

CITY OF SANIBEL

SPECIFICATIONS FOR POST HURRICANE IAN LIFT STATION CONTROL PANEL PROCUREMENT PHASE 1

ITB-UT-1-2025/SK

APRIL 9, 2025



*Public Works Department
800 Dunlop Road, Sanibel, FL 33957
(239)472-6397*

BIDS DUE BY: 2:30 PM, (ET) May 13, 2025

PRE-BID CONFERENCE: NONE

NO QUESTIONS WILL BE ACCEPTED AFTER: 5:00 PM, (ET) May 3, 2025, all questions must be submitted in writing to scott.krawczuk@mysanibel.com and received by stated time.

SEALED ENVELOPES MUST BE MARKED WITH THE TITLE OF THE BID, BID NUMBER, NAME AND ADDRESS OF THE BIDDER.

Courier Packages (FedEx, UPS) shall clearly state on the outer packaging, the Invitation to Bid Title and the Invitation to Bid Number. If the proper information is not on the courier's outer packaging the Bid/RFP may be sent back to the Vendor without being opened and/or given consideration for that project.

POST HURRICANE IAN LIFT STATION CONTROL PANEL PROCUREMENT PHASE 1

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CITY OF SANIBEL, FLORIDA

ADVERTISEMENT FOR BIDS

Legal Notice is hereby given that sealed proposals will be received at the Office of the City Engineer, City of Sanibel, Florida, at the Public Works Building, 750 Dunlop Road, Sanibel, until 2:30 P.M., on Tuesday, May 13, 2025 and shortly thereafter will be publicly opened and read aloud. Any proposal offered later than the above time will be returned unopened.

The work for which proposals are to be received consists of the following:

POST HURRICANE IAN LIFT STATION CONTROL PANEL PROCUREMENT PHASE 1

Proposals shall be properly and completely executed on a standard proposal form. Each proposal shall be accompanied by an acceptable certified check or cashier's check made payable to the City of Sanibel, or an acceptable Bidders Bond, in an amount not less than five percent (5%) of the total bid price.

The Contractor to whom the work is awarded will be required to furnish an acceptable Surety Bond in an amount of one hundred percent (100%) of the contract price.

No bidder may withdraw his proposal within a period of sixty (60) days following the date set for receiving proposals. The City of Sanibel reserves the right to hold any and all bids for a period of not more than sixty (60) days and said bids shall be and remain valid and in full force and effect during said period. The City of Sanibel reserves the right to reject any and all proposals and to waive informalities.

Plans and Specifications for the work may be obtained online at:

<https://www.mysanibel.com/government/public-works-department/useful-links/city-bids>

Scott Krawczuk
Deputy Public Works Director
AFFIDAVIT REQUESTED
PUBLISH ONE TIME
Fort Myers News-Press
April 9, 2025

INFORMATION FOR BIDDERS

1.01 SCOPE

- A. The contract work provides for the Post Hurricane Ian Lift Station Control Panel Procurement Phase 1 and other related items pertinent and incidental thereto including the furnishing of all labor, materials, supplies, equipment, work and services, ready for satisfactory and continuous operation, in accordance with the drawings and specifications.
- B. The work included in this contract is described briefly as follows:

City of Sanibel

Post Hurricane Ian Lift Station Control Panel Procurement Phase 1

- C. A purchase order for the scope of supply is anticipated in June 2025.

1.02 CONTRACT DOCUMENTS AND SPECIFICATIONS

- A. Work to be performed shall be in accordance with drawings and specifications prepared by Tetra Tech, Inc. and the City of Sanibel.

1.03 BIDDER TO EXAMINE SITE

NOT USED

1.04 INFORMATION NOT GUARANTEED

NOT USED

1.05 QUESTIONS REGARDING CONTRACT DOCUMENTS

- A. In general, no answer will be given in reply to an oral question if the question involves an interpretation of the intent or meaning of the drawings or contract documents, or the equality or use of products or methods other than those definitely designated or described on the drawings or in the specifications. Any information given to bidders other than by means of the drawings and contract documents or by addenda as described below is given informally and shall not be used as the basis of a claim against the OWNER or the Engineer.
- B. To receive consideration, such questions shall be submitted in writing to the OWNER at least **TEN (10)** days before the advertised date for receipt of bids. If the question involves equality or use of products or methods, it must be accompanied by drawings, specifications, or other data, in sufficient detail to enable the OWNER to determine the equality or suitability of the product or method. In general, the OWNER will neither approve nor disapprove particular products prior to the opening of the bids; such

products will be considered when offered by the CONTRACTOR for incorporation into the work.

- C. The OWNER will arrange as addenda, which shall become a part of the Contract, all questions received as above provided, with his decision regarding each. Addenda will be posted at least **FIVE (5)** days prior to the receipt of bids. It shall be the responsibility of the CONTRACTOR, prior to submitting a proposal, to check the DemandStar online marketplace to download any and all addenda associated with the project. CONTRACTOR shall acknowledge issued addenda on Proposal document page (P-2).
- D. Unless such action shall have been taken by the CONTRACTOR and approval obtained, he agrees to use the product or method designated or described in the specifications or as amended by these addenda.

1.06 PROPOSAL FORM

- A. All bids must be submitted upon the Proposal Form which will be furnished by the OWNER. The Proposal Form shall be completely executed and shall give the price bid for each item of work proposed, both in words and figures, and shall be signed by the bidder.
- B. In the event of a discrepancy between the prices written in words and prices written in figures, the prices written in words shall govern.
- C. OWNER is exempt from State of Florida sales tax on materials it purchases.
- D. Payment for work items in this contract is based on actual quantities with unit cost as per the bid schedule. The OWNER reserves the right to adjust quantities up to twenty-five percent (25%) above or below estimated quantities at contract unit prices.
- E The successful bidder shall be prepared to furnish all equipment within **FOUR HUNDRED (400)** calendar days of the Notice to Proceed.
 - (1) The successful bidder shall be prepared to furnish the initial fifteen (15) Duplex Pump Control Panels (Power Panels), fifteen (15) Duplex Pump Control Panels (Controls Panels), fifteen (15) Termination Cabinets, and fifteen (15) Vented Pedestal Boxes within **TWO HUNDRED AND FIFTY (250)** calendar days of the Notice to Proceed. OWNER will provide the scope of supply for the initial fifteen (15) lift stations after contract award.
 - (2) The successful bidder shall be prepared to furnish the next fifteen (15) Duplex Pump Control Panels (Power Panels), fifteen (15) Duplex Pump Control Panels (Controls Panels), fifteen (15) Termination Cabinets, and fifteen (15) Vented

Pedestal Boxes within **THREE HUNDRED AND FIFTY (350)** calendar days of the Notice to Proceed. OWNER will provide the scope of supply for the next fifteen (15) lift stations after contract award.

- (3) The successful bidder shall be prepared to furnish the final eleven (11) Duplex Pump Control Panels (Power Panels), ten (10) Duplex Pump Control Panels (Controls Panels), ten (10) Termination Cabinets, and ten (10) Vented Pedestal Boxes within **FOUR HUNDRED (400)** calendar days of the Notice to Proceed. OWNER will provide the scope of supply for the final eleven (11) lift stations after contract award.

1.07 LETTER FROM SURETY

- A. The CONTRACTOR shall submit with their executed bid proposal a letter or statement from their surety company that it will execute and deliver a one hundred percent (100%) Performance and Payment Bond.

1.08 AWARD OF CONTRACT

- A. Lump Sum Proposals - The award of Contract shall be made to the low, responsive and responsible bidder on the lump sum proposals submitted for the work. The Contract shall be deemed as having been awarded when formal notice shall have been served upon the successful bidder by an officer or agent of the OWNER duly authorized to give such notice.
- B. Unit Price Proposals
- (1) The award of the Contract will be made to the lowest responsible bidder on the total bid price given on the Proposal Form, page P-1. The Contract shall be deemed as having been awarded when formal notice shall have been served upon the successful bidder by an officer or agent of the OWNER duly authorized to give such notice.
- (2) The quantities listed in the unit price proposal form are to be considered as approximate and are to be used for the comparison of bids only. The unit prices to be tendered by the bidders are to be tendered expressly for the scheduled quantities, as they may be increased or decreased as hereinafter provided. Payments, except for lump sum items in the unit price Contract, will be made to the CONTRACTOR for the actual quantities of work performed or materials furnished in accordance with the plans and specifications; and it is understood that the scheduled quantities of work to be done and materials to be furnished may each be increased or diminished as hereinbefore provided without in any way invalidating the unit price bid. Where there is a conflict between the unit price and the extension thereof made by the bidder, the unit price shall govern, and the

Engineer shall be authorized to make a correct extension of such unit bid price and to use such corrected extension in comparing bids.

- (3) When bids are requested on "Alternate" items, the City reserves the right to select the lowest responsible bidder based upon either the base bid or the base bid with any or all of the alternate bid prices.
- (4) The City reserves the right to accept or reject any or all bids and to waive any formal irregularities in the bids, when deemed to be in the best interest of the City.

1.09 BID SECURITY

- A. Each bid shall be accompanied by a cashier's check made payable to the OWNER or an acceptable bidder's bond in an amount of not less than five percent (5%) of the total bid price. The checks will be returned to all except the three lowest formal bidders within three days after the date of opening the bids. Any checks remaining with the OWNER shall be returned upon execution of a contract.

1.10 EXPERIENCE AND ABILITY OF CONTRACTOR

- A. It is the intent of the OWNER not to award the Contract to any bidder who does not furnish satisfactory evidence they have the ability and experience in this class of work, and that they have sufficient capital and plant to enable them to prosecute the same successfully and to complete it in the time named in the proposal. CONTRACTOR shall have a minimum of **FIVE (5)** years' experience with similar projects.

1.11 EXECUTION OF CONTRACT

- A. The successful bidder to whom the Contract is awarded shall be required to execute **three (3)** copies of the Construction Contract and **three (3)** copies of the Performance and Payment Bond.

1.12 FORFEITURE OF BID SECURITY

- A. In the event that the party to whom the Contract is awarded shall fail or neglect to execute the Contract and furnish satisfactory bonds within TEN (10) days after the OWNER has notified him that the Contract is ready for execution, the OWNER may determine that the bidder abandoned the Contract, and thereupon the proposal and acceptance shall be null and void; and the security accompanying the proposal shall be forfeited to and retained by the OWNER as liquidated damages for such failure and neglect, and to indemnify the OWNER for any loss which may be sustained by failure of the bidder to execute the Contract. After the execution of the Contract and the acceptance of the bonds by the OWNER, the bid securities which have been retained by the OWNER shall be returned to the respective bidders.

1.13 UNAVAILABILITY OF MATERIALS

- A. Bids must be based on use of the materials specified, subject to the provisions of any addenda issued. If the CONTRACTOR is unable to furnish or use any of the materials or equipment specified because of any order by a governmental agency limiting the manufacture or use, or because of the supply situation in the general market for such material or equipment, the CONTRACTOR shall offer substitutes therefor. The substitutes shall be suitable for the purpose, considering the factors of quality, serviceability, appearance, and maintenance. No substitute shall be used until it has been approved by the Engineer.
- B. No consideration will be given to the use of substitutes on account of market conditions unless the CONTRACTOR demonstrates that for the item in question, CONTRACTOR placed their order and submitted shop drawings without delay, that CONTRACTOR has shown due diligence in attempting to locate the item as specified, and that the unavailability is due to market conditions in general throughout the particular industry.
- C. If substitutes are used in the work, the compensation to be paid to the CONTRACTOR shall be subject to review and adjustment. As a general principle, if the Engineer shall determine that the substitute will be less satisfactory, the CONTRACTOR shall allow a credit to the OWNER; only "under unusual circumstances shall there be an increase in" compensation to the CONTRACTOR on account of substitution. The basis upon which the amount of price adjustments will be founded shall be the cost of the appropriate items at the time the bids were opened.

1.14 LOCAL LABOR AND MATERIALS

NOT USED

1.15 NONDISCRIMINATION IN EMPLOYMENT

- A. Contracts for work under this proposal may obligate the CONTRACTOR and sub-contractors not to discriminate in employment practices.
- B. Bidders must, if requested, submit a compliance report concerning their employment practices and policies in order to maintain their eligibility to receive the award of the Contract.

1.16 RIGHT-OF-ACCESS

- A. The CONTRACTOR agrees that a representative of the OWNER or Engineer will have access to the work wherever it is in preparation of progress and that the CONTRACTOR will provide facilities for such access and inspection.

1.17 SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION

- A. The successful bidder shall be responsible for all obligations prescribed as employer obligations under Chapter XVII of Title 29, Code of Federal Regulations, Part 1926, otherwise known as "Safety and Health Regulations for Construction."

1.18 UTILITIES

NOT USED

1.19 EASEMENTS

NOT USED

1.20 OPERATIONS WITHIN RIGHT-OF-WAY

NOT USED

1.21 PUBLIC RECORDS

- A. OWNER is a public agency subject to Chapter 119, Florida Statutes, the Public Records Law. As a CONTRACTOR or service provider to OWNER, CONTRACTOR is also subject to the Public Records Law pursuant to Section 119.0701, Florida Statutes, and shall comply with Florida's Public Records Law. Unless specifically exempted by Florida law, in whole or part, the CONTRACTOR shall:

- (1) Keep and maintain public records required by the OWNER in order to perform the service. This shall include all records relating to CONTRACTOR'S services provided to the OWNER and includes "all documents, papers, letters, maps, books, tapes, photographs, films, sound recordings, data processing software, or other material, regardless of the physical form, characteristics or means of transmission."
- (2) Upon request from the OWNER'S custodian of public records, provide the OWNER with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
- (3) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the CONTRACTOR does not transfer the records to the OWNER.
- (4) Upon completion of the contract, transfer, at no cost to the OWNER, all public records in possession of the CONTRACTOR, or keep and maintain public records required by the OWNER to perform the service. If the CONTRACTOR transfers

all public records to the OWNER upon completion of the contract, the CONTRACTOR shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the CONTRACTOR keeps and maintains public records upon completion of the contract, the CONTRACTOR shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the OWNER, upon request from the OWNER'S custodian of public records, in a format that is compatible with the information technology systems of the OWNER.

- B. As required by Section 119.0701(2)(a), the following contact information is provided to the CONTRACTOR in the format required by statute:

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

**SANIBEL CITY CLERK
800 DUNLOP ROAD
SANIBEL, FLORIDA 33957
(239) 472-3700
scotty.kelly@mysanibel.com**

1.22 E-Verify

- A. In compliance with Section 448.095, Fla. Stat., CONTRACTOR and its sub-contractor must be registered with and use the E-Verify system to verify work authorization status of all employees hired after January 1, 2021.
- (1) CONTRACTOR shall require each of its sub-contractors to provide CONTRACTOR with an affidavit stating that the sub-contractor does not employ, contract with, or sub-contract with an unauthorized alien. CONTRACTOR shall maintain a copy of the sub-contractor's affidavit as part of and pursuant to the records retention requirements of this Agreement.
 - (2) The OWNER, CONTRACTOR, or any sub-contractor who has a good faith belief that a person or entity with which it is contracting has knowingly violated Section 448.09(1), Fla. Stat. or the provisions of this section shall terminate the contract with the person or entity.
 - (3) The OWNER, upon good faith belief that a sub-contractor knowingly violated the provisions of this section, but CONTRACTOR otherwise complied, shall promptly notify CONTRACTOR, and CONTRACTOR shall immediately terminate the contract with the sub-contractor.

- (4) A contract terminated under the provisions of this section is not a breach of contract and may not be considered such. Any contract termination under the provisions of this section may be challenged pursuant to Section 448.095(2)(d), Fla. Stat. CONTRACTOR acknowledges that upon termination of this Agreement by the OWNER for a violation of this section by CONTRACTOR, CONTRACTOR may not be awarded a public contract for at least one (1) year. CONTRACTOR further acknowledges that CONTRACTOR is liable for any additional costs incurred by the OWNER as a result of termination of any contract for a violation of this section.
- (5) Subcontracts. CONTRACTOR or sub-contractor shall insert in any subcontracts the clauses set forth in this section, including this subsection, requiring the sub-contractor to include these clauses in any lower tier subcontracts. CONTRACTOR shall be responsible for compliance by any sub-contractor or lower tier sub-contractor with the clauses set forth in this section.

PROPOSAL

CITY OF SANIBEL, FLORIDA

POST HURRICANE IAN LIFT STATION CONTROL PANEL PROCUREMENT PHASE 1

MAY 13, 2025 @ 2:30 PM

TO: CITY OF SANIBEL
Public Works Department
800 Dunlop Rd.
SANIBEL, FLORIDA 33957

Pursuant to the advertisement for bids, the undersigned having read the Specifications and examined the Drawings prepared by Tetra Tech, Inc. and the City of Sanibel for the **POST HURRICANE IAN LIFT STATION CONTROL PANELS PROCUREMENT PHASE 1** in the City of Sanibel, Florida hereby proposes to provide all materials, and all equipment, tools, etc., and to perform all labor necessary for furnishing the equipment as specified and described in said Specifications.

The Total Bid Price for the work based on the summation of the extensions of the unit prices on the attached itemized proposal is:

Item	Quantity	Total Price
Post Hurricane Ian Lift Station Control Panel Procurement Phase 1	1	\$
TOTAL BID IN WORDS _____ _____ <div style="text-align: right; margin-top: 10px;">\$ _____</div> <div style="display: flex; justify-content: space-between; margin-top: 10px;">(In words)(In figures)</div>		
NAME OF SUBMITTING CONTRACTOR _____ _____		

TIME OF COMPLETION

The undersigned further agrees to complete the fabrication and delivery of such work, ready for continuous and satisfactory operation in all respects, within **FOUR HUNDRED (400)** calendar days of the Notice to Proceed.

TIME OF VALIDITY

It is hereby agreed that this proposal shall remain in full force and effect and may not be withdrawn for a period of sixty (60) days from the date of receiving proposals by the City of Sanibel.

BID SECURITY

The undersigned encloses herewith a certified check or cashier's check payable to the City of Sanibel, Florida or a bidder's bond bonding the undersigned and surety to the City of Sanibel, Florida in an amount not less than five percent (5%) of the total bid price as set out above, guaranteeing that the undersigned will enter into contract for the performance of the work if this proposal is accepted.

ADDENDA

Receipt of Addenda Nos. _____ is hereby acknowledged.

