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BURK-KLEINPETER, INC.

ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS

4751 MAIN STREET, SUITE F-212

ORANGE BEACH, AL 36561

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REGIONAL VICE PRESIDENT - AL
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VICE PRESIDENT
SCOTT A. HARDY, PE



OVER 100 YEARS OF SERVICE

January 30, 2017

**RE: Perdido Pass Parking Lot and Seawall Repairs – Phase II
Addendum No. I**

TO ALL BIDDERS ON THE ABOVE REFERENCED PROJECT:

In response to the questions and comments received by Burk-Kleinpeter, Inc., the specifications for the above referenced project are hereby revised as follows:

- I. Under **Item III – Proposal Form**, replace the bid forms with the revised bid forms, attached herein. Please note that the revised bid forms include a header that states "Revised per Addendum No. I". The revised bid forms include the following changes:
 - a. Add Pay Item 999A-000, Work of Similar Nature Utilizing Bid Items and Unit Prices to be Determined by Engineer, per lump sum.
2. Under **Item XIII – Supplemental Specifications**, insert Supplemental Specification No. 999-12 – Work of Similar Nature Utilizing Bid Items and Unit Prices to be Determined by Engineer. A copy of this supplemental specification is attached herein.
3. Under **Item XIV – Special Provisions**, insert the following special provisions, attached herein.
 - a. Special Provision No. 7 – Soil Preparation
 - b. Special Provision No. 8 - Plants

In response to the questions and comments received by Burk-Kleinpeter, Inc., the plans for the above referenced project are hereby revised as follows:

- I. **Sheet 3 – Summary of Quantities** has been revised to include the following changes:
 - a. Add Pay Item 999A-000, Work of Similar Nature Utilizing Bid Items and Unit Prices to be Determined by Engineer, per lump sum.

Please find the following items attached:

- A. Pre-Bid Meeting Minutes and Sign-In Sheet
- B. Revised Bid Forms
- C. Supplemental Specification No. 999-12 – Work of Similar Nature Utilizing Bid Items and Unit Prices to be Determined by Engineer
- D. Special Provision No. 7 – Soil Preparation
- E. Special Provision No. 8 – Plants
- F. Revised Construction Plans:
 - i. Sheet 3





OVER 100 YEARS OF SERVICE

The bidders on this project will be required to fax or email a signed copy of this Addendum to Burk-Kleinpeter, Inc. (251-652-2417 or cweber@bkusa.com) prior to Tuesday, January 31, 2017 at 5:00 PM.

A copy of this entire addendum (36 pages) must be stapled to the inside front cover of the bid book. Additionally, the revised bid forms must be used in lieu of those provided in the original contract documents. If you have any questions about this addendum, please contact our office.

Sincerely,

BURK-KLEINPETER, INC.

Charles Weber, P.E.
Project Engineer

SIGNED:

Company Name

Contractor's Representative

Date



BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4751 MAIN STREET, SUITE F-212
ORANGE BEACH, ALABAMA 36561
PHONE (251) 652-2410 FAX (251) 652-2417

MEETING REPORT

Job No. OB.16.002

Meeting Date / Time: Wednesday, January 25, 2017, 10:00 AM

Job Title or Organization: Perdido Pass Parking Lot and Seawall Repairs – Phase II

Location: City of Orange Beach Municipal Complex, 4099 Orange Beach Boulevard

Participants: See attached sign in sheet.

REVISED MEETING MINUTES – JANUARY 30, 2017

General:

- This is a mandatory pre-bid conference for Perdido Pass Parking Lot and Seawall Repairs, Phase II. Attendance at this meeting qualifies a contractor as an eligible bidder (assuming appropriate license classification, etc.)
- Prime contractor must possess a Highways & Streets (HS), Municipal & Utility (MU), or a Heavy and Railroad (H/RR) Major Classification.
- Contractor shall agree to complete the work within forty-five (45) calendar days. However, substantial completion may be granted prior to the completion of landscaping or other incidental work (i.e. installation of light poles) if the contractor is unable to attain materials in a timely manner. If the lead time on materials is greater than the construction schedule provided, the contractor shall notify the Engineer in writing as soon as practical.
- **Bidders shall include the entire contract document (including any addenda) with their bid. Incomplete bid packages will be rejected.**
- All prime contractors and subcontractors must show proof of e-verification.
- The contractor awarded the project will be required to have an active City of Orange Beach business license (the fee for this license cannot be waived). A business license is not required for a contractor to bid this project.
- The contractor will be responsible for obtaining a Marine Accessory Permit and a Fill Permit from the City of Orange Beach at no cost.
- The contractor is responsible for scheduling work around weather conditions (i.e., rain, waves, rough weather, etc.)

- Contact Charles Weber or Matt Rogers for access to the site prior to the bid opening.

Project Details:

- A request has been made to ALDOT to extend Permit Number 9-2-10293, Agreement for the Cooperative Maintenance of Public ROW, to include the additional work under this phase.
- The Engineer's cost estimate for this project is between \$90,000 and \$230,000 depending on the additive alternates.
- Contractor is responsible for all BMPs.
- Some areas may have to be over-excavated due to existing conditions. This work will be paid for at unit costs.
- The contractor shall assume responsibility for any additional damage to the existing concrete pile cap caused as a result of this project.
- Material may be stockpiled on site ONLY AS APPROVED BY ALDOT, THE CITY OF ORANGE BEACH, AND THE ENGINEER.
- Fill material shall be a clean/washed white, beach sand (no staining material i.e. red clay). Material shall be approved by the Engineer prior to placement.
- Milled/removed asphalt, broken concrete, riprap and any other deleterious material will not be allowed within the upper 2' of fill material.
- The existing light poles are connected to the power at an existing electric meter located on the north side of the bridge. The City will have their electrician inspect this and confirm if power is available. However, the contractor will be responsible for all efforts and costs associated with ensuring power to the site.
- The fence designated for removal will be retained by ALDOT. The contractor shall contact Jay Palmer at (251) 937-2086 to coordinate this effort.
- The intent of spall repair is to enhance the aesthetics of the existing concrete pile cap. Additionally, the contractor shall provide a straight-line edge along the pile cap such that a consistent gap can be maintained along the proposed boardwalk.
- **Pay Item 999A-000, Work of Similar Nature Utilizing Bid Items and Unit Prices to be Determined by Engineer** will be added to the project. This is a lump sum pay item that will be paid as a percentage of the contract lump sum bid price for items used at the request of the City of Orange Beach and/or the Engineer. A supplemental specification will be provided for this item.
- **Pay Item 490D-000, Spall Repair** is a lump sum pay item which includes all labor and materials required to repair all damage found in the face of the existing concrete pile cap

including, but not limited to, chips, broken joints, bolt holes, and similar defects. Work shall be limited to the top of the concrete pile cap and the upper 24" on either side except in joints, at which work shall extend to a depth 12" below the normal water elevation (as noted on Sheet 2E of the construction plans). This work shall begin at the end of the recent repair work under Phase 1, near the limits of ALDOT right of way, and extend north toward the bridge. The following materials have been selected from ALDOT's approved materials list:

- *Pavemend VR*
 - *Set 45*
- **Additive Alternate Pay Item SP-3, Painting Concrete Pile Cap** shall include coating the top of the concrete pile cap and the upper 24" on either side. The following products have been selected from ALDOT's approved materials list:
 - *Texcote XL*
 - *Tamoseal*
- **Pay Item SP-5, New Light Poles and Heads** shall include all labor and materials (including conduit and wiring) required for the installation of the following sea turtle approved lighting items:
 - Light Pole: *LYTE-POLES #305-4012-14-D1-FINISH, 14' ROUND TAPERED ALUMINUM POLE (OR APPROVED EQUAL)*
 - Head: *USA #RZR-PLEDIII-80LED-535MA-TRUE AMBER-CREEXP-E2-VOLTAGE-FINISH (OR APPROVED EQUAL)*
- **Special Provision No. 7, Soil Preparation** will be added to the project.
- **Special Provision No. 8, Plants** will be added to the project.

