#### **ADDENDUM NO. 2**

## City of Springfield CITY COMPLEX

Mott MacDonald Project No.: 502100062
August 15, 2024

Plans, Specifications, and Contract Documents shall be amended in the following particulars:

#### I. QUESTIONS

 Attached to this Addendum #2 are the various questions that have been received from prospective bidders and the corresponding responses from the Architect/Engineer; see the attached QUESTIONS AND RESPONSES.

#### **II. SPECIFICATIONS**

#### A. <u>Division 0, Preface to Instructions to Bidders</u>

1. Replace the previously distributed "Preface to Instructions to Bidders" with the attached "Preface to Instructions to Bidders" and note the requirement of some supplemental conditions for Contract #2.

#### B. Division 0, Section C-200 – Instructions to Bidders for Construction Contract

- 1. Replace the previously distributed Section C-200 with the attached Section C-200.
- 2. While there are several revisions in the attached C-200, of particular note are the deletion of Article 21 regarding sales tax exemption and the correction in Article 22 paragraph A in which is provided the current Davis-Bacon Wage Determination Decision Number FL20240105 dated 04/26/2024.

#### C. <u>Division 2, Geotechnical</u>

 Add to Division 2 of the Specifications the attached "Report of Subsurface Exploration and Geotechnical Engineering Services – Springfield Nature Park SMS" dated March 3, 2022.

#### D. <u>DIVISION 8, Doors and Windows</u>

1. Add to Division 8 of the Specifications the attached "Section 081743 Composite Fiberglas Door."

#### E. Division 10, Specialties

1. Add to Division 10 of the Specifications the attached specification "Section 101463 Electronic Message Signage."

#### III. PLANS

#### A. Plan Sheets

1. Remove the following civil site drawing sheets: G0.1, G1.0, G2.0, C1.0, C1.1, C1.2, C1.3, C2.0, C3.0, C3.1, and M1.0 and replace with the attached drawings of the same number. The edits are noted on the new drawings and consist primarily of the deletion of a drawn square representing a future evidence storage building from the fenced impound yard west of the Fire Station and the replacement of the bar scale below the north arrow.

#### B. Plan Notes

1. On plan sheet E1.10, add the following note: "Provide two 2" spare conduits. The conduits shall terminate to panel L-FS-C and extend parallel to L-GEN-FS west past the generator to a 24"x24" handhole. In one conduit, provide a three #4AWG, plus one #4 ground with 20 ft. spare wire coiled in the manhole and enough slack to terminate in the panel L-FS-C. Provide a 60A/2 breaker in panel L-FS-C to terminate the wire for a portable building to be installed by others at a future date."

**END OF ADDENDUM No. 2** 

Addendum No. 2

### **ADDENDUM NO. 2**

# City of Springfield CITY COMPLEX

Mott MacDonald Project No.: 502100062

<u>August 20, 2024</u>

| ADDENDUM NO. 2 RECEIVED BY: |
|-----------------------------|
| COMPANY NAME:               |
| DATE:                       |

Please return acknowledgement of Addendum No. 2 either by email to: <a href="mailto:beverly.stephens@mottmac.com">beverly.stephens@mottmac.com</a>

Addendum No. 2 Page-3

### **QUESTIONS AND RESPONSES**

- 1. QUESTION: Regarding the separate bid items and separate pricing, will the contractor be required to complete one building before proceeding to the next? RESPONSE: No, the separate bid items are only for the purpose of identifying the costs of each building and to manage the two contracts in compliance with the funding agencies' supplemental conditions applicable to each. While the City may place a priority on the Police Station due to deterioration of their existing temporary facilities, all buildings will be under one contract and the successful Contractor may pursue the construction in the sequence and timing that he determines is most efficient.
- 2. QUESTION: Please provide Fire Alarm Spec Section. It is listed under the Mechanical Air Duct Spec section as having a digital addressable fire alarm system for the duct mounted fire and smoke detectors as well as having a zoned fire alarm system for the duct-mounted fire and smoke detectors. Will this fire alarm system be an open spec system or will it be sole sourced? RESPONSE: The system can be open ended and shall meet all applicable codes. It is required that the same type system be installed in each of the four buildings in the City Complex.
- 3. QUESTION: Is the Springfield City Complex AIS domestic? RESPONSE: This is being researched by the Owner's hurricane recovery consultant and their reply will be distributed to plan holders in a subsequent addendum.
- 4. QUESTION: ACT 3 is calling for a Wood Works product. Please specify the color. RESPONSE: ACT 3 basis of design shall be Armstrong Tegular 24x24 non-perforated wood panel or USG True Wood Panel 24x24 non-perforated. Color to be selected by architect in submittal phase.
- 5. QUESTION: ACT 1 is called out in the specs as "Optima 3352" but on the Finish Legend is "Radar 2210". Please clarify the correct ACT 1. RESPONSE: Basis of design shall be USG Radar 2210 for ACT 1.
- 6. QUESTION: Please advise if permits are by Owner or Contractor. RESPONSE: The Owner has already secured the building permits for the project.
- 7. QUESTION: Please advise if builder's risk is applicable. RESPONSE: See insurance requirements in Section C-800.
- 8. QUESTION: Please advise if testing and inspections are by owner or by the contractor. RESPONSE: By Contractor.
- 9. QUESTION: Please advise if Davis-Bacon, prevailing wages, etc. are applicable. RESPONSE: See the Preface, Exhibit A, etc., following the Advertisement for Bids in the Specifications.
- 10. QUESTION: Please advise if a budget has been outlined. RESPONSE: No.
- 11. QUESTION: Please advise if there is a projected start date. RESPONSE: No but the Owner wishes to proceed without delay; the condition of their temporary facilities is placing some urgency on the project.
- 12. QUESTION: The provided bid form indicates breakout sitework costs for City Hall separate from complete sitework costs. Is this imperative, it will be difficult to break out just these costs. RESPONSE: It is imperative due to the Federal rules applicable to the funding sources.
- 13. QUESTION: Plumbing roof plans have been provided for the Fire Station but no other

- buildings. Please advise if these plans can be made available. RESPONSE: No. The Fire Station is the only facility with a low slope roof and roof drains. All other facilities are metal roofs with gutters and downspouts which do not have or need roof plumbing plans.
- 14. QUESTION: Since we are pricing each building individually can we get a drawing clearly showing where each project separates from the other? RESPONSE: No, just make reasonable assumptions as you delineate.
- 15. QUESTION: The provided project manual calls for the generators to be natural gas or diesel, please advise which is correct. RESPONSE: The generators are to be natural gas.
- 16. QUESTION: Will communication/data drawings be provided, or will EC just provide raceways stubbed up to ceiling? RESPONSE: The communications and IT cabling will be provided and installed by the Owner's contracted IT Consultant who will not be a party to this construction contract; cabinet and equipment rooms, raceways, and related provisions have been designed into the buildings.
- 17. QUESTION: Please advise if an alternative Generac generator can be included in our bid proposal in lieu of specified. See attached product specifications. RESPONSE: Guidance for substitutions is provided in the Specifications document.
- 18. QUESTION: Please advise if alternative aluminum-framed entrances and storefront manufacturers can be considered. RESPONSE: Guidance for substitutions is provided in the Specifications document.
- 19. QUESTION: Please advise if BIM coordination is a requirement for this project. RESPONSE. No.
- 20. QUESTION: Thank you for the bid docs, can you include the CAD file please? RESPONSE: We do not provide AutoCAD files to prospective or actual bidders, only to the successful bidder after the contract is signed.
- 21. QUESTION: Are we required to submit a list of our subs and vendors with the bid? And if so, is there a specific form or format required? Or can we simply list the scope of work and the sub name (that would be preferred given how hectic it becomes in the final hour of the bid assembly due to late or changing subcontractor bids)? And if it is required, would you consider changing the required time for the receipt of those lists to the next morning as we have seen on other projects that we bid? RESPONSE: Article 11 of Section C-200 states "The apparent Successful Bidder, and any other Bidder so requested, must submit to Owner a list of the Subcontractors or Suppliers proposed for certain portions of the Work within five days after Bid opening." Reference that paragraph in your bid and note that they will be furnished within the five days.
- 22. QUESTION: The drawings call for the digital signage "as spec'd" (page G-06) but I don't see the specs noted anywhere in the plans/specs. Please advise the Digital Sign Spec Section. RESPONSE: See the attached specification "Section 101463 Electronic Message Signage."
- 23. QUESTION: Please provide spec section for the FRP Doors listed on door schedule A1-60. RESPONSE: See the attached specification "Section 081743 Composite Fiberglas Door."
- 24. QUESTION: 1. Spec Section 08 71 00 Door Hardware calls out doors numbered in the 500s. The plans do not have any doors numbered in the 500s. Please advise. RESPONSE: The 500's refer to the Community Center rooms and doors and is not included in this bid process.
- 25. QUESTION: 2. The following doors on the door schedule do not specify if the size is for a

single leaf or both leaves. Please verify the door sizes for the following doors.

RESPONSE: The correct size is shown in **bold**.

- 118B Pair of 4'0"x7'0" or Pair of 2'0"x7'0"
- 124B Pair of 4'0"x7'0" or Pair of 2'0"x7'0"
- 128B Pair of 4'0"x7'0" or Pair of 2'0"x7'0"
- 129B Pair of 4'0"x7'0" or Pair of 2'0"x7'0"
- 131- Pair of 4'0"x7'0" or Pair of 2'0"x7'0"
- 226 Pair of 3'0"x7'2" or Pair of 1'6"x7'2"
- 419 Pair of 3'0"x7'2" or Pair of 1'6"x7'2
- 26. QUESTION: The match between veneer leaves will be quoted as "Book" unless otherwise specified as "Pleasing" is not an option. RESPONSE: Book is acceptable.

# PREFACE TO INSTRUCTIONS TO BIDDERS

As publicized in the Advertisement for Bids, the City of Springfield proposes to build a new City Complex (City Hall, Fire Station, Police Station, and Public Works Building) at 1141 Transmitter Road. Also as noted in the Advertisement for Bids, the Civil Site Work, if awarded, will be awarded as a separate contract (Contract #1) from the contract for the buildings (Contract #2).

Contract #1 is for the Civil Site Work on the City Complex site (excluding for the City Hall building) and is funded by a CDBG-DR (Disaster Recovery) grant funded by HUD. The Federally required supplemental conditions for Contract #1 are provided in Attachment A (ten pages) to this Preface which is titled "Contractual Provisions for FEMA & United States Department of Housing & Urban Development (HUD) Projects". All of the supplemental conditions in Attachment A are applicable to Contract #1.

Contract #2 is for the construction of the City Hall, Police Station, Fire Station, and Public Works Building. The following four supplemental conditions are applicable to Contract #2, are also found in Attachment A, but are the only supplemental conditions in Attachment A that are applicable to Contract #2. The numbers preceding the titles (1, 4, 7, and 8) correspond to the numbered sections in Attachment A.

- 1. Equal Employment Opportunity
- 4. Contract Work Hours and Safety Standards Act
- 7. Department and Suspension
- 8. Byrd Anti-Lobbying Amendment

As further documented in the Bid Documents, Contract #1 and Contract #2 will both be awarded to one Contractor.

Each of the two Contracts will exceed the Simplified Acquisition Threshold therefore simplified acquisition is not applicable.

It is important to note that these instructions are in addition to and including all the requirements outlined in Division 0 Conditions of the Contract(s).

#### INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION CONTRACT

#### **TABLE OF CONTENTS**

|   | Page                         |
|---|------------------------------|
| Article 1— Defined Terms  | 1                            |
| Article 2— Bidding Documents  | 1                            |
| Article 3— Qualifications of Bidders  | 2                            |
| Article 4— Pre-Bid Conference   | 2                            |
| Article 5— Site and Other Areas; Existing Site Conditions; Examina Other Work at the Site |                              |
| Article 6— Bidder's Representations and Certifications                                    | 4                            |
| Article 7— Interpretations and Addenda  | 6                            |
| Article 8— Bid Security   | 6                            |
| Article 9— Contract Times   | 7                            |
| Article 10— Substitute and "Or Equal" Items   | 7                            |
| Article 11— Subcontractors, Suppliers, and Others   | 7                            |
| Article 12— Preparation of Bid  | 8                            |
| Article 13— Basis of Bid  | 9                            |
| Article 14— Submittal of Bid  | 10                           |
| Article 15— Modification and Withdrawal of Bid  | 10                           |
| Article 16— Opening of Bids   | 11                           |
| Article 17— Bids to Remain Subject to Acceptance  | 11                           |
| Article 18— Evaluation of Bids and Award of Contract                                      | 11                           |
| Article 19— Bonds and Insurance   | 12                           |
| Article 20— Signing of Agreement  | 12                           |
| Article 21— Sales and Use Taxes   | Error! Bookmark not defined. |
| Article 22 Davis-Bacon Wage Requirements  | 13                           |

#### **ARTICLE 1—DEFINED TERMS**

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
  - A. *Issuing Office*—The office from which the Bidding Documents are to be issued, and which registers plan holders.

#### **ARTICLE 2—BIDDING DOCUMENTS**

- 2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Agreement for a list of the Contract Documents. It is Bidder's responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.
- 2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.
- 2.03 Bidder may register as a plan holder and obtain complete sets of Bidding Documents, in the number and format stated in the Advertisement or invitation to bid, from the Issuing Office. Bidders may rely that sets of Bidding Documents obtained from the Issuing Office are complete, unless an omission is blatant. Registered plan holders will receive Addenda issued by Owner.

#### 2.04 Electronic Documents

- A. When the Bidding Requirements indicate that electronic (digital) copies of the Bidding Documents are available, such documents will be made available to the Bidders as Electronic Documents in the manner specified.
  - Bidding Documents will be provided in Adobe PDF (Portable Document Format) (.pdf). It is the intent of the Engineer and Owner that such Electronic Documents are to be exactly representative of the paper copies of the documents. However, because the Owner and Engineer cannot totally control the transmission and receipt of Electronic Documents nor the Contractor's means of reproduction of such documents, the Owner and Engineer cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.
- 3. Unless otherwise stated in the Bidding Documents, the Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.04.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and

responsibility associated with use of the Electronic Documents versions to derive information that is not explicitly contained in printed paper versions of the documents, and for Bidder's reliance upon such derived information.

#### **ARTICLE 3—QUALIFICATIONS OF BIDDERS**

- 3.01 To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit with its Bid the following information:
  - A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.
  - B. A written statement that Bidder is authorized to do business in the state where the Project is located.
  - C. Bidder's state or other contractor license number, if applicable.
- 3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

#### ARTICLE 4—PRE-BID CONFERENCE

- 4.01 A non-mandatory pre-bid conference will be held at the time and location indicated in the Advertisement or invitation to bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference; however, attendance at this conference is not required to submit a Bid.
- 4.02 Information presented at the pre-Bid conference does not alter the Contract Documents. Owner will issue Addenda to make any changes to the Contract Documents that result from discussions at the pre-Bid conference. Information presented, and statements made at the pre-bid conference will not be binding or legally effective unless incorporated in an Addendum.

## ARTICLE 5—SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

- 5.01 Site and Other Areas
  - A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.
- 5.02 Existing Site Conditions
  - A. Subsurface and Physical Conditions; Hazardous Environmental Conditions
    - 1. The Supplementary Conditions identify the following regarding existing conditions at or adjacent to the Site:

EJCDC® C-200, Instructions to Bidders for Construction Contract.

Copyright® 2018 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

- a. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data.
- Those drawings known to Owner of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data.
- c. Reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
- d. Technical Data contained in such reports and drawings.
- Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.
- 3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.
- 4. Geotechnical Baseline Report/Geotechnical Data Report: The Bidding Documents may contain a Geotechnical Baseline Report (GBR) and/or a Geotechnical Data Report (GDR).
  (Note: If no Geotechnical Report(s) are contained in the bidding document, none were generated for this project)
- B. Underground Facilities: Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05 of the General Conditions, and not in the drawings referred to in Paragraph 5.02.A of these Instructions to Bidders. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.
- 5.03 Other Site-related Documents
  - A. No other Site-related documents are available.
- 5.04 *Site Visit and Testing by Bidders* 
  - A. Bidder is required to visit the Site and conduct a thorough visual examination of the Site and adjacent areas. During the visit the Bidder must not disturb any ongoing operations at the Site.
  - B. A Site visit is scheduled following the pre-bid conference.
  - C. Bidders visiting the Site are required to arrange their own transportation to the Site.
  - D. All access to the Site other than during a regularly scheduled Site visit must be coordinated through the Owner for visiting the Site. Bidder must conduct the required Site visit during normal working hours.

- E. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder general access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site. Bidder is responsible for establishing access needed to reach specific selected test sites.
- F. Bidder must comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.
- G. Bidder must fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

#### 5.05 Owner's Safety Program

A. Site visits and work at the Site may be governed by an Owner safety program. If an Owner safety program exists, it will be noted in the Supplementary Conditions.

#### 5.06 Other Work at the Site

A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

#### ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

- 6.01 Express Representations and Certifications in Bid Form, Agreement
  - A. The Bid Form that each Bidder will submit contains express representations regarding the Bidder's examination of Project documentation, Site visit, and preparation of the Bid, and certifications regarding lack of collusion or fraud in connection with the Bid. Bidder should review these representations and certifications and assure that Bidder can make the representations and certifications in good faith, before executing and submitting its Bid.
  - 3. If Bidder is awarded the Contract, Bidder (as Contractor) will make similar express representations and certifications when it executes the Agreement.

- 6.02 It is the responsibility of each Bidder before submitting a Bid to:
  - A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;
  - B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
  - C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;
  - D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;
  - E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;
  - F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of theWork at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
  - G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
  - H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;
  - determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
  - J. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the

Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

#### ARTICLE 7—INTERPRETATIONS AND ADDENDA

- 7.01 Owner on its own initiative may issue Addenda to clarify, correct, supplement, or change the Bidding Documents.
- 7.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents to Engineer in writing via the two contacts shown below. Contact information and submittal procedures for such questions are as follows:
  - A. Tommy Pitts, Project Manager tommy.pitts@mottmac.com
  - B. cc: Beverly Stephens beverly.stephens@mottmac.com
- 7.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all registered plan holders. Questions received less than seven days prior to the date for opening of Bids may not be answered.
- 7.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Contract Documents.

#### **ARTICLE 8—BID SECURITY**

- A Bid must be accompanied by Bid security made payable to Owner in an amount of five (5%) percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a Bid bond issued by a surety meeting the requirements of Paragraph 6.01 of the General Conditions. Such Bid bond will be issued in the form included in the Bidding Documents.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract, furnished the required Contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract and furnish the required Contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited, in whole in the case of a penal sum bid bond, and to the extent of Owner's damages in the case of a damages-form bond. Such forfeiture will be Owner's exclusive remedy if Bidder defaults.
- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 7 days after the Effective Date of the

- Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.
- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within 7 days after the Bid opening.

#### **ARTICLE 9—CONTRACT TIMES**

- 9.01 The number of days within which, or the dates by which, the Work is to be (a) substantially completed and (b) ready for final payment, and (c) Milestones (if any) are to be achieved, are set forth in the Agreement.
- 9.02 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

#### ARTICLE 10—SUBSTITUTE AND "OR EQUAL" ITEMS

- 10.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those "or-equal" or substitute or materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an "or-equal" or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer within 15 days of the issuance of the Advertisement for Bids or invitation to Bidders. Each such request must comply with the requirements of Paragraphs 7.05 and 7.06 of the General Conditions, and the review of the request will be governed by the principles in those paragraphs. The burden of proof of the merit of the proposed item is upon Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all registered Bidders. Bidders cannot rely upon approvals made in any other manner.
- 10.02 All prices that Bidder sets forth in its Bid will be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of "or-equal" or substitution requests are made at Bidder's sole risk.

#### ARTICLE 11—SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 11.01 The apparent Successful Bidder, and any other Bidder so requested, must submit to Owner a list of the Subcontractors or Suppliers proposed for certain portions of the Work within five days after Bid opening. Examples of Items for which this may be required is as follows:
  - A. Subcontractors: All
  - B. All Equipment: Pumps, Controls, Mixers, Electrical Gear, etc.
- 11.02 If requested by Owner, such list must be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor or Supplier. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor or Supplier, Owner may, before the Notice of Award is given,

- request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder will submit a substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.
- 11.03 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors and Suppliers. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor or Supplier, so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.07 of the General Conditions.
- 11.04 The Contractor shall not award work to subcontractor(s) in excess of the limits stated in SC 7.07.

