RICHLAND COUNTY

ADMINISTRATION AND FINANCE COMMITTEE

AGENDA

THURSDAY DECEMBER 15, 2022

6:00 PM

COUNCIL CHAMBERS

Richland County Council 2021-2022

Bill Malinowski
District 1

Derrek Pugh
District 2

Jesica Mackey
District 9
Vice Chair

Overture Walker
District 8
Chair

Gretchen Barron
District 7

Yvonne McBride
District 3

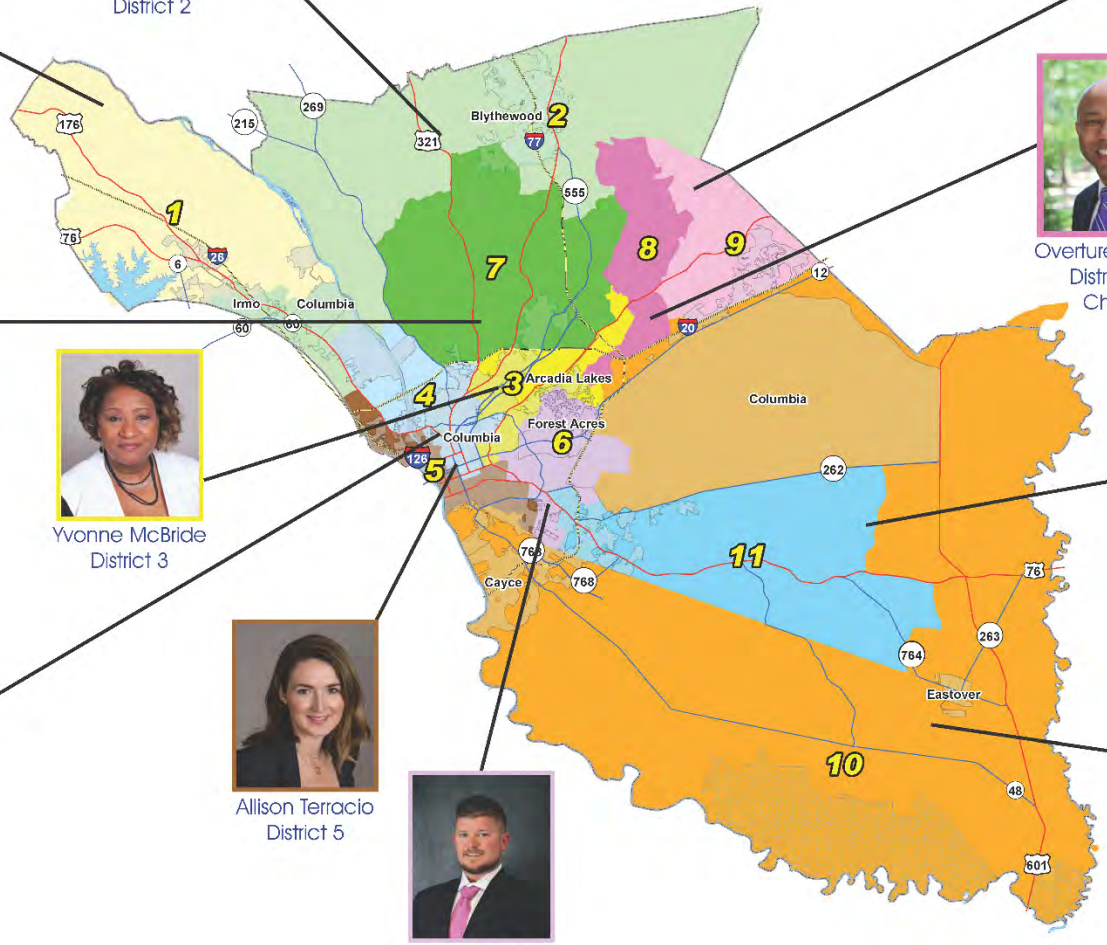
Chakisse Newton
District 11

Paul Livingston
District 4

Allison Terracio
District 5

Joe Walker, III
District 6

Cheryl English
District 10



Richland County
Administration and Finance Committee

AGENDA

December 15, 2022 - 6:00 PM
2020 Hampton Street, Columbia, SC 29204

The Honorable Bill Malinowski, Chair	The Honorable Yvonne McBride	The Honorable Paul Livingston	The Honorable Joe Walker	The Honorable Jesica Mackey
County Council District 1	County Council District 3	County Council District 4	County Council District 6	County Council District 9

1. CALL TO ORDER — The Honorable Bill Malinowski

2. APPROVAL OF MINUTES — The Honorable Bill Malinowski

a. November 17, 2022 **[PAGES 6-15]**

3. APPROVAL OF AGENDA — The Honorable Bill Malinowski

4. ITEMS FOR ACTION — The Honorable Bill Malinowski

a. Conservation Commission - Mill Creek Bridge Replacement **[PAGES 16-184]**

b. Department of Public Works - Road Maintenance Fund Revenue **[PAGES 185-187]**

c. Animal Services - Intergovernmental Agreement - City of Forest Acres **[PAGES 188-197]**

d. Animal Services - Intergovernmental Agreement - Town of Irmo **[PAGES 198-204]**

e. Animal Services - Intergovernmental Agreement - Town of Eastover **[PAGES 205-211]**

5. ITEMS PENDING ANALYSIS: NO ACTION REQUIRED — The Honorable Bill Malinowski

a. Direct staff and legal to create a new IGA regarding the Alvin S. Glenn Detention Center Inmate Per Diem rate. Richland County is operating on fees that were implemented effective July 1, 2018 and but did not go

into effect until July 1, 2019 due to the 90 day notice requirement pursuant to the agreement. The agreement in effect at that time was to have the fee only increase $10 per year until it reached 95% of the actual cost to the County. We are currently losing thousands of dollars per year the way this is being handled.

Richland County should not have taxpayers pay for outside entities who placed individuals in the County Detention Center, as that is the responsibility of the placing entity. Every entity who places an individual in the Alvin S. Glenn Detention Center should have an IGA with Richland County that reflects the current rate they will be paying as well as the fact rates are subject to change upward or downward on an annual basis. Those IGA's should also be worded as an annual agreement with up to so many extension years and the 90 day notice needs to be either reduced or more closely followed by staff. [MALINOWSKI - May 3, 2022]

***Staff continues its review and revision efforts of existing intergovernmental agreements and will provide recommendations to the Committee following their edits thereto.*

b. Any agency receiving funds from Richland County must provide an accounting for those funds prior to a request for funds in the next fiscal year budget. REASON: Accountability is a must for taxpayer dollars [MALINOWSKI - June 7, 2022] **[PAGES 212-226]**

***Staff recognizes there is a wide range of reporting requirements based on the numerous programs the County offers. Additionally, the Community Impact Grant Committee will be considering new methodology and processes for awarding what has historically composed the discretionary grant and lump sum awards to organizations. As modifications as considered, the Committee may consider reporting processes and compliance as a part of their recommendations.*

Staff recommends that this item be deferred and revisited for changes to the reports to become more consistent, streamlined, and standardized following recommendations from the Community Impact Grant Committee to the full Council in the spring of 2023.

6. ADJOURN The Honorable Bill Malinowski

Special Accommodations and Interpreter Services Citizens may be present during any of the County's meetings. If requested, the agenda and backup materials will be made available in alternative formats to persons with a disability, as required by Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), as amended and the federal rules and regulations adopted in implementation thereof. Any person who requires a disability-related modification or accommodation, including auxiliary aids or services, in order to participate in the public meeting may request such modification, accommodation, aid or service by contacting the Clerk of Council's office either in person at 2020 Hampton Street, Columbia, SC, by telephone at (803) 576-2061, or TDD at 803-576-2045 no later than 24 hours prior to the scheduled meeting.

Richland County Council
Administration and Finance Committee Meeting
MINUTES
November 17, 2022 – 6:00 PM
Council Chambers
2020 Hampton Street, Columbia, SC 29204

COUNCIL MEMBERS PRESENT: Bill Malinowski, Chair; Yvonne McBride (via Zoom), Paul Livingston, Joe Walker (via zoom)

OTHERS PRESENT: Overture Walker, Allison Terracio, Anette Kirylo, Leonardo Brown, Tamar Black, Michelle Onley, Angela Weathersby, Jennifer Wladischkin, Kyle Holsclaw, Justin Landy, Michael Maloney, Chelsea Bennett, Patrick Wright, Dale Welch, Michael Byrd, Stacey Hamm, Bill Davis, Ashiya Myers, and Lori Thomas

1. **CALL TO ORDER** – Chairman Bill Malinowski called the meeting to order at approximately 6:00 PM and stated Councilwoman Mackey will not be in attendance due to family matters.

2. **APPROVAL OF MINUTES**

    a. October 25, 2022 – Mr. Livingston moved to approve the minutes as distributed, seconded by Mr. J. Walker.

    In Favor: Malinowski, McBride, Livingston, and J. Walker

    Not Present: Mackey

    The vote in favor was unanimous.

3. **ADOPTION OF AGENDA** – Mr. Brown stated with the recent information related to the opioid grant opportunities, which would normally run through this committee, we are requesting Council's consideration due to the time constraints of the application process. He noted he wanted to notify the committee out of respect for the process and this committee.

    Mr. J. Walker moved to adopt the agenda as published, seconded by Mr. Livingston.

    In Favor: Malinowski, McBride, Livingston, and J. Walker

    Not Present: Mackey

    The vote in favor was unanimous.

4. **ITEMS FOR ACTION**

    a. Information Technology – Cybersecurity Modernization – Mr. Brown stated staff requested approval to move forward with the process of acquiring the necessary services. The

funding was approved as part of the COVID-19 funding. In order to engage in the agreements associated with the expenditures of those funds, staff is requesting approval in the amount of $4,190,000.

Mr. Livingston moved to forward this item to Council with a recommendation to approve spending $4,190,000 of American Rescue Plan (ARPA) funds and to proceed with the below listed recommended items to increase cybersecurity protection at all Richland County facilities, seconded by Ms. McBride.

In Favor: Malinowski, McBride, Livingston, and J. Walker

Opposed: Mackey

Recommendation	ARP Funding	Recurring Cost	Goal
RCSD server hardware, software and switching equipment.	$410,000 Purchase And Maintenance (5 years) Utilizing South Carolina State Contracts 4400027254 & 4400026926 with the company AHEAD	$32,500 /year Added to budget in FY 2026	By implementing new email server hardware and software and new switching equipment RCSD will be addressing existing security vulnerabilities in their systems.
Replacement of older unsupported desktop phones	$550,000 Utilizing South Carolina State Contract 4400030155 with the company NWN Carousel For 1420 new VOIP phones	N/A	Existing desktop phones are unsupported and present a security risk on the County network.
County wide replacement of unsupported and unsecure data switches and routers	$1.1 Million Utilizing South Carolina State Contracts 4400030155 & 4400027869 with the companies CDWG and NWN Carousel	$206,000/year Added to budget in FY 2026	A large number of data switches and routers County wide are obsolete and present a cyber- security vulnerability and must be replaced. These switches and routers provide the connections between all County computers and telephones in all County buildings.

Mobile wireless microphone and speaker system for the capability to host remote hybrid meetings during times of restricted travel or quarantine.	$15,000 Working with PIO staff to determine ideal make and model of various equipment for this solution using South Carolina State Contract 4400026098 with the company Solutionz	N/A	This mobile wireless microphone and PA system would allow large groups like county council to effectively communicate in a collaborative manner safely and remotely.
Mobile multi camera conference system for the capability to host remote hybrid meetings during times of restricted travel or quarantine.	$15,000 Working with PIO staff to determine ideal make and model of various equipment for this solution using South Carolina State Contract 4400026098 With the company Solutionz	N/A	This mobile multiple camera conference system would leverage the mobile wireless microphone system to add video collaboration for larger groups to effectively collaborate and communicate safely and remotely.
Secondary web application firewall, WAF, appliance to alleviate external access to County hosted websites	$90,000 Hardware and software support for 5 years Utilizing South Carolina State Contract 4400027095 With the company Data Network Solutions	$8000 /year Added to the budget in FY 2028	County websites are protected from denial of service attacks and other advanced malicious attacks by a single web application firewall. Installing a second unit to provide fail over fault tolerance would remedy this single point of failure.

Internet load balancing appliance to provide seamless failover for County websites and remote VPN connection for remote workers	$30,000 hardware and support for 3 years Utilizing South Carolina State Contract 4400026444 with the company SHI International	$5000/year Added to the budget in FY 2026	The County uses two Internet Service Providers. One for citizens to access external County websites and for remote County users to gain secure access into the County network for work. The second Internet connection is for County employees to gain access to external Internet resources. There is currently no way to share or fail resources over between these two connections. A load balancer would provide failover between these two connections.
Increase computing power and storage of the County's hyper converged server infrastructure to accommodate new applications and improve the effectiveness of County staff and citizens	$330,000 hardware and support for 5 years Utilizing South Carolina State Contracts 4400027254 & 4400026926 with the company AHEAD	$60,000 /year Added to the budget in FY 2028	The County currently uses two hyper converged server clusters to host application servers, database servers and file servers. Increasing the processing power and availability of these clusters would directly impact the speed, efficiency and fault tolerance of all of the County's computer applications.
New database server software for the County financial system to address security and encryption issues due to aging equipment	$100,000 software and support for 5 years Utilizing South Carolina State Contract 4400017751 with the company SHI International	N/A	The current County financial system is using application and database software that is scheduled for end of support in October 2023. The current database software does not support encryption of critical and sensitive financial and personal data. This new database software would allow real time encryption of all

			data stored in the County financial system.
New fault tolerant virtual private network, VPN appliances to allow secure connectivity for remote County employees.	$120,000 hardware and software support for 3 years Utilizing South Carolina State Contract 4400027869 with the company CDWG	$36,000 /year Added to budget in FY 2026	The County current uses a single Cisco VPN appliance to allow remote County staff to securely connect to all County resources and complete their jobs over a standard Internet connection from afar. By implementing a fault tolerate pair of VPN devices the County would ensure continuous remote access connectivity for these staff members in the event of a software or hardware failure on the primary unit.
Upgrade virtualization hardware and software in the detention center and public works locations to enhance security and performance	$130,000 hardware and software support 5 years Utilizing South Carolina State Contract 4400011358 With the company Dell Marketing	N/A	The virtualize hardware and software used in detention center and public works locations to host database servers, email servers, application and file services has been in place over 5 years. New hardware would provide enhanced security and resiliency at this locations.

Replace storage area network, SAN, equipment that was installed in 2014 and has reached the end of software and hardware support. Security updates are no longer being released for this obsolete equipment	$800,000 hardware and software support 7 years Utilizing South Carolina State Contracts 4400027254 & 4400026926 with the company AHEAD	N/A	The County database servers, application servers, and file servers that provide County departments and staff storage access to critical files and information rely on SAN equipment that is vulnerable to security exploits and attacks. This equipment also presents a performance bottle neck when newer equipment accesses this network storage. The new equipment would provide faster, more secure storage of all County information stored there. This new equipment would also provide offsite replication of data and real-time failover in a disaster recover situation.
County website redesign and enhancement to allow citizens to securely access more County services remotely.	$350,000 design, implementation and licensing	$15,000/ year Added to FY 2026 for continued licensing and support	The website redesign and enhancement would allow for increased citizen interaction and collaboration with County staff. Efficiency of staff communication with citizens would also be improved as well as security. This project was originally budgeted and funded as a CIP project for FY 2021- 2022 before funding was withdrawn.

The vote in favor was unanimous.

b. Utilities Department – Shady Grove Pump Station Project Bid Award – Mr. Brown stated staff recommends approval of awarding Republic Contracting for the Shady Grove Pump Station Project. He noted there was only one bid in the process. The South Carolina Rural Infrastructure Authority has approved it in this situation. This furthers our initiative to provide water in an area where it is needed. The total bid came in at $800,000. The department will make up the difference between the $500,000 grant.

Mr. Livingston moved to forward this item to Council with a recommendation to award the Shady Grove Pump Station Project to Republic Contracting, seconded by Ms. McBride.

Mr. Malinowski inquired if the completion of the contract is up to the contractor's expense after bidding on the project and if so why do we have a contingency of $80,000?

Bill Davis, Utilities Director, responded a 10% contingency is standard language but is currently 25% with the volatile market. The 10% was what was allowed to be put in with the RIA grant. They estimate $900,000 for the job and do have excess funds. In response to the contractor's responsibility, all contractors once they sign the contract would have to pay additional funds if they failed to do the job. The County would not pay them and would pay someone else to do the job.

In Favor: Malinowski, McBride, Livingston, and J. Walker

Not Present: Mackey

The vote in favor was unanimous.

c. Finance Department – Travel Policy Updates – Mr. Brown stated staff has reviewed the policy and recommends the changes to the new travel policy.

Mr. Livingston moved to forward to Council with a recommendation to update the Travel and Expense Reimbursement guidelines to a financial policy and update applicable procedures and financial amounts, seconded by Mr. J. Walker.

Mr. Malinowski inquired why the document references employees and department heads since department heads are also employees. Should it not just state employees?

Mr. Brown responded, for example, the Solicitor would not be addressed in the same way you would address an employee of the County Administrator. He would address him as an agency department head within Richland County.

Mr. Malinowski inquired about an employee being punished and not allowed to receive reimbursement of funds if a department head failed to submit the paperwork.

Mr. Brown responded the wording is "may" and not more definitive like "shall", so it allows for that opportunity.

Mr. Malinowski noted in one section states meals and lodging would be reimbursed and another section states it could be paid in advance. He inquired why they are not consistent.

Mr. Brown responded sometimes employees are unable to front the costs which would preclude them from attending. There are individuals who may have the means and do not mind booking their trips and paying their registration to expedite the process.

Mr. Malinowski requested adding resort areas to the chart for the meal allowance.

Mr. Brown responded resort areas would be paid at the out-of-state rate, but staff could certainly add it to the chart.

Mr. Malinowski inquired about getting Council's approval while on recess, noting that Council no longer recesses as it would be against state statute. He noted he did not know why they would have to come to Council for approval as the Administrator knows the budget and should be able to make that determination.

Mr. Brown responded they could change the language about recess. He noted, if an organization in the County is trying to utilize travel, but does not have funding, they would come to Council and request an expenditure increase.

Mr. Malinowski inquired about the 30-day window to turn in expenditures, which is in conflict with the 15 days previously discussed.

Ms. Lori Thomas, Assistant County Administrator, responded it was in reference to mileage accumulated during the month. Instead of submitting mileage on a daily basis, they accept mileage reimbursement forms once a month. The forms have to be turned in 5 days before the end of the month. After returning from business travel, the employee/department head has 30 days to submit their expenses.

Ms. McBride inquired if employees being reimbursed in a timely manner is addressed.

Ms. Thomas responded there is an Accounts Payable policy that addresses this. If the expense report is turned in by Friday morning, they are reimbursed the following Wednesday. The exceptions would be some holidays.

Mr. Malinowski inquired if the days are referring to the calendar or working days.

Ms. Thomas responded that 30 days are calendar days, but we can update the policy to specify calendar and/or working.

Ms. McBride inquired if we are following the Federal guidelines.

Ms. Thomas responded the County's policy is patterned after the GSA Schedule.

In Favor: Malinowski, McBride, Livingston and J. Walker

Not Present: Mackey

The vote in favor was unanimous.

d. Richland County Sheriff's Department – Accreditation Manager – Mr. Livingston moved to forward to Council with a recommendation to approve the Richland County Sheriff's Department Accreditation grant, seconded by Mr. J. Walker. The grant will provide salary and fringe benefits for an Accreditation Manager. The person will initiate and oversee the law enforcement agency accreditation process for the Richland County Sheriff's Department. Funds will also be provided for the initial and continuing accreditation fees for the South Carolina Law Enforcement Accreditation agency.

Ms. McBride stated, for clarification, we cannot budget for two years out.

Mr. Malinowski stated the Sheriff is trying to let us know the particular position they are trying to fill would be based on a two-year grant. After those two years, the Sheriff will request to continue the position through the normal budget process. He noted this is a State mandate.

Deputy Chief Polis stated recently the State passed a law that stated all South Carolina law enforcement agencies are required to be accredited. Failure to comply risks the Sheriff's Department losing their state certification and they would be unable to enforce the laws.

In Favor: Malinowski, McBride, Livingston, and J. Walker

Not Present: Mackey

The vote in favor was unanimous.

e. County Partnership with Gateway to the Army Association Centennial Park Project – Mr. Brown noted the Gateway to the Army Association is requesting approval for Richland County to serve as the primary applicant and fiscal agent for a $650,000 grant request to the South Carolina Department of Veteran Affairs to complete the Centennial Park Project at Fort Jackson. The entity is required to have a fiscal agent in order to receive the funds.

Mr. Livingston moved to forward to Council with a recommendation to approve the Gateway to the Army Association's request to serve as the primary applicant and fiscal agent for its $650,000 grant request to the SC Department of Veterans Affairs to complete the Centennial Park Project located at Fort Jackson Seconded by Ms. McBride.

Mr. Malinowski inquired if there will be an IGA.

Mr. Brown responded there will have to be some form of agreement, but he would have to come back with the particular form.

Ms. Malinowski inquired if the County has the capacity to do this without having a negative impact on the County.

Mr. Brown responded he did not foresee the County having to put staff on this project other than in a de minimis way, which is relative to the funding we will potentially receive as a pass-through.

Ms. McBride inquired if there is any liability to the County.

Mr. Wright responded there are not any liabilities as it is a pass-through to the County. He not it would be appropriate to have an IGA to outline everyone's responsibilities.

Mr. Malinowski inquired if we could amend the staff's recommendation and request an IGA.

Mr. Brown responded in the affirmative.

In Favor: Malinowski, McBride, Livingston and J. Walker

Not Present: Mackey

The vote in favor was unanimous.

5. **ITEMS PENDING ANALYSIS: NO ACTION REQUIRED**

a. Direct the County Administrator to create a new IGA regarding the Alvin S. Glenn Detention Center Inmate Per Diem rate. Richland County is operating on fees that were implemented effective July 1, 2018 and but did not go into effect until July 1, 2019 due to the 90 day notice requirement pursuant to the agreement. The agreement in effect at that time was to have the fee only increase $10 per year until it reached 95% of the actual cost to the County. We are currently losing thousands of dollars per year the way this is being handled.

Richland County should not have taxpayers pay for outside entities who placed individuals in the County Detention Center, as that is the responsibility of the placing entity. Every entity who places an individual in the Alvin S. Glenn Detention Center should have an IGA with Richland County that reflects the current rate they will be paying as well as the fact rates are subject to change upward or downward on an annual basis. Those IGA's should also be worded as an annual agreement with up to so many extension years and the 90-day notice needs to be either reduced or more closely followed by staff. [MALINOWSKI - May 3, 2022] – No action was taken.

b. Any agency receiving funds from Richland County must provide an accounting for those funds prior to a request for funds in the next fiscal year budget. REASON: Accountability is a must for taxpayer dollars [MALINOWSKI - June 7, 2022] – No action was taken.

6. **ADJOURNMENT** – Mr. Livingston moved to adjourn the meeting, seconded by Mr. J. Walker.

   In Favor: Malinowski, McBride, Livingston, and J. Walker

   Not Present: Mackey

   The vote in favor was unanimous.

   The meeting adjourned at approximately 6:36 PM.

RICHLAND COUNTY ADMINISTRATION
2020 Hampton Street, Suite 4069
Columbia, SC 29204
803-576-2050

Agenda Briefing

Prepared by:	Quinton Epps	**Title:**	Division Manager
Department:	Community Planning & Development	**Division:**	Conservation
Date Prepared:	November 10, 2022	**Meeting Date:**	November 17, 2022
Legal Review	Patrick Wright via email	**Date:**	November 15, 2022
Budget Review	Abhijit Deshpande via email	**Date:**	November 28, 2022
Finance Review	Stacey Hamm via email	**Date:**	November 28, 2022
Approved for consideration:	Assistant County Administrator	Aric A Jensen, AICP	
Meeting/Committee	Administration & Finance		
Subject	Mill Creek Property Bridge Replacement Project Funding		

RECOMMENDED/REQUESTED ACTION:

The Richland County Conservation Commission (RCCC) and staff request the Committee approve a budget amendment to move $700,000 from the RCCC Special Reserve Fund Balance to the Conservation Division FY22-23 Operating Budget for the replacement of a damaged bridge on the Mill Creek property.

Request for Council Reconsideration: ☒ Yes

FIDUCIARY:

Are funds allocated in the department's current fiscal year budget?	☐	Yes	☒	No
If not, is a budget amendment necessary?	☒	Yes	☐	No

ADDITIONAL FISCAL/BUDGETARY MATTERS TO CONSIDER:

The $700,000 available in the RCCC Special Reserve Fund Balance was approved by the RCCC at its October 17, 2022 meeting, but it may not be needed in its entirety pending the outcome of grant applications. The FY22-23 Council approved budget will need to be amended to transfer these funds from the RCCC Special Reserve Fund to the FY22-23 Conservation Division Operating Budget.

Applicable department/grant key and object codes: 1209000000-498000 (Special Reserve Fund)
1209451000-526500 (Professional Services)

OFFICE OF PROCUREMENT & CONTRACTING FEEDBACK:

Not applicable.

COUNTY ATTORNEY'S OFFICE FEEDBACK/POSSIBLE AREA(S) OF LEGAL EXPOSURE:

There are no legal concerns regarding this matter.

REGULATORY COMPLIANCE:

None applicable.

MOTION OF ORIGIN:

There is no associated Council motion of origin.

Council Member	
Meeting	
Date	

STRATEGIC & GENERATIVE DISCUSSION:

The RCCC was created in 1998 by the Richland County Council and is charged with promoting the protection of the County's natural, historical, and cultural resources and promoting nature-based recreation and eco- and heritage tourism. One of the county-owned conservation properties RCCC manages is an approximately 2,500-acre tract of land along the Congaree River known as Mill Creek, which is accessed from Old Bluff Road. Flooding in early February 2020 damaged a wooden bridge on the Mill Creek property, and RCCC seeks to replace it. The existing damaged bridge is approximately 70 ft. long by 15 ft. wide and provides access between the upper and lower tracts of the Mill Creek property. Currently, the property is not open to the public due in part to the failed bridge.

Staff and the RCCC request approval for a budget amendment to move $700,000 from the RCCC Special Reserve Fund Balance to the Conservation Division FY22-23 Operating Budget to replace the bridge. The request comes mid-year because the design and approval process required only half of the estimated time to complete. County Council approved the project design bid at its June 8, 2021 Special Called Meeting with the understanding that it would take approximately 24 months for the work to be completed and approved; however, the design was completed and approved in August 2022.

Due to the expedited design phase, the RCCC approved moving forward with the project using the Special Reserve Fund at its October 17, 2022 meeting. Conservation staff and the RCCC were informed that one of the CDBG grant programs administered by the County could potentially fund up to 75% of the project cost. However, the funds must be expended by September 30, 2023 which necessitates a mid-year budget amendment.

ADDITIONAL COMMENTS FOR CONSIDERATION:

Due to the size and scope of the project, selection of the construction vendor must be accomplished through the County's procurement process. If this item is deferred or otherwise not approved at this meeting, it will likely result in the project not being eligible for the CDBG funding due to the reduced meeting schedules in December and January.

ATTACHMENTS:

1. Parcel Location Map
2. Bridge replacement location map
3. Project Budget and Estimates
4. Design Plans Bridge Replacement
5. Environmental Permitting information

Project Location and Parcel Boundary Map

Attachment 1

June 12, 2020

1:50,000

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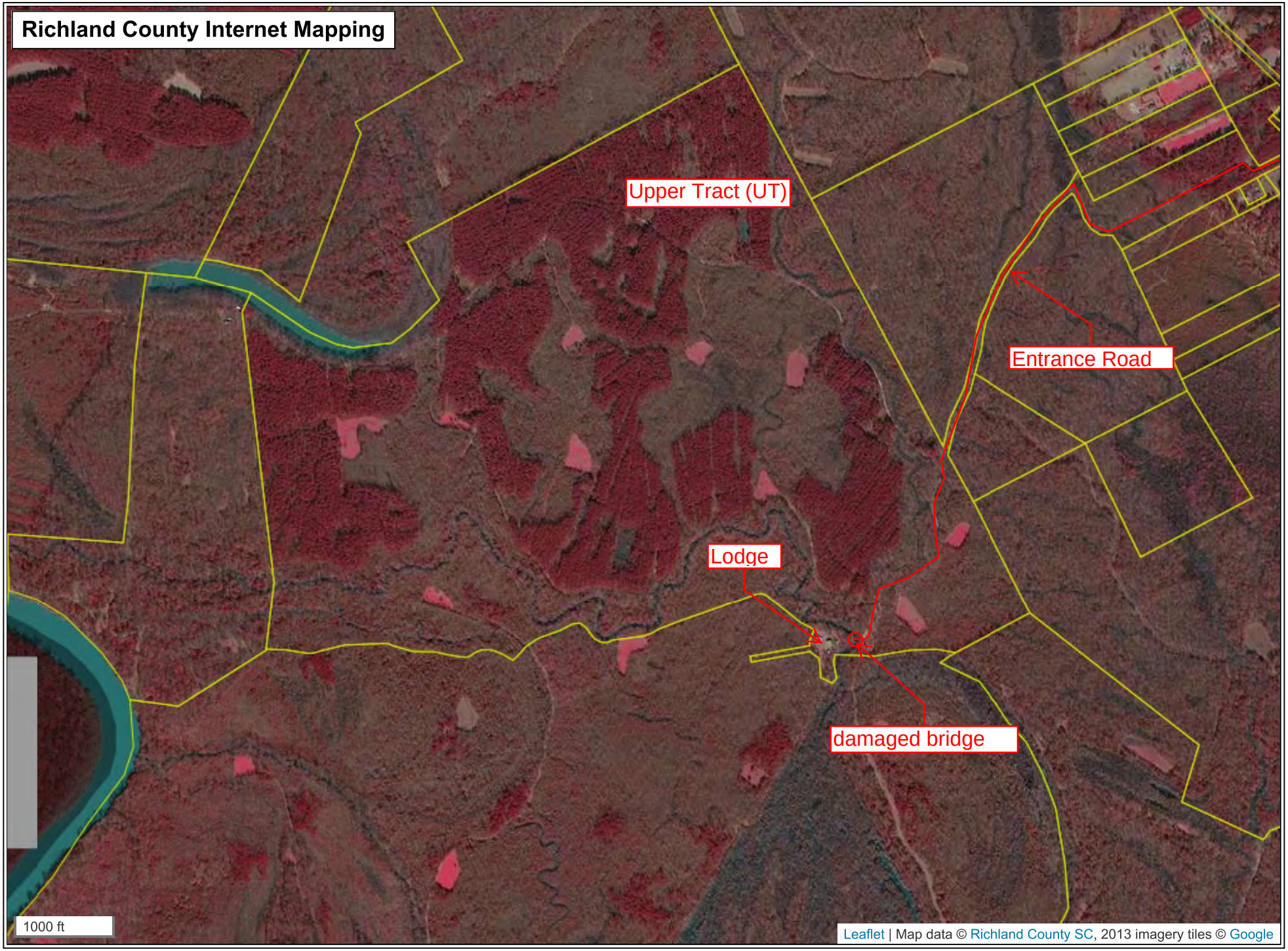
0 0.5 1 2 km


Richland County Internet Mapping
Upper Tract (UT)
Entrance Road
Lodge
damaged bridge
1000 ft
Leaflet | Map data © Richland County SC, 2013 imagery tiles © Google

Attachment 3

Quinton Epps

From: Kevin Gantt <kevin.gantt@carolina-tea.com>
Sent: Friday, September 9, 2022 10:45 AM
To: Quinton Epps
Subject: Cost Estimate

Good morning Quinton,
I got a contractor to review the plans and give us an estimate considering the location and the current market. I was very surprised to receive numbers that were in line with what we had previously discussed.

The estimate that we provided this spring was $528,000. His estimate (not including the grading for the approaches) was $650,000. If you add in a conservative figure of $30,000 for grading the roadway, that will push you close to $700,000 as a budget for the project.
Please give me a call when you get this email to discuss in more detail. Our concern is the variability in the market now, as contractors have more work than they can do and are challenged to find the labor they need to do it.

I also wanted to ask about the last invoice we submitted in late May. If you need anything additional to process that please let me know. I look forward to hearing from you at you earliest convenience.

Thanks,

Kevin L. Gantt, PE, CPM

CAROLINA Transportation Engineers & Assoc., PC

1201 Main Street, Suite 1850
Columbia, SC 29201
(864) 376-6397
kevin.gantt@Carolina-TEA.com

CAROLINA Transportation Engineers & Assoc. PC

Project:	Dirt Road Over Mill Creek		
Subject:	Bridge Estimated Quantities and Construction Cost Estimate		
Prepared By:	Date:	Project ID:	Sheet:
S. Kounbandith	3/7/2022	CPS21075	1
Checked by:			

Estimated Quantities and Construction Cost

ITEM NO.	BID ITEM	UNIT	QUANTITY	UNIT COST	TOTAL COST
1031000	MOBILIZATION	LS	NEC	$ 40,000.00	$ 40,000.00
2011000	CLEARING & GRUBBING WITHIN RIGHT OF WAY	LS	NEC	$ 10,000.00	$ 10,000.00
2028100	REMOVAL & DISPOSAL OF EXISTING BRIDGE	LS	NEC	$ 50,000.00	$ 50,000.00
2031200	SITE EXCAVATION	LS	NEC	$ 10,000.00	$ 10,000.00
3050106	GRADED AGGREGATE BASE COURSE (6" UNIFORM)	SY	260	$ 15.00	$ 3,900.00
6510105	FLAT SHEET, TYPE III, FIXED SZ. & MSG. SIGN	SF	12	$ 40.00	$ 480.00
6531210	U-SECTION POST FOR SIGN SUPPORTS-3P	LF	260	$ 10.00	$ 2,600.00
7011400	CONCRETE FOR STRUCTURES - CLASS 4000	CY	25.2	$ 2,000.00	$ 50,400.00
7031200	REINFORCING STEEL FOR STRUCTURES (BRIDGE)	LBS	4596	$ 2.00	$ 9,192.00
	3'-0" x 3'-3" BOX BEAM	LF	600	$ 300.00	$ 180,000.00
7054000	CONCRETE BRIDGE BARRIER PARAPET (3'-6")	LF	200	$ 100.00	$ 20,000.00
7110010	PILE DRIVING SET UP	EA	8	$ 2,500.00	$ 20,000.00
7111520	REINF. STEEL PILE TIPS (HP 12X53)	EA	8	$ 200.00	$ 1,600.00
7112140	STEEL H-BEARING PILING (HP 12 x 53)	LF	560	$ 45.00	$ 25,200.00
7243100	ELASTOMERIC BEARING	EA	12	$ 200.00	$ 2,400.00
8041020	RIP-RAP (CLASS B)	TON	31	$ 60.00	$ 1,860.00
8100100	PERMANENT COVER	AC	0.1	$ 1,500.00	$ 150.00
8131000	SODDING	MSY	0.52	$ 15,000.00	$ 7,800.00
8152007	SEDIMENT TUBES FOR DITCH CHECKS	LF	100	$ 10.00	$ 1,000.00
8153000	SILT FENCE	LF	550	$ 5.00	$ 2,750.00
8153090	REPLACE/REPAIR SILT FENCE	LF	55	$ 3.00	$ 165.00
8154050	REMOVAL OF SILT RETAINED BY SILT FENCE	LF	138	$ 5.00	$ 690.00
					$ -
	TOTAL COST				$ 440,187.00
				20% Contingency	$ 88,037.40
				Grand Total	**$ 528,224.40**

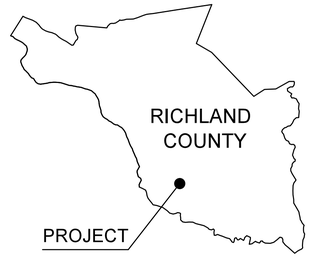
Attachment 4

SHEET NO.	TOTAL SHEETS
1	10

INDEX OF SHEETS

PROPOSED PLANS FOR

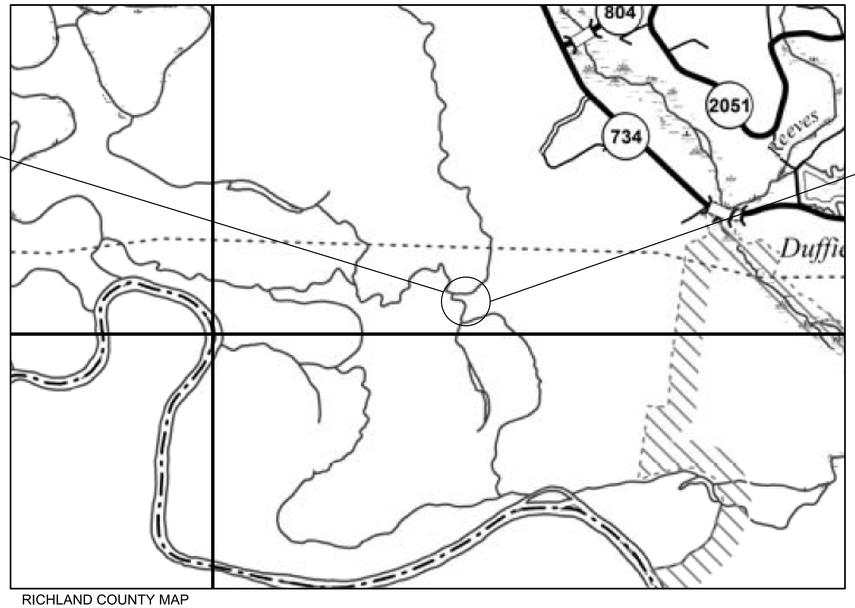
BRIDGE REPLACEMENT OVER MILL CREEK



LOCATION MAP
N.T.S.

STA. 104+10.00 TO STA. 106+38.65 (ROAD 1)

100'-0" x 18'-0" CONCRETE BRIDGE
FROM STA. 105+00.00 TO STA. 106+00.00



RICHLAND COUNTY MAP

LAYOUT
N.T.S

	ROAD 1	ROAD 2	TOTAL (MILES)
NET LENGTH OF ROADWAY	0.024	0.013	0.037
NET LENGTH OF BRIDGES	0.019	–	0.019
NET LENGTH OF PROJECT	0.043	0.013	0.056
LENGTH OF EXCEPTIONS	–	–	–
GROSS LENGTH OF PROJECT	0.043	0.013	0.056

EQUALITIES IN STATIONING:
NONE

NOTE: EXCEPT AS MAY OTHERWISE BE SPECIFIED ON THE PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIALS AND WORKMANSHIP ON THIS PROJECT SHALL CONFORM TO THE SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2007 EDITION) AND THE STANDARD DRAWINGS FOR ROAD CONSTRUCTION IN EFFECT AT THE RELEASE OF THE FINAL RFP.

NPDES PERMIT INFORMATION

Disturbed Area = 0.2 Acre(s)

Project Area = 2.2 Acre(s)

Approximate Location of Roadway is

Begin
Latitude 33°49'59"N
Longitude 80°53'11"W

End
Latitude 33°49'59"N
Longitude 80°53'9"W

Hydraulic and NPDES Design provided by:

SEPI, Inc.

3 DAYS BEFORE DIGGING IN SOUTH CAROLINA

CALL 811

SOUTH CAROLINA 811 (SC811)
WWW.SC811.COM
ALL UTILITIES MAY NOT BE A MEMBER OF SC811

RAILROAD INVOLVEMENT?
YES (NO)

CONSULTING ENGINEERING FIRM

HOLT CONSULTING COMPANY, LLC.

ENGINEER OF RECORD

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29957 DANIEL M. ATKINSON

1/7/2022

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION HOLT CONSULTING COMPANY LLC No. 4831

FOR CONSTRUCTION : _____ DATE

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SCDOT SUMMARY OF ESTIMATED QUANTITIES - CONSTRUCTION PLANS REVIEW

South Carolina Department of Transportation

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE/ROAD NO.	SHEET NO.
3	SC	RICHLAND	--	--	2

ITEM NO.	PAY ITEM	COMPUTED QUANTITY	INCIDENTAL QUANTITY	PAY UNIT
1031000	MOBILIZATION	1.000		LS
2011000	CLEARING & GRUBBING WITHIN RIGHT OF WAY	1.000		LS
2031200	SITE EXCAVATION	1.000		LS
3050106	GRADED AGGREGATE BASE COURSE (6" UNIFORM)	260.000		SY
6510105	FLAT SHEET, TYPE III, FIXED SZ. & MSG. SIGN	12.000		SF
6531210	U-SECTION POST FOR SIGN SUPPORTS - 3P	52.000		LF
8041020	RIP-RAP (CLASS B)	82.000		TON
8048210	GEOTEXTILE FOR EROSION CONTROL UNDER RIPRAP(CLASS 2)TYPE C	138.000		SY
8100100	PERMANENT COVER	0.100		AC
8131000	SODDING	0.520		MSY
8152007	SEDIMENT TUBES FOR DITCH CHECKS	20.000		LF
8153000	SILT FENCE	550.000		LF
8153090	REPLACE/REPAIR SILT FENCE	55.000		LF
8154050	REMOVAL OF SILT RETAINED BY SILT FENCE	138.000		LF

ITEM NO.	PAY ITEM	COMPUTED QUANTITY	INCIDENTAL QUANTITY	PAY UNIT

1/7/2022
https://holtconsultingco.sharepoint.com/sites/Surface/South Carolina/Richland_County/SC0304-06_Road_Bridge/Design/Quantities/[RCCC_Quantities_SHEET_xlsx]QUANTITY SHEET 1

HOLT CONSULTING COMPANY, LLC.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29957 DANIEL M. ATKINSON
1/7/2022

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION HOLT CONSULTING COMPANY LLC No. 4831

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

DESIGNED BY: _____ DATE _____
DRAWN BY: _____ DATE _____
CHECKED BY: _____ DATE _____

RICHLAND COUNTY
CONSERVATION COMMISSION

QUANTITY SHEET
BRIDGE REPLACEMENT
OVER MILL CREEK

SHEET 2 | SCALE: NTS

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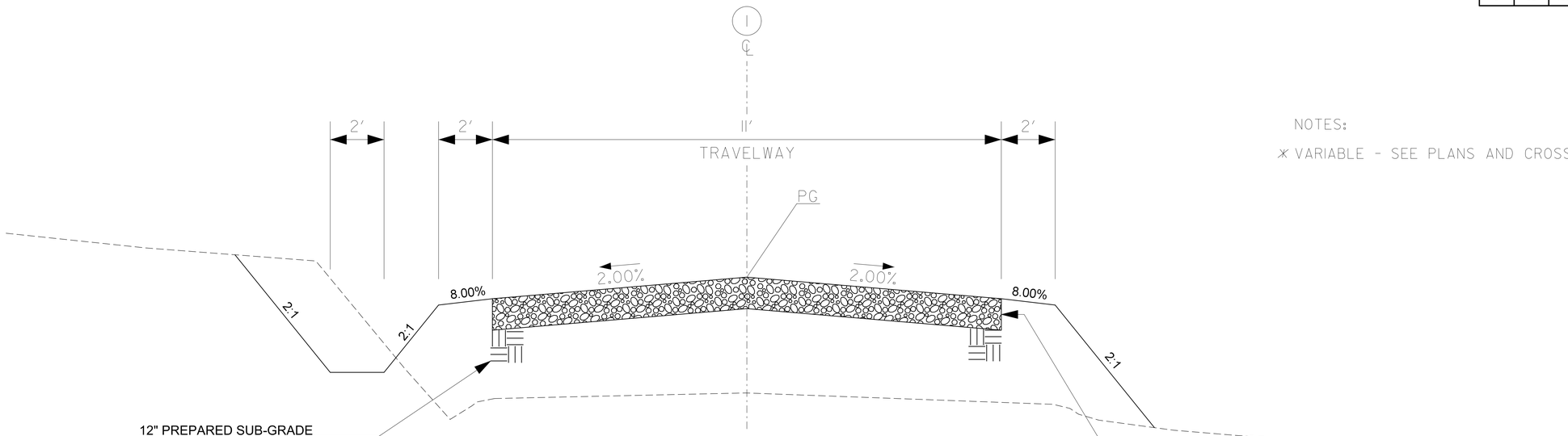
TYPICAL SECTIONS OF IMPROVEMENT

FED. RD. DIV. NO.	STATE	COUNTY	ROUTE NO.	SHEET NO.
3	SC	RICHLAND	–	3



NOTES:

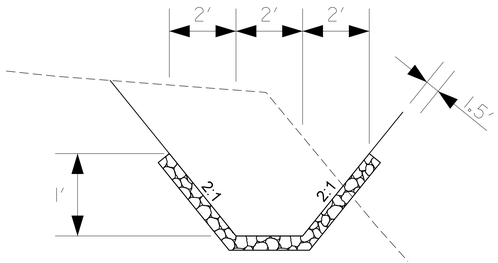
* VARIABLE - SEE PLANS AND CROSS SECTIONS

12" PREPARED SUB-GRADE
COMPACTED TO NOT LESS THAN 98%
OF MAXIMUM DENSITY.
MAXIMUM DENSITIES ARE DETERMINED
BY EITHER SC-T-25 (METHOD A OR C
AS APPLICABLE) OR SC-T-29.

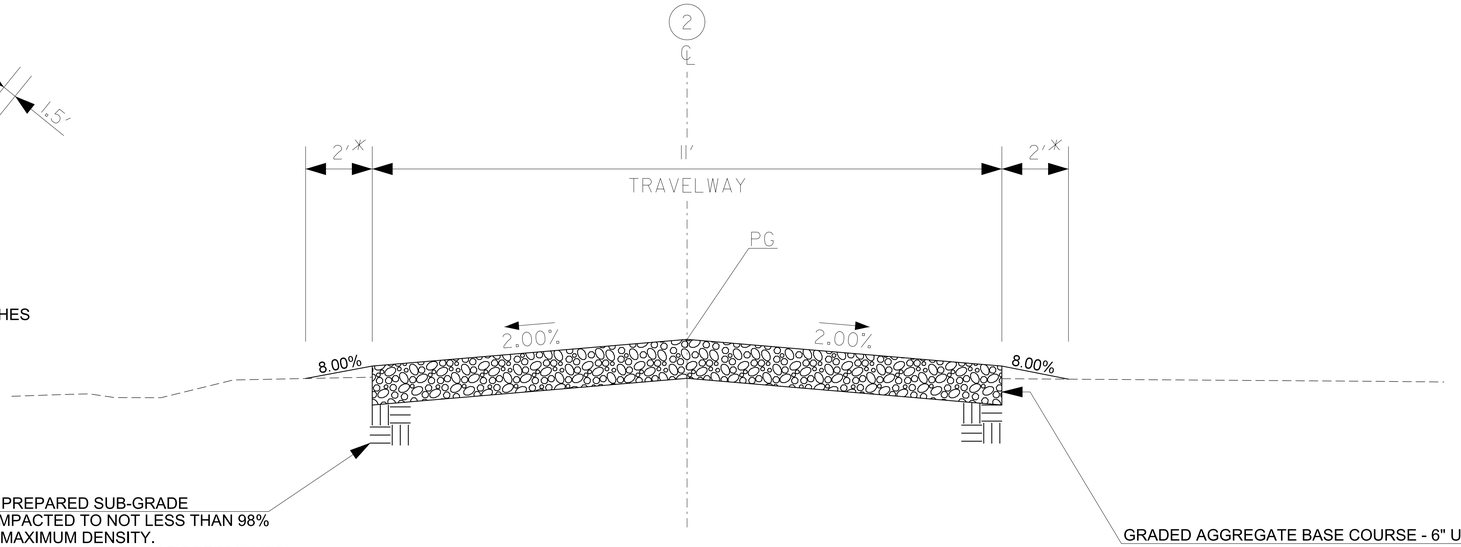
GRADED AGGREGATE BASE COURSE - 6" UNIFORM

USE THIS SECTION ON ROAD 1
STA. 104+10.00 TO 106+38.65

EXCEPTION: 100' x 18' BRIDGE
FROM STA. 105+00.00 TO STA. 106+00.00



CONSTRUCT RIPRAP LINING FOR ALL DITCHES



12" PREPARED SUB-GRADE
COMPACTED TO NOT LESS THAN 98%
OF MAXIMUM DENSITY.
MAXIMUM DENSITIES ARE DETERMINED
BY EITHER SC-T-25 (METHOD A OR C
AS APPLICABLE) OR SC-T-29.

GRADED AGGREGATE BASE COURSE - 6" UNIFORM

USE THIS SECTION ON ROAD 2
STA. 10+17.00 TO STA. 10+88.00

HOLT CONSULTING COMPANY, LLC.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29957 DANIEL M. ATKINSON
1/7/2022

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION HOLT CONSULTING COMPANY LLC No. 4831

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

DESIGNED BY: _____ DATE _____
DRAWN BY: _____ DATE _____
CHECKED BY: _____ DATE _____

RICHLAND COUNTY
CONSERVATION COMMISSION

TYPICAL SECTION
BRIDGE REPLACEMENT
OVER MILL CREEK

SHEET 3 | SCALE: NTS

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FED. RD. DIV. NO.	STATE	COUNTY	ROUTE NO.	SHEET NO.
3	SC	RICHLAND	–	5

GENERAL CONSTRUCTION NOTES

1. THIS PROJECT WILL CONSIST OF THE GRADING, DRAINAGE AND CONSTRUCTION OF APPROXIMATELY 140 LF OF ROADWAY, LOCATED IN RICHLAND COUNTY, SOUTH CAROLINA.
2. HORIZONTAL AND VERTICAL SURVEYS WERE PERFORMED BY SEPI, INC. AND ARE BASED ON NAD 83 STATE PLANE COORDINATES AND NAVD 88 ELEVATIONS SHOWN AT CONTROL POINTS AND BENCHMARKS ON THE PLANS.
3. CLEARING & GRUBBING OPERATIONS WILL BE PERFORMED ONLY IN THE IMMEDIATE AREA NECESSARY FOR THE CONSTRUCTION OF THE ROADWAY AND ALL WORK ASSOCIATED WITH THE PROJECT.
4. DISTURBED AREAS WILL BE RE-SEEDED AS SOON AS POSSIBLE FOLLOWING COMPLETION OF CONSTRUCTION ACTIVITIES IN THAT LOCATION. ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED, AND MULCHED AS NECESSARY OR AS DIRECTED BY THE ENGINEER TO ACHIEVE AN EROSION-RESISTANT VEGETATIVE COVER. METHOD "C" SHALL BE USED ON THIS PROJECT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, SECTION 810.4.12.
5. CLEANING OF EXISTING OUTFALLS SHALL BE PAID FOR UNDER CLEARING AND GRUBBING.
6. THE COST FOR CONSTRUCTION STAKES, LINES AND GRADES SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND INCLUDED IN THE COST FOR OTHER ITEMS.
7. THE CONTRACTOR SHALL REMOVE ALL SEDIMENT AND DEBRIS FROM ALL PIPES WITHIN THE PROJECT LIMITS UPON COMPLETION OF THE WORK.
8. ALL EXISTING ROADWAY SIGNAGE AFFECTED BY CONSTRUCTION ACTIVITIES SHALL BE RELOCATED, REUSED OR REPLACED AS INDICATED ON THE PLANS OR AS DEEMED NECESSARY TO PERFORM THE WORK. IF ROADWAY REMAINS OPEN TO TRAFFIC DURING CONSTRUCTION, ALL SIGNS THAT ARE TO BE RELOCATED SHALL BE ERECTED IN A TEMPORARY MANNER THAT DOES NOT IMPEDE TRAFFIC FLOW. ANY SIGN MESSAGE THAT CONFLICTS WITH THE CONSTRUCTION TRAFFIC CONTROL SIGNAGE SHALL BE COVERED OR TEMPORARILY REMOVED.
9. THE CONTRACTOR SHALL ADHERE TO THE WEIGHT LIMITS PRESCRIBED ON SCDOT/COUNTY MAINTAINED ROADS FOR HAULING EQUIPMENT AND/OR MATERIALS TO AND FROM THIS SITE. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGES TO THE ROADS AND/OR UTILITIES DUE TO NONCOMPLIANCE OF WEIGHT LIMIT REGULATIONS.
10. THE RICHLAND COUNTY DEPARTMENT OF TRANSPORTATION AND/OR THEIR CONSULTANT MUST SPECIFICALLY AUTHORIZE CHANGES INVOLVING INCREASED COST OF PROJECT OR CHANGES IN ALIGNMENT
11. THE CONTRACTOR SHALL GRADE FOR POSITIVE DRAINAGE IN CONFORMANCE WITH THE PROPOSED DRAINAGE PATTERNS ON THE PLANS.
12. THE CONTRACTOR MUST NOT OCCUPY ANY NON-PERMITTED WETLAND AREAS.

UTILITY INFORMATION

THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLANS HAVE BEEN DETERMINED FROM AVAILABLE INFORMATION AND ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE UTILITIES INFORMATION SHOWN ON THE DRAWINGS. IT IS THEREFORE THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM THAT THE PROPER COORDINATION WITH THE VARIOUS UTILITY OWNERS HAS BEEN PERFORMED.

THE CONTRACTOR SHALL COOPERATE WITH THE UTILITY OWNERS DURING RELOCATION OPERATIONS. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING AN UNDERGROUND UTILITY WHETHER SHOWN ON THE DRAWINGS OR LOCATED BY THE UTILITY COMPANY. COST OF DAMAGES TO ANY UTILITIES AS A RESULT OF CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

DHEC STANDARD NOTES

1. IF NECESSARY, SLOPES, WHICH EXCEED EIGHT (8) VERTICAL FEET SHOULD BE STABILIZED WITH SYNTHETIC OR VEGETATIVE MATS, IN ADDITION TO HYDROSEEDING. IT MAY BE NECESSARY TO INSTALL TEMPORARY SLOPE DRAINS DURING CONSTRUCTION. TEMPORARY BERMS MAY BE NEEDED UNTIL THE SLOPE IS BROUGHT TO GRADE.
2. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN FOURTEEN (14) DAYS AFTER WORK HAS CEASED, EXCEPT AS STATED BELOW.
   -WHERE STABILIZATION BY THE 14TH DAY IS PRECLUDED BY SNOW COVER OR FROZEN GROUND CONDITIONS STABILIZATION MEASURES MUST BE INITIATED AS SOON AS PRACTICABLE.
   -WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH-DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 14 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE.
3. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED ONCE EVERY CALENDAR WEEK. IF PERIODIC INSPECTION OR OTHER INFORMATION INDICATES THAT A BMP HAS BEEN INAPPROPRIATELY OR INCORRECTLY INSTALLED, THE PERMITTEE MUST ADDRESS THE NECESSARY REPLACEMENT OR MODIFICATION REQUIRED TO CORRECT THE BMP WITHIN 48 HOURS OF IDENTIFICATION.
4. PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED, AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY INSTALLATION. FILL, COVER, AND TEMPORARY SEEDING AT THE END OF EACH DAY ARE RECOMMENDED. IF WATER IS ENCOUNTERED WHILE TRENCHING, THE WATER SHOULD BE FILTERED TO REMOVE SEDIMENT BEFORE BEING PUMPED BACK INTO ANY WATERS OF THE STATE.
5. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
6. THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO PAVED ROADWAY(S) FROM CONSTRUCTION AREAS AND THE GENERATION OF DUST. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT, AS MAY BE REQUIRED.
7. RESIDENTIAL SUBDIVISIONS REQUIRE EROSION CONTROL FEATURES FOR INFRASTRUCTURE AS WELL AS FOR INDIVIDUAL LOT CONSTRUCTION. INDIVIDUAL PROPERTY OWNERS SHALL FOLLOW THESE PLANS DURING CONSTRUCTION OR OBTAIN APPROVAL OF AN INDIVIDUAL PLAN IN ACCORDANCE WITH S.C REG. 72-300 ET SEQ. AND SCR100000.
8. TEMPORARY DIVERSION BERMS AND/OR DITCHES WILL BE PROVIDED AS NEEDED DURING CONSTRUCTION TO PROTECT WORK AREAS FROM UPSLOPE RUNOFF AND/OR TO DIVERT SEDIMENT-LADEN WATER TO APPROPRIATE TRAPS OR STABLE OUTLETS.
9. ALL WATERS OF THE STATE (WOS), INCLUDING WETLANDS, ARE TO BE FLAGGED OR OTHERWISE CLEARLY MARKED IN THE FIELD. A DOUBLE ROW OF SILT FENCE IS TO BE INSTALLED IN ALL AREAS WHERE A 50-FOOT BUFFER CAN'T BE MAINTAINED BETWEEN THE DISTURBED AREA AND ALL WAS. A 10-FOOT BUFFER SHOULD BE MAINTAINED BETWEEN THE LAST ROW OF SILT FENCE AND ALL WAS.
10. LITTER, CONSTRUCTION DEBRIS, OILS, FUELS, AND BUILDING PRODUCTS WITH SIGNIFICANT POTENTIAL FOR IMPACT (SUCH AS STOCKPILES OF FRESHLY TREATED LUMBER) AND CONSTRUCTION CHEMICALS THAT COULD BE EXPOSED TO STORM WATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE IN STORM WATER DISCHARGES.
11. A COPY OF THE SWPPP, INSPECTIONS RECORDS, AND RAINFALL DATA MUST BE RETAINED AT THE CONSTRUCTION SITE OR A NEARBY LOCATION EASILY ACCESSIBLE DURING NORMAL BUSINESS HOURS, FROM THE DATE OF COMMENCEMENT OF CONSTRUCTION ACTIVITIES TO THE DATE THAT FINAL STABILIZATION IS REACHED.
12. INITIATE STABILIZATION MEASURES ON ANY EXPOSED STEEP SLOPE (3H:1V OR GREATER) WHERE LAND-DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED, AND WILL NOT RESUME FOR A PERIOD OF 7 CALENDAR DAYS.
13. MINIMIZE SOIL COMPACTION AND, UNLESS INFEASIBLE, PRESERVE TOPSOIL.
14. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER, AND OTHER WASH WATERS. WASH WATERS MUST BE TREATED IN A SEDIMENT BASIN OR ALTERNATIVE CONTROL THAT PROVIDES EQUIVALENT OR BETTER TREATMENT PRIOR TO DISCHARGE;
15. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM DEWATERING OF TRENCHES AND EXCAVATED AREAS. THESE DISCHARGES ARE TO BE ROUTED THROUGH APPROPRIATE BMPS (SEDIMENT BASIN, FILTER BAG, ETC.).
16. THE FOLLOWING DISCHARGES FROM SITES ARE PROHIBITED:
   -WASTEWATER FROM WASHOUT OF CONCRETE, UNLESS MANAGED BY AN APPROPRIATE CONTROL; FOR THIS PROJECT, NO CONCRETE WASHOUTS TO BE ALLOWED WITHIN PROJECT LIMITS; CONTRACTOR TO COORDINATE FOR APPROPRIATE OFFSITE LOCATION.
   -WASTEWATER FROM WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS;
   -FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE; AND
   -SOAPS OR SOLVENTS USED IN VEHICLE AND EQUIPMENT WASHING.
17. AFTER CONSTRUCTION ACTIVITIES BEGIN, INSPECTIONS MUST BE CONDUCTED AT A MINIMUM OF AT LEAST ONCE EVERY CALENDAR WEEK AND MUST BE CONDUCTED UNTIL FINAL STABILIZATION IS REACHED ON ALL AREAS OF THE CONSTRUCTION SITE.
18. IF EXISTING BMPS NEED TO BE MODIFIED OR IF ADDITIONAL BMPS ARE NECESSARY TO COMPLY WITH THE REQUIREMENTS OF THIS PERMIT AND/OR SC'S WATER QUALITY STANDARDS, IMPLEMENTATION MUST BE COMPLETED BEFORE THE NEXT STORM EVENT WHENEVER PRACTICABLE. IF IMPLEMENTATION BEFORE THE NEXT STORM EVENT IS IMPRACTICABLE, THE SITUATION MUST BE DOCUMENTED IN THE SWPPP AND ALTERNATIVE BMPS MUST BE IMPLEMENTED AS SOON AS REASONABLY POSSIBLE.
19. A PRE-CONSTRUCTION CONFERENCE MUST BE HELD FOR EACH CONSTRUCTION SITE WITH AN APPROVED ON-SITE SWPPP PRIOR TO THE IMPLEMENTATION OF CONSTRUCTION ACTIVITES. FOR NON-LINEAR PROJECTS THAT DISTURB 10 ACRES OR MORE THIS CONFERECE MUST BE HELD ON-SITE UNLESS THE DEPARTMENT HAS APPROVED OTHERWISE.

CONSTRUCTION SEQUENCE

1. RECEIVE NPDES COVERAGE FROM DHEC.
2. PRE-CONSTRUCTION MEETING (ON SITE IF MORE THAN 10 ACRES DISTURBED AND NON-LINEAR).
3. NOTIFY RICHLAND COUNTY PUBLIC WORKS 48 HOURS PRIOR TO BEGINNING LAND-DISTURBING ACTIVITIES.
4. INSTALLATION OF CONSTRUCTION ENTRANCES.
5. CLEARING AND GRUBBING ONLY AS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS.
6. INSTALLATION OF PERIMETER CONTROLS (E.G. SILT FENCE).
7. CLEARING AND GRUBBING ONLY IN AREAS OF BASINS/TRAPS/PONDS.
8. INSTALLATION OF BASINS/TRAPS/PONDS AND INSTALLATION OF DIVERSIONS TO THOSE STRUCTURES (OUTLET STRUCTURES MUST BE COMPLETELY INSTALLED AS SHOWN ON THE DETAILS BEFORE PROCEEDING TO NEXT STEP; AREAS DRAINING TO THESES STRUCTURES CANNOT BE DISTURBED UNTIL THE STRUCTURES AND DIVERSIONS TO THE STRUCTURES ARE COMPLETELY INSTALLED).
9. CLEARING AND GRUBBING OF SITE OR DEMOLITION (SEDIMENT AND EROSION CONTROL MEASURES FOR THESE AREAS MUST ALREADY BE INSTALLED).
10. ROUGH GRADING.
11. FINE GRADING, PAVING, ETC.
12. PERMANENT/FINAL STABILIZATION.
13. CLEAN-OUT OF DETENTION BASINS THAT WERE USED AS SEDIMENT CONTROL STRUCTURES AND RE-GRADING OF DETENTIONS; IF NECESSARY, MODIFICATION OF SEDIMENT BASIN RISER TO CONVERT TO DETENTION BASIN OUTLET STRUCTURE.
14. REMOVAL OF TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES AFTER ENTIRE AREA DRAINING TO THE STRUCTURE IS FINALLY STABILIZED (THE DEPARTMENT RECOMMENDS THAT THE PROJECT OWNER/OPERATOR HAVE THE SWPPP PREPARER OR REGISTRATION EQUIVALENT APPROVE THE REMOVAL OF TEMPORARY STRUCTURES. MAINTENANCE OF ALL SEDIMENT AND EROSION CONTROL MEASURES MUST CONTINUE UNTIL THE SITE IS PERMANENTLY STABILIZED AND THE CONTROLS ARE REMOVED).
15. PERFORM AS-BUILT SURVEYS OF ALL DETENTION STRUCTURES AND SUBMIT TO DHEC OR MS4 FOR ACCEPTANCE.
16. SUBMIT NOTICE OF TERMINATION (NOT) TO DHEC AS APPROPRIATE.

