

CITY OF SANIBEL

SPECIFICATIONS FOR POST HURRICANE IAN SANITARY SEWER CLEANING AND CCTV INSPECTION – PHASE I

ITB-UT-0-2025/SK

FEBRUARY 3, 2025



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

BIDS DUE BY: 2:30 PM, (ET) March 6, 2025

PRE-BID CONFERENCE: NONE

NO QUESTIONS WILL BE ACCEPTED AFTER: 5:00 PM, (ET) February 24, 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 SANITARY SEWER CLEANING AND
CCTV INSPECTION – PHASE I

TABLE OF CONTENTS

GENERAL SPECIFICATIONS

Advertisement for Bids	A-1
Information for Bidders	IB-1
Proposal Form	P-1
Specimen Form of Contract	CF-1
Specimen Form of Contract Performance and Payment Bond	CF-3
Specimen Form of Periodic Estimate for Partial Payment	CF-6
Specimen Form of Contractor's Certificate	CF-9

GENERAL CONDITIONS

Contract Documents	GC-1
Owners-Contractor-Engineer Relations	GC-3
Materials, Equipment & Workmanship	GC-8
Insurance, Legal Responsibility & Safety	GC-11
Progress and Completion of Work	GC-15
Payments to Contractor	GC-18
Control of Work	GC-21

SPECIAL PROVISIONS

SP-1

TECHNICAL SPECIFICATIONS

DIVISION 1 – GENERAL REQUIREMENTS

- 01010 - Summary of Work
- 01150 - Measurement and Payment
- 01570 - Traffic Regulation

DIVISION 2 - SITEWORK

- 02516 - Collection System Bypass
- 02761 - Cleaning Sanitary Sewer Systems
- 02762 - Televising Sanitary Sewer Systems
- 02764 - Inspection of Existing Manholes

ADDITION TECHNICAL INFORMATION

Phase 1 Plans	17 Sheets (Included by Reference)
Phase 1 GIS Asset List	Excel File (Included by Reference)

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 Thursday, March 6, 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 SANITARY SEWER CLEANING AND CCTV INSPECTION – PHASE I

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
February 3, 2025

INFORMATION FOR BIDDERS

1.01 SCOPE

- A. The contract work provides for the Sanitary Sewer Cleaning and CCTV Inspection 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 Sanitary Sewer Cleaning and CCTV Inspection – Phase 1

- C. The work included in this contract has an anticipated start date in April 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

- A. All bidders are to inform themselves of the conditions under which the work is to be performed, the site of the work, the obstacles which may be encountered, and all other relevant matters concerning the work to be performed. The successful bidder will not be allowed any extra compensation by reason of any matter or thing concerning which said bidder might have fully informed themselves because of their failure to have so informed themselves prior to the bidding.

1.04 INFORMATION NOT GUARANTEED

- A. All information given relating to borings, material encountered, and groundwater is from the reports of the boring CONTRACTOR. Such information is furnished only for the information and convenience of the bidders. It is understood and agreed that the OWNER does not warrant or guarantee as to the accuracy or completeness of such information. Each bidder must satisfy themselves regarding the character, quantities, and conditions of the various materials and work to be done.
- B. It is further understood and agreed that the bidder or the CONTRACTOR will not use any information made available to themselves or obtained by any examination made by them in any manner as a basis or ground of claim or demand of any nature against the OWNER arising from or by reason of any variance which may exist between the information offered and the actual materials and structures encountered during the construction work.

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. The successful bidder shall be prepared to complete the work within **ONE HUNDRED AND FIFTY (150)** Calendar days.

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

- A. Whenever possible, the CONTRACTOR, their sub-contractors, material personnel, or others who employ labor, shall employ such labor locally.

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

- A. All existing utility systems which conflict with the construction of the work herein shall be relocated or temporarily removed and replaced as required. Such relocating or temporary removal and replacement shall be accomplished at the expense of the CONTRACTOR, and the work shall be done by the Utility unless the Utility approves in writing that the work may be done by the CONTRACTOR.

- B. The CONTRACTOR shall make all necessary applications and arrangements and pay all fees and charges for electrical energy for power and light required for the construction of this Contract during its entire progress. CONTRACTOR shall provide and pay for all temporary wiring, switches, connections and meters.

1.19 EASEMENTS

- A. The OWNER will obtain right-of-way easements over and through certain private lands for the construction and rehabilitation. The width or limits of such rights-of-way will be defined by the OWNER before the work or construction shall begin. If the methods of construction employed by the CONTRACTOR are such as to require the use of land beyond the limits obtained, CONTRACTOR shall make their own agreements with the property owners affected for the use of such additional land and submit a copy of the agreement to the "owner".
- B. In all such easement rights-of-way, the CONTRACTOR shall be required to carefully remove the Owner's fences, or other obstacles to the construction procedure, and replace the same after the work is installed. The backfilling shall be to the grade of the existing ground level or to the grade as established by the Owner in the event the Owner permits the deposit of excess material upon such land.
- C. The cost of all such restoration of property shall be included and no additional payment will be allowed for this work.

1.20 OPERATIONS WITHIN RIGHT-OF-WAY

- A. In public thoroughfares, all operations of the CONTRACTOR, including those of temporary nature, must be confined within the applicable right-of-way limits. If the methods of the construction employed by the CONTRACTOR are such as to require the use of land beyond the public thoroughfares, CONTRACTOR shall make their own agreements with the property owners affected for the use of such additional land and submit a copy of the agreement to the "owner".

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 SANITARY SEWER CLEANING AND CCTV INSPECTION

DUE MARCH 6, 2025 @ 2:30 PM

TO: CITY OF SANIBEL
Public Works Department
800 Dunlop Road
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 SANITARY SEWER CLEANING AND CCTV INSPECTION** in the City of Sanibel, Florida, and having inspected the site of work and conditions affecting and governing same, hereby proposes to provide all materials, and all equipment, tools, etc., and to perform all labor necessary for the installation 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 Sanitary Sewer Cleaning and CCTV Inspection – Phase 1	1	\$
TOTAL BID IN WORDS		
<hr/>		
<hr/>		\$ <hr/>
(In words)		(In figures)

TIME OF COMPLETION

The undersigned further agrees to complete the furnishings and construction of such work, ready for continuous and satisfactory operation in all respects, within ONE HUNDRED AND FIFTY (150) 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 P1 through P-5
3	Include Certified Check or Bid Bond 5% or more of total bid price	Pages A-1 and IB-3
4	Acknowledge issued addenda on page 2 of Proposal Form	Pages IB-2, P2, GC-1
5	Letter or statement from Bidder's surety company it will execute and deliver a 100% Performance and Payment Bond	Page IB-3
6	Furnish evidence they have ability & experience, have sufficient capital and plant, and minimum 3-years of experience	Page IB-4
7	Complete Unit Price Proposal	Pages P1 through P-5

UNIT PRICE PROPOSAL

ITEM NO.	DESCRIPTION	EST. QUANT.	UNIT	UNIT PRICE	EXTENDED PRICE
1	Mobilization and Demobilization	1	LS		
2	General Requirements	1	LS		
3	Maintenance of Traffic	1	LS		
4	Clean and CCTV Gravity Sewer Mains	67,000	LF		
5	Manhole Inspections	329	EA		
6	Smoke Testing Sanitary Sewer	67,000	LF		
7	Owner's Contingency	1	LS	\$100,000.00	\$100,000.00
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 Sanitary Sewer Cleaning and CCTV Inspection – Phase 1" dated February 3, 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. Phase 1 Plans (17 Sheets)
 - D. Phase 1 GIS Asset List (Excel File)
 - E. CONTRACTOR'S Proposal in response to ITB-UT-0-2025/SK
 - F. This CONTRACT
 - G. Performance and Payment Bond
 - H. Notice of Award
 - I. Notice to Proceed
 - J. Change Order(s)
2. The CONTRACTOR will commence and complete the construction which includes:

"Post Hurricane Ian Sanitary Sewer Cleaning and CCTV Inspection – 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 within ONE HUNDRED AND FIFTY (150) calendar days of the 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

By _____

(Principal) Secretary

(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:

The CONTRACTOR shall maintain one complete set of the Contract Documents at the job site which shall always be available to the Engineer and upon which the CONTRACTOR shall record all changes and field adjustments. The CONTRACTOR shall keep one copy of plans, shop drawings, and supplemental drawings at the site in good order and annotated to show all changes made during construction. An as-built survey of the project shall be performed and submitted to OWNER prior to final acceptance. The survey shall be conducted in accordance with the standards set forth in Chapter 472 of the Florida Statutes and the Minimum Technical Standards for such survey as specified in Chapter 61G17 of the Florida Administrative Code. The cost of the survey shall be borne by the CONTRACTOR.

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: Any land and access thereto not specifically shown to be furnished by the OWNER that may be required for temporary construction facilities or for storage of materials shall be provided by the CONTRACTOR with no liability to the OWNER. The CONTRACTOR shall confine his apparatus and storage to such additional areas as he may provide at his expense.
 - A. Private and Public Property: The CONTRACTOR shall not enter upon private property for any purpose without obtaining permission; and he shall be responsible for the preservation of all public property, trees, monuments, structures, and improvements, along and adjacent to the street and/or right-of-way and shall use every precaution necessary to prevent damage or injury thereto. He shall use suitable precautions to prevent damage to pipes, conduits, and other underground structures, and shall protect carefully from disturbance or damage all monuments and property marks until an authorized agent has witnessed or otherwise referenced their location and shall not remove them until directed.
2. Surveys: Based upon the information provided by the OWNER, the CONTRACTOR shall develop and make all detailed surveys necessary for construction, including slope stakes, batter boards, stakes for pile locations and other working point lines, and elevations. The CONTRACTOR shall carefully preserve bench marks, reference points and stakes; and, in the case of destruction thereof by the CONTRACTOR or resulting from his negligence, the CONTRACTOR shall be charged with the expense and damage resulting there from and shall be responsible for any mistakes that may be caused by the loss or disturbance of such bench marks, reference points, and stakes.
3. Public Utilities: The elevation and location of all public utilities shown on the Drawings were taken from existing public records. It shall be the duty of the CONTRACTOR to make final and exact determination of the location and extent of all utilities, and he will be liable for any expense resulting from damage to them.
4. Superintendent: A qualified superintendent, who is acceptable to the OWNER, shall be maintained on the work and give efficient supervision to the work until its completion. The superintendent shall have full authority to act in behalf of the CONTRACTOR, and all instruction given to the superintendent shall be considered as given to the CONTRACTOR. It shall be the responsibility of this CONTRACTOR's superintendent to coordinate the work of all the sub-contractor's. The superintendent shall be present on the site at all times required to perform adequate supervision and coordination.
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

The CONTRACTOR shall remove or uncover such portions of the completed work as may be directed by the OWNER at any time before acceptance of the work. After examination, the CONTRACTOR shall restore the work to the standard required by the Contract Documents. Should the work thus exposed or examined prove acceptable, the uncovering or removing and the restoring of the work shall be paid for as Extra Work; but should the work exposed or examined prove unacceptable, the uncovering, removing, and restoring of the work shall be at the CONTRACTOR'S expense.

2.2.06 WORK BY OWNER OR OTHER CONTRACTOR'S:

1. Separate Contracts: The OWNER may let other contracts in connection with the work of the CONTRACTOR. The CONTRACTOR shall cooperate with other CONTRACTOR'S regarding storage of materials and execution of their work. It shall be the CONTRACTOR'S responsibility to inspect all work by other CONTRACTOR'S affecting his work and to report to the OWNER any irregularities which will not permit him to complete his work in a satisfactory manner. His failure to notify the OWNER of such irregularities shall indicate the work of other CONTRACTOR'S has been satisfactorily completed to receive his work. The CONTRACTOR shall not be responsible for defects of which he could not have known, which develop in the work of others after the work is completed. It shall be the responsibility of the CONTRACTOR to measure the completed work in place and report to the OWNER immediately any difference between completed work by others and the provisions of the Contract Documents.
2. Written Agreement: Whenever work being done by the OWNER through his own employees or through other CONTRACTOR'S is contiguous to work covered by the Contract Documents, the respective rights of the various interests involved shall be established by written agreement to secure the completion of the various portions of the work in general harmony.

2.2.07 SECTION DELETED

2.2.08 NIGHT AND SUNDAY WORK:

No night or Sunday work requiring the presence of an Engineer or Inspector will be permitted, except in case of emergency and then only to such an extent as it is absolutely necessary and with written approval of the Engineer, provided that the clause shall not operate in case of a gang organized for regular and continuous night work, and on work which, in the opinion of the Engineer, can be performed satisfactorily at night or on Sunday.

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:

The CONTRACTOR shall do all necessary cutting and patching of the work that may be required to properly receive the work of the various trades or as required by the Drawings and Specifications to complete the structure. He shall restore all such cut or patched work as approved by the Engineer. Cutting of existing structure that may endanger the work, adjacent property, workmen, or the public shall not be done.

