INVITATION TO BID

CITY OF CALLAWAY
GORE PARK SITE WORK
BID NO: LS2022-05

ADVERTISED: **The Bay County News Herald, Friday, February 11, 2022**

PREBID MEETING: **N/A**

BID DEADLINE: **2:00 p.m. Monday, March 14, 2022**

BIDS/PROPOSALS ARE TO BE SUBMITTED TO:

CITY OF CALLAWAY
ATTN: JANICE L. PETERS, CITY CLERK
6601 EAST HWY. 22
CALLAWAY, FL 32404

BID OPENING: **2:15 p.m. Monday, March 14, 2022**
Callaway Arts & Conference Center, 500 Callaway Park Way

Janice L. Peters

Janice L. Peters, MMC, City Clerk

INSTRUCTIONS TO BIDDERS/PROPOSERS

Qualified firms are invited to submit a Bid/Proposal to the **CITY OF CALLAWAY** for the **CITY OF CALLAWAY GORE PARK SITE WORK, BID NO: LS2022-05,** by replying to the enclosed specification. In order for the Bid/Proposal to be considered, complete all items in this specification.

All Bids/Proposals must include one **(1) unbound original** and **three (3) copies** and be addressed to:

CITY OF CALLAWAY
ATTN: CITY CLERK
6601 EAST HWY. 22
CALLAWAY, FL 32404

Proposals **must be received** at the address listed above no later than **2:00 p.m. on Monday, March 14, 2022.** Late Proposals will not be accepted, regardless of the reason.

Proposal envelopes must be **sealed and marked** with the Bid number, due date, and name of Proposer so as to identify the enclosed submittal. If more than one package is submitted, please mark "1 of 2", "2 of 2", etc.

INTERPRETATION OF SPECIFICATION

All questions pertaining to the terms and conditions of the scope of work of this Bid/Proposal must be submitted **in writing** via email or fax to the City Clerk as shown below:

Janice L. Peters, MMC, City Clerk
City of Callaway
6601 East Hwy. 22
Callaway, FL 32404
jpeters@cityofCallaway.com

No oral interpretations will be made to any firm as to the meaning of specifications or any other contract documents. **In accordance with Florida Statutes 287.057(23), "Respondents to this solicitation or persons acting on their behalf may not contact, between the release of the solicitation and the end of the 72-hour period following the agency posting the notice of intended award, excluding Saturdays, Sundays, and state holidays, any employee or officer of the executive or legislative branch concerning any aspect of this solicitation, except in writing to the procurement officer or as provided in the solicitation documents. Violation of this provision may be grounds for rejecting a response**." Questions must be submitted as referenced above.

All questions must be received at least five (5) calendar days prior to the scheduled opening of Bids/Proposals. Any interpretation of the Bid/Proposal terms, conditions, and/or specification, if made, will be only by Addendum issued by the City Clerk. A copy of such Addendum will be posted to the City's website at www.cityofcallaway.com and mailed to each proposer that received a copy of the advertisement of the Request for Bids/Proposals. **IT IS THE RESPONSIBILITY OF THE BIDDER/PROPOSER TO CHECK THE CITY'S WEBSITE FOR ANY ADDENDUMS PRIOR TO SUBMITTING A BID/PROPOSAL.** No verbal instructions or interpretations of drawings and specifications will be made other than indicated above.

The City reserves the right to reject any or all proposals, to waive informalities in the Bids/Proposals and to re-advertise for Bids/Proposals. The City also reserves the right to separately accept or reject any item or items of a Bid/Proposal and to award and/or negotiate a contract in the best interest of the City.

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*** Note: The GENERAL INSTRUCTIONS AND CONDITIONS (attached hereto) apply, except as set forth below, for this Bid.**

A. Description: ( ) See Attached (X) As Follows

The project includes a new football field, practice field, baseball field, basketball court, tennis court, field lighting for all fields/courts, site lighting, walking trail, fencing, parking improvements, and associated site work.

Although not a requirement to bid this project, all vendors have the elective to purchase official copies of the Plans and specifications via the City Clerk's office from the Engineer of Record at a cost of $50 per set, which is non-refundable.

Bidders must comply with federal requirements to check debarment and suspension status of contractors, subcontractors and vendors per 2 Code of Federal Regulations (CFR) 200, Appendix II (H) and 31 CFR Part 19.

B. Specifications: (X) See Attached ( ) As follows:

See attached Minimum Technical Specifications

C. Contract/Agreement Required: ( ) None (X) As follows: See enclosed Sample Contract

D. Items to be submitted with Bid: ( ) None (X) As follows:

- One (1) unbound original with three (3) copies of the bid submittal,
- Bid Bond in the amount of 5%
- Proof of Insurance
- Anti-Collusion Clause Form
- Bid/Certification Form with signature page,
- Sales Tax Exempt Agreement
- Conflict of Interest Form
- Public Entity Crimes Statement,
- Drug Free Workplace Certification,
- Proprietary/Confidential Information Form
- Certification Regarding Debarment
- Trench Safety Compliance Certification Form
- Anti-Collusion Statement
- References (3) for similar type work with contact information,
- State of Florida License Copy,
- List of Subcontractors, if applicable,

E. **Deadline and place for submission of Bids:**

2:00 p.m., MONDAY, MARCH 14, 2022 (BID DEADLINE)
City Hall
6601 East Hwy. 22
Callaway, FL 32404

F. **Time and place for OPENING of Bids:**

2:15 p.m., MONDAY, MARCH 14, 2022,
City of Callaway ARTS & CONFERENCE CENTER - 500 CALLAWAY PARK WAY.

G. **Insurance Requirements: ( ) None (X) As follows:**

	Minimum Coverage
Property Damage:	$ 500,000
General Liability:	$ 1,000,000/2,000,000
Automobile Liability:	$ 1,000,000/2,000,000
Workers' Compensation:	$ Statutory Limit*

Note: Insurance Certificate must be provided by Successful Bidder upon execution of Agreement. City is to be listed on the bidder's/proposer's Certificate of Insurance as additionally insured and certificate holder in order for the City to be notified if the insurance is canceled or modified.

H. **Bond Requirements: ( ) None (X) As follows:**

	Amount of Bond
Bid Bond	$____ or 5 % of Bid
Performance Bond	$____ or 100 % of Bid
Payment Bond	$____ or 100 % of Bid
Construction Bond	$____ or N/A % of Bid
Other:_____	$____ or N/A % of Bid

Bid Bonds can be in the form of Cashiers Check, Certified Check or Bond submitted on the bonding entities official forms.

I. **Number of Copies of Bid Forms with original signature(s) Required**:

One (1) unbound original, with notarized Signatures, plus three (3) copies

NOTICE: Proposals may be rejected if all documents are not complete and executed, and the numbers of copies specified/requested of each are not submitted with the proposal.

GENERAL INSTRUCTIONS AND CONDITIONS

(1) NOTICE TO BIDDERS/PROPOSERS

The following general instructions and conditions apply to all Requests for Bids/Proposals unless modified by the provisions set forth in the **"Special Instructions and Conditions"** attached hereto. If there is a conflict between the "Special Instructions and Conditions" and these "General Instructions and Conditions," the provisions in the Special Instructions and Conditions will apply. **Note: the General Instructions and Conditions and the Special Instructions and Conditions are periodically revised; potential Bidders/Proposers should read both carefully prior to submitting a Bid/Proposal. The attached Special Instructions and Conditions apply only to this Bid/Proposal.**

(2) SUBMITTAL OF BIDS/PROPOSALS

Qualified businesses or individuals requesting consideration must submit a complete Bid/Proposal with any/all attachments in a sealed package clearly marked with the **name** and **number of the Bid/Proposal**, to the attention of the City Clerk, prior to closing time at the address shown in the **Special Instructions and Conditions** attached hereto. If not so marked as to this wording, sealed and/or received by the closing time, the Bid/Proposal will not be accepted. Bid/Proposal packages, additional information regarding this Bid/Proposal, or the bidding procedures may be obtained by contacting the City Clerk, 6601 East Hwy. 22, Callaway, FL 32404, (850) 215-6694.

It shall be the sole responsibility of the Bidders/Proposers to have their Bid/Proposal delivered on or before the closing time and date stated in the **Special Instructions and Conditions**. Any Bids/Proposals received after the stated time and/or due to delays caused by mail or courier delivery, or any other reason, shall not be opened or otherwise considered, and will be returned at the bidder's/proposer's expense.

Bids/Proposals shall be opened and publicly announced at the City Clerk's Office, City Hall, 6601 East Hwy. 22, Callaway, Florida, after closing of Bids/Proposals, unless otherwise specified in the Special Instructions and Conditions.

(3) SPECIFICATIONS AND REQUIREMENTS

The detailed specifications and additional requirements relating to this Bid/Proposal are set forth in the Special Instructions and Conditions attached hereto.

SILENCE OF SPECIFICATIONS: The apparent silence of any specification as to any details or any omission of a detailed description concerning any point shall be regarded as meaning that only the best construction practices are to prevail and that only new materials of first quality and correct type, size and design are to be used. All workmanship is to be first quality. All interpretations of specifications shall be made accordingly by the City.

(4) BID/PROPOSAL FORM

Bidders/Proposers shall complete, sign and furnish the "Bid Certification Form", together with the forms, specifications and materials required in the "Special Instructions and Conditions" or any exhibits attached hereto. This will include a properly executed Drug-Free Workplace Certification, and a Sworn Statement on Public Entity Crimes Form, pursuant to Section 287.133(3)(a), Florida Statutes. The minimum number of complete Bid/Proposal packages to be submitted is set forth in the Special Instructions and Conditions.

If the “Special Instructions and Conditions” include a “Scope of Work” provision, and/or provide for a supplemental and or implementing agreement, the City reserves the right to modify the "Scope of Services." Further, the terms and conditions of any such agreement shall be modified prior to execution by the City, if such modifications are determined to be in the best interest of the City.

Bids/Proposals may be considered non-responsive, at the sole option of the City, and may be rejected if they include omissions, alterations of form, additions not called for, conditions or limitations, unauthorized alternate Bids/Proposals, submission of less than the number of bid packages requested, or other irregularities of any kind.

Unless otherwise stated, the price(s) set forth in the Bid/Proposal include(s) all costs and expenses for labor, equipment, materials, commissions, transportation charges and expenses, handling material inspection, and patent fees and royalties, together with any and all other costs and expenses for providing the service, equipment, materials or performing and completing the work as shown according to the plans and specifications herein.

If quotations are requested for the various items of work, they are intended to establish a total price for providing the materials, equipment, services, or completing the work in its entirety. If the Bidder/Proposer determines that the cost for any item of work has not been established by the Proposal Form, the cost for that work is to be included in other applicable Bid/Proposal item(s), so that the Bid/Proposal reflects the total price for completing that work in its entirety.

In the event of a discrepancy between a unit bid price and an extension, the unit bid price will govern. Written prices shall govern over figures.

(5) CLARIFICATION AND ADDENDA

Each Bidder/Proposer shall examine all Bid/Proposal documents and shall judge all matters relating to the adequacy and accuracy of such documents. Any inquiries, suggestions or requests concerning the interpretation, clarification or additional information pertaining to this Invitation to Bid/Request for Bid/Proposal will be accepted by the City Clerk up to and including five (5) working days prior to the closing date and time stated herein. The issuance of a written addendum signed by the City Clerk is the only official method whereby interpretation, clarification or additional information can be given. The City shall not be responsible for oral interpretations given by any City employee, representative or others. If any addenda are issued, the City will attempt to notify all known prospective Bidders/Proposers. However, it shall be the responsibility of each Bidder/Proposer, prior to submitting a Bid/Proposal, to contact the City Clerk's Office to determine if addenda were issued, and to make such addenda a part of the Bid/Proposal. If an addendum has been issued, and was not incorporated in the Bid/Proposal documents submitted by Bidder/Proposer, the Bid/Proposal may not be accepted or considered by the City.

(6) MANUFACTURER’S NAMES AND APPROVED EQUIVALENTS

Unless otherwise specifically stated in the Special Instructions and Conditions, any manufacturer’s names, trade names, brand names, catalog numbers, or similar information listed in a specification, are for the purpose of information and illustration, and are not intended to restrict the submission of alternates meeting minimum specifications. The Bidder/Proposer may offer the same or any alternate for which the Bidder/Proposer is an authorized representative, which meets or exceeds the specifications for any item. If a manufacturer’s name or model is included in the specification, and a Bid/Proposal is based on alternate products or services which Bidder/Proposer maintains is equivalent and meets or exceeds specifications, Bidder/Proposer is to indicate on the Bid/Proposal Form the manufacturer’s name and related information of the alternate, including any

deviation from the specifications. Unless expressly noted on the Bid/Proposal that an alternate is being proposed, and the specification includes a specific manufacturer's model or brand, the Bid/Proposal will be considered as a quotation for the item(s) stated in the specifications.

(7) INFORMATION AND DESCRIPTIVE LITERATURE

Bidders/Proposers must furnish all information requested in the Bid/Proposal packet including but not limited to any sketches, plans, designs, specification, and descriptive literature regarding the product(s)/service(s) being offered. Bids/Proposals which do not comply with these requirements are subject to rejection. Reference to submission of documentation or materials with a previous Bid/Proposal will not satisfy this provision.

(8) BONDS/INSURANCE

If the Bid/Proposal is accepted by the City, it will become a binding contract on both parties. If a bond or cashiers/certified check is required as a bond, it shall be submitted with the Bid/Proposal. If the undersigned shall fail to deliver or perform, or if applicable, execute a contract if provided for herein, then the City may, at its option, determine that the undersigned has abandoned the award/contract, and thereupon such acceptance of the Bid/Proposal and/or award shall be null and void, and any cashiers/certified check or bond accompanying this Bid/Proposal shall be forfeited to and become the property of the City. The full amount of said check, or if a bond, the full amount of such bond, shall be paid to the City as partial liquidated damages; otherwise, any bond or cashiers/certified check accompanying this Bid/Proposal shall be returned to the undersigned within 30 calendar days from the date of award, or if provisions for a Notice to Proceed are included, from the date of the Notice to Proceed.

If a bid or proposal bond is required, the bonds of unsuccessful Bidders/Proposers will be returned within 30 calendar days of the Bid/Proposal due date, except as set forth below.

If a proposal is subject to the Competitive Negotiations Act, the bonds will be returned within 60 days of the proposal due date, except for the bond of the 3 highest ranked proposers. Within 30 days of execution of a contract, bonds from the remaining unsuccessful proposers will be returned.

Bid bond, if required, will be returned within 30 calendar days of delivery/acceptance of the item(s) bid or service(s) provided, unless a standard payment and performance bond is required. When a standard Payment and Performance Bond is required, the bid bond of the successful Bidder/Proposer will be returned within 30 calendar days from the date of the Notice to Proceed.

In the event a bid is awarded, a proposal is accepted, and/or a contract is executed, and the Bidder/Proposer chooses not to proceed, or fails to perform for any reason, the bond will be forfeited and retained by the City as partial liquidated damages. Future Bids/Proposals will not be accepted for consideration from the Bidder/Proposer for five (5) years, or such shorter period as the City Commission may determine.

In the event an award/selection is not made within 90 days after the Bid/Proposal due date and the City does not return all bonds, upon 30 business days written request, a bidders/proposer may withdraw their bid or proposal from consideration and obtain a refund of the Bid/Proposal bond.

All Awards will be subject to presentation of any required performance bond or certificate of insurance prior to any purchase authorizations, agreements, contract documents, or delivery. The Bidder/Proposer shall maintain any performance bonds or insurance coverage set forth in the Special Instructions and Conditions, at its own expense. If insurance is required, the City is to be listed on the bidder/proposer's Certificate of Insurance as an additional insured and certificate holder in order that the City will be notified if the insurance is canceled or

modified. The certificate shall also list the name of the project/service/equipment purchased, and the expiration date of the policy. At the City's option, an award may be canceled, and any bid bond forfeited if any required performance bond or insurance certificate is not delivered within 21 calendar days of the date of award.

***Note**: The provisions of this section are in addition to and not a replacement for, any Bid/Proposal and/or performance bond required in the Special Instructions and Conditions. The foregoing provisions are intended to be in addition to any other legal remedy available to the City for non-performance by a Bidder/Proposer subsequent to the acceptance and/or award of a bid or proposal.*

(9) SERVICE AND WARRANTY

If any warranty repair or replacement service is requested in the Special Instructions and Conditions, any deviation or limitation from the requirements is to be expressly stated on the Bid Request for Proposal Certification Form.

If the service or product provided to the City pursuant to the bid consists of computer hardware, software or firmware, the Bidder/Proposer warrants that said product will accurately process/or reflect data from, into and between the twentieth and twenty-first centuries, including leap-year calculations.

(10) CONTRACT FORMS

Any agreement or contract resulting from the acceptance of a Bid/Proposal shall be on forms either supplied by or approved by the City, and shall contain, as a minimum, applicable provisions of the Invitation to Bid/Request for Proposal, and the Bid/Proposal documents to be submitted by Bidder/Proposer, including the Special Instructions and Conditions, General Instructions and Conditions, and all attachments therewith. The City reserves the right to reject any Bid/Proposal or resulting agreement which does not conform to the Invitation to Bid/Proposal and, if applicable, any City requirement relating to such an Agreement.

The City reserves the right to extend any contract or agreement for an additional period of not more than ninety (90) days beyond the original expiration date. Prices in effect on the last day of the contract shall remain in effect for the contract extension period. Additional extensions shall be subject to agreement of both parties.

The successful Bidder/Proposer will be required to execute any resulting agreement and provide any bonds or insurance certificates required within 10 days of contract execution. Failure to timely execute the necessary bond or insurance certificate will result in cancellation of an award, with no further obligation by the City.

This Bid/Proposal is subject to the appropriation of funds in an amount sufficient to allow continuation of the City's performance in accordance with the terms and conditions of this Bid/Proposal for each and every fiscal year in which this Bid/Proposal is executed and entered into. If funds are not appropriated/available, the City shall provide prompt written notice to the selected Bidder/Proposer that effective thirty (30) days after giving such notice, or upon the expiration of the time for which funds were appropriated, whichever occurs first, the City will thereafter be released of all further obligations related to the Bid/Proposal and/or award.

(11) BID/PROPOSAL EXPENSES

All expenses for preparing and submitting Bids/Proposals to the City are to be borne by the Bidder/Proposer.

(12) VARIANCES

Any variance whatsoever from the Bid/Proposal Specifications are to be clearly identified on the Bid/Proposal form. Acceptance of any proposed variations will be at the sole discretion of the City.

(13) CONFLICT OF INTEREST

The award of a bid or acceptance of proposal is subject to Chapter 112, Florida Statutes. All Bidders/Proposers must disclose with their Bid/Proposal the name of any officer, director, or agent who is a city official or employee, or a member of an official's or employee's immediate family. Further, Bidders/Proposers must disclose the name of any city official or employee, or a member of an official's or employee's immediate family, who owns directly or indirectly an interest of ten percent (10%) or more in the bidder's/proposer's firm or related business.

(14) DELIVERY

All items provided pursuant to an award are to be delivered prepaid to the City Clerk's Office, 6601 East Hwy. 22, Callaway, Florida 32404-2041, unless a different location is specified in the Special Instructions and Conditions. All delivery charges are to be included in the Bid/Proposal price. No Collect on Delivery (C.O.D.) will be accepted. Title and risk of loss or damage to all items shall be the responsibility of the Bidder/Proposer until delivered to the City.

(15) INSPECTION, ACCEPTANCE AND TITLE

All items delivered pursuant to an award are subject to inspection and review prior to acceptance by the City. Acceptance, evidenced by separately written Notice of Acceptance or full payment, will be made only after verification of compliance with all specifications. Acknowledgment of delivery and/or partial payment does not constitute acceptance.

(16) OWNERSHIP RIGHTS AND PUBLIC RECORDS LAW

Public Records Law. Bidder/Proposer acknowledges that they are familiar with the provisions of the Public Records Law of the State of Florida.

Bidder/Proposer agrees to comply with Chapter 119, Florida Statutes, and specifically per Florida Statute 119.0701, Bidder/Proposer agrees to keep and maintain public records that would be required by the City of Callaway in order to perform the services provided for in this agreement; Bidder/Proposer agrees to provide public access to any required public records in the same manner as a public agency; Bidder/Proposer agrees to protect exempt or confidential records from disclosure; Bidder/Proposer agrees to meet public records retention requirement; and Bidder/Proposer agrees that at the end of the term of this agreement, to transfer all public records to the City of Callaway and destroy any duplicate, exempt or confidential public records.

All products generated by the Bidder/Proposer for the City become the property of the City. The City may require submission of any electronic file version of reports, data, maps, or other submission of documentation produced for or as a result of this Bid/Proposal in addition to paper documents.

Further, in accordance with the Public Records Laws of the State of Florida, Section 119.0701, (2013), Contractor must:

A. Keep and maintain public records that ordinarily and necessarily would be required by the public agency in order to perform the service.

B. Provide the public with access to public records on the same terms and conditions that the public agency would provide the records and at a cost that does not exceed the cost provided in this chapter or as otherwise provided by law.

C. Ensure that public records that are exempt or confidential and exempt from public records are not disclosed except as authorized by law.

D. Meet all requirements for retaining public records and transfer, at no cost, to the public agency all public records in possession of the contractor upon termination of the contract and destroy any duplicate public records that are exempt or confidential and exempt from public record disclosure requirements. All records stored electronically must be provided to the public agency in a format that is compatible with the information technology systems of the public agency.

E. If a contractor does not comply with a public records request, the public agency shall enforce the contract provision in accordance with the contract.

(17) RESERVED RIGHTS

The City reserves the right to reject any and all Bids/Proposals, with or without statement of cause, request resubmissions, or to waive any irregularities or technicality or negotiate modifications to any Bid/Proposal which may be in the best interest of the City.

Bidders/Proposers which do not normally engage in providing the types of commodities/services specified herein may be required to demonstrate they have sufficient financial support, equipment, and organization to ensure they can satisfactorily perform if awarded a bid/contract under the terms and conditions herein stated.

The City reserves the right to make such investigations as it deems necessary to determine the ability of any Bidder/Proposer to perform the work or service requested. Any information the City deems necessary to make such determinations shall be provided by the Bidder/Proposer upon request as a condition of further consideration of the Bid/Proposal. The applicability of all information obtained and the City's decision shall be final. By submitting a bid or proposal, Bidder/Proposer authorizes such investigation.

If the contract awarded as a result of this bid is terminated prior to the end of the term, the City reserves the right to award the balance of the contract to the next lowest responsive and responsible bidder.

(18) ADVERTISING

In submitting a Bid/Proposal, Bidder/Proposer agrees not to use the results therefrom as a part of any commercial advertising or marketing purposes without written approval of the City Manager.

(19) GOVERNMENTAL RESTRICTIONS/REQUIREMENTS

In the event any governmental restrictions are imposed which would necessitate alteration of the material, quality, workmanship, or performance of the items offered in a Bid/Proposal, it shall be the responsibility of the successful Bidder/Proposer to immediately notify the City of the specific regulation which required an

alteration, and the specific alterations that will be made to the item(s) bid/proposed. The City reserves the right to accept any such alteration/substitution, including any price adjustments resulting therefrom, or to cancel the award at no expense to the City.

(20) NON-DISCRIMINATION

There shall be no discrimination as to race, sex, color, creed, handicap, or national origin in the selection, award, or operations conducted, or performance related to any bid or proposal.

(21) UNAUTHORIZED EMPLOYEES OR AGENTS

Employment of unauthorized aliens by Bidder/Proposer is considered a violation of Section 274A(e) of the Immigration and Nationality Act. If selected Bidder/Proposer knowingly employs unauthorized aliens, such action shall be cause for unilateral cancellation of this agreement and the City may recover damages from selected Bidder/Proposer resulting from such cancellation. The selected Bidder/Proposer shall be responsible for including this provision in any context with, and requiring compliance by any/all subcontracts performing for selected Bidder/Proposer relating to this agreement.

(22) OTHER GOVERNMENTAL ENTITIES - OPTIONAL APPLICATION

In the State of Florida, other Florida public entities may "piggy-back" on competitive Bid/Proposal awards under the same terms and conditions, if all parties are in agreement.

(23) LEGAL NAME

Bids/Proposals shall clearly indicate the legal name and organizational structure, business address, telephone number, and email address of the Bidder/Proposer. Bids/Proposals shall be signed above the typed or printed name and title of the individual submitting the Bid/Proposal. The signer shall warrant he/she has the authority to bind the Bidder/Proposer to the terms and conditions of the submitted Bid/Proposal.

(24) WAGES

State and Federal minimum wage and hour regulation (including the Davis-Bacon Act) apply to Bidder/Proposer and all subcontractors.

(25) SELECTION

The city intends to award this bid to the lowest responsive and responsible bidder or bidders. However, the City reserves the right to reject any and all Bids/Proposals. The procedures for the selection/award of Bids/Proposals are provided for by Florida Statutes and the City's Charter, Code of Ordinances, and Administrative Policies. Generally, all Bids/Proposals are reviewed by City staff and evaluated by the City Manager, and if required by law, by a Selection Advisory Committee appointed by the City Manager. The type and price of the product(s) or service(s) being acquired determines if an award or selection may be made by the City Manager or requires City Commission approval. For information on which procedure applies to a particular Bid/Proposal contact the City Clerk.

Bids/Proposals will be evaluated based on, but not limited to, one or more of the following criteria as appropriate:

- compliance with specifications,
- price (if applicable),

- capability/adequacy of Bidder/Proposer,
- past and current projects, services or equipment provided to the city,
- delivery schedule,
- prior government projects, services or equipment provided to other jurisdictions, and
- general reputation, location and references.

Separate procedures and requirements relating to Requests for Bids/Proposals/Qualifications apply for certain grant programs and for professional services, for example the Consultants' Competitive Negotiation Act (Florida Statute 287.055), and by the City's Code. When the City initiates such a Request for Proposals/Qualifications, the selection process and related procedures are included in the Special Instructions and Conditions.

Pursuant to Chapter 287.087 Florida Statutes, in the event two (2) or more bids are equal with respect to price, quantity, and services, preference will be given to Bidders/Proposers which have implemented Drug-Free Workplace Programs.

Further, per 287.087(11) "If two equal responses to a solicitation or a request for quote are received and one response is from a certified minority business enterprise, the agency shall enter into a contract with the certified minority business enterprise." In addition, at the sole discretion of the City, payment terms, conditions, and other consequential information may be utilized in resolving apparent tie Bids/Proposals.
NOTE: For consideration, Bidder/Proposer must return the Bid Certification Form included in the Bid/Proposal package.

(26) INDEMNIFY

After notification of award, the successful Bidder/Proposer agrees to defend, indemnify and hold harmless the City and its officials, officers, employees, agents, and invites, from and against all claims, suits, sections, damages, or causes of action arising from any personal injury, loss of life or damage to property, sustained by reason of, or as a result of constructing, manufacturing, processing, delivery, or performance of the services or work for which the Bid/Proposal was awarded or any resulting agreement executed, and from and against any orders, judgments, or decrees which may be entered thereto, and from and against all costs, attorney's fees, expenses, and liabilities incurred in or by reason of the defense of any such claim, suit or action, and the investigation thereof. Nothing in any resulting agreement shall be deemed to affect the rights, privileges and immunities of the City of Callaway.

The selected Bidder/Proposer, without exception, shall also indemnify and hold harmless the City and its officials, employees, agents, and invites from liability of any nature or kind, including cost and expenses for or on account of any copyrighted, patented or unpatented invention, process or article manufactured or used in the performance of the contract, including its use by the City. If the selected Bidder/Proposer uses any design, device or materials covered by patent or copyright, it is mutually agreed and understood that the Bid/Proposal prices include all royalties or costs arising from the use in any way of such design, device or materials involved in the product and/or services provided to the City.

