BANANA RIVER BLVD AND ATLANTIC AVE SEWER

Project Technical Specifications

100% DESIGN – NOT FOR CONSTRUCTION

BV PROJECT NO. 421730

PREPARED FOR

City of Cocoa Beach

JANUARY 2026

Lytvyn, Olena

Digitally signed by Lytvyn, Olena
DN: E=LytvynO@bv.com, CN="Lytvyn, Olena", O=Black & Veatch Corporation, OID.2.5.4.97="NTRUS+IDE-2966748", L=Overland Park, S=Kansas, SERIALNUMBER=MAS20230724892418, C=US
Date: 2025.12.16 12:01:19-05'00'

Olena Lytvyn, State of Florida
Professional Engineer
License No.82696

This item has been digitally signed and sealed by Olena Lytvyn on the date indicated here. Printed copies of this document are not considered signed and sealed and the signiture must be verified on any electronic copies.

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

TECHNICAL SPECIFICATIONS
TABLE OF CONTENTS

DIVISION 0 – CONTRACT DOCUMENTS

00020 Invitation to Bid
00100 Instructions to Bidders
00400 Bid Form
00430 Bid Bond – Penal Form
00440 Proposed Subcontractors Form
00480 Non-Collusion affidavit
00482 Segregated Facilities Affidavit
00500 Agreement Form
00500 Notice of Award
00510 Notice to Proceed
00550 Performance Bond Form
00610 Payment Bond Form
00615 Certificate of Substantial Completion Form
00625 Payment Bond Form
00626 Acceptance Certificate Form
00700 Standard General Conditions of the Construction Contract
00940 Work Change Directive Form
00941 Change Order Form
00942 Field Order Form

DIVISION 1 – GENERAL REQUIREMENTS

01000 Index of Drawings
01005 General Requirements
01010 Summary of Work
01025 Measurement and Payment
01030 Special Project Procedures
01050 Field Engineering and Survey

01065 Permits and Fees
01070 Abbreviations and Acronyns
01152 Application for Progress Payments
01310 Construction Progress Schedule
01310-1 Weather Delay Notification Form
01340 Shop Drawings and Submittals
01380 Pre-construction Video and Photos
01410 Testing and Testing Laboratory Services
01450 Quality Control
01510 Temporary Utilities
01530 Protection of Existing Facilities
01570 Traffic Regulation
01600 Material and Equipment
01700 Contract Closeout

DIVISION 2 – SITEWORK

02200 Site Preparation
02240 Dewatering
02300 Earthwork
02370 Erosion and Sedimentation Controls
02500 Existing Utilities
02513 Pavement Removal and Restoration
02550 Temporary Sanitary Sewer Flow Control
02580 Pavement Markings
02605 Sanitary Utility Sewerage Manholes, Frames and Covers
02606 Manhole and Vault Covers and Accessories
02623 Television Inspection
02702 Sewer Pipe Installation and Testing
02950 Site Restoration

APPENDICES

Appendix A Geotechnical Report
Appendix A Permits

SECTION 00020

INVITATION TO BID

Sealed Bids will be received by City of Cocoa Beach (Owner**)** at the City Clerk office at 2 South Orlando Ave., Cocoa Beach, FL 32931, **until 2PM , local time, on Friday March 20th for Banana river Blvd and Atlantic Ave Project**. The Invitation to bid package can be obtained on the city website at www.cityofcocoabeach.com/bids.aspx . Bids must be submitted with one (1) unbound original and four (4) signed copies with a flash drive containing one file in PDF format of the hard copy of the bid exactly as submitted

At said place and time, and promptly thereafter, all Bids that have been duly received will be publicly opened and read aloud.

The proposed Work is generally described as follows:

> Project consist of removal and replacing approximately 50 LF of existing 8" VCP gravity sewer pipe with 8" PVC gravity sewer pipe, installation of approximately 9 LF of 8" PVC gravity sewer pipe and grouting and abandonment of approximately 25LF of existing 8" gravity sewer, removal of approximately 51 LF of existing 10" VCP gravity sewer, removal and replacement of approximately 51 LF of existing 12" PVC gravity sewer, installation of 24 LF of 6" PVC service line, 4 core borings to existing manholes and removal and replacement of 1 new sanitary manhole. This will include but is not limited to temporary bypass pumping, construction temporary site access, MOT, utility replacement/ relocation, erosion control, dewatering and restoration.

All Bids must be in accordance with the Bidding Documents on file with Black & Veatch Corporation.

Electronic Copies of the Bidding Documents have also been provided to Bidders in PDF format without charge.

Copies of the Bidding Documents may be obtained from Black & Veatch Corporation (Engineer) by emailing DelarmeSalomAn@bv.com or by calling +1 913-458-2277.

Neither Owner nor Engineer has any responsibility for the accuracy, completeness or sufficiency of any bid documents obtained from any source other than the source indicated in these documents. Obtaining these documents from any other source(s) may result in obtaining incomplete and inaccurate information. Obtaining these documents from any source other than directly from

the source listed herein may also result in failure to receive any addenda, corrections, or other revisions to these documents that may be issued.

Bidders must be licensed contractors in the State of Florida.

Attendance at a pre-bid conference, as specified in the Instructions to Bidders, is required. **The non-mandatory meeting will be held Thursday, February 26th at 11AM** in the commission Chambers at Cocoa Beach City Hall Located at 2 South Orlando Ave. Cocoa Beach, FL 32931.

Bids will be received on a unit price basis as described in the Contract Documents.

Each Successful Bidder will be required to furnish a construction performance bond and a construction payment bond as security for the faithful performance and the payment of all bills and obligations arising from the performance of the Contract.

If the Contract is to be awarded, Owner will give the Successful Bidder a Notice of Award within the number of days set forth in the Bid Form for acceptance of the Bid.

END OF SECTION

SECTION 00100
INSTRUCTIONS TO BIDDERS

ARTICLE 1 - DEFINED TERMS

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

ARTICLE 4 - EXAMINATION OF CONTRACT DOCUMENTS, OTHER RELATED DATA, AND SITE

ARTICLE 5 - PRE-BID CONFERENCE

ARTICLE 6 - SITE AND OTHER AREAS

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

ARTICLE 8 - BID SECURITY

ARTICLE 9 - CONTRACT TIMES

ARTICLE 10 - LIQUIDATED DAMAGES

ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS

ARTICLE 12 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

ARTICLE 13 - PREPARATION OF BIDS

ARTICLE 14 - BASIS OF BID; EVALUATION OF BIDS

ARTICLE 15 - SUBMISSION OF BIDS

ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BID

ARTICLE 17 - OPENING OF BIDS

ARTICLE 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

ARTICLE 19 - AWARD OF CONTRACT

ARTICLE 20 - CONTRACT SECURITY AND INSURANCE

ARTICLE 21 - SIGNING OF AGREEMENT

ARTICLE 22 - SALES AND USE TAXES

ARTICLE 23 - RETAINAGE

ARTICLE 24 - ASSIGNMENT OF PROCUREMENT CONTRACTS

ARTICLE 25 - LAWS AND REGULATIONS

ARTICLE 26 - PARTNERING

SECTION 00100
INSTRUCTIONS TO BIDDERS

ARTICLE 1 - DEFINED TERMS

1.01. Terms used in these Instructions to Bidders shall have the meanings assigned to them in the General Conditions and in the Supplementary Conditions. Additional terms used in these Instructions to Bidders shall have the meanings indicated below, which are applicable to both the singular and plural thereof.

A. Issuing Office - The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

2.01. Bidding Documents may be obtained from the Issuing Office of Black & Veatch Corporation in the number and format stated in the invitation to bid.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

3.01. To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit with its Bid shall submit, within 5 days after Owner's request, written evidence on financial data, previous experience, present commitments, and other such data as may be requested by Owner , or Engineer. The Bid shall contain evidence of Bidder's qualification to do business in the state where the Project is located.

ARTICLE 4 - EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

4.01. Subsurface and Physical Conditions

A. The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that are known to the Owner.

2. Those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that are known to the Owner.

B. Copies of such reports and drawings will be available to Bidder as specified hereinbefore. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in Paragraph 5.03 of the General Conditions has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated on such drawings.

4.02. Underground Facilities

A. Information and data reflected in the Bidding Documents with respect to Underground Facilities at or contiguous to the Site are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities or others, and Owner and Engineer disclaim responsibility for the accuracy or completeness thereof, unless it is expressly provided otherwise in the Supplementary Conditions.

4.03. Hazardous Environmental Condition

A. The Supplementary Conditions identify those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that are known to the Owner.

B. Copies of such reports and drawings will be made available by Owner to Bidder upon request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in Paragraph 5.06 of the General Conditions has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports, or shown or indicated on such drawings.

4.04. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in

the Bidding Documents or identified in the Contract Documents to be within the scope of the Work appear in Paragraph 5.06 of the General Conditions.

4.05. Before submitting a Bid, each Bidder may, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests, and studies and obtain any additional information and data which pertain to subsurface or physical conditions at or contiguous to the site or otherwise, which may affect cost, progress, performance, or furnishing of the Work and which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contract Documents.

On request 24 hours in advance, Owner will provide each Bidder access to the Site to conduct such explorations and tests as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations. Arrangements for Site visits shall be made by calling Brad Kalsow at (321) 868-3308.

4.06. Reference is made to the Supplementary Conditions and the Project Requirements section of Division 1 for the identification of the general nature of other work that is to be performed at the Site by Owner or others (such as utilities or other prime contractors) that relates to the Work for which a Bid is to be submitted. On request, Owner will provide to Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.

4.07. It is the responsibility of each Bidder before submitting a Bid to:

A. Examine and carefully study the Bidding Documents, including any Addenda and other related data identified in the Bidding Documents.

B. Visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

C. Become familiar with and satisfy Bidder as to all Federal, state, and local Laws and Regulations that may affect cost, progress, or performance of the Work;

D. Carefully study all reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in Paragraph 5.03 of the General Conditions as modified by the Supplementary Conditions, and carefully study all

reports and drawings of a Hazardous Environmental Condition, if any, at the Site which have been identified in the Supplementary Conditions as provided in Paragraph 5.06 of the General Conditions;

E. Obtain and carefully study (or assume responsibility for doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents and safety precautions and programs incident thereto;

F. Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;

G. Become aware of the general nature of the Work to be performed by Owner or others at the Site that relates to the Work indicated in the Bidding Documents;

H. Correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;

I. Promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and

J. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

4.08. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement concerning examination of the Bidding Documents and the Site; that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or

expressly required by the Bidding Documents; that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 - PRE-BID CONFERENCE

5.01. **A pre-Bid conference will be held at 11:00 AM on February 26th in the Commission Chambers at Cocoa Beach City Hall located at 2 South Orlando Ave.** Representatives of Owner and Engineer will be present to discuss the Project. Bidders are required to attend and participate in the conference. In response to questions arising at the conference, Engineer will issue Addenda as Engineer considers necessary. Minutes of the meeting will be distributed as part of an Addendum.

5.02. Bidders are responsible for legibly signing the attendance list and for making sure their names appear on the attendance list which will be attached to the minutes of the pre-Bid conference. Bids from Bidders not listed will not be opened.

ARTICLE 6 - SITE AND OTHER AREAS

6.01. The lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and other lands designated for use by Contractor in performing the Work are identified in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by Contractor. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by Owner unless otherwise specified in the Bidding Documents.

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

7.01. All questions about the meaning or intent of the Bidding Documents shall be submitted by **Friday, March 6th, 2026**, to Owner in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda e-mailed, as having received the Bidding Documents. Questions received after **March 10th, 2026,** may not be answered. Only answers issued by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

ARTICLE 8 - BID SECURITY

8.01. Each Bid must be accompanied by Bid security made payable without condition to Owner in an amount of 5 percent of Bidder's maximum Bid and in the form of a bid bond issued by a surety meeting the requirements set forth in the Supplementary Conditions. The bid bond shall be submitted on the form included in the Bidding Documents.

8.02. The Bid security of the Successful Bidder will be retained until such Bidder has executed the Agreement, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Agreement and to furnish the required contract security within the number of days set forth in the Bid Form, Owner may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 7 days after the Effective Date of the Agreement or the day after the last day the Bids remain subject to acceptance as set forth in the Bid Form, whereupon Bid security furnished by such Bidders will be returned.

8.03. Bid security of other Bidders who Owner believes do not have a reasonable chance of receiving the award will be returned within 7 days after the Bid opening.

ARTICLE 9 - CONTRACT TIMES

9.01. The numbers of days within which, or the dates by which, the Work is to be substantially completed and also completed and ready for final payment (the Contract Times) are set forth in the Bid Form.

ARTICLE 10 - LIQUIDATED DAMAGES

10.01. Provisions for liquidated damages, if any, are set forth in the Agreement.

ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS

11.01. The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or "or-equal" items. Application for review of substitute or "or-equal" materials or equipment will not be considered by Engineer until after the Effective Date of the Agreement. The procedure for submission of any application for review of substitute or "or-equal" items by Contractor and consideration by Engineer is set forth in Paragraphs 7.04 and 7.05 of the General Conditions and may be supplemented in the Project Requirements section of Division 1, General Requirements.

ARTICLE 12 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

12.01. If the Bidding Documents require the identity of certain Subcontractors, Suppliers, and other individuals or entities to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within 7 days after the Bid opening submit to Owner the List of Subcontractors, completed with names of all such Subcontractors, Suppliers, and other individuals and entities proposed for those portions of the Work for which such identification is required. The list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity, if requested by Owner. If, after due investigation, Owner or Engineer has reasonable objection to any proposed Subcontractor, Supplier, or other individual or entity, Owner may, before the Notice of Award is given, request the apparent Successful Bidder to submit an acceptable substitute without an increase in the Bid.

12.02. If the apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, and other individuals and entities. Declining to make requested substitutions will not constitute grounds for sacrificing the bid security of any Bidder. Any Subcontractor, Supplier, or other individual or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner, and Engineer, subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 7.06 of the General Conditions.

12.03. Contractor shall not be required to employ any Subcontractor, individual, or entity against whom Contractor has a reasonable objection.

12.04. Any Bid conditioned upon furnishing equipment or materials which are not responsive to the Bidding Documents will be rejected.

ARTICLE 13 - PREPARATION OF BIDS

13.01. The Bid Forms listed in the Table of Contents are bound in the Bidding Documents and shall not be removed therefrom unless otherwise specified. The Bid shall be completed in ink.

13.02. All blanks in the Bid Form shall be filled. A bid price shall be indicated for each Bid item, listed therein, or the words "No Bid", "No Charge", "No Change", or other appropriate phrase shall be entered.

13.03. A Bid by a corporation shall be executed in the corporate name by the president or the vice-president or by another corporate officer, accompanied by evidence of authority to sign for the corporation.

13.04. A Bid by a partnership shall be executed in the partnership name and signed by a partner, accompanied by evidence of authority to sign.

13.05. A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm shall be shown below the signature.

13.06. A Bid by an individual shall show the Bidder's name.

13.07. A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid Form.

13.08. The names of all persons signing shall be legibly printed below their signatures. A Bid by a person who affixes to its signature the word "president", "secretary", "agent", or other designation without disclosing its principal may be held to be the Bid of the individual signing. When requested by Owner, evidence of the authority of the person signing shall be furnished.

13.09. The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers and dates of which shall be filled in on the Bid Form.

13.10. No alterations in a Bid by erasures, interpolations, or otherwise, will be acceptable unless each such alteration is signed or initialed by Bidder; if initialed, Owner may require Bidder to identify any alteration so initialed.

ARTICLE 14 - BASIS OF BID; EVALUATION OF BIDS

14.01. Bidder shall complete the schedule of unit prices included in the Bid Form and shall accept all unit prices listed therein.

The total Bid will be determined as the sum of the products of the estimated quantity of each item and the unit price bid for the item. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.

Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

14.02. The adjustment unit prices provided for in the Bid Form shall apply only in the event of a Change Order providing for such increase or decrease in the quantities. The Contract Price will be subject to adjustment according to final measured, used, or delivered quantities, and the adjustment unit prices in the Bid will apply to such final quantities.

14.05. Bidder shall prepare and submit with its Bid the Questionnaire listing the Suppliers and the manufacturers of items of equipment and materials that Bidder proposes to furnish.

14.06. The line item in the Bid Form for acceptance of the assigned procurement contract shall include all fees, profits, administrative costs, and other costs proposed by Bidder as compensation for acceptance of the procurement contract as a subcontract as set forth elsewhere in these Instructions to Bidders, the Agreement, and other Contract Documents.

ARTICLE 15 - SUBMISSION OF BIDS

15.01. Bids shall be submitted no later than the time and at the place indicated in the Invitation to Bid, or at the modified time and place indicated by Addendum. Bids shall be enclosed in an opaque, sealed envelope or wrapping, addressed to:

Cocoa Beach City Hall
City Clerk Office
2 South Orlando Ave.
Cocoa Beach, Florida 32931

15.02. Bids shall be marked with the name, license number, and address of the Bidder and shall be accompanied by the Bid security and other required documents. If the Bid is sent through the mail or by other delivery system, the sealed envelope shall be enclosed in a separate envelope, with the notation "BID ENCLOSED" on the face of it.

15.03. Each bid envelope shall be identified on the outside with the words "Bid. for Banana River Blvd and Atlantic Ave Sewer".

15.04. Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids. Bids received after the time and date for receipt of Bids will be returned unopened.

15.05. One copy of the Project Manual that contains the Bid Form must be submitted with the Bid.

15.06. Oral, telephone, facsimile, electronic mail, or telegraph Bids are invalid and will not receive consideration.

15.07. No Bidder may submit more than one Bid. Multiple Bids under different names will not be accepted from one firm or association.

ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BID

16.01. A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed, and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

16.02. If, within 24 hours after Bids are opened, any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 17 - OPENING OF BIDS

17.01. Bids will be publicly opened at the time and place indicated in the Invitation to Bid and, unless obviously non-responsive, read aloud. An abstract of the amounts of the Base Bids and major alternatives (if any) will be made available to Bidders after the opening of Bids.

ARTICLE 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

18.01. All Bids shall remain subject to acceptance for the number of days set forth in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of that period.

ARTICLE 19 - AWARD OF CONTRACT

19.01. Owner reserves the right to reject any or all Bids, including without limitation the rights to reject any or all nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsive. Owner may also reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work, and to negotiate contract terms with the Successful Bidder.

19.02. More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for

believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

19.03. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and with such alternatives, unit prices, and other data as may be requested in the Bid Form or prior to the Notice of Award.

19.05. Owner may conduct such investigations as Owner deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, and other individuals or entities to perform and furnish the Work in accordance with the Contract Documents.

19.06. If the Contract is to be awarded, it will be awarded to the Bidder whose evaluation by Owner indicates to Owner that the award will be in the best interests of Owner.

ARTICLE 20 - CONTRACT SECURITY AND INSURANCE

20.01. The Supplementary Conditions set forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by such bonds.

ARTICLE 21 - SIGNING OF AGREEMENT

21.01. When Owner gives a Notice of Award to the Successful Bidder, it will be accompanied by four unsigned counterparts of the Agreement, with all other Contract Documents except the Drawings which are identified in the Agreement as attached thereto. Within the number of days set forth in the Bid Form, the Successful Bidder shall sign, leaving the dates blank, and deliver the required number of counterparts of the Agreement and attached documents to Owner with the required bonds and power of attorney. Within 10 days thereafter, Owner shall execute all copies of the Agreement and other Contract Documents submitted by Contractor (Successful Bidder); shall insert the date of contract on the Agreement, bonds, and power of attorney; and shall return all copies to Engineer for review and distribution. Distribution of signed copies shall be as stipulated in the Agreement.

ARTICLE 22 - SALES AND USE TAXES

22.01. Provisions for sales and use taxes, if any, are set forth in the Supplementary Conditions.

ARTICLE 23 - RETAINAGE

23.01. Provisions concerning retainage and Contractor's right to deposit securities in lieu of retainage are set forth in the Agreement.

ARTICLE 25 - LAWS AND REGULATIONS

25.01. Modifications, if any, to the General Conditions concerning Laws and Regulations are set forth in the Supplementary Conditions. Additional provisions, if any, concerning Laws and Regulations are set forth in the Agreement and the Supplementary Conditions.

End of Section

SECTION 00400
BID FORM

PROJECT IDENTIFICATION:
Banana River Blvd and Atlantic Ave Sewer

ARTICLE 1 – BID RECIPIENT

1.01. This Bid is submitted to:

City of Cocoa Beach
City Clerk Office
2 South Orlando Ave.
Cocoa Beach, FL 32931

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER'S ACKNOWLEDGEMENTS

2.01. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 30 days after the day of Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner. Bidder will sign and submit the Agreement with the bonds and other documents required by the Bidding Documents to Owner within 15 days after the date of Owner's Notice of Award.

ARTICLE 3 – BIDDER'S REPRESENTATIONS

3.01. In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

No. _____ Dated _____

No. _____ Dated _____

No. _____ Dated _____

No. _____ Dated _____

No. _____ Dated _____

B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.

F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid or performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents and confirms that the written resolution thereof by Engineer is acceptable to Bidder.

I The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.

J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01. Bidder certifies that:

A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a

purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

E. Bidder has attended the pre-Bid conference.

ARTICLE 5 – BASIS OF BID

5.01. Bidder will complete the Work in accordance with the Contract Documents for the following prices:

5.01. Bidder will complete the Work for the following unit prices, computed in accordance with Paragraph 13.03.C of the General Conditions. Bidder acknowledges that (1) each Bid unit price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed and are solely for the purpose of comparison of Bids, and that final payment for all unit price Bid items will be based on actual quantities provided, determined as provided in the Contract Documents.

SCHEDULE OF PRICES & BID FORM Banana River Blvd and Atlantic Ave Sewer				
Item No.	**Approx. Quantity**	**Description of Item and Bid Price**	**Unit Price**	**Extended Amount**
1	1 LS	GENERAL REQUIREMENTS AND MOBILIZATION		
2	1 LS	DEMOBILIZATION		
3	1 LS	AUDIO – VIDEO RECORD		
4	1 LS	MAINTENANCE OF TRAFFIC		
5	1 LS	DEWATERING CONTAINMENT & DISPOSAL		
6	1 LS	LOCATE UTILITIES IN ADVANCE OF CONSTRUCTION		
7	57 LF	FURNISH AND INSTALL 8" PVC DR-26 SS (5'-10'DEEP)		
8	51 LF	FURNISH AND INSTALL 12" PVC DR-18 SS (10'-15'DEEP)		
9	24 LF	FURNISH AND INSTALL 6" PVC DR-18 SS SERVICE LINE (5'-10' DEEP)		

10	1 EA	FURNISH AND INSTALL 8”X8” SS WYE		
11	1 EA	FURNISH AND INSTALL 4’ PRECAST DROP MANHOLE (10’-15’DEEP)		
12	4 EA	CORE BORE CONNECTION TO EXISTING MANHOLES		
13	1 EA	CONNECTION TO EXISTING 8” VCP SS PIPE		
14	51 LF	REMOVAL OF EXISTING 10” VCP (10’-15’ DEEP)		
15	49 LF	REMOVAL OF EXISTING 8” VCP (5’-10’ DEEP)		
16	26 LF	ABANDON PIPE IN PLACE WITH GROUT		
17	1 EA	REMOVAL OF EXISTING 4’ MANHOLE (10’-15’ DEEP)		
18	744 SY	ASPHALT MILL AND OVERLAY		
19	44 SY	ASPHALT RESTORATION		
20	1,296 SF	SIDEWALK RESTORATION		
21	169 SY	SOD RESTORATION		
22	52 LF	CURB AND GUTTER RESTORATION		
23	1 LS	SANITARY SEWER BYPASS		
24	133 LF	PAVEMENT MARKING		
25	1 LS	LOCAL PERMITS & FEES – ALLOWANCE (0.5%)		
26	1 LS	CONTINGENCY FUND – ALLOWANCE (15%)		

TOTAL BASE BID: _____

(in numerals)

TOTAL BASE BID: _____

(in words)

ARTICLE 6 – TIME OF COMPLETION

6.01. Bidder agrees that the Work will be substantially complete within 120 calendar days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General

Conditions within **150** calendar days after the date when the Contract Times commence to run.

6.02. Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

7.01 The following documents are submitted with and made a condition of this Bid:

A Required Bid security;

B. List of Subcontractors;

C. List of Project References;

D. Evidence of authority to do business in the state of the Project;

E. Contractor's License Number;

F. Required Bidder Qualification Statement with supporting data;

ARTICLE 8 – DEFINED TERMS

8.01. The terms used in this Bid have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

BIDDER: _____

(Correct name of bidding entity)

By: _____

(Signature)

(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

_____

(Printed name)

Attest: _____

(Signature)

_____

(Printed name)

_____

(Title)

Submittal Date: _____

Address for giving notices:

_____

_____

_____

Telephone Number: (_____) _____

Fax Number: (_____) _____

Contact Name and e-mail address: _____

Contractor's License Number:_____

License Expiration Date :_____

End of Section

BID BOND

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER *(Name and Address)*:

SURETY *(Name, and Address of Principal Place of Business)*:

OWNER *(Name and Address)*:

BID

Bid Due Date:

Description *(Project Name— Include Location)*:

BOND

Bond Number:

Date:

Penal sum _____ $ _____

(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER	**SURETY**
_____ (Seal)	_____ (Seal)
Bidder's Name and Corporate Seal	Surety's Name and Corporate Seal
By: _____	By: _____
Signature	Signature (Attach Power of Attorney)
_____	_____
Print Name	Print Name
_____	_____
Title	Title
Attest: _____	Attest: _____
Signature	Signature
Title	Title

Note: Addresses are to be used for giving any required notice.

Provide execution by any additional parties, such as joint ventures, if necessary.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond

shall be Owner's sole and exclusive remedy upon default of Bidder.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

3.2 All Bids are rejected by Owner, or

3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

SECTION 00440
PROPOSED SUBCONTRACTORS FORM

In compliance with the Instructions to Bidders and other Contract Documents, the undersigned submits the following names of Subcontractors to be used in performing the Work for_____.

Bidder certifies that all Subcontractors listed are eligible to perform the Work.

Subcontractor's Work	Subcontractor's Name
Excavation	_____
Concrete	_____
Road Restoration	_____

NOTE: This form must be submitted with the Bid 7 days after the Bid opening in accordance with the Instructions to Bidders.

_____
Bidder's Signature

SECTION 00480
NON-COLLUSION AFFIDAVIT

City: _____

County: _____

State: _____

_____ being first duly sworn, deposes and says that
Authorized Officer

he/she is _____ of _____
(Owner, Partner, President, etc.) Company Name

the party making the foregoing proposal or bid; that such bid is genuine and not collusive or sham; that said bidder has not colluded, conspired, connived, or agreed, directly or indirectly, with any bidder or person, to put in a sham bid, or that such other person shall refrain from bidding, and has not in any manner, directly or indirectly sought by agreement or collusion, communication or conference, with any person, to fix the bid price of affiant or another bidder, or to fix any overhead, profit or cost element of said bid price, or of that of any other bidder, or to secure any advantage against the Owner or any person or persons interested in the proposed contract; and that all statements contained in said proposal or bid are true; further, that such bidder has not, directly or indirectly submitted this bid, or that contents thereof, or divulged information or data relative thereto any association or to any member of agent thereof.

_____
Affiant

Sworn and subscribed before me this _____ day of _____, 200__.

_____
Notary Public

County: _____

State: _____

(SEAL)

_____

Expiration Date

U.S. ENVIRONMENTAL PROTECTION AGENCY
WATER QUALITY OFFICE

NON-SEGREGATED FACILITIES AFFIDAVIT

(Applicable to federally assisted construction contracts and related subcontracts exceeding $10,000 which are not exempt from the Equal Opportunity clause.)

The federally assisted construction contractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity clause in this contract. As used in this certification, the term “segregated facilities” means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. The federally assisted construction contractor agrees that (except where he has obtained identical certifications from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause, and that he will retain such certifications in his files.

_____

Signature Date

_____

Name and Title of Signer (Please Type)

_____

Firm Name

Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

SECTION 00500
AGREEMENT FORM

This Agreement is by and between
_____
_____ ("Owner") and _____
_____ ("Contractor").

Owner and Contractor agree as follows:

ARTICLE 1 – THE PROJECT.

2.01. The Project, of which the Work under the Contract Documents is a part, is generally described as follows: Project consist of removal and replacing approximately 50 LF of existing 8" VCP gravity sewer pipe with 8" PVC gravity sewer pipe, installation of approximately 9 LF of 8" PVC gravity sewer pipe and grouting and abandonment of approximately 25 LF of existing 8" gravity sewer, removal of approximately 51 LF of existing 10" VCP gravity sewer, removal and replacement of approximately 51 LF of existing 12" PVC gravity sewer, installation of 24 LF of 6" PVC service line, 4 core borings to existing manholes and removal and replacement of 1 new sanitary manhole. This will include but is not limited to temporary bypass pumping, construction temporary site access, MOT, utility replacement/ relocation, erosion control, dewatering and restoration.

ARTICLE 2 – WORK.

2.01. Contractor shall complete all Work as specified or indicated in the Contract Documents.

ARTICLE 3 – ENGINEER.

3.01. The Project has been designed by Black & Veatch Corporation, who is referred to in the Contract Documents as Engineer. Engineer is to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 - CONTRACT TIMES.

4.01. Time of the Essence.

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02. Contract Times.

A. The Contract Times shall be as indicated in Contractor's Bid. The Work shall be substantially completed within the number of days indicated in the Contractor's Bid after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within the number of days indicated in Contractor's Bid after the date when the Contract Times commence to run.

4.03. Liquidated Damages.

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 and that Owner will suffer financial and other losses if the Work is not completed within the times specified in Paragraph 4.02, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay Owner the following amounts for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02 for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner the following amounts for each day that expires after such time until the Work is completed and ready for final payment.

Item	Liquidated Damages, Per day
Substantial Completion of the Work	$**1,000**
Completion of all Work	$**1,000**

A. The liquidated damages set forth herein shall not be accumulative. If Substantial Completion of the Work is not met within the time specified for final completion of all Work, the liquidated damages shall continue to be at the rate or rates specified for default on Substantial Completion until Substantial Completion is attained. If the Work is not then finally completed, the rate or rates specified for default on final completion shall apply until final completion is attained.

B. Owner shall have the right to deduct the liquidated damages from any money in its hands, otherwise due, or to become due, to Contractor, or to initiate applicable dispute resolution procedures and to recover liquidated damages for nonperformance of this Contract within the time stipulated.

ARTICLE 5 – CONTRACT PRICE.

5.01. Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item), for the total amount of: _____ _____ ($_____).
(words) *(figures)*

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on Estimated Quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

ARTICLE 6 – PAYMENT PROCEDURES.

6.01. Submittal and Processing of Payments.

A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02. Progress Payments; Retainage.

A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the _ _ _ _ day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided in Division 1, General Requirements.

B. Prior to Substantial Completion, Owner will retain from progress payments, less the aggregate of payments previously made and less such amounts as Engineer shall determine or Owner may withhold in accordance with Paragraph 15.01.C of the General Conditions, an amount equal to the following percentages:

1. Until the Work is 50 percent completed, retainage will be 5 percent of Work completed.

2. If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage on account of Work subsequently completed.

6.03. Final Payment.

A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in Paragraph 15.06.

ARTICLE 7 – CONTRACTOR'S REPRESENTATIONS.

7.01. In order to induce Owner to enter into this Contract, Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.

B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, or performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) safety precautions and programs incident thereto.

F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 8 – CONTRACT DOCUMENTS.

8.01. Contents.

A. The Contract Documents consist of the following:

1. This Agreement (pages 1 to ___, inclusive).

2. Bonds:

   a. Performance bond (pages ___ to ___ , inclusive)

   b. Payment bond (pages ___ to___ , inclusive).

3. General Conditions (pages _ _ _ to _ _ _ , inclusive).

4. Supplementary Conditions (pages _ _ _ to _ _ _ , inclusive).

5. Specifications as listed in the table of contents of the Project Manual.

6. Drawings (not attached but incorporated by reference) consisting of **18** Banana River and Atlantic Ave Sewer sheets, with each sheet bearing the following general title:

   _ _ _

Sheet titles are listed on the cover sheet 1 in the section entitled Drawings .

7. Addenda (numbers ____ to ____ inclusive).

8. Exhibits to this Agreement (enumerated as follows):

   a. Contractor's Bid.

   b. Notice to Proceed.

   c. Documentation submitted by Contractor prior to Notice of Award, marked Exhibit _____.

   d. ***List of Subcontractors***

   e. Instrumentation and Control System Supplier Questionnaire.

9. The following, which may be delivered or issued after the Effective Date of the Agreement and are not attached hereto:

   a. Work Change Directives.

   b. Change Orders.

   c. Field Orders.

B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed in this Article 9.

D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 9 – MISCELLANEOUS.

10.01. Terms.

A. Terms used in this Agreement will have the meanings indicated in the General Conditions and Supplementary Conditions.

10.02. Assignment of Contract.

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and specifically, but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law); and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03. Successors and Assigns.

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04. Severability.

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 Contractor's Certifications

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
   1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
   2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

   3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of

which is to establish Bid prices at artificial, non-competitive levels; and

4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

End of Section

SECTION 00510
NOTICE OF AWARD

Date of Issuance _____

Owner:	Owner's Contract No.:
Engineer:	Engineer's Project No.:
Project: Banana River Blvd and Atlantic Ave Sewer	Contract Name:

Bidder:

Bidder's Address: *[send Certified Mail, Return Receipt Requested]*

TO BIDDER:

You are notified that Owner has accepted your Bid dated _____ for the above Contract, and that you are the Successful Bidder and are awarded a Contract for: _____

[describe Work, alternates or sections of Work awarded]

The Contract Price of the awarded Contract is _____

_____ Dollars ($_____).

_____ ***copies of the Contract Documents (except Drawings) accompany this Notice of Award.***
_____ ***unexecuted counterparts of the Agreement accompany this Notice of Award , and one copy of the Contract Documents accompanies this Notice of Award has been transmitted or made available to Bidder electronically.***

You must comply with the following conditions precedent within [15] days of the date you receive this Notice of Award:

1. Deliver to Owner , fully executed by Bidder, leaving the date blank.

2. Deliver with the executed Contract Documents ✓ Agreements ✓ the Contract security *[e.g., performance and payment bonds]* and insurance documentation as specified in the Instructions to Bidders and General Conditions, Articles 2 and 6.

3. Other conditions precedent (if any):

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Contract Documents together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

_____
Owner

By: _____
Authorized Signature

Title: _____

Copy: Engineer

SECTION 00550

NOTICE TO PROCEED

Project:	Owner:	Owner's Contract No.:
Banana River Blvd and Atlantic Ave Sewer		
Contract Name:		Engineer's Project No.:
Contractor:		
Contractor's Address:		

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on _____.

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, the number of days to achieve Substantial Completion is _____, and the number of days to achieve readiness for final payment is _____.

Before starting any Work at the Site, Contractor must comply with the following:

_____

_____

_____

_____ _____
Owner

_____ Given by: _____
Authorized Signature

_____ _____
Title

_____ _____
Date

Copy: Engineer

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

SECTION 00550

PERFORMANCE BOND

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

CONSTRUCTION CONTRACT
- Effective Date of the Agreement:
- Amount:
- Description *(name and location)*:

BOND
- Bond Number:
- Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:
- Amount:
- Modifications to this Bond Form: ☐ None ☐ See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL	**SURETY**
_____ *(seal)*	_____ *(seal)*
Contractor's Name and Corporate Seal	Surety's Name and Corporate Seal
By: _____	**By:** _____
Signature	Signature *(attach power of attorney)*
_____	_____
Print Name	Print Name
_____	_____
Title	Title
Attest: _____	**Attest:** _____
Signature	Signature
_____	_____
Title	Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

16. Modifications to this Bond are as follows:

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

SECTION 00610

PAYMENT BOND

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

CONSTRUCTION CONTRACT

Effective Date of the Agreement:
Amount:
Description *(name and location)*:

BOND

Bond Number:
Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:
Amount:
Modifications to this Bond Form: ☐ None ☐ See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

_____ *(seal)*
Contractor's Name and Corporate Seal

By: _____
Signature

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

SURETY

_____ *(seal)*
Surety's Name and Corporate Seal

By: _____
Signature *(attach power of attorney)*

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.

4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.

5. The Surety's obligations to a Claimant under this Bond shall arise after the following:

   5.1 Claimants who do not have a direct contract with the Contractor,

      5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and

      5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).

   5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).

6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.

7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

   7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

   7.2 Pay or arrange for payment of any undisputed amounts.

   7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.

11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. **Definitions**

16.1 **Claim:** A written statement by the Claimant including at a minimum:

1. The name of the Claimant;
2. The name of the person for whom the labor was done, or materials or equipment furnished;
3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
4. A brief description of the labor, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4 **Owner Default**: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

18. Modifications to this Bond are as follows:

SECTION 00615
CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner: City of Cocoa Beach	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer: Black and Veatch	Engineer's Project No.:
Project:Banana River Blvd and Atlantic Ave Sewer	Contract Name:

This [preliminary] [final] Certificate of Substantial Completion applies to:

☐ All Work ☐ The following specified portions of the Work:

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work shall be as provided in the Contract, except as amended as follows: *[Note: Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.]*

Amendments to Owner's responsibilities: ☐ None ☐ As follows

Amendments to Contractor's responsibilities: ☐ None ☐ As follows:

The following documents are attached to and made a part of this Certificate: *[punch list; others]*

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract.

EXECUTED BY ENGINEER:	RECEIVED:	RECEIVED:
By: _____ (Authorized signature)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

ACCEPTANCE CERTIFICATE FORM

PROJECT: Banana River Blvd and Atlantic Ave Sewer

OWNER:

CONTRACTOR:

OWNER'S CONSTRUCTION CONTRACT IDENTIFICATION:

EFFECTIVE DATE OF THE CONSTRUCTION CONTRACT:

ENGINEER:

NOTICE DATE:

To: _____
Owner

And To: _____
Contractor

From: _____
Engineer

The Engineer hereby gives notice to the above Owner and Contractor that Engineer has recommended final payment to Contractor, and that the Work furnished and performed by Contractor under the above Construction Contract is acceptable, expressly subject to the provisions of the related Contract Documents, the Agreement between Owner and Engineer for Professional Services dated _____, and the following terms and conditions of this Notice:

CONDITIONS OF NOTICE OF ACCEPTABILITY OF WORK

The Notice of Acceptability of Work ("Notice") is expressly made subject to the following terms and conditions to which all those who receive said Notice and rely thereon agree:

1. This Notice is given with the skill and care ordinarily used by members of the engineering profession practicing under similar conditions at the same time and in the same locality.

2. This Notice reflects and is an expression of the Engineer's professional opinion.

3. This Notice is given as to the best of Engineer's knowledge, information, and belief as of the Notice Date.

4. This Notice is based entirely on and expressly limited by the scope of services Engineer has been employed by Owner to perform or furnish during construction of the Project

(including observation of the Contractor's work) under Engineer's Agreement with Owner, and applies only to facts that are within Engineer's knowledge or could reasonably have been ascertained by Engineer as a result of carrying out the responsibilities specifically assigned to Engineer under such Agreement.

5. This Notice is not a guarantee or warranty of Contractor's performance under the Construction Contract, an acceptance of Work that is not in accordance with the related Contract Documents, including but not limited to defective Work discovered after final inspection, nor an assumption of responsibility for any failure of Contractor to furnish and perform the Work thereunder in accordance with the Construction Contract Documents, or to otherwise comply with the Construction Contract Documents or the terms of any special guarantees specified therein.

6. This Notice does not relieve Contractor of any surviving obligations under the Construction Contract, and is subject to Owner's reservations of rights with respect to completion and final payment.

By: _____

Title: _____

Dated: _____

SECTION 00700
STANDARD GENERAL CONDITIONS
OF THE CONSTRUCTION CONTRACT

Prepared by

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Issued and Published Jointly by

ACEC
American Council of Engineering Companies

ASCE
American Society of Civil Engineers

National Society of Professional Engineers®

These General Conditions have been prepared for use with the Agreement Between Owner and Contractor for Construction Contract (EJCDC® C-520, Stipulated Sum, or C-525, Cost-Plus, 2013 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other.

To prepare supplementary conditions that are coordinated with the General Conditions, use EJCDC's Guide to the Preparation of Supplementary Conditions (EJCDC® C-800, 2013 Edition). The full EJCDC Construction series of documents is discussed in the Commentary on the 2013 EJCDC Construction Documents (EJCDC® C-001, 2013 Edition).

Copyright © 2013:

National Society of Professional Engineers

1420 King Street, Alexandria, VA 22314-2794

(703) 684-2882

www.nspe.org

American Council of Engineering Companies

1015 15th Street N.W., Washington, DC 20005

(202) 347-7474

www.acec.org

American Society of Civil Engineers

1801 Alexander Bell Drive, Reston, VA 20191-4400

(800) 548-2723

www.asce.org

The copyright for this document is owned jointly by the three sponsoring organizations listed above. The National Society of Professional Engineers is the Copyright Administrator for the EJCDC documents; please direct all inquiries regarding EJCDC copyrights to NSPE.

NOTE: EJCDC publications may be purchased at www.ejcdc.org, or from any of the sponsoring organizations above.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

TABLE OF CONTENTS

Page

Article 1 – Definitions and Terminology 1

1.01 Defined Terms 1

1.02 Terminology 5

Article 2 – Preliminary Matters 6

2.01 Delivery of Bonds and Evidence of Insurance 6

2.02 Copies of Documents 6

2.03 Before Starting Construction 6

2.04 Preconstruction Conference; Designation of Authorized Representatives 6

2.05 Initial Acceptance of Schedules 7

2.06 Electronic Transmittals 7

Article 3 – Documents: Intent, Requirements, Reuse 7

3.01 Intent 7

3.02 Reference Standards 8

3.03 Reporting and Resolving Discrepancies 8

3.04 Requirements of the Contract Documents 9

3.05 Reuse of Documents 9

Article 4 – Commencement and Progress of the Work 10

4.01 Commencement of Contract Times; Notice to Proceed 10

4.02 Starting the Work 10

4.03 Reference Points 10

4.04 Progress Schedule 10

4.05 Delays in Contractor's Progress 10

Article 5 – Availability of Lands; Subsurface and Physical Conditions; Hazardous Environmental Conditions 11

5.01 Availability of Lands 11

5.02 Use of Site and Other Areas 12

5.03 Subsurface and Physical Conditions 13

5.04 Differing Subsurface or Physical Conditions 13

5.05 Underground Facilities 15

5.06 Hazardous Environmental Conditions at Site 16

Article 6 – Bonds and Insurance 18

6.01 Performance, Payment, and Other Bonds 18
6.02 Insurance—General Provisions 19
6.03 Contractor's Insurance 20
6.04 Owner's Liability Insurance 22
6.05 Property Insurance 22
6.06 Waiver of Rights 24
6.07 Receipt and Application of Property Insurance Proceeds 25
Article 7 – Contractor's Responsibilities 25
7.01 Supervision and Superintendence 25
7.02 Labor; Working Hours 25
7.03 Services, Materials, and Equipment 26
7.04 "Or Equals" 26
7.05 Substitutes 27
7.06 Concerning Subcontractors, Suppliers, and Others 28
7.07 Patent Fees and Royalties 30
7.08 Permits 30
7.09 Taxes 31
7.10 Laws and Regulations 31
7.11 Record Documents 31
7.12 Safety and Protection 31
7.13 Safety Representative 32
7.14 Hazard Communication Programs 32
7.15 Emergencies 33
7.16 Shop Drawings, Samples, and Other Submittals 33
7.17 Contractor's General Warranty and Guarantee 35
7.18 Indemnification 35
7.19 Delegation of Professional Design Services 36
Article 8 – Other Work at the Site 37
8.01 Other Work 37
8.02 Coordination 37
8.03 Legal Relationships 38
Article 9 – Owner's Responsibilities 39
9.01 Communications to Contractor 39
9.02 Replacement of Engineer 39
9.03 Furnish Data 39

9.04 Pay When Due 39
9.05 Lands and Easements; Reports, Tests, and Drawings 39
9.06 Insurance 39
9.07 Change Orders 39
9.08 Inspections, Tests, and Approvals 39
9.09 Limitations on Owner's Responsibilities 39
9.10 Undisclosed Hazardous Environmental Condition 40
9.11 Evidence of Financial Arrangements 40
9.12 Safety Programs 40
Article 10 – Engineer's Status During Construction 40
10.01 Owner's Representative 40
10.02 Visits to Site 40
10.03 Project Representative 40
10.04 Rejecting Defective Work 41
10.05 Shop Drawings, Change Orders and Payments 41
10.06 Determinations for Unit Price Work 41
10.07 Decisions on Requirements of Contract Documents and Acceptability of Work 41
10.08 Limitations on Engineer's Authority and Responsibilities 41
10.09 Compliance with Safety Program 42
Article 11 – Amending the Contract Documents; Changes in the Work 42
11.01 Amending and Supplementing Contract Documents 42
11.02 Owner-Authorized Changes in the Work 42
11.03 Unauthorized Changes in the Work 43
11.04 Change of Contract Price 43
11.05 Change of Contract Times 44
11.06 Change Proposals 44
11.07 Execution of Change Orders 45
11.08 Notification to Surety 45
Article 12 – Claims 45
12.01 Claims 45
Article 13 – Cost of the Work; Allowances; Unit Price Work 47
13.01 Cost of the Work 47
13.02 Allowances 49
13.03 Unit Price Work 49
Article 14 – Tests and Inspections; Correction, Removal or Acceptance of Defective Work 50

14.01 Access to Work 50
14.02 Tests, Inspections, and Approvals 50
14.03 Defective Work 51
14.04 Acceptance of Defective Work 52
14.05 Uncovering Work 52
14.06 Owner May Stop the Work 52
14.07 Owner May Correct Defective Work 53
Article 15 – Payments to Contractor; Set-Offs; Completion; Correction Period 53
15.01 Progress Payments 53
15.02 Contractor's Warranty of Title 56
15.03 Substantial Completion 56
15.04 Partial Use or Occupancy 57
15.05 Final Inspection 58
15.06 Final Payment 58
15.07 Waiver of Claims 59
15.08 Correction Period 59
Article 16 – Suspension of Work and Termination 60
16.01 Owner May Suspend Work 60
16.02 Owner May Terminate for Cause 60
16.03 Owner May Terminate For Convenience 61
16.04 Contractor May Stop Work or Terminate 61
Article 17 – Final Resolution of Disputes 62
17.01 Methods and Procedures 62
Article 18 – Miscellaneous 62
18.01 Giving Notice 62
18.02 Computation of Times 62
18.03 Cumulative Remedies 63
18.04 Limitation of Damages 63
18.05 No Waiver 63
18.06 Survival of Obligations 63
18.07 Controlling Law 63
18.08 Headings 63

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.

3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

5. *Bidder*—An individual or entity that submits a Bid to Owner.

6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.

7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.

8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.

9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.

10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision

regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.

13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.

14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .

15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.

16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.

17. *Cost of the Work*—See Paragraph 13.01 for definition.

18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.

20. *Engineer*—The individual or entity named as such in the Agreement.

21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.

22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.

23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.

26. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.

27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.

28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.

29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.

32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of Resident Project Representative.

33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.

34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals and the performance of related construction activities.

35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.

38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work,

and certain administrative requirements and procedural matters applicable to the Work.

39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.

42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.

43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.

44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.

45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

46. *Unit Price Work*—Work to be paid for on the basis of unit prices.

47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 *Terminology*

A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives*:

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. *Day*:

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective*:

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:

a. does not conform to the Contract Documents; or

b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).

E. *Furnish, Install, Perform, Provide*:

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. *Evidence of Contractor's Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.

C. *Evidence of Owner's Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among

the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.

B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.

C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.

C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.

D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

A. Standards Specifications, Codes, Laws and Regulations

1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*:

1. *Contractor's Verification of Figures and Field Measurements*: Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents*: If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work

affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies*:

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:

a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.

B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

A. Contractor and its Subcontractors and Suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

4.03 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.

B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to

an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.

C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
2. abnormal weather conditions;
3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
4. acts of war or terrorism.

D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.

E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.

G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a

mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*:

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

B. *Removal of Debris During Performance of the Work*: During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning*: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading of Structures*: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;

2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and

3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

A. *Notice by Contractor*: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or

2. is of such a nature as to require a change in the Drawings or Specifications; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B. *Engineer's Review*: After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the

condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

C. *Owner's Statement to Contractor Regarding Site Condition*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

D. *Possible Price and Times Adjustments*:

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

    a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;

    b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

    c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:

    a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or

    b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or

    c. Contractor failed to give the written notice as required by Paragraph 5.04.A.

3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.

4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

A. *Contractor's Responsibilities*: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;

b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;

c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and

d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

B. *Notice by Contractor*: If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

C. *Engineer's Review*: Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. *Owner's Statement to Contractor Regarding Underground Facility*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

E. *Possible Price and Times Adjustments*:

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with

reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;

b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;

c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and

d. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and

2. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such

removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.

H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2)

was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.

B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.

D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.

E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.

F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.

F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.

H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.

I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.

J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

A. *Workers' Compensation*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.

2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).

3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).

4. Foreign voluntary worker compensation (if applicable).

B. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:

1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.

2. claims for damages insured by reasonably available personal injury liability coverage.

3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

C. *Commercial General Liability—Form and Content*: Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:

1. Products and completed operations coverage:

a. Such insurance shall be maintained for three years after final payment.

b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.

2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.

3. Broad form property damage coverage.

4. Severability of interest.

5. Underground, explosion, and collapse coverage.

6. Personal injury coverage.

7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG

20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.

8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.

D. *Automobile liability*: Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.

E. *Umbrella or excess liability*: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.

F. *Contractor's pollution liability insurance*: Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.

H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.

I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:

1. include at least the specific coverages provided in this Article.

2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.

3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.

4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.

5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.

J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."

2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.

3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
6. extend to cover damage or loss to insured property while in transit.
7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
8. allow for the waiver of the insurer's subrogation rights, as set forth below.
9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
10. not include a co-insurance clause.
11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
12. include performance/hot testing and start-up.
13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.

B. *Notice of Cancellation or Change*: All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.

C. *Deductibles*: The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.

D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come

off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.

E. *Additional Insurance*: If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.

F. *Insurance of Other Property*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.

D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 *"Or Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:

    a. in the exercise of reasonable judgment Engineer determines that:

        1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

        2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;

        3) it has a proven record of performance and availability of responsive service; and

        4) it is not objectionable to Owner.

    b. Contractor certifies that, if approved and incorporated into the Work:

        1) there will be no increase in cost to the Owner or increase in Contract Times; and

        2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.

C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.

E. *Treatment as a Substitution Request*: If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 *Substitutes*

A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

a. shall certify that the proposed substitute item will:

1) perform adequately the functions and achieve the results called for by the general design,

2) be similar in substance to that specified, and

3) be suited to the same use as that specified.

b. will state:

1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,

2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and

3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.

c. will identify:

1) all variations of the proposed substitute item from that specified, and

2) available engineering, sales, maintenance, repair, and replacement services.

d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.

F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.

B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.

C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.

D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.

E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.

F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.

G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.

J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.

K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.

L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to

the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.

N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.

O. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor

2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 *Permits*

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated

contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

7.09 *Taxes*

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.10 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.12 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.

D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

7.14 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements*:

1. Before submitting a Shop Drawing or Sample, Contractor shall have:

a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

B. *Submittal Procedures for Shop Drawings and Samples*: Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.

1. *Shop Drawings*:

a. Contractor shall submit the number of copies required in the Specifications.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. *Samples*:

a. Contractor shall submit the number of Samples required in the Specifications.

b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Other Submittals*: Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.

D. *Engineer's Review*:

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.

5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.

6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

E. *Resubmittal Procedures*:

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for

review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal;

6. the issuance of a notice of acceptability by Engineer;

7. any inspection, test, or approval by others; or

8. any correction of defective Work by Owner.

D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and

hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.

B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

8.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:

1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;

2. an itemization of the specific matters to be covered by such authority and responsibility; and

3. the extent of such authority and responsibilities.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.

C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.

D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or

arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

9.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.

B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.

C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.

B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's

consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.

B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.

C. Engineer's authority as to Change Orders is set forth in Article 11.

D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

1. *Change Orders*:

a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.

b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.

2. *Work Change Directives*: A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders*: Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall

be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.

B. An adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).

C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;

b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor

that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;

e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.

B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. *Procedures*: Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.

2. *Engineer's Action*: Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's

inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

3. *Binding Decision*: Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

B. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders covering:

1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;

2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;

3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and

4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12 – CLAIMS

12.01 *Claims*

A. *Claims Process*: The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:

1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;

2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and

3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.

B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.

D. *Mediation*:

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.

2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.

E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

    a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

    b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

    c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

    d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.

    e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

    f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

    g. The cost of utilities, fuel, and sanitary facilities at the Site.

    h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

    i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded*: The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*: When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

E. *Documentation*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 *Allowances*

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. *Cash Allowances*: Contractor agrees that:

1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.

E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;

2. there is no corresponding adjustment with respect to any other item of Work; and

3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

14.02 *Tests, Inspections, and Approvals*

A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.

B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:

1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;

2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;

3. by manufacturers of equipment furnished under the Contract Documents;

4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and

5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.

F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

A. *Contractor's Obligation*: It is Contractor's obligation to assure that the Work is not defective.

B. *Engineer's Authority*: Engineer has the authority to determine whether Work is defective, and to reject defective Work.

C. *Notice of Defects*: Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.

C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 *Progress Payments*

A. *Basis for Progress Payments*: The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. *Applications for Payments*:

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account

of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications*:

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

   a. the Work has progressed to the point indicated;

   b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and

   c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

   a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or

   b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

   a. to supervise, direct, or control the Work, or

   b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

   c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

   d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:

a. the Work is defective, requiring correction or replacement;

b. the Contract Price has been reduced by Change Orders;

c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*:

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner*:

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:

a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;

c. Contractor has failed to provide and maintain required bonds or insurance;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;

e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

f. the Work is defective, requiring correction or replacement;

g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

h. the Contract Price has been reduced by Change Orders;

i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;

j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;

k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;

l. there are other items entitling Owner to a set off against the amount recommended.

2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite

consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.

2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment*:

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

a. all documentation called for in the Contract Documents;

b. consent of the surety, if any, to final payment;

c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

d. a list of all disputes that Contractor believes are unsettled; and

e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Application and Acceptance*:

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect

to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

D. *Payment Becomes Due*: Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. correct the defective repairs to the Site or such other adjacent areas;

2. correct such defective Work;

3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and

4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or

repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);

2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;

3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or

4. Contractor's repeated disregard of the authority of Owner or Engineer.

B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:

1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and

2. enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the

Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.

E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner

or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

A. *Disputes Subject to Final Resolution*: The following disputed matters are subject to final resolution under the provisions of this Article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and

2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.

B. *Final Resolution of Disputes*: For any dispute subject to resolution under this Article, Owner or Contractor may:

1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or

2. agree with the other party to submit the dispute to another dispute resolution process; or

3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a

Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

SECTION 00940
WORK CHANGE DIRECTIVE FORM

WORK CHANGE DIRECTIVE FORM

INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed for use in situations involving changes in the Work which, if not processed expeditiously, might delay the Project. These changes are often initiated in the field and may affect the Contract Price or the Contract Times. This is not a Change Order, but only a directive to proceed with Work that may be included in a subsequent Change Order. Contract Price and Contract Times may only be changed by Change Order signed by Owner and Contractor.

For supplemental instructions and minor changes not involving a change in the Contract Price or the Contract Times, a Field Order should be used.

B. COMPLETING THE WORK CHANGE DIRECTIVE FORM

If requested by Owner, Engineer initiates the form, including a description of the items involved and attachments.

Based on conversations among Owner, Engineer and Contractor; Engineer completes the following:

> METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT PRICE: Mark the method to be used in determining the final cost of Work involved and the estimated net effect on the Contract Price. If the change involves an increase in the Contract Price and the estimated amount is approached before the additional or changed Work is completed, another Work Change Directive must be issued to change the estimated price or Contractor may stop the changed Work when the estimated cost is reached. If the Work Change Directive is not likely to change the Contract Price, the space for estimated increase (decrease) should be marked "Not Applicable".

Once Engineer has completed development of the form, all copies should be sent to Owner for authorization and execution. (Engineer has no authority to authorize changes that may affect Price or Times.) Once authorized by Owner, a copy should be sent to Engineer and to Contractor.

Paragraph 11.07.A.1 of the General Conditions requires that a Change Order be initiated and executed to cover any undisputed sum or amount of time for Work actually performed pursuant to this Work Change Directive.

Once the Work covered by such directive is completed or final cost and times are determined, Contractor should submit documentation for inclusion in a Change Order.

THIS IS A DIRECTIVE TO PROCEED WITH A CHANGE THAT MAY AFFECT THE CONTRACT PRICE OR CONTRACT TIMES. A CHANGE ORDER SHOULD BE CONSIDERED PROMPTLY.

WORK CHANGE DIRECTIVE

No. _____

DATE OF ISSUANCE _____ EFFECTIVE DATE _____

Owner: _____

Contractor: _____

Contract:_____

Project: _____

Owner's Contract No.: _____ Contract Name: _____

Contractor is directed to proceed promptly with the following change(s):
Description:

Attachments: *[List documents supporting change]*

Purpose for Work Change Directive:
Directive to proceed promptly with the Work described herein, prior to agreeing to changes in Contract Price and Contract Times, is issued due to:

- ☐ Non-Agreement on pricing of proposed change.
- ☐ Necessity to proceed for schedule or other Project reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Estimated increase (decrease) in Contract Price:

$ _____.

If the change involves an increase, the estimated amount is not to be exceeded without further authorization.

Estimated increase (decrease) in Contract Times:
Substantial Completion:_____ days;
Ready for final payment: _____ days.

Basis of estimated change in Contract Price:

- ☐ Unit Price
- ☐ Lump Sum
- ☐ Cost of the Work
- ☐ Other

AUTHORIZED BY:

_____
Owner (Authorized Signature)

Title:_____

Date:_____

SECTION 00941
CHANGE ORDER FORM

CHANGE ORDER FORM

INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Contract Price or Contract Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

B. COMPLETING THE CHANGE ORDER FORM

When the subject of a change affects the performance or acceptability of the Work, the design, or other engineering and technical matters, Engineer normally initiates preparation of the form, including preparing a description of the changes involved and attachments based upon review of documents and Change Proposals submitted by Contractor, or requests from Owner, or both.

After Engineer has completed the form, all copies should be sent to Owner for approval and thence forwarding to Contractor for acceptance and signature. Owner should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, insert “Zero” or “Not Applicable” to the part of the tabulation that does not apply.

CHANGE ORDER

Change Order No. _____

DATE OF ISSUANCE_____ EFFECTIVE DATE_____

Owner _____
Contractor _____
Contract Name:_____
Project: _____
Owner's Contract No. _____

The Contract is modified as follows upon execution of this Change Order:
Description:

Attachments: *[List documents supporting change]*

CHANGE IN CONTRACT PRICE:

Original Contract Price

$_____

[Increase] [Decrease] from previously approved Change Orders No. ___ to___:

$_____

Contract Price prior to this Change Order:

$_____

[Increase] [decrease] of this Change Order:

$_____

Contract Price incorporating this Change Order:

$_____

CHANGE IN CONTRACT TIMES:
[note changes in Milestones if applicable]
Original Contract Times:
Substantial Completion:_____
Ready for final payment:_____
(days or dates)

[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___:

Substantial Completion:_____
Ready for final payment:_____
(days)

Contract Times prior to this Change Order:

Substantial Completion:_____
Ready for final payment:_____
(days or dates)

[Increase] [decrease] of this Change Order:

Substantial Completion:_____
Ready for final payment:_____
(days)

Contract Times with all approved Change Orders:

Substantial Completion:_____
Ready for final payment:_____
(days or dates)

ACCEPTED:

By: _____
Owner (Authorized Signature)

Title: _____
Date: _____

ACCEPTED:

By: _____
Contractor (Authorized Signature)

Title: _____
Date: _____

SECTION 00942
FIELD ORDER FORM

Field Order No. _____

Date of Issuance: _____ Effective Date: _____

Project:

Owner:	Owner's Contract No.:
Contractor:	
Engineer:	Engineer's Project No.:

Contractor is hereby directed to promptly execute this Field Order, issued in accordance with General Conditions Paragraph 11.01, for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, submit a Change Proposal before proceeding with this Work.

Reference: _____ _____
Specification (s) Drawing(s) / Detail(s)

Description:

Will additional drawings be necessary? ( ) ( )
Yes No

Attachments:

	ISSUED:
	(RPR or CM)
RECEIVED:	Title:
Contractor (Authorized Signature)	Date:

Copy to: Owner

SECTION 01000

INDEX OF DRAWINGS

PART 1 -- GENERAL

1.01 GENERAL

The following list of engineering drawings titled, “Banana River Blvd and Atlantic Ave Sewer”, are incorporated into the Contract Documents by reference.

Sheet Number	Drawing Number	Title
1	G-00	COVER SHEET, DRAWING INDEX AND LOCATION MAP
2	G-01	GENERAL NOTES AND LEGEND
3	G-02	GENERAL NOTES
4	G-03	KEY MAP
5	C-01	PLAN AND PROFILE - N ATLANTIC AVE AND WAKULLA LN
6	C-02	PLAN AND PROFILE - N BANANA RIVER BLVD
7	C-03	DETAILS
8	C-04	DETAILS
9	C-05	DETAILS
10	P-01	PAVEMENT RESTORATION PLAN
11	E-01	EROSION CONTROL PLAN
12	E-02	EROSION DETAILS
13	M-01	MAINTENANCE OF TRAFFIC PLAN
14	M-02	MAINTENANCE OF TRAFFIC DETAILS
15	M-03	MAINTENANCE OF TRAFFIC DETAILS
16	M-04	MAINTENANCE OF TRAFFIC DETAILS
17	M-05	MAINTENANCE OF TRAFFIC DETAILS
18	M-06	MAINTENANCE OF TRAFFIC DETAILS

PART 2 - PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01000

GENERAL REQUIREMENTS

PART 1 -- GENERAL

1.1 PROJECT SCHEDULE

The CONTRACTOR shall submit a detailed schedule prior to the commencement of any work. The schedule shall include a proposed mobilization, completion, and demobilization date. The CONTRACTOR shall schedule all work or tests during daylight hours Monday through Friday, unless prior approval from the O W N E R has been obtained.

1.2 WORK EQUIPMENT

Equipment utilized for this project shall be in first-class working order. No unnecessary delays or work stoppages will be tolerated because of equipment failure. Equipment failure shall not be considered a valid reason for extending the length of the Contract. The CONTRACTOR shall be held responsible, and payment may be withheld for damages to any existing infrastructure due to negligence, faulty operation, or equipment failure.

1.3 REMEDIAL WORK

If remedial work proves to be necessary to make any portion of the pipeline acceptable to the OWNER to comply with the regulations and/or Specifications because of accident, loss of tools, defective material, or for any other cause, the CONTRACTOR shall propose a method of correcting the problem, in writing. Suggested methods shall be reviewed **AND APPROVED BY THE ENGINEER BEFORE WORK PROCEEDS. SUCH WORK SHALL BE PERFORMED** at no additional cost to the OWNER and it shall not extend the length of the Contract. The CONTRACTOR is notified that all specifications shall be met, including alignment and pressure testing to the points designated by the ENGINEER.

1.4 DAILY LOG

The CONTRACTOR shall maintain a detailed daily log of the sanitary sewer main construction and testing operations. The logs shall be on printed forms and shall give a description of all field activities and pertinent data as may be required by the OWNER. Two copies of each daily log shall be submitted to the OWNER (or OWNER's representative) daily.

1.5 SAFETY

The CONTRACTOR is expected to perform the proposed work in a safe manner. The CONTRACTOR shall use every precaution necessary to ensure a safe work area and shall comply with all U.S. Occupational Safety and Health Administration (OSHA) and U.S. Environmental Protection Agency (USEPA) regulations regarding the types of work described in these Specifications.

1.6 ABANDONMENT

If the CONTRACTOR voluntarily stops work, and/or fails to complete in a satisfactory manner, in accordance with the regulations and/or Specifications and approved changes, the OWNER shall consider the project to be abandoned by it. If the OWNER declares the project abandoned by the CONTRACTOR, then no payment will be made. All salvageable material furnished by the CONTRACTOR may be removed and remain its property. Written approval from the OWNER shall be required before the CONTRACTOR is allowed to proceed with any salvage operations.

1.7 GUARANTEE

The CONTRACTOR guarantees that the work and service to be performed under the Contract and all workmanship, materials, and equipment, furnished, used, or installed in the work shall be free from defect and flaws, and shall be performed and furnished in strict accordance with the Contract documents; that the strength of all parts of all manufactured equipment shall be adequate and as specified; and that the testing requirements of the Contract documents shall be fulfilled. The CONTRACTOR shall repair, correct or replace all damage to the work resulting from failures covered by the guarantee.

1.8 STANDBY TIME

The OWNER may ask the CONTRACTOR to stop operations so that extra work not included in these Specifications, such as other construction activities and additional data collection, can be performed. The OWNER shall schedule the request, so it causes a minimum of delay. All standby time for which extra payment will be made shall be approved by the OWNER in writing in advance.

1.9 REGULATORY REQUIREMENTS

The CONTRACTOR shall comply with all requirements and conditions of all permits related to the work of this contract and shall comply with the provisions of any permits issued. The CONTRACTOR shall be responsible for obtaining any necessary licenses and permits, and for complying with any applicable federal, state, and municipal laws, codes and regulations, in connection with the execution of the Work. The CONTRACTOR shall take proper safety and health precautions to protect the Work, its workers, OWNER workers, the public and the property of others.

1.10 NOISE CONTROL

Noise produced by field operations shall be kept to a minimum. Noisy operations shall be conducted whenever possible during daylight hours and scheduled to minimize duration. The CONTRACTOR shall comply with all applicable federal, state, and Cocoa Beach noise pollution control regulations. Noisy equipment shall be kept as far as possible from noise sensitive site boundaries. Equipment shall be properly maintained to reduce noise from excessive vibration, faulty mufflers, or other sources. No equipment shall be left idling unnecessarily.

1.11 RESPONSIBILITY AND HANDLING OF MATERIALS

The CONTRACTOR shall be responsible for all material furnished by it and shall replace at its own expense all such materials found to be defective in manufacture or damaged in handling. The CONTRACTOR shall be responsible for the safe storage of materials. The interior of all pipe, fittings and other accessories shall be kept free from dirt and foreign matter at all times. All materials shall be delivered and distributed at the site by the CONTRACTOR. All piping and accessories shall be loaded and unloaded so as to avoid shock or damage. Handling of piping shall conform to all manufacturers' recommendations. Pipe handled on skidways shall not be skidded or rolled against pipe already on the ground.

1.12 PROTECTION OF PROPERTY

The CONTRACTOR shall take special precautions to reduce to a minimum the nuisances and damage to property which could result from working in residential areas and adjacent to roads. As applicable, and as directed by the OWNER, the CONTRACTOR shall file a traffic control plan and obtain approval from the appropriate OWNER, County, or state traffic departments. Any damage to public or private property shall be immediately repaired and paid for by the CONTRACTOR at no expense to the OWNER. Equipment, tools, and materials shall be located in places where they will produce a minimum of nuisance. Appropriate warning signs, including lighted warnings, shall be posted on the streets and the City of Cocoa Beach Police Department shall be informed of the location of the construction sites.

1.13 CERTIFICATION OF CHEMICALS

All chemicals used during the project must show approval of either USEPA or the U.S. Department of Agriculture (USDA). The CONTRACTOR shall submit the most recent Safety Data Sheets (SDS's) in accordance with OSHA Rule 29 Code of Federal Regulations (CFR) 1910.1200 for each chemical to be used during the project. Two copies shall be furnished to the ENGINEER.