HOLT CONSULTING COMPANY, LLC.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29957 DANIEL N. ATKINSON
1/7/2022

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION HOLT CONSULTING COMPANY LLC No. 4831

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

DESIGNED BY: _____ DATE _____
DRAWN BY: _____ DATE _____
CHECKED BY: _____ DATE _____

RICHLAND COUNTY
CONSERVATION COMMISSION

GENERAL NOTES
BRIDGE REPLACEMENT
OVER MILL CREEK

SHEET 5 | SCALE: NTS

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07-JAN-2022 15:41
scurry

Beginning chain ROAD_1 description
==========

Point CL10 N 727,508.7434 E 2,034,460.5248 Sta 104+00.00

Course from CL10 to PC ROAD1_1 N 81° 26' 39.16" E Dist 34.3953

Curve Data

Curve ROAD1_1
P.I. Station 104+43.40 N 727,515.1996 E 2,034,503.4384
Delta = 10° 17' 12.94" (LT)
Degree = 57° 17' 44.81"
Tangent = 9.0012
Length = 17.9541
Radius = 100.0000
External = 0.4043
Long Chord = 17.9300
Mid. Ord. = 0.4027
P.C. Station 104+34.40 N 727,513.8605 E 2,034,494.5374
P.T. Station 104+52.35 N 727,518.1067 E 2,034,511.9573
C.C. N 727,612.7476 E 2,034,479.6601
Back = N 81° 26' 39.16" E
Ahead = N 71° 09' 26.23" E
Chord Bear = N 76° 18' 02.70" E

Course from PT ROAD1_1 to PC ROAD1_2 N 71° 09' 26.23" E Dist 36.4812

Curve Data

Curve ROAD1_2
P.I. Station 104+94.43 N 727,531.6966 E 2,034,551.7799
Delta = 9° 05' 14.26" (RT)
Degree = 81° 21' 31.31"
Tangent = 5.5964
Length = 11.1694
Radius = 70.4237
External = 0.2220
Long Chord = 11.1577
Mid. Ord. = 0.2213
P.C. Station 104+88.83 N 727,529.8891 E 2,034,546.4834
P.T. Station 105+00.00 N 727,532.6449 E 2,034,557.2955
C.C. N 727,463.2395 E 2,034,569.2282
Back = N 71° 09' 26.23" E
Ahead = N 80° 14' 40.49" E
Chord Bear = N 75° 42' 03.36" E

Course from PT ROAD1_2 to PC ROAD1_3 N 80° 14' 40.49" E Dist 100.0000

Curve Data

Curve ROAD1_3
P.I. Station 106+11.41 N 727,551.5232 E 2,034,667.0984
Delta = 9° 50' 05.35" (RT)
Degree = 43° 11' 17.79"
Tangent = 11.4140
Length = 22.7720
Radius = 132.6651
External = 0.4901
Long Chord = 22.7440
Mid. Ord. = 0.4883
P.C. Station 106+00.00 N 727,549.5892 E 2,034,655.8495
P.T. Station 106+22.77 N 727,551.5074 E 2,034,678.5124
C.C. N 727,418.8424 E 2,034,678.3286
Back = N 80° 14' 40.49" E
Ahead = S 89° 55' 14.16" E
Chord Bear = N 85° 09' 43.16" E

Course from PT ROAD1_3 to CL11 S 89° 55' 14.16" E Dist 28.0403

Point CL11 N 727,551.4685 E 2,034,706.5527 Sta 106+50.81

==========
Ending chain ROAD_1 description

Beginning chain ROAD_2 description
==========

Point CL20 N 727,500.1328 E 2,034,691.3183 Sta 10+00.00

Course from CL20 to PC ROAD2 N 7° 07' 14.16" E Dist 30.0000

Curve Data

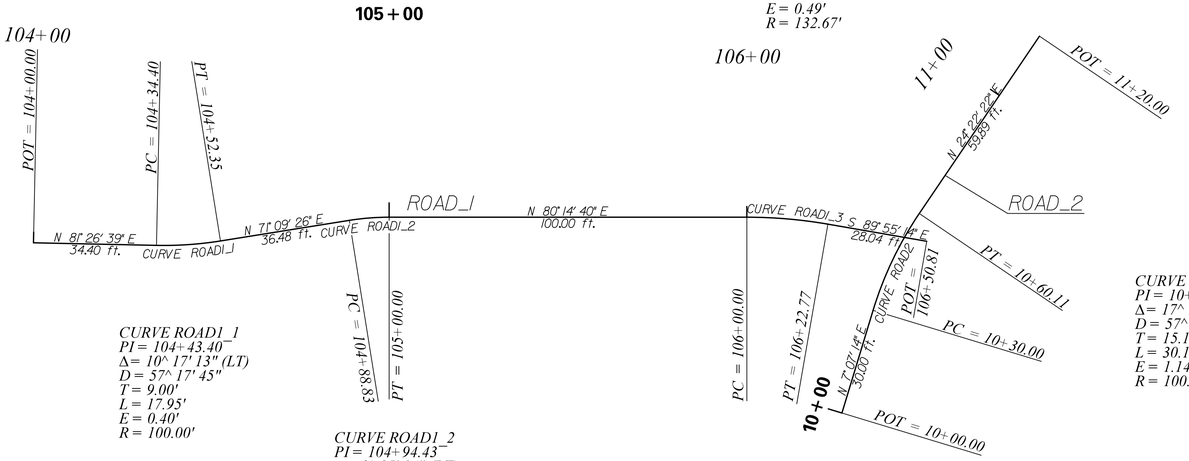
Curve ROAD2
P.I. Station 10+45.17 N 727,544.9545 E 2,034,696.9176
Delta = 17° 15' 07.81" (RT)
Degree = 57° 17' 44.81"
Tangent = 15.1701
Length = 30.1107
Radius = 100.0000
External = 1.1441
Long Chord = 29.9971
Mid. Ord. = 1.1312
P.C. Station 10+30.00 N 727,529.9014 E 2,034,695.0371
P.T. Station 10+60.11 N 727,558.7727 E 2,034,703.1778
C.C. N 727,517.5056 E 2,034,794.2658
Back = N 7° 07' 14.16" E
Ahead = N 24° 22' 21.97" E
Chord Bear = N 15° 44' 48.07" E

Course from PT ROAD2 to CL21 N 24° 22' 21.97" E Dist 59.8893

Point CL21 N 727,613.3247 E 2,034,727.8925 Sta 11+20.00

==========
Ending chain ROAD_2 description

FED. RD. DIV. NO.	STATE	COUNTY	ROUTE NO.	SHEET NO.
3	SC	RICHLAND	–	5A



HOLT CONSULTING COMPANY, LLC.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29957 DANIEL M. ATKINSON
1/7/2022

HOLT CONSULTING COMPANY, LLC SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION No. 4831

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

DESIGNED BY: _____ DATE _____
DRAWN BY: _____ DATE _____
CHECKED BY: _____ DATE _____

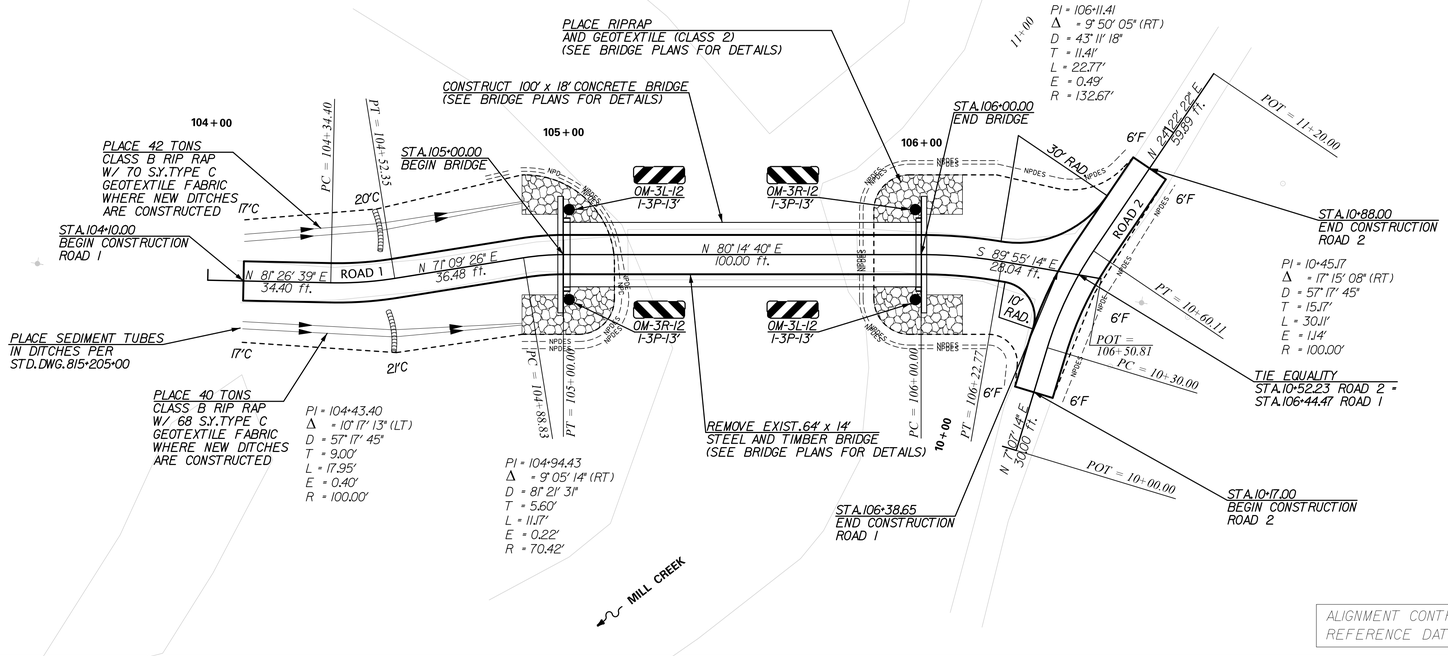
RICHLAND COUNTY
CONSERVATION COMMISSION

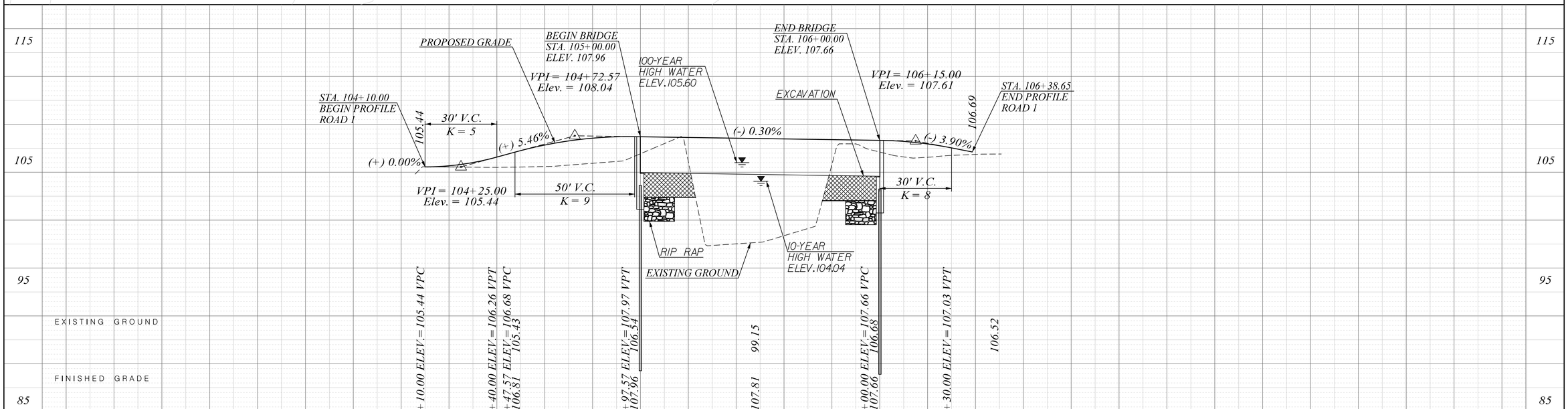
REFERENCE DATA SHEET
BRIDGE REPLACEMENT
OVER MILL CREEK

SHEET 5A | SCALE: 1" = 20'

C:\HCC\Holt Consulting Company\Surface - South Carolina\Richland_County\SC0304-06_Road_Badge\Design\Sheets\SHEET_5A.dgn
07-JAN-2022 15:41
scurry

FED. RD. DIV. NO.	STATE	COUNTY	ROUTE NO.	SHEET NO.
3	SC	RICHLAND	–	6





HOLT CONSULTING COMPANY, LLC.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29957 DANIEL M. ATKINSON 1/7/2022

SOUTH CAROLINA HOLT CONSULTING COMPANY LLC No. 4831 CERTIFICATE OF AUTHORIZATION

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

DESIGNED BY: ____ DATE ____
DRAWN BY: ____ DATE ____
CHECKED BY: ____ DATE ____

RICHLAND COUNTY CONSERVATION COMMISSION

PLAN AND PROFILE SHEET
BRIDGE REPLACEMENT
OVER MILL CREEK
STA. 104+10.00 TO STA. 106+38.65

SHEET 6 | SCALE: 1" = 20'

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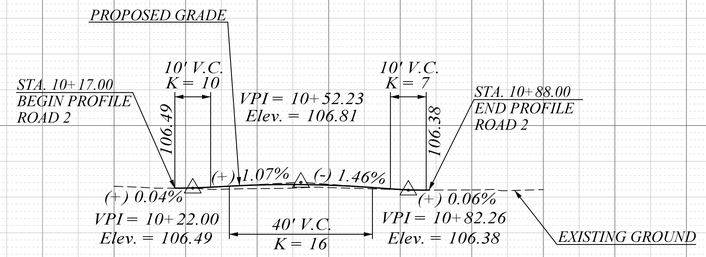
scurry

FED. RD. DIV. NO.	STATE	COUNTY	ROUTE NO.	SHEET NO.
3	SC	RICHLAND	–	6A

ROAD 2



	10+00			11+00		
EXISTING GROUND	106.60	+ 17.00 ELEV.= 106.49 VPC	+ 27.00 ELEV.= 106.54 VPT	106.49	+ 72.23 ELEV.= 106.52 VPT	+ 77.26 ELEV.= 106.45 VPC	+ 87.26 ELEV.= 106.38 VPT	106.39
FINISHED GRADE			+ 32.23 ELEV.= 106.60 VPC	106.69				

HOLT CONSULTING COMPANY, LLC.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER
DANIEL M. ATKINSON
No. 29957
1/7/2022

HOLT CONSULTING COMPANY LLC
No. 4831
SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION

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

DESIGNED BY: _____ DATE _____
DRAWN BY: _____ DATE _____
CHECKED BY: _____ DATE _____

RICHLAND COUNTY
CONSERVATION COMMISSION

PROFILE SHEET
BRIDGE REPLACEMENT
OVER MILL CREEK

SHEET 6A | SCALE: 1" = 20'

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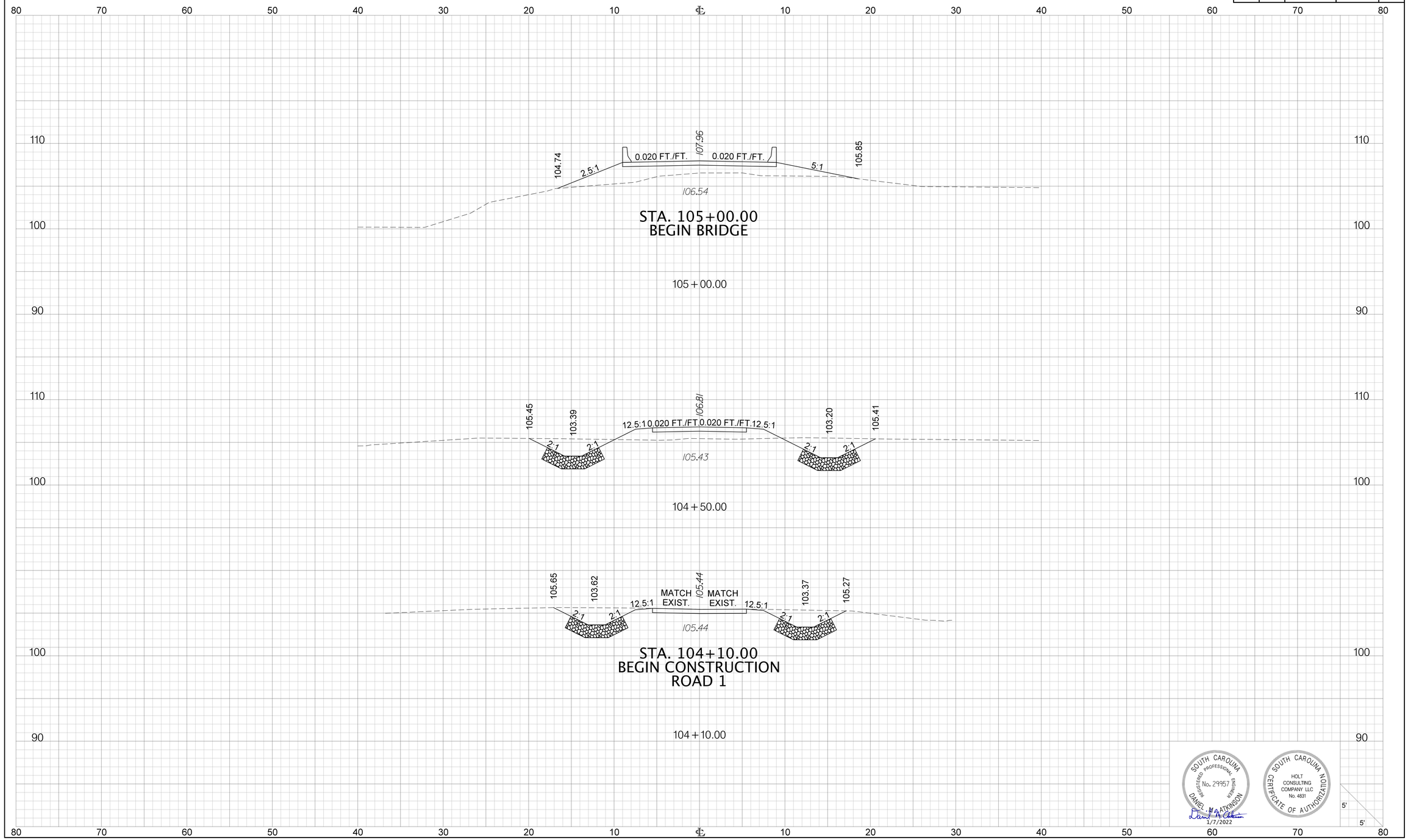
07-JAN-2022 15:42
scurry

ROAD 1

FED. RD. DIV. NO.	STATE	COUNTY	ROUTE NO.	SHEET NO.
3	SC	RICHLAND	-	X1



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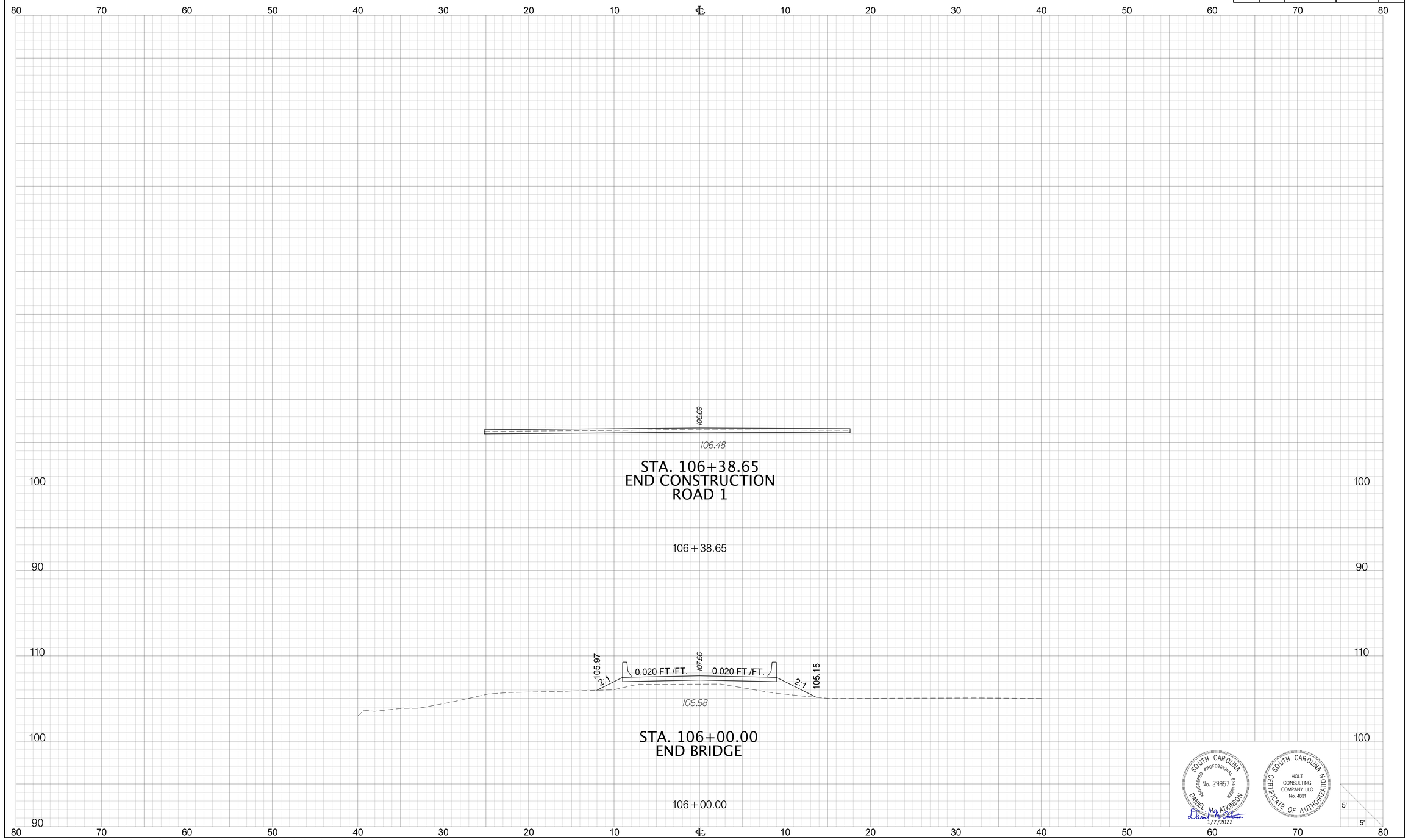
ROAD 1

FED. RD. DIV. NO.	STATE	COUNTY	ROUTE NO.	SHEET NO.
3	SC	RICHLAND	-	X2



SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER
No. 29957
DANIEL M. ATKINSON
1/7/2022

SOUTH CAROLINA
HOLT CONSULTING COMPANY LLC
No. 4831
CERTIFICATE OF AUTHORIZATION

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scurry
07-JAN-2022 15:42

ROAD 2

FED. RD. DIV. NO.	STATE	COUNTY	ROUTE NO.	SHEET NO.
3	SC	RICHLAND	-	X3

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

110 100 90

MATCH EXIST. 106.38 MATCH EXIST.

106.38

STA. 10+88.00
END CONSTRUCTION
ROAD 2

10+88.00

INTERSECTION WITH ROAD 1

106.69 106.51

0.020 FT./FT. 0.020 FT./FT. 12.5:1

106.49

10+50.00

MATCH EXIST. 106.49 MATCH EXIST.

106.49

STA. 10+17.00
BEGIN CONSTRUCTION
ROAD 2

10+17.00

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29957 DANIEL C. ATKINSON 1/7/2022

SOUTH CAROLINA HOLT CONSULTING COMPANY LLC No. 4831 CERTIFICATE OF AUTHORIZATION

5' 5'

C:\HCC\Holt Consulting Company\Surface - South Carolina\Richland_County\SC0304-06_Road_Bridge\Design\Cross Sections\PX_MO.dgn
scurry
07-JAN-2022 15:42

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, CHARLESTON DISTRICT
150 EXECUTIVE CENTER DRIVE, SUITE 205
GREENVILLE, SOUTH CAROLINA 29615

AUGUST 10, 2022

Regulatory Division

Mr. Wade Biltoft
Three Oaks Engineering
1022 State Street
Cayce, SC 29033
Wade.biltoft@threeoaksengineering.com

Dear Mr. Biltoft:

This is in response to your request for a preliminary jurisdictional determination (PJD) that is part of an overall project known as Mill Creek RCCC Bridge Replacement. Based on information submitted to the U.S. Army Corps of Engineers (Corps) we have determined there may be waters of the United States, including wetlands on your parcel located at the following:

Project Number:	SAC-2022-00410
County:	Richland County
Project/Site Size:	1.6 acres
Latitude:	33.8329°
Longitude:	-80.8861°
Project/Site Location:	The bridge site is located immediately west of Mosley Oaks Road in Hopkins, SC.
Waters (Acreage/Linear Feet):	0.05 acres of wetlands and 232.39 linear feet of tributaries.

A copy of the PJD form and the map dated February 03, 2022 and titled “Mill Creek RCCC Bridge Replacement – Aquatic Resources Map”, is enclosed. Please carefully read this form, then sign and return a copy to the project manager at the following Travis.F.Scott@usace.army.mil within 30 days from the date of this notification.

Please be advised a Department of the Army permit will be required for regulated work in all areas which may be waters of the United States, as indicated in this PJD. For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a PJD will treat all waters and wetlands, which would be affected in any way by the permitted activity on the site, as if they are jurisdictional waters of the United States. Should you desire an approved Corps determination, one will be issued upon request.

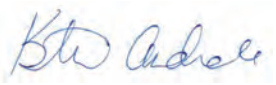
You are cautioned that work performed in areas which may be waters of the United States, as indicated in the PJD, without a Department of the Army permit could subject you to enforcement action.

The delineation included herein has been conducted to identify the location and extent of the aquatic resource boundaries and/or the jurisdictional status of aquatic resources for purposes of the Clean Water Act for the particular site identified in this request. This delineation and/or jurisdictional determination may not be valid for the Wetland Conservation Provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should discuss the applicability of a certified wetland determination with the local USDA service center, prior to starting work.

If you submit a permit application as a result of this PJD, include a copy of this letter and the depiction as part of the application. Not submitting the letter and depiction will cause a delay while we confirm a PJD was performed for the proposed permit project area. Note that some or all of these areas may be regulated by other state or local government entities, and you should contact the South Carolina Department of Health and Environmental Control, Bureau of Water to determine the limits of their jurisdiction.

In all future correspondence, please refer to file number SAC-2022-00410. A copy of this letter is forwarded to State and/or Federal agencies for their information. If you have any questions, please contact Travis Scott, Project Manager, at 864-609-4325, or by email at Travis.F.Scott@usace.army.mil.

Sincerely,



Date: 2022.08.10
06:59:54 -04'00'

Kristin Andrade
Team Leader

Enclosures:
Preliminary Jurisdictional Determination Form
Notification of Appeal Options
“Mill Creek RCCC Bridge Replacement – Aquatic Resources Map”.

Copies Furnished:

Mr. Quinton Epps
Richland County Conservation Division
2020 Hampton Street, Room 3063A
Columbia, SC 29204
epps.quinton@richalndcountysc.gov

SC DHEC - Bureau of Water
2600 Bull Street
Columbia, South Carolina 29201
WQCWetlands@dhec.sc.gov

BACKGROUND INFORMATION

A. **REPORT COMPLETION DATE FOR PJD:** 10-AUG-2022

B. **NAME AND ADDRESS OF PERSON REQUESTING PJD:**

Applicant:
Quinton Epps
Richland County Conservation Division
2020 Hampton Street, Room 3063A
Columbia, SC 29204
epps.quinton@richlandcountysc.gov

Agent:
Wade Biltoft
Three Oaks Engineering
1022 State Street
Cayce, SC 29033
Wade.biltoft@threeoaksengineering.com

C. **DISTRICT OFFICE, FILE NAME, AND NUMBER:**
SAC, Mill Creek RCCC Bridge Replacement, SAC-2022-00410

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: SC County: Richland County City: Saylors Lake
Center coordinates of site (lat/long in degree decimal format):
Lat.: 33.8329º Long.: -80.8861º
Universal Transverse Mercator: 17
Name of nearest waterbody: Congaree River

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☒ Office (Desk) Determination. Date: July 11, 2022
☐ Field Determination. Date(s):

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.

Site Number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
Non-wetlands Waters 1 (SA)	33.832975	-80.886016	175.56 feet	Non-wetland waters	Section 404
Non-wetlands Waters 2 (SB)	33.833069	-80.885916	56.83 feet	Non-wetland waters	Section 404

[1] Districts may establish timeframes for requester to return signed PJD forms. If the requester does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

Wetland A (WA)	33.832778	-80.886528	0.05 acres	Non-wetland waters	Section 404

1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the.JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there “may be” waters of the U.S. and/or that there “may be” navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

_X_ Maps, plans, plots or plat submitted by or on behalf of the PJD requestor: Three Oaks Engineering Map: “Mill Creek RCCC Bridge Replacement – Aquatic Resources Map” .
_X_ Data sheets prepared/submitted by or on behalf of the PJD requestor.
  _X_ Office concurs with data sheets/delineation report. The Corps agrees with the conclusions of the submitted report and data sheets.

[1] Districts may establish timeframes for requester to return signed PJD forms. If the requester does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

___ Office does not concur with data sheets/delineation report. Rationale: _____.
___ Data sheets prepared by the Corps: _N/A_____.
_X_ Corps navigable waters' study: 1977Navigability Study_____.
_X_ U.S. Geological Survey Hydrologic Atlas: _HA 730-G, 1990_____.
___ USGS NHD data.
_X_ USGS 8 and 12 digit HUC maps. 03050110 and 030501100310.
_X_ U.S. Geological Survey map(s). Cite scale & quad name: 1:24,000 Saylors Lake, SC 2020_____.
_X_ Natural Resources Conservation Service Soil Survey. Citation: "Mill Creek RCCC Bridge Replacement – Soil Survey Map" submitted by Three Oaks Engineering and dated January 30, 2021.
_X_ National wetlands inventory map(s). Cite name: "Mill Creek RCCC Bridge Replacement – NIW & NHD Map" submitted by Three Oaks Engineering and dated January 30, 2021.
___ State/local wetland inventory map(s): _____.
___ FEMA/FIRM maps: _____
___ 100-year Floodplain Elevation is: _____. (National Geodetic Vertical Datum of 1929)
_X_ Photographs: _X_ Aerial (Name & Date): "Mill Creek RCCC Bridge Replacement – Aquatic Resources Map" submitted by Three Oaks Engineering and dated February 03, 2022.
___ or _X_ Other (Name & Date): Photos 1-3 of 3 provided by Three Oaks Engineering.
___ Previous determination(s). File no. and date of response letter: _____.
___ Other information (please specify): _____.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Travis F. Scott August 10, 2022
Signature and date of Regulatory staff member completing PJD

_____
Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable)[1]

[1] Districts may establish timeframes for requester to return signed PJD forms. If the requester does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

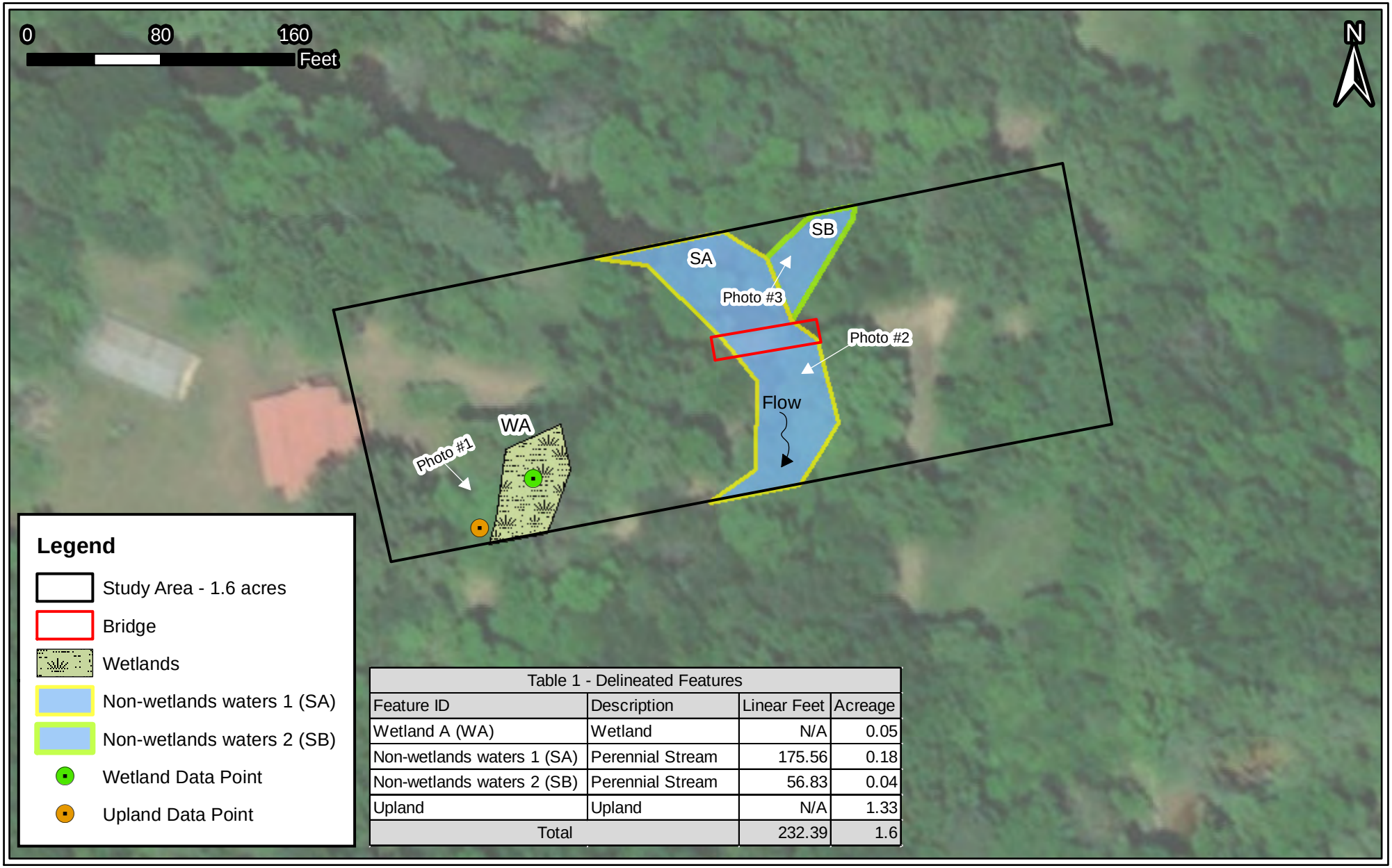


Table 1 - Delineated Features			
Feature ID	Description	Linear Feet	Acreage
Wetland A (WA)	Wetland	N/A	0.05
Non-wetlands waters 1 (SA)	Perennial Stream	175.56	0.18
Non-wetlands waters 2 (SB)	Perennial Stream	56.83	0.04
Upland	Upland	N/A	1.33
Total		232.39	1.6

THREE OAKS ENGINEERING

Prepared For:

RICHLAND COUNTY SOUTH CAROLINA

Mill Creek RCCC
Bridge Replacement

Aquatic Resources Map

Richland County, South Carolina

Date: July 28, 2022
Scale: 1 in = 80 feet
Job No.: 21-117
Drawn By: ZCB
Checked By: WCB

Figure 8

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, CHARLESTON DISTRICT
150 EXECUTIVE CENTER DRIVE, SUITE 205
GREENVILLE, SOUTH CAROLINA 29615

AUGUST 10, 2022

Regulatory Division

Mr. Quinton Epps
Richland County Conservation Division
2020 Hampton Street, Room 3063A
Columbia, SC 29204
epps.quinton@richlandcountysc.gov

Dear Mr. Epps:

This is in response to your February 07, 2022 letter inquiring if it is necessary to obtain a Department of the Army Permit for replacement of a structurally deficient bridge over an unnamed tributary of the Dead River (SAC-2022-00410). The work affecting waters of the United States is part of an overall project known as Mill Creek RCCC Bridge Replacement. The proposed project is located immediately west of Mosley Oaks Road in Saylors Lake, SC., Richland County, South Carolina (Latitude: 33.8329 °, Longitude: -80.8861 °). The site is depicted on the map you submitted, prepared by Three Oaks Engineering, dated February 03, 2022, and entitled "Mill Creek RCCC Bridge Replacement – Aquatic Resources Map".

We have reviewed the project drawings and description of work you provided (attached) titled “Richland County – Replace Bridge Over Mill Creek” sheets 1-13 of 13 and dated May 10, 2022. Based on a review of the information, your work as proposed is not a regulated activity pursuant to Section 404 of the Clean Water Act, and therefore, does not require a Department of the Army permit.

Be advised this letter does not make any determination regarding the presence or absence of wetlands and/or other Waters of the U.S. A jurisdictional determination may be requested by submitting a Request for Jurisdictional Determination (JD) / Delineation which can be found on our website at:

http://www.sac.usace.army.mil/Missions/Regulatory/PermittingProcess

It is your responsibility to ensure no unauthorized work in Navigable Waters of the United States or discharges of dredged or fill material into wetlands and/or other waters of the United States occurs as part of the proposed work. Note that performing such an action without the requisite permit could be a violation of the Clean Water Act and/or the Rivers and Harbors Act and may result in enforcement action.

This “No Permit Required” determination remains valid unless new information, (including changes to project plans), warrants revision. You may need state or local assent. Prior to performing any work, you should contact the South Carolina

Department of Health and Environmental Control Bureau of Water. A copy of this letter is forwarded for their information.

In all future correspondence, please refer to file number SAC-2022-00410. If you have any questions, please contact Travis Scott, Project Manager, at 864-609-4325, or by email at Travis.F.Scott@usace.army.mil.

Sincerely,

Date: 2022.08.10
07:02:37 -04'00'

Kristin Andrade
Team Leader

Attachments:
"Richland County – Replace Bridge Over Mill Creek"

Copies Furnished:

Mr. Wade Biltoft
Three Oaks Engineering
1022 State Street
Cayce, SC 29033
Wade.biltoft@threeoaksengineering.com

SC DHEC - Bureau of Water
2600 Bull Street
Columbia, South Carolina 29201
WQCWetlands@dhec.sc.gov

09/08/99

CONTRACT #RC-393-Q-2021 TIP PROJECT #CPS21075

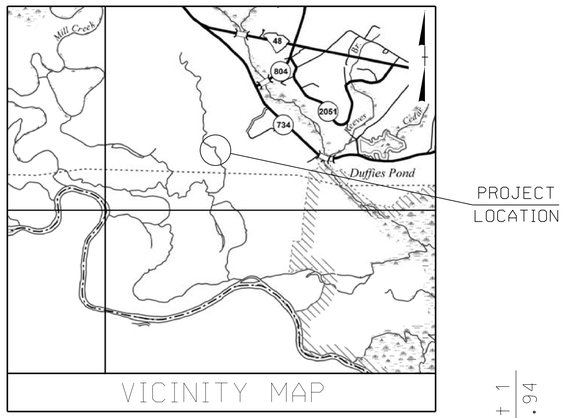
22-DEC-2021 15:20
C:\Users\Jonathan\Dropbox (CarolinaTEA)\Projects\Municipalities\Richland County Conservation Commission\Bridge and Dirt Road Improvement\Bridge\Plans\1_TS.dgn
Jonathan AT JONATHAN-5590

STATE	COUNTY PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
S.C.	CPS21075	1	13

RICHLAND COUNTY

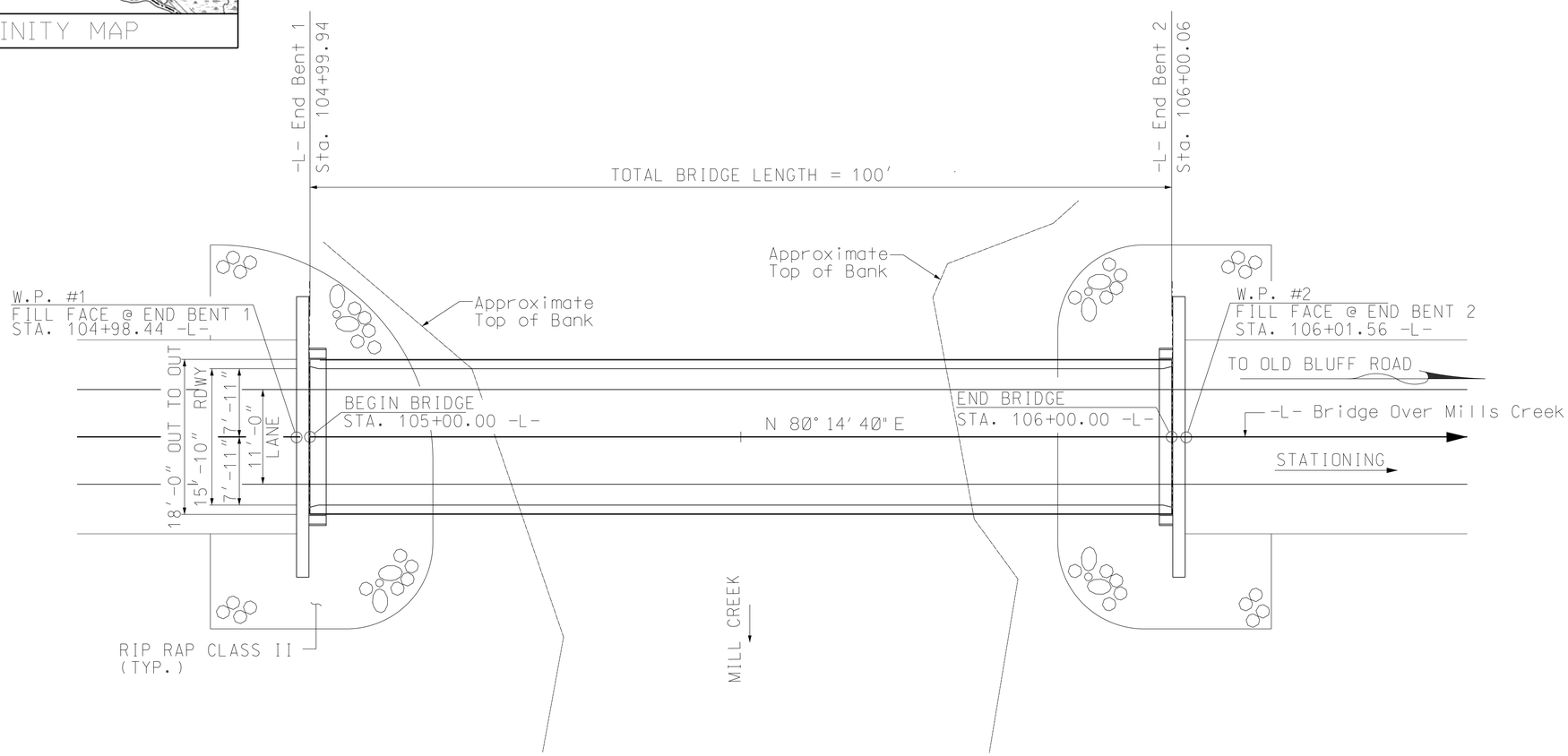
LOCATION: (DIRT ROAD) REPLACE BRIDGE OVER MILL CREEK

TYPE OF WORK: GRADING AND STRUCTURE



VICINITY MAP

NAD 83/11
NSRS 2011



GRAPHIC SCALES

PLANS

PROFILE (HORIZONTAL)

PROFILE (VERTICAL)

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT # CPS 21075 = 128.12

LENGTH OF STRUCTURE PROJECT # CPS 21075 = 100.00

TOTAL LENGTH OF PROJECT # CPS 21075 = 228.12

CAROLINA Transportation Engineers & Assoc., PC

Prepared in the Office of:
3600 Arco Corporate Drive, Suite 135
Charlotte, NC 28273
(980) 722-6065
www.carolina_TEA.com

License No. C-4307

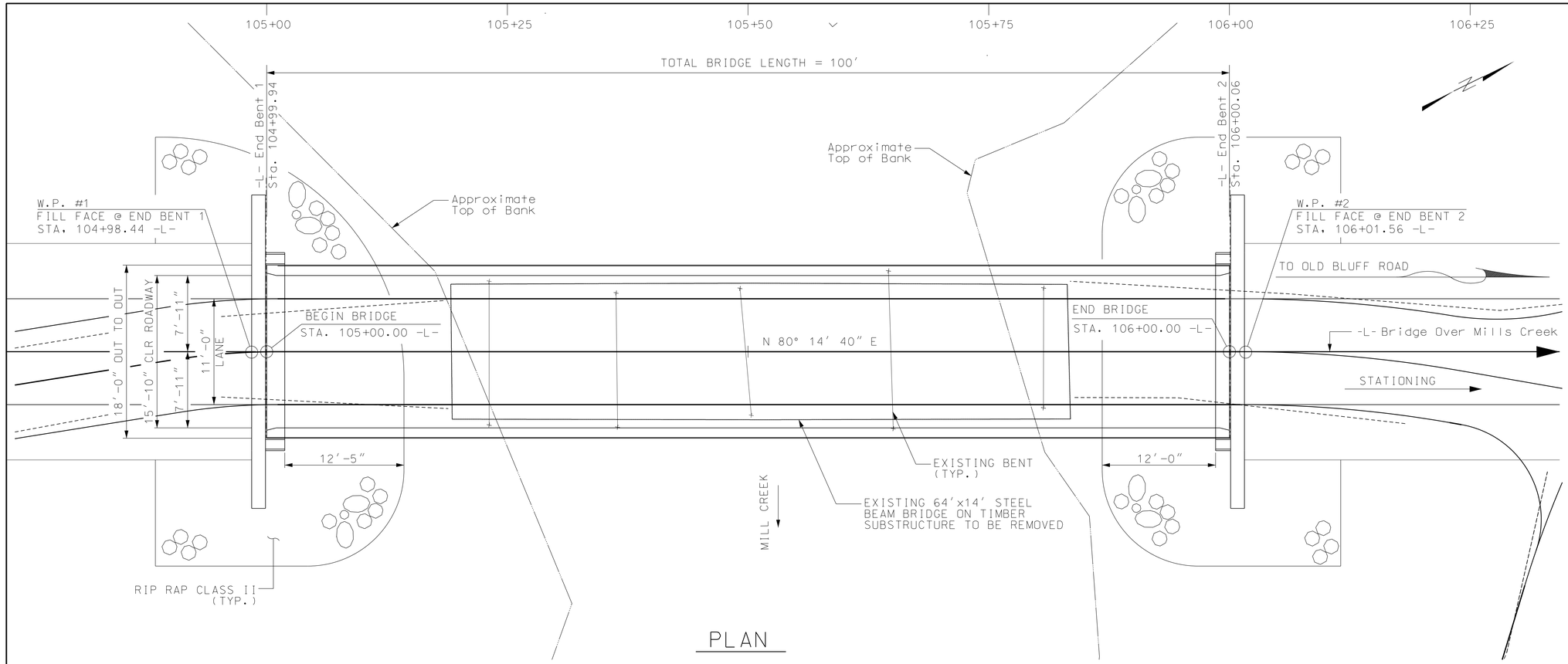
2018 STANDARD SPECIFICATIONS

DocuSigned by:
sacksone kounbandith
BE4463F6E883481...
8/3/2022

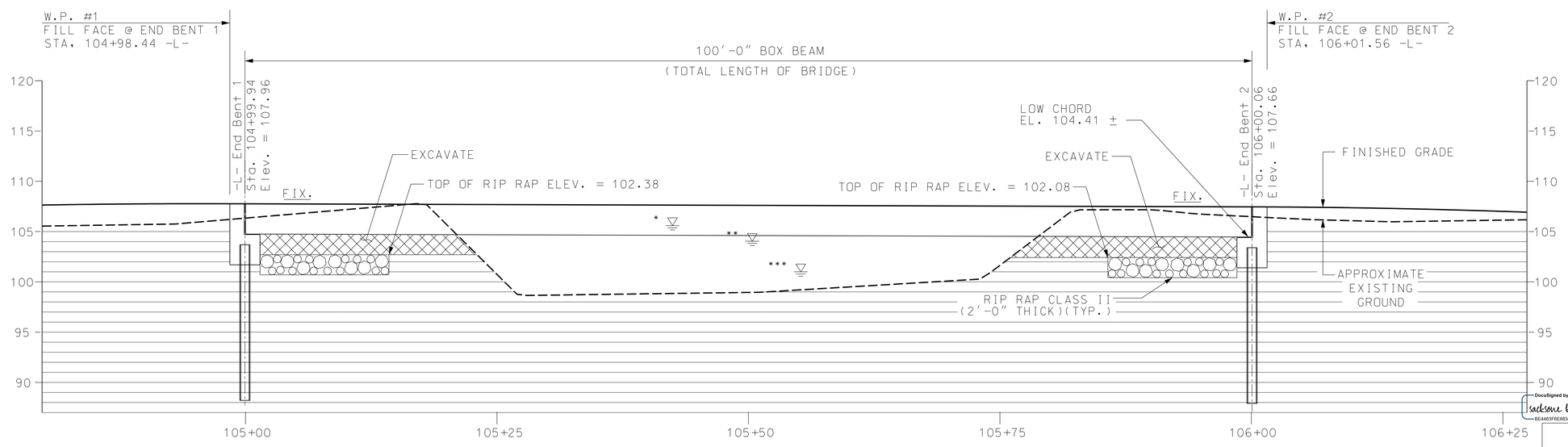
PROJECT DESIGN ENGINEER

SOUTH CAROLINA CAROLINA TRANSPORTATION ENGINEERS AND ASSOC., P.C. No. 5739 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 31235 SACKSONE KOUNBANDITH



PLAN



SECTION ALONG -L- BRIDGE

GENERAL NOTES:

1. Design data:
   Load and Resistance Factor Design (LRFD) method.
   Live Load: AASHTO HL-93 loading.
   Seismic design is in accordance with SCDOT "Supplemental Design Criteria For Low Volume Bridges with the following parameters:
   Design Acceleration Coefficients:
   Sd1 = 0.25g
2. All materials and workmanship shall be in accordance with the South Carolina Department of Transportation 2007 Specifications for Highway Construction.
3. Concrete for pile caps shall be class A with a minimum 28 days compressive strength of 4000 psi.
4. HP 12x53 piles shall be ATSM A709, grade 50 or approved equivalent.
5. All reinforcing steel shall conform to the most current C.R.S.I. Manual of standard Practice except for ties, stirrups, and welded hoops.
6. All bolts shall have washers and conform to ATSM A325.
7. Field locate any utilities prior to driving piles.
8. All miscellaneous steel shall be ATSM A709, grade 36 or eqivalent.

* 100-YR FLOOD ELEVATION = 105.60

** 10-YR FLOOD ELEVATION = 104.04

*** ORDINARY HIGH WATER MARK = 101.00

PROJECT NO. CPS21075

RICHLAND COUNTY

STATION: 104+10.00

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Jackson Kounbandith 8/3/2022
8E4463F6E883481...

PLANS PREPARED BY:

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SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 31235 JACKSON KOUNBANDITH

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RICHLAND COUNTY

GENERAL DRAWING

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			13

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Shilpkumar AT SHILPKUMAR-7540

GENERAL NOTES

FOR OTHER DESIGN DATA AND GENERAL AND STANDARD NOTES, SEE SHEET 2 AND 13.

FOR EROSION CONTROL MEASURES, SEE ROADWAY PLANS.

FOR SUBMITAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCURES, SEE SPECIAL PROVISIONS.

FOUNDATION NOTES

STANDARD SPECIFICATIONS REFERENCED BELOW ARE USDOT FHA STANDARD SPECIFICATIONS FP-14.

FOR PILES, SEE SECTION 711 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO. 1 AND END BENT NO. 2 ARE DESIGNED FOR A FACTORED DRIVING RESISTANCE OF 79 TONS PER PILE.

DRIVE PILES AT END BENT NO. 1 AND END BENT NO. 2 TO A REQUIRED DRIVING RESISTANCE OF 122 TONS PER PILE.

STEEL H-PILE POINTS ARE REQUIRED FOR STEEL H-PILES AT END BENT NO. 1. AND END BENT NO. 2 FOR STEEL PILE POINTS, SEE SECTION 771 OF THE STANDARD SPECIFICATIONS.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 30 TO 50 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT NO. 1 AND END BENT NO. 2. THIS ESTIMATED ENERGY DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SECTION 711 OF THE STANDARD SPECIFICATIONS.

TESTING THE FIRST PRODUCTION PILE ON EITHER END BENT 1 OR END BENT 2 WITH THE PDA DURING DRIVING, RESTRIKING, OR REDRIVING IS REQUIRED. FOR PDA TESTING, SEE SECTION 711 OF THE STANDARD SPECIFICATIONS.

DRIVE PILES OF END BENTS 1 AND 2 TO A FINAL EMBEDMENT OF NO LESS THAN 15 FEET BELOW BOTTOM OF PILE CAP.

TOTAL BILL OF MATERIAL

	3'-0" X 3'-3" PRESTRESSED CONCRETE BOX BEAMS		ELASTOMERIC BEARINGS	CONCRETE PARAPET	HP 12 X 53 STEEL PILES		CLASS A CONCRETE	REINFORCING STEEL	RIP RAP (CLASS II)	PILE DRIVING EQUIPMENT SETUP FOR HP 12x53 STEEL PILES	PILE POINTS	PDA
	NO.	LIN. FT.	EACH	LIN. FT.	NO.	LIN. FT	CU. YARDS	LBS.	TON	EACH	EACH	
SUPERSTRUCTURE	6	600		200								
END BENT 1			6		4	280	12.6	2298	14	4	4	1
END BENT 2			6		4	280	12.6	2298	17	4	4	
TOTAL	6	600	12	200	8	560	25.2	4596	31	8	8	1

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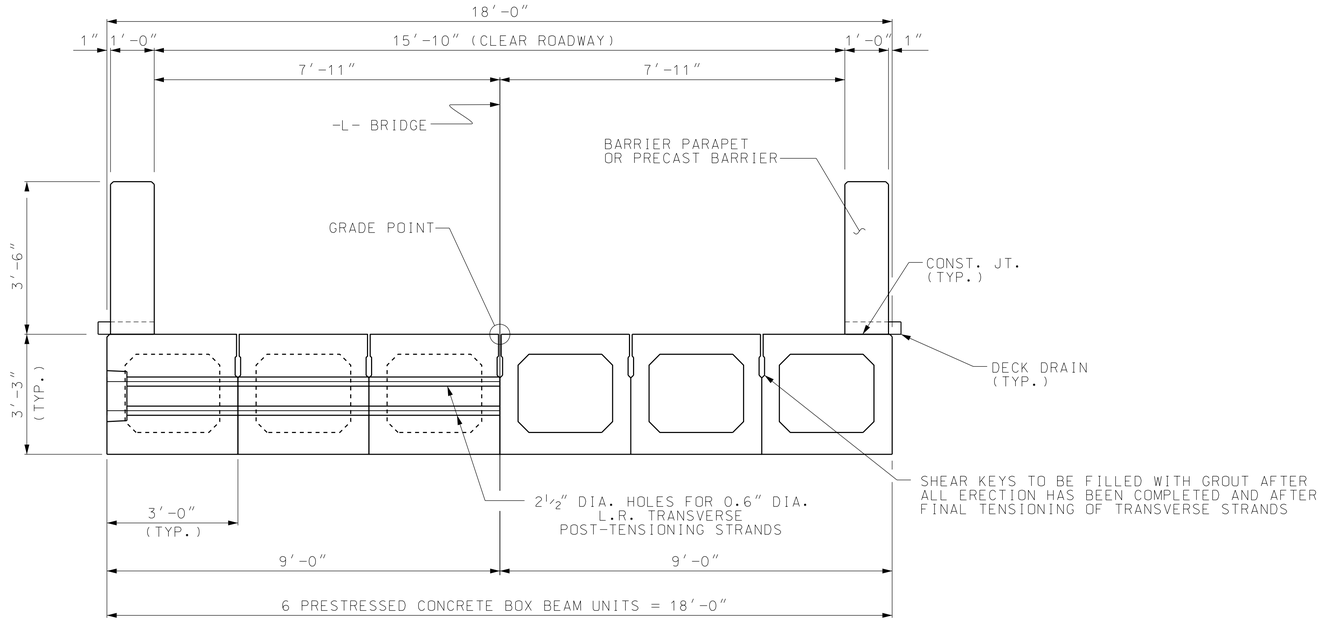


HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

HALF SECTION
THROUGH VOIDS

TYPICAL SECTION

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE BOX BEAM SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE BOX BEAMS.

FLAME CUTTING OF THE TRANSVERSE POST-TENSIONING STRAND IS NOT ALLOWED.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2½″ ~ DOWEL HOLES AT FIXED ENDS OF BOX BEAM SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE STANDARD SPECIFICATIONS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE BOX BEAM UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6000 PSI.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE BOX BEAM UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO BOX BEAM UNIT ENDS.

VERTICAL GROOVED CONTRACTION JOINTS, ½″ IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL. A VERTICAL CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

THE LOCATION OF THE VOID DRAINS MAY BE SHIFTED SLIGHTLY WHERE NECESSARY TO CLEAR PRESTRESSING STRANDS OR TRANSVERSE REINFORCING STEEL.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

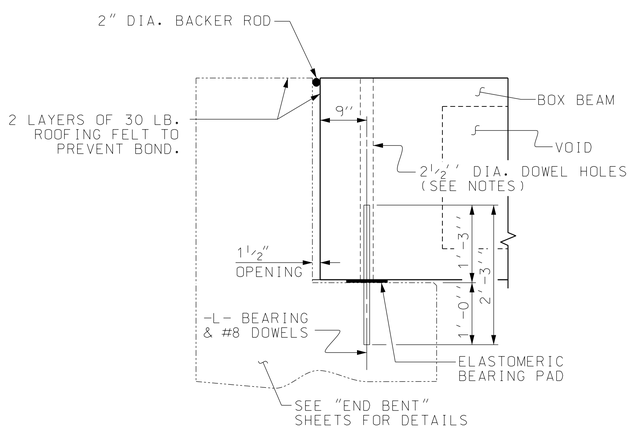
THE PERMITTED THREADED INSERTS ARE DETAILED AS AN OPTION FOR THE CONTRACTOR TO ATTACH FALSEWORK AND FORMWORK DURING CONSTRUCTION.

THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4′-0″ CENTERS AND GALVANIZED. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

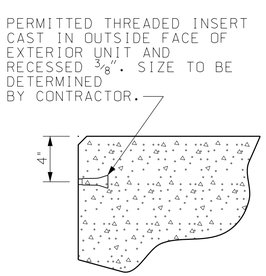
THE PERMITTED THREADED INSERTS SHALL BE GROUTED BY THE CONTRACTOR IMMEDIATELY FOLLOWING REMOVAL OF THE FALSEWORK.

THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

FIXED END



SECTION AT END BENT



THREADED INSERT DETAIL

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SHEET 1 OF 5

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STANDARD

3′-0″ X 3′-3″ PRESTRESSED CONCRETE BOX BEAM UNIT

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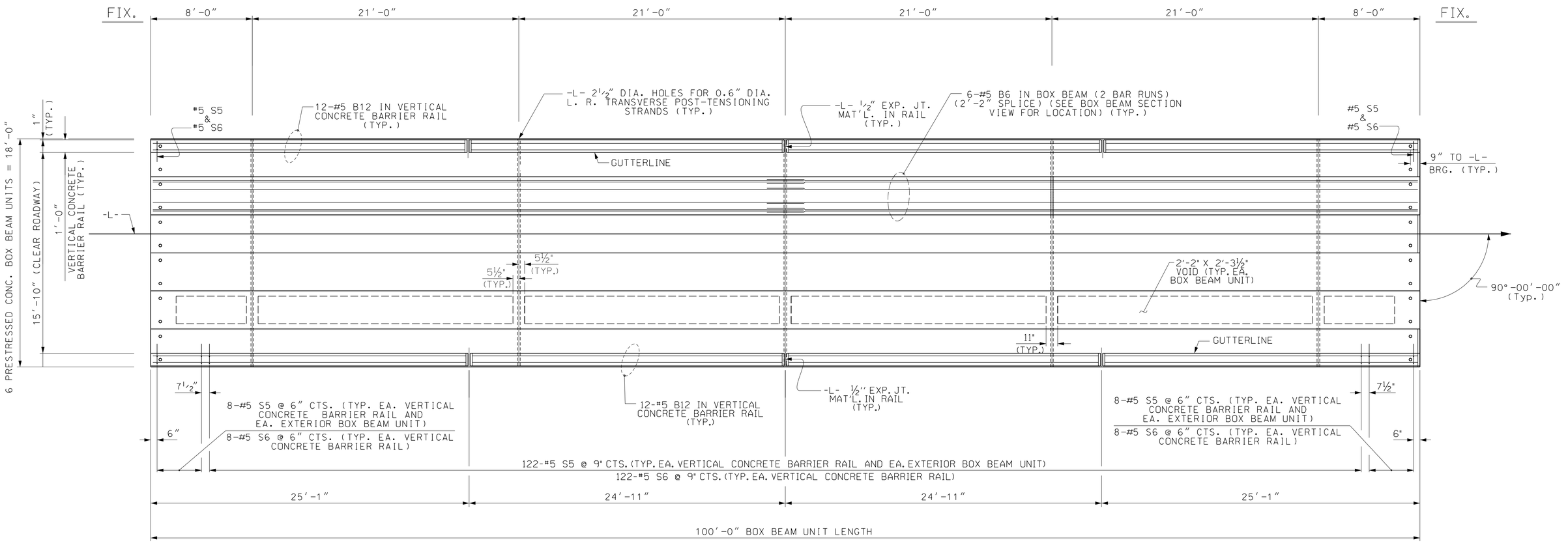
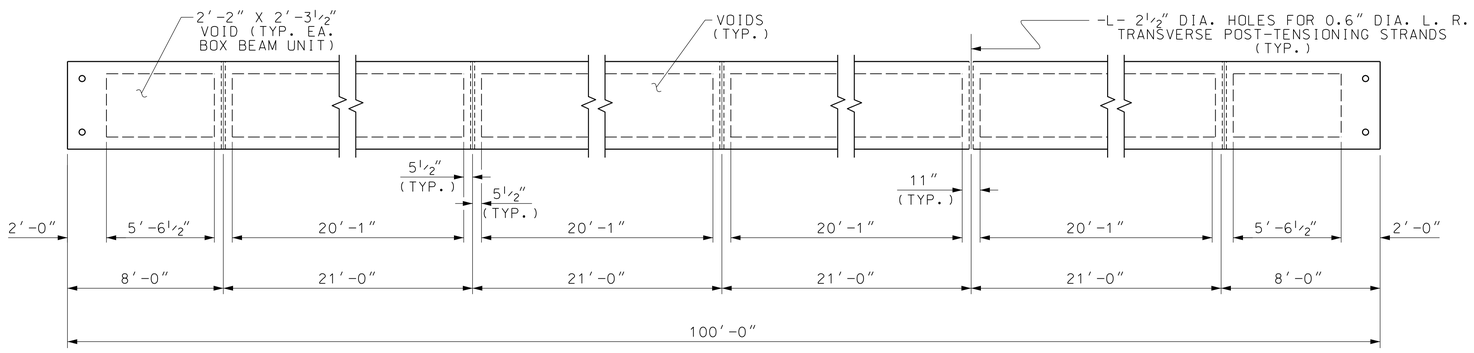


PLAN OF UNIT



DIAPHRAGM AND VOID LAYOUT

PROJECT NO. CPS21075

RICHLAND COUNTY

STATION: 104+10.00

SHEET 2 OF 5

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PLAN OF 100' UNIT 15'-10" CLEAR ROADWAY 90° SKEW

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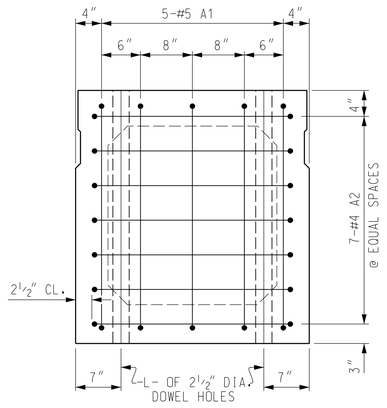
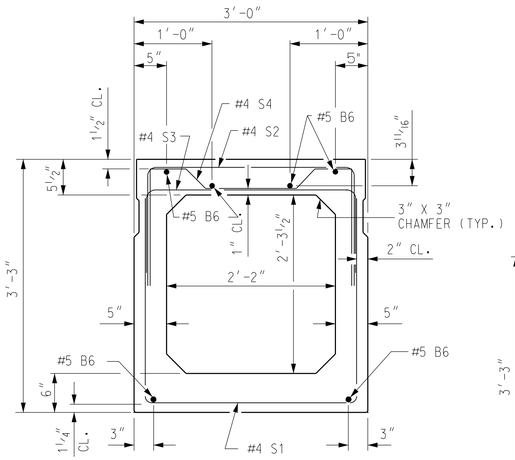


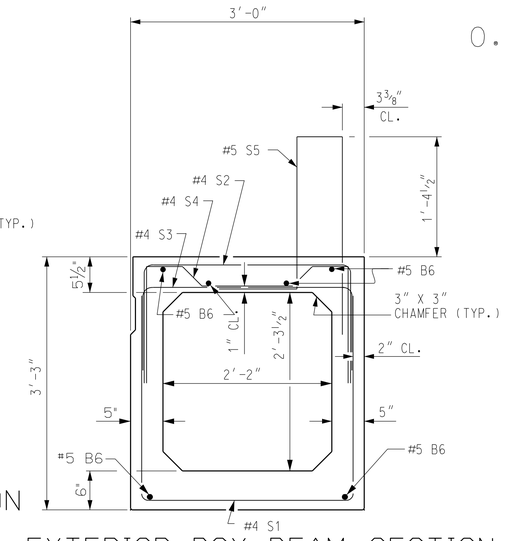
END ELEVATION

SHOWING PLACEMENT OF #5 & #4 "A" BARS AND LOCATION OF DOWEL HOLES. (INTERIOR BOX BEAM SECTION SHOWN-EXTERIOR SECTION SIMILAR EXCEPT SHEAR KEY LOCATION. STRAND LAYOUT NOT SHOWN.)



INTERIOR BOX BEAM SECTION

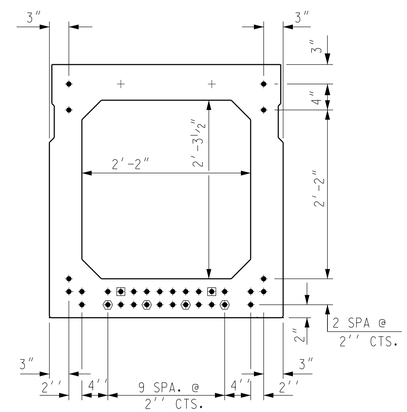
(STRAND LAYOUT NOT SHOWN)



EXTERIOR BOX BEAM SECTION

(STRAND LAYOUT NOT SHOWN)

0.6" DIA. LOW RELAXATION STRAND LAYOUT



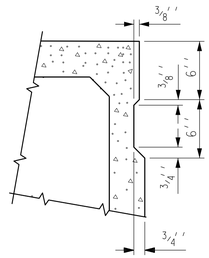
TYPICAL STRAND LOCATION

(32 STRANDS REQUIRED)

DEBONDING LEGEND

- ● FULLY BONDED STRANDS
- ◧ STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
- ⬢ STRANDS DEBONDED FOR 12'-0" FROM END OF GIRDER

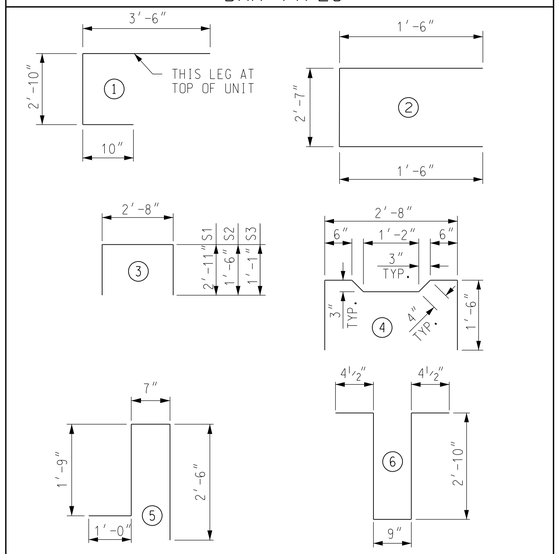
BOND SHALL BE BROKEN ON STRANDS AS SHOWN FOR THE SPECIFIED LENGTH FROM EACH END OF THE BOX BEAM. SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.



SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR BOX BEAMS.

BAR TYPES



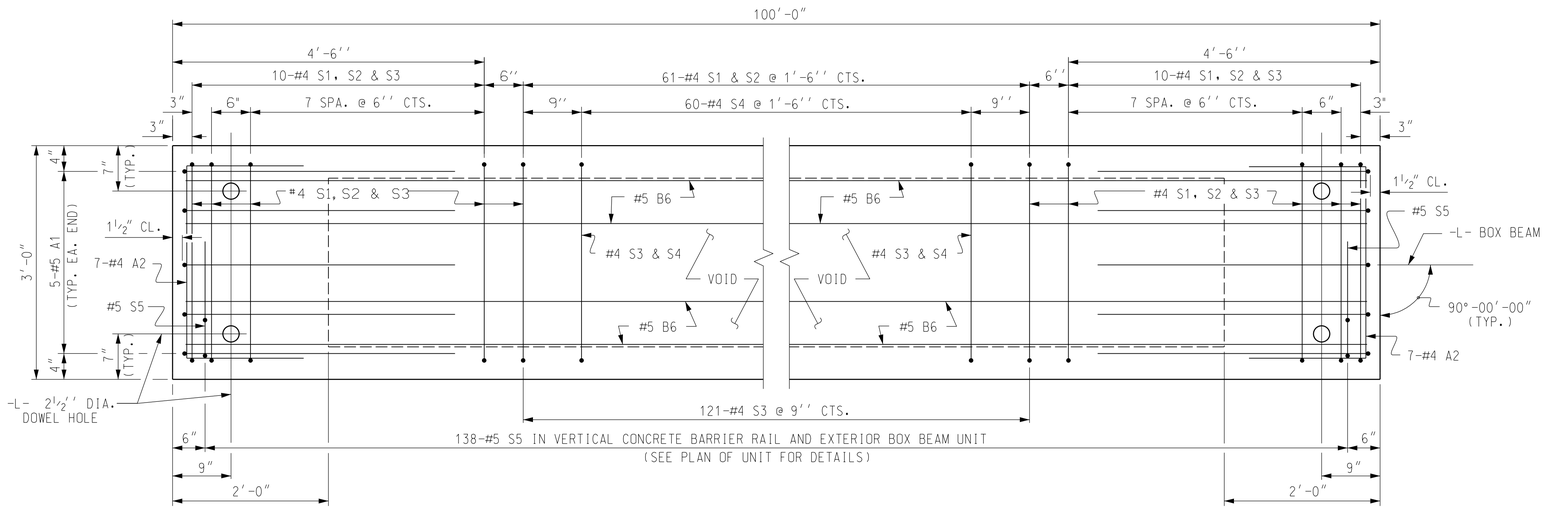
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE BOX BEAM SECTION

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
A1	10	#5	1	7'-2"	75	7'-2"	75
A2	44	#4	2	5'-7"	164	5'-7"	164
B6	12	#5	STR	50'-11"	637	50'-11"	637
K1	15	#4	6	7'-2"	72	7'-2"	72
K2	10	#4	STR	2'-7"	17	2'-7"	17
S1	81	#4	3	8'-6"	460	8'-6"	460
S2	81	#4	3	5'-8"	307	5'-8"	307
S3	141	#4	3	4'-10"	455	4'-10"	455
S4	60	#4	4	5'-10"	234	5'-10"	234
* S5	138	#5	5	5'-10"	840	--	--
REINFORCING STEEL					2421 LBS.		2421 LBS.
* EPOXY COATED REINF. STEEL					840 LBS.		
7500 P.S.I. CONCRETE					19.6 CU. YDS.		19.4 CU. YDS.
0.6" * L.R. STRANDS					No. 32		No. 32

GRADE 270 STRANDS

	0.6" * L.R.
AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950



PLAN OF BOX BEAM

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S5 BARS.
FOR LOCATION OF DIAPHRAGMS, SEE "PLAN OF UNIT".
FOR THREADED INSERTS, SEE "THREADED INSERT DETAIL".
FOR REINFORCING STEEL IN DIAPHRAGMS, SEE "DOUBLE DIAPHRAGM DETAILS".

PROJECT NO. CPS21075
RICHLAND COUNTY
STATION: 104+10.00

SHEET 3 OF 5

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SUPERSTRUCTURE DETAILS 3'-3" BOX BEAM

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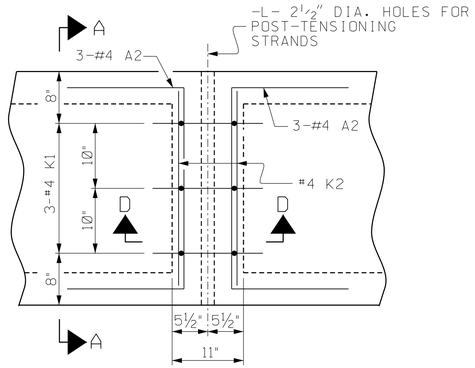
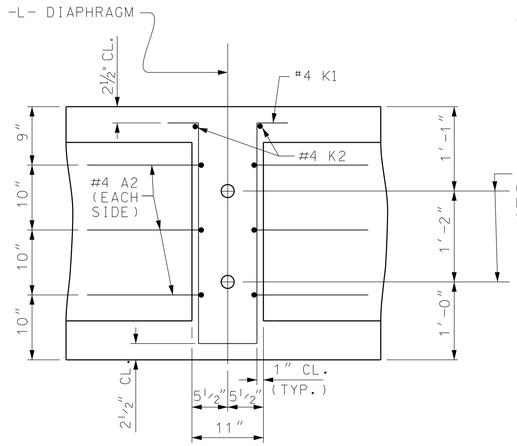
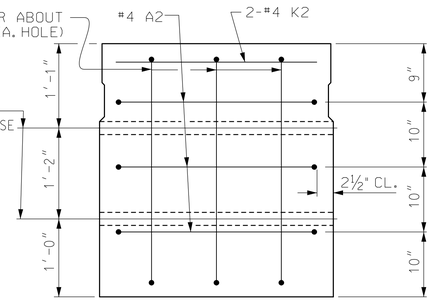


PLAN



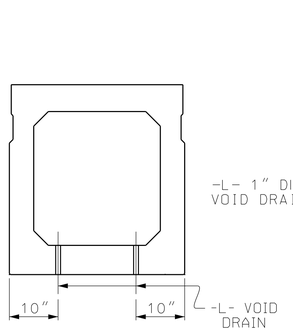
SECTION D-D



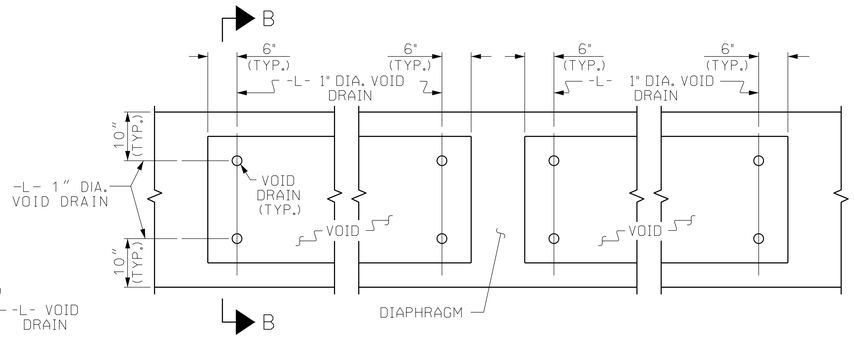
SECTION A-A
VOIDS NOT SHOWN

DOUBLE DIAPHRAGM DETAILS

#4 "S" BARS NOT SHOWN. #4 "S" BARS MAY BE SHIFTED SLIGHTLY TO CLEAR 2½" DIA. HOLE.



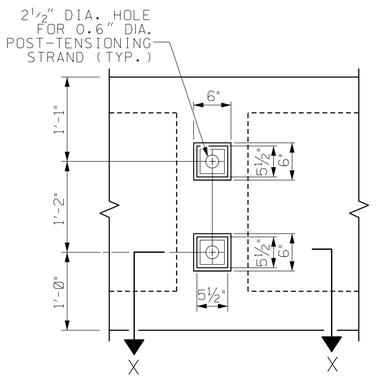
SECTION B-B



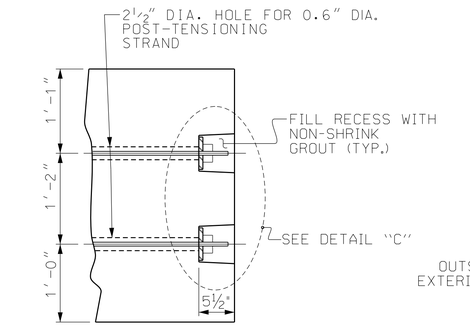
PART PLAN

VOID DRAIN DETAILS

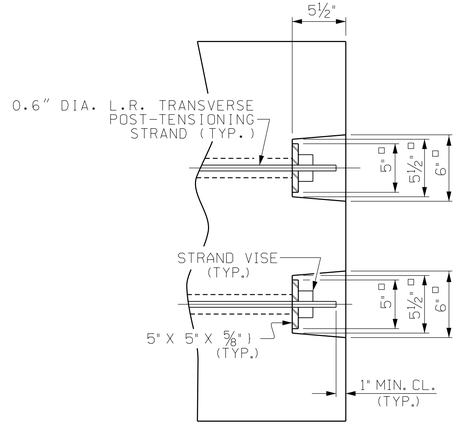
(DIMENSIONS SHOWN ARE TYPICAL FOR EACH VOID)



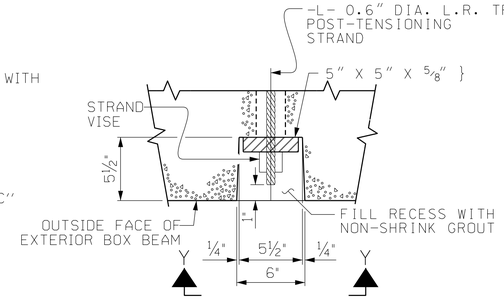
VIEW Y-Y
SHOWING ELEVATION VIEW OF GROUTED RECESS



PART SECTION AT RECESS



DETAIL "C"



SECTION X-X
SHOWING PLAN VIEW OF GROUTED RECESS

GROUTED RECESS DETAIL AT END OF POST-TENSIONED STRANDS OF EXTERIOR BOX BEAM

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 3'-3"
100' BOX BEAM UNIT	0.6" DIA. L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	2" ↑
DEFLECTION DUE TO ** SUPERIMPOSED DEAD LOAD	7/8" ↓
FINAL CAMBER	1 1/8" ↑

** INCLUDES FUTURE WEARING SURFACE

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PROJECT NO. CPS21075
RICHLAND COUNTY
STATION: 104+10.00

SHEET 4 OF 5

RICHLAND COUNTY

STANDARD

3'-0" X 3'-3" PRESTRESSED CONCRETE BOX BEAM UNIT

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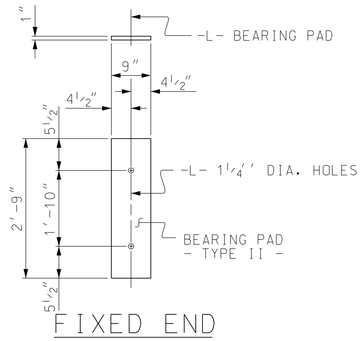
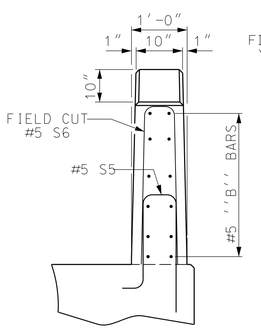
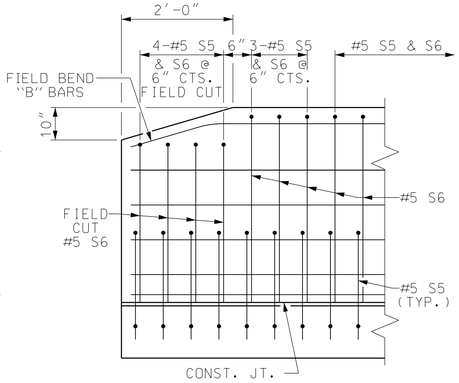


FIXED END

(TYPE II - 12 REQ'D)



END VIEW

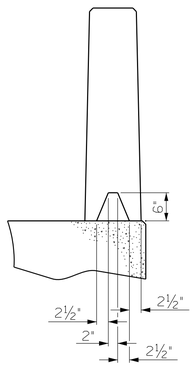


SIDE VIEW

ELASTOMERIC BEARING DETAILS

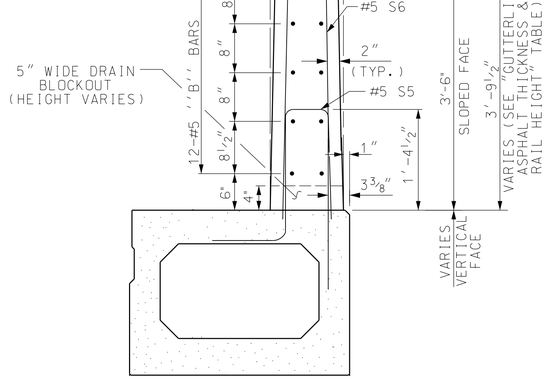
ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

END OF RAIL DETAILS

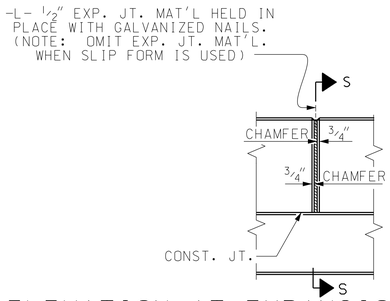


SECTION S-S

AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)



SECTION THRU RAIL



ELEVATION AT EXPANSION JOINTS

VERTICAL CONCRETE BARRIER RAIL DETAILS

BOX BEAM UNITS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR B.B.	2	100'-0"	200'-0"
INTERIOR B.B.	4	100'-0"	400'-0"
TOTAL	6	———	600'-0"

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL					
BAR	BARS PER PAIR OF EXTERIOR UNITS 100' UNIT	SIZE	TYPE	LENGTH	WEIGHT
* B12	96	#5	STR	24'-7"	2461
* S6	276	#5	1	7'-2"	2063
* EPOXY COATED REINFORCING STEEL			LBS.		4524
CLASS AA CONCRETE			CU.YDS.		25.9
TOTAL VERTICAL CONCRETE BARRIER RAIL			LN. FT.		200.0

PROJECT NO. CPS21075

RICHLAND COUNTY

STATION: 104+10.00

SHEET 5 OF 5

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SUPERSTRUCTURE DETAILS
3'-3" BOX BEAM

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			13

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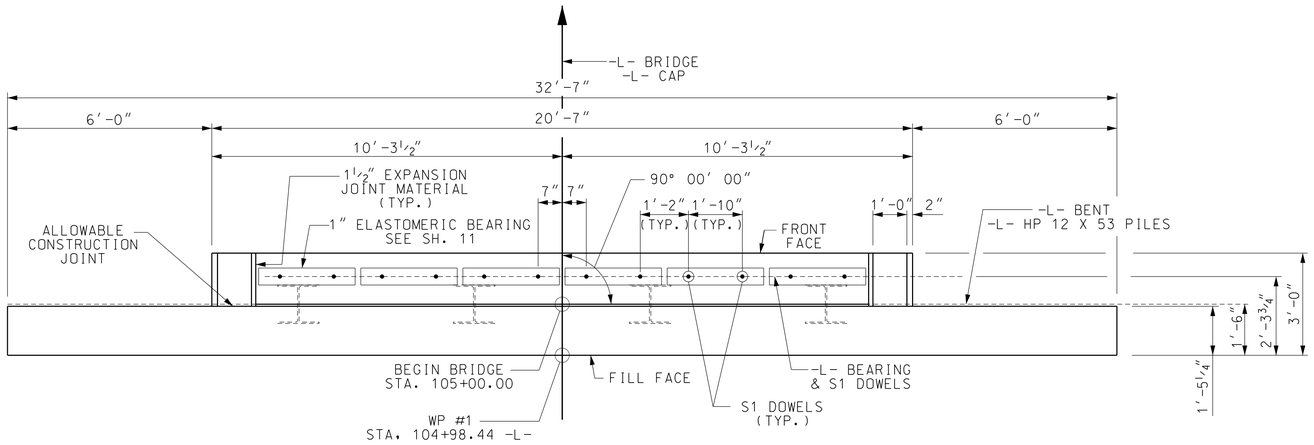
NOTES

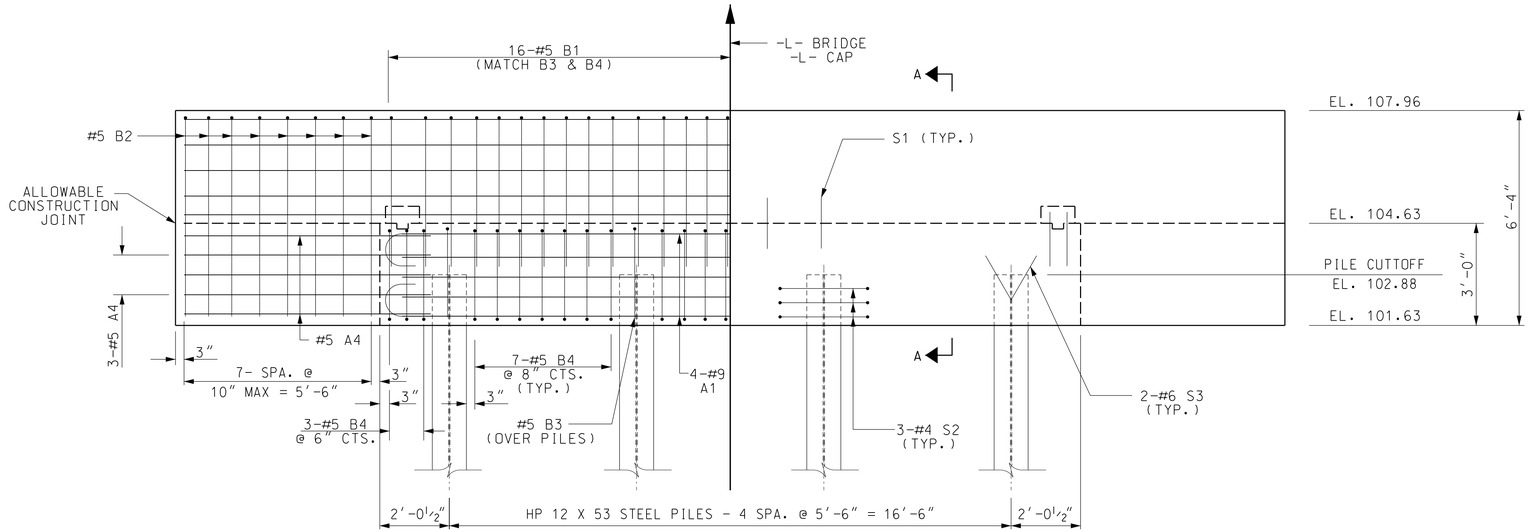
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

FOR PILE SPLICE DETAILS, SEE SHEET 11.

FOR WING DETAILS, SEE SHEET 12.



PLAN



ELEVATION

FOR SECTION A-A, SEE SHEET 11.

PROJECT NO. CPS21075

RICHLAND COUNTY

STATION: 104+10.00

SHEET 1 OF 4

DocuSigned by: sacksone kourbanolith 8/3/2022

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SUBSTRUCTURE

END BENT No. 1

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NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS 13
2			4			

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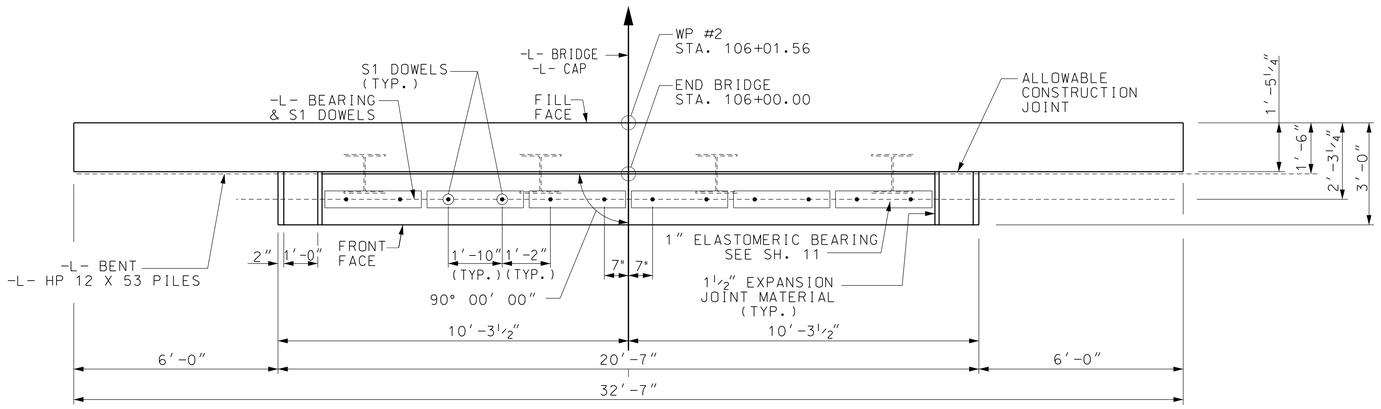
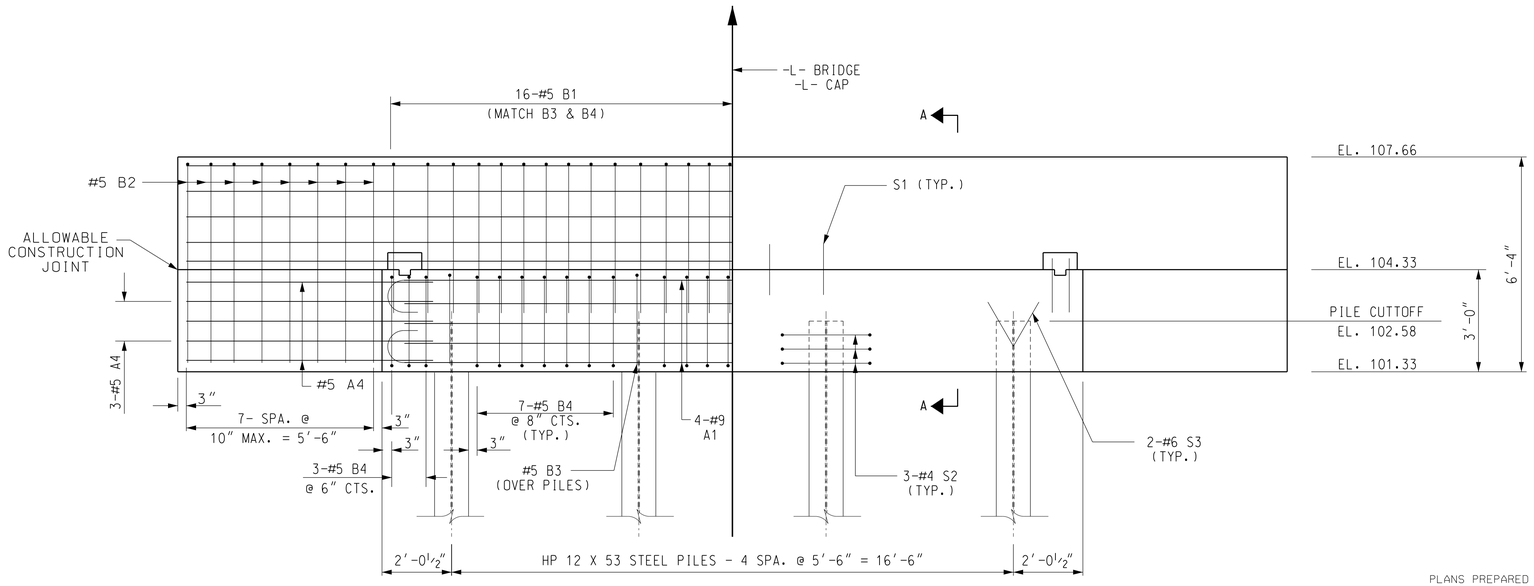


PLAN



ELEVATION

FOR SECTION A-A, SEE SHEET 11.

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

FOR PILE SPLICE DETAILS, SEE SHEET 11.

FOR WING DETAILS, SEE SHEET 12.

PROJECT NO. CPS21075

RICHLAND COUNTY

STATION: 104+10.00

SHEET 2 OF 4

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SUBSTRUCTURE

END BENT No. 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			13

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DESIGN ENGINEER OF RECORD: - DATE : -

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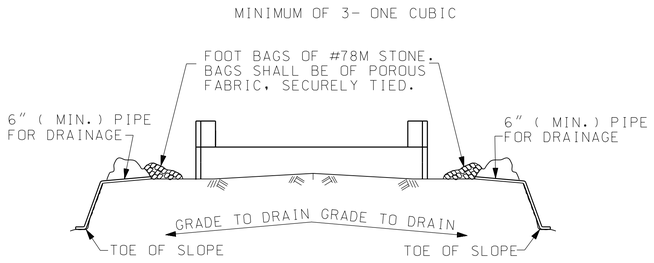
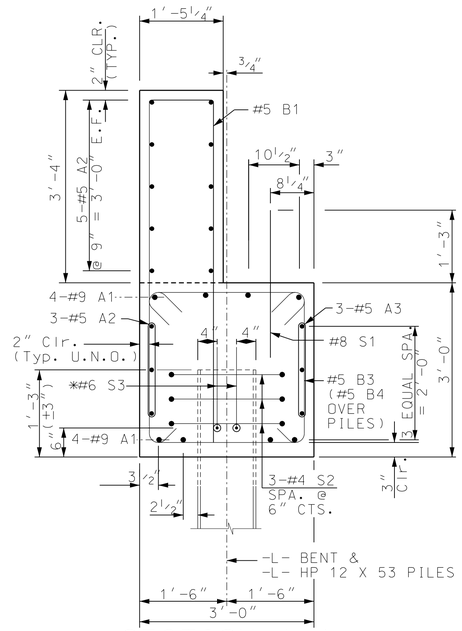


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

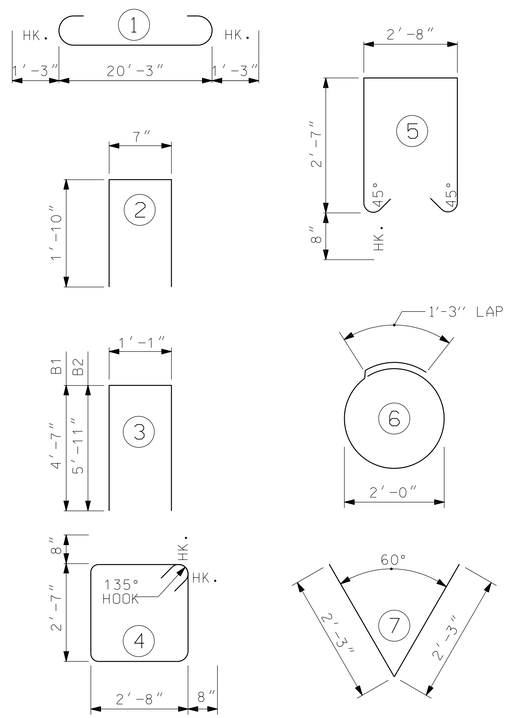
TEMPORARY DRAINAGE AT END BENT



SECTION A-A

* 1" DIA. MIN., 1½" DIA. MAX. HOLE FOR S3 BARS.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT No. 1	END BENT No. 2
HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES
NO: 4 LIN. FT. = 280	NO: 4 LIN. FT. = 280

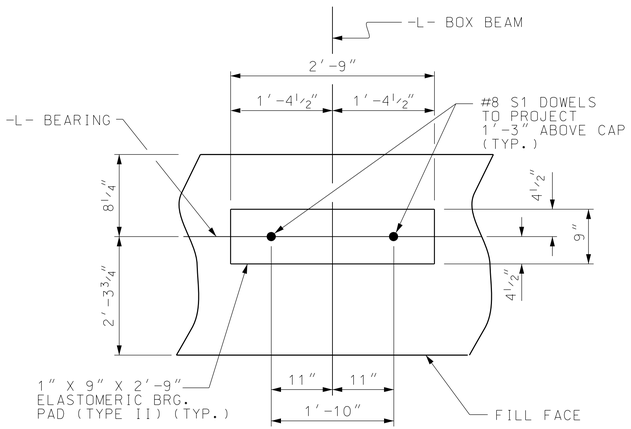
BILL OF MATERIAL FOR ONE END BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	8	#9	1	20'-3"	551
A2	13	#5	STR	32'-3"	437
A3	3	#5	STR	20'-3"	63
A4	14	#5	STR	7'-10"	114
B1	32	#5	3	10'-3"	331
B2	16	#5	3	12'-11"	216
B3	4	#5	5	9'-2"	38
B4	27	#5	4	11'-10"	333
K1	4	#5	STR	2'-6"	10
K2	6	#4	2	4'-3"	17
S1	12	#8	STR	2'-3"	72
S2	12	#4	6	7'-6"	60
S3	8	#6	7	4'-6"	54

REINFORCING STEEL (FOR ONE END BENT) 2298 LBS

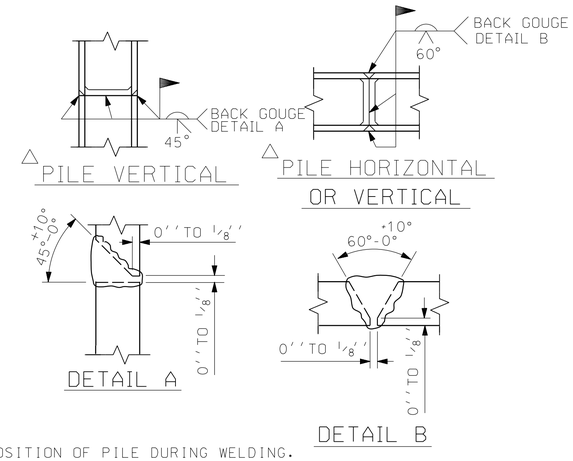
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

POUR #1	CAP, LOWER PART OF WINGS & COLLARS	7.8 C.Y.
POUR #2	BACKWALL & UPPER PART OF WINGS	4.8 C.Y.
	TOTAL CLASS A CONCRETE	12.6 C.Y.



DETAIL "A"

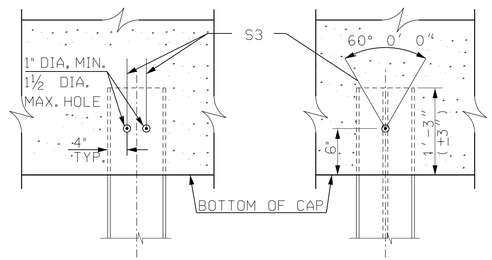
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

SCALE- 7/16" = 1'-0"



PILE ANCHORAGE DETAIL

PROJECT NO. CPS21075

RICHLAND COUNTY

STATION: 104+10.00

SHEET 3 OF 4

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END BENT NO. 1 & 2 DETAILS

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NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-11

TOTAL SHEETS 13

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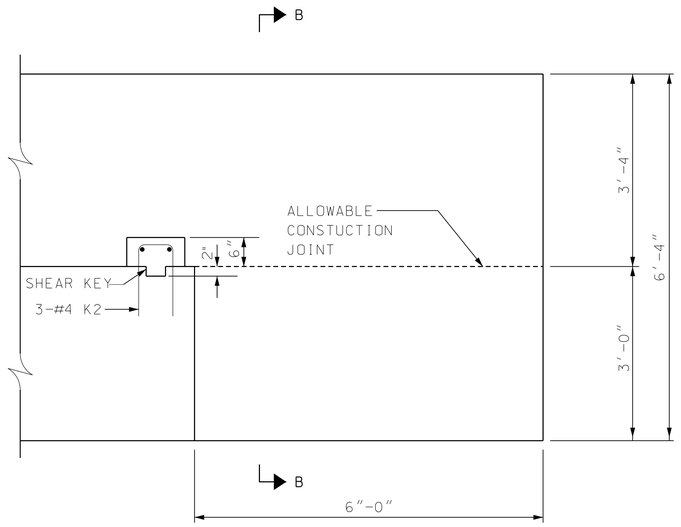
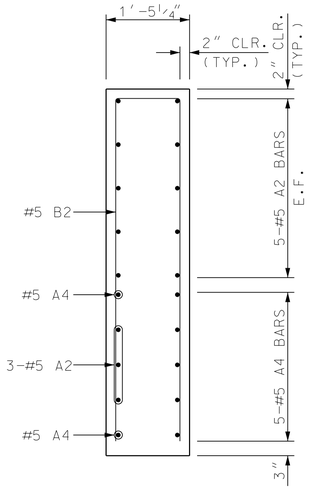
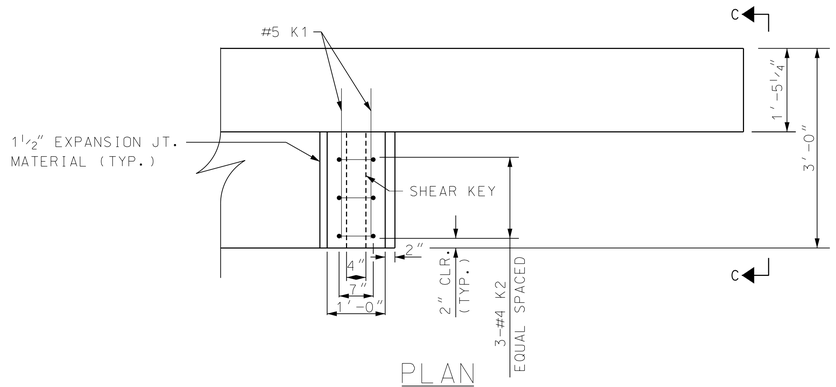


ELEVATION

WINGWALL W1 SHOWN, W2 SIMILAR

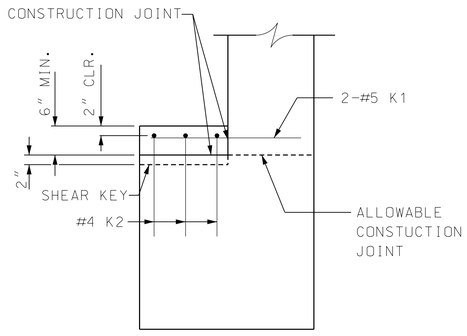


SECTION B-B



PLAN

ABUTMENT REINFORCEMENT
NOT SHOWN FOR CLARITY.



VIEW C-C

LATERAL RESTRAINT

(EB1 SHOWN, EB2 SIMILAR)

PROJECT NO. CPS21075

RICHLAND COUNTY

STATION: 104+10.00

SHEET 4 OF 4

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END BENT WING DETAILS

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STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	SEE PLANS
IMPACT ALLOWANCE	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF STRUCTURAL STEEL - AASHTO M270 GRADE 36	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION - GRADE 60	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR UNTREATED EXTREME FIBER STRESS	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	30 LBS. PER CU. FT. (MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED ¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1½" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¼" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A ¼" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

EXISTING BRIDGE REMOVAL:

SEE SCDOT STANDARD SPECIFICATION 202.4.2 REMOVAL AND DISPOSAL OF EXISTING BRIDGE. REMOVE ALL TIMBER PILES. ANY PILE THAT CANNOT BE REMOVED WILL BE CUT OFF BELOW NORMAL HIGH WATER.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE ⅞" ~ SHEAR STUDS FOR THE ¾" ~ STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⅞" ~ STUDS FOR 4 - ¾" ~ STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF ⅞" ~ STUDS ALONG THE BEAM AS SHOWN FOR ¾" ~ STUDS BASED ON THE RATIO OF 3 - ⅞" ~ STUDS FOR 4 - ¾" ~ STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

PROJECT NO. CPS21075

RICHLAND COUNTY

STATION: 104+10.00

DocuSigned by: sacksone koundranthe 8/3/2022 BE4463F6E883481...

PLANS PREPARED BY:
CAROLINA Transportation Engineers & Assoc., PC
3600 Arco Corprate drive,
Suite 135
Charlotte Nc 28273
(980) 722-6065
www.carolina_TEA.com
License No. C-4307

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 31235 SARKSONE KOUNDRANTHE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RICHLAND COUNTY

ENGLISH

JANUARY, 1990

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			13

DRAWN BY : J. Baker DATE :
CHECKED BY : D. Staton DATE : -
DESIGN ENGINEER OF RECORD: - DATE : -

10-MAY-2022 13:35
$$$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$$$
Jonathan AT JONATHAN-5590

LEAD-BASED PAINT INVESTIGATION REPORT

RICHLAND COUNTY CONSERVATION COMISSION
BRIDGE REPLACEMENT OVER MILL CREEK
RICHLAND COUNTY, SOUTH CAROLINA

PREPARED FOR:

Carolina TEA
C/O Mr. Kevin Gantt
3600 Arco Corporate Drive, Suite 135
Charlotte, North Carolina 28273

PREPARED BY:

F&ME Consultants
1825 Blanding Street
Columbia, South Carolina 29201

November 18, 2021

_____ Yes, lead was found.
_X_ No, lead was not found.

F&ME Project No.: G6580.000

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

This executive summary is intended as an overview for the convenience of the reader. This report should be reviewed in its entirety prior to making any decisions regarding this project.

F&ME Consultants (FME) has completed a Lead-Based Paint (LBP) Investigation on the Richland County Conservation Commission (RCCC) dirt road Bridge located in Richland County for Carolina TEA (Client). The investigation was performed on November 11, 2021, in anticipation of an on-alignment replacement of the existing Bridge. Appendix A – Site Vicinity Map is provided to show the location of the bridge. Appendix B – Bridge Plan, is provided to show the Bridge lay-out.

The scope of this LBP Investigation was to identify, analyze and assess the condition of LBP or coated building/structural components that will be affected by the planned demolition of the Bridge. The scope included both a visual evaluation of the physical condition of painted materials as well as quantitative testing of random suspect surfaces using an X-Ray Fluorescence (XRF) Portable Analyzer on the exterior of the building. The XRF documents the concentration of lead, if any, in the overall paint or coating. The exterior building components were scanned with a Viken XRF analyzer (Model # Pb200i, Serial #1888, Reference Date: 09/17/20) with a limit of detection (LOD) of 0.1 mg/cm^2.

LBP is regulated by multiple government agencies, and each requires different response actions when the concentration of lead exceeds specified thresholds. The Occupational Safety and Health Administration (OSHA) regulates worker exposure to lead dust, and as a result considers materials with any lead content to be a potential hazard. Furthermore, the South Carolina Department of Health and Environmental Control (SCDHEC) requires some materials found to contain greater than or equal to (≥) 0.7 mg/cm^2 lead to be disposed of at specialized waste facilities. Appendix C – XRF Data, is provided to present the data in a user-friendly format. Items in red text contain lead in concentrations regulated by SCDHEC and these materials must be addressed upon disposal. Items in blue and red text contain lead in concentrations that must be considered a potential for worker exposure by OSHA.

The results from the XRF quantitative testing of the bridge components indicate that no lead was present in paint and/or coatings in concentrations greater than or equal to (≥) 0.7 mg/cm^2 on any of the bridge components tested. See Appendix B – General Building Plan, for the lay-out of the Bridge.

We appreciate the opportunity to assist you in this matter. If you have any questions or require additional information, please feel free to contact our office at (803) 254-4540.

Sincerely,

F&ME CONSULTANTS

Timothy Ross
S.C. Lead-Based Paint Inspector
EPA Certification No. LBP-I-I198705-1 (Exp. 02/21/22)

Glynn M. Ellen
Environmental Manager

2. LBP BACKGROUND INFORMATION

Housing and Urban Development (HUD) defines "LBP" as any coating that has a lead concentration of 1.0 milligrams of lead per square centimeter (1.0 mg/cm^2) or greater, or if the lead concentration is greater than one half of a percent (> 0.5%) by weight. The Consumer Product Safety Commission (CPSC) currently considers paint to be lead-containing if the concentration of lead exceeds 90 ppm (0.009% by weight). In 1978, the CPSC banned the sale of LBP to consumers, and banned its application in areas where consumers have direct access to painted surfaces. Both the CPSC and HUD definitions of lead-containing paint are aimed at protecting the general population from exposure to lead in the residential setting.

In contrast, the mission of the Occupational Safety and Health Administration (OSHA) with respect to lead-containing paint is to protect workers during construction activities that may generate elevated airborne lead concentrations. OSHA states that construction work (including renovation, maintenance, and demolition) carried-out on structures coated with paint having lead concentrations lower than the HUD or CPSC can still result in airborne lead concentrations in excess of regulatory limits. For this reason, OSHA has not defined lead-containing paint, but states that paint having any measurable level of lead ($\geq$ 0.01 mg/cm^2) may pose a substantial exposure hazard during construction work, depending upon the work performed. Therefore, in these situations, OSHA guidelines and safety procedures should be followed. By OSHA standards and regulations, the employer shall ensure that no employee is exposed to lead at concentrations greater than fifty micrograms per cubic meter of air (50 ug/m^3) averaged over an 8-hour period.

Additionally, the South Carolina Department of Health and Environmental Control (SCDHEC) requires the use of specialized waste disposal sites if materials contain lead concentrations greater than or equal to ($\geq$) 0.7 mg/cm^2. It is imperative that these regulations be considered if any present or future replacement and/or demolition activities will impact LBP-containing bridge components.

3. INTRODUCTION

FME has completed a Lead-Based Paint (LBP) Investigation on the RCCC dirt road Bridge over Mill Creek in located Richland County, South Carolina. The scope of this LBP Investigation was to identify, analyze, and assess the condition of LBP or coated bridge components that may be affected by the bridge replacement activities. This investigation was performed on November 11, 2021, in anticipation of an on-alignment replacement of the existing Bridge.

The results, conclusions and recommendations from this investigation are representative of the conditions observed at the site on the date of the field inspection. FME does not assume responsibility for any changes in conditions or circumstances that occur after the inspection. Use of this document for bidding purposes is not recommended without prior consultation with FME. No other environmental issues are addressed in this report.

4. INVESTIGATION RESULTS

The existing bridge structure (~64'.6"L x 14'.6"W, inside curb to inside curb), is located on a dirt road and crosses over Mill Creek in Richland County, South Carolina. The construction date of the Bridge is unknown. The structure is a one (1) lane, four (4) span bridge constructed with a timber deck, and curbing. Each of the bridge deck spans are supported by two (2) horizontal steel beams which are supported by timber piles and bent caps. End bents are also constructed with timber piles and bent caps which are mostly covered with soil. The bridge approach at each end of the bridge consist of a one lane dirt roadway. Refer to Appendix A – Site Vicinity Map, for the location of the structure

Photo 1 – RCCC Dirt Road Bridge, Richland County, South Carolina.

Our LBP Investigation sampling protocol consisted of randomly selecting bridge components on the subject bridge and scanning them with our Viken XRF analyzer (Model # Pb200i, Serial #1888, Reference Date: 09/17/20) with a limit of detection (LOD) of 0.1 mg/cm^2.

The investigation revealed that no bridge components tested positive for lead in concentrations greater than or equal to (≥) 0.7 mg/cm^2. For more information regarding the specific descriptions and locations of the items that were scanned, refer to the Appendix C – Summary of XRF Data. On the XRF Data Table, items in Blue text contain lead in concentrations that must be considered a potential for worker exposure by OSHA. Appendix D includes the inspector's EPA lead-based paint inspector certification.

5. RECOMMENDATIONS

The investigation revealed that no building components tested positive for lead in concentrations greater than or equal to (≥) 0.7 mg/cm^2. For more information regarding the specific descriptions and locations of the items that were scanned, refer to the Appendix C – Summary of XRF Data. On the XRF Data Table, items in Blue text contain lead in concentrations that must be considered a potential for worker exposure by OSHA. Appendix D includes the inspector's EPA lead-based paint inspector certification.

If any hidden and/or inaccessible materials suspected or known to contain lead-based paint are encountered during any demolition activities, the persons involved are advised to stop work, follow proper regulatory precautions and procedures, and notify FME for an immediate response action. If you have any questions or require additional information concerning this report, please do not hesitate to contact our office at (803)254-4540. We appreciate the opportunity to be of service in this matter.

APPENDICES

Appendix A – Site Vicinity Map

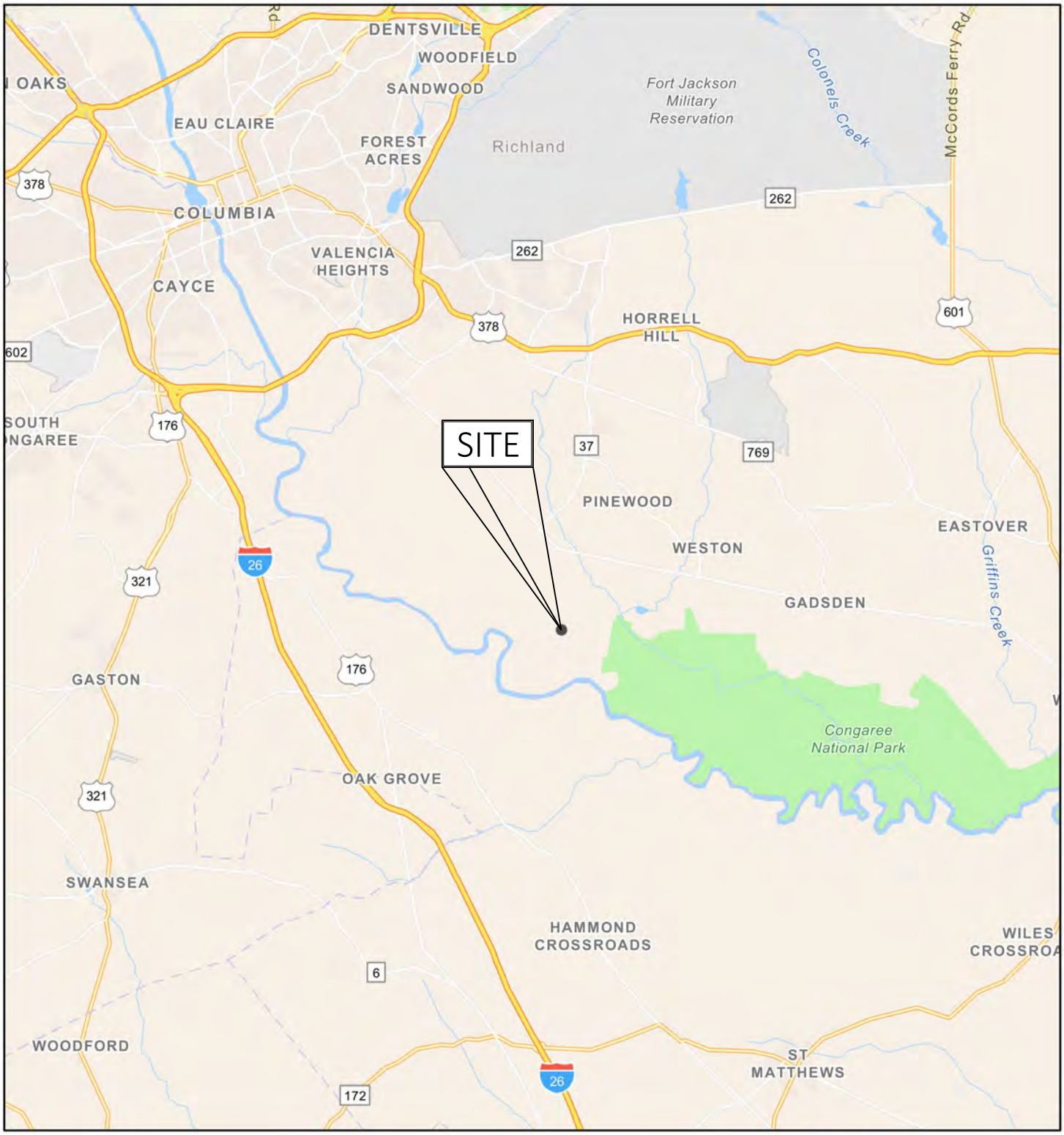
Appendix B – Bridge Plan

Appendix C –XRF Data

Appendix D – Personnel Certification

Appendix A

Site Vicinity Map



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1	G6580.000	LEAD-BASED PAINT INVESTIGATION RCCC Dirt Road Bridge Replacement Ricland Conty SC Site Vicinity Map Prepared or Carolina TEA Arco Corporate Drie Site Carlotte NC

F&ME CONSULTANTS

BLANDING STREET
COLMBIA SC

ORIGINAL:	November 15, 2021
REVISIONS:	
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3	
SCALĒ	AS SON

DRN B	MSM
CD B	TOR
APPR B	GME
NOTESĀ	

Appendix B

Bridge Plan

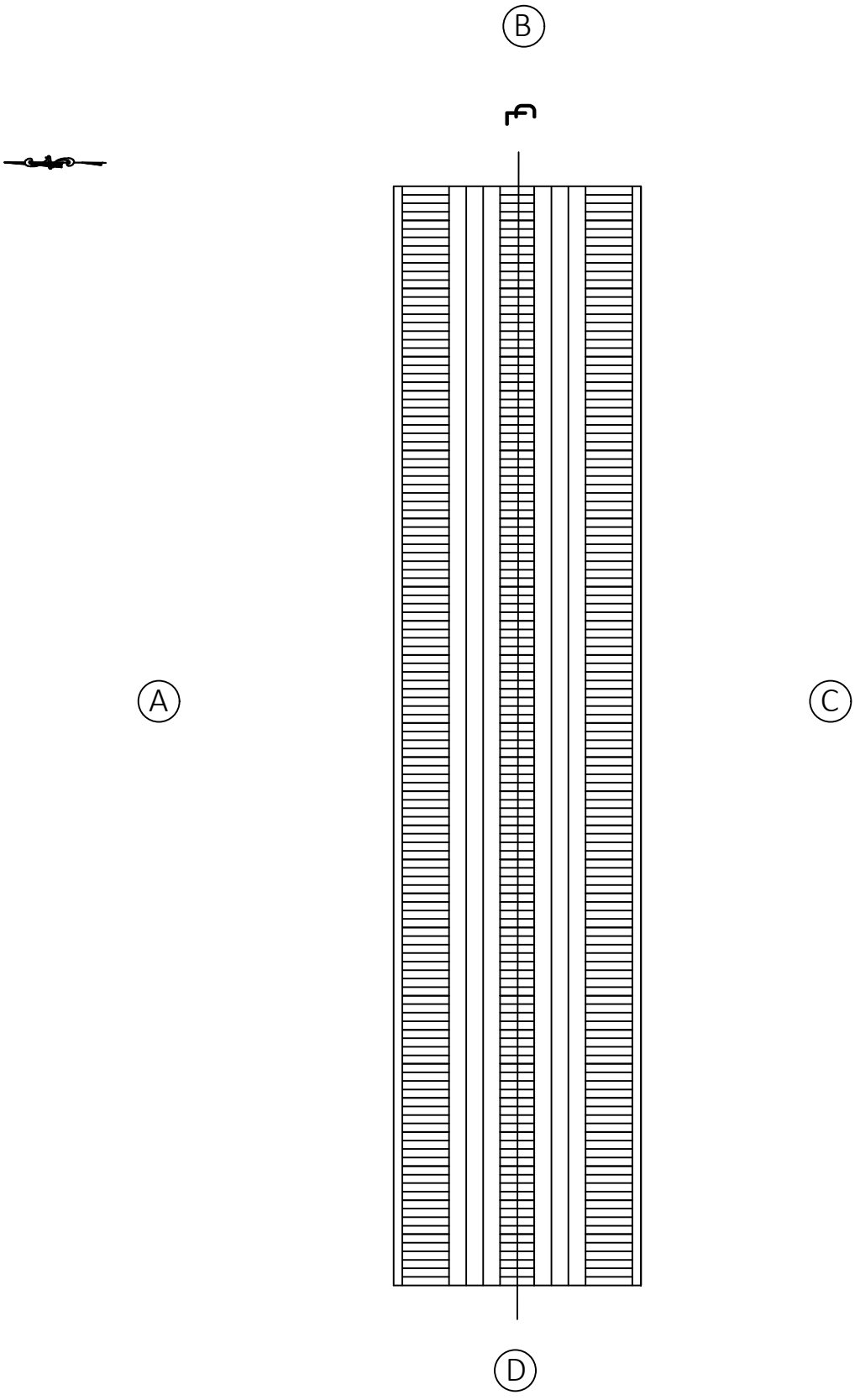


FIGURE NUMBER:	F&ME CONSULTANTS PROJECT NUMBER:	
2	G6580.000	LEAD-BASED PAINT INVESTIGATION RCCC Dirt Road Bridge Replacement Richland County, SC Appendix - B General Bridge Plan Prepared for: Carolina TEA 3600 Arco Corporate Drive, Suite 135 Charlotte, NC 28273

F&ME CONSULTANTS

1825 BLANDING STREET
COLUMBIA, SC 29201

ORIGINAL: November 15, 2021
REVISIONS:
1
2
3
SCALE: AS SHOWN

DRWN. BY: MSM
CHKD. BY: TOR
APPR. BY: GME
NOTES:

Appendix C

XRF Data

XRF Data
Dirt Rd. Bridge over Mill Creek
Date Analyzed: 11/11/2021
FME Project No.: G6580.00

Reading No.	Pb (mg/cm^2)	Location	Component	Substrate	Side	Condition	Color
1	0.96	Calibrate					
2	0.95	Calibrate					
3	0.93	Calibrate					
4	0.11	Underside	Beam	Metal	Underside	Peeling	Silver
5	LOD	Underside	Tie Strap	Metal	Underside	Peeling	Black
6	0.12	Underside	Brace	Metal	Underside	Peeling	Black
7	LOD	Underside	Bracket	Metal	Underside	Peeling	Black
8	0.90	Calibrate					
9	0.93	Calibrate					
10	0.91	Calibrate					

Red ($\geq$ 0.7 mg/cm^2)
LOD (Limit of Detection) = 0.1 mg/cm^2

Side A = North, then go clockwise
Blue (< 0.7 mg/cm^2 for OSHA considerations)

Appendix D

Personnel Certification

United States Environmental Protection Agency

This is to certify that

Timothy O Ross

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226 as:

Inspector

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires February 21, 2022

LBP-I-I198705-1

Certification #

February 07, 2019

Issued On

Adrienne Priselac, Manager, Toxics Office

Land Division

Preliminary Jurisdictional Determination and No Permit Required Letter Request Package

Richland County Conservation Commission Bridge and Dirt Road Improvement Project

Richland County, SC

Prepared For:

Prepared By:

Prepared on behalf of:

February 7, 2022

Three Oaks Engineering, Inc.
1022 State Street, Building 2
Cayce, South Carolina 29033
c/o Mr. Wade Biltoft (864) 978-8484

March 2, 2022

US Army Corps of Engineers
Columbia Regulatory Field Office
1835 Assembly Street, Rm. 865 B-1
Columbia, SC 29201

Subject: Preliminary Jurisdictional Determination and No Permit Required Letter Request Package: Richland County Conservation Commission Bridge and Dirt Road Improvement Project

Dear Sir/Madam:

Three Oaks Engineering (Three Oaks) presents the attached Request for Corps Jurisdictional Determination (JD) / Delineation Form and supporting materials for the Richland County Conservation Commission (RCCC) Bridge and Dirt Road Improvement (Project). The Project Study Area (PSA) is 1.6 acres and is located within the Mill Creek tract located on the Congaree River, close to the Congaree National Park, with access from Old Bluff Road in Richland County, SC (Figure 1). The county intends this tract to serve multiple functions: as a mitigation bank for stream and wetland restoration and conservation, and for the development of recreation, lodging, and sustainable tourism-oriented uses. To provide public access, RCCC proposes to replace a structurally deficient bridge over an unnamed tributary to Dead River which flows south into the Congaree River within the Mill Creek tract.