(27) MODIFICATION - AFTER AWARD

Any changes proposed by a Bidder/Proposer after an award in (a) materials used, (b) manufacturing process, (c) construction or (d) specifications, are to be submitted in writing to the City Manager prior to delivery. No changes shall be approved and binding upon the City unless evidenced by a Change Order issued and signed by the City Manager.

(28) ASSIGNMENT

Any purchase order issued pursuant to this bid invitation/request for proposal and the funds which may become due hereunder, are not assignable, except with the prior written approval of the City Manager.

(29) DISCLOSURE

Bidder/Proposer acknowledges by submitting a Bid/Proposal that all information provided to the City is part of the public domain as defined by Florida Statutes and is considered a public record. Information should not be labeled "confidential," unless specifically exempted under said Statutes, and exempts the City from any liability for releasing all information to the public, including inadvertently releasing information deemed confidential by the Bidder/Proposer.

(30) TAXES

The City is a tax-exempt Florida municipality, Federal Employment Identification Number 59-6000-284, Florida State Tax Number 37-02-008131-54C. Copies of Exemption Certificate and related information may be obtained by contacting the City Clerk, City of Callaway, 6601 East Hwy. 22, Callaway, Florida 32404-2041 or (850) 215-6694.

(31) APPLICABLE LAWS/LEGAL VENUE

All applicable laws, regulations and ordinances of the State of Florida, Bay County and the City of Callaway will apply to consideration and award of any Bid/Proposal and the performance of the Bidder/Proposer pursuant thereto, and shall be governed by the laws of the State of Florida both as to intention and performance. The venue for any action arising from the award or subsequent performance shall lie exclusively in the Circuit Court of Bay County, Florida, or the United States District Court for the Northern District of Florida, as applicable.

NOTE: *ANY AND ALL PROVISIONS SET FORTH IN THE **SPECIAL INSTRUCTIONS AND CONDITIONS** ATTACHED HERETO, WHICH VARY FROM THESE GENERAL INSTRUCTIONS AND CONDITIONS, SHALL HAVE PRECEDENCE.*

AGREEMENT FOR CONTRACTOR SERVICES
GORE PARK SITE WORK
BID NO.: LS2022-05

This Agreement made as of this ___ day of, _____, 20**22**, by and between the **City of Callaway**, Florida - (the "CITY"), and _____**,** authorized to do business in the State of Florida (the "CONTRACTOR"), and whose address is _____; Phone: _____.

In consideration of the mutual promises contained herein, the CITY and the CONTRACTOR agree as follows:

ARTICLE 1 - SERVICES

The CONTRACTOR'S responsibility under this Agreement is to furnish, deliver, and construct all materials, labor, and equipment and to perform all operations in accordance with the plans and specifications and as listed in the Bid Form for **BID NO. LS2022-05 GORE PARK SITE WORK.**

CONTRACTOR shall comply with all applicable procedures, guidelines, manuals, standards, and directives as described in the Special Federal Provisions (ATTACHED HERETO AS EXHIBIT A). along with the Davis-Bacon Act (ATTACHED HERETO AS EXHIBIT B). The contractor will also be responsible for including these requirements in any subcontract.

Services of the CONTRACTOR shall be under the general direction of the CITY MANAGER, who may designate a person to act as the CITY'S representative (hereinafter "REPRESENTATIVE") during the performance of this Agreement.

The CITY shall furnish to the CONTRACTOR up to four (4) sets of the Contract Documents for execution of the Work. Additional copies of the Contract Documents are available at the cost of reproduction.

ARTICLE 2 - SCHEDULE

The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS within 10 calendar days after the date of the NOTICE TO PROCEED and will substantially complete the project within 365 consecutive calendar days unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.

ARTICLE 3 - PAYMENTS TO CONTRACTOR

A. The CITY shall pay to the CONTRACTOR for services satisfactorily performed **$**_____ which includes all direct charges, indirect charges and reimbursable expenses, if any. The CONTRACTOR will bill the CITY monthly.

B. The invoices received from the CONTRACTOR pursuant to this Agreement will be reviewed and approved by the City Manager's office, indicating that services have been rendered in conformity with the Agreement, and then will be sent to the Finance Department for payment. The invoice must specify the work performed. Ten percent (10%) of each invoiced amount will be withheld and retained by the CITY until completion of the work to the satisfaction of the CITY.

C. In order for both parties herein to close their books and records, the CONTRACTOR will clearly state "final invoice" on the CONTRACTOR'S final/last billing to the CITY. This indicates that

all services have been performed and all charges and costs have been invoiced to the CITY. Since this account will thereupon be closed, any and other further charges if not properly included on this final invoice shall be waived by the CONTRACTOR.

D. CONTRACTOR acknowledges that it has reviewed the scope of work and inspected the work site and does not anticipate having any CONTRACTOR requested change orders.

ARTICLE 4 - TERMINATION

This Agreement may be terminated by the CONTRACTOR on 60 days prior written notice to the CITY in the event of substantial failure by the CITY to perform in accordance with the terms hereof through no fault of the CONTRACTOR. It may also be terminated by the CITY, with or without cause, immediately upon written notice to the CONTRACTOR. Unless the CONTRACTOR is in breach of this Agreement, the CONTRACTOR shall be paid for services rendered to the CITY'S satisfaction through the date of termination. After receipt of a termination notice and except as otherwise directed by the CITY the CONTRACTOR shall:

A. Stop work on the date and to the extent specified.

B. Terminate and settle all orders and subcontracts relating to the performance of the terminated work.

C. Transfer all work in process, completed work, and other material related to the terminated work to the CITY.

D. Continue and complete all parts of the work that have not been terminated.

ARTICLE 5 - PERSONNEL

The CONTRACTOR represents that it has or will secure at its own expense all necessary personnel required to perform the services under this Agreement. Such personnel shall not be employees of or have any contractual relationship with the CITY.

All of the services required herein under shall be performed by the CONTRACTOR or under its supervision, and all personnel engaged in performing the services shall be fully qualified and, if required, authorized or permitted under State and local law to perform such services.

The CONTRACTOR warrants that all services shall be performed by skilled and competent personnel to the highest professional standards in the field.

ARTICLE 6 - SUBCONTRACTING

The CITY reserves the right to accept the use of a subcontractor or to reject the selection of a particular subcontractor and to inspect all facilities of any subcontractors in order to make a determination as to the capability of the subcontractor to perform properly under this Agreement. The CONTRACTOR is encouraged to seek minority and women business enterprises for participation in subcontracting opportunities.

If a subcontractor fails to perform or make progress, as required by this Agreement, and it is necessary to replace the subcontractor to complete the work in a timely fashion, the CONTRACTOR shall promptly do so, subject to acceptance of the new subcontractor by the CITY.

ARTICLE 7 - FEDERAL AND STATE TAX

The CONTRACTOR shall be responsible for payment of its own FICA and Social Security benefits with respect to this Agreement and the personnel it employs.

ARTICLE 8 – INSURANCE & BONDS

A. The CONTRACTOR shall not commence work under this Agreement until it has obtained all insurance and bonds required under this paragraph and such insurance has been verified by the CITY.

B. All insurance policies shall be issued by companies authorized to do business under the laws of the State of Florida.

The CONTRACTOR shall maintain, during the life of this Agreement, comprehensive automobile liability insurance in the amount of $1,000,000 and $2,000,000 combined single limit for property damage and bodily injury liability covering claims which may arise from the ownership, use, or maintenance of owned and non-owned automobiles, including rented automobiles, whether such operations be by the CONTRACTOR or by anyone directly or indirectly employed by the CONTRACTOR. CONTRACTOR shall purchase and maintain a policy or policies of commercial general liability insurance satisfactory in all respects to CITY, and casualty and extended coverage insurance. All policies shall be occurrence form policies and shall name CITY as an additional insured, with the premium thereon fully paid by CONTRACTOR on or before their due date. The general liability insurance policy shall afford minimum protection of $1,000,000 and $2,000,000 combined single limit coverage for bodily injury.

Required insurance shall be documented in Certificates of Insurance which provide that CITY shall be notified at least 30 days in advance of cancellation, non-renewal, or adverse change. New Certificates of Insurance are to be provided to CITY at least 15 days prior to coverage renewals. City of Callaway, Florida is to be named as an additional insured entity.

If requested by CITY, CONTRACTOR shall furnish complete copies of its insurance policies, forms and endorsements.

For commercial general liability coverage, CONTRACTOR shall, at the option of CITY, provide an indication of the amount of claims, payments or reserves chargeable to the aggregate amount of liability coverage.

Receipt of certificates or other documentation of insurance or policies or copies of policies by CITY, or by any of its representatives, which indicate less coverage than required does not constitute a waiver of CONTRACTOR'S obligation to fulfill the insurance requirements herein.

CONTRACTOR shall also purchase and maintain workers compensation insurance for all obligations imposed by law, with employer's liability limits of at least the statutory limit, or provide notarized affidavit of exemption listing relevant statutes. CONTRACTOR shall also purchase any other coverage required by law.

CONTRACTOR'S maintenance of the insurance policies required hereunder shall not limit or otherwise affect its liability hereunder.

C. If a performance or payment bond is required due to use of grant funds for the project, by City Commission or as otherwise required, the CONTRACTOR shall not commence work under this Agreement until it has obtained the required bonds and provided such bonds to the CITY.

ARTICLE 9 - EXCUSABLE DELAYS

The CONTRACTOR shall not be considered in default by reason of any failure in performance if such failure arises out of causes reasonably beyond the CONTRACTOR'S control and without its fault or negligence. Such causes may include but are not limited to acts of God; the City's omissive and commissive failures; natural or public health emergencies; labor disputes; freight embargoes; and severe weather conditions. If failure to perform is caused by the failure of the CONTRACTOR'S subcontractor(s) and is without the fault or negligence of them, the CONTRACTOR shall not be deemed to be in default.

Upon the CONTRACTOR'S request, the CITY shall consider the facts and extent of any failure to perform the work and, if the CONTRACTOR'S failure to perform was without its fault or negligence as determined by the CITY, any affected provision of this Agreement shall be revised; accordingly, subject to the CITY's rights to change, terminate, or stop any or all the work at anytime.

ARTICLE 10 - LIQUIDATED DAMAGES

Liquidated damages shall be paid to the CITY at the rate of $500 per day for all work awarded under the contract until the work has been satisfactorily completed as provided by the Contract Documents. Sundays and Legal Holidays shall be excluded in determining days in default.

It is agreed that the amount is the per-diem rate for damage incurred by reason of failure to complete the work. The said amount is hereby agreed upon as the reasonable costs which may be accrued by the CITY after the expiration of the time of completion. It is expressly understood and agreed that this amount is not to be considered in the nature of a penalty, but as liquidated damages which have accrued against the CONTRACTOR. The CITY shall have the right to deduct such damages from any amount due, or that may become due the CONTRACTOR, or the amount of such damages shall be due and collectable from the CONTRACTOR or Surety.

ARTICLE 11 - ARREARS

The CONTRACTOR shall not pledge the CITY'S credit or make it a guarantor of payment or surety for any contract, debt, obligation, judgment, lien, or any form of indebtedness.

ARTICLE 12 - DISCLOSURE AND OWNERSHIP OF DOCUMENTS

The CONTRACTOR shall deliver to the CITY for approval and acceptance, and before being eligible for final payment of any amount due, all documents and materials prepared by and for the CITY under this Agreement.

All written and oral information not in the public domain or not previously known, and all information and data obtained, developed, or supplied by the CITY or at its expense will be kept confidential by the CONTRACTOR and will not be disclosed to any other party, directly or indirectly, without the CITY'S prior written consent.

Such information and data shall be and will remain the CITY'S property and may be reproduced and reused at the discretion of the CITY.

All products generated by the CONTRACTOR for the CITY become the property of the CITY. The CITY may require submission of any electronic file version of reports, data, maps, or other submission of documentation produced for or as a result of this project in addition to paper documents.

The CITY and the CONTRACTOR shall comply with the provisions of the Florida Public Records Law.

If the CONTRACTOR has questions regarding the application of Chapter 119, Florida Statutes, to the CONTRACTOR'S duty to provide public records relating to this contract, contact the custodian of public records, Janice Peters, City Clerk, at 850-215-6694, by email at jpeters@cityofcallaway.com, or via mail, at 6601 E. Hwy. 22, Callaway, FL 32404.

PUBLIC RECORDS LAW. CONTRACTOR acknowledges that it is familiar with the provisions of the Public Records Law of the State of Florida.

CONTRACTOR agrees to comply with Chapter 119, Florida Statutes, and specifically per Florida Statute 119.0701, CONTRACTOR agrees to keep and maintain public records that would be required by the City of Callaway in order to perform the services provided for in this Agreement; CONTRACTOR agrees to provide public access to any required public records in the same manner as a public agency; CONTRACTOR agrees to protect exempt or confidential records from disclosure; CONTRACTOR agrees to meet public records retention requirement; and CONTRACTOR agrees that at the end of term of this Agreement, to transfer all public records to the City of Callaway and destroy any duplicate exempt or confidential public records.

All products generated by the CONTRACTOR for the CITY become the property of the CITY. The CITY may require submission of any electronic file version of reports, data, maps or other submission of documentation produced for or as a result of this Bid/Proposal in addition to paper documents.

Further, in accordance with the Public Records Laws of the State of Florida, Section 119.0701, (2013), Contractor must:

A. Keep and maintain public records that ordinarily and necessarily would be required by the public agency in order to perform the service.

B. Provide the public with access to public records on the same terms and conditions that the public agency would provide the records and at a cost that does not exceed the cost provided in this chapter or as otherwise provided by law.

C. Ensure that public records that are exempt or confidential and exempt from public records are not disclosed except as authorized by law.

D. Meet all requirements for retaining public records and transfer, at no cost, to the public agency all public records in possession of the contractor upon termination of the contract and destroy any duplicate public records that are exempt or confidential and exempt from public record disclosure requirements. All records stored electronically must be provided to the public agency in a format that is compatible with the information technology systems of the public agency.

E. If a contractor does not comply with a public records request, the public agency shall enforce the contract provision in accordance with the contract.

All covenants, agreements, representations, and warranties made herein, or otherwise made in writing by any party pursuant hereto shall survive the execution and delivery of this Agreement and the consummation of the transactions contemplated hereby.

ARTICLE 13 - INDEPENDENT CONTRACTOR RELATIONSHIP

The CONTRACTOR is, and shall be, in the performance of all work services and activities under this Agreement, an independent contractor, and not an employee, agent, or servant of the CITY. All persons engaged in any of the work or services performed pursuant to this Agreement shall at all times, and in all places, be subject to the CONTRACTOR'S sole direction, supervision, and control. The CONTRACTOR shall exercise control over the means and manner in which it and its employees perform the work, and in all respects the CONTRACTOR'S relationship and the relationship of its employees to the CITY shall be that of an independent contractor and not as employees or agents of the CITY.

The CONTRACTOR does not have the power or authority to bind the CITY in any promise, agreement, or representation.

The CONTRACTOR shall hold the CITY, its officers, agents, and employees harmless and free from any loss, damage or expense arising out of any occurrence relating to this Agreement or its performance and shall indemnify the CITY, its officers, agents and employees, customers, and successors against any damage or claim of any type arising from the negligent or intentional acts or omission of the CONTRACTOR.

ARTICLE 14 - CONTRACT ASSIGNMENT

The CONTRACTOR shall not sublet, sell, transfer, assign or otherwise dispose of the CONTRACT or any portion thereof, or of his right, title, or interest therein, without written consent of the CITY. The CONTRACTOR shall complete the work contemplated by the terms and conditions of this Agreement in an amount equivalent to at least 50 percent (50%) of the dollar value of work to be performed under this Contract utilizing its own business or corporate entity, so that no single labor, material man, or subcontractor shall be permitted to perform more than 50% of the work contemplated by this Contract.

ARTICLE 15 - AMENDMENT

None of the provisions, terms and conditions contained in this Agreement may be added to, modified, superseded, or otherwise altered, except by a written instrument executed by the parties hereto.

ARTICLE 16 - ENFORCEMENT COSTS

If any legal action or other proceeding is brought for the enforcement of this Agreement, or because of an alleged dispute, breach, default, or misrepresentation in connection with any provision, the successful or prevailing party or parties shall be entitled to recover reasonable attorney's fees, court costs and all expenses even if not taxable as court costs (including, without limitation, all such fees, costs and expenses incident to appeals), incurred in that action or proceeding, in addition to any other relief to which such party or parties may be entitled.

ARTICLE 17 - AUTHORITY TO PRACTICE

The CONTRACTOR hereby represents and warrants that it has and will continue to maintain all licenses and approvals required to conduct its business, and that it will at all times conduct its business activities in a reputable manner.

ARTICLE 18 - SEVERABILITY

If any term or provision on this Agreement, or the application thereof to any person or circumstances shall, to any extent, be held invalid or unenforceable, the remainder of this Agreement, or the application of such terms or provisions to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected, and every other term and provision of this Agreement shall be deemed valid and enforceable to the extent permitted by law.

ARTICLE 19 - CITY'S REPRESENTATIVE AND AUTHORITY

The person designated by the CITY MANAGER shall serve as the CITY'S REPRESENTATIVE and shall decide questions which may arise as to quality and acceptability of materials furnished and work performed and shall interpret the intent of the Contract Documents with reasonable promptness.

The REPRESENTATIVE will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.

The REPRESENTATIVE may assign Project Inspector(s) who shall serve to assist the REPRESENTATIVE in determining if the work performed and the materials used meet the Contract requirements. The Project Inspector shall be authorized to issue Field Orders. The Project Inspector shall be authorized to stop all or any portion of the work if in his opinion the work is not proceeding according to the requirements of the plans and specifications.

ARTICLE 20 - MODIFICATION

The CITY reserves the right to make changes in the work, including alterations, reductions therein or additions thereto. Upon receipt by the CONTRACTOR of the CITY'S notification of a contemplated change, the CONTRACTOR shall (1) if requested by CITY, provide an estimate for the increase or decrease in cost due to the contemplated change, (2) notify the CITY of any estimated change in the completion date, and (3) advise the CITY in writing if the contemplated change shall affect the CONTRACTOR'S ability to meet the completion dates or schedules of this Agreement.

If the CITY so instructs in writing, the CONTRACTOR shall suspend work on that portion of the work affected by a contemplated change, pending the CITY'S decision to proceed with the change.

If the CITY elects to make the change, the CITY shall issue a contract amendment or change order and the CONTRACTOR shall not commence work on any such change until such written amendment or change order has been issued and signed by each of the parties.

ARTICLE 21 - CONTRACT DOCUMENTS

The other documents which comprise the entire Agreement are attached hereto, made a part hereof and consist of the following:

A. Advertisement for Bids,
B. Special Instructions and Conditions,
C. General Instructions and Conditions,
D. Minimum Technical Specifications,
E. Bid Forms

Bid Certification Form	Drug-Free Workplace Certification
Public Entity Crimes Statement	FL Trench Safety Compliance Form

F. Addenda (if any),
G. Change Orders (if any),
H. Notice of Award
I. Notice to Proceed
J. Anti-Collusion Clause Form
K. Conflict-of-Interest Form
L. Proprietary/Confidential Information Disclosure Form

Exhibit A Special Federal Provisions
Exhibit B Current Davis Bacon Act Wage Determination

In the event of a conflict between the terms of the above documents and the terms of this Agreement, the terms of this Agreement shall prevail.

There are no contract documents other than those listed above and there are no promises or understandings other than those stated herein.

ARTICLE 22 - VENUE

All applicable laws, regulations and ordinances of the State of Florida, Bay County and the City of Callaway will apply to consideration and award of any Bid/Proposal and the performance of the bidder/proposal pursuant thereto and shall be governed by the laws of the State of Florida both as to intention and performance. The venue for any action arising from the award or subsequent performance shall lie exclusively in the Circuit Court of Bay County, Florida, or the United States District Court for the Northern District of Florida, as applicable.

ARTICLE 23 - NOTICE

All notices required in this Agreement shall be sent by certified mail, return receipt requested, and if sent to the CITY shall be mailed to:

City of Callaway
Janice L. Peters, City Clerk
6601 East Hwy. 22
Callaway, Florida 32404
Phone: (850) 215-6694
Email: jpeters@cityofCallaway.com

With a copy to: Kevin D. Obos, Esq. City Attorney
Hand Arendall Harrison Sale, LLC
304 Magnolia Avenue
Panama City, FL 32401
Phone: (850) 769-3434
Fax: (850) 769-6121

and if sent to the CONTRACTOR shall be mailed to:

_____

_____

_____

_____

_____

Either party may change its address noted above by giving written notice to the other party in accordance with the requirements of the Section.

This Agreement is entered into as of the day and year first written above and is executed in at least two original copies of which one is to be delivered to the CONTRACTOR, and one to the CITY CLERK for filing in the official records.

CITY OF CALLAWAY, FLORIDA

Attest: _____
Janice L. Peters, MMC
City Clerk

By: _____
Keith E. Cook, City Manager

Contractor Witnesses:
(2 REQUIRED)

Witness: _____
Name

_____
Signature

Witness: _____
Name

_____
Signature

Contractor:

_____
Business Name

By: _____
Signature

_____
Print Name and Title

APPROVED AS TO FORM FOR THE RELIANCE OF THE CITY OF CALLAWAY ONLY:

_____
KEVIN D. OBOS, HAND ARENDALL HARRISON SALE
CITY ATTORNEY

SPECIAL FEDERAL PROVISIONS

A. GRANT CONDITIONS

FEMA funding requirements apply to projects funding in part or in whole with funds made available by the Federal government.

1. Goals for Women and Minorities in Construction

Department of Labor regulations set forth in 41 CFR 60-4 establish goals and timetables for participation of minorities and women in the construction industry. These regulations apply to all Federally-assisted construction contracts in excess of $10,000. The recipient must comply with these regulations and must obtain compliance with 41 CFR 60-4 from contractors and subcontractors employed in the completion of the project by including such notices, clauses and provisions in the Solicitations for Offers or Bids as required by 41 CFR 60-4. The goal for participation of women in each trade area must be as follows:

a. From April 1, 1981, until further notice: 6.9 percent;

b. All changes to this goal, as published in the Federal Register in accordance with the Office of Federal Contract Compliance Programs regulations at CFR 60- 4.6, or any successor regulations, must hereafter be incorporated by reference into these Special Award Conditions; and,

c. Goals for minority participation must be as prescribed by Appendix B-Federal Register, Volume 45, No. 194, October 3, 1980, or subsequent publications. The Recipient must include the “Standard Federal Equal Employment Opportunity Construction Contract Specifications” (or cause them to be included if appropriate) in all federally assisted contracts subcontracts. The goals and timetables for minority and female participation may not be less than those published pursuant to 41 CFR 60-6.

2. Contracting with small and minority businesses, women’s business enterprise, and labor surplus area firms

The non-federal entity must take all necessary affirmative steps to assure that minority businesses, women’s business enterprises, and labor surplus area firms are used when possible. Affirmative steps must include:

a. Placing qualified small and minority businesses and women’s business enterprises on solicitation lists;

b. Assuring that small and minority businesses, and women’s business enterprises are solicited whenever they are potential sources;

c. Dividing total requirements, when economically feasible, into smaller tasks quantities to permit maximum participation by small and minority business, and women’s business enterprises;

d. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women’s business enterprises;

e. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce; and,

f. Requiring the prime contractor, if subcontracts are to be let, to take the affirmative steps listed in (a) — (e) of this paragraph.

3. Davis Bacon Act, as amended (40 U.S.C.3141—3148)

Davis-Bacon Act-related provisions are applicable for a construction project if it is for the construction of a project that can be defined as a "treatment works" in 33 U.S.C 1292; or for a construction project regardless of whether it is a "treatment works" project if it is receiving federal assistance from another federal agency operating under an authority that requires the enforcement of Davis-Bacon Act-related provisions. When required, all prime construction contracts in excess of $2,000 awarded by the non-Federal entity must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141—3144, and 3146—3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specific in a wage determination made by the Secretary of Labor. In addition contracts must be required to pay wages not less than once a week.

The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to Treasury. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contracts and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or sub-recipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation or which he or she is otherwise entitled. The non-federal entity must report all suspected or reported violations to Treasury. See Attachment Nos. 1, 2, and 3 of this Section.

4. Equal Opportunity Clause

Pursuant to 41 CFR 60-1.4(b), Federally assisted construction contracts, for construction which is not exempt from the requirements of the equal opportunity clause, 41 CFR Part 60-1—Obligations of Contractors and Subcontractors, [t]he [recipient] hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained from the federal government or borrowed on the credit of the federal government pursuant to a grant, contract, loan, insurance, or guarantee, or undertaken pursuant to any federal program involving such grant, contract, loan, insurance, or guarantee, the following equal opportunity clause:

41 CFR §60-1.4 Equal opportunity clause. During the performance of this contract, the contractor agrees as follows:
(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

(4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance. Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such

direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States. The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract. The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance. The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

5. Revised ADA Standards for Accessible Design for Construction Awards

The U.S. Department of Justice has issued revised regulations implementing Title II of the ADA (28 C.F.R. Part 35) and Title III of the ADA (28 C.F.R. Part 36). The revised regulations adopted new enforceable accessibility standards called the “2010 ADA Standards for Accessible Design” (2010 Standards). The 2010 Standards are an acceptable alternative to the Uniform Federal Accessibility Standards (UFAS). Treasury deems compliance with the 2010 Standards to be an acceptable means of complying with the Section 504 accessibility requirements for new construction and alteration projects.

6. Historic Artifact Discovery

If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The applicant shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section at (850)-245-6333. Project activities shall not resume without verbal and/or written authorization. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statutes.

"General Decision Number: FL20220105 01/07/2022

Superseded General Decision Number: FL20210105

State: Florida

Construction Type: Heavy

County: Bay County in Florida.

HEAVY CONSTRUCTION PROJECTS (Inlcuding Sewer and Water Lines)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022, Executive Order 14026 generally applies to the contract. The contractor must pay all covered workers at least $15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022, Executive Order 13658 generally applies to the contract. The contractor must pay all covered workers at least $11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/07/2022

ENGI0653-012 10/01/2012

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Cranes 100 Tons & Over (Conventional & Hydraulic) & Tower Cranes	$ 26.30	11.13
Cranes Under 100 Tons	$ 25.30	11.13
Oiler	$ 23.85	11.13

Cranes with 350 feet or more boom and/or 400 ton capacity - additional $1.10 per hour.

Cranes with 500 feet boom and/or 600 ton capacity - additional $1.45 per hour.

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* IRON0798-008 10/01/2021

	Rates	Fringes
IRONWORKER, STRUCTURAL	$ 28.00	16.37

PAIN0164-006 06/01/2021

	Rates	Fringes
PAINTER: Brush, Roller and Spray	$ 20.21	12.38

SUFL2009-144 06/24/2009

	Rates	Fringes
CARPENTER	$ 15.36	0.00
CEMENT MASON/CONCRETE FINISHER	$ 14.77	3.50
ELECTRICIAN	$ 17.25	3.02
LABORER: Common or General	$ 9.13	1.02
LABORER: Landscape	$ 7.25	0.00
LABORER: Pipelayer	$ 11.51	2.94
LABORER: Power Tool Operator (Hand Held Drills/Saws, Jackhammer and Power Saws Only)	$ 10.63	2.20
OPERATOR: Asphalt Paver	$ 11.59	0.00
OPERATOR: Backhoe Loader		

Combo.....$ 16.10 2.44

OPERATOR: Backhoe/Excavator.....$ 13.11 1.51

OPERATOR: Bulldozer.....$ 15.00 4.98

OPERATOR: Grader/Blade.....$ 16.00 2.84

OPERATOR: Loader.....$ 13.89 2.07

OPERATOR: Mechanic.....$ 14.32 0.00

OPERATOR: Roller.....$ 10.76 0.00

OPERATOR: Scraper.....$ 11.00 1.74

OPERATOR: Trackhoe.....$ 20.92 5.50

OPERATOR: Tractor.....$ 10.54 0.00

TRUCK DRIVER, Includes Dump Truck.....$ 8.52 0.25

TRUCK DRIVER: Lowboy Truck.....$ 12.73 0.00

TRUCK DRIVER: Off the Road Truck.....$ 12.21 1.97

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after

award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union, which prevailed in the survey for this classification, which in this example would be Plumbers 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a

new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Division National Office Branch of Wage Surveys. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

PROPOSAL CHECKLIST
CITY OF CALLAWAY
GORE PARK SITE WORK
BID NO: LS2022-05

FORMS/ITEMS TO BE RETURNED WITH YOUR PROPOSAL!