1.14 SITE VIDEO

The CONTRACTOR is required to take a digital video of pre- and post- construction site conditions of the pipeline route and surrounding area to allow for clear comparisons of site conditions before and after the work is conducted in accordance with **01380 – Pre-construction Video and Photos.**

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION (NOT USED)

END OF SECTION

This Page Is

Intentionally

Blank

SECTION 01010

SUMMARY OF WORK

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The WORK to be performed under this Contract shall consist of furnishing all tools, equipment, materials, supplies, and manufactured articles, and furnishing all labor, transportation, and services, including fuel, power, water, and essential communications, and performing all work or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The WORK shall be complete, and all work, materials, and services not expressly indicated or called for in the Contract Documents which may be necessary for the complete and proper construction of the WORK, in good faith, shall be provided by the CONTRACTOR as though originally so indicated, at no increase in cost to the OWNER.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. The WORK of this contract includes the replacement and testing of **a Gravity Sewer pipes and manholes** in accordance with the Contract Documents. The work to be performed under these Contract Documents is generally described as follows:

1. Project consist of removal and replacing approximately 50 LF of existing 8" VCP gravity sewer pipe with 8" PVC gravity sewer pipe, installation of approximately 9 LF of 8" PVC gravity sewer pipe and grouting and abandonment of approximately 25 LF of existing 8" gravity sewer, removal of approximately 51 LF of existing 10" VCP gravity sewer, removal and replacement of approximately 51 LF of existing 12" PVC gravity sewer, installation of approximately 24 LF of 6" PVC service line, 4 core borings to existing manholes and removal and replacement of 1 new sanitary manhole. This will include but is not limited to temporary bypass pumping, construction temporary site access, MOT, utility replacement/ relocation, erosion control, dewatering and restoration.

1.3 WORK BY OTHERS

A. **Interference With Work On Utilities:** The CONTRACTOR shall cooperate fully with all utility forces of the OWNER or forces of other public or private agencies engaged in the access, relocation, altering, or otherwise rearranging of any facilities which interfere with or are needed for the progress of the WORK, and shall schedule the WORK so as to minimize interference with said access, relocation, altering, or other rearranging of facilities.

1.4 WORK SEQUENCE

A. The work sequence may be changed by the ENGINEER. Changes may include

alterations to the order of occurrence, deletions, or additions. The CONTRACTOR shall begin WORK within **10** calendar days following the receipt date of the Notice to Proceed from the ENGINEER. The WORK schedule and operations shall progress in sequence and continue without interruption until all WORK is completed by the CONTRACTOR.

B. **Site Preparation and Mobilization**. All Work shall be completed as specified in all applicable sections and includes but is not limited to, the following tasks:

1. Prior to the initiation of work, conduct a video survey of the site to document existing site conditions in accordance with **Section 01380 - Preconstruction Photos/Videos**.

2. Clear site, as required, and establish vertical and horizontal control with reference to NAVD 1988 and NAD 1983, respectively.

3. Protect existing facilities, install temporary utilities, and install temporary environmental controls based on approved site plan.

4. Install appropriate security barriers to prevent public access to the open cut areas and equipment and ensure public health and safety based on approved alignment.

C. **Gravity Sewer Replacement.** A description of the work to be included as part of the Gravity Sewer is as follows but is not limited to:

1. Gravity Sewer replacement as depicted on drawings including open-cut installation, tie-ins, trenching and backfilling, dewatering, flushing, and pressure testing.

D. **Demobilization and Site Restoration.** Following completion of all facility installation and testing the CONTRACTOR shall be required to demobilize all equipment, and restore the site as specified in **Section 02950 – Site Restoration**, and all other applicable sections. Work shall include, but is not limited to, the following tasks:

1. Removal of security barriers.

2. Removal of the temporary piping and all temporary utility connections.

3. Restore construction facilities and vegetation as needed.

4. Restore fencing and sodded and asphalt areas to pre-existing or better conditions.

1.5 CONTRACTOR USE OF SITE

A. The CONTRACTOR shall not use the private property of the surrounding parcels, unless written permission is obtained from the property owner, for any of its construction operations. A copy of the written permission received by the CONTRACTOR shall be provided to the ENGINEER and OWNER.

1.6 OUTAGE PLAN AND REQUESTS

A. Unless the Contract Documents indicate otherwise, the CONTRACTOR shall not remove from service, de-energize, or modify settings for any existing operating tank

pipeline, valve, channel, equipment, structure, road, or any other facility without permission from the OWNER.

1.7 PRECONSTRUCTION CONFERENCE

A. Prior to the commencement of WORK at the Site, and within 7 days after the date of commencement as stated in the Notice to Proceed, a preconstruction conference will be held at a mutually agreed time and place. The conference shall be attended by the CONTRACTOR'S Project Manager, its superintendent, and its subcontractors as the CONTRACTOR deems appropriate. Other attendees will be:

1. ENGINEER,

2. Representatives of OWNER,

3. Governmental representatives as appropriate, and

4. Others as requested by CONTRACTOR, OWNER, or ENGINEER.

B. The CONTRACTOR shall bring the preconstruction conference submittals in accordance with **Section 01340 – Submittal Procedures**.

C. The purpose of the conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The complete agenda will be furnished to the CONTRACTOR prior to the meeting date. However, the CONTRACTOR should be prepared to discuss all of the items listed below.

1. Status of CONTRACTOR's insurance and bonds,

2. CONTRACTOR's tentative schedules (work activities, critical path),

3. Transmittal, review, and distribution of CONTRACTOR's submittals,

4. Processing applications for payment,

5. Maintaining record documents,

6. Critical work sequencing,

7. Authority for field decisions,

8. Change Orders and processing requirements.

9. Use of Site, and storage areas, security, housekeeping, and OWNER's needs,

10. Major equipment deliveries and priorities,

11. CONTRACTOR’S responsibility for safety and first aid and personnel assignments, and Site Safety/Security Plans,

12. Daily Report Form which the CONTRACTOR will furnish, and

13. Submittal Transmittal Form which the ENGINEER will furnish.

D. The ENGINEER will preside at the preconstruction conference and will arrange for keeping and distributing the meeting minutes to all persons in attendance.

E. The duration of the preconstruction conference is anticipated to take no less than 2 hours; the CONTRACTOR and his respective subcontractors and personnel should plan accordingly.

1.8 Progress Meetings

A. The CONTRACTOR will schedule and hold regular biweekly, or monthly progress meetings throughout construction. The frequency of progress meetings shall be determined by OWNER and ENGINEER during the pre-construction meeting and is subject to change as required.

1. The purpose of the meetings is to review the progress of the WORK, maintain coordination of efforts, discuss changes in scheduling, and resolve other problems which may develop.

B. The CONTRACTOR, ENGINEER, and all subcontractors active on the Site shall attend each meeting. CONTRACTOR may at its discretion request attendance by representatives of its suppliers, manufacturers, and other subcontractors.

C. During each meeting, the CONTRACTOR shall present any issues that may impact its progress with a view to resolve these issues expeditiously.

D. The progress of each element of current work shall be discussed as to whether it is ahead of schedule, on time, or behind time in relation to the updated progress schedule. Items of significance which could affect the progress of the work, including schedule revisions, shall be discussed to ensure that current and subsequent work will be completed within the Contract time.

E. Methods to expedite behind time work shall be determined and commitments secured for restoring the scheduled date for the entities involved.

F. The CONTRACTOR will preside at the progress meetings and will arrange for keeping and distributing the minutes. Within three (3) days after each meeting, copies of the minutes of the meeting, including a brief summary of progress of the work since the previous meeting, shall be distributed to each present or who should have been present. Whenever revisions to the progress schedule have been made or recognized at the progress meeting, a copy of the revised schedule shall accompany the minutes distributed.

1.9 ADMINSTRATIVE AND SUPERVISORY PERSONNEL

A. In addition to a Project Superintendent, the CONTRACTOR shall provide a dedicated Project Manager specific to this project as a supervisor to oversee proper performance

of the WORK. The Project Manager shall attend any scheduled meetings and have the authority to make decisions on behalf of the CONTRACTOR. The Project Manager shall attend the site at a minimum once a day to evaluate the construction and to prepare a daily job report. The Project Manager shall be responsible for all coordination, document handling, submittals review and processing, quality control, and project scheduling. The Project Manager, once assigned, shall not be replaced without prior consent of the OWNER and ENGINEER.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION (NOT USED)

END OF SECTION

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 -- GENERAL

1.1 SCOPE

A. Payment for various items of the Bid Schedule, as further specified herein, shall include all compensation to be received by the CONTRACTOR for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor operations and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the WORK all in accordance with requirements of the Contract Documents, including all appurtenances thereto, and including all costs of permits and cost of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA). No separate payment will be made for any item that is not specifically set forth in the Bid Schedule, and all costs therefore shall be included in the prices named in the Bid Schedule for the various appurtenances needed to complete the items of work.

1.2 UNIT PRICE ITEMS LABELED “LUMP SUM (LS)”

A. Measurement for payment of the “Lump Sum” items will be based upon the completion of the work as a lump sum unit, complete, as specified and as indicated.

B. Payment for completion for the “Lump Sum” items will be made at the price named in the Contract Summary which price shall constitute full compensation for completing said work.

1.3 UNIT PRICE ITEMS BASED UPON FOOTAGE

A. Measurement of the footage for linear foot items including will be recorded by the foot with one complete foot as the smallest unit of length credited to the CONTRACTOR

B. Payment will be based on actual quantities furnished, installed, or constructed in accordance with the CONTRACTOR’s Contract Summary.

1.4 ABORTED TESTING

A. No payment for any portion of the aborted test or recovery period will be made to the CONTRACTOR.

PART 2 -- PRODUCTS (NOT USED)

3.1. EXECUTION CONTRACT SUMMARY:GENERAL WORK

A. GENERAL

1. GENERAL REQUIREMENTS AND MOBILIZATION (Bid Item No. 1)

   a. Payment shall be made at the Contract lump sum price. The lump sum price shall include temporary facilities, the cost of insurance, bonds, licenses and other miscellaneous administrative costs not specifically identified in the costs of any other work or any other pre-construction expenses necessary for the start of Work, excluding the cost for construction materials.

2. DEMOBILIZATION (Bid Item No. 2)

   a. Payment for demobilization shall be made at the Contract lump sum price corresponding to this line item and shall include all materials, labor, equipment, and services necessary to complete site clean-up, final submittals, touch-up and repair, demobilization, record drawings, and project closeout documents for the Work that will be required for all improvements associated with the Gravity Sewer Replacement.

3. AUDIO – VIDEO RECORD (Bid Item No. 3)

   a. Measurement of various items for Audio - Video Preconstruction Records will not be made for payment, and all items shall be included in the lump sum price. This lump sum shall include the taping and recording of conditions along the project route, easements, and right-of-way centerline within the project limits.

   b. Payment shall be made at the Contract lump sum price for Audio - Video Preconstruction Record as measured above, which price and payment shall be full compensation for all materials, equipment, labor, taping, and other such items as may be necessary to complete the item of work.

4. MAINTENANCE OF TRAFFIC (Bid Item No. 4)

   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 work and operations required to furnish, erect, and maintain all necessary traffic control and safety devices in accordance with the latest Manual of Uniform Traffic Control Devices (MUTCD) and the latest Florida Department of Transportation Roadway Design Standards (FDOTRDS). Maintenance of traffic shall include both vehicular access to the limits of construction, commercial and residential driveway access, and the pedestrian traffic along the existing sidewalk within the limits of the project. CONTRACTOR shall maintain access for local traffic with destinations within the project limits at all times. Temporary obstructions of existing driveways shall be limited to 4 hours per 24hour period between 9am and 3pm weekdays only. If during construction access for local traffic changes, then CONTRACTOR shall notify the owner(s) a minimum of 3 business days in advance.

   c. CONTRACTOR shall be responsible for developing a detailed Maintenance of Traffic plan which is specific to the construction of this project.

d. FDOT and the City of Cocoa Beach require the maintenance of traffic plans be submitted for review and approval. Plans shall be signed and sealed by a registered professional engineer FDOT or the City of Cocoa Beach may consider requests from CONTRACTOR for changes to the maintenance of traffic plan provided they are in accordance with the MUTCD and FDOTRDS. Approval shall be required prior to implementation of the Maintenance of Traffic plan or any modifications thereto within City right-of-way.

e. Cost associated with preparation, submission for review, and implementation of the Maintenance of Traffic Plan shall be included in this bid item.

5. DEWATERING CONTAINMENT AND DISPOSAL (Bid Item No. 5)

a. Payment will be made at the lump sum price submitted on the Bid Schedule. Payment shall be full compensation for all labor, materials, and equipment required to dewater the sanitary sewer mains during construction. This bid price shall constitute full payment for such measures including, but not limited to, dewatering, filtering of water, groundwater sampling and testing needed for permitting or compliance with FDEP requirements, removal and transportation of dewatered material to a designated disposal site, and proper disposal of the material in accordance with all local, state, and federal regulations.

6. LOCATE UTILITIES IN ADVANCE OF CONSTRUCTION (Bid Item No. 6)

a. Payment will be made at the lump sum price submitted on the Bid Schedule. Contractor shall furnish all labor, materials and equipment necessary to physically locate all utilities in the immediate project area using non-destructive digging equipment, supplies and personnel experienced in the use of subsurface utility engineering (SUE) to determine the precise horizontal and vertical positions of utilities, specified herein, and/or as directed by the Engineer. CONTRACTOR shall perform utility locates at least 14 calendar days in advance of construction in order to request clarification if required from the engineer. The Engineer will have 7 calendar days to respond. The contractor is hereby notified that deviations in the design alignment will be permitted due to existing utility conditions. The alignment deviations will be the contractors responsibility to coordinate and as-built throughout construction. If alternate construction means are required for the installation of the materials along a new alignment, those alternate methods will be at the contractors expense.

b. It is the responsibility of CONTRACTOR to officially notify “Sunshine,” “Dig Safe,” or the utilities directly prior to commencing any work. CONTRACTOR shall coordinate all existing utility adjustments with the appropriate utility provider. Copies of the issued Sunshine locate tickets and photographs of the locates, including dates and location of the photographs shall be submitted to the City. The cost of locating and documenting all underground facilities shall be included in Bid Item No. 6, Utility Coordination.

c. Additional “soft dig” investigation may be required under this contract to determine existing utility elevations near all conflict areas as shown on the plans. The data from these areas must be evaluated by the Engineer prior to commencement of any existing utility diversions. It shall be CONTRACTOR’s responsibility to identify any additional conflict points following utility locates and present these to the Engineer with elevation data.

B. GRAVITY SEWER REPLACEMENT

1. FURNISH AND INSTALL PVC GRAVITY SEWER PIPE VIA OPEN-CUT (Bid Items Nos. 7, 8, and 9)

a. Payment for furnishing and installing 6”, 8” and 12” (open cut) diameter gravity sewer pipelines via open-cut construction as shown in the Contract Documents will be based on the laying length of the pipe in linear feet actually placed as measured along the centerline of the completed pipe including the lengths of rubber boot and fittings. Contractor shall furnish all labor, materials and equipment necessary to complete the item of work. Payment for pipe will be made at the Contract unit price per linear foot for the size and type installed, which price and payment shall be full compensation for all clearing, grubbing, trenching, protection and/or support of existing utilities including pole vibration and deflection monitoring, CLSM, sheeting and shoring, pipe bedding, backfill and compaction, erosion control, testing, and all equipment and all other work necessary to complete the installation as specified in the contract documents.

2. FURNISH AND INSTALL 8”X8” SS WYE (Bid Items No. 10)

a. Payment for furnishing and installing 8" x 8" Wyes, as specified in the Contract Documents, will be calculated based on the actual quantity of Wyes installed. The Contractor is responsible for providing all necessary labor, materials, and equipment to complete the work. This price and payment will constitute full compensation for all activities such as clearing, grubbing, testing, and any other work required to complete the installation as specified in the contract documents.

3. FURNISH AND INSTALL SANITARY SEWER MANHOLE (Bid Item No. 11)

a. Measurement and Payment will be paid for each sewer manhole actually furnished, installed and accepted. Payment for the work will be made at the Contract Unit Price and shall be full compensation for the item of work including, spectrashield coating; excavation; backfilling and compaction and density testing when backfilling; all sheeting, shoring and bracing; protecting existing structures, utilities and property; cleaning up the site; disposal of debris; surface preparation; furnishing all labor, materials, tools and equipment for manhole construction, including manhole frames, covers, inside or outside drops, all pipe connections, leakage testing, and all work appurtenant thereto.

4. CONNECTION TO EXISTING MANHOLE (Bid Item No. 12)

a. Payment for standard connections, drop connections, service lateral connections and force main connections to existing manholes will be at the unit price set forth

in the contract for the size and type of connection. The unit price will constitute compensation in full for each connection actually furnished and installed including excavation; native soil backfill; compaction; coring; piping; fittings; rubber boot or sand sleeve; grouting and repair to existing manhole wall section; placing and removing all traffic signs and barriers and maintaining traffic plus all incidental work including all labor, materials, tools and equipment.

4. CONNECTION TO EXISTING 8” VCP PIPE (Bid Item No. 13)

    a. Payment for the connection of the proposed PVC pipe to the existing 8” VCP pipe will be at the Contract unit price per each connection completed and payment shall be full compensation for excavation and trenching as required, cutting and preparation of the existing VCP pipe, furnishing and installing all necessary fittings, adapters, and couplings, connection of the new 8" PVC DR 26 pipe to the existing VCP, including alignment and grade adjustments plus all incidental work including all labor, materials, tools and equipment.

5. REMOVAL OF PIPE (Bid Items No. 14 and 15)

    a. Payment to remove existing mains (various sizes) and all associated appurtenances and fittings incidental to construction of new facilities, will be made at the Contract unit price per linear foot for all mains designated to be removed in accordance with the project technical specifications and the Drawings.

6. ABANDON PIPE IN PLACE WITH GROUT (Bid Item No. 16)

    a. Payment to abandon and grout existing mains (various sizes) and all associated appurtenances and fittings incidental to construction of new facilities, will be made at the Contract unit price per linear foot for all mains designated to be grouted in accordance with the project technical specifications and the Drawings.

7. REMOVAL OF EXISTING 4’ MANHOLE (Bid Item No. 17)

a. Payment to remove existing manholes and all associated appurtenances incidental to construction of new facilities, will be made at the Contract unit price per each off all manholes designated to be removed in accordance with the project technical specifications and the Drawings.

8. ASPHALT MILL AND OVERLAY (Bid Item No. 18)

a. Measurement and Payment will be paid for each square yard of existing asphalt layer removed and each square yard of new 1.5” asphalt layer applied and accepted. Payment for the work will be made at the Contract Unit Price and shall be full compensation for the item of work including, but not limited to, milling and removal of existing asphalt layer to a specified depth, cleaning and preparing the surface, repairing any defects, and applying a new layer of asphalt of a specified thickness. The work also includes the disposal of debris, and all work appurtenant thereto. All pavement replaced shall meet the requirements of the Agency (FDOT and City of Cocoa Beach) responsible for the maintenance of the pavement.

9. ASPHALT RESTORATION (Bid Item No. 19)

a. Payment for Asphalt Removal and Replacement will be made at the Contract unit price per square yard for the respective thickness, which price and payment shall be full compensation for all cutting, excavation, clean fill material, compaction, stabilized subgrade, grade aggregate base course, leveling course, prime and surface courses, removing and disposing of existing material, protecting and replacing existing pavement. All pavement replaced shall meet the requirements of the Agency (FDOT or the City) responsible for the maintenance of the pavement.

10. SIDEWALK RESTORATION (Bid Item No. 20)

a. Measurement and Payment will be paid for each square yard of sidewalk actually removed, replaced, and accepted. Payment for the work will be made at the Contract Unit Price and shall be full compensation for the item of work including, but not limited to, removal and disposal of any damaged or displaced sidewalk sections, preparation of the subgrade, and installation of new concrete sidewalk sections. The work also includes the necessary traffic control measures, restoration of adjacent surfaces, and all work appurtenant thereto.

11. SOD RESTORATION (Bid Item No. 21)

a. Measurement and payment shall be made at the Contract unit price per square yard of sod installed, which price and payment shall be full compensation for all materials, equipment, labor, and other such items as may be necessary to complete the item of work.

12. CURB AND GUTTER RESTORATION (Bid Item No. 22)

a. Measurement of Curb and gutter restoration will be based on the actual linear feet of curbs to be removed and restored. Payment for Curb and gutter restoration will be made at the contract unit price per linear feer for all labor and equipment necessary to remove, dispose of existing curb, backfill area with clean fill, compact and grade area as specified in the Contract documents.

13. SANITARY SEWER BY-PASS (Bid Item No. 23)

a. Measurement and Payment for the work will be made at the Contract daily Lump Sum Price and shall be full compensation for the item of work.

b. The Daily Lump Sum Price shall be applied per calendar day that the bypass system is actively in use, as determined and approved by the City. The total compensation for this item will be calculated by multiplying the Daily Lump Sum Price by the actual number of approved bypass days.

c. Measurement and payment shall include all labor, materials, equipment, tools and incidentals for pump setup, plugging, pumping and diversion of sewage flow, development of the flow control and bypassing plan, setup, pumps, piping, fuel/electricity, maintenance, transportation and storage, temporary bypass and service piping, confined space entry and equipment, inserting and removing pipe plugs, constructing bulkheads, pumping flows, monitoring water levels, installing bypass/diversion piping, trenching, jacking and boring, abandoning the jacked casing, plating for diversion piping, backfill, compaction, placing temporary pavement, and all other necessary equipment, work, and materials required to accomplish sewage by-passing until completion of the rehabilitation process in accordance with the Plans and Specifications.

14. PAVEMENT MARKING (Bid Item No. 24)

a. Measurement and Payment for the work will be made at the Contract linear foot Price and shall be full compensation for the item of work including, but not limited to, application of traffic lines, symbols, and markers in accordance with the local and state regulations. The work also includes the necessary surface preparation, and all work appurtenant thereto.

C. DEDICATED ALLOWANCE ITEMS

1. LOCAL GOVERNMENT PERMITS AND FEES - ALLOWANCE (Bid Item No. 25)

   a. Payment will be made to the Contractor based on actual invoiced amounts paid by the Contractor to obtain required FDEP Notice of Intent to Discharge Stormwater from Construction Activities and any other local permits required.

2. CONTINGENCY FUND – ALLOWANCE (Bid Item No. 26)

   a. This bid item is a contingency allowance that is established for miscellaneous work items such as testing to be determined by the OWNER. The CONTRACTOR shall furnish all labor, materials, equipment, and incidentals to complete the additional work requested by the OWNER or other changes approved by the OWNER. The OWNER is not obligated to utilize any of the funds allocated to this pay item. Proposals for allowance work shall be submitted to the OWNER for approval prior to initiating work, and any work under this pay item and associated payment shall be based on a time and material and equipment basis. Final invoices and other supporting documentation shall be submitted for final payment of work

   b. Work not confirmed by the OWNER or the ENGINEER in writing prior to repair may not be measurered for payment.

END OF SECTION

SECTION 01030

SPECIAL PROJECT PROCEDURES

PART 1 – GENERAL

1.1 WORKMANSHIP, MATERIAL AND EQUIPMENT

A. When a particular product if specified or called for, it is intended and shall be understood that the proposal tendered by the Contractor included those products in his bid. Should the Contractor desire products equal to those specified, the Contractor shall furnish information as described in the Standard General Conditions. The alternate product or products submitted by the Contractor shall meet the requirements of the Specifications and shall, in all respects, be equal to the products specified by name herein.

B. All apparatus, mechanism, equipment, machinery, and manufactured articles for incorporation into the Work shall be the new and unused standard products of recognized reputable manufacturers.

C. Contractor must provide his own disposal of excavation that he removes from the site.

D. All work within the Florida Department of Transportation (FDOT) right of way will be prosecuted in accordance with the most recent Standard Specifications for Road and Bridge Construction and the FY 2024-25 Standard Plans for Road and Bridge Construction.

1.2 CONTRACTOR PROVIDED STAGING AREA

A. The Work of this project is to be performed in a congested area that affords minimal and limited space that the Contractor may use to stage construction activities such as material storage, parking, or tool & supply storage. The Contractor shall secure staging area(s) as he may require, and the cost shall be included as part of the price bid for the work.

B. Appropriate temporary security fencing and effective erosion control measures shall be provided for the staging area(s). Effective measures shall be employed to prevent soil, mud, or dust from being tracked onto roadway surfaces between the site of the work and the staging area. The cost to provide and maintain temporary security fencing and erosion control measures, and to clean debris tracked onto roadways, shall be considered an incidental project cost shall not be separately measured for payment.

C. When the Work of this project is completed, and before final payment is made to the Contractor, the staging area shall be restored according to the agreement between the Contractor and the staging area owner including removal of temporary fencing and erosion control measures. Roadway and sidewalk damage that may have occurred between the project site and staging

area because of construction equipment operation between the two sites shall be repaired, and the roadways and sidewalks shall be cleaned, to the satisfaction of the Owner's Representative and Owner. The Owner may withhold payment retainage to the Contractor until the requirements of this paragraph are satisfied.

1.3 PROVISIONS FOR CONTROL OF EROSION

A. Sufficient precautions shall be taken during construction to minimize the run-off of polluting substances such as silt, clay, fuels, oils, bitumens, calcium chloride, or other polluting materials harmful to humans, fish, or other life, into the supplies and surface waters of the state. Control measures must be adequate to assure that turbidity in the receiving water will not be increased more than 10 nephelometric turbidity units (NTU), or as otherwise required by the state or other controlling body, in water used for public water supply or fish unless limits have been established for the water. In surface water used for other purposes, the turbidity must not exceed 25 NTU unless otherwise permitted. Special precautions shall be taken in the use of construction equipment to prevent operations which promote erosion.

B. Comply with the requirements of the EPA-NPDES general permit for stormwater discharges and the stormwater pollution prevention plan developed for the project.

1.4 WARRANTIES

A. The Contractor and the materials manufacturers shall warranty all workmanship and materials for a minimum period of twelve (12) months. Warranty period shall commence on the date of Final Acceptance by the Owner.

B. If, within the warranty period, repairs or changes are required in connection with guaranteed work which, in the opinion of the OWNER, is rendered necessary as the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the Contract, the Contractor shall, promptly upon receipt of notice from the Owner and without expense to the Owner, do the following:

1. Place in satisfactory condition in every particular all of such warranted work and correct all defects herein.

2. Make good all damage which, in the opinion of the OWNER, is the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the Contract.

3. Make good any work or material or site disturbed in fulfilling any such guarantee.

C. If the Contractor, after notice, fails within ten (10) days to proceed to comply with the terms of this warranty, the Owner may have the defects corrected, and

the Contractor and his surety shall be liable for all expense incurred, provided, however, that in case of an emergency where, in the opinion of the Owner, delay would cause loss or damage, repairs may be started without notice being given to the Contractor and the Contractor shall pay the cost thereof.

D. All special guarantees or warranties applicable to specific parts of the work, as may be stipulated in the Contract Specifications or other papers forming a part of this Contract, shall be subject to the terms of this paragraph during the first year of life of each such guarantee.
All special guarantees and manufacturers' warranties shall be assembled by the Contractor and delivered to the Engineer, along with a summary list thereof, before the acceptance of the Work.

E. The Contractor's twelve (12) month warranty or guarantee period shall be part of the project performance bond.

1.5 PUBLIC NUISANCE

A. The Contractor shall not create a public nuisance including, but not limited to, encroachment on adjacent lands, flooding of adjacent lands, or excessive noise.

B. Trash accumulation, including accumulation of lunch-break refuse, shall be avoided. The Contractor shall provide appropriate containers for collecting rubbish and the Contractor’s superintendent shall enforce their use. The containers shall also be regularly emptied.

C. No extra charge may be made for time lost due to work stoppage resulting from the creation of a public nuisance.

1.6 HAZARDOUS LOCATIONS

A. Contractor shall perform work in accordance with OSHA, state and local safety requirements.

1.7 RELOCATIONS

A. The Contractor shall be responsible for the relocation of structures, including but not limited to utility poles, signs, sign poles, fences, piping, conduits and drains that interfere with the positioning of the work as set out on the Drawings. The cost of all such relocations shall be included in the bid.

1.8 HURRICANE PREPAREDNESS PLAN

A. Within 30 days of the date of Notice to Proceed, the Contractor shall submit to the Engineer and Owner a Hurricane Preparedness Plan. The Plan should outline the necessary measures that the Contractor proposes to perform at no additional cost to the Owner in case of a hurricane warning.

B. In the event of inclement weather, or whenever the Owner's Representative or Engineer shall direct; the Contractor shall carefully protect the Work and materials against damage or injury from the weather. If, in the opinion of Owner's Representative or Engineer, any portion of Work or material has been damaged or injured by reason of failure on the part of the Contractor or subcontractors to set protect the Work, such Work and materials shall be removed and replaced at the expense of the Contractor.

1.9 SALVAGE

A. Any existing equipment or material including, but not limited to, valves, pipes, fittings, couplings, etc., which is removed or replaced as a result of construction under this project may be designated as necessary and delivered, to the Owner at a location directed by the Owner, at the Contractor's expense. Removed material not designated as salvage, or that the Engineer decides is not to salvage, shall become the property of the Contractor, removed from the site, and properly disposed at the Contractor's expense.

1.10 PERMITS

A. Upon notice of award, the Contractor shall immediately apply for all applicable permits not previously obtained by the Owner to do the work from the appropriate governmental agency or agencies. The costs for obtaining all permits shall be included under bid item No. 24.

B. The Contractor shall be responsible for complying with all permit conditions for any permits that the Owner has already obtained and are attached to these specifications.

1.11 PUMPING

A. The Contractor shall, for the duration of the contract, and with his own equipment, pump out stormwater runoff or groundwater which may flow, seep or leak into excavations.

B. Contractor shall provide all labor, material, and equipment necessary to provide a pump discharge that is located and made in a manner acceptable to the Owner's Representative; that meets all permit and environmental protection requirements; and meets all federal, state, and local laws. At no time will the Contractor be allowed to pump sewage or polluted water into storm drains, streams, open channels, or onto streets during the course of the work. The Contractor shall also provide all necessary noise suppression devices to minimize pump noise and comply with the noise requirements of the Contract Documents.

1.12 NOTIFICATION OF WORK ON EXISTING FACILITIES

A. Before commencing work on any of the existing structures or equipment, the Contractor shall notify the Owner/Engineer, in writing, at least 10 calendar days in advance of the date he proposes to commence such work.

B. Contractor shall notify the various permitting and regulatory agencies prior to commencing the work permitted and regulated by the affected permits in accordance with the conditions of the permit.

1.13 EXISTING UNDERGROUND PIPING, STRUCTURES AND UTILITIES

A. The attention of the Contractor is drawn to the fact that during excavation, the possibility exists that the Contractor will encounter various water, gas, telephone, electrical, service laterals, irrigation systems or other utility lines not shown on the Drawings. The Contractor shall exercise extreme care before and during excavation to locate and flag these lines so as to avoid damage thereto. Should damage occur to an existing line, the Contractor shall immediately contact the utility and the Owner. If the repair is to be completed by the Contractor it shall be carried out in a timely and quality manner. Costs associated with such damage shall be borne by the Contractor at no additional cost to the Owner.

B. It is the responsibility of the Contractor to ensure that all utility or other poles, the stability of which may be endangered by the close proximity of excavation, are temporarily supported in position while work proceeds in the vicinity of the pole and that utility or other companies concerned be given reasonable advance notice of any such excavation by the Contractor.

C. The locations of existing utilities are shown without express or implied representation, assurance, or guarantee that they are complete or correct or that they represent a true picture of underground piping to be encountered. Encountering existing utilities at different depths or locations than shown on the drawings shall not be cause for additional costs to the Owner.

D. The existing piping and utilities that interfere with new construction shall be rerouted as shown, specified, or required. The Contractor shall excavate sufficiently ahead of the proposed work to predict potential conflicts. Before any piping and utilities not shown on the Drawings are disturbed, the Contractor shall immediately notify the Owner's Representative and Engineer of the location of the pipeline or utility and shall reroute or relocate the pipeline or utility as directed.

E. The Contractor shall exercise care in any excavation to locate all existing piping and utilities. All utilities that do not interfere with completed work shall be carefully protected against damage. Any existing utilities damaged in any way by the Contractor shall be restored or replaced by the Contractor at his expense.

F. It is intended that wherever existing utilities such as water, gas, telephone, electrical, or other service lines must be crossed, deflection of the pipe within recommended limits and cover shall be used to satisfactorily clear the obstruction unless otherwise indicated on the Drawings. However, when in the opinion of the Owner or Engineer this procedure is not feasible, the Engineer may direct the use of fittings for the utility crossing. The Contractor shall verify utility crossings with test pits prior to construction as required by the Engineer.

G. The contractor shall preserve existing sanitary sewers without interruption

while performing the work of the project. When the drawings indicate that all or a portion of a service lateral is to be replaced, the Contractor shall accomplish the work without disruption of service, backup in the structure served, or leakage of sewage into the excavation.

1.14 JOB SITE SECURITY

A. The Contractor shall properly protect the work area to prevent the public from entering the work area. The Contractor shall furnish and erect such barricades, fences, lights, and danger signals and shall provide such other precautionary measures for the protection of persons or property and of the work as necessary. Barricades/fencing shall be painted or have a reflective color that will be visible at night. From sunset to sunrise, the Contractor shall furnish and maintain at least one light at each barricade/fence and enough barricades/fencing shall be erected to keep vehicles or pedestrians from entering on or into any work under construction.

B. The Contractor will be held responsible for all damage to the work due to failure of barricades, fencing signs, and lights to protect it and whenever evidence is found of such damage, the Contractor shall immediately remove the damaged portion and replace it at his cost and expense. The Contractor's responsibility for the maintenance of barricades, signs, and lights shall not cease until the project has been accepted by the Owner.

1.15 RESTORATION

A. The Contractor shall restore disturbed areas progressively as the work continues.

B. All excavation and backfilling shall be in strict conformance with Section 02300 – Earthwork

C. Trench cuts and restoration of the pavement shall be in conformance with Section 02950 – Site Restoration.

D. Temporary restoration of all disturbed asphalt shall consist of a completed base layer as shown on the drawings and a temporary asphalt patch evenly matching the edges of the surrounding pavement. Temporary restoration shall be completed within 5 working days upon backfill and compaction of the excavation/pipe trench. Final restoration shall consist of milling and overlaying the temporary patch and surrounding asphalt as shown on the drawings. Temporary patches consisting of only compacted base material will not be accepted.

E. Where required, sidewalk removal shall be in whole panels. All removed sidewalk panels shall be replaced within 5 working days of removal, even if temporary, to maintain pedestrian safety.

F. Good housekeeping on this project is extremely important and the Contractor will be responsible for keeping the construction site neat and clean, with debris being removed daily as the work progresses or as otherwise directed by the Owner’s Representative. Good housekeeping at the job site shall include:

Removing all tools and temporary structures, dirt, rubbish, etc.; hauling all excess dirt, rock, etc., from excavations to a dump provided by the Contractor; and all clean up shall be accomplished to the satisfaction of the Owner's Representative. Dust shall be controlled daily as may be required. Immediately after construction completion in an area or part thereof (including restoration), barricades, construction equipment and surplus and discarded materials shall be removed by the Contractor.

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

H. The Owner reserves the right to stop new construction until the provisions of this Article are satisfied with no award of additional contract time or cost.

1.16 GEOTECHNICAL INVESTIGATION

A. Contractors shall perform additional geotechnical investigations at the site that they deem necessary for preparing their bids.

1.17 STORMWATER POLLUTION PREVENTION PLAN AND NOTICE OF INTENT

A. Prior to the start of construction, the Contractor shall sign the Stormwater Pollution Prevention Plan and file the Notice of Intent to Discharge Stormwater from Construction Activities with the FDEP along with the associated fee. Compensation for the fee will be paid for from the contract's permitting allowance.

1.18 CONTRACTOR'S AS-BUILT REQUIREMENTS

A. The Contractor shall note the special GIS As-Built requirements described in specification 01050, Field Engineering and Survey.

1.19 CONSTRUCTION SCHEDULE

A. The Contractor shall refer to specification 01340 regarding construction schedule submittal requirements. Mobilization will not be permitted to take place until a critical path initial schedule meeting the requirements of that specification has been submitted and approved.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01050

FIELD ENGINEERING AND SURVEYING

PART 1 -- GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide and pay for field surveying/engineering services required for the Project as follows:

1. Survey work required in execution of the Work.

2. Civil, structural or other professional engineering services required to execute CONTRACTOR's construction methods.

B. The CONTRACTOR shall retain the services of a Registered Land Surveyor licensed in the State of Florida, in good standing, to:

Identify and verify existing horizontal and vertical control points, and well locations as required by the Contract Documents. All surveys with elevation data will indicate NAVD88 as the required datum and a description of the benchmark upon which the survey was based.

C. The accuracy of any method of staking shall be the responsibility of the CONTRACTOR. All engineering for vertical and horizontal control shall be the responsibility of the CONTRACTOR.

D. The CONTRACTOR shall be held responsible for the preservation of all stakes and marks. If any stake or mark is disturbed, the CONTRACTOR shall not proceed with any Work until it has reestablished such points, marks, lines, and elevations as may be necessary for prosecution of the Work.

1.2 QUALIFICATIONS OF SURVEYOR OR ENGINEER

The CONTRACTOR shall retain the services of a Registered Professional Engineer or Land Surveyor of the disciple required for the specific service on the Project, currently licensed in the State of Florida, in good standing.

1.3 SURVEY REFERENCE POINTS

A. Existing horizontal and vertical control points for the project are those designated on Drawings or as may be obtained from or provided by the OWNER.

B. The Surveyor shall locate, protect, and verify horizontal and vertical control points prior to starting site Work, and shall preserve all permanent reference points during construction. CONTRACTOR shall:

1. Make no changes or relocations without prior written notice to the OWNER.

2. Report to the OWNER when any reference point is lost or destroyed or requires relocation because of necessary changes to grades or locations.

3. Require Surveyor to correctly replace project control points that may be lost or destroyed. Establish replacements based on original survey control.

C. Safeguarding Marks

1. The CONTRACTOR shall safeguard all points, stakes, grade mark monuments and bench marks made or established on the Work, bear the cost of reestablishing them if disturbed, and bear the expense of rectifying Work improperly installed due to not maintaining, protecting, or removing without authorization such established points, stakes, and marks.

2. The CONTRACTOR shall safeguard all existing and known property corners, monuments, and marks adjacent to, but not related to, the Work and shall bear the cost of reestablishing the corners, monuments, and marks if disturbed or destroyed.

3. Public land survey corners and accessories destroyed during construction must be restored or replaced according to the provisions of the Florida Statutes, Chapter 177.507, Certification of Corners. Copies of all certified corner records filed with the Florida State Bureau of Surveying and Mapping pursuant to the provisions of Chapter 177.507 must be submitted to the OWNER which will then submit the documents to the OWNER ENGINEER's office.

4. The CONTRACTOR will not be required to replace existing survey tracks (i.e. traverse points) located in roadways which have previously been extended from monuments by others.

1.4 RECORDS

A. In survey field books, the CONTRACTOR's Surveyor shall maintain a complete, accurate log of all control and survey work as it progresses.

B. All surveys conducted for the purpose of supplying record drawings shall be recorded in both the latitude/longitude coordinate system, within an accuracy of 0.001 seconds, and State Planar Florida West NAD 83 Coordinate System, within an accuracy of 0.01 feet. No conversion shall be allowed.

1.5 SUBMITTALS

A. CONTRACTOR shall submit the name and address of its Florida Registered Land Surveyor or Professional Engineer to the ENGINEER.

B. On or before the Substantial Completion date, the CONTRACTOR shall submit certified drawings (signed and sealed by the Florida Registered Land Surveyor) of the items listed below. Those drawings shall be included with, and made a part of, the Project Record Drawings.

1. Certified record survey showing the horizontal and vertical data of each benchmark and monument used for the construction of the Project. The Certified Record Survey

shall be at the same scale as the ENGINEER's line drawings and must comply with Florida Statute 472.027.

2. Certified as built drawings providing, but not limited to, the following where applicable:

Gravity Sewer

- Property Corners
- Tie-In Location and depth
- Pipeline Alignment and Depth
- Any Other Above Ground Appurtenance Items
- All Relocated Utilities

C. All record drawings shall be in AutoCAD Civil 3D 2018 or later using a layer system specified by the OWNER. In addition, the CONTRACTOR is required to submit a coordinate file (i.e. CSV) for use by the OWNER.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION (NOT USED)

END OF SECTION

This Page Is

Intentionally

Blank

SECTION 01065

PERMITS AND FEES

PART 1 -- GENERAL

1.1 GENERAL REQUIREMENTS

A. The CONTRACTOR shall comply with all requirements and conditions of all permits related to the work of this contract and shall comply with provisions of any permits issued. The CONTRACTOR shall be responsible for obtaining any necessary licenses and permits, and for complying with any applicable federal, state, and municipal laws, codes and regulations, in connection with the execution of the Work. The CONTRACTOR shall take proper safety and health precautions to protect the Work, the workers, the public and the property of others.

B. The CONTRACTOR shall obtain and pay for any permits and licenses required to complete the project. CONTRACTOR shall pay costs and fees associated with OWNER required permits and will be reimbursed the full amount following permit approvals.

C. The CONTRACTOR shall schedule all necessary inspections with the regulatory agencies to be in compliance with the permits.

1.2 RIGHT OF ENTRY AGREEMENTS

A. The CONTRACTOR shall be responsible for obtaining right of entry agreements with private property owners as necessary for staging and construction areas in order to properly construct pipeline(s).

1.3 PERMITS

A. City of Cocoa Beach has applied for a City of Cocoa Beach ROW Permit, FDOT Utility Permit and an FDEP Wastewater permit and will provide when obtained. All other permits required by State and Local Agencies necessary for this project, including those for dewatering and relocation of meters with associated plumbing, will be obtained by CONTRACTOR. CONTRACTOR is responsible to provide signed and sealed MOT plans, licenses, insurance, and bonds certificates meeting the requirements specified herein.

B. CONTRACTOR is required to obtain and pay all fees as necessary for the procurement of the Florida Department of Environmental Protection National Pollutant Discharge Elimination System (NPDES) Stormwater Permit. All others permit, licenses, fees necessary for this work are to be secured and paid for by CONTRACTOR. Any costs as a result of permit conditions are the responsibility of CONTRACTOR. Contractor shall prepare Stormwater Pollution Prevention Plan.

C. CONTRACTOR shall provide and maintain dewatering as necessary and conform to all State and County requirements for groundwater discharge. All required groundwater testing during construction is to be provided by CONTRACTOR.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION (NOT USED)

END OF SECTION

This Page Is

Intentionally

Blank

SECTION 01070

ABBREVIATIONS AND ACRONYMS

PART 1 – GENERAL

1.01. LIST OF ABBREVIATIONS

A. Abbreviations for standards and organizations used in the Contract Documents are defined as follows:

AA	Aluminum Association
AABC	Associated Air Balance Council
AAMA	Architectural Aluminum Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
ABMA	American Bearing Manufacturers Association
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
AEIC	Association of Edison Illuminating Companies
AFBMA	Antifriction Bearing Manufacturers Association now recognized as the ABMA
AFPA	American Forest & Paper Association
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AHA	American Hardboard Association
AHRI	Air-Conditioning, Heating and Refrigeration Institute
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Movement and Control Association International
ANSI	American National Standards Institute
APA	Engineered Wood Association (formerly American Plywood Association)
API	American Petroleum Institute
AREMA	American Railway Engineers and Maintenance-of-Way Association
ASAHC	American Society of Architectural Hardware Consultants
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASSE	American Society of Sanitary Engineers
ASTM	ASTM International
AWG	American Wire Gauge
AWI	Architectural Woodwork Institute

AWPA	American Wood-Preservers' Association
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Institute of America (formerly SCPI)
CDA	Copper Development Association
CISPI	Cast Iron Soil Pipe Institute
CMAA	Crane Manufacturers Association of America
CRA	California Redwood Association
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standard (U.S. Department of Commerce)
DHI	Door and Hardware Institute
DIPRA	Ductile Iron Pipe Research Association
EEI	Edison Electric Institute
EJCDC	Engineers' Joint Contract Documents Committee
EPA	Environmental Protection Agency
FCC	Federal Communications Commission
FCI	Fluid Controls Institute
Fed Spec	Federal Specification
FGMA	Flat Glass Marketing Association
FHWA	Federal Highway Administration
FIA	Factory Insurance Association
FM	Factory Mutual
FSA	Fluid Sealing Association
HEI	Heat Exchange Institute
HMI	Hoist Manufacturers Institute
HPMA	Hardwood Plywood Manufacturers Association
HTI	Hand Tools Institute
I-B-R	Institute of Boiler and Radiator Manufacturers
IEEE	Institute of Electrical and Electronics Engineers
IBC	International Building Code
IES	Illuminating Engineering Society
IFI	Industrial Fasteners Institute
IPCEA	Insulated Power Cable Engineers Association
IRI	Industrial Risk Insurers
ISA	International Society of Automation
LEED	Leadership in Energy and Environmental Design

MHI	Materials Handling Institute
MIL	Military Specification
MMA	Monorail Manufacturers Association
MSS	Manufacturers Standardization Society of Valve and Fitting Industry
NAAMM	National Association of Architectural Metals Manufacturers
NACE	NACE International
NBBPVI	National Board of Boiler and Pressure Vessel Inspectors
NBS	See NIST
NCSPA	National Corrugated Steel Pipe Association
NEBB	National Environmental Balancing Bureau
NEC	National Electrical Code
NECA	National Electrical Contractors Association
NEII	National Elevator Industry, Inc.
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NIST	National Institute of Standards and Technology (formerly NBS)
NLA	National Lime Association
NPC	National Plumbing Code
NPT	National Pipe Thread
NRMCA	National Ready Mixed Concrete Association
NSC	National Safety Council
NSF	NSF International (formerly National Sanitation Foundation)
NTMA	National Terrazzo and Mosaic Association
NWMA	National Woodwork Manufacturers Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PCI	Precast/Prestressed Concrete Institute
PS	Product Standard
RIS	Redwood Inspection Service
SAE	SAE International
SDI	Steel Door Institute
SFPA	Southern Forest Products Association
SI	Systéme International des Unités (International System of Units)
SIGMA	Sealed Insulating Glass Manufacturers Association
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association

SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SPFA	Steel Plate Fabricators Association
SPI	Society of the Plastics Industry
SPTA	Southern Pressure Treaters Association
SSFI	Scaffolding, Shoring & Forming Institute, Inc
SSPC	SSPC: The Society for Protective Coatings
TABB	Testing, Adjusting, and Balancing Bureau
UL	Underwriters' Laboratories
USBR	U.S. Bureau of Reclamation
USGBC	U.S. Green Building Council
WEF	Water Environment Federation

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01152

APPLICATIONS FOR PROGRESS PAYMENTS

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Submit Applications for Progress Payments to ENGINEER in accordance with the schedule established by Conditions of the Contract and Agreement between OWNER and Contractor.

1.02 RELATED REQUIREMENTS

A. Agreement between OWNER and Contractor.

B. Conditions of the Contract: Progress Payments, Retainages and Final Payment.

C. Section 01025: Measurement and Payment.

1.03 FORMAT AND DATA REQUIRED

A. Submit applications typed on forms provided by the OWNER.

B. Supporting Data

1. To receive approval for payment for materials stored but not incorporated into the work, submit the following appended to the application for payment.

a. Copies of delivery tickets.

b. Copies of vendor invoices (which match delivery tickets) included with the application for payment in which the materials first appear.

c. Copies of paid vendor invoices from the previous application showing that Contractor has paid for stored materials. OWNER may deduct amounts from current Application for Payment where Contractor fails to provide proof of payment for stored materials claimed in previous applications.

a. Unless covered and included by a Change Order, the quantities of materials listed on the Bid Form represent the maximum payable for stored materials.

b. Updated copy of the Progress Schedule.

1.04 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

A. When the OWNER or the ENGINEER requires substantiating data, Contractor shall submit suitable information, with a cover letter identifying:

1. Project

2. Application number and data

3. Detailed list of enclosures

4. For stored products:

a. Item number and identification as shown on application.

b. Description of specific material.

B. Submit one copy of data and cover letter for each copy of applications.

C. In addition, the Contractor's up-to-date mark-up set of contract drawings, will be made available for review. If the mark-up set is not up to date, it will be considered cause for withholding payment.

1.05 PREPARATION OF APPLICATION FOR FINAL PAYMENT

A. Fill in Application form as specified for progress payments.

B. Use continuation sheet for presenting the final statement of accounting.

1.06 SUBMITTAL PROCEDURE

A. Submit Application for Payment to ENGINEER at the times stipulated in the Agreement.

B. Number: Seven copies of each application, all originally signed.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01310

CONSTRUCTION PROGRESS SCHEDULE

PART 1 – GENERAL

1.01. GENERAL OVERVIEW.

A. A Progress Schedule shall be used to control the Work and to provide a definitive basis for determining project progress. The Progress Schedule shall be prepared, maintained and updated by Contractor and historical dates agreed monthly with Engineer. Contractor shall submit a preliminary Progress Schedule and a Progress Schedule for acceptance by Engineer. These schedules shall be Contractor's working schedules and shall be used to plan, organize and execute the Work, record and report actual performance and progress, and show how Contractor plans to complete all remaining Work as of the end of each progress report period.

B. The Progress Schedule shall comprise all the detailed construction-related activities using the critical path method (CPM). The Progress Schedule shall provide sufficient detail and clarity to reflect the intricacies and interdependencies of activities so Contractor can plan, schedule, monitor, control and report on the progress of his work. In addition, it shall provide Engineer and Owner a tool to monitor and follow the progress for all phases of the Work.

1.02. PRE-CONSTRUCTION SCHEDULING CONFERENCE.

A. Engineer will conduct a pre-construction scheduling conference with Contractor to review requirements for the schedules including Schedule of Values and schedule configuration. The conference shall be conducted sufficiently early to allow Contractor to submit the preliminary Progress Schedule within ten days of the Effective Date of the Contract.

B. At this meeting, Contractor shall explain in detail the procedure to be used to develop the schedule activity cost-loading or Schedule of Values and cash flow. This procedure is subject to the review and acceptance of Engineer.

1.03. PRELIMINARY PROGRESS SCHEDULE

A. Following the pre-construction scheduling conference but within ten calendar days after the Effective Date of the Contract, Contractor shall submit a preliminary Progress Schedule for review by Engineer. The preliminary Progress Schedule shall show detailed construction-related

activities for the first 45 days of the project. The remainder of the Contract activities shall be shown as summary bars within the milestones of the Work. If Engineer has comments on the preliminary Progress Schedule, Contractor shall make the necessary changes and resubmit it within ten calendar days. No progress payments will be made during the period specified above for the preliminary Progress Schedule until the preliminary Progress Schedule has been accepted by Engineer.

B. The preliminary Progress Schedule shall:

1. Illustrate a feasible schedule for completion of the Work within the Contract Times and Milestones specified.

2. Provide an elementary example of the schedule in the format to be used for the Progress Schedule.

3. Include the activity code structure as described in Paragraph 19 of this specification.

C. Preliminary Progress Schedule Submittal Format: Contractor shall submit two compact disks of the preliminary Progress Schedule. Compact disks shall be read-write and enable the use of the schedule as an executable file as described herein. A brief narrative shall accompany the submittal, describing Contractor's scheduling approach to the project. The narrative shall include a description of the Contract milestones, approach for construction activities during the period of the preliminary Progress Schedule, description of the general approach of the activities for the work beyond the preliminary Progress Schedule period, a description of the project's critical path, identification of critical long-lead submittals, and planned outages. The narrative shall also incorporate activity codes, calendars, weather days, milestone constraints, and work breakdown structure in accordance with the requirements specified herein.

1.04. PROGRESS SCHEDULE

A. The Progress Schedule comprises all the construction-related activities for the Work and shall show the order in which Contractor proposes to carry out the work. Contractor shall include milestones, coordination necessitated by limited access and available work areas, and the availability and use of manpower, material and equipment. Contractor shall use the Progress Schedule to plan, schedule and coordinate the Work including activities of subcontractors, equipment vendors, and suppliers.

B. The Progress Schedule shall be to the level of detail acceptable to Engineer, and shall include the following:

1. Organization and structural breakdown of the Project;

2. Milestones and completion dates;

3. Type of work to be performed and the labor trades involved;

4. Purchase, manufacture and delivery activities for major materials and equipment;

5. Preparation, submittal, and acceptance of shop drawings and material samples;

6. Deliveries of owner-furnished equipment and/or materials;

7. Acceptances required by regulatory agencies and/or other third parties;

8. Assignment of responsibility for each activity;

9. Access requirements to work areas;

10. Identification of interfaces and dependencies with preceding, concurrent and follow-on contractors;

11. Tests, submittal of test reports and acceptance of test results;

12. Planning for phased or total acceptance by Owner; including start up and commissioning;

13. Identification of any manpower, material and equipment restrictions.

14. Sequence of construction to maintain plant operations;

15. Planned outages.

C. The activities included in the Progress Schedule shall be defined in work days. Durations shall be based on the labor (crafts), equipment, and materials required to perform each activity on a normal workday basis. Activity durations shall be 20 working days or less except in the case of non-construction activities such as procurement of materials, delivery of equipment, and concrete curing. All durations shall be the result of definitive manpower and resource planning by Contractor to perform the Work, in consideration of contractually defined on-site work conditions and Contractor's planned means and methods.

D. When the Progress Schedule is accepted by Engineer, Engineer will save a copy of the Progress Schedule as the baseline schedule, and will use it for analysis of Contractor's progress.

E. Contractor shall update the Progress Schedule monthly.

1.05. ELECTRONIC PROGRESS SCHEDULE FORMAT AND REPORTING

A. The Progress Schedule shall be created using Primavera P6 scheduling software. Contractor shall use Engineer's file-naming format throughout the project.

a. Electronic schedule files shall be saved with .XML or .XER file extensions.

b. Primavera Project Manager settings for "Baseline Type" shall be used in the following manner:

i. Select <None> as the baseline type for the preliminary Progress Schedule submittal.

ii. Once the preliminary and Progress Schedule are accepted, the baseline type shall be named <Initial Plan>.

iii. Each subsequent Progress Schedule update shall set the baseline type to <Last Performance Update>.

c. The data date for schedule calculation in the preliminary Progress Schedule and Progress Schedule shall be set as the date of the Notice to Proceed unless otherwise specified by Engineer.

1.06. SUBMITTALS

A. The Progress Schedule and associated reports shall be submitted to Engineer for acceptance within the period of the preliminary Progress Schedule specified herein. If the Progress Schedule is not submitted, no progress payments will be made after the due date until the Progress Schedule has been submitted.

B. Printouts and electronic layouts required as part of the Progress Schedule submittal and monthly updates are as follows:

1. Summary Schedule: one page milestone and summary schedule, sorted by total Float, early-start, early-finish;

2. Detailed Project Schedule: organized by Work Breakdown Structure (WBS) or area of work; sorted by total Float, early-start, early-finish;

3. Critical Path Schedule: sorted based on the total Float, early-start, early-finish;

4. 60-Day Look Ahead Schedule: sorted by total Float, early-start, early-finish;

5. Activities in Progress: organized by WBS or area of work; sorted by total Float, early-start, early-finish;

6. Cash Flow Trending Report: presented in an S-Curve format based on original planned early start and late start forecasted expenditures. In addition, the historical actual data point(s) are to be graphed within the S-Curve graphic report;

7. Monthly payment projections;

8. Out-of-sequence Report: tabular report showing work performed out-of-sequence.

C. Contractor shall submit additional layouts if directed by Engineer. The submittal shall include the following:

1. Narrative report summarizing the milestones, critical path, project approach including phasing or use of crews, significant submittal and fabrication items, coordination or interface requirements, Owner-provided items, and list of subcontractors and vendors.

2. Graphic reports including critical path report (longest path), summary schedule report, total Float report by early-start early-finish, look-ahead report grouped by work breakdown structure or project phasing, and cash flow projection. Cash flow projections include estimated cumulative cost curves based on early and late start dates and projection of monthly payments over the life of the project

3. The schedule, critical path, and look-ahead schedules shall be submitted electronically in an executable format, using Primavera Project Manager (P6) file format, as described above.

4. A printed version shall be submitted electronically in color to facilitate use of red line markups. Printed electronic files shall be in Portable Document Format (PDF) as generated by BlueBeam

Revu Version 2017 or Adobe Acrobat Professional Version 7.0 or higher. The PDF file(s) shall be fully indexed using the Table of Contents, searchable with thumbnails generated. PDF images must be at a readable resolution. Optical Character Recognition (OCR) capture must be performed on these images so that text can be searched, selected and copied from the generated PDF file. The PDF documents shall have a bookmark created in the navigation frame for each major entry ("Section" or "Chapter") in the Table of Contents. Thumbnails shall be generated for each page or graphic in the PDF file.

5. The narrative and graphic reports shall be provided on 8"x11" paper and E-size plots respectively.

Contractor shall submit 4 copies of each deliverable.

1.07. MONTHLY SCHEDULE UPDATES

A. Monthly Progress Schedule updates shall be submitted for the duration of the Contract on a date agreed to by Owner, Engineer, and Contractor. If monthly Progress Schedule updates are not submitted by the due date, progress payments will be withheld until the required information is submitted.

B. The updated schedule shall be reviewed each month in a meeting with Engineer to verify:

1. Actual start dates,

2. Actual completion dates,

3. Activity percent completion,

4. Revised logic (as-built and projected) and changes in activity durations, cost assigned,

5. Cost influence of change orders, if any,

6. Revisions due to extension of time.

C. Prior to each meeting, Contractor shall prepare a complete and accurate report of current procurement and construction progress through the end of the update period, and a depiction of how Contractor plans to continue the Work to meet all contract completion dates. All network changes and status data agreed to during each update meeting shall be considered as accepted

by both parties unless written notice of any exceptions is given within five calendar days after the meeting.

D. For major network changes that cannot be agreed to during an updating meeting, Contractor shall submit the proposed changes for Engineer's acceptance prior to inserting such changes into the network. Submittals may be in the form of marked-up networks, fragnets, or schedule abstracts, provided they are submitted with a letter of transmittal. A fragnet is defined as a sequence of new activities and/or activity revisions that are proposed to be added to the existing schedule to demonstrate how project events have an impact on the schedule.

1.08. DATA DATE

A. The data date is the re-settable date in P6 that serves as the end of a reporting period. The reporting period will be recorded on a monthly basis, e.g., January 1st through January 31st with the 31st as the data date. If required for coordination purposes by Owner, Engineer will provide specific data dates to be used by Contractor.

1.09. REVIEW PROCESS

A. Engineer will review Contractor's preliminary Progress Schedule and full Progress Schedule submittals within 15 calendar days after receipt of all required information.

B. At the request of Owner or Engineer, Contractor shall participate in any meetings necessary to reach a mutual agreement and acceptance of the preliminary Progress Schedule, Progress Schedules, or Cash Flow Projections.

C. If any of the required submittals are returned to Contractor for corrections or revisions, they shall be resubmitted within ten calendar days after the return mailing date. Resubmittals shall include all information and media included in the first submittal. Review and response by Engineer will be given within 10 calendar days after receipt of each resubmittal.

D. Schedules shall show contract completion of the Work on the Contract completion date and with zero or positive total Float even if Contractor plans to finish early. In no event shall acceptance of the Progress Schedule be a basis for a claim for delay against Owner or Engineer by Contractor for an early finish. A Progress Schedule containing activities with negative Float or that extend beyond the date that the Work is completed and ready for final payment will not be acceptable.

E. Acceptance of the Progress Schedule by Engineer does not relieve Contractor of responsibility for accomplishing the Work by the Contract completion date. Omissions and errors in the accepted Progress Schedule shall not relieve Contractor of obligations under the Contract. Acceptance by Engineer in no way makes Engineer or Owner an ensurer of the Progress Schedule's success or liable for time or cost overruns. Engineer and Owner hereby disclaim any obligation or liability by reason of acceptance of the Progress Schedule by Engineer.

1.10. RESPONSIBILITY FOR SCHEDULE COMPLIANCE

A. Whenever it becomes apparent from the current Progress Schedule that the critical path is delayed and the contract completion date will not be met, Contractor shall mitigate the delay by taking some or all of the following actions at no additional cost to Owner.

1. Increase construction manpower in such quantities and crafts as will bring the project back on schedule within the completion dates and milestones.

2. Increase the number of working hours per shift, shifts per day, working days per week, and the amount of construction equipment, or any combination of the foregoing, to substantially eliminate the backlog of work.

3. Re-schedule activities to achieve maximum practical concurrence of activities and to comply with the schedule date(s).

B. Within ten calendar days of Engineer’s request, Contractor shall submit a recovery schedule and written statement of the steps intended to remove or arrest the delay to the critical path in the schedule. If Contractor fails to submit the required information or should fail to take measures acceptable to Engineer, Engineer with Owner concurrence may direct Contractor to increase man-power, equipment and scheduled work hours to remove or arrest the delay to the critical path and Contractor shall promptly provide such level of effort at no additional cost to Owner.

C. In the event Contractor fails to follow the updated or revised recovery schedule, Owner may elect to withhold progress payments until Contractor complies with the revised schedule.

D. Should Contractor’s efforts not remove or arrest the delay to the critical path of the accepted schedule, then Owner shall be entitled to supplement Contractor’s work-force and equipment to remove and arrest any delay, and shall be entitled to deduct all costs and expenses associated therewith from

payments due to Contractor. If insufficient Contract funds remain, Owner may recover such funds from Contractor and its Surety.

1.11. CHANGES IN THE WORK, DELAYS, AND EXTENSIONS OF TIME

A. When changes in the Work or delays are experienced by Contractor and Contractor requests an extension of time, Contractor shall submit a written time impact analysis to Engineer illustrating the influence of each change or delay to the current Contract Times. Each time impact analysis shall include a fragnet incorporating the change or delay into the Progress Schedule to demonstrate how Contractor was delayed.

B. Each time impact analysis shall demonstrate the estimated time impact based on the events of the change or the delay; the date the change was given to Contractor or the delay incurred, the status of construction at that point in time, and the event time computation of all activities affected by the change or delay. The event times used in the analysis shall be those included in the latest update of the Progress Schedule or as adjusted for the events of delay.

C. Three copies of the time impact analysis and an electronic copy on compact disk shall be submitted within seven calendar days of delay occurrence or direction to proceed with a change is given to Contractor. No time extensions will be considered if the time impact analysis is not submitted within the specified time.

D. Engineer will review Contractor's time impact analysis. Contractor shall furnish such justification and supporting evidence as Engineer deems necessary to determine whether Contractor is entitled to an extension of time. Engineer's review of each time impact analysis will be made within five working days of receipt of the time impact analysis and additional information as required by Engineer, unless subsequent meetings and negotiations are necessary.

E. The Contract Times will be adjusted only for causes specified in paragraph 15. Time extensions will be granted only to the extent that equitable time adjustments for the activity or activities affected exceed the total or remaining Float along the critical path at the time of actual delay. Delays in activities which are not on the critical path and do not affect Contract Times, will not be considered for an extension of time.

1.12. CAUSES FOR EXTENSIONS OF TIME

A. Additional positive total Float in the Progress Schedule generated by efficiencies of Owner or Contractor is a shared commodity to be reasonably used by either party, and belongs exclusively to the Project. Contractor is

not entitled to any additional compensation for completion of the project prior to expiration of the Contract Times.

B. Owner-Initiated Changes. Owner initiated changes to the Work that absorb Float time will not be considered for an extension of time. Owner-initiated changes that affect the critical path of the Progress Schedule shall be grounds for extending or shortening completion dates. Use of Float time for Contractor initiated changes will require Owner's concurrence. Contractor's changes, however, shall give way to Owner-initiated changes competing for the same Float time.

C. Outside Contractor's Control. Events outside of Contractor's control that affect the critical path of the Progress Schedule will be considered for an extension or reduction of the Contract Times.

D. Weather Delays. Contractor shall include the number of days, for each calendar period, from Tables 2 and 3 in the Project Schedule. Days shall be labeled as Extreme Weather Float. Extreme Weather Conditions that affect the Critical Path of the Progress Schedule, in excess of the Extreme Weather Float, will be considered for an extension or reduction of the Contract Times. Notification for all extreme weather related events must be submitted no later than 72 hours after the weather impact date.

E. Engineer will obtain weather data during construction from a reputable source, and will maintain weather records.

F. Engineer will determine Contractor's entitlement to an extension of the Contract Times as a result of weather delays, based on the flow chart in Figure 1-01310and the data included in Tables 1, 2 and 3 . Extensions of time will be granted at the discretion of Engineer for circumstances not covered by the flow chart.

G. Any weather-related extension of Contract Times shall be non-compensable. Efficiencies gained as a result of favorable weather within a calendar month, where the number of days of normally anticipated weather days is less than expected, shall contribute to the project Float and shall not affect the Contract Times.

H. All Extreme Weather Conditions that affect the Critical Path of the Progress Schedule, shall be submitted to Engineer, using form 1-01310 and shall state if any extension is requested and be supported by the relevant weather data.

Table 1 Average Monthly Precipitation (inches) 10 year average 2014 – 2024 NOAA National Centers for Environmental Information, Annual Climatological Summaries											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
3.13	2.47	1.68	3.25	4.21	7.21	7.88	6.29	10.28	4.72	3.37	3.04

Table 2 Average Number of Calendar Days with Precipitation of 0.50 Inches or More in a Single 24-hour Period 10 year average 2014 – 2024 NOAA National Centers for Environmental Information, Annual Climatological Summaries											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4	3	3	3	4	7	8	7	7	5	4	3

Table 3 Average Number of Calendar Days with Temperature of 90 °F 10 year average 2014 – 2024 NOAA National Centers for Environmental Information, Annual Climatological Summaries											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	1	1	6	14	25	24	11	3	0	0

I. Table 3 includes historical weather data for the average number of days recorded where temperature could be considered extreme. Not every day listed in Table 3 will result in an Extreme Weather Condition. A subsequent determination shall be done based on the Heat Index Apparent Temperature or Wind Chill Index.

J. Justification for an extension or reduction of the Contract Times as a result of extreme temperature shall be determined based on the Heat Index Apparent Temperature or Wind Chill Index using formulas below. The Heat Index and Wind Chill Temperature limits for determining the extreme temperature event shall be those listed in Figure 1-01 32 16.

Heat Index:

$$HI = -42.379 + 2.04901523 \times T + 10.14333127 \times RH - 0.22475541 \times T \times RH - 0.00683783 \times T \times T - 0.05481717 \times RH \times RH + 0.00122874 \times T \times T \times RH + 0.00085282 \times T \times RH \times RH - 0.00000199 \times T \times T \times RH \times RH$$

Where:
HI = Heat Index Expressed as an Apparent Temperature in Degrees Fahrenheit (°F)
T = Average Day Temperature in Degrees Fahrenheit (°F)
RH = Average Day Relative Humidity in Percent (%)

If the RH is less than 13% and the temperature is between 80 and 112 degrees Fahrenheit (°F), then the following adjustment is subtracted from HI:

$$ADJUSTMENT = [(13 - RH)/4] \times SQRT\{[17 - ABS(T - 95)]/17\}$$

Where:
HI = Heat Index Expressed as an Apparent Temperature in Degrees Fahrenheit (°F)
T = Average Day Temperature in Degrees Fahrenheit (°F)
RH = Average Day Relative Humidity in Percent (%)
SQRT = Square Root Function

If the RH is greater than 85% and the temperature is between 80 and 87 degrees Fahrenheit (°F), then the following adjustment is added to HI:

$$ADJUSTMENT = [(RH - 85)/10] \times [(87 - T)/5]$$

Where:
HI = Heat Index Expressed as an Apparent Temperature in Degrees Fahrenheit (°F)
T = Average Day Temperature in Degrees Fahrenheit (°F)
RH = Average Day Relative Humidity in Percent (%)

Wind Chill Index:

$$WC = 35.74 + 0.6215 \times T - 35.75 \times V^{0.16} + 0.4275 \times T \times V^{0.16}$$

Where:
WC = Wind Chill Index Expressed as a Temperature in Degrees Fahrenheit (°F)
T = Average Day Temperature in Degrees Fahrenheit (°F)
V = Wind Speed in Miles per Hour (mph)

1.13. AS-BUILT SCHEDULE

A. As a condition precedent to release of final payment, the last update to the Progress Schedule submitted shall be identified by Contractor as the “As-Built Schedule”. The “As-Built Schedule” shall reflect the exact manner in which the project was actually constructed (including actual start and

completion dates, activities, sequences, and logic) and shall be signed and certified by Contractor's project manager.

1.14. SCHEDULING SOFTWARE APPLICATION

A. Scheduling software shall be Primavera Project Manager (P6) without exception.

1.15. SCHEDULE SOFTWARE SETTINGS AND RESTRICTIONS

A. Contractor shall consult with Engineer for acceptable Primavera Project Manager software settings and restrictions. The following shall apply unless otherwise directed by Engineer.

a. Schedule Options:

i. Shall be defined only to "Use expected finish dates";

ii. Scheduling progressed activities to be set to "Use only retained logic", not progress override option;

iii. Critical Path activities defined as total Float less than or equal to zero;

iv. Calculating start-to-start lag from "early start" dates; and computing total Float as "finish Float = late finish – early finish";

v. Calendar to be set for scheduling relationship lag as "Predecessor Activity Calendar."

b. Activity progress shall be shown using Remaining Duration. Date format shall be DDMMYY.

c. Default activity type shall be set to "Independent Task".

d. Date/time activity constraint(s), other than those required by the Contract, will not be allowed unless accepted by Engineer. Contractor shall identify proposed constraints and explain the constraint purpose in the Narrative Report.

e. Lags shall not be used in the creation of an activity that will perform the same function, e.g., concrete cure time. Lag durations contained in the Progress Schedule shall not have a negative value. Contractor shall identify any lag proposed and explain the purpose of the lag in the Narrative Report.

f. Actual Start and Finish dates shall not be automatically updated by default mechanism that may be included in the CPM scheduling software system. Actual Start and Actual Finish dates on the CPM schedule shall be updated by actual work progression.