A single lane, single span bridge is proposed to replace the current bridge. This design will improve hydraulic efficiency by removing the interior bent piles which currently catch debris. The new bridge is also precast which eliminates the chance of spilling wet concrete into the stream and causing environmental impacts. Since the new structure is longer, the end bents will be located further from the top of bank and no encroachment within the ordinary high-water mark of the jurisdictional stream will be required. The Project as proposed will not involve the discharge of dredged or fill material into jurisdictional waters of the United States (WOTUS). Design drawings have been included in this package depicting the plans and profile for the bridge replacement.

A desktop evaluation was conducted to develop a preliminary understanding of the possible extent of WOTUS, including wetlands, in advance of the field delineation, to better understand the historical use of the property, and to identify past site alterations in the PSA. The desktop survey included a review of available online resources, including the USGS 7.5-minute topographic map (Figure 4), U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soil Map (Figure 5), U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) map (Figure 6), South Carolina Department of Natural Resources (SCDNR) light detection and ranging (LIDAR) Digital Elevation Model (DEM) 10x10 foot grid for Richland County (Figure 7), and aerial photographs of the site (Figure 3).

Field delineations were conducted on July 27, 2021, in accordance with the three-parameter approach outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)*. Based on Three Oaks' assessment, the PSA contains the following potential jurisdictional

WOTUS: two streams and one wetland. An Atlantic and Gulf Coastal Plain Region Wetland Determination Data Sheet was completed for Wetland A and has been included in this package. Features identified within the PSA are listed in Table 1 below:

Table 1 - Delineated Features			
Feature ID	Description	Linear Feet	Acreage
Wetland A (WA)	Wetland	N/A	0.05
Non-wetlands waters 1 (SA)	Perennial Stream	175.56	0.18
Non-wetlands waters 2 (SB)	Perennial Stream	56.83	0.04
Upland	Upland	N/A	1.33
Total		232.39	1.6

Delineated features and flag locations were geolocated using a handheld Trimble R1 Global Positioning System (GPS) unit capable of sub-meter accuracy. Representative photos of the delineated features have been included in the attached photo log.

The proposed Project will not involve the discharge of dredged or fill material into WOTUS. Three Oaks respectfully requests your review of the proposed Project and confirmation that the proposed activity is not a regulated activity by the Corps through a "No Permit Required" (NPR) Letter.

Three Oaks appreciates your review of the RCCC Bridge and Dirt Road Improvement Project. If you have questions, please contact me by phone at (864) 978-8484 or by email at wade.biltoft@threeoaksengineering.com.

Respectfully,

Wade Biltoft
Three Oaks Engineering

Enclosures Jurisdictional Determination (JD)/Delineation Request Form
JD Figures
Photo Log
Wetland Determination Data Forms

U.S. Army Corps of Engineers – Charleston District - Regulatory Division

REQUEST FOR CORPS JURISDICTIONAL DETERMINATION (JD) / DELINEATION

(For Jurisdictional Status and Identifying Wetlands and Other Aquatic Resources)

I. PROPERTY AND AGENT INFORMATION

A. Site Details/Location:

Site Name: Mill Creek RCCC Bridge Replacement Date: 02/07/2021
City/Township/Parish: Saylors Lake County: Richland County
Latitude/Longitude: 33.832904, -80.886101 Acreage: 1.6 acres
Tax Map Sequence (TMS) #(s): R21200-01-01
Property Address(es): S/S Old Bluff Rd

☑ Please attach a survey/plat map and vicinity map identifying location and review area for the JD/delineation. An accurate depiction of the review area must be provided (survey, tax map, or GPS coordinates). Tax maps may only be used if the site includes the entire tax map parcel.

B. Requestor of Jurisdictional Determination/Delineation *(if there are multiple property owners, please attach additional pages)*

Name: Quinton Epps
Company Name (*if applicable*): Richland County Conservation Division
Address: 2020 Hampton Street, Room 3063A
Phone: 803-576-2080 Email: epps.quinton@richlandcountysc.gov
Check one: ☑ I currently own this property
☐ I plan to purchase this property
☐ Other, please explain

C. Agent/Environmental Consultant Acting on Behalf of the Requestor *(if applicable)*:

Consultant/Agent Name: Wade Biltoft
Company Name: Three Oaks Engineering
Address: 1022 State Street Cayce, 29033 Phone: 864-978-8484
Email: wade.biltoft@threeoaksengineering.com

II. REASON FOR REQUEST *(check all that apply)*

☑ I intend to construct/develop a project or perform activities on this site which would be designed to avoid all aquatic resources.
☑ I intend to construct/develop a project or perform activities on this site which would be designed to avoid all jurisdictional aquatic resources under Corps authority.
☐ I intend to construct/develop a project or perform activities on this site which may require authorization from the Corps, and the Jurisdictional Determination would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.
☐ I intend to construct/develop a project or perform activities on this site which may require authorization from the Corps; this request is accompanied by my permit application and the jurisdictional determination is to be used in the permitting process.
☐ I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is subject to the ebb and flow of the tide.
☐ A Corps jurisdictional determination is required in order to obtain my local/state authorization.
☐ I intend to contest jurisdiction over a particular aquatic resource and the request the Corps to confirm that jurisdiction does/does not exist over the aquatic resource on the parcel.
☐ I believe that the site may be comprised entirely of dry land.
☐ Other:

Charleston Office:	Columbia Office:	Conway Office:	Greenville Office:
US Army Corps of Engineers Regulatory Division 69A Hagood Avenue Charleston, SC 29403 (ph) 843-329-8044 SAC.RD.Charleston@usace.army.mil	US Army Corps of Engineers Regulatory Office 1835 Assembly Street, Room 865 B-1 Columbia, SC 29201 (ph) 803-253-3444 SAC.RD.Columbia@usace.army.mil	US Army Corps of Engineers Regulatory Office 1949 Industrial Park Road, Room 140 Conway, SC 29526 (ph) 843-365-4239 SAC.RD.Conway@usace.army.mil	US Army Corps of Engineers Regulatory Office 150 Executive Center Drive, Suite 205 Greenville, SC 29615 (ph) 864-609-4326 SAC.RD.Greenville@usace.army.mil

*Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.
Principal Purpose: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above.
Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.
Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an jurisdictional determination cannot be evaluated nor can a jurisdictional determination be issued.

III. TYPE OF REQUEST:

☐ **Delineation Concurrence**[1]

☐ **Approved**[2] **Jurisdictional Determination (AJD) Only**

☑ **Preliminary**[3] **Jurisdictional Determination (PJD) Only**

☐ **Approved Jurisdictional Determination (AJD)** with submittal of a Pre-Construction Notification or Department of the Army permit application

☐ **Preliminary Jurisdictional Determination (PJD)** with submittal of a Pre-Construction Notification or Department of the Army permit application

☐ **Delineation of Wetlands and/or Other Aquatic Resources Only Conducted By Agent/Environmental Consultant** with submittal of a Pre-Construction Notification or Department of the Army permit application (No jurisdictional determination requested)

☐ I request that the **Corps delineate** the wetlands and/or other aquatic resources that may be present on my property with the attached **Pre-Construction Notification or Department of the Army permit application**

☐ I request that the **Corps delineate** the wetlands and/or other aquatic resources that may be present on my property **with a Delineation Only, an AJD or PJD**

☑ **"No Permit Required" (NPR) Letter** as I believe my proposed activity is not regulated[4]

☐ **Unclear** as to which jurisdictional determination I would like to request and require additional information to inform my decision

[1] Delineation Concurrence (DC) – A DC provides concurrence that the delineated boundaries of wetlands on a property are a reasonable representation of the aquatic resources on-site. A DC does not address the jurisdictional status of the aquatic resources.

[2]Approved – An AJD is defined in Corps regulations at 33 CFR 331.2. As explained in further detail in RGL 16-01, an AJD is used to indicate that this office has identified the presence or absence of wetlands and/or other aquatic resources on a site, including their accurate location(s) and boundaries, as well as their jurisdictional status. AJDs are valid for 5 years.

[3]Preliminary – A PJD is defined in Corps regulations at 33 CFR 331.2. As explained in further detail in RGL 16-01, a PJD is used to indicate that this office has identified the approximate location(s) and boundaries of wetlands and/or other aquatic resources on a site that are presumed to be subject to regulatory jurisdiction of the Corps of Engineers. Unlike an AJD, a PJD does not represent a definitive, official determination that there are, or that there are not, jurisdictional aquatic resources on a site, and does not have an expiration date.

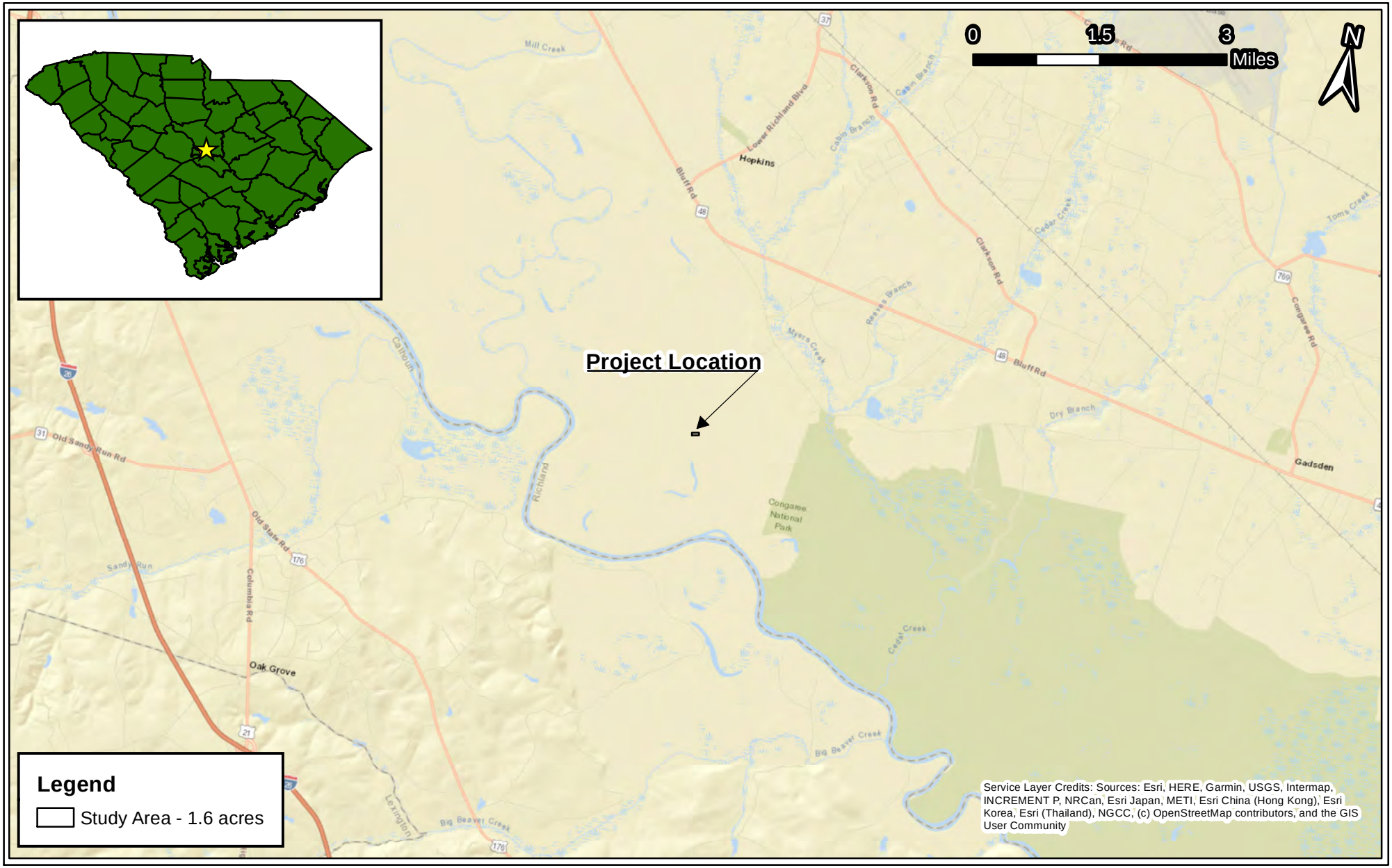
[4] "No Permit Required" (NPR) Letter- A NPR letter may be provided by the Corps to notify the requestor that an activity will not require a permit (authorization) from the Corps; this letter can only be used if the proposed activity is not a regulated activity, regardless of where the activity may occur. A NPR letter cannot be used to indicate the presence or absence of wetlands and/or other aquatic resources, nor can it be used to determine their jurisdictional status.

IV. LEGAL RIGHT OF ENTRY

By signing below, I am indicating that I have the authority, or am acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant U.S. Army Corps of Engineers personnel right of entry to legally access the property(ies) subject to this request for the purposes of conducting on-site investigations (e.g., digging and refilling shallow holes) and issuing a jurisdictional determination. I acknowledge that my signature is an affirmation that I possess the requisite property rights to request a jurisdictional determination on the properties subject to this request.

2020 Hampton Street, Room 3063 A	R21200-01-01
Mailing Address	Property Address / TMS #(s)
epps.quinton@richlandcountysc.gov	803-576-2082
Email Address	Daytime Phone Number
*Signature: [signature]	Quinton Epps 28 Feb 22
	Printed Name and Date

*Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.
Principal Purpose: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above.
Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.
Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an jurisdictional determination cannot be evaluated nor can a jurisdictional determination be issued.



THREE OAKS ENGINEERING

Prepared For:

RICHLAND COUNTY SOUTH CAROLINA

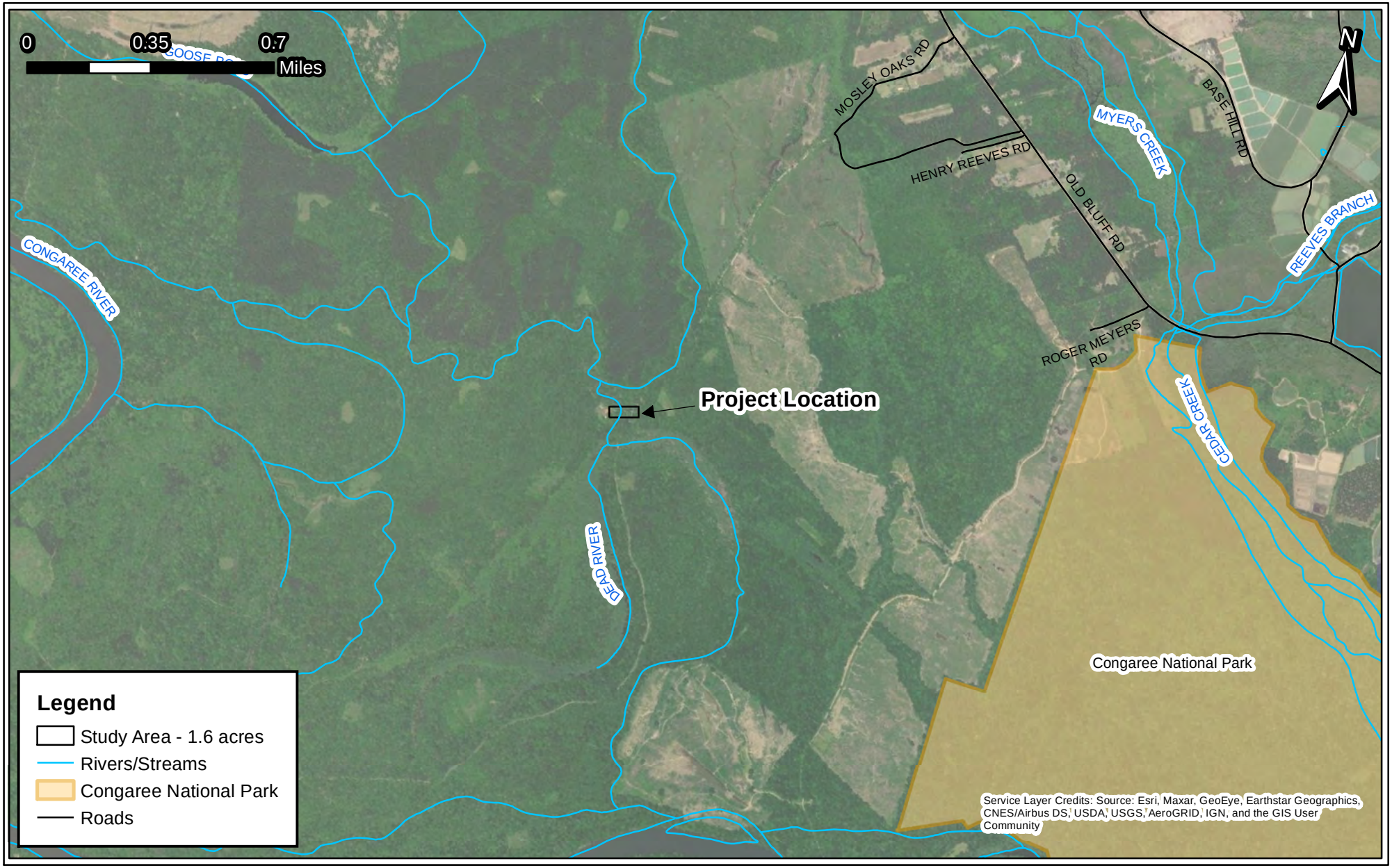
Mill Creek RCCC Bridge Replacement

Project Location Map

Richland County, South Carolina

Date:	January 30, 2022
Scale:	1 in = 2 miles
Job No.:	21-117
Drawn By:	CLB
Checked By:	WCB

Figure 1



THREE OAKS ENGINEERING

Prepared For:

RICHLAND COUNTY SOUTH CAROLINA

Mill Creek RCCC Bridge Replacement

Project Vicinity Map

Richland County, South Carolina

Date:	January 30, 2022
Scale:	1 in = 2,000 feet
Job No.:	21-117
Drawn By:	CLB
Checked By:	WCB

Figure 2

THREE OAKS ENGINEERING

Prepared For:

RICHLAND COUNTY SOUTH CAROLINA

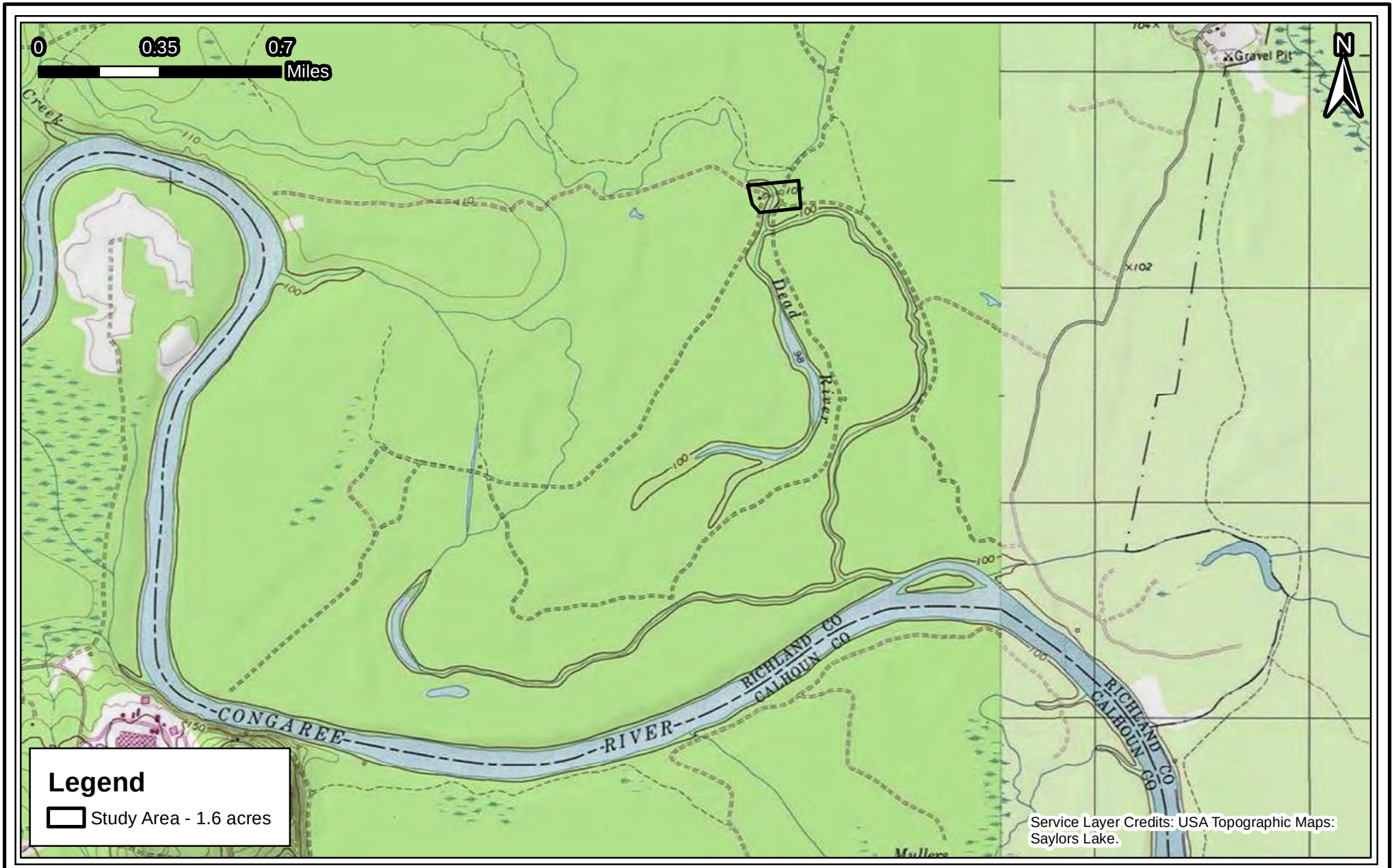
Mill Creek RCCC
Bridge Replacement

Aerial Map

Richland County, South Carolina

Date:	January 30, 2021
Scale:	1 in = 100 ft
Job No.:	21-117
Drawn By:	ZCB
Checked By:	WCB

Figure 3



THREE OAKS ENGINEERING

Prepared For:

RICHLAND COUNTY SOUTH CAROLINA

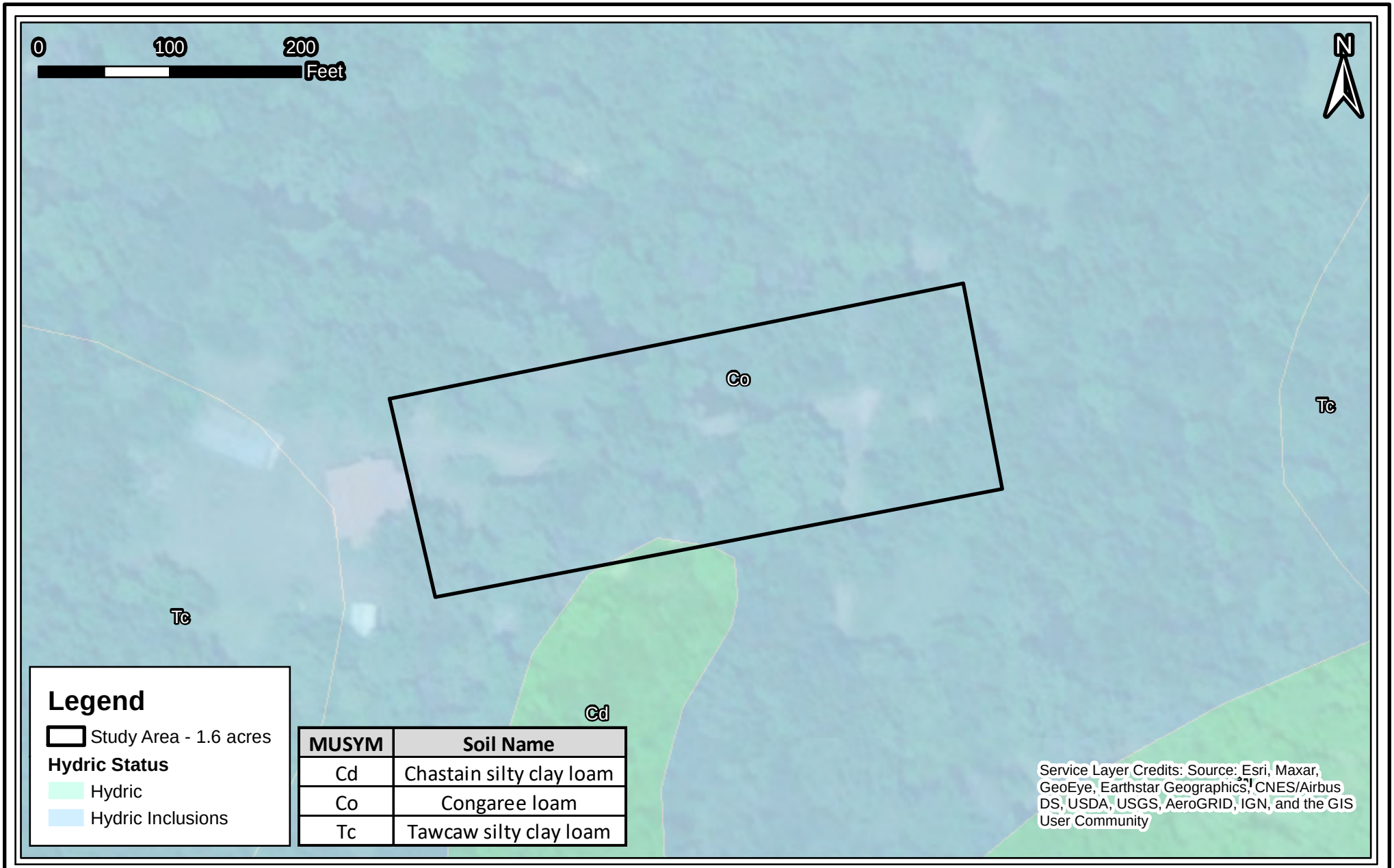
Mill Creek RCCC
Bridge Replacement

Topographic Map

Richland County, South Carolina

Date:	January 30, 2022
Scale:	1 in = 2,000 feet
Job No.:	21-117
Drawn By:	CLB
Checked By:	WCB

Figure 4



MUSYM	Soil Name
Cd	Chastain silty clay loam
Co	Congaree loam
Tc	Tawcaw silty clay loam

THREE OAKS ENGINEERING

Prepared For:

RICHLAND COUNTY SOUTH CAROLINA

Mill Creek RCCC
Bridge Replacement

Soil Survey Map

Richland County, South Carolina

Date:	January 30, 2021
Scale:	1 in = 100 ft
Job No.:	21-117
Drawn By:	ZCB
Checked By:	WCB

Figure 5

THREE OAKS ENGINEERING

Prepared For:

RICHLAND COUNTY SOUTH CAROLINA

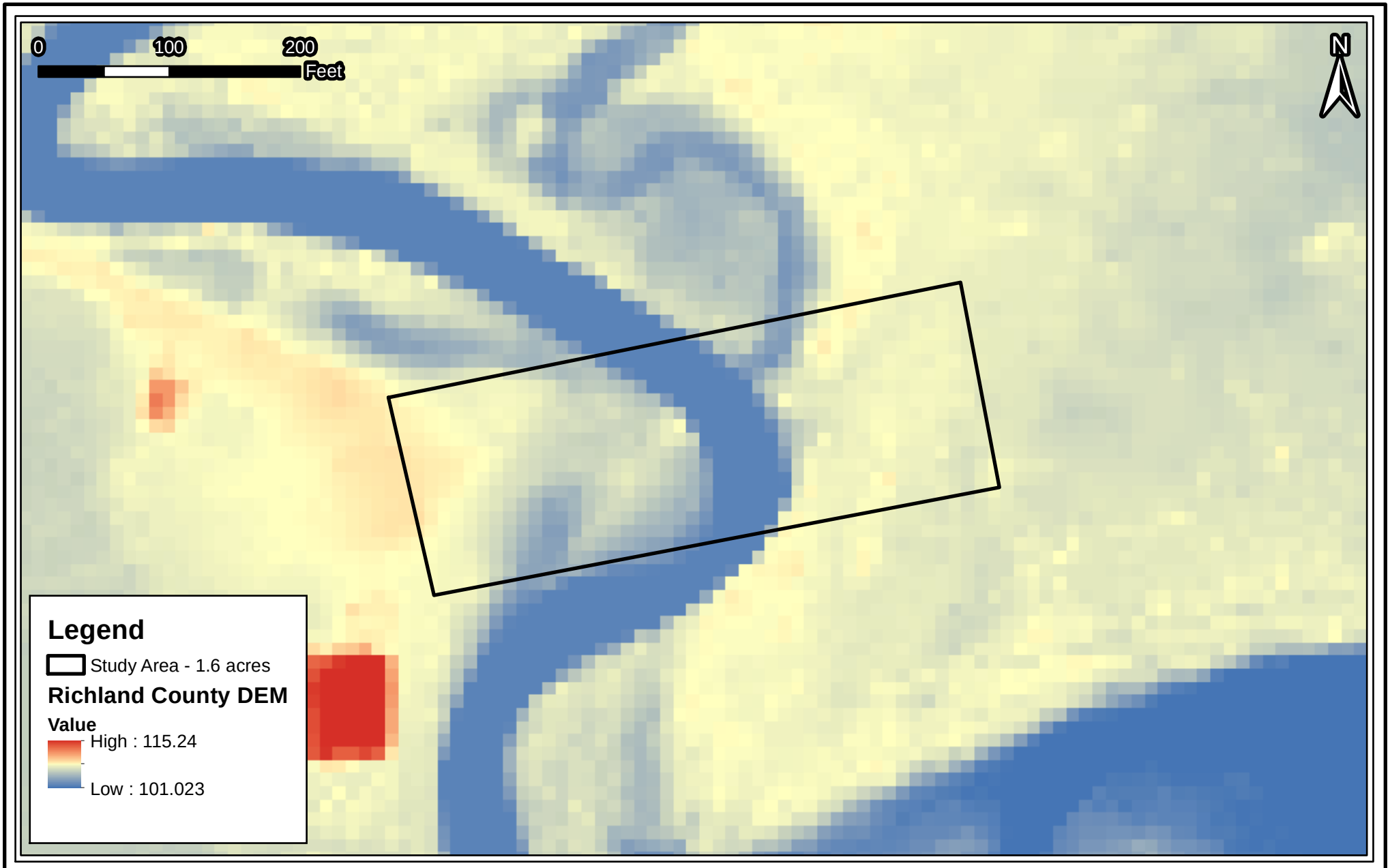
Mill Creek RCCC
Bridge Replacement

NWI & NHD Map

Richland County, South Carolina

Date:	January 30, 2021
Scale:	1 in = 100 ft
Job No.:	21-117
Drawn By:	ZCB
Checked By:	WCB

Figure 6



THREE OAKS ENGINEERING

Prepared For:

RICHLAND COUNTY SOUTH CAROLINA

Mill Creek RCCC
Bridge Replacement

Digital Elevation Model Map

Richland County, South Carolina

Date:	January 30, 2021
Scale:	1 in = 100 ft
Job No.:	21-117
Drawn By:	ZCB
Checked By:	WCB

Figure 7

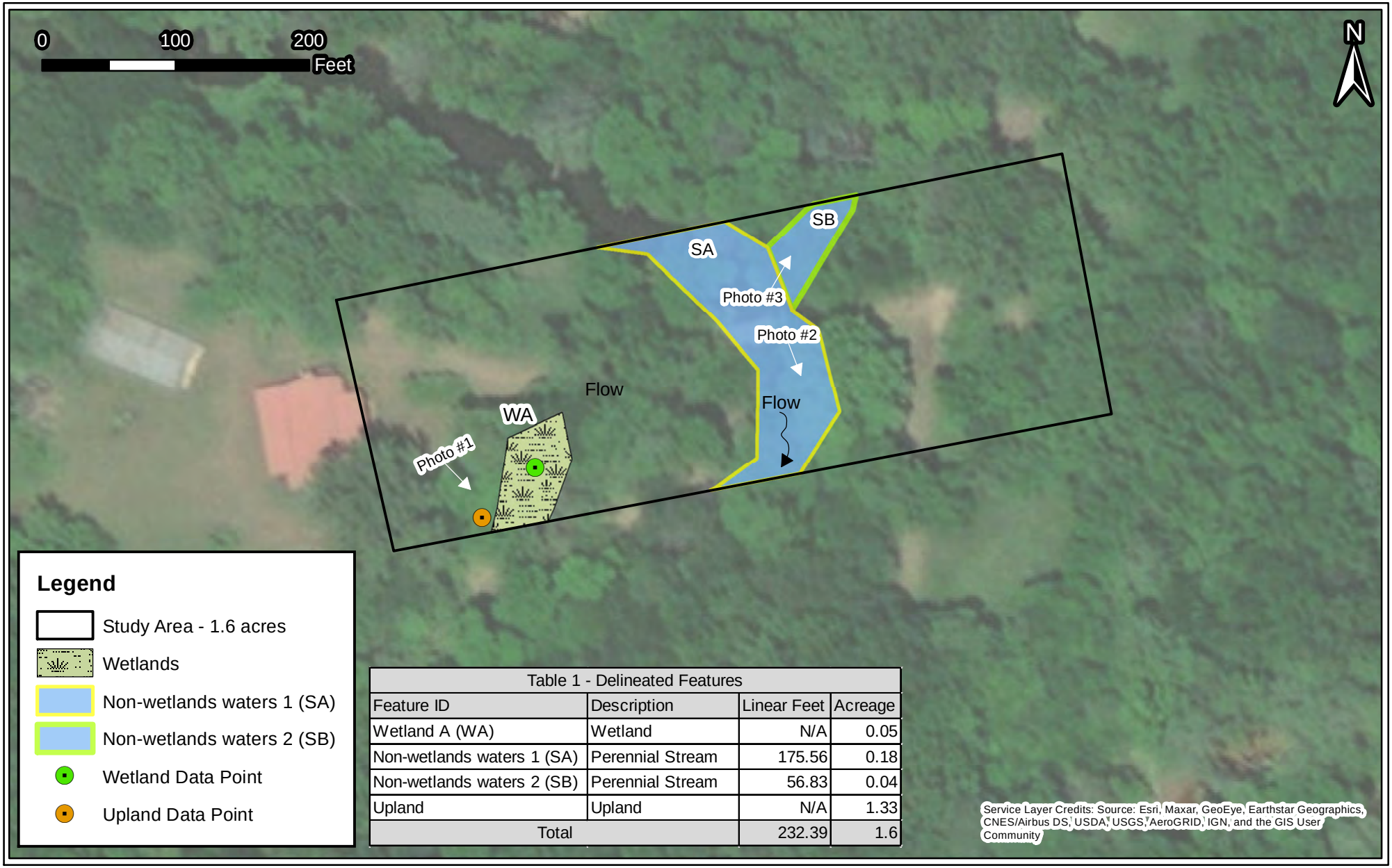


Table 1 - Delineated Features			
Feature ID	Description	Linear Feet	Acreage
Wetland A (WA)	Wetland	N/A	0.05
Non-wetlands waters 1 (SA)	Perennial Stream	175.56	0.18
Non-wetlands waters 2 (SB)	Perennial Stream	56.83	0.04
Upland	Upland	N/A	1.33
Total		232.39	1.6

THREE OAKS ENGINEERING

Prepared For:

RICHLAND COUNTY SOUTH CAROLINA

Mill Creek RCCC
Bridge Replacement

Aquatic Resources Map

Richland County, South Carolina

Date: February 3, 2022
Scale: 1 in = 80 feet
Job No.: 21-117
Drawn By: CLB
Checked By: WCB

Figure 8

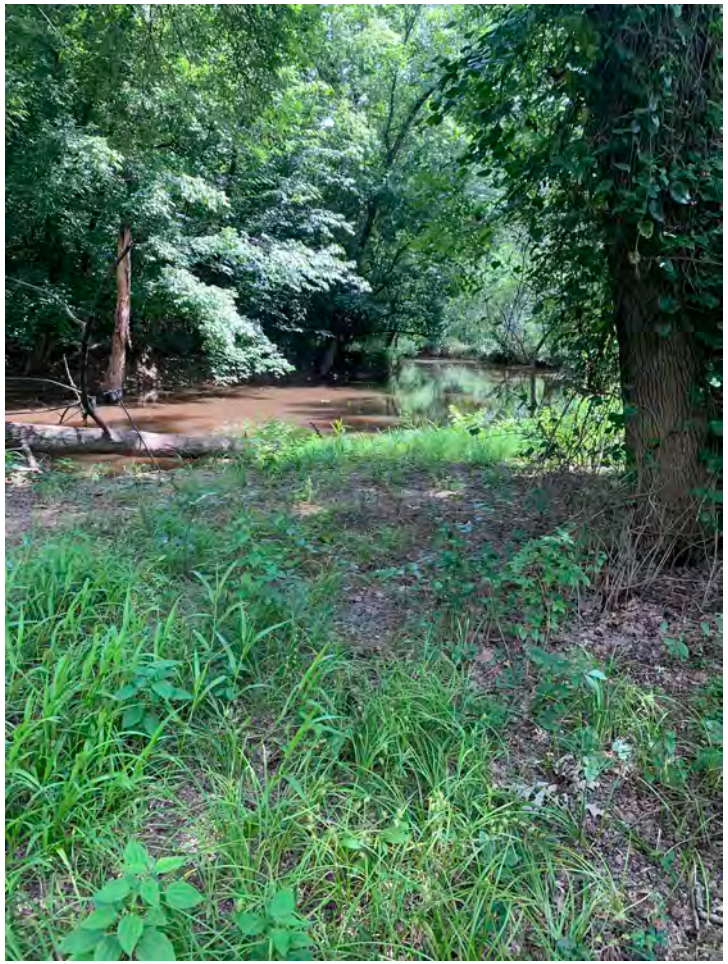


Photo 1
WA
Photo facing southeast

Photo 2
SA
Photo facing south

Photo 3
SB
Photo facing northeast

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Mill Creek RCCC Bridge Replacement City/County: Saylors Lake/Richland Sampling Date: 07-27-21

Applicant/Owner: Richland County Conservation Commission State: SC Sampling Point: Up A

Investigator(s): Three Oaks Engineering Section, Township, Range: Saylors Lake, SC (2020), 24K

Landform (hillside, terrace, etc.): None Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR or MLRA): LRR T Lat: 33.832634 Long: -80.886588 Datum: NAD83

Soil Map Unit Name: Co - Congaree Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: Up A

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus michauxii*	5	Yes	FACW
2. *Liquidambar styraciflua*	3	Yes	FAC
3.			
4.			
5.			
6.			
	8	=Total Cover	
50% of total cover: 4		20% of total cover: 2	

Sapling Stratum (Plot size: 30 ft)			
1. *Liquidambar styraciflua*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover: 1	

Shrub Stratum (Plot size: 30 ft)			
1. *Liquidambar styraciflua*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover: 1	

Herb Stratum (Plot size: 30 ft)			
1. *Pasalum notatum*	40	Yes	FACU
2. *Arundinaria gigantea*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45	=Total Cover	
50% of total cover: 23		20% of total cover: 9	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	13	x 3 =	39
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	63 (A)		219 (B)

Prevalence Index = B/A = 3.48

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: Up A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5yr 5/4	100					Loamy/Clayey	
2-6	7.5yr 5/4	75	7.5yr 5/6	25		M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers **WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region** See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	*OMB Control #: 0710-xxxx, Exp: Pending* *Requirement Control Symbol EXEMPT:* *(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Mill Creek RCCC Bridge Replacement City/County: Saylors Lake/Richland Sampling Date: 07-27-21

Applicant/Owner: Richland County Conservation Commission State: SC Sampling Point: WA

Investigator(s): Three Oaks Engineering Section, Township, Range: Saylors Lake, SC (2020), 24K

Landform (hillside, terrace, etc.): None Local relief (concave, convex, none): None Slope (%): 2

Subregion (LRR or MLRA): LRR T Lat: 33.832717 Long: -80.886483 Datum: NAD83

Soil Map Unit Name: Co - Congaree Loam NWI classification: PFO1/2F

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- X Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ____ Sphagnum Moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: WA

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus michauxii*	15	Yes	FACW
2. *Liquidambar styraciflua*	5	Yes	FAC
3. *Carya glabra*	5	Yes	FACU
4.			
5.			
6.			
	25	=Total Cover	
50% of total cover: 13		20% of total cover: 5	

Sapling Stratum (Plot size: 30)			
1. *Carya glabra*	10	Yes	FACU
2. *Liquidambar styraciflua*	5	Yes	FAC
3.			
4.			
5.			
6.			
	15	=Total Cover	
50% of total cover: 8		20% of total cover: 3	

Shrub Stratum (Plot size: 30)			
1. *Ligustrum sinense*	8	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	8	=Total Cover	
50% of total cover: 4		20% of total cover: 2	

Herb Stratum (Plot size: 30)			
1. *Carex sp.*	20	Yes	FACW
2. *Chasmanthium latifolium*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	=Total Cover	
50% of total cover: 20		20% of total cover: 8	

Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	38	x 3 =	114
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	88 (A)		244 (B)
Prevalence Index = B/A =			2.77

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below.)

SOIL Sampling Point: WA

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	7.5yr 5/4	100					Loamy/Clayey	
2-12	7.5yr 6/2	70	7.5yr 5/4	30		M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

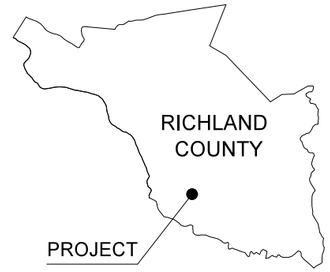
SHEET NO.	TOTAL SHEETS
1	10

INDEX OF SHEETS

SHEET NO.	DESCRIPTION	SHEET
1	TITLE SHEET	1
2	QUANTITY SHEET	1
3	TYPICAL SECTION SHEET	1
5	GENERAL NOTES SHEET	1
5A	REFERENCE DATA SHEET	1
6 – 6A	PLAN AND PROFILE SHEETS	2
X1 – X3	CROSS SECTIONS	3
	TOTAL SHEETS	10

PROPOSED PLANS FOR

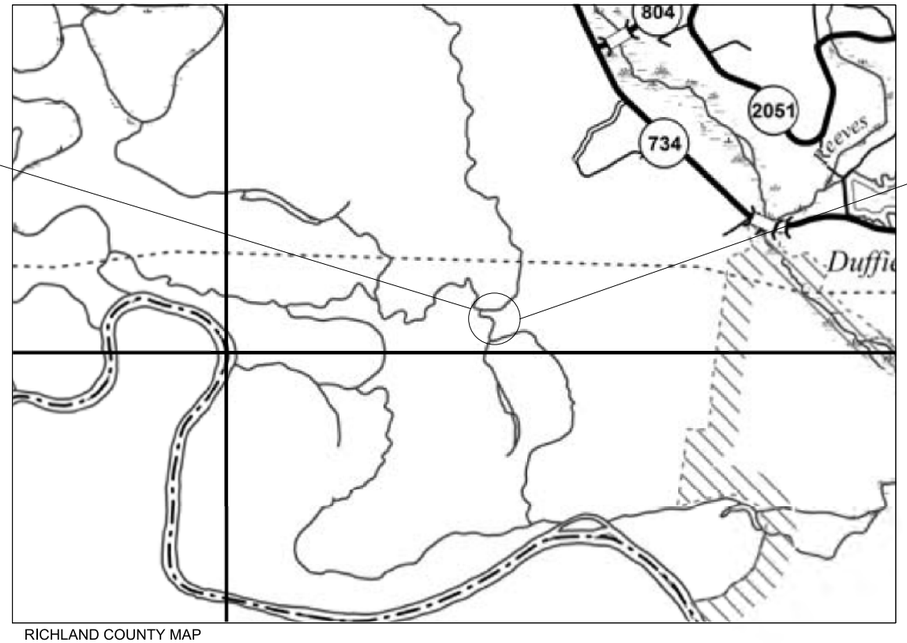
BRIDGE REPLACEMENT OVER MILL CREEK



LOCATION MAP
N.T.S.

STA. 104+10.00 TO STA. 106+38.65 (ROAD 1)

100'-0" x 18'-0" CONCRETE BRIDGE
FROM STA. 105+00.00 TO STA. 106+00.00



RICHLAND COUNTY MAP

LAYOUT
N.T.S

	ROAD 1	ROAD 2	TOTAL (MILES)
NET LENGTH OF ROADWAY	0.024	0.013	0.037
NET LENGTH OF BRIDGES	0.019	–	0.019
NET LENGTH OF PROJECT	0.043	0.013	0.056
LENGTH OF EXCEPTIONS	–	–	–
GROSS LENGTH OF PROJECT	0.043	0.013	0.056

EQUALITIES IN STATIONING:
NONE

NOTE: EXCEPT AS MAY OTHERWISE BE SPECIFIED ON THE PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIALS AND WORKMANSHIP ON THIS PROJECT SHALL CONFORM TO THE SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2007 EDITION) AND THE STANDARD DRAWINGS FOR ROAD CONSTRUCTION IN EFFECT AT THE RELEASE OF THE FINAL RFP.

NPDES PERMIT INFORMATION

Disturbed Area = 0.2 Acre(s)

Project Area = 2.2 Acre(s)

Approximate Location of Roadway is

Begin
Latitude 33°49'59"N
Longitude 80°53'11"W

End
Latitude 33°49'59"N
Longitude 80°53'9"W

Hydraulic and NPDES Design provided by:

SEPI, Inc.

3 DAYS BEFORE DIGGING IN SOUTH CAROLINA

CALL 811

SOUTH CAROLINA 811 (SC811)
WWW.SC811.COM
ALL UTILITIES MAY NOT BE A MEMBER OF SC811

RAILROAD INVOLVEMENT?
YES (NO)

CONSULTING ENGINEERING FIRM

HOLT CONSULTING COMPANY, LLC.

ENGINEER OF RECORD

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29957 DANIEL M. ATKINSON

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION HOLT CONSULTING COMPANY LLC No. 4831

FOR CONSTRUCTION: _____ DATE

SCDOT South Carolina Department of Transportation — SUMMARY OF ESTIMATED QUANTITIES - CONSTRUCTION PLANS REVIEW

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE/ROAD NO.	SHEET NO.
3	SC	RICHLAND	–	–	2

ITEM NO.	PAY ITEM	COMPUTED QUANTITY	INCIDENTAL QUANTITY	PAY UNIT
1031000	MOBILIZATION	1.000		LS
2011000	CLEARING & GRUBBING WITHIN RIGHT OF WAY	1.000		LS
2031200	SITE EXCAVATION	1.000		LS
3050106	GRADED AGGREGATE BASE COURSE (6" UNIFORM)	260.000		SY
6510105	FLAT SHEET, TYPE III, FIXED SZ. & MSG. SIGN	12.000		SF
6531210	U-SECTION POST FOR SIGN SUPPORTS - 3P	52.000		LF
8100100	PERMANENT COVER	0.100		AC
8131000	SODDING	0.520		MSY
8152007	SEDIMENT TUBES FOR DITCH CHECKS	100.000		LF
8153000	SILT FENCE	550.000		LF
8153090	REPLACE/REPAIR SILT FENCE	55.000		LF
8154050	REMOVAL OF SILT RETAINED BY SILT FENCE	138.000		LF

ITEM NO.	PAY ITEM	COMPUTED QUANTITY	INCIDENTAL QUANTITY	PAY UNIT

1/6/2022
https://holtconsultingco.sharepoint.com/sites/Surface/South Carolina/Richland_County/SC0304-06_Road_Bridge/Design/Quantities/[RCCC_Quantities_SHEET.xlsx]QUANTITY SHEET1

HOLT CONSULTING COMPANY, LLC.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER — No. 29957 — DANIEL M. ATKINSON

HOLT CONSULTING COMPANY LLC — No. 4831 — SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION

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

DESIGNED BY: _____ DATE _____
DRAWN BY: _____ DATE _____
CHECKED BY: _____ DATE _____

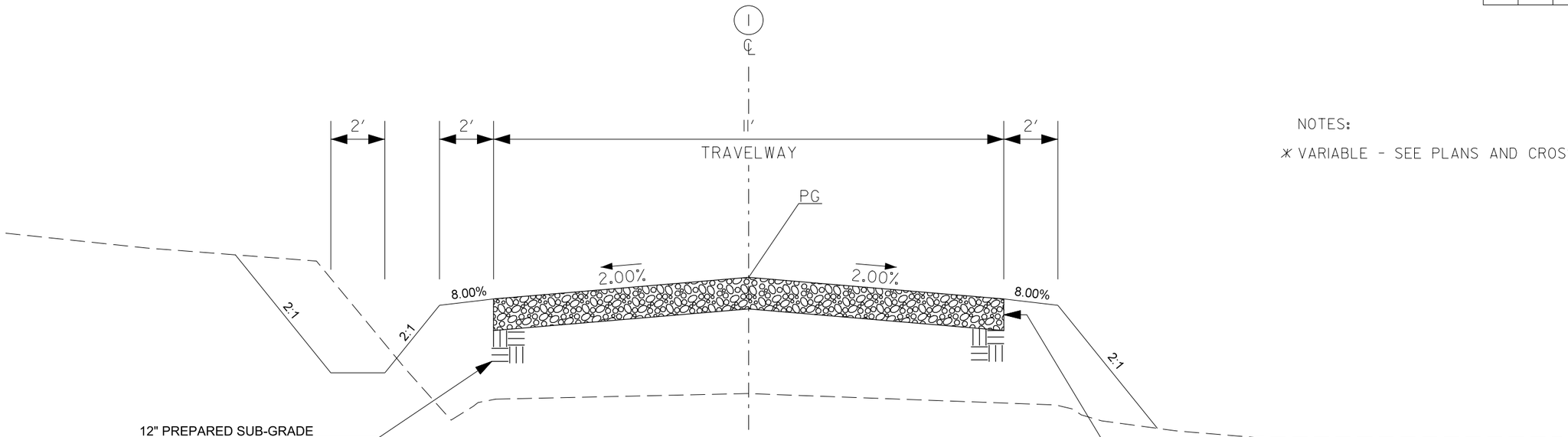
RICHLAND COUNTY
CONSERVATION COMMISSION

QUANTITY SHEET
BRIDGE REPLACEMENT
OVER MILL CREEK

SHEET 2 | SCALE: NTS

TYPICAL SECTIONS OF IMPROVEMENT

FED. RD. DIV. NO.	STATE	COUNTY	ROUTE NO.	SHEET NO.
3	SC	RICHLAND	–	3

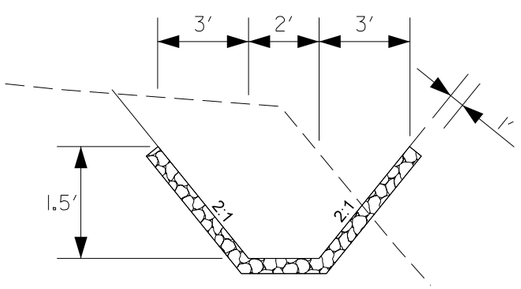


NOTES:

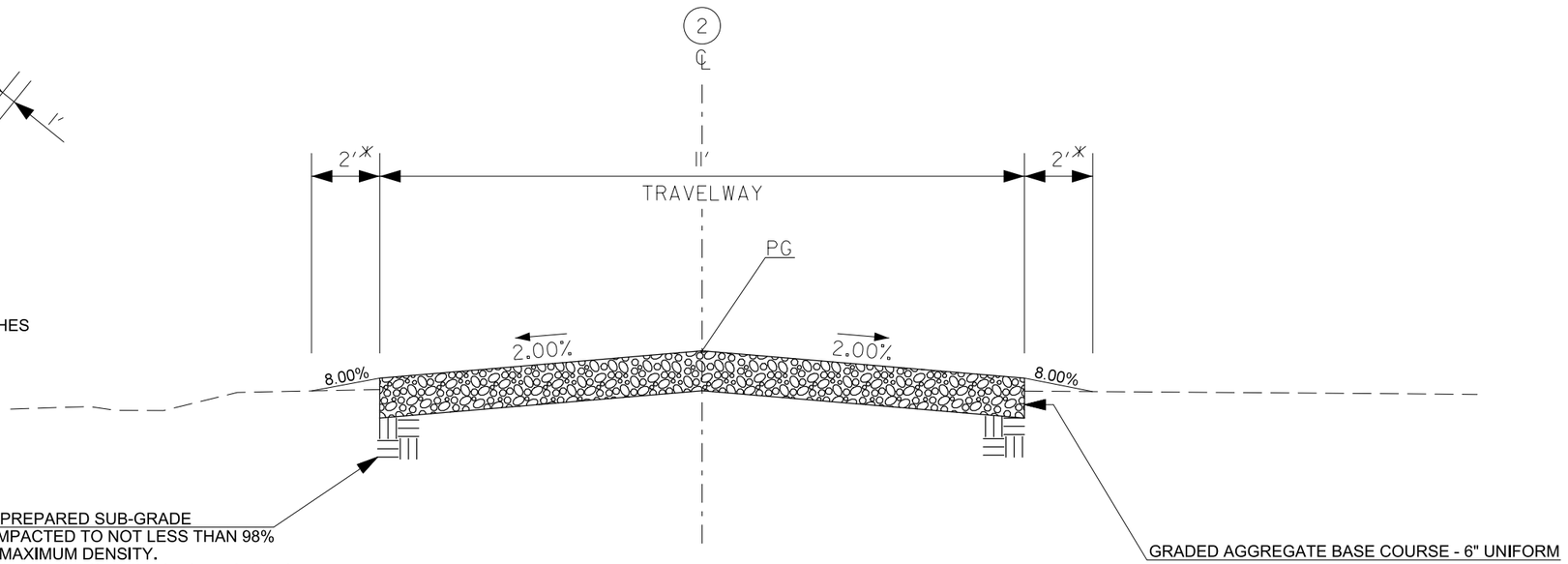
* VARIABLE - SEE PLANS AND CROSS SECTIONS

USE THIS SECTION ON ROAD 1
STA. 104+10.00 TO 106+38.65

EXCEPTION: 100' x 18' BRIDGE
FROM STA. 105+00.00 TO STA. 106+00.00



CONSTRUCT RIPRAP LINING FOR ALL DITCHES



USE THIS SECTION ON ROAD 2
STA. 10+17.00 TO STA. 10+88.00

HOLT CONSULTING COMPANY, LLC.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29957 DANIEL M. ATKINSON

HOLT CONSULTING COMPANY LLC No. 4831 SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION

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

DESIGNED BY: _____ DATE _____
DRAWN BY: _____ DATE _____
CHECKED BY: _____ DATE _____

RICHLAND COUNTY
CONSERVATION COMMISSION

TYPICAL SECTION
BRIDGE REPLACEMENT
OVER MILL CREEK

SHEET 3 | SCALE: NTS

FED. RD. DIV. NO.	STATE	COUNTY	ROUTE NO.	SHEET NO.
3	SC	RICHLAND	–	5

GENERAL CONSTRUCTION NOTES

1. THIS PROJECT WILL CONSIST OF THE GRADING, DRAINAGE AND CONSTRUCTION OF APPROXIMATELY 140 LF OF ROADWAY, LOCATED IN RICHLAND COUNTY, SOUTH CAROLINA.
2. HORIZONTAL AND VERTICAL SURVEYS WERE PERFORMED BY SEPI, INC. AND ARE BASED ON NAD 83 STATE PLANE COORDINATES AND NAVD 88 ELEVATIONS SHOWN AT CONTROL POINTS AND BENCHMARKS ON THE PLANS.
3. CLEARING & GRUBBING OPERATIONS WILL BE PERFORMED ONLY IN THE IMMEDIATE AREA NECESSARY FOR THE CONSTRUCTION OF THE ROADWAY AND ALL WORK ASSOCIATED WITH THE PROJECT.
4. DISTURBED AREAS WILL BE RE-SEEDED AS SOON AS POSSIBLE FOLLOWING COMPLETION OF CONSTRUCTION ACTIVITIES IN THAT LOCATION. ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED, AND MULCHED AS NECESSARY OR AS DIRECTED BY THE ENGINEER TO ACHIEVE AN EROSION-RESISTANT VEGETATIVE COVER. METHOD "C" SHALL BE USED ON THIS PROJECT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, SECTION 810.4.12.
5. CLEANING OF EXISTING OUTFALLS SHALL BE PAID FOR UNDER CLEARING AND GRUBBING.
6. THE COST FOR CONSTRUCTION STAKES, LINES AND GRADES SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND INCLUDED IN THE COST FOR OTHER ITEMS.
7. THE CONTRACTOR SHALL REMOVE ALL SEDIMENT AND DEBRIS FROM ALL PIPES WITHIN THE PROJECT LIMITS UPON COMPLETION OF THE WORK.
8. ALL EXISTING ROADWAY SIGNAGE AFFECTED BY CONSTRUCTION ACTIVITIES SHALL BE RELOCATED, REUSED OR REPLACED AS INDICATED ON THE PLANS OR AS DEEMED NECESSARY TO PERFORM THE WORK. IF ROADWAY REMAINS OPEN TO TRAFFIC DURING CONSTRUCTION, ALL SIGNS THAT ARE TO BE RELOCATED SHALL BE ERECTED IN A TEMPORARY MANNER THAT DOES NOT IMPEDE TRAFFIC FLOW. ANY SIGN MESSAGE THAT CONFLICTS WITH THE CONSTRUCTION TRAFFIC CONTROL SIGNAGE SHALL BE COVERED OR TEMPORARILY REMOVED.
9. THE CONTRACTOR SHALL ADHERE TO THE WEIGHT LIMITS PRESCRIBED ON SCDOT/COUNTY MAINTAINED ROADS FOR HAULING EQUIPMENT AND/OR MATERIALS TO AND FROM THIS SITE. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGES TO THE ROADS AND/OR UTILITIES DUE TO NONCOMPLIANCE OF WEIGHT LIMIT REGULATIONS.
10. THE RICHLAND COUNTY DEPARTMENT OF TRANSPORTATION AND/OR THEIR CONSULTANT MUST SPECIFICALLY AUTHORIZE CHANGES INVOLVING INCREASED COST OF PROJECT OR CHANGES IN ALIGNMENT
11. THE CONTRACTOR SHALL GRADE FOR POSITIVE DRAINAGE IN CONFORMANCE WITH THE PROPOSED DRAINAGE PATTERNS ON THE PLANS.
12. THE CONTRACTOR MUST NOT OCCUPY ANY NON-PERMITTED WETLAND AREAS.

UTILITY INFORMATION

THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLANS HAVE BEEN DETERMINED FROM AVAILABLE INFORMATION AND ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE UTILITIES INFORMATION SHOWN ON THE DRAWINGS. IT IS THEREFORE THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM THAT THE PROPER COORDINATION WITH THE VARIOUS UTILITY OWNERS HAS BEEN PERFORMED.