The following forms are to be completed/signed by the Proposer and submitted to the City:

One (1) unbound set of bid packet with original notarized signatures, plus three (3) copies to include:

1. Bid/RFP Certification Form(s)
2. Sales Tax Exempt Agreement
3. Conflict of Interest Form
4. Public Entity Crimes Statement [Complete items 1 and 6; notarized signature required]
5. Drug-Free Workplace Certification Form, [Complete Part I; notarized signature, or sign Part II]
6. Proprietary/Confidential Information Form
7. Certification Regarding Debarment
8. Florida Trench Safety Compliance Certification Form
9. Anti-Collusion Clause Form
10. Bid Bond or Cashier's Check/Certified Check in the amount of 5% of bid
11. Proof of Insurance in amounts required by the City with the City listed as Certificate Holder and Additionally Insured (See Special Instructions & Conditions)
12. State of Florida License or Bay County Contractor License or Certificate
13. List of Subcontractors with names of directors or owners, addresses, telephone numbers, and email address (if applicable),
14. List of a minimum of three (3) references for similar type work with contact information.

Note: Incomplete Bid/Proposal submissions may not be accepted/considered. Do not modify the forms! Any additional information you desire to present may be included as an attachment.

Reminder: Submit requested number of copies! (See Special Instructions and Conditions)

BID/RFP CERTIFICATION FORM
CITY OF CALLAWAY
GORE PARK SITE WORK
BID NO: LS2022-05

PROPOSERS CERTIFICATION TO THE CITY OF CALLAWAY:

1. The undersigned warrants that: (A) This Proposal is submitted in response to, and is in compliance with, all terms and conditions applicable thereto as set forth in the Advertisement, Instructions to Proposers, General Instructions and Conditions, Special Instructions and Conditions, Bid/RFP Certification Forms, the Minimum Technical Specifications, Addendum, Exhibits, Agreement, Bonds, and Insurance Requirements, each of which has been carefully examined, (B) Proposer or Proposer's representative has made such investigation as is necessary to determine the character and extent of the work and their capability to perform the work, and (C) agrees that if the Proposal is accepted by the City, Proposer will provide the necessary labor, materials, machinery, equipment, tools or apparatus, and perform all the work or services required to complete the assignment and/or contract within the time specified according to the requirements of the City as herein and hereinafter set forth, and (D) he/she is authorized to legally execute binding contracts for and on behalf of the Proposer.

2. Please check one:
   - ☐ Proposer declares that the only person, persons, company, or parties interested in this Proposal are named in the Proposal.

   - ☐ Proposer, or one or more of Proposer's officers, principals, or any owner of more than 5% in or of proposer, or members of their immediate families: (A) have a financial interest in another company, project, or property that could benefit financially from this proposed project; and/or (B) another individual or business will be compensated by (or on behalf of proposer) if Proposer is selected by the City for the requested services. (Attach a detailed explanation for either.)

3. Bid Bond - If the Proposal is accepted by the City, it will become a binding contract on both parties. If a Bid Bond or Cashier's Check/Certified Check is required, it shall be submitted with the Proposal. If the undersigned shall fail to deliver or perform, or if applicable, execute a Contract as stated herein, then the City may, at its option, determine that the undersigned has abandoned the Award/Contract, and thereupon such Bid and/or Award shall be null and void, and any Cashier's Check/Certified Check or Bond accompanying this Bid shall be forfeited to and become the property of the City, and the full amount of said check, or if a Bid Bond, the full amount of such bond, shall be paid to the City as partial liquidated damages; otherwise, any Bond or Cashier's Check/Certified Check accompanying this Bid shall be returned to the undersigned within 30 calendar days from the date of Award, or if provisions for a Notice to Proceed are included, from the date of the Notice to Proceed.

4. Vendor proposes and agrees to provide all materials, services or equipment required for the City of Callaway **GORE PARK SITE WORK BID NO: LS2022-05**, for the Total Sum(s) as follows: (*Total must match breakdown of costs for each part on next pages.)* Dollar Amount ($_____) Written Amount: _____

5. Number of days from date of the Notice to Proceed that will be required for the final completion of all work as described herein.

   _____
   (Maximum 365 Calendar Days)

6. The City reserves the right to accept any or all prices itemized in any combination that best serves the interests of the City. The City further reserves the right to accept or reject any of the components of this Proposal, including alternates.

7. BIDDER HEREBY ACKNOWLEDGES RECEIPT OF THE FOLLOWING ADDENDUMS: _____

BASE BID ITEMS

NOTE: BIDS shall include sales tax and all other applicable taxes and fees.

ITEM	DESCRIPTION	UNIT	QTY	EXTENSION
A.	**GENERAL ITEMS**			
1.	Mobilization (Max 5% of Bid)	LS	1	$_____
2.	Layout/As-Builts by Land Surveyor (Min. 2% of Bid) (Includes all design elevations, structures and Underground Utilities/pipes)	LS	1	$_____
3.	Testing (Includes but not limited to Asphalt, Concrete, Compaction, Hydrostatic, Video of Sewer and Storm Pipes) or as Required by plans and specifications.	LS	1	$_____
4.	Maintenance of Traffic	LS	1	$_____
5.	Bonds & Insurance (Includes Builders Risk Policy for Value of all Vertical Structures)	LS	1	$_____
6.	Erosion Control/INPDES Permitting (Includes Silt Fence and Hay Bales)	LS	1	$_____
7.	Demolition (Includes Hauling & Tipping Fees	LS	1	$_____
8.	Cleaning and video of existing storm pipe and inlets	LS	1	$_____
9.	Temporary Construction Sign	LS	1	$_____
		SUBTOTAL A:		**$_____**
B.	**BID ITEMS**			
1.	Fencing with all Gates and hardware (Black Vinyl Coated) (Includes all fencing with the exception of Basketball and Tennis Courts)	LS	1	$_____
2.	Net System with hardware attached to Fence Posts and Steel Posts (Includes 8” Steel Posts) – Entire Net System	LS	1	$_____
3.	Tiff Tuff Certified Bermuda Sod (All Disturbed Areas of entire site) (Includes Fertilizer and Cutting with REEL mower for 45 days – 4 cuts)	LS	1	$_____
4.	Landscaping (Includes but not limited to pipe, controllers, Valves, fittings, heads, and other appurtenances)	LS	1	$_____
5.	Irrigation System (Includes but not limited to pipe, controllers, valves, fittings, heads, and other appurtenances)	LS	1	$_____

6.	Stormwater Pipe and Inlets (includes video after completion Per FDOT Standards)	LS	1	$_____
7.	Tennis Courts (includes all equipment and fencing)	LS	1	$_____
8.	Basketball Courts (includes all equipment and fencing)	LS	1	$_____
9.	Trash Cans	LS	1	$_____
10.	Park Benches (W/Custom Pads as shown on Plans).	LS	1	$_____
11.	Concrete Work (Includes all sidewalks, detectable warning mats & handrail ramps, turn down footers, and curb).	LS	1	$_____
12.	12" Reclaimed Pavement with New SP 12.5 Asphalt and 6" Base with Thermo Plastic Striping	LS	1	$_____
13.	SP 9.5 Asphalt Paving (Includes Subgrade Type B Stabilization, Base Material, & Thermoplastic Striping)	LS	1	$_____
14.	Concrete Wheel Stops	LS	1	$_____
15.	Earthwork/Grading	LS	1	$_____
16.	Import Select Fill for Earthwork	LS	1	$_____
17.	Select Clay Material for Baseball Field	LS	1	$_____
18.	Permanent Signage	LS	1	$_____
19.	Bleachers for Baseball & Football Field (Installed)	LS	1	$_____
20.	Football Field Benches	LS	1	$_____
21.	Field Bases	LS	1	$_____
22.	Dug Outs with Water Fountains (Includes all components Including Bench and Bat Rack)	LS	1	$_____
23.	Underground Utilities (Includes but not limited to all water and wastewater Components) Directional Bores, Fittings, Pipe, Valves, Backflow Preventers, Hot Boxes, Cleanouts, Hose Bibs, Utility Pads (City to Supply Water Meter)	LS	1	$_____
24.	Bicycle Racks with Concrete	LS	1	$_____
25.	Football Field Goal Posts (3)	LS	1	$_____
26.	Decorative Site Lighting (Includes Lights for Flagpole)	LS	1	$_____
27.	LED Lighting for Tennis & Basketball Courts	LS	1	$_____
28.	LED Lighting for Baseball Field (Includes lights, poles, and foundations)	LS	1	$_____

29.	LED Lighting for Football Fields (Includes lights, poles and foundations)	LS	1	$_____
30.	Electrical and Controls/Panels for all LED Lighting (Includes all underground work, wire, conduit, terminations, back boards, miscellaneous appurtenances and 25-year unlimited parts and labor warranty from the manufacturer)	LS	1	$_____
31.	Electrical and Controls/Panels for all Decorative Site Lighting (Includes all underground work, wire, conduit, terminations, back boards, miscellaneous appurtenances, and 5-year unlimited parts and labor warranty from the manufacturer)	LS	1	$_____
32.	Flagpole with Concrete Pad Foundation	LS	1	$_____
33.	Allowance for Gulf Power Service/Transformer Installation	LS	1	$ 10,000.00
34.	Allowance for Electrical Permit Fee to Bay County	LS	1	$ 5,000.00
35.	Allowance for Changes, Additions, and unforeseen Conditions by the City/Engineer	LS	1	$ 200,000.00
36.	One year maintenance of landscaping, sod, and irrigation by bidder's subcontractor and to include mowing, fertilizers, and chemical treatment. Services shall include weed control, sod maintenance, insecticides, weekly mowing, debris cleanup, tree trimming, irrigation maintenance, and irrigation timer changes to regulate irrigation. The field shall be mowed with a REEL Mower. Maintenance includes weekly service for 12 months from date of acceptance of landscaping and irrigation. City intends to contract directly with prime contractor or subcontractor. The City has the right to not accept the maintenance price and may bid the services separately.	LS	1	$_____

SUBTOTAL B: $_____

TOTAL LUMP SUM BID (A & B): $_____

Contractor shall include all work in the plans in one of the line-items above. If not specifically listed, it must be included.

FEES FOR ADDITIVE WORK:

1. For extra work performed by your Subcontractors, the net amount of the Subcontractor's charge plus a percentage fee of 10%, which fee shall include all charges for supervision, overhead and profit, bonds, taxes and insurance.

2. For work performed by the Contractor's own forces, a reasonable estimate of the net cost of the work (less all discounts) plus a fee of 10% which fee shall include all charges for supervision, field office, general expenses, overhead and profit. Net cost, to which the percentage fee shall be applied, is understood to include state sales taxes, bonds, and delivery expenses of materials: cost of labor is to include all union fringe benefits, applicable insurance and payroll taxes. Labor rates with mark-up will not be accepted.

The city may elect to choose any variations of line items to award the project. The city may also perform minor services in house.

Name of Bidder: _____

Business structure: ( ) Corporation, ( ) Partnership, ( ) Individual, ( ) Other: _____

If a Partnership: _____

Name(s) of Partner(s):_____

If a Corporation: _____

Incorporated in State of: _____ Date of Incorporation: _____

Business Address: _____

City:_____ State_____ Zip _____

Telephone Number: ( ) _____Fax (__)_____

E-mail Address: _____

Submitted By: _____ Affix Corporate Seal
(Print) (If Corporation)

Title:_____

Signature: _____

ATTEST: _____

Secretary

By: _____
Print Name

State of Florida
County of _____

The foregoing instrument was acknowledged before me by means of ☐ Physical Presence or ☐ Online Notarization

The foregoing instrument was acknowledged before me this __ day of _____, 20__, by _____, who is personally known to me or who presented _____ as identification, and who (did) (did not) take an oath.

_____ _____
[Signature of Notary Public] [Printed, typed or stamped name of Notary Public)

NOTE: BIDS MAY BE REJECTED IF ALL DOCUMENTS ARE NOT COMPLETE AND EXECUTED, AND THE NUMBER OF COPIES SPECIFIED/REQUESTED OF EACH ARE NOT SUBMITTED WITH THE BID.

SWORN STATEMENT PURSUANT TO SECTION 287.133(3)(a), FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to ***City of Callaway, Florida, a Municipal Corporation, 6601 East Hwy. 22, Callaway, Florida 32404*** by_____
[print individual's name and title]

for_____ whose business
[print name of entity submitting sworn statement]

address is_____

_____and (if applicable) it's Federal Identification Number

(FEIN) is_____ (If the entity has no FEIN, include the Social Security

Number of the individual signing this sworn statement_____)

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), **Florida Statutes,** means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or of the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or any agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), **Florida Statutes,** means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, non-jury trial, or entry of a plea of guilty or nolo contendere.

4. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), **Florida Statutes,** means:

   a. A predecessor or successor of a person convicted of a public entity crime; or

   b. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

5. I understand that a "person" as defined in Paragraph 287.133(1)(e), **Florida Statutes,** means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members,

and agents who are active in management of an entity.

6. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. **[Indicate which statement applies.]**

_____ Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July, 1 1989.

_____ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. **[attach a copy of the final order]**

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

_____ LS2022-05

[signature] **[Reference: RFP Number]**

Sworn to and subscribed before me this ___ day of _____, 20__. Personally known _____ or produced identification _____.

[Type of identification]

The foregoing instrument was acknowledged before me by means of ☐ Physical Presence or ☐ Online Notarization

Notary Public - State of _____

My Commission expires: _____

_____

[Signature of Notary]

_____

[Printed, typed or stamped commissioned name of Notary Public]

CITY OF CALLAWAY

DRUG-FREE WORKPLACE CERTIFICATION

Please complete Part I or Part II as applicable.

In order to be given preference in the award process for having implemented a drug-free workplace program prior to the Bid/Proposal submission date, the Bidder/Proposer is requested to certify that as part of their drug-free workplace program, they have:

1. Published a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specified the actions that will be taken against employees for violations of such prohibition.

2. Informed employees about the dangers of drug abuse in the workplace, the business policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Given each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in Subsection 1.

4. In the statement specified in Subsection 1, notified the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Imposed a sanction on or required the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community by any employee who is so convicted.

6. Made a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

Part I - PROGRAM IMPLEMENTED

I certify that I/we have established a drug-free workplace program meeting the foregoing minimum requirements.

_____ _____

[Printed, typed name] [Signature]

State of Florida
County of _____

The foregoing instrument was acknowledged before me this ____ day of _____, 20__, by_____, who appeared by means of ☐Physical Presence or ☐Online Notarization, is personally known to me or who presented _____ as identification, and who (did) (did not) take an oath.

_____ _____

[Signature of Notary Public] [Printed, typed or stamped name of Notary Public]

_____

[Commission Number of Notary Public]

Part II - PROGRAM NOT IMPLEMENTED

A program meeting the above stated requirements has not been established or has not been fully implemented prior to Bid/Proposal closing date, and therefore I/we are not eligible for certification as a drug-free workplace.

_____ _____

[Signature] [Date]

PROPRIETARY/CONFIDENTIAL INFORMATION
CITY OF CALLAWAY GORE PARK SITE WORK
BID NO. LS2022-05

Name of Firm of Bidder/Vendor: _____

Trade secrets or proprietary information submitted by a Vendor shall not be subject to public disclosure under the Freedom of Information Act; however, the Vendor must invoke such protections provided by state law, in writing, either before or at the time the data or other material is submitted. The written notice must specifically identify the data or materials to be protected, including the section of the proposal in which it is contained, as well as the page number(s), and state the reasons why protection is necessary. The proprietary or trade secret material submitted must be identified by some distinct method such as highlighting or underlining and must indicate only the specific words, figures, or paragraphs that constitute a trade secret or proprietary information. In addition, a summary of proprietary information provided shall be submitted on this form. The designation of an entire proposal document, line item prices, and/or total proposal prices as proprietary or trade secrets is not acceptable. If, after being given reasonable time, the Vendor refuses to withdraw such a classification designation, the proposal will be rejected.

SECTION/TITLE	PAGE NUMBER(S)	REASON(S) FOR WITHHOLDING FROM DISCLOSURE

☐ **Check this box if there are none.**
This document must be completed and returned with proposal.

CITY OF CALLAWAY GORE PARK SITE WORK
BID NO. LS2022-05

CONFLICT-OF-INTEREST FORM

The award of a bid or acceptance of proposal is subject to Chapter 112, Florida Statutes*. All Bidders/Proposers must disclose with their Bid/Proposal the name of any officer, director, or agent who is a city official or employee, or a member of an official's or employee's immediate family. Further, Bidders/Proposers must disclose the name of any city official or employee, or a member of an official's or employee's immediate family, who owns directly or indirectly an interest of ten percent (10%) or more in the bidder's/proposer's firm or related business.

CERTIFICATION

☐ I declare that I do not have any matters which might give rise to a real or perceived conflict of interest.

☐ I hereby disclose that the following named person(s) is an Officer, Director, or Agent who is also a City Official, Employee, or member of a City Official or Employee's immediate family and could pose a possible conflict of interest:

Name: _____

Affiliation: _____

By signing below, I affirm that I have read and understood the principles of conflict-of-interest disclosure and I have made full disclosure of all matters that may put me in a conflict-of-interest situation in performing my role.

I acknowledge that non-disclosure could result in action being taken to terminate my work with the City of Callaway and potentially bar me from submissions of Bids/RFPs in the future.

_____
Signature

_____
Printed Name

_____
Company

Project/Bid/RFP Number: _____ Date: _____

*Florida Statutes Chapter 112.311(5) It is hereby declared to be the policy of the state that no officer or employee of a state agency or of a county, city, or other political subdivision of the state, and no member of the Legislature or legislative employee, shall have any interest, financial or otherwise, direct or indirect; engage in any business transaction or professional activity; or incur any obligation of any nature which is in substantial conflict with the proper discharge of his or her duties in the public interest.

CITY OF CALLAWAY
GORE PARK SITE WORK
BID NO: LS2022-05

MINIMUM TECHNICAL SPECIFICATIONS

SCOPE OF WORK

The project includes a new football field, practice field, baseball field, basketball court, tennis court, field lighting for all fields/courts, site lighting, walking trail, fencing, parking improvements, and associated site work.

The following sections are applicable to this project:

TECHNICAL SPECIFICATIONS **PAGES**

ELECTRICAL SPECIFICATIONS

APPENDICES

A. Project Sign
B. Geotechnical Report
C. Pay Request Form
D. Northwest Florida Water Management District (ERP – Permit)

SECTION 02110
SITE CLEARING

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions apply to work of this Section.

DESCRIPTION OF WORK:

Extent of site clearing is shown on drawings.

Site clearing work includes, but is not limited to:

- Protection of existing trees.
- Removal of trees and other vegetation.
- Topsoil stripping.
- Clearing and grubbing.
- Removing above-grade improvements.
- Removing below-grade improvements.

JOB CONDITIONS:

Traffic: Conduct site clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks or other occupied or used facilities without permission from authorities having jurisdiction.

Protection of Existing Improvements: Provide protections necessary to prevent damage to existing improvements indicated to remain in place.

Protect improvements on adjoining properties and on Owner's property.

Restore damaged improvements to their original condition, as acceptable to parties having jurisdiction.

Protection of Existing Trees and Vegetation: Protect existing trees and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line.

Provide temporary guards to protect trees and vegetation to be left standing.

Water trees and other vegetation to remain within limits of the contract work as required to maintain their health during course of construction operations.

Provide protection for roots over 1-1/2" diameter cut during construction operations. Coat cut faces with an emulsified asphalt, or other acceptable coating, formulated for use on damaged plant tissues. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.

Salvable Improvements: Carefully remove items indicated to be salvaged, and store on Owner's premises where indicated or directed.

PART 2 - PRODUCTS Not applicable to work of this section.

PART 3 - EXECUTION

SITE CLEARING:

General: Remove trees, shrubs, grass and other vegetation, improvements, or obstructions interfering with installation of new construction. Remove such items elsewhere on the site or premises as specifically indicated. Removal includes digging out stumps and roots.

Carefully and cleanly cut roots and branches of trees indicated to be left standing, where such roots and branches obstruct new construction.

Topsoil: Topsoil is defined as friable clay loam surface soil found in a depth of not less than 4". Satisfactory topsoil is reasonably free of subsoil, clay lumps, stones, and other objects over 2" in diameter, and without weeds, roots, and other objectionable material.

Strip topsoil to whatever depths encountered in a manner to prevent intermingling with underlying subsoil or other objectionable material.

Remove heavy growths of grass from areas before stripping.

Where trees are indicated to be left standing, stop topsoil stripping a sufficient distance to prevent damage to main root system.

Dispose of unsuitable or excess topsoil same as waste material, herein specified.

Clearing and Grubbing: Clear site of trees, shrubs and other vegetation, except for those indicated to be left standing.

Completely remove stumps, roots, and other debris protruding through the ground surface.

Use only hand methods for grubbing inside drip line of trees indicated to be left standing.

Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.

Place fill material in horizontal layers not exceed 6" loose depth, and thoroughly compact to a density equal to adjacent original ground.

Removal of Improvements: Remove existing above-grade and below-grade improvements necessary to permit construction, and other work as indicated.

Abandonment of removal of certain underground pipe or conduits may be shown on mechanical or electrical drawings, and is included under work of those sections. Removal of abandoned underground piping or conduit interfering with construction is included under this section.

DISPOSAL OF WASTE MATERIALS:

Burning on Owner's Property: Burning will be permitted only at designated areas and times directed by Owner. Attend burning materials until fires have burned out or have been extinguished. Contractor will be required to secure necessary burn permit from governing authorities.

Removal from Owner's Property: Remove waste materials and unsuitable and excess topsoil from Owner's property and dispose of offsite in legal manner.

END OF SECTION 02110

SECTION 02200
EARTHWORK

PART 1 – GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions apply to work of this section.

DESCRIPTION OF WORK:

Extent of earthwork is indicated on drawings. This work consists of grading in order to achieve finished elevations shown on the construction plans.

Preparation of subgrade for building slabs, walks, and pavements is included as part of this work.

All graded surfaces shall be smooth and uniform, without abrupt changes in slope or grade. Areas to be covered with paving shall be fine graded to the required elevations and slopes. Finished surfaces in all other areas may vary up to 0.1 feet from the required elevations.

Excavation for Mechanical/Electrical Work: Excavation and backfill required in conjunction with underground mechanical and electrical utilities, and buried mechanical and electrical appurtenances is included as work of this section.

Definition: "Excavation: consists of removal of material encountered to subgrade elevations indicated and subsequent disposal of materials removed.

QUALITY ASSURANCE:

Codes and Standards: Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction. All material and construction methods shall be in accordance with Section 120 of the Standard Specifications for Roads and Bridges, State of Florida, Department of Transportation, latest edition.

Testing and Inspection Service: Employ, at Contractor's expense, testing laboratory to perform soil testing and inspection service for quality control testing during earthwork operations.

SUBMITTALS:

Test Reports-Excavating: Submit following reports directly to Engineer from the testing services, with copy to the Contractor.

Test reports on borrow material.

Verification of each footing subgrade.

Field density test reports.
One optimum moisture-maximum density curve for each type of soil encountered.

Report of actual unconfined compressive strength and/or results of bearing tests of each strata tested.

PART 2 - PRODUCTS

Soils used as fill shall be clean sands, less than 5 percent passing the number 200 sieve.

CUT:
Where required, the site shall be excavated to the grades course. Excavated material that is suitable shall be used in the fill sections of the site. No suitable material shall be removed from the site. Any excess suitable material shall be placed at the direction of the Engineer.

FILL:
In order to insure proper bond and prevent slipping between the original ground and fill, the surface of the original ground shall be scarified to a depth of at least three inches. Each layer of fill material shall be compacted until the required density is achieved.

PART 3 - EXECUTION

GENERAL:

The site shall be rolled with a minimum of six overlapping passes of a 4 ton vibratory roller. The existing soil across the site should be compacted. The site can be filled by placing and compacting 1' - 2' lifts with the vibratory roller. Successful compaction of each lift should be attained prior to placement of successive lifts.

COMPACTION OF SUBGRADE AND FILL:

Compaction requirements shall be as shown on the plans, with a soil at or near optimum moisture content. All subgrade fill material and the top 12 inches in cut areas shall be compacted. All roots and other materials that would diminish the efficiency of the compaction operation shall be removed prior to compacting. Field tests shall be made by a soils testing laboratory under the direction of the Engineer.

TRENCH EXCAVATION:

The Contractor shall perform all excavation of every description and whatever substances encountered, to the dimensions and depths shown on the drawings, or as directed. All excavated materials not required for fill or backfill shall be removed or wasted as directed. All excavations shall be made by open cut unless otherwise shown on the plans.

Trenches shall be kept as nearly vertical as possible, and if required, shall be properly sheeted and braced. Where in the opinion of the Engineer, damage is liable to result from withdrawing sheeting, the sheeting shall be left in place.

Pipe trenches shall be excavated to a depth that will insure a minimum of thirty inches of cover unless otherwise shown on the drawings or directed. Trenches shall be excavated to provide a clearance on each side of the pipe of not less than six inches shall be excavated accurately to

grade and shall provide uniform support for pipes along their entire length. Excavation shall be made for bells of all pipes.

Except in rocks, water bearing earth, or where a granular or concrete base is to be used, mechanical excavation of trenches shall be stopped above the final invert grade elevation so that the pipe may be laid on a firm undisturbed native earth bed. If over digging occurs, all loosened earth must be removed and the trench bottom brought back to grade with granular material well compacted to the satisfaction of the Engineer.

If the trench width at the top of the pipe becomes greater than a distance of three times the outside diameter of the pipe, for any reason other than by order of the Engineer, the Contractor shall install at his own expense such concrete cradling, pipe easement or other bedding as may be required by the Engineer to support the load of backfill.

If there is not a good natural foundation it will be the Contractor's responsibility to stop construction and notify the Engineer of the condition encountered. The Engineer will then instruct the Contractor as to the method to be used to correct the conditions, and the Contractor will receive extra compensation amount negotiated with the Owner.

OTHER EXCAVATIONS:

Excavation for manholes, catch basins, and other accessories shall be sufficient to leave at least 12 inches in the clear between their outer surfaces and the embankment of timber that may be used to protect them. Backfill of earth around manholes shall be filled with thoroughly compacted sand or gravel at the expense of the Contractor.

Excavation for structures shall be made to the dimensions and elevation indicated on the drawings. Where the excavation is made below the indicated elevations, the excavation shall be restored to the proper elevation with concrete fill, or the heights of the walls and footings shall be increased. Such fill or increased height of walls and footings shall be furnished by the Contractor without extra compensations, except where additional excavation is ordered to obtain proper bearing in which case the contract price will be adjusted to cover such additional work.

SHORING AND DRAINAGE:

The Contractor shall do all shoring required to perform and protect the excavation and as necessary for the safety of the employees.

The Contractor shall prevent the accumulation of water in the excavated areas, and shall remove by pumping or other means any water which accumulates in the excavation. The Contractor shall prevent the accumulation of water in both structural and trench excavations and shall remove by well point system or by other means water which accumulates in the excavation. The Contractor shall provide, install and operate a suitable and satisfactory dewatering system. The Contractor shall include the cost of this pumping equipment and work in the price bid for the work.

BACKFILLING:

Trenches shall be backfilled with excavated materials, free from large clods or stones. Backfill shall be deposited in layers not to exceed 6 inches (6") in thickness, moistened, and compacted.