1.16. ACTIVITY CODES

A. The Primavera (P6) activity codes and work breakdown structure (WBS) to be confirmed or revised by Engineer are listed below. Confirmation or revision of the activity codes and WBS will be provided to Contractor within three workdays of the Effective Date of the Contract. Use of Engineer prescribed activity codes and WBS is mandatory.

B. "Project Codes" as defined by Primavera P6 is reserved for Owner. Only "Activity Codes" at Project Level will be permitted for Contractor use.

Activity Code	**Code Value**	**Description**
Phase	0005	Construction Phase
Construction Phase	A	Milestones
	BC	Administrative
	D	Submittals
	E	Construction Activities
		Closeout Phase
Submittals	SUB	Submittals
	R&A	Review & Approve
	F&D	Fabricate & Deliver

1.17. ACTIVITY RELATIONSHIPS

A. Relationships between activities shall be identified with the following information:

a. Predecessor and successor activity ID.

b. Relationship types:

i. FS - Finish to start

ii. SS - Start to start

iii. FF - Finish to finish

iv. SF - Start to finish – This relationship is not allowed, unless authorized by Engineer.

1.18. PROJECT CALENDARS

A. Project Calendars shall use workdays and calendar days as the planning unit for the schedule. Use of Global Calendars is reserved for Owner. Each calendar shall be set to start on Mondays with holidays in accordance with Owner policy. The following calendars shall be used for each activity except as otherwise accepted by Engineer:

a. 5-Day x 8 Hour Workweek (with holidays) shall be used for 5-day 40-hour workweek activities: Monday through Friday. All holidays and non-work days shall be assigned to this calendar. This calendar shall be used for all normal work activities, submittals, and fabricate and delivery activities. This calendar shall be the default calendar for the project unless otherwise specified.

b. 5-Day x 10-Hour Workweek (with holidays) shall be used for 5-day 50-hour workweek activities: Monday through Friday. All holidays and non-work days shall be assigned to this calendar.

c. 6-Day x 10-Hour Workweek (with holidays) shall be used for 6-day 60-hour workweek activities. Monday through Saturday. All holiday and non-work days shall be assigned to this calendar.

d. 7-Day Calendar (no holidays) shall be used for 7-day workweek activities. No non-work days shall be entered into this calendar.

e. Additional Calendars may be assigned depending on need. However, Contractor shall consult with Engineer before other calendars are entered and/or used in the Progress Schedule.

B. The work day to calendar day correlation shall be based on a single shift and 5-day work week with adequate allowance for holidays, adverse weather and all other special requirements of the Work. Contractor may, at his option, propose alternate baseline calendars to allow a second shift and/or a single shift on Saturdays subject to the concurrence and

acceptance of Owner. Under no circumstances will a schedule be accepted which allows regularly scheduled work on Sundays.

C. The holidays observed by Owner are as follows:

New Year's Day
Memorial Day
July 4th
Labor Day
Thanksgiving Day
Christmas Day

1.19. FLOAT

A. Contractor shall not use Float suppression techniques, including preferential sequencing (arranging critical path through activities more susceptible to Owner caused delay); lag logic restraints; zero total or free Float constraints; extended activity times; or imposing constraint dates other than as required by the Contract. Float suppression will be cause for rejection of the preliminary Progress Schedule or full Progress Schedule and its updates.

1.20. MANDATORY MILESTONES

A. The Contract duration shall be equal to the time period between the Notice to Proceed and the completion of the Work in readiness for final payment. The following milestones are mandatory.

a. Notice to Proceed

c. Milestones, if any, as indicated in Contractor's Bid

c. Substantial Completion as indicated in Contractor's Bid

d. Completion and readiness for final payment, as indicated in Contractor's Bid

B. The following additional milestones are to be considered and incorporated into the Progress Schedule in accordance with the Contract, if applicable.

a. Permit constraints

b. Facility shut down or outage milestone requirements

c. Applicable phasing milestones

d. Other milestones deemed appropriate by Engineer

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

BLACK & VEATCH

Black & Veatch, Water PMCM
201 S Orange Ave# 500, Orlando, FL 32801 USA
P +1 (407) 419-3500

Weather Delay Notification

Owner: City of Cocoa Beach
Banana River Blvd and Atlantic Ave Sewer
Project Limits:
Location:

B&V Project No.: 421730 Project Title:
B&V File No.:
Date[+]: Click here to enter a date.
Prepared By:
Claim Number:

General Contractor:	**Sub-Contractor(s) On-Site:**
Tel: Fax:	

Normal Work Hours:

Impact Date: Click here to enter a date.	Start Time:	End Time:	Total: Hrs.

Weather Conditions: *(Weather Data, River Data, Wind Chill, Heat Index)*

Weather Condition and Duration: [Select One]			Type of Impact: [Select One]		
Period:					
Temperature:	°F	°F	°F	°F	°F
Dew Point:	°F	°F	°F	°F	°F
Humidity:	%	%	%	%	%
Wind Direction:					
Wind Speed:	mph	mph	mph	mph	mph
Wind Gust:	mph	mph	mph	mph	mph
Heat Index/Wind Chill:	°F	°F	°F	°F	°F
Pressure:	in	in	in	in	in
Precipitation:	in	in	in	in	in
Event:					
Conditions:					
River Name: River Level *(Datum)*: *Stage: Action: , Flood:*	ft	ft	ft	ft	ft

	Low Temperature	High Temperature	Average Wind Speed	Total Precipitation	Total Snow
Daily Observation:	°F	°F	mph	in	in

Schedule Impact:

Schedule Data Date: Click here to enter a date.

Activity ID	Activity Description	Critical Path	Anticipated Delay Day	Time Extension Requested
		☐ Yes / ☐ No	☐ Yes / ☐ No	☐ Yes / ☐ No
		☐ Yes / ☐ No	☐ Yes / ☐ No	☐ Yes / ☐ No
		☐ Yes / ☐ No	☐ Yes / ☐ No	☐ Yes / ☐ No

Request:

Comments:

Contractor's Representative: _____ (Project Manager) _____ Date

Withdrawn By: _____ _____ Date

Reason for Withdrawal:

Acceptance:

Received: Click here to enter a date. ☐ Acknowledge ☐ Deny

Remarks:

Construction Manager's Representative: _____ (Resident Project Representative) _____ Date

Owner's Representative: _____ (Project Administrator) _____ Date

† Claim must be submitted not later than 72 hours after the weather impact date.

SECTION 01340

SHOP DRAWINGS AND SUBMITTALS

PART 1 – GENERAL

1.01. SCOPE

A. In accordance with the General Conditions CONTRACTOR shall submit a detailed list of data on items for which shop drawings, construction drawings, and samples are to be submitted. Included in this list shall be the names of all proposed Suppliers furnishing specified items. Review of this list by ENGINEER shall not relieve CONTRACTOR from submitting complete drawings and data and providing materials, equipment, etc., fully in accordance with the Contract Documents.

1.02. IMPLEMENTATION

A. CONTRACTOR Responsibility:

1. All submittals shall be in accordance with the General Conditions and accompanied by a transmittal letter prepared in duplicate containing at least the following information:

a. Date.

b. Project Title and Number.

c. CONTRACTOR'S name and address.

d. The number and revision of each drawing submitted.

e. Notification of Deviations from Contract Documents.

f. Submittal Log Number.

g. Specification title and number.

2. Be responsible for and bear costs of damages which may result from the ordering of material or from proceeding with any part of work prior to the completion of the review by ENGINEER of the necessary submittals unless otherwise authorized by ENGINEER in writing.

3. Notify ENGINEER of the need for making any changes in or manner of the installation which may be required by the materials/equipment which CONTRACTOR proposes to supply, both as it concerns his own work, or any work affected under other parts, headings, or divisions of drawings and specifications.

B. ENGINEER'S REVIEW

1. Submittals will be reviewed in accordance with the General Conditions.

2. Re-submittals will be handled in the same manner as first submittals. On resubmittals CONTRACTOR shall direct specific attention, in writing or on resubmitted drawings, to revisions other than the corrections requested by ENGINEER on previous submissions. CONTRACTOR shall make any additional corrections or clarifications required by ENGINEER.

3. If CONTRACTOR considers any correction indicated on the drawings to constitute a change to the Contract Documents, CONTRACTOR shall give written notice thereof to ENGINEER.

4. No partial submittals will be reviewed. Submittals not complete will be returned to CONTRACTOR for resubmittal.

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

C. SHOP DRAWINGS AND DATA

1. Shop Drawings, as defined in the General Conditions, shall complement design and construction drawings, but shall contain sufficient detail to clearly define all aspects of the construction. These drawings shall be complete and detailed.

2. CONTRACTOR or Supplier's catalog sheets, brochures, diagrams, illustrations and other standard descriptive data shall be clearly marked with specification title and numbers to identify pertinent materials, product or models. Delete information which is not applicable to the Work by striking or cross-hatching.

3. Each Shop Drawing shall have a blank area located adjacent to the title block. The title block shall display the following:

   a. Project Title and Number

   b. Number and title of the shop drawing

   c. Date of Shop drawing or revision

   d. Name of Contractor and subcontractor submitting drawing

   e. Supplier/Manufacturer

   f. Separate detailer when pertinent

   g. Specification title and number

   h. Drawing number

4. If shop drawings show variations from Contract requirements because of standard shop practice or for other reasons, CONTRACTOR shall describe such variations in his letter of transmittal. If acceptable, proper adjustment in the Contract shall

be implemented where appropriate. If CONTRACTOR fails to describe such variations, CONTRACTOR shall not be relieved of the responsibility for executing the Work in accordance with the Contract, even though such drawings have been reviewed.

5. Data on materials and equipment shall include, without limitation, materials and equipment lists, catalog data sheets, cuts, performance curves, diagrams, verification of conformance with applicable standards or codes, materials of construction and similar descriptive material. Materials and equipment lists shall, for each item, give: the name and location of the Supplier or manufacturer, trade name, catalog reference, size, finish and all other pertinent data.

6. For all mechanical and electrical equipment furnished, CONTRACTOR shall provide a list including the equipment name, address and telephone number of the Supplier's representative and service company so that service and/or spare parts can be readily obtained.

7. CONTRACTOR will obtain an installation list from suppliers and equipment suppliers who propose to furnish equipment or products for submittal to ENGINEER along with the required shop drawings. The installation list shall include at least five installations where identical equipment has been installed and has been in successful operation for a period of at least one year.

D. CONSTRUCTION DRAWINGS

1. The term "construction drawings" shall be considered to mean CONTRACTOR’s plan for temporary structures such as temporary construction fencing, support of open cut excavation, support of utilities, ground water control systems, forming and false work; for underpinning; and for such other work as may be required for construction but which does not become an integral part of the project.

2. Copies of construction drawings shall be submitted to ENGINEER at least 30 calendar days (unless otherwise specified by ENGINEER) in advance of their being required for work.

3. Construction drawings shall be signed by a registered Professional ENGINEER or Architect, currently licensed to practice in the State of Florida, and shall convey or be accompanied by, calculations or other sufficient information to completely explain the structure, machine, or system described and its intended manner of use. Prior to commencing such work, construction drawings must have been reviewed without specific exceptions by ENGINEER, which review will be for general conformance and will not relieve CONTRACTOR in any way from his responsibility with regard to the fulfillment of the terms of the Contract. All risks to new or existing work are assumed solely by CONTRACTOR. ENGINEER review

of the construction drawing assumes no responsibility for construction drawing design or implementation by ENGINEER or CITY

E. SAMPLES

1. CONTRACTOR shall furnish, for the approval of ENGINEER, samples required by the Contract Documents or as may be reasonably requested by ENGINEER. Samples shall be delivered to ENGINEER as directed. CONTRACTOR shall prepay shipping charges on samples. Materials or equipment for which samples are required shall not be used in Work until approved by ENGINEER.

2. Provide two of each requested sample, unless directed otherwise. Samples shall be of sufficient size to clearly illustrate:

   a. Functional characteristics of the product, with integrally related parts and attachment devices.

   b. Full range of color, texture and pattern.

3. Each sample shall have a label indicating:

   a. Name of Project.

   b. Name of CONTRACTOR and subcontractor.

   c. Material or equipment represented.

   d. Place of origin.

   e. Name of producer and brand (if any).

   f. Location in Project.

   g. Specification title and number.

   h. Submittal number.

Note: Samples of finished materials shall have additional marking that will identify them under the finish schedules.

4. CONTRACTOR shall prepare a transmittal letter, in triplicate for each shipment of samples, containing the information required in paragraph 2.00.E.3. CONTRACTOR shall enclose a copy of this letter with the shipment and send a copy of this letter to ENGINEER. Approval of a sample shall be only for the characteristics or use named in such approval and shall not be construed to change or modify any Contract requirements.

5. Approved samples not destroyed in testing shall be sent to ENGINEER or stored at the site of the Work. Approved samples of the hardware in good condition will be marked for identification and may be used in the Work. Materials and equipment incorporated in the work shall match the approved samples. Samples which failed

testing or were not approved will be returned to CONTRACTOR at his expense, if so, requested at time of submission.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01380

PRE-CONSTRUCTION PHOTOS/VIDEOS

PART 1 -- GENERAL

1.1 SCOPE

A. Prior to commencing the WORK, the CONTRACTOR shall provide a color audio-video recording of the Sanitary sewer main Replacement Route to serve as a record of the existing site conditions. The CONTRACTOR will provide one copy of the pre-construction video to the OWNER and FDOT prior to the pre-construction meeting. Contractor shall retain one copy in the Project files for turnover to the OWNER at Project Close Out. The CONTRACTOR shall review the video recordings for clarity and accuracy and shall make supplemental records of existing conditions if they are not clearly indicated.

B. The CONTRACTOR shall notify the OWNER two weeks prior to commencement of operations/construction within a specific geographic area (i.e., wellfield, etc.) in order to obtain the pre-construction video. No operations/construction shall begin prior to review of the preconstruction video of the work/construction area by the OWNER and the CONTRACTOR. Video recording shall be made not more than six weeks prior to commencement of operations/construction. One copy of all recordings and written records shall be well maintained by the CONTRACTOR without any damage and shall become the property of OWNER at Project Close Out.

C. The CONTRACTOR may engage the services of a professional videographer. However, the color audio-video recordings shall be prepared by a responsible commercial firm or individual known to be skilled and regularly engaged in the business of preconstruction color audio-video documentation.

PART 2 -- PRODUCTS

2.1. VIDEO MEDIA

A. The video portion of the recording shall produce bright, sharp, and clear pictures with accurate colors and shall be free from distortion, tearing, rolls, and any other form of picture imperfection. The audio portion of the recording shall produce the commentary of the camera operator with proper volume, clarity, and be free from distortion.

B. Video media shall be a digital file playable on windows media player.

2.2. RECORDED INFORMATION – VIDEO

A. All video recordings shall contain coverage of all surface features located within the work/construction zone of influence and shall include, but not be limited to: all designated easements, all roadways, roadway signage (type of sign to be noted in commentary), pavements, ditches, walls, curbs, driveways (zoom in and very slowly pan across the width of the driveway from the street to the first construction joint or at least fifteen (15) feet minimum, ensuring the camera stays in sharp focus (high detail is important), in addition slowly pan from the first construction joint to garage, ensuring the camera stays in sharp focus), sidewalks, culverts, buildings, raised pavement markings, owl burrows, gopher turtle burrows, vegetative cover (i.e., trees, shrubs, brush, etc.), landscaping, shrubbery and fences. Of particular concern shall be the existence of any faults, fractures, defects, etc. Video recording coverage shall include all surface conditions located within the zone of influence of operations/construction supported by appropriate audio description including the location relative to operations/construction stations. Panning, zoom-in and zoom-out rates shall be sufficiently controlled to maintain a clear view of the object.

B. All video recordings shall, by electronic means, display continuously and simultaneously, the date and time of recording. The video recording shall be generated with the actual taping date and time as transparent digital information. The date information shall contain the month, day and year.

2.3. RECORDED INFORMATION – AUDIO

A. Accompanying the video recording shall be a corresponding and simultaneously recorded audio recording. Each audio recording shall begin with the recorded date, project name and be followed by the general location, i.e., viewing location and direction of progress. The audio track shall consist of an original live recording. The recording shall contain exclusively the narrative commentary of the videographer, recorded simultaneously with the fixed elevation video record of the zone of influence of operations/construction. The recording shall assist in viewer orientation and in any needed identification, differentiation, clarification, or objective description of the features being shown in the video portion of the recording, including location relative to construction stations. The audio recording shall be free from any conversations between the camera operator and any other production technicians.

2.4. VIDEO MEDIA INDEXING

A. Video Identification: All video media shall be permanently labeled and shall be properly identified by number and project name and location.

B. Video Logs: Each street video shall have a log of that video's contents. The log shall describe the various segments of coverage contained on the video in terms of the names of the streets or easements, coverage beginning and end, directions of coverage, video unit counter numbers, and date.

C. Video Index: The videographer shall provide an index listing, in order by video number, each video number and a brief description of coverage contained on that video, including engineering station numbers.

PART 3 -- EXECUTION

3.1. VISIBILITY

A. All recordings shall be performed during times of good visibility. No recording shall be done during period of significant precipitation, mist or fog. The recording shall only be done when sufficient sunlight is present to properly illuminate the subject, and to produce bright, sharp video recordings of those subjects. No taping shall be performed when more than 10% of the area to be taped contains debris or obstructions unless otherwise authorized by the OWNER.

3.2. COVERAGE

A. In order to increase the continuity of coverage, the coverage shall consist of a single, continuous, unedited recording which begins at one end of a particular operations/construction area and proceeds uninterrupted to the other end of the operations/construction area.

B. The average rate of travel through a particular segment of coverage (e.g., coverage of one operations/construction site) shall be indirectly proportional to the number, size, and value of the surface features within that operation/construction area's zone of influence. The rate of travel at any given time shall not exceed one-half mile per hour.

3.3. CAMERA OPERATION

A. Camera Height and Stability: If conventional wheeled vehicles are used as conveyances for the recording system, the vertical distance between the camera lens and the ground shall not exceed ten feet. The camera shall be firmly mounted such that transport of the camera during the recording process will not cause an unsteady picture.

B. Camera Control: camera pan, tilt, zoom-in, and zoom-out rates shall be sufficiently controlled such that recorded objects will be clearly viewed during video playback. In addition, all other camera and recording system controls such as lens focus and aperture, video level, pedestal, chroma, white balance, and electrical focus shall be properly controlled or adjusted to maximize picture quality.

C. Viewer Orientation Techniques: The audio and video portions of the recording shall maintain viewer orientation. Visual displays of all visible building addresses shall be utilized. In easements where the proposed construction location will not be readily apparent to the video viewer, the OWNER shall indicate the proposed centerline of construction.

END OF SECTION

This Page Is

Intentionally

Blank

SECTION 01410

TESTING AND TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.01. SCOPE OF WORK

A. CONTRACTOR will employ and pay for services of an independent testing laboratory to perform certain inspection and testing as required by the Contract Documents. The testing laboratory shall be approved by Engineer or OWNER. This may include, but is not limited to, testing of soil, concrete, or structural connections and other such tests which OWNER deems necessary.

B. CONTRACTOR shall cooperate with the laboratory to facilitate the execution of its required services.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01. IMPLEMENTATION

1. CONTRACTOR will retain a testing laboratory for the on-site testing of soil, asphalt, concrete and any other material processes or activities deemed necessary to be approved by the Engineer, or as required, by the Contract Documents. OWNER will decide what off-site testing is required.

2. On-site testing laboratory services will be supplied by CONTRACTOR, and evaluated by, OWNER and ENGINEER.

3. Certified copies of all tests made shall ne submitted to the Engineer as well as to the OWNER's designated Site Inspector. The OWNER's designated site inspector must receive copies of all testing reports and certificates prior to the Engineer requesting a final project Inspection.

B. LABORATORY RESPONSIBILITIES

1. Meet "Recommended Requirements for Independent Laboratory Qualifications" latest edition, published by American Council of Independent Laboratories, and be authorized /certified to perform work in the state of Florida.

2. Cooperate with ENGINEER and CONTRACTOR; provide qualified personnel promptly on notice.

3. Perform specified inspections, sampling, cylinder breaks and testing of materials and methods of construction:

a. Comply with specific standards, ASTM, and other recognized authorities.

b. As certain compliance with requirements of Contract Documents.

4. Promptly notify ENGINEER and CONTRACTOR of irregularities or deficiencies of work which are observed during performance of services.

5. Promptly submit originals in quintuplicate of sealed and signed reports of inspections and tests to OWNER, ENGINEER and other designated officials, including:

a. Date issued.

b. Project title and ENGINEER'S job number.

c. Testing laboratory name and address.

d. Name and signature of inspector.

e. Date of inspection or sampling.

f. Record of temperature and weather.

g. Date of test.

h. Identification of product.

i. Location in project.

j. Type of inspection or test.

k. Observations regarding compliance with Contract Documents.

6. Perform additional services as required by OWNER.

7. Laboratory will not be authorized to:

a. Release,revoke, alter, or enlarge on requirements of Contract Documents.

b. Approve or accept any portion of work.

c. Perform any duties of the CONTRACTOR.

C. CONTRACTOR'S RESPONSIBILITIES

1. Cooperate with laboratory personnel; provide access to work, and to Subcontractors and Suppliers operations.

2. Secure and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used

and which require testing.

3. Provide to the laboratory the preliminary design mix proposed to be used for concrete, and other materials mixes which require control by the testing laboratory.

4. Materials and equipment used in the performance of work under this Contract are subject to inspection and testing at the point of manufacture or fabrication. Standard specifications for quality and workmanship are indicated in the Contract Documents. ENGINEER may require CONTRACTOR to provide statements or certificates from the manufacturers and fabricators that the materials and equipment provided by them are manufactured or fabricated in full compliance with the approved specifications for quality and workmanship. All costs of this testing and providing statements and certificates shall be a subsidiary obligation of the CONTRACTOR, and no extra charge to OWNER shall be allowed on account of such testing and certification.

5. Furnish incidental labor and facilities:

   a. To provide access to work to be tested.

   b. To obtain and handle samples at the project site or at the source of the material or product to be tested.

   c. To facilitate inspections and tests.

   d. For storage and curing of test samples.

6. Notify laboratory and ENGINEER sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.

END OF SECTION

SECTION 01450

QUALITY CONTROL

PART 1 -- GENERAL

1.1 DEFINITION

A. Specific quality control requirements for the WORK are indicated throughout the Contract Documents. The requirements of this Section are primarily related to performance of the WORK beyond furnishing of manufactured products. The term "Quality Control" includes inspection, sampling and testing, and associated requirements.

1.2 INSPECTION AT PLACE OF MANUFACTURER

A. Unless otherwise indicated, all products, materials, and equipment shall be subject to inspection by the ENGINEER at the place of manufacturer.

B. The presence of the ENGINEER at the place of manufacturer, however, shall not relieve the CONTRACTOR of the responsibility for providing products, materials, and equipment which comply with all requirements of the Contract Documents. Compliance is a duty of the CONTRACTOR and said duty shall not be avoided by any act or omission on the part of the ENGINEER.

1.3 SAMPLING AND TESTING

A. Unless otherwise indicated, all sampling and testing will be in accordance with the methods prescribed in the current standards of the ASTM, as applicable to the class and nature of the article or materials considered; however, the OWNER reserves the right to use any generally-accepted system of sampling and testing which, in the opinion of the ENGINEER will assure the OWNER that the quality of the workmanship is in full accord with the Contract Documents.

B. Any waiver by the OWNER of any specific testing or other quality assurance measures, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the testing or other quality assurance requirements originally indicated, and whether or not such guarantee is accompanied by a performance bond to assure execution of any necessary corrective or remedial WORK, shall not be construed as a waiver of any requirements of the Contract Documents.

1.4 INSPECTION AND TESTING SERVICE

A. Inspection and testing laboratory service shall comply with the following:

1. Unless indicated otherwise by the Technical Specifications, the CONTRACTOR will appoint, employ, and pay for services of an independent firm to perform inspection and testing or will perform inspection and testing itself.

2. The OWNER or independent firm will perform inspections, testing, and other services as required by the ENGINEER under Paragraph 1.3C above.

3. Reports of testing, regardless of whether the testing was the OWNER'S or the CONTRACTOR'S responsibility, will be submitted to the ENGINEER indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.

4. The CONTRACTOR shall cooperate with the OWNER or independent firm and furnish samples of materials, design mix, equipment, tools, storage, and assistance as requested.

5. The CONTRACTOR shall notify ENGINEER 24 hours prior to the expected time for operations requiring inspection and laboratory testing services.

6. Retesting required because of non-conformance to requirements shall be performed by the same independent firm on instructions by the ENGINEER. The CONTRACTOR shall bear all costs from such retesting.

7. For samples and tests required for CONTRACTOR'S use, the CONTRACTOR shall make arrangements with an independent firm for payment and scheduling of testing. The cost of sampling and testing for the CONTRACTOR'S use shall be the CONTRACTOR'S responsibility.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION

3.1 INSTALLATION

A. Inspection: The CONTRACTOR shall inspect materials or equipment upon the arrival on the job site and immediately prior to installation and reject damaged and defective items.

B. Measurements: The CONTRACTOR shall verify measurements and dimensions of the WORK, as an integral step of starting each installation.

C. Manufacturer's Instructions: Where installations include manufactured products, the CONTRACTOR shall comply with manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in Contract Documents.

END OF SECTION

SECTION 01510

TEMPORARY UTILITIES

PART 1 -- GENERAL

1.1 GENERAL REQUIREMENTS

A. Types: The types of utility services required for general temporary use for this project include the following:

1. Water service (potable for general use)

2. Electrical Power Service for ancillary facilities

1.2 JOB CONDITIONS

A. Scheduled Uses: The CONTRACTOR shall, in conjunction with establishment of the job progress schedule, establish a schedule for implementation and termination of service for each temporary utility at the earliest feasible time, and when acceptable to OWNER and ENGINEER.

PART 2 -- PRODUCTS

2.1 MATERIALS

A. The CONTRACTOR shall provide either new or used materials and equipment, which are in substantially undamaged condition and without significant deterioration and which are recognized in the construction industry, by compliance with appropriate standards, as being suitable for intended use in each case. Where a portion of the temporary utility is provided by a utility company, the CONTRACTOR shall provide the remaining portion with matching and compatible materials and equipment and shall comply with recommendations of the utility company.

PART 3 -- EXECUTION

3.1 INSTALLATION OF TEMPORARY UTILITY SERVICES

A. General: Wherever feasible, the CONTRACTOR shall engage the utility company to install temporary service to the project, or as a minimum, to make connection to existing utility service; locate services where they will not interfere with the total project construction WORK, including installation of permanent utility services; and maintain temporary services as installed for required period of use;

and relocate, modify or extend as necessary from time to time during that period as required to accommodate the total project construction WORK.

3.2 WATER SUPPLY

A. General: The CONTRACTOR shall obtain the water supply necessary for construction of the facilities. The CONTRACTOR shall provide all facilities necessary to convey the water from the source to the points of use in accordance with the requirements of the Contract Documents. The CONTRACTOR shall be responsible for all costs and charges associated with the construction water supply.

B. Water Connections: The CONTRACTOR shall coordinate with the OWNER for obtaining water service connections. The CONTRACTOR shall pay appropriate fees for water meters and all other charges for water use.

3.3 INSTALLATION OF SANITARY FACILITIES

A. Toilet Facilities: Fixed or portable chemical toilets shall be provided wherever needed for the use of CONTRACTOR's employees. Toilets at construction job sites shall conform to the requirements of Subpart D, Section 1926.51 of the OSHA Standards for Construction.

B. Sanitary and Other Organic Wastes: The CONTRACTOR shall establish a minimum of weekly collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities provided by the CONTRACTOR or organic material wastes from any other source related to the CONTRACTOR's operations shall be disposed of away from the Site in a manner satisfactory to the ENGINEER and in accordance with all laws and regulations pertaining thereto.

3.4 POWER SUPPLY

A. The CONTRACTOR shall coordinate with Electric Utility for obtaining a power service connection at the site. The CONTRACTOR shall pay the fee for meters and all other charges for site power usage. Temporary power through use of portable electric generators may be used if found acceptable to OWNER and ENGINEER.

3.5 OPERATIONS AND TERMINATIONS

A. Inspections: Prior to placing temporary utility services into use, the CONTRACTOR shall inspect and test each service and arrange for governing authorities' required inspection and tests and obtain required certifications and permits for use thereof.

B. Protection: The CONTRACTOR shall maintain distinct markers for underground lines and protect underground lines from damage during excavating operations.

C. Termination and Removal: When need for a temporary utility service, or a substantial portion thereof has ended, or when its service has been replaced by use of permanent services, or not later than time of substantial completion, the CONTRACTOR shall promptly remove the utility installation unless requested by ENGINEER to retain it for a longer period. The CONTRACTOR shall complete and restore WORK which may have been delayed or affected by installation and use of temporary utility, including repairs to construction and grades and restoration and cleaning of exposed surfaces

D. Removal of Water Connections: Before final acceptance of the WORK on the project, all temporary connections and piping installed by the CONTRACTOR shall be entirely removed, and all affected improvements shall be restored to original condition or better, to the satisfaction of the ENGINEER and to the agency owning the affected utility.

END OF SECTION

This Page Is

Intentionally

Blank

SECTION 01530

PROTECTION OF EXISTING FACILITIES

PART 1 -- GENERAL

1.1 GENERAL

A. The CONTRACTOR shall protect all existing utilities and improvements not designated for removal and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than prior to such damage or temporary relocation, all in accordance with the Contract Documents.

B. Where applicable furnish, install and maintain suitable barriers as required to prevent public entry, and to protect the Work, existing facilities, trees and plants from construction operations; remove when no longer needed, or at completion of Work.

C. Maintain and protect existing structures from weather intrusion during construction.

D. Restore all paved areas cut or damaged during construction.

1.2 RIGHTS-OF-WAY

A. The CONTRACTOR shall not do any WORK that would affect any oil, gas, sewer, or water pipeline; any telephone, telegraph, or electric transmission line; any fence; or any other structure, nor shall the CONTRACTOR enter upon the rights-of-way involved until notified that the OWNER has secured authority therefore from the proper party.

B. After authority has been obtained, the CONTRACTOR shall give said party due notice of its intention to begin work, if required by said party, and shall remove, shore, support, or otherwise protect such pipeline, transmission line, ditch, fence, or structure, or replace the same.

1.3 PROTECTION OF STREET OR ROADWAY MARKERS

A. The CONTRACTOR shall not destroy, remove, or otherwise disturb any existing survey markers or other existing street or roadway markers without proper authorization. No pavement breaking or excavation shall be started until all survey or other permanent marker points that will be disturbed by the construction operations have been properly referenced. Survey markers or points disturbed by the CONTRACTOR shall be accurately restored after street or roadway resurfacing has been completed at the CONTRACTOR’s expense.

1.4 RESTORATION OF PAVEMENT

A. General: All paved areas including asphaltic concrete berms cut or damaged during construction shall be replaced with similar materials of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents or in the requirements of the agency issuing the permit. The pavement restoration requirement to match existing sections shall apply to all components of existing sections, including sub-base, base, and pavement. Temporary and permanent pavement shall conform to the requirements of the affected pavement owner. Pavements which are subject to partial removal shall be neatly saw cut in straight lines.

B. Temporary Resurfacing: Wherever required by the public authorities having jurisdiction, the CONTRACTOR shall place temporary surfacing promptly after backfilling and shall maintain such surfacing for the period of time fixed by said authorities before proceeding with the final restoration of improvements.

C. Permanent Resurfacing: In order to obtain a satisfactory junction with adjacent surfaces, the CONTRACTOR shall saw cut back and trim the edge so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement.

D. Restoration of Sidewalks or Private Driveways: Wherever sidewalks or private roads have been removed for purposes of construction, the CONTRACTOR shall place suitable temporary sidewalks or roadways promptly after backfilling and shall maintain them in satisfactory condition for the period of time fixed by the authorities having jurisdiction over the affected portions. If no such period of time is so fixed, the CONTRACTOR shall maintain said temporary sidewalks or roadways until the final restoration thereof has been made.

1.5 EXISTING UTILITIES AND IMPROVEMENTS

A. General: The CONTRACTOR shall protect underground Utilities and other improvements which may be impaired during construction operations, regardless of whether or not the Utilities are indicated on the Drawings. The CONTRACTOR shall take all possible precautions for the protection of unforeseen Utility lines to provide for uninterrupted service and to provide such special protection as may be necessary.

1. Except where the Drawings indicate Utilities have been field located during design or certain Utility locations shall be exposed as part of the WORK, the CONTRACTOR shall be responsible for exploratory excavations as it

deems necessary to determine the exact locations and depths of Utilities which may interfere with its work. All such exploratory excavations shall be performed as soon as practicable after Notice to Proceed and, in any event, a sufficient time in advance of construction to avoid possible delays to the CONTRACTOR's progress. When such exploratory excavations show the Utility location as shown on the Drawings to be in error, the CONTRACTOR shall so notify the ENGINEER.

2. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the Utility.

B. Utilities to be Moved: In case it shall be necessary to move the property of any public utility or franchise holder, such utility company or franchise holder will, upon request of the CONTRACTOR, be notified by the OWNER to move such property within a specified reasonable time. When utility lines that are to be removed are encountered within the area of operations, the CONTRACTOR shall notify the ENGINEER a sufficient time in advance for the necessary measures to be taken to prevent interruption of service.

C. Utilities to be Removed: Where the proper completion of the WORK requires the temporary or permanent removal and/or relocation of an existing Utility or other improvement which is indicated, the CONTRACTOR shall remove and, without unnecessary delay, temporarily replace or relocate such Utility or improvement in a manner satisfactory to the ENGINEER and the owner of the facility. In all cases of such temporary removal or relocation, restoration to the former location shall be accomplished by the CONTRACTOR in a manner that will restore or replace the Utility or improvement as nearly as possible to its former locations and to as good or better condition than found prior to removal.

D. OWNER's Right of Access: The right is reserved to the OWNER and to the owners of public utilities and franchises to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the WORK of this Contract.

E. Underground Utilities Indicated: Existing Utility lines that are indicated or the locations of which are made known to the CONTRACTOR prior to excavation and that are to be retained, and all Utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired or replaced by the CONTRACTOR, unless otherwise repaired by the OWNER of the damaged Utility. If the owner of the damaged facility performs its own repairs, the CONTRACTOR shall reimburse said owner for the costs of repair.

F. Underground Utilities Not Indicated: In the event that the CONTRACTOR damages existing Utility lines that are not indicated or the locations of which are

not made known to the CONTRACTOR prior to excavation, a verbal report of such damage shall be made immediately to the ENGINEER and a written report thereof shall be made promptly thereafter. The ENGINEER will immediately notify the owner of the damaged Utility. If the ENGINEER is not immediately available, the CONTRACTOR shall notify the Utility owner of the damage. If directed by the ENGINEER, repairs shall be made by the CONTRACTOR under the provisions of the General Conditions.

1. Costs of locating and repairing damage not due to failure of the CONTRACTOR to exercise reasonable care, and removing or relocating such Utility facilities not indicated in the Contract Documents with reasonable accuracy, and for equipment on the project which was actually working on that portion of the WORK which was interrupted or idled by removal or relocation of such Utility facilities, and which was necessarily idled during such work will be paid for as extra work in accordance with the provisions of the General Conditions.

G. Approval of Repairs: All repairs to a damaged Utility or improvement are subject to inspection and approval by an authorized representative of the Utility or improvement owner before being concealed by backfill or other work.

H. Maintaining in Service: Unless indicated otherwise, oil and gasoline pipelines, power, and telephone or the communication cable ducts, gas and water mains, irrigation lines, sewer lines, storm drain lines, poles, overhead power and communication wires, and cables encountered along the line of the WORK shall remain continuously in service during all the operations under the Contract, unless other arrangements satisfactory to the ENGINEER are made with the owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, or wire or cable. The CONTRACTOR shall be responsible for and shall repair all damage due to its operations, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

1.6 PROTECTION OF STRUCTURES AND ABOVE GROUND UTILITIES

A. The CONTRACTOR shall exercise all necessary precautions so as not to damage or destroy any existing above ground utility or structure.

B. In the event that the CONTRACTOR damages an existing utility or structure CONTRACTOR shall contact Utility or Structure owner immediately. CONTRACTOR shall repair damages at no additional cost to the OWNER.

1.7 TREES OR SHRUBS WITHIN STREET RIGHTS-OF-WAY AND PROJECT LIMITS

A. General: Except where trees or shrubs are indicated to be removed, the CONTRACTOR shall exercise all necessary precautions so as not to damage or destroy any trees or shrubs, including those lying within street rights-of-way and project limits, and shall not trim or remove any trees unless such trees have been approved for trimming or removal by the jurisdictional agency or OWNER. Existing trees and shrubs which are damaged during construction shall be trimmed or replaced by the CONTRACTOR or a certified tree company under permit from the jurisdictional agency and/or the OWNER. Tree trimming and replacement shall be accomplished in accordance with the following paragraphs.

B. Trimming: Symmetry of the tree shall be preserved; no stubs or splits or torn branches left; clean cuts shall be made close to the trunk or large branch. Spikes shall not be used for climbing live trees. Cuts over 1-1/2 inches in diameter shall be coated with a tree paint product that is waterproof, adhesive, and elastic, and free from kerosene, coal tar, creosote, or other material injurious to the life of the tree.

C. Replacement: The CONTRACTOR shall immediately notify the jurisdictional agency and/or the OWNER if any tree or shrub is damaged by the CONTRACTOR's operations. If, in the opinion of said agency or the OWNER, the damage is such that replacement is necessary, the CONTRACTOR shall replace the tree or shrub at its own expense. The tree or shrub shall be of a like size and variety as the one damaged, or, if of a smaller size, the CONTRACTOR shall pay to the owner of said tree a compensatory payment acceptable to the tree or shrub owner, subject to the approval of the jurisdictional agency or OWNER. The size of the tree or shrub shall be not less than 1-inch diameter no less than 6 feet in height.

1.8 LAWN AREAS

A. Lawn or landscaped areas damaged during construction shall be repaired to match the pre-construction condition to the satisfaction of the landowner and the OWNER.

1.9 NOTIFICATION BY THE CONTRACTOR

A. Prior to any excavation in the vicinity of any existing underground facilities, including all water, sewer, storm drain, gas, petroleum products, or other pipelines; all buried electric power, communications, or television cables; all traffic signal and street lighting facilities; and all roadway and state highway rights-of-way, the CONTRACTOR shall notify the respective authorities representing the owners or agencies responsible for such facilities not less than 3 days nor more than 7 days prior to excavation so that a representative of said

owners or agencies can be present during such work if they so desire. The CONTRACTOR shall also notify the “call sunshine” at 1-800-432-4770 at least 2 days, but no more than 14 days, prior to such excavation.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION (NOT USED)

END OF SECTION

This Page Is

Intentionally

Blank

SECTION 01570

TRAFFIC REGULATION

PART 1 – GENERAL

1.01. General

A. 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: 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.

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, 2025-2026 Edition.
FDOT Standards	Florida Department of Transportation Roadway and Traffic Design Standards, 2025-2026 Edition.

1.03. Submittals

A. Contractor shall submit a Florida Licensed Professional Engineers signed and seal maintenance of traffic plan to City of Cocoa Beach and/or FDOT for approval prior to the construction meeting.

B. 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 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.

C. 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 and for the shortest practicable period consistent with efficient and expeditious construction. The Contractor shall be liable for any damages to persons or property resulting from his work.

D. 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.

E. 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

SECTION 01600

MATERIALS AND EQUIPMENT

PART 1 – GENERAL

1.01. SCOPE OF WORK

A. CONTRACTOR is responsible for furnishing and installing the material and equipment as required by the Contract Documents. Proper approval of submittals and substitutions are required. Furnished material and equipment shall be properly transported, handled, stored, and protected in accordance with manufacturer's instructions; federal, state or local regulations, or as approved by ENGINEER.

B. Material and equipment incorporated into the Work:

1. Shall not be defective.

2. Shall comply with size, make, type and quality as specified in the Contract Documents, or as specifically approved in writing by ENGINEER.

3. Shall not be used for any purpose other than that for which it is designed or is specified.

B. Manufactured and fabricated products:

1. Design, fabricate and assemble in accordance with the best engineering and shop practices.

2. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.

3. Two or more items of the same kind shall be identical, supplied by the same manufacturer.

4. Products shall be suitable for service conditions.

5. Equipment capacities, sizes and dimensions shown or a specified shall be adhered to unless variations are specifically approved in writing.

C. APPROVAL OF MATERIALS

1. Only new materials and equipment shall be incorporated in the Work unless otherwise specified in the Contract Documents or approved by ENGINEER. All materials and equipment furnished by CONTRACTOR shall be subject to the inspection and approval of ENGINEER. No material shall

be delivered to the Work without prior written approval of ENGINEER.

2. Facilities and labor for handling and inspection of all materials and equipment shall be furnished by CONTRACTOR. If required by the Contract Documents or as requested by ENGINEER, either prior to beginning or during the progress of the Work, CONTRACTOR shall submit samples of materials for such special tests as may be necessary to demonstrate that they conform to the approved specifications. Such samples shall be furnished, in accordance with the General Conditions. Except as otherwise noted, ENGINEER will make arrangements for and pay for the tests.

3. In order to demonstrate the proficiency of workmen or to facilitate the choice among several textures, types, finishes and surfaces, CONTRACTOR shall provide such samples of workmanship or finish as may be required.

4. The materials and equipment used on the Work shall correspond to the approved samples or other data.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 IMPLEMENTATION

A. TRANSPORTATION AND HANDLING

1. Arrange deliveries of products in accordance with construction schedules; coordinate to avoid conflict with work and conditions at the site.

a. Deliver products in undamaged condition in manufacturer's original containers or packaging, with identifying labels intact and legible.

b. Immediately upon delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that products are properly protected and undamaged.

2. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

B. STORAGE AND PROTECTION

1. All materials and equipment to be incorporated in the Work shall be handled and stored by CONTRACTOR before, during

and after shipment in a manner to prevent warping, twisting, bending, breaking, chipping, rusting, and any injury, theft or damage of any kind whatsoever to the material or equipment.

2. Cementitious and other products sensitive to moisture damage shall be stored under a roof, off the ground and shall be kept completely dry at all times. All structural and miscellaneous steel and reinforcing steel shall be stored off the ground to prevent accumulations of dirt or grease, and in a position to prevent accumulations of standing water and to minimize rusting.

3. All materials which, in the opinion of ENGINEER, have become so damaged as to be unfit for the use intended shall be promptly removed from the site of the Work, and CONTRACTOR shall receive no compensation for the damaged material, its removal or its replacement.

4. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.

5. CONTRACTOR shall be responsible for all material, equipment and supplies sold and delivered to OWNER under this Contract until final inspection of the Work and acceptance by the ENGINEER. In the event any such material, equipment and supplies are lost, stolen, or become defective prior to final inspection and acceptance; CONTRACTOR shall replace same without additional cost to OWNER.

6. Should CONTRACTOR fail to take proper action on storage and handling of equipment supplied under this Contract within ten days after written notice to do so has been given, OWNER retains the right to correct all deficiencies noted in previously transmitted written notice and deduct the cost associated with these corrections from CONTRACTOR'S next progress payment. These costs may be comprised of expenditures for labor equipment usage, administrative, clerical, engineering and any other costs associated with making the necessary corrections.

END OF SECTION

SECTION 01700

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

Comply with requirements stated in Conditions of the Contract and in the Specifications for administrative procedures in closing out the Work.

1.02 RELATED REQUIREMENTS

A. Conditions of the Contract. Fiscal provisions, legal submittals and additional administrative requirements.

C. The respective sections of Specifications: Submittals Required.

1.03 SUBSTANTIAL COMPLETION

A. When Contractor considers the Work is substantially complete, he shall submit to the OWNER:

1. A written notice that the Work is substantially complete.

2. A list of items to be completed or corrected.

B. Within a reasonable time after receipt of such notice, the OWNER will inspect to determine the status of completion.

C. Should the OWNER determine that the Work is not substantially complete:

1. The OWNER will promptly notify the Contractor in writing, giving reasons, therefore.

2. Contractor shall remedy the deficiencies in the Work and send a second written notice of substantial completion to the OWNER.

3. The OWNER will reinspect the Work.

1.04 FINAL INSPECTION

A. When Contractor considers the Work is complete, he shall submit written certification that:

1. Contract Documents have been reviewed.

2. Work has been inspected for compliance with Contract Documents.

3. Work has been completed in accordance with Contract Documents.

4. The work has been tested as required by the Specification and in the presence of the OWNER'S representative and is operational.

5. Work is completed and ready for final inspection.

B. The OWNER will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.

C. Should the OWNER consider that the Work is incomplete or defective:

1. The OWNER will promptly notify the Contractor in writing, listing the incomplete or defective work.

2. Contractor shall take immediate steps to remedy the stated deficiencies and send a second written certification to the OWNER that the Work is complete.

3. The OWNER will reinspect the Work.

D. When the OWNER finds that the Work is acceptable under the Contract Documents, he shall request the Contractor to make closeout submittals.

1.06 CONTRACTOR'S CLOSEOUT SUBMITTALS TO ENGINEER

A. Evidence of compliance with requirements of governing authorities.

B. As-built drawings.

C. Evidence of Payment and Release of Liens in accordance with requirements of General and Supplementary Conditions.

1.07 FINAL ADJUSTMENT OF ACCOUNTS

A. Submit final statement of accounting to the OWNER.

B. Statement shall reflect all adjustments to the Contract Sum:

1. The original Contract Sum

2. Additions and deductions resulting from:

a. Previous Change Orders

b. Allowances

c. Unit Prices

d. Deductions for uncorrected Work

e. Deductions for liquidated damages

f. Deductions for reinspection payments

g. Other adjustments

3. Total Contract Sum, as adjusted

4. Previous payments

5. Sum remaining and due to Contractor

C. The OWNER will prepare a final Change Order reflecting approved adjustments to the Contract Sum that were not previously made by Change Orders.

1.08 FINAL APPLICATION FOR PAYMENT

Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in Section 01150 and in the Conditions of the Contract.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 02200

SITE PREPARATION

PART 1 – GENERAL

1.0. DESCRIPTION

A. This Section covers demolition, clearing, grubbing, and stripping of construction sites and disposal of the material. The Contractor is expected to visit the sites of the work and determine the extent of the clearing, grubbing, and demolition necessary for the construction operations.

B. The Contractor shall clear and grub all of the area within the limits of actual construction as required, which includes, but is not limited to, roadways, trench work, structures, and open areas. The area to be cleared shall be approved by the Engineer prior to the beginning of any clearing.

C. The Contractor's attention is directed to any Soil Erosion and Sediment Control Ordinances in force. The Contractor shall comply with all applicable sections of these ordinances.

D. All utilities are to be located prior to clearing and grubbing operations. If utilities are not located properly before work begins and the Contractor damages the line in any way, the Contractor shall pay for repair and/or replacement of the utility. Once lines are located, the Contractor is to take care not to damage the existing utilities. Again, if the Contractor damages the line in any way, the Contractor shall pay for repair and/or replacement of the utility.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.0. DEMOLITION

A. Notify the City three days in advance of demolition to identify items that are to be salvaged and to coordinate shutdowns that may be required. Items salvaged from the premises are the property of the City and shall be delivered by the Contractor to a location identified by the City. The City will open or close valves and electrical disconnects required for shutdowns.

B. Remove existing structures, boxes, pipes, pavements, curbs, and other items as specified herein or as indicated in the drawings. Remove and dispose of all portions of those items that interfere with project construction.

C. Remove and properly dispose of the demolished facilities in their entirety

including below-ground footings, foundations, and other associated appurtenances, as shown in the drawings or as specified herein. Backfill and compact all site areas disturbed by demolition work with suitable backfill material. Perform the work in a manner that will not damage parts of the structure not intended to be removed or salvaged for the City. If in the opinion of the City's inspector, the method of demolition used may cause damage other than intended, the Contractor shall change the method of demolition. Blasting is not permitted.

D. All demolished items and materials, except those specified to be salvaged for the City, are the property of the Contractor and shall be removed from the project site. The salvage value of the demolished items and materials shall be reflected in the contract price of the demolition work.

E. Do not reuse material salvaged from demolition work on this project, except as specifically shown.

3.1. ASBESTOS CONTAINING MATERIAL

A. If required, the Contractor shall be responsible for obtaining and paying for the services of an asbestos abatement consultant and contractor licensed in the State of Florida for removal and disposal of asbestos containing materials encountered in the project.

B. Asbestos containing pipe material removed or placed out of service shall be performed by a licensed asbestos abatement contractor registered in the State of Florida.

3.2. CLEARING AND GRUBBING

A. The surface of the ground, for the area to be cleared and grubbed shall be completely cleared of all timber, brush, stumps, roots, grass, weeds, rubbish, and all other objectionable obstructions resting on or protruding from the surface of the ground. Trees designated by the Engineer shall be preserved as hereinafter specified. Clearing operations shall be conducted to prevent damage to existing structures and installations, those under construction, and to provide for the safety of employees and others.

B. Grubbing shall consist of the complete removal of all stumps, roots larger than 1 inch in diameter, matted roots, brush, timber, logs, and any other organic or metallic debris not suitable for foundation purposes, resting on, under, or protruding through the surface of the ground to a depth of 2 feet below the excavated surface under roadways and structures, and 1 foot below all other areas requiring clearing and grubbing. All depressions excavated below the original ground surface for or by the removal of such objects, shall be refilled with suitable materials and compacted to a density conforming to the surrounding ground surface.

C. The Contractor shall dispose of all material and debris from the clearing and grubbing operation by hauling such material and debris away to an approved landfill. No burning shall be allowed on-site. The cost of disposal (including hauling and obtaining the necessary permits) of cleared and grubbed material and debris shall be considered an obligation of the Contractor; the cost of which shall be included in the contract sum. The Contractor shall not allow any debris to accumulate on-site for more than 48 hours and shall remove such debris when requested by the Utility's inspector.

3.3. PRESERVATION OR REMOVAL OF TREES

A. Trees outside the limits of construction shall be carefully protected from damage. The Contractor shall erect barricades, guards, and enclosures as necessary for the protection of the trees during construction operations. Care shall be taken to prevent damage not only to the tree trunk, but also the root system and overhanging branches and limbs.

B. Cutting of branches, limbs, and roots shall be subject to the approval of the Engineer. All cutting shall be smoothly and neatly done without splitting or crushing. Cut or injured portions shall be neatly trimmed and covered with an application of grafting wax or tree healing paint. Such cutting or repairing shall be performed by a qualified arborist.

C. Prior to commencing construction, the Contractor shall inform the private owners of shrubs, plants, and trees within the project area so that the owners of the affected vegetation may remove them if they desire; otherwise, removal and replacement shall be done by the Contractor, included as part of the Work.

END OF SECTION

SECTION 02240
DEWATERING

PART 1 – GENERAL

1.1. DESCRIPTION

A. The Work to be performed under this section shall include the design and installation of a temporary dewatering system for removal of storm and subsurface waters from structure or utility trench excavations as required during construction.

B. The temporary dewatering system shall be designed by a firm who regularly engages in the design of dewatering systems and who is fully experienced, reputable and qualified in the design of such dewatering systems.

C. In lieu of experience, the Contractor shall provide a performance and warranty bond for 1.0 times the total installed cost of the temporary dewatering system. This bond shall be executed prior to award and/or contract execution.

D. The dewatering of any excavation areas and the disposal of water during construction shall be in strict accordance with all local and state government rules and regulations. If a consumptive use permit is required by SJRWMD, the Contractor shall be responsible for obtaining said permit.

E. Dewatering systems, earthwork, machinery, and material staging and stockpiling shall not block the sidewalk or access to residences.

F. The Contractor shall engage a Geotechnical Engineer registered in the State of Florida, to design the temporary dewatering system for all structures. The Contractor shall submit a conceptual plan for the dewatering system prior to commencing work. The dewatering system installed shall be in conformity with the overall construction plan, and certification of this shall be provided by the Geotechnical Engineer. The Geotechnical Engineer shall be required to monitor the performance of the dewatering system at the Contractor's expense during the progress of the work and require such modifications as may be required to assure that the systems will perform satisfactorily. Dewatering system shall be designed in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at the proposed structures or utilities and to preserve the integrity of any adjacent structures.

G. At all times during the progress of the work the Contractor shall use all reasonable precautions to prevent the entrance of foreign material into storm drain system.

H. Immediately upon completion of the dewatering operations, the Contractor shall remove all of his equipment, materials, and supplies from the site of the Work, remove all surplus materials and debris, fill in all holes or excavations, and grade the site to elevations of the surface levels which existed before the work started. The site shall be thoroughly cleaned and graded as directed by the Engineer.

1.2. SUBMITTALS.

A. The Contractor shall submit the dewatering plan to FDOT before the Pre-construction meeting for approval.

B. Submit to the Engineer for review, the proposed methods of construction including dewatering, excavation, bedding, filling, compaction and backfilling for the various portions of the Work. Review shall be for method only. The Contractor shall remain responsible to the adequacy and safety of the methods.

C. Submittals shall include the following:

1. Design Notes and Drawings.
2. Descriptive literature of the temporary dewatering system.
3. Layout of all piping involved.

1.3. PUMPING AND DRAINAGE

A. The Contractor shall at all times during construction provide and maintain proper equipment and facilities to remove all water entering excavations. The Contractor shall maintain a satisfactory undisturbed subgrade foundation condition until the fills, structures or pipe installation have been completed to such extent that they will not be floated or otherwise damaged by allowing water levels to return to natural levels.

B. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at the bottom of excavation and to preserve the integrity of adjacent structures. Drainage for the excavation shall be adequate. No pipe shall be laid in water and no water shall be allowed to rise above the bottom of any pipe while it is being jointed, except as otherwise permitted in writing. Well or sump installations shall be constructed with proper sand filters to prevent drawing of finer grained soil from the surrounding ground.

C. Water entering the excavation from surface runoff shall be collected in shallow ditches around the perimeter of the excavation, drained to sumps, and pumped from the excavation to maintain a bottom free from standing water.

D. The Contractor shall take all additional precautions or prevent uplift of any structure

during construction.

E. The conveying of water in open ditches or trenches will not be allowed. Permission to use any storm sewers or drains that have adequate capacity for water disposal purposes shall be obtained from the Owner of said utility. No flooding of streets, driveways, or private property will be permitted. Any requirements and costs for such use shall be the responsibility of the Contractor. However, the Contractor shall not cause flooding by overloading or blocking up the flow in the drainage facilities, and the Contractor shall leave the facilities unrestricted and as clean as originally found. Any damage to facilities shall be repaired or restored as directed by the Owner of the utility at no additional cost to the City.

F. Flotation shall be prevented by the Contractor by maintaining a positive and continuous operation of the dewatering system. The Contractor shall be fully responsible and liable for all damages which may result from failure of this system.

G. Removal of dewatering equipment shall be accomplished after the Contractor and the OWNER agree that the system is no longer required. The material and equipment constituting the system shall be removed by the Contractor.

H. The Contractor shall take all necessary precautions to preclude the accidental discharge of fuel, oil, etc. in order to prevent adverse effects on groundwater or receiving water quality.

PART 2 – PRODUCTS

2.1. GENERAL

A. The equipment specified herein shall be standard dewatering equipment of proven ability as designed, manufactured, and installed by firms having experience in the design and production of such equipment. The equipment furnished shall be designed, constructed and installed in accordance with the best practices and methods.

B. Equipment shall not exceed noise limits as identified in the Brevard County Code of Ordinances Sec. 62-2271 and shall be located as far as possible away from a residential unit.

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 02300
EARTHWORK

PART 1 – GENERAL

1.1. DESCRIPTION

A. The work included under this Section consists of excavating, trenching, sheeting, shoring, grading, backfilling, and compacting those soil materials required under, adjacent, and for the construction of piping, ditches, utilities, roads, and appurtenances as shown on the Drawings and specified herein.

B. Definitions:

1. Maximum Density: Maximum weight in pounds per cubic foot of a specific material.

2. Optimum Moisture Content: The optimum moisture content shall be determined by ASTM D 1557 specified to determine the maximum dry density for relative compaction. Field moisture content shall be determined on the basis of the fraction passing the 3/4-inch sieve.

3. Rock Excavation: Excavation of any hard-natural substance which requires the use of special impact tools such as jack hammers, sledges, chisels or similar devices specifically designed for use in cutting or breaking rock, but exclusive of trench excavating machinery.

4. Suitable: Suitable materials for fills shall be a non-cohesive, non-plastic granular local sand which shall be free from vegetation, organic material, marl, silt or muck. The Contractor shall furnish all additional fill material required.

5. Unsuitable: Unsuitable materials are highly organic soil (peat or muck) classified as A-8 in accordance with AASHTO Designation M l45.

C. Plan for Earthwork:

1. The Contractor shall be responsible for having determined to his satisfaction, prior to the submission of his bid, the conformation of the ground, the character and quality of the substrata, the types and quantities of materials to be encountered, the nature of the groundwater conditions, the prosecution of the work, the general and local conditions and all other matters which can in any way affect the Work under this Contract according to the General Conditions.

2. Prior to commencing the excavation, the Contractor shall submit a plan

of his proposed operations to the Engineer for review. The Contractor shall reflect the equipment and methods to be employed in the excavation. Prices established in the Proposal for the Work to be done will reflect all costs pertaining to the Work. No claims for extras based on substrata or groundwater table conditions will be allowed.

D. Trench Safety Act: The Contractor shall comply with all of the requirements of the Florida Trench Safety Act. The Contractor shall acknowledge that included in various items of his bid proposal and in the total bid price are costs for complying with the provisions of the Act. Additionally, the Contractor is required to break out the costs for complying with the Florida Trench Safety Act.

1.2. GENERALLY

A. Locate existing underground utilities in areas of Work. Provide adequate means of support and protection during earthwork operations.

B. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with the utility companies in keeping services and facilities in operation. Repair damaged utilities to the satisfaction of utility owner.

C. Do not interrupt existing utilities serving occupied facilities.

D. The use of explosives is not permitted.

E. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by vibration, settlement, lateral movement, undermining, washout, equipment tracks, and other damage caused by earthwork operations.

1.3. APPLICABLE PUBLICATIONS

A. All publications and standard specifications referred to herein are the latest or current issue of that publication or specification as of the specification date.

1.4. QUALITY ASSURANCE

A. A Testing Laboratory employed by the Contractor will make soil tests as required or as necessary for control of the Work. The Contractor shall schedule his Work to permit reasonable time for testing before placing succeeding lifts and shall keep the laboratory informed of his progress. Tests which have to be repeated because of the failure of the tested material to

meet specification shall be paid for by the Contractor.

B. Provide the services of a Professional Land Surveyor registered in the State of Florida to establish all vertical and horizontal controls required for layout of the Work and for preparation of a certified survey showing finished elevations and dimensions upon completion of site preparation and earthwork.

1.5. FEDERAL AND STATE REGULATORY REQUIREMENTS

A. All trench excavations which exceed 5 feet in depth shall comply with the applicable trench safety standards as stated in the OSHA excavation safety standards 29 CFR Sec. 1926.650, Subpart P, as regulated and administered by the Florida Department of Labor and Employment Security as the "Florida Trench Safety Act."

1.6. PRE-CONSTRUCTION SURVEY

A. Prior to commencing excavation, backfill or dewatering, the City and Contractor shall jointly conduct a survey of those existing structures which, in the opinion of the Engineer, may be subject to settlement or distress resulting from excavation or dewatering operations. This shall include both private and public property, both on the project sites and in and adjacent to the project site.

B. The Contractor shall monitor the structures surveyed to ascertain evidence of settlement or distress. If settlement or distress becomes evident the Contractor shall be required to repair the structures to the previous condition to the satisfaction of the Engineer. Costs shall be paid by the Contractor.

1.06 SUBMITTALS

A. Submit to the Engineer for review the proposed methods of construction, including excavation, bedding, filling, compaction and backfilling for the various portions of the work. Review shall be for information only. The Contractor shall remain responsible for the adequacy and safety of the methods and materials.

B. Submit copies of certifications from independent testing laboratories that the materials to be used for fills, backfills, and structural backfills meet the specified criteria.

PART 2 – PRODUCTS

2.1. MATERIALS

A. Satisfactory soil materials are ASTM D2487 soil classification groups GW, GP, SW and SP. Unsatisfactory soil materials are ASTM D2487 soil classification

groups GC, SC, ML, MH, CL, CH, OL, OH and PT.

B. All fill material from on and off-site sources shall be subject to the approval of the Engineer. All fill material shall be free of organic material, trash, or other objectionable material. Excess or unsuitable material designated by the Engineer shall be removed from the job site by the Contractor.

C. Subbase fill material shall be naturally or artificially graded mixture of natural or crushed gravel, crushed stone, crushed slag, natural or crushed sand.

D. Drainage fill material shall be washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, with 100 percent passing a 1-1/2 in. sieve and not more than 5 percent passing a No. 4 sieve.

E. Common Fill Material:

1. Common fill shall be sand not containing stones, rock, concrete or other rubble larger than 2 inches in diameter. It shall have physical properties which allow it to be easily spread and compacted.
2. The Contractor shall utilize as much excavated material as possible for reuse in accordance with the contract drawings and specifications or as directed by the Engineer.
3. The Engineer shall direct the Contractor on the type of material allowed in certain sections of the earthwork operations.

F. Structural fill shall be well graded sand to gravelly sand having the following gradation:

U.S. Sieve Size	Percent Passing by Weight
1-inch	100
No. 4	75-100
No. 40	15-80
No. 100	0-30
No. 200	0-10

G. Class I Soils shall be manufactured angular, granular material, 1/4 to 1/2 inches (6 to 12 mm) in size, including materials having significance such as crushed stone or rock, broken coral, crushed slag, cinders, or crushed shells. Crushed stone shall consist of clean mineral aggregate free from clay, loam or organic matter, conforming to ASTM C33 stone size No. 8 and with particle size limits as follows:

U.S. Sieve Size	Percent Passing By Weight

1/2	100
3/8	85-100
No. 4	10-30
No. 8	0-10
No. 16	0-5

H. Class II soils shall be in accordance with ASTM D2487, having stones less than 2" diameter, organic content less than 1% by weight, and having less than 5 percent passing a No. 200 sieve as follows:

1. GW: Well-graded gravels and gravel-sand mixtures, little or no fines, fifty percent or more retained on No. 4 sieve.
2. GP: Poorly graded gravels and gravel-sand mixtures, little or no fines, fifty percent or more retained on No. 4 sieve.
3. SW: Clean, well-graded sands, gravelly sands, little or no fines, more than fifty percent passing No. 4 sieve.
4. SP: Clean, poorly graded sands, gravelly sands, little or no fines, more than fifty percent passing No. 4 sieve.

I. Coarse Sand: Sand shall consist of clean mineral aggregate with particle size limits as follows:

U.S. Sieve Size	Percent Passing By Weight
No. 4	95-100
No. 8	85-100
No. 16	65-97
No. 30	25-60
No. 50	5-35
No. 100	0-7

J. All other material, not specifically described, but required for proper completion of the work shall be selected by the Contractor and approved by the Engineer.

PART 3 – EXECUTION

3.1. CLEARING AND GRUBBING

Clearing and grubbing shall be performed in accordance with standards found elsewhere in these criteria.

3.2. SHEETING, SHORING, AND BRACING

A. Furnish, put in place, and maintain sheeting, shoring, and bracing as required to support the sides of excavations, to prevent movement which could diminish the width of the excavation, to protect adjacent structures, and to protect workers from hazardous conditions. Such support shall consist of braced steel sheet piling, braced wood lagging and soldier beams or other approved methods. If the City is of the opinion that the supports are insufficient, he may order additional supports to be installed at the expense of the Contractor. Compliance with such order shall not relieve or release the Contractor from his responsibility for the sufficiency of supports. Care shall be taken to prevent voids adjacent to the sheeting, but if voids are formed, they shall be immediately filled and compacted. Where soil cannot be properly compacted to fill a void, lean concrete shall be used as backfill at no additional expense to the City.

B. The Contractor shall construct sheeting outside the lines of the foundation unless otherwise required for his method of operation. Sheeting shall be plumb and securely braced and tied in position. Sheeting and bracing shall withstand all pressure to which the structure or trench will be subjected. Any deformation shall be corrected by the Contractor at his own expense so as to provide the necessary clearances and dimensions.

C. Where sheeting and bracing is required to support the sides of excavations for structures, the Contractor shall engage a Professional Geotechnical Engineer, registered in the State of Florida, to design the sheeting and bracing. The sheeting and bracing installed shall conform to the design provided by the Professional Geotechnical Engineer.

D. The installation of sheeting, particularly by driving or vibrating, may cause distress to existing structures and will require the prior written approval of the Engineer of Record. The Contractor shall evaluate the potential for such distress and take precautions to prevent distress of existing structures.

E. The Contractor shall leave in place, embedded in the backfill, all sheeting and bracing the City directs him to leave in place for the purpose of preventing injury to structures, utilities, or other property, whether public or private.

F. Steel or wood sheeting may be used at the Contractor's option. Sheeting shall be of adequate strength for the purpose intended. Where conditions permit, steel drag shields or trench boxes may be used. Voids left by the advancement of the shield shall be carefully backfilled and compacted in accordance with trench backfill requirements.

G. Steel sheeting above the crown elevation of pipe may be completely removed when sufficient backfill has been placed to prevent damage to the work and/or existing structures. Care shall be exercised to prevent the opening of voids during the extraction process. All sheeting placed below the crown elevation of pipe shall be cut off above the pipe crown elevations and left in place.

H. All sheeting and bracing not left in place shall be carefully removed in such manner as not to endanger the construction, or other structures, utilities, or property. All voids left or caused by withdrawal of sheeting shall be immediately refilled with sand by ramming with tools especially adapted for that purpose, or as otherwise directed by the City.

I. The right of the City to order sheeting and bracing left in place shall not be construed as creating any obligation on his part to issue such orders, and his failure to exercise his right to do so shall not relieve the Contractor from liability for damages to persons or property growing out of a failure on the part of the Contractor to leave in place sufficient sheeting and bracing to prevent any caving or moving of the ground.

3.3. PUMPING AND DRAINAGE

A. All water pumped or drained from the excavated area shall be disposed of in a suitable manner without undue interference with other Work, without damage to surrounding property, and in accordance with pertinent rules and regulations.

B. No construction, including pipe laying, shall be allowed in water. Groundwater shall be maintained at least two feet below the excavation. No water shall be allowed to come into contact with masonry or concrete within 24 hours after being placed. The Contractor shall constantly guard against damage due to water and take full responsibility for all damage resulting from his failure to do so.

C. The Contractor will be required at his expense to excavate below grade and refill with approved fill material if the Owner determines that adequate drainage has not been provided.

3.4. EXCAVATION

A. Excavating for Structures and Utilities:

1. Excavation work shall be performed in a safe and proper manner with appropriate precautions being taken against all hazards. Excavations shall provide adequate working space and clearances for the Work to be performed therein and for installation and removal of concrete forms. In no case shall excavation faces be undercut for extended footings.
2. Excavation shall be made to such dimensions as will give suitable room for bracing and supporting, for pumping and draining, for installing the pipelines, and for all other Work required. Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10 ft.

B. Pre-Cast Structures: Excavation for precast or prefabricated structures in sub-standard soils shall be carried to an elevation six inches lower than the proposed outside bottom of the structure to provide space for the structural backfill material.

C. Cast in Place Structures: Excavation for structures constructed or cast- in-place in dewatered excavations such that a dry excavation bottom is exposed and the naturally occurring material can be leveled and made ready to receive construction shall be the elevation of the bottom of the structure. Material disturbed below that elevation in dewatered excavations shall be replaced with

structural backfill.