THE CONTRACTOR SHALL COOPERATE WITH THE UTILITY OWNERS DURING RELOCATION OPERATIONS. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING AN UNDERGROUND UTILITY WHETHER SHOWN ON THE DRAWINGS OR LOCATED BY THE UTILITY COMPANY. COST OF DAMAGES TO ANY UTILITIES AS A RESULT OF CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

DHEC STANDARD NOTES

1. IF NECESSARY, SLOPES, WHICH EXCEED EIGHT (8) VERTICAL FEET SHOULD BE STABILIZED WITH SYNTHETIC OR VEGETATIVE MATS, IN ADDITION TO HYDROSEEDING. IT MAY BE NECESSARY TO INSTALL TEMPORARY SLOPE DRAINS DURING CONSTRUCTION. TEMPORARY BERMS MAY BE NEEDED UNTIL THE SLOPE IS BROUGHT TO GRADE.
2. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN FOURTEEN (14) DAYS AFTER WORK HAS CEASED, EXCEPT AS STATED BELOW.
   -WHERE STABILIZATION BY THE 14TH DAY IS PRECLUDED BY SNOW COVER OR FROZEN GROUND CONDITIONS STABILIZATION MEASURES MUST BE INITIATED AS SOON AS PRACTICABLE.
   -WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH-DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 14 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE.
3. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED ONCE EVERY CALENDAR WEEK. IF PERIODIC INSPECTION OR OTHER INFORMATION INDICATES THAT A BMP HAS BEEN INAPPROPRIATELY OR INCORRECTLY INSTALLED, THE PERMITTEE MUST ADDRESS THE NECESSARY REPLACEMENT OR MODIFICATION REQUIRED TO CORRECT THE BMP WITHIN 48 HOURS OF IDENTIFICATION.
4. PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED, AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY INSTALLATION. FILL, COVER, AND TEMPORARY SEEDING AT THE END OF EACH DAY ARE RECOMMENDED. IF WATER IS ENCOUNTERED WHILE TRENCHING, THE WATER SHOULD BE FILTERED TO REMOVE SEDIMENT BEFORE BEING PUMPED BACK INTO ANY WATERS OF THE STATE.
5. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
6. THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO PAVED ROADWAY(S) FROM CONSTRUCTION AREAS AND THE GENERATION OF DUST. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT, AS MAY BE REQUIRED.
7. RESIDENTIAL SUBDIVISIONS REQUIRE EROSION CONTROL FEATURES FOR INFRASTRUCTURE AS WELL AS FOR INDIVIDUAL LOT CONSTRUCTION. INDIVIDUAL PROPERTY OWNERS SHALL FOLLOW THESE PLANS DURING CONSTRUCTION OR OBTAIN APPROVAL OF AN INDIVIDUAL PLAN IN ACCORDANCE WITH S.C REG. 72-300 ET SEQ. AND SCR100000.
8. TEMPORARY DIVERSION BERMS AND/OR DITCHES WILL BE PROVIDED AS NEEDED DURING CONSTRUCTION TO PROTECT WORK AREAS FROM UPSLOPE RUNOFF AND/OR TO DIVERT SEDIMENT-LADEN WATER TO APPROPRIATE TRAPS OR STABLE OUTLETS.
9. ALL WATERS OF THE STATE (WOS), INCLUDING WETLANDS, ARE TO BE FLAGGED OR OTHERWISE CLEARLY MARKED IN THE FIELD. A DOUBLE ROW OF SILT FENCE IS TO BE INSTALLED IN ALL AREAS WHERE A 50-FOOT BUFFER CANT BE MAINTAINED BETWEEN THE DISTURBED AREA AND ALL WAS. A 10-FOOT BUFFER SHOULD BE MAINTAINED BETWEEN THE LAST ROW OF SILT FENCE AND ALL WAS.
10. LITTER, CONSTRUCTION DEBRIS, OILS, FUELS, AND BUILDING PRODUCTS WITH SIGNIFICANT POTENTIAL FOR IMPACT (SUCH AS STOCKPILES OF FRESHLY TREATED LUMBER) AND CONSTRUCTION CHEMICALS THAT COULD BE EXPOSED TO STORM WATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE IN STORM WATER DISCHARGES.
11. A COPY OF THE SWPPP, INSPECTIONS RECORDS, AND RAINFALL DATA MUST BE RETAINED AT THE CONSTRUCTION SITE OR A NEARBY LOCATION EASILY ACCESSIBLE DURING NORMAL BUSINESS HOURS, FROM THE DATE OF COMMENCEMENT OF CONSTRUCTION ACTIVITIES TO THE DATE THAT FINAL STABILIZATION IS REACHED.
12. INITIATE STABILIZATION MEASURES ON ANY EXPOSED STEEP SLOPE (3H:1V OR GREATER) WHERE LAND-DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED, AND WILL NOT RESUME FOR A PERIOD OF 7 CALENDAR DAYS.
13. MINIMIZE SOIL COMPACTION AND, UNLESS INFEASIBLE, PRESERVE TOPSOIL.
14. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER, AND OTHER WASH WATERS. WASH WATERS MUST BE TREATED IN A SEDIMENT BASIN OR ALTERNATIVE CONTROL THAT PROVIDES EQUIVALENT OR BETTER TREATMENT PRIOR TO DISCHARGE;
15. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM DEWATERING OF TRENCHES AND EXCAVATED AREAS. THESE DISCHARGES ARE TO BE ROUTED THROUGH APPROPRIATE BMPS (SEDIMENT BASIN, FILTER BAG, ETC.).
16. THE FOLLOWING DISCHARGES FROM SITES ARE PROHIBITED:
   -WASTEWATER FROM WASHOUT OF CONCRETE, UNLESS MANAGED BY AN APPROPRIATE CONTROL; FOR THIS PROJECT, NO CONCRETE WASHOUTS TO BE ALLOWED WITHIN PROJECT LIMITS; CONTRACTOR TO COORDINATE FOR APPROPRIATE OFFSITE LOCATION.
   -WASTEWATER FROM WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS;
   -FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE; AND
   -SOAPS OR SOLVENTS USED IN VEHICLE AND EQUIPMENT WASHING.
17. AFTER CONSTRUCTION ACTIVITIES BEGIN, INSPECTIONS MUST BE CONDUCTED AT A MINIMUM OF AT LEAST ONCE EVERY CALENDAR WEEK AND MUST BE CONDUCTED UNTIL FINAL STABILIZATION IS REACHED ON ALL AREAS OF THE CONSTRUCTION SITE.
18. IF EXISTING BMPS NEED TO BE MODIFIED OR IF ADDITIONAL BMPS ARE NECESSARY TO COMPLY WITH THE REQUIREMENTS OF THIS PERMIT AND/OR SC'S WATER QUALITY STANDARDS, IMPLEMENTATION MUST BE COMPLETED BEFORE THE NEXT STORM EVENT WHENEVER PRACTICABLE. IF IMPLEMENTATION BEFORE THE NEXT STORM EVENT IS IMPRACTICABLE, THE SITUATION MUST BE DOCUMENTED IN THE SWPPP AND ALTERNATIVE BMPS MUST BE IMPLEMENTED AS SOON AS REASONABLY POSSIBLE.
19. A PRE-CONSTRUCTION CONFERENCE MUST BE HELD FOR EACH CONSTRUCTION SITE WITH AN APPROVED ON-SITE SWPPP PRIOR TO THE IMPLEMENTATION OF CONSTRUCTION ACTIVITES. FOR NON-LINEAR PROJECTS THAT DISTURB 10 ACRES OR MORE THIS CONFERECE MUST BE HELD ON-SITE UNLESS THE DEPARTMENT HAS APPROVED OTHERWISE.

CONSTRUCTION SEQUENCE

1. RECEIVE NPDES COVERAGE FROM DHEC.
2. PRE-CONSTRUCTION MEETING (ON SITE IF MORE THAN 10 ACRES DISTURBED AND NON-LINEAR).
3. NOTIFY RICHLAND COUNTY PUBLIC WORKS 48 HOURS PRIOR TO BEGINNING LAND-DISTURBING ACTIVITIES.
4. INSTALLATION OF CONSTRUCTION ENTRANCES.
5. CLEARING AND GRUBBING ONLY AS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS.
6. INSTALLATION OF PERIMETER CONTROLS (E.G. SILT FENCE).
7. CLEARING AND GRUBBING ONLY IN AREAS OF BASINS/TRAPS/PONDS.
8. INSTALLATION OF BASINS/TRAPS/PONDS AND INSTALLATION OF DIVERSIONS TO THOSE STRUCTURES (OUTLET STRUCTURES MUST BE COMPLETELY INSTALLED AS SHOWN ON THE DETAILS BEFORE PROCEEDING TO NEXT STEP; AREAS DRAINING TO THESES STRUCTURES CANNOT BE DISTURBED UNTIL THE STRUCTURES AND DIVERSIONS TO THE STRUCTURES ARE COMPLETELY INSTALLED).
9. CLEARING AND GRUBBING OF SITE OR DEMOLITION (SEDIMENT AND EROSION CONTROL MEASURES FOR THESE AREAS MUST ALREADY BE INSTALLED).
10. ROUGH GRADING.
11. FINE GRADING, PAVING, ETC.
12. PERMANENT/FINAL STABILIZATION.
13. CLEAN-OUT OF DETENTION BASINS THAT WERE USED AS SEDIMENT CONTROL STRUCTURES AND RE-GRADING OF DETENTIONS; IF NECESSARY, MODIFICATION OF SEDIMENT BASIN RISER TO CONVERT TO DETENTION BASIN OUTLET STRUCTURE.
14. REMOVAL OF TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES AFTER ENTIRE AREA DRAINING TO THE STRUCTURE IS FINALLY STABILIZED (THE DEPARTMENT RECOMMENDS THAT THE PROJECT OWNER/OPERATOR HAVE THE SWPPP PREPARER OR REGISTRATION EQUIVALENT APPROVE THE REMOVAL OF TEMPORARY STRUCTURES. MAINTENANCE OF ALL SEDIMENT AND EROSION CONTROL MEASURES MUST CONTINUE UNTIL THE SITE IS PERMANENTLY STABILIZED AND THE CONTROLS ARE REMOVED).
15. PERFORM AS-BUILT SURVEYS OF ALL DETENTION STRUCTURES AND SUBMIT TO DHEC OR MS4 FOR ACCEPTANCE.
16. SUBMIT NOTICE OF TERMINATION (NOT) TO DHEC AS APPROPRIATE.

HOLT CONSULTING COMPANY, LLC.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29957 DANIEL M. ATKINSON

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION HOLT CONSULTING COMPANY LLC No. 4831

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

DESIGNED BY: _____ DATE _____
DRAWN BY: _____ DATE _____
CHECKED BY: _____ DATE _____

RICHLAND COUNTY
CONSERVATION COMMISSION

GENERAL NOTES
BRIDGE REPLACEMENT
OVER MILL CREEK

SHEET 5 | SCALE: NTS

FED. RD. DIV. NO.	STATE	COUNTY	ROUTE NO.	SHEET NO.
3	SC	RICHLAND	–	5A

Beginning chain ROAD_1 description
==========

Point CL10 N 727,508.7434 E 2,034,460.5248 Sta 104+00.00

Course from CL10 to PC ROAD1_1 N 81° 26' 39.16" E Dist 34.3953

Curve Data

Curve ROAD1_1
P.I. Station 104+43.40 N 727,515.1996 E 2,034,503.4384
Delta = 10° 17' 12.94" (LT)
Degree = 57° 17' 44.81"
Tangent = 9.0012
Length = 17.9541
Radius = 100.0000
External = 0.4043
Long Chord = 17.9300
Mid. Ord. = 0.4027
P.C. Station 104+34.40 N 727,513.8605 E 2,034,494.5374
P.T. Station 104+52.35 N 727,518.1067 E 2,034,511.9573
C.C. N 727,612.7476 E 2,034,479.6601
Back = N 81° 26' 39.16" E
Ahead = N 71° 09' 26.23" E
Chord Bear = N 76° 18' 02.70" E

Course from PT ROAD1_1 to PC ROAD1_2 N 71° 09' 26.23" E Dist 36.4812

Curve Data

Curve ROAD1_2
P.I. Station 104+94.43 N 727,531.6966 E 2,034,551.7799
Delta = 9° 05' 14.26" (RT)
Degree = 81° 21' 31.31"
Tangent = 5.5964
Length = 11.1694
Radius = 70.4237
External = 0.2220
Long Chord = 11.1577
Mid. Ord. = 0.2213
P.C. Station 104+88.83 N 727,529.8891 E 2,034,546.4834
P.T. Station 105+00.00 N 727,532.6449 E 2,034,557.2955
C.C. N 727,463.2395 E 2,034,569.2282
Back = N 71° 09' 26.23" E
Ahead = N 80° 14' 40.49" E
Chord Bear = N 75° 42' 03.36" E

Course from PT ROAD1_2 to PC ROAD1_3 N 80° 14' 40.49" E Dist 100.0000

Curve Data

Curve ROAD1_3
P.I. Station 106+11.41 N 727,551.5232 E 2,034,667.0984
Delta = 9° 50' 05.35" (RT)
Degree = 43° 11' 17.79"
Tangent = 11.4140
Length = 22.7720
Radius = 132.6651
External = 0.4901
Long Chord = 22.7440
Mid. Ord. = 0.4883
P.C. Station 106+00.00 N 727,549.5892 E 2,034,655.8495
P.T. Station 106+22.77 N 727,551.5074 E 2,034,678.5124
C.C. N 727,418.8424 E 2,034,678.3286
Back = N 80° 14' 40.49" E
Ahead = S 89° 55' 14.16" E
Chord Bear = N 85° 09' 43.16" E

Course from PT ROAD1_3 to CL11 S 89° 55' 14.16" E Dist 28.0403

Point CL11 N 727,551.4685 E 2,034,706.5527 Sta 106+50.81

==========
Ending chain ROAD_1 description

Beginning chain ROAD_2 description
==========

Point CL20 N 727,500.1328 E 2,034,691.3183 Sta 10+00.00

Course from CL20 to PC ROAD2 N 7° 07' 14.16" E Dist 30.0000

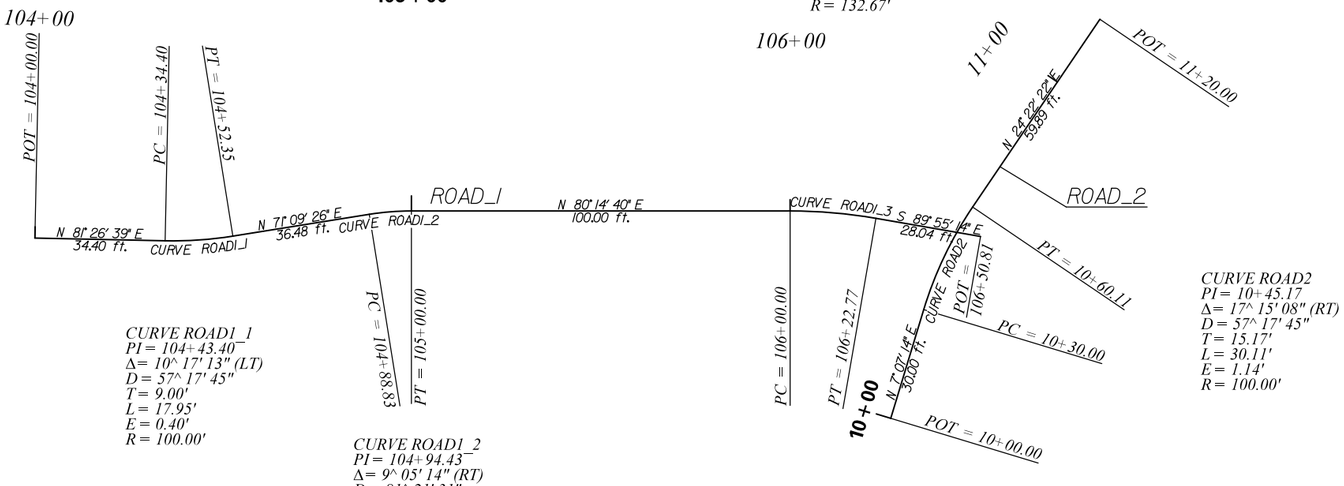
Curve Data

Curve ROAD2
P.I. Station 10+45.17 N 727,544.9545 E 2,034,696.9176
Delta = 17° 15' 07.81" (RT)
Degree = 57° 17' 44.81"
Tangent = 15.1701
Length = 30.1107
Radius = 100.0000
External = 1.1441
Long Chord = 29.9971
Mid. Ord. = 1.1312
P.C. Station 10+30.00 N 727,529.9014 E 2,034,695.0371
P.T. Station 10+60.11 N 727,558.7727 E 2,034,703.1778
C.C. N 727,517.5056 E 2,034,794.2658
Back = N 7° 07' 14.16" E
Ahead = N 24° 22' 21.97" E
Chord Bear = N 15° 44' 48.07" E

Course from PT ROAD2 to CL21 N 24° 22' 21.97" E Dist 59.8893

Point CL21 N 727,613.3247 E 2,034,727.8925 Sta 11+20.00

==========
Ending chain ROAD_2 description



HOLT CONSULTING COMPANY, LLC

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29957 DANIEL M. ATKINSON

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION HOLT CONSULTING COMPANY, LLC No. 4831

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

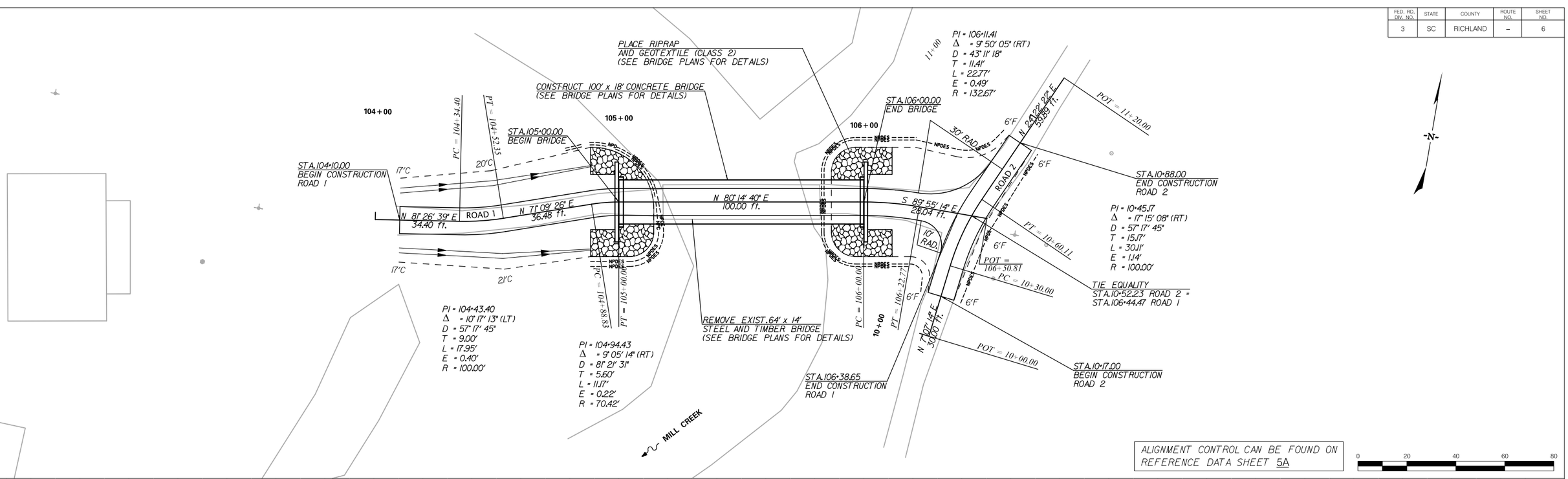
DESIGNED BY: _____ DATE _____
DRAWN BY: _____ DATE _____
CHECKED BY: _____ DATE _____

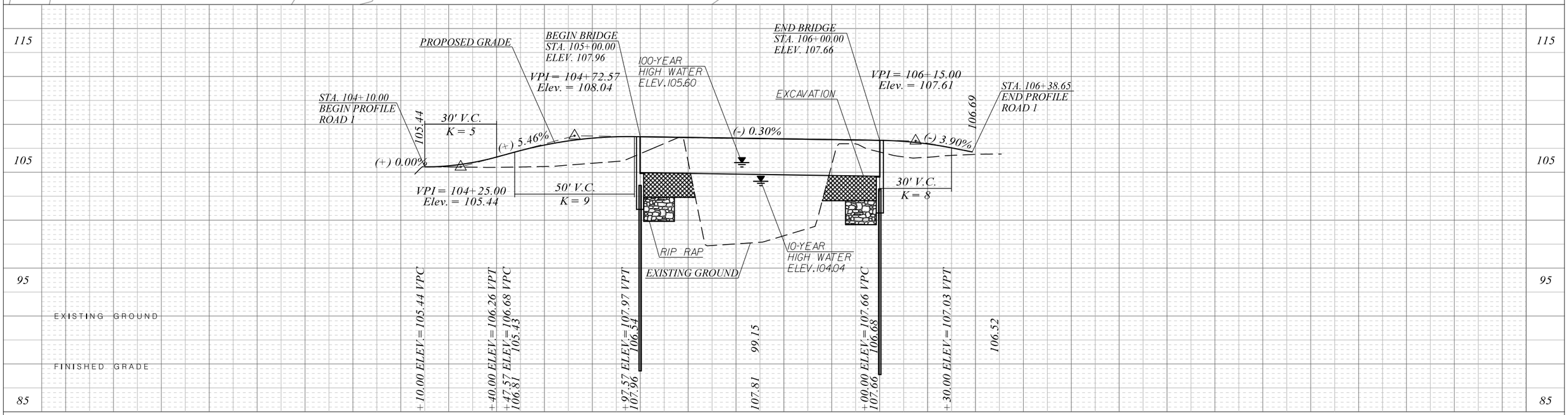
RICHLAND COUNTY
CONSERVATION COMMISSION

REFERENCE DATA SHEET
BRIDGE REPLACEMENT
OVER MILL CREEK

SHEET 5A | SCALE: 1" = 20'

FED. RD. DIV. NO.	STATE	COUNTY	ROUTE NO.	SHEET NO.
3	SC	RICHLAND	–	6





HOLT CONSULTING COMPANY, LLC.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29957 DANIEL M. ATKINSON

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DESIGNED BY: _____ DATE _____
DRAWN BY: _____ DATE _____
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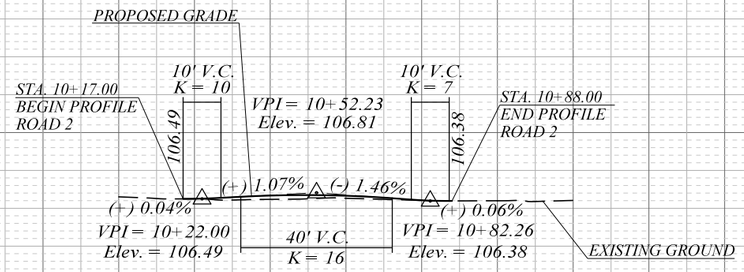
RICHLAND COUNTY CONSERVATION COMMISSION

PLAN AND PROFILE SHEET
BRIDGE REPLACEMENT
OVER MILL CREEK
STA. 104 + 10.00 TO STA. 106 + 38.65

SHEET 6 | SCALE: 1" = 20'

FED. RD. DIV. NO.	STATE	COUNTY	ROUTE NO.	SHEET NO.
3	SC	RICHLAND	–	6A

ROAD 2



EXISTING GROUND

FINISHED GRADE

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120 110 100 90

10+00 11+00

HOLT CONSULTING COMPANY, LLC.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29957 DANIEL M. ATKINSON

SOUTH CAROLINA HOLT CONSULTING COMPANY LLC No. 4831 CERTIFICATE OF AUTHORIZATION

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

DESIGNED BY: _____ DATE _____
DRAWN BY: _____ DATE _____
CHECKED BY: _____ DATE _____

RICHLAND COUNTY
CONSERVATION COMMISSION

PROFILE SHEET
BRIDGE REPLACEMENT
OVER MILL CREEK

SHEET 6A | SCALE: 1" = 20'

ROAD 1

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
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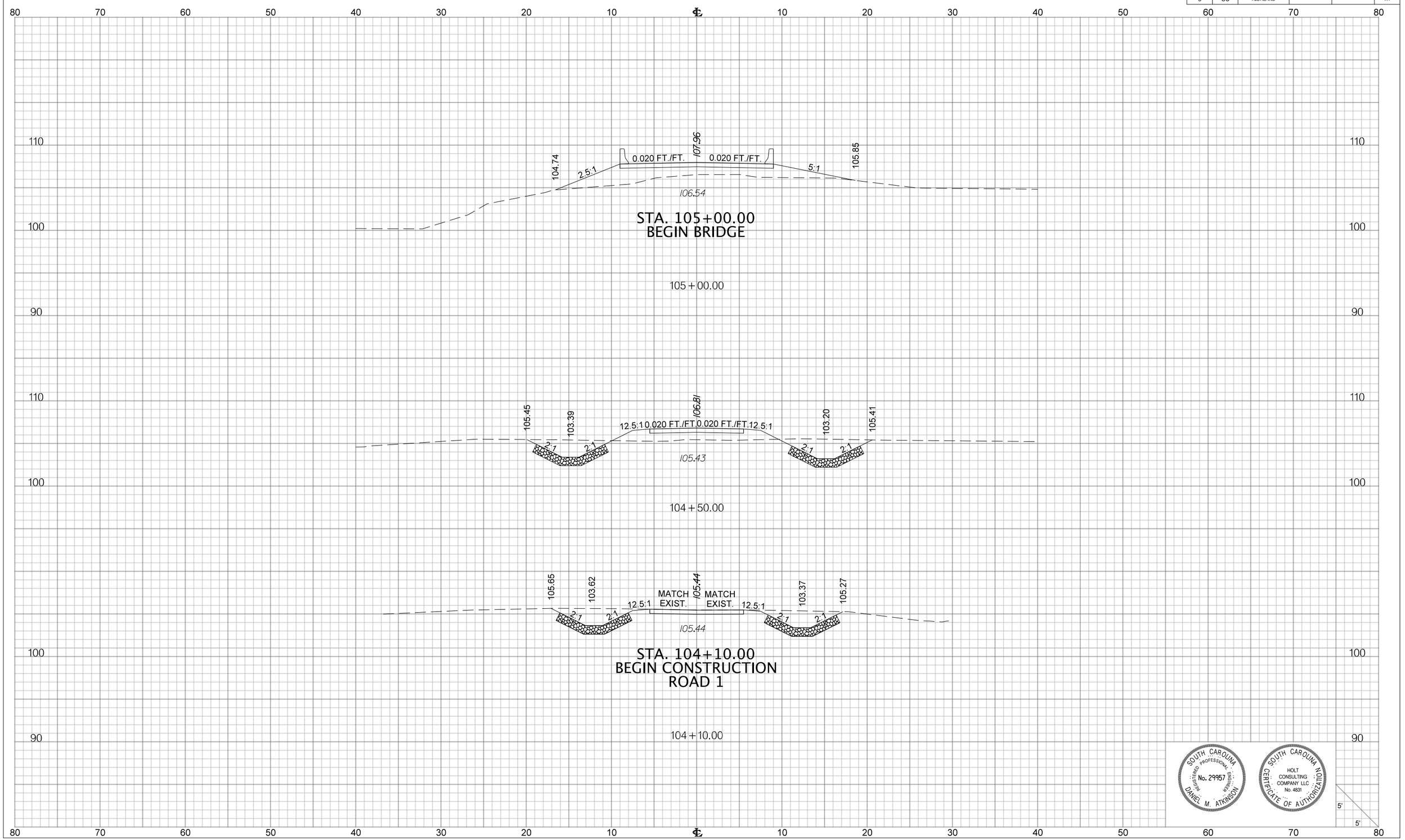

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ROAD 1

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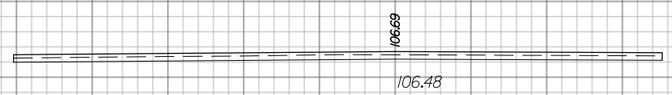

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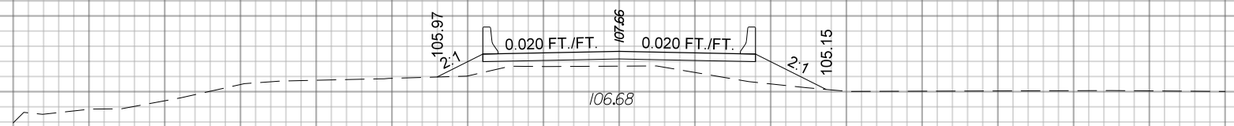
END CONSTRUCTION
ROAD 1

106+38.65



STA. 106+00.00
END BRIDGE

106+00.00

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29957 DANIEL M. ATKINSON

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION HOLT CONSULTING COMPANY LLC No. 4831

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ROAD 2

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.
3	SC	RICHLAND	-	-	X3

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

110 100 90

MATCH EXIST. 106.38 MATCH EXIST.

106.38

STA. 10+88.00
END CONSTRUCTION
ROAD 2

10+88.00

INTERSECTION WITH ROAD 1

106.69 106.51

0.020 FT./FT. 0.020 FT./FT. 12.5:1

106.49

10+50.00

MATCH EXIST. 106.49 MATCH EXIST.

106.49

STA. 10+17.00
BEGIN CONSTRUCTION
ROAD 2

10+17.00

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 29957 DANIEL M. ATKINSON

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION HOLT CONSULTING COMPANY LLC No. 4831

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BIOLOGICAL EVALUATION
RICHLAND COUNTY CONSERVATION COMMISION BRIDGE REPLACEMENT
RICHLAND COUNTY, SC

Prepared For:

Prepared By:

Prepared on behalf of:

CAROLINA Transportation Engineers & Assoc., PC

February 2022

Table of Contents

SECTION 1.0 INTRODUCTION

The Richland County Conservation Commission proposes to replace a deficient bridge over an un-named tributary (UT) to Dead River that is a tributary to the Congaree River (Figure 1, Appendix A). The proposed project will be funded by Richland County. The purpose of this Biological Evaluation (BE) is to identify the presence, or potential presence, and document potential project related effects to federally protected species known to occur in Richland County, within or adjacent to the project study area (PSA) and the construction footprint associated with the proposed project.

The existing bridge is located entirely on property owned by Richland County and provides access to the Mill Creek Mitigation Bank. The PSA that is being evaluated is rectangular in shape and encompasses approximately 1.6 acres (Figure 2, Appendix A). The PSA is 450 feet long and 160 feet wide.

1.1 Project Description

The proposed project will remove the existing bridge that consists of wooden piles driven into the UT substrate with four timber bents, steel girders, and a wooden deck (refer to site photographs in Appendix B). The approach road is unpaved.

The replacement bridge will consist of a concrete flat-slab bridge that spans the stream, and minor approach road improvements will be made.

SECTION 2.0 AGENCY CONSULTATION HISTORY

The purpose of this document is to satisfy the consultation requirements under the NEPA and Section 7 of the Endangered Species Act (ESA). No direct coordination or consultation with either the US Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) has taken place to date.

SECTION 3.0 FEDERALLY LISTED SPECIES AND CRITICAL HABITAT

A list of protected species known to occur in Richland County was obtained from the Charleston Field Office of the USFWS website (USFWS 2022a). The list was last updated by the USFWS on August 31, 2021 (Appendix C). A literature review was completed for each of the listed species to determine their description and habitat requirements. The South Carolina Department of Natural Resources (SCDNR) and USFWS species descriptions and articles were referenced. SCDNR's SC Natural Heritage Species Reviewer (SCDNR 2022), and the Mill Creek Mitigation Bank banking instrument document were utilized to determine known occurrences of the listed species near the PSA.

Federally protected species known to occur in Richland County are presented in Table 3.1.

Table 3.1
Richland County Federally Protected Species

Common Name	Federal Protection Status	Scientific Name
Amphibians		
Chamberlain's dwarf salamander	At-Risk-Species	*Eurycea chamberlaini*
Bird Species		
American wood stork	Threatened	*Mycteria americana*
Bald eagle	BGEPA	*Haliaeetus leucocephalus*
Red-cockaded woodpecker	Threatened	*Picoides borealis*
Crustaceans		
Broad River spiny crayfish	At-Risk-Species	*Cambarus spictus*
Fish Species		
Robust redhorse	At-Risk-Species	*Moxostoma robustum*
Shortnose sturgeon	Endangered	*Acipenser brevirostrum*
Insect Species		
Monarch butterfly	Candidate	*Danaus plexippus*
Mammal Species		
Little brown bat	At-Risk-Species	*Myotis lucifugus*
Tri-colored bat	At-Risk-Species	*Perimyotis subflavus*
Plant Species		
Bog spicebush	At-Risk-Species	*Lindera subcoriacea*
Canby's dropwort	Endangered	*Oxypolis canbyi*
Carolina-birds-in-a-nest	At-Risk-Species	*Macbridea caroliniana*
Ciliate-leaf tickseed	At-Risk-Species	*Coreopsis integrifolia*
Georgia aster	At-Risk-Species	*Symphyotricum georgianum*
Purple balduina	At-Risk-Species	*Balduina atropurpurea*
Rough-leaved loosestrife	Endangered	*Lysimachia asperulaefolia*
Smooth coneflower	Endangered	*Echinacea laevigata*

3.1 Birds

American wood stork (*Mycteria americana*) – Threatened

Photo by Gordon Murphy
(Charleston County, SC)

American wood storks are large wading birds standing about 45 inches tall with white plumage except on the black trailing edges of the wings. The head and neck are unfeathered and dark gray. They have a large dark bill that is heavy at the base and decurved and pointed at the tip. They soar on thermals with neck outstretched and a wingspan of 60-65 inches. Wood storks feed by moving the bill through shallow (6-10 inches deep) water slightly open until it touches a small fish when they snap the bill shut. They feed in both freshwater and estuarine waters including marshes, tidal creeks, and swamps especially during periods of falling water levels when the pools are more concentrated. They build nests in colonies in swamps primarily using medium to tall trees. They can be found nesting and feeding in South Carolina from mid-February until September (USFWS 2013).

Wood stork populations declined due to the loss of wetland habitat and a change in water regimes due to water level controls. This loss of habitat reduced the amount of cypress (*Taxodium distichum* and *T. ascendens*) trees that wood storks utilize for nesting, which is critical for the growth of the population. The loss of habitat also reduced their foraging areas and food supplies. Wood storks forage in shallow water with little vegetation where the fish can be congregated into dense schools. According to the USFWS Wood Stork Recovery Plan, it is recommended that human activity should not occur within 300 feet of foraging habitat to the maximum extent possible (USFWS 1997).

Bald eagle (*Haliaeetus leucocephalus*) – BGEPA

Photo by Steven Mlodinow
(Macaulay Library)

Bald eagles are large raptors (six-foot wingspan) which are mottled brown and white until they reach maturity at 4-5 years old when they develop a brown body with a white head and tail. They primarily feed on fish, but also feed on waterfowl, and carrion. When prime food options are absent, they will also eat small terrestrial animals. They hunt by sight and are often seen soaring or perched high in a tree near water. Fresh, brackish and marine habitats provide suitable foraging sites and include open water, marsh and riverine types. Prime habitats are characterized by having shallow, slow moving water with abundant fish and waterfowl (SCDNR 2015b). It nests in canopies of large trees usually within half of a mile from coastlines, rivers, and lakes. Nests are usually around four to six feet across and three feet deep. Nests are constructed out of large limbs and lined with soft plant fibers. They typically return to the same areas each year and reuse the same nest. They can be found nesting and rearing young in South Carolina from October until May (USFWS 2020a). Eagle nest locations are required to have a buffer zone ranging from 330-660 feet around nests, depending on site-specific conditions (USFWS 2007).

Bald eagle populations declined due to a series of human-caused events such as habitat degradation and loss, shooting, and the use of chemical compounds as pesticides (USFWS 1989). Bald eagles were listed on the ESA in 1973 and were delisted in 2007 due to their strong recovery (USFWS 2007). Bald eagles remain under federal protection by the Bald and Golden Eagle Protection Act which protects eagles from "take." Take is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest or disturb" (USFWS 2020b).

Red-cockaded woodpecker (*Picoides borealis*) – Threatened

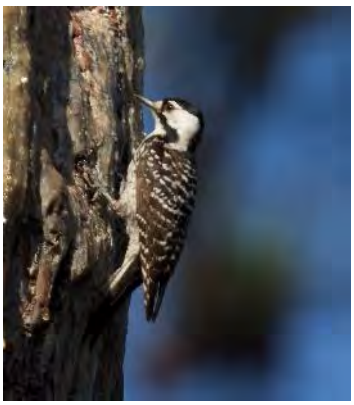


Photo by Gordon Murphy (Berkeley County, SC)

Red-cockaded woodpeckers (RCW) are small (seven inches long) colonially nesting woodpeckers. They are black with white horizontal stripes on the body, a large white cheek patch on the face, and a black cap and nape. The males have a small patch of red feathers (the cockade) which can be found in the upper corner of the cheek patch but are only exposed when agitated. They only nest in cavities of living, mature (at least 70-year-old) pine trees. They prefer long-leaf pines (*Pinus palustris*) that have been maintained by a frequent (less than five year) fire regimen. They nest colonially in clusters of 1-20 nests over 3-60 acres. Maintained, in-use cavity trees are obvious due to sap drips around the cavity hole that turn white when hardened. They forage for insects in the bark of pine trees which at least 30 years old and over 10 inches in diameter at breast height (USFWS 2020c). Threats to red-cockaded woodpeckers are predominantly the suppression of fire which has resulted in the loss of adequate habitat (USFWS 2003).

3.2 Fish

Shortnose sturgeon (*Acipenser brevirostrum*) – Endangered

Illustration by NOAA

Shortnose sturgeon are four feet long at maturity with rows of bony plates called scutes along the length of their body and have a dark back with a pale belly. They have short, wide, rounded snouts with four whisker-like barbels for detecting prey. Their tail fin is longer at the top than at the bottom. They are benthic feeders using their large mouths to feed on insects, crustaceans, mollusks, and benthic fish by crushing them with their mouth plates. Shortnose sturgeon spawn in freshwater and forage in mesohaline habitat (salinities of 5-18 ppt). They do venture into the ocean to undergo coastal migrations but are typically estuarine. Males mature at two to three years and may spawn annually, while females mature by six years and spawn every three to five years. Spawning occurs in late winter, typically before Atlantic sturgeon, in water temperatures from 46.4-59 degrees Fahrenheit and water velocities 9.4-51.2 inches/second in gravel substrate. They require similar foraging habitat and resources to the Atlantic sturgeon but can be found farther upriver (NOAA 2022).

3.3 Insects

Monarch butterfly (*Danaus plexippus*) – Candidate

Photo by Kenneth Dwain Harrelson. CC BY-SA 3.0, https://commons.wikimedia.org

Monarchs are large butterflies with orange wings that are bordered by a black band (USFWS 2020b). The black band contains many white spots; however, the spots do not occur on the black veins of the wing. Their wingspan ranges from 3.5 to 4.0 inches (Daniels 2003). The typical habitat consists of open areas with sun exposure where they feed on nectar of flowering plants and lay eggs on their host plant (Daniels 2003). The Monarch host plant consists of members of the milkweed family (*Asclepias* ssp., USFWS 2022b). Small white eggs are deposited on the underside of milkweed leaves and the growing caterpillars forage on the leaves. The caterpillars ingest and retain a toxic substance contained in the milkweed leaves which deters predators when they reach adulthood (USFWS 2020b). Some areas of the United States have resident populations while many Monarchs migrate as much as 1,864 miles to their overwintering locations (USFWS 2020b).

3.4 Plants

Canby's dropwort (*Oxypolis canbyi*) – Endangered

Photo by Gordon Murphy (Florence County, SC)

Canby's dropwort is a thin perennial herb that grows to be 2.6-3.9 feet tall. It has a round stem with stiff, slender, hollow leaves. The inflorescence is made of compound umbels of small, five-parted, white flowers. They bloom from mid-July to September. The seed is a small (0.16-0.24 inch) compressed elliptical schizocarp. They seed as early as October. Canby's dropwort suitable soil is sandy loam or acidic peat mucks underlain with clay. They grow in "natural ponds dominated by pond cypress, grass-sedge dominated Carolina bays, wet pine savannas, shallow pineland ponds and cypress-pine swamps or sloughs." They grow best with little or no canopy cover (USFWS 2011a). The largest threat to Canby's dropwort is loss or degradation of wetland habitats (USFWS 2011a). This may have been worsened by herbicides, insect predation, and ineffective seed dispersal (USFWS 2011a).

Rough-leaved loosestrife (*Lysimachia asperulaefolia*) - Endangered

Photo by Dale Suiter. (USFWS)

Rough-leaf loosestrife is a perennial herb, 11.8-23.6 inches tall, with whorled, triangular, smooth leaves arranged in threes or fours. They flower from mid-May through July with yellow petals and yellow-orange anthers and are about 0.6 inches across. They seed from July to October with capsules. Only a few plants bloom each year, so look for pinkish stems instead of flowers. They typically grow between pocosins and pine forests on moist to seasonally saturated sands and on shallow organic soils overlaying sand. They prefer to grow fire-maintained grass-shrub ecotone. There are some populations that grow in maintained roadsides and power line rights-of-way (USFWS 2011b).

Smooth coneflower (*Echinacea laevigata*) – Endangered

Photo by Gordon Murphy. Oconee County, SC.

Smooth coneflower is a perennial wildflower that can grow up to five feet tall with smooth stems and few leaves. The basal leaves can be eight inches long and three inches wide. They are elliptical, rough to the touch, and have long petioles. The stem leaves are smaller and have shorter petioles. (Beacham 2001). Smooth coneflower has purple rays and blooms from late May through October. It is found in the Piedmont and mountain physiographic provinces in open woods, on roadsides, and in utility easements (USFWS 2011c).

SECTION 4.0 ENVIRONMENTAL BASELINE

The project is situated in the Southeastern Floodplains and Terraces Level IV ecoregion as defined by the US Environmental Protection Agency (EPA). "*Southeastern Floodplains and Low Terraces comprise a riverine ecoregion that provides important wildlife corridors and habitat. Composed of alluvium and terrace deposits of sand, clay, and gravel, the region includes large sluggish rivers and backwaters with ponds, swamps, and oxbow lakes. It includes oak-dominated bottomland hardwood forests, and some river swamp forests of bald cypress and water tupelo. …..the flood-prone region includes brownwater floodplains and blackwater floodplains. The brownwater floodplains originate in or cross the Piedmont and the sediments contain more weatherable and mixed minerals than the blackwater floodplains that have their watersheds entirely within the coastal plain. The low terraces are mostly forested, although some cropland or pasture occurs in some areas that are better drained*" (Griffith et al. 2002). The project is located within the Congaree River Basin (hydrologic unit 03050110) (SCDHEC 2022a).

The overall terrain is relatively flat within the PSA with elevations ranging from approximately 100 feet above mean sea level (MSL) along the UT to 107 feet above MSL on the floodplain (US Geological Survey, Saylors Lake, SC 7.5 Minute Quadrangle. Figure 3, Appendix A, presents the LIDAR site elevations.

Biotic communities were initially identified within the PSA using remote sensing data, reviewing recent aerial imagery and digital elevation models for Richland County (SCDNR 2015a), and USFWS National Wetland Inventory mapping (USFWS 2022c). The communities were then confirmed during the field studies during the field delineation of WOTUS, conducted on February 8, 2021. Three basic habitat types were identified (see site photographs in Appendix B). Additional habitat assessments were conducted on August 23, 2021. WOTUS in the PSA were identified using the methods outlined by the 1987 Corps of Engineers Wetland Delineation Manual and the 2010 Atlantic and Gulf Coastal Plain Region (Version 2.0) supplement (USACE 2010). Jurisdictional WOTUS boundaries were mapped using a Global Positioning System (GPS) unit. The uplands within the PSA include hardwood forest typical of floodplain habitat. WOTUS habitat types were classified using the Cowardin naming convention (USFWS 1979). Non-wetland habitat types are described based on the dominant vegetation observed during the field studies.

4.1 Upland Habitats

Forested Uplands

Forested uplands in the PSA consist of those on the floodplain of the Congaree River and UTs to the river. Trees observed in floodplain uplands include swamp chestnut oak (*Quercus michauxii*), boxelder (*Acer negundo*), and sweetgum (*Liquidambar stryraciflua*). The shrub layer is dominated by common pawpaw (*Asimina triloba*) and Chinese privet (*Ligustrum sinense*). Woody vines observed include poison ivy (*Toxicodendron radicans*), Virginia creeper (*Parthenocissus quinquefolia*), cross vine (*Bignonia capreolata*), and muscadine (*Vitus rotundifolia*). The herbaceous layer was sparse and included partridge berry (*Mitchella repens*), giant cane (*Arundinaria gigantea*), and blackberry (*Rubus* sp.).

4.2 Wetland and Open Water Habitats

Riverine Systems

Two streams were identified within the PSA. These are the UT to Dead River that the bridge crosses and a smaller UT that converges with the main channel at the northeast corner of the bridge (Figure 4, Appendix A). These are classified as a lower perennial stream (USFWS 1979).

Palustrine Forested Wetlands

Palustrine forested wetlands are seasonally flooded freshwater forests (USFWS 1979). One wetland, approximately 0.04 acres, was identified within the PSA. Tree and shrub species observed in this habitat include swamp chestnut oak, sweetgum, and Chinese privet. Herbaceous species include river oats (*Chasmanthium latifolium*), sallow sedge (*Carex lurida*), false nettle (*Boehmeria cylindrica*), and Carolina sedge (*Carex caroliniana*).

4.2 WATER QUALITY

The South Carolina Department of Health and Environmental Control (SCDHEC) develops a priority list of waterbodies that do not currently meet state water quality standards pursuant to Section 303(d) of the Clean Water Act (CWA) and 40 CFR § 130.7. It is commonly referred to as the 303(d) List of Impaired Waters.

SCDHEC monitors the water quality of South Carolina with ambient water quality monitoring stations. These stations are used for "assessment of current conditions, assessment of long-term trends, determination of priority waterbodies, determination of waterbody designated use attainment or nonsupport, and identification of continuing or emerging problem areas" (SCDHEC 2020). A review of the SCDHEC online SC Watershed Atlas indicated there are two monitoring stations located in the Congaree River, and it is not listed on the 2018 303(d) list (SCDHEC 2022a). The SC Watershed Atlas indicates that the proposed project is in a Municipal Separate Storm Sewer System (MS4) watershed.

SECTION 5.0 ALTERNATIVES ANALYSIS

Because the proposed bridge replacement project is not on a public roadway and can be closed during construction, the only alternative analyzed is removing the existing bridge and constructing the new bridge in the same location.

SECTION 6.0 PROPOSED ACTION

6.1 Construction Activities and Potential Impacts or Effects

6.1.1 Site Preparation

The contractor will obtain a National Pollutant Discharge Elimination System (NPDES) permit from the SCDHEC before construction can commence. The contractor will be required to properly install the required erosion, turbidity, and sediment control devices prior to all other construction activities. The contractor will be required to install these measures around the perimeter of the active construction site, including any off-site staging areas. After the installation of erosion, turbidity, and sediment control measures, the contractor will begin the staging area preparation and general site preparation.

To prepare the general project area for construction and establish staging areas, the contractor may need to clear vegetation and remove stumps, roots, or debris. Clearing may occur in uplands or palustrine forested wetlands in the project area. The contractor may also grade portions of the project area to establish a suitable work environment. Staging areas will be selected by the contractor to establish a construction site office and will also include materials, equipment, and fuel storage. Staging areas are expected to be in uplands to the extent practicable.

Potential Habitat Impacts

The contractor will use Best Management Practices (BMPs) for soil and erosion control during construction. Impacts associated with construction site preparation will be temporary in nature. Construction site preparation and maintenance will continue during the different phases of construction and may result in permanent impacts to suitable habitat for protected species. Construction site preparation is not expected to result in the mortality of any protected species.

Clearing, grading, or placement of fill in jurisdictional WOTUS will require authorization from the USACE and SCDHEC. The limits of any clearing, grading, or fill in wetlands will be delineated and shown on approved permitted plans by the USACE and SCDHEC. Richland County and the contractor will comply with all applicable permits and permit conditions for the placement of fill in wetlands.

6.1.2 Borrow Pits and Disposal Areas

Waste and borrow areas landfills will likely be required to dispose of and obtain materials for earthwork and are also subject to clearing and grubbing excavated soil and bridge debris. According to SCDHEC's online SC Active Mines Viewer, there are two permitted borrow sites within a ten-mile radius of the proposed construction site (SCDHEC 2022b). Additionally, SCDHEC's March 2021 list of Solid Waste Facilities indicates that there are five active Construction and Demolition Debris Recyclers located in Richland and Lexington Counties (SCDHEC 2021).

Potential Habitat Impacts

No habitat impacts are anticipated if the contractor uses permitted borrow sites or landfills. If the contractor decides not to utilize the permitted borrow sites or landfills, the contractor will be

responsible for addressing the potential effects to federally listed threatened and endangered species for any new borrow or disposal sites.

6.1.3 Bridge Removal

The wooden deck of the existing bridge will be dismantled, and the steel girders cut and lifted away using a crane. The timber piles will likely be cut off two feet below the mudline if they cannot be pulled out.

Potential Habitat Impacts

Removal of the existing bridge is not expected to result habitat loss but is expected to improve the aquatic habitat with the permanent removal of the timber piles. Increased levels of turbidity may be temporarily present during the removal of existing piers.

6.1.4 Bridge Construction

The proposed new bridge will completely span the creek; therefore, no in water work will be necessary. A floodplain bench will be excavated above the ordinary high-water mark to facilitate water flow during flood events (see the conceptual plan and profile in Appendix D). Riprap will be keyed in along the base of the end bents to protect the bridge from scour damage. The riprap will not be placed in the stream itself.

Potential Habitat Impacts

As described above, the construction of the bridge only has impacts to the currently disturbed uplands, and no piles will be installed in the creek.

SECTION 7.0 EFFECTS ANALYSIS

The USFWS (1998) defines "take" as: to harass, harm, pursue, hunt, shoot, wound, kill, trap capture, or collect or attempt to engage in any such conduct. [ESA §3(19)] Harm is further defined by USFWS to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined by USFWS as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behaviour patterns which include, but are not limited to, breeding, feeding, or sheltering. [50 CFR §17.3]

The initial evaluation for the presence of listed species in the PSA was based on the presence or absence of species-specific suitable habitat. Online databases such as SCDNR's SC Natural Heritage Species Reviewer (SCDNR 2021b), and SCDNR's 2021 bald eagle nest Google Earth data layer were utilized to determine previous observations of the listed species in close proximity to the PSA.

7.1 Birds

7.1.1 American wood stork (*Mycteria americana*) – Threatened

The wetlands and stream habitats identified within the PSA are not suitable nesting or foraging habitat, and no American wood storks were observed during the field surveys. According to the SC Natural Heritage Reviewer there are no known occurrences near the PSA. According to the Mill Creek Mitigation Bank document, wood storks were observed on the bank site during the mitigation site assessment and eBird Mapper Tool (Cornell Lab of Ornithology 2021) indicates multiple sightings approximately two miles northeast of the PSA near Old Bluff Road.

Effect Determination

The proposed project is anticipated to have **no effect** to the American wood stork.

7.1.2 Bald eagle (*Haliaeetus leucocephalus*) – BGEPA

The Congaree River, located approximately 1.5 miles from the PSA, provides suitable foraging habitat for Bald eagles; however, no nests or eagles were observed within or adjacent to the PSA during the field surveys. According to SCDNR's Natural Heritage Reviewer, there is a nest located approximately 4.7 miles southeast of the PSA at Congaree National Park.

Effect Determination

Effect conclusions for the bald eagle are not required under the ESA. However, the project is not anticipated to result in the mortality of any bald eagles or limit the ability of the species to adequately breed, feed, or shelter.

7.1.3 Red-cockaded woodpecker (*Picoides borealis*) – Threatened

Neither loblolly pines (*Pinus taeda*) or long-leaf pines (*Pinus palustris*) are present within the PSA; therefore, no suitable foraging or nesting habitat for RCWs was identified within or adjacent to the PSA. According to SCDNR's online SC Natural Heritage Species Reviewer, there are no known occurrences of RCWs within a three-mile radius of the PSA (SCDNR 2022).

Effect Determination

The proposed project will have **no effect** on the red-cockaded woodpecker.

7.2 Fish

7.2.1 Shortnose sturgeon (*Acipenser brevirostrum*) – Endangered

The proposed bridge replacement project is located approximately two river miles from the confluence of Dead River and the Congaree River. Approximately 23 river miles upstream of the confluence is the Congaree River reach where Shortnose sturgeon are known to spawn. According to SCDNR's online SC Natural Heritage Species Reviewer, there is one known occurrence within a three-mile radius of the PSA in a UT to the Congaree River, within Congaree National Park. However, according to the species inventory list at the park obtained on the park's website, the only Shortnose sturgeon sighting listed is marked as "unconfirmed" (NPS 2021). The SC Natural Heritage Species Reviewer does not indicate any other occurrences of Shortnose sturgeon in tributaries of the Congaree River on the floodplain; therefore, it is not likely that they are present in the PSA.

Effect Determination

It is anticipated that the project will have **no effect** on the Shortnose sturgeon.

7.3 Insects

7.3.1 Monarch butterfly (*Danaus plexippus*) – Candidate

According to SCDNR's online SC Natural Heritage Species Reviewer, there are no known occurrences of Monarch butterflies within a three-mile radius of the PSA (SCDNR 2022).

Effect Determination

Effect conclusions for the Monarch butterfly are not required under the ESA. However, the project is not anticipated to result in the mortality of any monarchs or limit the ability of the species to adequately breed, feed, or shelter.

7.4 Plants

7.4.1 Canby's dropwort (*Oxypolis canbyi*) - Endangered

Suitable habitat for the Canby's dropwort was not observed within the PSA during the field survey. According to SCDNR's online SC Natural Heritage Species Reviewer, there are no known occurrences within a three-mile radius of the PSA.

Effect Determination

It is anticipated that project will have **no effect** on the Canby's dropwort.

7.4.2 Rough-leaved loosestrife (*Lysimachia asperulaefolia*) – Endangered

Suitable habitat for the Rough-leaved loosestrife was not observed within the PSA during the field survey. According to SCDNR's online SC Natural Heritage Species Reviewer, there are no known occurrences within a three-mile radius of the PSA.

Effect Determination

It is anticipated that project will have **no effect** on the Rough-leaved loosestrife.

7.4.3 Smooth coneflower (*Echinacea laevigata*) – Endangered

Suitable habitat for the Smooth coneflower was not observed within the PSA. According to SCDNR's online SC Natural Heritage Species Reviewer, there are no known occurrences within a three-mile radius of the PSA.

Effect Determination

It is anticipated that project will have **no effect** on the Smooth coneflower.

SECTION 8.0 CONSERVATION MEASURES

A list of recommended Environmental Commitments specific to the federally protected species that may be indirectly affected by the project can be found at the end of this section.

8.1 Erosion, Sediment, and Turbidity Control

The contractor will obtain a National Pollutant Discharge Elimination System (NPDES) permit from the SCDHEC before construction can commence. Temporary silt/turbidity curtains will be installed prior to commencement of in-water work, where practicable. The contractor will be required to utilize BMPs for soil and erosion control during construction.

8.2 Permitting Requirements

The contractor will be required to adhere to all Special Conditions associated with federal, state, and local permits required to construct the project. It is anticipated that no Section 404 permit or Section 401 water quality certification will be required since no impacts to WOTUS will occur.

8.3 Recommended Environmental Commitments

Table 8-1 summarizes the effect minimization commitments listed in the previous sections of the document. These commitments are recommended to either avoid or minimize habitat impacts. Richland County and the contractor will be required to stay in compliance with any special conditions established in the required permit authorizations.

Table 8-1
Effect Minimization Commitments

• The contractor will obtain a NPDES permit from the SCDHEC before construction can commence.
• If existing permitted borrow sites are not available, the contractor will be responsible for addressing the potential effects to federally listed threatened and endangered species for any new borrow or disposal sites.
• Richland County and the contractor will be required to stay in compliance with any special conditions established in the required permit authorizations.

As coordination with resource and regulatory agencies progresses, Environmental Commitments will be developed. The contractor will be required to honor/implement SCDOT standard Environmental Commitments, and those project specific conditions developed through resource and regulatory agency coordination and the permitting process.

SECTION 9.0 CONCLUSIONS

After completing a literature search, a field surveys, and a habitat assessment, it was determined proposed project will have **no effect** on the American wood stork, Red-cockaded woodpecker, Shortnose sturgeon, Canby's dropwort, Rough-leaved loosestrife, or Smooth coneflower. The mortality of any bald eagles is not anticipated.

Since it has been determined that neither suitable habitat for the protected species listed in Richland County, nor the species themselves, will not be affected by the proposed project, this document meets the consultation requirements for both USFWS and NMFS under Section 7 of the ESA. See guidance letters from the respective agencies in Appendix E.

SECTION 10.0 REFERENCES CITED

The Cornell Lab of Ornithology. 2021. eBird Mapper Tool. https://ebird.org/home. Accessed January 31, 2022.

Daniels, Jaret C. 2003. *Butterflies of the Carolinas Field Guide*. Adventure Publications, Inc., Cambridge, MN

Griffith, G., J. Omernik and J. Comstock. 2002. Ecoregions of South Carolina. https://www.nrc.gov/docs/ML1127/ML112710639.pdf. Accessed January 31, 2022.

National Oceanic and Atmospheric Association (NOAA). 2022. Shortnose Sturgeon Species Directory. https://www.fisheries.noaa.gov/species/shortnose-sturgeon. Accessed January 27, 2022.

National Park Service (NPS), Congaree National Park (CNP). 2021. Species Database. https://www.nps.gov/cong/learn/nature/index.htm. Accessed January 31, 2022.

South Carolina Department of Health and Environmental Control (SCDHEC). 2022b. SC Active Mines Viewer. https://gis.dhec.sc.gov/activeminesviewer/. Accessed January 27, 2022.

South Carolina Department of Health and Environmental Control (SCDHEC). 2021. Solid Waste Facilities. https://scdhec.gov/environment/land-management/solid-waste/solid-waste-facilities. Accessed January 27, 2022.

South Carolina Department of Health and Environmental Control (SCDHEC). 2022a. SC Watershed Atlas. https://gis.dhec.sc.gov/watersheds/ Accessed January 27, 2022.

South Carolina Department of Health and Environmental Control (SCDHEC). *Technical Report No. 1008-19: State of South Carolina Monitory Strategy for Calendar Year 2020*. 2020. https://scdhec.gov/sites/default/files/media/document/SC%20Monitoring%20Strategy%20CY%202020%20%281%29.pdf. Accessed January 27, 2022.

South Carolina Department of Natural Resources (SCDNR). 2015a. South Carolina GIS Data. https://www.dnr.sc.gov/GIS/gisdownload.html. Accessed January 27, 2022.

South Carolina Department of Natural Resources (SCDNR). 2015b. SC State Wildlife Action Plan. https://www.dnr.sc.gov/swap/supplemental/birds/baldeagle2015.pdf Accessed January 31, 2022.

South Carolina Department of Natural Resources (SCDNR). 2022. SC Natural Heritage Species Reviewer. https://schtportal.dnr.sc.gov/portal/apps/sites/#/natural-heritage-program. Accessed January 31, 2022.

US Army Corps of Engineers (USACE). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0). U.S. Army Engineer Research and Development Center. Vicksburg, MS.

United States Fish and Wildlife Service (USFWS). 1979. Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. Classification of wetlands and deepwater habitats of the United States. U. S. Department of the Interior, Fish and Wildlife Service, Washington, D.C.

United States Fish and Wildlife Service (USFWS). 2020b. Bald Eagles and Golden Eagles. https://www.fws.gov/southeast/our-services/permits/eagles/. Accessed on January 27, 2022.

United States Fish and Wildlife Service (USFWS). 2020a. Bald Eagle Natural History and Sensitivity to Human Activity Information. www.fws.gov/midwest/eagle/Nhistory/humanact.html Accessed January 27, 2022.

United States Fish and Wildlife Service (USFWS). 2011a. Canby's dropwort (Oxypolis canbyi). https://www.fws.gov/raleigh/species/es_canbys_dropwort.html Accessed January 27, 2022.

United States Fish and Wildlife Service (USFWS). 2022b. Environmental Conservation Online System (ECOS). Species Profile for monarch butterfly(Danaus plexippus) (fws.gov). accessed January 27, 2022.

United States Fish and Wildlife Service (USFWS). 2020b. Monarch (*Danaus plexippus*) Species Status Assessment Report, version 2.1 September 2020. https://ecos.fws.gov/ServCat/DownloadFile/191345. Accessed January 27, 2022.

United States Fish and Wildlife Service (USFWS). 2007. National Bald Eagle Management Guidelines. https://www.fws.gov/migratorybirds/pdf/management/nationalbaldeaglenanagementguidelines.pdf. Accessed February 17, 2022.

United States Fish and Wildlife Service (USFWS). 2022c. National Wetland Inventory. https://www.fws.gov/wetlands/. Accessed January 27, 2022.

United States Fish and Wildlife Service (USFWS). 2020c. Red-cockaded Woodpecker Ecology. https://www.fws.gov/rcwrecovery/rcw.html. Accessed January 27, 2022.

United States Fish and Wildlife Service (USFWS). 2011b. Rough-leaf Loosestrife (*Lysimachia asperulaefolia*). https://www.fws.gov/raleigh/species/es_rough-leaf_loosestrife.html. Accessed January 27, 2022.

United States Fish and Wildlife Service (USFWS). 2003. Red-cockaded Woodpecker Recovery Plan. https://www.fws.gov/rcwrecovery/recovery_plan.html. Accessed January 17, 2022.

United States Fish and Wildlife Service (USFWS). 2011c. Smooth Coneflower (*Echinacea laevigata*). 5-YearReview: Summary and Evaluation. https://www.nrc.gov/docs/ML1128/ML112800311.pdf. Accessed January 27, 2022.

United States Fish and Wildlife Service (USFWS). 2022a. South Carolina List of At-Risk, Candidate, Endangered, and Threatened Species by County. Charleston, SC.

https://www.fws.gov/southeast/pdf/fact-sheet/south-carolina-species-list-by-county.pdf. Accessed on January 27, 2022.

United States Fish and Wildlife Service (USFWS). 1989. Southeastern States Bald Eagle Recovery Plan. Atlanta, GA. https://ecos.fws.gov/docs/recovery_plan/0604194.pdf. Accessed on January 27, 2022.

United States Fish and Wildlife Service (USFWS). 2013. Wood stork (*Mycteria americana).* https://www.fws.gov/northflorida/Species-Accounts/PDFVersions/Wood-stork-2005.pdf Accessed January 27, 2022.

United States Fish and Wildlife Service (USFWS). 1997. Wood Stork Recovery Plan. https://www.fws.gov/northflorida/WoodStorks/Documents/19970127_rpp_Wood-stork-recovery-plan-1997.pdf Accessed January 27, 2022.

APPENDIX A

FIGURES

APPENDIX B

SITE PHOTOGRAPHS

APPENDIX C

RICHLAND COUNTY PROTECTED SPECIES

APPENDIX D

CONCEPTUAL PLANS

APPENDIX E

USFWS AND NMFS GUIDANCE

Project Narrative
and
Supporting Documentation

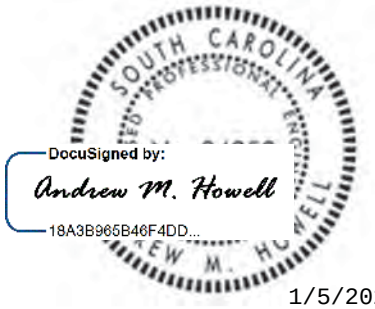
FOR

SEPI Project #: SE21.196.00
No-Rise Flood Study for

Richland County Conservation Commission
Richland County, South Carolina

Latitude: 33.83296 Longitude: -80.88602

January 2022



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SC COA: C02316

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APPENDICES

ATTACHED

No-Rise Model Narrative for
Richland County Conservation Commission
Mill Creek Tributary
Richland County, South Carolina
FIRM Panel 510 of 650 (Revised December 21, 2017)

Report Date: January 2022

PROJECT DESCRIPTION

The purpose of this study is to evaluate the potential floodplain impacts of the proposed replacement of an existing bridge structure on the Richland County Conservation Commission property over Mill Creek Tributary in Richland County, South Carolina. This study demonstrates a "No-Rise" condition, i.e. no increase in 100-year "Base Flood" Water Surface Elevations (WSEL) due to the project as proposed. The coordinates of the structure are as follows:

Latitude: 33.83296 Longitude: -80.88602

The existing structure is a six (6) span, 64'-0" timber bridge. Based upon field measurements, the elevation difference from creek bed to roadway crown is +/- 10 feet. The existing bridge open area is roughly 399 square feet. The existing bridge open area below the 100-year WSEL is roughly 379 square feet with the downstream face being most restrictive.

The proposed replacement structure a single span, 100-foot pre-stressed concrete box beam bridge, 39" deep and 18-feet wide on the approximate existing horizontal profile. The proposed bridge will be located at the approximate existing location with a skew angle of 90^{O}. The proposed bridge open area is roughly 427 square feet. The hydraulic analysis described in this document demonstrates that the proposed bridge design will result in no increase in Base Flood Elevations for flooding originating in the Mill Creek Tributary drainage area.

The bridge crossing over Mill Creek Tributary is located within an area designated as a Special Flood Hazard Area (SFHA), Zone A. The SFHA is the result of backwater from the Congaree River located downstream of the existing bridge and tributaries. Mill Creek Tributary is not currently within a Federal Emergency Management Agency (FEMA) Effective Flood Study. The crossing is located on Flood Insurance Rate Map (FIRM) number 45079C0510L, dated as Revised December 21, 2017.

All surveys and proposed design data are referenced to North American Vertical Datum (NAVD) 88.

An overview of the project site may be viewed in **Appendix A** and on the attached Certified Topographic Workmap (No-Rise Flood Study Figure).

