



1112 Manatee Ave. West
Bradenton, FL 34205
purchasing@mymanatee.org

Solicitation Addendum

Addendum No.: 3
Solicitation No.: 20-TA003443AJ
Project No.: 6005723 & 6005719
Solicitation Title: Coquina Beach Drainage Improvements Phase II
Addendum Date: September 3, 2020
Procurement Contact: Abby Jenkins

IFBC 20-TA003443AJ is amended as set forth herein. Responses to questions posed by prospective bidders are provided below. This addendum is hereby incorporated in and made a part of IFBC 20-TA003443AJ.

CHANGE:

SECTION A, PARAGRAPH A.03, PUBLIC OPENING OF BIDS.

Bids will be opened immediately following the Due Date and Time at the Manatee County Administration Building, Suite 803 in the presence of County officials. Bidders or their representatives may attend the Bid opening virtually by accessing the link below.

Zoom® Webinar Link: <https://manateecounty.zoom.us/j/89963279551>

Manatee County will make public at the opening the names of the business entities which submitted a Bid and the total bid price submitted. No review or analysis of the Bids will be conducted at the Virtual Bid Opening.

REPLACE:

SECTION B, APPENDIX K, BID PRICING FORM

Replace Appendix K, Bid Pricing Form with the Revised Appendix K, Bid Pricing Form included with this Addendum 3.

REPLACE:

SECTION B, APPENDIX K, ELECTRONIC BID PRICING FORM

Replace the Electronic Bid Pricing Form, with the Revised Electronic Bid Pricing Form issued as a separate attachment with this Addendum 3.

REPLACE:

SECTION C, BID ATTACHMENT 2, COQUINA SPECIAL PROVISIONS

Replace Attachment 2, Coquina Special Provision with Revised Attachment 2, Coquina Special Provision included with this Addendum 3.

REPLACE:

SECTION C, BID ATTACHMENT 3, PLANS/DRAWINGS

Replace Attachment 3, Plans/Drawings with Revised Attachment 3, Plans/Drawings issued as a separate attachment with this Addendum 3.

ADD:

BID SECTION C, ATTACHMENT 6, TECHNICAL SPECIFICATIONS

Add Bid Section C, Attachment 6, Technical Specifications included with this Addendum 3, which is hereby incorporated into the IFBC.

QUESTIONS AND RESPONSES:

Q1. Can you provide the engineer estimate of cost?

R1. The Engineer's opinion of Cost is \$3,629,567.54

Q2. I previously requested revised plans be issued that are in 24x36 format (preferably) or 11x17 as the original bid documents were sent out with the plan PDF's based on 8.5 x 11-page size. Addendum #1 issued new plans, and these were issued on the same size paper (8.5"x11") and were not even sent out with the correct orientation – so all the pages had to be rotated. I have included in the attached a snip showing this dimension. This also effects the scale - so even though they print out clearly, the scale is off which is also shown in the attached (Scales 64 feet when it should be 60 feet.) This make it extremely difficult to do take-offs and also difficult for the contractor awarded the project to use in the field. I would respectfully ask that this be corrected and be re-issued via addendum. The plans need to be issued to be able to print to scale on 24"x36" paper with correct orientation.

- R2. See the Revised Attachment 3, Plans/Drawings that is issued with this Addendum 3.
- Q3. How many linear feet of drainage pipeline shall be TV/Inspected?**
- R3. Refer to Appendix K, Bid Pricing Form for the estimated quantities.
- Q4. Is there a minimum caliper requirement for the 3 species of trees listed on the plans? They all say “30 Gallon Container – 12’ Height”.**
- R4. Just need to meet the height requirement.
- Q5. Irrigation controller is described as “NODE”. This is a battery-operated timer that would need to be install in each individual valve box and constantly serviced to make sure the batteries are not dead. Instead of this, would it be a better choice to specify a 110V (with battery back-up) wall mounted or pedestal mounted controller that could be connected to an available 110 power source.**
- R5. The Parks folks use the battery system for all their irrigation.
- Q6. On Sheet I-201, please confirm that we are tying into an existing water source that is downstream from a newly constructed 2” Backflow and a new 2” backflow (per detail on sheet I-150) is not required.**
- R6. Yes, you are correct.
- Q7. Sheets 33 and 34 are missing numerous pipe lengths for the underdrains where they are connecting to the pipes stubbed out from the previous project. Please provide these dimensions to verify our take-off quantities.**
- R7. See response to question Q2.
- Q8. During a site visit, it was observed that there are a lot of trees shown in the parking lots starting at station 31+15 all the way through 44+25. We measured the distance between the existing trees and it appears that a majority of these areas do not have sufficient distances between the existing trees to match the plan dimensions from BOC to BOC of 66’ (12” curb + 20’ stall + 24’ drive aisle + 20’ stall + 12” curb); some of these same areas it also appears the BOC’s will conflict. Is it the intent to remove these trees?**
- R8. Yes, any of the trees (Palms, green buttonwood etc.) in the foot print of the project are to be removed. The trees other than Australian pines were not shown on the tree removal plan. The Australian Pines that are to be removed are shown on the tree removal plan.
- Q9. If it is the intent per the above to remove these trees, can revised sheets be provided? And how does the contractor get paid to remove them? They are not shown on the tree removal plan and the pay item is bid lump sum.**
- R9. The project is being bid by the FDOT Specifications and the Special Provisions. Removal of the trees in the foot print of the project (other than Australian Pines) are to be paid for under clearing and grubbing. Due to the mitigation issues associated with

the Australian Pines, the payment to remove and mitigate are shown separately and paid for as lump sum.

Q10. Are there any restrictions on how many parking stalls we can remove from public use at any one given time?

R10. We have requested a sub phasing plan from the low bid contractor. We would like to minimize disruption to the public. Therefore, closing two bays to allow for prep in one while pouring pervious concrete in the next seems prudent. At the south and north ends, we will allow closure of these parking lots during preparation and construction.

NOTE: Items that are ~~struck through~~ are deleted. Items that are underlined have been added or changed. All other terms and conditions remain as stated in the IFBC.

END OF ADDENDUM

INSTRUCTIONS:

Receipt of this addendum must be acknowledged as instructed in the solicitation document. Failure to acknowledge receipt of this Addendum may result in the response being deemed non-responsive.

AUTHORIZED FOR RELEASE

REVISED BID FORM A
 20-TA003443AJ
 COQUINA BEACH DRAINAGE IMPROVEMENTS
 BID "A" Based on Completion Time of 360 Calendar Days

COQUINA BEACH DRAINAGE IMPROVEMENTS PHASE 2						
LINE NO.	ITEM NO.	DESCRIPTION	EST. QTY	U/M	ENGINEER'S ESTIMATE UNIT PRICE	EXTENDED PRICE
PARKING LOT						
1.	101-1	MOBILIZATION	1	LS		
2.	102-1	MAINTENANCE OF TRAFFIC	1	LS		
3.	104-10-3	SEDIMENT BARRIER	4,881	LF		
4.	104-18	INLET PROTECTION SYSTEM	2	EA		
5.	110-2-1	CLEARING & GRUBBING	9	AC		
6.	120-6	EMBANKMENT	490	CY		
7.	GR-1	EMBEDDED RING INFILTRATION KIT (ERIK)	11	EA		
8.	GR-2	8" PERVIOUS CONCRETE	28,656	SY		
9.	GR-5	RECYCLED MATERIAL WHEEL STOP	713	EA		
10.	425-1-541	INLETS, DITCH BOTTOM, TYPE D, <10' (Relocate)	1	EA		
11.	425-2-041	MANHOLES, P-7, <10	1	EA		
12.	430-175-124	PIPE CULVERT, RCP, 24" STORM	23	LF		
13.	440-1-10	UNDERDRAIN TYPE II, 6", W BOLD AND GOLD MEDIA	5,544	LF		
14.	440-73-2	UNDERDRAIN SOLID ADS 6" PIPE	288	LF		
15.	520-2-05	CONCRETE CURB, 12" Wide Ribbon Curb (HEADER CURB), 8"	12,611	LF		
16.	522-1	SIDEWALK CONCRETE 4" MANATEE COUNTY (5' WIDE)	27	SY		
17.	527-2	DETECTABLE WARNINGS	20	SF		
18.	550-60-511	RELOCATE SWING GATES	2	EA		
19.	700-1-50	SINGLE POST SIGN, RELOCATE	16	EA		
20.	711-11-101	THERMOPLASTIC, STANDARD, WHITE, SOLID, 6"	13,121	LF		
21.	711-11-401	THERMOPLASTIC, STANDARD, BLUE, SOLID, 6"	148	LF		
22.	711-11-460	THERMOPLASTIC, STANDARD, BLUE, MESSAGE OR SYMBOL	4	EA		
23.	TR-1	TREE REMOVAL (87)	1	LS		
24.	TR-2	TREE PLANTING WITH IRRIGATION (87)	1	LS		
25.	PK-1	RELOCATE BOLLARDS	896	EA		
					Subtotal	
TOTAL BASE BID "A" BASED ON A COMPLETION TIME OF 360 CALENDAR DAYS						
CONTRACT CONTINGENCY (10% OF TOTAL BASE BID (Used only with County Approval))					10%	
TOTAL OFFER (Bid "A") WITH 10% CONTRACT CONTINGENCY(Based On A Completion Time Of 360 Calendar Days)						

Bidder Name: _____

Authorized Signature: _____

REVISED BID FORM B
20-TA003443AJ
COQUINA BEACH DRAINAGE IMPROVEMENTS
BID "B" Based on Completion Time of 390 Calendar Days

