



RFQ 2015-016

DESIGN/BUILD CRITERIA PACKAGE

FOR

24-INCH FORCE MAIN AND 30-INCH

WATER MAIN CANAL CROSSING

**CITY OF MARGATE
5790 MARGATE BLVD
MARGATE, FL 33063**

(954) 935-5346

CITY OF MARGATE

REQUEST FOR QUALIFICATIONS – RFQ 2015-016

- I. STATEMENT OF WORK:** To hire a qualified and competent firm to provide design/build services for the construction of a water main crossing and force main crossing over a drainage canal that runs between the Great Horizon's Park and Coral Bay residential neighborhoods, located at the southwest corner of the Cape Sable housing development, west of Florida State Road 7/U.S. 441. (Refer to Attachment "B", Figure 1 for project location).
- II. SCOPE OF WORK:**
Services for this project shall include providing engineering and design plans, subsurface survey, and other professional design necessary to replace an existing 30-inch water main crossing and an existing 24-inch force main crossing that is experiencing corrosion and restraint system failure. Replacement of approximately 120 linear feet of each existing utility pipe and fittings that cross the drainage canal must be removed. Existing isolation butterfly valves on the water main and existing isolation plug valves on the force main must also be replaced. Pipe restraints must be installed at new valve locations on existing pipes. Proposed work will also require replacement of sections of the buried 30-inch water main and sections of the buried 24-inch force main through open cut excavation and backfill. The force main transmits raw wastewater from the northeast service area of the City to the Wastewater Treatment Plant, therefore all construction sequencing and work plan accommodations to maintain service at all times are included with this project.

Refer to the following attachments for additional project information:

- **Attachment "A"** **Technical Specifications**
- **Attachment "B"** **Figure 1- Project Location Map**
- **Attachment "C"** **Figure 2- Conceptual Layout**
- **Attachment "D"** **As-Built Drawings**
- **Attachment "E"** **Report of Geotechnical Explorations**
- **Attachment "F"** **Topographic Survey**
- **Attachment "G"** **Figure 3- Hydrant and Valve Locations**
- **Attachment "H"** **Figure 4- Force Main Service Area**
- **Attachment "I"** **Figure 5A & 5B- Valve Locations**
- **Attachment "J"** **Sample Insurance Certificate**

Services for this project shall include providing engineering and design plans.

III. SUBMISSION CONTENT:

The CITY has prepared the following instructions for the compilation of the RFQ in order to minimize costs and response times and to ensure review and evaluation of all applicants in a consistent manner. For that reason, each section of the RFQ response is subject to specific page limitations, as stated in these instructions. In addition the paper size limit is 8 ½" x 11", the minimum font size is ten point (10-pt) and lines of text may not be less than single spaced.

Each RFQ response shall include the following:

Transmittal Letter – This is to be a two page document to transmit the R.F.Q. package. The letter shall provide the name, title, address and telephone number of the official corporate contact, and an alternate. These individuals shall have the authority to bind the consulting firm and shall be available to attend appropriate meetings. (two page, single sided maximum).

Corporate History – Briefly describe the corporate history of the company. Also, describe the corporate history of any joint ventures or key subconsultants proposed for any of this type of project. Firms that are short-listed may be required to submit audited financial statements to demonstrate current financial condition and stability that will become public information as provided in Chapter 119, Florida Statutes (two pages, single sided maximum).

Corporate Qualifications – Summarize relevant corporate experiences that demonstrate specific knowledge of similar projects and services completed within the last five years in Florida. Provide a short description of the qualifications of specific people assigned to this project as they relate to the type of work to be performed. This narrative is in addition to Standard Form 330, Architect-Engineer Qualifications.

Overall Design Aspects – Provide a summary of technical and design aspects of the proposed design/build project.

Project Team – Identify key personnel and their qualifications for these Services. Also describe qualifications of assigned support personnel (two pages, single sided maximum). In addition, attach one page current organization chart (not counted as part of the page limit).

Personnel Assigned and Availability – Personnel proposed for the project, including all subconsultants, must be identified and their qualifications provided. Availability of the assigned personnel must also be described, including an estimate of current workload and future commitments for each person. Such descriptions must be made both in terms of man-hours per year and as a percentage of total workload (no page limit).

Price Proposal – Shall be provided in accordance with the Submission Requirements in section IV paragraph 3.

Professional Registration – All submittals must include copies of Certificate of Registration with the Florida State Board of Professional Engineers (no page limit).

Proof of Insurance – Proof of professional liability insurance and error omission insurance, auto, workers compensation or proof that the required insurance will be provided at the time of selection. (Refer to Section V –Insurance)

Attach sample certificates of insurance or equivalent (no page limit).

IV. SUBMISSION REQUIREMENTS

1. Any firm desiring to provide professional services described above shall submit expression of interest including qualifications and experience as outlined previously.
2. The City of Margate Purchasing Division will accept sealed Qualification Proposals, until Tuesday, August 18, 2015. R.F.Q. packets will be received in the Office of the Purchasing Division, City of Margate, City Hall, Finance Department, Second Floor, 5790 Margate Blvd., Margate, FL 33063. Proposals received prior to the date and time above will be considered. Proposals received after the time will not be considered and will be returned to the firm(s) unopened.
3. One original and five (5) copies, as well as an electronic copy (flash drive or disc – do not sent via email) in one (1) sealed envelope marked “A”, and one original and two (2) copies in one (1) sealed envelope marked “B” (no electronic copy is required for envelope “B”), shall be submitted by each proposer to the City of Margate, Purchasing Division, not later than the date and time as stated above. The first sealed envelope marked (A) shall contain the Qualifications, References and Technical Proposals. The second envelope marked (B) shall contain Respondent’s signed, firm, fixed-fee performance based price proposal and rate schedules for providing all design services and supplies necessary and incidental to the delivery of a complete project whether mentioned or not mentioned in the scope of work.
4. Respondents desiring to submit a proposal should carefully review the instructions and other related sections of the Request for Qualifications. Compliance with all requirements shall be solely the responsibility of the Respondent. By submitting a proposal, the Proposer certifies that they have fully read and understood the proposal method and have full knowledge of the scope, nature, and quality of work to be performed.

5. **NO FAXED OR ELECTRONICALLY SUBMITTED PROPOSALS WILL BE ACCEPTED.** It shall be the sole responsibility of the Proposer to have their proposal delivered to the City of Margate Purchasing Division, Finance Department, Second Floor, City of Margate City Hall, 5790 Margate Boulevard, Margate, FL 33063 prior to the date and time specified.
6. Proposers may withdraw their proposals by notifying the Purchasing Division in writing at any time prior to the scheduled opening. Proposers may withdraw their proposals in person or through an authorized representative. Proposers and authorized representative must disclose their identity and provide a receipt for the proposal. Proposals, once opened, become the property of the CITY and will not be returned to the Proposers.

The CITY reserves the right to accept any or all proposals, to waive irregularities and technicalities, and/or to request resubmission. The CITY shall be the sole judge in the selection of a firm and the resulting agreement that best serves the interest of the CITY.

7. **ADDENDA, ADDITIONAL INFORMATION**

Any addenda or answers to written questions supplied to participating proposers shall become part of the Request for Qualifications packet and the resultant contract. No negotiations, decisions or actions shall be initiated by the Proposer as a result of any discussions with a CITY employee. Only those communications which are in writing from the Purchasing Division may be considered as a duly authorized expression. Also only communications from Proposers, which are signed and submitted in writing will be recognized by the CITY as duly authorized expressions on behalf of the Proposer. **Questions received less than 7 days prior to the date for submission of proposals may not be answered** It is the Proposer's responsibility to contact the Purchasing Division at (954) 935-5346 (prior to the date and time for submission) to determine if any addenda have been issued

The Offeror's Certification form shall be signed by an authorized company representative, dated and returned with the RFQ..

V. INSURANCE

The awarded Proposer shall procure and maintain at its own expense and keep in effect during the full term of the Contract a policy or policies of insurance which shall be determined by the CITY prior to contract. Additionally, any subcontractor hired by the awarded Proposer for this contract shall provide insurance coverage as well. The CITY shall be named "additional insured" under the appropriate policies. Awarded Proposer agrees to provide CITY a Certificate(s) of Insurance evidencing that all coverages, limits

and endorsements required are maintained and in full force and effect. Said Certificate(s) of Insurance shall include a minimum of thirty (30) day endeavor to notify due to cancellation or non-renewal of coverage. (Refer to Attachment "D" –Sample Insurance Certificate)

The Certificate Holder address shall read:

For CITY:

City of Margate
Purchasing Division
5790 Margate Boulevard
Margate, FL 33063
Re: RFQ 2015-016

2. The required insurance coverage shall be issued by an insurance company duly authorized and licensed to do business in the State of Florida with the following minimum qualifications in accordance with the latest edition of A.M. Best's Insurance Guide:

Financial Stability B + to A+

3. Insurance Companies selected must be acceptable to CITY. All of the policies of insurance so required to be purchased and maintained shall contain a provision or endorsement that the coverage afforded shall not be canceled, materially changed or renewal refused until at least thirty (30) calendar days written notice has been given to CITY by certified mail.

VI. WORKING PAPER RETENTION AND ACCESS TO WORKING PAPERS

All working papers and reports must be retained in accordance with requirements and procedures set forth by the General Records Schedule for Local Government Agencies as promulgated by the Division of Archives, History and Records Management (a division of the Florida Department of State) at the firm's expense, unless the firm is notified in writing by the City of Margate of the need to extend the retention period. The firm will be required to make working papers available, upon request, to the following parties or their designees:

- City of Margate,
- U.S. General Accounting Office (GAO),
- Parties designated by federal or state governments or by the CITY as part of an audit quality review process.

In addition, the firm shall respond to the reasonable inquiries of auditors and allow successor auditors to review working papers relating to matters of continuing accounting significance.

VII. TIME REQUIREMENTS

A. PROPOSAL CALENDAR, NOTIFICATION AND CONTRACT DATES

The schedule of events, relative to the procurement shall be as follows:

<u>Event</u>	<u>Date (on or by)</u>
1. Issuance of R.F.Q.	July 9, 2015
2. Receipt of R.F.Q.	August 18, 2015
3. Proposal Evaluations	September 1, 2015
4. Oral Presentations with short listed firms	September 9-10, 2015
5. Request Permission from Commission to negotiate with selected firm	September 16, 2015
6. Recommendation to Commission for Award	October 7, 2015

Be advised that the CITY is prepared to award a single contract or multiple contracts as is deemed to be in the best interest of the CITY. The CITY reserves the right to change and/or delay scheduled dates.

As the best interest of the CITY may require, the right is reserved to reject any and all proposals or waive any minor irregularity or technicality in proposals received.

The successful proposer shall be required to execute a contract with the CITY covering the scope of services to be provided and setting forth the duties, rights and responsibilities of the parties.

A. Oral Presentations

During the evaluation process, the Selection Committee may, at its discretion, request firms to make oral presentations either in person, by phone, or by Webinar. Such presentations will provide firms with an opportunity to answer any questions the Selection Committee may have on a firm's proposal. Not all firms may be asked to make such oral presentations.

B. Final Selection

The CITY will select/award the firm(s) which best meets the interests of the CITY. The CITY shall be the sole judge of its own best interests, the proposals, and the resulting negotiated agreement. The CITY's decision will be final.

VIII. SUMMARY OF PROVIDED DOCUMENTS TO BE SUBMITTED WITH PROPOSALS

Samples of the following documents, (except certificate of insurance) are attached and shall be executed as a condition to this offer:

- (a) Proposal and Offeror's Certification
- (b) Qualifications Statement
- (c) Proof of Insurance (Refer to Section III, Submission Content)
- (d) Non-Collusive Affidavit Form

IX. EVALUATION AND SELECTION OF PROPOSALS

- (a) Qualification and Selection – There shall be the qualification and selection of no fewer than three design/build firms who are deemed to be the most qualified based upon the availability and past work of the firms including the partners or members thereof as follows:

<u>CRITERIA</u>	<u>POINTS</u>
Firm's Qualifications	70
Firm's Availability and Past Work	30

- (b) Each proposal shall be evaluated or considered on the basis of price, technical and design aspects of the design/build project as follows:

<u>CRITERIA</u>	<u>POINTS</u>
Price	50
Technical and Design Aspect of the project	50

The final ranking of the firms shall be determined by the overall point total from each step of the evaluation process with the highest possible point total of 200 points. The highest ranked firm(s) shall be recommended to the City Commission for authorization to negotiate a final contract for award.

X. AWARD OF CONTRACT

The contract or contracts shall be awarded to the most qualified Proposer(s) whose proposal(s) is/are determined to be the most advantageous to the CITY and who agree to provide the required services at compensation which the CITY determines is fair, reasonable and competitive.

XI. GENERAL CONDITIONS

A. PUBLIC ENTITY CRIMES INFORMATION STATEMENT: “A person or Affiliate who has been placed on the convicted vendor list following a conviction for a Public Entity Crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplies, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017 for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.”

B. DISCRIMINATORY VENDOR LIST: An entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid on a contract to provide goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not award or perform work as a contractor, supplier, subcontractor, or consultant under contract with any public entity, and may not transact business with any public entity.

C. EXPENSES: All expenses for making the proposal to the CITY are borne by the Proposer.

D. WITHDRAWAL OF PROPOSAL: Any proposal may be withdrawn up until the date and time set forth for the opening proposals. Any proposal not withdrawn shall constitute an irrevocable offer for a period of 90 days or until one or more of the proposals have been duly accepted and a contract is awarded. No guarantee or representation is made herein as to the time between the proposal opening and subsequent award.

E. LAWS AND REGULATIONS: All applicable laws and regulations of the U.S. Government, State of Florida, Broward County and ordinances and regulations of the City of Margate will apply to any resulting agreement.

F. RESULTANT AGREEMENT: Any agreement or contract resulting from the acceptance of a proposal shall be on forms either supplied by or approved by the CITY and shall contain, as a minimum, applicable provisions of the Request for Qualifications. The CITY reserves the right to reject any agreement that does not conform to the Request for Qualifications and any CITY requirements for agreements and contracts.

G. CONFLICT OF INTEREST: For purposes of determining any possible conflict of interest, all Proposers must indicate if any CITY employee is an owner, corporate officer, or employee of their business. If such relationship(s) exist, the Proposer must file a statement with the Supervisor of Elections, pursuant to Florida Statutes 112.13.

H. COPYRIGHTS AND PATENT RIGHT: Proposer warrants that there has been no violation of copyrights or patent rights in manufacturing, producing and/or selling the item(s) ordered or shipped as a result of this proposal, and successful proposer agrees to hold the city harmless from any and all liability, loss or expense by any such violation.

I. TAXES: – The CITY is exempt from any taxes imposed by the State and Federal Governments. Exemption certificates will be provided upon request.

J. RETENTION OF RECORDS AND RIGHT TO ACCESS CLAUSE: The successful proposer shall preserve and make available all financial records, supporting documents, statistical records and any other documents pertinent to this contract for a period of five (5) years after termination of this contract; or if an audit has been initiated and audit findings have not been resolved at the end of these (5) years, the records shall be retained until resolution of audit finding.

K. ASSIGNMENT: Successful Proposer may not assign or transfer this contract in whole or part without prior written approval of the CITY.

L. TERMINATION FOR CONVENIENCE OF CITY: Upon thirty (30) calendar days written notice delivered by certified mail, return receipt requested, to the successful Proposer, the CITY may without cause and without prejudice to any other right or remedy, terminate the agreement for the CITY's convenience whenever the CITY determines that such termination is in the best interests of the CITY. Where the agreement is terminated for the convenience of the CITY the notice of termination to the successful proposer must state that the contract is being terminated for the convenience of the CITY under the termination clause and the extent of the termination. Upon receipt of such notice, the contractor shall promptly discontinue all work at the time and to the extent indicated on the notice of termination, terminate all outstanding sub-contractors and purchase orders to the extent that they relate to the terminated portion of the contract and refrain from placing further orders and subcontracts except as they may be necessary, and complete any continued portions of the work.

M. CANCELLATION FOR UNAPPROPRIATED FUNDS: The obligation of the CITY for payment to a Contractor is limited to the availability of funds appropriated in current fiscal period, and continuation of the contract into a subsequent fiscal period is subject to appropriation of funds, unless otherwise authorized by law.

N. GOVERNMENT RESTRICTIONS: In the event any governmental restrictions may be imposed which would necessitate alteration of the material quality, workmanship, or performance of the items/services offered on the proposal prior to delivery/performance, it shall be the responsibility of the Contractor to notify the CITY at once, indicating in their letter the specific regulation which required an alteration. The CITY reserves the right to accept any such alteration, including any price adjustments occasioned hereby, or to cancel the contract at no further expense to the CITY.

O. NOTICES AND COMPLIANCE BY CONTRACTOR: The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and orders of public authorities bearing on the safety of persons and property and their protection from damage, injury or loss.

P. LIABILITY FOR DAMAGE: The Contractor shall be liable for damage or loss (other than damage or loss to property insured under the property insurance provided or required by the Contract Documents to be provided by the Owner) to property at the site caused in whole or in part by the Contractor, a contractor of the Contractor or anyone directly or indirectly employed by either of them, or by anyone for whose acts they may be liable.

Q. NON-COLLUSIVE STATEMENT: By submitting this proposal, the Proposer affirms that this proposal is without previous understanding, agreement, or connection with any person, business, or corporation submitting a proposal for the same materials, supplies, service, or equipment, and that this proposal is in all respects fair, and without collusion or fraud. (Refer to "Non-Collusive Affidavit" form attached.)

R. INDEMNIFICATION: For the total amount of one (1) million dollars, Contractor agrees to indemnify, and hold harmless the CITY, its officers and employees, from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the indemnifying party and persons employed or utilized, including sub-contractors, by the indemnifying party in the performance of this construction contract. Nothing contained in the foregoing indemnification shall be construed to be a waiver of any immunity or limitation of liability the CITY may have under the doctrine of sovereign immunity or Section 768.28, Florida Statutes.

S. WAIVER OF JURY TRIAL: CITY AND CONTRACTOR HEREBY KNOWINGLY, IRREVOCABLY, VOLUNTARILY AND INTENTIONALLY WAIVE ANY RIGHT EITHER MAY HAVE TO A TRIAL BY JURY IN RESPECT TO ANY ACTION, PROCEEDING, LAWSUIT OR COUNTERCLAIM BASED UPON THE CONTRACT, ARISING OUT OF, UNDER, OR IN CONNECTION WITH THE CONSTRUCTION OF THE WORK, OR ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENTS (WHETHER VERBAL OR WRITTEN) OR THE ACTIONS OR INACTIONS OF ANY PARTY.

T. CITY PERMITS: The Contractor shall be required to obtain all necessary permits from the CITY Engineering and/or Building Departments. CITY permit fees will not be waived and should be included in your bid proposal. A CITY permit fee schedule can be obtained from the CITY's website at www.margatefl.com under the Building Department by clicking on the link provided for permit fees.

U. DISPUTES: NOT WITHSTANDING ANY OTHER PROVISIONS PROVIDED IN CONTRACT, ANY DISPUTE ARISING UNDER THIS CONTRACT WHICH IS NOT DISPOSED OF BY AGREEMENT SHALL BE DECIDED BY THE CITY MANAGER OF THE CITY OF MARGATE, FLORIDA, WHO SHALL REDUCE HIS DECISION IN WRITING AND FURNISH A COPY THEREOF TO THE CONTRACTOR. THE DECISION OF THE CITY MANAGER OF THE CITY OF MARGATE, FLORIDA AND THOSE PERSONS TO WHOM HE DELEGATES AUTHORITY TO DECIDE DISPUTES, SHALL BE FINAL AND CONCLUSIVE UNLESS DETERMINED BY A COURT OF COMPETENT JURISDICTION TO BE FRAUDULENT, CAPRICIOUS, ARBITRARILY, OR GROSSLY ERRONEOUS AS TO NECESSARILY IMPLY BAD FAITH, OR NOT SUPPORTED BY SUBSTANTIAL EVIDENCE.

V. LITIGATION VENUE: This agreement shall have been deemed to have been executed within the State of Florida. The validity, construction, and effect of this Agreement shall be governed by the laws of the State of Florida. Any claim, objection or dispute arising out of this Agreement shall be litigated only in the courts of the Seventeenth Judicial Circuit in and for Broward County, Florida.

OFFEROR'S CERTIFICATION

WHEN OFFEROR IS AN INDIVIDUAL

IN WITNESS WHEREOF, the Offeror hereto has executed this Proposal Form this _____ day of _____, 2015.

By: _____
Signature of Individual

Witness

Printed Name of Individual

Witness

Business Address

City/State/Zip

Business Phone Number

State of _____

County of _____

The foregoing instrument was acknowledged before me this _____ day of _____, 2015, by _____ (Name), who is personally known to me or who has produced _____ as identification and who did (did not) take an oath.

WITNESS my hand and official seal.