Contractor Questions:

- Are there any items set up in the contract to secure the site and keep the public out during construction?
 - Pay Item 674A-000, Construction Safety Fence, is included to place a boundary around the site.
 - Also, there is an existing chain link fence around the site that the contractor is recommended to keep in-place during construction to help secure the site.
 - In addition to keeping the site secure during construction, the contractor will be expected to keep the site clean and safe at all times. A high level of public interaction and media attention is expected on this project.
- What is the approximate procurement time on the lights and how will that influence the contract time?
 - The procurement time could be up to 60 days, but the contract time is only 45 calendar days. Should the procurement of the lights exceed the contract time, the contractor will be allowed additional time in the contract to complete the work associated with the lights. However, substantial completion of all other items of work is expected within the 45 calendar day limit.

- What are the material certification requirements?
 - The contractor shall submit a sample of the borrow material for the Engineer's approval prior to use on the project.
 - An approved concrete mix design is required prior to placing any concrete.
- The plans show 2 ft of excavation. What if additional excavation is needed to remove deleterious materials?
 - There is an existing tie-back system for the seawall that varies in depth, but is close to the surface. The contractor shall be aware of this and is responsible for any damages that occur to the tie-backs due to over excavation. It is because of these tie-backs that the contractor is only required to remove the top 2 ft.

Important Dates:

- January 27, 2017 – No questions (oral or written) will be addressed after 12:00 PM.
- February 2, 2017 – Sealed bids will be received by the City of Orange Beach, 4099 Orange Beach Boulevard, Highway 161 until 11:00 AM.
- March 1, 2017 – Anticipated start date.
- April 14, 2017 – Anticipated Completion Date.

Addenda:

- **Bidders shall include the entire contract document (including any addenda) with their bid. Incomplete bid packages will be rejected.**
- The following items will be included in the Addendum No. 1:
 1. Item III – This section has been revised to include a new bid form.
 2. Item XIII – This section has been revised to include a supplemental specification for Pay Item 999A-000, Work of Similar Nature Utilizing Bid Items and Unit Prices to be Determined by the Engineer.
 3. Item XIV – This sections has been revised to include Special Provision No. 7, Soil Preparation, and Special Provision No. 8, Plants.
 4. Construction Plans – Sheet 3, Summary of Quantities, has been revised to include pay item 999A-000.

City of Orange Beach

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PRE-BID CONFERENCE SIGN-IN SHEET

Date & Time: January 25, 2017 @ 10:00 PM
 Location: Orange Beach City Hall
 Project: Perdido Pass Parking Lot and Seawall Repairs - Phase II
 Project No: 2017-0202

<u>Name</u>	<u>Company</u>	<u>Contact Information (Email/Phone/Fax)</u>
Brian Blackburn	Asphalt Services	OFFICE Phone - 251-621-9325 Fax - 251-621-9350 Email - asi@asi-gc.com
James Buck	Baldwin County Construction, Inc.	Email - bccine02@hotmail.com Phone - 251-947-7711
Josh M'Ellenney	M'Ellenney Construction Co.	352-212-2519 251-973-0030 josh@mcelkenneyconst.com
Chris Freeman	RIS Paving and Grading	251-943-2071 rspaving@gulfcoast.com
Steve Brown	Blade Construction	251-990-1050 steve@bladeconstruction.com
Scott Hardy	BKI	251-342-3888 shardy@BKUSA.com
Matt Rogers	"	
Charles Weber	"	
Renee Eberly	City of Orange Beach	251-981-6806 reberly@cityoforangebeach.com
Phillip West	City of Orange Beach	251-747-6166 pwest@cityoforangebeach.com
WADE STEVENS	C. O. B.	251-747-5510 wstevens@cityoforangebeach.com

PERDIDO PASS PARKING LOT AND SEAWALL REPAIRS - PHASE II

The following items shall be constructed in accordance with the *Alabama Department of Transportation Standard Specifications for Highway Construction*, Current, Non-metric Edition, except as modified herein:

NOTES:

1. The following unit prices shall include all labor, materials, equipment rental, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.
2. Unit prices for items that have quantities in both the base bid and any alternates shall be the same. If a unit price for an item in one of the alternates varies from the unit price for the same item found in the base bid, the unit price for the base bid will be used in calculating the total price.
3. Bidder understands that the Owner reserves the right to reject any and all bids.

*** BASE BID ***					
ITEM NUMBER	ITEM DESCRIPTION	UNIT	UNIT QUANTITY	UNIT COST	EXTENDED TOTAL
206C-026	REMOVING ASPHALT PAVEMENT	SY	600		
206D-001	REMOVING GUARDRAIL (INCLUDING POSTS)	LF	180		
206D-011	REMOVING FENCE (INCLUDING GATES)	LF	216		
206G-002	REMOVAL OF RUBBLE (RIPRAP/CONCRETE)	CY	130		
210A-000	UNCLASSIFIED EXCAVATION	CY	200		
210D-022	BORROW EXCAVATION (CLEAN SAND)	CY (TBM)	500		
243A-002	SOIL STABILIZATION GEOGRID, TYPE 3	SY	300		
301B-999	COARSE AGGREGATE BACKFILL MATERIAL (UNCRUSHED #57 STONE)	TON	5		
490D-000	SPALL REPAIR	LS	1		
600A-000	MOBILIZATION	LS	1		
610C-001	LOOSE RIPRAP, CLASS 2	TON	120		
610D-003	FILTER BLANKET, GEOTEXTILE	SY	520		
614A-000	SLOPE PAVING	CY	3		
623C-003	COMBINATION CURB & GUTTER, TYPE C (MODIFIED)	LF	340		
665O-000	TEMPORARY EROSION CONTROL	LS	1		
674A-000	CONSTRUCTION SAFETY FENCE	LF	500		

ITEM NUMBER	ITEM DESCRIPTION	UNIT	UNIT QUANTITY	UNIT COST	EXTENDED TOTAL
740A-000	TRAFFIC CONTROL SCHEME	LS	1		
770L-005	BOLLARD, COMPLETE IN PLACE	EA	1		
902A-000	6' HIGH CHAIN LINK FENCE (MATCH EXISTING, INCLUDING GATES)	LF	40		
999A-000	WORK OF SIMILAR NATURE UTILIZING BID ITEMS AND UNIT PRICES TO BE DETERMINED BY ENGINEER	LS	1	\$5,000.00	\$5,000.00
SP-1	WOODEN PEDESTRIAN BOARDWALK (COMPLETE INCL. STAIN/SEAL)	SF	325		
SP-2	REPLACE BROKEN HANDRAIL FLANGES	EA	1		
SP-3	PAINTING CONCRETE PILECAP	SF	700		
LS-1	SABAL PALMETTO / CABBAGE PALM, FG, 14-20' CT	EA	30		
TOTAL PRICE FOR BASE BID =					

*** ADDITIVE ALTERNATE NO. 1***					
ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY		
770L-005	BOLLARD, COMPLETE IN PLACE	EA	2		
SP-1	WOODEN PEDESTRIAN BOARDWALK (COMPLETE INCL. STAIN/SEAL)	SF	2490		
TOTAL PRICE FOR ADDITIVE ALTERNATE NO. 1 =					

*** ADDITIVE ALTERNATE NO. 2***					
ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY		
SP-4	RESETTING CONCRETE PEDESTAL	EA	1		
SP-5	NEW LIGHT POLES AND HEADS (COMPLETE)	EA	6		
TOTAL PRICE FOR ADDITIVE ALTERNATE NO. 2 =					

*** ADDITIVE ALTERNATE NO. 3***					
ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY		

ITEM NUMBER	ITEM DESCRIPTION	UNIT	UNIT QUANTITY	UNIT COST	EXTENDED TOTAL
206C-026	REMOVING ASPHALT PAVEMENT	SY	500		
206D-001	REMOVING GUARDRAIL (INCLUDING POSTS)	LF	55		
206D-011	REMOVING FENCE (INCLUDING GATES)	LF	174		
206G-002	REMOVAL OF RUBBLE (RIPRAP/CONCRETE)	CY	150		
210A-000	UNCLASSIFIED EXCAVATION	CY	250		
210D-022	BORROW EXCAVATION (CLEAN SAND)	CY (TBM)	450		
243A-002	SOIL STABILIZATION GEOGRID, TYPE 3	SY	190		
301B-999	COARSE AGGREGATE BACKFILL MATERIAL (UNCRUSHED #57 STONE)	TON	5		
490D-000	SPALL REPAIR	LS	1		
610C-001	LOOSE RIPRAP, CLASS 2	TON	35		
610D-003	FILTER BLANKET, GEOTEXTILE	SY	280		
614A-000	SLOPE PAVING	CY	1		
623C-003	COMBINATION CURB & GUTTER, TYPE C (MODIFIED)	LF	145		
674A-000	CONSTRUCTION SAFETY FENCE	LF	300		
SP-3	PAINTING CONCRETE PILE CAP	SF	500		
TOTAL PRICE FOR ADDITIVE ALTERNATE NO. 3 =					

*** ADDITIVE ALTERNATE NO. 4***					
ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY		
770L-005	BOLLARD, COMPLETE IN PLACE	EA	1		
SP-1	WOODEN PEDESTRIAN BOARDWALK (COMPLETE INCL. STAIN/SEAL)	SF	1120		
TOTAL PRICE FOR ADDITIVE ALTERNATE NO. 4 =					

Supplemental Specification No. 999-12

The Alabama Department of Transportation Standard Specifications for Highway Construction, 2012 Edition, is hereby amended as follows:

Add the following:

SECTION 999 WORK OF SIMILAR NATURE UTILIZING BID ITEMS AND UNIT PRICES TO BE DETERMINED BY ENGINEER

999.01 Description.

This section specifies administrative and procedural requirements governing handling and processing work of similar nature utilizing bid items and unit prices to be determined by Engineer. This has been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation.

999.02 Materials.

All materials furnished for use shall comply with the appropriate requirements of the Alabama Department of Transportation Standard Specifications for Highway Construction, 2012 Edition or as specified by the Project Engineer or the City of Orange Beach.

999.03 Construction Requirements.

(a) EQUIPMENT.

The equipment used for installation of this item of work shall be approved by the engineer prior to beginning work on this pay item.

999.04 Method of Measurement.

All work shall be measured, complete in place, in accordance with the appropriate section of the Alabama Department of Transportation Standard Specifications for Highway Construction, 2012 Edition or as specified by the Project Engineer or the City of Orange Beach.

999.05 Basis of Payment.

(a) UNIT PRICE COVERAGE.

The item of Work of Similar Nature Utilizing Bid Items and Unit Prices to be Determined by Engineer, measured as noted above, will be paid for at a percentage of the contract lump sum price bid. This percentage will be calculated as follows:

$$\frac{\text{Value of work performed (in dollars)}}{\text{Lump sum value of pay item (in dollars)}} = \text{Amount payable (in percent)}$$

(b) PAYMENT SHALL BE MADE UNDER ITEM NO.:

999A-000, Work of Similar Nature Utilizing Bid Items and Unit Prices to be Determined by Engineer – per lump sum

SPECIAL PROVISION NO. 7

SECTION 329113 - SOIL PREPARATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

- A. Section includes planting soils specified by composition of the mixes.
- B. Related Requirements:
 - 1. Section 329300 "Plants" for placing planting soil for plantings.

1.3 ALLOWANCES

- A. Preconstruction and field quality-control testing are part of testing and inspecting allowance.

1.4 UNIT PRICES

- A. Work of this Section is affected by unit prices specified in Section 012200 "Unit Prices."

1.5 DEFINITIONS

- A. AAPFCO: Association of American Plant Food Control Officials.
- B. Backfill: The earth used to replace or the act of replacing earth in an excavation. This can be amended or unamended soil as indicated.
- C. CEC: Cation exchange capacity.
- D. Compost: The product resulting from the controlled biological decomposition of organic material that has been sanitized through the generation of heat and stabilized to the point that it is beneficial to plant growth.
- E. Duff Layer: A surface layer of soil, typical of forested areas, that is composed of mostly decayed leaves, twigs, and detritus.

- F. NAPT: North American Proficiency Testing Program. An SSSA program to assist soil-, plant-, and water-testing laboratories through interlaboratory sample exchanges and statistical evaluation of analytical data.
- G. Organic Matter: The total of organic materials in soil exclusive of undecayed plant and animal tissues, their partial decomposition products, and the soil biomass; also called "humus" or "soil organic matter."
- H. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified as specified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- I. RCRA Metals: Hazardous metals identified by the EPA under the Resource Conservation and Recovery Act.
- J. SSSA: Soil Science Society of America.
- K. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
- L. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.
- M. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil"; but in disturbed areas such as urban environments, the surface soil can be subsoil.
- N. USCC: U.S. Composting Council.

1.6 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.7 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include recommendations for application and use.
 - 2. Include test data substantiating that products comply with requirements.
 - 3. Include sieve analyses for aggregate materials.
 - 4. Material Certificates: For each type of soil amendment and fertilizer before delivery to the site, according to the following:
 - a. Manufacturer's qualified testing agency's certified analysis of standard products.
 - b. Analysis of fertilizers, by a qualified testing agency, made according to AAPFCO methods for testing and labeling and according to AAPFCO's SUIP #25.

- c. Analysis of nonstandard materials, by a qualified testing agency, made according to SSSA methods, where applicable.
- B. Samples: For each bulk-supplied material, 1-quart volume of each in sealed containers labeled with content, source, and date obtained. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of composition, color, and texture.

1.8 INFORMATIONAL SUBMITTALS

- A. Preconstruction Test Reports: For preconstruction soil analyses specified in "Preconstruction Testing" Article.
- B. Field quality-control reports.

1.9 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An independent, state-operated, or university-operated laboratory; experienced in soil science, soil testing, and plant nutrition; with the experience and capability to conduct the testing indicated; and that specializes in types of tests to be performed.
 - 1. Laboratories: Subject to compliance with requirements, provide testing by one of the following:
 - a. AU Soil Testing Lab, ALFA Building, 961 S. Donahue Drive, Auburn University, AL 36849-5411, Telephone: (334) 844-3958, Fax (334) 844-4001, <http://www.aces.edu/anr/soillab/>.
 - b. Or approved equal.
 - 2. Multiple Laboratories: At Contractor's option, work may be divided among qualified testing laboratories specializing in physical testing, chemical testing, and fertility testing.

1.10 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction soil analyses on existing, on-site soil.
 - 1. Notify Engineer seven days in advance of the dates and times when laboratory samples will be taken.
- B. Preconstruction Soil Analyses: For each unamended soil type, perform testing on soil samples and furnish soil analysis and a written report containing soil-amendment and fertilizer recommendations by a qualified testing agency performing the testing according to "Soil-Sampling Requirements" and "Testing Requirements" articles.
 - 1. Have testing agency identify and label samples and test reports according to sample collection and labeling requirements.

1.11 SOIL-SAMPLING REQUIREMENTS

- A. General: Extract soil samples according to requirements in this article.
- B. Sample Collection and Labeling: Have samples taken and labeled by Contractor in presence of Engineer under the direction of the testing agency.
 - 1. Number and Location of Samples: Minimum of eight representative soil samples where directed by Engineer for each soil to be used or amended for landscaping purposes.
 - 2. Procedures and Depth of Samples: According to USDA-NRCS's "Field Book for Describing and Sampling Soils."
 - 3. Division of Samples: Split each sample into two, equal parts. Send half to the testing agency and half to Owner for its records.
 - 4. Labeling: Label each sample with the date, location keyed to a site plan or other location system, visible soil condition, and sampling depth.

1.12 TESTING REQUIREMENTS

- A. General: Perform tests on soil samples according to requirements in this article.
- B. Physical Testing:
 - 1. Soil Texture: Soil-particle, size-distribution analysis by one of the following methods according to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods":
 - a. Sieving Method: Report sand-gradation percentages for very coarse, coarse, medium, fine, and very fine sand; and fragment-gradation (gravel) percentages for fine, medium, and coarse fragments; according to USDA sand and fragment sizes.
 - b. Hydrometer Method: Report percentages of sand, silt, and clay.
 - 2. Total Porosity: Calculate using particle density and bulk density according to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods."
 - 3. Water Retention: According to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods."
 - 4. Saturated Hydraulic Conductivity: According to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods"; at 85% compaction according to ASTM D 698 (Standard Proctor).
- C. Chemical Testing:
 - 1. CEC: Analysis by sodium saturation at pH 7 according to SSSA's "Methods of Soil Analysis - Part 3- Chemical Methods."
 - 2. Metals Hazardous to Human Health: Test for presence and quantities of RCRA metals including aluminum, arsenic, barium, copper, cadmium, chromium, cobalt, lead, lithium, and vanadium. If RCRA metals are present, include recommendations for corrective action.

3. Phytotoxicity: Test for plant-available concentrations of phytotoxic minerals including aluminum, arsenic, barium, cadmium, chlorides, chromium, cobalt, copper, lead, lithium, mercury, nickel, selenium, silver, sodium, strontium, tin, titanium, vanadium, and zinc.
- D. Fertility Testing: Soil-fertility analysis according to standard laboratory protocol of SSSA NAPT SERA-6, including the following:
1. Percentage of organic matter.
 2. CEC, calcium percent of CEC, and magnesium percent of CEC.
 3. Soil reaction (acidity/alkalinity pH value).
 4. Buffered acidity or alkalinity.
 5. Nitrogen ppm.
 6. Phosphorous ppm.
 7. Potassium ppm.
 8. Manganese ppm.
 9. Manganese-availability ppm.
 10. Zinc ppm.
 11. Zinc availability ppm.
 12. Copper ppm.
 13. Sodium ppm and sodium absorption ratio.
 14. Soluble-salts ppm.
 15. Presence and quantities of problem materials including salts and metals cited in the Standard protocol. If such problem materials are present, provide additional recommendations for corrective action.
 16. Other deleterious materials, including their characteristics and content of each.
- E. Organic-Matter Content: Analysis using loss-by-ignition method according to SSSA's "Methods of Soil Analysis - Part 3- Chemical Methods."
- F. Recommendations: Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated to produce satisfactory planting soil suitable for healthy, viable plants indicated. Include, at a minimum, recommendations for nitrogen, phosphorous, and potassium fertilization, and for micronutrients.
1. Fertilizers and Soil Amendment Rates: State recommendations in weight per 1000 sq. ft. for 6-inch depth of soil.
 2. Soil Reaction: State the recommended liming rates for raising pH or sulfur for lowering pH according to the buffered acidity or buffered alkalinity in weight per 1000 sq. ft. for 6-inch depth of soil.

1.13 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and compliance with state and Federal laws if applicable.
- B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Do not move or handle materials when they are wet or frozen.
4. Accompany each delivery of bulk fertilizers and soil amendments with appropriate certificates.

PART 2 - PRODUCTS

2.1 PLANTING SOILS SPECIFIED BY COMPOSITION

- A. General: Soil amendments, fertilizers, and rates of application specified in this article are guidelines that may need revision based on testing laboratory's recommendations after preconstruction soil analyses are performed.
- B. Planting-Soil Type A: Existing, on-site surface soil, with the duff layer, if any, retained; and stockpiled on-site; modified to produce viable planting soil. Blend existing, on-site surface soil with the following soil amendments and fertilizers in the following quantities to produce planting soil:
 1. Ratio of Loose Compost to Soil: 1:3 by volume.
 2. Weight of Commercial Fertilizer: 1 lb. per 1000 sq. ft. per 6 inches of soil depth.
 3. Weight of Slow-Release Fertilizer: 1 per 1000 sq. ft. per 6 inches of soil depth.

2.2 ORGANIC SOIL AMENDMENTS

- A. Compost: Well-composted, stable, and weed-free organic matter produced by composting feedstock, and bearing USCC's "Seal of Testing Assurance," and as follows:
 1. Feedstock: Limited to leaves.
 2. Reaction: pH of 5.5 to 8.
 3. Soluble-Salt Concentration: Less than 4 dS/m.
 4. Moisture Content: 35 to 55 percent by weight.
 5. Organic-Matter Content: 50 to 60 percent of dry weight.
 6. Particle Size: Minimum of 98 percent passing through a 2-inch sieve.

2.3 FERTILIZERS

- A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified testing agency.
- B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
 1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified testing agency.

PART 3 - EXECUTION

3.1 GENERAL

- A. Place planting soil and fertilizers according to requirements in other Specification Sections.
- B. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in planting soil.
- C. Proceed with placement only after unsatisfactory conditions have been corrected.

3.2 PREPARATION OF UNAMENDED, ON-SITE SOIL BEFORE AMENDING

- A. Excavation: Excavate soil from designated area(s) to a depth of 6 inches and stockpile until amended.
- B. Unacceptable Materials: Clean soil of concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials that are harmful to plant growth.
- C. Unsuitable Materials: Clean soil to contain a maximum of 8 percent by dry weight of stones, roots, plants, sod, clay lumps, and pockets of coarse sand.

3.3 PLACING AND MIXING PLANTING SOIL OVER EXPOSED SUBGRADE

- A. General: Apply and mix unamended soil with amendments on-site to produce required planting soil. Do not apply materials or till if existing soil or subgrade is frozen, muddy, or excessively wet.
- B. Subgrade Preparation: Using a spading tiller, cultivate subgrade to a minimum depth of 4 inches. Remove stones larger than 1-1/2 inches in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
 1. Apply, add soil amendments, and mix approximately half the thickness of unamended soil over prepared, loosened subgrade according to "Mixing" Paragraph below. Mix thoroughly into top 2 inches of subgrade. Spread remainder of planting soil.

- C. Mixing: Spread unamended soil to total depth of 6 inches , but not less than required to meet finish grades after mixing with amendments and natural settlement. Do not spread if soil or subgrade is frozen, muddy, or excessively wet.
 - 1. Amendments: Apply soil amendments, except compost, and fertilizer, if required, evenly on surface, and thoroughly blend them with unamended soil to produce planting soil.
 - a. Mix fertilizer with planting soil no more than seven days before planting.
 - 2. Lifts: Apply and mix unamended soil and amendments in lifts not exceeding 8 inches in loose depth for material compacted by compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- D. Compaction: Compact each blended lift of planting soil to 75 to 82 percent of maximum Standard Proctor density according to ASTM D 698 and tested in-place.
- E. Finish Grading: Grade planting soil to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

3.4 BLENDING PLANTING SOIL IN PLACE

- A. General: Mix amendments with in-place, unamended soil to produce required planting soil. Do not apply materials or till if existing soil or subgrade is frozen, muddy, or excessively wet.
- B. Preparation: Till unamended, existing soil in planting areas to a minimum depth of 8 inches . Remove stones larger than 2 inches in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
- C. Mixing: Apply soil amendments and fertilizer, if required, evenly on surface, and thoroughly blend them into full depth of unamended, in-place soil to produce planting soil.
 - 1. Mix fertilizer with planting soil no more than seven days before planting.
- D. Compaction: Compact blended planting soil to 75 to 82 percent of maximum Standard Proctor density according to ASTM D 698.
- E. Finish Grading: Grade planting soil to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

3.5 APPLYING COMPOST TO SURFACE OF PLANTING SOIL

- A. Application: Apply compost component of planting-soil mix to surface of in-place planting soil. Do not apply materials or till if existing soil or subgrade is frozen, muddy, or excessively wet.
- B. Finish Grading: Grade surface to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

- B. Perform the following tests:
 - 1. Compaction: Test planting-soil compaction after placing each lift and at completion using a densitometer or soil-compaction meter calibrated to a reference test value based on laboratory testing according to ASTM D 698. Space tests at no less than one for each 2000 sq. ft. of in-place soil or part thereof.
- C. Soil will be considered defective if it does not pass tests.
- D. Prepare test reports.
- E. Label each sample and test report with the date, location keyed to a site plan or other location system, visible conditions when and where sample was taken, and sampling depth.

3.7 PROTECTION

- A. Protection Zone: Identify protection zones according to Section 015639 "Temporary Tree and Plant Protection."
- B. Protect areas of in-place soil from additional compaction, disturbance, and contamination. Prohibit the following practices within these areas except as required to perform planting operations:
 - 1. Storage of construction materials, debris, or excavated material.
 - 2. Parking vehicles or equipment.
 - 3. Vehicle traffic.
 - 4. Foot traffic.
 - 5. Erection of sheds or structures.
 - 6. Impoundment of water.
 - 7. Excavation or other digging unless otherwise indicated.
- C. If planting soil or subgrade is overcompacted, disturbed, or contaminated by foreign or deleterious materials or liquids, remove the planting soil and contamination; restore the subgrade as directed by Engineer and replace contaminated planting soil with new planting soil.

3.8 CLEANING

- A. Protect areas adjacent to planting-soil preparation and placement areas from contamination. Keep adjacent paving and construction clean and work area in an orderly condition.
- B. Remove surplus soil and waste material including excess subsoil, unsuitable materials, trash, and debris and legally dispose of them off Owner's property unless otherwise indicated.
 - 1. Dispose of excess subsoil and unsuitable materials on-site where directed by Owner.

END OF SECTION 329113

SPECIAL PROVISION NO. 8

SECTION 329300 - PLANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Plants.
 - 2. Planting soils.
 - 3. Tree stabilization.
 - 4. Landscape edgings.

- B. Related Sections:

- 1. Section 329113 "Soil Preparation" for existing and planting soil analysis and preparation.

1.3 UNIT PRICES

- A. Work of this Section is affected by unit prices specified in the Supplemental Specifications.

- 1. Unit prices apply to authorized work covered by quantity allowances.
 - 2. Unit prices apply to additions to and deletions from Work as authorized by Change Orders.

1.4 DEFINITIONS

- A. Backfill: The earth used to replace or the act of replacing earth in an excavation.
- B. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown, with ball size not less than diameter and depth recommended by ANSI Z60.1 for type and size of plant required; wrapped with burlap, tied, rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI Z60.1.

- C. Balled and Potted Stock: Plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is not less than diameter and depth recommended by ANSI Z60.1 for type and size of plant required.
- D. Bare-Root Stock: Plants with a well-branched, fibrous-root system developed by transplanting or root pruning, with soil or growing medium removed, and with not less than minimum root spread according to ANSI Z60.1 for type and size of plant required.
- E. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.
- F. Finish Grade: Elevation of finished surface of planting soil.
- G. Pests: Living organisms that occur where they are not desired, or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- H. Planting Area: Areas to be planted.
- I. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- J. Plant; Plants; Plant Material: These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.
- K. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.
- L. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.
- M. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
- N. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- O. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated, including soils.

1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.
2. Plant Photographs: Include color photographs in digital format of each required species and size of plant material as it will be furnished to the Project. Take photographs from an angle depicting true size and condition of the typical plant to be furnished. Include a scale rod or other measuring device in each photograph. For species where more than 20 plants are required, include a minimum of three photographs showing the average plant, the best quality plant, and the worst quality plant to be furnished. Identify each photograph with the full scientific name of the plant, plant size, and name of the growing nursery.

B. Samples for Verification: For each of the following:

1. Organic Mulch: 1-pint volume of each organic mulch required; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture, and organic makeup.
2. Edging Materials and Accessories: Manufacturer's standard size, to verify color selected.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified landscape Installer. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.
- B. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:
 1. Manufacturer's certified analysis of standard products.
 2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.
- C. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of plants during a calendar year. Submit before start of required maintenance periods.
- D. Warranty: Sample of special warranty.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful establishment of plants.
 1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
 2. Experience: Five years' experience in landscape installation.

3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 4. Personnel Certifications: Installer's personnel assigned to the Work shall have certification in one of the following categories from the Professional Landcare Network:
 - a. Certified Landscape Technician - Exterior, with installation specialty area(s), designated CLT-Exterior.
 - b. Certified Ornamental Landscape Professional, designated COLP.
- B. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.
- C. Measurements: Measure according to ANSI Z60.1, typical, or Florida Grades & Standards, if referenced. Do not prune to obtain required sizes.
1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements 6 inches above the root flare for trees up to 4-inch caliper size, and 12 inches above the root flare for larger sizes.
 2. Other Plants: Measure with stems, petioles, and foliage in their normal position.
- D. Plant Material Observation: Engineer may observe plant material either at place of growth or at site before planting for compliance with requirements for genus, species, variety, cultivar, size, and quality. Engineer retains right to observe trees and shrubs further for size and condition of balls and root systems, pests, disease symptoms, injuries, and latent defects and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.
1. Notify Engineer of sources of planting materials seven days in advance of delivery to site.
- E. Preinstallation Conference: Conduct conference at Project site.
- 1.8 DELIVERY, STORAGE, AND HANDLING
- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws if applicable.
- B. Bulk Materials:
1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.

- C. Deliver bare-root stock plants freshly dug. Immediately after digging up bare-root stock, pack root system in wet straw, hay, or other suitable material to keep root system moist until planting.
- D. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.
- E. Handle planting stock by root ball.
- F. Store bulbs, corms, and tubers in a dry place at 60 to 65 deg F until planting.
- G. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.
 - 1. Heel-in bare-root stock. Soak roots that are in dry condition in water for two hours. Reject dried-out plants.
 - 2. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
 - 3. Do not remove container-grown stock from containers before time of planting.
 - 4. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly-wet condition.

1.9 PROJECT CONDITIONS

- A. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.
- B. Interruption of Existing Services or Utilities: Do not interrupt services or utilities to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary services or utilities according to requirements indicated:
 - 1. Notify Owner no fewer than two days in advance of proposed interruption of each service or utility.
 - 2. Do not proceed with interruption of services or utilities without Owner's written permission.
- C. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.

- D. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.
- E. Coordination with Turf Areas (Lawns): Plant trees, shrubs, and other plants after finish grades are established and before planting turf areas unless otherwise indicated.
 - 1. When planting trees, shrubs, and other plants after planting turf areas, protect turf areas, and promptly repair damage caused by planting operations.

1.10 WARRANTY

- A. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner, or incidents that are beyond Contractor's control.
 - b. Structural failures including plantings falling or blowing over.
 - c. Faulty performance of tree stabilization.
 - d. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 2. Warranty Periods from Date of Substantial Completion:
 - a. Trees, Shrubs, Vines, and Ornamental Grasses: 12 months.
 - b. Ground Covers, Biennials, Perennials, and Other Plants: 12 months.
 - c. Annuals: Three months.
 - 3. Include the following remedial actions as a minimum:
 - a. Immediately remove dead plant and replace unless required to plant in the succeeding planting season.
 - b. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
 - c. A limit of one replacement of each plant will be required except for losses or replacements due to failure to comply with requirements.
 - d. Provide extended warranty for period equal to original warranty period, for replaced plant material.

1.11 MAINTENANCE SERVICE

- A. Initial Maintenance Proposal: From Installer to Owner and/or Bid Administrator, in the form of a standard yearly (or other period) maintenance agreement as an addendum to Bid Proposal or Bid Form if not requested otherwise in bidding documents, starting on date that

maintenance begins as defined in this Section. State services, obligations, conditions, and terms for agreement period and for future renewal options.

- B. Initial Maintenance Service for Trees and Shrubs: Provide maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established but for not less than maintenance period below.
 - 1. Maintenance Period: 12 months from date of Substantial Completion.
- C. Initial Maintenance Service for Ground Cover and Other Plants: Provide maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established but for not less than maintenance period below.
 - 1. Maintenance Period: Six months from date of Substantial Completion.
- D. Continuing Maintenance Proposal: From Installer to Owner, in the form of a standard yearly (or other period) maintenance agreement, starting on date initial maintenance service is concluded. State services, obligations, conditions, and terms for agreement period and for future renewal options.

PART 2 - PRODUCTS

2.1 PLANT MATERIAL

- A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant Schedule or Plant Legend shown on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.
 - 1. Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch in diameter; or with stem girdling roots will be rejected.
 - 2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.
- B. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to Engineer, with a proportionate increase in size of roots or balls.
- C. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which shall begin at root flare according to ANSI Z60.1. Root flare shall be visible before planting.

- D. Labeling: Label at least one plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant as shown on Drawings.
- E. If formal arrangements or consecutive order of plants is shown on Drawings, select stock for uniform height and spread, and number the labels to assure symmetry in planting.

2.2 PLANTING SOILS

- A. Planting Soil: Refer to Section "329113 - Soil Preparation" for planting soil information.

2.3 MULCHES

- A. Organic Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:
 - 1. Type: Longleaf pine needles.
 - 2. Color: Natural.

2.4 TREE STABILIZATION MATERIALS

- A. Stakes and Guys:
 - 1. Upright and Guy Stakes: Rough-sawn, sound, new hardwood, free of knots, holes, cross grain, and other defects, 2-by-2-inch nominal by length indicated, pointed at one end.
 - 2. Guys and Tie Wires: ASTM A 641/A 641M, Class 1, galvanized-steel wire, two-strand, twisted, 0.106 inch in diameter.
 - 3. Tree-Tie Webbing: UV-resistant polypropylene or nylon webbing with brass grommets.
 - 4. Guy Cables: Five-strand, 3/16-inch-diameter, galvanized-steel cable, with zinc-coated compression springs, a minimum of 3 inches long, with two 3/8-inch galvanized eyebolts.
 - 5. Flags: Standard surveyor's plastic flagging tape, white, 6 inches long.
 - 6. Proprietary Staking-and-Guying Devices: Proprietary stake and adjustable tie systems to secure each new planting by plant stem; sized as indicated and per manufacturer's written recommendations.
- B. Root-Ball Stabilization Materials:
 - 1. Upright Stakes and Horizontal Hold-Down: Rough-sawn, sound, new hardwood or softwood, free of knots, holes, cross grain, and other defects, 2-by-2-inch nominal by length indicated; stakes pointed at one end.
 - 2. Wood Screws: ASME B18.6.1.
 - 3. Proprietary Root-Ball Stabilization Devices: Proprietary at- or below-grade stabilization systems to secure each new planting by root ball; sized per manufacturer's written recommendations unless otherwise indicated.

- C. Palm Bracing: Battens or blocks, struts, straps, and protective padding as indicated.
 - 1. Battens or Blocks and Struts: Rough-sawn, sound, new hardwood or softwood, free of knots, holes, cross grain, and other defects, 2-by-4-inch nominal by lengths indicated.
 - 2. Straps: Adjustable steel or plastic package banding straps.
 - 3. Padding: Burlap.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive plants for compliance with requirements and conditions affecting installation and performance.
 - 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 - 2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
 - 3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 - 4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Engineer and replace with new planting soil.

3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- C. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Engineer's acceptance of layout before excavating or planting. Make minor adjustments as required.
- D. Lay out plants at locations directed by Engineer. Stake locations of individual trees and shrubs and outline areas for multiple plantings.

3.3 PLANTING AREA ESTABLISHMENT

- A. Loosen subgrade of planting areas to a minimum depth of 6 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
 - 1. spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil.
 - 2. Spread planting soil to a depth of 6 inches but not less than required to meet finish grades after natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
- B. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.
- C. Before planting, obtain Engineer's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 EXCAVATION FOR TREES AND SHRUBS

- A. Planting Pits and Trenches: Excavate circular planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are not acceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.
 - 1. Excavate approximately three times as wide as ball diameter for balled and burlapped stock.
 - 2. Excavate at least 12 inches wider than root spread and deep enough to accommodate vertical roots for bare-root stock.
 - 3. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
 - 4. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
 - 5. Do not excavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
 - 6. Maintain supervision of excavations during working hours.
 - 7. Keep excavations covered or otherwise protected after working hours.
 - 8. If drain tile is shown on Drawings or required under planting areas, excavate to top of porous backfill over tile.
- B. Subsoil and topsoil removed from excavations may be used as planting soil.
- C. Obstructions: Notify Engineer if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.

1. Hardpan Layer: Drill 6-inch-diameter holes, 24 inches apart, into free-draining strata or to a depth of 10 feet, whichever is less, and backfill with free-draining material.
- D. Drainage: Notify Engineer if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.
- E. Fill excavations with water and allow to percolate away before positioning trees and shrubs.

3.5 TREE, SHRUB, AND VINE PLANTING

- A. Before planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.
- B. Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.
- C. Set balled and burlapped stock plumb and in center of planting pit or trench with root flare 1 inch above adjacent finish grades.
 1. Use native soils for backfill.
 2. After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
 3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
 4. Continue backfilling process. Water again after placing and tamping final layer of soil.
- D. Set container-grown stock plumb and in center of planting pit or trench with root flare 1 inch above adjacent finish grades.
 1. Use native soils for backfill.
 2. Carefully remove root ball from container without damaging root ball or plant.
 3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
 4. Continue backfilling process. Water again after placing and tamping final layer of soil.
- E. When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.

3.6 TREE, SHRUB, AND VINE PRUNING

- A. Prune, thin, and shape trees, shrubs, and vines as directed by Engineer.

- B. Do not apply pruning paint to wounds.

3.7 TREE STABILIZATION

- A. Install trunk stabilization as follows unless otherwise indicated:

1. Upright Staking and Tying: Stake trees of 2- through 5-inch caliper. Stake trees of less than 2-inch caliper only as required to prevent wind tip out. Use a minimum of two stakes of length required to penetrate at least 18 inches below bottom of backfilled excavation and to extend one-third of trunk height above grade. Set vertical stakes and space to avoid penetrating root balls or root masses.
2. Use two stakes for trees up to 12 feet high and 2-1/2 inches or less in caliper; three stakes for trees less than 14 feet high and up to 4 inches in caliper. Space stakes equally around trees.
3. Support trees with bands of flexible ties at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.
4. Support trees with two strands of tie wire, connected to the brass grommets of tree-tie webbing at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.

- B. Staking and Guying: Stake and guy trees more than 14 feet in height and more than 3 inches in caliper unless otherwise indicated. Securely attach no fewer than three guys to stakes 30 inches long, driven to grade.

1. Site-Fabricated Staking-and-Guying Method:

- a. For trees more than 6 inches in caliper, anchor guys to wood deadmen buried at least 36 inches below grade. Provide compression spring for each guy wire and tighten securely.
- b. Support trees with bands of flexible ties at contact points with tree trunk and reaching to compression spring. Allow enough slack to avoid rigid restraint of tree.
- c. Support trees with strands of cable or multiple strands of tie wire, connected to the brass grommets of tree-tie webbing at contact points with tree trunk and reaching to compression spring. Allow enough slack to avoid rigid restraint of tree.
- d. Attach flags to each guy wire, 30 inches above finish grade.
- e. Paint compression springs with luminescent white paint.

2. Proprietary Staking and Guying Device: Install staking and guying system sized and positioned as recommended by manufacturer unless otherwise indicated and according to manufacturer's written instructions.

- C. Root-Ball Stabilization: Install at- or below-grade stabilization system to secure each new planting by the root ball unless otherwise indicated.

1. Wood Hold-Down Method: Place vertical stakes against side of root ball and drive them into subsoil; place horizontal wood hold-down stake across top of root ball and screw at each end to one of the vertical stakes.
 - a. Install stakes of length required to penetrate at least 18 inches below bottom of backfilled excavation. Saw stakes off at horizontal stake.
 - b. Install screws through horizontal hold-down and penetrating at least 1 inch into stakes. Predrill holes if necessary to prevent splitting wood.
 - c. Install second set of stakes on other side of root trunk for larger trees as indicated.
 2. Proprietary Root-Ball Stabilization Device: Install root-ball stabilization system sized and positioned as recommended by manufacturer unless otherwise indicated and according to manufacturer's written instructions.
- D. Palm Bracing: Install bracing system at three or more places equally spaced around perimeter of trunk to secure each palm until established unless otherwise indicated.
1. Site-Fabricated Palm-Bracing Method:
 - a. Place battens over padding and secure battens in place around trunk perimeter with at least two straps, tightened to prevent displacement. Ensure that straps do not contact trunk.
 - b. Place diagonal braces and cut to length. Secure upper ends of diagonal braces with galvanized nails into battens or into nail-attached blocks on battens. Do not drive nails, screws, or other securing devices into palm trunk; do not penetrate palm trunk in any fashion. Secure lower ends of diagonal braces with stakes driven into ground to prevent outward slippage of braces.

3.8 GROUND COVER AND PLANT PLANTING

- A. Set out and space ground cover and plants other than trees, shrubs, and vines as indicated in even rows with triangular spacing.
- B. Use native soils for backfill.
- C. Dig holes large enough to allow spreading of roots.
- D. For rooted cutting plants supplied in flats, plant each in a manner that will minimally disturb the root system but to a depth not less than two nodes.
- E. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.
- F. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.
- G. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

3.9 PLANTING AREA MULCHING

- A. Mulch backfilled surfaces of planting areas and other areas indicated.
 - 1. Trees and Tree-like Shrubs in Turf Areas: Apply organic mulch ring of 3-inch average thickness, with 36-inch radius around trunks or stems. Do not place mulch within 3 inches of trunks or stems.
 - 2. Organic Mulch in Planting Areas: Apply 3-inch average thickness of organic mulch over whole surface of planting area, and finish level with adjacent finish grades. Do not place mulch within 2 inches of trunks or stems.

3.10 EDGING INSTALLATION

- A. Shovel-Cut Edging: Separate mulched areas from turf areas with a 45-degree, 4- to 6-inch-deep, shovel-cut edge as shown on Drawings.

3.11 PLANT MAINTENANCE

- A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.
- B. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.

3.12 CLEANUP AND PROTECTION

- A. During planting, keep adjacent paving and construction clean and work area in an orderly condition.
- B. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.
- C. After installation and before Substantial Completion, remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.

3.13 DISPOSAL


- A. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off Owner's property.

END OF SECTION 329300

SUMMARY OF QUANTITIES

REVISIONS  01/30/2016 – REVISED PER ADDENDUM NO. 1

SHEET NUMBER 3


BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
WWW.BKUSA.COM
4751 MAIN STREET, SUITE F-212
ORANGE BEACH, ALABAMA 36561
PHONE (251) 632-2410 FAX (251) 632-2417



BASE BID				
ITEM NUMBER	ITEM DESCRIPTION	UNIT	BID QUANTITY	AS-BUILT QUANTITY
206C-026	REMOVING ASPHALT PAVEMENT	SY	600.00	
206D-001	REMOVING GUARDRAIL (INCLUDING POSTS)	LF	180.00	
206D-011	REMOVING FENCE (INCLUDING GATES)	LF	216.00	
206G-002	REMOVAL OF RUBBLE (RIPRAP/CONCRETE)	CY	130.00	
210A-000	UNCLASSIFIED EXCAVATION	CY	200.00	
210D-022	BORROW EXCAVATION (CLEAN SAND)	CY (TBM)	500.00	
243A-002	SOIL STABILIZATION GEOGRID, TYPE 3	SY	300.00	
301B-999	COARSE AGGREGATE BACKFILL MATERIAL (UNCRUSHED #57 STONE)	TON	5.00	
490D-000	SPALL REPAIR	LS	1.00	
600A-000	MOBILIZATION	LS	1.00	
610C-001	LOOSE RIPRAP, CLASS 2	TON	120.00	
610D-003	FILTER BLANKET, GEOTEXTILE	SY	520.00	
614A-000	SLOPE PAVING	CY	3.00	
623C-003	COMBINATION CURB & GUTTER, TYPE C (MODIFIED)	LF	340.00	
665O-000	TEMPORARY EROSION CONTROL	LS	1.00	
674A-000	CONSTRUCTION SAFETY FENCE	LF	500.00	
740A-000	TRAFFIC CONTROL SCHEME	LS	1.00	
770L-005	BOLLARD, COMPLETE IN PLACE	EA	1.00	
902A-000	6' HIGH CHAIN LINK FENCE (MATCH EXISTING, INCLUDING GATES)	LF	40.00	
999A-000	WORK OF SIMILAR NATURE UTILIZING BID ITEMS AND UNIT PRICES TO BE DETERMINED BY ENGINEER	LS	1.00	
SP-1	WOODEN PEDESTRIAN BOARDWALK (COMPLETE INCL. STAIN/SEAL)	SF	325.00	
SP-2	REPLACE BROKEN HANDRAIL FLANGES	EA	1.00	
SP-3	PAINTING CONCRETE PILECAP	SF	700.00	
LS-1	SABAL PALMETTO / CABBAGE PALM, FG,14-20' CT	EA	30.00	
ADDITIVE ALTERNATE # 1				
ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY	
770L-005	BOLLARD, COMPLETE IN PLACE	EA	2.00	
SP-1	WOODEN PEDESTRIAN BOARDWALK (COMPLETE INCL. STAIN/SEAL)	SF	2490.00	
ADDITIVE ALTERNATE # 2				
ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY	
SP-4	RESETTING CONCRETE PEDESTAL	EA	1.00	
SP-5	NEW LIGHT POLES AND HEADS (COMPLETE)	EA	6.00	
ADDITIVE ALTERNATE # 3				
ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY	
206C-026	REMOVING ASPHALT PAVEMENT	SY	500.00	
206D-001	REMOVING GUARDRAIL (INCLUDING POSTS)	LF	55.00	
206D-011	REMOVING FENCE (INCLUDING GATES)	LF	174.00	
206G-002	REMOVAL OF RUBBLE (RIPRAP/CONCRETE)	CY	150.00	
210A-000	UNCLASSIFIED EXCAVATION	CY	250.00	
210D-022	BORROW EXCAVATION (CLEAN SAND)	CY (TBM)	450.00	
243A-002	SOIL STABILIZATION GEOGRID, TYPE 3	SY	190.00	
301B-999	COARSE AGGREGATE BACKFILL MATERIAL (UNCRUSHED #57 STONE)	TON	5.00	
490D-000	SPALL REPAIR	LS	1.00	
610C-001	LOOSE RIPRAP, CLASS 2	TON	35.00	
610D-003	FILTER BLANKET, GEOTEXTILE	SY	280.00	
614A-000	SLOPE PAVING	CY	1.00	
623C-003	COMBINATION CURB & GUTTER, TYPE C (MODIFIED)	LF	145.00	
674A-000	CONSTRUCTION SAFETY FENCE	LF	300.00	
SP-3	PAINTING CONCRETE PILE CAP	SF	500.00	
ADDITIVE ALTERNATE # 4				
ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY	
770L-005	BOLLARD, COMPLETE IN PLACE	EA	1.00	
SP-1	WOODEN PEDESTRIAN BOARDWALK (COMPLETE INCL. STAIN/SEAL)	SF	1120.00	

SCALE

DESIGNED C.D.W.
CHECKED M.C.R.

DATE JAN 2017 PROJECT OB.16.002
NUMBER

PLAN SUBMITTAL ISSUED FOR CONSTRUCTION

PROJECT THE CITY OF ORANGE BEACH, ALABAMA
PERDIDO PASS PARKING LOT
AND SEAWALL REPAIRS – PHASE II

SHEET SUMMARY OF QUANTITIES
TITLE