#### ARTICLE 12—PREPARATION OF BID

- 12.01 The Bid Form is included with the Bidding Documents.
  - A. All blanks on the Bid Form must be completed in ink and the Bid Form signed in ink. Erasures or alterations must be initialed in ink by the person signing the Bid Form. A Bid price must be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
  - B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable."
- 12.02 If Bidder has obtained the Bidding Documents as Electronic Documents, then Bidder shall prepare its Bid on a paper copy of the Bid Form printed from the Electronic Documents version of the Bidding Documents. The printed copy of the Bid Form must be clearly legible, printed on 8½ inch by 11-inch paper and as closely identical in appearance to the Electronic Document version of the Bid Form as may be practical. The Owner reserves the right to accept Bid Forms which nominally vary in appearance from the original paper version of the Bid Form, providing that all required information and submittals are included with the Bid.
- 12.03 A Bid by a corporation must be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation must be shown.
- 12.04 A Bid by a partnership must be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership must be shown.
- 12.05 A Bid by a limited liability company must be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown.
- 12.06 A Bid by an individual must show the Bidder's name and official address.

- 12.07 A Bid by a joint venture must be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.
- 12.08 All names must be printed in ink below the signatures.
- 12.09 The Bid must contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.
- 12.10 Postal and e-mail addresses and telephone number for communications regarding the Bid must be shown.
- 12.11 The Bid must contain evidence of Bidder's authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.
- 12.12 If Bidder is required to be licensed to submit a Bid or perform the Work in the state where the Project is located, the Bid must contain evidence of Bidder's licensure, or Bidder must certify in writing that it will obtain such licensure within the time for acceptance of Bids and attach such certification to the Bid. Bidder's state contractor license number, if any, must also be shown on the Bid Form.

#### ARTICLE 13—BASIS OF BID

#### 13.01 Lump Sum

- A. Bidders must submit a Bid on a lump sum basis as set forth in the Bid Form.
- 13.02 Base Bid with Alternates (if Applicable)
  - A. Bidders must submit a Bid on a lump sum basis for the base Bid and include a separate price for each alternate described in the Bidding Documents and as provided for in the Bid Form. The price for each alternate will be the amount added to or deleted from the base Bid if Owner selects the alternate.
  - B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form.

#### 13.03 Unit Price

- A. Bidders must submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.
- 3. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity", which Owner or its representative has set forth in the Bid Form, for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

#### 13.04 *Allowances*

A. For cash allowances the Bid price must include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

#### **ARTICLE 14—SUBMITTAL OF BID**

- 14.01 The Bidding Documents include one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 2 of the Bid Form.
- 14.02 A Bid must be received no later than the date and time prescribed and at the place indicated in the Advertisement or invitation to bid and must be enclosed in a plainly marked package with the Project title, and, if applicable, the designated portion of the Project for which the Bid is submitted, the name and address of Bidder, and must be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid must be enclosed in a separate package plainly marked on the outside with the notation "SEALED BID FOR CONSTRUCTION OF SPRINGFIELD CITY COMPLEX." A mailed Bid must be addressed to the location designated in the Advertisement.
- 14.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

#### ARTICLE 15—MODIFICATION AND WITHDRAWAL OF BID

- 15.01 An unopened Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 15.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 15.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 15.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, the Bidder may withdraw its Bid,

and the Bid security will be returned. Thereafter, if the Work is rebid, the Bidder will be disqualified from further bidding on the Work.

#### ARTICLE 16—OPENING OF BIDS

16.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

#### ARTICLE 17—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

17.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

#### ARTICLE 18—EVALUATION OF BIDS AND AWARD OF CONTRACT

- 18.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.
- 18.02 Owner will reject the Bid(s) of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible.
- 18.03 If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, whether in the Bid itself or in a separate communication to Owner or Engineer, then Owner will reject the Bid as nonresponsive.
- 18.04 If Owner awards the contract for the Work, such award will be to the responsible Bidder submitting the lowest responsive Bid.
- 18.05 Bidders are hereby notified that Section 287.05701, Florida Statutes, requires that the Owner may not request documentation of or consider a Bidder's social, political, or ideological interests when determining if the Bidder is a responsible Bidder.
- 18.06 As noted elsewhere, the Work will be awarded in two contracts. The portion of the Work covered by Contract #1 and the portion of the Work Covered by Contract #2, if awarded, will both be awarded to one Contractor. On the Bid Proposal Form, the "TOTAL BID (Sum of Contracts #1 & #2") will be the amount considered when determining the lowest responsive Bid.

#### 18.07 Evaluation of Bids

- A. In evaluating Bids, Owner will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 3. For determination of the apparent low Bidder(s) when sectional bids are submitted, Bids will be compared on the basis of the aggregate of the Bids for separate sections and the Bids for combined sections that result in the lowest total amount for all of the Work.

- C. For the determination of the apparent low Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.
- 18.08 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 18.09 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

#### ARTICLE 19—BONDS AND INSURANCE

- 19.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds, other required bonds (if any), and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by required bonds and insurance documentation.
- 19.02 Article 8, Bid Security, of these Instructions, addresses any requirements for providing bid bonds as part of the bidding process.

#### **ARTICLE 20—SIGNING OF AGREEMENT**

20.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Agreement and any bonds and insurance documentation required to be delivered by the Contract Documents to Owner. Within 10 days thereafter, Owner will deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

#### **ARTICLE 21—DELETED**

21.01 Article 21, paragraph 21.01 is hereby deleted. Bidders shall include all applicable sales tax. Owner is exempt from Florida state sales and use taxes on materials and equipment to be incorporated in the Work, Exemption No. 576002787. Said taxes must not be included in the Bid. Refer to Paragraph SC 7.10 of the Supplementary Conditions for additional information.

#### ARTICLE 22—DAVIS-BACON WAGE REQUIREMENTS

22.01 As described in detail elsewhere within these Specifications, the Work of this project is divided into two Contracts based upon the source of funding for each Contract. Work funded by FEMA

and the US Department of Housing and Urban Development (HUD) must comply with Davis-Bacon Wage Requirements.

- A. Contract #1 Civil Site Work for the City Complex is funded by FEMA and HUD and the wage rates for Contract #1 must comply with Davis-Bacon Wage Determination Decision Number FL20240105 dated 04/26/2024 which is included elsewhere in these Specifications.
- B. Contract #2 for the construction of the City Hall, Fire Station, Police Station, and Public Works Buildings are NOT required to comply with Davis-Bacon.



March 3, 2022

#### **STOA Architects**

121 East Government Street Pensacola, Florida 32502

Attention: Mr. Christopher Kariher

**Subject:** Report of Subsurface Exploration and Geotechnical Engineering Services

**Springfield Nature Park SMS**Springfield, Bay County, Florida

NOVA Project Number 10111-2021242

Dear Mr. Kariher:

This letter forwards the results of our exploration for the proposed stormwater management system (SMS) to be constructed within the planned nature park in Springfield, Bay County, Florida.

The primary objectives of this study were to provide a geotechnical exploration of the soils present beneath the proposed SMS footprint and to provide geotechnical parameters required for the SMS design. This report briefly discusses our understanding of the project at the time of the subsurface exploration, describes the geotechnical consulting services provided by NOVA, and presents our findings, conclusions, and recommendations.

#### **Subsurface Conditions**

NOVA performed three (3) auger borings within the footprint of the proposed SMS basin, in general accordance with ASTM designations and industry standards.

Beneath about 8 to 12 inches of topsoil, the test borings generally encountered slightly silty fine-grained sand (USCS classification of SP-SM) to a depth of about 3 feet below existing grade (BEG), where the boreholes collapsed due to groundwater intrusion. The Test Boring Records and a summary of laboratory soil testing results are provided in the attached Appendix.

Groundwater was encountered in the borings at a uniform depth of approximately 1 foot BEG at the time of our subsurface investigation, which occurred during a period of relatively normal seasonal rainfall.

#### **Stormwater Management System Recommendations**

NOVA understands the project will include the construction of a stormwater management system (SMS) to treat and dispose of stormwater runoff associated with planned site improvements, which will consist of a wet detention basin. Based on the results of our field exploration, the subsurface conditions encountered within the proposed SMS basin appear to be suitable for employing this desired SMS. Provided the design team elects to proceed with the proposed SMS design, we recommend that soil parameters presented in the table below be considered.

| TABLE 1 – SMS Soil Design Parameters                  |               |  |  |  |  |  |  |  |  |
|---|---------------|--|--|--|--|--|--|--|--|
| Corresponding Soil Boring Test Location               | S-1, S-2, S-3 |  |  |  |  |  |  |  |  |
| Measured Depth to Stabilized GW Table, BEG            | 1 ft.         |  |  |  |  |  |  |  |  |
| Approximate Depth to Normal Permanent SHGW Table, BEG | At Grade      |  |  |  |  |  |  |  |  |
| Approximate Depth to Normal Permanent SLGW Table, BEG | ±3 ft.        |  |  |  |  |  |  |  |  |

The estimated normal permanent SHGW and SLGW levels provided in the table above are based on our experience with projects in this locale; the soil strata encountered in the test boring; and the published information by the "Web Soil Survey" National database, NRCS division of the United States Department of Agriculture (USDA).

We appreciate your selection of **NOVA** and the opportunity to be of service on this project. If you have any questions, or if we may be of further assistance, please do not hesitate to contact us.

Sincerely,

**NOVA ENGINEERING AND ENVIRONMENTAL LLC** 

David Ritzel, E.I.

Staff Engineer

Florida Registration No. 1100023406

David Ritzel

Attachments:

Appendix A - Figures & Maps, Appendix B - Subsurface Data,

Appendix C - Support Documents



# APPENDIX A Figures and Maps



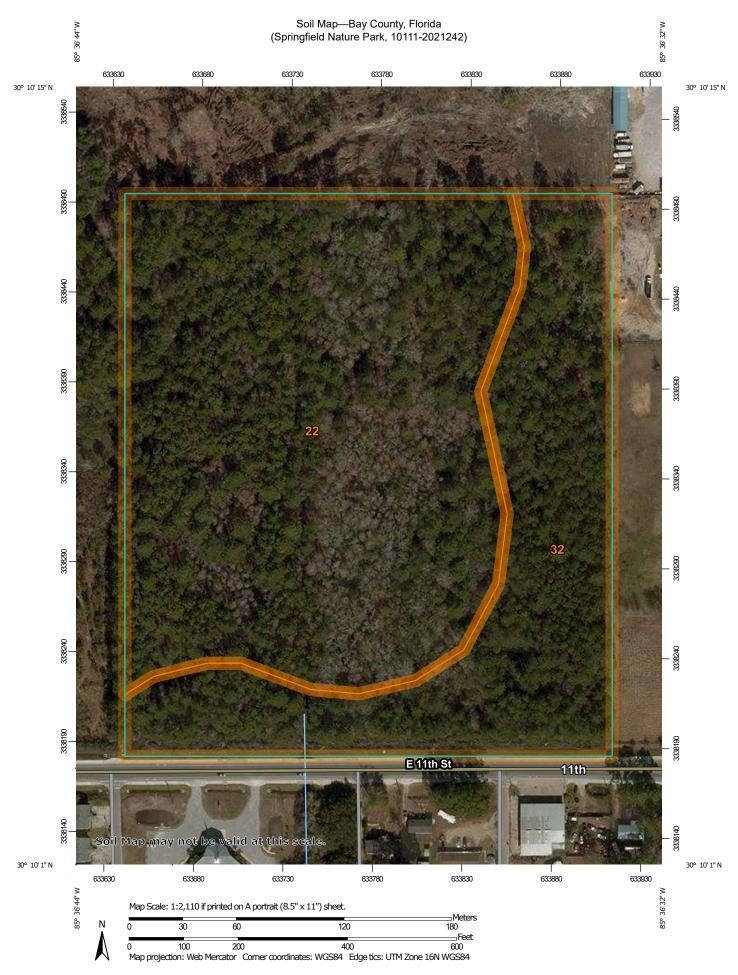
Drawn By: D. Ritzel

Checked By: W. Lawrence



17612 Ashley Drive Panama City Beach, Florida 32413 850.249.6682 • 850.249.6683

Springfield, Bay County, Florida NOVA Project Number 10111-2021242



#### MAP LEGEND

â

00

Δ

Water Features

Transportation

---

Background

Spoil Area

Stony Spot

Wet Spot

Other

Rails

**US Routes** 

Major Roads

Local Roads

Very Stony Spot

Special Line Features

Streams and Canals

Interstate Highways

Aerial Photography

#### Area of Interest (AOI)

Area of Interest (AOI)

#### Soils

Soil Map Unit Polygons



Soil Map Unit Points

#### Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Candfill

Lava Flow

Marsh or swamp

Walsh of Swall

Mine or Quarry

Miscellaneous Water

Perennial Water

Nock Outcrop

→ Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

#### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Bay County, Florida Survey Area Data: Version 21, Sep 7, 2021

Soil map units are labeled (as space allows) for map scales 1:50.000 or larger.

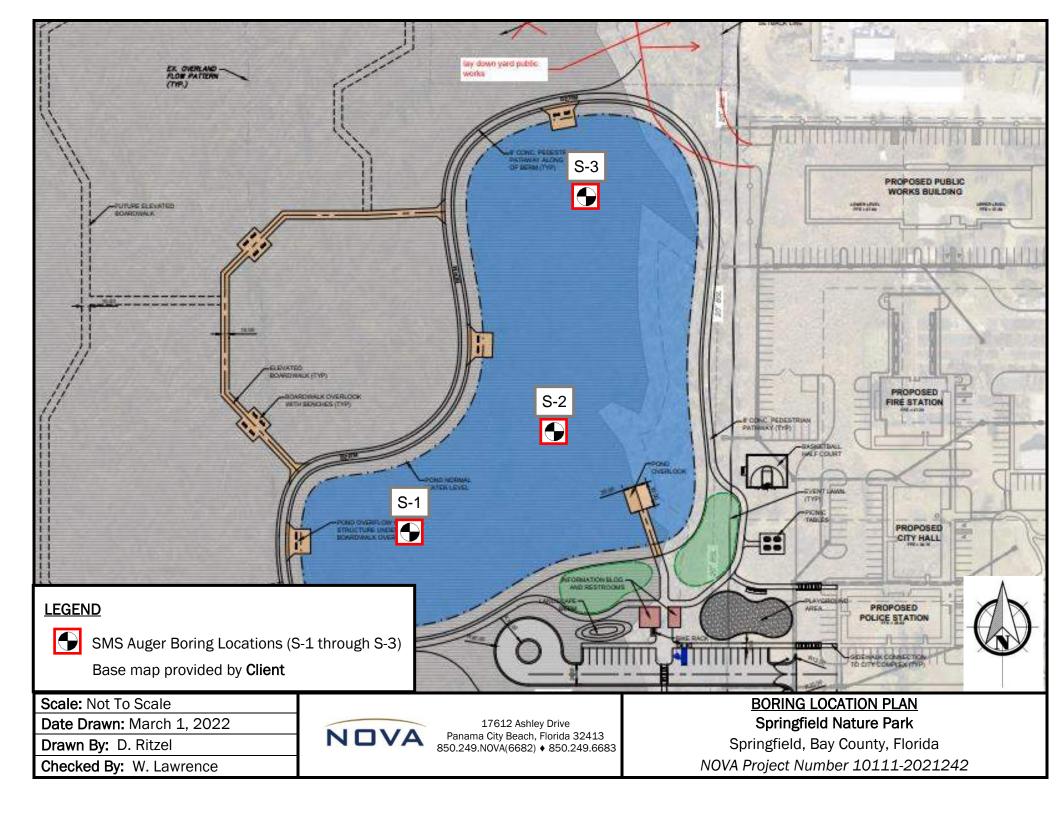
Date(s) aerial images were photographed: Jan 18, 2015—Mar 7, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## **Map Unit Legend**

|                             | ,                       |              |                |
|-----------------------------|-------------------------|--------------|----------------|
| Map Unit Symbol             | Map Unit Name           | Acres in AOI | Percent of AOI |
| 22                          | Pamlico-Dorovan complex | 13.9         | 65.9%          |
| 32                          | Plummer sand            | 7.2          | 34.1%          |
| Totals for Area of Interest |                         | 21.1         | 100.0%         |

# APPENDIX B Subsurface Data





### **KEY TO BORING LOGS**

#### SYMBOLS AND ABBREVIATIONS SYMBOL DESCRIPTION No. of Blows of a 140-lb. Weight Falling 30 N-Value Inches Required to Drive a Standard Spoon 1 Foot WOR Weight of Drill Rods WOH Weight of Drill Rods and Hammer Sample from Auger Cuttings Standard Penetration Test Sample Thin-wall Shelby Tube Sample (Undisturbed Sampler Used) % REC Percent Core Recovery from Rock Core Drilling RQD Rock Quality Designation Stabilized Groundwater Level Seasonal High Groundwater Level (also referred to as the W.S.W.T.) NE Not Encountered GNE Groundwater Not Encountered BT **Boring Terminated** Fines Content or % Passing No. 200 Sieve -200 (%) MC (%) Moisture Content

#### UNIFIED SOIL CLASSIFICATION SYSTEM

|  | MAJOR DIVIS                      | SIONS                                  | GROUP<br>SYMBOLS | TYPICAL NAMES  |  |  |  |  |
|--|----------------------------------|--|------------------|--|--|--|--|--|
| *e/  | GRAVELS                          | CLEAN                                  | GW               | Well-graded gravels and gravel-<br>sand mixtures, little or no fines                       |  |  |  |  |
| COARSE-GRAINED SOILS<br>More than 50% retained on the the No. 200 sieve* | 50% or<br>more of<br>coarse      | GRAVELS                                | GP               | Poorly graded gravels and<br>gravel-sand mixtures, little or no<br>fines                   |  |  |  |  |
| SOILS<br>he No.  | fraction<br>retained on          | GRAVELS                                | GM               | Silty gravels and gravel-sand-<br>silt mixtures  |  |  |  |  |
| AINED<br>on the t  | No. 4 sieve                      | WITH FINES                             | GC               | Clayey gravels and gravel-<br>sand-clay mixtures   |  |  |  |  |
| COARSE-GRAINED SOILS 50% retained on the the No.                         | SANDS                            | CLEAN<br>SANDS                         | SW**             | Well-graded sands and gravelly sands, little or no fines                                   |  |  |  |  |
| COAR!  | More than<br>50% of              | 5% or less<br>passing No.<br>200 sieve | SP**             | Poorly graded sands and gravelly sands, little or no fines                                 |  |  |  |  |
| e than   | coarse<br>fraction<br>passes No. | SANDS with<br>12% or more              | SM**             | Silty sands, sand-silt mixtures  |  |  |  |  |
| Mor  | 4 sieve                          | passing No.<br>200 sieve               | SC**             | Clayey sands, sand-clay<br>mixtures  |  |  |  |  |
|  |                                  |  | ML               | Inorganic silts, very fine sands,<br>rock flour, silty or clayey fine<br>sands             |  |  |  |  |
| ) sieve*   | Liqu                             | ND CLAYS<br>id limit<br>or less        | CL               | Inorganic clays of low to<br>medium plasticity, gravelly<br>clays, sandy clays, lean clays |  |  |  |  |
| SOILS<br>No. 200   |                                  |  | OL               | Organic silts and organic silty<br>clays of low plasticity                                 |  |  |  |  |
| FINE-GRAINED SOILS<br>50% or more passes the No. 200 sieve*              |                                  |  | МН               | Inorganic silts, micaceous or<br>diamicaceous fine sands or<br>silts, elastic silts        |  |  |  |  |
| FINE-(   | Liqu                             | ND CLAYS<br>id limit                   | СН               | Inorganic clays or clays of high plasticity, fat clays                                     |  |  |  |  |
| 20% c  | greater                          | than 50%                               | ОН               | Organic clays of medium to<br>high plasticity  |  |  |  |  |
|  |                                  |  | PT               | Peat, muck and other highly organic soils  |  |  |  |  |

\*Based on the material passing the 3-inch (75 mm) sieve

\*\* Use dual symbol (such as SP-SM and SP-SC) for soils with more than 5% but less than 12% passing the No. 200 sieve

#### RELATIVE DENSITY

Coefficient of Permeability

Ground Surface Elevation

Organic Content

Liquid Limit (Atterberg Limits Test)

Plasticity Index (Atterberg Limits Test)

PI

K

Org. Cont.