NOTARY PUBLIC

(Name of Notary Public: Print, Stamp,
or type as Commissioned)

OFFEROR'S CERTIFICATION

WHEN OFFEROR IS A SOLE PROPRIETORSHIP OR OPERATES UNDER A FICTITIOUS OR TRADE NAME

IN WITNESS WHEREOF, the Offeror hereto has executed this Proposal Form this _____ day of _____, 2015.

Printed Name of Firm

By: _____
Signature of Owner

Witness

Printed Name of Individual

Witness

Business Address

City/State/Zip

Business Phone Number

State of _____

County of _____

The foregoing instrument was acknowledged before me this _____ day of _____, 2015 by _____ (Name), who is personally known to me or who has produced _____ as identification and who did (did not) take an oath.

WITNESS my hand and official seal.

NOTARY PUBLIC

(Name of Notary Public: Print, Stamp,
or type as Commissioned)

OFFEROR'S CERTIFICATION

WHEN OFFEROR IS A PARTNERSHIP

IN WITNESS WHEREOF, the Offeror hereto has executed this Proposal Form this _____ day of _____, 2015.

Printed Name of Partnership

By: _____
Signature of General or Managing Partner

Witness

Printed Name of partner

Witness

Business Address

City/State/Zip

Business Phone Number

State of Registration

State of _____

County of _____

The foregoing instrument was acknowledged before me this _____ day of _____, 2015, by
(Name), _____ (Title) of _____
(Name of Company) who is personally known to me or who has produced
as identification and who did (did not) take an oath.

WITNESS my hand and official seal.

NOTARY PUBLIC

(Name of Notary Public: Print, Stamp,
or type as Commissioned)

OFFEROR'S CERTIFICATION

WHEN OFFEROR IS A CORPORATION

IN WITNESS WHEREOF, the Offeror hereto has executed this Proposal Form this _____ day of _____, 2015.

Printed Name of Corporation

Printed State of Incorporation

By: _____
Signature of President or other authorized officer

(CORPORATE SEAL)

Printed Name of President or other authorized officer

ATTEST:

By _____
Secretary

Address of Corporation

City/State/Zip

Business Phone Number

State of _____

County of _____

The foregoing instrument was acknowledged before me this _____ day of _____, 2012, by _____ (Name), _____ (Title) of _____ (Company Name) on behalf of the corporation, who is personally known to me or who has produced _____ as identification and who did (did not) take an oath.

WITNESS my hand and official seal.

NOTARY PUBLIC

(Name of Notary Public: Print, Stamp, or type as Commissioned)

OFFEROR'S
QUALIFICATION STATEMENT

The undersigned certifies under oath the truth and correctness of all statements and of all answers to questions made hereinafter:

SUBMITTED TO: City of Margate (Purchasing Division)

ADDRESS: 5790 Margate Boulevard
 Margate, Florida 33063

CIRCLE ONE

SUBMITTED BY:	Corporation
NAME:	Partnership
ADDRESS:	Individual
PRINCIPAL OFFICE:	Other

1. State the true, exact, correct and complete name of the partnership, corporation, trade or fictitious name under which you do business and the address of the place of business.

The correct name of the Offeror is:

The address of the principal place of business is:

2. If Offeror is a corporation, answer the following:

a. Date of Incorporation:

b. State of Incorporation:

c. President's name:

d. Vice President's name:

e. Secretary's name:

f. Treasurer's name:

g. Name and address of Resident Agent:

If Offeror is an individual or a partnership, answer the following:

- a. Date of organization:
 - b. Name, address and ownership units of all partners:
 - c. State whether general or limited partnership:
4. If Offeror is other than an individual, corporation or partnership, describe the organization and give the name and address of principals:
5. If Offeror is operating under a fictitious name, submit evidence of compliance with the Florida Fictitious Name Statute.

6. How many years has your organization been in business under its present business name?
 - a. Under what other former names has your organization operated?
7. Indicate registration, license numbers or certificate numbers for the businesses or professions which are the subject of this RFQ. Please attach certificate of competency and/or state registration.
8. Have you ever failed to complete any work awarded to you? If so, state when, where and why?

THE OFFEROR ACKNOWLEDGES AND UNDERSTANDS THAT THE INFORMATION CONTAINED IN RESPONSE TO THIS QUALIFICATIONS STATEMENT SHALL BE RELIED UPON BY OWNER IN AWARDING THE CONTRACT AND SUCH INFORMATION IS WARRANTED BY OFFEROR TO BE TRUE. THE DISCOVERY OF ANY OMISSION OR MISSTATEMENT THAT MATERIALLY AFFECTS THE OFFEROR'S QUALIFICATIONS TO PERFORM UNDER THE CONTRACT SHALL CAUSE THE OWNER TO REJECT THE PROPOSAL, AND IF AFTER THE AWARD TO CANCEL AND TERMINATE THE AWARD AND/OR CONTRACT.

(Signature)

State of _____
County of _____

The foregoing instrument was acknowledged before me this _____ day of _____, 2015, by _____, who is personally known to me or who has produced _____ as identification and who did (did not) take an oath.

WITNESS my hand and official seal.

NOTARY PUBLIC

(Name of Notary Public: Print, Stamp,
or Type as Commissioned)



NON-COLLUSIVE AFFIDAVIT FOR RFQ 2015-016

State of _____)
County of _____) ss.

_____ being first duly sworn, deposes
and says that:

He/she is the _____, (Owner, Partner, Officer,
Representative or Agent) of _____, the Offeror that has submitted the
attached Proposal;

He/she is fully informed regarding the preparation and contents of the attached
Proposal and of all pertinent circumstances regarding such Proposal;

Such Proposal is genuine and is not a collusive or sham Proposal;

Neither the said Offeror nor any of its officers, partners, owners, agents,
representatives, employees or parties in interest, including this affiant, have in any
way colluded, conspired, connived or agreed, directly or indirectly, with any other
Offeror, firm, or person to submit a collusive or sham Proposal in connection with
the Work for which the attached Proposal has been submitted; or to refrain from
bidding in connection with such Work; or have in any manner, directly or indirectly,
sought by agreement or collusion, or communication, or conference with any
Offeror, firm, or person to fix the price or prices in the attached Proposal or of any
other Offeror, or to fix any overhead, profit, or cost elements of the Proposal price or
the Proposal price of any other Offeror, or to secure through any collusion,
conspiracy, connivance, or unlawful agreement any advantage against (Recipient),
or any person interested in the proposed Work;

The price or prices quoted in the attached Proposal are fair and proper and are not
tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part
of the Offeror or any other of its agents, representatives, owners, employees or
parties in interest, including this affiant.

Signed, sealed and delivered in the presence of:

Witness

Witness

By _____

Printed Name

Title

**ACKNOWLEDGMENT
NON-COLLUSIVE AFFIDAVIT FOR**

State of Florida
County of _____

On this the _____ day of _____, 20____, before me, the undersigned Notary Public of the State of Florida, personally appeared

_____ and
(Name(s) of individual(s) who appeared before notary)

whose name(s) is/are Subscribed to within the instrument, and he/she/they acknowledge that he/she/they executed it.

WITNESS my hand
and official seal.

NOTARY PUBLIC
SEAL OF OFFICE:

NOTARY PUBLIC, STATE OF FLORIDA

(Name of Notary Public: Print,
Stamp, or Type as Commissioned)

☐ Personally known to me, or
☐ Produced identification:

(Type of Identification Produced)

☐ DID take an oath, or ☐ DID NOT take an oath

Attachment A

Technical Specifications

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1.0 Project Description

The City of Margate (CITY) proposes to construct one water main crossing and one force main crossing over a drainage canal that runs between the Great Horizon's Park and Coral Bay residential neighborhoods through a Design-Build contract approach. Attachment B includes Figure 1, project location map. The components of the proposed work are generally described as follows:

- Proposed 30-inch Water Transmission Main: This crossing involves the replacement of an existing 30-inch water transmission main canal crossing that is experiencing corrosion and failures of its restraint system. This improvement consists of replacing a section of approximately 120 linear feet of 30-inch pipe and fittings that crosses the drainage canal, within the limits of the existing utility easement. The project shall also include the replacement of the existing isolation butterfly valves located on each end of the canal crossing with new butterfly valves. Pipe restraints shall be installed on existing pipe at new valve locations. It is recognized that the proposed work will require replacement of sections of the buried 30-inch water main through open cut excavation and backfill.
- Proposed 24-inch Sewage Force Main: This crossing involves the replacement of an existing 24-inch force main canal crossing that is experiencing corrosion and failures of its restraint system. This improvement consists of replacing a section of approximately 120 linear feet of 24-inch diameter pipe and fittings that crosses the drainage canal, within the limits of the existing utility easement. The project shall also include the replacement of the existing isolation plug valves located on each end of the canal crossing with new plug valves. Pipe restraints shall be installed on existing pipe at new valve locations. It is recognized that the proposed work will require replacement of sections of the buried 24-inch force main through open cut excavation and backfill. The force main transmits raw wastewater from the northeast service area of the City to the Wastewater Treatment Plant. Included with this project are all construction sequencing and work plan accommodations to maintain service at all times.

The primary methods of pipeline installation will be above grade flanged pipe construction and open cut excavation to match existing conditions. The connections to the existing transmission and collection system on each side of the drainage canal shall be installed via open cut method. The overall length of the crossing and exact tie-in locations shall be determined as part of the scope of this Design-build project. Attachment C includes Figure 2, a conceptual layout that illustrates the project intent. Attachment D includes as-built drawings for the 30-inch water transmission main and 24-inch sewage force main canal crossing.

The Design Build Firm (DBF) will be required to retain full responsibility for design, permitting, testing and construction of all aspects of the Project. The DBF will develop a detailed project design based on the criteria set forth in the contract documents. In addition, the DBF will construct the work in accordance with the requirements set forth in this document and all applicable permits procured for the Project by the DBF.

2.0 Site Investigation

The DBF, by virtue of executing the Contract, acknowledges that it has satisfied itself to the nature and location of the work, the general and local conditions including, but not restricted to: those bearing upon transportation; disposal, handling and storage of materials; access to the site; the confirmation and conditions of the work area; and the character of equipment and facilities needed preliminary to and during the performance of the work. Failure on the part of the DBF to completely or properly evaluate the site conditions shall not be grounds for additional compensation.

2.1 Responsibility for Geotechnical Investigation

A separate geotechnical report is included in Attachment E as a reference for information purposes. The CITY will not assume responsibility for variations of sub-soil quality or conditions at locations other than places shown at the time the geotechnical investigation was performed. Additional geotechnical investigations as deemed necessary to develop a permissible design and to develop an appropriate construction plan shall be performed by the DBF at its own cost. The DBF shall implement whatever technologies it deems necessary to gain sufficient understanding of existing underground conditions. The DBF shall accept full responsibility for any interpretations, deductions or conclusions made or implied from the information obtained from the geotechnical investigation.

2.2 Topographic Survey

A topographic survey of the general pipelines corridor has been performed by Craven Thompson and Associates. A signed and sealed survey copy is included in Attachment F - Topographic Survey. An electronic AutoCAD file is available. The DBF shall perform additional site surveying as may be required to develop a functional, constructible and permissible project.

3.0 Environmental Management Plan

The DBF shall ensure all statutory environmental requirements are met. The DBF assumes full responsibility for meeting environmental regulations and conditions of all applicable permits. To this end, the DBF shall develop an Environmental Management Plan prior to commencing construction. This Environmental Management Plan shall detail, at a minimum, the DBF's work methods for handling the following items:

- Temporary environmental controls
- Dewatering
- Stormwater pollution prevention
- Emergency Response Plan
- Environmental incident reporting

The Environmental Management Plan shall incorporate the environmental regulations and conditions of all applicable permits.

3.1 Temporary Environmental Controls

The DBF shall carry out effective measures wherever and as often as necessary to prevent its operation from producing dust in amounts damaging to property, cultivated vegetation, or domestic animals, or causing a nuisance to persons living in or occupying buildings in the vicinity.

During the progress of the work, the DBF shall keep the site and other areas used by it in a neat and clean condition, and free from any accumulation of rubbish. Rubbish and waste materials shall be collected and disposed of off site daily in accordance with the local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable safety laws, and to the particular requirements of Part 1926 of the OSHA Standards for Construction.

Fixed or portable chemical toilets shall be provided wherever needed for the use of DBF employees.

All chemicals used during project construction or furnished for project operation shall show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture. The handling, storage, use and disposal of all such chemicals and disposal of residues shall be in strict accordance with all applicable rules and regulations of Federal, State and local jurisdictional agencies and the printed instructions of the manufacturer and all regulatory requirements.

Noise resulting from the DBF's work shall not exceed the noise levels and other requirements stated in the City of Margate Noise Ordinance. The DBF shall be responsible for curtailing noise resulting from its operation.

The DBF shall be required to maintain full responsibility for addressing all regulatory and/or residential complaints associated with its work effort.

3.2 Dewatering

The DBF shall submit as part of the Environmental Management Plan its proposed methods of handling trench water and the locations at which the water will be disposed. Excavations shall be free from water prior to the installation of pipe or structures. The DBF shall provide pumps and other appurtenant equipment necessary to remove and maintain water at such a level as to permit construction in a dry condition. The DBF shall continue dewatering operations until backfilling has progressed to a sufficient depth over the pipe or structure to prevent flotation or movement of the pipe or structure in the trench or so that it is above the water table.

Water from trenches and excavation operations shall be disposed of in such a manner as will not cause injury to public health, to public or private property, to the work completed or in progress, to the surface of the streets, cause any interference with the use of the same by the public, or cause pollution of any waterway or stream. Disposal to any surface water body will require silt screens to prevent any degradation in the water body. The DBF shall have full responsibility for acquiring all necessary permits for disposal.

3.3 Stormwater Pollution Prevention

The DBF shall maintain full responsibility for meeting environmental regulations and conditions of all applicable permits with regard to stormwater pollution prevention.

3.4 Emergency Response Plan

The CITY has identified the crossings as critical pieces of infrastructure. The DBF shall submit as part of the Environmental Management Plan an Emergency Response Plan (ERP) that addresses the proposed immediate actions that will be implemented by the DBF to effectively manage the response and remediation of a wastewater spill and minimize impacts to the ground, groundwater, surface waters, as well as the neighborhood, in the event that a spill occurs. The DBF shall maintain full responsibility for the minimization of adverse effects on human health and welfare, preservation of water quality and protection of environmentally sensitive areas. The ERP shall at a minimum address the following for the wastewater force main crossing:

- Flow reduction, including the management of upstream wastewater pump stations with possible bypassing of flow
- Spill containment
- Recovery
- Cleanup

3.5 Environmental Incident Reporting

In the event of any environmental incident, the DBF shall respond in an expeditious manner and notify the proper authorities. The appropriate environmental regulatory agency shall also be notified in accordance with the applicable requirements.

4.0 Compliance with Codes and Technical Requirements

All work specified in this document shall conform to or exceed the requirements of all applicable codes and specified technical requirements. The DBF shall construct the work specified in accordance with the requirements of this document and the referenced portions of those codes, standards and technical requirements listed herein. In case of conflict between codes, reference standards and technical requirements, the most stringent requirements shall govern. All conflicts shall be brought to the attention of the CITY and approved by the CITY prior to ordering or providing any materials or labor.

All references made to published specifications, codes, standards or other requirements shall mean the latest specifications, standards, or requirements of the respective issuing agencies which have been published as of the date of the opening of the bids. In case of conflict between codes, reference standards, or other applicable documents, the most stringent requirements shall govern.

5.0 Utility Location

The DBF shall determine the exact locations and depths of all utilities that may interfere with the work. Utility location shall be performed in a manner sufficient to determine the alignment and grade of any potential conflicts. It is the responsibility of the DBF to make utility investigations in order to fully

inform themselves of the character, condition and extent of all such utilities as may be encountered and as may affect the design and the construction operations. The DBF shall make all appropriate contacts and negotiations as required with local utility companies that may be affected by the proposed work. All existing utilities in the vicinity of the proposed pipeline corridor routing shall be shown on the design drawings developed by the DBF.

The DBF shall perform utility verifications and shall excavate to verify tie-in points for connections to existing systems. All connections shall be performed in such a manner that no damage and minimal interruption is caused to the existing facilities. Before commencing work involving the removal or placement in operation of existing or new facilities or tie-ins to existing facilities, the DBF shall notify the CITY in writing at least seven days in advance. Connections to existing services or utilities, shutdowns and startups shall be planned in detail with appropriate scheduling of work and coordination with the CITY.

6.0 Permit Requirements

It shall be the DBF's responsibility to secure all permits required to initiate and complete the work under this contract. The DBF shall adhere to all requirements of the applicable permits before, during and after construction. Two copies of all permit applications, including supporting documentation, shall be provided to the CITY. Three copies of approved permits, issued by the approving agency, shall be provided to the CITY. These permits include, but may not be limited to the following:

- City of Margate
- Florida Department of Environmental Protection (FDEP)
- Broward County Environmental Protection and Growth Management Department (BCEPGMD)
- Broward County Health Department (BCHD)

The DBF shall have responsibility for acquiring and adhering to the requirements of any other permit required to complete the work for this project.

7.0 Submittal Requirements

All submittals shall be directed to the CITY. A general summary of the types of submittals and the number of copies required is as follows:

<u>No. of Copies to CITY</u>	<u>Type of Submittal</u>
2	Geotechnical Report (if performed)
2	Underground Utility Survey
2	Site Survey (if required)
5	60% Design Submittal
5	90% Design Submittal
2	All Permit Application Packages, including BCEPGMD and BCHD
3	All Approved Permits from Applicable Regulatory Agencies
3	Environmental Management Plan
3	Work Plan (Refer to Section 8.3)
3	Initial Schedule and Progress Schedules
3	Schedule of Values
3	Progress Payment Requests
1	Shop Drawings – Approved by Contractor and Engineer of Record for DBF (Hard Copy)
1	Shop Drawings – Approved by Contractor and Engineer of Record for DBF (Electronic Copy on Flash Drive or Disk)
1	Daily Construction Inspection Reports
2	Certificates of Compliance
2	Warranties
2	Preconstruction Video Tapes
3	Maintenance of Traffic (MOT) Plans
3	All Hydrostatic Test Results
3	All Disinfection and Bacteriological Test Results
1	Record Drawings – originals on disk in AutoCAD format
5	Record Drawings – signed and sealed prints
2	Approvals from Regulatory Agencies to Place Facilities Into Service
1	Original releases from all parties entitled to claims against project
1	Consent of Surety to Final Payment

The DBF shall submit a design package to the CITY for review and comments at the 60% and 90% design completion stage. The design package shall include the following:

- Geotechnical Results
- Design Drawings on 11-inch by 17-inch Paper
- Design Calculations
- Permitting (if available)

The DBF shall allow for a two (2) week comment period on all submittals. The DBF shall incorporate all comments on the 90% Design Submittal in the Permit Submittal. The approved BCEPGMD and BCHD permit drawings shall be the 100% design drawings used for construction.

All drawings submitted to the CITY shall be developed electronically in AutoCAD format 2012 edition or later. The DBF shall be required to prepare all contract drawings to a requisite scale of 1-inch equals 20 feet on the horizontal and 1-inch equals 4 feet on the vertical. Drawings shall include both plan and profiles of the proposed pipeline routing. Design documentation shall include such things as technical specifications, technical data sheets and vendor supplied drawings.

Within seven days after the award of the Contract, the DBF shall prepare and submit copies of its proposed schedule to the CITY for review and comments. The schedule shall be updated monthly and submitted with the application for monthly progress payments. The schedule shall be prepared in the form of a horizontal bar chart showing in detail the proposed sequence of the work and identifying construction activities for each pipeline crossing. The schedule shall be time scaled, identifying the first day of each week, with the estimated date of starting and completion of each stage of the work in order to complete the project within the Contract time.

The DBF shall submit a Schedule of Values for review within two weeks after receiving the Notice to Proceed. The schedule shall contain the major design milestones as well as the installed value of the component parts of work for the purpose of making progress payments during the design and construction period. Progress payment requests shall be made in accordance with CITY standards.

Copies of all shop drawings, approved by the Engineer of Record for the DBF, shall be submitted to the CITY.

The DBF shall submit daily construction inspection reports to the CITY from the date that the DBF commences mobilization on site to the date that the DBF achieves substantial completion for the project. Reports shall be submitted weekly, on Mondays immediately following the end of the previous week.

Where warranties are called for, a sample of the warranty shall be submitted with the approved shop drawings. The sample warranty shall be the same form that will be used for the actual warranty. Actual warranties shall be originals and notarized.

Copies of certificates of compliance and test reports shall be submitted for requested items prior to request for payment.

Prior to commencing work, the DBF shall have a continuous color audio-video recording taken along the entire length of the project to serve as a record of preconstruction conditions. Recordings shall not be made more than ninety (90) days prior to construction in any area. Audio-video recordings shall be digital and compatible for playback with a standard DVD player. Each DVD shall begin with current date, project name, and municipality and be followed by general location information such as the name of street, the viewing side, and the direction of progress. All video recordings must display continuously and simultaneously, generated with actual taping, transparent digital information to include the date and time of recording.