Selected materials shall be used for all backfill. Trash shall not be allowed to accumulate in spaces to be backfilled, and this space shall be well cleared before backfill is placed.

No fill material shall be placed, spread or rolled while the ground or fill is frozen or thawing or during unfavorable weather conditions. When the work is interrupted by heavy rain, fill operations shall not be resumed until the moisture content and density of the fill are as previously specified.

GRADING:

General: Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finish surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.

Grading Outside Building Lines: Grade areas adjacent to building lines to drain away from structures and to prevent ponding.

Finish surfaces free from irregular surface changes, and as follows:

Lawn or Unpaved Areas: Finish areas to receive topsoil to within not more than 0.10' above or below required subgrade elevations.

Walks: Shape surface of areas under pavement to line, grade and cross-section, with finish surface not more than 1/2" above or below required subgrade elevation.

Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or relative density for each area classification.

PAVEMENT BASE COURSE:

General: Base course consists of placing base material, in layers of specified thickness, over subgrade surface to support a pavement course.

Grade Control: During construction, maintain lines and grades including crown and cross-slope of base course.

Shoulders: Place shoulders along edges of base course to prevent lateral movement. Construct shoulders of acceptable soil materials, placed in such quantity to compact to thickness of each base course layer. Compact and roll at least 12" width of shoulder simultaneously with compacting and rolling of each layer of base course.

Placing: Place base course material on prepared subgrade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting base material during placement operations.
When a compacted base course is shown to be 6" thick or less, place material in a single layer. When shown to be more than 6" thick, place material in equal layers, except no single layer more than 6" or less than 3" in thickness when compacted.

FIELD QUALITY CONTROL:

Quality Control Testing During Construction: Allow testing service to inspect and test and engineer to approve subgrades and fill layers before further construction work is performed.

Perform field density tests in accordance with ASTM D 1556 (sand cone method) or ASTM D 2167 (rubber balloon method) or ASTM D 2922 (nuclear method), as applicable.

If in opinion of the Engineer, based on testing service reports and inspection, subgrade or fills which have been placed are below specified density, provide additional compaction and testing at no additional expense.

MAINTENANCE:

Protection of Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris.

Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.

Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape, and compact to required density prior to further construction.

Settling: Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

EXISTING UTILITY LINES:

Attention is called to the fact that the Contractor is responsible for contacting all utility companies to obtain locations of all existing utilities or obstructions which he may encounter during construction. After location of utilities by the appropriate utility company, it is the Contractor's liability to protect all such utility lines, including service lines and appurtenances, and to replace at his own expense any which may be damaged by the Contractor's equipment or forces during construction of the project.

BARRICADES, GUARDS, AND SAFETY PROVISIONS:

To protect persons from injury and to avoid property damage, adequate barricades, construction signs, torches, red lanterns and guards as required shall be placed and maintained during the progress of the construction work. Rules and regulations of the local authorities with respect to safety provisions shall be observed.

TRAFFIC CONTROLS:

Excavations for pipe laying operation shall be conducted in a manner to cause the least interruption to traffic. When traffic must cross open trenches, the Contractor shall provide suitable bridges.

FLOW DRAIN AND SEWER MAINTENANCE:

Adequate provision shall be made for the flow of sewers, drains, and water courses encountered during construction, and the structures which may have been disturbed shall be satisfactorily restored by the Contractor.

PROPERTY PROTECTION:

Trees, fences, poles, and all other property shall be protected unless their removal is authorized; and any property damaged shall be satisfactorily restored by the Contractor at the Contractor's expense.

CLEAN-UP:

Before final inspection and acceptance the Contractor shall clean ditches, shape shoulders and restore all disturbed areas, including street crossings, grass plots, regrassing if necessary, to as good a condition as existed before work started. All trenches shall be leveled, and loose material removed from pavement, gutters, and sidewalks, employing hand labor if necessary.

EROSION CONTROL:

The Contractor shall be responsible for the prevention of erosion from the site and for maintaining graded surfaces for the duration of the project.

The Contractor shall take whatever steps necessary to prevent erosion and will be responsible for any damages which might occur to down-land properties as a result of increased runoff from the site during sitework construction.

END SECTION 02200

SECTION 02211
SODDING

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Sod Installation

1.02 REFERENCES

A. ASPA - American Sod Producers Association - Guideline Specifications to Sodding.

B. FS O-F-241 - Fertilizers, Mixed, Commercial.

1.03 DEFINITIONS

A. Weeds: Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Hill, Bindweed, Bent Grass, Wild Garlic, Perrenial Sorrel, and Brome Grass.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver sod on pallets. Protect exposed roots from dehydration.

B. Do not deliver more sod that can be laid within 24 hours.

PART 2 - PRODUCTS

2.01 ACCEPTABLE SOD GROWERS

A. Nurseries and Sod Growers in the surrounding area who have a five year record are acceptable.

2.02 MATERIALS

A. Sod:

1. ASPA approved, field grown grade; cultivated grass sod; for low maintenance and traffic durability, with strong fibrous root system, free of stone, burned or bare spots; containing no more than 5 weeds per 1000 square feet.

B. Approved Sods:

1. Tiff Tuff, Bermuda (Cynodon Dactylon) as supplied by McCall Sod Farm or approved equal.

2.03 HARVESTING SOD

A. Machine cut sod and load on pallets in accordance with ASPA guidelines.

B. Cut sod in area not exceeding one square yard, with minimum 1/2 inch and maximum one inch topsoil base.

PART 3 - EXECUTION

3.01 INSPECTION

A. Verify that prepared soil base is ready to receive the work of this Section.

B. Beginning of installation means acceptance of existing site conditions.

3.02 PREPARATION OF SUBSOIL

A. Prepare subsoil to eliminate uneven areas and low spots. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.

B. Remove foreign materials and undesirable plants and their roots. Do not bury foreign material beneath areas to be sodded. Remove contaminated subsoil.

3.03 LAYING SOD

A. Moisten prepared surface immediately prior to laying sod.

B. Lay sod immediately on delivery to site and within 24 hours after harvesting to prevent deterioration.

C. Lay sod tight with no open joints visible, and no overlapping; stagger end joints 12-inches overlapping; minimum. Do not stretch or overlap sod pieces.

D. Lay smooth. Align with adjoining grass areas. Place top elevation of sod 1/2 inch below adjoining paving or curbs.

E. On slopes 6 inches per foot and steeper, lay sod perpendicular to slope and secure every row with wooden pegs at maximum 2 feet on center. Drive pegs flush with soil portion of sod.

F. Prior to placing sod, on slopes exceeding 8 inches per foot or where indicated, place wire mesh over topsoil. Securely anchor in place with wood pegs sunk firmly into the ground.

G. Water sodded areas immediately after installation. Saturate sod to 4 inches of soil.

H. After sod and soil have dried, roll sodded areas to ensure good bond between sod and soil and to remove minor depressions and irregularities.

I. Sod shall be laid in all ditch areas and slopes that are equal to or steeper than 1 vertical to 3 horizontal or in areas determined by the Engineer to "erosion problem" areas. Sod shall be pinned down for stabilization in these areas.

END OF SECTION

SECTION 02222
TRENCHING, BACKFILLING AND COMPACTING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. The extent of trenching, backfilling and compacting is shown on the drawings.

B. This section includes furnishing equipment, labor and materials, and performing all operations necessary and incidental to perform the required work.

PART 2 – PRODUCTS NOT USED

PART 3 - EXECUTION

3.01 CLEARING THE SITE

A. The site of the work shall be cleared of all trees, shrubs, paving and objectionable material which interfere with the prosecution of the proposed work.

B. Trees and shrubs which will not interfere with construction shall be protected from damage.

C. Clearing shall be considered as an incidental item of excavation.

3.02 EXCAVATION

A. General:

1. Perform excavation described of whatever substance encountered to the dimensions and depths specified or shown on the drawings.

2. Undercutting will not be permitted, except when ordered by the ENGINEER. Material suitable for backfill shall be stockpiled near the site.

3. Rock or other material undesirable for backfill shall be spoiled outside the area in a neat manner, as directed by the ENGINEER.

4. Where it is necessary to cut roots projecting into an excavation or where it is necessary to trim branches for equipment clearance, all severed root ends or cuts to branches over 1/2-inch diameter shall be treated with an asphalt base pruning paint.

5. Backfill over exposed roots as soon as possible.

B. Rock:

1. Where encountered in the trench bed, rock shall be excavated to a depth of 1/4 of the pipe diameter below the bottom of the pipe but in no case less than 4 inches.

2. All undercut trench excavation shall be backfilled and tamped with materials as specified in the following paragraphs under Unstable Subgrade.

C. Unstable Subgrade:

1. In the event that unsuitable material is encountered at or below the excavation depth specified or shown on the drawings, the ENGINEER shall be notified.

2. Such material shall be removed and replaced with suitable material. Methods and materials used for replacement shall be one of the following as directed by the ENGINEER in writing.

   a. Suitable earth or sand compacted in the trench. Materials shall be furnished as a part of the Bid Proposal item covering excavation and backfill.

   b. Gravel or crushed limerock, compacted in the trench and paid for under the appropriate item.

   c. Existing materials, stabilized after removal and then replaced and compacted in the trench at no additional cost to the OWNER.

3. The Engineer shall determine the methods and materials to be used, based upon the condition of the excavation, the pipe structure to be supported, and the availability and character of stabilizing materials.

D. Trenches:

1. Keep pipe laying operation as close to the excavation operation as possible during the prosecution of the work. The ENGINEER reserves the right to stop the excavation at any time when, in his opinion, the excavation is opened too far in advance of the pipe laying.

   a. Pipe trenches shall be excavated to a depth that will insure a minimum of 36 inches of cover for ductile iron and PVC pipe and 54 inches of cover for polyethylene pipe, except service laterals. Trenches shall be only of sufficient width to provide a free working space on each side of the pipe.

   b. To prevent excess pressure on the pipe, the maximum width of trench at the top of the pipe and at the bottom of the trench shall not be greater than 2 feet more than the greatest exterior diameter of the pipe.

c. If this maximum width is exceeded, it shall be the CONTRACTOR's responsibility to provide, at no additional cost to the OWNER, such additional bedding or select backfill materials as the ENGINEER may require.

d. The excavation below the spring line shall be made to conform as near as possible to the shape of the lower third of the pipe.

e. To protect the pipe lines from unusual stresses, all work shall be done in open trenches.

f. Excavation shall be made for bells of all pipes and of sufficient depth to permit access to the joint for construction and inspections. In no case will the bells be used to support the body of the pipe.

2. In order to avoid existing utilities, at times it may be necessary for the pipe to be laid deeper than the minimum cover specified in the preceding paragraph. At such time the CONTRACTOR will not be allowed extra compensation for additional excavation involved.

3. In case excavation has been made deeper than necessary, a layer of concrete, fine gravel or other material satisfactory to the ENGINEER shall be placed, at no extra cost, to secure a firm foundation for the lower third of each pipe.

a. Where possible, excavated material shall be placed so as not to interfere with public travel.

b. Bridging shall be provided to afford necessary access to public or private premises.

E. Bridging shall be considered as part of the excavation operation and shall be supplied at no additional cost to the OWNER. Structural: (For inlets, manholes, valve pits and similar structures)

1. Structural Excavation:

a. Sufficient material shall be removed to allow proper space for erecting and removing forms. The elevations of the bottoms of footings, if shown on the drawings, shall be considered as approximate only, and the ENGINEER may order, in writing, such changes in dimensions or elevations of footings as may be deemed necessary to secure a satisfactory foundation.

b. Excavation for structures shall be sufficient to leave at least 12 inches in the clear between their outer surfaces and the embankment of timber that may be used to protect them.

c. Backfill of earth under structures will not be permitted.

d. Excess excavation for structures shall be filled with thoroughly compacted sand, gravel, or concrete at the expense of the CONTRACTOR.

2. After excavation for a structure is completed, the CONTRACTOR shall notify the ENGINEER to that effect. No concrete or reinforcing steel shall be placed until the ENGINEER has approved the depth of the excavation and the character of the foundation material.

F. Sheeting and Shoring:

1. The CONTRACTOR shall provide all trench and structural bracing, sheeting or shoring necessary to construct and protect the excavation, existing utilities, structures and private property of all types and as required for the safety of the employees.

2. Sheeting shall be removed or cut off by the CONTRACTOR during backfilling operations as directed by the ENGINEER.

3. Sheeting which is left in place by order of the ENGINEER will be paid for under the item, Lumber left in Place.

4. Removal of shoring for structures shall be done in such a manner as not to disturb or mar finished masonry or concrete surfaces.

3.03 DRAINAGE

A. Grading shall be controlled in the vicinity of excavations so that the surface of the ground will be properly sloped to prevent water from running into trenches or other excavated areas.

B. Any water which accumulates in the excavations shall be promptly removed by well point or by other means satisfactory to the ENGINEER in such a manner as to not create a nuisance to adjacent property or public thoroughfare.

C. Trenches shall be kept dry while pipe is being laid.

D. Bridging of dewatering pipe shall be provided where necessary.

E. Pumps and engines for well point systems shall be operated with mufflers, and at a minimum noise level suitable to a residential area.

F. The CONTRACTOR will not be allowed to discharge water into the OWNER's storm drainage system without the written approval of the ENGINEER. Approval will be subject to the condition that the storm sewer be returned to its original condition.

G. The CONTRACTOR is responsible for carrying the water to the nearest ditch or body of water and for obtaining the necessary permission to use same. The CONTRACTOR shall be financially responsible for any nuisance created due to carrying off water from his drainage system.

3.04 BACKFILL

A. Trenches:

1. Trenches shall be backfilled immediately after the pipe is laid unless other protection for the pipeline is provided.

2. Clean earth, sand, crushed limerock or other material approved by the ENGINEER shall be used for backfill.

3. Backfill material shall be selected, deposited and compacted (simultaneously on both sides of the pipe) so as to eliminate the possibility of lateral displacement of the pipe.

4. Backfill material shall solidly tamped around the pipes in layers to a level at least 1 foot above the top of the pipe. Each layer shall be compacted to a maximum thickness of 6 inches.

5. Unpaved Areas:

a. In unpaved areas, the remainder of the backfill shall be deposited and then compacted by puddling, water flooding, or mechanical tampers.

b. Mechanical tamping of layers in unpaved areas shall be to a maximum thickness of 12 inches.

6. Areas to be Paved:

a. In areas to be paved or repaved, the entire depth of backfill shall be deposited in layers and compacted by hand or mechanical tampers to a maximum thickness of 6 inches.

b. Compaction shall be carried out to achieve a density of at least 98% of the maximum density as determined by AASHTO, Method T-180.

7. Density Tests In Areas to be Paved:

a. In areas to be paved, density tests for determination of the specified compaction shall be made by a testing laboratory and spaced one in every 300 feet of trench cut.

b. It is the intent of this specification to secure a condition where no further settlement of trenches will occur.

8. Roadway Base for areas to be Paved:

a. When backfilling is completed, the roadway base for pavement replacement may be placed immediately.

B. It will be the responsibility of the CONTRACTOR to restore the surface to the original grade wherever settlement occurs. Wet Trenches (CONTRACTOR's Option):

1. Backfill for the pipe bed in wet trenches shall be crushed, graded limerock, and compacted in the trench.

2. After the pipe is laid, a graded limerock backfill shall be placed and worked in around the haunches to a point 6 inches above the pipe. The width of the limerock material around the pipe shall not be less than the outside diameter of the pipe plus 6 inches on each side of the pipe. Material shall be carefully distributed along the pipe so as to provide full and uniform support under and around the pipe.

3. Six inches above the top of the pipe and up to the water level, material from the excavations with no rock or earth exceeding 4 inches in any one dimension shall then be lifted to the trench and released at the water level. Material shall be uniformly distributed for the full width of the trench.

4. Backfill and compaction above the eater level in the trench shall be as specified above.

5. All costs for graded limerock placed in wet trenches shall be included in the cost of stage excavation and backfill for the various sizes of pipe.

C. Bedding and Backfill - Flexible Pipe:

1. For polyvinyl chloride (PVC) pipe, the bedding and backfill materials shall be such as to limit the vertical ring deflection to 5% of the inside pipe diameter. A deflection greater than 5% of the inside diameter shall be cause for rejection of the pipe.

2. Class IV or Class V materials as defined in ASTM D2321-74 shall not be used for bedding, haunching or initial backfill for flexible pipes.

3. For PVC plastic pipe, bedding shall be in accordance with ASTM D2321-74, using Class I, II or III materials, except under wet conditions. In any area where the pipe will be installed below existing or future groundwater levels or where the trench could be subject to inundation, Class I material shall be placed to the springline of the pipe.

4. A minimum of effort is needed to compact the material. However, in the initial stage of placing this type of material, take care to ensure that sufficient material has been worked under the haunch of the pipe to provide adequate side support. Take precautions to prevent movement of the pipe during placing of the material under the pipe haunch.

   Except for the protection of the pipe from large particles of backfill material, little care need be taken and no compaction is necessary in placing backfill material in the balance of the initial backfill area above the pipe. Where unstable trench wall exist because of migratory materials, such as water-bearing silts or fine sand, take care to prevent the loss of side support through the migratory action.

5. All bedding requirements for flexible pipe specified in the preceding paragraphs shall be included in the price bid for the applicable pipe material and no additional compensation for bedding material will be allowed.

D. Structural:

1. After completion of foundation footings and walls and other construction below the elevation of the final grades, and prior to backfilling, forms shall be removed and the excavation shall be cleared of all trash and debris.

2. Material for backfilling shall consist of the excavation, borrow sand or other approved materials, and shall be free of trash, lumber or other debris.

3. Backfill shall be placed in horizontal layers not in excess of 9 inches in thickness, and have a moisture content such that a density may be obtained to prevent excessive settlement or shrinkage.

4. Each layer shall be compacted by hand or approved machine tampers with extreme care being exerted not to damage pipe or structures.

5. Backfill shall be placed and compacted evenly against the exposed surfaces to prevent undue stress on any surface.

3.05 RESTORATION OF SURFACE IMPROVEMENTS

A. Roadways, including shoulders, alleys and driveways of shell, limerock, stabilized soil or gravel, grass plots, sod, shrubbery, ornamental trees, signs, fences, or other surface improvements on public or private property which have been damaged or removed in excavation, shall be restored to conditions equal to or better than conditions existing prior to beginning work.

B. Restoration of shoulders shall consist of seeding and mulching or stabilizing with limerock as selected by the ENGINEER.

C. The cost of doing this work shall be included in the cost of the various applicable items.

D. General Quality Control will be used as an aid in determining conditions prior to construction.

E. Materials for unpaved roadways, road shoulders, alleys, or driveways, shall be compacted as described in the plans. The cost of this work and furnishing new materials shall be included in the cost of the applicable items of work as no separate payment will be made, unless a separate bid item is provided.

3.06 FINE GRADING

A. Finished areas around structures shall be graded smooth and hand raked and shall meet the elevations and contours shown on the drawings. Lumber, earth clods, rocks and other undesirable materials shall be removed from the site.

3.07 DISPOSAL OF MATERIALS

A. Such portions of the excavated materials as needed and as suitable, shall be used for backfilling and grading about the completed work to the elevations as shown of the drawings or as directed. Excavated material in excess of the quantity required for this purpose shall be disposed of by the CONTRACTOR in those areas designated by the OWNER and as shown on the drawings. The CONTRACTOR shall leave the earth over the trenches or other excavations in a neat and uniform condition acceptable to the OWNER.

3.08 PAVEMENT REPLACEMENT

A. Asphalt pavement shall be removed by saw cutting on a straight line with edges as vertical as possible. Concrete pavement or asphalt surfaced concrete shall be removed by cutting with a concrete saw in as straight a line and vertically as possible. Materials to replace State Highway paving shall conform to the specifications required by the Florida Department of Transportation Specifications for Type S-I asphaltic concrete surface course, or as specifically shown in the plans.

B. Prior to replacing concrete or asphalt pavement replacement, a limerock base shall be laid. The base for concrete pavement shall be 6 inches of compacted thickness, and that for asphalt pavement shall be 8 inches of compacted thickness. The base course for each shall be compacted to a minimum of 98% of the maximum density as determined by AASHTO, Method T-180. The OWNER will have tests made by an independent testing laboratory to verify compaction results. One test will be made for each block of continuous trench cut.

C. Non-asphalt pavement replacement shall be replaced of like material and thickness. Asphalt or built-up asphalt pavement shall be replaced with like material or concrete as directed by the ENGINEER.

D. Where asphalt or built-up asphalt pavement is replaced by concrete, the concrete shall have a minimum of 6 inches in thickness and be reinforced with 6 by 6 no. 6 gage welded wire fabric. Concrete for paving shall be 3,000 psi design strength. Where the pavement replacement is of like material, it shall be replaced in thickness equal to or better than that existing at the time of removal.

E. Unless the base is sealed or other temporary paving applied over areas to be repaved, pavement shall be replaced not later than 3 weeks after completion of backfill.

3.09 TESTS

A. The CONTRACTOR shall furnish facilities for making all density tests and make such restorations as may be necessary due to test operations. All density tests on backfill or base replacement will be made by a commercial testing laboratory employed by the CONTRACTOR and at such locations as may be recommended by the ENGINEER. If the densities as determined by the specified tests fall below the required minimums, the CONTRACTOR shall pay for all retests.

3.10 SIDEWALK, CURB AND GUTTER REMOVAL AND REPLACEMENT

A. Sidewalk, curb and gutter removal and replacement required in the construction of this work shall be done by the CONTRACTOR.

B. Reasonable care shall be exercised in removing sidewalk and curb and gutter, and the CONTRACTOR shall either stockpile or dispose of this material as directed by the ENGINEER.

C. Brick, concrete or built-up asphalt sidewalk replacement and curb and gutter replacement shall be replaced of like material in a manner and condition equal to or better than that existing at the time of removal.

D. Materials and methods of replacing State Highway sidewalks or curbs shall conform to the Florida Department of Transportation specifications.

END OF SECTION

SECTION 02513
ASPHALT CONCRETE PAVING

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to work of this section. The Standard Specifications referenced in this section refer to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition.

DESCRIPTION OF WORK:

Extent of asphalt concrete leveling and resurfacing work is shown on drawings and called out in the bid quantities.

SUBMITTALS:

Material Certificates: Provide copies of materials certificates signed by material producer and Contractor, certifying that each material item complies with, or exceeds, specified requirements.

JOB CONDITIONS:

Weather Limitations: Apply prime and tack coats when ambient temperature is above 50 degrees F. (10 degrees C), and when temperature has not been below 35 degrees F. (1 degree C), and when base is dry. Surface course may be placed when air temperature is above 30 degrees F. (-1 degree C) and rising.

Grade Control: Establish and maintain required lines and elevations.

PART 2 - PRODUCTS

MATERIALS:

General: Use locally available materials and gradations which exhibit a satisfactory record of previous installations. Surface Course Aggregate: Crushed stone, crushed gravel, crushed slag, and sharp-edged natural sand.

ASPHALT-AGGREGATE MIXTURE:

Provide asphalt-aggregate mixture as recommended by local paving authorities and/or approved by the Engineer to suit project conditions.

PART 3 - EXECUTION

SURFACE PREPARATION:

Proof roll prepared base surface to check for unstable areas and areas requiring additional compaction.

Notify Engineer of unsatisfactory conditions. Do not begin paving work until deficient base areas have been corrected and are ready to receive paving.

Tack Coat: Apply to contact surfaces of previously constructed asphalt or Portland Cement Concrete and surfaces abutting or projecting into asphalt concrete pavement. Distribute at a rate of 0.05 to 0.15 gal. per sq. yd. of surface.

Allow to dry until at proper condition to receive paving.

PRECAUTIONS:

The application of tack shall be as not to allow long distances between the application truck and the paving operations.

PLANT MIX ASPHALTIC CONCRETE COURSE:

General: This item shall consist of a leveling wearing surface constructed of asphaltic concrete on a prepared base, in accordance with the plans and specifications.

Materials: The materials and construction methods shall comply with those set forth for Type S-1 or S-3 Asphaltic Concrete in the latest edition of the Standard Specifications, Sections 330 and 331.

The asphaltic cement shall meet the requirements of AASHTO Specification M-20, Viscosity Grade AC-20 (Penetration Grade 60-70).

Job Mix Formula: The Marshall of testing will be used in establishing the job mix formula and for control testing throughout the work

The density of field samples shall not be less than the Marshall laboratory compacted mixture composed of the same materials in like proportions.

Thickness: The thickness of the surface shall be as called for. This requirement shall be checked by cores and where a deficiency of more than 1/4" exists, the Contractor shall be required to correct the deficiency either by replacing the full thickness or overlaying the area to the satisfaction of the Engineer.

PLACING THE MIX:

Place the asphaltic concrete mixtures for both leveling and surface course in accordance with Section 330 of the FDOT Standard Specifications for Road and Bridge Construction, latest edition.

ROLLING:

The rolling operations shall be in accordance with FDOT Standard Specifications for Road and Bridge Construction, latest edition.

TRAFFIC AND LANE MARKINGS:

Cleaning: Sweep and clean surface to eliminate loose material and dust.

Striping: Use traffic lane-marking paint in accordance with Section 971 of the Florida Department of Transportation Standard Specifications. All paint will be fast-drying, reflectorized traffic paint.

FIELD QUALITY CONTROL:

General: Test in-place asphalt concrete courses for paving as directed by the Engineer for smoothness. Repair or remove and replace unacceptable paving as directed by the Engineer.

Thickness: In-place compacted thickness will not be acceptable if exceeding following allowable variation from required thickness:

Surface Course: 1/4", less than that specified.

Surface Smoothness: Test finished surface of each asphalt concrete course for smoothness, using 15' straightedge applied parallel with, and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding the following tolerances for smoothness.

Wearing Course Surface: 3/16".
Check surfaced areas at intervals as directed by the Engineer.

MISCELLANEOUS REQUIREMENTS:

Each driveway transitions shall be smooth and without steep slopes. Transitions into existing driveways shall be no more than 12-inches. If more than 12-inches is needed in order to achieve a smooth transition, it shall only be done only at the direction of the Engineer.

Existing blue fire hydrant markers shall be removed prior to paving operations. Upon completion of all paving operations, the Contractor shall place a new marker at each fire hydrant.

END OF SECTION 02513

SECTION 02950
SITE RESTORATION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. The work includes the restoration of driveways, lawn areas, trees and plants, roadways, sprinkler systems, walks and any other existing improvement affected by the proposed work.

B. This section includes furnishing equipment, labor and materials, and performing all necessary and incidental operations to perform the required work.

PART 2 – PRODUCTS

2.01 SOD

A. Any slope equal to or steeper than 1 vertical to 3 horizontal shall be sodded and the sod shall be pinned down for stabilization.

B. The CONTRACTOR shall, at his expense, maintain the sodded areas in a satisfactory condition until final acceptance of the project. Such maintenance shall include watering, re-staking sod, filling, leveling and repairing of any washed or eroded areas, as may be necessary.

2.02 PLANTS AND TREES

A. Existing damaged plants and tress shall be replaced by plants and trees of equal type, quality and size whenever possible. All new plants and trees shall be sound, healthy, vigorous and free from defects, decay, disfiguring, bark abrasions, plant diseases, insect pests, their eggs or larvae. The new plants shall be approved by the ENGINEER before placing.

B. Existing plants may be removed, preserved, and replaced at the CONTRACTORs option. Plants shall be handled by an approved nursery.

C. Plants shall be watered and cared for until new growth appears. Dead and dying plants shall be immediately replaced. Plants used shall be in accordance with the standards for Florida No. 1 or better as given in Grades and Standards for Nursery Plants Part 1.

D. Plants shall conform to the sizes indicated by the OWNER.

E. Trees shall be guaranteed for one year. If the replaced tree dies within one year of project completion it shall be replaced by the CONTRACTOR at no expense to the Government.

2.03 MULCH

A. Match existing mulch.

2.04 WATER

A. The water used in the performance of this Contract shall be of drinking water quality, clean and free from injurious amounts of oil, acid, alkali, or organic matter.