G.S. Elevation

(Sands and Gravels)
Very loose – Less than 4 Blow/Foot
Loose – 4 to 10 Blows/Foot
Medium Dense – 11 to 30 Blows/Foot
Dense – 31 to 50 Blows/Foot
Very Dense – More than 50 Blows/Foot

#### CONSISTENCY

(Silts and Clays) Very Soft – Less than 2 Blows/Foot

Soft – 2 to 4 Blows/Foot Medium Stiff – 5 to 8 Blows/Foot Stiff – 9 to 15 Blows/Foot Very Stiff – 16 to 30 Blows/Foot Hard – More than 30 Blows/Foot

#### RELATIVE HARDNESS

(Limestone)
Soft – 100 Blows for more than 2 Inches
Hard – 100 Blows for less than 2 Inches

#### MODIFIERS

These modifiers Provide Our Estimate of the Amount of Minor Constituents (Silt or Clay Size Particles) in the Soil Sample

Trace – 5% or less
With Silt or With Clay – 6% to 11%
Silty or Clayey – 12% to 30%
Very Silty or Very Clayey – 31% to 50%

These Modifiers Provide Our Estimate of the Amount of Organic Components in the Soil Sample

Trace – Less than 3%
Few – 3% to 4%
Some – 5% to 8%
Many – Greater than 8%

These Modifiers Provide Our Estimate of the Amount of Other Components (Shell, Gravel, Etc.) in the Soil Sample

Trace - 5% or less Few - 6% to 12% Some - 13% to 30% Many - 31% to 50%

|                                     |  |              | PROJECT NAME: S                                    | pringfield Na | ature Pa                 | rk   |                |         |             | DATE:     | 2/28/   | 2022   |
|-------------------------------------|--|--------------|--|---------------|--------------------------|--|----------------|---------|-------------|-----------|---------|--------|
|                                     | NIC  | OVA          | PROJECT NO.: 202                                   | 1242          | CLIENT:                  | STO  | A Arch         | nitect  | S           |           |         |        |
|                                     | 146  | JVA          | PROJECT LOCATION: Springfield, Bay County, Florida |               |                          |  |                |         |             |           |         |        |
| Ιт                                  | FST  | BORING       | LOCATION: See Boring Location Plan                 |               |                          |  | LEVA           | TION:   | Existing    | g Grade   | 9       |        |
| 1 '                                 |  |              | DRILLED BY: D. Rit                                 | _             |                          |  |                |         | ': D. Ritze |           |         |        |
|                                     |  | CORD         | DRILLING METHOD:                                   |               | er                       |  | IAMM           |         |             |           |         |        |
|                                     | ,  | S-1          | INITIAL GW DEPTH:                                  |               |                          |  | SHG            |         | <br>PTH: ♀  | 0.0 f     | eet     |        |
|                                     |  |              |  |               |                          |  |                |         | • N-Value   |           |         |        |
|                                     | L C  |              |  |               | ي ا                      | ater                                       | l <sub>o</sub> | υ       | ▲ Moistu    |           |         |        |
| Depth<br>(feet)                     | Elevation                                    |              | Material Description                               | 1             | 2 2                      | Graphic                                    | Sample<br>Type | N-Value | ♦ Organi    | c Conten  | ıt (%)  |        |
|                                     | E e  |              | •  |               | ئ ا                      | rou  | Sa T           | ź       | Fines (     | Content ( | %)<br>L | ı      |
|                                     |  |              |  |               |                          | 9  |                |         | 10 20 30    |           |         |        |
| 0                                   |  |              |  |               |                          | <u>,                                  </u> |                |         |             |           |         |        |
| <u>i</u>                            |  |              | n silty fine-grained SA                            |               | v                        |  |                |         |             |           |         |        |
| מ<br>ט                              |  | or           | ganics - organic silt (                            | SIVI)         |                          |  |                |         |             |           |         |        |
| 5                                   |  |              |  |               |                          |  |                |         |             |           |         |        |
| allye                               |  |              |  |               |                          |  |                |         |             |           |         |        |
| 5                                   |  |              |  |               |                          |  |                |         |             |           |         |        |
| =<br>20<br>=                        |  |              |  |               |                          |  |                |         |             |           |         |        |
| De interpreted as being mulcauve of |  | Drown oligh  | thy cilty find grained C                           |               | <u> </u>                 |  |                |         |             |           |         |        |
| מ<br>ב                              |  | Brown Slight | tly silty fine-grained S                           | :<br>         |                          |  |                |         |             |           |         |        |
| <u> </u>                            |  |              |  |               |                          | 1 ▼  |                |         |             |           |         |        |
|                                     |  |              |  |               | 1966<br>  1967<br>  1968 | : - <br> - -                               |                |         |             |           |         |        |
| E<br>E                              |  |              |  |               |                          | : I.:<br>: I:                              |                |         |             |           |         |        |
| ğ                                   |  |              |  |               |                          |  |                |         |             |           |         |        |
| snould                              |  |              |  |               |                          |  |                |         |             |           |         |        |
|                                     |  |              |  |               |                          |  |                |         |             |           |         |        |
| all                                 |  |              |  |               |                          |  |                |         |             |           |         |        |
| 24<br>= 1                           |  |              |  |               |                          | :<br>                                      |                |         |             |           |         |        |
| o tnis boring and                   |  |              |  |               |                          | 1  |                |         |             |           |         |        |
|                                     |  |              |  |               |                          |  |                |         |             |           |         |        |
| ž ———                               |  |              |  |               |                          | : I: .<br>: I: .                           |                |         |             |           |         |        |
|                                     |  |              |  |               |                          |  |                |         |             |           |         |        |
|                                     |  |              |  |               |                          |  |                |         |             |           |         |        |
| <u>6</u>                            |  |              |  |               |                          |  |                |         |             |           |         |        |
| allo                                |  |              |  |               |                          | : - <br>: -                                |                |         |             |           |         |        |
|                                     |  |              |  |               |                          | :<br>:<br>:<br>!                           |                |         |             |           |         |        |
|                                     |  |              |  |               |                          | 1  |                |         |             |           |         |        |
|                                     |  |              |  |               |                          |  |                |         |             |           |         |        |
|                                     |  |              |  |               |                          | : I.:<br>                                  |                |         |             |           |         |        |
|                                     |  | Ro           | ring Terminated at 3                               | <br>feet      |                          | • • • •                                    |                |         |             |           |         |        |
|                                     |  |              | ring reminated at 5                                | 1000          |                          |  |                |         |             |           |         |        |
|                                     |  |              |  |               |                          |  |                |         |             |           |         |        |
|                                     |  |              |  |               |                          |  |                |         |             |           |         |        |
|                                     |  |              |  |               |                          |  |                |         |             |           |         |        |
|                                     |  |              |  |               |                          |  |                |         |             |           |         |        |
|                                     |  |              |  |               |                          |  |                |         |             |           |         |        |
|                                     |  |              |  |               |                          |  |                |         |             |           |         |        |
|                                     |  |              |  |               |                          |  |                |         |             |           |         |        |
| Note                                | <u>.                                    </u> |              |  |               |                          |  |                |         |             |           |         |        |
| ivote                               | •  |              |  |               |                          |  |                |         |             |           |         |        |
|                                     |  |              |  |               |                          |  |                |         |             |           | Page    | 1 of 1 |

|                                   |           |               | PROJECT NAME: Sp                             | ringfield N | ature  | Park        |                        |                   |          |                   | DATE:     | 2/28/     | 2022      |
|-----------------------------------|-----------|---------------|--|-------------|--------|-------------|------------------------|-------------------|----------|-------------------|-----------|-----------|-----------|
|                                   | NIC       | AVE           | PROJECT NO.: 2021242 CLIENT: STOA Architects |             |        |             |                        |                   |          |                   |           |           |           |
|                                   | IAL       | - VA          | PROJECT LOCATION:                            | Springfie   | ld, Ba | y Cou       | inty,                  | Floric            | la       |                   |           |           |           |
| ∣ т                               | FST       | BORING        | LOCATION: See Boring Location Plan           |             |        |             | _ E                    | LEVA              | TION:    | Existin           | ng Grade  | е         |           |
| '                                 |           |               | DRILLED BY: D. Ritz                          | _           |        |             |                        |                   |          | ': <u>D. Ritz</u> |           |           |           |
|                                   |           | CORD          | DRILLING METHOD:                             | Hand Aug    | ger    |             | _ H                    | АММ               | ER:      |                   |           |           |           |
|                                   | ,         | S-2           | INITIAL GW DEPTH:                            | 0.8         | feet   |             | E                      | SHGV              | V DE     | PTH: ∑            | 0.0       | feet      |           |
|                                   |           |               |  |             |        |             |                        |                   |          | N-Valu            |           | per Foot) |           |
|                                   | on        |               |  |             |        | <u>.</u> 2  | ate                    | <u>e</u>          | <u>e</u> |                   | ure Conte |           |           |
| Depth<br>(feet)                   | Elevation |               | Material Description                         |             |        | Graphic     | vpu                    | Sample<br>Type    | N-Value  | _                 | ic Conter |           |           |
|                                   | Ele       |               |  |             |        | ច           | Groundwater            | Sa                | Ż        | Fines PL          | Content ( | (%)<br>L  | Ţ         |
|                                   |           |               |  |             |        |             |                        |                   |          | 10 20 3           | 30 40 50  | 0 60 70   |           |
| 0                                 | _         |               |  |             |        | 00 Texas 10 | $\overline{\triangle}$ | l <sub>■⊓</sub> ∣ | -        |                   |           |           |           |
| الد.<br>الا                       |           |               | n silty fine-grained SAN                     |             | W      |             |                        |                   |          |                   |           |           |           |
| ָט<br>ב                           |           | Or            | ganics - organic silt (S                     | IVI)        |        |             |                        |                   |          |                   |           |           |           |
| 5                                 |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
| S<br>I<br>I                       |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
| De mer preteu as being mulcauve o |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
| <u> </u>                          |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
| S C                               |           |               |  |             |        |             | Ţ                      |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
| <u> </u>                          | -         | Duarra alimin | Live ither times are in a side of the        |             |        |             |                        |                   |          |                   |           |           |           |
| <u> </u>                          |           | Brown sligh   | tly silty fine-grained SA                    | AND (SP-S   | IVI)   |             |                        |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
| STIOUIS                           |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
| S D                               |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
| o<br>G                            |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
| <u> </u>                          |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
| È<br>5                            |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
| Series                            |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
| 5                                 |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
| ō<br>E                            |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
| 2                                 |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
|                                   |           | Во            | ring Terminated at 3 f                       | eet         |        |             |                        |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           |           |           |
| Note                              | e:        |               |  |             |        |             |                        |                   |          |                   |           |           |           |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           | ь.        | - 4 - 5 4 |
|                                   |           |               |  |             |        |             |                        |                   |          |                   |           | Page      | e 1 of 1  |

|   |           |                | PROJECT NAME: _S                   | Springfield  | Nature | Park    |                     |                |              |         | DATE:                  | 2/28/    | 2022      |
|---|-----------|----------------|------------------------------------|--|--------|---------|---------------------|----------------|--------------|---------|------------------------|----------|-----------|
|   | NIC       | AVE            | PROJECT NO.: 202                   | 21242  | CLIEN  | NT: _   | STOA                | Arch           | itects       | 5       |                        |          |           |
|   | INL       | JVA            | PROJECT LOCATION                   | PROJECT LOCATION: Springfield, Bay County, Florida |        |         |                     |                |              |         |                        |          |           |
| Ιт                                      | FST       | BORING         | LOCATION: See Boring Location Plan |  |        |         | _ E                 | LEVA           | TION:        | Existin | g Grade                | Э        |           |
| '                                       |           |                | DRILLED BY: D. R                   | _  |        |         |                     |                |              | D. Ritz |                        |          |           |
|   |           | CORD           | DRILLING METHOD                    |  |        |         |                     | АММ            |              |         |                        |          |           |
|   | ,         | S-3            | INITIAL GW DEPTH:                  |  | foot   |         |                     |                | V DEF        | PTH: ♀  | 0.0                    | feet     |           |
|   |           |                | I III III GIV DEI IIII             |  | 1000   |         |                     | J              | 1            |         |                        |          | <u> </u>  |
|   | Ē         |                |                                    |  |        | 0       | ater                | a)             | a)           |         | ue (Blows<br>ure Conte | per Foot | )         |
| Depth<br>(feet)                         | Elevation |                | Material Descriptio                | n  |        | Graphic | Groundwater         | Sample<br>Type | N-Value      |         | ic Conter              |          |           |
| ا ۾ ڇ                                   | Elev      |                |                                    |  |        | Gra     |                     | Sar<br>Ty      | \ <u>\ \</u> |         | Content (              | (%)      |           |
|   |           |                |                                    |  |        |         |                     |                |              | · i     |                        |          | L<br>1    |
| 0                                       |           |                |                                    |  |        |         | $\overline{\nabla}$ |                |              | 10 20 3 | 60 40 5t               | J 60 70  | 80 90     |
| oj.                                     |           | Dark brown     | n silty fine-grained S             | AND with f   | ew     |         | <u>-</u>            |                |              |         |                        |          |           |
| รั                                      |           |                | ganics - organic silt (            |  |        |         |                     |                |              |         |                        |          |           |
| 5                                       |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| 5<br>≙<br>≥                             |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| Icar                                    |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
|   |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| De interpreted as being mulcauve of     |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| SS<br>SS                                |           | Brown slight   | tly silty fine-grained             | SAND (SP-  | SM)    |         |                     |                |              |         |                        |          |           |
| D T T T T T T T T T T T T T T T T T T T |           |                |                                    | ·  | ·      |         | _                   |                |              |         |                        |          |           |
|   |           |                |                                    |  |        |         | Ī                   |                |              |         |                        |          |           |
|   |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| ed 10                                   |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| D<br>D                                  |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| strouid                                 |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
|   |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| g                                       |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| o this boring and                       |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| Q<br>SI                                 |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| 0                                       |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| only                                    |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
|   |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| <u> </u>                                |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| E                                       |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| atio                                    |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| 5                                       |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| inis information pertains               |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| Ë                                       |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
|   |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| -                                       |           | D <sub>0</sub> | ring Terminated at 3               | foot   |        |         |                     | ╽┸╜╽           |              |         |                        |          |           |
|   |           | D0             | ring reminated at 3                | ieet   |        |         |                     |                |              |         |                        |          |           |
|   |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
|   |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
|   |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
|   |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
|   |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
|   |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
|   |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
|   |           |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
| Note                                    | :         |                |                                    |  |        |         |                     |                |              |         |                        |          |           |
|   |           |                |                                    |  |        |         |                     |                |              |         |                        | -        | - 4 . 6 4 |
|   |           |                |                                    |  |        |         |                     |                |              |         |                        | Page     | e 1 of 1  |

## APPENDIX C Laboratory Data

# APPENDIX D Support Documents

#### QUALIFICATIONS OF RECOMMENDATIONS

The findings, conclusions and recommendations presented in this report represent our professional opinions concerning subsurface conditions at the site. The opinions presented are relative to the dates of our site work and should not be relied on to represent conditions at later dates or at locations not explored. The opinions included herein are based on information provided to us, the data obtained at specific locations during the study, and our previous experience. If additional information becomes available which might impact our geotechnical opinions, it will be necessary for NOVA to review the information, re-assess the potential concerns, and re-evaluate our conclusions and recommendations.

Regardless of the thoroughness of a geotechnical exploration, there is the possibility that conditions between borings may differ from those encountered at specific boring locations, that conditions are not as anticipated by the designers and/or the contractors, or that either natural events or the construction process has altered the subsurface conditions. These variations are an inherent risk associated with subsurface conditions in this region and the approximate methods used to obtain the data. These variations may not be apparent until construction.

The professional opinions presented in this report are not final. Field observations and foundation installation monitoring by the geotechnical engineer, as well as soil density testing and other quality assurance functions associated with site earthwork and foundation construction, are an extension of this report. Therefore, NOVA should be retained by the owner to observe all earthwork and foundation construction to confirm that the conditions anticipated in this study actually exist, and to finalize or amend our conclusions and recommendations. NOVA is not responsible or liable for the conclusions and recommendations presented in this report if NOVA does not perform these observations and testing services.

This report is intended for the sole use of **STOA ARCHITECTS** only. The scope of work performed during this study was developed for purposes specifically intended by **STOA ARCHITECTS** only and may not satisfy other users' requirements. Use of this report or the findings, conclusions or recommendations by others will be at the sole risk of the user. NOVA is not responsible or liable for the interpretation by others of the data in this report, nor their conclusions, recommendations, or opinions.

Our professional services have been performed, our findings obtained, our conclusions derived, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices in the State of Florida. This warranty is in lieu of all other statements or warranties, either expressed or implied.

## **Important Information about This**

# Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

### Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical- engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one* — *not even you* — should apply this report for any purpose or project except the one originally contemplated.

#### Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

### Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a lightindustrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an

assessment of their impact. Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.

#### **Subsurface Conditions Can Change**

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. Do not rely on a geotechnical-engineering report whose adequacy may have been affected by: the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. Contact the geotechnical engineer before applying this report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

### Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

#### A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. Confirmation-dependent recommendations are not final, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual subsurface conditions revealed during construction. The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.

### A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly

problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

#### Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk*.

### Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, but preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/ or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

#### Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help

others recognize their own responsibilities and risks. *Read these provisions closely*. Ask questions. Your geotechnical engineer should respond fully and frankly.

#### **Environmental Concerns Are Not Covered**

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures*. If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else*.

### Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the express purpose of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold- prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical- engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.

### Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you GBC-Member geotechnical engineer for more information.



8811 Colesville Road/Suite G106, Silver Spring, MD 20910 Telephone: 301/565-2733 Facsimile: 301/589-2017 e-mail: info@geoprofessional.org www.geoprofessional.org

Copyright 2015 by Geoprofessional Business Association (GBA). Duplication, reproduction, or copying of this document, or its contents, in whole or in part, by any means whatsoever, is strictly prohibited, except with GBA's specific written permission. Excerpting, quoting, or otherwise extracting wording from this document is permitted only with the express written permission of GBA, and only for purposes of scholarly research or book review. Only members of GBA may use this document as a complement to or as an element of a geotechnical-engineering report. Any other firm, individual, or other entity that so uses this document without being a GBA member could be committing negligent or intentional (fraudulent) misrepresentation.

#### SECTION 08 17 43 COMPOSITE FIBERGLASS DOOR

#### PART 1 GENERAL

#### **1.01** SECTION INCLUDES

- A. AF-200 Smooth Composite Fiberglass Door with PP Polypropylene Honeycomb Core.
- B. AF-200 Smooth Composite Fiberglass Door with Expanded Polystyrene Core.
- C. AF-200 Smooth Composite Fiberglass Door with PP Polypropylene Honeycomb Core Installed in AF-150 Pultruded Fiberglass Framing.
- D. AF-200 Smooth Composite Fiberglass Door with PP Polypropylene Honeycomb Core Installed in AF-250 Pultruded Fiberglass Framing.
- E. AF-200 Smooth Composite Fiberglass Door with Expanded Polystyrene Core installed in AF-150 Pultruded Fiberglass Framing.
- F. AF-200 Smooth Composite Fiberglass Door with Expanded Polystyrene Core installed in AF-250 Pultruded Fiberglass Framing.

#### **1.02** RELATED SECTIONS

- A. Section 08 01 17 Operation and Maintenance of Integrated Door Opening Assemblies.
- B. Section 08 06 71 Door Hardware Schedule.
- C. Section 08 06 80 Glazing Schedule.
- D. Section 08 10 00 Doors and Frames.
- E. Section 08 12 16 Aluminum Frames.
- F. Section 08 42 13 Aluminum-Framed Entrances.
- G. Section 08 71 00 Door Hardware.
- H. Section 08 91 26 Door Louvers.

#### **1.03** REFRENCES

- A. AAMA 1304 Voluntary Specification for Forced Entry Resistance of Side-Hinged Door Systems.
- B. ASTM-D256 Standard Test Methods for Determining the Pendulum Impact Resistance of Plastics.
- C. <u>ASTM-D-4226</u> Standard Test Methods for Impact Resistance of Rigid Poly(Vinyl Chloride) (PVC) Building Products
- D. ASTM-D570 Standard Test Method for Water Absorption of Plastics.
- E. ASTM-D638 Standard Test Method for Tensile Properties of Plastics.
- F. ASTM-D695 Standard Test Method for Compression Properties of Rigid Plastics.
- G. <u>ASTM-D696</u> Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30 °C and 30 °C with a Vitreous Silica Dilatometer.
- H. <u>ASTM-D790</u> Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
- I. <u>ASTM-D792</u> Standard Test Method for Density and Specific Gravity (Relative Density) of Plastics by Displacement.
- J. ASTM-D1761 Standard Test Methods for Mechanical Fasteners in Wood.
- K. <u>ASTM-D2344</u> Standard Test Method for Short-Beam Strength of Polymer Matrix Composite Materials and Their Laminates.
- L. <u>ASTM-D2583</u> Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impresser.
- M. <u>ASTM-D2794</u> Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).

N. <u>ASTM-D5116</u> – Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/ Products.

- O. <u>ASTM-D6670</u> Standard Practice for Full-Scale Chamber Determination of Volatile Organic Emissions from Indoor Materials/ Products.
- P. <u>ASTM-E84</u> Standard Test Method for Surface Burning Characteristics of Building Materials.
- Q. <u>ASTM-E90</u> Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.
- R. <u>ASTM-G-53</u> Standard Practice for Operating Light-and Water-Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Nonmetallic Materials
- S. NFRC 100 Procedure for Determining Fenestration Products U-Factors.
- T. NFRC 400 Procedure for Determining Fenestration Products Air Leakage.

