

Bridge Package 21 Design-Build Project Contract ID 5368980 Oconee and Spartanburg Counties

Technical Proposal

December 1, 2025



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1 PROJECT DELIVERY AND APPROACH

Palmetto Infrastructure Inc. (PII) and Carolina Transportation Engineers & Associates, PC

(CTEA) assembled a highly qualified and motivated team to deliver this project for SCDOT. We have an organized design team structure, available construction crews, and contracting resources to **beat substantial completion by 5 months**. CTEA's bridge and roadway design staff is supported with geotechnical, utility coordination, permitting / public involvement, traffic and right-of-way specialists to complete preconstruction efforts for each site. The Design Manager, Derek Staton, works daily with PII, and has routine discussions with our prestressed concrete fabricators, subcontractors, utility providers and community stakeholders to resolve construction issues, reduce risk and develop plans to facilitate construction.

Our fundamental design and construction approach to bridge replacements is "Keep It Simple." We have worked with SCDOT to incorporate Formal Alternative Technical Concepts (FATCs) to simplify the project, minimize impacts, and reduce or eliminate risk. Four of the five sites will be constructed with single span structures. All bridges are replaced as close as practical to the current alignment, and every roadway is reconstructed as near as possible to the existing profile. Our design minimizes project limits, ROW and utility impacts, temporary works, and provides maintenance friendly designs. It facilitates construction by reducing risks and accelerates the construction schedule.

The PII/CTEA plan for this project helps achieve all SCDOT goals for the project including:

- Minimization to right-of-way, driveways, businesses
- Minimization to utility impacts
- Minimization to environmental impacts
- Cost Certainty
- No change orders
- Schedule certainty

with no conflict to the high voltage power lines, allowing the project to be completed by the required substantial completion date with significant utility relocation and ROW cost savings to SCDOT.

Reduced minimum bridge lengths, revised end bent termini and low chord FATCs allow us to replace bridges with efficient structures that meet or improve hydraulic and all roadway criteria as defined by the RFP. Eliminating drilled shafts by using encased steel pile bents reduces temporary work, simplifies construction, and improves our schedule. Multi-span cored slab and box beam bridges were upgraded to single span integral concrete girder bridges at three sites. This reduces future maintenance for SCDOT for joints, AWS, bearings, scour around interior bents and debris removal.

CTEA will perform roadway design for all five bridge replacement sites. We will perform bridge and hydraulic design for four sites, with Aulick Engineering (Aulick) designing one. This enables the PII/CTEA team to advance multiple sites early, allowing PII to go to construction 4 months after NTP and complete 2 bridge replacements before the end of 2026. We will submit detour plans for approval as soon as possible after Notice-To-Proceed (NTP), immediately after submittal 000 including our Quality Control Plan.

PII will coordinate bridge crews with earthwork and paving subcontractors. We will initiate clearing/grubbing activities prior to closing roadways, while obtaining final plan approvals. Erosion control will be installed, and each site will be cleared / grubbed to the ROW limits (or nearest water feature) per RFP requirements. This work will be scheduled outside bat moratoriums and early enough to allow utility relocations prior to bridge demolition / construction.

S-133 over Little Cane Creek is locked into our project schedule due to a bat moratorium and utility accommodations, and all other sites are developed around it. This bridge will be closed during the spring of 2027 (4-month window between February and June) while power lines can be deenergized. PII will close the site and demolish the existing bridge before the bat moratorium begins in April 2027. Clearing is

also restricted by the bat moratorium, between October 2026 and April 2027. CTEA will push the ROW design at this site so acquisition can begin and clearing can be completed during the appropriate window. S-197 over S. Tyger River will be the final bridge replacement. ROW acquisition is required prior to clearing this site, which is a precursor for utility relocation. Power and telecom will need several months to relocate after clearing, and a waterline will be removed from the structure and relocated. The waterline can be turned off at valves on each end of bridge during construction and replaced after substantial completion. CTEA anticipates completing this design and utility relocation early, so the site is ready for PII at their convenience. CTEA will request SCDOT review and approve the hydraulic model at this site early, prior to development of the ROW and final plans, as we have questions with the model that could impact the roadway and bridge development. The proposed schedule has this site completed in November 2027. Starting this site a month earlier will complete paving work long before winter months and since this is our last site, substantial completion will be obtained early. The above sites are critical to our overall schedule and fixed due to environmental impacts, utility impacts and hydraulic questions. The three remaining sites are aligned around these critical projects in our schedule to assure project completion prior to substantial completion.

Utility and ROW delays often interrupt the construction schedule, causing delays. The PII_CTEA schedule allows ROW acquisition and utility relocation to occur prior to construction at each site – eliminating these potential delays during construction.

Site	Delay	Utilities
S-51 over Snow Creek	One Month	Blue Ridge Electric and UpCountry Fiber to relocate on Blue Ridge poles
S-168 over Choestoea Creek	One Month	Pioneer water can turn off and relocate valve Blue Ridge Electric and UpCountry Fiber to relocate on Blue Ridge poles
S-168 over Choestoea Trib	One Month	Blue Ridge Electric and UpCountry Fiber to relocate on Blue Ridge poles.
S-133 over Little Cane Creek	N/A	
S-197 over Tyger River	Three Months	Laurens Electric Co-op and Charter to relocate on Laurens Electric Co-op poles Woodruff Roebuck Water can be turned off at each end of the bridge

Utilities: Utilities at each site are identified, along with the necessary time for relocation as shown. The project schedule has been developed allotting time for this relocation after clearing is complete. Pioneer

Water and Woodruff Roebuck Water desire to re-attach their utilities to bridges, which they plan to discuss with SCDOT post award. CTEA will include this utility load in our design in the event SCDOT and the utility owners reach an agreement to allow this.

ROW: Minimal ROW is required at each site, primarily to meet the 75 ft minimum requirements around the bridge, or to capture construction limits and erosion control. PII and CTEA minimized guardrail on the project, as requested by the RFP. We flatten slopes to 4:1 or 6:1 to the clear zone limits. The PII CTEA designs will have less future maintenance due to this decision. Three months are allocated in our schedule at each site for ROW acquisition.

The PII construction schedule is based on completing work at each site before moving to the next site. PII has the resources to work on multiple sites concurrently and are therefore confident in our assurances to complete this project ahead of schedule. Construction activities may take place simultaneously, and when necessary, we can mobilize multiple crews to one site to accelerate the schedule. Adding time for weather delays, equipment issues, subcontractor performance and other delays, each site will be completed in less time than the minimum allotted Construction Time per the RFP. PII commits in the Quality Matrix to completing the Project 5 months early.

To achieve our schedule, PII will self-perform major construction items on the critical path including project management, Team coordination, construction oversight, bridge demolition, bridge foundations, bridge substructures, bridge superstructures and traffic control / MOT. Specialty subcontractors will be utilized for items including earthwork, paving, guardrail installation and striping. PII has the equipment, resources and availability to provide two crews to the project as soon as possible after NTP (once designs are approved for construction).

1b. Approach to design and how it minimized the need for new right-of-way on the project:

CTEA and PII approached this project with a goal for simplicity. Single-span structures, completely spanning the channel with required setbacks, and appropriately sized to provide hydraulic requirements as defined by the RFP, are utilized to the maximum extent practical (S-51, S-133 and both S-168 bridges). When not practical, a multi-span structure is used (S-197 over Tyger River). Designs focus on providing efficient high-quality, maintenance free bridge replacements while achieving the stated goals of SCDOT. S-133 over Little Cane Creek was challenging to meet SCDOT's goals for minimizing conflicts with utilities and reducing ROW and wetland impacts; however, the final RFP's inclusion of the reduction in design speed for the vertical curves at this location, as requested by our team, significantly improved our ability to meet these goals. Approved FATCs that help us achieve SCDOT's goals include:

- FATC 01 Reduce minimum bridge length for all sites.
- FATC 02 Reduce minimum channel for S-168 over Choestoea Creek.
- FATC 03 Place proposed end bents at or in front of existing end bents.
- FATC 04 Lower low chord for non-PCDM-11 bridges.
- FATC 06 Construct catch basins in lieu of flumes for S-51 and S-133.
- FATC 07 Use encased steel piles in lieu of drilled piers.
- FATC 09 Deepened end bent caps at S-133.

All bridges in this package will be closed and replaced on alignment utilizing detours. No phasing is anticipated. The use of single span structures as well as driven pile interior bents eliminate drilled shaft interior bents for the project. This effective construction alternative accelerates the project schedule, and eliminates the temporary work required to provide access to the interior bents. These decisions help us reduce the construction footprint and ROW.

CTEA set all bridges based on minimum geometrical constraints including setbacks from the top of channel, RFP channel length requirements, and minimum / maximum abutment heights except as allowed by our approved FATCs. Hydraulic models provided by SCDOT were used and the low chord is set by

maintaining the maximum elevation of 100-year HWEL, 50-year HWEL plus 2 feet freeboard, and ordinary highwater plus 8 feet for navigable waterways. The bridge lengths provide a maximum 1-foot backwater as compared to natural conditions, and equal or greater hydraulic opening than existing conditions.

Roadway profiles are based on maintaining the minimum required low chord across the bridge, matching maximum grades within project limits, providing vertical curves to meet project requirements, and keeping the low point off the bridge and approach slabs for the appropriate bridge end drainage.

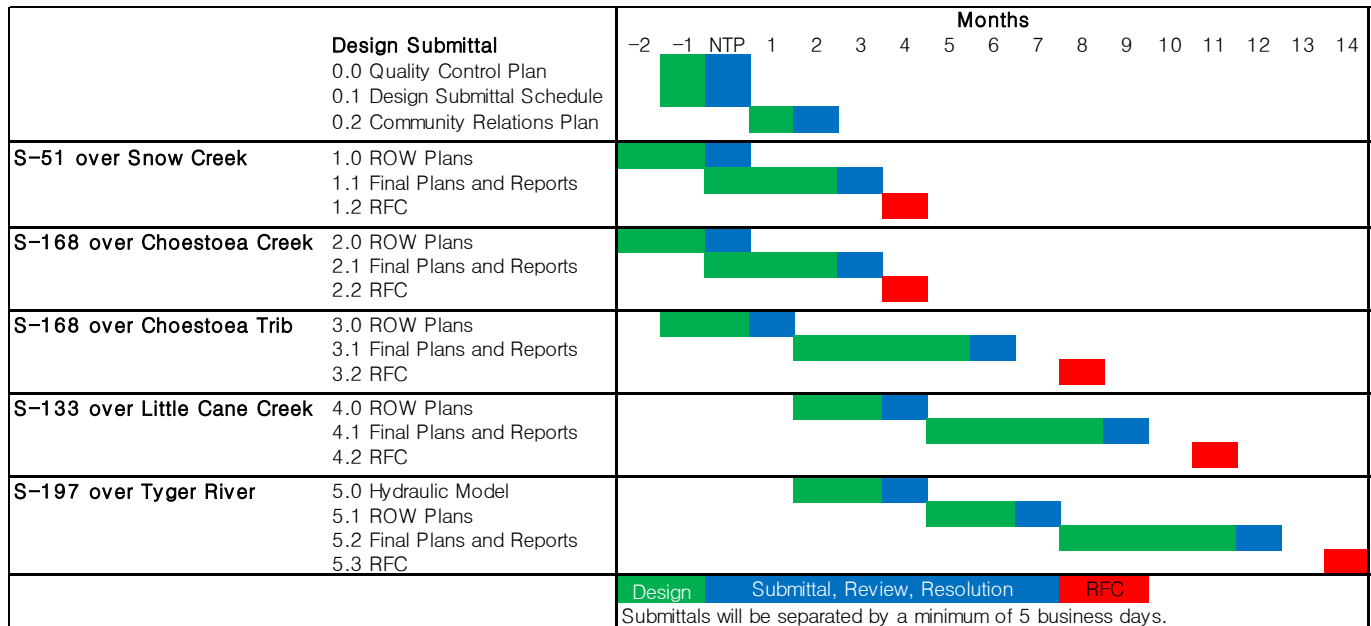
Paving limits are developed for the area where the roadway profile is reconstructed and/or the horizontal alignment is tied in. Construction limits are extended when guardrail attachments to the bridge extend beyond the profile adjustment limits and we tie the roadway back to existing conditions within 50 ft.

CTEA designs meet all design requirements of the SCDOT manuals and memorandums as well as the RFP, except as specifically allowed by our approved FATCs.

ROW: We will acquire 75 feet of ROW on each side of centerline of the existing roadway extended to 75 feet from each end of each bridge, except when 75 feet of ROW exists for a minimum of 45 feet from the end of bridge as allowed by the RFP. ROW will also be obtained to cover all construction limits including erosion control measures on fill slopes. The total reduction in ROW (number of parcels and total area of take) from the SCDOT provided plans to the PII / CTEA concept is 6 parcels and nearly 2 acres, a 25% reduction in parcels and 45% reduction in area.

		Conceptual Plans			PII_CTEA Proposed			Reduction
		sf	# parcels	ac	sf	# parcels	ac	
S-37-168	Choestoea Creek Trib	32880	4	0.755	15850	3	0.36	0.391
S-37-168	Little Choestoea Creek	43814	5	1.006	33310	4	0.76	0.241
S-37-51	Snow Creek	12543	4	0.288	2489	2	0.06	0.231
S-37-133	Little Cane Creek	69285	5	1.591	28721	3	0.66	0.931
S-42-197	S. Tyger River	22506	5	0.517	20234	5	0.46	0.052
			23	4.156		17	2.31	1.846

1c. Proposed design submittal process and chart showing anticipated deliverables in sequence that will allow SCDOT to conduct efficient and complete reviews:



PII and CTEA have collaborated to develop a design and construction schedule (CPM Schedule) for each site and the overall project. The chart shown is derived from our CPM schedule and shows we anticipate submitting no more than two design deliverables to SCDOT each month, after the initial submittals of the quality control plan and design submittal schedules, which will be submitted upon NTP. We will work at risk on the first sites to accelerate ROW plan submittal and approval. RFC plans will be used to fabricate beams, cored slabs, box beams, bearings, etc. to eliminate the risk of changes to the plans. Our team is familiar with SCDOT policies, file naming conventions, report formats, and design plan requirements. We will produce quality deliverables that meet the requirements of the RFP and in a format SCDOT expects, which will facilitate quick design reviews and expedite approvals. Our goal on this project will be to have no comments on the plan submittals, and our Quality Control Program is focused on providing quality documents that meet the expectations of SCDOT.

ROW plans will be submitted for all sites. ROW plan approval allows us to acquire property, clear the ROW limits earlier and relocate utilities while final plans are completed and approved. Our schedule

allows for one month of SCDOT review and resolution of comments after each submittal. Final plans will progress during this month, with plan comments incorporated into the next submittal.

Initially, CTEA will develop S-51 over Snow Creek and Aulick will develop S-168 over Choestoea Creek. Upon completion of S-168 over Choestoea Creek, Aulick will develop and submit the Hydraulic Report for South Tyger River for review and acceptance. ROW Plans and Final Plans will follow acceptance of this report. The remaining sites will be submitted as ROW and Final packages including Geotechnical and Hydraulic Reports. Drainage and Erosion Control plans will be included in the roadway plan set. CTEA will submit and obtain the NOI once plans are approved for RFC.

All plans and reports will undergo independent QC reviews prior to submittal to SCDOT. Part of our dedication to providing quality services to our clients is our commitment to Continuous Quality Improvement (CQI). This is an attitude, a state of mind, for each CTEA employee, bringing lessons learned from each and every project to improve the delivery of our services to our clients.

Post RFC, CTEA will review and approve shop drawings, and deliver construction submittals such as pile installation plans and approved shop drawings. CTEA will assemble this information and plan markups during construction, along with required surveyed elements, and deliver As-Built Plans to SCDOT prior to Final Completion of the Project.

2 INNOVATION AND ADDED VALUE

PII and CTEA bring significant innovation and added value to this project. Specific items approved as FATCs and changes to the RFP through confidential discussions with SCDOT are included in the Quality Matrix.

- Project limits, the number of parcels impacted, total ROW, environmental impacts, utility conflicts, and the project schedule are reduced for every site.

- A construction plan and CPM schedule is developed that significantly reduces schedule risks associated with utilities, ROW, and fabrication.
- Constructability challenges associated with the provided plans were identified and adjustments made to replace bridges without change orders – shortening project limits and eliminating conflicts.
- Bridges are shorter at all five sites. The reduction in bridge deck has a direct impact on the reduction of future maintenance by SCDOT.
- Integral prestressed concrete girder bridges with concrete decks are provided at three sites, reducing future maintenance. Single span integral concrete girder bridges are significantly more robust and maintenance free as compared to cored slab / box beam bridges allowed by the RFP.
- Interior bents on S-51 over Snow Creek, S-133 over Little Cane Creek and S-168 over Little Choestoea Creek Tributary are eliminated. Eliminating interior bents improves hydraulic capacity of the bridge crossing and significantly reduces future maintenance concerns with scour or debris rafting.
- Earthwork is reduced at all sites, eliminating hauling operations on the local roadway network. This will keep the local roadways intact and minimize impacts to traffic.
- Existing driveways within the project corridor will be maintained.
- Early Substantial Completion (5 months early) minimizes impact to the local communities around the bridges.

Appendix A1: Roadway Plans



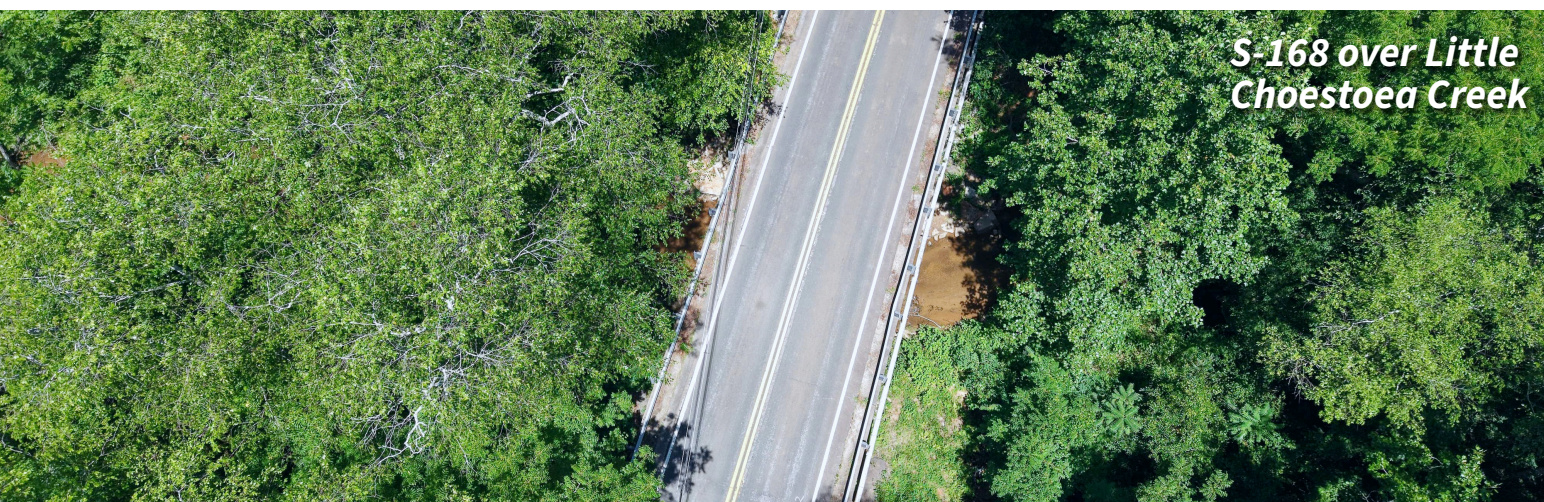
S-197 over S. Tyger River



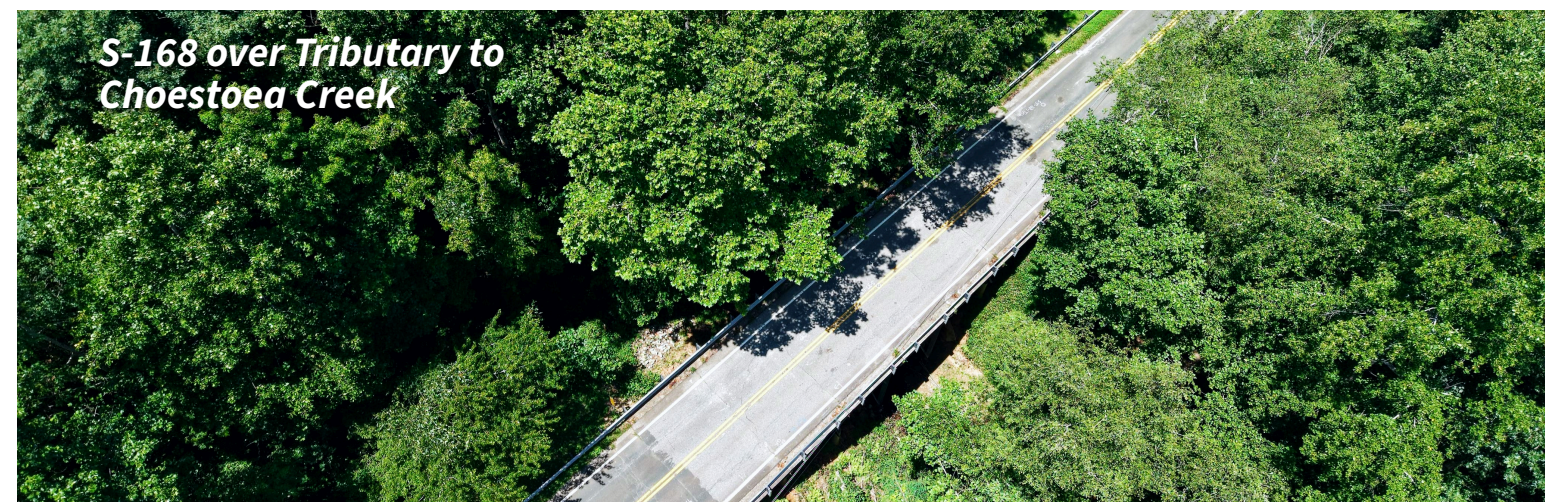
S-133 over Little Cane Creek



S-51 over Snow Creek



*S-168 over Little
Choestoea Creek*



*S-168 over Tributary to
Choestoea Creek*

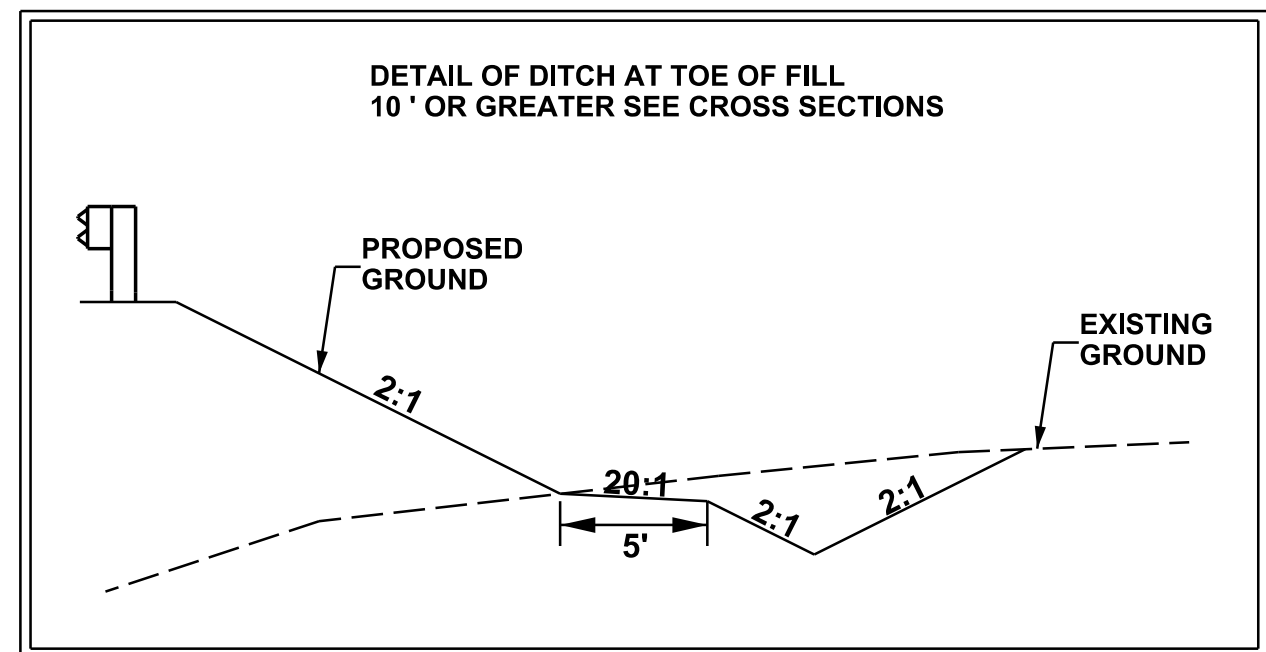
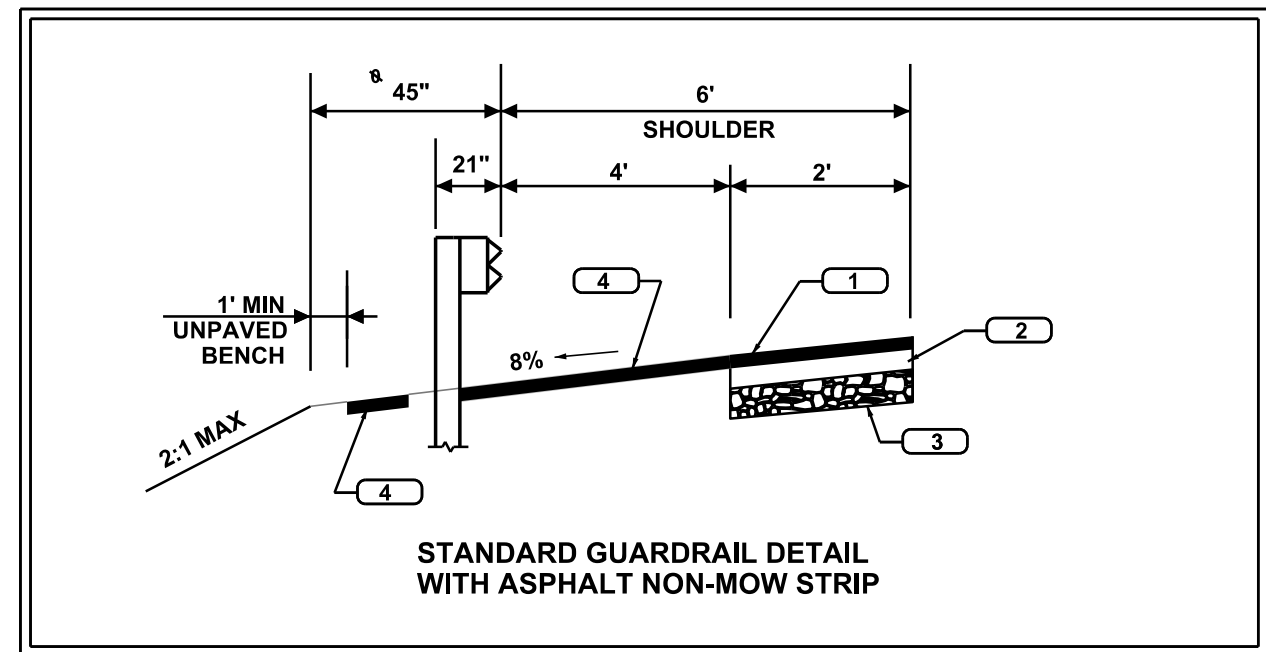
*** SEE CROSS SECTIONS FOR SLOPES**
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*** 6:1 < 5'**
4:1 5' - 10'
2:1 (MAX) > 10'

Ø ADD 3.75' WHEN USING GUARDRAIL

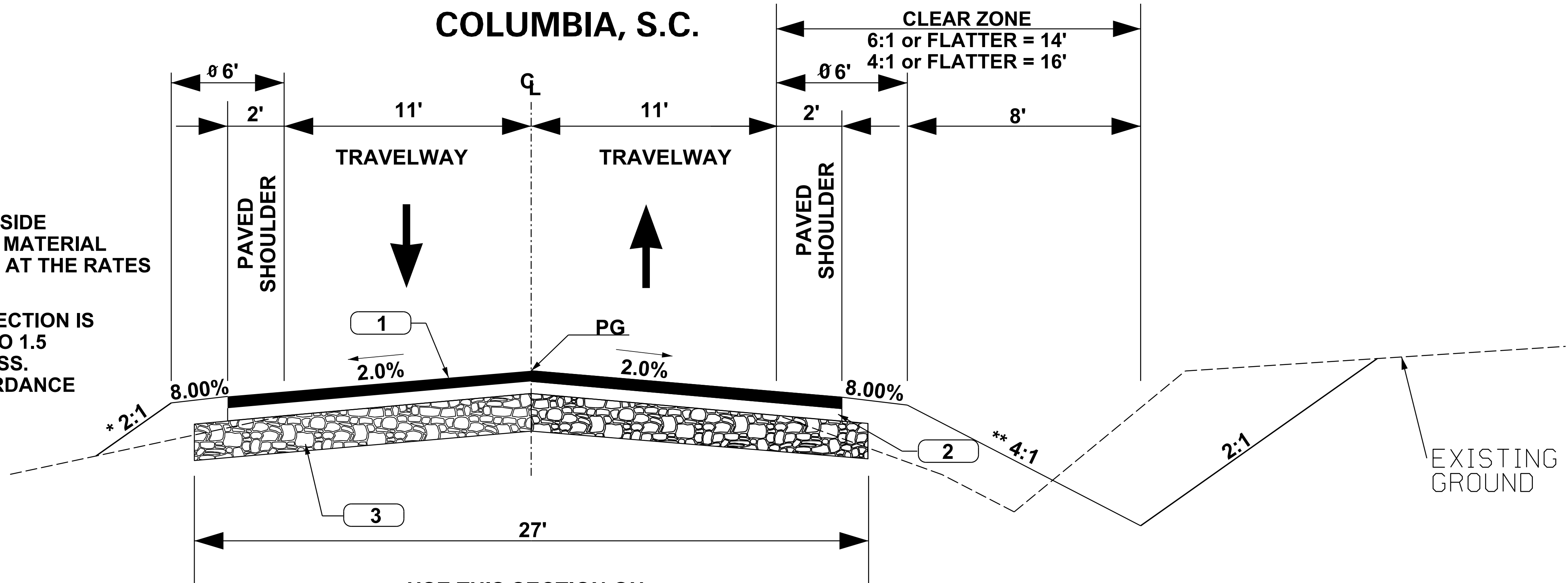
IN AREAS WHERE EXISTING PAVEMENTS ARE WIDENED OUTSIDE THE TRAVEL LANES, USE 600 #/SY OF SHOULDER WIDENING MATERIAL AND OVERLAY WITH INTERMEDIATE AND SURFACE COURSE AT THE RATES SPECIFIED.

WHERE LEVELING AND BUILD-UP OR CROSS SLOPE CORRRECTION IS REQUIRED, USE HMA SURFACE TYPE -E FOR THICKNESS 0 TO 1.5 INCHES. USE INTERMEDIATE B FOR ANY GREATER THICKNESS. PLACEMENT AND SELECTION OF MIXES SHALL BE IN ACCORDANCE WITH ASPHALT MIX DESIGN GUIDELINES.

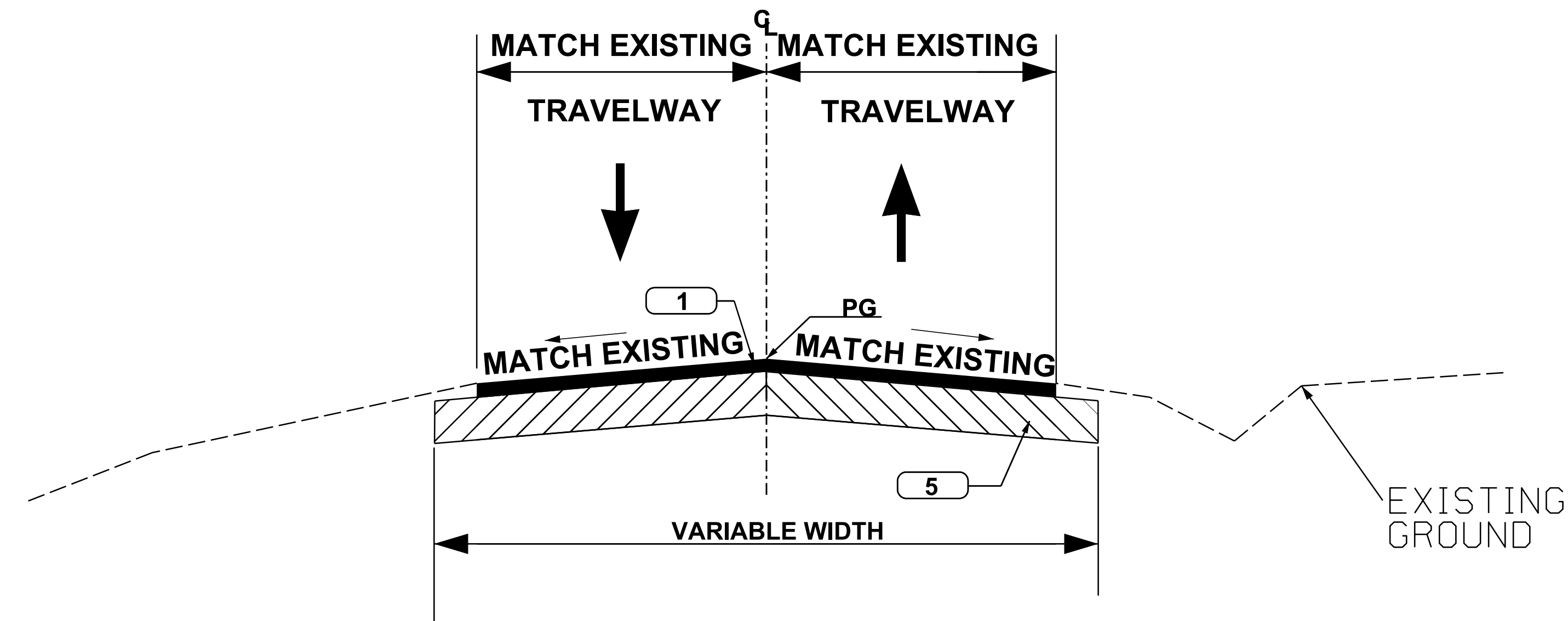


1		HMA SURFACE COURSE TYPE C 175 #/S.Y.
2		HMA INTERMEDIATE COURSE TYPE- C 200 #/S.Y.
3		HMA BASE COURSE TYPE- B 850 #/S.Y.
4		4" HMA SURFACE COURSE
5		RETAIN EXISTING PAVEMENT

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



USE THIS SECTION ON:
S-51 (SNOW CREEK RD.)
STA. 109+00.00 TO 110+79.50
STA. 111+79.50 TO STA. 114+50.00



USE THIS SECTION ON
S-51 (SNOW CREEK RD.)
STA. 108+50.00 TO STA. 109+00.00
STA. 114+50.00 TO STA. 115+00.00

* 20 MPH VERTICAL SAG CURVES
DESIGN SPEED ALLOWED BY RFP

S-51 Rural - Major Collector		
RD. S-51	DESIGN SPEED	
MPH	FROM STA.	TO STA.
40	109+00.00	114+50.00
EXCEPTION TO DESIGN SPEED		
20 *	109+00.00	110+20.00
20 *	111+49.44	114+25.44

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ROAD DESIGN COLUMBIA, S.C.

TYPICAL SECTION
S-51 (SNOW CREEK RD.)

SCALE 1"=100' VERT. SCALE 1"=100' HORIZ. RTE./RD.

PAVEMENT DESIGN

PRELIMINARY

CLEAR ZONE
DS=40 MPH ADT= 1900
6:1 OR FLATTER = 14'
4:1 OR FLATTER = 16'

P.I. = 106+23.85
 $\Delta = 51^\circ 03' 11''$ (RT)
D = 7' 56' 15"
T = 344.71'
L = 643.19'
E = 78.08'
R = 721.84'
D.S = 40 MPH
eMAX = 0.06
e = 0.056
P.C. - LG% = 0.58%
P.T. - LG% = 0.58%

REMOVE EXISTING 90' X 25'
REINFORCED CONCRETE BRIDGE.
CONSTRUCT 100' X 36' - 3"
54" FLORIDA I-BEAM
STA. 110+79.50 TO STA. 111+79.50
(SEE BRIDGE PLANS)

ERECT MTB TRAILING
END TREATMENT
ERECT MTB/C2 THRIE BEAM
STIFFNESS TRANSITION
ERECT 12.5 LF MGS3
GUARDRAIL

TIE EQUALITY:
STA. 111+35.18 S-51 =
STA. 15+40.77 SNOW CREEK

CONST. CB T-1
PLACE 32'-18" RC PIPE

ERECT MT2 LEADING
END TREATMENT
ERECT MTB/C2 THRIE BEAM
STIFFNESS TRANSITION
ERECT 12.5 LF MGS3 GUARDRAIL

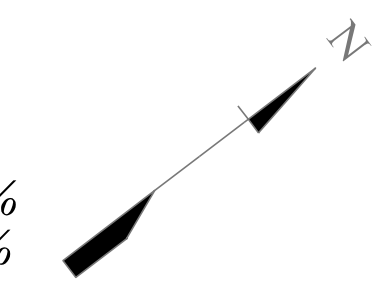
TIE EQUALITY:
STA. 114+78.05 S-51 =
STA. 0+00.00 DRIVE

RELOCATE EXISTING GATE
AS SHOWN. APPROX. LOCATION
TO BE DETERMINED BY
CONTRACTOR.

