



RFP 2015-0028 - ADDENDUM 1

SHELTER COVE TO PALMETTO DUNES PEDESTRIAN UNDERPASS BRIDGE REPLACEMENT Town of Hilton Head Island, South Carolina

Date Issued: November 19, 2015

Proposal Opening EXTENDED to: November 30, 2015 at 11:00 AM

Item 1. Questions and Answers regarding the proposal:

Q1. Can the bid sheet contain an alternate to install 8" round timber piles where practical, somewhat similar to the existing, that includes a bolted timber cap and timber cross bracing between bent piles?

A1. Yes

Q2. For bid purposes, what is the ultimate vertical load capacity needed on the helicals/piling in pounds or tons?

A2. 20 KIPS or 20,000 LBS

Q3. Can the lagoon be lowered 5 feet so underwater rip rap can be moved for boardwalk construction or shall another means of underwater rip rap removal be used?

A3. The Town will coordinate with Palmetto Dunes to lower the water levels as practical to accommodate construction, but the depth and duration is indeterminate at this time. Lowering the level five feet for an extended period may be unacceptable due to adverse impacts to stabilized shoreline and aquatic habitat.

Q4. Drawing C105 lists the extent of the project at Station 0+00. West of this station, do the end timber retaining walls need adjustment to the new path width and the sidewalk removed, widened and replaced for concrete end abutment construction?

A4. Yes, the new retaining wall on the north side of the concrete path shall be retained. The older wall on the south side of the concrete path shall be removed and disposed of, and the concrete pathway widened to 10.0 feet (Sta. 0+00 to the intersection). The shoulder on the south side of the widened concrete path shall be graded to tie in at no steeper than 1:1 slope. The graded area shall be stabilized by mulch or grass. The Town shall be responsible for any landscaping.

- Q5. Does the landward side of the boardwalk between Stations 2+63 and 2+41 require a new timber bulkhead to retain the embankment?
- A5. The new retaining wall will be required approximately between Stations 2+55 and 2+63 as shown on sheet C106
- Q6. Drawing S103, Section 3, shows a retaining wall detail with rail posts and stainless steel wire railing. This wall section is found between Station 2+63 and Station 2+80. The Section 4 fence post rail is found between which Stations?
- A6. The fence post rail is required between Stations 2+80 and 5+37.
- Q7. Are the LED rope lights to be hooked to a switch, photocell, or timer? Are fuse panels and ground fault in place or do we upgrade this electrical?
- A7. The Contractor shall install a photocell and upgrade the electrical source/panel to an adequate GFCI breaker that meets current building codes.
- Q8. Will there be a new bid sheet that shows the Alternate for the observation decks and benches?
- A8. Yes - See revised bid sheet
- Q9. The observation decks will also have pile/helical bents at 8' spacing?
- A9. Yes
- Q10. The observation decks will have the same rail spacing and the boardwalk?
- A10. Yes
- Q11. Can either Wagner or Johnson stainless steel cable systems be used on the railing?
- A11. Yes, Wagner, Johnson, or any equivalent system that meets the specifications/
- Q12. Can a notice of award be granted prior to the contract being signed due to the lead time needed on order and delivery of certain materials?
- A12. Yes, but please include the material ordering and delivery lead times In the work plan and critical path schedule in your proposal.
- Q13. The base bid calls for Helical Piles to support the bridge bents. Can we submit an alternate for timber piles?
- A13. Yes
- Q14. In order to price the piles we need specific pile sizes and pile lengths. If sizes and lengths will not be provided we need a geotechnical report with boring logs, etc.

To compute the size of the piles and the lengths needed, we will also need to know the ultimate load in kips for each pile.

A14. See the attached soils report and 20 KIPS or 20,000 LBS

Q15. Will the galvanized bent brackets need to be bolted to the pile shaft - plan shows no detail on this?

A15. See revised detail 2/S102 as part of Addendum 1 plans dated 11/17/2015.

Q16. Explain how the battered helical pile installation will not conflict with the vertical bent piles?

A16. Battered pile is on outside of pile cap while vertical pile is centered on pile cap. This should provide clearance at depth.

Q17. To determine the required helical pile hardware we strongly recommend installation of a test pile and subsequent load test in accordance with AB Chance specs.

A17. Yes, a test pile shall be installed and load tested in accordance with the manufacturer's specifications to determine pile hardware. This shall be included in the cost of the piles and there will no additional compensation for the testing.

Q18. The existing bridge has several electrical conduits and electrical lights attached to it. The new bridge plans also show new rope lighting. In order to price this work we should be provided: A plan showing how many conduits and home run cables are existing; How many of the existing lights mounted to the handrail and mounted to the underside of the DOT bridge will need to be replaced; If they will need to be replaced please provide a location, count and specification for the lights. Where is the location of the power source and breaker panel for this project? And is the breaker panel large enough to handle additional lights specified?

A18. The Contractor shall install a photocell and upgrade the electrical source/panel to an adequate GFCI breaker that meets current building codes. The power is supplied from the Shelter Cove POA service (contact person is John Betts). The existing overhead lighting is to be demolished.

Q19. For bid purposes, please provide a specific detail for the timber bulkhead that may or may not be required to retain the existing rip rap. The existing wall design is insufficient and is attached to the side of the existing bridge. (As soon as the old bridge is torn out rip rap is going to slide into the water). Also for bid purposes, please provide a specific length for the rip rap bulkhead.

A19. See revised plans and details C106 and 6/S103 in Addendum 1 dated 11/17/2015.

Q20. Should new rip rap be added to the bid sheet to compensate for the rip rap that slides into the water, i.e., please provide an allowance / quantity for rip rap or exclude it from the bid.

- A20. No – there should be no net loss of rip rap coverage under the US 278 vehicular bridge. This will have to be moved as necessary to construction the project.
- Q21. There is a significant amount of concrete near Stations 2+50 – 2+70 that was poured under the existing asphalt pathway. There is no bid line item to remove this.
- A21. The longitudinal limits of the asphalt pathway in this area shall remain the same in this area. Existing material shall be removed as necessary to provide a compacted base for the proposed concrete abutment here.
- Q22. Will the grate inlet at Station 2+85 need to be pulled out and re-set at a higher elevation?
- A22. Yes, the steel frame and grate will have to be adjusted upward to accommodate the thickness of the asphalt overlay and be flush with the adjacent pathway surface.
- Q23. Please clarify if A316 stainless steel cable and A304 stainless connectors are okay?
- A23. Yes
- Q24. The (Wider) distance between the wood retaining walls on the shelter cove side has an opening of only 7.67 ft. The width of the new bridge is at station 0+00 is 10ft. Does the concrete pathway and timber retaining wall in this area need to be torn out and rebuilt to accommodate the wider entrance. (Most of what is there looks new)?
- A24. The new retaining wall on the north side of the concrete path shall be retained. The older wall on the south side of the concrete path shall be removed and disposed of, and the concrete pathway widened to 10.0 feet (Sta. 0+00 to the intersection). The shoulder on the south side of the widened concrete path shall be graded to tie in at no steeper than 1:1 slope. The graded area shall be stabilized by mulch or grass. The Town shall be responsible for any landscaping.

Item 2. The mobilization specification has been revised – see attached

Item 3. The geotechnical report has been provided – see attached

Item 4. The fee schedule has been revised – see attached

Reminder:

New Bid Submittal Deadline is November 30, 2015 at 11:00 AM

EXHIBIT C

FEE PROPOSAL

REVISED PER ADDENDUM 1, 11-19-15

SHELTER COVE - PALMETTO DUNES PEDESTRIAN UNDERPASS BRIDGE AND PATHWAY PROJECT LIST OF ESTIMATED QUANTITIES / UNIT COST BID SCHEDULE

The unit prices given on this document, along with any negotiated changes in quantities, shall become the basis for, and included in, the contract agreement.

NO.	ITEM DESCRIPTION	EST. QUANT.	UNIT	UNIT PRICE	VALUE
1	MOBILIZATION	1	LS		\$0.00
2	CONSTR. STAKES, LINES, & GRADES and AS-BUILT SURVEY	1	LS		\$0.00
3	DEMOLITION AND CLEARING	1	LS		\$0.00
4	TIMBER PEDESTRIAN BRIDGE - SUPERSTRUCTURE including girders, stringers, decking, handrails, rope lighting, and observation decks	1	LS		\$0.00
5	HELICAL PILES (assumed quantity, actual contingent on soils report)	1	LS		\$0.00
6	ALTERNATE TIMBER PILES (or could be combined as part helical, part timber)	1	LS		\$0.00
7	TIMBER RETAINING WALL	1	LS		\$0.00
8	EARTHWORK	1	LS		\$0.00
9	ASPHALT PATHWAY - INCLUDING GEOGRID AND BASE	1	LS		\$0.00
10	CONCRETE CURB	1	LS		\$0.00
11	TRAFFIC CONTROL	1	LS		\$0.00
12	EROSION AND SEDIMENT CONTROLS	1	LS		\$0.00
13	TREE PROTECTION FENCING	1	LS		\$0.00
BASE FEE TOTAL =					\$0.00
ATLTERNATE DEDUCT 1: If the two decks are not included, deduct this amount =					
TOTAL FEE with ATLTERNATE DEDUCT 1 (deleting the two decks) =					\$0.00

MOBILIZATION

Rev. 11-18-15

Mobilization consists of the preparatory operations including: moving personnel and equipment to the project site; paying bond and insurance premiums; establishing offices, buildings, and other facilities necessary for work on the project; and all other preparatory work or costs incurred before beginning work on the project.

Measurement and Payment

Mobilization is paid at the lump sum price bid, which price and payment is full compensation for organizing and moving all forces, supplies, equipment and incidentals to the project site, regardless of the number of times such moves are made, and all preconstruction costs incurred after award of the Contract. The price and payment also includes costs for demobilization.

Payments for mobilization are included on the first and second construction pay applications. Each payment is for 1/2 of the lump sum price for Mobilization, subject to the limits shown in the following table:

Contract Amount (CA)	Max. Payment in First Estimate	Max. Payment in Second Estimate
\$0 to \$100,000	$CA \times 0.05$	$CA \times 0.05$
\$100,000 and above	$CA \times 0.025$	$CA \times 0.025$

If there is a remaining amount of the lump sum price for Mobilization after the two payments are made according to the table above, then the remaining amount is paid after all work on the project has been completed and accepted along with the retainage.

Completion of erection of materials processing plants, if any, is not required as a condition for the release of the second payment.

Partial payment for this item in no way acts to preclude or limit any of the provisions of partial payments otherwise provided for by the Contract or these specifications.

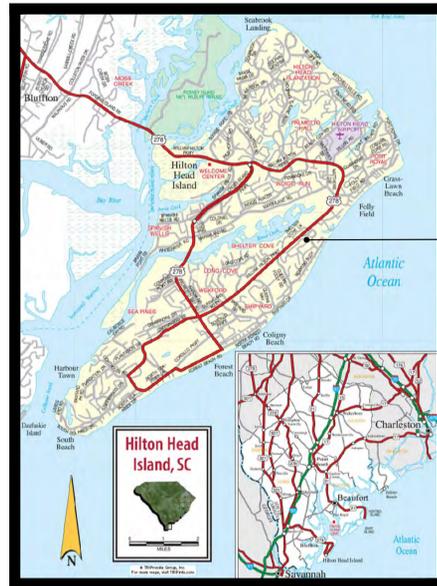
Payment for this item includes all direct and indirect costs and expenses required to complete the work.

SHELTER COVE PEDESTRIAN BRIDGE REPLACEMENT

HILTON HEAD ISLAND, SOUTH CAROLINA

PREPARED FOR

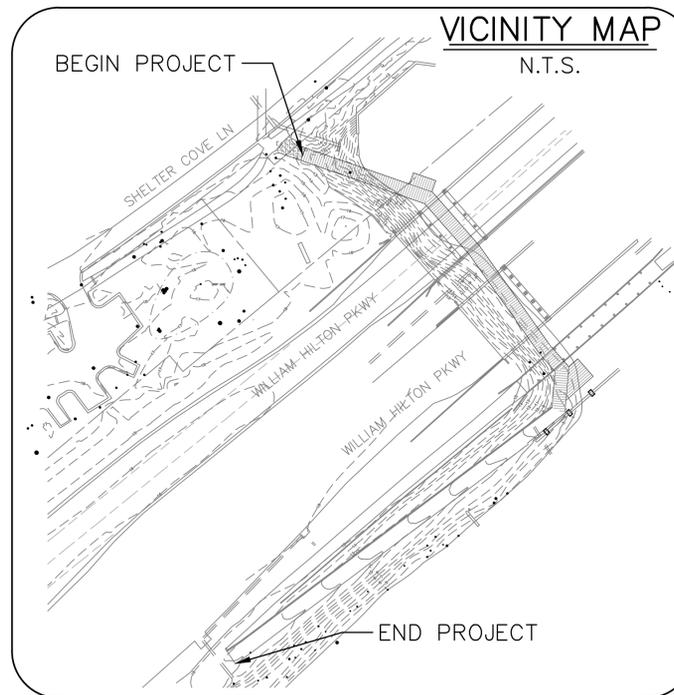
TOWN OF HILTON HEAD ISLAND



LOCATION MAP
NOT TO SCALE

PLAN INDEX

SHEET NO.	TITLE
	COVER SHEET
C101	CONSTRUCTION NOTES
C102	EXISTING SITE PLAN
C103	CLEARING & DEMOLITION PLAN
C104	EROSION PLAN
C105	OVERALL SITE PLAN
C106	STATION 0+00 TO STATION 3+00
C107	STATION 3+00 TO STATION 5+37
C108	PROFILES
C109	CROSS SECTIONS
C110	CONSTRUCTION DETAILS
C111	CONSTRUCTION DETAILS
S101	STUCTURAL NOTES
S102	TYPICAL STRUCTURAL SECTION AND DETAILS
S103	STUCTURAL DETAILS



SURVEY DATA	
SURVEY PERFORMED BY	SEA ISLAND LAND SURVEY, LLC.
HORIZONTAL DATUM	- S.C. STATE PLANE ----
VERTICAL DATUM	- ----
THIS PROPERTY LIES IN F.E.M.A. ZONE A7	
BASE FLOOD ELEVATION	= 14.0'
COMMUNITY NO.	450250, PANEL 0014D, DATED: 9/29/86

ENVIRONMENTAL PERMIT INFORMATION		
USACE PERMIT	— YES	<input checked="" type="checkbox"/> NO
NEPA DOCUMENT	— YES	<input checked="" type="checkbox"/> NO
401 CERTIFICATION	— YES	<input checked="" type="checkbox"/> NO
OCRM CAP	<input checked="" type="checkbox"/> YES	— NO
NAVIGABLE WATERS	— SC	— USCG — USACE <input checked="" type="checkbox"/> N/A

NET LENGTH OF PATHWAY	277 FEET
NET LENGTH OF BRIDGES	280 FEET
NET LENGTH OF PROJECT	557 FEET
LENGTH OF EXCEPTIONS	0 FEET
GROSS LENGTH OF PROJECT	577 FEET

EQUALITIES IN STATIONING

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON THE PLANS OR IN THE SPECIAL NOTE: 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.

Approximate Location of Bridge is

Begin	Latitude	32.180328
	Longitude	-80.725110
End	Latitude	32.179425
	Longitude	-80.725223

3 FULL WORKING DAYS BEFORE DIGGING IN
SOUTH CAROLINA
(NOT INCLUDING THE DAY YOU CALL)
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MAY 13, 2015
AUGUST 28, 2015 (REVISION 1)
JOB: 2015-0058

GENERAL NOTES

- THE CONTRACTOR SHALL SUBMIT ALL SITE CONSTRUCTION SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL. ANY REQUESTS FOR INFORMATION (RFI), SUBSTITUTIONS, OR REVISIONS SHALL BE REQUESTED IN WRITING AND APPROVED BY THE ENGINEER PRIOR TO MODIFICATION.
- THE CONTRACTOR SHALL SUBMIT PROPER NOTIFICATION FOR REQUIRED INSPECTIONS. IN NO CASE SHALL NOTIFICATION BE LESS THAN 24 HOURS.
- IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL REQUIRED PERMITS ARE IN HAND PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
- PROPOSED ELEVATIONS: THE CONTRACTOR SHALL SET AND ADJUST PROPOSED ELEVATIONS AS NECESSARY TO ENSURE PROPER LONGITUDINAL GRADE FOR DRAINAGE.
- DRAINAGE STRUCTURES: GRADES, ELEVATIONS AND LOCATIONS SHOWN ARE APPROXIMATE. AS DIRECTED BY THE ENGINEER, THEY MAY BE ADJUSTED TO ACCOMMODATE UNFORESEEN CONDITIONS. STATIONS, OFFSETS AND ELEVATIONS REFER TO THE CENTER OF DROP INLETS, MANHOLES AND JUNCTION BOXES, AND THE MIDPOINT OF THE LIP FOR CATCH BASINS.
- BARRICADES, DANGER AND WARNING SIGNS: ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" LATEST EDITION. THE CONTRACTOR SHALL INSTALL AND MAINTAIN BARRICADES, SUITABLE AND SUCCEDENT LIGHTS, DANGER SIGNALS, SIGNS, AND OTHER TRAFFIC CONTROL DEVICES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION OF THE WORK AND SAFETY OF THE PUBLIC. LANES CLOSED TO TRAFFIC SHALL BE PROTECTED BY EFFECTIVE BARRICADES, LIGHTED DURING HOURS OF DARKNESS. SUITABLE WARNING SIGNS SHALL BE PROVIDED TO CONTROL, DIRECT TRAFFIC AND WARN PEDESTRIANS. UPON COMPLETION, ALL BARRICADES, SIGNS AND THE LIKE SHALL BE REMOVED.
- SUBSURFACE PLANS: SUBSURFACE INVESTIGATIONS ARE NOT AVAILABLE FOR THIS PROJECT. IT IS THE OBLIGATION OF THE CONTRACTOR TO MAKE THEIR OWN INTERPRETATION OF ALL SURFACE AND SUBSURFACE DATA THAT IS AVAILABLE AS TO THE NATURE AND EXTENT OF THE MATERIALS TO BE EXCAVATED, WASTED, GRADED, AND COMPACTED. THE INFORMATION SHOWN ON THESE PLANS IN NO WAY GUARANTEES THE AMOUNT OR NATURE OF THE MATERIAL TO BE ENCOUNTERED.
- SANITARY PROVISIONS: THE CONTRACTOR SHALL PROVIDE TEMPORARY SANITARY FACILITIES FOR THE USE OF THE WORKERS DURING THE PROGRESS OF THE WORK. THE SANITARY FACILITIES SHALL CONFORM TO THE REQUIREMENTS OF THE SOUTH CAROLINA DEPARTMENT OF HEALTH & ENVIRONMENTAL CONTROL. ALL FACILITIES SHALL BE REMOVED AT THE COMPLETION OF THE CONTRACT.
- INCIDENTAL ITEMS: THE CONTRACTOR SHALL REMOVE AND RESET ANY INCIDENTAL ITEMS SUCH AS MAILBOXES OR FENCES AS NOTED ON THE PLANS, AS DIRECTED BY THE ENGINEER, AND/OR ARE DISTURBED DURING CONSTRUCTION.
- RESPONSIBILITY REGARDING EXISTING UTILITIES AND STRUCTURES: THE ENGINEER OF CONSULTS OR THE CONTRACTOR SHALL CONTACT "PALMETTO UTILITY PROTECTION SERVICE" AT 1-888-721-7877, AT LEAST 72 HOURS PRIOR TO BEGINNING EXCAVATION. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES WILL BE INVESTIGATED AND LOCATED / VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE STARTING WORK. EXCAVATION IN THE VICINITY OF EXISTING STRUCTURES AND UTILITIES SHALL BE CAREFULLY DONE BY HAND. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO AND FOR MAINTENANCE AND PROTECTION OF EXISTING UTILITIES AND STRUCTURES. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE UTILITY COMPANIES FOR LOCATIONS, ANY RELOCATION, ADJUSTMENT OR REPLACEMENT OF UTILITY FACILITIES. VERTICAL ALIGNMENT OF WATERLINE TO BE ALTERED BY INSERTION OF VERTICAL BENDS WHICH ALLOW SEPARATION AS REQUIRED BY LOCAL JURISDICTION.
- INTERRUPTION OF UTILITY SERVICE: THE CONTRACTOR'S OPERATIONS SHALL BE SO CONDUCTED AS TO INTERFERE AS LITTLE AS POSSIBLE WITH UTILITY SERVICES. ANY PROPOSED INTERRUPTION BY THE CONTRACTOR MUST BE ACCEPTED IN ADVANCE BY THE ENGINEER AND RESPECTIVE UTILITY OWNER.
- UTILITIES: PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE AND VERIFY THE SIZE AND INVERT OF ALL EXISTING UTILITIES WHERE CONTACTS EXIST BETWEEN UTILITY AND NEW CONSTRUCTION. THE UTILITY SHALL BE RELOCATED BY THE APPROPRIATE UTILITY PROVIDER(S). THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH THE UTILITY PROVIDER. REPAIR OF ANY AND ALL DAMAGES TO EXISTING UTILITIES DUE TO THIS CONSTRUCTION ARE THE CONTRACTOR'S RESPONSIBILITY.

PATHWAY PAVING, GRADING, AND DRAINAGE NOTES

- WHERE EXISTING PAVEMENT IS SHOWN TO BE MATCHED, EDGE OR CONTACT FACE WITH EXISTING PAVEMENT SHALL BE SAW CUT TO A NEAT VERTICAL LINE.
- THE CONTRACTOR SHALL SAWCUT EXISTING ASPHALT AND/OR CONCRETE SURFACES PRIOR TO REMOVAL, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. A ONE FOOT MINIMUM WIDTH FOR ALL SAWCUTS.
- CONTRACTOR SHALL COORDINATE DEMOLITION AND IMPROVEMENTS TO MINIMIZE TRAFFIC INTERFERENCE AND OPERATIONS OF FACILITIES.
- TEMPORARY CONTROL OF STORM WATER DRAINAGE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. SEQUENCING AND CONSTRUCTION TECHNIQUES SHALL PREVENT OBSTRUCTION OF STORM SEWERS, FLOODING IN TRAFFIC AREAS OR RAISING OF WATER LEVELS WHICH WOULD ENTER ADJACENT BUILDINGS OR STRUCTURES.
- ELEVATION OF TOP OF EXISTING MANHOLES, INLETS, WATER VALVE BOXES, ETC., SHALL BE ADJUSTED TO MATCH NEW PAVING OR RESURFACING GRADES. PRICE TO BE CONSIDERED INCIDENTAL TO THE WORK.
- PREPARATION, GRADING, PAVING AND OTHER SITE IMPROVEMENTS SHALL CONFORM TO THE FOLLOWING:
 - SUBGRADE PREPARATION: TOP SOIL SHALL BE REMOVED FROM PAVED AREAS TO A MINIMUM DEPTH OF 4". ALL EXCAVATION SHALL BE TO SUBGRADE LIMITS. SUBGRADE SHALL BE COMPACTED TO A MINIMUM OF 95X (ASTM D1556) DENSITY FOR A DEPTH OF 12 INCHES.
 - CONCRETE: MINIMUM 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS (5-1/2 BAGS CEMENT PER CU. YD.; ENTRAINED AIR 5% ± 1%).
 - BASE COURSE: 4-1/2" COMPACTED THICKNESS STABILIZED GRANITE AGGREGATE.
 - WEARING SURFACE: HOT PLANT MIX ASPHALT CONCRETE, TYPE C, 1-1/2" COMPACTED THICKNESS. (PRIME AS INDICATED BY PAVING SECTION DETAILS).
- ALL CONSTRUCTION MUST CONFORM TO APPLICABLE STATE, BEAUFORT COUNTY AND/OR TOWN OF HILTON HEAD STANDARDS, SPECIFICATIONS AND REQUIREMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SEDIMENT AND SOIL EROSION CONTROL AS MAY BE REQUIRED BY SC DHEC/OCRM. THE CONTRACTOR MUST INSTALL SILT BARRIERS AS SHOWN, OR DIRECTED, BY THE PROJECT ENGINEER AND/OR THE OCRM INSPECTOR.
- ALL PIPES BEING SHOWN AS ABANDONED WILL BE FILLED WITH FLOWABLE FILL. CONTRACTOR CAN ELECT TO LEAVE IN PLACE AND FILL WITH FLOWABLE FILL WITH THE TOWN'S APPROVAL AT NO ADDITIONAL COST.
- CONTRACTOR TO ENSURE POSITIVE DRAINAGE ON ROADS, CURBS, SIDEWALKS AND GRASSED LINED DITCHES BEING REPLACED OR CONSTRUCTED.
- PIPE LENGTHS AND SLOPE SHOWN IN PLAN AND PROFILE WERE DETERMINED USING CENTER OF STRUCTURE TO CENTER OF STRUCTURE.

SCDHEC STANDARD NOTES

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

GENERAL CONSTRUCTION NOTES

- CLEARING AND GRUBBING: THE CONTRACTOR WILL BE REQUIRED TO CLEAR ALL AREAS NECESSARY FOR THE CONSTRUCTION OF ANY SEDIMENT DAMS AND INSTALL THE SEDIMENT DAMS AND ALL OTHER PERIMETER EROSION CONTROL MEASURES PRIOR TO CLEARING AND GRUBBING ACTIVITIES. ALSO, THE CONTRACTOR SHALL STAGE HIS CLEARING AND GRUBBING WORK ALONG WITH HIS ROADWAY CONSTRUCTION TO MINIMIZE THE AMOUNT OF EROSION AND SEDIMENTATION. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED DURING ALL STAGES OF CONSTRUCTION.
- SEEDING: SEEDING SHALL BE ACCOMPLISHED ACCORDING TO S.C.D.O.T. STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION 2007 EDITION, SECTION 810.
- EROSION CONTROL MEASURES: ALL EROSION CONTROL MEASURES ON THIS PROJECT SHALL BE IMPLEMENTED AS DETAILED ON THE PLANS AND SHALL COMPLY WITH S.C.D.O.T. STANDARD DRAWINGS, STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION 2007 EDITION, AND THE SUPPLEMENTAL SPECIFICATIONS. SILT FENCE AND OTHER EROSION CONTROL FEATURES SHALL BE IN PLACE PRIOR TO GROUND DISTURBING ACTIVITY BEGINS. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED DURING ALL STAGES OF CONSTRUCTION.
- PERIMETER EROSION CONTROL DEVICES: SILT FENCE AND SEDIMENT TUBES MAY BE PLACED AT LOCATIONS WHERE SEDIMENT LEAVES THE PROJECT LIMITS ESPECIALLY AT THE TOE OF FILL SLOPES THAT SLOPE AWAY FROM THE PROJECT. SILT FENCE SHALL NOT BE PLACED IN A POSITION SUCH THAT IT BLOCKS DRIVEWAYS OR POINTS OF ACCESS TO PROPERTY. SEDIMENT TUBES (STAKED) SHALL BE UTILIZED, IN LIEU OF SILT FENCE, WITHIN TWELVE (12) FEET OF A TREE TO BE RETAINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF SEDIMENT TUBES THROUGHOUT THE EXTENT OF CONSTRUCTION.
- INTERIOR EROSION CONTROL DEVICES: INLET PROTECTION SHOULD BE PLACED WHEN PRACTICAL, AROUND EXISTING AND NEW CATCH BASINS SO AS TO PREVENT SEDIMENT FROM ENTERING THE STORM SEWER SYSTEM. REFER TO THE PLAN SHEETS FOR PLACEMENT OF EROSION CONTROL MEASURES AND REFER TO THE SCDOT EROSION CONTROL STANDARD DRAWINGS FOR OTHER DETAILS ON OTHER EROSION CONTROL MEASURES.
- INSPECTION AND IMPLEMENTATION: ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSPECTED ACCORDING TO THE REQUIREMENTS OF THE NPDES GENERAL CONSTRUCTION PERMIT. STABILIZATION MEASURES SHALL BE IMPLEMENTED AS SOON AS PRACTICABLE WITHIN THE ALLOWABLE TIMEFRAME STATED WITHIN THE NPDES GENERAL CONSTRUCTION PERMIT IN PORTIONS OF THE SITE WHERE ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL FINAL STABILIZATION HAS BEEN OBTAINED.
- MAINTENANCE OF DRIVEWAYS: MAINTENANCE STONE HAS BEEN PROVIDED FOR MAINTAINING DRIVEWAYS THAT ARE DISTURBED BY CONSTRUCTION AND IN AREAS WHERE CONSTRUCTION TRAFFIC WILL ENTER A PAVED ROADWAY. MAINTENANCE STONE SHALL BE PLACED TO MINIMIZE THE TRACKING OF MUD/SOIL FROM CONSTRUCTION AND PUBLIC TRAFFIC ONTO PAVED ROADWAYS. STONE SHALL REMAIN IN PLACE UNTIL DRIVEWAYS ARE STABILIZED.
- SILT FENCE ALONG PIPE INSTALLATION: IN AREAS OF PIPE INSTALLATION OUTSIDE OF THE CONSTRUCTION LIMITS SHOWN ON THE PLANS, USE SILT FENCE AS NEEDED TO MINIMIZE SOIL LOSS FROM THE PROJECT. IMMEDIATELY AFTER COMPLETION OF PIPE INSTALLATION, APPLY PERMANENT VEGETATION TO DISTURBED AREAS.

CLEARING NOTES

- CLEARED AREAS TO BE COMPLETELY CLEARED IN ACCORDANCE WITH THE SPECIFICATIONS.
- NO CLEARING SHALL OCCUR WITHIN DESIGNATED BUFFER/TREE PROTECTION AREAS, OUTSIDE OF THE PROPERTY LINES OR BEYOND CLEARING LIMITS EXCEPT AS OTHERWISE SHOWN.
- THE CONTRACTOR SHALL INSTALL A CONTINUOUS LINE OF FLAGGING OR FENCING ALONG THE LIMITS OF CLEARING PRIOR TO ANY CONSTRUCTION WORK BEGINNING.
- CAUTION SHOULD BE TAKEN DURING CLEARING OPERATIONS TO AVOID FELLING TREES INTO THE DESIGNATED TREE PROTECTION ZONES. NO BURNING SHALL OCCUR WITHIN 50 FEET OF A TREE PROTECTION ZONE.
- NO MATERIALS STORAGE, EARTH STORAGE, GAS FUELING, CONCRETE WASHOUT, DUMPING, OR CONSTRUCTION TRAFFIC IS ALLOWED WITHIN THE TREE PROTECTION ZONES.
- SELECTIVE CLEARING AREAS SHALL BE CLEARED OF ALL BRUSH AND UNDERSTORY GROWTH. ALL TREES OVER 6" IN DIAMETER WILL BE RETAINED AND PROTECTED FROM DAMAGE, UNLESS APPROVED FOR REMOVAL BY THE OWNER OR ENGINEER.
- ALL TREES SHOWN ON THE PLANS TO REMAIN SHALL BE CONSIDERED SPECIMEN TREES AND SHALL BE PROTECTED EVEN IF LOCATED WITHIN CLEARING AREAS. PROTECTION WILL INCLUDE, BUT IS NOT LIMITED TO, THE MEASURES DESCRIBED IN NOTES 4 AND 5 ABOVE. AN AREA 1 1/2 TIMES THE DIAMETER OF THE TREE TRUNK MEASURED 4 FEET FROM EXISTING GRADE WILL BE CONSIDERED THE TREE PROTECTION ZONE FOR AN INDIVIDUAL TREE.
- WHEN TREE ROOTS ARE SEVERED OR EXPOSED DURING TRENCHING OR GRADING OPERATIONS, RE-CUT CLEANLY WITH A SHARP SAW BEFORE FINISHED GRADING.

GENERAL SEQUENCE OF CONSTRUCTION

- RECEIVE NPDES COVERAGE FROM SC DHEC.
- CONDUCT PRE-CONSTRUCTION MEETING INCLUDING TOWN, ASSOCIATED CONTRACTORS, ENGINEER, SC DHEC, AND OTHER AFFECTED PARTIES AS NECESSARY.
- NOTIFY DHEC EOC REGIONAL OFFICE OR OCRM OFFICE 48 HOURS PRIOR TO BEGINNING LAND-DISTURBING ACTIVITIES.
- OBTAIN TREE PROTECTION APPROVAL LETTER AND COORDINATE PLACEMENT OF TREE PROTECTION FENCING WITH TOWN OF HILTON HEAD ISLAND NATURAL RESOURCES.
- INSTALL PERIMETER EROSION CONTROL MEASURES (SILT FENCE AND INLET PROTECTION). CLEAR ONLY AS NECESSARY TO INSTALL THESE DEVICES.
- CLEARING & GRUBBING OF SITE OR DEMOLITION (SEDIMENT * EROSION CONTROL MEASURES FOR THESE AREAS MUST ALREADY BE INSTALLED).
- PERFORM ROUGH GRADING OPERATIONS.
- INSTALL STORM DRAIN SYSTEM AND PLACEMENT OF INLET PROTECTION AS EACH INLET IS INSTALLED.
- PERFORM FINE GRADING AND PAVING OPERATIONS IN A MANNER AND SEQUENCE SO AS TO REDUCE UNNECESSARY DISTURBANCE OF SURFACE COVER.
- PERMANENTLY OR TEMPORARILY VEGETATE AREAS AS COMPLETED OR LEFT IDLE.
- EROSION CONTROL MEASURES SHALL BE PROPERLY MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED. THE CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES AT THE END OF EACH WORKING DAY TO ENSURE MEASURES ARE FUNCTIONING PROPERLY.
- ONCE PERMANENT VEGETATION AND EROSION CONTROL MEASURES ARE ESTABLISHED, THE CONTRACTOR SHALL SCHEDULE A FINAL INSPECTION IN ORDER TO OBTAIN A CERTIFICATE OF COMPLETION.
- SUBMIT NOTICE OF TERMINATION (NOT) TO DHEC AS APPROPRIATE.

EROSION CONTROL NOTES

- ALL DISTURBED EARTH AREAS, NOT DESIGNATED TO BE PAVED, SHALL BE GRASSED USING FERTILIZER, MULCH, AND GRASS SEED OR SOO AS SHOWN ON THE PLAN. APPLY WATER AND MAINTAIN ACCORDING TO APPLICABLE PROVISIONS OF THE SCDOT'S "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION," LATEST EDITION.
- ALL SOIL EROSION CONTROL FEATURES SHALL COMPLY WITH THE STATE MANUAL FOR SOIL EROSION AND SEDIMENTATION CONTROL AND SHALL BE MAINTAINED BY CONTRACTOR AND INSPECTED DAILY UNTIL DISTURBED AREAS ARE COMPLETELY STABILIZED.
- REFER TO "SOUTH CAROLINA STORMWATER MANAGEMENT AND SEDIMENT CONTROL HANDBOOK FOR LAND DISTURBANCE ACTIVITIES" AND SCDOT'S "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION," LATEST EDITION FOR MINIMUM STANDARDS AND SPECIFICATIONS FOR DESIGN AND INSTALLATION OF EROSION AND SEDIMENT CONTROL DEVICES.
- IMMEDIATELY FOLLOWING ALL LAND DISTURBING ACTIVITIES THE CONTRACTOR SHALL SOW GRASS AS FOLLOWS:
 - PREPARATION: GRADE ALL SEED BEDS, THOROUGHLY REMOVING ALL RIDGES AND DEPRESSIONS AND MARKING AREAS INTO SMOOTH, CONTINUOUS, FIRM PLANES THAT ENSURE PROPER DRAINAGE. REMOVE ALL SOIL LUMPS, ROCKS, STICKS AND OTHER DELETERIOUS MATERIAL.
 - ALL DISTURBED OPEN EARTH AREAS NOT COVERED BY WALKS OR PAVING SHALL BE GRASSED AS FOLLOWS:

COMMON BERMUDA (HULLED)	30 LBS/ACRE
CARPETGRASS	35 LBS/ACRE
RESEEDING CRIMSON CLOVER	20 LBS/ACRE
ANNUAL RYEGRASS	15 LBS/ACRE

- SEEDS SHALL BE PROPORTIONED ACCORDING TO RESPECTIVE APPLICATION RATES. RESEEDING CRIMSON CLOVER AND ANNUAL RYEGRASS SHALL BE ELIMINATED FROM THE MIX IF SEEDING OCCURS BETWEEN MARCH 1 AND AUGUST 15.
- SEED SHALL BE APPLIED AS A HYDROMULCH OF FERTILIZER, MULCH AND GRASS SEED. IF A HYDROMULCH TECHNIQUE IS NOT USED, AFTER SOWING THE FERTILIZER AND SEED, THE ENTIRE AREA SHALL BE LIGHTLY RAKED OR DRAGGED TO COVER ALL SEED TO A MAXIMUM DEPTH OF APPROXIMATELY ONE-QUARTER INCH.
- APPLY WATER AND MAINTAIN SEEDED AREA. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE SOUTH CAROLINA LAND RESOURCES CONSERVATION COMMISSION "EROSION AND SEDIMENT CONTROL PRACTICES FOR DEVELOPING AREAS".
- FERTILIZING: APPLY 15-0-15 FERTILIZER AT THE RATE OF 10 POUNDS PER 1,000 SQUARE FEET RAKING LIGHTLY INTO THE SOIL.
- MULCHING: WHEAT STRAW IS TO BE SPREAD LIGHTLY OVER SEEDED AREA AT THE RATE OF 1 BALE PER 500 SQUARE FEET.
- WATERING: WATER IMMEDIATELY AFTER MULCHING.
- ALL SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND AFTER ANY STORM EVENT OF GREATER THAN 0.5 INCHES OF PRECIPITATION DURING ANY 24-HOUR PERIOD. ALL SEDIMENT CONTROL FEATURES SHALL BE MAINTAINED UNTIL FINAL STABILIZATION HAS BEEN OBTAINED.
- STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICAL IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE COMMENCEMENT OF CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED, UNLESS ACTIVITY IN THAT PORTION OF THE SITE WILL RESUME WITHIN 21 DAYS.
- COPIES OF THE SCDHEC/OCRM APPROVED LAND DISTURBANCE PLAN AND PERMIT SHALL BE PRESENT ON THE SITE WHENEVER LAND DISTURBANCE ACTIVITY IS IN PROGRESS.
- ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH THE NPDES GENERAL PERMIT SCR100000. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STRICT COMPLIANCE WITH PERMIT SCR100000.
- THE CONTRACTOR WILL GRASS ALL DISTURBED AREAS NOT PAVED AS PER THE SEEDING SCHEDULE OR SC DHEC/OCRM REQUIREMENTS.
- THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO THE PAVED ROADWAY FROM CONSTRUCTION AREAS. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT AS MAY BE REQUIRED.

APPLICABLE SCDOT STANDARD DRAWINGS

NO.	SYMBOLS AND ABBREVIATIONS (ROAD)
100-105-00	SYMBOLS AND ABBREVIATIONS (ROAD)
100-110-00	SYMBOLS AND ABBREVIATIONS (UTILITY)
601-110-00	MATERIALS STORAGE PRIMARY & SECONDARY RURAL ROADWAYS
601-115-00	MATERIALS STORAGE PRIMARY & SECONDARY URBAN ROADWAYS
601-205-01	PROTECTION OF EXCAVATIONS ADJACENT TO ROADWAY
610-005-00	FLAGGING OPERATION TWO-LANE TWO-WAY PRIMARY & SECONDARY ROUTES
610-010-00	LANE CLOSURE DAYTIME - URBAN LOW SPEED <= 35 MPH
610-020-00	DUAL LANE CLOSURE - URBAN LOW SPEED <= 35 MPH
610-025-00	LANE CLOSURE DAYTIME - MULTILANE PRIMARY ROUTES
610-205-00	RIGHT SHOULDER CLOSURE (CASE I/ CASE II) PRIMARY ROUTES
610-210-00	LEFT SHOULDER CLOSURE (CASE I/ CASE II) PRIMARY ROUTES
610-215-00	LEFT SHOULDER CLOSURE (CASE I/ CASE II) PRIMARY ROUTES
625-305-00	STANDARD MARKINGS FOR INTERSECTIONS
625-310-00	TYPICAL MARKINGS FOR TURN LANE INSTALLATIONS
630-105-00	PAVEMENT MARKING TYPICAL RAISED MARKER PLACEMENT & DETAIL
630-205-00	PAVEMENT MARKING TYPICAL LINE PATTERNS AND RAISED MARKER PLACEMENT
630-210-00	PAVEMENT MARKING TYPICAL MULTILANE ROADS - RAISED MARKER PLACEMENT
719-105-02	DROP INLET (24"x24") INLET ADAPTER
719-605-00	END TREATMENT (STRAIGHT HEADWALL FOR CIRCULAR PIPE)
719-610-00	END TREATMENT (RCP BEVELED END)
720-105-01	CURB & GUTTER (CONCRETE)
720-105-02	CURB & GUTTER (CONCRETE) TRANSITION CURB
720-905-02	DETECTABLE WARNINGS GENERAL LAYOUT
720-905-01	DETECTABLE WARNINGS DETAILS
720-910-01	DETECTABLE WARNINGS TYPE 1 INSTALLATION
720-910-02	DETECTABLE WARNINGS TYPE 2 INSTALLATION
720-910-03	DETECTABLE WARNINGS TYPE 3 INSTALLATION
804-310-00	RIPRAP (PIPE & DITCH LINING)
815-105-00	DITCH CHECK
815-605-00	TEMPORARY EROSION & SEDIMENTATION CONTROL

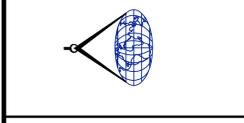
EXISTING SURVEY LEGEND

SYMBOL	ABBREV.	DESCRIPTION	SYMBOL	ABBREV.	DESCRIPTION
	BM	SURVEY BENCHMARK		TBX	TELEPHONE BOX
	RW/MON	RIGHT-OF-WAY MONUMENT		TPED	TELEPHONE PEDESTAL
	CON/MON	CONCRETE MONUMENT		GAS	POINT ON GAS LINE
	EIP	EXIST. IRON PIN		FH	FIRE HYDRANT
	CB	EXIST. CATCH BASIN		WP	WITNESS POST
	DI	EXISTING DROP INLET		WM	WATER/GAS METER
	JB	EXIST. JUNCTION BOX		WV	WATER/GAS VALVE
	MH/SMH	MANHOLE/SEWER MANHOLE		MMW	WATER MONITORING WELL
	GP	GUY POLE		CATV	CABLE TELEVISION BOX
	GUY	GUY WIRE		—	SHRUB
	MSP	METER/SERVICE POLE		MB	MAILBOX
	PP	POWER POLE		FLAG	FLAGPOLE
	EPED	ELECTRIC PEDESTAL		AC	AIR CONDITIONING UNIT
	ETB	ELECTRIC TRANSFORMER BOX		SIGN	SIGN
	LP	LIGHT POLE		COL	COLUMN
	FLT	FLOOD LIGHT		FC	FILL CAP
	TP	TELEPHONE POLE		VAC	VACUUM (COMMERCIAL)
WATER LINE		—	W	—	W
ELECTRIC WIRE (UNDERGROUND)		—	UGE	—	UGE
ELECTRIC WIRE (OVERHEAD)		—	OHE	—	OHE
TELEPHONE LINE (UNDERGROUND)		—	UGT	—	UGT
TELEVISION LINE (UNDERGROUND)		—	CTV	—	CTV
FIBER OPTIC CABLE LINE		—	FO	—	FO
GAS LINE		—	G	—	G
SANITARY SEWER LINE		—	SS	—	SS
EXISTING PROPERTY LINE		—	—	—	—
FENCE LINE		—	—	—	—
STORM SEWER		—	—	—	—

PROPOSED IMPROVEMENTS LEGEND

	PERMANENT SEEDING		TEMPORARY SEEDING
	OUTLET PROTECTION		TREE REMOVAL
	STORM SEWER		TREE PROTECTION
	SILT FENCE		LIMITS OF DISTURBANCE

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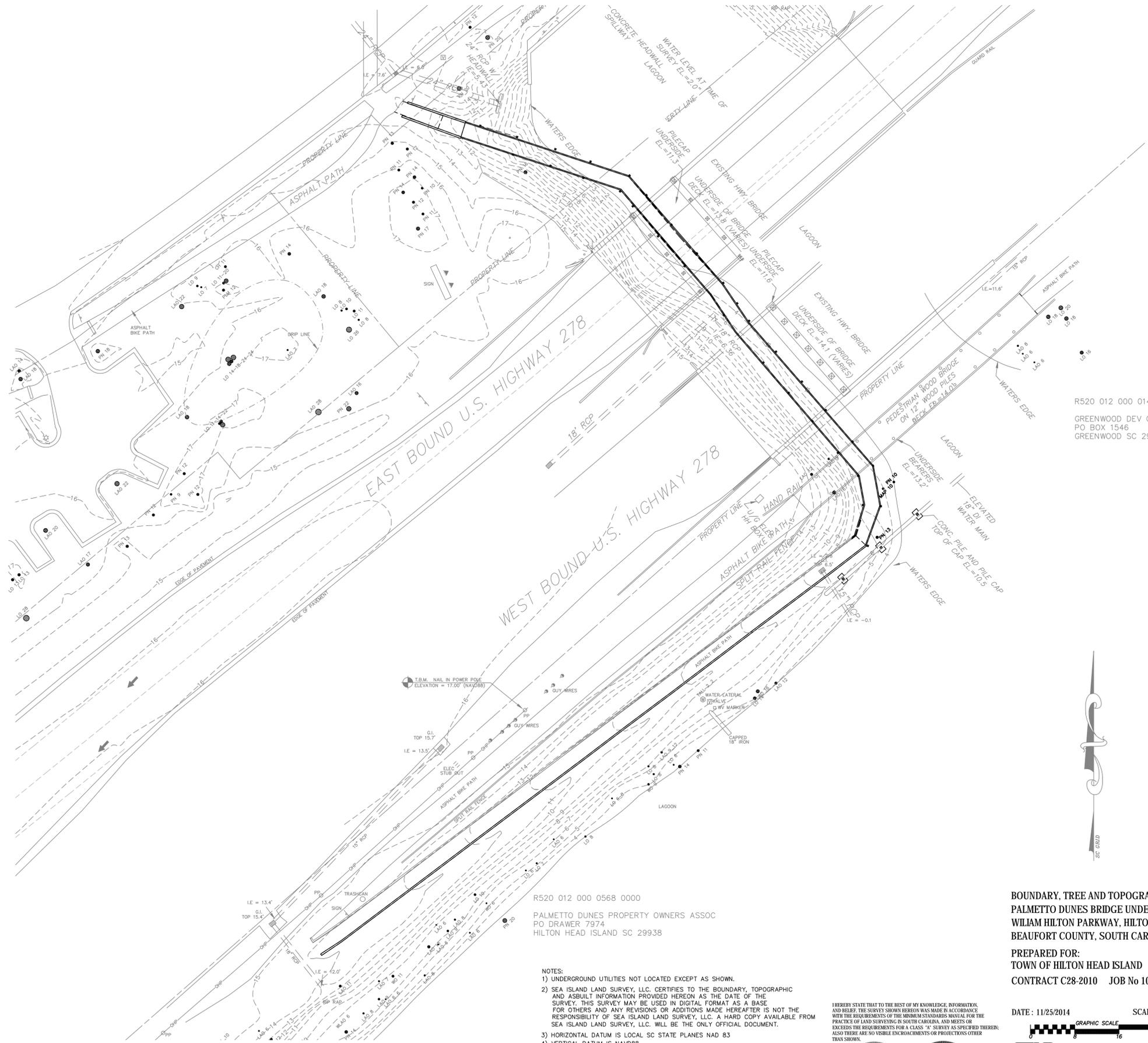


NO.	REVISION	DATE	DESCRIPTION
2	11-17-2015	ADDITION 1	
1	09-28-2015	PERMITTING COMMENTS	
0	05-13-2015	PERMIT SET	
		REV.	DATE

NO.	REVISION	DATE	DESCRIPTION
2	11-17-2015	ADDITION 1	
1	09-28-2015	PERMITTING COMMENTS	
0	05-13-2015	PERMIT SET	
		REV.	DATE

**SHELTER COVE
 PEDESTRIAN BRIDGE
 REPLACEMENT**
CONSTRUCTION NOTES

DRAWN BY:	RAC
CHECKED BY:	JRE
APPROVED BY:	JDM
DATE:	5-13-2015
SCALE:	AS NOTED
JOB No.	2015-0058
DRAWING No.	C101



- LEGEND & SYMBOLS:**
- TREE SIZES ARE INCHES IN DIAMETER
 - SPOT ELEVATION
 - CONTOUR
 - CMFB 3" CONCRETE MONUMENT FOUND
 - TEMPORARY BENCH MARK
 - IE INVERT ELEVATION
 - FFE FINISHED FLOOR ELEVATION
 - PVC POLYVINYL CHLORIDE
 - CPP CORRUGATED PLASTIC PIPE
 - RCP REINFORCED CONCRETE PIPE
 - HDPE HIGH DENSITY POLYETHYLENE PIPE
 - LO LIVE OAK
 - LAO LAUREL OAK
 - MAG MAGNOLIA
 - RO RED OAK
 - PN PINE
 - FLM PALM
 - WO WATER OAK
 - WHO WHITE OAK
 - WAX WAX MYRTLE
 - CEO CEDAR
 - TO TURKEY OAK
 - G GUM
 - TUP TUPPELO
 - BIR BIRCH
 - HOL HOLLY
 - HIC HICKORY

THIS PROPERTY LIES IN F.E.M.A. ZONE A7
 BASE FLOOD ELEVATION = 14.0'
 COMMUNITY NO. 450250, PANEL 0014D, DATED: 9/29/86

R520 012 000 0568 0000
 PALMETTO DUNES PROPERTY OWNERS ASSOC
 PO DRAWER 7974
 HILTON HEAD ISLAND SC 29938

- NOTES:**
- 1) UNDERGROUND UTILITIES NOT LOCATED EXCEPT AS SHOWN.
 - 2) SEA ISLAND LAND SURVEY, LLC. CERTIFIES TO THE BOUNDARY, TOPOGRAPHIC AND ASBUILT INFORMATION PROVIDED HEREON AS THE DATE OF THE SURVEY. THIS SURVEY MAY BE USED IN DIGITAL FORMAT AS A BASE FOR OTHERS AND ANY REVISIONS OR ADDITIONS MADE HEREAFTER IS NOT THE RESPONSIBILITY OF SEA ISLAND LAND SURVEY, LLC. A HARD COPY AVAILABLE FROM SEA ISLAND LAND SURVEY, LLC. WILL BE THE ONLY OFFICIAL DOCUMENT.
 - 3) HORIZONTAL DATUM IS LOCAL SC STATE PLANES NAD 83
 - 4) VERTICAL DATUM IS NAVD88
 - 5) CONTOUR INTERVAL IS 1'
 - 6) THIS SURVEY HAS BEEN PREPARED WITHOUT BENEFIT OF A COMPLETE TITLE SEARCH AND IS SUBJECT TO EASEMENTS AND RESTRICTIONS OF RECORD.
 - 7) THIS SURVEY DOES NOT CERTIFY TO THE EXISTENCE OR ABSENCE OF FRESHWATER WETLANDS.
 - 8) IF IDENTIFICATION OF TREES IS CRITICAL TO DEVELOPMENT, AN ARBORIST SHOULD BE CONSULTED TO VERIFY SUCH TREE IDENTIFICATION.

I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.

DATE: 11/25/2014 SCALE: 1" = 20'

SIS Sea Island Land Survey, LLC.
 4D Mathews Court, Tel (843) 681-3248
 Hilton Head Island, SC 29926 Fax (843) 689-3871
 E-mail: sis@spynet.com
 FILE No: 14186 DWG No: 3-1952
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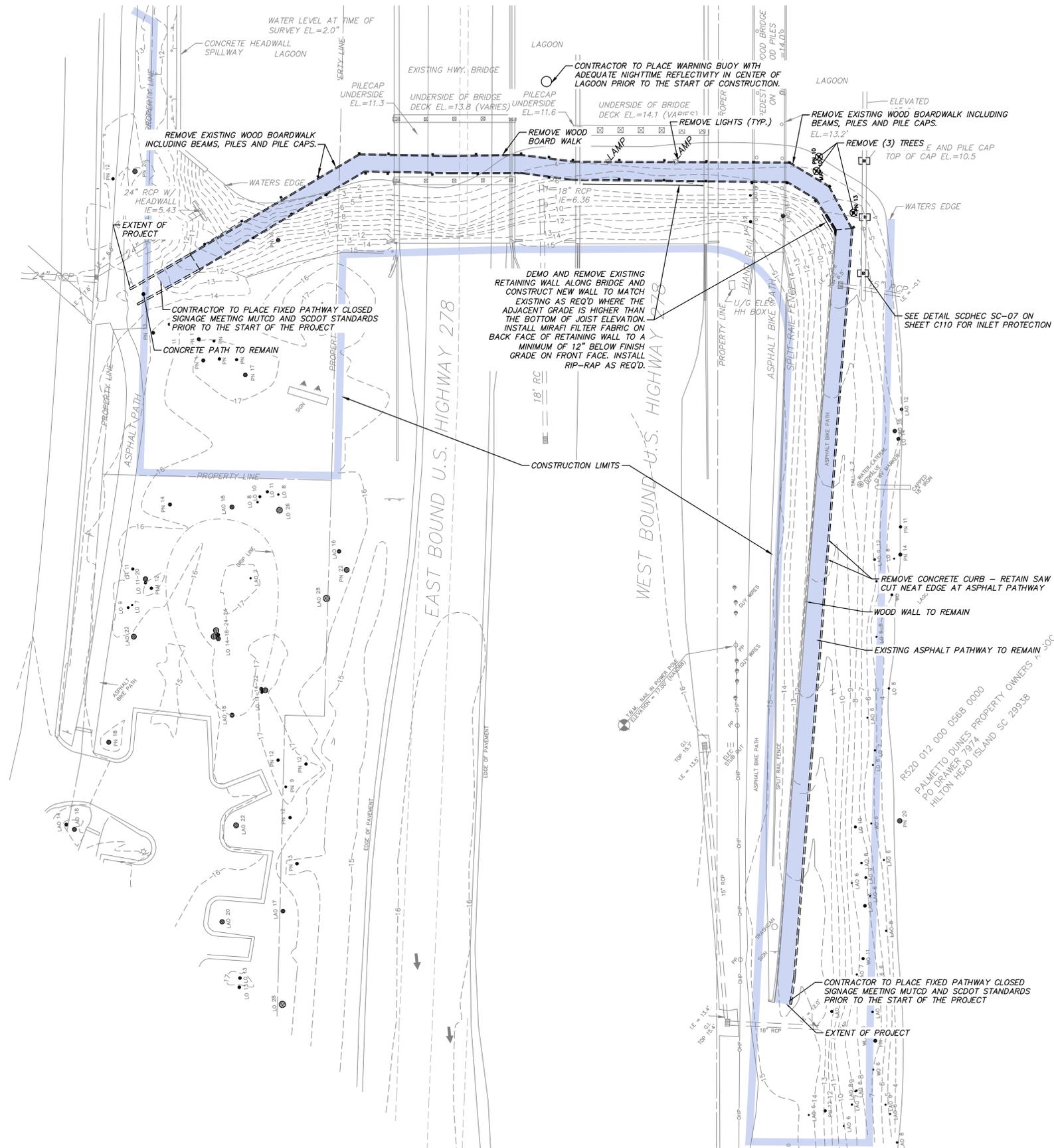
2015-11-17

REV.	DATE	DESCRIPTION
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1	08-28-2015	PERMITTING COMMENTS
0	05-13-2015	PERMIT SET

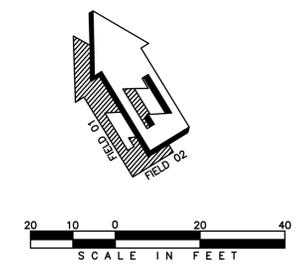
**SHELTER COVE
 PEDESTRIAN BRIDGE
 REPLACEMENT**

EXISTING SITE PLAN

DRAWN BY:	RAC
CHECKED BY:	JRE
APPROVED BY:	JDM
DATE:	5-13-2015
SCALE:	1" = 20'-0"
JOB No.	2015-0058
DRAWING No.	C102



1 CLEARING & DEMOLITION PLAN
 C103 SCALE: 1" = 20'-0"



3 FULL WORKING DAYS BEFORE DIGGING IN
 SOUTH CAROLINA
 (NOT INCLUDING THE DAY YOU CALL)
CALL 811
 SOUTH CAROLINA 811 (SC811)
 (888) 721-7877
 WWW.SC811.COM
 ALL UTILITIES MAY NOT BE A MEMBER OF SC811

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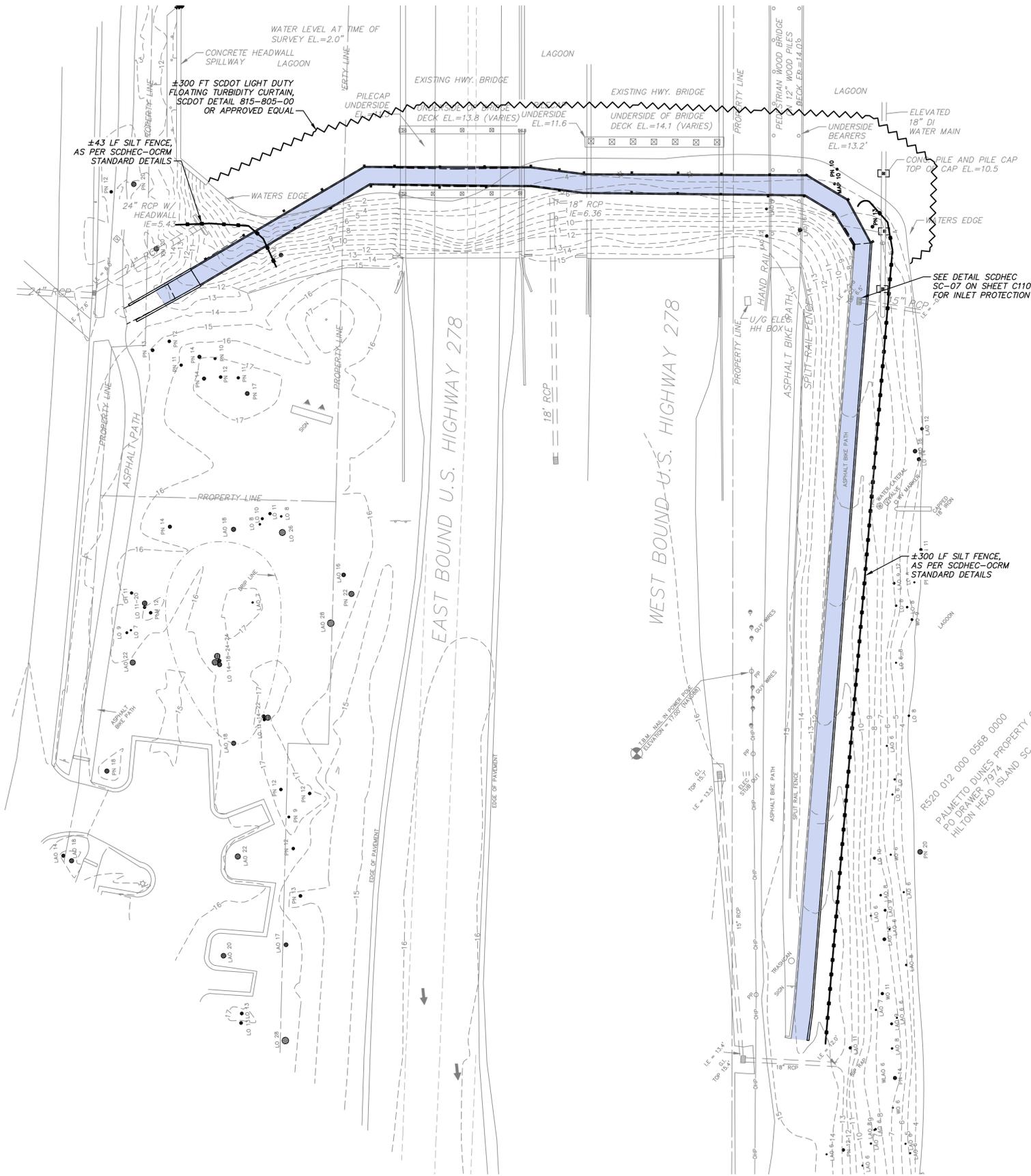


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1	08-28-2015	PERMITTING COMMENTS
0	05-13-2015	PERMIT SET

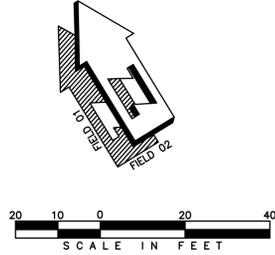
**SHELTER COVE
 PEDESTRIAN BRIDGE
 REPLACEMENT**

**CLEARING AND
 DEMOLITION PLAN**

DRAWN BY: RAC
 CHECKED BY: JRE
 APPROVED BY: JDM
 DATE: 5-13-2015
 SCALE: 1" = 20'-0"
 JOB No. 2015-0058
 DRAWING No. **C103**

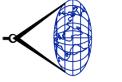


1 EROSION CONTROL PLAN
C104 SCALE: 1" = 20'-0"



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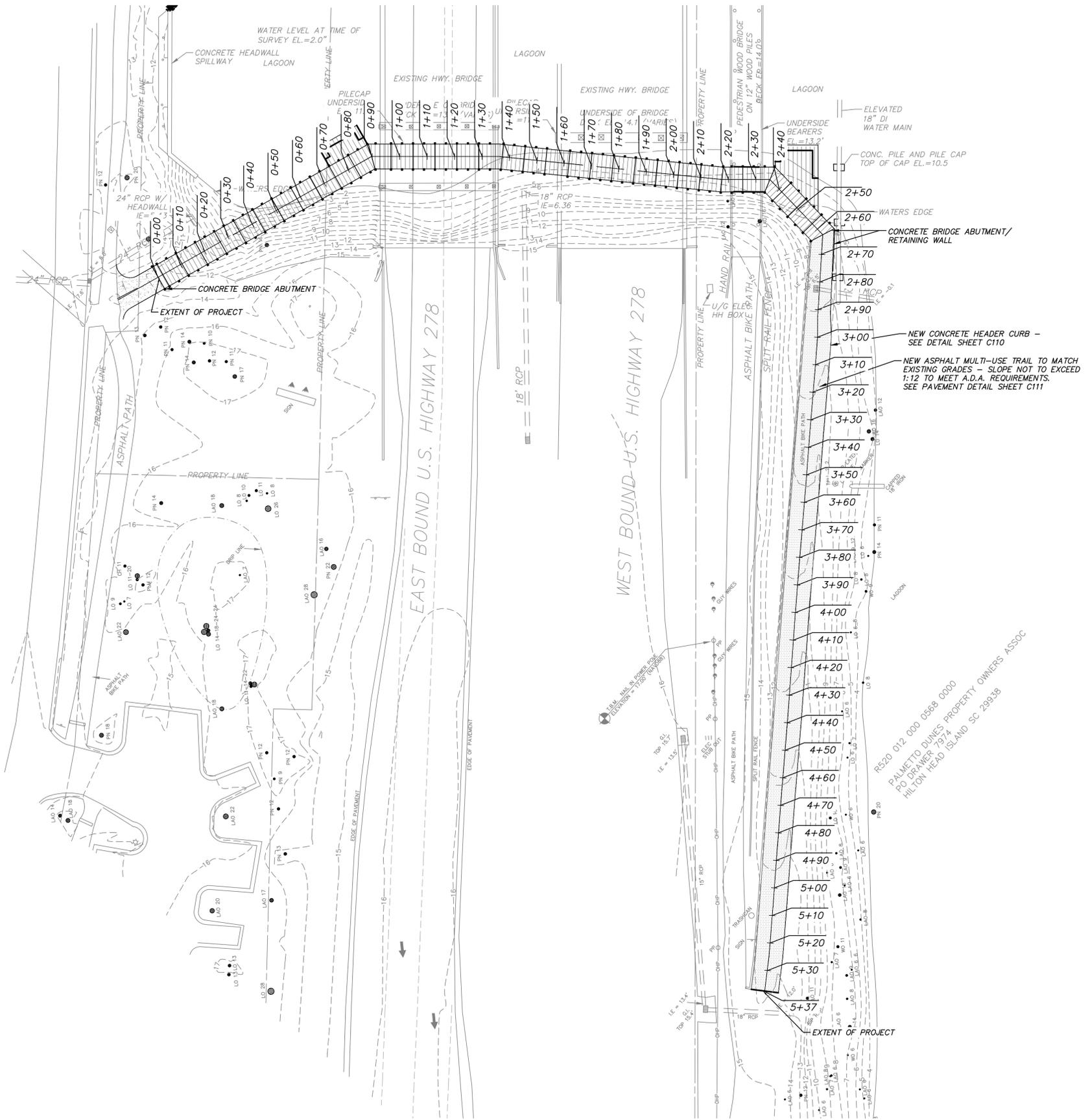
REV.	DATE	DESCRIPTION
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**SHELTER COVE
 PEDESTRIAN BRIDGE
 REPLACEMENT**

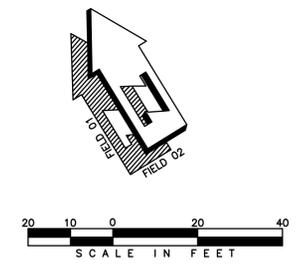
EROSION CONTROL PLAN

DRAWN BY:	DAI
CHECKED BY:	JRE
APPROVED BY:	JDM
DATE:	5-13-2015
SCALE:	1" = 20'-0"
JOB No.	2015-0058
DRAWING No.	

C104

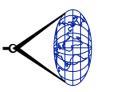


1 OVERALL SITE PLAN
 C105 SCALE: 1" = 20'-0"



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 ENGINEERS - PLANNERS - SURVEYORS
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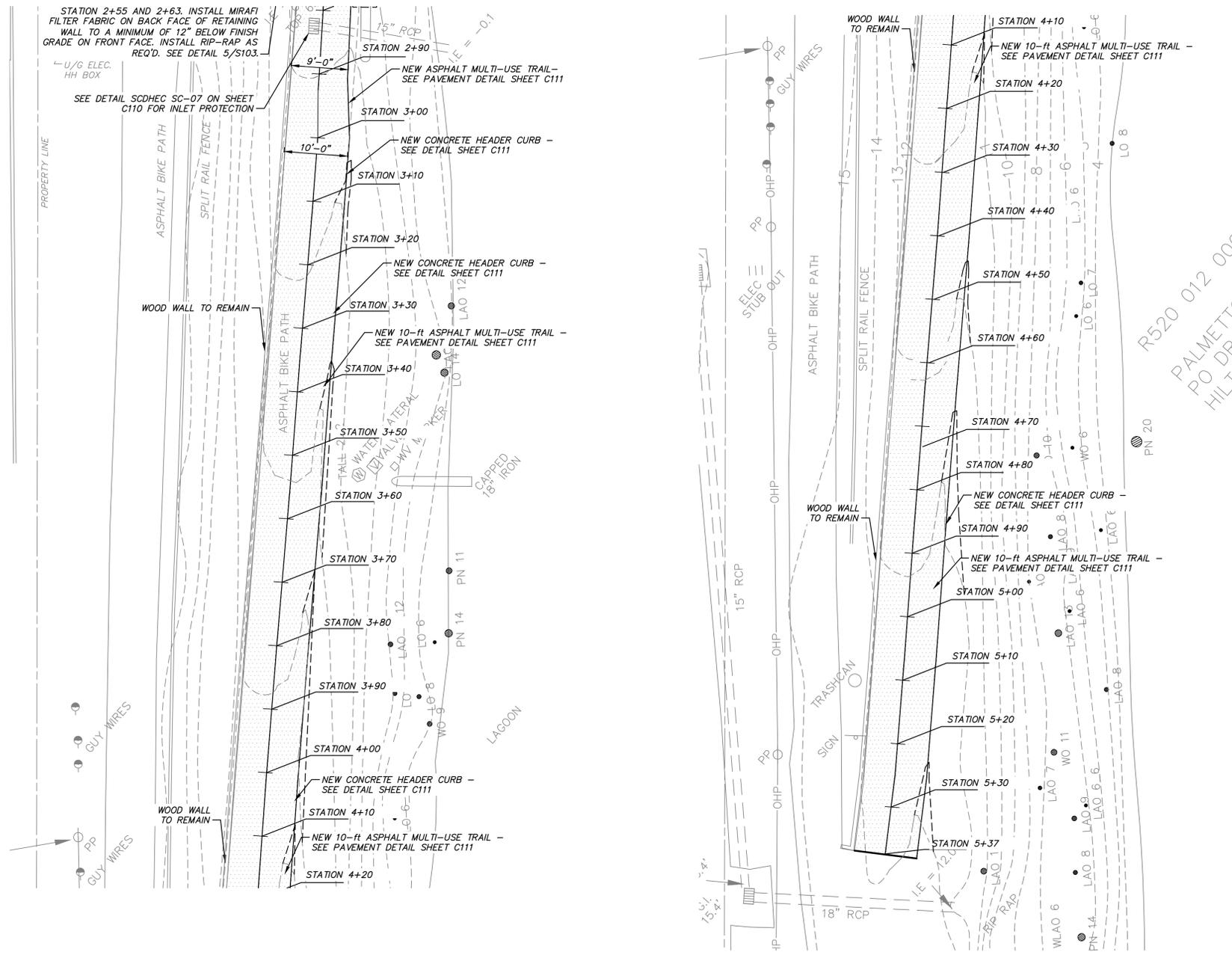


REV.	DATE	DESCRIPTION
2	11-17-2015	ADDENDUM 1
1	08-28-2015	PERMITTING COMMENTS
0	05-13-2015	PERMIT SET

**SHELTER COVE
 PEDESTRIAN BRIDGE
 REPLACEMENT
 OVERALL SITE PLAN**

DRAWN BY:	DAI
CHECKED BY:	JRE
APPROVED BY:	JDM
DATE:	5-13-2015
SCALE:	1" = 20'-0"
JOB No.	2015-0058
DRAWING No.	

C105

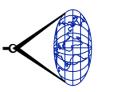


1 STATION 3+00 TO STATION 5+37
 C107 SCALE: 1" = 10'-0"



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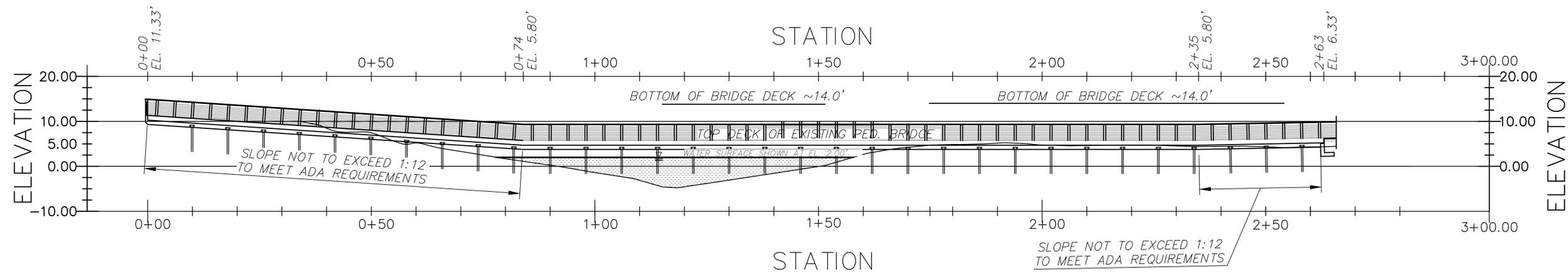
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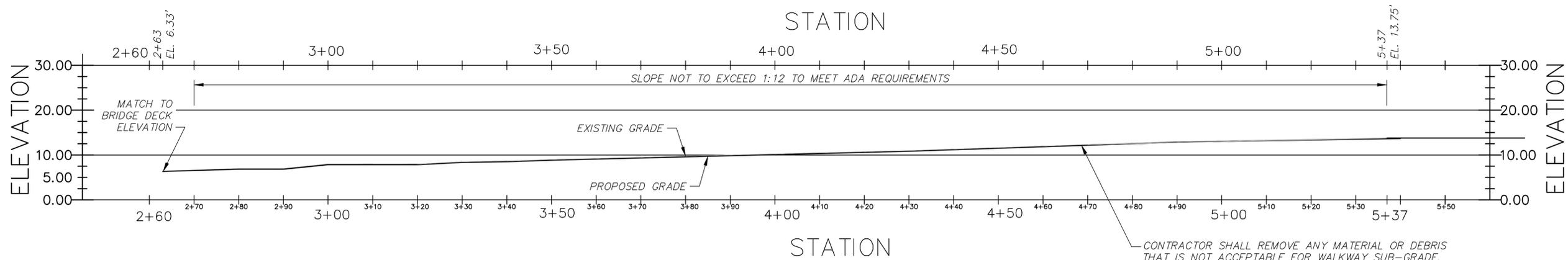
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1	08-28-2015	PERMITTING COMMENTS
0	05-13-2015	PERMIT SET

**SHELTER COVE
 PEDESTRIAN BRIDGE
 REPLACEMENT**
STATION 3+00 TO STATION 5+37

DRAWN BY:	DAI
CHECKED BY:	JRE
APPROVED BY:	JDM
DATE:	5-13-2015
SCALE:	1" = 10'-0"
JOB No.	2015-0058
DRAWING No.	C107



1 PROFILE
C108 NOT TO SCALE



2 PROFILE
C108 NOT TO SCALE



REV.	DATE	DESCRIPTION
2	11-17-2015	ADDENDUM 1
1	08-28-2015	PERMITTING COMMENTS
0	05-13-2015	PERMIT SET

**SHELTER COVE
PEDESTRIAN BRIDGE
REPLACEMENT**

PROFILES

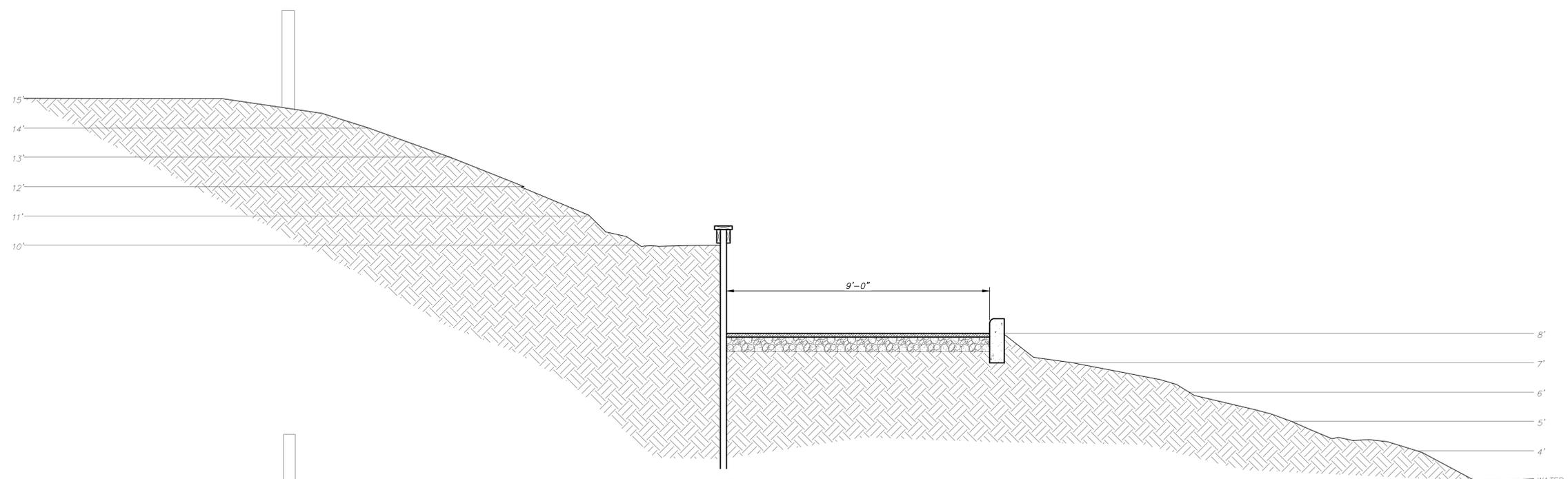
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DATE:	5-13-2015
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JOB No.	2015-0058
DRAWING No.	C108



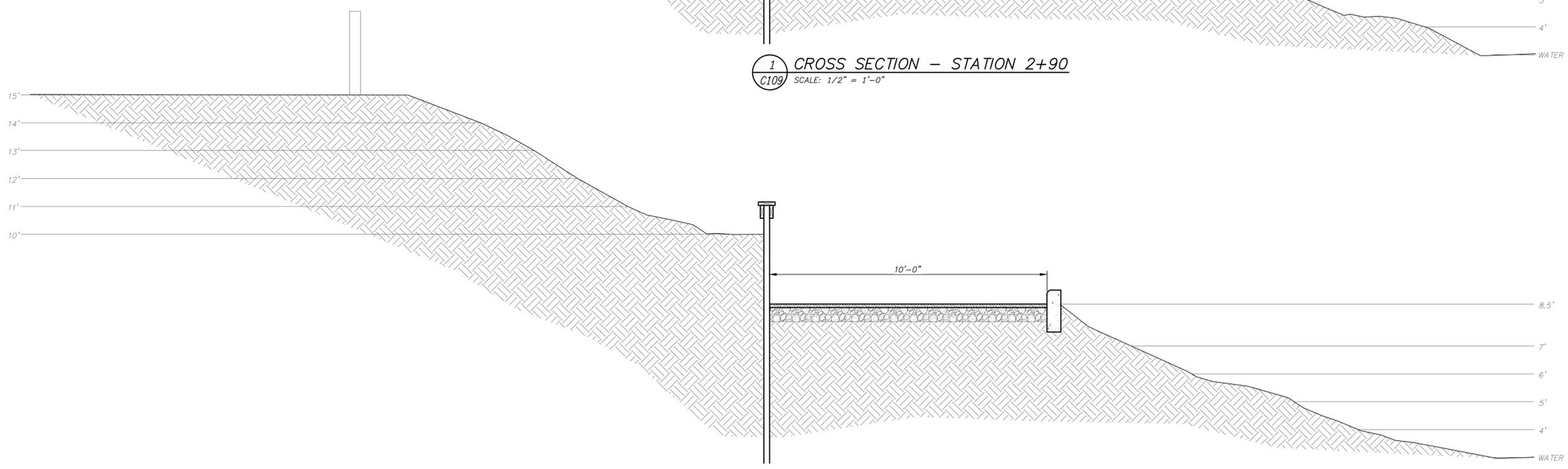
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1	08-28-2015	PERMITTING COMMENTS
0	05-13-2015	PERMIT SET

**SHELTER COVE
 PEDESTRIAN BRIDGE
 REPLACEMENT
 CROSS SECTIONS**

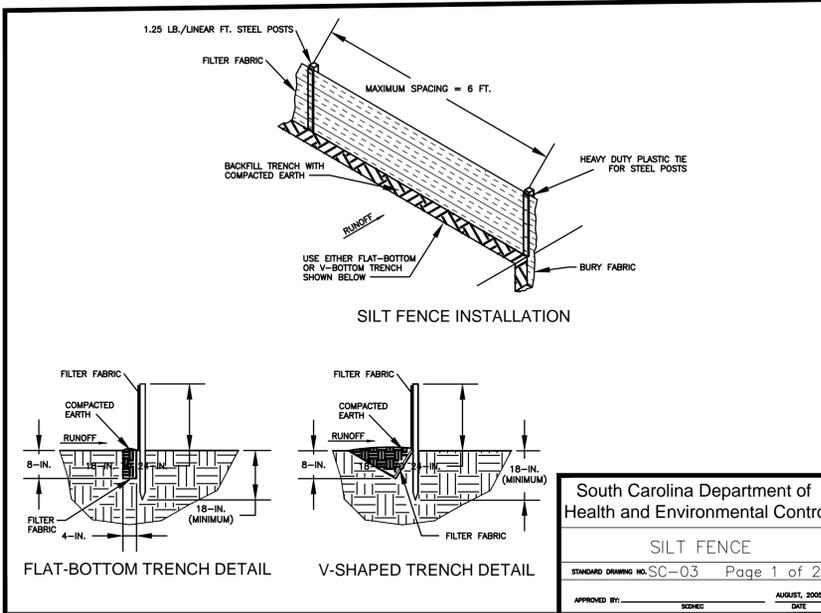
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CHECKED BY:	JRE
APPROVED BY:	JDM
DATE:	5-13-2015
SCALE:	AS NOTED
JOB No.	2015-0058
DRAWING No.	C109



1 CROSS SECTION - STATION 2+90
 C109 SCALE: 1/2" = 1'-0"



2 CROSS SECTION - STATION 3+00
 C109 SCALE: 1/2" = 1'-0"



South Carolina Department of Health and Environmental Control
SILT FENCE
 STANDARD DRAWING NO. SC-03 Page 1 of 2
 APPROVED BY: [Signature] SCDHEC DATE: AUGUST, 2005

SILT FENCE DETAIL
When and Where to Use It
 Silt fence is applicable in areas:
 Where the maximum sheet or overlaid flow path length to the fence is 100-feet. Where the maximum slope steepness (normal [perpendicular] to fence line) is 2H:1V. That do not receive concentrated flows greater than 0.5 cfs.
Do not place silt fence across channels or use it as a velocity control BMP.
Materials
Steel Posts
 Use 48-inch long steel posts that meet the following minimum physical requirements:
 Composed of high strength steel with minimum yield strength of 50,000 psi.
 Have a standard "T" section with a nominal face width of 1.38-inches and nominal "T" length of 1.48-inches.
 Weigh 1.25 pounds per foot (± 8%).
 Have a soil stabilization plate with a minimum cross section area of 17-square inches attached to the steel posts. Painted with a water based baked enamel paint.
 Use steel posts with a minimum length of 4-feet, weighing 1.25 pounds per linear foot (± 8%) with projections to aid in fastening the fabric. Except when heavy clay soils are present on site, steel posts will have a metal soil stabilization plate welded near the bottom such that when the post is driven to the proper depth, the plate will be below the ground level for added stability.
 The soil plates should have the following characteristics:
 Be composed of minimum 15 gauge steel.
 Have a minimum cross section area of 17-square inches.
Geotextile Filter Fabric
 Filter fabric is:
 Composed of fibers consisting of long chain synthetic polymers composed of at least 85% by weight of polyolefins, polyesters, or polyamides. Formed into a network such that the filaments or yarns retain dimensional stability relative to each other. Free of any treatment or coating which might adversely affect its physical properties after installation. Free of defects or flaws that significantly affect its physical and/or filtering properties. Cut to a minimum width of 36 inches.
 Use only fabric appearing on SCDOT Approval Sheet #34 meeting the requirements of the most current edition of the SCDOT Standard Specifications for Highway Construction.

South Carolina Department of Health and Environmental Control
SILT FENCE
 STANDARD DRAWING NO. SC-03 Page 2 of 3
 APPROVED BY: [Signature] SCDHEC DATE: AUGUST, 2005

SILT FENCE DETAIL
Installation
 Excavate a trench approximately 6-inches wide and 6-inches deep when placing fabric by hand. Place 12-inches of geotextile fabric into the 6-inch deep trench, extending the remaining 6-inches towards the upslope side of the trench. Backfill the trench with soil or gravel and compact. Bury 12-inches of fabric into the ground when pneumatically installing silt fence with a slicing method. Purchase fabric in continuous rolls and cut to the length of the barrier to avoid joints. When joints are necessary, wrapped the fabric together at a support post with both ends fastened to the post, with a 6-inch minimum overlap. Install posts to a minimum depth of 24-inches. Install posts a minimum of 1- to 2-inches above the fabric, with no more than 3-feet of the post above the ground. Space posts to maximum 6-foot centers. Attach fabric to wood posts using staples made of heavy-duty wire at least 1½-inch long, spaced a maximum of 6-inches apart. Staple a 2-inch wide lathe over the filter fabric to securely fasten it to the upslope side of wooden posts. Attach fabric to the steel posts using heavy-duty plastic ties that are evenly spaced and placed in a manner to prevent sagging or tearing of the fabric. In all cases, ties should be affixed in no less than 4 places. Install the fabric a minimum of 24-inches above the ground. When necessary, the height of the fence above ground may be greater than 24-inches. In tidal areas, extra silt fence height may be required. The post height will be twice the exposed post height. Post spacing will remain the same and extra height fabric will be 4-, 5-, or 6-feet tall. Locate silt fence checks every 100 feet maximum and at low points. Install the fence perpendicular to the direction of flow and place the fence the proper distance from the toe of steep slopes to provide sediment storage and access for maintenance and cleanout.
Inspection and Maintenance
 Inspect every seven calendar days and within 24-hours after each rainfall event that produces ½-inches or more of precipitation. Check for sediment buildup and fence integrity. Check where runoff has eroded a channel beneath the fence, or where the fence has sagged or collapsed by fence overtopping. If the fence fabric tears, begins to decompose, or in any way becomes ineffective, replace the section of fence immediately. Remove sediment accumulated along the fence when it reaches 1/3 the height of the fence, especially if heavy rains are expected. Remove trapped sediment from the site or stabilize it on site. Remove silt fence within 30 days after final stabilization is achieved or after temporary best management practices (BMPs) are no longer needed. Permanently stabilize disturbed areas resulting from fence removal.

South Carolina Department of Health and Environmental Control
SILT FENCE
 STANDARD DRAWING NO. SC-03 Page 3 of 3
 APPROVED BY: [Signature] SCDHEC DATE: AUGUST, 2005



South Carolina Department of Health and Environmental Control
TYPE A - FILTER FABRIC INLET PROTECTION
 STANDARD DRAWING NO. SC-07 Page 1
 APPROVED BY: [Signature] SCDHEC DATE: AUGUST, 2005

FILTER FABRIC INLET PROTECTION
Materials:
 Use filter fabric that conforms to SCDOT standard specifications for highway construction (latest edition). Refer to the silt fence geotextile fabrics Approval Sheet #34.
 Use steel posts that meet the following minimum physical requirements:
 Be composed of high strength steel with minimum yield strength of 50,000 psi.
 Have a standard "T" section with a nominal face width of 1.38-inches and nominal "T" length of 1.48-inches.
 Weigh 1.25 pounds per foot (± 8%).
 Be painted with a water based baked enamel paint.
 Attach fabric to metal posts with heavy-duty plastic ties.
Installation:
 Excavate a trench 6-inches wide and 6-inches deep around the outside perimeter of the inlet unless the fabric is pneumatically installed.
 Extend the filter fabric a minimum of 12-inches into the trench. Backfill the trench with soil or crushed stone and compact over the filter fabric unless the fabric is pneumatically installed.
 Use steel posts with a minimum post length of 60-inches consisting of standard "T" sections with a weight of 1.25 pounds per foot (±8%). Install the filter fabric to a minimum height of 24-inches above grade. Space the steel posts around the perimeter of the inlet a maximum of 3-feet apart and drive them into the ground a minimum of 24-inches. Cut the filter fabric from a continuous roll to the length of the protected area to avoid the use of joints. When joints are necessary, wrap filter fabric together only at a support post with both ends securely fastened to the post, with a minimum 6-inch overlap.
 Attach fabric to steel posts with heavy-duty plastic ties.
 Attach at least four (4) evenly spaced ties in a manner to prevent sagging or tearing of the fabric. In all cases, affix ties in no less than four (4) places.
Inspection and Maintenance
 Inspections should be made every 7 calendar days and within 24-hours after each storm that produces ½-inches or more of rain. If the fabric becomes clogged, it should be replaced. Sediment should be removed when it reaches approximately 1/3 the height of the fence. Take care not to damage or undercut fabric when removing sediment. If a sump is used, sediment should be removed when it fills approximately 1/3 the depth of the hole. Maintain the pool area, always providing adequate sediment storage volume for the next storm.
 Storm drain inlet protection structures should be removed only after the disturbed areas are permanently stabilized. Remove all construction material and sediment, and dispose of them properly. Grade the disturbed area to the elevation of the drop inlet structure crest. Use appropriate permanent stabilization methods to stabilize bare areas around the inlet.

South Carolina Department of Health and Environmental Control
Type A
FILTER FABRIC INLET PROTECTION
 STANDARD DRAWING NO. SC-07 Page 2 of 2
 APPROVED BY: [Signature] SCDHEC DATE: AUGUST, 2005

ADHESIVE	WATER DILUTION	NOZZLE TYPE	APPLICATION (GAL./ACRE)
ANIONIC ASPHALT EMULSION	7:1*	COARSE SPRAY	1,200
LATEX EMULSION	12.5:1*	FINE SPRAY	235
RESIN-IN-WATER EMULSION	4:1*	FINE SPRAY	300

*USE MANUFACTURER'S RECOMMENDATIONS WHEN AVAILABLE.

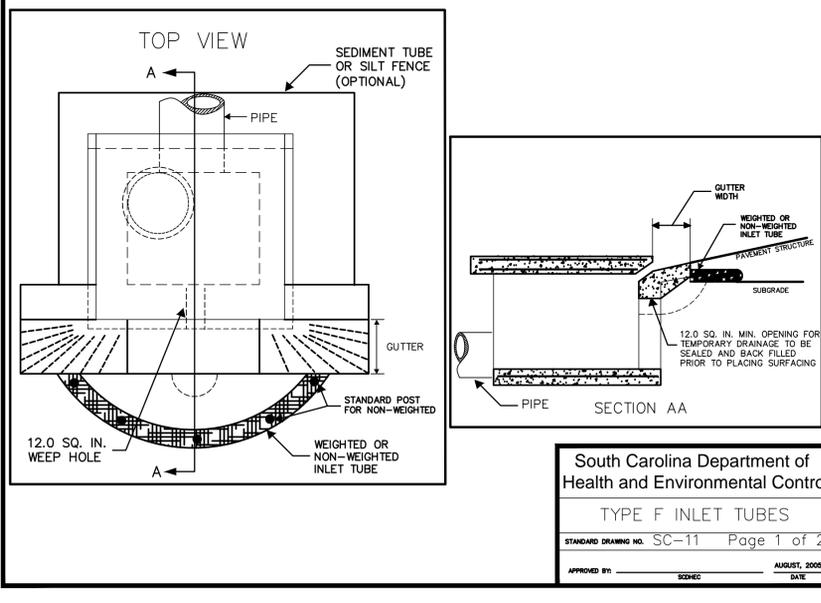
MAINTENANCE:

- PROHIBIT TRAFFIC ON SURFACE AFTER SPRAYING.
- SUPPLEMENT SURFACE COVERING AS NEEDED.

INSTALLATION:

- APPLY ACCORDING TO APPROVED PLAN.
- MULCH DISTURBED AREAS AND TACKIFY WITH RESINS SUCH AS ASPHALT, CURASOL OR TERRATACK ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- STABILIZE DISTURBED AREAS WITH TEMPORARY OR PERMANENT VEGETATION.
- IRRIGATE DISTURBED AREAS UNTIL SURFACE IS WET.
- COVER SURFACES WITH CRUSHED STONE OR GRAVEL.
- APPLY CALCIUM CHLORIDE AT A RATE TO KEEP SURFACES MOIST.
- APPLY SPRAY-ON ADHESIVES TO MINERAL SOILS (NOT MUCK SOILS) AS DESCRIBED IN TABLE 1.

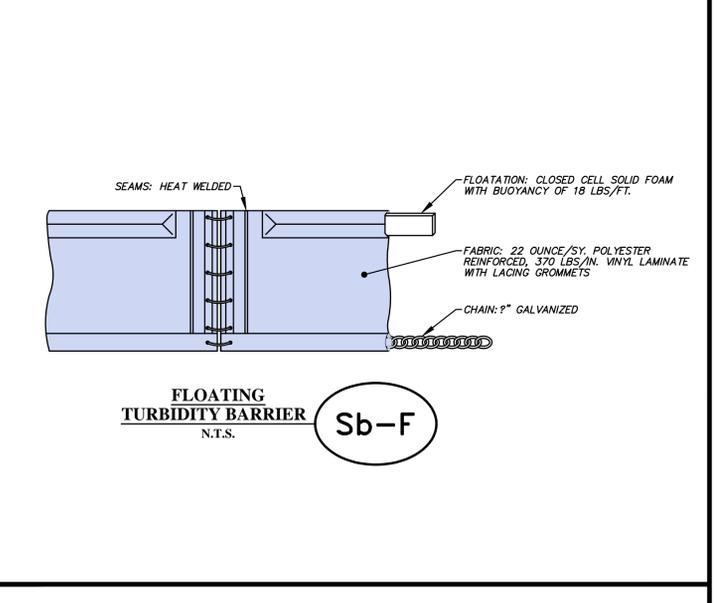
DC DUST CONTROL ON DISTURBED AREAS



South Carolina Department of Health and Environmental Control
TYPE F INLET TUBES
 STANDARD DRAWING NO. SC-11 Page 1 of 2
 APPROVED BY: [Signature] SCDHEC DATE: AUGUST, 2005

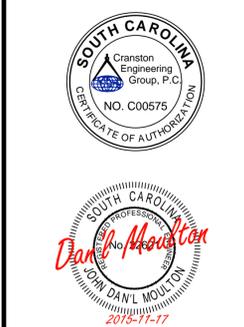
Type F Inlet Tubes
Materials
 Use inlet tubes that exhibit the following properties:
 Produced by a Manufacturer experienced in sediment tube manufacturing.
 Composed of compacted geotextiles, curled excelsior wood, natural coconut fibers or hardwood mulch or a mix of these materials enclosed by a flexible netting material.
 Do not use straw, straw fiber, straw bales, pine needles or leaf mulch under this specification.
 Utilize an outer netting that consists of seamless, high-density polyethylene photodegradable materials treated with ultraviolet stabilizers or a seamless, high-density polyethylene non-degradable materials. Curled wood excelsior fiber, or natural coconut fiber rolled erosion control products (RECP) rolled up to create inlet tube devices are allowed under this specification.
Weighted Inlet Tubes
 Weighted inlet tubes are sediment tubes capable of staying in place without external stabilization measures and may have a weighted inner core or other weighted mechanism to keep them in place.
Materials
 Applicable Type F weighted inlet tubes may be selected from the SCDOT approved products list.
Installation:
 Install weighted inlet tubes lying flat on the ground, with no gaps between the underlying surface and the inlet tube.
 Never stack weighted inlet tubes on top of one another.
 Do not completely block inlets with weighted inlet tubes.
 Install weighted inlet tubes in such a manner that all overflow or overtopping water has the ability to enter the inlet unobstructed.
 To avoid possible flooding, two or three concrete cinder blocks may be placed between the weighted inlet tubes and the inlet.
Non-Weighted Inlet Tubes
 Non-weighted inlet tubes are defined as sediment tubes that require staking or other stabilization methods to keep them safely in place.
Materials
 Applicable Type F non-weighted inlet tubes may be selected from the SCDOT approved products list.
Inspection and Maintenance:
 Inlet tubes may be temporarily moved during construction as needed.
 Replace inlet tubes damaged during installation as directed by the Inspector or Manufacturer's Representative at the contractor's expense.

South Carolina Department of Health and Environmental Control
TYPE F INLET TUBES
 STANDARD DRAWING NO. SC-11 Page 2 of 2
 APPROVED BY: [Signature] SCDHEC DATE: AUGUST, 2005



South Carolina Department of Health and Environmental Control
TYPE F INLET TUBES
 STANDARD DRAWING NO. SC-11 Page 2 of 2
 APPROVED BY: [Signature] SCDHEC DATE: AUGUST, 2005

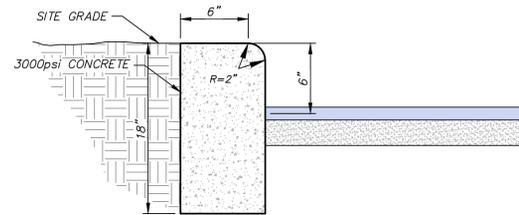
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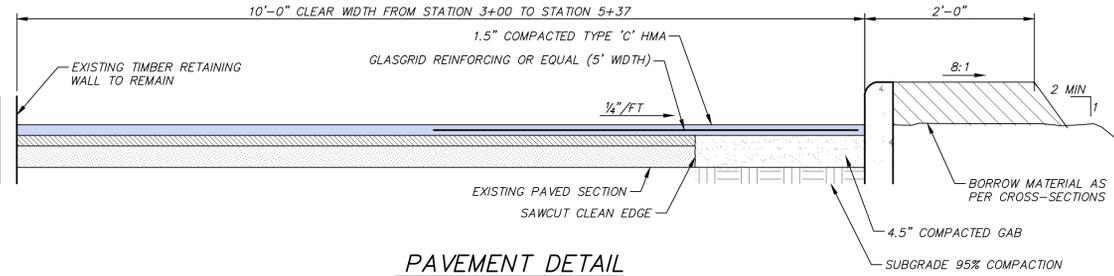
REV.	DATE	DESCRIPTION
2	11-17-2015	ADDENDUM 1
1	08-28-2015	PERMITTING COMMENTS
0	05-13-2015	PERMIT SET

SHELTER COVE PEDESTRIAN BRIDGE REPLACEMENT
CONSTRUCTION DETAILS

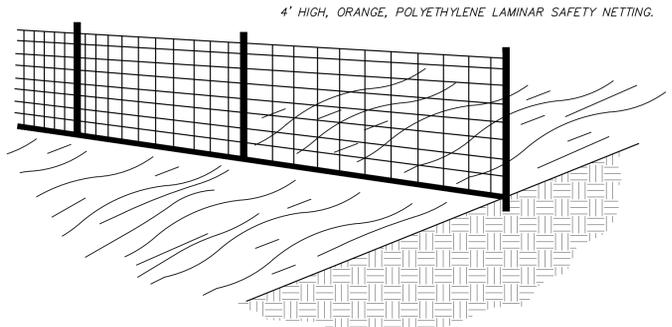
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 CHECKED BY: JRE
 APPROVED BY: JDM
 DATE: 5-13-2015
 SCALE: AS NOTED
 JOB No. 2015-0058
 DRAWING No. C110



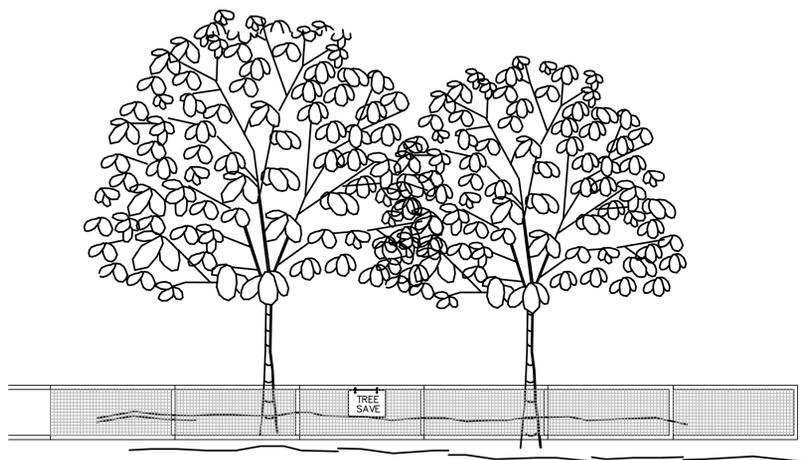
CONCRETE HEADER CURB
(NOT TO SCALE)



PAVEMENT DETAIL
NOT TO SCALE



TREE PROTECTION FENCING
(NOT TO SCALE)



TREE PROTECTION FENCING
(NOT TO SCALE)

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**SHELTER COVE
PEDESTRIAN BRIDGE
REPLACEMENT**

CONSTRUCTION DETAILS

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SCALE: AS NOTED
JOB No. 2015-0058
DRAWING No.

C111

STRUCTURAL NOTES

GENERAL REQUIREMENTS

- WHERE A SECTION OR DETAIL IS SHOWN FOR ONE CONDITION, IT SHALL APPLY TO ALL SIMILAR CONDITIONS.
- COORDINATE ALL LIMITS AND DEPTHS OF DEPRESSIONS FOR FLOOR FINISHES WITH ARCHITECTURAL DRAWINGS AND SCHEDULES. LIMITS SHOWN ON STRUCTURAL DRAWINGS ARE SCHEMATIC.
- THE DESIGN ADEQUACY AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC. SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- DO NOT SCALE DRAWINGS. FOLLOW DIMENSIONS SHOWN ON PLANS.
- CONTRACTOR SHALL COORDINATE AND VERIFY ALL DIMENSIONS AND ELEVATIONS SHOWN HEREIN WITH ARCHITECTURAL PLANS, SECTIONS, AND DETAILS PRIOR TO CONSTRUCTION OR MATERIAL PURCHASE AND SHALL NOTIFY ARCHITECT OR ENGINEER IN WRITING OF DISCREPANCIES. SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS AND ELEVATIONS NOT SHOWN HEREIN.
- DIMENSIONS INDICATED RELATIVE TO EXISTING STRUCTURE ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION OR MATERIALS PURCHASE. CONTRACTOR SHALL NOTIFY ARCHITECT OR ENGINEER IN WRITING OF DISCREPANCIES.
- SPECIFIED ANCHOR SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. SPECIAL ATTENTION SHALL BE GIVEN TO THE DRILLING, CLEANING, AND PREPARATION OF HOLES. WHERE ADHESIVE ANCHORS ARE SHOWN, SPECIAL ATTENTION SHALL BE GIVEN TO THE REQUIRED MIXING, APPLICATION, AND CURING TIME OF ADHESIVE TYPE SPECIFIED.

SUBGRADE PREPARATION

- CONTRACTOR SHALL STRIP AND REMOVE ALL VEGETATION, TOPSOIL, ROOTS, AND ORGANIC SOILS FROM THE CONSTRUCTION AREA FOR A DISTANCE OF AT LEAST 10' BEYOND THE EXTENT OF BUILDING FOUNDATION LIMITS. THE DEPTH OF STRIPPING SHALL BE THAT REQUIRED TO REMOVE SIGNIFICANT ROOT ZONES, SMALL TREE STUMPS, AND OTHER UNACCEPTABLE MATERIALS, BUT IN NO CASE SHALL IT BE LESS THAN 12".
- AFTER TOPSOILS, ETC. HAVE BEEN REMOVED FROM THE SITE WITHIN AND TO A POINT 10' OUTSIDE THE BUILDING CONSTRUCTION AREA, THE UPPER 24" OF EXPOSED SOILS SHALL BE COMPACTED TO A MINIMUM DENSITY OF 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D1557) BY PROOFROLLING WITH A FULLY LOADED PNEUMATIC TIRE TANDER AXLE DUMP TRUCK CAPABLE OF TRANSFERRING A LOAD OF 10 TO 20 TONS BY OVERLAPPING PASSES. A MINIMUM OF 8 COMPLETE PASSES SHALL BE MADE WITHIN THE BUILDING AREA.
- PROOFROLLING SHALL BE PERFORMED UNDER THE OBSERVATION OF AN APPROVED TESTING LABORATORY SUPERVISED BY A REGISTERED ENGINEER. UNDERCUT, BACKFILL, AND COMPACT AREAS WHICH PUMP, DEFLECT, OR RUT EXCESSIVELY OR WHICH DO NOT STABILIZE AFTER SUCCESSIVE PASSES OF PROOFROLLING EQUIPMENT.
- AFTER COMPLETION OF DENSIFICATION OF EXISTING SOILS, PLACE STRUCTURAL FILL FOR BUILDING AND PAVEMENT AREAS IN THIN (8" TO 10") LIFTS COMPACT TO A MINIMUM DENSITY OF 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D1557). MATERIAL USED AS STRUCTURAL FILL SHALL BE NON-PLASTIC GRANULAR MATERIAL CONTAINING LESS THAN 15% FINES PASSING THROUGH THE NO. 200 SIEVE AND FREE OF ORGANICS, BOULDERS, OR OTHER DELETERIOUS MATERIALS.

FOUNDATIONS

- ALL FOUNDATION FILL SUBGRADE SOILS SHALL BE COMPACTED AS FOLLOWS. (REF. ASTM D1557)
 - 95% MODIFIED PROCTOR FOR GREATER THAN 18" BELOW FINAL FILL.
 - 98% MODIFIED PROCTOR FOR THE UPPER 18" BENEATH BUILDINGS AND PAVEMENTS.
- SOILS TESTING LABORATORY SHALL CONDUCT COMPACTION TESTS IN ACCORDANCE WITH ASTM D698. RATE OF COMPACTION SHALL BE AS FOLLOWS:
 - ONE TEST FOR EACH SPREAD FOOTING;
 - ONE TEST FOR EACH 50 LINEAR FEET OF CONTINUOUS FOOTING;
 - ONE TEST FOR EACH 1000 S.F. OF SLAB.
- FOUNDATIONS HAVE BEEN DESIGNED FOR 1,500 PSF MINIMUM ALLOWABLE SOIL BEARING PRESSURE.
- REMOVE ALL WATER SOFTENED SOILS FROM FOOTING EXCAVATIONS PRIOR TO PLACING CONCRETE. FILL REMAINING VOIDS WITH ADDITIONAL CONCRETE.
- SUPPORT ALL BOTTOM REINFORCEMENT IN FOUNDATION WITH STANDEES OR WHOLE CONCRETE BRICKS AT 48" O.C. MAX. REQUIRED CONCRETE COVER SHALL BE MAINTAINED AT ALL TIMES.
- ALL FOOTING, PIER, AND OTHER FOUNDATION REINFORCING SHALL BE TIED IN PLACE PRIOR TO POURING CONCRETE.
- WHERE FINISHED GRADES DIFFER ON OPPOSITE SIDES OF FOUNDATION WALLS, PROVIDE TEMPORARY BRACING. PREVENT LATERAL MOVEMENT UNTIL ALL ADJACENT FILLING, COMPACTION, FLOOR SLABS, AND FRAMING AT NEXT LEVEL OVER HAS BEEN COMPLETED.
- UNLESS INDICATED ON FOUNDATION PLAN, VERTICAL STEPS IN FOOTINGS TO BE MAXIMUM 2'-0" VERTICAL SPACED NO LESS THAN 4'-0" O.C. HORIZONTALLY TO MAINTAIN MINIMUM 12" COVER BELOW FINISHED EARTH GRADE.
- WHERE GRAVITY PLUMBING LINES OCCUR BELOW TOP OF WALL FOOTING, STEP FOOTING DOWN TO PROVIDE CLEARANCES INDICATED ON PLANS. COORDINATE WITH PLUMBING DRAWINGS FOR LOCATIONS, SIZES, AND INVERTS.
- CONSTRUCTION JOINTS IN CONTINUOUS FOOTINGS TO BE FORMED VERTICALLY IN ACCORDANCE WITH FOUNDATION DETAILS IN PLANS.
- PROVIDE 1/2" EXPANSION JOINT FILLER AROUND PERIMETER OF SLABS WHERE THEY ABUT VERTICAL SURFACES AND AT COLUMN ISOLATION JOINTS AS DETAILED.

SLAB ON GRADE

- APPLY AN APPROVED CURING COMPOUND CONFORMING TO ASTM C309 AFTER FINISHING THE SLAB.
- ALL WELDED WIRE FABRIC SHALL BE IN ACCORDANCE WITH ASTM A185. LAP ADJOINING PIECES AT LEAST ONE FULL MESH OR 8" MINIMUM. UNLESS OTHERWISE APPROVED, ALL WELDED WIRE FABRIC SHALL BE BLOCKED INTO POSITION INDICATED WITH PRECAST CONCRETE BLOCKS HAVING A COMPRESSIVE STRENGTH EQUAL TO THAT OF THE SLAB.
- THE USE OF POLYPROPYLENE FIBERS (IN LIEU OF WELDED WIRE FABRIC) IS PROHIBITED WITHOUT THE WRITTEN AUTHORIZATION OF THE ENGINEER.
- THE MAXIMUM SPACING OF JOINTS SHALL BE 15' OR AS SHOWN ON PLANS.
- ALL POROUS FILL MATERIAL SHALL BE A CLEAN GRANULAR MATERIAL WITH 100% PASSING 1-1/2" SIEVE AND NO MORE THAN 5% PASSING A NO. 4 SIEVE. POROUS FILL SHALL BE COMPACTED TO 95% MODIFIED PROCTOR, DRY DENSITY PER ASTM D1557.
- SLAB JOINTS SHALL BE FILLED WITH APPROVED MATERIAL. THIS SHOULD TAKE PLACE AS LATE AS POSSIBLE, PREFERABLY 4 TO 6 WEEKS AFTER THE SLAB HAS BEEN CAST. PRIOR TO FILLING, REMOVE ALL DEBRIS FROM THE SLAB JOINTS, THEN FILL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- SEE THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF DEPRESSED SLAB AREAS AND DRAINS. SLOPE SLAB TO DRAINS WHERE SHOWN.
- THE FINISH TOLERANCE OF ALL SLABS SHALL BE IN ACCORDANCE WITH ACI 301, TYPE A
- WALKWAYS AND OTHER EXTERIOR SLABS ARE NOT INDICATED ON THE STRUCTURAL DRAWINGS. SEE THE SITE PLAN AND ARCHITECTURAL DRAWINGS FOR LOCATIONS, DIMENSIONS, ELEVATIONS, JOINTING DETAILS AND FINISH DETAILS.
- CONTROL JOINT SEALANT SHALL BE SIKADUR 51 NS/SL OR APPROVED EQUAL. EXPANSION AND ISOLATION JOINT SEALANT SHALL BE SIKAFLEX 10 OR APPROVED EQUAL.

CAST-IN-PLACE REINFORCED CONCRETE

- THE FOLLOWING ACI STANDARDS (LATEST EDITION) APPLY:
 - ACI 318 - CODE
 - ACI 315 - DETAILING
 - ACI 301 - SPECIFICATIONS
 - ACI 304 - PLACING
 - ACI 347 - FORMWORK
 - ACI 211.1 - MIX PROPORTIONING
 - ACI 305 - HOT WEATHER CONCRETING
 - ACI 306 - COLD WEATHER CONCRETING
- ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE (145 PCF) WITH MIXES MEETING THE FOLLOWING CRITERIA:

STRUCTURAL ELEMENT	28 DAY COMPRESSIVE STRENGTH
FOOTINGS, GRADE BEAMS & FOUNDATION WALLS	3,000 PSI
SLAB ON GRADE	3,000 PSI
ELEVATED SLABS & BEAMS	4,000 PSI
COLUMNS	4,000 PSI

- SLUMP SHALL NOT EXCEED 5". SLUMP TESTS SHALL BE PERFORMED ON EACH TRUCK LOAD AND CONFORM TO ASTM C143.

DIMENSIONAL LUMBER FRAMING

- ALL STRUCTURAL LUMBER DESIGN SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS-2008)
- LOCATION, NUMBER, AND DIMENSIONS OF FRAMING MEMBERS SHOW GENERAL ARRANGEMENT ONLY. ACTUAL SPANS, SPACING, ETC. SHALL BE DETERMINED FROM ARCHITECTURAL DETAILS.
- SEE ARCHITECTURAL PLANS AND DETAILS FOR EDGE SECTIONS, HEADER AND LINTEL LOCATIONS, AND ALL NON-STRUCTURAL FRAMING AND TRIM.
- ALL WOOD FRAMING MATERIAL SHALL BE SURFACED DRY AND USED AT 19% MAXIMUM MOISTURE CONTENT. ALLOWABLE STRESS REQUIREMENTS OF ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE "SCHEDULE OF REQUIRED STRESS VALUES"
- ALL STUD AND WALL FRAMING SHALL BE NO. 2 GRADE SOUTHERN YELLOW PINE (SYP). "STUD" GRADE MATERIAL IS STRICTLY PROHIBITED FROM USE.
- ALL JOIST, RAFTER & MISC. FRAMING SHALL BE NO. 2 GRADE, SOUTHERN YELLOW PINE. PROVIDE FULL-DEPTH BLOCKING AT ENDS. PROVIDE FULL-DEPTH (OR METAL) BRIDGING AT MIDSPAN AND AT A MAXIMUM SPACING OF 8'-0" O.C. IN BETWEEN.
- ALL LUMBER EXPOSED TO EXTERIOR ENVIRONMENT OR IN CONTACT WITH MASONRY OR CONCRETE SHALL BE PRESSURE TREATED TO A MINIMUM RETENTION OF 0.25 LBS OF ACP PER CUBIC FOOT OF WOOD, AND EACH PIECE SHALL BEAR THE THIRD PARTY QUALITY MARK, "ABOVE GRADE USE". ALL LUMBER IN CONTACT WITH THE GROUND SHALL BE PRESSURE TREATED TO A MINIMUM RETENTION OF 0.40 LBS. OF ACP PER CUBIC FOOT OF WOOD, AND EACH PIECE SHALL BEAR THE THIRD PARTY QUALITY MARK, "GROUND CONTACT USE". REFERENCE STANDARD AWPA C2 AND ASTM D1760 FOR PRESSURE TREATMENT OF TIMBER PRODUCTS.
- WHERE POSSIBLE ALL CUTS AND HOLES SHOULD BE COMPLETED BEFORE TREATMENT. CUTS AND HOLES DUE TO ON-SITE FABRICATION SHALL BE BRUSHED WITH 2 COATS OF COPPER NAPHTHENATE SOLUTION CONTAINING A MINIMUM OF 2% METALLIC COPPER IN SOLUTION (PER AWPA STD. M4).
- THE CONTRACTOR SHALL CAREFULLY SELECT LUMBER TO BE USED IN LOAD BEARING APPLICATIONS. THE LENGTH OF SPLIT ON THE WIDE FACE OF 2" NOMINAL LOAD BEARING FRAMING SHALL BE LIMITED TO LESS THAN 1/2 OF THE WIDE FACE DIMENSION. THE LENGTH OF SPLIT ON THE WIDE FACE OF 3" (NOMINAL) AND THICKER LUMBER SHALL BE LIMITED TO 1/2 OF THE NARROW FACE DIMENSIONS.
- ALL WOOD JOISTS AND HEADERS WHICH FRAME INTO BEAMS SHALL BE SUPPORTED BY SIMPSON LUS HANGERS WITH THE SAME WIDTH AND DEPTH OF THE MEMBER, U.N.O. USE HANGERS WITH CONCEALED FLANGES WHERE THE CONNECTOR CANNOT BE HIDDEN BY WOOD TRIM OR THE SUPPORT MEMBER IS WIDER THAN THE STANDARD FLANGE.
- PROVIDE NAILING PATTERN IN COMPLIANCE WITH IBC RECOMMENDED FASTENING SCHEDULE.
- LOAD BEARING STUD WALLS SHALL BE CONTINUOUSLY BRIDGED AT MID-HEIGHT AND UNSUPPORTED PLYWOOD WALL SHEATHING JOINTS WITH SOLID WOOD BLOCKING, U.N.O.
- NO CUTS, HOLES, OR COPES IN STRUCTURAL WOOD FRAMING SHALL BE PERMITTED WITHOUT PRIOR REVIEW AND APPROVAL BY THE STRUCTURAL ENGINEER AND ARCHITECT.
- PROVIDE FULL-DEPTH BLOCKING AT ENDS OF RAFTERS AND JOISTS. PROVIDE FULL-DEPTH (OR METAL) BRIDGING AT MIDSPAN AND AT A MAXIMUM SPACING OF 8'-0" O.C. IN BETWEEN.
- STRUCTURAL STEEL PLATE CONNECTORS SHALL CONFORM TO ASTM A 36 SPECIFICATIONS AND BE 1/4" THICK UNLESS OTHERWISE INDICATED. BOLTS CONNECTING WOOD MEMBERS SHALL BE PER ASTM A 307 AND BE 3/4" DIAMETER UNLESS OTHERWISE INDICATED. PROVIDE WASHERS FOR ALL BOLT HEADS AND NUTS IN CONTACT WITH WOOD SURFACES.
- BOLT HOLES SHALL BE CAREFULLY CENTERED AND DRILLED NOT MORE THAN 1/16" LARGER THAN THE BOLT DIAMETER. BOLTED CONNECTIONS SHALL BE SNUG TIGHT BUT NOT TO THE EXTENT OF CRUSHING WOOD UNDER WASHERS.
- HOLES AND NOTCHES DRILLED OR CUT INTO WOOD FRAMING SHALL NOT EXCEED THE REQUIREMENTS OF IBC, SECTION 23.
- ALL PLATES, ANCHORS, NAILS, BOLTS, NUTS, WASHERS, AND OTHER MISCELLANEOUS HARDWARE SHALL BE HOT DIP GALVANIZED.
- ADEQUATE BRACING SHALL BE PROVIDED UNTIL PERMANENT BRACING AND/OR DIAPHRAGMS ARE INSTALLED.
- OVERLAP ALL TOP PLATES AT CORNERS.
- JOISTS IN THE DOUBLE TOP PLATES OF WALLS SHALL BE OFFSET A MINIMUM LAP LENGTH OF 4'-0" & NAILED WITH NOT LESS THAN (15) 16d FACE NAILS ON EACH SIDE OF THE JOINT.
- ALL BEAMS SHALL HAVE LATERAL SUPPORT AT THE COMPRESSION EDGE AT A MAXIMUM OF 24" O.C. AND AT BEARING POINTS, WITH A MINIMUM BEARING LENGTH OF 3 1/2".
- PROVIDE DOUBLE JOISTS OR SOLID BLOCKING AT 24" O.C. UNDER ALL PARTITIONS AND TO SUPPORT CONCENTRATED LOADS FROM FRAMING ABOVE, UNLESS NOTED OTHERWISE.
- PROVIDE DOUBLE HEADER BEAMS OF THE SAME SIZE AS JOISTS OR RAFTERS TO FRAME AROUND OPENINGS IN PLYWOOD DECK UNLESS OTHERWISE INDICATED.
- PROVIDE DOUBLE LAYER PLYWOOD UNDER ALL CERAMIC OR STONE TILE FLOORS.
- PROVIDE HEADERS, BRIDGING, CONNECTORS, BLOCKING, TRIMMERS, ETC. AS REQUIRED AND RECOMMENDED BY AITC TIMBER CONSTRUCTION STANDARDS AND IBC 2006 U.N.O.
- WOOD FRAMING MATERIALS:
 - ALL DIMENSIONAL LUMBER SHALL BE #2 SYP KD OR BETTER AND PROVIDE NOT LESS THAN THE FOLLOWING ALLOWABLE STRESSES:
 $F_b = 1,000$ PSI
 $F_c = 600$ PSI
 $E = 1,400,000$ PSI
 $F_v = 1,400$ PSI
 $F_{cp} = 565$ PSI
 - SHEATHING:
 WALLS.....APA RATED SHEATHING, EXPOSURE 1 OR EXTERIOR
 ROOF.....APA RATED SHEATHING, EXPOSURE 1, 2, OR EXTERIOR
 FLOOR.....APA RATED STURD-I-FLOOR
 - ALL BOLTS SHALL BE ASTM A307 WITH WASHERS, GALVANIZED
 - NAILS IN ACCORDANCE WITH MINIMUM NAILING REQUIREMENTS OF IBC EXCEPT WHERE NOTED IN DETAILS OR SPECIFICATIONS. ALL NAILS TO BE GALVANIZED.

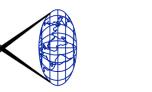
REINFORCING STEEL

- ALL REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60, UNLESS NOTED OTHERWISE.
- ALL WELDED WIRE FABRIC SHALL BE ASTM A185, 70 KSI MINIMUM YIELD STRENGTH.
- ADDITIONAL REINFORCING AND THAT QUANTITY OF REINFORCING OCCURRING AT OPENINGS SHALL BE PLACED EQUALLY EACH SIDE OF OPENINGS AS DETAILED.
- HOOKS IN REINFORCING ARE IN ADDITION TO LENGTH SHOWN.
- REINFORCING IS TO BE SUPPORTED IN FORMS AND SPACED WITH WIRE BAR SUPPORTS ACCORDING TO CRSI "PLACING REINFORCING BARS" UNLESS NOTED OTHERWISE.
- MINIMUM REINFORCING STEEL CLEAR COVERS ARE AS FOLLOWS:
 - CONCRETE CAST DIRECTLY AGAINST EARTH.....3"
 - INTERIOR SLABS.....1"
 - INTERIOR BEAMS AND COLUMNS.....1 1/2"
 - EXTERIOR BEAMS AND COLUMNS.....2"
 - EXTERIOR SLABS.....1 1/2"
- UNLESS NOTED OTHERWISE, ALL BAR REINFORCING LAP SPLICES SHALL HAVE A MINIMUM LAP LENGTH OF 48 BAR DIAMETERS.

CABLE RAIL NOTES:

- INTERMEDIATE CABLE RAILS (INFILL) FOR THE HANDRAIL SYSTEM SHALL BE 1/2" DIAMETER, 1 X 19-TYPE STAINLESS STEEL (TYPE 316) CABLES AS MANUFACTURED/ SUPPLIED BY JOHNSON ARCHITECTURE HARDWARE (C.S. JOHNSON COMPANY, INC.) OR EQUAL - ONLY AS APPROVED BY THE ENGINEER. MORE INFORMATION AND ILLUSTRATIONS FOR PRODUCTS AND INSTALLATION REQUIREMENTS CAN BE FOUND AT THE WEBSITE: WWW.CSJOHNSON.COM (CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL MANUFACTURER GUIDELINES FOR THE PROPER INSTALLATION, ATTACHMENT, AND TENSIONING OF THE CABLE RAIL SYSTEM).
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER INSTALLATION OF 1/4" DIA. STAINLESS STEEL CABLE RAILS TO ENSURE PROPER TIGHTNESS OF INDIVIDUAL CABLES AND TO PROVIDE SECURE ATTACHMENT TO THE SUPPORTING RAIL POSTS. CABLE RAILS SHALL BE INSTALLED PER MANUFACTURER'S GUIDELINES AND ADEQUATE CABLE LENGTHS SHALL BE USED, WHICH WILL ALLOW FOR FUTURE TIGHTENING/ ADJUSTMENTS BY THE CABLE RAIL SYSTEM. TERMINATION CONNECTIONS/ TURNBUCKLES SHALL BE PROVIDED AND UTILIZED BY THE CONTRACTOR FOR THIS PURPOSE. FOR THE CONTRACTOR'S REFERENCE AND CONVENIENCE, THE FOLLOWING SUPPLIER OF THE CABLE RAIL SYSTEM IS PROVIDED: CHARLESTON'S RIGGING & MARINE LOCATED IN CHARLESTON, SC. CONTRACTOR MAY USE OTHER SUPPLIER OF HIS/HER CHOICE PROVIDED THAT MATERIAL AND INSTALLATION REQUIREMENTS ARE SATISFIED. PRIOR APPROVAL MUST BE GIVEN BY THE ENGINEER FOR ANY PROPOSED ALTERNATE BRAND/SUPPLIER FOR THE STAINLESS STEEL CABLE RAIL SYSTEM.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL CABLE RAIL SPACING DOES NOT EXCEED 3 1/2".
- CONTRACTOR SHALL USE "DECK TOGGLE WITH CLASSIC TURNBUCKLE" (END CONNECTOR AND TURNBUCKLE) FOR END-OF-RUN TERMINATIONS (MAX. 40 FT. PER RUN). THE "DECK TOGGLE WITH CLASSIC TURNBUCKLE" TERMINAL SHALL BE ATTACHED BY USE OF (2) 1/4" DIA. SS (TYPE 316) DOME-HEAD THROUGH-BOLTS AT EACH CABLE (DECK TOGGLE TURNBUCKLE) TERMINAL LOCATION. USE STAINLESS STEEL ACORN NUT ON NUT AND TIGHTENING OF THE ACORN NUT. END OF DOME HEAD THROUGH-BOLT SHALL HAVE ADEQUATE THREADS EXTENDING PAST THE TERMINAL CONNECTION AT THE RAIL POST TO ALLOW FULL THREADING INTO THE ACORN NUT THROUGH-BOLT SHALL HAVE SMOOTH (DOME HEAD). USE WASHERS ON BOTH ENDS; DOME HEAD END AND ACORN NUT END. DO NOT USE LAG SCREWS OR OTHER SCREWS FOR THIS ATTACHMENT; THROUGH-BOLT ONLY.
- MAXIMUM RUN ON ANY CABLE RAIL SHALL BE 40 FT.
- CONTRACTOR SHALL TIGHTEN EACH CABLE RAIL TO 350 LBS. TENSION IN EACH CABLE - PER MANUFACTURER'S SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR USING TENSIONING TOOL AS RECOMMENDED BY THE MANUFACTURER TO ENSURE THAT PROPER TENSIONING IN CABLE IS ACHIEVED.
- MAX. ALLOWABLE SPACING FOR ALL 6" X 6" TIMBER RAIL POSTS SHALL BE 5 FT. O.C.

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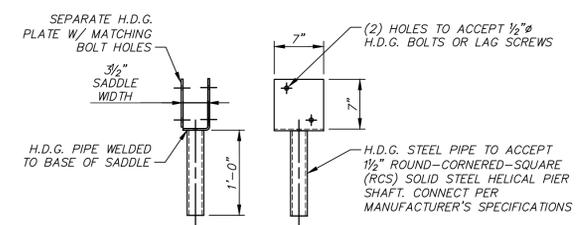
REV.	DATE	DESCRIPTION
2	11-17-2015	ADDENDUM 1
1	09-28-2015	PERMITTING COMMENTS
0	05-13-2015	PERMIT SET

SHELTER COVE
 PEDESTRIAN BRIDGE
 REPLACEMENT

STRUCTURAL NOTES

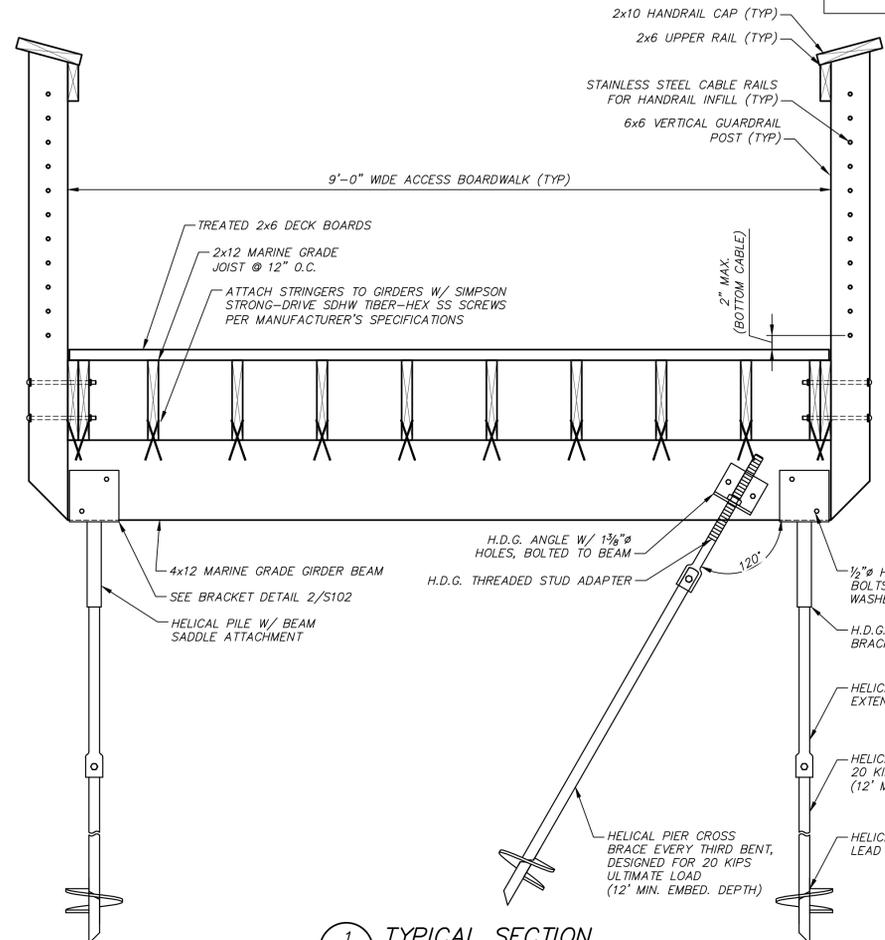
DRAWN BY:	DAI
CHECKED BY:	JRE
APPROVED BY:	JDM
DATE:	5-13-2015
SCALE:	AS NOTED
JOB No.	2015-0058
DRAWING No.	S101

NOTES:
 - ALL WOOD TO BE MARINE GRADE, U.N.O.
 - ALL STEEL IN CONTACT WITH PILES,
 TO BE HOT DIPPED GALVANIZED



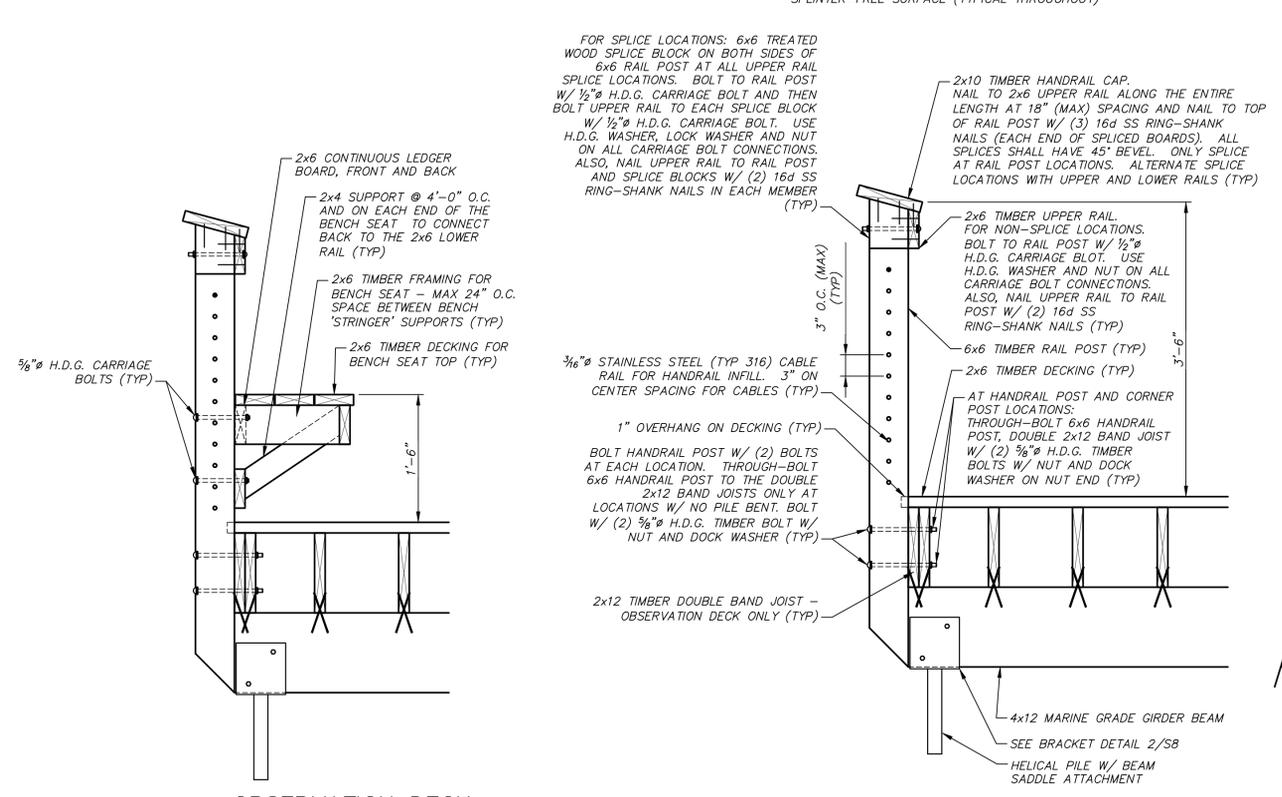
2 BRACKET DETAIL
 S102 SCALE: NOT TO SCALE

HANDRAIL CAP FINISH NOTE:
 CONTRACTOR SHALL USE A 3/8" RADIUS ROUND-OVER BIT TO CREATE A SMOOTH RADIUS EDGE ON THE FRONT AND REAR TOP EDGES OF THE HAND-RAIL CAP BOARDS. ALL CAP BOARDS SHALL ALSO BE SANDED TO RESULT IN A SMOOTH AND SPLINTER-FREE SURFACE (TYPICAL THROUGHOUT)