COQUINA BEACH DRAINAGE IMPROVEMENTS PHASE 2						
LINE NO.	ITEM NO.	DESCRIPTION	EST. QTY	U/M	ENGINEER'S ESTIMATE UNIT PRICE	EXTENDED PRICE
PARKING LOT						
1.	101-1	MOBILIZATION	1	LS		
2.	102-1	MAINTENANCE OF TRAFFIC	1	LS		
3.	104-10-3	SEDIMENT BARRIER	4,881	LF		
4.	104-18	INLET PROTECTION SYSTEM	2	EA		
5.	110-2-1	CLEARING & GRUBBING	9	AC		
6.	120-6	EMBANKMENT	490	CY		
7.	GR-1	EMBEDDED RING INFILTRATION KIT (ERIK)	11	EA		
8.	GR-2	8" PERVIOUS CONCRETE	28,656	SY		
9.	GR-5	RECYCLED MATERIAL WHEEL STOP	713	EA		
10.	425-1-541	INLETS, DITCH BOTTOM, TYPE D, <10' (Relocate)	1	EA		
11.	425-2-041	MANHOLES, P-7, <10	1	EA		
12.	430-175-124	PIPE CULVERT, RCP, 24" STORM	23	LF		
13.	440-1-10	UNDERDRAIN TYPE II, 6", W BOLD AND GOLD MEDIA	5,544	LF		
14.	440-73-2	UNDERDRAIN SOLID ADS 6" PIPE	288	LF		
15.	520-2-05	CONCRETE CURB, 12" Wide Ribbon Curb (HEADER CURB), 8"	12,611	LF		
16.	522-1	SIDEWALK CONCRETE 4" MANATEE COUNTY (5' WIDE)	27	SY		
17.	527-2	DETECTABLE WARNINGS	20	SF		
18.	550-60-511	RELOCATE SWING GATES	2	EA		
19.	700-1-50	SINGLE POST SIGN, RELOCATE	16	EA		
20.	711-11-101	THERMOPLASTIC, STANDARD, WHITE, SOLID, 6"	13,121	LF		
21.	711-11-401	THERMOPLASTIC, STANDARD, BLUE, SOLID, 6"	148	LF		
22.	711-11-460	THERMOPLASTIC, STANDARD, BLUE, MESSAGE OR SYMBOL	4	EA		
23.	TR-1	TREE REMOVAL (87)	1	LS		
24.	TR-2	TREE PLANTING WITH IRRIGATION (87)	1	LS		
25.	PK-1	RELOCATE BOLLARDS	896	EA		
Subtotal						\$ -
TOTAL BASE BID "B" BASED ON A COMPLETION TIME OF 390 CALENDAR DAYS						
CONTRACT CONTINGENCY (10% OF TOTAL BASE BID (Used only with County Approval))					10%	
TOTAL OFFER (Bid "B") WITH 10% CONTRACT CONTINGENCY(Based On A Completion Time Of 390 Calendar Days)						

Bidder Name: _____

Authorized Signature: _____

SPECIAL PROVISIONS
FOR
Coquina Beach Drainage Improvements

PROJECT # 6005719

July 2020
Revised August 2020

PROJECT OWNER:

County of Manatee, Florida
c/o Manatee County Purchasing Division
1112 Manatee Avenue West
Bradenton, Florida 34205
(941) 748-4501

PREPARED BY:

Engineering Division
Manatee County Public Works Department
1022 26th Avenue East
Bradenton, Florida 34208
(941) 708-7450

SPECIAL PROVISIONS

SECTION	PAGE
GENERAL.....	1
STANDARD SPECIFICATIONS	1
PRIORITY	1
NO SEPARATE PAYMENT FOR SPECIAL PROVISIONS.....	1
MATERIALS.....	1
LABORATORY TESTING.....	2
MEASUREMENT AND PAYMENT	2
RESTORATION.....	3
COOPERATION WITH OTHERS	3
SITE INVESTIGATION	3
PROJECT SCHEDULE.....	4
PROJECT IDENTIFICATION SIGNS	5
SPECIAL TERMS AND CONDITIONS.....	8
SOIL EROSION AND SILTATION.....	8
SHOP DRAWINGS.....	8
SUBSOIL EXCAVATION.....	9
DEWATERING, SHEETING AND BRACING.....	9
EARTHWORK.....	9
TEMPORARY PAVEMENT	10
MAINTENANCE OF STORM DRAINAGE SYSTEM.....	10
POST-CONSTRUCTION STORM PIPE TESTING.....	10
SIDEWALKS TO REMAIN OPEN.....	10
DUST CONTROL	10
UNDERGROUND UTILITY LOCATIONS	11
UTILITY COORDINATION	11
UTILITY CONFLICTS	11
DAILY CLEAN-UP REQUIREMENTS	12
MAINTENANCE AND RESTORATION OF JOB SITE	12
NOTICE AND SERVICE THEREOF.....	12
REQUIREMENTS FOR CONTROL OF THE WORK.....	13
USE OF PRIVATE PROPERTY	13
CONSTRUCTION PHOTOGRAPHY	13
CONTRACTOR TO EXECUTE NPDES “NOTICE OF INTENT”	15
WORKSITE TRAFFIC SUPERVISOR.....	16
CONTRACTOR’S SUPERVISION.....	16
LIST OF EMERGENCY CONTACT NUMBERS & UTILITY SERVICE MAINTENANCE ...	17
PEDESTRIAN ACCESS	17
RECORD DRAWINGS AND PROJECT CERTIFICATION	17
COMPLIANCE WITH THE FDEP COASTAL PERMIT REQUIREMENTS	19
CRUSHED CONCRETE BASE	19

CLARIFICATION OF SPECIFIC LINE ITEMS..... 21
DISCRETIONARY WORK (Contingency) 21
SHOP DRAWING SUBMITTAL COVER SHEET 22

SPECIAL PROVISIONS

GENERAL

This Section amends, enhances or otherwise revises the Technical Specifications.

STANDARD SPECIFICATIONS

The standard Specifications to be used for this work shall be Division II and III of the Florida Department of Transportation (FDOT) *Standard Specifications for Road and Bridge Construction*, 2013 Edition and all Supplemental Specifications thereto, hereinafter referred to as the *Standard Specifications*, for roadway construction, except as amended under this Contract, or as noted on the construction plans meeting the Manatee County Highway, Traffic & Stormwater Standards (dated 2007).

The Contractor's work shall follow the Manatee County Public Works Utility Standards (dated May 2011) and Specifications (dated June 2018) for all utility work

These specifications cover the usual construction requirements for work specified by the County Public Works Department; however, in the event it is determined that the specific work to be done is of such a nature that the method of construction, type and/or kind of material is not defined by the *Standard Specifications*, such work shall be performed in accordance with the Special Provisions.

The apparent silence of the Specifications as to any detail or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used. Interpretation of these specifications shall be made upon that basis.

PRIORITY

In any instance where there is an apparent conflict between these technical specifications, special provisions and the corresponding terms of the "Standard Specifications", these special provisions followed by these technical specifications shall be controlling.

NO SEPARATE PAYMENT FOR SPECIAL PROVISIONS

No separate payment will be made for the Contractor to execute Special Provisions. All expenses borne by the Contractor shall be included in the individual unit prices for the particular pay item.

MATERIALS

- a. **Delivery Tickets:** It will be necessary to submit a copy of all delivery tickets for materials used on the project, regardless of the basis of payment.

- b. **Job Mix Formula for Asphaltic Concrete:** Attention is directed to the requirement that job mix formulas for asphaltic concrete, of the type specified, be submitted at least 14 days before plant operations begin. The submitted formula should be derived, or approved, by the laboratory approved by the Owner and/or its agents. Costs for such job mix formulation will be paid by the Contractor directly to the assigned laboratory.
- c. **Job Mix Formula for Portland Cement Concrete:** Attention is directed to the requirement that job mix design formulas for all Portland Cement Concrete, of the type specified, be submitted at least 14 days prior to use on the project. The submitted formulas shall be derived or approved by the Owner and/or its agents. All concrete mix designs shall meet FDOT Concrete Class mix guidelines, except as follows: when approved, in writing by the Engineer, an Alternate Class I Concrete mix design formula, for concrete curb and gutter to be placed by automated curb machines, may show, as a substitution for #57 aggregate, an amount of #89 aggregate not to exceed 33 percent, by weight, of the #57 aggregate.

LABORATORY TESTING

Testing for the Work shall be performed at no expense to the Contractor. However, any test that fails or is not performed, as a result of the Contractor's action will, in turn, be back-charged to the Contractor, including the cost of all re-testing due to defective materials or construction. The testing laboratory shall be approved by the County.

The samples and tests used for determining the quality and acceptability of the materials and workmanship, which have been or are to be incorporated in the Work, shall conform to the requirements of the State of Florida Department of Transportation Materials Sampling, Testing and Reporting Guide, latest edition.

Testing shall also be in accordance with the applicable portions of the *FDOT Standard Specifications* and these specifications.

MEASUREMENT AND PAYMENT

- a. All work completed under the terms of this contract shall be measured according to United States Standard Measures.
- b. All measurements shall be taken horizontally or vertically unless specifically provided otherwise.
- c. No payment will be made for construction over a greater area than authorized, nor for material moved from outside of stakes and data shown on the plans, except when such work is performed upon instructions of the Engineer.
- d. The Contractor shall accept compensation provided under the terms of this contract as full payment for furnishing all materials and for performing all work contemplated and

embraced under this contract. Such compensation shall also be for any and all loss or damage arising out of the nature of the work or from the action of the elements, or from any unforeseen difficulties or obstructions encountered during the contract period until final acceptance by the Owner.

