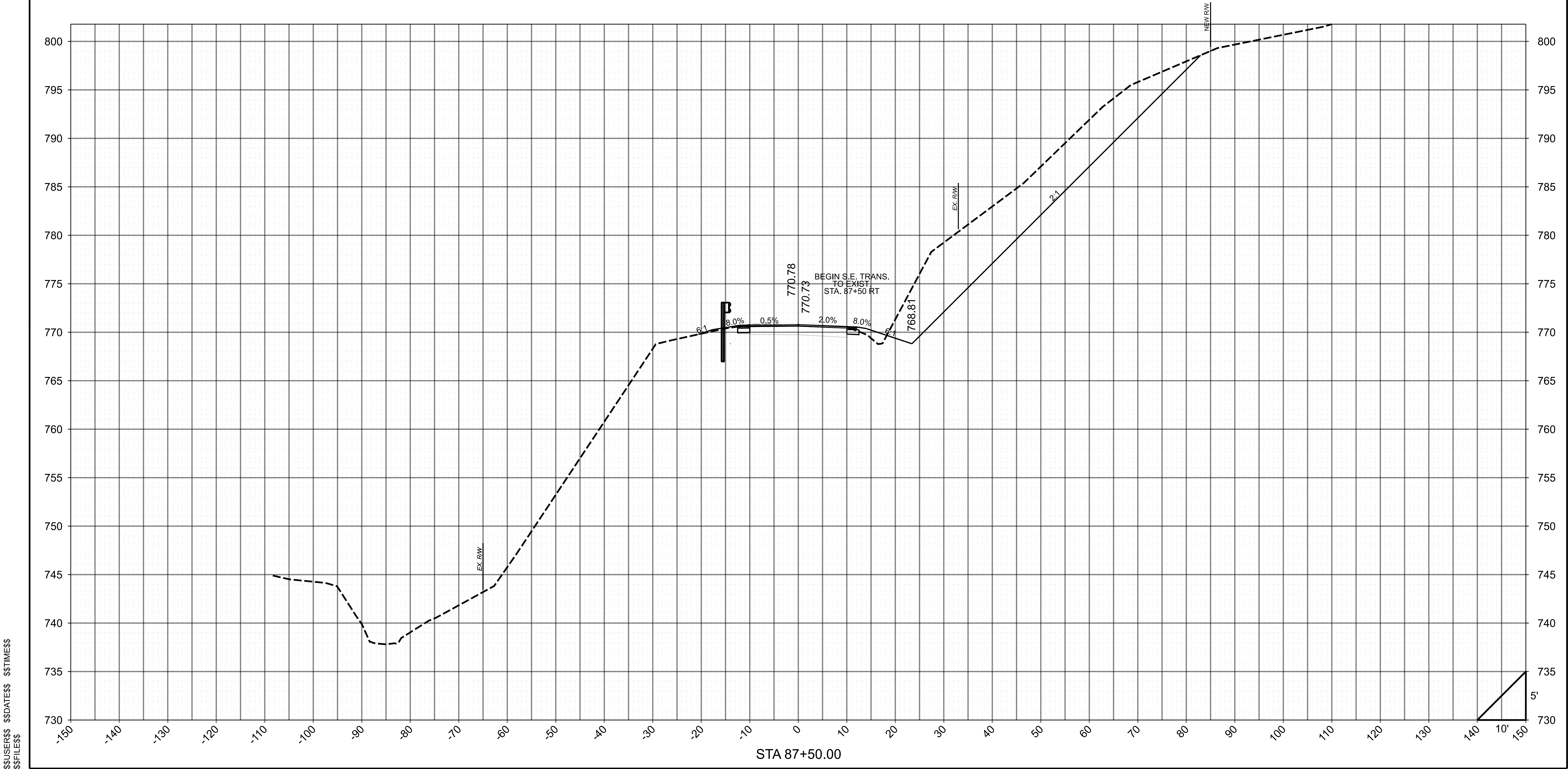


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3	S.C.	OCONEE		S-37-168	X6

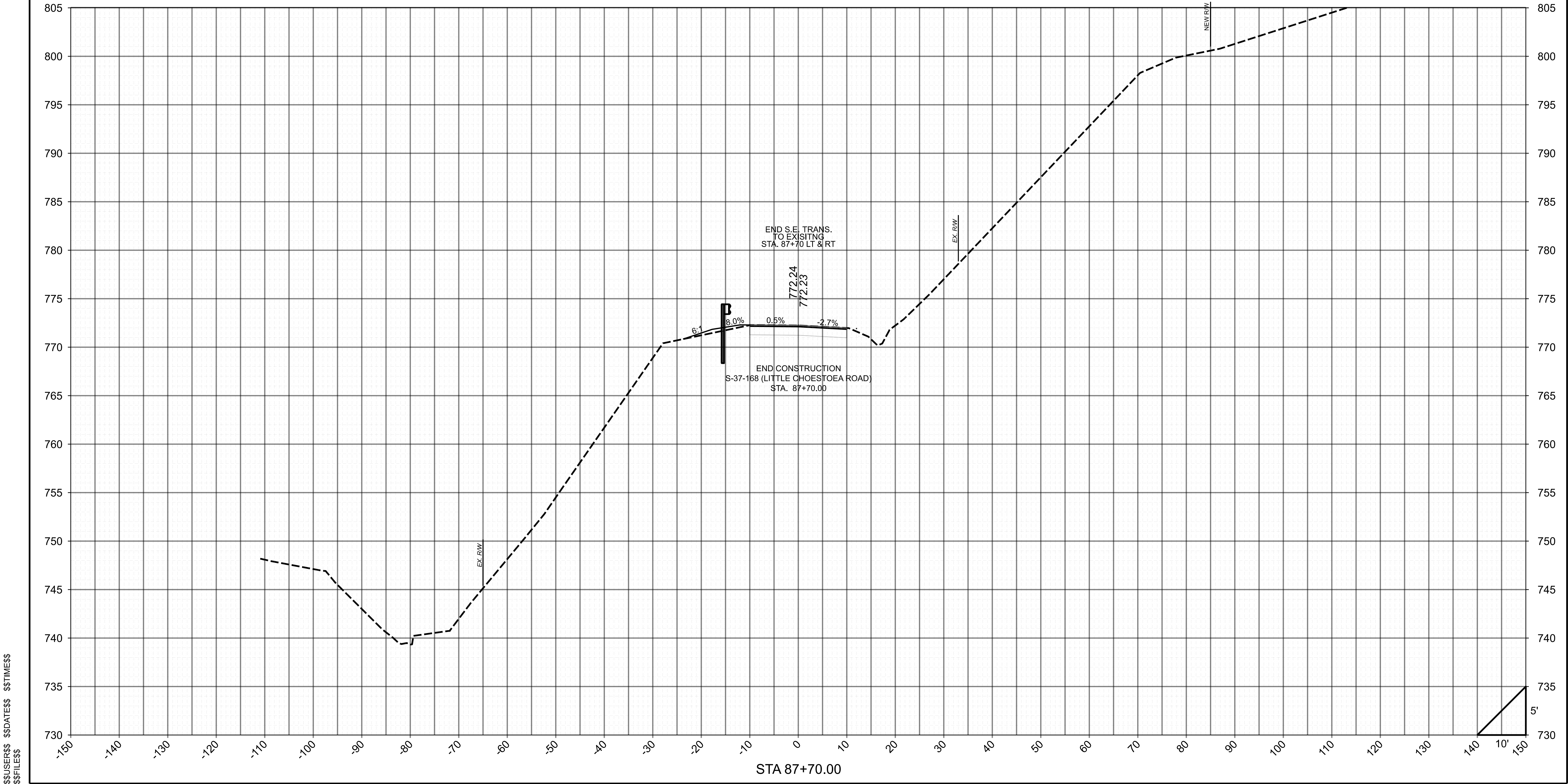




FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-168	X8



FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-168	X9



FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-133	3

TYPICAL SECTION OF IMPROVEMENT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

GENERAL NOTES:

SEE PLANS AND CROSS SECTIONS FOR LOCATIONS OF DITCH AND FILL SECTIONS

TIE TO EXISTING TRAFFIC LANE AND SHOULDER WIDTHS

SHOULDER WIDTH VARIES AT GUARDRAIL LOCATIONS, SEE "TYPICAL GUARDRAIL SECTION FOR OUTSIDE SHOULDER". SEE PLANS FOR GUARDRAIL LOCATIONS.

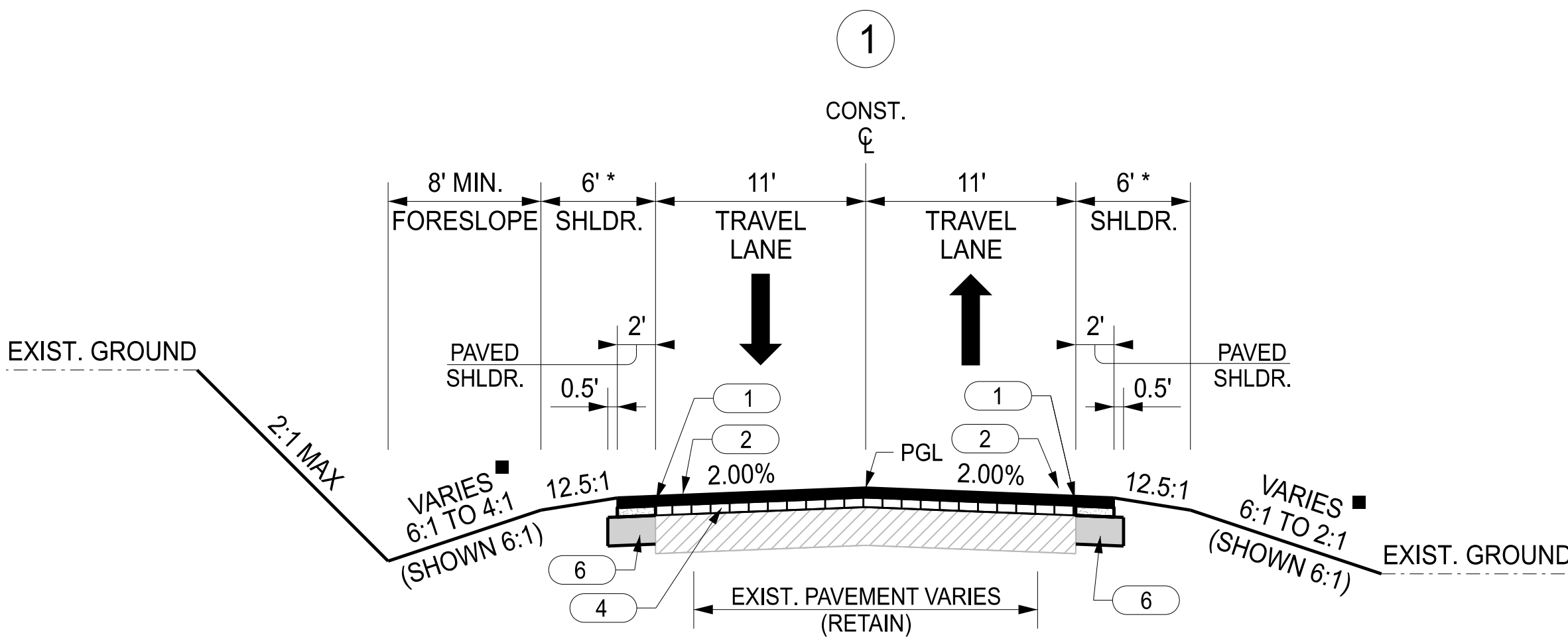
SECTION NOTES:

VARIABLE - SEE CROSS SECTIONS FOR REQUIRED SLOPE VALUES
PROVIDE SMOOTH TRANSITIONS BETWEEN SLOPE CHANGES

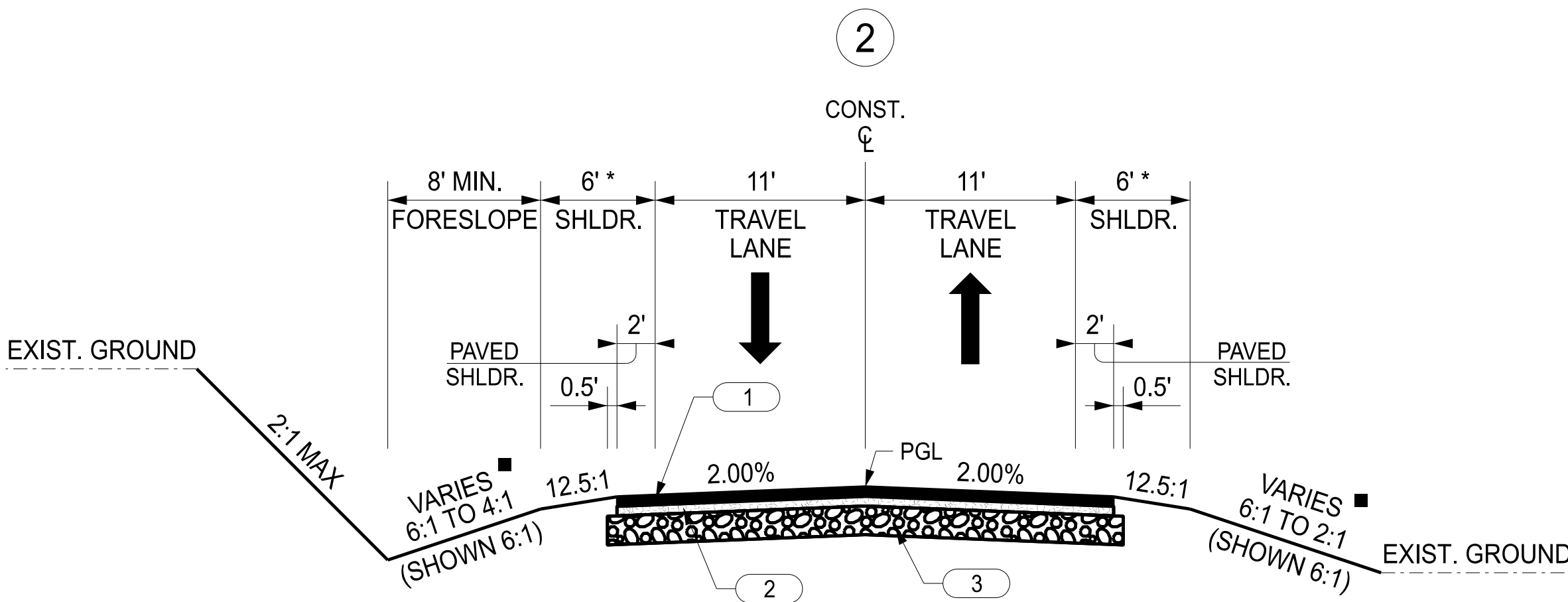
- 6:1 SLOPE 0'-5' FILL HEIGHT
- 4:1 SLOPE 5'-10' FILL HEIGHT
- 2:1 MAX SLOPE >10' FILL HEIGHT AND AT BRIDGE ENDS

DITCH SLOPES MAY BE VARIED WHEN A DEEPER DITCH IS NECESSARY FOR DRAINAGE PURPOSES, USING A MINIMUM SLOPE OF 12:1 AND A MAXIMUM SLOPE OF 4:1. WHERE A DEEPER DITCH PROVIDED BY A 4:1 SLOPE IS NECESSARY, THE DITCH SHALL BE PLACED FURTHER FROM THE CENTERLINE CONTINUING THE 4:1 SLOPE TO PROVIDE THE NECESSARY DEPTH.







* ADD 3.75' WHERE GUARDRAIL IS ERECTED.



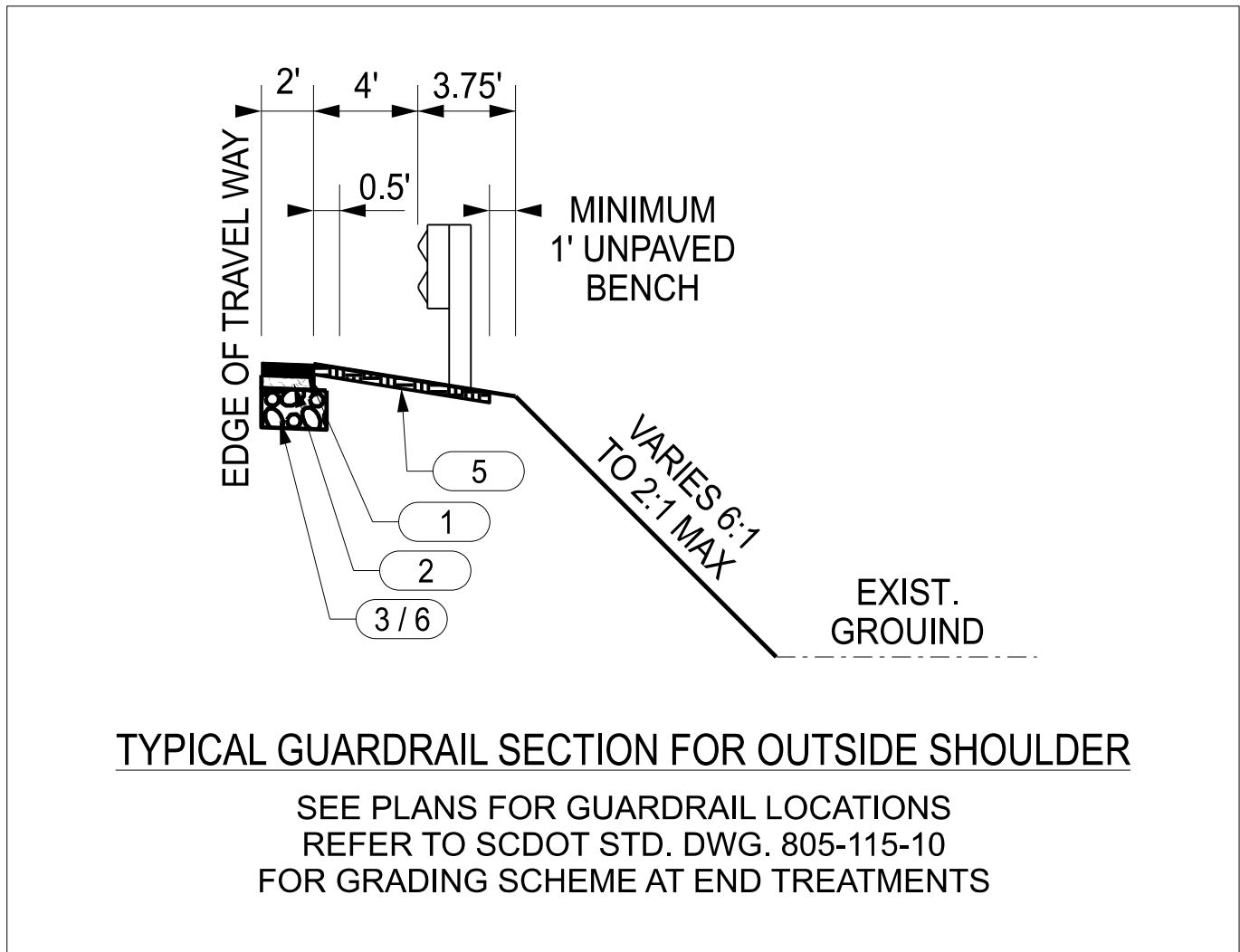
USE THIS SECTION
S-37-133 (BURNS MILL ROAD)
STA. 31+62.50 TO STA. +/- 32+25.00
STA. +/- 37+25.00 TO STA. 37+89.00



USE THIS SECTION
S-37-133 (BURNS MILL ROAD)
STA. +/- 32+25.00 TO STA. 34+63.00
STA. 36+39.00 TO STA. +/- 37+25.00



- | | | |
|---|---|--|
|  | 1 | HOT MIX ASPHALT SURFACE COURSE TYPE C - 175 LBS. PER S.Y. |
|  | 2 | HOT MIX ASPHALT INTERMEDIATE COURSE TYPE C - 200 LBS. PER S.Y. |
|  | 3 | HOT MIX ASPHALT BASE COURSE TYPE B - 850 LBS. PER S.Y. |
| | | VARIABLE HOT MIX ASPHALT FOR BUILD-UP |
|  | 4 | HOT MIX ASPHALT SURFACE TYPE E (LESS THAN OR EQUAL TO 1.5") |
| | | HOT MIX ASPHALT INTERMEDIATE TYPE B (GREATER THAN 1.5") |
|  | 5 | 4" HOT MIX ASPHALT SURFACE COURSE (NON-MOW STRIP) |
|  | 6 | SHOULDER WIDENING MATERIAL - 600 LBS. PER S.Y. |

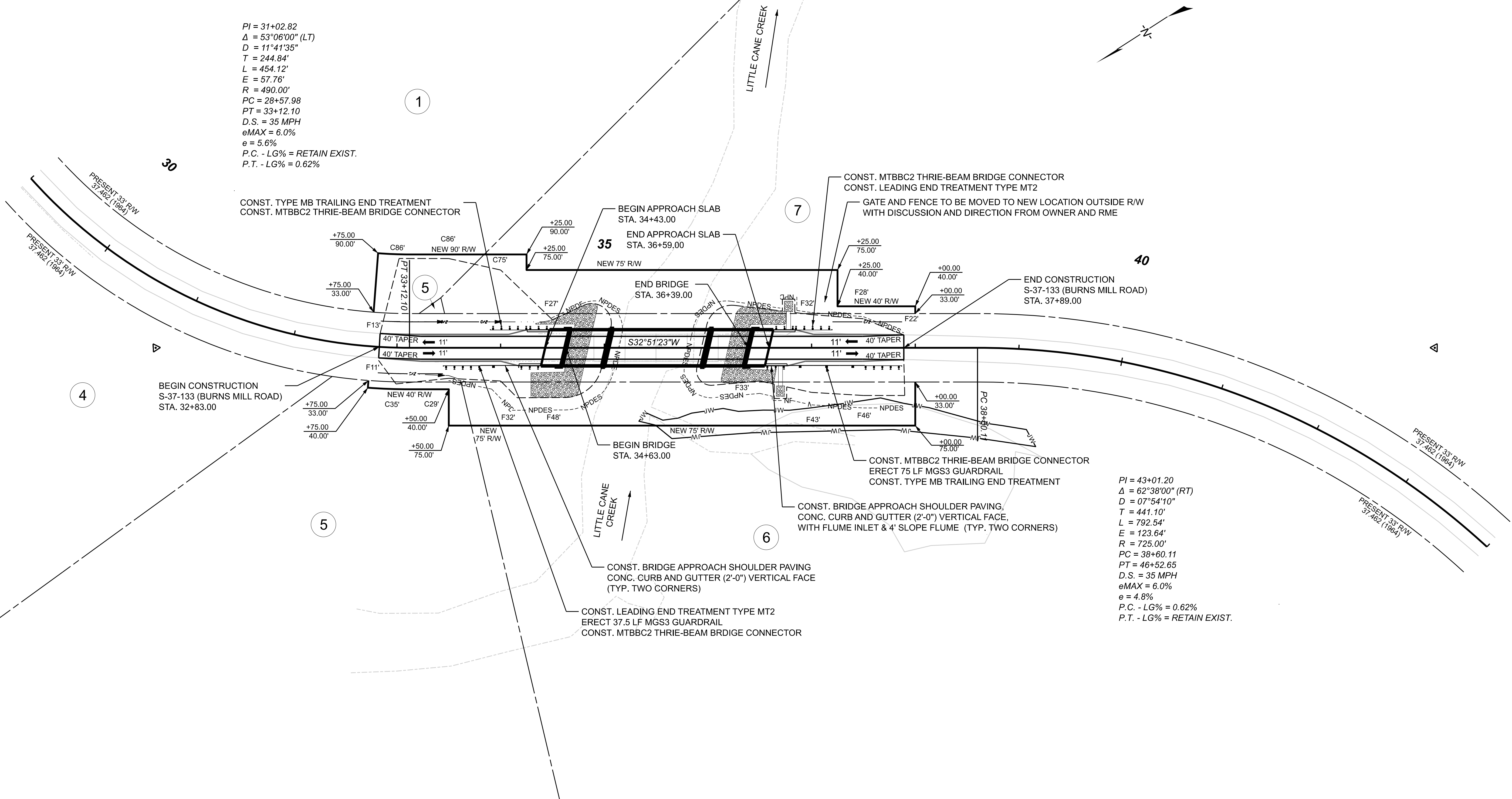
FOR SITE S-37-133, A DESIGN SPEED REDUCTION WILL BE IMPLEMENTED AS NECESSARY TO MEET OR IMPROVE THE EXISTING ROADWAY CONDITIONS



TYPICAL GUARDRAIL SECTION FOR OUTSIDE SHOULDER

SEE PLANS FOR GUARDRAIL LOCATIONS
REFER TO SCDOT STD. DWG. 805-115-10
FOR GRADING SCHEME AT END TREATMENTS

	NO.	FUNCTIONAL CLASSIFICATION	DESIGN SPEED				SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION COLUMBIA, S.C.
	S-37-133	RURAL - LOCAL GROUP 4	MPH	FROM STA.	TO STA.		
			35	31+62.50	37+89.00		
						S-37-133 (BURNS MILL ROAD) OVER LITTLE CANE CREEK TYPICAL SECTION SHEET	
						SCALE = N.T.S.	



PI = 31+02.82
Δ = 53°06'00" (LT)
D = 11°41'35"
T = 244.84'
L = 454.12'
E = 57.76'
R = 490.00'
PC = 28+57.98
PT = 33+12.10
D.S. = 35 MPH
eMAX = 6.0%
e = 5.6%
P.C. - LG% = RETAIN EXIST.
P.T. - LG% = 0.62%

PI = 43+01.20
Δ = 62°38'00" (RT)
D = 07°54'10"
T = 441.10'
L = 792.54'
E = 123.64'
R = 725.00'
PC = 38+60.11
PT = 46+52.65
D.S. = 35 MPH
eMAX = 6.0%
e = 4.8%
P.C. - LG% = 0.62%
P.T. - LG% = RETAIN EXIST.

\$\$\$USERS\$ \$SDATES\$ \$STIME\$
\$\$\$FILES\$

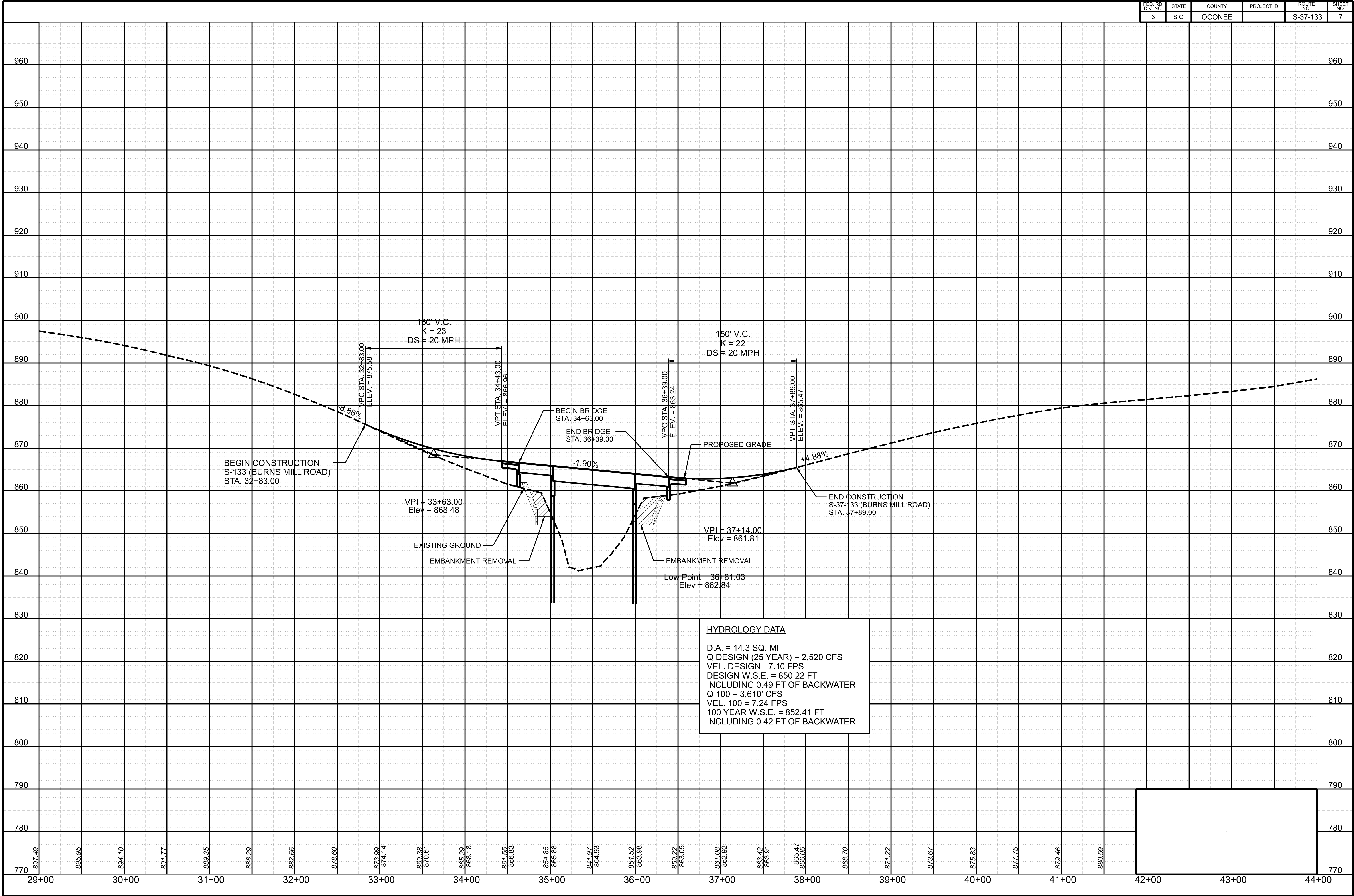


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REV. NO.	BY	DATE	DESCRIPTION OF REVISION

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

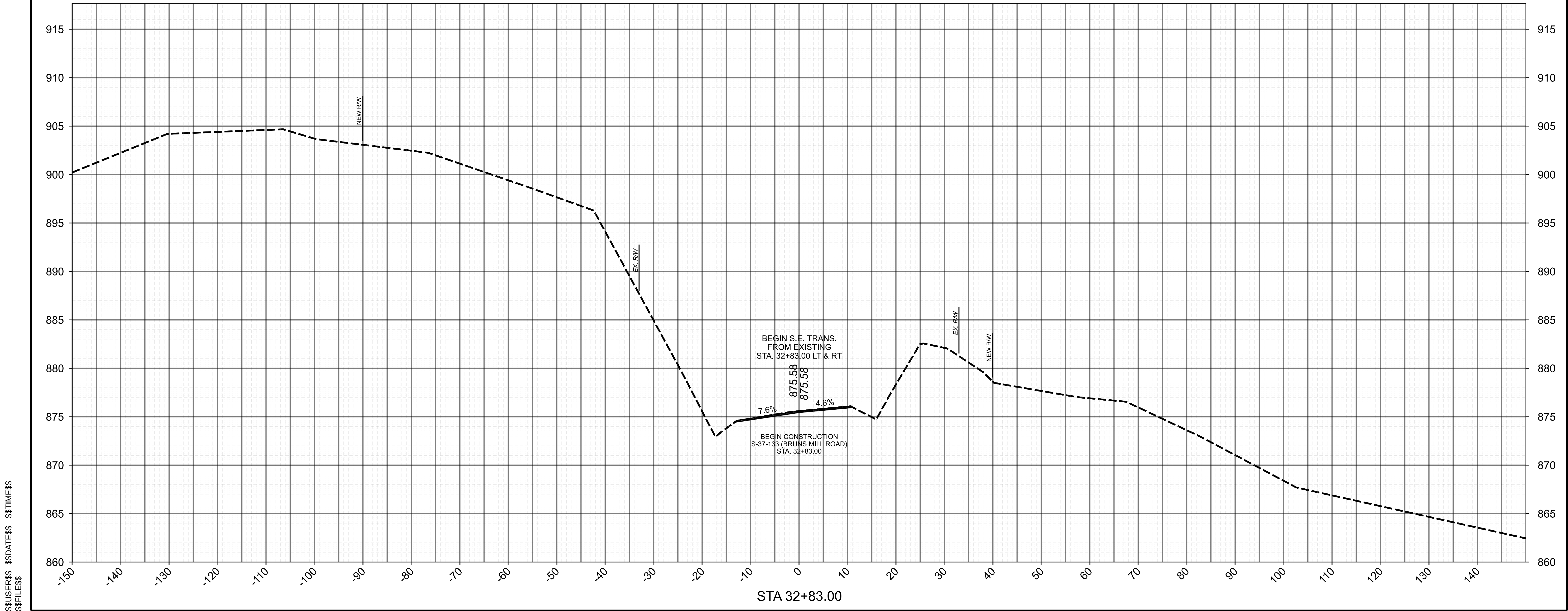
S-37-133 (BURNS MILL ROAD)
OVER LITTLE CANE CREEK
PLAN SHEET

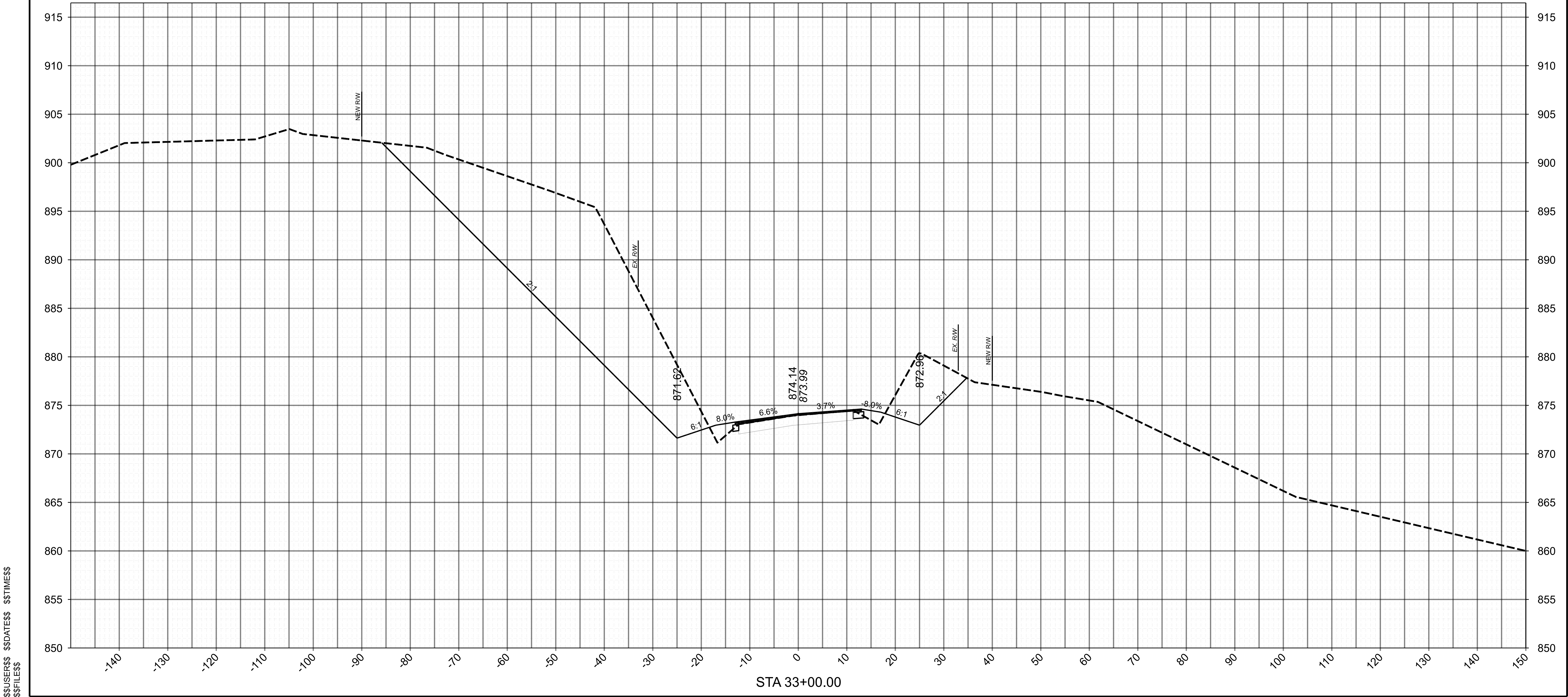
SCALE 1"=50'



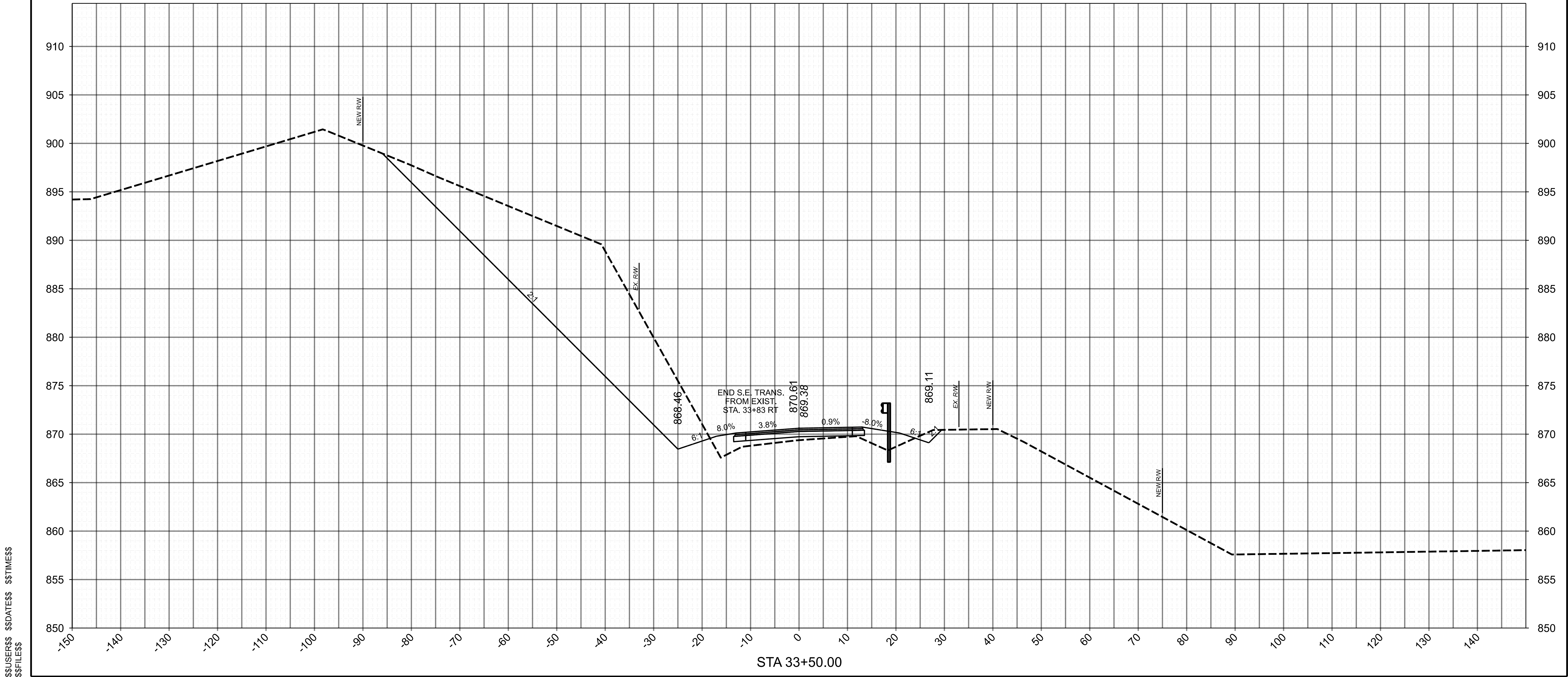
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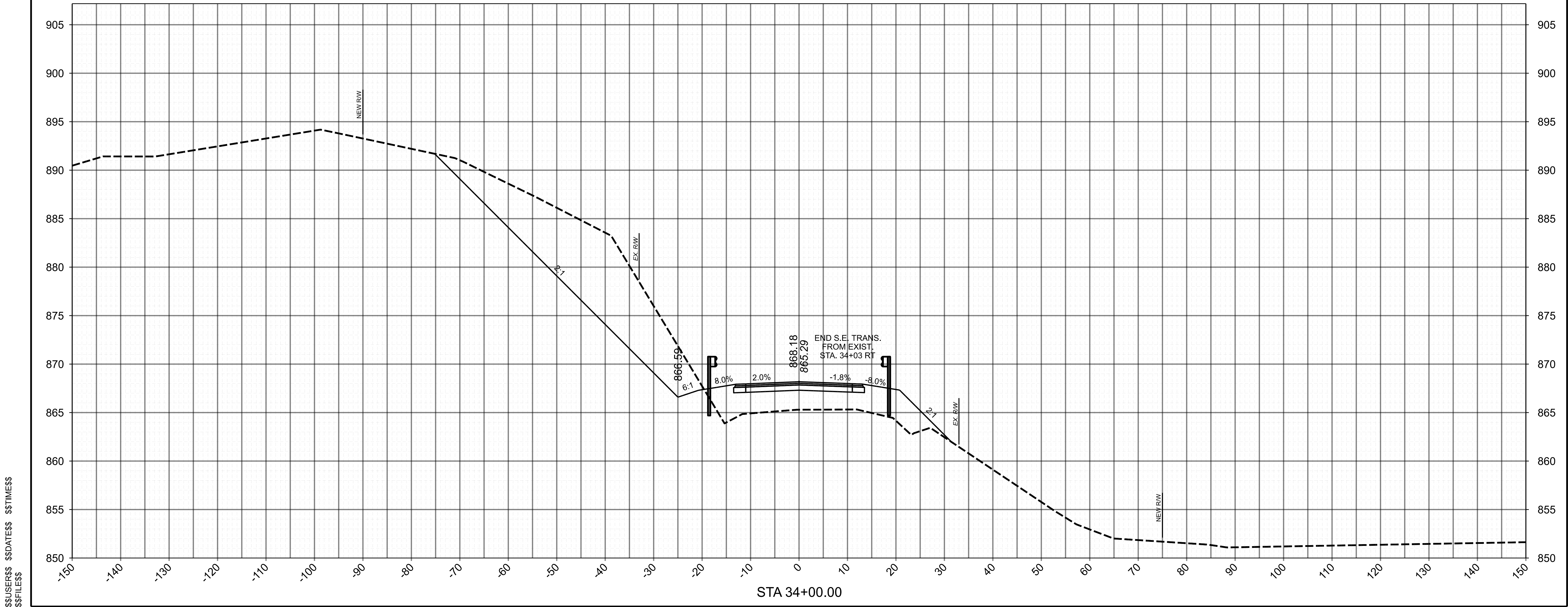
FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-133	X1



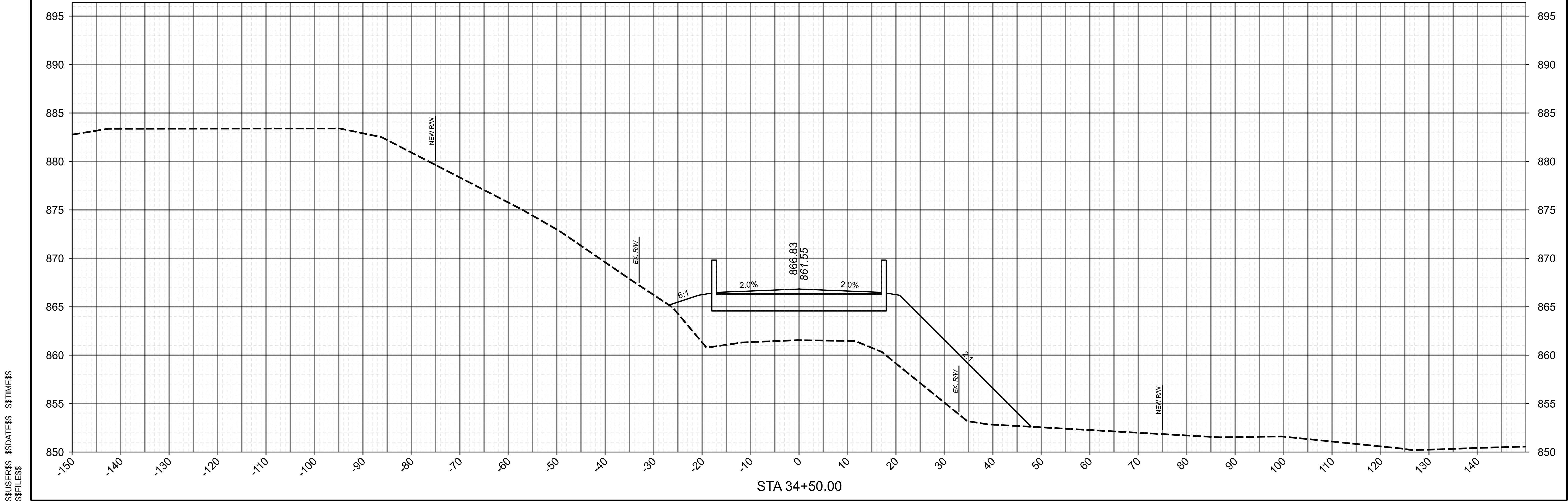


FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-133	X3

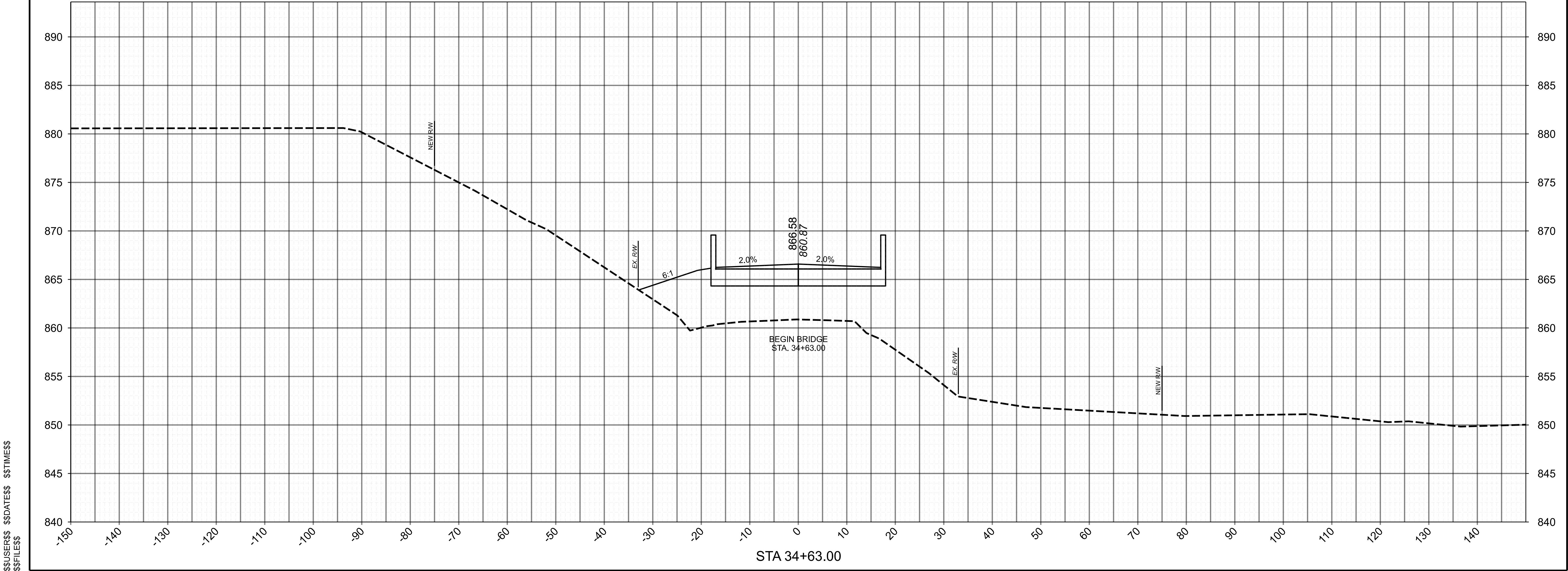


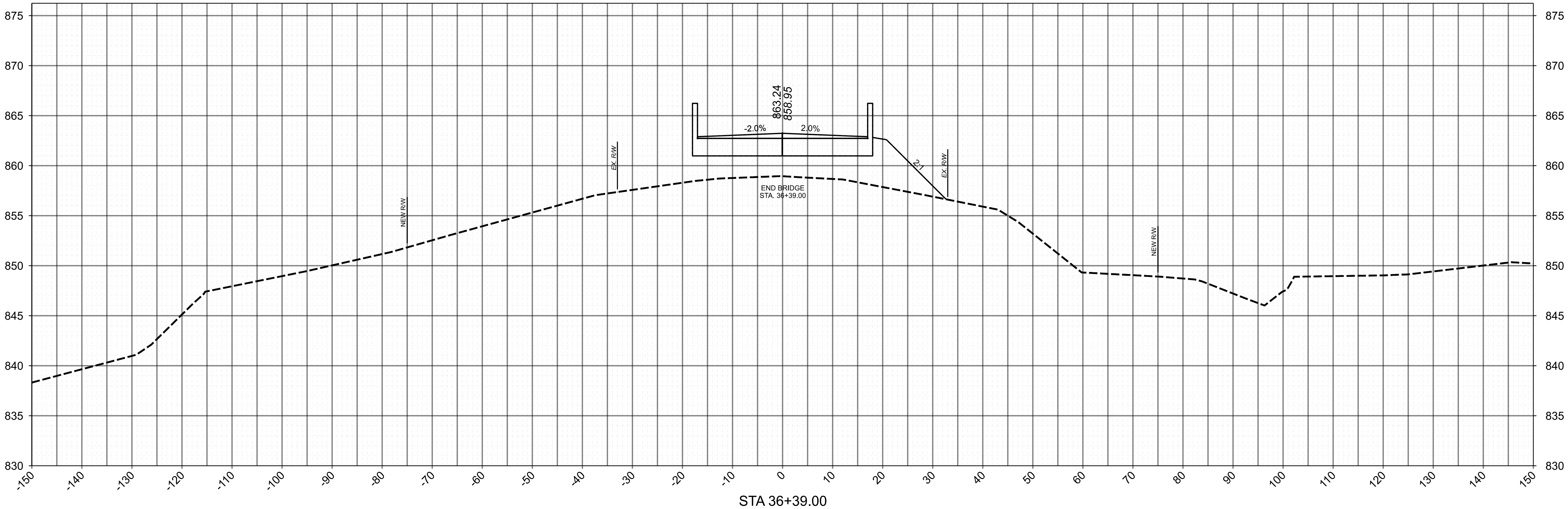
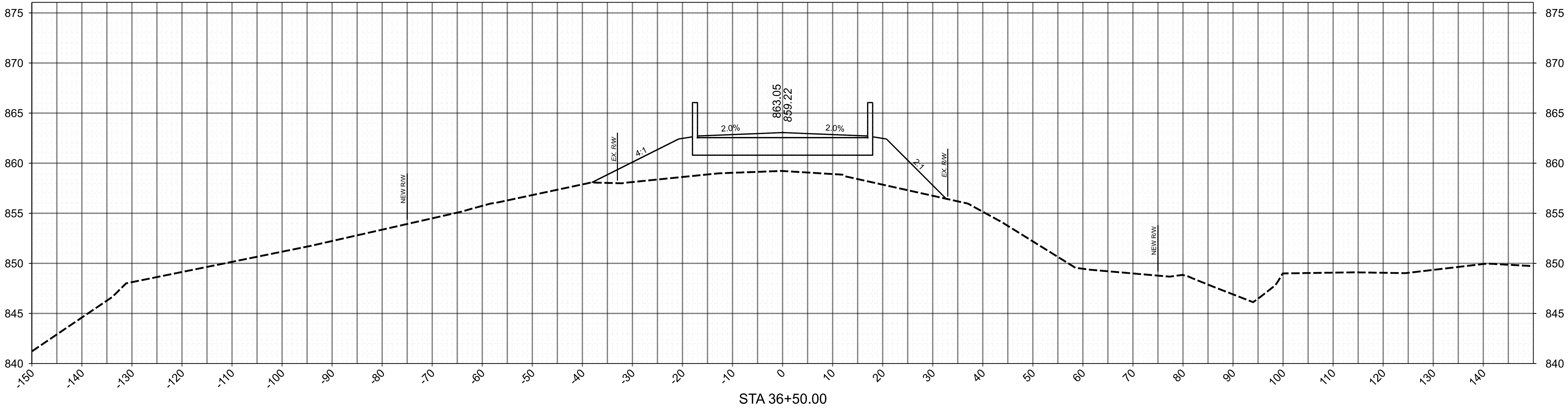


FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-133	X5

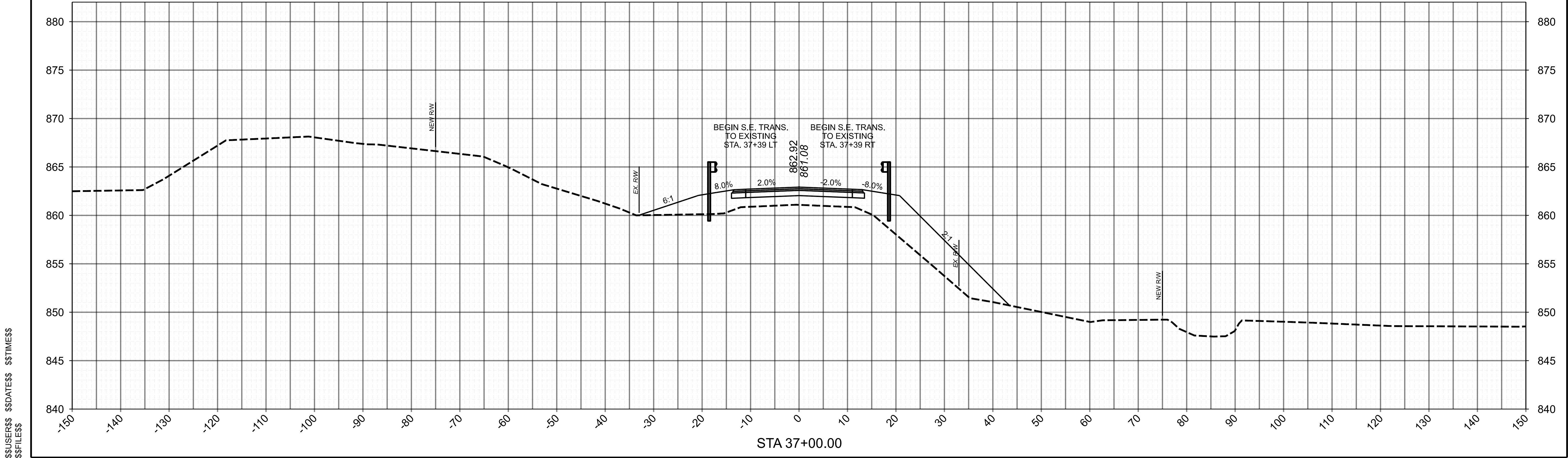


FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-133	X6

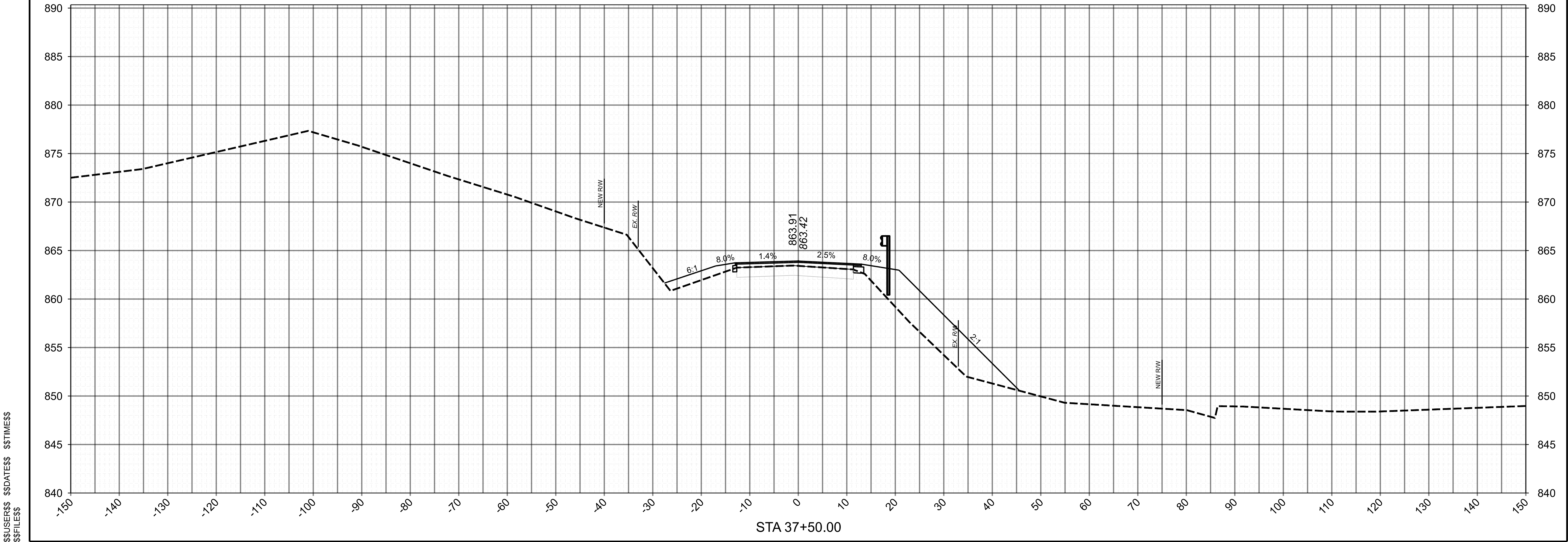




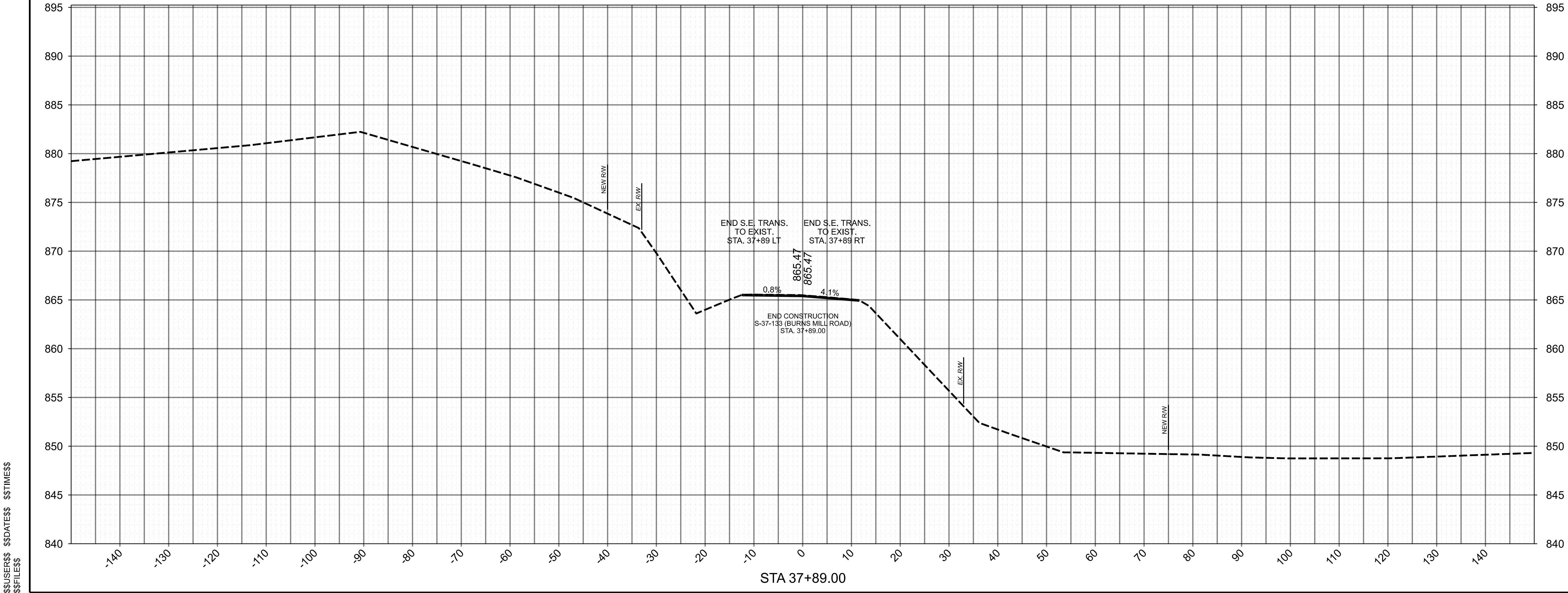
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FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-133	X9



FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-133	X10



TYPICAL SECTION OF IMPROVEMENT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

TIE TO EXISTING TRAFFIC LANE AND SHOULDER WIDTHS

SECTION NOTES:

- 6:1 SLOPE 0'-5' FILL HEIGHT
4:1 SLOPE 5'-10' FILL HEIGHT
2:1 MAX SLOPE >10' FILL HEIGHT AND AT BRIDGE ENDS

1

CONST. \bar{C}

12' MIN. FORESLOPE

6' SHLDR.

11' TRAVEL LANE

11' TRAVEL LANE

6' * SHLDR.

2' PAVED SHLDR.

0.5' PAVED SHLDR.

EXIST. GROUND

2:1 MAX

VARIES 6:1 TO 4:1 (SHOWN 6:1)

12.5:1

2.00%

PGL

2.00%

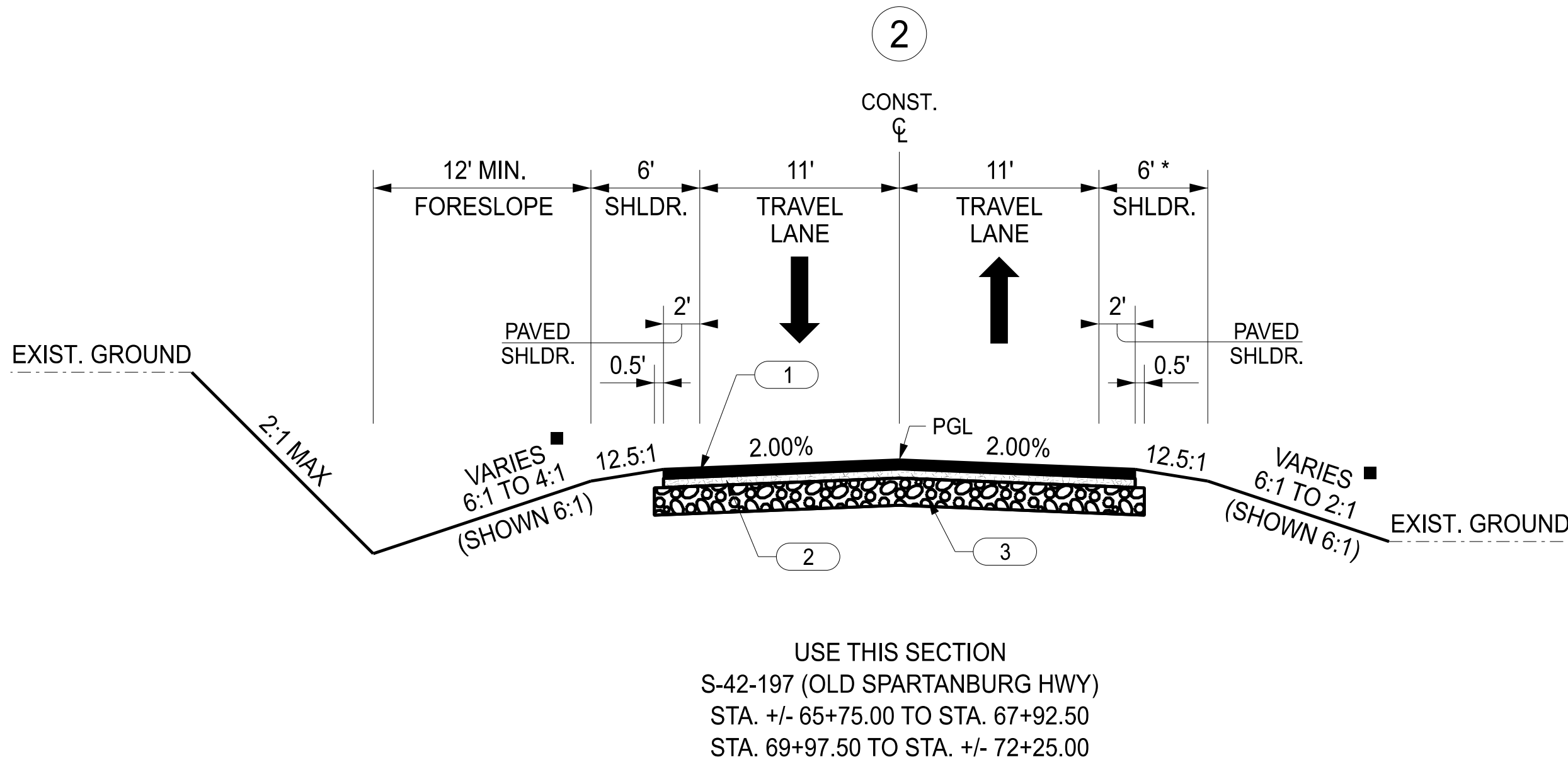
12.5:1

VARIES 6:1 TO 2:1 (SHOWN 6:1)

EXIST. GROUND

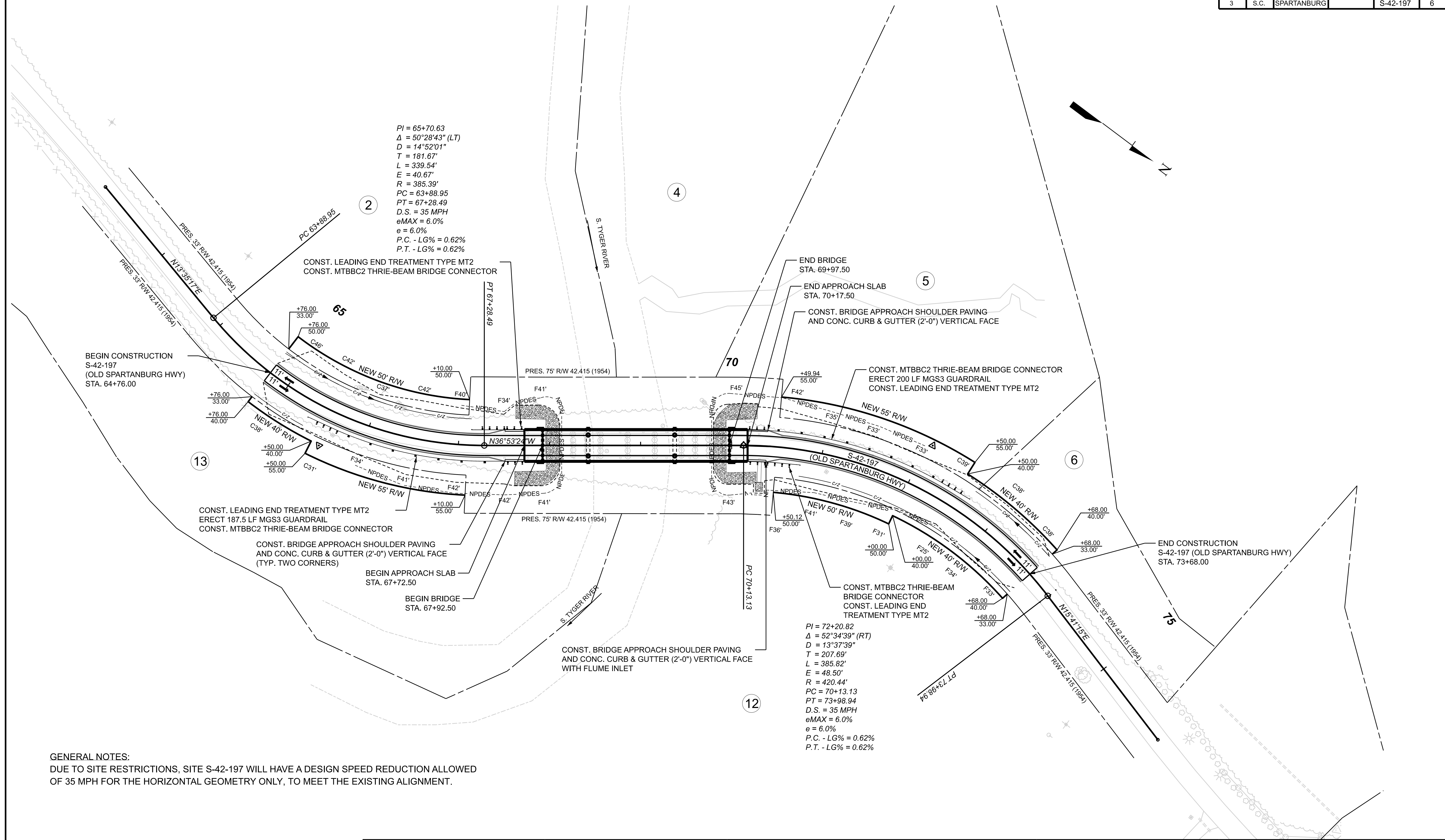
EXIST. PAVEMENT VARIES (RETAIN)

USE THIS SECTION
S-42-197 (OLD SPARTANBURG HWY)
STA. 64+76.00 TO STA. +/- 65+75.00
STA. +/- 72+25.00 TO STA. 73+68.00

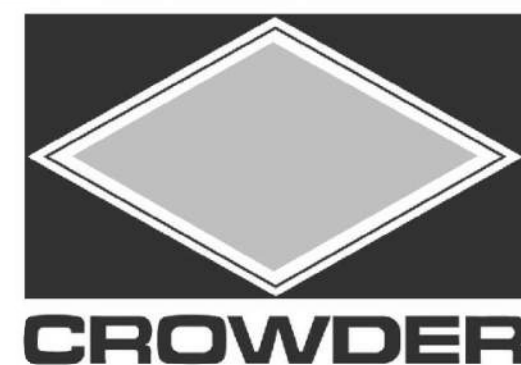


-
- 2' 4' 3.75'
- 0.5'
- EDGE OF TRAVEL WAY
- MINIMUM 1' UNPAVED BENCH
- VARIES 6:1 TO 2:1 MAX
- EXIST. GROUND
- 5
- 1
- 2
- 3
- TYPICAL GUARDRAIL SECTION FOR OUTSIDE SHOULDER
- SEE PLANS FOR GUARDRAIL LOCATIONS
REFER TO SCDOT STD. DWG. 805-115-10
FOR GRADING SCHEME AT END TREATMENTS

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	SPARTANBURG		S-42-197	6



GENERAL NOTES:
DUE TO SITE RESTRICTIONS, SITE S-42-197 WILL HAVE A DESIGN SPEED REDUCTION ALLOWED
OF 35 MPH FOR THE HORIZONTAL GEOMETRY ONLY, TO MEET THE EXISTING ALIGNMENT.



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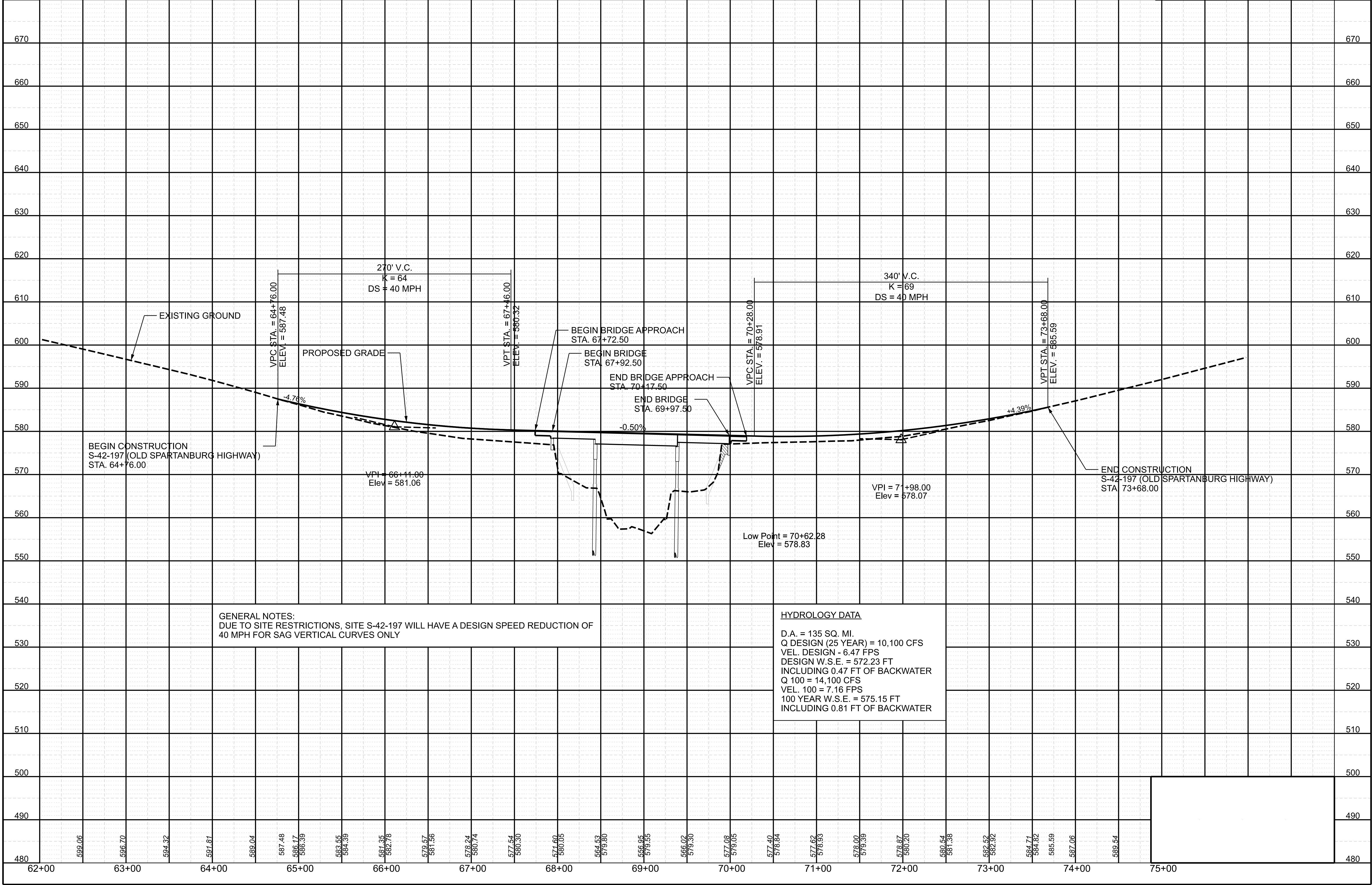
SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

S-42-197 (OLD
SPARTANBURG HWY)
OVER S. TYGER RIVER

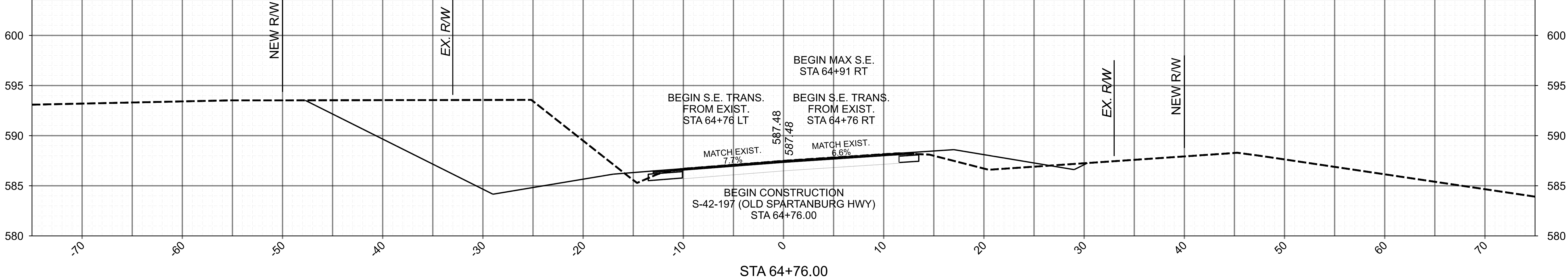
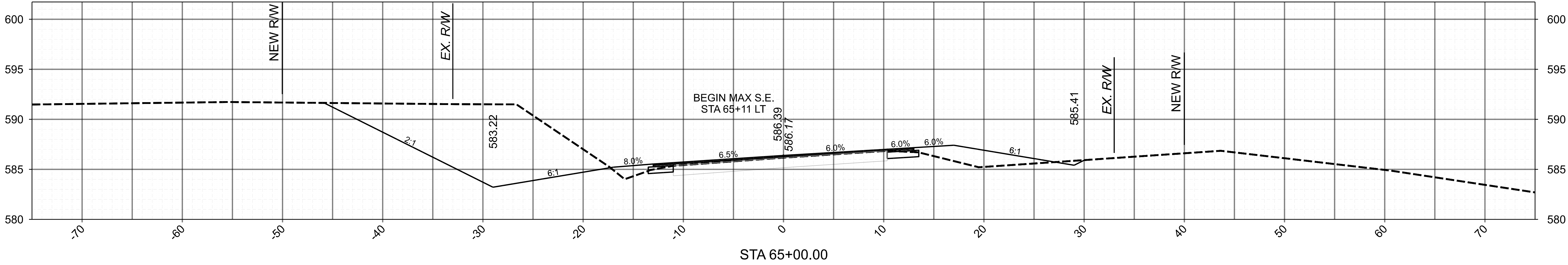
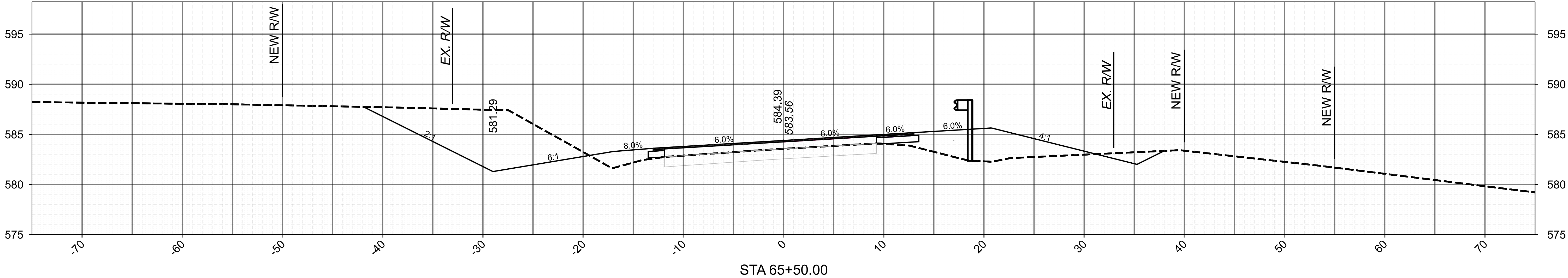
SCALE: 1" = 50'

\$\$\$USER\$\$\$ \$DATE\$\$\$ \$TIME\$\$\$
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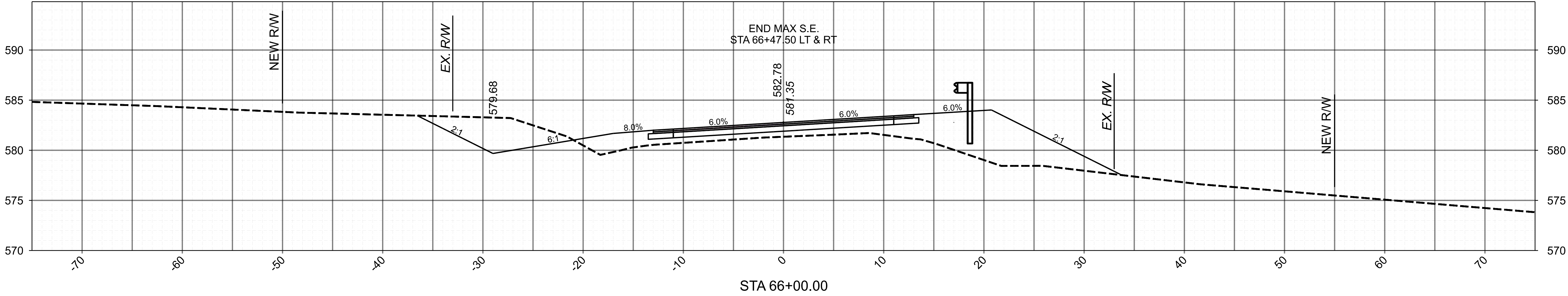
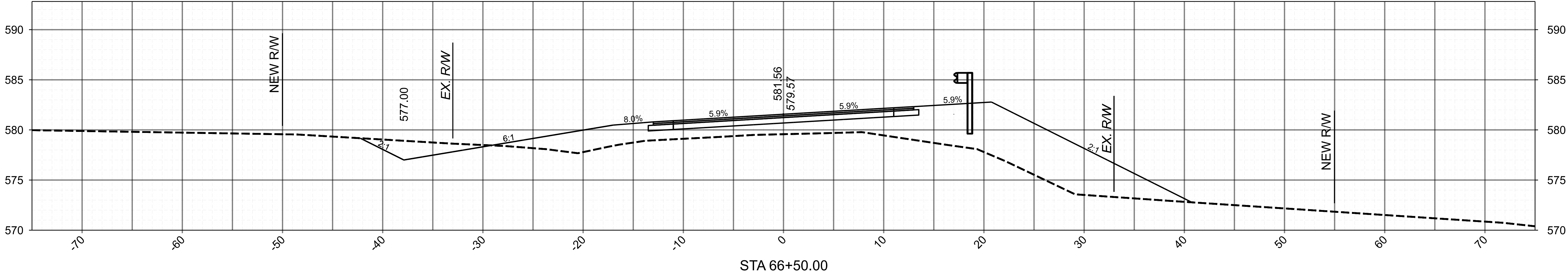
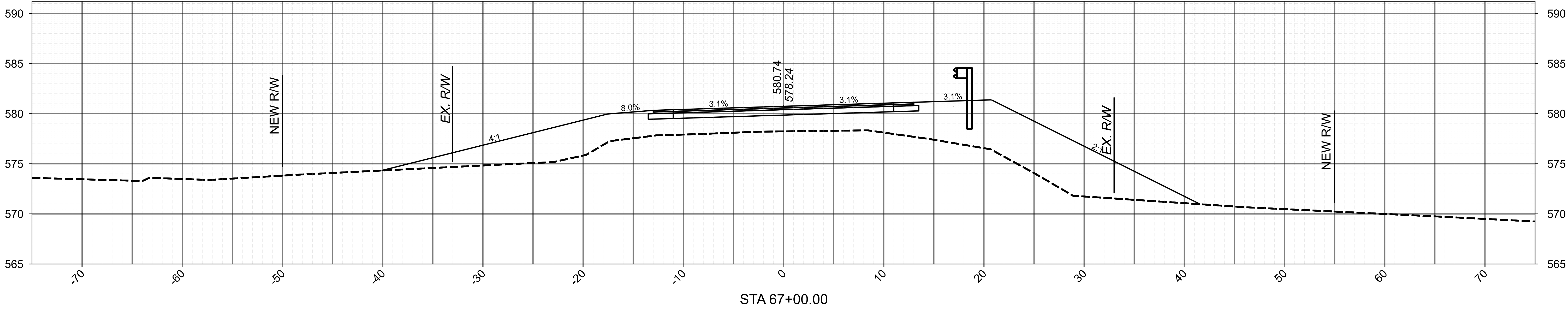
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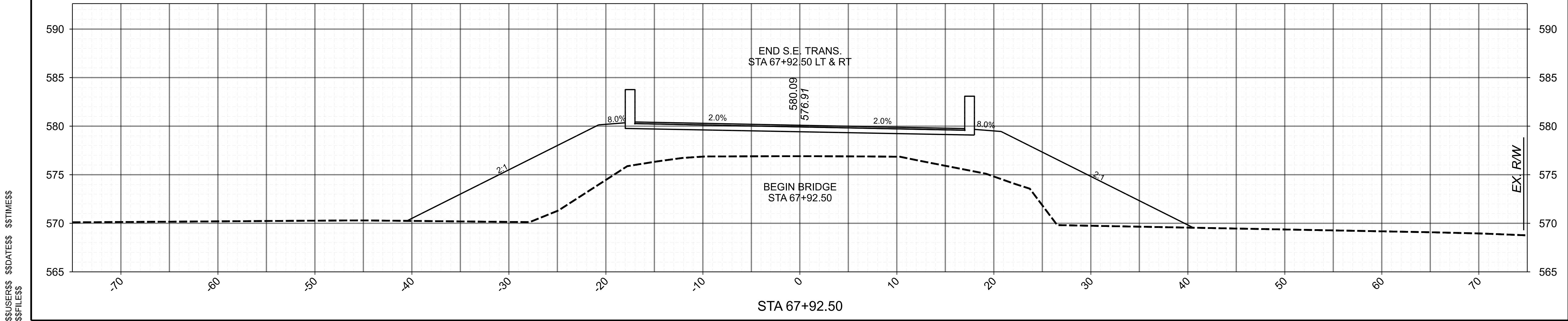


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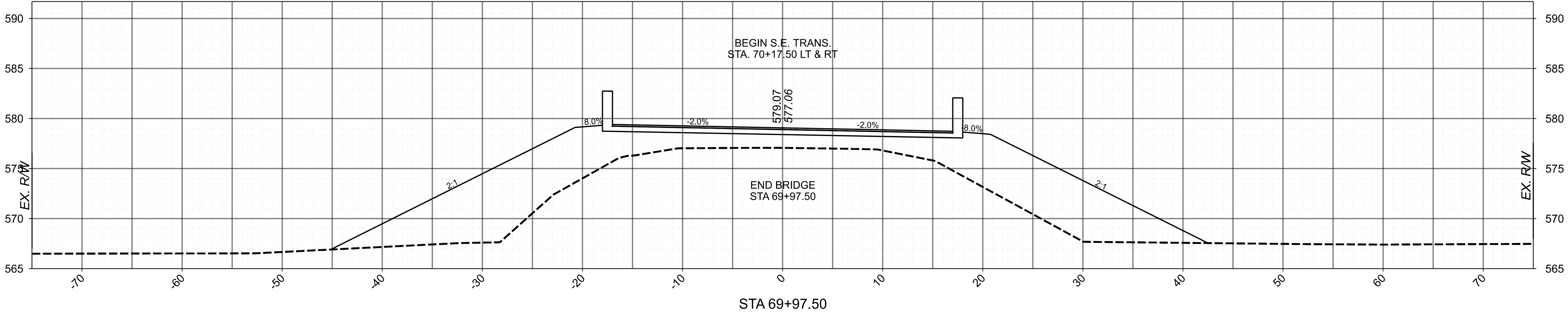
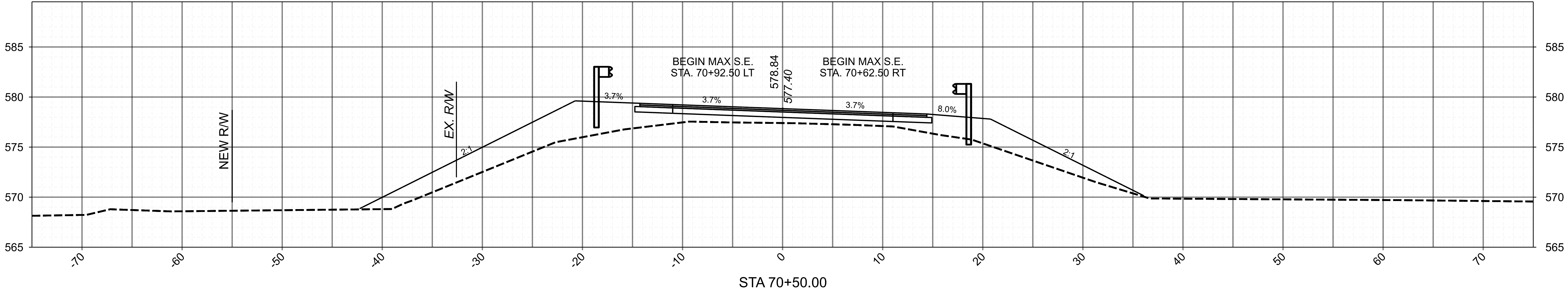
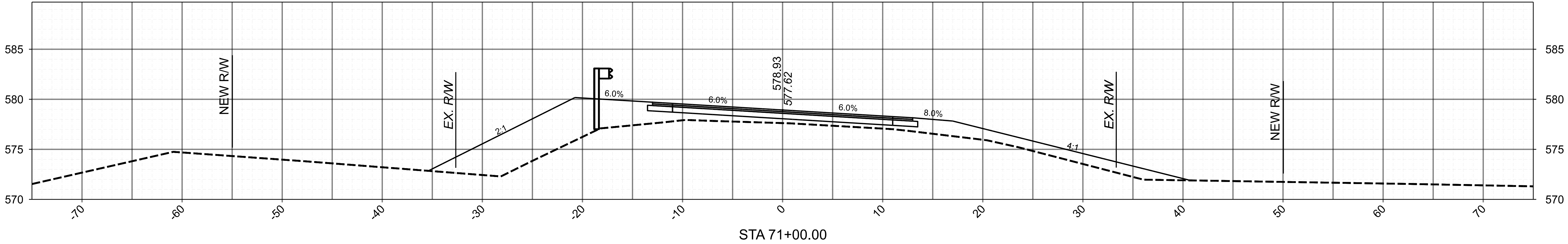


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\$\$\$FILE\$\$\$

FED. RD. DIST. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	SPARTANBURG		S-42-197	X3

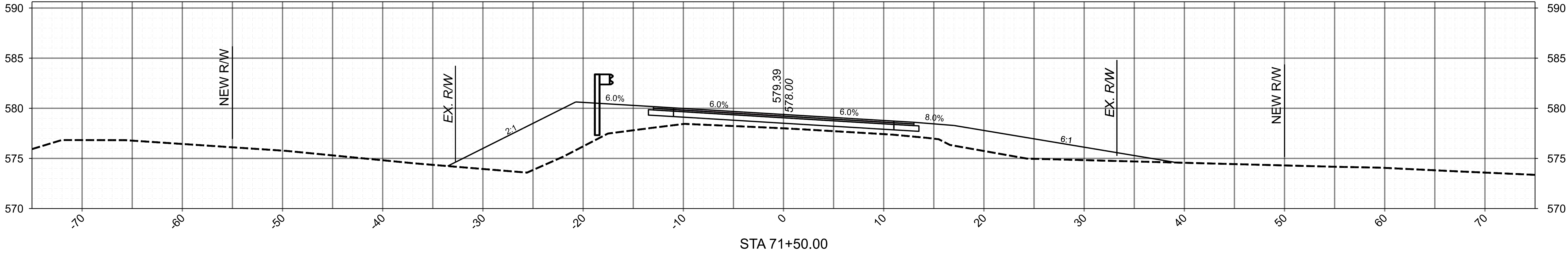
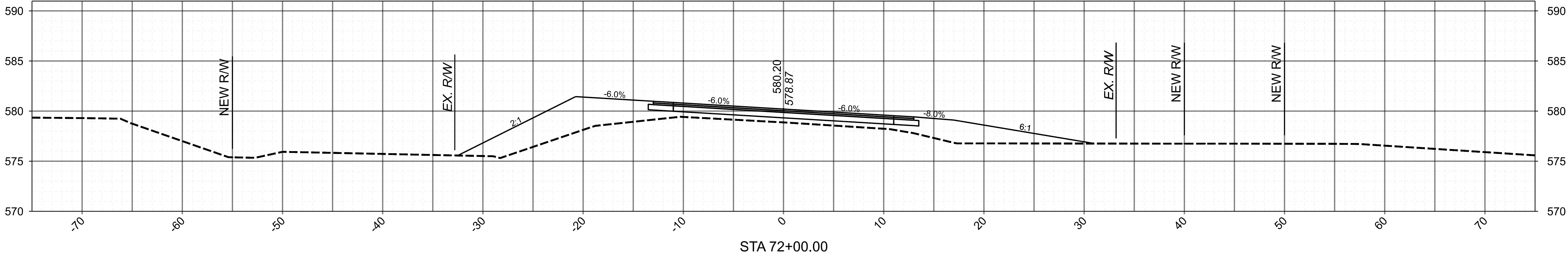
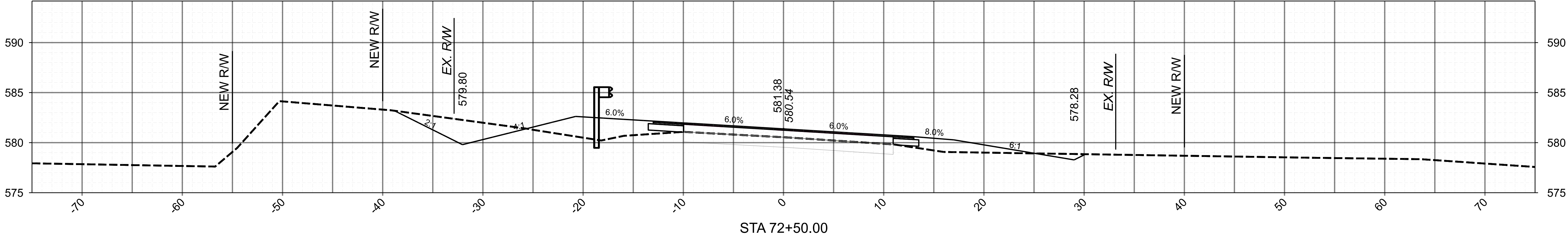


FED. RD. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	SPARTANBURG		S-42-197	X4

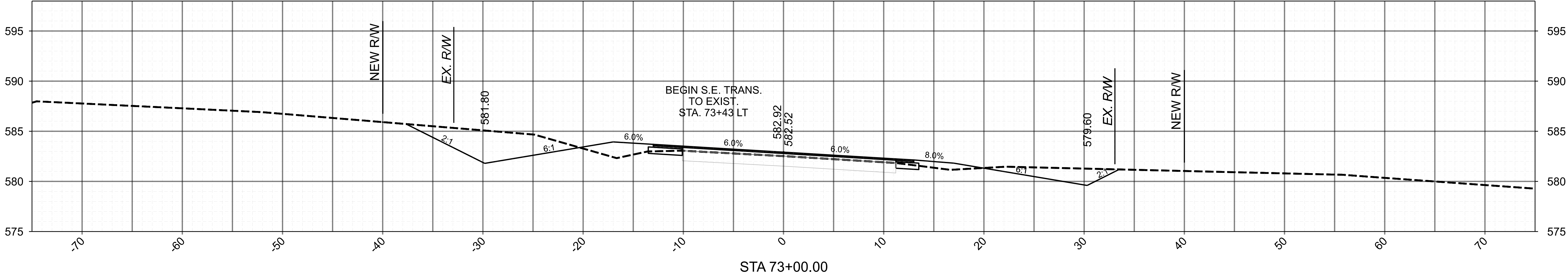
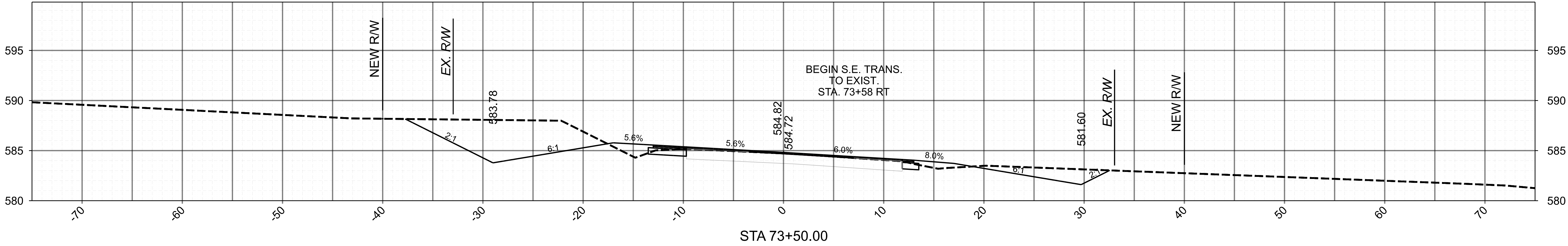
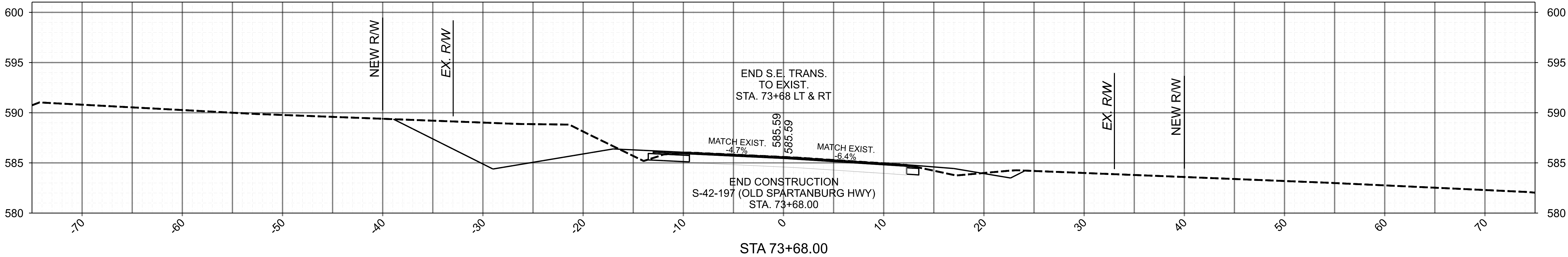


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FED. RD. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	SPARTANBURG		S-42-197	X5



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\$\$\$FILE\$\$\$



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\$\$\$TIME\$\$\$
\$\$\$FILE\$\$\$

FED. RD. DW. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-168	3

TYPICAL SECTION OF IMPROVEMENT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

GENERAL NOTES:

SEE PLANS AND CROSS SECTIONS FOR LOCATIONS OF DITCH AND FILL SECTIONS

TIE TO EXISTING TRAFFIC LANE AND SHOULDER WIDTHS

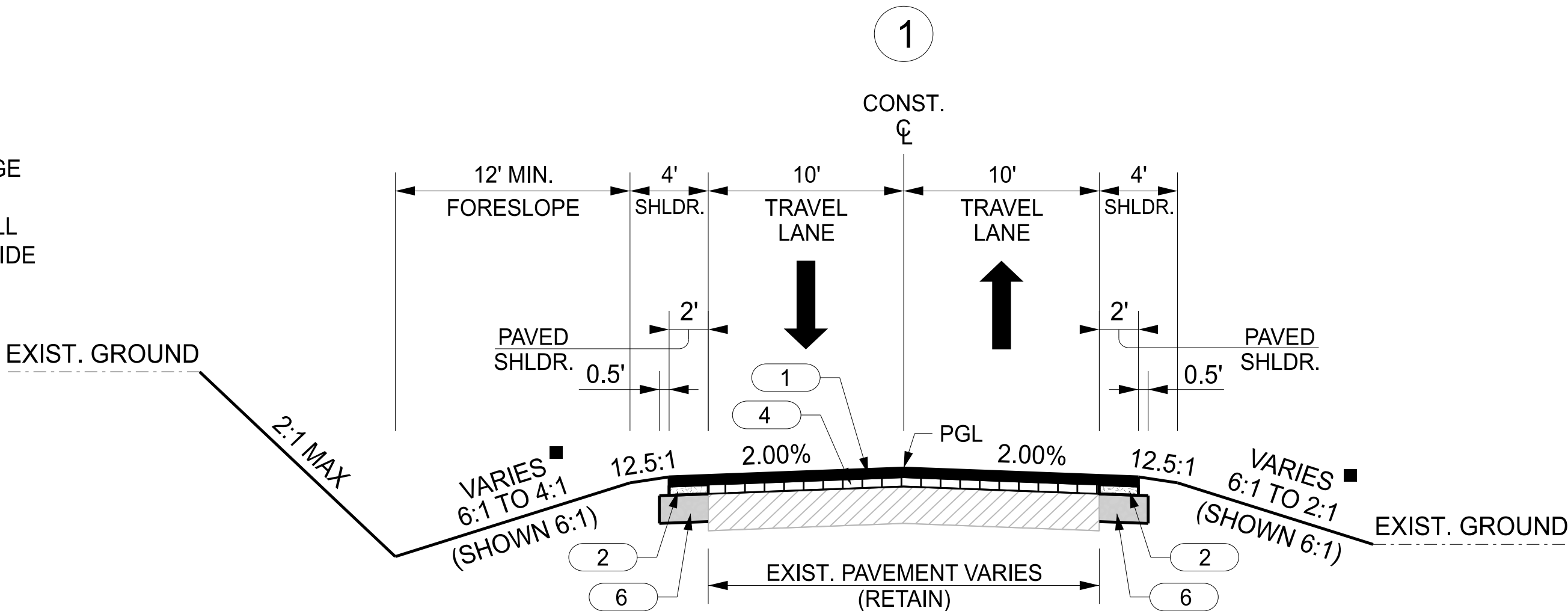
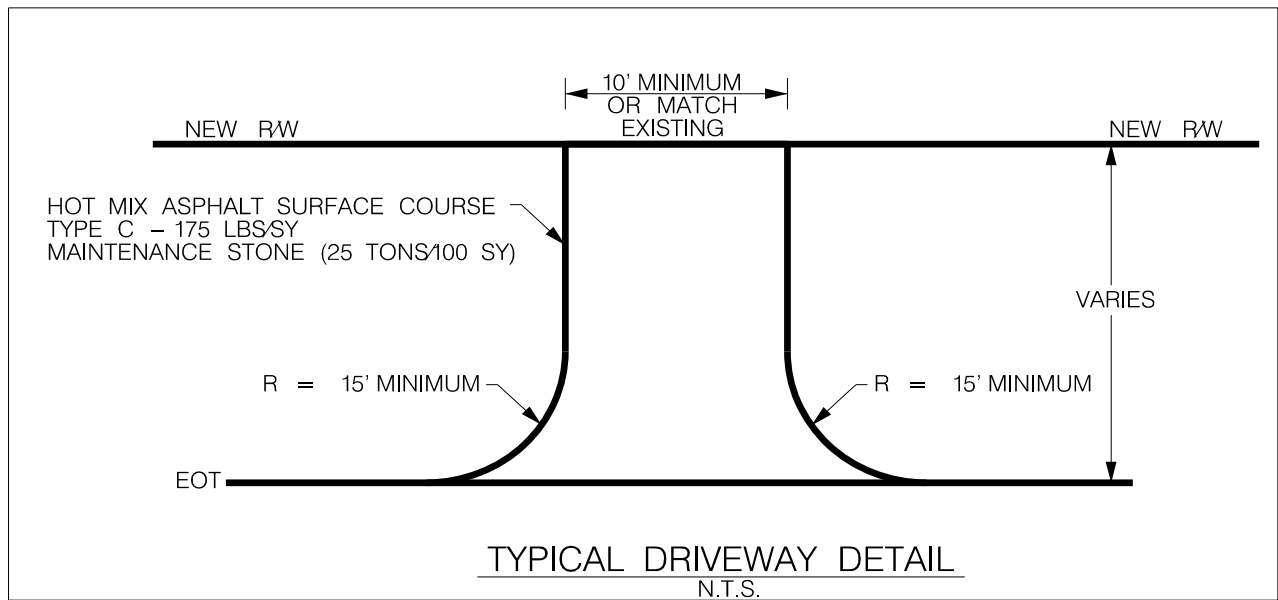
SHOULDER WIDTH VARIES AT GUARDRAIL LOCATIONS, SEE "TYPICAL GUARDRAIL SECTION FOR OUTSIDE SHOULDER". SEE PLANS FOR GUARDRAIL LOCATIONS.

SECTION NOTES:

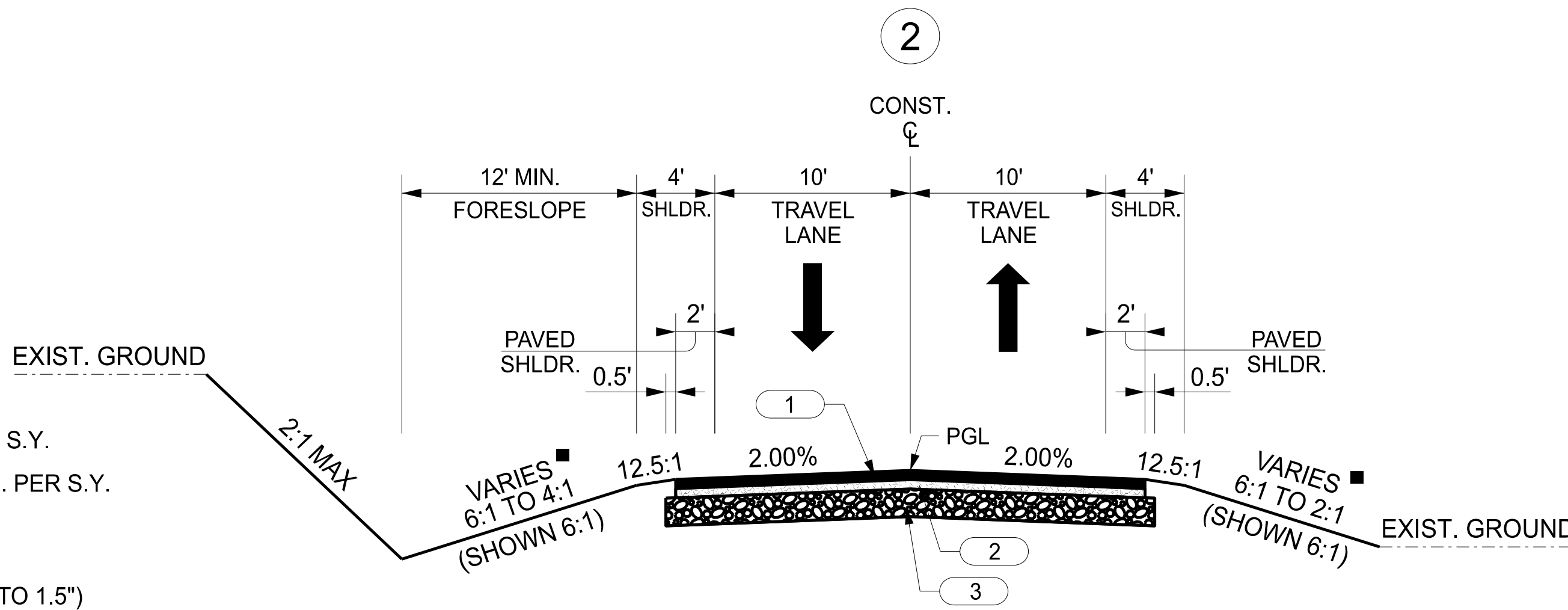
- VARIABLE - SEE CROSS SECTIONS FOR REQUIRED SLOPE VALUES
PROVIDE SMOOTH TRANSITIONS BETWEEN SLOPE CHANGES

6:1 SLOPE 0'-5' FILL HEIGHT
4:1 SLOPE 5'-10' FILL HEIGHT
2:1 MAX SLOPE >10' FILL HEIGHT AND AT BRIDGE ENDS

DITCH SLOPES MAY BE VARIED WHEN A DEEPER DITCH IS NECESSARY FOR DRAINAGE PURPOSES, USING A MINIMUM SLOPE OF 12:1 AND A MAXIMUM SLOPE OF 4:1.
WHERE A DEEPER DITCH PROVIDED BY A 4:1 SLOPE IS NECESSARY, THE DITCH SHALL BE PLACED FURTHER FROM THE CENTERLINE CONTINUING THE 4:1 SLOPE TO PROVIDE THE NECESSARY DEPTH.

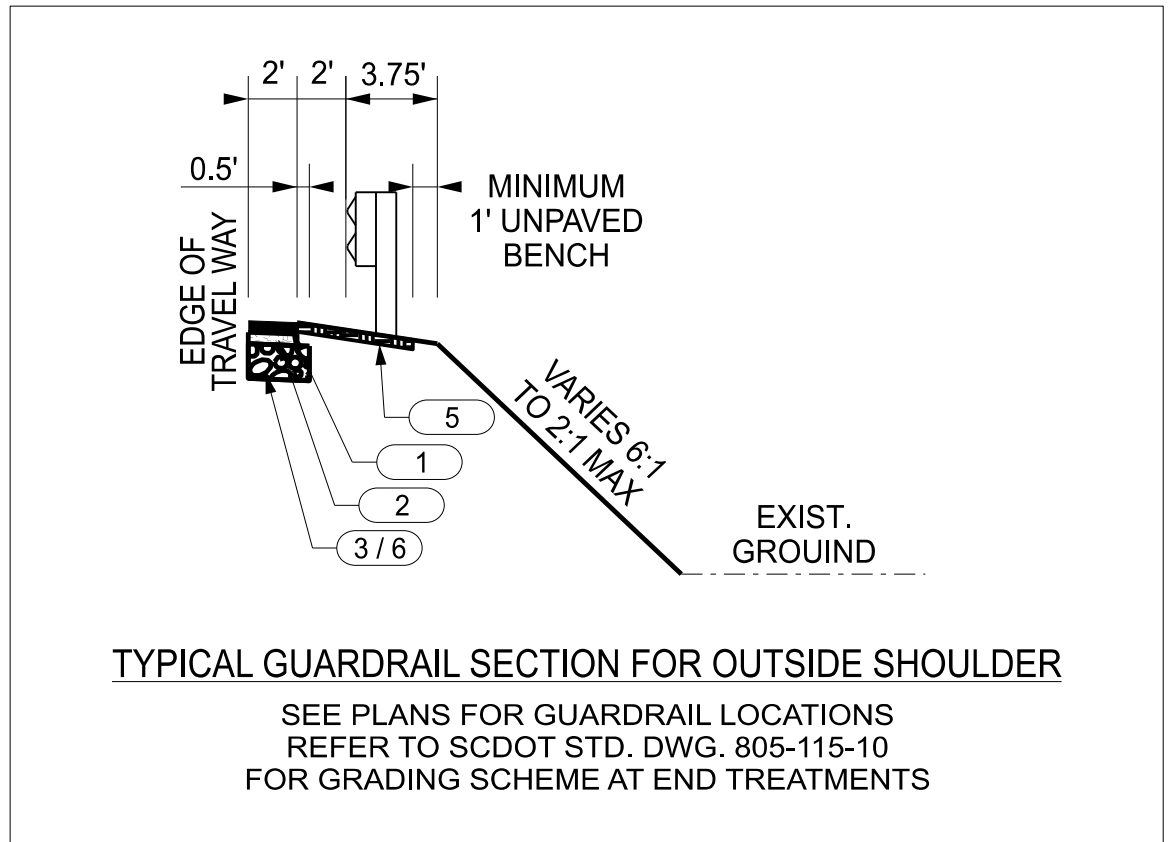


USE THIS SECTION
S-37-168 (LITTLE CHOESTOEA ROAD)
STA. 42+75.00 TO +/- STA. 43+75.00
+/- STA. 49+75.00 TO STA. 51+25.00



USE THIS SECTION
S-37-168 (LITTLE CHOESTOEA ROAD)
+/- STA. 43+75.00 TO STA. 45+76.50
STA. 46+74.50 TO +/- STA. 49+75.00

- 1 HOT MIX ASPHALT SURFACE COURSE TYPE C - 175 LBS. PER S.Y.
- 2 HOT MIX ASPHALT INTERMEDIATE COURSE TYPE C - 200 LBS. PER S.Y.
- 3 HOT MIX ASPHALT BASE COURSE TYPE B - 650 LBS. PER S.Y.
- 4 VARIABLE HOT MIX ASPHALT FOR BUILD-UP
HOT MIX ASPHALT SURFACE TYPE E (LESS THAN OR EQUAL TO 1.5")
HOT MIX ASPHALT INTERMEDIATE TYPE B (GREATER THAN 1.5")
- 5 4" HOT MIX ASPHALT SURFACE COURSE (NON-MOW STRIP)
- 6 SHOULDER WIDENING MATERIAL - 600 LBS. PER S.Y.



TYPICAL GUARDRAIL SECTION FOR OUTSIDE SHOULDER
SEE PLANS FOR GUARDRAIL LOCATIONS
REFER TO SCDOT STD. DWG. 805-115-10
FOR GRADING SCHEME AT END TREATMENTS

\$\$\$USERS\$ \$DATE\$ \$TIME\$
\$\$FILE\$



NO.
S-37-168

FUNCTIONAL
CLASSIFICATION
RURAL - LOCAL (GROUP 4)

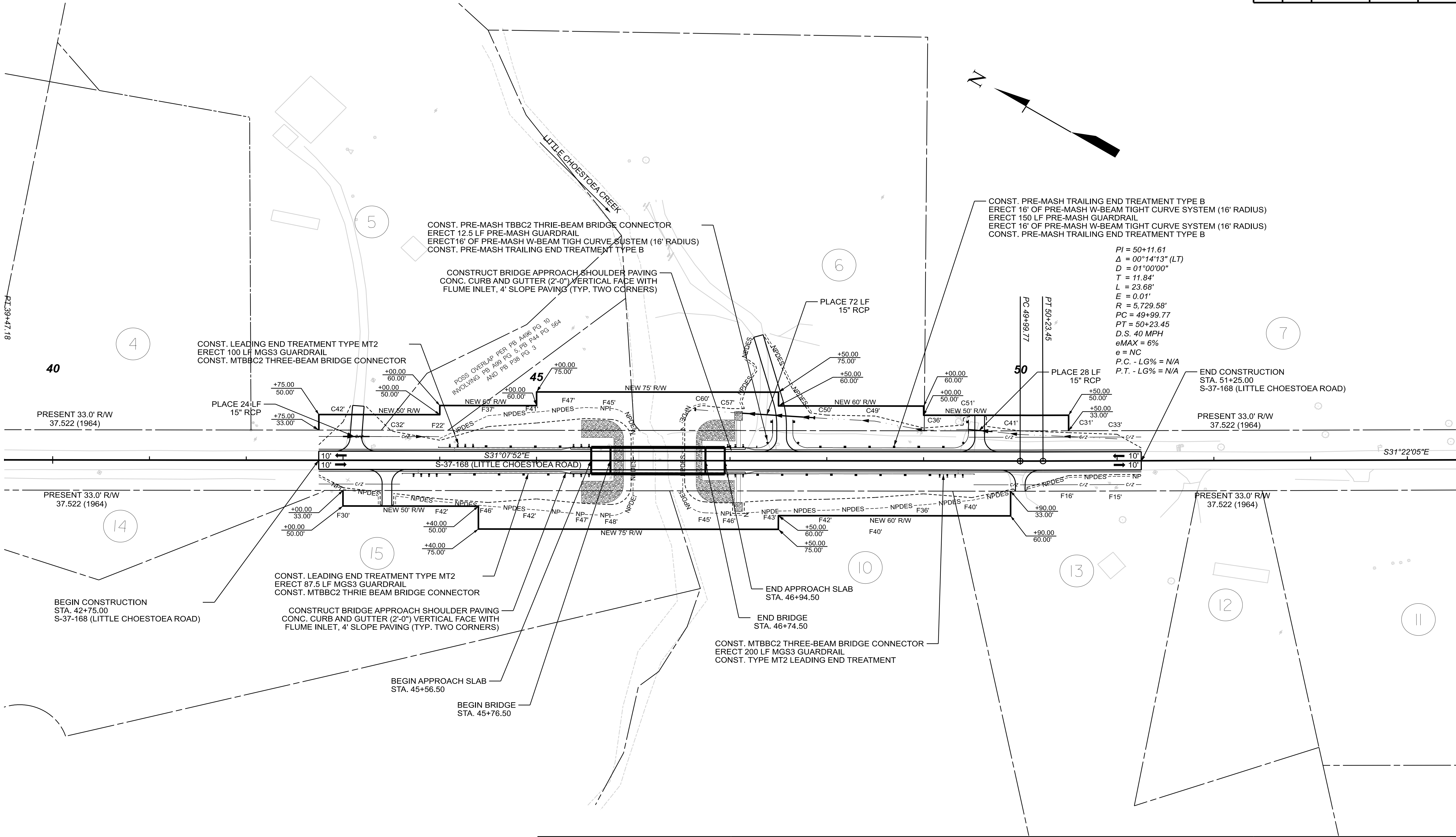
DESIGN SPEED
MPH FROM STA. TO STA.
50 42+50.00 51+25.00



SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

S-37-168 (LITTLE CHOESTOEA ROAD)
OVER CHOESTOEA CREEK
TYPICAL SHEET

SCALE = N.T.S.



PI = 50+11.61
Δ = 00°14'13" (LT)
D = 01°00'00"
T = 11.84'
L = 23.68'
E = 0.01'
R = 5,729.58'
PC = 49+99.77
PT = 50+23.45
D.S. 40 MPH
eMAX = 6%
e = NC
P.C. - LG% = N/A
P.T. - LG% = N/A

\$\$\$USER\$\$\$ \$SDATE\$\$\$ \$STIME\$\$\$
\$\$\$FILE\$\$\$



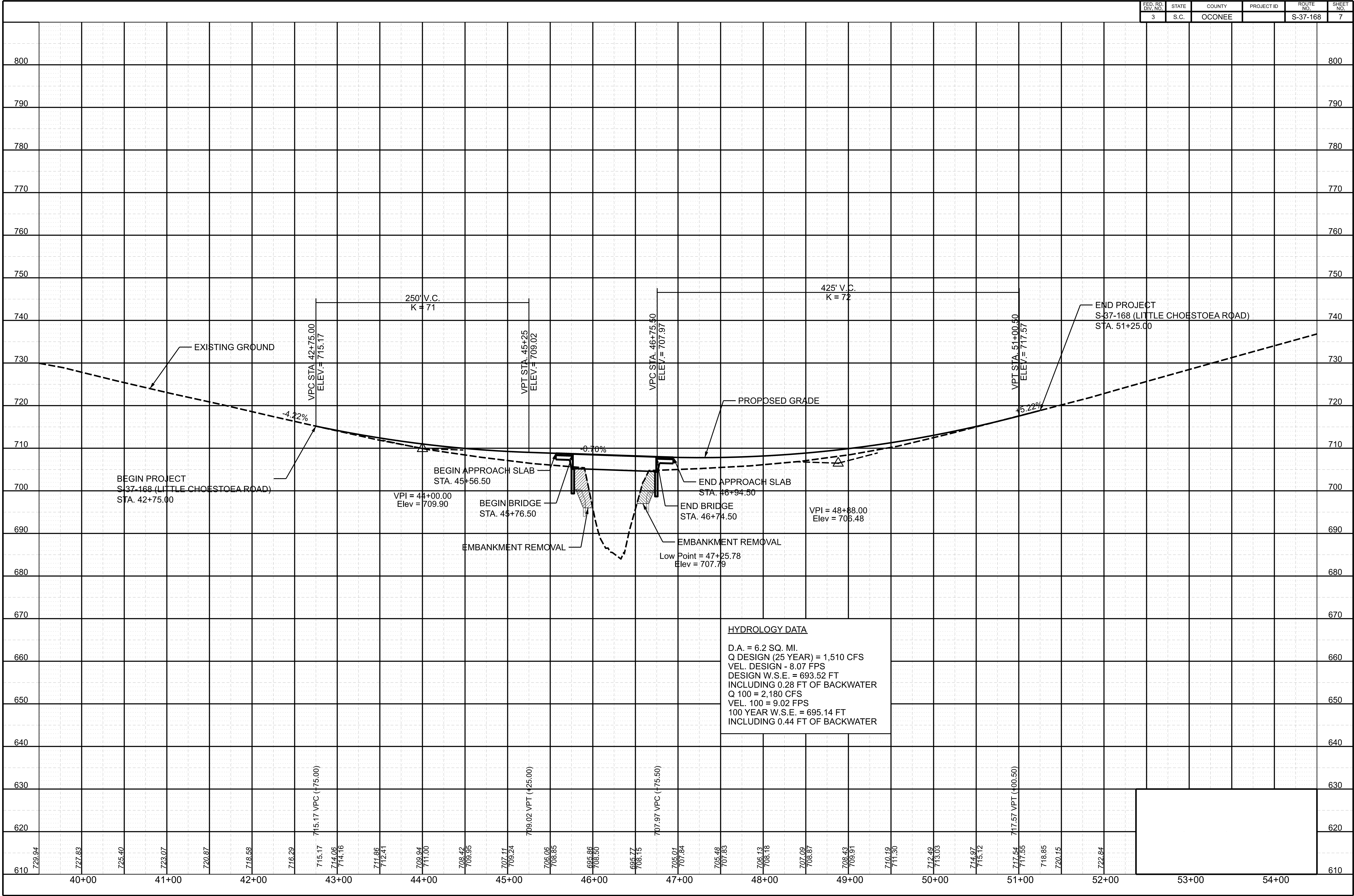
5			
4			
3			
2			
1			
REV. NO.	BY	DATE	DESCRIPTION OF REVISION

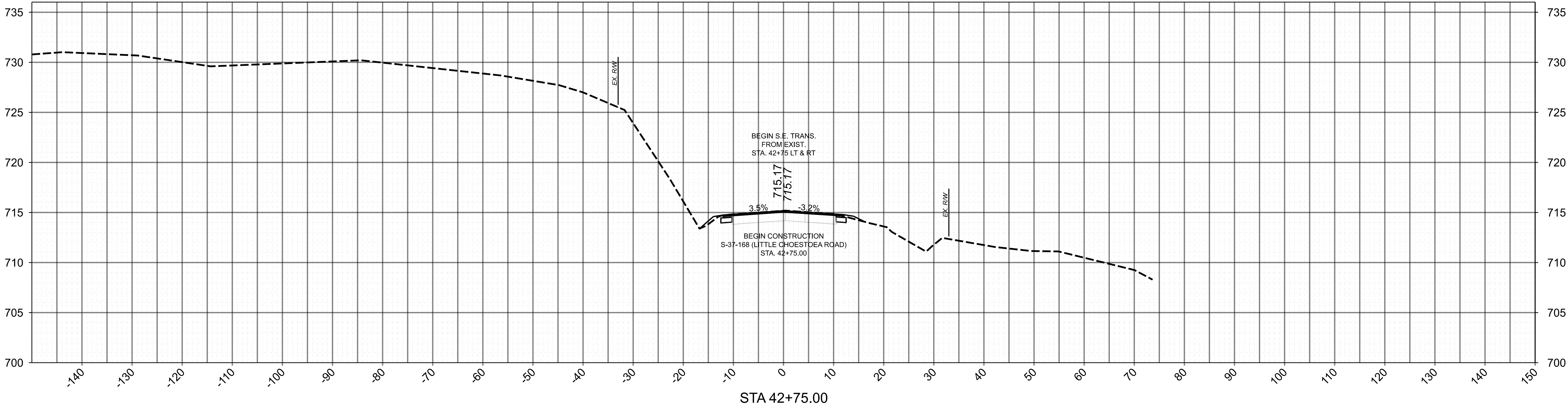
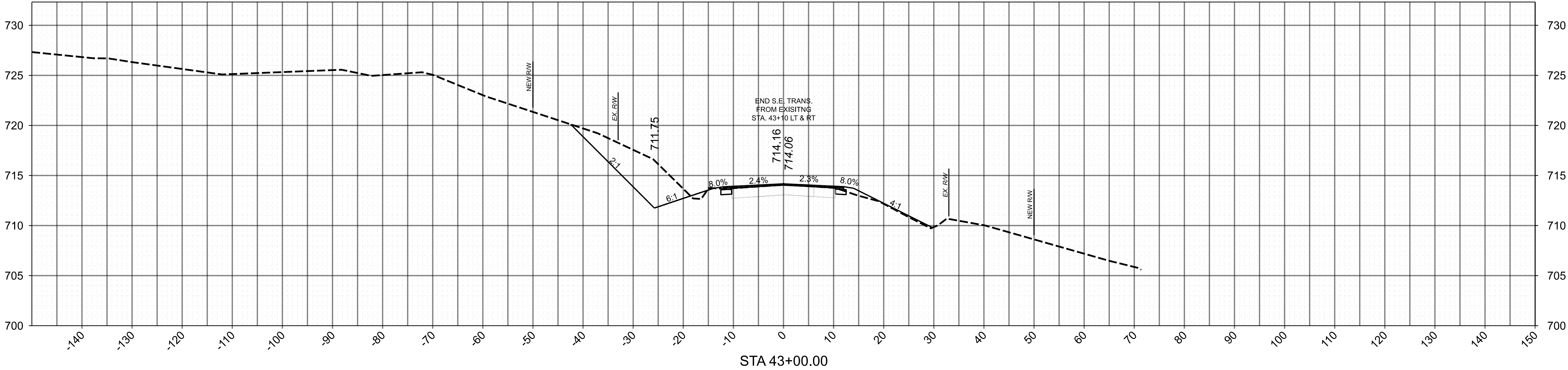


SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

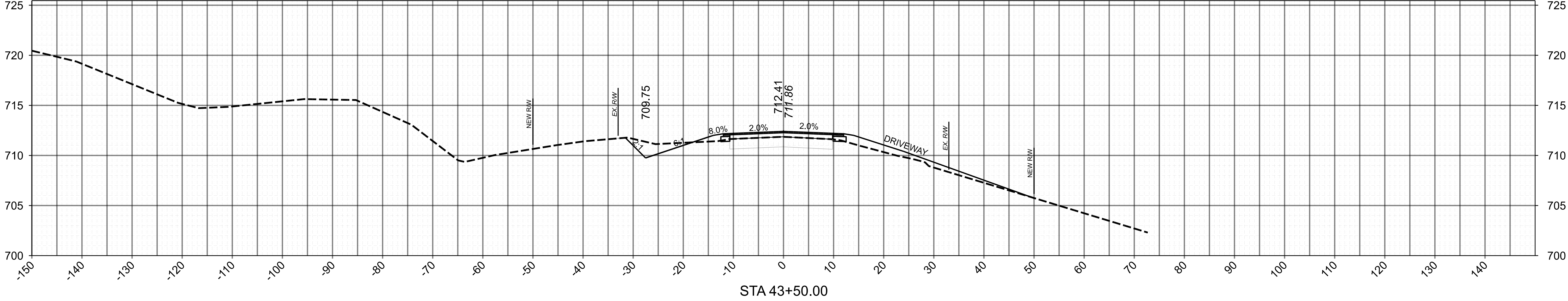
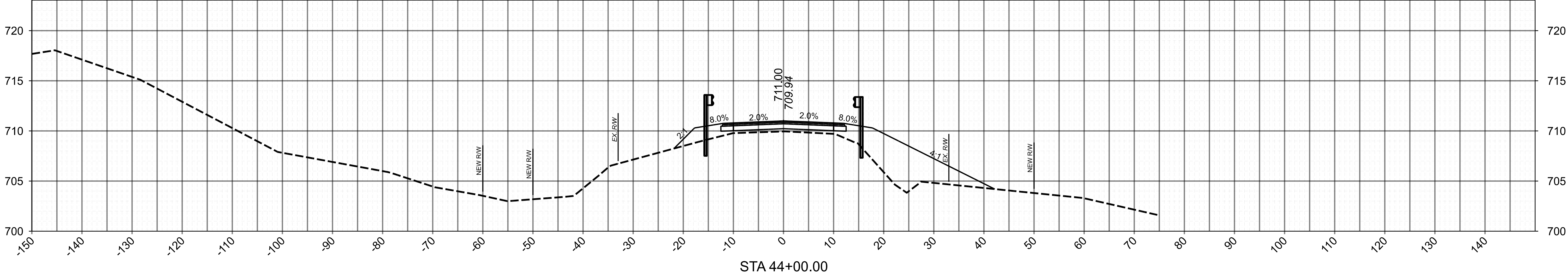
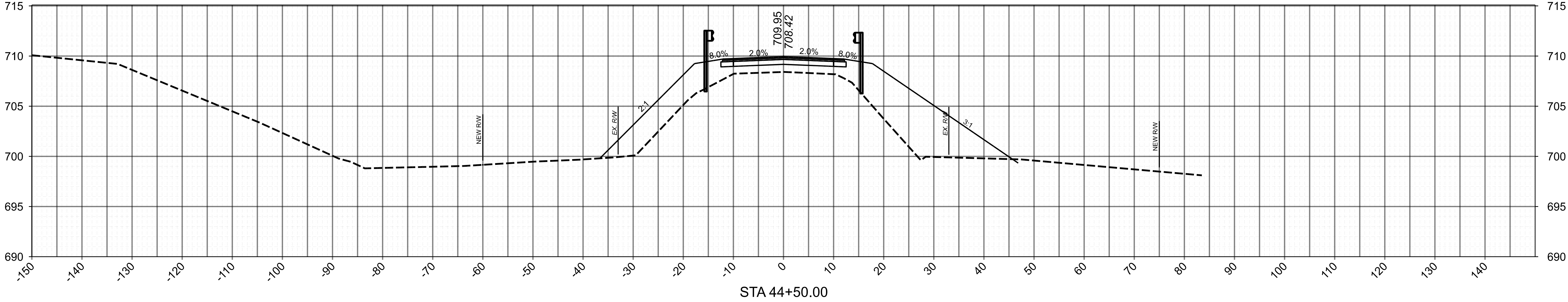
S-37-168 (LITTLE CHOESTOE ROAD)
OVER CHOESTOE CREEK
PLAN SHEET

SCALE 1"=50'

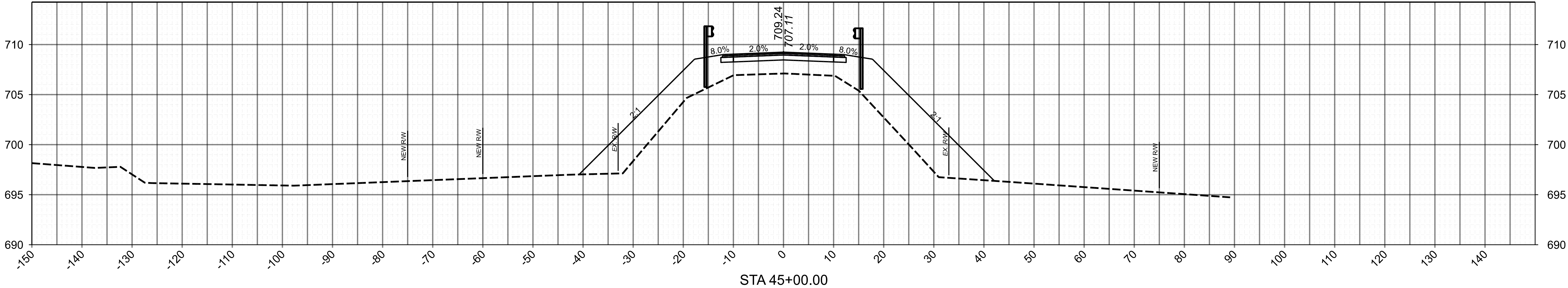
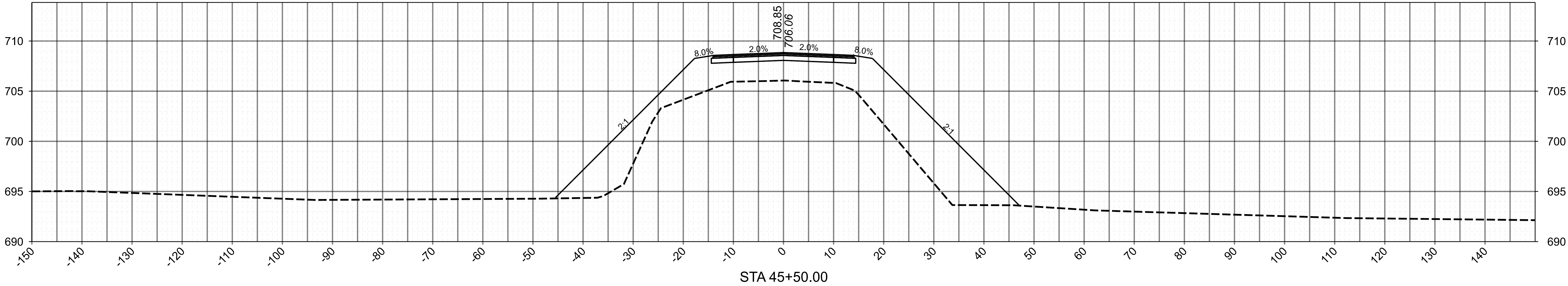
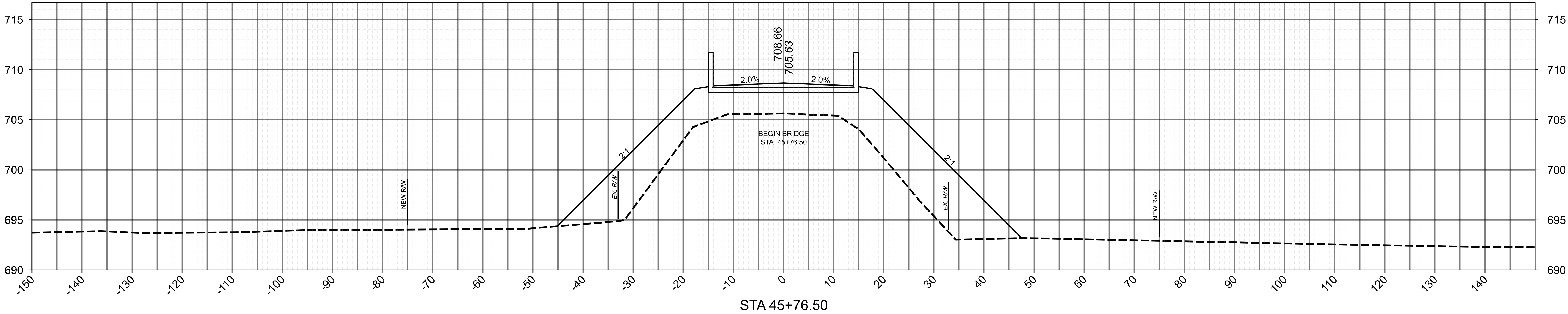




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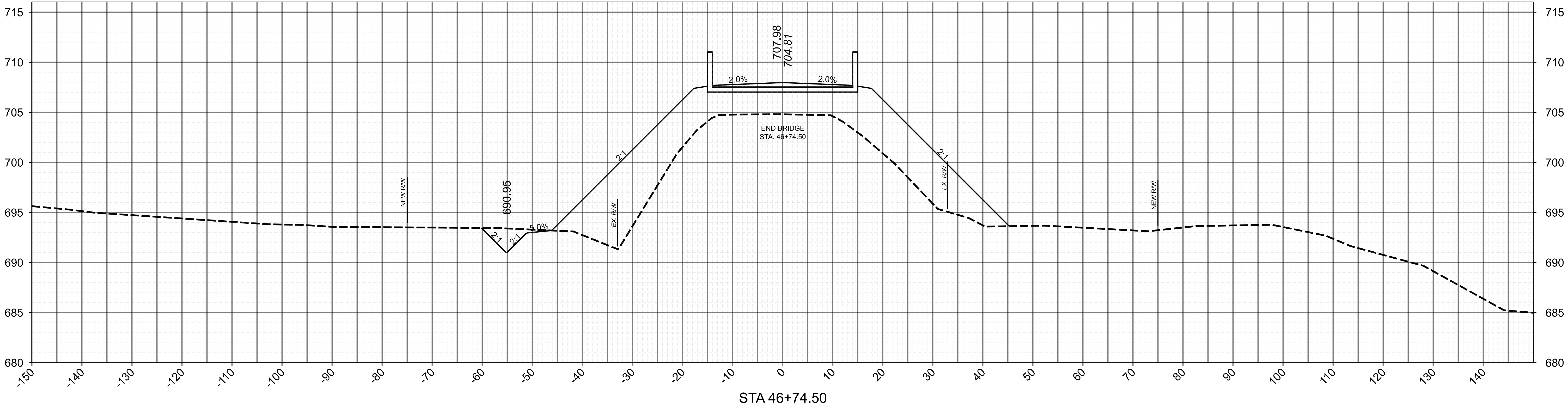
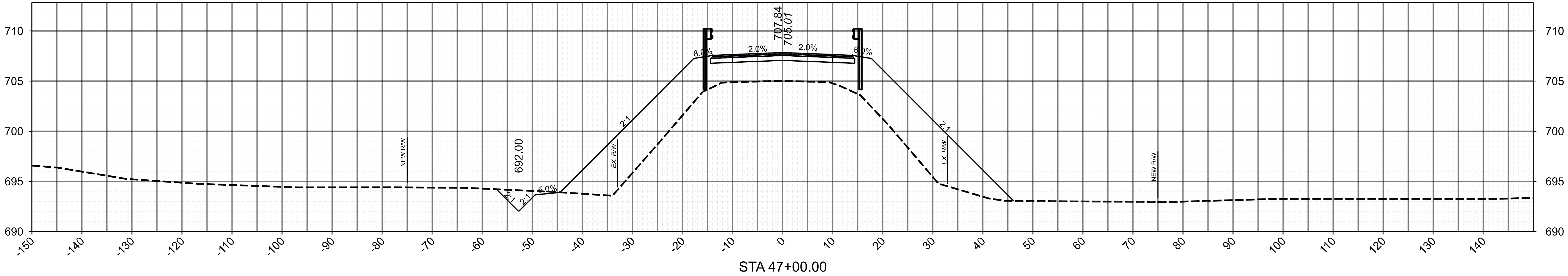


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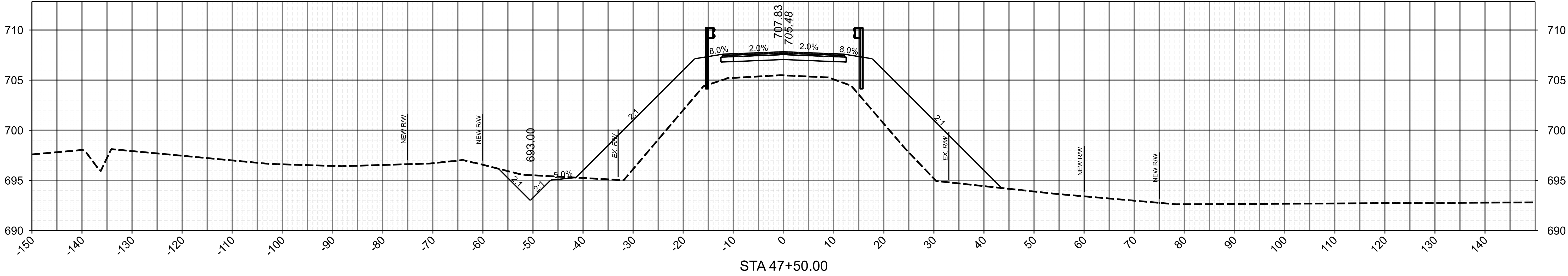
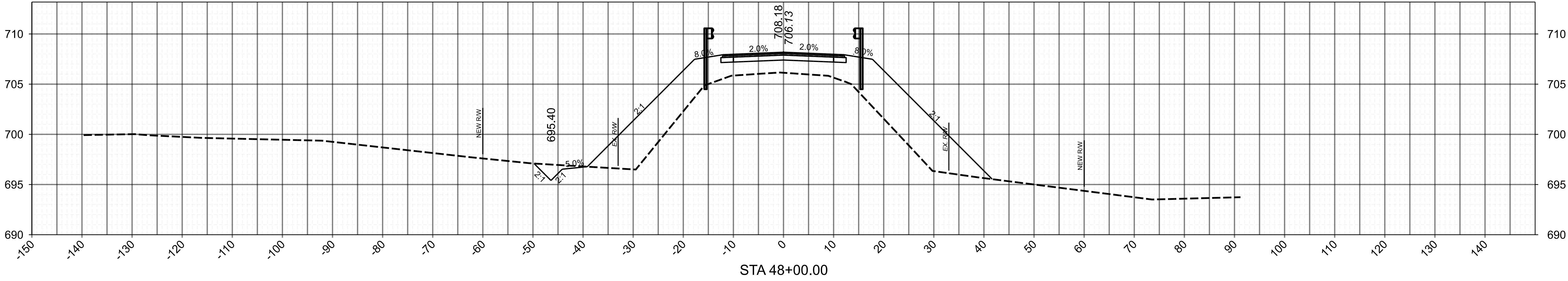
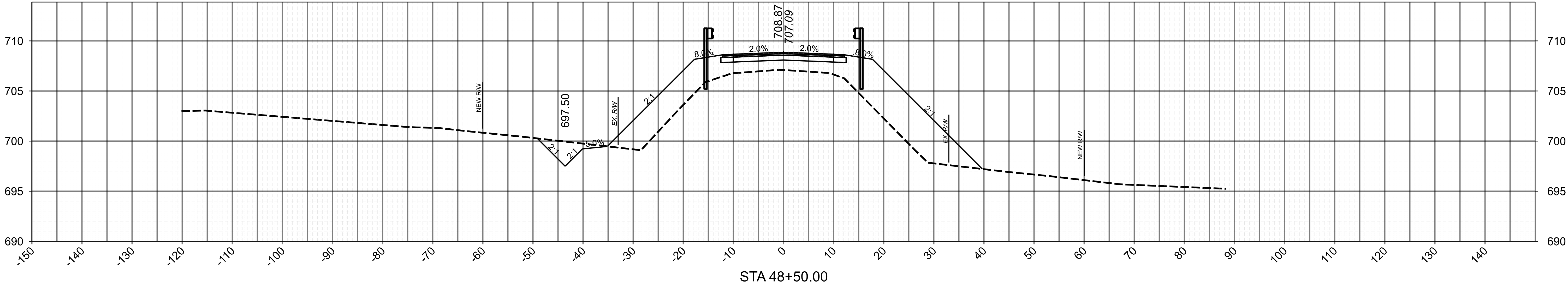
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FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	S.C.	OCONEE		S-37-168	X4

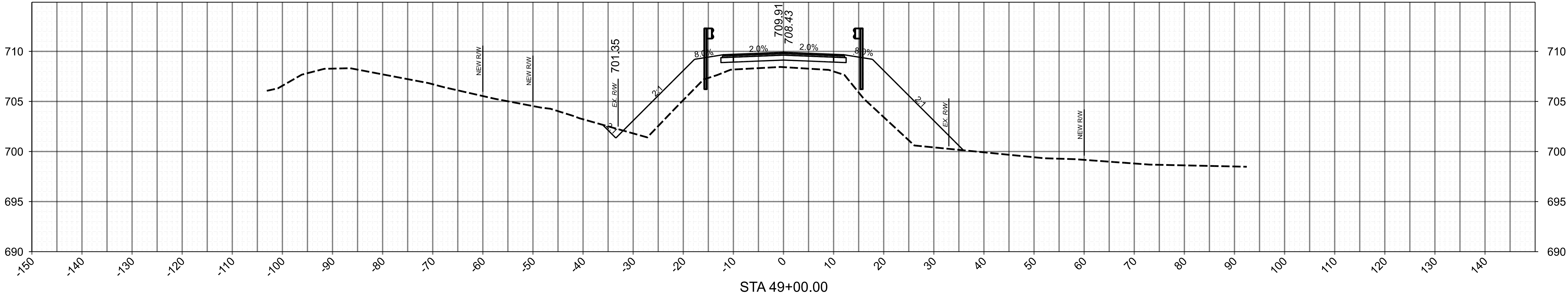
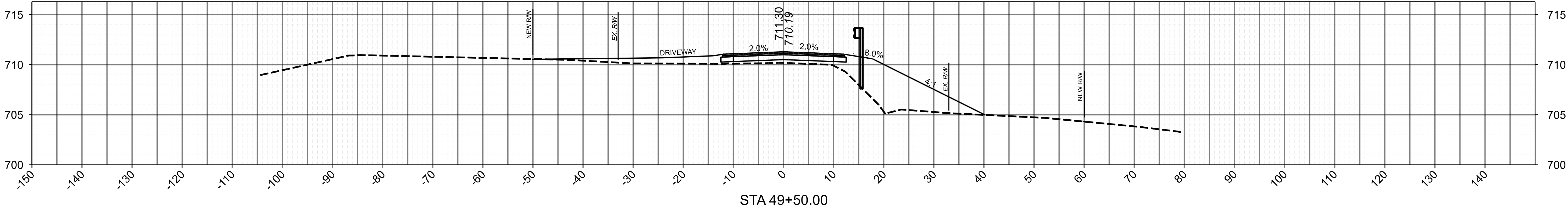
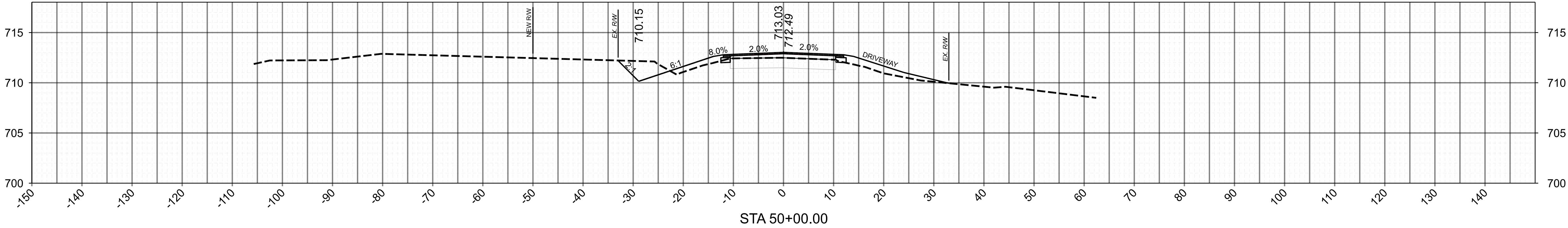


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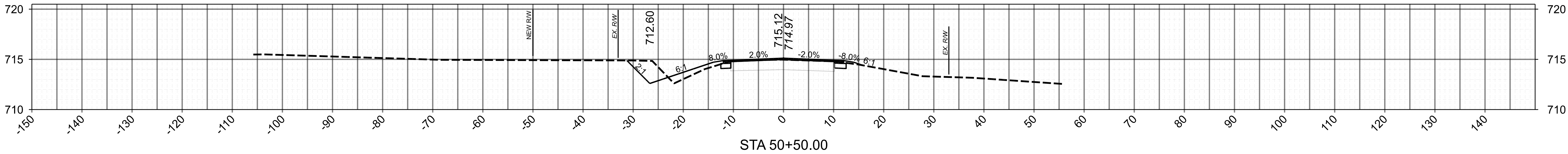
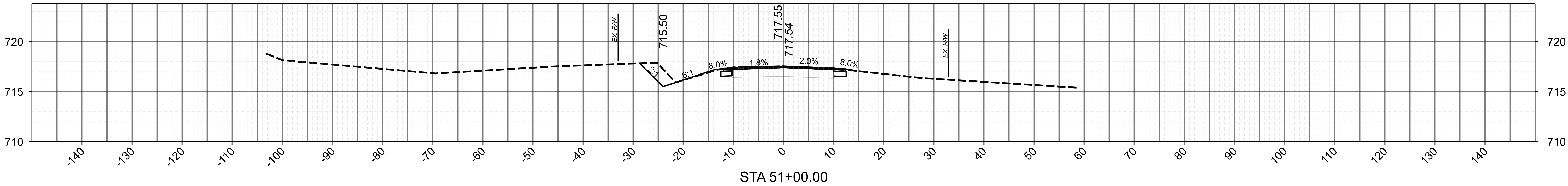
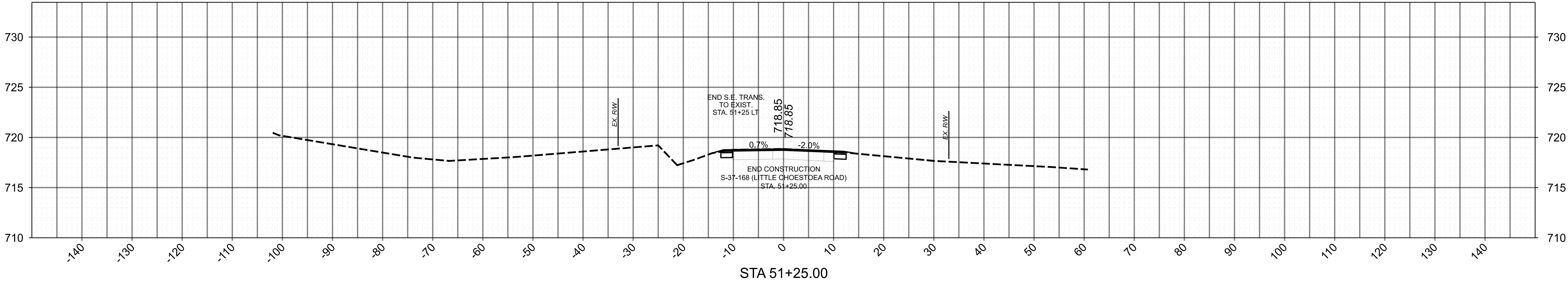
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\$\$\$FILE\$\$\$



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\$\$\$FILE\$\$\$

\$\$\$DATE\$\$\$
\$\$\$TIME\$\$\$

A.2 BRIDGE PLANS

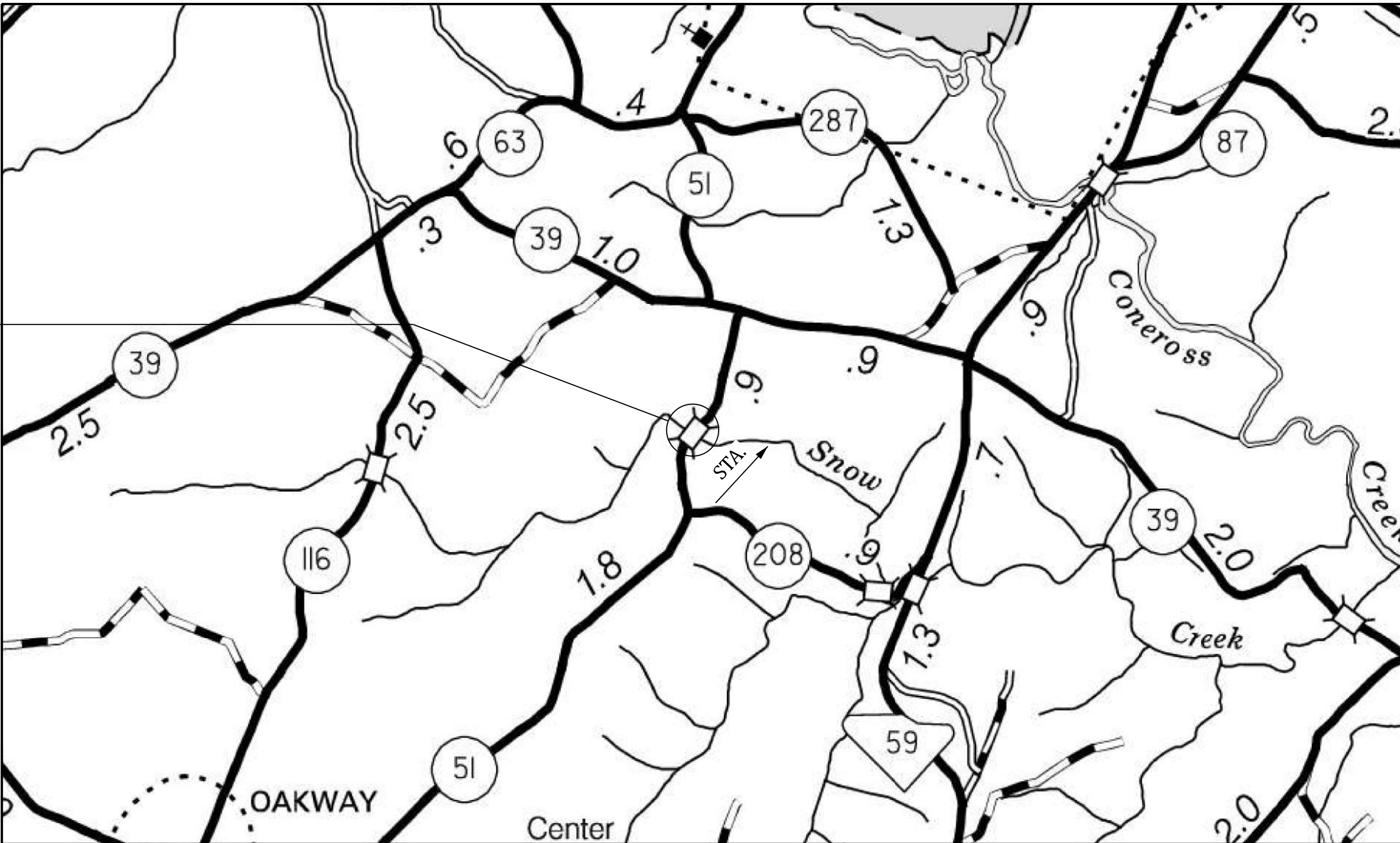
INDEX OF SHEETS

- 1. TITLE SHEET
- 2. BRIDGE PLAN AND PROFILE
- 3. TYPICAL SECTION



PROPOSED PLANS
FOR
OCONEE COUNTY
PROJECT ID 5368980
ROUTE S-37-51 (SNOW CREEK ROAD)
REPLACE BRIDGE OVER SNOW CREEK

SITE LOCATION



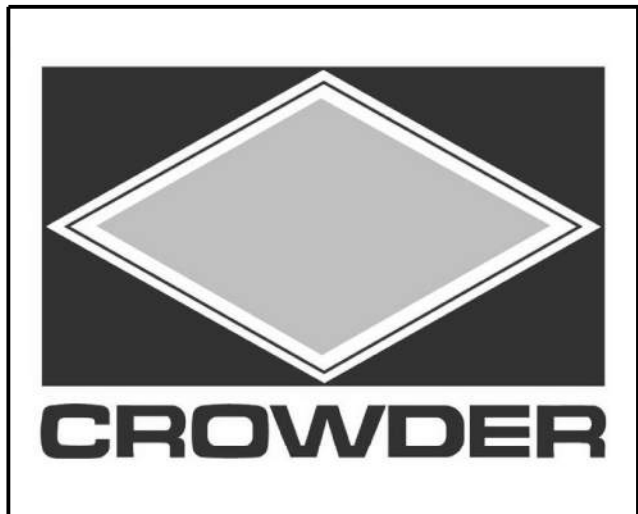
APPROXIMATE LOCATION OF BRIDGE IS
LATITUDE 34° - 37' - 25" N
LONGITUDE 82° - 59' - 40" W

LAYOUT

3 DAYS BEFORE DIGGING IN
SOUTH CAROLINA
CALL 811
SOUTH CAROLINA 811 (SC811)
WWW.SC811.COM
ALL UTILITIES MAY NOT BE A MEMBER OF SC811

ASSET ID TBD

TRAFFIC DATA
2025 ADT 1,400 V.P.D.
2045 ADT 1,900 V.P.D.
TRUCKS 9 %



NET LENGTH OF ROADWAY	0.000	MILES
NET LENGTH OF BRIDGES	0.022	MILES
NET LENGTH OF PROJECT	0.022	MILES
LENGTH OF EXCEPTIONS	0.000	MILES
GROSS LENGTH OF PROJECT	0.022	MILES

NOTE: EXCEPT AS MAY OTHERWISE BE SPECIFIED ON THE PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIALS AND WORKMANSHIP ON THIS PROJECT SHALL CONFORM TO THE SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE STANDARD DRAWINGS FOR ROAD CONSTRUCTION IN EFFECT AT THE TIME OF THE RELEASE OF THE FINAL RFP.

CONSULTING ENGINEERING FIRM

INFRASTRUCTURE
CONSULTING & ENGINEERING

110 MIDLANDS COURT
WEST COLUMBIA, SC 29269
Telephone: (803) 822-0333

ENGINEER OF RECORD
FOR CONSTRUCTION

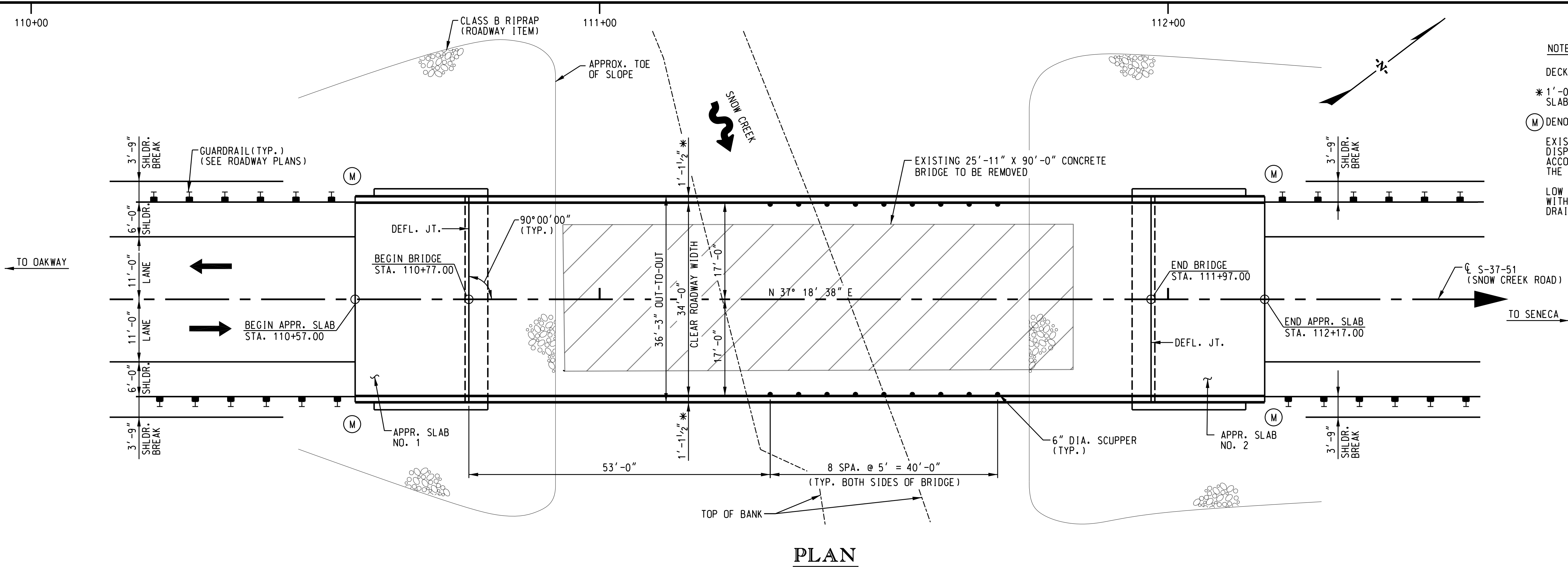
**TECHNICAL
PROPOSAL PLANS**

REVIEWED	J. FELKEL
DR.	RMH
BY	CHK.
DATE	10-25

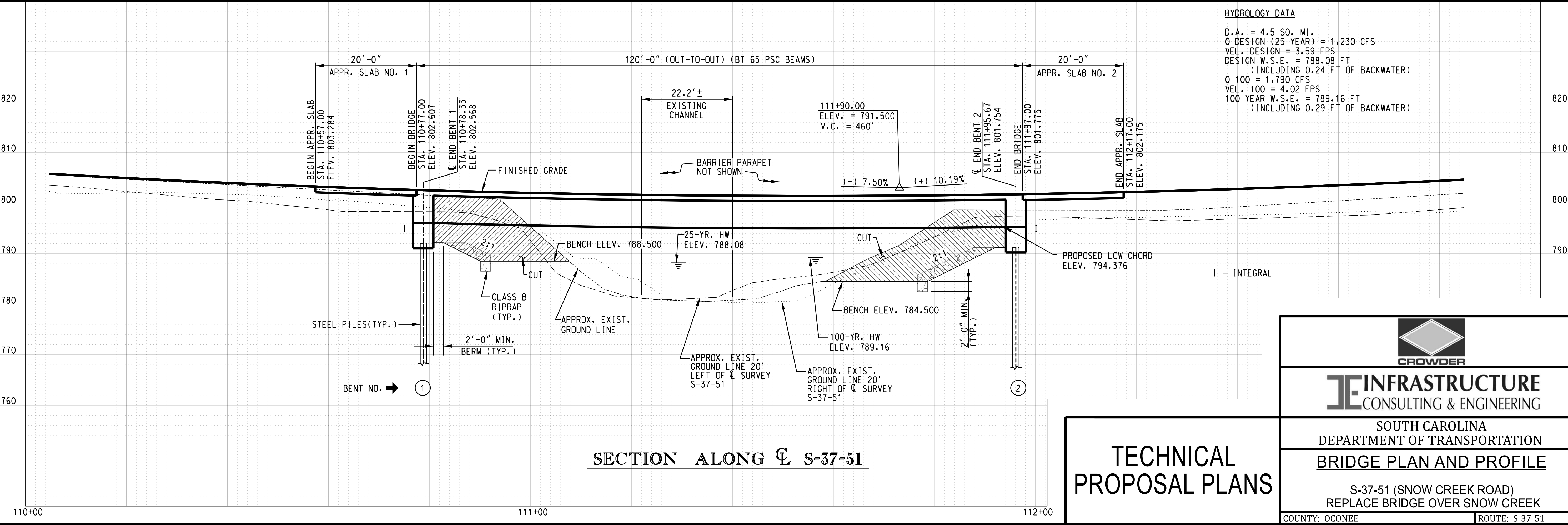
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11/20/2025

REVIEWED J. FELKEL					\$\$\$PRINT PROPERTIES\$\$\$				
QUAN.	DR.	RMH	CSB	11-25	REV.	REV.	REV.	DATE	DESCRIPTION OF REVISION



- NOTES:
- DECK DRAINS AS SHOWN.
 - * 1'-0" MASH BARRIER WITH 1 1/2" SLAB EXTENSION
 - (M) DENOTES MTBBC2 GUARDRAIL ATTACHMENT
 - EXISTING BRIDGE TO BE REMOVED AND DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH SECTION 202.3.2 OF THE STANDARD SPECIFICATIONS.
 - LOW POINT OF VERTICAL CURVE OCCURS WITHIN BRIDGE LIMITS. BRIDGE END DRAINAGE NOT NECESSARY.



HYDROLOGY DATA

D.A. = 4.5 SQ. MI.
Q DESIGN (25 YEAR) = 1,230 CFS
VEL. DESIGN = 3.59 FPS
DESIGN W.S.E. = 788.08 FT
(INCLUDING 0.24 FT OF BACKWATER)
Q 100 = 1,790 CFS
VEL. 100 = 4.02 FPS
100 YEAR W.S.E. = 789.16 FT
(INCLUDING 0.29 FT OF BACKWATER)

I = INTEGRAL



INFRASTRUCTURE
CONSULTING & ENGINEERING

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
BRIDGE PLAN AND PROFILE

S-37-51 (SNOW CREEK ROAD)
REPLACE BRIDGE OVER SNOW CREEK

COUNTY: OCONEE

ROUTE: S-37-51

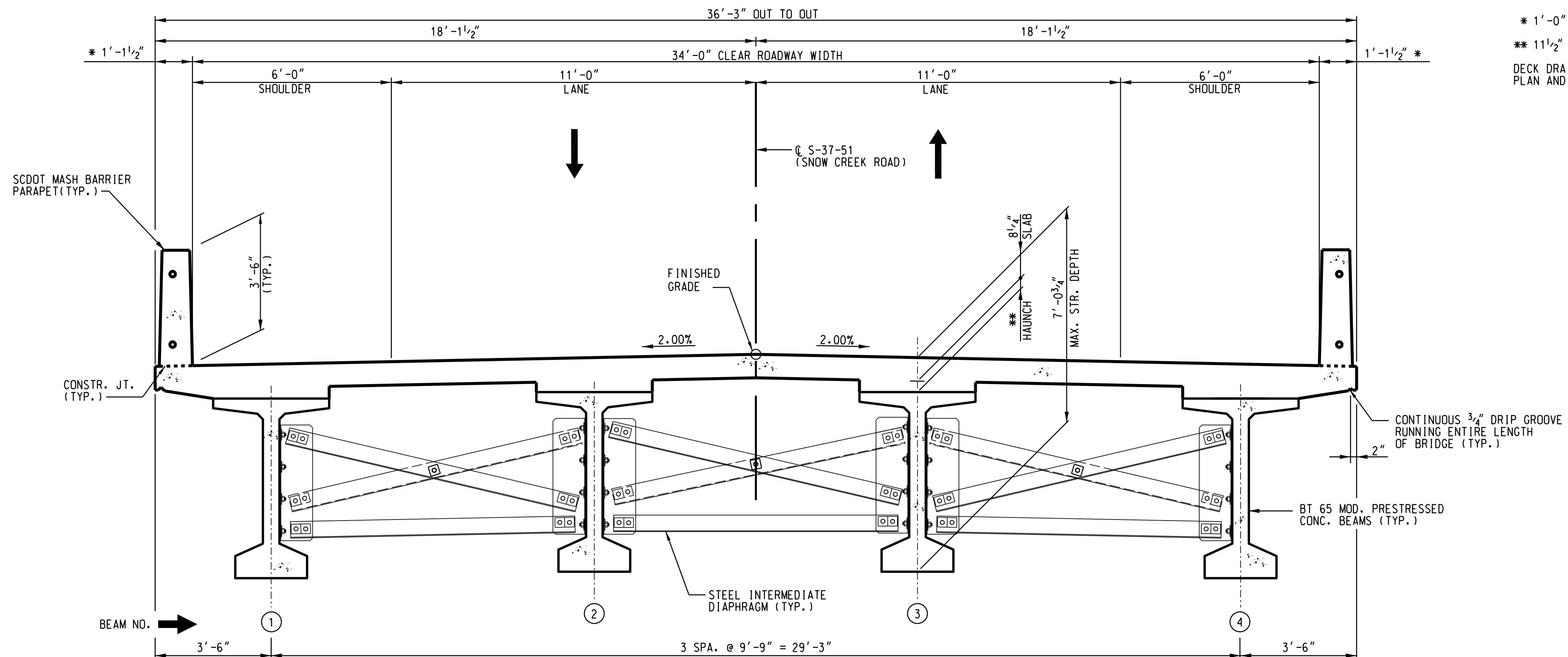
TECHNICAL
PROPOSAL PLANS

NOTES:

* 1'-0" MASH BARRIER WITH 1½" SLAB EXTENSION

** 11 1/2" HAUNCH AT C BEARING

DECK DRAINS NOT SHOWN FOR CLARITY. SEE BRIDGE
PLAN AND PROFILE SHEET.





TYPICAL SECTION

LOOKING IN DIRECTION OF STATIONING

REVIEWED				J. FELKEL				\$\$\$PRINT_PROPERTIES\$\$\$			
QUAN.	___	___	___	REV.	___	___	___	REV.	___	___	___
DR.	RMH	CSB	11-25	REV.	___	___	___	REV.	___	___	___
DES.	___	___	___	REV.	___	___	___	REV.	___	___	___
BY				CHK.	DATE	BY		CHK.	DATE	DESCRIPTION OF REVISION	

REVIEWED	J. FELKEL
QUAN.	— — —
DR.	RMH CSB 11-25
DES.	— — —
	BY CHK. DATE

\$\$\$PRINT_PROPERTIES\$\$\$			
REV.			
REV.			
REV.			
	BY	CHK.	DATE
	DESCRIPTION OF REVISION		

	
	
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION	
<u>TYPICAL SECTION</u>	
S-37-51 (SNOW CREEK ROAD) REPLACE BRIDGE OVER SNOW CREEK	
COUNTY: OCONEE	ROUTE: S-37-51

INDEX OF SHEETS

- 1. TITLE SHEET
- 2. BRIDGE PLAN AND PROFILE
- 3. TYPICAL SECTION



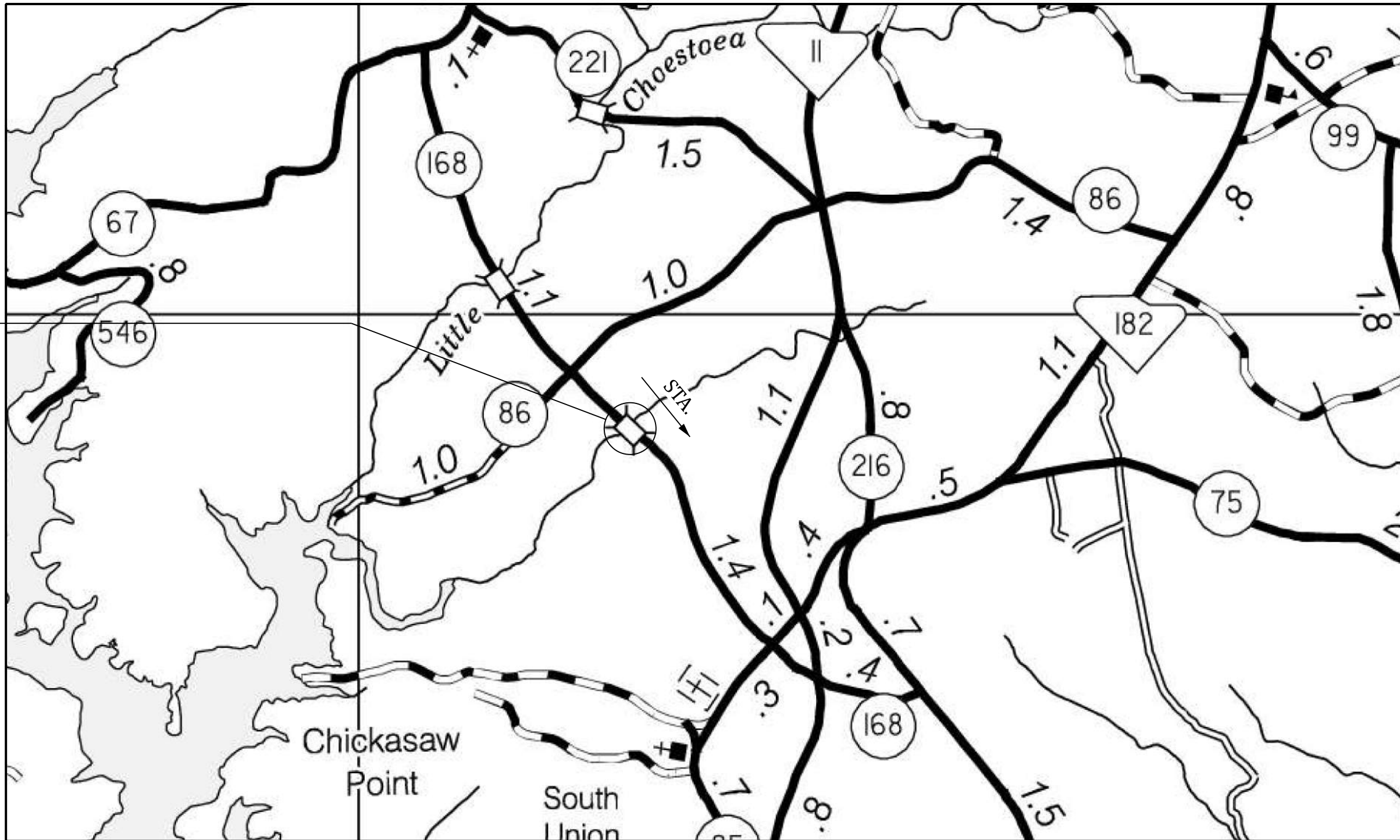
PROPOSED PLANS
FOR
OCONEE COUNTY
PROJECT ID 5368980
ROUTE S-37-168 (LITTLE CHOESTOEA ROAD)
REPLACE BRIDGE OVER TRIBUTARY TO CHOESTOEA CREEK

DESIGN REFERENCE FOR THESE PLANS IS THE:

LVB

SUPPLEMENTAL DESIGN CRITERIA FOR
LOW VOLUME BRIDGE REPLACEMENT PROJECTS

SITE LOCATION



APPROXIMATE LOCATION OF BRIDGE IS

LATITUDE 34°- 33' - 43" N
LONGITUDE 83°- 03' - 38" W

LAYOUT

3 DAYS BEFORE DIGGING IN
SOUTH CAROLINA
CALL 811
SOUTH CAROLINA 811 (SC811)
WWW.SC811.COM
ALL UTILITIES MAY NOT BE A MEMBER OF SC811

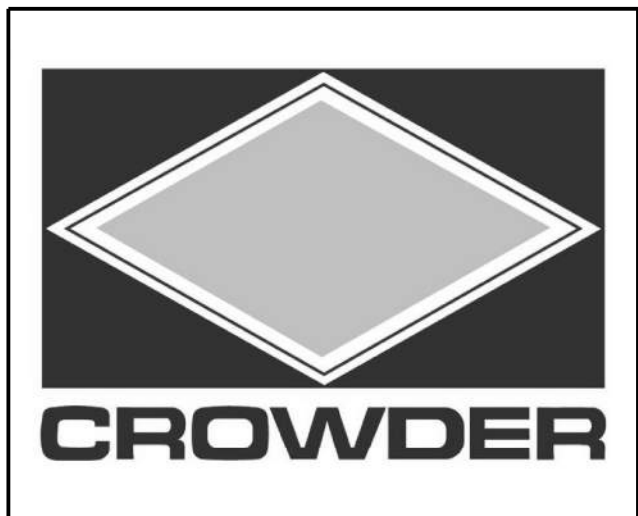
ASSET ID TBD

TRAFFIC DATA

2025 ADT 650 V.P.D.

2045 ADT 950 V.P.D.

TRUCKS 6 %



NET LENGTH OF ROADWAY	0.000	MILES
NET LENGTH OF BRIDGES	0.021	MILES
NET LENGTH OF PROJECT	0.021	MILES
LENGTH OF EXCEPTIONS	0.000	MILES
GROSS LENGTH OF PROJECT	0.021	MILES

NOTE: EXCEPT AS MAY OTHERWISE BE SPECIFIED ON THE PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIALS AND WORKMANSHIP ON THIS PROJECT SHALL CONFORM TO THE SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE STANDARD DRAWINGS FOR ROAD CONSTRUCTION IN EFFECT AT THE TIME OF THE RELEASE OF THE FINAL RFP.

CONSULTING ENGINEERING FIRM

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110 MIDLANDS COURT
WEST COLUMBIA, SC 29269
Telephone: (803) 822-0333

ENGINEER OF RECORD
FOR CONSTRUCTION

TECHNICAL
PROPOSAL PLANS

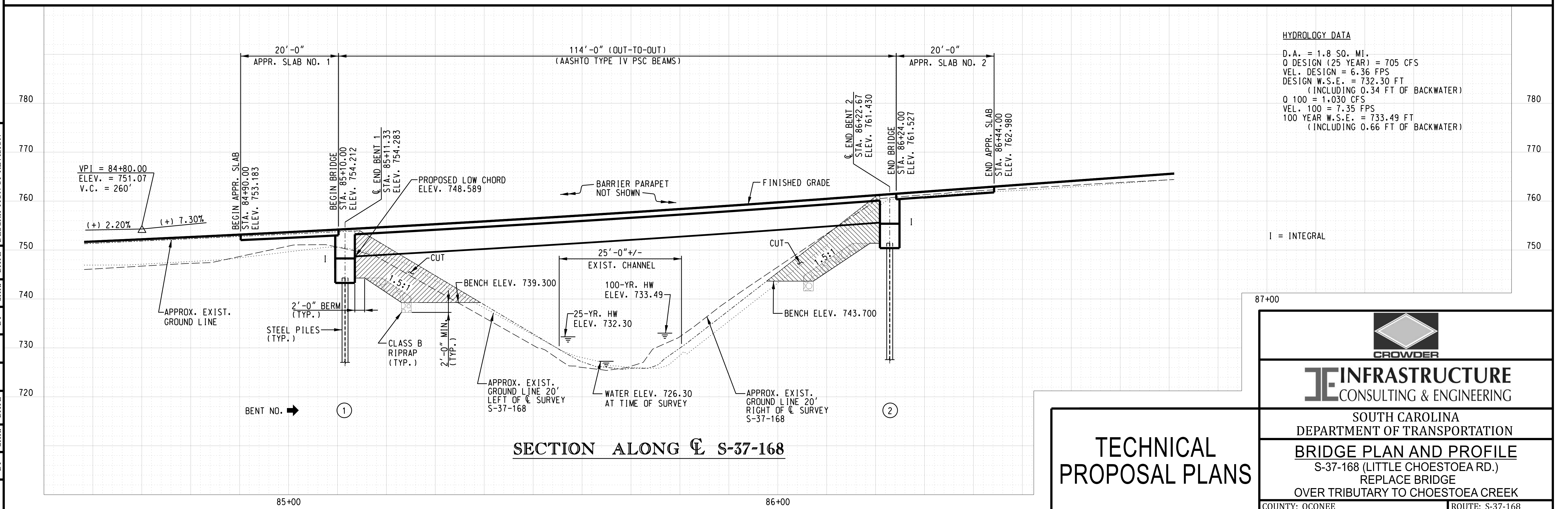
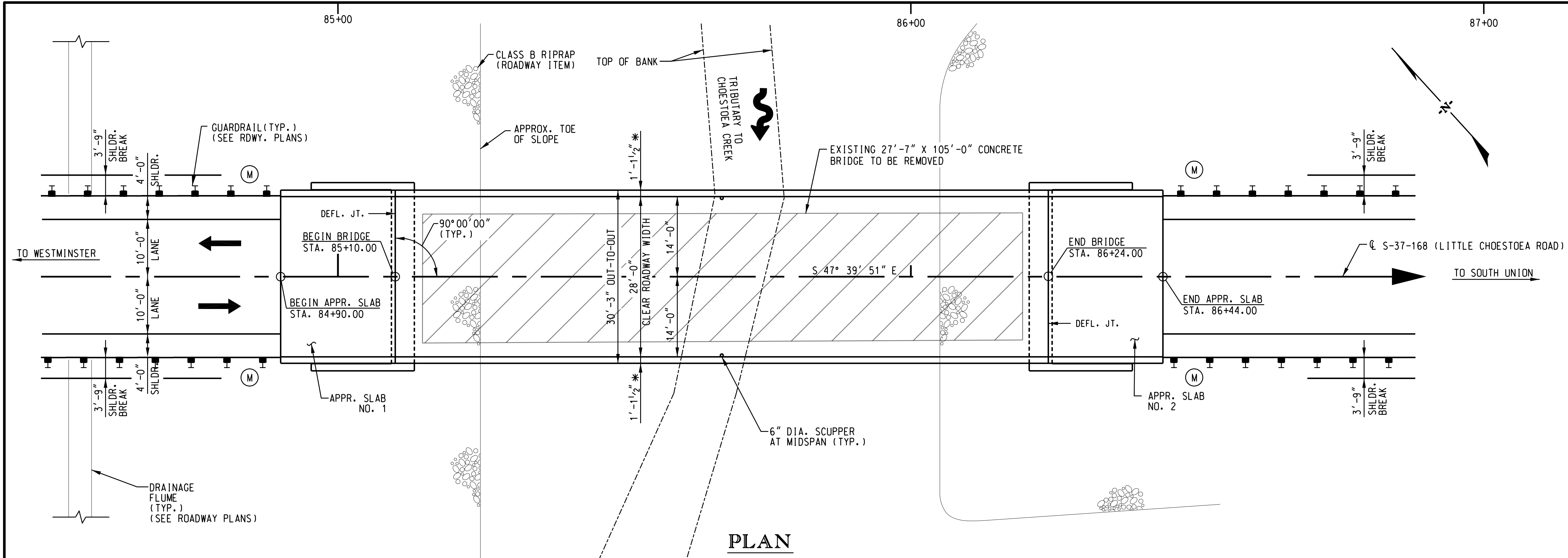
NOTES:

DECK DRAINS AS SHOWN.

* 1'-0" MASH BARRIER WITH 1½" SLAB EXTENSION

(M) DENOTES MTBBC3 GUARDRAIL ATTACHMENT

EXISTING BRIDGE TO BE REMOVED
AND DISPOSED OF BY THE
CONTRACTOR IN ACCORDANCE WITH
SECTION 202.3.2 OF THE
STANDARD SPECIFICATIONS.



HYDROLOGY DATA

D.A. = 1.8 SQ. MI.
Q DESIGN (25 YEAR) = 705 CFS
VEL. DESIGN = 6.36 FPS
DESIGN W.S.E. = 732.30 FT
(INCLUDING 0.34 FT OF BACKWATER)
Q 100 = 1,030 CFS
VEL. 100 = 7.35 FPS
100 YEAR W.S.E. = 733.49 FT
(INCLUDING 0.66 FT OF BACKWATER)

I = INTEGRAL



IE INFRASTRUCTURE
CONSULTING & ENGINEERING

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
BRIDGE PLAN AND PROFILE
S-37-168 (LITTLE CHOESTOE RD.)
REPLACE BRIDGE
OVER TRIBUTARY TO CHOESTOE CREEK

COUNTY: OCONEE

ROUTE: S-37-168

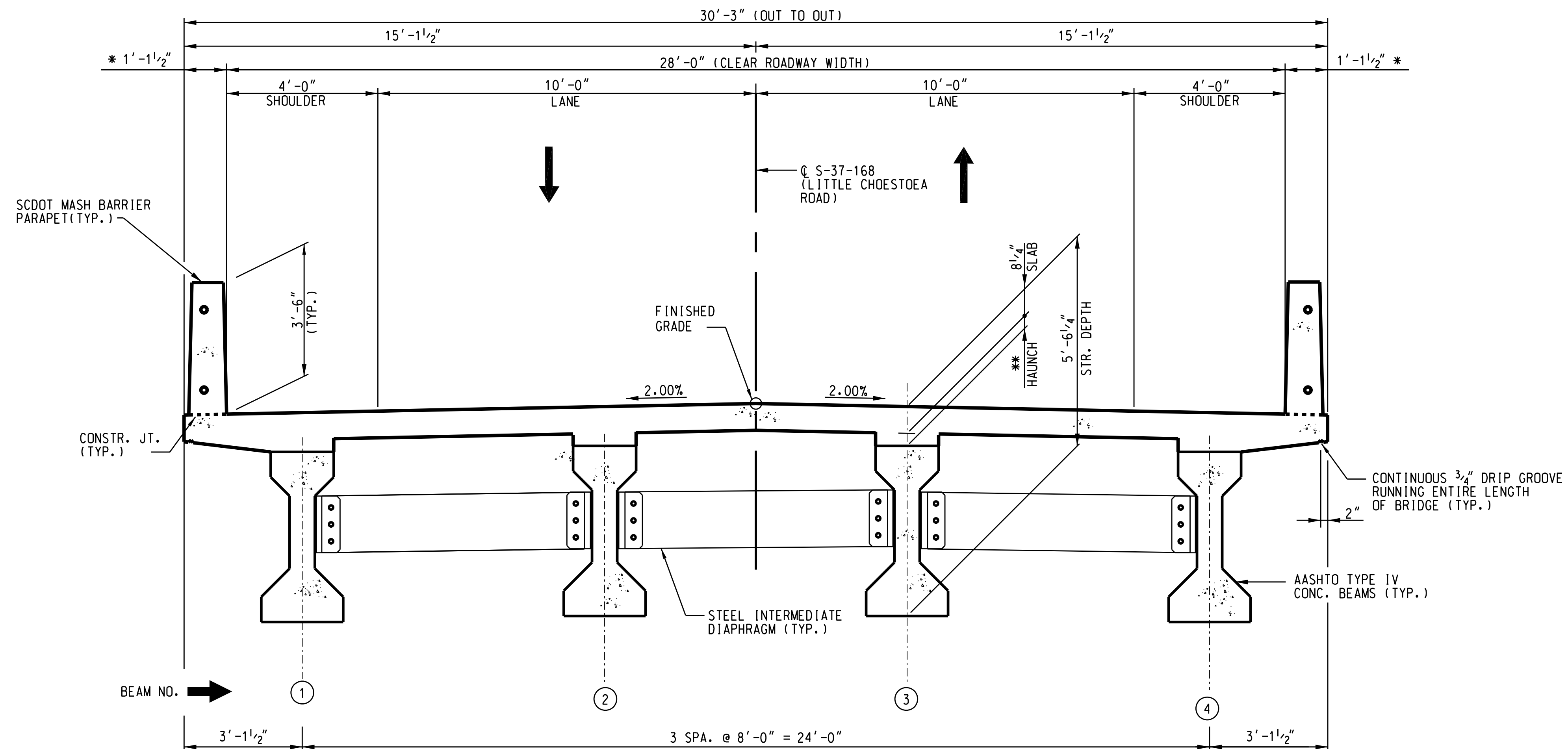
TECHNICAL PROPOSAL PLANS

NOTES:

* 1'-0" MASH BARRIER WITH 1½" SLAB EXTENSION

** 4" HAUNCH AT C BEARING

DECK DRAINS NOT SHOWN FOR CLARITY. SEE BRIDGE
PLAN AND PROFILE SHEET.



TYPICAL SECTION

LOOKING IN DIRECTION OF STATIONING

\$\$\$PRINT_PROPERTIES\$\$\$			
REV.			
REV.			
REV.			
	BY	CHK.	DATE
	DESCRIPTION OF REVISION		

REVIEWED J. FELKEL			
QUAN.	—	—	—
DR.	RMH	CSB	10-25
DES.	—	—	—
	BY	CHK.	DATE

\$\$\$PRINT_PROPERTIES\$\$\$

REVIEWED J. FELKEL

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11/20/2025



IE INFRASTRUCTURE
CONSULTING & ENGINEERING

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION
S-37-168 (LITTLE CHOESTOE RD.)
REPLACE BRIDGE
OVER TRIBUTARY TO CHOESTOE CREEK

COUNTY: OCONEE

ROUTE: S-37-168

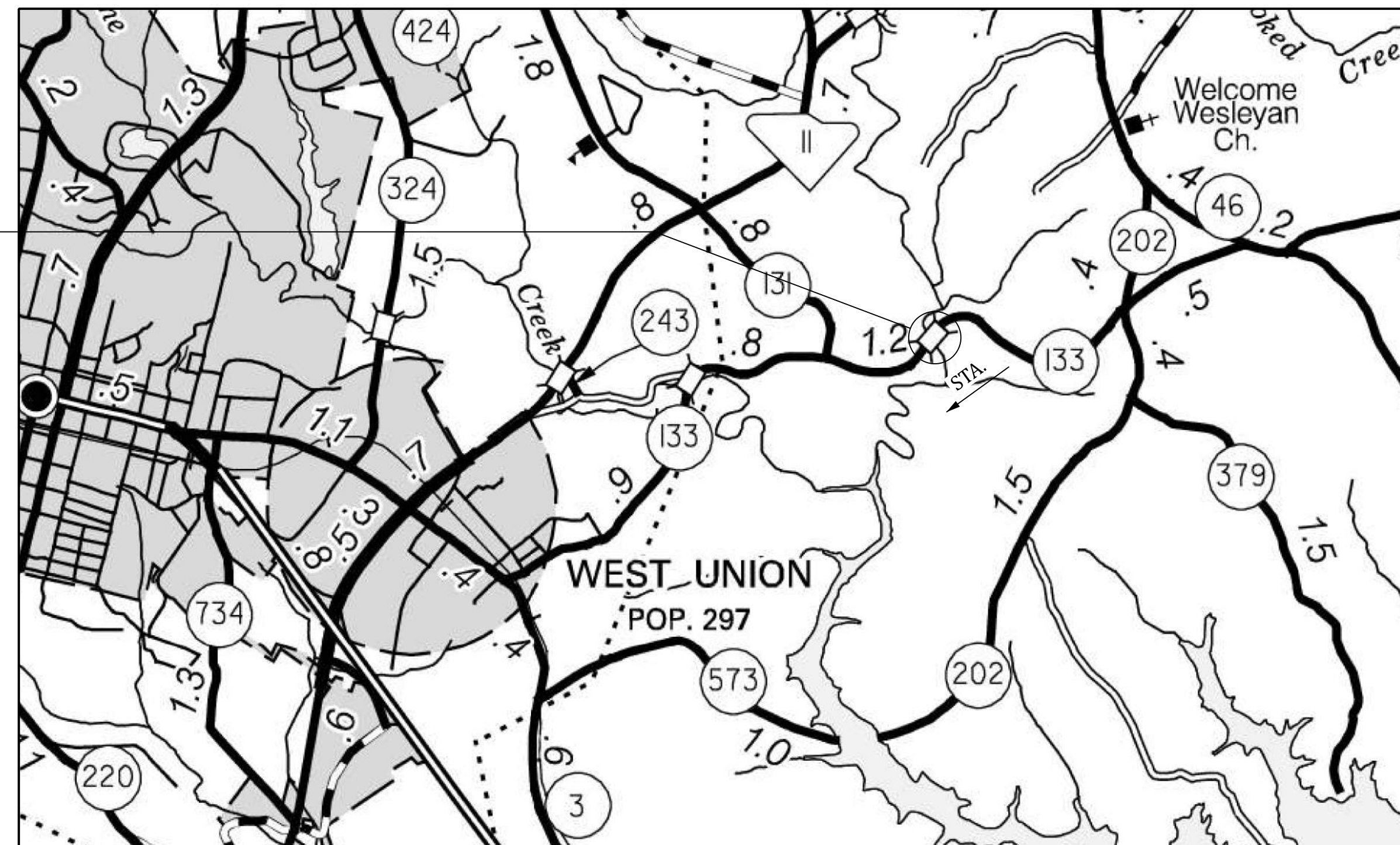
TECHNICAL PROPOSAL PLANS



SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION



PROPOSED PLANS
FOR
OCONEE COUNTY
PROJECT ID 5368980
ROUTE S-37-133 (BURNS MILL ROAD)
REPLACE BRIDGE OVER LITTLE CANE CREEK



SITE LOCATION

APPROXIMATE LOCATION OF BRIDGE IS

LATITUDE	34°- 46' - 00" N
LONGITUDE	83°- 01' - 33" W

-N

LAYOUT

INDEX OF SHEETS

1. TITLE SHEET
2. BRIDGE PLAN AND PROFILE
3. TYPICAL SECTION (1)
4. TYPICAL SECTION (2)

3 DAYS BEFORE DIGGING IN
SOUTH CAROLINA
CALL 811
SOUTH CAROLINA 811 (SC811)
WWW.SC811.COM
ALL UTILITIES MAY NOT BE A MEMBER OF SC811

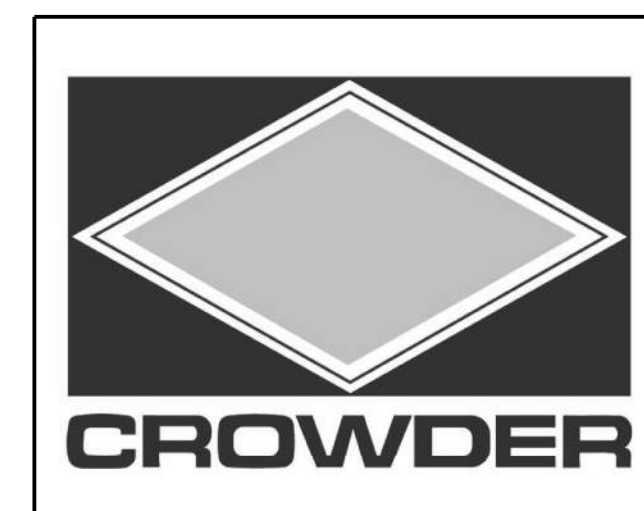
ASSET ID TBD

TRAFFIC DATA

2025 ADT 1,900 V.P.D.

2045 ADT 2,600 V.P.D.

TRUCKS 4 %



NET LENGTH OF ROADWAY	0.000	MILES
NET LENGTH OF BRIDGES	0.033	MILES
NET LENGTH OF PROJECT	0.033	MILES
LENGTH OF EXCEPTIONS	0.000	MILES
GROSS LENGTH OF PROJECT	0.033	MILES

NOTE: EXCEPT AS MAY OTHERWISE BE SPECIFIED ON THE PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIALS AND WORKMANSHIP ON THIS PROJECT SHALL CONFORM TO THE SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE STANDARD DRAWINGS FOR ROAD CONSTRUCTION IN EFFECT AT THE TIME OF THE RELEASE OF THE FINAL RFP.

CONSULTING ENGINEERING FIRM

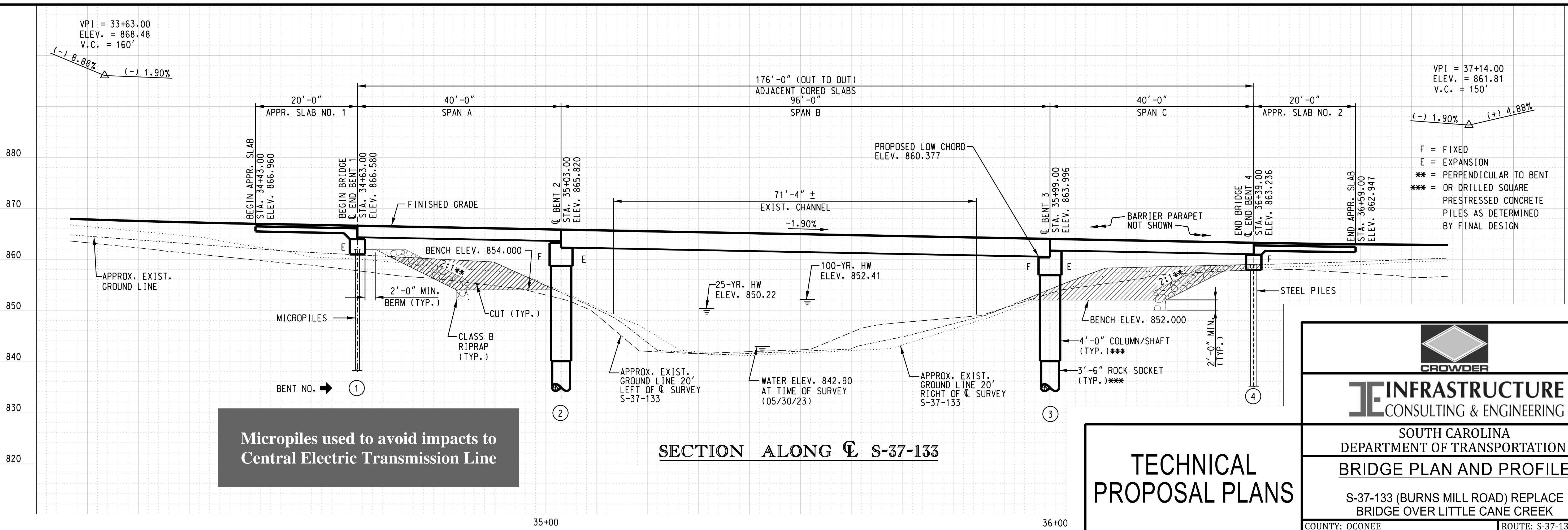
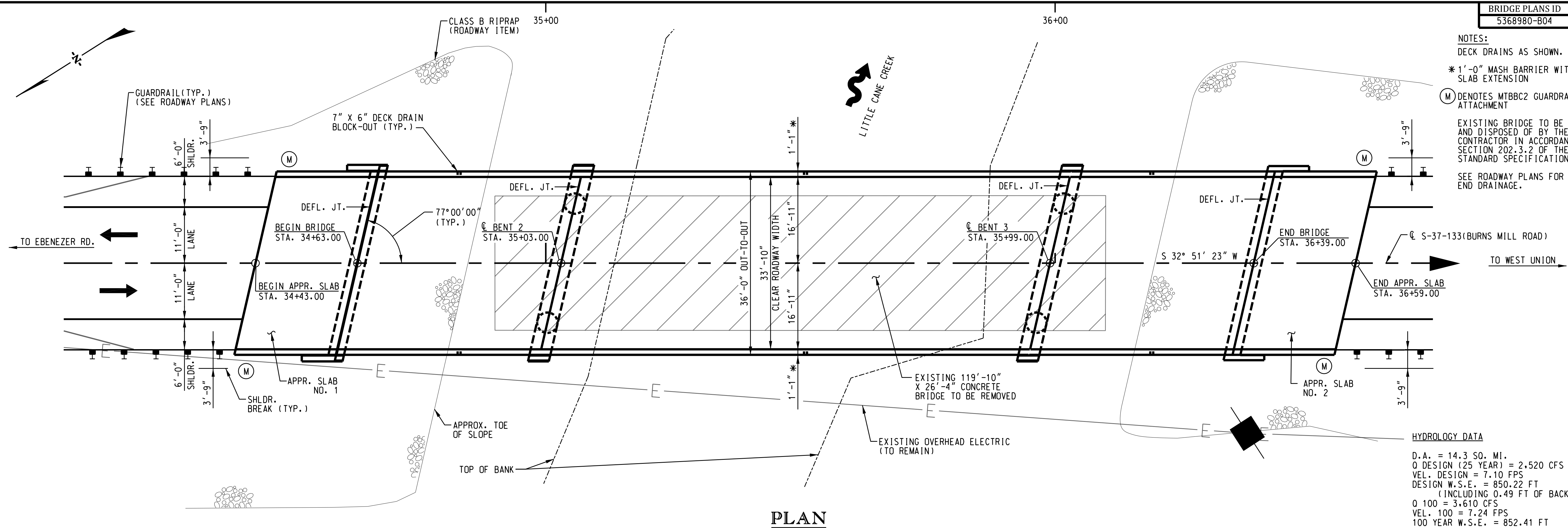


110 MIDLANDS COURT
WEST COLUMBIA, SC 29269
Telephone: (803) 822-0333

ENGINEER OF RECORD
FOR CONSTRUCTION

TECHNICAL PROPOSAL PLANS

NOTES:
DECK DRAINS AS SHOWN.
1'-0" MASH BARRIER WITH 1"
SLAB EXTENSION
DENOTES MTBBC2 GUARDRAIL
ATTACHMENT
EXISTING BRIDGE TO BE REMOVED
AND DISPOSED OF BY THE
CONTRACTOR IN ACCORDANCE WITH
SECTION 202.3.2 OF THE
STANDARD SPECIFICATIONS.
SEE ROADWAY PLANS FOR BRIDGE
END DRAINAGE.



Micropiles used to avoid impacts to Central Electric Transmission Line

SECTION ALONG \mathbb{C} S-37-133

TECHNICAL PROPOSAL PLANS

IE INFRASTRUCTURE
CONSULTING & ENGINEERING

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BRIDGE PLAN AND PROFILE

S-37-133 (BURNS MILL ROAD) REPLACE
BRIDGE OVER LITTLE CANE CREEK

COUNTY: OCONEE	ROUTE: S-37-133
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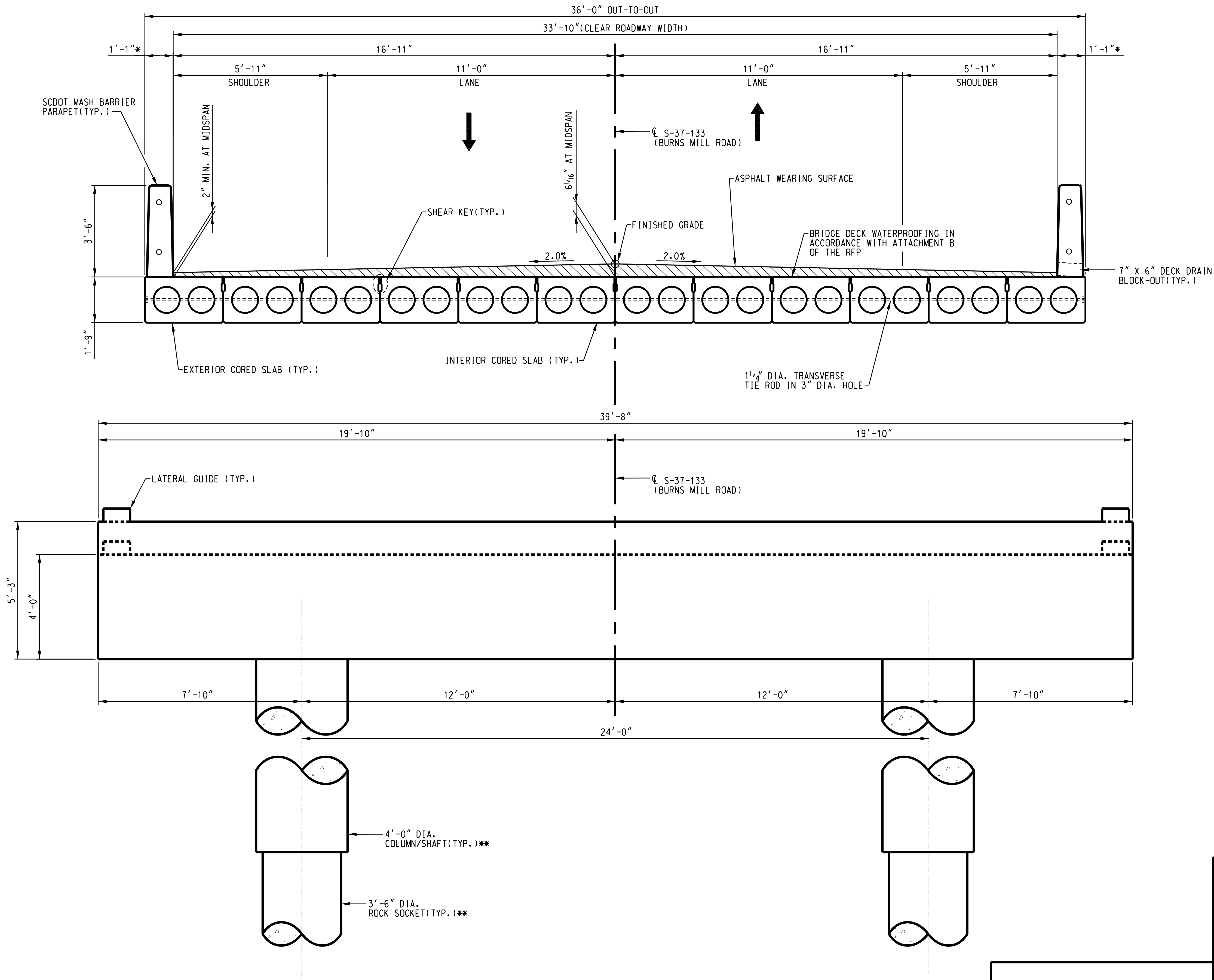
c:\bms\ice-eng-pw-01\0055742\03-04_S-42-197_OVER_LITTLE_CANE_CR_TYP_SECTIONS_I&2.dgn
11/20/2025

REVIEWED J.FELKEL					QUAN.					DES.				
BY	CHK.	DATE	BY	CHK.	DATE	BY	CHK.	DATE	BY	CHK.	DATE	BY	CHK.	DATE
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
DR.	RMH	CSB	11-25	—	—	—	—	—	—	—	—	—	—	—
REV.	—	—	—	—	—	—	—	—	—	—	—	—	—	—
REV.	—	—	—	—	—	—	—	—	—	—	—	—	—	—
REV.	—	—	—	—	—	—	—	—	—	—	—	—	—	—

\$\$\$PRINT PROPERTIES\$\$\$

REVIEWED J.FELKEL					QUAN.					DES.				
BY	CHK.	DATE	BY	CHK.	DATE	BY	CHK.	DATE	BY	CHK.	DATE	BY	CHK.	DATE
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
DR.	RMH	CSB	11-25	—	—	—	—	—	—	—	—	—	—	—
REV.	—	—	—	—	—	—	—	—	—	—	—	—	—	—
REV.	—	—	—	—	—	—	—	—	—	—	—	—	—	—
REV.	—	—	—	—	—	—	—	—	—	—	—	—	—	—

BRIDGE PLANS ID	SHEET
5368980-B04	3

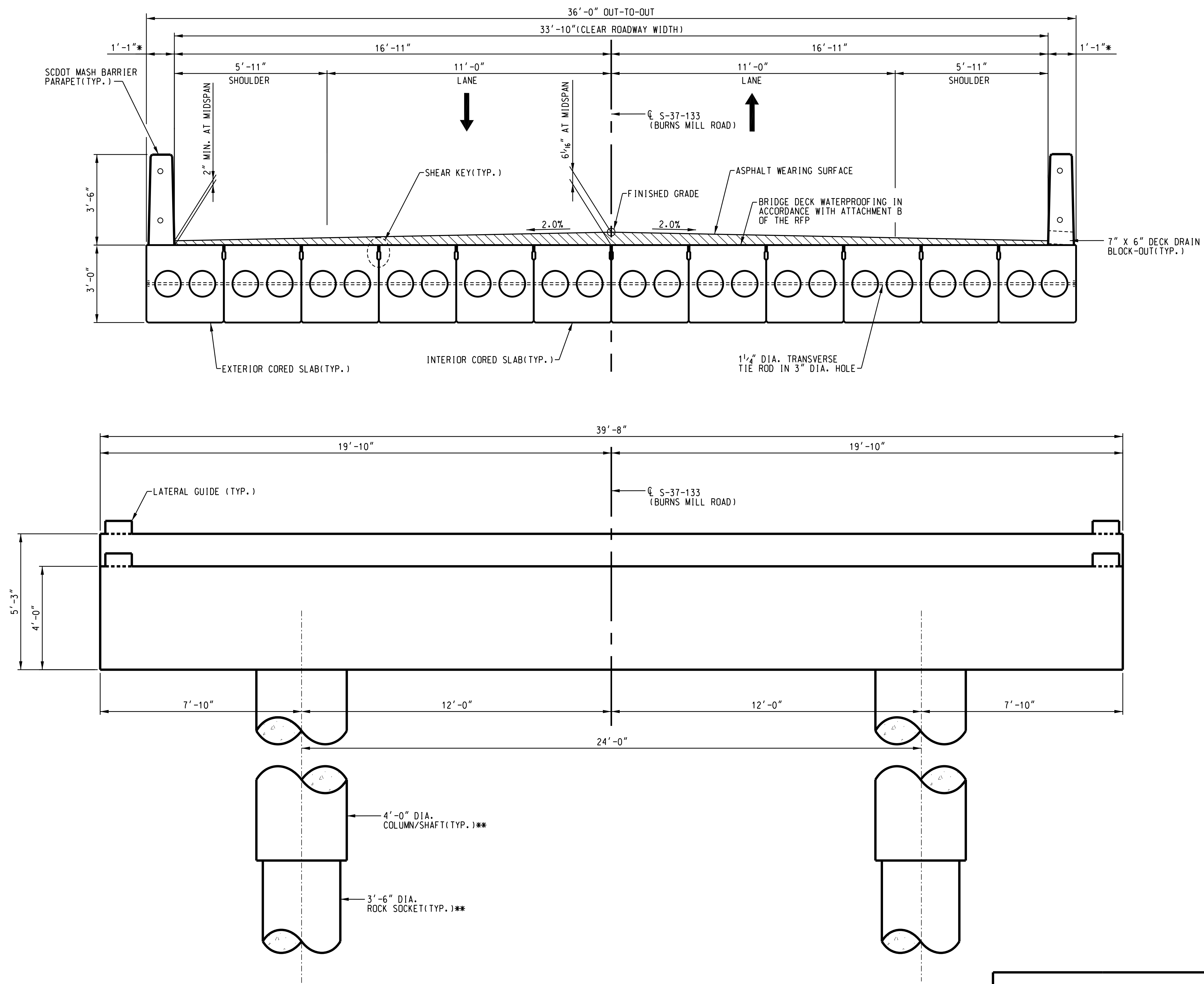


* 1'-0" MASH BARRIER PARAPET WITH 1" SLAB EXTENSION.
** OR DRILLED SQUARE PRESTRESSED CONCRETE PILES AS DETERMINED BY FINAL DESIGN.

TYPICAL SECTION - SPANS A & C
LOOKING IN DIRECTION OF STATIONING

**TECHNICAL
PROPOSAL PLANS**

	
INFRASTRUCTURE CONSULTING & ENGINEERING	
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION	
TYPICAL SECTION (1)	
S-37-133 (BURNS MILL ROAD) REPLACE BRIDGE OVER LITTLE CANE CREEK	
COUNTY: OCONEE	S-37-133



* 1'-0" MASH BARRIER PARAPET
WITH 1" SLAB EXTENSION.

** OR DRILLED SQUARE PRESTRESSED CONCRETE
PILES AS DETERMINED BY FINAL DESIGN.

	REVIEWED	J. FELKEL	\$\$\$\$PRINT_PROPERTIES\$\$\$
QUAN.	___	___	REV. _____
DR.	RMH	CSB	REV. _____
DES.	___	___	REV. _____
	BY	CHK.	DATE
			DESCRIPTION OF REVISION

REVIEWED	J. FELKEL	
QUAN.	—	—
DR.	RMH	CSB
DES.	—	11-25
	BY	CHK: DATE

TYPICAL SECTION - SPAN B
LOOKING IN DIRECTION OF STATIONING

TECHNICAL PROPOSAL PLANS



IE INFRASTRUCTURE
CONSULTING & ENGINEERING

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION (2)

S-37-133 (BURNS MILL ROAD) REPLACE
BRIDGE OVER LITTLE CANE CREEK

COUNTY: OCONEE

S-37-133

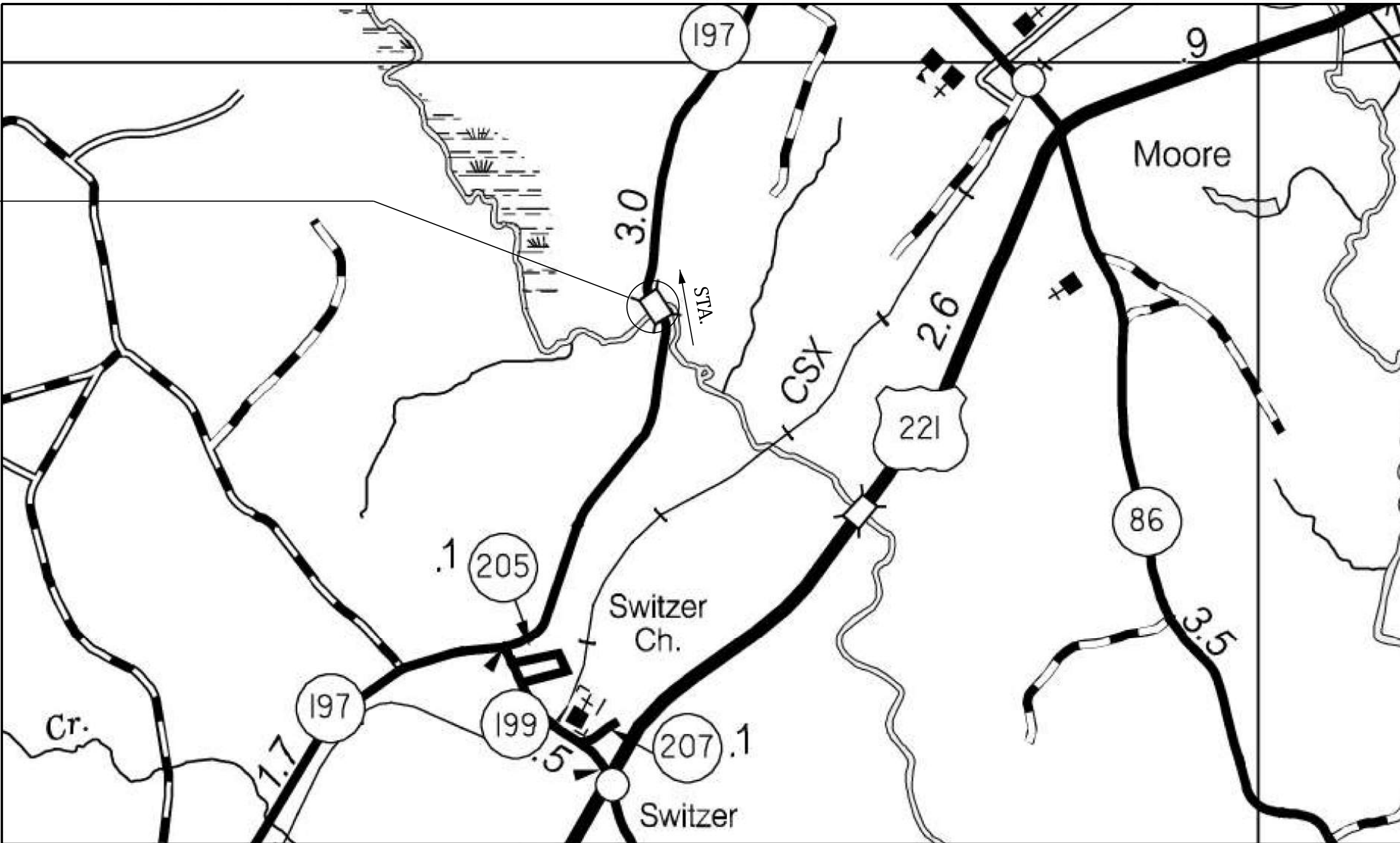
INDEX OF SHEETS

- 1. TITLE SHEET
- 2. BRIDGE PLAN AND PROFILE
- 3. TYPICAL SECTION (1)
- 4. TYPICAL SECTION (2)



PROPOSED PLANS
FOR
SPARTANBURG COUNTY
PROJECT ID 5368980
ROUTE S-42-197 (OLD SPARTANBURG HWY.)
REPLACE BRIDGE OVER SOUTH TYGER RIVER

SITE LOCATION



LAYOUT

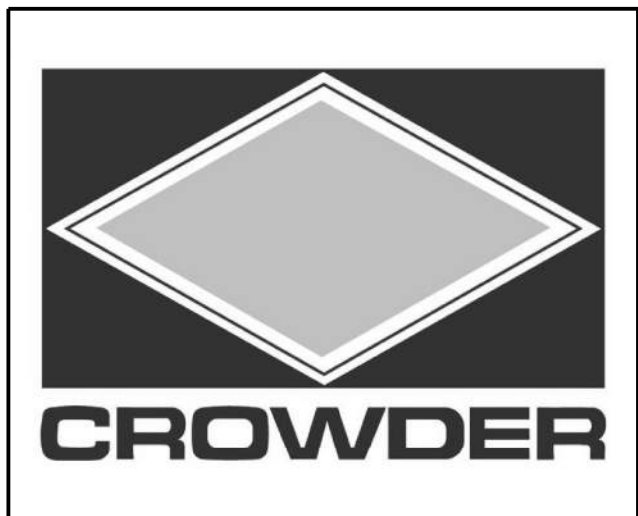
APPROXIMATE LOCATION OF BRIDGE IS
LATITUDE 34° - 49' - 21" N
LONGITUDE 82° - 00' - 48" W

3 DAYS BEFORE DIGGING IN
SOUTH CAROLINA
CALL 811
SOUTH CAROLINA 811 (SC811)
WWW.SC811.COM
ALL UTILITIES MAY NOT BE A MEMBER OF SC811

ASSET ID TBD

TRAFFIC DATA

2025 ADT 1,200 V.P.D.
2045 ADT 1,600 V.P.D.
TRUCKS 5 %



NET LENGTH OF ROADWAY	0.000	MILES
NET LENGTH OF BRIDGES	0.038	MILES
NET LENGTH OF PROJECT	0.038	MILES
LENGTH OF EXCEPTIONS	0.000	MILES
GROSS LENGTH OF PROJECT	0.038	MILES

NOTE: EXCEPT AS MAY OTHERWISE BE SPECIFIED ON THE PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIALS AND WORKMANSHIP ON THIS PROJECT SHALL CONFORM TO THE SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE STANDARD DRAWINGS FOR ROAD CONSTRUCTION IN EFFECT AT THE TIME OF THE RELEASE OF THE FINAL RFP.

CONSULTING ENGINEERING FIRM

INFRASTRUCTURE
CONSULTING & ENGINEERING

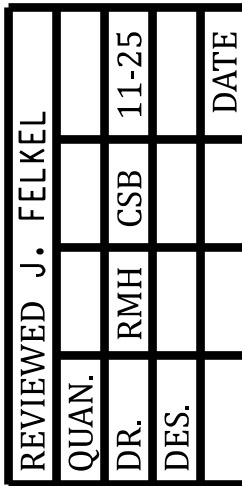
110 MIDLANDS COURT
WEST COLUMBIA, SC 29269
Telephone: (803) 822-0333

ENGINEER OF RECORD
FOR CONSTRUCTION

TECHNICAL
PROPOSAL PLANS

REVIEWED	J. FELKEL
DR.	RMH
BY	CHK.
DATE	11-25

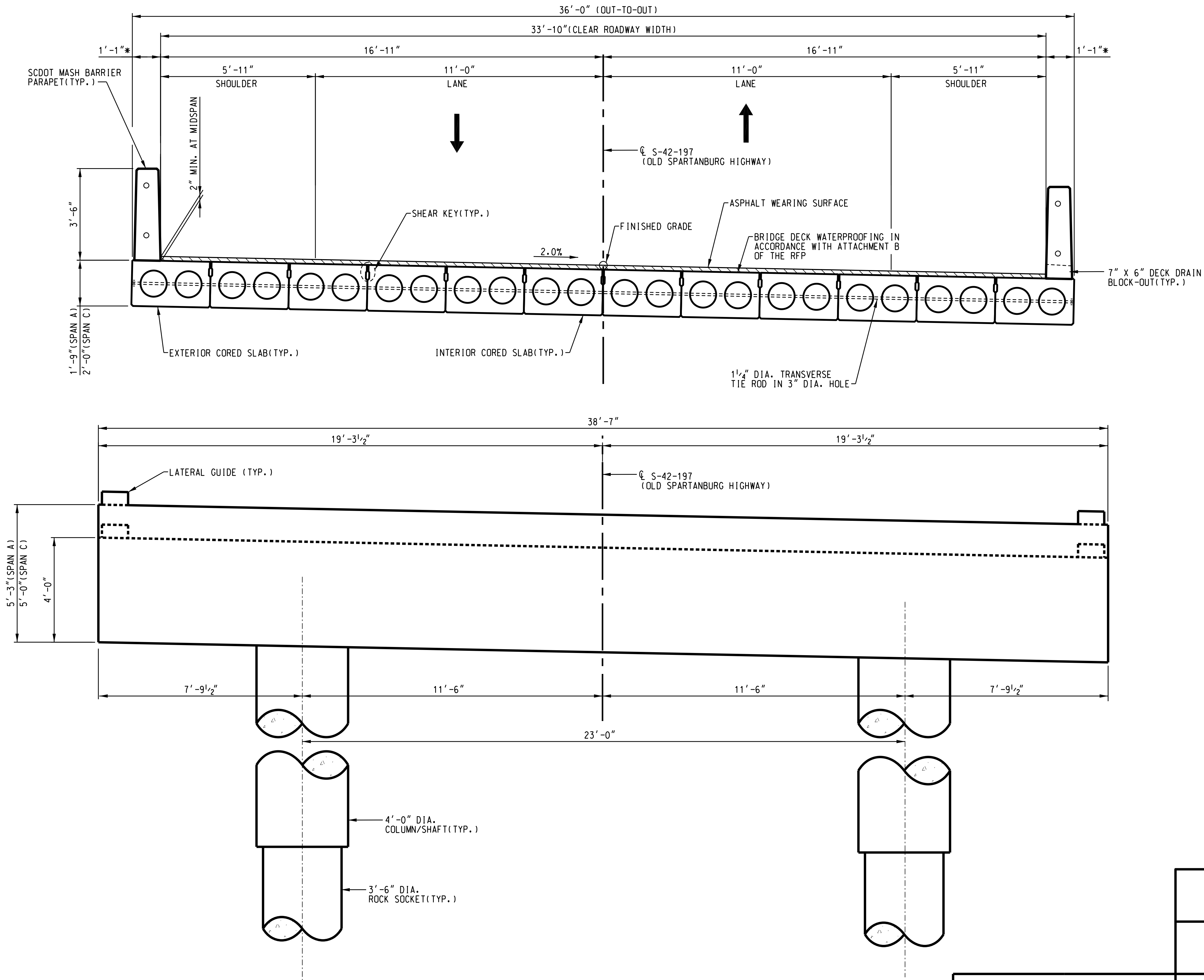
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11/20/2025

REVIEWED J. FELKEL					QUAN.					DR.					DES.				
REV.	REV.	REV.	REV.	REV.	BY	CHK.	DATE	DESCRIPTION OF REVISION	BY	CHK.	DATE	DESCRIPTION OF REVISION	BY	CHK.	DATE	DESCRIPTION OF REVISION	BY	CHK.	DATE
11-25																			

\$\$\$PRINT_PROPERTIES\$\$\$




* 1'-0" MASH BARRIER PARAPET WITH 1" SLAB EXTENSION.
UTILITY LOAD OF 120 LB/FT APPLIED TO BOTH BARRIERS IN ACCORDANCE WITH RFP EXHIBIT 4B SECTION 2.1.1.

BRIDGE PLANS ID	SHEET
5368980-B05	3

TYPICAL SECTION - SPANS A & C
LOOKING IN DIRECTION OF STATIONING

TECHNICAL
PROPOSAL PLANS



CROWDER
INFRASTRUCTURE
CONSULTING & ENGINEERING

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION (1)
S-42-197 (OLD SPARTANBURG HWY.)
REPLACE BRIDGE
OVER SOUTH TYGER RIVER

COUNTY: SPARTANBURG

ROUTE: S-42-197

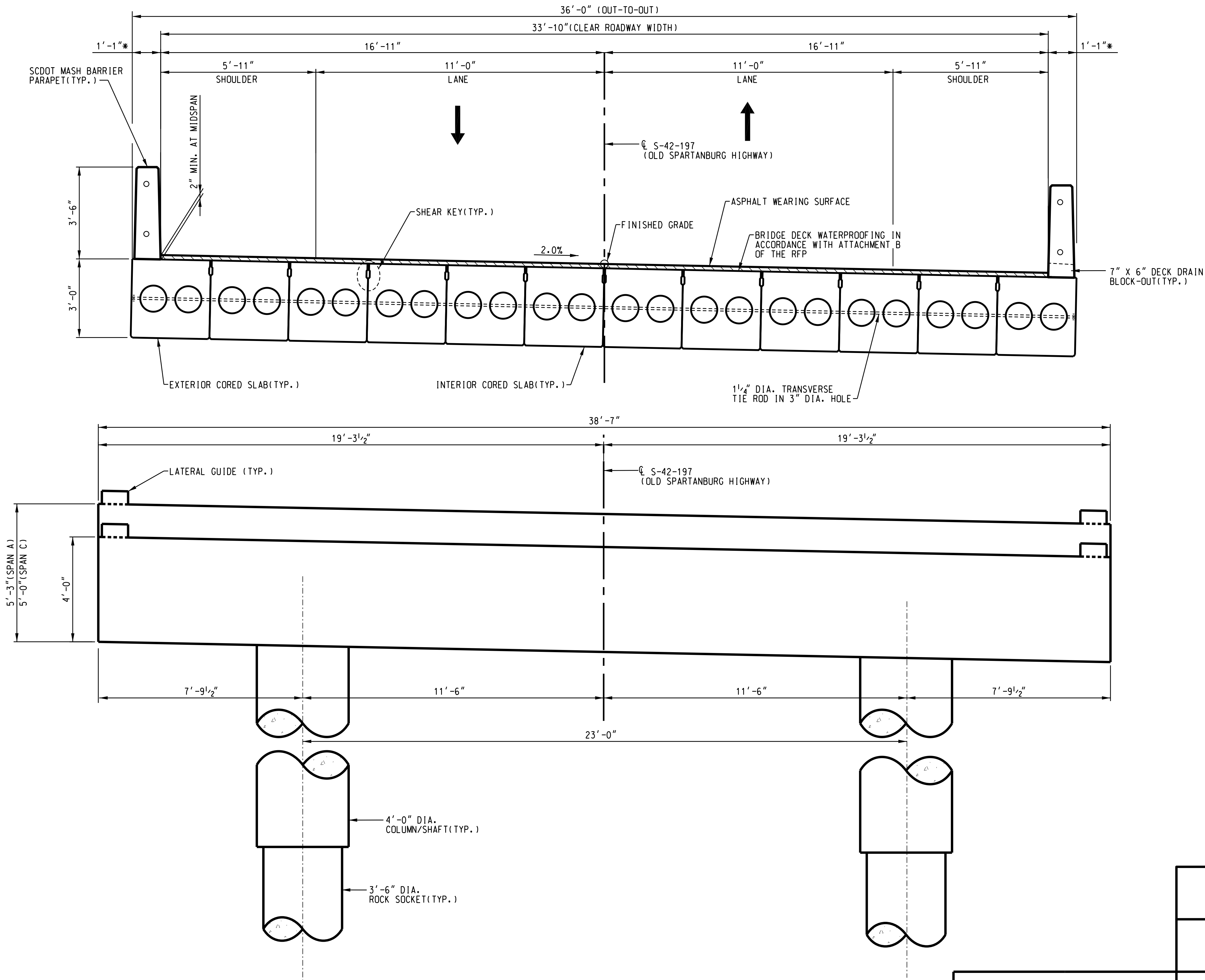
c:\bms\ice-eng-pw-01\055744\03-04_S-42-197_OVER SOUTH TYGER_TYP_SECTIONS.1&2.dgn
11/20/2025

REVIEWED J. FELKEL				QUAN.			
REV.	—	—	—	DR.	RMH	CSB	11-25
REV.	—	—	—	DES.	—	—	—
REV.	—	—	—	BY	CHK.	DATE	—

DESCRIPTION OF REVISION			
BY	CHK.	DATE	—

\$\$\$PRINT_PROPERTIES\$\$\$

BRIDGE PLANS ID	SHEET
5368980-B05	4




* 1'-0" MASH BARRIER PARAPET WITH 1" SLAB EXTENSION.

UTILITY LOAD OF 120 LB/FT APPLIED TO BOTH BARRIERS IN ACCORDANCE WITH RFP EXHIBIT 4B SECTION 2.1.1.

TYPICAL SECTION - SPAN B
LOOKING IN DIRECTION OF STATIONING

**TECHNICAL
PROPOSAL PLANS**

	
JE INFRASTRUCTURE CONSULTING & ENGINEERING	
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION	
TYPICAL SECTION (2) S-42-197 (OLD SPARTANBURG HWY.) REPLACE BRIDGE OVER SOUTH TYGER RIVER	
COUNTY: SPARTANBURG	ROUTE: S-42-197

INDEX OF SHEETS

- 1. TITLE SHEET
- 2. BRIDGE PLAN AND PROFILE
- 3. TYPICAL SECTION



SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION



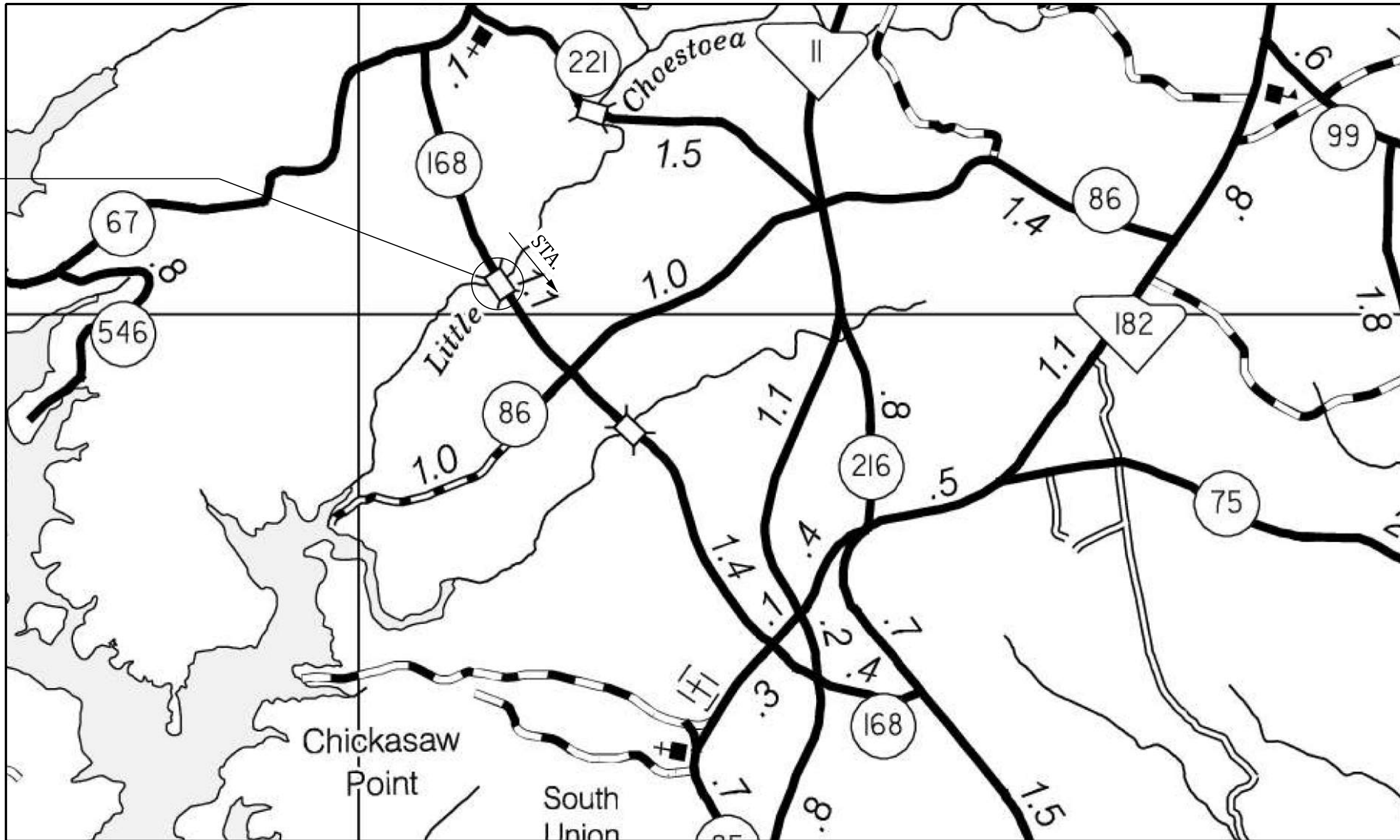
PROPOSED PLANS
FOR
OCONEE COUNTY
PROJECT ID 5368980
ROUTE S-37-168 (LITTLE CHOESTOE A ROAD)
REPLACE BRIDGE OVER LITTLE CHOESTOE A CREEK

DESIGN REFERENCE FOR THESE PLANS IS THE:

LVB

SUPPLEMENTAL DESIGN CRITERIA FOR
LOW VOLUME BRIDGE REPLACEMENT PROJECTS

SITE LOCATION



APPROXIMATE LOCATION OF BRIDGE IS

LATITUDE 34°- 34' - 09" N
LONGITUDE 83°- 04' - 07" W

LAYOUT

3 DAYS BEFORE DIGGING IN
SOUTH CAROLINA
CALL 811
SOUTH CAROLINA 811 (SC811)
WWW.SC811.COM
ALL UTILITIES MAY NOT BE A MEMBER OF SC811

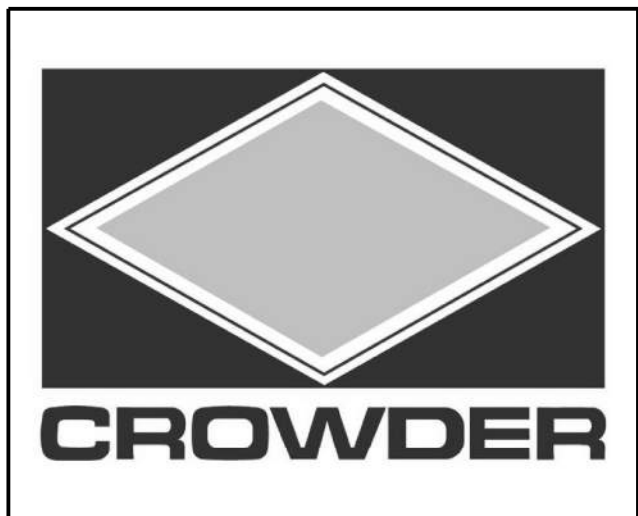
ASSET ID TBD

TRAFFIC DATA

2025 ADT 650 V.P.D.

2045 ADT 950 V.P.D.

TRUCKS 6 %



NET LENGTH OF ROADWAY	0.000	MILES
NET LENGTH OF BRIDGES	0.018	MILES
NET LENGTH OF PROJECT	0.018	MILES
LENGTH OF EXCEPTIONS	0.000	MILES
GROSS LENGTH OF PROJECT	0.018	MILES

NOTE: EXCEPT AS MAY OTHERWISE BE SPECIFIED ON THE PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIALS AND WORKMANSHIP ON THIS PROJECT SHALL CONFORM TO THE SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE STANDARD DRAWINGS FOR ROAD CONSTRUCTION IN EFFECT AT THE TIME OF THE RELEASE OF THE FINAL RFP.

CONSULTING ENGINEERING FIRM

INFRASTRUCTURE
CONSULTING & ENGINEERING

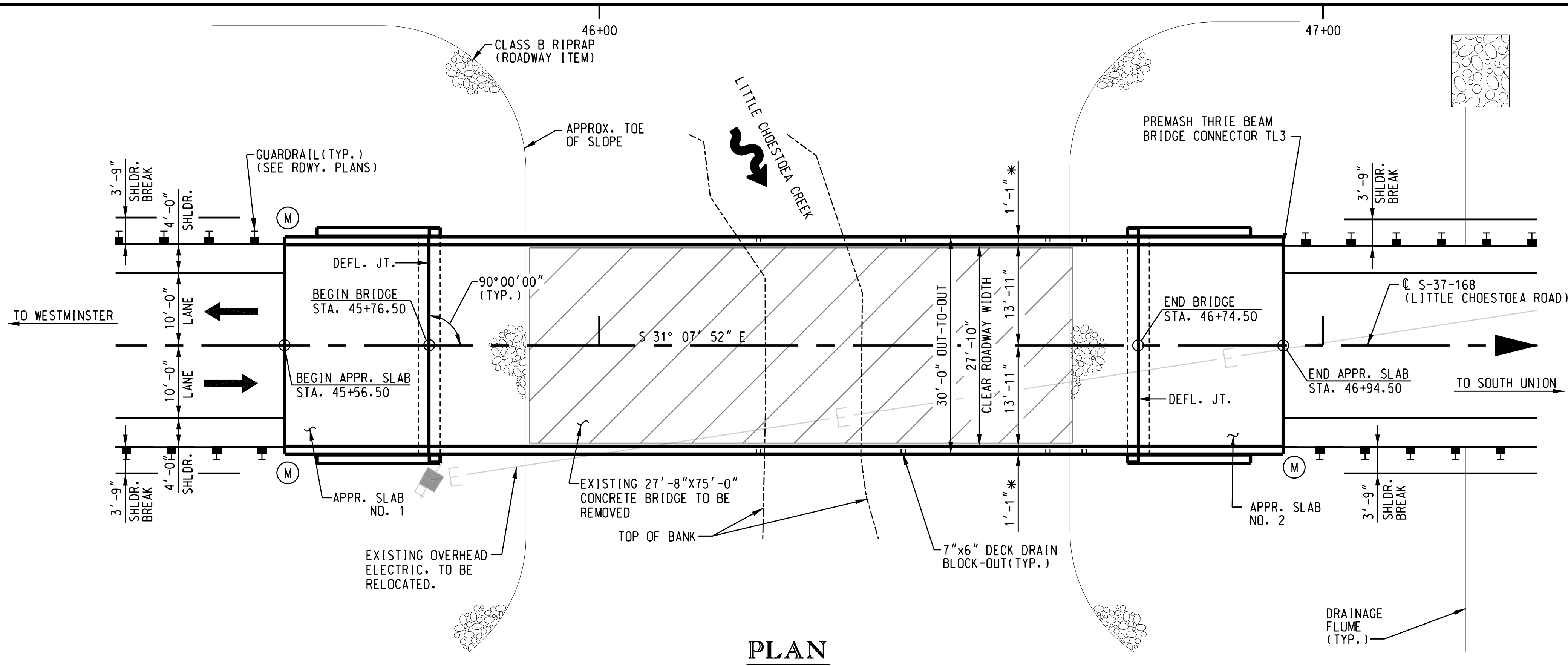
110 MIDLANDS COURT
WEST COLUMBIA, SC 29269
Telephone: (803) 822-0333

ENGINEER OF RECORD
FOR CONSTRUCTION

TECHNICAL
PROPOSAL PLANS

REVIEWED	J. FELKEL
DR.	RMH
BY	CHK.
DATE	10-25

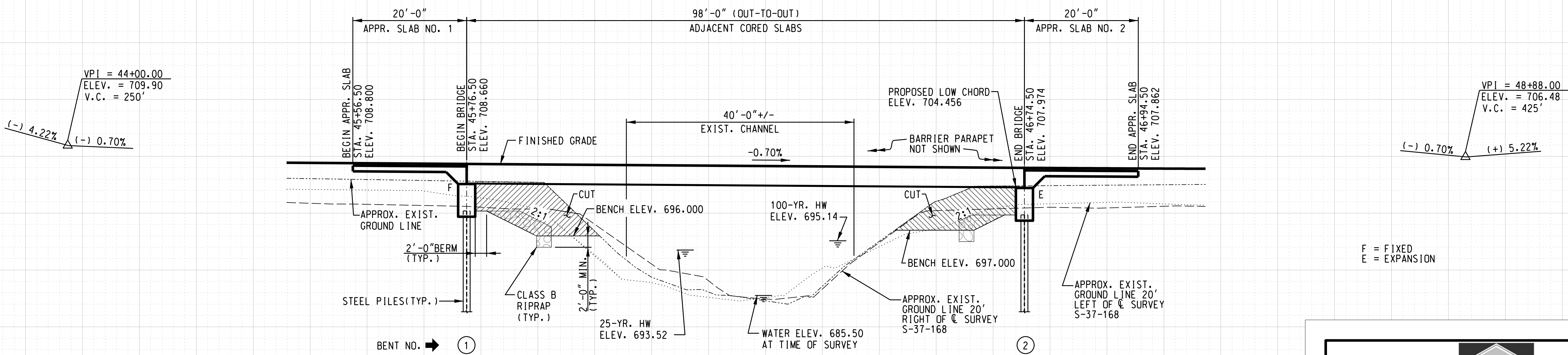
\$\$\$PRINT_PROPERTIES\$\$\$



NOTES:
DECK DRAINS AS SHOWN.
* 1'-0" MASH BARRIER WITH 1" SLAB EXTENSION
(M) DENOTES MTBBC3 GUARDRAIL ATTACHMENT
EXISTING BRIDGE TO BE REMOVED AND DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH SECTION 202.3.2 OF THE STANDARD SPECIFICATIONS.

HYDROLOGY DATA
D.A. = 6.2 SQ. MI.
Q DESIGN (25 YEAR) = 1,510 CFS
VEL. DESIGN = 8.07 FPS
DESIGN W.S.E. = 693.52 FT
(INCLUDING 0.28 FT OF BACKWATER)
Q 100 = 2,180 CFS
VEL. 100 = 9.02 FPS
100 YEAR W.S.E. = 695.14 FT
(INCLUDING 0.44 FT OF BACKWATER)

PLAN



SECTION ALONG CL S-37-168

TECHNICAL
PROPOSAL PLANS

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
BRIDGE PLAN AND PROFILE

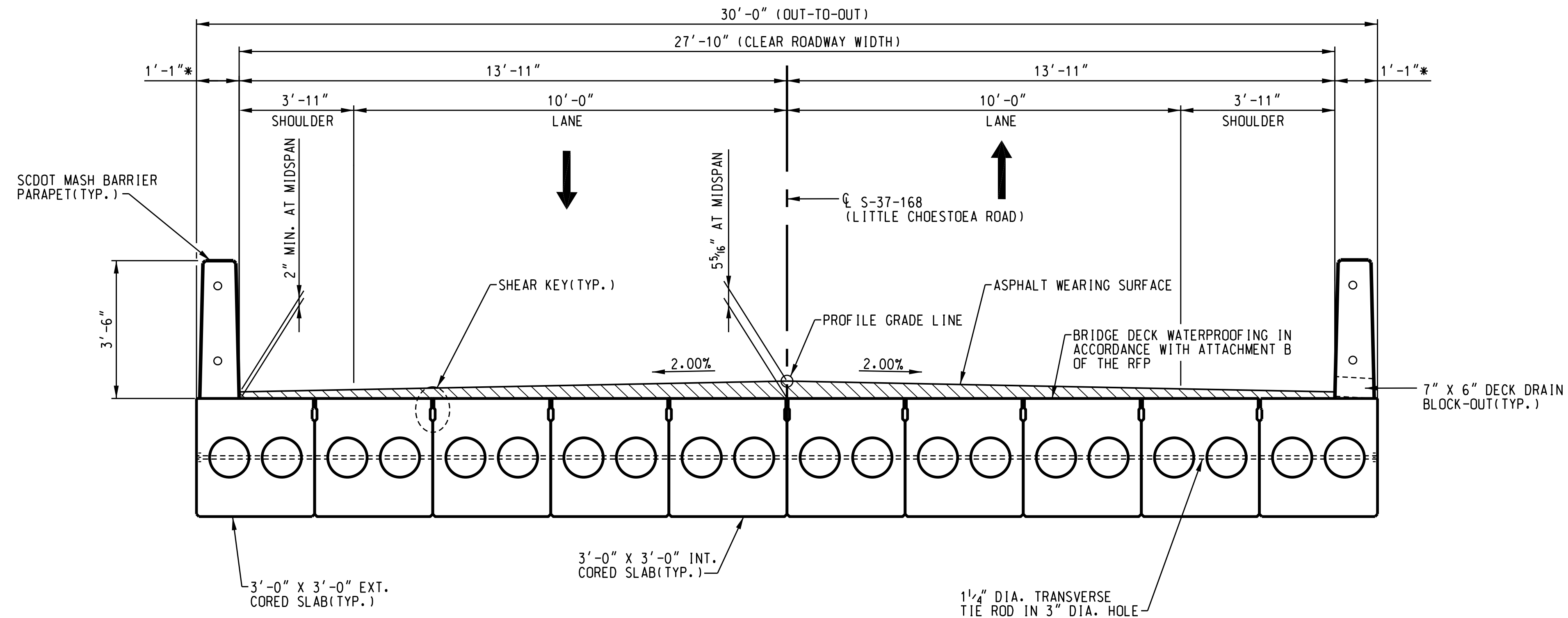
S-37-168 (LITTLE CHOESTOE ROAD)
REPLACE BRIDGE OVER LITTLE CHOESTOE CREEK

COUNTY: OCONEE ROUTE: S-37-168

REVIEWED J. FELKEL				QUAN.			
DR.	CSB	10-25	DATE	DR.	CSB	10-25	DATE
DES.	RMH			DES.	RMH		
BY	CHK.	DATE	DESCRIPTION OF REVISION	BY	CHK.	DATE	DESCRIPTION OF REVISION
REV.				REV.			
REV.				REV.			
REV.				REV.			
REV.				REV.			
REV.				REV.			
REV.				REV.			

c:\bms\ice-eng-pw-01\055738\02_S-168 OVER LITTLE CHOESTOE CREEK_P&P.dgn
11/20/2025

* 1'-0" MASH BARRIER PARAPET
WITH 1" SLAB EXTENSION.




TYPICAL SECTION
(LOOKING IN DIRECTION OF STATIONING)

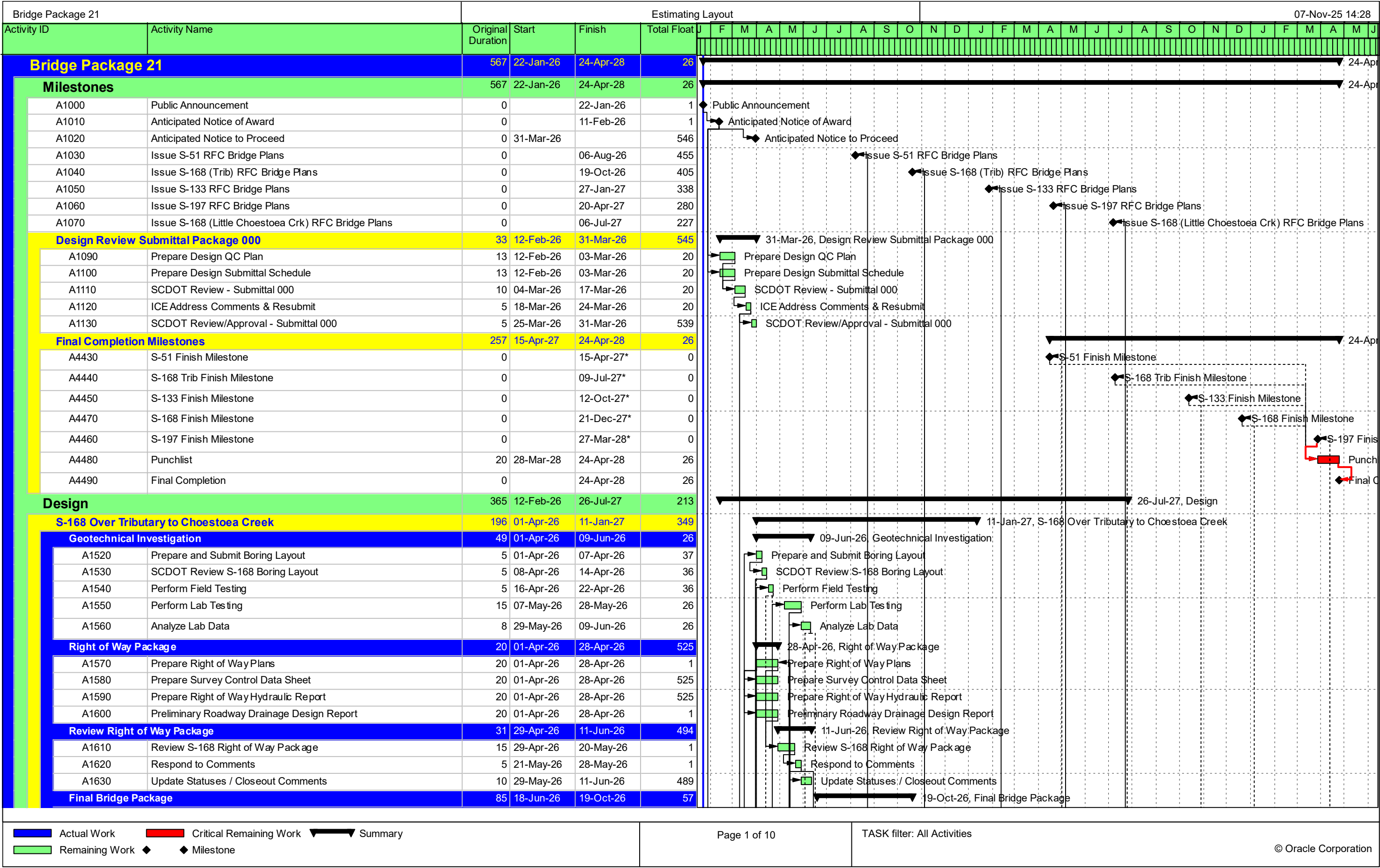
REVIEWED J. FELKEL				\$\$\$PRINT_PROPERTIES\$\$\$			
QUAN.	___	___	___	REV.	___	___	___
DR.	RMH	CSB	10-25	REV.	___	___	___
DES.	___	___	___	REV.	___	___	___
BY		CHK.	DATE	BY		CHK.	DATE
				DESCRIPTION OF REVISION			

REVIEWED J. FELKEL				
QUAN.	—	—	—	—
DR.	RMH	CSB	10-25	
DES.	—	—	—	
	BY	CHK:	DATE	

\$\$\$PRINT_PROPERTIES\$\$\$			
REV.			
REV.			
REV.			
	BY	CHK.	DATE
	DESCRIPTION OF REVISION		

	
JE INFRASTRUCTURE CONSULTING & ENGINEERING	
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION	
<u>TYPICAL SECTION</u>	
S-37-168(LITTLE CHOESTOE ROAD) REPLACE BRIDGE OVER LITTLE CHOESTOE CREEK	
COUNTY: OCONEE	ROUTE: S-37-168

A.3 CPM SCHEDULE



Bridge Package 21					
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
A1670	Prepare Bridge Load Rating Documentation	50	18-Jun-26	27-Aug-26	54
A1640	Prepare Final Bridge Plans	50	18-Jun-26	27-Aug-26	20
A1660	Prepare Geotechnical Summary Report	50	18-Jun-26	27-Aug-26	54
A1650	Prepare Final Bridge Hydraulic Design Report	50	18-Jun-26	27-Aug-26	54
A1680	Issue S-168 RFC Bridge Plans	5	13-Oct-26	19-Oct-26	57
Review Final Bridge Package		30	28-Aug-26	09-Oct-26	57
A1690	Review S-168 Final Bridge Plans	15	28-Aug-26	18-Sep-26	55
A1700	Respond to Comments	5	21-Sep-26	25-Sep-26	55
A1710	Update Statuses / Closeout Comments	10	28-Sep-26	09-Oct-26	55
Final Roadway Package		73	02-Jul-26	15-Oct-26	59
A1730	Prepare Final Roadway Design Drainage Report	40	02-Jul-26	27-Aug-26	43
A1720	Prepare Final Road Plans	40	02-Jul-26	27-Aug-26	43
A1740	Prepare Geotechnical Summary Report	40	02-Jul-26	27-Aug-26	43
A1750	Issue S-168 RFC Road Plans	3	13-Oct-26	15-Oct-26	59
Review Final Roadway Package		30	28-Aug-26	09-Oct-26	59
A1760	Review S-168 Final Package Road	15	28-Aug-26	18-Sep-26	44
A1770	Respond to Comments	5	21-Sep-26	25-Sep-26	43
A1780	Update Statuses / Closeout Comments	10	28-Sep-26	09-Oct-26	57
ROW Acquisitions		155	29-May-26	11-Jan-27	1
A1790	Preliminary Title Reports - Parcels 1, 3, 6 & 7	15	29-May-26	18-Jun-26	1
A1800	Appraisal, Valuations, Appraisal Review - Parcels 1, 3, 6 & 7	30	19-Jun-26	31-Jul-26	1
A1810	Offer and Negotiations - Parcels 1, 3, 6 & 7	30	03-Aug-26	14-Sep-26	1
A1820	Voluntary Option Obtained - Parcels 1, 3, 6 & 7	20	15-Sep-26	13-Oct-26	61
A1830	Eminent Domain Required - Parcels 1, 3, 6 & 7	80	15-Sep-26	11-Jan-27	1
A1840	Clear for Construction - Parcels 1, 3, 6 & 7	0		11-Jan-27	1
SCDES NOI		26	28-Sep-26	03-Nov-26	46
A1850	Prepare & Submit NOI to SCDOT	7	28-Sep-26	06-Oct-26	43
A1860	SCDOT Review S-168 NOI & Submit to SCDES	5	07-Oct-26	13-Oct-26	43
A1870	SCDES Review & Approve NOI	15	14-Oct-26	03-Nov-26	43
WOTUS Permit		0			0
S-51 Over Snow Creek		173	12-Feb-26	19-Oct-26	405
Geotechnical Investigation		41	25-Mar-26	20-May-26	509
A1140	Prepare and Submit Boring Layout	5	25-Mar-26	31-Mar-26	20
A1150	Mobilize Drilling Equipment	5	01-Apr-26	07-Apr-26	20
A1160	SCDOT Review S-51 Boring Layout	5	01-Apr-26	07-Apr-26	20
A1170	Perform Field Testing	6	08-Apr-26	15-Apr-26	20
A1180	Perform Lab Testing	15	16-Apr-26	06-May-26	26
A1190	Analyze Lab Data	10	07-May-26	20-May-26	509
Right of Way Package		33	12-Feb-26	31-Mar-26	1
A1200	Prepare Right of Way Plans	33	12-Feb-26	31-Mar-26	1
A1210	Prepare Survey Control Data Sheet	33	12-Feb-26	31-Mar-26	1
A1220	Prepare Right of Way Hydraulic Report	33	12-Feb-26	31-Mar-26	1
A1230	Preliminary Road Geotechnical Report	33	12-Feb-26	31-Mar-26	1
A1240	Preliminary Roadway Drainage Design Report	33	12-Feb-26	31-Mar-26	1
Review Right of Way Package		31	01-Apr-26	13-May-26	514

Actual Work

Critical Remaining Work

Summary

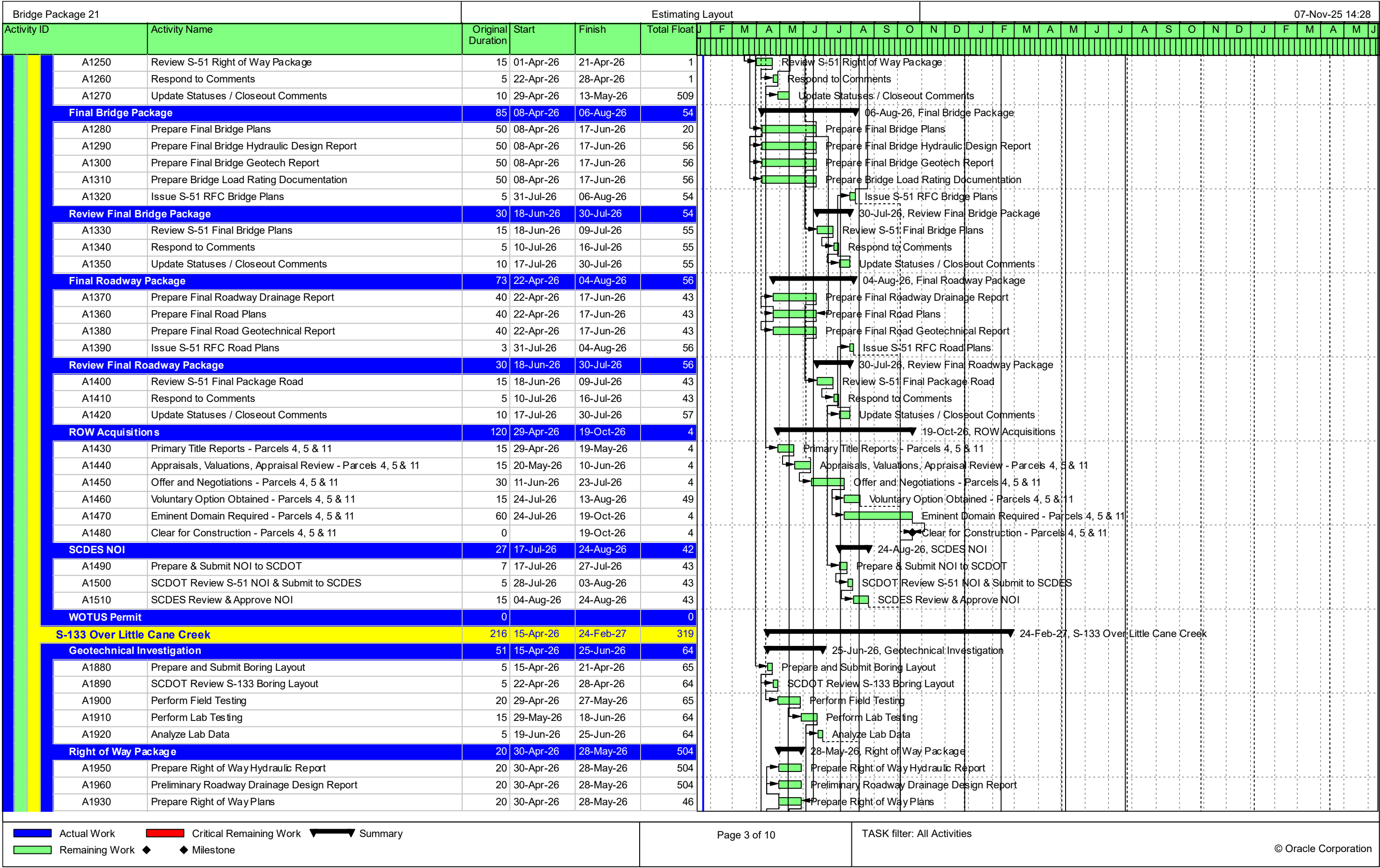
Remaining Work

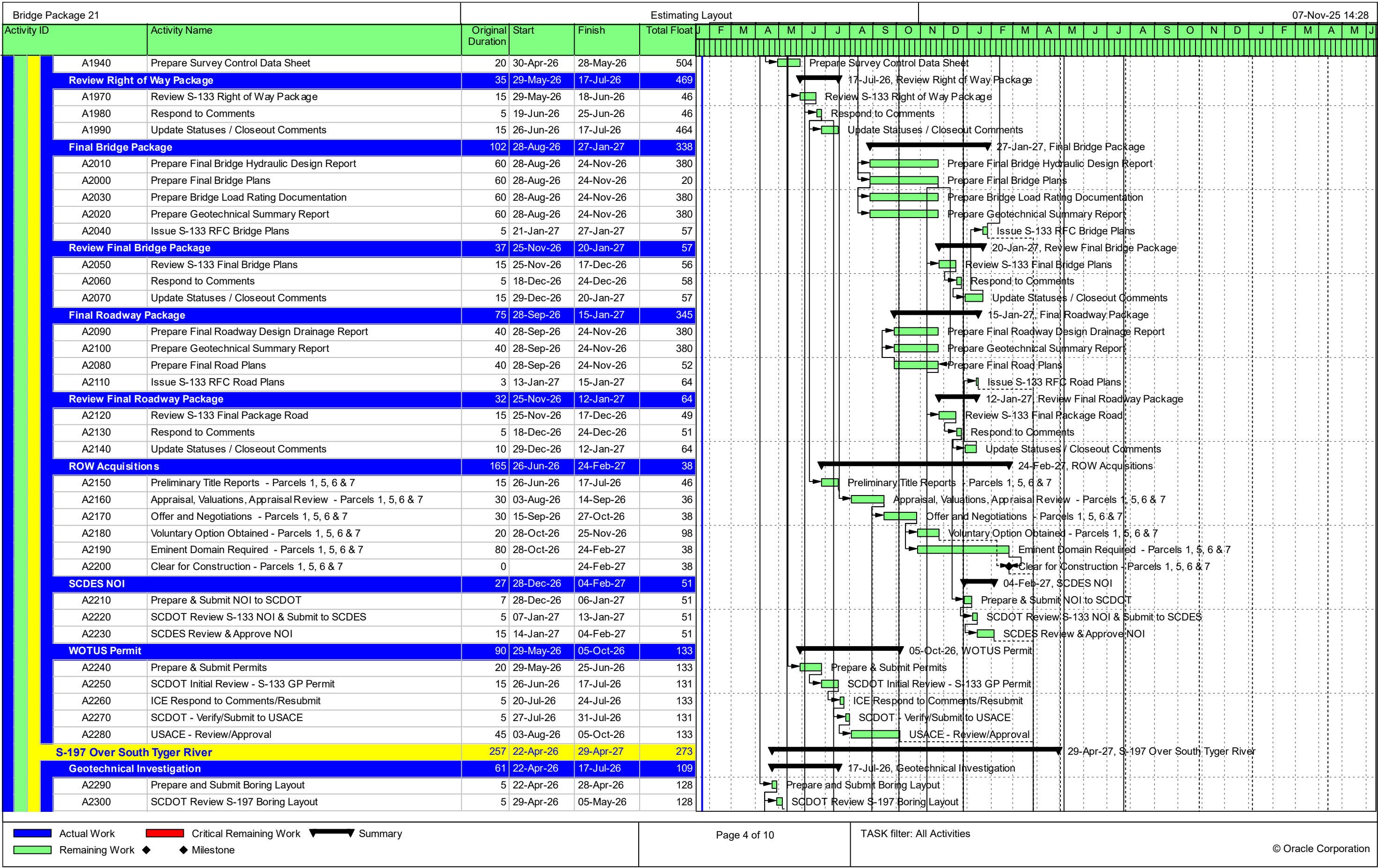
Milestone

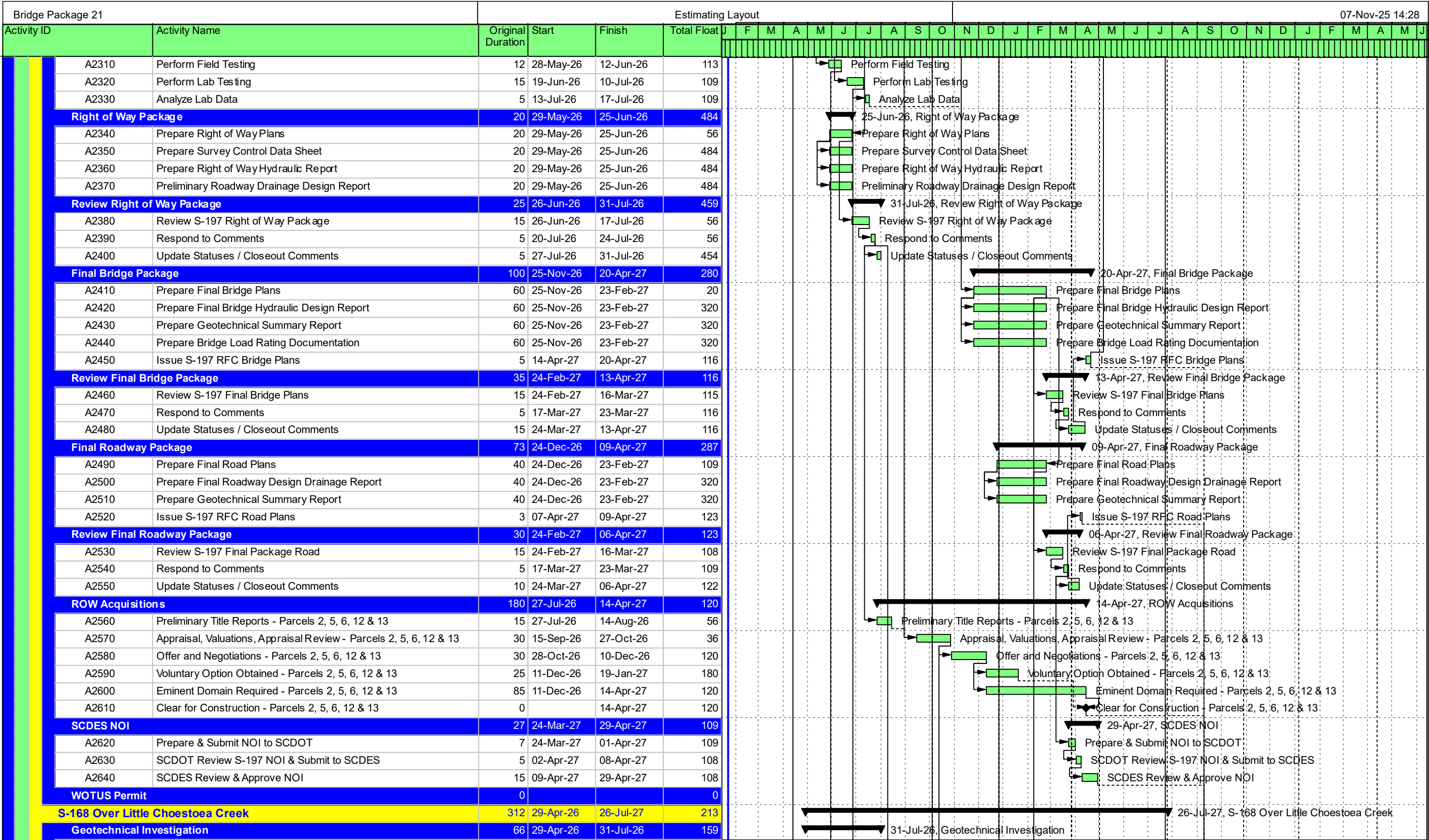
Page 2 of 10

TASK filter: All Activities

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Bridge Package 21					
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
A2650	Prepare and Submit Boring Layout	5	29-Apr-26	05-May-26	198
A2660	SCDOT Review S-168 Boring Layout	5	06-May-26	13-May-26	195
A2670	Perform Field Testing	2	15-Jun-26	16-Jun-26	176
A2680	Perform Lab Testing	10	13-Jul-26	24-Jul-26	159
A2690	Analyze Lab Data	5	27-Jul-26	31-Jul-26	159
Right of Way Package		15	06-Jul-26	24-Jul-26	464
A2720	Prepare Right of Way Hydraulic Report	15	06-Jul-26	24-Jul-26	464
A2700	Prepare Right of Way Plans	15	06-Jul-26	24-Jul-26	61
A2710	Prepare Survey Control Data Sheet	15	06-Jul-26	24-Jul-26	464
A2730	Preliminary Roadway Drainage Design Report	15	06-Jul-26	24-Jul-26	464
Review Right of Way Package		25	27-Jul-26	28-Aug-26	439
A2740	Review S-168 Right of Way Package	15	27-Jul-26	14-Aug-26	62
A2750	Respond to Comments	5	17-Aug-26	21-Aug-26	61
A2760	Update Statuses / Closeout Comments	5	24-Aug-26	28-Aug-26	434
Final Bridge Package		100	24-Feb-27	15-Jul-27	220
A2800	Prepare Bridge Load Rating Documentation	60	24-Feb-27	18-May-27	260
A2770	Prepare Final Bridge Plans	60	24-Feb-27	18-May-27	20
A2780	Prepare Final Bridge Hydraulic Design Report	60	24-Feb-27	18-May-27	260
A2790	Prepare Geotechnical Summary Report	60	24-Feb-27	18-May-27	260
A2810	Issue S-168 RFC Bridge Plans	5	09-Jul-27	15-Jul-27	27
Review Final Bridge Package		35	19-May-27	08-Jul-27	27
A2820	Review S-168 Final Bridge Plans	15	19-May-27	09-Jun-27	27
A2830	Respond to Comments	5	10-Jun-27	16-Jun-27	27
A2840	Update Statuses / Closeout Comments	15	17-Jun-27	08-Jul-27	27
Final Roadway Package		73	24-Mar-27	06-Jul-27	227
A2850	Prepare Final Road Plans	40	24-Mar-27	18-May-27	20
A2860	Prepare Final Roadway Design Drainage Report	40	24-Mar-27	18-May-27	260
A2870	Prepare Geotechnical Summary Report	40	24-Mar-27	18-May-27	260
A2880	Issue S-168 RFC Road Plans	3	01-Jul-27	06-Jul-27	34
Review Final Roadway Package		30	19-May-27	30-Jun-27	34
A2890	Review S-168 Final Package Road	15	19-May-27	09-Jun-27	20
A2900	Respond to Comments	5	10-Jun-27	16-Jun-27	20
A2910	Update Statuses / Closeout Comments	10	17-Jun-27	30-Jun-27	34
ROW Acquisitions		215	24-Aug-26	01-Jul-27	36
A2920	Preliminary Title Reports - Parcels 5, 6, 7, 10, 13 & 15	20	24-Aug-26	21-Sep-26	61
A2930	Appraisal, Valuations, Appraisal Review - Parcels 5, 6, 7, 10, 13 &	40	28-Oct-26	24-Dec-26	36
A2940	Offer and Negotiations - Parcels 5, 6, 7, 10, 13 & 15	40	28-Dec-26	24-Feb-27	36
A2960	Eminent Domain Required - Parcels 5, 6, 7, 10, 13 & 15	90	25-Feb-27	01-Jul-27	36
A2950	Voluntary Option Obtained - Parcels 5, 6, 7, 10, 13 & 15	30	25-Feb-27	07-Apr-27	96
A2970	Clear for Construction - Parcels 5, 6, 7, 10, 13 & 15	0		01-Jul-27	36
SCDES NOI		27	17-Jun-27	26-Jul-27	20
A2980	Prepare & Submit NOI to SCDOT	7	17-Jun-27	25-Jun-27	20
A2990	SCDOT Review S-168 NOI & Submit to SCDES	5	28-Jun-27	02-Jul-27	20
A3000	SCDES Review & Approve NOI	15	06-Jul-27	26-Jul-27	20
WOTUS Permit		0			0

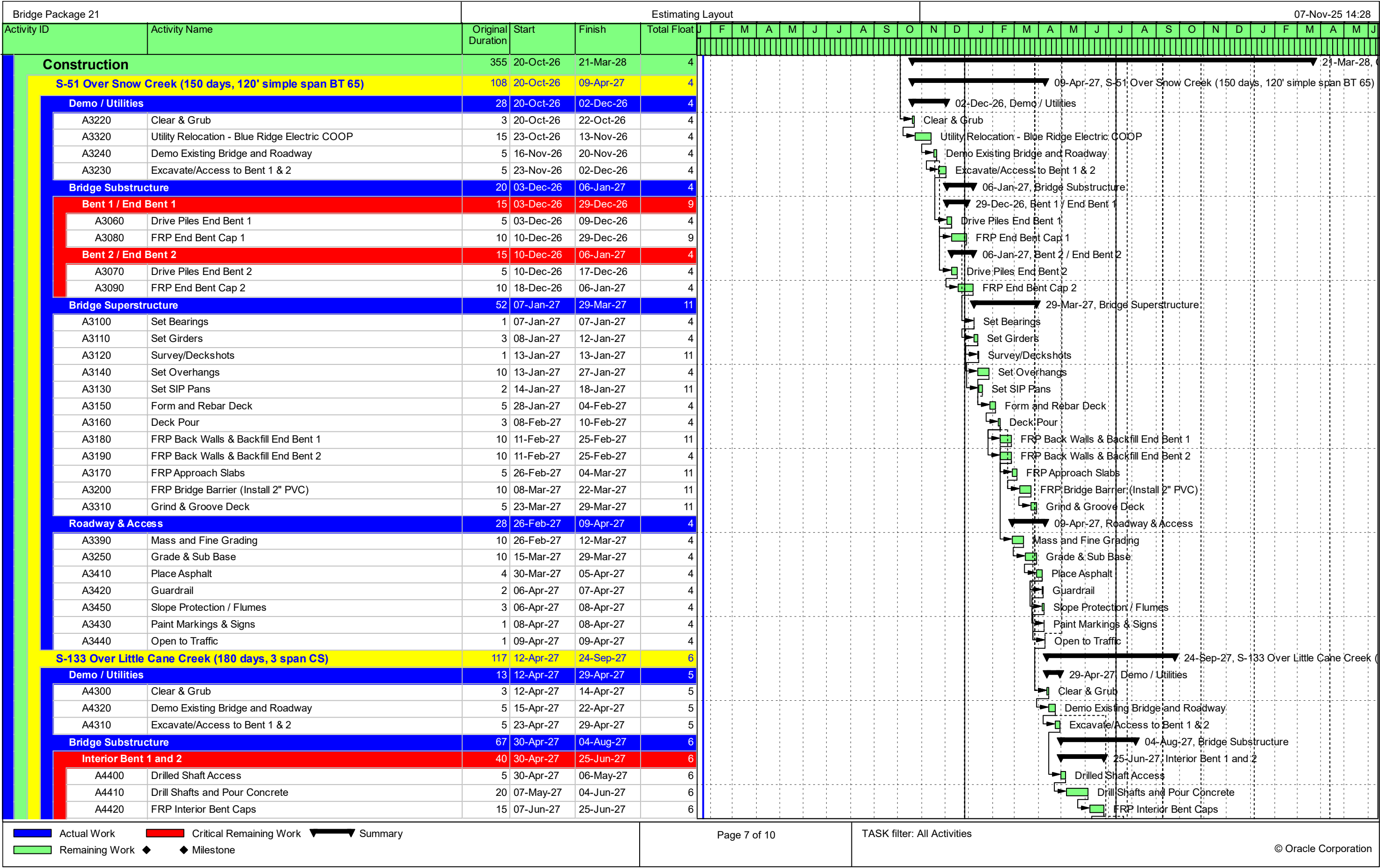
Actual Work

Critical Remaining Work

Milestone

Summary

Page 6 of 10TASK filter: All Activities© Oracle Corporation



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APPENDIX

**REQUIRED FORMS AND CONFIDENTIAL
AND PROPRIETARY INFORMATION**

B

A. STIPEND ACKNOWLEDGMENT FORM

Version 20250612

12. STIPEND ACKNOWLEDGEMENT FORM**Stipend Acknowledgement Form****Bridge Package 21
Oconee and Spartanburg Counties**Proposer: Crowder Construction CompanyADDRESS: 6409 Brookshire Blvd, Charlotte, NC 28216

The undersigned Proposer, hereby:

☐

Waives the stipend for this Project.

☒

Accepts the stipend for this Project.

By accepting the stipend for this Project, Proposer agrees:

- 1) to execute and include the Stipend Agreement in Article XIII of the RFP with its RFP response;
- 2) to submit an invoice with FEIN number for the stipend amount to the SCDOT POC after SCDOT's posting of the Notice of Award on SCDOT's Design-Build Website.;
- 3) to transfer all rights to its Work Product used to develop the Proposal as of the date of this acknowledgement. "Work Product" means all submittals, including ATCs, ideas, innovations, solutions, methods, processes, design concepts, materials, electronic files, marked up drawings, cross sections, quantity lists and intellectual property, made by Proposer during the RFP process, including the Proposal, exchange of information during the pre-Proposal and post-Proposal period.

SCDOT will pay the stipend to each eligible unsuccessful Proposer, who has signed a Stipend Agreement, within ninety (90) days after execution of the Contract or the decision to not award a contract.

11-21-2025

Date

George F Ellis
ProposerGeorge F Ellis, Executive Vice President

Print Name

B. STIPEND AGREEMENT

13. STIPEND AGREEMENT

STIPEND AGREEMENT
Contract ID: 5368980
Bridge Package 21
Oconee and Spartanburg Counties

THIS STIPEND AGREEMENT (the "Agreement") is made and entered into as of the 21 day of November, 2025, by and between the SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION (hereinafter "SCDOT"), and Crowder Construction Company ("Proposer"), with reference to the following facts:

SCDOT issued a Request for Proposal ("RFP") for design and construction of the above-referenced Design-Build Project ("Project"), pursuant to procurement authority granted in Section 57-5-1625 of the S.C. Code of Laws, 1976, as amended. The RFP provided for payment of stipends as provided herein. Capitalized terms used, but not defined, have the meanings ascribed in the RFP.

NOW, THEREFORE, Proposer hereby agrees as follows:

1. Work Product.

1.1 Proposer shall prepare and submit a responsible and responsive Technical Proposal and Cost Proposal that conforms in all material respects to the requirements and provisions of the RFP, as determined by SCDOT, and are timely received by SCDOT in accordance with the RFP Milestone Schedule.

1.2 By signing this Stipend Agreement, Proposer agrees to transfer full and complete ownership to SCDOT of all Work Product. The Work Product (as defined below) shall become the property of SCDOT without restriction or limitation on its use, without further compensation or consideration, and can be used in connection with this Project or any future projects by SCDOT. Neither Proposer nor any of its team members shall copyright any of the material developed under this Agreement.

1.3 The term "Work Product" shall mean the Proposal and all material, electronic files, marked up drawings, cross sections, quantity lists, submittals, alternative technical concepts (ATC), ideas, innovations, solutions, methods, processes, design concepts, Trade Secrets or confidential information, and intellectual property, made by or produced for Proposer in the development and submission of the Technical and Cost Proposal, including exchanges of information during the pre-Proposal and post-Proposal period.

2. Compensation and Payment.

2.1 A stipend to Proposer for the Work Product described herein shall be \$40,000.00 and is payable to Proposer that was determined to be responsible and (1) submitted a responsive Technical Proposal and responsive Cost Proposal to the RFP which is not selected for award of this Project, or (2) was awarded the Contract but the Contract was terminated by SCDOT for convenience after the Submittal of Proposal Due Date (See Final RFP Milestone schedule) but prior to the Notice to Proceed #1. Responsibility of Proposers and responsiveness of the Technical Proposal and Cost Proposal will be determined by SCDOT as a condition of payment.

2.2 SCDOT will pay the stipend to Proposer as follows, subject (as applicable) to the following conditions:

(a) Proposer has submitted this signed Stipend Agreement, unchanged with its response to the RFP.

(b) After posting of the Notice of Award on SCDOT's Design-Build Website, Proposer has submitted to SCDOT an invoice, with FEIN Number, for the Stipend amount.

(c) After execution of the Contract or the decision not to award a contract, SCDOT will pay the invoice for the stipend amount to the unsuccessful Proposer meeting the criteria of Section 2.1 within 90 calendar days of receipt of the invoice from Proposer.

(d) If the procurement is suspended or cancelled prior to the Proposal Due Date (see FINAL RFP Milestone schedule), no stipend will be paid to Proposer.

(e) After the submittal of Proposals, but prior to award, if the procurement is cancelled, all Proposers that provide a responsive Technical Proposal and Cost Proposal to the final RFP and submitted a signed Stipend Agreement with their RFP shall receive the stipend

(f) In the event of a Best and Final Offer, only one stipend will be paid to each Proposer that executed a Stipend Agreement and met the other criteria and conditions herein.

(g) No stipends will be paid for submitting RFQ responses.

(h) No stipends will be paid to a Proposer who withdraws at any time from this procurement.

2.3 Acceptance by the Proposer of payment of the stipend amount from SCDOT shall constitute a waiver by Proposer of any and all right, equitable or otherwise, to bring any claim in connection with this procurement, procurement process, award of the Contract, or cancellation of this procurement.

2.4 The Proposer awarded the contract shall be not eligible to receive a stipend.

2.5 If Proposer elects to waive payment of the stipend, SCDOT will not use the ideas or information contained in that Proposer's Proposal for this Project. However, the Proposer's Proposal will be subject to the South Carolina Freedom of Information Act.

3. Indemnities.

3.1 Subject to the limitations contained in Section 3.2, Proposer shall indemnify, protect and hold harmless SCDOT and its directors, officers, employees and contractors from, and Proposer shall defend at its own expense, all claims, costs, expenses, liabilities, demands, or suits at law or equity arising, in whole or in part, from the negligence or willful misconduct of Proposer or any of its agents, officers, employees, representatives or subcontractors or breach of any of Proposer's obligations under this Agreement.

3.2 This indemnity shall not apply with respect to any claims, demands or suits arising from use of the Work Product by SCDOT.

4. Compliance With Laws.

4.1 Proposer shall comply with all federal, state, and local laws, ordinances, rules, and regulations applicable to the work performed or paid for under this Agreement and covenants and agrees that it and its employees shall be bound by the standards of conduct provided in applicable laws, ordinances, rules, and regulations as they relate to work performed under this Agreement. Proposer agrees to incorporate the provisions of this paragraph in any subcontract into which it might enter with reference to the work performed pursuant to this Agreement.

4.2 The Proposer agrees (a) not to discriminate in any manner against an employee or applicant for employment because of race, color, religion, creed, age, sex, marital status, national origin, ancestry or disability of a qualified individual with a disability; (b) to include a provision similar to that contained in subsection (a) in any subcontract; and (c) to post and to cause subcontractors to post in conspicuous places available to employees and applicants for employment, notices setting forth the substance of this clause.

5. Assignment.

Proposer shall not assign this Agreement without SCDOT's prior written consent. Any assignment of this Agreement without such consent shall be null and void.

6. Miscellaneous.

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

Version 20250612

6.2 This Agreement, together with the RFP, as amended from time to time, the provisions of which are incorporated herein by reference, embodies the entire agreement of the parties. 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, representation, or agreements, either oral or written, between the parties hereto.

6.3 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 State of South Carolina, the 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.

6.4 This Agreement shall be governed by and construed in accordance with the laws of the State of South Carolina.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

Witness:

Recommended:

{INSERT NAME}

South Carolina Department of Transportation

By:

{INSERT NAME}

Preconstruction Alternative Delivery Engineer

Proposer

By: 

George F Ellis, Executive Vice President

Print Name

C. EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATE

Version 20250612

11. EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION**(COMPLETE THIS SECTION FOR FEDERAL PROJECTS ONLY)
EQUAL EMPLOYMENT OPPORTUNITY PERFORMANCE**

Select the Certification that applies to the PROPOSER:

Certification (☒) or Certification (☐)

Select the appropriate responses in the applicable Certification:

Certification (1): Pursuant to 41 C.F.R. §60-1.7(b)(1), Previous Equal Employment Opportunity Performance

Certification, as the Prospective Prime Contractor, I HEREBY CERTIFY THAT I:

(a) **(HAVE / HAVE NOT)** developed and filed an Affirmative Action Program pursuant to 41C.F.R. §60-2 and/or 60-4;(b) **(HAVE / HAVE NOT)** participated in a previous contract or subcontract subject to the equal opportunity clause;(c) **(HAVE / HAVE NOT)** filed with the Joint Reporting Committee, the Director of Office of Federal Contract Compliance, or the Equal Employment Opportunity Commission, all reports due under the applicable filing requirements,

OR

Certification (2): I, HEREBY CERTIFY that as the Prospective Prime Contractor submitting this Proposal, **(CLAIM / DO NOT CLAIM)** exemption from the submission of the Standard Form 100 (EEO-1) due to the fact that it employs a total of less than fifty (50) employees under C.F.R. §60-1.7, or qualifies for an exempted status under 41 C.F.R. §60-1.5.

I FURTHER CERTIFY that the above Certification will be made part of any Subcontract Agreement, or other agreement involved with this project.

Executed on 11/21, 20 25Signed: 
(Officer/PROPOSER)Title: George F Ellis, Executive Vice PresidentCompany: Crowder Construction CompanyAddress: 6409 Brookshire Blvd, Charlotte, NC 28216

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)), and must be submitted by PROPOSERS only in connection with contracts which are subject to the equal opportunity clause. Contracts that are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally, only contracts of \$10,000 or under are exempt.)

D. NON-COLLUSION CERTIFICATE

10. NON-COLLUSION CERTIFICATION

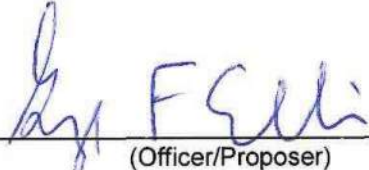
NON-COLLUSION CERTIFICATION

Contract ID: 5368980

IN ACCORDANCE WITH THE PROVISIONS OF S.C. CODE ANN. §§ 39-3-10 ET. SEQ., 39-5-10 ET. SEQ., 15 U.S.C. §45; 23 C.F.R. §635.112(F); AND 28 U.S.C. §1746, I HEREBY ACKNOWLEDGE THAT I AM AN OFFICER OF THE PROPOSER FIRM AND, UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE UNITED STATES AND SOUTH CAROLINA, DECLARE, BY MY CERTIFICATION BELOW, THAT THE FOLLOWING IS TRUE AND CORRECT, AND FURTHER, THAT THIS JOINT-VENTURE, FIRM, PARTNERSHIP, ASSOCIATION OR CORPORATION, OR ANY OTHER LEGAL ENTITY HAS NOT, EITHER DIRECTLY OR INDIRECTLY, ENTERED INTO ANY AGREEMENT, PARTICIPATED IN ANY COLLUSION, OR OTHERWISE TAKEN ANY ACTION IN RESTRAINT OF FREE COMPETITIVE BIDDING IN CONNECTION WITH THE SUBMISSION OF A BID PROPOSAL ON THE ABOVE REFERENCED PROJECT.

BY CHECKING THIS BOX ☒ , I CERTIFY THAT I HAVE READ, UNDERSTAND, ACCEPT, AND ACKNOWLEDGE ALL OF THE ABOVE STATEMENTS.

Executed on 11/21/2025
(Date)

Signed: 
(Officer/Proposer)

George F Ellis, Executive Vice President
(Title)

6409 Brookshire Blvd
(Address)

Charlotte, NC 28216

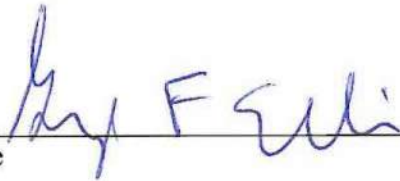
DISCLOSURE OF POTENTIAL CONFLICT OF INTEREST CERTIFICATION

PROPOSER hereby indicates that it has, to the best of its knowledge and belief has:

- ☒ Determined that no potential organizational conflict of interest exists.
☐ Determined a potential organizational conflict of interest as follows:

Attach additional sheets as necessary.

1. Describe nature of the potential conflict(s):
2. Describe measures proposed to mitigate the potential conflict(s):



Signature

11/21/2025

Date

George F Ellis

Print Name

Crowder Construction Company

Company

If a potential conflict has been identified, please provide name and phone number for a contact person authorized to discuss this disclosure certification with Department of Transportation contract personnel.

Name

Phone

Company



E. NOTICE OF RECEIPT OF ADDENDUM





NOTICE OF RECEIPT
Bridge Package 21
Design-Build – Contract ID 5368980
Oconee and Spartanburg Counties

Addendum 1

The information in this addendum shall be made part of the contract documents. PROPOSERS are instructed to incorporate the information into the previously provided RFP documents.

PROPOSERS are required to sign this document and enclose it with their Technical Proposal. Receipt of this signed document by The South Carolina Department of Transportation serves as confirmation that the PROPOSER has received and incorporated this Addendum into the contract documents.

Confirmation Statement:

I, the PROPOSER confirm that I have received this addendum package and have incorporated the information provided in the addendum into the contract documents.



PROPOSER's Signature

10/14/2021

Date

George F Ellis, Executive Vice President

Printed Name

For: Crowder / ICE

Design-Build Team Name



NOTICE OF RECEIPT
Bridge Package 21
Design-Build – Contract ID 5368980
Oconee and Spartanburg Counties


Addendum 2

The information in this addendum shall be made part of the contract documents. PROPOSERS are instructed to incorporate the information into the previously provided RFP documents.

PROPOSERS are required to sign this document and enclose it with their Technical Proposal. Receipt of this signed document by The South Carolina Department of Transportation serves as confirmation that the PROPOSER has received and incorporated this Addendum into the contract documents.

Confirmation Statement:

I, the PROPOSER confirm that I have received this addendum package and have incorporated the information provided in the addendum into the contract documents.



PROPOSER's Signature

10/27/2025

Date

George F Ellis, Executive Vice President

Printed Name

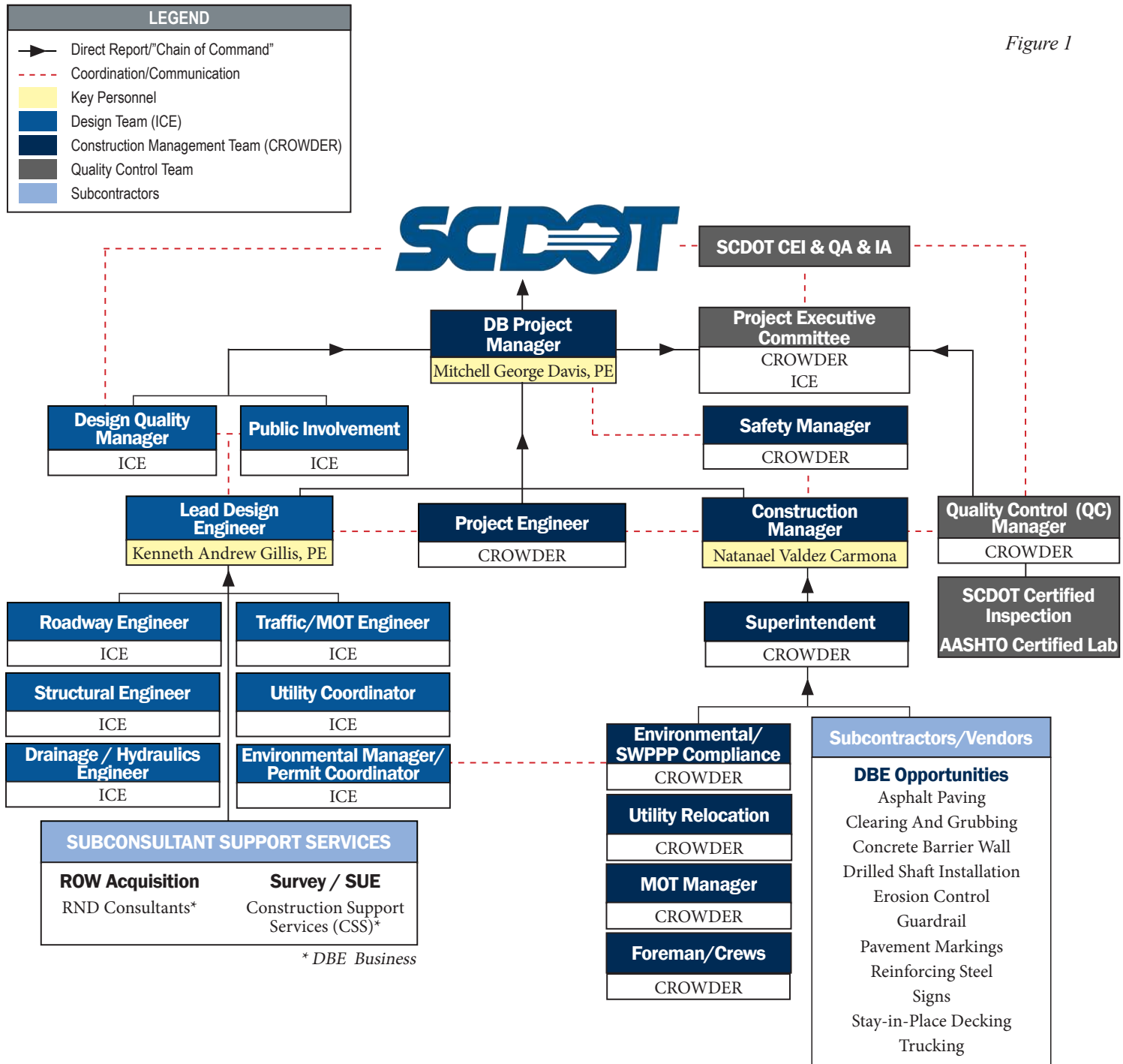
For: Crowder / ICE

Design-Build Team Name

**F. UPDATED ORGANIZATION CHART AND NOTARIZED
STATEMENT OF AVAILABILITY OF KEY INDIVIDUALS**

Organizational Chart

The organizational chart highlights the Crowder+ICE team's key personnel who are committed to facilitating transparent communication and partnering with SCDOT to deliver this project. All key personnel identified meet requirements of the RFQ and the SCDOT's quality and schedule expectations. Crowder Construction Company and Infrastructure Consulting & Engineering (ICE) confirm availability of key staff for the duration of the project.



The Crowder+ICE Team acknowledges there are no key personnel changes that have been made to the original organizational chart submitted in the Statement of Qualifications.

PO Box 30007 (28230-0007)
 6409 Brookshire Boulevard (28216)
 Charlotte, NC
 Telephone: 704.332.8184 Fax 704.372.9946



PROPOSER'S STATEMENT SCDOT BRIDGE PACKAGE 21

DESIGN BUILD PROJECT | CONTRACT ID 5368980 | COUNTY: OCONEE AND SPARTANBURG

Proposed Key Individual, Mitchell Davis, Project Manager, identified in the original organizational chart in the Crowder Construction Company / Infrastructure Consulting & Engineering Statement of Qualifications, will be available barring any unforeseen circumstances at the earliest of the times and durations identified in the RFQ and RFP, until expiration of the Warranty Period, or such earlier date as the Contract is terminated or SCDOT releases, in writing, such Key Individual from this requirement.

George F. Ellis
 George F. Ellis, Executive Vice President

11/10/2025
 Date

Mitchell Davis
 Mitchell Davis, Project Manager

11/10/25
 Date

State: North Carolina

County: Mecklenburg

State: North Carolina

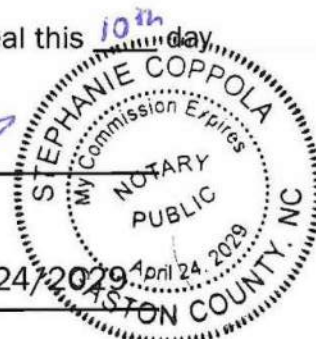
County: Mecklenburg

I, Stephanie Coppola, a Notary Public for said County and State, do hereby certify that George F Ellis personally appeared before me this day and acknowledged the due execution of the foregoing statement.

I, Stephanie Coppola, a Notary Public for said County and State, do hereby certify that Mitchell Davis personally appeared before me this day and acknowledged the due execution of the foregoing statement.

Witness my hand and official seal this 10th day of November, 2025

Stephanie Coppola
 Notary Public



My Commission Expires: 04/24/2029

Witness my hand and official seal this 10th day of November, 2025

Stephanie Coppola
 Notary Public



My Commission Expires: 04/24/2029

PO Box 30007 (28230-0007)
 6409 Brookshire Boulevard (28216)
 Charlotte, NC
 Telephone: 704.332.8184 Fax 704.372.9946



PROPOSER'S STATEMENT SCDOT BRIDGE PACKAGE 21

DESIGN BUILD PROJECT | CONTRACT ID 5368980 | COUNTY: OCONEE AND SPARTANBURG

Proposed Key Individual, Andy Gillis, Lead Design Engineer, identified in the original organizational chart in the Crowder Construction Company / Infrastructure Consulting & Engineering Statement of Qualifications, will be available barring any unforeseen circumstances at the earliest of the times and durations identified in the RFQ and RFP, until expiration of the Warranty Period, or such earlier date as the Contract is terminated or SCDOT releases, in writing, such Key Individual from this requirement.

George F. Ellis
 George F. Ellis, Executive Vice President

11/10/2025
 Date

Mitchell Davis
 Mitchell Davis, Project Manager

11/10/25
 Date

State: North Carolina

County: Mecklenburg

I, Stephanie Coppola, a Notary Public for said County and State, do hereby certify that George F Ellis personally appeared before me this day and acknowledged the due execution of the foregoing statement.

Witness my hand and official seal this 10th day of November, 2025

[Signature]
 Notary Public

My Commission Expires: 04/24/2029

State: North Carolina

County: Mecklenburg

I, Stephanie Coppola, a Notary Public for said County and State, do hereby certify that Mitchell Davis personally appeared before me this day and acknowledged the due execution of the foregoing statement.

Witness my hand and official seal this 10th day of November, 2025

[Signature]
 Notary Public

My Commission Expires: 04/24/2029

PO Box 30007 (28230-0007)
 6409 Brookshire Boulevard (28216)
 Charlotte, NC
 Telephone: 704.332.8184 Fax 704.372.9946



PROPOSER'S STATEMENT SCDOT BRIDGE PACKAGE 21

DESIGN BUILD PROJECT | CONTRACT ID 5368980 | COUNTY: OCONEE AND SPARTANBURG

Proposed Key Individual, Nate Carmona, Construction Manager, identified in the original organizational chart in the Crowder Construction Company / Infrastructure Consulting & Engineering Statement of Qualifications, will be available barring any unforeseen circumstances at the earliest of the times and durations identified in the RFQ and RFP, until expiration of the Warranty Period, or such earlier date as the Contract is terminated or SCDOT releases, in writing, such Key Individual from this requirement.

George F. Ellis
 George F. Ellis, Executive Vice President

Mitchell Davis
 Mitchell Davis, Project Manager

11/10/2025
 Date

11/10/25
 Date

State: North Carolina

County: Mecklenburg

I, Stephanie Coppola, a
 Notary Public for said County and State, do hereby
 certify that George F Ellis
 personally appeared before me this day
 and acknowledged the due execution of the
 foregoing statement.

Witness my hand and official seal this 10th day
 of November, 2025

[Signature]
 Notary Public

My Commission Expires: 04/24/2029

State: North Carolina

County: Mecklenburg

I, Stephanie Coppola, a
 Notary Public for said County and State, do hereby
 certify that Mitchell Davis
 personally appeared before me this day
 and acknowledged the due execution of the
 foregoing statement.

Witness my hand and official seal this 10th day
 of November, 2025

[Signature]
 Notary Public

My Commission Expires: 04/24/2029

G. CONFIDENTIAL AND PROPRIETARY INFORMATION PAGE LIST

No page of this submitted technical proposal contains confidential or proprietary information.

H. PREQUALIFICATION CERTIFICATE FOR PROPOSER



South Carolina Department of Transportation

Columbia, South Carolina

**South Carolina Department
Of
Transportation**

Prime Contractor

Prequalification Certificate

This Certifies that your company has complied with the rules and regulations of the Department and the State of South Carolina, and subject to the rules and regulations for a prime contractor, is declared eligible to submit a bid and be awarded any construction contract issued by the Department, subject to obtaining proper bonds and insurance acceptable to the Department and complying with all other statutory and contract requirements.

ALL BIDS SUBMITTED TO THE DEPARTMENT MUST BE IN THE NAME AS SHOWN BELOW.

VENDOR NAME

CROWDER CONSTRUCTION COMPANY

Vendor ID:

1CR007

Date Issued:

April 15, 2025

Expiration Date:

May 31, 2026

Approved By:

A handwritten signature in black ink, appearing to read "B. J. [unclear]", is written over a horizontal line. Below the signature, the text "Prequalification and Contracts Coordinator" is printed in a bold, black, sans-serif font.

Prequalification and Contracts Coordinator

I. JOINT VENTURE ORGANIZATIONAL AGREEMENT

Not applicable.

J. QUALITY CREDIT MATRIX

QUALITY CREDIT MATRIX

Number	Description	Added Value/Benefits	Cost/Schedule Impacts	Self-imposed Assurance
General				
1	Right of Way Reduction	Overall design reduces the total right-of-way footprint of 181,042 square feet (RFP Conceptual Plans) to 131,042 square feet (Technical Proposal Plans). An overall reduction of 27%.	Schedule: Provides more schedule certainty Costs: \$12,000 savings to SCDOT	Included in the Technical Proposal & Plans
2	Use of span increments less than 10-feet	Crowder+ICE Team proposes to only use cored slab for all spans less than 100-feet. Allows for a single superstructure vendor.	Schedule: Provides more schedule certainty Costs: \$300,000 savings	Included in the Technical Proposal & Plans
S-37-168 over Tributary to Choestoea Creek				
3	114-foot simple span with AASHTO Type IV girders	Reduces Right-of-Way impacts by approximately 53% from 32,889 square feet to 17,647 square feet. Provides a 40-year deck riding surface, eliminating 10-year deck maintenance resurfacing.	Schedule: Provides more schedule certainty Costs: \$3,500 savings to SCDOT Maintenance: Eliminates 3 deck resurfacing cycles	Included in the Technical Proposal & Plans
S-37-168 over Little Choestoea Creek				
4	Reduced total bridge length	Reduced bridge length by 2-feet via hydrology optimization.	Costs: \$20,000 savings	Included in the Technical Proposal & Plans
S-37-51 over Snow Creek				
5	120-foot simple span with BT-65 girders	Eliminates interior bent and provides better creek hydrology, less scour susceptibility, and reduces potential debris accumulation at eliminated interior bent. Provides 40-year deck riding surface eliminating 10-year deck resurfacing maintenance. Reduces Right-of-Way impacts by approximately 40% from 12,546 square feet to 5,025 square feet.	Schedule: Provides more schedule certainty Costs: \$125,000 savings & \$1,725 savings to SCDOT Maintenance: Eliminates 3 deck resurfacing cycles	Included in the Technical Proposal & Plans
S-37-133 over Little Cane Creek				
6	Reduced total bridge length 24 feet and use of cored slabs for all 3 spans	Reduces Right-of-Way impacts by approximately 59% from 69,285 square feet to 41,000 square feet.	Costs: \$100,000 savings and \$6,500 savings to SCDOT	Included in the Technical Proposal & Plans
7	Use of Micro Piles at end bent 1	Eliminates impacts to the Central Electric overhead transmission line and potential relocation.	Schedule: Saves 18-months for transmission line relocation Costs: \$1 Million savings to SCDOT; \$50,000 additional cost for specialty subcontractor to install micro-piles.	Included in the Technical Proposal & Plans
S-42-197 over South Tyger River				
8	Reduced total bridge length and use of cored slabs for all 3 spans	Reduced bridge length by 5-feet and use of cored slabs for all 3 bents	Schedule: Provides more schedule certainty Costs: \$40,000 savings	Included in the Technical & Cost Proposal

APPENDIX

APPROVED FORMAL ATCS

A large, light blue, sans-serif capital letter 'C' is positioned on the right side of the page. It is centered vertically within the light blue horizontal band and is the largest element on the page.

Formal ATCs - Final Determination

Date Received: 28-Oct

Date Reponse Sent: 4-Nov

Crowder			SCDOT		Final?
ATC No.	Primary Discipline	Concept	Response	Justification	
1	Structures	36" wide adjacent cored slabs up to a max span of 100' and 36" structure depth. Use of span increments less than 10 feet.	Approved		Yes
2	Hydrology	S-51 bridge configuration revision to single span 120'	Approved		Yes
3	Hydrology	S-133 revision to total bridge length and skew angle.	Approved		Yes
4	Hydrology	S-168T revision to bridge configuration to single span 135' bridge	Addendum		Yes
5	Structures	S-168_Choestoea revise bridge configuration to single 98' simple span	Approved		Yes
6	Hydrology	S-197 revision to total bridge length.	Approved		Yes



Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21

Project ID: 5368980

ATC No.: 1

Priority: High

Team: Crowder-ICE

Date: 10/7/25

Description (required):

This ATC requests approval to use 36" wide adjacent cored slabs up to a maximum span length of 100 feet. A structure depth of 36" will be used. We also request approval to use span increments less than 10 feet.

Usage:

Currently we are proposing to use the cored slab span longer than 70' and at increments less than 10' at these sites: S-133 over Little Cane Creek, S-168 over Little Choestoea Creek, and S-197 over South Tyger River. We also request to have the option to use this ATC at other sites if we determine that it will provide a more economical design.

Deviations (required):

RFP Exhibit 4b Section 2.1.7

SCDOT Structural Drawings and Details for cored slab and box beam bridges are available in standard span lengths (10-foot increments) from 30-feet up to 100- feet. Do not deviate from the standard span lengths provided.

Justification:

The use of longer span cored slabs will reduce construction costs and schedule. All cored slab spans will be designed to meet strength, service, load rating, span to depth ratio and live load deflection criteria.

Schedule:

This ATC will not have any negative schedule impacts and will help to expedite the production of the bridge superstructure at these sites.

Impacts:

There will be no negative impacts to the structures or sites.

History:

The SCDOT has a long history of using cored slabs. The current practice of using 70' cored slabs spans was introduced in the Statewide 33 Bridges Replacement Project (2005-2006). We have discussed this with precasters and cored slabs are easier and cheaper to manufacture than box beams.

Risks:

We will eliminate all design risks by complying with all RFP and BDM criteria.

Costs (required):

Savings of approximately \$100,000 per span for a total estimated savings of \$300,000.

Quality:

This ATC will provide equal quality to the current RFP requirements.

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21

Project ID: 5368980

ATC No.: 1

Priority: High

Team: Crowder-ICE

Date: 10/7/25

Operations & Maintenance:

The difference in flexural stiffness and the resulting live load deflections between the standard 70' span and the 100' span is minimal. Therefore we expect the asphalt wearing surface to perform similarly to the 70' long spans without any additional operations & maintenance costs.

Bridge Package 21

FATC #1 Attachment

Non-Standard Cored Slab Supplementary
Information

Oconee and Spartanburg Counties

Bridge Package 21

FATC #1 Attachment

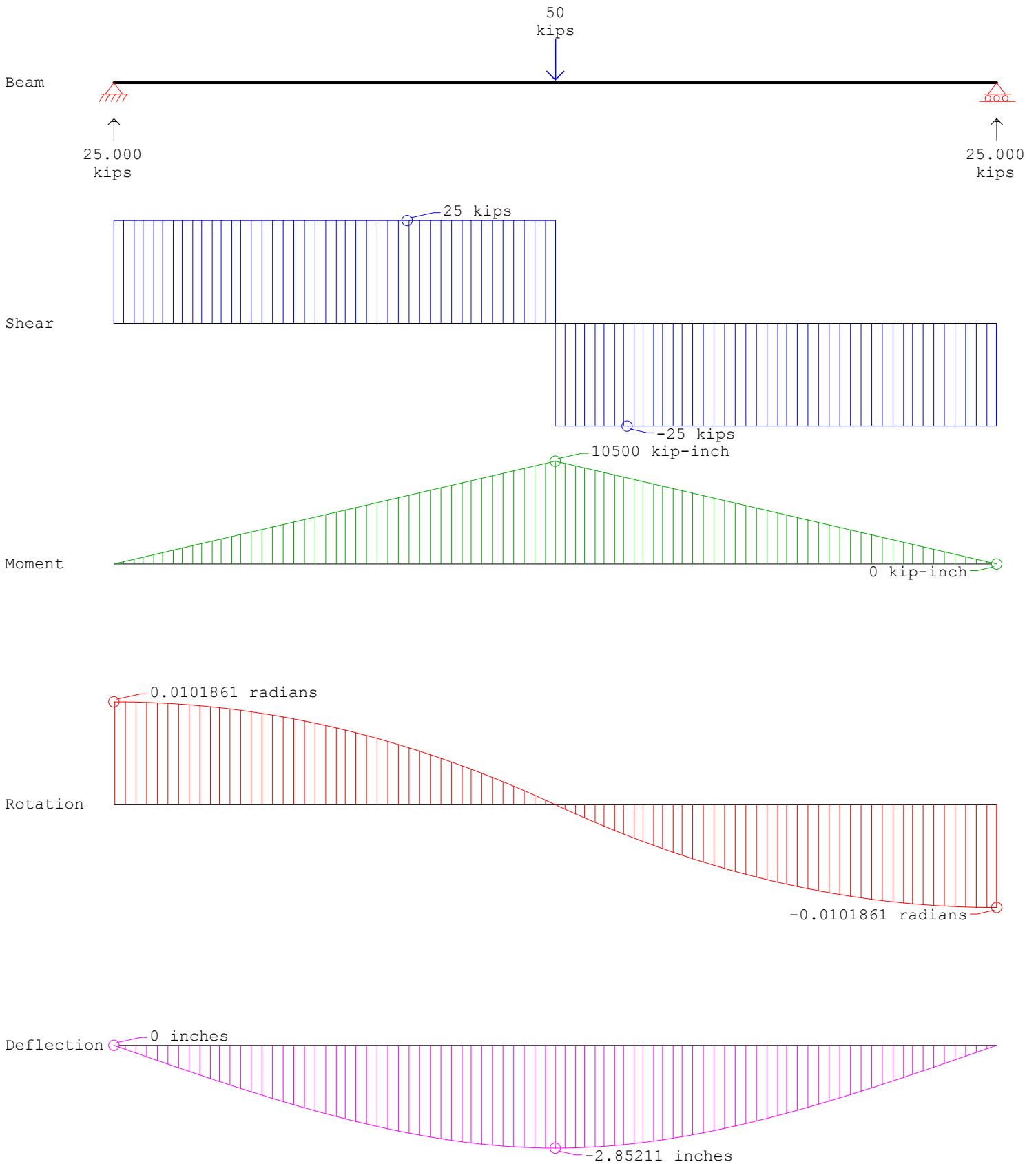
Live Load Deflection Comparison

Oconee & Spartanburg Counties



70 Foot Deflection
Beam length = 70 feet, E = 5575 ksi, I = 38829 inches⁴

24" Cored Slab - 70' Bearing to Bearing



Input:

Title: 70 Foot Deflection
Beam Element: Length = 70 feet; E = 5575 ksi; I = 38829 inches⁴;
Pin Support: X = 0 feet;
Roller Support: X = 70 feet;
Point Load: X = 35 feet; P = -50 kips;

Analysis Data:

Beam Length = 70 feet
501 Nodes, 500 Beam Elements, 1002 Degrees of Freedom

Reactions:

X feet	Vert kips	Rot kip-inch
0	25.000	
70.000	25.000	

Equilibrium:

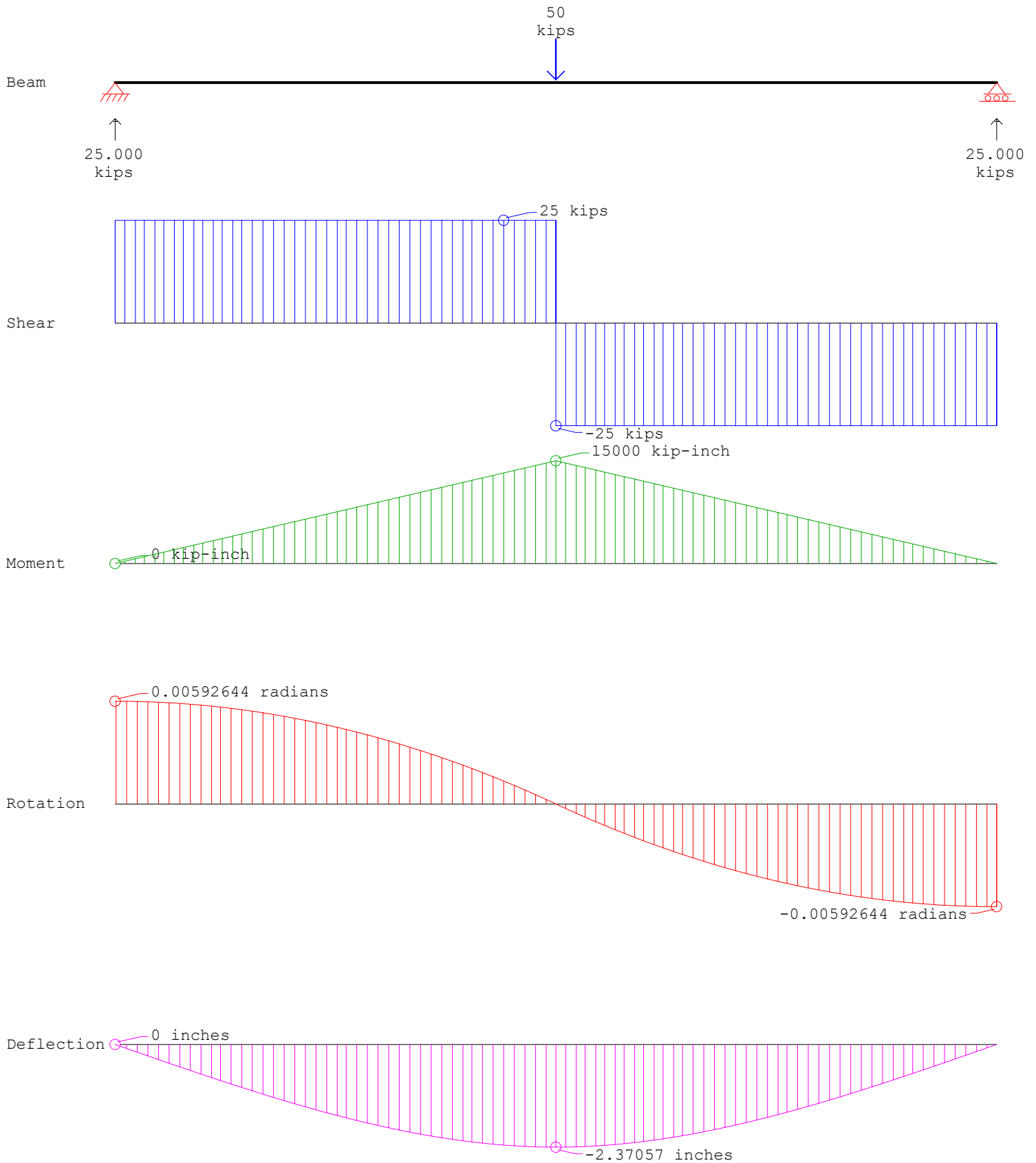
	Force	Reaction	Error
Vert	-50.000	50.000	0.000 kips
Rot	21000.000	-21000.000	0.000 kip-inch

Min & Max values:

Min Shear	=	-25.000 kips	at	40.693 feet
Max Shear	=	25.000 kips	at	23.263 feet
Min Moment	=	-1.863e-09 kip-inch	at	70.000 feet
Max Moment	=	10500.000 kip-inch	at	35.000 feet
Min Rotation	=	-0.010186 radians	at	70.000 feet
Max Rotation	=	0.010186 radians	at	0 feet
Min Deflection	=	-2.852 inches	at	35.000 feet
Max Deflection	=	0 inches	at	0 feet

100 Foot Deflection
Beam length = 100 feet, $E = 5575 \text{ ksi}$, $I = 136199 \text{ inches}^4$

36" Cored Slab - 100' Bearing to Bearing



Input:

Title:100 Foot Deflection
Beam Element: Length = 100 feet; E = 5575 ksi; I = 136199 inches⁴;
Pin Support: X = 0 feet;
Roller Support: X = 100 feet;
Point Load: X = 50 feet; P = -50 kips;

Analysis Data:

Beam Length = 100 feet
501 Nodes, 500 Beam Elements, 1002 Degrees of Freedom

Reactions:

X feet	Vert kips	Rot kip-inch
0	25.000	
100.000	25.000	

Equilibrium:

	Force	Reaction	Error
Vert	-50.000	50.000	-0.000 kips
Rot	30000.000	-29999.997	0.003 kip-inch

Min & Max values:

Min Shear	=	-25.000 kips	at	50.000 feet
Max Shear	=	25.000 kips	at	44.077 feet
Min Moment	=	0 kip-inch	at	0 feet
Max Moment	=	14999.999 kip-inch	at	50.000 feet
Min Rotation	=	-0.005926 radians	at	100.000 feet
Max Rotation	=	0.005926 radians	at	0 feet
Min Deflection	=	-2.371 inches	at	50.000 feet
Max Deflection	=	0 inches	at	0 feet

Bridge Package 21

FATC #1 Attachment

100' Span 36" Adjacent Cored Slab Preliminary
Design Summary

Oconee & Spartanburg Counties



Bentley				Sheet #	1
				Job #	25-244 Pursuit
Program:	LEAP® Bridge Concrete	Infrastructure Consulting & Engineering,		Designed	DPC
Module:	Precast/Prestressed Girder	Copyright © Bentley Systems, Inc. 2024		Date	Oct/3/2025
Version:	23.00.01.16	www.bentley.com	Phone: 1-800-778-4277	Checked	JLJ
File Name:	Superstructure - S-197 over S Tyger River... .lbcx			Date	Oct/3/2025

PROPERTIES

Span:2, Beam:1

PRECAST DATA:

Section Id	SCDOT 36" x 36" Cored Slab int					
Type	Rect. Beams w/ Circular Voids					
Fing width	Top	36.000	in	Bot	36.000	in
thick	Top	12.000	in	Bot	12.000	in
Stems	No	0				
	Top	N/A				
	Bot	N/A				
Shear width		12.000	in			

Minimum Thickness Criteria, Article 5.12.3.2 checked: OK.

GENERAL SPAN DATA:

Overall length	100.000	ft
Release length	100.000	ft
Design length	98.875	ft

Span:2, Beam:1

PRESTRESSED STEEL:

38 strands, 6/10-270K-LL, Low relaxation strands
Straight Pattern

END PATTERN (Ycg = 7.53 in):

10 @ 2.000 in	10 @ 4.000 in	10 @ 6.000 in	4 @ 8.000 in
4 @ 33.500 in			

SHIELDING AND REDUCED INITIAL PULLS:

Group	Strands	End	Heights	Mid		End		Shielding	Mid		Distance to center		Initial Frac	Pull Pull/Str	
16	2	2.000	in	2.000	in	4.00	ft		0.00	ft	4.000	in	75.0 %	43.9	kips
18	2	2.000	in	2.000	in	10.00	ft		0.00	ft	8.000	in	75.0 %	43.9	kips

Check for Art. 5.11.4.3 (debond termination distances): OK

Bentley			Sheet #	1
			Job #	25-244 Pursuit
Program:	LEAP® Bridge Concrete	Infrastructure Consulting & Engineering,	Designed	DPC
Module:	Precast/Prestressed Girder	Copyright © Bentley Systems, Inc. 2024	Date	Oct/3/2025
Version:	23.00.01.16	www.bentley.com	Checked	JLJ
File Name:	Superstructure - S-197 over S Tyger River... .lbcx		Date	Oct/3/2025

DESIGN STATUS

Span:2, Beam:1

Release Stress, computed vs. limiting	OK
Final Stress, computed vs. limiting	OK
Ultimate Moment, required vs. provided	OK

RELEASE STRESSES (ksi)

Limiting Stresses		
Compression	Tens with Reinf	Tens without Reinf
4.550	-0.635	-0.200

Computed Stresses						
	Trans	0.10L/0.90L	0.20L/0.80L	0.30L/0.70L	0.40L/0.60L	Midspan
Location, ft	0.500	7.500	17.500	27.500	37.500	47.500
Precast-top	-0.456	-0.022	0.492	0.928	1.190	1.277
Bottom	3.132	2.855	2.499	2.063	1.801	1.714
As_top, in2	1.251	0.000	0.000	0.000	0.000	0.000
Ast_prvd, in2	0.000*	0.000	0.000	0.000	0.000	0.000

Reinforcing will be provided in final design.

FINAL STRESSES (ksi)

Limiting Stresses		
Final (P/S+DL+LL)	Compression	Precast 5.400
Final 1	Tension	-0.570
Final 2 (P/S+DL)	Compression	4.050
Final 3 (0.5(P/S+DL)+F_LL)	Compression	3.600

Computed Stresses
POSITIVE MOMENT ENVELOPE : SERVICE I (Final)

	Bearing	Trans	H/2	0.10L/0.90L	0.20L/0.80L	0.30L/0.70L	0.40L/0.60L	Midspan
Location, ft	0.000	2.438	1.500	9.438	19.438	29.438	39.438	49.438
Precast-top	-0.086	-0.076	-0.077	0.819	1.832	2.611	3.077	3.223
Bottom	0.550	2.551	1.779	1.802	0.935	0.156	-0.310	-0.456

POSITIVE MOMENT ENVELOPE : SERVICE III (Final 1)

	Bearing	Trans	H/2	0.10L/0.90L	0.20L/0.80L	0.30L/0.70L	0.40L/0.60L	Midspan
Precast-top	-0.086	-0.095	-0.090	0.750	1.710	2.454	2.898	3.040
Bottom	0.550	2.571	1.792	1.871	1.057	0.313	-0.131	-0.273

Bentley			Sheet #	2
			Job #	25-244 Pursuit
Program:	LEAP® Bridge Concrete	Infrastructure Consulting & Engineering,	Designed	DPC
Module:	Precast/Prestressed Girder	Copyright © Bentley Systems, Inc. 2024	Date	Oct/3/2025
Version:	23.00.01.16	www.bentley.com	Checked	JLJ
File Name:	Superstructure - S-197 over S Tyger River... .lbcx		Date	Oct/3/2025

POSITIVE MOMENT ENVELOPE : SERVICE I (Final 2)

	Bearing	Trans	H/2	0.10L/0.90L	0.20L/0.80L	0.30L/0.70L	0.40L/0.60L	Midspan
Precast-top	-0.086	-0.174	-0.139	0.474	1.224	1.825	2.185	2.305
Bottom	0.550	2.650	1.841	2.148	1.543	0.942	0.582	0.462

POSITIVE MOMENT ENVELOPE : FATIGUE I (Final 3)

	Bearing	Trans	H/2	0.10L/0.90L	0.20L/0.80L	0.30L/0.70L	0.40L/0.60L	Midspan
Precast-top	-0.043	-0.019	-0.027	0.474	1.020	1.438	1.678	1.732
Bottom	0.275	1.257	0.878	0.837	0.363	-0.055	-0.295	-0.348

ULTIMATE MOMENT (k.ft)

STRENGTH I

	Trans	H/2	0.10L/0.90L	0.20L/0.80L	0.30L/0.70L	0.40L/0.60L	Midspan
Location, ft	2.438	1.500	9.438	19.438	29.438	39.438	49.438
Mu-req'd	339.2	211.0	1207.2	2174.3	2856.2	3262.8	3388.9
Mu-prv'd	3087.1	2195.2	4192.4	4467.9	4482.6	4482.6	4482.6

CAMBER / DEFLECTION (in) at Midspan (0.5 x L = 49.44 ft)

SERVICE I

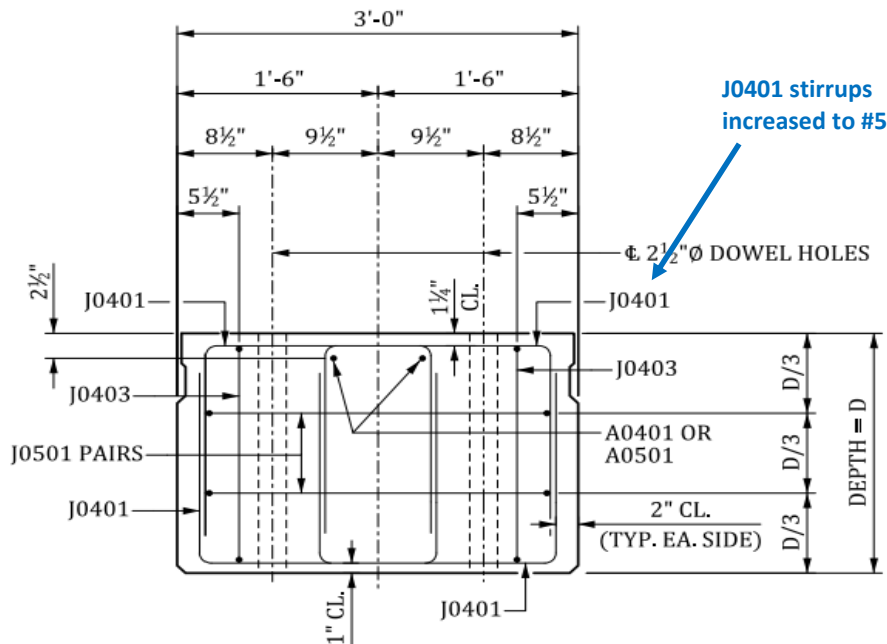
	Release	Mult	Erection	Mult	Final
Prestress	3.819	1.80	6.875	2.45	9.357
Self Wt.	-2.885	1.85	-5.338	2.70	-7.790
Deck + Haunch			0.000	2.30	0.000
DL-Prec. (DC)			-0.560	3.00	-1.680
Diaphragm			-0.014	3.00	-0.042
DL-Prec. (DW)			0.000	3.00	0.000
DL-Comp. (DC)			-0.092	3.00	-0.275
DL-Comp. (DW)			-0.021	3.00	-0.063
Total	0.934		0.850		-0.493

Positive values indicate upward deflection.

Project: Bridge Package 21
Subject: FATC 1 Cored Slab Splitting Resistance
By: CSB
Date: 10/7/2025

Cored Slab Splitting Resistance

Required Area of Bursting Steel	2.81	sq. in.	From OBD
h/4	9	in	
# of Horizontal Stirrup Legs	2	per location, #5 legs (see below)	
# of Horizontal J0501 Legs	4	Total	
Total Legs	10		
Area per Leg	0.31	sq. in.	
Area of Steel in H/4	3.10	sq. in.	Using Horizontal Legs of #5 Stirrups, Plus J0501 bars, Total of 10 Legs



END ELEVATION

STRANDS NOT SHOWN.
 INTERIOR SLAB SHOWN - EXTERIOR SLAB SIMILAR EXCEPT SHEAR KEY LOCATION

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21

Project ID: 5368980

ATC No.: 2

Priority: High

Team: Crowder-ICE

Date: 10/23/25

Description (required):

The Crowder ICE team requests to revise the bridge configuration at S-51 to a single span 120' girder bridge. This type of structure would allow us to lower the roadway profile thus reducing the amount of fill to be placed in the floodplain. It would also eliminate an interior bent adjacent to the channel.

Usage:

This ATC is specifically for S-51 over Snow Creek.

Deviations (required):

Minimum Bridge Length. Per Attachment B - Supplemental Project Design Criteria the minimum bridge length is 140 feet. We are proposing to possibly lower the proposed low chord no more than one foot below that of the existing bridge, while meeting minimum freeboard requirements. The roadway profile low point will be placed on the bridge.

Justification:

We have performed a preliminary bridge hydraulic analysis with the proposed 120' single span bridge and confirmed that this bridge will provide equal or better hydraulic performance for the 100 year event as compared to the conceptual bridge layout. Our design also meets the 2 ft of freeboard requirement to the low chord elevation for the 25 year event. Our proposed concept eliminates excess bridge length, while providing the required hydraulic performance to save time and money at this site. Since we are using a single span with a cast in place deck the Department has given us provisional approval to place the low point on the bridge provided that we restrict the spread to 90% of the shoulder width which our preliminary analysis shows will be provided. If this results in scuppers spaced closer than every 5-feet along both gutterlines, then it would be acceptable to use a 5 foot spacing.

Schedule:

Approval of this ATC will positively impact the schedule with the elimination of an interior bent and reduction in new embankment.

Impacts:

This ATC reduces our construction footprint in the floodplain and eliminates an interior bent thus improving channel hydraulics.

History:

SCDOT has prescribed minimum bridge lengths at each site. We encourage a less prescriptive approach as long as the proposed bridge length meets all of the RFP hydraulic criteria. Lowering the low chord of a bridge is routinely approved as long as all other hydraulic criteria is met.

Risks:

By meeting all of the freeboard and backwater requirements the risks for approving this ATC are eliminated.

Costs (required):

Savings of approximately \$125,000 for this site.

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21

Project ID: 5368980

ATC No.: 2

Priority: High

Team: Crowder-ICE

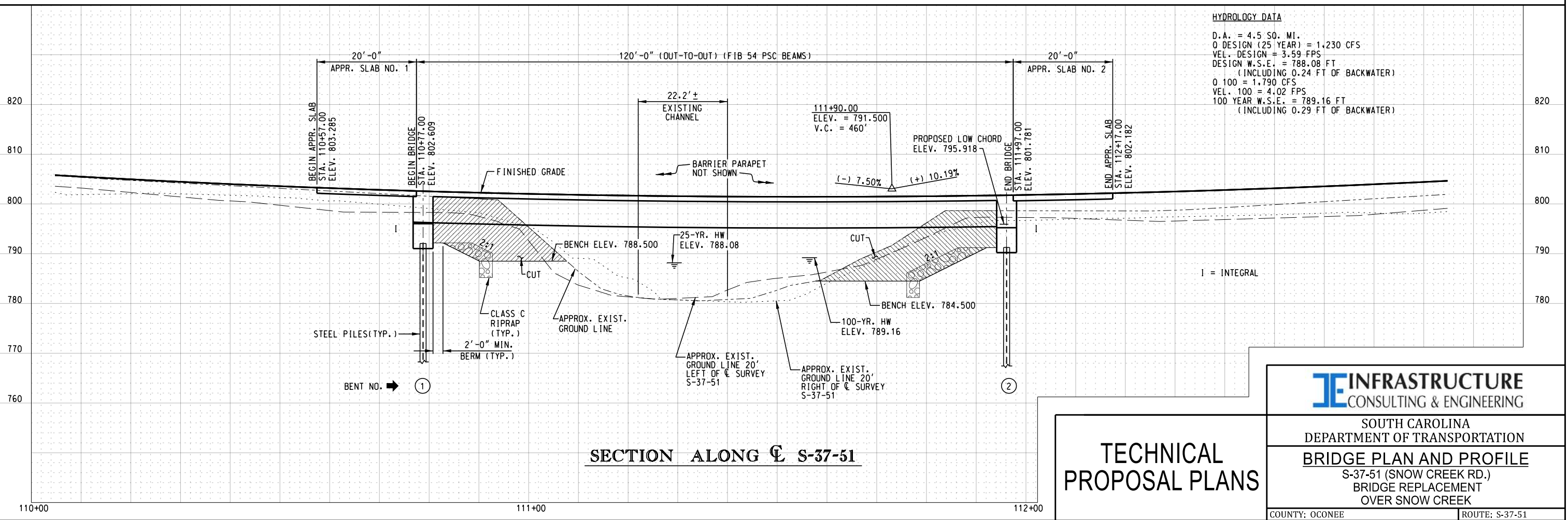
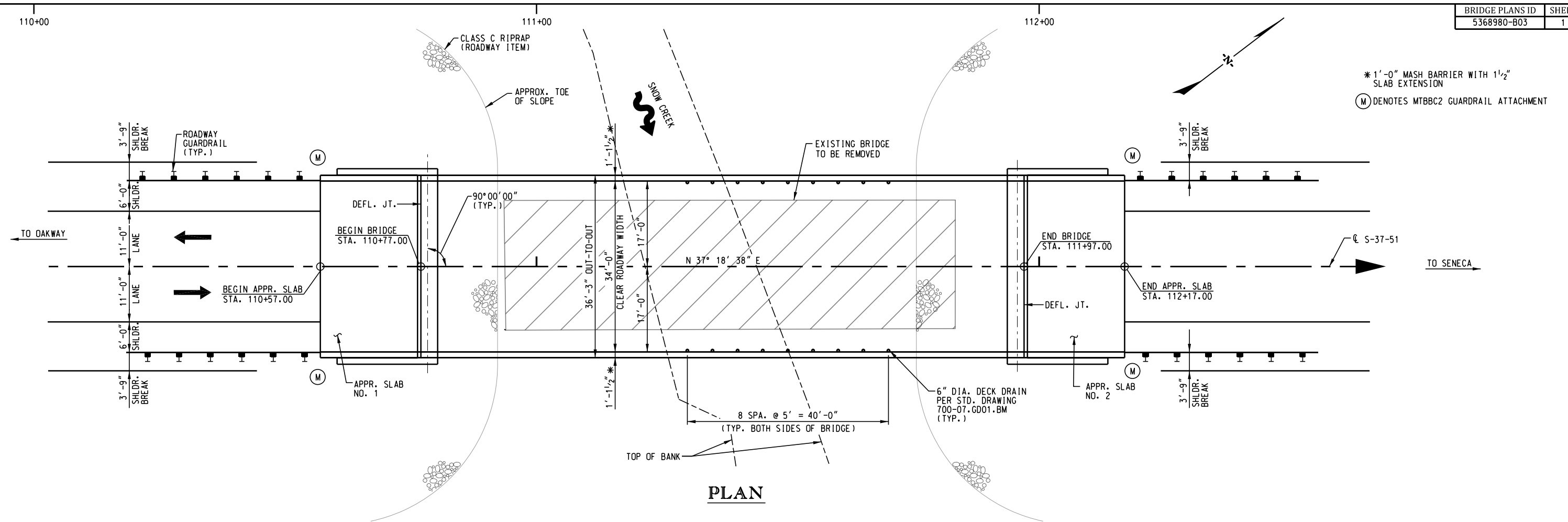
Date: 10/23/25

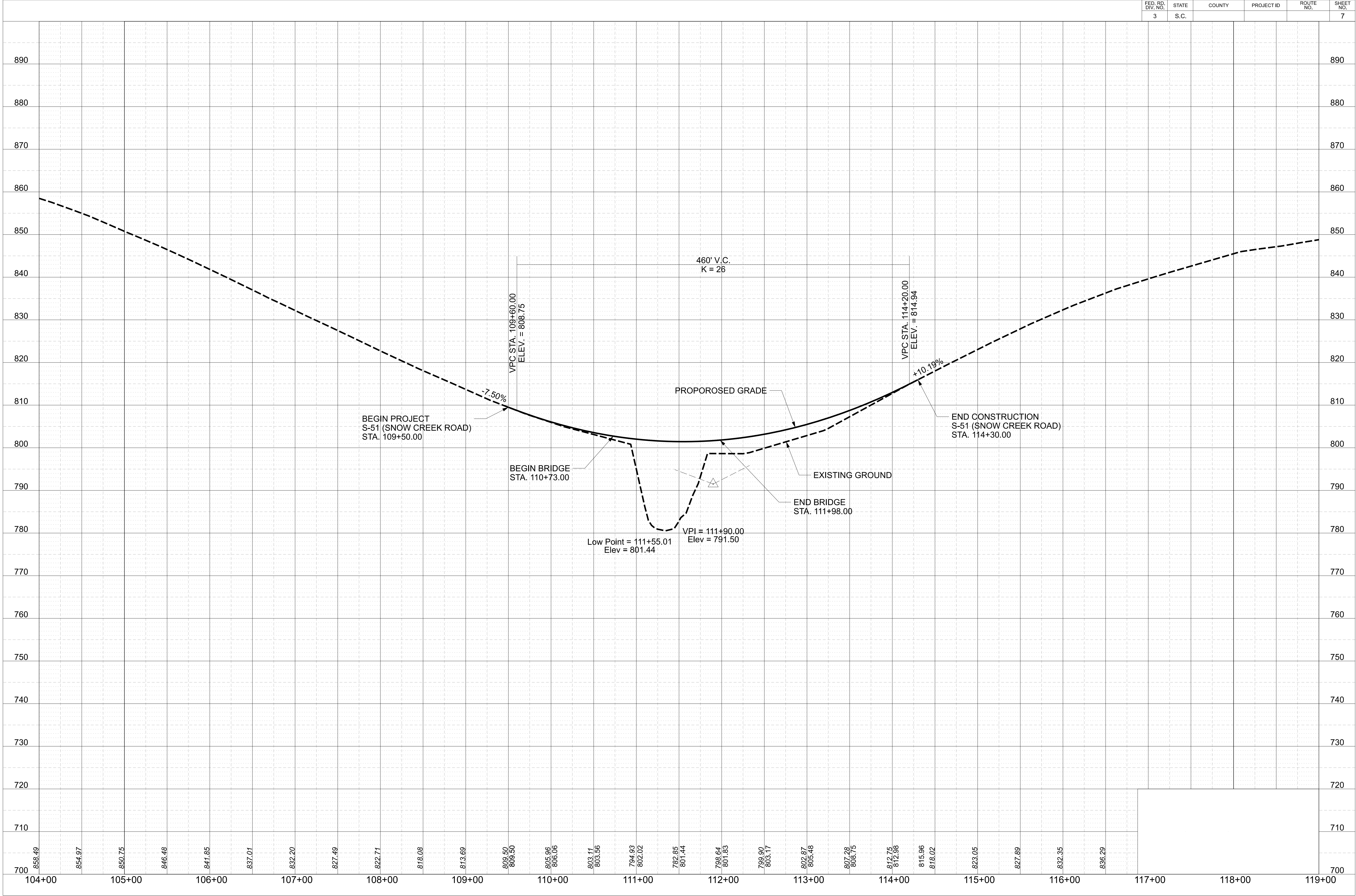
Quality:

There is no reduction in quality with this ATC. The reduced earthwork may even lead to reductions in long term settlement which would improve the longevity of the pavement structure. The single span and cast in place deck will eliminate a transverse deflection joint at the interior bent and the longitudinal joints between adjacent slabs/box beams.

Operations & Maintenance:

Maintenance will be significantly improved since the cast in place bridge deck will require little or no maintenance as compared to cored slabs and box beams with an asphalt overlay.





\$\$\$USER\$\$\$ \$\$\$\$DATE\$\$\$ \$\$\$\$TIME\$\$\$
\$\$\$FILE\$\$\$

Bridge Package 21

FATC #2 Attachment

Snow Creek P&P and FIB 54 Haunch Loading

Oconee & Spartanburg Counties




Project: Bridge Package 21
Subject: Snow Creek Haunch Load
By: CSB
Date: 10/22/2025



Haunch Load Calculation

Point Along Beam	Haunch Thickness (in) Along CL of Beam	Haunch Load (klf)
Beam 1 EB1 CL of Bearing	11.50	0.58
0.1	7.52	0.38
0.2	4.68	0.23
0.3	2.72	0.14
0.4	1.55	0.08
0.5	1.17	0.06
0.6	1.55	0.08
0.7	2.72	0.14
0.8	4.68	0.23
0.9	7.52	0.38
Beam 1 EB2 CL of Bearing	11.50	0.58
Beam 2 EB1 CL of Bearing	11.50	0.58
0.1	7.59	0.38
0.2	4.82	0.24
0.3	2.90	0.15
0.4	1.78	0.09
0.5	1.40	0.07
0.6	1.78	0.09
0.7	2.90	0.15
0.8	4.81	0.24
0.9	7.59	0.38
Beam 2 EB2 CL of Bearing	11.50	0.58


**Sag curve and beam
camber necessitates a
larger than typical haunch
value. Contractor has
verified constructability.**

PACKAGE 21 - SNOW CREEK OPEN BRIDGE DESIGN INPUT SUMMARY

GEOMETRY DATA BRIDGE LAYOUT

Overall Width (ft)	36.250
Left curb (ft)	1.125
Right curb (ft)	1.125
Curb-to-curb width (ft)	34.000
Number of spans	1
Number of lanes	2
Lane width (ft)	12.000
Eff Deck thick (in)	8.250
Sacrificial thick (in)	0.250
Haunch thickness (in)	0.000
Haunch width (in)	48.000
Bridge c/s, MI(lxx) (in4)	3292921.00

Haunch thickness
entered as zero.

LOADS DATA

Loads generated using Permanent Load Wizard: NO

DEAD LOADS ON PRECAST

UNITS: (Point: kips, Location: ft, Line: klf, Trapez: klf)

Span	Beam	DC/DW	Type	Mag.1	Loc.1	Mag.2	Loc.2	Description
1	1	DC	Line	0.026	0.000	0.026	117.333	Sacrificial Wearing Surface
1	1	DC	Trapez	0.100	0.000	0.000	58.670	Additional Overhang
1	1	DC	Line	0.046	0.000	0.046	117.333	SIP
1	1	DC	Trapez	0.000	58.670	0.100	117.330	Additional Overhang
1	1	DC	Trapez	0.600	0.000	0.100	58.670	Haunch
1	1	DC	Trapez	0.100	58.670	0.600	117.333	Haunch
1	2	DC	Line	0.030	0.000	0.030	117.333	Sacrificial Wearing Surface
1	2	DC	Line	0.095	0.000	0.095	117.333	SIP
1	2	DC	Trapez	0.600	0.000	0.100	58.670	Haunch
1	2	DC	Trapez	0.100	58.670	0.600	117.330	Haunch
1	3	DC	Line	0.030	0.000	0.030	117.333	Sacrificial Wearing Surface
1	3	DC	Line	0.095	0.000	0.095	117.333	SIP
1	3	DC	Trapez	0.600	0.000	0.100	58.670	Haunch
1	3	DC	Trapez	0.100	58.670	0.600	117.330	Haunch
1	4	DC	Line	0.026	0.000	0.026	117.333	Sacrificial Wearing Surface
1	4	DC	Line	0.046	0.000	0.046	117.333	SIP
1	4	DC	Trapez	0.100	0.000	0.000	58.670	Additional Overhang
1	4	DC	Trapez	0.000	58.670	0.100	117.330	Additional Overhang
1	4	DC	Trapez	0.600	0.000	0.100	58.670	Haunch
1	4	DC	Trapez	0.100	58.670	0.600	117.330	Haunch

Haunch concrete and additional
overhang concrete loads calculated
along the beam accounting for sag
curve and camber, and entered as
trapezoidal loads to capture varying
thickness along beam.

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21

Project ID: 5368980

ATC No.: 3

Priority: High

Team: Crowder-ICE

Date: 10/30/25

Description (required):

The Crowder ICE team requests to revise the total bridge length and skew angle at S-133. We are proposing three spans at 40' - 96' - 40' for a total bridge length of 176'. All bridge bents will be skewed 13 degrees.

Usage:

This ATC is specifically for S-133 over Little Cane Creek.

Deviations (required):

Attachment B - Supplemental Project Design Criteria states the minimum bridge length is 200 feet and the minimum channel span is 100 feet.

RFP Exhibit 4b Section 2.1.7

SCDOT Structural Drawings and Details for cored slab and box beam bridges are available in standard span lengths (10-foot increments) from 30-feet up to 100- feet. Do not deviate from the standard span lengths provided.

Justification:

We have performed a preliminary bridge hydraulic analysis with the proposed three span bridge and confirmed that this bridge will provide equal or better hydraulic performance for the 100 year event as compared to the conceptual bridge layout. Our design also exceeds the 2 ft of freeboard requirement to the low chord elevation for the 25 year event. Our proposed concept eliminates excess bridge length, while providing the required hydraulic performance to save time and money at this site. Our layout also complies with channel bank set back criteria.

Schedule:

Approval of this ATC will have a positive impact on the schedule.

Impacts:

There are no negative impacts to approving this design.

History:

SCDOT has prescribed minimum bridge lengths at each site. We encourage a less prescriptive approach as long as the proposed bridge length meets all of the RFP hydraulic criteria. Lowering the low chord of a bridge is routinely approved as long as all other hydraulic criteria is met.

Risks:

By meeting all of the freeboard and backwater requirements the risks for approving this ATC are eliminated.

Costs (required):

Savings of approximately \$100,000 at this site.

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21

Project ID: 5368980

ATC No.: 3

Priority: High

Team: Crowder-ICE

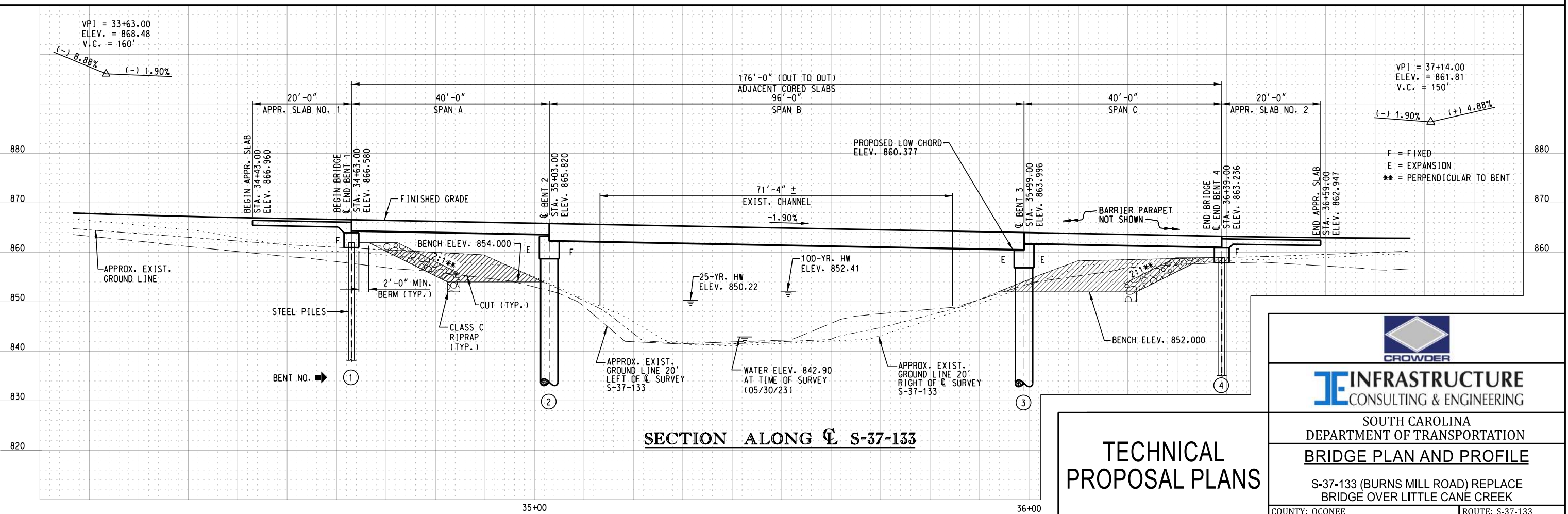
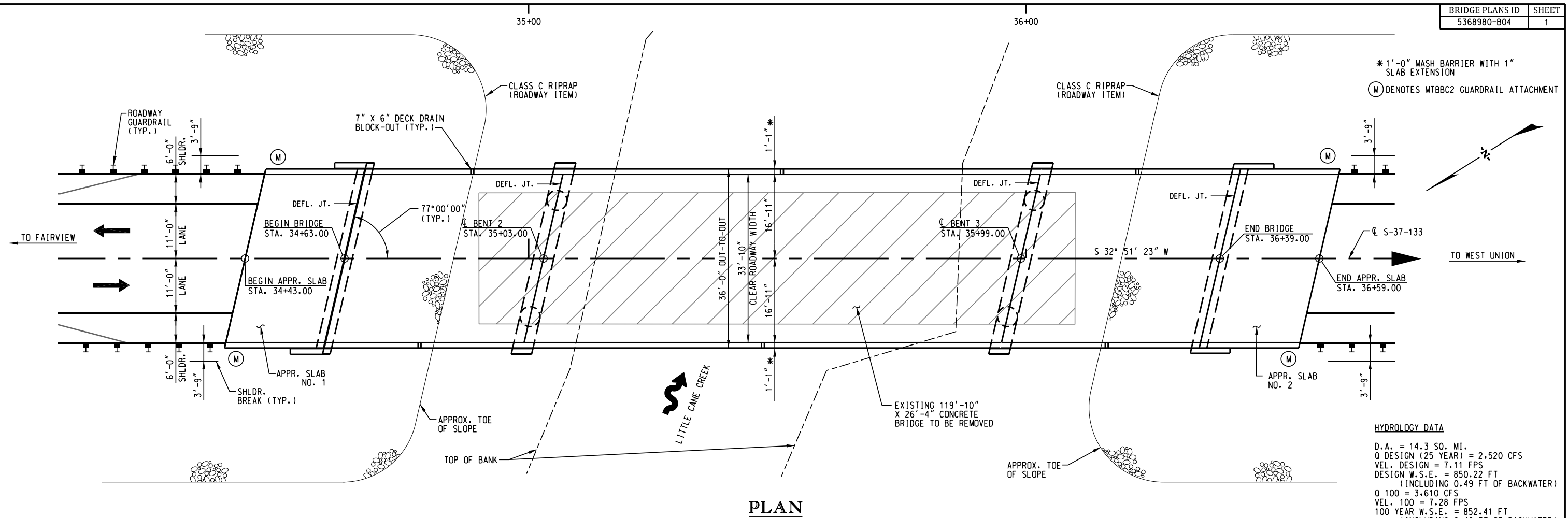
Date: 10/30/25

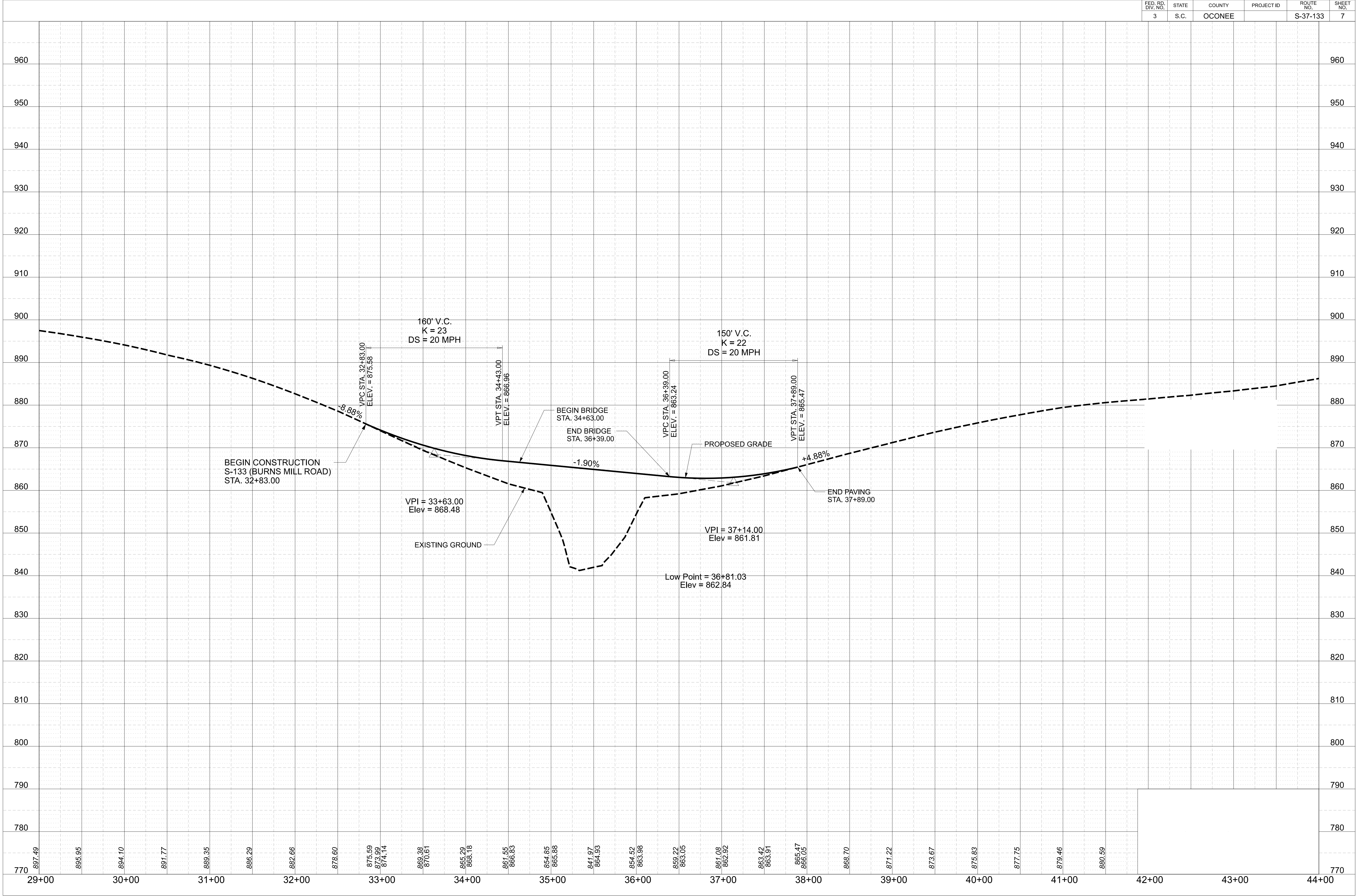
Quality:

There is no reduction in quality with this ATC. The reduced earthwork may even lead to reductions in long term settlement which would improve the longevity of the pavement structure.

Operations & Maintenance:

No additional operations or maintenance costs are expected by approving this ATC.





\$\$\$USER\$\$\$ \$\$\$\$DATE\$\$\$ \$\$\$\$TIME\$\$\$
\$\$\$FILE\$\$\$

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21

Project ID: 5368980

ATC No.: 5

Priority: High

Team: Crowder-ICE

Date: 10/7/25

Description (required):

The Crowder ICE team requests to revise the bridge configuration at S-168 over the Little Choestoea Creek to a single 98' simple span.

Usage:

This ATC is specifically for S-168 over Little Choestoea Creek.

Deviations (required):

Attachment B - Supplemental Project Design Criteria states the minimum bridge length is 100 feet.
RFP Exhibit 4b Section 2.1.7

SCDOT Structural Drawings and Details for cored slab and box beam bridges are available in standard span lengths (10-foot increments) from 30-feet up to 100- feet. Do not deviate from the standard span lengths provided.

Justification:

We have performed a preliminary bridge hydraulic analysis with the proposed 98' single span bridge and confirmed that this bridge will provide equal or better hydraulic performance for the 100 year event as compared to the conceptual bridge layout. Our design also exceeds the 2 ft of freeboard requirement to the low chord elevation for the 25 year event. Our proposed concept eliminates excess bridge length, while providing the required hydraulic performance to save time and money at this site.

Schedule:

Approval of this ATC will positively impact the schedule with the elimination of an interior bent and reduction in new embankment.

Impacts:

There are no negative impacts to approving this design.

History:

SCDOT has prescribed minimum bridge lengths at each site. We encourage a less prescriptive approach as long as the proposed bridge length meets all of the RFP hydraulic criteria.

Risks:

By meeting all of the freeboard and backwater requirements the risks for approving this ATC are eliminated.

Costs (required):

Savings of approximately \$20,000 at this site.

Quality:

There is no reduction in quality with this ATC.

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21

Project ID: 5368980

ATC No.: 5

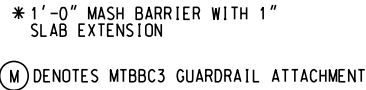
Priority: High

Team: Crowder-ICE

Date: 10/7/25

Operations & Maintenance:

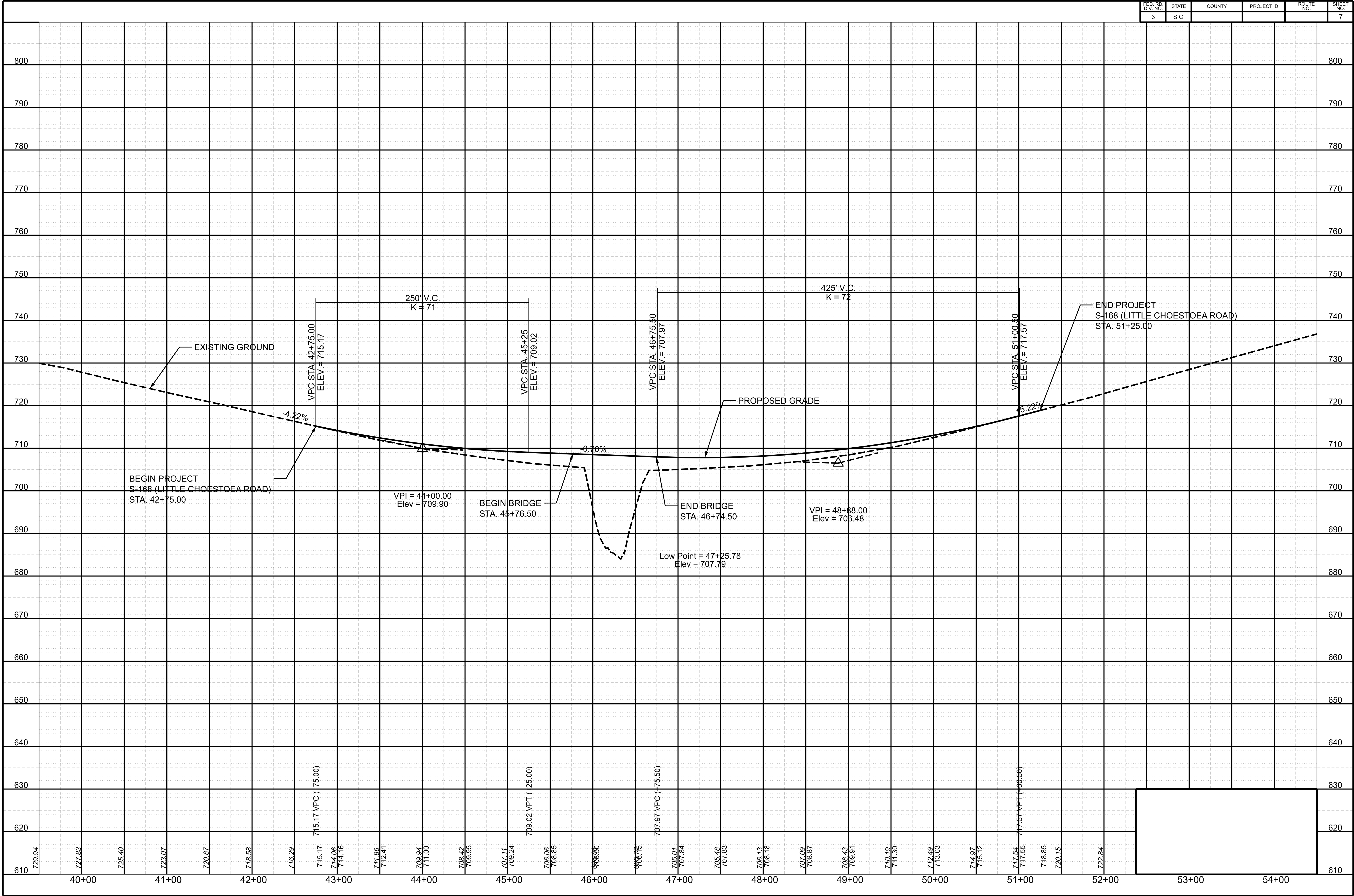
No additional operations or maintenance costs are expected by approving this ATC.



HYDROLOGY DATA

D.A. = 6.2 SQ. MI.
Q DESIGN (25 YEAR) = 1,510 CFS
VEL. DESIGN = 8.13 FPS
DESIGN W.S.E. = 693.52 FT
(INCLUDING 0.28 FT OF BACKWATER)
Q 100 = 2,180 CFS
VEL. 100 = 9.12 FPS
100 YEAR W.S.E. = 695.16 FT
(INCLUDING 0.46 FT OF BACKWATER)





\$\$\$USER\$\$\$ \$\$\$\$DATE\$\$\$ \$\$\$\$TIME\$\$\$
\$\$\$FILE\$\$\$

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21

Project ID: 5368980

ATC No.: 6

Priority: High

Team: Crowder-ICE

Date: 10/7/25

Description (required):

The Crowder ICE team requests to revise the total bridge length at S-197. We are proposing three spans at 50' - 95' - 60' for a total bridge length of 205'.

Usage:

This ATC is specifically for S-197 over South Tyger River.

Deviations (required):

Attachment B - Supplemental Project Design Criteria states the minimum bridge length is 210 feet.
RFP Exhibit 4b Section 2.1.7

SCDOT Structural Drawings and Details for cored slab and box beam bridges are available in standard span lengths (10-foot increments) from 30-feet up to 100- feet. Do not deviate from the standard span lengths provided.

Justification:

We have performed a preliminary bridge hydraulic analysis with the proposed three span bridge and confirmed that this bridge will provide equal or better hydraulic performance for the 100 year event as compared to the conceptual bridge layout. Our design also exceeds the 2 ft of freeboard requirement to the low chord elevation for the 25 year event. Our proposed concept eliminates excess bridge length, while providing the required hydraulic performance to save time and money at this site. Our layout also complies with channel bank set back criteria. We are proposing to raise the low chord from elevation 574.17 to approximately elevation 575.87.

Schedule:

Approval of this ATC will have a positive impact on the schedule.

Impacts:

There are no negative impacts to approving this design.

History:

SCDOT has prescribed minimum bridge lengths at each site. We encourage a less prescriptive approach as long as the proposed bridge length meets all of the RFP hydraulic criteria.

Risks:

By meeting all of the freeboard and backwater requirements the risks for approving this ATC are eliminated.

Costs (required):

Savings of approximately \$40,000 at this site.

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21

Project ID: 5368980

ATC No.: 6

Priority: High

Team: Crowder-ICE

Date: 10/7/25

Quality:

There is no reduction in quality with this ATC. The reduced earthwork may even lead to reductions in long term settlement which would improve the longevity of the pavement structure.

Operations & Maintenance:

No additional operations or maintenance costs are expected by approving this ATC.

c:\bms\ice-eng-pw-0\055744\02_S-42-197 OVER SOUTH TYGER PLAN & PROFILE.dgn
10/17/2025

REVIEWED C: BAER					REVISIONS				
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