P.I. = 118+19.76
 $\Delta = 24^\circ 17' 33''$ (LT)
D = 4' 33' 35"
T = 270.45'
L = 532.76'
E = 28.77'
R = 1,256.56'
D.S = 40 MPH
eMAX = 0.06
e = 0.056
P.C. - LG% = 0.58%
P.T. - LG% = 0.58%

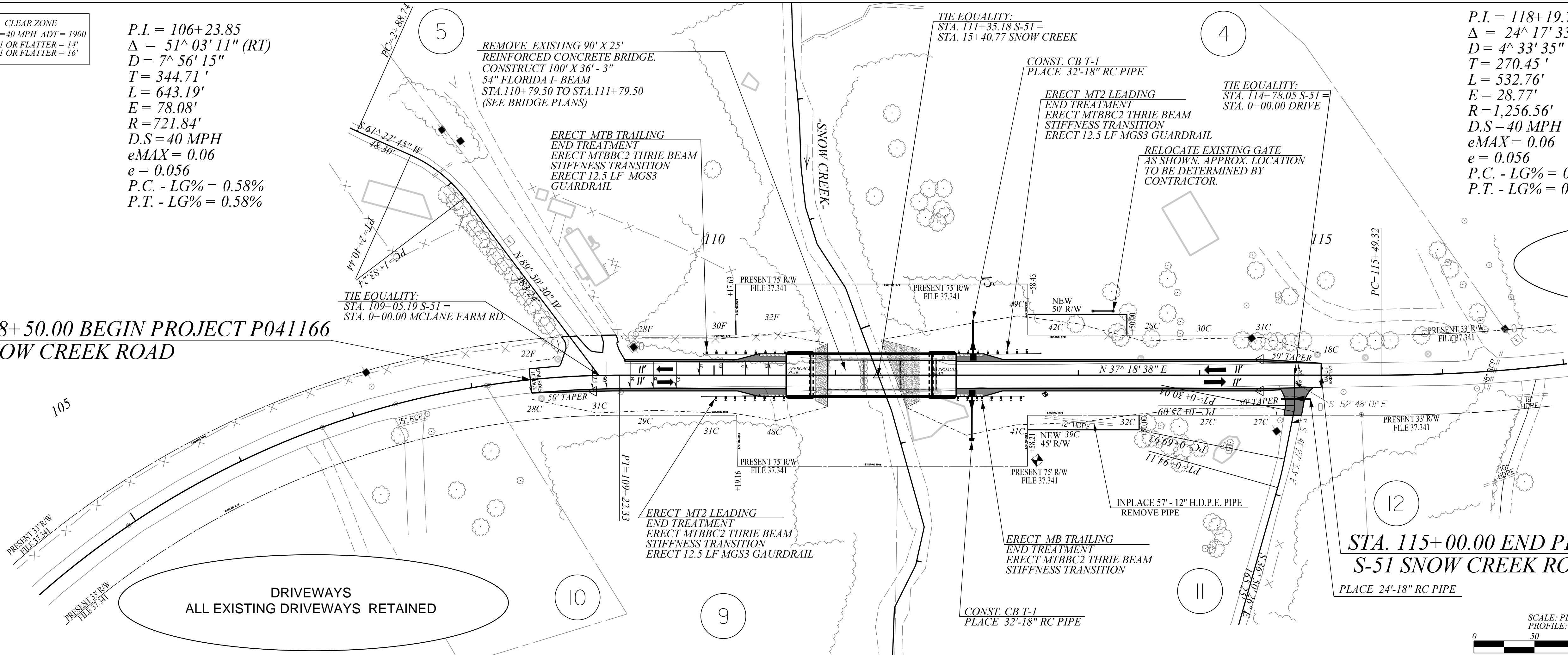
FED. RD. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	OCONEE	P041166	S-51	6

SNOW CREEK RD



ROW
2 PARCEL IMPACTS ELIMINATED
0.231 AC SAVED

STA. 108+50.00 BEGIN PROJECT P041166
S-51 SNOW CREEK ROAD

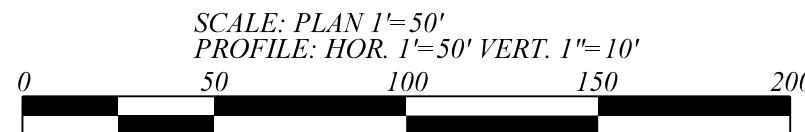


DRIVEWAYS
ALL EXISTING DRIVEWAYS RETAINED

NOT FOR
CONSTRUCTION

STA. 115+00.00 END PROJECT P041166
S-51 SNOW CREEK ROAD

PLACE 24'-18" RC PIPE



NOTE:

20 MPH SAG CURVES ALLOWED BY RFP

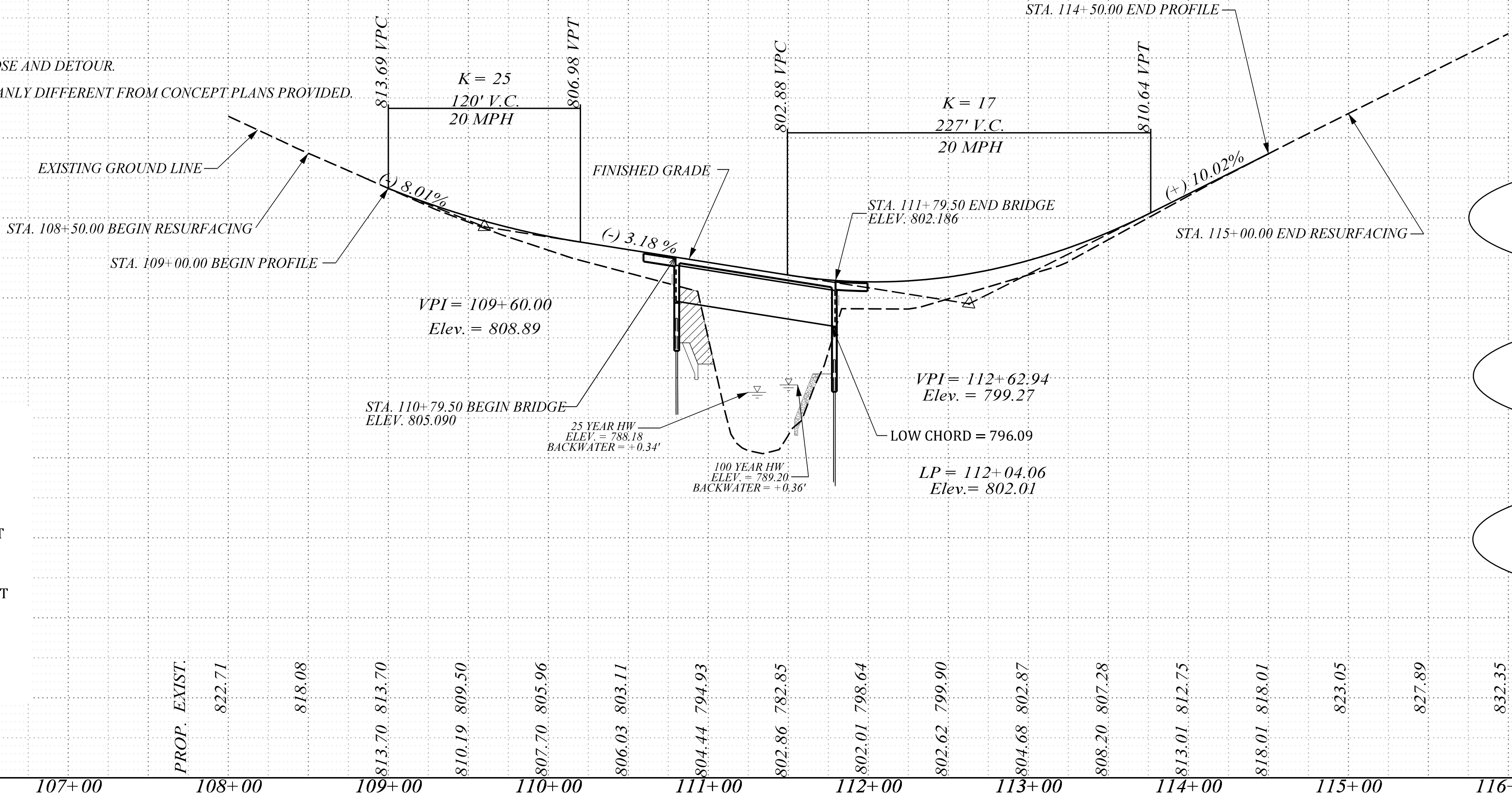
MATERIAL STAGING AND LAYDOWN AREAS NOT APPLICABLE FOR CLOSE AND DETOUR.

ROADWAY CROSS SECTION AT END BRIDGE APPROACH ARE SIGNIFICANLY DIFFERENT FROM CONCEPT PLANS PROVIDED.
CROSS SECTION AT 112+50.00 IS INCLUDED

WATER SURFACE ELEVATION AT TIME OF SURVEY IS NOT AVAILABLE
SEE PLAN

SEE PLANS FOR SUPERELEVATION TRANSITIONS

THE PROPOSED 10.02% VERTICAL GRADE ON THE EAST
END OF THE PROJECT DOES NOT EXCEED THE EXISTING GRADE.



HYDROLOGY DATA

DRAINAGE AREA = 4.5 SQ. MI.

Q (25 YR) = 1,230 CFS
VEL. (25 YR) = 4.1 FT/SEC
AREA FURNISHED UNDER 25 = 1,640 SQ. FT

Q (100YR) = 1,790 CFS
VEL. (100 YR) = 4.9 FT/SEC.
AREA FURNISHED UNDER 100 = 1,580 SQ. FT

OVERTOPPING FLOOD

Q= 18,550 CFS
PROBABILITY < 2%

FATC 06
CATCH BASINS IN LIEU OF FLUMES ALLOWS THE
PROFILE TO BE AS LOW AS POSSIBLE

SIDE SLOPES
FLATTENED SIDE SLOPES MINIMIZE
THE NEED FOR GUARDRAIL

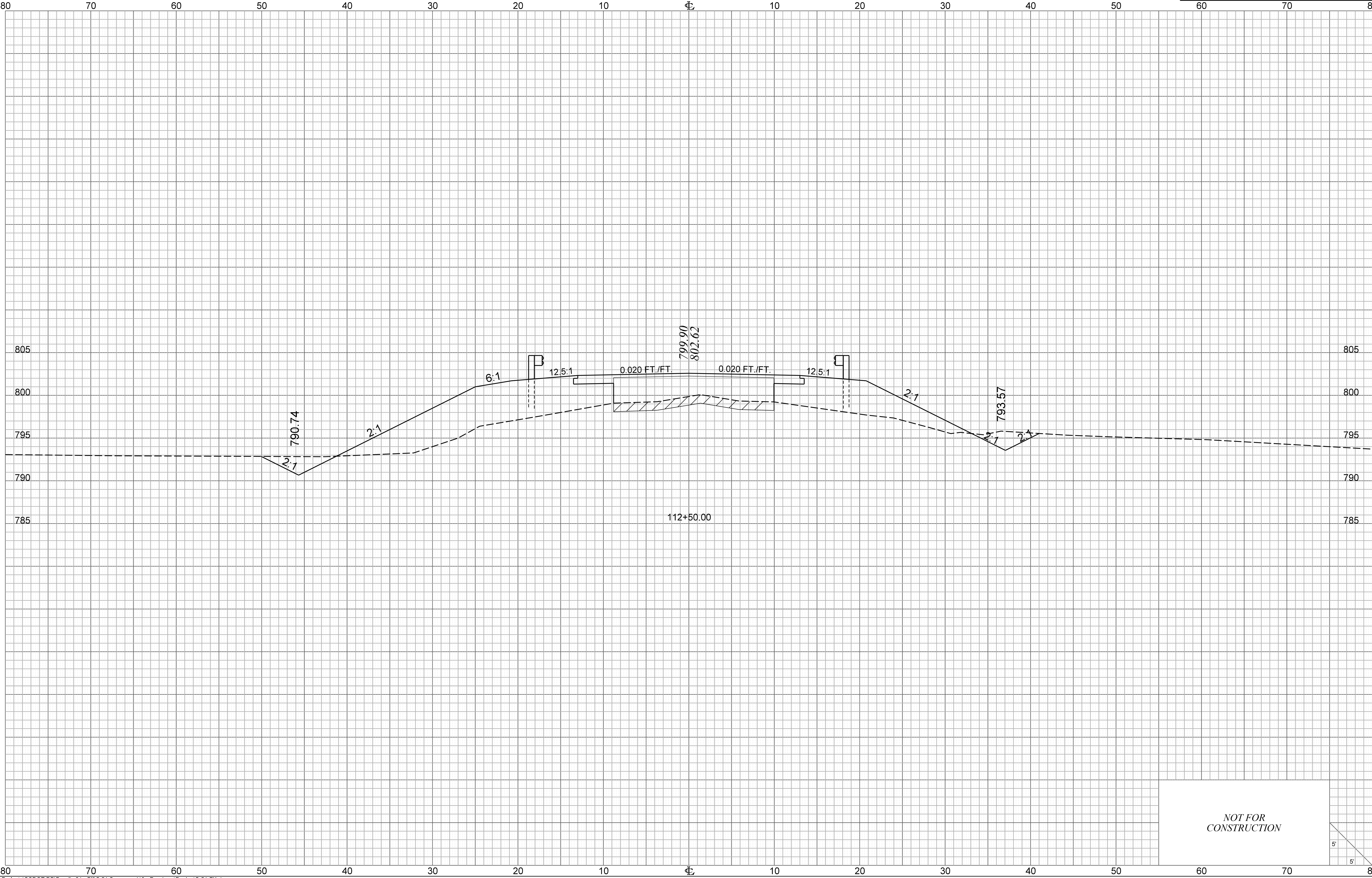
LOW CHORD
LOWERING THE LOW CHORD ALLOWS PROFILE
TO REMAIN NEAR EXISTING WITH SINGLE SPAN
STRUCTURE

CarolinaTEA

Carolina Transportation Engineers & Associates, PC

Carolina Transportation Engineers
& Assoc. PC
1201 Main Street
Suite 1850
Columbia, SC 29201
(864) 376-6397

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	NO.	SHEET NO.
3	S.C.	OCONEE	P041166	S-51	X1



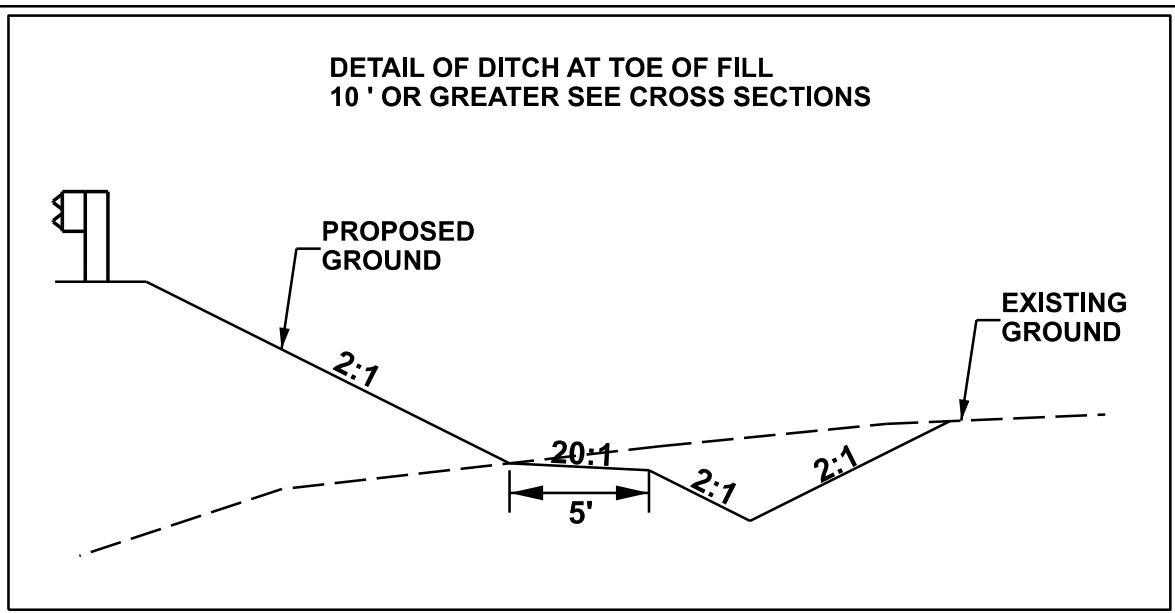
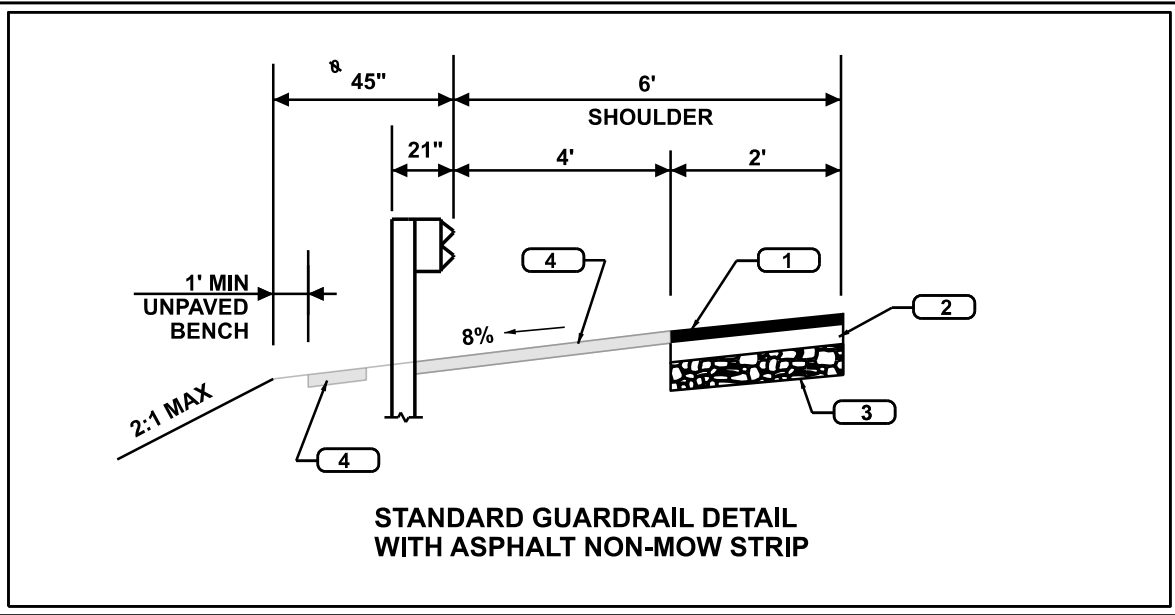
**** SEE CROSS SECTIONS FOR SLOPES**
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- * 6:1 < 5'
- * 4:1 5' - 10'
- * 2:1 (MAX) > 10'

Ø ADD 3.75' WHEN USING GUARDRAIL

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1

HMA SURFACE COURSE TYPE C 175 #/S.Y.

2

HMA INTERMEDIATE COURSE TYPE- C 200 #/S.Y.

3

HMA BASE COURSE TYPE- B 850 #/S.Y.

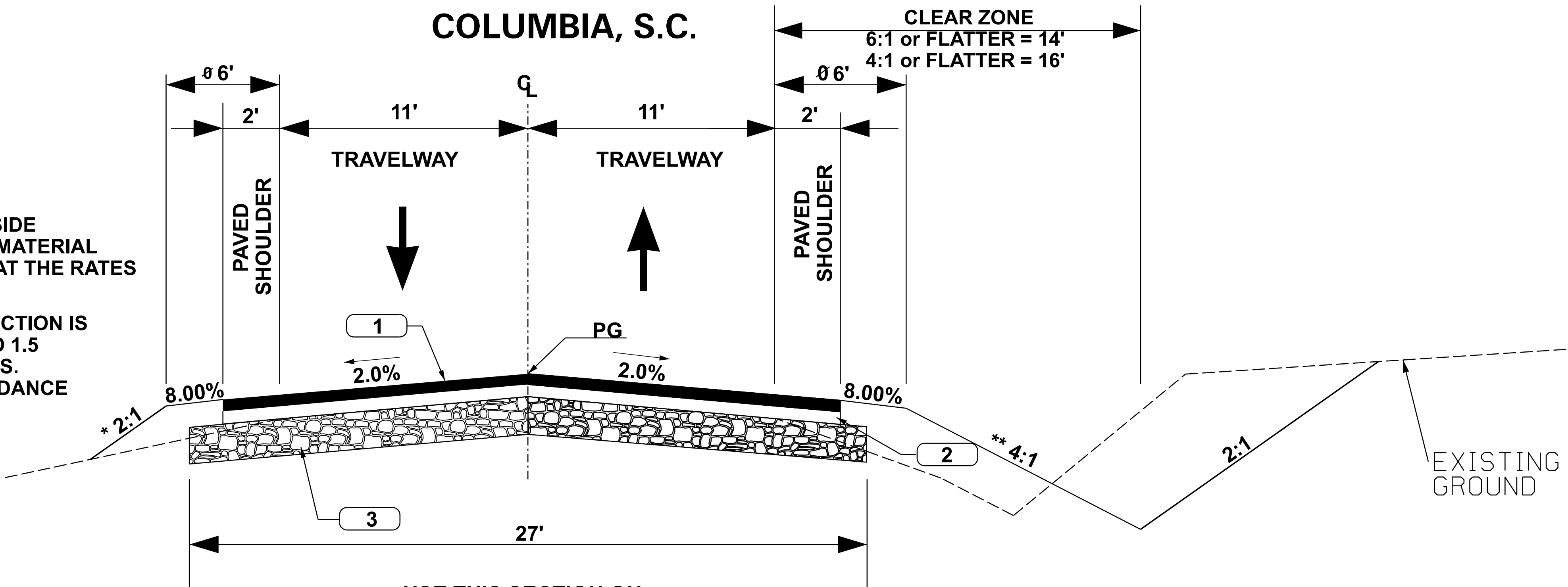
4

4" HMA SURFACE COURSE

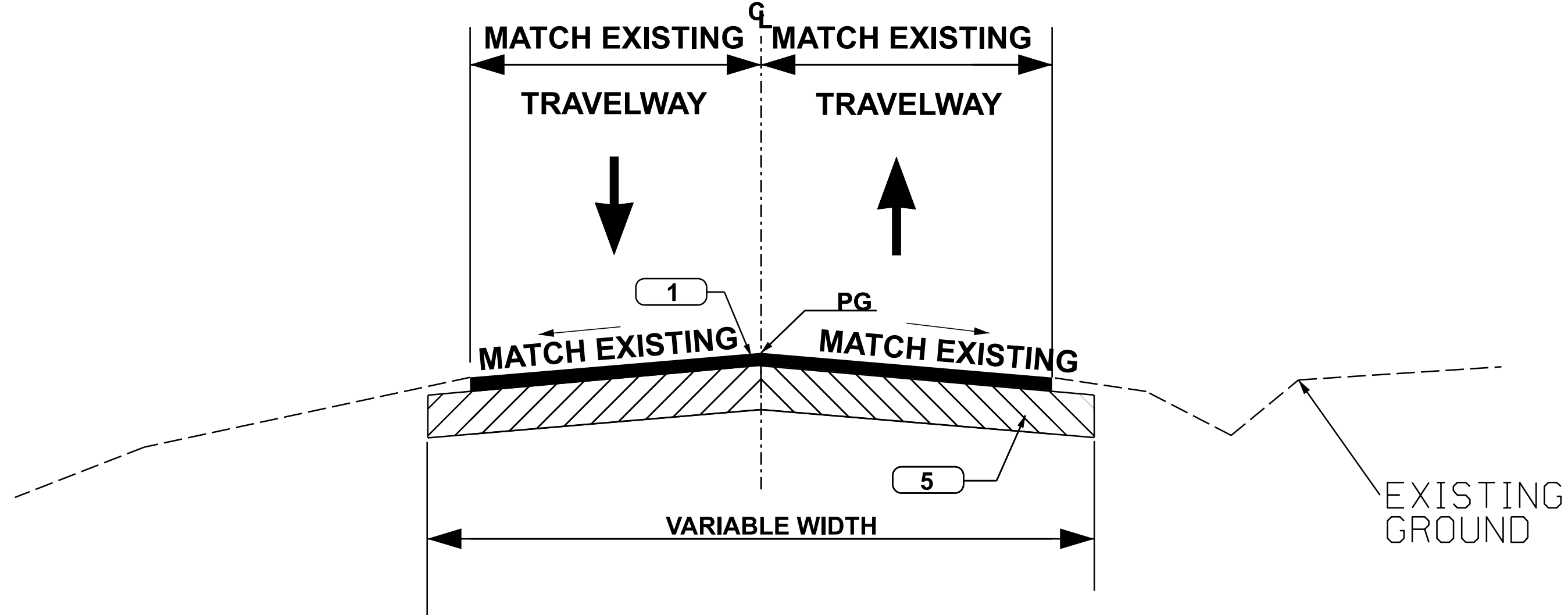
5

RETAIN EXISTING PAVEMENT

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



USE THIS SECTION ON:
S-133 (BURNS MILL RD)
STA. 33+75.00 TO STA. 34+86.00
STA. 36+02.00 TO STA. 37+50.00



USE THIS SECTION ON
S-133 (BURNS MILL RD)
STA. 33+25.00 TO STA. 33+75.00
STA. 37+50.00 TO STA. 38+00.00

* MINIMUM EXISTING VERTICAL
SAG CURVE DESIGN SPEED
ALLOWED BY RFP (15 MPH)

S-133 RURAL ROAD GROUP 4			
RD. S-133		DESIGN SPEED	
MPH	FROM STA.	TO STA.	
35	33+75.00	37+50.00	
EXCEPTION TO DESIGN SPEED			
20 *	33+85.00	34+95.00	
20 *	36+00.00	37+00.00	

PAVEMENT DESIGN

PRELIMINARY

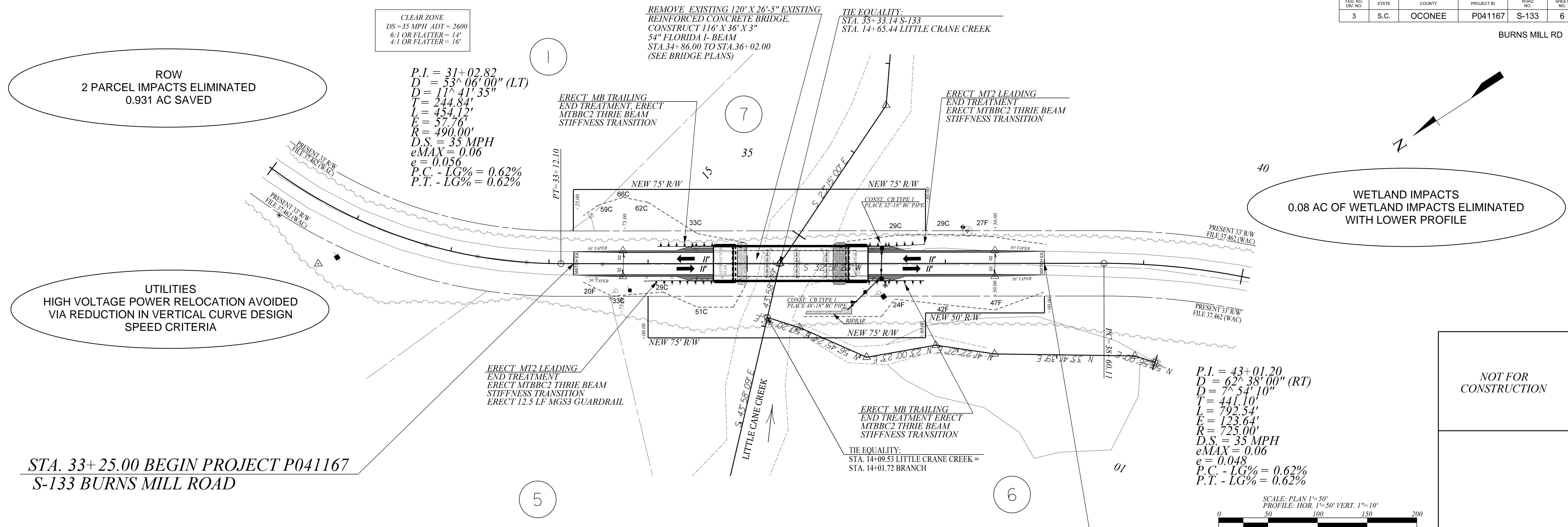
SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ROAD DESIGN
COLUMBIA, S.C.

TYPICAL SECTION
S-133 (BURNS MILL RD)

SCALE 1"=40' HORIZONTAL
SCALE 1"=4' VERTICAL
RTE./RD.

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	OCONEE	P041167	S-133	6

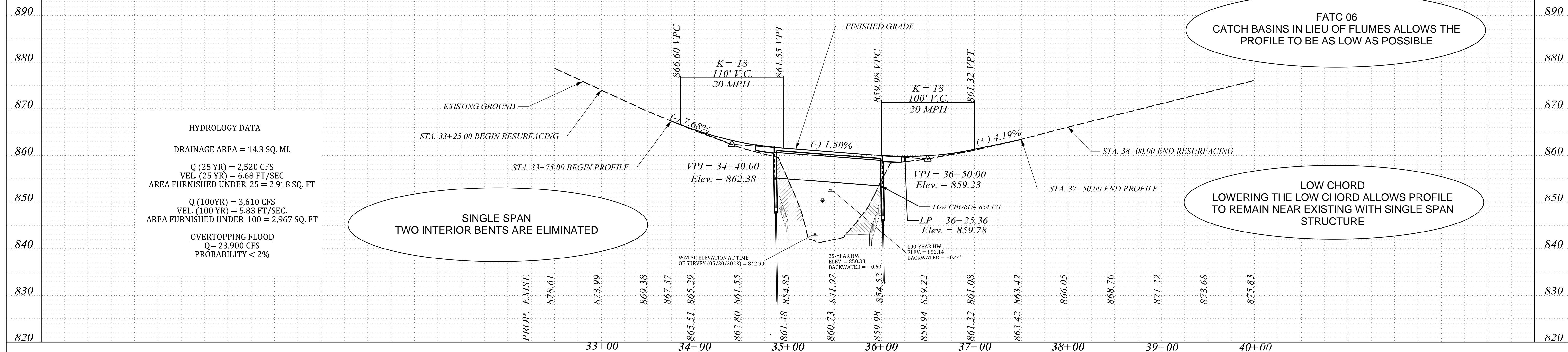
BURNS MILL RD



NOTE:
MATERIAL STAGING AND LAYDOWN AREAS NOT APPLICABLE FOR CLOSE AND DETOUR.

ROADWAY IS SIGNIFICANTLY LOWER THAN CONCEPTUAL PLANS. CROSS SECTIONS PROVIDED AT STATION 34+50.00 AND 36+50.00

15 MPH SAG CURVES ALLOWED BY RFP



HYDROLOGY DATA

DRAINAGE AREA = 14.3 SQ. MI.

Q (25 YR) = 2,520 CFS
VEL. (25 YR) = 6.68 FT/SEC
AREA FURNISHED UNDER_25 = 2,918 SQ. FT

Q (100YR) = 3,610 CFS
VEL. (100 YR) = 5.83 FT/SEC.
AREA FURNISHED UNDER_100 = 2,967 SQ. FT

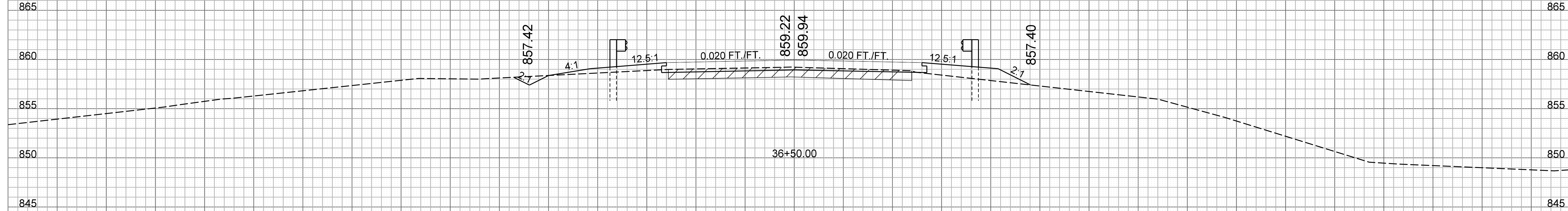
OVERTOPPING FLOOD
Q= 23,900 CFS
PROBABILITY < 2%

C:\Users\RonnieBlevins\Carolina TEA\Public - Projects\SCDOT DB\Bundel 21 - PIIS 133 Little Crane Creek\6 - Roadway\Design\41167\pf.dgn
RonnieBlevins
11/26/2025

06 Plan Profile Sheet 5

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	OCONEE	41167	S-133	X2

80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80



EvonRiser
projects\SCDOT DB\Little Choestoea Creek\6 - Plans 168 Little Choestoea Design\168_TYP.dgn
11/26/2025

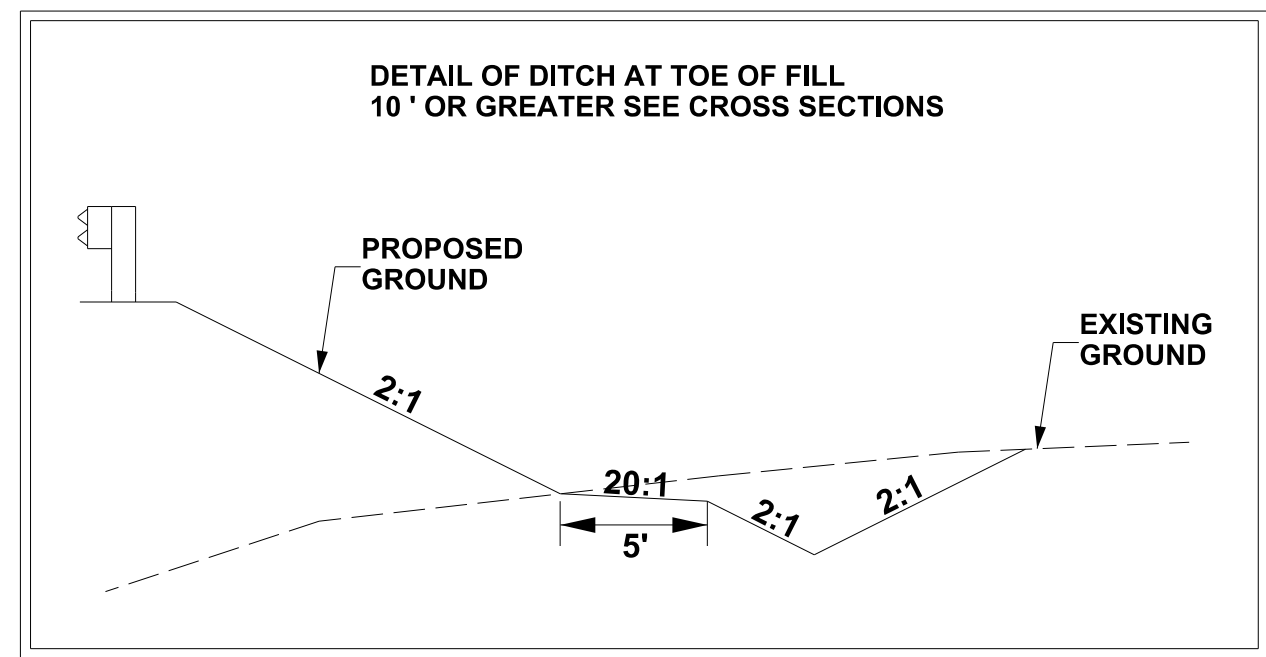
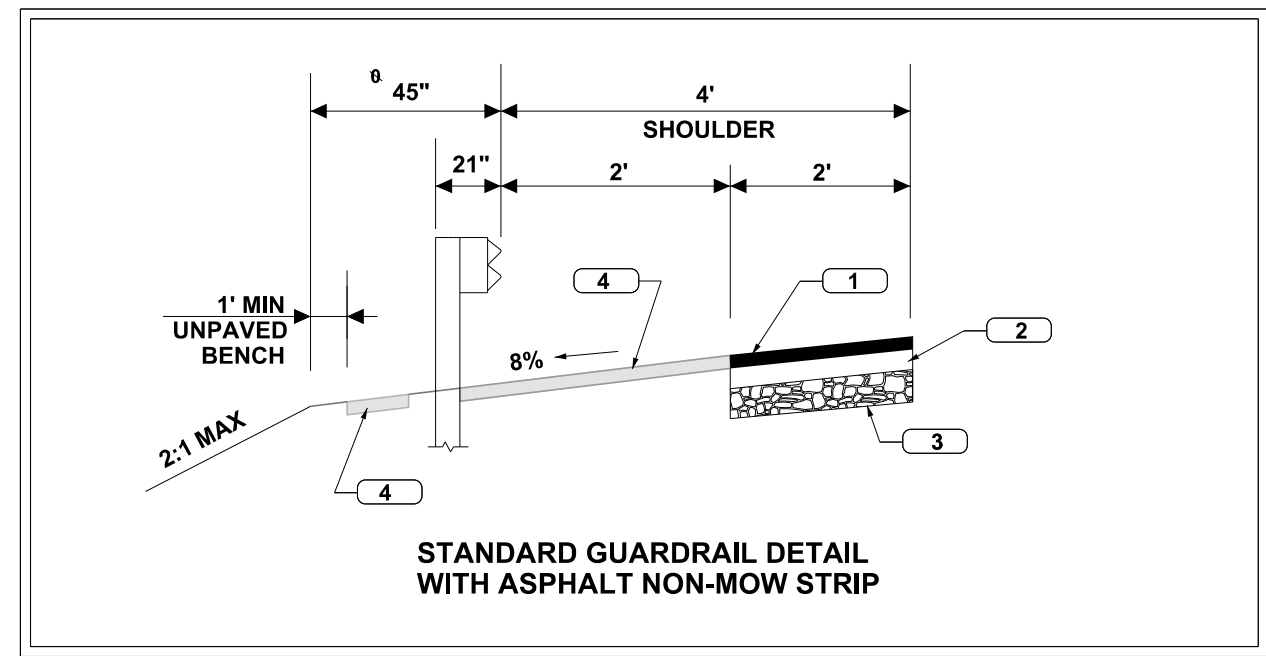
*** SEE CROSS SECTIONS FOR SLOPES**
THIS SLOPE MAY BE VARIED WHEN A
DEEPER DITCH IS NECESSARY FOR DRAINAGE
PURPOSES, USING A MINIMUM SLOPE OF 6:1 AND
A MAXIMUM SLOPE OF 4:1. WHERE A DEEPER DITCH
THAN PROVIDED BY 4:1 IS NECESSARY, THE DITCH
SHALL BE PLACED FARTHER FROM THE C/L CONTINUING
THE 4:1 SLOPE TO PROVIDE THE NECESSARY DEPTH.

*** 6:1 < 5'**
4:1 5' - 10'
2:1 (MAX) > 10'

Ø ADD 3.75' WHEN USING GUARDRAIL

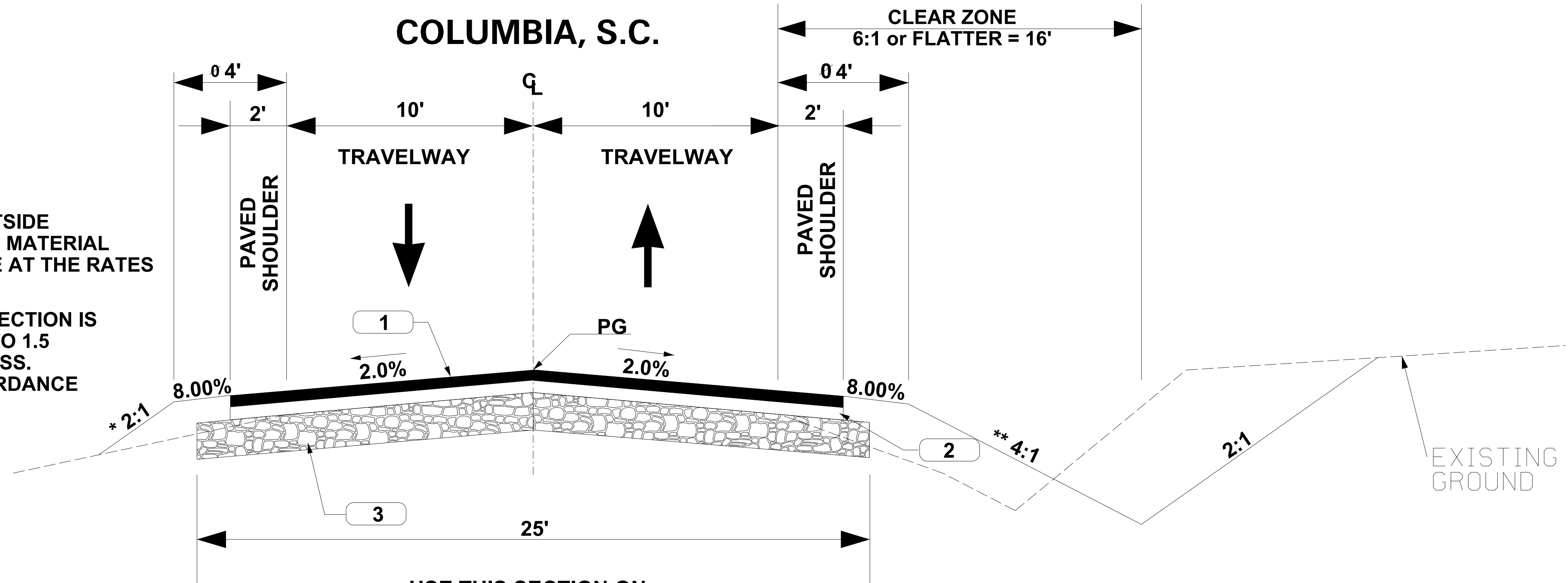
IN AREAS WHERE EXISTING PAVEMENTS ARE WIDENED OUTSIDE
THE TRAVEL LANES, USE 600 #/SY OF SHOULDER WIDENING MATERIAL
AND OVERLAY WITH INTERMEDIATE AND SURFACE COURSE AT THE RATES
SPECIFIED.

WHERE LEVELING AND BUILD-UP OR CROSS SLOPE CORRRECTION IS
REQUIRED, USE HMA SURFACE TYPE -E FOR THICKNESS 0 TO 1.5
INCHES. USE INTERMEDIATE B FOR ANY GREATER THICKNESS.
PLACEMENT AND SELECTION OF MIXES SHALL BE IN ACCORDANCE
WITH ASPHALT MIX DESIGN GUIDELINES.

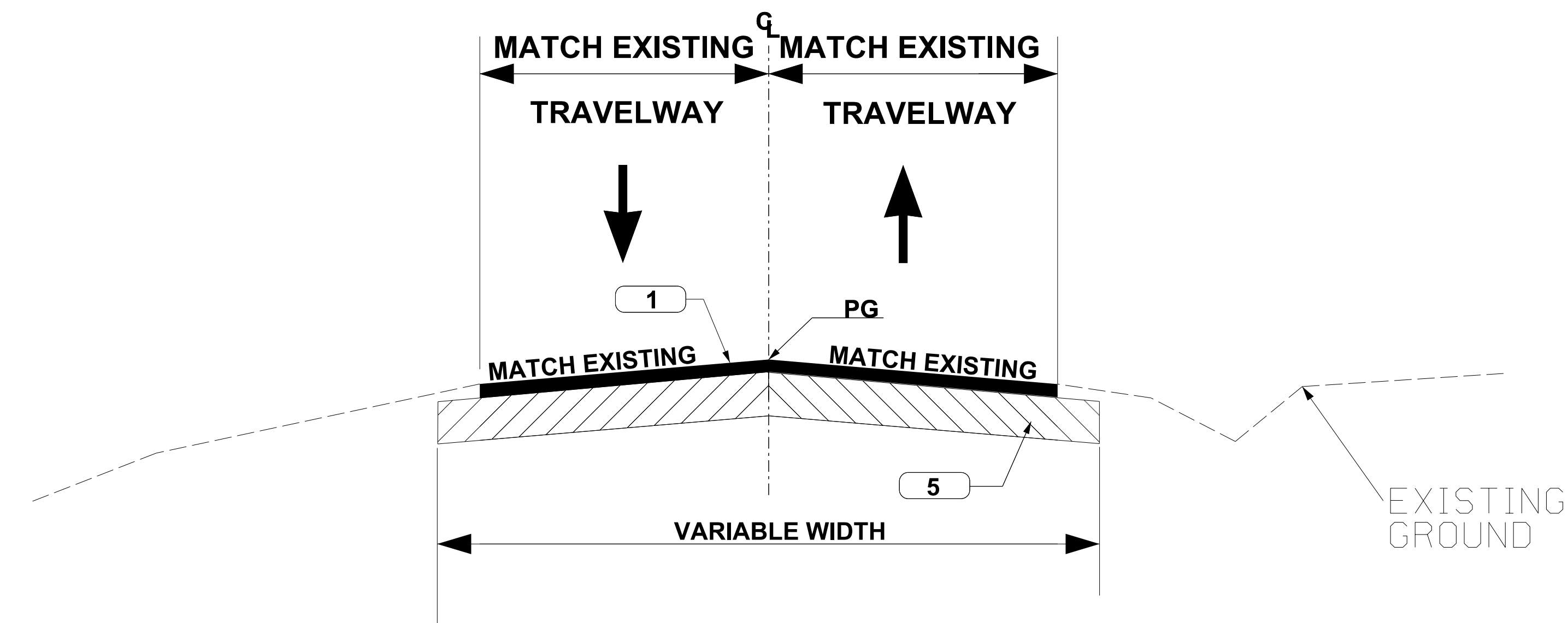


1		HMA SURFACE COURSE TYPE C 175 #/S.Y.
2		HMA INTERMEDIATE COURSE TYPE- C 200 #/S.Y.
3		HMA BASE COURSE TYPE- B 650 #/S.Y.
4		4" HMA SURFACE COURSE
5		RETAIN EXISTING PAVEMENT

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



USE THIS SECTION ON:
ROAD S-168 (LITTLE CHOESTOE RD.)
STA. 44+00 TO STA. 45+78.00
STA. 46+68.00 TO STA. 48+25.00



USE THIS SECTION ON
RD. S-168 (LITTLE CHOESTOE RD.)
STA. 43+50.00 TO STA. 44+00.00
STA. 48+25.00 TO STA. 48+75.00

*MEETS PCDM-11

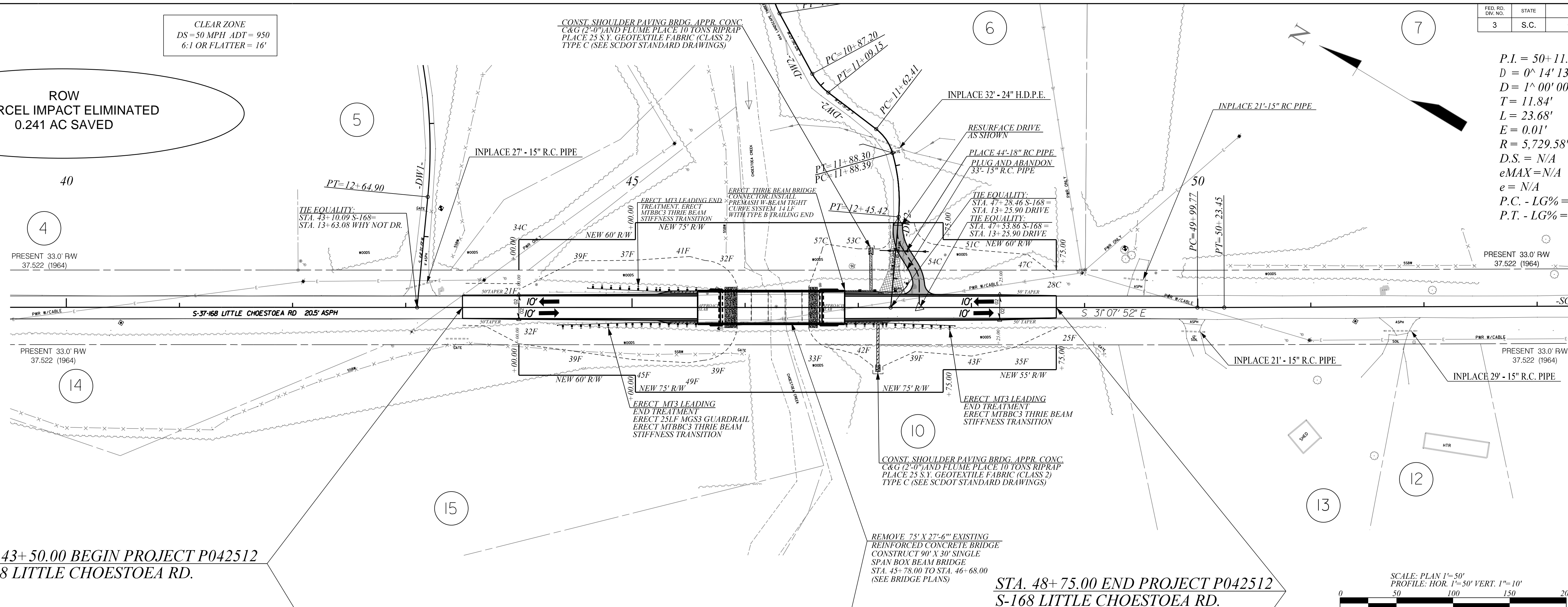
RURAL- LOCAL GROUP 4		
RD. S-168	DESIGN SPEED	
MPH	FROM STA.	TO STA.
50	44 + 00.00	48 + 25.00
EXCEPTIONS TO DESIGN SPEED		
40 MPH*	44 + 40.00	45 + 60.00
40 MPH*	46 + 95.00	48 + 05.00

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION ROAD DESIGN COLUMBIA, S.C.		
TYPICAL SECTION S-168 (LITTLE CHOESTOE RD.)		
SCALE 1"V= NTS	SCALE 1"H= NTS	RTE./RD.

PRELIMINARY

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	Oconee	P042512	S-168	6

$P.I. = 50 + 11.61$
 $D = 0^{\circ} 14' 13'' (LT)$
 $D = 1^{\circ} 00' 00''$
 $T = 11.84'$
 $L = 23.68'$
 $E = 0.01'$
 $R = 5,729.58'$
 $D.S. = N/A$
 $eMAX = N/A$
 $e = N/A$
 $P.C. - LG\% = N/A$
 $P.T. - LG\% = N/A$



STA. 43+50.00 BEGIN PROJECT P042512
S-168 LITTLE CHOESTOE RD.

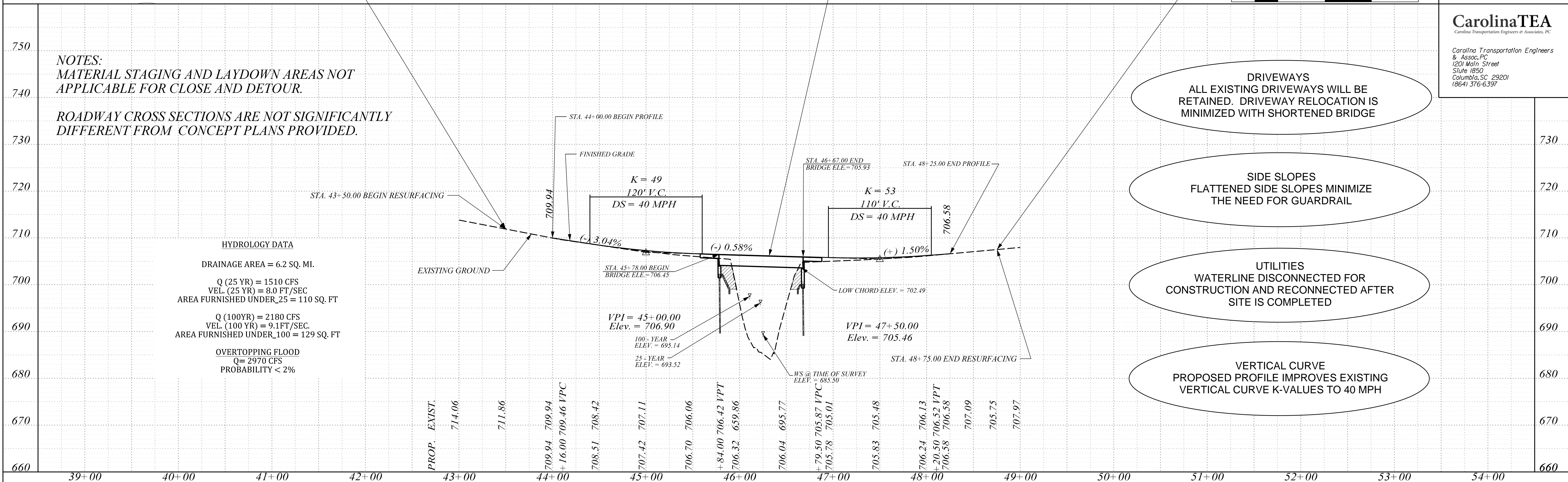
STA. 48+75.00 END PROJECT P042512
S-168 LITTLE CHOESTOE RD.

SCALE: PLAN 1"=50'
 PROFILE: HOR. 1"=50' VERT. 1"=10'

A horizontal graphic scale bar with alternating black and white segments. Above the bar, numerical values are marked at intervals of 50: 0, 50, 100, 150, and 200. The bar represents a total length of 200 feet.

NOTES:
MATERIAL STAGING AND LAYDOWN AREAS NOT
APPLICABLE FOR CLOSE AND DETOUR.

ROADWAY CROSS SECTIONS ARE NOT SIGNIFICANTLY
DIFFERENT FROM CONCEPT PLANS PROVIDED.



DRIVEWAYS
ALL EXISTING DRIVEWAYS WILL BE
RETAINED. DRIVEWAY RELOCATION IS
MINIMIZED WITH SHORTENED BRIDGE

SIDE SLOPES
FLATTENED SIDE SLOPES MINIMIZE
THE NEED FOR GUARDRAIL

UTILITIES
WATERLINE DISCONNECTED FOR
CONSTRUCTION AND RECONNECTED AFTER
SITE IS COMPLETED

VERTICAL CURVE
PROPOSED PROFILE IMPROVES EXISTING
VERTICAL CURVE K-VALUES TO 40 MPH

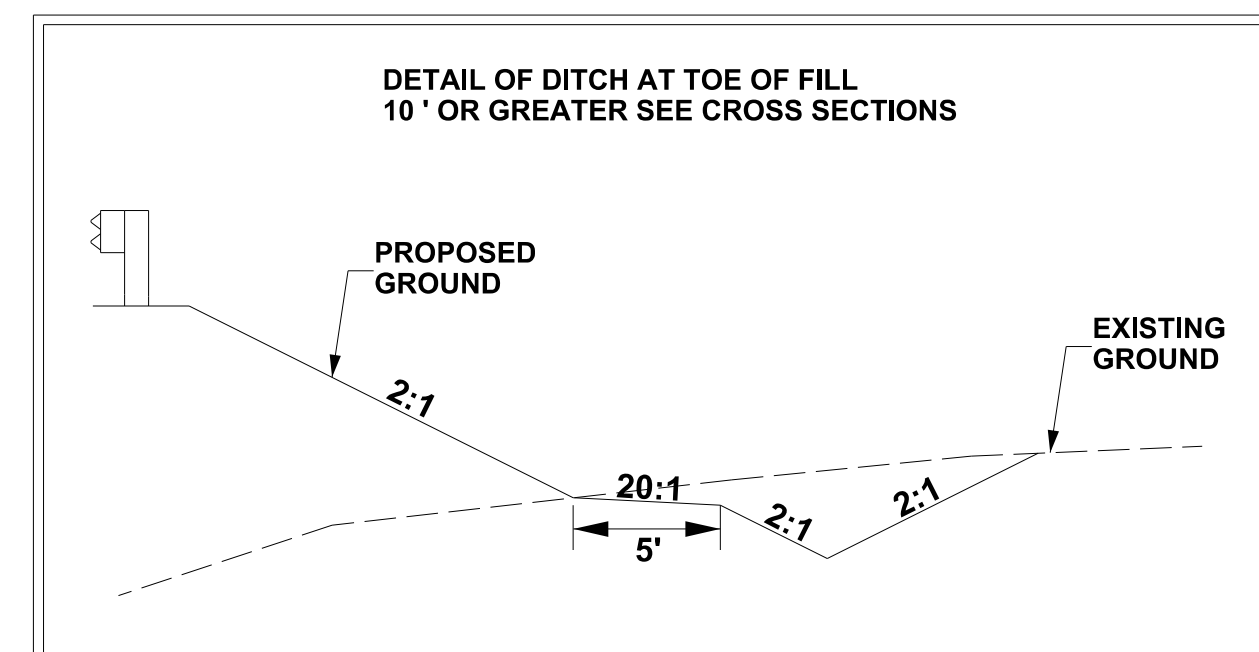
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RonnieBlevins
11/26/2025

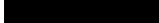




06_Plan_Profile_Sheet_5

* 6:1 < 5'
4:1 5' - 10'
2:1 (MAX) > 10'

IN AREAS WHERE EXISTING PAVEMENTS ARE WIDENED OUTSIDE THE TRAVEL LANES, USE 600 #/SY OF SHOULDER WIDENING MATERIAL AND OVERLAY WITH INTERMEDIATE AND SURFACE COURSE AT THE RATES SPECIFIED.

WHERE LEVELING AND BUILD-UP OR CROSS SLOPE CORRECTION IS REQUIRED, USE HMA SURFACE TYPE -E FOR THICKNESS 0 TO 1.5 INCHES. USE INTERMEDIATE B FOR ANY GREATER THICKNESS. PLACEMENT AND SELECTION OF MIXES SHALL BE IN ACCORDANCE WITH ASPHALT MIX DESIGN GUIDELINES.



1		HMA SURFACE COURSE TYPE C 175 #/S.Y.
2		HMA INTERMEDIATE COURSE TYPE- C 200 #/S.Y.
3		HMA BASE COURSE TYPE- B 650 #/S.Y.
4		4" HMA SURFACE COURSE
5		RETAIN EXISTING PAVEMENT

[illegible]

The diagram illustrates a cross-section of a bridge deck with a variable width. The deck is shown with a hatched pattern, indicating existing ground. The width of the deck is labeled as "VARIABLE WIDTH". The deck is divided into two sections by a vertical dashed line, with "MATCH EXISTING" labels on both sides. The left section is labeled "TRAVELWAY" with a downward arrow, and the right section is labeled "TRAVELWAY" with an upward arrow. A "PG" (Profile Grade) line is shown above the deck. A callout "1" points to the left side of the deck, and a callout "5" points to the right side. The existing ground is shown as a dashed line extending from the right side of the deck.

USE THIS SECTION ON
RD. S-168 (LITTLE CHOESTOE RD.)
STA. 83+50.00 TO STA. 84+50.00
STA. 87+00.00 TO STA. 87+50.00

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	SC	OCONEE	P042511	S-168	3

LITTLE CHOESTOE RD.

*MEETS PCDM-11		
RURAL- LOCAL GROUP 4		
RD. S-168	DESIGN SPEED	
MPH	FROM STA.	TO STA.
50	84+50.00	87+00.00
EXCEPTION TO DESIGN SPEED		
35 **	84+70.00	86+10.00

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ROAD DESIGN COLUMBIA, S.C.

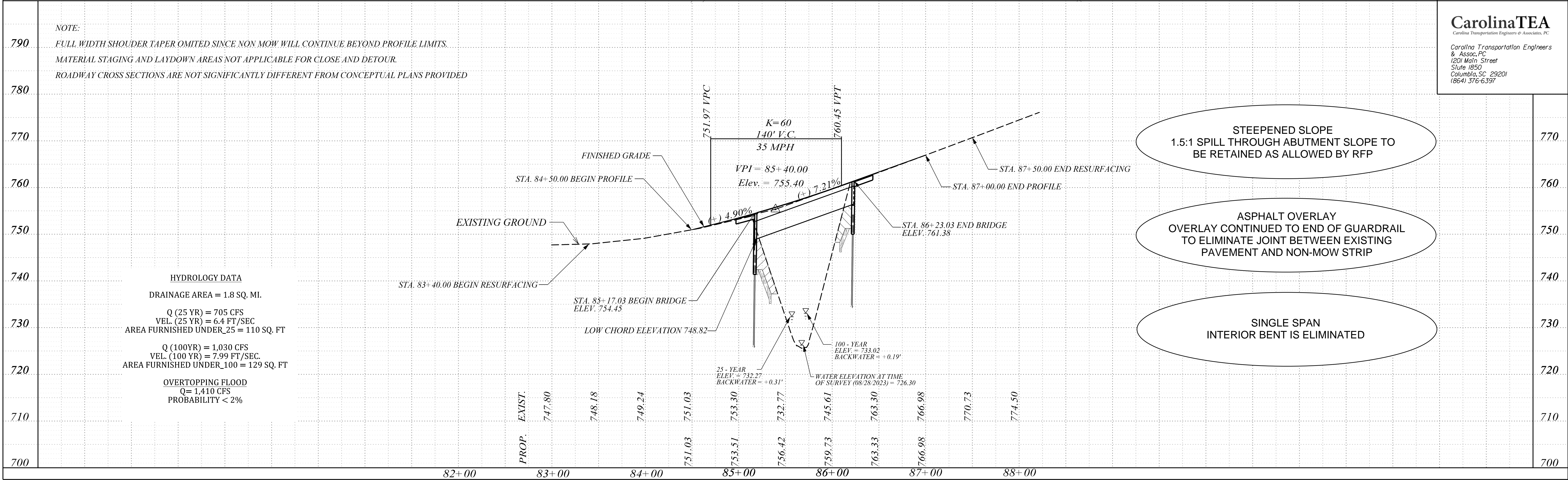
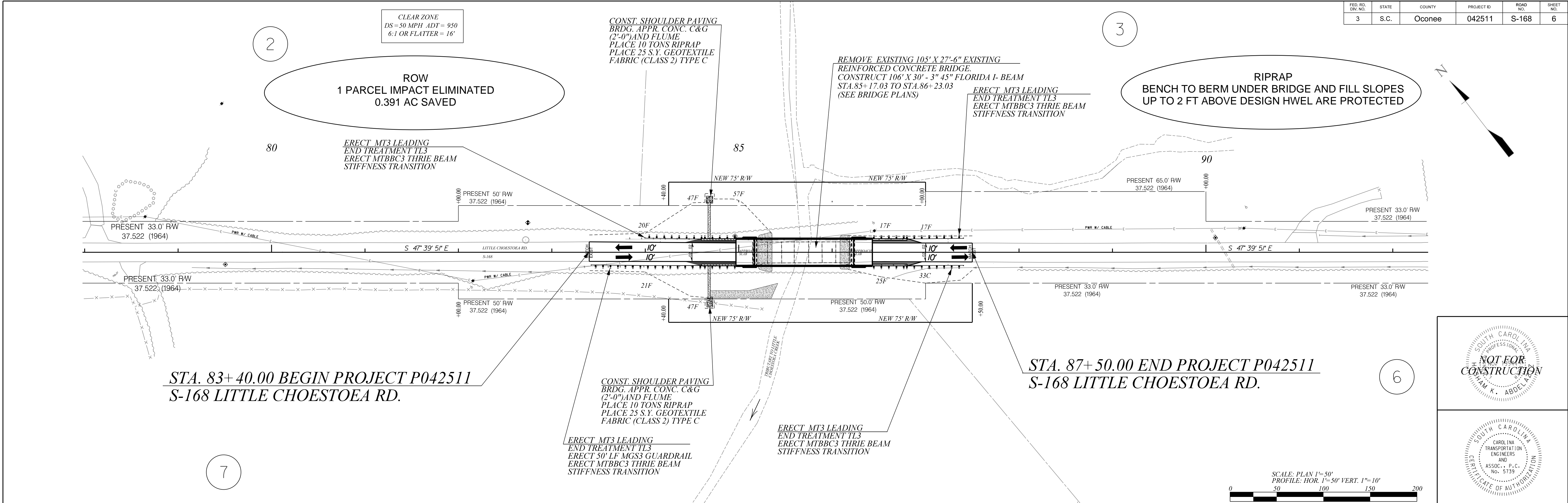
TYPICAL SECTION
S-168 (LITTLE CHOESTOE RD.)

SCALE 1"V=NTS	SCALE 1"H=NTS	RTE./RD.
---------------	---------------	----------

RonnieBlevins
168 Trib Choestoea Creek V6 - Roadway Design\S168_TYP.dgn
11/26/2025

03_Typical.dgn

FED. RD. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	Oconee	042511	S-168	6



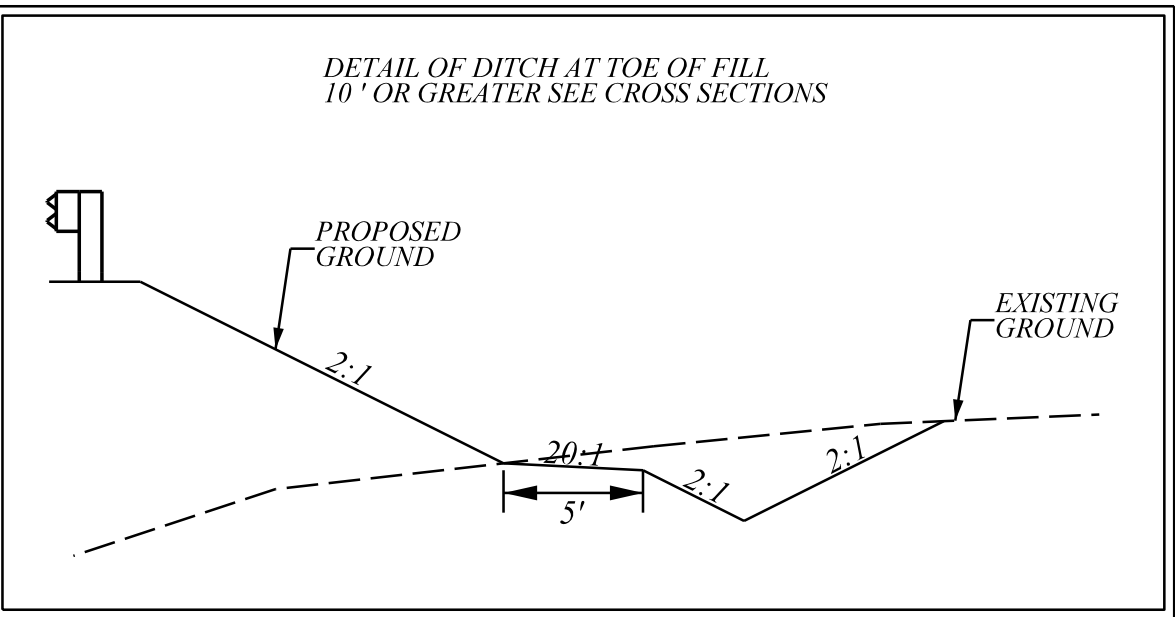
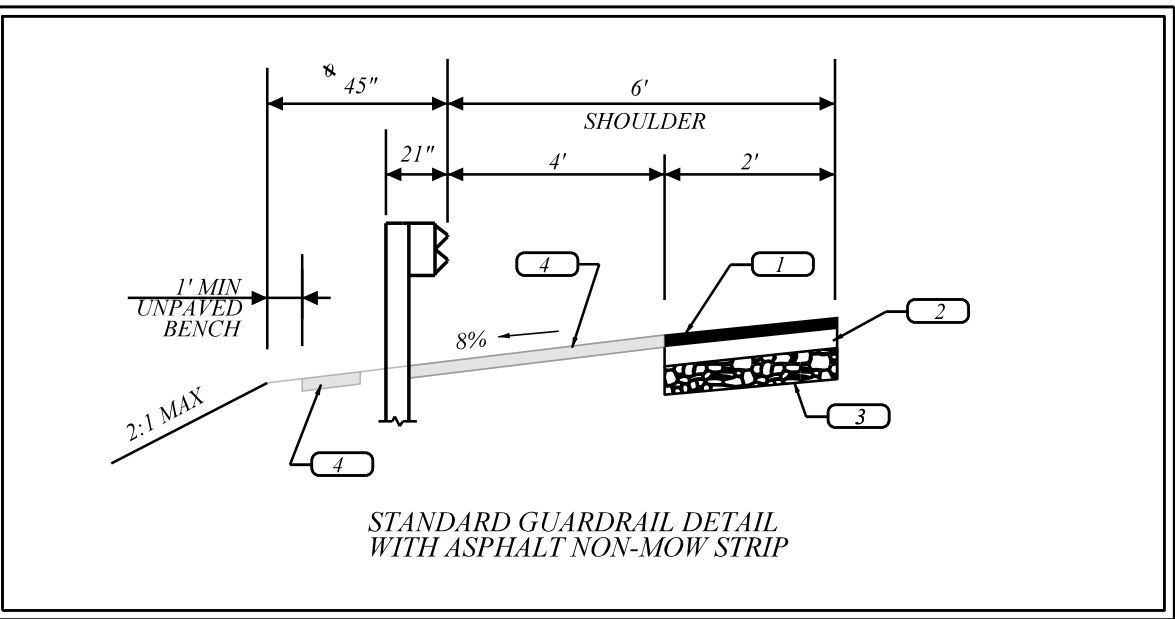
****SEE CROSS SECTIONS FOR SLOPES**
THIS SLOPE MAY BE VARIED WHEN A DEEPER DITCH IS NECESSARY FOR DRAINAGE PURPOSES, USING A MINIMUM SLOPE OF 6:1 AND A MAXIMUM SLOPE OF 4:1. WHERE A DEEPER DITCH THAN PROVIDED BY 4:1 IS NECESSARY, THE DITCH SHALL BE PLACED FARTHER FROM THE C/L CONTINUING THE 4:1 SLOPE TO PROVIDE THE NECESSARY DEPTH.

* 6:1 < 5'
4:1 5' - 10'
2:1 (MAX) > 10'

Ø ADD 3.75' WHEN USING GUARDRAIL

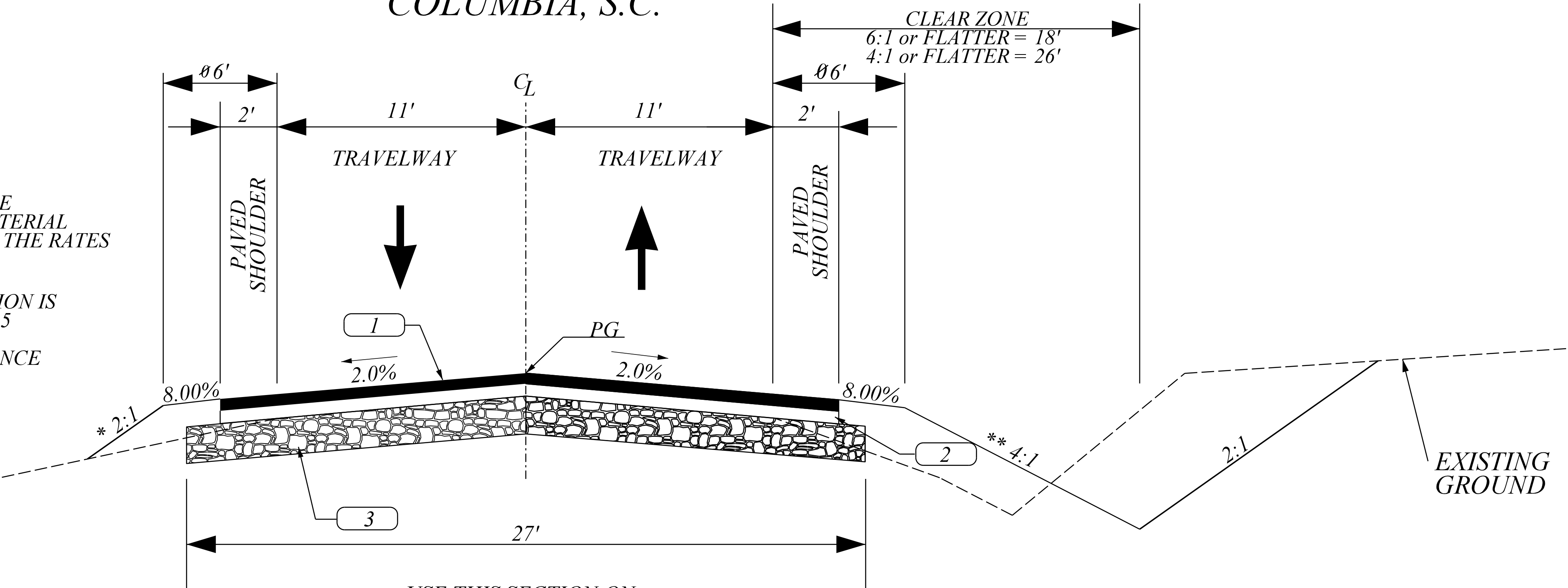
IN AREAS WHERE EXISTING PAVEMENTS ARE WIDENED OUTSIDE THE TRAVEL LANES, USE 600 #/SY OF SHOULDER WIDENING MATERIAL AND OVERLAY WITH INTERMEDIATE AND SURFACE COURSE AT THE RATES SPECIFIED.

WHERE LEVELING AND BUILD-UP OR CROSS SLOPE CORRRECTION IS REQUIRED, USE HMA SURFACE TYPE -E FOR THICKNESS 0 TO 1.5 INCHES. USE INTERMEDIATE B FOR ANY GREATER THICKNESS. PLACEMENT AND SELECTION OF MIXES SHALL BE IN ACCORDANCE WITH ASPHALT MIX DESIGN GUIDELINES.

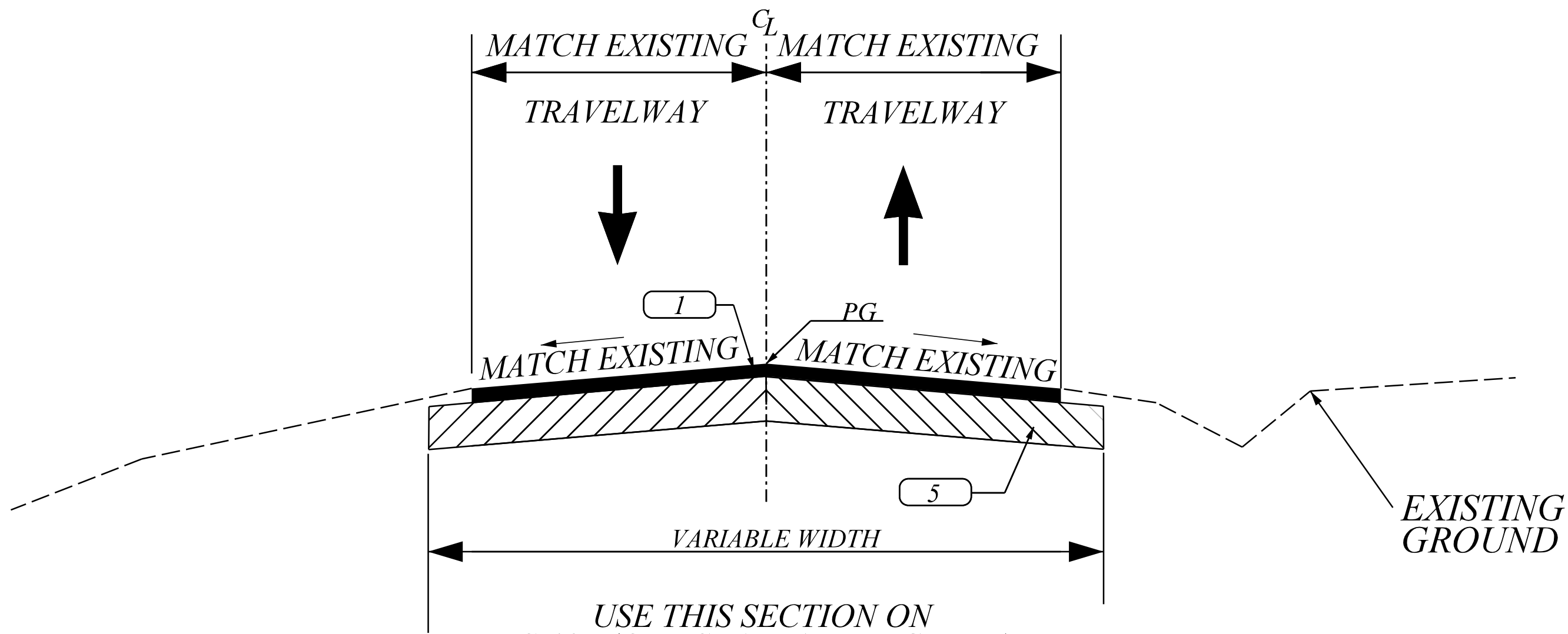


1		HMA SURFACE COURSE TYPE C 175 #/S.Y.
2		HMA INTERMEDIATE COURSE TYPE- C 200 #/S.Y.
3		HMA BASE COURSE TYPE- B 650 #/S.Y.
4		4" HMA SURFACE COURSE
5		RETAIN EXISTING PAVEMENT

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



USE THIS SECTION ON:
S-197 (OLD SPARTANBURG HWY)
STA. 64+ 50.00 TO STA. 67.87.00
STA. 69+ 87.00 TO STA. 74+ 00.00



USE THIS SECTION ON
S-197 (OLD SPARTANBURG HWY)
STA. 64+ 00.00 TO STA. 64+ 50.00
STA. 74+ 00.00 TO STA. 74+ 50.00

* 40 MPH VERTICAL SAG CURVES ALLOWED BY RFP
** 35 MPH HORIZONTAL CURVES ALLOWED BY RFP

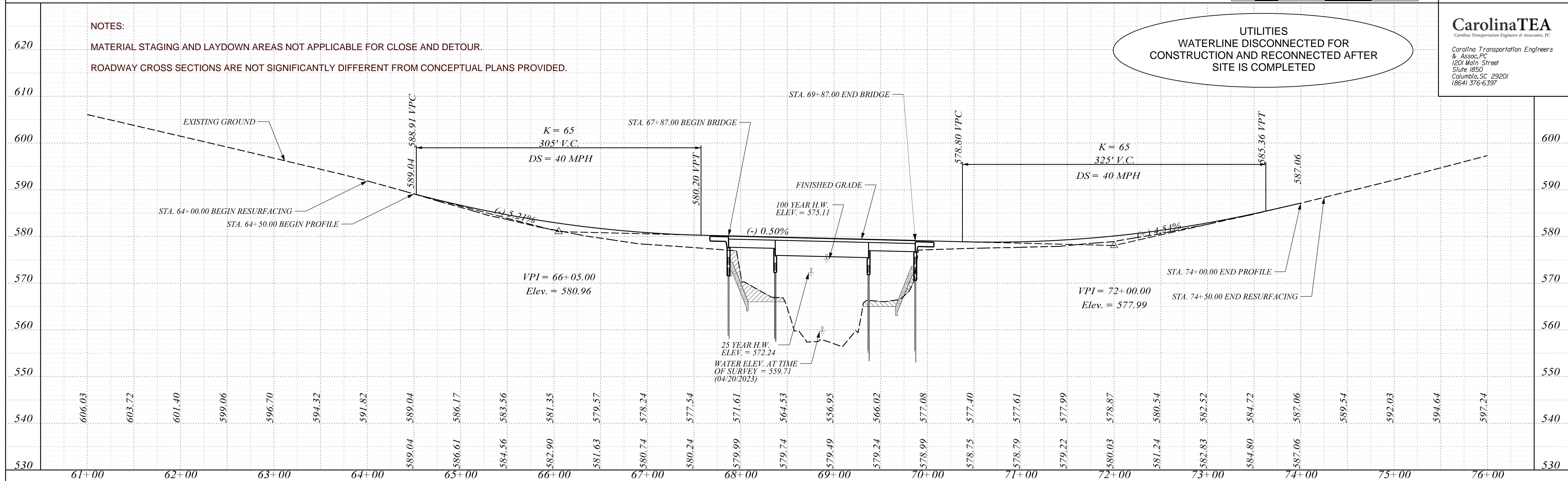
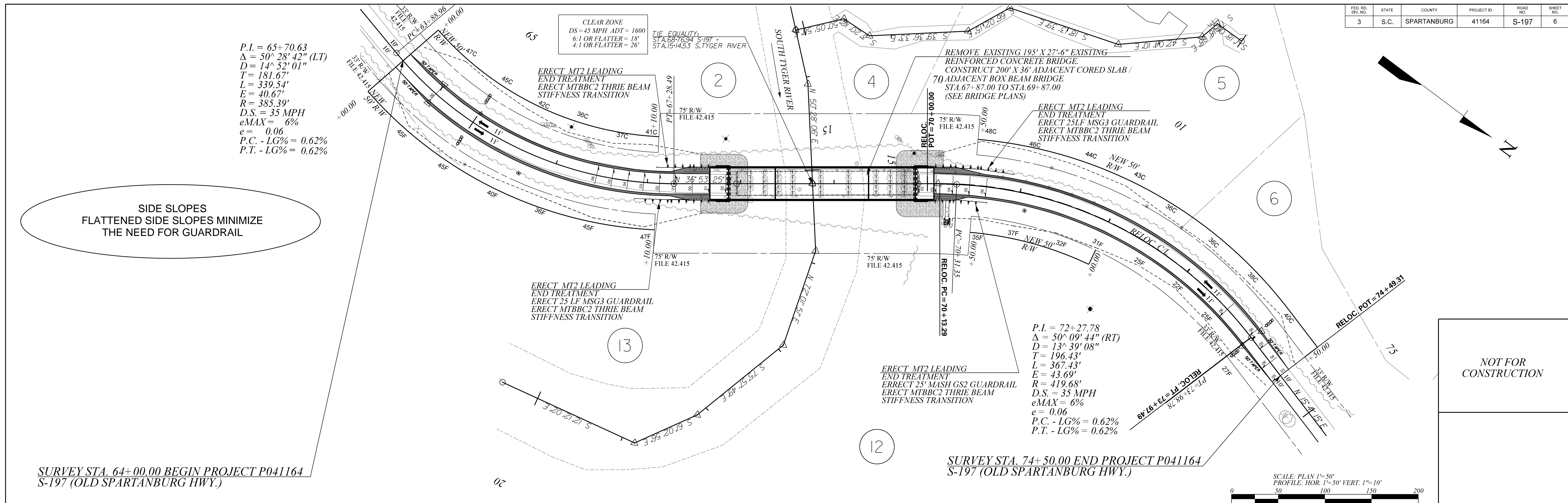
S-197 RURAL MAJOR COLLECTOR		
RD. S-197	DESIGN SPEED	
MPH	FROM STA.	TO STA.
45	64+ 50.00	74+ 00.00
EXCEPTION TO DESIGN SPEED		
40*	64+ 52.50	67+ 57.50
40*	70+ 37.50	73+ 62.50
35**	64+ 50.00	67+ 28.49
35**	70+ 13.29	73+ 97.49

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ROAD DESIGN COLUMBIA, S.C.

TYPICAL SECTION
S-197 (OLD SPARTANBURG HWY)

SCALE 1"= NTS SCALE 1"= NTS RTE./RD.