#### **1.04** SUBMITTALS

- A. Must comply with Section 01 33 00 Submittal Procedures.
- B. Action Submittals/Informational Submittals.
  - 1. Product Data.
    - a. Submit manufacturer's product data sheets, catalog pages illustrating the products, description of materials, components, fabrication, finishes, installation instructions, and applicable test reports.
  - 2. Shop Drawings.
    - a. Submit manufacturer's shop drawings, including elevations, sections, and details indicating dimensions, tolerances, materials, fabrication, doors, panels, framing, hardware schedule, and finish.
  - 3. Testing and Evaluation Reports.
    - a. Submit testing reports and evaluations provided by manufacturer conducted by and accredited independent testing agency certifying doors and frames comply with specified performance requirements listed in Section 2.04.
- C. Closeout Submittals.
  - 1. Operation and Maintenance Manual.
    - a. Submit manufacturer's maintenance and cleaning instructions for doors and frames, including maintenance and operating instructions for hardware.
  - 2. Warranty Documentation.
    - a. Submit manufacturer's standard warranty.

#### 1.05 OUALITY ASSURANCE

- A. Manufacturer's Qualifications.
  - 1. Continuously engaged in manufacturing of doors of similar type to that specified, with a minimum of 20 years concurrent successful experience.
  - 2. Door and frame components must be fabricated by same manufacturer.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Delivery.
  - 1. Deliver materials to site in manufacturer's original, unopened, containers and packaging.
  - 2. Labels clearly identifying opening, door mark, and manufacturer.
- B. Storage.
  - 1. Store materials in a clean, dry area, indoors in accordance with manufacturer's instructions.
- C. Handling.
  - 1. Protect materials and finish from damage during handling and installation.

#### 1.07 WARRANTY

- A. Warrant doors, frames, and factory installed hardware against failure in materials and workmanship, including excessive deflection, faulty operation, defects in hardware installation, and deterioration of finish or construction in excess of normal weathering.
- B. Standard Period.
  - 1. Ten years starting on date of shipment.
- C. Limited lifetime
  - 1. Covers failure of corner joinery, core deterioration, and delamination or bubbling of door skin and corrosion of all-fiberglass products while the door is in its specified application in its original installation.
- D. Finish
  - 1. Painted AF-200, AF-150 frames, AF-250 frames: 3 years.
  - 2. Thresholds do not have a finish warranty.

#### **PART 2 PRODUCTS**

#### 2.01 COMPOSITE FIBERGLASS DOOR

- A. Manufacturer.
  - 1. Special-Lite, Inc.
  - 2. Approved Equals

#### 2.02 DESCRIPTION

- A. Door Opening Size.
  - 1. As scheduled
- B. Construction.
  - 1. Door Thickness.
    - a. 1-3/4".
  - 2. Stiles & Rails.
    - a. Pultruded fiberglass with integral channels for securing corner reinforcing clip.
  - 3. Corners.
    - a. Mitered.
    - b. Secured with pultruded fiberglass corner clip chemically welded to stiles and rails.
    - c. Mechanical fasteners to secure corner joints not acceptable.
  - 4. Core.
    - a. Expanded Polystyrene.
    - b. Expanded Polystyrene.
      - 1. 2.0 pcf
      - 2. Mildew and rot resistant.
      - 3. Sound and vibration dampening.
  - 5. Face Sheet.
    - a. Interior and Exterior
      - 1. 0.090" thick, Class C, smooth texture, painted FRP sheet.
    - b. Attachment of face sheet.
      - 1. Face sheets to be flame treated to promote durable, long lasting bond.
      - 2. Face sheets adhered to stiles, rails, and core using hot melt adhesive evenly coated across all surfaces to produce strong bond and prevent moisture absorption.
  - 6. Cutouts.
    - a. Manufacture doors with cutouts for required vision lites, louvers, and panels.
  - 7. Hardware.
    - a. Pre-machine doors in accordance with templates from specified hardware manufacturers.
    - b. Surface mounted closures will be reinforced for but not prepped or installed at factory.
  - 8. Reinforcements.
    - a. Solid high-density polyurethane shapes chemically welded to stiles, rails and/ or core.

b. No metallic reinforcements will be allowed.

#### **2.03** FRAMING

- A. Framing
  - 1. Jamb Depth.
    - a. 5-3/4".
  - 2. Materials.
    - a. See 2.05.A.
  - 3. Perimeter Frame Members.
    - a. ½" thick pultruded fiberglass open throat with return.
    - b. Factory fabricated.
    - c. 2" or 4" face available for frame headers.
  - 4. Integral Door Stops.
    - a. 5/8" x 2-1/4".
  - 5. Frame Assembly.
    - 1. Optional chemically welded consult factory for details.
    - f. Frame Member to Member Connections.
      - 1. Corners mitered with 4" x 4" x 3/8" pultruded FRP angle reinforcement with interlocking pultruded FRP brackets.
    - g. Reinforcements.
      - 1. Standard.
        - a. 1/4" thick pultruded FRP chemically welded to frame at all hinge, strike, and closer locations.
    - h. Hardware
      - 1. Pre-machine and reinforce frame members for hardware in accordance with manufacturer's standards and door hardware schedule.
      - 2. Surface mounted closures will be reinforced for but not prepped or installed at factory.
    - i. Anchors:
      - 1. Drywall.
        - a. Standard jamb anchor tuck.
        - b. KD wrap.
        - c. Optional punch and dimple tuck with either metal or wood studs.

#### **2.04** PERFORMANCE

- A. Face Sheet.
  - 1. Standard Interior and Exterior Class C 0.090" thick, smooth texture, painted FRP sheet.
    - a. Flexural Strength, ASTM-D790: 14 x 10<sup>3</sup> psi.
    - b. Flexural Modulus, ASTM-D790: 0.4 x 10<sup>6</sup> psi.
    - c. Tensile Strength, ASTM-D638: 6 x 10<sup>3</sup> psi.
    - d. Tensile Modulus, ASTM-D638: 0.4 x 10<sup>6</sup> psi.
    - e. Barcol Hardness, ASTM-D2583: 35.
    - f. Izod Impact, ASTM-D256: 5.0 ft-lb/in.
    - g. Water Absorption, ASTM-D570: 0.16%/24hrs at 77°F.
    - h. Surface Burning, ASTM-E84: Flame Spread  $\leq$  200, Smoke Developed  $\leq$  450.
    - i. Meets USDA/ FSIS requirements.
    - j. GreenGuard Certified.
- B. Pultruded Structural Shapes.
  - 1. Tensile Strength, ASTM-D638: Minimum 30,000 psi.
  - 2. Compressive Strength, ASTM-D695: Minimum 30,000 psi.
  - 3. Flexural Strength, ASTM-D790: Minimum 30,000 psi.
  - 4. Tensile Strength, ASTM-D638: Minimum psi.
  - 5. Flexural Modulus, ASTM-D790: Minimum 1.6 x 10<sup>6</sup> psi.
  - 6. Short Beam Shear, ASTM-D2344: Minimum 4,500 psi.

- 7. Impact, Notched, ASTM-D256: Minimum 25 ft-lb/in.
- 8. Thermal Expansion, ASTM-D696: Maximum 8.0 x 10<sup>-6</sup> psi.
- 9. Surface Burning, ASTM-E84: Flame Spread  $\leq$  25, Smoke Developed  $\leq$  450.
- 10. Fastener Withdrawal, ASTM-D1761: 894 lbs.

#### C. Framing.

- 1. Tensile Strength, ASTM-D638: Minimum 30,000 psi.
- 2. Compressive Strength, ASTM-D695: Minimum 30,000 psi.
- 3. Flexural Strength, ASTM-D790: Minimum 30,000 psi.
- 4. Tensile Strength, ASTM-D638: Minimum psi.
- 5. Flexural Modulus, ASTM-D790: Minimum 1.6 x 10<sup>6</sup> psi.
- 6. Short Beam Shear, ASTM-D2344: Minimum 4,500 psi.
- 7. Impact, Notched, ASTM-D256: Minimum 25 ft-lb/in.
- 8. Thermal Expansion, ASTM-D696: Maximum 8.0 x 10<sup>-6</sup> psi.
- 9. Surface Burning, ASTM-E84: Flame Spread  $\leq$  25, Smoke Developed  $\leq$  450.
- 10. Fastener Withdrawal, ASTM-D1761: 924 lbs.
- 11. Percent Fiberglass: Minimum 50%.
- D. Door and Frame Assembly.
  - 1. Expanded Polystyrene Core.
    - a. Thermal Transmittance, NFRC 100.
      - 1. Opaque Swinging Door (< than 50% glass)
        - a. U-Factor =  $0.24 \text{ Btu/hr} \cdot \text{ft}^2 \cdot ^{\circ}\text{F}$ .
      - 2. Commercially Glazed Swinging Entrance Door (> than 50% glass)
        - a. U-Factor =  $0.43 \text{ Btu/hr} \cdot \text{ft}^2 \cdot ^{\circ}\text{F}$ .
    - b. Air Leakage, NFRC 400, ASTM-E283.
      - 1. Opaque Swinging Door (< than 50% glass)
        - a. 0.02 cfm/sqft @ 1.57 psf.
        - b. 0.06 cfm/sqft @ 6.24 psf.
      - 2. Commercially Glazed Swinging Entrance Door (> than 50% glass)
        - a. 0.30 cfm/sqft @ 1.57 psf.
        - b. 0.53 cfm/sqft @ 6.24 psf.
    - c. STC and OITC, ASTM-E90: STC = 30, OITC = 30.

#### **2.05** MATERIALS

- A. Fiberglass.
  - 1. Face Sheet.
    - a. See 2.04.A.
  - 2. Stiles & Rails.
    - a. <u>See 2.04.B.</u>
  - 3. Framing
    - a. See 2.04.C.
- B. Fasteners.
  - 1. All exposed fasteners will have a finish to match material being fastened.
  - 2. 410 stainless steel or other non-corrosive metal.
  - 3. Must be compatible with items being fastened.

#### 2.06 FABRICATION

- A. Factory Assembly.
  - 1. Door and frame components from the same manufacturer.
  - 2. Required size for door and frame units, shall be as indicated on the drawings.
  - 3. Complete cutting, fitting, forming, drilling, and grinding of metal before assembly.
  - 4. All cut edges to be free of burs.

- 5. Electrical arc welding of doors or frames is not acceptable.
- 6. Maintain continuity of line and accurate relation of planes and angles.
- 7. Secure attachments and support at mechanical joints with hairline fit at contact surfaces.

#### B. Shop Fabrication

- 1. All shop fabrication to be completed in accordance with manufactures process work instructions.
- 2. Quality control to be performed before leaving each department.

#### 2.07 FINISHES

#### A. Door.

- 1. Two-component flexible acrylic urethane Satin topcoat. (STANDARD)
  - a. Color.
    - 1. Primed Only.
  - b. Custom colors available consult manufacturer.
  - c. Excellent exterior durability.
  - d. Unique, high-solids, high-build, multifunctional coating.
  - e. Low VOC, Satin coating.
  - f. Impact Resistance, ASTM D-4226 Minimum 1.2 in/lb/mil
  - g. Color retention:  $\leq 1\Delta$  (CIE L.a.b.), Montreal 45° South: 12 months
  - h. Very good chemical resistance.

#### B. Frame

- 1. Fiberglass.
- 2. Two-component flexible acrylic urethane Satin topcoat. (STANDARD)
  - a. Color.
    - 1. Primed Only.
  - b. Custom colors available consult manufacturer.
  - c. Excellent exterior durability.
  - d. Unique, high-solids, high-build, multifunctional coating.
  - e. Low VOC, Satin coating.
  - f. Impact Resistance, ASTM D-4226 Minimum 1.2 in/lb/mil
  - g. Color retention:  $\leq 1\Delta$  (CIE L.a.b.), Montreal 45° South: 12 months
  - h. Very good chemical resistance.

#### 2.08 ACCESSORIES

#### A. Hardware.

- 1. Pre-machine doors in accordance with templates from specified hardware manufactures and hardware schedule.
- 2. Hardware Schedule.
  - a. As indicated on the drawings.

#### PART 3 EXECUTION

#### 3.01 EXAMINATION

- A. Examine areas to receive doors.
- B. Notify architect of conditions that would adversely affect installation or subsequent use.
- C. Do no proceed with installation until unsatisfactory conditions are corrected.

#### **3.02** PREPARATION

A. Ensure openings to receive frames are plumb, level, square, and in tolerance.

#### 3.03 ERECTION

- A. Install doors in accordance with manufacturer's instructions.
- B. Install doors plumb, level, square, true to line, and without warp or rack.
- C. Anchor frames securely in place.
- D. Separate aluminum from other metal surfaces with bituminous coatings or other means approved by architect.
- E. Set thresholds in bed of mastic and back seal.
- F. Install exterior doors to be weathertight in closed position.
- G. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by architect.
- H. Remove and replace damaged components that cannot be successfully repaired as determined by architect.

#### 3.04 FIELD QUALITY CONTROL

- A. Manufacture's Field Services.
  - 1. Manufacturer's representative shall provide technical assistance and guidance for installation of doors.

#### 3.05 ADJUSTING

A. Adjust doors, hinges, and locksets for smooth operation without binding.

#### 3.06 CLEANING

- A. Clean doors promptly after installation in accordance with manufacturer's instructions.
- B. Do not use harsh cleaning materials or methods that would damage finish.

#### 3.07 PROTECTION

A. Protect installed doors to ensure that, except for normal weathering, doors will be without damage or deterioration at time of substantial completion.

END OF SECTION

THIS PAGE LEFT BLANK

#### SECTION 10 14 63 ELECTRONIC MESSAGE SIGNAGE

#### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

A. Outdoor light emitting diode. (LED) message center.

#### 1.2 RELATED SECTIONS

A. Section 10 14 00 - Signage.

#### 1.3 REFERENCES

- A. Federal Communications Commission (FCC):
  - 1. FCC Part 15 Class A Complaint.
- B. Underwriters Laboratories (UL):
  - 1. UL48, CUL48, Standard for Electric Signs,
  - 2. UL Energy Efficiency Verified (Green Leaf certification).
- C. National Electric Code (NEC).
- D. Florida Building Code (FBC):
  - FBC Standards.
- E. American Society of Civil Engineers (ASCE):
  - 1. ASCE-7/16 Standard Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

#### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00.
- B. Upon contract award, the LED display manufacturer shall provide a complete technical submittal within 60 days and shall not proceed with manufacturing until approval.
- C. Product Data:
  - 1. Manufacturer's data sheets on each product to be used.
  - 2. Preparation instructions and recommendations.
  - 3. Storage and handling requirements and recommendations.
  - 4. Site power requirements.
  - 5. LED display manufacturer qualifications, as specified herein.
  - 6. LED display installation drawing.
  - 7. LED display installation manual.
  - 8. LED display control software operator's manual.
  - 9. LED display installation and maintenance manual.
- D. Shop Drawings: Include details of materials, construction, and finish. Include relationship with adjacent construction.

#### 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section.
  - 1. A minimum of 10 years of LED display manufacturing experience prior to the contract bid date.
  - 2. A minimum of 10,000 permanently mounted LED displays in operation for a minimum period of one year prior to the contract bid date.
  - 3. Support via domestic, toll-free help desk and an online service knowledge base.
- B. Manufacturing experience with the following types of electronic signs shall not satisfy the requirements:
  - 1. Matrix displays that show a limited quantity of messages.
  - 2. Back-lit displays.
- C. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
- D. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

#### 1.6 PRE-INSTALLATION CONFERENCE

A. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
- B. Protect from damage due to weather, excessive temperature, and construction operations.

#### 1.8 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

#### 1.9 WARRANTY

- A. Manufacturer's standard limited warranty unless indicated otherwise.
  - 1. Warranty against material defects in material and workmanship for five years from the date of shipment from factory dock.
  - 2. Provide ten year parts guarantee with replacements reserved at time of purchase.

#### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Watchfire Signs, which is located at: 1015 Maple St.; Danville, IL 61832; Tel: 217-442-0611; Fax: 217-442-0620;
- B. Requests for substitutions will be considered in accordance with the provisions of Section 01 60 00.

#### 2.2 LED OUTDOOR DISPLAY (W SERIES, XVS SERIES, and S SERIES)

#### A. Basis of Design:

- Watchfire Signs XVS-Series. For advertising and branding. Live video capable.
  - a. Model XVS 10mm. Outdoor Light Emitting Diode (LED) message center.
    - 1) Pixel Pitch: 0.4 inches (10.16 mm).
    - 2) Optimized Pixel Pitch: True 10 mm.
    - 3) Pixel Density per Square Foot: 900.
    - 4) Pixel Density per Square Meter: 9,687.
    - 5) LEDS per Square Foot: 2,700.
    - 6) LEDS per Square Meter: 29,062.
    - 7) Pixel Configuration: SMD 3-in-1.
    - 8) Maximum Brightness: 8,500 nits.
    - 9) Matrix Configuration: 30 x 30 pixels.
    - 10) Horizontal Viewing Angle: 150 degrees.
    - 11) Vertical Viewing Angle: +29/-45 degrees.
    - 12) Weight per Square Foot: 9 lbs (4.08 kg).
    - 13) Minimum Viewing Distance: 23 ft (7.010 m).
    - 14) Video Share Rate: Up to 60 FPS/300Hz.
    - 15) Color Capability: 1.2 quintillion.
    - 16) Character Height: 2.8 inches (71 mm) and larger.

#### B. Features:

- 1. Module Type: Smart module, fully self-contained.
- 2. LED Encapsulation: Fully encapsulated.
- 3. Compliance Information: UL 48, cUL 48, FCC Part 15 regulations for Class A devices, HDCP 2.x.
- 4. Environmental Rating: IP 65 per face.
- 5. Ventilation:
  - a. Cabinet: 5 inch (127 mm). Front Ventilation.
- 6. Power Source: 120 VAC, 60 Hz single-phase, including neutral and ground.
- 7. Cabinet Construction: Extruded aluminum, precision mitered solid weld corners.
  - a. Depth: Front vent signs. Up to 4 ft (1219 mm) Height: 5 inches (127 mm).
- 8. Service Access: Front access.
- 9. Software: Proprietary Ignite; Integrates with digital signage players via Ignite live video option.
- 10. Cabinet Temperature Rating: -40 to 140 degrees F (-40 to 60 degrees C).
- 11. Thermal Control: Automatic shut-down if temperature exceeds 149 degrees F (65 degrees C).
- 12. Dimming: Photocell, auto-adjustment from 1 to 100 percent brightness; Software backup.
- 13. Security: Password protected.
- 14. User interface: Web and stand-alone PC application.
- 15. Graphics Compatibility: Import capability from most AVI sources; BMP, GIF, JPG, and other graphic file types.
- 16. Video Formats: Most AVI and WMV formats; Options include DVI, HDMI.
- 17. Weatherproofing: Tested per ASTM B-117 to a continuous 95 degrees F (35 degrees C), 7.2 pH salt fog.
- 18. Windload Rating: Complies with IBC 2012/2015/2018, ASCE7-16.
- 19. Self-Diagnostic Monitoring and Reporting: Advanced on-demand or automated diagnostics available.

City of Springfield

City Complex

20. Module (HxW): 12 x 12 inches (305 x 305 mm).

#### C. LED Display:

- 1. Cabinet Construction:
  - a. Cabinet Dimensions (H x W): 42 x 84 inches
  - b. Front-to-Back Cabinet Depth: Not to exceed 8 inches (203 mm).
  - c. Display Configuration: Single face and one sided.
  - d. The distance from the center of one line or column of pixels to the center of adjacent lines or columns:
    - 1) Model XVS 10mm: 10.16 mm both horizontally and vertically.
  - e. Maximum Display Power per Face: Not to exceed \_\_30\_\_ amps when 100 percent of the pixels are operating at their maximum possible drive current.
  - f. Cabinet Weight per Face: Not to exceed 9 lbs (4.08 kg) per sq ft.
  - g. Power Source: 120 VAC, 60 Hz single-phase, including neutral and ground.
  - h. Operating Temperature Range: -40 to 140 degrees F (-40 to 60 degrees C).
    - 1) Relative Humidity: 90 percent.
  - i. Internal Display Component Hardware: Includes but is not limited to nuts, bolts, screws, standoffs, rivets, and fasteners; to be fabricated from stainless steel, aluminum, nylon, or other durable corrosion-resistant materials suitable for the signage application.
  - j. Module Components: 100 percent solid-state.
  - k. Display Performance: May not cause harmful radio, magnetic or electromagnetic interference. The display must accept any interference received, including interferences that may cause undesired operation.