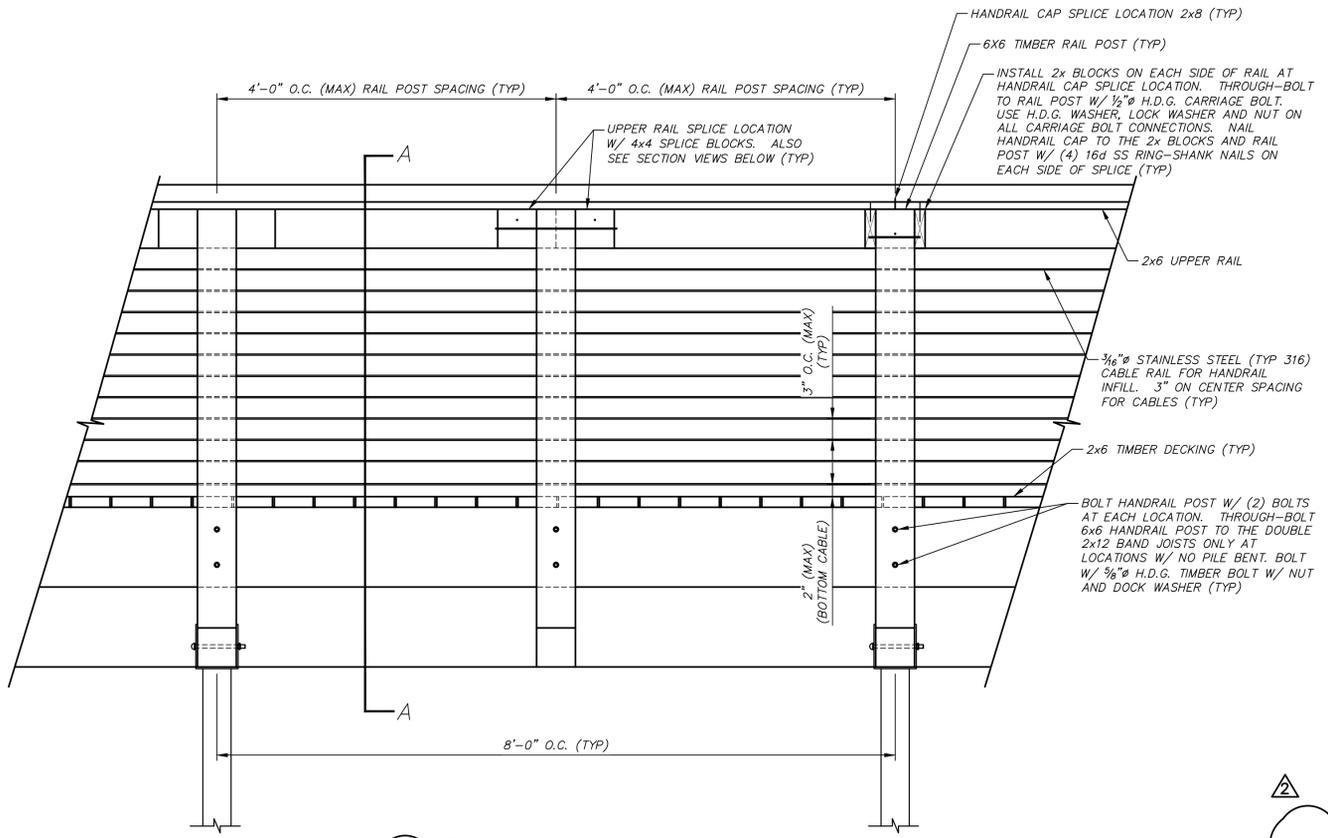
1 TYPICAL SECTION
 S102 SCALE: 1" = 1'-0"

FOR SPLICE LOCATIONS: 6x6 TREATED WOOD SPLICE BLOCK ON BOTH SIDES OF 6x6 RAIL POST AT ALL UPPER RAIL SPLICE LOCATIONS. BOLT TO RAIL POST W/ 1/2" H.D.G. CARRIAGE BOLT AND THEN BOLT UPPER RAIL TO EACH SPLICE BLOCK W/ 1/2" H.D.G. CARRIAGE BOLT. USE H.D.G. WASHER, LOCK WASHER AND NUT ON ALL CARRIAGE BOLT CONNECTIONS. ALSO, NAIL UPPER RAIL TO RAIL POST AND SPLICE BLOCKS W/ (2) 16d SS RING-SHANK NAILS IN EACH MEMBER (TYP)



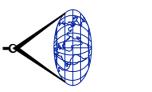
5 OBSERVATION DECK BENCH DETAIL
 S102 SCALE: NOT TO SCALE

4 SECTION A-A
 S102 SCALE: NOT TO SCALE



3 TYPICAL HANDRAIL ELEVATION VIEW
 S102 SCALE: 1" = 1'-0"

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REV.	DATE	DESCRIPTION
2	11-17-2015	ADDENDUM 1
1	08-28-2015	PERMITTING COMMENTS
0	05-13-2015	PERMIT SET

SHELTER COVE PEDESTRIAN BRIDGE REPLACEMENT
TYPICAL STRUCTURAL SECTION AND DETAILS

DRAWN BY:	DAI
CHECKED BY:	JRE
APPROVED BY:	JDM
DATE:	5-13-2015
SCALE:	AS NOTED
JOB No.	2015-0059
DRAWING No.	

S102



November 19, 2015

Reference No. 090320-29

Mr. Jeffrey Buckalew, P.E.
Town of Hilton Head Island
One Town Center Court
Hilton Head Island, South Carolina 29928

Dear Mr. Buckalew:

Re: Report of Geotechnical Exploration
Shelter Cove to Palmetto Dunes Pedestrian Underpass Bridge
Hilton Head Island, South Carolina

GHD Services Inc. (GHD) is pleased to present this letter regarding the procedures and findings of our Geotechnical Exploration for the above referenced site. Our services were performed in general conformance with Job Order No. 29 (executed November 18, 2015) of our 'Indefinite Geotechnical Engineering Services' Contract No. C35-2011 (executed February 23, 2013).

1. Project Understanding

We have received project information through telephone and email correspondence with Mr. Jeff Buckalew of the Town of Hilton Head Island on November 6, 2015. Project information provided to us included an aerial photograph of the project site with two preferred boring locations marked upon it and the 'Job Order No. 29' document. The 'Project Description' section of Job Order 29 states that "the Town wishes to construct a new pedestrian bridge connecting the pathway systems on both sides of US 278 (Bus) at Shelter Cove and Palmetto Dunes. Due to the highway bridge overhead, helical piles have been specified. The contractor, pile supplier and structural engineer will need soil information to confirm pile lengths".

The purpose of our work has been to provide soil test boring information for use by others in designing the helical pile foundations to support the proposed bridge structure.

2. Subsurface Exploration and Conditions Encountered

Two (2) soil test borings (designated B-1 and B-2) with Standard Penetration Test (SPT) sampling were advanced using mud rotary drilling procedures on November 16, 2015. Soil test borings were advanced to a depth of 75 feet below the existing ground surface. Locations of both soil test borings are shown in **Figure 1**.

Soil sampling was performed at closely spaced intervals in the upper ten feet and at five-foot intervals thereafter. During the sampling procedure, SPT tests were performed to obtain the standard penetration value of the soil. The standard penetration value (N) is defined as the number of blows of a 140-pound hammer, falling thirty inches, required to advance the split spoon sampler one foot. The sampler is lowered to the bottom of the drill hole and the number of blows recorded for each of three successive increments of six inches penetration. The "N" value is obtained by adding the second and third incremental values. The "N" values are reported on each boring log. The results of the SPT testing indicate the relative density and comparative consistency of the soils, and thereby provide a basis for estimating relative strength and compressibility of the soil profile components.

The soil samples obtained by each SPT test were initially visually classified in the field. Each sample was placed into a properly sealed and labeled container and returned to our laboratory for further evaluation and analysis. Selected samples of the soils collected from the borings were tested in our laboratory to determine their percent fines, natural moisture content, and plasticity indices.

A GHD professional developed the final log information from the field boring logs, visual review of the recovered soil samples in our laboratory, and the results of the laboratory analyses. Similar soils were grouped into strata, with each stratum described in general accordance with the nomenclature used in ASTM D 2487 (Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)). Although indicated on the boring logs as distinct changes, the transition from one soil type or stratum to another is generally gradual or may occur at slightly differing elevations than indicated between soil samples. The final boring logs are provided in **Attachment A, SPT Boring Logs**.

Groundwater was not measureable due to the drilling and sampling methods used. However, we estimate that the depth to groundwater at the soil test boring locations at the time of our explorations was approximately 6 to 7 feet below the existing ground level.

3. Closure

We appreciate the opportunity to have provided geotechnical exploration services for this project. If you have any questions or comments concerning this letter, please do not hesitate to contact us at (843) 815-5120.

Sincerely,

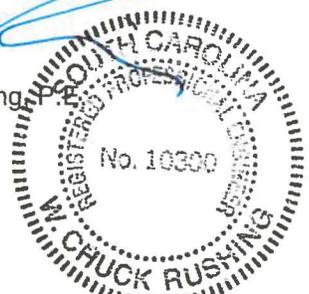
GHD



Patrick R. Jones

PJ/cr/admin

Encl.


W. Chuck Rushing

11-19-15

Attachment A

SPT Boring Logs

KEY TO SOIL CLASSIFICATION

Correlation of Penetration Resistance with Relative Density and Consistency

<u>Sands and Gravels</u>		<u>Silts and Clays</u>	
<u>No. of Blows, N</u>	<u>Relative Density</u>	<u>No. of Blows, N</u>	<u>Relative Density</u>
0 – 4	Very loose	0 – 2	Very soft
5 – 10	Loose	3 – 4	Soft
11 – 31	Medium dense	5 – 8	Firm
31 – 50	Dense	9 – 15	Stiff
Over 50	Very dense	16 – 30	Very stiff
		31 – 50	Hard
		Over 50	Very hard

Particle Size Identification (Unified Classification System)

Boulders:	Diameter exceeds 8 inches
Cobbles:	3 to 8 inches diameter
Gravel:	Coarse - 3/4 to 3 inches diameter Fine - 4.76 mm to 3/4 inch diameter
Sand:	Coarse - 2.0 mm to 4.76 mm diameter Medium - 0.42 mm to 2.0 mm diameter Fine - 0.074 mm to 0.42 mm diameter
Silt and Clay:	Less than 0.07 mm (particles cannot be seen with naked eye)

Modifiers

The modifiers provide our estimate of the amount of silt, clay or sand size particles in the soil sample.

Approximate Content	Modifiers
≤ 5%:	Trace
5% to 12%:	Slightly silty, slightly clayey, slightly sandy
12% to 30%:	Silty, clayey, sandy
30% to 50%:	Very silty, very clayey, very sandy

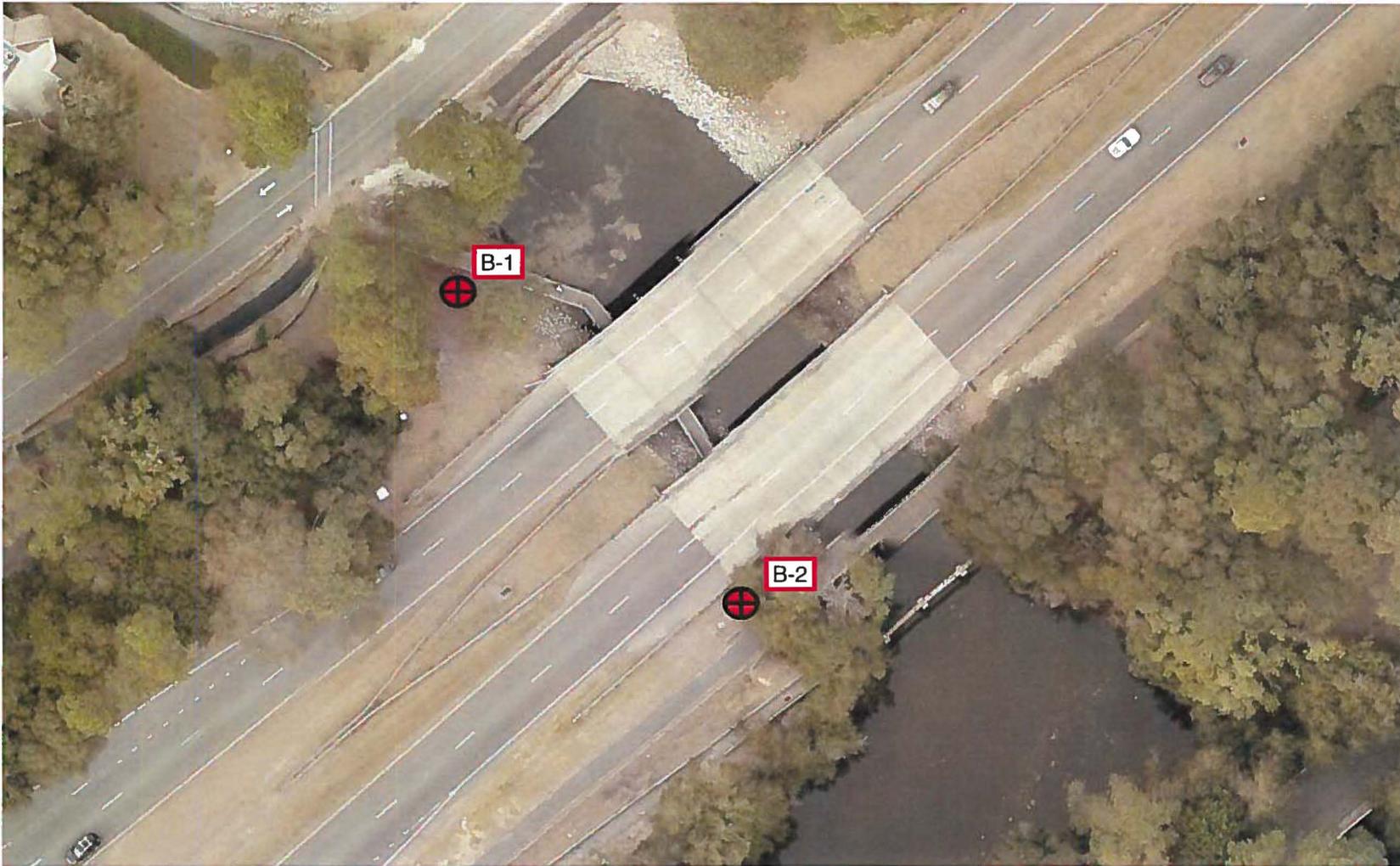
Field Moisture Description	
Saturated:	Usually liquid; very wet, usually from below the groundwater table
Wet:	Semisolid; requires drying to attain optimum moisture
Moist:	Solid; at or near optimum moisture
Dry:	Requires additional water to attain optimum moisture

PROJECT: <i>Hilton Head Island Pedestrian Bridge</i>		LOG OF BORING: <p style="text-align: center;">B-1</p>
DATE DRILLED: 11-16-15	DRILLER: GHD Services Inc	Notes:
DRILLING METHOD: Mud Rotary	BORING DEPTH: 75.0'	
WATER LEVEL:	WATER LEVEL (24-HRS):	

ANALYSIS					Depth feet	BLOW COUNTS	GROUND WATER	GRAPHIC LOG	USCS	GEOLOGIC DESCRIPTION
Moisture Content	% Passing 200 Sieve	Organic Content	Liquid Limit	Plasticity Index						
					0				SP-	Brown and tan slightly silty fine SAND
					2	N/A			SM	Tan slightly silty fine SAND
					4	N/A			SP-	
					6	5			SM	Loose tan slightly silty fine SAND
					8	7			SP-	
					10	10			SM	Loose gray clayey fine SAND
					12				SC	
					14					
					16	6				
					18					
29.7	1.5				20	16			SP	Medium dense gray fine SAND with trace clay
					22					
					24	29				
					26					
					28					
33.4	13.5				30	9			SC	Loose dark gray clayey fine SAND with trace shell fragments
					32					
					34					
					36	9			SC	Loose dark gray clayey fine SAND with trace shell fragments
					38					
					40	5			CL	Firm dark gray very sandy CLAY
					42					
					44					
					46	7			SC	Loose dark gray very clayey fine SAND
					48					
					50	4			CL	Soft dark gray sandy CLAY
					52					
					54	6			CL	Firm dark gray very sandy CLAY with shell fragments
					56					
					58					
					60	6			CL	Firm dark gray very sandy CLAY with fine sand seams
					62					
					64	36			SP-	Dense gray slightly clayey fine SAND
					66				SC	
					68					
					70	15			SC	Medium dense gray clayey fine SAND with trace shell fragments
					72					
					74	11			CL	Stiff olive very sandy CLAY
					76					Boring terminated at 75 feet
					78					

PROJECT:					LOG OF BORING:					
Hilton Head Island Pedestrian Bridge									B-2	
DATE DRILLED: 11-16-15					DRILLER: GHD Services Inc				Notes:	
DRILLING METHOD: Mud Rotary					BORING DEPTH: 75.0'					
WATER LEVEL:					WATER LEVEL (24-HRS):					
ANALYSIS					Depth feet	BLOW COUNTS	GROUND WATER	GRAPHIC LOG	USCS	GEOLOGIC DESCRIPTION
Moisture Content	% Passing 200 Sieve	Organic Content	Liquid Limit	Plasticity Index						
					0				SP-SM	Brown slightly silty fine SAND with trace fine roots
					2	N/A			SM	
					4	N/A			SM	Loose brown silty fine SAND
					6	8			SP-SM	Loose light gray slightly silty fine SAND
					8	8			SP-SM	
					10	10				
					12					
					14	7			SC	Loose gray clayey fine SAND
					16					
					18					
					20	15			SC	Medium dense gray clayey fine SAND
					22					
					24					
					26	21				
					28					
					30	2			SC	Very loose dark gray very clayey fine SAND
					32					
					34					
					36	4				
					38					
					40	7			SC	Loose dark gray clayey fine SAND with trace shell fragments
					42					
					44					(no return)
					46	6				
					48					
					50	4				
					52					
					54	8			SP-SC	Loose dark gray slightly clayey fine SAND with shell fragments
25.8	6.1				56				SP-SC	
					58					
					60	7			CL	Firm dark gray very sandy CLAY with fine sand seams
					62					
					64	37			SP-SC	Dense dark gray slightly clayey fine to medium SAND
24.9	5				66				SP-SC	
					68					
					70	93			SP-SC	Very dense gray slightly clayey fine to medium SAND
					72					
					74	9			CL	Stiff olive very sandy CLAY
					76					Boring terminated at 75 feet
					78					

Figure



NOTE: This figure is intended for the purpose of denoting our approximate exploration locations, only.



B-1 Standard Penetration Test (SPT) Boring Designation



Figure 1: Location Plan

Shelter Cove to Palmetto Dunes Pedestrian Underpass Bridge

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Date: 11-18-15

Checked By: CR
Date: 11-19-15

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