2.05 PLANTING MIXTURE:

A. The 18-inch planting mixture, when required, shall consist of a thorough mixture of 40% peat and 60% sand. The peat shall be Florihome peat or equivalent and the sand shall be clean and free from debris of any kind.

2.06 FERTILIZER

A. Fertilizer shall be pelletized 13-13-13, or approved equal.

PART 3 - EXECUTION

3.01 LANDSCAPING RESTORATION

A. Lawn Areas:

1. Any lawn area affected by the required work shall be restored to a condition equal or better than the conditions existing before the commencement of work.

B. Balled Plants:

1. Plants where required shall be adequately balled with firm natural balls of soil, sized as set forth in "Horticultural Standards."

2. Balls shall be firmly wrapped with burlap or equally approved strong cloth.

C. No balled plant will be planted if the ball is cracked or broken before or during the process of planting.

D. Preparation of Plant Pits:

1. All plant pits shall be circular in outline and have vertical sides.

2. Tree pits shall be two feet wider than the width of the ball and 1 foot deeper than the depth of the ball.

3. Shrubs that are either B&B or 3 gallons + shall have pits 2 feet wider than the width of the plant ball and 6 inches deeper than the depth of the ball.

4. Smaller shrubs shall have pits that are at least one foot wider than the

width of the plant ball and 6 inches deeper than the ball depth.

E. Setting Plants:

1. All plants except as otherwise specified, shall be centered in pits.

2. Deep planting shall be avoided and unless otherwise specified, plants shall be set at such a level that after settlement they will bear the same relation to the required grade as they have to the natural grade before being transplanted.

F. Balled and Burlapped:

1. Balled and burlapped plants and palm trees shall be placed on 6 inches to 12 inches of tamped planting mixture and adjusted so as to be at the proper level.

2. The rope and burlap shall be cut away and the burlap folded down to the bottom of the pit.

3. Very large B&B plants shall remain wrapped until fully backfilled and then just the upper portion of the burlap shall be removed.

4. Backfill of planting mix shall be placed halfway up the pit and then water tamped.

5. After this water has drained away, backfill around the ball to grade and water tamp again.

6. Finally, form a ridge of soil around the edge of the pit to form a saucer and full area three times with water.

G. Water: Water to be used initially during plant installation shall be furnished by the CONTRACTOR. The existing irrigation system, where damaged, shall be promptly repaired after the installation of the plants.

H. Options as to Methods:

1. Any plant may be furnished container grown instead of balled if all other requirements are met.

I. Immediately before sod is placed, 8-8-8 fertilizer shall be applied at the rate of approximately 500 pounds per acre, by broadcasting and raking into the planting area.

J. Sod shall be firmly embedded by light tamping. Wherever necessary to prevent an erosion condition caused by vertical edges at the outer limits of the sodded area, the sod shall be tamped so as to produce a featheredge at the outer limits. The sod shall be kept in a moist condition after it is planted. Water shall not be applied between the hours of 8 a.m., and 4 p.m. or when there is danger of freezing.

K. The CONTRACTOR shall, at his expense, maintain the planted areas in a satisfactory condition until final acceptance of the project. Such maintenance shall include watering, filling, leveling and repairing of any washed or eroded areas, as may be necessary.

3.02 PAVEMENT REPLACEMENT

A. Asphalt pavement shall be removed by saw cutting on a straight line with edges as vertical as possible. Concrete pavement or asphalt surfaced concrete shall be removed by cutting with a concrete saw in as straight a line and vertically as possible.

B. Non-asphalt pavement replacement shall be replaced of like material and thickness. Asphalt or built-up asphalt pavement replacement shall be replaced with like material or concrete as directed by the ENGINEER.

1. Where asphalt or built-up asphalt pavement is replaced by concrete, the concrete shall have a minimum of 6 inches in thickness and be reinforced with 6 by 6 No. 6 gage welded wire fabric.

2. Where the pavement replacement is of like material, it shall be replaced in thickness equal to or better than that existing at the time of removal.

C. Road cuts across City, County, or State roads shall not be cut.

3.03 Unless the base is sealed or other temporary paving applied over driveway areas to be repaved, pavement shall be replaced not later than three weeks after completion of backfill.

3.04 CURB REMOVAL AND REPLACEMENT

A. Curb removal and replacement required in the construction of this work shall be done by the CONTRACTOR.

B. Reasonable care shall be exercised in removing the curb, and the CONTRACTOR shall either stockpile or dispose of this material as directed by the ENGINEER.

C. Curb shall be replaced of like material in a manner and condition equal to or better than that existing at the time of removal.

D. Materials and methods of replacing State Highway sidewalks or curbs shall conform to the Department of Transportation specifications.

3.05 TESTS

A. The CONTRACTOR shall furnish facilities for making all density tests and make such restorations as may be necessary due to test operations.

B. All density tests on backfill or base replacement will be made by a commercial

testing laboratory employed by the CONTRACTOR at such locations as may be recommended by the ENGINEER.

C. If the densities as determined by the specified tests fall below the required minimums, the CONTRACTOR shall pay for all retests.

END OF SECTION

SECTION 03310
CONCRETE WORK

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to work of this section.

DESCRIPTION OF WORK:

Extent of concrete work is shown on Drawings.

Concrete paving and walks are specified in Division 2.

Mechanical finishes and concrete floor toppings are specified in other Division 3 sections.

SUBMITTALS:

Product Data: Submit data proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, waterstops, joint systems, curing compounds, dry-shake finish materials, and others as requested by Engineer.

Shop Drawings, Reinforcement: Submit original shop drawings for fabrication, bending, and placement of concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, diagrams of bent bars, and arrangement of concrete reinforcement. Include special reinforcement required for openings through concrete structures.

Engineer's review is for general engineering applications and features only. Design of formwork for structural stability and efficiency is Contractor's responsibility.

Laboratory Test Reports: Submit laboratory test reports for concrete materials and mix design test.

QUALITY ASSURANCE:

Codes and Standards: Comply with provisions of following codes, specifications, and standards, except where more stringent requirements are shown or specified:

ACI 301 "Specifications for Structural Concrete for Buildings".

ACI 318 "Building Code Requirements for Reinforced Concrete".

Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice".

Concrete Testing Services: Engage a testing laboratory acceptable to Engineer to perform material evaluation tests and to design concrete mixes.

Materials and installed work may require testing and retesting at anytime during progress of work. Tests, including retesting of rejected materials for installed work, shall be done at Contractor's expense.

PROJECT CONDITIONS:

Protection of Footings against Freezing: Cover completed work at footing level with sufficient temporary or permanent cover as required to protect footings and adjacent subgrade against possibility of freezing; maintain cover for time period as necessary.

Protect adjacent finish materials against spatter during concrete placement.

PART 2 - PRODUCTS

FORM MATERIALS:

Forms for Exposed Finish Concrete: Plywood, metal, metal-framed plywood faced, or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints.

> Use plywood complying with U. S. Product Standard PS-1 "B-B (Concrete Form) Plywood", Class I, Exterior Grade or better, mill-oiled and edge-sealed, with each piece bearing legible inspection trademark.

Forms for Unexposed Finish Concrete: Plywood, lumber, metal, or other acceptable material. Provide lumber dressed on at least 2 edges and one side for tight fit.

Form Coatings: Provide commercial formulation form-coating compounds that will not bond with, stain, nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces.

Form Ties: Factory-fabricated, adjustable-length, removable or snapoff metal form ties, designed to prevent form deflection and to prevent spalling concrete upon removal. Provide units which will leave no metal closer than 1-1/2" to surface.

Provide ties which, when removed, will leave holes not larger than 1" diameter in concrete surface.

REINFORCING MATERIALS:

Reinforcing Bars: ASTM A 615, Grade 60, deformed.

Steel Wire: ASTM A 82, plain, cold-drawn steel.

Welded Wire Fabric: ASTM A 185, welded steel wire fabric.

Welded Deformed Steel Wire Fabric: ASTM A 497.

Supports for Reinforcement: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Use wire bar type supports complying with CRSI specifications.

For slabs-on-grade, use supports with sand plates or horizontal runners where base material will not support chair legs.

CONCRETE MATERIALS:

Portland Concrete: ASTM C 150, Type I.

Use one brand of cement throughout project, unless otherwise acceptable to Engineer.

Normal Weight Aggregates: ASTM C 33, and as herein specified. Provide aggregates from a single source for exposed concrete.

For exterior exposed surfaces, do not use fine or coarse aggregates containing spalling-causing deleterious substances.

Water: Drinkable.

RELATED MATERIALS:

Polyvinyl Chloride Waterstops: Corps of Engineers CRD-C 572.

Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

Manufacturer: Subject to compliance with requirements, provide products of one of the following or equal:

AFCO Products
The Burke Co.
Edoco Technical Products
Greenstreet Plastic Products
Harbour Town Products
W. R. Meadows
Progress Unlimited
Schleigel Corp.
Vinylex Corp.

Granular Base: Evenly graded mixture of fine and coarse aggregates to provide, when compacted, a smooth and even surface below slabs on grade.

Vapor Retarder: Provide vapor retarder cover over prepared base material where indicated below slabs on grade. Use only materials which are resistant to decay when tested in accordance with ASTM E 154, as follows:

Polyethylene sheet not less than 8 mils thick.

Non-Shrink Grout: CRD-C 621, factory pre-mixed grout.

Products: Subject to compliance with requirements, provide one of the following or equal:

Metallic:

"Vibrofoil", A. C. Horn, Inc.
"Metallic Spec. Grout", The Burke Co.
"Embeco 636", Master Builders
"Ferrolith GDS", Sonneborn-Rexnord
"Hi-Mod Grout", Euclid Chemical Co.
"Kemox G", Sika Chemical Co.
"Ferrogrout", L & M Const. Chemical Co.
"Supreme Plus", Gifford-Hill/American Admixtures

Non-metallic:
"Set Grout", Master Builders
"Sonogrout", Sonneborn-Rexnord
"Euco-NS", Euclid Chemical Co.
"Supreme", Gifford-Hill/American Admixtures
"Crystex", L &M Const. Chemical Co.
"Sure-Grip Grout", Dayton Superior Corp.
"Horngrout", A. C. Horn, Inc.
"Five Star Grout", U. S. Grout Corp.

Liquid Membrane-Forming Curing Compound: Liquid type membrane-forming curing compound complying with ASTM C 309, Type I, Class A. Moisture loss not more than 0.055 gr./sq. cm. when applied at 200 sq. ft./gal.

Products: Subject to compliance with requirements, provide one of the following or equal:

"Masterseal", Master Builders
"A-H 3 Way Sealer", Anti-Hydro Waterproofing Co.
"Ecocure", Euclid Chemical Co.
"Clear Seal", A. C. Horn, Inc.
"Sealco 309", Gifford-Hill/American Admixtures
"J-20 Acrylic Cure", Dayton Superior
"Spartan-Cote", The Burke Co.
"Sealkure", Toch Div. - Carboline
"Kure-N-Seal", Sonneborn-Rexnord
"Polyclear", Upco Chemical/USM Corp.
"L & M Cure", L & M Construction Chemicals
"Klearseal", Setcon Industries
"LR-152", Protex Industries
"Hardtop", Gifford-Hill

PROPORTIONING AND DESIGN OF MIXES:

Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301. If trial batch method used, use an independent testing facility acceptable to Engineer for preparing and reporting proposed mix designs. The testing facility shall not be the same as used for field quality control testing.

Submit written reports to Structural Engineer of each proposed mix for each class of concrete at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed by Engineer.

Design mixes to provide normal weight concrete with the following properties, as indicated on drawings and schedules:

4000 psi 28-day compressive strength; W/C ratio, 0.44 maximum (non-air-entrained).

3000 psi 28-day compressive strength; W/C ratio, 0.58 maximum (non-air-entrained).

2500 psi 28-day compressive strength; W/C ratio, 0.67 maximum (non-air-entrained).

Lightweight Concrete: Proportion mix as herein specified. Design mix to produce strength and modulus of elasticity as noted on Drawings, with a split-cylinder strength factor (Fct) of not less than 5.5 for 3000 psi concrete and a dry weight of not less than 95 lbs. or more than 110 lbs. after 28 days. Limit shrinkage to 0.03 percent at 28 days.

Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to Owner and as accepted by Engineer. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Engineer before using in work.

Use air-entraining admixture in exterior exposed concrete, unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content with a tolerance of plus-or-minus 1-1/2 percent within following limits:

Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:

Ramps, slabs, and sloping surfaces: Not more than 3 inches.

Reinforced foundation systems: Not less than 1 inch and not more than 3 inches.

Concrete containing HRWR admixture (super-plasticizer): Not more than 8 inches after addition of HRWR to site-verified 2-3 inches slump concrete.

Other concrete: Not less than 1 inch nor more than 4 inches.

CONCRETE MIXING:

Ready-Mix Concrete: Comply with requirements of ASTM C 94, and as herein specified.

During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C 94 may be required.

PART 3 - EXECUTION

GENERAL:

Coordinate the installation of joint materials and vapor retarders with placement of forms and reinforcing steel.

FORMS:

Design, erect, support, brace, and maintain formwork to support vertical and lateral, static, and dynamic loads that might be applied until such loads can be supported by concrete structure. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation, and position. Maintain formwork construction tolerances complying with ACI 347.

Design formwork to be readily removable without impact, shock, or damage to cast-in-place concrete surfaces and adjacent materials.

Construct forms to sizes, shapes, lines, and dimensions shown, and to obtain accurate alignment, location, grades, level and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required to work. Use selected materials to obtain required finishes. Solidly butt joints and provide back-up at joints to prevent leakage of cement paste.

Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, reglets, recesses, and the like, to prevent swelling and for easy removal.

Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement, and for placement of concrete. Securely brace temporary openings and set tightly to forms to prevent loss of concrete mortar. Locate temporary openings on forms at inconspicuous locations.

Chamfer exposed corners and edges as indicated, using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.

Provisions for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses, and chases from trades providing such items. Accurately place and securely support items built into forms. Other trades shall provide location and size of openings. The forms for such openings shall be constructed and set in place under this section.

Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before concrete is placed. Retightening

forms and bracing after concrete placement is required to eliminate mortar leaks and maintain proper alignment.

VAPOR RETARDER INSTALLATION:

Following leveling and tamping of granular base for slabs on grade, place vapor retarder sheeting with longest dimension parallel with direction of pour.

Lap joints 6" and seal with appropriate tape.

PLACING REINFORCEMENT:

Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.

Avoid cutting or puncturing vapor retarder during reinforcement placement and concreting operations.

Clean reinforcement of loose rust and mill scale, earth, ice, and other materials which reduce or destroy bond with concrete.

Accurately position, support, and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as required.

Place reinforcement to obtain at least minimum coverages for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

Install welded wire fabric in as long lengths as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset end laps in adjacent widths to prevent continuous laps in either direction.

JOINTS:

Construction Joints: Locate and install construction joints as indicated or, if not indicated, locate so as not to impair strength and appearance of the structure, as acceptable to Engineer.

Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints, except as otherwise indicated.

Waterstops: Provide waterstops in construction joints as indicated. Install waterstops to form continuous diaphragm in each joint. Make provisions to support and protect exposed waterstops during progress of work. Fabricate field joints in waterstops in accordance with manufacturer's printed instructions.

Isolation Joints in Slabs-on-Ground: Construct isolation joints in slabs-on-ground at points of contact between slabs-on-ground and vertical surfaces, such as column pedestals, foundation walls, grade beams, and elsewhere as indicated.

INSTALLATION OF EMBEDDED ITEMS:

General: Set and build into work anchorage devices and other embedded items required for other work that is attached to, or supported by, cast-in-place concrete. Use setting drawings, diagrams, instructions, and directions provided by suppliers of items to be attached thereto.

PREPARATION OF FORM SURFACES:

Clean re-used forms of concrete matrix residue, repair and patch as required to return forms to acceptable surface condition.

Coat contact surfaces of forms with a form-coating compound before reinforcement is placed.

Thin form-coating compounds only with thinning agent of type, amount, and under conditions of form-coating compound manufacturer's directions. Do not allow excess form-coating material to accumulate in forms or to come into contact with in-place concrete surfaces against which fresh concrete will be placed. Apply in compliance with manufacturer's instructions.

CONCRETE PLACEMENT:

Preplacement Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast-in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work. Moisten wood forms immediately before placing concrete where form coatings are not used.

Apply temporary protective covering to lower 2' of finished walls adjacent to poured floor slabs and similar conditions, and guard against spattering during placement.

General: Comply with ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete", and as herein specified.

Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation.

Placing Concrete in Forms: Deposit concrete in forms in horizontal layers not deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.

Consolidate placed concrete by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI 309.

Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion limit duration of vibration to

time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.

Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.

Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.

Bring slab surfaces to correct level with straightedge and strikeoff. Use bull floats or darbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.

Maintain reinforcing in proper position during concrete placement operations.

Cold Weather Placing: Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with ACI 306 and as herein specified.

When air temperature has fallen to or is expected to fall below 40 degrees F (4 degrees C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees F (10 degrees C), and not more than 80 Degrees F (27 degrees C) at point of placement.

Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

Do not use calcium chloride, salt, and other materials containing antifreeze agents or chemical accelerators, unless otherwise accepted in mix designs.

Hot Weather Placing: When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.

Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 degrees F (32 degrees C). Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing water. Use of liquid nitrogen to cool concrete is Contractor's option.

Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.

Fog spray forms, reinforcing steel, and subgrade just before concrete is placed.

Use water-reducing retarding admixture (Type D) when required by high temperatures, low humidity, or other adverse placing conditions.

FINISH OF FORMED SURFACES:

Rough Form Finish: For formed concrete surfaces not exposed-to-view in the finish work or by other construction, unless otherwise indicated. This is the concrete surface having texture imparted by form facing material used, with tie holes and defective areas repaired and patched and fins and other projections exceeding 1/4 inch in height rubbed down or chipped off.

Smooth Form Finish: For formed concrete surfaces exposed-to-view, or that are to be covered with a coating material applied directly to concrete, or a covering material applied directly to concrete, such as waterproofing, dampproofing, veneer plaster, painting, or other similar system. This is as-cast concrete surface obtained with selected form facing material, arranged orderly and symmetrically with a minimum of seams. Repair and patch defective areas with fins or other projections completely removed and smoothed.

Grout Cleaned Finish: Provide grout cleaned finish to scheduled concrete surfaces which have received smooth form finish treatment.

Combine one part portland cement to 1-1/2 parts fine sand by volume, and mix with water to consistency of thick paint. Proprietary additives may be used at Contractor's option. Blend standard portland cement and white portland cement, amounts determined by trial patches, so that final color of dry grout will match adjacent surfaces.

Thoroughly wet concrete surfaces and apply grout to coat surfaces and fill small holes. Remove excess grout by scraping and rubbing with clean burlap. Keep damp by fog spray for at least 36 hours after rubbing.

Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces occurring adjacent to formed surfaces, strike-off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

MONOLITHIC SLAB FINISHES:

ASTM E 1155, "Standard Test Method for Determining Floor Flatness and Levelness Using the "F Number System (inch-pound-units)", shall be used for these finishes as follows:

Scratch Finish: Apply scratch finish to monolithic slab surfaces that are to receive concrete floor topping or mortar setting beds for tile, portland cement terrazzo, and other bonded applied cementitious finish flooring material, and as otherwise indicated.

After placing slabs, plane surface to tolerances for floor flatness (FF) of 15 and floor levelness (FL) of 13. Slope surfaces uniformly to drains where required. After leveling, roughen surface before final set, with stiff brushes, brooms, or rakes.

Float Finish: Apply float finish to monolithic slab surface to receive trowel finish and other finishes as hereinafter specified, and slab surfaces which are to be covered with membrane or elastic waterproofing membrane or elastic roofing, or sand-bed terrazzo, and as otherwise indicated.

After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats, or by hand-floating if area is small or inaccessible to power units. Check and level surface plane to tolerances of FF 18 - FL 15. Cut down high spots and dill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.

Trowel Finish: Apply trowel finish to monolithic slab surfaces to be exposed-to-view, and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint, or other thin film finish coating system.

After floating, begin first trowel finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and with surface leveled to tolerances of FF 20 - FL 17. Grind smooth surface defects which would telegraph through applied floor covering system.

Trowel and Fine Broom Finish: Where ceramic or quarry tile is to be installed with thin-set mortar, apply trowel finish as specified, then immediately follow with slightly scarifying surface by fine brooming.

Non-Slip Broom Finish: Apply non-slip broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

Immediately after float finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with Engineer before application.

CONCRETE CURING AND PROTECTION:

General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.

Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least 7 days in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period.

Curing Methods: Perform curing of concrete by curing and sealing compound, by moist curing, by moisture-retaining cover curing, and by combinations thereof, as herein specified.

Provide moisture curing by the following methods:

Keep concrete surface continuously wet by covering with water.

Continuous water-fog spray.

Covering concrete surface with specified absorptive cover, thoroughly saturating cover with water and keeping continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4 inch lap over adjacent absorptive covers.

Provide moisture-cover curing as follows:

Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3 inches and sealed by waterproof tape of adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

Provide curing slabs and sealing compounds to exposed interior slabs and to exterior slabs, walks, and curbs, as follows:

Apply specified curing and sealing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours). Apply uniformly in continuous operation by power-spray or roller in accordance with manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.

Do not use membrane curing compounds on surfaces which are to be covered with coating material applied directly to concrete, liquid floor hardener, waterproofing, dampproofing, membrane roofing, flooring (such as ceramic or quarry tile, glue-down carpet), painting, and other coatings and finish materials, unless otherwise acceptable to Engineer.

Curing Formed Surfaces: Cure formed concrete surfaces, including undersides of beams, supported slabs, and other similar surfaces by moist curing with forms in place for full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.

Curing Unformed Surfaces: Cure unformed surfaces, such as slabs, floor topping, and other flat surfaces by application of appropriate curing method.

Final cure concrete surfaces to receive liquid floor hardener or finish flooring by use of moisture-retaining cover, unless otherwise directed.

Sealer and Dustproofer: Apply a second coat of specified curing and sealing compound only to surfaces given a first coat.

SHORES AND SUPPORTS:

Remove shoring from ground to roof for structures 4 stories or less, unless otherwise permitted.

Remove shores and reshore in a planned sequence to avoid damage to partially cured concrete. Locate and provide adequate reshoring to safely support work without excessive stress or deflection.

Keep shores in place a minimum of 15 days after placing upper tier, and longer if required, until concrete has attained its required 28-day strength and heavy loads due to construction operations have been removed.

REMOVAL OF FORMS:

Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 degrees F (10 degrees C) for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided curing and protection operations are maintained.

Form facing material may be removed 4 days after placement, only if shores and other vertical supports have been arranged to permit removal of form facing material without loosening or disturbing shores and supports.

RE-USE OF FORMS:

Clean and repair surfaces of forms to be re-used in work. Split, frayed, delaminated, or otherwise damaged from facing material will not be acceptable for exposed surfaces. Apply new form coating compound as specified for new formwork.

When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joint to avoid offsets. Do not use "patched" forms for exposed concrete surfaces, except as acceptable to Engineer.

MISCELLANEOUS CONCRETE ITEMS:

Filling-In: Fill-in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place, and cure concrete as herein specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.

Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and steel troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

Equipment Bases and Foundations: Provide machine and equipment bases and foundations, as shown on drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with certified diagrams or templates of manufacturer furnishing machines and equipment.

Grout base plates and foundations as indicated, using specified non-shrink grout. Use non-metallic grout for exposed conditions, unless otherwise indicated.

Reinforced Masonry: Provide concrete grout for reinforced masonry lintels and bond beams where indicated on drawings and as scheduled including filling of concrete modular unit cavities where called for on plans. Maintain accurate location of reinforcing steel during concrete placement.

CONCRETE SURFACE REPAIRS:

Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to Engineer.

Cut out honeycomb, rock pockets, voids over 1/4 inch in any dimension, and holes left by tie rods and bolts, down to solid concrete but, in no case to a depth of less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush-coat the area to be patched with specified bonding agent. Place patching mortar after bonding compound has dried.

Repair of Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Engineer. Surface defects, as such, include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets; fins and other projections on surface; and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes, fill with dry pack mortar, or precast cement cone plugs secured in place with bonding agent.

Repair concealed formed surfaces, where possible, that contain defects that affect the durability of concrete. If defects cannot be repaired, remove and replace concrete.

Repair of Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface plane to tolerances specified for each surface and finish. Correct low and high areas as herein specified. Test unformed surfaces slopped to drain for trueness of slope, in addition to smoothness using a template having required slope.

Repair finished unformed surfaces that contain defects which affect durability of concrete. Surface defects, as such, include crazing cracks in excess of 0.01 inch wide or which penetrate to reinforcement or completely through non-reinforced sections regardless of width, spalling, pop-outs, honeycomb, rock pockets, and other objectionable conditions.

Correct high areas in unformed surfaces by grinding, after concrete has cured at least 14 days.

Correct low areas in unformed surfaces during or immediately after completion of surface finishing operations by cutting out low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete. Proprietary patching compounds may be used when acceptable to Engineer.

Repair defective areas, except random cracks and single holes not exceeding 1 inch diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least 3/4 inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding compound. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

Perform structural repairs with prior approval of Structural Engineer for method and procedure, using specified epoxy adhesive and mortar.

Repair methods not specified above may be used, subject to acceptance of Engineer.

QUALITY CONTROL TESTING DURING CONSTRUCTION:

Sampling and testing for quality control during placement of concrete may include the following, as directed by Engineer.

Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM C 94.

Slump: ASTM C 143, each type of concrete, and additional tests when concrete consistency seems to have changed.

Concrete Temperature: Test hourly when air temperature is 40 degrees F (4 degrees C) and below, and when 80 degrees F (27 degrees C) and above, and each time a set of compression test specimens are made.

Compression Test Specimen: ASTM C 31, one set of 3 standard cylinders for each compressive strength test, unless otherwise directed. Mold and store cylinders for laboratory cured test specimens except when field-cure test specimens are required.

Compressive Strength Tests: ASTM C 39, one set for each day's pour plus additional sets for each 50 cubic yards over and above the first 25 cubic yards of each concrete class placed in any one day; one specimen tested at 7 days, two specimens tested at 28 days.

When frequency of testing will provide less than 5 strength tests for a given class of concrete, conduct testing from at least 5 randomly selected batches or form each batch if fewer than 5 are used.

Test results will be reported in writing to Structural Engineer and Contractor within 24 hours after tests. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials; compressive breaking strength and type of break for both 7-day tests and 28-day tests.

Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.

Additional Tests: The testing service will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by Engineer. Testing service may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed. Contractor shall pay for such tests when unacceptable concrete is verified.

END OF SECTION 03310

SECTION 15010

BASIC MECHANICAL REQUIREMENTS

RELATED DOCUMENTS:

Drawings and general provisions of Contract apply to work of this section.

SUMMARY:

This section specifies the basic requirements for mechanical installations. It expands and supplements the requirements specified in sections under "General Requirements".

ACCESSIBILITY:

Install equipment and materials to provide required access for servicing and maintenance. Coordinate the final location of concealed equipment and devices requiring access with final location of required access panels and doors. Allow ample space for removal of all parts that require replacement or servicing.

Extend all grease fittings to an accessible location.

MECHANICAL INSTALLATIONS:

Coordinate mechanical equipment and materials installation with other building components.

Verify all dimensions by field measurements.

Coordinate the installation of required supporting devices and sleeves to be set in poured in place concrete and other structural components, as they are constructed.

Sequence, coordinate, and integrate installations of mechanical materials and equipment for efficient flow of the Work.

Install mechanical equipment to facilitate maintenance and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.

Coordinate connection of mechanical systems with exterior underground and overhead utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies. Provide required connection for each service.

MECHANICAL SUBMITTALS:

Submittal of shop drawings, product data, and samples will be accepted only when submitted by the Contractor. Data submitted from subcontractors and material suppliers directly to the Engineer will not be processed. Submit five (5) complete sets of all shop drawings and product data.