#### 2. Housing Frame:

- a. Display Materials: Non-corrosive materials or have a protective coating so they shall be anti-corrosive and not degrade or oxidize.
- b. Cabinets Construction: Extruded aluminum with precision-mitered corners, solid welds, and stainless fasteners.
- c. Display: Front or rear ventilated with adequate ventilation provided by the use of fans.
- d. Steel Mounting Points: Provided with the display and have the ability to be adjusted for alternative mounting methods.
- e. Lifting supports that can be removed after installation.
- 3. Exterior Cabinet Finish: Coated with a baked acrylic enamel.
- 4. Front Face Construction: To meet display readability requirements.
  - a. Front Face: Must be constructed to provide high contrast, low sunlight reflection and durability in all weather and site conditions.
    - 1) Minimum Features:
      - a) UV resistance to prevent discoloring.
      - b) Horizontal louvers over LEDs for contrast enhancement and sunlight shading.
      - c) Vertical light traps to reduce light spill.
      - d) Surface materials in the active LED area, such as metal, plastic, or other face materials, are designed for low sunlight reflectivity.

#### 5. Serviceability:

- a. Safe and convenient rear and/or front service access for modular assemblies, components, wiring, and other materials located within the housing.
- b. Internal Components: Replaceable by a single technician with proper tooling.
- c. Service Access: By removal of one or more modules in front of the associated internal component and/or rear access panel.

- d. Each module should allow easy removal with a latch with positive stops.
- e. Service features are to minimize potential bodily harm.

#### D. Display Components:

- 1. LED Display Modules: Constructed for good readability, long life, and ease of service.
  - a. Modules Within the Product Family: Designed with the same physical footprint of  $12 \times 12$  inches ( $305 \times 305$  mm).
  - b. Modules and Their Components: Fully encapsulated and sealed to meet IP-67 standards.
  - c. LED Modules: Consist of LEDs with drive electronics mounted on a single Printed Circuit Board (PCB).
    - 1) LEDs: To be auto inserted in order to maintain quality and uniformity of the LEDs within each LED module.
    - 2) PCBs: Cleaned in a manner so as not to contain more than 2 parts per million contaminants.
    - 3) Surface Mount LEDs: Soldered using a reflow process to ensure uniformity, quality, and durability of all solder joints.
  - d. Module Signal and Electrical Connections: Positive locking and removable.
    - 1) Module Removal from Display: Will not require a de-soldering operation.
  - e. LED Display Modules in a Single Display:
    - 1) Identical in construction and interchangeable. Capable of being field calibrated.
    - 2) Modules to be individually attached to the cabinet frame.
    - 3) Removal of one or more modules is not to affect the display's structural integrity.
    - 4) Horizontal Half-Intensity Viewing Angle: 150 degrees.
  - f. Transition of Viewing Intensity: To be consistent throughout the viewing cone.
  - g. Confines high speed data signals to individual smart LED modules, each with its own microcontroller that runs the LEDs.
    - 1) The display must not send high speed data signals from a receiver card to the module over multi-conductor cables to display an image.
  - h. The failure of a single pixel, module or power supply shall not cause the failure of any other pixel, module, or power supply in the display.
- 2. Pixels: Constructed with 3 in 1 SMD LEDs and conform to the following:
  - a. LEDs: Diffused, ultra-bright, solid-state light emitting diodes.
  - b. Each Color of LEDs Used in LED Displays for Each Contract: Must come from the same product run.
  - c. LED Half-Life: Estimated 100,000 hours.
  - d. Display Maximum Intensity: 6000 nits maximum light output.
- 3. Power Supplies: Regulated, auto-ranging AC to DC power, with protection for the LED pixel, LED display, and driver circuitry in the event of power spikes or surges.
  - a. Power Supplies and their Connectors: Fully sealed to protect from corrosive environmental factors meeting IP-67 standards.
- 4. Internal Wiring:
  - a. Minimize the Number of Cables Needed: Reduce potential points of failure and reduce Mean Time Between Failures (MTBF).
  - b. Cables: Must withstand environmental conditions by using high grade automotive connectors instead of insulation displacement (ribbon-type cables) connectors.

- c. Wiring for LED Display Modules and Other Internal Components:
  - 1) Installed in the housing in a neat and professional manner.
  - 2) Must not impede the removal of display modules, power supplies or other display components.
  - 3) Must not make contact with or be bent around sharp metal edges.
- d. Conform to the National Electric Code.
- 5. The display shall be protected from electrical spikes and transients.
- 6. The manufacturer shall provide an earth-ground lug on the display.

#### E. Display Performance:

- 1. LED Display Capability:
  - a. Present messages that are continuous, uniform, and unbroken in appearance.
  - b. Capable of producing 1.2 quintillion colors.
  - c. Display Pixels Composed of One Each: Red, green, and blue LEDS configured in a Surface Mount Diode (SMD) pixel package.
  - d. Able to display messages composed of any combination of alphanumeric text, punctuation symbols, and graphic images.
  - e. Video and message files are to have up to a 30 frame per second playback capability.

#### 2. Controllers:

- a. Able to run independently from a content management system, allowing the display to continue to operate even if the controlling system is unreachable.
- b. Connected to a light sensor allowing each LED display to automatically adjust brightness according to display direction and lighting conditions.
- c. Allow connection to a temperature sensor that provides accurate site temperatures.
- d. Active presentations, stored presentations, schedules, display configuration, time and date shall be stored in non-volatile memory.
- e. No external power or battery backup will be required to maintain this data.

#### 3. Control and Communications:

- a. Display Controller: DHCP enabled or allow for static IP addressing.
- b. Single Faced Displays: Controlled and monitored by its own display controller.
- c. Double Faced Displays: Controlled and monitored by a single display controller.
- d. Receive content and schedule instructions using the following communication mode:
  - 1) Internet via Ethernet Cat5 wire.

#### F. Control Software:

- 1. Control Software: Create, schedule, and deliver content via Ignite OPx cloud-based software. Software to be hosted on manufacturer's servers at no cost to the customer.
  - a. Includes browser-based online editor for creating content, multiple content zones, playlists
  - b. Able to integrate widgets and RSS feeds.
  - c. Include a content library of more than 1000 pieces of graphics and animations.
  - d. Allows for smart scheduling, which eliminates competing products to display in the same daypart.
  - e. Import and store JPG, GIF, PNG, and TGA image files; MP4 video files with HD 1080 capability; MP3, WAV and WMA audio files.

#### PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Do not begin installation until the substrates have been properly constructed and prepared.
  - 1. Mounting Supports: To be installed to support displays.
  - 2. Separate Conduit for Power and Data to Display: To be in place unless fiber is being used. Verify control equipment has access to 120/240 VAC.
- B. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.

#### 3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

#### 3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.
  - 1. Support structure design depends on the mounting methods, display size, and weight.
    - a. Structure Design: Should be done only by a qualified individual.
  - 2. The Contractor:
    - a. Is responsible to ensure the structure and mounting hardware are adequate.
    - b. Is responsible to ensure that the installation meets local standards.
  - 3. Mounting Hardware: To be capable of supporting components to be mounted.
  - 4. Possible power and signal entrances are designated by etched markings.
    - a. Separate conduit must be used to route the power, and data cables.
  - 5. Displays must be grounded according to the provisions outlined in Article 250 of the National Electrical Code.
  - 6. Installations are to conform to Article 600 of the National Electrical Code.

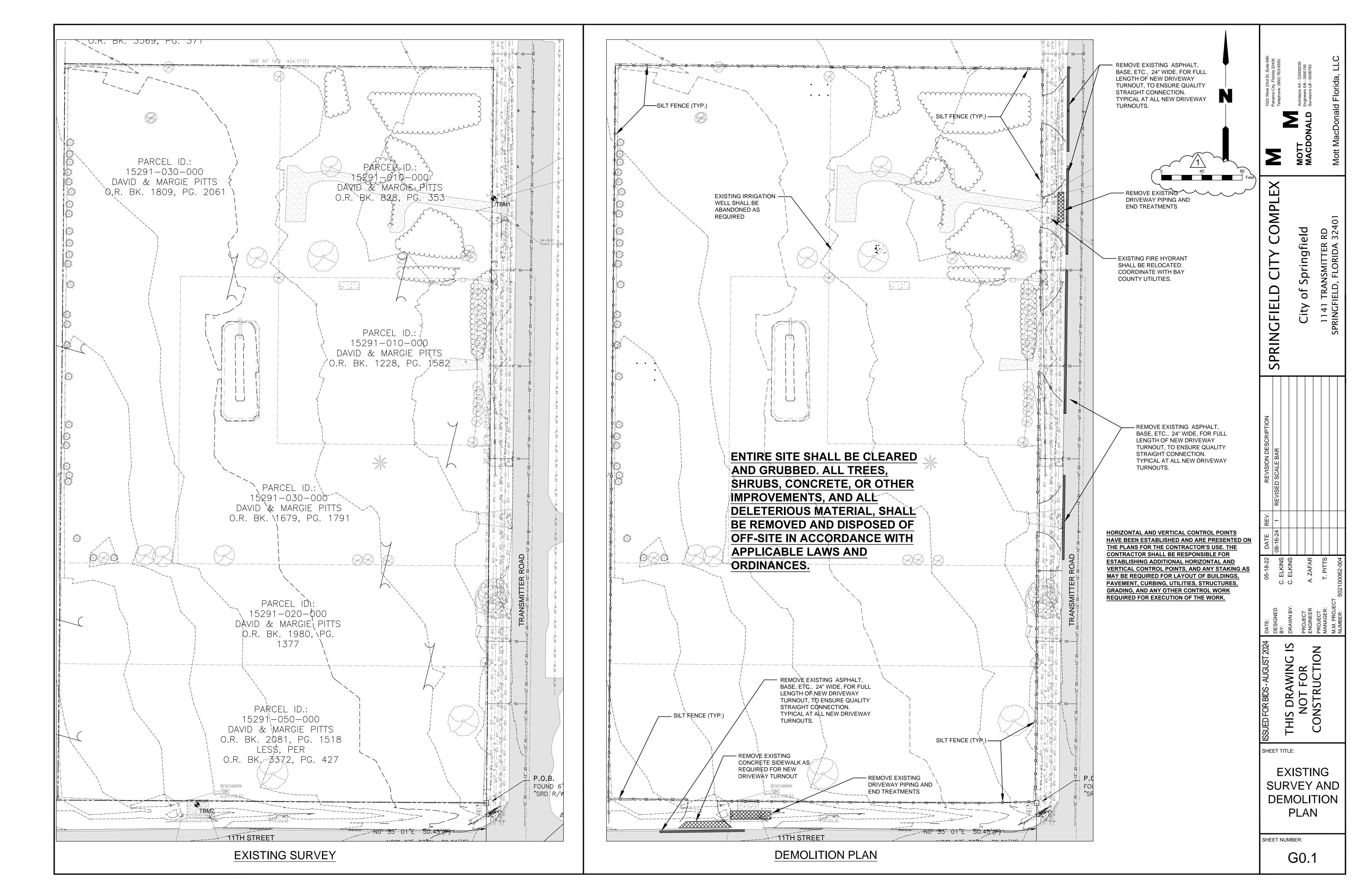
#### 3.4 FIELD OUALITY CONTROL

- A. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.
- B. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.

#### 3.5 CLEANING AND PROTECTION

- A. Clean products in accordance with the manufacturer's recommendations.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

#### **END OF SECTION**



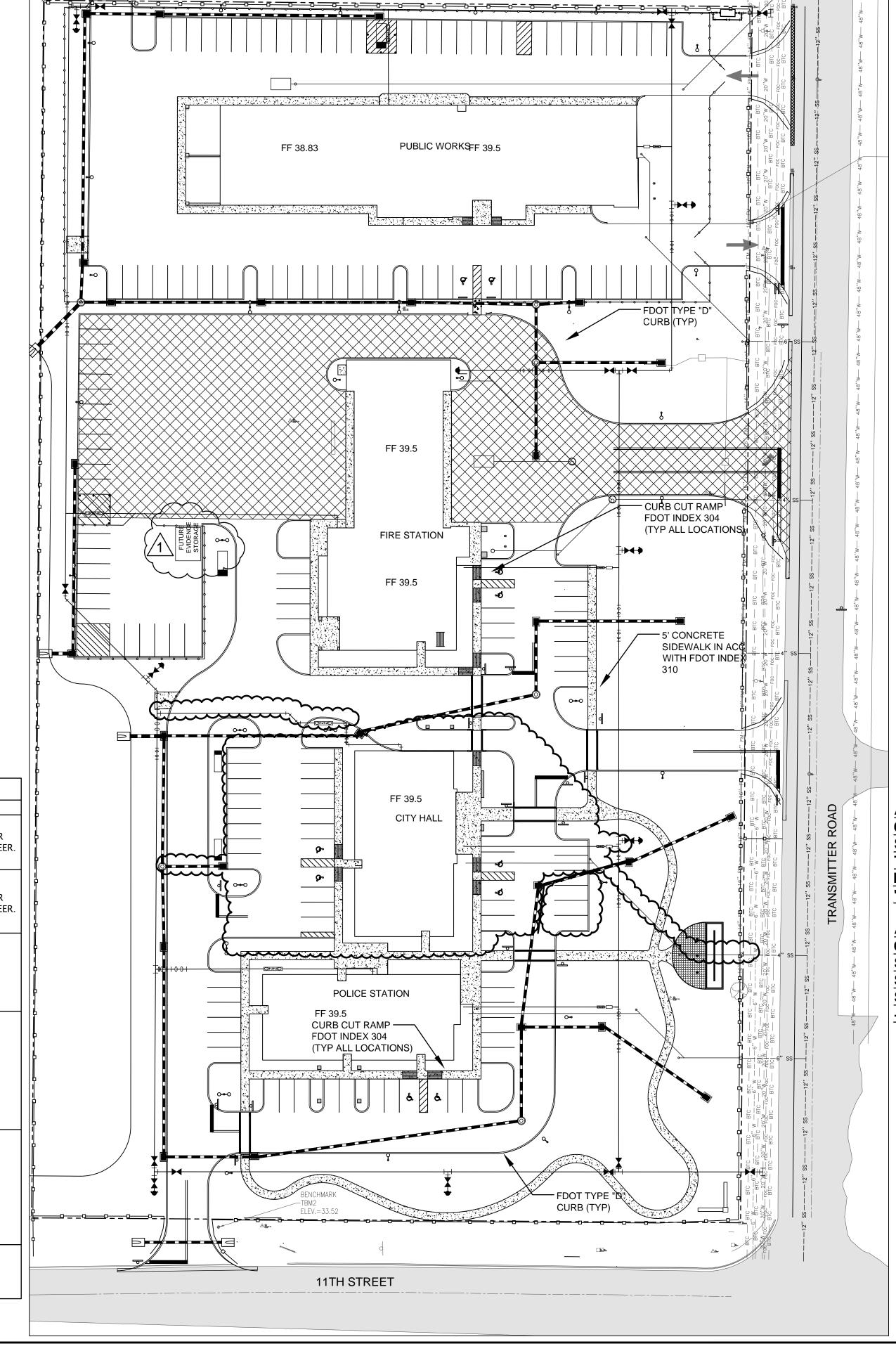
#### **GENERAL NOTES**

- 1. THE EXACT LOCATION AND ELEVATION OF EXISTING STRUCTURES, UTILITIES, AND PIPING SHALL BE PHYSICALLY VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE CONSTRUCTION BEGINS. THESE DRAWINGS DO NOT PURPORT TO SHOW IN COMPLETE DETAIL ALL EXISTING STRUCTURES, UTILITIES, OR PIPING.
- 2. THE CONTRACTOR SHALL EXAMINE ALL AVAILABLE RECORDS AND MAKE ALL EXPLORATIONS AND EXCAVATIONS AS REQUIRED TO DETERMINE THE LOCATION OF EXISTING STRUCTURES, UTILITIES, AND PIPING, WHENEVER NECESSARY. THE OWNER RESERVES THE RIGHT TO CHANGE LOCATION OF LINES TO AVOID CONFLICT WITH EXISTING STRUCTURES, UTILITIES, OR PIPING. THE CONTRACTOR SHALL CHECK PLANS FOR CONFLICTS AND DISCREPANCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE OWNER OR OWNER'S ENGINEER OF ANY CONFLICT BEFORE PERFORMING ANY WORK IN THE AFFECTED AREA.
- 3. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN AREAS OF BURIED UTILITIES AND SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE VARIOUS UTILITY COMPANIES IN ORDER TO PERMIT MARKING THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES IN ADVANCE OF CONSTRUCTION.
- 4. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES ABOVE OR BELOW GROUND THAT MAY OCCUR AS A RESULT OF WORK CALLED FOR IN THESE CONTRACT DOCUMENTS AT HIS OWN EXPENSE.
- 5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LEARN, KNOW, AND COMPLY WITH THE REGULATIONS, ORDINANCES, PERMIT AND INSPECTION REQUIREMENTS OF THE VARIOUS GOVERNMENTAL AGENCIES HAVING JURISDICTION.THE CONTRACTOR SHALL SCHEDULE THE REQUIRED INSPECTIONS AND APPROVALS IN ACCORDANCE WITH THE REQUIREMENTS OF THE PERMIT CONDITIONS. THE CONTRACTOR SHALL NOTIFY THE NECESSARY AGENCIES OF CONSTRUCTION COMMENCEMENT.
- 6. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO MAINTAIN ADEQUATE TRAFFIC CONTROL AND TO PROVIDE DETOURS AROUND CONSTRUCTION ACTIVITIES. ROAD CLOSURES MUST BE PRE-APPROVED BY THE OWNER AND ANY OTHER GOVERNING AGENCIES. IN ADDITION, THE CONTRACTOR SHALL COOPERATE WITH LOCAL RESIDENTS IN GAINING ACCESS TO THEIR HOMES AND BUSINESSES DURING WORKING HOURS AND SHALL ASSIST AT ALL TIMES WHEN VEHICLES EXPERIENCE TROUBLE DUE TO CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC PLAN FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION.
- 7. THE CONTRACTOR IS ADVISED THAT GROUNDWATER LEVELS VARY WITH WEATHER CONDITIONS AND SEASONAL CHANGES. THE DEWATERING OR REMOVAL OF WATERS FROM EXCAVATIONS IN THE COURSE OF CONSTRUCTING THIS PROJECT SHALL NOT BE GROUNDS FOR CHANGED CONDITIONS.
- 8. ALL DISTURBED AREAS SHALL BE SEEDED OR SODDED, AS DIRECTED IN THE FIELD.
- 9. THE CONTRACTOR SHALL OBTAIN AND HAVE ON SITE ALL PERMITS PRIOR TO CONSTRUCTION. DEP (EXCLUDING NPDES), DOT, AND COUNTY, PERMITS SHALL BE FURNISHED BY THE CITY. THE CONTRACTOR SHALL OBTAIN ALL OTHER REQUIRED PERMITS.
- 10. PRIOR TO COMMENCING CONSTRUCTION, CONTRACTOR SHALL INSTALL ANY REQUIRED SILT FENCING AND / OR OTHER EROSION CONTROL MEASURES FOR SILT CONTROL.
- 11. THE CONTRACTOR SHALL INSTALL ALL TRAFFIC CONTROL DEVICES REQUIRED FOR THE PROJECT IN ACCORDANCE WITH THE LATEST EDITION OF THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- 12. ALL EXISTING CONCRETE, ASPHALT, MANHOLES, PIPES, TREES, STUMPS, AND OTHER DELETERIOUS MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH FLORIDA LAWS.
- 13. WHERE IT BECOMES NECESSARY TO TEMPORARILY REMOVE, REPOSITION, OR SUPPORT EXISTING FACILITIES, STORMDRAIN STRUCTURES, UTILITY POLES, ETC., THIS WORK SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE AND IN ACCORDANCE WITH REQUIREMENTS OF THE OWNER OF THE EXISTING FACILITY, UTILITY POLE, ETC. THE CONTRACTOR SHALL GIVE PROPER NOTICE TO THE UTILITIES.
- 14. THE CONTRACTOR SHALL PHYSICALLY EXAMINE THE ENTIRE PROJECT SITE TO BECOME FULLY INFORMED IN REGARD TO ALL CONDITIONS PERTAINING TO THE PLACE WHERE THE WORK IS TO BE PERFORMED FOR PURPOSE OF DETERMINING HIS COST TO PERFORM THE WORK. THE CONTRACTOR SHOULD PAY SPECIAL ATTENTION TO AREAS INVOLVING CLEARING AND GRUBBING, EXISTING FACILITIES REMOVAL AND REPLACEMENT, SUPPORT OR RELOCATION, AND WORK INVOLVED ADJACENT TO WETLAND AREAS.
- 15. ALL SIDEWALK AND CURB CUT RAMPS SHALL BE IN ACCORDANCE WITH FDOT INDEX 310 AND 304.