1. Immediately document the location, elevation, size, material type and function of new subsurface installations, including underground utilities encountered during the course of construction.
2. Excavation equipment operators shall be familiar with subsurface obstructions as shown on the Drawings and should anticipate encountering them and other unknown obstructions and utilities during the course of the Work.
3. Encounters with subsurface obstructions shall be hand excavated.
4. Excavation and dewatering shall be accomplished by methods which preserve the undisturbed state of subgrade soils. Subgrade soils which become soft, loose, "quick" or otherwise unsatisfactory for support of structures as a result of inadequate dewatering or other construction methods shall be removed and replaced by crushed stone as required by the Engineer at the Contractor's expense.
5. The bottom of excavations shall be rendered firm and dry before placing any structure or pipe. Excavated material not suitable for backfill shall be removed from the site and disposed of by the Contractor.
6. Excavated material shall be stockpiled in such a manner as to prevent nuisance conditions. Surface drainage shall not be hindered.
7. Except where trees are indicated to be removed, trees shall be protected from injury during construction operations. No tree roots greater than 2 inches in diameter shall be cut without the permission of the owner. Trees shall be supported during excavation by means approved by the City.

3.5. OVERCUT AND UNDERCUT

A. If any excavation is in excess of that indicated in the Drawings, the Contractor shall refill to proper grade with fill at his own cost. Fill material and compaction method shall be as directed by the Engineer.

3.6. STABILIZATION

A. Subgrades for concrete structures and trench bottoms shall be firm, dense, and thoroughly compacted and consolidated They shall be free from mud and muck and shall be sufficiently stable to remain firm and intact.

B. Subgrades for concrete structures or trench bottoms which are otherwise solid, but become mucky on top due to construction operations shall be reinforced with one or more layers of crushed rock or gravel. Not more than 1/2-inch depth of mud or muck shall be allowed to remain on stabilized trench bottoms when the pipe bedding material is placed thereon. The finished elevation of

stabilized subgrades for concrete structures shall not be above subgrade elevations shown on the Drawings.

C. All stabilization work shall be performed by and at the expense of the Contractor.

3.7. FILL AND COMPACTION

A. Materials: To the maximum extent available, excess earth obtained from structure and trench excavation shall be used for the construction of fills and embankments. Materials used as backfill must be acceptable to the Engineer and shall be free from rocks or stones larger than 2 inches in their greatest dimension, brush, stumps, logs, roots, debris, and organic or other deleterious materials.

B. Placement and Compaction:

1. Backfill materials shall be placed in approximately horizontal layers not to exceed 8 inches in uncompacted thickness. Material deposited in piles or windrows by excavating and hauling equipment shall be spread and leveled before compaction.
2. Each layer of material being compacted shall have the best practicable uniform moisture content to ensure satisfactory compaction. The Contractor will be required to add water and harrow, disc, blade, or otherwise work the material in each layer to ensure uniform moisture content and adequate compaction. Each layer shall be thoroughly compacted by rolling or other method acceptable to the Engineer to 98 percent of maximum density at optimum moisture content as determined by Modified Proctor Method, ASTM D1557, latest (AASHTO T180).

C. Backfill excavations and construct embankments for structures according to the schedule listed in Table A. Backfill pipes according to the schedule listed in Table B.

D. Pipe shall be laid in open trenches unless otherwise indicated on the Drawings or elsewhere in the Contract Documents.

E. Excavations shall be backfilled to the original grade or as indicated on the Drawings. Deviation from settling shall be corrected.

F. Embankments shall be constructed true to lines, grades and cross sections shown on the plans or ordered by the City. Embankments shall be placed in successive layers of not more than 8 inches in thickness, loose measure, for the full width of the embankment. As far as practicable, traffic over the Work during the construction phase shall be distributed so as to cover the maximum surface area of each layer.

G. If the Contractor requests approval to backfill material utilizing lifts and/or methods other than those specified herein, such request shall be in writing to the Engineer. Approval will be considered only after the Contractor has performed tests, at the Contractor's expense, to identify the material used and density achieved throughout the backfill area utilizing the method of backfill requested.

H. Foundation Preparation: Backfilled areas shall be compacted in 8-inch layers to a density of not less than 98 percent of Modified Proctor Dry Density as determined by ASTM D1557 latest (AASHTO T108) for a depth of not less than

2-feet below the bottom of the foundation or concrete slab. Any unsuitable foundation material shall be removed and replaced with suitable material. The ground beneath building foundations, equipment base slabs, and slabs on grade shall be removed and the area proof-rolled. Proof-rolling for building and containment areas should consist of at least 10 passes of a self- propelled vibrator compactor capable of delivering a minimum impact force of 30,000 to 35,000 pounds per drum to the soils. Each pass should overlap the preceding pass by 30 percent to ensure complete coverage.

3.8. TRENCH EXCAVATION

A. The Contractor shall not open more trench in advance of pipe laying than is necessary to expedite the work. Four hundred (400) feet shall be the maximum length of open trench on any line under construction. All trench excavation shall be open cut from the surface. Where pipe grades or elevations are not definitely fixed by the contract drawings, trenches shall be excavated to a depth sufficient to provide a minimum depth of backfill cover over the top of the pipe of 36 inches. Greater pipe cover depths may be necessary to provide clearance beneath existing pipes conduits, drains, drainage structures, or other obstructions encountered at normal pipe grades. Measurement of pipe cover depth shall be made vertically from the outside top of pipe to finished ground or pavement surface elevation.

B. Trench Widths:

1. Cutting trench banks on slopes to prevent sliding and caving will be permitted only in areas where the increased trench width will not interfere with surface features or encroach upon rights-of-way limits. Slopes shall not extend lower than one foot above the top of the pipe.
2. Trenches shall be excavated to a width that will provide adequate working space and sidewall clearances for proper pipe installation, jointing, and embedment. Minimum permissible sidewall clearances between the installed pipe and the trench wall shall be 12 inches.

C. Mechanical Excavation:

1. The use of mechanical equipment will not be permitted in locations where its operation would cause damage to trees, buildings, culverts, and other existing property, utilities, or structures above or below ground. In all such locations, hand excavating methods shall be used.
2. Mechanical equipment used for trench excavation shall be of the type, design, and construction that the bottom elevation of the rough trench excavation can be controlled, that uniform trench widths and vertical sidewalls are obtained, and that trench alignment is such that a pipe when accurately laid will be centered in the trench with adequate clearance between the pipe and the sidewalls of the trench. Undercutting a trench sidewall to obtain sidewall clearance will not be permitted.

D. Pavement Cutting:

1. Cuts in concrete pavement, asphalt pavement, and asphalt base pavements shall be no larger than necessary to provide adequate

working space for proper installation of pipe and appurtenances. Cutting shall be done with an asphalt or concrete saw in a manner that will provide a clean groove for the full depth of pavement along each side of the trench and along the perimeter of cuts for structures.

2. Asphalt pavement and pavement base over trenches excavated for pipelines shall be removed so that a shoulder not less than 12 inches in width at any point is left between the cut edge of the pavement and the top edge of the trench. Trench width at the bottom shall not be greater than at the top and no undercutting will be permitted. Pavement cuts shall be made parallel with the centerline of the trench.

3.9. TESTS

A. All tests required for preliminary review of materials shall be made by an independent testing laboratory supplied by the Contractor and approved by the Engineer. Two initial gradation tests shall be made for each type of backfill material and one additional gradation test shall be made for each additional 500 tons of each material by the independent testing laboratory. Moisture- density (Proctor) tests and relative in place density tests on the materials, and all in-place field density tests, shall be made at the expense of the Contractor.

B. Field Testing

1. All field soil testing will be done by a qualified geotechnical engineering company licensed in the State of Florida to perform such work as indicated below.
2. Where soil material is required to be compacted to a percentage of maximum density, the maximum density at optimum moisture content will be determined in accordance with the appropriate ASTM standard.
3. Each set of density tests above the gravity sewer pipe, force main, potable water main and reclaimed water main shall consist of one test 2 feet above the top of the pipe and one test for each foot interval up to the bottom of the subgrade or to the ground surface if not under a road.
4. One set of density tests shall be performed at each of the following locations:
    a. At 200-foot intervals along gravity mains, force mains, potable water mains and reclaimed water mains.
    b. Adjacent to manholes or other underground structures.
    c. Between manholes along segments of gravity sewer 200 feet or longer.
    d. City of Cocoa Beach reserves the right to require density tests at other locations, as the inspector may deem necessary.

C. If a test shows non-compliance with the required density, the Contractor shall accomplish such remedy as may be required to ensure compliance. Subsequent testing to show compliance shall be done by a testing laboratory

selected by the City and paid for by the Contractor.

D. The Contractor shall provide test trenches for the Utility's field soil testing operations. The trenches and excavations shall be provided at the locations to the depths required by the City. Lawns destroyed by test trenching and excavation shall be regraded and restored.

3.10 DRAINAGE MAINTENANCE

A. Bridges and other temporary structures required to maintain traffic across unfilled trenches shall be constructed and maintained by the Contractor. Backfilling shall be done so that water will not accumulate in unfilled or partially filled trenches. Material deposited in roadway ditches or other water courses crossed by the trench shall be removed immediately after backfilling and the original sections, grades, and contours of ditches or water courses shall be restored. Surface drainage shall not be obstructed longer than necessary.

3.11 FINAL GRADING

A. All areas on the site of the Work which are to be graded shall be brought to grade within a tolerance of ± 0.1 feet of the indicated elevations.

B. Use of graders or other power equipment will be permitted for final grading and dressing of slopes, provided the result is uniform and equivalent to hand work. All surfaces shall be graded to secure effective drainage. Unless otherwise shown, a slope of at least one percent shall be provided.

C. Where sodding is required, soil grades shall be three inches below finished grade.

D. Where seeding is required, soil grades shall be six inches below finished grade. Six inches of topsoil shall be evenly spread to finished grade. Topsoil shall be from an Engineer approved source and shall be clear of trash and debris.

E. Final grading shall be completed to the satisfaction of the Engineer.

3.12 EXCESS EXCAVATED MATERIALS

A. Excess excavated materials are property of the Contractor and shall be removed from the work site upon completion of the project.

3.13 SOIL SETTLEMENT

A. The Contractor shall be responsible for all settlement of fills, backfill, and embankments which may occur within the correction period stipulated in the General Conditions.

END OF SECTION

TABLE A – COMPACTION AND BACKFILL SCHEDULE FOR STRUCTURES

LOCATION	MATERIAL	COMPACTION
Beneath structures, foundations, slabs, and pavements. (minimum 2-foot depth)	Structural Fill	8-inch lifts, compacted to 98% of the soil's Modified Proctor maximum dry density. Fill should not be placed over any in- place soils until those layers have been compacted to 95% of the soil's Modified Proctor maximum dry density.
Around structures, foundations, and slabs (minimum 2-foot spacing)	Structural Fill	8-inch lifts, compacted to 98% of the soil's Modified Proctor maximum dry density. Use lift rubber-tired or vibratory plate compactors.
Subgrade for paved and gravel roadway surfaces	Common Fill	12-inch lifts, compacted to 98% of the soil's Modified Proctor maximum dry density.
Disturbed area requiring seeding and mulching	Topsoil	None

TABLE B – BACKFILL SCHEDULE FOR PIPING

Pipe Material	Pipe Size	Trench Condition (Pipe Bedding)	Material (Pipe Bedding)	Material (Pipe Envelope – Primary Zone)	Depth (Pipe Envelope – Primary Zone)	Material (Pipe Envelope – Secondary Zone)	Depth (Pipe Envelope – Secondary Zone)
Ductile Iron	Up to 16”	Dry	Common Fill	Coarse Sand	1/2 Pipe Dia.	Coarse Sand	1/2 Pipe Dia. + 12”
Ductile Iron	Up to 16”	Saturated	Class I	Coarse Sand	1/2 Pipe Dia.	Coarse Sand	1/2 Pipe Dia. +12”
Ductile Iron	Greater than 16”	Dry	Class II	Common Fill	1/4 Pipe Dia.	Common Fill	3/4 Pipe Dia. +12”
Ductile Iron	Greater than 16”	Saturated	Class I	Common Fill	1/4 Pipe Dia.	Common Fill	3/4 Pipe Dia. +12”
PVC and HDPE	Up to 6”	Dry	Coarse Sand	Coarse Sand	3/4 Pipe Dia.	Coarse Sand	1/4 Pipe Dia. + 12”
PVC and HDPE	Up to 6”	Saturated	Class I	Coarse Sand	3/4 Pipe Dia.	Coarse Sand	1/4 Pipe Dia. + 12”
PVC and HDPE	Greater than 6”	Dry	Class II	Class II	3/4 Pipe Dia.	Class II	1/4 Pipe Dia. + 12”
PVC and HDPE	Greater than 6”	Saturated	Class I	Class II	3/4 Pipe Dia.	Class II	1/4 Pipe Dia. + 12”

Notes:

1. No special bedding shall be required in the case of a suitable undisturbed earth trench bottom.
2. Bedding thickness shall be at least 12 inches unless specified otherwise.
3. Backfill shall be compacted to 98% Modified Proctor maximum dry density and shall be placed in 6-inch lifts for the pipe envelope and 12-inch lifts in the secondary zone.
4. It is intended that additional excavation shall be conducted to remove unsuitable material below the pipe bedding that would prevent compaction of the bedding and to replace such materials with suitable compacted material. Where indicated on the Drawings, the Contractor shall remove unsuitable material below the bedding to the limits indicated and replace with coarse sand or other suitable stabilization up to the bedding level without any additional cost to the Owner.

SECTION 02500
EXISTING UTILITIES

PART 1 – GENERAL

1.1. DESCRIPTION

A. This section includes procedures for protecting existing underground utilities, temporary bypassing of utilities, and making connections to existing utilities.

1.2. CONSTRUCTION REQUIREMENTS

B. Contractor shall provide the means and methods to keep existing utilities in uninterrupted service during the entirety of the project except as approved by the Owner of the utility.

PART 2 – MATERIALS

2.1. MATERIALS FOR RECONSTRUCTION

A. Except as indicated elsewhere or as specifically authorized by the City's inspector, reconstruct utilities with new material of the same size, type, and quality as that removed.

2.2. TAPPING SLEEVES

A. Tapping sleeves shall comply with ASTM A 285.
B. Pressure rating shall be at least 200 psi for piping 12 inches and smaller and at least 150 psi for piping 14 through 24 inches.
C. Tapping sleeves shall be approved by the CIty.

2.3. TAPPING VALVES

A. Tapping valves shall be approved by the City.

PART 3 – EXECUTION

3.1. GENERAL

A. The Contractor's attention is called to the utilities as shown on the drawings. Protect these utilities from any disturbances and repair the lines and associated vaults and appurtenances if they are damaged in any way. All costs incurred for protection of these lines, or any costs incurred due to the presence of the lines, whether or not they lie within the construction limits, shall be borne in full by the Contractor.

B. Where utilities are parallel with or cross the construction but do not

conflict with the permanent work to be constructed, protect the utility as required. Notify the utility owner 48 hours in advance of the crossing construction and coordinate the construction schedule with the utility owner's requirements. For utility crossings not shown in the drawings, refer to the General Conditions and the instructions of the City's inspector for guidance.

C. Determine the true location and depth of utilities and service connections which may be affected by or which may affect the work. Determine the type, material, and condition of these utilities. In order to provide sufficient lead time to resolve unforeseen conflicts, order materials and take appropriate measures to ensure that there is no delay in the work.

D. Protect utilities in place and maintain the utility in service, unless otherwise specified in the drawings or in the specifications.

E. Remove or grout-fill out-of-service utility lines as indicted in the drawings. Where utilities are to be taken out of service but left in place ("abandoned"), electronic markers are to be installed at no more than 100' spacing and at all changes in horizontal direction.

F. Where conditions require temporary removal of an existing utility, reconstruct it in kind with new materials. Provide temporary service for the disconnected utility.

3.2. TAPPING SLEEVES AND VALVES

A. Excavate the points of connection and verify pipe outer diameters of connecting pipes prior to ordering materials.

B. After installation, wrap the entire tapping sleeve and valve with two layers of polyethylene sheeting conforming to AWWA C105, 8 mils in thickness each. Backfill around the valve with care to avoid damaging the polyethylene.

3.3. PUMPING AND DRAINAGE

A. The Contractor shall supply the pumps, conduits, and other equipment, including stand-by equipment, to divert the flow of sewage around the sanitary sewer in which work is to be performed. The by-pass system shall be of sufficient capacity to handle existing flows plus additional flow that may occur during a rainstorm. The temporary by-pass system shall be capable of maintaining normal sewer operational levels at all times, without sewer overflows. The Contractor shall be responsible for furnishing the necessary labor and supervision to set up and operate the by-pass pumping system. Connections to the existing sanitary sewer main system shall be through the use of temporary connections to the sanitary sewer main (which are to be removed upon completion of the by- pass requirements) or through the proposed or existing by-pass connection.

B. The design of the temporary by-pass systems shall be the responsibility of the Contractor; however, such systems shall be subject to approval by the City. The Contractor shall submit detailed drawings and descriptions of the

temporary facilities to the Engineer for approval at least thirty days prior to the installation of any temporary facilities. The temporary by-pass system shall consist of a primary electric by-pass pump, a diesel back up pump, and an auto dialer notification system.

C. The Contractor will be responsible for conforming to the Brevard County Code of Ordinances, Land Development Regulations, Section 62-2271, titled Noise. At no time during the by-pass pumping operation will the noise level of the by-pass pumping operation exceed 60 db maximum (7a.m. to 10 p.m.) and 55 db (10p.m. to 7 a.m.). The sound level shall be measured at the property line of the parcel or lot from which the sound is emanating. The Contractor will use all acceptable construction industry methods for sound attenuation, such as Quiet Zone type pumps, hay bales, and plywood enclosures to ensure that the by-pass operation does not exceed the maximum limit described above.

D. If the Contractor's operations disrupt sewer service, except for brief periods as expressly permitted and required, the Contractor shall immediately make repairs, and do the work necessary to restore service at no additional cost to the City. The Contractor shall provide the services of emergency repair crews on call 24 hours per day.

E. The Contactor shall assign reliable individuals to monitor and maintain the bypass pumps on a continuous basis and to maintain the proper pressure on inflatable plugs to assure that leakage or failure does not occur.

F. Any fines or damage caused by not maintaining sewer service as specified above shall be the responsibility of the Contractor.

3.4. BACKFILL AND COMPACTION

A. Backfill and compact under and around utilities so that no voids are left.

B. Sand-cement slurry (flowable fill) consisting of one sack (94 pounds) of Portland cement per cubic yard of sand and sufficient moisture for workability may be substituted for other backfill materials to aid in reducing compaction difficulties. Submit specific methods and procedures for the review of the City’s inspector prior to construction.

3.5. THRUST BLOCKS ON WATER LINES

A. The Contractor's attention is called to thrust blocks for pressure pipes throughout the project whose thrust is in the direction of the new excavation and, therefore, may be affected by the construction. Protect thrust blocks in place or shore to resist the thrust by a means approved by the affected agency. If the thrust blocks are exposed or rendered to be ineffective in the opinion of the City’s inspector, reconstruct them to bear against firm unexcavated or backfill material.

B. Provide firm support by backfilling that portion of the trench for a distance of 2 feet on each side of the thrust block to be reconstructed from the pipe bedding to the pavement subgrade, with either:

1. Sand-cement slurry (94 pounds of cement per cubic yard).

2. The native material compacted to a relative compaction of 95%.

C. Excavate the backfill material for construction of the thrust block.

D. Test compaction of the backfill material before pouring any concrete thrust block.

END OF SECTION

SECTION 02513

ASPHALT PAVEMENT REMOVAL AND RESTORATION

PART 1 – GENERAL

1.01 DESCRIPTION

A. Work Included:

1. Where existing pavement is removed for the purpose of constructing or removing pipe, appurtenances, facilities, or structures; pavement and striping shall be replaced in equal or better section than the original.

2. Remove excavated material from site.
3.

1.02. RELATED WORK:

A. Division 2: Sitework

B. Division 3: Concrete

C. Division 15: Mechanical

1.03. JOB CONDITIONS

A. Traffic Control

1. Maintain traffic in accordance with Section 01570, Traffic Regulation.

PART 2 – PRODUCTS

2.1. MATERIAL

A. Base:

1. Match existing base material and thickness in accordance with F.D.O.T. Standard Specification for Road and Bridge Construction.

2. Concrete where approved for use as pavement base material shall be high early strength concrete conforming to FDOT Standard Specification, Section 345-3.3.

B. Prime and Tack Coat:

1. Meet FDOT Specification Section 300-2.

C. Seal Coat:

1. Emulsified asphalt - Grade RS-2, CRS-2, CRS-2H, Section 916-4 of FDOT specifications.
2. Cut back asphalt, Grade RC-3000, Section 916-2 of FDOT specifications.

D. Asphalt Concrete Surface:

1. FDOT Type S-III. Thickness shall match existing pavement.

E. Traffic Striping and Markings:

1. Meet requirements of FDOT Standard Specifications, Section 710, Painting Traffic Stripes, and Section 711, Thermoplastic Traffic Stripes, and Markings, where applicable. Traffic triping and markings shall be replaced with the same type of striping and/or markings as was removed.

PART 3 – EXECUTION

3.1. EXECUTION

A. Contractor shall conform to the requirements of the FDOT and City of Cocoa Beach Right-of- Way Utilization Permit.

B. Saw-Cutting:

1. Where existing pavement is to be removed, saw-cut the surface as shown in the plans leaving a uniform straight edge with minimum disturbance to the remaining adjacent surface.

C. Pavement Replacement in State and County Roads:

1. Compact the trench backfill in 6-inch lifts to 98% Modified Proctor Maximum Dry Density in accordance with AASHTO T-180.
2. Provide the following minimum pavement structure:

    a. Subgrade: Construct stabilized subgrade to match existing subgrade in conformance with FDOT Specification Section 160.

    b. Base: Unless otherwise specified or shown on the Drawings, provide minimum 8-inch-thick lime rock base course conforming to Section 200 of the FDOT Specifications. Surface elevation of lime rock to match that of the top of the adjoining existing pavement base course.

3. Provide the following asphalt pavement structure:
    a. Tack Coat: Apply tack coat in conformance with FDOT Specification Section 300-7.

    b. Surface: Compacted thickness of Type S-III plant mix or as required to

match existing pavement. Finish surface, grade, cross section, and depth of asphalt surface shall match the existing surface.

4. Traffic Striping and Markings:

   a. Meet requirements of FDOT Standard Specifications, Section 710, Painting Traffic Stripes, and Section 711, Thermoplastic Traffic Stripes, and Markings, where applicable. Traffic striping and markings shall be replaced with the same type of striping and/or markings as removed.

D. Pavement Replacement in Drives, Prior Approval of the Owner and Engineer of Open Cutting Drives, Required:

   1. Construct pavement replacement to match existing pavement.

   2. Vehicular access to City or County facilities shall not be restricted for more than 4 consecutive hours.

   3. The Contractor shall provide written notice to the owner a minimum of 24 hours in advance of restricting access to private properties.

E. Temporary Pavement Restorations:

   1. General: Pavement removed under this contract requires immediate re-surfacing shall be temporarily restored and maintained until permanently replaced by the Contractor (or removed to accommodate proposed work by others).

   2. Temporary Asphalt Pavement Restoration:

      a. Construction methods and equipment for temporary pavement restoration shall generally meet the requirements therefore as established in the FDOT Specifications but shall be modified to meet the relatively narrow strip construction conditions. Any such modification shall be approved by the Engineer prior to their use.

      b. Stabilized subgrade shall be compacted for its full thickness (minimum 12”) to not less than 98 percent of maximum density as determined by AASHTO Designation T180.

      c. Joints with existing surface and base shall be straight and neat. If necessary to obtain a straight neat joint, the contractor shall cut out sufficient existing material and replace with new material.

      d. After compaction of the stabilized subgrade, the Contractor shall install a minimum 6-inch limerock base course. The limerock shall be compacted for its full thickness prior to the application of the tack coat. Additional thickness of the limerock base may be installed, at the option of the Contractor, to minimize maintenance of the temporary pavement area.

e. After base reconstruction, the surface shall be tack-coated and a 1’/ - inch compacted thickness of Type S-III (per FDOT Standard 300) asphaltic concrete shall be constructed to match the undisturbed grade at all edges.

f. Temporary pavement shall be maintained by the Contractor until permanent restoration is completed by the Contractor.

3. Nonsurfaced streets, alleys, walkways and driveways shall be restored to original condition.

F. Settlement of Pavement:

1. All settlement and raveling of pavement occurring during the construction and warranty periods shall be repaired or replaced by the Contractor at no additional cost to the Owner.

2. All pavement removed shall be replaced with the same or similar type as that removed, except where approved by the Owner and Engineer. The pavement shall be replaced and restored to an as good a condition as existed prior to construction as determined by the Engineer.

END OF SECTION

SECTION 02550
TEMPORARY SANITARY SEWER FLOW CONTROL

PART 1 – GENERAL

A. This section covers the requirements for planning and implementation of complete stoppage or bypassing of the sanitary sewer flow during closed-circuit television (CCTV) inspection, sewer cleaning operations, sewer pipe rehabilitation and lateral reconnections or other events as needed.

B. The Contractor shall prepare and submit a detailed flow bypass pumping plan for approval by the Owner prior to implementation of flow diversion. The plan shall indicate the sequence of diversion operations, and all other operations during the work. The plans shall include drawings showing the scheme and location of temporary sewer plugs, silenced bypass pumping systems, bypass discharge lines, temporary road and access ramps, traffic maintenance, and site reinstatement.

C. Contractor shall observe and comply with Federal, State and Local laws, ordinances, codes and regulations which affect the work, specifically as they relate to wastewater discharges. Contractor shall be responsible for preventing wastewater discharges, recovery and disposal of any discharges, and payment of any fines, penalties and claims arising from negligent or willful discharge of wastewater.

PERFORMANCE REQUIREMENTS

A. It is essential to the operation of the existing sewerage system that there is no interruption in flow of sewage throughout the duration of Project. Contractor shall be responsible for the design of the bypass system. Two sets of bypassing equipment of equal size shall be furnished during bypassing.

B. Provide, maintain, and operate temporary facilities such as dams, plugs, pumping equipment, conduits, and necessary power to intercept sewage and ground water infiltration before it reaches a point where it would interfere with the Work.

C. Maintain sewer flow around Work area in a manner that will not cause surcharging of sewers, damage to sewers, and that will protect public and private property from damage. Contractor shall be fully responsible for preventing wastewater discharges, containing the sewage, recovery and legal disposal of sewage, any fines, penalties, claims, and liability arising from negligent or willful discharge of wastewater, and violation of any law, ordinance, code, order, or regulation as a result of the discharge. Contractor shall be responsible for payment of any fines assessed against Owner and Engineer for such sewage spills.

D. Design and provide bypass system that provides and maintains private property access and usability and maintains traffic flow, property access and roadway usage by means of excavation, sawcutting, excavation traffic plating, traffic ramps, temporary installation of bypass piping where required and restoration of all disturbed areas.

1.01. SUBMITTALS

A. Contractor shall furnish data covering design and installation. Submittals shall be made in a timely manner so that the project schedule can be met. The data to be submitted shall include the following:

1. Contractor shall submit a detailed implementation plan at least four weeks prior to beginning construction of the bypass system. The plan shall include the following:

b. Detailed drawing of bypass pump, pipeline, plug, and all equipment locations.

c. Equipment list including: pump sizes, capacities, number of each size to be onsite, power requirements including standby equipment, standby power, pipeline sizes, and material types.

d. Sewer user notification plan.

e. Operation and noise control plan.

f. Traffic control plan and traffic control plan approvals from applicable agencies.

2. Contractor shall submit a written emergency response plan to handle wastewater discharges.

3. Contractor shall obtain and submit permits and written permission, where required, to locate and operate flow control system in public right-of-way or private property.

1.02. SEQUENCING AND SCHEDULING

A. Notify Owner in writing of any planned flow diversions or by-pass pumping at least 3 working days before beginning work on each individual segment of sewer rehabilitation. Coordinate with the Owner and provide contingency plans to address rainfall forecasts.

PART 2 - PRODUCTS

A. The flow control system shall provide adequate capacity and size to handle existing flows plus additional flows that may occur during periods of rainstorm. Capacity of the system shall be at least 125 percent of the peak flow. Capacity shall be determined for pipes and pumps by using a velocity of no more than 10 feet per second.

B. Plugs shall conform to the following minimum requirements:

1. Plugs shall have taps for connection of pressure gauges and air hoses and flow-through capability.

C. Bypass piping shall be restrained joint high-density polyethylene (HDPE) and shall meet the following criteria:

1. All piping shall be leak free.

2. Pressure rating at least 1.5 times the operating pressure.

3. Temporary HDPE pressure bypass piping shall meet ASTM D3350 and be a minimum SDR of 32.5. Joints shall be fully butt-fusion welded with flanged or welded bends as necessary. Air valves shall be installed as required.

4. Piping may be reused for subsequent flow bypass pumping system placements. Owner or Engineer, at their sole discretion, shall have right to reject sections deemed unserviceable.

D. Bypass pumps shall be the fully automatic, self-priming units and shall conform to the following minimum requirements:

1. Open impeller design with the ability to pass minimum 3-inch-diameter solids.

2. Able to run dry for long periods of time to accommodate cyclical nature of flows.

3. The engine shall be equipped to minimize noise. All pumps shall be sound attenuated and provided with noise barricades as required. Noise levels shall comply with the noise control ordinance of the Lee County Health Department.

4. Backup pumping capacity shall be provided. 100% full redundancy of the pumping capability will be required. The backup pumps shall be fully installed, operational, and ready for immediate use.

5. Contractor shall provide one dedicated fuel tank for every single pump if fuel driven pumps are used. Contractor shall provide a fuel level indicator outside each fuel tank. Contractor shall provide an emergency standby power generator if electric power driven pumps are used.

6. Contractor shall place all pumps, generators and other equipment that use petroleum on plastic tarps to protect against spills of petroleum products.

PART 3 - EXECUTION

A. Contractor shall develop a bypass pumping plan that is suitable to the type of sewer rehabilitation being used. Flow must be maintained at all times during the project.

B. The Contractor shall notify the Owner in writing at least 3 working days prior to implementing flow control system for each rehabilitation segment or manhole installation.

C. The system shall be monitored by a competent person at all times during operation, including overnight if the system is in operation. The system shall be inspected every day and all leaks repaired immediately. The backup system shall also be routinely checked to ensure that it will function properly if needed.

D. When a bypass pumping plan is implemented, the Contractor shall operate and maintain pumps 24 hours per day, 7 days per week, including holidays, as required, to control flow.

E. Take all necessary precautions to ensure no private or public properties are subjected to a sewage backup or spill. Contractor shall be solely responsible for all cleanup, damages, and resultant fines in the event of a backup or spill.

F. Eliminate flow from sewer manhole-to-manhole segments during spot repair, service connection rehabilitation, and sewer pipe replacement or lining within that segment as required to perform the Work.

G. If at any time during the work the flow reaches the peak estimated flow that the flow control system was designed for, stop all Work that requires flow control, secure the work area, and restore flow in sewer until flow recedes. Owner shall be notified is this occurs.

H. After the Work is completed, return flow to sewer and remove temporary equipment.

I. Contractor shall plan and execute the work in a manner that provides for pedestrian and vehicle access and does not block streets.

3.01.

A. The Contactor shall prepare an emergency response plan to handle wastewater discharges that includes the following items. The Contractor is responsible to assure that all employees, including subcontractors, know and obey all emergency procedures included in the emergency response plan.

   a. Identification of nearby environmentally-sensitive areas such as waterways, channels, catch basins and entrances to existing underground storm drains.

   b. Development of an emergency notification procedure. Contractor shall designate primary and secondary representatives, their respective phone numbers, pager numbers, and mobile phone numbers. Owner and Engineer contacts shall also be listed.

   c. Identify personnel and equipment/tools that will be utilized in the event of a wastewater discharge. Include an emergency response team with arrangements for backup personnel and equipment. The emergency response team shall be able to dispatch to the site 24 hours a day, 7 days a week, including weekends and holidays to respond immediately to any wastewater discharge related to the Project work.

   d. Identify any property owners who may be affected.

   e. Identify step-by-step procedures to follow to contain, control, and minimize wastewater discharge.

   f. Notification to Wastewater Treatment Plant in the event of plug failure or upset in the bypass pumping process.

B. In the event of a wastewater discharge Contractor shall:

   1. Immediately implement the plan, without direction from Engineer or Owner, to control and contain the discharge.

2. Contact the Owner as outlined in the plan. When contact is made, the following information, at a minimum, shall be conveyed:

   a. Location of discharge.

   b. Estimated volume.

   c. Time discharge began.

   d. Duration (if already controlled).

   e. Cause (if known).

   f. Control measures implemented.

   g. Type of remedial and/or cleanup measures taken.

3. Based on this information, Contractor, Engineer, and Owner shall determine if the discharge is contained, and whether or not the Owner's personnel should be dispatched to the site.

4. Contractor shall, within three working days of the wastewater discharge, submit to Engineer and Owner a written Wastewater Discharge Incident Report.

C. Engineer and Owner will evaluate suggested procedural changes to avoid further discharges and will instruct Contractor on changes. Engineer and Owner may institute further corrective actions, as deemed necessary.

D. Contractor shall be fully responsible for preventing wastewater discharges, containing the sewage, recovery and legal disposal of sewage, any fines, penalties, claims and liability arising from negligent or willful discharge of wastewater; and any violation of any law, ordinance, code, order, or regulation as a result of the emergency. Contractor shall be responsible for replacement or repair of damaged or failed equipment as a direct result of the emergency.

A. Design, furnish, install, and maintain all power, primary and standby pumps, appurtenances, tanks and trucks, and bypass piping required to maintain existing flows and services.

B. Site verification shall take place prior to the construction of the bypass control system. The verification shall include:

1. Locate existing utilities in area of bypass pipelines.

2. Bypass pipeline location shall be selected to:

   a. Minimize disturbance of existing utilities.

   b. Confine bypass discharge pipeline within public rights-of-way or temporary construction area and permanent easement.

   c. When bypass pipeline crosses local streets and private driveways, place bypass pipeline in trench and cover with temporary pavement or method approved by Engineer.

E. Flow bypass shall be done in such a manner that will not damage private or public property, or create a nuisance or public menace. Pumped sewage shall be in an enclosed pipe that is adequately protected from traffic and shall be redirected into sanitary sewer system. Dumping or free flow of sewage on private or public property, gutters, streets, sidewalks or into storm sewers is prohibited.

F. Contractor may remove cones or decks from existing manholes if necessary for the bypass pumping operation. All cones and decks shall be replaced with new cones or decks unless use of original cones or decks is approved by the Engineer. Salvage and reinstall all existing frames and grates/lids unless directed otherwise by the Engineer. If manhole was previously lined, Contractor shall reline the disturbed section in a manner acceptable to Engineer. Contractor shall utilize mastic at joints and provide a watertight connection between the new and existing liner. New liner shall overlap at least 8-inches on both sides of the joint.

G. Contractor shall continuously monitor fuel level in the tanks and ensure that the fuel level does not drop below a level equivalent of two hours of continuous flow diversion system operation.

H. The Contractor shall maintain a sufficient number of valves, tees, elbows, connections, tools, sewer plugs, piping, and other parts of system hardware to ensure immediate repair or modification of any part of the system as necessary.

A. The system shall be hydraulically tested with a minimum pressure equal to 1.5 times the maximum operating pressure and run for two hours. The test shall occur once construction of the system is complete and before bypass pumping operations begin. Contractor shall demonstrate to the satisfaction of Engineer that both the primary and backup flow diversion systems are fully functional and adequate, and shall certify the same, in writing. Engineer shall be notified 24 hours in advance of the test.

A. Before bypass pumping system is broken down, and removed at the completion of the Work, discharge sewage remaining in bypass pipeline and pumping equipment to working sewer. If necessary to remove debris alternate pigging and purging to clean the pipe until all loose material is removed from the pipe. Contractor shall disinfect the piping with a 10% chlorine and water solution prior to dismantling the pipe in order to remove it from the site upon completion of the project or if the pipe will be stored on site for more than 24 hours before being placed into operation.

B. Upon completion of bypass pumping operation, clean and restore all areas disturbed by the flow control system operations including, but not limited to, pavement sawcutting, asphalt removal, asphalt replacement, trench backfill, concrete replacement, monuments, fences, grading, irrigation systems, landscaping, to equal or better than which existed prior to start of the Work.

END OF SECTION

SECTION 02580
PAVEMENT MARKINGS

PART 1 - GENERAL

1.01 REFERENCE

A. The following is a list of standards which may be referenced in this section:

1. American Association of State Highway and Transportation Officials (AASHTO):

   a. M237, Standard Specification for Epoxy Resin Adhesives for Bonding Traffic Markers to Hardened Portland Cement and Asphalt Concrete.

   b. M247, Standard Specification for Glass Beads Used in Traffic Paint.

   c. M248, Standard Specification for Ready-Mixed White and Yellow Traffic Paints.

   d. M249, Standard Specification for White and Yellow Reflective Thermoplastic Striping Material (Solid Form).

2. ASTM International (ASTM): D4280, Standard Specification Extended Life Type, Nonplowable, Prismatic, Raised, Retroreflective Pavement Markers.

3. Federal Specifications (FS):
   a. A-A-2886A, Paint, Traffic, Solvent Based.
   b. TT-B-1325C, Beads (Glass Spheres); Retroreflective.

1.02 DEFINITIONS

A. Standard Specifications: Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.

1.03. SUBMITTALS

A. Action Submittals:

1. Shop Drawings:
   a. Product Data:
      1) Paint.
      2) Thermoplastic material.
      3) Reflective markers.

4) Epoxies, resins, and primers to be used.

b. Glass Beads: Proposed gradation.

B. Samples:
   1. Glass Beads: 2 pounds.
   2. Portland Cement Concrete Primer: 1 quart.
   3. Reflective marker(s).
   4. Thermoplastic material.

C. Informational Submittals:

   1. Description of proposed methods for removal of drips, overspray, improper markings, paint and thermoplastic material tracked by traffic, and existing markings.
   2. Manufacturer's Certificate of Compliance for products specified in this section.
   3. Equipment List: Proposed equipment to be used, including descriptive data.
   4. Manufacturer's Instructions:
      a. Application of preformed tape.
      b. Application of portland cement concrete primer.
      c. Application of glass beads.
      d. Application of epoxy resin.
      e. Installation of reflective markers.

PART 2 - PRODUCTS

2.01 GENERAL

A. Subcontractor shall restore all pavement markings disturbed during construction to match existing marking tape.

2.02. PAINT

A. Color: White or yellow, to match existing.
B. Traffic paint in accordance with Section 842 of the Standard Specifications.
C. Homogeneous, easily stirred to smooth consistency, with no hard settlement or other objectionable characteristics during storage period of 6 months.

2.03 THERMOPLASTIC MARKING

A. Color: White or yellow, to match existing.

B. AASHTO M249.

2.04 RAISED REFLECTIVE MARKERS

A. Type V meeting requirements of Section 840 of the Standard Specifications.

B. Color: To match existing.

C. Epoxy in accordance with AASHTO M237.

PART 3 - EXECUTION

3.01. SURFACE PREPARATION

A. Cleaning:

1. Thoroughly clean surfaces to be marked before application of pavement marking material.
2. Remove dust, dirt, and other granular surface deposits by sweeping, blowing with compressed air, rinsing with water or a combination of these methods.
3. Completely remove rubber deposits, surface laitance, existing paint markings, and other coatings adhering to pavement with scrapers, wire brushes, sandblasting, approved chemicals, or mechanical abrasion.
4. Scrub areas of old pavement affected with oil or grease with several applications of trisodium phosphate solution or other approved detergent or degreaser, and rinse thoroughly after each application.
5. Surfaces shall be completely free of dirt and ice, and dry of water at the time of application of materials specified herein.
6. Oil-Soaked Areas: After cleaning, seal with cut shellac to prevent bleeding through the new paint.
7. Reclean surfaces when the Work has been stopped due to rain.
8. Existing Pavement Markings:
   a. Remove existing pavement markings that may interfere or conflict with newly applied marking patterns, or that may result in a misleading or confusing traffic pattern.
   b. Do not apply thermoplastic markings over existing preformed or thermoplastic markings.
   c. Perform grinding, scraping, sandblasting or other operations so finished pavement surface is not damaged.

D. New Concrete Pavement:

1. Allow a minimum cure time of 30 days before cleaning and marking.
2. Clean by either sandblasting or water blasting to the following results:
   a. No visible evidence of curing compound on peaks of textured

concrete surface.

b. No heavy puddled deposits of curing compound in valleys of textured concrete surface.

c. Remaining curing compound is intact, with loose and flaking material completely removed.

d. Peaks of textured pavement surface are rounded in profile and free of sharp edges and irregularities.

3. Allow a minimum drying time of 24 hours after water blasting before applying thermoplastic markings.

E. New Asphalt Pavement: Allow a minimum pavement cure time of 30 days before applying paint.

3.02. PAINT APPLICATION

A. General:

1. Thoroughly mix pigment and vehicle together prior to application and keep thoroughly agitated during application.
2. Do not add thinner.
3. Apply only when air and pavement temperatures are above 40 degrees F and less than 95 degrees F. Maintain paint temperature within these same limits.
4. Apply only when surface is dry.
5. Do not apply when conditions are windy to the point of causing overspray or fuzzy line edges.
6. Provide guidelines and templates to control paint application.
7. Take special precautions in marking numbers, letters, and symbols.
8. Sharply outline edges of markings and apply without running or spattering.

B. Rate of Application:

a. Reflective Markings: Apply evenly, 105 plus or minus square feet per gallon.

b. Glass Bead Application:
- Apply immediately following application of paint.
- Use evenly distributed drop-on application method.
- Rate: 6 pounds per gallon of paint.

2. Nonreflective Markings: Apply paint evenly to pavement surface at a rate of 105 plus or minus 5 square feet per gallon.

3. On new pavement or new asphalt surface treatments, apply two coats of paint at a uniform rate of 210 square feet per gallon.

4. Drying:

a. Provide maximum drying time to prevent undue softening of bitumen and pickup, displacement, or discoloration by traffic.

b. If drying is abnormally slow, discontinue painting operations until cause is determined and corrected.

C. Protection:

1. Protect markings from traffic until paint is thoroughly dry.

2. Protect surfaces from disfiguration by paint spatters, splashes, spills, or drips.

D. Cleanup: Remove paint spatters, splashes, spills, or drips from the Work and staging areas including areas outside the immediate Work area where spills occur.

3.03. THERMOPLASTIC MARKING APPLICATION

A. Following specified surface preparation, prime and apply marking and glass beads to provide a reflectorized strip as shown on Drawings.

B. Application Temperatures:

1. Pavement Surface: Minimum 40 degrees F and rising.
2. Thermoplastic: Minimum 375 degrees F, maximum 425 degrees F.

C. Primer:

1. On portland cement concrete and existing asphalt pavements, apply epoxy resin primer/sealer according to thermoplastic manufacturer's recommendations.

2. All primer/sealer to dry prior to applying thermoplastic.

D. Thermoplastic Marking:

1. Extrude or spray in a molten state, free of dirt or tint at a minimum thickness of 0.125 inch; maximum thickness of 0.190 inch.
2. Apply centerline, skipline, edgeline, and other longitudinal type markings with a mobile applicator.
3. Apply special markings, crosswalks, stop bars, legends, arrows, and similar patterns with a portable, extrusion-type applicator.

E. Glass Bead Application:

1. Immediately after marker application, mechanically apply such that the beads are held by and imbedded in the surface of the molten

material.

2. Application Rate: 1 pound per 20 square feet of compound.

F. Cool completed marking to ambient temperature prior to allowing vehicular traffic.

3.04. INSTALLATION OF RAISED REFLECTIVE MARKERS

A. Apply epoxy to cleaned and prepared pavement area per manufacturer's instructions.

B. Apply marker to epoxy before epoxy has a chance to set.

C. Align markers carefully, projecting no more than 3/4 inch above level of pavement.

D. Spacing:

a. Solid Longitudinal Lines: To match existing.
b. Broken Centerlines: To match existing.

END OF SECTION

SECTION 02605
SANITARY UTILITY SEWERAGE MANHOLES, FRAMES, AND COVERS

PART 1 - GENERAL

1.01. SCOPE

A. This section covers the furnishing and installation of standard and drop sewer manholes. Standard and drop manholes shall be constructed complete with covers, steps, fittings, and other appurtenances, in accordance with the details in the figures at the end of this section.

B. Where required, special manholes shall be constructed in accordance with the details indicated on the Drawings.

C. Steps, frames, and covers for structures other than sewer manholes are covered in other sections.

1.02. GENERAL.

A. At the option of Contractor, standard and drop manholes may be constructed with cast-in-place concrete bases or precast concrete (developed) bases as indicated on the figures.

B. Only manholes which are required to have inside/outside pipe and fittings for dropping sewage into the lower line will be designated as drop manholes. Inside drop manholes where the incoming line discharges directly into the manhole and which do not require special fittings will be considered standard manholes.

1.03. SUBMITTALS

A. Drawings and data covering precast concrete sections and castings shall be submitted in accordance with the Submittals Procedures section.

B. When steel-reinforced plastic manhole steps are specified, data submitted shall include verification of the type and grade of steel used for step reinforcement, typical chemical analysis of the steel, type and classification of the plastic, and reports of acceptance tests performed in accordance with ASTM C478, Section 16, and C497, Section 10.

C. When corrosion protection systems are specified, data submitted shall include corrosion protection materials, method of application, maintenance requirements, and other pertinent data.

1.04. DELIVERY, STORAGE, AND HANDLING.

A. Shipping shall be in accordance with the Product Delivery Requirements section. Handling and storage shall be in accordance with the Product Storage and Handling Requirements section.

B. Precast concrete sections shall not be delivered to the job until representative concrete control cylinders have attained a strength of at least 80 percent of the specified minimum.

C. Precast concrete sections shall be handled carefully and shall not be bumped or dropped. Hooks shall not be permitted to come in contact with joint surfaces.

PART 2 - PRODUCTS

2.01. MATERIALS

Precast Concrete Manholes and Reinforcement	ASTM C478, except as modified herein.
Cement	Cement type shall comply with ASTM C150, Type II. Water-cementitious materials ratio shall not exceed 0.40. Alternative materials proposed by Contractor that will provide equivalent corrosion protection and durability may be submitted subject to review and acceptance by Engineer.
Riser and Precast Base	Circular, uniform outside diameter.
Minimum Wall Thickness	8”
Cone	Shape shall be concentric as required; wall thickness as specified for riser sections.
Adjusting Rings	Circular, with shear keys.
Cast-in-Place Concrete Bases	Materials, handling, forms, finishing, curing, and other work as specified in the cast-in-place concrete section.
Nonshrinking Grout	L&M "Crystex", BASF Master Builders "Masterflow 713 " or "Set Grout", Sauereisen Cements "Grout No. F-100 Level Fill Grout", , or Five Star Products "Five Star Grout".
Resilient Manhole/Pipe Connectors	A-LOK Premium manhole pipe seal.
Mastic Fill	Butyl rubber compatible with resilient connector material.
Gaskets	
Mastic	ASTM C990; Hamilton-Kent "Kent-Seal No. 2", , or Henry Company "Ram-Nek". Cross-sectional area as recommended by manhole manufacturer.

Rubber	ASTM C361, Section 6.9, except gasket shall be synthetic, with hardness of 40 ± 5 when measured by ASTM D2240, Type A durometer. Natural rubber will not be acceptable.
Rubber Joint Filler	Ram-Nek or equal.
Coal Tar Epoxy	High-build coal tar epoxy; Ameron "Amercoat 78HB Coal Tar Epoxy", Carboline "Bitumastic 300M", or Tnemec "46H-413 Hi-Build Tneme-Tar".
Corrosion Protection System	As specified herein.
Castings	ASTM A48, Class 35B or better.
Manhole Rings and Covers	See Section 02606.

2.02. MANUFACTURE

A. The first riser sections for use with cast-in-place bases shall be provided with horseshoe-shaped boxouts for connecting piping to be grouted in, or with circular openings with continuous, circular, resilient connectors cast into the riser wall. Boxouts for grouting, if used, shall have surfaces grooved or roughened to improve grout bond.

B. Precast base sections shall be provided with circular openings, with continuous, circular, resilient connectors cast into the wall.

C. Resilient connectors shall be installed in accordance with the manufacturer's recommendations, except that connectors shall be positioned so that sealing or resealing operations may be accomplished from inside the manhole.

D. Precast sections may be provided with lifting notches on the inside faces of walls to facilitate handling. Lifting notches shall be not more than 3 inches deep; holes extending through the wall will not be acceptable.

E. If precast concrete base sections are used, part of the concrete invert fill may be furnished with the precast unit; however, a rough surface shall be provided to improve bond with the final invert fill. At least the top 2 inches of the concrete invert fill shall be installed in the field.

2.03. INTERIOR AND EXTERIOR COATING

A. The interior and exterior surfaces of precast concrete manholes shall be coated with a three-coat water based acrylic coating. The interior and exterior coats shall be factory applied to the coating manufacturer’s recommendation with a minimum total DFT of 12 mils. Each of thecoats will be 4 mils thick of contrasting colors. The interior shall be coated red, black, and a final gray coat. The exterior shall be coated red, gray, and a final black coat.

PART 3 – EXECUTION

3.01. INSPECTION

A. Precast concrete sections shall be inspected when delivered and all cracked, or otherwise visibly defective units shall be rejected.

3.02. CONSTRUCTION.

A. Bases

1. If cast-in-place concrete bases are used, concrete shall be placed on undisturbed earth in accordance with applicable requirements of the Concrete section.

2. If precast concrete (developed) bases are used, the subgrade materials shall be excavated to undisturbed earth and to a uniform elevation which will permit at least 4 inches of granular embedment material, as specified in the Excavation and Fill for Structures section, to be installed and compacted. The surface of the granular material shall be carefully graded and the base section accurately set so that connecting pipes will be on proper line and grade. The elevation of the granular material shall be adjusted until proper grade and alignment of the base section has been attained.

3. No wedging or blocking under precast concrete bases will be permitted.

4. When resilient connectors are used with cast-in-place bases, the concrete fill under the connecting pipe outside the manhole shall be deleted and shall be replaced with granular embedment material to undisturbed earth.

5. In no case shall the invert section through a manhole be greater than that of the outgoing pipe. The shape of the invert shall conform exactly to the lower half of the pipe it connects. Side branches shall be connected with a radius of curve as large as practicable. All inverts shall be troweled to a smooth, clean surface.

B. Riser and Cone Sections and Precast Concrete Adjusting Rings:

1. Circular precast sections and rings shall be provided with a rubber or mastic gasket to seal joints between sections and rings. Mastic gaskets shall be used only at temperatures recommended by the manufacturer. Lifting notches in manhole walls shall be filled with nonshrinking grout.

2. Cast iron manhole steps shall be provided, and shall be cast in, or shall be grouted into prepared holes with nonshrinking grout. Embedded legs shall be cut if required to prevent protruding through the manhole wall.

3. Steel-reinforced plastic manhole steps shall be provided. Manhole steps shall be plant-installed and shall be driven into prepared holes or vibrated into green concrete, in accordance with the recommendations of the step manufacturer.

4. Manhole steps are not required.

C. Connecting Piping

1. The space between connecting pipes and the wall of precast sections shall be completely filled with non-shrink grout, except where resilient connectors are provided.

2. When resilient connectors are used, the connecting pipe shall be carefully adjusted to proper line and grade, and the bedding material shall be compacted under the haunches and to the spring line of the pipe for a distance of at least 6 feet from the manhole wall and to at least the minimum trench width. The pipe shall be installed in the resilient connector prior to backfilling outside the manhole and shall be resealed after completion of the manhole and backfill. All visible leakage shall be eliminated.

3. The connecting pipe for installation with resilient connectors shall be plain-end, square cut spigots and shall not protrude more than 1 inch inside the manhole wall. A clear distance of at least 1 inch from the end of each connecting pipe and around the pipe shall be provided when the concrete invert fill is installed. After completion of the manhole, the boxout shall be filled with mastic filler material, completely filling the space beneath the pipe, and extending to at least the spring line. The filler material shall provide a smooth, uniform surface between the inside diameter of the pipe and the manhole invert.

4. At each special manhole, rubber joint filler shall be provided around connecting piping. The filler shall be securely fastened in place with suitable wires or straps.

3.03. VACUUM TESTING OF MANHOLES

A. All sewer manholes shall be required to meet the requirements of the vacuum test as per the current ASTM C 1244 “Standard Test Method for Concrete Sewer Manholes by the negative Air Pressure (Vacuum) Test” prior to acceptance. Manholes and connected piping must be backfilled to finished grade prior to testing.

B. A vacuum of 10” of mercury shall be drawn and the vacuum pump shut off. With the valves closed, the time for the vacuum to drop to 9” of mercury shall not be less than that shown in the following table:

Manhole Depth (ft)	Time Elapsed* (Sec)		
	48 in	60 in	72 in
0-8	20	26	33
10	25	33	41
12	30	39	49
14	35	46	57
16	40	52	67
18	45	59	73
20	50	65	81
22	55	72	89
24	59	78	97
26	64	85	105
28	69	91	113
30	74	98	121

*Times shown are minimum elapsed times, in seconds, for a drop in vacuum of 1" of mercury.

END OF SECTION

SECTION 02606

MANHOLE AND VAULT COVERS AND ACCESSORIES

PART 1 - GENERAL

1.01. SCOPE

A. This section covers the fabrication and erection of iron manhole and vault covers and accessories suitable for installation in manholes, vaults, slabs, electrical handholes, and other applications where a floor access hatch is not required. Manhole steps (suitable for both cast-in-place and epoxy grouted installations) are also included. For floor access hatches and doors see the specification section of the same name.

B. Fabricated items which are indicated on the Drawings but not mentioned specifically herein shall be fabricated in accordance with the applicable requirements of this section.

1.02. SUBMITTALS

A. Complete data, detailed drawings, and setting or erection drawings covering all materials shall be submitted in accordance with the Submittals Procedures section. Each separate piece shall be marked.

1.03. DELIVERY, STORAGE, AND HANDLING.

A. Materials shall be handled, transported, and delivered in a manner which will prevent bends, dents, significant coating damage, or corrosion. Damaged materials shall be promptly replaced. Materials shall be stored on blocking and protected from the weather so that no metal touches the ground and water cannot collect thereon.

PART 2 - PRODUCTS

2.01. GENERAL

A. Materials work shall be fabricated in conformity with dimensions, arrangements, sizes, and weights or thicknesses as specified or as indicated on the Drawings.

B. All members and parts shall be free of warps, local deformations, and unauthorized bends. Holes and other provisions for field connections shall be accurately located and shop checked so that proper fit will result when the units are assembled in the field. All field connection materials shall be furnished.

2.02. DESIGN REQUIREMENTS

A. Manhole and electrical vault cover and frames shall be cast iron assemblies specifically intended as covers. Manufacturer, product number, and type shall be as specified.

B. All covers and frames shall be capable of carrying an AASHTO HS-20 street loading unless specifically indicated as light duty. An equivalent heavy-duty cover and frame may be substituted for the indicated light duty cover and frame.

2.03. MATERIALS

A. Covers must meet AASHTO M306 H-20/HS20 Traffic Rating. Cast iron manhole access covers and rings must be traffic load bearing and have an O-Ring seal similar to USF No. 225-AS ORS. Bearing surfaces will be machined to produce a tight, even seating surface without rocking. Minimum clear opening will be 24". The words “CITY OF COCOA BEACH” and "SANITARY SEWER" will be cast into manhole covers.

PART 3 - EXECUTION

3.01. INSTALLATION

A. Prior to installation all loose rust shall be removed from castings and one coat of coal tar epoxy shall be applied to surfaces embedded in concrete. Materials shall be erected and installed in conformity with the dimensions and arrangements specified or indicated on the Drawings and as recommended by the manufacturer.

B. After erection covers and frames shall be cleaned. Product finishes damaged during erection, shall be repaired as recommended by the manufacturer.

END OF SECTION

SECTION 02623
TELEVISION INSPECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Contractor shall supply television inspection of the line to obtain quality videos and Television Inspection Reports upon which the Owner can make decisions regarding the acceptability of installed pipe and determine any required corrective action necessary.

1.02 DEFINITIONS

A. Television Inspection: Video inspection by TV INSPECTION Contractor of sewer lines designated for evaluation to confirm acceptability of construction, location of service connections, conformance of construction to contract Drawings and Specifications and that the inspected pipes are defect-free.

B. Post-Repair Television Inspection: Video inspection to determine whether required corrective action resulting from defects identified in the Television Inspection has been completed to the satisfaction of the Owner.

C. Television Inspection Report: A form that is filled out by each television operator for any Television Inspection effort that is submitted to the Owner on the form provided at the end of this section. Substitute forms may be provided to the Owner for approval.

1.03 PERFORMANCE REQUIREMENTS

A. The Owner may or may not approve any corrective action proposed by the Contractor that may be necessary to repair improperly installed pipe identified during review of the television inspection video. Defective pipe or manholes discovered in the video will be repaired at the Contractor's expense. Upon completion of such repairs, the Contractor shall re-video the pipe for approval by the Owner at the Contractor's expense.

B. The pipelines shall not be flushed concurrently with the television inspection effort.

C. All television inspections must be performed in the presence of the City of Cocoa Beach or their representative.

1.04 SUBMITTALS

A. Comply with Section 01340 – Shop Drawings and Submittals.

B. Submit 2 videos and 2 Television Inspection Reports (hard copy) and 1 digital copy of the Television Inspection Report to the Owner for review.

1. Provide videos of quality sufficient for the Owner to evaluate the condition of the sanitary sewer and locate each sewer service. If quality is poor, re-

record the sanitary sewer segment and provide a new DVD and report at no additional cost. Camera distortion, inadequate lighting, dirty lens and blurred or hazy pictures will be causes for rejection of DVD and associated line segment.

2. One copy of all videos submitted will become the property of the Owner.

3. Owner shall maintain the master originals of all videos and Television Inspection Reports submitted, until final acceptance of the sewer piping.

1.05 QUALITY ASSURANCE

A. Qualifications: TV Contractor must use experienced personnel to operate television inspection equipment and devices.

PART 2 -- PRODUCTS

2.01 VIDEO EQUIPMENT

A. Video Equipment: Select and use video equipment that will produce color video.

B. Video: Provide video in DVD format, recorded at Standard Play (SP). Permanently label each DVD with the following information:

Project No.:_____Contractor's Name: _____
Inspection Type: [ ] Survey [ ] Pre-Installation [ ] Post-Installation
DVD No.:_____Date Recorded:_____Date Submitted: _____
Pipe Diameter:_____Pipe Length: _____
Manhole No.: From_____To _____

1. Provide two labels on the DVD, one on the spine and the other on the face of the DVD.

2. DVDs shall show only one pump station collection area. Only line segments from the same pump station collection area shall be included on a single DVD.

3. Up to 5 (maximum) line segments may be included on the same video if they are in the same pump station collection area.

C. Pipe Inspection Camera: Produce a video using a pan-and-tilt radial-viewing pipe inspection camera that pans 275 degrees and rotates 360 degrees. Use a camera with an accurate footage counter that displays on the monitor the exact distance of the camera from the centerline of the starting manhole. Use a camera

with camera height adjustment so that the camera lens is always centered at one-half the inside diameter, or higher, in the pipe being videoed. Provide a gauge attachment to the camera capable to determining the depth of dips or flat spots in the sewer mains. Provide a lighting system that allows the features and condition of the pipe to be clearly seen. A reflector in front of the camera may be required to enhance lighting in dark or large diameter pipe.

PART 3 -- EXECUTION

3.01 PREPARATION

A. Videotaping of the line shall not take place until after the limerock base and manhole inverts have been installed and accepted. Videotaping is to be performed prior to installation of the asphalt pavement. All defects are to be corrected and accepted prior to the placement of asphalt pavement.

B. Results of video inspections must be documented including all information required by Article 3.5 of this Section.

3.02 TELEVISION INSPECTION

A. TELEVISION INSPECTION Contractor shall notify the Owner at weekly Contractor meetings to provide 2 weeks' notice of any required TV inspection requirements.

B. Perform Television Inspection of sanitary sewers as follows:

1. Perform a television inspection on sanitary sewers within the boundary of the project, as directed by the Owner. After reviewing videos, the Owner will determine which sanitary sewers require corrective action, if any. All work to manholes, including benches, inverts and pipe penetrations into manholes, should be complete prior to initial Television Inspection.

2. Videos shall pan beginning and ending manholes to show post-construction condition. Complete and submit a Television Inspection Report for every sewer segment video submitted to the Owner.

3. Perform post-repair television inspection to confirm completion of repair work, if applicable. Verify that repair work conforms to the requirements of the Drawings and Specifications. Provide a color video showing the completed work, including the condition of restored service connections. Prepare and submit Television Inspection Report forms providing location of service connections along with location of any discrepancies. Manhole work, including benches, inverts and pipe penetrations into manhole, should be complete prior to post-repair video work.

C. Survey Television Inspection DVDs shall be continuous for pipe segments between manholes. Do not leave gaps in the recording of a segment between manholes and do not show a single segment on more than one DVD.

3.03 FLOW CONTROL – IN LINE SYSTEMS

A. Perform survey Television Inspection on one manhole section at a time. Adequately control the flow in the section being videoed. Do not exceed the depth of wastewater flow shown below:

Pipe Diameter (Inches)	Depth of flow (Percentage of Pipe Diameter)
6-10	10%
12-24	15%
Over 24	20%

1. If during survey Television Inspection of a live manhole section, the wastewater flow depth exceeds the maximum allowable, reduce the flow depth to an acceptable level by performing the survey television inspection during minimum flow hours, by diversion pumping, or by pulling a camera with swab, high- velocity jet nozzle or other acceptable dewatering device. Video made while floating the camera is not acceptable unless approved by the Owner.

B. Minimize flow in the line while performing Television Inspection. If required by the Owner, normal flow diversion shall be by method approved by the Owner.

C. No flow is allowed in the line while performing post-installation video inspection.

3.04 PASSAGE OF VIDEO CAMERA

A. Do not pull or propel the video camera through the line at a speed greater than 60 feet per minute.

B. If during survey Television Inspection of a manhole section, the camera is unable to pass an obstruction even though flow is unobstructed, televise the manhole section from the other direction (reverse setup) in order to obtain a complete video of the line. Whenever such a condition arises, notify the Owner to determine whether an obstruction removal or point repair is necessary. If a point repair is authorized, repair the pipe at the designated location and then re-video the manhole section to verify completion of the point repair.

1. When the camera is being sent from the other direction in order to survey on either side of an obstruction, and a second obstruction or repair location is encountered away from the first obstruction, notify the Owner and request a review of the video. The Owner may direct the Contractor to make one or both point repairs. No extra costs shall be incurred by the Owner for any delays associated with these repairs.
2. If two-point repairs are allowed and completed, re-video the manhole section.

C. For post-repair television inspection, exercise the full capabilities of the camera equipment to document the completion of the repair work and the conformance

of the work to the Drawings and Specifications. Provide a full 360-degree view of pipe, joints and service connections.

3.05 TELEVISION INSPECTION REVIEW

A. Once television inspection review has been completed, Contractor shall submit the television inspection video to the Owner for review. If cracks, joint misalignment, broken joints, or debris inside pipe are identified, the Contractor shall repair the damage at no additional cost to the Owner.

END OF SECTION

SECTION 02702
SEWER PIPE INSTALLATION AND TESTING

PART 1 - GENERAL

1.01. SCOPE

A. This section covers the installation and testing of polyvinyl chloride (PVC) gravity sewer pipe. Pipe trenching, embedment, and backfill are covered in the Section 02300 - Earthwork

1.02. DELIVERY, STORAGE, AND HANDLING.

A. Pipe, fittings, and appurtenances shall be transported, stored, and handled in a manner which prevents damage. Hooks shall not be permitted to come in contact with joint surfaces. Plastic pipe shall be shaded if necessary to prevent curvature due to thermal expansion. Damaged pipe and fittings shall be removed from the site.

PART 2 - PRODUCTS

2.01 Polyvinyl chloride (PVC) Pipe

A. PVC Gravity Sewer: PVC pipe and fittings 4 inches nominal diameter and larger for wastewater gravity sewer lines and services shall conform to the requirements of ASTM D 3034, latest revision, with DR as specified on the drawings. Pipe shall be furnished in standard laying lengths of 14 ft.

B. Pipe joints shall be an integral wall bell and spigot with a solid cross section, elastomeric ring gasket which shall conform to the manufacturer's standard dimensions and tolerances and meet the requirements of ASTM D 3212, latest revision. The elastomeric ring gasket shall be factory assembled in the pipe bell and securely locked in place to prevent displacement during jointing in the field.

C. All fittings and accessories shall be manufactured of PVC in accordance with the same specifications as PVC pipe of the same size. Fittings shall have bell ends with elastomeric gaskets which conform to the same dimensions, tolerances, and specifications as the PVC pipe. PVC fittings shall be molded where available.

D. Pipe shall be continuously and permanently marked with the manufacturer’s name, pipe size and DR rating or minimum pipe stiffness in psi. Pipe shall be green.

E. The Contractor shall also require the manufacturer to mark the extrusion or manufacturing code on the pipe. Records shall be maintained by the manufacturer for 2 years, covering date of extrusion, quality control tests, raw material batch number and other information deemed necessary by the manufacturer.

F. Pipe bedding, Trench excavation and backfill shall conform to the requirements of Section 02300- Earthwork, and as specified herein.

PART 3 - EXECUTION

3.01. ALIGNMENT

A. Piping shall be laid to the lines and grades indicated on the Drawings. Laser beam equipment or surveying instruments shall be used to maintain alignment and grade. At least one elevation measurement shall be made on each length of pipe.

B. If laser beam equipment is used, periodic elevation measurements shall be made with surveying instruments to verify accuracy of grades. If such measurements indicate thermal deflection of the laser beam due to differences between the ground temperature and the air temperature within the pipe, precautions shall be taken to prevent or minimize further thermal deflections.

3.02. LAYING PIPE

A. Pipe shall be protected from lateral displacement by embedment material installed as specified in the Trenching and Backfilling section. Pipe shall not be laid in water or under unsuitable weather or trench conditions.

B. Pipe laying shall begin at the lowest elevation with bell ends facing the direction of laying, except when reverse laying is permitted by Engineer.

C. Foreign material shall be kept out of the pipe during installation. No debris, tools, clothing, or other foreign objects shall be placed in the pipe.

D. Whenever pipe laying is stopped, the open end of the pipe shall be closed with a tight-fitting end board to keep out soil. The end board shall have perforations to admit water and prevent flotation of the pipe in the event the trench becomes flooded.

E. Core holes and handling holes in concrete pipe shall be repaired by cementing a properly shaped concrete plug-in place with epoxy cement or by other methods acceptable to Engineer. Plugs shall be provided by the pipe manufacturer and shall be sized and designed to match the pipe supplied.

3.03. JOINTING

A. All joint preparation and jointing procedures shall comply with the instructions and recommendations of the manufacturer.

B. Rubber Gasketed Joints

1. Rubber gaskets shall be positioned on the joint in accordance with the manufacturer's recommendations. Immediately before joints are pushed together, all joint surfaces shall be thoroughly cleaned and coated with the lubricant furnished with the pipe. The gasket shall be lubricated and positioned in the spigot groove so that the gasket is distributed uniformly around the pipe circumference. The position of the rubber gasket shall be checked with a feeler gauge after each joint is completed. If the gasket is not in the proper position, the joint shall be pulled apart, the gasket removed and discarded, and the joint re-assembled using a new, properly lubricated gasket.

2. Joint lubricant shall be stored in closed containers and shall be kept clean. When installing pipe in cold weather, the joint surfaces and gaskets shall be kept warm, and the joint lubricant shall be protected from freezing.

3. For rubber and steel joints, each exterior joint recess shall be filled with joint grout. A diaper shall be used to prevent foreign material from entering the joint recess before grouting and to serve as a form for the grout. Each diaper shall be of sufficient length to encircle the pipe, leaving enough space between the ends to allow the grout to be poured. Joint grout shall be poured between the diaper and the pipe and shall be allowed to run down to the bottom of the pipe. The grout shall be rodded while being poured, using a stiff wire curved to the approximate shape of the pipe. Each joint recess shall be completely filled with grout for the full circumference of the pipe.

4. Not less than two lengths of pipe shall be in final position in advance of exterior joint grouting. If placing of pipe embedment is resumed before the grout has attained initial set, care shall be taken to prevent damage to the grout while placing and compacting embedment material.

5. After trench backfilling has been completed, the interior joint recess of pipe with rubber and steel joints shall be filled with mortar following the recommendations of the pipe manufacturer. Joint surfaces shall be damp, but free from standing water, when the mortar is placed. Mortar shall be thoroughly compacted to completely fill the recess and shall be finished smooth. All excess mortar shall be removed from the pipe.