REQUIRED BID ITEMS

No.	Name	Page Reference
1	Bid Package in sealed envelope marked with Title of Bid, Bid Number, Name & Address of Bidder	Cover page Invitation to Bid
2	Complete Proposal on form provided	Pages A-1 and P-1 through P-6
3	Complete Unit Price Proposal	Pages P-1 through P-6
4	Include Certified Check or Bid Bond 5% or more of total bid price	Pages A-1 and IB-3
5	Acknowledge issued addenda on page 2 of Proposal Form	Pages IB-2, P-2, GC-1
6	Letter or statement from Bidder's surety company it will execute and deliver a 100% Performance and Payment Bond	Page IB-3
7	Furnish evidence they have ability & experience, have sufficient capital and plant, and minimum 5-years of experience	Page IB-4

UNIT PRICE PROPOSAL

ITEM NO.	DE Scription	SHEETS	LS #	HP	E ST. QTY.	UNIT	UNIT PRICE	AMOUNT
1	Shop Drawings/Approved Submittals				1	LS		
2	Duplex Pump Station Control Panel (Power Panel)							
2A	240V, 1 phase, 2 HP to 10 HP Duplex Pump Control Panel (Power Panel)	E-301, E-311 to E-315	18	2	1	EA		
			19	2.3	2	EA		
			38					
			120	2.4	1	EA		
			8	4	3	EA		
			12					
			28					
			76	4.7	1	EA		
			45	5	8	EA		
			77					
			79					
			89					
			90					
			114					
			117					
			32					
			70	7.5	1	EA		
			7	7.6	1	EA		
			88	10	1	EA		

UNIT PRICE PROPOSAL (continued)

ITEM NO.	DESCRIPTION	SHEETS	LS #	HP	EST. QTY.	UNIT	UNIT PRICE	AMOUNT
2B	230V, 3 phase, 2 HP 10 HP Duplex Pump Control Panel (Power Panel)	E-301, E-321 to E-324	13	3	1	EA		
			115	4.7	1	EA		
			4	5	3	EA		
			1					
			2					
			9	9.6	1	EA		
			14	10	7	EA		
			3					
			6					
			10					
			16					
			17					
			20					
2C	230V, 3 phase, 11 to 40 HP Duplex Pump Control Panel (Power Panel)	E-301, E-331 to E-335	5	15	1	EA		
2D	480V, 3 phase, 2 HP to 10 HP Duplex Pump Control Panel (Power Panel)	E-301, E-341 to E-344	TBD	10	1	EA		
2E	480V, 3 phase, 11 to 40 HP Duplex Pump Control Panel (Power Panel)	E-301, E-351 to E-355	55	20	1	EA		
			54	15	1	EA		
2F	208V, 3 phase, 2 HP to 10 HP Duplex Pump Control Panel (Power Panel)	E-301, E-361 to E-364	94	5	4	EA		
			118					
			119					
			46					
			97	10	1	EA		

UNIT PRICE PROPOSAL (continued)

ITEM NO.	DESCRIPTION	SHEETS	LS #	HP	EST. QTY.	UNIT	UNIT PRICE	AMOUNT
3	Duplex Pump Station Control Panel (Controls Panel)							
3A	Duplex Pump Control Panel (Controls Panel) Panel	E-302, E-371 to E-373	1, 2, 3, 4, 6, 9, 10, 13, 14, 16, 17, 20, 46, 94, 97, 115, 118, 119		18	EA		
3B	Duplex Pump Control Panel (Controls Panel) With VFD Keypad	E-302, E-371 to E-373	8, 7, 12, 18, 19, 28, 32, 38, 45, 70, 76, 77, 79, 88, 89, 90, 114, 117, 120,		19	EA		
3C	Duplex Pump Control Panel (Controls Panel) With RVSS Keypad	E-302, E-371 to E-373	5, 54, 55		3	EA		
4	Termination Cabinet	E-303	All		40	EA		
5	Vented Pedestal Box	E-303	All		40	EA		
TOTAL								

Respectfully submitted,

Contractor
(Individual____) (Partnership____) or (Corporation____)

(SEAL)

Signed _____

Name (print) _____

Title _____

Address _____

City/State _____

Telephone _____

Fax _____

Email _____

DATE:

NOTE: The legal status of the bidder, whether as an individual, partnership or corporation, must be indicated above, and all pertinent information as required of the Specifications must be furnished.

SPECIMEN FORM OF CONTRACT

THIS CONTRACT, made this _____ day of _____, 2025, by and between THE CITY OF SANIBEL, FLORIDA, hereinafter called "OWNER", and _____ a Florida profit corporation, hereinafter called "CONTRACTOR".

WITNESSETH: That for and in consideration of the covenants set forth below and other good and valuable consideration, the sufficiency and receipt of which is acknowledged, OWNER and CONTRACTOR hereby agree as follows:

1. The term "CONTRACT DOCUMENTS" means and includes the following, all of which are incorporated herein and made part of the CONTRACT:
 - A. Specifications for "Post Hurricane Ian Lift Station Control Panel Procurement Phase 1" dated April 9, 2025, including, without limitation, all General Specifications, General Conditions, Special Provision, Required Contract Provisions, Technical Specifications, and Appendices
 - B. Bidding Documents, including Advertisement, Information to Bidders, and Addenda
 - C. Drawings for "Post Hurricane Ian Lift Station Control Panel Procurement Phase 1" dated April 3, 2025.
 - D. CONTRACTOR'S Proposal in response to ITB-UT-1-2025/SK
 - E. This CONTRACT
 - F. Performance and Payment Bond
 - G. Notice of Award
 - H. Notice to Proceed
 - I. Change Order(s)
2. The CONTRACTOR will commence and complete the construction which includes:

"Post Hurricane Ian Lift Station Control Panel Procurement Phase 1" as described in the CONTRACT DOCUMENTS (the "WORK")
3. The CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor and other services necessary for the completion of the WORK.
4. The CONTRACTOR will commence the WORK within six calendar days after date of the NOTICE TO PROCEED and will complete the same with within **FOUR HUNDRED (400)** calendar days after notice to proceed, unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.
5. The CONTRACTOR agrees to perform all of the WORK in accordance with the CONTRACT DOCUMENTS for the sum of \$_____ said amount being the total "unit price sum" as listed on the Contractor's proposal form as submitted for this project.
6. The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the General Conditions such amounts as required by the CONTRACT DOCUMENTS.
7. The CONTRACT DOCUMENTS embody the entire agreement of CONTRACTOR and OWNER regarding the Work. No deviation from the CONTRACT DOCUMENTS will be allowed, honored or compensated unless accompanied by a fully executed change order.

8. This CONTRACT shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns; however, CONTRACTOR shall not assign or otherwise transfer its rights, duties or obligations under this CONTRACT without prior written consent of OWNER.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in counterparts each of which shall be deemed an original on the date first above written.

(SEAL)

OWNER City of Sanibel

ATTEST _____

By _____

Name _____

Name _____

Title _____

Title _____

(SEAL)

CONTRACTOR: _____

ATTEST _____

By _____

Name _____

Name _____

Title _____

Title _____

Email _____

Approved as to form

City Attorney

SPECIMEN FORM OF CONTRACT
PERFORMANCE AND PAYMENT BOND

BY THIS BOND, WE

(Name of Contractor)

(Address of Contractor)

A _____, as principal, and
(Corporation, Partnership, or Individual)

(Name of Surety)

(Address of Surety)

a Corporation, as Surety, are bound to

(Name of Owner)

(Address of Owner)

herein called Owner, in the sum of _____
_____ Dollars, (\$_____)

for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs the Contract dated _____, **"Year"** between Principal and Owner for construction of:

the contract being made a part of this bond by reference, at the times and in the manner prescribed in the contract and;

2. Promptly makes payments to call claimants, as defined in Section 255.05 (1), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in the Contract and;
3. Pays Owner all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that Owner sustains because of a default by Principal under the Contract and;
4. Performs the guarantee of all work and materials furnished under the Contract for the time specified in the Contract; then this bond is void; otherwise it remains in full force.

Any changes in or under the Contract Documents and compliance or non-compliance with any formalities connected with the Contract or the changes does not affect Surety's obligation under this bond.

DATED ON _____, **"Year"**.

ATTEST:

(Principal) Secretary

Principal

By _____

(SEAL)

(Witness as to Principal)

(Address)

ATTEST:

(Surety) Secretary

Surety

By _____
Attorney-in-Fact

(SEAL)

(Witness as to Surety)

(Address)

(Address)

NOTE: Date of bond must not be prior to date of Contract. If Contractor is Partnership, all partners should execute Bond.

IMPORTANT: Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

PERIODIC ESTIMATE FOR PARTIAL PAYMENT

PROJECT: _____ OWNER: _____

ENGINEER: _____ CONTRACTOR: _____

PERIODIC ESTIMATE NO. _____ FOR PERIOD _____ TO _____

ANALYSIS OF ADJUSTED CONTRACT AMOUNT TO DATE

- A. Original contract amount (Col.6) _____
- B. Plus: Change Order Additions (Col.13) _____
- C. Less: Change Order Deductions (Col.16) _____
- D. Adjust contract amount to date _____

ANALYSIS OF WORK PERFORMED

- 1. Amount of original contract work performed to date (Col.8) _____
- 2. Change Order work performed to date _____
- 3. Total amount of work performed to date _____
- 4. Add: Materials stored at close of this period
(Attach detailed schedule _____)
- 5. Less: Amount retained _____ percent _____
- 6. Net amount earned on contract work to date _____
- 7. Less: Amount of previous payments _____
- 8. Balance due this payment _____

CERTIFICATION OF CONTRACTOR

According to the best of my knowledge and belief, I certify that all items and amounts shown on the face of this periodic estimate are correct; that all work has been performed and/or material supplied in full accordance with the Terms and Conditions of the Contract, and/or duly authorized deviations, substitutions, alterations, and/or additions; that this estimate is as true and correct statement of the contract account up to and including the last day of the period covered by this Periodic Estimate, and that no part of the "Balance Due This Payment" has been received:

(Contractor)

By _____
(Authorized Representative)

Title _____

RECOMMENDATION OF ENGINEER

In accordance with the contract and this Periodic Estimate for Partial Payment, the Contractor is entitled to payment in the amount shown above.

DATE: _____

By _____

PERIODIC ESTIMATE FOR PARTIAL PAYMENT

PROJECT:

OWNER:

ENGINEER:

CONTRACTOR:

PERIODIC ESTIMATE NO. _____ FOR PERIOD _____ TO _____

CONTRACT AMOUNT						COMPLETED TO DATE		
ITEM NO.	DESCRIPTION OF ITEM	QUANTITY	UNIT OF MEAS.	COST PER UNIT	TOTAL AMOUNT	QUANTITY	AMOUNT	% COM- LETE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

TOTAL

PERIODIC ESTIMATE FOR PARTIAL PAYMENT

PROJECT:

OWNER:

ENGINEER:

CONTRACTOR:

PERIODIC ESTIMATE NO. _____ FOR PERIOD _____ TO _____

SCHEDULE OF CHANGE ORDERS

CHANGE ORDER					ADDITIONS	
					AMOUNT COMPLETED TO DATE	DEDUCTIONS
NO. (10)	DATE (11)	DESCRIPTION (12)	AMOUNT (13)	PERCENT COMPLETE (14)	(15)	(16)

TOTAL

CONTRACTOR'S LETTERHEAD

CONTRACTOR'S CERTIFICATE

I, _____, the duly qualified, acting and authorized agent of the Contractor, _____ on the project, do hereby certify that we have performed all of the work set forth in strict accordance with the plans, specifications, laws and ordinances applicable thereto and do further certify that all materials and equipment listed herein have been paid for in full as allowed on all prior Estimates and, if requested to do so, will show evidence of payment for same in writing before the final payment of this Estimate No. _____.

I further certify (if this is a Final Estimate) that the amount received hereunder is considered compensation and final payment in full for all work performed under the Contract, including any amendments thereto, and upon payment of said sum, hereby release the Owner, its employees, agents, and representatives in accordance with said Contract. We further certify that we fully guarantee all work performed hereunder for a period of twelve months from the date of payment for the Final Estimate, (in accordance with the terms of our original Contract and all Amendments thereto), during which time all terms and conditions of the original Contract Documents shall remain in full force and effect, including the insurance requirements, Hold Harmless Agreement and Indemnifying Agreements as contained in said Contract Documents.

CERTIFIED TO FOR PAYMENT ON THIS _____ DAY OF _____, "Year".

CONTRACTOR'S SEAL

Contractor

BY: _____

TITLE: _____

Sworn to before me this _____ day of _____, "Year".

NOTARY

My commission expires: _____:

(NOTARY SEAL)

PROJECT: _____

OWNER: City of Sanibel

CHANGE ORDER NO. _____

TO: _____

You are hereby authorized to make the following additions and/or deductions to your contract amount.

	PREVIOUS CONTRACT AMOUNT	NET CHANGE		REVISED		CONTRACT AMOUNT
		INCREASE	DECREASE	(DEDUCT)	(ADD)	
TOTAL:	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____

Description of Change: Add Deduct

RECOMMENDED:

APPROVED:

OWNER _____

By _____ By _____

Title _____ Date _____ Title _____ Date _____

ACCEPTED:

CONTRACTOR _____

BY _____

Title _____ Date _____

GENERAL CONDITIONS OF THE CONTRACT

SECTION 2.1 - CONTRACT DOCUMENTS

2.1.01 GENERAL:

The Contract Documents comprise the following general classifications of documents, including all additions, deletions, modifications, or other documents incorporated therein:

1. Bidding Documents
2. Contract
3. General Conditions of the Contract
4. Special Conditions
5. Specifications

2.1.02 BIDDING DOCUMENTS:

The Bidding Documents are issued by the OWNER to assist bidders in preparing their proposal include:

1. Advertisement
2. Information for Bidders
3. Proposal: The offer of a Bidder to perform the work described by the Contract Documents made out and submitted on the prescribed Proposal Form, properly signed and guaranteed.
4. Addenda to Contract Documents: Any addenda issued during the time of bidding, or forming a part of the Contract Documents loaned to the Bidder for the preparation of his Proposal, shall be covered in the Proposal, and shall be made a part of the Contract. Receipt of each Addendum shall be acknowledged in the Proposal.

2.1.03 CONTRACT:

The Contract defines the "Contract Documents" and covers the performance of the work described in the Contract Documents including all supplemental addenda thereto and all general and special provisions pertaining to the work or materials.

2.1.04 GENERAL CONDITIONS OF THE CONTRACT:

The General Conditions of the Contract outline certain general responsibilities of the OWNER and the CONTRACTOR (who are the parties to the Contract) and those responsibilities delegated by the OWNER to the Engineer who acts as the agent of the OWNER.

1. Definitions: Wherever the words hereinafter defined, or pronouns used in their stead, occur in these specifications and contract documents, they shall have the meanings herein given:
 - A. The word "OWNER" shall mean the municipality, person, firm, or corporation as specified in the Advertisement for Bids, for whom the work is to be done.
 - B. The word "CONTRACTOR" shall mean the person, firm, or corporation entering into a contract with the OWNER to construct and complete the work as herein specified, set out and shown.
 - C. The word "sub-contractor" shall mean a person, firm, or corporation, other than a CONTRACTOR, supplying labor and materials or labor for work at the site of the project.
 - D. The word "Engineer" shall mean the project engineer as designated by the OWNER.

2.1.05 SPECIAL CONDITIONS:

Special Conditions are special provisions not included in the General Conditions of the Contract, which apply to this specific project.

2.1.06 DRAWINGS AND SPECIFICATIONS:

The intent of the Drawings and Specifications is that the CONTRACTOR shall furnish all labor, materials, equipment, and transportation necessary for the proper execution of the work, unless specifically noted otherwise. The CONTRACTOR shall do all the work outlined in the Contract Documents and all incidental work necessary to complete the project in a substantial and acceptable manner, and fully complete the work or improvement, operational and ready for occupancy by the OWNER.

1. Discrepancies: Any discrepancies found between the Drawings and Specifications and site conditions or any inconsistencies or ambiguities in the Drawings and Specifications shall be immediately reported to the Engineer, who shall promptly correct such inconsistencies or ambiguities in writing. Any work done by the CONTRACTOR after his discovery of such discrepancies, inconsistencies, or ambiguities shall be done at the CONTRACTOR'S risk.

2. Adequacy: Responsibility for adequacy of the design and for sufficiency of the Drawings and Specifications shall be borne by the OWNER. The complete requirements of the work to be performed under the Contract shall be set forth in Drawings and Specifications to be supplied by the OWNER through the Engineer or by the Engineer as representative of the OWNER. The Drawings and Specifications shall be considered inseparable documents; and in considering them, the CONTRACTOR shall rely upon both instruments in order to perform the work in accordance with their combined intent.
3. Additional Instructions: Further instructions may be issued by the Engineer during the progress of the work by means of Drawings, or otherwise to make more clear or specific the Drawings and Specifications or as may be necessary to explain or illustrate changes in the work to be done. Where said correction of errors or omissions, except as provided in the next two paragraphs below, adds to the amount of work to be done by the CONTRACTOR, compensation for said additional work shall be made under the item for Extra Work except where the additional work may be classed under some item of work for which a unit price is included in the proposal.
4. The fact that specific mention of the fixture, or of any part of work, is omitted in the specifications, whether intentionally or otherwise, when the same is clearly shown or indicated on the drawings, or is usually and customarily required to fully complete such work as is specified herein, will not entitle the CONTRACTOR to consideration in the matter of any claim for extra compensation, but the said fixtures or work or both must be installed or done the same as if called for by both drawings and specifications.
5. All work indicated on the drawings and not mentioned in the specifications or vice versa, and all work and material usual and necessary to make work complete in all its parts, whether or not they are indicated on the drawings or mentioned in the specifications, shall be furnished and executed the same as if they were called for by both the drawings and specifications.
6. Plans and Specifications: The Engineer may furnish the CONTRACTOR up to 5 sets of plans and specifications covering this project at no cost to the CONTRACTOR. For each set of plans and specifications furnished to the CONTRACTOR, or any of his sub-contractor's, in excess of this number, the CONTRACTOR shall be billed at actual cost of printing and delivery.
7. Dimensions: Only figured dimensions on the Drawings will be used by the CONTRACTOR. Where the work of the CONTRACTOR is affected by finish dimensions, these shall be determined by the CONTRACTOR at the site, and he shall assume the responsibility, therefore.

2.1.07 CONTRACT DOCUMENTS FOR THE USE OF THE ENGINEER:

NOT USED

SECTION 2.2 - OWNER-CONTRACTOR-ENGINEER RELATIONS

2.2.01 OWNER'S RIGHTS AND RESPONSIBILITIES:

1. Lands by OWNER: The OWNER will provide the lands shown on the Drawings or described in the Specifications upon which the work under the Contract is to be performed and to be used for right-of-way for access. Any delay in furnishing these lands by the OWNER will be deemed proper for adjustment in the Contract Amount and in the time of completion.
2. Base Lines and Bench Marks: Unless otherwise specified, the OWNER will establish base lines, and bench marks.
3. OWNER'S Right to Correct Deficiencies: Upon failure to perform the work in accordance with the Contract Documents, including any requirements with respect to the Schedule of Completion, and after five days' written notice to the CONTRACTOR, the OWNER may, without prejudice to any other remedy he may have, correct such deficiencies in work intended to become a permanent part of the project. The cost to correct such deficiencies may be deducted from the payment due the CONTRACTOR.
4. Suspension of Work by OWNER: The OWNER shall have the authority to suspend the work, wholly or in part, for such period or periods as he may deem necessary due to unsuitable weather or such other conditions as are considered unfavorable to carry out the provisions of the Contract, or to supply materials meeting the requirements of the Contract Documents.
 - A. Notice: The work or any portion thereof may be suspended at any time by the OWNER provided that he gives the CONTRACTOR five days' notice of suspension which shall set forth the date on which work is to be resumed. The CONTRACTOR shall resume the work upon written notice from the OWNER and within ten days after the date set forth in the notice of suspension. If the OWNER does not give written notice to resume work within ten days of the date fixed in the notice of suspension, the CONTRACTOR may abandon that portion of the work so suspended and shall be entitled to payment in accordance with Paragraph 2.6.09, Payment for Work Suspended by the OWNER.
 - B. In case of any suspensions, the time in which the CONTRACTOR is required to complete the work shall be extended as many working days as the same is suspended; provided, however, that if the work is

suspended on account of failure on the part of the CONTRACTOR to comply with specifications, such extensions of time will not be allowed.

5. OWNER'S Right to Terminate Agreement and Complete the Work: The OWNER shall have the right to terminate his agreement with the CONTRACTOR after giving ten days' written notice of termination to the CONTRACTOR in the event of any default by the CONTRACTOR.
 - A. Default by CONTRACTOR: It shall be considered a default by the CONTRACTOR whenever he shall:
 - (i) Declare bankruptcy, become insolvent, or assign his assets for the benefit of his creditors.
 - (ii) Disregard or violate provisions of the Contract Documents or fail to prosecute the work according to the agreed Schedule of Completion, including extensions thereof.
 - (iii) Fail to provide a qualified superintendent, competent workmen or sub-contractor's, or proper materials, or fail to make prompt payment, therefore.
 - B. Completion by the OWNER: In the event of termination of the Agreement by the OWNER because of default by the CONTRACTOR, the OWNER may take possession of the work and of all materials and equipment thereon and may finish the work by whatever method and means he may select.