NAMEPLATE DATA:

Provide permanent operational data nameplate on each item of power operated mechanical equipment, indicating manufacturer, product name, model number, serial number, capacity, operating and power characteristics labels of tested compliances, and similar essential data. Locate nameplates in an accessible location.

PART 2 - PRODUCTS

DELIVERY, STORAGE, AND HANDLING:

Deliver products to project properly identified with names, model numbers, types, grades, compliance labels, and similar information needed for distinct identifications; adequately packaged and protected to prevent damage during shipment, storage, and handling.

Store equipment and materials at the site, unless off-site storage is authorized in writing. Protect stored equipment and materials from damage.

PART 3 - EXECUTION

RECORD DOCUMENTS:

Refer to the Section 01705 - "Project Closeout" for requirements. The following paragraphs supplement the requirements in sections under "General Requirements".

Mark drawings to indicate revisions to piping, size and location both exterior and interior; actual equipment locations, dimensioned for column lines; actual inverts and locations of underground piping; concealed equipment, dimensioned to column lines; mains and branches of piping systems, with valves and control devices located and numbered, concealed unions located, and with items requiring maintenance located (i.e., traps, strainers, expansion compensators, tanks, etc.); Change Orders; concealed control system devices.
Mark Specifications to indicate approved substitutions, Change Orders, actual equipment and materials used.

OPERATION AND MAINTENANCE DATA:

Refer to Section 01705 - "Project Closeout" for procedures and requirements for preparation and submittal of maintenance manuals.

Include the following information:

Description of function, normal operating characteristics and limitations, performance curves, engineering data and tests, and complete nomenclature and commercial numbers of all replaceable parts.

Manufacturer's printed operating procedures to include start-up, break-in, routine and normal operating instructions; regulation, control, stopping, shut-down, and emergency instructions; and summer and winter operating instructions.

Maintenance procedures for routine preventative maintenance and troubleshooting; disassembly, repair, and reassembly; aligning and adjusting instructions.

Servicing instructions and lubrication charts and schedules.

WARRANTIES:

Compile and assemble the warranties into a separated set of vinyl covered, three ring binders, tabulated and indexed for easy reference.

Provide complete warranty information for each item to include product or equipment to include date of beginning of warranty or bond; duration of warranty or bond; and names, addresses, and telephone numbers and procedures for filing a claim and obtaining warranty services.

CLEANING:

Refer to the Section 01705 - "Project Closeout" for general requirements for final cleaning.

SECTION 15051
MECHANICAL RELATED WORK

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract apply to work of this Section.

DESCRIPTION OF WORK:

Extent of mechanical related work and work required by this section is indicated on drawings and/or specified in other sections.

Contractor shall furnish all labor, material and equipment, and shall perform all operations required to satisfactorily and properly install, adjust, test and place into operation all equipment and system shown on the construction drawings. Submittal data and as-built drawings shall also be required for each piece of equipment or installation.

EQUIPMENT INSTALLATION:

All equipment and systems shown on the drawings and/or specified herein shall be installed in a workmanlike manner and in strict accordance with the manufacturer's recommendations. All required piping, electrical connections and other necessary items shall be furnished and connected in order to provide a complete operating facility.

EQUIPMENT TESTING AND ADJUSTING:

After installation, the Contractor shall demonstrate that all equipment is operating in a satisfactory manner. All equipment shall be lubricated according to recommendations of the vendors and all adjustments shall be made to suit anticipated operating conditions. Each piece of equipment shall be tested to show that it operated quietly, without vibration, overheating, or signs of distress, at full specified capacity. Adjustments shall be made as necessary. All defective parts of machinery, equipment or materials, shall be replaced. Vendor's certificates that the installation of equipment is in accordance with the manufacturer's recommendations shall be secured by the Contractor and submitted to the Engineer.

The Contractor shall furnish to the Engineer five copies of all necessary manuals and instructions describing the proper operation and maintenance of each type of equipment furnished.

INSTALLATION SUPERVISION:

Installation and initial start-up and operation of all equipment shall be performed under the supervision of a factory-trained technical representative of the manufacturer. The services of the manufacturer's representative shall include instruction of the Owner's operator in the operation, maintenance and adjustment of the equipment. The Contractor shall give the Engineer and Owner's operator 48 hours notice before start-up. Start-up shall not proceed without the presence of the Engineer.

EQUIPMENT REQUIREMENTS:

The following requirements shall apply to equipment furnished in the Contracts:

Each piece of mechanical equipment and motors shall be provided with a substantial nameplate of non-corrodible metal, securely fastened in place, clearly and permanently inscribed with the manufacturer's name, model or type designation, serial number, rated capacity, electrical or other power characteristics, and other appropriate nameplate data.

All equipment shall be delivered fully lubricated with oil and/or grease insofar as possible. If any point cannot be so serviced, it shall be clearly marked to the effect that it is not lubricated and requires servicing prior to operation. An adequate supply of the proper lubricant, with instructions for its application, shall be supplied with the equipment for each point not lubricated prior to shipment.

The Contractor shall also provide the Owner with a sufficient amount of proper lubricants for one complete change of lubricant for all equipment furnished.

All factory painted equipment shall be provided with two (2) pints of touch up paint to match original finish along with instructions for application.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

SECTION 15060
PIPE AND PIPE FITTINGS

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract apply to work of this section.

DESCRIPTION OF WORK:

Extent of pipes and pipe fittings required by this section is indicated on drawings and/or specified in other sections. This specification is intended for use in all pressure piping applications (i.e. pressurized water lines or force mains).

Types of pipes and pipe fittings specified in this section include the following:
- Ductile - Iron Pressure Pipes (Pressure Pipe)
- Plastic Pipes (Pressure Pipes)
- Miscellaneous Piping Materials/Products

Pipes and pipe fittings furnished as part of factory-fabricated equipment, are specified as part of equipment assembly in other sections.

QUALITY ASSURANCE:

Manufacturer's Qualifications: Firms regularly engaged in manufacture of pipes and pipe fittings of types and sizes required, whose products have been in satisfactory use in similar service for not less than 5 years.

Codes and Standards:

Welding: Qualify welding procedures, welders and operators in accordance with ASME B31.1, or ASME B31.9, as applicable, for shop and project site welding of piping work.

Brazing: Certify brazing procedures, brazers, and operators in accordance with ASME Boiler and Pressure Vessel Code, Section IX, for shop and job-site brazing of piping work.

NSF Labels: Where plastic piping is indicated to transport potable water, provide pipes and pipe fittings bearing approval label by National Sanitation Foundation (NSF).

PART 2 - PRODUCTS

GENERAL:

Piping Materials: Provide pipe and tube of type, joint type, grade, size and weight (wall thickness or class) indicated for each service. Where type, grade or class is not indicated, provide proper selection as determined by Installer for installation requirements, and comply with governing regulations and industry standards.

Pipe/Tube Fittings: Provide factory-fabricated fittings of type, materials, grade, class and pressure rating indicated for each service and pipe size. Provide sizes and types matching pipe, tube, valve or equipment, connection in each case. Where not otherwise indicated, comply with governing regulations and industry standards for selections, and with pipe manufacturer's recommendations where applicable.

DUCTILE-IRON PRESSURE PIPES AND PIPE FITTINGS:

Ductile-Iron Pipe: ANSI A21.51; AWWA C151.

Ductile-Iron Fittings: AWWA C110.

Rubber-Gasket Joints: AWWA C111.

Where ductile iron pipe and fittings are to be below ground or installed in a casing pipe, the coating shall be a minimum 1.0 mil thick in accordance with ANSI/AWWA A21.51. Where ductile iron pipe and fittings are to be installed above ground, pipe, fittings and valves shall be thoroughly cleaned and given one field coat (minimum 1.5 mils dry thickness) of rust inhibitor primer. The intermediate and field coats of Alkyd shall also be applied by the Contractor (minimum 1.5 mil dry thickness each coat). Primer and field coats shall be compatible and shall be applied in accordance with the manufacturer's recommendations.

All ductile iron pipe and fittings shall have an interior protective lining of cement-mortar with a seal coat of asphaltic material in accordance with ANSI/AWWA A21.4/C104. Ductile iron pipe shall be by American Pipe Company, or approved equal.

PLASTIC PIPES AND PIPE FITTINGS:

Use Polyethylene Pipe (PE) ASTM D 1248, D 3350, Type III, Grade P 34 for water services.

Use Polyvinyl Chloride Pipe (PVC) AWWA C 900 (latest revision) for below-ground pressure pipe. Use SDR 18. Use ductile iron for above-ground pressure pipe with flange joint fittings.

Underground Pressure Pipe Fitting 4" and Larger: Use mechanical joint, ductile iron Class 350, compact fittings manufactured in accordance with ANSI/AWWA C153/A21.53-84, as manufactured by American Pipe Company, Union Foundary, or equal.

PE Fittings:
Butt Heat Fusion: ASTM D 3261.
Insert Fusion: ASTM D 3197.
Socket Type: ASTM D 2683.
Insert: ASTM D 2609.

MISCELLANEOUS PIPING MATERIALS/PRODUCTS:

Welding Materials: Except as otherwise indicated, provide welding materials as determined by Installer to comply with installation requirements.

Comply with Section II, Part C, ASME Boiler and Pressure Vessel Code for welding materials.

Soldering Materials: Except as otherwise indicated, provide soldering materials as determined by Installer to comply with Installation requirements.

Gaskets for Flanged Joints: ANSI B16-21, full-faced for cast-iron flanges, raised-face for steel flanges, unless otherwise indicated.

Expansion Joints: Single-arch expansion joints shall be installed as shown on the drawings. The expansion joints shall have a buna - N body with Neoprene cover and hypalon paint coating. Galvanized retainer rings shall be provided and, where anchoring is insufficient, control rods shall be installed. Expansion joints shall be Redflex Model J-1, Metraflex, or approved equal.

PART 3 - EXECUTION

INSTALLATION:

General Instructions:

All excavation and backfilling for underground piping shall be done in accordance with the applicable sections of these specifications. All pipe, fittings, and valves shall be carefully handled at all times to prevent damage to the pipe or other installations on the job site. Install ductile-iron water mains and appurtenances in accordance with AWWA C 600. Install PVC pressure sewer pipe in accordance with ASTM D 2774.

All joints shall be wiped free of all dirt, sand and foreign material and the pipe shall be carefully examined for defects before installation.
At times when pipe installation is not in progress, the open ends of the pipe shall be closed by approved means and shall remain closed until construction on that particular section is resumed, eliminating the possibility of any flow obstructions getting into the pipe.

Install pipes and pipe fittings in accordance with recognized industry practices which will achieve permanently leakproof piping systems, capable of performing each indicated service without piping failure. Install each run with minimum joints and couplings, but with adequate and accessible unions for disassembly and maintenance/replacement of valves and equipment. Reduce sizes (where indicated) by use of reducing fittings. Align piping accurately at connections, within 1/16" misalignment tolerance.

SPECIFIC INSTRUCTIONS:

All non-metallic water lines (except service lines) shall be installed with underground locator marking tape. Locator tape shall be installed 4 to 8 inches below the ground surface or pavement directly over the pipeline. Locator tape shall be of an inert polyethylene material having a minimum thickness of 0.1 mm and should be color-coded "Safety Green" as adopted by the American Public Works Association and the Florida Utilities Coordination Committee. The tape shall bear printed identification describing the type of pipeline buried below and shall contain a 0.025 mm thick metallic foil core. The imprint shall repeat itself for the entire length of the tape.

PVC FITTINGS:

PVC fittings will not be used on pressure pipe larger than 3" in diameter.

PIPING SYSTEM JOINTS:

General: Provide joints of type indicated in each piping system.

Weld pipe joints of steel water pipe in accordance with AWWA C 206.

Flanged Joints: Match flanges within piping system, and at connections with valves and equipment. Clean flange faces and install gaskets. Tighten bolts to provide uniform compression of gaskets.

Plastic Pipe/Tube Joints: Comply with manufacturer's instructions and recommendations, and with applicable industry standards.

Heat Joining of Thermoplastic Pipe: ASTM D 2657.

ANCHORAGE OF BENDS, TEES, AND PLUGS:

Limiting Pipe Diameter and Degree of Bend: Reaction thrust backing shall be applied on all pipe lines at all tees, plugs, caps and at bends deflecting 22-1/2 degrees or more, or movement shall be prevented by attaching suitable metal rods or straps as directed.

Materials for Reaction Backing: Reaction or thrust backing shall be of concrete that conforms with sections of these specifications, but may have a 28 day compressive strength of not less than 2000 psi. Reaction backing will be placed in accordance with the schedule on the construction plans.

Backing shall be placed between solid ground and the fitting to be anchored. The backing shall, unless otherwise directed, be so placed that the pipe and fitting joints will be accessible for repairs. No extra payment will be made for this material but shall be included in the unit price bid.

In some cases, the Engineer may direct the Contractor to provide backing using cable and "deadman" anchors where the soil conditions will not support the normal concrete type as described above.

CLEANING, FLUSHING, INSPECTING:

General: Clean exterior surfaces of installed piping systems of superfluous materials, and prepare for application of specified coatings (if any). Flush out piping systems with clean water before

proceeding with required tests. Inspect each run of each system for completion of joints, supports and accessory items.

Inspect pressure piping in accordance with procedures of ASME B 31.

Disinfect water mains and water service piping in accordance with AWWA C 601.

PRESSURE MAIN PIPING TEST:

General: Provide temporary equipment for testing, including pump and gauges. Test piping system before insulation is installed wherever feasible, and remove control devices before testing. Test each natural section of each piping system independently but do not use piping system valves to isolate sections where test pressure exceeds valve pressure rating. Fill each section with water and pressurize for indicated pressure and time.

Required test period is 2 hours.

Test pipe at 150 psi, except where fittings are lower Class or pressure rating.
Permissible leakage:

Pipe Size	gal's/1000'/24 hrs	gal's/1000'/1 hr
1-1/4"	2.4 gal.	0.10 gal.
1-1/2"	2.9 gal.	0.12 gal.
2"	4.1 gal.	0.17 gal.
2-1/2"	5.0 gal	0.21 gal.
3"	6.0 gal.	0.25 gal.
4"	7.9 gal.	0.33 gal.
6"	12.0 gal.	0.50 gal.
8"	15.8 gal.	0.66 gal.
10"	19.9 gal.	0.83 gal.
12"	23.8 gal.	0.99 gal.
14"	27.8 gal.	1.16 gal.
16"	31.7 gal.	1.32 gal.
18"	35.8 gal.	1.49 gal.

Should any test of combined sections of pipe disclose leakage greater than the specified limit, the Contractor shall, at his own expense, locate and repair the defective joints until the leakage is within the specified allowance.

Water for testing shall be provided by the Contractor.

Pipe may be subjected to hydrostatic pressure, inspected and tested for leakage at any convenient time after partial completion of backfill. The Contractor may test the system with joints exposed or backfilling complete at his option. The Engineer shall be notified at least 48 hours before beginning testing.

Drain test water from piping systems after testing and repair work has been completed.

END OF SECTION

SECTION 15075

SANITARY PIPING – GENERAL

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. The work covered by this section and the related sections following consists of providing all labor, equipment, material and supplies and performing all operations required to install the various piping systems for gravity sewers, force mains, and directional borings in the locations shown on the drawings.

1.2 SUBMITTALS

A. Submittals for the various types of pipe and fittings will be specified in the individual sections.

B. Shop drawings shall be submitted for all valves, boxes, harnessing, manholes, frames and covers.

C. Record drawings shall be submitted. The type of pipe used shall be noted on the drawings.

D. Two copies of cut sheets shall be submitted as specified under "Installation" in this Section. One copy to be returned to the Contractor.

E. Pipe elevations shall be submitted as specified under "Installation", in this Section.

F. The manufacturer shall furnish a sworn affidavit that the pipe, fittings and lining furnished under the Contract or Agreement comply with all applicable provisions of the ANSI and/or ASTM Standards.

G. Foundry reports shall be submitted by the Contractor.

PART 2 - PRODUCTS

A. The CONTRACTOR shall use the pipe specified in the previous sections of these specifications.

PART 3 - EXECUTION

3.1 INSPECTION

A. All pipe shall be subject to inspection by the Engineer or Owner.

B. Special markings shall be plainly marked on the applicable pipe indicating the weight, proper location of the pipe or fitting in the line by reference to layout drawings and schedules, class of pipe, casting period, manufacturer's mark and

year pipe was produced.

3.2 TESTS

A. All tests shall be made in the presence of the Owner or Engineer unless waived in writing. The Contractor shall notify the Engineer a minimum of 24 hours prior to time when tests are to be conducted.

3.3 INSTALLATION OF UNDERGROUND PIPING

A. Excavation, trenching, and backfill for the installation of underground piping systems shall be as specified in Section 02222. Laying of the pipe shall be commenced immediately after the excavation is started, and every means must be used to keep pipe laying closely behind the trenching. The Engineer may stop the trenching when, in his opinion, the trench is open too far in advance of the pipe laying operation. Open trench shall not exceed 40 feet. The bottom of the sewer trench shall be shaped to give substantially uniform circumferential support to the lower one-third of each pipe. Where bell and spigot type pipe is used, holes shall be scooped out where the bells occur leaving the entire barrel of the pipe bearing on the pipe bed. Each pipe shall be inspected for defects prior to being lowered into the trench and swabbed or brushed out to insure that no dirt or foreign material gets into the finished line. Waters shall be kept out of the pipe and the pipe kept closed by means of a test plug whenever work is not in progress. Pipe shall be handled carefully to avoid breakage. Pipe may be laid in the best manner adapted to securing speed and good results. However, it shall be laid in accord with the manufacturer's instructions and recommendations. Pipe shall be laid with spigot ends pointing in the direction of flow.

1. If the maximum trench width specified is exceeded for any reason other than by order of the Engineer, the Contractor shall install at his own expense, graded rock, pipe encasement or other bedding as may be required by the Engineer to support the load of the backfill. Backfill shall be tamped as specified.

B. Installation of pipe and fittings with factory-made joints shall be accomplished in strict accord with the pipe manufacturer's recommendations and approval of the Engineer. Pipe alignment shall conform to the requirements stated in the paragraph on "Inspection and Tests" in this sections.

C. Pipe Bedding:

1. Where there is no adequate natural foundation upon which to construct a pipe bed, the pipe shall be installed on a prepared stabilized subgrade or rock bedding. Unsuitable subgrade materials shall be replaced or stabilized as described in Section 02200. Gravel or graded limerock may be used for pipe bedding where suitable material is not available at the site and in accordance with the subparagraphs under Section 02200.

D. Gravity Sewers:
1. Cut sheets shall be submitted to the Engineer for checking and approval at least 24-hours in advance of trenching. The cut sheets shall indicate the lines and grades that have been set. No excavation shall commence until the cut sheets have been approved.
2. In construction of gravity line pipe installations, a laser instrument shall be used for establishing lines and grades of pipe.
   a. The Contractor shall check the instrument setting for each 100-foot of pipe laid to verify that the grade agrees with the design grade.
   b. The Contractor shall provide adequate forced air ventilation through the pipe being installed to minimize refraction
3. All installed sewers shall be dewatered and cleaned prior to inspection.

E. Water and Sewer Main Crossing:
1. The clearances between water and sewer mains shall be in accordance with FAC Rule 62-555.314. Where water and sewer mains cross with less than 12 inches vertical clearance or 6 inches for gravity, the sewer shall be 20-feet concreted encased, centered on the point of crossing. When a water main parallels a sewer main, a separation of at least 6 feet should be maintained where practical.

F. Miscellaneous Concrete in Sewer Trench:
1. Where required to install sewer pipe with less than 3-feet of cover, concrete encasement shall be used and placed according to the sectional dimensions shown on the drawings and to the length as shown or as directed by the Engineer. Concrete encasement shall be placed at such other locations as the Engineer may approve in writing. Concrete shall be 3,000 psi, and shall conform to the requirements as specified in Section 03310 - Concrete. Locations and length of encasements shall be recorded and no separate payment shall be made.

G. Service Laterals:
1. Service lines shall be connected to the sewer lines by means of a wye fitting with a branch as approved by the Engineer. The branch of the wye fitting will be elevated as directed depending on the depth of the sewer and the elevation of the property to be served. Eighth bends shall be used to connect the service line at the wye branch.
2. Service lines shall extend from the sewer main and connect to the existing service line or grinder pump station, unless otherwise shown. Where no existing service lateral exists, the service line shall extend to the property line and be plugged unless otherwise shown. Service lines shall be installed at such grades as will adequately serve the properties.
   a. Service lines shall be 6-inches for commercial, and 4-inches for single family residential, unless otherwise shown in the drawings.
3. The location of plugged wyes shall be made as directed by the Engineer. Plugs shall be of the type and size required to match the pipe and shall be watertight and removable without breaking the pipe.
4. It is the Contractor's responsibility to insure that every service shall be deep enough to serve the property intended. The Engineer shall be notified if this is not possible.

3.5 INSPECTION AND TESTS:

A. Watertight Construction:

1. It is imperative that all sewers, manholes and service connections be built practically watertight and that the Contractor adhere rigidly to the specifications for material and workmanship. Special care and attention must be given to securing watertight construction. After completion, the sewers or sections thereof will be tested and gaged and if leakage is above the limits specified, the sewer will be rejected.

B. Inspection:

1. On completion of each block or section of sewer or such other time as the Engineer may direct, the block or section of sewer shall be cleaned, tested and inspected. Regardless of test results, all observable leaks shall be corrected in a manner acceptable to the Owner and cracked pipe removed and replaced. All repairs shown necessary by the test are to be made, all deposits removed and the sewers left true to line and grade, clean and ready for use. Upon examination from either end, each section of sewer between manholes is to show essentially a circle of light. Tests shall be made by the Contractor in the presence of the Engineer.

C. Infiltration into Gravity Sewers:

1. For acceptance, the allowable limit of ground water infiltration applicable to the entire system of new sewers or to any one portion of the sewers, or trunk, interceptor or outfall sewer including connection laterals shall not exceed the following rate:

   a. Not more than 200 gallons per 24 hours per mile of sewer per inch diameter of the sewer, for all ground conditions.

2. Measurement of the infiltration shall be made before sewage flows are allowed in the sewer, and shall be made by means of a V-notch weir, by measuring the volume direct.

SECTION 15080

POLYVINYL CHLORIDE (PVC) GRAVITY SEWER PIPE

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. The CONTRACTOR shall furnish all labor, materials, equipment and incidentals required, and install polyvinyl chloride ASTM D3034 (PVC) gravity sewer pipe and appurtenances as shown on the Drawings and as specified herein.

1.3 SUBMITTALS

A. Submittals during construction shall be made in accordance with Section 01300.

B. The CONTRACTOR shall submit to the ENGINEER not less than twenty (20) calendar days after the date of the Notice to Proceed, a list of materials to be furnished, the names of suppliers and an expected schedule of delivery of materials to the site.

C. At least 3 days prior to beginning construction of any gravity sewer section or any portion of the system the CONTRACTOR must submit to the ENGINEER for review "cut-sheets" for that portion to be constructed. The type of the "cut sheets" required shall be presented to the CONTRACTOR by the ENGINEER at the preconstruction meeting. The CONTRACTOR shall supply all "cut sheets".

D. Furnish in duplicate to the ENGINEER, prior to each shipment of pipe, sworn certificates that all tests and inspections required by the Specifications under which the pipe is manufactured have been satisfied.

E. The pipe MANUFACTURER shall inspect all pipe joints for out-of-roundness and pipe ends for squareness. The MANUFACTURER shall furnish to the ENGINEER a notarized affidavit stating all pipe meets the requirements of ASTM, ASCE, ANSI, etc., these Specifications, and the joint design with respect to square ends and out-of-round joint surfaces.

1.4 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM)
1. ASTM D1784 - Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.
2. ASTM D2321 - Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe.
3. ASTM D3034 - Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
4. ASTM D3189 - Method for Rubber - Evaluation of Solution BR (Polybutadiene Rubber).
5. ASTM D3212 - Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.

6. ASTM F477 - Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
7. ASTM F679 - Specification for Poly (Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings.
8. ASTM F758 - Specification for Smooth-Wall Poly (Vinyl Chloride) (PVC) Plastic Underdrain Systems for Highway, Airport, and Similar Drainage.

B. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.5 QUALITY ASSURANCE

A. All PVC pipe shall be from a single MANUFACTURER. The supplier shall be responsible for the provisions of all test requirements specified in ASTM D3034. All tests, hydrostatic and material, if not performed by the MANUFACTURER as part of the MANUFACTURER standard quality control procedures, are to be performed by an independent laboratory at the expenses of the MANUFACTURER. In addition, all PVC pipe to be installed under this Contract may be inspected at the plant for compliance with these specifications by an independent testing laboratory provided by the OWNER. The CONTRACTOR shall require the MANUFACTURER's cooperation in these inspections. The cost of plant inspection of all pipe approved for this contract shall be borne by the OWNER.

B. Inspections of the pipe may also be made by the ENGINEER or other representatives of the OWNER after delivery. The pipe shall be subject to rejection at any time on account of failure to meet any of the Specification requirements, even though sample pipes may have been accepted as satisfactory at the place of manufacture. Pipe rejected after delivery shall be marked for identification and shall be removed from the job at once.

1.6 DELIVERY, STORAGE AND HANDLING

A. Care shall be taken in shipping, handling and laying to avoid damaging the pipe and fittings. Extra care will be necessary during cold weather construction. Any pipe damaged in shipment shall be replaced as directed by the ENGINEER.

B. Any pipe or fitting showing a crack or which has received a blow that may have caused an incipient fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work.

C. While stored, pipe shall be adequately supported from below at not more than 3-ft intervals to prevent deformation. Pipe shall not be stacked higher than 6-ft. Pipe and fittings shall be stored in a manner which will keep them at ambient outdoor temperatures and out of the sunlight (or delivered to the site so that no pipe is exposed to the sunlight for more than (60) days). Temporary shading as required to meet this requirement shall be provided. Simple covering of the pipe and fittings which allows temperature buildup when exposed to direct sunlight will not be permitted. Pipe shall be protected from sunlight or weather conditions in accordance with the MANUFACTURER's recommendations.

1.7 INSPECTION, TEST REPORTS, MARKINGS AND SUBMITTALS

A. All pipe and accessories to be installed under this Contract shall be inspected and tested at the place of manufacture by the MANUFACTURER as required by the Standard Specifications to which the material is manufactured.

B. Each length of pipe shall be subject to inspection and approval at the factory, point of delivery, and site of work. Sample of pipe to be tested shall be selected at random by the ENGINEER or the testing laboratory and shall be delivered by the CONTRACTOR to the testing laboratory approved by the ENGINEER.

C. When the specimens tested conform to applicable standards, all pipe represented by such specimens shall be considered acceptable based on the test parameters measured. Copies of test reports shall be submitted to the ENGINEER before the pipe is installed in the project. Acceptable pipe will be stamped with an appropriate monogram under the supervision of the testing laboratory.

D. In the event that any of the test specimens fail to meet the applicable standards, all pipe represented by such tests shall be subject to rejection. The CONTRACTOR may furnish two additional test specimens from the same shipment or delivery for each specimen that failed and the pipe will be considered acceptable if all of these additional specimens meet the requirements of the applicable standards.

E. Pipe that has been rejected by the ENGINEER shall be removed from the site of the work by the CONTRACTOR and replaced with pipe which meets these specifications.

F. Other testing requirements specific to the type of pipe are included under the appropriate paragraph in Part 2, below.

G. All 6-inch through 12-inch pipe and fittings shall be marked per Section No. 12 "Marking" of ASTM D3034. All 18-inch and 27-inch pipe and fittings shall be marked per Section 11 "Marking" of ASTM F679. For all pipe (6-inch through [12-inch), the MANUFACTURER's code including year, month, day, shift, plant and extruder of manufacture shall be clearly marked on each pipe section.

H. Prior to shipment of the pipe and fittings to the project site, the CONTRACTOR shall submit to the ENGINEER, test reports and certifications as described below duly certified by the MANUFACTURER's testing facility or an independent certified testing laboratory demonstrating full compliance with the applicable

ASTM specifications described above. Certification from the supplier is NOT acceptable.

An original plus two (2) copies of the following shall be submitted to the ENGINEER:

1. The name, address and phone number of the pipe and fittings MANUFACTURER and the location of the plant at which they will be manufactured.

2. Certification and Certified Test Reports that each LOT of pipe has been manufactured, sampled and tested per Section 8 "Test Methods" of ASTM D3034 for 6-inch through 15-inch diameter and Section 11 "Marking" of ASTM F679 for 18-inch through 27-inch diameter pipe. The OWNER shall be provided in writing with the means to cross reference the markings with the certification and test reports (i.e., date of manufacture, lot number and shift number, etc.). If this information is marked on the pipe in a code, the markings shall be decoded in writing. A letter of certification from the fittings MANUFACTURER shall be provided for fittings stating compliance with ASTM D3034 for 6-inch through 15-inch diameter and with ASTM F679 for 18-inch through 27-inch.

PART 2 - PRODUCTS

2.1 POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS

A. PVC gravity pipe and fittings 6-inches through 12-inches nominal diameter, shall be solid wall and shall be type PSM, PVC SDR 20 with full diameter dimensions and shall conform to ASTM D3034, for sizes 4-inch through 15-inch and shall conform to ASTM F679 for sizes 18-inch through 27-inch. Straight pipe shall be furnished in lengths of not more than 13-feet. Saddle wyes will not be allowed. All PVC shall have a cell classification of 12454 B or C.

B. For depths of cover through 18 feet, a minimum wall thickness of SDR-26 is required. For depths of cover greater than 18-feet, a minimum wall thickness of SDR-26 is required. Fittings shall be either integrally cast (factory molded) or factory solvent welded and a separate section from the mainline pipe. SDR 26 fittings shall be used with SDR 26 pipe and SDR 26 fittings shall be used with SDR 26 pipe. At any time in a manhole run the depth of cover exceeds 18-ft, SDR 26 shall be used.

C. The supplier shall be responsible for the performance of all inspection and testing requirements specified in ASTM D-3034, ASTM D-3212, D3189, F679 and F789, as applicable. Complete records of inspections, examinations and tests shall be kept and submitted to the ENGINEER. The ENGINEER reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure that materials and services conform to the prescribed requirements.

D. The pipe shall be joined with an integral bell and spigot push-on type gasketed joints. Each integral bell joint shall consist of a formed bell with an integral wall section of a solid cross-section elastomeric gasket securely locked in place to prevent displacement during assembly. Gaskets shall conform to ASTM F-477. Joints shall permit contraction, expansion and settlement, and yet maintain a watertight connection. Joints shall be tested in accordance with ASTM F477, D3139 or D3212.

E. PVC sewer fittings shall conform to the requirements of ASTM D-3034 specification. Fittings in sizes through 8-inches shall be molded in one piece with elastomeric joints and minimum socket depths as specified in Sections 6.2 and 7.3.2 of the ASTM D-3034 specification. Gaskets for elastomeric joints shall be

molded and shall conform to ASTM F-477 specification. Fittings 10-inches and larger shall be molded or fabricated from pipe meeting ASTM D-3034 with MANUFACTURER's standard pipe bells and gaskets.

F. All fittings and accessories shall be furnished by one pipe supplier and shall have bell and/or spigot configurations compatible with the pipe.

2.2 IDENTIFICATION

A. Each length of pipe and each fitting shall be marked with the name of the MANUFACTURER, size, and class. All gaskets shall be marked with the name of the MANUFACTURER, size, and proper insertion directions. A color sample of the PVC pipe and fittings shall be submitted to the ENGINEER for approval prior to fabrication of any pipe and accessories.

B. All below ground polyvinyl chloride pipe and fittings shall have an identification color code.
1. Gravity sewer pipe and service laterals - Green, similar to Kop Coat No. 0336.

C. All polyvinyl chloride pipe shall have identification marking tape similar to the color listed above.

PART 3 - EXECUTION

3.1 LAYING POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS

A. Polyvinyl Chloride (PVC) gravity sewer pipe shall be laid in accordance with the instructions of the MANUFACTURER and as specified herein. As soon as the excavation is completed to normal grade, as indicated on the Drawings, the CONTRACTOR shall immediately bed the pipe as specified in Section 02222 in the trench, to conform accurately to the line and grade indicated on the Drawings. Embedment of pipe shall conform to the details shown on the Drawings and ASTM D-2321, "Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe." Bell holes shall be excavated so that after installation only the pipe barrel shall bear upon the trench bottom. Proper selection and placement of bedding and backfill materials are necessary to minimize deflection of the pipe diameter. No blocking under the pipe will be permitted.

B. No single piece of pipe shall be laid unless it is generally straight. The centerline of the pipe shall not deviate from a straight line drawn between the centers of the openings at the ends of the pipe by more than 1/4-inch per foot of length. If a piece of pipe fails to meet this requirement check for straightness, it shall be rejected and removed from the site. Laying instructions of the MANUFACTURER shall be explicitly followed.

C. The CONTRACTOR shall use care in handling and installing pipe and fittings. Storage of pipe on the job site shall be done in accordance with the pipe MANUFACTURER's recommendation and with approval of the ENGINEER. Under no circumstances shall pipe or fittings be dropped either into the trench or

during unloading. The interior of the pipe shall be kept clean of oil, dirt and foreign matter, and the machined ends and couplings shall be wiped clean immediately prior to jointing.

D. The CONTRACTOR shall use a PVC pipe cutter where necessary to cut and machine all PVC pipe in the field. A "full insertion mark" shall be provided on each field cut pipe end. Field-cut pipe shall be beveled with a beveling tool made especially for plastic pipe. Bevels shall be in accordance with the MANUFACTURER's requirements.

E. Each length of pipe and each fitting shall be marked with the nominal size, the SDR designation, the name of the MANUFACTURER or his trademark, and the date of manufacture.

F. Rubber gaskets shall be marked with MANUFACTURERs identification sizes and proper insertion direction.

G. Pipe stubs for all future connections shall be not less than 26-ft. in length unless otherwise shown on the Drawings. Install watertight plugs where required.

H. The laying of the pipe in finished trenches shall begin at the lowest point, with the spigot ends pointing in the direction of flow. The interior of the pipe and the jointing seal shall be free from sand, dirt, and trash before installing in the line. Extreme care must be taken to keep the bells of the pipe free from dirt and rocks so joints may be properly assembled without overstressing the bells. The jointing of the pipe shall be done in strict accordance with the pipe MANUFACTURER's instructions and shall be done entirely in the trench. Tolerances are 1-inch on grade or 5 percent of the design slope, whichever is smaller, and 6-inches on line in any section between manholes. Deviations exceeding these tolerances shall be grounds for rejection of the line.

I. All pipe shall be sound and clean before installation. When installation is not in progress, including lunchtime, the open ends of the pipe shall be closed by watertight plug or other approved means to prevent foreign material from entering the pipe. Good alignment shall be preserved during installation. The deflection of joints shall not exceed that recommended by MANUFACTURER. Fittings for service laterals, in addition to those shown on the plans, shall be provided, if required, in crossing utilities which may be encountered upon opening the trench.

J. The ENGINEER may examine each bell and spigot end to determine whether any preformed joint has been damaged prior to installation. Any pipe having defective joint surfaces shall be rejected, marked as such, and immediately removed from the job site.

K. Each length of the pipe shall be shoved home against the pipe previously laid and held securely until enough backfill has been placed to hold the pipe in place. Joints shall not be "pulled" or "cramped".

L. Before any joint is made, the pipe shall be checked to assure that a close joint with the next adjoining pipe has been maintained and that the inverts are matched and conform to the required grade. The pipe shall not be driven down to

grade by striking it.

M. Precautions shall be taken to prevent flotation of the pipe in the trench.

N. When moveable trench bracing such as trench boxes, moveable sheeting, shoring or plates are used to support the sides of the trench, care shall be taken in placing and moving the boxes or supporting bracing to prevent movement of the pipe, or disturbance of the pipe bedding and the screened gravel backfill. Trench boxes, moveable sheeting, shoring or plates shall not be allowed to extend below mid-diameter of the pipe. As trench boxes, moveable sheeting, shoring or plates are moved, screened gravel shall be placed to fill any voids created and the screened gravel and backfill shall be recompacted to provide uniform side support for the pipe.

O. Laser shall be used for maintaining pipe alignment.

3.2 JOINTING POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS

A. PVC push-on sewer pipe and fittings shall be jointed in accordance with the recommendations of the latest ASTM Standards and detailed instructions of the MANUFACTURER. The pipe MANUFACTURER shall furnish information and approve the installation of at least the first ten (10) joints of each pipe laying crew. The pipe MANUFACTURER shall visit the site on a quarterly basis to supervise and inspect and certify installation.

B. All manhole connections shall be as shown on the Drawings except that concrete and mortared connections shall be equipped with an integral O-ring or other sealant such that a positive watertight seal is established.

3.3 TESTS FOR GRAVITY SEWERS - GENERAL

A. Gravity sewers shall be required to pass a leakage test before acceptance. Leakage tests may be by the infiltration test or exfiltration test, depending on the level of the groundwater table or by the low-pressure air test all as described below.

B. Water infiltration or exfiltration or air loss, as applicable, rates will be measured by the ENGINEER. The tests shall be performed by the CONTRACTOR under the observation of the ENGINEER.

C. The groundwater height above the installed pipe shall be determined by a system of monitoring wells. CONTRACTOR shall submit his method of establishing the groundwater height to the ENGINEER for approval prior to commencing testing.

D. Sewers will be checked by the ENGINEER prior to final restoration or the placing of asphalt to determine if pipe displacement has occurred. The CONTRACTOR shall give a minimum of 48 hours notice to the ENGINEER and furnish all necessary test equipment and labor required to allow the ENGINEER to perform this check. The CONTRACTOR shall also be responsible for pumping the system down and maintaining the pumped down condition for all pump station service areas. The equipment shall include but not be limited to the following:

1. Hand held spotlight minimum 300,000 candle power and a power source for the light.
2. Appropriate ladders necessary to allow access to all manholes.
3. Mirrors
4. All equipment and manpower necessary to comply with confined space entry requirements (gas sensors, blowers, safety harness, etc.)

On pipelines under 12-inch in diameter the light shall be flashed down the center of the pipe from the upstream manhole and viewed from the downstream manhole. Measurements shall be taken at the top, each side and the bottom to determine the moon designation of the pipeline (example 8-inches - 1-inches out of alignment 7/8 moon, 2-inches out of alignment 3/4 moon, etc.). On pipelines 12-inches in diameter and larger the light shall be held at the upstream manhole and will be placed at the top, each side and bottom to allow for measurements to be taken in the same manner as for the pipelines under 12-inches in diameter. Pipelines under 12-inches in diameter or greater which have a 7/8 moon or less shall be televised and recorded on video tape (as required in other sections of this specification) to verify the extent of the misalignment to determine in the opinion of the ENGINEER/OWNER if a point repair or relaying of the pipeline is necessary prior to any further restoration work being performed. The cost to maintain all traffic and roadways until a determination as to the acceptability of the pipeline is made shall be at the expense of the CONTRACTOR in addition to the actual cost of the repair.

E. Allowable Deflection Test

1. Deflection shall be measured with a rigid mandrel (Go/No-Go) device cylindrical in shape and constructed with a minimum of 9 or 10 evenly spaced arms or prongs. Drawings of the mandrel with complete dimensions shall be submitted to the ENGINEER for each diameter of pipe to be tested.

2. Pipe deflection shall be measured not less than 90 days after the backfill or permanent pavement base has been completed as specified and shall not exceed 5 percent of the base inside diameter of the pipe as listed in the following table.

	SDR-35		SDR-26	
Nominal Size (Inches)	Base Inside Diameter (Inches)	5% Deflection Mandrel (Inches)	Base Inside Diameter (Inches)	5% Deflection Mandrel (Inches)
8	7.665	7.28	7.488	7.11
10	9.563	9.08	9.342	8.87
12	11.361	10.79	11.102	10.55
15	13.898	13.20	13.575	12.90

	Type T-1		Type T-2	
18	16.976	16.13	17.054	16.20
21	20.004	19.01	20.098	19.09
24	22.480	21.36	22.586	21.46
27	25.327	24.06	25.446	24.17

3. If the CONTRACTOR performs the deflection testing rather than employing an approved test lab, the following shall apply:
The CONTRACTOR shall furnish the rigid mandrel, labor, materials and equipment necessary to perform the tests as approved by the ENGINEER. The mandrel shall be pulled through by Hand or a Hand operated reel through all sewer lines in the presence of the ENGINEER. Prior to performing the deflection tests, the CONTRACTOR shall submit to the ENGINEER certification that the minimum 9-arm mandrels are preset as stated above. Each mandrel shall be engraved with the following:

Serial Number
Nominal pipe diameter
Either "ASTM D3034", year and either "SDR-35" or "SDR-26"

or "ASTM F679", year and either "Type T-1" or "Type T-2"
% deflection as stated above.

4. If the mandrel fails to pass any section of pipe, the CONTRACTOR shall excavate to the point of excess deflection and carefully compact around the point where excess deflection was found at no additional cost to the OWNER. After the permanent pavement base has been re-compacted and resealed, the line shall be retested. If the mandrel fails to pass a second time, the section shall be replaced and retested. Re-rounding is NOT permitted.

F The CONTRACTOR shall repair all visible leaks in manholes even though the leakage test requirements are met.

G. The ends of branches, laterals, tees, wyes, and stubs to be included in a test section shall be plugged to prevent water or air leakage. All plugs shall be secured to prevent blowout due to internal pressure. A test section is defined as the length of sewer between manholes.

3.4 LEAKAGE TEST - INFILTRATION METHOD

A. The water infiltration test shall not be considered a valid leakage test unless the top surface of the groundwater level is at least 4-feet or more above the pipe crown during the test measurement. The rate of infiltration of water into the sewers, including manholes and appurtenances, shall not exceed 200 gallons per day per inch diameter per mile of sewer. In the event groundwater does not submerge the pipe as specified, the CONTRACTOR shall conduct an exfiltration test described hereinafter.

B. A visual inspection and an infiltration test will be conducted on all completed sewers 30-inches or more when they are submerged by groundwater as specified above. The CONTRACTOR shall provide facilities to stop inflow from adjacent sections of sewer and to provide pondage to permit measurement of infiltration. Visible leaks, defective joints, and defective pipe shall be satisfactorily replaced.

3.5 LEAKAGE TEST - EXFILTRATION METHOD

A. Sewers not submerged by groundwater shall be tested for exfiltration or, if approved, by low-pressure air method. The ENGINEER reserves the right to waive the exfiltration test on any section of sewer based on his evaluation of the results of previous tests.

B. The hydrostatic head for test purposes shall be 4-feet or more above the sewer crown at the upstream end. Any arrangement of testing equipment which will provide observable and accurate measurement of water leakage under the specified conditions will be permitted. The rate of exfiltration of water out of the sewers, including manholes and appurtenances, shall not exceed 200 gallons per day per inch diameter per mile of sewer. Visible leaks, defective joints, and defective pipe shall be satisfactorily replaced.

C. The sewer test section may be filled 24 hours prior to time of exfiltration testing, if desired, to permit normal absorption into the sewers walls to take place.

3.6 LEAKAGE TEST - LOW PRESSURE AIR METHOD (PREFERRED METHOD)

A. Test Procedure. The following test procedures shall be used in making each test:
1. The section of sewer line to be tested shall be flushed and cleaned prior to conducting the low-pressure air test to clean out any debris, wet the pipe, and produce more consistent results.
2. Isolate the section of sewer line to be tested by means of inflatable stoppers or other suitable test plugs. One of the plugs shall have an inlet tap, or other provision for connecting a hose to a portable air source.
3. If the test section is below the groundwater level, determine the height of the groundwater above the springline of the pipe at each end of the test section and compute the average. For every foot of groundwater above the pipe springline, increase the gauge test pressure by 0.43 pounds per square inch.
4. Connect the air hose to the inlet tap and a portable air source. The air equipment shall consist of necessary valves and pressure gauges to control the rate at which air flows into the test section and to enable monitoring of the air pressure within the test relief device to prevent the possibility of loading the test section with the full capacity of the compressor.
5. Add air slowly to the test section until the pressure inside the pipe is raised to 4.0 psig greater than the average back pressure of any groundwater that may be over the pipe.
6. After a pressure of 4.0 psig is obtained, regulate the air supply so that the pressure is maintained between 3.5 and 4.0 psig (above the average groundwater back pressure) for a period of two-minutes to allow the air

temperature to stabilize in equilibrium with the temperature of the pipe walls.

7. Determine the rate of air loss by the time pressure-drop method. After the two-minute air stabilization period, disconnect the air supply and adjust the pressure to 3.5 psig above the average to drop from 3.5 psig to 2.5 psig shall be determined by means of a stopwatch and this time interval will be compared to the required time in the tables to determine if the rate of air loss is within the allowable time limit. If the time is equal to or greater than the times indicated in the tables, the pipeline shall be deemed acceptable.
8. Defective joints, fittings and pipe shall be satisfactorily replaced.

B. The pipe shall be tested between adjacent manholes. The test time for the air pressure to drop the specified one pound shall be as listed below:

Pipe Diameter "D" in Inches

Length of Test Sec. "L" (ft.)	8	10	12	15	18	21	24
25	0.18	0.28	0.40	1.02	1.29	2.01	2.38
50	0.35	0.55	1.19	2.04	2.58	4.03	5.17
75	0.53	1.23	1.59	3.06	4.27	6.04	7.55
100	1.11	1.50	2.38	4.08	5.56	8.05	10.39
125	1.28	2.18	3.18	5.09	7.26	9.55	11.20
150	1.46	2.45	3.58	6.11	8.30	9.55	11.20
175	2.03	3.13	4.37	7.05	8.30	9.55	11.20
200	2.21	3.40	5.17	7.05	8.30	9.55	11.20
225	2.38	4.08	5.40	7.05	8.30	9.55	11.20
250	2.56	4.35	5.40	7.05	8.30	9.55	11.20
275	3.14	4.43	5.40	7.05	8.30	9.55	11.20
300	3.31	4.43	5.40	7.05	8.30	9.55	11.20
325	3.47	4.43	5.40	7.05	8.30	9.55	11.20
350	3.47	4.43	5.40	7.05	8.30	9.55	11.20
400	3.47	4.43	5.40	7.05	8.30	9.55	11.20
425	3.47	4.43	5.40	7.05	8.30	9.55	11.20
450	3.47	4.43	5.40	7.05	8.30	9.55	11.20
475	3.47	4.43	5.40	7.05	8.30	9.55	11.20
500	3.47	4.43	5.40	7.05	8.30	9.55	11.20

C. For sewer diameter between 27-inches and 36-inches inclusive, the pipeline may be tested between adjacent manholes, or segmentally. The test time shall be in accordance with the following formula.

$T = .00493 (D \times D) L$

where:

T= Test Time, Seconds.
D = Diameter, Inches, L = Length of test Section, Feet.

3.7 FINAL SEWER CLEANING

A. Prior to final acceptance and final manhole-to-manhole inspection of the sewer system by the ENGINEER, flush and clean all parts of the system. Remove all accumulated construction debris, rocks, gravel, sand, silt, and other foreign material from the sewer system at or near the closest downstream manhole. If necessary, use mechanical rodding or bucketing equipment.

B. Upon the ENGINEER's final manhole-to-manhole inspection of the sewer system, if any foreign matter is still present in the system, reflush and clean the section and portions of the lines as required.

3.8 VACUUM TEST OF MANHOLES/WETWELLS

A. Pretest manhole/wetwells after connections have been completed but before backfilling. Results derived from this test will allow time for necessary repairs to be completed before further construction proceeds and hinders such repairs.

A. Plug all manhole/wetwells inverts and lift holes. Inverts shall be plugged using suitably-sized pneumatic or mechanical pipeline plugs. The plugs shall be placed a minimum of 6-inches beyond the manhole/wetwells wall to prevent temporary sealing of the inverts. Follow all MANUFACTURER'S recommendations and warnings for proper and safe installation of such plugs. Make sure such plugs are properly rated for the pressures required for the test. The standard test of 10-inch Hg. (mercury) is equivalent to approximately 5 psig (0.3 bar) back pressure. Unless such plugs are mechanically restrained, it is recommended that the plugs used have a two-times (2X) safety factor or a minimum 10 psig (.7 bar) back pressure usage rating. Brace inverts if lines entering if lines entering the manhole/wetwells have not been backfilled to prevent pipe from being dislodged and pulled into the manhole/wetwells.

C. Install the vacuum tester head assembly at the top access point of the manhole, preferably the ring area (Figures A and B). Adjust the cross brace to insure that the inflatable sealing element inflates and seals against the straight top section of the manhole/wetwells structure.

D. Attach the vacuum pump assembly to the proper connection on the test head assembly. Make sure the vacuum inlet/outlet valve is in the closed position.

E. Following all safety precautions and MANUFACTURER'S instructions, inflate sealing element to the recommended maximum inflation pressure.

F. Start the vacuum pump assembly engine and allow preset RPM to stabilize.

G. Open the inlet/outlet ball valve and evacuate the manhole to 10-inch Hg. (0.3 bar).

H. Close vacuum inlet/outlet ball valve, disconnect vacuum pump, and monitor

vacuum for the specified time period (see table below). If the vacuum does not drop in excess of 1-inch Hg. over the specified time period, the manhole is considered acceptable and passes the test. If the manhole fails the test, identify the leaking areas by removing the head assembly, coating the interior surfaces of the manhole with a soap and water solution, and repeating the vacuum test for approximately thirty seconds. Leaking areas will have soapy bubbles. Once the leaks have been identified, complete all necessary repairs and repeat test procedures until satisfactory results are obtained.

I. Repeat the test procedure after backfilling for final acceptance test.

VACUUM TEST TIMETABLE			
	DIAMETER - INCHES		
Depth - Feet	48"	60"	72"
4'	10 sec.	13 sec.	16 sec.
8'	20 sec.	26 sec.	32 sec.
12'	30 sec.	39 sec.	48 sec.
16'	40 sec.	52 sec.	64 sec.
20'	50 sec.	65 sec.	80 sec.
24'	60 sec.	78 sec.	96 sec.
*	05 sec.	6.5 sec.	8.0 sec.
*Add "T" times for each additional 2' depth. (The values listed above have been extrapolated from ASTM designation C924-85.)			

SECTION 16010
GENERAL ELECTRICAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General Conditions and Supplementary General Conditions sections apply to work specified in Division 16.

1.2 RELATED WORK:

The Contractor's attention is directed to the following Divisions of these specifications for related work that may require Division 16 compliance:

Division 15

1.3 DESCRIPTION OF WORK:

Furnish all labor, materials, equipment and incidentals required to complete all electrical work at the proposed Gore Park in Bay County, Florida as specified here and shown on the Contract Drawings.

The work, apparatus and materials furnished under these Specifications and accompanying Drawings shall include all items listed here and shown on the Drawings. Line voltage connections to equipment furnished as specified in other sections of these Specifications or shown on other than the Electrical Drawings shall be governed by this Division of the Specifications.

Each bidder or his authorized representatives shall visit the job site(s) and carefully inspect the present conditions before preparing his bid. The submission of a bid will be considered evidence that such a visit and inspection was performed by the bidder and that he takes full responsibility for all factors governing his work.

It is the intent of these Specifications and Drawings that the electrical systems shall be complete, fully operational, and suitable in every way for the service required. Drawings are diagrammatic in nature and do not show in every detail all devices and incidental materials necessary to accomplish the intent. Therefore, the Contractor shall understand that such devices and incidental materials required shall be furnished at no cost to the Owner.

1.4 TEMPORARY LIGHTING AND POWER:

Provide temporary lighting and power as required during construction.

The Contractor shall pay all service connection fees for temporary power installation and all electrical bills for temporary construction power required for completing the project.

Temporary wiring shall be done in a safe and neat manner. See Article 305 of the NEC.

1.5 SERVICE:

Contractor shall pay all fees and charges as required to obtain temporary and permanent service(s) if applicable. Contractor shall coordinate with electrical utility company to determine the location of the service transformer(s) and all utility company requirements for the service.

1.6 SUBMITTALS:

Manufacturers' data in the form of "cut sheets" and engineering drawings shall be submitted to the Engineer on the equipment listed below and in other Sections of Division 16 before delivery to the work site. Review of the submittal by the Engineer is to check for general conformance to the design intent and shall not relieve the Contractor of the responsibility for the correctness of all dimensions and the correct fitting of all parts of the work.

Panelboards and Circuit Breakers
Disconnect Switches
Plugs and Receptacles
Motor Starters
Transformers
Lighting Fixtures
Surge Protective Devices
Control Panels

The manufacturers' names and catalog numbers shall be submitted for the following materials:

Conduit, Fittings, and Couplings
Boxes and Fittings
Wire and Cable

The submittal shall be thoroughly checked by the Contractor for accuracy and compliance with the contract requirements. Shop drawings and "cut sheets" shall bear the date checked and shall be accompanied by a statement by the Contractor that they have been checked for conformity to Specifications and Drawings. Shop submittals not so checked and noted will be returned without review.

1.7 CODES, INSPECTION AND FEES:

Division 16 work shall be in accordance with the latest edition of the following codes and ordinances:

The National Electrical Code (NFPA 70)
The National Electrical Safety Code
The Life Safety Code (NFPA 101)
The Southern Standard Building Code (SBCCI)
Serving Utility Company
State and Municipal

Contractor shall pay all fees for permits and inspections.

1.8 RECORD DRAWINGS:

At Job Close-out submit three (3) copies of the following:

Complete and accurate sets of Record Drawings showing clearly deviations to the Contract Drawings.

Bound sets of Equipment Operation and Maintenance Instructions.

Test results required in other sections of this division.

1.9 GUARANTEES:

In addition to the guarantee of equipment by the manufacturer the Contractor shall also guarantee such equipment for a period of one (1) year from final acceptance by the Owner. The Contractor's one (1) year guarantee shall be for equipment, materials, and labor.

Additional guarantee requirements may be in the General and Special Conditions of these specifications.

PART 2 - PRODUCTS

2.1 EQUIPMENT AND MATERIALS:

Furnish materials or equipment specified by manufacturer's names unless approval of other manufacturers is listed in addendum to these specifications.

The materials furnished shall be new, undamaged and packed in the original manufacturer's packing.

Equipment and materials shall at all times during construction be protected from mechanical and water damage. Equipment shall not be stored out-of-doors. Damaged materials and equipment shall be replaced by the Contractor at no cost to the Owner.

All electrical panels, enclosures, raceways, conduit, and boxes shall be fabricated of metal unless indicated otherwise.

2.2 EQUIPMENT AND MATERIALS STANDARDS:

The design and fabrication of electrical equipment and materials furnished under Division 16 shall comply with the latest edition and revisions of the following codes and standards:

The American National Standards Institute (ANSI)
The American Society of Mechanical Engineers (ASME)
The American Society for Testing and Materials (ASTM)
The Institute of Electrical and Electronic Engineers (IEEE)
The National Electrical Manufacturers Association (NEMA)

The Occupational Safety and Health Administration (OSHA)
The Underwriters Laboratories (UL)
The National Fire Protection Association (NFPA)
The National Electrical Code (NEC)

PART 3 - EXECUTION

3.1 SUPERVISION

The electrical work shall be supervised by a licensed journeyman or master electrician who shall be on the job site at all times while work is in progress.

3.2 EQUIPMENT IDENTIFICATION:

Engraved nameplates shall be of laminated plastic with black surface and white 1/8" high letters secured with stainless steel screws.

All major components of the distribution system shall have engraved nameplates.

All panelboards, motor starters, contactors, disconnect switches, and control panels shall have engraved nameplates identifying the equipment served.