C. Flexible Sealant Joints

1. Joints made with flexible joint sealant shall be coated with adhesive as directed by the sealant manufacturer, and the joint sealant shall be positioned in accordance with the manufacturer's installation instructions. The pipe sections forming the joint shall be pulled together with sufficient force to uniformly fill and seal the annular space in the joint. Joints shall not be made when adverse weather conditions may prevent proper sealing, nor when the temperature of the pipe and sealing materials is too low to achieve proper sealing.

D. Mastic Joints.

1. Surfaces of pipe to be joined with mastic joints shall be primed, if recommended by the mastic manufacturer. Immediately before joining the pipes, a uniform layer of mastic shall be applied to the joint surfaces. After the pipes are in final position, the mastic shall completely fill and seal the annular space in the joint. Joints shall not be made when weather conditions may interfere with obtaining a satisfactory seal.

E. Field Cut Joints or Connections Between Dissimilar Pipe Materials

1. Where indicated on the Drawings or required to facilitate installation of field cut joints in PVC or composite sewer pipe, or connections between PVC or

composite sewer pipe and pipe of other materials, couplings may be used in accordance with the instructions of the coupling manufacturer and pipe manufacturer.

3.04. TEE BRANCHES

A. Tee branches shall be installed at locations indicated on the Drawings. Tee branch locations shall be marked in advance of the construction of sewers to any property to which sewer service will be extended and, if the locations have not been designated, sewer construction shall be stopped until the necessary tee branch locations have been established. Tee branches shall be installed with the lower lip not more than 2 inches below the outside top of the pipe and shall remain uncovered until their locations have been recorded.
B. Each tee branch shall be closed with a suitable plug and shall be marked with a wooden strip extending vertically from the tee to 12 inches above the ground surface. Markers shall be securely anchored and maintained upright until backfilling has been completed.

3.05. SERVICE CONNECTIONS

A. Service connections shall not be installed as vertical risers but shall be laid on a slope not to exceed 2 verticals to 1 horizontal. Each service connection pipe shall have a solid bearing on undisturbed earth.

3.06. CONCRETE ENCASEMENT

A. Concrete encasement shall be installed where indicated on the Drawings. A pipe joint shall be provided within 12 inches of each end of the concrete encasement. Concrete and reinforcing steel shall be as specified in the Cast-in-Place Concrete section. All pipe which is to be encased shall be suitably supported and blocked in proper position and shall be anchored against flotation.

3.07. ACCEPTANCE TESTS

A. Each reach of sewer shall meet the requirements of the following acceptance tests. All defects shall be repaired to the satisfaction of Engineer.

B. Lamping

1. Unless otherwise indicated on the Drawings, each section of sewer line between manholes shall be straight and uniformly graded. Each section will be lamped by Engineer. Contractor shall furnish suitable assistants to assist Engineer.

C. Exfiltration

1. An exfiltration test shall be conducted on each reach of sewer between manholes. The first line between manholes shall be tested before backfilling and before any additional sewer pipe is installed. Thereafter, exfiltration testing shall be done after backfilling, and individual or multiple reaches may be tested at the option of Contractor.

2. Exfiltration tests shall be conducted by blocking off all manhole openings except those connecting with the reach being tested, filling the line, and measuring the water required to maintain a constant level in the manholes. Each manhole shall be subjected to at least one exfiltration test.

3. During the exfiltration test, the water depth above the pipe invert at the lower end shall be at least to the elevation of the ground surface, unless otherwise specified. The maximum depth of the water at the lower end shall not exceed 25 feet, and the minimum depth of the water at the upper end shall be at least 5 feet above the crown of the pipe or 5 feet above groundwater elevation, whichever is higher.

4. The total exfiltration shall not exceed 100 gallons per inch of nominal diameter per mile of pipe per day for each reach tested. For purposes of determining maximum allowable leakage, nominal diameter and depth of manholes shall be included. The exfiltration tests shall be maintained on each reach for at least 2 hours and shall be longer, if necessary, in the opinion of Engineer, to locate all leaks.

5. Contractor shall provide, at his own expense, all necessary piping between the reach to be tested and the source of water supply, and all labor, equipment, and materials required for the tests. The methods used and the time of conducting exfiltration tests shall be acceptable to Engineer.

D. Low Pressure Air Testing

1. With prior approval by Engineer, low pressure air testing may be used in lieu of exfiltration testing for 24-inch diameter and smaller pipe. Air testing shall not be used for manholes, or for pipe larger than 24 inches in diameter.

2. Low pressure air testing shall comply with ASTM C828. The schedule of testing shall be submitted to Engineer prior to starting the tests. The time of conducting the tests shall be acceptable to Engineer.

3. The time elapsed for a 1 psi drop in air pressure shall be not less than, nor shall the air loss exceed, the limits set forth in the governing standard.

4. If the length of sewer to be tested is fully or partially submerged in groundwater, the test pressure shall be increased if necessary to overcome the actual static pressure exerted by the groundwater. If a test pressure greater than 8 psi results, air testing shall not be used, and exfiltration testing will be required.

5. Leaks shall be located by testing short sections of pipe. Leaks shall be repaired, and the reach of sewer retested.

E. Infiltration

1. If, at any time prior to expiration of the correction period stipulated in the General Conditions, infiltration exceeds 100 gallons per inch of nominal diameter per mile of sewer per day, Contractor shall locate the leaks and make repairs as necessary to control the infiltration.

3.08. CLEANING

A. The interior of all pipe and fittings shall be thoroughly cleaned before installation and shall be kept clean until the work has been accepted. All joint contact surfaces shall be kept clean until the joint is completed.

END OF SECTION

SECTION 02950
SITE RESTORATION

PART 1 – GENERAL

1.01 DESCRIPTION

A. The Contractor shall perform the restoration work indicated on the drawings in accordance with the Contract Documents. The Contractor shall furnish all labor, materials, equipment and incidentals necessary to perform the Work.

B. Restoration work shall be performed as indicated in this Section. Restoration shall begin as soon as practical after the utility has been installed. All practical efforts shall be made to complete restoration within 30 days of substantial completion.

1.02 CONSTRUCTION REQUIREMENTS

A. The Contractor shall completely restore any areas disturbed during construction activities with the same type and quality or better of materials and workmanship than previously existed. In grassed areas, restoration shall be replaced with seeding or sod to match existing species as directed by the Engineer.

B. The Contractor shall examine the site and identify items that require restoration prior to completion and shall coordinate the restoration of such items with the Utility and the Landowner as needed.

1.03 QUALITY CONTROL

A. The Engineer shall perform quality control to confirm and document that all restoration work performed by the Contractor has been completed to the satisfaction of the Utility and Landowners.

PART 2 – PRODUCTS

2.01 SOD

A. Sod to match existing with well matted roots. The sod shall be taken up in commercial-size rectangles, preferably 12-inch by 24-inch or larger, except where 6-inch strip sodding is called for.

B. The sod shall have no visible broadleaf weeds when viewed from a standing position and the turf shall be visibly consistent with no obvious patches of foreign grasses. In no case may the total amount of foreign grasses or weeds exceed 2% of the total canopy. Florida Standard Grade sod shall be neatly mowed and mature enough that when grasped at one end it can be picked up and handled without damage. The sod shall be sufficiently thick to secure a dense stand of live grass. The sod shall be live, fresh and uninjured, at the time of planting. It shall have a soil mat of sufficient thickness adhering firmly to the roots to withstand all necessary handling.

PART 3 – EXECUTION

3.01 SODDING

A. Incorporate sodding into the project at the earliest practical time in the life of the contract. Do not use sod which has been cut for more than 3 days. Stack any sod which is not planted within 24 hours after cutting and maintain properly moistened.

B. Prepare the areas to be grassed by disc-harrowing and thoroughly pulverizing to a depth of at least 6 inches.

C. Bring all areas to be grassed to finished grades, remove weeds, surplus dirt and rock debris over 1 inch in diameter, and rough grade the area.

D. Test the soil for pH. If the soil is below a pH level of 5.5, spread lime to raise the pH level to at least 5.5.

E. Uniformly apply fertilizer at the rate of 400 to 500 pounds per acre. Immediately after the fertilizer and/or lime is spread over the area, mix them into the soil to a depth of approximately 4 inches.

F. Grade the area to a smooth uniform grade. Slope all areas to drain. Establish flow lines as shown on the drawings. Grade areas to be grassed approximately 3 inches below top of adjoining curb or pathway.

G. Place the sod on a prepared surface, with abutting joints. Fill any gaps or cracks between sod blocks with sod. Roll with a minimum one-ton roller to obtain an even surface. Bring the sod edge in a neat, clean manner to the edge of all paving and shrub areas and project limits.

H. Where sodding is used in drainage ditches, stagger the setting of the pieces to avoid a continuous seam along the line of flow.

I. On areas where the sod may slide due to height and slope, peg the sod with pegs driven through the sod blocks into firm earth at suitable intervals. Replace any pieces of sod which, after placing, show an appearance of extreme dryness.

3.02 LANDSCAPING AND TREES

A. Existing trees and shrubs that are damaged during construction shall be trimmed by the Contractor or a certified tree company under permit from the jurisdictional agency and approved by the Utility. If in the opinion of the Utility the damage is such that replacement is necessary, the Contractor shall replace the tree at his own expense. The tree shall be of a like size and variety as the damaged tree, or the Contractor shall pay the Utility a compensatory payment. Planting of replacement trees and shrubs shall be in accordance with the recommendations of the nursery furnishing the plants. The Contractor shall water and maintain replacement trees and shrubs until acceptance by the Utility.

3.03 ROADWAY REMOVAL AND RESTORATION

A. Bituminous pavement shall be removed in clean straight lines by saw cutting. Where bituminous pavement adjoins a trench, the edges adjacent to the trench shall be trimmed to neat straight lines before resurfacing to ensure that all areas to be resurfaced are accessible to rollers or tampers used to compact the sub-grade or paving materials.

B. Asphalt restoration on Owner's maintained roads shall consist of the following. Roads owned or maintained by other entities (FDOT) shall be restored in accordance with that entity's requirements or details, but in no case shall be less than as described

below:

- Furnishing and installing 10” of asphalt concrete base material per FDOT standards, compacted of 98% density per AASHTO T-180, placed in lifts not exceeding 6”.
- Furnishing and installing a 4.5” minimum structural asphalt pavement layer.
- Furnishing and installing a 1-1/2” asphalt overlay using Type SP-12.5 with rubber.
- Milling of the existing asphalt to a minimum depth of 1-1/2” prior to overlay.
- Overlaying shall take place no more than 3 days after the pavement has been milled.

C. In lieu of saw cutting and milling existing asphalt, it is acceptable to sawcut and remove the entire asphalt layer to the milling limits shown on the drawings. Asphalt completely removed shall be replaced in-kind with SP-12.5 with rubber. All new asphalt, whether replacing all of the existing asphalt or topping a milled asphalt surface, shall be graded properly and free from puddling. Improperly graded asphalt shall be re-worked or replaced as necessary until proper grading is achieved at no additional cost to the Owner. Re-worked asphalt that has a jagged/unprofessional appearance will not be accepted. The Owner does not know and cannot guarantee the thickness of the existing asphalt.

D. Concrete pavement shall be removed with sawed edges and cut at a minimum depth of one and one- half inches (1 and ½”). If a saw cut in concrete pavement falls within three feet (3’) of a construction joint, cold joint, expansion joint or edge, the concrete shall be removed to the joint or edge. The edges of existing concrete pavement adjacent to trenches, which had been damaged subsequent to saw cutting of the pavement, shall be saw cut to neat straight lines for the purpose of removing the damaged pavement areas. Such saw cuts shall be parallel to the original saw cuts or shall be cut on an angle which departs from the original saw cut not more than one inch (1”) in six inches (6”).

E. Concrete curb, sidewalk, gutters and driveways shall be removed with neatly sawed edges, cut at a minimum depth of one and one-half inches (1 ½”). Concrete sidewalk or driveway to be removed shall be neatly sawed in straight lines parallel to the curb or at right angles to the alignment of the sidewalk. No section to be replaced shall be smaller than four feet (4’) in either length or width. If the saw cut in sidewalk or driveway should fall within three feet (3’) of a construction joint, expansion joint, or edge, the concrete shall be removed to the joint or edge except that where the saw cut would fall within twelve inches (12”) of a score mark, the saw cut shall be made in and along the score mark. Curb and gutter shall be sawed to a depth of one and one-half (1½”) inches in a neat line at right angles to the curb face.

F. In the event that pavement is not replaced immediately following trench backfilling in streets and highways, the contractor shall be responsible for maintaining the trench surface in a level condition, at proper pavement grade, at all times.

3.04 PUMPING AND DRAINAGE

A. Wherever fences are removed or damage for purposes of construction, the Contractor shall replace the fence to preexisting conditions or better.

3.05 MAINTENACE PRIOR TO FINAL ACCEPTANCE

A. The Contractor shall maintain the planted areas in a satisfactory condition until final acceptance of the project. Such maintenance shall include the filling, leveling, and repairing of any washed or eroded areas and sufficient watering to maintain the plant materials in a healthy condition. The Engineer may require replanting of any areas in which the establishment of the vegetative ground cover does not appear to be developing satisfactorily.

END OF SECTION

APPENDIX A

GEOTECHNICAL REPORT

Geotechnical Engineering Report
Cocoa Beach Gravity Sewer Replacement Project
City of Cocoa Beach, Florida
NADIC Project No.: PR.GEO-CV24071

Prepared for:

Black & Veatch
201 South Orange Avenue, Suite 500
Sanford, FL 32801

Prepared by:

Nadic Engineering Services, Inc.
601 N. Hart Blvd
Orlando, Florida 32818
407-521-4771

Consultants in: Civil · Environmental · Geotechnical Engineering
Offices in: Orlando · Miami

NADIC
ENGINEERING

April 28, 2025

Black & Veatch
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Attention: Ms. Jessica Hernandez Rebollo
Civil Engineer, Water

RE: Geotechnical Engineering Report
Cocoa Beach Gravity Sewer Replacement Project
City of Cocoa Beach, Florida
NADIC Project No.: PR.GEO-CV24071

Dear Ms. Hernandez:

Nadic Engineering Services, Inc. (NADIC) is pleased to submit this geotechnical engineering report for the proposed referenced project. This evaluation was authorized through a subconsultant agreement between Black & Veatch and **NADIC** dated November 15, 2024. The purpose of this investigation was to explore the subsurface soil and groundwater conditions within the area of improvement in order to provide recommendations for design and earthwork during installation.

This report has been prepared in accordance with generally accepted geotechnical engineering practices for specific application to the project study area indicated herein. This report describes our field exploration procedures, presents our laboratory test results, and includes our analyses and recommendations for the new sewer pipeline system design and construction.

NADIC appreciates the opportunity to provide our service and trust that the information presented herein is adequate for your intent. Please contact us if you have any questions, or if we may be of further assistance to you as this project proceeds.

Sincerely,

NADIC ENGINEERING SERVICES, INC.
Engineering Business No. 8214

Oliver D. Rosen., E.I.
Staff Engineer

Godwin N. Nnadi, Ph.D., P.E.
Principal Engineer
FL Registration No. 50637

Table of Contents

1.0 EXECUTIVE SUMMARY 1

2.0 PROJECT DESCRIPTION 2

3.0 PURPOSE AND SCOPE OF SERVICES 2

4.0 REVIEW OF AVAILABLE PUBLISHED DATA 3

4.1 General *3*

4.2 USGS Topographic Map *3*

4.3 USDA, NRCS Soil Survey *3*

4.4 Potentiometric Surface *4*

4.5 Generalized Geology *4*

5.0 FIELD EXPLOARTION PROGRAM AND METHODS 4

5.1 Field Exploration Program *4*

5.2 Field Exploration Methods *5*
5.2.1 Standard Penetration Test (SPT) Borings 5

6.0 SITE AND SUBSURFACE CONDITIONS 5

6.1 Existing Site Conditions *5*

6.2 Subsurface Condition *5*
6.2.1 General 5
6.2.2 Gravity Sewer Boring Results 6
6.2.3 Groundwater 6

7.0 LABORATORY TESTING 7

8.0 EVALUATIONS AND RECOMMENDATIONS 7

8.1 General *7*

8.2 Groundwater Control *8*

8.3 Pipeline Considerations *8*
8.3.1 Pipeline Settlement 8
8.3.2 Lateral Earth Pressures 9

8.4 Temporary Retaining System *9*

9.0 CONSTRUCTION CONSIDERATIONS 10

9.1 Site Preparation *10*

9.2 Trench Excavations *11*

9.3 Dewatering *11*

9.4 Structural Filling and Backfilling *12*

10. REPORT LIMITATIONS 13

APPENDICES

Appendix A

Figures 1A and 1B	Vicinity Map
Figures 2A and 2B	USGS Topographic Map
Figures 3A and 3B	USDA/NRCS Soils Map
Table 4	Summary of Laboratory Test Results

Appendix B

Sheet 1	Cross Section of Soil Survey
Sheets 2 and 3	Report of SPT Borings

1.0 EXECUTIVE SUMMARY

Nadic Engineering Services, Inc. (NADIC) was retained to conduct geotechnical engineering investigation for replacement of gravity sewer pipeline systems at the following locations in the City of Cocoa Beach:

- Area 1: At the intersection of North Atlantic Avenue and Wakulla Lane for an approximate replacement length of about 50 linear feet (LF).
- Area 2: At the intersection of North Banana River Boulevard and West Columbia Lane for an approximate length of about 50 LF.

To accomplish the investigation, the following procedures were completed:

- Performed site reconnaissance to evaluate site conditions and stake boring locations.
- Coordinated utility clearance.
- Completed two (2) Standard Penetration Test (SPT) borings to a depth of 15 feet below grade (one per location).
- Measured existing groundwater table and estimated seasonal high groundwater table.
- Performed engineering evaluation based on the results of the field exploration.

The investigation focused on shallow foundation systems. Based on the results of the exploration, **NADIC** concluded the following:

- Use a maximum allowable bearing pressure of 2,000 pounds per square foot (psf) for the pipelines.
- Groundwater was encountered at depths of about 8.5 feet and 7 feet in the borings at Area 1 and Area 2, respectively, at the time of our field exploration (March, 2025).
- Due to the shallow groundwater level encountered, some form of dewatering may be needed to achieve the required compaction if excavation and construction proceed during the wet season.
- Excavate any areas of soft yielding or unsuitable materials encountered in the proposed pipe elevation and replace with clean sands compacted in accordance with the City of Cocoa Beach Standard Construction Details.
- Site preparations, excavations, structural filling and backfilling should be in accordance with the City of Cocoa Beach Standard Construction Details and FDOT Standard Specifications for Road and Bridge Construction Design Standard.
- Unsupported vertical cut is considered unstable and/or unsafe during construction.
- A representative number of in-place field density tests should be performed in each lift of structural fill to ensure the required degree of compaction has been achieved. At least one density test must be performed for every 200 linear feet per lift of compacted fill.

The following report presents the results, conclusions, and recommendations resulting from the geotechnical exploration at this site. This summary should be used in conjunction with the entire report for design purposes.

2.0 PROJECT DESCRIPTION

The City of Cocoa Beach plans for a gravity sewer replacement along the following streets: North Atlantic Avenue and Wakulla Lane, designated as Area 1 and North Banana River Boulevard and West Columbia Lane, designated as Area 2. in Brevard County, Florida. We understand the proposed gravity sewer replacements are anticipated to be installed via open-cut method.

The project areas are located in Section 34, Township 24 South and Range 37 East in Cocoa Beach, Florida. Vicinity Maps of the project locations are shown on Figures **1A** and **1B** in **Appendix A**.

This report presents the findings of our subsurface exploration program, an evaluation of the soil and ground water encountered, and provides recommendation to support the development of engineering design plans and technical specifications as well as construction considerations for the proposed sewer replacements.

3.0 PURPOSE AND SCOPE OF SERVICES

The purpose of this study was to obtain information on the general subsurface conditions in order to make engineering assessments and recommendations to guide the design and construction of the proposed gravity sewer pipeline replacement. The following services were provided in order to achieve the preceding objectives.

1. Reviewed readily available published geologic and topographic information. This published information was obtained from the appropriate Quadrangle Maps published by the United States Geological Survey (USGS) and “Soil Survey of Brevard County, Florida” published by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NSCS).

2. Performed site reconnaissance to evaluate existing conditions and drilling accessibility.

3. Coordinated clearance with utility locators.

4. Executed a program of subsurface exploration consisting of two (2) SPT borings (one per area) to a depth of 15 below grade.

5. Measured the existing groundwater table at the individual boring locations and estimated normal wet seasonal high groundwater table depths.

6. Visually classified and stratified representative soil samples in the laboratory using the American Association of Highway and Transportation Officials (AASHTO) classification system. Performed laboratory testing of selected soil samples to evaluate the basic index and engineering properties of the encountered soils.

7. Prepared this formal engineering report summarizing the field exploration, laboratory tests, engineering analyses, evaluations and recommendations.

4.0 REVIEW OF AVAILABLE PUBLISHED DATA

4.1 General

United States Geological Survey (USGS) quadrangle topographic maps for the area and the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soil Survey for Brevard County were reviewed to obtain information about the general area.

4.2 USGS Topographic Map

The "Cocoa Beach, Florida" USGS Topographic Map issued in 2024 was reviewed. The project area is shown on an excerpt of the USGS topographic map and presented as **Figures 2A** and **2B** in **Appendix A**. The map shows the ground surface elevation in the project vicinity to be approximately 0 feet to +10 feet, NAVD-88.

4.3 USDA, NRCS Soil Survey

The "Soil Survey of Brevard County, Florida" published by the United States Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS) was reviewed. Refer to **Figures 3A** and **3B** in **Appendix A** for a reproduction of the NRCS map for the project area. Soils found in the project vicinity are listed below on **Table 1**.

Table 1:
USDA/NRCS Soil Survey Summary

Soil Unit	Depth (inches)	Soil Description	AASHTO*	USCS**	Risk of Corrosion		USDA SHGWT (in)***
					Uncoated Steel	Concrete	
Palm Beach (42)	0 – 54	Sand	A-3	SP	Moderate	Low	>120
	54 – 10 5	Sand (mixed with shells and shell fragments)	A-3, A-1-b	SP, SW			
Urban Land (69)	-	-	-	-	-	-	-

*AASHTO: American Association of State Highway and Transportation Officials
**USCS: Unified Soil Classification System
***SHGWT: Seasonal High Groundwater Table

Information contained in the NRCS Soil Survey is very general and may be outdated due to recent development in the site vicinity. These developments may have modified soil condition or surface/subsurface drainage. It should be noted that the NRCS Soil Survey is not intended as a substitute for site-specific geotechnical exploration; rather it is a useful tool for planning a

project scope by providing likely surficial soil types likely to be encountered. Boundaries between adjacent soil types on the Soil Survey maps are approximate.

4.4 Potentiometric Surface

Based on review of data provided by the Florida Department of Environmental Protection, Florida Geological Survey titled "Upper Floridian Aquifer Potentiometric Surface, Florida, 2023", the elevation of the potentiometric surface in the vicinity of the project alignment appears to be approximately +20 feet to +30 feet, North American Vertical Datum of 1988 (NAVD-88).

4.5 Generalized Geology

The geology of the Brevard County area is characterized by sedimentary strata. The county is underlain by a series of limestone formations having a total thickness of several thousand feet. The upper several hundred feet of the limestone formations constitute the Floridan aquifer, which generally includes the Avon Park Limestone and the overlying Ocala Group of limestone formations, all of the Eocene age. The Floridan aquifer is one of the most productive aquifers in the world. The extremely high productivity of this aquifer is directly related to its numerous cavities and interconnected channels. The top of the artesian aquifer is approximately 75 feet below sea level in the northwestern corner of the county and more than 300 feet below sea level in the southeastern corner. In Brevard County, the direction of movement of the artesian water is generally northeastward, except under the barrier islands.

Overlying the artesian aquifer are beds of sandy clay, shells and clay of the Hawthorn Formation of Early and Middle Miocene Age and deposits of Late Miocene or Pliocene Age. These beds serve to confine water under pressure in the underlying artesian aquifer. The confining beds are overlain by unconsolidated deposits of sand and sandy coquina of Pleistocene and Recent Age which completely cover all of Brevard County. The sediments of Pleistocene and Recent Age average approximately 50 feet in thickness in the coastal ridge area but are less than 20 feet thick in the vicinity of the St. Johns River. Non-artesian water saturates approximately 40 feet of these sediments in the coastal ridge area and the zone of saturation thins toward the St. Johns and Indian Rivers.

5.0 FIELD EXPLOARTION PROGRAM AND METHODS

5.1 Field Exploration Program

To evaluate the subsurface conditions along the proposed pipeline replacements, field visits were conducted to establish drilling equipment access, layout and stake boring locations, and coordinate underground utility locations and markings. Two (2) Standard Penetration Test (SPT) borings were completed to examine the subsurface conditions at the proposed improvement areas. All boring locations were staked in the field by a representative of **NADIC** with the aid of a Garmin GPSMAP64st Global Positioning System (GPS) device. Although the locations are given only approximately, the methods used to locate them are, in **NADIC**'s opinion, sufficient to meet the intent of our study.

All borings were backfilled upon completion and after groundwater measurement for safety. Boring information and profiles are presented on **Sheets 2** and **3** in **Appendix B**.

5.2 Field Exploration Methods

5.2.1 Standard Penetration Test (SPT) Borings

The SPT borings were conducted in general accordance with American Society for Testing and Materials (ASTM) test designation D-1586. Soil sampling, using 1⅜ inch I.D. split-barrel sampler, was performed at closely spaced intervals from the ground surface to 10 feet below existing grade and at five-foot intervals thereafter. After seating the sampler six inches, the number of successive blows required to drive the sampler 12 inches into the soil constitutes the test result commonly referred to as the "N" value. Adjacent to the SPT boring profiles on **Sheets 2** and **3** in **Appendix B** are the "N" values. The "N" value has been empirically correlated with various soil properties and is considered indicative of the relative density of cohesionless soils and the consistency of cohesive soils.

The recovered split-barrel samples were described in the field with representative portions of the samples placed in airtight jars and transported to our laboratory for further visual classification and testing by a geotechnical engineer. Following completion and groundwater level measurement, each SPT boring was backfilled with natural soils.

6.0 SITE AND SUBSURFACE CONDITIONS

6.1 Existing Site Conditions

The proposed pipeline alignment is predominately within the right-of-way of the existing roadways bordered by residential and small business developments. The pipeline alignments will be beneath paved road. The existing roadway cover is flexible asphalt concrete.

6.2 Subsurface Condition

6.2.1 General

The results of the borings are presented in the form of soil profiles in the attached **Sheets 2** and **3** in **Appendix B**. The encountered soils were classified using the AASHTO Soil Classification System (A-3, A-2-4, A-2-6, etc.) and described using the ASTM soil descriptions such as sand with silt. Soil classification and stratification are based on visual examination of the recovered soil samples, laboratory testing, and interpretation of field boring logs by a geotechnical engineer. The stratification lines represent approximate boundaries between soil types of significantly different engineering properties. However, the actual transition between layers may be gradual.

The boring logs indicate subsurface conditions only at the specific boring locations at the time of our field exploration. In addition, subsurface conditions at the boring locations can change over

time. The following generalized soil description is intended to provide a brief summary of the observed subsoil conditions at the proposed gravity sewer replacement.

6.2.2 Gravity Sewer Boring Results

The subsurface profiles generally encountered in Areas 1 and 2 have been grouped into two (2) strata. Each stratum exhibits a range of engineering properties related to application for roadway and pipeline construction as outlined by FDOT Standard Plan Indices 120-001 and 120-002. Included with the soil profiles on **Sheets 2** and **3** in **Appendix B** are the groundwater levels measured at the time the borings were performed.

The soil strata encountered, soil descriptions, AASHTO classifications and FDOT Standard Plan Index 120-001 Embankment Soil Utilization designations are summarized below on **Table 2**.

Table 2:
Generalized Subsurface Profiles

Stratum No.	Soil Description	AASHTO	Index 120-001 Classification
1	Light brown to light gray SAND, occasionally with silt or shell fragments.	A-3	Select (S)
2	Gray silty SAND	A-2-4	Select (S)

The borings generally revealed sandy soils with N-values ranging from 7 to 22 blows per foot, indicating a loose to dense relative density.

The above subsurface conditions are only general descriptions. For details refer to the boring profiles on **Sheets 2** and **3** in **Appendix B**.

6.2.3 Groundwater

Groundwater was encountered in the borings at depths between 7 feet and 8.5 feet at the time of our field exploration (March, 2025). Groundwater conditions will vary with environmental variations and seasonal conditions, such as the frequency and magnitude of rainfall patterns, as well as man-made influences, such as swales, drainage ponds, underdrains, and areas of covered soils (roadway, sidewalks, etc.).

For the purpose of this report, estimated seasonal high groundwater levels are defined as groundwater levels that are anticipated at the end of wet season of a "normal rainfall year" under current site conditions. The estimated seasonal high groundwater levels presented next to the boring profiles (**Sheets 2** and **3** in **Appendix B**) are based on the soil stratigraphy, measured groundwater levels, USDA/NRCS information, and past experience with similar soil conditions.

7.0 LABORATORY TESTING

Representative soil samples were retained from the strata observed in each boring and returned to **NADIC**'s laboratory for visual classification and stratification. The soil samples were classified using the American Association of State Highway and Transportation officials (AASHTO) Soil Classification System in general accordance with all ASTM D-2488, titled "Standard practice for description and identification of soils (Visual-Manual procedure) ASTM D-2487 titled Standard Test for Classification of soils in Engineering purpose". The classification was based on visual observation only. Laboratory classification tests consisting of sieve analysis and natural moisture content were performed on selected soil samples. The types of tests performed with their associated test designations are presented on **Table 3** below. The results of our laboratory testing are presented on **Table 4** in **Appendix A** and on the Soil Survey Sheet (**Sheet 1** in **Appendix B**).

Table 3:
Laboratory Testing Performed

Test Type	FDOT	ASTM
Grain Size Analysis	FM 1-T 088	D-422
Moisture Content	FM 1-T 265	D-2216

8.0 EVALUATIONS AND RECOMMENDATIONS

8.1 General

The following recommendations are based upon the results of this limited subsurface exploration, our understanding of the proposed construction, and experience with similar projects and subsurface conditions. If the proposed construction changes from those discussed in this report, we request the opportunity to review and possibly amend our recommendations with respect to those changes.

The sampling methods used in this study indicate subsurface conditions only at the specific boring locations where samples were obtained at the depth penetrated. Borings cannot be relied upon to accurately reflect the variations that usually exist between boring locations and the variations may not be evident until construction. If subsurface conditions encountered during construction differ significantly from those conditions in the borings, **NADIC** should be retained to reevaluate this report's conclusions and recommendations in light of such changes.

Based on our investigation, geotechnical recommendations are provided for the required excavation shoring, working platform, and guidelines for potential need of dewatering.

Our analysis and recommendations herein assumed normal construction procedures and based upon the subsurface conditions encountered on the site. Therefore, we should be notified in the event that these conditions are changed, so as to modify or amend our recommendations.

Discussions of the analyses and recommendations for groundwater control, and shallow foundation design are presented herein the report.

8.2 Groundwater Control

Groundwater table fluctuates seasonally depending upon intensity and duration of rainfall and presence and proximity of any artificial drainage facilities. Based upon our observations at the site, the boring profiles and a review of the Brevard County Soil Survey, it is our opinion that the seasonal high groundwater tables are as represented on **Sheets 2** and **3** in **Appendix B**. Depending upon groundwater levels at the time of construction, some form of dewatering may be required to achieve the required compaction. Groundwater can normally be controlled in shallow excavations with pumps and sumps. We recommend the groundwater table be maintained at least two feet below all earthwork and bearing level during construction. Control of groundwater should be completed in accordance with the City of Cocoa Beach Standard Construction Details.

It is anticipated that groundwater level will affect the proposed construction depending on the time of the year. Consequently, if groundwater is encountered, we recommend the contract documents should require the contractor to be responsible for all dewatering, regardless of the groundwater level. Lack of proper controls could result in ponding surface water on compaction surfaces which will impede or prevent necessary soil compaction operations and make construction difficult.

8.3 Pipeline Considerations

We understand that the gravity sewer pipelines will be installed using open-cut method of installation. Based upon the information provided by Black & Veatch and the results of our field exploration, it is **NADIC**'s opinion that the encountered soil deposit within the project limits is generally suitable for the proposed construction provided the soils are prepared as recommended herein:

- Prepare foundation subgrade soil in accordance with the recommendations presented in the **Construction Considerations** section of this report.
- Use a maximum allowable bearing pressure of 2,000 pounds per square foot (psf) for foundation design. The allowable bearing pressure is a net pressure that will increase over and above that due to the overburdened soils.
- Over excavate any areas of soft yielding or unsuitable material encountered in the proposed pipe locations to a minimum of two (2) feet below pipe elevation. Probe and compact the base of excavation prior to replacing the excavated material with clean sands compacted in accordance with the City of Cocoa Beach Standard Construction Details.

8.3.1 Pipeline Settlement

The primary design concerns with pipeline installation are typically long-term differential settlement and the effective length for settlement. Since the foundation soils are primarily sand, short-term settlement is anticipated to occur rather quickly except where clayey sands (SC) are

encountered below the anticipated depth of pipe embedment. We therefore recommend that clayey soils, if encountered along the pipeline, should be removed to a depth of at least two feet below pipe embedment depth and replaced with clean sands compacted to a density of at least 95 percent of the materials Modified Proctor maximum dry density (ASTM D-1557).

Field control will contribute substantially in minimizing settlements which actually occur. Based on our analysis, we anticipate a total settlement of less than 0.5 inches. Based on the results of our field exploration and our understanding of design loads, we feel that settlement is not a concern provided the recommendations discussed below under CONSTRUCTION CONSIDERATION are followed.

8.3.2 Lateral Earth Pressures

Any below ground structure including excavations to install the pipeline should be designed to resist pressures exerted by retained soils and hydrostatic head. Any foundation wall constructed below existing grade or which has adjacent compacted fill will be subjected to lateral at-rest or active earth pressure. For walls that are not restrained but are free to rotate at the top, active earth pressure should be used in design. The recommended equivalent fluid densities for each pressure condition are presented below.

- Active Pressure
  Above Water Table – 37 pcf
  Below Water Table – 78 pcf

- At-Rest Pressure
  Above Water Table – 55 pcf
  Below Water Table – 86 pcf

The above recommended densities do not include effects of surcharge loads such as traffic, construction equipment, etc. The above equivalent fluid densities do not include any factor of safety. If a uniform surcharge is applied behind the vertical walls, it will produce an additional lateral pressure along the wall equal to about one-third the vertical contact pressure. The values presented herein presume that the walls will be backfilled with well compacted granular materials.

8.4 Temporary Retaining System

It is anticipated that temporary retaining system such as cantilever steel sheet pile walls or trench box may be utilized because of the close proximity of the existing roadway to the proposed pipeline alignment. **NADIC** recommends that predrilling should be considered prior to sheet pile installation. Predrilling, although will prevent refusal conditions and damages to sheet pile structural sections, will also help minimize vibration and noise to the nearby buildings. Sheet pile installation will generally produce vibration and noise levels that will disturb people and/or may damage nearby structures.

NADIC recommends that the following note be provided on the project plan:

"Temporary sheet piling shall remain the property of the contractor and shall be removed from the site upon completion of work. The contractor shall submit his method of sheet piling removal and soil treatment at the removal site to the City of Cocoa Beach for approval."

"The Contractor shall provide survey and vibration monitoring of any structures within 150 feet of the construction that may be affected by vibration from sheet piling. Pre sheet piling survey for all structures shall be completed prior to the start of sheet pile installation. The survey and vibration monitoring procedures shall meet the requirements of Section 455-1.1 of the FDOT Standard Specifications. The Contractor shall monitor for settlement as required in Section 455-1.1 of the FDOT Standard Specifications."

NADIC recommends the following geotechnical soil parameters presented on **Table 5** below for the sheet pile design. The soil parameters include unit weight, ultimate shear strength, and angle of wall friction for an idealized section representative of the subsoil conditions within the project location.

Table 5:
Generalized Geotechnical Parameters for Sheet Piles

Soil Description	Average "N" Value	Unit Weight (pcf)			Soil Friction Angle (deg)	Steel Wall Friction Angle (deg)	Cohesion (psf)	Earth Pressure Coefficients	
		Saturated	Moist	Effective				Passive (Kp)	Active (Ka)
Loose Sand	*3	100	95	37.6	28	17	-	2.77	0.36
Medium Dense Sand	14	110	105	47.6	30	17	-	3.0	0.33

*3 = "N" value for hand augered depth.

9.0 CONSTRUCTION CONSIDERATIONS

9.1 Site Preparation

Site preparation and construction should be in accordance with the City of Cocoa Beach Standard Construction Details. The Contractor shall perform all clearing necessary for the proper installation of all piping and appurtenances in the locations shown in the drawings in accordance with the City of Cocoa Beach Standard Construction Details. Where required, all existing shrubbery, trees, grass, sprinklers, signs, fences, etc. should be transplanted, relocated, braced, shored, or otherwise protected and preserved.

9.2 Trench Excavations

The installation of the proposed sewer pipeline will require excavation of the existing subsurface materials. **NADIC** recommends the following temporary excavation side slopes to achieve a minimum factor of safety of 1.3:

Table 6:
Excavation Side Slopes

Excavation Material	Side Slopes
Sandy Soils	1V:2H
Silty Soils	1V:3H

All excavations shall be executed in accordance with the Central Florida Building Codes, the State of Florida Trench Safety Act (TSA), Occupational Safety and Health Administration (OSHA) requirements. Where required, slope protection should be provided in accordance with the most recent OSHA regulations.

All unsuitable materials encountered during the excavation should be removed... If the excavation of unsuitable materials extends below…. planned pipe…select backfill should be used to fill the excavation…

All unsuitable materials encountered during the excavation should be removed along the pipe alignment. If the excavation of unsuitable materials extends below the planned pipeline elevation, select backfill should be used to fill the excavation and should be compacted in 6-inch layers up to the bottom of the proposed six inches of pipe bedding. Sand backfill should be compacted to a density of at least 95 percent of the materials modified proctor maximum dry density (ASTM D-1557).

Based on the results of our exploration, any unsupported excavation to install the pipes is considered unstable or unsafe during construction. An unsupported vertical cut may cause distress on the roadway due to the angle of repose of the granular material may be exceeded and tension cracks will develop behind the vertical face of the excavation. During construction, excavated materials should not be stockpiled at the top of the slope within a horizontal distance equal to the excavation depth to minimize an excavation slope failure. Surface water runoff should be drained away from the excavation and not be allowed to pond.

9.3 Dewatering

Temporary dewatering may be required at the site if excavation and construction proceed during the wet season. Dewatering of excavations is normally the contractor's responsibility. This can be accomplished by a sanded well point system or by open sumps and pumps. The dewatering method used will depend on the level of the groundwater at the time of excavation and the water flow rate. The groundwater table, however, should be maintained at least 24 inches below all earthwork and compacted surfaces. Controlled dewatering should be performed to avoid possible piping/blowout at the base of the excavation or to avoid excessive settlement problems to surrounding areas.

We recommend that notes similar to the following be added to the appropriate plan sheets:

> *"The Contractor shall anticipate that dewatering will be required to facilitate pipe installation construction and standard dewatering methods will not be adequate for proper preparation/compaction of the foundation soils. The Contractor shall use well points, sumps, deep wells and/or other necessary dewatering methods as required to dewater the shaft excavations."*
>
> *"The Contractor shall obtain all necessary permits for proposed method of disposal and location of disposal prior to discharging water from the excavation."*

All excavations should be sloped as required to prevent slope failures and to allow proper backfilling. The excavations should be constructed in accordance with current OSHA regulations. Where restrictions do not permit the excavation to be sloped appropriately, the excavation should be shored in accordance with current OSHA criteria and regulations. During excavation, material should not be stockpiled at the top of the slope within a horizontal distance equal to the excavation depth.

9.4 Structural Filling and Backfilling

All trenching and backfilling for piping systems shall be executed in accordance with the City of Cocoa Beach Standard Construction Details and FDOT Standard Specifications for Road and Bridge Construction design standard.

All pipe trenches should be excavated to a level, 6-inch below the outside bottom of the proposed pipe barrel. The resulting excavation should be backfilled with approved pipe bedding material, up to the level of the outside bottom of the proposed pipe barrel. This material should be tamped and compacted to provide a proper bedding for the pipe and should then be shaped to receive the pipe. After pipe placement, the structural fill should be placed. Select backfill material should be placed under and around the pipe to one foot above the crown (or to two feet above crown for PVC gravity sewers) in 6-inch layers. Each layer should be thoroughly compacted with vibratory tamper until densities equivalent to at least 95 percent of the Modified Proctor maximum dry density in general accordance with AASHTO T-180 (ASTM D-1557) are uniformly obtained.

Suitable structural/backfill material should consist of an inorganic, non-plastic, granular soil containing less than 10 percent material passing the No. 200 mesh sieve (relatively clean sand with limerock or a crushed limerock with a two-inch maximum particle size) with an AASHTO Classification of A-1-a, A-1-b or A-3.

Prior to compaction operations, representative samples of the structural fill material should be tested to determine if the materials are acceptable and for compaction control. Testing should consist of maximum dry density, optimum moisture content, gradation, and plasticity characteristics of these materials. A representative number of in-place field density tests should

be performed in each lift of structural fill to ensure that the required degree of compaction has been achieved. We recommend that at least one density test be performed for every 200 linear feet per lift of compacted fill.

10. REPORT LIMITATIONS

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. We are not responsible for the conclusions, opinions or recommendations made by others based on these data.

The scope of the exploration was intended to evaluate subsurface soil and groundwater conditions within the influence of pipeline foundations, which does not include evaluations of deep potential soil problems such as sinkholes. The analyses and recommendations submitted in this report are based upon the data obtained from the soil borings performed at the locations indicated and does not reflect any variations which may occur among these borings. If any variations become evident during the course of this project, a re-evaluation of the recommendations contained in this report will be necessary after we have had the opportunity to observe the characteristics of the conditions encountered. Unanticipated soil conditions are commonly encountered and cannot be fully determined by taking soil samples; different soil conditions may require that additional expenditures be made during construction to attain a properly constructed project. The applicability of the report should be reviewed in the event significant changes occur in the design, nature or location of the proposed sewer pipeline.

The scope of services, included herein, did not include any environmental assessment for the presence or absence of hazardous or toxic materials in the soil, surface water, and groundwater, air on the site, below and around the site. Any statements in this report or on the boring logs regarding odors, colors, unusual or suspicious items and conditions are strictly for the information of the client.

APPENDIX A

Figures 1A and 1B	**Vicinity Maps**
Figures 2A and 2B	**USGS Topographic Maps**
Figures 3A and 3B	**USDA/NRCS Soil Maps**
Table 4	**Summary of Laboratory Test Results**

QUADRANGLE: COCOA BEACH, FL (2024)
SECTION: 34
TOWNSHIP: 24 SOUTH
RANGE: 37 EAST

REFERENCE: Google Earth Aerial Maps (2022)

NOT TO SCALE

REVISIONS				NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY:	ODR	04-10-2025
			CHECKED BY:	GNN	04-10-2025
			MODIFIED BY:	N/A	N/A
			CHECKED BY:	N/A	N/A
			APPROVED BY:	GNN	

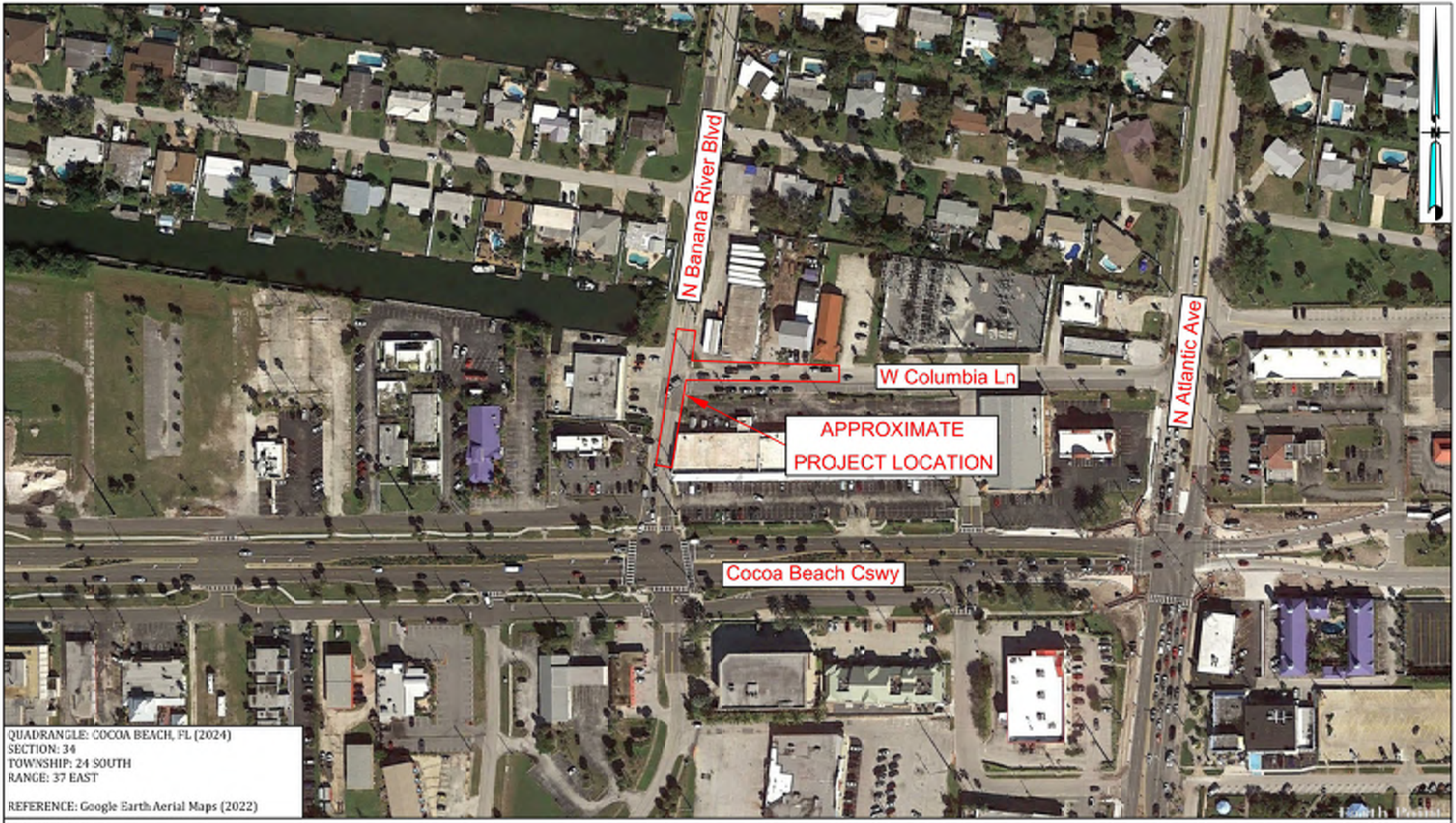
NADIC
GODWIN N. NNAEI, Ph.D., P.E.
FL REGISTRATION NO. 56637
NADIC ENGINEERING SERVICES, INC.
601 N. HART BOULEVARD
ORLANDO, FL 32818
PH (407) 521-4771 FAX (407) 521-4772
CERTIFICATE OF AUTHORIZATION NO. 8214

CITY OF COCOA BEACH, FLORIDA

COUNTY	CONTRACT NO.
BREVARD	RFQ23-003

FIGURE 1A
VICINITY MAP
AREA 1

PROJECT NAME:
COCOA BEACH GRAVITY SEWER REPLACEMENT



QUADRANGLE: COCOA BEACH, FL (2024)
SECTION: 34
TOWNSHIP: 24 SOUTH
RANGE: 37 EAST

REFERENCE: Google Earth Aerial Maps (2022)

NOT TO SCALE

REVISIONS				NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY:	ODR	04-10-2025
			CHECKED BY:	GNN	04-10-2025
			MODIFIED BY:	N/A	N/A
			CHECKED BY:	N/A	N/A
			APPROVED BY:	GNN	

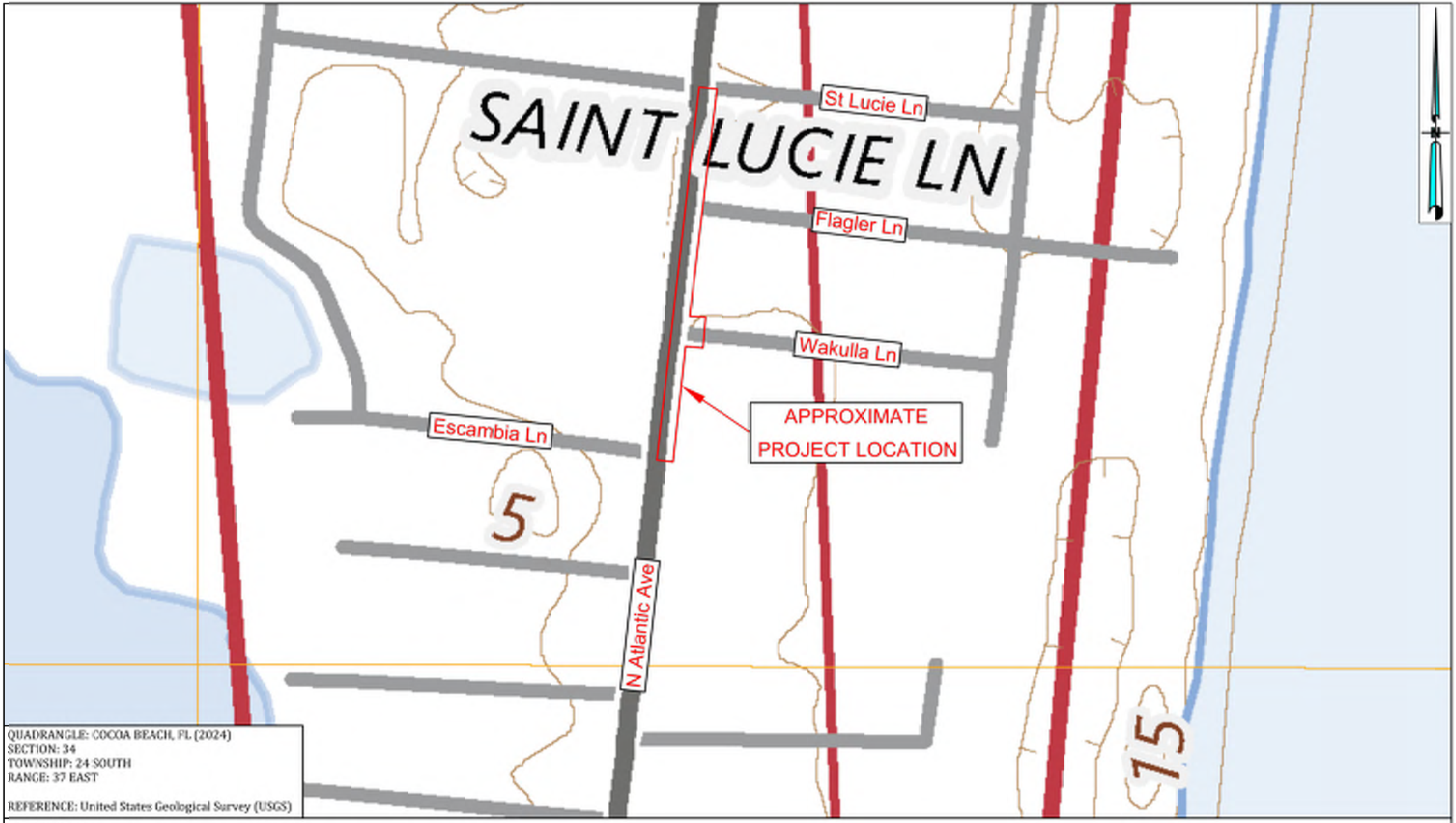
NADIC
GODWIN N. NNAJI, Ph.D., P.E.
FL REGISTRATION NO. 56637
NADIC ENGINEERING SERVICES, INC.
601 N. HART BOULEVARD
ORLANDO, FL 32818
PH (407) 521-4771 FAX (407) 521-4772
CERTIFICATE OF AUTHORIZATION NO. 8214

CITY OF COCOA BEACH, FLORIDA

COUNTY	CONTRACT NO.
BREVARD	RFQ23-003

FIGURE 1B
VICINITY MAP
AREA 2

PROJECT NAME:
COCOA BEACH GRAVITY SEWER REPLACEMENT



NOT TO SCALE

REVISIONS				NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY:	ODR	04-10-2025
			CHECKED BY:	GNN	04-10-2025
			MODIFIED BY:	N/A	N/A
			CHECKED BY:	N/A	N/A
			APPROVED BY:	GNN	

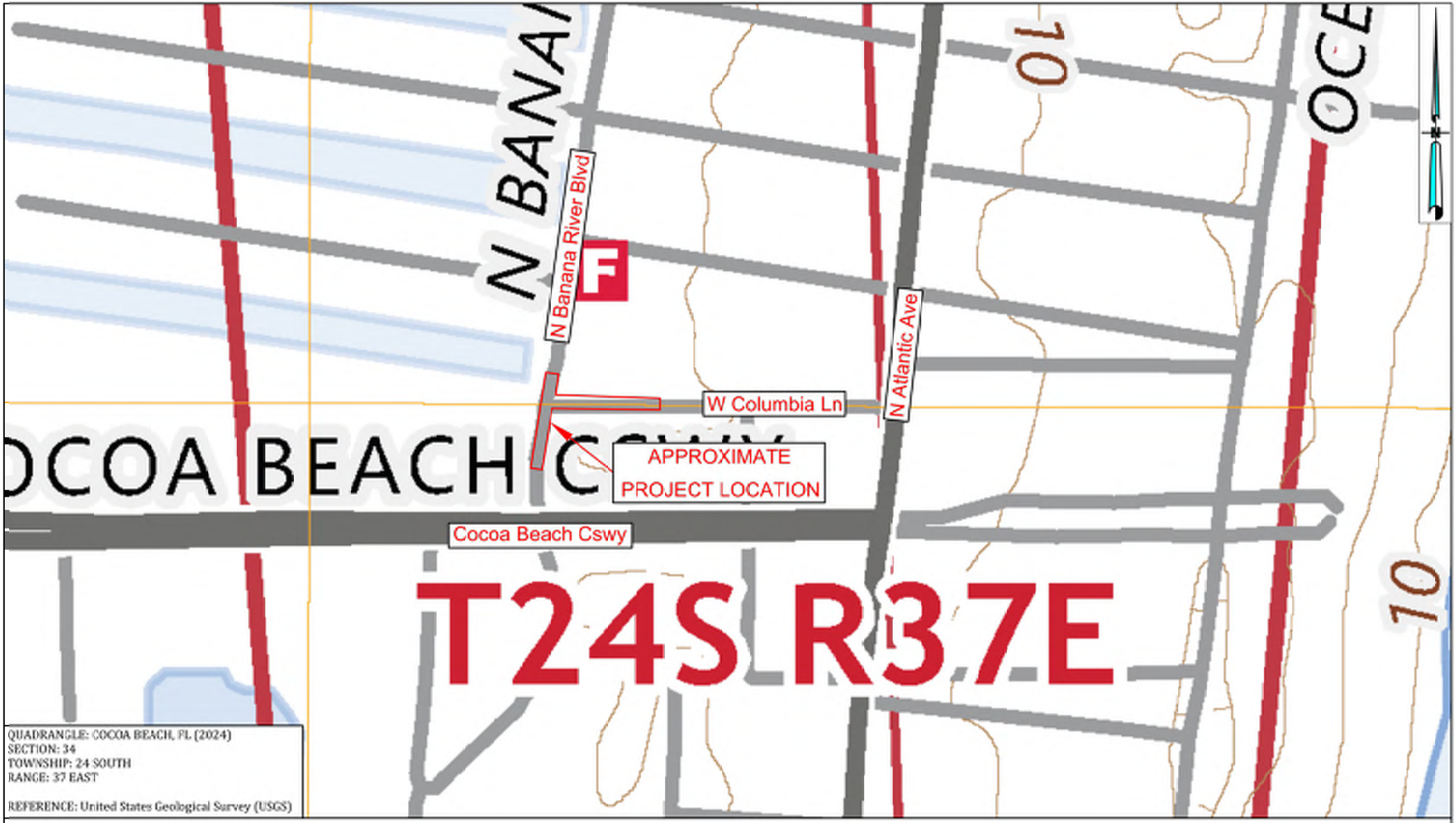
NADIC
GODWIN N. NNAEI, Ph.D., P.E.
FL REGISTRATION NO. 56637
NADIC ENGINEERING SERVICES, INC.
601 N. HART BOULEVARD
ORLANDO, FL 32818
PH (407) 521-4771 FAX (407) 521-4772
CERTIFICATE OF AUTHORIZATION NO. 8214

CITY OF COCOA BEACH, FLORIDA

COUNTY	CONTRACT NO.
BREVARD	RFQ23-003

FIGURE 2A
TOPOGRAPHIC MAP
AREA 1

PROJECT NAME:
COCOA BEACH GRAVITY SEWER REPLACEMENT



QUADRANGLE: COCOA BEACH, FL (2024)
SECTION: 34
TOWNSHIP: 24 SOUTH
RANGE: 37 EAST

REFERENCE: United States Geological Survey (USGS)

NOT TO SCALE

REVISIONS				NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY:	ODR	04-10-2025
			CHECKED BY:	GNN	04-10-2025
			MODIFIED BY:	N/A	N/A
			CHECKED BY:	N/A	N/A
			APPROVED BY:	GNN	

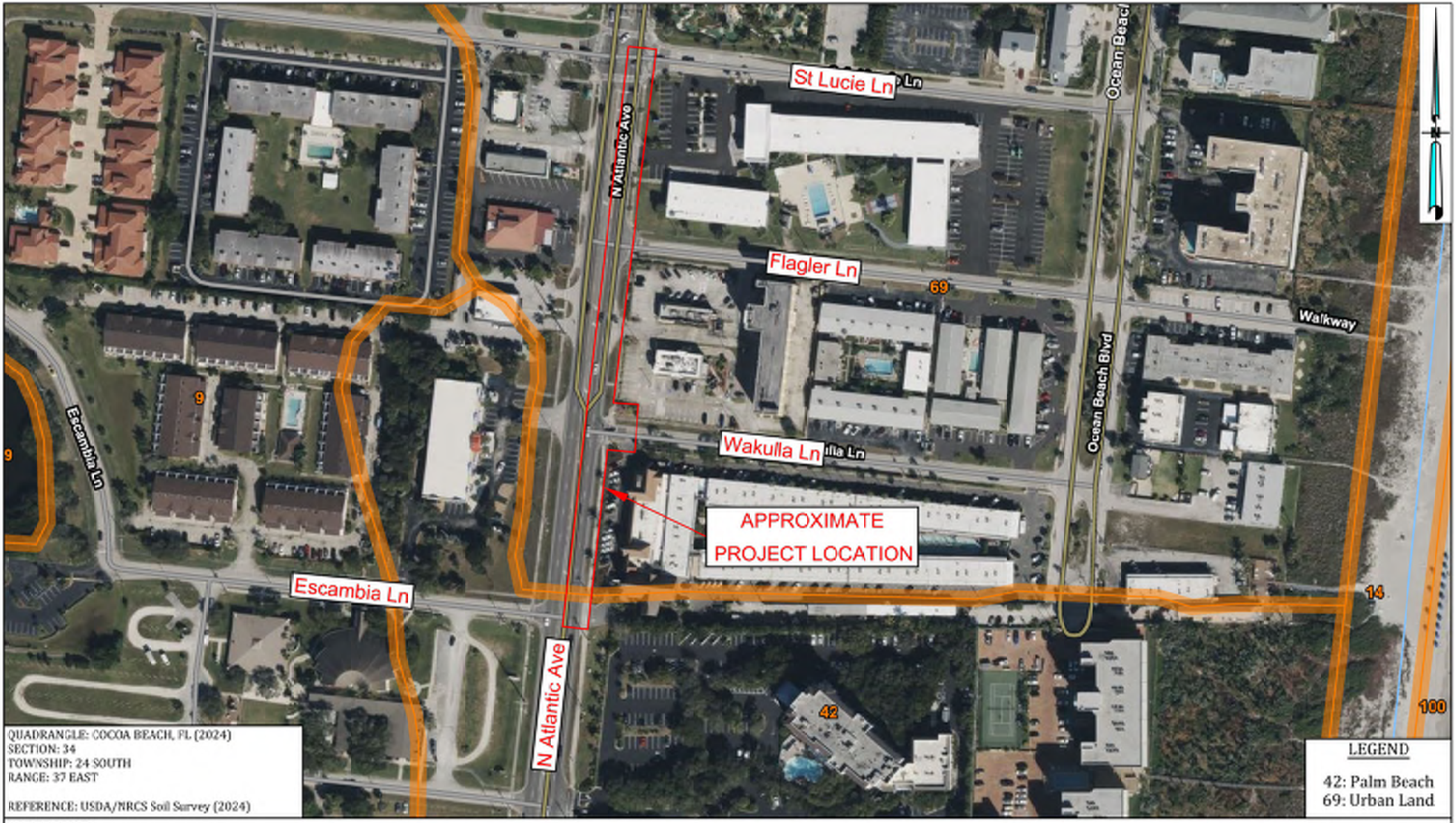
NADIC
GODWIN N. NNAEI, Ph.D., P.E.
FL REGISTRATION NO. 56637
NADIC ENGINEERING SERVICES, INC.
601 N. HART BOULEVARD
ORLANDO, FL 32818
PH (407) 521-4771 FAX (407) 521-4772
CERTIFICATE OF AUTHORIZATION NO. 8214

CITY OF COCOA BEACH, FLORIDA

COUNTY	CONTRACT NO.
BREVARD	RFQ23-003

FIGURE 2B
TOPOGRAPHIC MAP
AREA 2

PROJECT NAME:
COCOA BEACH GRAVITY SEWER REPLACEMENT



QUADRANGLE: COCOA BEACH, FL (2024)
SECTION: 34
TOWNSHIP: 24 SOUTH
RANGE: 37 EAST

REFERENCE: USDA/NRCS Soil Survey (2024)

LEGEND

42: Palm Beach
69: Urban Land

NOT TO SCALE

REVISIONS				NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY:	ODR	04-10-2025
			CHECKED BY:	GNN	04-10-2025
			MODIFIED BY:	N/A	N/A
			CHECKED BY:	N/A	N/A
			APPROVED BY:	GNN	

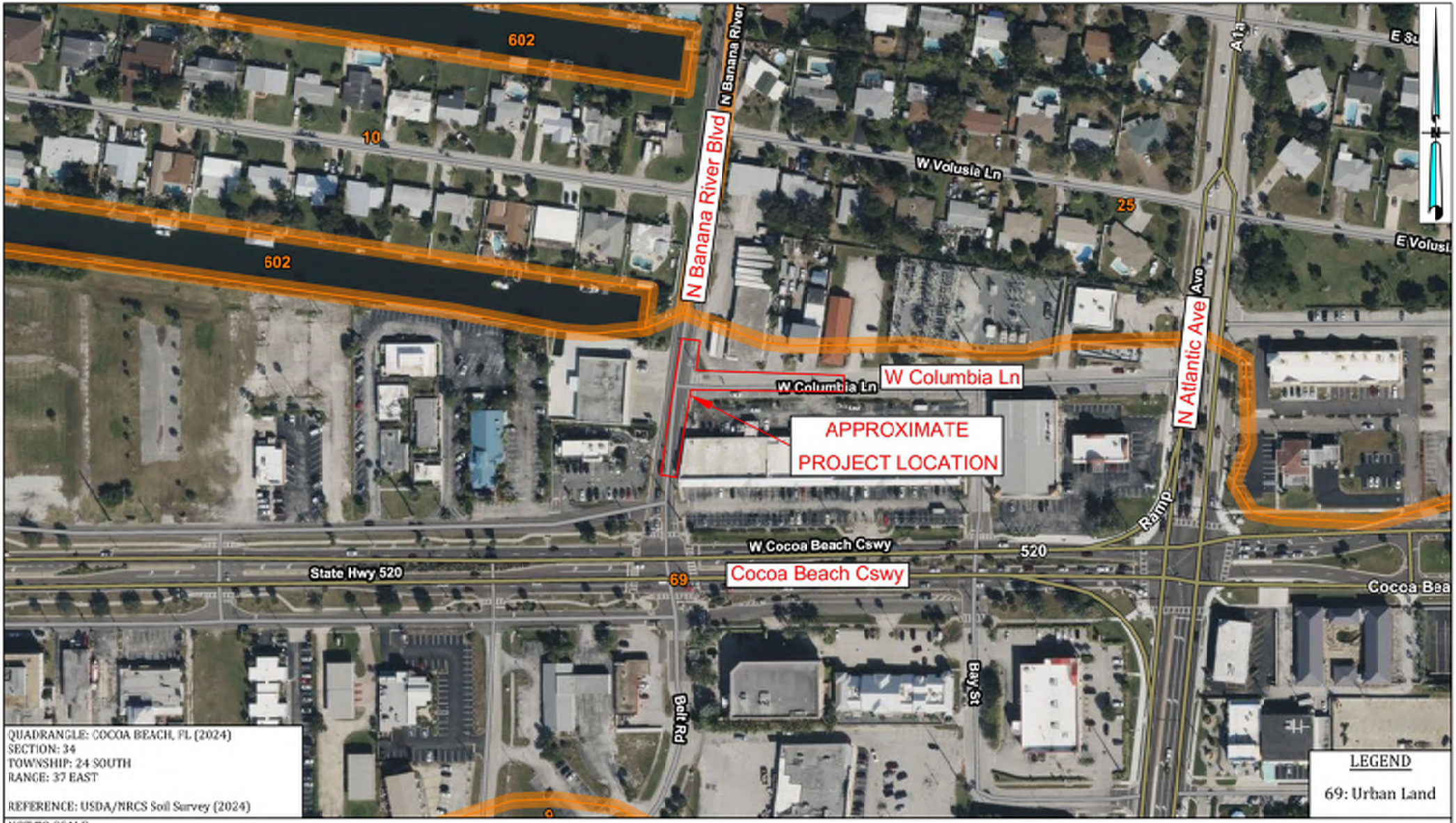
NADIC
GODWIN N. NNAEI, Ph.D., P.E.
FL REGISTRATION NO. 56637
NADIC ENGINEERING SERVICES, INC.
601 N. HART BOULEVARD
ORLANDO, FL 32818
PH (407) 521-4771 FAX (407) 521-4772
CERTIFICATE OF AUTHORIZATION NO. 8214

CITY OF COCOA BEACH, FLORIDA

COUNTY	CONTRACT NO.
BREVARD	RFQ23-003

FIGURE 3A
SOIL SURVEY MAP
AREA 1

PROJECT NAME:
COCOA BEACH GRAVITY SEWER REPLACEMENT



NOT TO SCALE

REVISIONS				NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY:	ODR	04-10-2025
			CHECKED BY:	GNN	04-10-2025
			MODIFIED BY:	N/A	N/A
			CHECKED BY:	N/A	N/A
			APPROVED BY:	GNN	

NADIC
GODWIN N. NNAEI, Ph.D., P.E.
FL REGISTRATION NO. 56637
NADIC ENGINEERING SERVICES, INC.
601 N. HART BOULEVARD
ORLANDO, FL 32818
PH (407) 521-4771 FAX (407) 521-4772
CERTIFICATE OF AUTHORIZATION NO. 8214

CITY OF COCOA BEACH, FLORIDA

COUNTY	CONTRACT NO.
BREVARD	RFQ23-003

FIGURE 3B
SOIL SURVEY MAP
AREA 2

PROJECT NAME:
COCOA BEACH GRAVITY SEWER REPLACEMENT

TABLE 4: SUMMARY OF LABORATORY TEST RESULTS

Location/ Intersection	Boring Number	Approximate Latitude and Longitude	Sample Depth (feet)	Moisture Content (%)	Organic Content (%)	Sieve Analysis (Percent Passing)					Atterberg Limits (%)		AASHTO Classification
						#10	#40	#60	#100	#200	Liquid Limit	Plasticity Index	
W Columbia LN & N Banana River Blvd	B-1	28°21'6.61"N, 80°36'31.07"W	4 – 6	5	-	100	99	95	27	2	-	-	A-3
	B-2	28°21'31.04"N, 80°36'37.11"W	13.5 – 15	32	-	-	-	-	-	24	-	-	A-2-4

AASHTO: American Association of State Highway & Transportation Officials

APPENDIX B

Sheet 1	**Cross Section of Soil Survey**
Sheets 2 and 3	**Report of SPT Borings**

NADIC ENGINEERING SERVICES, INC

SEWER PIPELINE CROSS SECTION OF SOIL SURVEY

REPORT OF TESTS

PROJECT No.: PR.GEO-CV24071
PROJECT DESCRIPTION: COCOA BEACH GRAVITY SEWER REPLACEMENT
SUBMITTED BY: NADIC

QUADRANGLE: COCOA BEACH, FLORIDA
SECTION: 34
TOWNSHIP: 24 SOUTH
RANGE: 37 EAST

DATE REPORTED: MARCH, 2025

	ORGANIC CONTENT		MOISTURE CONTENT		SIEVE ANALYSIS RESULTS % PASSING						ATTERBERG LIMITS (%)					CORROSION TEST RESULTS					SUBSTRUCTURE ENVIRONMENTAL CLASSIFICATION	
STRATUM NO.	No. OF TESTS	% ORGANIC	No. OF TESTS	% MOISTURE CONTENT	No. OF TESTS	% PASSING 10 MESH	% PASSING 40 MESH	% PASSING 60 MESH	% PASSING 100 MESH	% PASSING 200 MESH	No. OF TESTS	LIQUID LIMIT	PLASTICITY INDEX	AASHTO GROUP	DESCRIPTION	No. OF TESTS	pH	RESISTIVITY OHM-CM	CHLORIDES PPM	SULFATE PPM	CONCRETE	STEEL
1	-	-	1	5	1(FULL)	100	99	95	27	2	-	-	-	A-3	LIGHT BROWN TO LIGHT GRAY SAND, OCCASIONALLY WITH SILT OR SHELL FRAGMENTS	-	-	-	-	-	-	-
2	-	-	1	32	1 (-200)	-	-	-	-	24	-	-	-	A-2-4	GRAY SILTY SAND	-	-	-	-	-	-	-

NOTES:

(1) STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. ANY STRATUM CONNECTING LINES SHOWN ARE FOR ESTIMATING EARTHWORK ONLY AND DO NOT INDICATE ACTUAL STRATUM LIMITS. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED AS INDICATED IN FDOT SECTION 2-4. FOR FURTHER DETAILS SEE FDOT STANDARD SPECIFICATIONS SECTION 120-3.