EXISTING CONDITIONS MODEL

An Existing Conditions Hydraulic Model was developed using the United States Army Corps of Engineers (USACE) one-dimensional river analysis software, HEC-RAS version 5.0.7. The model was built utilizing best available geographic and hydrologic data for Richland County, South Carolina.

Base Geometry Development

Various source data was utilized in the development of base geometry for the bridge crossing and adjacent floodplain. A conventional, ground survey event was conducted in August 2021 to obtain existing roadway, floodplain, and stream data. Publicly available LiDAR surface data from the South Carolina Department of Natural Resources (SCDNR) was used outside the limits of conventional and aerial survey. LiDAR data in ".tif" depth raster format was used to develop the base surface data in HEC-RAS, and the same data in "was used in ".shp" GIS shapefile format to develop the flood study figures.

A streamline representing the run of Mill Creek Tributary was developed using aerial imagery, LiDAR contour data, field observation, and the United States Geologic Survey (USGS) National Hydrography Dataset (NHD). The flow path used in hydraulic modeling reflects the field verified condition. Once finalized, the flow path was used to determine River Stationing, or distance along the run of the creek from the mouth at the confluence with Dead River.

A total of eight (8) cross sections were developed along the run of Mill Creek Tributary. Three (3) cross sections were located from the mouth to the downstream face of the existing bridge, and five (5) cross sections were located from the upstream face of existing bridge to the limit of study. The cross sections are described below:

309 ..... Downstream Limit of Study (309 feet above mouth / confluence)
513 ..... Downstream Limit of Expansion Reach (Bridge Exit Section #1)
624 ..... Downstream Toe of Fill (Bridge Section #2)
662 ..... Upstream Toe of Fill (Bridge Section #3)
744 ..... Upstream Limit of Contraction Reach (Bridge Approach Section #4)
1016 ..... Section along run of creek (1,016 feet above mouth / confluence)
1444 ..... Section along run of creek (1,444 feet above mouth / confluence)
2286 ..... Upstream Limit of Study (2,286 feet above mouth / confluence)

Existing roadway profile and bridge geometric data were developed from the results of conventional field survey. The highest high chord, and lowest low chords at each point along the roadway profile and bridge were used. Existing timber bents are generally 1 foot in diameter and circular. Sloping abutments were not present based upon field observation and survey of the existing structure.

Based upon field inspection and historical aerial photography, Manning's roughness values were determined to be 0.120 for the left and right floodplain, and 0.045 for the main channel. The project site, drainage area and floodplain all reside within a heavily forested region surrounded by primarily

agricultural (timber) and conservation land uses. The floodplain may be described as a heavy stand of timber, few down trees, moderate undergrowth with flood stage reaching branches.

Ineffective flow areas have been set upstream and downstream of the existing bridge based upon expansion and contraction ratios of 1:1, both sides. A contraction coefficient of 0.3 and an expansion coefficient of 0.5 was used for cross sections at the Approach, Upstream Face and Downstream Face.

Photographs of the existing bridge crossing and adjacent floodplain may be viewed in **Appendix B**.

Hydrology

Contributing drainage areas for Mill Creek Tributary were delineated at the mouth / confluence with Dead River, roughly 309 feet downstream of the bridge crossing, and at a point downstream of the Approach cross section, approximately 744 feet upstream of the mouth. Multiple flow change locations were used for this analysis due to the presence of a large tributary connection downstream of the Approach cross section which may be seen on the flood study figure in this report. Discharges were computed using USGS regional regression equations developed in Scientific Investigations Report (SIR) 2009-5156, *Magnitude and Frequency of Rural Floods in the Southeastern United States, through 2006, Volume 3, South Carolina.* The site is located within Hydrologic Region 4. A peak discharge summary for the site is shown below.

Flooding Source	Location	Peak Discharge (cfs)					
		Drainage Area (sq. mi.)	5-year	10-year	25-year	100-year	500-year
Mill Creek Tributary	Bridge Approach Section 744 feet above Mouth	1.84	180	253	355	546	784
Mill Creek Tributary	Mouth of Creek	4.12	299	416	579	882	1,250

Results

The 100-year WSEL, computed at a point 12 feet upstream of the face of the existing bridge is 105.60 feet, and produces 0.03 feet of backwater. For this report, "backwater" is defined as the increase in WSEL as compared to a "natural" condition, in which no bridge or fill existed within the natural floodplain. Flood profile comparison tables may be viewed in **Appendix D** of this report. Raw HEC-RAS output has been included in **Appendix E**.

General Model Assumptions

Mill Creek Tributary is located within the Congaree River Floodplain. This area is depicted on FIRM Panels as Zone A with no base flood elevations established. Multiple minor tributaries existing within this floodplain which are all subject to backwater flooding from the Congaree River. Due to the difference in scale of drainage areas of the Congaree and Mill Creek Tributary, the analysis for this project considers flooding resulting from the Mill Creek Tributary drainage area only. Per FHWA guidance, hydrograph peaks are assumed coincident when the drainage area of the larger flood source is roughly three times the drainage area of the tributary or smaller.

Further, flooding on minor tributaries within the larger Congaree River floodplain appears to cross drainage area boundaries regularly due to the very small difference in floodplain elevations. Therefore, for the purpose of developing a model for the bridge replacement site, we have assumed an effective flow boundary exists along the drainage area boundary for the project prior to spilling over to the drainage area for adjacent minor tributaries. Drainage area boundaries were estimated using the USGS StreamStats web application. An overview of the drainage areas and regression analyses used for this project have been included in **Appendix C**.

REVISED MODEL

The design criteria for the proposed replacement structure is for the design to maintain or improve the existing condition water surface profile at all points along the run of Mill Creek Tributary during a 100-year design peak discharge. In other words, the structure must be designed to produce "No-Rise" and no adverse impact to the surrounding property, as compared to the Existing Conditions discussed in the previous section.

A Revised Model was developed utilizing the base geometry and hydrology from the Existing Conditions Model. The proposed crossing was modified to reflect the proposed replacement structure as described herein, and as detailed in the attached structure design. **See Appendix H**.

As discussed in the Project Description, the proposed replacement structure is a single span, 100-foot pre-stressed concrete box beam bridge, 39" deep and 18-feet wide on the approximate existing horizontal profile. The proposed bridge will be located at the approximate existing location with a skew angle of 90^{O}.

Results

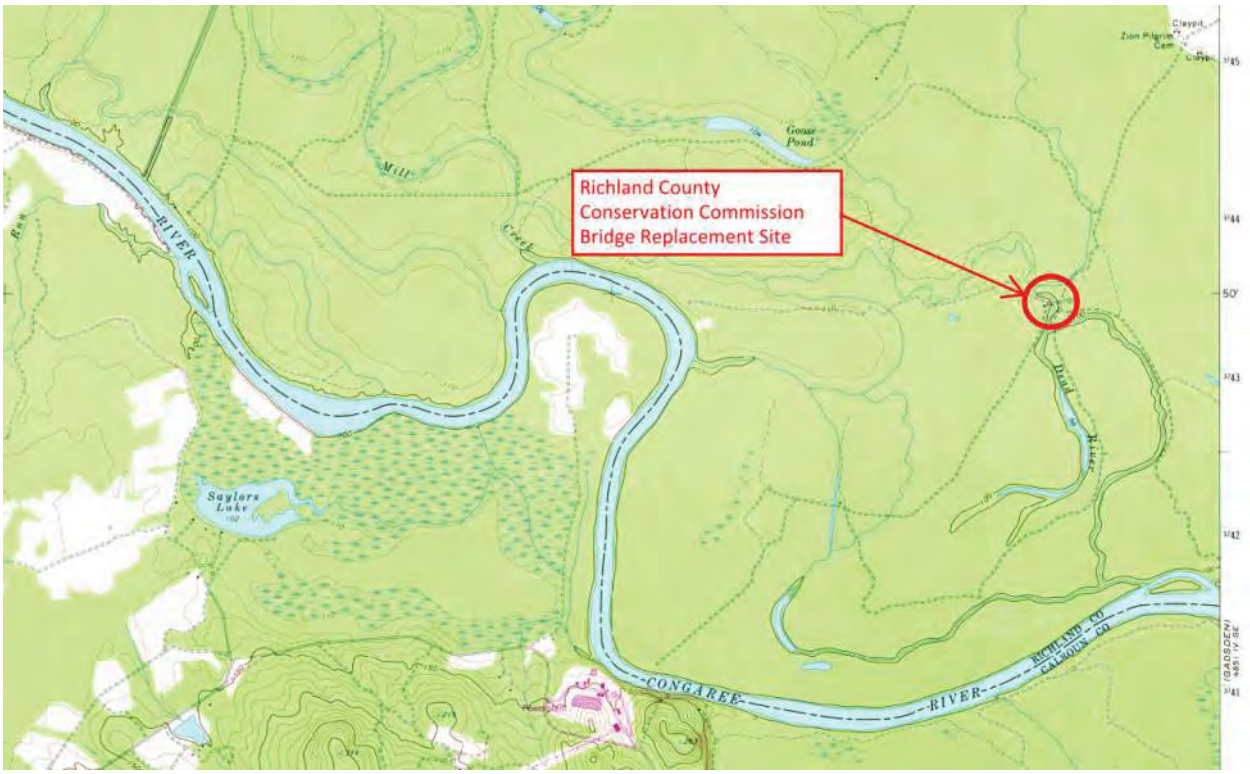
The 100-year WSEL, computed at a point 12 feet upstream of the face of the proposed bridge is 105.60 feet, and produces 0.03 feet of backwater, as defined in the Existing Conditions Model section above. Compared to Existing Conditions, the proposed culvert produces 0.00-foot increase in the 100- year WSEL at the upstream toe of fill. Flood profile comparison tables may be viewed in **Appendix D** of this report. Raw HEC-RAS output has been included in **Appendix E**.

Scour due to flooding which originates within the Mill Creek Tributary drainage area is not anticipated to present a substantial issue. The bridge crossing does not represent a significant obstruction to the floodplain. For informational purposes only, an estimate of contraction scour using USGS SIR 2016-5121 has been provided in **Appendix F**.

The "No-Rise" and "No-Impact" Certification Statements have been included in **Appendix G**.

APPENDIX A

PROJECT AREA OVERVIEW



Latitude: 33.83296 **Longitude: -80.88602**

Project is located on USGS **Saylors Lake Quadrangle**, South Carolina, 7.5 Minute Series

Nearest Intersection: Old Bluff Road and Mosely Oaks Road (Lat: 33.85069 Long: -80.87366)
Bridge is located immediately west of Mosely Oaks Road.

APPENDIX B

PROJECT PHOTOS

Existing Bridge Crossing – Facing West – Flow Direction from RT to LT

Existing Bridge Crossing Facing Upstream Showing Superstructure and Pile Bents

Mill Creek Tributary Facing Upstream

Mill Creek Tributary Facing Downstream

Typical Land Use within Drainage Area – Timberland and Conservation Areas in Winter

Existing Dirt Road Access to Bridge with Typical Wooded Floodplain in Winter

APPENDIX C

USGS STREAMSTATS DRAINAGE AREA REPORTS

RCCC Basin 1 StreamStats Report

Region ID: SC
Workspace ID: SC20211013171221674000
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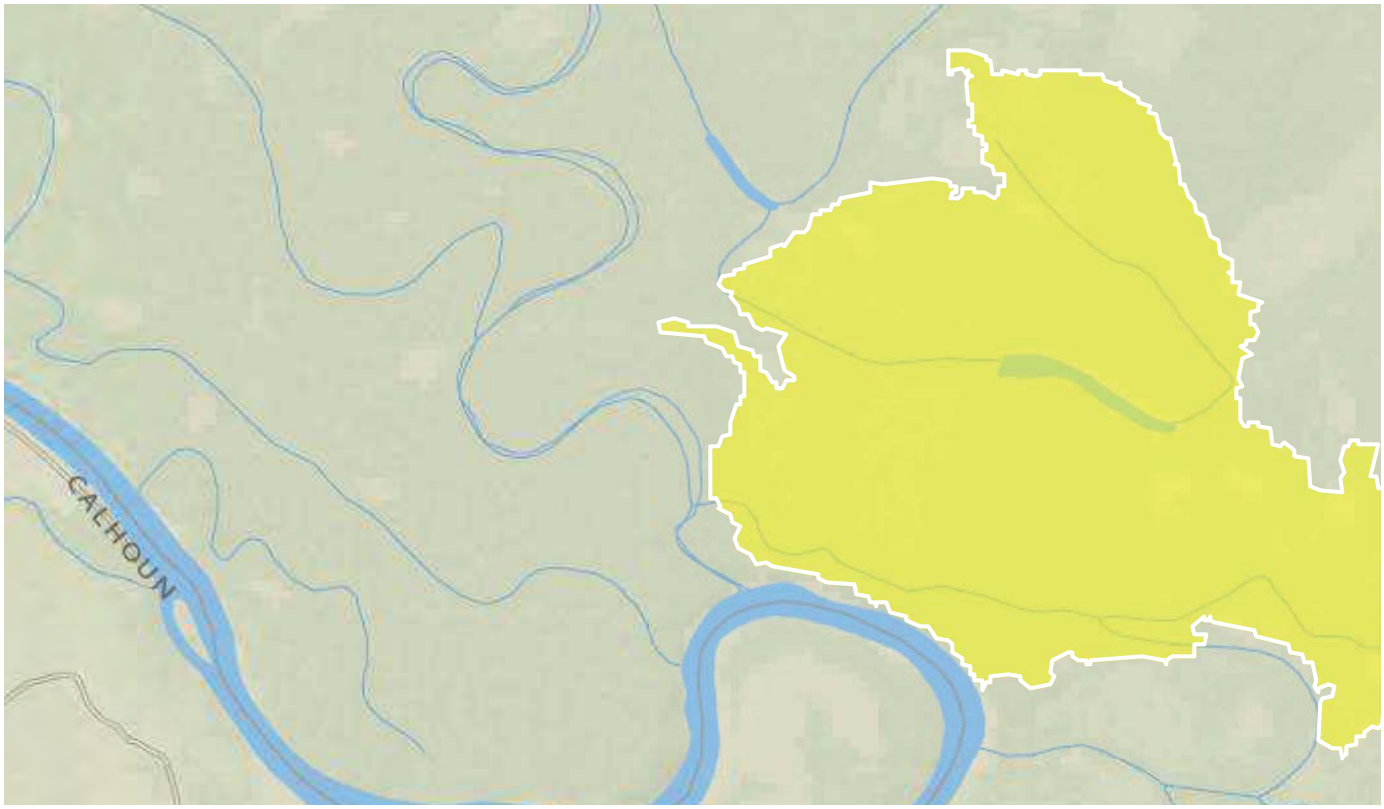
Time: 2021-10-13 13:12:40 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.84	square miles
PCTREG1	Percentage of drainage area located in Region 1 - Piedmont / Ridge and Valley	0	percent
PCTREG2	Percentage of drainage area located in Region 2 - Blue Ridge	0	percent
PCTREG3	Percentage of drainage area located in Region 3 - Sandhills	0	percent
PCTREG4	Percentage of drainage area located in Region 4 - Coastal Plains	100	percent

Parameter Code	Parameter Description	Value	Unit
PCTREG5	Percentage of drainage area located in Region 5 - Lower Tifton Uplands	0	percent
LC06IMP	Percentage of impervious area determined from NLCD 2006 impervious dataset	0.02	percent
I24H50Y	Maximum 24-hour precipitation that occurs on average once in 50 years	7.6	inches

Peak-Flow Statistics Parameters [Peak Southeast US over 1 sqmi 2009 5156]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.84	square miles	1	9000
PCTREG1	Percent Area in Region 1	0	percent	0	100
PCTREG2	Percent Area in Region 2	0	percent	0	100
PCTREG3	Percent Area in Region 3	0	percent	0	100
PCTREG4	Percent Area in Region 4	100	percent	0	100
PCTREG5	Percent Area in Region 5	0	percent	0	100

Peak-Flow Statistics Flow Report [Peak Southeast US over 1 sqmi 2009 5156]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PIl	PIu	ASEp
50-percent AEP flood	89.5	ft^3/s	51.4	156	34.5
20-percent AEP flood	180	ft^3/s	104	311	34
10-percent AEP flood	253	ft^3/s	144	445	35.1
4-percent AEP flood	355	ft^3/s	195	647	37.5
2-percent AEP flood	446	ft^3/s	237	839	39.6
1-percent AEP flood	546	ft^3/s	280	1060	41.9
0.5-percent AEP flood	640	ft^3/s	317	1290	44.3
0.2-percent AEP flood	784	ft^3/s	370	1660	47.7

Peak-Flow Statistics Citations

Feaster, T.D., Gotvald, A.J., and Weaver, J.C.,2009, Magnitude and Frequency of Rural Floods in the Southeastern United States, 2006: Volume 3, South Carolina: U.S. Geological Survey Scientific Investigations Report 2009-5156, 226 p. (http://pubs.usgs.gov/sir/2009/5156/)

Application Version: 4.6.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

RCCC Basin Combined StreamStats Report

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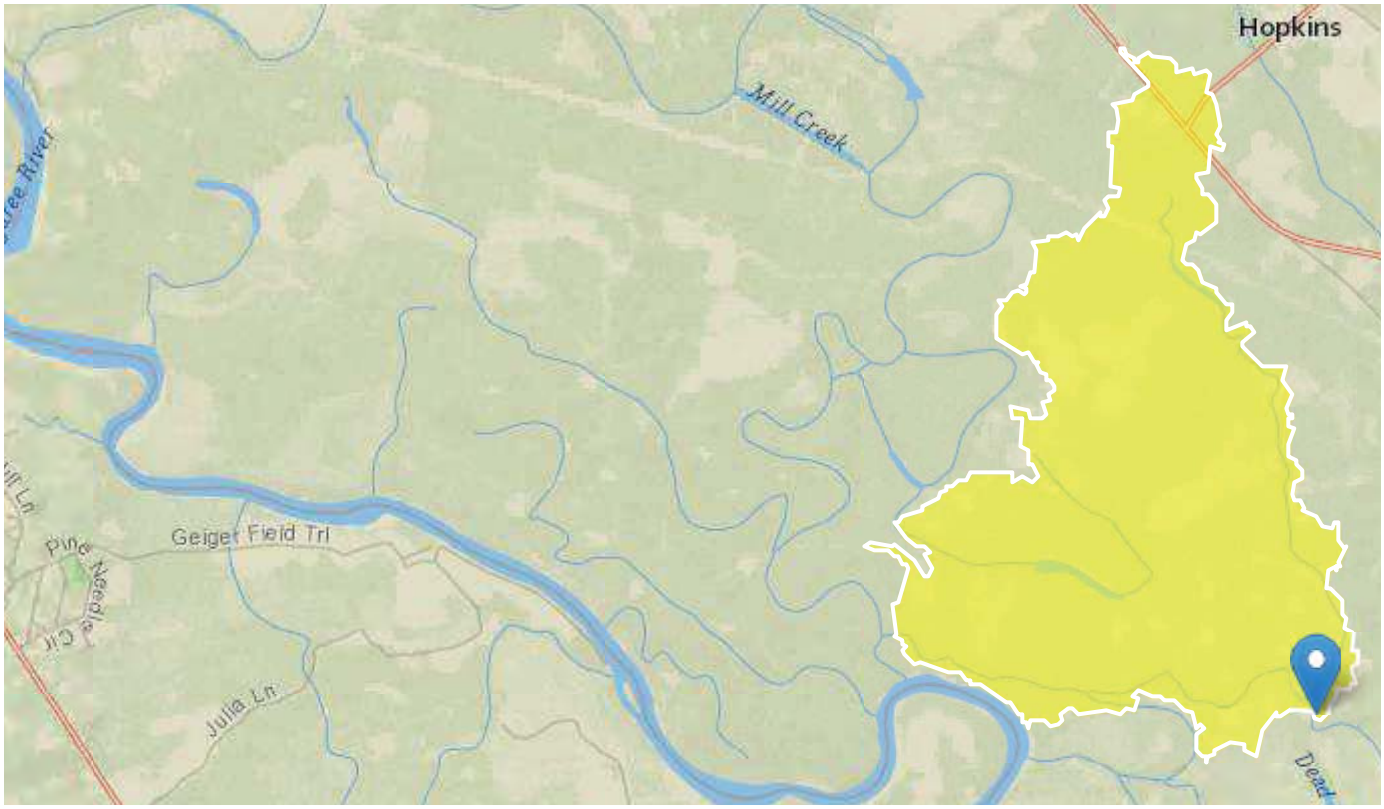


Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	4.12	square miles
PCTREG1	Percentage of drainage area located in Region 1 - Piedmont / Ridge and Valley	0	percent
PCTREG2	Percentage of drainage area located in Region 2 - Blue Ridge	0	percent
PCTREG3	Percentage of drainage area located in Region 3 - Sandhills	0	percent
PCTREG4	Percentage of drainage area located in Region 4 - Coastal Plains	100	percent

Parameter Code	Parameter Description	Value	Unit
PCTREG5	Percentage of drainage area located in Region 5 - Lower Tifton Uplands	0	percent
LC06IMP	Percentage of impervious area determined from NLCD 2006 impervious dataset	0.16	percent
I24H50Y	Maximum 24-hour precipitation that occurs on average once in 50 years	7.6	inches

Peak-Flow Statistics Parameters [Peak Southeast US over 1 sqmi 2009 5156]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	4.12	square miles	1	9000
PCTREG1	Percent Area in Region 1	0	percent	0	100
PCTREG2	Percent Area in Region 2	0	percent	0	100
PCTREG3	Percent Area in Region 3	0	percent	0	100
PCTREG4	Percent Area in Region 4	100	percent	0	100
PCTREG5	Percent Area in Region 5	0	percent	0	100

Peak-Flow Statistics Flow Report [Peak Southeast US over 1 sqmi 2009 5156]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PIl	PIu	ASEp
50-percent AEP flood	151	ft^3/s	86.8	263	34.5
20-percent AEP flood	299	ft^3/s	173	516	34
10-percent AEP flood	416	ft^3/s	237	731	35.1
4-percent AEP flood	579	ft^3/s	318	1050	37.5
2-percent AEP flood	723	ft^3/s	385	1360	39.6
1-percent AEP flood	882	ft^3/s	454	1710	41.9
0.5-percent AEP flood	1030	ft^3/s	512	2070	44.3
0.2-percent AEP flood	1250	ft^3/s	591	2640	47.7

Peak-Flow Statistics Citations

Feaster, T.D., Gotvald, A.J., and Weaver, J.C.,2009, Magnitude and Frequency of Rural Floods in the Southeastern United States, 2006: Volume 3, South Carolina: U.S. Geological Survey Scientific Investigations Report 2009-5156, 226 p. (http://pubs.usgs.gov/sir/2009/5156/)

Application Version: 4.6.2
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

APPENDIX D

WSEL COMPARISON TABLES

Richland County Conservation Commission
Mill Creek Tributary No-Rise Flood Study

River Station			River Station Info	5-Year Water Surface Profile			
Natural	Existing	Proposed		Natural Condition WSEL	Existing Condition WSEL	Proposed Condition WSEL	Project Impact WSEL Change Proposed vs. Existing
2286	2286	2286	Upstream Limit of Study	103.82	103.83	103.83	0.00
1444	1444	1444		103.52	103.54	103.53	-0.01
1016	1016	1016		103.40	103.42	103.41	-0.01
744	744	744	Bridge Approach Section #4	103.35	103.37	103.37	0.00
662	662	662	Bridge U/S Toe of Fill Section #3	103.35	103.36	103.36	0.00
	643	643	RCCC Bridge Crossing				
624	624	624	Bridge D/S Toe of Fill Section #2	103.34	103.35	103.35	0.00
513	513	513	Bridge Exit Section #1	103.23	103.23	103.23	0.00
309	309	309	Downstream Limit of Study	102.88	102.88	102.88	0.00

Note: A negative value in the "Project Impact" Column represents a decrease in Water Surface Elevation

Richland County Conservation Commission
Mill Creek Tributary No-Rise Flood Study

River Station			River Station Info	10-Year Water Surface Profile			
Natural	Existing	Proposed		Natural Condition WSEL	Existing Condition WSEL	Proposed Condition WSEL	Project Impact WSEL Change Proposed vs. Existing
2286	2286	2286	Upstream Limit of Study	104.52	105.32	104.53	-0.79
1444	1444	1444		104.23	105.05	104.24	-0.81
1016	1016	1016		104.10	104.91	104.11	-0.80
744	744	744	Bridge Approach Section #4	104.03	104.84	104.05	-0.79
662	662	662	Bridge U/S Toe of Fill Section #3	104.02	104.82	104.04	-0.78
	643	643	RCCC Bridge Crossing				
624	624	624	Bridge D/S Toe of Fill Section #2	104.01	104.79	104.02	-0.77
513	513	513	Bridge Exit Section #1	103.89	104.66	103.89	-0.77
309	309	309	Downstream Limit of Study	103.50	104.23	103.50	-0.73

Note: A negative value in the "Project Impact" Column represents a decrease in Water Surface Elevation

Richland County Conservation Commission
Mill Creek Tributary No-Rise Flood Study

River Station			River Station Info	25-Year Water Surface Profile			
Natural	Existing	Proposed		Natural Condition WSEL	Existing Condition WSEL	Proposed Condition WSEL	Project Impact WSEL Change Proposed vs. Existing
2286	2286	2286	Upstream Limit of Study	105.31	105.32	105.31	-0.01
1444	1444	1444		105.02	105.05	105.03	-0.02
1016	1016	1016		104.89	104.91	104.89	-0.02
744	744	744	Bridge Approach Section #4	104.81	104.84	104.82	-0.02
662	662	662	Bridge U/S Toe of Fill Section #3	104.80	104.82	104.80	-0.02
	643	643	RCCC Bridge Crossing				
624	624	624	Bridge D/S Toe of Fill Section #2	104.78	104.79	104.79	0.00
513	513	513	Bridge Exit Section #1	104.66	104.66	104.66	0.00
309	309	309	Downstream Limit of Study	104.23	104.23	104.23	0.00

Note: A negative value in the "Project Impact" Column represents a decrease in Water Surface Elevation

Richland County Conservation Commission
Mill Creek Tributary No-Rise Flood Study

River Station			River Station Info	100-Year Water Surface Profile			
Natural	Existing	Proposed		Natural Condition WSEL	Existing Condition WSEL	Proposed Condition WSEL	Project Impact WSEL Change Proposed vs. Existing
2286	2286	2286	Upstream Limit of Study	106.18	106.20	106.20	0.00
1444	1444	1444		105.88	105.90	105.90	0.00
1016	1016	1016		105.70	105.73	105.73	0.00
744	744	744	Bridge Approach Section #4	105.59	105.62	105.62	0.00
662	662	662	Bridge U/S Toe of Fill Section #3	105.57	105.60	105.60	0.00
	643	643	RCCC Bridge Crossing				
624	624	624	Bridge D/S Toe of Fill Section #2	105.54	105.54	105.54	0.00
513	513	513	Bridge Exit Section #1	105.48	105.48	105.48	0.00
309	309	309	Downstream Limit of Study	105.08	105.08	105.08	0.00

Note: A negative value in the "Project Impact" Column represents a decrease in Water Surface Elevation

Richland County Conservation Commission
Mill Creek Tributary No-Rise Flood Study

River Station			River Station Info	500-Year Water Surface Profile			
Natural	Existing	Proposed		Natural Condition WSEL	Existing Condition WSEL	Proposed Condition WSEL	Project Impact WSEL Change Proposed vs. Existing
2286	2286	2286	Upstream Limit of Study	106.71	106.74	106.73	-0.01
1444	1444	1444		106.45	106.50	106.48	-0.02
1016	1016	1016		106.24	106.31	106.28	-0.03
744	744	744	Bridge Approach Section #4	106.08	106.16	106.12	-0.04
662	662	662	Bridge U/S Toe of Fill Section #3	106.04	106.12	106.08	-0.04
	643	643	RCCC Bridge Crossing				
624	624	624	Bridge D/S Toe of Fill Section #2	105.99	106.00	106.00	0.00
513	513	513	Bridge Exit Section #1	105.97	105.97	105.97	0.00
309	309	309	Downstream Limit of Study	105.58	105.58	105.58	0.00

Note: A negative value in the "Project Impact" Column represents a decrease in Water Surface Elevation

APPENDIX E

HEC-RAS OUTPUT

NATURAL RUN

HEC-RAS Plan: Natural River: Mill Creek Trib Reach: Reach-1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	2286	2yr	89.50	100.70	102.71	101.54	102.75	0.001535	1.56	57.26	42.70	0.24
Reach-1	2286	5yr	180.00	100.70	103.82	101.99	103.86	0.000910	1.65	108.95	506.88	0.20
Reach-1	2286	10yr	253.00	100.70	104.52	102.33	104.56	0.000765	1.74	145.61	2029.55	0.19
Reach-1	2286	25yr	355.00	100.70	105.31	102.65	105.36	0.000700	1.86	190.57	3135.58	0.18
Reach-1	2286	50yr	446.00	100.70	105.81	102.89	105.87	0.000676	1.99	271.70	3844.21	0.18
Reach-1	2286	100yr	546.00	100.70	106.18	103.12	106.25	0.000640	2.07	486.18	4584.16	0.18
Reach-1	2286	200yr	640.00	100.70	106.45	103.32	106.51	0.000607	2.10	713.76	5025.96	0.18
Reach-1	2286	500yr	784.00	100.70	106.71	103.59	106.73	0.000309	1.56	1764.13	5501.04	0.13
Reach-1	1444	2yr	89.50	100.07	102.38	100.55	102.39	0.000192	0.73	123.21	60.64	0.09
Reach-1	1444	5yr	180.00	100.07	103.52	100.83	103.53	0.000204	0.91	198.68	179.05	0.10
Reach-1	1444	10yr	253.00	100.07	104.23	101.02	104.24	0.000220	0.99	254.57	1222.78	0.10
Reach-1	1444	25yr	355.00	100.07	105.02	101.25	105.04	0.000222	1.07	330.96	2727.28	0.10
Reach-1	1444	50yr	446.00	100.07	105.53	101.44	105.55	0.000236	1.16	395.80	3350.95	0.11
Reach-1	1444	100yr	546.00	100.07	105.88	101.63	105.90	0.000264	1.27	533.61	4171.89	0.12
Reach-1	1444	200yr	640.00	100.07	106.14	101.80	106.17	0.000276	1.35	734.01	5029.92	0.12
Reach-1	1444	500yr	784.00	100.07	106.45	102.05	106.48	0.000282	1.43	1112.36	5845.70	0.12
Reach-1	1016	2yr	89.50	99.75	102.27	100.36	102.28	0.000326	0.96	93.48	44.46	0.12
Reach-1	1016	5yr	180.00	99.75	103.40	100.70	103.42	0.000355	1.19	151.42	144.06	0.13
Reach-1	1016	10yr	253.00	99.75	104.10	100.95	104.12	0.000354	1.32	191.55	898.35	0.13
Reach-1	1016	25yr	355.00	99.75	104.89	101.24	104.92	0.000362	1.47	240.75	2608.14	0.13
Reach-1	1016	50yr	446.00	99.75	105.38	101.48	105.42	0.000391	1.63	273.72	3004.22	0.14
Reach-1	1016	100yr	546.00	99.75	105.70	101.73	105.76	0.000450	1.85	319.83	3617.56	0.15
Reach-1	1016	200yr	640.00	99.75	105.94	101.94	106.01	0.000504	2.02	421.19	4449.56	0.16
Reach-1	1016	500yr	784.00	99.75	106.24	102.30	106.31	0.000546	2.19	725.00	5445.02	0.17
Reach-1	744	2yr	151.00	97.33	102.25	98.07	102.25	0.000065	0.68	220.67	48.70	0.06
Reach-1	744	5yr	299.00	97.33	103.35	98.50	103.37	0.000131	1.09	275.46	113.42	0.08
Reach-1	744	10yr	416.00	97.33	104.03	98.79	104.06	0.000181	1.34	322.37	1184.24	0.10
Reach-1	744	25yr	579.00	97.33	104.81	99.14	104.85	0.000229	1.62	441.46	2834.70	0.11
Reach-1	744	50yr	723.00	97.33	105.29	99.43	105.33	0.000266	1.82	582.12	3565.73	0.12
Reach-1	744	100yr	882.00	97.33	105.59	99.73	105.66	0.000325	2.07	683.54	4153.19	0.13
Reach-1	744	200yr	1030.00	97.33	105.81	99.98	105.89	0.000385	2.30	766.18	4435.48	0.15
Reach-1	744	500yr	1250.00	97.33	106.08	100.33	106.17	0.000472	2.61	940.72	5084.21	0.16
Reach-1	662	2yr	151.00	97.70	102.24	98.36	102.25	0.000057	0.62	243.86	58.32	0.05
Reach-1	662	5yr	299.00	97.70	103.35	98.73	103.36	0.000110	0.97	309.83	140.65	0.08

HEC-RAS Plan: Natural River: Mill Creek Trib Reach: Reach-1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	662	10yr	416.00	97.70	104.02	98.99	104.05	0.000145	1.18	352.37	1214.20	0.09
Reach-1	662	25yr	579.00	97.70	104.80	99.30	104.83	0.000183	1.44	414.67	2645.28	0.10
Reach-1	662	50yr	723.00	97.70	105.27	99.56	105.31	0.000222	1.66	466.59	3551.33	0.11
Reach-1	662	100yr	882.00	97.70	105.57	99.81	105.63	0.000283	1.93	520.42	3918.99	0.13
Reach-1	662	200yr	1030.00	97.70	105.79	100.04	105.86	0.000345	2.18	572.27	4252.77	0.14
Reach-1	662	500yr	1250.00	97.70	106.04	100.36	106.13	0.000442	2.52	706.26	4995.98	0.16
Reach-1	624	2yr	151.00	98.07	102.24	98.75	102.25	0.000087	0.72	209.04	54.17	0.06
Reach-1	624	5yr	299.00	98.07	103.34	99.15	103.35	0.000156	1.11	269.71	217.95	0.09
Reach-1	624	10yr	416.00	98.07	104.01	99.41	104.04	0.000203	1.35	308.53	1207.02	0.10
Reach-1	624	25yr	579.00	98.07	104.78	99.75	104.82	0.000251	1.64	360.27	2761.87	0.12
Reach-1	624	50yr	723.00	98.07	105.25	100.01	105.30	0.000303	1.89	399.64	3528.54	0.13
Reach-1	624	100yr	882.00	98.07	105.54	100.28	105.62	0.000386	2.20	437.92	3959.57	0.15
Reach-1	624	200yr	1030.00	98.07	105.75	100.52	105.84	0.000472	2.48	483.70	4401.80	0.17
Reach-1	624	500yr	1250.00	98.07	105.99	100.84	106.11	0.000603	2.87	624.88	5099.06	0.19
Reach-1	513	2yr	151.00	99.75	102.18	100.58	102.22	0.000924	1.68	90.07	39.71	0.20
Reach-1	513	5yr	299.00	99.75	103.23	101.06	103.31	0.001224	2.22	134.72	95.15	0.23
Reach-1	513	10yr	416.00	99.75	103.89	101.37	103.98	0.001452	2.46	169.35	1106.96	0.26
Reach-1	513	25yr	579.00	99.75	104.66	101.76	104.76	0.001563	2.58	272.72	2977.60	0.27
Reach-1	513	50yr	723.00	99.75	105.16	102.08	105.24	0.001193	2.44	605.84	3886.61	0.24
Reach-1	513	100yr	882.00	99.75	105.48	102.40	105.55	0.000982	2.36	1019.09	4479.70	0.22
Reach-1	513	200yr	1030.00	99.75	105.70	102.68	105.76	0.000916	2.37	1400.70	5124.95	0.21
Reach-1	513	500yr	1250.00	99.75	105.97	103.17	106.01	0.000775	2.28	2098.51	5944.05	0.20
Reach-1	309	2yr	151.00	99.60	101.88	100.65	101.95	0.002002	2.17	69.74	38.66	0.28
Reach-1	309	5yr	299.00	99.60	102.88	101.21	102.99	0.002001	2.67	111.91	45.03	0.30
Reach-1	309	10yr	416.00	99.60	103.50	101.56	103.63	0.002002	2.95	140.80	159.59	0.31
Reach-1	309	25yr	579.00	99.60	104.23	102.00	104.39	0.002003	3.26	177.66	2207.92	0.31
Reach-1	309	50yr	723.00	99.60	104.74	102.33	104.92	0.002002	3.46	273.60	3206.89	0.32
Reach-1	309	100yr	882.00	99.60	105.08	102.65	105.26	0.002004	3.59	467.83	3782.29	0.32
Reach-1	309	200yr	1030.00	99.60	105.30	102.94	105.48	0.002004	3.68	625.55	4109.84	0.32
Reach-1	309	500yr	1250.00	99.60	105.58	103.32	105.76	0.002004	3.85	875.95	4803.78	0.33

EXISTING CONDITIONS RUN

HEC-RAS Plan: Existing River: Mill Creek Trib Reach: Reach-1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	2286	2yr	89.50	100.70	102.72	101.54	102.76	0.001520	1.56	57.47	42.76	0.24
Reach-1	2286	5yr	180.00	100.70	103.83	101.99	103.87	0.000896	1.64	109.52	517.33	0.20
Reach-1	2286	10yr	253.00	100.70	104.53	102.33	104.58	0.000751	1.73	146.50	2085.33	0.19
Reach-1	2286	25yr	355.00	100.70	105.32	102.65	105.38	0.000689	1.85	191.66	3143.29	0.18
Reach-1	2286	50yr	446.00	100.70	105.83	102.89	105.89	0.000663	1.98	278.59	3870.19	0.18
Reach-1	2286	100yr	546.00	100.70	106.20	103.12	106.26	0.000627	2.05	497.92	4606.33	0.18
Reach-1	2286	200yr	640.00	100.70	106.47	103.32	106.52	0.000590	2.08	730.61	5038.89	0.18
Reach-1	2286	500yr	784.00	100.70	106.74	103.59	106.76	0.000289	1.52	1830.46	5576.07	0.13
Reach-1	1444	2yr	89.50	100.07	102.39	100.55	102.40	0.000189	0.72	123.74	60.72	0.09
Reach-1	1444	5yr	180.00	100.07	103.54	100.83	103.55	0.000201	0.90	199.86	181.31	0.10
Reach-1	1444	10yr	253.00	100.07	104.25	101.02	104.26	0.000216	0.99	256.39	1298.42	0.10
Reach-1	1444	25yr	355.00	100.07	105.05	101.25	105.07	0.000218	1.06	333.37	2749.44	0.10
Reach-1	1444	50yr	446.00	100.07	105.55	101.44	105.57	0.000232	1.15	400.41	3380.04	0.11
Reach-1	1444	100yr	546.00	100.07	105.90	101.63	105.93	0.000258	1.26	546.97	4240.79	0.12
Reach-1	1444	200yr	640.00	100.07	106.17	101.80	106.19	0.000267	1.33	760.78	5100.90	0.12
Reach-1	1444	500yr	784.00	100.07	106.50	102.05	106.53	0.000262	1.39	1196.51	5957.32	0.12
Reach-1	1016	2yr	89.50	99.75	102.28	100.36	102.29	0.000323	0.95	93.93	44.63	0.12
Reach-1	1016	5yr	180.00	99.75	103.42	100.70	103.44	0.000348	1.18	152.42	147.26	0.13
Reach-1	1016	10yr	253.00	99.75	104.12	100.95	104.15	0.000347	1.31	192.94	985.38	0.13
Reach-1	1016	25yr	355.00	99.75	104.91	101.24	104.95	0.000355	1.46	242.46	2647.64	0.13
Reach-1	1016	50yr	446.00	99.75	105.40	101.48	105.44	0.000384	1.62	275.77	3034.75	0.14
Reach-1	1016	100yr	546.00	99.75	105.73	101.73	105.78	0.000441	1.83	325.60	3675.67	0.15
Reach-1	1016	200yr	640.00	99.75	105.98	101.94	106.04	0.000489	2.00	445.59	4609.18	0.16
Reach-1	1016	500yr	784.00	99.75	106.31	102.30	106.38	0.000497	2.11	819.85	5661.26	0.17
Reach-1	744	2yr	151.00	97.33	102.26	98.07	102.26	0.000065	0.68	221.17	48.71	0.06
Reach-1	744	5yr	299.00	97.33	103.37	98.50	103.39	0.000130	1.08	276.41	115.00	0.08
Reach-1	744	10yr	416.00	97.33	104.06	98.79	104.08	0.000179	1.33	324.54	1267.33	0.10
Reach-1	744	25yr	579.00	97.33	104.84	99.14	104.87	0.000226	1.61	448.44	2865.51	0.11
Reach-1	744	50yr	723.00	97.33	105.31	99.43	105.36	0.000261	1.81	590.39	3637.15	0.12
Reach-1	744	100yr	882.00	97.33	105.62	99.73	105.68	0.000319	2.06	693.05	4187.49	0.13
Reach-1	744	200yr	1030.00	97.33	105.85	99.98	105.92	0.000377	2.28	782.23	4516.28	0.15
Reach-1	744	500yr	1250.00	97.33	106.16	100.33	106.25	0.000444	2.55	1012.94	5233.24	0.16
Reach-1	662	2yr	151.00	97.70	102.25	98.35	102.26	0.000057	0.62	244.44	58.34	0.05
Reach-1	662	5yr	299.00	97.70	103.36	98.73	103.38	0.000109	0.96	310.93	141.26	0.08

HEC-RAS Plan: Existing River: Mill Creek Trib Reach: Reach-1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	662	10yr	416.00	97.70	104.05	98.98	104.07	0.000144	1.18	353.87	1306.28	0.09
Reach-1	662	25yr	579.00	97.70	104.82	99.30	104.85	0.000181	1.43	415.50	2668.55	0.10
Reach-1	662	50yr	723.00	97.70	105.30	99.55	105.34	0.000220	1.66	457.07	3584.87	0.11
Reach-1	662	100yr	882.00	97.70	105.60	99.81	105.66	0.000280	1.93	508.12	3963.21	0.13
Reach-1	662	200yr	1030.00	97.70	105.82	100.04	105.89	0.000341	2.17	548.54	4328.64	0.14
Reach-1	662	500yr	1250.00	97.70	106.12	100.35	106.21	0.000428	2.50	671.86	5202.95	0.16
Reach-1	643		Bridge									
Reach-1	624	2yr	151.00	98.07	102.25	98.75	102.25	0.000086	0.72	209.42	54.18	0.06
Reach-1	624	5yr	299.00	98.07	103.35	99.15	103.37	0.000155	1.11	270.35	218.27	0.09
Reach-1	624	10yr	416.00	98.07	104.02	99.41	104.05	0.000201	1.35	309.31	1241.58	0.10
Reach-1	624	25yr	579.00	98.07	104.79	99.74	104.83	0.000249	1.63	361.06	2775.59	0.12
Reach-1	624	50yr	723.00	98.07	105.25	100.00	105.31	0.000302	1.89	398.25	3535.31	0.13
Reach-1	624	100yr	882.00	98.07	105.54	100.28	105.62	0.000385	2.20	434.39	3961.82	0.15
Reach-1	624	200yr	1030.00	98.07	105.75	100.52	105.85	0.000471	2.48	473.86	4419.43	0.17
Reach-1	624	500yr	1250.00	98.07	106.00	100.85	106.13	0.000597	2.86	638.26	5135.84	0.19
Reach-1	513	2yr	151.00	99.75	102.18	100.58	102.22	0.000924	1.68	90.07	39.71	0.20
Reach-1	513	5yr	299.00	99.75	103.23	101.06	103.31	0.001224	2.22	134.72	95.15	0.23
Reach-1	513	10yr	416.00	99.75	103.89	101.37	103.98	0.001452	2.46	169.35	1106.96	0.26
Reach-1	513	25yr	579.00	99.75	104.66	101.76	104.76	0.001563	2.58	272.72	2977.60	0.27
Reach-1	513	50yr	723.00	99.75	105.16	102.08	105.24	0.001193	2.44	605.84	3886.61	0.24
Reach-1	513	100yr	882.00	99.75	105.48	102.40	105.55	0.000982	2.36	1019.09	4479.70	0.22
Reach-1	513	200yr	1030.00	99.75	105.70	102.68	105.76	0.000916	2.37	1400.70	5124.95	0.21
Reach-1	513	500yr	1250.00	99.75	105.97	103.17	106.01	0.000775	2.28	2098.51	5944.05	0.20
Reach-1	309	2yr	151.00	99.60	101.88	100.65	101.95	0.002002	2.17	69.74	38.66	0.28
Reach-1	309	5yr	299.00	99.60	102.88	101.21	102.99	0.002001	2.67	111.91	45.03	0.30
Reach-1	309	10yr	416.00	99.60	103.50	101.56	103.63	0.002002	2.95	140.80	159.59	0.31
Reach-1	309	25yr	579.00	99.60	104.23	102.00	104.39	0.002003	3.26	177.66	2207.92	0.31
Reach-1	309	50yr	723.00	99.60	104.74	102.33	104.92	0.002002	3.46	273.60	3206.89	0.32
Reach-1	309	100yr	882.00	99.60	105.08	102.65	105.26	0.002004	3.59	467.83	3782.29	0.32
Reach-1	309	200yr	1030.00	99.60	105.30	102.94	105.48	0.002004	3.68	625.55	4109.84	0.32
Reach-1	309	500yr	1250.00	99.60	105.58	103.32	105.76	0.002004	3.85	875.95	4803.78	0.33

REVISED CONDITIONS RUN

HEC-RAS Plan: Revised River: Mill Creek Trib Reach: Reach-1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	2286	2yr	89.50	100.70	102.72	101.54	102.76	0.001524	1.56	57.42	42.75	0.24
Reach-1	2286	5yr	180.00	100.70	103.83	101.99	103.87	0.000900	1.65	109.36	514.45	0.20
Reach-1	2286	10yr	253.00	100.70	104.53	102.33	104.58	0.000755	1.73	146.23	2068.19	0.19
Reach-1	2286	25yr	355.00	100.70	105.31	102.65	105.36	0.000697	1.86	190.86	3138.35	0.18
Reach-1	2286	50yr	446.00	100.70	105.82	102.89	105.88	0.000671	1.99	274.27	3854.10	0.18
Reach-1	2286	100yr	546.00	100.70	106.20	103.12	106.26	0.000628	2.05	497.50	4605.55	0.18
Reach-1	2286	200yr	640.00	100.70	106.47	103.32	106.52	0.000590	2.08	731.27	5039.40	0.18
Reach-1	2286	500yr	784.00	100.70	106.73	103.59	106.75	0.000298	1.54	1799.82	5544.88	0.13
Reach-1	1444	2yr	89.50	100.07	102.39	100.55	102.40	0.000190	0.72	123.61	60.70	0.09
Reach-1	1444	5yr	180.00	100.07	103.53	100.83	103.55	0.000202	0.90	199.53	180.87	0.10
Reach-1	1444	10yr	253.00	100.07	104.24	101.02	104.26	0.000217	0.99	255.84	1274.84	0.10
Reach-1	1444	25yr	355.00	100.07	105.03	101.25	105.05	0.000221	1.07	331.61	2732.05	0.10
Reach-1	1444	50yr	446.00	100.07	105.54	101.44	105.56	0.000234	1.16	397.50	3360.74	0.11
Reach-1	1444	100yr	546.00	100.07	105.90	101.63	105.93	0.000258	1.26	546.49	4238.29	0.12
Reach-1	1444	200yr	640.00	100.07	106.17	101.80	106.19	0.000267	1.33	761.86	5103.74	0.12
Reach-1	1444	500yr	784.00	100.07	106.48	102.05	106.51	0.000271	1.41	1157.74	5905.04	0.12
Reach-1	1016	2yr	89.50	99.75	102.28	100.36	102.29	0.000323	0.95	93.82	44.59	0.12
Reach-1	1016	5yr	180.00	99.75	103.41	100.70	103.43	0.000350	1.18	152.14	146.38	0.13
Reach-1	1016	10yr	253.00	99.75	104.11	100.95	104.14	0.000349	1.31	192.52	959.39	0.13
Reach-1	1016	25yr	355.00	99.75	104.89	101.24	104.93	0.000360	1.47	241.22	2619.86	0.13
Reach-1	1016	50yr	446.00	99.75	105.39	101.48	105.43	0.000388	1.63	274.48	3015.50	0.14
Reach-1	1016	100yr	546.00	99.75	105.73	101.73	105.78	0.000442	1.83	325.38	3673.60	0.15
Reach-1	1016	200yr	640.00	99.75	105.98	101.94	106.04	0.000488	2.00	446.62	4618.15	0.16
Reach-1	1016	500yr	784.00	99.75	106.28	102.30	106.35	0.000519	2.15	776.08	5571.32	0.17
Reach-1	744	2yr	151.00	97.33	102.25	98.07	102.26	0.000065	0.68	221.05	48.71	0.06
Reach-1	744	5yr	299.00	97.33	103.37	98.50	103.38	0.000130	1.08	276.15	114.57	0.08
Reach-1	744	10yr	416.00	97.33	104.05	98.79	104.08	0.000180	1.33	323.88	1243.17	0.10
Reach-1	744	25yr	579.00	97.33	104.82	99.14	104.85	0.000228	1.61	443.34	2841.86	0.11
Reach-1	744	50yr	723.00	97.33	105.30	99.43	105.34	0.000264	1.82	585.22	3585.36	0.12
Reach-1	744	100yr	882.00	97.33	105.62	99.73	105.68	0.000319	2.06	692.72	4186.29	0.13
Reach-1	744	200yr	1030.00	97.33	105.85	99.98	105.92	0.000376	2.28	782.89	4520.22	0.15
Reach-1	744	500yr	1250.00	97.33	106.12	100.33	106.21	0.000457	2.58	979.73	5167.15	0.16
Reach-1	662	2yr	151.00	97.70	102.25	98.35	102.26	0.000057	0.62	244.30	58.34	0.05
Reach-1	662	5yr	299.00	97.70	103.36	98.73	103.37	0.000109	0.96	310.61	141.09	0.08

HEC-RAS Plan: Revised River: Mill Creek Trib Reach: Reach-1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	662	10yr	416.00	97.70	104.04	98.98	104.06	0.000144	1.18	353.40	1275.96	0.09
Reach-1	662	25yr	579.00	97.70	104.80	99.30	104.83	0.000183	1.44	415.26	2650.63	0.10
Reach-1	662	50yr	723.00	97.70	105.28	99.55	105.32	0.000222	1.66	464.87	3563.16	0.11
Reach-1	662	100yr	882.00	97.70	105.60	99.81	105.65	0.000280	1.92	515.89	3961.50	0.13
Reach-1	662	200yr	1030.00	97.70	105.82	100.04	105.89	0.000340	2.17	560.25	4332.05	0.14
Reach-1	662	500yr	1250.00	97.70	106.08	100.35	106.17	0.000435	2.51	667.11	5101.32	0.16
Reach-1	643		Bridge									
Reach-1	624	2yr	151.00	98.07	102.25	98.75	102.25	0.000086	0.72	209.42	54.18	0.06
Reach-1	624	5yr	299.00	98.07	103.35	99.15	103.37	0.000155	1.11	270.35	218.27	0.09
Reach-1	624	10yr	416.00	98.07	104.02	99.41	104.05	0.000201	1.35	309.31	1241.58	0.10
Reach-1	624	25yr	579.00	98.07	104.79	99.74	104.83	0.000249	1.63	361.06	2775.59	0.12
Reach-1	624	50yr	723.00	98.07	105.25	100.00	105.31	0.000302	1.89	398.93	3535.26	0.13
Reach-1	624	100yr	882.00	98.07	105.54	100.28	105.62	0.000386	2.20	437.60	3961.80	0.15
Reach-1	624	200yr	1030.00	98.07	105.75	100.52	105.85	0.000471	2.48	479.81	4419.43	0.17
Reach-1	624	500yr	1250.00	98.07	106.00	100.85	106.13	0.000597	2.86	638.26	5135.84	0.19
Reach-1	513	2yr	151.00	99.75	102.18	100.58	102.22	0.000924	1.68	90.07	39.71	0.20
Reach-1	513	5yr	299.00	99.75	103.23	101.06	103.31	0.001224	2.22	134.72	95.15	0.23
Reach-1	513	10yr	416.00	99.75	103.89	101.37	103.98	0.001452	2.46	169.35	1106.96	0.26
Reach-1	513	25yr	579.00	99.75	104.66	101.76	104.76	0.001563	2.58	272.72	2977.60	0.27
Reach-1	513	50yr	723.00	99.75	105.16	102.08	105.24	0.001193	2.44	605.84	3886.61	0.24
Reach-1	513	100yr	882.00	99.75	105.48	102.40	105.55	0.000982	2.36	1019.09	4479.70	0.22
Reach-1	513	200yr	1030.00	99.75	105.70	102.68	105.76	0.000916	2.37	1400.70	5124.95	0.21
Reach-1	513	500yr	1250.00	99.75	105.97	103.17	106.01	0.000775	2.28	2098.51	5944.05	0.20
Reach-1	309	2yr	151.00	99.60	101.88	100.65	101.95	0.002002	2.17	69.74	38.66	0.28
Reach-1	309	5yr	299.00	99.60	102.88	101.21	102.99	0.002001	2.67	111.91	45.03	0.30
Reach-1	309	10yr	416.00	99.60	103.50	101.56	103.63	0.002002	2.95	140.80	159.59	0.31
Reach-1	309	25yr	579.00	99.60	104.23	102.00	104.39	0.002003	3.26	177.66	2207.92	0.31
Reach-1	309	50yr	723.00	99.60	104.74	102.33	104.92	0.002002	3.46	273.60	3206.89	0.32
Reach-1	309	100yr	882.00	99.60	105.08	102.65	105.26	0.002004	3.59	467.83	3782.29	0.32
Reach-1	309	200yr	1030.00	99.60	105.30	102.94	105.48	0.002004	3.68	625.55	4109.84	0.32
Reach-1	309	500yr	1250.00	99.60	105.58	103.32	105.76	0.002004	3.85	875.95	4803.78	0.33

APPENDIX F

CONTRACTION SCOUR ESTIMATE

Live-Bed Contraction-Scour Estimate

(occurs in the channel region)

(Option to fill in/modify gray shaded cells. Other cells are selected/calculated automatically.)

Bridge Number:	N/A	**Stream:**	Mill Creek Tributary	**Date of Analysis:**	1/5/22
County:	Richland	**Road:**	County Dirt Road	**Bridge Length:**	100 ft
Physiographic Region:	Coastal Plain	**Multiple Bridge?**	No	**Drainage Area:**	4.12 sq mi
		Relief Bridge?	No		
		Swampy, Poorly Defined Channel?	No		
Latitude:	33 34 36 DMS				
Longitude:	81 30 59 DMS				

Drainage Area Check -- Original Curve (Benedict and others, 2016; Benedict and Caldwell, 2009):	**DA OUTSIDE RANGE (Below)**
Drainage Area Check -- Modified Curve (Benedict and others, 2016; Benedict and Caldwell, 2012):	**DA OUTSIDE RANGE (Below)**

Comparison of Geometric-Contraction Ratios [m]

	m Value	Quality of Source Data
m from model:	0.22	Fair
m from road plans:	No Data	No Data
m from topographic map:	0.50	Not Usable
m from FEMA/Other map:	No Data	No Data
USE m: (from "Site Info" Sheet)	0.22	

m range check -- Original Curve (Benedict and Caldwell, 2009) (m <=0.82):	**OK**
m range check -- Modified Curve (Benedict and Caldwell, 2012) (m <=0.90):	**OK**

**NOTE: The "USE m" value is automatically pulled from the Site Info Sheet.

Guidance:

Original Live-Bed Contraction-Scour Curve:
(Benedict and others, 2016; Benedict and Caldwell, 2009)

NOTE: Only the field envelope curve for live-bed contraction scour is used in the spreadsheet template. The user may refer to Benedict and others (2016) for application of the dimensionless envelope curve, if deemed appropriate.

Limits:
1) For Piedmont and Coastal Plain sites the maximum m =0.82.
2) Limited clear-water scour data suggests that it may be appropriate to extend the live-bed curve beyond a value of 0.82; however caution and judgment must be used.
3) Drainage area should fall within range of the measured data and caution should be used as drainage area approaches limits of data.
4) Because of uncertainty associated with the live-bed contraction-scour data, caution and judgment must be used in the final estimate of live-bed contraction scour.

Modified Live-Bed Contraction-Scour Curve:
(Benedict and others, 2016; Benedict and Caldwell, 2012)

Limits:
1) For Piedmont and Coastal Plain sites the maximum m =0.9.
2) Drainage area should be 200 square miles or less.
3) Because of uncertainty associated with the live-bed contraction-scour data, caution and judgment must be used in the final estimate of live-bed contraction scour.

Live-Bed Contraction-Scour Depth from Envelope Curves (NOTE: Only the Field Envelope Curves are Used)

	Scour Depth	
Original Field Envelope Curve for Live-Bed Contraction-Scour Curve (Benedict and others, 2016; Benedict and Caldwell, 2009):		
Live-bed contraction-scour depth:	1.5	ft
Modified Field Envelope Curve for Live-Bed Contraction-Scour Curve (Benedict and others, 2016; Benedict and Caldwell, 2012):		
Live-bed contraction-scour depth:	0.8	ft
Final Selected Live-Bed Contraction-Scour Depth:		
Final live-bed contraction-scour curve selection:	**Automatic Selection**	
Final selected live-bed contraction-scour depth:	**0.8**	ft
Relative Increase in Theoretical Live-Bed Contraction Scour from the 100- to 500-Year Flows (Benedict and others, 2016):		
500-yr flow coefficient:	1.32	
Live-bed contraction-scour by 500-year flow coefficient:	**1**	ft

Guidance:

Original and Modified Live-Bed Contraction-Scour Curve
(Benedict and others, 2016; Benedict and Caldwell, 2012; Benedict and Caldwell, 2009)

NOTE: Only the field envelope curve for live-bed contraction scour is used in the spreadsheet template. The user may refer to Benedict and others (2016) for application of the dimensionless envelope curve, if deemed appropriate.

1) If drainage area is 200 square miles or less, then use the live-bed contraction-scour estimate based on the modified envelope curve (Benedict and Caldwell, 2012). Otherwise, use the estimate based on the original envelope curve (Benedict and others, 2016; Benedict and Caldwell, 2009).

2) If site is a relief bridge or is swampy with a poorly defined channel, it will be assumed that live-bed contraction scour will not occur and the scour depths in the above cells will be set to "N/A."

Relative Increase in Theoretical Live-Bed Contraction-Scour from the 100- to 500-Year Flows
(Benedict and others, 2016)

1) The 500-year flow adjustment coefficient (K_{500}) is used to calculate the relative abutment scour increase from 100- to 500-year flows.

2) The K_{500} is a helpful tool for gaining perspective on the relative increase of theoretical scour associated with the 100- to 500-year live-bed contraction-scour depth. However, the adjusted envelope curve values should not be considered a definitive estimate of the scour associated with the 500-year flow.

Comments:

1	These and other limitations should be kept in mind when using the envelope curves to assess scour potential. The envelope curves are empirical methods that are based on limited field samples; it is possible that scour could exceed the envelope curves; therefore, application of a safety factor may be prudent. Application of the envelope curves is constrained to the range of data and site characteristics used to develop the envelope curves. The uncertainty associated with the envelope curves increases near the limits of the data range. The live-bed scour data have the largest uncertainty.
2	The envelope curves do not account for unusual site conditions such as: debris; channel bank failures; pressure flow; unusual flow patterns created by unique site conditions; unusual pier geometries; and washout of approach road embankments.
3	The field data generally represent scour associated with flows approaching the 100-year flow magnitude but should not be considered a definitive estimate of the scour depth associated with the 100-year flow. Similarly, the 500-year flow adjustment coefficients can be used to provide perspective on the relative increase in theoretical scour associated with the 100- to 500-year flow condition, but should not be considered a definitive estimate of the scour depth associated with the 500-year flow.
4	Subsurface soils can impede or promote scour. Therefore, assessing the potential effect of subsurface soils on scour is important.

APPENDIX G

NO-RISE / NO-IMPACT CERTIFICATIONS

NO-RISE CERTIFICATION

This document is to certify that I am duly qualified engineer licensed to practice in the State of South Carolina. It is to further certify that the attached technical data supports the fact that the proposed Richland County Conservation Commission Bridge Replacement at **Latitude: 33.83296 Longitude: -80.88602** will not increase the existing base flood elevations on Mill Creek Tributary at unpublished cross-sections in the area of the proposed development.

Provided Across Seal Below

(Signature)

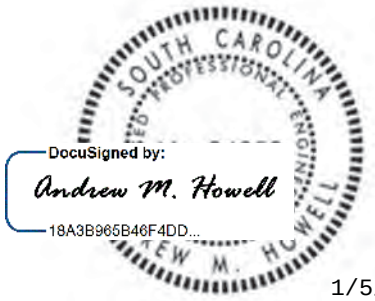
Jan. 5, 2022

(Date)

Hydraulic Engineer

(Title)

Seal:



SEPI
Engineering & Construction, Inc.

1 Glenwood Avenue
Raleigh, NC 27603
Tel:919.789.9977
Fax:919.789.9591
SC COA: C02316

Structure No-Impact Certification

This is to certify that I am a duly qualified engineer licensed to practice in the State of South Carolina. This further certifies that no structures* are located in the areas that would be affected by base flood elevation increases for Mill Creek Tributary in Richland County, South Carolina, associated with the replacement of an existing bridge located at **Latitude: 33.83296 Longitude: -80.88602** near Hopkins, SC.

*A structure, as defined by FEMA 44 CFR 59.1, is a walled and roofed building, including a gas or liquid storage tank that is principally above ground, as well as a manufactured home. Structure, for insurance purposes, means:

(1) A building with two or more outside rigid walls and a fully secured roof that is affixed to a permanent site;

(2) A manufactured home ("a manufactured home," also known as a mobile home, is a structure: built on a permanent chassis, transported to its site in one or more sections, and affixed to a permanent foundation}; or

(3) A travel trailer without wheels, built on a chassis and affixed to a permanent foundation, that is regulated under the community's floodplain management and building ordinances or laws.

Provided Across Seal Below

(Signature)

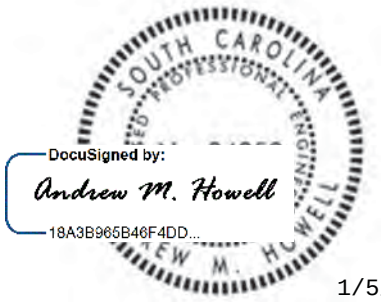
Jan. 5, 2022

(Date)

Hydraulic Engineer

(Title)

Seal:



SEPI
Engineering & Construction, Inc.