2.3.07 CHARACTER OF WORKMEN:

The CONTRACTOR shall always be responsible for the conduct and discipline of his employees and/or any sub-contractor or persons employed by sub-contractor's. All workmen must have sufficient knowledge, skill, and experience to perform properly the work assigned to them. Any foreman or workman employed by the CONTRACTOR or sub-contractor who does not perform his work in a skillful manner or appears to be incompetent or to act in a disorderly or intemperate manner shall, at the written request of the OWNER, be discharged immediately and shall not be employed again in any portion of the work without the approval of the OWNER.

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 Indemnatee, its partners, employees, agents, and anyone else for or on behalf of any of them, or any other person for whom any Indemnatee 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 Indemnatee.

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:

The CONTRACTOR shall provide adequate signs, barricades, warning lights, and watchmen and take all necessary precautions for the protection of the work and the safety of the public. All barricades and obstructions shall be protected at night by suitable signal lights which shall be kept burning from sunset to sunrise. Barricades shall be of substantial construction and shall be painted such as to increase their visibility at night. Suitable warning signs shall be so placed and illuminated at night as to show in advance where construction, barricades, or detours exist.

2.4.15 PUBLIC CONVENIENCE:

The CONTRACTOR shall at all times so conduct his work as to insure the least possible obstruction to traffic and inconvenience to the general public and the residents in the vicinity of the work, and to insure the protection of persons and property. No road or street shall be closed to the public, except with the permission of the proper authorities. Fire hydrants on or adjacent to the work shall always be kept accessible to fire-fighting equipment. Temporary provisions shall be made by the CONTRACTOR to ensure the use of sidewalks and the proper functioning of all gutters, sewer inlets, drainage ditches, and irrigation ditches, which shall not be obstructed.

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:

When new construction is adjacent to or crosses highways, railroads, streets, or utilities under the jurisdiction of State, County, City, or other public agency, public utility, or private entity, the OWNER shall secure written permission from the proper authority before executing such new construction. The CONTRACTOR shall satisfy himself that the OWNER has secured written permission before any work is done. The CONTRACTOR shall acquaint himself with and shall execute the work in accordance with any and all requirements of the written permit. The CONTRACTOR shall replace or repair all existing construction damaged in the execution of this Contract. The CONTRACTOR will be required to furnish a release from the proper authority before final acceptance of the work.

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:

At the termination of this Contract, before acceptance of the work by the OWNER, the CONTRACTOR shall remove all of his equipment, tools, and supplies from the property of the OWNER. Should the CONTRACTOR fail to remove such equipment, tools, and supplies, the OWNER shall have the right to remove them at the expense of the CONTRACTOR.

2.5.09 CLEANING UP:

The CONTRACTOR shall remove from the OWNER'S property, and from all public and private property, all temporary structures, rubbish, and waste materials resulting from his operation or caused by his employees, and shall remove all surplus materials leaving the site smooth, clean, and true to line and grade.

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:

The following general provisions have been taken verbatim from the Florida Department of Transportation Standard Specifications for Road and Bridge Construction with certain modifications to meet specific requirements of the City of Sanibel. The CONTRACTOR is advised to read these provisions very carefully and ensure that he fully understands all of the requirements.

2.7.02 PLANS AND WORKING DRAWINGS:

1. Plans and Contract Documents:

The CONTRACTOR will be furnished an appropriate number of copies of the plans and special provisions as required for the particular project. Copies of the Standard Specifications may be purchased from the Florida Department of Transportation. The CONTRACTOR shall have available on the work, at all times, one copy each of the plans, specifications and special provisions.

2. Plans:

The plans furnished by the Engineer consist of general drawings showing such details as are necessary to give a comprehensive idea of the construction contemplated. Roadway plans will show in general, alignment, profile grades, typical cross sections and general cross sections. Structure plans, in general, will show in detail all dimensions of the work contemplated. When the structure plans do not show the dimensions in detail, they will show general features and such details as are necessary to give a comprehensive idea of the structure.

3. Alterations in Plans:

All authorized alterations affecting the requirements and information given on the approved plans shall be in writing. No changes shall be made on any plan or drawing after its approval by the Engineer, except by direction of the Engineer.

4. Working Drawings (for Structures):

A. General:

The CONTRACTOR shall furnish, on sheets not larger than 24 inches by 36 inches, such working and detail drawings as may be required for any part of the structure and which are not included in plans furnished by the Engineer.

B. For Steel Structures:

Working Drawings for steel structures shall consist of shop detail, erection details and other working plans, showing details, dimensions, sizes of material, and other information necessary for the complete fabrication and erection of the metal work.

C. For Concrete Structures:

Working drawings for concrete structures shall consist of such detailed plans as may reasonably be required for the effective prosecution of the work and which are not included in plans furnished by the Engineer. These may include details of falsework, bracing centering and formwork, masonry layout diagrams, and diagrams for bending reinforcing steel.

D. Submission of Working Drawings:

The CONTRACTOR shall submit to the Engineer for approval three (3) sets of any required detailed shop or working drawings. These drawings shall be submitted in

sufficient time to allow adequate study and discussion and any necessary correction prior to beginning the work they cover. Prior to the approval of these drawings any work done, or materials ordered for the structures involved shall be at the CONTRACTOR'S risk. One set of these drawings will be returned to the CONTRACTOR, either approved or marked with corrections required. The other sets will be retained by the Engineer.

E. Responsibility of Accuracy of Working Drawings:

It is understood, however, that approval by the Engineer of the CONTRACTOR'S working drawings does not relieve the CONTRACTOR of any responsibility for accuracy of dimensions and details, or for conformity of dimensions and details. The CONTRACTOR shall be responsible for agreement and conformity of his working drawings with the approved plans and specifications.

F. Cost of Working Drawings:

The contract prices shall include the cost of furnishing all working drawings, and the CONTRACTOR will be allowed no extra compensation for such drawings.

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:

1. Stakes Furnished:

The CONTRACTOR shall furnish and set, free of charge, slope stakes, grade stakes and all other stakes necessary for construction of the project. The CONTRACTOR shall furnish all templates and other materials necessary for making and maintaining points and lines given and shall furnish the Engineer such incidental labor as he may require in reestablishing points and lines necessary to the prosecution of the work.

2. Special Requirements for Landscape Work:

For landscape work, the OWNER will furnish all stakes in the size and quantity required and the CONTRACTOR shall set all such stakes with his own forces. The CONTRACTOR shall maintain such stakes in place until the layout is approved and the digging of the holes for the plantings has begun; replacing any which may become destroyed or disturbed during such period.

2.7.09 CONTRACTOR'S SUPERVISION:

1. Prosecution of work:

The CONTRACTOR shall give the work the constant attention necessary to assure the scheduled progress and he shall cooperate fully with the Engineer and with other CONTRACTOR'S at work in the vicinity.

2. CONTRACTOR'S Superintendent:

The CONTRACTOR shall at all times have on the work as his agent, a competent superintendent capable of thoroughly interpreting the plans and specifications and thoroughly experienced in the type of work being performed, who shall receive the instructions from the Engineer or his authorized representatives. The superintendent shall have full authority to execute the orders or directions of the Engineer and to supply promptly any materials, tools, equipment, labor and incidentals which may be required. Such superintendence shall be furnished regardless of the amount of work sublet.

3. Supervision for Emergencies:

The CONTRACTOR shall have a responsible person available at or reasonably near the work site on a 24-hour basis, seven days a week, in order that he may be contacted in emergencies and in cases where immediate action must be taken to maintain traffic or to handle any other problem that might arise. For compliance with this requirement outside of working hours, the furnishing of the telephone number where such person can be reached will suffice.

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.

SPECIAL PROVISIONS

1. REFERENCE SPECIFICATIONS – Reference specifications included in Technical Specifications; all other Federal, State and Local Codes and Ordinances which may be in effect for this construction location.
2. Required licensing costs and any other miscellaneous fees associated with the project shall be paid for by the Contractor. All required environmental permits shall be secured by the City.
3. The Contractor shall dispose of all debris such as trees, brush, stumps and other deleterious material at location off the Island of Sanibel. No extra compensation will be allowed for hauling and providing the off-island disposal areas.
4. The Contractor is advised that he may not enter upon private property adjacent to the project without written consent of the affected property owner. A copy of the permission document shall be given to the Engineer.
5. The Contractor is hereby advised that he may not engage in any work on private property in the City of Sanibel during the contract performance period without written permission from the City of Sanibel. Failure to comply with this provision may result in suspension of all work activities until the matter is resolved.

An example of such work would be the paving of a private driveway. If the Contractor paves the driveway and the property owners does not possess the proper City permits, the entire project might be stopped until the necessary permits are obtained. The delay could be months and the Contractor could be assessed for liquidated damages.

6. No allowance for time extension of the project will be made for weather conditions common to Southwest Florida during the contract time period. The Contractor is reminded that time is of the essence and the work should proceed as quickly and efficiently as possible.
7. The Contractor shall remove and relocate as necessary all mailboxes, street signs, post fences structures such as headwalls, pipes, etc., and any other item necessary for progress and completion of the work. Payment shall be incidental to other items of work.
8. The Contractor shall include the adjustment of those structures (manholes, valves, etc.) that are required to be adjusted for the satisfactory completion of the work. These structures shall be of reinforced concrete or may be brick masonry if circular and constructed in place and shall include the necessary metal frames and gratings. No payment will be made for these items.
9. The Contractor will ensure that the roadway and bridges over which he hauls materials will be kept clear. If spoil material and water fall from the truck onto the roadway, the Contractor will keep the road clear at all times, either by power broom or by whatever means is necessary, if excessive material continues to be deposited, the Engineer will require hauling to be discontinued until the situation is resolved.
10. Contractor responsible for any temporary markings (i.e. signs, barricades, Striping, caution tape) to assure traffic safety (Vehicular, Pedestrian and Bicycle traffic).
11. All subcontractors must be approved in writing by the City.

12. The Contractor shall prevent erosion of soil on the site and adjacent property resulting from his construction activities. Effective measures shall be initiated prior to the commencement of clearing, grading, excavation, or other operation that will disturb the natural protection. Install silt barriers or screens for capturing sediments/solids from erosion and dewatering / jetting activities.
13. The Contractor must be in possession of or obtain from the City of Sanibel an Occupational Registration and if applicable a Vegetation Competency Card prior to the start of the contract work to be done.
14. The Contractor is responsible to pay all toll fees required by Lee County to use the Sanibel Causeway.
15. Contractor is responsible for preventing any workers on this project, including all subcontractors, from feeding alligators anywhere on Sanibel Island. Contractor is required to instruct all workers and subcontractors not to eat lunch on the edge of any waterbody on Sanibel Island and not to feed, tease or interact in any way with any alligators, which is illegal under state law. Signage provided by the City regarding alligator feeding shall be posted on all job sites in a clearly visible location. Project sites adjacent to open water of any kind shall have a minimum of two additional alligator signs posted in clearly visible locations near the water's edge. All job sites shall be maintained free of any open containers of food or any food-related garbage. All workers on this project are to be informed that the City takes this issue very seriously and will prosecute any violators to the full extent of this law. State penalties for violating this law include a fine of up to \$500 per incidence and up to 60 days in jail. Failure to inform workers of the prohibition against feeding alligators as required above or evidence of alligators being fed by workers on this project, either at the project site or elsewhere on Sanibel Island, will result in immediate revocation of this contract.
16. 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%) over or underestimated quantities at contract unit prices. Any increase of work items shall be based on unit prices of similar work items in the vicinity. Any such adjustment resulting in the increase of the total contract price must be approved by the City Council.
17. It is up to the Contractor to verify the correct scaling for printed plan documents of electronic documents provided by the City.
18. Contractor shall only be allowed to work on one location at a time. Current location must be fully completed prior to start of the next scheduled location.



DIVISION 1

GENERAL **REQUIREMENTS**

SECTION 01010

SUMMARY OF WORK

PART 1 – GENERAL

1.01 LOCATION

- A. The work described by these specifications is located on property, easements, or right-of-way, owned or leased by the City of Sanibel, Florida.

1.02 DESCRIPTION

- A. The Work to be done consists of furnishing all labor, equipment, materials and services required to clean and inspect identified wastewater collection system gravity sewer mains and manholes within the City of Sanibel service area. Additional work includes smoke testing, maintenance of traffic (MOT), bypass pumping, flow control, restoration of disturbed areas or structures and all other associated work. The exact size and materials of the gravity sewer is unknown at this time. Please be advised that the project is located on Sanibel Island, which is a barrier island with one access road, to and from, that is subject to congestion. Currently, there is roadway construction along this route.