(2) SOIL PARAMETER NOT TESTED DENOTED AS "-" ABOVE.

(3) ▼ INDICATES WATER TABLE WHERE ENCOUNTERED AT THE TIME OF SURVEY.
GNE INDICATES GROUNDWATER LEVEL NOT ENCOUNTERED AT THE TIME OF SURVEY.
▽ INDICATES ESTIMATED SEASONAL HIGH WATER LEVEL.

(4) REMOVAL OF PLASTIC AND HIGH PLASTIC MATERIAL OCCURING WITHIN THE ROADWAY SHALL BE ACCOMPLISHED IN ACCORDANCE WITH FDOT STANDARD INDEX No. 120-002 UNLESS OTHERWISE STATED IN THE PLANS. THE MATERIAL UTILIZED IN EMBANKMENT CONSTRUCTION SHALL BE IN ACCORDANCE WITH FDOT STANDARD INDEX No. 120-001.

(5) STRATA 1 AND 2 SHALL BE TREATED AS SELECT (S) MATERIALS PER FDOT STANDARD INDEX No. 120-001.

REVISION		
DATE	BY	DESCRIPTION

NADIC ENGINEERING — Civil, Geotechnical, Environmental Consulting Engineering

ENGINEER OF RECORD:
GODWIN N. NNADI, P.E. #50637
NADIC
601 N. Hart Boulevard
ORLANDO, FLORIDA 32818

SEAL:

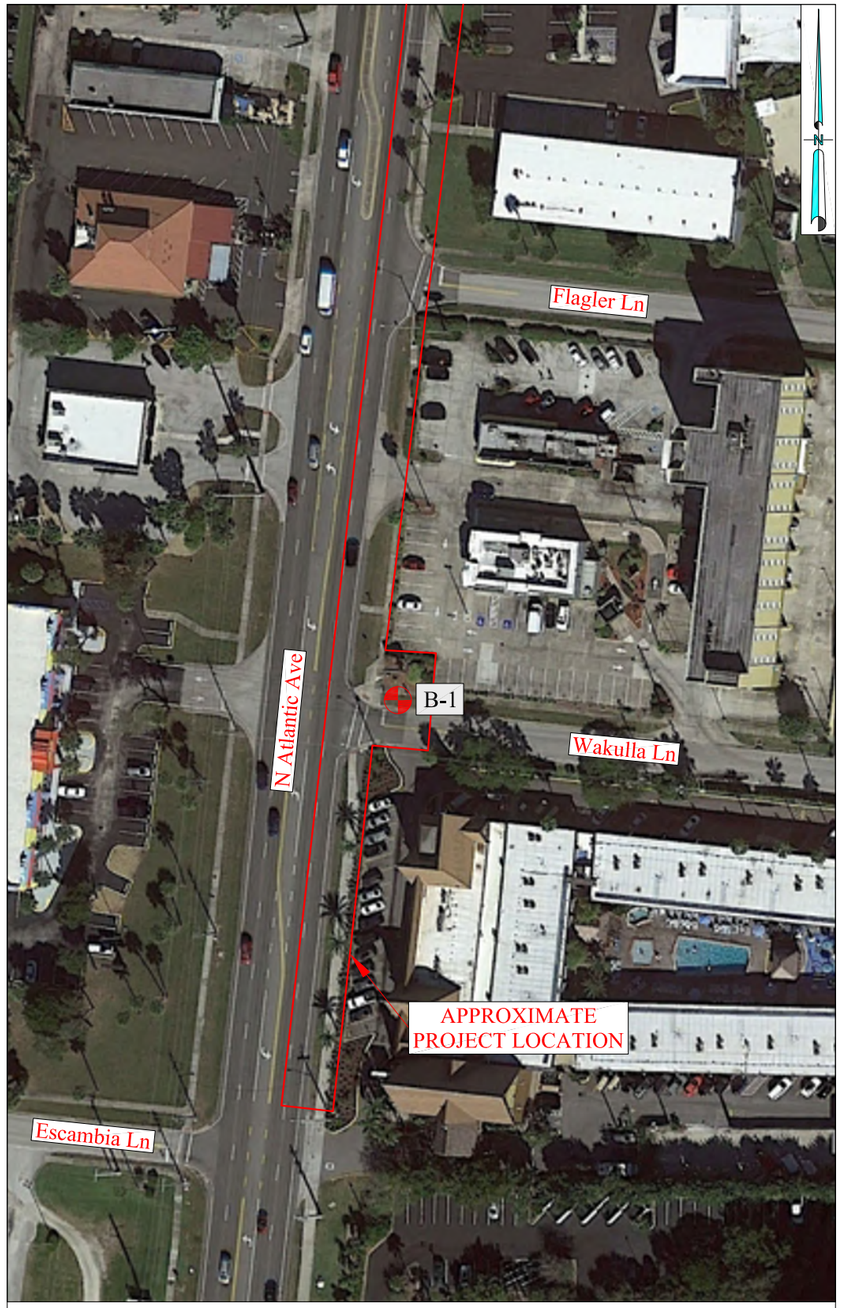
CITY OF COCOA BEACH, FLORIDA

COUNTY	CONTRACT NO.
BREVARD	RFQ23-003

SHEET TITLE: SEWER PIPELINE SOIL SURVEY
PROJECT NAME: COCOA BEACH GRAVITY SEWER REPLACEMENT
PROJECT NO.
SHEET NO.

NADIC SHEET NO. 1

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



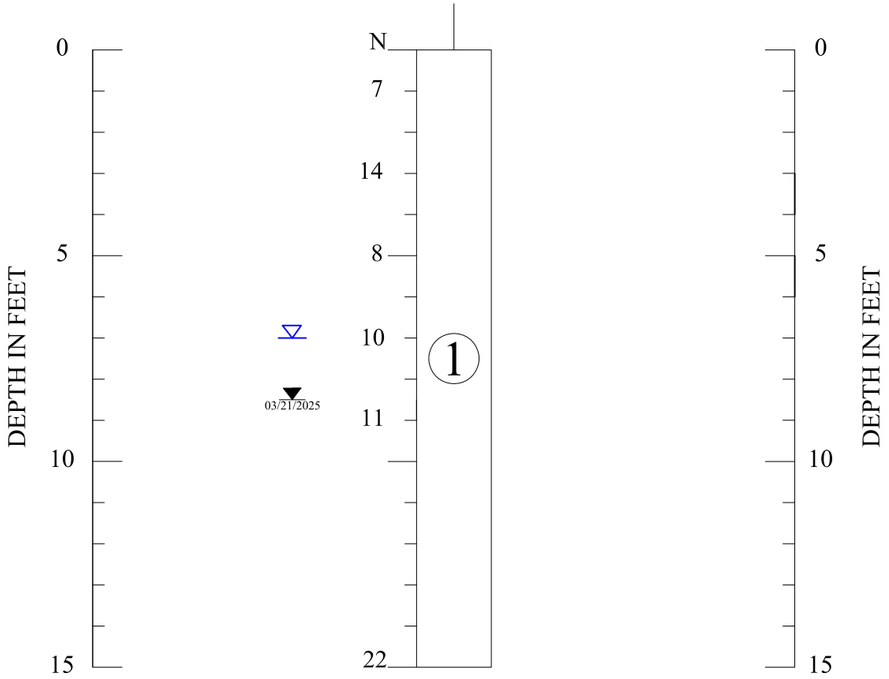
QUADRANGLE: COCOA BEACH, FL (2024)
SECTION: 34
TOWNSHIP: 24 SOUTH
RANGE: 37 EAST

REFERENCE: Google Earth Aerial Maps (2022)

NOT TO SCALE

APPROXIMATE BORING LOCATION

Boring No.:	**B-1**
Approx. Latitude:	28°21'6.61"N
Approx. Longitude:	80°36'31.07"W
Approx. Elevation:	-
Date Drilled:	03-21-2025



Boring Terminated @
Depth 15'
ASTM Automatic Hammer

LEGEND

①	Light brown to light gray SAND, occasionally with silt or shell fragments, (A-3)
②	Gray silty SAND, (A-2-4)
W =	Natural Moisture Content (%) (FM 1-T265)
-200 =	Percent Passing No. 200 US Standard Sieve (%) (FM-T088)
12/05/2024 ▼	Groundwater level encountered on date shown
▽	Estimated seasonal high groundwater level
GNE	Groundwater not encountered in the top 10 feet
(A-3)	A.A.S.H.T.O.: Soil classification group symbol as determined by visual examination

Standard Penetration Test Data

N	Standard penetration resistance in blows per foot (18" spoon ASTM D-1586)
	Spoon Inside Diameter 1 3/8 in.
	Spoon Outside Diameter 2 in.
	ASTM Standard Automatic Hammer
	Average Hammer Drop 30 in.
	Hammer Weight 140 lbs.

NOTES

1. Standard Penetration Test borings were performed in accordance with ASTM D-1586. Standard Penetration Resistance are shown on the borings at the test depths in blows per foot unless otherwise noticed
2. Subsurface conditions shown on the boring do not represent conditions between boring locations. Actual conditions between the borings may vary from those shown.
3. Unified Soil Classifications shown on the boring are based on visual examination and limited laboratory testing

GRANULAR MATERIALS

	Drop Safety Hammer	Automatic Hammer
RELATIVE DENSITY	SPT (BLOWS/FT.)	SPT (BLOWS/FT.)
Very loose	Less than 4	Less than 3
Loose	4-10	3-7
Medium Dense	10-30	7-21
Dense	30-50	21-35
Very Dense	Greater than 50	Greater than 35

SILTS AND CLAYS

	Drop Safety Hammer	Automatic Hammer
CONSISTENCY	SPT (BLOWS/FT.)	SPT (BLOWS/FT.)
Very soft	Less than 2	Less than 1
Soft	2-4	1-3
Firm	4-8	3-6
Stiff	8-15	6-11
Very Stiff	15-30	11-21
Hard	Greater than 30	Greater than 21

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
Drawn by:	ODR	04-10-2025
Checked by:	GNN	04-10-2025
Designed by:	N/A	N/A
Checked by:	N/A	N/A
Approved by:	GNN	

ENGINEER OF RECORD:
NADIC ENGINEERING SERVICES, INC.
601 N. HART BOULEVARD
ORLANDO FL, 32818
GODWIN N. NNADI, P.E. NO. 50637

CITY OF COCOA BEACH, FLORIDA

COUNTY	CONTRACT NO.
BREVARD	RFQ23-003

SHEET TITLE:
REPORT OF SPT BORING - AREA 1

PROJECT NAME:
COCOA BEACH GRAVITY SEWER REPLACEMENT

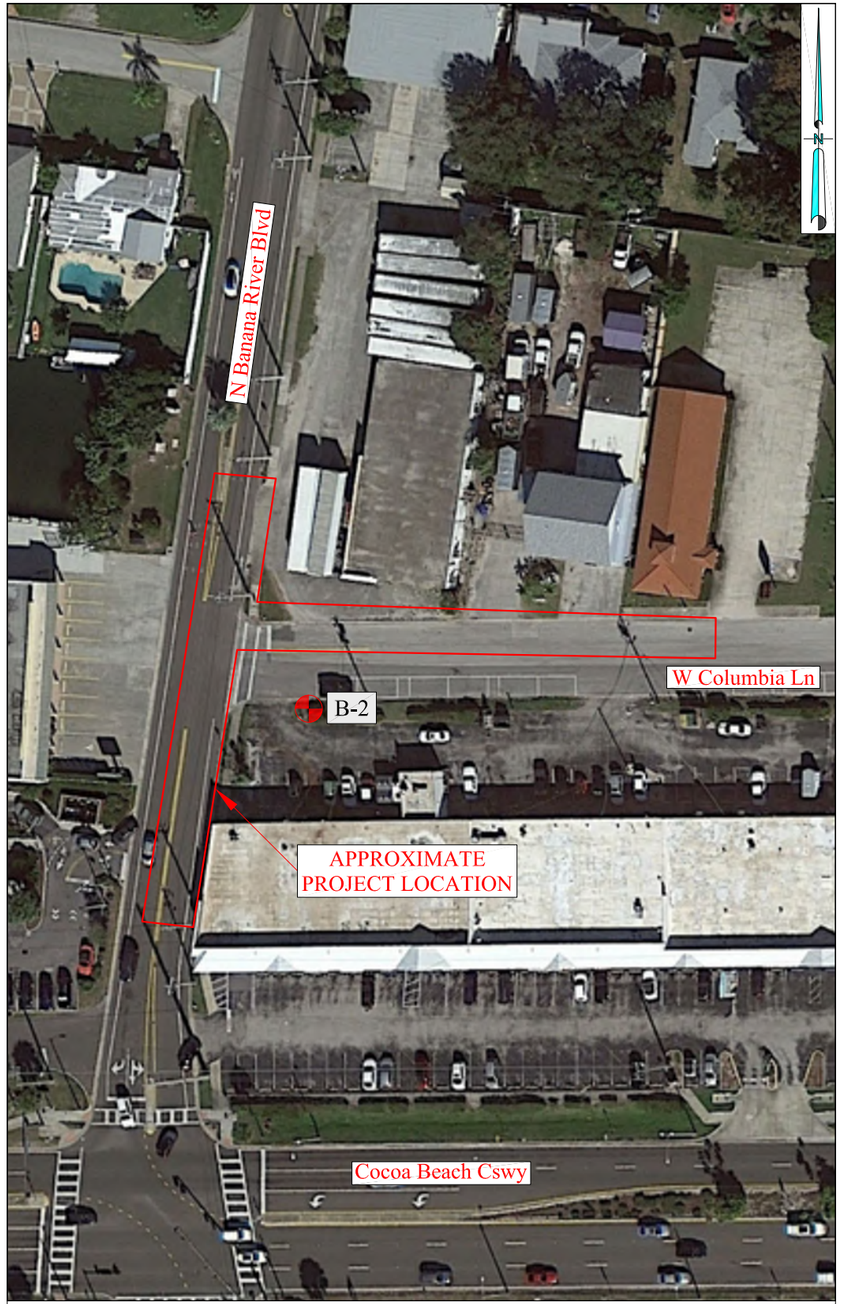
SHEET NO.

NADIC Project No. PR.GEO-CV24071

NADIC SHEET NO. 2

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

Nadic Engineering Services, Inc\Engineering - Geotechnical\Orlando\Civil (CV)\2024\PR.GEO-CV24071 - Cocoa Beach Sewer Replacement\Project Working File\Autocad



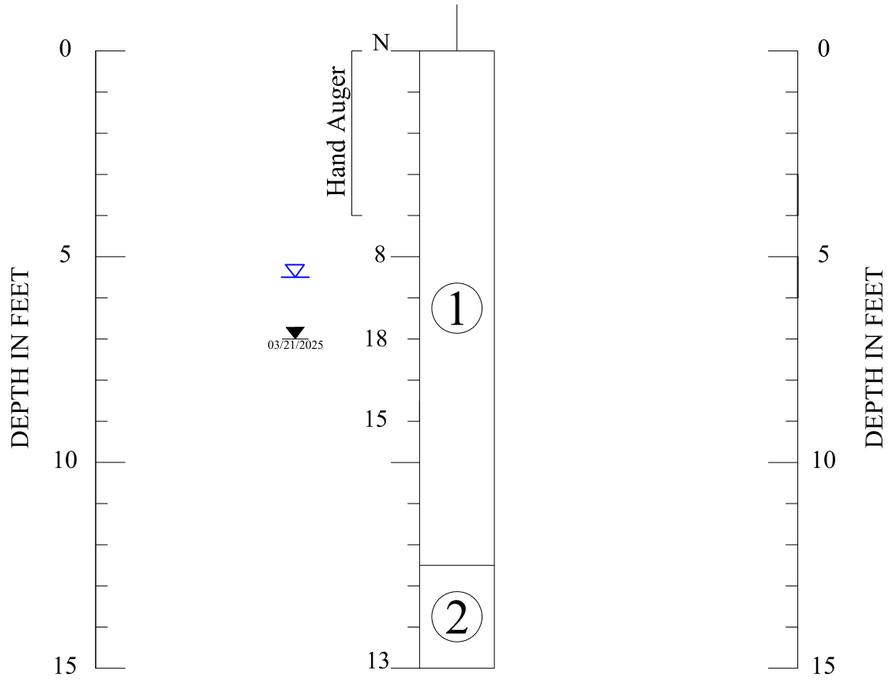
QUADRANGLE: COCOA BEACH, FL (2024)
SECTION: 34
TOWNSHIP: 24 SOUTH
RANGE: 37 EAST

REFERENCE: Google Earth Aerial Maps (2022)

NOT TO SCALE

APPROXIMATE BORING LOCATION

Boring No.:	**B-2**
Approx. Latitude:	28°21'31.04"N
Approx. Longitude:	80°36'37.11"W
Approx. Elevation:	-
Date Drilled:	03-21-2025



Boring Terminated @
Depth 15'
ASTM Automatic Hammer

LEGEND

① Light brown to light gray SAND, occasionally with silt or shell fragments, (A-3)

② Gray silty SAND, (A-2-4)

W = Natural Moisture Content (%) (FM 1-T265)
-200 = Percent Passing No. 200 US Standard Sieve (%) (FM-T088)

12/05/2024 Groundwater level encountered on date shown

Estimated seasonal high groundwater level

GNE Groundwater not encountered in the top 10 feet

(A-3) A.A.S.H.T.O.: Soil classification group symbol as determined by visual examination

Standard Penetration Test Data

N Standard penetration resistance in blows per foot (18" spoon ASTM D-1586)

Spoon Inside Diameter 1 3/8 in.
Spoon Outside Diameter 2 in.
ASTM Standard Automatic Hammer
Average Hammer Drop 30 in.
Hammer Weight 140 lbs.

NOTES

1. Standard Penetration Test borings were performed in accordance with ASTM D-1586. Standard Penetration Resistance are shown on the borings at the test depths in blows per foot unless otherwise noticed
2. Subsurface conditions shown on the boring do not represent conditions between boring locations. Actual conditions between the borings may vary from those shown.
3. Unified Soil Classifications shown on the boring are based on visual examination and limited laboratory testing

GRANULAR MATERIALS

	Drop Safety Hammer	Automatic Hammer
RELATIVE DENSITY	SPT (BLOWS/FT.)	SPT (BLOWS/FT.)
Very loose	Less than 4	Less than 3
Loose	4-10	3-7
Medium Dense	10-30	7-21
Dense	30-50	21-35
Very Dense	Greater than 50	Greater than 35

SILTS AND CLAYS

	Drop Safety Hammer	Automatic Hammer
CONSISTENCY	SPT (BLOWS/FT.)	SPT (BLOWS/FT.)
Very soft	Less than 2	Less than 1
Soft	2-4	1-3
Firm	4-8	3-6
Stiff	8-15	6-11
Very Stiff	15-30	11-21
Hard	Greater than 30	Greater than 21

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
Drawn by:	ODR	04-10-2025
Checked by:	GNN	04-10-2025
Designed by:	N/A	N/A
Checked by:	N/A	N/A
Approved by:	GNN	

ENGINEER OF RECORD:
NADIC ENGINEERING SERVICES, INC.
601 N. HART BOULEVARD
ORLANDO FL, 32818
GODWIN N. NNADI, P.E. NO. 50637

CITY OF COCOA BEACH, FLORIDA

COUNTY	CONTRACT NO.
BREVARD	RFQ23-003

SHEET TITLE:
REPORT OF SPT BORING - AREA 2

PROJECT NAME:
COCOA BEACH GRAVITY SEWER REPLACEMENT

SHEET NO.

NADIC Project No. PR.GEO-CV24071

Nadic Engineering Services, Inc\Engineering - Geotechnical\Orlando\Civil (CV)\2024\PR.GEO-CV24071 - Cocoa Beach Sewer Replacement\Project Working File\Autocad

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

NADIC SHEET NO. 3

APPENDIX B

PERMITS

FLORIDA DEPARTMENT OF Environmental Protection

Central District Office
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803

Ron DeSantis
Governor

Jay Collins
Lt. Governor

Alexis A. Lambert
Secretary

October 21, 2025

NOTIFICATION OF ACCEPTANCE OF USE OF A GENERAL PERMIT

PERMITTEE:		**PERMIT NUMBER:**	0465359-001-DWC/CG
Brad Kalsow		**ISSUE DATE:**	October 21, 2025
Director of Public Works and Water Reclamation Department		**EXPIRATION DATE:**	October 20, 2030
City of Cocoa Beach		**COUNTY:**	Brevard
1600 Minutemen Causeway		**PROJECT NAME:**	Banana Riv-Atlantic Ave Area 1
City of Cocoa Beach, FL 32931		**CONNECTED TO:**	COCOA BEACH WRF
Email: bkalsow@cityofcocoabeach.com		**FACILITY ID:**	FL0021105

Dear Mr. Brad Kalsow:

This letter acknowledges receipt of your Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System for the subject project. Our Office received the Notice on October 21, 2025. This project includes: A) 51 Liner Feet (LF) of 12-Inch PVC Gravity Main B) Associated Manholes and Appurtenances.

This is to advise you that the Department does not object to your use of such general permit.

Please note the attached requirements apply to your use of this general permit for constructing the proposed domestic wastewater collection/transmission system.

You are further advised that the construction activity must conform to the description contained in your Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System and that any deviation will subject the permittee to enforcement action and possible penalties.

If you have any questions, please contact the Central District Office at DEP_CD@FloridaDEP.gov or 407-897-4100.

Sincerely,

Gabriel Knobeloch
Environmental Manager
Permitting and Waste Cleanup Program

cc: Olena Lytvyn, Black and Veatch, lytvyno@bv.com
FDEP: Charles LeGros; Rashendrick Johnson; Gabriel Knobeloch; Jacqueline Greaves; William Gillett

REQUIREMENTS FOR USE OF THE GENERAL PERMIT FOR DOMESTIC WASTEWATER COLLECTION/TRANSMISSION SYSTEMS:

1. This general permit is subject to the general permit conditions of Rule 62-4.540, F.A.C., as applicable. [62-4.540]

2. This general permit does not relieve the permittee of the responsibility for obtaining a dredge and fill permit where it is required. [62-604.600(6)(b)1]

3. This general permit cannot be revised, except to transfer the permit. [62-604.600(6)(b)2]

4. This general permit will expire five years from the date of issuance. If the project has been started and not completed by that time, a new permit must be obtained before the expiration date in order to continue work on the project. [62-4.030]

5. Upon completion of construction of the collection/transmission system project, and before placing the facilities into operation for any purpose other than testing for leaks or testing equipment operation, the permittee shall submit Form 62-604.300(3)(b), Notification of Completion of Construction for a Domestic Wastewater Collection/Transmission System. The form shall be submitted electronically by using the Department's Business Portal at https://www.fldepportal.com/go/ (via "Submit" then "Registration/Notification" and "Submit Notifications to DEP." The submission is "Division of Water Resource Management Domestic/Industrial Wastewater" and the submittal type is "Notification of Completion of Construction for a Domestic Wastewater Collection/Transmission System."). This form is available at the Department's Internet site at: https://floridadep.gov/water/domestic-wastewater/content/domestic-wastewater-forms. [62-604.700(2)]

6. Abnormal events shall be reported to the Department's Central District Office in accordance with Rule 62-604.550, F.A.C. For unauthorized spills of wastewater in excess of 1000 gallons per incident, or where information indicates that public health or the environment may be endangered, oral reports shall be provided to the STATE WATCH OFFICE TOLL FREE NUMBER (800)320-0519 as soon as practical, but no later than 24 hours from the time the permittee or other designee becomes aware of the circumstances. Unauthorized releases or spills less than 1000 gallons per incident are to be reported orally to the Department's Central District Office within 24 hours from the time the permittee, or other designee becomes aware of the circumstances.

   The oral notification shall be followed by a written submission, which shall be provided within five days of the time that the owner/operator becomes aware of the circumstances. The written submission shall contain: a description of the spill, release or abnormal event and its cause; the period and duration of noncompliance including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; clean-up actions taken and status; steps taken or planned to reduce, eliminate, and prevent recurrence; the type of sanitary sewer overflow structure (e.g., manhole); the discharge location address and latitude/longitude; type of water discharged; discharge volumes and volumes recovered; volume discharged to surface waters and receiving waterbody name; types of human health and environmental impacts of the sanitary sewer overflow (e.g., beach closure); whether the noncompliance was caused by a third party (e.g., contractor); and, whether the sanitary sewer overflow was related to wet weather. The written submission shall be provided electronically. Electronic submission is available using the Department's Business Portal at https://www.fldepportal.com/go/ (via "Submit" followed by "Report" or "Registration/Notification").

In accordance with Section 403.077, F.S., unauthorized releases or spills reportable to the State Watch Office shall also require a public notice of pollution report. Reporting may be made or by reporting electronically using the Department's Business Portal at https://www.fldepportal.com/go/ (via "Submit" followed by "Report" or "Registration/Notification") and selecting the option to also submit the public notice of pollution report, or reporting may be made to the Department's Public Notice of Pollution web page at https://floridadep.gov/pollutionnotice. [62-604.550]

ADDITIONAL INFORMATION:

Once a collection/transmission system is cleared for operation, the provisions below shall be met by the owner/operator of the system in accordance with Rule 62-604.500, F.A.C.

1. All collection/transmission systems shall be operated and maintained to provide uninterrupted service. All pump stations shall be operated and maintained to provide the emergency pumping capability requirements in paragraph 62-604.400(2)(a), F.A.C., the lightning and transient voltage surge protections in paragraph 62-604.400(2)(b), F.A.C., and the design and signage requirements in paragraph 62-604.400(2)(d), F.A.C. Also, all equipment, pipes, manholes, pump stations, and other appurtenances necessary for the collection/transmission of domestic wastewater, including equipment provided pursuant to subsection 62-604.400(2), F.A.C., shall be maintained to function as intended. [62-604.500(2) and (3)]

2. The owner/operator of a collection/transmission system shall evaluate and update the emergency response plan portion of the operation and maintenance manual annually. The emergency response plan shall assess system security including cybersecurity; water quality monitoring for sanitary sewer overflows affecting surface waters; and, hurricane and severe storm preparedness and response. [62-604.500(4)]

3. Collection/transmission systems shall be maintained to minimize excessive infiltration and inflow into the collection/transmission system, as well as excessive leakage from the collection/transmission system. The owner/operator of a collection/transmission system shall take corrective actions when infiltration, inflow, or leakage is excessive. Infiltration and inflow are considered excessive if one or both cause or contribute to sanitary sewer overflows. Leakage, or exfiltration, is considered excessive if it causes or contributes to a violation of surface water quality standards or ground water quality standards. [62-604.500(5)]

4. All collection/transmission systems shall be operated and maintained to prevent sanitary sewer overflows. Owners/operators shall evaluate the cause of all sanitary sewer overflows and evaluate potential corrective measures to avoid future sanitary sewer overflows. Corrective actions shall be taken by the owner/operator of the collection/transmission system if excessive inflow and infiltration causes or contributes to a sanitary sewer overflow. The owner/operator of a satellite collection system shall take corrective actions for a sanitary sewer overflow in the receiving collection system caused by excessive inflow and infiltration in the satellite collection system. [62-604.500(6)]

5. The approved Operation and Maintenance Manual and emergency response plan pursuant to Rule 62-604.500(4), F.A.C., shall be kept available at a site convenient for use by operation and maintenance personnel and for inspection by the Florida Department of Environmental Protection personnel.

FLORIDA DEPARTMENT OF Environmental Protection

Central District Office
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803

Ron DeSantis
Governor

Jay Collins
Lt. Governor

Alexis A. Lambert
Secretary

November 3, 2025

NOTIFICATION OF ACCEPTANCE OF USE OF A GENERAL PERMIT

PERMITTEE:		**PERMIT NUMBER:**	0465359-002-DWC/CG
Brad Kalsow		**ISSUE DATE:**	November 3, 2025
Director of Public Works and Water Reclamation Department		**EXPIRATION DATE:**	November 2, 2030
City of Cocoa Beach		**COUNTY:**	Brevard
1600 Minutemen Causeway		**PROJECT NAME:**	Banana Riv-Atlantic Ave Area 2
City of Cocoa Beach, FL 32931		**CONNECTED TO:**	COCOA BEACH WRF
Email: bkalsow@cityofcocoabeach.com		**FACILITY ID:**	FL0021105

Dear Mr. Brad Kalsow:

This letter acknowledges receipt of your Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System for the subject project. Our Office received the Notice on October 20, 2025. This project includes: A) 48 Linear Feet (LF) of 8-Inch PVC Gravity Main and B) Associated Manholes and Appurtenances.

This is to advise you that the Department does not object to your use of such general permit.

Please note the attached requirements apply to your use of this general permit for constructing the proposed domestic wastewater collection/transmission system.

You are further advised that the construction activity must conform to the description contained in your Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System and that any deviation will subject the permittee to enforcement action and possible penalties.

If you have any questions, please contact the Central District Office at DEP_CD@FloridaDEP.gov or 407-897-4100.

Sincerely,

Gabriel Knobeloch
Environmental Manager
Permitting and Waste Cleanup Program

cc: Olena Lytvyn, Black and Veatch, lytvyno@bv.com
FDEP: Jacqueline Greaves; Charles LeGros; Gabriel Knobeloch; William Gillett

REQUIREMENTS FOR USE OF THE GENERAL PERMIT FOR DOMESTIC WASTEWATER COLLECTION/TRANSMISSION SYSTEMS:

1. This general permit is subject to the general permit conditions of Rule 62-4.540, F.A.C., as applicable. [62-4.540]

2. This general permit does not relieve the permittee of the responsibility for obtaining a dredge and fill permit where it is required. [62-604.600(6)(b)1]

3. This general permit cannot be revised, except to transfer the permit. [62-604.600(6)(b)2]

4. This general permit will expire five years from the date of issuance. If the project has been started and not completed by that time, a new permit must be obtained before the expiration date in order to continue work on the project. [62-4.030]

5. Upon completion of construction of the collection/transmission system project, and before placing the facilities into operation for any purpose other than testing for leaks or testing equipment operation, the permittee shall submit Form 62-604.300(3)(b), Notification of Completion of Construction for a Domestic Wastewater Collection/Transmission System. The form shall be submitted electronically by using the Department's Business Portal at https://www.fldepportal.com/go/ (via "Submit" then "Registration/Notification" and "Submit Notifications to DEP." The submission is "Division of Water Resource Management Domestic/Industrial Wastewater" and the submittal type is "Notification of Completion of Construction for a Domestic Wastewater Collection/Transmission System."). This form is available at the Department's Internet site at: https://floridadep.gov/water/domestic-wastewater/content/domestic-wastewater-forms. [62-604.700(2)]

6. Abnormal events shall be reported to the Department's Central District Office in accordance with Rule 62-604.550, F.A.C. For unauthorized spills of wastewater in excess of 1000 gallons per incident, or where information indicates that public health or the environment may be endangered, oral reports shall be provided to the STATE WATCH OFFICE TOLL FREE NUMBER (800)320-0519 as soon as practical, but no later than 24 hours from the time the permittee or other designee becomes aware of the circumstances. Unauthorized releases or spills less than 1000 gallons per incident are to be reported orally to the Department's Central District Office within 24 hours from the time the permittee, or other designee becomes aware of the circumstances.

   The oral notification shall be followed by a written submission, which shall be provided within five days of the time that the owner/operator becomes aware of the circumstances. The written submission shall contain: a description of the spill, release or abnormal event and its cause; the period and duration of noncompliance including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; clean-up actions taken and status; steps taken or planned to reduce, eliminate, and prevent recurrence; the type of sanitary sewer overflow structure (e.g., manhole); the discharge location address and latitude/longitude; type of water discharged; discharge volumes and volumes recovered; volume discharged to surface waters and receiving waterbody name; types of human health and environmental impacts of the sanitary sewer overflow (e.g., beach closure); whether the noncompliance was caused by a third party (e.g., contractor); and, whether the sanitary sewer overflow was related to wet weather. The written submission shall be provided electronically. Electronic submission is available using the Department's Business Portal at https://www.fldepportal.com/go/ (via "Submit" followed by "Report" or "Registration/Notification").

In accordance with Section 403.077, F.S., unauthorized releases or spills reportable to the State Watch Office shall also require a public notice of pollution report. Reporting may be made or by reporting electronically using the Department's Business Portal at https://www.fldepportal.com/go/ (via "Submit" followed by "Report" or "Registration/Notification") and selecting the option to also submit the public notice of pollution report, or reporting may be made to the Department's Public Notice of Pollution web page at https://floridadep.gov/pollutionnotice. [62-604.550]

ADDITIONAL INFORMATION:

Once a collection/transmission system is cleared for operation, the provisions below shall be met by the owner/operator of the system in accordance with Rule 62-604.500, F.A.C.

1. All collection/transmission systems shall be operated and maintained to provide uninterrupted service. All pump stations shall be operated and maintained to provide the emergency pumping capability requirements in paragraph 62-604.400(2)(a), F.A.C., the lightning and transient voltage surge protections in paragraph 62-604.400(2)(b), F.A.C., and the design and signage requirements in paragraph 62-604.400(2)(d), F.A.C. Also, all equipment, pipes, manholes, pump stations, and other appurtenances necessary for the collection/transmission of domestic wastewater, including equipment provided pursuant to subsection 62-604.400(2), F.A.C., shall be maintained to function as intended. [62-604.500(2) and (3)]

2. The owner/operator of a collection/transmission system shall evaluate and update the emergency response plan portion of the operation and maintenance manual annually. The emergency response plan shall assess system security including cybersecurity; water quality monitoring for sanitary sewer overflows affecting surface waters; and, hurricane and severe storm preparedness and response. [62-604.500(4)]

3. Collection/transmission systems shall be maintained to minimize excessive infiltration and inflow into the collection/transmission system, as well as excessive leakage from the collection/transmission system. The owner/operator of a collection/transmission system shall take corrective actions when infiltration, inflow, or leakage is excessive. Infiltration and inflow are considered excessive if one or both cause or contribute to sanitary sewer overflows. Leakage, or exfiltration, is considered excessive if it causes or contributes to a violation of surface water quality standards or ground water quality standards. [62-604.500(5)]

4. All collection/transmission systems shall be operated and maintained to prevent sanitary sewer overflows. Owners/operators shall evaluate the cause of all sanitary sewer overflows and evaluate potential corrective measures to avoid future sanitary sewer overflows. Corrective actions shall be taken by the owner/operator of the collection/transmission system if excessive inflow and infiltration causes or contributes to a sanitary sewer overflow. The owner/operator of a satellite collection system shall take corrective actions for a sanitary sewer overflow in the receiving collection system caused by excessive inflow and infiltration in the satellite collection system. [62-604.500(6)]

5. The approved Operation and Maintenance Manual and emergency response plan pursuant to Rule 62-604.500(4), F.A.C., shall be kept available at a site convenient for use by operation and maintenance personnel and for inspection by the Florida Department of Environmental Protection personnel.

FLORIDA DEPARTMENT OF TRANSPORTATION

December 14, 2016

UTILITY PERMIT

PERMIT NO: 2025-H-590-00337

STATE ROAD INFORMATION

County:	Section:	State Road No:	Beginning Mile Post:	Ending Mile Post:
Brevard	70060000	SR A1A	35.259	35.832

APPLICANT INFORMATION

The Utility Agency Owner (UAO) shall be identified in this Applicant Information Box. When the UAO is a City or County and desires to have the Utility Builder make a joint permit applicant, as prescribed in Section 2.1(4) of the 2017 Utility Accommodation Manual (UAM), the Utility Builder shall also be identified in this Applicant Information Box. A Utility Builder alone cannot apply for a utility permit without the City or County adding them as a joint applicant.

Utility Agency/Owner (UAO)

Name: City of Cocoa Beach
Contact Person: City of Cocoa Beach
Address: 1600 Minutemen Causeway
City: Cocoa Beach
State: Florida
Zip: 329312010
Telephone: 3218683243
Email: sbarber@cityofcocoabeach.com

Utility Builder (only applicable when the UAO is a City or County)

Name:
Contact Person:
Address:
City:
State:
Zip:
Telephone:
Email:

WORK DESCRIPTION

The Applicant(s) requests permission from the Florida Department of Transportation (FDOT) to construct, operate, and maintain the utilities as described below and as depicted in the incorporated documentation.

Project consist of removal of approximately 51 LF of existing 10" VCP gravity sewer, removal and replacement of approximately 51 LF of existing 12" PVC gravity sewer, installation of 25LF of 6" PVC service line, 1 core borings to existing manhole and removal and replacement of 1 new sanitary manhole. This will include but is not limited to temporary bypass pumping, construction temporary site access, MOT, utility replacement/ relocation, erosion control, dewatering and restoration.

Utility Work No:

Additional sheets are attached and are incorporated into this permit Yes ☑ No ☐

For FDEP certification, the FDOT agency report is attached in accordance with UAM Section 2.4.1 (13) Yes ☐ No ☑

TRAFFIC CONTROL (TCP)

☑ The TCP will comply with the following 600 series index(es) 660, 612, 603, 602

☐ A TCP has been attached and incorporated into this permit application in compliance with UAM Section 2.4.2.

MOT Technician's contact information (may be supplied at the two (2) business day notification to FDOT):

Name: _____ Telephone _____ Email: _____

COMMENCEMENT OF WORK

The UAO and/or Utility Builder shall commence actual construction in good faith within sixty (60) calendar days after approval of the permit application. If the beginning date is more than sixty (60) calendar days from the date of approval, the UAO and/or Utility Builder must review the permit with the FDOT Approving Engineer listed to make sure no changes have occurred to the transportation facility that would affect the permit's continued approval. The UAO and/or Utility Builder shall make good faith efforts to expedite the work and complete the work within the calendar days indicated.

Anticipated Start Date: 2/2/2026

Calendar days needed to completed: 120

Approved
2025-H-590-00337
William Rickard
11/20/2025

Florida Department of Transportation

UTILITY PERMIT

PERMIT NO: 2025-H-590-00337

APPLICANT SIGNATURE

By the below signature(s) the UAO and/or Utility Builder agree(s) to construct, operate, and maintain the work as noted in the above Work Description, shown in plans and incorporated documents, in compliance with the UAM, all instructions noted in the FDOT Special Instructions Box, and special instructions incorporated into this permit. The UAO and/or Utility Builder declares, the location of all existing utilities that it owns or has an interest in, both aerial and underground, are accurately shown on the plans of the work areas. In accordance with UAM Section 2.8, the UAO and/or Utility Builder further declares that a letter of notification was delivered to the owners of other facilities within the work areas and that those listed below are the only facility owners known to be involved or potentially impacted by the proposed work.

Date Notified:	Name of other facility owners (attach additional sheets if necessary).
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Utility Agency/Owner	Utility Builder (when applicable)
Signature: Brad Kalsow (digital signature) Date: 10/20/2025	Signature:_____ Date: _____
Name (printed): Brad Kalsow	Name (printed): _____
Title: _____	Title: _____

FDOT PROJECT INFORMATION

Pursuant to UAM Section 2.1(10), the utility work is within FDOT projects listed below and must have a Utility Work Schedule for each project approved prior to commencement of work within the FDOT project limits:

There are NO FDOT constructions (proposed or underway).
This work is NOT related to an approved Utility Work Schedule.

FDOT SPECIAL INSTRUCTIONS

In accordance with UAM Section 2.7, FDOT incorporates the below and attached special instructions into this permit.

Variable Message Signs will need to be installed 14 days in advance alerting vehicular drivers of the time frame for the closure of Wakulla Ln. Per FDOT Standard Specification 555 any deactivated pipes within FDOT's Right of Way must be "Placed out of service and filled with excavatable flowable fill." Submit dewatering plans if within FDOT's Right of Way.

Additional FDOT Special Instructions are attached and incorporated into this permit. Yes ☐ No ☑

PERMIT APPROVAL

By signature below, FDOT gives permission to the UAO and /or Utility Builder to construct, operate, and maintain the utilities indicated in this Utility Permit in compliance with the UAM, all incorporated documents, and special instructions. Any changes to the approved work must be approved by the FDOT's Approving Engineer and attached and incorporated into this permit in accordance with UAM Section 2.11.

Approving Engineer: William Rickard (digital signature) Date: 11/20/2025
Name: William Rickard
Title: MAINTENANCE MANAGER/PERMITS

Notification of Utility Work to be provided to: Telephone (321) 634-6115 ext. _____ or Email: curtis.keels@dot.state.fl.us

An FDOT Representative is required to be present on the worksite prior to commencement of work. Yes ☑ No ☐

Rep. Name: William Rickard Telephone 3216346086 Email: william.rickard@dot.state.fl.us

Approved
2025-H-590-00337
William Rickard
11/20/2025

Florida Department of Transportation

UTILITY PERMIT

PERMIT NO: 2025-H-590-00337

CERTIFICATION

I, the undersigned UAO and/or Utility Builder, hereby CERTIFY that the utilities were constructed and inspected in compliance with the UAM all incorporated documents, and special instructions. Pursuant to UAM Section 2.11, all changes have been approved by the FDOT's Approving Engineer and incorporated into this permit along with all other material certifications, test results, bore logs, approved plans changes, as-built plans or other required documentation.

I also CERTIFY that work began on _____ and was completed on _____ and that the area was left in as good or better condition than when the work began.

Utility Agency/Owner	Utility Builder (when applicable)
Signature: _____ Date _____	Signature:_____ Date _____
Name (printed): _____	Name (printed): _____
Title: _____	Title: _____

FINAL INSPECTION OF WORK

☐ The work was inspected and found to be in non-compliance as noted below:

☐ All issues of non-compliance listed above have been brought into compliance and/or FDOT has no outstanding issues that need to be addressed by the UAO and/or Utility Builder. However, this final inspection does not release the UAO and/or Utility Builder of their continuing responsibilities pursuant to Rule 14-46.001, the UAM, all incorporated documents, and special instructions.

FDOT Inspector: _____ Date: _____

Name: _____

Title: _____

Approved
2025-H-590-00337
William Rickard
11/20/2025

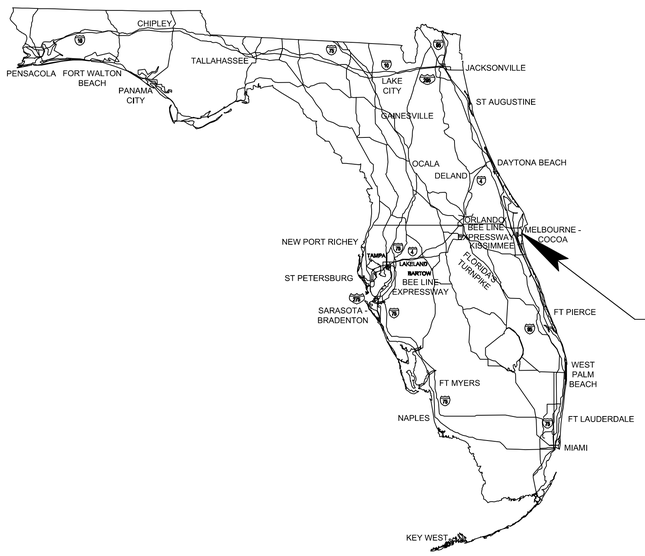
CITY OF COCOA BEACH

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

BID # _____

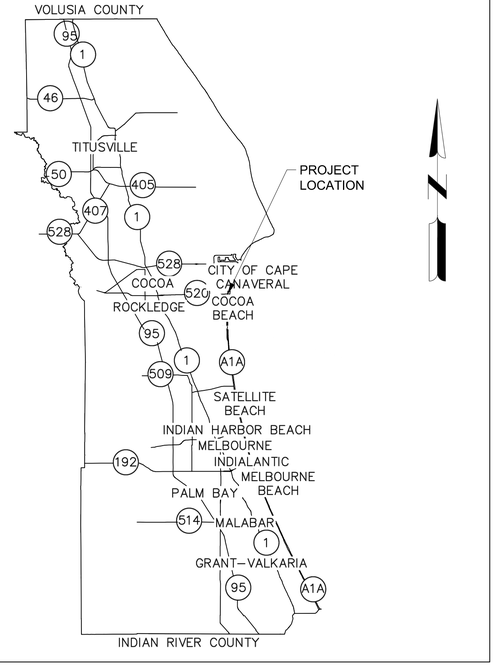
BLACK & VEATCH PROJECT 421730

SEPTEMBER 2025

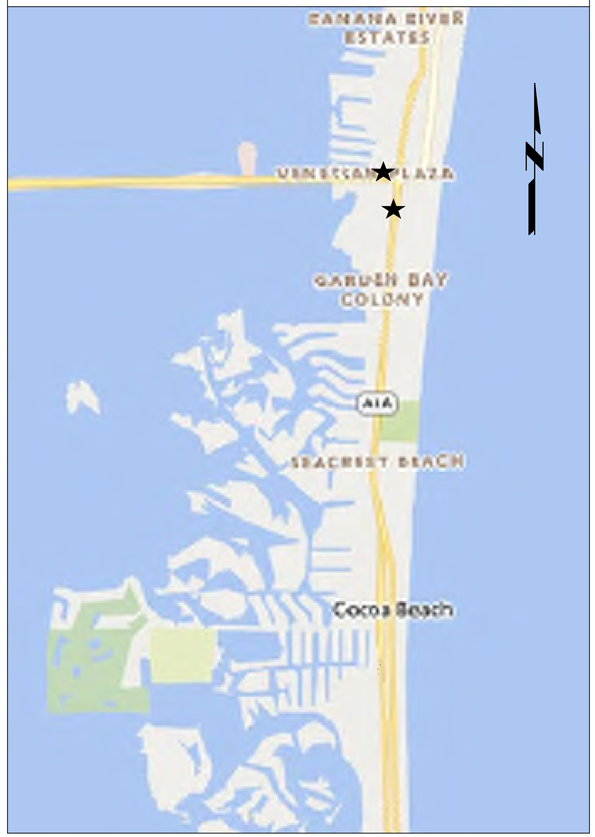


LOCATION OF PROJECT
BREVARD COUNTY

VICINITY MAP



LOCATION MAP



DRAWING INDEX

SHEET NO.	DRAWING NO.	DRAWING TITLE
GENERAL		
1	G-00	COVER SHEET, DRAWING INDEX AND LOCATION MAP
2	G-01	GENERAL NOTES AND LEGEND
3	G-02	GENERAL NOTES
4	G-03	KEY MAP
CIVIL		
5	C-01	PLAN AND PROFILE - N ATLANTIC AVE AND WAKULLA LN
6	C-02	PLAN AND PROFILE - N BANANA RIVER BLVD
7	C-03	DETAILS
8	C-04	DETAILS
9	C-05	DETAILS
10	P-01	PAVEMENT RESTORATION PLAN
11	E-01	EROSION CONTROL PLAN
12	E-02	EROSION DETAILS
13	M-01	MAINTENANCE OF TRAFFIC PLAN
14	M-02	MAINTENANCE OF TRAFFIC DETAILS
15	M-03	MAINTENANCE OF TRAFFIC DETAILS
16	M-04	MAINTENANCE OF TRAFFIC DETAILS
17	M-05	MAINTENANCE OF TRAFFIC DETAILS
18	M-06	MAINTENANCE OF TRAFFIC DETAILS

CITY OFFICIALS

MAYOR / COMMISSIONER: KEITH CAPIZZI
COMMISSIONER: JOSHUA JACKSON
COMMISSIONER: TIM TUMULTY
COMMISSIONER: SKIP WILLIAMS
COMMISSIONER: JEREMY HUTCHERSON
CITY MANAGER: AJ HUTSON

PROJECT TEAM:

OWNER:

CITY OF COCOA BEACH

SURVEYOR:

L & S DIVERSIFIED
489 STATE ROAD 436
SUITE 117
CASSELBERRY, FL 32707
PHONE: (407) 681-3836

CIVIL ENGINEER:

BLACK & VEATCH CORPORATION
201 S. ORANGE AVE. #500
ORLANDO, FL 32801
407-419-3500

ENGINEER OF RECORD:

OLENA LYTVYN, P.E.

ISSUED FOR PERMIT

BLACK & VEATCH

Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Lytvyn, Olena

Digitally signed by Lytvyn, Olena
DN: E=LytvynO@bv.com, CN=Lytvyn, Olena, OU=Water, O=Black & Veatch, C=US
2.5.4.5=1.3.6.1.4.1.311.60.2.1.3=US, 2.5.4.15=Private Government Entity, L=Overland Park, S=Kansas, SERIALNUMBER=fe4c5202f2f24882dc8, Date: 2025.09.18 12:23:54-04'00'

Olena Lytvyn, State of Florida
Professional Engineer
License No.82696

This item has been digitally signed and sealed by Olena Lytvyn on the date indicated here. Printed copies of this document are not considered signed and sealed and the signiture must be verified on any electronic copies.

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

90% SUBMITTAL

REVISIONS AND RECORD OF ISSUE

DESIGNED:	JH
DETAILED:	LP
CHECKED:	MM
APPROVED:	OL
DATE:	SEPTEMBER 2025
PROJECT NO.:	421730

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

GENERAL

COVER SHEET

G-00

1 OF 18

Approved
25-H-590-0337
William Rickard
11/20/2025

PLOTTED: 9/15/2025 5:31:09 PM
FILE: C:\PW_WORKING\BVV_AMERICAS_2\D21739794\421730-G00-COVER.DWG
ED1000
D1000

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

GENERAL CONSTRUCTION NOTES

1. ALL CONSTRUCTION CONNECTING TO THE CITY OF COCOA BEACH PUBLIC UTILITIES SYSTEM SHALL CONFORM TO THE CONTRACT DOCUMENTS.
2. LOCATIONS OF EXISTING UTILITIES AS SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTENCE AND LOCATION OF ALL ABOVE GROUND AND UNDERGROUND UTILITIES. CONTRACTOR SHALL CONTACT SUNSHINE ONE CALL PER STATE LAW PRIOR TO EXCAVATION . ALL EXISTING UTILITIES SHALL REMAIN AND ARE TO BE PROTECTED AND SUPPORTED AS NEEDED FOR GRAVITY SEWER INSTALLATION.
3. WHEN USING SCALED DATA CONSIDER THAT THESE PLANS MAY HAVE BEEN ALTERED IN SIZE DURING REPRODUCTION.
4. LOCATIONS AND DIMENSIONS OF EXISTING RIGHT-OF-WAYS AND EASEMENTS ARE BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY AND STAKE THE LIMITS OF THE RIGHT-OF-WAYS AND EASEMENTS IN ORDER TO AVOID ENCROACHMENTS BEFORE CONSTRUCTION.
5. WHEN OBTAINING DATA AND INFORMATION FROM THE PLANS, NUMERICAL FIGURES SHALL BE USED IN PREFERENCE TO SCALED DIMENSIONS AND LARGER SCALE DRAWINGS IN PREFERENCE TO SMALLER SCALE DRAWINGS.
6. PIPE LENGTHS SHOWN ON PLANS ARE APPROXIMATE. ACTUAL LENGTHS ARE TO BE DETERMINED DURING CONSTRUCTION.
7. ALL STATIONS AND OFFSETS REFER TO THE BASELINE OF STATIONING.
8. MAINTAIN EMERGENCY VEHICLE ACCESS TO ALL BUSINESSES AND RESIDENCES AT ALL TIMES.
9. LOCAL RESIDENTIAL ACCESS SHALL BE MAINTAINED AT ALL TIMES. PROVIDE WRITTEN NOTIFICATION TO RESIDENTS SEVEN (7) DAYS PRIOR TO IMPLEMENTING ANY ROADWAY OR DRIVEWAY CLOSURE. A SECOND NOTICE WILL BE GIVEN 24 HOURS IN ADVANCE OF CLOSURE. WRITTEN NOTIFICATIONS SHALL BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO RESIDENTIAL DISTRIBUTION.
10. SUPPORT AND PROTECT ALL EXISTING UTILITIES. CONTRACTOR SHALL CONTACT UTILITY OWNERS FOR LOCATION OF ALL EXISTING FACILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH UTILITY OWNERS AND BE RESPONSIBLE FOR PROVIDING TEMPORARY SUPPORT FOR UTILITY POLES AND ALL OTHER UTILITIES.
11. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATION IN PROXIMITY OF EXISTING UTILITIES. MAIN LOCATIONS SHOWN ON PLANS ARE NOT EXCAT OR GUARANTEED. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING UTILITY LOCATIONS.
12. COMPLETE ALL CONSTRUCTION WITHIN RIGHT OF WAY LIMITS AND EASEMENT LIMITS.
13. PIPE SIZES SHOWN ON PLANS ARE MINIMUM NOMINAL INSIDE DIAMETER.
14. MAINS SHALL NOT BE PLACED IN SERVICE UNTIL CLEARANCE IS RECEIVED FROM FDEP.
15. PROTECT EXISTING IMPROVEMENTS TO THE MAXIMUM EXTENT POSSIBLE.
16. RESTORE ALL EXISTING IMPROVEMENTS AND DISTURBED AREAS TO ORIGINAL OR BETTER CONDITION. PAVEMENT TO BE RESTORED IN ACCORDANCE WITH THE PAVEMENT RESTORATION DETAILS SHOWN ON THE CONSTRUCTION DETAIL SHEETS. CONTRACTOR TO PROVIDE OWN SURVEY AS NEEDED TO MATCH EXISTING CONDITIONS.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SATISFYING ALL REQUIREMENTS OF REGULATORY AGENCY PERMITS FOR CONSTRUCTION ACTIVITIES AND RELATED ACTIVITIES.
18. BENCHMARK LOCATIONS AND ELEVATION ARE SHOWN IN THE PLANS AS REPRESENTED BY SURVEYOR AT THE TIME OF SURVEY. CONTRACTOR SHALL INSTALL HIS OWN TEMPORARY BENCHMARKS AS DEEMED NECESSARY. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.
19. IMMEDIATELY AT ONSET OF CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES CRITICAL TO COMPLETING THE PROJECT (INCLUDING RECLAIM WATER, SEWER, POWER, TELEPHONE, GAS, AND CABLE TV) STORM WATER AND SHALL EVALUATE POTENTIAL CONFLICTS IN A WRITTEN REPORT. ANY CONFLICTS SHALL BE REPORTED TO ENGINEER/OWNER IMMEDIATELY UPON DISCOVERY AND DETAILED IN THE REPORT. CONTRACTOR SHALL ASSUME ALL EXISTING UTILITIES SHALL REMAIN AND WILL BE SUPPORTED BY THE CONTRACTOR DURING CONSTRUCTION.
20. NO VALVE BOXES, METERS, PORTIONS OF MANHOLES, OR OTHER APPURTENANCES OF ANY KIND RELATING TO ANY UNDERGROUND UTILITIES SHALL BE LOCATED IN ANY PORTION OF A CURB-AND-GUTTER OR SIDEWALK SECTION. CONTRACTOR SHALL ADVISE ENGINEER IMMEDIATELY UPON DISCOVERY OF A POTENTIAL CONFLICT.
21. WHERE REQUIRED, AT NO ADDITIONAL COST TO CITY OF COCOA BEACH, THE CONTRACTOR SHALL USE TEMPORARY SHEETING OR TRENCH BOXES TO MINIMIZE THE SIZE OF EXCAVATIONS AND PROTECT EXISTING ROADWAYS, UTILITIES, STORM WATER SYSTEMS AND OTHER FACILITIES. CONTRACTOR TO COMPLY WITH OSHA TRENCH SAFETY REQUIREMENTS AT ALL TIMES. CITY PERSONNEL ARE AUTHORIZED TO SHUT DOWN ANY UNSAFE OPERATIONS IF WITNESSED, WITHOUT REPERCUSSION OR LIABILITY FOR DELAY, OR COST IMPACT.
22. THE CONTRACTOR SHALL RECOGNIZE AND ABIDE BY ALL OSHA EXCAVATION SAFETY STANDARDS, INCLUDING THE FLORIDA TRENCH SAFETY ACT (90-96,LAWS OF FLORIDA). ANY MATERIAL, CONSTRUCTION METHODS, OR MATERIAL COST TO COMPLY WITH THESE LAWS SHALL BE INCIDENTAL TO THE CONTRACT.
23. ALL COMPACTION SHALL BE 98% OF AASHTO T-180 WITHIN 2FT OF ROADWAY OR UNDER ROADS OR DRIVEWAYS. 95% IS ACCEPTABLE ELSEWHERE.
24. CONTRACTOR SHALL MAINTAIN DRAINAGE IN DITCHES AND SWALES AT ALL TIMES. THIS INCLUDES ALL TURBIDITY BARRIERS, ADDITIONAL FILL MATERIAL, BYPASS PUMPING AND SWALE RESTORATION INCLUDING SODDING. ALL DITCH WORK SHALL MEET THE FLORIDA EROSION SEDIMENT CONTROL MANUAL, LATEST VERSION.
25. ALL EXISTING TRAFFIC SIGNS WITHIN THE PROPOSED CONSTRUCTION LIMITS ARE TO BE PROTECTED. CAUTION SHOULD BE EXERCISED WHILE RELOCATING EXISTING SIGNS WHERE DIRECTED. IF THE SIGNS ARE DAMAGED BEYOND USE, AS DETERMINED BY THE ACENCY WITH JURISDICTION OF THE SIGN, THE DAMAGED SIGNED SHALL BE REPLACED AT THE CONTRACTOS EXPENSE.
26. ALL EXISTING GRAVITY SEWER MAINS SHALL REMAIN IN SERVICE BY WAY OF TEMPORARY PIPING AND CONNECTIONS AS NEEDED TO ACCOMMODATE REPLACEMENT WORK.
27. CONTRACTOR SHALL PROVIDE SILT FENCE IN ALL WORK ZONES TO PREVENT SILT AND DEBRIS FROM LEAVING THE RIGHT-OF-WAY OR ENTERING ACTIVE STORM WATER DITCHES AND SWALES.
28. CONTRACTOR SHALL MAINTAIN STORM WATER FLOW, INCLUDING DRAINAGE DITCHES AND SWALES TO ALLOW FOR PROPER EXISTING DRAINAGE PATTERNS TO BE MAINTAINED AND TO ALLOW FOR UTILITY RELOCATIONS TO OCCUR IN DRY CONDITIONS PER PROPOSED SPECIFICATIONS.
29. SEDIMENT WILL BE PREVENTED FROM ENTERING ANY STORM DRAIN SYSTEM, DITCH OR CANAL. ALL STORM FACILITIES THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT AND SEDIMENT LADEN WATER CANNOT ENTER THE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
30. ALL SEDIMENT PILES FROM EXCAVATIONS ARE TO BE PROTECTED USING EROSION AND SEDIMENT BEST MANAGEMENT PRACTICES TO INCLUDE SUCH MEASURE E.G. SILT FENCE FOR ANY RUN-OFF INTO/ONTO THE STREET, CURB OR SIDEWALKS TO PROTECT STORM DRAINS FROM ANY TRANSPORT OF MATERIALS INTO WATERWAYS.
31. EXCAVATED MATERIALS SHOULD BE PLACED SO AS NOT TO IMPEDE PEDESTRIAN OR VEHICULAR TRAFFIC AT ANY TIME. WHEN UNAVOIDABLE ALTERNATE ADA PEDESTRIAN ROUTES ARE TO HAVE APPROPRIATE SIGNAGE.
32. OPEN PITS ARE TO BE ALWAYS PROTECTED FROM PUBLIC ACCESS.
33. WEEKEND WORK INVOLVING ANY EXCAVATIONS IS NOT PERMITTED WITHIN THE CITY OF COCOA BEACH CITY LIMITS.
34. UTILITY LOCATES REQUIRED 48 HOURS PRIOR TO COMMENCEMENT, CALL (SUNSHINE) 811 LOCATE SERVICE OR 1-800-432-4770.
35. ANY DAMAGES WILL BE ASSIGNED TO THE CONTRACTOR WHO WILL BE RESPONSIBLE.

GRAVITY SEWER NOTES

TESTING:

1. THE CITY'S PUBLIC UTILITIES DEPARTMENT SHALL BE GIVEN A MINIMUM OF 48 HOURS ADVANCE NOTICE (NOT INCLUDING HOLIDAYS OR WEEKENDS) PRIOR TO BEGINNING ANY SANITARY SEWER CONSTRUCTION.
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE GREEN, PIPE DR SHALL BE AS SHOWN ON THE PLANS.
3. MINIMUM GRAVITY SANITARY SEWER SLOPES ARE AS FOLLOWS:

   8" PIPE 0.40%

   10" PIPE 0.30%

   12" PIPE 0.22%
4. GRAVITY SANITARY SEWER LINES SHALL BE INSTALLED WHENEVER POSSIBLE WITHIN PUBLIC RIGHTS-OF-WAY. UTILITY EASEMENTS SHALL BE PROVIDED WHENEVER PUBLICLY OWNED SEWER LINES ARE CONSTRUCTED OUTSIDE OF APUBLIC RIGHT-OF-WAY.
5. GRAVITY SANITARY SEWER LINE CONSTRUCTION SHALL BE ACCOMPLISHED BY THE USE OF LASER INSTRUMENT UNLESS ANOTHER METHOD IS PREVIOUSLY APPROVED BY THE CITY.
6. THE CONTRACTOR SHALL AT ALL TIMES, DURING PIPE LAYING OPERATIONS, DEWATER THE GROUND SUFFICIENTLY TO KEEP THE GROUNDWATER ELEVATION A MINIMUM OF 6" BELOW THE PIPE BEING LAID WITHIN THE AREA OF THE TRENCH.
7. ALL PIPES SHALL BE LAID ON A FIRM FOUNDATION. SOFT OR SPONGY BEDDING FOR PIPES IS NOT ACCEPTABLE. ANY UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH A DRY, COMPACTED, GRANULAR MATERIAL SATISFACTORY TO THE CITY.
8. ON ALL EXCAVATION AND BACKFILLING THE CONTRACTOR SHALL PROVIDE ADEQUATE SHEETING AND BRACING IN ORDER TO PROVIDE FOR THE SAFETY OF WORKMEN, AS WELL AS REPRESENTATIVES OF THE CITY, THE DESIGN ENGINEER, AND THE DEVELOPER.
9. ALL TRENCHES SHALL BE BACKFILLED WITH ACCEPTABLE MATERIAL AND COMPACTED TO THE SPECIFIC MINIMUM COMPACTION (95% IN UNPAVED AREA AND 98% IN PAVED AREAS) OF THE OPTIMUM DENSITY OF THAT MATERIAL BASED ON THE AASHTO T-180 MODIFIED PROCTOR TEST.
10. THE CONTRACTOR SHALL EMPLOY AN INDEPENDENT TESTING LABORATORY AT HIS OWN EXPENSE TO INSURE THAT COMPACTION OF ALL FILL MATERIAL IS COMPLETED PROPERLY. TESTS SHALL BE DONE ONE FOOT ABOVE THE PIPE AND THEN AT ONE FOOT VERTICAL INTERVALS UNTIL FINAL GRADE IS REACHED. TESTING SHALL BE COMPLETED AND TEST DOCUMENTS SUBMITTED TO THE CITY AT A MINIMUM FREQUENCY OF ONE SET OF TESTS BETWEEN EACH MANHOLE AND ONE ADDITIONAL SET OF TESTS AT EVERY MANHOLE. IDENTIFICATION OF TEST LOCATIONS SHALL BE CLEARLY INDICATED ON TEST REPORTS. TEST RESULTS SHALL BE FORWARDED PROMPTLY TO THE CITY'S DESIGNATED SITE INSPECTOR.
11. THE CONTRACTOR SHALL INSTALL A METALIZED FOIL LOCATOR TAPE, OR SIMILAR DEVICE AS MAY BE APPROVED BY THE CITY FOR THE FULL LENGTH OF ALL PVC SEWAGE FORCE MAINS. THIS PIPE LOCATOR AID SHALL BE INSTALLED BETWEEN 15" AND 24" BELOW FINISHED GRADE OR AS DIRECTED BY THE MANUFACTURER. TAPE SHALL BE COLOR CODED GREEN FOR SANITY SEWER AND FORCE MAIN.
12. ALL TESTING REQUIRED BY THE CITY SHALL BE PAID FOR BY THE CONTRACTOR.
13. ALL LOCAL COLLECTION SANITARY SEWER MANHOLES SHALL BE PRECAST WITH A MINIMUM INSIDE DIAMETER OF 4 FEET.
14. STANDARD MANHOLES SHALL BE LOCATED AT INTERVALS NOT EXCEEDING 350 FEET.
15. ALL SEWER FITTINGS TO BE "HARCO" OR CITY APPROVED EQUAL.
16. MANHOLE RIMS SHALL MATCH FLUSH WITH THE FINISH GRADE ELEVATION IN PAVED AREAS AND A MINIMUM OF 0.2 FEET AND MAXIMUM OF 0.5 FEET FEET ABOVE GRADE GENERALLY IN UNPAVED AREAS.
17. THE CONTRACTOR SHALL CONSTRUCT SANITARY SEWER MANHOLES IN SUCH A WAY THAT SEWER LINES DO NOT INTERSECT SEALED JOINTS BETWEEN SECTIONS OF THE MANHOLE.
18. RUBBER BOOTS AND STAINLESS STEEL BANDS SHALL BE UTILIZED IN THE CONNECTION OF THE SEWER MAIN TO THE MANHOLES (SEE STANDARD MANHOLE AND BOOT DETAIL).
19. INDIVIDUAL SANITARY SERVICE CONNECTORS ON NEW CONSTRUCTION SHALL NOT BE CONNECTED DIRECTLY INTO MANHOLES, AND MUST BE CONNECTED TO SEWER MAIN LINES BY USE OF WYE CONNECTIONS, UNLESS OTHERWISE BE APPROVED BY THE CITY.
20. ALL SANITARY SEWER MANHOLE COVERS SHALL HAVE THE WORDS "COCOA BEACH, FLORIDA SANITARY SEWER" CAST INTO THEM.
21. SANITARY SEWER MANHOLES WHICH HAVE SEWER FORCE MAINS DISCHARGING DIRECTLY INTO THEM SHALL BE FIBERGLASS OR POLY-ETHYLENE LINED. RETRO-FITTING OF MANHOLES WITH LINERS SHALL BE REQUIRED WHEN NEW CONNECTIONS SUCH AS THIS ARE MADE. FIBERGLASS SHALL BE A MINIMUM $\frac{1}{4}$" THICKNESS UNLESS APPROVED OTHERWISE BY THE CITY. OTHER TYPES OF LINING METHODS AND MATERIALS MAY BE CONSIDERED ON A CASE BY CASE BASIS. UNDER SPECIAL CIRCUMSTANCES WHERE HYDROGEN SULFIDE IS A MAJOR CONCERN MANHOLES UPSTREAM AND/OR DOWNSTREAM OF THE FORCE MAIN TIE-IN OR WET WELL MAY ALSO BE REQUIRED TO HAVE LININGS INSTALLED.
22. THE CITY OF COCOA BEACH RESERVES THE RIGHT TO REQUIRE THE CONTRACTOR TO PERFORM VACUUM TESTING OF ALL SANITARY MANHOLES, AIR TEST SEWER MAINS, AND REQUIRES THAT ALL SANITARY SEWER MAIN LINES BE TELEVISED PRIOR TO FINAL ACCEPTANCE. LATERALS SHALL BE TELEVISED UPON DEMAND BY THE CITY PRIOR TO FINAL ACCEPTANCE WHEN IT IS SUSPECTED THAT A PROBLEM EXISTS.
23. ALL SEWER MAINS, PRIOR TO ACCEPTANCE BY THE CITY AND PRIOR TO ANY FINAL PAVING OPERATIONS, SHALL BE TELEVISED USING A "PAN AND TILT" CAMERA BY A CITY APPROVED CONTRACTOR. THE VIDEO SHALL BE NON-STOP WITH AUDIO DESCRIBING WHAT IS BEING REVIEWED. WRITTEN VIDEO LOGS DESCRIBING THE CONDITION OF THE LINES SHALL ACCOMPANY THE TAPE SUBMISSION TO THE CITY PRIOR TO COMMENCING ANY INSTALLATION OF ASPHALT OR CONCRETE PAVEMENT, RE-TAPING MAY BE REQUIRED BY THE CITY IF ADDITIONAL CLEARING OR CORRECTIVE ACTIONS ARE NECESSARY.
24. CONTECH A-2000 PVC PIPE SHALL NOT BE ALLOWED FOR USE.
25. EZ-WRAP PLASTIC, AS MANUFACTURED BY PRESS SEAL GASKET CORPORATION, SHALL BE USED ON THE OUTSIDE OF ALL MANHOLE AND WETWELL JOINTS. APPLY ONE LAYER OF 9" WRAP CENTERED ON EACH JOINT. A CITY INSPECTOR SHALL PERSONALLY INSPECT ALL JOINT SEALS PRIOR TO BACKFILLING OPERATIONS.
26. WITH RESPECT TO TIE-IN CONNECTIONS AND CORING OPERATIONS, THE CITY RESERVES THE RIGHT TO REQUIRE CONNECTIONS TO BE PERFORMED DURING PERIODS OF LOW FLOW (MIDNIGHT TO 6:00 A.M.) IN ORDER TO MINIMIZE SERVICE DISRUPTION TO EXISTING CUSTOMERS.
27. ALL WORK PERFORMED UPON SANITARY SEWER FACILITIES OWNED OR PROPOSED TO BE OWNED BY THE CITY SHALL BE CONSTRUCTED BY AN UNDERGROUND UTILITY CONTRACTOR, OR LICENSED GENERAL CONTRACTOR, WHO IS LICENSED IN THE STATE OF FLORIDA AND REGISTERED WITH THE CITY.
28. UPON CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE SYSTEM, IT SHALL BE THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE SYSTEM IS PROPERLY CERTIFIED AND ACCEPTED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AND AS-BUILTS ARE PROVIDED TO THE CITY PRIOR TO ANY USE OF THE SYSTEM.

