

<b>Joint Federal and State Application Form For Activities Affecting Waters of the United States or Critical Areas of the State of South Carolina</b>		This Space for Official Use Only.	
		Application # _____	
		Date Received: _____	
		Project Manager: _____	
		Watershed #: _____	
<p><i>Authorities:</i> 33 USC 401, 33 USC 403, 33 USC 407, 33 USC 408, 33 USC 1341, 33 USC 1344, 33 USC 1413 and Section 48-39-10 et. seq of the South Carolina Code of Laws. These laws require permits for activities in, or affecting, navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. The Corps of Engineers and the State of South Carolina have established a joint application process for activities requiring both Federal and State review or approval. Under this joint process, you may use this form, together with the required drawings and supporting information, to apply for both the Federal and/or State permit(s).</p> <p><i>Drawings and Supplemental Information Requirements:</i> In addition to the information on this form, you must submit a set of drawings and, in some cases, additional information. A completed application form together with all required drawings and supplemental information is required before an application can be considered complete. See the attached instruction sheets for details regarding these requirements. You may attach additional sheets if necessary to provide complete information.</p>			
1. Applicant Last Name: Connolly		11. Agent Last Name (agent is not required):	
2. Applicant First Name: Sean		12. Agent First Name:	
3. Applicant Company Name: SC Department of Transportation		13. Agent Company Name:	
4. Applicant's Mailing Address: PO Box 191		14. Agent Mailing Address	
5. Applicant City: Columbia		15. Agent City	
6. Applicant State: SC	7. Applicant ZIP: 29202	16. Agent State	17. Agent ZIP
8. Applicant Phone No.: (803) 737-1398		18. Agent Phone No.:	
9. Applicant Fax. No.: (803) 737-1394		19. Agent Fax No.:	
10. Applicant E-mail: connollyms@scdot.org		20. Agent E-Mail:	
21. Project Name: SC 41 Bridge Replacement		22. Project Street Address: SC 41 at Wando River	
23. Project City: Cainhoy	24. Project County: Berkeley and Charleston	25. Project ZIP Code: 29429	26. Nearest Water Body: Wando River
27. Tax Parcel ID	28. Property Size (acres) Approx 65 acres	29. Latitude: 32.923772 N	30. Longitude: 79.825453 W
31. Directions to Project Site (Include street numbers, street names, and landmarks and attach additional sheet if necessary): From Charleston, take US 17 north to SC 41. Take a left and go north on SC 41 for five miles to the Wando River. The project extends from 0.4 mile south of the Wando River to Tuxbury Farm Road and Reflectance Drive.			
32. Description of the overall Project and of Each Activity in or Affecting U.S. Waters or State Critical Areas (attach additional sheets if needed). See attached sheets.			

33. Overall Project Purpose and the Basic Purpose of Each Activity in or Affecting U.S. Waters (attach additional sheets if necessary). See attached sheets.

34. Type and quantity of Materials to Be Discharged

Dirt or Topsoil: 14920 cubic yards  
Concrete: 1100 cubic yards  
Gravel, Rock, or Stone: 100 cubic yards  
  
TOTAL: 16120 cubic yards

35. Type and Quantity of Impacts to U.S. Waters (including wetlands).  
Filling: 2.012 acres / 16120 cubic yards

Landclearing: 0.006 acre  
Shading: 0.097 acre

TOTALS: 2.115 acres / 16120 cy

36. Individually list wetland impacts including mechanized clearing, fill, excavation, flooding, draining, shading, etc. and attach a site map with location of each impact (attach additional sheets if needed).

Impact No.	Wetland Type	Distance to Receiving Water body (LF)	Purpose of Impact (road crossing, impoundment, flooding, etc)	Impact Size (acres)
See attached sheets				
Total Wetland Impacts (acres)				1.881 acres

37. Individually list all seasonal and perennial stream impacts and attach a site map with location of each impact (attach additional sheets if needed).

Impact No.	Seasonal or Perennial Flow	Average Stream Width (LF)	Impact type (road crossing, impoundment, flooding, etc)	Impact Length (LF)
Wando River	Perennial	1700 feet	Fill for bascule bridge counterweight housing unit	0.131 ac/ 95 ft x 60 ft
Total Stream Impacts (Linear Feet)				0.131 ac/ 95 ft x 60 ft

38. Have you commenced work on the project site? Yes No ☒ If yes, describe all work that has occurred and provide dates.

39. Describe measures to avoid and minimize impacts to Waters of the United States: See attached sheets

40. Provide a brief description of the proposed mitigation plan to compensate for impacts to aquatic resources or provide justification as to why mitigation should not be required (Attach a copy of the proposed mitigation plan for review). See attached sheets

41. See the attached sheet to list the names and addresses of adjacent property owners.

42. List all Corps Permit Authorizations and other Federal, State, or Local Certifications, Approvals, Denials, received for work described in this application.. SAC 80-2005-1664; OCRM Critical Line verified 02-03-11)

43. Authorization of the Agent. I hereby authorize the agent whose name is given on page one of this application to act in my behalf in the processing of this application and to furnish supplemental information in support of this application.<sup>1</sup>

\_\_\_\_\_  
Applicant's Signature

\_\_\_\_\_  
Date

44. Certification. Application is hereby made for a permit or permits to authorize the work and uses of the work as described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent for the applicant.<sup>1</sup>

\_\_\_\_\_  
Applicant's Signature

\_\_\_\_\_  
Date

<sup>1</sup>The application must be signed by the person who desires to undertake the proposed activity or it may be signed by the duly authorized agent if the authorization statement in blocks 11 and 43 have been completed and signed. 18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious, or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious, or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

Item 32. Description of the overall Project and of Each Activity in or Affecting U.S. Waters or State Critical Areas.

SCDOT proposes to replace the existing SC 41 bridge over the Wando River and construct various improvements on SC 41 north and south of the bridge. The new, 2700-foot, 4 lane bascule bridge will replace the existing 1690-foot, 2 lane, low level swing span bridge. The new bridge will allow clearance of 14 to 20 feet in its closed position and unlimited clearance in its open and upright position. The new bridge will be constructed 110 feet east (upstream) of the existing bridge. The new bridge will include a counterweight housing unit to be constructed on the bed of the Wando River; this structure will house the bridge counterweight and accommodate its vertical movement as the bridge is raised and lowered.

The proposed work also includes relocating the intersection of SC 41 and Clements Ferry Road from its current location to a point approximately 1000 feet to the north, forming a T-intersection at that point. The proposed work also includes placing fill material in wetlands at various locations for new turning lanes, shoulder improvements, and to accommodate the relocation of the new bridge.

33. Overall Project Purpose and the Basic Purpose of Each Activity in or Affecting U.S. Waters

The overall project purpose is to replace the existing SC 41 bridge and improve safety and traffic capacity on SC 41 while maintaining navigation under the bridge. The basic purpose of each activity in U.S. waters is to build the new bridge and associated roadbed.

36. Individually list wetland impacts including mechanized clearing, fill, excavation, flooding, draining, shading, etc. and attach a site map with location of each impact. Distance to receiving water body

Impact No.	Wetland Type	Distance to Receiving Water body (LF)*	Purpose of Impact (road crossing, impoundment, flooding, etc)	Impact Size (acres) Sheet subtotal
Sheet 14				
Wetland 23a	PEM1F/H	200	Roadway fill	0.099 ac
Wetland 23b	PEM1F/H	270	Roadway fill	0.051 ac
Wetland 25	PEM1J	200	Roadway fill	0.016
Wetland 26	PEM1J	200	Roadway fill	0.007
Wetland 27	PEM1J	300	Roadway fill	0.003
				0.176 ac
Sheet 13				
Wetland 2	PEM1J	2550	Roadway fill	0.009 ac
Wetland 3	PEM1C	2600	Roadway fill	0.018 ac
Wetland 4	PEM1J	2450	Roadway fill	0.011 ac
Wetland 5	PEM1C	1850	Roadway fill	0.004 ac
Wetland 6	PEM1J	1850	Roadway fill	0.044 ac
				0.086 ac
Sheet 12				
Wetland 6	PEM1J	1300	Roadway fill	0.074 ac
Wetland 7	PEM1J	1350	Roadway fill	0.003 ac
Wetland 8	PEM1J/PSS4B	1300	Roadway fill	0.048 ac
Wetland 9	PSS1C	1050	Roadway fill	0.034 ac

Wetland 10	PEM1J	1050	Roadway fill	0.036 ac 0.195 ac
Sheet 11				
Wetland 6	PEM1J	750	Roadway fill	0.051 ac
Wetland 10	PEM1J	900	Roadway fill	0.017 ac
Wetland 27	PEM1J	300	Roadway fill	0.012 ac 0.08 ac
Sheet 10				
Wetland 34	PEM1J	150	Roadway fill	0.099 ac
Wetland 35	PEM1J	50	Roadway fill	0.001 ac
Wetland 36	PEM1J	150	Roadway fill	0.005 ac
Wetland 36	E2EM1N	50	Roadway fill	0.003 ac
Wetland 37	E2EM1N	0	Roadway fill	0.369 ac 0.477 ac
Sheet 9				
Wetland 38B	E2EM1N	0	Roadway fill	0.001 ac
Wetland 39	PFO4A	50	Roadway fill	0.091 ac
Wetland 40	PFO4A	50	Roadway fill	0.025 ac 0.117 ac
Sheet 8				
Wetland 41	E2EM1N	0	Bridge shading	0.097 ac 0.097 ac
Sheet 7				
Wando River	E1UBL	0	Bridge fill	0.131 ac 0.131 ac
Sheet 6				
Wetland 44	PFO1J/PEM1J	850	Roadway fill	0.148 ac 0.148 ac
Sheet 5				
Wetland 44	PFO1J/PEM1J	850	Roadway fill	0.239 ac
Wetland 45	PEM1J	300	Roadway fill	0.096 ac
Wetland 46	PEM1C	150	Roadway fill	0.045 ac 0.38 ac
Sheet 4				
Wetland 46	PEM1C	100	Roadway fill	0.009 ac
Wetland 47	E2EM1N	0	Roadway fill	0.074 ac
Wetland 48	PEM1J	100	Roadway fill	0.018 ac
Wetland 48	PEM1J	100	Clearing	0.006 ac
Wetland 50	PFO3Y	50	Roadway fill	0.021 ac
Wetland 51	E2EM1N	0	Roadway fill	0.100 ac 0.228 ac
Total Wetland Impacts (acres)				2.012 fill 0.006 clearing 0.097 shade 2.115 total

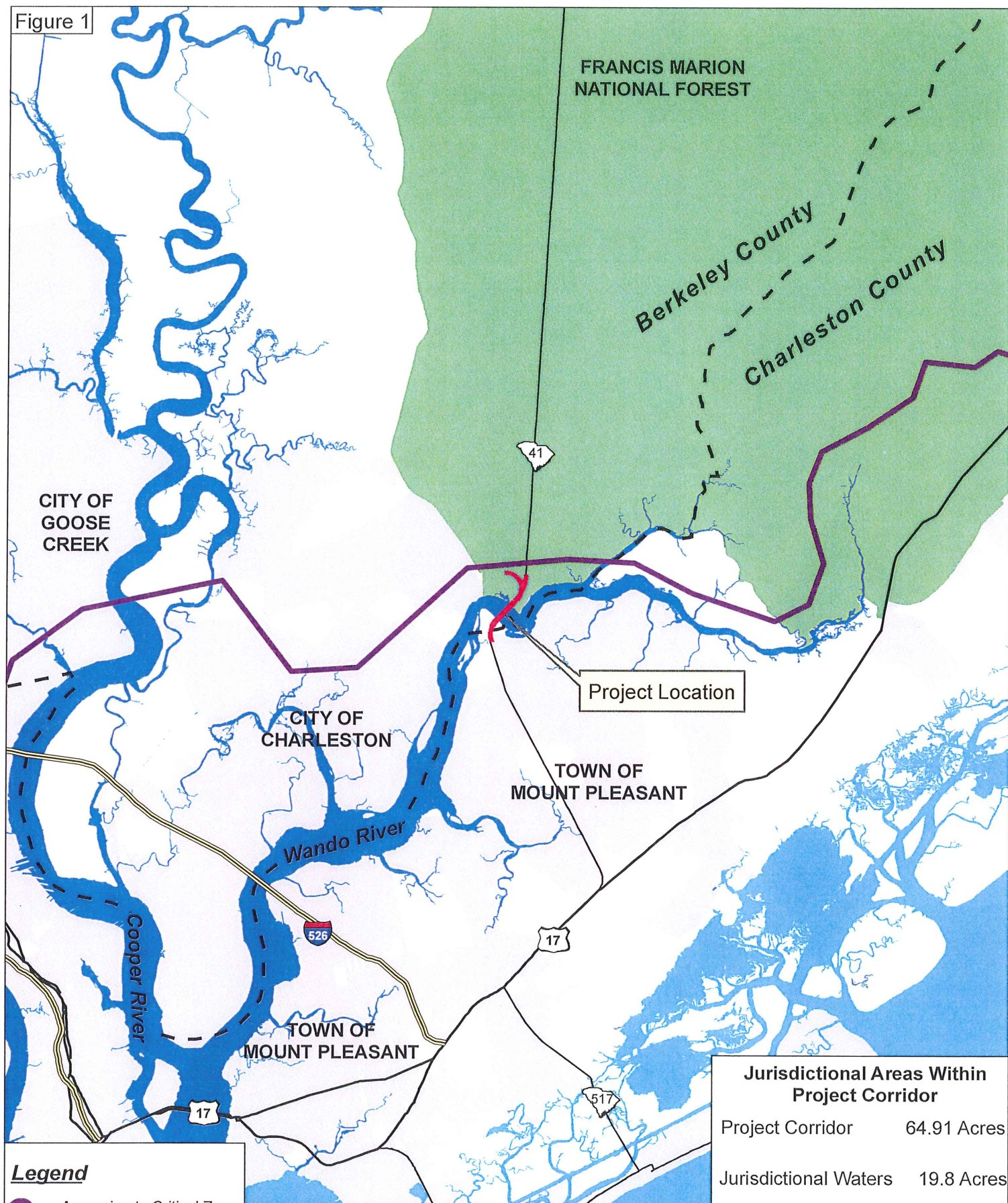


Item 39. Describe measures to avoid and minimize impacts to Waters of the United States: The proposed fill in wetlands is the minimum required to accomplish the project purpose. Turning lanes, shoulder improvements and roadbed relocations were designed to have the smallest footprint practicable while maintaining roadway safety.

40. Provide a brief description of the proposed mitigation plan to compensate for impacts to aquatic resources or provide justification as to why mitigation should not be required.

Compensatory mitigation will be provided from credits obtained from one or more SCDOT mitigation banks.

Figure 1



**Legend**

- Approximate Critical Zone
- Project Study Area
- Municipalities
- U.S. Forest Land

**SC-41 BRIDGE  
REPLACEMENT PROJECT  
PROJECT VICINITY MAP**

*Charleston and Berkeley Counties*

DRAWN BY : J.L.S.

DATE : 08/30/11

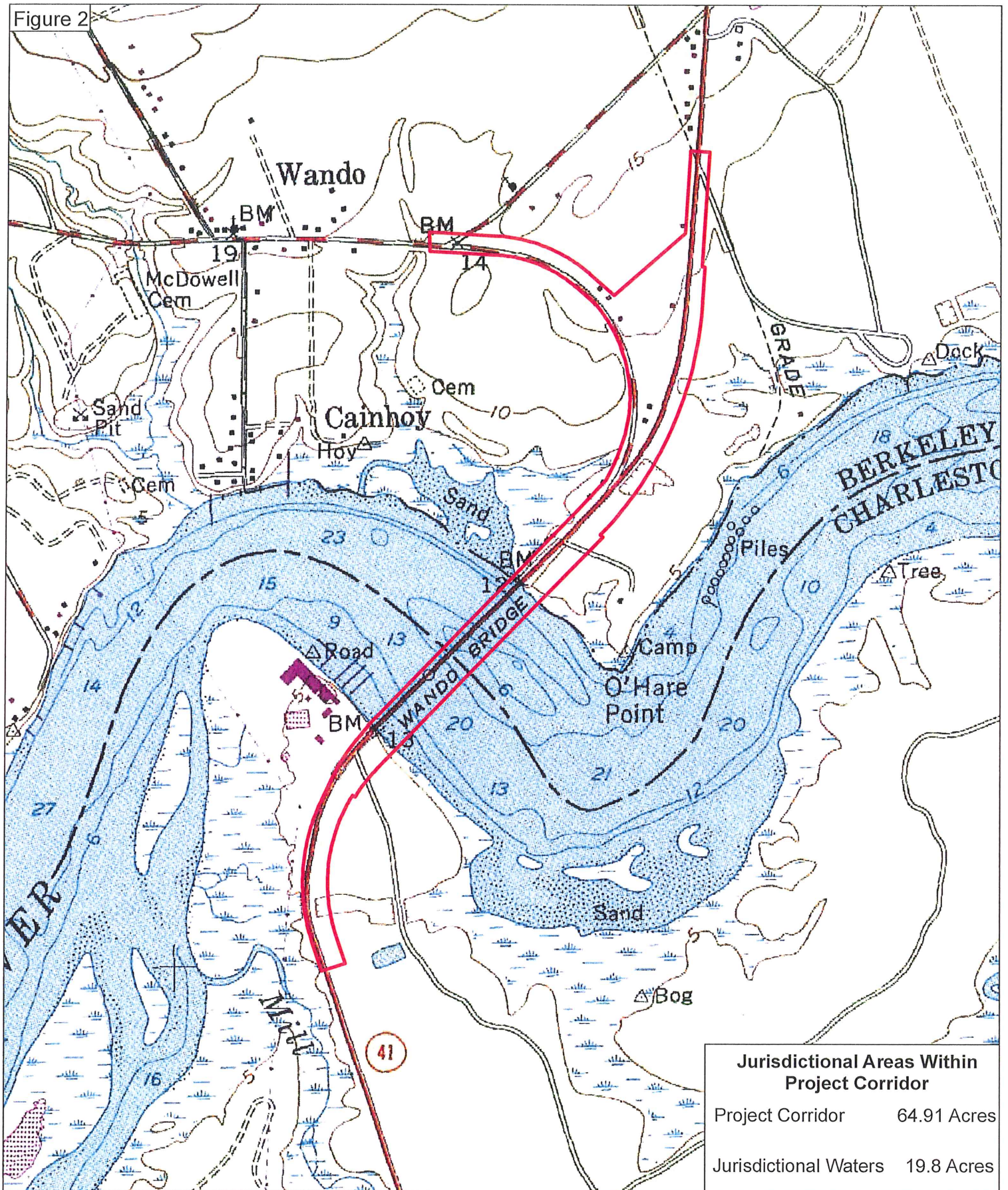
**SCDOT**  
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

**C E**  
**C S**

**Civil Engineering  
Consulting Services, Inc.**



Figure 2



### Legend

Project Study Area

SC-41 BRIDGE  
REPLACEMENT PROJECT  
USGS TOPOGRAPHY MAP  
*Charleston and Berkeley Counties*

DRAWN BY : J.L.S.

DATE : 08/30/11

**SCDOT**  
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

C E  
C S

Civil Engineering  
Consulting Services, Inc.