1 Glenwood Avenue
Raleigh, NC 27603
Tel:919.789.9977
Fax:919.789.9591
SC COA: C02316

APPENDIX H

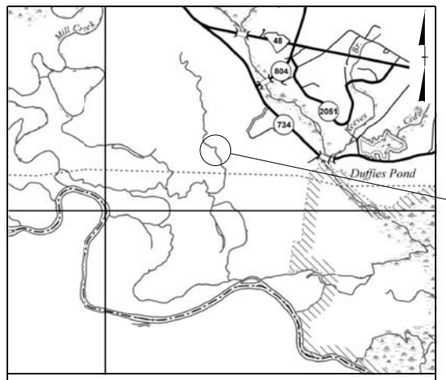
STRUCTURE DESIGN DRAWINGS

STATE	COUNTY PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
S.C.	CPS21075	1	13

RICHLAND COUNTY

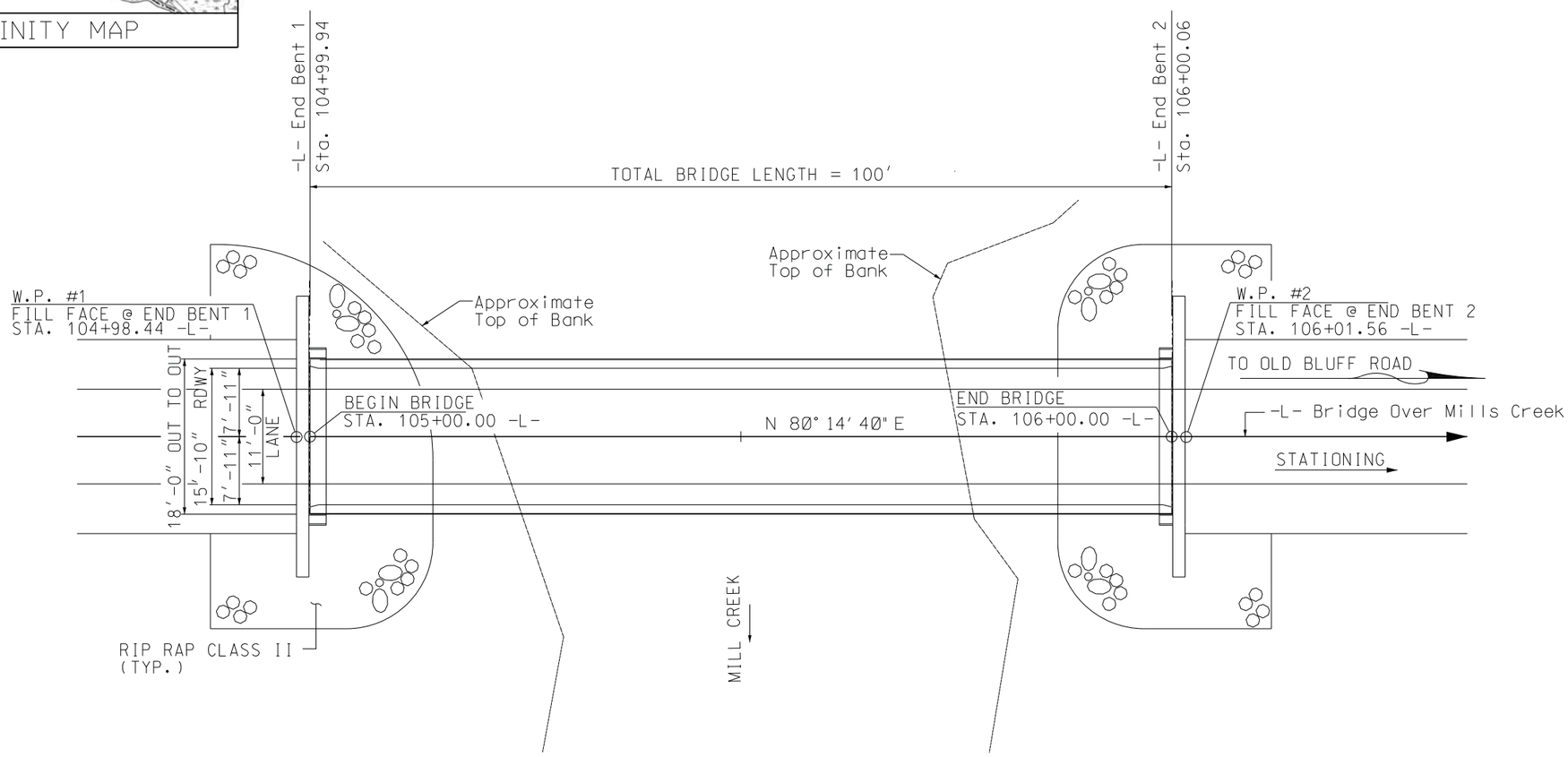
LOCATION: (DIRT ROAD) REPLACE BRIDGE OVER MILL CREEK

TYPE OF WORK: GRADING AND STRUCTURE



VICINITY MAP

NAD 83/
NSRS 2011



GRAPHIC SCALES

PLANS

PROFILE (HORIZONTAL)

PROFILE (VERTICAL)

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT # CPS 21075 = 128.12

LENGTH OF STRUCTURE PROJECT # CPS 21075 = 100.00

TOTAL LENGTH OF PROJECT # CPS 21075 = 228.12

CAROLINA Transportation Engineers & Assoc., PC

Prepared in the Office of:
3600 Arco Corporate Drive, Suite 135
Charlotte, NC 28273
(980) 722-6065
www.carolina_TEA.com
License No. C-4307

2018 STANDARD SPECIFICATIONS

Docusigned by: Jonathan Kounbandith 12/22/2021

PROJECT DESIGN ENGINEER

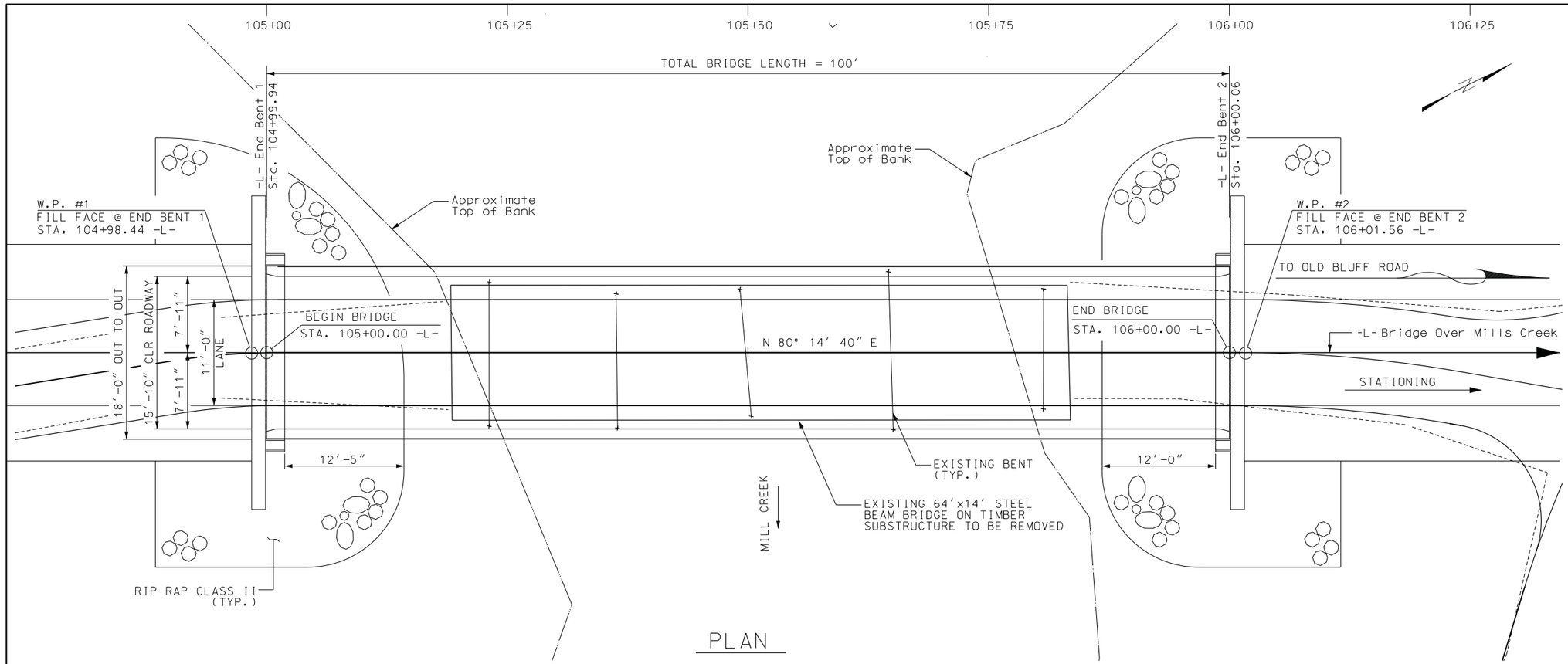
SOUTH CAROLINA CAROLINA TRANSPORTATION ENGINEERS AND ASSOC., P.C. No. 5739 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 31235 JACKSONE KOUNBANDITH

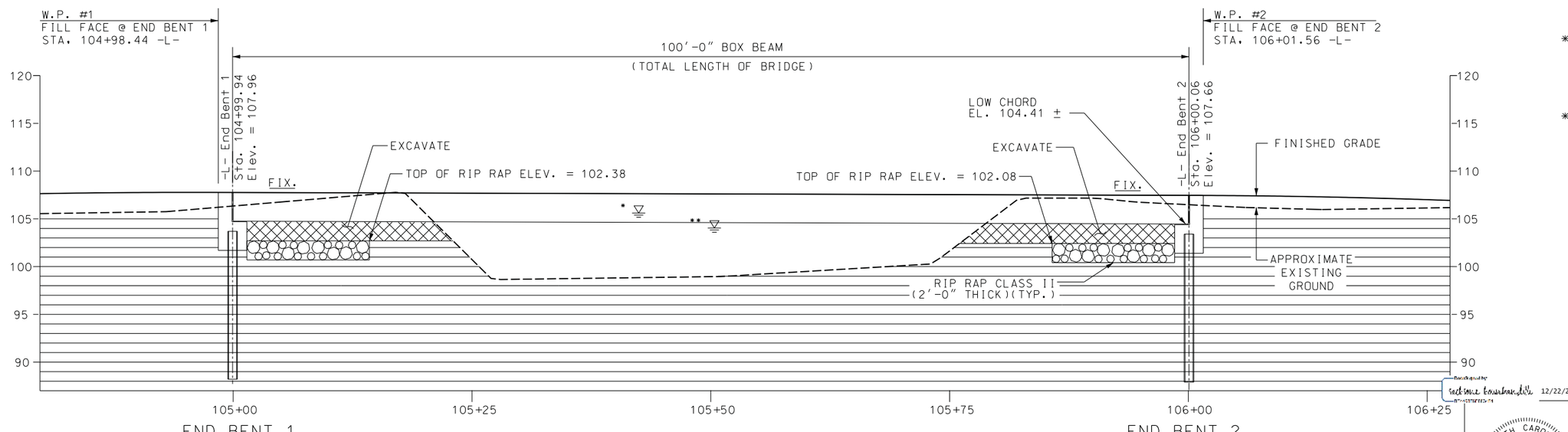
CONTRACT:RC-393-Q-2021 TIP PROJECT:CPS21075

09/08/99

22-DEC-2021 15:20
C:\Users\Jonathan\Dropbox (CarolinaTEA)\Projects\Municipalities\Richland County Conservation Commission\Bridge and Dirt Road Improvement\Bridge\Plans\1_TS.dgn
Jonathan AT JONATHAN-5590



PLAN



SECTION ALONG -L- BRIDGE

GENERAL NOTES:

1. Design data:
   Load and Resistance Factor Design (LRFD) method.
   Live Load: AASHTO HL-93 loading.
   Seismic design is in accordance with SCDOT "Supplemental Design Criteria For Low Volume Bridges with the following parameters:
   Design Acceleration Coefficients:
   Sd1 = 0.25g
2. All materials and workmanship shall be in accordance with the South Carolina Department of Transportation 2007 Specifications for Highway Construction.
3. Concrete for pile caps shall be class A with a minimum 28 days compressive strength of 4000 psi.
4. HP 12x53 piles shall be ATSM A709, grade 50 or approved equivalent.
5. All reinforcing steel shall conform to the most current C.R.S.I. Manual of standard Practice except for ties, stirrups, and welded hoops.
6. All bolts shall have washers and conform to ATSM A325.
7. Field locate any utilities prior to driving piles.
8. All miscellaneous steel shall be ATSM A709, grade 36 or eqivalent.

* 100-YR FLOOD ELEVATION = 105.60

** 10-YR FLOOD ELEVATION = 104.04

PROJECT NO. CPS21075

RICHLAND COUNTY

STATION: 104+10.00

RICHLAND COUNTY

GENERAL DRAWING

DRAWN BY : J. Baker DATE :

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License No. C-4307

factour tounbar, LLC 12/22/2021

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 31235 JACKSONE KOUNBAMOTH

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1			3			TOTAL SHEETS
2			4			13

GENERAL NOTES

FOR OTHER DESIGN DATA AND GENERAL AND STANDARD NOTES, SEE SHEET 2 AND 13.

FOR EROSION CONTROL MEASURES, SEE ROADWAY PLANS.

FOR SUBMITAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCURES, SEE SPECIAL PROVISIONS.

FOUNDATION NOTES

STANDARD SPECIFICATIONS REFERENCED BELOW ARE USDOT FHA STANDARD SPECIFICATIONS FP-14.

FOR PILES, SEE SECTION 711 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO. 1 AND END BENT NO. 2 ARE DESIGNED FOR A FACTORED DRIVING RESISTANCE OF 79 TONS PER PILE.

DRIVE PILES AT END BENT NO. 1 AND END BENT NO. 2 TO A REQUIRED DRIVING RESISTANCE OF 122 TONS PER PILE.

STEEL H-PILE POINTS ARE REQUIRED FOR STEEL H-PILES AT END BENT NO. 1. AND END BENT NO. 2 FOR STEEL PILE POINTS, SEE SECTION 771 OF THE STANDARD SPECIFICATIONS.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 30 TO 50 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT NO. 1 AND END BENT NO. 2. THIS ESTIMATED ENERGY DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SECTION 711 OF THE STANDARD SPECIFICATIONS.

TESTING THE FIRST PRODUCTION PILE ON EITHER END BENT 1 OR END BENT 2 WITH THE PDA DURING DRIVING, RESTRIKING, OR REDRIVING IS REQUIRED. FOR PDA TESTING, SEE SECTION 711 OF THE STANDARD SPECIFICATIONS.

DRIVE PILES OF END BENTS 1 AND 2 TO A FINAL EMBEDMENT OF NO LESS THAN 15 FEET BELOW BOTTOM OF PILE CAP.

TOTAL BILL OF MATERIAL

	3'-0" X 3'-3" PRESTRESSED CONCRETE BOX BEAMS		ELASTOMERIC BEARINGS	CONCRETE PARAPET	HP 12 X 53 STEEL PILES		CLASS A CONCRETE	REINFORCING STEEL	RIP RAP (CLASS II)	PILE DRIVING EQUIPMENT SETUP FOR HP 12x53 STEEL PILES	PILE POINTS	PDA
	NO.	LIN. FT.	EACH	LIN. FT.	NO.	LIN. FT	CU. YARDS	LBS.	TON	EACH	EACH	
SUPERSTRUCTURE	6	600		200								
END BENT 1			6		4	280	12.6	2298	14	4	4	1
END BENT 2			6		4	280	12.6	2298	17	4	4	
TOTAL	6	600	12	200	8	560	25.2	4596	31	8	8	1

PROJECT NO. CPS21075

RICHLAND COUNTY

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SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 31235 SACKSONE KOUNSABOUTH

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GENERAL NOTES

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2			4			13

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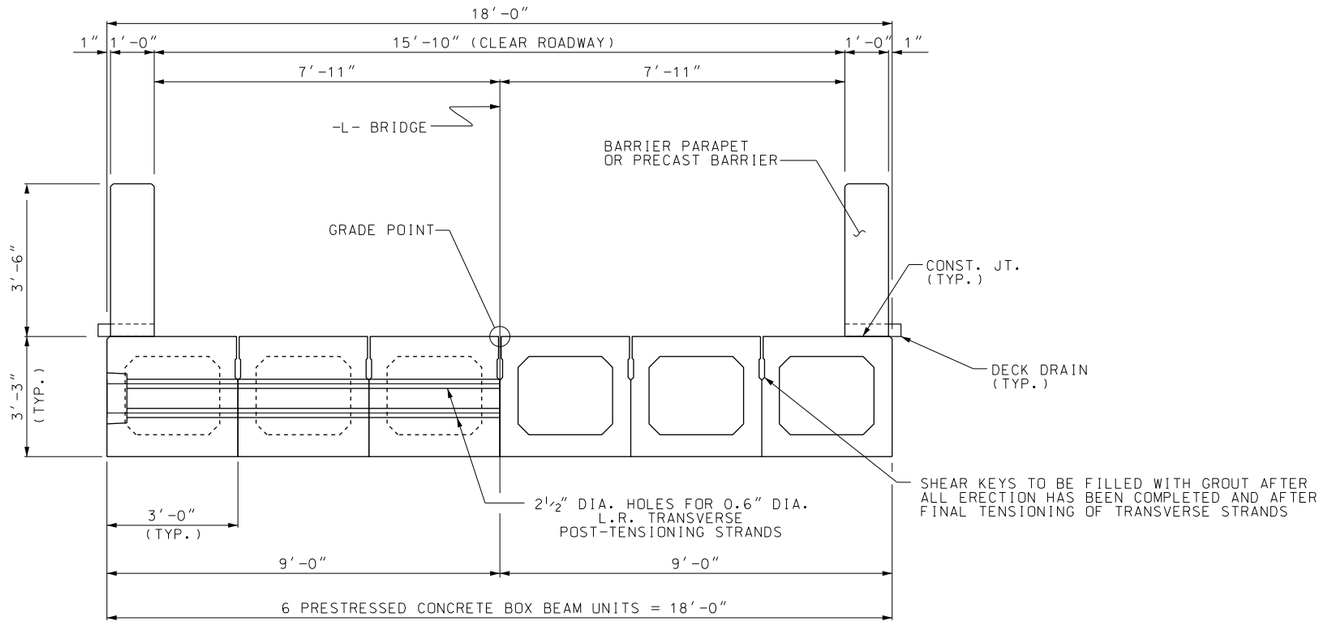
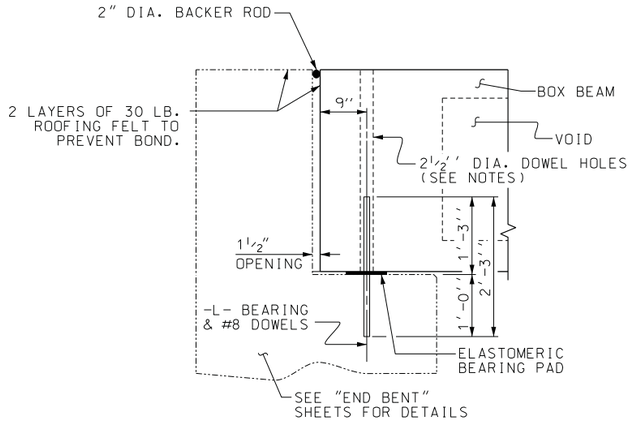


HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

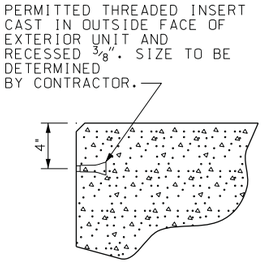
HALF SECTION
THROUGH VOIDS

TYPICAL SECTION

FIXED END



SECTION AT END BENT



THREADED INSERT DETAIL

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE BOX BEAM SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE BOX BEAMS.

FLAME CUTTING OF THE TRANSVERSE POST-TENSIONING STRAND IS NOT ALLOWED.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2½″ ~ DOWEL HOLES AT FIXED ENDS OF BOX BEAM SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE STANDARD SPECIFICATIONS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE BOX BEAM UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6000 PSI.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE BOX BEAM UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO BOX BEAM UNIT ENDS.

VERTICAL GROOVED CONTRACTION JOINTS, ½″ IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL. A VERTICAL CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

THE LOCATION OF THE VOID DRAINS MAY BE SHIFTED SLIGHTLY WHERE NECESSARY TO CLEAR PRESTRESSING STRANDS OR TRANSVERSE REINFORCING STEEL.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE PERMITTED THREADED INSERTS ARE DETAILED AS AN OPTION FOR THE CONTRACTOR TO ATTACH FALSEWORK AND FORMWORK DURING CONSTRUCTION.

THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4′-0″ CENTERS AND GALVANIZED. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

THE PERMITTED THREADED INSERTS SHALL BE GROUTED BY THE CONTRACTOR IMMEDIATELY FOLLOWING REMOVAL OF THE FALSEWORK.

THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

PROJECT NO. CPS21075
RICHLAND COUNTY
STATION: 104+10.00

SHEET 1 OF 5

Docusigned by: Sackstone Koumbarakis 12/22/2021

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RICHLAND COUNTY

STANDARD
3′-0″ X 3′-3″
PRESTRESSED CONCRETE
BOX BEAM UNIT

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			13

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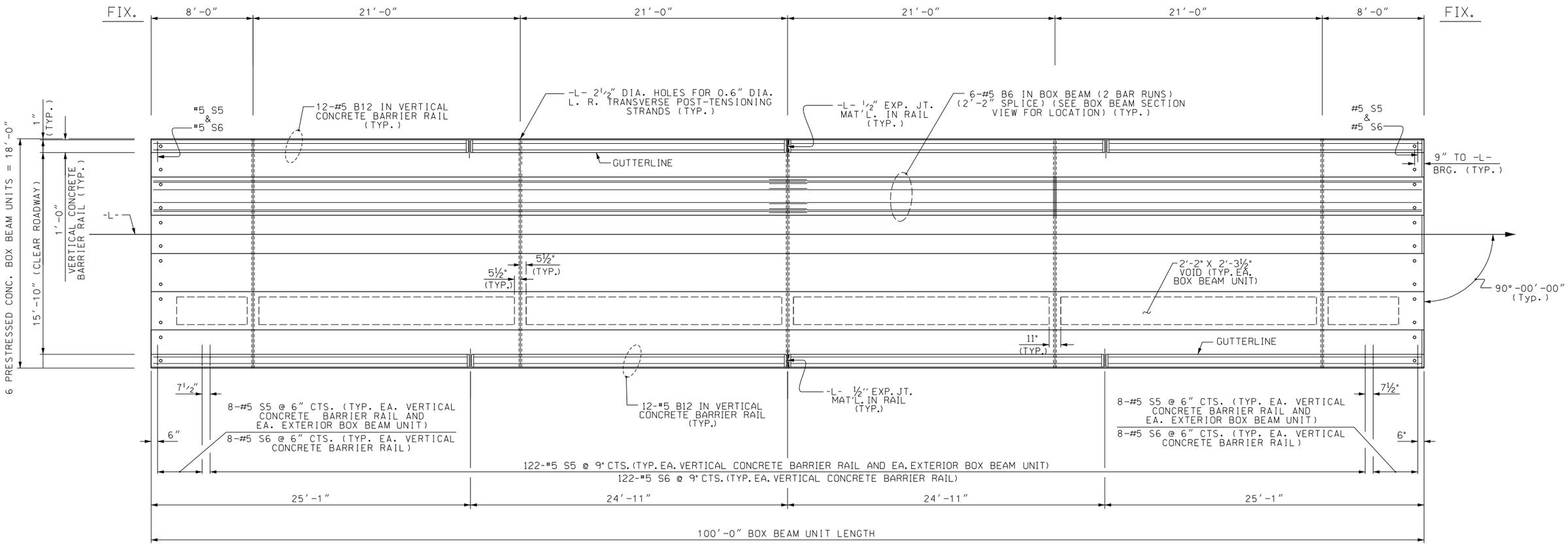
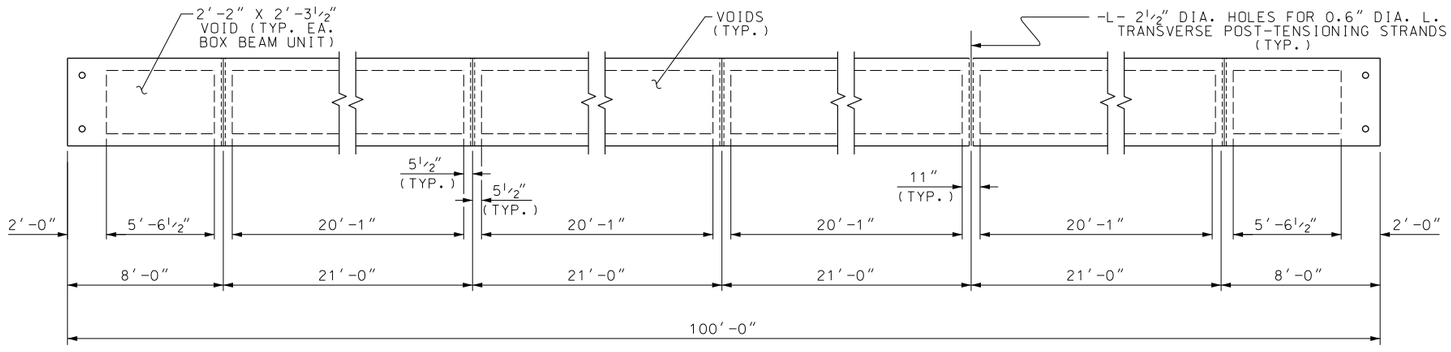


PLAN OF UNIT



DIAPHRAGM AND VOID LAYOUT

PROJECT NO. CPS21075

RICHLAND COUNTY

STATION: 104+10.00

SHEET 2 OF 5

12/22/2021

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RICHLAND COUNTY

PLAN OF 100' UNIT 15'-10" CLEAR ROADWAY 90° SKEW

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
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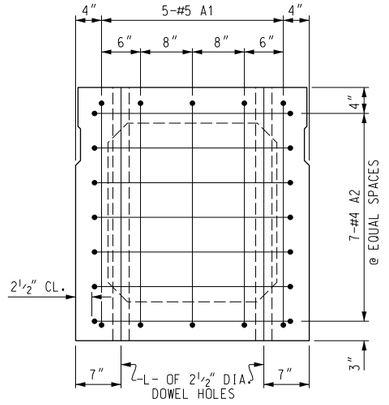
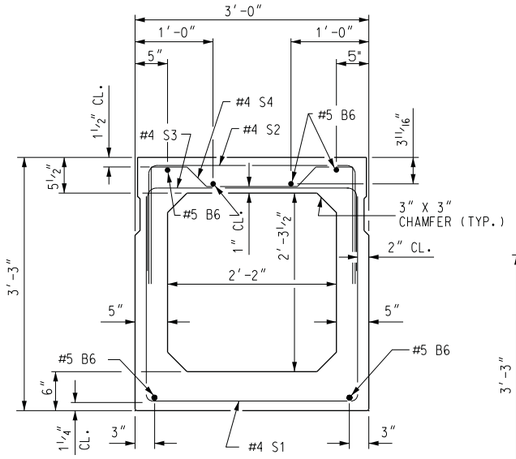


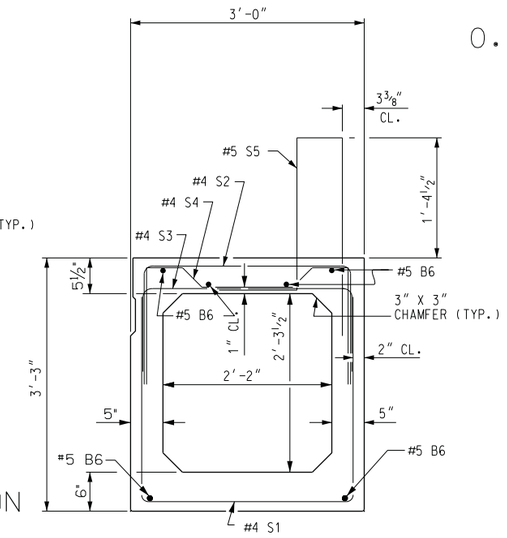
END ELEVATION

SHOWING PLACEMENT OF #5 & #4 "A" BARS AND LOCATION OF DOWEL HOLES.
(INTERIOR BOX BEAM SECTION SHOWN-EXTERIOR SECTION SIMILAR EXCEPT SHEAR KEY LOCATION. STRAND LAYOUT NOT SHOWN.)



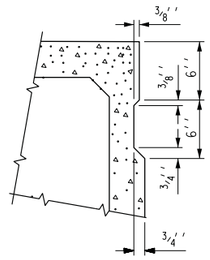
INTERIOR BOX BEAM SECTION

(STRAND LAYOUT NOT SHOWN)



EXTERIOR BOX BEAM SECTION

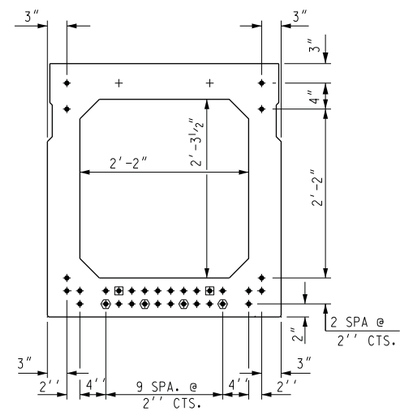
(STRAND LAYOUT NOT SHOWN)



SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR BOX BEAMS.

0.6" DIA. LOW RELAXATION STRAND LAYOUT



TYPICAL STRAND LOCATION

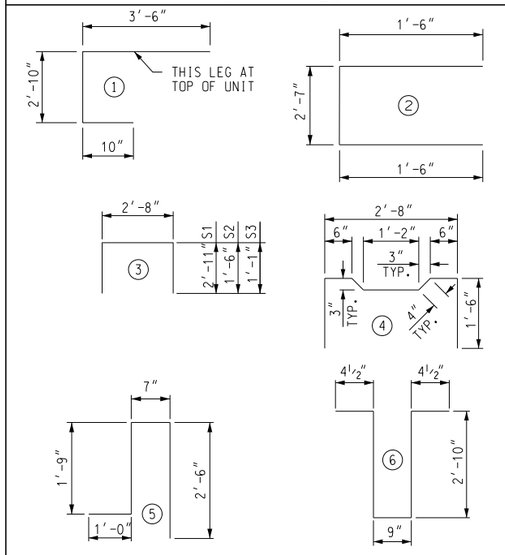
(32 STRANDS REQUIRED)

DEBONDING LEGEND

- ● FULLY BONDED STRANDS
- ◉ STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
- ⬢ STRANDS DEBONDED FOR 12'-0" FROM END OF GIRDER

BOND SHALL BE BROKEN ON STRANDS AS SHOWN FOR THE SPECIFIED LENGTH FROM EACH END OF THE BOX BEAM. SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.

BAR TYPES



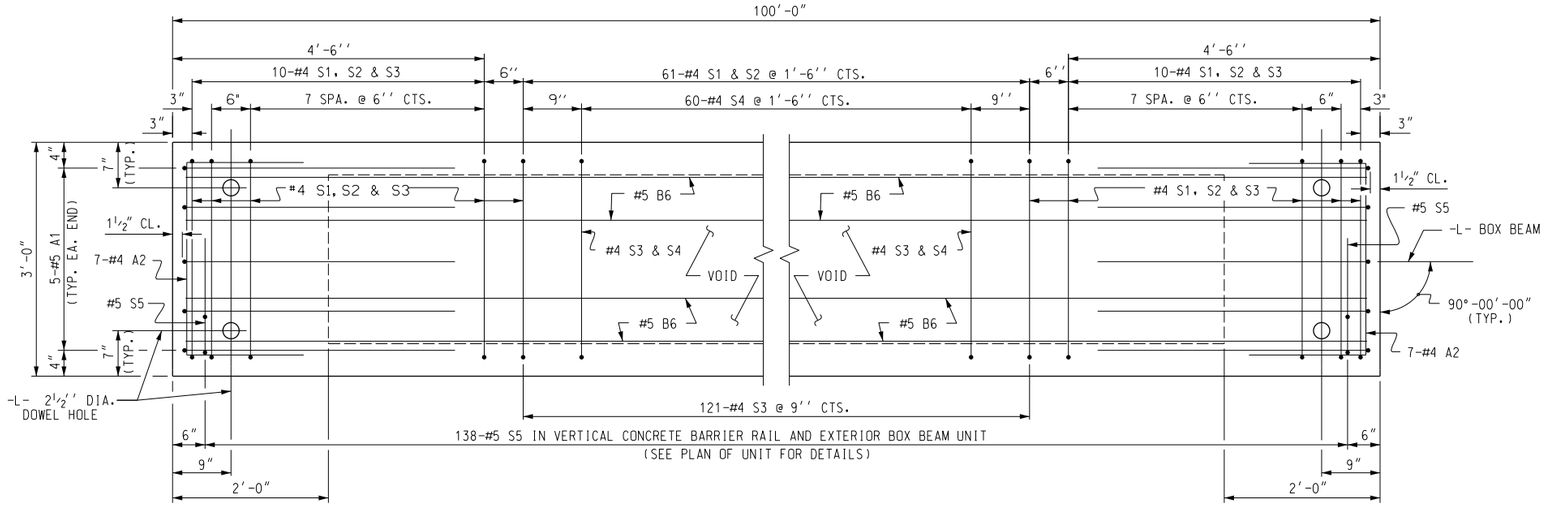
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE BOX BEAM SECTION

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
A1	10	#5	1	7'-2"	75	7'-2"	75
A2	44	#4	2	5'-7"	164	5'-7"	164
B6	12	#5	STR	50'-11"	637	50'-11"	637
K1	15	#4	6	7'-2"	72	7'-2"	72
K2	10	#4	STR	2'-7"	17	2'-7"	17
S1	81	#4	3	8'-6"	460	8'-6"	460
S2	81	#4	3	5'-8"	307	5'-8"	307
S3	141	#4	3	4'-10"	455	4'-10"	455
S4	60	#4	4	5'-10"	234	5'-10"	234
* S5	138	#5	5	5'-10"	840	--	--
REINFORCING STEEL					2421 LBS.		2421 LBS.
* EPOXY COATED REINF. STEEL					840 LBS.		
7500 P.S.I. CONCRETE				19.6	CU. YDS.	19.4	CU. YDS.
0.6" * L.R. STRANDS				No. 32		No. 32	

GRADE 270 STRANDS

	0.6" * L.R.
AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950



PLAN OF BOX BEAM

EXTERIOR UNIT SHOWN. INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S5 BARS.
FOR LOCATION OF DIAPHRAGMS, SEE "PLAN OF UNIT".
FOR THREADED INSERTS, SEE "THREADED INSERT DETAIL".
FOR REINFORCING STEEL IN DIAPHRAGMS, SEE "DOUBLE DIAPHRAGM DETAILS".

PROJECT NO. CPS21075
RICHLAND COUNTY
STATION: 104+10.00

SHEET 3 OF 5

Designed by: 12/22/2021

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SUPERSTRUCTURE DETAILS 3'-3" BOX BEAM

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NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			13

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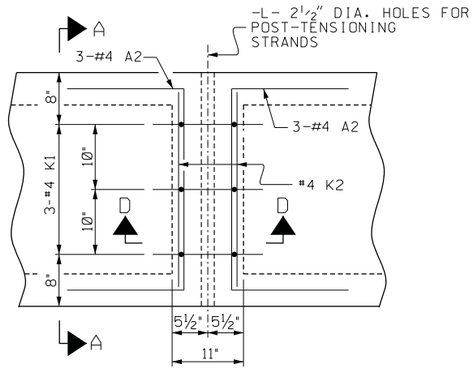
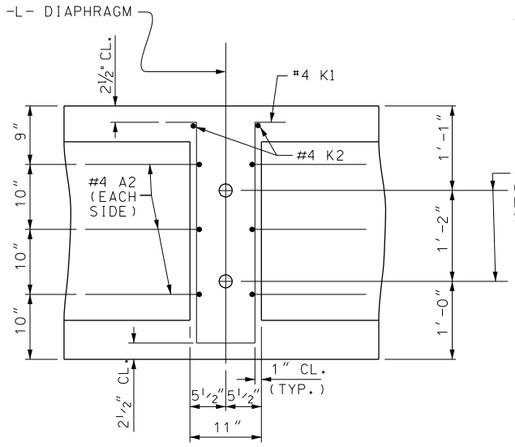
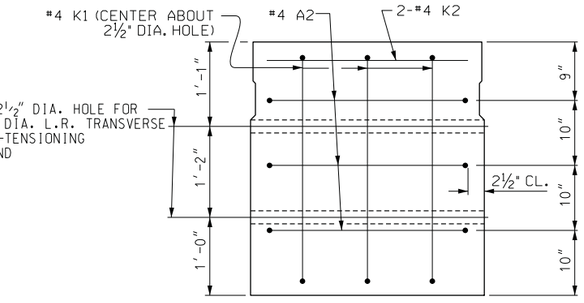


PLAN



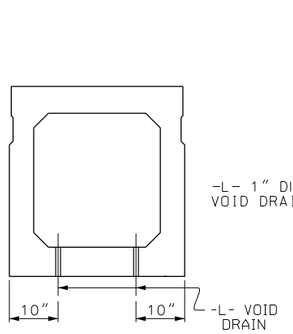
SECTION D-D



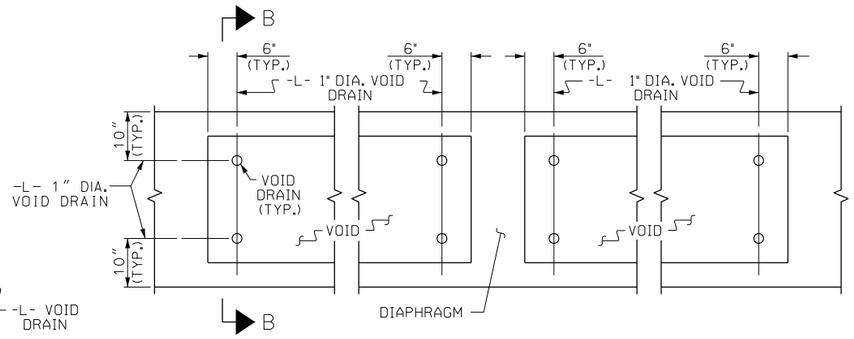
SECTION A-A
VOIDS NOT SHOWN

DOUBLE DIAPHRAGM DETAILS

#4 "S" BARS NOT SHOWN. #4 "S" BARS MAY BE SHIFTED SLIGHTLY TO CLEAR 2½" DIA. HOLE.



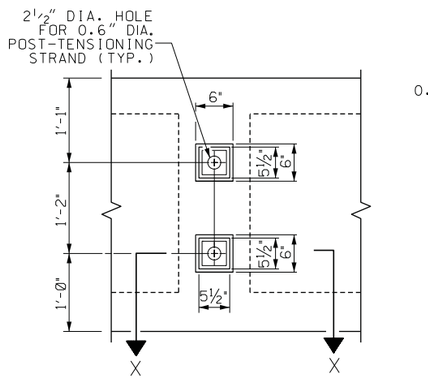
SECTION B-B



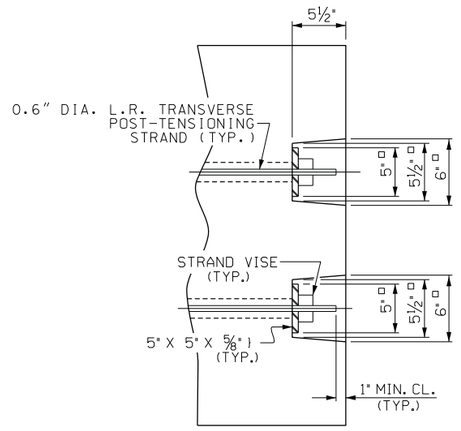
PART PLAN

VOID DRAIN DETAILS

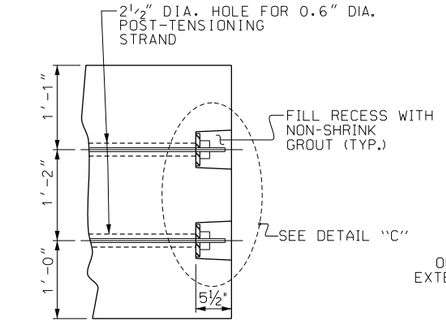
(DIMENSIONS SHOWN ARE TYPICAL FOR EACH VOID)



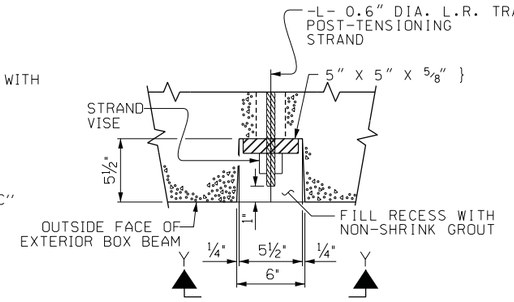
VIEW Y-Y
SHOWING ELEVATION VIEW OF GROUTED RECESS



DETAIL "C"



PART SECTION AT RECESS



SECTION X-X
SHOWING PLAN VIEW OF GROUTED RECESS

GROUTED RECESS DETAIL AT END OF POST-TENSIONED STRANDS OF EXTERIOR BOX BEAM

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 3'-3"
100' BOX BEAM UNIT	0.6" DIA. L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	2" ↑
DEFLECTION DUE TO ** SUPERIMPOSED DEAD LOAD	⅞" ↓
FINAL CAMBER	1⅛" ↑

** INCLUDES FUTURE WEARING SURFACE

PROJECT NO. CPS21075
RICHLAND COUNTY
STATION: 104+10.00

SHEET 4 OF 5

RICHLAND COUNTY

STANDARD

3'-0" X 3'-3" PRESTRESSED CONCRETE BOX BEAM UNIT

PLANS PREPARED BY:
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Rachael Baumbach 12/22/2021

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 31235 SACKSONE KOUNDAMOTH

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REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-7
TOTAL SHEETS 13

DRAWN BY : J. Baker DATE :
CHECKED BY : D. Staton DATE : -
DESIGN ENGINEER OF RECORD: - DATE : -

22-DEC-2021 15:29
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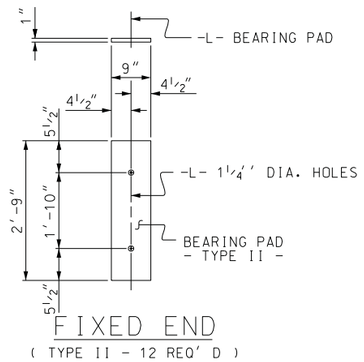
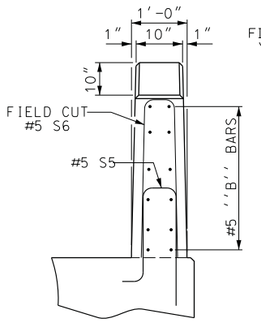
Jonathan AT JONATHAN-5590

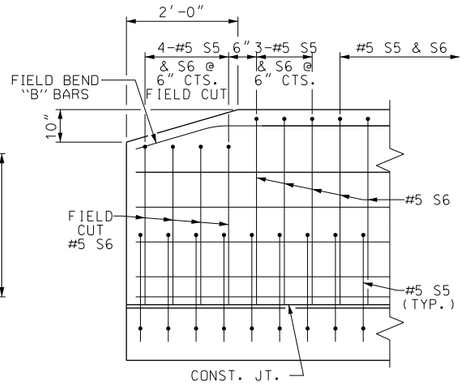


FIXED END

(TYPE II - 12 REQ'D)



END VIEW

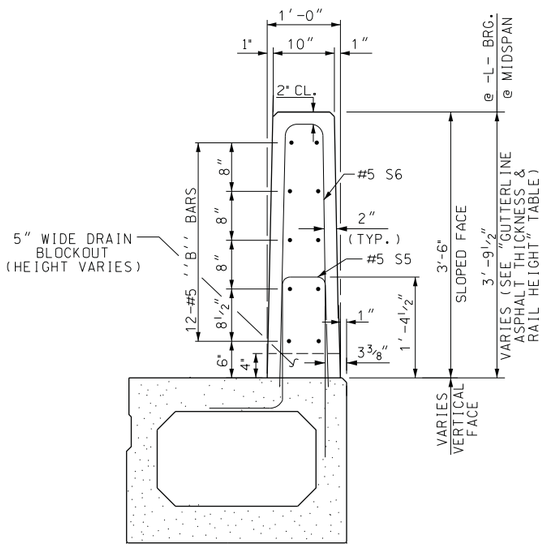


SIDE VIEW

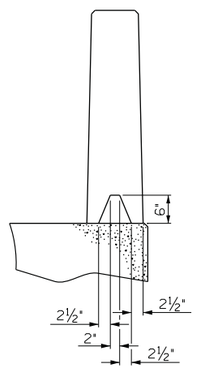
ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

END OF RAIL DETAILS

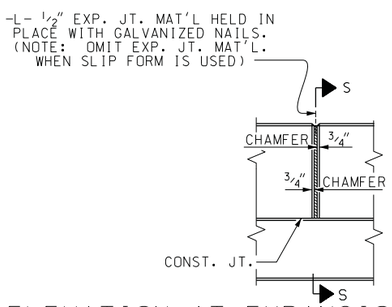


SECTION THRU RAIL



SECTION S-S

AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS

VERTICAL CONCRETE BARRIER RAIL DETAILS

BOX BEAM UNITS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR B.B.	2	100'-0"	200'-0"
INTERIOR B.B.	4	100'-0"	400'-0"
TOTAL	6	———	600'-0"

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL					
BAR	BARS PER PAIR OF EXTERIOR UNITS 100' UNIT	SIZE	TYPE	LENGTH	WEIGHT
• B12	96	#5	STR	24'-7"	2461
• S6	276	#5	1	7'-2"	2063
* EPOXY COATED REINFORCING STEEL			LBS.		4524
CLASS AA CONCRETE			CU.YDS.		25.9
TOTAL VERTICAL CONCRETE BARRIER RAIL			LN. FT.		200.0

DRAWN BY : J. Baker DATE :
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Jonathan AT JONATHAN-5590

Docusigned by: Jackson Kounahmouth 12/22/2021

PLANS PREPARED BY:

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www.carolina_TEA.com

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SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 31235 JACKSONE KOUNAHMOUTH

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PROJECT NO. CPS21075
RICHLAND COUNTY
STATION: 104+10.00

SHEET 5 OF 5

RICHLAND COUNTY

SUPERSTRUCTURE DETAILS 3'-3" BOX BEAM

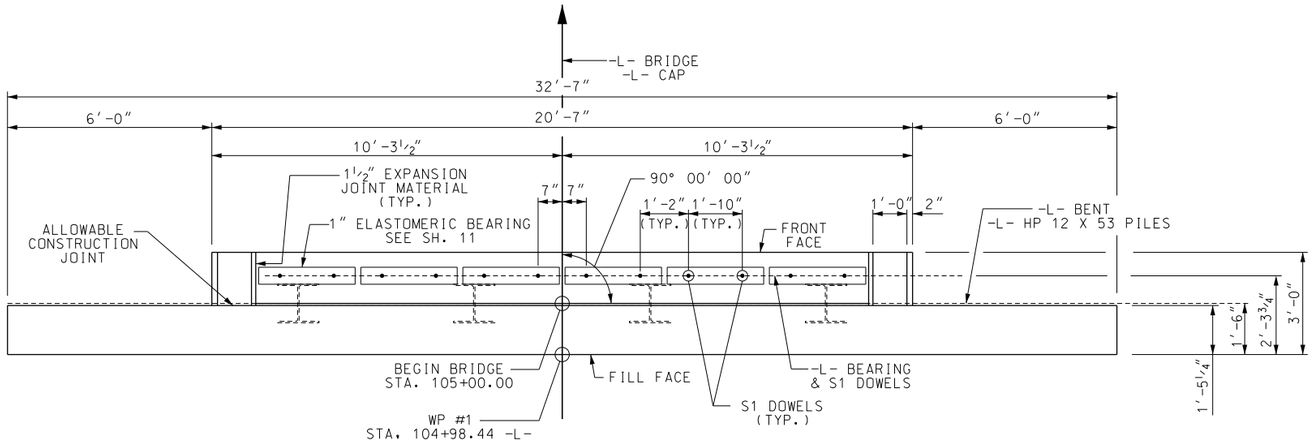
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			13

NOTES

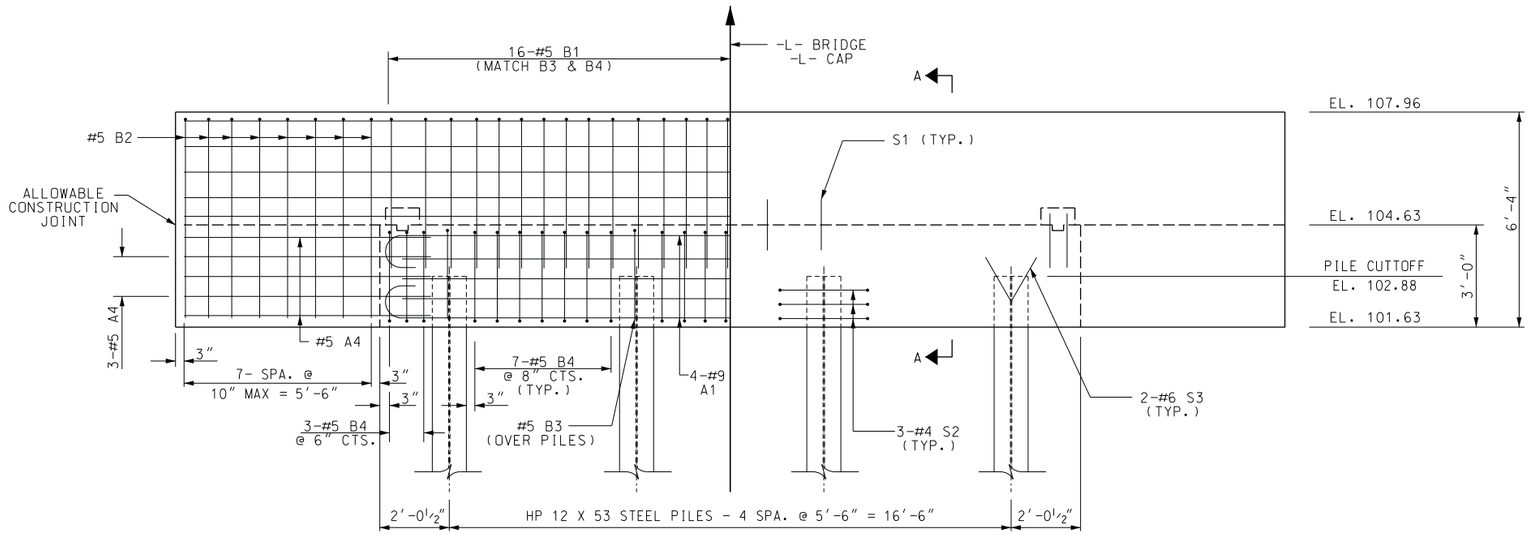
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

FOR PILE SPLICE DETAILS, SEE SHEET 11.

FOR WING DETAILS, SEE SHEET 12.



PLAN



ELEVATION

FOR SECTION A-A, SEE SHEET 11.

PROJECT NO. CPS21075

RICHLAND COUNTY

STATION: 104+10.00

SHEET 1 OF 4

12/22/2021

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SOUTH CAROLINA PROFESSIONAL ENGINEER No. 31235 SACKSONE KOUMBAMOTH

RICHLAND COUNTY

SUBSTRUCTURE

END BENT No. 1

DRAWN BY : J. Baker DATE :

CHECKED BY : D. Staton DATE : -

DESIGN ENGINEER OF RECORD: - DATE : -

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS 13
2			4			

22-DEC-2021 15:31
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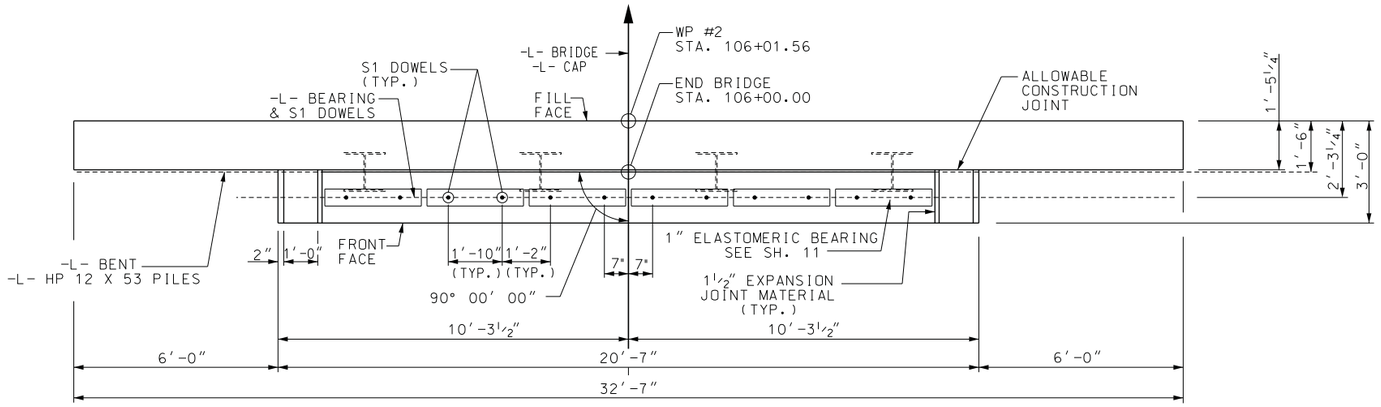
Jonathan AT JONATHAN-5590

NOTES

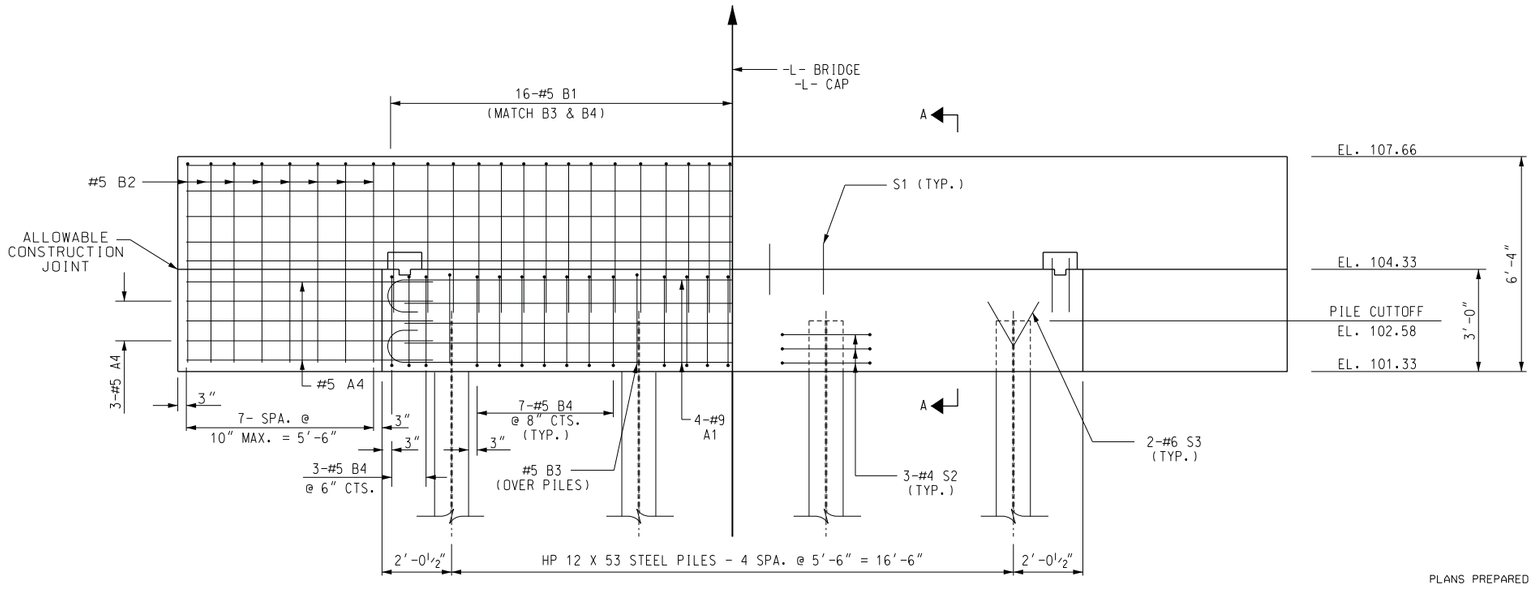
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

FOR PILE SPLICE DETAILS, SEE SHEET 11.

FOR WING DETAILS, SEE SHEET 12.



PLAN



ELEVATION

FOR SECTION A-A, SEE SHEET 11.

PROJECT NO. CPS21075

RICHLAND COUNTY

STATION: 104+10.00

SHEET 2 OF 4

Designed by: 12/22/2021

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RICHLAND COUNTY

SUBSTRUCTURE

END BENT No. 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			13

DRAWN BY : J. Baker DATE :

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DESIGN ENGINEER OF RECORD: - DATE : -

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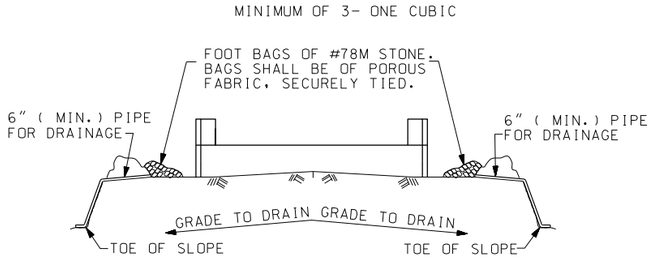
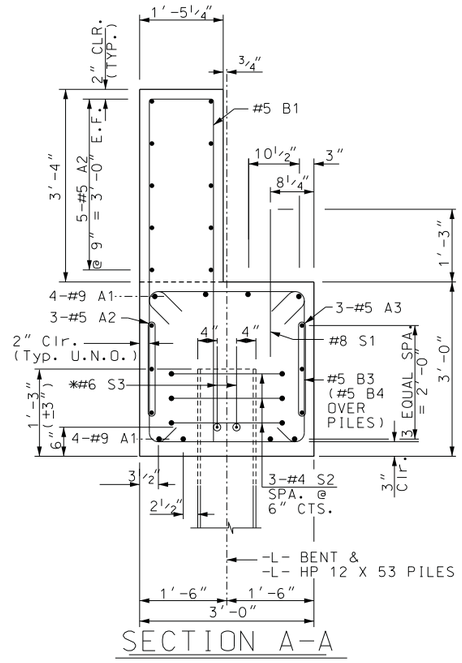


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

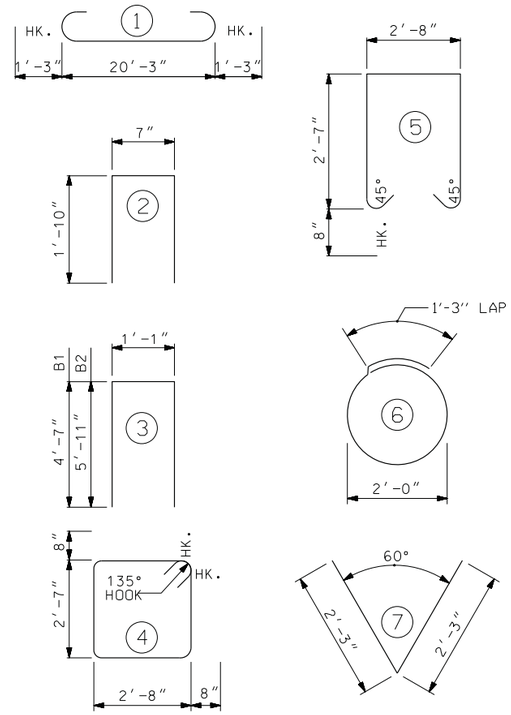
TEMPORARY DRAINAGE AT END BENT



SECTION A-A

* 1" DIA. MIN., 1½" DIA. MAX. HOLE FOR S3 BARS.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT No. 1	END BENT No. 2
HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES
NO: 4 LIN. FT.= 280	NO: 4 LIN. FT.= 280

BILL OF MATERIAL

FOR ONE END BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	8	#9	1	20'-3"	551
A2	13	#5	STR	32'-3"	437
A3	3	#5	STR	20'-3"	63
A4	14	#5	STR	7'-10"	114
B1	32	#5	3	10'-3"	331
B2	16	#5	3	12'-11"	216
B3	4	#5	5	9'-2"	38
B4	27	#5	4	11'-10"	333
K1	4	#5	STR	2'-6"	10
K2	6	#4	2	4'-3"	17
S1	12	#8	STR	2'-3"	72
S2	12	#4	6	7'-6"	60
S3	8	#6	7	4'-6"	54

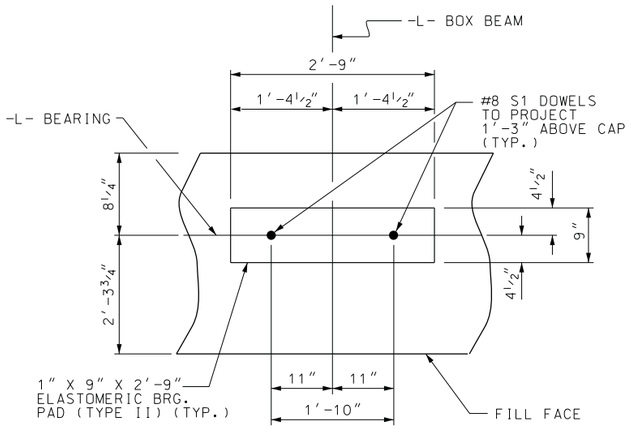
REINFORCING STEEL (FOR ONE END BENT) 2298 LBS

CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

POUR #1 CAP, LOWER PART OF WINGS & COLLARS 7.8 C.Y.

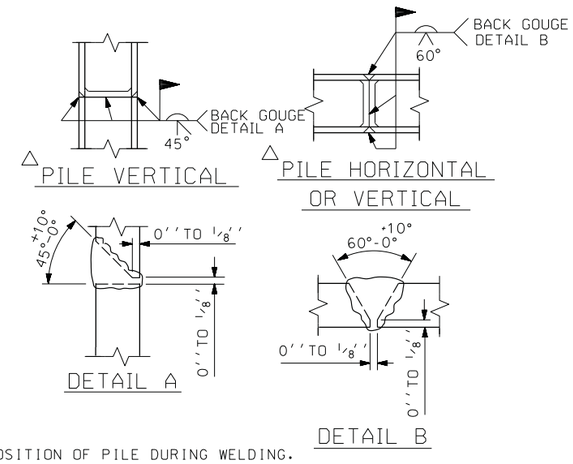
POUR #2 BACKWALL & UPPER PART OF WINGS 4.8 C.Y.