- 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. Water and utilities required for construction.
 - d. Other facilities and services necessary for the proper execution and completion of the Work.
- 4. Secure and pay for, as necessary for the proper execution and completion of the Work, and as applicable at time of receipt of bids:
 - a. Permits.
 - b. Government fees.
 - c. Licenses.
- 5. Give required notices.

6. Comply with codes, ordinances, rules, regulations, orders, and other legal requirements of public authorities that bear on performance of Work.
7. Promptly submit written notice to Engineer of observed variance of Contract Documents from legal requirements.
8. Enforce strict discipline and good order among employees. Do not employ on Work persons not skilled in their assigned task.
9. 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 appear 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.
10. The Contractor shall be responsible for restoring all disturbed private property, resulting from his construction activities, or the activities of his sub-consultants, at no additional cost to the Owner.
11. The Contractor shall confine his activities to the site(s) designated by the Owner for the Work or for materials storage.
12. The Contractor must be required to obtain all the necessary permits and pay all fees required to use the various municipal water works supply systems i.e. hydrant meter. All costs for water usage will be included in the various contract items. Water services to residents or other users of the municipal water works system will not be shut off.
 - a. Failure to comply with the rules for usage of the water works systems will result in denial of any use of the water works system facility.
13. Contractor must be aware that the Contract requires work in confined spaces and must follow all federal, state and local requirements for safety in confined spaces.

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, Article 5 of Payment Procedures.
- 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 installed 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. Mobilization and Demobilization (Bid Item No. 1):**
 - a. Measurement of various items for Mobilization and Demobilization will not be made for payment and all items shall be included in the lump sum price.
 - b. Payment for Mobilization and Demobilization 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 mobilizing for beginning work on the Project and demobilizing for ending work on the Project, as well as any storm preparation and required demobilization and remobilization during work on the Project. The establishment and maintenance/use of field offices, buildings, safety equipment, first aid supplies, sanitary and other facilities, as required by these Specifications, State and local laws and any other pre-construction expense necessary for the state of the Work; all coordination with stakeholders, and Contractor coordination for work being done by others, all public relations work including door hangers and public meetings in advance of the work and notifications for the various project areas, the cost of field engineering, including proper disposal of all debris, permits and all permit fees, construction schedules, project phasing and coordination, construction photographs, cleaning or maintaining the work areas,

temporary facilities, record documents, operating and maintenance data. The Contractor shall submit invoices substantiating the cost of mobilization with each pay request. Ten percent of the cost for mobilization and demobilization will be withheld until acceptance and final payment.

The contractor should not assume that all items listed in the above paragraph are mandated for work performed under this specification, although if included, they do fall under this lump sum item.

2. General Requirements, Bonds, and Permits (Bid Item No. 2):

- a. Measurement for various items covered under General Requirements, Bonds, and Permits will not be made for payment, and all items shall be included in the lump sum price.
- b. Payment for General Requirements, Bonds, and Permits shall include all insurance requirements costs, the costs of all bonds, permits, and all administrative costs associated with acquiring and maintaining the necessary insurance coverage and permit issuance as described in the Contract Documents. This item will be paid upon each payment request made by the Contractor. The Contractor shall attach with the payment request invoices to substantiate that appropriate insurance and bonds have been obtained by the Contractor.

3. Maintenance of Traffic (Bid Item No. 3):

- a. Measurement of various items for Maintenance of Traffic will not be made for payment, and all items shall be included in the lump sum price.
- b. Payment for Maintenance of Traffic will be made at the Contract lump sum price for the item, which price and payment shall be full compensation for the preparation and implementation of a phased vehicular, pedestrian, school goers/students, bus stop system and emergency services MOT plan which includes construction and maintenance of any necessary detour facilities or necessary adjusted bus stop locations for bus goer pick-ups and drop-offs, construction and removal of temporary stabilized roadways for traffic relocations; phased MOT, adjustments to MOT throughout the project as the work progresses or as project phases are implemented, the providing of necessary facilities for pedestrians and access to residences, businesses, students or schools, buses, etc., along the project including all necessary notifications and coordination; the furnishing, installing and maintaining of traffic control, barricades, railings, warning lights, ITS or message boards, and all other safety or other required MOT devices during construction, the control of dust, providing the services of flagmen and uniformed off-duty police officers, and other special requirements for the safe and expeditious movements of traffic and pedestrians as called for in the Specifications and as required by the various governing

jurisdictions. MOT shall also include signed and sealed drawings by a PE registered in the State of Florida, all required permit submittals, resubmittal and permit fees, and coordination with all agencies having jurisdiction over the ROW limits and obtaining all required permit approvals.

4. Clean and CCTV Gravity Sewer Mains (Bid Item No.4):

- a. Measurement for sewer cleaning and CCTV shall be measured in linear feet of piping cleaned and video inspected for various diameters and types of pipes as shown on the plans. Measurement shall be along the length of the centerline of sewer, which cleaning was performed, between manholes, measured to the nearest foot from inside wall of the manhole to the inside wall of the other manhole not including the manhole chamber. Note: All cleaning and CCTVing must be from manhole to manhole.
- b. Payment for sewer cleaning and CCTVing will be for furnishing all labor, materials and equipment for each linear foot of piping cleaned and made upon Owner receipt and approval of inspection video, NASSCO PACP-compliant database exchange file, and inspection logs; including but not limited to, furnishing and installing and set up of all equipment required to clean and CCTV, obtaining water, reverse set ups as necessary, completely clean the sewer by whatever means possible including all heavy cleaning and multiple passes with various types of equipment, cleaning the manholes, chipping out or removal of concrete or other solid debris, grease removal, plugs for isolation of piping and manholes, flow control, coordination with City of Sanibel and other representatives for flow control, work during non-peak hours/night work (if required), bypass piping and pumping including noise attenuation, protection of downstream sewers, proper handling of equipment and materials, hauling and proper disposal of all removed material and debris, materials and equipment to complete the work to the satisfaction of City of Sanibel, including removal of all mineral deposits, grease, debris, roots including mechanical cutting or removal of all roots and immediate application of chemical root treatment, debris, concrete or other blockages or foreign objects that would hinder the normal operation of, or the future application or installation of future sewer rehabilitation or maintenance operations, including proper disposal. If CCTV inspection shows the cleaning to be unsatisfactory, the line shall be re-cleaned and re-inspected until the cleaning is shown to be satisfactory. Any re-cleaning and re-inspection will be at no additional cost to the Owner.

5. Manhole Inspections (Bid Item No.5):

- a. Measurement and payment for Manhole Inspection will be based on the number of manholes inspected.

- b. Payment for this item will be made upon Owner receipt and approval of inspection video, NASSCO MACP-compliant database exchange file, and inspection logs. Price bid shall include all labor, equipment, supplies and incidentals to complete the work. Video inspections that do not comply with these specifications shall be rejected and subsequently re-cleaned and re-inspected at no additional cost to the Owner.

6. Smoke Testing Sanitary Sewer (Bid Item No.6):

- a. Measurement and payment for Smoke Testing will be based on the linear feet of piping inspected, measured to the nearest foot from inside wall of the manhole to the inside wall of the other manhole not including the manhole chamber.
- b. Payment for Smoke Testing will be for furnishing all labor, materials and equipment for each linear foot of piping tested; including but not limited to, furnishing and installing and set up of all equipment required to complete smoke testing of the gravity mains and all connected laterals, dual axial blowers, smoke bombs or liquid smoke, recording smoke testing findings, plugs for isolation of piping and manholes, flow control, coordination with City of Sanibel and other representatives for flow control, notifications to the public, work during non-peak hours/night work, bypass piping and pumping including noise attenuation, protection of downstream sewers, proper handling of equipment and materials, hauling and proper disposal of all removed material and debris, materials and equipment to complete the work to the satisfaction of City of Sanibel.
- c. Smoke testing shall meet the requirements of the NASSCO Specification Guideline for Smoke Testing. Flags shall be placed at observed smoke locations and digital images shall be captured. All smoke defect images shall be entered into the field inspection database. All smoke inspection observations are to include survey grade GPS coordinate collection. Additionally, all photographic records of smoke tests observations are to be associated with the relevant GPS collection observations. Ideally photo records are attached to the GPS location. This may be accomplished using ESRI's Field Maps application or another application that meets these requirements.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01570

TRAFFIC REGULATION

PART 1 - GENERAL

1.01 DESCRIPTION

This section covers procedures for developing and implementing traffic control and regulation measures and maintenance of traffic in and around the construction area to provide for safe and efficient protection and movement of vehicular and pedestrian traffic/through and adjacent to the construction site areas.

1.02 REFERENCES

A. Codes, Specifications, and Standards

1. Codes, specifications, and standards referred to by number or title shall form a part of this Specification to the extent required by the reference thereto. Latest revisions shall apply, unless otherwise shown or specified.

B. Florida Department of Transportation (FDOT) Standards

FDOT Manual	State of Florida Manual of Traffic Control and Safe Practices for Street and Highway Construction, Maintenance and Utility Operations.
FDOT Specifications	Florida Department of Transportation Standard Specifications for Road and Bridge Construction.
FDOT Standards	Florida Department of Transportation Roadway and Traffic Design Standards.

1.03 SUBMITTALS

- A. Before closing or restricting traffic flow through any thoroughfare, the Contractor shall give written notice to and, if necessary, obtain a permit or permits from the duly constituted public authority having jurisdiction over the thoroughfare. Contractor shall also notify the applicable law enforcement, fire, and emergency services having jurisdiction in the area. Notice shall be given no less than 72 hours in advance of the time when it may be necessary in the process of construction to close or restrict traffic to such thoroughfare, or as may be otherwise required by the governing authority.

1.04 SITE CONDITIONS

- A. The Contractor shall plan construction operations such that existing local traffic access can be maintained and shall maintain during the construction such barricades, lights, flagmen,

and other protective devices as appropriate, whether specified for the project or required by the local governing authority. Traffic control devices used for maintenance of traffic shall comply with the FDOT Manual.

- B. The Contractor shall conduct his work in such manner as not to unduly or unnecessarily restrict or impede normal traffic through the streets of the community. Insofar as it is practicable, excavated material and spoil banks shall not be located in such manner as to obstruct traffic. The traveled way of all streets, roads, and alleys shall be kept clear and unobstructed insofar as is possible and shall not be used for the storage of construction materials, equipment, supplies, or excavated earth, except when and where necessary.

If required by duly constituted public authority, the Contractor shall, at his own expense, construct bridges or other temporary crossing structures over trenches so as not to unduly restrict traffic. Such structures shall be of adequate proper construction and shall be maintained by the Contractor in such manner as not to constitute an undue traffic hazard. Private driveways shall not be closed except when and where necessary, and then only upon due advance notice to the City of Sanibel and for the shortest practicable period of time consistent with efficient and expeditious construction. The Contractor shall be liable for any damages to persons or property resulting from his work.

- C. The Contractor shall make provisions at cross streets for the free passage of vehicles and foot passengers, either by bridging or otherwise, and shall not obstruct the sidewalks, gutters, or streets, nor prevent in any manner the flow of water in the latter, but shall use all proper and necessary means to permit the free passage of surface water along the gutters. The Contractor shall immediately cart away all offensive matter, exercising such precaution as may be directed by the City. All material excavated shall be so disposed of as to inconvenience the public and adjacent tenants as little as possible and to prevent injury to trees, sidewalks, fences, and adjacent property of all kinds. The Contractor may be required to erect suitable barriers to prevent such inconvenience or injury.
- D. Unless otherwise required by the governing authority, maintenance of traffic in and around the construction zone shall conform to Section 102 of the FDOT Specifications, and 600 Series Roadway Design Standards drawings of the FDOT Standards, as applicable.

PART 2 - PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION



DIVISION 2

SITEWORK

SECTION 02516

COLLECTION SYSTEM BYPASS

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The Work covered by this section consists of providing all temporary bypassing to perform all operations in connection with the flow of wastewater around pipe segment(s) wastewater systems, wastewater force mains, or lift stations. The purpose of bypassing is to prevent wastewater overflows and provide continuous service to all wastewater customers. The Contractor will maintain wastewater flow in the construction area in order to prevent backup and/or overflow and provide reliable wastewater service to the users of the wastewater system at all times. Temporary bypass may be required at multiple locations through the project duration. In addition, noise attenuation and maintenance of traffic are required for all bypass pumping operations.

1.02 SUBMITTALS

- A. Prior to implementation of any bypass, the Contractor will submit and receive Owner acceptance of a bypass plan. The Contractor will submit to the Owner a comprehensive written plan for approval and acceptance that describes the intended bypass for the maintenance of flows during construction. The Contractor will also provide a sketch showing the location of bypass pumping equipment for each pump station or line segment(s) around which flows are being bypassed. The plan will include proposed tanker(s), pump(s), bypass piping, sound attenuation equipment, backup plan and equipment, work schedule, monitoring log for bypass pumping, monitoring plan of the bypass pumping operation, and maintenance of traffic plan.

PART 2 - PRODUCTS

2.01 GENERAL

- A. The Contractor will provide and maintain adequate equipment, piping, tankers, and other necessary appurtenances in order to maintain continuous and reliable wastewater service in all wastewater lines as required for construction. Bypass pumping operation to be conducted by manned supervision 24 hours per day (including weekends) and backup emergency auto-dialer installed. The Contractor will have tankers, backup pump(s), piping, and appurtenances ready to deploy immediately.
- B. All piping will be designed to withstand at least twice the maximum system pressure or a minimum of 50-psi, whichever is greater.

- C. Flow control plugs and coordination with the Owner will be required for all bypass pumping.
- D. Bypass equipment shall include discharge flow meter and multiple pressure gauges.
- E. When bypassing a pump station, one (1) back-up pump equal to the primary unit will be provided by the Contractor. Bypass pumps shall have a maximum rating of 55 decibels for sound attenuation.
- F. Bypass pumping operations shall allow for continuous pedestrian and vehicular access at all times including all necessary materials and equipment such as temporary piping, pipe bypass flow ramps (H2O loaded), signage, maintenance of traffic, and all other items needed for bypass operations to maintain continual access.

PART 3 - EXECUTION

3.01 GENERAL

- A. The Contractor shall have scheduled delivery of all materials, equipment, and labor necessary to complete the repair, replacement, or rehabilitation on the job site prior to isolating the gravity main segment, manhole, or pump station. The Contractor will demonstrate that the temporary bypass pumping system is in good working order and is sufficiently sized to successfully handle flows by performing a test run for a period of 48-hours prior to beginning the Work.

3.02 TRAFFIC CONSIDERATIONS

- A. The Contractor shall locate bypass pumping suction and discharge lines so as to not cause undue interference with the use of streets, private driveways, and alleys, to include the possible temporary trenching of piping at critical intersections. Additional traffic maintenance requirements are to follow the regulatory agencies requirements for the owner having jurisdiction over the Right-of-Way limits.

3.03 BYPASS PLAN

- A. The Contractor shall submit a comprehensive written bypass plan to the owner, which describes the intended bypass for the maintenance of flows during construction. The bypass plan must be approved before the bypass is operational to perform the Work. Contractor shall maintain the wastewater system flow and no surcharging will be allowed to occur out of the system. The Contractor shall also provide a sketch showing the location of bypass pumping equipment and materials for each pump station or line segments around which flows are being bypassed. The plan shall include any proposed tankers, pumps, supports, bypass piping, bypass piping ramps (H2O loaded), backup plan and equipment, work schedule, monitoring log for bypass pumping, monitoring plan of the bypass pumping operation, signage, noise attenuation, maintenance of traffic plan and all other

items for an approved bypass plan. The Contractor shall cease bypass operations and return flows to the new and/or existing sewer when directed by the Owner. All piping shall be designed to withstand at least twice the maximum system pressure or a minimum of 50 psi, whichever is greater. During bypassing, no wastewater shall be leaked, dumped, or spilled in or onto, any area outside of the existing wastewater system. When bypass operations are complete, all bypass piping shall be drained into the wastewater system prior to disassembly.

3.04 BYPASS OPERATION

- A. The Owner or their Engineer shall review and provide written comments to the bypass plan prior to implementation of the bypass. The Contractor shall plug off and pump down the line segment in the immediate work area and shall maintain the wastewater system so that surcharging does not occur.
- B. The Owner shall accept the bypass plan prior to implementation of the bypass. Contractor will plug off and pump down the line segment in the immediate work area. A successful 3-day test period shall be performed during Owner workdays (no weekends). If the Contractor is unable to isolate the system prior to installation of the temporary bypass connection, then a wet tap or line stops will be required at the expense of the Contractor.
- C. Where Work requires the main or pump station to be taken out service after normal working hours and bypass pumping is being used; the Contractor shall be responsible for monitoring the bypass operation 24-hours per day, 7-days per week. Any electronic monitoring in lieu of on-site monitoring must be detailed in the comprehensive written bypass plan and approved by the Owner or their Engineer.
- D. The Contractor shall ensure that no damage will be caused to private property as a result of bypass pumping operations. The Contractor will complete the Work as quickly as possible and pass all tests and inspections before discontinuing bypassing operations and returning flow to the wastewater manhole, main, or pump station.
- E. During bypassing, no wastewater will be leaked, dumped, or spilled in or onto, any area outside of the existing wastewater system.
- F. The Contractor shall immediately notify the Owner should a sanitary sewer overflow (SSO) occur. The Contractor shall take the necessary action to wash down, clean up and disinfect the spillage area to the satisfaction of the Owner and all governmental agencies having jurisdiction over the SSO. If sewage is spilled onto public or private property, the Contractor shall wash down, clean up and disinfect the spillage to the satisfaction of the Owner and/or other governmental agencies, as required. When bypassing, complete redundancy is required. One back-up pump equal to the primary unit shall be required. Bypass pumps and motors shall have a maximum rating of 55 decibels at 20 feet for sound attenuation.
- G. Contractor shall provide secure temporary fencing around all bypass pumping equipment. Owner shall be given keys to access the bypass equipment.

- H. The Contractor shall cease bypass operations and return flows to the new and/or existing sewer when directed by the Owner. When bypass operations are complete, all bypass piping shall be drained into the wastewater system prior to disassembly.

3.05 CONTRACTOR LIABILITY

- A. The Contractor shall be responsible for all required pumping, equipment, piping and fittings, signage, bypass piping ramps, maintenance of traffic, monitoring, sound attenuation, appurtenances and all other items to accomplish the bypassing of wastewater flows and for any and all damage that results directly or indirectly from the bypass pumping equipment, piping and/or appurtenances. The Contractor shall also be liable for all Owner personnel, labor, equipment, products/materials and clean-up costs and all penalties and fines resulting from SSOs. In addition to the aforementioned costs to be paid by the Contractor, a fine of \$5,000 per overflow occurrence or sanitary sewer disruption shall be assessed. For each 24-hour period following overflow that the wastewater overflow/damage is not completely cleaned, disinfected, and returned to full operational capacity, an additional \$5,000 fine will be assessed daily. It is the intent of these specifications to require the Contractor to establish adequate bypass pumping as required regardless of the flow condition.

END OF SECTION

SECTION 02761

CLEANING SANITARY SEWER SYSTEMS

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The work covered in this section consists of cleaning sewer lines and manholes prior to the internal television inspection(s) for new or existing wastewater systems.
- B. Gravity Main and Sewer Lateral Cleaning: The intent of gravity main cleaning is to remove debris that may be causing a reduction in flow capacity, potential sewer backups, or that limits the ability to evaluate the structural condition of the pipe segment and/or manhole. On all sewers, the Contractor shall perform sewer cleaning work to an acceptable level as necessary to perform a thorough television inspection of the sewer. An acceptable level is defined as the removal of all debris (settled or attached) throughout the pipe segment or manhole cleaned. If the pipe condition is such that cleaning may cause a potential collapse, then the pipe shall be televised without attempting to clean it pending approval by the Owner.
- C. Water for Cleaning: The Contractor will be responsible for obtaining a transient water meter and paying for water used during course of cleaning.
- D. Recovering of Equipment: The Contractor will be responsible for recovering any equipment that becomes lodged or lost in the pipeline. The Contractor will cover the cost which will include cost associated with required evacuation, restoration of roads and easements, and repairs to pipes and manholes as needed to restore the pipeline and appurtenances back to their original conditions. Video documentation of pre-removal conditions will apply prior to any excavation.

1.02 CLEANING EQUIPMENT

- A. Hydraulically Propelled Equipment: The equipment used shall be of a movable dam type and be constructed in such a way that a portion of the dam may be collapsed at any time during the cleaning operation to protect against flooding of the sewer. The movable dam shall be equal in diameter to the pipe being cleaned and shall provide a flexible scraper around the outer periphery for grease removal. Special precautions to prevent flooding of the sewers and public or private property shall be taken at all times.
- B. High-Velocity Jet (Hydro-Cleaning) Equipment: All high-velocity sanitary sewer cleaning equipment shall be constructed for ease and safety of operation. The equipment shall have a selection of two or more high-velocity nozzles. The nozzles shall be capable of producing a scouring action from 15 to 45° (degrees) in all size mains. Equipment shall also include a high-velocity gun for washing and scouring manhole walls and floor. The gun shall be capable of producing flows from a fine spray to a solid stream. The equipment shall carry its own water tanks, auxiliary engines, pumps, and hydraulically driven hose reel.

- C. Mechanically Powered Equipment: Bucket machines shall be in pairs with sufficient power to perform the Work in an efficient manner. Machines shall be belt operated or have an overload device. Machines with direct drive that could cause damage to the pipe will not be used. A power rodding machine shall be either a sectional or continuous rod type capable of holding a minimum of 750-feet of rod. The rod shall be heat-treated steel. To ensure safe operation, the machine shall be fully enclosed and have an automatic safety clutch or relief valve.
- D. Vacuum machines must be used for removal of materials from manholes when other cleaning equipment is used to dislodge and transport material to the access point.
- E. Combination Cleaner: For cleaning small and large diameter sewer, the Contractor may use a combination hydraulic high-volume water and solids separation system. Water volume of up to 250-gpm at or above 2000 psi will move solids to the downstream manhole in high flow conditions. The separation system will dewater solids to 95 percent (passing a paint filter test) and transfer them to a dump truck, if needed, for transport to a water reclamation facility, approved landfill, or other location specified by the Owner or designee. Wash water will be filtered to a point where it can be used in the pump for continuous cleaning. No bypassing of sewer flows will be necessary. The unit shall be capable of 24-hour operation and the unit shall not leave the manhole until a section is fully cleaned.

1.03 SHOP DRAWINGS AND SUBMITTALS

- A. Submittals shall be submitted to the Owner for review and acceptance prior to construction in accordance with the General Conditions.
- B. A daily log shall be maintained to record the location of the manholes and sewer lines, lengths of the lines cleaned, method of cleaning, line sizes, identify type of cleaning (light, medium, or heavy), and type of debris moved. Observations are to be recorded on a cleaning report form.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

- A. The equipment shall remove dirt, grease, rocks, sand, other materials, and obstructions from the sewer mains, laterals, and manholes.
- B. A high velocity sewer cleaner will be used for the majority of the cleaning work. Other equipment, such as bucket machines, rod machines, hydraulic root cutters, vacuum trucks and balling equipment shall be available.

3.02 CLEANING PRECAUTIONS

- A. All necessary precautions shall be taken to protect the sewer from damage during all cleaning and preparation operations. Precautions shall also be taken to ensure that no damage is caused to public or private property adjacent to or served by the sewer or its branches. The Contractor shall pay for and restore, at no additional costs to the Owner, any damage caused to public or private property because of such cleaning and preparation operations.
- B. Satisfactory precautions shall be taken in the use of cleaning equipment. When hydraulically propelled cleaning tools (which depend upon water pressure to provide their cleaning force) or tools which retard the flow in the sewer line are used, precautions shall be taken to ensure that the water pressure created does not damage or cause flooding of public or private property being served by the sewer. When possible, the flow of sewage in the sewer shall be utilized to provide the necessary pressure for hydraulic cleaning devices. When additional water from fire hydrants is necessary to avoid delay in normal work procedures, the water shall be conserved and not used unnecessarily. No fire hydrant shall be obstructed in case of a fire in the area served by the hydrant. All requirements shall be met when accessing a fire hydrant including but not limited to meters, backflow preventers, and properly trained personnel. It shall be the Contractor's responsibility to meet all state and local requirements.

3.03 CLEANING

- A. If cleaning of an entire sewer section cannot be successfully performed from one manhole, the equipment shall be set up on the other manhole and cleaning attempted again. If results of the cleaning are favorable, the Contractor will proceed with the TV inspection. All sludge, dirt, sand, rocks, and other solid or semi solid materials resulting from the cleaning operation shall be removed from the downstream manhole of the section being cleaned.
- B. Materials shall be disposed of from the site at least once at the end of each workday. The Contractor will be responsible for the disposal of materials removed from the sewer system. All sewer cleaning efforts shall require documentation of all quantities and types of materials removed during cleaning.
- C. The designated sewer manhole sections shall be cleaned using hydraulically propelled, high-velocity jet, or mechanically powered equipment approved by the Owner. Cleaning shall consist of normal hydraulic jet cleaning to facilitate the internal CCTV inspection.
 - 1. Types of cleaning of sanitary sewers:
 - a. Light cleaning of sewers consists of a maximum of one pass of the jet nozzle. Light cleaning of laterals will consist of flushing water into a cleanout.
 - b. Medium cleaning of sewers consists of two to four passes of the jet nozzle. Medium cleaning of laterals will consist of one to four passes with a jet nozzle.

- c. Heavy cleaning consists of five or more passes of the jet nozzle such as removing heavy grease, debris, and roots.
 - d. Descaling of Ductile Iron pipe. Multiple passes with mechanical equipment to remove scale build up to restore pipe to original inside diameter.
- 2. Selection of the equipment used shall be based on the conditions of lines at the time the Work commences. The equipment and methods selected shall be satisfactory to the Owner. The equipment shall be capable of removing dirt, grease, rocks, sand, debris, other materials, and obstructions from the sewer lines, laterals, and manholes.
- 3. If cleaning of an entire section cannot be successfully performed from one manhole, the equipment shall be set up on the other manhole and cleaning again attempted. The intent of preparatory cleaning is to provide sufficient cleaning to ensure camera passage and the internal conditions of the pipeline can be fully assessed.
- 4. If the Owner establishes that a particular section of the pipeline cannot be adequately cleaned due to broken, collapsed, or void areas, then the inspection will be attempted up to the obstruction.

3.04 ROOT REMOVAL (NOT USED)

3.05 CHEMICAL ROOT TREATMENT (NOT USED)

3.06 MATERIAL REMOVAL AND DISPOSAL

- A. All sludge, dirt, sand, rocks, grease, roots, and other solid or semisolid material resulting from the cleaning operation shall be removed at the downstream manhole of the section being cleaned. Contractor shall provide appropriate screening to stop passing of materials into downstream sewers. All solid or semisolid materials dislodged during cleaning operations shall be removed from the sewer by Contractor at the downstream manhole of the sewer section being cleaned. The passing of dislodged materials downstream of the sewer segment being cleaned shall not be permitted. In such an event, as observed or detected by the Owner or any third party, Contractor shall be responsible for cleaning the affected downstream sewers in their entirety, at no additional cost to the Owner.
- B. These materials shall become the property of the Contractor, shall be removed from the site at the end of each workday, and shall be disposed of by the Contractor. Copies of records of all disposals shall be furnished to the Owner, indicating disposal site, date, amount, and a brief description of material disposed. Disposal manifests from the licensed disposal facility shall be submitted with invoices.
- C. The Contractor shall keep his haul route and work area(s) neat, clean, and reasonably free of odor, and shall bear all responsibility for the cleanup of any spill.

3.07 ACCEPTANCE OF CLEANING OPERATION

- A. Acceptance of sanitary sewer cleaning shall be made upon the successful completion of the television inspection and shall be to the satisfaction of the Owner. If television inspection shows the cleaning to be unsatisfactory, the Contractor shall be required to re-clean and re-inspect the sewer line at no additional cost until the cleaning is shown to be satisfactory.

END OF SECTION

SECTION 02762

TELEVISIONING SANITARY SEWER SYSTEMS

PART 1 - GENERAL

1.01 SCOPE OF WORK

The Work covered within this Section is for the internal closed circuit television (CCTV) inspection of sanitary sewer pipes. The Contractor shall perform sewer televising work as necessary to thoroughly document the condition of all sewers, service lateral connections, and manhole corbel, barrel, invert, channel and cone-sections in the study area. The sanitary sewer and service laterals shall be carefully inspected to determine alignment, grade variations, separated joints, location and extent of any deterioration, breaks, obstacles, obstructions, debris, quantities of infiltration/inflow and the locations of service connections.

The quality of all work specified in this Section shall meet or exceed the requirements of the National Association of Sewer Service Companies (NASSCO) Recommended Specifications for Sewer Collection System Rehabilitation (latest edition), except as described in this Section. Applicable portions of this Section that inadvertently fall below those standards shall be corrected and maintained at the NASSCO standards as a minimum requirement, at no additional cost to the Owner.

1.02 REQUIREMENTS

- A. The Contractor shall inspect the sewer interior using a color closed circuit television camera (CCTV) and document the inspection on a digital recorder. All inspection video shall be captured in either MPEG or Windows Media Video (.WMV) file. Each inspected main line sewer reach referenced manhole to manhole, and each inspected sewer lateral referenced to the property address and corresponding sewer main should have an associated MPEG or WMV file. Digital photographs (.JPG files), inspection reports (.PDF files) and any handwritten inspection logs or field maps shall accompany the video inspections for each sewer reach (manhole-to-manhole) or lateral inspected.
- B. Contractor shall provide inspection video, data and reports in accordance with the requirements specified herein. Contractor shall provide all video on portable hard drive (or equivalent) as specified. All work will conform to current NASSCO Pipeline Assessment Certification Program (PACP) coding conventions and all software used by the Contractor will be PACP compliant. An electronic database, containing those items in paragraph A above, will be provided by the Contractor in a PACP exported format approved by the Owner.
- C. The Contractor shall provide comments as necessary to fully describe the existing condition of the sewer on the inspection forms.
- D. Contractor shall be responsible for modifications to equipment and/or inspection procedures to achieve report material of acceptable quality.

- E. No work shall commence prior to approval of the submitted material by the Owner. Once accepted, the report material shall serve as a standard for the remaining work.

1.03 QUALITY ASSURANCE

- A. Each CCTV field inspection supervisor shall be NASSCO PACP certified. Use of PACP certified technicians to review/document defects in the office (post process) is not acceptable unless approved by the Owner. This approval will be based on the CCTV equipment being used and its ability to pan and tilt 180 degrees to fully investigate surfaces.
- B. The inspection Contractor must have an internal quality assurance/quality control program in place and all inspection data shall be subjected to the procedures prior to submittal to the Owner. The Owner will perform QA/QC audits on submitted data.
- C. QA/QC shall be performed by NASSCO PACP certified personnel.

1.04 SUBMITTALS

- A. The following deliverables shall be submitted on a portable hard drive (or equivalent) at the completion of inspection:
 - 1. Inspection videos saved in MPEG format or Windows Media video format.
 - 2. Electronic version (.pdf) of the pipe inspection reports.
 - 3. PACP export pipe inspection database (.mdb).
 - 4. Inspection digital photographs in JPEG format.
 - 5. Map of sub area depicting area inspected, inspection status, asset identification numbers and mark ups.
 - 6. QA/QC report.
- B. The above deliverables shall be submitted monthly to the Owner for approval. Application for payment shall be made after review and approval by the Owner.
- C. The sewer inspection video, report documents, and sewer inspection database shall be in accordance with Owner data standards and NASSCO PACP.

1.05 NOTIFICATION

Contractor shall notify the Owner a minimum of 48 hours prior to performing any inspection work. No payment will be made for inspections performed without proper notification.

1.06 QUALIFICATIONS

- A. The qualifications of the CCTV Contractor shall be submitted and shall include detailed descriptions of the following:
 - 1. Name, business address and telephone number of the CCTV Contractor.
 - 2. Name(s) of all supervisory personnel to be directly involved with this Project.
 - 3. NASSCO PACP certification of on-site operator performing inspections or subject to Owner approval, resume of proposed CCTV operator displaying similar inspection experience.
 - 4. The Contractor shall sign and date the information provided and certify that to the extent of his knowledge, the information is true and accurate, and that the supervisory personnel will be directly involved with and used on this Project. Substitutions of personnel and/or methods will not be allowed without written authorization of the Owner.
 - 5. Specialty technicians shall be certified by the equipment manufacturer and/or its authorized representative. Certifications shall be submitted to the Owner.

PART 2 - PRODUCTS

2.01 EQUIPMENT

- A. Closed Circuit Television Camera: The television camera used for the inspection shall be one specifically designed and constructed for sanitary sewer inspection. Lighting for the camera shall be suitable to allow a clear picture of the entire periphery of the pipe. The camera shall be operative in 100 percent humidity/submerged conditions. The CCTV camera equipment will provide a view of the pipe ahead of the equipment and of features to the side of the equipment through turning and rotation of the lens. The camera shall be capable of tilting at right angles along the axis of the pipe while panning the camera lens through a full circle about the circumference of the pipe. The lights on the camera shall also be capable of panning 90-degrees to the axis of the pipe.
- B. The radial view camera must be solid state color and have remote control of the rotational lens. The camera shall be capable of viewing the complete circumference of the pipe and manhole structure, including the inverts, channel and cone-section or corbel. Cameras incorporating mirrors for viewing sides or using exposed rotating heads are not acceptable. The camera lens shall be an auto-iris type with remote controlled manual override. If the equipment proves to be unsatisfactory, it shall be replaced with adequate equipment. The camera unit shall have sufficient quantities of line and video cable to inspect two complete, consecutive sewer reaches with access approximately 750 feet apart.

- C. The camera, television monitor, and other components of the video system shall be capable of producing picture quality to the satisfaction of the Owner. The television camera, electronic systems and monitor shall provide an image that meets the following specifications or approved equal.
1. The gray scale shall show equal changes in brightness ranging from black to white with a minimum of five stages.
 2. With the monitor control correctly adjusted, the six colors - Yellow, Cyan, Green, Magenta, Red, and Blue, plus black and white shall be clearly resolved with the primary colors in order of decreasing luminance. The gray scale shall appear in contrasting shades of gray with no color tint.
 3. The picture shall show no convergence or divergence over the whole of the picture. The monitor shall be at least 13-inches diagonally across the picture tube.
 4. The live picture on the CCTV monitor shall be capable of registering a minimum of 470 lines horizontal resolution and be a clear, stable image with no interference.
 5. Lighting intensity shall be remote controlled and shall be adjusted to minimize reflective glare. Lighting and camera quality shall provide a clear, in-focus picture of the entire inside periphery of the sewers and laterals for all conditions except submergence. Under ideal conditions (no fog in the sewer) the camera lighting shall allow a clear picture up to five pipe diameter lengths away for the entire periphery of the sewer. The lighting shall provide uniform light free from shadows or hot spots.
 6. The camera light head shall include a high-intensity side viewing lighting system to allow illumination of internal sections of lateral sewer connections.
 7. Camera focal distance shall be remotely adjustable through a range of 6-inches to infinity.
 8. Picture quality and definition shall be to the satisfaction of the Owner.
 9. The monitor and software shall also be able to capture and save screen images of typical sewer details and all defects. Screen images shall be embedded into the pipe inspection report document submitted with the inspection video.
 10. The video camera shall be capable of displaying on screen data as specified in paragraph 3.08 herein.
 11. Depth gage: The camera shall have a depth gage or approved method to measure deflection in the pipe, depth of sag and joint separation approved by the Owner.
 12. The camera shall have zoom capabilities to be able to view the entire depth of a 20-foot-deep manhole from the bottom during inspection.

D. Lateral Video Camera:

Lateral cameras may be push type or launched from the sewer main line. Lateral cameras shall be color, shall be self leveling, and equipped with a footage counter to provide on screen display of footage measurement. Monitor resolution shall be as specified above in paragraph 2.01 A Close Circuit Television Camera, or approved equal

E. Video Capture System:

The video and audio recordings of the sewer inspections shall be made using digital video equipment. A video enhancer may be used in conjunction with, but not in lieu of, the required equipment. The digital recording equipment shall capture sewer inspection on DVD disks or hard drive, with each sewer reach inspection recorded as an individual movie file (.MPEG, .MPG, or .WMV) or approved equal. The video files will be named in accordance with the Owner file naming convention contained in paragraph 3.11 herein.

1. The video file names will be referenced in the inspection database and in an inspection report generated in PDF format. The pipeline collection and real time video capture and data acquisition systems shall be provided.
2. The system shall use the most current PACP compliant application software and shall be fully object oriented or approved equal. It shall be capable of printing pipeline inspection reports with captured images of defects or other related significant visual information on a standard color printer.
3. The imaging capture system shall store digitized color picture images and be saved in digital format on a DVD, hard drive or approved equal. Also, this system shall have the capability to supply the Owner with inspection data reports for each line segment.
4. The Contractor shall have the ability to store the compressed video files in industry standard and approved Owner format and be transferable with the PACP compliant inspection database.
5. The Contractor's equipment shall have the ability to "Link". "Linking" is defined as storing the video time frame code with each observation or defect with the ability to navigate from/to any previously recorded observation or defect instantaneously.
6. The system shall be able to produce data reports to include, at a minimum, all observation points and pertinent data. All data reports shall match the defect severity codes in accordance with PACP naming conventions
7. The data-sorting program shall be capable of sorting all data stored using generic sort key and user defined sort fields.
8. Camera footage, date & manhole numbers shall be maintained in real time and shall be displayed on the video monitor as well as the video character generators illuminated footage display at the control console.

9. Digital video shall be defined as ISO-MPEG Level 1 (MPEG-1) coding having a resolution of 352 pixels (x) by 240 pixels (y) (minimum) and an encoded frame rate of 29.97 frames per second. The digital recording shall include both audio and video information that accurately reproduces the original picture and sound of the video inspection. The video portion of the digital recording shall be free of electrical interference and shall produce a clear and stable image. The audio portion shall be sufficiently free of background and electrical noise so as to produce an oral report that is clear and discernible.
10. Inspection software shall be PACP compliant versions of CUES Granite XP, WinCan, Flexidata, or approved equal.
11. The CCTV equipment/software shall be capable of producing digitized images of all sewer line defects, manhole defects, and sewer line service connections in .jpeg format. Contractor shall plan to take digital still images of each defect, construction features and service connection to clearly depict it. More images may be necessary depending upon the condition of the pipe.