## Attachment "B"

### SCDOT IMPACT ASSESSMENT

#### I. Processing

1. Check all of the approval(s) requested for this project:

<input checked="" type="checkbox"/> Section 404 Permit	<input type="checkbox"/> ACOE General Permit
<input checked="" type="checkbox"/> Section 10 Permit	<input checked="" type="checkbox"/> Nav. Water General Permit
<input checked="" type="checkbox"/> 401 Water Quality Certification	<input checked="" type="checkbox"/> CZMC – (OCRM)

#### II. Applicant Information

Name: \_\_\_\_\_  
Company Affiliation: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Telephone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_  
E-mail Address: \_\_\_\_\_

#### III. Project Information

Attach a **vicinity map** clearly showing the location of the property with respect to local landmarks such as towns, rivers, and roads. The vicinity map must include a scale and north arrow. The maps and plans should include the appropriate USGS Topographic Quad Map with the project corridor outlined. For administrative and distribution purposes, the **USACE requires information to be submitted on sheets no larger than 8.5 by 11-inch format.**

1. Name of project: SC 41 Bridge Replacement over Wando River
2. Location  
County: Charleston and Berkeley Counties Nearest Town: Wando SC  
Directions to site (include road numbers, landmarks, etc.): From Charleston, take US 17 north to SC 41. Take a left and go north on SC 41 for five miles to the Wando River. The project extends from 0.4 mile south of the Wando River to Tuxbury Farm Road and Reflectance Drive.
3. Site coordinates, if available (UTM or Lat/Long): 32.923772 N; 79.825453 W
4. (Note – Since the project is linear, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)

5. Property size (acres): 64.91 acres
6. Nearest body of water (stream/river/sound/ocean/lake): Wando River
7. Describe the existing conditions on the site and general land use in the vicinity: Land use in the area is a combination of undeveloped woodland, tidal marsh, and open water tidal riverine habitat; and moderate density residential and commercial development.
8. Describe the overall project in detail: SCDOT proposes to replace the existing SC 41 bridge over the Wando River and construct various improvements on SC 41 north and south of the bridge. The new, 2700-foot, 4 lane bascule bridge will replace the existing 1690-foot, 2 lane, low level swing span bridge. The new bridge will allow clearance of 14 to 20 feet in its closed position and unlimited clearance in its open and upright position. The new bridge will be constructed 110 feet east (upstream) of the existing bridge.
- The proposed work also includes relocating the intersection of SC 41 and Clements Ferry Road from its current location to a point approximately 1000 feet to the north, forming a T-intersection at that point. The proposed work also includes placing fill material in wetlands at various locations for new turning lanes, shoulder improvements, and to accommodate the relocation of the new bridge
9. Explain the purpose of the proposed work: The overall project purpose is to replace the existing SC 41 bridge and improve safety and traffic capacity on SC 41 while maintaining navigation under the bridge. The basic purpose of each activity in U.S. waters is to build the new bridge and associated roadbed.
10. . List all Certifications, Approvals, and/or Denials received for this project: OCRM Critical Areas verified 3 Feb 2011; Corps JD pending.
10. Has any portion of the work already commenced? If yes, describe: No



#### IV. Proposed Impacts to Waters of the United States/Waters of the State

All proposed impacts, permanent and temporary, must be listed herein, and must be clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) must be shown on a delineation map, whether or not impacts are proposed to these systems. Wetland and stream evaluation and delineation forms should be included as appropriate. Photographs shall be included.

1. Individually list **wetland impacts** below:

Impact No.	Type of Impact	Area of Impact (acres)	Located within 100-year floodplain (yes/no)	Distance to Nearest Stream (linear feet)	Type of Wetland (see index below)
Sheet 14					
Wetland 23a	Roadway fill	0.099 ac	yes	200	PEM1F/H
Wetland 23b	Roadway fill	0.051 ac	yes	270	PEM1F/H
Wetland 25	Roadway fill	0.016	yes	200	PEM1J
Wetland 26	Roadway fill	0.007	yes	200	PEM1J
Wetland 27	Roadway fill	0.003	yes	300	PEM1J
Sheet 13					
Wetland 2	Roadway fill	0.009 ac	yes	2550	PEM1J
Wetland 3	Roadway fill	0.018 ac	yes	2600	PEM1C
Wetland 4	Roadway fill	0.011 ac	yes	2450	PEM1J
Wetland 5	Roadway fill	0.004 ac	yes	1850	PEM1C
Wetland 6	Roadway fill	0.044 ac	yes	1850	PEM1J
Sheet 12					
Wetland 6	Roadway fill	0.074 ac	yes	1300	PEM1J
Wetland 7	Roadway fill	0.003 ac	yes	1350	PEM1J
Wetland 8	Roadway fill	0.048 ac	yes	1300	PEM1J/PSS4B
Wetland 9	Roadway fill	0.034 ac	yes	1050	PSS1C
Wetland 10	Roadway fill	0.036 ac	yes	1050	PEM1J
Sheet 11					
Wetland 6	Roadway fill	0.051 ac	yes	750	PEM1J
Wetland 10	Roadway fill	0.017 ac	yes	900	PEM1J
Wetland 27	Roadway fill	0.012 ac	yes	300	PEM1J
Sheet 10					
Wetland 34	Roadway fill	0.099 ac	yes	150	PEM1J
Wetland 36	Roadway fill	0.005 ac	yes	150	PEM1J
Wetland 36	Roadway fill	0.003 ac	yes	50	E2EM1N
Wetland 37	Roadway fill	0.369 ac	yes	0	E2EM1N

Sheet 9					
Wetland 38B	Roadway fill	0.001 ac	yes	0	E2EM1N
Wetland 39	Roadway fill	0.091 ac	yes	50	PFO4A
Wetland 40	Roadway fill	0.025 ac 0	yes	50	PFO4A
Sheet 8					
Wetland 41	Bridge shading	0.097 ac	yes	0	E2EM1N
Sheet 6					
Wetland 44	Roadway fill	0.148 ac	yes	850	PFO1J/PEM1J
Sheet 5					
Wetland 44	Roadway fill	0.239 ac	yes	850	PFO1J/PEM1J
Wetland 45	Roadway fill	0.096 ac	yes	300	PEM1J
Wetland 46	Roadway fill	0.045 ac	yes	150	PEM1C
Sheet 4					
Wetland 46	Roadway fill	0.009 ac	yes	100	PEM1C
Wetland 47	Roadway fill	0.074 ac	yes	0	E2EM1N
Wetland 48	Roadway fill	0.018 ac	yes	100	PEM1J
Wetland 48	Clearing	0.006 ac	yes	100	PEM1J
Wetland 50	Roadway fill	0.021 ac	yes	50	PFO3Y
Wetland 51	Roadway fill	0.100 ac	yes	0	E2EM1N

PEM – Palustrine emergent marsh – freshwater wetlands, mostly located within existing right of way, that are mowed periodically.

PFO – Palustrine forested wetlands – freshwater wetlands with forested vegetation.

PSS – Palustrine scrub-shrub wetlands – freshwater wetlands that are mowed occasionally.

E2E- Estuarine tidal marshes.

List the total acreage (estimated) of all existing wetlands on the property: 19.8 acres

Total area of wetland impact proposed: 1.983 acres

2. Individually list all **intermittent and perennial stream impacts** below:

Stream Impact Site Number (indicate on map)	Type of Impact*	Length of Impact (linear feet)	Stream Name**	Average Width of Stream Before Impact	Perennial or Intermittent? (please specify)
None					
None					

\* List each impact separately and identify temporary impacts. Impacts include, but are not limited to: culverts and associated rip-rap, dams (separately list impacts due to both structure and flooding), relocation (include linear feet before and after, and net loss/gain), stabilization activities (cement wall, rip-rap, crib wall, gabions, etc.), excavation, ditching/straightening, etc.

\*\* Stream names can be found on USGS topographic maps. If a stream has no name, list as UT (unnamed tributary) to the nearest downstream named stream into which it flows.

Cumulative impacts (linear distance in feet) to all streams on site: None

3. Individually list all **open water impacts** (including lakes, ponds, estuaries, sounds, Atlantic Ocean and any other water of the U.S.) below:

Open Water Impact Site Number (indicate on map)	Type of Impact*	Area of Impact (acres)	Name of Waterbody (if applicable)	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)
None				

\* List each impact separately and identify temporary impacts. Impacts include, but are not limited to: fill, excavation, dredging, flooding, drainage, bulkheads, etc.

#### V. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. Please attach a separate sheet, as an appendix, if more space is needed.

The proposed fill in wetlands is the minimum required to accomplish the project purpose. Turning lanes, shoulder improvements and roadbed relocations were designed to have the smallest footprint practicable while maintaining roadway safety.

#### VI. Feasible Alternatives

Specifically describe measures *in detail* showing that SCDOT exhausted all feasible alternatives before filling in the wetland resources on-site. This should show that the proposed project was the least damaging alternative to water resources. Please attach a separate sheet, as an appendix, if more space is needed.

There are no feasible alternatives.

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#### VII. Mitigation

Provide a description of the proposed mitigation plan. The description should provide as much information as possible, including, but not limited to: site location (attach directions and map, if offsite), affected wetland/stream and river basin, type and amount (acreage/linear feet) of mitigation proposed (restoration, enhancement, creation, or preservation), a plan view, preservation mechanism (e.g., deed restrictions, conservation easement, etc.), and a description of the current site conditions and proposed method of construction. Please attach a separate sheet, as an appendix, if more space is needed.

Compensatory mitigation will be provided from credits obtained from one or more SCDOT mitigation banks.



## **VIII. Biological/ Habitat Assessment**

Present a detailed report of the habitat and existing condition of that habitat. The report should include a detailed list of all State and Federal Threatened and Endangered Species and whether the species of concern was present and/ or if their habitat was present.

See attached sheets.

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**SCDOT Authorized Agent's Signature**

/ /  
**Date**

## Protected Species

The federally protected species listed for Berkeley and Charleston Counties by the USFWS as of May 2011 are listed below.

**Table 1:** Federally Protected Species listed for Berkeley and Charleston Counties

Scientific Name	Common Name	Status	County*	Biological Conclusion
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	Endangered	B, C	MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT
<i>Ambystoma cingulatum</i>	Flatwoods salamander	Threatened	B, C	NO EFFECT
<i>Caretta caretta</i>	Loggerhead sea turtle	Threatened	B, C	NO EFFECT
<i>Chelonia mydas</i>	Green sea turtle	Threatened	C	NO EFFECT
<i>Dermochelys coriacea</i>	Leatherback sea turtle	Endangered	C	NO EFFECT
<i>Lepidochelys kempii</i>	Kemp's ridley sea turtle	Endangered	C	NO EFFECT
<i>Trichechus manatus</i>	West Indian manatee	Endangered	B**, C	MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT
<i>Vermivora bachmanii</i>	Bachman's warbler	Endangered	C	MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT
<i>Charadrius melodus</i>	Piping plover	Threatened	C	NO EFFECT
<i>Dendroica kirtlandii</i>	Kirtland's warbler	Endangered	C	MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT
<i>Mycteria americana</i>	Wood stork	Endangered	B, C	MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT
<i>Picoides borealis</i>	Red-cockaded woodpecker	Endangered	B, C	NO EFFECT
<u>Haliaeetus leucocephalus</u>	Bald eagle	BGEPA	B, C	MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT
<i>Amaranthus pumilus</i>	Seabeach amaranth	Threatened	C	NO EFFECT
<i>Lindera melissifolia</i>	Pondberry	Endangered	B, C**	NO EFFECT
<i>Oxypolis canbyi</i>	Canby's dropwort	Endangered	B, C	NO EFFECT
<i>Schwalbea americana</i>	American chaffseed	Endangered	B, C	NO EFFECT

\* County: B: Berkeley; C: Charleston

\*\* Occurrence in County listed as "Possible"

***Acipenser brevirostrum* (Shortnose sturgeon – Endangered)**

Family: Acipenseridae

Date Listed: March 11, 1967

The shortnose sturgeon is a bottom-feeding fish that occurs in estuaries and lower sections of large Atlantic seaboard rivers from the St. Johns River, Florida, to eastern Canada.

**BIOLOGICAL CONCLUSION: MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT**

The proposed SC 41 bridge replacement over the Wando River occurs over waters that may provide important foraging habitat for shortnose sturgeon during the winter months. The National Marine Fisheries Service may recommend that construction of the Wando River bridge should not take place during the winter. Regarding the shortnose sturgeon, the best period for in-water construction would be the spring spawning season (February 1 to June 15), when the fish are more likely to be upstream of the project study area. No surveys for shortnose sturgeon were undertaken during the field studies. The SCHTP documents no occurrence of shortnose sturgeon within 5 miles of the project study area. If in-water bridge construction occurs during the summer months, the project is unlikely to affect shortnose sturgeon.

***Ambystoma cingulatum* (Flatwoods salamander – Threatened)**

The flatwoods salamander occurs from the southern half of the coastal plain of South Carolina through Georgia, Florida, and westward to Alabama. Its principal habitat is sandy, seasonally wet pine flatwoods with a wiregrass (*Aristida* spp.) understory (Petranka 1998). These salamanders may be found beneath logs near cypress ponds, swamps, and pitcher plant bogs. This salamander burrows near water or moves about under debris on the forest floor. It is nocturnal and most likely to be seen during the fall courtship and breeding period.

**BIOLOGICAL CONCLUSION: NO EFFECT**

Suitable habitat for flatwoods salamander does not occur within the project study area. The SCHTP documents several occurrences of flatwoods salamander within 5 miles of the project study area. This project is not expected to affect the flatwoods salamander.

***Caretta caretta* (Loggerhead sea turtle – Threatened)**

The loggerhead sea turtle is the most common sea turtle on the coast of the Carolinas. The loggerhead is basically temperate or subtropical in nature, and is primarily oceanic, but may also be found in estuarine bays, sounds, and large coastal rivers.

**BIOLOGICAL CONCLUSION: NO EFFECT**

The project study area contains no nesting or foraging habitat for the loggerhead sea turtle. Shoreline areas are comprised of either salt marsh or riprap. The estuarine waters in this section of the Wando River are unsuited to the turtle's marine habitat preferences. The SCHTP documents no occurrence of the loggerhead sea turtle within 5 miles of the project study area. This project will not affect the loggerhead sea turtle.

***Chelonia mydas* (Green sea turtle – Threatened)**

The green sea turtle is most commonly found in the Caribbean where it breeds, although individuals are occasionally found as far north as the North Carolina coast. Preferred nesting habitat is ocean-fronting beaches.

**BIOLOGICAL CONCLUSION: NO EFFECT**

The project study area contains no nesting or foraging habitat for the green sea turtle. Shoreline areas are comprised of either salt marsh or riprap, and do not offer nesting habitat. Additionally, the estuarine waters in this section of the Wando River are unsuited to the turtle's marine foraging habitat preferences. The SCHTP documents no occurrence of the green sea turtle within 5 miles of the project study area. This project will not affect the green sea turtle.

***Dermochelys coriacea* (Leatherback sea turtle – Endangered)**

The leatherback turtle is primarily tropical in nature, but the range may extend to Nova Scotia and Newfoundland. The leatherback is a powerful swimmer, often seen far from land; however, it sometimes moves into shallow bays, estuaries, and even river mouths. The leatherback generally nests on sandy, tropical beaches.

**BIOLOGICAL CONCLUSION: NO EFFECT**

The project study area occurs in estuarine waters that are incompatible with the marine habitat that the leatherback sea turtle requires for foraging. Shorelines in the area are unsuitable for nesting, as they consist of salt marsh and riprap. The SCHTP documents no occurrence of the leatherback sea turtle within 5 miles of the project study area. This project will not affect the leatherback sea turtle.

***Lepidochelys kempi* (Kemp's ridley sea turtle – Endangered)**

The Kemp's ridley sea turtle ranges from the Gulf of Mexico and the east coast, to Nova Scotia and Europe. Kemp's ridley prefers shallow coastal waters, including sounds and the lower portions of large rivers.

**BIOLOGICAL CONCLUSION: NO EFFECT**

No nesting or foraging habitat for the Kemp's ridley sea turtle occurs within the project study area. The estuarine waters edged by salt marsh and armored banks do not offer the marine environment and sandy beaches required by the turtle. The SCHTP documents no occurrence of the Kemp's ridley sea turtle within 5 miles of the project study area. This project will not affect the Kemp's ridley sea turtle.

***Trichechus manatus* (West Indian manatee – Endangered)**

The manatee occurs from Brazil to the West Indies to the east coast of the United States. During summer months manatees migrate from their Florida wintering areas as far north as coastal Virginia. These mammals inhabit warm waters, both fresh and salt, where their diet consists mostly of aquatic vegetation. Manatee are observed infrequently along the SC coast.

The USFWS has developed recommendations for general construction activities in aquatic areas which may be used by the manatee (USFWS memo dated June 2003 [USFWS 2003]; Appendix E). The USFWS directs that construction which can be completed in several months be scheduled during the seven month period of November through May. The USFWS also makes a series of recommendations pertaining to construction and the manatee, some of which are summarized as follows: 1) construction managers should advise all construction personnel to be aware of the possibility of manatee appearance and the legal obligation to avoid harassment of

the species; 2) construction personnel will watch for manatee sightings and be prepared to shut down equipment if one is made; 3) any sightings or contact with manatees will be reported to the appropriate natural resource agencies (USFWS, SCDNR); 4) a sign will be posted providing instructions to equipment operators in case a manatee is sighted; 5) special steps will be taken on site concerning operations during the no-blast moratorium period, such as guidelines for operating water craft and placement of siltation barriers.

**BIOLOGICAL CONCLUSION: MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT**

The SCHTP documents no occurrence of West Indian manatee within 5 miles of the project study area. No West Indian manatees were sighted during field studies in March. However, the project study area may provide habitat for West Indian manatee during the summer months. The USFWS has recommended that in-water construction activities, such as pile driving, be conducted during the fall, winter, or early spring. If recommendations to avoid disturbance to the manatee are followed, this project is unlikely to affect the West Indian manatee.

***Vermivora bachmanii* (Bachman's warbler – Endangered)**

Bachman's warbler may be extinct; the last certain sightings were in the Charleston, South Carolina region in 1962

**BIOLOGICAL CONCLUSION: MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT**

The SCHTP documents no occurrence of Bachman's warbler within 5 miles of the project study area. Marginal habitat for migrating Bachman's warblers may occur within the project study area in thickets and forested areas adjoining wetlands. The USFWS recommends that disturbances to these areas be minimized to avoid adversely impacting Bachman's warbler habitat. If such disturbances are minimized, this project is not likely to affect the Bachman's warbler.

***Charadrius melodus* (Piping plover – Threatened)**

Piping plovers occur along beaches above the high tide line, sand flats at the ends of sand spits and barrier islands, and in various sand dune habitats. Nests are most often on open, wide, sandy stretches of beach

**BIOLOGICAL CONCLUSION: NO EFFECT**

No habitat for piping plover occurs within the project study area. Shoreline areas consist of marshes, bulkheads, and wooded fringes, and no sandy beaches or dunes are present. The SCHTP documents no occurrence of the piping plover within 5 miles of the project study area. No piping plovers were observed during the field studies. This project will not affect the piping plover.

***Dendroica kirtlandii* (Kirtland's warbler- Endangered)**

Kirtland's Warbler is a very rare transient in the Carolinas in spring and fall. The birds frequent thickets and woodland edges on uplands adjacent to the wet margins of lakes and swamps.

**BIOLOGICAL CONCLUSION: MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT**

Suitable habitat for Kirtland's warblers may exist within the project study area during migration periods in spring and fall. Forested edges and thickets bordering salt marshes and freshwater wetlands may provide stopover feeding and resting areas for the warblers. If construction minimizes the disturbance of these areas, the project is unlikely to affect the Kirtland's warbler. The SCHTP documents no occurrence of Kirtland's warbler within 5 miles of the project study area.

***Mycteria americana* (Wood stork – Endangered)**

Wood storks habitat includes shallow salt or brackish water, shallow water of bays, tidal creeks, ponds, or other bodies of water. Wood storks usually feed in 6 to 10 inches of water, and typically feed on fish, but also prey on amphibians, crustaceans, and reptiles. Nesting habitat consists of flooded cypress or other wooded swamps.

**BIOLOGICAL CONCLUSION: MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT**

The SCHTP documents no occurrence of wood storks within 5 miles of the project study area, and the USFWS has no record of nesting colonies in or near the project study area. No suitable nesting habitat occurs in or near the project study area. However, foraging habitat may occur in the Wando River and its associated tidal saltwater marshes. A detailed survey for foraging wood storks was conducted for a minimum of 300 feet outward from the project study area on August 10, 2005. No sightings of wood storks were recorded. The proposed project will avoid extensive alterations to natural shorelines. Based on observations, habitat requirements, and project parameters, this project is unlikely to affect the wood stork.

***Picoides borealis* (Red-cockaded woodpecker- Endangered)**

Primary habitat consists of mature to over-mature southern pine forests dominated by loblolly, long-leaf (*Pinus palustris*), slash (*P. elliotii*), and pond (*P. serotina*) pines. Nest cavities are constructed in the heartwood of living pines, generally older than 70 years, that have been infected with red-heart disease. Pine flatwoods or pine-dominated savannas which have been maintained by frequent natural or prescribed fires serve as ideal nesting and foraging sites for this woodpecker.

**BIOLOGICAL CONCLUSION: NO EFFECT**

The SCHTP documents two occurrences of the red-cockaded woodpecker within 5 miles of the project study area. One is approximately 4 miles northwest, at the border of the Francis Marion National Forest; the other is approximately 4.5 miles east of the project study area. No foraging or nesting habitat for red-cockaded woodpecker occurs within the project study area. Wooded sections within the project study area consist of pine and pine-hardwood stands with well-developed shrub layers containing wax myrtle, groundsel bush, and other species. Few mature pines occur in or near the project study area, and no pure stands are located in or near the project study area. No evidence of red-cockaded woodpecker presence, including foraging birds, was noted during the field studies. This project will not affect the red-cockaded woodpecker.

***Haliaeetus leucocephalus* (Bald eagle)**

This species is protected under the Bald and Golden Eagle Protection Act. Bald eagles occur throughout coastal South Carolina but are relatively uncommon.

**BIOLOGICAL CONCLUSION: MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT**

Surveys for the bald eagle were completed by the SCDNR, and according to a letter from Charlotte Hope of the SCDNR dated April 26, 2005, no bald eagle nests occur within 1500 feet of the project study area. However, a bald eagle was sighted twice over the project study area during field studies in March. The SCHTP documents one occurrence of the bald eagle approximately 3.3 miles east of the project study area in the Francis Marion National Forest, and one occurrence 4.6 miles southwest of the project study area on the Wando River. No other occurrence is recorded within 5 miles of the project study area. The Wando River provides foraging habitat for the bald eagle, and the USFWS may require that construction activities be avoided during the nesting period (approximately December through February in South Carolina).

***Amaranthus pumilus* (Seabeach amaranth-Threatened)**

Seabeach amaranth is primarily found on foredunes and sand spits of Atlantic coast barrier beaches and inlets in areas where periodic overwash eliminate vegetative competition. The preferred habitat of this plant does not occur within the project area as beach slopes are too steep for inland overwash except on rare occasions and there are no nearby accreting spits.

**BIOLOGICAL CONCLUSION: NO EFFECT**

The SCHTP documents no occurrence of seabeach amaranth within 5 miles of the project study area. No habitat for seabeach amaranth occurs in or near the project study area, as sandy, eroded shorelines and dunes are absent. Shorelines are composed of mud, marsh, or wooded fringes, or are armored. No specimens of seabeach amaranth were noted during the field visits to the project study area. This project will not affect seabeach amaranth.

***Lindera melissifolia* (Pondberry or southern spicebush – Endangered)**

Pondberry occurs along margins of sink holes, ponds, and depressions in pinelands. The plants generally grow in shaded areas but may also be found in full sun.

**BIOLOGICAL CONCLUSION: NO EFFECT**

The fringes of freshwater wetlands may provide very marginal pondberry habitat within the project study area. However, detailed surveys for pondberry were conducted during the March field visits, and no specimens of pondberry were found. The SCHTP documents six occurrences of pondberry within 5 miles of the project study area. These occurrences are all within the Francis Marion National Forest near SC 41, from 1.7 to 4.5 miles north of the project study area. This project will not affect pondberry.

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

Canby's dropwort grows in coastal plain habitats with little or no canopy cover such as wet meadows, wet pine savannas, ditches, sloughs, and edges of cypress ponds. Canby's dropwort also grows best in acidic, deep, poorly-drained soils with a high organic content.

**BIOLOGICAL CONCLUSION: NO EFFECT**

The SCHTP documents no occurrence of Canby's dropwort within 5 miles of the project study area. However, ditches and other open freshwater wetlands may provide habitat for Canby's dropwort within the project study area. Detailed surveys for the plant were conducted on August 9, 2005 by walking systematic transects of suitable and marginal habitat areas. No occurrences of Canby's dropwort were recorded. This project will not affect Canby's dropwort.

***Schwalbea americana* (American chaffseed – Endangered)**

American occurs in open grass/sedge assemblages with seasonally moist to dry acidic sandy loams or sandy peat loams. These assemblages typically exist in moist pine flatwoods, savannas, bog borders, ecotones of streamhead pocosins, pine/scrub oak sandhills, and open oak woods. Frequent fires maintain a strong dominance and high diversity of herbs in what were historically fire-dominated communities.

**BIOLOGICAL CONCLUSION: NO EFFECT**

Suitable habitat for American chaffseed may occur within the project study area in ditches and other open wetlands areas, as well as undisturbed open fringes of these areas. The SCHTP documents American chaffseed at four locations within 5 miles of the project study area, within the Francis Marion National Forest. These occur near SC 41 approximately 2.2 miles, 4.0 miles, and 4.5 miles north of the project study area. Detailed surveys for the plant were conducted on August 9, 2005 by walking systematic transects of suitable and marginal habitat areas. No occurrences of American chaffseed were recorded. This project will not affect American chaffseed.



Federal Highway Administration  
Finding of No Significant Impact (FONSI)  
SC Route 41 Bridge Replacement over the Wando River,  
Berkeley and Charleston Counties, South Carolina  
File No. 10.032908.1

## Introduction

As discussed below, the Federal Highway Administration (FHWA) has determined that in accordance with 23 CFR § 771.119 and § 771.121, the SC Route 41 Bridge Replacement Project will not have any significant impact on the human or natural environment. This FONSI is based on the Environmental Assessment (EA) approved by FHWA on May 4, 2010, and all supporting documentation.

Both the May 4, 2010 EA and FONSI request, as well as the Public Hearing Summary, analysis, public comments and responses have been independently evaluated by the FHWA. The FHWA has determined that the documents adequately and accurately discuss the need, purpose, alternatives, environmental issues, Section 4f issues, and impacts of the proposed Project. The documents also provide appropriate mitigation measures for any resulting impacts. The documents provide sufficient evidence and analysis for determining that the Project will not have any significant impact on the human or natural environment; and thus no Environmental Impact Statement (EIS) is required for this project.

The Project has been developed in accordance with the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) regulations for Implementing the Procedural Provision of NEPA (40 CFR 1500-1508), FHWA regulations 23 CFR Parts 771 and 774 which govern environmental impacts and related procedures, Section 4f, and other related federal and state requirements. FHWA recognizes the US Coast Guard as a cooperating agency on this project.

## Monitoring and Enforcement

All commitments and conditions of approval stated in the EA and above will be fully monitored by SCDOT, the FHWA, and all other appropriate state, federal and local agencies to ensure compliance.

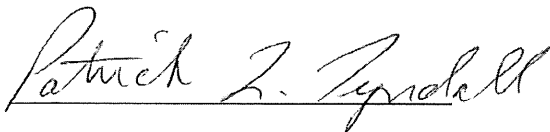
## FHWA Decision

Based upon its own independent review of the EA, supporting studies, documents and reports, the FHWA finds that the EA analyzed and considered all the relevant and potential environmental impacts and issues associated with the Project.

FHWA concurs with the finding in the FONSI request that Build Alternative "A2" is the alternative that best meets the Need and Purpose of the Project with the least amount of impacts to the surrounding areas; and that the proposed Project will have no significant impacts on the quality of the human or natural environment under NEPA. Build Alternative A2 includes a "bascule" bridge design.

The existing SC 41 Bridge over the Wando River is historic and eligible for the National Register and is therefore a Section 4f property. A nationwide Section 4f programmatic evaluation was done on this resource and signed on Dec. 22, 2010. Because of the adverse effect under Section 106, a Memorandum of Agreement between SC Dept. of Archives and History, SCDOT, and FHWA was completed on Sept. 27, 2010.

Based upon our own agency review and consideration of the analysis and evaluation contained in the EA for this Project, and after further careful consideration of all social economic, and environmental factors, including input from the public involvement process, FHWA hereby approves the issuance of a Finding of No Significant Impact for the SC 41 Bridge Replacement Project. Further, FHWA approves Build Alternative "A2" as the recommended alternative for selection as the proposed action for this Project, because it best fulfills the project need and purpose. As to Project mitigation, SCDOT is hereby required to ensure completion of all mitigation outlined above, and as set out in the May 4, 2010 EA. SCDOT is also required to ensure that any and all local, state, or federal permit requirements and conditions are met and or otherwise complied with.



Patrick L. Tyndall  
Planning and Environment Team Leader  
South Carolina Division  
Federal Highway Administration

Date: 12-22-10

**SC 41 BRIDGE REPLACEMENT  
OVER THE WANDO RIVER**

**BERKELEY & CHARLESTON COUNTIES  
SOUTH CAROLINA**

**NATIONWIDE  
PROGRAMMATIC SECTION 4(f) EVALUATION**

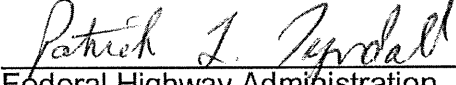
Submitted by  
U.S. Department of Transportation  
Federal Highway Administration  
and  
S.C. Department of Transportation

Cooperating Agency  
U.S. Coast Guard

12-16-10  
Date of Approval

  
S.C. Department of Transportation

12-22-10  
Date of Approval

  
Federal Highway Administration

The following individuals may be contacted for additional information concerning the project:

**Mr. Patrick Tyndall**  
Environmental Program Manager  
Federal Highway Administration  
1835 Assembly Street, Suite 1270  
Columbia, S.C. 29202  
(803) 765-5460

**Mr. Anthony W. Fallaw, P.E.**  
Project Manager  
S.C. Department of Transportation  
P.O. Box 191  
Columbia, S.C. 29202  
(803) 737-9932

Project No. BR-BR08 (017)  
Construction PIN 32098

**MEMORANDUM OF AGREEMENT BETWEEN  
THE FEDERAL HIGHWAY ADMINISTRATION,  
THE SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION,  
AND THE SOUTH CAROLINA STATE HISTORIC PRESERVATION OFFICE**

Whereas, the Federal Highway Administration (FHWA) has determined that the S.C. Route 41 Wando Bridge Replacement Project in Berkeley and Charleston County, South Carolina, will have an adverse effect upon the Wando Bridge (Resource # 066 0006), a property determined eligible for inclusion in the National Register of Historic Places, and

WHEREAS, the FHWA has notified the Advisory Council on Historic Preservation of the adverse effect determination in accordance with Section 106 of the National Historic Preservation Act (36 CFR Part 800.6 (a)) and the Council has elected not to participate, and

WHEREAS, the FHWA has delegated responsibility to the South Carolina Department of Transportation (SCDOT) to coordinate with the South Carolina State Historic Preservation Officer (SHPO) on matters related to Section 106 of the National Historic Preservation Act (16 U.S.C. Sec. 470f), and

WHEREAS, the SCDOT has consulted with the South Carolina SHPO in accordance with Section 106 of the National Historic Preservation Act (16 U.S.C. Sec. 470f) and its implementing regulations (36 CFR Part 800) to resolve adverse effects, and

NOW, THEREFORE, the FHWA, the SCDOT, and the South Carolina SHPO agree that the undertaking will be implemented according to the following stipulations in order to take into account the effects of the undertaking on the Wando Bridge:

**STIPULATIONS**

The FHWA and the SCDOT will ensure that the following stipulations are implemented:

1. SCDOT will hire a qualified firm with experience in engineering and cultural resources to complete Phase III of the Historic Bridge Survey of non-metal truss bridges in the state of South Carolina. Phase III of the project will include determinations of National Register eligibility, development of GIS data derived from the bridge survey, the production of a technical report, and the completion of the bridge database.
2. SCDOT will produce 30 hard copies of the technical report for distribution to resource agencies and professional consultants. Digital copies of the report and database will also be made available to resource agencies and consultants.

### Late Discoveries

If unanticipated cultural materials (e.g., large, intact artifacts or animal bones; large soils stains or patterns of soil stains; buried brick or stone structures; clusters of brick or stone) or human skeletal remains are discovered during construction activities, then the Resident Construction Engineer shall be immediately notified and all work in the vicinity of the discovered materials shall cease until an evaluation can be made by the SCDOT archaeologist in consultation with the South Carolina SHPO.

### Dispute Resolution

The FHWA, the SCDOT, and the South Carolina SHPO will attempt to resolve any disagreement arising from the implementation of the MOA. This will include any disputes that arise concerning the contents of the report(s), including but not limited to its merit as a cultural resource management document.

In the event that the terms of this agreement cannot be carried out, the FHWA and SCDOT will submit a new (or amended) MOA to the South Carolina SHPO and the Council for review. If consultation to prepare a new MOA or amendments proves unproductive, the FHWA will seek Council comment in accordance with 36CFR Part 800.6(b)(1).

### Amendment and Modification

Any party to this MOA may request that it be amended or modified at any time, whereupon the parties will consult with each other to consider such amendment or modification.

Execution of this Memorandum of Agreement by the Federal Highway Administration, the South Carolina Department of Transportation, and the South Carolina State Historic Preservation Office and implementation of its terms, is evidence that the FHWA has taken into account the effects of the undertaking on the Wando Bridge in accordance with Section 106 of the National Historic Preservation Act (16 U.S.C. Sec. 470f) and its implementing regulations (36 CFR Part 800).

Federal Highway Administration

By: Patrick L. Zepdall Date: 9-27-10

South Carolina Department of Transportation

By: Chad Garg Date: 9/20/2010

South Carolina State Historic Preservation Office

By: Elizabeth M. Johnson Date: 9/16/2010

**SC-41 BRIDGE REPLACEMENT  
OVER THE WANDO RIVER**

**BERKELEY AND CHARLESTON COUNTIES  
SOUTH CAROLINA**

**ENVIRONMENTAL ASSESSMENT  
&  
DRAFT PROGRAMMATIC SECTION 4(F) EVALUATION**

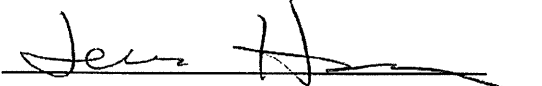
Submitted Pursuant To 42 U.S.C. 4332 (2)(c)  
by

The U.S. Department of Transportation,  
Federal Highway Administration  
and  
South Carolina Department of Transportation,  
Environmental Management Office

5/4/10  
Date of Approval

  
S.C. Department of Transportation

5/4/10  
Date of Approval

  
Federal Highway Administration

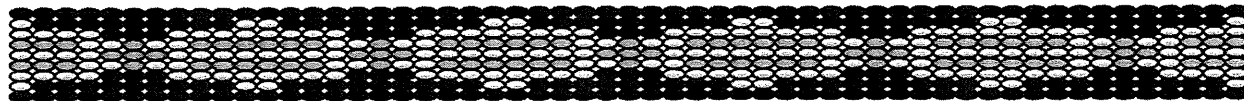
The following individuals may be contacted for additional information concerning the project:

**Mr. Patrick Tyndall**  
Environmental Program Manager  
Federal Highway Administration  
1835 Assembly Street, Suite 1270  
Columbia, S.C. 29202  
(803) 765-5460

**Mr. Anthony W. Fallaw, P.E.**  
Project Manager  
S.C. Department of Transportation  
P.O. Box 191  
Columbia, S.C. 29202  
(803) 737-9932

Project No. BR-BR08 (017)  
Construction PIN 32098

Catawba Indian Nation  
Tribal Historic Preservation Office  
1536 Tom Steven Road  
Rock Hill, South Carolina 29730  
803-328-2427 Fax 803-328-5791



12 August 2008

Mr. Chad C. Long  
Archaeologist  
SCDOT  
Post Office Box 191  
Columbia, South Carolina 29202-0191

THPO #	PIN 32098 File	Project description and location
2008-66-11	8.158	SC Rt. 41 Wando Bridge Replacement Project Revised Draft Report: <i>Cultural Resources Survey of the SC Route 41 Wando Bridge Replacement , Berkeley and Charleston Counties, South Carolina.</i>

Dear Mr. Long,

Based on the *Cultural Resources Survey of the SC Route 41 Wando Bridge Replacement* Revised Draft Report as listed above, the Catawba Indian Nation Tribal Historic Preservation Office has no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.

If you have questions, please contact Sandra Reinhardt at 803-328-2427 ext. 233, or e-mail [sandrar@ccppcrafters.com](mailto:sandrar@ccppcrafters.com).

Sincerely,

*Sandra Reinhardt for*

Wenonah G. Haire  
Tribal Historic Preservation Officer

8/13/08  
Sandra Reinhardt



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

176 Croghan Spur Road, Suite 200  
Charleston, South Carolina 29407



July 16, 2008

Mr. Chad C. Long  
S.C. Department of Transportation  
P.O. Box 191  
Columbia, SC 29202-0191

Re: SC 41 Bridge Replacement, Wando River, Charleston and Berkeley Counties, SC  
FWS Log No. 42410-2008-I-0547

Dear Mr. Long:

The U.S. Fish and Wildlife Service (Service) has received the Natural Systems Technical Report regarding the proposed replacement of the SC 41 Bridge over the Wando River connecting Charleston and Berkeley Counties, SC. The South Carolina Department of Transportation (SCDOT) seeks to replace the existing bridge as well as improve the approach roadways in order to alleviate safety concerns and increase traffic capacity on SC 41. This report provides a description of the natural features within the corridor and evaluates potential impacts of the proposed work. In addition, this report offers a determination of effect upon federally protected species that may occur in the project area.