2.2.02 CONTRACTOR'S RIGHTS AND RESPONSIBILITIES:

All work shall be done in strict accordance with the Contract Documents. Observations, construction reviews, tests, recommendations or approvals by the Engineer or persons other than the CONTRACTOR, shall in no way relieve the CONTRACTOR of his obligation to complete all work in accordance with the Contract Documents. All work shall be done under the direct supervision of the CONTRACTOR. The CONTRACTOR shall be responsible for construction means, methods, techniques and procedures, and for providing a safe place for the performance of the work by the CONTRACTOR, Sub-contractor's, suppliers and their employees, and for access use, work or occupancy by all authorized persons. The CONTRACTOR shall be responsible for all obligations prescribed as employer obligations under Chapter XVII of Title 29, Code of Federal Regulations, Part 1926, otherwise known as "Safety and Health Regulations for Construction".

1. Lands by CONTRACTOR:

NOT USED

2. Surveys:

NOT USED
3. Public Utilities:

NOT USED
4. Superintendent:

NOT USED
5. Subcontracts: At the time set forth in the Contract Documents or when requested by the OWNER, the CONTRACTOR shall submit in writing for review of the OWNER the names of the sub-contractor's proposed for the work. Sub-contractor's may not be changed, except at the request or with the approval of the OWNER. The CONTRACTOR is responsible to the OWNER for the acts and deficiencies of his sub-contractor's, and of their direct and indirect employees, to the same extent as he is responsible for the acts and deficiencies of his employees. The Contract Documents shall not be construed as creating any contractual relation between any sub-contractor and the OWNER. The CONTRACTOR shall bind every sub-contractor by the terms of the Contract Documents.
 - A. For convenience of reference and to facilitate the letting of Contracts and Subcontracts, the Specifications are separated into titled sections. Such separation shall not, however, operate to make the OWNER or the Engineer an arbiter to establish limits to the contracts between CONTRACTOR and sub-contractor.
6. CONTRACTOR'S Right to Suspend Work or Terminate Agreement: CONTRACTOR may suspend work or terminate his Agreement with the OWNER upon ten days' written notice to the OWNER for any of the following reasons:
 - A. If an order of any court or other public authority caused the work to be stopped or suspended for a period of 90 days through no act or fault of the CONTRACTOR or his employees.
 - B. If the OWNER should fail to pay the CONTRACTOR any sum within 45 days after its award by arbitrators.
7. Work During an Emergency: The CONTRACTOR shall perform any work and shall furnish and install any materials and equipment necessary during an emergency endangering life or property. In all cases, he shall notify the

OWNER of the emergency as soon as practicable, but he shall not wait for instruction before proceeding to properly protect both life and property.

2.2.03 RESPONSIBILITY OF THE ENGINEER:

The Engineer shall decide questions which may arise as to the quality and acceptability of materials furnished, work performed, rate of progress of work, interpretation of Drawings and Specifications, and all questions as to the acceptable fulfillment of the Agreement on the part of the CONTRACTOR. The duties and responsibilities of the Engineer as set forth herein shall not be extended, except through written consent of the Engineer and the OWNER.

1. Observation of the Work: All materials and each part or detail of the work shall always be subject to observation by the Engineer and the OWNER; and the CONTRACTOR will be held strictly to the intent of the Contract Documents in regard to quality of materials, workmanship, and the diligent execution of the Contract. Observations may be made at the site or at the source of material supply, whether mill, plant, or shop. The Engineer shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the CONTRACTOR as is required to make his observations and construction review.
2. Acceptability of Work: The Engineer's decision as to the acceptability or adequacy of the work shall be final and binding upon the CONTRACTOR. The CONTRACTOR agrees to abide by the Engineer's decision relative to the performance of the work.
3. Engineer's Decisions: All claims of the OWNER or the CONTRACTOR shall be presented to the Engineer for decision which shall be final, except in cases where time and/or financial considerations are involved, which shall be subject to arbitration.

2.2.04 ORAL AGREEMENTS:

No oral order, objection, claim, or notice by any party to the others shall affect or modify any of the terms or obligations contained in any of the Contract Documents; and none of the provisions of the Contract Documents shall be held to be waived or modified by reason of any act whatsoever, other than a definitely agreed waiver or modification thereof in writing; and no evidence shall be introduced in any proceeding of any other waiver or modification.

2.2.05 OBSERVATION OF COMPLETED WORK

NOT USED

2.2.06 WORK BY OWNER OR OTHER CONTRACTOR'S:

NOT USED

2.2.07 SECTION DELETED

2.2.08 NIGHT AND SUNDAY WORK:

NOT USED

SECTION 2.3 - MATERIALS, EQUIPMENT, AND WORKMANSHIP

2.3.01 MATERIALS AND EQUIPMENT:

The materials and equipment installed in the work shall meet the requirements of the Contract Documents, and no materials or equipment shall be ordered until reviewed by the Engineer. All materials and equipment not otherwise specifically indicated shall be furnished by the CONTRACTOR. The CONTRACTOR shall guarantee all materials and equipment he provides in accordance with Paragraph 2.3.08.

1. Substitutions: In order to establish standards of quality, the Engineer has, in the detailed Specifications, referred to certain products by name and catalog number. This procedure is not to be construed as eliminating from competition other products of equal or better quality by other manufacturers where fully suitable in design.
 - A. The CONTRACTOR shall furnish the complete list of proposed desired substitutions prior to signing of the Contract, together with such engineering and catalog data as the Engineer may require.
 - B. The CONTRACTOR shall abide by the Engineer's recommendation when proposed substitute materials or items of equipment are not recommended for installation and shall furnish the specified material or item of equipment in such case. All proposals for substitutions shall be submitted in writing by the General CONTRACTOR and not by individual trades or material suppliers. The Engineer will review proposed substitutions and make his recommendations in writing within a reasonable time.
2. Space Requirements: It shall be the responsibility of the CONTRACTOR to ensure that materials and equipment to be furnished fit the space available. He shall make necessary field measurements to ascertain space requirements, including those for connections and shall order such sizes and

shapes of equipment that the final installation shall suit the true intent and meaning of the Contract Documents.

3. Arrangement: Where equipment requiring different arrangement of connections from those shown is approved, it shall be the responsibility of the CONTRACTOR to install the equipment to operate properly, and in harmony with the intent of the Contract Documents, and to make all changes in the work required by such arrangement.
4. Unacceptable Materials and Equipment: Materials and equipment which do not conform to the requirements of the Contract Documents, are not equal to samples reviewed by the Engineer, or are in any way unsatisfactory or unsuited to the purpose for which they are intended, shall not be furnished nor installed.
5. Storage: Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the work. When considered necessary, they shall be placed on wooden platforms or other hard, clean surfaces, and not on the ground, and/or they shall be placed under cover. Stored materials and equipment shall be located to facilitate prompt inspection. Private property shall not be used for storage purposes without the written permission of the OWNER or lessee.
6. Manufacturer's Directions: Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned as directed by the manufacturer.

2.3.02 SAMPLES:

All samples called for in the Specifications or required by the Engineer shall be furnished by the CONTRACTOR and shall be submitted to the Engineer for his review. Samples shall be furnished so as not to delay fabrication, allowing the Engineer reasonable time for the consideration of the samples submitted.

1. Samples for Tests: CONTRACTOR shall furnish such samples of material as may be required for examination and test. All samples of materials for tests shall be taken according to standard methods or as provided in the Contract Documents.
2. CONTRACTOR'S Guaranty: All samples shall be submitted by the CONTRACTOR with a covering letter indicating that such samples are recommended by the CONTRACTOR for the service intended and that the CONTRACTOR'S Guaranty will fully apply.
3. All materials, equipment, and workmanship shall be in accordance with samples guaranteed by the CONTRACTOR and reviewed by the Engineer.

2.3.03 SHOP DRAWINGS:

The CONTRACTOR shall provide shop drawings, setting schedules and such other drawings as may be necessary for the prosecution of the work in the shop and in the field as required by the Drawings, Specifications, or the Engineer's instructions. Deviations from the Drawings and Specifications shall be called to the attention of the Engineer at the time of the first submission of shop drawings and other drawings for consideration. The Engineer's review of any drawings shall not release the CONTRACTOR from responsibility for such deviations. Shop drawings shall be submitted according to a schedule prepared jointly by the CONTRACTOR and the Engineer.

1. CONTRACTOR'S Certification: When submitted for the Engineer's review, shop drawings shall bear the CONTRACTOR'S certification that he has reviewed, checked, and approved the shop drawings; that they are in harmony with the requirements of the Project and with the provisions of the Contract Documents; and that he has verified all field measurements and construction criteria, materials, catalog numbers, and similar data. CONTRACTOR shall also certify that the work represented by the shop drawings is recommended by the CONTRACTOR and the CONTRACTOR'S Guaranty will fully apply.

2.3.04 EQUIPMENT DATA:

The CONTRACTOR shall submit for the Engineer's review complete catalog data for every manufactured item of equipment and all components to be used in the work, including specific performance data, material description, rating, capacity, working pressure, material gage or thickness, brand name, catalog number, and general type. This submission shall be compiled by the CONTRACTOR and reviewed by the Engineer before any of the equipment is ordered.

1. Index: Each data sheet or catalog in the submission shall be indexed according to specification section and paragraph for each reference.
2. Relation to Contract Documents: Catalog data for equipment reviewed by the Engineer shall not supersede the Engineer's Contract Documents. The review of the Engineer shall not relieve the CONTRACTOR from responsibility for deviations from Drawings or Specifications, unless he has in writing called the Engineer's attention to such deviations at the time of submission, nor shall it relieve him from responsibility for error of any sort in the items submitted. The CONTRACTOR shall check the work described by the catalog data with the Engineer's Contract Documents for deviations and errors.
3. CONTRACTOR'S Certification: Equipment data shall be submitted by the CONTRACTOR with a covering letter indicating that he has reviewed, checked and approved the data submitted; that they are in harmony with the

requirements of the project and with the provisions of the Contract Documents; and that he has verified all field measurements and construction criteria, materials, catalog numbers, and similar data. CONTRACTOR shall also certify that the work represented by the shop drawings is recommended by the CONTRACTOR and that his Guaranty will fully apply.

2.3.05 REJECTED WORK AND MATERIALS:

Any defective work whether the result of poor workmanship, use of defective materials, damage through carelessness or any other cause shall be removed within ten days after written notice is given by the OWNER, and the work shall be re-executed by the CONTRACTOR. The fact that the Engineer may have previously overlooked such defective work shall not constitute an acceptance of any part of it.

1. Should the CONTRACTOR fail to remove rejected work or materials within ten days after written notice to do so, the OWNER may remove them and may store the materials.
2. Correction of faulty work after final payment shall be in accordance with Paragraph 2.5.12.

2.3.06 CUTTING AND PATCHING:

NOT USED

2.3.07 CHARACTER OF WORKMEN:

NOT USED

2.3.08 GUARANTY:

The CONTRACTOR shall guarantee all materials and equipment furnished and work performed for a period of one year from the date of written acceptance of the work.

1. Correction of faulty work after final payment shall be as provided in Paragraph 2.5.12.

2.3.09 A.S.T.M. DESIGNATION:

Wherever the letters "A.S.T.M." are used in these specifications, it shall be understood as referring to the American Society for Testing Materials. When reference is made to a certain Designation Number of a specification or test as set out or given by the American Society of Testing Materials, it shall be understood to mean the current, up-to-date standard specification or tentative specification for that particular process, material, or test as currently published by that group.

SECTION 2.4 – INSURANCE, LEGAL RESPONSIBILITY, AND SAFETY

2.4.01 INSURANCE:

CONTRACTOR shall purchase and maintain such comprehensive general liability and other insurance as well as provide protection from claims set forth below which may arise out of or result from CONTRACTOR'S performance of the Work and CONTRACTOR'S other obligations under the Contract Documents, whether such performance is by CONTRACTOR, by any sub-contractor, by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. All insurance policies shall be with insurers qualified to do business in the state of the Project location.

1. Types: The types of insurance the CONTRACTOR is required to obtain and maintain for the full period of the Contract will be: Workmen's Compensation and Employer's Liability, Comprehensive General Liability and Automobile Liability, U.S.L. & H. coverage (if applicable), Jones Act (if applicable) and an Excess Liability Umbrella Insurance as detailed in the following specifications.
2. Evidence: As evidence of specified insurance coverage, the OWNER may, in lieu of actual policies, accept a Certificate of Insurance on Accord Form 25 issued by the insurance carrier showing such policies in force for the specified period. Each policy or certificate will bear an endorsement or statement waiving right of cancellation or reduction in coverage without ten days notice in writing to be delivered by registered mail to the OWNER. Should any policy be canceled before final payment by the OWNER to the CONTRACTOR and the CONTRACTOR fails immediately to procure other insurance as specified, the OWNER reserves the right to procure such insurance and to deduct the cost thereof from any sum due the CONTRACTOR under this Contract.
3. Adequacy of Performance: Any insurance bearing on adequacy of performance shall be maintained after completion of the project for the full guaranty period. Should such insurance be canceled before the end of the guaranty period and the CONTRACTOR fails immediately to procure other insurance as specified, the OWNER reserves the right to procure such insurance and to charge the cost thereof to the CONTRACTOR.
4. Payment of Damages: Nothing contained in these insurance requirements is to be construed as limiting the extent of the CONTRACTOR'S responsibility for payment of damages resulting from his operations under this Contract.

2.4.02 COMPREHENSIVE GENERAL LIABILITY INSURANCE:

1. General liability insurance shall provide full comprehensive form coverage for both bodily injury and property damage. Such coverage shall include premises-operations, underground hazard, products/completed operations hazard, contractual insurance, broad form property damage, independent

CONTRACTOR'S, and personal injury. The limits for bodily injury shall be \$500,000 each occurrence and \$500,000 aggregate. The limits for property damage shall be \$100,000 each occurrence and \$100,000 aggregate.

2. Automobile liability insurance shall provide full comprehensive form coverage for both bodily injury and property damage. Such coverage shall include owned, hired, and non-owned vehicles. The limits for bodily injury shall be \$500,000 each person and \$500,000 each accident. The limits for property damage shall be \$100,000.
3. Excess liability insurance shall provide an umbrella form coverage for both bodily injury and property damage combined with a minimum limit of \$2,000,000.
4. Indemnity: Included in such insurance will be contractual coverage sufficiently broad to insure the OWNER, the Engineer, their consultants and each of their officers, agents, and employees as additional insured under the General Liability Policy. See Paragraph 2.4.05 below for provisions of Indemnity.

2.4.03 WORKMEN'S COMPENSATION INSURANCE:

CONTRACTOR'S shall provide the statutory Workmen's Compensation and Employer's Liability Insurance requirements of the most current and applicable state Workmen's Compensation Insurance Laws.

2.4.04 DELETED

2.4.05 INDEMNITY:

The CONTRACTOR (sub-contractor) hereinafter "Indemnitor", hereby agrees to indemnify, save and hold harmless, and defend at its own expense the Engineer, OWNER, their respective partners, agents, employees, and anyone else acting for or on behalf of any of them, and any other person or entity for whom any of them may be legally responsible (herein collectively called "Indemnities") from all claims, losses, damages, suits, costs and expenses, including attorneys' fees, or actions of any nature whatsoever which arise out of or are connected with, or are alleged to arise out of or be connected with, the Work to be performed herein; including without limiting the generality of the foregoing, all liability for damages, loss, claims, demands, and actions arising or alleged to arise from injury including death, damage to property including the loss of use thereof and consequential damages therefrom, or damages arising out of economic loss, to any person or entity including any Indemnatee or Indemnitor or its employees, servants and agents whether based upon, or claimed to be based upon, statutory (including without limiting the generality of the foregoing, workmen's compensation), contractual, tort or other liability of any Indemnatee whether or not caused, or alleged to be caused, in whole or in part, by the joint, several or sole negligence, breach of contract, breach of warranty,

strict liability, or other breach of duty by any Indemnitee, its partners, employees, agents, and anyone else for or on behalf of any of them, or any other person for whom any Indemnitee may be responsible.

In the event more than one Indemnitor is responsible or alleged to be responsible in respect to an accident or occurrence covered by this indemnification, then all of such Indemnitor shall be jointly and severally responsible to the Indemnities for indemnification shall be settled by separate proceedings and without jeopardy to any Indemnitee.

The indemnity provided hereunder shall not include indemnification of the Engineer in respect to claims arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs, or specifications, or (2) the giving of or the failure to give directions or instructions by the Engineer, his agents or employees; provided that such giving or failure to give is a primary cause of the injuries and damages.

If any part of these indemnity provisions is adjudged to be contrary to law, the remaining parts of these provisions shall in all other respects be and remain legally effective and binding. Moreover, these indemnity provisions shall not be construed to eliminate or in any way reduce any other indemnification or right which the Engineer and OWNER has by law.

2.4.06 WAIVER OF SUBROGATION:

The OWNER and the CONTRACTOR waive all rights against (1) each other and other sub-contractor's, agents, and employees of each other, and (2) the Engineer and separate CONTRACTOR'S, if any, and their sub-contractor's, agents, and employees, for damages caused by fire or other perils to the extent covered by insurance obtained pursuant to this Section 2.4 or any other property insurance applicable to the work, except such rights as they may have to the proceeds of such insurance held by the OWNER as trustees. The OWNER or the CONTRACTOR, as appropriate, shall require of the Engineer, separate CONTRACTOR'S and sub-contractor's by appropriate agreements, written where legally required for validity, similar waivers each in favor of all other parties enumerated in this subparagraph 2.4.06.

2.4.07 PATENTS AND ROYALTIES:

If any design, device, material, or process covered by letters, patent or copyright is used by the CONTRACTOR, he shall provide for such use by legal agreement with the OWNER of the patent or a duly authorized licensee of such OWNER, and shall save harmless the OWNER and the Engineer from any and all loss or expense on account thereof, including its use by the OWNER.

2.4.08 PERMITS:

All permits and licenses (except as listed hereafter) necessary for the prosecution of the work shall be secured and paid for by the CONTRACTOR. The permits for construction

within or across the property, rights-of-way, or easements of highways, railroads, gas lines, electric power transmission lines, water lines, telephone lines, telegraph lines, levees, or other utilities shall be secured and paid for by the OWNER. City of Sanibel Building Dept. permit fees shall be paid for by the OWNER.

2.4.09 LAWS TO BE OBSERVED:

The CONTRACTOR shall give all notices and comply with all Federal, State, and local laws, ordinances, and regulations in any manner affecting the conduct of the work, and all such orders and decrees as exist, or may be enacted by bodies or tribunals having any jurisdiction or authority over the work, and shall indemnify and save harmless the OWNER and the Engineer against any claim or liability arising from, or based on, the violation of any such law, ordinance, regulation, order or decree, whether by himself or his employees. If any discrepancy or inconsistency is discovered in the plans, drawings, specifications, or contract for this work in relation to any such law, ordinance, regulations, order or decree, the CONTRACTOR shall forthwith report the same to the Engineer in writing.

1. Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein; and the contract shall be read and enforced as though it were included herein and, if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the contract shall forthwith be physically amended to make such insertion. This shall include but not be limited to the Occupational Safety and Health Act of 1970.

2.4.10 WRITTEN NOTICE:

Written notice shall be considered as served when delivered in person or sent by registered mail to the individual, firm, or corporation, or to the last business address of such known to him who serves the notice.

1. Change of Address: It shall be the duty of each party to advise the other parties to the Contract as to any change in his business address until completion of the Contract.

2.4.11 ASSIGNMENT OF CONTRACT:

Neither the CONTRACTOR nor the OWNER shall sublet, sell, transfer, assign, or otherwise dispose of the Contract or any portion thereof, or of his right, title, or interest therein, or his obligations thereunder, without written consent of the other party.

2.4.12 ORAL AGREEMENTS:

No oral order, objection, claim, or notice by any party to the others shall affect or modify any of the terms or obligations contained in any of the Contract Documents; and none of

the provisions of the Contract Documents shall be held to be waived or modified by reason of any act whatsoever, other than by a definitely agreed waiver or modification thereof in writing, and no evidence shall be introduced in any proceeding of any other waiver or modification.

2.4.13 WORK DURING AN EMERGENCY:

The CONTRACTOR shall perform any work and shall furnish and install any materials and equipment necessary during an emergency endangering life or property. In all cases he shall not wait for instructions before proceeding to properly protect both life and property.