The DBF shall submit record drawing information to the CITY for review prior to the preparation of final record drawings. This preliminary submittal shall be submitted to the CITY within thirty (30) calendar days of the date of substantial completion. Upon receipt of review comments from the CITY, the DBF shall commence preparation of final Record Drawings.

The DBF shall, within thirty (30) calendar days of the receipt of review comments from the CITY, prepare Record Drawings showing those changes made during the construction process. Record Drawings shall be plotted on 22-inch by 34-inch paper.

8.0 General Requirements

8.1 Summary of Work

The work to be performed under this Contract shall consist of furnishing all tools, equipment, materials, supplies, and manufactured articles, for furnishing all transportation and services, including fuel, power, water, and essential communications, and for the performance of all labor, 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 shown or called for in the RFQ Documents which may be necessary for the complete and proper construction of the work, in good faith shall be performed, furnished and installed by the DBF as though originally so specified at no increase in cost to the CITY.

The work comprises the complete replacement of a canal crossing section of the Rock Island Road Water Main and Force Main pipelines, including one (1) above ground 30-inch diameter ductile iron water main and one (1) above ground 24-inch diameter ductile iron force main installed in the City of Margate. The work set forth within this document includes the furnishing of all labor, materials, equipment, services and incidentals for installing the water main and force main as described herein, including isolation valves and all other appurtenances and support structures. Maintenance of existing operations is mandated throughout the construction period. All materials and workmanship supplied for this project shall be new and of first class quality.

The project is located in Broward County, in the City of Margate, across the drainage canal that runs north and south between the Great Horizon's Park and Coral Bay residential neighborhoods. The canal to the north of the crossing is owned and maintained by Broward County and the canal to the south of the crossing is privately maintained.

During construction, the DBF is expected to work regular hours from 7:00 A.M. to 6:00 P.M. Monday through Saturdays. After hours work requests and work on Sundays, must be approved by the City Manager. Requests to work during other than regular hours must be submitted to the CITY at least 72 hours in advance of the period proposed for such overtime work and shall set forth the proposed schedule for overtime work to give the CITY ample time to arrange for its personnel to be at the site of the work. Hours of work shall conform to the requirements of the CITY's Noise Ordinance.

Prior to the commencement of work at the site, a preconstruction conference will be held at a mutually agreed time and place which shall be attended by the DBF, its superintendent, its subcontractors as well as representatives of the CITY, governmental representatives as appropriate, and others requested by the DBF or CITY. Prior to the preconstruction conference, the DBF shall have submitted a progress schedule.

The CITY will schedule and hold biweekly progress meetings during construction. The CITY, DBF and all subcontractors active on the site shall be represented at each meeting.

The City will schedule a meeting with DBF to review the 60%, and 90% Design Submittals.

8.2 Temporary Utilities

The DBF shall be responsible for determining and providing the equipment and temporary utilities that are adequate for the performance of the work within the time specified. All items shall conform to the applicable requirements of OSHA Standards for Construction. These items may include, but are not limited to power, lighting, and water supply.

The DBF shall make arrangements for and pay all costs for all water used for construction and testing. The DBF shall provide and maintain all meters, piping, fittings, adapters and valving required.

To obtain potable water, the DBF shall install a CITY supplied meter and backflow preventer. The CITY supplied meter will be a hydrant meter. The CITY will charge the DBF for potable water. The DBF shall make all necessary connections to existing piping and shall provide all necessary appurtenances at his own expense. Attachment G includes Figure 3, a layout of the fire hydrants and valves in the vicinity of the project area.

The DBF shall not make connection to, or draw water from, any fire hydrant or pipeline without first obtaining permission of the authority having jurisdiction over the use of said fire hydrant or pipeline and from the agency owning the affected water system. For each such connection made, the DBF shall first attach to the fire hydrant or pipeline a valve and a meter, if required by the said authority, of a size and type acceptable to said authority and agency.

8.3 Maintenance of Facilities and Sequence of Construction

All connections to existing systems shall be performed in such a manner that no damage and minimal interruption is caused to the existing facilities. Required shutdowns to the utility systems shall be identified in writing during design. The DBF shall give the CITY seven days notice in writing before commencing work involving removing or placing in operation existing or new facilities or tie-ins to existing facilities for all work planned for this Project. Connections to existing services or utilities, shutdowns and startups shall be planned in detail with appropriate scheduling of work and coordination with the CITY. The DBF shall obtain written approval from the appropriate permitting agencies and the CITY prior to placing the water main and the force main into service.

The proposed force main is part of an existing wastewater collection/transmission system that will be maintained in continuous operation by the CITY during the entire design and construction period of this contract. The average flow, excluding infiltration and inflow, estimated through the force main crossing is approximately 550,000 gallons per day. The DBF shall closely coordinate and communicate all work associated with installation and tie-in of the proposed force main with the CITY. The DBF shall address the following sequencing and work plan accommodations associated with the force main replacement described herein:

- The DBF is informed that there is no other force main in the CITY for conveying wastewater from ten existing upstream lift stations located in the northeast service area (LS 25, 35, 38, 39, 42, 44, 45, 55, PLS 1 (Daycare PLS) and PLS 2 (Coral Gate PLS) across the drainage canal to the

Wastewater Treatment Plant. Attachment H includes Figure 4, a layout of the force main service area. Attachment I includes Figures 5, depicting the location of existing valves in the vicinity of the project area.

- The DBF shall provide a means to transmit wastewater flow across the drainage canal for the duration of this project. The DBF shall be informed that the transmission system can only be shut down between the hours of 12 midnight to 6 AM, Mondays through Fridays. The DBF is limited to two (2) shut downs during the construction of this Project.
- The DBF shall promptly inform the CITY of any possibility that the work will extend over the allowable six-hour period.
- The DBF is informed that the CITY will be responsible for the disposal of sewage from the upstream lift stations during the allowable six-hour period. However, the DBF shall be responsible for the disposal of sewage from upstream lift stations if work extends beyond the allowable six-hour period.
- The DBF shall note that wastewater dewatering of the existing force main is required. The DBF shall be responsible for the proper containment and disposal of wastewater, chemical, etc. drained from the existing force main during this Project, in accordance with all applicable codes.
- The DBF shall receive the appropriate regulatory agency clearance prior to placing force main into service.

The proposed water main is part of an existing potable water system that will be maintained in continuous operation by the CITY during the entire design and construction period of this contract. Work shall be scheduled and coordinated by the DBF with the CITY so that interruption of distribution systems for this potable water system is minimal. The DBF shall address the following sequencing and work plan accommodations associated with the water main replacement described herein.

- To facilitate the replacement of the isolation valves, the City will shut down the existing water distribution system. The DBF shall be informed that the distribution system can only be shut down between the hours of 12 midnight to 6 AM, Mondays through Fridays. The DBF is limited to two (2) shut downs for installation of isolation valves.
- The DBF shall maintain an air gap (physical separation) between the existing system and the ends of the new pipe for the duration of the construction period.
- The DBF shall provide temporary valves and other appurtenances as required to properly flush, pressure test, disinfect and perform bacteriological sampling of the new water main.
- The DBF shall obtain Health Department clearance and certification prior to connecting new water main to existing pipeline system.

The DBF shall submit for approval a detailed, written Work Plan for the force main and water main replacement, a minimum of three weeks prior to commencing the work. The Work Plan shall include detailed sequencing for performing the force main replacement and the water main replacement, the anticipated duration of each replacement, a detailed plan for tie-ins and shut downs, and procedures for managing upstream lift stations if work extends beyond the allowable six-hour period. Costs for managing upstream lift stations, if work extends beyond the allowable six-hour period, shall be borne by the DBF.

8.4 Protection of Existing Facilities

The DBF shall protect all existing utilities and improvements not required for removal and shall restore damaged or temporarily relocated utilities and improvements to equal or better conditions than they were prior to such damage or temporary relocation. DBF is informed that any existing structures damaged as a result of driving of sheet piles, shoring, and installation of temporary restraints during construction of this Project shall be replaced at no additional cost to the CITY.

The DBF shall determine the exact locations and depths of all utilities that may interfere with the work. Utility location shall be performed in a manner sufficient to determine the alignment and grade of any potential conflicts. It is the responsibility of the DBF to make utility investigations in order to fully inform themselves of the character, condition and extent of all such utilities as may be encountered and as may affect the design and the construction operations at no additional cost to the CITY. The DBF shall make all appropriate contact and negotiations as required with local utility companies that may be affected by the proposed work.

8.5 Site Access and Storage

Nothing herein shall be construed to entitle the DBF to the exclusive use of any public street, parking area or easement during the performance of the work. The DBF shall conduct its operations so as not to interfere unnecessarily with the authorized work of utility companies or other agencies in such streets, parking areas or easements. No street shall be closed to the public without first obtaining permission from the CITY and proper governmental authority. Fire hydrants on or adjacent to the work shall be kept accessible to firefighting equipment at all times. Temporary provisions shall be made by the DBF to assure the use of sidewalks and the proper functioning of all gutters, sewer inlets, and other drainage facilities.

The DBF shall obtain permission from the CITY and relevant authority prior to using any right of way or easement for storage or operation of any construction equipment.

If closure of any street is required during construction, a formal application for a street closure shall be made to the authority having jurisdiction at least thirty (30) days prior to the required street closure in order to determine necessary sign and detour requirements.

Responsibility for protection and safekeeping of equipment and materials at or near the project area will be solely that of the DBF and no claim shall be made against the CITY by reasons of any act of an employee or trespasser.

The CITY maintains a 20 feet x 110 feet perimeter chain link fence with two gates located at each end around the existing above ground canal crossings. Additionally, a perimeter chain link fence and main access gate is maintained between the Coral Harbor and Colonial Park communities. The DBF shall be responsible for coordinating with CITY to gain access to the project site via the main access gate. The DBF shall be responsible for monitoring the main gate for its personnel, equipment and material deliveries.

The DBF shall notify the fire and police departments prior to closing any street or portion thereof, and again when streets are passable for emergency vehicles. Emergency vehicle access to consecutive arterial crossings or dead-end streets in excess of 300 feet shall not be blocked without special written permission from the fire department.

8.6 Traffic Control, Regulations and Maintenance of Traffic

The DBF shall obey all traffic laws and comply with all the requirements, rules and regulations of, the Broward County Traffic Engineering Division (BCTED), City of Margate and other local authorities having jurisdiction, to maintain adequate warning signs, lights, barriers, etc. for the protection of traffic on public roadways.

The DBF shall maintain and protect access, for vehicular and pedestrian traffic, to and from all properties and business establishments adjoining or adjacent to those streets affected by his operations. The DBF shall note that all streets in the immediate vicinity of the project site are privately owned. Vehicle parking or storage of materials shall not be allowed on any private street unless the DBF obtains prior written approval from the property owner and / or Homeowners Association.

Upon submittal of the 90% Design plans, the DBF shall immediately prepare and submit Maintenance of Traffic (MOT) Plans to the CITY and BCTED if required for approval. The MOT Plans shall comply with the requirements of BCTED and any other regulatory agency that may have jurisdiction within the project area.

8.7 Equipment and Materials

All equipment, materials, instruments or devices incorporated in this project shall be new and unused. All handling, maintenance and storage of these items shall be in accordance with the manufacturer's recommendations.

8.8 Project Closeout

The DBF shall promptly remove from the vicinity of the completed work, all rubbish, unused materials, concrete forms, construction equipment, temporary structures and facilities, construction signs, tools, scaffolding, materials, supplies and equipment which may have been used in the performance of the Work.

Before final acceptance of the project, the DBF shall submit to the CITY the following items:

- Written test results of project components;
- Certificates of inspection and acceptance by governing agencies having jurisdiction;
- Releases from all parties who are entitled to claims against the subject project; and
- Consent of Surety to Final Payment.

Final inspection of the work will be done by the CITY and the Engineer of Record for the DBF upon notification from the DBF. Any work not found acceptable will be noted on a "Punch List". Punch List work must be completed by the DBF to the satisfaction of the CITY prior to processing the final payment.

The DBF shall restore damaged areas or temporarily relocated utilities and improvements to a condition equal to or better than prior to such damage or temporary relocation.

The DBF shall comply with all maintenance and guarantee requirements.

9.0 Piping

The proposed pipelines shall have working pressure rating of at least 150 psi and are anticipated to be installed through a combination of the following methods:

- Above grade flanged pipe construction
- Open cut excavation and backfill

The primary method of installation over the canal and within the limits of the utility easement shall be above grade flanged pipe construction. Pipelines to be installed from the terminal points of the proposed above ground pipes to connection with the existing buried piping will be constructed by open cut excavation and backfill. All piping shall be ductile iron pipe (DIP). Structural supports shall be provided for all joints in pipes utilized for canal crossings and shall be designed to prevent overturning and settlement. Automatic air release valves shall be installed at the high point of the crossing.

9.1 Ductile Iron Pipe

All ductile iron pipe shall be cast in accordance with the requirements of ANSI A21.51 (AWWA C151) and have wall thickness that conforms to ANSI/AWWA Standard C150/A21.50. All joints and fittings shall be restrained. All fittings with mechanical joints, flange joints and push-on joints shall conform to ANSI/AWWA Standard C110/A21.10. In addition, all pipe and fittings with rubber-gasketed mechanical joints and push-on joints shall conform to ANSI/AWWA Standard C111/A21.11. Restrained push-on joints and fittings shall be TR-FLEX as manufactured by U.S. Pipe and Foundry or Flex-Ring by the American Ductile Iron Pipe Company or equal. Mechanical joint restraining via Megalugs as manufactured by EBAA Iron, Inc. or approved equal shall only be allowed for field cuts. All force main pipe joint gasket material shall be neoprene rubber and all water main pipe joint gasket material shall be SBR Rubber. All above grade pipe and fittings shall be flanged and shall conform to ANSI A21.15/AWWA Standard C115. All below grade pipe and fittings shall be restrained.

30-Inch Nominal Diameter Water Main: Wall thickness for all above grade threaded pipe and fittings shall be equal to or greater than special thickness Class 53. All buried pipe shall be Pressure Class 300. Fittings shall be pressure rated at a minimum 250 psi. The interior surface of all ductile iron pipe and fittings for use on water mains shall be cement mortar lined and seal coated in conformance with ANSI/AWWA Standard C104/A21.4. The exterior coating of buried piping and fittings shall be an asphaltic coating in conformance with ANSI/AWWA C151/A21.51. The exterior surface of above ground piping and fittings shall be painted with a suitable rust inhibitive primer compatible with a suitable epoxy coating to minimize corrosion.

24-Inch Nominal Diameter Force Main: Wall thickness for all above grade threaded pipe and fittings shall be equal to or greater than special thickness Class 53. All buried pipe shall be Pressure Class 350. Fittings shall be pressure rated at a minimum 350 psi. The interior surface of all ductile iron pipe and fittings for use on sewage force mains shall be Protecto 401 epoxy lined. The exterior coating of buried

piping and fittings shall be an asphaltic coating in conformance with ANSI/AWWA C151/A21.51. The exterior surface of above ground piping and fittings shall be painted with a suitable rust inhibitive primer compatible with a suitable epoxy coating to minimize corrosion.

9.2 Hydrostatic Testing and Disinfection

All pipelines shall be hydrostatically tested. Prior to testing, the pipelines shall be flushed or blown out as appropriate.

The hydrostatic test shall consist of holding the test pressure on the pipeline for a period of two hours at a pressure of 150 psi. All test procedures shall be in accordance with the requirements of the Broward County Health Department (BCHD) as well as all applicable requirements of ANSI/AWWA C600. The maximum allowable leakage for distribution and transmission pipelines shall be in accordance with the requirements of the BCHD. Pipes with welded joints shall have no leakage.

Before being placed into service, all new water mains and repaired portions of, or extension of existing mains shall be disinfected. Disinfection shall be done in accordance with the requirements of ANSI/AWWA C651. Bacteriological testing shall be performed in accordance with the requirements of the BCHD and any other applicable regulatory agency as well as all applicable requirements of AWWA C601. The Contractor shall be responsible for obtaining the necessary certifications from the BCHD prior to placing the pipeline into service.

Where connections are to be made to an existing potable water system, the interior surfaces of all pipe and fittings used in making the connections shall be swabbed or sprayed with a one percent hypochlorite solution before they are installed. Thorough flushing shall be started as soon as the connection is completed and shall be continued until discolored water is eliminated. It is noted that connection to the existing potable water system cannot be made until clearance from the Health Department is obtained

All water required for hydrostatic testing shall be supplied to the DBF by the CITY at the cost of the DBF.

10.0 Open Cut Excavation and Backfill

The DBF shall excavate, grade and backfill as required for site underground piping systems. All excavations shall meet applicable OSHA, local and Federal Code requirements. Trench excavation, where required, shall be done in accordance with the requirements of Florida Statute Section 553.60 et. seq. cited as the "Trench Safety Act". The DBF shall furnish, place and maintain sheeting and bracing to support sides of the excavation as necessary to provide safe working conditions in accordance with OSHA requirements.

Clean, sandy excavated materials free from organics, clay and construction debris can be used as pipe bedding when construction is in a dry condition and when the bedding is not sided by muck. Pipe bedding shall be able to pass through a 3/4-inch sieve. Bedding for wet installations shall be pea rock conforming to the requirements of ASTM C 33, Size Number 8. Bedding for all precast concrete items shall be crushed stone, conforming to the requirements of ASTM C 33, Size Number 57.

All excavations shall be free from water before pipe or structures are installed. The DBF shall use dewatering systems as necessary to permit construction in a dry condition. The DBF shall have responsibility for acquiring all necessary permits for disposal.

Compaction of backfill shall be 98 percent of the maximum density where the trench is located under structures or paved areas, and 95 percent of the maximum density elsewhere. More thorough compaction may be required when work is performed in other regulatory agencies' jurisdictions, such as the FDOT. Maximum density of material in trenches shall be determined by ASTM D 1557. Field density of the backfill material in place shall be determined by ASTM D 1556 or D 2922. The DBF shall be responsible for obtaining all density tests that may be required for the work.

11.0 Canal Crossings

All crossings over the drainage canal shall be designed and constructed in accordance with the requirements of the CITY, and any other applicable regulatory agency. If a conflict exists between the requirements specified here and the requirements of the CITY, the most stringent requirements shall apply.

11.1 Piles

It is the responsibility of the DBF to perform investigations to fully inform themselves of the character, condition and extent of all existing piles. Based on visual inspection of the exposed portions of the existing structure, it is assumed that the existing piles and a portion of the existing pile caps will be reused. Exposed concrete shall be painted in accordance with the requirements of this Document.

11.2 Pipe Supports

All piping shall be adequately supported, restrained, and anchored to prevent undue deflection, vibration, dislocation due to seismic events and line pressures, and stresses on piping and structures. All supports and parts thereof shall conform to the requirements of ANSI/ASME B31.1 – Power Piping. All pipe support assemblies, including framing, hardware, and anchors, shall be Type 316 Stainless steel construction. All materials used shall be compatible with piping, hardware, and any other item that it may contact. Supports shall be spaced to prevent excessive sag, bending and shear stresses in the piping. Support spacing shall be designed by the Engineer of Record for the DBF and meet the requirements of this section. Pipe supports shall be painted in accordance with the requirements of this Document.

12.0 Valves

12.1 Tapping Valves and Sleeves

Tapping valves shall be resilient wedge type meeting ANSI/AWWA C509 and shall be connected by a machined projection on the outlet flanges of the tapping sleeves. The outlet ends shall conform in mechanical joint connections, except that the outside of the valves shall be larger than normal size to permit full diameter cuts.

Tapping valves shall comply in all other respects to the gate valve requirement of these specifications. All tapping valves must have a cast-in-alignment ring. VALVES, TAPPING: - Resilient seat only, Manufacturers: Mueller, American Darling, AVK Series 45, or City approved equal.

All tapping sleeves shall have duck-tipped end gaskets, flanged outlet with American one hundred, twenty-five pounds (125 lbs.) standard template, mechanical joints in the main line, factory tested for 400 psi and with working pressure of two hundred (200) PSI, They shall be Ford Style FS1-SS, JCM Model 432 (4"-12"), Mueller, American Darling or A Series or City approved equal. Stainless steel full clamp style may be considered on a case by case basis per City approval.

USE OF TAPPING CROSSES IS PROHIBITED.

12.2 Plug Valves

Isolation valves for the sewer force mains shall be eccentric plug valves conforming to the requirements of the latest revision of AWWA C517 - Resilient-Seated Cast-Iron Eccentric Plug Valves. The existing isolation valves at the connection points to the existing transmission system shall be removed and replaced. Eccentric plug valves shall be of the non-lubricated eccentric type with cast iron body, resilient faced plug, or a replaceable, resilient seat in the body. Resilient facing shall be suitable for the intended service. All valves above grade or in valve vaults shall have handwheels and shall have worm gear operators and ANSI B16.1, Class 125 flanges. Buried valves shall have mechanical joint ends conforming to ANSI 21.11. All shaft bearings shall be of stainless steel, Teflon, or other suitable material furnished with permanently lubricated bearing surfaces. All valves shall be ¼ turn and have an unobstructed port area of not less than 100 percent of full pipe area. All eccentric plug valves shall have a pressure rating of not less than 150 psig, for bubble tight shut off. Plug valves shall be as manufactured by DeZurik Corporation, Val-Matic or equal.