|                                |   | TEST   | FING SCHEDULE   |   |  |  |  |
|--------------------------------|---|--|---|---|--|--|--|
| TEM                            | TEST  | TEST IDENTIFICATION  | TEST REQUIREMENT  | TEST FREQUENCY  |  |  |  |
| UTILITY TRENCH                 | MAXIMUM DENSITY                               | AASHTO T-180<br>ASTM D-1557  | N/A   | PER SOIL TYPE   |  |  |  |
| FILL & BACKFILL                | OPTIMUM MOISTURE FIELD DENSITY                | AASHTO T-191   | 98% OF MODIFIED PROCTOR                                   | ONE PER EVERY 300 LF HORIZONTALLY, WITH A MINIMUM OF ONE PER  |  |  |  |
|                                | GRADATION                                     | ASTM D-1556, D-2937, D-6938<br>AASHTO T-27, ASTM D-6913                  | (15% PASSING NO. 200)                                     | LIFT. THE LOCATION OF EACH TEST WILL BE SELECTED BY THE ENGINE PER SOIL TYPE  |  |  |  |
| FILL & BACKFILL UNDER ROADWAYS | MAXIMUM DENSITY<br>OPTIMUM MOISTURE           | AASHTO T-180<br>ASTM D-1557  | N/A   | PER SOIL TYPE   |  |  |  |
| AND STRUCTURES                 | FIELD DENSITY                                 | AASHTO T-191<br>ASTM D-1556, D-2937, D-6938                              | 98% OF MODIFIED PROCTOR                                   | ONE PER EVERY 300 LF HORIZONTALLY, WITH A MINIMUM OF ONE PER LIFT. THE LOCATION OF EACH TEST WILL BE SELECTED BY THE ENGINE |  |  |  |
|                                | GRADATION                                     | AASHTO T-27, ASTM D-6913   | (15% PASSING NO. 200)                                     | ONE PER SOIL TYPE   |  |  |  |
| SUB GRADE                      | BEARING VALUES                                | LBR-FDOT 5-515   | 40 (MIN.)   | ONE PER SITE OR AT MATERIAL CHANGES   |  |  |  |
|                                | MAXIMUM DENSITY<br>OPTIMUM MOISTURE           | AASHTO T-180<br>ASTM D-1557  | N/A   | PER SOIL TYPE   |  |  |  |
|                                | FIELD DENSITY & THICKNESS                     | AASHTO T-191<br>ASTM D-1556, D-2937, D-6938                              | 98% OF MAXIMUM DENSITY                                    | ONE PER 300 LF HORIZONTAL WITH A MINIMUM OF 3 TESTS   |  |  |  |
| BASE (SAND-ASPHALT)            | MARSHALL STABILITY<br>TESTS                   | FDOT FM 5-511  | 500 LBS. (MIN.)   | ONE PER SITE AS MATERIAL CHANGES  |  |  |  |
|                                | FIELD DENSITY & THICKNESS                     | ASTM D-2950  | 95% OF LAB DENSITY AS<br>DETERMINED BY MARSHALL<br>METHOD | ONE PER 300 LF HORIZONTAL WITH A MINIMUM OF 3 TESTS   |  |  |  |
| BASE (LIMEROCK)                | BEARING VALUES                                | FDOT FM 5-515  | 100 (MIN.)  | ONE PER SUPPLIER WITH A MINIMUM OF 3 TESTS  |  |  |  |
|                                | FIELD DENSITY &                               | AASHTO T-180, ASTM D-1557<br>AASHTO T-191<br>ASTM D-1556, D-2937, D-6938 | 98% OF MAXIMUM DENSITY                                    | ONE PER 250 LF HORIZONTAL WITH A MINIMUM OF 3 TESTS   |  |  |  |
| ASPHALT                        | MATERIALS QUALITY BITUMEN CONTENT & GRADATION | AASHTO T-164, 5-30<br>ASTM D-2172  | FDOT SPEC. 330, 331, 916<br>FDOT SPEC. 330, 331, 916      | ONE PER DAY FOR GRADATION   |  |  |  |
|                                | FIELD DENSITY & THICKNESS                     | ASTM D-2950  | 95% OF LAB DENSITY  | ONE PER 300 LF HORIZONTAL WITH A MINIMUM OF 3 TESTS   |  |  |  |
|                                | AGGREGATE<br>CERTIFICATION                    | N/A  | FDOT SPEC. 901, 902                                       | ONE PER SUPPLIER  |  |  |  |
|                                | MARSHALL STABILITY & DENSITY                  | FDOT FM 5-11   | FDOT SPEC 331   | ONE PER DAY   |  |  |  |
| CONCRETE                       | SLUMP TEST                                    | AASHTO T-119<br>ASTM C-143   | 2" TO 3"  | AS REQUIRED BY SOILS ENGINEER OR ONE PER SET OF CYLINDERS   |  |  |  |
| (MISC. SITE WORK)              | COMPRESSIVE<br>STRENGTH                       | AASHTO T-23, TP-20<br>ASTM C-31, C-39                                    | 3000 PSI  | ONE SET OF 3 CYLINDERS PER 50 CY PER DAY  |  |  |  |
|                                | AIR CONTENT                                   | ASHM C-31, C-39<br>AASHTO T-356, 152, 196, 121                           | 3% TO 6%  | ONE PER SET OF CYLINDERS  |  |  |  |

NOTES:

1) CONCRETE FOR SITE WORK INCLUDES BUT IS NOT LIMITED TO CURB, CURB & GUTTER, SIDEWALKS ETC., EXCEPT CONCRETE PAVEMENT.
2) WHERE THERE IS A DISCREPANCY BETWEEN THIS TESTING SCHEDULE AND THE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.



LEGEND

O EXISTING SEWER MANHOLE

----12" SS— EXISTING GRAVITY SEWER

NEW STORM DRAIN INLET

O NEW STORM DRAIN MANHOLE

NEW MITERED END SECTION

NEW STORM DRAIN PIPE

**NEW SEWER MANHOLE** 

NEW GRAVITY SEWER

NEW GATE VALVE

**NEW WATER LINE** 

NEW HD ASPHALT

NEW CONCRETE

**NEW ASPHALT** 

ALL CIVIL SITE WORK, UTILITIES, OR ANY OTHER IMPROVEMENTS SHOWN INSIDE THE CLOUD FOR THE NEW CITY HALL, SHALL BE INCLUDED IN BID SCHEDULE #2 "CITY HALL - CITYCOMPLEX".

ALL CIVIL SITE WORK, UTILITIES, OR ANY OTHER IMPROVEMENTS
SHOWN OUTSIDE THE CLOUD,
SHALL BE INCLUDED IN BID
SCHEDULE #1 "CIVIL SITE WORK
- CITY COMPLEX".

THIS DRAWING IS

NOT FOR

CONSTRUCTION

MANAGER:

DESIGNED

C. ELKINS

C. ELKINS

C. ELKINS

C. ELKINS

C. ELKINS

C. ELKINS

A. ZAFAR

MANAGER:

T. PITTS

M M

gfield

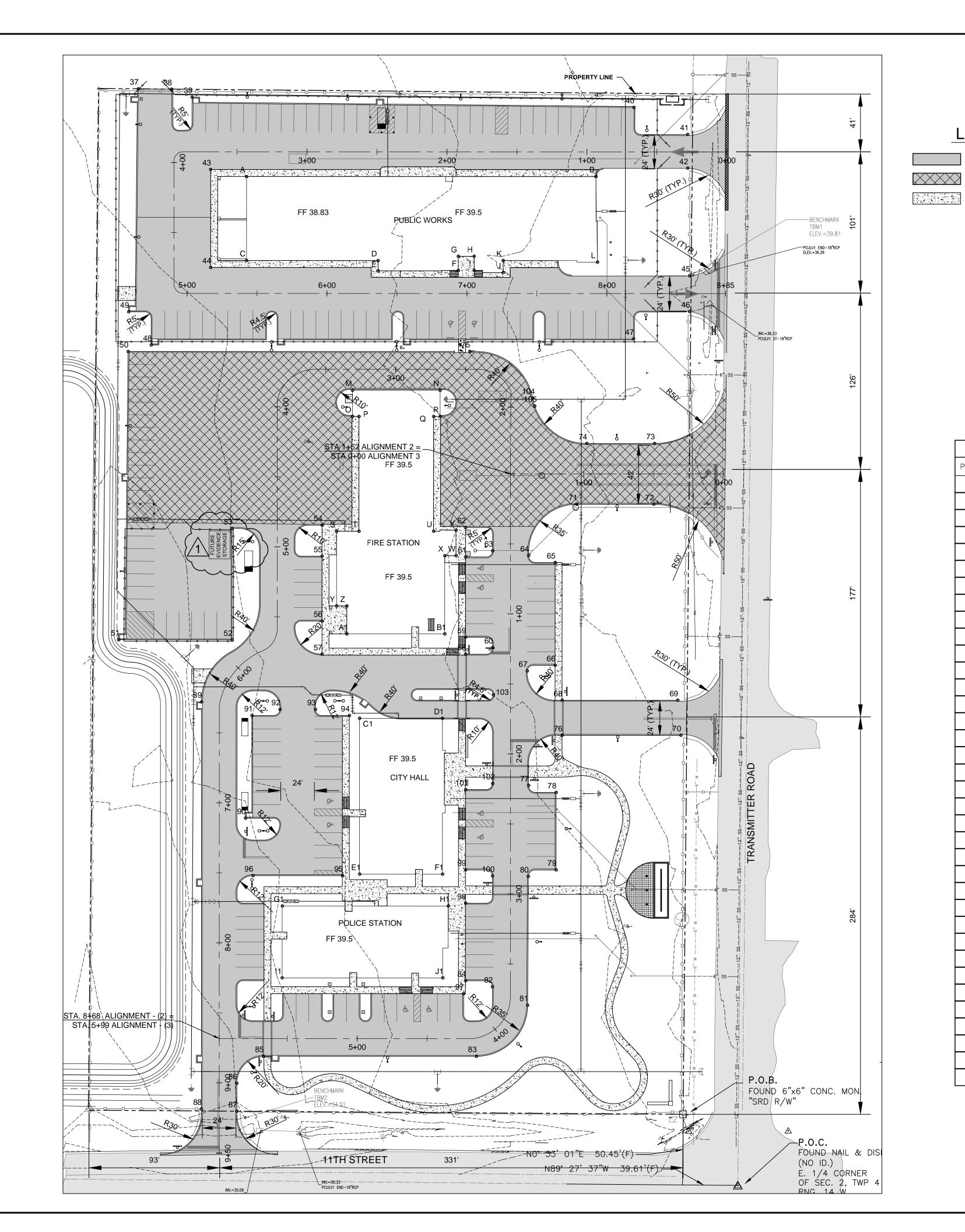
4 7

EET TITLE:

PROJECT LAYOUT AND GENERAL NOTES

SHEET NUMBER:

G1.0



PAVEMENT LAYOUT POINTS

1618004.2381

1618028.0291

1618042.6276

1618358.3805

1618396.7813

1618396.7813

1618055.8902

1618055.8902

1618398.1795

1618398.1795

1618358.0826

1618013.4432

1617996.9432

1618071.2519

1618071.2519

1618135.5102

1618135.5102

1618135.5102

1618135.5102

1618238.0850

1618238.0850

1618257.4142

1618238.0850

1618238.0850

1618257.4142

1618283.0842

1618302.0850

1618302.0850

1618282.1331

1618307.0850

1618389.7037

1618391.9580

1618317.4142

1618372.5489

426956.7619 1617997.2926

426722.4966 1617990.2160

427116.0283

427115.7882

427110.0786

427102.7380

427083.4097

427059.3704

427058.3883

426988.3907

426982.5136

426956.8907

426937.3867

426933.0870

426928.3870

426722.4544

426802.0384

426804.3747

426782.1917

426735.8535

426712.1945

426712.1945

426724.3516

426716.9045

426781.6913

426802.7139

426786.0213

426782.6773

426777.6773

426704.3373

426700.2986

426679.3218

426679.3218

426654.3074

426819.3558

426819.3558

PAVEMENT LAYOUT POINTS

426862.6958 1618373.1032

426613.4757 1618302.7646

426405.6270 1618074.5463

426385.7430 1618074.5819

Easting

1618324.6940

1618241.0913

1618307.0850

1618283.0859

1618302.7646

1618282.8628

1618282.3450

1618257.2621

1618245.8396

1618238.1075

1618093.5558

1618049.2515

1618049.4372

1618080.7816

1618085.4462

1618105.4446

1618130.7836

1618155.0385

1618150.1041

1618086.1092

1618236.6365

1618238.0937

1618238.0937

1618257.2749

1618238.0934

1618257.4142

1618257.9140

1618285.9982

426889.4150 1618287.4406

Northing

426862.6958

426928.3870

426654.3169

426618.4757

426558.1357

426553.4916

426461.4756

426474.6655

426425.0003

426478.9950

426424.9915

426387.4051

426678.1048

426595.0513

426668.3886

426672.7184

426672.7184

426668.3944

426554.0532

426554.0532

426469.6675

426534.3307

426558.1357

426553.8058

426615.4753

426619.8053

426683.1516

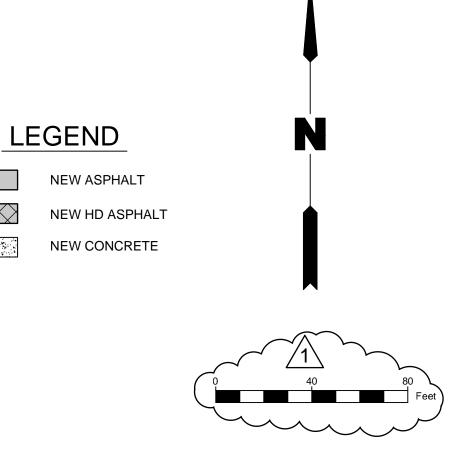
426894.9912

100

102

105

Point #



| BUILDING LAYOUT POINTS |             |                   |  |  |  |  |  |
|------------------------|-------------|-------------------|--|--|--|--|--|
|                        |             | Easting           |  |  |  |  |  |
| Point #                | Northing    |                   |  |  |  |  |  |
| A                      | 427053.3612 | 1618081.5595      |  |  |  |  |  |
| В                      | 427053.3612 | 1618331.1934      |  |  |  |  |  |
| С                      | 426993.3907 | 1618081.5595      |  |  |  |  |  |
| D                      | 426993.3636 | 1618175.5282      |  |  |  |  |  |
| E                      | 426986.0303 | 1618175.5538      |  |  |  |  |  |
| F                      | 426986.3632 | 1618232.8612      |  |  |  |  |  |
| G                      | 426996.4224 | 1618232.8612      |  |  |  |  |  |
| Н                      | 426996.4224 | 1618244.1947      |  |  |  |  |  |
| 1                      | 426986.3632 | 1618244.1947      |  |  |  |  |  |
| J                      | 426984.6970 | 1618264.8615      |  |  |  |  |  |
| K                      | 426993.3907 | 1618264.8849      |  |  |  |  |  |
| L                      | 426992.2282 | 1618332.3288      |  |  |  |  |  |
| М                      | 426900.6675 | 1618157.2373      |  |  |  |  |  |
| N                      | 426900.6675 | 1618219.9040      |  |  |  |  |  |
| 0                      | 426882.0474 | 1618157.2373      |  |  |  |  |  |
| Р                      | 426882.0009 | 1618161.9042      |  |  |  |  |  |
| Q                      | 426882.0009 | 1618215.2373      |  |  |  |  |  |
| R                      | 426882.0474 | 1618219.9040      |  |  |  |  |  |
| S                      | 426800.0009 | 1618145.9040      |  |  |  |  |  |
| Т                      | 426800.0009 | 1618161.9040      |  |  |  |  |  |
| U                      | 426800.0507 | 1618215.2373      |  |  |  |  |  |
| V                      | 426800.7921 | 1618231.2529      |  |  |  |  |  |
| W                      | 426782.5421 | 1618231.2529      |  |  |  |  |  |
| Х                      | 426782.5421 | 1618223.2373      |  |  |  |  |  |
| Υ                      | 426746.6676 | 1618145.9040      |  |  |  |  |  |
| Z                      | 426746.6676 | 1618153.2373      |  |  |  |  |  |
| A1                     | 426726.6676 | 1618153.2373      |  |  |  |  |  |
| B1                     | 426726.6676 | 1618223.2373      |  |  |  |  |  |
| C1                     | 426666.4274 | 1618162.3219      |  |  |  |  |  |
| D1                     | 426666.3922 | 1618221.5453      |  |  |  |  |  |
| E1                     | 426555.0942 | 1618162.3219      |  |  |  |  |  |
| F1                     | 426555.0942 | 1618221.6552      |  |  |  |  |  |
| G1                     | 426532.3442 | 1618107.1136      |  |  |  |  |  |
| H1                     | 426532.3442 | 1618225.7802      |  |  |  |  |  |
| 11                     | 426481.0109 | 1618106.9552      |  |  |  |  |  |
| J1                     | 426481.0000 | 1618221.7802      |  |  |  |  |  |
|                        | 3.51.0000   | . 5 . 522 117 502 |  |  |  |  |  |

| eet |                                     | SPRINGFIELD OIL T COMPLEA                 |           |                 | City of Springfield |          |              | I 141 I KANSMII I EK KD | SPRINGFIELD. FLORIDA 32401 |
|-----|-------------------------------------|---|-----------|-----------------|---------------------|----------|--------------|-------------------------|----------------------------|
|     | REVISION DESCRIPTION                | REVISED SCALE BAR, ADDED RADII DIMENSIONS |           |                 |                     |          |              |                         |                            |
|     | REV.                                | 1   |           |                 |                     |          |              |                         |                            |
|     | DATE                                | 08-16-24                                  |           |                 |                     |          |              |                         |                            |
|     | 05-18-22 DATE REV.                  |   | C. FLNING | C. ELKINS       |                     | A. ZAFAR |              | T. PITTS                |                            |
|     | DATE:                               | DESIGNED                                  | D.T.      | DRAWN BY:       | PROJECT             | ENGINEER | PROJECT      | MANAGER:                | M.M. PROJECT               |
|     | ISSUED FOR BIDS - AUGUST 2024 DATE: |   |           | LHIS DRAWING IS | NOT FOR             |          | CONSTRUCTION |                         |                            |

SHEET TITLE:

SHEET NUMBER:

**GEOMETRIC** 

LAYOUT

G2.0

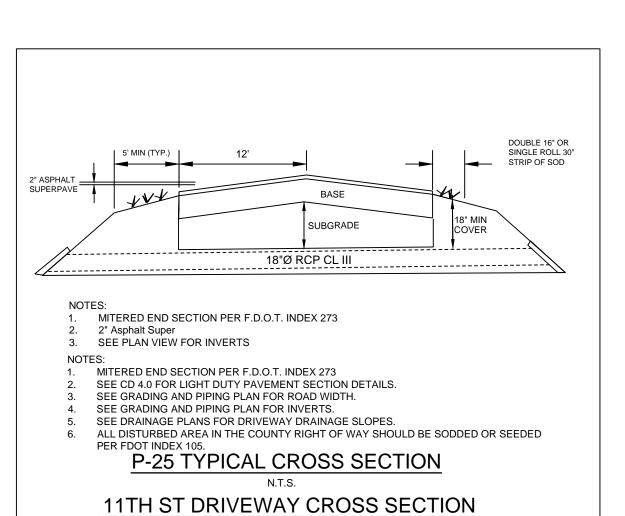
| NO.         TYPE         L.F.         SIZE         % SLOPE         INV. IN         INV. OUT           P-1         RCP CL III         138         15°         0.20         32.52         32.24           P-2         RCP CL III         40         15°         0.20         32.24         32.16           P-3         RCP CL III         146         18°         0.20         31.62         31.58           P-5         RCP CL III         20         18°         0.20         32.26         32.19           P-5.1         RCP CL III         56         18°         0.20         32.38         32.34           P-5.2         RCP CL III         30         15°         0.20         32.99         31.96           P-5.4         RCP CL III         74         15°         0.20         32.99         31.96           P-5.4         RCP CL III         66         18°         0.20         32.99         31.96           P-7         RCP CL III         85         18°         0.20         31.62         31.59           P-8         RCP CL III         85         18°         0.20         31.62         31.58           P-9         RCP CL III         16°  | DRAINAGE PIPE INFORMATION |                               |      |      |         |         |          |  |  |
|---|---------------------------|-------------------------------|------|------|---------|---------|----------|--|--|
| P-2   RCP CL III  | NO.                       | TYPE                          | L.F. | SIZE | % SLOPE | INV. IN | INV. OUT |  |  |
| P-3         RCP CL III         146         18"         0.20         31.91         31.62           P-4         RCP CL III         20         18"         0.20         31.62         31.58           P-5         RCP CL III         56         18"         0.20         32.26         32.19           P-5.1         RCP CL III         19         15"         0.20         32.38         32.34           P-5.2         RCP CL III         30         15"         0.20         32.50         32.19           P-5.4         RCP CL III         74         15"         0.20         32.50         32.19           P-6.4         RCP CL III         66         18"         0.20         32.09         31.96           P-7         RCP CL III         85         18"         0.20         31.79         31.62           P-8         RCP CL III         85         18"         0.20         31.62         31.58           P-10         RCP CL III         16         18"         0.20         31.62         31.58           P-11         RCP CL III         110         24"         0.20         31.53         32.32           P-12         RCP CL III         40   | P-1                       | RCP CL III                    | 138  | 15"  | 0.20    | 32.52   | 32.24    |  |  |
| P-4         RCP CL III         20         18'         0.20         31.62         31.58           P-5         RCP CL III         56         18'         0.20         32.26         32.19           P-5.1         RCP CL III         19         15'         0.20         32.38         32.34           P-5.2         RCP CL III         30         15'         0.20         32.19         32.06           P-5.4         RCP CL III         74         15'         0.20         32.50         32.19           P-6         RCP CL III         66         18'         0.20         32.09         31.96           P-7         RCP CL III         85         18'         0.20         31.96         31.79           P-8         RCP CL III         85         18'         0.20         31.96         31.79           P-9         RCP CL III         16         18'         0.20         31.62         31.58           P-10         RCP CL III         110         24'         0.20         31.53         32.32           P-11         RCP CL III         110         24'         0.20         31.53         32.76           P-121         RCP CL III         40  | P-2                       | RCP CL III                    | 40   | 15"  | 0.20    | 32.24   | 32.16    |  |  |
| P-5 RCP CL III  | P-3                       | RCP CL III                    | 146  | 18"  | 0.20    | 31.91   | 31.62    |  |  |
| P-5.1 RCP CL III  | P-4                       | RCP CL III                    | 20   | 18"  | 0.20    | 31.62   | 31.58    |  |  |
| P-5.2 RCP CL III P-5.4 RCP CL III P-6.4 RCP CL III P-6.5 RCP CL III P-7.5 RCP CL III P-7.5 RCP CL III P-8.5 RCP CL III P-9.5 RCP CL III P-9.5 RCP CL III P-9.5 RCP CL III P-10 RCP CL III P-10 RCP CL III P-10 RCP CL III P-11 RCP CL III P-12 RCP CL III P-12 RCP CL III P-13 RCP CL III P-14 RCP CL III P-15 RCP CL III P-16 RCP CL III P-17 RCP CL III P-18 RCP CL III P-19 RCP CL III P-10 RCP CL III RCP | P-5                       | RCP CL III                    | 56   | 18"  | 0.20    | 32.26   | 32.19    |  |  |
| P-5.4 RCP CL III P-6 RCP CL III P-6 RCP CL III P-7 RCP CL III P-8 RCP CL III P-8 RCP CL III P-9 RCP CL III P-9 RCP CL III P-9 RCP CL III P-10 RCP CL III P-11 RCP CL III P-12 RCP CL III P-13 RCP CL III P-14 RCP CL III P-15 RCP CL III P-15 RCP CL III P-16 RCP CL III P-17 RCP CL III P-18 RCP CL III P-19 RCP CL III P-19 RCP CL III P-10 RCP CL III P-11 RCP CL III P-12 RCP CL III P-12 RCP CL III P-13 RCP CL III P-14 RCP CL III P-15 RCP CL III P-15 RCP CL III P-16 RCP CL III P-17 RCP CL III P-17 RCP CL III P-17 RCP CL III P-18 RCP CL III P-19 RCP CL III P-20 RCP CL III P-20 RCP CL III P-21 RCP CL III P-22 RCP CL III P-22 RCP CL III P-23 RCP CL III P-24 RCP CL III P-25 RCP CL III P-26 RCP CL III P-27 RCP CL III P-27 RCP CL III P-28 RCP CL III P-29 RCP CL III P-20 | P-5.1                     | RCP CL III                    | 19   | 15"  | 0.20    | 32.38   | 32.34    |  |  |
| P-6         RCP CL III         66         18"         0.20         32.09         31.96           P-7         RCP CL III         85         18"         0.20         31.96         31.79           P-8         RCP CL III         85         18"         0.20         31.62         31.58           P-9         RCP CL III         16         18"         0.20         31.62         31.58           P-10         RCP CL III         16         18"         0.20         31.62         31.58           P-10         RCP CL III         110         24"         0.20         31.53         32.32           P-11         RCP CL III         110         24"         0.20         31.53         32.76           P-12.1         RCP CL III         40         15"         0.00         32.76         32.76           P-13         RCP CL III         105         15"         0.20         32.30         32.06           P-14         RCP CL III         122         18"         0.20         31.78         31.68           P-15         RCP CL III         48         24"         0.20         31.68         31.56           P-15.1         RCP CL III         84  | P-5.2                     | RCP CL III                    | 30   | 15"  | 0.20    | 32.19   | 32.06    |  |  |
| P-7 RCP CL III  | P-5.4                     | RCP CL III                    | 74   | 15"  | 0.20    | 32.50   | 32.19    |  |  |
| P-8 RCP CL III  | P-6                       | RCP CL III                    | 66   | 18"  | 0.20    | 32.09   | 31.96    |  |  |
| P-9 RCP CL III W/ CROSS DRAIN MES 42 30" 5.67 30.83 28.45  P-11 RCP CL III W/ CROSS DRAIN MES 42 30" 5.67 30.83 28.45  P-11 RCP CL III  | P-7                       | RCP CL III                    | 85   | 18"  | 0.20    | 31.96   | 31.79    |  |  |
| P-10 RCP CL III W/ CROSS DRAIN MES  | P-8                       | RCP CL III                    | 85   | 18"  | 0.20    | 31.79   | 31.62    |  |  |
| P-11 RCP CL III 110 24" 0.20 31.53 32.32 P-12 RCP CL III 68 15" 0.00 32.76 32.76 P-12.1 RCP CL III 40 15" 0.00 32.76 32.76 P-13 RCP CL III 105 15" 0.20 32.76 32.55 P-14 RCP CL III 122 18" 0.20 32.30 32.06 P-15 RCP CL III 48 24" 0.20 31.78 31.68 P-15.1 RCP CL III 62 24" 0.20 31.68 31.56 P-16 RCP CL III 62 24" 0.20 31.68 31.56 P-17 RCP CL III 84 15" 0.20 33.31 33.31 P-17.1 RCP CL III 84 15" 0.20 33.31 33.31 P-18 RCP CL III 84 15" 0.20 33.50 33.31 P-19 RCP CL III 84 15" 0.20 33.50 33.31 P-19 RCP CL III 84 15" 0.20 33.50 32.43 P-19.1 RCP CL III 54 18" 0.20 33.60 32.95 P-20 RCP CL III 54 15" 0.20 33.50 33.31 P-20.1 RCP CL III 54 15" 0.20 33.50 33.31 P-20.1 RCP CL III 54 15" 0.20 33.50 33.40 P-21 RCP CL III 54 15" 0.20 33.50 33.40 P-21 RCP CL III 54 15" 0.20 33.50 33.40 P-22 RCP CL III 56 18" 0.20 32.63 32.52 P-23 RCP CL III 56 18" 0.20 32.63 32.52  | P-9                       | RCP CL III                    | 16   | 18"  | 0.20    | 31.62   | 31.58    |  |  |
| P-12 RCP CL III 68 15" 0.00 32.76 32.76 P-12.1 RCP CL III 40 15" 0.00 32.76 32.76 P-13 RCP CL III 105 15" 0.20 32.76 32.55 P-14 RCP CL III 122 18" 0.20 32.30 32.06 P-15 RCP CL III 48 24" 0.20 31.78 31.68 P-15.1 RCP CL III 62 24" 0.20 31.68 31.56 P-16 RCP CL III W/ CROSS DRAIN MES 34 18" 4.76 31.07 23.00 P-17 RCP CL III 84 15" 0.20 33.31 33.31 P-17.1 RCP CL III 84 15" 0.20 33.31 33.31 P-18 RCP CL III 84 15" 0.20 33.31 33.31 P-19 RCP CL III 84 15" 0.20 33.31 33.31 P-19 RCP CL III 84 15" 0.20 33.31 33.31 P-19 RCP CL III 54 18" 0.20 33.06 32.95 P-20 RCP CL III 54 15" 0.20 33.50 33.40 P-21 RCP CL III 54 15" 0.20 33.50 33.40 P-21 RCP CL III 54 15" 0.20 33.50 33.40 P-21 RCP CL III 56 18" 0.20 33.50 33.40 P-22 RCP CL III 56 18" 0.20 32.95 32.63 P-22 RCP CL III 56 18" 0.20 32.02 31.78  | P-10                      | RCP CL III W/ CROSS DRAIN MES | 42   | 30"  | 5.67    | 30.83   | 28.45    |  |  |
| P-12.1 RCP CL III 40 15" 0.00 32.76 32.76 P-13 RCP CL III 105 15" 0.20 32.76 32.55 P-14 RCP CL III 122 18" 0.20 32.30 32.06 P-15 RCP CL III 48 24" 0.20 31.78 31.68 P-15.1 RCP CL III 62 24" 0.20 31.68 31.56 P-16 RCP CL III W/ CROSS DRAIN MES 34 18" 4.76 31.07 23.00 P-17 RCP CL III 84 15" 0.20 33.31 33.31 P-17.1 RCP CL III 61 15" 0.20 33.50 33.31 P-18 RCP CL III 84 15" 0.20 33.50 33.31 P-19 RCP CL III 84 15" 0.20 33.50 32.43 P-19.1 RCP CL III 36 15" 0.20 32.50 32.43 P-19.1 RCP CL III 54 18" 0.20 33.60 32.95 P-20 RCP CL III 44 15" 0.20 33.50 33.31 P-20.1 RCP CL III 54 15" 0.20 33.50 33.40 P-21 RCP CL III 55 15" 0.20 32.95 32.63 P-22 RCP CL III 56 18" 0.20 32.63 32.52 P-23 RCP CL III 56 18" 0.20 32.02 31.78  | P-11                      | RCP CL III                    | 110  | 24"  | 0.20    | 31.53   | 32.32    |  |  |
| P-13         RCP CL III         105         15"         0.20         32.76         32.55           P-14         RCP CL III         122         18"         0.20         32.30         32.06           P-15         RCP CL III         48         24"         0.20         31.78         31.68           P-15.1         RCP CL III         62         24"         0.20         31.68         31.56           P-16         RCP CL III W/ CROSS DRAIN MES         34         18"         4.76         31.07         23.00           P-17         RCP CL III         84         15"         0.20         33.31         33.31           P-17.1         RCP CL III         61         15"         0.20         33.50         33.31           P-18         RCP CL III         84         15"         0.20         33.31         33.31           P-19         RCP CL III         36         15"         0.20         32.50         32.43           P-19.1         RCP CL III         54         18"         0.20         33.40         33.31           P-20         RCP CL III         54         15"         0.20         33.50         33.40           P-21         RCP CL III  | P-12                      | RCP CL III                    | 68   | 15"  | 0.00    | 32.76   | 32.76    |  |  |
| P-14       RCP CL III       122       18"       0.20       32.30       32.06         P-15       RCP CL III       48       24"       0.20       31.78       31.68         P-15.1       RCP CL III       62       24"       0.20       31.68       31.56         P-16       RCP CL III W/ CROSS DRAIN MES       34       18"       4.76       31.07       23.00         P-17       RCP CL III       84       15"       0.20       33.31       33.31         P-17.1       RCP CL III       61       15"       0.20       33.50       33.31         P-18       RCP CL III       84       15"       0.20       33.31       33.31         P-19       RCP CL III       36       15"       0.20       32.50       32.43         P-19.1       RCP CL III       54       18"       0.20       33.40       33.31         P-20       RCP CL III       44       15"       0.20       33.40       33.31         P-20.1       RCP CL III       54       15"       0.20       33.50       33.40         P-21       RCP CL III       158       15"       0.20       32.63       32.52         P-23 <t< td=""><td>P-12.1</td><td>RCP CL III</td><td>40</td><td>15"</td><td>0.00</td><td>32.76</td><td>32.76</td></t<>   | P-12.1                    | RCP CL III                    | 40   | 15"  | 0.00    | 32.76   | 32.76    |  |  |
| P-15 RCP CL III   | P-13                      | RCP CL III                    | 105  | 15"  | 0.20    | 32.76   | 32.55    |  |  |
| P-15.1 RCP CL III 62 24" 0.20 31.68 31.56  P-16 RCP CL III W/ CROSS DRAIN MES 34 18" 4.76 31.07 23.00  P-17 RCP CL III 84 15" 0.20 33.31 33.31  P-17.1 RCP CL III 61 15" 0.20 33.50 33.31  P-18 RCP CL III 84 15" 0.20 33.31 33.31  P-19 RCP CL III 36 15" 0.20 32.50 32.43  P-19.1 RCP CL III 54 18" 0.20 33.40 33.31  P-20.1 RCP CL III 54 15" 0.20 33.50 33.40  P-21 RCP CL III 54 15" 0.20 33.50 33.40  P-22 RCP CL III 56 18" 0.20 32.63  P-23 RCP CL III 158 15" 0.20 32.63 32.52  P-23 RCP CL III 56 18" 0.20 32.63 32.52  | P-14                      | RCP CL III                    | 122  | 18"  | 0.20    | 32.30   | 32.06    |  |  |
| P-16       RCP CL III W/ CROSS DRAIN MES       34       18"       4.76       31.07       23.00         P-17       RCP CL III       84       15"       0.20       33.31       33.31         P-17.1       RCP CL III       61       15"       0.20       33.50       33.31         P-18       RCP CL III       84       15"       0.20       33.31       33.31         P-19       RCP CL III       36       15"       0.20       32.50       32.43         P-19.1       RCP CL III       54       18"       0.20       33.06       32.95         P-20       RCP CL III       44       15"       0.20       33.40       33.31         P-20.1       RCP CL III       54       15"       0.20       33.50       33.40         P-21       RCP CL III       158       15"       0.20       32.95       32.63         P-22       RCP CL III       56       18"       0.20       32.63       32.52         P-23       RCP CL III       121       18"       0.20       32.02       31.78  | P-15                      | RCP CL III                    | 48   | 24"  | 0.20    | 31.78   | 31.68    |  |  |
| P-17       RCP CL III       84       15"       0.20       33.31       33.31         P-17.1       RCP CL III       61       15"       0.20       33.50       33.31         P-18       RCP CL III       84       15"       0.20       33.31       33.31         P-19       RCP CL III       36       15"       0.20       32.50       32.43         P-19.1       RCP CL III       54       18"       0.20       33.06       32.95         P-20       RCP CL III       44       15"       0.20       33.40       33.31         P-20.1       RCP CL III       54       15"       0.20       33.50       33.40         P-21       RCP CL III       158       15"       0.20       32.95       32.63         P-22       RCP CL III       56       18"       0.20       32.63       32.52         P-23       RCP CL III       121       18"       0.20       32.02       31.78   | P-15.1                    | RCP CL III                    | 62   | 24"  | 0.20    | 31.68   | 31.56    |  |  |
| P-17.1       RCP CL III       61       15"       0.20       33.50       33.31         P-18       RCP CL III       84       15"       0.20       33.31       33.31         P-19       RCP CL III       36       15"       0.20       32.50       32.43         P-19.1       RCP CL III       54       18"       0.20       33.06       32.95         P-20       RCP CL III       44       15"       0.20       33.40       33.31         P-20.1       RCP CL III       54       15"       0.20       33.50       33.40         P-21       RCP CL III       158       15"       0.20       32.95       32.63         P-22       RCP CL III       56       18"       0.20       32.63       32.52         P-23       RCP CL III       121       18"       0.20       32.02       31.78   | P-16                      | RCP CL III W/ CROSS DRAIN MES | 34   | 18"  | 4.76    | 31.07   | 23.00    |  |  |
| P-18       RCP CL III       84       15"       0.20       33.31       33.31         P-19       RCP CL III       36       15"       0.20       32.50       32.43         P-19.1       RCP CL III       54       18"       0.20       33.06       32.95         P-20       RCP CL III       44       15"       0.20       33.40       33.31         P-20.1       RCP CL III       54       15"       0.20       33.50       33.40         P-21       RCP CL III       158       15"       0.20       32.95       32.63         P-22       RCP CL III       56       18"       0.20       32.63       32.52         P-23       RCP CL III       121       18"       0.20       32.02       31.78   | P-17                      | RCP CL III                    | 84   | 15"  | 0.20    | 33.31   | 33.31    |  |  |
| P-19       RCP CL III       36       15"       0.20       32.50       32.43         P-19.1       RCP CL III       54       18"       0.20       33.06       32.95         P-20       RCP CL III       44       15"       0.20       33.40       33.31         P-20.1       RCP CL III       54       15"       0.20       33.50       33.40         P-21       RCP CL III       158       15"       0.20       32.95       32.63         P-22       RCP CL III       56       18"       0.20       32.63       32.52         P-23       RCP CL III       121       18"       0.20       32.02       31.78   | P-17.1                    | RCP CL III                    | 61   | 15"  | 0.20    | 33.50   | 33.31    |  |  |
| P-19.1       RCP CL III       54       18"       0.20       33.06       32.95         P-20       RCP CL III       44       15"       0.20       33.40       33.31         P-20.1       RCP CL III       54       15"       0.20       33.50       33.40         P-21       RCP CL III       158       15"       0.20       32.95       32.63         P-22       RCP CL III       56       18"       0.20       32.63       32.52         P-23       RCP CL III       121       18"       0.20       32.02       31.78   | P-18                      | RCP CL III                    | 84   | 15"  | 0.20    | 33.31   | 33.31    |  |  |
| P-20       RCP CL III       44       15"       0.20       33.40       33.31         P-20.1       RCP CL III       54       15"       0.20       33.50       33.40         P-21       RCP CL III       158       15"       0.20       32.95       32.63         P-22       RCP CL III       56       18"       0.20       32.63       32.52         P-23       RCP CL III       121       18"       0.20       32.02       31.78   | P-19                      | RCP CL III                    | 36   | 15"  | 0.20    | 32.50   | 32.43    |  |  |
| P-20.1       RCP CL III       54       15"       0.20       33.50       33.40         P-21       RCP CL III       158       15"       0.20       32.95       32.63         P-22       RCP CL III       56       18"       0.20       32.63       32.52         P-23       RCP CL III       121       18"       0.20       32.02       31.78   | P-19.1                    | RCP CL III                    | 54   | 18"  | 0.20    | 33.06   | 32.95    |  |  |
| P-21       RCP CL III       158       15"       0.20       32.95       32.63         P-22       RCP CL III       56       18"       0.20       32.63       32.52         P-23       RCP CL III       121       18"       0.20       32.02       31.78   | P-20                      | RCP CL III                    | 44   | 15"  | 0.20    | 33.40   | 33.31    |  |  |
| P-22         RCP CL III         56         18"         0.20         32.63         32.52           P-23         RCP CL III         121         18"         0.20         32.02         31.78  | P-20.1                    | RCP CL III                    | 54   | 15"  | 0.20    | 33.50   | 33.40    |  |  |
| P-23 RCP CL III 121 18" 0.20 32.02 31.78  | P-21                      | RCP CL III                    | 158  | 15"  | 0.20    | 32.95   | 32.63    |  |  |
|   | P-22                      | RCP CL III                    | 56   | 18"  | 0.20    | 32.63   | 32.52    |  |  |
| P-24 RCP CL III W/ CROSS DRAIN MES 28 30" 3.75 29.5 28.45   | P-23                      | RCP CL III                    | 121  | 18"  | 0.20    | 32.02   | 31.78    |  |  |
|   | P-24                      | RCP CL III W/ CROSS DRAIN MES | 28   | 30"  | 3.75    | 29.5    | 28.45    |  |  |