2.4.14 WARNING SIGNS AND BARRICADES:

NOT USED

2.4.15 PUBLIC CONVENIENCE:

NOT USED

2.4.16 SAFETY:

In accordance with general accepted construction practices, the CONTRACTOR shall be solely and completely responsible for conditions of the job site, including safety of all persons and property affected directly or indirectly by his operations during the performance of the work. This requirement will apply continuously 24 hours per day until acceptance of the work by the OWNER and shall not be limited to normal working hours.

1. The duty of the Engineer to conduct construction review of the CONTRACTOR'S performance is not intended to include review of the adequacy of the CONTRACTOR'S safety measures in, on, or near the construction site.

2.4.17 EXISTING CONSTRUCTION:

NOT USED

2.4.18 SANITARY PROVISIONS:

The CONTRACTOR shall provide and maintain such sanitary accommodations for the use of his employees and those of his sub-contractor's as may be necessary to comply with the requirements and regulations of the local and state departments of health.

2.4.19 NONDISCRIMINATION IN EMPLOYMENT:

The CONTRACTOR agrees:

1. That in the hiring of employees for the performance of work under this contract or any subcontract hereunder, no CONTRACTOR, or sub-contractor, shall, by reason of race, religion, color, sex, national origin or ancestry, discriminate against any citizen who is qualified and available to perform the work to which the employment relates;
2. That no CONTRACTOR, sub-contractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of work under this contract on account of race, religion, color, sex, national origin or ancestry;
3. The CONTRACTOR agrees to comply with any Federal, State, or local law with respect to nondiscrimination in employment.

SECTION 2.5 - PROGRESS AND COMPLETION OF WORK

2.5.01 NOTICE TO PROCEED:

Following the execution of the Contract by the OWNER and the CONTRACTOR, written Notice to Proceed with work shall be given by the OWNER to the CONTRACTOR. The CONTRACTOR shall begin and shall prosecute the work regularly and uninterruptedly thereafter and not before (except as provided for herein) with such force as to secure the completion of the work within the Contract Time.

2.5.02 CONTRACT TIME:

The CONTRACTOR shall complete, in an acceptable manner, all of the work contracted for in the time stated herein. Computation of Contract Time shall commence on the day specified in the Notice to Proceed and every calendar day following, except as herein provided, shall be counted as Contract Time.

2.5.03 SCHEDULE OF COMPLETION:

The CONTRACTOR shall submit, at such times as may reasonably be requested by the Engineer, schedules showing the order in which the CONTRACTOR proposes to carry on the work, with dates at which the CONTRACTOR will start the various parts of the work, and estimated date of completion of each part.

2.5.04 CHANGES IN THE WORK:

The OWNER may, as the need arises, order changes in the work through additions, deletions, or modifications to the extent of 25% of the original Contract Amount, without

invalidating the Contract. Compensation and time of completion affected by the change shall be adjusted at the time of ordering such change.

2.5.05 EXTRA WORK:

New and unforeseen items of work found to be necessary and which cannot be covered by any item or combination of items for which there is a Contract price, shall be classed as Extra Work. The CONTRACTOR shall do such Extra Work and furnish such materials as may be required for the proper completion or construction of the whole work contemplated, upon written order from the OWNER as approved by the Engineer. In the absence of such written order, no claim for Extra Work shall be considered. Extra Work shall be performed in accordance with these Contract Documents where applicable and work not covered by such shall be done in accordance with the best construction practice and in a workmanlike manner. Extra Work required in an emergency to protect life and property shall be performed by the CONTRACTOR as required.

2.5.06 EXTENSION OF CONTRACT TIME:

A delay beyond the CONTRACTOR'S control occasioned by an Act of God, by act or omission on the part of the OWNER, or by strikes, lockouts, fire, etc., may entitle the CONTRACTOR to an extension of time in which to complete the work as agreed by the OWNER, provided, however, that the CONTRACTOR shall immediately give written notice to the OWNER of the cause of such delay.

1. Act of God shall mean an earthquake, flood, cyclone, or other cataclysmic phenomenon of nature. Rain, wind, flood, or other natural phenomenon of normal intensity for the locality shall not be construed as an Act of God, and no reparation shall be made to the CONTRACTOR for damages to the work resulting therefrom.

2.5.07 USE OF COMPLETED PORTIONS:

The OWNER shall have the right to take possession of and use any completed or partially completed portions of the work, notwithstanding that the time for completing the entire work or such portions may not have expired; but such taking possession and use shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents. If such prior use increases the cost of or delays the completion of uncompleted work or causes refinishing of completed work, the CONTRACTOR shall be entitled to such extra compensation or extension of time or both, as agreed by the OWNER.

2.5.08 REMOVAL OF CONSTRUCTION EQUIPMENT, TOOLS, AND SUPPLIES:

NOT USED

2.5.09 CLEANING UP:

NOT USED

2.5.10 ENGINEER'S CERTIFICATE OF SUBSTANTIAL COMPLETION:

When the work to be performed under this Contract is substantially completed in accordance with the Contract Documents, the Engineer shall prepare an Engineer's Certificate of Substantial Completion to be acknowledged and accepted by the OWNER and the CONTRACTOR. The Certificate may list items to be completed or corrected, but such Certificate shall not relieve the CONTRACTOR of his obligation to complete all work, whether listed or not, in accordance with the Contract Documents nor will it preclude any right the OWNER may have for recourse in accordance with the Contract Documents.

2.5.11 TERMINATION OF CONTRACTOR'S RESPONSIBILITY:

The Contract will be considered complete when all work has been finished, the final review made up by the Engineer, and the project accepted in writing by the OWNER. The CONTRACTOR'S responsibility shall then cease, except as set forth in his Performance and Payment Bond, as provided in Paragraph 2.3.08 Guaranty, and as provided in Paragraph 2.5.12 Correction of Faulty Work After Final Payment.

2.5.12 CORRECTION OF FAULTY WORK AFTER FINAL PAYMENT:

The making of the final payment by the OWNER to the CONTRACTOR shall not relieve the CONTRACTOR of responsibility for faulty materials or workmanship. The CONTRACTOR shall promptly replace any such defects discovered within one year from the date of written acceptance of the work.

2.5.13 LIQUIDATED DAMAGES:

In the event the CONTRACTOR fails to complete satisfactorily the entire work contemplated and provided for under this contract on or before the date of completion determined as described elsewhere herein, the OWNER shall deduct from the monies due to CONTRACTOR the sum of One Thousand Five Hundred Dollars (\$1,500.00) for each calendar day of delay, which sum is agreed upon not as a penalty but as a fixed and liquidated damage for each day of such delay, to be paid in full and subject to no deduction, it being understood and agreed that the time of completion is of the essence. If the monies due the CONTRACTOR are less than the amount of such liquidated damages, then the CONTRACTOR shall pay the balance to the OWNER.

2.5.14 INCENTIVE CLAUSE:

The City of Sanibel will pay the CONTRACTOR an "Incentive Bonus" in the sum of One Hundred Dollars (\$100.00) for each calendar day if the work in the Contract is completed in accordance with the Contract Documents, as determined by the Engineer, before the documented project completion date.

The parties anticipate that delays may be caused by or arise from any number of events during the course of the Contract, including, but not limited to, work performed, work deleted, change orders, supplemental agreements, delays, disruptions, differing site conditions, utility conflicts, design changes or defects, time extensions, extra work, right-of-way issues, permitting issues, actions of Suppliers, sub-contractor's or other CONTRACTOR'S, actions by third parties, shop drawing approval process delays, expansion of the physical limits of the project to make it functional, weather, weekends, holidays, suspension of CONTRACTOR'S operations, or other such events, forces or factors sometimes experienced in construction work. Such delays or events and their potential impacts on performance by the CONTRACTOR are specifically contemplated and acknowledged by the parties in entering into this Contract and shall not extend the "Incentive Bonus" Completion Date set forth above.

SECTION 2.6 – PAYMENTS TO CONTRACTOR

2.6.01 DETAILED BREAKDOWN OF CONTRACT AMOUNT:

Except in cases where unit prices form the basis for payment under the Contract, the CONTRACTOR shall, within ten days of receipt of Notice to Proceed, submit a complete breakdown of the Contract Amount showing the value assigned to each part of the work, including an allowance for profit and overhead. Upon approval of the breakdown of the Contract Amount by the Engineer, it shall be used as the basis for all Requests for Payment.

2.6.02 REQUESTS FOR PAYMENT:

Progress Payments. OWNER may make progress payments on the project based on the CONTRACTOR'S Applications for Payment as recommended by the Engineer during construction as provided below.

1. Prior to Substantial Completion progress payments will be in an amount equal to 90% of the Work completed, and 90% of materials and equipment not incorporated in the Work but delivered and suitably stored, less in each case the aggregate of payments previously made.
2. Upon Substantial Completion, OWNER shall pay an amount sufficient to increase total payments to CONTRACTOR to 95% of the Contract Price, less

such amounts as Engineer shall determine in accordance with paragraph 2.6.05 of the General Conditions.

2.6.03 DELETED

2.6.04 OWNER'S ACTION ON REQUEST FOR PAYMENT:

Within 30 days after receipt of a Request for Payment from the CONTRACTOR, the OWNER shall:

1. Process the Request for Payment as recommended by the Engineer.
2. Pay such other amount, in accordance with Paragraph 2.6.05, as he shall decide is due the CONTRACTOR, informing the CONTRACTOR and the Engineer in writing of his reasons for paying the amended amount.
3. Withhold payment in accordance with Paragraph 2.6.05, informing the CONTRACTOR and the Engineer of his reasons for withholding payment.

2.6.05 OWNER'S RIGHT TO WITHHOLD PAYMENT OF A REQUEST FOR PAYMENT:

The OWNER may withhold payment, in whole or in part, of a Request for Payment to the extent necessary to protect himself from loss on account of any of the following:

1. Defective work.
2. Evidence indicating the probable filing of claims by other parties against the CONTRACTOR which may adversely affect the OWNER.
3. Failure of the CONTRACTOR to make payments due to sub-contractor's, material suppliers, or employees.
4. Damage to another CONTRACTOR.

2.6.06 PAYMENT FOR UNCORRECTED WORK:

Should the OWNER direct the CONTRACTOR not to correct work that has been damaged or that was not performed in accordance with the Contract Documents, an equitable deduction from the Contract Amount shall be made to compensate the OWNER for the Uncorrected work.

2.6.07 PAYMENT FOR REMOVAL OF REJECTED WORK AND MATERIALS:

The removal of work and materials rejected in accordance with Paragraph 2.3.05 and the re-execution of acceptable work by the CONTRACTOR shall be at the expense of the CONTRACTOR, and he shall pay the cost of replacing the work of other

CONTRACTOR'S destroyed or damaged by the removal of the rejected work or materials and the subsequent replacement of acceptable work.

1. Removal by OWNER: Removal of rejected work or materials and storage of materials by the OWNER, in accordance with Paragraph 2.3.05, shall be paid by the CONTRACTOR within 30 days after written notice to pay is given by the OWNER. If the CONTRACTOR does not pay the expenses of such removal and after ten days written notice being given by the OWNER of his intent to sell the materials, the OWNER may sell the materials at auction or at private sale and will pay the CONTRACTOR the net proceeds therefrom after deducting all the costs and expenses that should have been borne by the CONTRACTOR.

2.6.08 PAYMENT FOR EXTRA WORK:

Written notice of claims for payment for Extra Work shall be given by the CONTRACTOR within ten days after receipt of instructions from the OWNER to proceed with the Extra Work and before any work is commenced, except in an emergency endangering life or property. No claim shall be valid unless so made. In all cases, the CONTRACTOR'S itemized estimate sheets showing all labor and material shall be submitted to the OWNER. The OWNER'S order for Extra Work shall specify any extension of the Contract Time and one of the following methods of payment.

1. Unit prices or combinations of unit prices which formed the basis of the original Contract.
2. A lump sum based on the CONTRACTOR'S estimate and accepted by the OWNER.
3. Actual cost plus 15% for overhead and profit. Actual costs are defined as follows:
 - A. Labor costs, including all allowances for holidays, vacation, sick leave, apprentice programs, hospitalization, or other "fringe benefits" and including time of foreman while engaged directly upon extra work.
 - B. Labor insurance and taxes.
 - C. Materials and supplies used on the work.
 - D. Associated General CONTRACTOR'S of America standard rental rates on each piece of equipment having a value in excess of \$50.00. Equipment and tools of lesser value are considered "small tools" and, as such, are considered to be part of overhead.

2.6.09 PAYMENT FOR WORK SUSPENDED BY THE OWNER:

If the work or any part thereof shall be suspended by the OWNER and abandoned by the CONTRACTOR as provided in Paragraph 2.2.01 d., Suspension of Work by OWNER, the CONTRACTOR will then be entitled to payment for all work done on the portions so abandoned, plus 15% of the value of the abandoned work to compensate for overhead, plant expense, and anticipated profit.

2.6.10 PAYMENT FOR WORK BY THE OWNER:

The cost of the work performed by the OWNER, in removing construction equipment, tools, and supplies in accordance with Paragraph 2.5.08, Removal of Construction Equipment, Tools, and Supplies, and in correcting deficiencies in accordance with Paragraph 2.2.01 e., OWNER'S Right to Terminate the Agreement and Complete the Work shall be paid by the CONTRACTOR.

2.6.11 PAYMENT FOR WORK BY THE OWNER FOLLOWING HIS TERMINATION OF THE CONTRACT:

Upon termination of the Contract by the OWNER in accordance with Paragraph 2.2.01 e., OWNER'S Right to Terminate Agreement and Complete the Work, no further payments shall be due the CONTRACTOR until the work is completed. If the unpaid balance of the Contract Amount shall exceed the cost of completing the work including all overhead costs, the excess shall be paid to the CONTRACTOR. If the cost of completing the work shall exceed the unpaid balance, the CONTRACTOR shall pay the difference to the OWNER. The cost incurred by the OWNER, as herein provided, and the damage incurred through the CONTRACTOR'S default, shall be certified by the OWNER.

1. Unpaid Balance: If the unpaid balance of the Contract Sum exceeds the cost of finishing the work, including compensation for the Engineer's additional services, such shall be paid to the CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR shall pay the difference to the OWNER. The cost incurred by the OWNER as herein provided shall be certified by the Engineer.

2.6.12 PAYMENT FOR WORK TERMINATED BY THE CONTRACTOR:

Upon suspension of the work or termination of the Contract by the CONTRACTOR in accordance with Paragraph 2.2.02f, CONTRACTOR'S Right to Suspend Work or Terminate Agreement, the CONTRACTOR shall recover payment from the OWNER for the work performed, plus loss on plant and materials, plus established profit and damages.

2.6.13 PAYMENT FOR SAMPLES AND TESTING OF MATERIALS:

Samples furnished in accordance with Paragraph 2.3.02, Samples, shall be furnished by the CONTRACTOR at his expense and may be used in the work, after acceptance.

1. Testing of samples and materials furnished in accordance with Paragraph 2.3.02, Samples, shall be arranged and paid for by the OWNER.

2.6.14 ACCEPTANCE AND FINAL PAYMENT:

When the CONTRACTOR shall have completed the work in accordance with the terms of the Contract Documents, he shall certify completion of the work to the OWNER and submit a final Request for Payment, which shall be the Contract Amount plus all approved additions, less all approved deductions and less previous payments made. The CONTRACTOR shall furnish evidence that he has fully paid all debts for labor, materials, and equipment incurred in connection with the work, and, upon acceptance by the OWNER, the OWNER will release the CONTRACTOR, except as to the conditions of the Performance and Payment Bond, any legal rights of the OWNER, required guaranties, and Correction of Faulty Work after Final Payment, and will pay the CONTRACTOR'S final Request for Payment. The CONTRACTOR shall allow sufficient time between the time of completion of the work and approval of the final Request for Payment for the Engineer to assemble and check the necessary data.

1. Release of Liens: The CONTRACTOR shall deliver to the OWNER a complete release of all liens arising out of this Contract before the final Request for Payment is paid. If any lien remains unsatisfied after all payments are made, the CONTRACTOR shall refund to the OWNER such amounts as the OWNER may have been compelled to pay in discharging such liens including all costs and a reasonable attorney's fee.
2. Final Payment: The CONTRACTOR shall be paid in full within 61 days after the date of substantial completion. If within 61 days after substantial completion there remains uncompleted minor items, an amount equal to 200% of the value of each item as determined by the Engineer shall be withheld and paid 61 days following completion of all such items. This payment shall constitute final settlement.

SECTION 2.7 - CONTROL OF THE WORK

2.7.01 GENERAL:

NOT USED

2.7.02 PLANS AND WORKING DRAWINGS:

NOT USED

2.7.03 COORDINATION OF PLANS, SPECIFICATIONS AND SPECIAL PROVISIONS:

These Specifications, the plans, special provisions, and all supplementary documents are integral parts of the contract, and a requirement occurring in one is as binding as though occurring in all.

They are intended to be complementary and to describe and provide for a complete work. In addition to the work and materials specifically called for in the Specifications as being included in any specific pay item, additional incidental work, not specifically mentioned, will be included in such pay item when so shown in the plans, or if indicated, or obvious and apparent, as being necessary for the proper completion of the work under such pay item and not stipulated as being covered under other pay items. In case of discrepancy, computed dimensions shall govern over scaled dimensions, plans shall govern over Standard Specifications, and special provisions shall govern over both Standard Specifications and Plans.

2.7.04 CONFORMITY OF WORK WITH PLANS:

All Work performed, and all materials furnished shall be in reasonably close conformity with the lines, grades, cross sections, dimensions, and material requirements, including tolerances, shown on the plans or indicated in the specifications.

In the event the Engineer finds the materials or the finished product in which the materials are used not within reasonable close conformity with the plans and specifications, but that reasonably acceptable work has been produced, he shall then make a determination if the work shall be accepted and remain in place. In this event, the Engineer will document the basis of acceptance by contract modification which will provide for an appropriate adjustment in the contract price for such work or materials as he deems necessary to conform to his determination based on engineering judgment.

In the event the Engineer finds the materials, or the finished product in which the materials are used, or the work performed are not in reasonably close conformity with the plans and specifications and have resulted in an inferior or unsatisfactory product, the work or materials shall be removed and replaced or otherwise corrected by and at the expense of the CONTRACTOR.

In the event the OWNER accepts the work that is not within these tolerances, appropriate deductions will be made from the actual amount used to cover the cost of the extra material. The amount will be computed based on the job mix formula and the unit price stated in the Contract.

2.7.05 ERRORS OR OMISSIONS IN PLANS OR SPECIFICATIONS:

The CONTRACTOR shall take no advantage of any apparent error or omission which he might discover in the plans or specifications but shall forthwith notify the Engineer of such discovery, who will then make such corrections and interpretations as he deems necessary for reflecting the actual spirit and intent of the plans and specifications.

2.7.06 AUTHORITY OF THE ENGINEER:

All work shall be available for inspection by the Engineer and performed to his satisfaction.

It is agreed by the parties hereto that the Engineer shall decide all questions, difficulties and disputes, of whatever nature, which may arise relative to the interpretation of the plans, construction, prosecution and fulfillment of the contract, and as to the character, quality, amount and value of any work done, and materials furnished, under or by reason of the contract.

2.7.07 AUTHORITY AND DUTIES OF ENGINEER'S ASSISTANTS:

The Engineer may appoint such assistants and representatives as he desires. They shall be authorized to inspect all work done and all materials furnished. Such inspection may extend to all or any part of the work and to the manufacture, preparation or fabrication of the materials to be used. Such assistants shall not be authorized to revoke, alter or waive any requirement of the specifications. They shall be authorized to call to the attention of the CONTRACTOR any failure of the work or materials to conform to the specifications and contract and shall have the authority to reject materials or suspend the work until any questions at issue can be referred to and decided by the Engineer. The CONTRACTOR shall be immediately notified in writing of any such suspension of the work and such notice shall state in detail the reasons for the suspension. The presence of the inspector or other assistant shall in no way lessen the responsibility of the CONTRACTOR.