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	SPARTANBURG	41164	S-197	6



Appendix A2: Bridge Plans



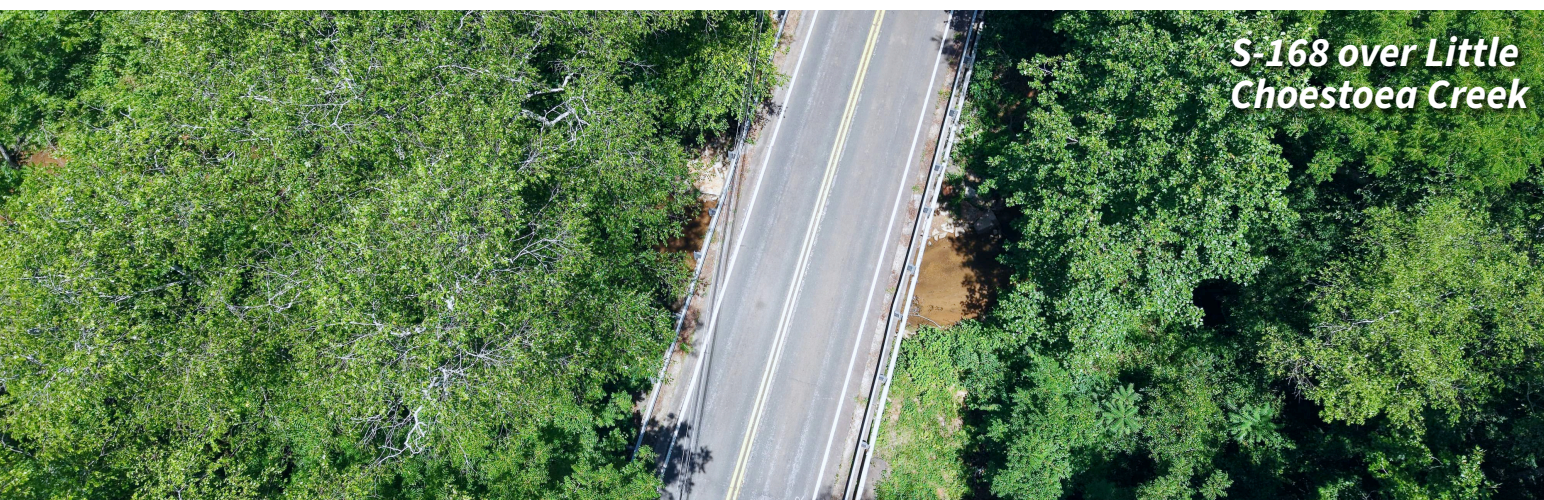
S-197 over S. Tyger River



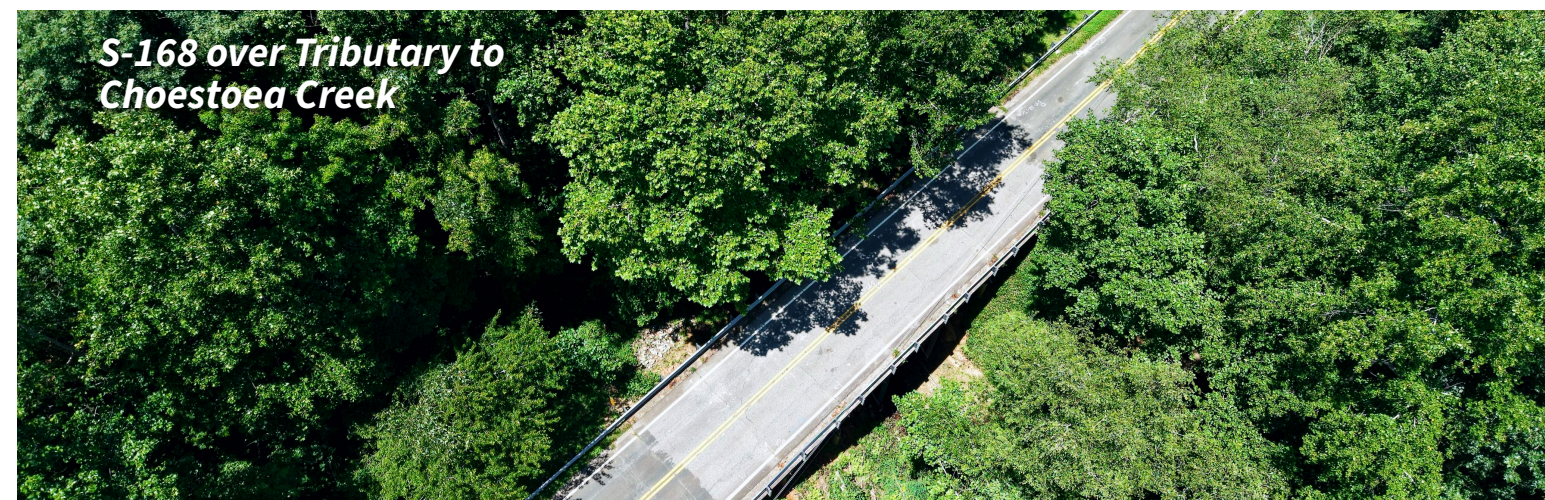
S-133 over Little Cane Creek



S-51 over Snow Creek



*S-168 over Little
Choestoea Creek*

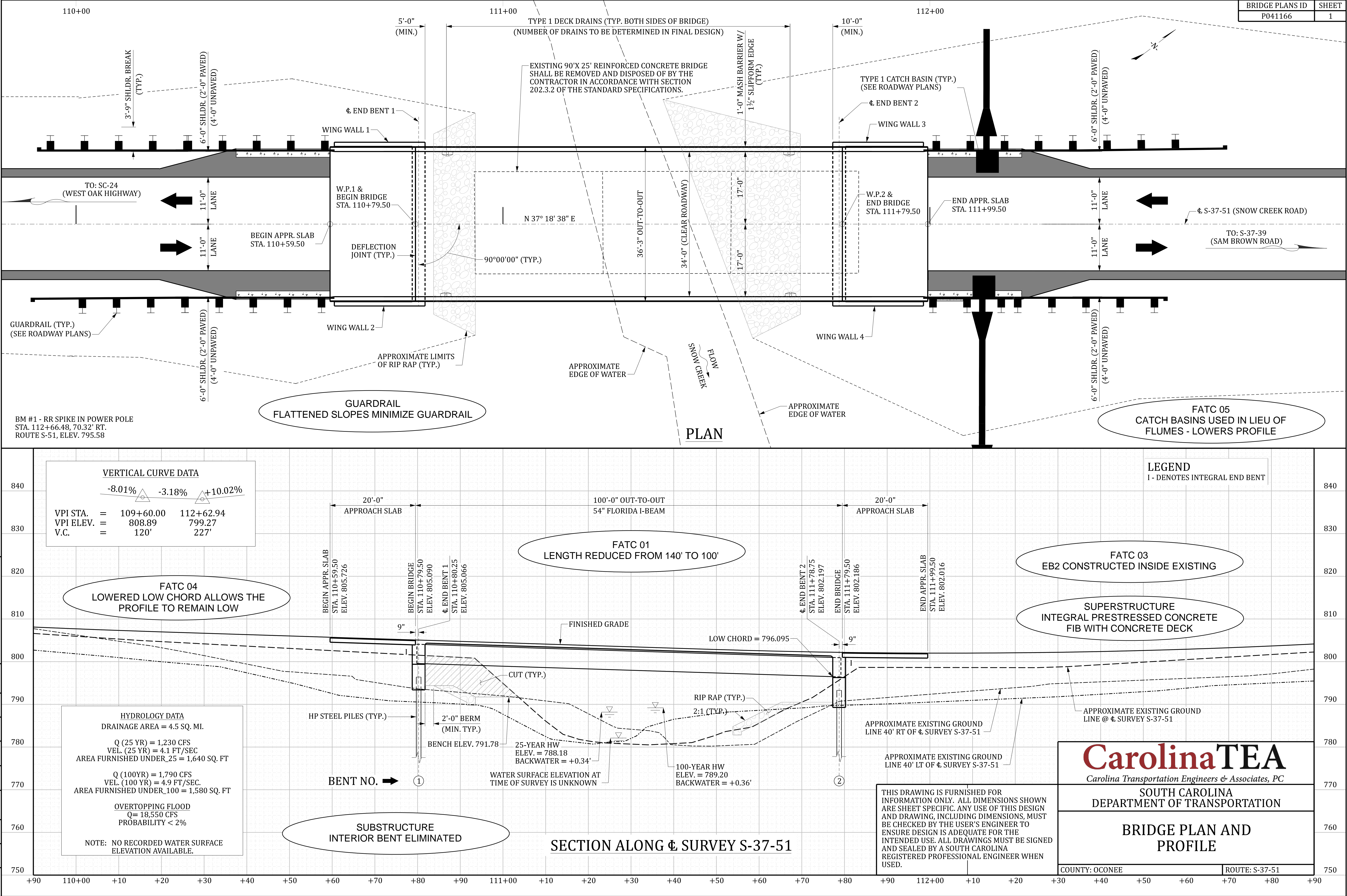


*S-168 over Tributary to
Choestoea Creek*

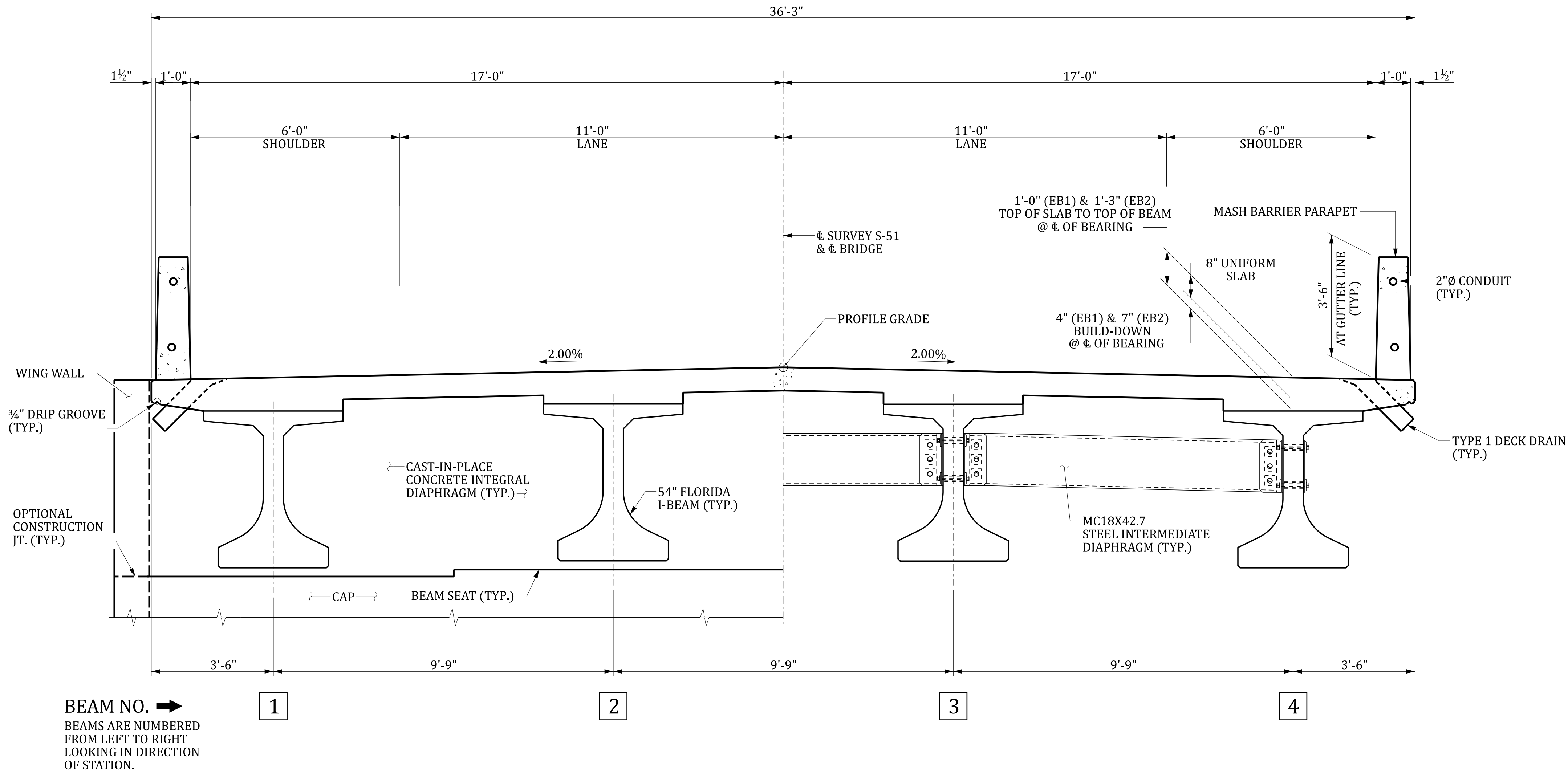
JonathanBaker 11/27/2025 12:10:40 PM S-51_PLANANDPROF.dgn

REVIEWED CCC			
QUAN.	DR.	JDB	RA
DES.	BY	CHK.	DATE
			11-25

REV.	LATEST REVISION
REV.	PREVIOUS REVISION
BY	CHK.
DATE	DESCRIPTION OF REVISION



NOTES:
PLAIN ELASTOMERIC PADS WILL BE PROVIDED
AT THE END BENTS. THEY ARE NOT SHOWN
FOR CLARITY OF OTHER DETAILS.



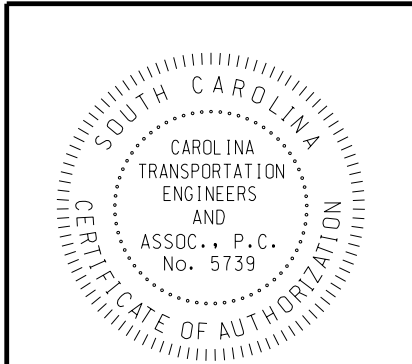
HALF SECTION AT END BENT
(SHOWING INTEGRAL DIAPHRAGMS)

HALF SECTION AT INTERMEDIATE DIAPHRAGM
(SHOWING STEEL INTERMEDIATE DIAPHRAGMS)

TYPICAL SECTION

REVIEWED		BY		CHK.		DATE	
QUAN.							
DR.							
DES.							

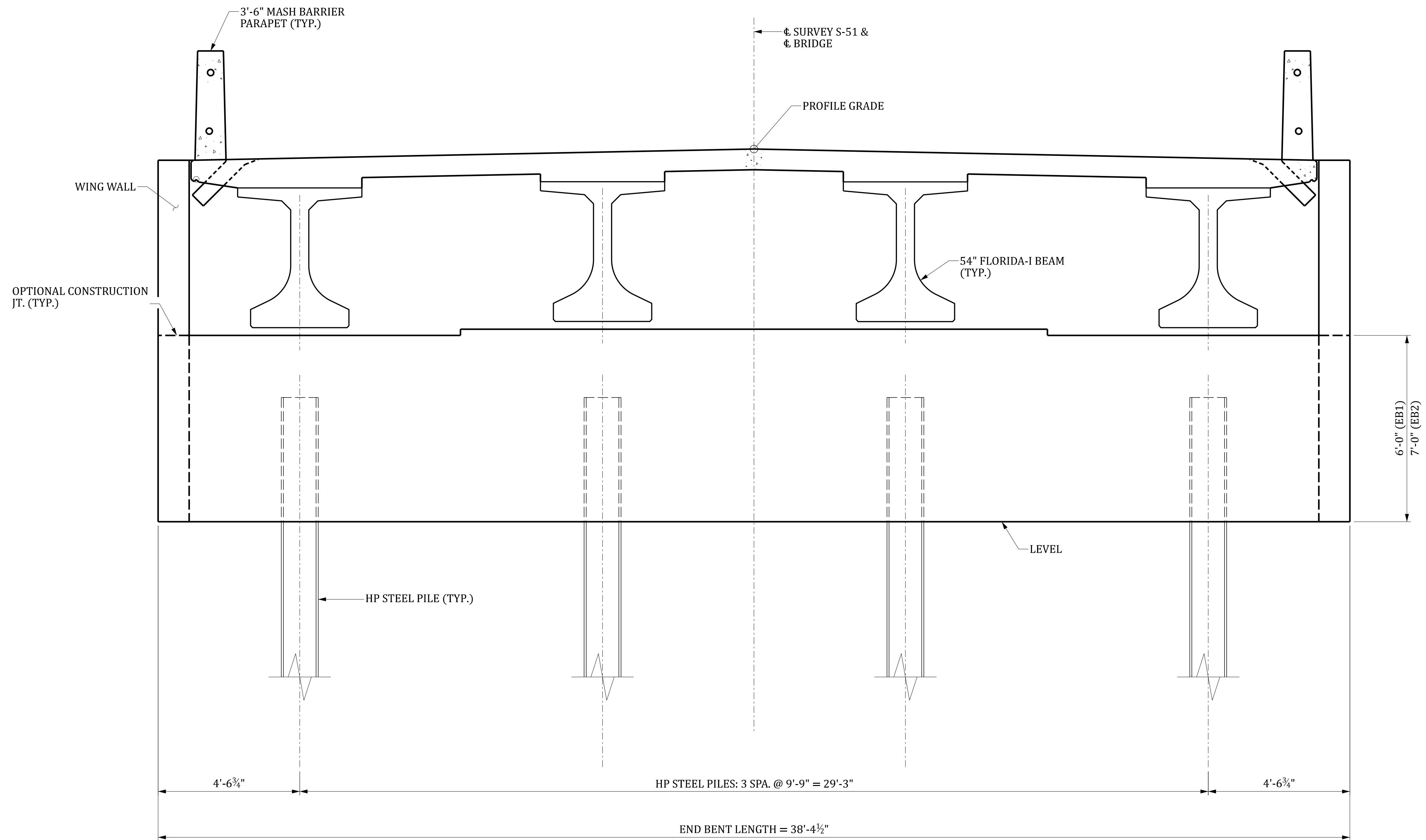
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REV.							
REV.							
REV.							



CarolinaTEA
Carolina Transportation Engineers & Associates, PC
SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION

COUNTY: OCONEE ROUTE: S-37-51



NOTES:
PLAIN ELASTOMERIC PADS WILL BE
PROVIDED AT THE END BENTS. THEY ARE NOT
SHOWN FOR CLARITY OF OTHER DETAILS.

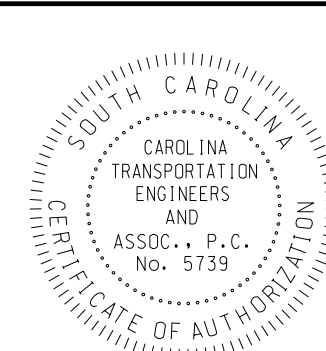
PILE NO. ➡
PILES ARE NUMBERED
FROM LEFT TO RIGHT
LOOKING IN DIRECTION
OF STATION.

ELEVATION

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REV.			
REV.			
REV.			
	BY	CHK.	DATE
	DESCRIPTION OF REVISION		

REVIEWED			
QUAN.			
DR.			
DES.			
	BY	CHK.	DATE



CarolinaTEA

Carolina Transportation Engineers & Associates, PC

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION

END BENTS 1 & 2

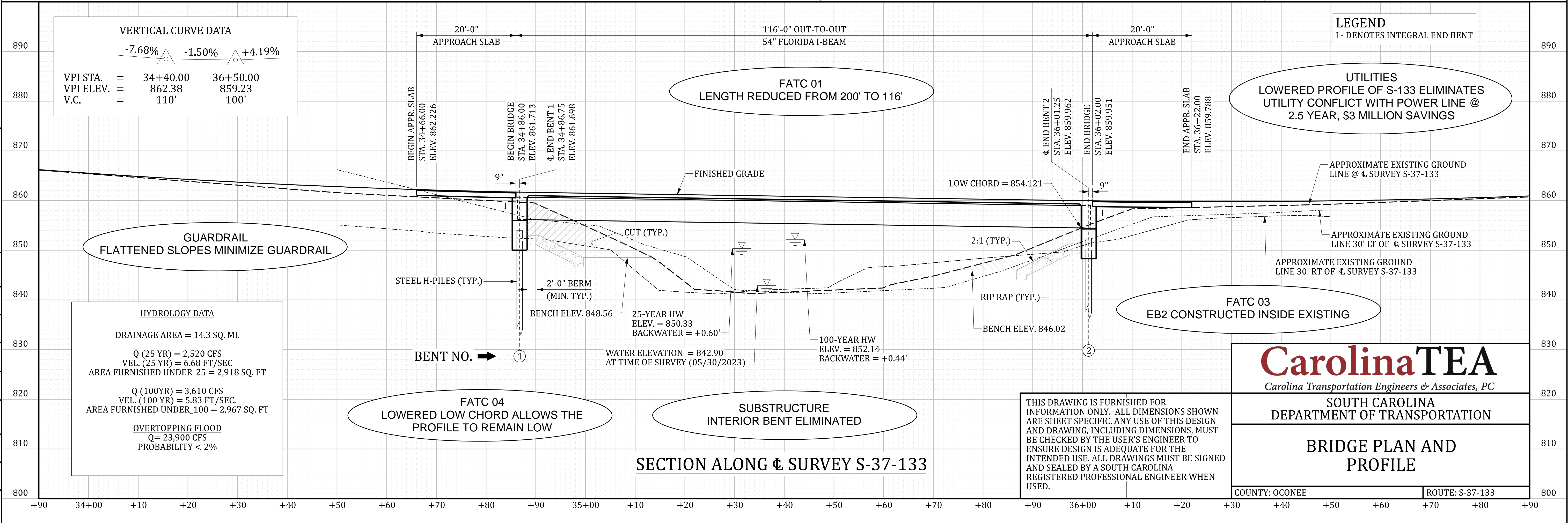
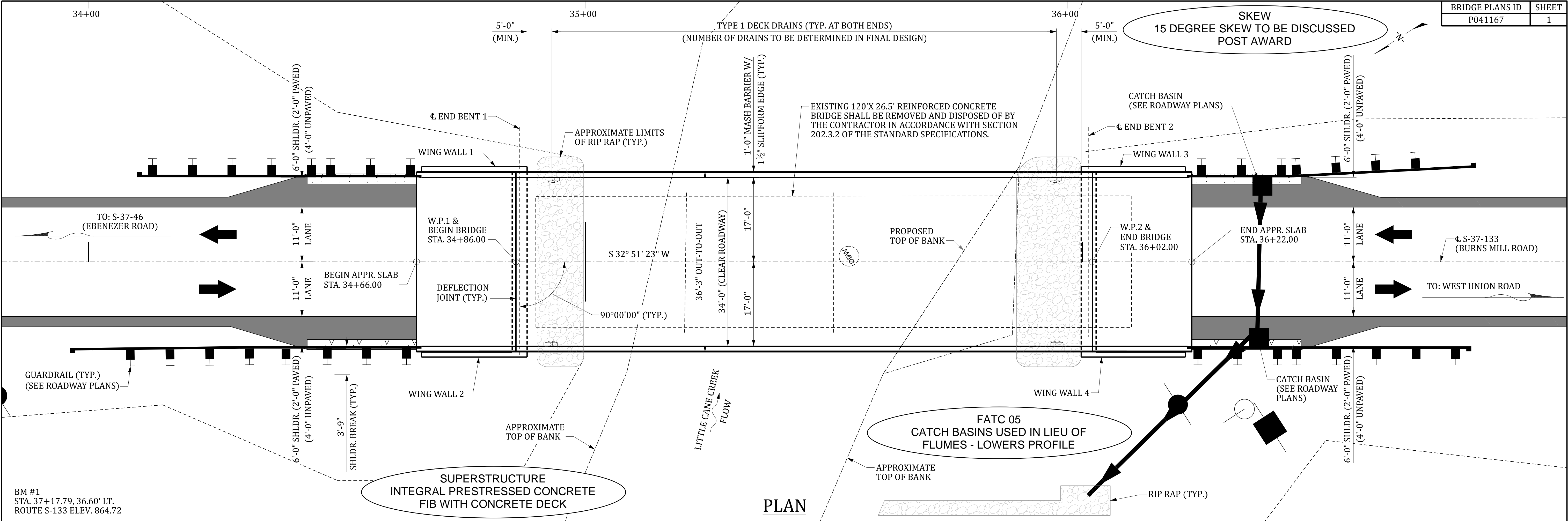
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ROUTE: S-37-51

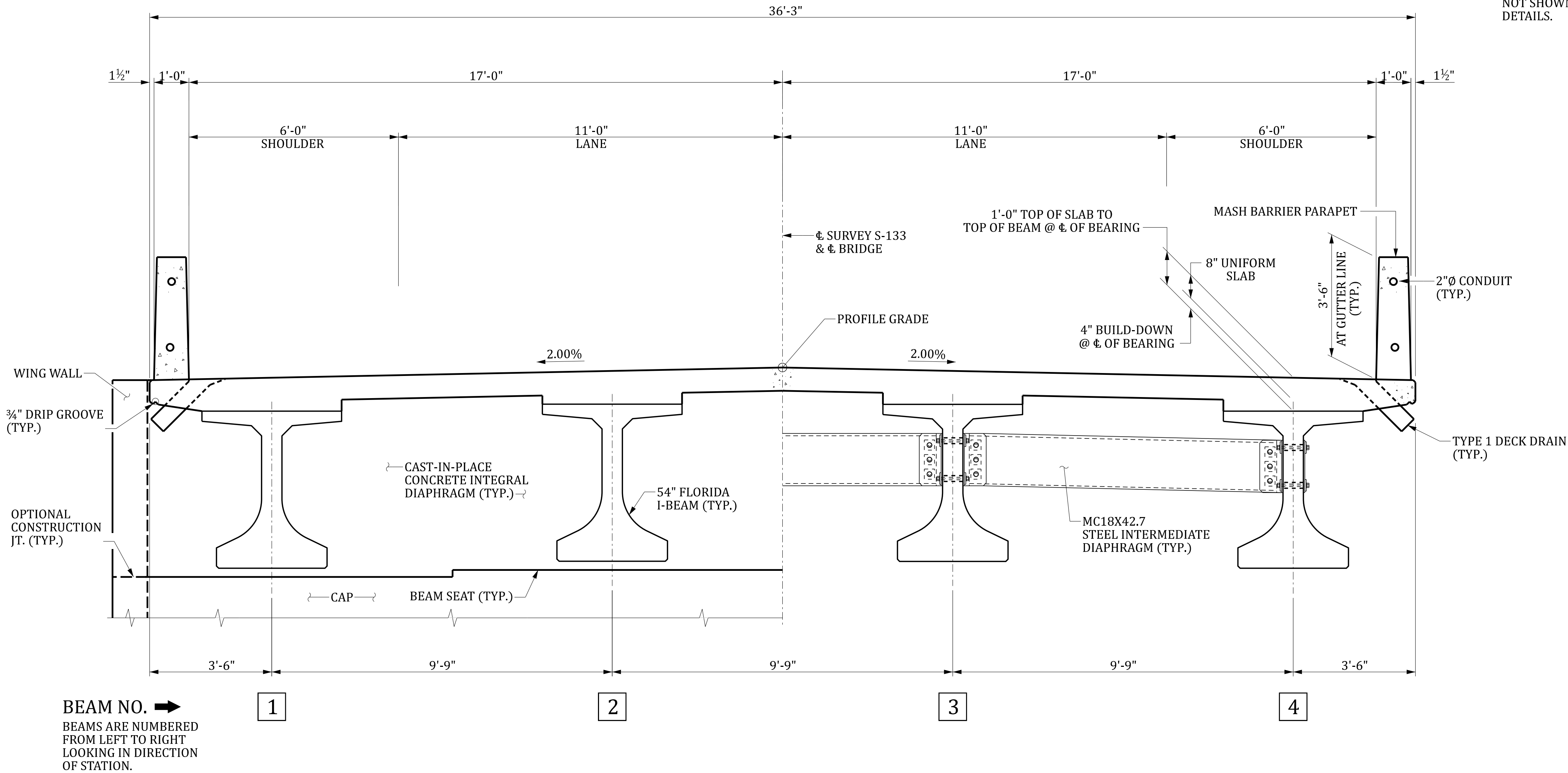
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REVIEWED CCC			
QUAN.	DR.	JDB	RA
DES.	BY	CHK.	DATE
			11-25

REV.	LATEST REVISION
REV.	PREVIOUS REVISION
BY	CHK.
DATE	DESCRIPTION OF REVISION



NOTES:
PLAIN ELASTOMERIC PADS WILL BE PROVIDED AT THE END BENTS. THEY ARE NOT SHOWN FOR CLARITY OF OTHER DETAILS.



HALF SECTION AT END BENT
(SHOWING INTEGRAL DIAPHRAGMS)

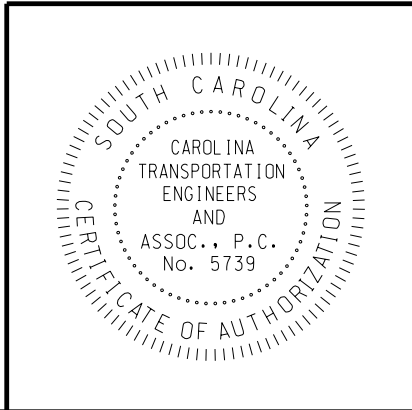
HALF SECTION AT INTERMEDIATE DIAPHRAGM
(SHOWING STEEL INTERMEDIATE DIAPHRAGMS)

TYPICAL SECTION

JonathanBaker 11/26/2025 10:47:50 AM S-133_TYP_SECTION.dgn

REV.	BY	CHK.	DATE	DESCRIPTION OF REVISION

QUAN.	BY	CHK.	DATE



CarolinaTEA

Carolina Transportation Engineers & Associates, PC

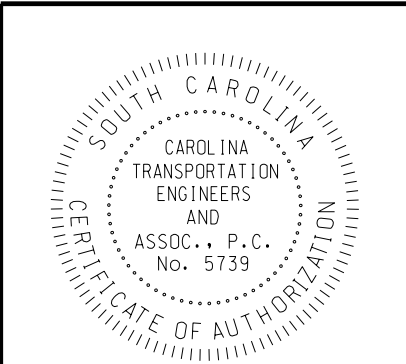
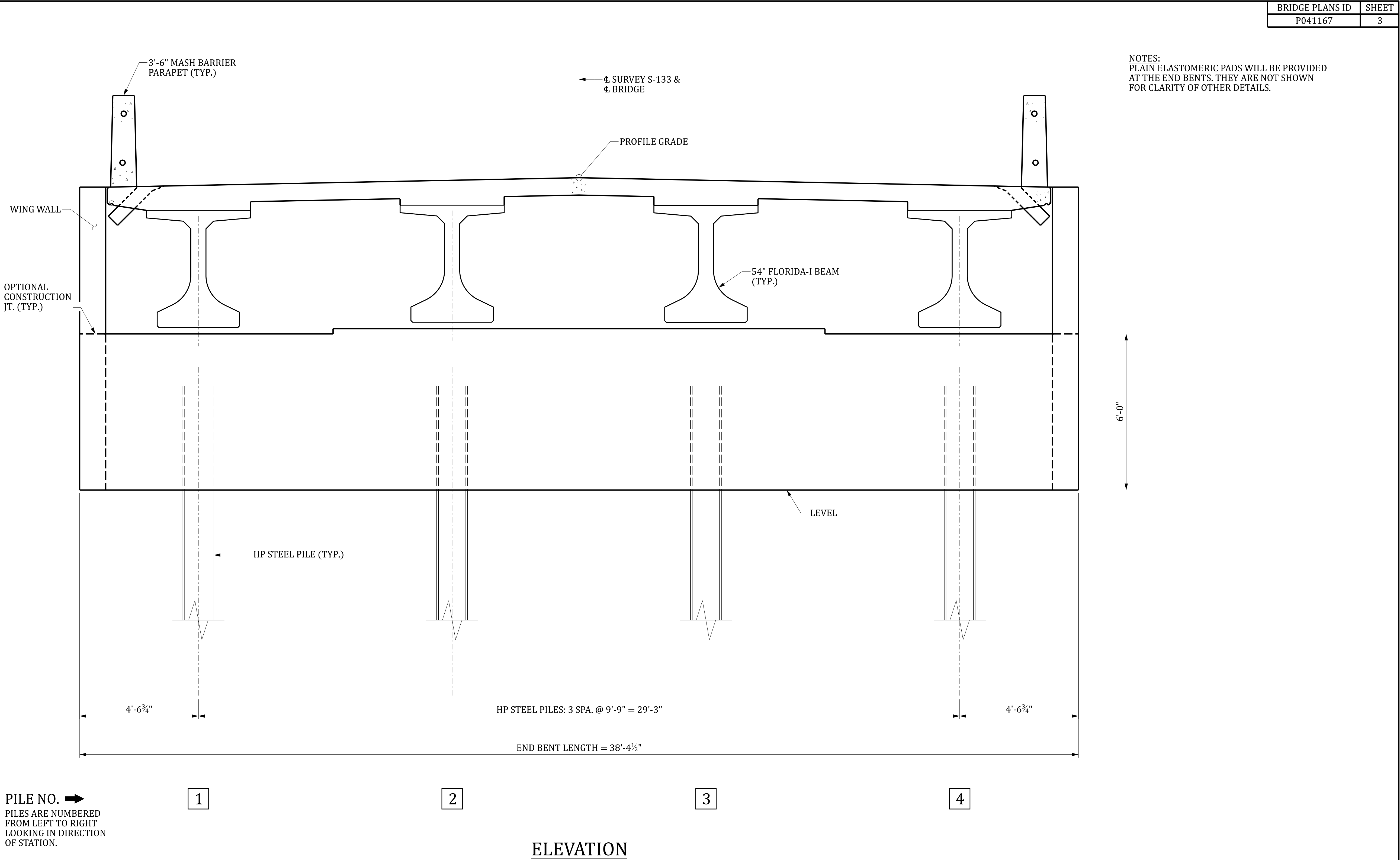
SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECITON

COUNTY: OCONEEROUTE: S-37-133

REVIEWED		BY		CHK.		DATE	
QUAN.							
DR.							
DES.							
REV.		BY		CHK.		DATE	
REV.							
REV.							

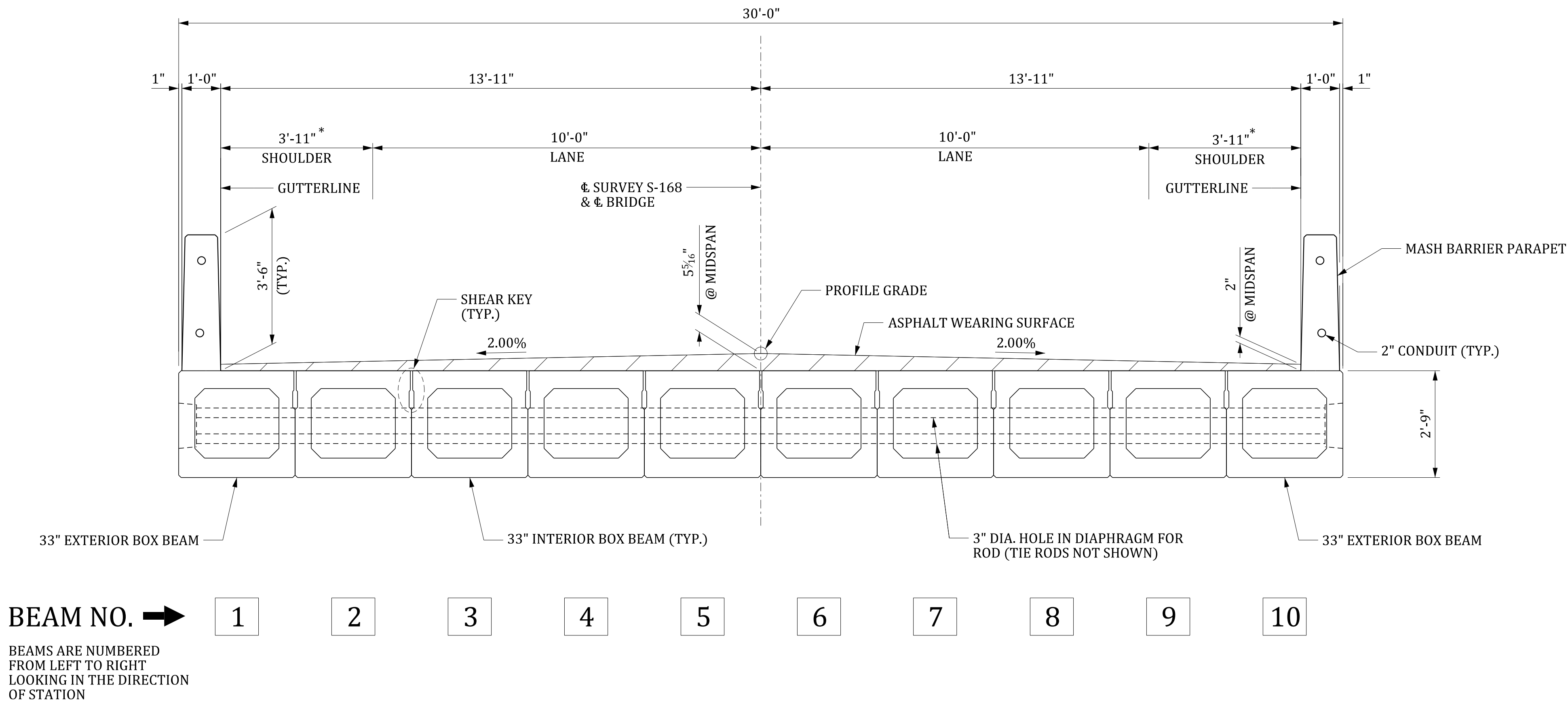
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CarolinaTEA
Carolina Transportation Engineers & Associates, PC
SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION

END BENTS 1 & 2

COUNTY: OCONEE ROUTE: S-37-133



TYPICAL SECTION

LEGEND:
* - 3'-11" SHOULDER ALLOWED ON BRIDGE PER DM0524

REVIEWED	QUAN.	DR.	DES.	BY	CHK.	DATE	REV.												
							REV.												
							REV.												
							REV.												

CONCEPTUAL PLANS
NOT FOR CONSTRUCTION

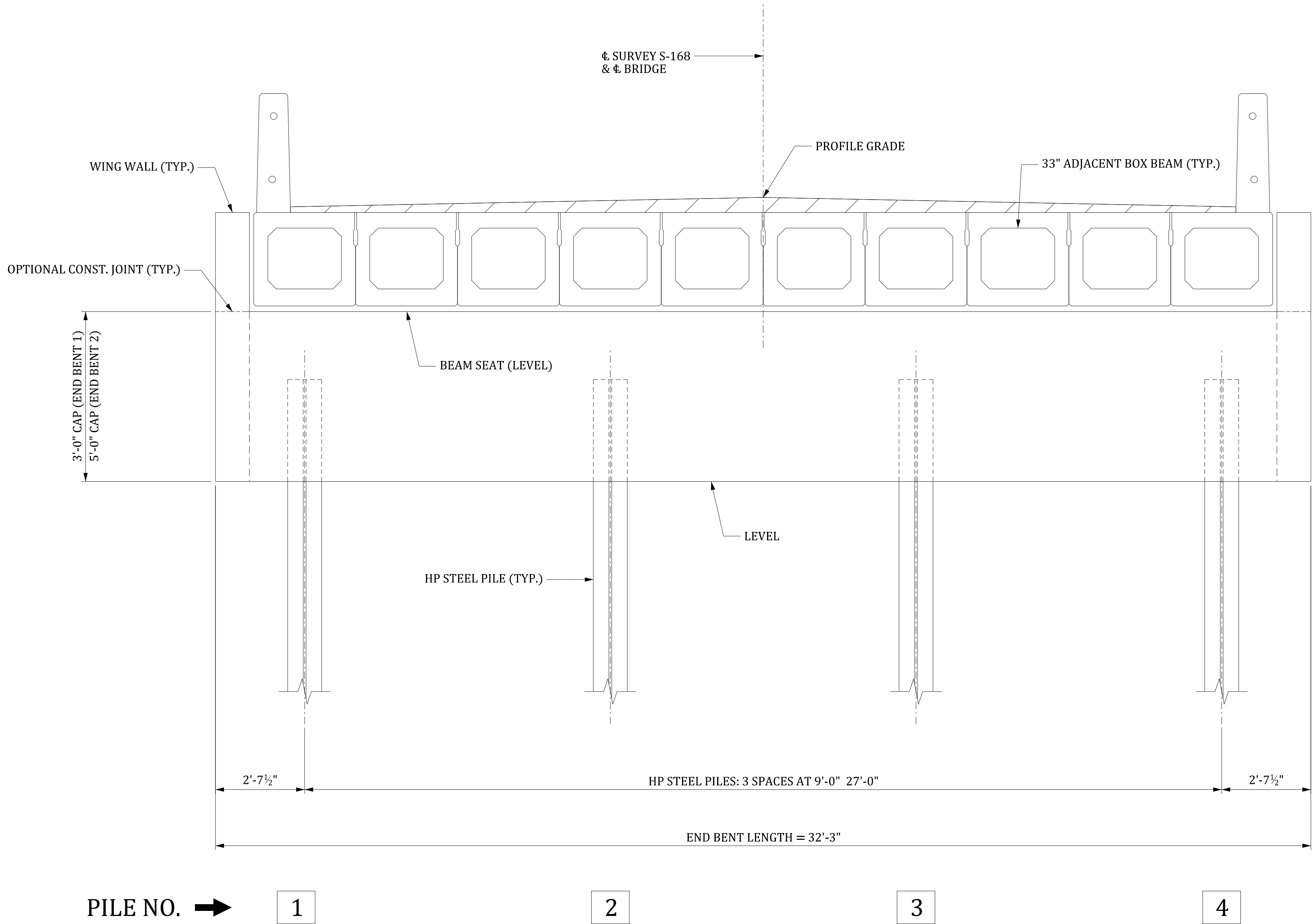
PLANS PREPARED BY:
AULICK ENGINEERING LLC
101 WEST MAIN STREET
SUITE 210
LEXINGTON, SC 29072

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION

COUNTY: OCONEEROUTE: S-37-168

REVIEWED QUAN.	AJS 11-25											
	DR.	BKP	AJS	11-25								
	DES.	BKP	AJS	11-25								
		BY	CHK.	DATE	BY	CHK.	DATE	DESCRIPTION OF REVISION				



PILE NO. ➔

PILES ARE NUMBERED
FROM LEFT TO RIGHT
LOOKING IN THE DIRECTION
OF STATION

ELEVATION

CONCEPTUAL PLANS
NOT FOR CONSTRUCTION

PLANS PREPARED BY:
AULICK ENGINEERING LLC
101 WEST MAIN STREET
SUITE 210
LEXINGTON, SC 29072



SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION

END BENT
DETAILS

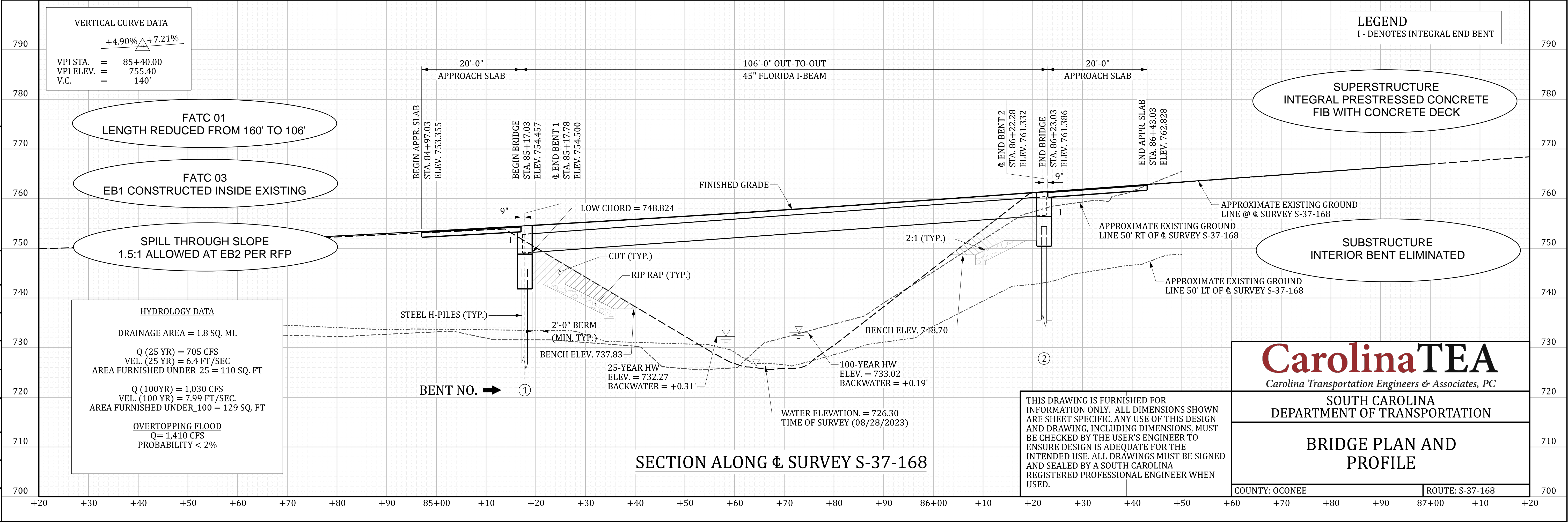
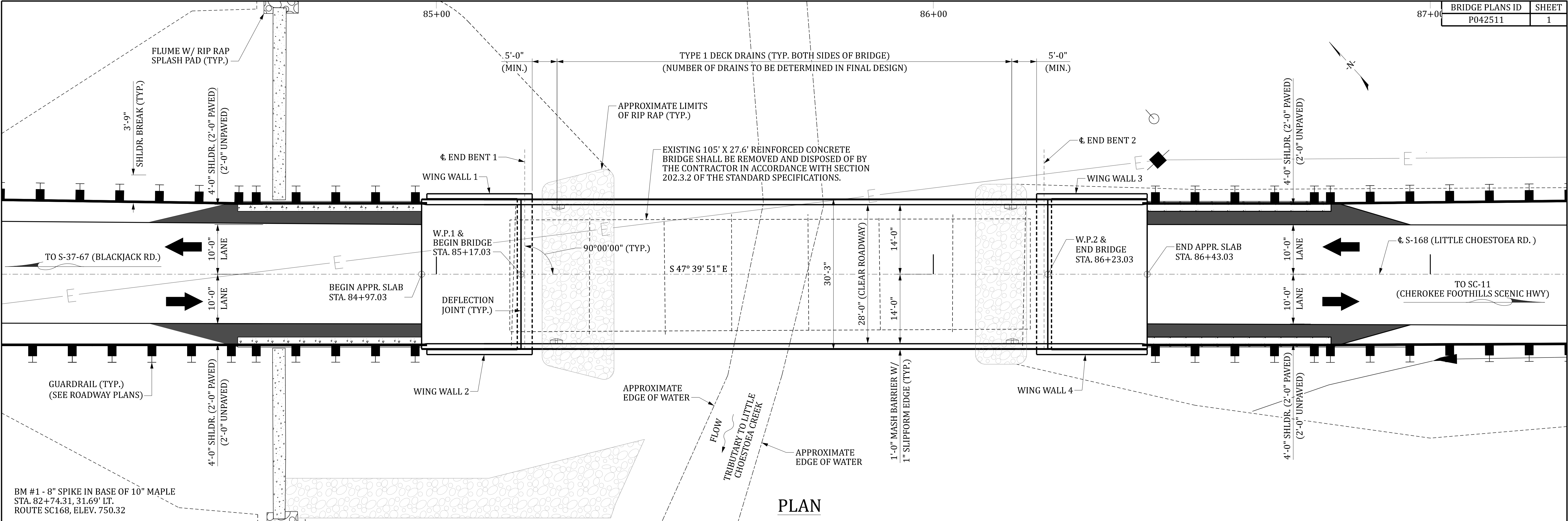
COUNTY: OCONEE

ROUTE: S-37-168

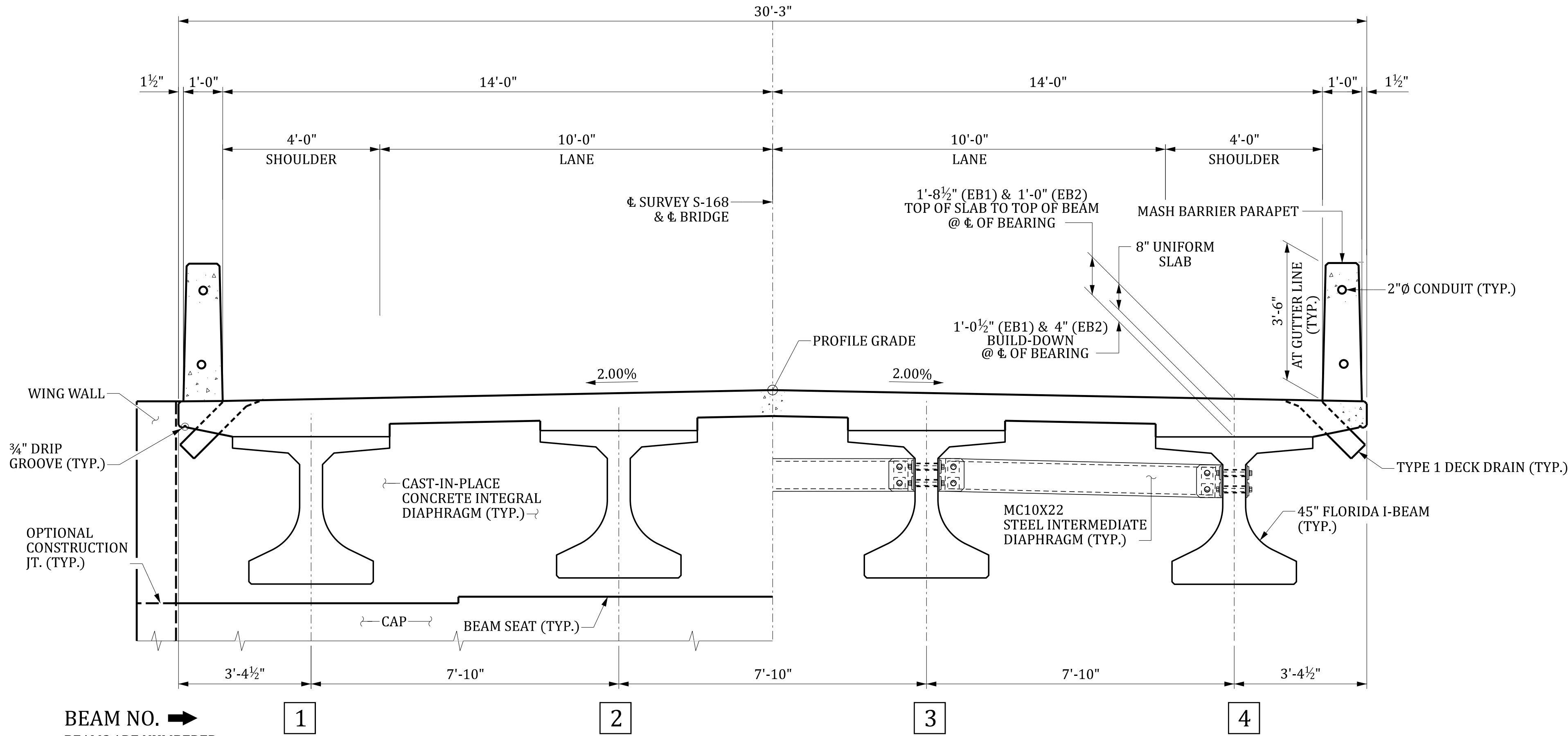
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REVIEWED CCC							
QUAN.	DR.	JDB	RA	11-25	BY	CHK.	DATE
DES.							

REV.	LATEST REVISION	PREVIOUS REVISION	DESCRIPTION OF REVISION
REV.			
BY	CHK.	DATE	



NOTES:
PLAIN ELASTOMERIC PADS WILL BE PROVIDED AT THE END BENTS. THEY ARE NOT SHOWN FOR CLARITY OF OTHER DETAILS.



HALF SECTION AT END BENT
(SHOWING INTEGRAL DIAPHRAGMS)

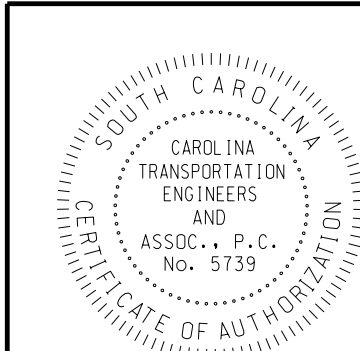
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(SHOWING STEEL INTERMEDIATE DIAPHRAGMS)

TYPICAL SECTION

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REV.	BY	CHK.	DATE	DESCRIPTION OF REVISION

QUAN.	BY	CHK.	DATE

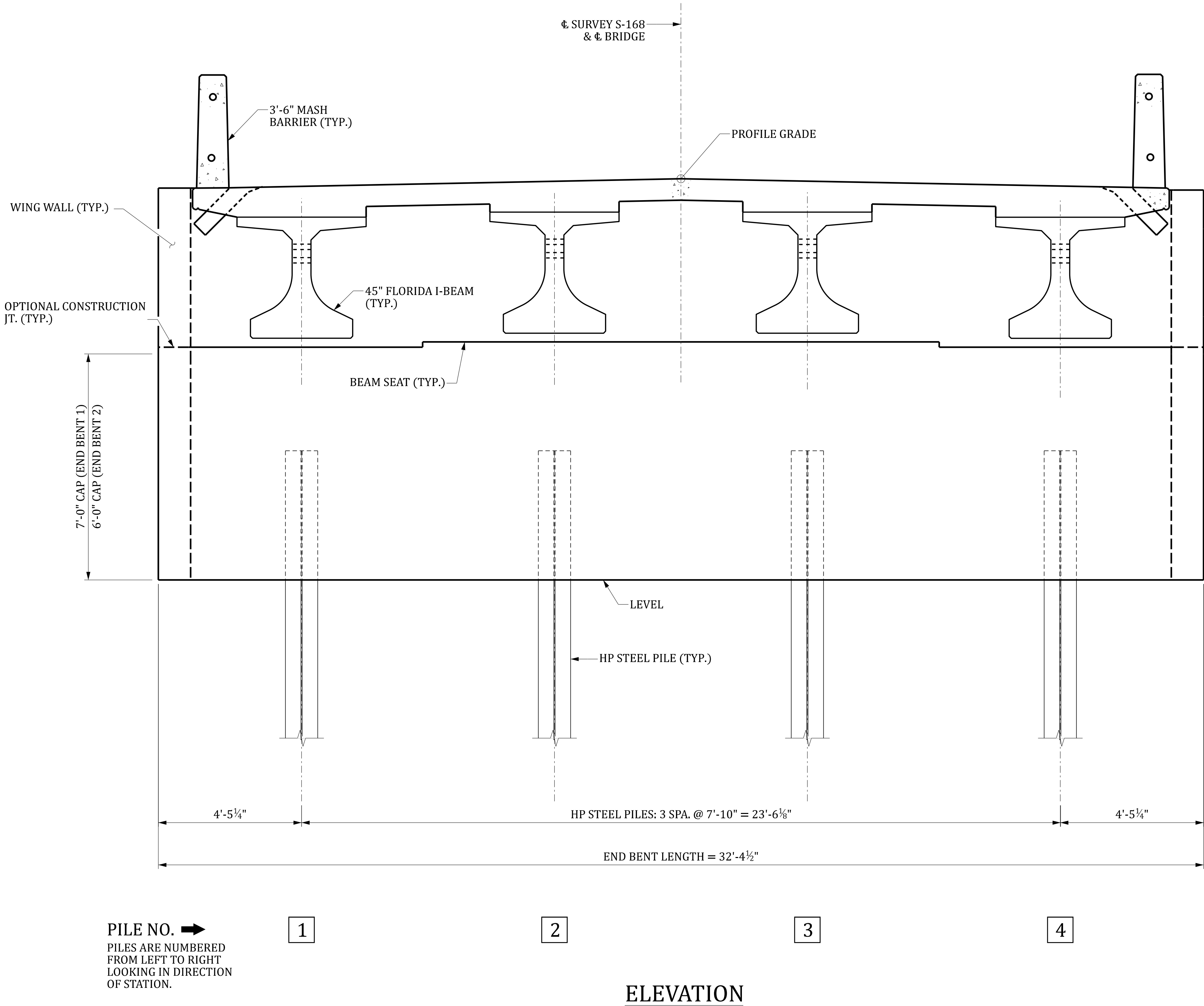


CarolinaTEA
Carolina Transportation Engineers & Associates, PC
SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION

COUNTY: OCONEE ROUTE: S-37-168

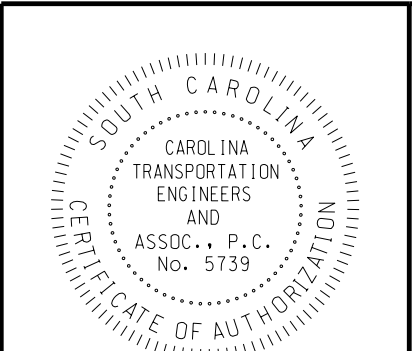
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REVIEWED	QUAN.					REV.			
	DR.					REV.			
	DES.					REV.			
		BY	CHK.	DATE					
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		BY	CHK.	DATE					
		BY	CHK.	DATE					



BRIDGE PLANS ID	SHEET
P042511	3

NOTES:
PLAIN ELASTOMERIC PADS WILL BE PROVIDED AT THE END BENTS. THEY ARE NOT SHOWN FOR CLARITY OF OTHER DETAILS.

TOP OF END BENT CAP ON THE UPHILL END MAY BE SLOPED AND BEVELED BEARING PLATES ON TOP OF THE ELASTOMERIC PADS ON THE DOWNHILL END MAY BE USED TO ADDRESS LONGITUDINAL GRADES OF THE BEAMS.



CarolinaTEA
Carolina Transportation Engineers & Associates, PC

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION

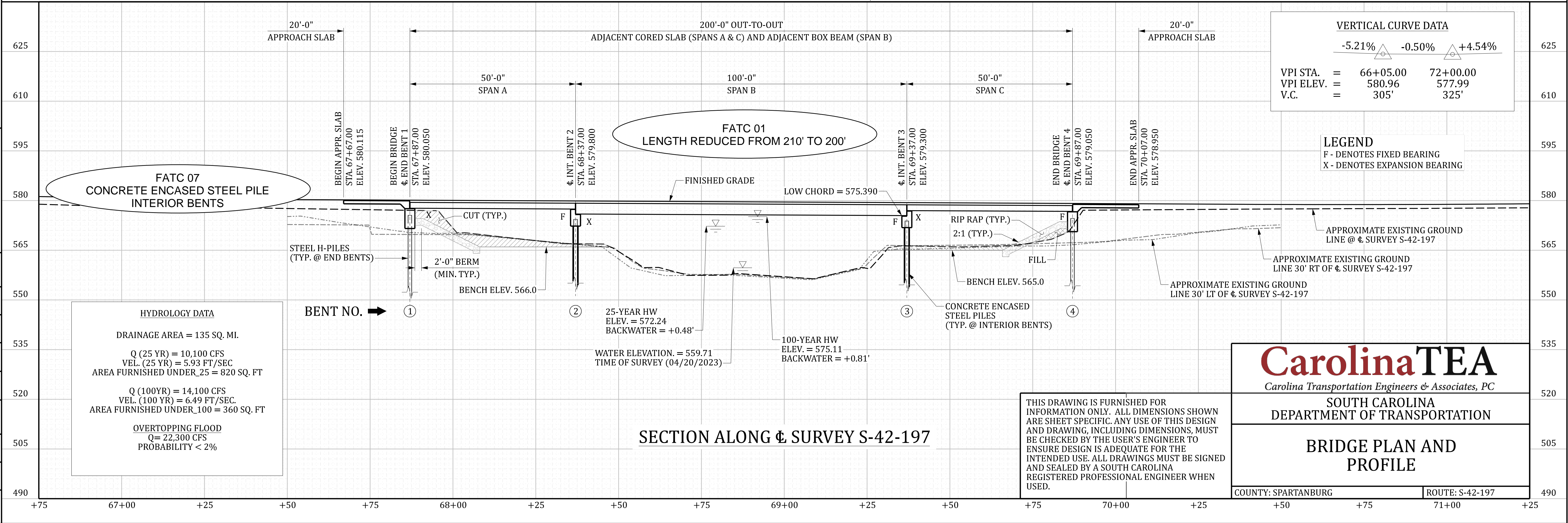
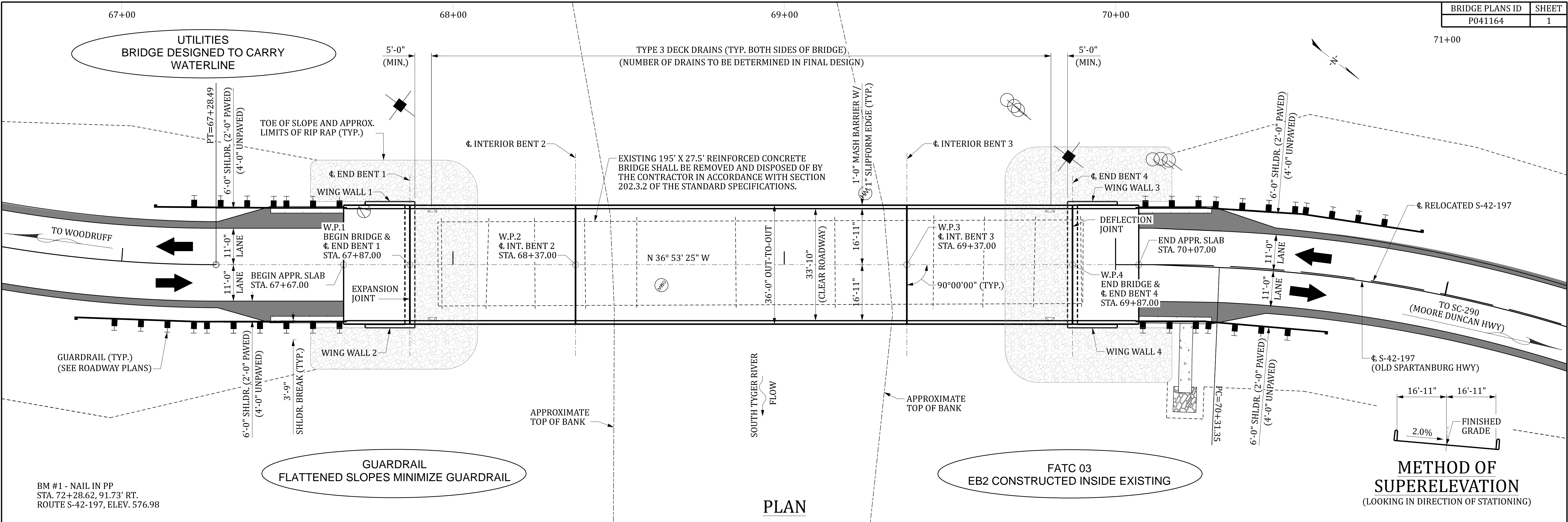
END BENT
DETAILS

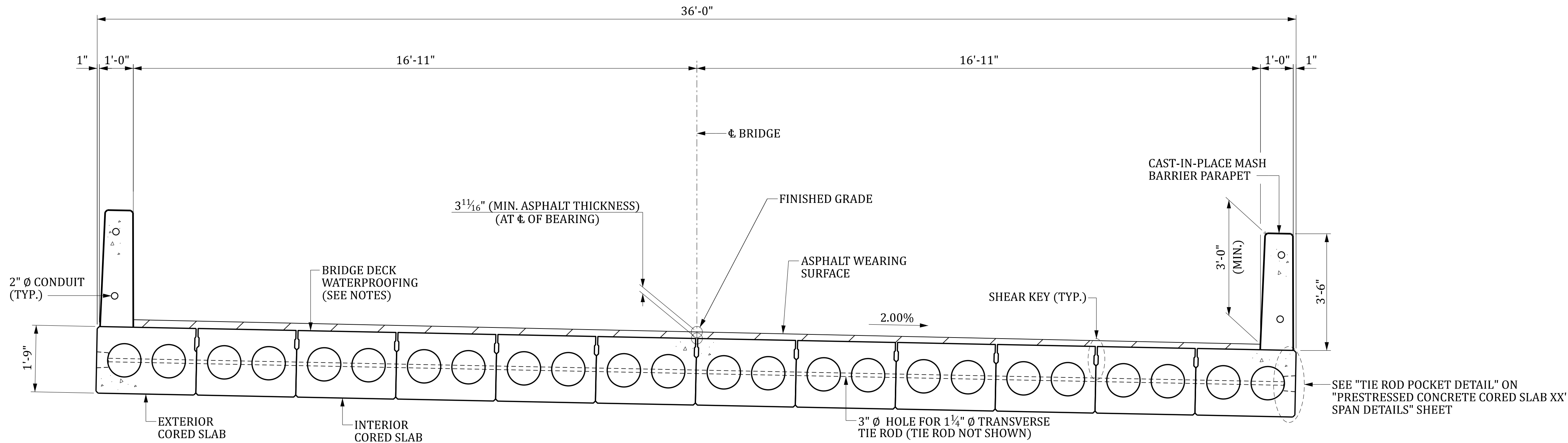
COUNTY: OCONEE ROUTE: S-37-168

JonathanBaker 11/26/2025 7:24:24 PM S-197_PLANANDPROF.dgn

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DES.							

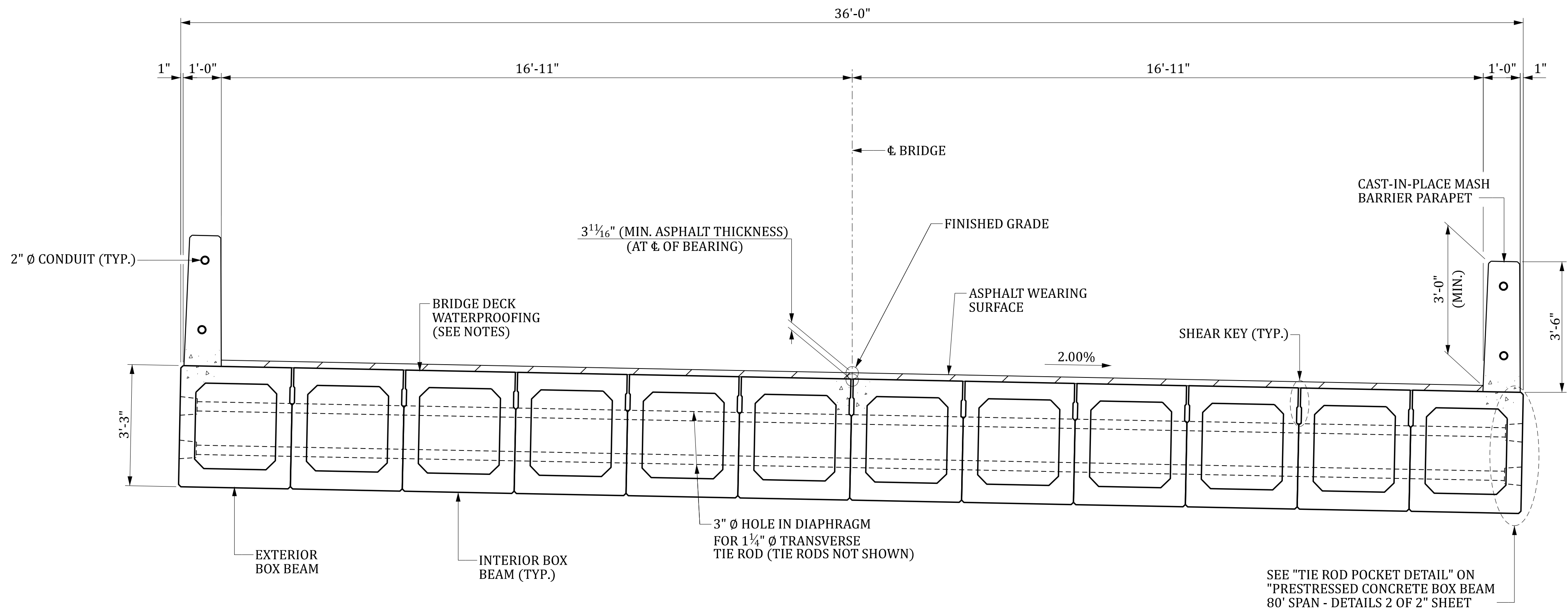
REV.	LATEST REVISION	PREVIOUS REVISION	DESCRIPTION OF REVISION
REV.			
BY	CHK.	DATE	





TYPICAL SECTION (SPANS 'A' AND 'C')

DECK DRAINS NOT SHOWN.



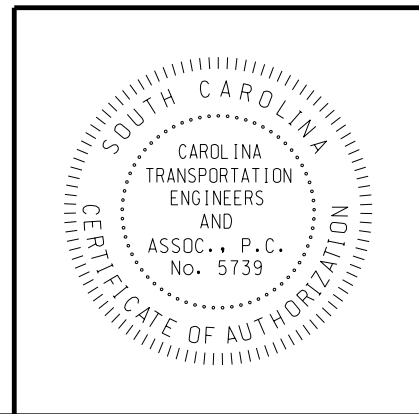
TYPICAL SECTION (SPAN 'B')

DECK DRAINS NOT SHOWN.

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REV.	DATE	BY	CHK.	DATE	DESCRIPTION OF REVISION

QUAN.	DATE	BY	CHK.	DATE



CarolinaTEA

Carolina Transportation Engineers & Associates, PC

SOUTH CAROLINA

DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION

COUNTY: SPARTANBURG

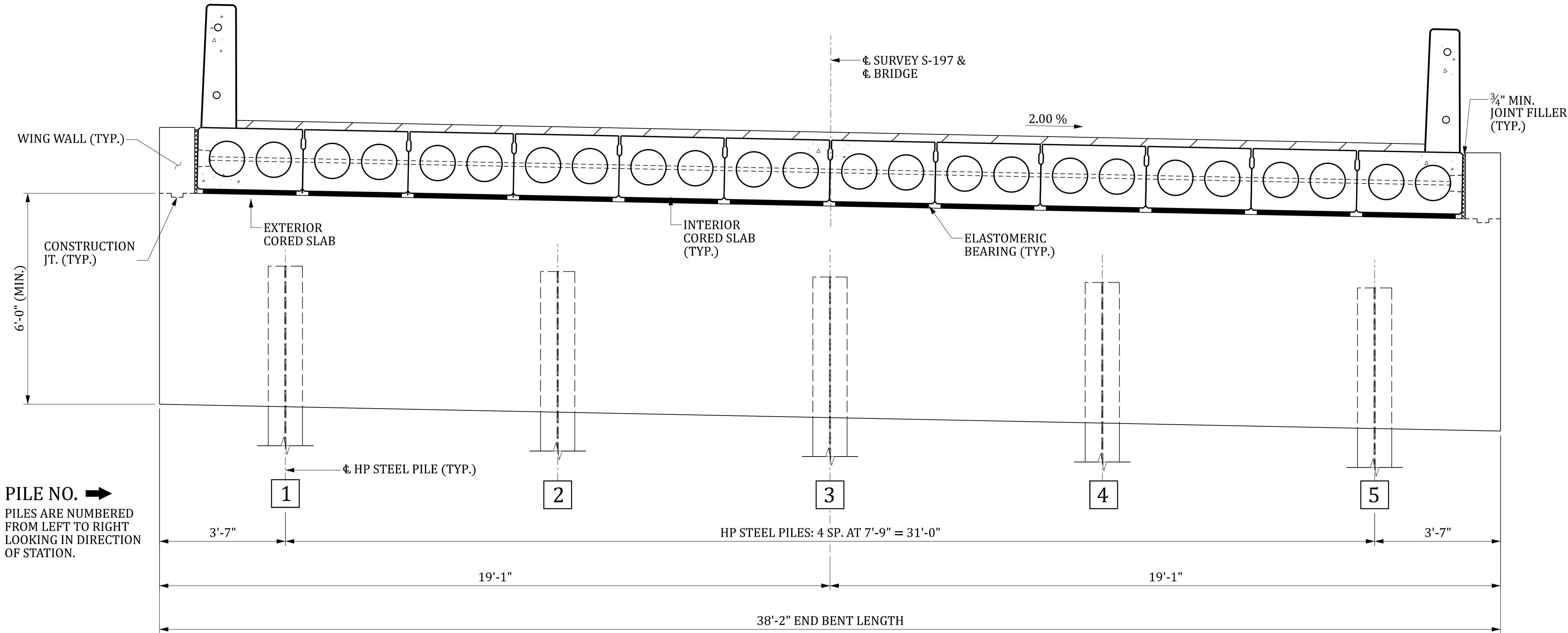
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REV.					

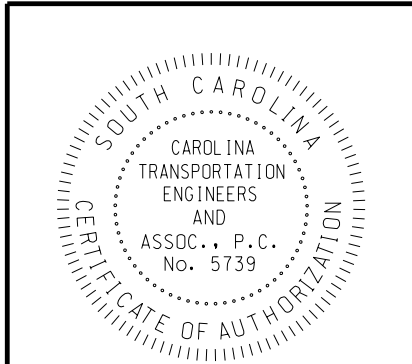
QUAN.					

BY	CHK.	DATE	DESCRIPTION OF REVISION



ELEVATION AT END BENTS

(SUPERSTRUCTURE DETAILS AND DIMENSIONS NOT SHOWN, SEE TYPICAL SECTION SHEET FOR DETAILS.)



CarolinaTEA

Carolina Transportation Engineers & Associates, PC

SOUTH CAROLINA

DEPARTMENT OF TRANSPORTATION

END BENT DETAILS

COUNTY: SPARTANBURG

ROUTE: S-42-197

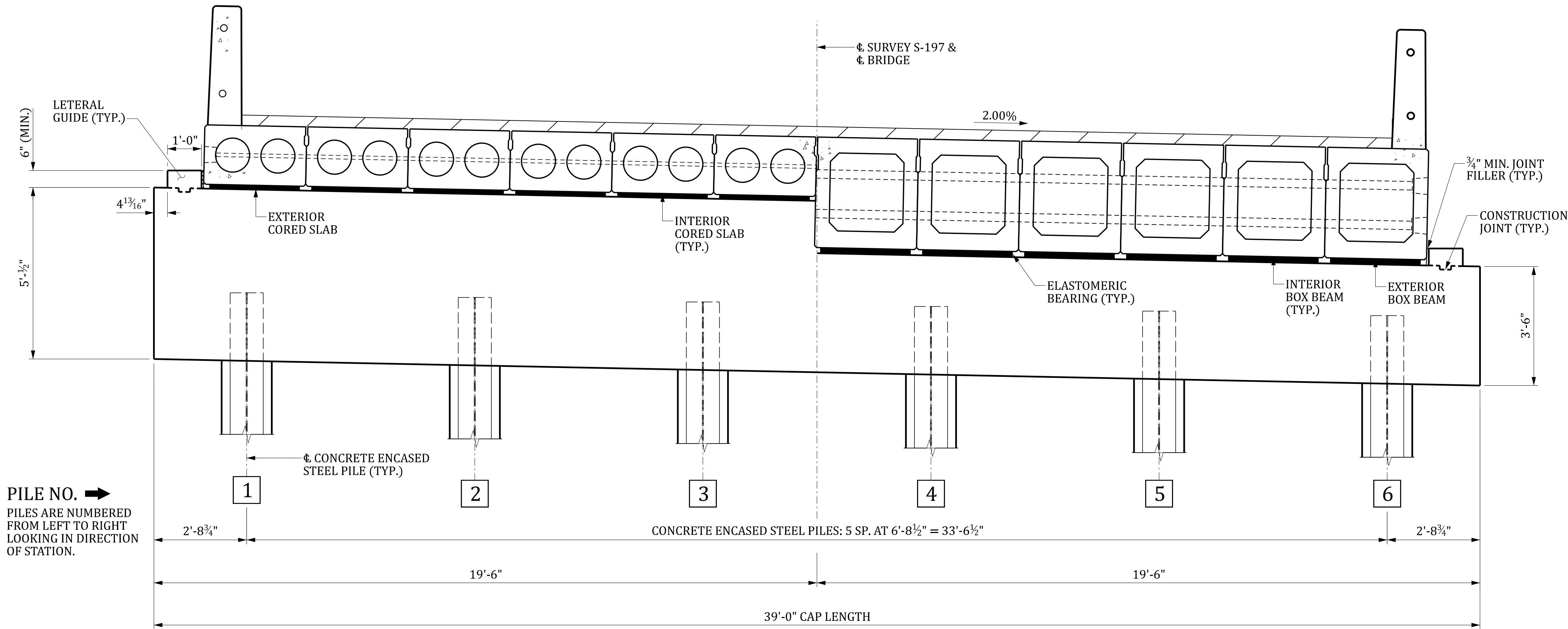
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REV.					

QUAN.					

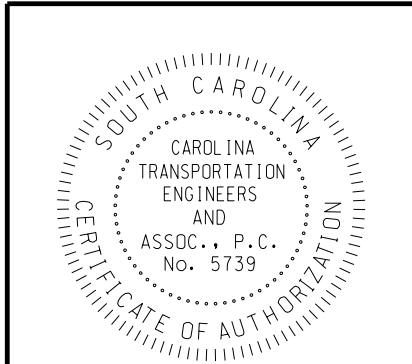
REV.					

QUAN.					



ELEVATION AT INTERIOR BENTS

(SUPERSTRUCTURE DETAILS AND DIMENSIONS NOT SHOWN, SEE TYPICAL SECTION SHEET FOR DETAILS.)



CarolinaTEA

Carolina Transportation Engineers & Associates, PC

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION

INTERIOR BENT DETAILS
ELEVATION VIEW

COUNTY: SPARTANBURG

ROUTE: S-42-197

Appendix A3: CPM Schedule



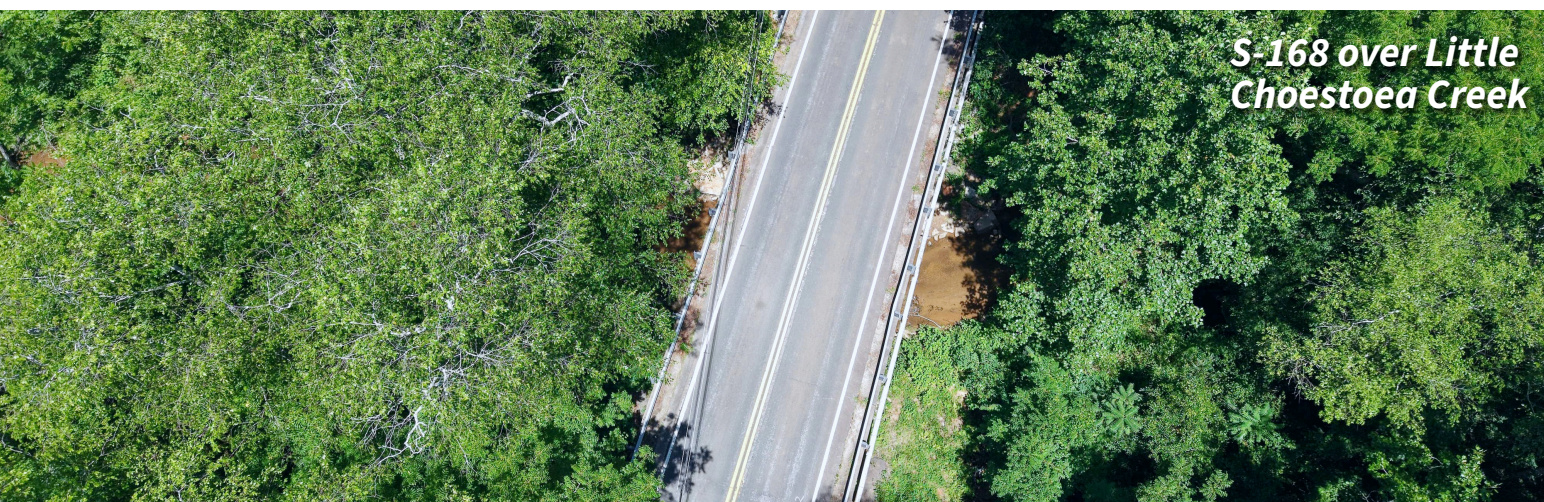
S-197 over S. Tyger River



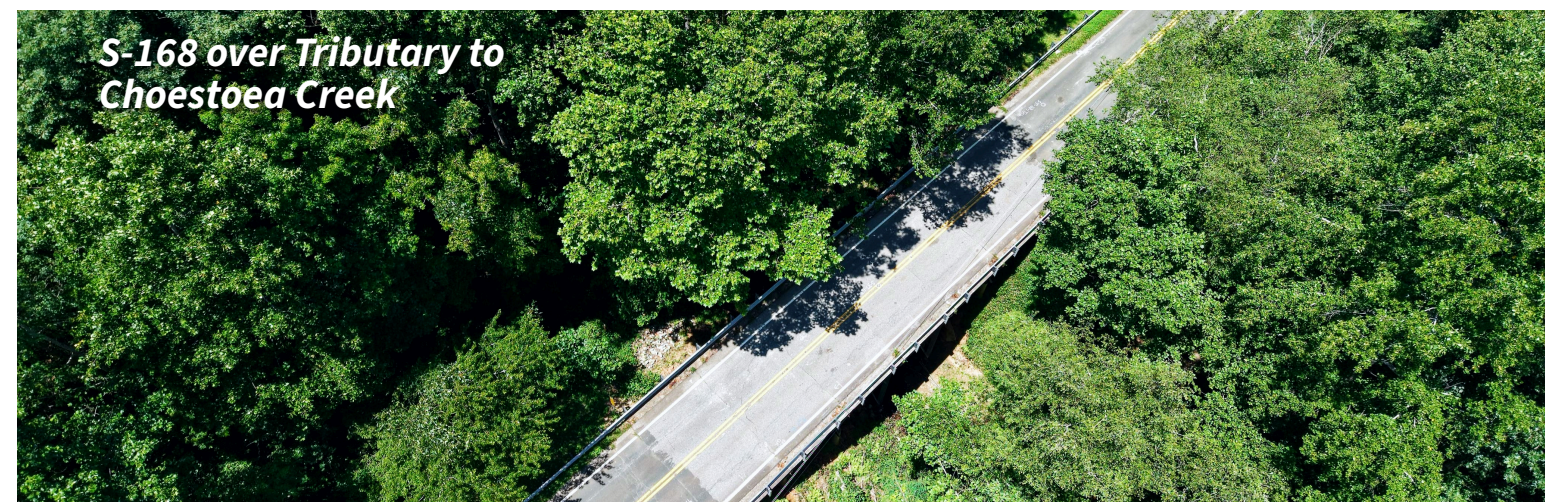
S-133 over Little Cane Creek









S-51 over Snow Creek



*S-168 over Little
Choestoea Creek*



*S-168 over Tributary to
Choestoea Creek*

 Remaining Level of Effort  Actual Level of Effort	 Actual Work  Remaining Work	 Critical Remaining Work  Milestone	Page 1 of 5	Data Date: 01-01-26	5368980 Bid Schedule - Bridge Package 21 Palmetto Infrastructure, Inc. - Summary
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Remaining Level of Effort Actual Work Critical Remaining Work Actual Level of Effort Remaining Work Milestone	Page 2 of 5	Data Date: 01-01-26	5368980 Bid Schedule - Bridge Package 21 Palmetto Infrastructure, Inc. - Summary
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FABRICATION
FABRICATION TO START AFTER RFC
PLANS ARE COMPLETE

Remaining Level of Effort Actual Work Critical Remaining Work Actual Level of Effort Remaining Work Milestone	Page 4 of 5	Data Date: 01-01-26	5368980 Bid Schedule - Bridge Package 21 Palmetto Infrastructure, Inc. - Summary
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SUBSTANTIAL COMPLETION
WILL BE ACHIEVED AT LEAST 5 MONTHS
EARLIER THAN REQUIRED BY THE RFP

Appendix B Forms



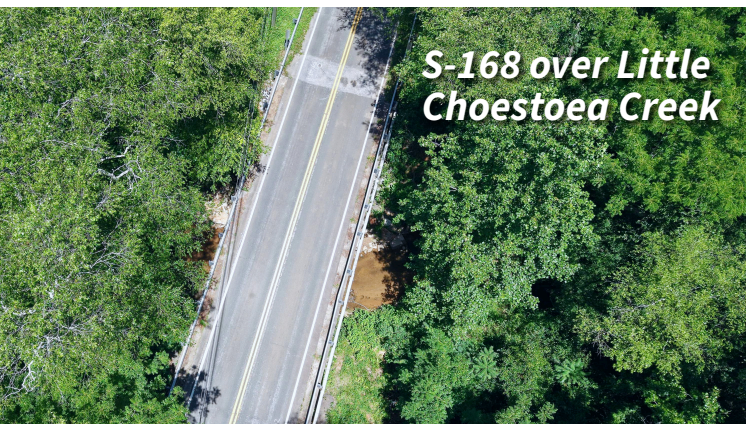
S-197 over S. Tyger River



S-133 over Little Cane Creek



S-51 over Snow Creek



*S-168 over Little
Choestoea Creek*



*S-168 over Tributary to
Choestoea Creek*

12. STIPEND ACKNOWLEDGEMENT FORM**Stipend Acknowledgement Form****Bridge Package 21
Oconee and Spartanburg Counties**Proposer: Palmetto Infrastructure, Inc.ADDRESS: 3620 Pelham Rd. PMB 349 Greenville, SC 29615

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.

11-28-25
DatePalmetto Infrastructure, Inc.
ProposerGreg Canniff
Print Name

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 ____ day of _____, 20__, by and between the SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION (hereinafter "SCDOT"), and Palmetto Infrastructure, Inc. ("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.

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 11/27, 20 25 .

Signed: 

(Officer/PROPOSER)

Title: President

Company: Palmetto Infrastructure, Inc

Address: 3620 Pelham Rd. PMB 349

Greenville, SC 29615

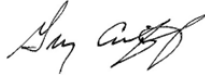
Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)), and must be submitted by PROPOSERS only in connection with contracts which are subject to the equal opportunity clause. Contracts that are exempt from the equal opportunity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

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 11-27-25
(Date)

Signed: 
(Officer/Proposer)

President

(Title)

3620 Pelham Rd. PMB 349

(Address)

Greenville, SC 29615

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

11-27-25

Date

Greg Canniff

Printed Name

For: Palmetto Infrastructure, Inc.
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

11-27-25

Date

Greg Canniff

Printed Name

For: Palmetto Infrastructure, Inc.

Design-Build Team Name

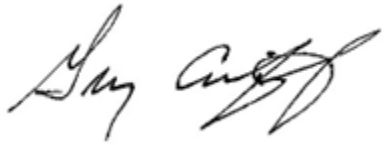


Contract ID 5368980

Organization Chart Updates

The following updates have been made to the Organizational Chart:

None



Gregory Canniff

President

11-27-25

Notary: Gwendolyn Goodwin



For: State of South Carolina

Expiration Date: September 13, 2033

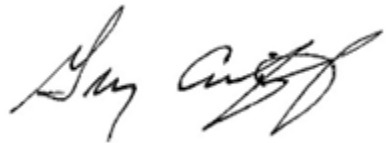
Notarized this 27th day of November 2025

Contract ID 5368980

Confidential and/or Proprietary Information Page List

The following section of this proposal is considered confidential and should not be disclosed under the South Carolina Freedom of Information Act:

None

A handwritten signature in black ink, appearing to read "Greg Canniff", written in a cursive style.

Gregory Canniff

President

11-27-25



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

PALMETTO INFRASTRUCTURE, INC.

Vendor ID:

1PA056

Date Issued:

March 25, 2025

Expiration Date:

April 30, 2026

Approved By:

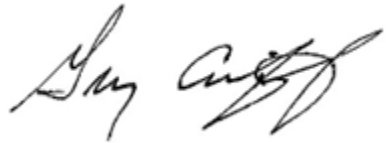
A handwritten signature in black ink is written over a horizontal line. The signature is stylized and appears to be "B. J. [unclear]".

Prequalification and Contracts Coordinator

Contract ID 5368980

Joint Venture Operational Agreement

Not Applicable.

A handwritten signature in black ink, appearing to read "Greg Canniff", written in a cursive style.

Gregory Canniff

President

11-27-25

Number	Description	Added Value/Benefits	Cost/Schedule Impacts	Self-imposed Assurance
1	FATC 01 and FATC 02 allows bridges to be shortened as compared to the Concept Plans.	Reduced bridge length directly reduces future maintenance and utility impacts. Total bridge length is reduced 198 ft (25%) as compared to Conceptual Plans.	Reduces initial construction and utility costs as incorporated in the bid. Future maintenance of bridge is reduced. Future maintenance savings is estimated to be \$500,000 over the life of the 5 bridges.	Technical proposal plans incorporate FATC 01 & 02. Additional bridge length costs will be covered by contractor.
2	FATC 04 allows the low chord for S-51, S-133 and S-197 to be lower than the existing low chord.	Lowering the low chord reduces fill, shortens guardrail, and reduces impacts to ROW, utilities and wetlands.	Reductions to earthwork, utility relocations, ROW acquisition and project limits will save \$2 million. Future maintenance is reduced with less slopes to maintain and reduced guardrail. Estimated savings is \$150,000.	Technical proposal plans incorporate FATC 04 at S-51 and S-133. S-197 is controlled by 100 yr HWEL. Additional costs for raising the profile will be covered by Contractor.
3	S-133 utility conflicts with the high voltage power lines (during and after construction) were demonstrated to SCDOT with potential solutions. CTEA's discussion with SCDOT led to a reduction to the design speed for vertical curves at S-133 over Little Cane Creek	Reducing vertical geometry design speed eliminates the vertical conflict with the lower power lines and the need to replace the bridge via off alignment replacement or make significant cuts into probable rock. This change saves ROW, wetland impacts, reduces utility relocations and provides for cost and schedule certainty.	Eliminating the relocation of this utility line saves SCDOT \$3 million in cost (2 self supporting steel poles, foundations, ROW, wetland mitigation and engineering costs) and 30 months (over 900 days) in schedule.	Technical proposal plans incorporate the reduced vertical curve design speed (20 mph) which exceeds existing (15 mph) as allowed by RFP. CTEA and PII will continue to identify and resolve utility conflicts with SCDOT to avoid this relocation.
4	S-168 over Choestoea Creek Trib, S-51 over Snow Creek and S-133 over Little Cane Creek use integral prestressed concrete girder (PCG) bridges with reinforced concrete deck.	PCGs with reinforced concrete deck are more robust and require significantly less maintenance than cored slabs / box beam bridges as allowed by the RFP. S-51 over Snow Creek is especially beneficial as this site has a higher truck traffic percentage.	Initial cost savings is included in items 1 and 2 above, reducing the initial bridge replacement costs by an estimated \$5 million. Future maintenance savings of the three bridges is estimated to be over \$750,000 over the lifespan of the bridges in resurfacing and other repairs. Additionally, the estimated lifespan of the bridge is increased.	Technical proposal plans incorporate PCG at S-168 over Choestoea Creek Trib, S-51 over Snow Creek and S-133 over Little Cane Creek.
5	S-168 over Choestoea Creek Trib, S-51 over Snow Creek and S-133 over Little Cane Creek will use single span replacement structures.	Eliminating the interior bents reduces environmental impacts via temporary works needed for construction. The bridges eliminate scour around the interior bent foundations and rafting of debris on the substructure.	Eliminating drilled shaft interior bents saves 40 days per bent on the construction schedule and \$150,000 per bent (realized in bid). Future maintenance for interior bent rafting and scour maintenance is eliminated, saving an estimated \$300,000 over the lifespan of the three bridges.	Technical proposal plans incorporate single span bridges at the three identified sites.
6	Schedule Certainty	Substantial completion will be achieved 5 months early.	Substantial completion will be achieved 150 days early, reducing from 792 days as required by the RFP to 642 days. Using \$2,800 per day LD from the contract, we project a public cost benefit of \$420,000 due to early access to the project corridors.	PII commits to self imposed LDs of \$2800 per day for the revised Substantial Completion Date.

7	Reduction in earthwork and/or balancing the earthwork at sites reduces hauling operations on the local roadway network	Reducing hauling allows the local roadway to remain intact, reducing maintenance and impacts to local traffic.	Reductions in earthwork are incorporated into the bid. Impact to traffic and the local roadways will be realized by SCDOT in maintenance costs.	Technical proposal plans incorporate the reduction in earthwork.
8	Existing driveways are maintained for all sites	Our plan maintains access for every existing driveway within project limits. Traffic will be maintained on all driveways throughout construction.	Profile reductions and elimination of guardrail through our designs allow all driveways to be maintained at no additional cost or schedule impact.	Technical proposal plans incorporate proposed driveways, and allow for the reconnection of existing driveways.
9	Wetland / Stream impacts.	There are no stream impacts in the conceptual plans or CTEA plans for this project. CTEA's designs reduce wetland impacts as follows: 0.080 acres (S-133) 0.016 acres (S-168 Trib) 0.003 acres (S-168)	Cost is reduced by avoiding mitigation fees, schedule is improved by avoiding permits. Both are incorporated into our proposed cost and schedule. Total wetland and stream impacts for CTEA Plan = 0 acres and 0 LF.	Technical proposal plans eliminate the stream and wetland impacts. Contractor will cover any permitting costs or delays in the event the impacts are not eliminated.
10	Total ROW is reduced for the project by 6 Parcels and 1.85 acres.	The # of parcels impacted is reduced by 25% and the amount of ROW is reduced by 44% as compared to the Conceptual Plans provided.	SCDOT ROW acquisition costs are reduced by approximately 1/2 of the Conceptual Plans.	Technical proposal plans incorporate ROW reductions. Further reductions may be realized in Final Design. CTEA will pay for acquisition costs for additional parcels.
11	No joint between roadway and non-mow strip. CTEA discussions with SCDOT led to modification of RFP to extend AWS overlay to the Project limit where non-mow strip ends.	Eliminates the joint created between the non-mow detail and existing roadway that would trap and allow water to penetrate the pavement structure creating maintenance issues.	Additional overlay costs are included in bid. SCDOT will realize reduced maintenance costs with this detail, estimated at \$50,000 worth of patching each site for a total of \$250,000	Technical plans incorporate this detail.
12	S-168 bridge over Choestoea Creek will be designed for utility loads similar to the S-197 over South Tyger River.	CTEA will design both bridges to carry the waterline load so if the utility is allowed to reattach - there will be no additional design work needed. This will be performed at S-168 over Choestoea as well as S-197 over Tyger River, which is required by the RFP.	Schedule will benefit from eliminating rework. SCDOT will realize a cost savings on the utility relocation if a reattachment is allowed in lieu of a directional bore requirement. The presence of rock will increase this cost. SCDOT's estimated cost savings is over \$600,000 at each site for a total of \$1,200,000.00	Design will include utility loads so no additional cost or schedule impacts will be realized by the utility relocation decisions.

Appendix C

Formal Alternative Technical Concepts



Formal ATCs - Final Determination

Date Received: 28-Oct

Date Reponse Sent: 4-Nov

Palmetto			SCDOT		Final?
ATC No.	Primary Discipline	Concept	Response	Justification	
1	Hydrology	Modifying minimum bridge lengths for all sites.	Approved		Yes
2	Hydrology	Modify minimum channel span for S-168_Choestoea Creek	Approved		Yes
3	Hydrology	Place proposed end bents at or in front of existing end bents for all sites except S-168_Choestoea	Approved		Yes
4	Hydrology	Request to lower low chord for non PCDM-11 bridges	Approved		Yes
5	Pavement	Leave existing pavement structure in place	Not Approved	Not equal or better.	Yes
6	Structures	Use of catch basins instead of flumes for S-51 over Snow Creek EB2 and S-133 over Little Cane Creek EB2	Approved		Yes
7	Structures	Use of encased steel piles. The pile bents will be used for average span lengths of 75' or less	Approved		Yes
8	Hydrology	Match existing slope (1.5:1) for the theoretical projected slope below bench at S-168 Trib	Addendum	Addendum will address this.	Yes
9	Structures	Request to deepen end bent caps at S-133	Approved		Yes
10	Roadway	Reduce roadway design criteria at S-133 for design speed from 35 to 20 (25 max)	Addendum		Yes



Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21 Design-Build Project

Project ID: 5368980

ATC No.: 1

Priority: High

Team: PII_CTEA

Date: 10/28/25

Description (required):

DB Team requests to use performance based criteria (required freeboard over design highwater, maximum backwater, no bents in channel, match existing toe of slope, etc) to engineer a solution to meet the bridge replacements while maximizing the abilities of our team.

DB Team requests to modify the minimum bridge length shown in Attachment B and conceptual plans as follows:

S-168 Choestoea Creek:	Required length = 100 ft	Requested minimum length = 90 ft
S-168 Choestoea Creek Trib:	Required length = 160 ft	Requested minimum length = 103 ft
S-197 Tyger River:	Required length = 210 ft	Requested minimum length = 200 ft
S-51 Snow Creek:	Required length = 140 ft	Requested minimum length = 100 ft
S-133 Little Cane Creek:	Required length = 200 ft	Requested minimum length = 116 ft

Each bridge is set based on typical SCDOT geometric requirements including:

- abutment setback / bench (10 ft to toe / 5 ft for PCDM-11 bridges) from channel as defined in SCDOT conceptual plans,
- 5 ft max height from superstructure to berm unless modified by FATC 9,
- 2:1 spill through end bents & projected slope except S-168 where steeper slopes are allowed by RFP,
- NO bents in channel as defined in SCDOT conceptual plans,
- 10 ft setbacks to interior bents (drilled piers), 5 ft to interior pile bents; except as allowed by the RFP,
- Minimum span lengths will follow RFP guidance unless modified by FATC 2.

There is no loss of hydraulic opening with the approval of this ATC. Some bridges perform better hydraulically with this approval as interior bents are removed, others are equal to the proposed condition as the proposed bridge length has no affect on the waterway, or other modifications (deepened end bents) will be made to improve the water flow (Tyger River).

Usage:

This ATC will be used at all bridge sites as defined in description. Plans attached.

Deviations (required):

Exhibit 4e Section 2.2.1.7 Bridge Span Configuration

- Limited conceptual work has been performed for each site. Attachment B/Hydrology includes a table of the minimum channel span lengths, the minimum bridge length, and the minimum skew angle (measured from a line perpendicular to the alignment centerline). The lengths take into consideration existing topography and the setback requirements below. Additional span length maybe necessary to meet freeboard and backwater requirements.
- Channel should be fully spanned where possible to avoid the risk of debris.

FATC1 requests to reduce the minimum bridge lengths provided to the lengths as shown above as controlling criteria.

Justification:

Approval of FATC1 supports ALL of SCDOT's stated goals:

Minimization to right-of-way, driveways, and businesses - shorter bridges reduce the ROW requirements from bridge

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21 Design-Build Project

Project ID: 5368980

ATC No.: 1

Priority: High

Team: PII_CTEA

Date: 10/28/25

ends, and may eliminate all ROW takes at one site.

Minimization to utility impacts - direct conflicts with buried utilities at approach slabs are avoided with shortened bridges.

Minimization to environmental impacts - reduction in bridge lengths reduces ROW requirements and project lengths, reducing opportunities wetland impacts. Pile bents will be used at Tyger River in lieu of drilled shafts with this change, which will reduce impacts associated with contractor's access to the interior bents.

Cost Certainty - reduction in bridge lengths reduces ROW requirements and project lengths, reducing opportunities for scope changes and discovery of unknown conditions. Pile bents will be constructed more economically and faster than drilled shaft bents.

No change orders - reduction in bridge lengths reduces ROW requirements and project lengths, reducing opportunities for change orders.

Schedule Certainty - shortening the bridges will eliminate interior bents, significantly improving chances of successfully completing each bridge on schedule and completing the overall project on time. Tyger River interior bents will be completed with pile bents in lieu of drilled shafts.

Schedule:

Interior bents will be eliminated at bridges:

S-168 Choestoea Creek Trib: 1 bent

S-51 Snow Creek: 1 bent

S-133 Little Cane Creek: 2 bents

Pile bents will be used at Tyger River in lieu of drilled shafts.

Superstructures will take more time to construct, but eliminating / modifying interior bents could reduce construction by 6 to 8 weeks for each drilled shaft bent eliminated, and 3-4 weeks where a drilled shaft bent is changed to a pile bent.

Impacts:

There is a reduction to ROW impacts, utility impacts and jurisdictional wetland impacts with this ATC. The toe of slopes along the channel will be the same for all span length revisions. Benches may be altered from the conceptual plans provided, but will maintain standard SCDOT layout practice.

Pile bents will be able to be used in accordance with the RFP for the shortened spans resulting from FATC1.

History:

This same ATC was approved for Package 16 DB. Allowing this FATC will maximize our teams ability to provide quality and innovation.

Risks:

There are no known risks associated with this change.

Costs (required):

Estimated total cost savings may exceed \$4 million for the five bridges combined.

This savings includes reduction in square foot of bridge deck constructed, elimination of interior bents and access to

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21 Design-Build Project

Project ID: 5368980

ATC No.: 1

Priority: High

Team: PII_CTEA

Date: 10/28/25

build the interior bents, and reductions in roadway costs.

Additional cost savings in ROW, wetland mitigation and utility relocation will be realized by SCDOT that are not included in the PII cost savings, including up to \$3 million for utility relocations at S-133 over Little Cane Creek (See FATC10 for more details).

Quality:

Quality is improved as three bridges will utilize single span structures constructed of prestressed concrete girders and CIP bridge decks. Single spans will result in less debris rafting on interior bents, and the girder bridges are more durable than cored slab or box beam bridges.

Operations & Maintenance:

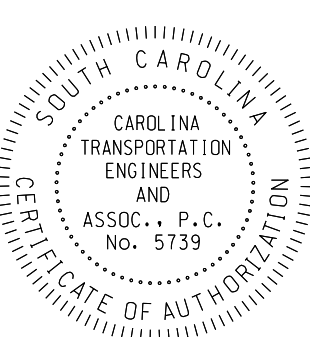
Operations and maintenance will be reduced. Fill slopes in the ROW will be reduced (side slopes along roadway), guardrail length will be reduced and three bridges will be reduced to a single span structure, eliminating rafting on the interior bents.

FED. RD. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	Oconee	041166	S-51	6

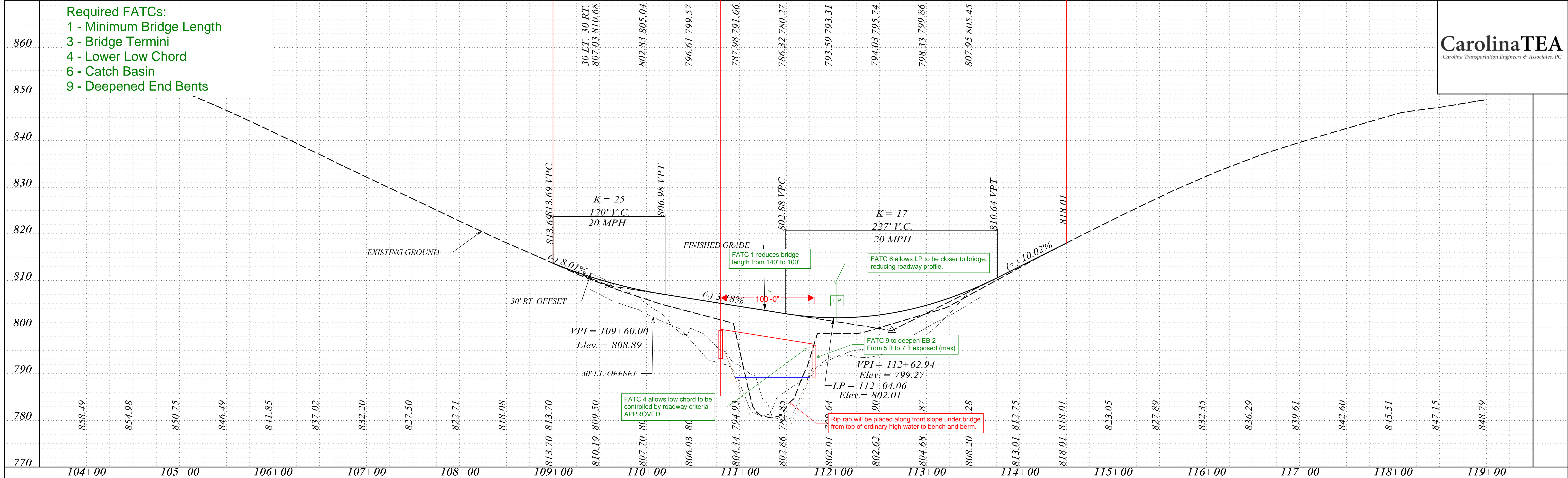
TRAL ELECTRIC COOP. TRANSMISSION LINE
PER DB B309 PG 2

S-51 over Snow Creek
Begin bridge Sta 110+79.50
End bridge Sta 111+79.50
54" FIB with 4" additional haunch at EB2
End Bent Height = 6 ft EB1, 8 ft max EB2
Low point Sta 112+04 (24.5 ft from bridge)

Required FATCs:
1 - Minimum Bridge Length
3 - Bridge Termini
4 - Lower Low Chord
6 - Catch Basin
9 - Deepened End Bents

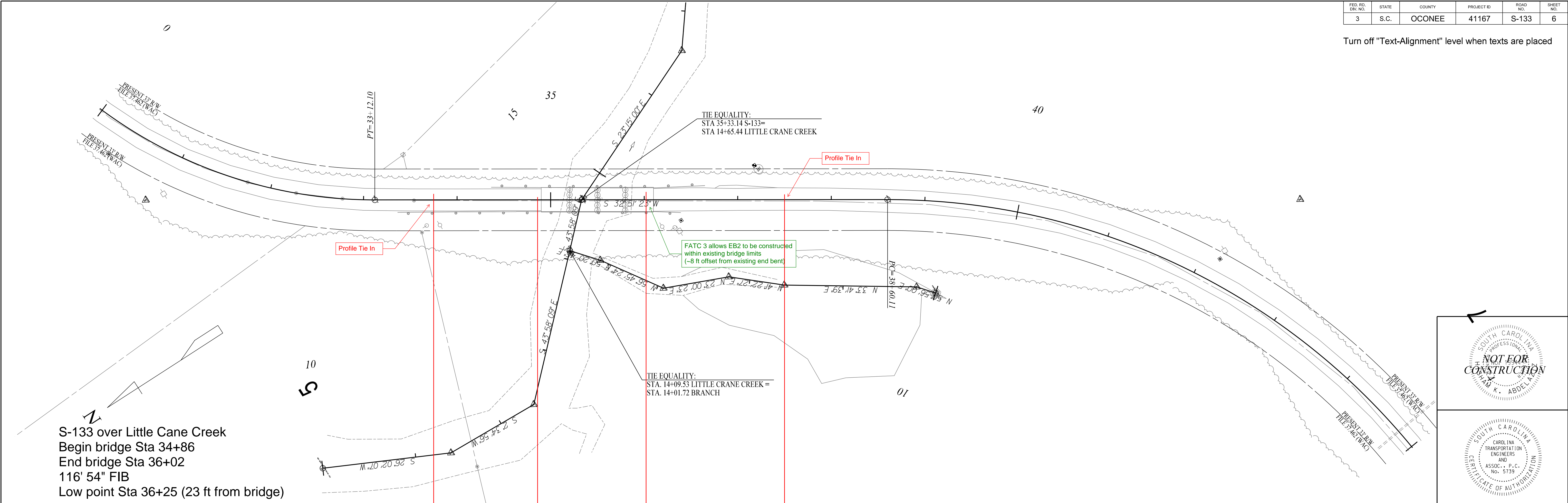


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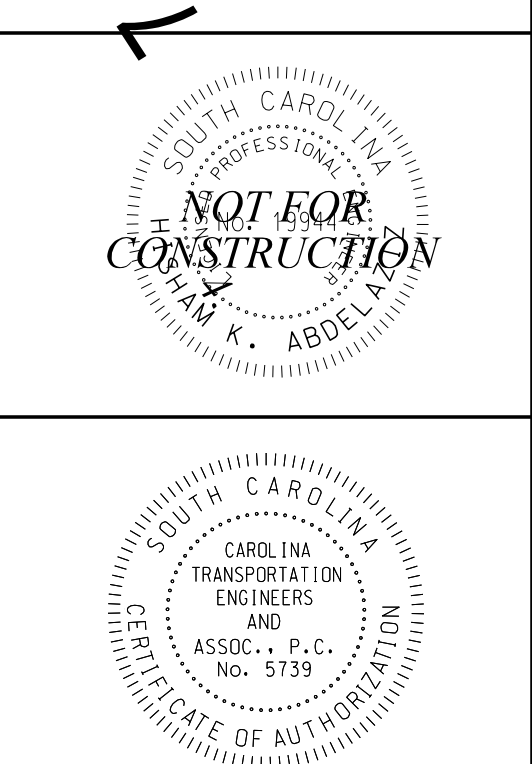
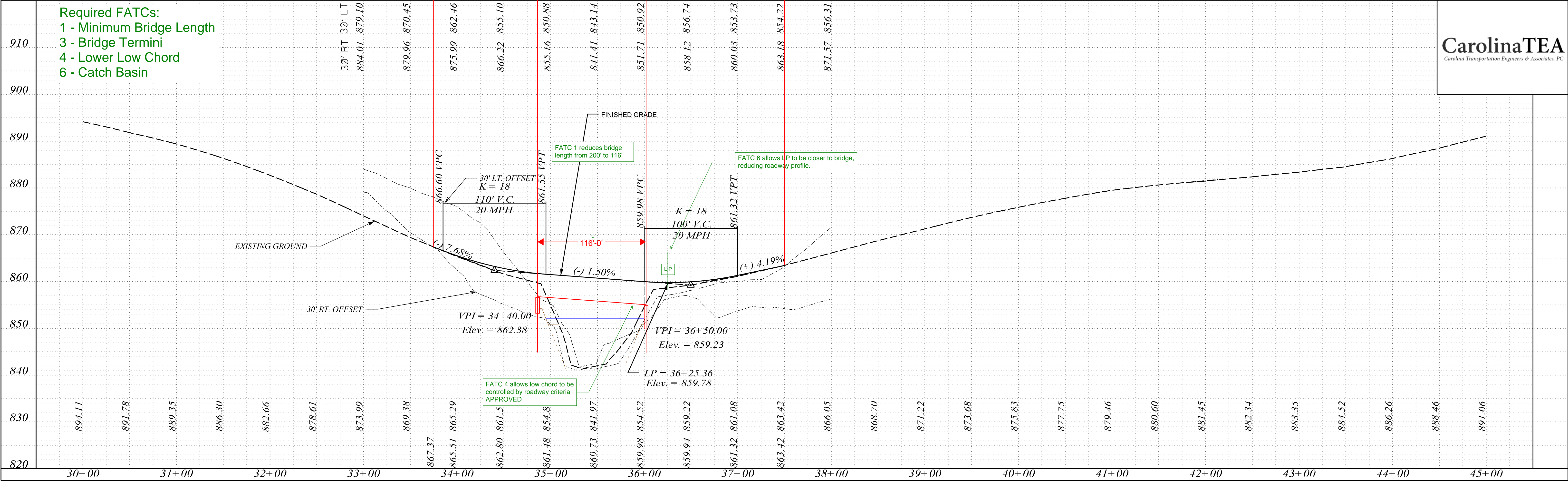
FED. RD. DIST. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	OCONEE	41167	S-133	6

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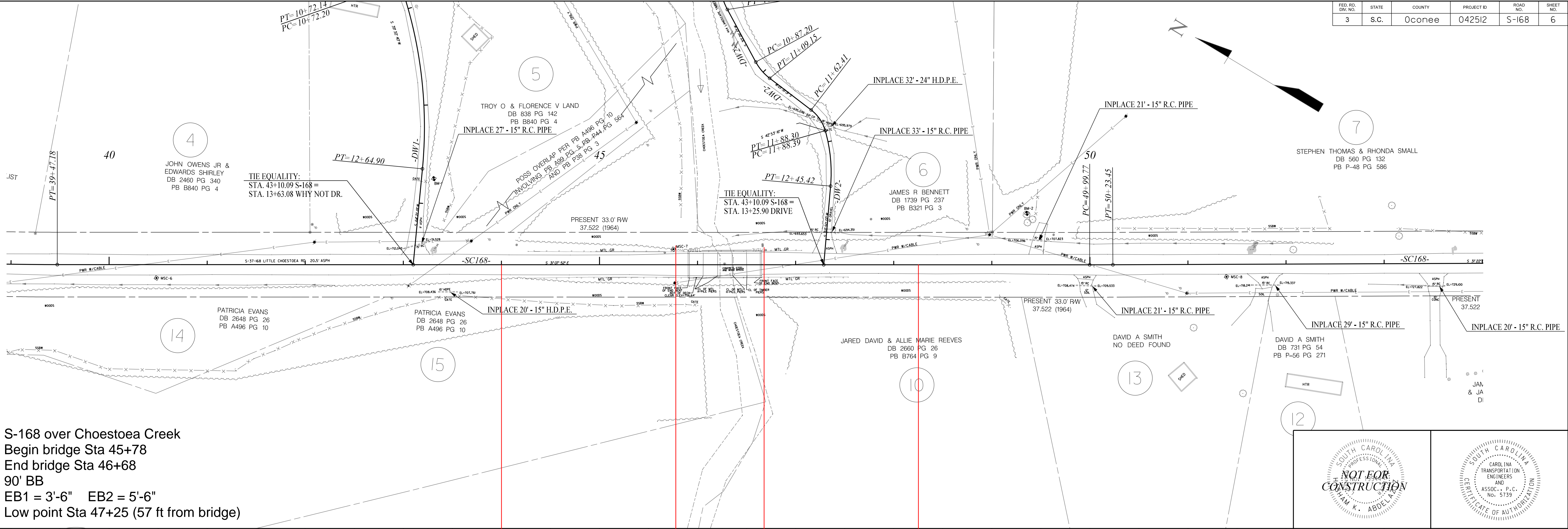


S-133 over Little Cane Creek
Begin bridge Sta 34+86
End bridge Sta 36+02
116' 54" FIB
Low point Sta 36+25 (23 ft from bridge)

Required FATCs:
1 - Minimum Bridge Length
3 - Bridge Termini
4 - Lower Low Chord
6 - Catch Basin

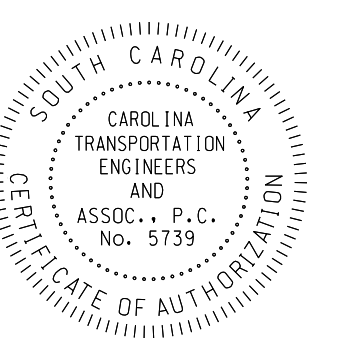
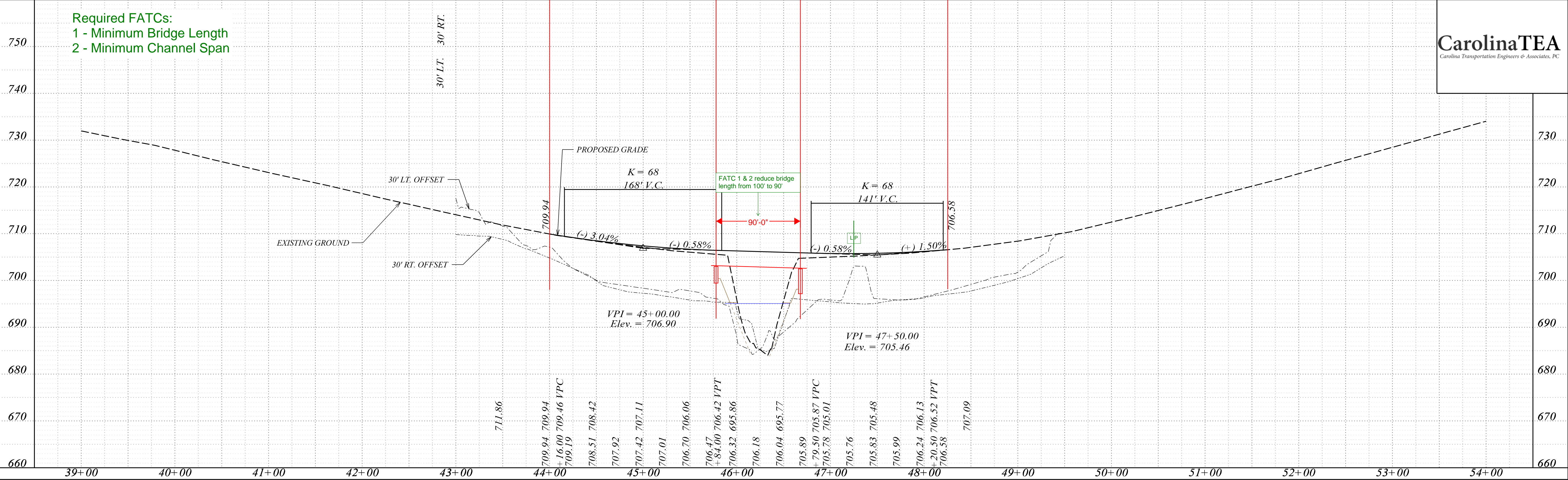


FED. RD. DIST. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	Oconee	042512	S-168	6



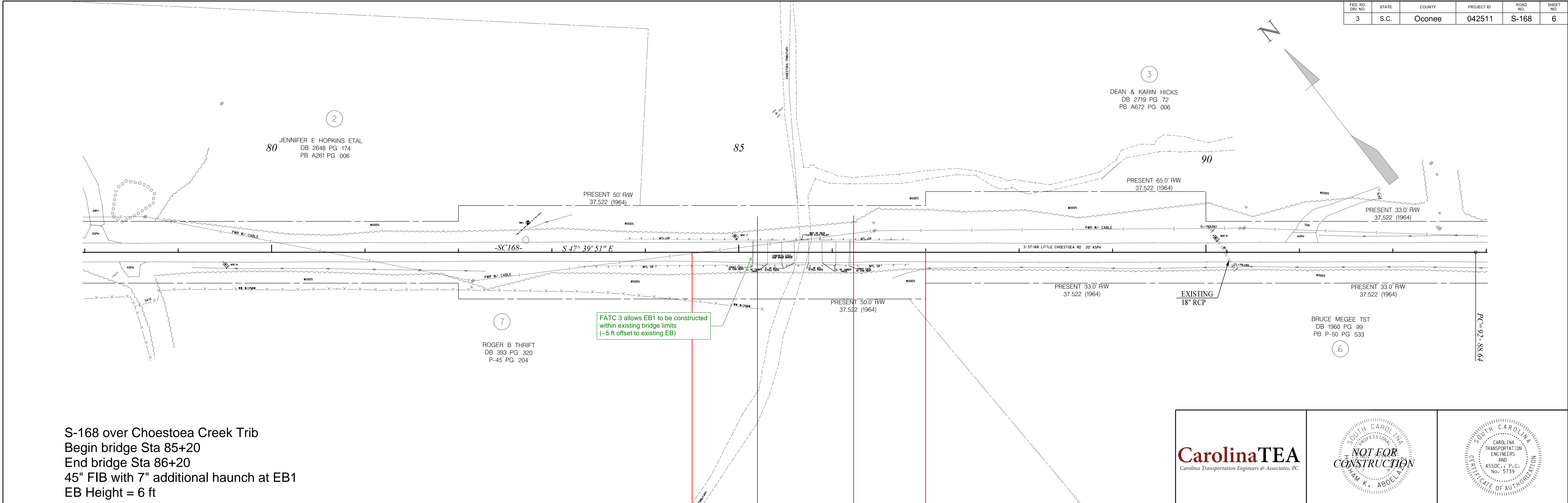
S-168 over Choestoea Creek
Begin bridge Sta 45+78
End bridge Sta 46+68
90' BB
EB1 = 3'-6" EB2 = 5'-6"
Low point Sta 47+25 (57 ft from bridge)

Required FATCs:
1 - Minimum Bridge Length
2 - Minimum Channel Span



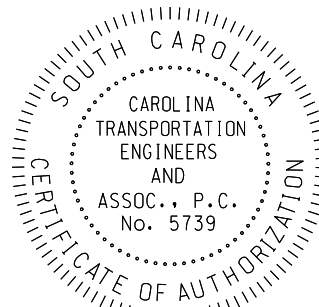
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FED. RD. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	Oconee	042511	S-168	6

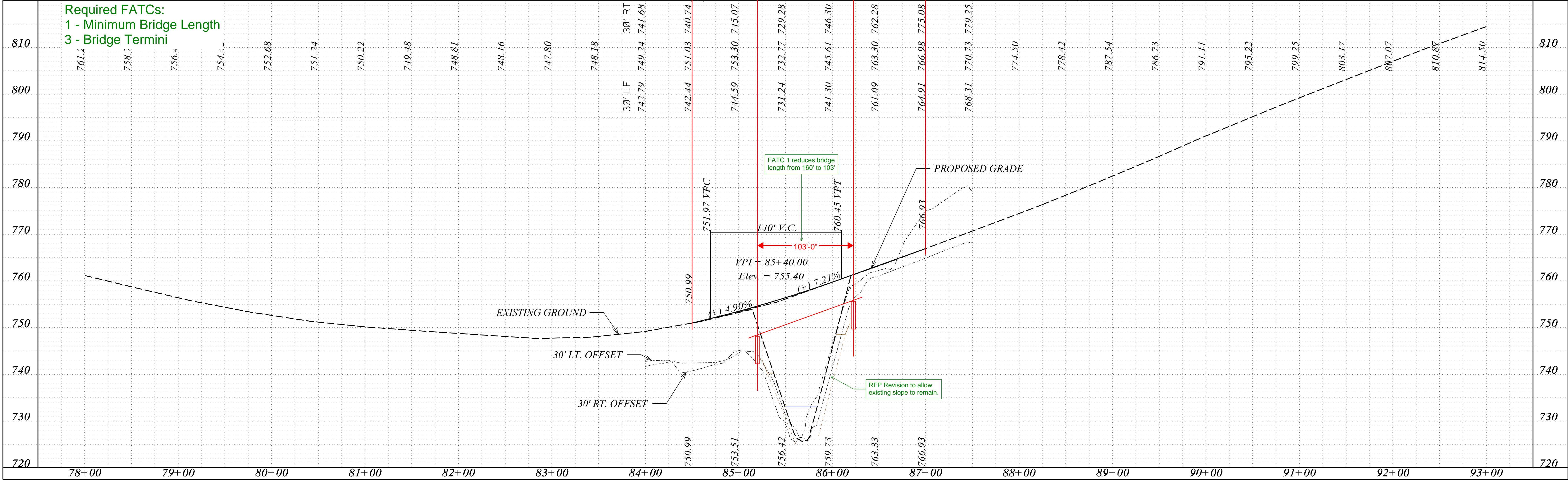


S-168 over Choestoea Creek Trib
Begin bridge Sta 85+20
End bridge Sta 86+20
45" FIB with 7" additional haunch at EB1
EB Height = 6 ft

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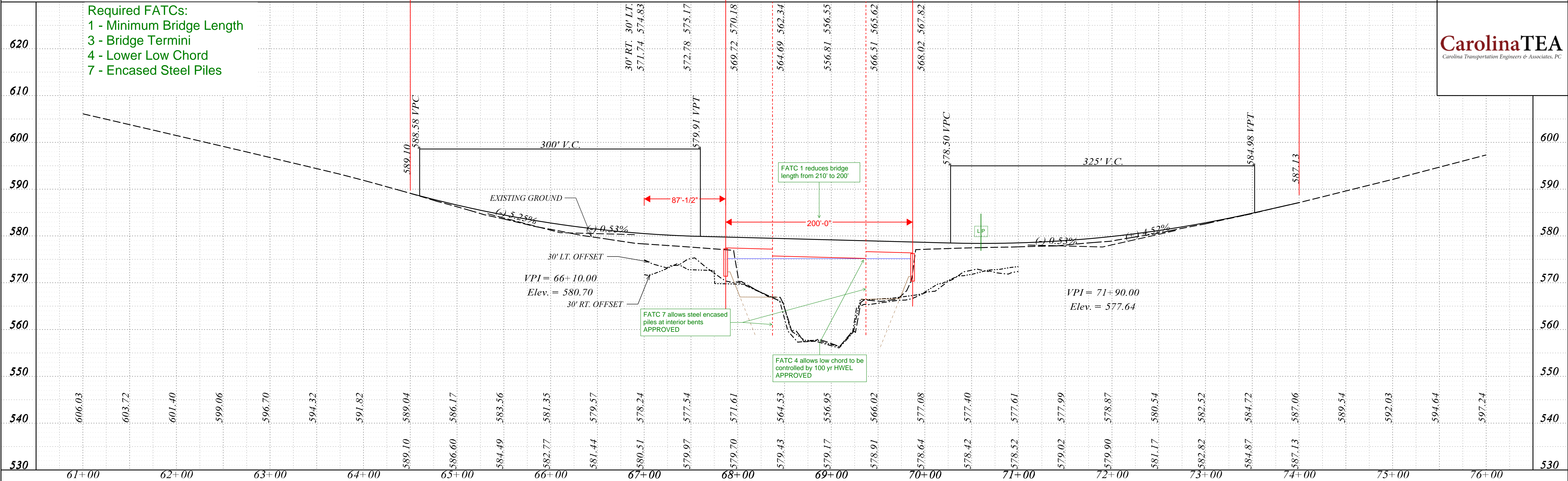
Required FATCs:
1 - Minimum Bridge Length
3 - Bridge Termini



FED. RD. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	Spartanburg	41164	S-197	6

S-197 over Tyger River
Begin bridge Sta 67+87
End bridge Sta 69+87
50' cored slab & 100' box beam
End Bent Height = 6 ft
Low point Sta 70+60 (73 ft from bridge)

Required FATCs:
1 - Minimum Bridge Length
3 - Bridge Termini
4 - Lower Low Chord
7 - Encased Steel Piles



Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21 Design-Build Project

Project ID: 5368980

ATC No.: 2

Priority: Med

Team: PII_CTEA

Date: 10/28/25

Description (required):

DB Team requests to modify the minimum channel span shown in Attachment B and conceptual plans as follows:

S-168 Choestoea Creek: Required length = 100 ft Requested length = 90 ft

Our team developed an alternative to maintain the hydraulic opening and meet geometric requirements, but shorten the bridge and minimum channel span with no negative impacts to the channel. The toe of abutment slope and bench will be similar to the conceptual plans provided. There is no loss of hydraulic opening with the approval of this ATC. The bridge and channel is reduced by using taller end bents, with all changes above the 100 year HWEL.

Anticipated hydraulic data includes:

25 yr HWEL 693.52 with 0.28 ft backwater

100 yr HWEL 695.14 with 0.44 ft backwater

The bridge is set based on typical SCDOT geometric requirements including:

- abutment setback / bench (5 ft for PCDM-11 bridges) from channel as defined in SCDOT conceptual plans,
- 5 ft max height from superstructure to berm,
- 2:1 spill through end bents & projected slope not within the channel,
- NO bents in channel as defined in SCDOT conceptual plans,

The shortening of the bridge allows the driveway at end of bridge left to be offset less than shown on the conceptual plans, keeping all driveway relocation work within the ROW and therefore reducing clearing, grubbing and earthwork.

Usage:

This ATC will be used at S-168 Choestoea Creek only.

Deviations (required):

Exhibit 4e Section 2.2.1.7 Bridge Span Configuration

- Limited conceptual work has been performed for each site. Attachment B/Hydrology includes a table of the minimum channel span lengths, the minimum bridge length, and the minimum skew angle (measured from a line perpendicular to the alignment centerline). The lengths take into consideration existing topography and the setback requirements below. Additional span length maybe necessary to meet freeboard and backwater requirements.
- Channel should be fully spanned where possible to avoid the risk of debris.

FATC2 requests to modify the minimum channel span at one site from 100 ft to 90 ft.

Justification:

Approval of this ATC supports SCDOT's stated goals:

Minimization to right-of-way, driveways, and businesses - ROW will be reduced and driveway at the end of bridge left will have less impact from existing location. All driveway relocation work to remain within SCDOT ROW.

Cost Certainty - 90 ft box beam requires smaller cranes and easier delivery than 100 ft box beam.

No change orders - VE is incorporated in prebid work. Shorter project limits reduce risk of unknowns.

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21 Design-Build Project

Project ID: 5368980

ATC No.: 2

Priority: Med

Team: PII_CTEA

Date: 10/28/25

Schedule Certainty - 90 ft bridge will be constructed slightly faster, especially with roadway profile reductions due to structure height.

Schedule:

Reductions to roadway fill and shortening the bridge improve the contractor's the ability to complete this site on schedule, or early.

Impacts:

There are no negative impacts to the hydraulic performance of the bridge. The toe of slopes is unchanged. No other impacts are recognized.

History:

SCDOT has reduced minimum bridge lengths and channel spans so long as the hydraulic opening was not impacted and there was no adverse impacts to the defined channel.

Risks:

There are no known risks associated with this change.

Costs (required):

Bridge costs can be reduced by shortening the length of bridge. Shorter bridges can use smaller girders / cored slabs and box beams; so the reduction is more than a simple ratio of bridge area. By optimizing the roadway profile, additional savings are realized. We anticipate a savings of more than \$250,000 with this approval.

Quality:

There is no difference in quality with this change.

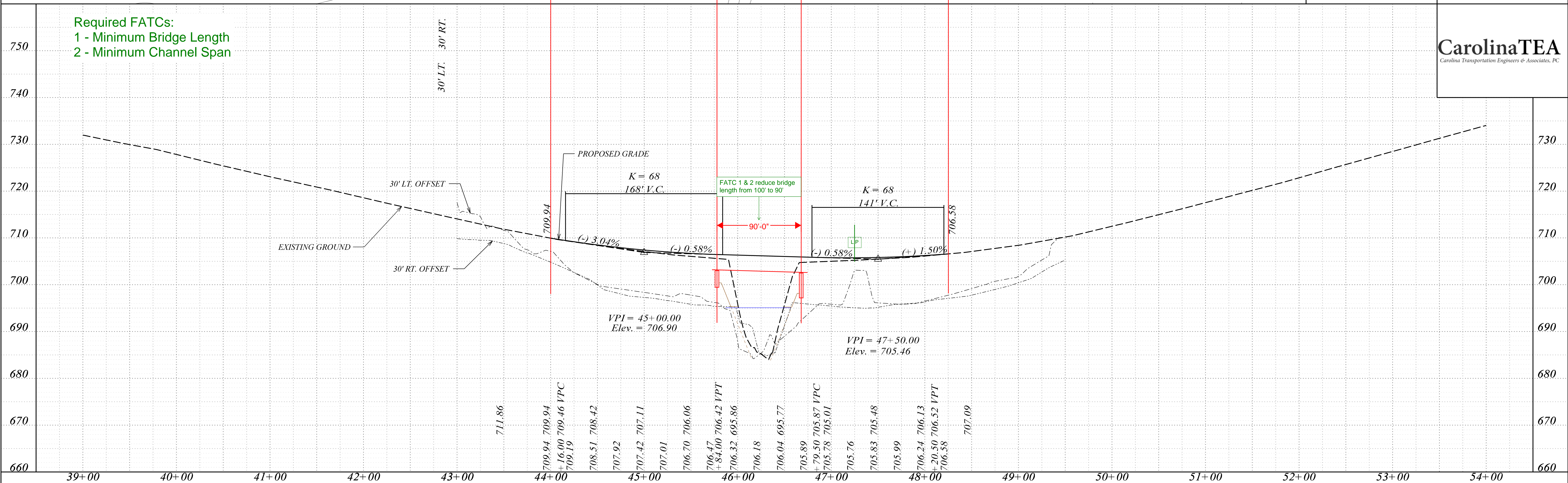
Operations & Maintenance:

Shorter bridges typically result in reduced future maintenance.

S-168 over Choestoea Creek
 Begin bridge Sta 45+78
 End bridge Sta 46+68
 90' BB
 EB1 = 3'-6" EB2 = 5'-6"
 Low point Sta 47+25 (57 ft from bridge)

S-168 over Choestoea Creek
Begin bridge Sta 45+78
End bridge Sta 46+68
90' BB
EB1 = 3'-6" EB2 = 5'-6"
Low point Sta 47+25 (57 ft from bridge)

Required FATCs:
1 - Minimum Bridge Length
2 - Minimum Channel Span



Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21 Design-Build Project

Project ID: 5368980

ATC No.: 3

Priority: Med

Team: PII_CTEA

Date: 10/28/25

Description (required):

DB Team requests to place proposed end bents a minimum of 3 feet in front of existing end bents. PII_CTEA propose to shorten the proposed bridges as compared to existing, so long as hydraulic capacity under the bridge is maintained or improved.

This change allows the proposed profile to be optimized while maintaining the required offset to the low point from end of bridge. Combined with vertical curve on the structure, this change significantly reduces haunch over the girders near the end bent. The bridge can also be shortened, reducing beam length and potentially reducing the size of crane needed.

The hydraulic opening for all sites will be maintained, or improved. The low chord and backwater will meet hydraulic criteria including improving existing performance and all criteria for setting the bridge will be followed.

Approximate distance in front of existing end bents are as follows:

S-168 Choestoea Creek Trib: EB1 is 5 ft

S-197 Tyger River: EB2 is 3 ft.

S-51 Snow Creek: EB2 is 3 ft.

S-133 Little Cane Creek: EB2 is 8 ft.

Remaining end bents will be placed outside the existing bent locations.

Additionally, CTEA_PII noticed the proposed interior bent 2 of Tyger River is in conflict with the existing interior bent. We propose to shift the entire bridge toward EB1 to provide a 3 ft offset between bent centerlines. This revision may reduce the required 5 ft bench width at interior bent 3 slightly. A 3 ft minimum bench will be maintained.

Usage:

This ATC applies to four sites as noted above.

Deviations (required):

Exhibit 4e Section 2.2.1.6 Bridge Ends

Bridge ends shall not be inside the limits of the existing bridge ends (as defined along the centerline of roadway)

HDB 2019-4

1.1.9 Bridge Replacements

The low chord of a replacement bridge should not be below the low chord of the existing bridge, and the bridge ends should not be within the limits of the existing bridge.

We request to eliminate this controlling criteria to the limitations noted in Description above.

The S-51 Snow Creek bench at EB2 is reduced as part of this FATC from 10 ft. We request 6 ft minimum bench but will attempt to get at least 8 ft bench width in the final layout. The distance from top of bank to interior bent 3 at Tyger River is reduced from the 5 ft minimum to 3 ft minimum.

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21 Design-Build Project

Project ID: 5368980

ATC No.: 3

Priority: Med

Team: PII_CTEA

Date: 10/28/25

Justification:

The requirements ensure a proposed hydraulic opening of a bridge replacement exceeds the existing bridge being replaced, but does not consider the additional costs associated when the bridge is controlled by roadway criteria in lieu of hydraulic criteria. We developed replacement solutions at these bridge sites reducing the bridge length while maintaining or improving the hydraulic opening.

Shortening bridges and eliminating interior bents will reduce future maintenance, improve the construction schedule, and reduce construction costs.

Approval of this ATC supports the following SCDOT stated goals:

Minimization to right-of-way, driveways, and businesses - shorter bridges reduce required ROW.

Minimization to environmental impacts - reduction to wetlands at Little Cane Creek

Cost Certainty - VE implemented during pursuit

No change orders - VE implemented during pursuit

Schedule Certainty. Changing drilled shafts to pile bents at Tyger River provides the maximum benefit to schedule.

Schedule:

Reductions to roadway fill, shortening the bridge, eliminating interior bents, and using pile bents in lieu of drilled shafts each improve the contractor's the ability to complete these sites on schedule, or early.

S-133 over Little Cane Creek will benefit the most from schedule as this ATC can assist in avoiding the need to relocate the power lines above by keeping the profile as low as possible, while pushing the low point off the bridge as required. Eliminating the utility relocation at S-133 could reduce the project schedule by 18 months or more.

Impacts:

There is a reduction to ROW and jurisdictional wetlands with this ATC. Hydraulic opening is not adversely impacted by this ATC. All hydraulic criteria will be met.

Utility conflicts at S-133 could be eliminated with this ATC and Addenda - allowing the bridge to be constructed within a 4 month utility window.

History:

SCDOT approved this ATC for DB Bundle 16, reducing impacts, accelerating the schedule and saving money.

Risks:

The primary risk of placing the proposed end bents at or near existing is having foundations in conflict. A 3 ft minimum offset will be implemented to mitigate this risk.

Costs (required):

Bridge lengths can be reduced, interior bents can be eliminated or piles used in lieu of drilled shafts, and roadway profiles can be lowered. ROW acquisition can be reduced and roadway project limits reduced. Each item will reduce the project cost. Anticipated cost reduction is \$300,000.



Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21 Design-Build Project

Project ID: 5368980

ATC No.: 3

Priority: Med

Team: PII_CTEA

Date: 10/28/25

Additional cost savings in ROW, wetland mitigation and utility relocation will be realized by SCDOT that are not included in the PII cost savings.

Quality:

There is no difference in quality with the approval of this ATC.

Operations & Maintenance:

Reductions to bridge length and elimination of interior bents reduces future maintenance.

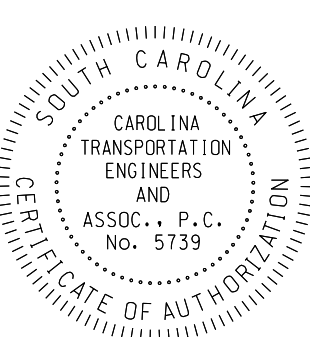


FED. RD. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	Oconee	041166	S-51	6

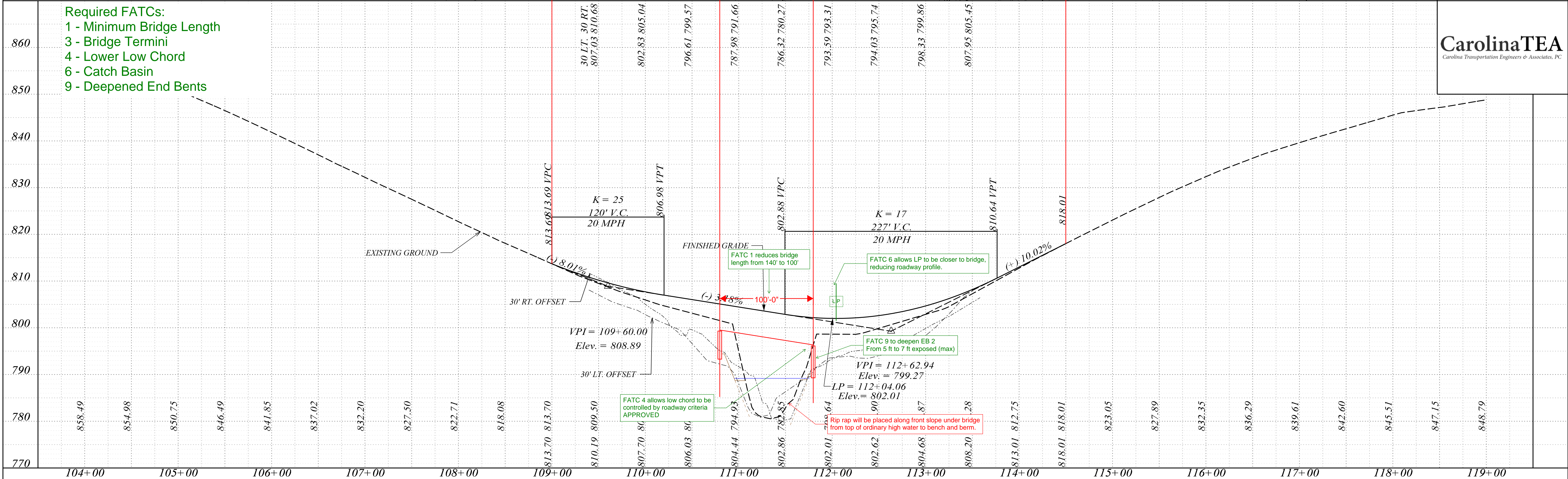
TRAL ELECTRIC COOP. TRANSMISSION LINE
PER DB B309 PG 2

S-51 over Snow Creek
Begin bridge Sta 110+79.50
End bridge Sta 111+79.50
54" FIB with 4" additional haunch at EB2
End Bent Height = 6 ft EB1, 8 ft max EB2
Low point Sta 112+04 (24.5 ft from bridge)

Required FATCs:
1 - Minimum Bridge Length
3 - Bridge Termini
4 - Lower Low Chord
6 - Catch Basin
9 - Deepened End Bents

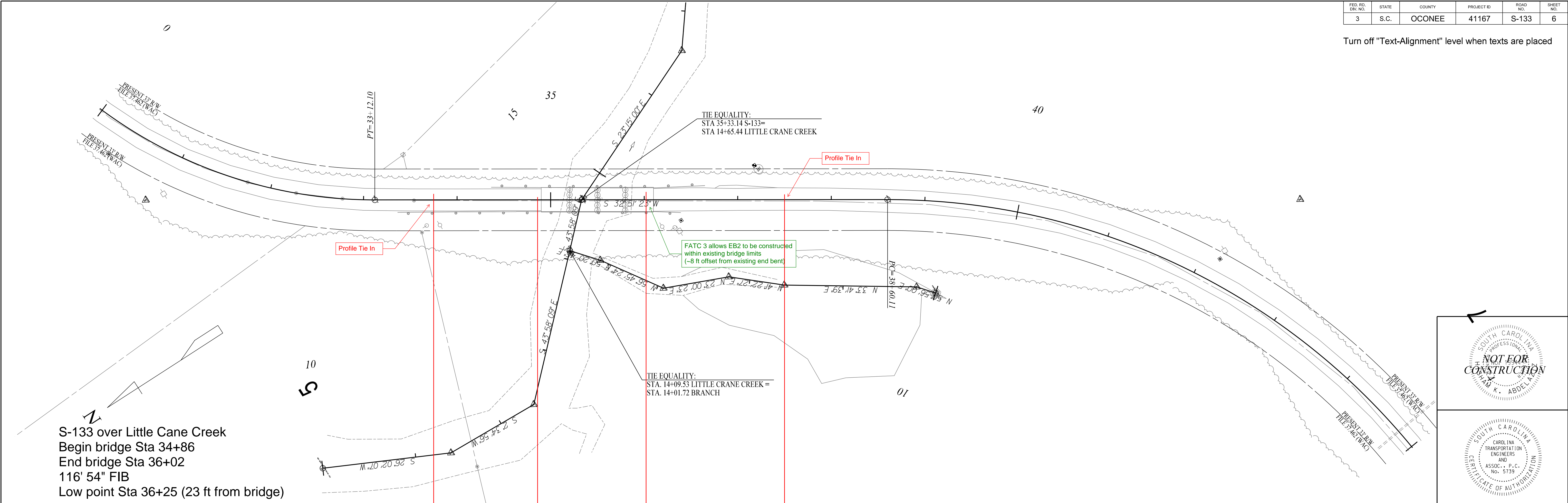


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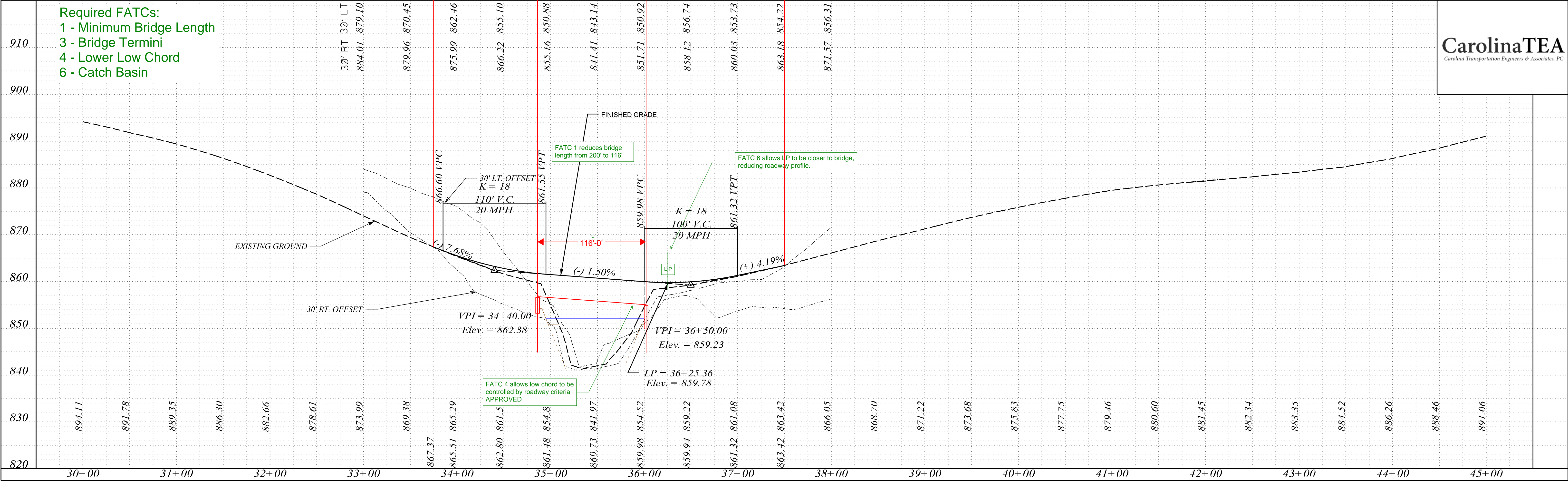
FED. RD. DIST. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	OCONEE	41167	S-133	6

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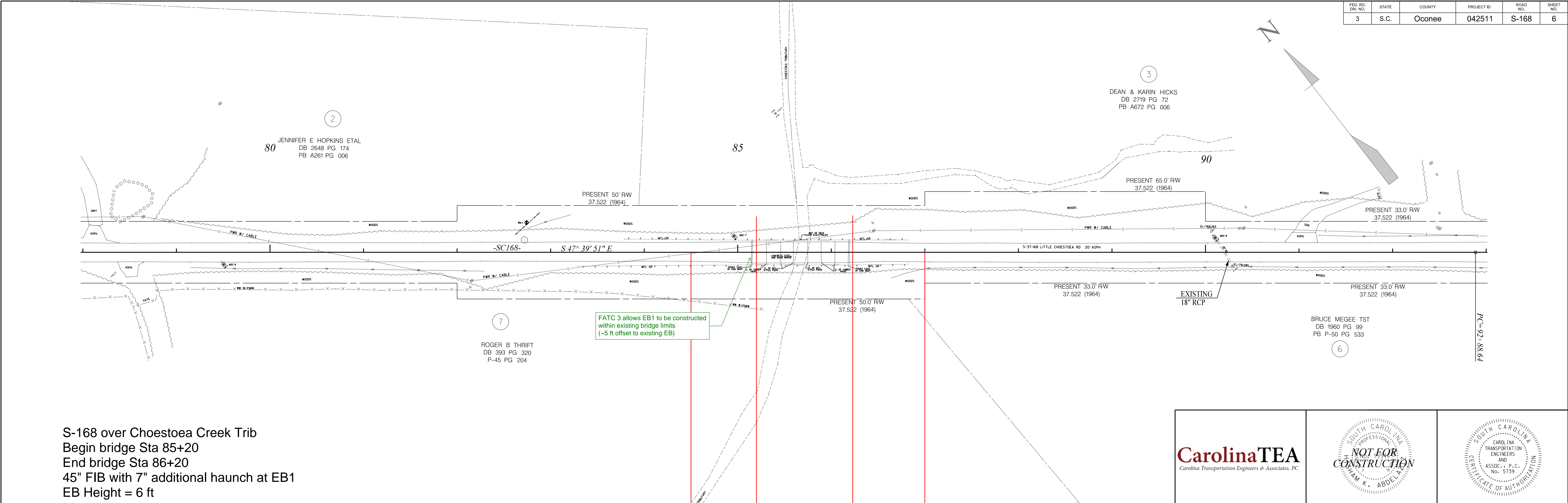


S-133 over Little Cane Creek
Begin bridge Sta 34+86
End bridge Sta 36+02
116' 54" FIB
Low point Sta 36+25 (23 ft from bridge)

Required FATCs:
1 - Minimum Bridge Length
3 - Bridge Termini
4 - Lower Low Chord
6 - Catch Basin

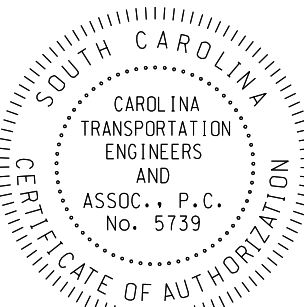
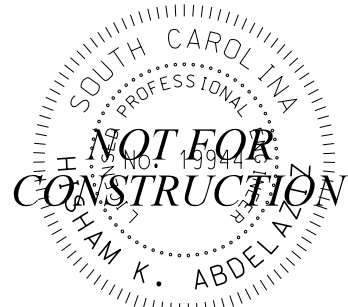


FED. RD. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	Oconee	042511	S-168	6

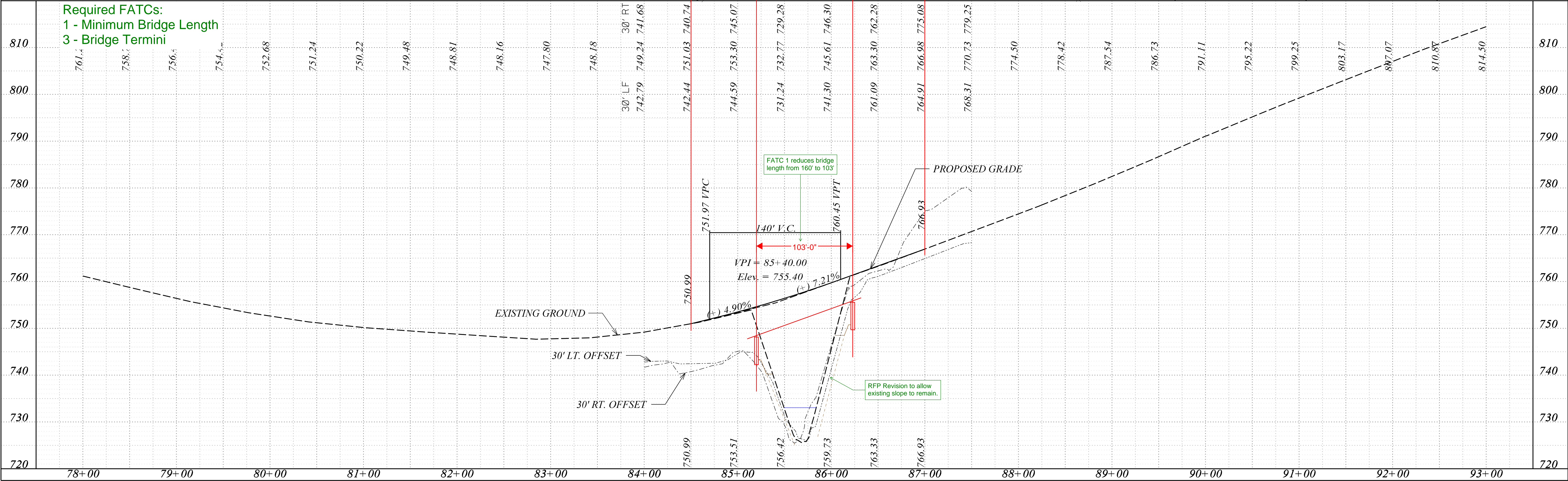


S-168 over Choestoea Creek Trib
Begin bridge Sta 85+20
End bridge Sta 86+20
45" FIB with 7" additional haunch at EB1
EB Height = 6 ft

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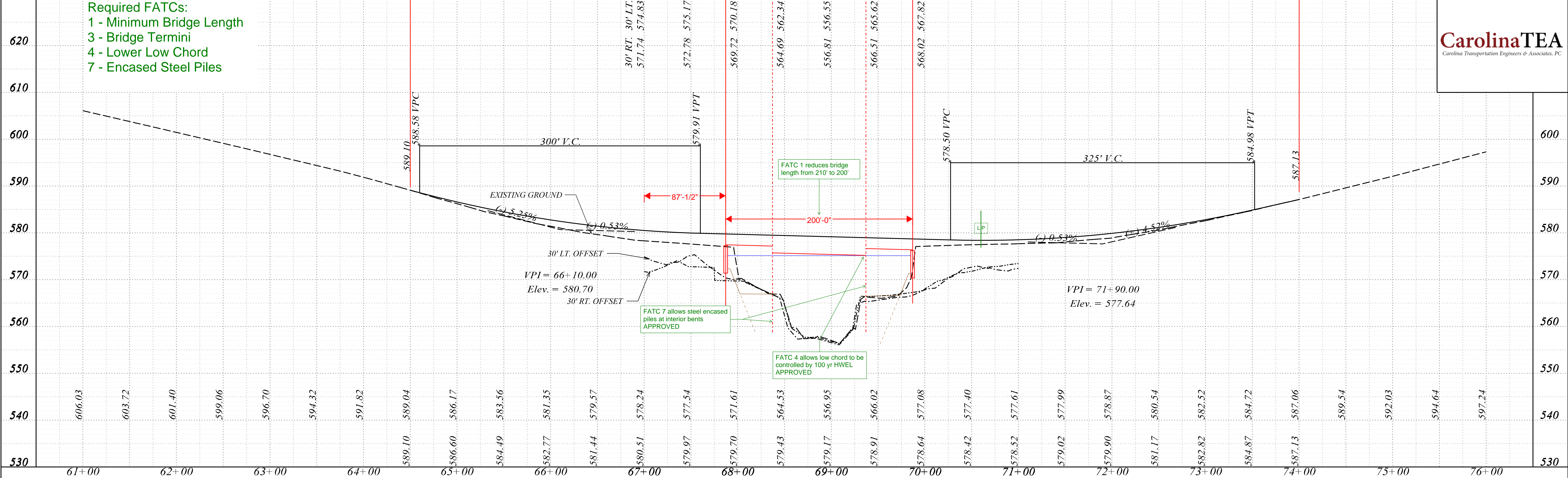
Required FATCs:
1 - Minimum Bridge Length
3 - Bridge Termini



FED. RD. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	Spartanburg	41164	S-197	6

S-197 over Tyger River
Begin bridge Sta 67+87
End bridge Sta 69+87
50' cored slab & 100' box beam
End Bent Height = 6 ft
Low point Sta 70+60 (73 ft from bridge)

Required FATCs:
1 - Minimum Bridge Length
3 - Bridge Termini
4 - Lower Low Chord
7 - Encased Steel Piles



Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21 Design-Build Project

Project ID: 5368980

ATC No.: 4

Priority: High

Team: PII_CTEA

Date:

Description (required):

DB Team requests to lower the low chord for non PCDM-11 bridges (HDB 2019-4 Criteria).

PII_CTEA proposes to verify the hydraulic models and associated highwater elevations (HWEL) at each site. We will compare the Design HWEL + 2 ft freeboard, 100 year HWEL, and ordinary water elevation + 8 ft freeboard for navigable waterways to establish the minimum low chord elevation. It is likely the 100 yr HWEL will control at the Tyger River site.

For S-133 over Little Cane Creek and S-51 over Snow Creek, the low chord will be maintained over the design storm plus freeboard, 100 yr HWEL and even the 500 yr HWEL.

We propose to meet the 100 yr HWEL with the low chord at S-197 over Tyger River. We will lower the low chord by 2 ft maximum at S-133 over Little Cane Creek and 3 ft maximum at S-51 over Snow Creek.

Usage:

S-133 over Little Cane Creek and S-51 over Snow Creek.

Deviations (required):

Exhibit 4e Section 2.2.1.5 Low Chord

The design high-water elevation for evaluating freeboard and determining the minimum low chord elevation shall represent the highest water-surface upstream of the bridge before it begins to drawdown through the bridge. For bridges that do not meet Low Volume Criteria for design, the low chord of a replacement bridge shall not be below the low chord of the existing bridge. See HDB 2019-4 section 1.1.5.3. For Low Volume Criteria project sites, the low chord may be set lower.

This ATC would allow the low chord of the proposed bridge to be lower than the existing bridge.

Justification:

HDB 2019-4 requirements do not account for situations where a bridge is set based on roadway profile requirements and not hydraulic criteria. Eliminating this criteria will help achieve all SCDOT goals for the project.

The requirement to hold the low chord elevation, when SCDOT is routinely increasing span length to remove bents from the channel, elevates roadway profiles without providing hydraulic benefit.

The low chord required to meet the roadway design criteria meets all hydraulic requirements for design year plus freeboard as well as 100-yr pressure flow criteria (and 500 yr free flow).

Schedule:

Approval of this ATC will accelerate the schedule. It will reduce roadway approach work and bridge lengths. Project limits will be reduced.

S-133 over Little Cane Creek will benefit the most from schedule as this ATC can assist in avoiding the need to relocate

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21 Design-Build Project

Project ID: 5368980

ATC No.: 4

Priority: High

Team: PII_CTEA

Date:

the power lines above by keeping the profile as low as possible, while pushing the low point off the bridge as required. Eliminating the utility relocation at S-133 could reduce the project schedule by 18 months or more.

Impacts:

For the calculated HWEL of the design storm plus 2 ft freeboard, 100 yr storm, and even the 500 yr storm, there are no negative impacts for this ATC. The water will flow under the structure in the same way it would if the bridge low chord is higher and the roadway profile is elevated.

History:

Design Variances are noted in the HDB 2019-4 as a way to not use these criteria. Carolina TEA has used design variances on multiple existing traditional projects in South Carolina to reduce this criteria. SCDOT approved a similar ATC on Bundle 16 DB.

Risks:

There are no identified risks associated with this ATC. The bridges will perform hydraulically the same as proposed.

Costs (required):

This approval will allow the low chord to be lowered, and combined with other ATCs, may allow multi-span bridges to be single span, and bridge lengths to be reduced. Cost savings associated with this change could save \$2 million or more.

Additional cost savings in ROW, wetland mitigation and utility relocation will be realized by SCDOT that are not included in the PII cost savings, including up to \$3 million for utility relocations at S-133 over Little Cane Creek (See FATC10 for more details).

Quality:

There is no adverse quality with this ATC. The reduced earthwork may reduce long term settlement, which could improve the quality of construction. Shorter bridges will be girder bridges with concrete CIP decks - a more durable structure than the cored slab and box beam bridges noted in the conceptual plans.

Operations & Maintenance:

There will be no difference in operations of the bridges regarding this ATC.

Maintenance may be better as inspection access under the bridge is improved due to the lowered profile.

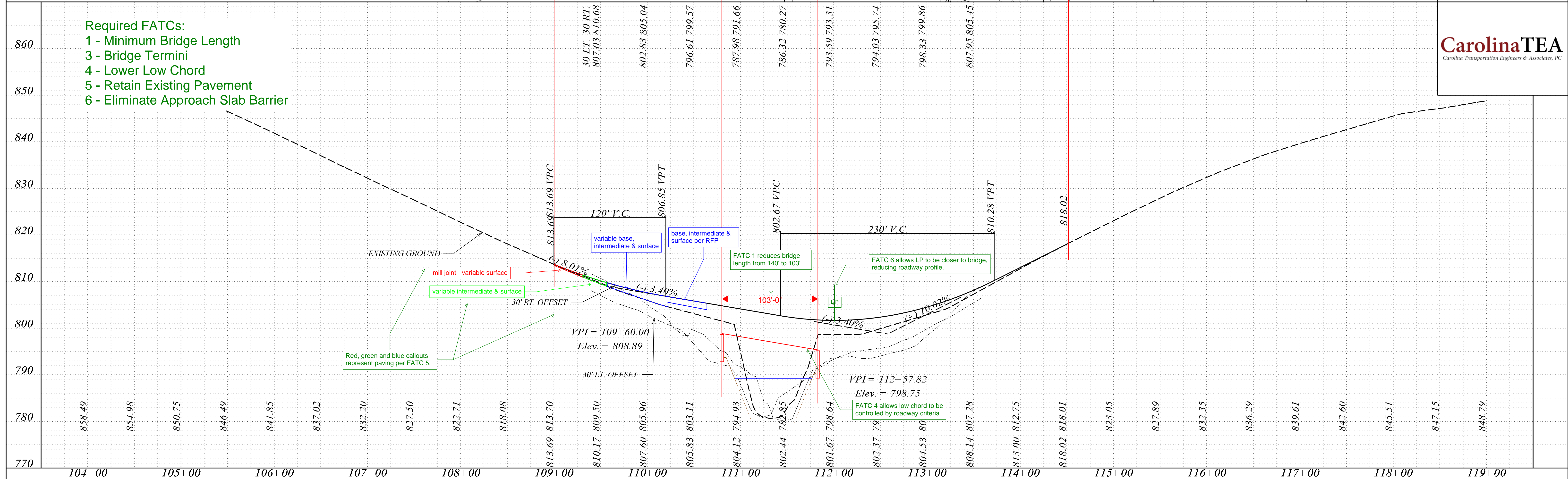
FED. RD. DIST. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	Oconee	041166	S-51	6

TRAL ELECTRIC COOP. TRANSMISSION LINE
PER DB B309 PG 2

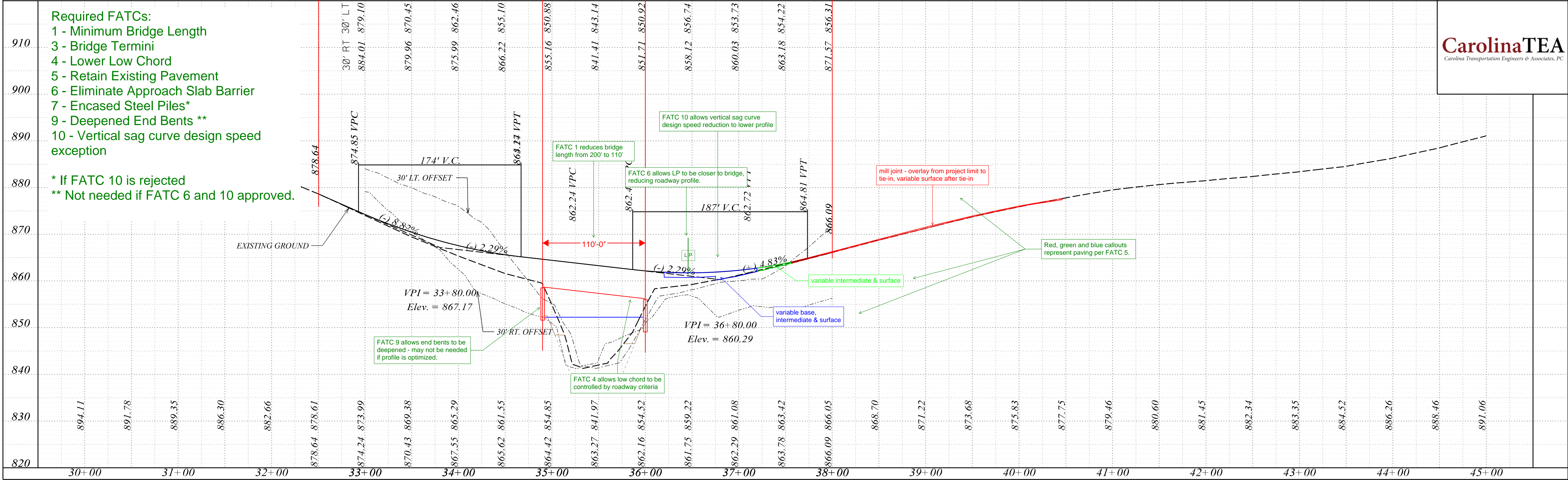
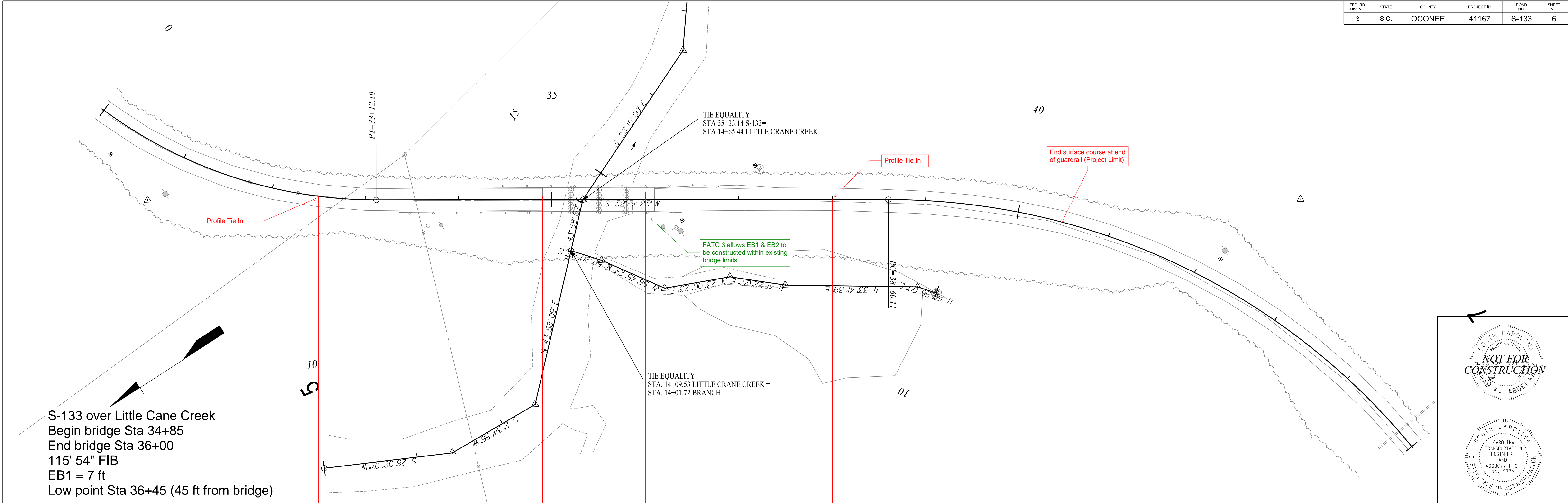
S-51 over Snow Creek
Begin bridge Sta 110+80
End bridge Sta 111+83
54" FIB with 6" additional haunch at EB2
End Bent Height = 6 ft
Low point Sta 112+01 (18 ft from bridge)

Required FATCs:
1 - Minimum Bridge Length
3 - Bridge Termini
4 - Lower Low Chord
5 - Retain Existing Pavement
6 - Eliminate Approach Slab Barrier

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FED. RD. DIST. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	OCONEE	41167	S-133	6



Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21 Design-Build Project

Project ID: 5368980

ATC No.: 6

Priority: Med

Team: PII_CTEA

Date: 10/28/25

Description (required):

DB Team requests to utilize catch basins in lieu of flumes. The catch basins will be installed no closer than 2 ft from the end of approach slab and at the low point of the roadway. There is only a small amount of stormwater (1/2 bridge deck area) being discharged to each catch basin. The catch basin discharge pipe will be placed under the guardrail post elevation and outlet onto riprap. The pipe will be placed beyond the wingwall. A ditch will carry this water to the creek.

The catch basins allow the team to move the low point closer to the bridge. Moving the low point closer to the bridge will allow the roadway profile to be lower.

For S-51, a lower profile will facilitate reconnecting gated access at EB2 as well as reduce fill slopes. ROW impacts will be reduced and the bridge may be shortened. A single span CIP concrete deck on girder structure will be constructed.

For S-133, a lower profile will facilitate replacing the bridge in its current location without relocating the power lines. Roadway fill slopes will be maintained outside the wetlands, reducing impacts, and the bridge will be shortened to a single span CIP concrete deck on girder structure.

Usage:

This ATC will be used at S-51 over Snow Creek EB2 and S-133 over Little Cane Creek EB2 (downslope ends of bridge only).

Deviations (required):

Required flumes will be replaced with catch basins.

Justification:

This ATC allows the bridges to be replaced while maintaining the roadway profile closer to existing conditions. This reduces fill slopes, and bridge lengths.

Approval of FATC6 supports all of SCDOT's stated goals:

Minimization to right-of-way, driveways, and businesses - shorter bridges and lowered profiles reduce the ROW requirements from bridge ends, and facilitates replacing the gated entrance at S-51 EB2.

Minimization to utility impacts - power at S-133 can remain in place.

Minimization to environmental impacts - reduction in roadway profile at S-133 will reduce impacts to the wetlands on EB2 right.

Cost Certainty - reduction in bridge lengths and fill heights reduces ROW requirements and project lengths. Avoidance of power lines will save SCDOT in relocation costs.

No change orders - reduction in bridge lengths reduces project lengths, reducing opportunities for change orders.

Schedule Certainty - shortening the bridges and reducing fill will significantly improve chances of successfully completing each bridge on schedule and completing the overall project on time. Avoiding utility conflicts at S-133 is critical to maintaining the project schedule.

Schedule:

Moving the low point toward the bridge allows the roadway profile to be lowered. The reduced profile leads to

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21 Design-Build Project

Project ID: 5368980

ATC No.: 6

Priority: Med

Team: PII_CTEA

Date: 10/28/25

reductions to roadway fill, shortening the bridge and eliminating interior bents each improve the contractor's ability to complete this project on schedule, or early.

S-133 over Little Cane Creek will benefit the most from schedule as this ATC can assist in avoiding the need to relocate the power lines above by keeping the profile as low as possible, while pushing the low point off the bridge as required. Eliminating the utility relocation at S-133 could reduce the project schedule by 18 months or more.

Impacts:

There are no known impacts with approval of this ATC. With the catch basins located at the low point of the roadway, there will be no bypass flow.

History:

Catch basins are common in SC. Standard Drawing 719-001-01 will be followed for Type I CB, or optional catch basin as requested by SCDOT.

Risks:

There are no known risks with the use of catch basins.

Costs (required):

This ATC (combined with others to allow for shortening the bridge) could save over \$200,000 in embankment costs and roadway items at S-51 and additional embankment or cuts at S-133.

Quality:

There is no reduction in quality with this ATC.

Operations & Maintenance:

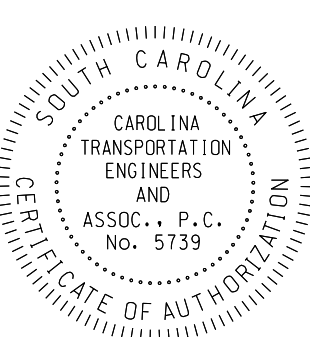
Maintenance will be improved by reducing the height of the slopes, shortening the bridges and eliminating interior bents with the lowered profile. There is additional potential for debris in the catch basins as compared to the flumes, but with short and straight discharge pipes onto the rip rap, any maintenance or pipe clearing is minimized.

FED. RD. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	Oconee	041166	S-51	6

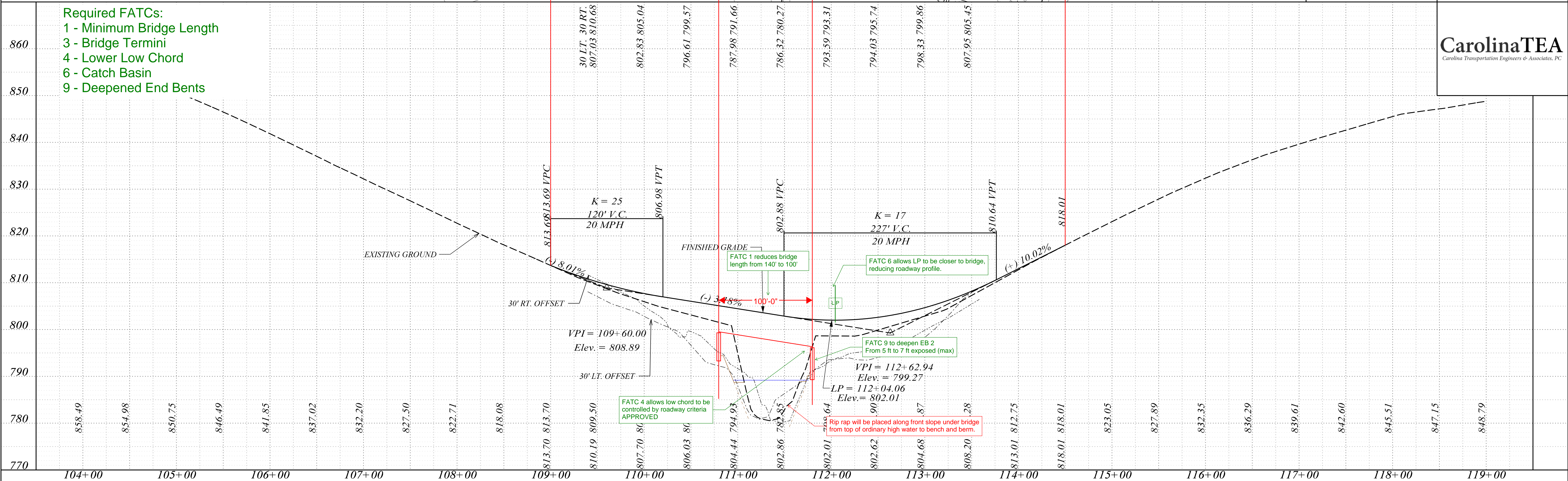
TRAL ELECTRIC COOP. TRANSMISSION LINE
PER DB B309 PG 2

S-51 over Snow Creek
Begin bridge Sta 110+79.50
End bridge Sta 111+79.50
54" FIB with 4" additional haunch at EB2
End Bent Height = 6 ft EB1, 8 ft max EB2
Low point Sta 112+04 (24.5 ft from bridge)

Required FATCs:
1 - Minimum Bridge Length
3 - Bridge Termini
4 - Lower Low Chord
6 - Catch Basin
9 - Deepened End Bents



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Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21 Design-Build Project

Project ID: 5368980

ATC No.: 7

Priority: High

Team: PII_CTEA

Date:

Description (required):

DB Team requests to use Encased Steel Piles as an alternate to prestressed concrete piles at interior bents. The pile bents will be used for average span lengths of 75 ft or less.

Steel piles will be encased with a reinforced concrete encasement, following the GA DOT standards. The bottom of the concrete encasement will adhere to the requirements in the RFP to be 2 ft below ground or predicted scour line.

Usage:

This FATC will be used at S-197 over Tyger River for the interior bents.

If other FATCs are rejected and interior bents are necessary per the PII/CTEA designs, we request the ability to use this FATC for the installation of all interior pile bents at S-133, S-51 and S-168.

Deviations (required):

Exhibit 4b Section 2.1.19 Substructures

Design Interior Pile Bents using cast-in-place reinforced concrete bent caps and a single row of vertical prestressed concrete piles (with or without prestressed concrete pile points). For corrosion protection of the pile, ensure concrete portions of piles with points extend a minimum of 2 feet below final ground line or predicted scour line, whichever is deeper. Do not use Interior Pile Bents to support an average span length that exceeds 75 feet, considering both adjacent span lengths.

We propose to use encased steel piles in lieu of prestressed concrete piles, following all other criteria.

Justification:

PII can drive steel piles at the anticipated locations from a crane sitting behind proposed end bents. Piles will be driven to the required tip or bearing, and cast a concrete encasement around the pile for corrosion protection. This will accelerate construction and reduce costs.

Approval of this FATC supports SCDOT's stated goals: Cost Certainty; No change orders; Schedule Certainty

Schedule:

Construction of interior bents may be slightly longer due to the need to form and pour the concrete encasement. However, since the reach of the cranes is longer, end bent construction can proceed simultaneously - therefore accelerating the bridge completion schedule. We can save 2 weeks per site with this approval.

Impacts:

There are no identified impacts associated with this ATC. The provided encasement details will provide similar protection of the pile bents as prestressed concrete piles.

History:

Encased piles are a standard in Georgia.

Similar FATC was approved for Bundle 16 DB, but was not utilized due to higher than anticipated rock elevations.

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21 Design-Build Project

Project ID: 5368980

ATC No.: 7

Priority: High

Team: PII_CTEA

Date:

Risks:

The PII_CTEA Team does not recognize any additional risks due to this ATC.

Costs (required):

There is a cost savings as compared to installation of PSC pile bents. The cost of the pile is less per ft, smaller cranes can be used and the reach to the pile bent location is longer. The savings as compared to drilled shaft and column interior bents is significantly higher.

The combined savings for each pier where used is approximately \$25,000 as compared to PSC piles.

Quality:

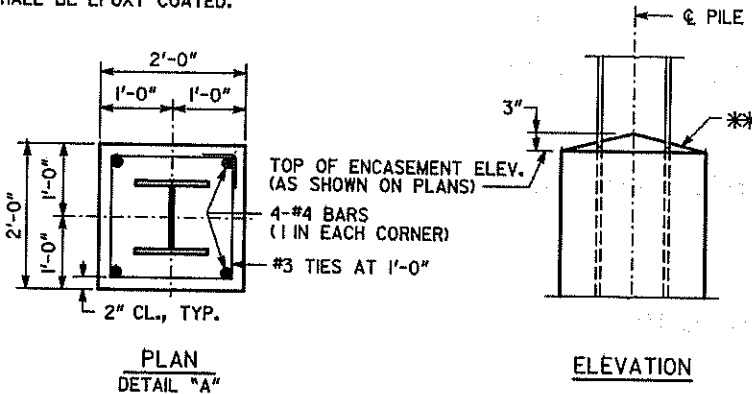
There should be no adverse quality with this ATC.

Operations & Maintenance:

There should be no difference in operations and maintenance for this ATC.

COST OF #3 TIES AND #4 BARS TO BE INCLUDED IN PRICE BID FOR PILE ENCASEMENT. #3 TIES AND #4 BARS SHALL BE EPOXY COATED.

**SLOPE TOP OF ENCASEMENT AS INDICATED TO ENSURE POSITIVE DRAINAGE.



ENCASEMENT MAY CONFORM TO THE DETAILS OF EITHER DETAIL "A" OR DETAIL "B".
STIRRUPS FOR ENCASEMENT ON EXISTING BRIDGES MAY BE LAPPED.

Figure 1

SONOTUBE®
ROUND
concrete forms



TRUE. AUTHENTIC. GENUINE.





Applications

- *Outdoor sign, light pole and fence-post bases*
- *Footings*
- *Stub piers for elevated ramps*
- *Columns for residential and commercial buildings and other structures*
- *Flagstones and round steps*
- *Theatrical and movie props*
- *Super-sized shipping tubes*

A heritage of trust

Contractors around the world have relied on the Sonotube® brand for over 70 years. More than just paper tubes, Sonotube concrete forms stand strong as the most economical way to create round columns for buildings, entrance ways, structural columns, light posts and other commercial and residential structures.

Rain resistance

Sonoco engineers applied more than a century of leadership in design, technology and manufacturing to create a high-strength, rain-resistant paper for Sonotube forms. The paper's attributes allowed Sonoco to reduce the weight of the forms, making them easier to handle, set, strip and discard. And with RainGuard® paper technology, Sonotube forms stand strong even in wet weather. Set today and pour tomorrow.



Industry-leading technology and value

The superior strength-to-weight properties of Sonotube forms prevent blowouts and may eliminate the need to use a crane during setup. Contractors around the world know Sonotube concrete forms stand strong in their superior technology and value.

Advantages

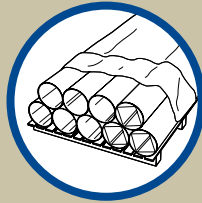
- Rain-resistant technology keeps wet weather from impacting your pour.
- Easier to setup and brace so multiple columns can be poured at one time.
- Superior strength-to-weight properties prevent blowouts.
- Easy to cut and drill at the job site.
- Heat resistance eliminates form deformation during the pour.
- Sonoco manufactures and distributes Sonotube brand concrete forms throughout North America, minimizing lead times.

Important instructions for field use

How to store

Store Sonotube concrete forms in a dry place at the job site:

- For best results, store forms vertically to maintain roundness.
- Keep ends covered at all times.
- If stored horizontally, elevate a minimum of 4 inches off the ground and support the full length of the forms.



Placing

Even the largest Sonotube brand forms are easier to place either manually with block and tackle, or by crane:

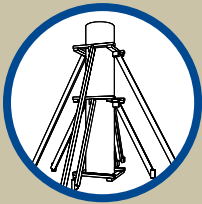
- Position over a reinforcing bar cage if desired.
- Avoid damaging the inside surface.
- Place individually or in groups for continuous pouring.



Bracing

Sonotube concrete forms require minimal bracing to be brought to plumb:

- Use light lumber or scaffolding.
- Secure the column foot with collars if necessary.
- If pouring bents for bridges, consider tying the column form in with the beam form.



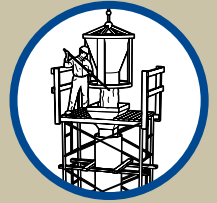
Sonotube concrete forms can also be tied into other forms or structural members.

Pouring

NOTE: Use of a release agent is recommended with all Sonotube forms, especially when working with aggressive concrete formulations.

Sonotube concrete forms are engineered not to buckle, swell or lose shape. Sold in standard lengths of 12', Sonotube concrete forms are designed to be poured in a single lift. Do not exceed ACI-recommended pour rates.

Concrete must be vibrated during pour.



Stripping

If stripping is required, strip the form as soon as possible after the concrete has set to prevent concrete from sticking to the form. Recommended time for the easiest and fastest stripping is 24 to 48 hours after the pour. Sonotube concrete forms should not be left on the column for more than five days.



Stripping options:

- Use a circular power saw to make two vertical cuts on opposite sides of the form. To prevent marring, make sure the depth of cut is less than form thickness. Remove the form.
- Use a utility knife to cut the form from the top down at least 12 inches. Use a broad-bladed tool such as a shovel and short strokes to pry the form away from the column in a spiral motion.

Sonotube® round concrete forms

Sizes

Forms are available in diameters ranging from 6" to 36". For diameters larger than 36," Sonotube Commercial is available.

Standard length is 12". Custom lengths available upon request.

Concrete requirements *(Expressed in cubic yards for columns of various heights)*

Diameter (in.)	Height of column						
	3 ft.	6 ft.	8 ft.	10 ft.	12 ft.	16 ft.	20 ft.
6	.022	.044	.058	.073	.088	.117	.146
8	.039	.077	.103	.129	.155	.206	.258
10	.061	.121	.162	.202	.242	.323	.404
12	.087	.176	.233	.291	.349	.466	.582
14	.119	.238	.317	.396	.475	.634	.792
16	.155	.310	.414	.517	.620	.827	1.034
18	.196	.392	.523	.654	.785	1.046	1.310
20	.242	.485	.646	.808	.970	1.293	1.616
22	.293	.587	.782	.978	1.173	1.565	1.956
24	.349	.698	.931	1.164	1.397	1.862	2.328
26	.410	.820	1.093	1.366	1.639	2.186	2.732
28	.475	.950	1.270	1.584	1.901	2.534	3.170
30	.545	1.091	1.454	1.818	2.182	2.909	3.636
32	.621	1.241	1.655	2.069	2.483	3.310	4.138
34	.701	1.401	1.868	2.335	2.802	3.736	4.670
36	.785	1.571	2.094	2.618	3.142	4.189	5.236

Learn more about Sonoco's construction products

Sonotube concrete forms, Sonovoid® brand void forms and BlastMaster blasting tubes are available from dealers throughout North America. For additional product or technical information, please contact your distributor, call Sonoco at 888/766-8823 or visit sonotube.com.

Founded in 1899, Sonoco is a global provider of a variety of consumer packaging, industrial products, protective packaging, and displays and packaging supply chain services. With annualized net sales of approximately \$5 billion, the Company has 20,800 employees working in more than 330 operations in 34 countries, serving some of the world's best known brands in some 85 nations. Sonoco is proud to be a member of the Dow Jones Sustainability World Index for seven consecutive years. For more information on the Company, visit our website at www.sonoco.com.

Sonoco
1 North Second Street
Hartsville, South Carolina 29550
Toll Free (888) SON-TUBE (766-8823)
Website www.sonotube.com
E-mail terry.mckeon@sonoco.com

Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 2004 Edition MasterFormat. The section must be carefully reviewed and edited by the Architect or Engineer to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the Drawings.

Delete all "Specifier Notes" when editing this section.

SECTION 03 11 13

ROUND CONCRETE COLUMN FORMS

Specifier Notes: This section covers Sonoco Sonotube® Concrete Forms. Consult Sonoco for assistance in editing this section for the specific application.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Round cast-in-place concrete column forms.

1.2 RELATED SECTIONS

Specifier Notes: Edit the following list of related sections as required for the project. List other sections with work directly related to this section.

- A. Section 03 30 00 - Cast-in-Place Concrete.

1.3 REFERENCES

Specifier Notes: List standards referenced in this section, complete with designations and titles. This article does not require compliance with standards, but is merely a listing of those used.

- A. ACI 301 - Standard Specification for Structural Concrete.

1.4 SUBMITTALS

- A. Comply with Section 01 33 00 - Submittal Procedures.
- B. Product Data: Submit manufacturer's product data, including erection and removal instructions.

Specifier Notes: Edit the following sentence to specify shop drawings. Delete if shop drawings are not required for formwork.

- C. Shop Drawings: Submit manufacturer's shop drawings, indicating locations and dimensions of embedded items.

1.5 QUALITY ASSURANCE

- A. Column Formwork and Form Accessories: ACI 301, unless otherwise specified.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage:
 - 1. Store forms in accordance with manufacturer's instructions.
 - 2. Store forms vertically in dry area.
 - 3. If forms stored horizontally, elevate a minimum of 10 inches above ground on supports running length of forms.
 - 4. Protect forms from rain and excess moisture.
 - 5. Do not dent, scratch, or damage interior coating.
 - 6. Do not drop forms.
- C. Handling: Protect forms during handling and erection to prevent damage.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Sonoco, 1 North Second Street, Hartsville, South Carolina 29550. Toll Free (888) 875-8754. Website www.sonotube.com. E-mail terry.mckee@sonoco.com.

2.2 ROUND CONCRETE COLUMN FORMS

- A. Concrete Column Forms: Sonotube Concrete Forms.
 - 1. Description: Multiple layers of 100 percent recycled paperboard, spirally wound, and laminated with adhesive.
 - 2. Interior Surface: Smooth with spiral seam. Alathon release and moisture barrier coating.
 - 3. Exterior Surface: Micryl moisture barrier coating.
 - 4. Spiral Mark: Impart visible spiral mark on concrete columns.
 - 5. 1-piece, 1-time-use forms.
 - 6. Recyclable.

Specifier Notes: Specify inside diameter of forms. Sonotube Concrete Forms are available with inside diameters from 6 to 60 inches.

7. Inside Diameter: [_____ inches] [As indicated on the Drawings].

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive column forms. Notify Architect if areas are not acceptable. Do not begin erection until unacceptable conditions have been corrected.

3.2 ERECTION

- A. Place and brace column forms in accordance with manufacturer's instructions.
- B. Erect forms at locations and to elevations as indicated on the Drawings.
- C. Erect column forms plumb.
- D. Avoid damaging interior surface of forms.
- E. Waterproof and reinforce openings cut into forms.
- F. Do not use forms that are out-of-round, deformed, damaged, or contain defects that could impair concrete surface.
- G. Protect forms from rain and snow if work is delayed and forms have been positioned for placing concrete.
- H. Place waterproof sheeting over top of forms to prevent damage to interior surface by rain or snow.
- I. Do not allow forms to stand in water or snow before placing concrete.

3.3 PLACING CONCRETE

- A. Place concrete as specified in Section 03 30 00, unless otherwise specified in this section.
- B. Do not place concrete if column forms are wet.
- C. Apply form release coating to interior surface.
- D. Place concrete at pour rate in accordance with manufacturer's instructions.
- E. Do not touch interior surface of forms with vibrator.
- F. Do not vibrate concrete from exterior of forms.

3.4 REMOVAL

- A. Remove column forms in accordance with manufacturer's instructions.
- B. Remove forms as soon as removal operations will not damage concrete, a minimum of 24 hours and a maximum of 5 days after placing concrete.

- C. Prevent damage to concrete from form removal.

Specifier Notes: Delete protection for the concrete columns if not required.
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3.5 PROTECTION

- A. Protect concrete columns during remaining construction by placing form halves loosely around columns and securing. Ensure concrete surface is fully dry.

END OF SECTION

FED. RD. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	Spartanburg	41164	S-197	6

S-197 over Tyger River
Begin bridge Sta 67+90
End bridge Sta 69+90
50' cored slab & 100' box beam
End Bent Height = 6 ft
Low point Sta 70+60 (70 ft from bridge)

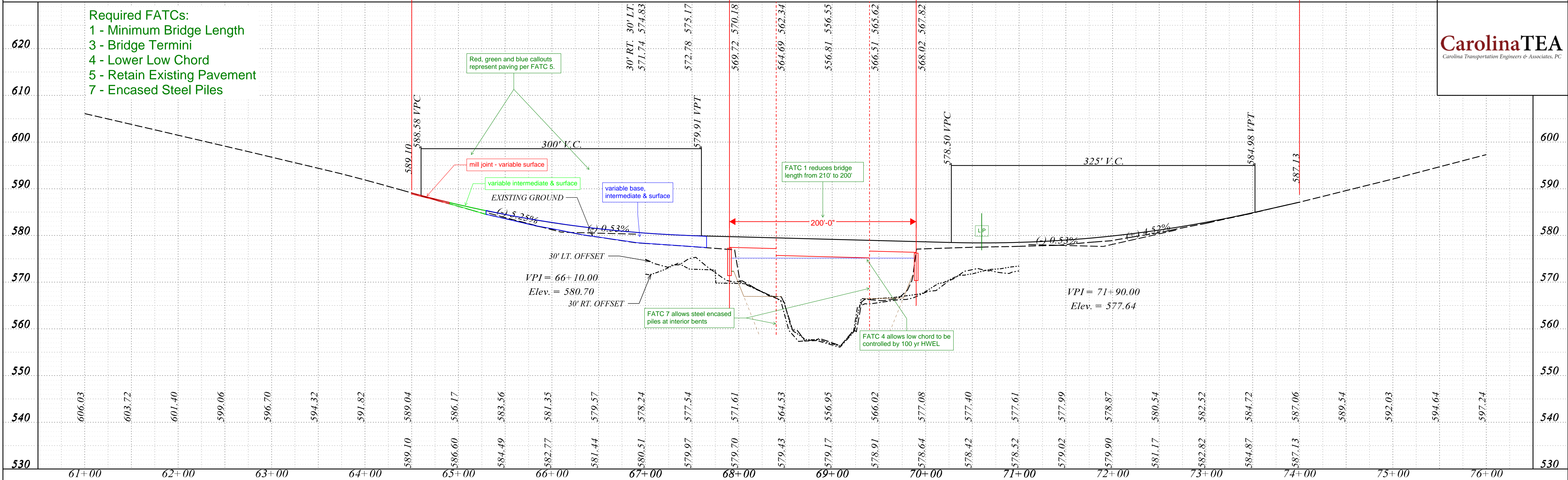
- Required FATCs:
- 1 - Minimum Bridge Length
 - 3 - Bridge Termini
 - 4 - Lower Low Chord
 - 5 - Retain Existing Pavement
 - 7 - Encased Steel Piles

NOT FOR CONSTRUCTION

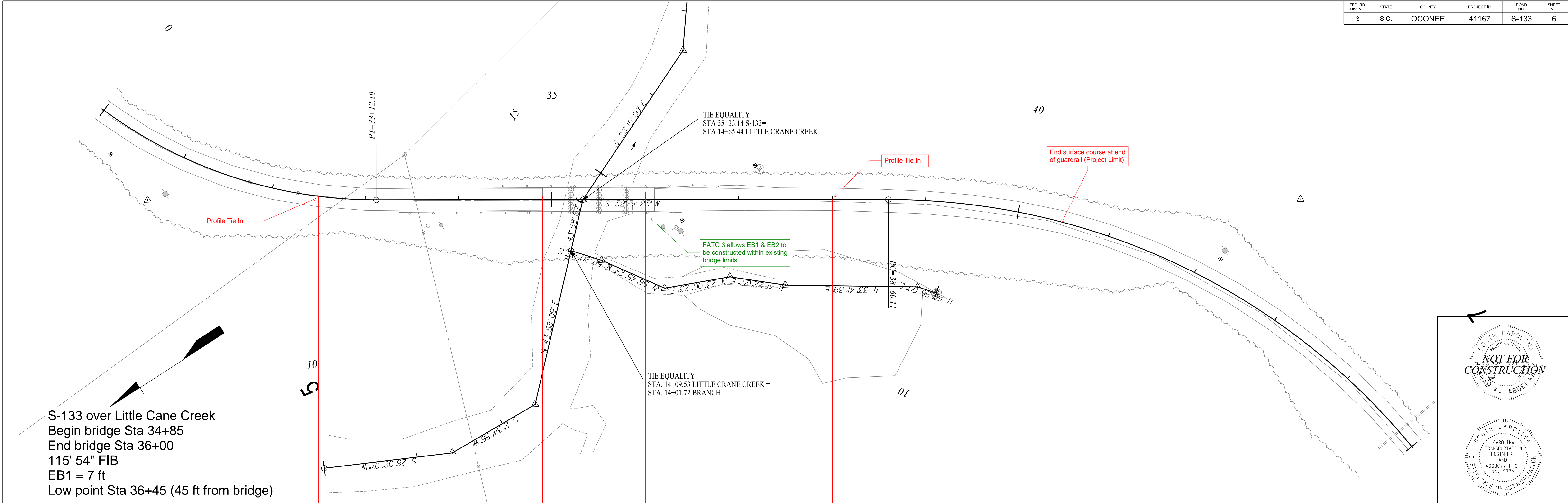
SOUTH CAROLINA PROFESSIONAL ENGINEER
T. M. K. ABDEL-AZIZ

SOUTH CAROLINA PROFESSIONAL ENGINEERS AND ASSOCIATES, P.C.
No. 5739
CERTIFICATE OF AUTHORIZATION

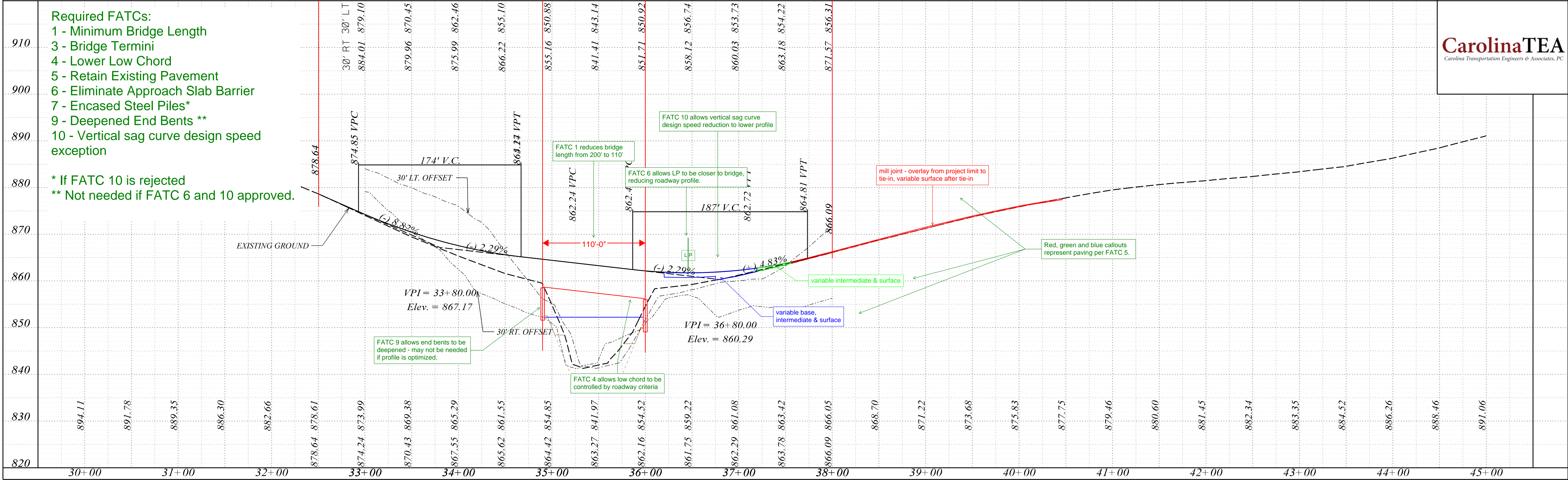
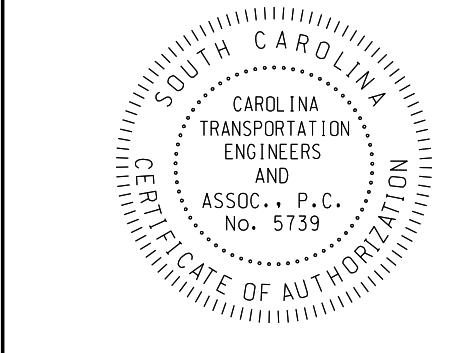
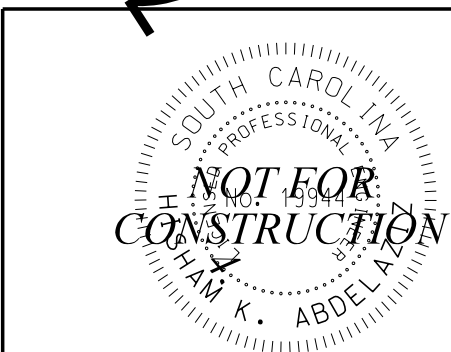
CarolinaTEA
Carolina Transportation Engineers & Associates, PC



FED. RD. DIST. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	OCONEE	41167	S-133	6



S-133 over Little Cane Creek
Begin bridge Sta 34+85
End bridge Sta 36+00
115' 54" FIB
EB1 = 7 ft
Low point Sta 36+45 (45 ft from bridge)



Required FATCs:
1 - Minimum Bridge Length
3 - Bridge Termini
4 - Lower Low Chord
5 - Retain Existing Pavement
6 - Eliminate Approach Slab Barrier
7 - Encased Steel Piles*
9 - Deepened End Bents **
10 - Vertical sag curve design speed exception

* If FATC 10 is rejected
** Not needed if FATC 6 and 10 approved.

CarolinaTEA
Carolina Transportation Engineers & Associates, PC

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21 Design-Build Project

Project ID: 5368980

ATC No.: 9

Priority: Med

Team: PII_CTEA

Date: 10/28/25

Description (required):

DB Team requests to deepen end bent caps at S-51 over Snow Creek.

Deepened caps allow the bridge to be shortened, reducing the amount of sag vertical curve on bridge and allowing the end bents to be shifted away from existing. The shorter bridge will allow lighter girders and smaller cranes to set the girders. Delivery of girders is improved.

The deepened cap will be used with single span integral bridge layout to balance overturning forces on each side of the bridge. The end bents will be lengthened to resolve conflicts between the wingwalls and approach guardrail posts. The approach slab will be extended laterally to fill in the gap between the back of the barrier and the wingwall, including the standard expansion joint material at the interface between approach slab and wall. Rip rap will be placed from top of ordinary highwater to the bench at EB2 since bench and berm are relatively close in elevation.

The driveway at S-51 EB2 left will be retained (relocated) while meeting other design criteria.

Usage:

This ATC will be used at S-51 over Snow Creek EB 2.

Deviations (required):

Exhibit 4b Structures Section 2.1.19 Substructures:

Design end abutments as spill-through abutments with 2:1 slope. In addition to the requirements of Section 20.2.8 of the BDM, set the elevation of the berm so that the top of the berm (embankment fill) is no greater than 5 feet below the superstructure. Limit level-berm-length to 4 feet from the face of bent cap. If riprap is placed on top of the berm, increase the cap depth if needed to provide 1-foot minimum clear distance from top of riprap to top of bent cap.

We request to increase the 5 ft maximum clearance requirement to 7 ft.

Justification:

This ATC allows the bridge to be replaced while maintaining the roadway profile closer to existing conditions. This reduces fill slopes, bridge lengths and keeps the additional haunch on the girders to a minimum. The modification allows the profile to remain low, and in combination with other FATCs, to use a single span bridge and maintain existing property access.

Approval of FATC9 supports SCDOT's stated goals:

Minimization to right-of-way, driveways, and businesses - shorter bridges and lowered profiles reduce the ROW requirements from bridge ends and maintains existing driveway access at S-51 EB2 left.

Cost Certainty - reduction in bridge lengths and fill heights reduces ROW requirements and project lengths.

No change orders - reduction in bridge lengths reduces project lengths, reducing opportunities for change orders.

Schedule Certainty - shortening the bridge and reducing fill will significantly improve chance of successfully completing each bridge on schedule and completing the overall project on time.

Formal Alternative Technical Concepts Submittal Form

Project: Bridge Package 21 Design-Build Project

Project ID: 5368980

ATC No.: 9

Priority: Med

Team: PII_CTEA

Date: 10/28/25

Schedule:

Deepening the end bent allows the bridge to be shorter, to move the low point toward the bridge, and allows the roadway profile to be lowered. Minimizing the profile reduces roadway fill, shortening the bridge and eliminating interior bents each which improve the contractor's ability to complete this project on schedule, or early.

Impacts:

Eliminates all ROW needs at S-51 over Snow Creek.

History:

Deepened end bents were approved on a recent emergency DB pursuit (Cannon's Creek).

Risks:

CTEA will only use deepened end bents on single span integral bridges to keep earth pressures balanced on each end of bridge. Maximum fill heights prior to integral behavior will be detailed on plans.

Conflicts with the approach guardrail posts will be resolved by lengthening the end bent caps to shift the wingwalls out.

Costs (required):

Less bridge deck is offset by the deeper, and longer end bents. \$50,000 savings may be realized in roadway approach work with the lower profile.

Quality:

There is no reduction in quality with this ATC.

Operations & Maintenance:

There is no difference in operations with this ATC.

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD NO.	SHEET NO.
3	S.C.	Oconee	041166	S-51	6