SYMBOL AND ABBREVIATION LEGEND

	CONCRETE LIGHT POLE
	CONCRETE POWER POLE
	GUY WIRE
E	ELECTRICAL VAULT
	WOODEN POWER POLE
IRR	IRRIGATION VALVE
	BOLLARD
	CLEANOUT
MB	MAILBOX
MW	MONITORING WELL
	SINGLE STAND SIGN
RW	RECLAIMED WATER VALVE
SS	EXISTING SANITARY SEWER MANHOLE
SW	SANITARY SEWER VALVE
CB	CATCH BASIN
SD	STORM DRAINAGE MANHOLE
	FOUND BRASS OR ALUMINUM DISK
	FOUND NAIL & DISK
	SET TRAVERSE POINT OR BENCHMARK
T	TELECOMMUNICATION MANHOLE
	TEST HOLES
	TREE LIVE OAK
	TREE PALM
	TREE UNKNOWN
	BACKFLOW PREVENTER
	FIRE HYDRANT
WM	WATER METER
	WATER VALVE
ASPH	ASPHALT
CLF	CHAIN LINK FENCE
CONC	CONCRETE
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
DIP	DUCTILE IRON PIPE
EC	EDGE OF CONCRETE
ELEV	ELEVATION
ESMT	EASEMENT
FND	FOUND
INV	INVERT
LB	LICENSED BUSINESS
LS	LICENSED SURVEYOR
N	NORTH/NORTHING
N/D	NAIL AND DISK
ORB	OFFICIAL RECORDS BOOK
PB	PLAT BOOK
PG(S)	PAGE(S)
P.L.	PROPERTY LINE
PSM	PROFESSIONAL SURVEYOR AND MAPPER
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
VCP	VITRIFIED CLAY PIPE
26	CONTOUR
+24.1	SPOT ELEVATION
BTV	BURIED CABLE TV
BE	BURIED ELECTRICAL
BFO	BURIED FIBER OPTIC
BFM	BURIED FORCE MAIN
BG	BURIED GAS
BRW	BURIED RECLAIMED WATER
BS	BURIED SANITARY SEWER
BT	BURIED TELECOMMUNICATION
BU	BURIED UNKNOWN
BW	BURIED WATER
	ORIGINAL LOT LINE
	FENCE LINE
	EASEMENT
OE	OVERHEAD ELECTRICAL LINE
	DRAINAGE PIPE
	BUILDING LINE
	EDGE OF PAVEMENT
	CONCRETE
SS	EXISTING GRAVITY SEWER
	PROPOSED GRAVITY SEWER
	GEOTECHNICAL BORING
	PROPOSED SANITARY SEWER MANHOLE

ISSUED FOR PERMIT

BLACK & VEATCH

Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Lytvyn, Olena

Digitally signed by Lytvyn, Olena
DN: E=LytvynO@bv.com, CN=Lytvyn, Olena, OU=Orlando Professional Park, O=Black & Veatch Corporation, L=Overland Park, S=Kansas, C=US, 1.2.840.113549.1.9.2=id-at-name=2.5.4.42=id-at-givenName=Olena, 1.2.840.113549.1.9.2=id-at-surname=2.5.4.4=Lytvyn
Date: 2025.09.18 12:23:18-04'00'

Olena Lytvyn, State of Florida
Professional Engineer
License No.82696

This item has been digitally signed and sealed by Olena Lytvyn on the date indicated here. Printed copies of this document are not considered signed and sealed and the signiture must be verified on any electronic copies.

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

90% SUBMITTAL

REVISIONS AND RECORD OF ISSUE

DESIGNED:	JH
DETAILED:	LP
CHECKED:	MM
APPROVED:	OL
DATE:	SEPTEMBER 2025
PROJECT NO.:	421730

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

GENERAL

GENERAL NOTES AND LEGEND

G-01

2 OF 18

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

PLOTTED: 9/15/2025 5:32:14 PM
FILE: C:\PV_WORKING\BVW_AMERICAS_2\D2173979\421730-G01X.DWG
BY1000 D1000

Approved
2025-H-590-10337
William Flickert
11/20/2025

CONTRACTOR REQUIREMENTS FOR SITE CLEARING, GRADING, AND EROSION CONTROL DESIGN AND CONSTRUCTION NOTES

THE FOLLOWING MEASURES REPRESENT MINIMUM STANDARDS TO BE ADHERED TO BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION OF A PROJECT. THE CITY RESERVES THE RIGHT TO REQUIRE ADDITIONAL MEASURE S TO BE EMPLOYED WHEN WARRANTED BY EXTREME CONDITIONS AND/OR THE FAILURE OF THE CONTRACTOR TO EMPLOY THE APPROPRIATE EROSION CONTROL BEST MANAGEMENT PRACTICES. FAILURE TO COMPLY WITH THESE PROVISIONS SHALL RESULT IN THE ISSUANCE OF A "STOP WORK ORDER".

1. NO DISTURBANCE OF PROPOSED CONSERVATION EASEMENTS, NATURAL BUFFERS, OR WATER BODIES IS PERMITTED. THE CONTRACTOR SHALL LOCATE THESE AREAS ON SITE AND BARRICADE THEM TO AVOID ANY UNAUTHORIZED CLEARING. BARRICADES AND OTHER PROTECTIVE FENCING ARE TO BE LOCATED AT THE DRIP LINE OF EXISTING NATIVE TREES OR AT THE EDGE OF THE NATIVE UNDERSTORY HABITAT, WHICHEVER IS NEAREST TO THE CONSTRUCTION ACTIVITY.
2. SPECIMEN AND HISTORIC TREES, CONSERVATION EASEMENTS, NATURAL VEGETATION BUFFERS, AND SIMILAR AREAS MUST BE PROTECTED BY BARRICADES OR FENCING PRIOR TO CLEARING. BARRICADES ARE TO BE SET AT THE DRIP LINE OF THE TREES AND MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. BARBED WIRE IS NOT PERMITTED AS A PROTECTIVE BARRIER.
3. WHERE A CHANGE OF GRADE OCCURS AT THE DRIP LINE OF A SPECIMEN TREE, SILT FENCES WILL BE REQUIRED DURING CONSTRUCTION AND RETAINING WALLS MUST BE INSTALLED PRIOR TO FINAL ACCEPTANCE BY THE CITY.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL PROTECTIVE VEGETATION BARRICADES AND EROSION CONTROL STRUCTURES AND MEASURES IN PLACE PRIOR TO THE COMMENCEMENT OF ANY EARTHWORK, INCLUDING PRELIMINARY GRUBBING. THESE MEASURES INCLUDES, BUT ARE NOT LIMITED TO, TEMPORARY CONSTRUCTION FENCES, SILT FENCES, AND FLOATING TURBIDITY BARRIERS. FURTHER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL EROSION CONTROL DEVICES THROUGHOUT THE DURATION OF THE ENTIRE PROJECT. MAINTENANCE SHALL INCLUDE PERIODIC INSPECTION AND REMOVAL OF DEBRIS ABUTTING EROSION CONTROL DEVICES.
5. PRIOR TO THE INSTALLATION OF ANY FILL MATERIALS ON SUBJECT SITE, SILT FENCES SHALL BE INSTALLED (1) ALONG SUBJECT SITE BOUNDARY AND PROPERTY LINES, (2) AT THE EDGE OF CONSERVATION EASEMENTS AND WETLANDS, (3) ADJACENT TO NATURAL LANDSCAPE BUFFERS, (4) AROUND THE PERIMETER OF EXISTING STORM WATER TREATMENT FACILITIES, AND (5) AT ANY ADDITIONAL AREAS THAT THE CITY DEEMS NECESSARY TO BE PROTECTED FROM POTENTIAL EROSION IMPACTS DURING CONSTRUCTION. THESE CONDITIONS SHALL APPLY IN ALL INSTANCES WHERE FILL MATERIAL IS BEING INSTALLED WITHIN 25 FEET OF ANY OF THE AFOREMENTIONED LOCATIONS, WHILE THESE ITEMS REPRESENT THE MINIMUM REQUIREMENTS, THE CITY RESERVES THE RIGHT TO IMPOSE ADDITIONAL PROTECTIVE MEASURES, AS DETERMINED DURING ACTUAL SITE VISITS CONDUCTED AS PART OF THE STANDARD REVIEW OF THE SITE-SPECIFIC CLEARING PERMIT APPLICATION AND THROUGHOUT PROJECT CONSTRUCTION.
6. WHERE FILL MATERIAL IS INTENDED TO BE INSTALLED ADJACENT TO EXISTING VEGETATION WHICH IS INTENDED TO REMAIN NATURAL, THE CONTRACTOR MAY INSTALL SILT FENCING AS A TREE PROTECTION MEASURE, IN LIEU OF INSTALLING EITHER WOOD BRACING OR ORANGE MESH FENCING. THIS PRACTICE IS ENCOURAGED BY THE CITY. IF THE SILT FENCE FAILS TO PROVIDE ADEQUATE PROTECTION FROM IMPACT DUE TO CONSTRUCTION, THEN ADDITIONAL CONSTRUCTION FENCING OR WOOD BRACING SHALL BE REQUIRED.
7. AT A MINIMUM, THE CONTRACTOR SHALL SOD ALL DISTURBED AREAS. SUFFICIENT GRASS COVERAGE IS TO BE ESTABLISHED WITHIN THIRTY DAYS.
8. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR THROUGH SCHEDULING, TO MINIMIZE THE DISTURBANCE OF SITE AREAS THAT HAVE BEEN BROUGHT TO THEIR PROPOSED FINAL GRADE WITHIN TWENTY DAYS OF BRINGING A SUBJECT AREA TO ITS FINAL GRADE, THE CONTRACTOR SHALL INSTALL SOD, AS REQUIRED.
9. FOR INDIVIDUAL CONSTRUCTION PROJECTS INVOLVING MULTIPLES PHASES, UPON COMPLETION OF EACH PHASE OF THE PROJECT, SODDING IS TO BE PERFORMED PRIOR TO COMMENCING THE NEXT PHASE OF CONSTRUCTION.
10. ONCE AN AREA IS SODDED, IT MUST BE MAINTAINED BY THE CONTRACTOR TO ALLOW THE GRASS TO BECOME ESTABLISHED.
11. ANY BURNING OF CLEARED MATERIALS MUST BE INSPECTED AND PERMITTED ON A DAILY BASIS. CONTACT THE FIRE MARSHALL AT 756-5401 PRIOR TO EACH DAY OF DESIRED BURNING.
12. ABSOLUTELY NO BURYING OF CLEARED MATERIALS IS PERMITTED.
13. THE REMOVAL OF ALL VEGETATION AND TOPSOIL ON THE FUTURE ROADWAY, PARKING AND BUILDING LOT AREAS IS REQUIRED TO BE COMPLETED PRIOR TO THE PLACEMENT OF FILL ON THOSE AREAS, THE TOPSOIL MAY BE TEMPORARILY STOCKPILED AND USED AS TOPSOIL OVER PROPOSED GREEN AREAS SUCH AS PLANT BEDS, SODDED AREAS, AND WHERE TREES ARE TO BE INSTALLED OR RELOCATED.
14. A SIGNED, DATED, AND SEALED LETTER FROM A SOILS ENGINEER CERTIFYING THAT THE AREAS TO BE FILLED HAVE BEEN STRIPPED OF ORGANIC MATERIALS, MUST BE SUBMITTED TO THE CITY PRIOR TO FILLING.
15. FILL MATERIAL IS TO BE PLACED IN ONE FOOT LIFTS AND COMPACTED TO THE APPROPRIATE DENSITY (98% FOR PAVED AREAS AND 95% FOR BUILDING PADS AND ALL OTHER AREAS AS PER AASHOT T-180).
16. IF ANY MUCK MATERIAL IS DISCOVERED, IT SHALL BE REQUIRED TO BE REMOVED AND REPLACED WITH A SUITABLE MATERIAL THAT IS PROPERLY BACKFILLED, COMPACTED AND TESTED USING AASHTO T-180 MODIFIED PROCTOR METHOD.
17. STOCKPILING IS NOT GENERALLY PERMITTED BY THE CITY. WHEN ALLOWED, STOCKPILES SHALL NOT EXCEED SIX FEET IN HEIGHT MEASURED FROM THE ORIGINAL GRADE. AT A MINIIMUM, STOCK PILES THAT WILL REMAIN IN PLACE IN EXCESS OF TWENTY DAYS SHOULD BE RE-SODDED IMMEDIATELY UPON PLACEMENT OF THE FINAL LIFT.
18. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION AND THE IMPACT TO NEIGHBORING COMMUNITIES. ADEQUATE WATERING METHODS SHOULD BE EMPLOYED TO ALLOW DAILY COVERAGE OF THE ENTIRE LIMITS OF ALL AREAS THAT DO NOT HAVE AN ESTABLISHED VEGETATIVE COVER. METHODS TO BE EMPLOYED INCLUDE, BUT ARE NOT LIMITED TO WATER TRUCKS, PERMANENT IRRIGATION SYSTEMS. TEMPORARY SPRINKLER SYSTEMS OPERATED BY PUMPING UNITS CONNECTED TO WET RETENTION PONDS, WATER CANNONS, TEMPORARY IRRIGATION SYSTEMS MOUNTED ATOP STOCKPILE AREAS AND OTHER METHODS AS DEEMED NECESSARY BY THE CITY.
19. ALL FILL MATERIALS LOCATED BENEATH STRUCTURES AND PAVEMENT SHALL CONSIST OF CLEAN GRANULAR SAND FREE FROM ORGANICS AND SIMILAR MATERIAL THAT COULD DECOMPOSE.
20. ALL FILL TO BE PLACED IN LANDSCAPED AREAS SHALL HAVE A Ph RANGE BETWEEN 5.5 AND 7.5, BE ORGANIC IN NATURE, FREE OF ROCKS AND DEBRIS, OR MATCH NATIVE EXISTING SOILS.

RECORD NOTES

NOT LESS THAN THREE (3) WORKING DAYS PRIOR TO THE FINAL INSPECTION BY THE CITY, A WRITTEN CERTIFICATION SIGNED, SEALED AND DATED, SHALL BE PROVIDED PER CONTRACT DOCUMENTS THAT ALL RECORD DRAWING PLANS, ACCURATELY AND COMPLETELY REFLECT ANY AND ALL DEVIATIONS FROM OUR CHANGES MADE TO THE CONTRACT DOCUMENTS. THE SUBMITTAL SHALL INCLUDE ONE (1) COMPLETE SET OF SIGNED, SEALED, AND DATED RECORD DRAWING PLANS. IN ADDITION TO THE PLANS ONE (1) ELECTRONIC COPY IN TIFF FORMAT (NOT PDF) AND ONE (1) ELECTRONIC COPY IN AUTOCAD 2013 (OR EARLIER VERSION) OF THE RECORD DRAWINGS TO THE CITY PRIOR TO THE ISSUANCE OF THE CERTIFICATE OF ACCEPTANCE FOR THE IMPROVEMENTS SHALL BE PROVIDED PER CONTRACT DOCUMENTS. RECORDING INFORMATION ON THE APPROVED PLANS AS CONSTRUCTION PROGRESSES SHALL BE SUBMITTED AS STATED ON THE CONTRACT DOCUMENTS. RECORD DRAWINGS SUBMITTED TO THE CITY AS PART OF THE PROJECT ACCEPTANCE SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:

1. DRAWINGS SHALL BE LEGIBLY MARKED TO RECORD ACTUAL CONSTRUCTION.
2. DRAWINGS SHALL SHOW ACTUAL LOCATION OF ALL UNDERGROUND AND ABOVE GROUND WATER, RECLAIMED WATER STORM DRAINAGE AND WASTEWATER PIPING AND RELATED APPURTENANCES. ALL CHANGES SHALL BE BASED HORIZONTAL CONTROL DATUM NAD1983 STATE PLANE FLORIDA EAST (US FEET) AND VERTICAL CONTROL DATUM NAVD88. DRAWINGS SHALL SHOW ACTUAL INSTALLED PIPE SIZE, TYPE OF MATERIAL AND PRESSURE CLASS.
3. DRAWINGS SHALL CLEARLY SHOW ALL FIELD CHANGES OF DIMENSION AND DETAIL.
4. DRAWINGS SHALL CLEARLY SHOW ALL DETAILS NOT ON THE ORIGINAL CONTRACT DRAWINGS BUT CONSTRUCTED IN THE FIELD. ALL EQUIPMENT AND PIPING RELOCATION SHALL BE SHOWN.
5. LOCATION OF ALL MANHOLES, HYDRANTS, VALVES, AND VALVE BOXES SHALL BE SHOWN. ALL VALVES SHALL BE REFERENCED FROM AT LEAST TWO AND PREFERABLY THREE PERMANENT POINTS.
6. DIMENSIONS BETWEEN ALL MANHOLES SHALL BE FIELD VERIFIED AND SHOWN. THE INVERTS, GRADE ELEVATIONS AND SLOPE OF ALL MANHOLES SHALL BE SHOWN. SEWER LATERALS SHALL BE LOCATED ALONG THE MAINS MEASURED FROM THE NEAREST DOWNSTREAM MANHOLE.
7. THE DEPTH FROM FINISH GRADE OF POTABLE WATER, RECLAIMED WATER, AND SEWER FORCE MAINS SHALL BE INDICATED AT ALL VALVE LOCATIONS.
8. THE INFORMATION LISTED IN ITEM 2, 5, 6, AND 7, SHALL BE COMPLETED BY A CERTIFIED PROFESSIONAL LAND SURVEYOR. SIGNED AND SEALED CERTIFICATION PREPARED BY THE SURVEYOR SHALL BE SUBMITTED TO THE CITY.
9. THE CERTIFIED RECORD DRAWINGS SHALL BE PRESENTED IN DIGITAL FORMAT. THE FORMAT SHALL BE A HIGH RESOLUTION TIFF IMAGE AS WELL AS AUTOCAD, AT THE SAME SIZE AND SCALE AS THE DEVELOPMENT PLAN, PLUS ANY ADDITIONAL PLAN SHEETS NECESSARY TO COMPLETE THE PROJECT CONSTRUCTION.
10. EACH SHEET OF THE PLANS SHALL BE SIGNED, SEALED, AND DATED BY THE CONTRACT'S ENGINEER AS BEING RECORD DRAWINGS. CONSTRUCTION PLANS SIMPLY STAMPED RECORD DRAWINGS NOT CERTIFYING THE ACCURACY OF THE LOCATION, ELEVATION AND CONFIRMATION OF SUCH UTILITIES WILL NOT BE ACCEPTED AND SHALL BE RETURNED TO THE CONTRACT'S ENGINEER. THE "CERTIFICATE OF ACCEPTANCE" WILL NOT BE ISSUED UNTIL CORRECT RECORD DRAWINGS HAVE BEEN SUBMITTED.
11. COPIES OF ALL TESTING RESULTS AND SYSTEM CLEARANCE DOCUMENTATION FROM REGULATORY AGENCIES SHALL ALSO BE SUBMITTED TO THE CITY PRIOR TO THE ISSUANCE OF THE "CERTIFICATION OF ACCEPTANCE".
12. THE FOLLOWING STATEMENT SHALL APPEAR ON EACH SHEET OF RECORD:

    RECORD DRAWINGS CONTAIN INFORMATION FURNISHED BY OTHERS. THE INFORMATION PROVIDED HAS BEEN REVIEWED BY ME OR BY INDIVIDUALS UNDER MY DIRECT SUPERVISION AND FOUND TO BE CORRECT AND ACCURATE, CONSISTENT WITH THE PERMIT AND THE APPROVED DRAWINGS AND SPECIFICATIONS. ANY ADJUSTMENTS AND MINOR DEVIATIONS, WHICH ARE DEPICTED, WERE MADE WITH PRIOR APPROVALS AND IN MY JUDGEMENT DO NOT ALTER THE MAIN INTENT OF THE DESIGN, THE SAFETY OR THE STRUCTURAL INTEGRITY OF THE CONSTRUCTED WORK AND WILL NOT PREVENT THE PROJECT FROM FUNCTIONING IN ACCORDANCE WITH THE CONSTRUCTED WORK AND WILL NOT PREVENT THE PROJECT FROM FUNCTIONING IN ACCORDANCE WITH THE RULE REQUIREMENTS".

MAINTENANCE OF TRAFFIC (MOT) NOTES:

1. THE CONTRACTOR SHALL FURNISH, ERECT, AND MAINTAIN ALL NECESSARY TRAFFIC CONTROL AND SAFETY DEVICES IN ACCORDANCE WITH THE LATEST EDITION TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (2023)" AND THE LATEST EDITION TO THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN STANDARDS. ALL DEVICES SHALL BE INCLUDED IN PRICE BID FOR MAINTENANCE OF TRAFFIC.
2. ACCESS FOR LOCAL TRAFFIC WITH DESTINATIONS WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED. IF DURING CONSTRUCTION, ACCESS FOR LOCAL TRAFFIC IS CHANGED, THEN THE CONTRACTOR SHALL NOTIFY THE CITY A MINIMUM OF THREE WORKING DAYS IN ADVANCE.
3. ACCESS TO ALL DRIVEWAYS SHALL BE MAINTAINED. COMMERCIAL DRIVEWAY MAINTENANCE SHALL BE PROVIDED AS DIRECTED BY THE PROJECT ENGINEER, FDOT AND CITY OF COCOA BEACH. COST TO BE INCLUDED IN THE PRICE BID FOR MAINTENANCE OF TRAFFIC.
4. CONTRACTOR SHALL SUBMIT A FLORIDA LICENSED PROFESSIONAL ENGINEERS SIGNED AND SEAL MAINTENANCE OF TRAFFIC PLAN TO CITY OF COCOA BEACH AND/OR FDOT FOR APPROVAL AT LEAST TWO WEEKS PRIOR TO STARTING CONSTRUCTION. THE HOURS OF OPERATION FOR WORKS WITHIN THE FDOT AND CITY OF COCOA BEACH RIGHT-OF-WAY ARE BASED ON LOCATION OF WORK, TRAFFIC COUNT, AND WILL BE CLARIFIED BY THE FDOT AND CITY OF COCOA BEACH RIGHT-OF-WAY UTILIZATION PERMIT.

FDOT NOTES:

1. ALL WORK PERFORMED WITHIN FDOT RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE LATEST FDOT STANDARD PLANS AND FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND THE 2017 UTILTY ACCOMODATION MANUAL.
2. LOCATE ALL UTILITIES/FACILITIES, INCLUDING STORMWATER DRAINAGE SYSTEMS, PRIOR TO START OF CONSTRUCTION, TO DETERMINE ACTUAL LOCATION & DEPTH OF OTHER FACILITIES.
3. DISCHARGING INTO FDOT STROMWATER DRAINAGE SYSTEM WITHOUT PRIOR APPROVED DEWATERING PLAN IS NOT PERMITTED.
4. CONTRACTOR SHALL RESTORE RIGHT-OF-WAY TO EQUAL OR BETTER CONDITION UPON COMPLETION OF WORK.
5. RESTORATION OF SODDING AND TURF SHOULD BE DONE ACCORDING TO FDOT STANDARDS INDEX 570-010.
6. ANY SIDEWALK, RAMPS AND/OR CURB AND GUTTER WORK SHOULD BE PER FDOT STANDARD PLANS NO. 520-001, 522-001,522-002 AND 522-003 AND FDOT STANDARD SPECIFICATION 522.

ISSUED FOR PERMIT

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

BLACK & VEATCH

Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Lytvyn, Olena
Digitally signed by Lytvyn, Olena
DN: E=olytvyn@bv.com, CN=Lytvyn, Olena", O=Black & Veatch Corporation, OID.2.5.4.97="VTN-BJHE-29665148", OID.0.9.2342.19200300.100.1.1="U0MyNDAwMTA5MS1mNjE0ZDI1MS0xOTk2LCHS"
Date: 2025.09.18 12:23:31-04'00'

Olena Lytvyn, State of Florida
Professional Engineer
License No.82696

This item has been digitally signed and sealed by Olena Lytvyn on the date indicated here. Printed copies of this document are not considered signed and sealed and the signiture must be verified on any electronic copies.

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

90% SUBMITTAL

REVISIONS AND RECORD OF ISSUE

DESIGNED:	JH
DETAILED:	LP
CHECKED:	MM
APPROVED:	OL
DATE:	SEPTEMBER 2025
PROJECT NO.:	421730

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

GENERAL

GENERAL NOTES

G-02

3 OF 18

Approved
2025-H-590-10337
William Flickard
11/20/2025

PLOTTED: 9/15/2025 5:32:37 PM
FILE: C:\PW_WORKING\BVW_AMERICAS_2\D21739794\421730-G0X.DWG
D31:1000
D1:1000

250' 125' 0 250' 500'

1"=250'

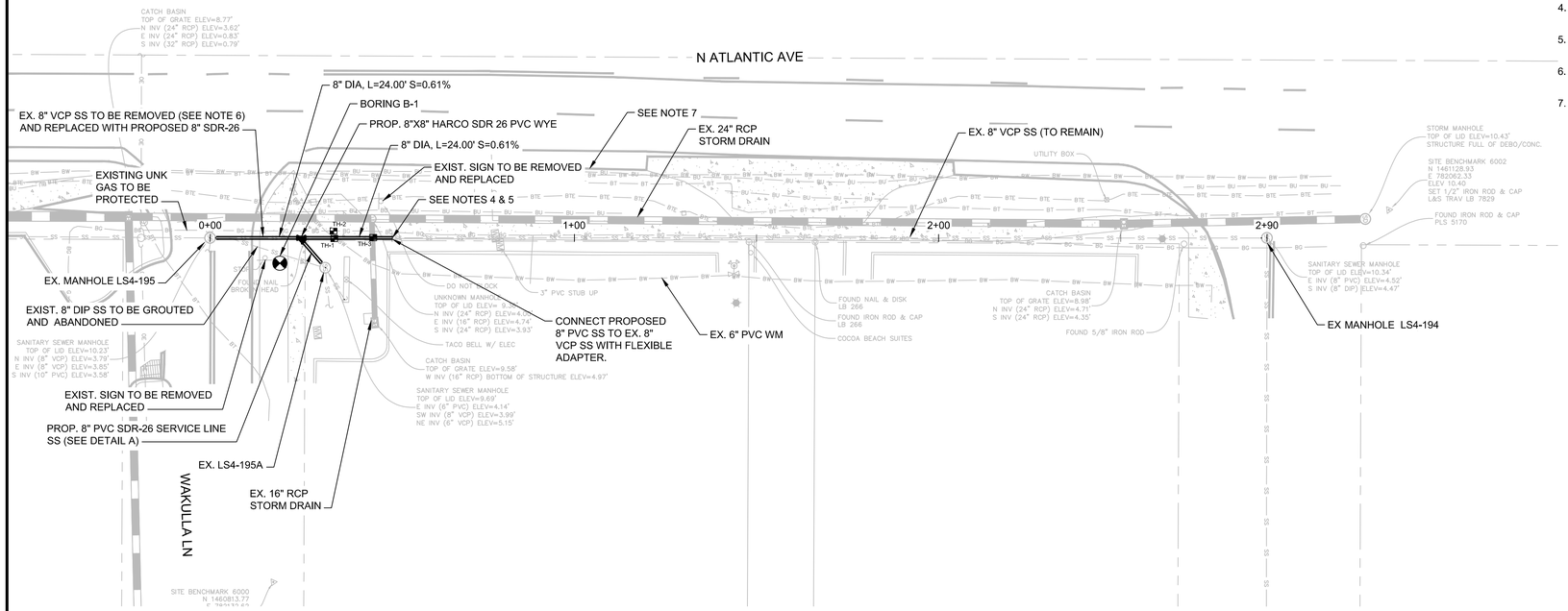
BLACK & VEATCH

Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

CITY OF COCOA BEACH FLORIDA 1923

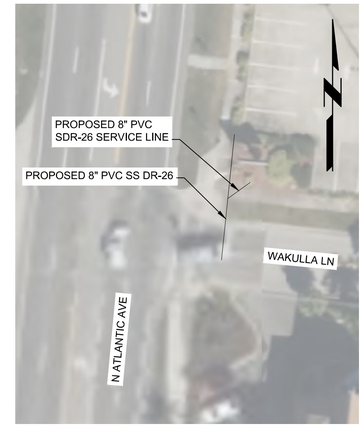
Lytvyn, Olena

Digitally signed by Lytvyn, Olena
DN: E=LytvynO@bv.com, CN=Lytvyn, Olena*, O=Black & Veatch Corporation, OU=Civil & Env, L=Orlando, S=Florida, C=US, 1.2.840.113549.1.9.2=Name, 2.5.4.65=Olena Lytvyn, 0.9.2342.19200300.100.1.1=M6928, 2.5.4.65=M6928, 2.16.840.1.101.3.6.8=2.16.840.1.101.3.6.8=2.16.840.1.101.3.6.8=

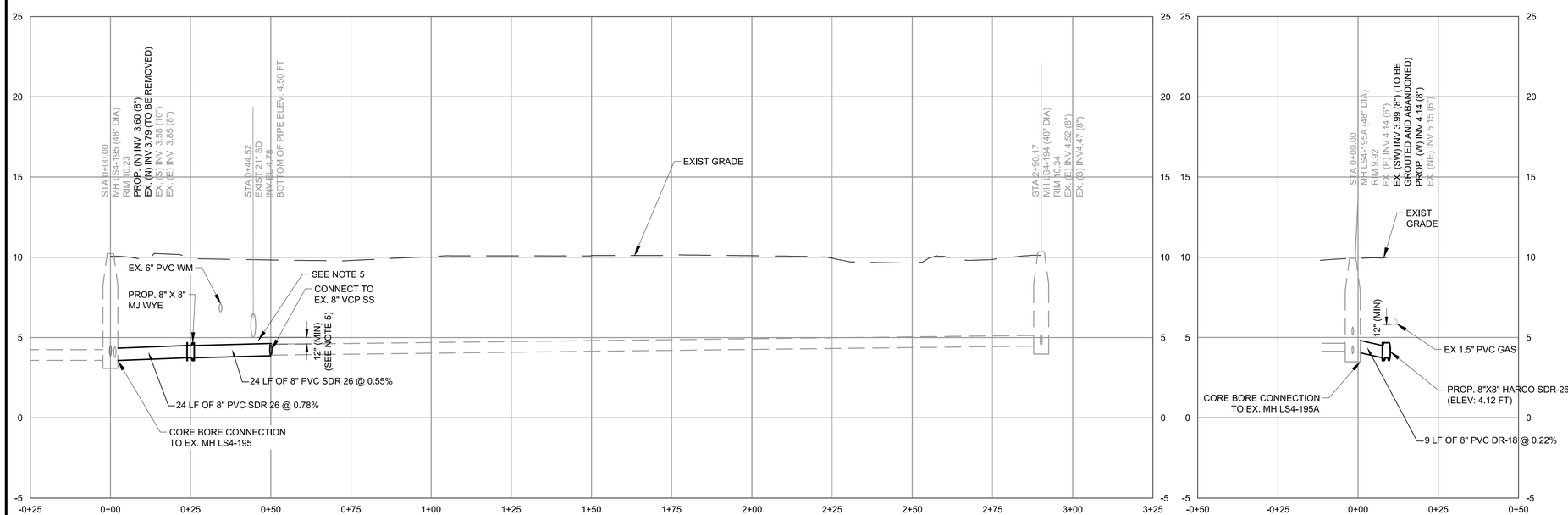


NOTES:

1. CONTRACTOR MUST BY-PASS EXISTING FLOW. AT NO POINT SHALL SERVICE BE DISRUPTED. CONTRACTOR SHALL MAINTAIN TWO PUMPS ON SITE AT ALL TIMES.
2. CONTRACTOR TO CONNECT TO EXISTING MANHOLE AT PROPOSED INVERT ELEVATIONS USING COUPLINGS AS NECESSARY PER DETAIL S-7.
3. CONTRACTOR MUST FIELD VERIFY ALL UTILITIES PRIOR TO EXCAVATION.
4. NO JOINTS SHALL BE ALLOWED AT UNDER A HORIZONTAL DISTANCE OF 5 FT FROM OTHER UTILITY CROSSINGS IN ANY DIRECTION.
5. CONTRACTOR TO POUR CLSM WHERE MINIMUM SEPARATION BETWEEN SEWER AND STORM DRAIN CANNOT BE ACHIEVED.
6. CONTRACTOR TO REMOVE AND REPLACE EXISTING PIPE FROM STA 0+00 TO NEAREST JOINT OF EXISTING 8" VCP PIPE NEAR STATION 0+43.
7. CONTRACTOR SHALL COORDINATE WITH SPACE COAST AREA TRANSIT THE TEMPORARY RELOCATION OF THE EXISTING BUS STOP.



KEY PLAN



A PROPOSED 8" PVC SS
\- HORIZ. 1"=20' VERT. 1"=5'

20' 10' 0 20' 40'
HORIZONTAL SCALE 1"=20'

5' 3' 0 5' 10'
VERTICAL SCALE 1"=5'

ISSUED FOR PERMIT

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

PLOTTED: 9/15/2025 9:28:12 PM
FILE: C:\PW_WORKING\BVW_AMERICAS_2\D21739854\421730-C-XX_BANANA RIVER BLVD AND ALANTIC AVE SEWER.DWG
EDITOR: DTM

BLACK & VEATCH

Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Lytvyn, Olena

Digitally signed by Lytvyn, Olena
DN: E=LytvynOl@bv.com, CN=Lytvyn, Olena, OU=Black & Veatch Corporation, OID.2.5.4.97="VYRJ-0439-2968"
L=Overland Park, S=Kansas, C=US, OU=MA20230714492418, OU=BLACK&VEATCH-MA20230714492418
Date: 2025.09.18 12:24:02-04'00'

Olena Lytvyn, State of Florida
Professional Engineer
License No.82696

This item has been digitally signed and sealed by Olena Lytvyn on the date indicated here. Printed copies of this document are not considered signed and sealed and the signiture must be verified on any electronic copies.

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

90% SUBMITTAL

REVISIONS AND RECORD OF ISSUE

DESIGNED:	JH
DETAILED:	LP
CHECKED:	MM
APPROVED:	OL
DATE:	SEPTEMBER 2025
PROJECT NO.:	421730

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

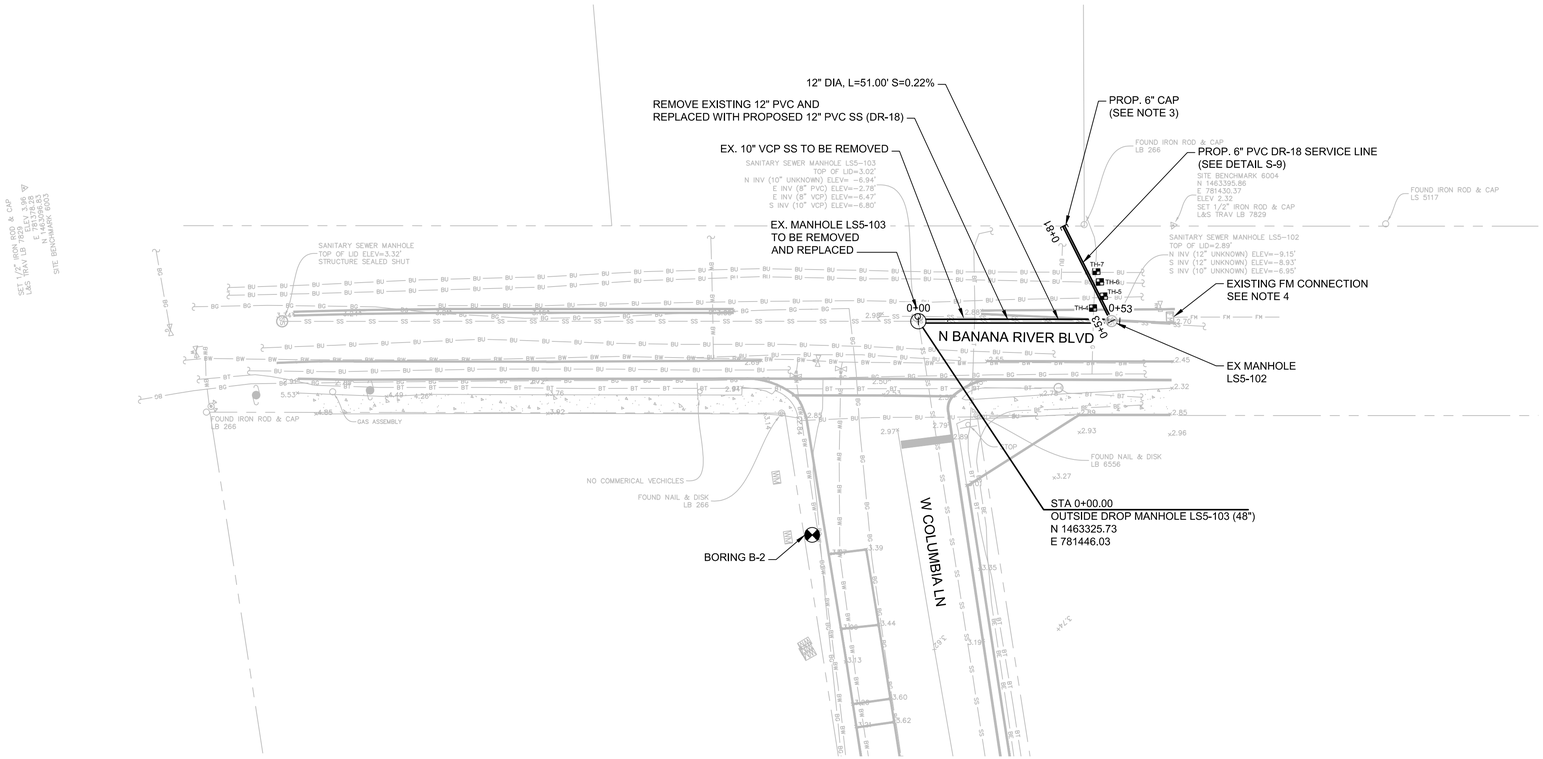
CIVIL

PLAN AND PROFILE - N ATLANTIC AVE AND WAKULLA LN

C-01

5 OF 18

Approved
25-H-590-0337
William Eckard
11/20/2025

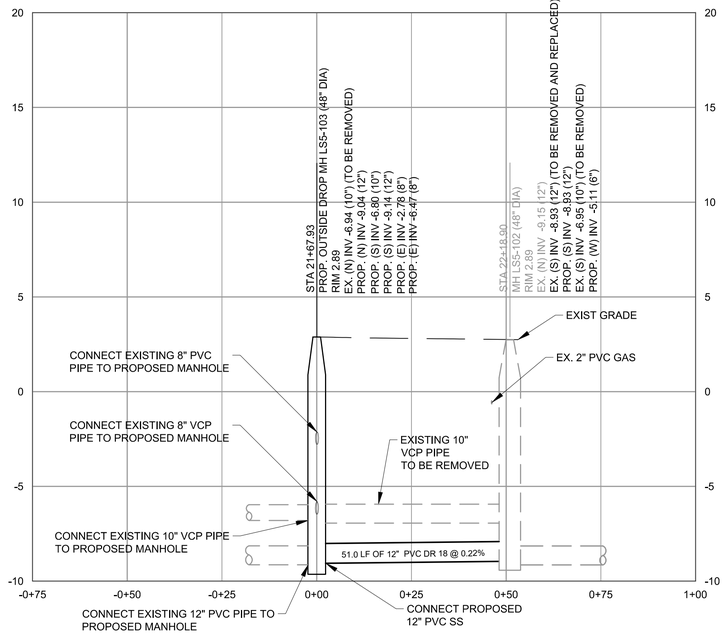


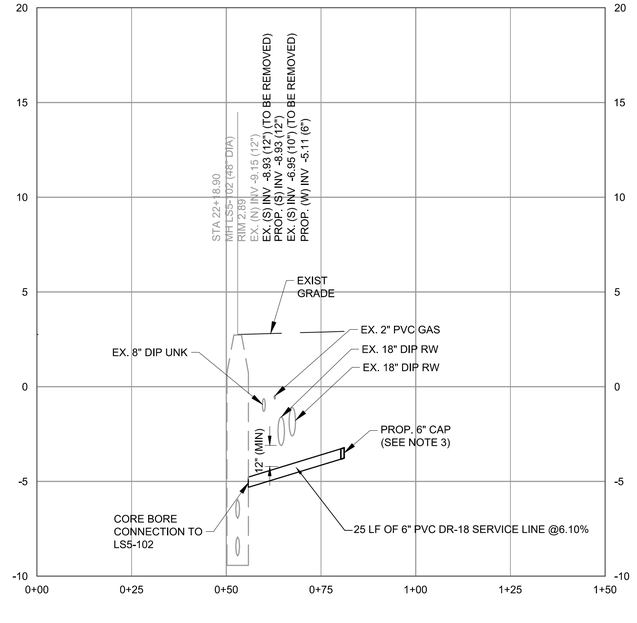
NOTES:

1. CONTRACTOR MUST BY-PASS EXISTING FLOW. AT NO POINT SHALL SERVICE BE DISRUPTED. CONTRACTOR SHALL MAINTAIN TWO PUMPS ON SITE AT ALL TIMES.
2. CONTRACTOR TO CONNECT TO EXISTING MANHOLE AT PROPOSED INVERT ELEVATIONS USING COUPLINGS AS NECESSARY PER DETAIL S-7.
3. CONTRACTOR TO INSTALL PROPOSED 6" PVC SERVICE LINE UP TO PROPERTY LINE.
4. CONTRACTOR MAY USE EXISTING FM CONNECTION TO BYPASS EXISTING GRAVITY SEWER FLOW.

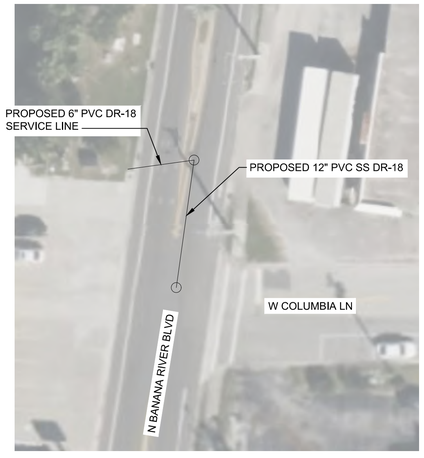
20' 10' 0 20' 40'
HORIZONTAL SCALE 1"=20'

5' 3' 0 5' 10'
VERTICAL SCALE 1"=5'





B PROPOSED 6" PVC SERVICE LINE
\- HORIZ. 1"=20' VERT. 1"=5'



KEY PLAN

ISSUED FOR PERMIT

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

PLOTTED: 9/15/2025 9:28:44 PM
FILE: C:\PW_WORKING\BVW_AMERICAS_2\D2173989\421730-C-XX_BANANA RIVER BLVD AND ALANTIC AVE SEWER.DWG
FD11000
D11004

Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Lytvyn, Olena
Digitally signed by Lytvyn, Olena
DN: E=Lytvyn@bv.com, CN=Lytvyn, Olena, OU=Water, O=Black & Veatch, OID.2.5.4.51=76 BLUE OBELISK DR, LOVeteran Park, S=Kansas, SERIALNUMBER=MA2022071480243, C=US
Date: 2025.09.18 12:24:18-04'00'

Olena Lytvyn, State of Florida
Professional Engineer
License No.82696

This item has been digitally signed and sealed by Olena Lytvyn on the date indicated here. Printed copies of this document are not considered signed and sealed and the signiture must be verified on any electronic copies.

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

90% SUBMITTAL

REVISIONS AND RECORD OF ISSUE

DESIGNED:	JH
DETAILED:	LP
CHECKED:	MM
APPROVED:	OL
DATE:	SEPTEMBER 2025
PROJECT NO.:	421730

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

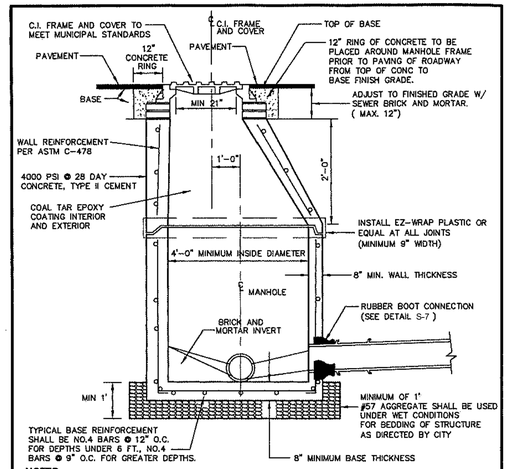
CIVIL

PLAN AND PROFILE - N BANANA RIVER BLVD

C-02

6 OF 18

Approved
2025-H-590-10337
William Rickard
11/20/2025



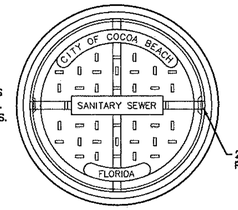
NOTES:

1. ON TRANSITIONS BETWEEN LARGER DIAMETER AND SMALLER SEWER COLLECTORS, OUTVERTS OF SEWERS SHALL BE MATCHED.
2. NON-PENETRATING PICK-HOLES IN ALL CONCRETE SECTIONS.
3. USE FARBERTITE BITUMASTIC SEALER BETWEEN SECTIONS OF MANHOLES.
4. 0.1' - DROP ACROSS MANHOLE TYP.

STANDARD CONSTRUCTION DETAIL
STANDARD MANHOLE DETAIL

FILE NAME: CB_S1.DWG
DETAIL REF: S-1

USF No. 117-BL-ORS
FRAME WT = 85 LBS.
COVER WT = 125 LBS.

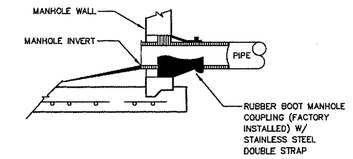


NOTES:

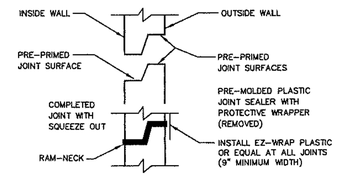
1. CEMENT USED IN PRECAST CONCRETE MIX SHALL BE TYPE II, ACID RESISTANT AND SULFIDE RESISTANT CONCRETE.
2. MORTAR TO CONTAIN "HYDRATITE", OR APPROVED EQUAL, TO PREVENT SHRINKAGE.
3. SUB-GRADE BENEATH MANHOLES SHALL BE UNDISTURBED GRANULAR UNSATURATED SOIL. No. 57 AGGREGATE STONE SHALL BE USED IN WET CONDITIONS AND/OR WHERE UNSUITABLE MATERIAL IS ENCOUNTERED.
4. ALL SEWER LINES SHALL BE VIDEOTAPED WITH "PAN AND TILT" CAMERA AND COPIES OF VIDEOS SUPPLIED TO THE UTILITIES DEPT. THE CITY MAY REQUIRE ADDITIONAL VIDEO TAPING, VIDEO TAPING OF LATERALS, AND/OR INFILTRATION/EXFILTRATION TESTS IF DEFECTS ARE APPARENT OR WORKMANSHIP IS QUESTIONABLE.
5. UNLESS DETAILED PLANS SHOW OTHERWISE, ALL MANHOLE RING AND COVER CASTINGS IN PAVED AREAS ARE TO BE ADJUSTED TO FINAL GRADE, SEALED AND SECURED IN PLACE WITH A CONCRETE COLLAR AFTER THE ROAD BASE IS PLACED AND JUST PRIOR TO PLACEMENT OF ASHPALT WEARING SURFACE.
6. CONTRACTOR SHALL PROVIDE THICKER MANHOLE WALLS AND BASES AS REQUIRED TO PREVENT FLOTATION BASED ON HISTORIC HIGH GROUND WATER TABLE ELEVATIONS AS DETERMINED USING ACCEPTED ENGINEERING PRACTICES AND/OR APPROVED BY PUBLIC UTILITIES DEPT.
7. CONCRETE COLLAR AROUND MANHOLE FRAME IS REQUIRED IN PAVED AREAS ONLY.
8. SHOP DRAWINGS FOR ALL STRUCTURES SHALL BE SUBMITTED TO AND APPROVED BY THE DESIGN ENGINEER PRIOR TO INSTALLATION WITH TWO COPIES FORWARDED BY THE DESIGN ENGINEER TO THE CITY.
9. TWO (2) COATS OF BITUMASTIC COATING INSIDE: 16 MIL
10. ONE (1) COAT OF BITUMASTIC COATING OUTSIDE: 8 MIL
11. FRAME AND COVER TO BE USF #117-BL-ORS .
12. NO BUG HOLES OR HONEYCOMB WILL BE ACCEPTED.
13. ENDS OF SECTION SHALL FIT FLUSH TOGETHER
14. ANY COVERS IN SIDEWALK AREAS SHALL HAVE SMOOTH SURFACE IN CONFORMANCE WITH A.D.A. REQUIREMENTS.

STANDARD CONSTRUCTION DETAIL
SANITARY SEWER COVER & GENERAL NOTES

FILE NAME: CB_S2.DWG
DETAIL REF: S-2



MANHOLE PIPE CONNECTION DETAIL
FOR NEW CONNECTIONS IN EXISTING MANHOLES



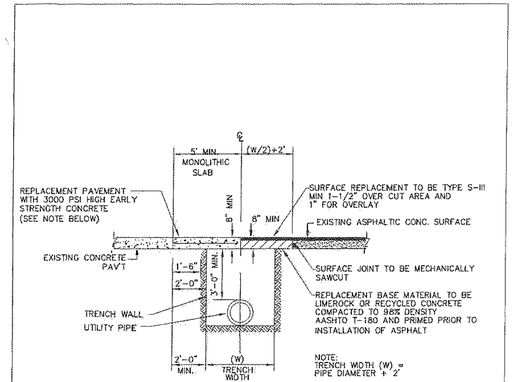
PRECAST JOINT CONNECTION

NOTES:

1. ALL NEW CONNECTIONS TO EXISTING SANITARY SEWER MANHOLES SHALL UTILIZE A CORING METHOD AND THE IN-FIELD INSTALLATION OF A RUBBER BOOT INTO THE MANHOLE.

STANDARD CONSTRUCTION DETAIL
RUBBER BOOT AND PRECAST JOINT CONNECTION DETAIL

FILE NAME: CB_S7.DWG
DETAIL REF: S-7

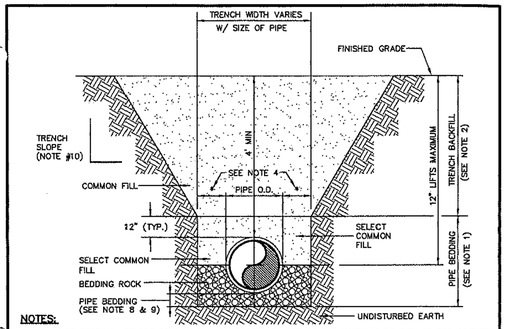


NOTES:

1. PAVING REPLACEMENT SHALL INCLUDE RAISING ALL MANHOLE FRAMES AND LIDS AND VALVE BOXES AND LIDS (AND SIMILAR APPURTENANCES) TO FINAL ELEVATION PRIOR TO RESURFACING
2. IN AREAS WHERE CONCRETE PAVEMENT IS TO BE UTILIZED, 3000 PSI - 28 DAY STRENGTH CONCRETE PAVEMENT MAY BE PERMITTED PROVIDED THAT THE SUBJECT AREA WILL REMAIN FREE OF VEHICULAR TRAFFIC FOR A MINIMUM OF 3 DAYS.
3. CITY PERMITS REQUIRED FOR ALL ROAD CUTS.

STANDARD CONSTRUCTION DETAIL
PAVEMENT TRENCH RESTORATION

FILE NAME: CB_ST3.DWG
DETAIL REF: ST-3A

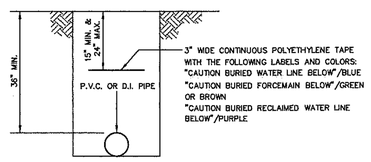


NOTES:

1. PIPE BEDDING: SELECT COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
2. TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180. (98% DENSITY REQUIRED UNDER PAVEMENT, DRIVEWAYS AND STRUCTURES.)
3. USE TYPE "A" BEDDING TO BE DETERMINED IN THE FIELD AS DIRECTED BY THE CITY.
4. (*): 15" MAX. FOR PIPE DIAMETER LESS THAN 24", AND 24" MAX. FOR PIPE DIAMETER 24" AND LARGER.
5. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
6. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF FLOW.
7. REFER TO SECTION 32.5 OF THE MANUAL FOR SHEETING AND BRACING IN EXCAVATIONS.
8. GRAVITY SEWERS SHALL UTILIZE TYPE "A" BEDDING, WHERE UNSUITABLE MATERIAL EXISTS. BEDDING DEPTH SHALL BE 4" MINIMUM FOR PIPE DIAMETER LESS THAN 15", AND 6" MINIMUM FOR PIPE DIAMETER 16" AND LARGER.
9. DEPTH FOR REMOVAL OF UNSUITABLE MATERIAL SHALL GOVERN DEPTH OF BEDDING ROCK BELOW THE PIPE. CITY SHALL DETERMINE IN THE FIELD REQUIRED REMOVAL OF UNSUITABLE MATERIAL TO REACH SUITABLE FOUNDATION.
10. REFER TO OSHA REQMTS. FOR SLOPING, SHEETING AND BRACING IN EXCAVATIONS.

STANDARD CONSTRUCTION DETAIL
TYPE "A" BEDDING AND TRENCH DETAIL
(SPECIAL GRAVITY SEWER INSTALLATIONS)

FILE NAME: CB_S27.DWG
DETAIL REF: S-27



"TERRA TAPE D" or SIMILAR

STANDARD CONSTRUCTION DETAIL
LOCATOR TAPE INSTALLATION FOR
SEWER, WATER AND RECLAIMED WATER PIPELINES

FILE NAME: CB_S11.DWG
DETAIL REF: S-11

ISSUED FOR PERMIT

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

BLACK & VEATCH
Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Lytvyn, Olena
Digitally signed by Lytvyn, Olena
DN: E=LytvynO@bv.com, CN=Lytvyn, Olena, OU=Water, O=Black & Veatch, OU=1.2.6.61=?N?U0436.2980?#?, L=Overland Park, S=Kansas, C=US, 1.2.840.113549.1.9.8=MA1200387248?418, SERIALNUMBER=MA1200387248?418
Date: 2025.09.18 12:24:42-04'00'

Olena Lytvyn, State of Florida
Professional Engineer
License No.82696

This item has been digitally signed and sealed by Olena Lytvyn on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

90% SUBMITTAL

DESIGNED:	JH
DETAILED:	LP
CHECKED:	MM
APPROVED:	OL
DATE:	SEPTEMBER 2025
PROJECT NO.:	421730

REVISIONS AND RECORD OF ISSUE

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

CIVIL

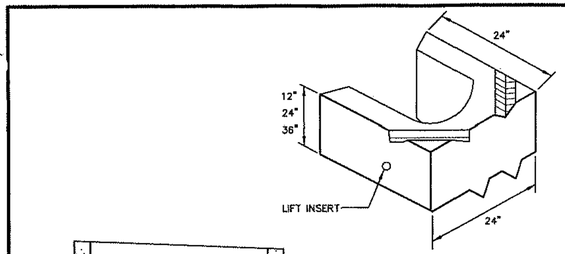
DETAILS

C-03

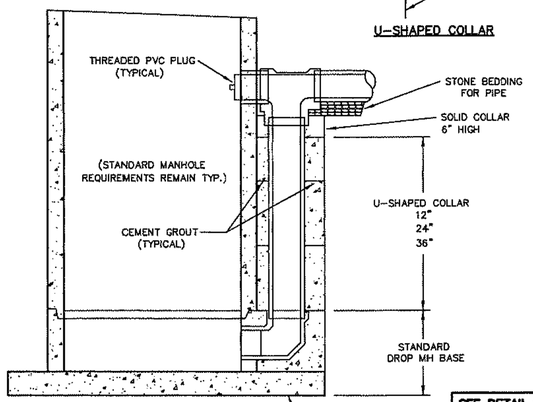
7 OF 18

Approved
2025-H-590-9387
William Bickard
11/20/2025

PLOTTED: 9/15/2025 9:29:51 PM
FILE: C:\PW_WORKING\BVW_AMERICAS_21\D217398542\730-C-XX_BANANA RIVER BLVD AND ALANTIC AVE SEWER.DWG
FDT1000
DT1000



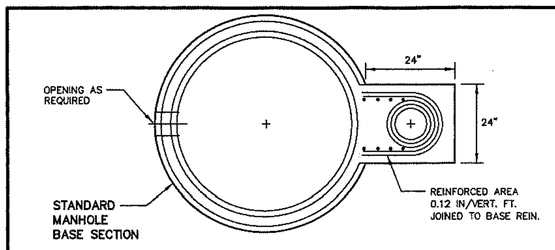
U-SHAPED COLLAR

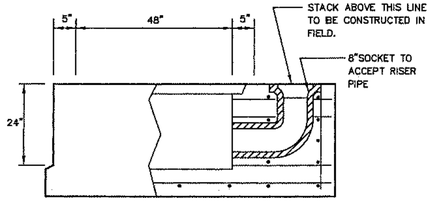


CROSS-SECTION OF DROP MANHOLE

SEE DETAIL S-1 FOR ADDITIONAL INFORMATION

STANDARD CONSTRUCTION DETAIL OUTSIDE DROP MANHOLE (STANDARD NEW CONSTRUCTION)	FILE NAME: CB_S4.DWG DETAIL REF: S-4



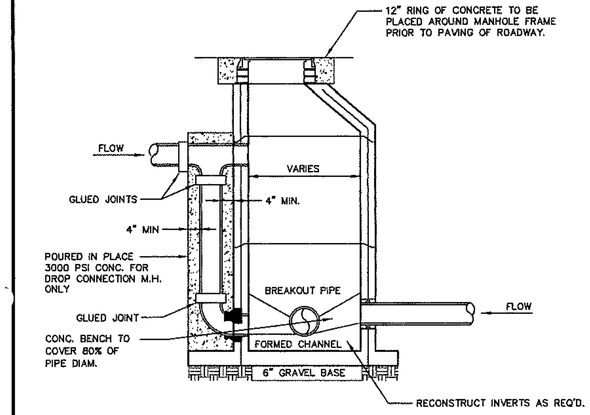


MANHOLE BASE WITH PRECAST DROP

MANHOLE DESIGN

MANHOLE DESIGN SPECIFICATIONS CONFORM TO "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS.

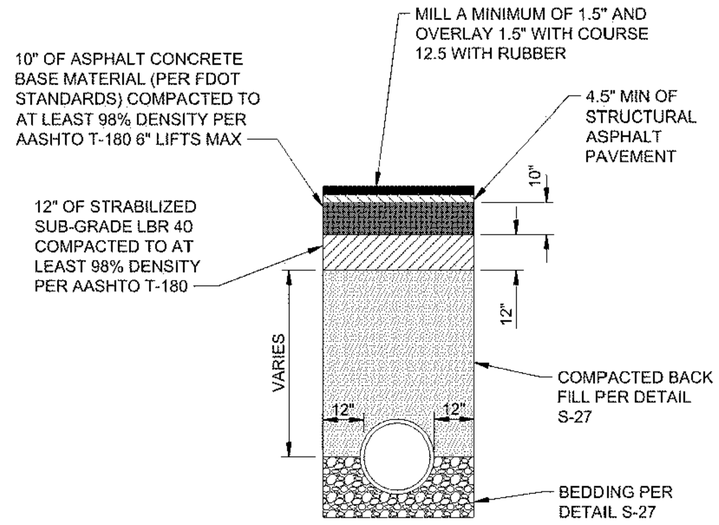
STANDARD CONSTRUCTION DETAIL OUTSIDE DROP MANHOLE (STANDARD)	FILE NAME: CB_S5.DWG DETAIL REF: S-5



FOR SPECIAL CONDITIONS ONLY
(I.E. RETROFIT CONSTRUCTION)

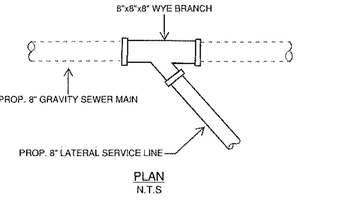
SEE DETAIL S-1 FOR ADDITIONAL INFORMATION

STANDARD CONSTRUCTION DETAIL OUTSIDE DROP MANHOLE DETAIL	FILE NAME: CB_S6.DWG DETAIL REF: S-6

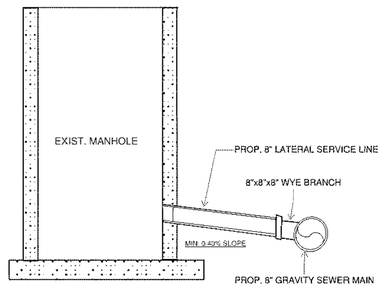


PAVEMENT RESTORATION DETAIL

NOT TO SCALE

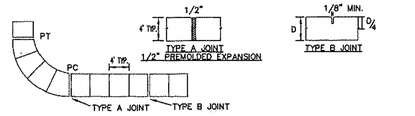


PLAN
N.T.S



SECTION
N.T.S

SEWER LATERAL DETAIL



SIDEWALK CONSTRUCTION REQUIREMENTS

1. SIDEWALKS, BIKEPATHS, RAMPS, AND DRIVEWAY APRONS SHALL BE CONSTRUCTED OF PLAIN PORTLAND CEMENT CONCRETE WITH A MAXIMUM SLUMP OF 3 INCHES, A MINIMUM DEVELOPED COMPRESSIVE STRENGTH OF 2500 P.S.I. IN 28 DAYS, AND A MINIMUM UNIFORM THICKNESS OF 4 INCHES WHERE INTENDED SOLELY FOR PEDESTRIAN TRAFFIC, AND 6 INCHES THICK WHERE MOTOR VEHICLES ARE LIKELY TO CROSS.
2. SIDEWALKS AND BIKEPATHS SHALL BE PLACED PARALLEL TO, AND ONE FOOT WITHIN THE RIGHT-OF-WAY LINE EXCEPT THAT THE CITY MAY APPROVE DEVIATIONS TO SAVE SPECIMEN TREES PROVIDED THAT THE SIDEWALK REMAINS WITHIN THE RIGHT-OF-WAY OR AN APPROVED SIDEWALK EASEMENT ABUTTING THE RIGHT OF WAY. SIDEWALKS AND BIKE PATHS SHOULD BE LOCATED AT LEAST 4 FEET FROM THE EDGE OF THE STREET PAVEMENT UNLESS OTHERWISE APPROVED BY THE CITY.
3. THE TOP OF THE CONCRETE SHALL BE AT AN ELEVATION NO LOWER THAN THE CROWN OF THE ADJACENT ROADWAY, AND NO HIGHER THAN 6 INCHES ABOVE THE CROWN UNLESS APPROVED BY THE CITY TO MAKE A MORE NATURAL TRANSITION WITH THE ADJACENT LAND.
4. ISOLATION JOINTS (TYPE A JOINTS) SHALL BE PROVIDED BETWEEN EXISTING SLABS OR STRUCTURES AND FRESH CONCRETE, TO SEPARATE PEDESTRIAN SECTIONS FROM SECTIONS WHICH WILL ENCOUNTER VEHICLE TRAFFIC, TO SEPARATE FRESH PLACEMENT FROM CONCRETE WHICH HAS SET FOR MORE THAN 60 MINUTES, AND NO FARTHER APART THAN 100 FEET IN SIDEWALKS AND BIKEPATHS. JOINT MATERIAL SHALL BE AS SPECIFIED IN F.D.O.T. STANDARDS AND SPECIFICATIONS AND SHALL BE RUBBER, PLASTIC OR OTHER APPROVED NON-BIODEGRADABLE ELASTOMERIC MATERIAL. WOOD AND DECCA-DRAIN STYLE POOL DRAINS ARE STRICTLY PROHIBITED.
5. CONTROL JOINTS (TYPE B JOINTS) SHALL BE TOOLED INTO THE FRESH CONCRETE TO A DEPTH EQUAL TO 1/4 THE SLAB THICKNESS AND SPACED APART A DISTANCE EQUAL TO THE WIDTH OF THE SLAB OR 5 FEET WHICHEVER IS GREATEST.
6. THE SLAB SURFACE SHALL BE BROOM FINISHED TO BE SLIP RESISTANT, AND SHALL MATCH AS CLOSELY AS POSSIBLE THE FINISH OF EXISTING ADJACENT SLABS AND ALL EDGES SHALL BE TOOLED TO ELIMINATE SHARP CORNERS.
7. THE BEARING SUBSURFACE SHALL HAVE ALL ORGANIC, LOOSE, AND DELETERIOUS MATTER REMOVED, AND THE REMAINING CLEAN SOIL SHALL BE SMOOTH, SOUND, AND SOLID. ANY FILL MATERIAL SHALL BE COMPACTED WITH A VIBRATORY OR IMPACT COMPACTION MACHINE IN MAXIMUM 12 INCH LIFTS OR COMPACTED WITH A HAND TAMPER IN MAXIMUM 4 INCH LIFTS THE CITY SHALL REQUIRE A COMPACTION TEST FOR EACH LIFT IF THE TOTAL FILLED SECTION IS MORE THAN 12 INCHES DEEP OR IF THE SUBSURFACE HAS BEEN DISTURBED MORE THAN 12 INCHES DEEP, WHERE SUCH TEST IS REQUIRED, THE RESULTS SHALL SHOW A MINIMUM PROCTOR FIELD DENSITY OF 95 PERCENT.
8. ALL CONCRETE WORK IN THE RIGHT-OF-WAY SHALL BE INSPECTED BY THE CITY AFTER THE SUBSOIL IS PREPARED AND THE FORMS ARE SET, BUT BEFORE THE CONCRETE PLACEMENT BEGINS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE FINISHED SLAB FROM ALL DAMAGE AND VANDALISM UNTIL THE CITY ACCEPTS OR APPROVES THE SLAB, AFTER WHICH TIME THE OWNER OF THE ABUTTING LAND SHALL BE RESPONSIBLE FOR THE SLAB IN ACCORDANCE WITH THE CITY CODE. ANY SLAB SECTION DAMAGED OR VANDALIZED PRIOR TO ACCEPTANCE OR APPROVAL SHALL BE CUT OUT BETWEEN JOINTS AND REPLACED. REPAIRS ARE NOT ACCEPTABLE.
10. SIDEWALKS LOCATED WITHIN THE RIGHT-OF-WAY SHALL NOT BE TINTED, STAINED, COLORED, OR COATED.
11. ALL FORMS SHALL BE REMOVED PRIOR TO ACCEPTANCE OR APPROVAL AND THE DISTURBED GROUND SHALL BE BACKFILLED, REGRADED, AND SODDED SO THAT THE WEAR SURFACE OF THE CONCRETE IS REASONABLY FLUSH WITH THE ADJACENT GRADE.