TOTAL CLASS A CONCRETE 12.6 C.Y.



DETAIL "A"

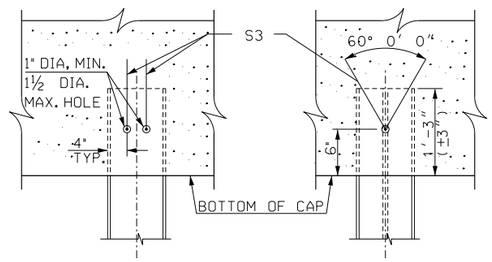
(END BENT No. 1 SHOWN. END BENT No. 2 SIMILAR BY ROTATION)



△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

SCALE- 7/16" = 1'-Ø"



PILE ANCHORAGE DETAIL

PROJECT NO. CPS21075

RICHLAND COUNTY

STATION: 104+10.00

SHEET 3 OF 4

12/22/2021

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END BENT NO. 1 & 2 DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			13

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DESIGN ENGINEER OF RECORD: - DATE :

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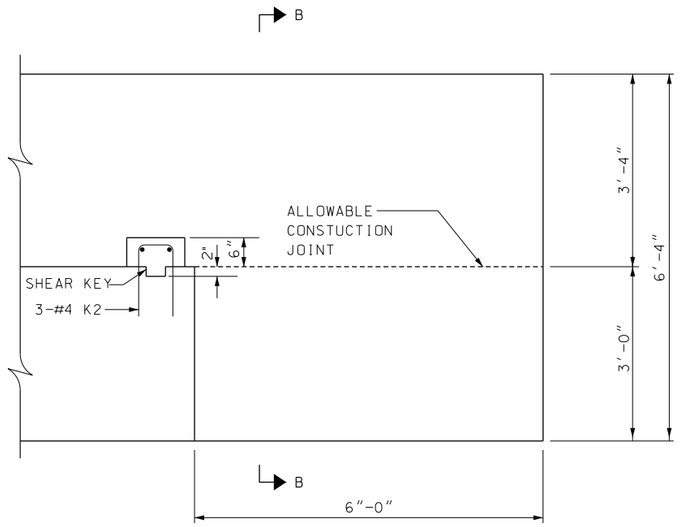
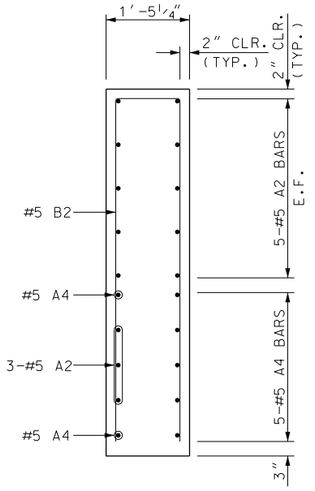
Jonathan AT JONATHAN-5590

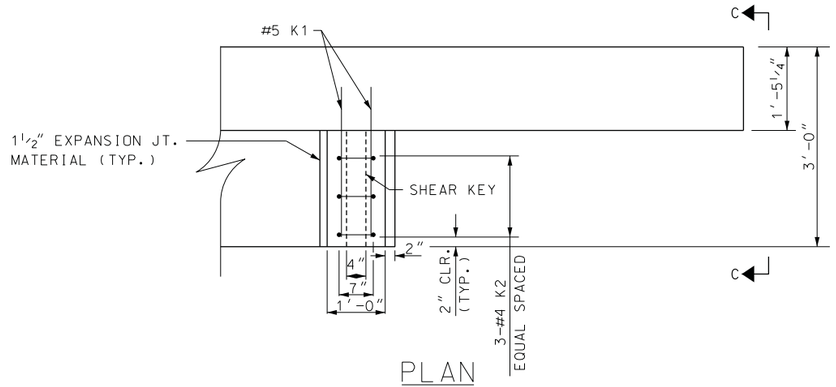


ELEVATION

WINGWALL W1 SHOWN, W2 SIMILAR

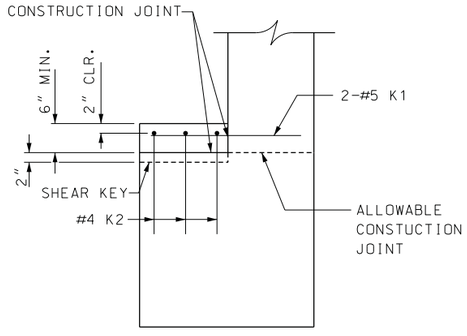


SECTION B-B



PLAN

ABUTMENT REINFORCEMENT
NOT SHOWN FOR CLARITY.



VIEW C-C

LATERAL RESTRAINT

(EB1 SHOWN, EB2 SIMILAR)

PROJECT NO. CPS21075

RICHLAND COUNTY

STATION: 104+10.00

SHEET 4 OF 4

DRAWN BY : J. Baker DATE :

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END BENT WING DETAILS

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			13

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS - - - - - - - - - - - - - - - - A.A.S.H.T.O. (CURRENT)

LIVE LOAD - - - - - - - - - - - - - - - - - - -SEE PLANS

IMPACT ALLOWANCE - - - - - - - - - - - - - - - SEE A.A.S.H.T.O.

STRESS IN EXTREME FIBER OF
STRUCTURAL STEEL - AASHTO M270 GRADE 36 - 20,000 LBS. PER SQ. IN.

- AASHTO M270 GRADE 50W - 27,000 LBS. PER SQ. IN.

- AASHTO M270 GRADE 50 - 27,000 LBS. PER SQ. IN.

REINFORCING STEEL IN TENSION - GRADE 60 - - 24,000 LBS. PER SQ. IN.

CONCRETE IN COMPRESSION - - - - - - - - - - - - 1,200 LBS. PER SQ. IN.

CONCRETE IN SHEAR - - - - - - - - - - - - - - - SEE A.A.S.H.T.O.

STRUCTURAL TIMBER - TREATED OR UNTREATED
EXTREME FIBER STRESS - - - 1,800 LBS. PER SQ. IN.

COMPRESSION PERPENDICULAR TO GRAIN
OF TIMBER - - - - - 375 LBS. PER SQ. IN.

EQUIVALENT FLUID PRESSURE OF EARTH - - - - - 30 LBS. PER CU. FT.
(MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED $^{3}/_{4}$" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO $1^{1}/_{2}$" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A $^{1}/_{4}$" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A $^{1}/_{4}$" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE $^{7}/_{8}$" ⌐ SHEAR STUDS FOR THE $^{3}/_{4}$" ⌐ STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - $^{7}/_{8}$" ⌐ STUDS FOR 4 - $^{3}/_{4}$" ⌐ STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF $^{7}/_{8}$" ⌐ STUDS ALONG THE BEAM AS SHOWN FOR $^{3}/_{4}$" ⌐ STUDS BASED ON THE RATIO OF 3 - $^{7}/_{8}$" ⌐ STUDS FOR 4 - $^{3}/_{4}$" ⌐ STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST $^{5}/_{16}$" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS " BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY $^{1}/_{16}$INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

PROJECT NO. CPS21075

RICHLAND COUNTY

STATION: 104+10.00

DRAWN BY : J. Baker DATE :

CHECKED BY : D. Staton DATE : -

DESIGN ENGINEER OF RECORD: - DATE : -

22-DEC-2021 15:34
$$$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$$$
Jonathan AT JONATHAN-5590

PLANS PREPARED BY:

CAROLINA Transportation Engineers & Assoc. PC

3600 Arco Corprate drive,
Suite 135
Charlotte Nc 28273
(980) 722-6065
www.carolina_TEA.com

License No. C-4307

12/22/2021

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 31235 JACKSONE KOUNGMOUTH

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RICHLAND COUNTY

ENGLISH

JANUARY, 1990

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			13

RICHLAND COUNTY ADMINISTRATION
2020 Hampton Street, Suite 4069
Columbia, SC 29204
803-576-2050

Agenda Briefing

Prepared by:	Michael Maloney	**Title**:	Director
Department:	Public Works	**Division:**	Engineering
Date Prepared:	November 21, 2022	**Meeting Date:**	December 15, 2022
Legal Review	Patrick Wright via email	**Date:**	November 28, 2022
Budget Review	Abhijit Deshpande via email	**Date:**	November 30, 2022
Finance Review	Stacey Hamm via email	**Date:**	November 28, 2022
Approved for consideration:	Assistant County Administrator	John M. Thompson, Ph.D., MBA, CPM, SCCEM	
Meeting/Committee	Administration & Finance		
Subject	Department of Public Works - Road Maintenance Fund		

RECOMMENDED/REQUESTED ACTION:

Staff recommends that County Council approve the release of capital funding from previously-approved Public Works budgets for road improvements ($3,080,700) and capital purchases ($845,000).

Request for Council Reconsideration: ☒ Yes

FIDUCIARY:

Are funds allocated in the department's current fiscal year budget?	☒	Yes	☐	No
If not, is a budget amendment necessary?	☐	Yes	☐	No

ADDITIONAL FISCAL/BUDGETARY MATTERS TO CONSIDER:

Road Maintenance Fund balance at the end of Fiscal Year 2022 (FY-22) was $12,045,868.

Applicable department/grant key and object codes: 1216302000 / 531400
1216302000 / 532200

OFFICE OF PROCUREMENT & CONTRACTING FEEDBACK:

Not applicable.

COUNTY ATTORNEY'S OFFICE FEEDBACK/POSSIBLE AREA(S) OF LEGAL EXPOSURE:

There are no legal concerns regarding this matter.

REGULATORY COMPLIANCE:

Not applicable.

MOTION OF ORIGIN:

There is no associated Council motion of origin.

Council Member	
Meeting	
Date	

STRATEGIC & GENERATIVE DISCUSSION:

The Department of Public Works (DPW) receives revenue via the Road Maintenance Fund to support the maintenance, repair, and improvement of roads in the County Road Maintenance System (CRMS). This revenue is collected through a Road Maintenance Fee (RMF) on vehicle personal property tax bills from residents of Richland County. The RMF generates approximately $6,000,000 per year, of which one-third is directly applied to funding transportation capital improvements such as paved road resurfacing and roadway drainage repair and improvements. The other source of funding for roadways and safety improvements within the CRMS are "C" Funds distributed by the County Transportation Committee (CTC). "C" Funds are allocated on a per project basis at the CTC's discretion to agencies whose projects meet criteria established by the Committee. Richland County competes with the South Carolina Department of Transportation (SCDOT) and City of Columbia for "C" funds.

In a typical year, the Department of Public Works would anticipate receiving half of its project funding from the CTC and half from the RMF. A lawsuit filed in multiple South Carolina counties, to include Richland County, delayed funding capital improvement projects and equipment purchases using the RMF. Roadway projects during this time have been funded only though CTC grants. This funding reduction resulted in half the number of capital road projects in the project pipeline being constructed. During this same time period, heavy equipment purchases have been severely reduced as well.

Not surprisingly, DPW is falling behind in its ability to improve the County road infrastructure and provide excellent facilities to the public (reference County Strategic Goal 4.1.3).

Staff is requesting the ability to access and spend funds budgeted for specific improvement projects and equipment purchases. By making Road Maintenance Fund available once more, staff can again begin to partner with the CTC this fiscal year on much needed improvements to County's infrastructure by providing a local match. Deferred projects and equipment include the following:

Construction	**Cost**
Hobart Rd	$500,000
Pavement Resurfacing	$1,000,000
Fashion/Forum Dr	$1,580,700

Equipment	**Cost**
Vactor Truck	$335,000
Rubber tire loader	$200,000
Paving Machine	$200,000
Mini Excavator	$60,000
Skid Steer Loader	$50,000

It is critical that the County being reinvesting into the public infrastructure within the CRMS to avoid overall deterioration of the system. An investment of seven million dollars annually is needed to maintain the current pavement conditions.

RICHLAND COUNTY ADMINISTRATION
2020 Hampton Street, Suite 4069
Columbia, SC 29204
803-576-2050

Agenda Briefing

Prepared by:	Sandra Haynes	**Title**:	Director
Department:	Animal Services	**Division:**	Animal Care
Date Prepared:	November 16, 2022	**Meeting Date:**	December 15, 2022
Legal Review	Patrick Wright via email	**Date:**	November 28, 2022
Budget Review	Abhijit Deshpande via email	**Date:**	November 30, 2022
Finance Review	Stacey Hamm via email	**Date:**	November 28, 2022
Approved for consideration:	Assistant County Administrator	Aric A Jensen, AICP	
Meeting/Committee	Administration & Finance		
Subject	Intergovernmental Agreement -- City of Forest Acres		

RECOMMENDED/REQUESTED ACTION:

Staff recommends the approval of the standard intergovernmental agreement with the City of Forest Acres. This intergovernmental agreement will replace the agreement previously entered into with the City for animal care services.

Forest Acres is requesting that Council consider waiving the pet license fee for the citizens of the City. The County has intergovernmental agreements with the Towns of Irmo, Eastover, Arcadia Lakes and Blythewood which require their citizens to pay pet licensing fees.

Request for Council Reconsideration: ☒ Yes

FIDUCIARY:

Are funds allocated in the department's current fiscal year budget?	☐	Yes	☒	No
If not, is a budget amendment necessary?	☐	Yes	☒	No

ADDITIONAL FISCAL/BUDGETARY MATTERS TO CONSIDER:

Currently, there are no funds explicitly dedicated to the budget for the intergovernmental agreement. An amendment is not necessary to carry out the duties associated with the intergovernmental agreement.

Applicable department/grant key and object codes: 1100306200 526800

OFFICE OF PROCUREMENT & CONTRACTING FEEDBACK:

Not applicable.

COUNTY ATTORNEY'S OFFICE FEEDBACK/POSSIBLE AREA(S) OF LEGAL EXPOSURE:

There are no legal concerns regarding this matter.

REGULATORY COMPLIANCE:

None applicable

MOTION OF ORIGIN:

There is no associated Council motion of origin.

Council Member	
Meeting	
Date	

STRATEGIC & GENERATIVE DISCUSSION:

The City of Forest Acres wishes to enter into a new agreement with the County to provide animal care and control services to the citizens of the City. The City desires to provide uniformity of animal control regulations in the best interest of its citizenry's health, safety, and general welfare. The agreement will allow Richland County Animal Care Officers to continue to enforce within the City of Forest Acres limits.

To continue with best practices, the City shall adopt Chapter 5 of the County's Code of Ordinances within sixty (60) days of signing the new agreement; this allows Animal Care officers to enforce and issue citations under Chapter 5 of the Richland County Code of Ordinances. The approval of this request will positively impact the City's citizens by providing the same level of service as the citizens of the County, thereby fostering good governance through collaboration with other governments (reference Strategic Plan Goal 1, Objective 1.5). The approval of this agreement will foster positive public relationships with our neighboring municipality.

Staff recommends the approval of the standard intergovernmental agreement with the City of Forest Acres that includes uniform policies and procedures for all of the areas the County services, and that does not include the request to waive the pet licensing fee. This intergovernmental agreement will replace the previous agreement with the City for animal care services.

The City of Forest Acres requests the Council's approval of an alternate agreement that waves the payment of the pet license fee for the Citizens of the City.

Council previously entered into an agreement with the City of Forest Acres on January 17, 2011. This request does not require an ordinance amendment.

ADDITIONAL COMMENTS FOR CONSIDERATION:

ATTACHMENTS:

1. Standard Intergovernmental agreement
2. Intergovernmental Agreement -- Pet Licensing fees waived
3. Cost of services provided to the City for previous years
4. Previous Council approval

STATE OF SOUTH CAROLINA)
)
RICHLAND COUNTY)

INTERGOVERNMENTAL AGREEMENT
(Animal Care)

THIS AGREEMENT entered into this ____ day of _____, 2022, is by and between Richland County (hereinafter the "County") and the City of Forest Acres (hereinafter the City").

RECITALS

WHEREAS, the County and the City mutually entered into an agreement dated February 7, 2012, for animal care services within the City; and

WHEREAS, the City continues to desire the services of the County Animal Care Department for all animal care services; and

WHEREAS, the County is willing to provide the City said animal care services; and

WHEREAS, the parties desire to execute a new agreement for animal care services.

NOW, THEREFORE, it is mutually agreed by and between the parties hereto as follows:

1. The Animal Care Department of the County shall provide such services to secure the enforcement and uniformity of animal control regulations within the City in compliance with the animal control ordinances of the County and in accordance with the laws of the State of South Carolina where applicable.

The County shall provide the same degree, type and level of service as customarily provided to residents of the unincorporated areas of Richland County, which shall include, but not be limited to:

a) Field services shall include patrolling for stray, injured, nuisance and vicious animals and enforcing the County Animal Care Ordinance to include issuance of violation notices, citations and pet license applications. Field services also includes setting dog traps for sick, injured, or aggressive animals upon the request of the City. The County shall be responsible for the investigation and enforcement of animal cruelty, neglect and abandonment of animals. The County shall be responsible for the disposal of deceased animals prepared according to guidelines. The County shall be responsible for public education in the areas of responsible pet ownership.

b) Licensing of animals of the City shall be in accordance with the County Ordinance. The County staff shall be responsible for maintaining records, receiving payment

and issuing tags. The County shall retain all payments received for pet licenses within the City.

c) Animal Housing/Veterinary Services – County shall transport animals to locations contract or designated by the County. The County shall ensure veterinary services for sick or injured animals as set forth in veterinary contract.

d) Rabies Control – The County shall act as agent of the City in relation to animal bites and rabies testing. Activities include but are not limited to investigation of all reported bites and quarantining of biting animals in pursuit to the Department of Health and Environmental Services of South Carolina guidelines and performing of such duties as necessary to prepare and deliver animals for rabies testing.

2. The City shall, within sixty (60) days after signing this Agreement, adopt the current Richland County Animal Care Ordinance, and hereby agrees to timely adopt all subsequent amendments thereto.

3. In any and all instances where an ordinance of the City conflicts, restrains or is unreasonably burdensome to the enforcement of the Richland County Animal Care ordinance adopted by the City, the adopted animal care ordinances shall take precedence. It is hereby declared to be the intent of the parties to give the County exclusive authority regarding the enforcement of such regulations within the territorial limits of the City.

4. This Agreement shall commence on the date set forth above and shall continue unless terminated by either party upon such party giving six months written notice to the other party of its intent to terminate this agreement.

5. This Agreement may be amended, modified or changed only upon the written agreement between the County Council for Richland County and the City Council for Forest Acres.

6. The County shall continue to assess, levy, and collect property taxes from the residents of that portion of the City of Forest Acres which lies within the boundaries of Richland County for the above services. Such assessment and levy shall not exceed that which is assessed and levied on property in the unincorporated areas of Richland County. The taxes generated by such assessment and levy shall be designated as an offset to the costs of providing these services and shall constitute the compensation to the County for the undertaking of these services.

7. This agreement, including all requirements and details outlined in the above

paragraphs, shall apply ONLY to that portion of the City of Forest Acres which lies within the geographical boundaries of Richland County.

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

WITNESSES:

_____

_____

RICHLAND COUNTY

_____

By: Overture Walker, Richland County Council Chairperson

CITY OF FOREST ACRES

_____

_____

By: _____,
City of Forest Acres Mayor

STATE OF SOUTH CAROLINA)
)
RICHLAND COUNTY)

INTERGOVERNMENTAL AGREEMENT
(Animal Care)

THIS AGREEMENT entered into this ____ day of _____, 2022, is by and between Richland County (hereinafter the "County") and the City of Forest Acres (hereinafter the City").

RECITALS

WHEREAS, the County and the City mutually entered into an agreement dated February 7, 2012, for animal care services within the City; and

WHEREAS, the City continues to desire the services of the County Animal Care Department for all animal care services; and

WHEREAS, the County is willing to provide the City said animal care services; and

WHEREAS, the parties desire to execute a new agreement for animal care services.

NOW, THEREFORE, it is mutually agreed by and between the parties hereto as follows:

1. The Animal Care Department of the County shall provide such services to secure the enforcement and uniformity of animal control regulations within the City in compliance with the animal control ordinances of the County and in accordance with the laws of the State of South Carolina where applicable.

The County shall provide the same degree, type and level of service as customarily provided to residents of the unincorporated areas of Richland County, which shall include, but not be limited to:

a) Field services shall include patrolling for stray, injured, nuisance and vicious animals and enforcing the County Animal Care Ordinance to include issuance of violation notices, citations and pet license applications. Field services also includes setting dog traps for sick, injured, or aggressive animals upon the request of the City. The County shall be responsible for the investigation and enforcement of animal cruelty, neglect and abandonment of animals. The County shall be responsible for the disposal of deceased animals prepared according to guidelines. The County shall be responsible for public education in the areas of responsible pet ownership.

b) Licensing of animals of the City shall be in accordance with the County Ordinance. The County shall waive pet licensing fees for residents of the City. The County staff shall be responsible for maintaining records and issuing tags.

c) Animal Housing/Veterinary Services – County shall transport animals to locations contract or designated by the County. The County shall ensure veterinary services for sick or injured animals as set forth in veterinary contract.

d) Rabies Control – The County shall act as agent of the City in relation to animal bites and rabies testing. Activities include but are not limited to investigation of all reported bites and quarantining of biting animals in pursuit to the Department of Health and Environmental Services of South Carolina guidelines and performing of such duties as necessary to prepare and deliver animals for rabies testing.

2. The City shall, within sixty (60) days after signing this Agreement, adopt the current Richland County Animal Care Ordinance, and hereby agrees to timely adopt all subsequent amendments thereto.

3. In any and all instances where an ordinance of the City conflicts, restrains or is unreasonably burdensome to the enforcement of the Richland County Animal Care ordinance adopted by the City, the adopted animal care ordinances shall take precedence. It is hereby declared to be the intent of the parties to give the County exclusive authority regarding the enforcement of such regulations within the territorial limits of the City.

4. This Agreement shall commence on the date set forth above and shall continue unless terminated by either party upon such party giving six months written notice to the other party of its intent to terminate this agreement.

5. This Agreement may be amended, modified or changed only upon the written agreement between the County Council for Richland County and the City Council for Forest Acres.

6. The County shall continue to assess, levy, and collect property taxes from the residents of that portion of the City of Forest Acres which lies within the boundaries of Richland County for the above services. Such assessment and levy shall not exceed that which is assessed and levied on property in the unincorporated areas of Richland County. The taxes generated by such assessment and levy shall be designated as an offset to the costs of providing these services and shall constitute the compensation to the County for the undertaking of these services.

7. This agreement, including all requirements and details outlined in the above paragraphs, shall apply ONLY to that portion of the City of Forest Acres which lies within the geographical boundaries of Richland County.

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

WITNESSES:

_____

_____

RICHLAND COUNTY

_____

By: Overture Walker, Richland County Council Chairperson

CITY OF FOREST ACRES

_____

_____

_____

By: _____,
City of Forest Acres Mayor

City of Forest Acres Complaint Request/Cost Paid

	FY 17/18	FY 18/19	FY 19/20	FY 20/21
Complaints Received	81	64	66	52
No. of Animals Picked up	59	27	21	17
Number of Days Held	187	126	109	89
Total paid for housing	$2,618.00	$3,024.00	$2,616.00	$2,136.00
Emergency Veterinary Services	$123.60	$0.00	$108.75	$352.00
Taxes Paid by Forest Acres	$1,337,949.74	$1,385,003.14	$1,553,497.78	$1,625.688.40

*The number of animals picked up includes cats and dogs.

*FY 20/21 – Animal Care picked up three sick raccoons – No cost

* Two dogs and one cat picked up in the Forest Acres required emergency veterinary services.

Mr. Jackson moved, seconded by Ms. Kennedy, to reconsider the Caughman Creek Property item. The motion failed.

City of Forest Acres Animal Care Intergovernmental Agreement – Ms. Dickerson moved, seconded by Ms. Hutchinson, to approve the committee's recommendation. The vote was in favor.

Authorization of Rules & Appointments Chair's Signature on Ethics Commission Letter – Mr. Malinowski moved, seconded by Mr. Livingston, to authorize the Rules & Appointments Chair to forward a letter to the Ethics Commission. The vote in favor was unanimous.

CITIZEN'S INPUT

No one signed up to speak.

MOTION PERIOD

Whenever a motion is forwarded to full Council from Committee the only way it goes back to Committee is if Council directs it back to Committee [JACKSON] – This item was referred to the Rules & Appointments Committee.

ADJOURNMENT

The meeting adjourned at approximately 7:49 p.m.

Kelvin E. Washington, Sr., Chair

L. Gregory Pearce, Jr., Vice-Chair

Gwendolyn Davis Kennedy

Joyce Dickerson

Valerie Hutchinson

Norman Jackson

Damon Jeter

RICHLAND COUNTY ADMINISTRATION
2020 Hampton Street, Suite 4069
Columbia, SC 29204
803-576-2050

Agenda Briefing

Prepared by:	Sandra Haynes	**Title**:	Director
Department:	Animal Services	**Division:**	Animal Care
Date Prepared:	November 16, 2022	**Meeting Date:**	December 15, 2022
Legal Review	Patrick Wright via email	**Date:**	November 28, 2022
Budget Review	Abhijit Deshpande via email	**Date:**	December 1, 2022
Finance Review	Stacey Hamm via email	**Date:**	November 28, 2022
Approved for consideration:	Assistant County Administrator	Aric A Jensen, AICP	
Meeting/Committee	Administration & Finance		
Subject	Intergovernmental Agreement -- Town of Irmo		

RECOMMENDED/REQUESTED ACTION:

Staff recommends the approval of the intergovernmental agreement with the Town of Irmo. This intergovernmental will replace the agreement previously entered into with the Town for animal care services.

Request for Council Reconsideration: ☒ Yes

FIDUCIARY:

Are funds allocated in the department's current fiscal year budget?	☐	Yes	☒	No
If not, is a budget amendment necessary?	☐	Yes	☒	No

ADDITIONAL FISCAL/BUDGETARY MATTERS TO CONSIDER:

Currently, there are no funds explicitly dedicated to the budget for the intergovernmental agreement. An amendment is not necessary to carry out the duties associated with the intergovernmental agreement.

Applicable department/grant key and object codes: 1100306200.526800

OFFICE OF PROCUREMENT & CONTRACTING FEEDBACK:

Not applicable.

COUNTY ATTORNEY'S OFFICE FEEDBACK/POSSIBLE AREA(S) OF LEGAL EXPOSURE:

There are no legal concerns regarding this matter.

REGULATORY COMPLIANCE:

None applicable.

MOTION OF ORIGIN:

There is no associated Council motion of origin.

Council Member	
Meeting	
Date	

STRATEGIC & GENERATIVE DISCUSSION:

The Town of Irmo wishes to enter into a new agreement with the County to provide animal care and control services to the citizens of the Town. The Town desires to provide uniformity of animal control regulations in the best interest of its citizenry's health, safety, and general welfare. The agreement will allow Richland County Animal Care Officers to continue to enforce in the Town of Irmo.

To continue with best practices, the Town shall adopt Chapter 5 of the Richland County Code of Ordinances within sixty (60) days of signing the new agreement; this allows Animal Care officers to enforce and issue citations under Chapter 5 of the Richland County Code of Ordinances. The approval of this request will positively impact the Town's citizens by providing the same level of service as the citizens of the County, thereby fostering good governance through collaboration with other governments (reference Strategic Plan Goal 1, Objective 1.5). The approval of this agreement will foster positive public relationships with our neighboring municipality.

Council previously entered into an agreement with the Town of Irmo on February 1, 2011. This request does not require an ordinance amendment.

ADDITIONAL COMMENTS FOR CONSIDERATION:

ATTACHMENTS:

1. Intergovernmental agreement
2. Cost of services provided to the Town for previous years
3. Council approval of the previous agreement

STATE OF SOUTH CAROLINA)
)
RICHLAND COUNTY)

INTERGOVERNMENTAL AGREEMENT
(Animal Care)

THIS AGREEMENT entered into this ____ day of _____, 2022, is by and between Richland County (hereinafter the "County") and the Town of Irmo (hereinafter the “Town”).

RECITALS

WHEREAS, the County and the Town mutually entered into an agreement dated February 15, 2021, for animal care services within the Town; and

WHEREAS, the Town continues to desire the services of the County Animal Care Department for all animal care services; and

WHEREAS, the County is willing to provide the Town said animal care services; and

WHEREAS, the parties desire to execute a new agreement for animal care services.

NOW, THEREFORE, it is mutually agreed by and between the parties hereto as follows:

1. The Animal Care Department of the County shall provide such services to secure the enforcement and uniformity of animal control regulations within the Town in compliance with the animal control ordinances of the County and in accordance with the laws of the State of South Carolina where applicable.

The County shall provide the same degree, type and level of service as customarily provided to residents of the unincorporated areas of Richland County, which shall include, but not be limited to:

a) Field services shall include patrolling for stray, injured, nuisance and vicious animals and enforcing the County Animal Care Ordinance to include issuance of violation notices, citations and pet license applications. The County shall be responsible for the investigation and enforcement of animal cruelty, neglect and abandonment of animals. The County shall be responsible for the disposal of deceased animals prepared according to guidelines. The County shall be responsible for public education in the areas of responsible pet ownership.

b) Licensing of animals of the Town shall be in accordance with the County Ordinance. The County staff shall be responsible for maintaining records, receiving payment

and issuing tags. The County shall retain all payments received for pet licenses within the Town.

c) Animal Housing/Veterinary Services – County shall transport animals to locations contract or designated by the County. The County shall ensure veterinary services for sick or injured animals as set forth in veterinary contract.

d) Rabies Control – The County shall act as agent of the Town in relation to animal bites and rabies testing. Activities include but are not limited to investigation of all reported bites and quarantining of biting animals in pursuit to the Department of Health and Environmental Services of South Carolina guidelines and performing of such duties as necessary to prepare and deliver animals for rabies testing.

2. The Town shall, within sixty (60) days after signing this Agreement, adopt the current Richland County Animal Care Ordinance, and hereby agrees to timely adopt all subsequent amendments thereto.

3. In any and all instances where an ordinance of the Town conflicts, restrains or is unreasonably burdensome to the enforcement of the Richland County Animal Care ordinance adopted by the Town, the adopted animal care ordinances shall take precedence. It is hereby declared to be the intent of the parties to give the County exclusive authority regarding the enforcement of such regulations within the territorial limits of the Town.

4. This Agreement shall commence on the date set forth above and shall continue unless terminated by either party upon such party giving six months written notice to the other party of its intent to terminate this agreement.

5. This Agreement may be amended, modified or changed only upon the written agreement between the County Council for Richland County and the Town Council for Irmo.

6. The County shall continue to assess, levy, and collect property taxes from the residents of that portion of the Town of Irmo which lies within the boundaries of Richland County for the above services. Such assessment and levy shall not exceed that which is assessed and levied on property in the unincorporated areas of Richland County. The taxes generated by such assessment and levy shall be designated as an offset to the costs of providing these services and shall constitute the compensation to the County for the undertaking of these services.

7. This agreement, including all requirements and details outlined in the above paragraphs, shall apply ONLY to that portion of the Town of Irmo which lies within the

geographical boundaries of Richland County.

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

WITNESSES:

_____

_____

RICHLAND COUNTY

_____

By: Overture Walker, Richland County Council Chairperson

_____

_____

TOWN OF IRMO

_____

By: _____, Irmo Mayor

	FY 17/18	FY 18/19	FY 19/20	FY 20/21
Complaints Received	163	191	143	114
No. of Animals Picked up	69	50	32	25
Number of Days Held	294	249	123	139
Total paid for housing	$4,116.00	$5,976.00	$2,952.00	$3,336.00
Emergency Veterinary Services	$642.70	$211.35	$443.15	$491.15
Taxes Paid by the Town of Irmo	$1,123,443.56	$1,306,368.71	$1,475,995.16	$1,513,353.68

*The number of animals picked up includes cats and dogs.

*FY 17/18 - Animal Care picked up one guinea pig – No cost

*FY 19/20 – Animal Care picked up one chicken – ($144.00). This cost includes the housing.

*FY 20/21 – Animal Care picked up one sick raccoon – No cost

* Four dogs and six cats picked up in the Town of Irmo required emergency veterinary services.

the "Emergency Planning Zone (EPZ)" of the V. C. Summer Nuclear Plant, which is located in Fairfield County [SECOND READING]

- **An Ordinance Amending the Richland County Code of Ordinances; Chapter 26, Land Development; Article VII, General Development, Site and Performance Standards; Section 26-180, Signs; Subsection (I), On-Premises Signs Permitted in the General Commercial District; Paragraph (4), Height; so as to the maximum height for on-premises signs in the GC (General Commercial) District [SECOND READING]**
- **Construction Services/Detention Center Chiller Project**
- **Judicial Center and Administration Building Lighting Upgrades**
- **Kershaw County IGA Screaming Eagle Landfill**
- **Recreation for Adults/Seniors**

Ms. Hutchinson moved, seconded by Mr. Pearce, to approve the consent items. The vote in was unanimous.

FIRST READING

Sale of Property to Vulcan – Mr. Washington, seconded by Ms. Dickerson, to approve this item. The vote in favor was unanimous.

REPORT OF DEVELOPMENT AND SERVICES COMMITTEE

Richland County North Paving Contract RC-008-CN-1011 – Ms. Kennedy moved, seconded by Ms. Dickerson, to approve this item. The vote in favor was unanimous.

Richland County Membership in the U. S. Green Building Council – Mr. Washington moved, seconded by Ms. Dickerson, to approve this item. A discussion took place.

The vote was in favor.

The Town of Irmo Animal Care Intergovernmental Agreement – Ms. Hutchinson stated that the committee recommended approval of this item. The vote in favor was unanimous.

To amend the existing Intergovernmental Agreement with the Town of Arcadia Lakes for Road Maintenance, Drainage Maintenance, Plan Review, Inspection, and NPDES Stormwater Permit Compliance, dated July 14, 2003 – Ms. Hutchinson stated that the committee recommended approval of this item. The vote in favor was unanimous.

REPORT OF ADMINISTRATION AND FINANCE COMMITTEE

A Resolution in support of the Central Midlands Council of Governments' pursuit of grant funding from the Department of Defense – Mr. Malinowski moved, seconded

RICHLAND COUNTY ADMINISTRATION
2020 Hampton Street, Suite 4069
Columbia, SC 29204
803-576-2050

Agenda Briefing

Prepared by:	Sandra Haynes	**Title**:	Director
Department:	Animal Services	**Division:**	Animal Care
Date Prepared:	November 16, 2022	**Meeting Date:**	December 15, 2022
Legal Review	Patrick Wright via email	**Date:**	November 28, 2022
Budget Review	Abhijit Deshpande via email	**Date:**	November 30, 2022
Finance Review	Stacey Hamm via email	**Date:**	November 28, 2022
Approved for consideration:	Assistant County Administrator	Aric A Jensen, AICP	
Meeting/Committee	Administration & Finance		
Subject	Intergovernmental Agreement -- Town of Eastover		

RECOMMENDED/REQUESTED ACTION:

Staff recommends the approval of the intergovernmental agreement with the Town of Eastover. This intergovernmental will replace the agreement previously entered into with the Town for animal care services.

Request for Council Reconsideration: ☒ Yes

FIDUCIARY:

Are funds allocated in the department's current fiscal year budget?	☐	Yes	☒	No
If not, is a budget amendment necessary?	☐	Yes	☒	No

ADDITIONAL FISCAL/BUDGETARY MATTERS TO CONSIDER:

Currently, there are no funds explicitly dedicated to the budget for the intergovernmental agreement. An amendment is not necessary to carry out the duties associated with the intergovernmental agreement.

Applicable department/grant key and object codes: 1100306200 526800

OFFICE OF PROCUREMENT & CONTRACTING FEEDBACK:

Not applicable.

COUNTY ATTORNEY'S OFFICE FEEDBACK/POSSIBLE AREA(S) OF LEGAL EXPOSURE:

There are no legal concerns regarding this matter.

REGULATORY COMPLIANCE:

None applicable

MOTION OF ORIGIN:

There is no associated Council motion of origin.

Council Member	
Meeting	
Date	

STRATEGIC & GENERATIVE DISCUSSION:

The Town of Eastover wishes to enter into a new agreement with the County to provide animal care and control services to the citizens of the Town. The Town desires to provide uniformity of animal control regulations in the best interest of its citizenry's health, safety, and general welfare. The agreement will allow Richland County Animal Care officers to continue to enforce in the Town of Eastover

To continue with best practices, the Town shall adopt Chapter 5 of the Richland County Code of Ordinances within sixty (60) days of signing the new agreement; this allows Animal Care officers to enforce and issue citations under Chapter 5 of the Richland County Code of Ordinances. The approval of this request will positively impact the Town's citizens by providing the same level of service as the citizens of the County, thereby fostering good governance through collaboration with other governments (reference Strategic Plan Goal 1, Objective 1.5). The approval of this agreement will foster positive public relationships with our neighboring municipality.

Council previously entered into an agreement with the Town of Eastover on February 7, 2012. This request does not require an ordinance amendment.

If this request is denied, Animal Care will no longer provide services to the Town of Eastover.

ADDITIONAL COMMENTS FOR CONSIDERATION:

ATTACHMENTS:

1. Intergovernmental agreement
2. Cost of services provided to the Town for previous years
3. Council regular session meeting minutes of February 7, 2012

STATE OF SOUTH CAROLINA)
)
RICHLAND COUNTY)

INTERGOVERNMENTAL AGREEMENT
(Animal Care)

THIS AGREEMENT entered into this ____ day of _____, 2022, is by and between Richland County (hereinafter the "County") and the Town of Eastover (hereinafter the “Town”).

RECITALS

WHEREAS, the County and the Town mutually entered into an agreement dated February 21, 2012, for animal care services within the Town; and

WHEREAS, the Town continues to desire the services of the County Animal Care Department for all animal care services; and

WHEREAS, the County is willing to provide the Town said animal care services; and

WHEREAS, the parties desire to execute a new agreement for animal care services.

NOW, THEREFORE, it is mutually agreed by and between the parties hereto as follows:

1. The Animal Care Department of the County shall provide such services to secure the enforcement and uniformity of animal control regulations within the Town in compliance with the animal control ordinances of the County and in accordance with the laws of the State of South Carolina where applicable.

The County shall provide the same degree, type and level of service as customarily provided to residents of the unincorporated areas of Richland County, which shall include, but not be limited to:

a) Field services shall include patrolling for stray, injured, nuisance and vicious animals and enforcing the County Animal Care Ordinance to include issuance of violation notices, citations and pet license applications. The County shall be responsible for the investigation and enforcement of animal cruelty, neglect and abandonment of animals. The County shall be responsible for the disposal of deceased animals prepared according to guidelines. The County shall be responsible for public education in the areas of responsible pet ownership.

b) Licensing of animals of the Town shall be in accordance with the County Ordinance. The County staff shall be responsible for maintaining records, receiving payment

and issuing tags. The County shall retain all payments received for pet licenses within the Town.

c) Animal Housing/Veterinary Services – County shall transport animals to locations contract or designated by the County. The County shall ensure veterinary services for sick or injured animals as set forth in veterinary contract.

d) Rabies Control – The County shall act as agent of the Town in relation to animal bites and rabies testing. Activities include but are not limited to investigation of all reported bites and quarantining of biting animals in pursuit to the Department of Health and Environmental Services of South Carolina guidelines and performing of such duties as necessary to prepare and deliver animals for rabies testing.

2. The Town shall, within sixty (60) days after signing this Agreement, adopt the current Richland County Animal Care Ordinance, and hereby agrees to timely adopt all subsequent amendments thereto.

3. In any and all instances where an ordinance of the Town conflicts, restrains or is unreasonably burdensome to the enforcement of the Richland County Animal Care ordinance adopted by the Town, the adopted animal care ordinances shall take precedence. It is hereby declared to be the intent of the parties to give the County exclusive authority regarding the enforcement of such regulations within the territorial limits of the Town.

4. This Agreement shall commence on the date set forth above and shall continue unless terminated by either party upon such party giving six months written notice to the other party of its intent to terminate this agreement.

5. This Agreement may be amended, modified or changed only upon the written agreement between the County Council for Richland County and the Town Council for Eastover.

6. The County shall continue to assess, levy, and collect property taxes from the residents of that portion of the Town of Eastover which lies within the boundaries of Richland County for the above services. Such assessment and levy shall not exceed that which is assessed and levied on property in the unincorporated areas of Richland County. The taxes generated by such assessment and levy shall be designated as an offset to the costs of providing these services and shall constitute the compensation to the County for the undertaking of these services.

7. This agreement, including all requirements and details outlined in the above paragraphs, shall apply ONLY to that portion of the Town of Eastover which lies within the

geographical boundaries of Richland County.

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

WITNESSES:

_____

_____

RICHLAND COUNTY

_____

By: Overture Walker, Richland County Council Chairperson

_____

_____

TOWN OF EASTOVER

_____

By: _____, Eastover Mayor

Attachment 2

Town of Eastover Complaint Request/Cost Paid

	FY 17/18	FY 18/19	FY 19/20	FY 20/21
Complaints Received	45	45	31	20
No. of Animals Picked up	34	29	10	10
Number of Days Held	169	181	42	40
Total paid for housing	$2,366.00	$4,344.00	$1,008.00	$960.00
Emergency Veterinary Services	$0.00	$0.00	$0.00	$0.00
Taxes Paid by the Town of Eastover	$57,877.70	$57,031.44	$53,945.75	$56,308.76

*The number of animals picked up includes cats and dogs.

- Rezoning a portion of TMS numbers 09309-03-07/08/09/10 from General Commercial to Residential Multi-Family, Medium Density
- Town of Eastover Animal Care Intergovernmental Agreement
- An Ordinance Amending the Fiscal Year 2011-2012 General Fund Annual Budget to appropriate $29,2003 of General Fund Undesignated Fund Balance to the Treasurer's Office for the purchase of a new AS400 computer system [FIRST READING]
- An Ordinance Amending the Fiscal Year 2011-2012 General Fund Annual Budget to appropriate $30,803 of General Fund Undesignated Fund Balance to the Auditor's Office for the purchase of a new AS400 computer system and printers [FIRST READING]
- An Ordinance Amending the Fiscal Year 2011-2012 General Fund Annual Budget to appropriate $45,500 of General Fund Undesignated Fund Balance to the Auditor's Office for the printing of tax bills and software updates [FIRST READING]
- An Ordinance Amending the Richland County Code of Ordinances; Chapter 16, Licenses and Miscellaneous Business Regulations; Article I, In General; Section 16-7, Deductions, Exemptions, Charitable Organizations, and Determination of Classification; so as to allow the deduction of Interstate Commerce Income from Gross Income [FIRST READING]
- An Ordinance to repeal Ordinance Number 055-08HR in its entirety, and to ensure that businesses are not harmed by such repeal [FIRST READING]
- Credentialing System Equipment Project
- Curtiss-Wright Hangar
- Forensic Laboratory Enhancement Grant—Sheriff's Department
- RCSD Entry Deputy Pay Increase FY12

Ms. Hutchinson moved, seconded by Ms. Dickerson, to approve the consent items. The vote in favor was unanimous.

THIRD READING

An Ordinance Amending the Richland County Code of Ordinances; Chapter 5, Animals and Fowl, so as to clarify sections dealing with authority of officers, conditions of

RICHLAND COUNTY ADMINISTRATION
2020 Hampton Street, Suite 4069
Columbia, SC 29204
803-576-2050

Informational Agenda Briefing

Prepared by:	Lori J. Thomas	**Title**:	Assistant County Administrator
Department:	Administration	**Division:**	
Date Prepared:	November 7, 2022	**Meeting Date:**	November 17, 2022
Approved for consideration:	County Administrator	Leonardo Brown, MBA, CPM	
Meeting/Committee	Administration and Finance		
Subject:	Reporting for Outside Entities Receiving Fiscal Support from Richland County		

BACKGROUND:

During the fiscal 2023 budget process, Councilmember Bill Malinowski, District 2, made the following motion at the June 7, 2022 Regular Session Council meeting:

> "*Any agency receiving funds from Richland County must provide an accounting for those funds prior to a request for funds in the next fiscal year budget.*"

At present, Richland County provides funding from different sources (including pass-through state and federal grants, conservation, neighborhood improvement, hospitality tax, accommodations tax, discretionary funds and lump sum awards) to over 100 entities.

CURRENT STANDARD

Each of the County's internal programs that award funds has some form of required reporting (please see attachments); for those that are part of a federal or state award, the requirements of those applicable programs are imposed. The exceptions to these are awards to entities in support of a State agency for services provided in Richland County (Columbia Area Mental Health) or those based upon collections of specific revenue sources (Lexington Richland Area Drug Abuse Council) in which the non-profit publishes their own audited financial reports (https://www.flipsnack.com/lradac/fy21-annual-report.html).

RECOMMENDATIONS

Staff recognizes there is a wide range of reporting requirements based on the numerous programs the County offers. Additionally, the Community Impact Grant Committee will be considering new methodology and processes for awarding what has historically composed the discretionary grant and lump sum awards to organizations. As modifications as considered, the Committee may consider reporting processes and compliance as a part of their recommendations.

Staff recommends that this item be deferred and revisited for changes to the reports to become more consistent, streamlined, and standardized following recommendations from the Community Impact Grant Committee to the full Council in the spring of 2023.

As always, staff stands ready to support Council in their efforts to assist all Richland County citizens.

ATTACHMENTS:

1. Discretionary Mid-Year Report
2. Discretionary Final Report
3. Conservation Report
4. Hospitality Tax Mid Year Report
5. Hospitality Tax Final Report
6. Accommodations Tax Mid-Year Report
7. Accommodations Tax Final Report

Attachment 1

Discretionary Grant Mid-Year Financial Report

Due: January 31, 2023 - for grant funds expended July 1 – December 31, 2022.

Organization: _____

Contact: _____

Phone: _____ **Email:** _____

Report Notes:

- Agencies receiving FY23 Discretionary funds must complete and submit this form even if no FY23 Discretionary grant funds were spent prior to December 31, 2022.
- If your program/event ended prior to January 1, 2023, you must submit a Discretionary Grant Final Report in lieu of the Mid-Year Report.
- Programmatic information will be collected on the Final Report Form once your program is complete.

FY22 DISCRETIONARY GRANT MID-YEAR FINANCIAL ACTIVITY

$_____ Amount of County Discretionary Grant funds spent between July 1 and December 31, 2022. **This number must equal the total of amount of expenses listed on your itemized list of expenditures that is a required attachment to this report.**

$_____ Amount of FY23 Discretionary Grant funds requested from Richland County between July 1 and December 31, 2022. Reminder that all County grant funds must be spent by June 30, 2023. The amount spent by December 31, 2022 and the amount drawn down by December 31 do not have to match.

REQUIRED ATTACHMENTS

___**Grant Expenses List -** Please attach an **itemized list of grant expenditures** that includes vendor name, amount, expense purpose, and date paid. Grantees must submit an itemized list of all Discretionary Grant expenses between July 1 and December 31, 2022.

___**Copies of valid invoices and proof of payment for each item in the itemized Discretionary Grant Expenditure list.** Proof of payment is a copy of a cancelled check, bank statement showing a cleared check or credit card receipt. All grant expenses must tie to expenses outlined in the application budget.

Failure to produce completed, accurate reports may result in withholding of future grant allocations.

ORGANIZATION SIGNATURE:

Provide signature of the Authorizing Official within organization, verifying accuracy of above statements and attachments.

_____ _____

Name Title

_____ _____

Signature Date

For questions, please call Matiah Pough, Grants Manager at 803.576.5459.

Richland County Budget and Grants Management P.O. Box 192 Columbia, SC 29202 Fax: 803.576.2138 Email: grantsmgmt@richlandcountysc.gov

Attachment 2

FY23 Discretionary Grant Final Report

Funds Received July 1, 2022 – June 30, 2023

Organization: _____

Contact: _____

Phone: _____ **Email:** _____

Project Name: _____

Grant Amount: $ _____ **Total Cost of Project:** $ _____

Project Dates: _____

Please answer the questions below. You may add as many extra lines as needed in order to give a complete, yet concise answer. Reports should not be hand-written.

1. Were you able to complete the project as stated in your original application? ____ Yes ____ No
Please describe the effect of this program on the community. If you answered no, state any problems you encountered. (In this section, please also describe the population served by including the number of people participating and any demographics.)

2. Describe the outcomes of the project. Describe the evaluation practices used in measuring the program.

3. Describe any collaborative partnerships associated with this program. Please state the partner and their role(s). Please include any partnerships with organizations located within Richland County that have similar missions as your organization.

REQUIRED ATTACHMENTS

___ **Grant Expenses List -** Attach an **itemized list of expenditures** not included in the Mid-Year report that includes vendor name, amount, expense purpose, and date paid.

___ **Copies of valid invoices and proof of payment** for each grant expenditure. Proof of payment is a copy of a cancelled check, bank statement showing a cleared check or credit card receipt. All grant expenses must tie to expenses outlined in the application budget. **All expenditures should match up to payment requests and original grant budget.**

___ **Samples of acknowledgement of** Richland County's support.

ORGANIZATION SIGNATURE:

Provide signature of official within organization, verifying accuracy of above statements. Failure to produce completed, accurate reports may result in withholding of future grant allocations.

_____ _____

Name Title

_____ _____

Signature Date

For questions, please call Matiah Pough, Grants Manager at 803.576.5459.

Richland County Budget and Grants Management P.O. Box 192 Columbia, SC 29202 Fax 803.576.2138 Email grantsmgmt@richlandcountysc.gov

Conservation Grants Program Final Report

Grant Number:

Organization:

Project Name:

1. Provide a summary of work completed under this grant. **Submit photos electronically of completed project.**

2. List actual expenditures by category.

3. List each source of match, amount and type (cash, donated labor, materials, etc.)

4. Provide a copy of any written or digital materials produced as a result of this grant.

5. How was RCCC acknowledged for this project?

Submitted by: Date:

Conserving Richland County's Natural and Historic Legacy

2020 Hampton Street ▪ Room 3063A
Columbia, SC 29204
(803) 576-2083

Conservation Grants Program Quarterly Report

☐ October 10, 2022 ☐ January 9, 2023 ☐ April 10, 2023

Grant Number:

Organization:

Project Name:

1. Description of work accomplished: (Include brief narrative description of project activities, % activities complete); **Submit photos electronically.**

2. What problems have you encountered?

3. County expenditures to date; match documented to date

4. Timeline for remainder of work

Submitted by: Date:

FY23 Hospitality Tax Grant Mid-Year Financial Report

Due: January 31, 2023 for grant funds expended July 1 – December 31, 2022.

Organization: _____

Contact: _____

Phone: _____ **Email:** _____

Report Notes:

- Agencies receiving FY23 H-tax funds must complete and submit this form even if no FY23 H-tax grant funds were spent prior to December 31, 2022.
- If your program/event ended prior to January 1, 2023, you must submit a Hospitality Tax Final Report in lieu of the Mid-Year Report.
- Programmatic information will be collected on the Final Report Form once your program is complete.

FY23 H-TAX GRANT MID-YEAR FINANCIAL ACTIVITY

$_____ Amount of County H-tax funds spent between July 1 and December 31, 2022. **This number must equal the total of amount of expenses listed on your itemized list of expenditures that is a required attachment to this report.**

$_____ Amount of FY23 H-tax funds requested from Richland County between July 1 and December 31, 2022. Reminder that all County grant funds must be spent by June 30, 2023. The amount spent by December 31, 2022 and the amount drawn down by December 31 do not have to match.

REQUIRED ATTACHMENTS

___**Grant Expenses List-** Please attach an **itemized list of grant expenditures** that includes vendor name, amount, expense purpose, and date paid. Grantees must submit an itemized list of all H-tax expenses between July 1 and December 31, 2022.

___**Copies of valid invoices and proof of payment for each item in the itemized H-tax Expenditure list.** Proof of payment is a copy of a cancelled check, bank statement showing a cleared check or credit card receipt. All grant expenses must tie to expenses outlined in the application budget.

Failure to produce completed, accurate reports may result in withholding of future grant allocations.

ORGANIZATION SIGNATURE:

Provide signature of the Authorizing Official within organization, verifying accuracy of above statements and attachments.

_____ _____

Name Title

_____ _____

Signature Date

For questions, please call Matiah Pough, Grants Manager at 803.576.5459.

Richland County Budget and Grants Management P.O. Box 192 Columbia, SC 29202 Fax: 803.576.2238 Email: grantsmgmt@richlandcountysc.gov

Hospitality Tax Grant Final Report Form

Funds Received FY2023: July 1, 2022 – June 30, 2023

Attachment 5

Organization: _____

Contact: _____

Phone: _____ **Email:** _____

Project Name: _____

Grant Amount: $ _____ **Project Dates:** _____

Please answer the questions below. You may add as many extra lines as needed in order to give a complete, yet concise answer. Reports should not be hand written.

PROJECT OUTCOMES

1. Were you able to complete the project as stated in your original application? ___Yes ___No
Describe project success and state any problems you encountered.

2. How has this project increased tourism and visitation to unincorporated Richland County?

3. Provide a detailed description of how your organization serves the citizens of unincorporated Richland County (Transportation, education programs, recreation, discounted programs, etc.)

4. Describe how your project worked with businesses that collect Hospitality Tax in unincorporated Richland County (Any area outside the city limits of Columbia, Forest Acres, Arcadia Lakes and Blythewood).

5. Briefly describe the marketing efforts to promote your program. Be sure to include how you reached out to tourists.

6. How did your organization determine the attendance figures (see below)? Describe methods of tracking attendance and tourism numbers. Describe methods for determining meal and overnight numbers. If you have zip code summary data, please attach or email to grantsmgmt@richlandcountysc.gov.

PROJECT BUDGET DATA:

Provide two years of financial data for the project(s) outlined in your application even if you did not receive H-Tax funding in the previous fiscal year. If FY23 is your first program year, mark the FY22 column with N/A.

			FY 2021-2022		FY 2022-2023
1	Total Amount of Expenditures (total cost of producing program in which you applied for)				
2	Amount of Richland County H-Tax Grant				
3	Amount funded by H-Tax from other jurisdictions (City, Forest Acres, Lexington, etc.)				
4	Total amount of other sponsorships, donations and grants towards the project outlined in the grant not counting H-Tax funding listed above.				
5	Total amount of sales income generated by project outlined in the grant (ticket sales, product sales, etc.)				
6	Total cash income generated by the project outlined in the grant (add lines 2, 3, 4, and 5 to get total cash income)				
7	Value of in-kind donations towards the project outlined in the grant				
8	Total income for the project outlined in the grant (add lines 6 and 7)				

TOURISM DATA:

Provide two years of attendance and tourism data for the project(s) outlined in your application even if you did not receive H-Tax funding in the previous fiscal year. If FY23 is your first program year, mark the FY22 column with N/A.

			FY 2021-2022	FY 2022-2023
9	Total number of hotel rooms/overnight stays booked as a result of your program/event			
10	Total number of meals generated by the program/event			
11	Total tourists (those who traveled from outside the County)			
12	Total attending from unincorporated Richland County (including Eastover and Richland County portion of Irmo)			
13	Percentage of attendees for the project(s) outlined in your application from unincorporated areas of Richland County (including Eastover and Richland County portion of Irmo)			
14	Total attending from incorporated Richland County (includes City of Columbia, Forest Acres, Arcadia Lakes and Blythewood)			
15	Percentage of attendees for the project(s) outlined in your application from incorporated areas of Richland County (includes City of Columbia, Forest Acres, Arcadia Lakes and Blythewood)			
16	**Total Attendance** (Add lines 11, 12, and 14)			

REQUIRED ATTACHMENTS

___ **Grant Expenses -** Attach an **itemized list of expenditures** not included in the Mid-Year report that includes vendor name, amount, expense purpose, and date paid.

___ **Copies of valid invoices and proof of payment** for each grant expenditure. Proof of payment is a copy of a cancelled check, bank statement showing a cleared check or credit card receipt. All grant expenses must tie to expenses outlined in the application budget. **All expenditures should match up to payment requests and original grant budget.**

___ **Samples of acknowledgement of** Richland County's support.

ORGANIZATION SIGNATURE:

Provide signature of official within organization, verifying accuracy of above statements. Failure to produce completed, accurate reports may result in withholding of future grant allocations.

_____	_____
Name	Title
_____	_____
Signature	Date

For questions, please call Matiah Pough, Grants Manager at 803.576.5459.

Richland County Budget and Grants Management P.O. Box 192 Columbia, SC 29202 Fax: 803.576.2138 Email: grantsmgmt@richlandcountysc.gov

Attachment 6

Accommodations Tax Grant Mid-Year Financial Report

Due: January 31, 2023 for grant funds expended July 1 – December 31, 2022.

Organization: _____

Contact: _____

Phone: _____ **Email:** _____

Report Notes:

- Agencies receiving FY23 A-Tax funds must complete and submit this form even if no FY23 A-Tax grant funds were spent prior to December 31, 2022.
- If your program/event ended prior to January 1, 2023, you must submit an Accommodations Tax Final Report in lieu of the Mid-Year Report.
- Programmatic information will be collected on the Final Report Form once your program is complete.

FY22 A-TAX GRANT MID-YEAR FINANCIAL ACTIVITY

$_____ Amount of County A-Tax funds spent between July 1 and December 31, 2022. **This number must equal the total of amount of expenses listed on your itemized list of expenditures that is a required attachment to this report.**

$_____ Amount of FY22 A-Tax funds requested from Richland County between July 1 and December 31, 2022. Reminder that all County grant funds must be spent by June 30, 2023. The amount spent by December 31, 2022 and the amount drawn down by December 31 do not have to match.

REQUIRED ATTACHMENTS

___**Grant Expenses List-** Please attach an **itemized list of grant expenditures** that includes vendor name, amount, expense purpose, and date paid. Grantees must submit an itemized list of all A-Tax expenses between July 1 and December 31, 2022.

___**Copies of valid invoices and proof of payment for each item in the itemized A-Tax Expenditure list.** Proof of payment is a copy of a cancelled check, bank statement showing a cleared check or credit card receipt. All grant expenses must tie to expenses outlined in the application budget.

Failure to produce completed, accurate reports may result in withholding of future grant allocations.

ORGANIZATION SIGNATURE:

Provide signature of the Authorizing Official within organization, verifying accuracy of above statements and attachments.

_____ _____

Name Title

_____ _____

Signature Date

For questions, please call Matiah Pough, Grants Manager at 803.576.5459.

Richland County Budget and Grants Management P.O. Box 192 Columbia, SC 29202 Fax: 803.576.2138 Email: grantsmgmt@richlandcountysc.gov

Accommodations Tax Grant Final Report Form

Funds Received FY July 1, 2022 – June 30, 2023

Due: July 31, 2023

Organization: _____

Contact: _____

Phone: _____ **Email:**_____

Project Name: _____

Grant Amount: $ _____ **Project Dates:** _____

Please answer the questions below. You may add as many extra lines as needed in order to give a complete, yet concise answer. Reports should not be hand-written.

PROJECT OUTCOMES

1. Were you able to complete the project as stated in your original application? ___Yes ___No
Describe project success and state any problems you encountered.

2. How has this project increased tourism and visitation to Richland County, especially in the unincorporated areas?

3. Describe how your project worked with businesses that collect A-Tax in **unincorporated** Richland County.

4. Briefly describe the marketing efforts to promote your program. Be sure to include how you reached out to tourists.

5. How did your organization determine attendance figures (see below)? Describe methods of tracking attendance and tourism numbers. Describe methods of for determining meals and overnight numbers. **If you have zip code summary data, please attach or email to grantsmgmt@richlandcountysc.gov.**

PROJECT SUMMARY DATA:

Provide two years of financial data for the project(s) outlined in your application even if you did not receive A-Tax funding in the previous fiscal year. If FY23 is your first program year, mark the FY22 column with N/A.

			FY 2021-2022	FY 2022-2023
1	Total Amount of Expenditures (total cost of producing program in which you applied for)			
2	Amount funded by Richland Co. A-Tax			
3	Amount funded by A-Tax from other jurisdictions			
4	Amount funded from all other sources (grants, sponsors, donations for the project in which you applied for not including A-Tax funds received)			
5	Amount of income generated from the program in which you applied (food/beverage sales, ticket sales, etc.)			
6	Total Cash Income Generated (Add lines 2, 3, 4, and 5)			
7	Value of In-kind Donations for the project outlined in the grant (please provide back-up detail)			
8	Total Revenue (Add lines 6 and 7)			

TOURISM DATA:

Provide two years of attendance and tourism data for the project(s) outlined in your application even if you did not receive A-Tax funding in the previous fiscal year. If FY23 is your first program year, mark the FY22 column with N/A.

			FY 2021-2022	FY 2022-2023
9	Total number of hotel rooms/overnight stays booked as a result of your program/event			
10	Total tourists (those who traveled from outside the County)			
11	Total attending from unincorporated Richland County (including Eastover and Richland County portion of Irmo)			
12	Percentage of attendees for the project(s) outlined in your application from unincorporated areas of Richland County (including Eastover and Richland County portion of Irmo)			
13	Total attending from incorporated Richland County (includes City of Columbia, Forest Acres, Arcadia Lakes and Blythewood)			
14	Percentage of attendees for the project(s) outlined in your application from incorporated areas of Richland County (includes City of Columbia, Forest Acres, Arcadia Lakes and Blythewood)			
15	**Total Attendance** (Add lines 10, 11, and 13)			

REQUIRED ATTACHMENTS

___ **Grant Expenses List -** Attach an **itemized list of expenditures** not included in the Mid-Year report that includes vendor name, amount, expense purpose, and date paid.

___ **Copies of valid invoices and proof of payment** for each grant expenditure. Proof of payment is a copy of a cancelled check, bank statement showing a cleared check or credit card receipt. All grant expenses must tie to expenses outlined in the application budget. **All expenditures should match up to payment requests and original grant budget.**

___ **Samples of acknowledgement of** Richland County's support.

ORGANIZATION SIGNATURE:

Provide signature of official within organization, verifying accuracy of above statements. Failure to produce completed, accurate reports may result in withholding of future grant allocations.

_____	_____
Name	Title
_____	_____
Signature	Date

For questions, please call Matiah Pough, Grants Manager at 803.576.5459.

Richland County Budget and Grants Management P.O. Box 192 Columbia, SC 29202 Fax: 803.576.2138 Email: grantsmgmt@richlandcountysc.gov