12.3 Butterfly Valves

Isolation valves for water mains shall be butterfly valves conforming to the requirements of the latest revision of AWWA C504 – Butterfly Valves for Water Systems. The valves shall be suitable for a design working water pressure of 200 psig. Valves shall be lined with two-part epoxy in accordance with AWWA C-550. Coating shall be suitable for potable water service. The existing isolation valves at the connection points of the existing distribution system shall be removed and replaced. All butterfly valves shall be provided with valve boxes, complete with concrete pad and identifying brass disk in accordance with the requirements of the CITY. Butterfly valves shall be as manufactured by DeZurik Corporation, Mueller Company or equal.

12.4 Air Release Valves

Automatic air release valves conforming to the requirements of AWWA C512 shall be installed where required to vent accumulating air while the system is in service and under pressure. Air release valves shall be provided at the high points of each pipeline crossing. The design of the valves shall be appropriate for the type of service (water or wastewater). Hardware and nipples shall be Type 316 Stainless Steel. Automatic air release valves shall be as manufactured by APCO (Valve and Primer Corporation), Val-Matic (Valve and Manufacturing Corporation) or equal.

12.5 Valve Boxes and Cover/Lids

Valve boxes and covers for all size valves shall be of cast iron construction and adjustable screw-on type. The lid shall have cast in the metal the word "WATER" for the water line and "SEWER" for the wastewater line. All valve boxes shall be six-inch (6") nominal diameter and shall be suitable for depths of the particular valve. The distance from the top of the valve nut to the finished grade shall be within twelve inches (12") unless otherwise approved by the CITY. An Operator extension shaft shall be provided as required. Cast iron valve box shall not rest directly upon the body of the valve or upon the pipe. The box shall be placed in proper alignment and to such an elevation that the top will be at the final grade. Back filling around both units shall be placed and compacted to the satisfaction of the CITY. Valve boxes and Covers/Lids:-Manufacturer: Tyler Pipe/Union Foundry cast iron two-piece 5-1/4" shaft screw-type 6850 series or equal.

13.0 Concrete

All materials for concrete work shall comply with the requirements of ACI 301. Materials for concrete shall conform to the following requirements:

- Cement shall be standard brand portland cement conforming to ASTM C 150, Type II.
- Water shall be potable and clean;
- Aggregates shall conform to the Florida Building Code and ASTM C 33.
- Ready mix concrete shall conform to the requirements of ASTM C 94.

Reinforcing steel shall conform to the following requirements:

- Bar reinforcement shall conform to the requirements of ASTM A 615 for Grade 60 Billet Steel Reinforcement with supplementary requirement S-1.
- Welded wire fabric reinforcement shall conform with the requirements of ASTM A 185.

Structural concrete (Class A concrete for use in vaults, pile caps, etc.) shall have a minimum 28 day compressive strength ratio of 4,000 psi. For site work concrete (Class C concrete for use in concrete fill, pavement, curbs and sidewalks), the minimum 28-day compressive strength ratio of 3,000 psi shall be used. Tremie seal concrete (concrete placed under water) shall have a minimum 28 day compressive strength ratio of 4,000 psi.

14.0 Grout

Nonshrink grout shall be used wherever grout is required. Non-shrink grout shall be a prepackaged, inorganic, non-gas liberating, nonmetallic, cement based grout requiring only the addition of water. Nonshrink grout shall have a minimum 28 day compressive strength of 5000 psi; shall have no shrinkage and a maximum 4.0 percent expansion in the plastic state when tested in accordance with ASTM C 827. The DBF shall provide the Material Safety Data Sheets for all grout material.

15.0 Painting

All exposed piping, valves and ferrous metals shall be painted with not less than one shop coat and two field coats. Items to be painted included, but are not limited to, structural steel, miscellaneous metals, pipe, fittings, valves and all other work which is obviously required to be painted unless specified otherwise. The following items shall not be coated unless otherwise noted:

- Stainless steel work
- Finish hardware
- Signs and nameplates

Surface preparation shall be in accordance with Specifications of the paint manufacturer's recommendations and the Society of Protective Coatings (SSPC). Metal surfaces exposed to the atmosphere shall be painted as described below:

- First Coat – Epoxy primer: Tnemec Series N69 – High Build Epoxoline II or equal
- Second Coat – Hi-Build epoxy: Tnemec Series L69 – High Build Epoxoline II or equal
- Third Coat – Hi-Build Epoxy: Tnemec Series 73 – Endura Shield or equal

New concrete surfaces exposed to the atmosphere shall be painted as described below:

- First Coat – Modified Waterborne Acrylate – Tnemec Series 156 – Envirocrete (Smooth Texture) or equal
- Second Coat – Modified Waterborne Acrylate: Tnemec Series 156 – Envirocrete (Smooth Texture) or equal

The DBF shall provide the Material Safety Data Sheets for all painting material. All colors shall be as selected by the CITY.

16.0 Site Restoration

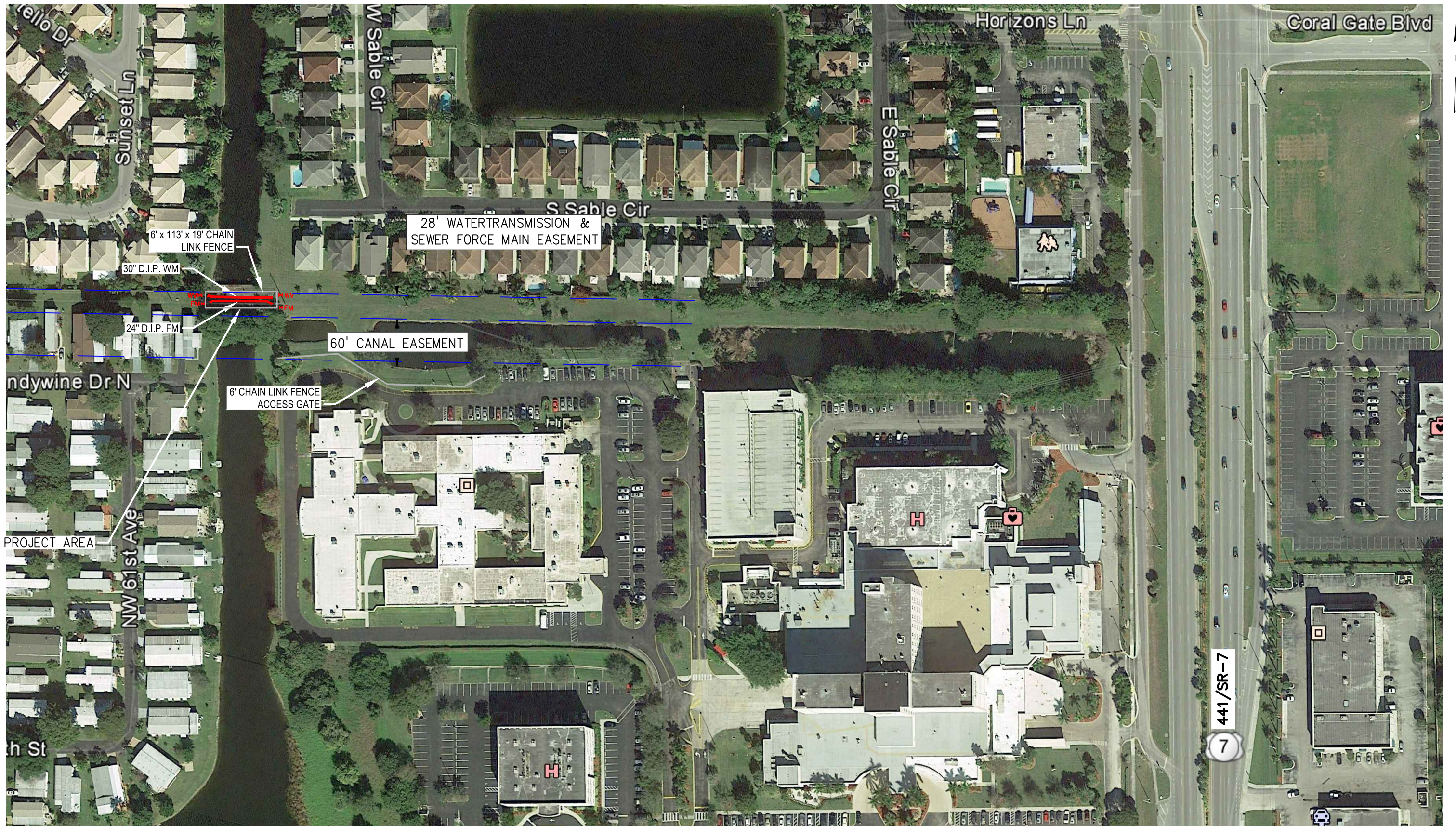
The DBF shall restore damaged areas and temporarily relocated utilities, chain link fencing and improvements to a condition equal to or better than original condition prior to such damage or temporary relocation. The DBF shall make any repairs to landscaped and grassed areas that may be damaged by DBF activities. Landscaping and sodding in City's rights-of-way shall be done in accordance with the applicable City Specifications.

Damaged concrete pavement, curbs and sidewalks shall be reconstructed to an "equal to or better condition" to existing lines, grades and dimensions.

Should the DBF elect to install piping, valves, and tees and/or other fittings as part of a temporary wastewater bypass operation, such piping/valves/fittings shall be removed rather than left in place upon completion of the work.

Attachment B

Figure 1



PLAN

NTS

HAZEN AND SAWYER
Environmental Engineers & Scientists



CITY OF MARGATE

SCALE
NTS

FIGURE-1

PROJECT LOCATION MAP

Attachment C

Figure 2



WATER ELEVATION = 7.6
 @ 1 PM ON 10-21-14

28' WATERTRANSMISSION &
 SEWER FORCE MAIN EASEMENT

60' CANAL EASEMENT

LEGEND

- ABOVE GROUND
- BELOW GROUND

PLAN

1"=20'-0"



HAZEN AND SAWYER
 Environmental Engineers & Scientists



CITY OF MARGATE

SCALE
 1"=20'-0"

FIGURE-2
**30-INCH WATER MAIN AND
 24-INCH FORCE MAIN
 CANAL CROSSING CONCEPTUAL LAYOUT**

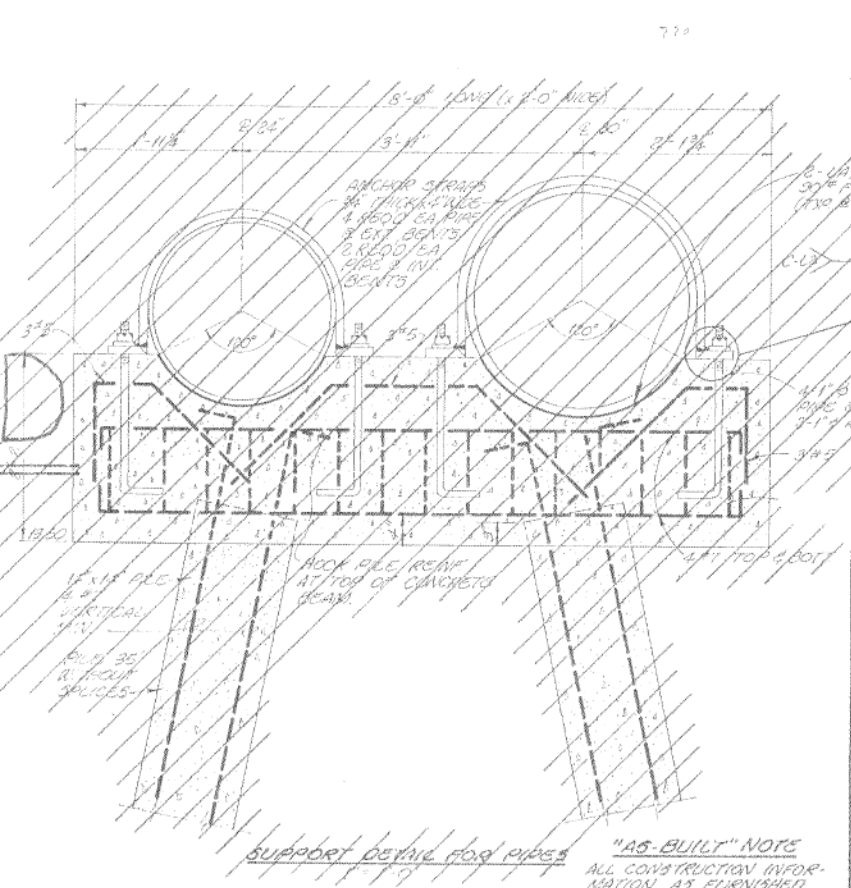
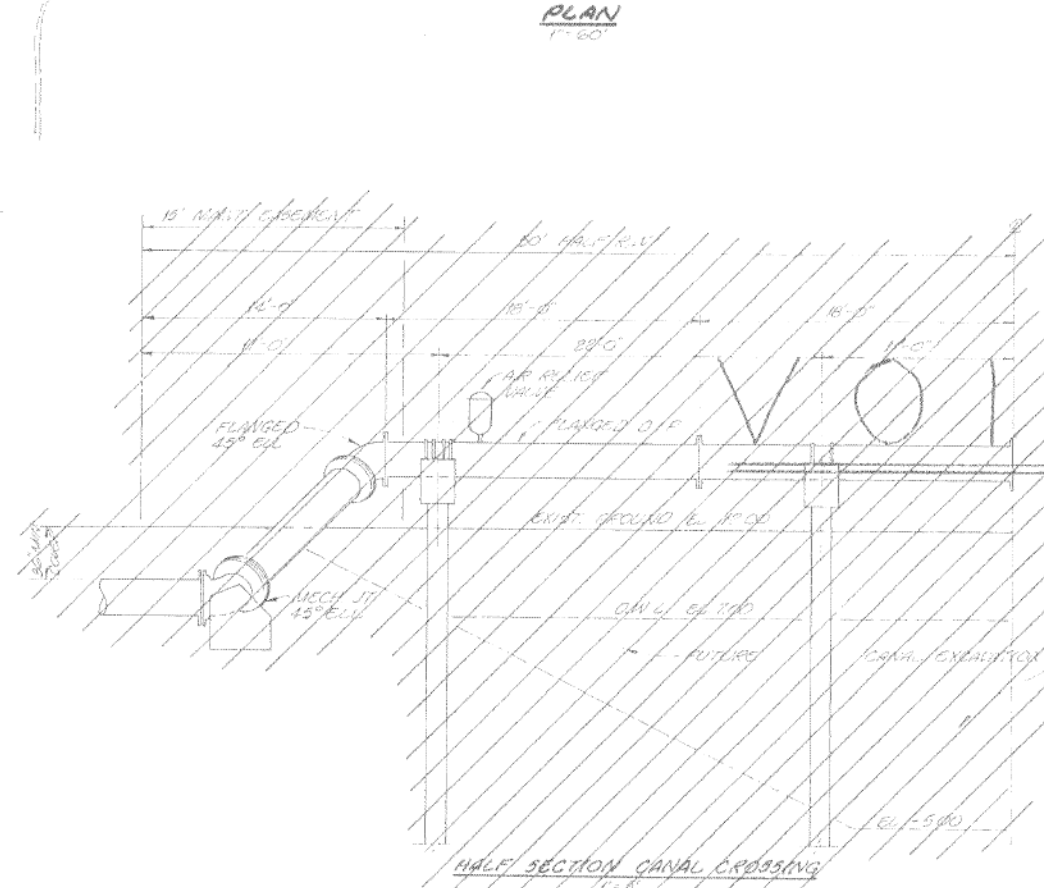
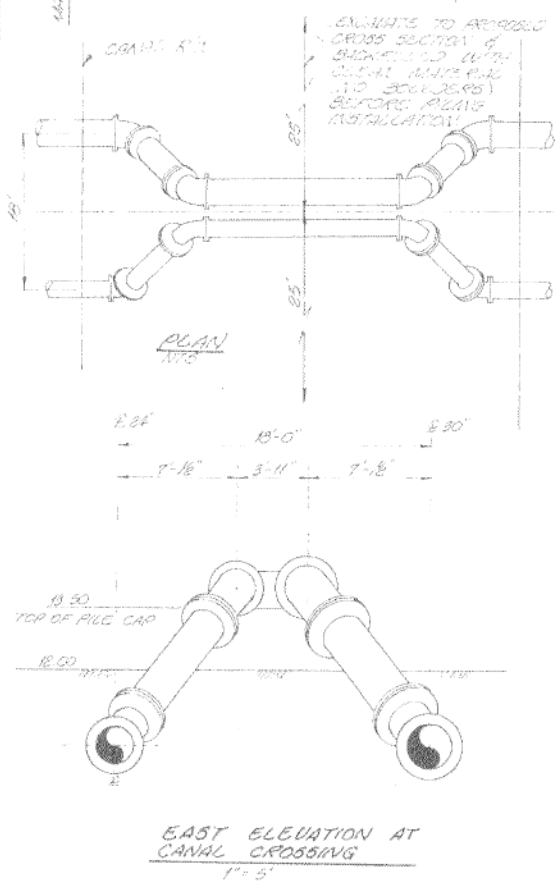
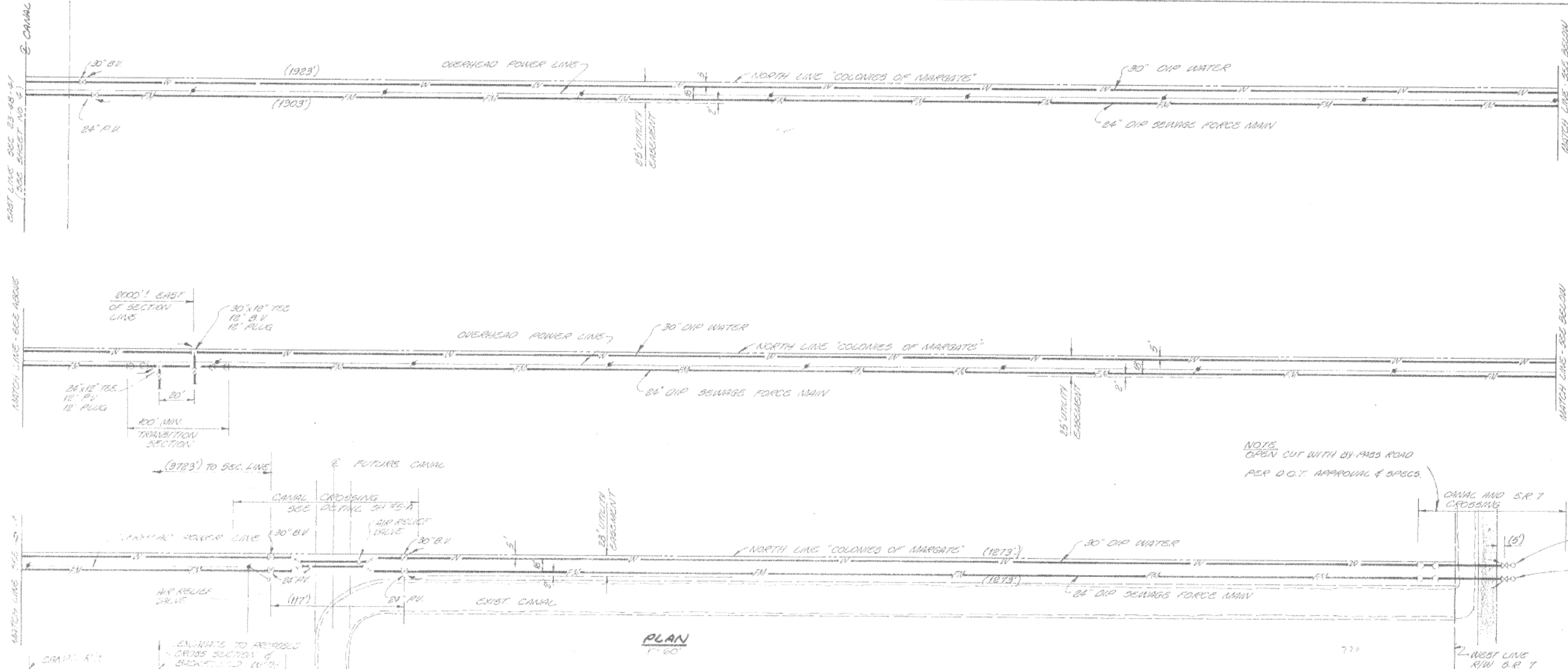
PLOT DATE: 3/17/2015 4:33 PM BY: TBCCAS

File = O:\40618-000-HWD\Drawings\Figures\40618-000-FIG02 Saved by tbccas Save date = 3/11/2015 3:18 PM

Attachment D

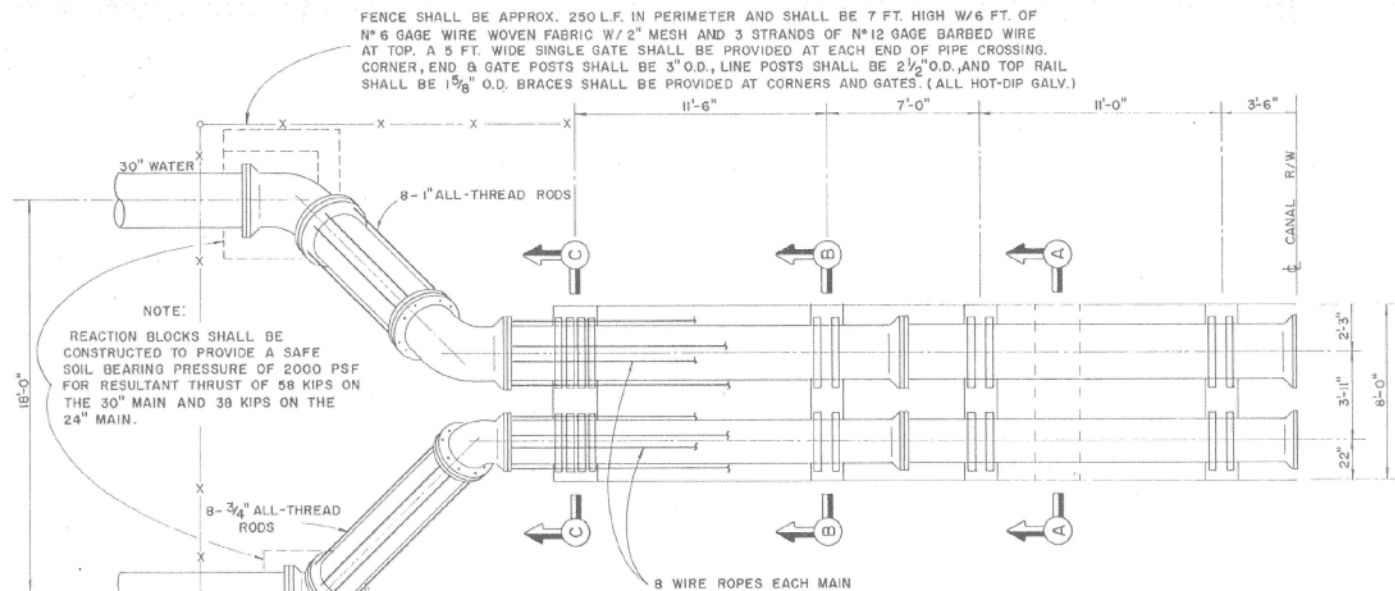
As-Built Drawings

The attached as-built information is provided for informational purposes only. The CITY makes no guarantee, either expressed or implied, as to its accuracy or completeness.