STANDARD CONSTRUCTION DETAIL SIDEWALK CONSTRUCTION REQUIREMENTS	FILE NAME: CB_M2.DWG DETAIL REF: M-2

BLACK & VEATCH

Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Lytvyn, Olena

Digitally signed by Lytvyn, Olena
DN: E=LytvynO@bv.com, CN="Lytvyn, Olena", OU=Orlando, O=Black & Veatch, OU=2.5.4.51="9780LHDE,DB67467, L=Overland Park, S=Kansas, SERIALNUMBER=4b52323272485f2418, C=US
Date: 2025.09.18 12:25:04-04'00'

Olena Lytvyn, State of Florida
Professional Engineer
License No.82696

This item has been digitally signed and sealed by Olena Lytvyn on the date indicated here. Printed copies of this document are not considered signed and sealed and the signiture must be verified on any electronic copies.

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

90% SUBMITTAL

REVISIONS AND RECORD OF ISSUE	
DESIGNED:	JH
DETAILED:	LP
CHECKED:	MM
APPROVED:	OL
DATE:	SEPTEMBER 2025
PROJECT NO.:	421730

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

CIVIL

DETAILS

C-04

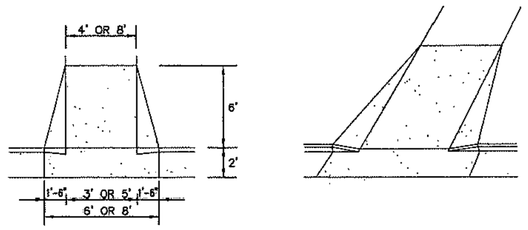
8 OF 18

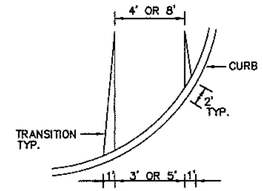
ISSUED FOR PERMIT

Approved
25-H-590-73337
William Pickard
11/20/2025

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

PLOTTED: 9/15/2025 9:31:04 PM
FILE: C:\PW_WORKINGBWW_AMERICAS_2\D2173985\421730-C-XX_BANANA RIVER BLVD AND ALANTIC AVE SEWER.DWG
PSTYLE: BV1000
BV1000



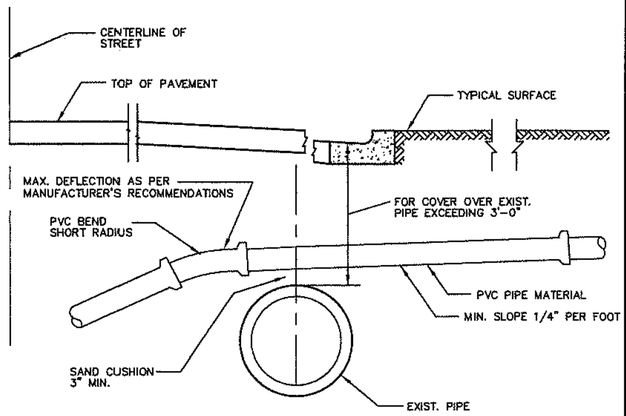


NOTES:

1. RAMP LOCATIONS ARE TO BE COORDINATED WITH AND IN COMFORMANCE WITH CROSSWALK MARKING DETAILS SHOWN IN THE PLANS.
2. CURBED RAMPS SHALL HAVE FLARED SIDES WITH A MAXIMUM SLOPE OF 12:1.
3. RAMPS SHALL HAVE A TACTLIKE SURFACE, TEXTURED TO A DEPTH NOT EXCEEDING 1/8".
4. RAMPS ARE TO BE CONSTRUCTED AT ALL LOCATIONS SHOWN IN THE PLANS EVEN WHEN A SIDEWALK IS NOT CONSTRUCTED CONCURRENTLY.
5. NO CURB TRANSITION IS NEEDED FOR MIAMI CURBS.
6. ALL RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FDOT INDEX NO. 304 AND HANDICAPPED ACCESSIBILITY REQUIREMENTS IN ACCORDANCE WITH THE AMERICAN DISABILITIES ACT.

STANDARD CONSTRUCTION DETAIL
SIDEWALK AND BIKEPATH RAMP

FILE NAME: CITYM3.DWG
DETAIL REF: M-3

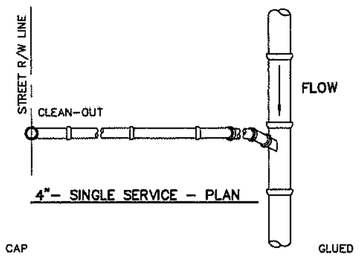


ALTERNATE GRADIENT FOR HOUSE SERVICE SEWERS AT CONFLICTS WITH EXISTING STORM SEWERS & OTHER EXISTING CONDUITS

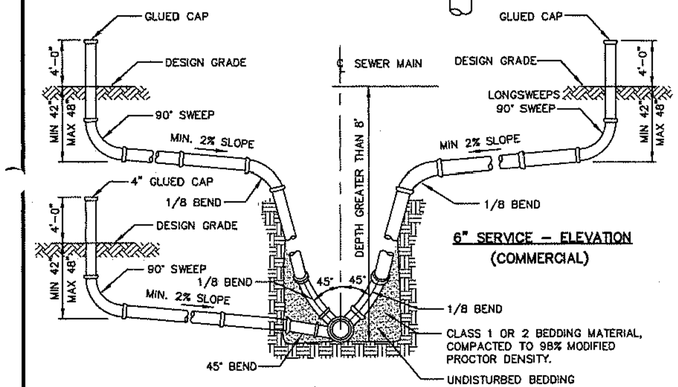
APPROVED PIPE MATERIALS--PVC (SDR 26)

STANDARD CONSTRUCTION DETAIL
SEWER LINE UTILITY CROSSING DETAIL

FILE NAME: CB_S8.DWG
DETAIL REF: S-8



4"- SINGLE SERVICE - PLAN



6" SERVICE - ELEVATION (COMMERCIAL)

4" - 6" SINGLE SERVICE - ELEVATION

NOTES:

1. USE OF STYRENE MATERIAL WILL NOT BE PERMITTED.
2. ALL JOINTS TO BE RUBBER GASKET (NO GLUED FITTINGS) TYPICAL.
3. USE ALL HARCO SDR-26 FITTINGS OR CITY APPROVED EQUAL.

4" - RESIDENTIAL
6" - COMMERCIAL

STANDARD CONSTRUCTION DETAIL
SEWER LATERAL DETAIL

FILE NAME: CB_S9.DWG
DETAIL REF: S-9

BLACK & VEATCH
Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Lytvyn, Olena

Digitally signed by Lytvyn, Olena
DN: E=Lytvyn,O@bv.com, CN=Lytvyn, Olena*, O=Black & Veatch Corporation, OU=Orlando Fish, S=Florida, SERIALNUMBER=MA0203074892418, C=US
Date: 2025.09.18 12:25:23-04'00'

Olena Lytvyn, State of Florida
Professional Engineer
License No.82696

This item has been digitally signed and sealed by Olena Lytvyn on the date indicated here. Printed copies of this document are not considered signed and sealed and the signiture must be verified on any electronic copies.

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

90% SUBMITTAL

REVISIONS AND RECORD OF ISSUE	
DESIGNED:	JH
DETAILED:	LP
CHECKED:	MM
APPROVED:	OL
DATE:	SEPTEMBER 2025
PROJECT NO.:	421730

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

CIVIL

DETAILS

C-05

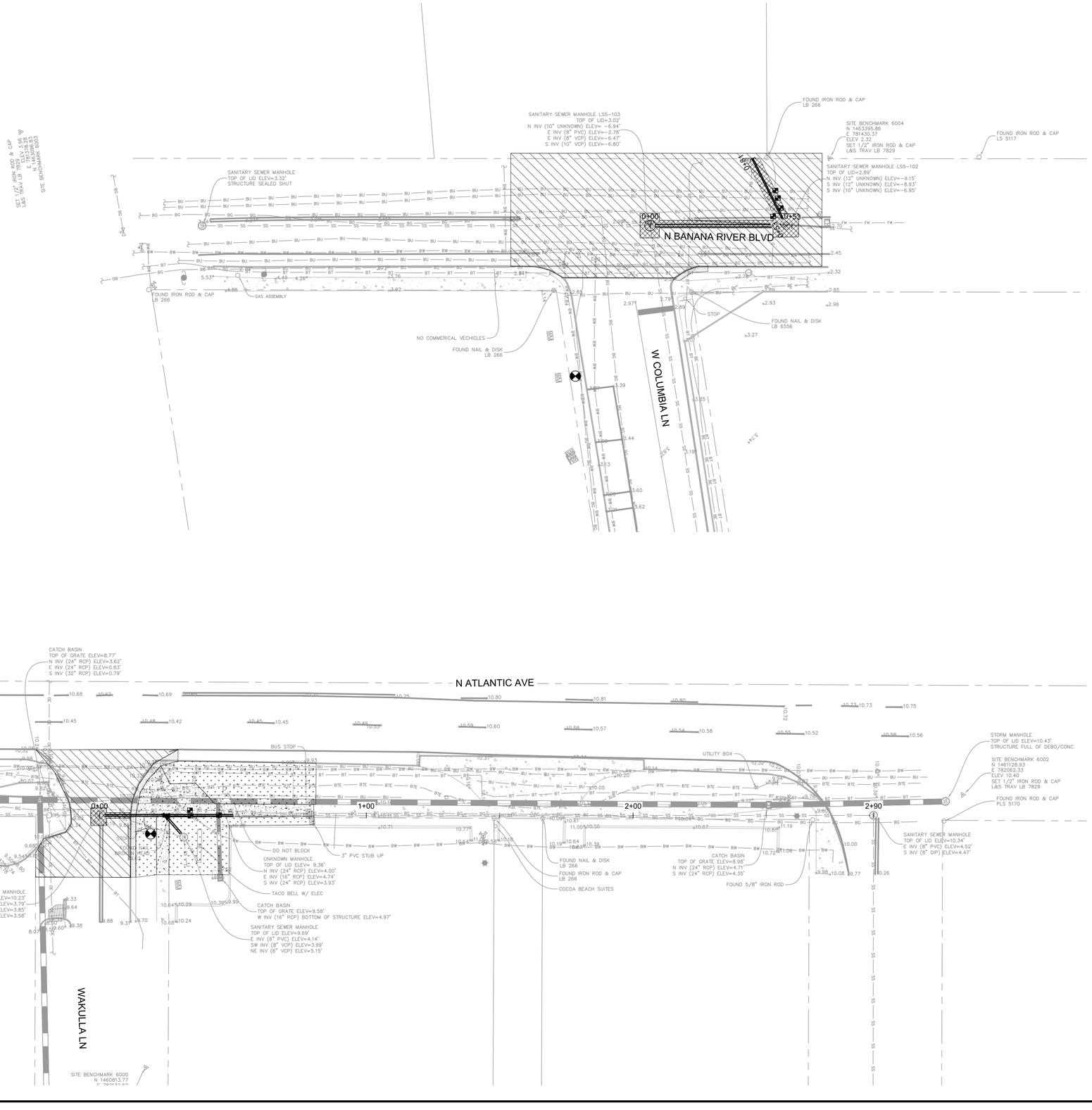
9 OF 18

ISSUED FOR PERMIT

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

Approved
2025-H-590-10337
William Rickard
11/20/2025

PLOTTED: 9/15/2025 9:31:58 PM
FILE: C:\PW_WORKING\BVW_AMERICAS_2\D2173885\421730-C-XX_BANANA RIVER BLVD AND ALANTIC AVE SEWER.DWG
PDT1000
PDT1000



NOTES:

1. CONTACT FDOT TO SCHEDULE PRE-WORK MEETING TWO WEEKS PRIOR TO BEGINNING WORK AT 9321) 634-6100.
2. COORDINATE OPEN CUT AND MILL & RESURFACE REPAIR WITH FDOT PERMITS OFFICE AT (321) 634-6100.

RESTORATION LEGEND

- ASPHALT RESTORATION
- MILL AND OVERLAY
- CONCRETE SIDEWALK
- LAWN RESTORATION
- PAVEMENT MARKINGS
- CURB AND GUTTER RESTORATION

ISSUED FOR PERMIT

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

PLOTTED: 9/15/2025 10:18:24 PM
FILE: C:\PW_WORKING\BVW_AMERICAS_2\D2173985\421730-C-XX_BANANA RIVER BLVD AND ALANTIC AVE SEWER.DWG
PDT1000
PDT1043

BLACK & VEATCH

Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Lytvyn, Olena

Digitally signed by Lytvyn, Olena
DN: E=LytvynOA@bv.com, CN=Lytvyn, Olena, OU=Orlando-Main, O=Black & Veatch, C=US,2.5.4.41=1.2.840.113549.1.9.1=#16124c79747679 6e4f4140627...
Date: 2025.09.18 12:25:45-04'00'

Olena Lytvyn, State of Florida
Professional Engineer
License No.82696

This item has been digitally signed and sealed by Olena Lytvyn on the date indicated here. Printed copies of this document are not considered signed and sealed and the signiture must be verified on any electronic copies.

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

90% SUBMITTAL

REVISIONS AND RECORD OF ISSUE

DESIGNED:	JH
DETAILED:	LP
CHECKED:	MM
APPROVED:	OL
DATE:	SEPTEMBER 2025
PROJECT NO.:	421730

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

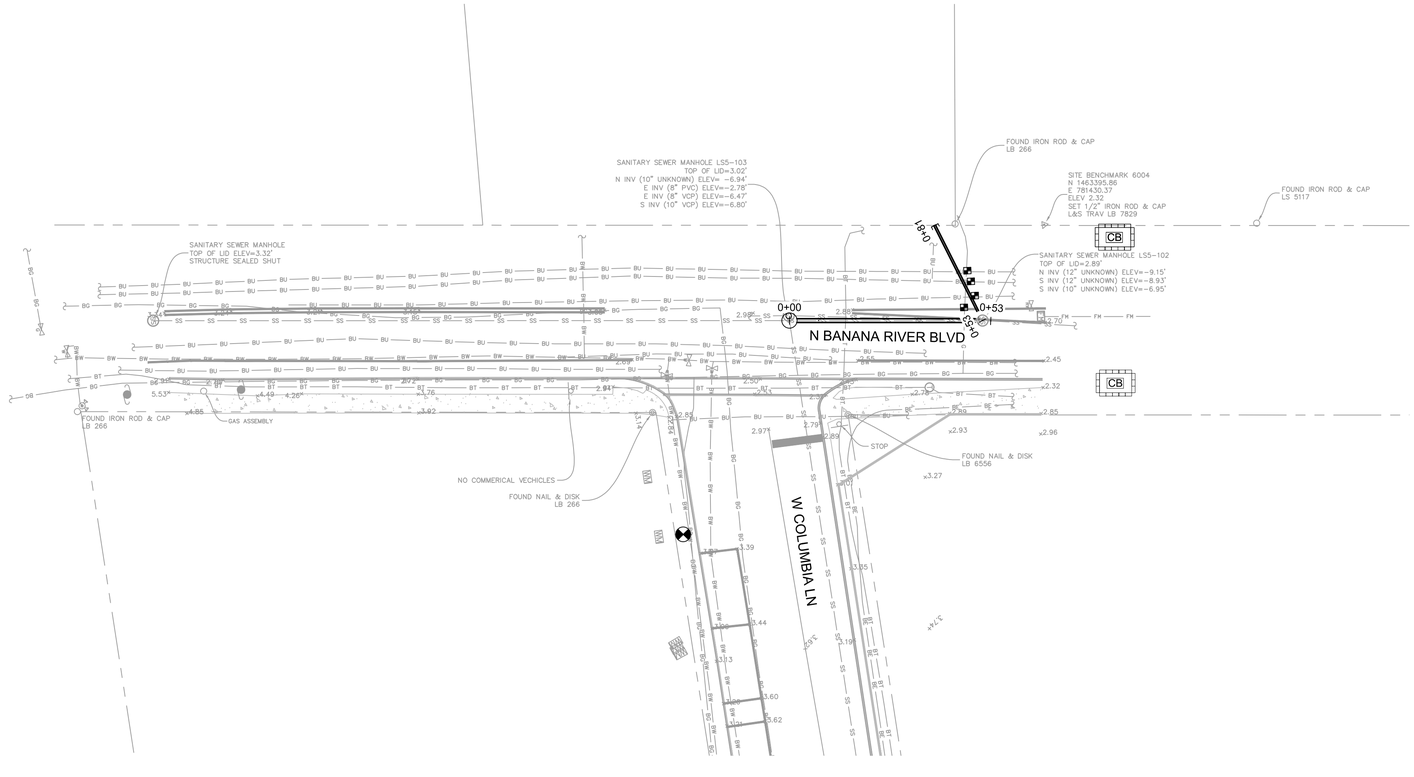
CIVIL

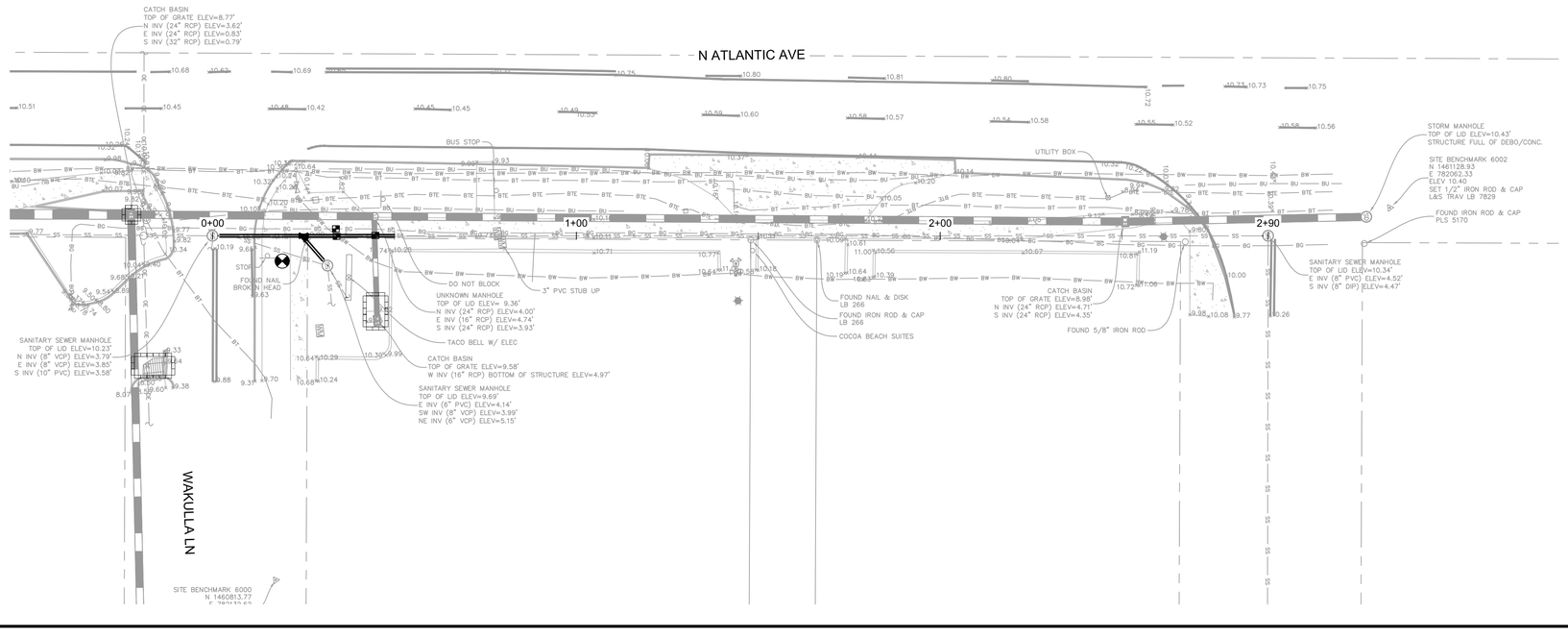
PAVEMENT RESTORATION PLAN

P-01

10 OF 18

Approved
2025-H-590-75337
William Rickard
11/20/2025





EROSION CONTROLS LEGEND

INLET PROTECTION

ISSUED FOR PERMIT

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

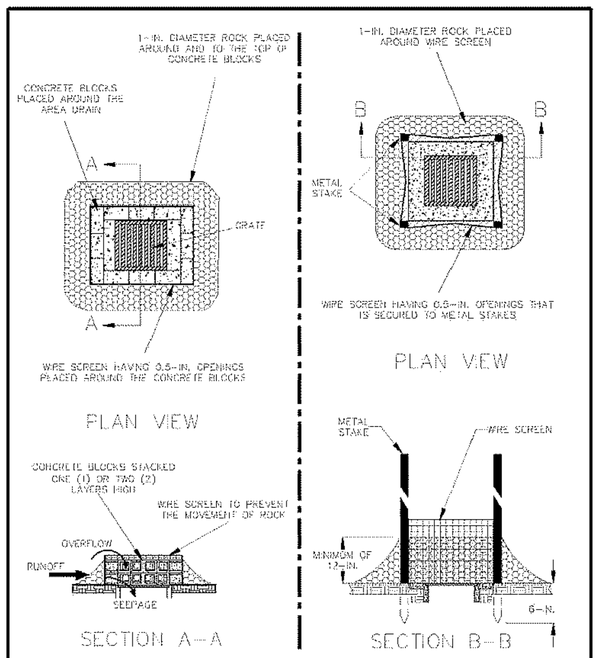
PLOTTED: 9/15/2025 10:20:53 PM
FILE: C:\PW_WORKING\BVW_AMERICAS_2\D2173985\421730-C-XX_BANANA RIVER BLVD AND ALANTIC AVE SEWER.DWG
PSTYLE: PSTYLE.CTB
PLOTSTYLE: FULL1000
PLOTTABLE: PLOTTABLE.PLT

BLACK & VEATCH

Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Lytvyn, Olena

Digitally signed by Lytvyn, Olena
DN: E=LytvynO@bv.com, CN=Lytvyn, Olena, OU=Water, O=Black & Veatch, C=US
2.16.4.6.9.1.1.1

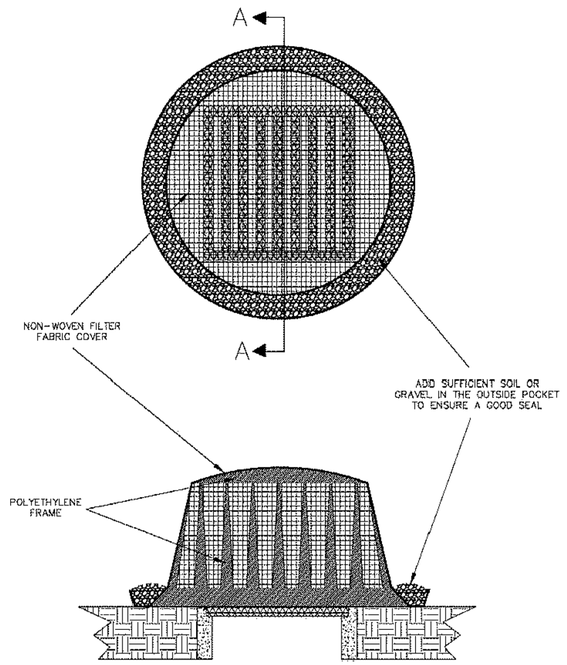


1. THESE BARRIERS SHOULD BE INSTALLED ONLY WHERE "SUMP" CONDITIONS EXIST IN ORDER TO MINIMIZE DIVERSION OF RUNOFF WATERS ONTO DOWNSTREAM STRUCTURES.
2. ROCK BARRIERS AROUND CONCRETE BLOCKS CAN BE INSTALLED ON PAVEMENT OR BARE GROUND.

© 2009 Hydrotech

ROCK BARRIERS FOR AREA DRAINS

11/09

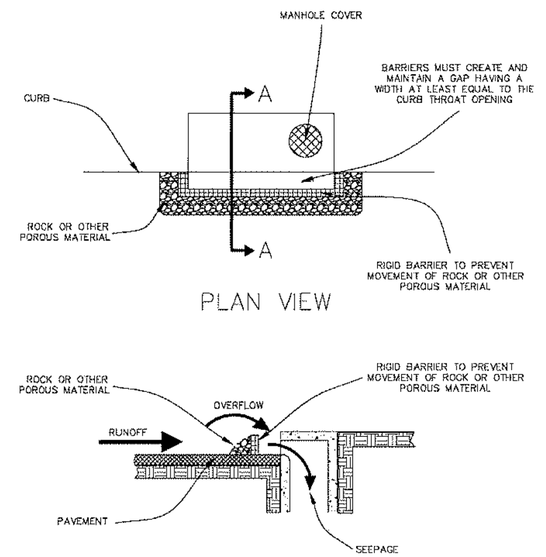


SECTION A-A

© 2006 Hydrotech

FRAME & FILTER BARRIER FOR AREA DRAINS

4-06



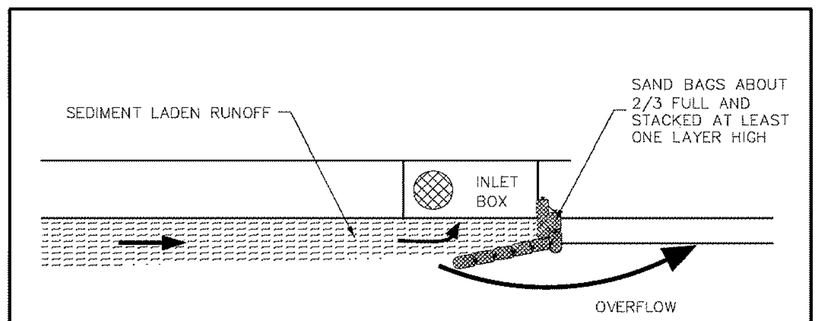
SECTION A-A

1. RIGID BARRIER MUST HAVE OPENINGS TO ALLOW FOR PERCOLATION OF RUNOFF
2. PLACE BARRIERS IN FRONT OF INLETS ONLY WHERE SUMP CONDITIONS EXIST.
3. THE GAP WIDTH MUST BE AT LEAST EQUAL TO THE CURB THROAT OPENING.
4. THESE STRUCTURES MAY CAUSE ASPHALT DAMAGE DUE TO WATER SEEPAGE INTO JOINTS.

© 2009 Hydrotech

CURB INLET SUMP BARRIER

mod/Mar 8/06



THIS BARRIER SYSTEM IS TO BE USED ONLY IF:

1. THE STORM SEWER SYSTEM DISCHARGES INTO A PROPERLY DESIGNED AND FUNCTIONING SEDIMENT CONTAINMENT SYSTEM.
2. STORM SEWER PIPES CONVEYING RUNOFF HAVE SLOPES THAT ARE AT LEAST 1.0% OR STEEPER.
3. DISCHARGES WILL FLOW FREELY INTO THE SEDIMENT CONTAINMENT SYSTEM AND NO BACKWATER EFFECTS WILL OCCUR.

© 2009 Hydrotech

CURB INLET DIVERSION BARRIER

11/09

ISSUED FOR PERMIT

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

BLACK & VEATCH

Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Lytvyn, Olena

Digitally signed by Lytvyn, Olena
DN: E=LytvynO@bv.com, CN=Lytvyn, Olena, O=Black & Veatch Corporation, OU=Chestnut Park, S=Florida, C=US
Reason: I am approving this document
Location: Chestnut Park, S=Florida, C=US
Date: 2025-09-18 12:26:32-04'00'

Olena Lytvyn, State of Florida
Professional Engineer
License No.82696

This item has been digitally signed and sealed by Olena Lytvyn on the date indicated here. Printed copies of this document are not considered signed and sealed and the signiture must be verified on any electronic copies.

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

90% SUBMITTAL

REVISIONS AND RECORD OF ISSUE

DESIGNED:	JH
DETAILED:	LP
CHECKED:	MM
APPROVED:	OL
DATE:	SEPTEMBER 2025
PROJECT NO.:	421730

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

CIVIL

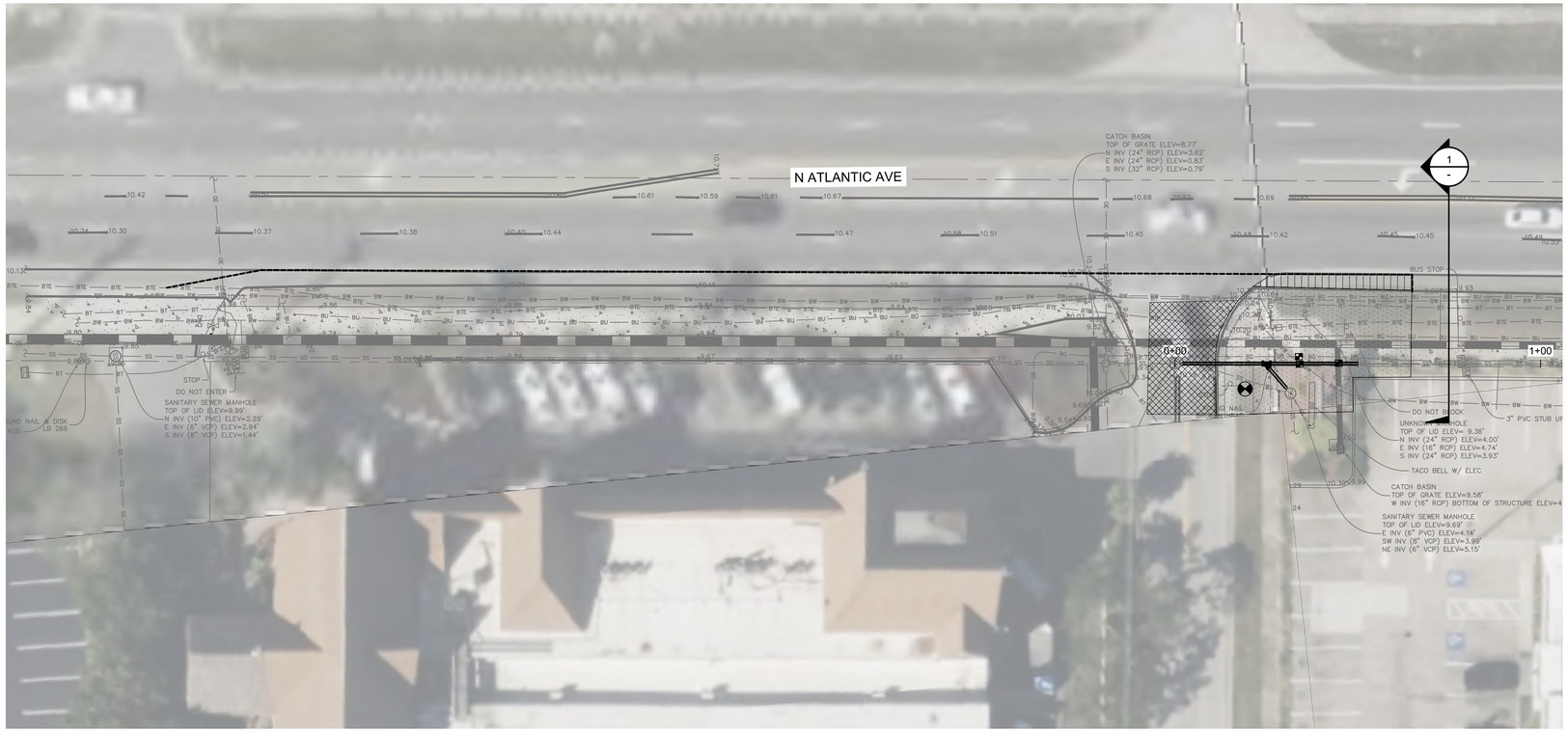
EROSION DETAILS

E-02

12 OF 18

Approved
2025-H-550-00387
William Rickard
11/20/2025

PLOTTED: 9/19/2025 10:21:33 PM
FILE: C:\PW_WORKING\BVW_AMERICAS_2\D2173989421730-C-XX_BANANA RIVER BLVD AND ALANTIC AVE SEWER.DWG
FDT1000
D1000



NOTES:

1. CONTRACTOR TO COORDINATE WITH SPACE COAST AREA TRANSIT (SCAT) ABOUT THE TEMPORARY RELOCATION OF EXISTING BUS STOP
2. VARIOUS MESSAGE SIGNS SHALL BE INSTALLED 14 DAYS IN ADVANCE ALERTING VEHICULAR DRIVERS OF THE TIME FRAME FOR THE CLOSURE OF WALKULLA LN.

LEGEND:

- WORK ZONE - WORK ON SHOULDER - FDOT INDEX 102-602
- WORK ZONE - WORK BEYOND SHOULDER - FDOT INDEX 102-601 & SIDEWALK CLOSURE - FDOT INDEX 102-660
- WORK ZONE - TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY - FDOT INDEX 102-603
- CHANNELING DEVICES

BLACK & VEATCH

Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Lytvyn, Olena

Digitally signed by Lytvyn, Olena
DN: E=LytvynOl@bv.com, CN=Lytvyn, Olena, OU=Orlando, O=Black & Veatch, C=US
2.5.4.5=1.2.840.113549.1.9.2=8E.29BD7487-1.HOverlaker Park, S=Kansas, SERIALNUMBER=fe4d2023d57d4850418, Ou=
Date: 2025.09.18 12:26:56-04'00'

Olena Lytvyn, State of Florida
Professional Engineer
License No.82696

This item has been digitally signed and sealed by Olena Lytvyn on the date indicated here. Printed copies of this document are not considered signed and sealed and the signiture must be verified on any electronic copies.

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

90% SUBMITTAL

REVISIONS AND RECORD OF ISSUE

DESIGNED:	JH
DETAILED:	LP
CHECKED:	MM
APPROVED:	OL
DATE:	SEPTEMBER 2025
PROJECT NO.:	421730

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

CIVIL

MAINTENANCE OF TRAFFIC PLAN

M-01

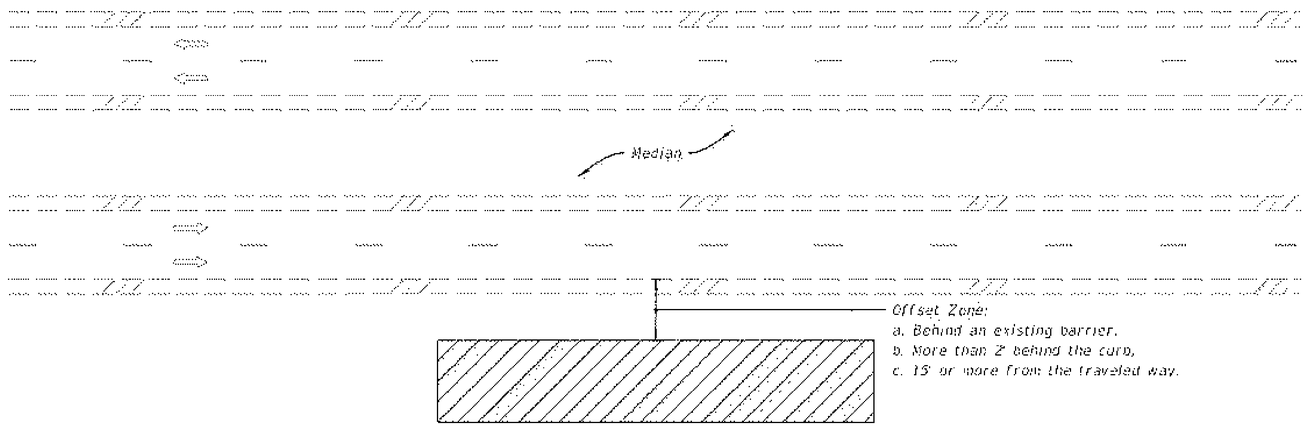
13 OF 18

ISSUED FOR PERMIT

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

Approved
E2025-H-590-50337
William Rickard
11/20/2025

PLOTTED: 9/15/2025 10:22:23 PM
FILE: C:\PW_WORKING\BVW_AMERICAS_2\D21739859\421730-C-XX_BANANA RIVER BLVD AND ALANTIC AVE SEWER.DWG
D1:1000
D1:1000



MULTILANE ROADWAY SHOWN, TWO-LANE ROADWAY SIMILAR

NOTES:

1. This Index applies to Two-Lane, Two-Way and Multilane Roadways, including Medians of divided roadways, with work beyond the shoulder.
2. Use Index 102-602 when the work operation (excluding establishing and terminating the work area) requires that two or more work vehicles cross the Offset Zone in any one hour period.
3. Use Index 102-660 when Work Area encroaches a Sidewalk.

SYMBOLS:

Work Area

Lane Identification and Direction of Traffic

FDOT INDEX 102-601 - TWO-LANE AND MULTIWAY ROADWAY, WORK BEYOND THE SHOULDER

ISSUED FOR PERMIT

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

BLACK & VEATCH

Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Lytvyn, Olena

Olena Lytvyn, State of Florida
Professional Engineer
License No.82696

This item has been digitally signed and sealed by Olena Lytvyn on the date indicated here. Printed copies of this document are not considered signed and sealed and the signiture must be verified on any electronic copies.

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

90% SUBMITTAL

REVISIONS AND RECORD OF ISSUE

DESIGNED:	JH
DETAILED:	LP
CHECKED:	MM
APPROVED:	OL
DATE:	SEPTEMBER 2025
PROJECT NO.:	421730

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

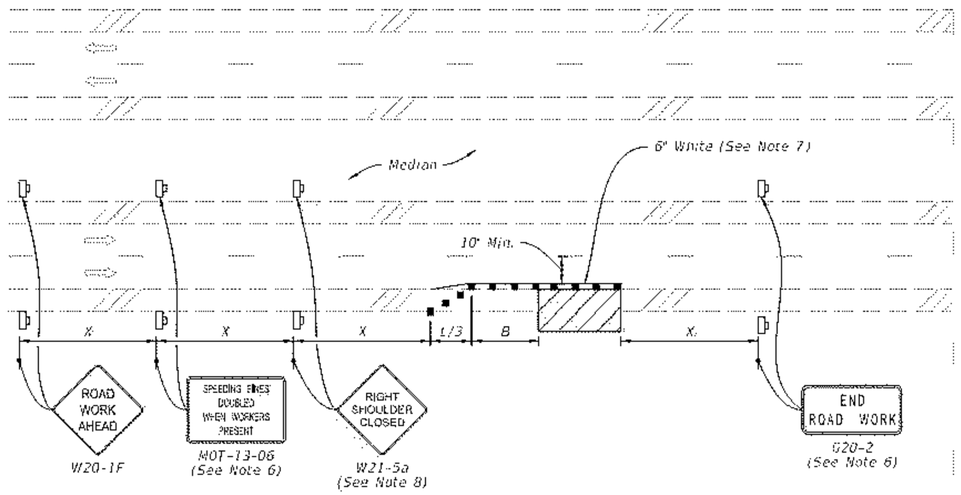
CIVIL

MAINTENANCE OF TRAFFIC DETAILS

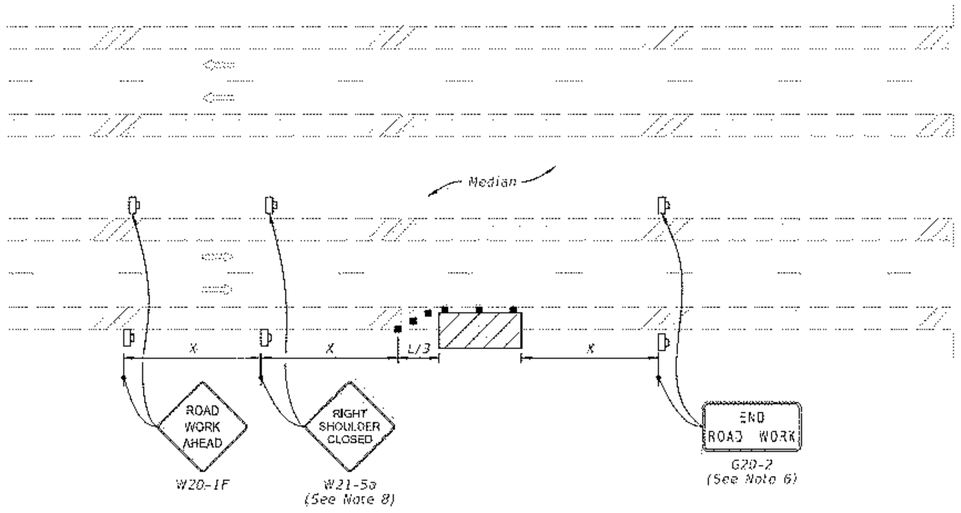
M-02

Approved
E2025-H-590-0337
William Rickard
11/20/2025

PLOTTED: 9/15/2025 10:22:47 PM
FILE: C:\PW_WORKING\BVW_AMERICAS_2\D2173885\421730-C-XX_BANANA RIVER BLVD AND ALANTIC AVE SEWER.DWG
D31000
D11X34



MULTILANE ROADWAY
SHOULDER WORK LESS THAN 2' FROM THE TRAVELED WAY
WITH WORK ZONE SPEED OF 45 MPH OR LESS



MULTILANE ROADWAY
SHOULDER WORK BETWEEN 2' AND 15' FROM THE TRAVELED WAY

SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Lane Identification and Direction of Traffic

FDOT INDEX 102-602 - TWO-LANE AND MULTILANE, WORK ON THE SHOULDER

ISSUED FOR PERMIT

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

BLACK & VEATCH

Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Lytvyn, Olena

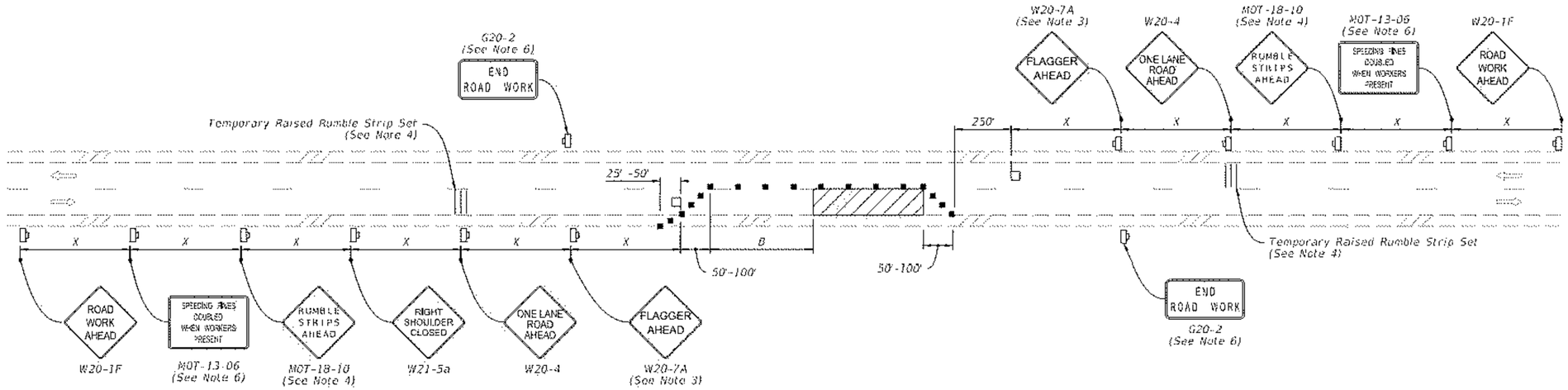
Digitally signed by Lytvyn, Olena
DN: E=LytvynO@bv.com, CN="Lytvyn, Olena", OU=Water, O="Black & Veatch Holding Company", L=Middleton Park, S=Boston, C=US, 1.2.840.113549.1.9.8=NULL, 2.5.4.41="Olena Lytvyn", 2.5.4.5="c7f8d2e4d8c1f4b0a3e5d6c7b8a9f0e1d2c3b4a5f6e7d8c9b0a1f2e3d4c5b6a7"
Date: 2025.09.18 12:28:15-04'00'

Olena Lytvyn, State of Florida
Professional Engineer
License No.82696

This item has been digitally signed and sealed by Olena Lytvyn on the date indicated here. Printed copies of this document are not considered signed and sealed and the signiture must be verified on any electronic copies.

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

90% SUBMITTAL



NOTES:

1. This Index applies to Two-Lane, Two-Way Roadways with work within the traveled way.

2. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Spacing
   See Index 102-600 for "L", "B", "X" and channelizing device spacing values.

3. Optionally, use "Flagger Ahead" sign with symbol (W20-7) instead of "Flagger Ahead" sign with text (W20-7A).

4. Use temporary raised rumble strips when the existing posted speed is 55 mph or greater and the work duration is greater than 60 minutes. If temporary raised rumble strips are not used, omit "Rumble Strips Ahead" signs (W01-18-10) and associated work zone sign spacing.

5. Additional one-way control may be provided by the following means:
   a. Flag-carrying vehicle
   b. Official vehicle
   c. Pilot vehicles
   d. Traffic signals

   When flaggers are the sole means of one-way control, the flaggers must be in sight of each other or in direct communication at all times.

6. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign spacing, may be omitted when the work operation will be in place for 24 hours or less.

7. Automated Flagger Assistance Devices (AFADs) may be used in accordance with Specification Sections 102, 990 and the APL vendor drawings.

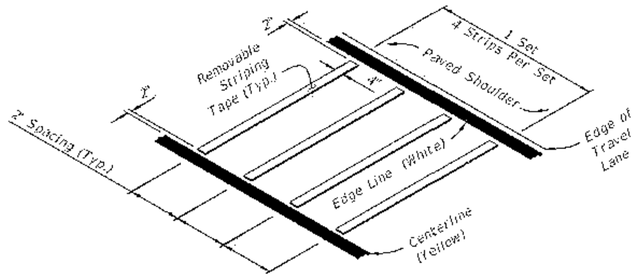
8. Railroad Crossings:

   a. If an active railroad crossing is located closer to the Work Area than the queue length plus 300 feet, extend the Buffer Space as shown on Sheet 2.

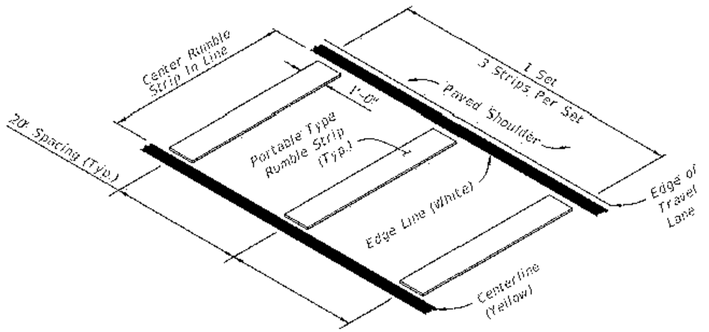
   b. If the queuing of vehicles across an active railroad crossing cannot be avoided, provide a uniformed traffic control officer or flagger at the highway-rail grade crossing to prevent vehicles from stopping within the highway-rail grade crossing, even if automatic train warning devices are in place.

SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Flagger
- Lane Identification and Direction of Traffic



OPTION - 1
REMOVABLE STRIPING TYPE



OPTION - 2
PORTABLE TYPE

RUMBLE STRIP SETS

FDOT INDEX 102-603 - TWO-LANE, TWO WAY, WORK WITHIN THE TRAVEL WAY

ISSUED FOR PERMIT

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

BLACK & VEATCH

Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Lytvyn, Olena

Olena Lytvyn, State of Florida
Professional Engineer
License No.82696

This item has been digitally signed and sealed by Olena Lytvyn on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

90% SUBMITTAL

REVISIONS AND RECORD OF ISSUE

DESIGNED:	JH
DETAILED:	LP
CHECKED:	MM
APPROVED:	OL
DATE:	SEPTEMBER 2025
PROJECT NO.:	421730

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

CIVIL

MAINTENANCE OF TRAFFIC DETAILS

M-04

16 OF 18

Approved
[illegible]-H-590-[illegible]387
William Bickard
11/20/2025

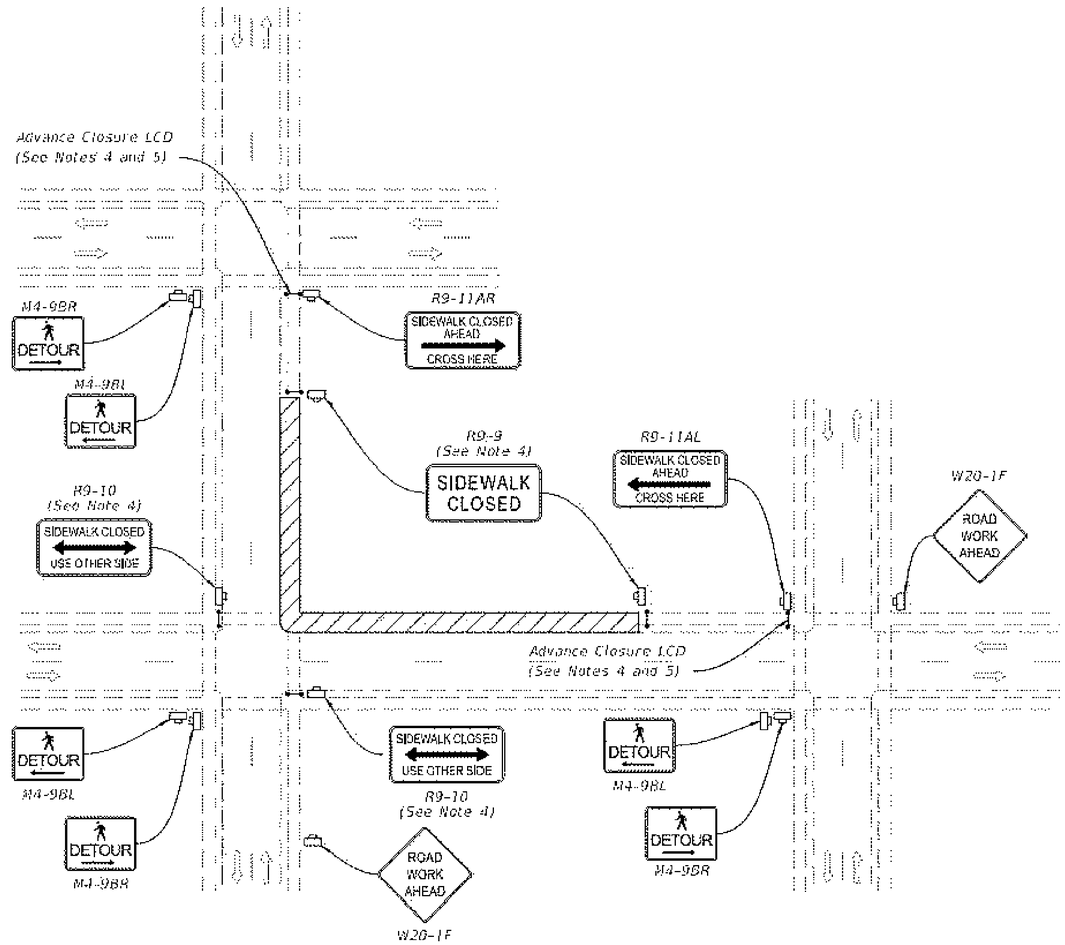
PLOTTED: 9/15/2025 10:24:03 PM
FILE: C:\PW_WORKING\BVW_AMERICAS_2\D2173985\421730-C-XX_BANANA RIVER BLVD AND ALANTIC AVE SEWER.DWG
EDITOR: D1100

NOTES:

1. Cover or deactivate pedestrian traffic signal display(s) controlling closed crosswalks.
2. Place pedestrian LCDs across the full width of the closed sidewalk.
3. For post mounted signs located near or adjacent to a sidewalk, maintain a minimum 7' clearance from the bottom of the sign panel to the surface of the sidewalk.
4. "Sidewalk Closed" signs (R9-XX) may be mounted on pedestrian LCDs in accordance with the manufacturer's instructions.
5. Omit the Advance Closure LCD if it blocks access to other pedestrian facilities (e.g., transit stops, residences, or business entrances).

SYMBOLS:

- Work Area
- Work Zone Sign
- Pedestrian Longitudinal Channelizing Device (LCD)
- Lane Identification and Direction of Traffic



PEDESTRIAN DETOUR

FDOT INDEX 102-660 - SIDEWALK CLOSURE

ISSUED FOR PERMIT

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

BLACK & VEATCH

Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Lytvyn, Olena

Olena Lytvyn, State of Florida
Professional Engineer
License No.82696

This item has been digitally signed and sealed by Olena Lytvyn on the date indicated here. Printed copies of this document are not considered signed and sealed and the signiture must be verified on any electronic copies.

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

90% SUBMITTAL

DESIGNED:	JH
DETAILED:	LP
CHECKED:	MM
APPROVED:	OL
DATE:	SEPTEMBER 2025
PROJECT NO.:	421730

REVISIONS AND RECORD OF ISSUE

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

CIVIL

MAINTENANCE OF TRAFFIC DETAILS

M-05

17 OF 18

Approved
2025-H-590-50337
William Bickford
11/20/2025

PLOTTED: 9/15/2025 10:31:06 PM
FILE: C:\PW_WORKING\BVW_AMERICAS_2\D2173885\421730-C-XX_BANANA RIVER BLVD AND ALANTIC AVE SEWER.DWG
FDT1000
D1.0.0

NOTES:

1. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Distance
   See Index 102-600 for "L", "B", "X", channelizing device spacing values.

2. Provide a 5' wide temporary pedestrian way with a maximum cross-slope of 0.02, except where space restrictions warrant a minimum width of 4'. Provide a 5' x 5' passing space for temporary pedestrian ways less than 5' in width at intervals not to exceed 200'.

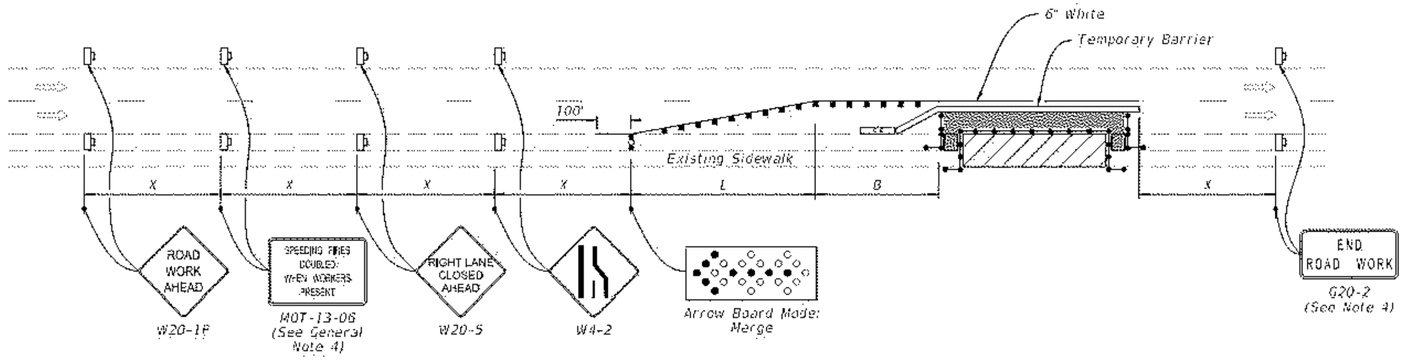
3. When temporary pedestrian ways require curb ramps, meet the requirements of Index 522-002. Detectable warnings are not required for curb ramps diverting pedestrian traffic into a closed lane.

4. The "Speeding Fines Doubled When Workers Present" signs (M0T-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign distances, may be omitted when the work operation will be in place for 24 hours or less.

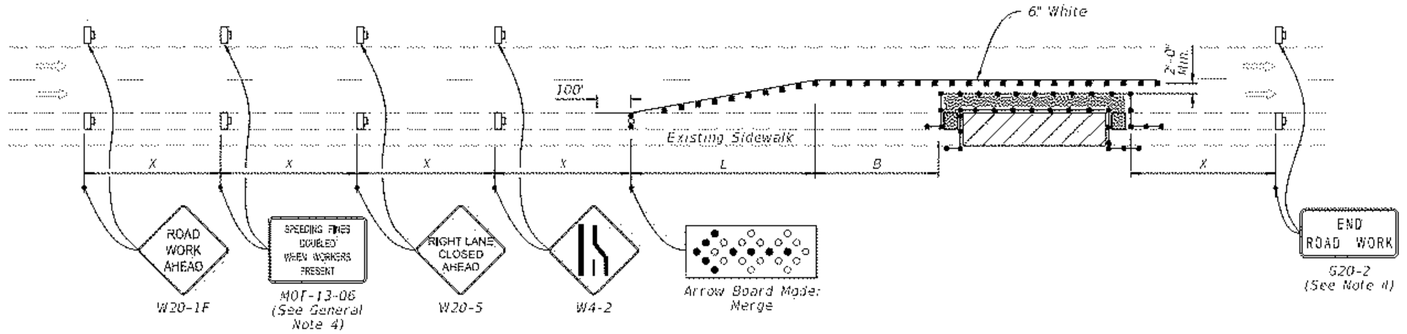
5. Pedestrian Diversion Option 2 may only be used when called for in the Plans or as approved by an Engineer.

SYMBOLS:

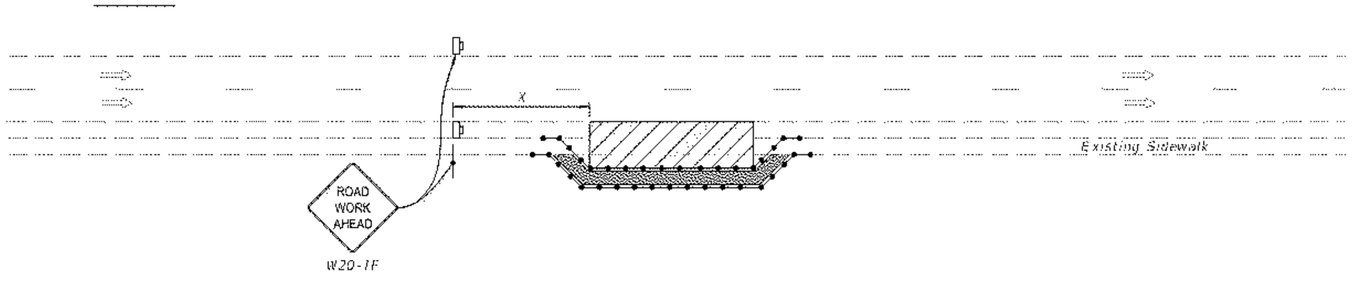
- Work Area
- Temporary Pedestrian Way
- Channelizing Device (See Index 102-600)
- Pedestrian Longitudinal Channelizing Device (LCD)
- Work Zone Sign
- Arrow Board
- Crash Cushion
- Lane Identification and Direction of Traffic



PEDESTRIAN DIVERSION - OPTION 1
(Temporary Barrier Shown, Low Profile Barrier Similar)



PEDESTRIAN DIVERSION - OPTION 2
(Work Zone Speed 35 mph or Less)



PEDESTRIAN SPECIAL DETOUR

FDOT INDEX 102-660 - SIDEWALK CLOSURE

ISSUED FOR PERMIT

(SCALE BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3 4

BLACK & VEATCH

Black & Veatch Corporation
Certificate No. 8132
201 South Orange Avenue, Suite 500
Orlando, Florida 32801

Lytvyn, Olena — Digitally signed by Lytvyn, Olena DN: E=lytvynol@bv.com, CN=Lytvyn, Olena, O=Black & Veatch Corporation, OU=Water, L=Winter Park, S=Florida, C=US Reason: I am the author of this document Location: Winter Park, S=Florida, C=US 0x0000018A8E81=4A0A2200700148D418, Date: 2025.09.18 12:29:39-04'00'

Olena Lytvyn, State of Florida
Professional Engineer
License No.82696

This item has been digitally signed and sealed by Olena Lytvyn on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

90% SUBMITTAL

REVISIONS AND RECORD OF ISSUE

DESIGNED:	JH
DETAILED:	LP
CHECKED:	MM
APPROVED:	OL
DATE:	SEPTEMBER 2025
PROJECT NO.:	421730

BANANA RIVER BLVD AND ATLANTIC AVE SEWER

CIVIL

MAINTENANCE OF TRAFFIC DETAILS

M-06

18 OF 18

Approved
2025-H-590-50387
William Stewart
11/20/2025

PLOTTED: 9/15/2025 10:31:22 PM
FILE: C:\PW_WORKINGIBVW_AMERICAS_2\D2173985\421730-C-XX_BANANA RIVER BLVD AND ALANTIC AVE SEWER.DWG
FDT1000
D1000

Utility Permit No.: 2025-H-590-00337

Project Name: Banana River Blvd and Atlantic Ave Sewer

1. Variable Message Signs will need to be installed 14 days in advance alerting vehicular drivers of the time frame for the closure of Wakulla Ln. Per FDOT Standard Specification 555 any deactivated pipes within FDOT's Right of Way must be "Placed out of service and filled with excavatable flowable fill." Submit dewatering plans if within FDOT's Right of Way.

   RE: A general note has been included on sheet M-01 specifying the signage requirement to inform drivers about the upcoming closure of Wakulla Ln with a 14-day notice (attached). It is important to note that all pipes to be placed out of service on this intersection are situated on Wakulla Ln and none are within the FDOT right-of-way.

   The contractor has not been selected yet. Once a contractor is chosen, they will be required to submit a dewatering permit for the dewatering activities taking place at that intersection.

Approved
2025-H-590-00337
William Rickard
11/20/2025

ROW PERMIT

CITY OF COCOA BEACH

2 SOUTH ORLANDO AVENUE / P O BOX 322430 COCOA BEACH, FLORIDA 32932-2430
(321) 868-3217 FAX (321) 868-3212 www.CityofCocoaBeach.com

Permit No. ROW-25-53
Address:
Issue Date: November 20, 2025
Expiration Date: May 20, 2026

Contractor Information

Additional Information

Company: Black and Veatch

Job Reference No.

Type of work: Replacement
Scope of work:

Project consist of removal of approximately 51 LF of existing 10" VCP gravity sewer, removal and replacement of approximately 51 LF of existing 12" PVC gravity sewer, installation of 25LF of 6" PVC service line, 1 core borings to existing manhole and removal and replacement of 1 new sanitary manhole. This will include but is not limited to temporary bypass pumping, construction temporary site access, MOT, utility replacement/ relocation, erosion control, dewatering and restoration.

false; ; false; true; true;
Utility Locate Sunshine 811 Reference No. #7504570

Special Notes and Comments: A permit issued shall be construed to be a license to proceed with the work and is not authority to violate, cancel, alter or set aside any of the provisions of the technical code. Every permit issued shall become invalid unless the authorized work is commenced within 180 days of issuance pursuant to Florida Building Code Section 105.4.

SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN SYSTEM, DITCH OR CANAL. ALL STORM FACILITIES THAT ARE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT AND SEDIMENT LADEN WATER CANNOT ENTER THE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE PARTICULATES.

PUBLIC RIGHTS OF WAY MUST BE PROPERLY CLEANED DAILY AND NO MATERIALS OR VEHICLES MAY BE STORED WITHIN THE RIGHT OF WAY.

OPEN PITS ARE TO BE PROTECTED FROM PUBLIC ACCESS AT ALL TIMES.

WEEKEND WORK INVOLVING ANY EXCAVATIONS IS NOT PERMITTED WITHIN THE CITY OF COCOA BEACH CITY LIMITS. OUT OF HOURS DIRECTIONAL BORES ARE NEVER PERMITTED.

DIRECTIONAL BORES SCHEDULE MUST GIVE 48 HOURS' NOTICE TO THE CITY OF COCOA BEACH BY SENDING AN EMAIL NOTIFICATION TO **ENGINEERINGINSPECTIONS@CITYOFCOCOABEACH.COM**

12" Transmission Line needs to Constructed of C900 and 6" Service Lines also needs to C900. All fittings for this need to be HARCO Fittings.

NOTICE: In addition to the requirements of this permit, there may be additional restrictions applicable to this property that may be found in the public records of this county, and there may be additional permits required from other governmental entities such as water management districts, state agencies, or federal agencies. Also, if your property is subject to deed restrictions, it is your responsibility to ensure compliance with same.

FAILURE TO COMPLY WITH THE MECHANICS LIEN LAW CAN RESULT IN THE PROPERTY OWNER PAYING TWICE FOR BUILDING IMPROVEMENTS

ROW PERMIT

CITY OF COCOA BEACH

2 SOUTH ORLANDO AVENUE / P O BOX 322430 COCOA BEACH, FLORIDA 32932-2430
(321) 868-3217 FAX (321) 868-3212 www.CityofCocoaBeach.com

Permit No. ROW-25-52
Address:
Issue Date: November 20, 2025
Expiration Date: May 20, 2026

Contractor Information

Additional Information

Company: Black and Veatch

Job Reference No.

Type of work: Replacement
Scope of work:

Project consist of removal and replacing approximately 24 LF of existing 8" VCP gravity sewer pipe with 8" PVC gravity sewer pipe, installation of approximately 9 LF of 8" PVC gravity sewer pipe and grouting and abandonment of approximately 25LF of existing 8" gravity sewer, 2 core borings to existing manhole. This will include but is not limited to temporary bypass pumping, construction temporary site access, MOT, utility replacement/ relocation, erosion control, dewatering and restoration.

true; ; true; true; true;
Utility Locate Sunshine 811 Reference No. 7504570

Special Notes and Comments: A permit issued shall be construed to be a license to proceed with the work and is not authority to violate, cancel, alter or set aside any of the provisions of the technical code. Every permit issued shall become invalid unless the authorized work is commenced within 180 days of issuance pursuant to Florida Building Code Section 105.4.

SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN SYSTEM, DITCH OR CANAL. ALL STORM FACILITIES THAT ARE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT AND SEDIMENT LADEN WATER CANNOT ENTER THE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE PARTICULATES.

PUBLIC RIGHTS OF WAY MUST BE PROPERLY CLEANED DAILY AND NO MATERIALS OR VEHICLES MAY BE STORED WITHIN THE RIGHT OF WAY.

OPEN PITS ARE TO BE PROTECTED FROM PUBLIC ACCESS AT ALL TIMES.

WEEKEND WORK INVOLVING ANY EXCAVATIONS IS NOT PERMITTED WITHIN THE CITY OF COCOA BEACH CITY LIMITS. OUT OF HOURS DIRECTIONAL BORES ARE NEVER PERMITTED.

DIRECTIONAL BORES SCHEDULE MUST GIVE 48 HOURS' NOTICE TO THE CITY OF COCOA BEACH BY SENDING AN EMAIL NOTIFICATION TO **ENGINEERINGINSPECTIONS@CITYOFCOCOABEACH.COM**

1. LDC Section 7-1.H Sediment will be prevented from entering any storm drain system, ditch or canal. All storm facilities that are made operable during construction shall be protected so that sediment and sediment laden water cannot enter the system without first being filtered or otherwise treated to remove sediment.
2. All sediment piles from excavations are to be protected using erosion and sediment Best Management Practices to include such measures e.g. silt fence for any run-off into/onto the street, curb or sidewalks to protect stormdrains from any transport of materials into the City waterways.
3. Excavated materials should be placed so as not to impede pedestrian or vehicular traffic at any time. When unavoidable alternate ADA pedestrian routes are to have appropriate signage.
4. Open pits are to be always protected from public access.
5. Weekend work involving any excavations is NOT permitted within the City of Cocoa Beach City Limits.
6. Directional Bore schedule must give 48hours notice to the City of Cocoa Beach by sending a notification EngineeringInspections@CityOfCocoaBeach.com which inform all the City Departments concerned.
7. City Inspector must be on site for all Directional Bores. Contact August Schroeder @ (321)704-3838.
8. Out of hours Directional Bores are NEVER permitted.
9. Utility locates required 48hours prior to commencement, Call (Sunshine) 811 locate service. Or 1-800-432-4770.
10. Any damages will be assigned to the contractor who will be responsible for prompt replacement prior to closing the permit.

NOTICE: In addition to the requirements of this permit, there may be additional restrictions applicable to this property that may be found in the public records of this county, and there may be additional permits required from other governmental entities such as water management districts, state agencies, or federal agencies. Also, if your property is subject to deed restrictions, it is your responsibility to ensure compliance with same.

FAILURE TO COMPLY WITH THE MECHANICS LIEN LAW CAN RESULT IN THE PROPERTY OWNER PAYING TWICE FOR BUILDING IMPROVEMENTS