- e. Whenever any change, or combination of changes, on the plans results in an increase or decrease in the original contract quantities, and the work added or decreased/eliminated is of the same general character as that called for on the plans, the Contractor shall accept payment in full at the original contract unit prices for the actual quantity of work performed, with no allowance for any loss of anticipated profits.
- f. It is the Contractor's responsibility to perform a detailed quantity take-off from the plans to determine actual quantities for ordering and delivery purposes. The Owner will not be responsible for quantities ordered in excess of those installed and constructed. The Contractor should be aware that some of the pay items may have contingency quantities. Payment shall be made only for final in-place quantities.

No payment shall be made for contingency quantities or additional work unless otherwise directed and approved in writing by the Engineer.

- g. Bid Schedule Completion - the blank spaces in the bid schedule shall be filled in correctly where indicated for each and every item for which a description is given, as the bidder must state the unit prices for which he proposes to do each part of the work contemplated, and the total price for all the parts included in any or all of the combinations of the work. In case of a discrepancy, the written words for "unit price", where stated, shall be considered as being the unit price. If the bid schedule does not use the written words for the unit price, then the numerically correct "total price", shall be considered as being the total price.

RESTORATION

Payment for restoration shall be covered under the applicable restoration Pay Items as specified in the proposal. If a specific restoration Pay Item is not listed in the proposal, the cost of such work shall be included in the applicable Pay Item unless otherwise provided under separate restoration section or pay quantity of these Specifications.

COOPERATION WITH OTHERS

The Contractor shall cooperate with the owners of any underground or overhead utility lines in their removal and rearrangement operations, in order that these operations may progress in a reasonable manner and that service rendered by these parties will not be interrupted. The Owner shall not be responsible for costs associated with delays, disruptions and remobilizations attributed to utility agency scheduling.

SITE INVESTIGATION

The Contractor acknowledges that he has satisfied himself as to the nature and location of the work; the general and local conditions, including but not restricted to those bearing upon

transportation, disposal, handling and storage of materials; availability of labor, water, electric power, roads; and uncertainties of weather, water stages, tides or similar physical conditions at the site; the conformation and conditions of the ground; the character of equipment and facilities needed preliminary to and during prosecution of the work.

The Contractor further acknowledges that he has satisfied himself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered, insofar as this information presented by the drawings and Specifications made a part of this contract.

The Contractor shall carefully review and adhere to conditions and recommendations made in the project geotechnical report.

Any failure by the Contractor to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the work.

The Owner assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the Owner. The Owner also assumes no responsibility for any understanding or representations made by its officers or agents during or prior to the execution of this Contract, unless (1) such understanding or interpretations are made in writing by the Engineer or are expressly stated in the Contract and (2) the Contract expressly provides that the responsibility therefore is assumed by the Owner.

PROJECT SCHEDULE

The Contractor shall submit a preliminary construction schedule after the bid. The preliminary schedule shall show major work items and any phases the Contractor proposes. The schedule will show duration of work items and phases.

The Contractor shall submit a detailed Critical Path Method (CPM) construction schedule within 15 days of the notification of award or its intent for the County to review. The submittal shall meet the following requirements:

- Schedule will be submitted on 11-inch by 17-inch paper.
- The time scale (horizontal) shall be in weeks. The activities shall be listed on the left hand side (vertical).
- Activities shall show most Work activities. The listing from top to bottom shall be in a logical sequence of how the Work will be accomplished. Space shall be provided between activities or within bars to allow for marking of actual progress.

A copy of the CPM schedule, clearly showing progress made, shall be submitted on a monthly basis during the progress of the work at the monthly meeting. Review or acceptance will neither impose on the County responsibility for the progress or scheduling of the Work, nor relieve the Contractor from full responsibility therefore.

The Contractor shall provide a revised CPM schedule if, at any time, the County considers the completion date to be in jeopardy because of “activities behind schedule”. An activity that cannot be completed by its original or latest completion date shall be deemed to be behind schedule. The revised CPM schedule is designed to show how the Contractor intends to accomplish the Work to meet the contractual completion date. The form and method employed by the Contractor shall be the same as for the original CPM schedule. The cost to prepare and revise the schedule is considered incidental to the Work.

PROJECT IDENTIFICATION SIGNS

The Contractor shall be responsible for furnishing, installing and maintaining two (2) County project identification signs and removal of same upon completion of the construction. Project identification sign shall be constructed and maintained at the project site as directed by the Owner. The Contractor shall erect, maintain and relocate the sign as directed for the duration of the Project.

The Contractor shall mount the sign using 4-inch pressure treated lumber or as approved by the Engineer, and other supports as required, at a location mutually agreed by the Engineer and the Contractor.

The identification signs shall not be less than 32 square feet in area. The Contractor shall coordinate with the Owner for the sign verbiage before fabrication. The signs shall be painted with graphic content to include:

- Title of Project
- Name of Owner
- Names and Titles of authorities, as directed by Owner
- Prime Contractor
- Construction Cost

The signs shall be erected prior to commencement of work at a lighted location of high public visibility, adjacent to the main entrance at each end of the project, as approved by the Engineer and Owner.

The signs shall be a minimum of 8 feet wide and 4 feet high. The signs shall be constructed of high density 3/4-inch exterior plywood without waves or buckles, mounted and braced with pressure treated lumber as necessary and maintained in a presentable condition for the duration of the project. Hardware shall be galvanized. The surface of the sign shall be of exterior softwood plywood with medium density overlay.

Painting shall be constructed with materials to resist weathering and fading during the construction period. Experienced professionals shall perform painting. Graphic design and style shall be in accordance with the following:

- The signs will be placed in accordance with Manatee County Development Code, Ordinance 90-01, Section 724, Signs and Section 713, Visibility Triangles.

Payment for installing and maintaining the project identification signs shall be included as part of the lump sum quantity under Pay Item Number 1 (101-1) for Mobilization. The sign will remain the property of the Owner upon completion of the Project unless otherwise directed.



COQUINA BEACH DRAINAGE IMPROVEMENT PROJECT

Board of County Commissioners

BETSY BENAC

CHAIRMAN

STEPHEN JONSSON

REGGIE BELLAMY

CAROL WHITMORE

VANESSA BAUGH

MISTY SERVIA

PRISCILLA TRACE

CONSTRUCTION COST

\$ (Enter Amount)

PRIME CONTRACTOR

(Enter Contractor Name)

SPECIAL TERMS AND CONDITIONS

SOIL EROSION AND SILTATION

The Contractor shall plan and control the Work to minimize all soil erosion and the siltation of drains and canals resulting from such erosion.

At the pre-construction meeting, the Contractor shall present his proposed plan and schedule, which shall specifically indicate the proposed usage of temporary erosion control features. The plan shall include:

- **Sediment barriers** designed, furnished and installed by the Contractor in accordance with the plans, and FDOT Specifications Section 104.
- **Inlet Protection System** furnished and installed by the Contractor as shown on the plans and/or required by conditions of the permits and as outlined in FDOT Specifications Section 104.

SHOP DRAWINGS

The Contractor shall submit to the Engineer for approval, all working drawings and shop drawings with descriptive specifications and engineering calculations necessary for the successful completion of the Work. The shop drawing shall be submitted in pdf format, along with a submittal log, and the number of the submittals should follow the number on the submittal log. Each shop drawing shall have a cover sheet and reference the submittal log number, following the sample format provided in the contact documents.

The working and shop drawings shall be certified by a Florida licensed Professional Engineer and state that the design is sufficient for the successful completion of the Work. The working drawings and shop drawings shall include, but not be limited to:

- Traffic Control Plan
- Erosion Control Plan
- Shop Drawings as required by FDOT Standard Specifications

The Contractor is responsible for maintaining a Submittal Activity Record (Logbook) on this project. The Contractor shall submit all shop drawings to the Roadway Engineer of Record for processing to the appropriate Area of Practice EOR for review. The Area of Practice EOR will complete the review and return the shop drawing to the Roadway Engineer of Record for logging and processing back to the Contractor and to the County Representative.

The logbook shall be updated each time when any Shop Drawing submittal activity occurs.

The following minimum data shall be entered in the logbook for each submittal:

County Project Number

Submittal Number
Description of Submittal
Number of Sheets in the Submittal
Number of Pages of Calculations, in Reports, in Manuals, etc.
Date Transmitted by Contractor to the Roadway Engineer of Record
Date Transmitted by Roadway EOR to the Area of Practice EOR
Date Roadway EOR Receives Shop Drawing Back From Area of Practice EOR
Date Roadway EOR Sends Shop Drawing Back to Contractor
Disposition as either "A" (Approved), "AN" (Approved as Noted), "R" (Resubmit) or "NA" (Not Approved).

The Logbook is a historical record of the activity devoted to an individual submittal as well as that for the project as a whole. It can serve as a verification of review time, to respond to inquiries of a particular submittal's status and as a record of manpower effort to aid in estimating and allocating future workload.

SUBSOIL EXCAVATION

The contractor shall detect and remove all unsuitable material, such as plastic/organic soil, rock, hard plane, debris and trash, within project limit, following FDOT Design Standard Index 500, latest version. Payment for subsoil excavation shall be included in the subsoil excavation pay items.

DEWATERING, SHEETING AND BRACING

The contractor shall determine the need of dewatering, sheeting and bracing to facilitate the construction, conforming to current SWFWMD/FDEP rule and OSHA safety criteria. Payment for dewatering, sheeting and bracing shall be included in the applicable item for earthwork, unless separate pay items are specified.

Approval of Dewatering Plan:

At least 10 days prior to the commencement of any dewatering activity, the Contractor shall obtain the approval from SWFMWD, or FDEP (if water needs to be discharged offsite into the state surface water), and submit the permit with a detailed description of the proposed dewatering system to the Project Manager. The dewatering plan shall include design computations, layout, type, and spacing of dewatering devices, number and size of pumps and other equipment, with a description of the installation and operating procedures.

EARTHWORK

Quantities included on cross-section sheets, if any, represent estimated in-place quantities and do not include shrinkage and expansion factors. The quantities were calculated by the method with average end areas between the station-to-station limits. Payment for Earthwork shall be made based on average end area method calculations. Contractor shall provide supporting survey data (before and after cross-sections) and calculations for payment purposes

TEMPORARY PAVEMENT

Temporary pavement shall consist of a minimum of Optional Base Group 4 and one (1) inch of Type SP structural course (Traffic C) over a firm, unyielding, well-compacted subgrade. The Contractor shall immediately repair all potholes that develop within the project limits and shall maintain a supply of cold mix on the project site to expedite these repairs.

The Temporary by-pass road shall provide adequate cover and protection of existing utilities. It is the Contractor's responsibility to coordinate with utility companies to repair any damages to the existing utilities during the construction at no additional cost to the County.

Payment for the temporary pavement and maintenance of this pavement shall be included under Maintenance of Traffic.

MAINTENANCE OF STORM DRAINAGE SYSTEM

The Contractor shall be responsible at all times to maintain the operation of existing stormwater facilities, or, when existing stormwater facilities are removed, to provide equivalent capacity alternate forms of stormwater removal adequate to prevent upstream flooding in excess of existing conditions. This responsibility shall include the installation of temporary connections, bypass pumping, or other temporary means necessary until the new drainage system is fully operational. Payment for these items shall be included under the applicable pay item for new storm systems.

POST-CONSTRUCTION STORM PIPE TESTING

The Contractor shall inspect and televise all newly constructed storm pipes on the project. The purpose is to assure the pipes are properly constructed and do not leak at the joints. Payment for this item shall be included under the pay item for Mobilization.

SIDEWALKS TO REMAIN OPEN

Existing sidewalks and proposed sidewalks completed during construction shall remain open at all times unless approved otherwise by the Engineer. Temporary sidewalk shall be constructed as shown in the plans or as required to maintain pedestrian movement. Payment for these items shall be included under the lump sum pay item for Maintenance of Traffic.

If the Contractor, in the process of performing his contract operations, breaks any of the existing sidewalk that is to remain in place, replacement of this sidewalk will be at the Contractor's expense.

DUST CONTROL

The Contractor shall control dust resulting from construction operations at all times. The locations and frequencies of applications shall be as directed by the Engineer. Dust control is required to be in accordance with the *FDOT Standard Specifications* Section 102-5. Payment for Dust Control shall be made under Mobilization unless separate pay item for Dust Control is specified.

UNDERGROUND UTILITY LOCATIONS

The Contractor shall field verify existing underground utility locations by means of subsurface locating or other approved method. All existing utilities shall remain unless otherwise noted on the plans. The Contractor shall locate all existing utilities to remain at potential conflict locations prior to construction activities and before ordering any proposed structures. The Contractor shall contact and coordinate with "Sunshine State One Call 811" as well as the individual utilities prior to and during construction for utility locations, relocation and assistance while installing in potential conflict areas. All utility coordination and relocations shall be factored into the Contractor's construction schedule at no additional cost to the Owner.

The cost of all labor, materials and incidentals required for the performance of any survey and utility location work shall be included under the pay item for Mobilization. A Florida registered land surveyor shall perform all survey work.

UTILITY COORDINATION

The Contractor shall be responsible for coordination of the work with all affected utility owners. The Contractor must take into consideration the required utility adjustments and relocations in development of his schedule for completing the work including construction of temporary work to allow phased construction of the permanent facilities.

The Contractor shall coordinate and schedule utility relocations and/or adjustments with the utility owners along the project in order to avoid delays. The work includes remobilization if required after utility relocation is complete. The intent is to coordinate utility construction activities so the project construction continues and is not stopped or delayed at any time due to utility work being done. Once Notice to Proceed is issued, the Contractor shall contact the affected utilities to discuss the Contractor's anticipated means and methods so temporary and permanent relocation plans can be implemented as needed to meet OSHA safety requirements.

The Contractor shall hold a utility owners meeting every two weeks / or alternate time schedule agreed to by the Owner at 1022 26th Avenue East. The meeting shall review current and upcoming activities for the project. Written meeting minutes will be prepared by the Contractor and distributed to the meeting participants within 3 calendar days of the meeting.

UTILITY CONFLICTS

It shall be the Contractor's responsibility to avoid conflicts with other utilities. The Owner will not be responsible for additional costs incurred by the Contractor for incorrect installations, relocations and breaks due to service conflicts.

The contractor's equipment shall maintain a minimum clearance distance to the power line (10 feet for voltage up to 50kv, 15 feet for voltage over 50kv to 200kv, 20 feet for voltage over 200kv to 350kv, 25 feet for voltage over 350kv to 500kv, 35 feet for voltage over 500kv to 750kv, 45 feet

for voltage over 750kv to 1,000kv.), following new OSHA Rule (29 CFR Part 1926) and FDOT Roadway Design Bulletin 11-03 DCE Memorandum 02-11.

DAILY CLEAN-UP REQUIREMENTS

The Contractor shall clean up the job site at the end of each workday. Clean up will include the elimination of rubble and waste material on public and private property. Driveways shall remain accessible by residents. Each Friday, the Contractor shall prepare the road surface and barricades in an acceptable manner for weekend traffic use.

MAINTENANCE AND RESTORATION OF JOB SITE

The Contractor shall conduct his operations in such a manner as will result in a minimum of inconvenience to occupants of adjacent homes and business establishments and shall provide temporary access as directed or as may be required by the Project Manager. All final restoration must be performed to an equal or better condition than that which existed prior to construction.

Good housekeeping on this project is extremely important and the Contractor will be responsible for keeping the construction site neat and clean, with debris being removed daily as the work progresses or as otherwise directed by the Project Manager. Good housekeeping at the job site shall include: Removing all tools and temporary structures, dirt, rubbish, etc.; hauling all excess dirt, rock, etc., from excavations to a dump provided by the Contractor; and all clean up shall be accomplished to the satisfaction of the Project Manager. Dust will be controlled daily as may be required. Immediately after construction completion in an area or part thereof (including restoration), barricades, construction equipment and surplus and discarded materials shall be removed by the Contractor.

In the event that the timely clean up and restoration of the job site is not accomplished to the satisfaction of the Project Manager, the Project Manager shall make arrangements to affect the necessary clean up by others. The Contractor shall be charged for these costs through deductions in payment due the contractor. If such action becomes necessary on the part of and in the opinion of the Project Manager, the Owner shall not be responsible for the inadvertent removal from the work site of materials which the Contractor would not normally have disposed of had he affected the required clean up.

NOTICE AND SERVICE THEREOF

All notices, which shall include demands, instructions, requests, approvals, and claims shall be in writing. Any notice to or demand upon the Contractor shall be sufficiently given if delivered to the office of the Contractor specified in the bid (or to such other office as the Contractor may, from time to time, designate to the Owner in writing), or if deposited in the United States mail in a sealed, postage prepaid envelope, or delivered, with charges prepaid, sent via fax transmission, or to any telegraph company for transmission, in each case addressed to such office.

All notices required to be hand delivered to the Owner, unless otherwise specified in writing to the Contractor, shall be delivered to the Project Manager, and any notice to or demand upon the Owner shall be sufficiently given as delivered to the office of the Project Manager, or if deposited in the United States mail in a sealed, postage prepaid envelope, sent via fax transmission, or delivered with charges prepaid to any telegraph company for transmission, in each case addressed to said Project Manager or to such other representative of the Owner or to such other address as the Owner may subsequently specify in writing to the Contractor for such purposes.

Any such notice or demand shall be deemed to have been given or made as of the time of actual delivery or (in the case of mailing) when the same should have been received in due course of post or in the case of a fax transmission or telegram at the time of actual receipt, as the case may be.

REQUIREMENTS FOR CONTROL OF THE WORK

Prior to the start of the Work described in this contract, a pre-construction conference may be held by the Project Manager to be attended by the Contractor and representatives of the various utilities and others as required, for the purpose of establishing a schedule of operations which will coordinate the work to be done under this contract with all related work to be done by others within the limits of the project.

All items of work in this contract shall be coordinated so that progress of each related item will be continuous from week to week. The progress of the work will be reviewed by the Project Manager at the end of each week, and if the progress of any item of work during that week is found to be unsatisfactory, the Contractor shall be required to adjust the rate of progress on that item or other items as directed by the Project Manager without additional compensation. The Contractor will continuously control the work until completed.

USE OF PRIVATE PROPERTY

All construction activities required to complete this project in accordance with the Contract Documents shall be confined to public right-of-way, easements of record or temporary construction easements, unless the Contractor makes specific arrangements with private property owners for his use of their property. Written authorization from the granting property owner shall be placed on file with the Project Manager prior to utilization of said private properties. The Owner assumes no responsibility for damage to private property in such instances. The Contractor is responsible for protection of private property abutting all work areas on this project. Adequate equipment storage and material storage shall also be accomplished outside the Owner's right-of-way. Pipe and other materials shall not be strung out along the right-of-way, but will be delivered in quantities adequate for one day's installation. The Owner will coordinate with the Contractor to identify possible storage sites.

CONSTRUCTION PHOTOGRAPHY

General

The Contractor shall employ a competent photographer to take construction record photographs and perform videotaping, including providing all labor, materials, equipment and incidentals necessary to obtain photographs and/or videotapes of all areas specified in the Contract specifications.

The word "Photograph" includes standard photographic methods involving negatives, prints and slides and it also includes digital photographic methods involving computer technology items such as diskettes and CD-ROMs.

Qualifications

A competent camera operator who is fully experienced and qualified with the specified equipment shall do all photography.

For the videotape recording, the audio portion should be done by a person qualified and knowledgeable in the specifics of the Contract, who shall speak with clarity and diction so as to be easily understood.

General

The Contractor shall employ a competent photographer to take construction record digital photos and perform video recording, including providing all labor, materials, equipment and incidentals necessary to obtain photos and/or video recordings of all areas within the project limits or as otherwise specified in the Contract specifications.

The word "Photo" includes standard photographic methods involving digital photography and production of hard copies for photos and saving photos as jpg files on diskettes and CD-ROMs.

Qualifications

A competent camera operator who is fully experienced and qualified with the specified equipment shall do all photography.

For the video recording, the audio portion should be done by a person qualified and knowledgeable in the specifics of the Contract, who shall speak with clarity and diction so as to be easily understood.

Project Photos for Construction Progress

Provide photos of the entire work area during construction for the purpose of records of completed work. Photos should be spaced at approximately 100-foot intervals. Three prints of each standard photograph shall be provided to the County. In addition to the CD_ROM media, one print of each digital photograph shall be provided to the County.

The Contractor shall pay all costs associated with the required photographs and prints. Any parties requiring additional photography or prints will pay the photographer directly.

Each print shall have clearly marked on the back the name of the project, the orientation of view, the date and time of exposure, name and address of photographer and the photographers numbered identification of exposure.

All project photographs shall be a single weight, color image. All finishes shall be smooth surface and glossy, and all prints shall be 8 inches by 10 inches.

All project photos shall be taken from locations to adequately illustrate conditions prior to construction, or conditions of construction and state of progress. The Contractor shall consult with the County Representative at each period of photography for instructions concerning views required.

The Contractor shall deliver photos in conformance with the above requirements to the County Representative. No construction shall begin until pre-construction photo are completed and submitted to the County Representative.

Record Photos

The Contractor shall require that photographer maintain digital copies of photos for a period of two years from date of Substantial Completion of the Project.

Photographer shall agree to furnish additional prints to the County Representative at commercial rates applicable at the time of purchase. Photographer shall also agree to participate as required in any litigation requiring the photographer as expert witness.

Video Recording for Pre-Construction

Video recording shall be used in lieu of photos for pre-construction. It shall be of sufficient quality to fully illustrate details of conditions and construction, including special features

Video recording shall be accomplished along all routes that are scheduled for construction.

The video recording shall, when viewed, depict an image with ¼ of the image being the roadway fronting of property and ¾ of the image being of the property. The video recording shall be done so as to show the roadway and property in an oblique view (30 degrees).

A complete view, in sufficient detail, of all driveways, with audio description of the exact location shall be provided.

The Engineering plans shall be used as a reference for stationing in the audio portion of the video recording for easy location identifications. If visible, house numbers shall be mentioned on the audio.

Two complete sets of video recording shall be delivered to the Owner for the permanent and exclusive use of the Owner prior to the start of any construction on the project.

All video recording shall contain the name of the project, the date and time of the video recording the name and address of the photographer and any other identifying information required.

Payment for this item shall be included under the pay item for Mobilization.

CONTRACTOR TO EXECUTE NPDES “NOTICE OF INTENT”

Prior to proceeding with construction, the Contractor shall prepare and submit a “Notice of Intent to Use Generic Permit for Stormwater Discharge from Construction Activities that Disturb One or More Acres of Land” to the Florida Department of Environmental Protection (FDEP). The Contractor shall monitor the site at all times and take appropriate action to prevent erosion including the use of BMPs. No pumping of ground or surface water shall be performed without approval from the FDEP. Following completion of construction, Contractor shall prepare and submit a “Notice of Termination of Generic Permit Coverage” to FDEP. Payment for this item shall be included under the pay item for Mobilization.

WORKSITE TRAFFIC SUPERVISOR

- a. The Contractor shall have a Worksite Traffic Supervisor who will be responsible for initiating, installing and maintaining all traffic control devices as described in Section 102 of the *FDOT Standard Specifications for Road and Bridge Construction* and in the Plans. The Worksite Traffic Supervisor shall have at least one year of experience directly related to work site traffic control in a supervisory or responsible capacity and shall be certified by the American Traffic Safety Services Association Worksite Traffic Supervisor Certification Program or an equal approved by FDOT. Approved alternate Worksite Traffic Supervisors may be used when necessary.
- b. The Worksite Traffic Supervisor shall be available on a 24-hour per day basis and shall review the project on a day-to-day basis as well as being involved in all changes to traffic control. The Worksite Traffic Supervisor shall have access to all equipment and materials needed to maintain traffic control and handle traffic related situations. The Worksite Traffic Supervisor shall ensure that routine deficiencies are corrected within a 24-hour period.
- c. The Worksite Traffic Supervisor shall be available on the site within 45 minutes after notification of an emergency situation, prepared to positively respond to repair the work zone traffic control or to provide alternate traffic arrangements.
- d. Failure of the Worksite Traffic Supervisor to comply with the provisions of the Sub-article may be grounds for decertification or removal from the project or both. Failure to maintain a designated Worksite Traffic Supervisor or failure to comply with these provisions will result in temporary suspension of all activities except traffic and erosion control and such other activities deemed to be necessary for project maintenance.
- e. Payment for Worksite Traffic Supervisor shall be included under the pay item for Maintenance of Traffic.

CONTRACTOR’S SUPERVISION

- a. **Prosecution of Work:** The Contractor shall give the work the constant attention necessary to assure the scheduled progress. He shall cooperate fully with the Project Manager and with other Contractors at work in the vicinity.

- b. Contractor's Superintendent: The Contractor shall at all times have on the work site as his agent, a competent superintendent capable of thoroughly interpreting the plans and specifications and thoroughly experienced in the type of work being performed, who shall receive the instructions from the Project Manager or his authorized representatives. The superintendent shall have full authority to execute the orders or directions of the Project Manager and to supply promptly any materials, tools, equipment, labor and incidentals that may be required. Such superintendence shall be furnished regardless of the amount of work sublet.
- c. The Contractor's superintendent shall speak and understand English, and at least one responsible person who speaks and understands English shall be on the project during all working hours, and wherever work is being done by the contractor.
- d. Supervision for Emergencies: The Contractor shall have a responsible person available at or reasonably near the work site on a 24-hour basis, 7 days a week, in order that he may be contacted for emergencies and in cases where immediate action must be taken to maintain traffic or to handle any other problem that may arise. The Contractor's responsible person for supervision for emergencies shall speak and understand English. The Contractor shall submit, by certified mail, phone numbers and names of personnel designated to be contacted in cases of emergencies along with a description of the project location to the Florida Highway Patrol and all other local law enforcement agencies.

LIST OF EMERGENCY CONTACT NUMBERS & UTILITY SERVICE MAINTENANCE

The Contractor shall obtain and maintain a list of emergency contact phone numbers for all utilities during the course of the project. The Contractor shall maintain utility service during the project except for interruptions authorized by the utility owner. If interruptions are required, the Contractor shall notify the Owner 48 hours in advance.

PEDESTRIAN ACCESS

The Contractor shall provide access and make provisions to maintain school zones during construction. The Contractor is to facilitate pedestrian traffic whether for school or public transportation.

RECORD DRAWINGS AND PROJECT CERTIFICATION

The County will furnish the Contractor copies of the bid plans to be used for the record drawings. A Florida Registered Surveyor shall perform a field survey and any differences between the plan elevations or dimensions shall be marked through and the as-built elevation or dimension legibly entered. All elevations and dimensions that are correct shall have a check mark placed beside it.

The Contractor shall keep a complete set of surveyed "As-built" records. These records shall show all items of Work and existing features of utilities revealed by excavation work. The records shall be kept in a professional manner, in a form that shall be approved by the County prior to the Work. These results shall be available at all times during construction for reference by the Engineer and

shall be delivered to the Engineer upon completion of the Work. All completed “As-builts” must be certified by a Florida Licensed Surveyor or Engineer per Chapter 61 G 17-6, Florida Administrative Code, pursuant to Sec. 47207, Florida Statutes. All Record Drawings shall be in accordance with current Manatee County Standards.

The “Record Drawings” shall, at a minimum, include the following:

- A. Roadway centerline profile [100-foot maximum interval].
- B. Roadway cross sections [100-foot maximum interval].
- C. All underground piping with elevations and dimensions, changes to piping locations, horizontal and vertical locations of underground utilities and appurtenances referenced to permanent surface improvements. Actual installed pipe material, class, etc. Dimensions at these locations shall indicate distance from the centerline of construction.
- D. Elevations on all drainage control structures, verifying all plan dimensions.
- E. Stormwater ponds with cross sections [25-foot maximum interval] (sufficient to calculate volumes).
- F. Flow line elevations on all ditch breaks (vertical and horizontal).
- G. Field changes of dimensions and details.
- H. Details not on original contract drawings.
- I. Equipment and piping relocations.
- J. The locations of all headwalls, pipes and any other structures shall be located by station and offset.
- K. Benchmarks and elevation datum shall be indicated.
- L. Additional elevations or dimensions as required by the Engineer
- M. Additional elevations or dimensions as required by the County Representative

Following completion of construction and prior to final payment, the Contractor shall submit a Certification by the Contractor and Manufacturer including test data that the materials (filter fabric, filter media, etc.) installed meet plan specifications and regulatory requirements.

Upon completion of the work, four (4) sets of draft “Record Drawings” shall be submitted to the Owner for review. Such drawings shall accurately show all approved field changes to the original Construction Drawings, including actual locations, dimensions and elevations and shall be subject to a field review in the presence of the Engineer or his designated representative. The drawings are to be prepared by competent personnel, neatly drafted and certified, signed and sealed by a Florida Registered Surveyor.

The Contractor shall incorporate any comments from the Owner and/or Engineer and shall submit two write-only CD-ROMs, one set of 11-inch by 17-inch Mylar record drawings and four sets of 11-inch by 17-inch certified prints with the Surveyor’s certification.

All Digital Drawings shall be identical to those submitted as hard copy. The Digital Drawing files shall be AutoCAD format (Release 2010 or later) and shall include all external reference drawings, text fonts, shape files and all other files necessary to make use of the drawings.

In addition, \$150,000 or five percent (whichever is smaller) of the Contract price shall be retained until the County Representative has approved the "Record Drawings". The County Representative will review and approve the "Record Drawings within 30 days unless additional information is required. No final payment shall be made until such time as the "Record Drawings" have been approved and accepted by SWFWMD for Maintenance and Operation Phase Transfer. Unless there is a separate pay item for Record Drawings, payment shall be included as part of the lump sum quantity for Mobilization.

COMPLIANCE WITH THE FDEP COASTAL PERMIT REQUIREMENTS

FDEP Stormwater Management and Discharge permits or exemptions, if any, and/or a Department of Environmental Protection Coastal permit, if any, required for this project have been obtained by the County. The Contractor shall comply with the stipulations of the Permits or Exemptions as stated herein.

The Contractor shall allow periodic inspection of the work by authorized representatives of the Department of Environmental Protection, as well as other duly authorized law enforcement officers of the State.

CRUSHED CONCRETE BASE

Crushed Concrete Base shall follow FDOT Standard Specifications 2007 (rev 8-07) except that the Lime Rock Bearing Ratio (LBR) shall be minimum 150. The layer coefficient of 0.18 with LBR minimum 150 is allowed to calculate the base thickness.

Only FDOT certified piles are acceptable to this project. The producing process certified by FDOT without the actual pile certified is not considered solid enough for the acceptance of the material. The contract shall send the engineer the deliver tickets with FDOT certified pile number, pile location, project name and manufactory contact information shown.

Additional tests and pile inspections will be required for the quality control and the contractor will be responsible for the cost of the initial ten tests and any re-tests when needed. The material will be rejected by the County if the initial test fails. The rejected material shall be completely removed from the project site.

1) Regarding structural number on Crushed Concrete Base, Manatee County to approve SN 0.18 if following criteria is met and maintained:

- A) Limerock Bearing Ratio value of 150 or greater 10" compacted thickness in place.
- B) Gradation conforms to FDOT Specifications 2007 (rev 8-07).
- C) Deleterious materials conform to FDOT Specifications 2007 (rev 8-07).

- D) Delivery ticket indicates FDOT approved source, actual lot allocated to a particular project.
- E) Piles or lots to be inspected by Manatee County representative prior to acceptance.

2) Regarding Limerock Bearing Ratio value:

- A) No Limerock Bearing Ratio value less than 150, with no under tolerance.

3) Regarding source approval:

- A) FDOT approved source, allocated lot sufficient to serve projects need, delivery tickets stating FDOT approved source, project name, FDOT preapproved lot or pile number.

4) Regarding deleterious materials:

- A) Deleterious material content in addition to the FDOT Specifications 2007 (rev 8-07) should state that no construction debris such as Styrofoam insulation, telephone wire, lumber, shingles, aluminum window or door frames etc., or household trash ie: bottles, cans, paper goods etc. is acceptable.

5) Material source inspection:

- A) Prior to acceptance of base product, a representative of Manatee County will visit the Producer's location and obtain a sample of the proposed base for the specified project. In addition to sampling, the pile will be visually inspected for deleterious materials, substantial segregation, or any other undesirable characteristics. The pile shall have a traceable identification by pile number or lot number and an accurate quality assessment.

6) Import and placement of base product:

- A) During import of base product, a county inspector or duly designated representative of the county will be onsite monitoring incoming loads, making visual assessments of the product and checking load tickets for verification of materials.

7) Import and placement of base product:

A) After spreading out, prior to compacting, samples of the base product will be obtained by Manatee County approved testing lab, every 500 LF staggering right, left, center of the roadway for Limerock Bearing Ratio, gradation and deleterious material testing.

8) Rejection of materials:

A) Material not meeting above requirements will subject to rejection and be removed from the project site. Any three (3) concurrent rejections will require immediate shut down of imported material and require review and remedies prior to restart.

9) Compaction of material:

A) In place material should be a minimum of 10" in compacted thickness and achieve 98% of AASHTO T-180 compaction.

CLARIFICATION OF SPECIFIC LINE ITEMS

Clarification of the County's expectations of work to be performed as it relates to specific line items and/or item No. listed on the Bid Form is included in the FDOT Basis of Estimate Manual version 2013. Where such item number is not available, the description shows herein will prevail.

Line item # 5, Clearing & Grubbing, incl. riprap, trees, pipes, structures, endwalls, sidewalk, etc. shall follow FDOT Specifications 2013.

Line Item # 25, relocate bollards, shall meet County Park Specifications.

DISCRETIONARY WORK (Contingency)

The discretionary work (Contingency) pay item shall cover the cost for various contingencies and contract amendments authorized by the Owner. Any amount of extra work and/or alterations to the proposed work charged to the allowance shall be fully documented and authorized by the Project Manager before the start of the work. No payment shall be made for work completed without written authorization from the Owner or Engineer.

Date: ___/___/_____

Submittal No. _____

SHOP DRAWING SUBMITTAL COVER SHEET

(IFB) # [Insert IFB Number]

Project Name: [Insert Full Project Name]

Project File No.: [Insert Project Number]

Specification Title Number: [Insert Section No.] Specification No.: Part *[Insert Part No.]*, *[Insert Item No.]*

Page(s): *[Insert Page No.]*

Submittal Description: [Insert Title, Description of Submittal and Use]

SHOP DRAWING REVIEW	
RESPONSE NOT REQUIRED	RESPONSE REQUIRED
<input type="checkbox"/> NO EXCEPTIONS TAKEN <input type="checkbox"/> NOTE MARKINGS	<input type="checkbox"/> NOTE MARKINGS, CONFIRM <input type="checkbox"/> NOTE MARKINGS, RESUBMIT <input type="checkbox"/> REJECTED, RESUBMIT
<p>Engineer's review is for general conformance with the design concept and contract documents. Markings or comments shall not be construed as relieving the Contractor from compliance with the project drawings and specifications, nor departure therefrom. The Contractor remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly, and for performing his work in a safe manner.</p> <p style="text-align: center;">MANATEE COUNTY PUBLIC WORKS DEPARTMENT</p> <p>By: _____ Date: _____</p>	

Your Company Logo and/or information

[Contractor's Name]

[Contractor's Title]

[Company Name]

[Company Address]

[Office Number]

[Fax Number]

[email address]

[Approval Signature: _____]

[Approval Date: ___/___/_____]

Technical Specifications
FOR
Coquina Beach Drainage Improvements
Phase 2
PROJECT # 6005719

July 2020

Revised August 2020

PROJECT OWNER:

County of Manatee, Florida
c/o Manatee County Purchasing Division
1112 Manatee Avenue West
Bradenton, Florida 34205
(941) 748-4501

PREPARED BY:

Engineering Division
Manatee County Public Works Department
1022 26th Avenue East
Bradenton, Florida 34208
(941) 708-7450

Date

COQUINA BEACH TECHNICAL SPECIFICATIONS

DIVISION 1	SITE WORK	3
SECTION 001	PERVIOUS CONCRETE	3
SECTION 002	EMBEDDED RING INFILTRATION KIT (ERIK)	8
SECTION 003	BOLD & GOLD MEDIA	11

SITE WORK

SECTION 001 PERVIOUS CONCRETE

Part 1 General

1.01 Description

- A. Scope - This Section includes furnishing and installing pervious concrete paving for vehicular traffic. The Contractor shall be required to submit a proposed concrete mixture complying with the provisions of this section. All testing required within this Section shall be performed by the COUNTY.

1.02 Quality Assurance

A. Certification

At least one (1) member of the pervious concrete construction crew shall be certified as a "Craftsmen" per the National Ready Mix Concrete Association (NRMCA). Proof of certification shall be provided to the City prior to Contract Award. This certified individual shall be present at the site during all pervious concrete installation activities.

B. Qualifications

The Contractor shall provide a list of at least two (2) recent reference projects or Approved Equal. This list shall include the project's name, location and Owner's contact information. Test results (void content, unit weight, infiltration, etc.) for reference projects or Approved Equal shall also be provided.

Each reference project shall consist of a minimum of 2,500 square feet of pervious concrete. Reference projects or Approved Equal shall have been completed within the past three (3) years.

1.03 Submittals

The Contractor shall be required to submit a proposed mix design identifying the aggregate type, source and gradation. Cement, fly ash, admixtures (including applicable certifications) shall also be provided. The proposed mix design shall clearly state the concrete mixture proportions.

The Contractor will also be responsible for providing a jointing plan identifying the location of all proposed control, construction and isolation joints.

1.04 Test Panels

Test panels, measuring 12'x 12' (min.), shall be provided by the Contractor prior to construction for inspection and approval. Test panels shall be constructed of a depth matching the plan-defined thickness. A single-ring infiltrometer shall be installed (in accordance with the plans) within this test panel. The Contractor shall perform all specification-required finishing to the panel.

The test panel shall meet all performance specifications (i.e. density, void content, infiltration rate, etc.) required within this section.

Non-compliant test panels shall be removed and disposed of at the Contractor's expense. Additional test panels shall be constructed until the performance specifications are met.

1.5 Performance Requirements

Pervious concrete shall meet the following requirements:

- Void content between 15% and 25% per ASTM C42.
- In-place density within 5 pounds per cubic foot of the design unit weight.
- Water-to-cement ration of 0.35 to 0.45
- Infiltration rate of 1.5 inches / hour.
- Compressive strength of 300 psi.

Part 2 Products or Approved Equal

2.01 Materials

A. Cement

1. Cement shall be Portland Cement (Type I or II) per ASTM C150 or Portland Cement (Type IP or IS) per ASTM C595.
2. The Contractor may substitute up to 20% of the required cement with Class F fly ash per ASTM C618.
3. The Contractor may substitute up to 50% of the required cement with Ground iron blast furnace slag per ASTM C989.

B. Aggregates

Course and fine aggregate shall comply with ASTM C33.

Course aggregate gradation shall be Size No. 89 as defined within FDOT Specification Section 901. Alternate gradations may be used if approved by the CITY.

If used, fine aggregate shall not exceed 3 cubic feet per yard.

C. Water

Water shall be per ASTM C1602.

D. Admixtures

Utilize admixtures in accordance with the manufacturer's recommendations.

Part 3 Execution

3.01 Subgrade Preparation

- A. The Contractor shall prepare the subgrade in accordance with plan details and other applicable specification sections. All excess material shall be removed from the site and disposed of at the Contractor's expense. Some of these materials are shown to be used to fill in behind the back of curb paid for as denoted in the plans. Removal of trees, and other surface material shall be paid for in the unit price for pervious concrete.

- B. Permeability testing shall be performed for each ½ acre of prepared (i.e. compacted) subgrade. Permeability testing shall be performed in accordance with ASTM D3385. Testing shall be submitted to the CITY prior to base installation.

3.02 Forms

- A. Forms shall be constructed of reinforced plastic or roll formed steel. Wooden forms will only be permitted for intermediate transition segments (radii, fill-in, etc.). Forms shall be of a suitable strength to support mechanical equipment.
- B. Forms shall be the width and depth of the pavement. Removable spacers (3/8") shall be placed above the forms to support finishing equipment.
- C. Forms shall maintain proper alignment and grade. Base of forms shall be directly in contact with the subgrade.
- D. A release compound shall be placed on the forms prior to pouring pervious concrete. Forms shall not be removed within 24 hours of a pour.
- E. The Contractor may use previously placed concrete in lieu of a form so long as the newly placed concrete has achieved a sufficient split tensile strength.

3.03 Mixing & Hauling

- A. Aggregate used in pervious concrete mix shall be kept wet prior to mixing activities. Manufacture and deliver pervious concrete in accordance with ASTM C94.
- B. Mixtures can be produced in central or truck mixtures. Concrete delivered shall be mixed in the central mixer for 90 seconds. Concrete mixed in truck mixers shall be mixed at the speed designated as mixing speed by the manufacturer for 75 – 100 revolutions.
- C. Whether mixed offsite or onsite, each load shall be used within one (1) hour of introduction of mix water. This duration can be extended to 90-minutes if a hydration stabilizer is used.
- D. Each truckload shall be inspected for consistency of concrete mixture. Water addition is permitted at the point of discharge to obtain the required mix consistency provided a measurable quantity is used before more than 0.5 cubic yard of concrete is discharged, and the design water to cement ratio is not exceeded. A minimum of 30 revolutions at the manufacturer's designated mixing speed shall be required following the addition of any water to the mix. Discharge shall be a continuous operation and completed as quickly as possible. Concrete shall be deposited as close to its final position as practical. Pulling or shoveling pervious concrete to final placement will not be permitted.

3.04 Placement & Finishing

- A. Concrete shall be used while fresh. Re-tempering shall be minimized.
- B. Concrete shall be applied in successive batches to the full width of a parking stall, drive isle or traffic lane. If approved, adjacent traffic lanes or drive isles may be monolithically poured without a construction joint. A longitudinal weakened-plane joint shall be installed at each traffic lane or drive isle.
- C. Successive concrete batches shall not be placed within 30 minutes of one another.

- D. Slip form or vibratory form riding equipment shall be used to place the pervious concrete. Internal vibration will not be permitted. Mechanical vibratory screed shall be used to strike off the pervious concrete 3/8" above the final height.
- E. Embed infiltrometers per plan requirements (one per each 1/2 acre of pervious concrete).
- F. Do not disturb concrete when in its plastic state. Low spots shall be filled and compacted. Finish concrete in a manner to consolidate the concrete without segregation (i.e. through use of hand tools).
- G. Form spacers shall be removed after strike-off and compaction shall commence. Compaction shall be performed through the use of a steel roller with a minimum diameter of 10" (or other approved method). The steel roller shall span the width of the pour and exert a vertical pressure of at least 10 PSI. Caution shall be used during compaction to ensure that sufficient compaction is achieved without the application of excessive force that could minimize porosity of the finished surface.
- H. Compaction along the edges of the pervious slab shall be done using hand tampers. No further finishing shall be performed once compaction efforts are completed.
- I. Pavement slopes shall not deviate greater than 3/8" over 10-feet.

3.05 Joints

Joints shall be longitudinal and traverse construction joints and longitudinal and traverse weakened-plane joints. The faces of all joints shall be constructed in a manner that is normal to the finished surface.

Traverse joints shall be constructed normal to the centerline of the road or drive isle and extend the full width of the pavement. Traverse joints shall be in line with each other across the full width of the road or drive isle. Where curbing is present, control joints in the curbing and pervious concrete shall align.

Longitudinal joints shall be parallel to the centerline of the road or drive isle.

A. Construction Joints

Construction joints shall be made when pervious concrete is poured against hardened concrete at planned locations and at locations when concrete pouring operations are interrupted for longer than 30 minutes.

Traverse construction joints shall not be placed within 10' of another traverse joint. When joint spacing is less than 10' due to concrete pouring operations ceasing, excess material shall be removed and pouring shall commence at the nearest joint.

- B. Control (contraction) joints shall be installed at regular intervals not to exceed 15' or the width of the traffic lane or drive isle. Control joint depth shall be 1/4 of the overall pervious concrete depth but no greater than 1-1/2". These joints shall be installed in the plastic state using a steel "salt roller" with a beveled fin welded circumferentially along the roller (i.e. "pizza cutter").
- C. Control (contraction) joints may be installed in hardened concrete using a wet saw. Saw cuts shall be at the above-specified depth and made as soon as the pavement has hardened. The curing cover shall be removed the surface kept misted to prevent moisture loss. Curing cover shall be replaced with a minimum of 1' overlap on each side of the joint.
- D. Isolation joints shall be installed when pervious concrete abuts fixed vertical surfaces such

as a light pole foundation, building foundation, etc. Isolation material shall extend the full depth of the pervious concrete and be placed prior to pouring.

The contractor will be required to submit a jointing plan prior to construction.

3.06 Curing

- A. Within 20 minutes after final placement, curing procedures shall commence. The pervious concrete surface shall be covered with a 6-mil thick polyethylene sheet or other approved material. The cover shall overlap all exposed edges by 1-foot and be secured to prevent movement and/or uplift.
- B. Joints within the covering sheet shall be overlapped to a suitable degree. Overlapped edges shall be protected from soil intrusion.
- C. The surface shall be kept moist after screeding using misting or fogging devices only. Direct water spray is not permitted.
- D. Vehicular traffic shall be kept off of the pervious concrete surface for seven (7) days. Truck traffic shall be kept off of the pervious concrete surface for fourteen (14) days.

3.07 Field Quality Control

- A. Concrete tests shall be performed for each 150 cubic yards of pervious concrete poured or each work day, whichever is less. Concrete tests shall determine the density (unit weight) of the concrete in accordance with ASTM C138.
- B. At locations determined by the City, test cores (4" diameter) shall be obtained at a rate of one core per 1,000 square yard of pervious concrete surface. Cores shall be drilled in accordance with ASTM C42.

The cores shall be tested for compressive strength in accordance with ASTM C39. Cores shall also be tested for density and void content per ASTM C42.

- C. Infiltration rates shall be tested using the embedded infiltrometers.

End of Section

SECTION 002 EMBEDDED RING INFILTRATION KIT (ERIK)

PART 1 GENERAL

Part 1 General

1.01 Description

A. Scope - This Section includes furnishing and installing embedded ring infiltration kit (ERIK) for measuring the percolation in and through pervious concrete. All inspection required within this Section shall be performed by the COUNTY.

1.02 Submittals

The Contractor shall be required to submit shop drawings of the ERIK or approved equal for review and approval. The contractor can contact Erik Stuart, P.E. at 941-400-8040 or by e-mail at erikstuartpe@gmail.com for additional information above what is included in the construction plans.

Part 2 Products or Approved Equal

2.01 Materials

There are essentially three main components of the ERIK device: the (permanent) embedded ring and two (graduated) measurement reservoirs for monitoring a range of flow rates through the pervious pavement system. The element that is considered novel is the permanently embedded ring portion of the ERIK device. This novel feature of actually embedding the ring into the system at time of construction is the key to preventing water from flowing laterally through a more permeable layer which gives a false indication of the true vertical infiltration of the entire system.

A. Embedded Ring

The material utilized in constructing the embedded ring is a 6 inch ID (schedule 80) PVC pipe and coupling system, in which the bottom (6 inch ID PVC schedule 80) pipe end extends downward through each of the layers of the pervious pavement system under consideration. The embedded ring can be extended into the parent earth soils underneath the pervious pavement system for monitoring the system's infiltration performance at a particular location/site given its own soil characteristics. An advantage of the device is that testing can be conducted throughout the service life of the system for monitoring system performance over time. This can be used to track the performance of the system as it clogs with sediment and is later vacuumed to remove the clogging debris.

B. Measurement Reservoirs

The measurement reservoirs supply water to the embedded ring by easy manipulation of the valves to control the flow rate. This makes the test process easy to conduct and minimal training is needed for future field personnel. By providing pre-determined graduated markings for easy recording and conversion of infiltration rates into inches per hour, the testing device is self-sufficient and user friendly. There are no moving parts or electronics that may malfunction during a test or need continuous maintenance or calibration.

Part 3 Execution

3.01 Placement & Finishing

A. Installation of Embedded Ring

The top of the embedded ring coupling is set flush to the top of the surface of the pavement to enable installers to construct the pavement layers with concurrent construction methods (i.e. screeding, compacting, rolling, troweling, covering, etc.). In large surface areas of pavement, the embedded ring may function as a top of grade marker (or grade stake) set at an elevation consistent with the final elevation of the pavement surface. Once the embedded ring is installed, it is subjected to natural conditions that impact the pavement's infiltrating performance such as wind-blown sediments or automobile tires tracking sediments. These conditions are similar to the natural loading of the remainder of the pavement surface and reflect the eventual accumulation of sediments in the surface pores of the pavement. The sediments then can get washed in deeper into the pore structure of the pavement system by precipitation and even compacted into the void spaces by automobile tire loads.

B. Installation Insert Collar

During installation of the embedded ring in the pavement, a ring shaped gap or dap-out is left between the inner wall of the coupling and the pavement to allow for the insertion and removal of the testing collar into the top of the coupling when a test is conducted. To create this gap, a small (1.5 inches in length) installation collar is temporarily inserted (not glued) as a placeholder into the top of the embedded coupling until flush with pavement surface. Once the pavement is installed and properly cured, this temporary construction insert ring is removed. The small ring can then be discarded or used for future ERIK installations. Since the test collar can only be practically inserted about one inch into the top of the coupling for a test, there is an empty space beneath the test collar. To eliminate this unwanted empty space which may create an artificial flow channel for the water, an additional small ring (labeled "Permanent Insert Collar" in Figure 4) is permanently fixed used PVC glue to the coupling system at the time of installation. Figure 4 shows the details of the entire assembly.

C. Testing Insert Collar

The function of the temporary testing collar is to support the column of water at a certain head level above the pavement surface during an actual test. This insert collar is temporarily sealed with clear silicone prior to testing to prevent leakage between the outside wall of the collar and the inside wall of the embedded coupling. The testing collar is able to be removed once testing is complete avoiding any tripping hazard during normal operation.

D. Embedment Pipe

The bottom portion of the coupling is a permanently-glued, 6-inch ID, schedule 80 PVC pipe that extends downward through the sub-base layers and penetrates 4 inches into the parent earth soils. For example, if the pavement layer is 6 inches in thickness and the sub-base layer is 10 inches, then the total length of the permanent embedded ring would be $6 + 10 + 4 = 16$ inches.

E. Graduated Measurement/Monitoring Reservoirs

The Type-A monitoring reservoir is a 2 inch ID [clear] schedule 40 PVC pipe which stands vertically in close proximity to the embedded pipe during the test. The clear measuring tube is graduated by scoring lines on the outside of the clear pipe at 4.5 inch intervals. At this 4.5 inch interval, the volume of water inside is equal to a 0.5 inch interval or volume of water

entering the pavement through the 6 inch ID embedded ring and hence equals the volume of water infiltrating through the pervious pavement system. This graduation provides a quick and easy measurement of the infiltration rate of water and is expressed in units of inches per hour (in/hr), which may be compared directly to the rainfall intensities.

F. Flow Control Valve

The Type-A measurement reservoir has a $\frac{3}{4}$ inch valve attached near the bottom for manual control of the flow of water into the testing collar. The valve must be manipulated during each test to keep the water level inside the test collar at a constant head level indicated by the marking on the inside of the collar.

End of Section

SECTION 003 BOLD & GOLD MEDIA

PART 1 GENERAL

Part 1 General

1.01 Description

- A. Scope - This Section includes furnishing and installing Bold & Gold Media for water quality enhancement. All inspection required within this Section shall be performed by the COUNTY.

1.02 Submittals

The Contractor shall be required to submit shop drawings of the Bold & Gold Media or approved equal for review and approval. The contractor can contact Chris Bogdan at 407-298-5121 or e-mail at chris.bogdan@ecs-water.com for additional information above what is included in the construction plans.

Part 2 Products or Approved Equal

2.01 Materials

The contractor shall be responsible for the satisfactory delivery, stockpiling, installation and maintenance of the Bold & Gold® CTS or Approved Equal media during construction based on information provided in the Contract Documents and as provided by the supplier. The Bold & Gold® CTS or approved equal media shall be purchased from an approved source.

A. Composition

The Bold & Gold® CTS or approved equal media shall be manufactured with mineral materials and no organic materials. The final product will have more than 2% but less than 6% passing the 200 sieve. The mix will be composed of 85 % poorly graded sand and 15% sorption materials by volume. The sorption materials are composed of recycled tire crumb with no metal contents and mined clay that has no less than 99% clay content. Percentages shall be determined by in-place volume. The mix will have an average dry weight of non-compacted media greater than 62 pounds per cubic foot and be non-flammable up to 482°F. Water passing through the media must not exhibit acute or chronic toxicity and not change the pH of the filtered water by more than 1.0 unit. The material will have a water holding capacity (amount of water that the media can hold for crop use) of at least 10% as measured by porosity, and total porosity of 32%. The permeability as measured in the laboratory must be greater than 5.0 inch per hour at maximum compaction. The Bold & Gold® CTS or approved equal media has a dissolved phosphorus (DP) removal capacity that exceeds 0.2 mg DP/gram of media as measured in the laboratory during normal operating conditions. Environmental Conservation Solutions, LLC. will provide certification of authenticity on the above composition and performance.

B. Storage and Handling

At the contractor's option, the Bold & Gold® CTS or approved equal media may be delivered pre-mixed and ready to install or the material components delivered separately and mixed on site by a ECS representative. Pre-mixed material and/or the clay portion of the component material shall be stored in a covered and well-drained area. Material shall not be stockpiled longer than 30 days before installation to prevent separation of the material due to rainfall.

Part 3 Execution

3.02 Placement & Finishing

A. Delivery of the Material

Bold & Gold® CTS or approved equal media may be delivered to the jobsite premixed OR the component materials may be delivered for onsite mixing by the manufacturer.

B. Premixed Delivery

Bold & Gold® CTS or approved equal media shall be mixed by an Environmental Conservation Solutions, LLC. and delivered to the jobsite ready for installation. The delivered material is certified to meet the patent requirements.

C. Onsite Mixing Delivery

The mixing shall be done either in a pugmill or other mechanical mixing system that has the capability of uniformly mixing the component material to the requirements of Section 2.01 of this specification. An Environmental Conservation Solutions, LLC. representative shall mix the material on site. Care shall be taken to avoid contaminating the component material with the existing ground in the stockpile area. The mixed material may be stockpiled and covered for up to 30 days before installation.

D. Installation

Surface on which the Bold & Gold® CTS or approved equal media is placed shall be reasonably smooth and within ± 1 of the elevations shown in the plans. The surface of the Bold & Gold® CTS or approved equal media is to be placed or shall be compacted to meet the requirements as specified by the design engineer. The Bold & Gold® CTS or approved equal media shall not be installed until all areas that drain to it have the final stabilization in place. If the installed Bold & Gold® CTS or approved equal media becomes contaminated with sediment it shall be removed and replaced at the contractor's expense. After placement of the top soil over the Bold & Gold® CTS or approved equal media, driving and parking on the installed Bold & Gold® CTS or approved equal media is allowed. If rutting to the Bold & Gold® CTS or approved equal media occurs due to vehicles or equipment during installation the contractor shall repair it to the grades and elevations in the plans.

The Bold & Gold® CTS or approved equal media may be placed in one lift and compacted to the density specified in the plan by the design engineer. The compacted thickness will be no less than the thickness shown in the plans. Clean water with no contaminants may be added to the material to meet the compaction requirements. If the compacted Bold & Gold® CTS or approved equal media has an in-place density greater than 105% of the required density, the material will be reworked to meet density requirements.

If required by the design engineer, sod or seed shall be placed over the Bold & Gold® CTS or approved equal media within two days of placement. The sod used as cover for the Bold & Gold® CTS or approved equal media shall have been grown in a predominantly sandy site with less than 5% of the soil attached to the sod passing the 200 sieve.

End of Section