0.83

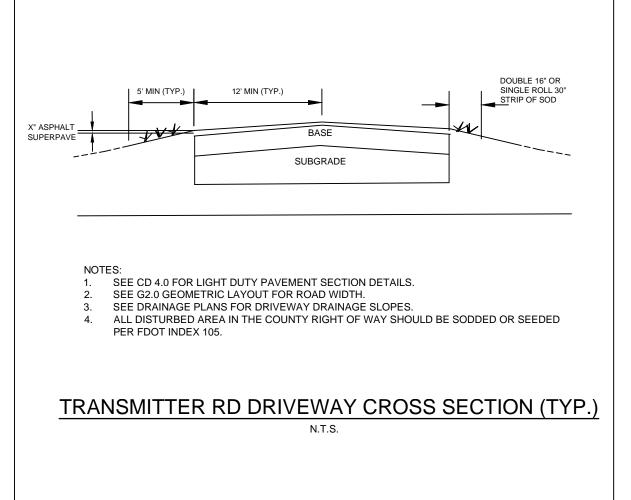
30.50

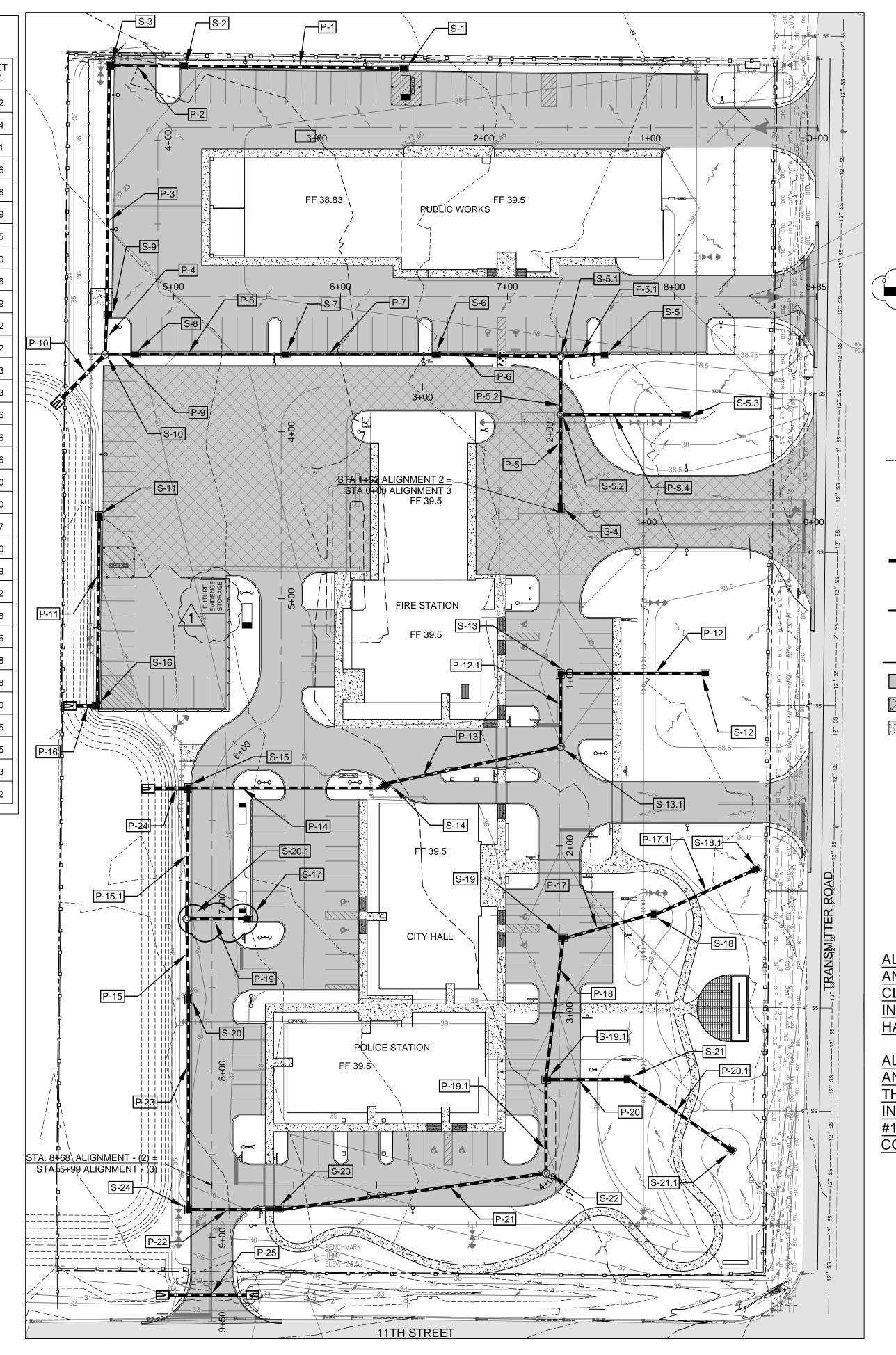
30.00

| _      | DRAINAGE STRU            | JCTL         | IRE I  | NFO    | RMA    | TION   | <u>l</u>      |
|--------|--------------------------|--------------|--------|--------|--------|--------|---------------|
| NO.    | STRUCTURE<br>DESCRIPTION | TOP<br>ELEV. | INV. N | INV. S | INV. E | INV. W | INLET<br>INV. |
| S-1    | FDOT TYPE C INLET        | 37.50        |        |        |        | 32.52  | 32.02         |
| S-2    | FDOT TYPE C INLET        | 36.90        |        |        | 32.24  | 32.24  | 31.74         |
| S-3    | FDOT TYPE C INLET        | 36.75        |        | 31.91  | 32.16  |        | 31.41         |
| S-4    | FDOT TYPE C INLET        | 37.90        | 32.26  |        |        |        | 31.76         |
| S-5    | FDOT TYPE C INLET        | 37.95        |        |        |        | 32.38  | 31.88         |
| S-5.1  | FDOT 48" STORM MANHOLE   | 39.00        |        | 32.15  | 32.34  | 32.09  | 31.59         |
| S-5.2  | FDOT 48" STORM MANHOLE   | 38.50        | 32.15  | 32.15  | 32.15  |        | 31.65         |
| S-5.3  | FDOT TYPE C INLET        | 37.75        |        |        |        | 32.20  | 31.70         |
| S-6    | FDOT TYPE C INLET        | 37.50        |        | 31.96  | 31.96  |        | 31.46         |
| S-7    | FDOT TYPE C INLET        | 37.25        |        |        | 31.79  | 31.79  | 31.29         |
| S-8    | FDOT TYPE C INLET        | 36.50        |        |        | 31.62  | 31.62  | 31.12         |
| S-9    | FDOT TYPE C INLET        | 36.50        | 31.62  | 31.62  |        |        | 31.12         |
| S-10   | FDOT 48" STORM MANHOLE   | 37.50        | 30.83  | 31.58  | 31.58  |        | 30.33         |
| S-11   | FDOT TYPE C INLET        | 36.30        |        | 31.53  |        |        | 31.03         |
| S-12   | FDOT TYPE C INLET        | 38.25        |        |        |        | 32.76  | 32.26         |
| S-13   | FDOT TYPE C INLET        | 37.50        |        |        | 32.76  | 32.76  | 32.26         |
| S-13.1 | FDOT 48" STORM MANHOLE   | 38.00        |        |        | 32.76  | 32.76  | 32.26         |
| S-14   | FDOT TYPE C INLET        | 38.35        |        |        | 32.55  | 32.30  | 31.80         |
| S-15   | FDOT TYPE D INLET        | 36.30        |        | 31.56  | 32.06  | 29.50  | 29.00         |
| S-16   | FDOT TYPE C INLET        | 35.75        | 32.32  |        |        | 31.07  | 30.57         |
| S-17   | FDOT TYPE C INLET        | 37.40        |        |        |        | 32.50  | 32.00         |
| S-18   | FDOT TYPE C INLET        | 38.35        |        |        |        | 33.59  | 33.09         |
| S-18.1 | FDOT TYPE C INLET        | 37.50        |        |        |        | 33.72  | 33.22         |
| S-19   | FDOT TYPE C INLET        | 37.50        |        |        | 33.48  | 33.48  | 32.98         |
| S-19.1 | FDOT TYPE C INLET        | 37.50        | 33.31  | 33.06  | 33.31  |        | 32.56         |
| S-20   | FDOT TYPE D INLET        | 35.75        | 31.78  | 31.78  |        |        | 31.38         |
| S-20.1 | 48" STORM DRAIN MANHOLE  | 36.50        | 31.68  | 31.68  | 32.43  |        | 31.18         |
| S-21   | FDOT TYPE C INLET        | 38.25        |        |        | 33.40  | 33.40  | 32.90         |
| S-21.1 | FDOT TYPE C INLET        | 38.25        |        |        |        | 33.55  | 33.05         |
| S-22   | FDOT 48" STORM MANHOLE   | 38.10        | 32.95  |        |        | 32.95  | 32.45         |
| S-23   | FDOT TYPE C INLET        | 36.75        |        |        | 32.63  | 32.63  | 32.13         |
| S-24   | FDOT TYPE C INLET        | 35.75        | 32.02  |        | 32.52  |        | 31.52         |



RCP CL III W/ 2-SIDE DRAIN MES 60





### LEGEND

EXISTING SEWER MANHOLE ————12" ss— EXISTING GRAVITY SEWER

NEW STORM DRAIN INLET

NEW STORM DRAIN MANHOLE NEW MITERED END SECTION

NEW STORM DRAIN PIPE

NEW SEWER MANHOLE NEW GRAVITY SEWER

NEW GATE VALVE **NEW WATER LINE** 

**NEW ASPHALT** NEW HD ASPHALT

NEW CONCRETE

ALL STORM DRAIN PIPING AND INLET WORK INSIDE THE CLOUD SHALL BE INCLUDED IN BID SCHEDULE #2 "CITY HALL - CITY COMPLEX".

ALL STORM DRAIN PIPING AND INLET WORK OUTSIDE THE CLOUD SHALL BE INCLUDED IN BID SCHEDULE #1 "CIVIL SITE WORK - CITY COMPLEX"

1141 TRANSMITTER RD SPRINGFIELD, FLORIDA 32401

MOTT

COMPLEX

SPRIN

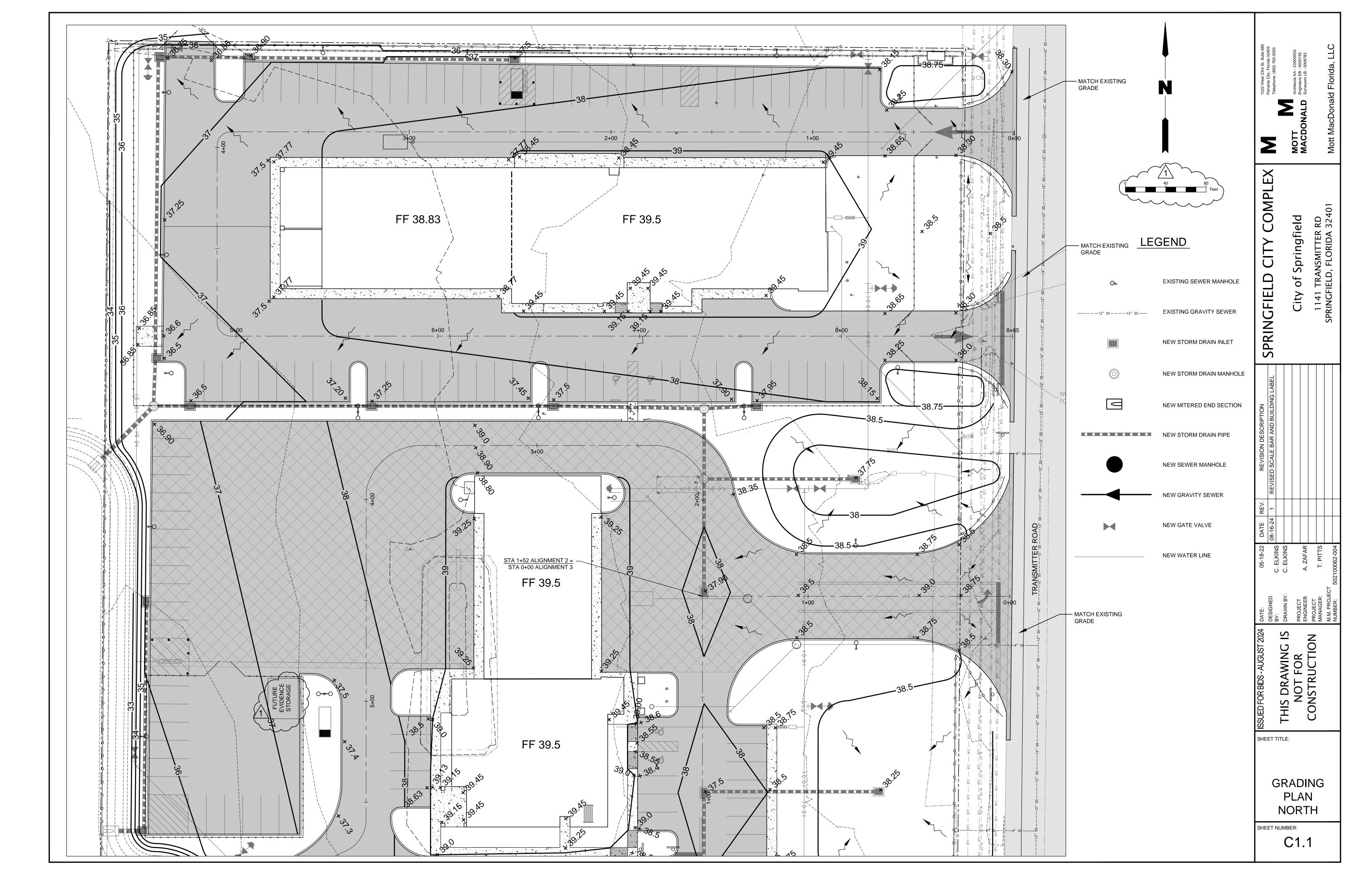
THIS DRAWING IS
NOT FOR
CONSTRUCTION

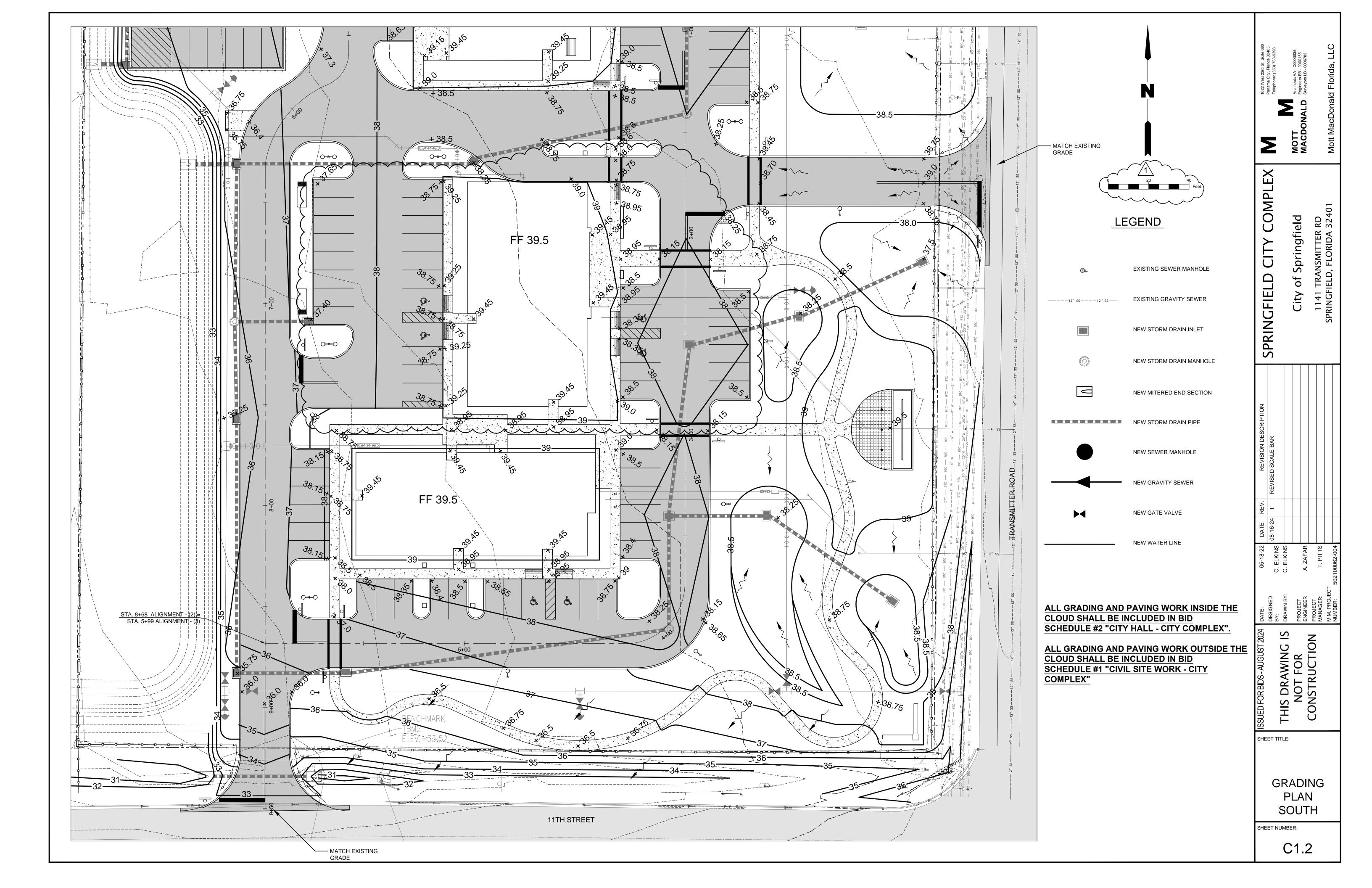
SHEET TITLE:

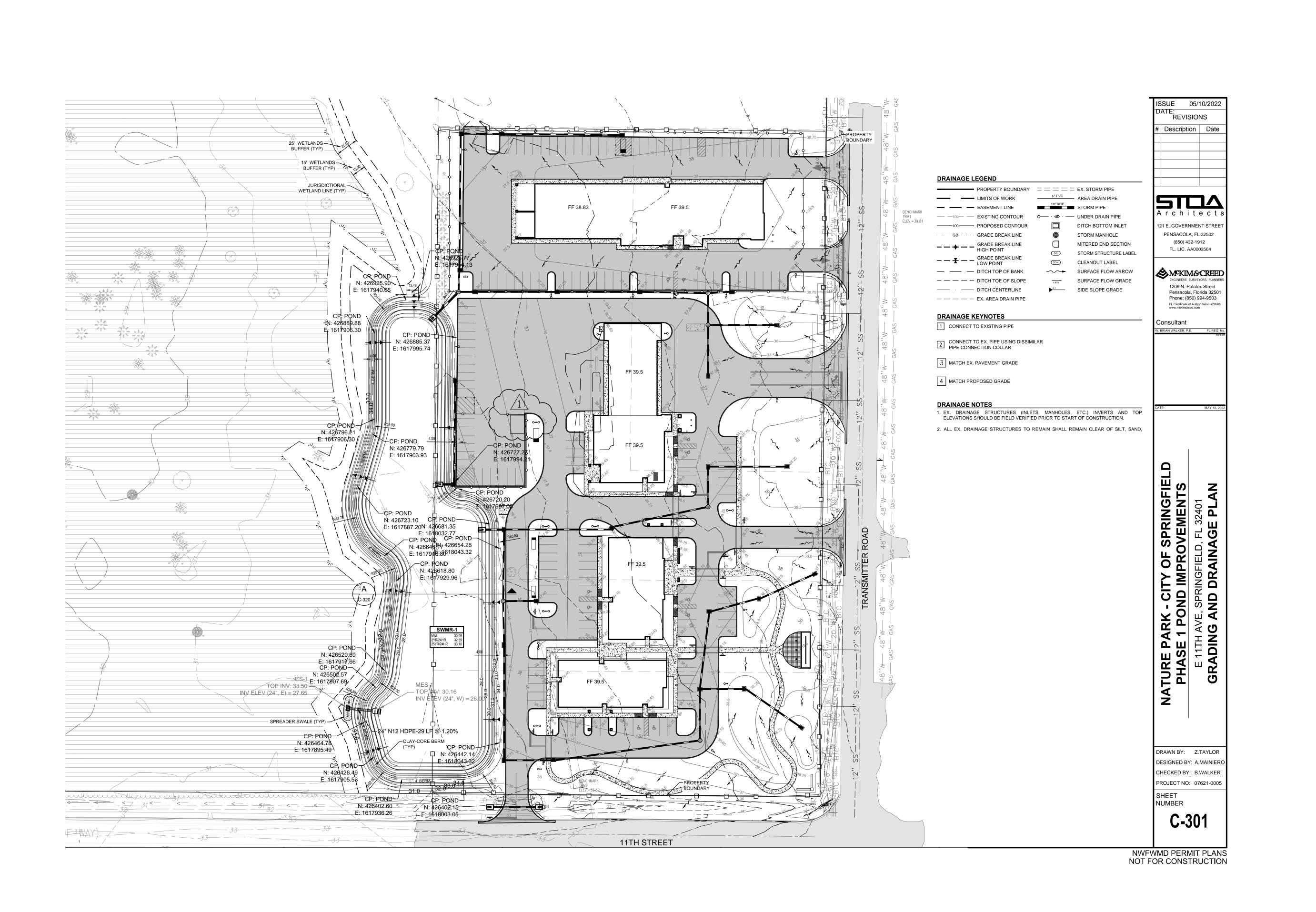
**GRADING AND** PIPING PLAN

SHEET NUMBER:

C1.0







COMPLEX 1141 TRANSMITTER RD SPRINGFIELD, FLORIDA 32401 Springfield SPRINGFIELD of THIS DRAWING IS
NOT FOR
CONSTRUCTION SHEET TITLE: GRADING PLAN

WEST

C1.3

SHEET NUMBER:

