

JURISDICTIONAL DETERMINATION REQUEST

For Identifying Waters of the U.S., Including Wetlands and Tributaries

Project Name: SC-41 Bridge Replacement over the Wando River

Date: 30 August 2011

County: Charleston and Berkeley

Total Acreage of Tract: 65 acres +/-

Property Owner : <u>SC Dept of Transportation</u>	Agent: <u>Civil Engineering Consulting</u>
Address: <u>PO Box 191</u>	<u>Services, Inc; Attn Brian Taylor</u>
Address: <u>Columbia SC 29202</u>	Address: <u>2000 Park Street, Suite 201</u>
Phone: <u>803 737-1395</u>	Address: <u>Columbia, SC 29201</u>
Email: <u>ConnollyMS@dot.state.sc.us</u>	Phone: <u>803 779-0311</u>
	Email: <u>taylorbl@cecsinc.com</u>

Information Required to Accompany Request - Check the items submitted - forward as much information as is available. At a minimum, the first two items must be forwarded:

- ☒ Accurate Location Maps (from County Map, USGS Quad Sheet, etc.) 32°55'23.09"N; 79°49'30.58"W
- ☐ Survey Plat or Tax Map of the Property in Question (N/A)
- ☒ Soil Survey Sheet (from USDA-NRCS) or Aerial Photo (from County Assessor's Office or other source).
- ☒ Property boundaries should be shown on the soil survey / photo.
- ☐ Topographic Survey (N/A)
- ☒ Conceptual Site Plan for the Overall Development (Project Area/Corridor Identified)
- ☒ Description of the proposed use of the property (Transportation Improvements)
- ☒ Status of the project (Project's Development is in the Planning Stages)

Type of Determination Requested - Choose one:

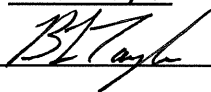
☒ Preliminary – Preliminary determinations will identify whether wetlands or other waters are present on the site and will presume that they are jurisdictional. This type of determination is likely to be made more quickly and require less information be submitted.

☐ Approved – Approved determinations will identify whether wetlands or other waters are present on the site and will include a determination of their jurisdictional status. This type of determination is likely to take longer and require more detailed information be submitted.

IMPORTANT NOTE: Legible printed name and signature required. The person signing this form must be the present property owner or have the specific authority of the property owner to authorize Corps of Engineers employees or their agents to enter onto the property for on-site investigations if such is deemed necessary. Do not sign this form unless you are the owner, or have the specific authority of the property owner.

PRINTED NAME of person signing this form, below: Brian Taylor

Signature of Property Owner or Authorized Agent: _____

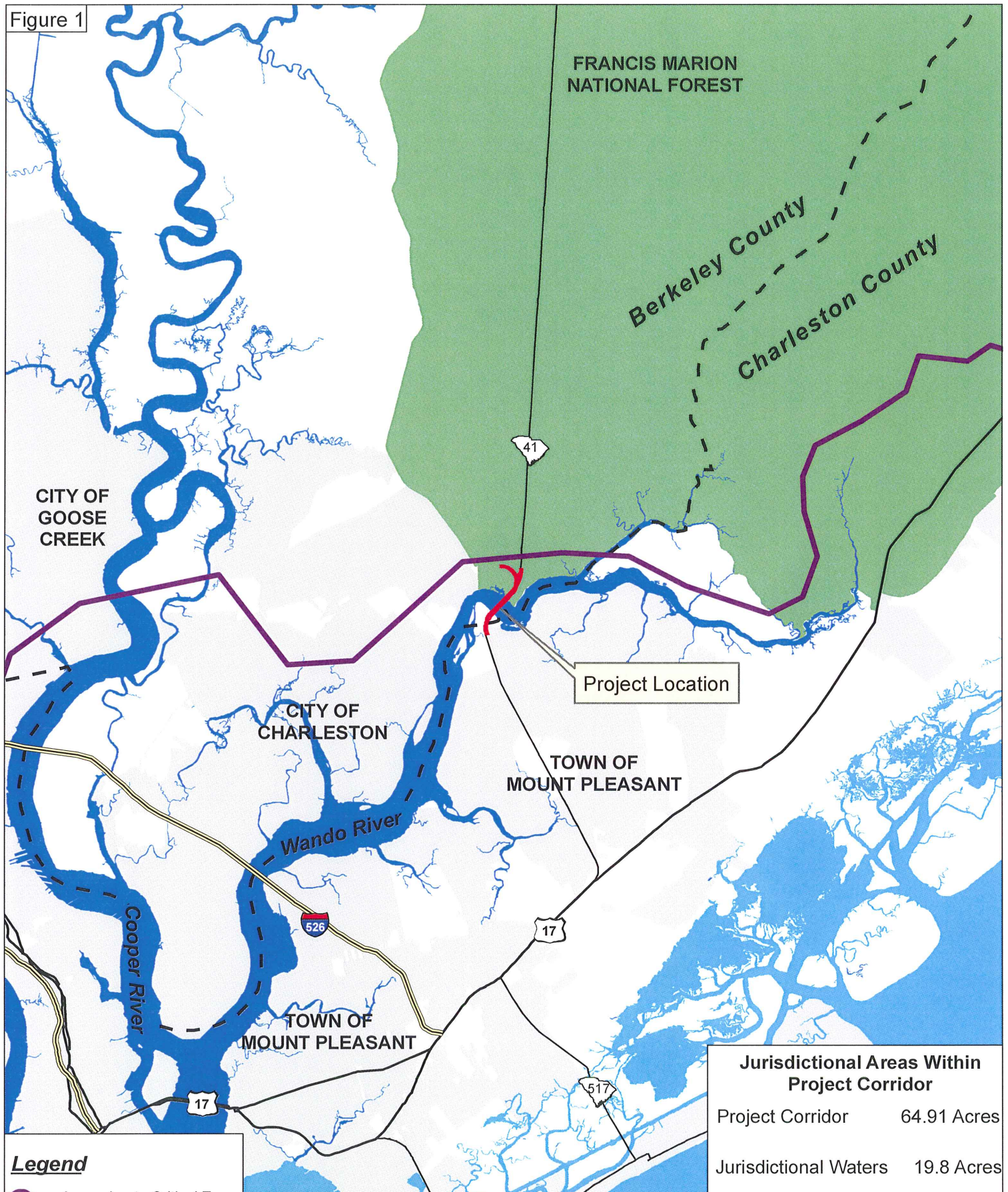


HQ and South Branch
69-A Hagood Avenue
Charleston, SC 29403
843-329-8044

Northwest Branch
1835 Assembly St., Room 865-B1
Columbia, SC 29201
803-253-3444

Northeast Branch
1949 Industrial Park Rd, Rm 140
Conway, SC 29526
843-365-4239

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.

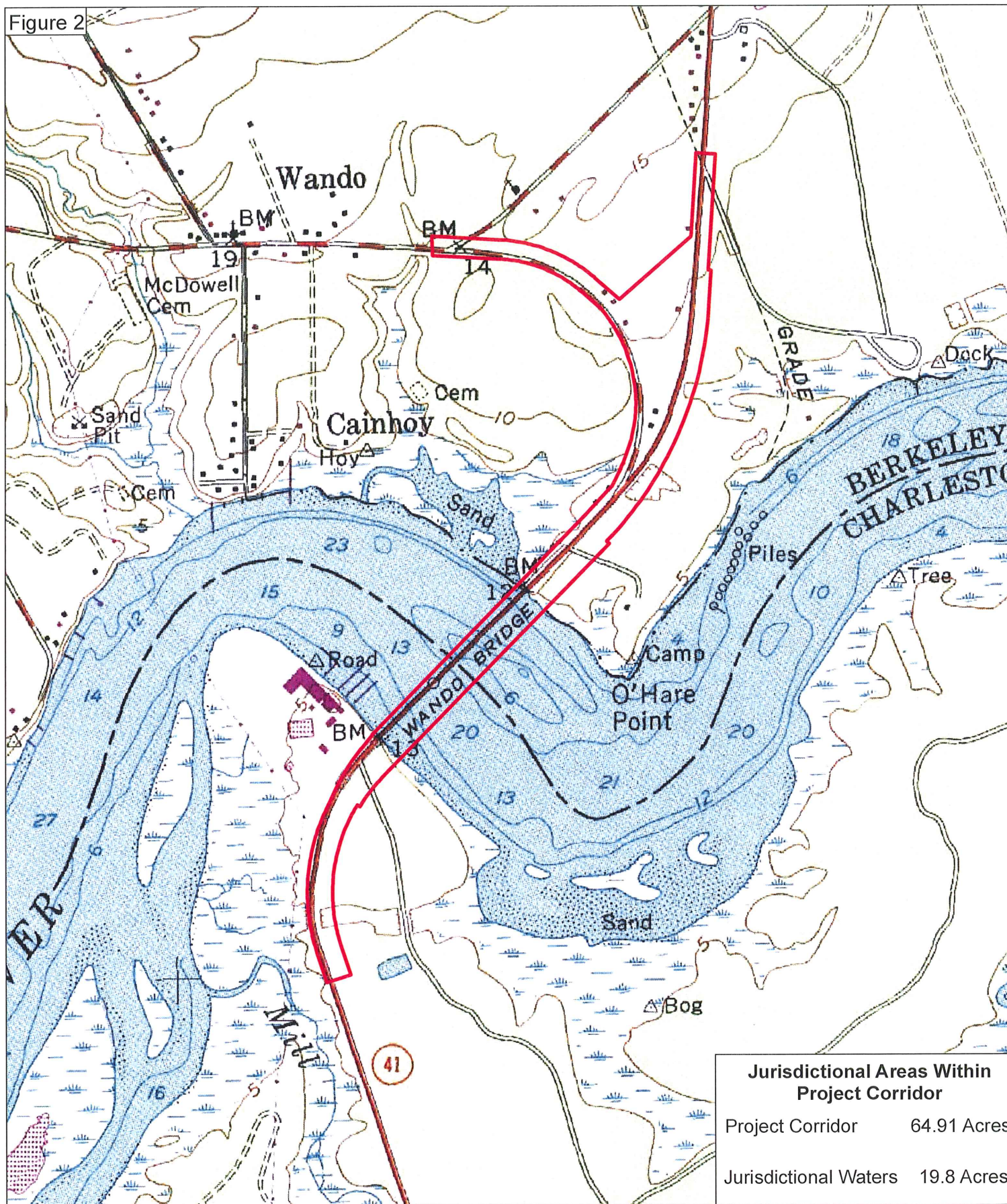
DATE : 08/30/11

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION



**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.

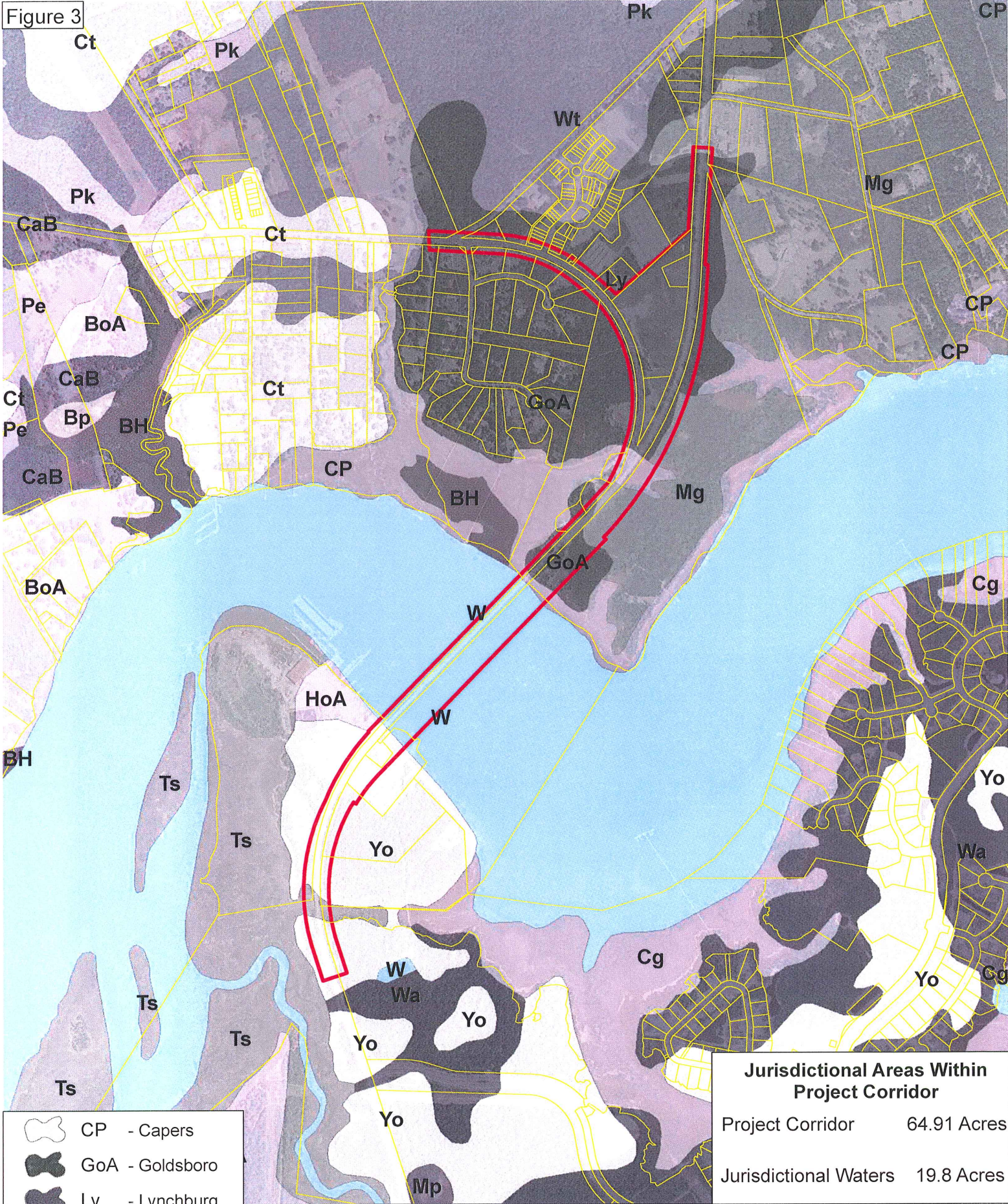
DATE : 08/30/11

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

C E
C S

Civil Engineering
Consulting Services, Inc.

Figure 3

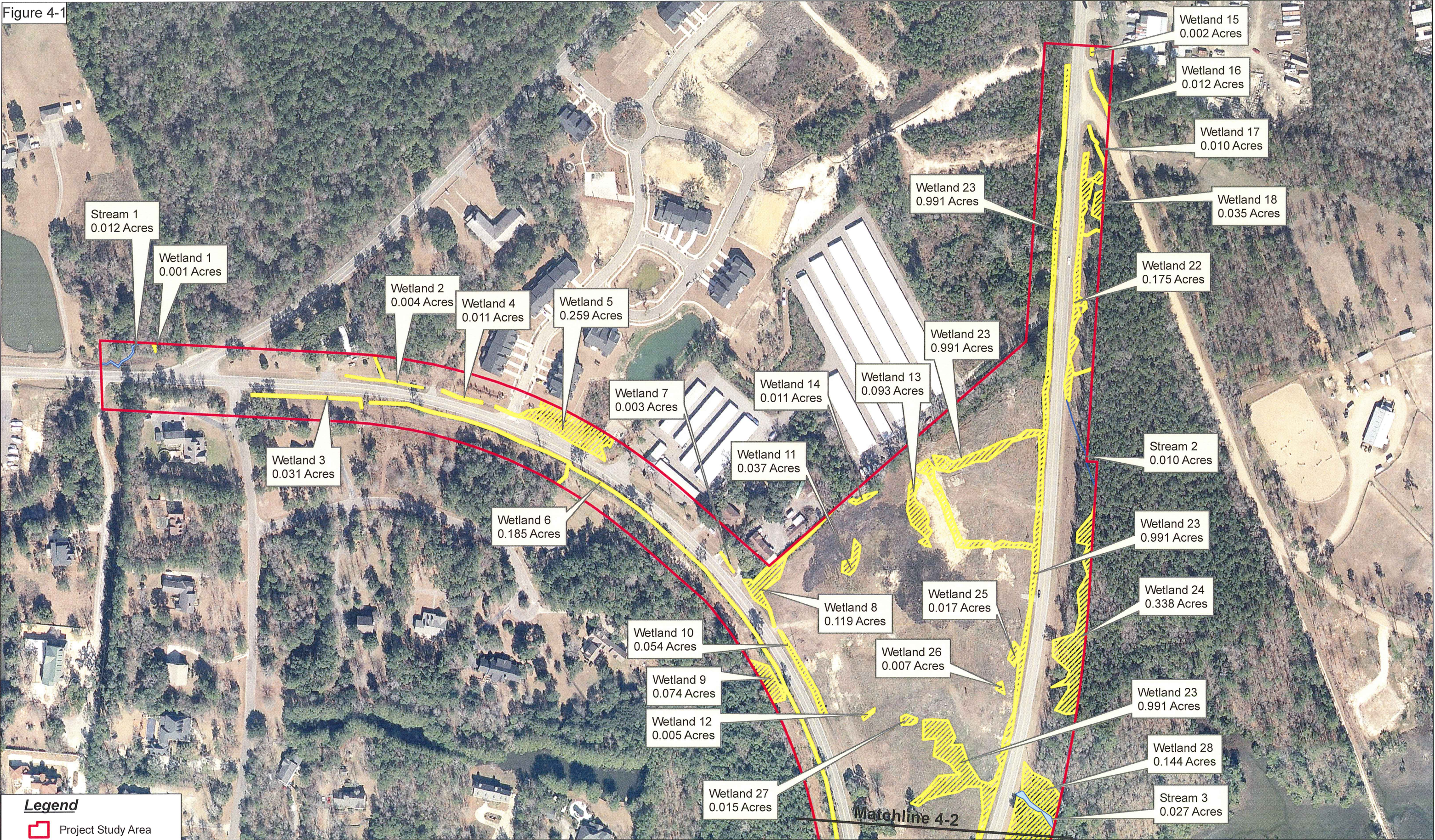


-  CP - Capers
-  GoA - Goldsboro
-  Ly - Lynchburg
-  Mg - Meggett
-  Ts - Tidal Marsh
-  Yo - Yongs

Jurisdictional Areas Within Project Corridor	
Project Corridor	64.91 Acres
Jurisdictional Waters	19.8 Acres

<p align="center">SC-41 BRIDGE REPLACEMENT PROJECT</p> <p align="center">NRCS SOIL MAP</p> <p align="center"><i>Charleston and Berkeley Counties</i></p>		<p>DRAWN BY : J.L.S.</p> <p>DATE : 08/30/11</p>	<p align="center">SCDOT</p> <p align="center">SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION</p> <p align="center">  Civil Engineering Consulting Services, Inc. </p>
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Figure 4-1



Legend

- Project Study Area
- Critical Boundary
- Saltwater
- Freshwater
- Stream



DRAWN BY : J.L.S.
DATE : 08/30/11



SC-41 BRIDGE
REPLACEMENT PROJECT
JURISDICTIONAL AREAS
Charleston and Berkeley Counties

Jurisdictional Areas Within Project Corridor	
Project Corridor	64.91 Acres
Jurisdictional Waters	19.8 Acres

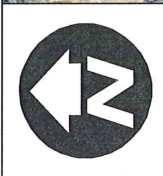


Figure 4-2

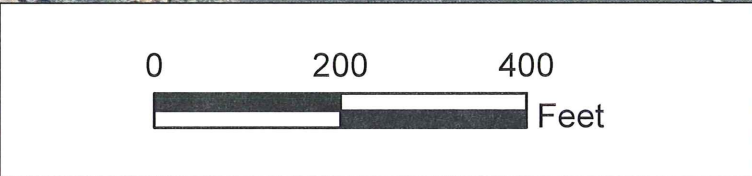


Legend

- Project Study Area
- Critical Boundary
- Saltwater
- Freshwater
- Stream



DRAWN BY : J.L.S.
DATE : 08/30/11



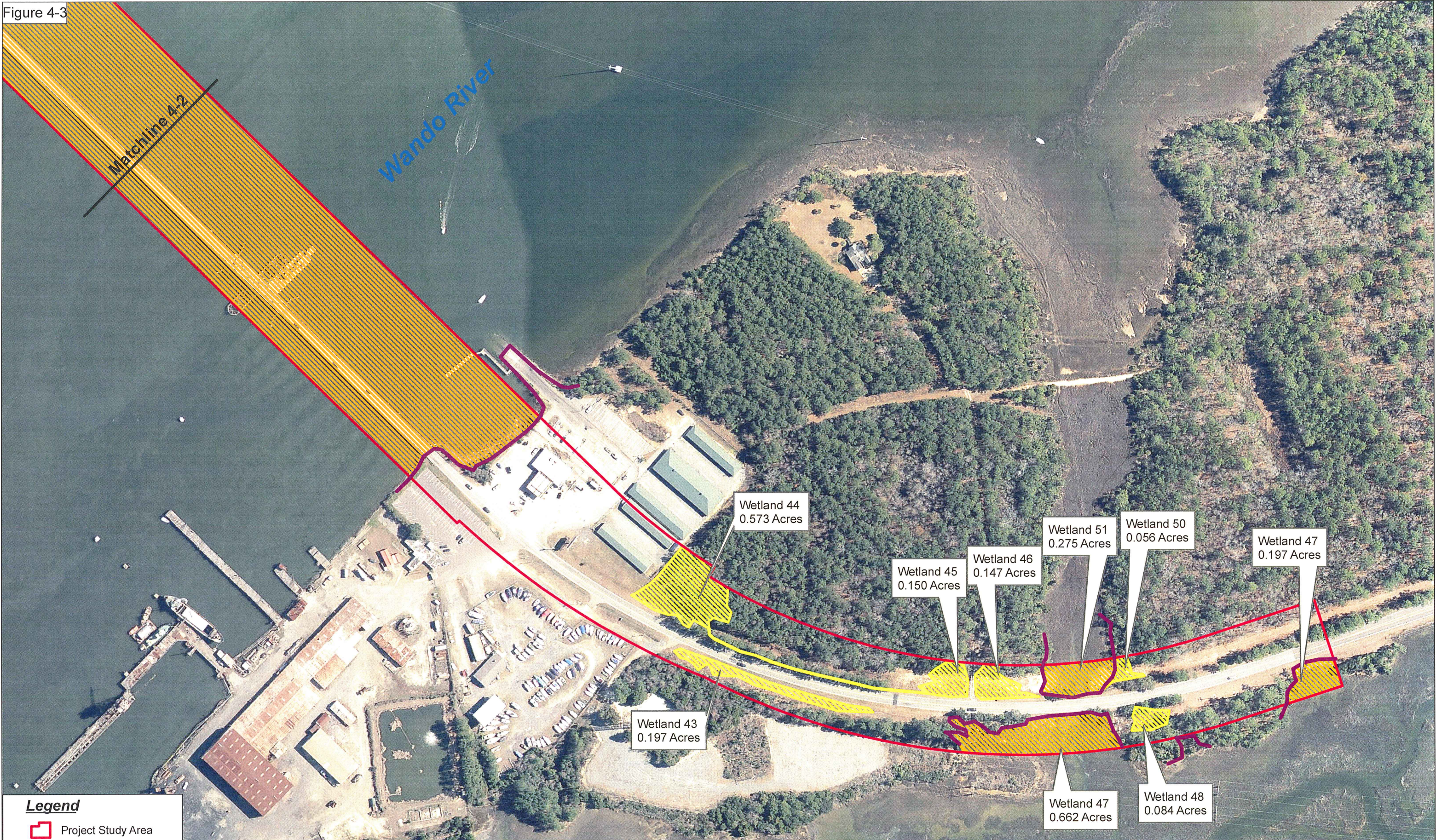
SC-41 BRIDGE
REPLACEMENT PROJECT
JURISDICTIONAL AREAS
Charleston and Berkeley Counties

Jurisdictional Areas Within Project Corridor	
Project Corridor	64.91 Acres
Jurisdictional Waters	19.8 Acres

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

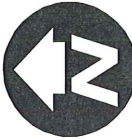
Civil Engineering Consulting Services, Inc.

Figure 4-3

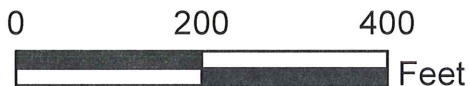


Legend

- Project Study Area
- Critical Boundary
- Saltwater
- Freshwater
- Stream



DRAWN BY : J.L.S.
DATE : 08/30/11



SC-41 BRIDGE
REPLACEMENT PROJECT
JURISDICTIONAL AREAS
Charleston and Berkeley Counties

Jurisdictional Areas Within Project Corridor	
Project Corridor	64.91 Acres
Jurisdictional Waters	19.8 Acres



WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SC 41 Bridge Replacement Project City/County: Charleston and Berkeley Sampling Date: 8-11 Nov 2010

Applicant/Owner: SC Dept of Transportation State: SC Sampling Point: upland 5

Investigator(s): Brian L.Taylor Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32°55'59.83"N Long: 79°49'20.07"W Datum: _____

Soil Map Unit Name: Lynchburg fine sandy loam NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ sign. 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 <u>X</u> No _____	Is the Sampled Area within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks	

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) (LRR U) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Moss Trim Lines (B16) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidizes Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (O6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) |
| | | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks

This is a lawned area adjacent to the wetlands

VEGETATION (Five Strata) – Use scientific names of plants.
Sampling Point upland 5

<p>Tree Stratum (Plot size: _____)</p> <p>Absolute % Cover Dominant Species? Indicator Status</p> <p>_____ = Total Cover</p>	<p>Dominance Test Worksheet:</p> <p>Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>1</u> (B)</p> <p>Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B)</p>
<p>Sapling Stratum (Plot size: _____)</p> <p>Absolute % Cover Dominant Species? Indicator Status</p> <p>_____ = Total Cover</p>	<p>Prevalence Index Worksheet</p> <p><u>Total % Cover of:</u> <u>Multiply by:</u></p> <p>OBL species x 1 = _____</p> <p>FACW species x 2 = _____</p> <p>FAC species x 3 = _____</p> <p>FACU species x 4 = _____</p> <p>UPL species x 5 = _____</p> <p>Column totals: _____ (A) _____ (B)</p> <p>Prevalence Index = B/A = _____</p>
<p>Shrub Stratum (Plot size: _____)</p> <p>Absolute % Cover Dominant Species? Indicator Status</p> <p>_____ = Total Cover</p>	<p>Hydrophytic Vegetation Indicators:</p> <p>___ 1 - Rapid Test for Hydrophytic Vegetation</p> <p>___ 2 - Dominance Test is >50%</p> <p>___ 3 - Prevalence Index is >3.0</p> <p>___ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)</p> <p>___ Problematic Hydrophytic Vegetation (Explain)</p> <p>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p>
<p>Herb Stratum (Plot size: _____)</p> <p>1 <i>Stenotaphrum secundatum</i></p> <p>Absolute % Cover Dominant Species? Indicator Status</p> <p>100 yes Fac</p> <p>_____ = Total Cover</p>	<p>Definitions of Five Vegetation Strata:</p> <p>Tree – Woody plants, excluding woody vines larger than 20 ft in height and 3 in DBH.</p> <p>Sapling – Woody plants 20 ft or more in height and less than 3 in. DBH.</p> <p>Shrub – Woody plants 3 to 20 ft in height.</p> <p>Herb – All herbaceous plants regardless of size, and woody plants, except woody vines, less than 3 ft in height.</p> <p>Woody vine – All woody vines, regardless of height.</p>
<p>Woody Vine Stratum (Plot size: _____)</p> <p>Absolute % Cover Dominant Species? Indicator Status</p> <p>_____ = Total Cover</p>	<p>Hydrophytic Vegetation Present? Yes <u>X</u> No _____</p>

SOIL

Sampling Point: upland 5

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

Depth (inches)	Matrix		Redox Features		Type ¹ / Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%			
0-18+	10 YR 5/3					sandy clay loam	

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

Hydric Soil Indicators:

- ☐ 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)
- ☐ 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LRR T, U)
- ☐ Other (Explain in Remarks)

³Indicators 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 ☒

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

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Soil Map Unit Name: Lynchburg fine sandy loam NWI classification: N/A

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

Are Vegetation _____, Soil _____, or Hydrology _____ sign. 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 <u>X</u> No _____	Is the Sampled Area within a Wetland Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks	

HYDROLOGY

Wetland Hydrology Indicators:	
<u>Primary Indicators</u> (minimum of one is required; check all that apply)	<u>Secondary Indicators</u> (minimum of two required)
<u>X</u> Surface Water (A1)	____ Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	____ Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u>X</u> Drainage Patterns (B10)
____ Water Marks (B1)	____ Moss Trim Lines (B16)
____ Sediment Deposits (B2)	____ Dry-Season Water Table (C2)
____ Drift Deposits (B3)	____ Crayfish Burrows (C8)
____ Algal Mat or Crust (B4)	____ Saturation Visible on Aerial Imagery (C9)
____ Iron Deposits (B5)	____ Geomorphic Position (D2)
____ Inundation Visible on Aerial Imagery (B7)	____ Shallow Aquitard (D3)
<u>X</u> Water-Stained Leaves (B9)	<u>X</u> FAC-Neutral Test (D5)
____ Aquatic Fauna (B13)	
____ Marl Deposits (B15) (LRR U)	
____ Hydrogen Sulfide Odor (C1)	
____ Oxidizes Rhizospheres on Living Roots (C3)	
____ Presence of Reduced Iron (C4)	
____ Recent Iron Reduction in Tilled Soils (O6)	
____ Thin Muck Surface (C7)	
____ Other (Explain in Remarks)	

Field Observations:	
Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>0-6</u>	Wetland Hydrology Present? Yes <u>X</u> No _____
Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u>	
Saturation Present? Yes <u>X</u> No _____ Depth (inches): _____ (includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks	

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point: wetland 5

Tree Stratum (Plot size: _____) 1. Liquidamber styraciflua 2. Acer rubrum 2. Salix nigra	Absolute % Cover 10 10 7	Dominant Species? yes yes yes	Indicator Status fac fac obl	Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B)												
Sapling Stratum (Plot size: _____) 1. Liquidamber styraciflua 2. Acer rubrum 2. Salix nigra	Absolute % Cover 5 5 5	Dominant Species? yes yes yes	Indicator Status fac fac obl	Prevalence Index Worksheet <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;"><u>Total % Cover of:</u></td> <td style="width: 40%;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL species</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species</td> <td>x 5 = _____</td> </tr> </table> Column totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL species	x 1 = _____	FACW species	x 2 = _____	FAC species	x 3 = _____	FACU species	x 4 = _____	UPL species	x 5 = _____
<u>Total % Cover of:</u>	<u>Multiply by:</u>															
OBL species	x 1 = _____															
FACW species	x 2 = _____															
FAC species	x 3 = _____															
FACU species	x 4 = _____															
UPL species	x 5 = _____															
Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is >3.0 ___ 4 - Morphological Adaptations ₁ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ₁ (Explain) Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.												
Herb Stratum (Plot size: _____) 1. Scirpus cyperinus 2. Typha latifolia 2. Ludwigia alterniflora	Absolute % Cover 10 10 5	Dominant Species? yes yes yes	Indicator Status obl obl obl	Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines larger than 20 ft in height and 3 in DBH. Sapling – Woody plants 20 ft or more in height and less than 3 in. DBH. Shrub – Woody plants 3 to 20 ft in height. Herb – All herbaceous plants regardless of size, and woody plants, except woody vines, less than 3 ft in height. Woody vine – All woody vines, regardless of height.												
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <u>X</u> No _____												

SOIL

Sampling Point: wetland 5

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

Depth (inches)	Matrix		Redox Features		Type ¹ / Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%			
0-8	2.5Y 2.5/1					clay loam	
8-12+	2.5 Y 6/1		2.5 Y 6/6		C / M	sandy clay loam	

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

Hydric Soil Indicators:

- ☐ 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)
- ☐ 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LRR T, U)
- ☐ Other (Explain in Remarks)

³Indicators 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 ☐

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SC 41 Bridge Replacement Project City/County: Charleston and Berkeley Sampling Date: 8-11 Nov 2010

Applicant/Owner: SC Dept of Transportation State: SC Sampling Point: upland 9

Investigator(s): Brian L. Taylor Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32°55'53.11"N Long: 79°49'15.66"W Datum: _____

Soil Map Unit Name: Lynchburg fine sandy loam NWI classification: NI

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

Are Vegetation X, Soil _____, or Hydrology _____ sign. disturbed? Are "Normal Circumstances" present? Yes _____ No X

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 <u>X</u> No _____	Is the Sampled Area within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks Roadside area	

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) (LRR U) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Moss Trim Lines (B16) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidizes Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (O6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) |
| | | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): >14 inches
 Saturation Present? Yes _____ No _____ Depth (inches): _____
 (includes capillary fringe)

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: wetland 9

<p>Tree Stratum (Plot size: <u>30-ft radius</u>)</p> <table border="0"> <thead> <tr> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td colspan="3" style="text-align: center;">= Total Cover</td> </tr> </tbody> </table>	Absolute % Cover	Dominant Species?	Indicator Status	= Total Cover			<p>Dominance Test Worksheet:</p> <p>Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>2</u> (B)</p> <p>Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B)</p>																
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SOIL

Sampling Point: wetland 9

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

Depth (inches)	Matrix		Redox Features		Texture	Remarks
	Color (moist)	%	Color (moist)	%		
0-3	10 YR 3/1				sandy loam	
3-9	10 YR 3/2				sandy loam	
9-18+	10 YR 4/3				sandy loam	

†Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ‡Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

☐ 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)
☐ 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)
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Indicators for Problematic Hydric Soils:

☐ 1 cm Muck (A9) (LRR O)
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☐ Other (Explain in Remarks)

‡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 ☒

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SC 41 Bridge Replacement Project City/County: Charleston and Berkeley Sampling Date: 8-11 Nov 2010

Applicant/Owner: SC Dept of Transportation State: SC Sampling Point: wetland 9

Investigator(s): Brian L. Taylor Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): flat Slope (%): 0

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Soil Map Unit Name: Lynchburg fine sandy loam NWI classification: NI

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

Are Vegetation _____, Soil _____, or Hydrology _____ sign. 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 <u>X</u> No _____	Is the Sampled Area within a Wetland	Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____		
Wetland Hydrology Present?	Yes <u>X</u> No _____		
Remarks			

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
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| | | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes X No _____ Depth (inches): 6 inches
 Saturation Present? Yes _____ No _____ Depth (inches): _____
 (includes capillary fringe)

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: Wetland 9

<p>Tree Stratum (Plot size: <u>30-ft radius</u>)</p> <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. Liquidamber styraciflau</td> <td>15</td> <td>yes</td> <td>fac</td> </tr> <tr> <td>2. Quercus laurifolia</td> <td>10</td> <td>yes</td> <td>facw</td> </tr> <tr> <td>3. Salix nigra</td> <td>10</td> <td>yes</td> <td>obl</td> </tr> <tr> <td colspan="4"><u>35%</u> = Total Cover</td> </tr> </tbody> </table>		Absolute % Cover	Dominant Species?	Indicator Status	1. Liquidamber styraciflau	15	yes	fac	2. Quercus laurifolia	10	yes	facw	3. Salix nigra	10	yes	obl	<u>35%</u> = Total Cover				<p>Dominance Test Worksheet:</p> <p>Number of Dominant Species That are OBL, FACW, or FAC: <u>7</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>7</u> (B)</p> <p>Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B)</p>				
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SOIL

Sampling Point: wetland 9

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

Depth (inches)	Matrix		Redox Features		Texture	Remarks
	Color (moist)	%	Color (moist)	%		
0-6	10 YR 2/1				sandy loam	
6-18+	10 YR 4/1				sandy loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
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☐ 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)
☐ 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)
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Indicators for Problematic Hydric Soils:

- ☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

3Indicators 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

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SC 41 Bridge Replacement Project City/County: Charleston and Berkeley Sampling Date: 8-11 Nov 2010

Applicant/Owner: SC Dept of Transportation State: SC Sampling Point: upland 28

Investigator(s): Brian L. Taylor Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32°55'49.76"N Long: 79°49'8.26"W Datum: _____

Soil Map Unit Name: Meggett loam NWI classification: NI

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

Are Vegetation _____, Soil _____, or Hydrology _____ sign. 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 <u>X</u> No _____	Is the Sampled Area within a Wetland	Yes _____ No <u>X</u> _____
Hydric Soil Present?	Yes _____ No <u>X</u> _____		
Wetland Hydrology Present?	Yes _____ No <u>X</u> _____		
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)
- ☐ Oxidizes Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (O6)
- ☐ 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)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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 upland 28

<p>Tree Stratum (Plot size: _____)</p> <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. Quercus falcata</td> <td>15</td> <td>yes</td> <td>facu-</td> </tr> <tr> <td>2. Acer rubrum</td> <td>10</td> <td>yes</td> <td>fac</td> </tr> <tr> <td>3. Pinus taeda</td> <td>15</td> <td>yes</td> <td>fac</td> </tr> <tr> <td>4. Quercus nigra</td> <td>10</td> <td>no</td> <td>fac</td> </tr> <tr> <td colspan="4">_____ = Total Cover</td> </tr> </tbody> </table>		Absolute % Cover	Dominant Species?	Indicator Status	1. Quercus falcata	15	yes	facu-	2. Acer rubrum	10	yes	fac	3. Pinus taeda	15	yes	fac	4. Quercus nigra	10	no	fac	_____ = Total Cover				<p>Dominance Test Worksheet:</p> <p>Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>5</u> (B)</p> <p>Percent of Dominant Species That are OBL, FACW, or FAC: <u>80</u> (A/B)</p>				
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SOILSampling Point: upland 28**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features		Type ¹ / Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%			
0-2	10 YR 5/4					sandy loam	
2-18+	10 YR 6/13					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators:**

☐ 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)
☐ 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
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☐ Red Parent Material (TF2)
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☐ Other (Explain in Remarks)

³Indicators 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**___

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SC 41 Bridge Replacement Project City/County: Charleston and Berkeley Sampling Date: 8-11 Nov 2010

Applicant/Owner: SC Dept of Transportation State: SC Sampling Point: wetland 28

Investigator(s): Brian L. Taylor Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32°55'49.76"N Long: 79°49'8.26"W Datum: _____

Soil Map Unit Name: Meggett loam NWI classification: NI

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

Are Vegetation _____, Soil _____, or Hydrology _____ sign. 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 <u>X</u> No _____	Is the Sampled Area within a Wetland	Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____		
Wetland Hydrology Present?	Yes <u>X</u> No _____		
Remarks			

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- | | | |
|---|--|---|
| <u> </u> Surface Water (A1) | <u>X</u> Water-Stained Leaves (B9) | <u> </u> Surface Soil Cracks (B6) |
| <u>X</u> High Water Table (A2) | <u> </u> Aquatic Fauna (B13) | <u> </u> Sparsely Vegetated Concave Surface (B8) |
| <u>X</u> Saturation (A3) | <u> </u> Marl Deposits (B15) (LRR U) | <u> </u> Drainage Patterns (B10) |
| <u> </u> Water Marks (B1) | <u> </u> Hydrogen Sulfide Odor (C1) | <u> </u> Moss Trim Lines (B16) |
| <u> </u> Sediment Deposits (B2) | <u> </u> Oxidizes Rhizospheres on Living Roots (C3) | <u> </u> Dry-Season Water Table (C2) |
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| <u> </u> Iron Deposits (B5) | <u> </u> Thin Muck Surface (C7) | <u> </u> Geomorphic Position (D2) |
| <u> </u> Inundation Visible on Aerial Imagery (B7) | <u> </u> Other (Explain in Remarks) | <u> </u> Shallow Aquitard (D3) |
| | | <u>X</u> FAC-Neutral Test (D5) |

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes X No _____ Depth (inches): 10 inches
 Saturation Present? Yes X No _____ Depth (inches): _____
 (includes capillary fringe)

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 wetland 28

<p>Tree Stratum (Plot size: _____)</p> <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. Liquidamber styraciflua</td> <td>10</td> <td>yes</td> <td>fac</td> </tr> <tr> <td>2. Acer rubrum</td> <td>10</td> <td>yes</td> <td>fac</td> </tr> <tr> <td>3. Pinus taeda</td> <td>7</td> <td>yes</td> <td>fac</td> </tr> <tr> <td>4. Sabal palmetto</td> <td>3</td> <td>no</td> <td>fac</td> </tr> <tr> <td colspan="4">_____ = Total Cover</td> </tr> </tbody> </table>		Absolute % Cover	Dominant Species?	Indicator Status	1. Liquidamber styraciflua	10	yes	fac	2. Acer rubrum	10	yes	fac	3. Pinus taeda	7	yes	fac	4. Sabal palmetto	3	no	fac	_____ = Total Cover				<p>Dominance Test Worksheet:</p> <p>Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>4</u> (B)</p> <p>Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B)</p>
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SOIL

Sampling Point: wetland 28

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

Depth (inches)	Matrix		Redox Features		Texture	Remarks
	Color (moist)	%	Color (moist)	%		
1-2	10 YR 2/1				fine sandy loam	high organic content
2-4	10 YR 5/1				fine sandy loam	
4-18+	10 YR 6/1		10 YR 4/6		sand	

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

Hydric Soil Indicators:

- ☐ 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)
- ☐ 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LRR T, U)
- ☐ Other (Explain in Remarks)

3Indicators 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 _____

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SC 41 Bridge Replacement Project City/County: Charleston and Berkeley Sampling Date: 8-11 Nov 2010

Applicant/Owner: SC Dept of Transportation State: SC Sampling Point: upland 33

Investigator(s): Brian L. Taylor Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32°55'44.78 Long: 79°49'13.74" Datum: _____

Soil Map Unit Name: Goldsboro loamy sand NWI classification: NI

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

Are Vegetation _____, Soil _____, or Hydrology _____ sign. 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 <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> _____ Wetland Hydrology Present? Yes _____ No <u>X</u> _____	Is the Sampled Area within a Wetland Yes _____ No <u>X</u> _____
Remarks: <u>Roadside ditch</u>	

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

☐ 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)
☐ Oxidizes Rhizospheres on Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (O6)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remarks)

☐ 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)
☒ FAC-Neutral Test (D5)

Field Observations:

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

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 wetland 33

<p>Tree Stratum (Plot size: _____)</p> <p>Absolute % Cover Dominant Species? Indicator Status</p> <p>_____ = Total Cover</p>	<p>Dominance Test Worksheet:</p> <p>Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)</p> <p>Total Number of Dominant Species Across All Strata: 2 (B)</p> <p>Percent of Dominant Species That are OBL, FACW, or FAC: 50 (A/B)</p>
<p>Sapling Stratum (Plot size: _____)</p> <p>Absolute % Cover Dominant Species? Indicator Status</p> <p>_____ = Total Cover</p>	<p>Prevalence Index Worksheet</p> <p><u>Total % Cover of:</u> <u>Multiply by:</u></p> <p>OBL species x 1 = _____</p> <p>FACW species x 2 = _____</p> <p>FAC species x 3 = _____</p> <p>FACU species x 4 = _____</p> <p>UPL species x 5 = _____</p> <p>Column totals: _____ (A) _____ (B)</p> <p>Prevalence Index = B/A = _____</p>
<p>Shrub Stratum (Plot size: _____)</p> <p>Absolute % Cover Dominant Species? Indicator Status</p> <p>_____ = Total Cover</p>	<p>Hydrophytic Vegetation Indicators:</p> <p>___ 1 - Rapid Test for Hydrophytic Vegetation</p> <p>___ 2 - Dominance Test is >50%</p> <p>___ 3 - Prevalence Index is >3.0¹</p> <p>___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p>___ Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p>
<p>Herb Stratum (Plot size: _____)</p> <p>1. Stenotaphrum secundatum 85 yes fac</p> <p>2. Trifolium repens 15 yes facu</p> <p>100% = Total Cover</p>	<p>Definitions of Five Vegetation Strata:</p> <p>Tree – Woody plants, excluding woody vines larger than 20 ft in height and 3 in DBH.</p> <p>Sapling – Woody plants 20 ft or more in height and less than 3 in. DBH.</p> <p>Shrub – Woody plants 3 to 20 ft in height.</p> <p>Herb – All herbaceous plants regardless of size, and woody plants, except woody vines, less than 3 ft in height.</p> <p>Woody vine – All woody vines, regardless of height.</p>
<p>Woody Vine Stratum (Plot size: _____)</p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p> <p>4. _____</p> <p>5. _____</p> <p>_____ = Total Cover</p>	<p>Hydrophytic Vegetation Present? Yes <u> X </u> No _____</p>

SOIL

Sampling Point: wetland 33

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

Depth (inches)	Matrix		Redox Features		Type ₁ / Loc ₂	Texture	Remarks
	Color (moist)	%	Color (moist)	%			
0-3	10 YR 3/3					sandy loam	
3-18+	10 YR 5/6					sandy clay loam	

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

Hydric Soil Indicators:

- ☐ 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)
☐ 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators 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 ☒

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SC 41 Bridge Replacement Project City/County: Charleston and Berkeley Sampling Date: 8-11 Nov 2010

Applicant/Owner: SC Dept of Transportation State: SC Sampling Point: wetland 33

Investigator(s): Brian L. Taylor Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32°55'44.78 Long: 79°49'13.74" Datum: _____

Soil Map Unit Name: Goldsboro loamy sand NWI classification: NI

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

Are Vegetation _____, Soil _____, or Hydrology _____ sign. 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 <u>X</u> No _____	Is the Sampled Area within a Wetland Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: <u>Roadside ditch</u>	

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- High Water Table (A2)
- X Saturation (A3)
- X 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)
- Oxidizes Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (O6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- X 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)

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 0-4 inches
 Water Table Present? Yes _____ No _____ Depth (inches): _____
 Saturation Present? Yes _____ No _____ Depth (inches): _____
 (includes capillary fringe)

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 wetland 33

<p>Tree Stratum (Plot size: _____)</p> <p>Absolute % Cover Dominant Species? Indicator Status</p> <p>_____ = Total Cover</p>	<p>Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)</p> <p>Total Number of Dominant Species Across All Strata: 4 (B)</p> <p>Percent of Dominant Species That are OBL, FACW, or FAC: 100 (A/B)</p>
<p>Sapling Stratum (Plot size: _____)</p> <p>Absolute % Cover Dominant Species? Indicator Status</p> <p>_____ = Total Cover</p>	<p>Prevalence Index Worksheet</p> <p><u>Total % Cover of:</u> <u>Multiply by:</u> OBL species x 1 = _____ FACW species x 2 = _____ FAC species x 3 = _____ FACU species x 4 = _____ UPL species x 5 = _____</p> <p>Column totals: _____ (A) _____ (B)</p> <p>Prevalence Index = B/A = _____</p>
<p>Shrub Stratum (Plot size: _____)</p> <p>1 <i>Baccharis halimifolia</i></p> <p>Absolute % Cover Dominant Species? Indicator Status</p> <p>5 no facw</p> <p>_____ = Total Cover</p>	<p>Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ___ 3.0 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p>
<p>Herb Stratum (Plot size: _____)</p> <p>1. <i>Juncus effusus</i> 20 yes facw+ 2. <i>Typha latifolia</i> 10 yes obl 3. <i>Carex</i> sp. 35 yes facw</p> <p>65% = Total Cover</p>	<p>Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines larger than 20 ft in height and 3 in DBH. Sapling – Woody plants 20 ft or more in height and less than 3 in. DBH. Shrub – Woody plants 3 to 20 ft in height. Herb – All herbaceous plants regardless of size, and woody plants, except woody vines, less than 3 ft in height. Woody vine – All woody vines, regardless of height.</p>
<p>Woody Vine Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p>Absolute % Cover Dominant Species? Indicator Status</p> <p>_____ = Total Cover</p>	<p>Hydrophytic Vegetation Present? Yes <u> X </u> No _____</p>

SOIL

Sampling Point: wetland 33

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

Depth (inches)	Matrix		Redox Features		Type ¹ / Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%			
0-5	10 YR 4/2					sandy loam	
5-18+	10 YR 3/1					sandy clay loam	

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

Hydric Soil Indicators:

- ☐ 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)
- ☐ 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LRR T, U)
- ☐ Other (Explain in Remarks)

³Indicators 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 _____

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SC 41 Bridge Replacement Project City/County: Charleston and Berkeley Sampling Date: 8-11 Nov 2010

Applicant/Owner: SC Dept of Transportation State: SC Sampling Point: upland 34

Investigator(s): Brian L. Taylor Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32°55'44.28"N Long: 79°49'13.01"W Datum: _____

Soil Map Unit Name: Goldsboro loamy sand NWI classification: NI

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

Are Vegetation _____, Soil _____, or Hydrology _____ sign. 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 <u>X</u> No _____	Is the Sampled Area within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks	

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) (LRR U) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Moss Trim Lines (B16) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidizes Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (O6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) |
| | | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

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

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 upland 34

<p>Tree Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p style="text-align: right;">_____ = Total Cover</p>	<p>Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: 4 _____ (A)</p> <p>Total Number of Dominant Species Across All Strata: 4 _____ (B)</p> <p>Percent of Dominant Species That are OBL, FACW, or FAC: 100 _____ (A/B)</p>												
<p>Sapling Stratum (Plot size: _____)</p> <p>1. Liquidamber styraciflua 2. Pinus taeda 3. Myrica cerifera 3. _____ 4. _____ 5. _____</p> <p style="text-align: right;">25% = Total Cover</p>	<p>Prevalence Index Worksheet</p> <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species</td> <td>x 5 = _____</td> </tr> </table> <p>Column totals: _____ (A) _____ (B)</p> <p>Prevalence Index = B/A = _____</p>	Total % Cover of:	Multiply by:	OBL species	x 1 = _____	FACW species	x 2 = _____	FAC species	x 3 = _____	FACU species	x 4 = _____	UPL species	x 5 = _____
Total % Cover of:	Multiply by:												
OBL species	x 1 = _____												
FACW species	x 2 = _____												
FAC species	x 3 = _____												
FACU species	x 4 = _____												
UPL species	x 5 = _____												
<p>Shrub Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p style="text-align: right;">_____ = Total Cover</p>	<p>Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is >3.0 ___ 4 - Morphological Adaptations₁ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation₁ (Explain)</p> <p>₁Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p>												
<p>Herb Stratum (Plot size: _____)</p> <p style="text-align: right;">Total Cover</p>	<p>Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines larger than 20 ft in height and 3 in DBH. Sapling – Woody plants 20 ft or more in height and less than 3 in. DBH. Shrub – Woody plants 3 to 20 ft in height. Herb – All herbaceous plants regardless of size, and woody plants, except woody vines, less than 3 ft in height. Woody vine – All woody vines, regardless of height.</p>												
<p>Woody Vine Stratum (Plot size: _____)</p> <p>1. Gelsemium sempervirens 2. _____ 3. _____ 4. _____ 5. _____</p> <p style="text-align: right;">_____ = Total Cover</p>	<p>Hydrophytic Vegetation Present? Yes <u> X </u> No _____</p>												

SOIL

Sampling Point: wetland 34

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

Depth (inches)	Matrix		Redox Features		Texture	Remarks
	Color (moist)	%	Color (moist)	%		
0-8	10 YR 3/3				sandy loam	
8-18+	10 YR 4/3		10 YR 4/6		sandy clay loam	

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

Hydric Soil Indicators:

☐ 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)
☐ 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

3Indicators 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**

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SC 41 Bridge Replacement Project City/County: Charleston and Berkeley Sampling Date: 8-11 Nov 2010

Applicant/Owner: SC Dept of Transportation State: SC Sampling Point: wetland 34

Investigator(s): Brian L. Taylor Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32°55'44.28"N Long: 79°49'13.01"W Datum: _____

Soil Map Unit Name: Goldsboro loamy sand NWI classification: NI

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

Are Vegetation _____, Soil _____, or Hydrology _____ sign. 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland Yes <u>X</u> No _____
Remarks	

HYDROLOGY

Wetland Hydrology Indicators:

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

X Surface Water (A1)
____ High Water Table (A2)
X 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)

X Water-Stained Leaves (B9)
____ Aquatic Fauna (B13)
____ Marl Deposits (B15) (LRR U)
____ Hydrogen Sulfide Odor (C1)
X Oxidizes Rhizospheres on Living Roots (C3)
____ Presence of Reduced Iron (C4)
____ Recent Iron Reduction in Tilled Soils (O6)
____ Thin Muck Surface (C7)
____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

____ Surface Soil Cracks (B6)
____ Sparsely Vegetated Concave Surface (B8)
X 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)

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 1-2
Water Table Present? Yes X No _____ Depth (inches): 0-4
Saturation Present? Yes _____ No _____ Depth (inches): _____
(includes capillary fringe)

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 wetland 34

<p>Tree Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p>Absolute % Cover Dominant Species? Indicator Status</p> <p>_____ = Total Cover</p>	<p>Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: 2____ (A)</p> <p>Total Number of Dominant Species Across All Strata: 2____ (B)</p> <p>Percent of Dominant Species That are OBL, FACW, or FAC: 100__ (A/B)</p>												
<p>Sapling Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p>Absolute % Cover Dominant Species? Indicator Status</p> <p>_____ = Total Cover</p>	<p>Prevalence Index Worksheet</p> <table border="0"> <tr> <td><u>Total % Cover of:</u></td> <td><u>Multiply by:</u></td> </tr> <tr> <td>OBL species</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species</td> <td>x 5 = _____</td> </tr> </table> <p>Column totals: _____ (A) _____ (B)</p> <p>Prevalence Index = B/A = _____</p>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL species	x 1 = _____	FACW species	x 2 = _____	FAC species	x 3 = _____	FACU species	x 4 = _____	UPL species	x 5 = _____
<u>Total % Cover of:</u>	<u>Multiply by:</u>												
OBL species	x 1 = _____												
FACW species	x 2 = _____												
FAC species	x 3 = _____												
FACU species	x 4 = _____												
UPL species	x 5 = _____												
<p>Shrub Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p>Absolute % Cover Dominant Species? Indicator Status</p> <p>_____ = Total Cover</p>	<p>Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ____3.0 ____ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p>												
<p>Herb Stratum (Plot size: _____)</p> <p>1 Juncus roemerianus 2. Andropogon glomeratus</p> <p>Absolute % Cover Dominant Species? Indicator Status</p> <p>70 yes Obl 10 yes Facw+</p> <p>80% = Total Cover</p>	<p>Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines larger than 20 ft in height and 3 in DBH. Sapling – Woody plants 20 ft or more in height and less than 3 in. DBH. Shrub – Woody plants 3 to 20 ft in height. Herb – All herbaceous plants regardless of size, and woody plants, except woody vines, less than 3 ft in height. Woody vine – All woody vines, regardless of height.</p>												
<p>Woody Vine Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p>Absolute % Cover Dominant Species? Indicator Status</p> <p>_____ = Total Cover</p>	<p>Hydrophytic Vegetation Present? Yes <u> X </u> No _____</p>												

SOIL

Sampling Point: wetland 34

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

Depth (inches)	Matrix		Redox Features		Texture	Remarks
	Color (moist)	%	Color (moist)	%		
0-4	10 YR 3/2				loamy sand	
4-18+	GL1 6/10Y		10 YR 5/4		sandy clay loam	

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

Hydric Soil Indicators:

- ☐ 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)
- ☐ 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LRR T, U)
- ☐ Other (Explain in Remarks)

3Indicators 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 _____

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SC 41 Bridge Replacement Project City/County: Charleston and Berkeley Sampling Date: 8-11 Nov 2010

Applicant/Owner: SC Dept of Transportation State: SC Sampling Point: upland 43

Investigator(s): Brian L. Taylor Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32°55'11.71"N Long: 79°49'45.32"W Datum: _____

Soil Map Unit Name: Yonges loamy fine sand NWI classification: NI

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

Are Vegetation X, Soil _____, or Hydrology _____ sign. 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 <u>X</u> No _____	Is the Sampled Area within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks	

HYDROLOGY

Wetland Hydrology Indicators:	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u>	<u>Water-Stained Leaves (B9)</u> <u>Aquatic Fauna (B13)</u> <u>Marl Deposits (B15) (LRR U)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidizes Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (O6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u>
	<u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>FAC-Neutral Test (D5)</u>

Field Observations:		Wetland Hydrology Present? Yes _____ No <u>X</u>
Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks		

VEGETATION (Five Strata) – Use scientific names of plants.

 Sampling Point upland 43

<p>Tree Stratum (Plot size: <u>30-ft radius</u>)</p> <p>1. <u>Pinus taeda</u></p> <p>2. <u>Sabal palmetto</u></p> <p>3. _____</p> <p>4. _____</p> <p>5. _____</p>	<table border="1"> <thead> <tr> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>35</td> <td>yes</td> <td>fac</td> </tr> <tr> <td>5</td> <td>yes</td> <td>fac</td> </tr> <tr> <td colspan="3">40 _____ = Total Cover</td> </tr> </tbody> </table>	Absolute % Cover	Dominant Species?	Indicator Status	35	yes	fac	5	yes	fac	40 _____ = Total Cover			<p>Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: 4 _____ (A)</p> <p>Total Number of Dominant Species Across All Strata: 5 _____ (B)</p> <p>Percent of Dominant Species That are OBL, FACW, or FAC: 80 _____ (A/B)</p>						
Absolute % Cover	Dominant Species?	Indicator Status																		
35	yes	fac																		
5	yes	fac																		
40 _____ = Total Cover																				
<p>Sapling Stratum (Plot size: _____)</p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p> <p>4. _____</p> <p>5. _____</p>	<table border="1"> <thead> <tr> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td colspan="3">_____ = Total Cover</td> </tr> </tbody> </table>	Absolute % Cover	Dominant Species?	Indicator Status	_____ = Total Cover			<p>Prevalence Index Worksheet</p> <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species</td> <td>x 5 = _____</td> </tr> </tbody> </table> <p>Column totals: _____ (A) _____ (B)</p> <p>Prevalence Index = B/A = _____</p>	Total % Cover of:	Multiply by:	OBL species	x 1 = _____	FACW species	x 2 = _____	FAC species	x 3 = _____	FACU species	x 4 = _____	UPL species	x 5 = _____
Absolute % Cover	Dominant Species?	Indicator Status																		
_____ = Total Cover																				
Total % Cover of:	Multiply by:																			
OBL species	x 1 = _____																			
FACW species	x 2 = _____																			
FAC species	x 3 = _____																			
FACU species	x 4 = _____																			
UPL species	x 5 = _____																			
<p>Shrub Stratum (Plot size: _____)</p> <p>1. <u>Baccharis halimifolia</u></p> <p>2. <u>Acer rubrum</u></p> <p>3. _____</p> <p>4. _____</p> <p>5. _____</p>	<table border="1"> <thead> <tr> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>yes</td> <td>fac</td> </tr> <tr> <td>5</td> <td>no</td> <td>fac</td> </tr> <tr> <td colspan="3">20% _____ = Total Cover</td> </tr> </tbody> </table>	Absolute % Cover	Dominant Species?	Indicator Status	10	yes	fac	5	no	fac	20% _____ = Total Cover			<p>Hydrophytic Vegetation Indicators:</p> <p>___ 1 - Rapid Test for Hydrophytic Vegetation</p> <p>___ 2 - Dominance Test is >50%</p> <p>___ 3 - Prevalence Index is >3.0</p> <p>___ 4 - Morphological Adaptations: (Provide supporting data in Remarks or on a separate sheet)</p> <p>___ Problematic Hydrophytic Vegetation: (Explain)</p> <p>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p>						
Absolute % Cover	Dominant Species?	Indicator Status																		
10	yes	fac																		
5	no	fac																		
20% _____ = Total Cover																				
<p>Herb Stratum (Plot size: _____)</p> <p>1. _____</p>	<table border="1"> <thead> <tr> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td colspan="3">42% _____ = Total Cover</td> </tr> </tbody> </table>	Absolute % Cover	Dominant Species?	Indicator Status	42% _____ = Total Cover			<p>Definitions of Five Vegetation Strata:</p> <p>Tree – Woody plants, excluding woody vines larger than 20 ft in height and 3 in DBH.</p> <p>Sapling – Woody plants 20 ft or more in height and less than 3 in. DBH.</p> <p>Shrub – Woody plants 3 to 20 ft in height.</p> <p>Herb – All herbaceous plants regardless of size, and woody plants, except woody vines, less than 3 ft in height.</p> <p>Woody vine – All woody vines, regardless of height.</p>												
Absolute % Cover	Dominant Species?	Indicator Status																		
42% _____ = Total Cover																				
<p>Woody Vine Stratum (Plot size: _____)</p> <p>1. <u>Lonicera japonica</u></p> <p>2. _____</p> <p>3. _____</p> <p>4. _____</p> <p>5. _____</p>	<table border="1"> <thead> <tr> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>yes</td> <td>fac-</td> </tr> <tr> <td colspan="3">_____ = Total Cover</td> </tr> </tbody> </table>	Absolute % Cover	Dominant Species?	Indicator Status	5	yes	fac-	_____ = Total Cover			<p>Hydrophytic Vegetation Present? Yes <u>X</u> No _____</p>									
Absolute % Cover	Dominant Species?	Indicator Status																		
5	yes	fac-																		
_____ = Total Cover																				

SOIL

Sampling Point: upland 43

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

Depth (inches)	Matrix		Redox Features		Texture	Remarks
	Color (moist)	%	Color (moist)	%		
0-18+	10 YR 2/2		2.5 YR 2/2		sandy loam	

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

Hydric Soil Indicators:

- ☐ 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)
☐ 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils:

- ☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

3Indicators 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___

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SC 41 Bridge Replacement Project City/County: Charleston and Berkeley Sampling Date: 8-11 Nov 2010

Applicant/Owner: SC Dept of Transportation State: SC Sampling Point: wetland 43

Investigator(s): Brian L. Taylor Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32°55'11.71"N Long: 79°49'45.32"W Datum: _____

Soil Map Unit Name: Yonges loamy fine sand NWI classification: NI

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

Are Vegetation X, Soil _____, or Hydrology _____ sign. 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland Yes <u>X</u> No _____
Remarks This wetland is located under an overhead power line	

HYDROLOGY

Wetland Hydrology Indicators:

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

X Surface Water (A1)
____ High Water Table (A2)
X 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)
____ Oxidizes Rhizospheres on Living Roots (C3)
____ Presence of Reduced Iron (C4)
____ Recent Iron Reduction in Tilled Soils (O6)
____ 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)

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 1-3 inches
Water Table Present? Yes _____ No _____ Depth (inches): _____
Saturation Present? Yes _____ No _____ Depth (inches): _____
(includes capillary fringe)

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 wetland 43

<p>Tree Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p>_____ = Total Cover</p>	<p>Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: 4____ (A)</p> <p>Total Number of Dominant Species Across All Strata: 4____ (B)</p> <p>Percent of Dominant Species That are OBL, FACW, or FAC: 100__ (A/B)</p>												
<p>Sapling Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p>_____ = Total Cover</p>	<p>Prevalence Index Worksheet</p> <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species</td> <td>x 5 = _____</td> </tr> </table> <p>Column totals: _____ (A) _____ (B)</p> <p>Prevalence Index = B/A = _____</p>	Total % Cover of:	Multiply by:	OBL species	x 1 = _____	FACW species	x 2 = _____	FAC species	x 3 = _____	FACU species	x 4 = _____	UPL species	x 5 = _____
Total % Cover of:	Multiply by:												
OBL species	x 1 = _____												
FACW species	x 2 = _____												
FAC species	x 3 = _____												
FACU species	x 4 = _____												
UPL species	x 5 = _____												
<p>Shrub Stratum (Plot size: _____)</p> <p>1. <u>Baccharis halimifolia</u> 2. <u>Acer rubrum</u> 3. _____ 4. _____ 5. _____</p> <p>15 yes fac 5 no fac</p> <p>20%_____ = Total Cover</p>	<p>Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ___3.0 ___ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation (Explain)</p> <p>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p>												
<p>Herb Stratum (Plot size: _____)</p> <p>1. <u>Juncus roemerianus</u> 2. <u>Typha latifolia</u> 3. <u>Hydrocotyle umbellata</u> 4. _____ 5. _____</p> <p>20 yes obl 7 yes obl 15 yes obl</p> <p>42%_____ = Total Cover</p>	<p>Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines larger than 20 ft in height and 3 in DBH. Sapling – Woody plants 20 ft or more in height and less than 3 in. DBH. Shrub – Woody plants 3 to 20 ft in height. Herb – All herbaceous plants regardless of size, and woody plants, except woody vines, less than 3 ft in height. Woody vine – All woody vines, regardless of height.</p>												
<p>Woody Vine Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p>_____ = Total Cover</p>	<p>Hydrophytic Vegetation Present? Yes <u> X </u> No _____</p>												

SOIL

Sampling Point: wetland 43

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

Depth (inches)	Matrix		Redox Features		Texture	Remarks
	Color (moist)	%	Color (moist)	%		
0-8	10 YR 3/2		10 YR 3/6		C/ M	sandy loam
8-18+	10 YR 5/1		10 YR 4/4		C/M	loamy sand

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

Hydric Soil Indicators:

- ☐ 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)
- ☐ 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LRR T, U)
- ☐ Other (Explain in Remarks)

3Indicators 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 _____

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SC 41 Bridge Replacement Project City/County: Charleston and Berkeley Sampling Date: 8-11 Nov 2010

Applicant/Owner: SC Dept of Transportation State: SC Sampling Point: upland 44

Investigator(s): Brian L. Taylor Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32°55'15.14"N Long: 79°49'42.24"W Datum: _____

Soil Map Unit Name: Yonges fine sandy loam NWI classification: PFEM / PFOA

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

Are Vegetation _____, Soil _____, or Hydrology _____ sign. 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 <u>X</u> No _____	Is the Sampled Area within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks	

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) (LRR U) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Moss Trim Lines (B16) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidizes Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (O6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) |
| | | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

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

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 wetland 44

<p>Tree Stratum (Plot size: <u>30-ft radius</u>)</p> <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. Pinus taeda</td> <td>20</td> <td>yes</td> <td>fac</td> </tr> <tr> <td>2. Quercus nigra</td> <td>10</td> <td>yes</td> <td>fac</td> </tr> <tr> <td>3. Sabal palmetto</td> <td>5</td> <td>yes</td> <td>fac</td> </tr> <tr> <td>4. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5. _____</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>35_____ = Total Cover</p>		Absolute % Cover	Dominant Species?	Indicator Status	1. Pinus taeda	20	yes	fac	2. Quercus nigra	10	yes	fac	3. Sabal palmetto	5	yes	fac	4. _____				5. _____				<p>Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: 7____ (A)</p> <p>Total Number of Dominant Species Across All Strata: 8____ (B)</p> <p>Percent of Dominant Species That are OBL, FACW, or FAC: 88____ (A/B)</p>
	Absolute % Cover	Dominant Species?	Indicator Status																						
1. Pinus taeda	20	yes	fac																						
2. Quercus nigra	10	yes	fac																						
3. Sabal palmetto	5	yes	fac																						
4. _____																									
5. _____																									
<p>Sapling Stratum (Plot size: _____)</p> <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. _____</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>_____ = Total Cover</p>		Absolute % Cover	Dominant Species?	Indicator Status	1. _____				<p>Prevalence Index Worksheet</p> <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species</td> <td>x 5 = _____</td> </tr> </tbody> </table> <p>Column totals: _____ (A) _____ (B)</p> <p>Prevalence Index = B/A = _____</p>	Total % Cover of:	Multiply by:	OBL species	x 1 = _____	FACW species	x 2 = _____	FAC species	x 3 = _____	FACU species	x 4 = _____	UPL species	x 5 = _____				
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1. Smilax rotundifolia	10	yes	fac																						
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5. _____																									

SOIL

Sampling Point: upland 44

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

Depth (inches)	Matrix		Redox Features		Texture	Remarks
	Color (moist)	%	Color (moist)	%		
0-18+	10 YR 5/6		10 YR 6/1		C/M	clayey loam

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

Hydric Soil Indicators:

- ☐ 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)
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- ☐ 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils3:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LRR T, U)
- ☐ Other (Explain in Remarks)

3Indicators 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

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SC 41 Bridge Replacement Project City/County: Charleston and Berkeley Sampling Date: 8-11 Nov 2010

Applicant/Owner: SC Dept of Transportation State: SC Sampling Point: wetland 44

Investigator(s): Brian L. Taylor Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32°55'15.14"N Long: 79°49'42.24"W Datum: _____

Soil Map Unit Name: Yonges fine sandy loam NWI classification: PFEM / PFOA

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

Are Vegetation _____, Soil _____, or Hydrology _____ sign. 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland Yes <u>X</u> No _____
Remarks	

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- | | | |
|--|---|--|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Marl Deposits (B15) (LRR U) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input checked="" type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Moss Trim Lines (B16) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidizes Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (O6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) |
| | | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 1-4 inches
Water Table Present? Yes X No _____ Depth (inches): _____
Saturation Present? Yes _____ No _____ Depth (inches): _____
(includes capillary fringe)

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 wetland 44

<p>Tree Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p>_____ = Total Cover</p>	<p>Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: 5 _____ (A)</p> <p>Total Number of Dominant Species Across All Strata: 5 _____ (B)</p> <p>Percent of Dominant Species That are OBL, FACW, or FAC: 100__ (A/B)</p>
<p>Sapling Stratum (Plot size: _____)</p> <p>1. Salix nigra 2. Pinus taeda 3. _____ 4. _____ 5. _____</p> <p>5 15</p> <p>yes yes</p> <p>obl fac</p> <p>20 _____ = Total Cover</p>	<p>Prevalence Index Worksheet</p> <p><u>Total % Cover of:</u> <u>Multiply by:</u></p> <p>OBL species x 1 = _____</p> <p>FACW species x 2 = _____</p> <p>FAC species x 3 = _____</p> <p>FACU species x 4 = _____</p> <p>UPL species x 5 = _____</p> <p>Column totals: _____ (A) _____ (B)</p> <p>Prevalence Index = B/A = _____</p>
<p>Shrub Stratum (Plot size: _____)</p> <p>1. Baccharis halimifolia 2. Myrica cerifera 3. _____ 4. _____ 5. _____</p> <p>5 5</p> <p>yes yes</p> <p>fac fac+</p> <p>10 _____ = Total Cover</p>	<p>Hydrophytic Vegetation Indicators:</p> <p>___ 1 - Rapid Test for Hydrophytic Vegetation</p> <p>___ 2 - Dominance Test is >50%</p> <p>___ 3 - Prevalence Index is ___3.0</p> <p>___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p>___ Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p>
<p>Herb Stratum (Plot size: _____)</p> <p>1. Juncus roemerianus 2. _____ 3. _____ 4. _____ 5. _____</p> <p>25%</p> <p>yes</p> <p>facw+</p> <p>25 _____ = Total Cover</p>	<p>Definitions of Five Vegetation Strata:</p> <p>Tree – Woody plants, excluding woody vines larger than 20 ft in height and 3 in DBH.</p> <p>Sapling – Woody plants 20 ft or more in height and less than 3 in. DBH.</p> <p>Shrub – Woody plants 3 to 20 ft in height.</p> <p>Herb – All herbaceous plants regardless of size, and woody plants, except woody vines, less than 3 ft in height.</p> <p>Woody vine – All woody vines, regardless of height.</p>
<p>Woody Vine Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p>_____ = Total Cover</p>	<p>Hydrophytic Vegetation Present? Yes <u> X </u> No _____</p>

SOIL

Sampling Point: wetland 44

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

Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹ / Loc ²		
0-10	10 YR 5/1		10 YR 5/8		C/M	sandy loam	
10-18+	Gley 2 6/10 BG					clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators:**

☐ 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)
☐ 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators 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 _____

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SC 41 Bridge Replacement Project City/County: Charleston and Berkeley Sampling Date: 8-11 Nov 2010

Applicant/Owner: SC Dept of Transportation State: SC Sampling Point: upland 48

Investigator(s): Brian L. Taylor Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32°55'3.73 Long: 79°49'46.32" Datum: _____

Soil Map Unit Name: Yonges fine sandy loam NWI classification: PFO1A

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

Are Vegetation _____, Soil _____, or Hydrology _____ sign. 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? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>X</u> No _____ Yes _____ No <u>X</u> Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland	Yes _____ No <u>X</u>
Remarks			

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

____ 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)
____ Oxidizes Rhizospheres on Living Roots (C3)
____ Presence of Reduced Iron (C4)
____ Recent Iron Reduction in Tilled Soils (O6)
____ Thin Muck Surface (C7)
____ Other (Explain in Remarks)

____ 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)
____ FAC-Neutral Test (D5)

Field Observations:

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

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 upland 48

<p>Tree Stratum (Plot size: _____)</p> <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. Pinus taeda</td> <td>25</td> <td>yes</td> <td>fac</td> </tr> <tr> <td>2. Quercus virginiana</td> <td>15</td> <td>yes</td> <td>facu+</td> </tr> <tr> <td>3. Sabal palmetto</td> <td>5</td> <td>yes</td> <td>fac+</td> </tr> <tr> <td>4. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5. _____</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>40_____ = Total Cover</p>		Absolute % Cover	Dominant Species?	Indicator Status	1. Pinus taeda	25	yes	fac	2. Quercus virginiana	15	yes	facu+	3. Sabal palmetto	5	yes	fac+	4. _____				5. _____				<p>Dominance Test Worksheet:</p> <p>Number of Dominant Species That are OBL, FACW, or FAC: 3_____ (A)</p> <p>Total Number of Dominant Species Across All Strata: 5_____ (B)</p> <p>Percent of Dominant Species That are OBL, FACW, or FAC: 60____ (A/B)</p>												
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SOIL

Sampling Point: upland 48

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

Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹ / Loc ²		
0-4	10 YR 3/2		10 YR 3/4		C/M	sandy loam	
4-18+	10 YR 5/2		10 YR 4/4		C/M	loamy sand	

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

Hydric Soil Indicators:

- ☐ 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)
- ☐ 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LRR T, U)
- ☐ Other (Explain in Remarks)

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 ☒

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SC 41 Bridge Replacement Project City/County: Charleston and Berkeley Sampling Date: 8-11 Nov 2010

Applicant/Owner: SC Dept of Transportation State: SC Sampling Point: wetland 48

Investigator(s): Brian L. Taylor Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32°55'3.73 Long: 79°49'46.32" Datum: _____

Soil Map Unit Name: Yonges fine sandy loam NWI classification: PFO1A

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

Are Vegetation _____, Soil _____, or Hydrology _____ sign. 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 <u>X</u> No _____	Is the Sampled Area within a Wetland Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<u>X</u> Surface Water (A1)	_____ Water-Stained Leaves (B9)	_____ Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	_____ Marl Deposits (B15) (LRR U)	_____ Drainage Patterns (B10)
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (C1)	_____ Moss Trim Lines (B16)
_____ Sediment Deposits (B2)	_____ Oxidizes Rhizospheres on Living Roots (C3)	_____ Dry-Season Water Table (C2)
_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Crayfish Burrows (C8)
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (O6)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Other (Explain in Remarks)	_____ Shallow Aquitard (D3)
		<u>X</u> FAC-Neutral Test (D5)

Field Observations:		Wetland Hydrology Present? Yes <u>X</u> No _____
Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>1-2 inches</u>		
Water Table Present? Yes <u>X</u> No _____ Depth (inches): _____		
Saturation Present? Yes _____ No _____ Depth (inches): _____		
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks		

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point wetland 48

<p>Tree Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p>_____ = Total Cover</p>	<p>Dominance Test Worksheet:</p> <p>Number of Dominant Species That are OBL, FACW, or FAC: 3____ (A)</p> <p>Total Number of Dominant Species Across All Strata: 3____ (B)</p> <p>Percent of Dominant Species That are OBL, FACW, or FAC: 100__ (A/B)</p>												
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<p>Shrub Stratum (Plot size: _____)</p> <p>1. Baccharis halimifolia 2. _____ 3. _____ 4. _____ 5. _____</p> <p>25 yes fac</p> <p>25_____ = Total Cover</p>	<p>Hydrophytic Vegetation Indicators:</p> <p>___ 1 - Rapid Test for Hydrophytic Vegetation</p> <p>___ 2 - Dominance Test is >50%</p> <p>___ 3 - Prevalence Index is ___3.0</p> <p>___ 4 - Morphological Adaptations: (Provide supporting data in Remarks or on a separate sheet)</p> <p>___ Problematic Hydrophytic Vegetation: (Explain)</p> <p>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p>												
<p>Herb Stratum (Plot size: _____)</p> <p>1. Panicum virgatum 2. Juncus effusus 3. _____ 4. _____ 5. _____</p> <p>15 yes fac+ 20 yes obl</p> <p>35_____ = Total Cover</p>	<p>Definitions of Five Vegetation Strata:</p> <p>Tree – Woody plants, excluding woody vines larger than 20 ft in height and 3 in DBH.</p> <p>Sapling – Woody plants 20 ft or more in height and less than 3 in. DBH.</p> <p>Shrub – Woody plants 3 to 20 ft in height.</p> <p>Herb – All herbaceous plants regardless of size, and woody plants, except woody vines, less than 3 ft in height.</p> <p>Woody vine – All woody vines, regardless of height.</p>												
<p>Woody Vine Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p>_____ = Total Cover</p>	<p>Hydrophytic Vegetation</p> <p>Present? Yes <u> X </u> No _____</p>												

SOIL

Sampling Point: wetland 48

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

Depth (inches)	Matrix		Redox Features		Texture	Remarks
	Color (moist)	%	Color (moist)	%		
0-3	10 YR 3/1		10 YR 3/4		sandy loam	
3-18+	10 YR 5/1		10 YR 4/4		loamy sand	

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

Hydric Soil Indicators:

☐ 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)
☐ 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20)
(MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

3Indicators 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 _____

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SC 41 Bridge Replacement Project City/County: Charleston and Berkeley Sampling Date: 8-11 Nov 2010

Applicant/Owner: SC Dept of Transportation State: SC Sampling Point: upland 50

Investigator(s): Brian L. Taylor Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32°55'4.42" Long: 79°49'42.74" Datum: _____

Soil Map Unit Name: Yonges fine sandy loam NWI classification: NI

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

Are Vegetation _____, Soil _____, or Hydrology _____ sign. 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 _____ No <u>X</u>	Is the Sampled Area within a Wetland	Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>		
Wetland Hydrology Present?	Yes _____ No <u>X</u>		
Remarks			

HYDROLOGY

Wetland Hydrology Indicators:	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u>	<u>Water-Stained Leaves (B9)</u> <u>Aquatic Fauna (B13)</u> <u>Marl Deposits (B15) (LRR U)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidizes Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (O6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u>
	<u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>FAC-Neutral Test (D5)</u>

Field Observations:		Wetland Hydrology Present? Yes _____ No <u>X</u>
Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks		

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point upland 50

<p>Tree Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p>_____ = Total Cover</p>	<p>Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: 0 ____ (A)</p> <p>Total Number of Dominant Species Across All Strata: 4 ____ (B)</p> <p>Percent of Dominant Species That are OBL, FACW, or FAC: 0 ____ (A/B)</p>
<p>Sapling Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p>_____ = Total Cover</p>	<p>Prevalence Index Worksheet</p> <p><u>Total % Cover of:</u> <u>Multiply by:</u> OBL species x 1 = ____ FACW species x 2 = ____ FAC species x 3 = ____ FACU species x 4 = ____ UPL species x 5 = ____</p> <p>Column totals: ____ (A) ____ (B)</p> <p>Prevalence Index = B/A = _____</p>
<p>Shrub Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p>_____ = Total Cover</p>	<p>Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is >3.0 ____ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p>
<p>Herb Stratum (Plot size: _____)</p> <p>1. Festuca arundinacea 2. Geranium maculatum 3. Trifolium repens 4. Taraxacum officinale 5. _____</p> <p>75 yes fac- 5 yes facu 5 yes facu 5 yes facu</p> <p>90 _____ = Total Cover</p>	<p>Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines larger than 20 ft in height and 3 in DBH. Sapling – Woody plants 20 ft or more in height and less than 3 in. DBH. Shrub – Woody plants 3 to 20 ft in height. Herb – All herbaceous plants regardless of size, and woody plants, except woody vines, less than 3 ft in height. Woody vine – All woody vines, regardless of height.</p>
<p>Woody Vine Stratum (Plot size: _____)</p> <p>1. _____ 2. _____ 3. _____ 4. _____ 5. _____</p> <p>_____ = Total Cover</p>	<p>Hydrophytic Vegetation Present? Yes <u> X </u> No _____</p>

SOIL

Sampling Point: upland 50

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

Depth (inches)	Matrix		Redox Features		Type ¹ / Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%			
0-18+	10 YR 4/4		10 YR 6/4		C/M	sandy clay	

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

Hydric Soil Indicators:

- ☐ 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)

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- ☐ 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LRR T, U)
- ☐ Other (Explain in Remarks)

³Indicators 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**_____

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SC 41 Bridge Replacement Project City/County: Charleston and Berkeley Sampling Date: 8-11 Nov 2010

Applicant/Owner: SC Dept of Transportation State: SC Sampling Point: wetland 50

Investigator(s): Brian L. Taylor Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): flat Slope (%): 0

Subregion (LRR or MLRA): LRR T Lat: 32°55'4.42" Long: 79°49'42.74" Datum: _____

Soil Map Unit Name: Yonges fine sandy loam NWI classification: PFO4S

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

Are Vegetation _____, Soil _____, or Hydrology _____ sign. 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? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>X</u> No _____ Yes <u>X</u> No _____ Yes <u>X</u> No _____	Is the Sampled Area within a Wetland Yes <u>X</u> No _____
Remarks		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply)		<u>Secondary Indicators</u> (minimum of two required)
<u>Surface Water</u> (A1) <u>High Water Table</u> (A2) <u>X</u> <u>Saturation</u> (A3) <u>Water Marks</u> (B1) <u>Sediment Deposits</u> (B2) <u>Drift Deposits</u> (B3) <u>Algal Mat or Crust</u> (B4) <u>Iron Deposits</u> (B5) <u>Inundation Visible on Aerial Imagery</u> (B7)	<u>X</u> <u>Water-Stained Leaves</u> (B9) <u>Aquatic Fauna</u> (B13) <u>Marl Deposits</u> (B15) (LRR U) <u>Hydrogen Sulfide Odor</u> (C1) <u>Oxidizes Rhizospheres on Living Roots</u> (C3) <u>Presence of Reduced Iron</u> (C4) <u>Recent Iron Reduction in Tilled Soils</u> (O6) <u>Thin Muck Surface</u> (C7) <u>Other</u> (Explain in Remarks)	<u>Surface Soil Cracks</u> (B6) <u>Sparsely Vegetated Concave Surface</u> (B8) <u>Drainage Patterns</u> (B10) <u>Moss Trim Lines</u> (B16) <u>Dry-Season Water Table</u> (C2) <u>Crayfish Burrows</u> (C8) <u>Saturation Visible on Aerial Imagery</u> (C9) <u>Geomorphic Position</u> (D2) <u>Shallow Aquitard</u> (D3) <u>X</u> <u>FAC-Neutral Test</u> (D5)

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>5</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> 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 wetland 50

<p>Tree Stratum (Plot size: _____)</p> <table border="1"> <thead> <tr> <th></th> <th>Absolute % Cover</th> <th>Dominant Species?</th> <th>Indicator Status</th> </tr> </thead> <tbody> <tr> <td>1. Pinus taeda</td> <td>25</td> <td>yes</td> <td>fac</td> </tr> <tr> <td>2. Sabal palmetto</td> <td>5</td> <td>yes</td> <td>fac</td> </tr> <tr> <td>3. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4. _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5. _____</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>30 _____ = Total Cover</p>		Absolute % Cover	Dominant Species?	Indicator Status	1. Pinus taeda	25	yes	fac	2. Sabal palmetto	5	yes	fac	3. _____				4. _____				5. _____				<p>Dominance Test Worksheet:</p> <p>Number of Dominant Species That are OBL, FACW, or FAC: 3 _____ (A)</p> <p>Total Number of Dominant Species Across All Strata: 3 _____ (B)</p> <p>Percent of Dominant Species That are OBL, FACW, or FAC: 100 _____ (A/B)</p>												
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SOIL

Sampling Point: wetland 50

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

Depth (inches)	Matrix		Redox Features		Texture	Remarks
	Color (moist)	%	Color (moist)	%		
0-8	10 YR 4/1		10 YR 3/6		sandy loam	
8-18+	10 YR 6/1		10 YR 6/8		sandy clay loam	

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

Hydric Soil Indicators:

- ☐ 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)
- ☐ 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 Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils:

- ☐ 1 cm Muck (A9) (LRR O)
- ☐ 2 cm Muck (A10) (LRR S)
- ☐ Reduced Vertic (F18) (outside MLRA 150A,B)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Anomalous Bright Loamy Soils (F20)
- ☐ (MLRA 153B)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) (LRR T, U)
- ☐ Other (Explain in Remarks)

3Indicators 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 ☐

LEGEND

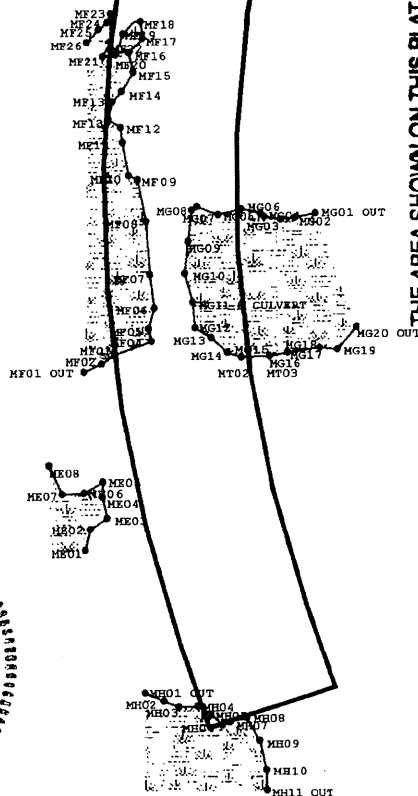


Project Study Area



Critical Area Boundary

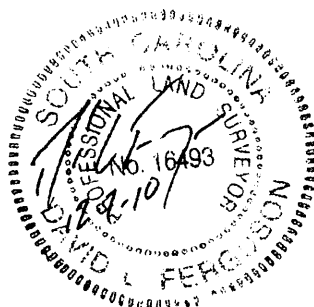
• Survey Point



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[Signature]
SIGNATURE
DATE 12-03-11

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0 100 200 400 Feet

Note: The areas depicted are for the purpose of establishing a Critical Area Line by the S.C. Department of Health and Environmental Control, Ocean and Coastal Resource Management (OCRM). Only areas under the jurisdiction of OCRM are depicted. Areas under the jurisdiction of the U.S. Army Corps of Engineers are not depicted.



 SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION	 Civil Engineering Consulting Services, Inc.	SC-41 BRIDGE REPLACEMENT PROJECT CRITICAL AREA BOUNDARY Charleston and Berkeley Counties, South Carolina		DRAWN BY: DATE:	M.T.D. 12/01/10
		REVIEWED BY: DATE:	B.L.T. 12/06/10		

FIGURE 5D

LEGEND



Project Study Area



Critical Area
Boundary

• Survey Point

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[Signature] 02-03-11
SIGNATURE DATE

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N

FIGURE 5C

M.T.D.
12/01/10
DRAWN BY:
DATE:

B.L.T.
12/06/10
REVIEWED BY:
DATE:

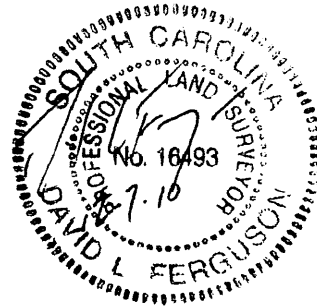
SC-41 BRIDGE REPLACEMENT PROJECT
CRITICAL AREA BOUNDARY

Charleston and Berkeley Counties, South Carolina



SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

MB04 OUT
MB03
MB02
MA22
MA20
MA19
MA18
MA16
MA15
MA14
MA12
MA11
MA10
MA09
MA08
MA07
MA06
MA05
MA04
MA03
MA02
MA01 OUT



0 100 200 400 Feet

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LEGEND



Project Study Area



Critical Area
Boundary

• Survey Point

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Frederick
SIGNATURE

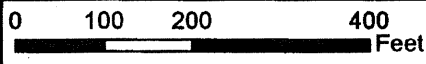
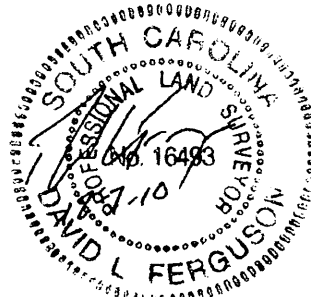
02-03-11
DATE

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MP13 OUT
MP12
MP11
MP10
MP09
MP08 8 CULVERT
MP07
MP06
MP05
MP04
MP03
MP02
MP01 OUT

MK12 OUT
MK11
MK10
MK09
MK08
MK07
MK06
MK05
MK04
MK03
MK02
MK01
BF03 8 CULVERT
BF02
BF01
WF M318
WF M315
WF M314
WF M313
WF M312
WF M311
WF M310
WF M309
WF M308
WF M307
WF M306
WF M305
WF M304
WF M303
WF M302
WF M301
WF M327 OUT
WF M326
WF M325
WF M324
WF M323
WF M322
WF M321
WF M320

MC09 OUT
MC08
MC07
MC06
MC05
MC04
MC03
MC02
MC01
MD01
MD02
MD03
MD04
MD05
MD06
MD07
MD08
MD09
MD10
MD11
MD12
MD13 OUT



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FIGURE 5B

M.T.D.
12/01/10
DRAWN BY:
DATE:
B.L.T.
12/06/10
REVIEWED BY:
DATE:

SC-41 BRIDGE REPLACEMENT PROJECT CRITICAL AREA BOUNDARY Charleston and Berkeley Counties, South Carolina



LEGEND

-  Project Study Area
-  Critical Area Boundary
- Survey Point

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FIGURE 5A

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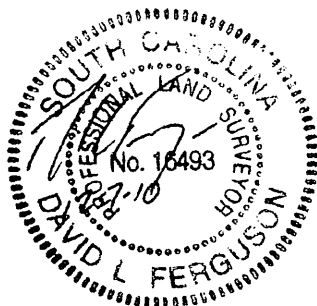
Rey W. Oden 02-03-11

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M.T.D. 12/01/10
 B.L.T. 12/06/10
 DRAWN BY: _____
 DATE: _____
 REVIEWED BY: _____
 DATE: _____

SC-41 BRIDGE REPLACEMENT PROJECT
CRITICAL AREA BOUNDARY
 Charleston and Berkeley Counties, South Carolina



0 100 200 400 Feet

ML09
 ML08
 ML07
 ML05
 ML03
 ML10
 ML12 OUT
 ML02