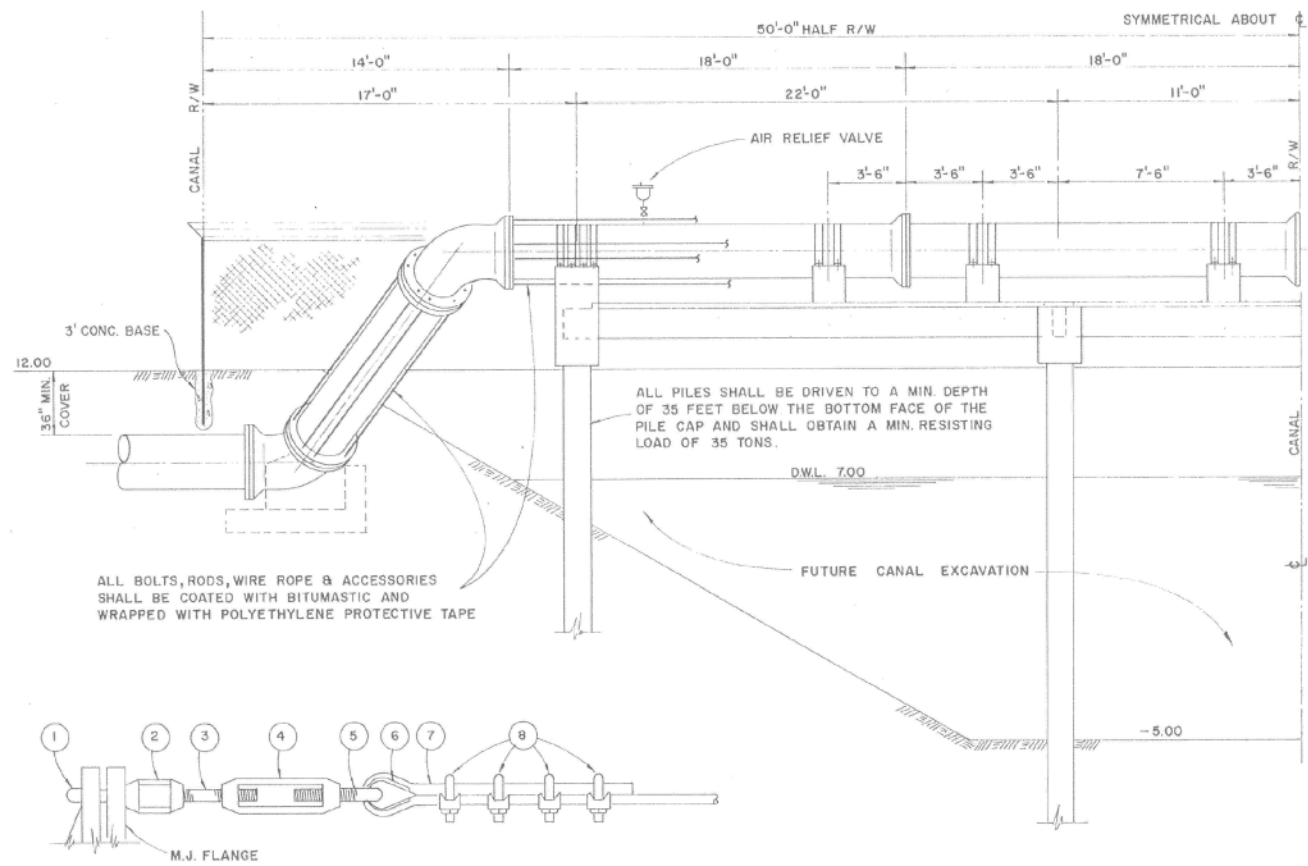


R-1	9-12-74	GSK	"AS-BUILT"
R-3	6-18-73	GSK	1010 CANAL CROSSING DETAILS
R-2	4-27-73	GSK	REIN CANAL CROSSINGS
R-1	10-4-72	GSK	GENERAL REVISION
WATER TRANSMISSION MAIN AND SEWAGE FORCE MAIN			
MARGATE ASSOCIATES LTD. MARGATE, FLORIDA			
ROCK ISLAND ROAD EXTENSIONS			
DIVERSIFIED UTILITY SERVICES CONSULTING ENGINEERS MARGATE, FLORIDA			
DESIGN	DRAWN	DATE	FILE
JBS	GEK	SEPT. 1972	72-153E
Approved By			SHEET
			5 OF 5
Registered Engineer No. 4376			State of Florida

"AS-BUILT" NOTE
ALL CONSTRUCTION INFORMATION AS FURNISHED BY CONTRACTOR



PLAN

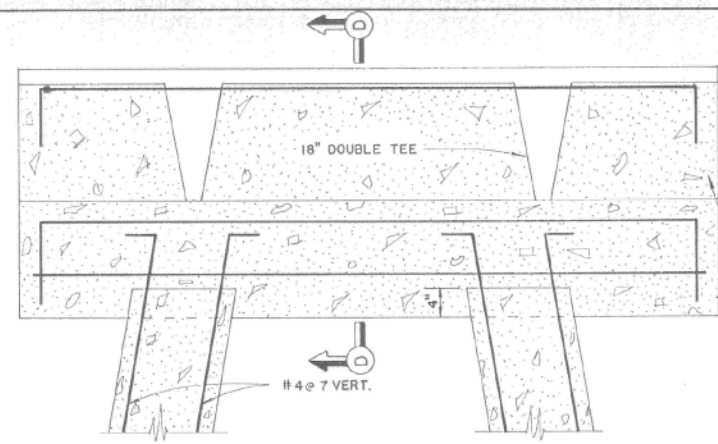


ELEVATION

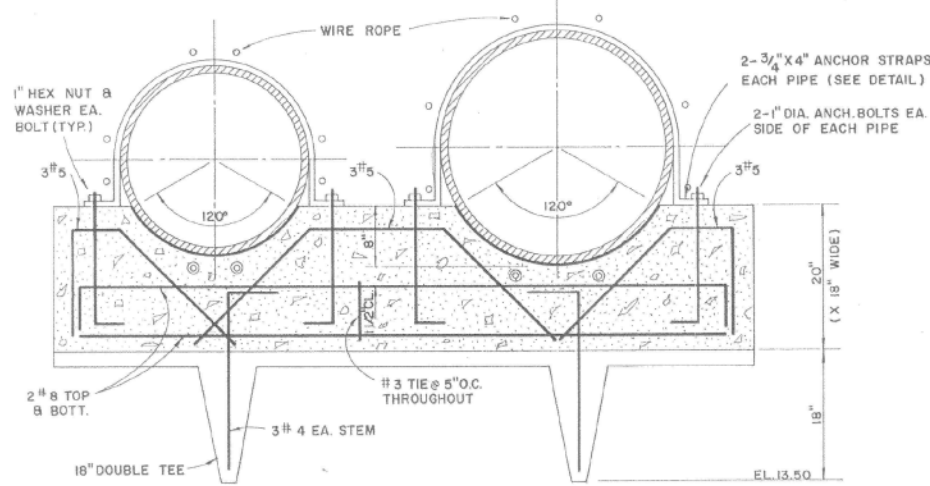
ITEM	DESCRIPTION	24"	30"
1	TEE BOLT	3/4"	1"
2	MALLABLE IRON COUP.		
3	ALL THREAD ROD		
4	TURNBUCKLE		
5	EYE BOLT		
6	WIRE ROPE THIMBLE	3/8"	1/2"
7	WIRE ROPE		
8	WIRE ROPE CLIPS		

ALL BOLTS AND TURNBUCKLES SHALL BE TIGHTENED ALTERNATELY TO THE FOLLOWING RANGES OF TORQUE:
3/4" DIA. 60-90 FT. LBS
1" DIA. 70-100 FT. LBS

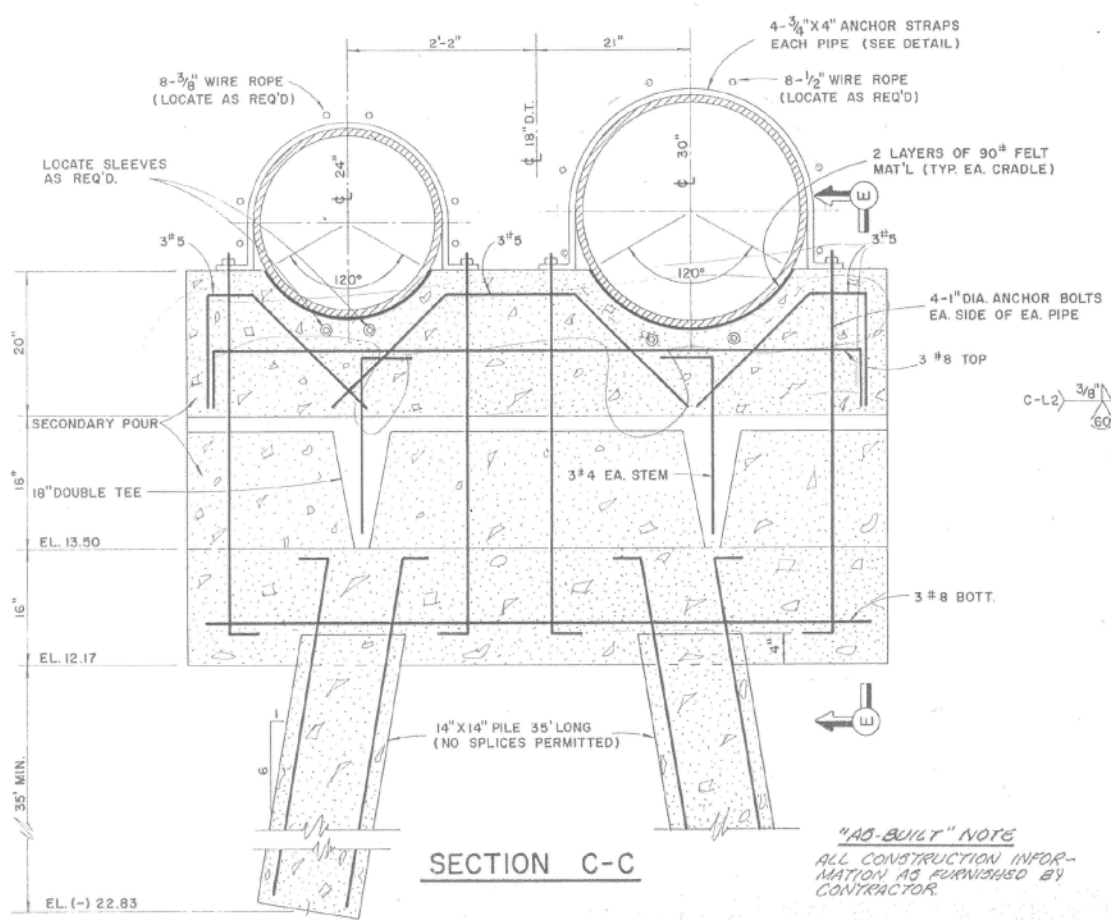
- PILES SHALL BE 14"x14" PRESTRESSED CONCRETE WITH 4 #7 DOWELS AND 35'-0" LONG WITHOUT SPLICES.
- CONCRETE SHALL ATTAIN 3,000 P.S.I. IN 28 DAYS.
- REINFORCING STEEL SHALL COMPLY WITH ASTM 615 GRADE 60.
- 18" DOUBLE TEES SHALL BE DESIGNED FOR THE FOLLOWING LOADS:
EACH PIPE W/WATER 500 # / FT.
LIVE LOAD 80 P.S.F.
- STRUCTURAL STEEL SHALL COMPLY WITH ASTM A-36



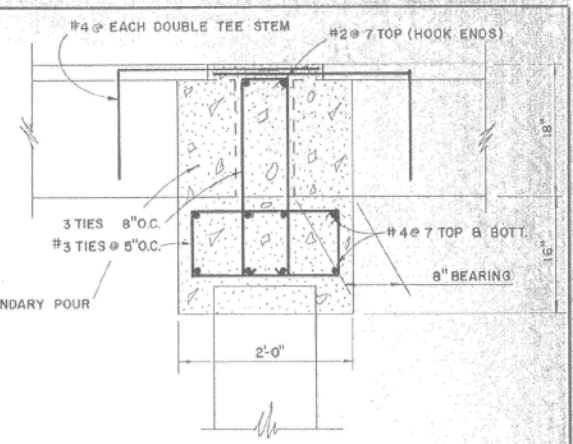
SECTION A-A



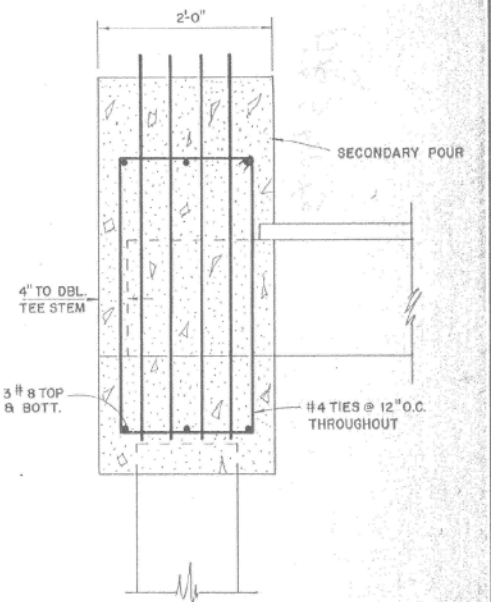
SECTION B-B



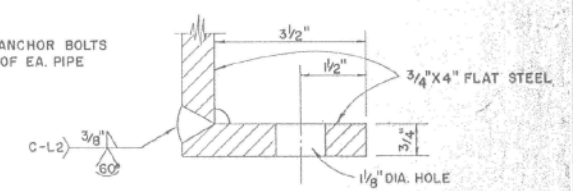
SECTION C-C



SECTION D-D



SECTION E-E



ANCHOR STRAP DETAIL

"AS-BUILT" NOTE
ALL CONSTRUCTION INFORMATION AS FURNISHED BY CONTRACTOR.

R-1 9-12-78 GEM "AS-BUILT"			
WATER TRANSMISSION MAIN AND SEWAGE FORCE MAIN			
MARGATE ASSOCIATES LTD. MARGATE, FLORIDA			
ROCK ISLAND ROAD EXTENSIONS			
DIVERSIFIED UTILITY SERVICES CONSULTING ENGINEERS MARGATE, FLORIDA			
DESIGN JBS	DRAWN JAK	DATE MAY, 1973	FILE 72-153-E
Approved By <i>John D. Smith</i>			SHEET 5A OF 5
Registered Engineer No. 4376			State of Florida

Attachment E

Report of Geotechnical Exploration

The attached geologic data is provided for informational purposes only. The CITY makes no guarantee, either expressed or implied, as to its accuracy or completeness.



Miami Office

GEOTECHNICAL ENGINEERING | FOUNDATION ENGINEERING | GEOTECHNICAL TESTING | SOIL BORINGS/MONITORING WELLS | CONSTRUCTION MATERIALS TESTING

December 5, 2014

Ms. Monique Durand, P.E.
Senior Principal Engineer
Hazen & Sawyer
4000 Hollywood Boulevard
750N, North Tower
Hollywood, Florida 33021

Re: Report of Subsurface Exploration & Geotechnical Engineering Study
Proposed Canal Pipe Crossing Replacement
Near NW 61st Avenue and Brandywine Drive
Margate, Florida
NV5 Project No. 146714

Dear Ms. Durand:

NV5, Inc. (formerly KACO), submits this report in fulfillment of the scope of services described in our Proposal No. 14-0529REV dated October 23, 2014. The work was authorized by acceptance of our Professional Services Agreement. This report describes our understanding of the project, presents our evaluations, and provides our professional opinions and recommendations for geotechnical design parameters for the project.

Sincerely,

NV5, INC.

GARFIELD WRAY (for)

Zubeda Bentley
Staff Engineer

Enclosures/

Distribution: 2 Copies to Addressee via U.S. Mail
1 Copy to Addressee via Email
1 Copy to NV5 File



f:\doc\nv5 reports\146714_canal_pipe_crossings_nw_61st_ave_brandywine_drive_margate_hazen_sawyer_geo_rpt_12_05_2014.doc

OFFICES NATIONWIDE

14486 COMMERCE WAY | MIAMI LAKES, FL 33016 | WWW.NV5.COM | OFFICE: 305.666.3563 | FBPE CA #29065

CONSTRUCTION QUALITY ASSURANCE • INFRASTRUCTURE ENGINEERING • ENERGY SERVICES • PROGRAM MANAGEMENT • ENVIRONMENTAL SERVICES

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FIGURES

Drawing 1 Site Vicinity Map & Test Location Plan

APPENDICES

Appendix A Boring Log Data (A-1 through A-6)

1.0 SITE AND PROJECT INFORMATION

Based on the information received from you, we understand that the project site is located on a canal on the east side of NW 61st Avenue just southeast of South Sable Circle in Margate, Florida. A site and vicinity map is presented on Drawing 1. We estimate that the site grade is at about elevation +8 feet with respect to the 1929 National Geodetic Vertical Datum (NGVD). Based on information received from you, we understand that the project comprises replacement for a 30-inch-diameter water main and a 36-inch-diameter wastewater force crossing the canal.

2.0 PURPOSE AND SCOPE OF WORK

The purpose of our services on this project is to explore the subsurface conditions at the site in order to provide recommendations for geotechnical parameters for the design of the project. Specifically this report addresses:

- ◆ Drawings showing boring locations, a graphic summary of the generalized subsurface conditions, and boring logs with detailed descriptions of the materials encountered and SPT N-values recorded.
- ◆ Discussion of generalized surface and subsurface conditions at the site including groundwater levels.
- ◆ Soil description and corresponding design parameters including unit weights, strength parameters, and active, at-rest, and passive earth pressure coefficients.
- ◆ Construction considerations including excavation support and dewatering, impacts of existing foundations, and impacts for adjacent structures.