2.7.08 CONSTRUCTION STAKES AND MARKERS:

NOT USED

2.7.09 CONTRACTOR'S SUPERVISION:

NOT USED

2.7.10 GENERAL INSPECTION REQUIREMENTS:

1. Cooperation by CONTRACTOR:

No work shall be done, nor materials used, without suitable inspection by the Engineer or his representative, and the CONTRACTOR shall furnish the Engineer with every reasonable facility for ascertaining whether the work

performed, and materials used are in accordance with the requirements and intent of the plans and specifications. If the Engineer so requests, the CONTRACTOR shall, at any time before final acceptance of the work, remove or uncover such portions of the finished work as may be directed. After examination, the CONTRACTOR shall restore the uncovered portions of the work to the standard required by the specifications. Should the work so exposed or examined prove unacceptable, the uncovering or removal, and the replacing of the covering or making good of the parts removed, shall be at the CONTRACTOR'S expense. However, should the work thus exposed or examined prove acceptable, the uncovering or removing, and the replacing of the covering or making good of the parts removed, shall be paid for as extra work.

2. Failure of Engineer to Reject Work During Construction:

If, during or prior to construction operations, the Engineer should fail to reject defective work or materials, whether from lack of discovery of such defect or for any other reason, such initial failure to reject shall in no way prevent his later rejection when such defect is discovered, or obligate the Engineer to final acceptance, and the CONTRACTOR shall make no claim for losses suffered due to any necessary removals or repairs of such defects.

3. Failure to Remove and Renew Defective Materials and Work:

Should the CONTRACTOR fail or refuse to remove and renew any defective materials used or work performed, or to make any necessary repairs in an acceptable manner and in accordance with the requirements of the specifications, within the time indicated in writing, the Engineer shall have the authority to cause the unacceptable or defective materials or work to be repaired, removed and renewed, as may be necessary; all at the CONTRACTOR'S expense. Any expense incurred by the City in making these repairs, removals or renewals, which the CONTRACTOR has failed or refused to make, shall be paid for out of any moneys due or which may become due the CONTRACTOR, or may be charged against the contract bond. Continued failure or refusal on the part of the CONTRACTOR to make any or all necessary repairs promptly, fully and in an acceptable manner shall be sufficient cause for the City, at its option, to perform the work with its own organization, or to contract with any other individual, firm or corporation to perform the work. All costs and expenses incurred thereby shall be charged against the defaulting CONTRACTOR and the amount thereof deducted from any moneys due or which may become due to him or shall be charged against the contract bond. Any work performed, subsequent to forfeiture of the Contract, as described in this Article, shall not relieve the CONTRACTOR in any way of his responsibility for the work performed by him.

2.7.11 **FINAL CONSTRUCTION INSPECTION:**

1. Maintenance Until Final Acceptance:

The CONTRACTOR shall maintain all work in first-class condition until it has been completed as a whole and has been accepted by the Engineer under the provisions of 2.7.12.

2. Semifinal Inspections:

The Engineer will make a semifinal inspection within seven (7) days after notice from the CONTRACTOR of presumptive completion of the entire project. If, at the semifinal inspection, all construction provided for and contemplated by the contract is found completed to the Engineer's satisfaction, such inspection shall constitute the final inspection, as prescribed below. If, however, at any semifinal inspection any work is found unsatisfactory, in whole or in part, the Engineer shall give the CONTRACTOR the necessary instructions as to replacement of material and performance or re-performance of work necessary and prerequisite to final completion and acceptance, and the CONTRACTOR forthwith shall comply with and execute such instructions. Upon satisfactory replacement of material and performance or reperformance of such work, another inspection shall be made, which shall constitute the final inspection if the required material is found to have been replaced and the work completed satisfactorily.

3. Final Inspection:

Whenever all materials have been furnished, all work has been performed, and the construction contemplated by the contract has been satisfactorily completed, the Engineer will make the final inspection.

2.7.12 **FINAL ACCEPTANCE:**

When, upon completion of the final construction inspection, the work is found to be completed satisfactorily, the Engineer shall give the OWNER a written recommendation for acceptance of the work. The OWNER shall then satisfy himself as to the Engineer's recommendation and within five days of said recommendation notify the CONTRACTOR, in writing, of his acceptance of the work.

2.7.13 CLAIMS BY CONTRACTOR:

Where the CONTRACTOR deems that extra compensation is due him for work or materials not clearly covered in the contract or not ordered by the Engineer as extra work, as defined herein, the CONTRACTOR shall notify the Engineer in writing of his intentions to make claim for extra compensation, before he begins the work on which he bases the claim. If such notification is not given, and the Engineer is not afforded proper opportunity for keeping strict account of actual cost, as defined for force account, then the CONTRACTOR thereby agrees to waive the claim for such extra compensation. Such notice by the CONTRACTOR, and the fact that the Engineer has kept account of the cost as aforesaid, shall not in any way be construed as establishing the validity of the claim. In such case the claim after consideration by the Engineer, is found to be valid, it shall be allowed and paid for as extra as provided herein.

REQUIRED CONTRACT PROVISIONS

TERMINATION FOR CAUSE OR CONVENIENCE; REMEDIES

This contract is for more than the simplified acquisition threshold, currently set at \$250,000, so it must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms and provide for such sanctions and penalties as appropriate. See 2 C.F.R. Part 200, Appendix II(A). This requirement applies to all FEMA grant and cooperative agreement programs.

The City of Sanibel may terminate the contract at any time for breach of contractual obligations or for convenience, by providing the provider with a written notice of such cancellation. In the event of a termination for cause, the termination shall become effective on the date specified in the notice of cancellation, and the City of Sanibel shall have no continuing financial or other obligations to the Contractor from the effective date of the termination through what otherwise would have remained of the contract term. In the event of a termination for convenience, such termination shall not be earlier than 30 days from the date of such written notice, and the City shall be obligated to pay reasonable, substantiated demobilization costs but shall otherwise have no continuing financial or other obligations to the Contractor from the effective date of the termination through what otherwise would have remained for the contract term.

ACCESS TO RECORDS

The following access to records requirements apply to this contract: (1) The contractor agrees to provide the State of Florida (or any of its agencies), the City of Sanibel, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions. (2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed. (3) The contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract."

COMPLIANCE WITH FEDERAL LAW, REGULATIONS AND EXECUTIVE ORDERS

This is an acknowledgement that FEMA financial assistance will be used to fund the contract only. The contractor will comply with all applicable federal law, regulations, executive orders, FEMA policies, procedures, and directives.

NO OBLIGATION BY FEDERAL GOVERNMENT

The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.

PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS OR RELATED ACTS

The contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the contractor's actions pertaining to this contract.

COPELAND ANTI-KICKBACK ACT

Compliance with the Copeland "Anti-Kickback" Act.

The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clause above and such other clauses as FEMA may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all these contract clauses.

Breach. A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.

CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Compliance with the Contract Work Hours and Safety Standards Act.

The following clauses set forth in 29 C.F.R. § 5.5(b) are required, in accordance with the Contract Work Hours and Safety Standards Act:

- (1) *Overtime requirements.* No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- (2) *Violation; liability for unpaid wages; liquidated damages.* In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.
- (3) *Withholding for unpaid wages and liquidated damages.* The City of Sanibel shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which

is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

- (4) *Subcontracts.* The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

CLEAN AIR ACT AND THE FEDERAL WATER POLLUTION CONTROL ACT

Federal Water Pollution Control Act

The contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

The contractor agrees to report each violation to the City of Sanibel and understands and agrees that the City of Sanibel will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

EQUAL EMPLOYMENT OPPORTUNITY

During the performance of this contract, the contractor agrees as follows:

- (1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants' employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- (2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration

for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

- (3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- (4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- (8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: provided, however, that in the event a contractor

becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The City of Sanibel further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: *provided, however*, that if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The City of Sanibel agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The City of Sanibel further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

DEBARMENT AND SUSPENSION

This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

This certification is a material representation of fact relied upon by The City of Sanibel. If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R.

pt. 3000, subpart C, in addition to remedies available to the City of Sanibel, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

BYRD ANTI-LOBBYING AMENDMENT

Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352 (as amended)

Contractors who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

Required Certification. If applicable, contractors must sign and submit to the non-federal entity the following certification.

APPENDIX A, 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned

shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

Signature of Contractor's Authorized Official

Name and Title of Contractor's Authorized Official

Date

PROCUREMENT OF RECOVERED MATERIAL

This required contract provision applies to all procurements over \$10,000 made by a state agency or an agency of a political subdivision of a state and its contractors.

The requirements include: Procuring only items designated in EPA guidelines that contain the highest practical percentage of recovered materials consistent with maintaining competition, where the purchase price of the item is greater than \$10,000, or the value of the amount of items purchased in the preceding fiscal year was greater than \$10,000; Procuring solid waste management services in a way that maximizes energy and resource recovery; and Establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired Competitively within a timeframe providing for compliance with the contract performance schedule; Meeting contract performance requirements; or At a reasonable price. Information about this requirement, along with the list of EPA-designated items, is available at EPA's Comprehensive Procurement Guidelines webpage: <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>. The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act."

PROHIBITION ON CONTRACTING FOR COVERED TELECOMMUNICATIONS EQUIPMENT OR SERVICES

Section 889(b)(1) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (FY2019 NDAA) and 2 C.F.R. § 200.216, as implemented by FEMA Policy 405-143-1, Prohibitions on Expending FEMA Award Funds for Covered Telecommunications Equipment or Services (Interim), prohibit the obligation or expending of federal award funds on certain telecommunication products or from certain entities for national security reasons. Effective August 13, 2020, FEMA recipients and subrecipients, as well as their contractors and subcontractors, may not obligate or expend any FEMA award funds to:

- a. Procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system;
- b. Enter into, extend, or renew a contract to procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system; or
- c. Enter into, extend, or renew contracts with entities that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

"Prohibition on Contracting for Covered Telecommunications Equipment or Services (a) Definitions. As used in this clause, the terms backhaul; covered foreign country; covered telecommunications equipment or services; interconnection arrangements; roaming; substantial or essential component; and telecommunications equipment or services have the meaning as defined in FEMA Policy 405-143-1, Prohibitions on Expending FEMA Award Funds for Covered Telecommunications Equipment or Services (Interim), as used in this clause— (b) Prohibitions. (1) Section 889(b) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232, and 2 C.F.R. § 200.216 prohibit the head of an executive agency on or after Aug.13, 2020, from obligating or expending grant, cooperative agreement, loan, or loan guarantee funds on certain telecommunications products or from certain entities for national security reasons. (2) Unless an exception in paragraph (c) of this clause applies, the contractor and its

subcontractors may not use grant, cooperative agreement, loan, or loan guarantee funds from the Federal Emergency Management Agency to: (i) Procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system; (ii) Enter into, extend, or renew a contract to procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system; (iii) Enter into, extend, or renew contracts with entities that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system; or (iv) Provide, as part of its performance of this contract, subcontract, or other contractual instrument, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. (c) Exceptions. (1) This clause does not prohibit contractors from providing— (i) A service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or Contract Provisions Guide 28 (ii) Telecommunications equipment that cannot route or redirect user data traffic or permit visibility into any user data or packets that such equipment transmits or otherwise handles. (2) By necessary implication and regulation, the prohibitions also do not apply to: (i) Covered telecommunications equipment or services that: i. Are not used as a substantial or essential component of any system; and ii. Are not used as critical technology of any system. (ii) Other telecommunications equipment or services that are not considered covered telecommunications equipment or services. (d) Reporting requirement. (1) In the event the contractor identifies covered telecommunications equipment or services used as a substantial or essential component of any system, or as critical technology as part of any system, during contract performance, or the contractor is notified of such by a subcontractor at any tier or by any other source, the contractor shall report the information in paragraph (d)(2) of this clause to the recipient or subrecipient, unless elsewhere in this contract are established procedures for reporting the information. (2) The Contractor shall report the following information pursuant to paragraph (d)(1) of this clause: (i) Within one business day from the date of such identification or notification: The contract number; the order number(s), if applicable; supplier name; supplier unique entity identifier (if known); supplier Commercial and Government Entity (CAGE) code (if known); brand; model number (original equipment manufacturer number, manufacturer part number, or wholesaler number); item description; and any readily available information about mitigation actions undertaken or recommended. (ii) Within 10 business days of submitting the information in paragraph (d)(2)(i) of this clause: Any further available information about mitigation actions undertaken or recommended. In addition, the contractor shall describe the efforts it undertook to prevent use or submission of covered telecommunications equipment or services, and any additional efforts that will be incorporated to prevent future use or submission of covered telecommunications equipment or services. (e) Subcontracts. The Contractor shall insert the substance of this clause, including this paragraph (e), in all subcontracts and other contractual instruments.”

DOMESTIC PREFERENCES FOR PROCUREMENT

As appropriate, and to the extent consistent with law, NFEs should, to the greatest extent practicable under a federal award, provide a preference for the purchase, acquisition, or use of goods, products or materials produced in the United States. This includes, but is not limited to, iron, aluminum, steel, cement, and other manufactured products.

As appropriate, and to the extent consistent with law, the contractor should, to the greatest extent practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States. This includes, but is not limited to iron, aluminum, steel, cement, and other manufactured products. For purposes of this clause: Produced in the United States means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States. Manufactured products mean items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.”

CONTRACT CHANGES OR MODIFICATIONS

To be allowable under a FEMA grant or cooperative agreement award, the cost of any contract change, modification, amendment, addendum, change order, or constructive change must be necessary, allocable, within the scope of the grant or cooperative agreement, reasonable for the scope of work, and otherwise allowable.

AFFIRMATIVE SOCIOECONOMIC STEPS

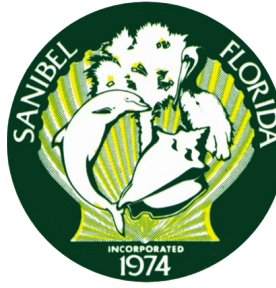
For procurements under FEMA declarations and awards issued on or after November 12, 2020, all NFEs are required to take the six affirmative steps to ensure use of small and minority businesses, women’s business enterprises, and labor surplus area firms when possible. One of the six steps is to require the prime contractor, if subcontracts are to be let, to take the five other affirmative steps, For procurements under FEMA declarations and awards issued between December 26, 2014, and November 12, 2020, this requirement only applies to non-state entities.

If subcontracts are to be let, the prime contractor is required to take all necessary steps identified in 2 C.F.R. § 200.321(b)(1)-(5) to ensure that small and minority businesses, women’s business enterprises, and labor surplus area firms are used when possible.

COPYRIGHT AND DATA RIGHTS

An NFE is required by 2 C.F.R. § 200.315 to provide certain licenses with respect to copyright and data to the federal awarding agency. 2 C.F.R. § 200.315(b) provides to the federal awarding agency “a royalty-free, nonexclusive and irrevocable right to reproduce, publish, or otherwise use [any work that is subject to copyright] for federal purposes, and to authorize others to do so.” 2 C.F.R. § 200.315(d) provides to the federal government the rights to “obtain, reproduce, publish, or otherwise use” data produced under a federal award and to authorize others to do the same.

The Contractor grants to the City of Sanibel a paid-up, royalty-free, nonexclusive, irrevocable, worldwide license in data first produced in the performance of this contract to reproduce, publish, or otherwise use, including prepare derivative works, distribute copies to the public, and perform publicly and display publicly such data. For data required by the contract but not first produced in the performance of this contract, the Contractor will identify such data and grant to the City of Sanibel or acquires on its behalf a license of the same scope as for data first produced in the performance of this contract. Data, as used herein, shall include any work subject to copyright under 17 U.S.C. § 102, for example, any written reports or literary works, software and/or source code, music, choreography, pictures or images, graphics, sculptures, videos, motion pictures or other audiovisual works, sound and/or video recordings, and architectural works. Upon or before the completion of this contract, the Contractor will deliver to the City of Sanibel data first produced in the performance of this contract and data required by the contract but not first produced in the performance of this contract in formats acceptable by the City of Sanibel.”



TECHNICAL SPECIFICATIONS



DIVISION 1

GENERAL REQUIREMENTS

SECTION 01010

SUMMARY OF WORK

PART 1 – GENERAL

1.01 DESCRIPTION

- A. The Work to be done consists of furnishing all labor, equipment, materials and services required to fabricate and deliver lift station control panels (power panel and control panel), terminal cabinets, vented pedestals as shown on the plans and described in the specifications.
- B. Contractor's Duties:
 - 1. Cooperate with the Owner or Owner's Representatives.
 - 2. Adequately phase and coordinate the project and all associated work efforts to avoid delays or project issues.
 - 3. Except as specifically noted, provide and pay for:
 - a. Labor, materials, and equipment.
 - b. Tools, construction equipment, and machinery.
 - c. Other facilities and services necessary for the proper execution and completion of the Work.
 - 4. Comply with codes, ordinances, rules, regulations, orders, and other legal requirements of public authorities that bear on performance of Work.
 - 5. Promptly submit written notice to Engineer of observed variance of Contract Documents from legal requirements.
 - 6. Enforce strict discipline and good order among employees. Do not employ on Work persons not skilled in their assigned task.
 - 7. The Contractor shall furnish personnel and equipment that will be efficient, appropriate, and large enough to secure a satisfactory quality of work and a rate of progress that will ensure the completion of the work within the time stipulated in the Proposal. This project is a critical/priority project and the work should be completed in a timely fashion accordingly. If, at any time, such personnel appears to the Engineer to be inefficient, inappropriate or insufficient for securing the quality of work aforesaid, he may order the Contractor to increase the efficiency, change the character or increase the personnel and equipment, and the Contractor shall conform to such order. Failure of the Engineer to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the work and rate of progress.

END OF SECTION

SECTION 01150

MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.01 GENERAL INFORMATION

- A. Refer to Section 01010 for a description of the work required for completion of the Work.
- B. Subject to the provisions in the Contract General Conditions, all work and payment for the work is represented by the Total Base Bid amount shown on the Bid Form.

1.02 PAYMENT

- A. Work under this contract will be paid for on a unit price and/or lump sum price basis as outlined on the Bid Form. The amount of payment will be as defined in the Standard Form of Agreement between Owner and Contractor.
- B. The prices shown on the Bid Form establish a total price cost for completing the Work in its entirety. Furnish all materials, equipment, transportation, tools, labor, services and supplies, plus any miscellaneous items and services that may not be specifically identified in the Contract Drawings and Specifications but that can be inferred from the Contract Drawings and Specifications and are necessary to produce a completed Work that is usable in a manner for which it was intended. If any items for a complete work are omitted or not shown, the Contractor shall furnish and install them without additional cost to the Owner. No separate payment will be made for another Payment Item required to complete the work of a lump sum item.
- C. The Contractor shall prepare and submit an Application for Payment no more often than each month.
- D. Retainage shall apply to all Contractor payments prior to final acceptance as provided for in the Contract General Conditions.

1.03 MEASUREMENT FOR PAYMENT

- A. Measurement for Lump Sum bid items shall be based on the percent of actual completion as determined by the Contractor and agreed upon by the Engineer.
- B. Measurement for Unit Price bid items shall be based on the actual quantity provided and accepted by the Engineer.
- C. Measurement of volumes shall be the actual "as-built" volume pertinent to payment items. Quantities on the Bid Form are estimated and may be increased or decreased without limit.

1.04 PAYMENT ITEMS

- A. Separate payment will be made for the Unit Price and Lump Sum Items listed on the Bid Form. Related work not specifically listed or identified, but evidently necessary for satisfactory completion of the Item, shall be considered to be included.
- B. No separate payment will be made for the following Work and its cost shall be included in appropriate Payment Items:
 - 1. Record drawings.
 - 2. Clean up.
 - 3. Testing materials and apparatus.
 - 4. Appurtenant work.
 - 5. Contractor fees associated with the performance of the Work.
 - 6. Project phasing and coordination.
 - 7. Work required outside of normal work hours (nights, weekends or holidays, etc.)
 - 8. Submitting and obtaining all necessary permit approvals, including fees.
 - 9. Storm preparation and associated demobilization and remobilization.
- C. The following will clarify the work included for bid items in the Pay Item Sheet:
 - 1. Shop Drawings/Approved Submittals (Bid Item No. 1):**
 - a. Measurement for Shop Drawings/Approved Submittals will be based on the percentage of work complete.
 - b. Payment for Shop Drawings/Approved Submittals will be made at the Contract lump sum price for the item, which price and payment shall be full compensation for the preparatory work and operations in preparing and providing shop drawings for review by the Owner and/or the Engineer. Price will include all costs for all revisions necessary until the shop drawings are approved for production.
 - 2. Duplex Pump Station Control Panel (Power Panel) (Bid Item No. 2A-2F):**
 - a. Measurement for Duplex Pump Station Control Panel (Power Panel) will be based on the actual quantity of Power Panels delivered and accepted.
 - b. Payment for Power Panels will be made at the Unit Price for the item, which price and payment shall be full compensation for all labor and materials required to fabricate and deliver, the Power Panel, and all ancillary components required to fabricate the components in accordance with the Drawings and as specified herein.

3. Duplex Pump Station Control Panel (Control Panel) (Bid Item No. 3A-3C):

- a. Measurement for Control Panels will be based on the actual quantity of Control Panels delivered and accepted.
- b. Payment for Control Panels will be made at the Unit Price for the item, which price and payment shall be full compensation for all labor and materials required to fabricate and deliver, the Control Panel, and all ancillary components required to fabricate the components in accordance with the Drawings and as specified herein.

4. Termination Cabinet (Bid Item No. 4):

- a. Measurement for Termination Cabinet will be based on the actual quantity of Termination Cabinets delivered and accepted.
- b. Payment for Termination Cabinet will be made at the Unit Price for the item, which price and payment shall be full compensation for all labor and materials required to fabricate and deliver, the Termination Cabinet, and all ancillary components required to fabricate the components in accordance with the Drawings and as specified herein.

5. Vented Pedestal Box (Bid Item No. 5):

- a. Measurement for Vented Pedestal Box will be based on the actual quantity of Vented Pedestal Box delivered and accepted.
- b. Payment for Vented Pedestal Box will be made at the Unit Price for the item, which price and payment shall be full compensation for all labor and materials required to fabricate and deliver, the Vented Pedestal Boxes, and all ancillary components required to fabricate the components in accordance with the Drawings and as specified herein.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01340

SHOP DRAWINGS, WORKING DRAWINGS, AND SAMPLES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. The Contractor shall submit to the Engineer for review and approval, such Shop Drawings, Test Reports, and Product Data on materials and equipment (hereinafter in this Section called Data), and material samples (hereinafter in this Section called Samples) as are required for the proper control of work, including but not limited to those Shop Drawings, Data, and Samples for materials and equipment specified elsewhere in the Specifications and in the Drawings.
2. Within fourteen (14) calendar days after the Effective Date of the Agreement, the Contractor shall submit to the Engineer a complete list of preliminary data on items for which Shop Drawings are to be submitted. Included in this list shall be the names of all proposed manufacturers furnishing specified items. Review of this list by the Engineer shall in no way expressed or implied relieve the Contractor from submitting complete Shop Drawings and providing materials, equipment, etc., fully in accordance with the Contract Documents. This procedure is required in order to expedite final review of Shop Drawings.
3. The Contractor is to maintain an accurate updated submittal log and will bring this log to each scheduled progress meeting with the Owner and the Engineer. This log should include the following items:
 - a. Submittal description and number assigned.
 - b. Date to Engineer.
 - c. Date returned to Contractor (from Engineer).
 - d. Status of submittal (Approved, Approved as Noted, Amend and Resubmit, and Rejected).
 - e. Date of resubmittal and return (as applicable).
 - f. Date material release (for fabrication).
 - g. Projected date of fabrication.
 - h. Projected date of delivery to site.

- i. Status of O&M manuals submittal.
- j. Specification Section.
- k. Drawings sheet number.

1.02 CONTRACTOR'S RESPONSIBILITY

- A. It is the responsibility of the Contractor to check all drawings, data and samples prepared before submitting them to the Engineer for review. Each and every copy of the Drawings and data shall bear the Contractor's stamp showing that they have been so checked. Shop drawings submitted to the Engineer without the Contractor's stamp will be returned to the Contractor for conformance with this requirement. Shop drawings shall indicate any deviations in the submittal from requirements of the Contract Documents. If the Contractor takes exception to the specifications, the Contractor shall note the exception in the letter of transmittal to the Engineer.
- B. Determine and verify:
 - 1. Field measurements.
 - 2. Field construction criteria
 - 3. Catalog numbers and similar data.
 - 4. Conformance with Specifications.
- C. The Contractor shall furnish the Engineer a schedule of Shop Drawing submittals fixing the respective dates for the submission of shop and working drawings, the beginning and ending of manufacture, testing, and installation of materials, supplies, and equipment. This schedule shall indicate those that are critical to the progress schedule.
- D. The Contractor shall not begin any of the work covered by a Shop Drawing, Data, or a Sample returned for correction until a revision or correction thereof has been reviewed and returned to him, by the Engineer, with approval.
- E. The Contractor shall submit to the Engineer all drawings and schedules sufficiently in advance of construction requirements to provide no less than thirty (30) calendar days for checking and appropriate action from the time the Engineer receives them.
- F. All submittals shall be accompanied with a transmittal letter prepared in duplicate containing the following information:
 - 1. Date.
 - 2. Project Title and Number.
 - 3. Contractor's name and address.

4. The number of each Shop Drawings, Project Data, and Sample submitted.
 5. Notification of Deviations from Contract Documents.
 - a. The Contractor shall indicate in **bold type** at the top of the cover sheet of submittal of shop drawing if there is a deviation from the Drawings, Specifications, or referenced specifications or codes.
 - b. The Contractor shall also list any deviations from the Drawings, Specifications, or referenced specifications or codes and identify in green ink prominently on the applicable Shop Drawings.
 6. Submittal Log Number conforming to Specification Section Number.
- G. The Contractor shall submit all descriptive or product data information and Shop Drawings to the Owner and Engineer in electronic PDF format via e-mail. The Engineer will review the submittal with the Owner and return to Contractor with appropriate review comments.
 - H. The Contractor shall be responsible for and bear all costs of damages which may result from the ordering of any material or from proceeding with any part of Work prior to the completion of the review by the Engineer of the necessary Shop Drawings.
 - I. The Contractor shall be fully responsible for observing the need for and making any changes in the arrangement of piping, connections, wiring, manner of installation, etc., which may be required by the materials/equipment he proposes to supply both as pertains to his own work and any work affected under other parts, headings, or divisions of the Drawings and Specifications.
 - J. The Contractor shall not use Shop Drawings as a means of proposing alternate items to demonstrate compliance with the Drawings and Specifications.
 - K. Drawings and schedules shall be checked and coordinated with the work of all trades and sub-contractors involved, before they are submitted for review by the Engineer and shall bear the Contractor's stamp of approval as evidence of such checking and coordination. Drawings or schedules submitted without this stamp of approval shall be returned to the Contractor for resubmission.
 - L. Each submittal will bear a stamp indicating that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal. The Contractor stamp shall be similar to the sample given below.

(OWNER'S NAME)	
(PROJECT NAME)	
(PROJECT NUMBER)	
SHOP DRAWING NO.: _____	
SPECIFICATION SECTION: _____	DRAWING NO. _____
<p>WITH RESPECT TO THIS SHOP DRAWING OR SAMPLE, I HAVE DETERMINED AND VERIFIED ALL QUANTITIES, DIMENSIONS, SPECIFIED PERFORMANCE CRITERIA, INSTALLATION REQUIREMENTS, MATERIALS, CATALOG NUMBERS, AND SIMILAR DATA WITH RESPECT THERETO AND REVIEWED OR COORDINATED THIS SHOP DRAWING OR SAMPLE WITH OTHER SHOP DRAWINGS AND SAMPLES AND WITH THE REQUIREMENTS OF THE WORK AND THE CONTRACT DOCUMENTS.</p>	
<p>_____ NO VARIATION FROM CONTRACT DOCUMENTS</p> <p>_____ VARIATION FROM CONTRACT DOCUMENTS AS SHOWN</p>	
(CONTRACTOR'S NAME)	
(CONTRACTOR'S ADDRESS)	
BY: _____	DATE: _____
AUTHORIZED SIGNATURE	

1.03 ENGINEER'S REVIEW OF SHOP DRAWINGS

- A. The Engineer's review of Shop Drawings, Data, and Samples as submitted by the Contractor will be to determine if the items(s) generally conforms to the information in the Contract Documents and is compatible with the design concept. The Engineer's review and exceptions, if any, will not constitute an approval of dimensions, connections, quantities, and details of the material, equipment, device, or item shown.
- B. The review of drawings and schedules will be general, and shall not be construed:
 1. As permitting any departure from the Contract Documents.
 2. As relieving the Contractor of responsibility for any errors, including details, dimensions, and materials.
 3. As approving departures from details furnished by the Engineer, except as otherwise provided herein.
- C. If the drawings or schedules as submitted describe variations and show a departure from the Contract Documents which the Engineer finds to be in the interest of the Owner and to be so minor as not to involve a change in Contract Price or contract time, the Engineer may return the reviewed drawings without noting an exception.
- D. "Approved As Noted" - Contractor shall incorporate Engineer's comments into the submittal before release to manufacturer. The Contractor shall send a letter to the Engineer acknowledging the comments and their incorporation into the Shop Drawing.

- E. "Amend And Resubmit" - Contractor shall resubmit the Shop Drawing to the Engineer. The resubmittal shall incorporate the Engineer's comments highlighted on the Shop Drawing.
- F. "Rejected" - Contractor shall correct, revise and resubmit Shop Drawing for review by Engineer.
- G. Resubmittals will be handled in the same manner as first submittals. On resubmittals the Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, to revisions other than the corrections requested by the Engineer on previous submissions. The Contractor shall make any corrections required by the Engineer.
- H. If the Contractor considers any correction indicated on the drawings to constitute a change to the Drawings or Specifications, the Contractor shall give written notice thereof to the Engineer.
- I. When the Shop Drawings have been completed to the satisfaction of the Engineer, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the Engineer.
- J. No partial submittals will be reviewed. Submittals not deemed complete will be stamped "Rejected" and returned to the Contractor for resubmittal. Unless otherwise specifically permitted by the Engineer, make all submittals in groups containing all associated items for:
 - 1. Systems.
 - 2. Processes.
 - 3. As indicated in specific Specifications Sections.

All drawings, schematics, manufacturer's product data, certifications, and other Shop Drawing submittals required by a system specification shall be submitted at one time as a package to facilitate interface checking.

- K. Only the Engineer shall utilize the color "red" in marking Shop Drawing submittals.
- L. Shop drawing and submittal data shall be reviewed by the Engineer for each original submittal and first resubmittal; thereafter review time for subsequent resubmittals shall be charged to the Contractor and the Contractor shall reimburse the Owner for services rendered by the Engineer as specified in the Supplementary Conditions.

1.04 SHOP DRAWINGS

- A. When used in the Contract Documents, the term "Shop Drawing" shall be considered to mean Contractor's plans for materials and equipment which become an integral part of the Project. Shop Drawings shall be complete and detailed and shall consist of

fabrication, erection, setting and schedule drawings, manufacturer's scale drawings, and wiring and control diagrams. Catalogs cuts, catalogs, pamphlets, descriptive literature, and performance and test data shall be considered only as supportive information to required Shop Drawings as defined above. As used herein, the term "manufactured" applies to standard units usually mass-produced; and "fabricated" means items specifically assembled or made out of selected materials to meet individual design requirements.

- B. Manufacturer's catalog sheets, brochures, diagrams, illustrations, and other standard descriptive data shall be clearly marked to identify pertinent materials, products, or models. Delete information which is not applicable to the Work by striking or cross-hatching.
- C. Each Shop Drawing shall be submitted with a cover sheet which shall include a title block for the submittal, refer to Section 00847 – Shop Drawing Submittal Form. The title block/cover sheet shall display the following:
 - 1. Project Title and Number.
 - 2. Name of project building or structure.
 - 3. Number and title of the Shop Drawing.
 - 4. Date of Shop Drawing or revision.
 - 5. Name of Contractor and subcontractor submitting drawing.
 - 6. Supplier/manufacturer.
 - 7. Separate detailer when pertinent.
 - 8. Specification title and Section number.
 - 9. Applicable Drawing number.
- D. Data on materials and equipment shall include, without limitation, materials and equipment lists, catalog data sheets, catalog cuts, performance curves, diagrams, verification of conformance with applicable standards or codes, materials of construction, and similar descriptive material. Materials and equipment lists shall give, for each item thereon, the name and location of the supplier or manufacturer, trade name, catalog reference, size, finish, and all other pertinent Data.
- E. For all mechanical and electrical equipment furnished, the Contractor shall provide a list including the equipment name, and address, and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained.

- F. If drawings show variations from Contract requirements because of standard shop practice or for other reasons, the Contractor shall describe such variations in his letter of transmittal. If acceptable, proper adjustment in the Contract shall be implemented where appropriate. If the Contractor fails to describe such variations, he shall not be relieved of the responsibility for executing the Work in accordance with the Contract, even though such drawings have been reviewed.
- G. All manufacturers or equipment suppliers who propose to furnish equipment or products shall submit an installation list to the Engineer along with the required shop drawings. The installation list shall include at least five (5) installations where identical equipment has been installed and has been in operation for a period of at least two (2) years unless specified otherwise in the Specification Section applicable.

1.05 WORKING DRAWINGS

- A. When used in the Contract Documents, the term "Working Drawings" shall be considered to mean the Contractor's plan for temporary structures such as temporary bulkheads, support of open cut excavation, support of utilities, ground water control systems, forming and falsework for underpinning, and for such other work as may be required for construction but does not become an integral part of the Project.
- B. Copies of working drawings as noted in paragraph 1.05 A. above, shall be submitted to the Engineer where required by the Contract Documents or requested by the Engineer, and shall be submitted at least thirty (30) calendar days (unless otherwise specified elsewhere) in advance of their being required for the Work.
- C. Working Drawings shall be signed by a registered Professional Engineer, currently licensed to practice in the State of Florida, and shall convey, or be accompanied by, calculations or other sufficient information to completely explain the structure, machine, or system described and its intended manner of use. Prior to commencing such work, working drawings must have been reviewed without specific exceptions by the Engineer, which review will be for general conformance and will not relieve the Contractor in any way from his responsibility with regard to the fulfillment of the terms of the Contract. All risks to new or existing work are assumed by the Contractor; the Owner and Engineer shall have no responsibility therefor.

1.06 SAMPLES

- A. The Contractor shall furnish, for the approval of the Engineer, samples required by the Contract Documents or requested by the Engineer. Samples shall be delivered to the Engineer as specified or directed. The Contractor shall prepay all shipping charges on samples. Materials or equipment for which samples are required shall not be used in the Work until approved by the Engineer.
- B. Samples shall be of sufficient size and quantity to clearly illustrate:
 - 1. Functional characteristics of the product, with integrally related parts and attachment devices.

2. Full range of color, texture, and pattern.
 3. A minimum of three (3) samples of each item shall be submitted.
- C. Each sample shall have a label indicating:
1. Name of Project.
 2. Name of Contractor and subcontractor.
 3. Material or equipment represented.
 4. Place of origin.
 5. Name of producer/supplier and brand (if any).
 6. Location in Project.
 7. Submittal and specification numbers.
- (Samples of finished materials shall have additional marking that will identify them under the finished schedules.)
- D. The Contractor shall prepare a transmittal letter and a description sheet for each shipment of samples. The description sheet shall contain the information required in Paragraphs 1.06B and C above. He shall enclose a copy of the letter and description sheet with the shipment and send a copy of the letter and description sheet to the Engineer. Approval of a sample shall be only for the characteristics or use named in such approval and shall not be construed to change or modify any Contract requirements.
- E. Approved samples not destroyed in testing shall be sent to the Engineer or stored at the site of the Work. Approved Samples of the hardware in good condition will be marked for identification and may be used in the Work. Materials and equipment incorporated in the Work shall match the approved Samples. Samples which failed testing or were not approved will be returned to the Contractor at his expense, if so requested at time of submission.

END OF SECTION



DIVISION 16

ELECTRICAL

SECTION 16480

DUPLEX LIFT STATION

PUMP CONTROL PANEL (POWER PANEL) AND TERMINAL CABINET

PART 1 - GENERAL

1.01 REQUIREMENTS

- A. The Pump Control Panels (Power Panel) and the Pump Termination Cabinets described in these specifications shall be supplied by a single equipment vendor. Pump Control Panel shall work in conjunction with the Duplex Lift Station Pump Control Panel (Controls Panel) as described in specification 17250. The vendor shall be responsible for furnishing fully operational pump control panels in accordance with all applicable codes and standards. The vendor shall provide all incidentals design and equipment selection services required to produce a fully operation product.

1.02 WORK INCLUDED

- A. The Control Panel Vendor shall provide the following services:
 - 1. Design, fabricate, factory test, deliver, site test, commission, provide training for, etc., all control system components and assemblies as required to provide a fully functional Lift Station Control package.
 - 2. Provide training to Operations staff per contract requirements.
 - 3. Provide O&M manuals.
 - 4. Provide detailed system operations and maintenance manuals.
 - 5. Provide on-site assistance, direction, and coordination during installation, functional check-out, startup, and commissioning of systems, and as needed through project closeout.

1.03 REFERENCED STANDARDS

- A. IEEE – Institute of Electrical and Electronics Engineers
- B. ISA – International Society of Automation
- C. NEC – National Electric Code
- D. NEMA – National Electrical Manufacturer’s Association
- E. NETA – International Electrical Testing Association
- F. NFPA – National Fire Protection Association

- G. UL – Underwriters Laboratories
- H. OSHA – US Department of Labor “Occupational Safety and Health Administration Standards”

1.04 SUBMITTALS

- A. The vendor shall provide the following submittals for review and approval by the Owner and Engineer. The Engineer shall be the sole judge of equality relating to substitute material.
- B. Action/Informational Submittals:
 - 1. Product Data
 - a. Product literature of all enclosure electrical devices and components mounted on or within the control panel. Product literature shall include markings indicating options selected for each component.
 - b. List of miscellaneous items, cables, spare and replenishment parts, chemicals to be provided, including MSDS information.
 - 2. Bill of materials of all electrical components including manufacturer/model numbers, tag numbers as shown on the Drawings, and quantities.
 - 3. Shop Drawings
 - a. Dimensioned drawings:
 - 1) Exterior panel and internal layouts
 - 2) Interior devices and layout
 - 3) Door-in-door construction devices, where required
 - b. Panel assembly drawings including sections showing clearances between face and rear mounted equipment.
 - c. Nameplate engraving schedule
 - 1) Indicate engraving by line
 - 2) Character size
 - 3) Nameplate size
 - 4) Panel and equipment tag number and description

- d. Control Panel wiring drawings:
 - 1) Schematic diagrams
 - 2) Internal wiring diagrams
 - 3) Connection diagrams
 - 4) Interconnection wiring diagrams including terminal block numbers for all internal and external connections.
- 4. Panel Power Requirements and Heat Dissipation: Provide detailed heat dissipation and panel power supply calculations:
 - a. Detailed calculations of 24V dc power supply including 25% spare capacity.
 - b. Listing of the maximum allowable temperature based on the component with the minimum maximum temperature.
 - c. Detailed calculations of the maximum internal temperature based on the environmental calculations specified herein. Include in the calculations the impacts of internal heat generation and solar radiation.
- C. Testing:
 - 1. Control Panel factory test plan and forms. Test plan shall include detailed steps of each control panel function to be tested.
- D. Operations and Maintenance:
 - 1. Signed control panel factory test plan and forms shall be included in the operations and maintenance manual.

1.05 QUALITY ASSURANCE

- A. Vendor Qualifications:
 - 1. The vendor shall employ and provide a qualified on-site specialist experienced in the design, installation, and operation of the supplied control equipment for either a minimum of five years or five separate projects. This experience shall include managing programming, testing, commissioning, and training tasks for the packaged control system.
 - 2. Provide the names and qualifications for three full time employees qualified to support the installed packaged control system after formal acceptance.
 - 3. Provide experienced training personnel for the required operations and maintenance training courses.

B. Listing:

1. All materials and equipment specified herein shall be within the scope of Nationally Recognized Testing Laboratory (NRTL) examination services, be approved by the NRTL for the purpose for which they are used and shall bear the appropriate listing/label.
2. Equipment listed/labeled by an NRTL acceptable to the local authority having jurisdiction.
3. When a product is not available with a listing/label for the purpose for which it is to serve, the product may be required by the inspection authority to undergo a special inspection at the manufacturer's place of assembly or as a completed assembly in the field. All costs and expenses incurred for such inspections shall be included in the original contract price.
4. The pump control panels and terminal cabinets shall be NRTL listed as a complete assembly.

1.06 ENVIRONMENTAL CONDITIONS

A. Outdoor:

1. Temperature: 32 degrees Fahrenheit to 104 degrees Fahrenheit.
2. Humidity: 10 to 100% relative humidity.
3. Corrosive Environment: Salt Air / Costal Environment

PART 2 - PRODUCTS

2.01 GENERAL

- A. All control panels shall be constructed in a UL approved production facility and bear all applicable UL labels for panel construction.
- B. The completed panel shall be factory tested prior to shipment. Field installation by the Contractor shall consist only of setting the panel in place and making necessary pneumatic and/or electrical connections.
- C. All control panels shall be designed to operate at the service voltage and AIC as indicated in the project plans. When the AIC of a panel is not clearly indicated on the drawings the AIC of the Control Panel shall the same as indicated below:
 1. 120/240V Single Phase – 22K AIC
 2. 120/208V Three Phase – 22k AIC
 3. 120/230V Three Phase – 22k AIC

4. 277/480V Three Phase – 42K AIC

D. All tag names referenced in drawings, schedules, and other documents shall comply with tag naming conventions as indicated on the Drawings.

2.02 CONTROL PANEL CONSTRUCTION

A. Enclosure Requirements

1. Enclosure Type: NEMA 4X, 316 Stainless Steel, Powdercoated White
2. Metal Thickness: 14-gauge, minimum.
3. Doors: Rubber-gasket with continuous hinge. For panels larger than 16" x 16" x 8" provide a lockable handle with three-point latching mechanism for panels.
4. Size cabinet to allow access around all the equipment for ease of operation and maintenance.
5. The enclosure shall include a removeable back panel on which panel components shall be mounted. Back panel shall be secured to the enclosure with collar studs.
6. Provide enclosure with door with rear mounted pocket for storage of panel drawings.
7. Manufacturers: Hoffman Engineering Co., Coxline, or Approved equal

2.03 CONTROL PANEL ELECTRICAL

A. Control Panel shall be built to the standards of UL 508A/698A. Panel shall bear mark stating "Listed Enclosed Industrial Control Panel" per UL 508A or 698A.

B. All control and electrical components, terminal blocks, wiring and enclosures shall be UL recognized or UL listed.

A. Control Panel Wiring

1. Wiring, where required, shall be general-purpose open type, neatly bundled and laced or installed in plastic wiring troughs. Wire shall be stranded No. 16 AWG minimum tinned copper, with thermoplastic insulation rated for 600V and 90 degrees C.
2. All equipment mounting backboards shall be provided with nonmetallic slotted ducts. All nonmetallic slotted ducts shall have spare space equal to 40% of the depth of the duct. Plan wire routing such that no low twisted shielded pair cable conducting analog 4-20 mA signals or low voltage analog signals are routed in the same wire trough as conductors carrying discrete signals or power
3. Wiring colors shall be as follows:

- a. All ungrounded AC conductors operating at the supply voltage shall be "Black".
 - b. All ungrounded AC control conductors operating at voltage less than supply shall be "RED".
 - c. All ungrounded DC control conductors shall be "Blue".
 - d. All ungrounded AC control conductors or wires that remain energized when the main disconnect is in the "OFF" position shall be "Yellow".
 - e. All grounded AC current carrying conductors shall be "White".
 - f. All grounded DC current carrying conductors shall be "White with a Blue stripe".
 - g. All grounded AC current carrying conductors that remain energized when the main disconnect is in the "OFF" position shall be "White with a Yellow stripe".
 - h. All ground conductors shall be "Green".
 - i. A wiring color code legend shall be mounted inside the control panel door.
- 4. All wires entering and leaving all panels shall be terminated at terminal strips. All terminals shall be identified and labeled per the Owner's standard naming conventions. It shall be the Vendor's responsibility to coordinate with the Owner for the accepted naming conventions. (All terminal strips shall be designed for wiring as shown on the electrical drawings #12 AWG (Min.), XHHW-2, 90 degree C field wiring for terminations.)
 - 5. No terminal strip may be located closer than 8" from any side or bottom of the control panel. This is designed to allow for adequate wire bending radius for field terminations.
 - 6. All wiring shall be clearly marked with an identification number consistent with the wiring schematic.
 - 7. Devices mounted on the enclosure door or interior dead front panel shall be run in spiral wrap to avoid pinch points when opening and closing the enclosure door(s) or interior panels

B. Circuit Breakers

- 1. Circuit breakers shall be Square D or approved equal. There shall be selective device coordination between the Main Breaker, Feeder Breakers and control circuit protective devices above .1 seconds. When using a circuit breaker or fuses

as a main protective device, the instantaneous trip levels of the main protective device must be higher than the available fault current to the control panel

- a. 120/240V Single Phase – 22k AIC
- b. 120/208V Three Phase – 22k AIC
- c. 120/230V Three Phase – 22k AIC
- d. 277/480V Three Phase – 42k AIC

- 2. Main Circuit breaker and Emergency Circuit breaker shall be mechanical interlocked together to not both operate at the same time.

C. Generator Receptacle

- 1. Generator Receptacle shall be EATON, model AR2042-S22 with angle mount plate.

D. Motor Starters & Controllers

- 1. All motor starters shall be Square D, model 8536Sor Approved Equal. All starters shall be NEMA rated (no IEC devices). All motor starters shall have the following capabilities: remote start/stop, running status, and overload status.
- 2. All motor starters shall be provided with Bimetallic Overloads.
- 3. All reduced voltage starters shall be Square D, model Altistart 22 or approved equal (size/type as required). Each reduced voltage starter shall be supplied with an Ethernet connected remote keypad..
- 4. All variable frequency drives shall be Yaskawa, model V1000 or Approved Equal, Low Harmonic Matrix Drives (size/type as required). Each variable frequency drive shall be supplied with an Ethernet/IP connected remote keypad and 3% input reactors (MTE Corp).
- 5. Power distribution blocks shall be block style distribution blocks manufactured by Ferraz Shawmut or Engineer approved equal. All distribution blocks shall be provided with polycarbonate safety covers to provide dead front protection. The safety cover shall have a test prod hole for testing purposes
- 6. Fuse blocks/holders shall be UL style fuse blocks manufactured by Ferraz Shawmut.
- 7. General purpose power fuses shall be Cooper Bussman GMA style. Unless otherwise noted the fuse rating and type shall be determined based on the equipment (which the fuse is protecting) manufacturer's recommendations for overcurrent protection.

8. Provide current limiting fuses by Cooper Bussman when need for limiting short circuit energy. Provide short circuit study for panel by a registered professional engineer when using fuses for short circuit limitation.
9. All control transformers shall be sized to provide 25% spare capacity. The transformer connections shall be provided with protective covers to guard against accidental contact, and the transformer shall be provided with primary and secondary fusing per the manufacturer's recommendations.
10. 120V distribution power transformers shall be provided in each control panel as necessary and shall have a supply voltage of 480V. Transformers shall be manufactured by Square D, Eaton, GE, or ACME and provided with both primary and secondary fuses per the NEC. (Provide 25% spare capacity)
11. 24VAC control power transformers shall be provided in each control panel with a supply voltage of 120V . Control power transformers shall be manufactured by Square D, Eaton, GE, or ACME and provided with both primary and secondary fuses per the NEC. (Provide 25% spare capacity)
12. 24VDC control power shall be provided with a supply voltage of 120V. Power Supply shall be of sufficient capacity to provide all required DC power to all RTU control panel, equipment, discrete and analog input/output circuitry, under full load, communications interface equipment, RF modems, radios, and other radio interface/conditioning equipment and appurtenances, as required.

E. Compression Clamp Type Terminals

1. Strip, prepare, and install wires in accordance with terminal manufacturer's recommendations.
2. Wires installed in a compression screw and clamp, maximum of one for field wires entering enclosure, otherwise maximum of two.
3. Splicing and tapping of wires, allowed only at device terminals or terminal blocks.
4. Separate analog and dc circuits by at least 6 inches from ac power and control wiring, except at unavoidable crossover points and at device terminations.
5. Arrange wiring to allow access for testing, removal, and maintenance of circuits and components.
6. Plastic Wire Duct Fill: Provide 25% spare space.

E. Terminal Blocks

1. Provide sufficient terminations to accommodate both present needs and 20% spare future needs.

2. Provide 300 volt screw clamp compression, dead-front barrier type terminal blocks with current bar providing direct contact with wire between the compression screw and yoke. Provide yoke, current bar and clamping screw constructed of high strength and high conductivity metal. Use yoke that guides all strands of wire into the terminal. Use current bar providing vibration proof connection. Supply terminals that allow connection of wire without any preparation other than stripping. Rail mount individual terminals to create a complete assembly.
3. Provide terminal constructed such that jumpers can be installed with no loss of space on terminal or rail.
4. Size all terminal block components to allow insertion of all necessary wire sizes and types. Supply terminal blocks with marking system allowing the use of UL approved terminal blocks manufactured by Allen Bradley, Cutler Hammer, Phoenix Contact or Approved equal.

F. Grounding

1. Cabinets isolated copper grounding bus for all signal and shield ground connections. This ground bus shall be grounded at a common ground point.
 - a. Ground each analog loop at a single point for the loop. This single point shall be at location of the DC power supply for the loop.
 - b. Each analog loop shall have its wire shields connected to ground at a single point for the loop.
 - c. Discrete signals between cabinets shall be dry isolated contacts rated for 5 amps continuous at 120 V AC.

G. Wire Ducts and Duct Covers:

1. Panduit or approved equal with 40% spare space.

H. Intrinsically Safe Barriers:

1. Macromatic Series ISEUR1 or approved equal.

I. Alternating Relays:

1. Time Mark Series 261-D-XXX or approved equal.

J. Time Delay Relays:

1. Time Mark Series 303-H or approved equal.

K. Pump Moisture Relays:

1. Macromatic Series TCP or approved equal. Vendor to supply relay based on pump being supplied and ship loose to owner for installation in the field.
- L. Phase Fail / Voltage Monitoring Relay:
1. Time Mark Model 24-Series for 3 Phase AC Systems or approved equal.
 2. Time Mark Model 2629 for Single Phase AC Systems or approved equal.
- M. Surge Protection
1. Provide a Square D Type 2 SDSA Series or approved equal surge protector on all incoming power feeds to the pump control panels.
 2. Provide a Phoenix Contacts Type 2/3 PLT-SEC-T3-FM-UT series or approved equal surge protector downstream of the control power transformer in all pump control panels
- N. Pushbuttons
1. Provide flush head, heavy-duty pushbuttons, with NEMA rating to match enclosure type.
 - a. Dielectric Strength: 1300 Volts for one minute for Logic Reed contacts, 2200 Volts for one minute for other contacts.
 - b. 30.5 mm mounting hole.
 - c. Temperature operating range –10 degree C. to +55 degree C.
 - d. Momentary contact type
 - e. When switching circuits are not monitored by programmable controllers or other solid state circuits, furnish contacts with NEMA Utilization Category rating A600 rated not less than 10 amperes continuous and 6 amperes break at 120 Vac.
 2. Manufacturer: Allen-Bradley 800T/800H series or approved equal.
- O. Relays
1. General
 - a. Relay Mounting: Plug-in type socket.
 - b. Relay Enclosure: Furnish dust cover.
 - c. Socket Type: Screw terminal interface with wiring.

- d. Socket Mounting: Rail.
- e. Provide hold-down clips.

2. Signal Switching Relay

- a. Type: Dry circuit.
- b. Contact Arrangement: 2 Form C contacts.
- c. Contact Rating: 10 amps at 28V dc or 120V ac.
- d. Contact Material: Gold or silver.
- e. Coil Voltage: As noted or shown.
- f. Coil Power: 0.9 watts (dc), 1 .2VA (ac).
- g. Expected Mechanical Life: 10,000,000 operations.
- h. Expected Electrical Life at Rated Load: 100,000 operations.
- i. Indication Type: Neon or LED indicator lamp.
- j. Seal Type: Hermetically sealed case.
- k. Manufacturer: Potter and Brumfield; Allen Bradley, Cutler Hammer or approved equal.

3. Control Circuit Switching Relay, Non-latching

- a. Type: Compact general purpose plug-in.
- b. Contact Arrangement: 2 Form C contacts.
- c. Contact Rating: 10A at 28V dc or 240V ac.
- d. Contact Material: Silver cadmium oxide alloy.
- e. Coil Voltage: As noted or shown.
- f. Coil Power: 1.8 watts (dc), 2.7VA (ac).
- g. Expected Mechanical Life: 10,000,000 operations.
- h. Expected Electrical Life at Rated Load: 100,000 operations.
- i. Indication Type: Neon or LED indicator lamp.

- j. Push-to-test button.
- k. Manufacturer and Product: Allen Bradley 700-HC14A1, or approved equal.

4. Control Circuit Switching Relay, Latching

- a. Type: Dual coil mechanical latching relay.
- b. Contact Arrangement: 2 Form C contacts.
- c. Contact Rating: 10A at 28V dc or 120V ac.
- d. Contact Material: Silver cadmium oxide alloy.
- e. Coil Voltage: As noted or shown.
- f. Coil Power: 2.7 watts (dc), 5.3VA (ac).
- g. Expected Mechanical Life: 500,000 operations.
- h. Expected Electrical Life at Rated Load: 50,000 operations.
- i. Manufacturer: Potter and Brumfield, Siemens or Allen Bradley or approved equal.

P. Annunciator

1. Horn

- a. Edwards Signaling, Alarm horn, 4", 24VAC, 876-G5

2. Alarm Beacon

- a. Edwards Signaling , RED, 24VAC, 57PLEDMR24ADB.

Q. Panel Lighting and Service Outlets

- 1. Provide plunger switched LED lighting package. Provide a light for every four feet of panel width. List shall include metal shield for lights.

- a. Manufacturer/Model: Hoffman PanelLite series or Approved Equal.

- 2. Provide circuit for remote mounted three-wire 120V 15 amp GFCI receptacle.

2.04 CONTROL PANEL COOLING REQUIREMENTS

- A. The manufacturer shall provide panel internal heat rise calculations to show that the panel internal temperatures will be maintained below the maximum operating temperatures of the panel components.

1. For enclosures mounted in direct sunlight add the appropriate solar heat gain component to the calculation, and assume the ambient temperature to be 104 degrees F.
2. The calculation shall show all the internal and external heat gain loads, the expected internal temperature rise in degrees F above the specified ambient without the air conditioner. Provide a calculation showing the expected temperature rise in degrees F above the specified ambient with the air conditioner running.

2.05 SPARE PARTS

- A. Provide a spare parts list associated with the packaged control system for the equipment listed in the proposal. Include unit prices for all replaceable parts. Provide the following items:
 1. Recommendations for spare parts and materials for the first 12 months of system operation. Provide a total cost for all recommended spare parts.

PART 3 - EXECUTION

3.01 FACTORY TEST

- A. Assemble, interconnect, and functionally test the control panel at the Vendor's shop prior to shipment. The Owner/Engineer shall have the option of witnessing the functional shop test. Notify the Owner/Engineer at least four (4) weeks in advance prior of the scheduled functional shop test.

3.02 SHIPPING

- A. Equipment shall be shipped to the owner in packaging designed for long term storage.

3.03 INSTALLATION, CALIBRATION, CHECKOUT

- A. Checkout: The Vendor shall inspect the control system installation and shall certify the completed installation meets the vendor's installation requirements.
- B. Problem Resolution: All malfunctions, faults, or abnormal operating conditions shall be investigated, documented, and resolved by the vendor to the satisfaction of Engineer.

3.04 TRAINING

- A. Instructors: The system supplier shall provide qualified personnel to train the Operations staff.

3.05 ASBUILT DRAWING

- A. The vendor shall provide the owner with AutoCAD drawing of the control panels and bill of materials for use in constructing additional panels.

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DIVISION 17

INSTRUMENTATION AND CONTROLS

SECTION 17250

DUPLEX LIFT STATION

PUMP CONTROL PANEL (CONTROLS PANEL)

PART 1 - GENERAL

1.01 REQUIREMENTS

- A. The Pump Control Panel (Controls Panel) described in these specifications shall be supplied by a single equipment vendor. The Control Panel shall work in conjunction with the Duple Lift Station Pump Control Panel (Power Panel) as described in specification 16480. The vendor shall be responsible for furnishing fully operational RTU control panels in accordance with all applicable codes and standards. The vendor shall provide all incidentals design and equipment selection services required to produce a fully operation product.

1.02 WORK INCLUDED

- A. The Control Panel Vendor shall provide the following services:
 - 1. Design, fabricate, factory test, deliver, site test, commission, provide training for, etc., all control system components and assemblies as required to provide a fully functional Lift Station Control package.
 - 2. Provide training to Operations staff per contract requirements.
 - 3. Provide O&M manuals.
 - 4. Provide detailed system operations and maintenance manuals.
 - 5. Provide on-site assistance, direction, and coordination during installation, functional check-out, startup, and commissioning of systems, and as needed through project closeout.

1.03 REFERENCED STANDARDS

- A. IEEE – Institute of Electrical and Electronics Engineers
- B. ISA – International Society of Automation
- C. NEC – National Electric Code
- D. NEMA – National Electrical Manufacturer’s Association
- E. NETA – International Electrical Testing Association
- F. NFPA – National Fire Protection Association

- G. UL – Underwriters Laboratories
- H. OSHA – US Department of Labor “Occupational Safety and Health Administration Standards”

1.04 SUBMITTALS

- A. The vendor shall provide the following submittals for review and approval by the Owner and Engineer. The Engineer shall be the sole judge of equality relating to substitute material.
- B. Action/Informational Submittals:
 - 1. Product Data
 - a. Product literature of all enclosure electrical devices and components mounted on or within the control panel. Product literature shall include markings indicating options selected for each component.
 - b. List of miscellaneous items, cables, spare and replenishment parts, chemicals to be provided, including MSDS information.
 - 2. Bill of materials of all electrical components including manufacturer/model numbers, tag numbers as shown on the Drawings, and quantities.
 - 3. Shop Drawings
 - a. Dimensioned drawings:
 - 1) Exterior panel and internal layouts
 - 2) Interior devices and layout
 - 3) Door-in-door construction devices, where required
 - b. Panel assembly drawings including sections showing clearances between face and rear mounted equipment.
 - c. Nameplate engraving schedule
 - 1) Indicate engraving by line
 - 2) Character size
 - 3) Nameplate size
 - 4) Panel and equipment tag number and description

- d. RTU Control Panel wiring drawings:
 - 1) Schematic diagrams
 - 2) Internal wiring diagrams
 - 3) Connection diagrams
 - 4) Interconnection wiring diagrams including terminal block numbers for all internal and external connections.
- 4. Panel Power Requirements and Heat Dissipation: Provide detailed heat dissipation and panel power supply calculations:
 - a. Detailed calculations of 24V dc power supply including 25% spare capacity.
 - b. Listing of the maximum allowable temperature based on the component with the minimum maximum temperature.
 - c. Detailed calculations of the maximum internal temperature based on the environmental calculations specified herein. Include in the calculations the impacts of internal heat generation and solar radiation.
- C. Testing:
 - 1. Control Panel factory test plan and forms. Test plan shall include detailed steps of each control panel function to be tested.
- D. Operations and Maintenance:
 - 1. Signed control panel factory test plan and forms shall be included in the operations and maintenance manual.

1.05 QUALITY ASSURANCE

- A. Vendor Qualifications:
 - 1. The vendor shall employ and provide a qualified on-site specialist experienced in the design, installation, and operation of the supplied control equipment for either a minimum of five years or five separate projects. This experience shall include managing programming, testing, commissioning, and training tasks for the packaged control system.
 - 2. Provide the names and qualifications for three full time employees qualified to support the installed packaged control system after formal acceptance.
 - 3. Provide experienced training personnel for the required operations and maintenance training courses.

B. Listing:

1. All materials and equipment specified herein shall be within the scope of Nationally Recognized Testing Laboratory (NRTL) examination services, be approved by the NRTL for the purpose for which they are used and shall bear the appropriate listing/label.
2. Equipment listed/labeled by an NRTL acceptable to the local authority having jurisdiction.
3. When a product is not available with a listing/label for the purpose for which it is to serve, the product may be required by the inspection authority to undergo a special inspection at the manufacturer's place of assembly or as a completed assembly in the field. All costs and expenses incurred for such inspections shall be included in the original contract price.
4. The RTU control panel shall be NRTL and UL listed as a complete assembly.

1.06 ENVIRONMENTAL CONDITIONS

A. Outdoor:

1. Temperature: 32 degrees Fahrenheit to 104 degrees Fahrenheit.
2. Humidity: 10 to 100% relative humidity.
3. Corrosive Environment: Salt Air / Coastal Environment

PART 2 - PRODUCTS

2.01 GENERAL

- A. All control panels shall be constructed in a UL approved production facility and bear all applicable UL labels for panel construction.
- B. The completed panel shall be factory tested prior to shipment. Field installation by the Contractor shall consist only of setting the panel in place and making necessary pneumatic and/or electrical connections.
- C. All control panels shall be designed to operate at 24VDC service All tag names referenced in drawings, schedules, and other documents shall comply with tag naming conventions as indicated on the Drawings.

2.02 CONTROL PANEL CONSTRUCTION

A. Enclosure Requirements

1. Enclosure Type: NEMA 4X, 316 Stainless Steel, Powdercoated White
2. Metal Thickness: 14-gauge, minimum.
3. Doors: Rubber-gasket with continuous hinge. For panels larger than 16" x 16" x 8" provide a lockable handle with three-point latching mechanism for panels.
4. Size cabinet to allow access around all the equipment for ease of operation and maintenance.
5. The enclosure shall include a removeable back panel on which panel components shall be mounted. Back panel shall be secured to the enclosure with collar studs.
6. Provide enclosure with door with rear mounted pocket for storage of panel drawings.
7. Manufacturers: Hoffman Engineering Co., Coxline, or Approved equal

2.03 CONTROL PANEL ELECTRICAL

A. Control Panel shall be built to the standards of UL 508A. Panel shall bear mark stating "Listed Enclosed Industrial Control Panel" per UL 508A.

B. All control and electrical components, terminal blocks, wiring and enclosures shall be UL recognized or UL listed.

C. Control Panel Wiring

1. Wiring, where required, shall be general-purpose open type, neatly bundled and laced or installed in plastic wiring troughs. Wire shall be stranded No. 14 AWG minimum tinned copper, with thermoplastic insulation rated for 600V and 90 degrees C.
2. All equipment mounting backboards shall be provided with nonmetallic slotted ducts. All nonmetallic slotted ducts shall have spare space equal to 40% of the depth of the duct. Plan wire routing such that no low twisted shielded pair cable conducting analog 4-20 mA signals or low voltage analog signals are routed in the same wire trough as conductors carrying discrete signals or power.
3. Wiring colors shall be as follows:
 - a. All ungrounded AC conductors operating at the supply voltage shall be "Black"
 - b. All ungrounded AC control conductors operating at voltage less than supply shall be "RED"

- c. All ungrounded 24 VDC control conductors shall be "Blue".
 - d. All ungrounded AC control conductors or wires that remain energized when the main disconnect is in the "OFF" position shall be "Yellow"
 - e. All grounded AC current carrying conductors shall be "White"
 - f. All grounded 24 VDC current carrying conductors shall be "White with a Blue stripe"
 - g. All grounded AC current carrying conductors that remain energized when the main disconnect is in the "OFF" position shall be "White with a Yellow stripe"
 - h. All ground conductors shall be "Green"
 - i. A wiring color code legend shall be mounted inside the control panel door.
- 4. All wires entering and leaving all panels shall be terminated at terminal strips. All terminals shall be identified and labeled per the Owner's standard naming conventions. It shall be the Vendor's responsibility to coordinate with the Owner for the accepted naming conventions. (All terminal strips shall be designed for wiring as shown on the electrical drawings #12 AWG (Min.), XHHW-2, 90 degree C field wiring for terminations.)
 - 5. No terminal strip may be located closer than 8" from any side or bottom of the control panel. This is designed to allow for adequate wire bending radius for field terminations.
 - 6. All wiring shall be clearly marked with an identification number consistent with the wiring schematic.
 - 7. Devices mounted on the enclosure door or interior dead front panel shall be run in spiral wrap to avoid pinch points when opening and closing the enclosure door(s) or interior panels
- D. Circuit Breakers
 - 1. Circuit breakers shall be micro breakers, Phoenix Contact or approved equal.
 - E. Fused Terminal Block
 - 1. Fused terminal blocks shall be provided and shall be of type that is lit when blown. Phoenix Contact or approved equal.

F. PLC

1. The Remote Telemetry Units shall be microprocessor based, user programmable, which shall serve as an interface to accumulate, process, transmit and receive discrete and analog status and control messages between the RTU base stations and the City's SCADA system.
2. All components shall be off-the-shelf, readily available from more than one vendor.
3. The manufacturer shall also provide programming software (Connected Components Workbench) that can be loaded on notebook PC for field use.
4. Each RTU shall have sufficient battery backed RAM, and EEPROM nonvolatile backup memories to provide all discrete and analog status, monitoring and control functions and shall be designed to operate in an outdoor industrial environment. Batteries shall be sealed, no maintenance types. Provisions shall be made to prevent hydrogen gas explosion in the event battery out gassing due to accidental overcharge or battery failure.
5. On-board LED indicators shall be provided to verify the presence of power supply output voltages, and power delivered to each I/O board or module. A power control assembly shall be provided to monitor the supply voltage and battery charge condition. Upon detection of power drop or voltage loss, power shall be automatically switched to the battery bank. Should the battery become depleted, the RTU shall automatically shut down to prevent damage. The RTU shall include internal alarms for low battery voltage and line power failure.
6. The RTU logic processor shall be microprocessor based. The minimum memory configuration shall be 10 KB EEPROM or FLASH memory for storage of configuration parameters and control logic programs, and 128 Kb of memory for storage of transient data. Operating system and RTU system code shall be stored in nonvolatile memory. Each RTU processor shall be equipped with two serial communication ports and one 10/100 Ethernet port.
7. The RTU shall be designed to operate in an industrial environment. The RTU shall be capable of operation in an ambient temperature range of -20° to 60° C and a relative humidity of 5-95 percent, non-condensing. The RTU shall be capable of operation on supply voltages of 24VDC.
8. All components of the RTU shall be of the same manufacturer who is regularly engaged in the manufacture of programmable controllers. The manufacturer shall have fully tested units similar to that being furnished in an industrial environment with associated electrical noise. The processing unit shall perform the operations functionally described herein based on the program stored in memory and the status of the inputs and outputs.
9. The RTU shall provide the following I/O modules:

- a. One 4-point 4-20mA analog input module
 - b. Three 8-point 24 VDC input module
 - c. One 8-point 24 VDC output module
 - d. Each RTU shall be configured to provide the I/O and data communications equipment as indicated on the Drawings. In addition, all RTUs shall be sized to meet future expansion by providing two empty slots in the PLC for future I/O boards.
- 10. The RTU shall include a software programmable ON/OFF watchdog timer, an operations monitor, and logic voltage supervisory circuitry. The on-board real-time clock shall measure time by the year, month, day, hour, minute, second, and 0.01 seconds. Each data change shall be time tagged at the RTU to 0.01-second resolution before transmission.
 - 11. All RTU's shall be powered with 24 VDC source and shall include an DC power monitor with alarm output to the RTU on loss of DC power. Power supply shall be of sufficient capacity to provide all required DC power to all RTU equipment, discrete and analog input/output circuitry, under full load, communications interface equipment, RF modems, radios, and other radio interface/conditioning equipment and appurtenances, as required. Batteries shall be sized to provide a minimum of 30 minutes of full load backup in the event of power loss.
 - 12. RTU shall be Allen-Bradley MicroLogix 870, or City approved equal (as determined by the City).
 - 13. Each RTU shall be lighted as shown on the Drawings.
 - 14. RTU inputs to detect the RTU control panel door intrusion switch and pump control panel intrusion switch shall be provided to report an event/alarm when the enclosure has been opened.

2.04 RTU COMMUNICATIONS INTERFACE

- A. Primary communication to the City's SCADA system is DNP3 over IP via cellular modem.

2.05 CELLULAR MODEM AND APPURTENANCES

- A. An industrial cellular gateway is used for remote connectivity to the existing SCADA system. Modem shall have the following features:
 - 1. Support for Verizon M2M communication
 - 2. 2x2 MIMO antenna connection
 - 3. 10/100 Ethernet Port
 - 4. 24VDC

- 5. Operating temperature of -40C to +70C
 - B. Provide a MIMO LTE antenna located at the top of the pump station control panel above the space reserved for the RTU. Antenna shall be provided by the cellular modem manufacturer.
 - C. The complete communications subsystem including all interconnecting cables shall contain lightning, surge, and transient protection.
 - D. Modem shall be GE MDS Orbit MCR, or City approved equal.
- 2.06 24 VDC SUBSYSTEM
- A. Provide a 24 VDC subsystem which includes a 24 VDC backup battery. The 24 VDC system will power critical communication including the PLC, network switch, and cellular modem.
 - B. The 24 VDC system will also provide power to the PLC digital and analog input/output power, wetwell floats, and 24 VDC control relays.
 - C. 24 VDC power supply shall be Phoenix Contact TRIO UPS with external battery sized for the requirements above.
- 2.07 NETWORK ACCESSORIES
- A. Network switch shall be 4-port copper, 10/100Base, 24 VDC.
 - B. Network switch shall be N-Tron 105X.
- 2.08 REQUIRED PLC INPUTS/OUTPUTS
- A. Provide the following digital inputs:
 - 1. Pump No.1 in Auto
 - 2. Pump No.1 Running
 - 3. Pump No.1 Over Temp
 - 4. Pump No. 1 Seal Fail
 - 5. Pump No.2 in Auto
 - 6. Pump No.2 Running
 - 7. Pump No.2 Over Temp
 - 8. Pump No. 2 Seal Fail
 - 9. High Level Float
 - 10. Local Alarm Silenced

11. Float Back-Up Activated
 12. 24 VDC UPS Alarm Status
 13. 24 VDC UPS in Battery Mode
 14. Control Panel Door Intrusion
 15. RTU Panel Door Intrusion
 16. Phase Fail
 17. Radar Mode Activated
 18. Remainder Spares Wired to TB
- B. Provide the following digital outputs:
1. Pump No.1 Start/Stop
 2. Pump No.2 Start/Stop
 3. Alarm Horn Remote Reset
 4. PLC Health OK
- C. Provide the following analog inputs:
1. Wetwell Level
 2. 1 Spare Wired to TB (future flow meter) Remainder Spares Not Used
- D. Compression Clamp Type Terminals
1. Strip, prepare, and install wires in accordance with terminal manufacturer's recommendations.
 2. Wires installed in a compression screw and clamp, maximum of one for field wires entering enclosure, otherwise maximum of two.
 3. Splicing and tapping of wires, allowed only at device terminals or terminal blocks.
 4. Separate analog and dc circuits by at least 6 inches from ac power and control wiring, except at unavoidable crossover points and at device terminations.
 5. Arrange wiring to allow access for testing, removal, and maintenance of circuits and components.

6. Plastic Wire Duct Fill: Provide 25% spare space.
- E. Terminal Blocks
1. Provide sufficient terminations to accommodate both present needs and 20% spare future needs.
 2. Provide 300 volt screw clamp compression, dead-front barrier type terminal blocks with current bar providing direct contact with wire between the compression screw and yoke. Provide yoke, current bar and clamping screw constructed of high strength and high conductivity metal. Use yoke that guides all strands of wire into the terminal. Use current bar providing vibration proof connection. Supply terminals that allow connection of wire without any preparation other than stripping. Rail mount individual terminals to create a complete assembly.
 3. Provide terminal constructed such that jumpers can be installed with no loss of space on terminal or rail.
 4. Size all terminal block components to allow insertion of all necessary wire sizes and types. Supply terminal blocks with marking system allowing the use of UL approved terminal blocks manufactured by Allen Bradley, Cutler Hammer, Phoenix Contact or Approved equal.
- F. Grounding
1. Cabinets isolated copper grounding bus for all signal and shield ground connections. This ground bus shall be grounded at a common ground point.
 - a. Ground each analog loop at a single point for the loop. This single point shall be at location of the DC power supply for the loop.
 - b. Each analog loop shall have its wire shields connected to ground at a single point for the loop.
 - c. Discrete signals between cabinets shall be dry isolated contacts rated for 5 amps continuous at 120 V AC.
- G. Wire Ducts and Duct Covers:
1. Panduit or approved equal with 40% spare space.
- H. Elapse Time Meter:
1. ENM Model TB44B69A Series NEMA 4X or approved equal.
- I. Alternating Relays:
1. Time Mark Series 261-D-XXX or approved equal.

J. Time Delay Relays:

1. Time Mark Series 303-H or approved equal.

K. Surge Protection

1. Provide a Phoenix Contacts Type 2/3 PLT-SEC-T3-FM-UT series or approved equal surge protector downstream of the control power transformer in all control panels

L. Pushbuttons

1. Provide flush head, heavy-duty pushbuttons, with NEMA rating to match enclosure type.
 - a. Dielectric Strength: 1300 Volts for one minute for Logic Reed contacts, 2200 Volts for one minute for other contacts.
 - b. 30.5 mm mounting hole.
 - c. Temperature operating range –10 degree C. to +55 degree C.
 - d. Momentary contact type
 - e. When switching circuits are not monitored by programmable controllers or other solid state circuits, furnish contacts with NEMA Utilization Category rating A600 rated not less than 10 amperes continuous and 6 amperes break at 120 Vac.
2. Manufacturer: Allen-Bradley 800T/800H series or approved equal.

M. Selector Switches

1. Provide heavy-duty selector switches with NEMA rating to match enclosure type. Selector switches shall have maintained position contacts. Provide switches with contact blocks and number of positions as required for performing the specified or indicated operations.
 - a. UL Listed.
 - b. Dielectric Strength: 1300 Volts for one minute for Logic Reed contacts, 2200 Volts for one minute for other contacts.
 - c. 30.5mm mounting hole.
 - d. Standard knob operator (not lever type nor wing lever type)
 - e. When switching circuits are not monitored by programmable controllers or other solid state circuits, furnish contacts with NEMA Utilization

Category rating A600 rated not less than 10 amperes continuous and 6 amperes break at 120 Vac.

2. Manufacturer: Allen-Bradley 800T/800H series or approved equal.

N. Indicating Lights

1. Indicating lights shall be heavy-duty full voltage 120Vac or 24Vdc push-to-test LED type with NEMA rating to match enclosure type for installation in a 30.5mm hole. Furnish with 28 chip high visibility LED.
2. Manufacturer:
 - a. Allen-Bradley 800H-QRTH10 series or approved equal for 120Vac applications with colors other than white.
 - b. Allen-Bradley 800HQRTH24 series or approved equal for 24Vdc applications with colors other than white.
 - c. Allen-Bradley 800H-QRT10 series or approved equal for 120Vac applications with white.
 - d. Allen-Bradley 800H-QRT24 series or approved equal for 24Vdc applications with white.

3. Indicating Light Lens Color:

Condition	Color
Running/Opened	Green
Auto/Ready	White
Off/Closed	Red
Fail/Alarm	Amber
Generic Status	Blue or White

O. Relays

1. General
 - a. Relay Mounting: Plug-in type socket.
 - b. Relay Enclosure: Furnish dust cover.
 - c. Socket Type: Screw terminal interface with wiring.

- d. Socket Mounting: Rail.
 - e. Provide hold-down clips.
2. Signal Switching Relay
- a. Type: Dry circuit.
 - b. Contact Arrangement: 2 Form C contacts.
 - c. Contact Rating: 10 amps at 28V dc or 120V ac.
 - d. Contact Material: Gold or silver.
 - e. Coil Voltage: As noted or shown.
 - f. Coil Power: 0.9 watts (dc), 1 .2VA (ac).
 - g. Expected Mechanical Life: 10,000,000 operations.
 - h. Expected Electrical Life at Rated Load: 100,000 operations.
 - i. Indication Type: Neon or LED indicator lamp.
 - j. Seal Type: Hermetically sealed case.
 - k. Manufacturer: Potter and Brumfield; Allen Bradley, Cutler Hammer or approved equal.
3. Control Circuit Switching Relay, Non-latching
- a. Type: Compact general purpose plug-in.
 - b. Contact Arrangement: 2 Form C contacts.
 - c. Contact Rating: 10A at 28V dc or 240V ac.
 - d. Contact Material: Silver cadmium oxide alloy.
 - e. Coil Voltage: As noted or shown.
 - f. Coil Power: 1.8 watts (dc), 2.7VA (ac).
 - g. Expected Mechanical Life: 10,000,000 operations.
 - h. Expected Electrical Life at Rated Load: 100,000 operations.
 - i. Indication Type: Neon or LED indicator lamp.

- j. Push-to-test button.
- k. Manufacturer and Product: Allen Bradley 700-HC14A1, or approved equal.

4. Control Circuit Switching Relay, Latching

- a. Type: Dual coil mechanical latching relay.
- b. Contact Arrangement: 2 Form C contacts.
- c. Contact Rating: 10A at 28V dc or 120V ac.
- d. Contact Material: Silver cadmium oxide alloy.
- e. Coil Voltage: As noted or shown.
- f. Coil Power: 2.7 watts (dc), 5.3VA (ac).
- g. Expected Mechanical Life: 500,000 operations.
- h. Expected Electrical Life at Rated Load: 50,000 operations.
- i. Manufacturer: Potter and Brumfield, Siemens or Allen Bradley or approved equal.

P. Panel Lighting and Service Outlets

- 1. Provide switched LED lighting package. Provide a light for every four feet of panel width. List shall include metal shield for lights. Light shall not be powered by a UPS.
 - a. Manufacturer/Model: Hoffman PanelLite series or Approved Equal.

2.09 CONTROL PANEL COOLING REQUIREMENTS

- A. The manufacturer shall provide panel internal heat rise calculations to show that the panel internal temperatures will be maintained below the maximum operating temperatures of the panel components.
 - 1. For enclosures mounted in direct sunlight add the appropriate solar heat gain component to the calculation, and assume the ambient temperature to be 104 degrees F.
 - 2. The calculation shall show all the internal and external heat gain loads, the expected internal temperature rise in degrees F above the specified ambient without the air conditioner. Provide a calculation showing the expected temperature rise in degrees F above the specified ambient with the air conditioner running.

2.10 SPARE PARTS

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PART 3 - EXECUTION

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- A. Equipment shall be shipped to the owner in packaging designed for long term storage.

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- B. Problem Resolution: All malfunctions, faults, or abnormal operating conditions shall be investigated, documented, and resolved by the vendor to the satisfaction of Engineer.

3.04 TRAINING

- A. Instructors: The system supplier shall provide qualified personnel to train the Operations staff.

3.05 ASBUILT DRAWING

- A. The vendor shall provide the owner with AutoCAD drawing of the control panels and bill of materials for use in constructing additional panels.

END OF SECTION