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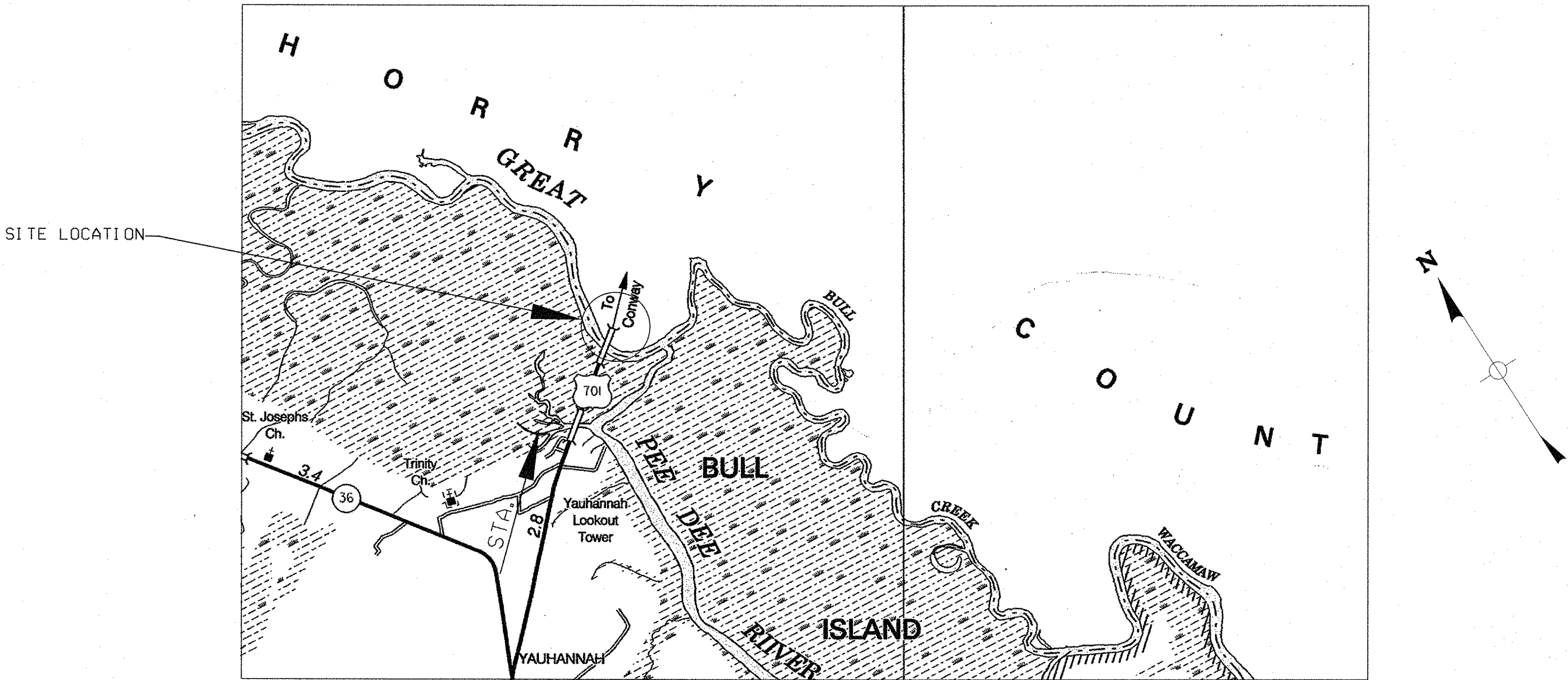


PROPOSED PLANS FOR
GEORGETOWN & HORRY COUNTIES
FILE NO. 2226.030683
SHAFT LOAD TEST FOR REPLACEMENT OF
US-701 BRIDGES OVER LAKE YAUHANNAH,
GREAT PEE DEE RIVER, & PEE DEE OVERFLOW

Submit Shop Plans to:

SCDOT
Preconstruction Support Engineer
Attn: Logistics Coordinator - Shop Plans
955 Park Street - Room 409
Columbia, SC 29201

Approximate Location of Load Test is
Latitude 33°- 39'- 42"
Longitude 79°- 09'- 11"



	FOR CONSTRUCTION	
	INITIAL	DATE
RPG - HYDROLOGY		
RPG - STRUCTURES	WGP	11-26-12
RPG - GEOTECHNICAL	MAH	11-26-12
PRECONSTRUCTION SUPPORT - STRUCTURES		
RPG - DESIGN MANAGER	WCE	27/11/12
RPG - PROGRAM MANAGER	WGP	11-26-12

3 DAYS BEFORE DIGGING IN
SOUTH CAROLINA

CALL 811

PALMETTO UTILITY PROTECTION SERVICES, INC. (PUPS)
ALL UTILITIES MAY NOT BE A MEMBER OF PUPS.

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

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

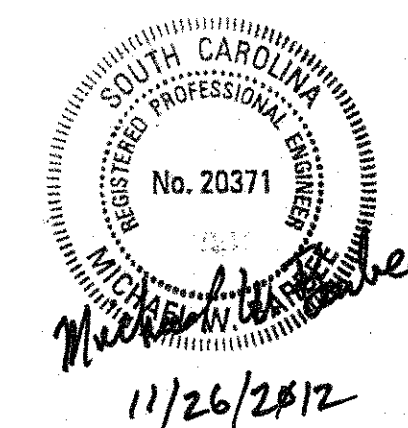
ENGINEER OF RECORD

FOR CONSTRUCTION: *Michael W. Barbee* 11/26/2012
DATE

TRAFFIC DATA			
2012	ADT	7900	V.P.D.
2032	ADT	12300	V.P.D.
TRUCKS 7 %			

REVIEWED	DR.	MAH	NRC	CHK	DATE

Printed: Wednesday, January 02, 2013 11:28:49 AM



REV.				SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION			
REV.							
REV.				SHAFT LOAD TEST PLAN			
REV.							
REV.							
REV.							
REVIEWED							
QUAN.							
DR.	MAH	NRC	11-12				
DES.							
BY	CHK.	DATE		FILE NO. 2226.030683	ROUTE US-701	COUNTY GEORGETOWN/HORRY	DRAWING NO. 702-300

REINFORCING STEEL CODE

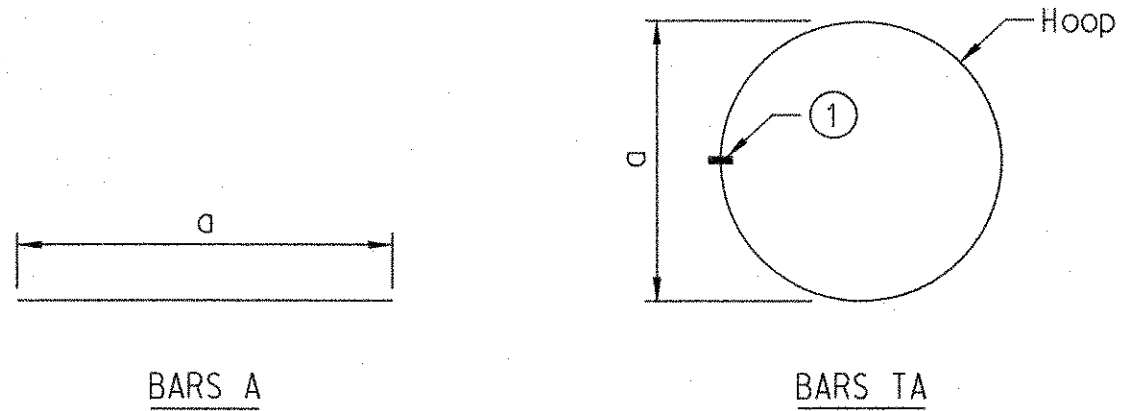
TYPE	SIZE	SERIES	COUPLER
A	16	01	②

SHEET NO.	TOTAL SHEETS
4	5

REINF. STEEL SCHED.

MARK	NO. REQ'D	DIMENSION				LENGTH
		"a"	"b"	"c"	"d"	
A3601U	10	60'-0"				60'-0"
A3602U	10	58'-0"				58'-0"
A3603U	10	39'-4"				39'-4"
A3604U	10	41'-4"				41'-4"
TA1901	199	4'-4"				13'-5"

BAR BENDING DETAIL



ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Reinforcing Steel For Structures (Bridge)	LB	10,556
Hoop Reinforcing Steel For Struct. (Bridge)	LB	4,011
Drilled Shaft w/ Wet & Dry Excav. - 60" Dia.	LF	63.0
Drilled Shaft w/ Wet & Dry Excav. - 66" Dia.	LF	37.0
Construction Casing - 66" Dia. ③	LF	37.0
Crosshole Sonic Logging Setup	EA	1
Drilled Shaft Axial Load Test 60"	EA	1
Drilled Shaft Setup	EA	1

- ① Ultimate Butt-Welded Splice - Use complete joint penetration butt weld conforming to the requirements of Structural Welding Code - Reinforcing Steel (ANSI/AWS D1.4, latest edition) and the Standard Specifications.
- ② If a mechanical coupler is required, the reinforcing steel code includes a designation of "S" for a Standard Coupler and a designation of "U" for an Ultimate Coupler. Unless noted otherwise, bar lengths shown in the Reinforcing Steel Schedules are to the center of the coupler. If necessary, adjust the length of the bars to maintain the required concrete cover.
- ③ Quantities shown are approximate and are for bid purposes only. The Engineer will determine the actual quantity based on field conditions and adjust quantities accordingly. At a minimum, provide the upper 15 feet of casing for each drilled shaft to accommodate load testing procedures.
- ④ Field cut "A36U" bars as necessary at the Osterberg Cell Assemblies and weld to cell bearing plates per manufacturer's installation procedures.
- ⑤ Alternate 10-A3601U and 10-A3602U @ equal spaces.
- ⑥ Alternate 10-A3603U and 10-A3604U @ equal spaces.
- ⑦ Adjust location of Access Tubes as necessary for proper placement of strain gauges and adjust lengths as necessary to accommodate Osterberg Cell Assemblies. Score Access Tubes with pipe cutter at Osterberg Cell bottom plate or splice with short sections of PVC pipe at Osterberg Cell location to create weak points at Osterberg Cell Assemblies. Protect the scored areas or PVC pipe connections with waterproof tape.

Notes:

Dimensions shown are out-to-out and Standard C.R.S.I. bending details shall apply, except as noted.

Construct all drilled shaft foundations in accordance with the 2007 Standard Specifications.

Use grade 60 reinforcing steel conforming to ASTM A706. Fabricate reinforcing bars in accordance with the current C.R.S.I. Manual of Standard Practice.

Test shaft axially using the Osterberg Cell Testing procedure with a total test load of 2,500 tons. See Special Provisions for additional information.

Install instrumentation for load test along the reinforcing steel cage prior to placing the cage in the excavated hole. Coordinate the instrumentation of the shaft with the Engineer and the Osterberg Cell supplier. See Special Provisions for more information. Prior to beginning construction, submit shop drawings for all appurtenances required for load testing to the Engineer for approval.

To prevent the hoop weld splices from being located on the same vertical plane, stagger locations of the splices around the perimeter of the shaft by a minimum distance of 1/3 the hoop circumference.

Adjust dimensions necessary to accommodate Osterberg Cell.

The shaft load test shall be performed between Sta. 261+90 and Sta. 262+80 within a distance no less than 40 feet and no greater than 80 feet from the proposed CL. Once the exact location of the test shaft has been determined, one satisfactory (as determined by the Engineer) soil test boring shall be completed at the exact planned test shaft location. See Special Provisions for details.

Approximately 37 feet of 66-inch construction casing will be required for the installation of the test shaft. Top of casing or top of drilled shaft elevation proposed different from that of those shown in the plans shall be approved in writing by the BCE prior to installation. Support the top of casing to maintain construction tolerances during construction.

Wet construction method for the test shaft is required. Mineral slurry is required as a drilling fluid to maintain stability of the shaft excavation. Mineral slurries shall be tested and maintained within the tolerances indicated in Section 712 of the 2007 Standard Specifications. Mineral slurries shall be tested at the time intervals indicated in the 2007 Standard Specifications. The use of plain water, salt water, and/or polymer slurries is not allowed.

The test shaft shall have a minimum diameter of 60 inches below the bottom of casing elevation of -32.0.

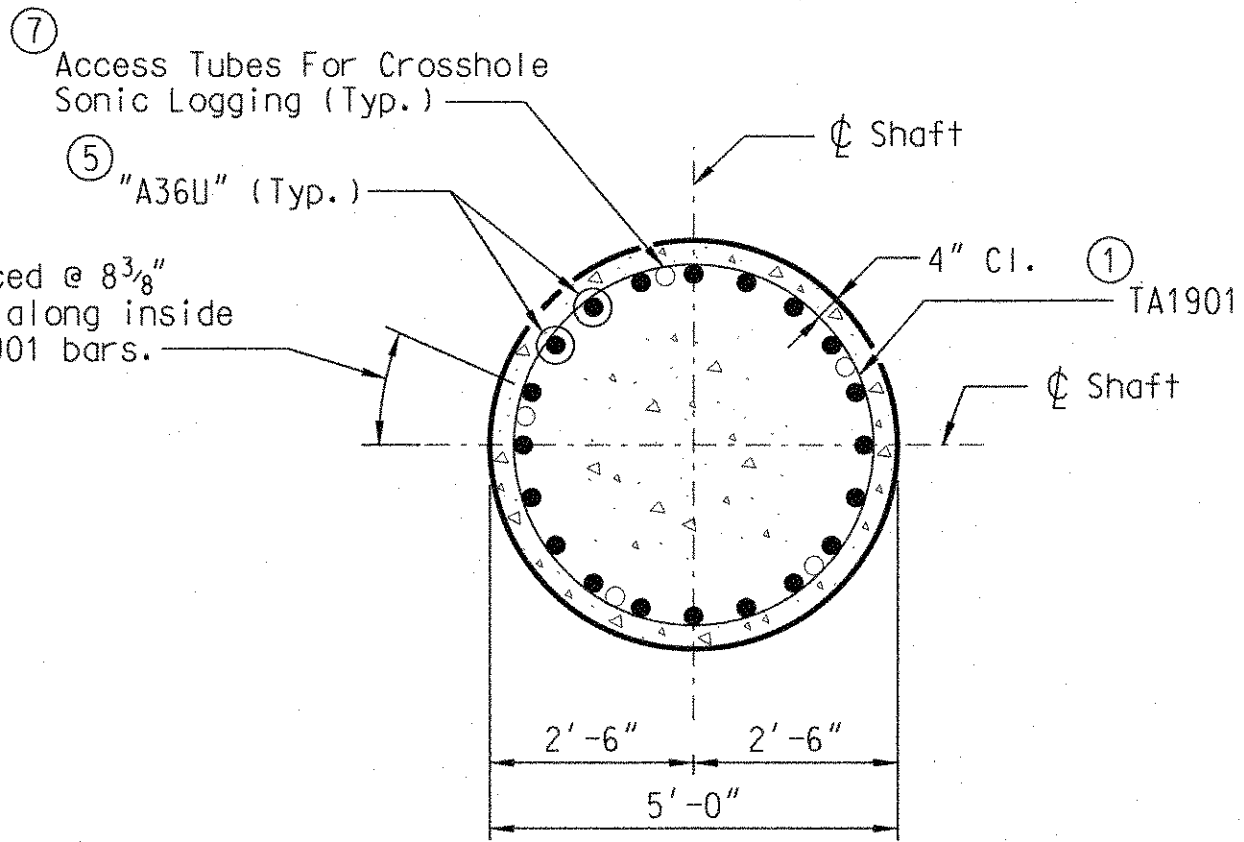
The number and location of strain gauges required at each level shall be determined by the Contractor and approved by the Engineer. See Special Provisions for details.

The Contractor shall verify that each Osterberg Cell assembly accommodates the Crosshole Sonic Logging access tubes reaching the bottom of the shaft excavation. Crosshole Sonic Logging of the test shaft shall comply with the requirements of Section 727 of the 2007 Standard Specifications.

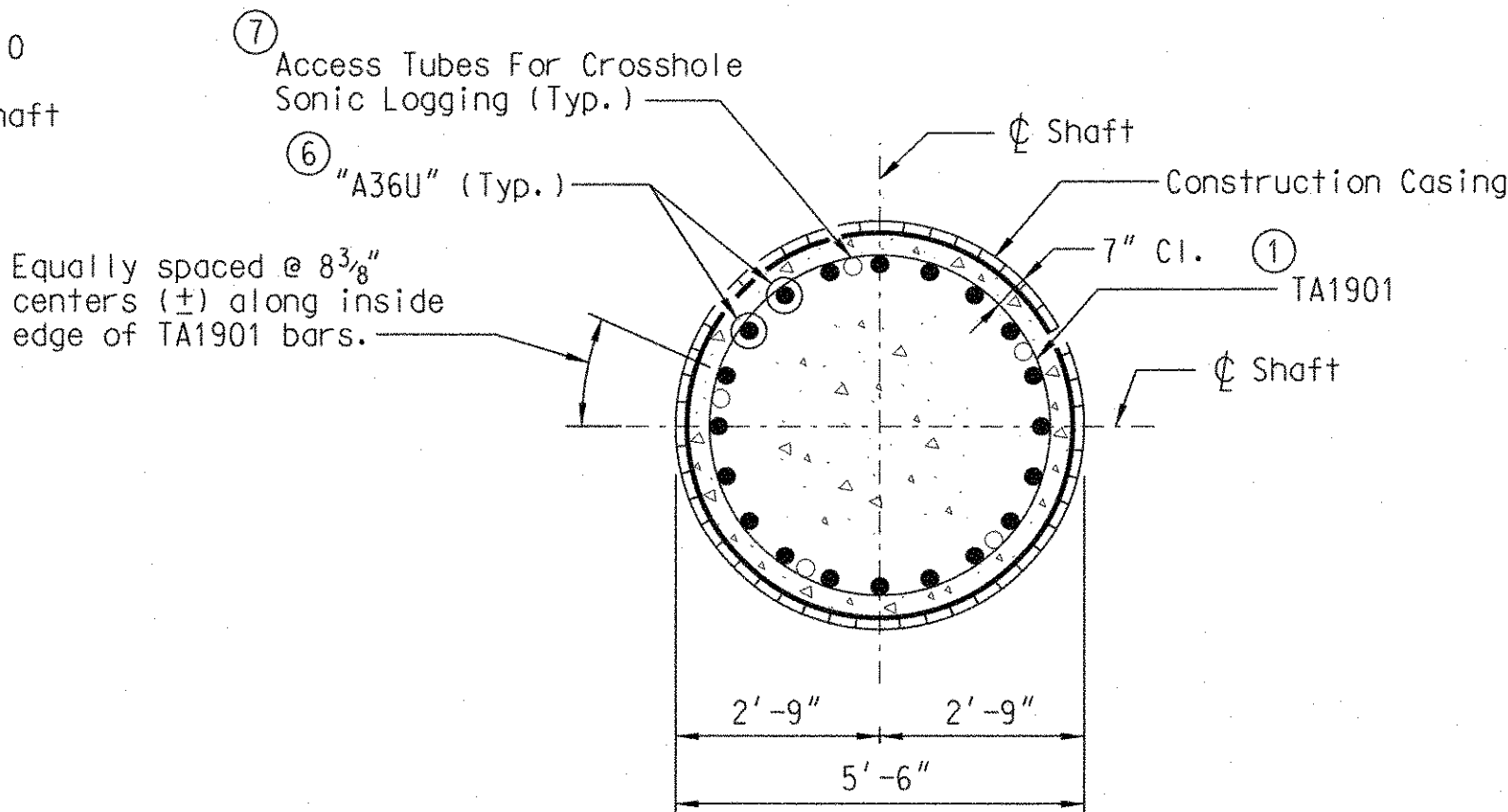
All costs associated with constructing, installing, performing the load test, and subsequent removal of the test apparatus and test shaft shall be included in the price bid for Drilled Shaft Axial Load Test 60".

OSTERBERG CELL LOCATION SCHEDULE

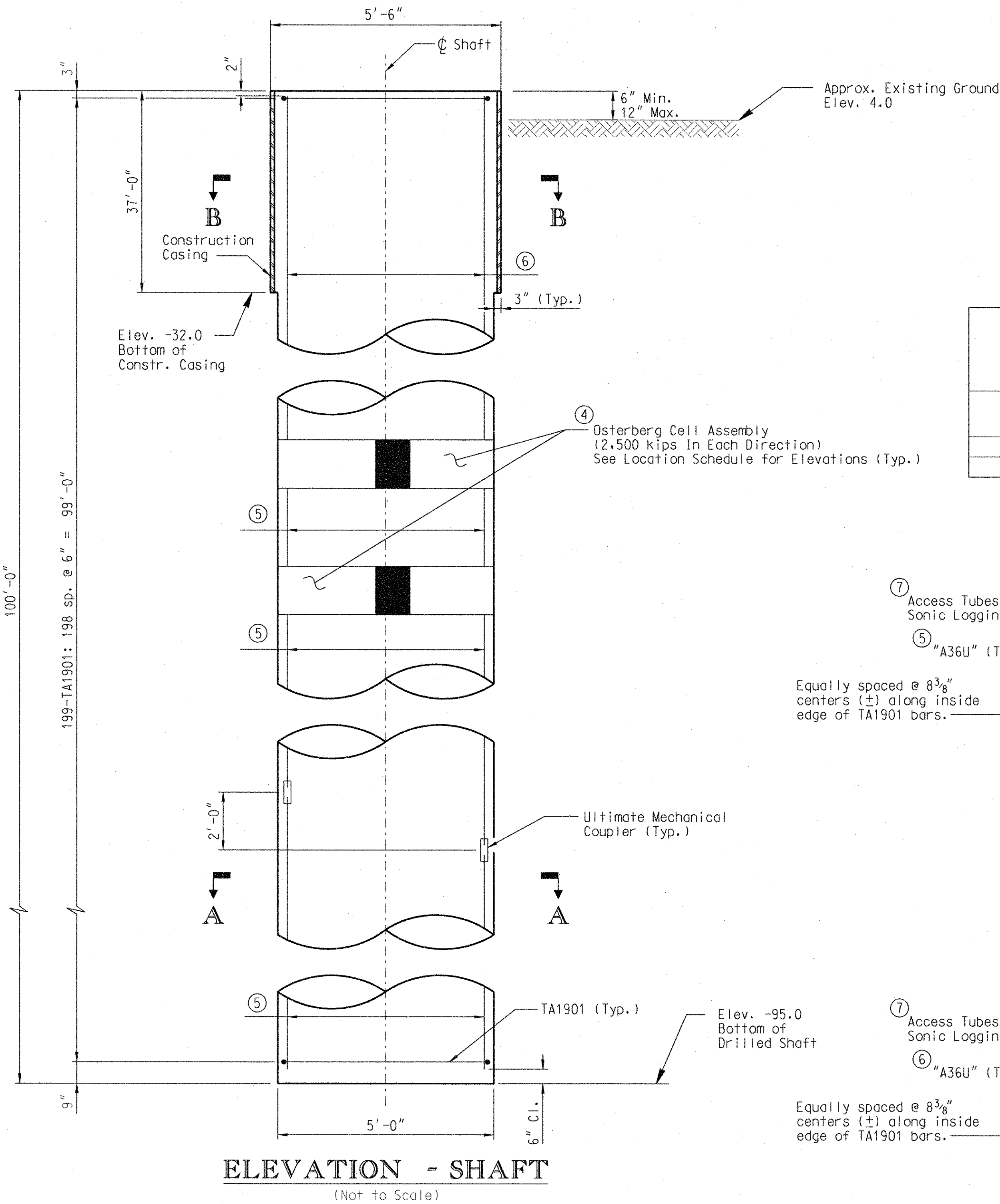
LOCATION	OSTERBERG CELL MIDPOINT (FT)
Upper	-67.0
Lower	-90.0



SECTION A-A



SECTION B-B



ELEVATION - SHAFT
(Not to Scale)

REV.				SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION			
REV.				AXIAL SHAFT LOAD TEST - 60" DIA. OSTERBERG CELL			
REV.				FILE NO. 2226.030683 ROUTE US-701 COUNTY GEORGETOWN/HORRY DWG. NO. 712-15			
REV.				QUAN. MAH JP 11-12			
REV.				DR. MAH NRC 11-12			
REV.				DES. MAH NRC 11-12			
REV.				BY CHK. DATE			



PROJECT:		US 701 Bridges at Yauhannah 1611-04-569		BORING LOG B-4			
DATE DRILLED: 12/14/2004		ELEVATION: 4		NOTES: Boring located between Bent 3 & Bent 4 on middle bridge, 35 ft right of centerline of bridge on the SB shoulder.			
DRILLING METHOD: Mud Rotary		BORING DEPTH: 110					
LOGGED BY: D. Hudspeth		WATER LEVEL: Water level at 2.5 ft after 24 hr.					
DRILLER:		DRILL RIG: CME 45-B					
DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)	SAMPLE NO. / SAMPLE TYPE	STANDARD PENETRATION TEST DATA (blows/ft)	N VALUE
50		POORLY GRADED SAND (SP) - medium to fine sand, trace fines, some organics observed, wet, gray, loose to dense. (continued)		12		32	
55				13		18	
60				14		37	
65				15		66	
70				16		22	
75		SANDY FAT CLAY (CH)(Pee Dee Formation) - mostly medium to high plasticity fines, trace fine sand, medium toughness, high dry strength, wet, dark gray, strong reaction to muratic acid, stiff to very hard.		17		100/ 6"	
80				18		50/ 3"	
85				19		70/ 6"	
				20		19	

BORING LOG 1611-04-569 (P.4) WITH CPT (BPT) 5/1/05

NOTES:

- THIS LOG IS ONLY A PORTION OF A REPORT PREPARED FOR THE NAMED PROJECT AND MUST ONLY BE USED TOGETHER WITH THAT REPORT.
- BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.
- STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.
- WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.

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S&ME
ENGINEERING • TESTING
ENVIRONMENTAL SERVICES


PROJECT:		US 701 Bridges at Yauhannah 1611-04-569		BORING LOG B-4			
DATE DRILLED: 12/14/2004		ELEVATION: 4		NOTES: Boring located between Bent 3 & Bent 4 on middle bridge, 35 ft right of centerline of bridge on the SB shoulder.			
DRILLING METHOD: Mud Rotary		BORING DEPTH: 110					
LOGGED BY: D. Hudsph		WATER LEVEL: Water level at 2.5 ft after 24 hr.					
DRILLER:		DRILL RIG: CME 45-B					
DEPTH (feet)	GEOPIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet)	SAMPLE NO. SAMPLE TYPE	STANDARD PENETRATION TEST DATA (blows/ft)	N VALUE
95		SANDY FAT CLAY (CH)(Fee Dee Formation) - mostly medium to high plasticity fines, trace fine sands, medium toughness, high dry strength, wet, dark gray, strong reaction to muriatic acid, stiff to very hard. (continued)		-91.0	21		15
100				-96.0	22		23
105		Hard drilling encountered at approximately 101 feet. Approximately 5 inches thick.		-101.0	23		26
110		Boring B-4 terminated at 110 feet.		-106.0	24		34

BORING LOG: 1611-04-569 (P.1) WITH GPC (DOT 9/7/05)

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 4. WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.

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FOR INFORMATION ONLY

	REV.				SOUTH CAROLINA											
	REV.				DEPARTMENT OF TRANSPORTATION											
	REV.				<div style="font-size: 2em; font-weight: bold;">SOIL TEST</div> <div style="font-size: 2em; font-weight: bold;">BORING LOG</div>											
	REVIEWED															
	QUAN.															
DR.	MAH	NRC	11-12	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">FILE NO.</td> <td style="width: 25%;">ROUTE</td> <td style="width: 25%;">COUNTY</td> <td style="width: 25%;">DRAWING NO.</td> </tr> <tr> <td>2226.030683</td> <td>US-701</td> <td>GEORGETOWN/HORRY</td> <td>702-30g</td> </tr> </table>					FILE NO.	ROUTE	COUNTY	DRAWING NO.	2226.030683	US-701	GEORGETOWN/HORRY	702-30g
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