3.0 FIELD EXPLORATION

3.1 BORINGS

The subsurface conditions at the project site were explored with two (2) engineering test borings drilled to 50 feet below the existing grade at the approximate locations shown on Drawing 1. The test locations were marked and identified in the field by NV5. The borings were drilled with a custom track-mounted tight-access drill rig utilizing the rotary wash method. Samples of the subsurface materials were recovered in the borings at roughly 2-foot intervals within the upper 10 feet, and at roughly 5-foot intervals below that using a Standard Penetration Test split-spoon sampler (SPT) in substantial accordance with ASTM D-1586, "Standard Test Method for Standard Penetration Test and Split-Barrel Sampling of Soils." This test procedure drives a 1.4-inch I.D. split-tube sampler into the subsurface profile using a 140-pound hammer falling 30 inches. The total number of blows required to drive the sampler the second and third six-inch increments is the SPT N-value, in blows per foot, and is an indication of

material strength. Upon completion of the borings, the lower portions of the boreholes were backfilled with the soil cuttings, and the remaining portions closed with cement grout.

The soil/rock samples recovered from the borings were classified by a geotechnical engineer. The collected samples were later re-examined to confirm field classifications. Visual soil classifications were made in accordance with ASTM D2487 and ASTM D2488. The results of the classification and consequent generalized stratification are shown in the records of test borings in Appendix A (sheets A-1 through A-4). Strata contacts shown on these drawings are approximate. The boring data reflect conditions at the specific test location only, and at the time the borings were drilled.

4.0 LOCAL GEOLOGY

Broward County is located on the southern flank of a stable carbonate platform on which thick deposits of limestones, dolomites and evaporites have accumulated. The upper two hundred feet of the soil profile is composed predominantly of limestone and quartz sand. These sediments were deposited during several glacial and interglacial stages when the ocean was at elevations higher than present.

In many portions of Broward County, surface sand deposits of the Pamlico Formation are encountered. The Pamlico sands overlie the Miami Limestone. In western Broward County, portions of the Everglades Region interfinger with the Pamlico sand. The Everglades soil consists of peat and calcareous silt (marl).

The Miami Limestone is a soft to moderately hard, white, porous to very porous, sometimes sandy, oolitic calcareous cemented grainstone. The formation outcrops in portions of Broward County. The Miami Limestone has a maximum thickness of about 35 feet along the Atlantic Coastal Ridge and thins sharply near the coastline and more gradually in a westerly direction. The Miami Limestone was formed about 130,000 years ago at a time when the sea level was twenty-five feet higher than it is today. This environment facilitated formation of concentrically layered sand sized carbonate grains called oolites. These grains formed by repeated precipitation of calcium carbonate around the nucleus of a sand or shell grain.

The Miami Limestone can be separated into two facies: the barrier bar oolitic facies and the tidal shoal limestone facies. The barrier bar facies is characterized by lenses of oolitic limestone separated by intermittent, 1-inch thick or less, uncemented sand layers (cross-bedded limestone). Zones of higher porosity are characteristic and parallel the bedding planes of the cross-bedded limestone. The tidal shoal limestone facies is characterized by a distinct lack of bedding planes. In addition, burrowing organisms have churned previously deposited sediments, which have resulted in high porosity channels in the rock. These ancient channels give the rock an appearance of a hardened sponge in some areas.

The Fort Thompson Formation underlies the Miami Limestone, and includes sand, sandstone, and limestone. The upper zones of the Fort Thompson Formation consist of sand having a thickness ranging from 5 to 35 feet. The remainder of the formation consists of coralline limestone, quartz sandstone, sandy limestone and freshwater limestone. The type of soils within the formation and the degree of cementation vary with lateral extent and depth.

The Fort Thompson Formation is underlain by the Tamiami Formation. The Tamiami Formation consists of sands, silts, clays, and sometime fossiliferous limestone. The upper portions of the Tamiami Formation are permeable and make up the lower reaches of the Biscayne Aquifer. This Formation ranges in thickness from zero to 300 feet in South Florida.

5.0 SUBSURFACE CONDITIONS

In general, the subsurface conditions encountered in the borings are generally consistent with the geology described above. The detailed subsurface conditions are presented graphically in the records of test boring sheets. The subsurface conditions disclosed by the borings can be generalized as described below.

Layer 1 – Sand (Fill)

This layer consists of fine sand that is about 4 feet thick in the borings. SPT N-values of 10, and 15 blows per foot (bpf) were recorded in the sand.

Layer 2 –Limestone

This layer consists of limestone. The SPT N-values recorded in the limestone are 2, 6, 16, and 21 bpf. This layer was encountered in Boring B-2 only.

Layer 3 – Sand with Limestone Fragments

This layer consists of fine to medium sand with limestone fragments and extends to the maximum termination depth of the borings. The layer is mostly medium dense with an average SPT N-value of at least 34 recorded in the borings, and the values ranging from 6 to greater than 50 bpf. From a depth of about 25 feet below grade to the boring termination the sand is generally dense to very dense.

Groundwater

Groundwater was encountered in the borings at depths of 4 and 6 feet below the existing ground surface. These depths correspond approximately to elevations of about +2 and +6 feet NGVD. On average, groundwater levels in the general vicinity of the project are expected to vary between elevations +0 to +4 feet NGVD, the variations being primarily as a result of tidal fluctuations in the canal and seasonal rainfall. Storm and hurricane events and construction activities also result in variations in the groundwater levels. Notwithstanding the variations

acknowledged, we anticipate that groundwater at the site will generally be encountered within the upper 5 to 10 feet of the existing ground surface.

6.0 DISCUSSION AND RECOMMENDATIONS

We consider the site suitable for the proposed project from a geotechnical perspective. The primary concerns for the project from a geotechnical standpoint are for support of the pipe foundations. Our recommendations for geotechnical design and construction of the proposed canal crossing project are presented below.

6.1 GEOTECHNICAL DESIGN PARAMETERS

- The parameters listed in the table below may be used for geotechnical design for the pipe structures:

TABLE 1 - SUMMARY OF RECOMMENDED GEOTECHNICAL PARAMETERS

Layer	Depth (ft.)	SPT N-values		Angle of Internal Friction (deg.)	Earth Pressure Coefficients		
		Range	Avg.		Active k _a	At- Rest k _o	Passive k _p
Boring B-1							
Sand (Fill)	0 – 4	-	-	32	0.31	0.53	3.22
Sand with Limestone Fragments	4 - 25	6 - 26	10	30	0.3	0.50	3.00
Sand with Limestone Fragments	25 - 50	32 – 50+	50+	35	0.29	0.57	3.45
Boring B-1							
Sand (Fill)	0 – 4	10 –15	14	32	0.31	0.53	3.22
Limestone	4 –18	2 – 21	12	35	0.29	0.57	3.45
Sand*	18 - 50	13 – 50+	32	35	0.29	0.57	3.45

6.2 FOUNDATIONS FOR MISCELLANEOUS STRUCTURES

- Lightly loaded miscellaneous structures can be designed using an allowable bearing pressure of 2,000 psf after the site has been cleared of all vegetation, and stripped to remove any topsoil/organics in the upper 6 or so inches. Footings must bear at a minimum depth of 12 inches below lowest adjacent

grade. Continuous footings should be at least 16 inches wide and isolated footings should be at least 24 inches wide. Exposed bearing soils in the bottom of footing excavations should be compacted to a minimum of 95 percent of the laboratory Modified Proctor maximum dry density (ASTM D1557).

Resistance to lateral loads can be provided by passive pressure acting on the vertical faces of foundation elements and by friction between the bases of foundations and the supporting grade. Equivalent fluid densities for passive resistance can be computed using the geotechnical design parameters presented above. Passive resistance of the upper one foot of soil should be neglected, unless it is confined by a slab or pavement. Frictional resistance between the soil and bottom of footings should be computed by multiplying the sustained dead loads by a coefficient of 0.3

With the shallow footing bearing pressure recommended above, we expect settlement of such footings for lightly loaded structures will be on the order of one (1) inch, with differential settlement on the order of one-half inch.

6.3 TRENCH BACKFILLING AND COMPACTION

The following recommendations can be followed for any trench backfilling work required for the project.

1. The boring data suggest that the bottom of trench or structure will be in sand or limestone. Where the bottom of trench is located in the limestone, the trench should be over excavated to allow for the placement of pipeline bedding material. The purpose of the bedding is to provide a firm, uniform, stable and uniform support for the pipe. The placement of crushed stone beneath the pipe will also provide for a stable working surface during pipeline construction. Six inches of $\frac{3}{4}$ -inch washed aggregate bedding material are recommended in these trench areas.
2. In general fill soils should consist of either inorganic, non-plastic sand having less than 10 percent material passing the No. 200 sieve, or crushed limestone with a maximum rock size of six (6) inches. In particular, fill soils placed within the upper 12 inches of the subgrade of building slabs on grade should consist of either sand with less than 10 percent passing the number 200 sieve, or crushed limestone with a maximum particle size of three inches.

Based on our boring data the Layer 1 and Layer 3 sand materials should satisfy the fill criteria, but might require localized sorting and moisture-conditioning prior to re-use. In any event, representative samples of the fill soils should be collected for classification and compaction testing. The maximum dry density, optimum moisture content, gradation, and plasticity should be determined. These tests are needed for quality control of the compacted fill.

3. The haunch area defined as the zone enclosed by the bottom of the pipe, the sides of the trench and the spring-line of the pipe requires special attention. This area is of critical importance in terms of limiting the deflection of a flexible pipe. High quality backfill should be placed and compacted in this zone. A rigid pipe installation also requires lateral support of the pipe at the haunches, but this requirement is not as critical a performance factor as in the case of a flexible pipe.

The backfill soils to be placed and compacted in the haunch area should consist of either $\frac{3}{4}$ -inch crushed stone aggregate, or well-graded, inorganic, clean, non-plastic sand. The granular soils excavated for trench construction may be used for this purpose if they meet these gradation requirements. Crushed-stone aggregate should be used in the haunch area only in those cases where the trench bottom and the natural site soils (up to the spring-line of the pipe) consist of the natural limestone. This should prevent the migration of natural sands in the subsurface profile into the open pore spaces of the crushed-stone backfill. A well-graded, compacted granular backfill in the haunch area should prevent such a condition from occurring in a natural sand profile.

4. Fill soils should be placed with loose lift thicknesses of not more than 12-inches, moisture-conditioned to within two (2) percent of the optimum moisture content based on ASTM D-1557, and compacted to a minimum 95 percent relative compaction¹. One test should be performed for each 100 lineal feet of trench fill per lift of fill soils.
5. Fill compaction should be performed with appropriate compaction equipment to obtain the recommended in-place soil density results. Heavy compaction equipment should not be used directly above the pipe until sufficient backfill (a minimum of 12-inches) has been placed to reduce the risk of damaging the pipe.

The vibrations produced by the operation of the compactor should be monitored for potential adverse effect on adjacent existing structures, pavements, and utilities. If nearby structures will be affected by the vibration of the compactor, the compaction procedure may require modification as approved by the geotechnical engineer.

¹

Relative compaction refers to the in-place dry unit weight of a material expressed as a percentage of the maximum dry unit weight of the same material as determined in the laboratory using the Modified Proctor procedure (ASTM D1557).

6.4 EXCAVATION AND DEWATERING

1. Shallow excavations into the near-surface materials will likely stand vertical for short periods of time only. The excavation sides will unravel over time as they are exposed to weather and construction traffic. In general, the limestone is expected to stand vertically unsupported if excavated. However localized weaker sandy zones within this layer could become loose if unsupported. Deeper excavations, especially those that extend below the groundwater table, as well as excavations that will remain open for longer periods of time will require support in the form of temporary shoring or sliding trench boxes to prevent instability of excavation walls and to protect workers from injury. All excavations should comply with Occupational Safety and Health Administration (OSHA) design and safety requirements. Shoring designs should be signed and sealed by a Florida-licensed professional engineer, and should be provided for the Owner's review.
2. Average groundwater elevation is expected to be between about Elevation +0 and +4 feet NGVD for this site. The proposed depths of excavation are unknown to us at this time. We anticipate that some dewatering could be required for installation of the pipes, and that dewatering could also be required for the installation of deeper utilities and appurtenances such as catch basins, and manholes. We judge that localized dewatering can be accomplished using pumps and sumps. Dewatering of larger excavations and larger volumes will require the installation of well points. All dewatering and consequent effluent discharge should meet the requirements of the local jurisdictional agencies including Broward County, Florida Department of Environmental Protection (FDEP), Florida Department of Transportation, and South Florida Water Management District (SFWMD) as appropriate.

During dewatering the adjacent properties must be monitored for adverse impacts from dewatering drawdown. The dewatering subcontractor should submit a proposed design for dewatering operations to the owner for review and approval prior to commencing work.

6.5 OTHER RECOMMENDATIONS

1. NV5 should participate in the design development phases of this project in order to modify the recommendations provided above as changes occur during the design development process.
2. NV5 should participate in the evaluation of field problems as they arise and recommend solutions. We should also be involved with site work activities so we can address needed changes to the foundation recommendations if site conditions different from those described herein are encountered. NV5 should observe and test the foundation installation to satisfy the requirements of the Florida Building Code and municipal agencies.

7.0 REPORT LIMITATIONS

This report has been prepared for the exclusive use of the Owner and other members of the design/construction team for the specific projects discussed in this report. This report has been prepared in accordance with generally accepted local geotechnical engineering practices; no other warranty is expressed or implied.

The evaluation and recommendations submitted in this report are based in part upon the data collected from the field exploration. The nature or extent of variations throughout the subsurface profile may not become evident until the time of construction. If variations then appear evident, it may be necessary to evaluate our recommendations as provided in this report. In the event changes are made in the nature, design or locations of the proposed project construction, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions modified or verified in writing by NV5.

The scope of services did not include any environmental assessment or investigation for the presence or absence of wetlands, sinkholes, chemically hazardous or toxic materials in the soil, surface water, groundwater or air, on or below or around the site.

We should be provided the opportunity to review final foundation specifications and review foundation design drawings, in order to ascertain whether our recommendations have been properly interpreted and implemented. If NV5. is not afforded the opportunity to participate in construction related aspects of foundation installation as recommended in this report, we can accept no responsibility for the interpretation of our recommendations made in this report or for foundation performance.

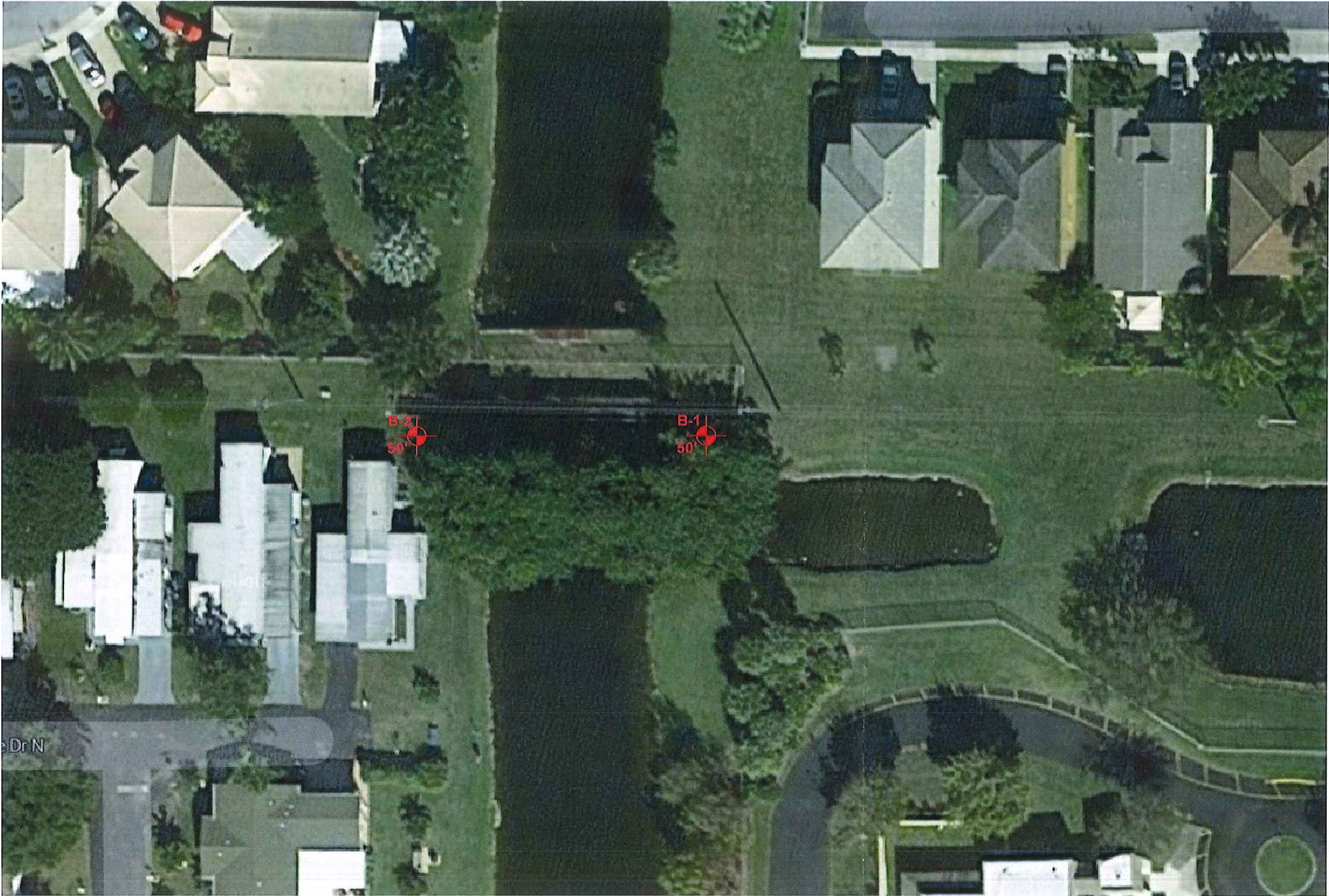
8.0 CLOSURE

We appreciate the opportunity to provide specialized engineering services on this project and look forward to an opportunity to participate in construction related aspects of the development. If you have questions about information contained in this report contact the writer at 305-901-1891.

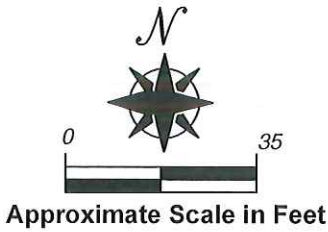
DRAWINGS

APPENDIX A
BORING LOG DATA


DRAWINGS



Site Vicinity Map



LEGEND:

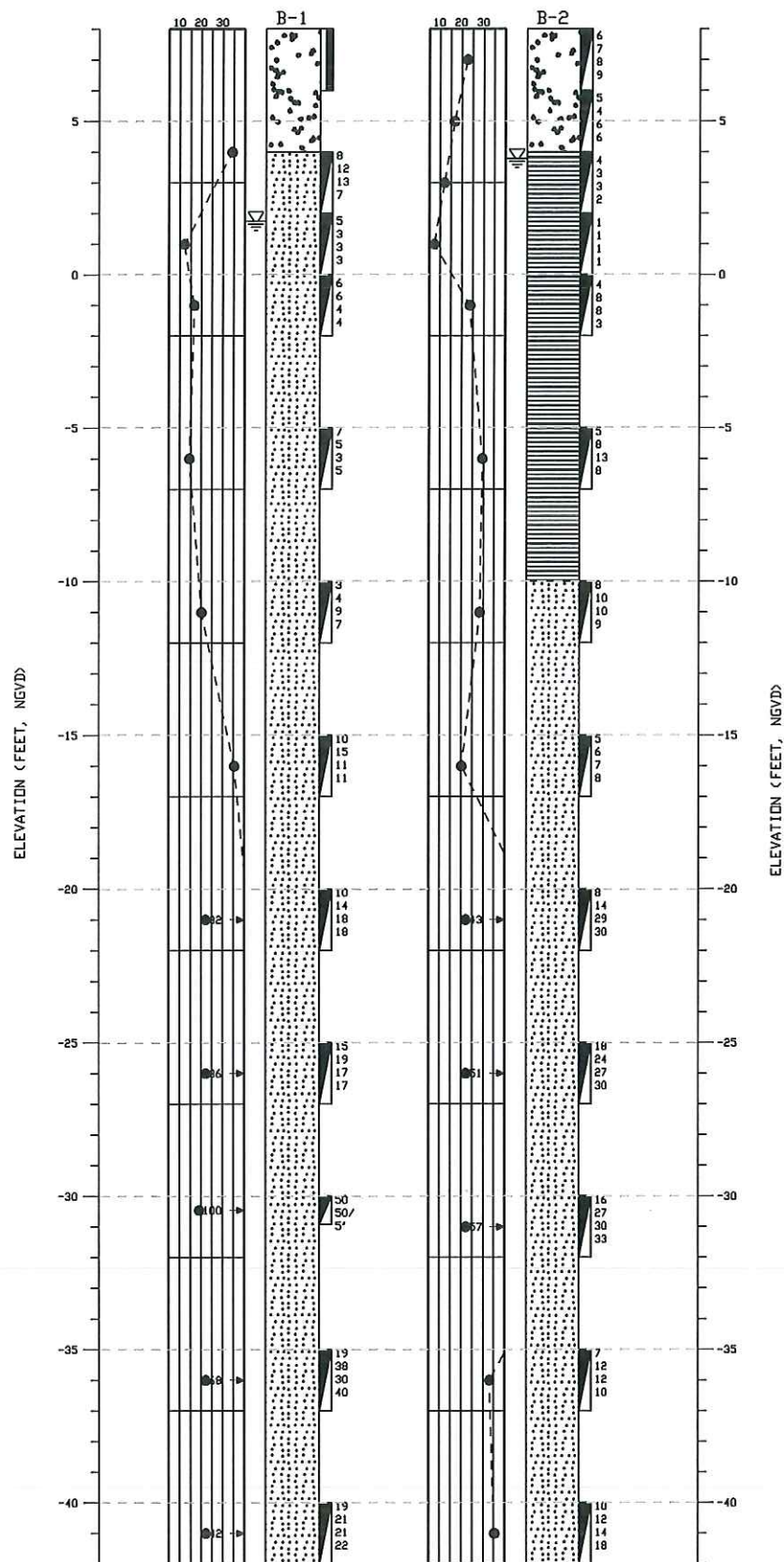
B-1  - Depth and approximate location of borings
50'

NOTES:

1. Test locations shown are approximate.
2. Test location symbols are not to scale.
3. Base drawing taken from Google Earth

N|V|5

DRAWING TITLE:	Site Vicinity Map & Test Location Plan				DWN BY:	AS
PROJECT NAME:	Canal Pipe Crossing Replacement				CKD BY:	GW
PROJECT LOCATION:	NW 61st Avenue & Brandywine Drive, Margate, Florida	PROJECT NO:	146714	DATE:	11/13/14	DWG NO: 1
				APD BY	_____	



Note: Refer to the appended Record of Test Boring log(s) for a complete description of the strata shown above.

	DRAWING TITLE: <i>Generalized Subsurface Profile</i>			DWN BY: <i>WO</i>
	PROJECT NAME: <i>Margate Canal, NW 61st Av & Duval Dr, Margate, FL</i>			CKD BY: <i>GLW</i>
	PROJECT NO: <i>146714</i>	DATE: <i>11/16/14</i>	DWG NO: <i>2</i>	APD BY: <i>—</i>

APPENDIX A

BORING LOG DATA



RECORD OF TEST BORING

PROJECT: Margate Canal, Canal Between S. Sable Cir/Brandywine, Margate, Florida

BORING NO: B-1

PROJECT NO: 146714

START: 11/6/2014

FINISH: 11/6/2014

WEATHER: Sunny

BORING LOCATION: Refer to Test Location Plan

DRILLER: Cruz/Jimenez

DRILL: Mobile D-25

DRILL CONTRACTOR: NV5

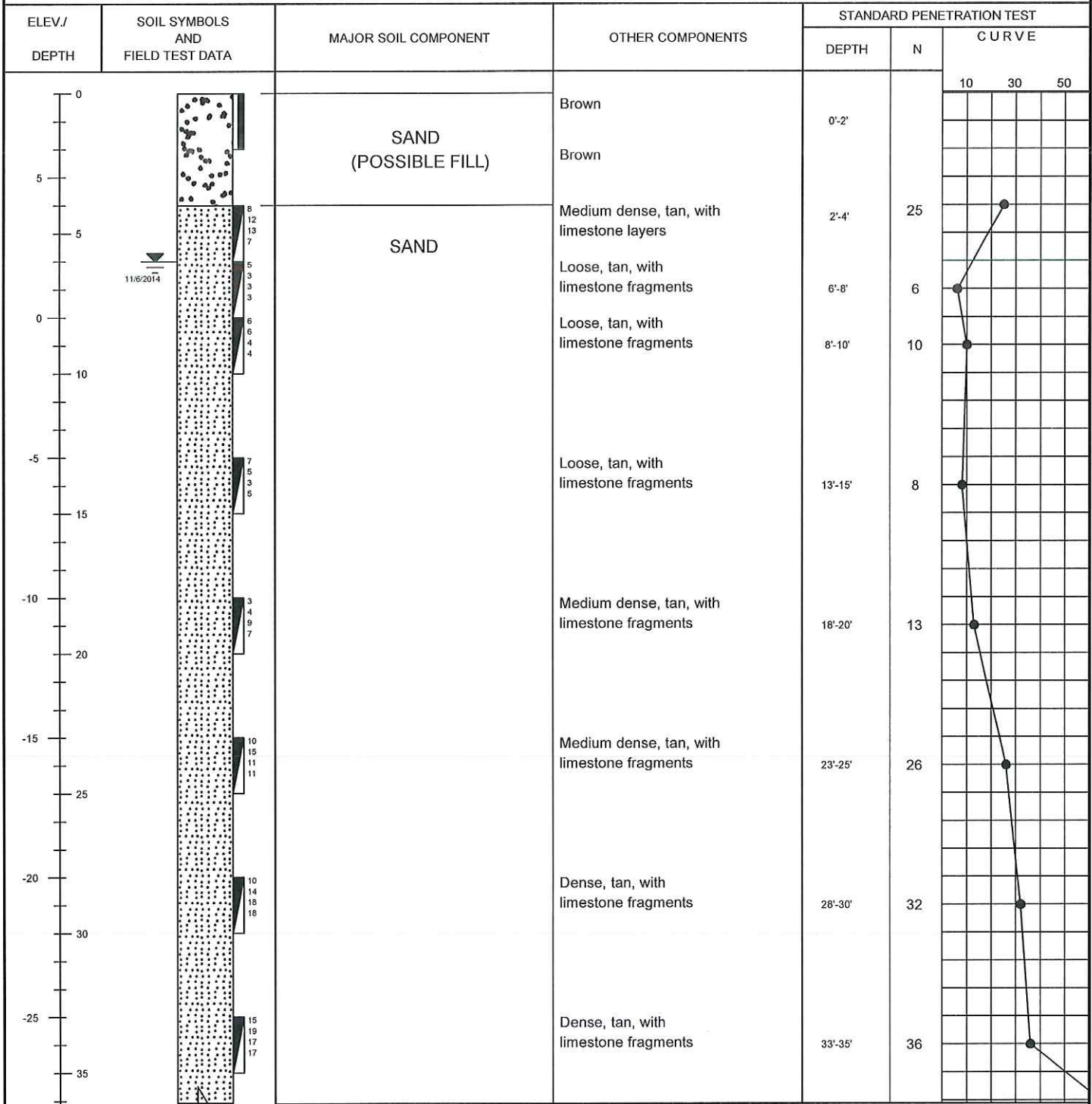
ELEVATION (EST.):+ 8 Feet (NGVD)

GROUNDWATER: 6 Feet (depth)

DATE CHECKED: 11/6/2014

BORING METHOD: Rotary drill with mud, wash & casing

FLUID LOSS: None



Refer to Notes and Legend on separate sheet for additional information.
 This Record of Test Boring is part of the project Geotechnical Report.
 It should not be assumed that changes in the "N-Value" are a linear function.
 Soil and rock samples recovered using a ASTM D-1586 test procedures.

RECORD OF TEST BORING

PROJECT: Margate Canal, Canal Between S. Sable Cir/Brandywine, Margate, Florida

BORING NO: B-1

ELEV./ DEPTH	SOIL SYMBOLS AND FIELD TEST DATA	MAJOR SOIL COMPONENT	OTHER COMPONENTS	STANDARD PENETRATION TEST		
				DEPTH	N	CURVE
						10 30 50
-30		SAND	Very dense, tan, with limestone fragments	38'-38'11"	100	100
-40						
-35			very dense, tan, with limestone fragments	43'-45'	68	68
-45						
-40			Dense, tan, with limestone fragments	48'-50'	42	
-50						
-45						
-55						
-60						
-65						
-70						

RECORD OF TEST BORING

PROJECT: Margate Canal, Canal Between S. Sable Cir/Brandywine, Margate, Florida

BORING NO: B-2

PROJECT NO: 146714

START: 11/6/2014

FINISH: 11/6/2014

WEATHER: Sunny

BORING LOCATION: Refer to Test Location Plan

DRILLER: Cruz/Jimenez

DRILL: Mobile D-25

DRILL CONTRACTOR: NV5

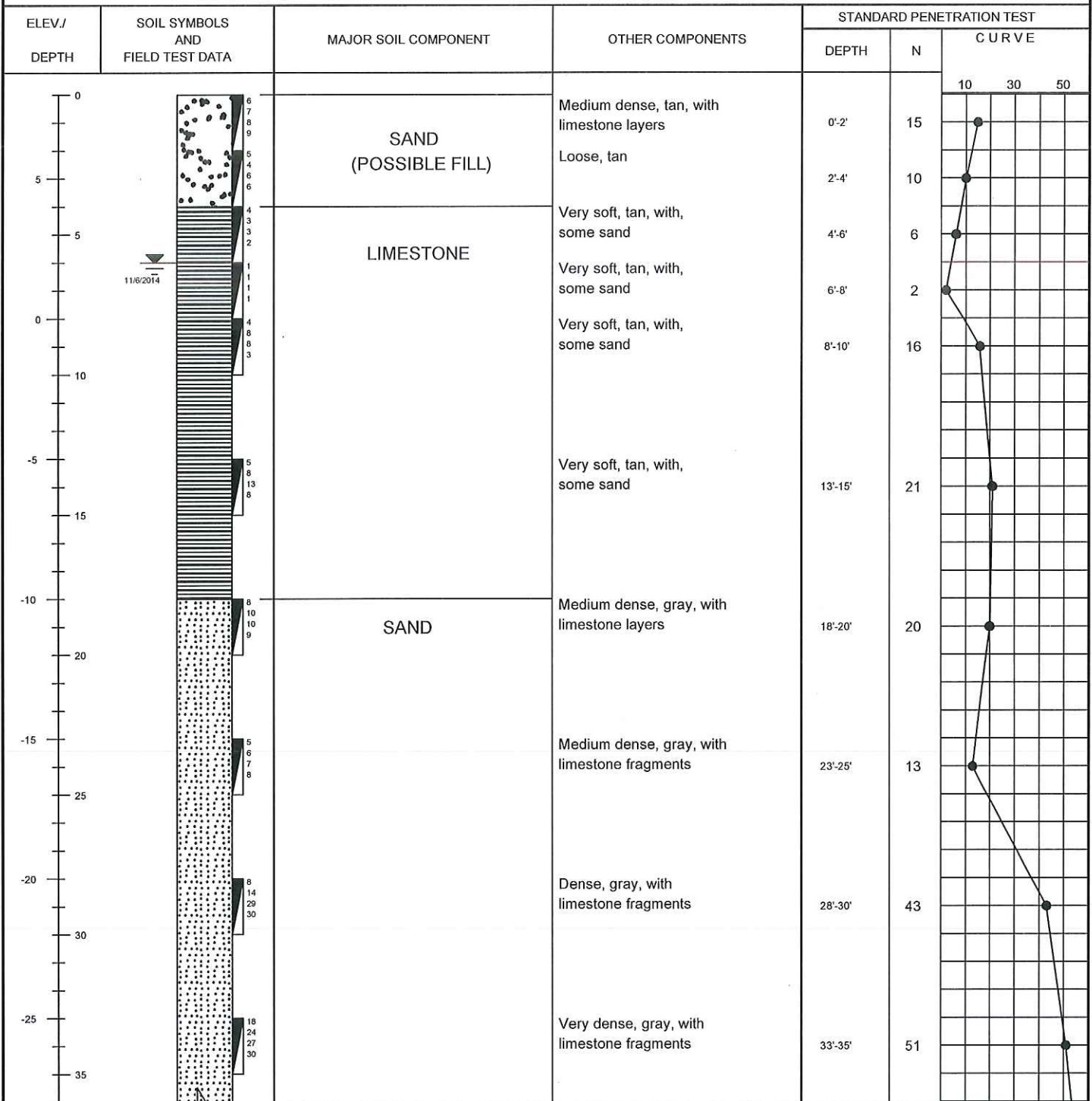
ELEVATION (EST.): + 8 Feet (NGVD)

GROUNDWATER: 4 Feet (depth)

DATE CHECKED: 11/6/2014

BORING METHOD: Rotary drill with mud, wash & casing

FLUID LOSS: None



Refer to Notes and Legend on separate sheet for additional information.

This Record of Test Boring is part of the project Geotechnical Report.

It should not be assumed that changes in the "N-Value" are a linear function.

Soil and rock samples recovered using a ASTM D-1586 test procedures.

RECORD OF TEST BORING

PROJECT: Margate Canal, Canal Between S. Sable Cir/Brandywine, Margate, Florida

BORING NO: B-2

ELEV./ DEPTH	SOIL SYMBOLS AND FIELD TEST DATA	MAJOR SOIL COMPONENT	OTHER COMPONENTS	STANDARD PENETRATION TEST		
				DEPTH	N	CURVE
						10 30 50
-30		SAND	Very dense, tan, with limestone fragments	38'-40'	57	
-40						
-35						
-45		SAND	Medium dense, tan, with limestone fragments	43'-45'	24	
-40						
-50						
-55		SAND	Medium dense, tan, with limestone fragments	48'-50'	26	
-60						
-65						
-70						

KEY TO SYMBOLS

Symbol Description

Strata symbols



SAND
(POSSIBLE FILL)



SAND



LIMESTONE

Misc. Symbols



Groundwater level measured
at boring completion. The
date checked is indicated.



Boring continues



End of Boring

Soil Samplers



Standard penetration test.
140 lb. hammer dropped 30"

Notes:

1. Exploratory borings were drilled on 11/06/14 using a 4-inch diameter rotary drill with wash, mud and casing.
2. Groundwater was encountered at depths of 4 and 6 feet below grade upon boring completion.
3. Boring locations were taped from existing features and elevations estimated.
4. These logs are subject to the limitations, conclusions, and recommendations in this report.
5. Results of tests conducted on samples recovered are reported on the logs.

NOTES RELATED TO RECORDS OF TEST BORING AND GENERALIZED SUBSURFACE PROFILE

1. Groundwater level was encountered and recorded (if shown) following the completion of the soil test boring on the date indicated. Fluctuations in ground water levels are common; consult report text for a discussion.
2. The boring location was identified in the field by offsetting from existing reference marks and using a cloth tape and survey wheel.
3. The borehole was backfilled to site grade following boring completion, and patched with asphalt cold patch mix when pavement was encountered.
4. The Record of Test Boring represents our interpretation of field conditions based on engineering examination of the soil samples.
5. The Record of Test Boring is subject to limitations, conclusions and recommendations presented in the report text.
6. "Field Test Data" shown on the Record of Test Boring indicated as 11/6 refers to the Standard Penetration Test (SPT) and means 11 hammer blows drove the sampler 6 inches. SPT uses a 140-pound hammer falling 30 inches.
7. The N-value from the SPT is the sum of the hammer blows required to drive the sampler the second and third 6-inch increments.
8. The soil/rock strata interfaces shown on the Record of Test Boring are approximate and may vary from those shown. The soil/rock conditions shown on the Record of Test Boring refer to conditions at the specific location tested; soil/rock conditions may vary between test locations.
9. Relative density for sands/gravels and consistency for silts/clays and limestone are described as follows:

SPT Blows/ Foot	Sand/Gravels Relative Density	SPT Blows/ Foot	Silt/Clay Relative Consistency	SPT Blows/ Foot	Limestone Relative Consistency
0-4	Very Loose	0-2	Very Soft	0-20	Very Soft
5-10	Loose	3-4	Soft	21-30	Soft
11-30	Medium dense	5-8	Firm	31-45	Medium Hard
31-50	Dense	9-15	Stiff	46-60	Moderately Hard
Over 50	Very Dense	16-30	Very Stiff	61-50/2"	Hard
		Over 30	Hard	Over 50/2"	Very Hard

10. Grain size descriptions are as follows:

<u>NAME</u>	<u>SIZE LIMITS</u>
Boulder	12 inches or more
Cobbles	3 to 12 inches
Coarse Gravel	3/4 to 3 inches
Fine Gravel	No. 4 sieve to 3/4 inch
Coarse Sand	No. 10 to No. 4 sieve
Medium Sand	No. 40 to No. 10 sieve
Fine Sand	No. 200 to No. 40 sieve
Fines	Smaller than No. 200 sieve

11. Definition related to adjectives used in soil/rock descriptions:

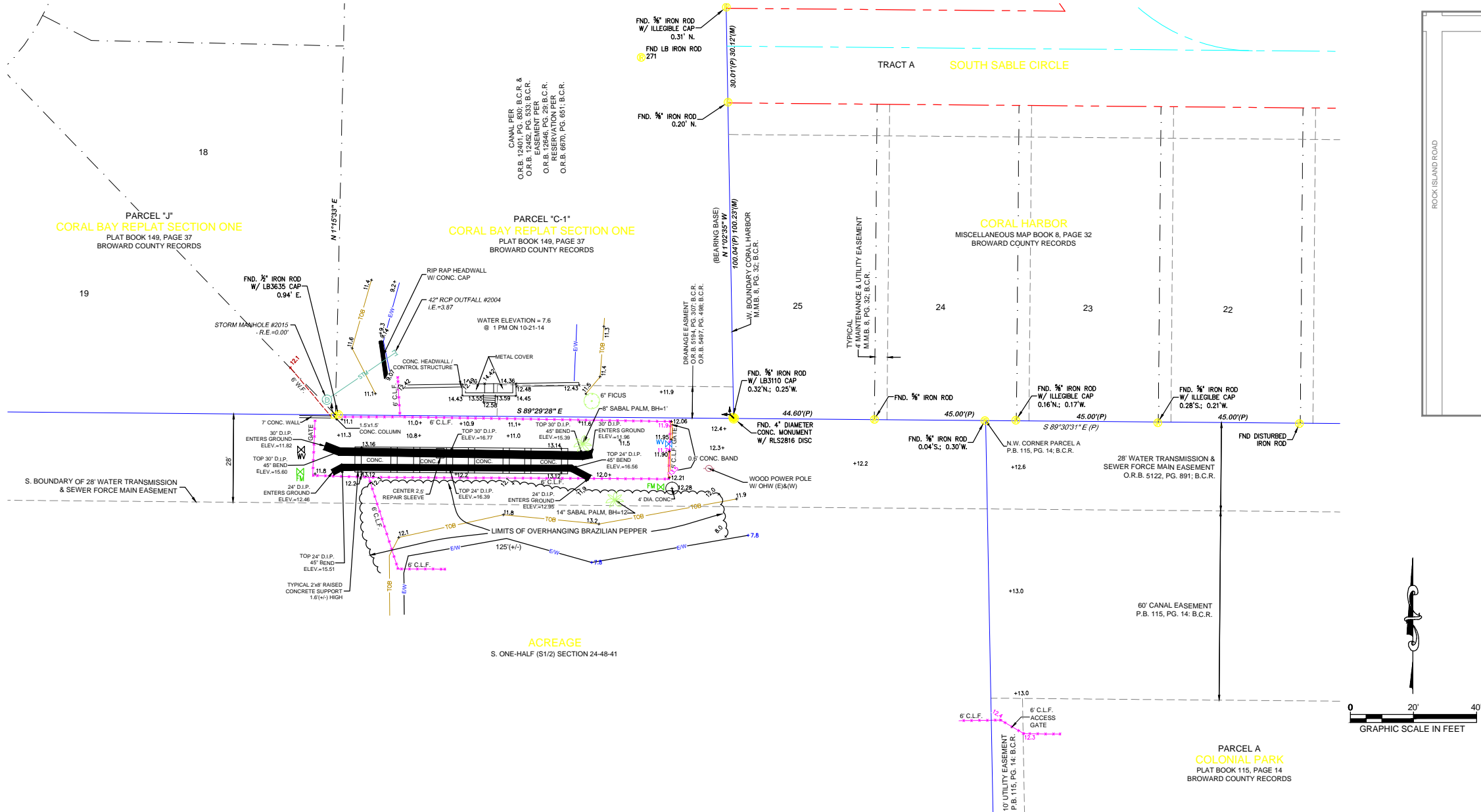
<u>PROPORTION</u>	<u>ADJECTIVE</u>	<u>APPROXIMATE ROOT DIAMETER</u>	<u>ADJECTIVE</u>
About 10%	with a trace	Less than 1/32"	Fine roots
About 25%	with some	1/32" to 1/4"	Small roots
About 50%	and	1/4" to 1"	Medium roots
		Greater than 1"	Large roots

Attachment F

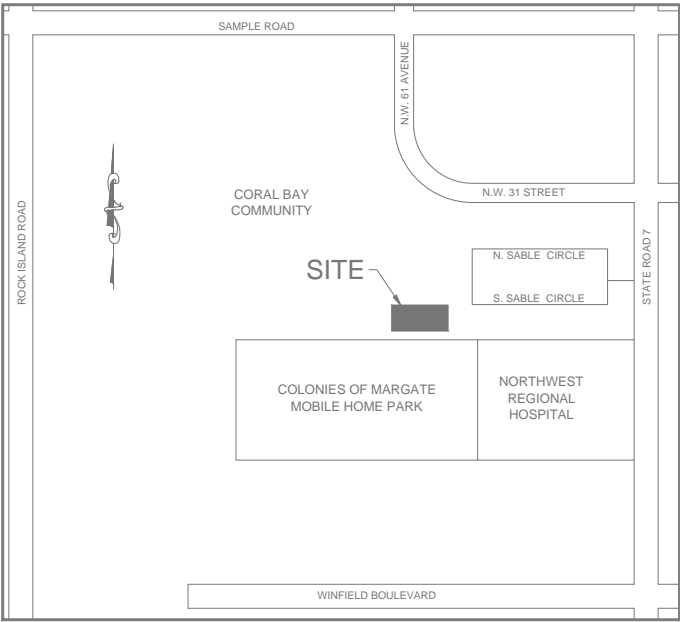
Topographic Survey

O:\40618-000-HWD\Drawings\Figures\OLD\Survey Converted\ACAD-140065_CALCS.dwg [S-1 (22x34)] Dec 17, 2014 1:09pm TBOCAS

SKETCH OF SURVEY TOPOGRAPHIC SURVEY



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NOTE: Lands shown hereon were not abstracted for right-of-way and/or easements of record.



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ENGINEERS • PLANNERS • SURVEYORS
3563 N.W. 53RD STREET, FORT LAUDERDALE, FLORIDA 33309
FAX: (954) 739-6409
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CANAL CROSSING
CITY OF MARGATE
H&S PROJECT #40618-008
PREPARED FOR:
HAZEN & SAWYER, P.C.
TOPOGRAPHIC SURVEY

SEAL
PROJECT NO.
14-0065.001-01

V-1
SHEET 1 OF 1

ABBREVIATION LEGEND

B.C.R. BROWARD COUNTY RECORDS
BH BUD HEIGHT
C.L.F. CHAIN LINK FENCE
CONC. CONCRETE
DIA. DIAMETER
D.I.P. DUCTILE IRON PIPE
ELEV. ELEVATION
FND. FOUND
I.E. INVERT ELEVATION
L.B. LICENSED BUSINESS
(M) MEASURED
M.M.B. MISCELLANEOUS MAP BOOK
OHW OVERHEAD WIRES
O.R.B. OFFICIAL RECORDS BOOK
(P) PER PLAT
P.B. PLAT BOOK
PG. PAGE
R.E. RIM ELEVATION
R.L.S. REGISTERED LAND SURVEYOR
W/ WITH
W.F. WOOD FENCE

SYMBOL LEGEND

⊙ STORM DRAIN MANHOLE
FMX FORCE MAIN VALVE
+10.0 SPOT GROUND ELEVATION
+10.00 SPOT HARD SURFACE ELEVATION
— EW — EDGE OF WATER
— TW — TOP OF BANK
— STM — STORM DRAIN PIPE

SURVEYOR'S NOTES

- THE BEARINGS SHOWN HEREON ARE BASED ON AN ASSUMED MERIDIAN, THE WEST BOUNDARY OF THE PLAT OF CORAL HARBOR, AS RECORDED IN MISCELLANEOUS MAP BOOK 8, PAGE 32, OF THE PUBLIC RECORDS OF BROWARD COUNTY IS ASSUMED TO BEAR NORTH 02°35'11" WEST.
- ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
- THIS SURVEY DRAWING WAS PREPARED FOR THE EXCLUSIVE USE OF HAZEN & SAWYER, P.C. FOR THE EXPRESS PURPOSE STATED HEREON AND/OR CONTAINED IN THE CONTRACT WITH AFOREMENTIONED CLIENT FOR THIS PROJECT.
- THE PURPOSE OF THIS SURVEY IS TO SHOW THE IMPROVEMENTS WITHIN THE HEREON DESCRIBED PROPERTY AS DESIGNATED BY THE CLIENT AND TO SHOW THE RELATIONSHIP OF SAID IMPROVEMENTS TO THE PROPERTY LINES FOR ENGINEERING DESIGN PURPOSES. PROPERTY BOUNDARY LINES ARE SHOWN HEREON AS A BEST FIT SCENARIO BASED ON THE PROPERTY CORNERS FOUND. NO CORNERS WERE SET DURING THE PREPARATION OF THIS TOPOGRAPHIC SURVEY. REUSE OF THIS SURVEY FOR PURPOSES OTHER THAN WHICH IT WAS INTENDED, WITHOUT WRITTEN PERMISSION, WILL BE AT THE RE-USERS SOLE RISK AND WITHOUT LIABILITY TO THE SURVEYOR.
- THIS SURVEY IS LIMITED TO THE LOCATION OF ABOVE GROUND IMPROVEMENTS ONLY. UNDERGROUND FOUNDATIONS OR OTHER BURIED ENCROACHMENTS WERE NOT LOCATED IN CONNECTION WITH THIS SURVEY UNLESS OTHERWISE NOTED.
- THE EXPECTED USE OF THIS SURVEY AND MAP IS FOR COMMERCIAL/HIGH RISK, THEREFORE THIS SURVEY IS CLASSIFIED AS COMMERCIAL/HIGH RISK LINEAR AND EXCEEDS THE MINIMUM RELATIVE DISTANCE ACCURACY OF 1 FOOT IN 10,000 FEET AS REQUIRED BY THE FLORIDA MINIMUM TECHNICAL STANDARDS (5J-17.051 AND 5J-17.062, F.A.C.).
- THIS MAP IS INTENDED TO BE DISPLAYED AT A SCALE OF 1"=20' OR SMALLER. HORIZONTAL FEATURE LOCATIONS ARE TO THE CENTER OF THE SYMBOL AND MAY BE ENLARGED FOR CLARITY AND MAY NOT REPRESENT THE ACTUAL SIZE OR SHAPE OF THE FEATURE.
- THE TOPOGRAPHICAL MEASUREMENTS SHOWN HEREON WERE OBTAINED USING A "LEICA TC-700 SERIES" TOTAL STATION AND "TDS" DATA COLLECTION SOFTWARE. THE ACCURACY OF CONTROL SURVEY DATA HAS BEEN VERIFIED BY REDUNDANT MEASUREMENTS OR TRAVERSE CLOSURES.
- ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AND REFERENCED TO FLORIDA DEPARTMENT OF TRANSPORTATION BENCHMARK 9, AS SHOWN ON PROJECT NETWORK CONTROL SHEET FOR STATE ROAD 7, SHEETS "CTL-1" THRU "CTL-5", FINANCIAL PROJECT ID: 416878-1-52-01. . ELEVATION=5.52.

LEGAL DESCRIPTION

THAT PORTION OF THE 28 FOOT WATER TRANSMISSION & SEWER FORCE MAIN EASEMENT AS DESCRIBED IN OFFICIAL RECORDS BOOK 5122, PAGE 891 OF THE PUBLIC RECORDS OF BROWARD COUNTY, FLORIDA, LYING SOUTH OF AND ADJACENT TO THE SOUTH BOUNDARY PARCEL C-1, CORAL BAY REPLAT SECTION ONE, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 149, PAGE 37 OF SAID PUBLIC RECORDS.

SAID LANDS LYING WITHIN THE CITY OF MARGATE, BROWARD COUNTY, FLORIDA.

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THIS SKETCH OF SURVEY AND OTHER PERTINENT DATA SHOWN HEREON, OF THE ABOVE DESCRIBED PROPERTY WAS MADE ON THE GROUND, CONFORMS TO THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN THE STATE OF FLORIDA, AS OUTLINED IN RULES 5J-17.051 AND 5J-17.052, (FLORIDA ADMINISTRATIVE CODE) AS ADOPTED BY THE DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN SEPTEMBER, 1981, AS AMENDED, PURSUANT TO CHAPTER 472.027, FLORIDA STATUTES AND THAT SAID SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AS SURVEYED UNDER MY DIRECTION IN SEPTEMBER / OCTOBER, 2014.

LAST DATE OF FIELD WORK: OCTOBER 3, 2014

CRAVEN THOMPSON & ASSOCIATES, INC.
CERTIFICATE OF AUTHORIZATION NO. LB271

RAYMOND YOUNG
PROFESSIONAL SURVEYOR & MAPPER NO. 5799
STATE OF FLORIDA




THIS SURVEY MAP AND REPORT OR COPIES THEREOF ARE NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OR A UNIQUE ELECTRONIC SIGNATURE OF A FLORIDA LICENSED PROFESSIONAL SURVEYOR AND MAPPER UNDER CHAPTER RULES 5J-17.061 & 5J-17.062 FLORIDA ADMINISTRATIVE CODE.

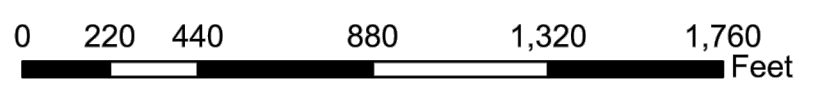
THIS DRAWING WAS NOT PLOTTED BY THE SURVEY DEPARTMENT

Attachment G

Figure 3



-  Valves To Close
-  Hydrant
-  Water Main



MATCH LINE: SHEET 2

Canal
Crossing
Location

HAZEN AND SAWYER
Environmental Engineers & Scientists



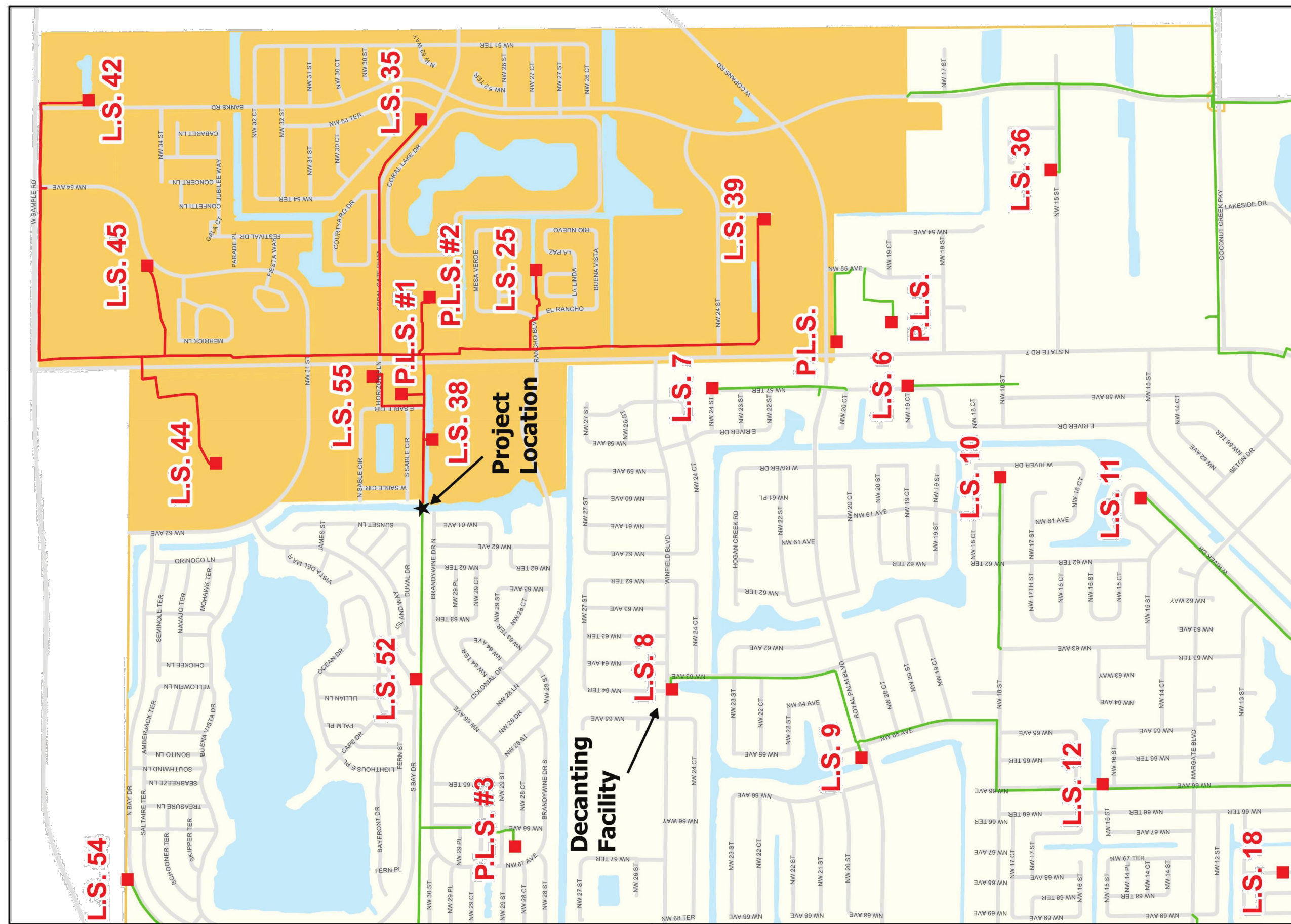
CITY OF MARGATE

SCALE
NTS

FIGURE-3
**WATER DISTRIBUTION SYSTEM
HYDRANT AND VALVE LOCATIONS**

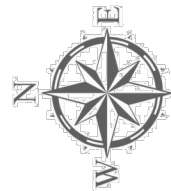
Attachment H

Figure 4



Legend

- Lift Stations
- Force Mains Not Affected
- Force Mains To Be Shut Down
- Affected Service Areas
- Water



Disclaimer:

The City of Margate provides these maps and their information for your personal use as-is. This information is derived from multiple sources which may, in part, not be current, be outside the control of the City of Margate, and may be of dubious accuracy. The areas depicted by these maps are approximate, and are not necessarily accurate to surveying or engineering standards. The City of Margate makes no representation or warranty, expressed or implied, for the completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Please notify the GIS staff of any discrepancies by contacting the Department of Environmental and Engineering Services at (954) 972-0426.

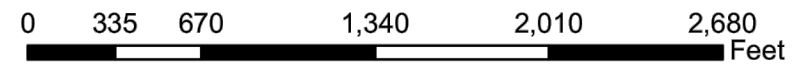
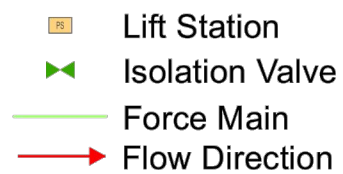
(Not To Scale)

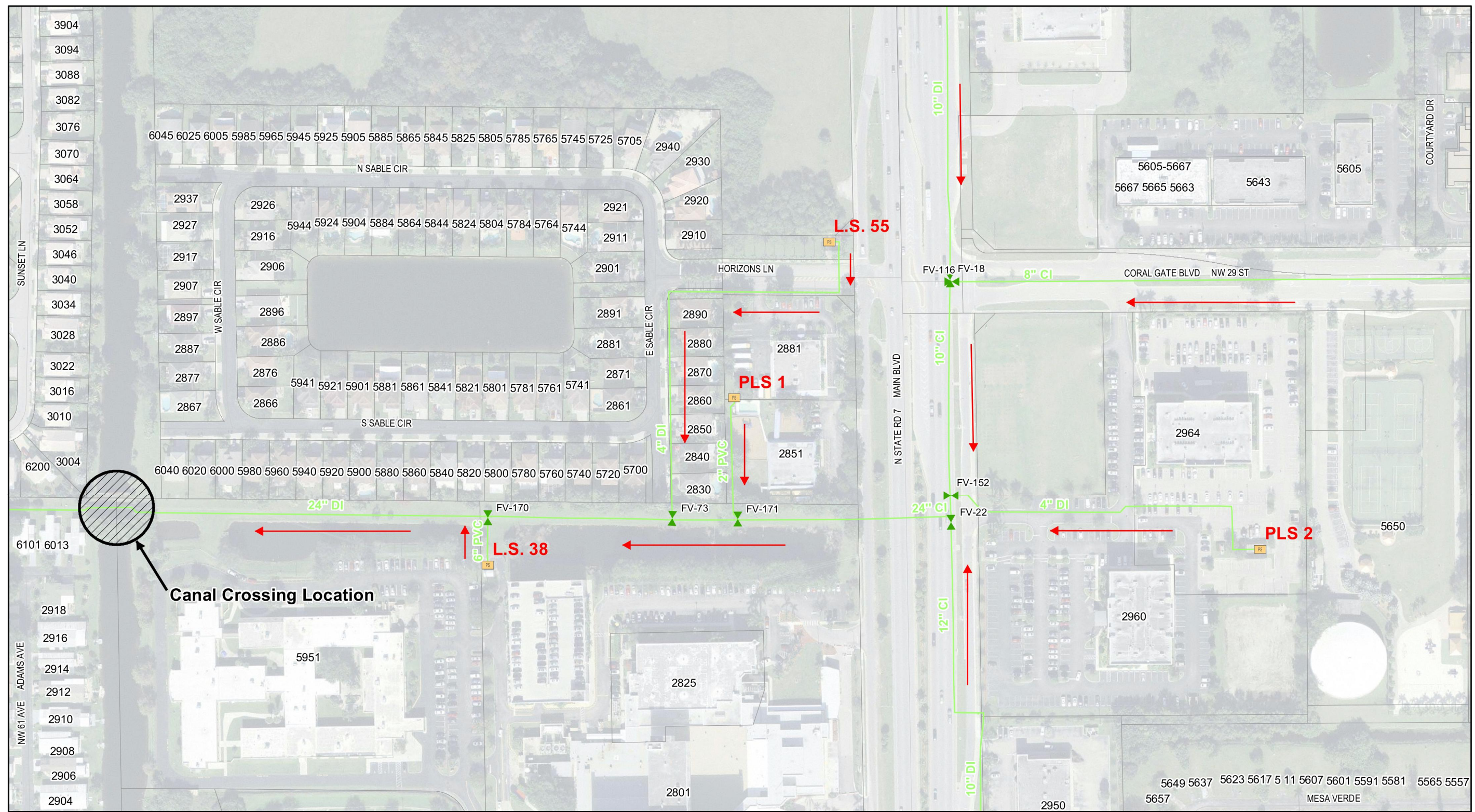
M:\ArcMap Projects\Engineer\force_main_aerial_crossing_project1\1x17.mxd 4/7/2014 J. Laboy, J. Shelton



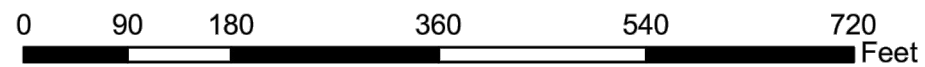
Attachment I

Figure 5A and 5B





- Lift Station
- Isolation Valve
- Force Main
- Flow Direction



HAZEN AND SAWYER
Environmental Engineers & Scientists



CITY OF MARGATE

SCALE
NTS

FIGURE-5B
**WASTE WATER TRANSMISSION MAIN
VALVE LOCATIONS - DETAIL 1**

Attachment J

Sample Insurance Certificate



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
	PHONE (A/C, No, Ext):	FAX (A/C, No):
	E-MAIL ADDRESS:	
	PRODUCER CUSTOMER ID #:	
INSURED	INSURER(S) AFFORDING COVERAGE	
	INSURER A:	NAIC #
	INSURER B:	
	INSURER C:	
	INSURER D:	
	INSURER E:	

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY POLICY OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN EXCEEDED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	GENERAL LIABILITY					
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY					EACH OCCURRENCE \$ 1M
	<input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR					DAMAGE TO RENTED PREMISES (Ea occurrence) \$
						MED EXP (Any one person) \$ 5K
						PERSONAL & ADV INJURY \$ 1M
						GENERAL AGGREGATE \$ 1M
						PRODUCTS - COMP/OP AGG \$ 1M
	GEN'L AGGREGATE LIMIT APPLIES PER:					\$
	<input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC					
	AUTOMOBILE LIABILITY					
	<input checked="" type="checkbox"/> ANY AUTO					COMBINED SINGLE LIMIT (Ea accident) \$ 500K
	<input type="checkbox"/> ALL OWNED AUTOS					BODILY INJURY (Per person) \$
	<input type="checkbox"/> SCHEDULED AUTOS					BODILY INJURY (Per accident) \$
	<input type="checkbox"/> HIRED AUTOS					PROPERTY DAMAGE (Per accident) \$
	<input type="checkbox"/> NON-OWNED AUTOS					\$
						\$
	UMBRELLA LIAB	<input type="checkbox"/> OCCUR				EACH OCCURRENCE \$
	EXCESS LIAB	<input type="checkbox"/> CLAIMS-MADE				AGGREGATE \$
	DEDUCTIBLE					\$
	RETENTION \$					\$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY					
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input type="checkbox"/> Y/N	N/A				<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER
	(Mandatory in NH) If yes, describe under SPECIAL PROVISIONS below					E.L. EACH ACCIDENT \$ 100,000
						E.L. DISEASE - EA EMPLOYEE \$ 100,000
						E.L. DISEASE - POLICY LIMIT \$ 300,000

Note: When applicable, the Insured shall provide a copy of authorized certificate or

Workers Compensation Exemption

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

The City of Margate additional Insured for General Liability Only

CERTIFICATE HOLDER**CANCELLATION**

The City of Margate
(Department Name)
5790 Margate Blvd
Margate, Florida 33063

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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ACORD 25 (2009/09)

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ATTACHMENT "J"