2.02 REPORTING CAPABILITIES

- A. The CCTV system shall be capable of printing pipeline inspection reports with pipeline schematics and captured images of defects and other related significant visual information. The system shall have the ability to display any combination of the following formats and features simultaneously.
- B. The following information is mandatory for all inspections.
 1. Inspection Information – Refers to the area of pipe to be inspected between two manholes or the address of the lateral to be inspected.
 - a. Project Name
 - b. Surveyed by (Operator/Surveyor's name)
 - c. Operator/Surveyor Certificate number
 - d. System Owner
 - e. Date
 - f. Drainage Area (tributary pump station number)
 - g. Time
 - h. Sheet number (report sheet number)
 - i. Street Name and Number
 - j. Locality (Owner)

- k. Additional Location Information (e.g. backyard, parking lot, etc.)
 - l. Upstream Manhole Number (Owner standard Asset Number)
 - m. Upstream MH rim to invert (depth)
 - n. Downstream Manhole Number (Owner standard Asset Number)
 - o. Downstream MH rim to invert (depth)
 - p. Direction of inspection (Upstream or Downstream)
 - q. DVD Identification Number
 - r. Flow control (e.g. plugged, lift station, bypassed, not controlled)
 - s. Type of Pipe
 - t. Pipe Height
 - u. Pipe Width
 - v. Pipe Shape
 - w. Pipe Material
 - x. Lining Material (for lined sewers)
 - y. Pipe Joint Length
 - z. Purpose of Inspection (new line, year-end warranty, CIP R/R project, etc.)
 - aa. Pre Cleaning (jetter, heavy cleaning, no pre-cleaning)
 - bb. Media Number (Video file name)
 - cc. Weather
 - dd. Additional information/Comments
2. Observation Data – Refers to the portion of pipe where an observation is discovered. Observations shall be noted by text descriptions and defect code number using PACP defects codes, still frame pictures and video clips captured and recorded. Each observation shall include the following:
- a. Actual observation footage
 - b. Video reference
 - c. Location of defect; clock position

- d. Code (Group/Descriptor/Modifier/Severity)
 - e. Whether it is a continuous defect
 - f. Whether the defect occurs at a joint
 - g. Severity level
 - h. DVD Identification number
 - i. DVD counter
 - j. Final footage
 - k. Video clip ID for each observation
 - l. Image reference (file name of photos)
 - m. Remarks (as appropriate or needed)
3. Formats - Standard and/or custom designed reports shall have the following formats available and shall be able to be produced in hard copy or viewed on the monitor.
- a. Site Observation: Displays detailed site observation reports in landscape or portrait views.
 - b. Directory Report: Displays a list of all the projects sorted by pump station number and manhole number
 - c. Picture Reports: Displays site data and include full size single photos or half size double photos of discrepancies
 - d. Pipe Run: Displays a graphical display of the site indicating footage, observations, and comments.
 - e. Project Data: Displays the project, client, and Contractor information.
 - f. Custom Sort: Creates user-defined reports of selected site, project, and observation data.

PART 3 - EXECUTION

3.01 GENERAL

- A. Prior to inspection the Contractor shall obtain pipe and manhole asset identification numbers from the Owner to be used during inspections. Inspections performed using identification numbers other than the Owner assigned numbers will be rejected.

- B. Inspection shall not commence until the sewer section to be televised has been completely cleaned in conformance with Specification Section 02761 "Cleaning Sanitary Sewer Systems".
- C. Inspection of newly installed sewers (not yet in service) shall not begin prior to completion of the following:
 - 1. Pipe air testing.
 - 2. All manhole work, including installation of inverts.
 - 3. Installation of all lateral services.
- D. After the sewer main and/or lateral cleaning operation is completed, the line sections shall be visually inspected internally by means of color closed circuit television. The television inspection shall be performed one line section at time.
- E. CCTV inspection shall require a minimum of 2 certified personnel with PACP certifications.
 - 1. One (1) person shall have PACP certification that will lead or supervise each field CCTV crew for inspection and a minimum of 2 years in the role of a lead person.
 - 2. One (1) person shall have PACP certification serving in the role as a QA/QC management supervisor.
- F. Contractor shall perform sewer televising work within 24 hours of said sewer being cleaned. If said sewer is not televised within the required 24 hour time limit, the sewer shall be re-cleaned prior to televising at no additional expense to the Owner.
- G. The Contractor shall also inspect and document all manholes included in this Work. The video recording shall begin as the camera is lowered down the manhole all the way to the preset footage and continuously throughout the pipe reach until the downstream manhole is reached.
- H. The Contractor shall lower the camera into the start manhole and record the camera entry into the sewer, observing the manhole as the camera enters.
- I. The camera shall pan the periphery of the start and finish manhole from casting to invert. To achieve this, the CCTV camera operator shall pan and zoom the manhole to obtain the best possible image of the manhole, including the wall, cone and chimney section(s).
- J. The depth of each manhole shall be measured to the nearest 1/10th of a foot and documented on the inspection forms. Estimates of manhole depths will not be accepted.
- K. The CCTV camera shall be positioned as close to the spring line as possible while maintaining the required equipment stability.

- L. Wherever possible the inspections shall be performed in the upstream to downstream direction. All sewer segments shall be recorded in a logical order in the same direction they are cleaned and televised.
- M. In the event that access to some manholes is restricted, permission may be granted by the Owner to direct the camera through the sewer in an upstream direction, against the flow.
- N. When sewer conditions prevent forward movement of the camera, the camera shall be withdrawn, and Contractor shall televise the line from the opposite direction.
- O. The camera shall be directed through the sewer in a downstream direction, with the flow, at a uniform, slow rate. In no case will the video camera record while moving at a speed greater than 30 feet per minute. If, during the course of the Project, the inspection is rejected due to camera speeds exceeding 30 feet per minute, the inspection recordings shall be redone, at no additional cost to the Owner.
- P. If a new manhole is discovered in the field that was not on current maps, a new manhole identification number will be assigned by Owner. The data / video files shall then be re-named to include the new MH ID, and a new CCTV inspection shall be started from the new MH ID. Contractor shall consult with the Owner for assignment of new manhole identification numbers. Contractor shall note in the inspection form comments that a new manhole ID has been assigned as well as provide a marked up map indicating the newly found manhole and assigned manhole ID.
- Q. Flow levels within existing sewers to be inspected shall not exceed 5% of the pipe diameter. If water levels prevent adequate televising of the sewer, then conducting the work during low flow periods or other methods like plugging and bypass pumping shall be implemented.
- R. For inspection of new sewers (not yet in service), the Contractor shall introduce clean water into the upstream manhole and keep water flowing until flow is observed at the downstream manhole location.
- S. The survey unit shall be slowed, stopped, or backed-up to perform detailed inspections of significant features. The camera shall be stopped at all defects, changes in material, water level, size, side connections, manholes, junctions, or other unusual areas. When stopped at the defect or feature, the operator shall pan the camera to the area and along the circumference of the pipe.
- T. The camera unit shall be paused long enough at areas suspected of leaking to determine if a leak exists currently or if deposits have occurred.
- U. The operator shall also record audio of the type of defect or feature, clock position, footage, extent or other pertinent data.
- V. Digital photographs or screen captures shall be taken at all laterals, defects and general condition photographs shall be taken at least every 200 feet.

- W. At the Contractor's discretion or direction of the Owner, the camera shall be stopped or backed up (when conditions allow) to view and analyze conditions that appear to be unusual or uncommon for a sound sewer. The lens and lighting shall be readjusted, if need be, in order to ensure a clear, distinct, and properly lighted feature.
- X. Audio shall be recorded during each inspection by the operating technician, electronic voice text recognition or approved equal on the inspection video as the sewer is inspected and shall include the sewer location, identification of beginning and terminating manholes including location (address or cross streets), inspection direction, length of inspection, side sewer identification, flow information, complete descriptions of the sewer line conditions as they are encountered, description of the rehabilitation work, reason for termination, and other relevant commentary to the inspections. Voice descriptions should be made:
1. At points of pipe failure or weakness,
 2. At points of infiltration,
 3. At the location of service connections,
 4. At points where unusual conditions are noted, and
 5. At points where digital still photos are taken.

In addition, the audio reports shall include the distance traveled on the specific run, a description of abnormal conditions in the sewer and side sewer connections as they are encountered, explanations for pausing, backing up, or stopping the survey, and the final measured center to center distances between consecutive manholes. The audio portion of the composite video shall be sufficiently free from electrical interference and background noise to provide complete intelligibility of the oral report. Audio dubbing after the inspection is prohibited.

- Y. Video recordings shall include a continuous video display/readout of similar information, as described in paragraph 3.08 herein. A separate digital video file shall be made for each pipe reach inspected.
- Z. Contractor shall coordinate with the Owner prior to commencement of Work to ensure inspection is accomplished in a manner acceptable to the Owner.
- AA. If the video and/or audio recording is of poor quality, the Owner has the right to require a re-submittal of the affected sewer sections and no payment will be made until an acceptable video and audio recording is made, submitted to, and accepted by the Owner.
- BB. Measurement for location of defects and actual length of pipe shall be by means of a calibrated meter on the camera with a digital readout on the video monitor. This readout shall be included in the video recording. Marking on cable, or the like, which would require interpolation for depth of manhole, will not be allowed. Measurement will be accurate to one foot per 100 feet of inspected pipe.

- CC. The Contractor inspection units shall be equipped with adequate back up equipment and spare parts so field repairs to equipment can be made and down time is minimized.
- DD. The Contractor shall be responsible for all traffic control measures required to perform the Work.
- EE. Lateral inspections shall be performed from the main line using a lateral launch camera or shall be pushed from cleanouts to the sewer main using sewer rods. Lateral camera travel measurements shall be displayed on screen and on the captured video.
- FF. If lateral inspections are performed from the sewer main as part of the main line inspection, the lateral shall be logged in the main line inspection report per PACP requirements and the "comment" field of the main line inspection report shall be used to document the lateral identification number, defects observed, footage of all lateral defects, connecting pipes and clean outs. If lateral inspections are not performed as part of the main sewer inspection, a separate PACP pipe inspection record shall be created for each lateral. Refer to paragraph 3.10 for numbering requirements.
- GG. Care must be taken not to pull off excess water during inspection whereby masking the extent and significance of SAGS in mains and manholes. Methods to accurately measure the start, stop and significance of SAGS in the collection system must be defined by the contractor and approved by the Owner. This method may include the introduction of clean water back into the system after the inspection in areas of SAGS is completed.

3.02 GRAVITY SEWER INSPECTION

A. Procedure:

1. The entire sewer line (from manhole to manhole) shall be televised. The inspection will determine whether the line has been cleaned sufficiently to provide the location and nature of defects; and for a thorough condition assessment of the gravity main.
2. The camera shall be moved through the line in either direction at a moderate rate, stopping when necessary to permit documentation of the sewer's condition. In no case will the television camera be pulled at a speed greater than 30 feet per minute. Manual winches, power winches, TV cable, and power rewinds or other devices that do not obstruct the camera view or interfere with proper documentation of the sewer conditions shall be used to move the camera through the sewer line. If, during the inspection operation, the television camera will not pass through the entire manhole section, the Contractor shall set up his equipment so that the inspection can be performed from the opposite manhole (reverse set-up).
3. When manually operated winches are used to pull the television camera through the line, telephones, radios or other suitable means of communication shall be set up between the two manholes of the section being inspected to insure good communication between members of the crew.

4. The importance of accurate distance measurements is emphasized. The location of defects shall be within two (2) feet \pm .
5. During the internal inspection the television camera shall be temporarily stopped at each defect along the line. The Contractor shall record the nature and location of the defect. Where defects are also active infiltration sources, the rate of infiltration in gallons per minute shall be estimated by the Contractor and recorded. The camera shall also be stopped at active service connections where flow is discharging. Flows from service connections that are determined to be infiltration/inflow shall also be recorded.

B. Documentation of Television Inspection:

1. Television Inspection Logs - Printed location records shall be kept by the Contractor and will clearly show the location in relation to an adjacent manhole of each infiltration point observed during inspection. In addition, other points of significance such as locations of building sewers, unusual conditions, roots, storm sewer connections, broken pipe, presence of scale and corrosion, and other discernible features will be recorded and a copy of such records will be supplied to the Owner. The Contractor shall record all visual observations on a "Television Inspection Report" form.
2. Once recorded, the digital data shall be labeled and become the property of the Owner. The Contractor shall have all readings and necessary playback equipment readily accessible for review by the Owner during the Project.

3.03 SEWER BYPASSING AND DEWATERING

- A. Contractor shall be responsible for bypassing sewer flow around his work and dewatering of sewer lines in accordance with the requirements of Section 02516 "Collection System Bypass". Where sags or submerged sections of the sewer are encountered during TV inspection, the Contractor shall first complete inspection of the entire reach to determine the extent of such areas prior to dewatering the sewer. Dewatered sections of the sewer shall then be TV inspected.
- B. On all sewer mains which have sags or dips, to an extent that the television camera lens becomes submerged during the television inspection and after the beginning, end and severity of the sag is determined as outlined in 3.01 GG, the Contractor shall use a high pressure cleaner to draw the water out of the pipe, or other means, to allow inspection of the pipe and identification of pipe defects, cracks, holes and location of service connections.

3.04 LINEAR MEASUREMENT

- A. The CCTV camera location footage counter shall be zeroed at the beginning of each inspection. The survey unit location entered on the footage counter at the start of the inspection shall allow for the distance from the accepted start of the length of the sewer to the initial point of observation of the camera (preset footage). In the case of resuming an inspection at an intermediate point within a sewer reach, the footage counter shall be

set to start at the distance from the upstream maintenance hole to that point, as previously recorded by the counter. The Contractor shall ensure that the footage counter starts to register immediately when the survey unit starts to move.

- B. The lateral camera shall be pushed from cleanouts to the sewer main and be equipped with a footage counter to display and record inspection footage. Maximum rate of travel shall be 30 feet per minute when recording.
- C. Prior to commencing inspections, the Contractor shall demonstrate compliance with the linear measurement tolerance specified below:
 - 1. The equipment shall measure the location of the camera unit in 1 foot increments from the beginning (upstream end) of each continuous section. This footage location must be displayed on the CCTV monitor and recorded on the videotapes.
 - 2. The accuracy of the measured location shall be within + 0.5% of the actual length of the sewer reach being surveyed, or 1 foot, whichever is greater.

3.05 MEASUREMENT OF SAGS

- A. Care must be taken not to pull off excess water during inspection whereby masking the extent and significance of SAGS in mains and manholes. Methods to accurately measure the start, stop and significance of SAGS in the collection system must be defined by the contractor and approved by the Owner. This method may include the introduction of clean water back into the system after the inspection in areas of SAGS is completed.
- B. For warranty inspection of new construction areas, the CCTV camera shall be equipped with a measuring device capable of accurately measuring the depth of standing water up to 3-inches. The measuring device shall be mounted to the front of the unit and be capable of being read as the unit advances through the pipe.

3.06 CCTV MONITOR DISPLAY

- A. The images displayed on the CCTV monitors will be a view of the pipe above the water surface as seen by the CCTV camera as the unit is conveyed through the sewer.
- B. The camera lighting shall be fixed in intensity prior to commencing the survey and the white balance set to the color temperature emitted. In order to ensure color constancy, no variation in illumination shall take place during the survey.
- C. The video equipment shall be checked using an approved test card with a color bar prior to commencing each day's survey. The camera shall be positioned centrally and parallel to the test card at a distance where the full test card just fills the monitor screen. The card shall be illuminated evenly and uniformly without any reflection.

3.07 DATA DISPLAYS

- A. The CCTV images shall include an initial data display that identifies the sewer reach being surveyed and a survey status display that provides continuously updated information on

the location of the survey unit as the survey is being performed. These data displays shall be in alphanumeric form. The size and position of the data shall not interfere with the main subject of the monitor picture.

- B. The on-screen display should be white during inspections where the background behind the display is dark and, conversely, black where the background is light.
- C. At the beginning of each reach of sewer being inspected, the following information shall be electronically generated and displayed on the CCTV monitors as well as included in the audio track:
 - 1. Date of survey.
 - 2. Inspection company name and inspector.
 - 3. Street name or location.
 - 4. Manhole number to manhole number (in order of inspection).
 - 5. Direction of survey (upstream or downstream).
 - 6. Time of start of survey.
- D. During inspections, the following information shall be electronically generated, automatically updated, and displayed on the CCTV monitors:
 - 1. Survey unit location in the sewer line in feet and tenths of feet from adjusted zero.
 - 2. Sewer diameter.
 - 3. Upstream and downstream manholes reference numbers as per approved drawings or Owner GIS.
 - 4. During Lateral inspections the video display shall contain the lateral location and the footage of the camera within the lateral.

3.08 PHOTOGRAPHS

- A. During CCTV inspections, screen captures will be taken from the monitor images and saved electronically by the in-sewer inspection crew of typical conditions every 200 feet and at all defects, construction features, manholes and laterals. The screen capture shall have the pipe reach (identified by the upstream and downstream manholes), survey direction, footage, and date when photograph was taken. The annotation shall be clearly visible and in contrast to its background, shall have a figure size no greater than 1/4-inch, and shall be type-printed. The annotation shall be positioned on the front of the photograph so as to not interfere with the subject of the photograph. Photograph files shall be named by the video capture system and automatically referenced to the logged defect.

- B. The image of the sewer shall fill the photographic image. Photographs must clearly and accurately show what is displayed on the monitor, which shall be in proper adjustment. Where significant features exist within 6 feet of each other, one photograph shall be made to record these features. Where there is a continuous feature, photographs shall not be taken at intervals of less than 6 feet unless absolutely necessary to show a change in the feature.
- C. The images shall be kept electronically, copied to a hard drive, and submitted with the inspection videos, database and reports.

3.09 MANHOLE NUMBERING, INSPECTION FORMS AND DEFECT CODES

- A. The Contractor will be required to use the manhole numbering as shown on sewer maps provided by the Owner when performing the inspections for this project.
- B. The Owner inspection forms and standard defect codes shall be used. The defect codes, inspection forms, inspection database and inspection protocols shall be in accordance with the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP).
- C. When lateral inspections are performed as part of the main sewer inspection, lateral numbers shall be referenced in the "comment" field of the main sewer PACP report. The lateral number shall be as follows:

<Upstream Manhole ID>_<footage>_<clock position>_<L>

Example: 39550020_212_02_L

- D. When lateral inspections are not performed as part of the main sewer inspection, the main sewer inspection shall be performed first to obtain the footage and clock positions needed to identify the lateral.

3.11 DELIVERABLES

The Contractor will be required to submit the following deliverables at the completion of inspection.

- A. Inspection Reports to include:
 - 1. Inspection session header information (see required fields above)
 - 2. Defect log report including photo captures from CCTV video
 - 3. Schematic drawing of pipe showing defects
 - 4. Format:
 - a. Adobe Acrobat PDF files – 1 report PDF per pipe
 - b. Main sewer inspection report file name:

<upstream MH ID>_<downstream MH ID>_<Date (year_mo_day format)>.PDF

Example: 30060002_30060001_2010_02_16.pdf

c. Lateral inspection report file name:

<upstream MH ID>_<footage>_<clock position>_<L>_<Date (year_mo_day format)>.PDF_

Example: 30060002_210_02_L_2010_02_16.pdf

B. Inspection video files on portable hard drive, Typed labels shall be attached to the face of each hard drive. The typed index labels shall include the following information:

1. Content Number / Delivery Order Number (if applicable)

C. Main sewer video files shall be MPEG or Windows Media File named according to the following standard:

<Upstream MH ID>_<Downstream MH ID>-<Inspection>_<Date (year month day)>.wmv

Example: 39540008-39540007_20090805.wmv

In instances where a reverse set up is necessary to perform or complete the inspection the file name shall incorporate a "R" at the end of the file name to indicate "reverse" direction. Using the file example above, if the inspection from the upstream end was halted due to an obstruction and the pipe was televised from the opposite end, the video file from the downstream to upstream direction would be assigned the following file name:

Example: 39540008-39540007_20090805_R.wmv

D. Lateral connection inspection video files shall be MPEG or Windows Media File named according to the following standard:

<Upstream MH ID>_<footage>_<clock position>_<L>_<date (year_mo_day format)>.wmv

Example: 39540008_145_10_L_2009_08_05.wmv

E. Electronic Inspection Data stored and exported in a NASSCO Pipeline Assessment and Certification Program (PACP) compliant Microsoft Access database (.MDB) version 4.4 or newer delivered on DVD or portable hard drive.

F. Inspection photograph digital files (jpeg) indexed to NASSCO PACP compliant database.

G. Map of sub area depicting area inspected, inspection status, asset identification numbers and mark ups,

H. Acceptable media for the video recordings portable hard drive.

I. Inspection data noted above shall be provided to the Owner weekly throughout the inspection work.

- J. Contractor Quality Control report detailing data validation performed, pipe inspection records reviewed and results.
- K. All inspection data shall be submitted on a portable hard drive. Each hard drive shall be filled with as much data as practical to minimize the number of hard drives submitted. Sections of a single segment of sewer main shall not be recorded to more than one hard drive. Video footage of recorded segments shall be grouped by area and shall be submitted in sequential order relating to the area mapping designation.
- L. Upon approval by the Owner of all, or portions of, the data delivered via the portable hard drives, the approved CCTV data shall be delivered to the Owner on a portable hard drive labeled with project information. The hard drive shall clearly indicate the date of the inspection, the designated segment(s) of sewer mains(s) contained on the disk, the name of the project, the project CIP number, the pump station number, and Contractor name. The hard drive shall contain separate digital files for each manhole-to-manhole section.
- M. The database shall be comprehensive for the entire project, and additional data shall be added to the database each week.

3.12 ACCEPTANCE

- A. Inspection deliverables will be validated to check conformance with the specified requirements for file names, formats, quantity, resolution, data table references, in addition to checks for null fields, asset numbers, duplicate records, connectivity, material, size, and depth. Any data not passing the data validation checks will be returned to the Contractor for resubmittal.
- B. Inspection submittals will be reviewed for quality control. A minimum of 5% of the submitted inspections will be randomly reviewed. A quality control check will be performed for each CCTV operator and each operator must exceed 90% accuracy.
- C. Throughout the duration of the project, should the Owner discover inaccuracies in data or quality issues with any of the videos, Contractor shall re-inspect those segments at no additional cost to the Owner. The Owner will provide comments regarding acceptance of the data within 21 days of receiving the data from the Contractor. Neither the CCTV inspections nor the WORK inspected is accepted by the Owner until such time that an acceptance letter is issued by the Owner.

END OF SECTION

SECTION 02764

INSPECTION OF EXISTING MANHOLES

PART 1--GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall perform visual inspections of the project manholes and record physical characteristics any defect discovered. The visual inspection shall include surface photo, manhole cover and frame, chimney, walls, invert and all appurtenances.
- B. The nature of the inspections shall be to verify the physical condition of the manhole and to provide a permanent record of the existing condition as it relates to dimensions, materials, obstructions, breakage, connections, infiltration and deterioration. Inspections may be performed by personnel entry or from the surface utilizing pole mounted camera equipment to visually inspect the chimney, cone, wall, bench, pipe seals and invert conditions and conditions of connecting pipes.

1.02 REQUIREMENTS

- A. The Contractor shall inspect the manhole surroundings and the manhole interior using visual means and Closed-Circuit Television or digital camera for documentation.
- B. If hardcopy forms are used to collected field data than:
 - 1. All inspections shall be recorded on an Owner approved forms.
 - 2. All inspection forms shall be scanned and submitted as .PDF files.
 - 3. All inspection data shall be entered into a NASSCO Manhole Assessment Certification Program (MACP) compliant database provided by the Contractor. The database shall be submitted along with the scanned .PDF files and all digital photographs in .JPG format.
- C. The inspection photographs, report documents, and inspection database shall be in accordance with Owner data standards and NASSCO MACP.
- D. Contractor shall maintain a copy of all report material. The contractor shall provide comments as necessary to fully describe the existing condition of the manhole on the inspection forms.
- E. Contractor shall be responsible for modifications to equipment and/or inspection procedures to achieve Owner's report requirements.
- F. No work shall commence prior to approval of the submitted material by the Owner. Once accepted, the report material shall serve as a standard for the remaining work.

1.03 QUALITY ASSURANCE

- A. Each inspection supervisor shall be NASSCO PACP certified. Use of MACP/PACP certified technicians to review/document defects in the office (post process) is not acceptable unless approved by the Owner. Approval will be based on the pan and tilt capabilities of the camera and the quality system put in place to manage the review/documentation process.
- B. The inspection contractor must have an internal quality assurance/quality control program in place and all inspection data shall be subjected to the procedures prior to submittal to the Owner. The Owner will perform QA/QC audits on submitted data.
- C. QA/QC shall be performed by NASSCO PACP certified personnel.

1.03 SUBMITTALS

- A. The following deliverables shall be submitted at the completion of inspection:
 - 1. Electronic version (.pdf) of the manhole inspection reports.
 - 2. Populated MACP compliant manhole inspection database (.mdb or Excel) saved on CD-R's, DVD, or portable hard drives.
 - 3. Inspection digital photographs in JPEG format saved on CD-Rs, DVD or portable hard drives
 - 4. QA/QC report.
 - 5. MACP compliant database containing items 1-4 above.
- B. The above deliverables shall be submitted to the Owner for approval.
- C. The manhole inspection reports, and database shall be in accordance with Owner data standards and current version of NASSCO MACP.

1.04 NOTIFICATION

The Contractor shall notify the Owner a minimum of 48 hours prior to performing any inspection work. The Owner may have a representative present during part or all of the inspections. No payment will be made for inspections performed without proper notification.

PART 2 --PRODUCTS

2.01 CLOSED CAPTURE TELEVISION AND VIDEO CAPTURE SYSTEM

It is preferred that manhole MACP inspections are performed concurrent with gravity main PACP inspections utilizing the same CCTV and an integrated video/image capturing system. Requirements are located in Section 02762 paragraph 2.01.

2.02 DIGITAL CAMERA FOR REMOTE INSPECTIONS

All manhole photographs required as part of this specification shall be obtained using a digital camera with a minimum 2-megapixel digital camera with strobe flash capable of producing digital images with minimum resolution of 640 x 480.

PART 3--EXECUTION

3.01 GENERAL

- A. The inspection crew shall mobilize to the site of the manhole inspection and immediately establish traffic control measures per the government having jurisdiction and Florida Department of Transportation (FDOT) requirements as well as any measures required to protect pedestrians. The crew shall inspect each manhole and record required information.
- B. A diligent effort shall be made to locate all structures. Metal detectors shall be used to locate buried manholes. Once a buried manhole has been located, it shall be marked with paint and/or flagging, if necessary. All pertinent information available shall be recorded including area photo, address, etc. Contractor shall notify Owner weekly with a list of those manholes that could not be fully inspected due to unable to locate, buried, surcharged, could not open, not access, other. Owner may arrange to have some, or all these manholes exposed, or otherwise made accessible for full inspection. Owner will notify Contractor of the status and may authorize re-inspection provided the Contractor is still working on-site.
- C. The contractor shall perform cleaning as necessary to perform a thorough inspection of the manhole. An acceptable level is defined as the removal of all debris (settled or attached) within the manhole. If the manhole's condition is such that cleaning may cause a potential collapse, then the manhole shall be televised without attempting to clean it pending approval by the Owner.
- D. After cleaning (if required) but prior to inspection - invert flow level shall be observed by the contractor. If flow is in excess of 20% of any invert, then flow control must be utilized on the incoming pipes. After the manhole inspection is completed and prior to removing flow control, fresh water should be introduced into the manhole to allow the contractor to record the maximum water level at the inverts. This provides the visibility necessary for identifying infiltration at the inverts that would otherwise be masked by surcharge or flow volume. The introduction of clean water after the inspection provides the information necessary to determine whether the manhole structure has settled.

- E. MACP Level 1 shall be performed on all manholes. Additional requirements are identified in 1 – 3 below.
1. Manholes with defects noted in the following components require detailed notes describing the condition in MACP field # 106. These inspections would not be upgraded to MACP Level II unless there is a defect that would compromise the integrity of the structure.
 - Cover (MACP field #56 coded as Defective – D)
 - Ring (MACP field #61 coded as Defective – D)
 - Frame (MACP field #68 coded as Defective - D)
 2. Manholes with defects noted in the following components require detailed notes describing the condition in MACP field # 106. Additionally, these inspections shall be upgraded to MACP Level II.
 - Chimney (MACP field #81 coded as Defective – D)
 - Cone (MACP field #87 coded as Defective – D)
 - Wall (MACP field #94 coded as Defective – D)
 - Bench ((MACP field #98 coded as Defective – D)
 - Channel (MAC {field #103 coded as Defective – D)
 3. Manholes exhibiting any of the following conditions should have MACP Level II inspections performed.
 - Evidence of settlement
 - Failed seal at piping/invert
 - Any level of active infiltration

3.02 MANDATORY INSPECTION HEADER INFORMATION

A. Once the manhole is located, the following mandatory information shall be recorded on the inspection form (template is located in the forms section). Note that the mandatory fields noted below are more inclusive than the MACP requirements. All available information shall be collected and recorded for those manholes that are buried, could not open, surcharged, etc.

1. Manhole Number (by Owner)
2. Surveyor's Name
3. Certification Number
4. System owner (the City of Sanibel)
5. Purpose (using approved MACP codes)
6. Chimney Infiltration (using approved MACP codes)
7. Evidence of Surcharge (using approved MACP codes)
8. Mandatory Level (1)
9. Drainage area (tributary Pump Station Number)
10. Street (street name)
11. Rim to grade (inches)
12. Pre-cleaning method (using approved MACP codes)
13. Location code (using approved MACP codes)
14. Manhole surface type (using approved MACP codes)
15. Potential for runoff (using approved MACP codes)
16. Access point type (using approved MACP codes)
17. Inspection status (using approved MACP codes)
18. Area photo image reference (using Owner's naming convention)
19. Internal photo image reference (using Owner's naming convention)

3.03 MANHOLE COMPONENT OBSERVATIONS

The inspection crew shall complete all fields within the manhole component/observation section of the inspection form as required by the level of inspection (Level I or Level II) being performed as defined by NASSCO MACP standards.

3.04 MANHOLE INTERIOR INSPECTION

The inspection crew shall complete all fields within the manhole inspection sections of the inspection form as required by the level of inspection (Level I or Level II) being performed as defined by NASSCO MACP standards.

3.05 CONNECTING PIPE DETAILS

A. Each pipe entering and exiting the manhole shall be photographed where possible and inspected to determine diameter, pipe material, debris levels and rim to invert distance (to 0.1 feet). The pipe inspection will include the following information:

1. Pipe photo (using OCU approved file naming structure)
2. Pipe direction (incoming or outgoing)
3. Pipe clock positions (6=outgoing)
4. Pipe diameter
5. Pipe material (using PACP codes)
6. Pipe shape
7. Rim to invert distance (measured to nearest 1/10th of a foot)
8. Pipe special condition (drops, force mains, etc. using approved MACP codes)
9. Debris depth
10. Connecting structure number if manhole or cleanout, service line clock position, stub out clock position, etc.
11. Pipe seal condition (using approved MACP codes)
12. Pipe seal roots (using approved MACP codes)
13. Observed pipe defects, obstructions, roots, etc. (using PACP codes)

3.06 MANHOLE SKETCH, MAP UPDATE AND NOTES

A. The inspection crew shall complete the manhole plan view sketch noting all connecting pipes. Any special observations or notes may be added to the profile sketch on the field form.

- B. Influent and effluent lines in each manhole shall be compared to the existing map and corrections noted in the sketch section of the field form.

3.07 NOTIFICATION OF EMERGENCY CONDITIONS

Inspection crews shall immediately notify the Owner and/or on-site inspector of any defects posing imminent danger to the public (missing lids, covers broken during inspection, sink holes, etc.) and any observed pipe blockages or potential overflow conditions.

3.08 COMPLETION

- A. Once the inspection is complete the field crew shall make certain the ring is clean and does not have any debris preventing a proper cover fit. The manhole lid shall be replaced, and any displaced items moved back into place.
- B. A list of manholes that could not be fully inspected, along with the problem explanation, shall be forwarded to the Owner representative weekly throughout the inspection work.
- C. If the contractor has completed accessible inspections, and Owner authorizes, then Contractor may be required to re-mobilize at the same unit price and complete the requested inspections. All re-inspections will be at the same contracted unit price.
- D. Any map updates shall be consolidated and forwarded to Owner's Project Manager with the submitted inspections.

3.09 PHOTOGRAPH REQUIREMENTS

- A. During each inspection the following series of photographs shall be taken:
 - 1. Area Photograph - During the inspection, a photograph shall be taken of the manhole cover showing location within the roadway, shoulder or easement as appropriate. Photographs shall be taken of any indications of previous overflows such as water marks and paper or other debris typical of sewer overflows. Surface photographs shall be oriented in the direction of the outgoing pipe to show the pipeline cover and easement condition. The area photographs should show the manhole visible in the foreground where possible. A minimum of one area photo is required.
 - 2. Internal Photograph - Take a photograph of the manhole interior in plain view showing the general arrangement of the incoming and outgoing sewers, manhole walls and other appurtenances. The internal condition photograph shall be oriented with the direction of the outgoing main line flow at the bottom of the photograph (6:00 position). A minimum of one internal photograph is required.
 - 3. Manhole Defect Photographs - During manhole inspections digital photographs shall be taken of all defects. Photographs must clearly and accurately show each defect and correspond to defects and photo numbers logged on the manhole inspection form. A minimum of one photo for each observed defect is required.

4. Connecting Pipe Photographs - The camera should then be pointed into all incoming and outgoing pipes where possible to capture general conditions within the pipes. Any obvious blockages or defects should be noted using PACP defect codes. A minimum of one photo of each incoming or outgoing pipe is required.
- B. During inspections manholes shall be free of steam, fog, water vapor or other conditions that will impact the quality of photographs.
- C. All photographs shall adequately capturing the manhole conditions and details of defects. Lighting and camera quality shall provide a clear, in-focus picture of the manhole interior, manhole defects, and manhole. The lighting shall provide uniform light free from shadows or hot spots.
- D. If larger than 640x480 resolution, then photo will be converted to 640x480. Photos less than 640x480 are not acceptable and converting upward to 640x480 is not acceptable. All photographs shall be resized to 640 x 480 resolution to minimize file size.
- E. The images shall be kept electronically, copied to a CD, DVD, or external hard drive, and submitted with the inspection forms per paragraph 3.06. Photographs shall be named according to the photograph naming conventions included herein.
- F. All digital photographs shall be referenced on the manhole inspection form and electronic spreadsheet/database.
- G. All digital photographs shall be renamed in accordance with the following photo file naming convention.
 1. Area Photo = Manhole ID, A, Photo Number, jpg

Example: 3965002A0001.jpg
Manhole: 39650002
A=Area Photo
Photo No.0001
 2. Internal Photo = Manhole ID, I, Photo Number, jpg

Example: 3965002I0001.jpg
Manhole: 3965002
I=Internal Photo
Photo No.0001

(Note: Photo oriented with the outgoing pipe on the bottom)
 3. Manhole Defect Photo = Manhole ID, M, Photo Number, jpg

Example: 3965002M0015
Manhole: 3965002
M=Manhole Defect Photo
Photo No. 0015

4. Pipe Photo = Manhole ID, P, Photo Number, jpg

Example: 3965002P0002.jpg

Manhole: 3965002

P=Pipe Photo

Photo No. 0002

3.10 MANHOLE NUMBERING, INSPECTION FORMS AND DEFECT CODES

- A. The Contractor shall use the Owner's manhole numbering system when performing the inspections for this project. Manhole numbers will be provided by the Owner.
- B. Defect codes shall conform to those specified in the NASSCO MACP specification.

3.11 SITE RESTORATION

After inspecting manholes in an area, the WORK site shall be cleaned and restored to pre-WORK conditions. If manhole is buried and exposed, then restore site by placing material back over exposed manhole. No re-sodding is anticipated or included in the pricing.

3.12 DELIVERABLES

The Contractor will be required to submit the following deliverables at the completion of inspection.

- A. Scanned Field Inspection Reports to include:
 1. Inspection session header information (see required fields above).
 2. Component observations.
 3. Manhole inspection details including defects observed and photo image references.
 4. Connecting pipe details.
 5. Manhole plan view sketch.
 6. Format:
 - a Adobe Acrobat PDF files – 1 report PDF per manhole
 - b File name: <MH ID> <Date (year_mo_day format)>.PDF
- Example: 30060002_2010_02_16.pdf
- B. Inspection digital photograph in Owner approved format and resolution and assigned file names in accordance with the Owner standard.

- C. Electronic Inspection Data stored and exported in Owner approved NASSCO Manhole Assessment and Certification Program (MACP) compliant Microsoft Access database (.MDB) version 4.4, or Excel file delivered on DVD or portable hard drive.
- D. Marked up field maps detailing map corrections and/or discrepancies noted during inspection.
- E. All digital files shall be submitted on DVD or portable hard drive (or equivalent), labeled as follows: DVD/Hard drive Labels - Typed labels shall be attached to the face of each DVD. The typed index labels shall include the following information:
 - 1. Content (Manhole Inspections).
 - 2. Contractor name.
 - 3. Purpose of Survey (CIP R/R).
 - 4. Tributary Pump station number.
 - 5. Manholes included (listing of manholes using Owner standard Asset Numbers).
 - 6. Date of survey.
 - 7. Contract Number / Delivery Order Number (if applicable).
 - 8. QA/QC report including listing of manhole inspections reviewed and results.

END OF SECTION