S.C. Department of Transportation plans to replace the existing SC 41 bridge over the Wando River with a new wider structure on the upstream, or eastern, side. With the bridge relocation, SCDOT must realign the approach roadways on both sides of the bridge as well as the intersection at SC 41 and Clements Ferry Road located northeast of the bridge. The project will begin approximately 2000 feet south of the existing bridge in Charleston County and terminate approximately 3000 feet north along SC 41 in Berkeley County. The project's study corridor extends 150 feet beyond both sides of the existing right of way for a length of 1.5 miles.

This Technical Report includes a review of each of the threatened and endangered (T&E) species that are known to occur, or may occur, within the two counties. A survey for these species was performed in order to facilitate consultation with the Service as required by the Endangered Species Act of 1973 (Act), as amended. The results are detailed and tabulated with a final determination of effect.

Upon review of the information provided, the Service concurs with the determination that the SC 41 project may affect, but is not likely to adversely affect the Kirkland's warbler, wood stork,





Bachman's warbler or the West Indian manatee. The determination for the manatee is based upon the implementation of provisions designed to protect the manatee during construction. Further, the Service concurs that the SC 41 project will have no effect upon the seabeach amaranth, flatwoods salamander, piping plover, pondberry, Canby's dropwort, red-cockaded woodpecker and American chaffseed. Existing and potential habitat for the shortnose sturgeon is found within the Wando River. The Service recommends you contact NOAA Fisheries for consultation regarding this species as well as sea turtles.

Obligations under section 7 of the Act must be reconsidered if (1) new information reveals impacts of this identified action may affect any listed species or critical habitat in a manner not previously considered, (2) this action is subsequently modified in a manner which was not considered in this assessment, or (3) a new species is listed or critical habitat is designated that may be affected by the identified action.

If you have any questions regarding the Service's comments, please do not hesitate to contact Mark Caldwell at (843) 727-4707 ext. 215.

Sincerely,

A handwritten signature in black ink, appearing to read "Ed Endley" with a stylized flourish underneath.

Timothy N. Hall  
Field Supervisor

TNH/MAC

cc: Mr. Dan Hinton, Federal Highway Administration, Columbia, SC



South Carolina  
Department of Transportation

June 5, 2008

MULT  
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08-DK0010  
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RECEIVED

JUN 06 2008

SC Department of  
Archives & History

Ms. Elizabeth Johnson  
Deputy State Historic Preservation Officer  
South Carolina Department of Archives and History  
8301 Parklane Road  
Columbia, SC 29223-4905

RE: SC Route 41 Wando Bridge Replacement Project  
Revised Draft Report: *Cultural Resources Survey of the SC Route 41 Wando Bridge Replacement, Berkeley and Charleston Counties, South Carolina.*  
PIN: 32098 File No. 8.158

Dear Ms. Johnson:

The Department's cultural resources subconsultant has prepared a revised draft report for the proposed SC Route 41 Wando River Bridge Replacement in Berkeley and Charleston Counties. The revised report includes additional information on archaeological sites 38BK1810 and 38BK1621. Archaeological site 38BK1810, a nineteenth-century brick kiln, was tested by TRC (Grunden and Henry) in 2006 during an investigation of an adjacent development tract. Through consultation with your agency, the site was subsequently determined not eligible for listing in the National Register of Historic Places. With respect to archaeological site 38BK1621, field investigations undertaken during the current survey failed to identify any archaeological deposits associated with the site. The proposed project will therefore have no effect on this site.

The architectural survey identified six historic architectural resources in the Area of Potential Effects. The Wando River Bridge (Site # 066 0006) was the only architectural resource determined eligible for listing in the National Register of Historic Places. The proposed removal of the bridge will result in an adverse effect to this historic property. Pursuant to 36 CFR Part 800.6, the Department recommends that a Memorandum of Agreement be developed in order to resolve adverse effects.

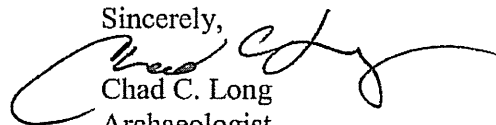
In accordance with the memorandum of agreement approved by the Federal Highway Administration, March 16, 1993, the Department is providing this information as agency official



Ms. Elizabeth Johnson  
June 5, 2008  
Page Two

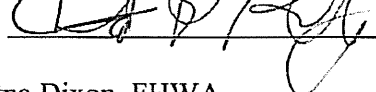
designee, as defined under 36 CFR 800.2, to ensure compliance with Section 106 of the National Historic Preservation Act.

It is requested that you review the enclosed material and, if appropriate, indicate your concurrence in the Department's findings, thus completing the Section 106 consultation process. Please respond within 30 days if you have any objections or if you have need of additional information.

Sincerely,  
  
Chad C. Long  
Archaeologist

Enclosures: 2 reports

I ~~(do not)~~ concur in the above determination.

Signed:  SCDAH Date: 6/9/08  
DOT Project Coordinator

cc: Chetna Dixon, FHWA  
Brian Taylor, CECS  
Keith Derting, SCIAA



February 27, 2006

Mr. J. Berry Still  
Environmental Engineer  
South Carolina Department of Transportation  
P.O. Box 191  
Columbia, SC 29202-0191

Re: Brockington and Associates' ***Cultural Resources Survey of the SC Route 41 Wando Bridge Replacement Project, Berkeley and Charleston Counties, South Carolina***, SCDOT PIN 32098.

Dear Mr. Still:

Thank you for providing the letter, site forms and draft report for the *Cultural Resources Survey of the SC Route 41 Wando Bridge Replacement Project, Berkeley and Charleston Counties, South Carolina* project, dated January 25, 2006 and received January 27, 2006. We have reviewed these materials and have several comments.

We concur with the report's recommendation of eligibility for the six architectural resources over fifty years old in the project area. Of the six, only one (site # 066 0006, the Wando River Bridge) is eligible for the National Register of Historic Places. The report suggests that modified HAER documentation serve as mitigation for the adverse effect resulting from the bridge's demolition. While modified HAER documentation has worked as mitigation for several bridge replacement projects, we would like to explore other mitigation options as we consider this bridge type to be of increasing significance in the state. State Historic Preservation Office (SHPO) staff will coordinate with South Carolina Department of Transportation (SCDOT) staff to explore other mitigation or avoidance options for this bridge replacement project.

As for the archaeological resources in the project area, 38BK1621 is eligible for the National Register of Historic Places and should be avoided or mitigated. It has undergone Phase II testing through a private development project for the O'Hear Tract. TRC, in *Archaeological and Historical Investigations at 38BK1621, the O'Hare Point Brickyard, Berkeley County, South Carolina* (January 2006, Grunden and Henry), recommended the site eligible, and our office concurred, just prior to our review of SCDOT's report on the SC Route 41 bridge replacement. We do, however, agree that

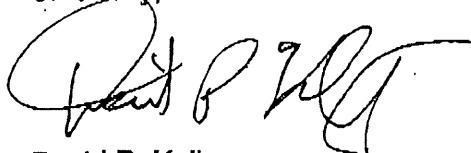
the proposed right of way does not overlap 38BK1621 -- either that or there are no deposits within the right of way that would contribute to the site's significance. Please note also that the boundaries of 38BK1621, as defined by TRC's testing, represent a smaller area than what is indicated in this SCDOT report.

Additionally, we concur that 38BK1810 is potentially eligible for the National Register. This site is within the proposed new right of way for the bridge widening, thus we have to consider that the project as proposed will have an adverse effect on 38BK1810. Unless project plans change, we recommend the development of a Memorandum of Agreement to manage this site. Additional evaluative testing, and possibly mitigation through data recovery and public information, will be needed if the site cannot be avoided. This site appears to be significant for its association with the brick maker John O'Hear, his occupation of this property, and his brick making industry that is most clearly manifested at 38BK1621.

SCDOT's letter of January 25, 2006 references avoidance of archaeological sites. This reference indicates that final project plans are not presently available. SHPO looks forward to receiving final plans so that we may issue conclusive affect findings for the project.

We are providing these comments to assist you with your responsibilities as agency official designee, as defined under 36 CFR 800.2, to ensure compliance with Section 106 of the National Historic Preservation Act. If you have any questions, please call me at (803) 896-6184.

Sincerely,



David P. Kelly  
DOT Project Coordinator

cc: Keith Derting, SCIAA  
Dan Hinton, FHWA  
Tony Fallaw, SCDOT  
Ed Salo, Brockington and Associates  
Bonnie Frick, SCDOT

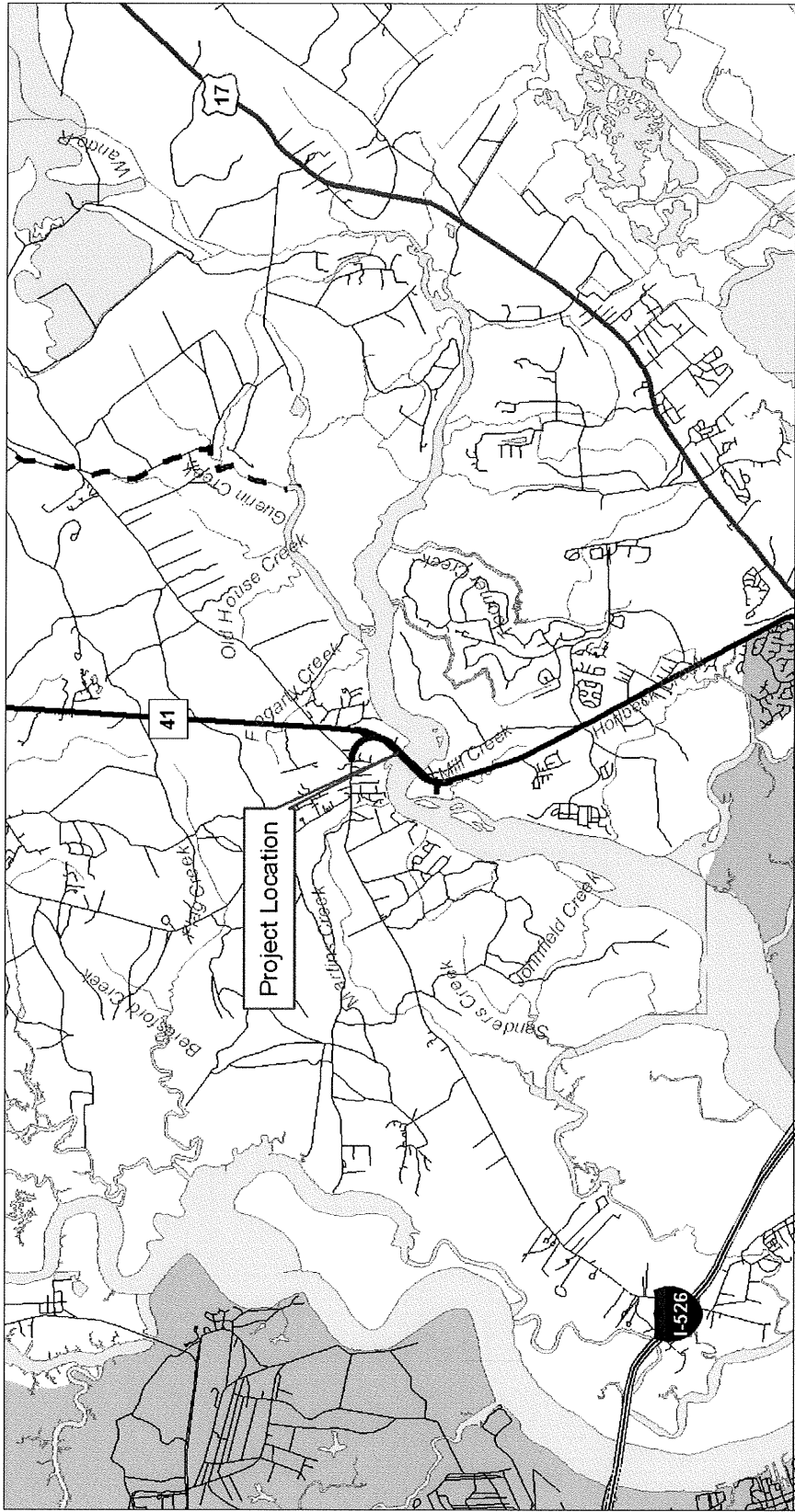
VICINITY MAP  
From: BERKELEY/CHARLESTON  
Co. (SCDOT)



Shaded Area Indicates  
County Location in SC



Location of Project is:  
Latitude 32°55'25"  
Longitude 79°49'30"



PIN 32098 BR-BR08(07)  
SC RTE. 41 BRIDGE REPLACEMENT  
OVER WANDO RIVER  
BERKELEY/CHARLESTON COUNTIES  
APPLICATION BY S.C.D.O.T.  
FEDERAL FUNDS TO BE USED  
DATE: AUGUST 30, 2011

SCALE 0 2 MILES

SOUTH CAROLINA DEPARTMENT  
OF TRANSPORTATION

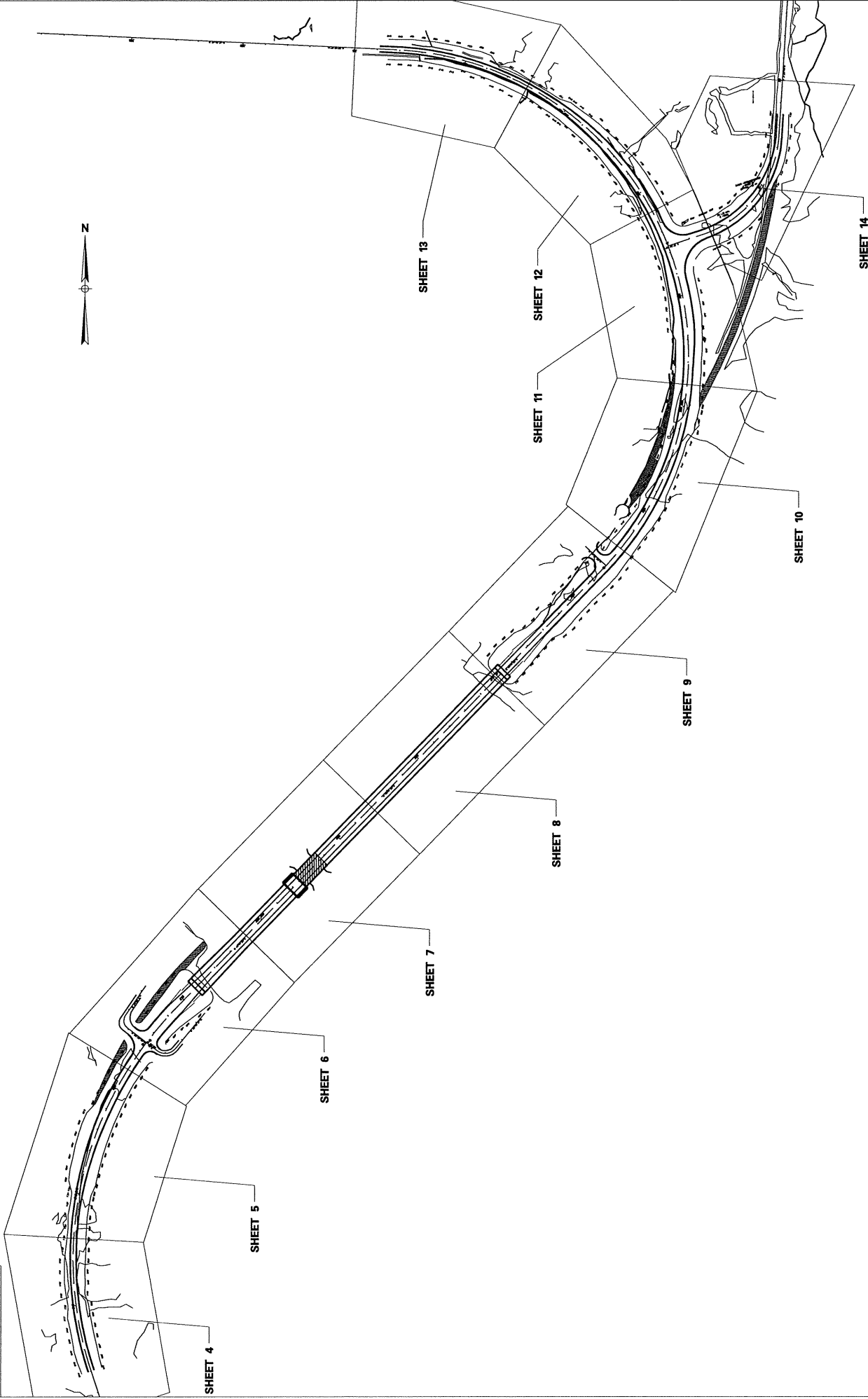


SHEET 1 OF 28

LOCATION MAP



PLAN



SOUTH CAROLINA DEPARTMENT  
OF TRANSPORTATION

**SCDOT**

SHEET 3 OF 28

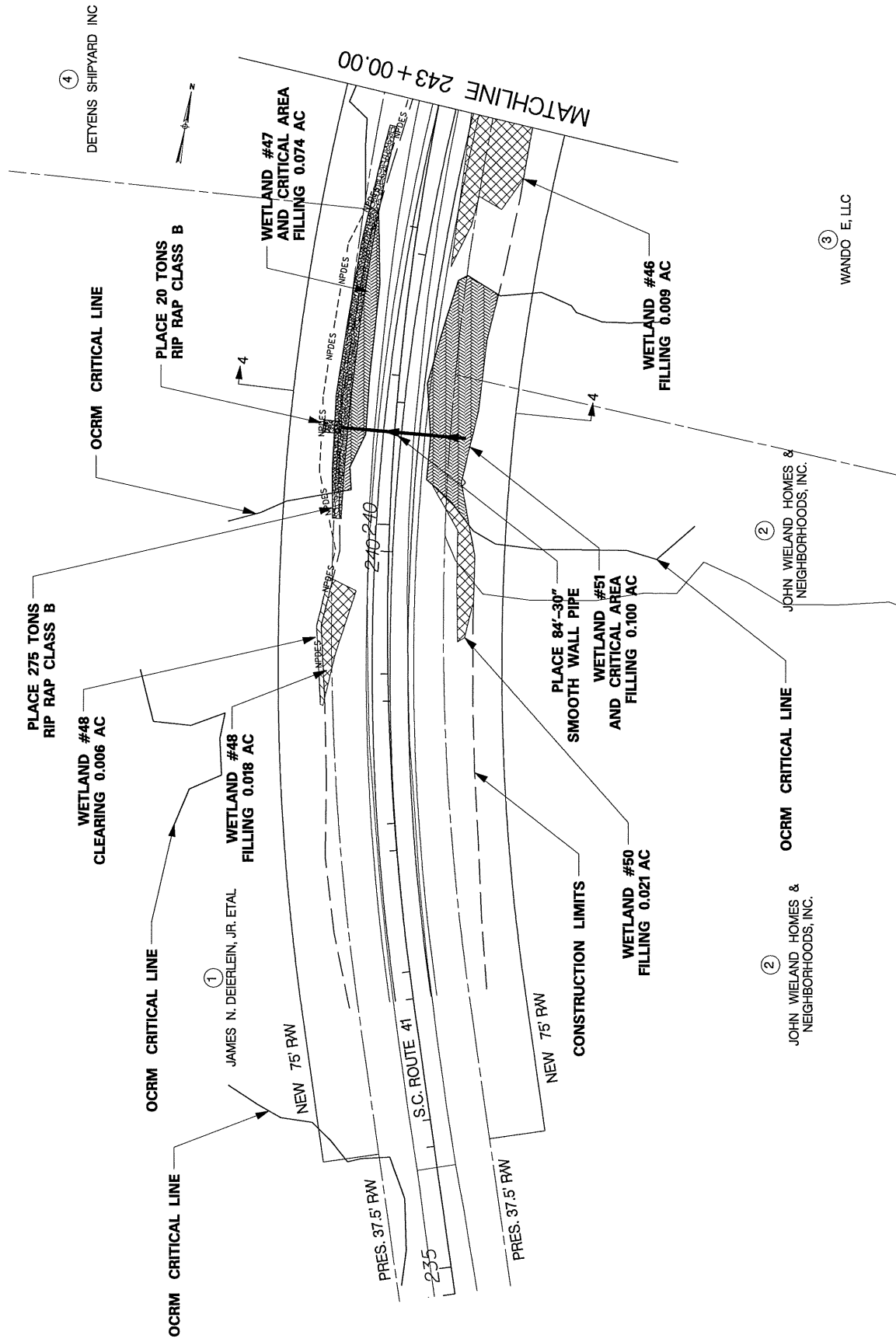
KEY TO

PLAN VIEW SHEETS

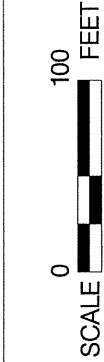
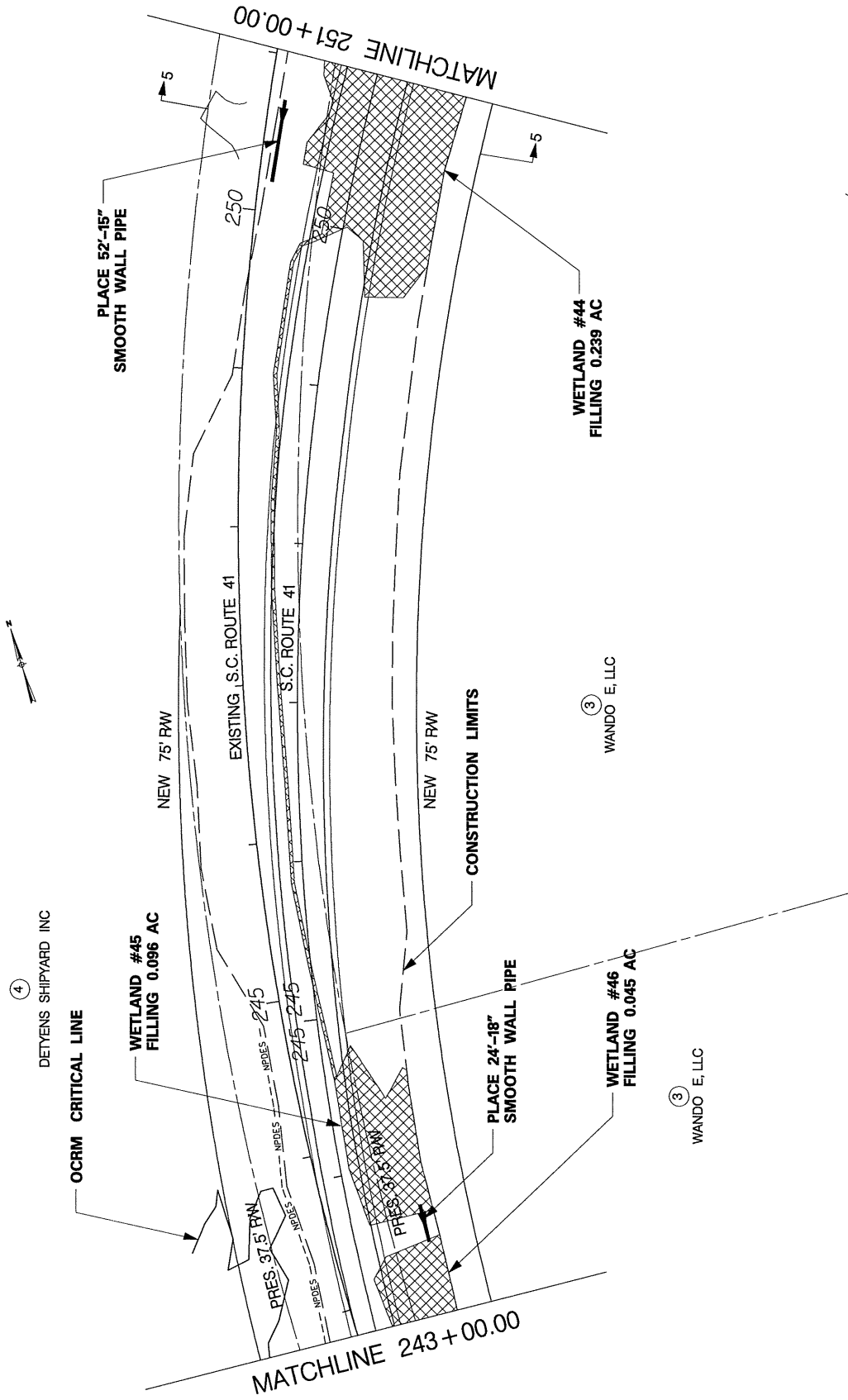
PIN 32098 BR-BR08(017)  
SC. RTE. 41 BRIDGE REPLACEMENT  
OVER WANDO RIVER  
BERKELEYCHARLESTON COUNTIES  
APPLICATION BY S.C.D.O.T.  
FEDERAL FUNDS TO BE USED  
DATE: AUGUST 30, 2011

Location of Project is:  
Latitude 32° 55' 25"  
Longitude 79° 49' 30"





<div><div><div>0</div><div>100</div></div><div>SCALE</div><div>FEET</div></div>		<div><div><div><div></div></div></div><div><div><div></div></div></div><div><div><div></div></div></div><div><div><div></div></div></div></div>	<div><div>FRESHWATER WETLANDS FILLED</div><div>FRESHWATER WETLANDS CLEARED</div><div>SALTWATER WETLANDS FILLED</div><div>SALTWATER SHADING</div></div>	<div><div>PIN 32098 BR-BR08(017)</div><div>SC RTE. 41 BRIDGE REPLACEMENT</div><div>OVER WANDO RIVER</div><div>BERKELEY-CHARLESTON COUNTIES</div><div>APPLICATION BY S.C.D.O.T.</div><div>FEDERAL FUNDS TO BE USED</div><div>DATE: AUGUST 30, 2011</div></div>	<div><div>0.048 AC</div><div>0.006 AC</div><div>0.174 AC</div></div>	<div><div>SOUTH CAROLINA DEPARTMENT</div><div>OF TRANSPORTATION</div><div>SCDOT</div></div> <div><div>SHEET 4</div><div>OF 28</div></div> <div><div>WETLAND</div><div>LOCATION</div></div>
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0.38 AC

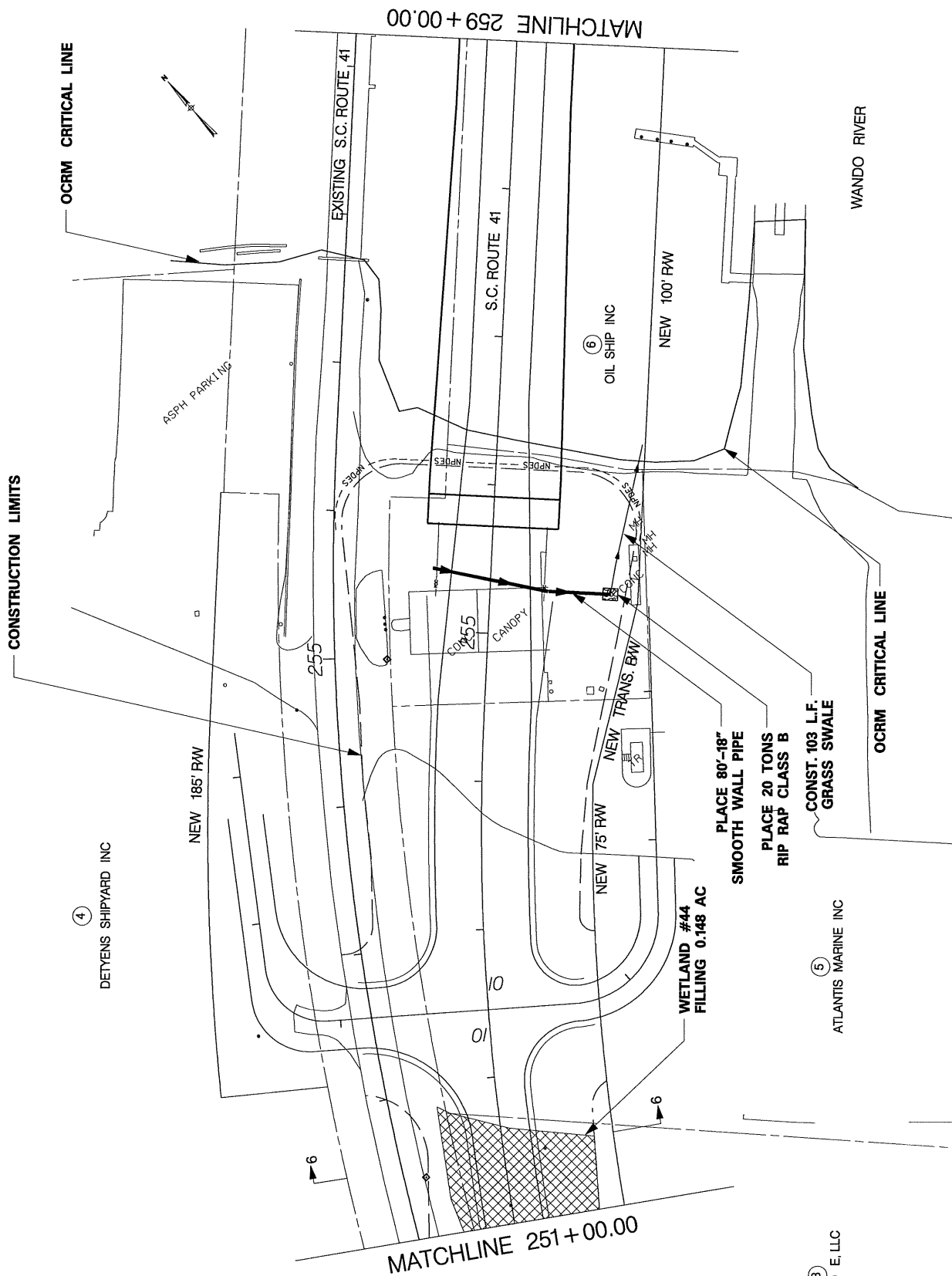
PIN 32098 BR-BR08(017)  
SC RTE. 41 BRIDGE REPLACEMENT  
OVER WANDO RIVER  
BERKELEY-CHARLESTON COUNTIES  
APPLICATION BY S.C.D.O.T.  
FEDERAL FUNDS TO BE USED  
DATE: AUGUST 30, 2011

SOUTH CAROLINA DEPARTMENT  
OF TRANSPORTATION

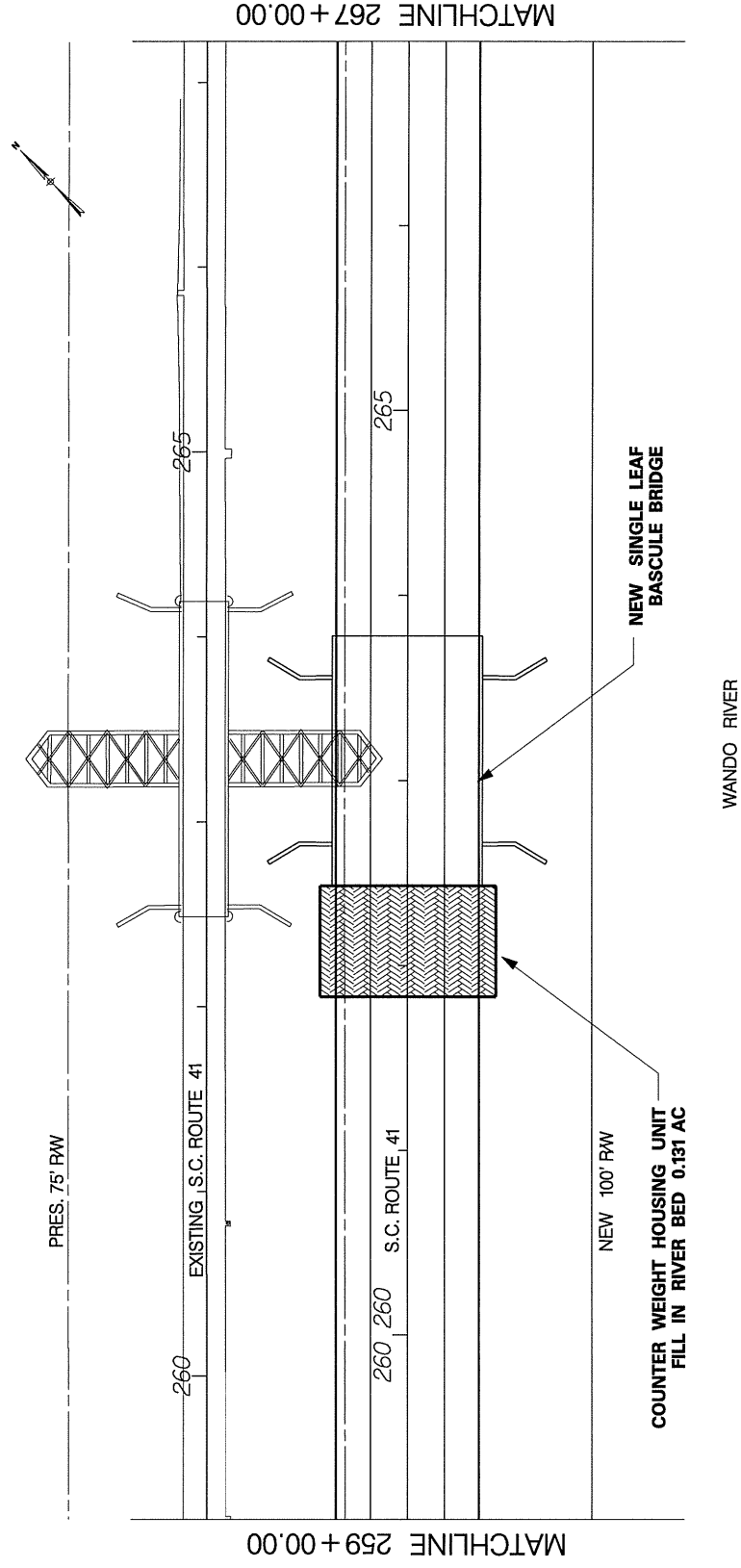


SHEET 5 OF 28

WETLAND  
LOCATION



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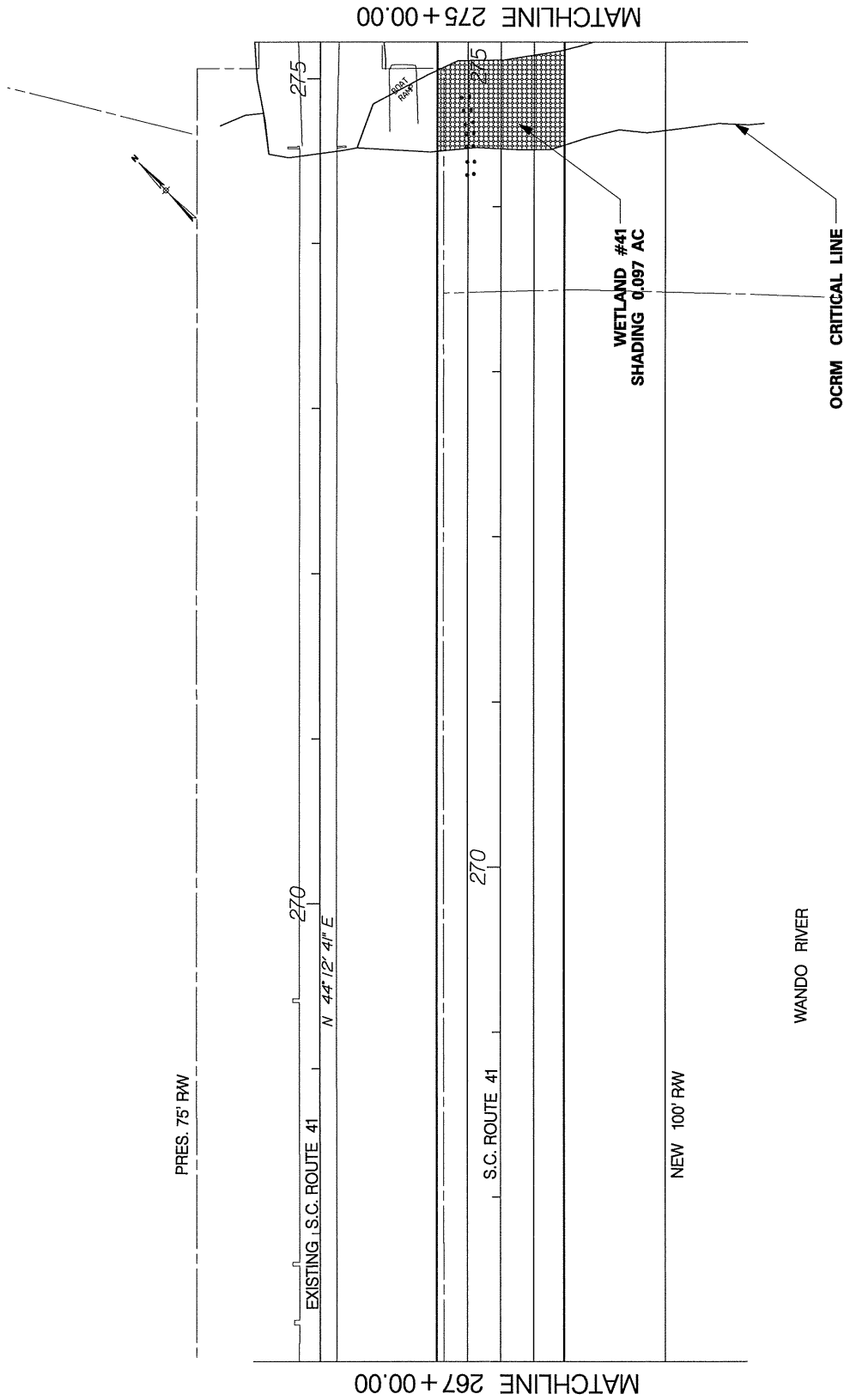
PIN 32098 BR-BR08(017)  
SC RTE. 41 BRIDGE REPLACEMENT  
OVER WANDO RIVER  
BERKELEY-CHARLESTON COUNTIES  
APPLICATION BY S.C.D.O.T.  
FEDERAL FUNDS TO BE USED  
DATE: AUGUST 30, 2011


FRESHWATER WETLANDS FILLED  
FRESHWATER WETLANDS CLEARED  
SALTWATER WETLANDS FILLED  
SALTWATER SHADING

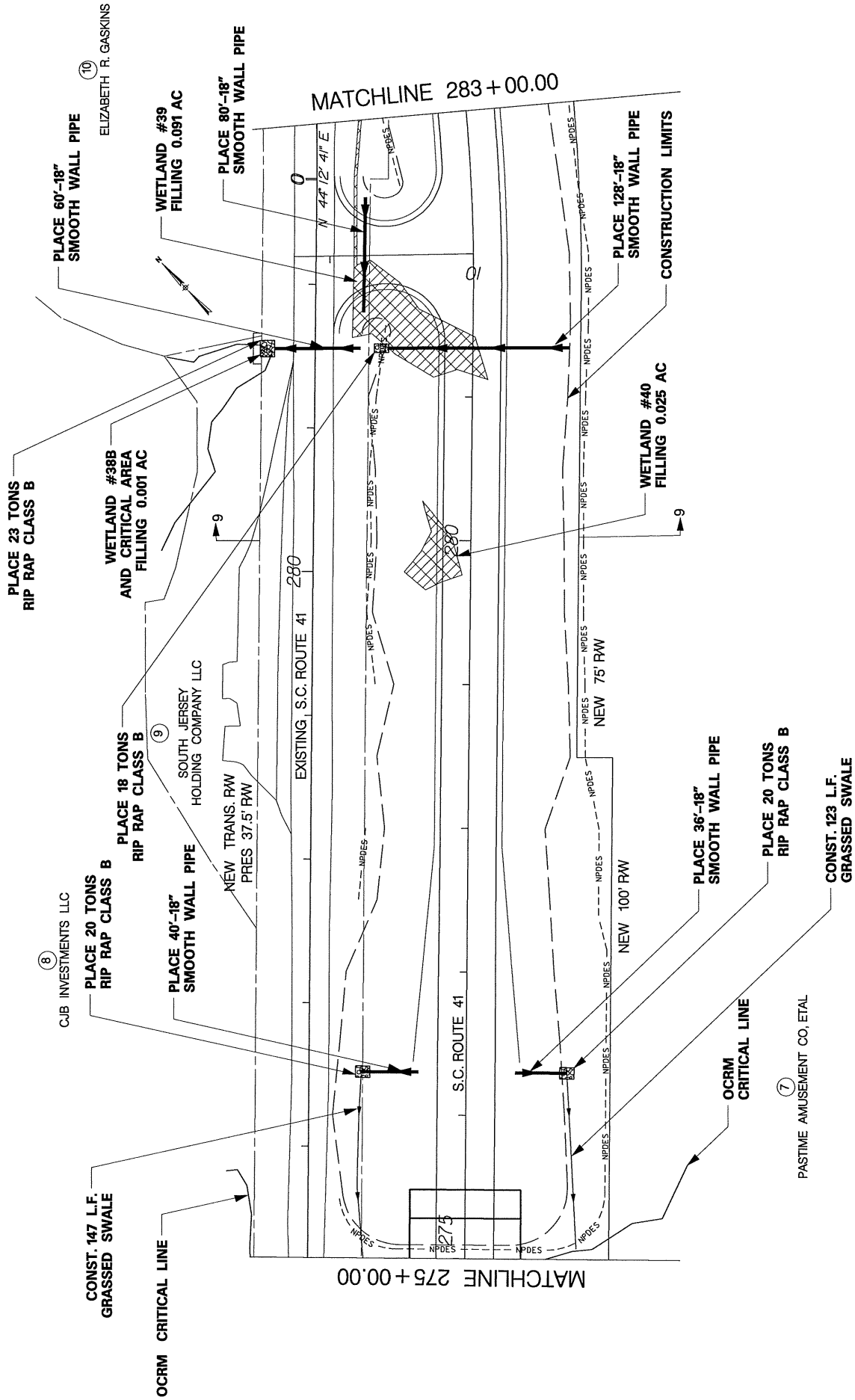
**SOUTH CAROLINA DEPARTMENT  
OF TRANSPORTATION**

SHEET 7 OF 28

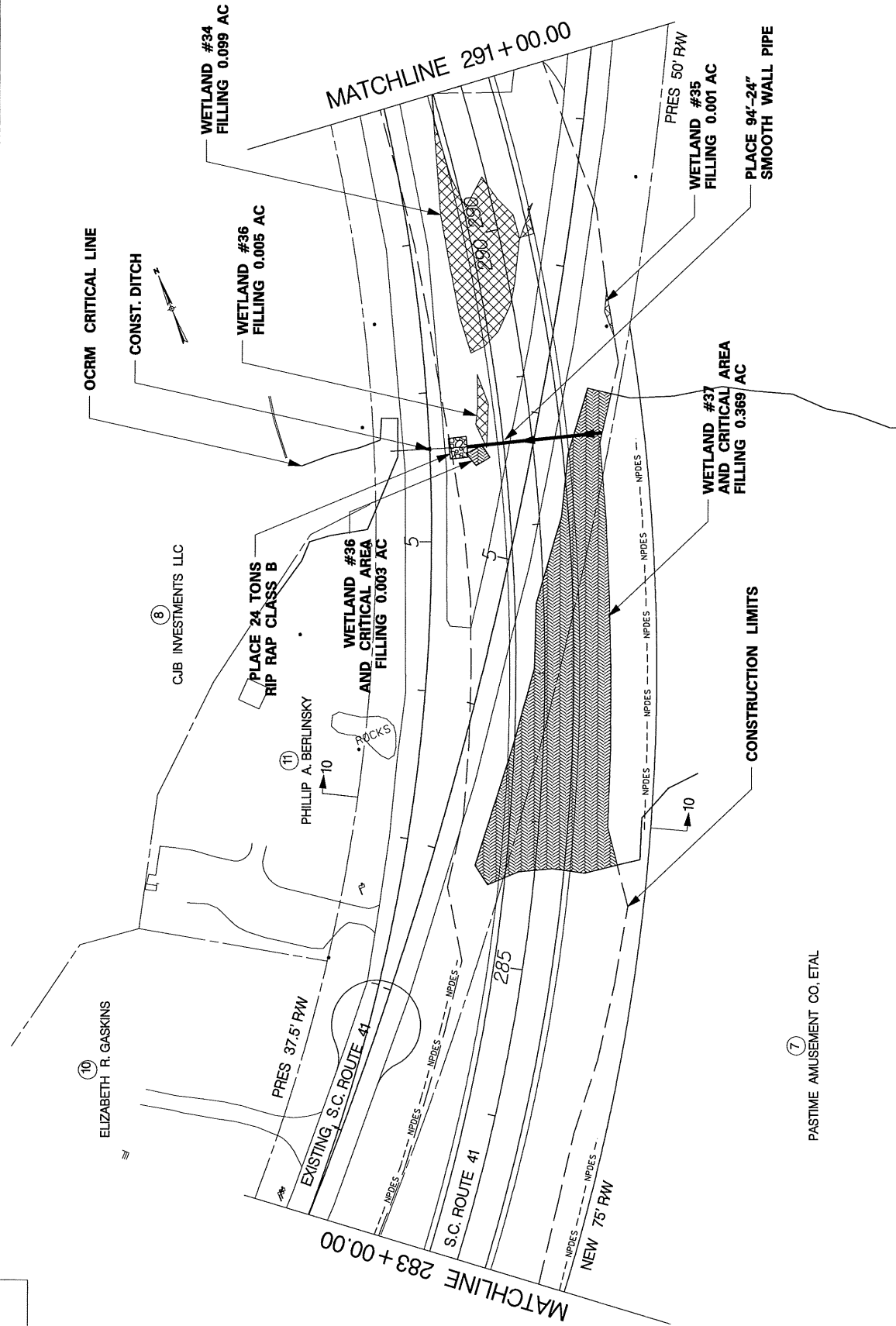
WETLAND  
LOCATION



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				SHEET 8 OF 28	
<p>SCALE 0 100 FEET</p>			WETLAND LOCATION		



	<p>PIN 32098 BR-BR08(017) SC RTE. 41 BRIDGE REPLACEMENT OVER WANDO RIVER BERKELEY-CHARLESTON COUNTIES APPLICATION BY S.C.D.O.T. FEDERAL FUNDS TO BE USED DATE: AUGUST 30, 2011</p>	<p>0.116 AC</p> <p>0.001 AC</p>	<p>FRESHWATER WETLANDS FILLED</p> <p>FRESHWATER WETLANDS CLEARED</p> <p>SALTWATER WETLANDS FILLED</p> <p>SALTWATER SHADING</p>	<p>SCALE 0 100 FEET</p>	<p>SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION</p> <p>SHEET 9 OF 28</p> <p>WETLAND LOCATION</p>

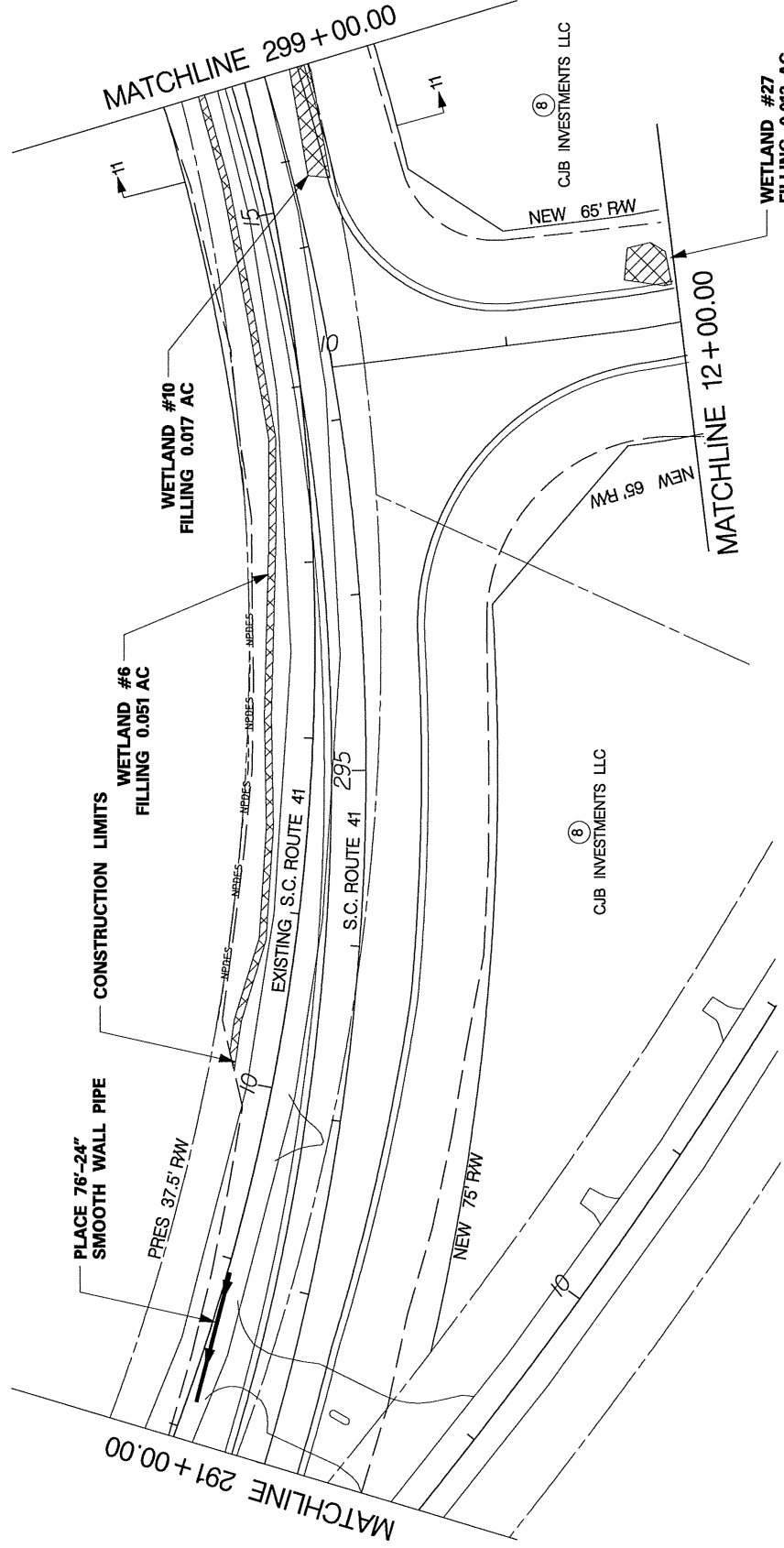


SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION	PIN 32098 BR-BR08(017) SC RTE. 41 BRIDGE REPLACEMENT OVER WANDO RIVER BERKELEYCHARLESTON COUNTIES APPLICATION BY S.C.D.O.T. FEDERAL FUNDS TO BE USED DATE: AUGUST 30, 2011	0.105 AC	FRESHWATER WETLANDS FILLED	<div data-bbox="1364 1491 1396 1533" data-label="Image"></div>
SHEET 10 OF 28		0.372 AC	FRESHWATER WETLANDS CLEARED	<div data-bbox="1429 1491 1461 1533" data-label="Image"></div>
WETLAND LOCATION			SALTWATER WETLANDS FILLED	<div data-bbox="1461 1491 1494 1533" data-label="Image"></div>
			SALTWATER SHADING	<div data-bbox="1494 1491 1526 1533" data-label="Image"></div>



PASTIME AMUSEMENT CO, ETAL

⑧  
CJB INVESTMENTS LLC



FRESHWATER WETLANDS FILLED  
FRESHWATER WETLANDS CLEARED  
SALTWATER WETLANDS FILLED  
SALTWATER SHADING

0.08 AC

PIN 32098 BR-BR06(017)  
SC RTE. 41 BRIDGE REPLACEMENT  
OVER WANDO RIVER  
BERKELEY-CHARLESTON COUNTIES  
APPLICATION BY S.C.D.O.T.  
FEDERAL FUNDS TO BE USED  
DATE: AUGUST 30, 2011



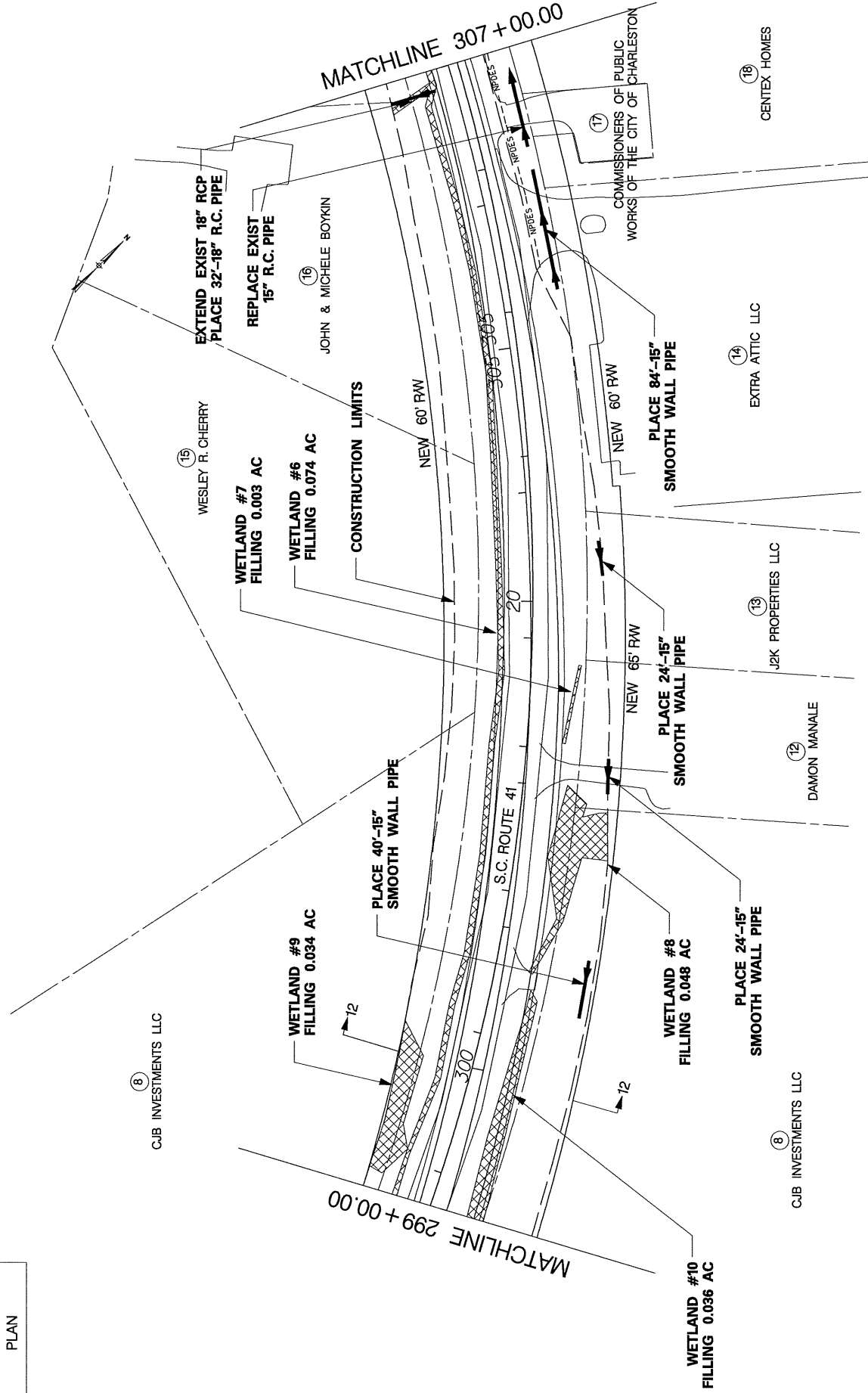
SOUTH CAROLINA DEPARTMENT  
OF TRANSPORTATION



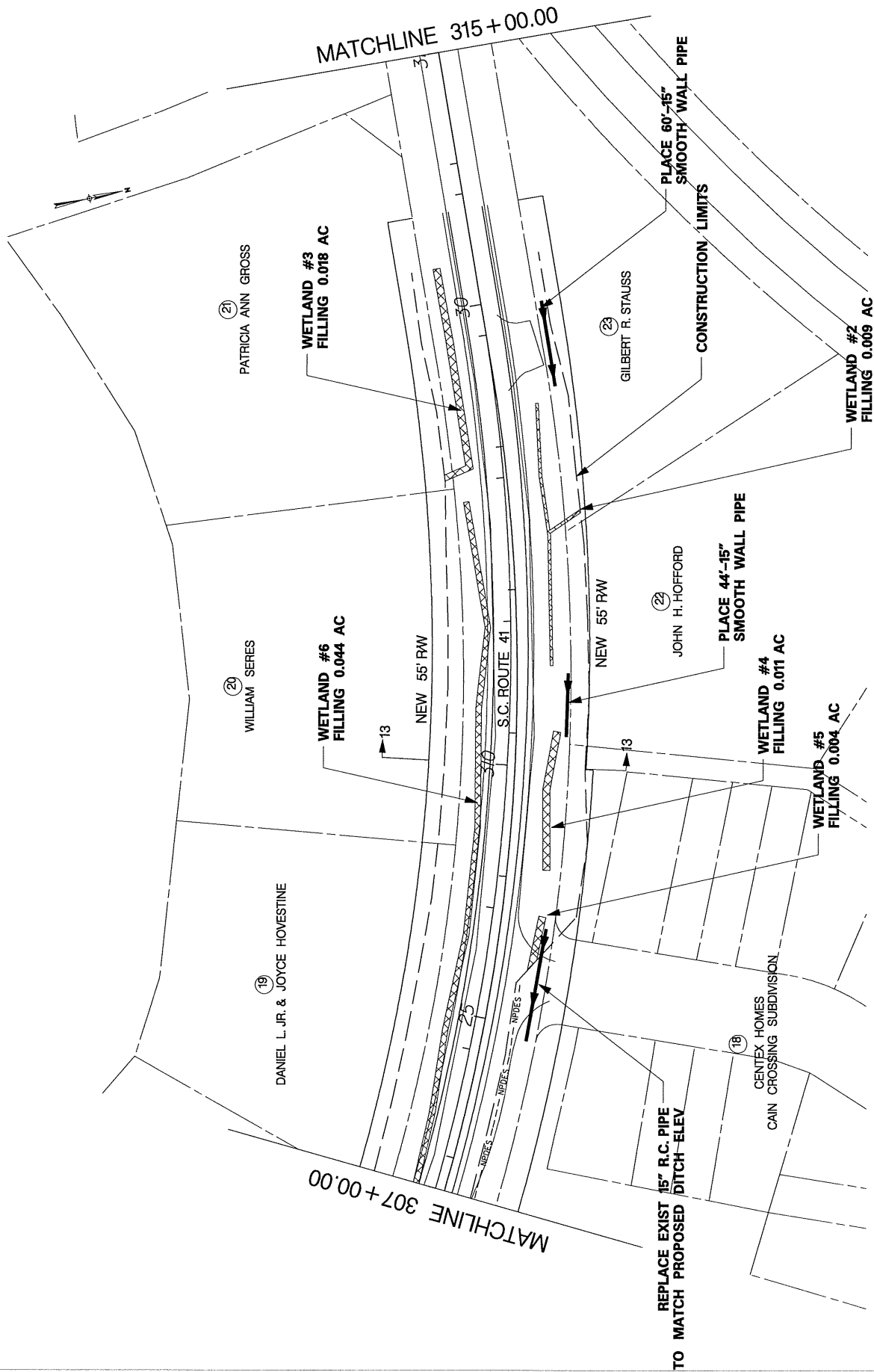
SHEET 11 OF 28

WETLAND  
LOCATION

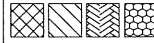
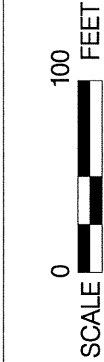
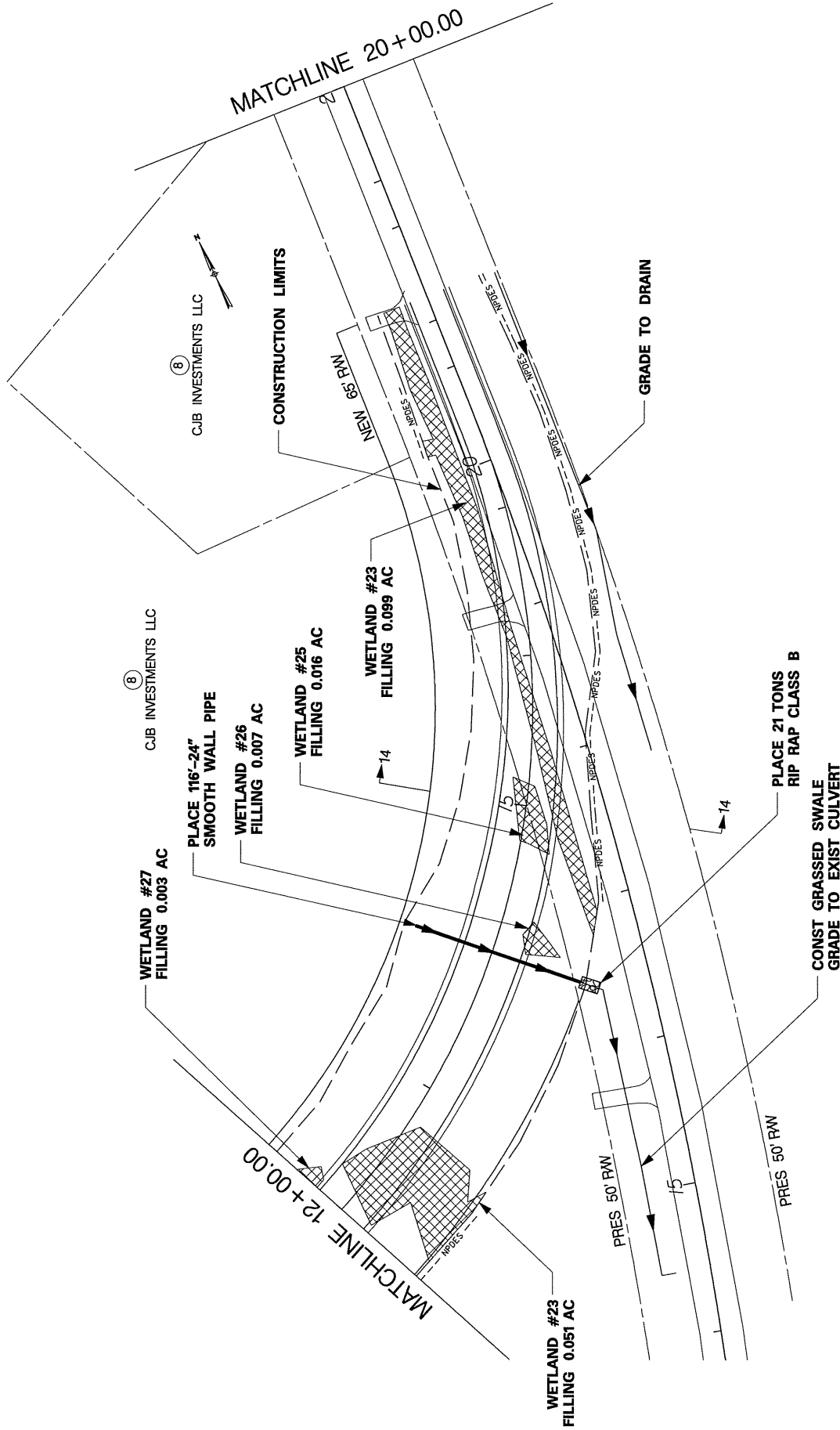




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			SCALE 0 100 FEET	SHEET 12 OF 28



SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION	PIN 32098 BR-BR08(017) SC RTE. 41 BRIDGE REPLACEMENT OVER WANDO RIVER BERKELEY-CHARLESTON COUNTIES APPLICATION BY S.C.D.O.T. FEDERAL FUNDS TO BE USED DATE: AUGUST 30, 2011	0.086 AC	<div data-bbox="1364 1491 1396 1533"></div> FRESHWATER WETLANDS FILLED <div data-bbox="1396 1491 1429 1533"></div> FRESHWATER WETLANDS CLEARED <div data-bbox="1429 1491 1461 1533"></div> SALTWATER WETLANDS FILLED <div data-bbox="1461 1491 1494 1533"></div> SALTWATER SHADING
SHEET 13 OF 28			<div data-bbox="1429 1638 1461 1680">0</div> <div data-bbox="1429 1680 1461 1722">100</div> <div data-bbox="1429 1722 1461 1764">FEET</div>
WETLAND LOCATION			



0.176 AC

PIN 32098 BR-BR08(017)  
SC RITE. 41 BRIDGE REPLACEMENT  
OVER WANDO RIVER  
BERKELEY-CHARLESTON COUNTIES  
APPLICATION BY S.C.D.O.T.  
FEDERAL FUNDS TO BE USED  
DATE: AUGUST 30, 2011

SOUTH CAROLINA DEPARTMENT  
OF TRANSPORTATION

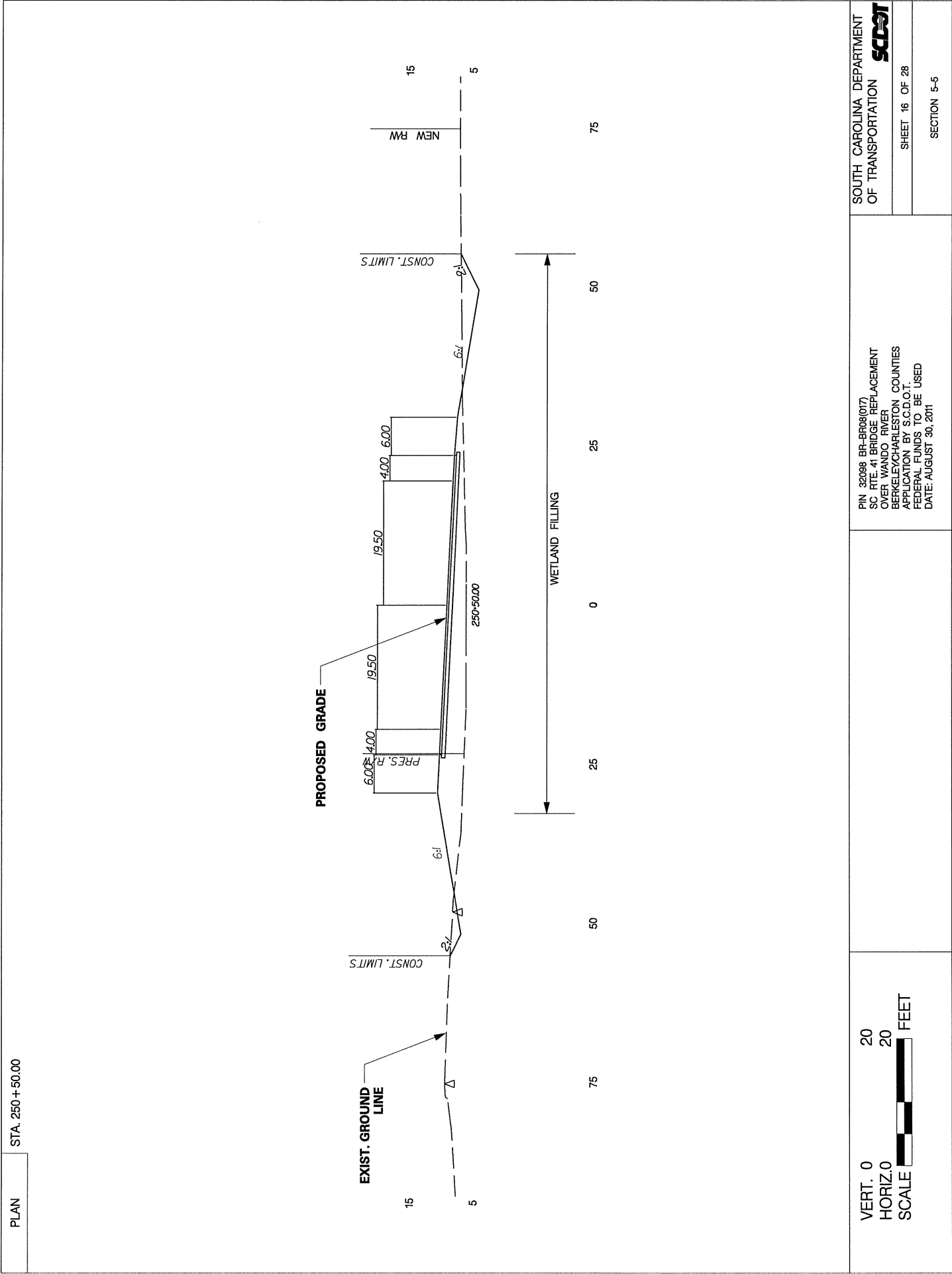
SHEET 14 OF 28

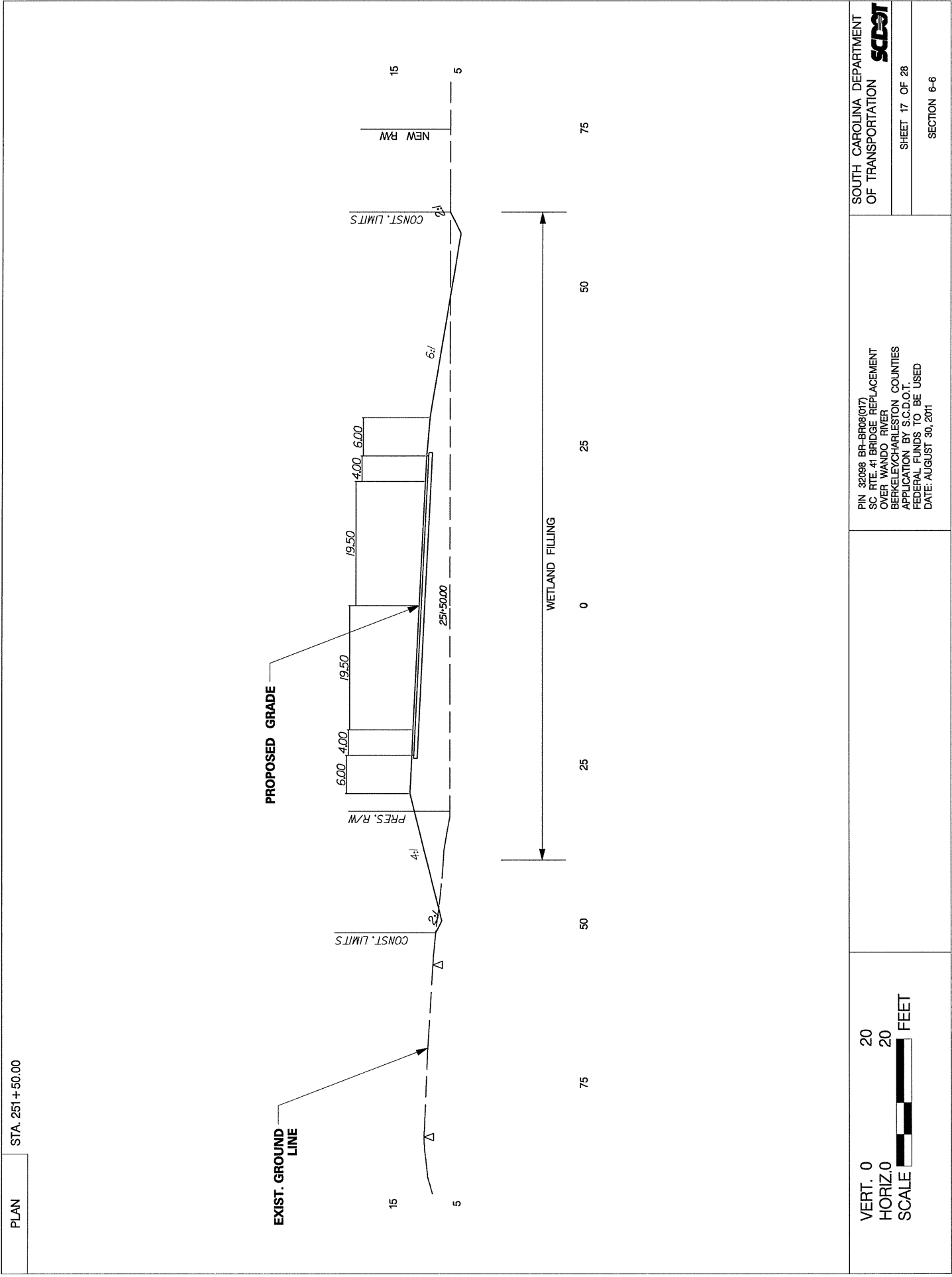
WETLAND  
LOCATION

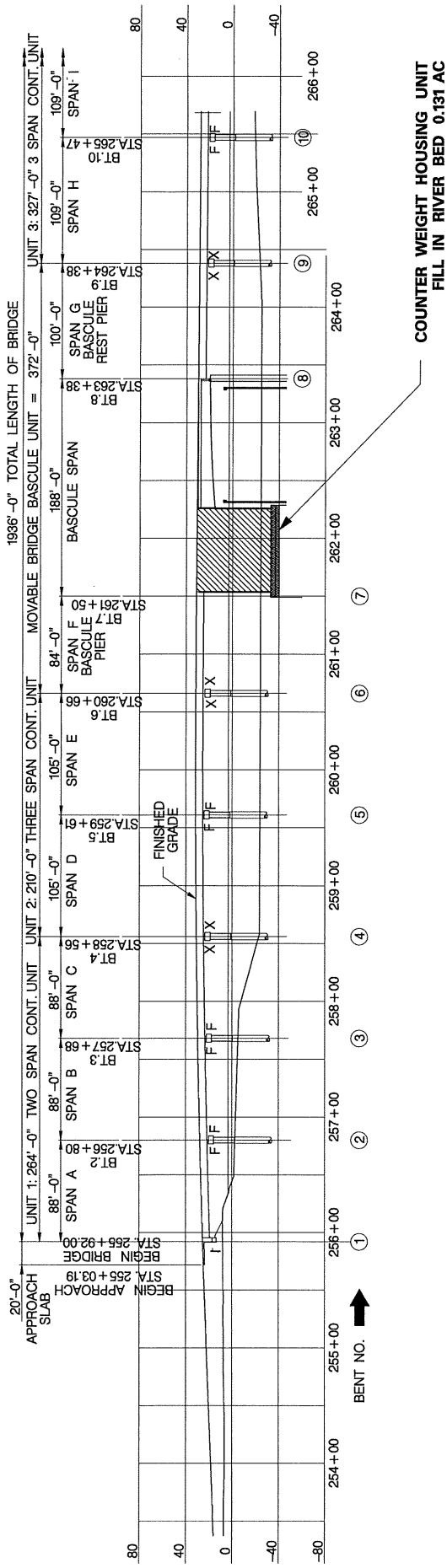




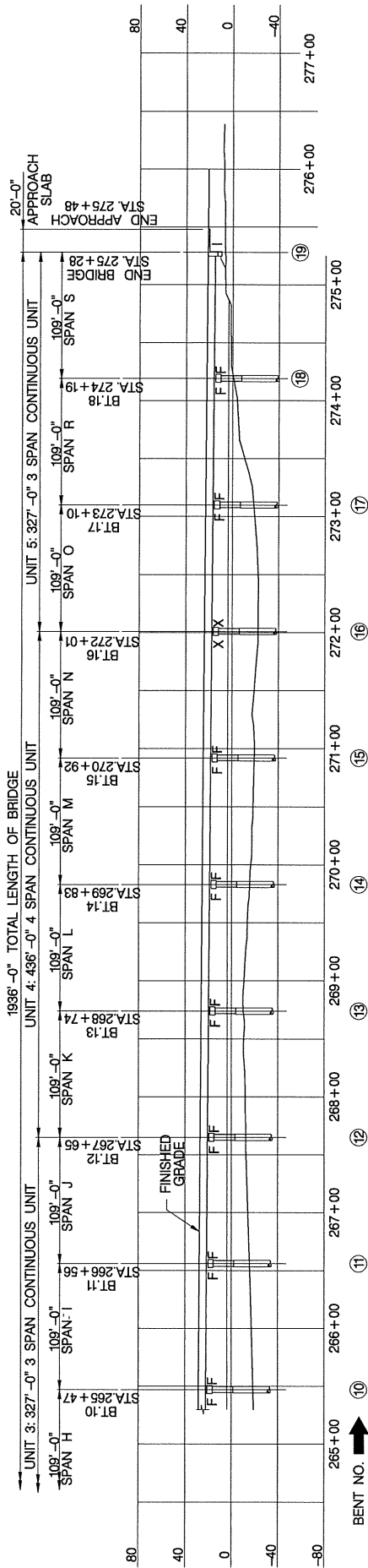
SECTION 4-4







SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION	PIN 32038 BR-BR08(017) SC RTE 41 BRIDGE REPLACEMENT OVER WANDO RIVER BERKELEY-CHARLESTON COUNTIES APPLICATION BY S.C.D.O.T. FEDERAL FUNDS TO BE USED DATE: AUGUST 30, 2011	SHEET 18 OF 28	BRIDGE



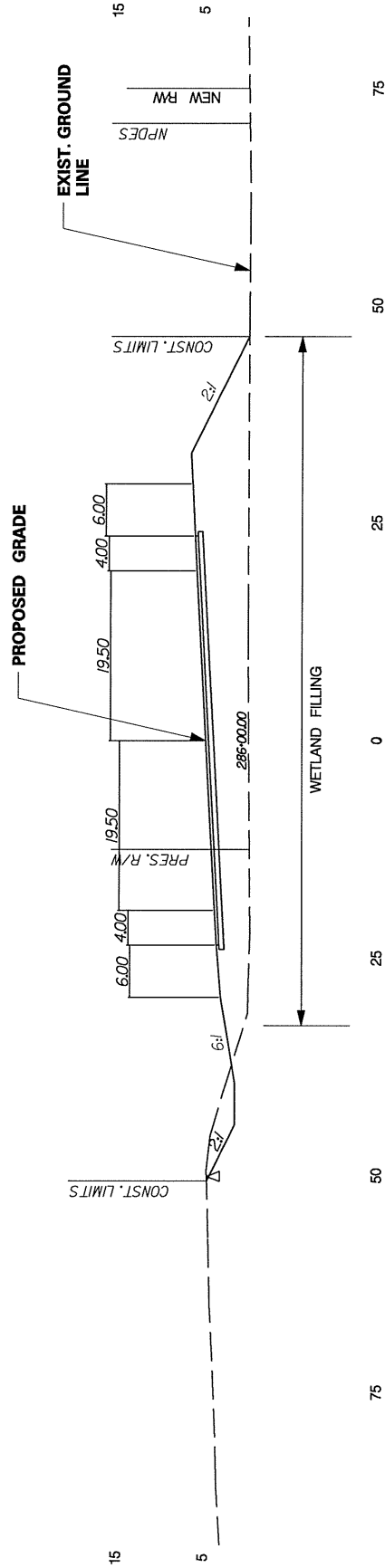
PIN 32098 BR-BR08(017)  
SC RTE 41 BRIDGE REPLACEMENT  
OVER WANDO RIVER  
BERKELEY-CHARLESTON COUNTIES  
APPLICATION BY S.C.D.O.T.  
FEDERAL FUNDS TO BE USED  
DATE: AUGUST 30, 2011



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SECTION 9-9



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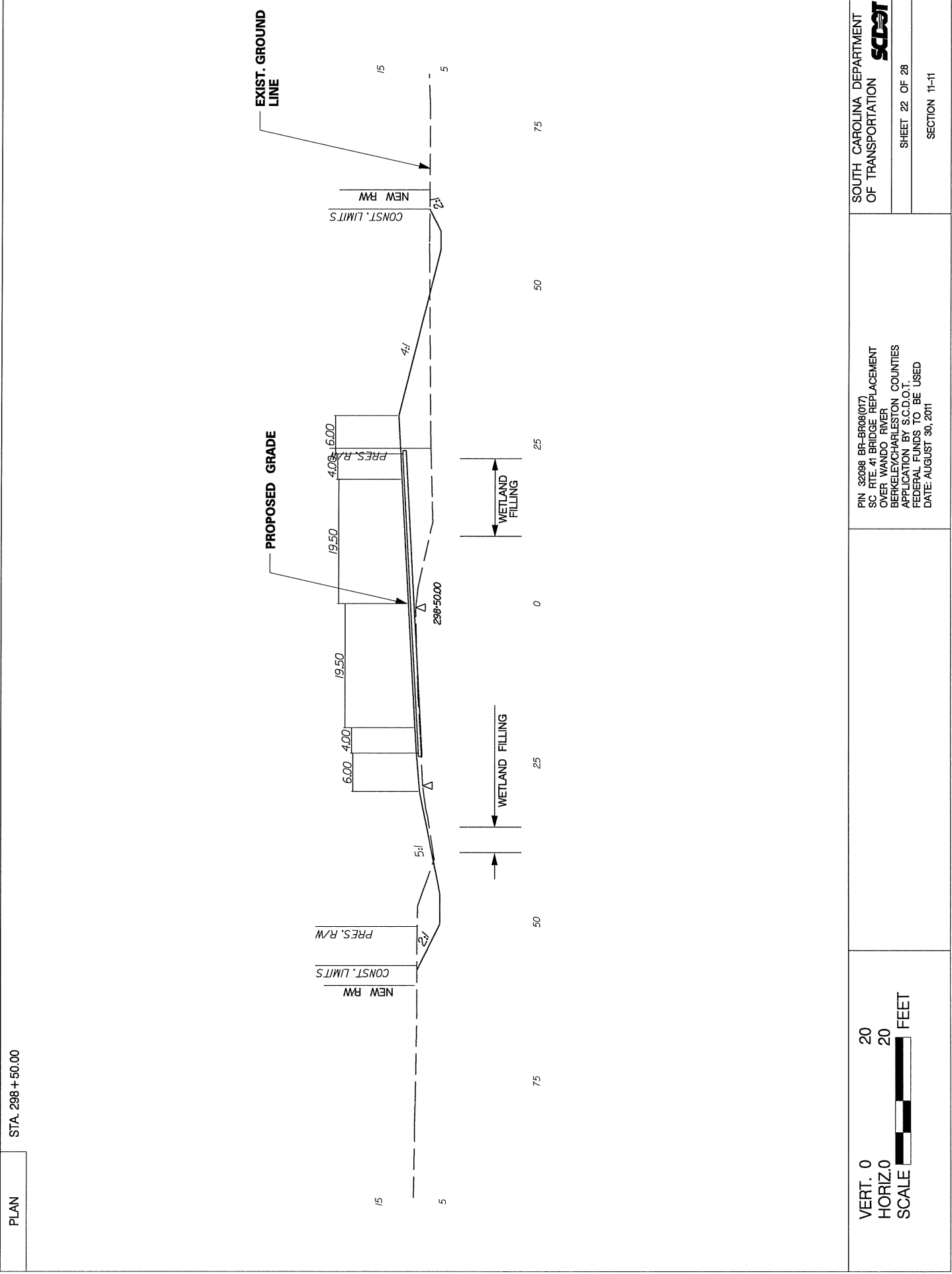
PIN 32098 BR-BR08(017)  
SC. RTE. 41 BRIDGE REPLACEMENT  
OVER WANDO RIVER  
BERKELEY-CHARLESTON COUNTIES  
APPLICATION BY S.C.D.O.T.  
FEDERAL FUNDS TO BE USED  
DATE: AUGUST 30, 2011

SOUTH CAROLINA DEPARTMENT  
OF TRANSPORTATION



SHEET 21 OF 28

SECTION 10-10



VERT. 0  
HORIZ. 0  
SCALE

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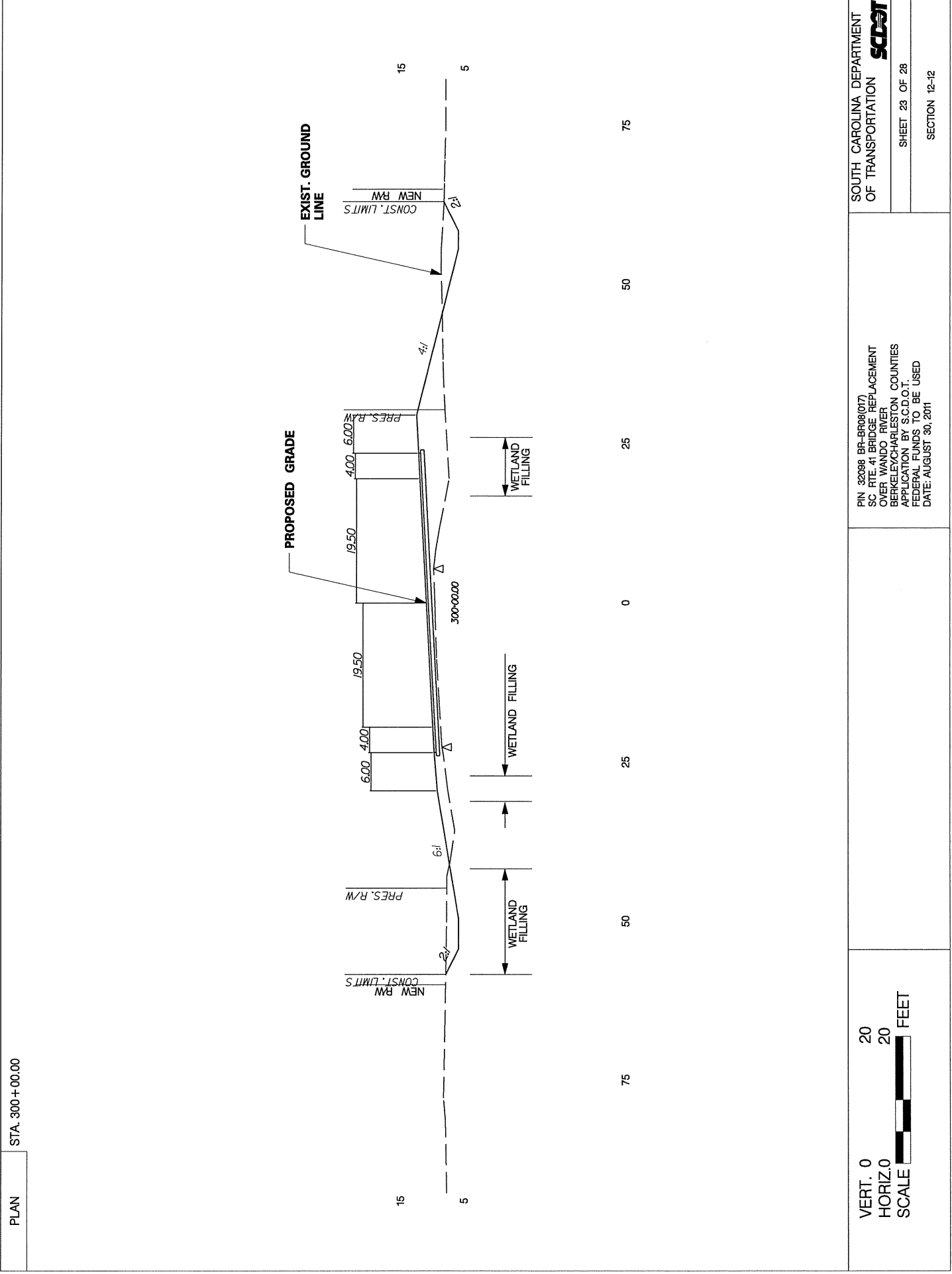
FEET

PIN 32098 BR-BR08(017)  
SC. RTE. 41 BRIDGE REPLACEMENT  
OVER WANDO RIVER  
BERKELEY-CHARLESTON COUNTIES  
APPLICATION BY S.C.D.O.T.  
FEDERAL FUNDS TO BE USED  
DATE: AUGUST 30, 2011

SOUTH CAROLINA DEPARTMENT  
OF TRANSPORTATION

SHEET 22 OF 28

SECTION 11-11



SOUTH CAROLINA DEPARTMENT  
OF TRANSPORTATION

**SCDOT**

SHEET 23 OF 28

SECTION 12-12

PIN 32098 BR-BR08(07)  
SC RTE 41 BRIDGE REPLACEMENT  
OVER WANDO RIVER  
BERKELEY-CHARLESTON COUNTIES  
APPLICATION BY S.C.D.O.T.  
FEDERAL FUNDS TO BE USED  
DATE: AUGUST 30, 2011

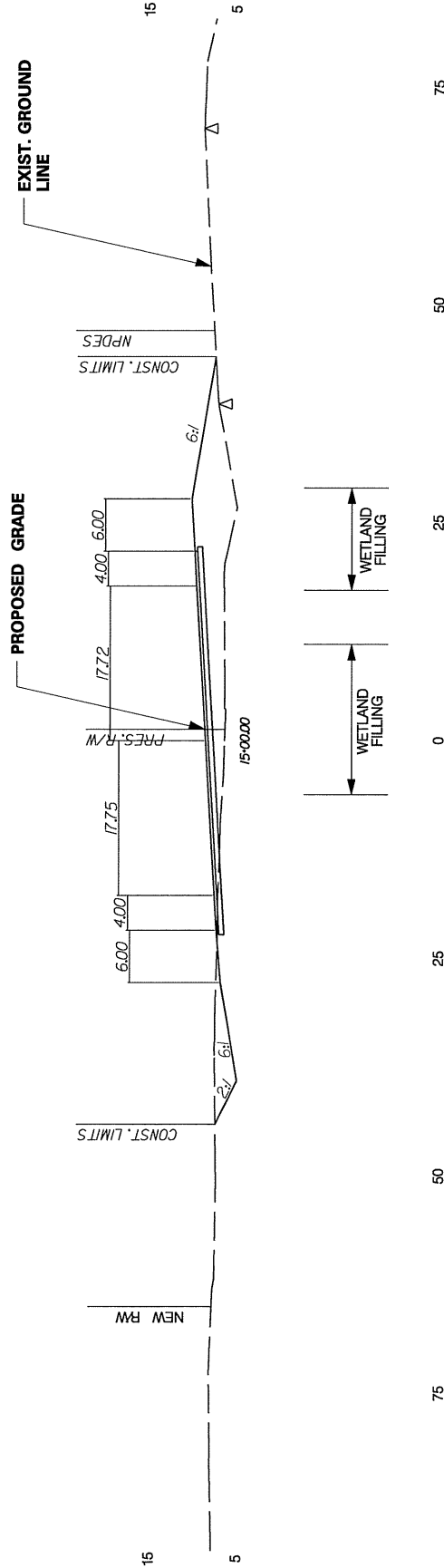
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SECTION 13-13





PIN 32098 BR-BR08(07)  
SC RTE. 41 BRIDGE REPLACEMENT  
OVER WANDO RIVER  
BERKELEY/CHARLESTON COUNTIES  
APPLICATION BY S.C.D.O.T.  
FEDERAL FUNDS TO BE USED  
DATE: AUGUST 30, 2011

SOUTH CAROLINA DEPARTMENT  
OF TRANSPORTATION


SHEET 25 OF 28

SECTION 14-14

Sheet No.	Tract	Name	Address	<div> <div>SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION</div> <div>  </div> </div> <div> <div>PIN 32098 BR-BR08(017) SC RTE 41 BRIDGE REPLACEMENT OVER WANDO RIVER BERKELEY/CHARLESTON COUNTIES APPLICATION BY S.C.D.O.T. FEDERAL FUNDS TO BE USED DATE: AUGUST 30, 2011</div> </div>	<div> <div>SHEET 26 OF 28</div> <div>PROPERTY OWNERS</div> </div>
4	1	JAMES N. DEIERLEIN, JR. ETAL	2257 HWY 41 AAAAA , SC 29466		
	2	JOHN WIELAND HOMES & NEIGHBORHOODS, INC.	- -		
	3	WANDO E, LLC	- -		
	4	DETYENS SHIPYARD	- -		
5	3	WANDO E, LLC	- -		
	4	DETYENS SHIPYARD	- -		
6	3	WANDO E, LLC	- -		
	4	DETYENS SHIPYARD	- -		
	5	ATLANTIS MARINE INC	- -		
	6	OIL SHIP INC	- -		
7		WANDO RIVER			
8		WANDO RIVER			
9	7	PASTIME AMUSEMENT CO. ETAL	- -		
	8	CJB INVESTMENTS LLC	- -		
	9	SOUTH JERSEY HOLDING COMPANY LLC	- -		
	10	ELIZABETH R. GASKINS	- -		
10	7	PASTIME AMUSEMENT CO. ETAL	- -		
	8	CJB INVESTMENTS LLC	- -		

Site No.	Tract	Name	Address	<div> <div>SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION</div> <div>  </div> </div>	<div> <div>SHEET 27 OF 28</div> <div>PROPERTY OWNERS</div> </div>
10	10	ELIZABETH R. GASKINS	--		
	11	PHILLIP A. BERLINSKY	--		
11	8	CJB INVESTMENTS LLC	--	<div> <div>PIN 32098 BR-BR08(017)</div> <div>SC RTE 41 BRIDGE REPLACEMENT OVER WANDO RIVER</div> <div>BERKELEY/CHARLESTON COUNTIES APPLICATION BY S.C.D.O.T.</div> <div>FEDERAL FUNDS TO BE USED</div> <div>DATE: AUGUST 30, 2011</div> </div>	
12	8	CJB INVESTMENTS LLC	--		
	12	DAMON MANALE	--		
	13	J2K PROPERTIES LLC	--		
	14	EXTRA ATTIC LLC	--		
	15	WESLEY R. CHERRY	--		
	16	JOHN & MICHELE BOYKIN	--		
	17	COMMISSIONERS OF PUBLIC WORKS OF THE CITY OF CHARLESTON	--		
	18	CENTEX HOMES	--		
13	18	CENTEX HOMES CAIN CROSSING SUBDIVISION	--		
	19	DANIEL L. JR. & JOYCE HOVESTINE	--		
	20	WILLIAM SERES	--		
	21	PATRICIA ANN GROSS	--		
	22	JOHN H. HOFFORD	--		
	23	GILBERT R. STAUSS	--		
14	7	PASTIME AMUSEMENT CO. ETAL	--		
	8	CJB INVESTMENTS LLC	--		



	Description	Sheet 4	Sheet 5	Sheet 6	Sheet 7	Sheet 8	Sheet 9	Sheet 10	Sheet 11	Sheet 12	Sheet 13	Sheet 14	Total
1.	Fill in Wetlands (Freshwater)	0.048 AC 400 CY	0.38 AC 3,000 CY	0.148 AC 1,200 CY			0.116 AC 950 CY	0.105 AC 810 CY	0.08 AC 650 CY	0.195 AC 1,500 CY	0.086 AC 700 CY	0.176 AC 1,400 CY	1.334 AC 10,610 CY
2.	Volume (C. Y.) Fill in Open Water												
3.	Excavation in Wetlands												
4.	Excavation in Open Water												
5.	Clearing In Wetlands (Freshwater) & Future Maintenance	0.006 AC											0.006 AC
6.	Channel Relocation in Wetlands												
7.	Culvert or Pipe Relocation. in Uplands												
8.	Existing Streams Filled for Relocation												
9.	Fill In Wetlands (Saltwater)	0.174 AC 1,400 CY			0.131 AC 1,100 CY		0.001 AC 10 CY	0.372 AC 3,000 CY					0.678 AC 5,510 CY
	Volume (C. Y.)												
10.	Clearing In Wetlands (Saltwater) & Future Maintenance												
11.	Shading					0.097 AC							0.097 AC
Location of Project is: Latitude 32° 55' 25 " Longitude 79° 49' 30 "		PIN 32098 BR-BR08(017) SC. RTE. 41 BRIDGE REPLACEMENT OVER WANDO RIVER BERKELEY-CHARLESTON COUNTIES APPLICATION BY S.C.D.O.T. FEDERAL FUNDS TO BE USED DATE: AUGUST 30, 2011					SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION						
							SHEET 28 OF 28					WETLANDS SUMMARY	