Panelboards shall have typed directories with all loads indicated for each circuit.

3.3 CLEANING:

All equipment and boxes shall be thoroughly cleaned inside and outside at the completion of installation. Do not leave dirt and debris inside panelboard and equipment cabinets, device and junction boxes, etc.

3.4 PAINTING:

Touchup scratched or marred surfaces of lighting fixtures, panelboards, switchboards, etc. with paint furnished by the equipment manufacturers specifically for the purpose.

3.5 EXCAVATION, TRENCHING AND BACKFILLING:

Perform all excavation and trenching to install raceways indicated on the drawings.

No tunneling shall be allowed unless written permission is received by the Architect / Engineer.

Excavated material not suitable for backfill shall be removed from the job site.

Insure that the bottom of trenches is uniform (without large rocks or lumps of dirt) which could damage the raceway or conductors.

Backfill with material that will compacted readily.

Compact backfill material from bottom of excavation up to 95% of surrounding undisturbed material.

Cover shall not be less than surrounding grade and no greater than 2" above surrounding grade.

3.6 TESTS:

Contractor shall test all wiring for shorts and proper grounding before energizing. Equipment shall be thoroughly checked and adjusted for proper operation. All controls shall be set to perform as intended. Motors shall be checked for proper rotation.

END OF SECTION 16010

SECTION 16110

RACEWAYS AND FITTINGS

PART 1 - GENERAL

1.1 SCOPE OF WORK:

Furnish and install complete raceway systems as indicated on the Drawings and as specified here.

1.2 APPLICATIONS:

All interior and above grade exterior wiring shall be installed in a metal conduit, and all embedded in concrete or below grade wiring shall be in Rigid PVC conduit unless indicated otherwise on the drawings.

All exterior, above grade, conduits shall be rigid steel or rigid aluminum.

Liquid Tight flexible metal raceway is acceptable as long as installed per NEC.

Conduits and fittings installed in or around pool equipment with chlorine shall be corrosion resistant.

All conduit of a given type shall be the product of one manufacturer.

Utility service conduit(s) shall be as required by the utility company.

PART 2 - PRODUCTS

2.1 RIGID CONDUIT AND FITTINGS:

Rigid steel and aluminum conduit shall be conforming to the requirements of UL 6 and ANSI C80.1 standards.

Fittings for rigid aluminum or steel conduit shall be the threaded type manufactured by RACO, Steel City, or Thomas & Betts (T&B).

Plastic conduit for direct burial shall be UL labeled Schedule 40 PVC manufactured to NEMA TC 2-1983 specifications, WC-1094A Federal specifications, and UL-651 specifications unless otherwise noted or required.

Fittings for plastic conduit shall be manufactured to NEMA TC 3-1982 specifications.

2.2 FLEXIBLE METAL CONDUIT, COUPLINGS, AND FITTINGS:

All flexible metal conduit for damp or exterior applications shall be Liquid Tight UL listed spiral wound galvanized steel with a PVC outer jacket type.

Fittings for liquid tight conduit shall be manufactured RACO, Steel City, or T&B.

2.3 CONDUIT MOUNTING EQUIPMENT:

Hangers, rods, backplates, beam clamps etc. shall be hot-dipped galvanized iron, steel, or aluminum suitable for in a corrosive environment. They shall be as manufactured by the Appleton Electric Co., Thomas and Betts Co., Unistrut Corp., or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION:

Provide pull strings in all conduits (utilized and spare conduits).

No conduit shall any have more than three 90 degree bends in any one run. Pull boxes shall be provided as required or directed. No run shall exceed 200' without a pullbox.

No wire shall be pulled until the conduit system is complete in all details.

The ends of all conduits shall be tightly plugged to exclude dust and moisture during construction.

Aluminum conduit threads shall be cleaned and coated with a grease metallic type conductive compound suitable for use on nonferrous conduits.

Conduit support shall be spaced at intervals of 8 ft. or less, adjacent to all couplings, and additionally as required to obtain rigid construction.

Conduit hangers shall be attached to structural steel by means of beam or channel clamps.

Bends in parallel conduit runs shall be concentric. All conduits shall be run perfectly straight and true.

Conduit terminating in knockouts shall have Meyer's hubs.

Conduits shall be installed using threaded fittings and couplings.

Liquid Tight Flexible metal conduit shall be used for all motor terminations, not in wet wells, and other equipment where vibration is present. Flexible conduit lengths shall not exceed 1'-6" in length for this application.

Liquid Tight Flexible metal conduit used for installing lighting fixtures shall not exceed 6' in length.

Where hazardous locations exist (as defined and classified by the National Electrical Code), all conduit, fittings and installation shall comply with Article 500 of the NEC. Conduits from wet wells shall have "seal offs" before entry into any control panel, junction box, etc.

Provide expansion coupling every 100 feet for long runs of conduit and at concrete expansion joints. Provide ground bonding jumpers around expansion couplings, used on metallic conduit,

sized according to Table 250-95 of the NEC.

Set top of underground conduits a minimum of 2' below finish subgrade, or as required for conditions defined by NEC, or as required per local codes. Service conduits shall be at minimum depth required by the serving electric utility company.

END OF SECTION 16110

SECTION 16120
WIRE AND CABLES

PART 1- GENERAL

1.1 SCOPE OF WORK:

Furnish, install and test all wire, cable, and appurtenances as shown on the Drawings and as hereinafter specified.

1.2 APPLICATIONS:

Wire for lighting and single power circuits shall be type THHN/THWN-2, 90 degree C temperature rating, suitable for the environment (wet, damp, etc.) unless otherwise noted.

Single conductor wire for control, indication, and metering shall be type THHN/THWN-2, minimum No. 14 AWG, stranded.

Tray Cable shall contain a minimum of 20 conductors and shall be No. 12 AWG, stranded.

Ground wires shall be Green and Neutrals shall be White or Gray. Green and White shall be used for these purposes only.

Color coding of all ungrounded service, feeder, and branch circuits conductors shall be required according to the following convention:

120/240 Volt, 1 phase: black and red

120/208 Volt, 3 phase: black, red, and blue

277/480 Volt, 3 phase: brown, orange, and yellow (gray neutral)

Parallel wire runs shall be run in separate conduits of the same material and as close as possible to the same length.

1.3 MINIMUM SIZES:

Except for control and signal leads, no wire smaller than No. 12 AWG shall be used.

PART 2- PRODUCTS

2.1 MATERIALS:

Wires and cables shall be of annealed, 98% conductivity, soft drawn copper unless indicated otherwise on the Drawings or in these Specifications.

All conductors No. 14 AWG and larger sizes shall be stranded.

2.2 600 VOLT WIRE:

Type THHN/THWN-2 shall be manufactured by Southwire, Okonite Co., or equal.
Multi-conductor control cable shall be stranded copper, 600 Volt polyvinyl chloride insulated and jacketed Type PNR as manufactured by Cerro Wire and Cable Co., General Electric, The Okonite Co., or equal.

2.3 INSTRUMENTATION CABLE:

Process instrumentation wire shall be twisted pair, 600 Volt, polyethylene insulated, copper tape shielded, polyvinyl chloride jacketed, manufactured by General Electric Co., Okonite Co., Belden Corp., or equal.

2.4 WIRE AND CABLE MARKERS:

Wire and cable markers shall be "Omni-Grip" as manufactured by W.H. Brady Co., or equal.

PART 3 - EXECUTION

3.1 INSTALLATION:

All conductors shall be carefully handled to avoid kinks or damage to insulation.

Wiring of different system voltages shall be installed in separate raceways.

All wires, cables, and each conductor of multi-conductor cables shall be uniquely identified at each end by color or with wire and cable markers. Lighting and receptacle wiring shall be distinctly differentiated and junction boxes marked.

Lubrications shall be used, if required, to facilitate wire pulling. Lubricants shall be U.L. approved for use with the insulation specified.

Shielded instrumentation wire shall be installed from terminal to terminal with no splicing at any intermediate point.
Shielding on instrumentation wire shall be grounded at the transmitter end only.

3.2 TESTS:

All 600 Volt wire insulation shall be tested with a "megger" after installation. Tests shall be made at not less than 500 Volts.

END OF SECTION 16120

SECTION 16170
DISCONNECT SWITCHES

PART 1 - GENERAL

1.1 SCOPE OF WORK:

Furnish and install all circuit disconnects (safety switches) indicated on the Drawings and as specified herein.

1.2 APPLICATIONS:

Service Entrance – Switches identified for use as service equipment are to be labeled for this application.

Equipment Disconnect – Switches serving as equipment disconnects shall be lockable, heavy duty type, rated as shown on the plans or required for the equipment served.

Exterior disconnects shall be in Nema 3R enclosures, interior disconnects shall be in Nema 1 enclosures.

PART 2 - PRODUCTS

2.1 GENERAL:

Switches shall be manufactured by Square D Company, GE, or Cutler Hammer.

Disconnect switches shall be NEMA type HD (Heavy Duty) and UL listed.

Switches shall have switch blades fully visible in the "OFF" position when the door is open.

Switches shall be quick-make, quick-break such that, the operation of the contacts (blades) shall not be capable of being restrained by the operation of the operating handle after the closing or opening action has been initiated.

Provisions for padlocking the switch in the "OFF" position with at least three (3) locks shall be provided.

Switches shall have interlock to prevent the unauthorized opening of the door when the handle is in the "ON" position.

The handle position shall clearly indicate whether the switch is "ON" or "OFF".

2.2 CONSTRUCTION:

Switch covers shall be attached with welded pin-type hinges (Type 1, 12, 12K, 4-4X-5 stainless steel) or top hinged, attached with removable screws and securable in the open position (Type 3R).

The enclosure shall be finished with gray baked enamel paint which is electrodeposited on cleaned, phosphate pre-treated steel (Type 1) or gray baked enamel paint which is electrodeposited on cleaned, phosphate pre-treated galvannealed steel (Type 3R, 12, 12K) or brush finish on type 304 stainless steel (Type 4-4X-5 stainless steel)

The enclosure shall have ON and OFF markings stamped into the cover.

The operating handle shall be provided with a dual colored, red/black position indication.

All switches shall have provisions to accept up to three 3/8 in hasp padlocks to lock the operating handle in the OFF position.

NEMA 4X enclosures shall be manufactured from stainless steel and contain all copper current carrying parts.

All current carrying parts shall be plated to resist corrosion.

2.3 RATINGS:

Lugs shall be front removable and be UL listed for aluminum or copper conductors at 60°C or 75°C.

Disconnect switches shall be horsepower rated.

The UL Listed short circuit current rating of the switches shall be: 10,000 rms symmetrical amperes when used with or protected by Class H or K fuses (30-600 ampere), 200,000 rms symmetrical amperes when used with or protected by Class R or Class J fuses (30-600 ampere switches employing appropriate fuse rejection schemes), 200,000 rms symmetrical amperes when used with or protected by Class L fuses (800-1200 ampere.

PART 3 - EXECUTION

3.1 INSTALLATION:

Disconnects shall be labeled according to Section 16010.

END OF SECTION 16170

SECTION 16440
PANELBOARDS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Panelboards - Furnish and install panelboard(s) as specified herein and where shown on the associated schedules and drawings.

1.02 REFERENCES

The panelboard(s) and circuit breaker(s) referenced herein are designed and manufactured according to the latest revision of the following specifications.

A. NEMA PB 1 - Panelboards
B. NEMA PB 1.1 - Instructions for Safe Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less.
C. NEMA AB 1 - Molded Case Circuit Breakers
D. UL 50 - Enclosures for Electrical Equipment
E. UL 67 - Panelboards
F. UL 489 - Molded-Case Circuit Breakers and Circuit Breaker Enclosures
G. CSA Standard C22.2 No. 29-M1989 - Panelboards and Enclosed Panelboards
H. CSA Standard C22.2 No. 5-M91 - Molded Case Circuit Breakers
I. Federal Specification W-P-115C - Type I Class 1
J. Federal Specification W-C-375B/Gen - Circuit Breakers, Molded Case, Branch Circuit and Service.
K. Federal Specification W-C-865C - Fusible Switches
L. NFPA 70 - National Electrical Code (NEC)
M. ASTM - American Society of Testing Materials

1.03 SUBMITTAL AND RECORD DOCUMENTATION

A. Approval documents shall include drawings. Drawings shall contain overall panelboard dimensions, interior mounting dimensions, and wiring gutter dimensions. The location of the main, branches, and solid neutral shall be clearly shown.

1.04 QUALIFICATIONS

A. Company specializing in manufacturing of panelboard products with a minimum of fifty (50) years documented experience.
B. Panelboards shall be manufactured in accordance with standards listed Article 1.02 - REFERENCES.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Inspect and report concealed damage to carrier within their required time period.

B. Handle carefully to avoid damage to panelboard internal components, enclosure, and finish.
C. Store in a clean, dry environment. Maintain factory packaging and, if required, provide an additional heavy canvas or heavy plastic cover to protect enclosure(s) from dirt, water, construction debris, and traffic.

1.06 OPERATIONS AND MAINTENANCE MATERIALS

A. Manufacturer shall provide installation instructions and NEMA Standards Publication PB 1.1 - Instructions for Safe Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less.

1.07 WARRANTY

A. Manufacturer shall warrant specified equipment free from defects in materials and workmanship for the lesser of one (1) year from the date of installation or eighteen (18) months from the date of purchase.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Shall be Square D Company, GE, or Cutler Hammer

2.02 277/480VAC PANELBOARDS

A. 277/480V Panelboards
1. Interior
a. Shall be type NF, I-Line, or equal panelboard for 480Y/277 Vac maximum. Continuous main current ratings, as indicated on associated drawings, not to exceed 600 amperes for main breaker panelboards and not to exceed 800 amperes for main lug panelboards.
b. Minimum Short Circuit Rating:
35,000 rms symmetrical amperes at 480Y/277 Vac.
Provide one (1) continuous bus bar per phase. Each bus bar shall have sequentially phased branch circuit connectors limited to bolt-on branch circuit breakers. The bussing shall be fully rated. Panelboard bus current ratings shall be determined by heat-rise tests conducted in accordance with UL 67. Bussing rated 100-400 amperes shall be plated copper. Bussing rated for 600 and 800 amperes shall be plated copper as standard construction. Bus bar plating shall run the entire length of the bus bar. Panelboards shall be suitable for use as Service Equipment when application requirements comply with UL 67 and NEC Articles 230-F&G.
c. All current-carrying parts shall be insulated from ground and phase-to-phase by high dielectric strength thermoplastic.
d. A solidly bonded copper equipment ground bar shall be provided.
e. Interior trim shall be of dead-front construction to shield user from energized parts. Dead-front trim shall have filler plates covering unused mounting space.
f. Nameplates shall contain system information and catalog number or

factory order number. Interior wiring diagram, neutral wiring diagram, CSA/UL Listed label and short circuit current rating shall be displayed on the interior or in a booklet format.

g. Interior phase bus shall be pre-drilled to accommodate field installable options. (i.e., Sub-Feed Lugs, Sub-Feed Breakers, Thru-Feed Lugs)

2. Main Circuit Breaker
   a. Main circuit breakers shall have an overcenter, trip-free, toggle mechanism which will provide quick-make, quick-break contact action. Circuit breakers shall have a permanent trip unit with thermal and magnetic trip elements in each pole. Each thermal element shall be true rms sensing and be factory calibrated to operate in a 40° C ambient environment. Thermal elements shall be ambient compensating above 40°C
   b. Two- and three-pole circuit breakers shall have common tripping of all poles.
   c. Circuit breaker handle and faceplate shall indicate rated ampacity. Standard construction circuit breakers shall be UL Listed for reverse connection without restrictive line or load markings.
   d. Circuit breaker escutcheon shall have ON/OFF markings.
   e. Lugs shall be UL Listed to accept solid or stranded copper and aluminum conductors.
3. Branch Circuit Breakers
   a. Circuit breakers shall be UL Listed with amperage ratings, interrupting ratings, and number of poles as indicated on the panelboard schedules.
   b. Molded case branch circuit breakers shall have bolt-on type bus connectors.
   c. Circuit breakers shall have an overcenter toggle mechanism which will provide quick-make, quick-break contact action. Circuit breakers shall have thermal and magnetic trip elements in each pole. Two- and three-pole circuit breakers shall have common tripping of all poles.
   d. There shall be two forms of visible trip indication. The circuit breaker handle shall reside in a position between ON and OFF. In addition, there shall be a red TRIP indicator appearing in the clear window of the circuit breaker housing.
   f. Lugs shall be UL Listed to accept solid or stranded copper and aluminum conductors.
   g. Breaker shall be UL Listed with the following ratings: (15-125A) Heating, Air Conditioning, and Refrigeration (HACR), (15-30A) High Intensity Discharge (HID), (15-20A) Switch Duty (SWD), (15-50A) Equipment Protection Device (EPD) (480Y/277Vac maximum).

4. Enclosures
   a. Type 1 Boxes
      1) Boxes shall be hot zinc dipped galvanized steel constructed in accordance with UL 50 requirements. Unpainted galvannealed steel is not acceptable.
      2) Boxes shall have removable endwalls with knockouts located on one end. Boxes shall have welded interior mounting studs. Interior mounting brackets are not required.
      3) Box width shall not exceed 20" wide.

b. Type 1 Fronts
   1) Front shall meet strength and rigidity requirements per UL 50 standards. Shall have ANSI 49 gray enamel electrodeposited over cleaned phosphatized steel.
   2) Fronts shall be hinged 1-piece with door. Mounting shall be surface as indicated on associated schedules.
   3) Front shall have flat latch type lock with catch and spring loaded stainless steel door pull. All lock assemblies shall be keyed alike. One (1) key shall be provided with each lock. A clear plastic directory card holder shall be mounted on the inside of door.

c. Type 3R, 5, and 12
   1) Enclosures shall be constructed in accordance with UL 50 requirements. Enclosures shall be painted with ANSI 49 gray enamel electrodeposited over cleaned phosphatized steel.
   2) All doors shall be gasketed and equipped with a tumbler type vault lock and two (2) additional quarter turn fasteners on enclosures 59 inches or more in height. All lock assemblies shall be keyed alike. One (1) key shall be provided with each lock. A clear plastic directory card holder shall be mounted on the inside of door.
   3) Maximum enclosure dimensions shall not exceed 21" wide and 9.5" deep.

2.03 120/240 VAC PANELBOARDS

A. 120/240V Panelboards
   1. Interior
      a. Shall be rated for 240 Vac/48 Vdc maximum. Continuous main current ratings, as indicated on associated schedules, not to exceed 600 amperes maximum.
      b. Minimum short circuit current rating: 10,000 in rms symmetrical amperes at 240 Vac.
      c. Provide one (1) continuous bus bar per phase. Each bus bar shall have sequentially phased branch circuit connectors suitable for plug-on or bolt-on branch circuit breakers. The bussing shall be fully rated. Panelboard bus current ratings shall be determined by heat-rise tests conducted in accordance with UL 67. Bussing rated 100-400 amperes shall be plated copper. Bussing rated for 600 amperes shall be plated copper as standard construction. Bus bar plating shall run the entire length of the bus bar. Panelboards shall be suitable for use as Service Equipment when application requirements comply with UL 67 and NEC Articles 230-F&G.
      e. All current-carrying parts shall be insulated from ground and phase-to-phase by high dielectric strength thermoplastic.
      f. A solidly bonded copper equipment ground bar shall be provided. An additional copper isolated/insulated ground bar shall also be provided.
      g. Interior trim shall be of dead-front construction to shield user from energized parts. Dead-front trim shall have pre-formed twist outs covering unused mounting space.
      h. Nameplates shall contain system information and catalog number or factory order number. Interior wiring diagram, neutral wiring diagram, UL Listed label and short circuit current rating shall be displayed on the

interior or in a booklet format.

2. Main Circuit Breaker
   a. Main circuit breakers shall have an overcenter, trip-free, toggle mechanism which will provide quick-make, quick-break contact action. Circuit breakers shall have a permanent trip unit with thermal and magnetic trip elements in each pole. Each thermal element shall be true rms sensing and be factory calibrated to operate in a 40° C ambient environment. Thermal elements shall be ambient compensating above 40°C.
   b. Two- and three-pole circuit breakers shall have common tripping of all poles.
   c. Breaker handle and faceplate shall indicate rated ampacity. Standard construction circuit breakers shall be UL Listed for reverse connection without restrictive line or load markings.
   d. Circuit breaker escutcheon shall have ON/OFF markings.
   e. Lugs shall be UL Listed to accept solid or stranded copper and aluminum conductors. Lugs shall be suitable for 75° C rated wire or 90° C rated wire, sized according to the 75° C temperature rating per NEC Table 310-16. Lug body shall be bolted in place; snap-in designs are not acceptable.
   f. The circuit breakers shall be UL Listed for use with the following accessories: Shunt Trip, Under Voltage Trip, Ground Fault Shunt Trip, Auxiliary Switch, Alarm Switch, Mechanical Lug Kits, and Compression Lug Kits.
3. Branch Circuit Breakers
   a. Circuit breakers shall be UL Listed with amperage ratings, interrupting ratings, and number of poles as indicated on the associated schedules.
   b. Molded case branch circuit breakers shall have bolt-on type bus connectors.
   c. Circuit breakers shall have an overcenter toggle mechanism which will provide quick-make, quick-break contact action. Circuit breakers shall have thermal and magnetic trip elements in each pole. Two- and three-pole circuit breakers shall have common tripping of all poles.
   d. There shall be two forms of visible trip indication. The breaker handle shall reside in a position between ON and OFF. In addition, there shall be a red TRIP indicator appearing in the clear window of the circuit breaker housing.
   e. The exposed faceplates of all branch circuit breakers shall be flush with one another.
   f. Lugs shall be UL Listed to accept solid or stranded copper and aluminum conductors. Lugs shall be suitable for 75° C rated wire or 90° C rated wire, sized according to the 75° C temperature rating per NEC Table 310-16. Branch circuit breakers rated 30 amperes and below shall be UL Listed to accept 60° C rated wire.
   g. Breakers shall be UL Listed for use with the following factory installed accessories: Shunt Trip, Auxiliary Switch, and Alarm Switch.
4. Enclosures
   a. Type 1 Boxes
      1) Boxes shall be galvanized steel constructed in accordance with UL 50 requirements. Galvannealed steel will not be acceptable.
      2) Boxes shall have removable endwalls with knockouts located on one

end. Boxes shall have welded interior mounting studs. Interior mounting brackets are not required.
3) Box width shall be 20" wide maximum.

b. Type 1 Fronts
1) Front shall meet strength and rigidity requirements per UL 50 standards. Front shall have ANSI 49 gray enamel electrodeposited over cleaned phosphatized steel.
2) Fronts shall be hinged 1-piece with door. Mounting shall be surface as indicated on associated schedules/drawings.
3) Front shall have cylindrical tumbler type lock with catch and spring-loaded stainless steel door pull. All lock assemblies shall be keyed alike. One (1) key shall be provided with each lock. A clear plastic directory cardholder shall be mounted on the inside of door.

c. Type 3R, 5, and 12
1) Enclosures shall be constructed in accordance with UL 50 requirements. Enclosures shall be painted with ANSI 49 gray enamel electrodeposited over cleaned phosphatized steel.
2) All doors shall be gasketed and equipped with a tumbler type vault lock and two (2) additional quarter turn fasteners on enclosures 59 inches or more in height. All lock assemblies shall be keyed alike. One (1) key shall be provided with each lock. A clear plastic directory cardholder shall be mounted on the inside of door.
3) Maximum enclosure dimensions shall not exceed 21" wide and 6.5" deep.

d. Type 4X
1) Enclosures shall be constructed in accordance with UL 50 requirements. Enclosures shall be painted corrosion resistant type 304 stainless steel.
2) All doors shall be gasketed and equipped with a tumbler type vault lock and two (2) additional quarter turn fasteners on enclosures 59 inches or more in height. All lock assemblies shall be keyed alike. One (1) key shall be provided with each lock. A clear plastic directory cardholder shall be mounted on the inside of door.
3) Maximum enclosure dimensions shall not exceed 21" wide and 6.5" deep.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install panelboards in accordance with manufacturer's written instructions, NEMA PB 1.1 and NEC standards.

3.02 FIELD QUALITY CONTROL

A. Inspect complete installation for physical damage, proper alignment, anchorage, and grounding.
B. Measure steady state load currents at each panelboard feeder; rearrange circuits in the panelboard to balance the phase loads within 20% of each other. Maintain proper phasing for multi-wire branch circuits.
C. Check tightness of bolted connections and circuit breaker connections using

calibrated torque wrench or torque screwdriver per manufacturer's written specifications.

END OF SECTION

SECTION 16450
GROUNDING

PART 1 - GENERAL

1.1 SCOPE OF WORK:

The work required under this section of the specifications consists of the installation of the complete grounding system for the project. Grounding shall consist of ground rods, concrete encased electrode conductors, ground rings, etc. to form a complete grounding system. Provide all materials required for the grounding system under this section of the specifications.

1.2 RELATED WORK:

Coordinate installation of grounding system with all work required under Division 16.

1.3 APPLICATION:

Equipment grounding conductors shall be used to establish grounding of the entire system.

Equipment grounding shall not be by metallic raceway alone.

Table 250-66 of the NEC shall be used to size all grounding electrode conductors.

Table 250-122 of the NEC shall be used to size equipment grounding conductors. Sizes shall be adjusted as required for voltage drop.

PART 2 - PRODUCTS

2.1 GROUND RODS:

Ground rods shall be 3/4" X 10', regular or sectional as required, unless indicated otherwise.

Construction shall be a solid steel core with a heavy uniform covering of electrolytic copper.

Threads, on sectional rods, shall be rolled (not cut) into the composite metal after the copper covering has been applied.

Copper covering shall be work hardened by drawing rods.

Sectional rod couplings shall be of a corrosion resistant alloy.

2.2 GROUNDING ELECTRODE CONDUCTOR CONNECTIONS:

Conductor connections shall be by UL approved exothermic weld.

2.3 EQUIPMENT GROUNDING CONDUCTORS:

Equipment grounding conductors shall be green with THW, THWN, THHN, or XHHN insulation (See Section 16120 - Wires and Cables).

PART 3 - EXECUTION

3.1 INSTALLATION:

Ground and bond all non-current carrying metal parts of the electrical system to provide a low impedance path for ground fault current.

The neutral conductor(s) of the incoming electrical service shall be bonded to the ground rod system, metal cold water piping system, ground ring, structural steel, etc. (all that are available) using Table 250-66 of the NEC for conductor sizing. Grounding conductors shall be run in rigid non-metallic conduit.

Ground the neutral of all dry type and liquid filled transformers to effectively grounded metal cold water piping system or grounding electrode as near as practicable using Table 250-66 of the NEC to size conductor.

Grounding conductors shall be attached to equipment with a bolt or sheet metal screw used for no other purpose. Use crimp on spade lugs for stranded conductors.

Where ground rods are utilized at the service entrance, a minimum of 3 shall be arranged in a triangular pattern, spaced as required by the NEC, to form a low impedance grounding system.

Furnish ground rods at all lighting poles. Refer to pole details and recommendations from the lighting supplier for installation requirements.

3.2 TESTING:

The Contractor shall test the final grounding system and certify that the impedance is 25 ohms or less. Where the impedance is greater than 25 ohms, the contractor shall install additional grounding electrodes until the impedance is below 25 ohms.

END OF SECTION 16450

SECTION 16460
ENERGY EFFICIENT LIGHTING AND DISTRIBUTION TRANSFORMERS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Dry-type energy efficient transformers per NEMA TP1, with primary and secondary voltages of 600V and less and capacity ratings 15kVA through 750kVA.

1.02 REFERENCES

A. NFPA 70 - National Electrical Code
B. NEMA ST20
C. UL 1561
D. NEMA TP1
E. NEMA TP2

1.03 SUBMITTALS

A. Submit complete, warranted performance data and physical dimensions for transformers.

1.04 STANDARDS

A. Transformers 750kVA and smaller shall be listed by Underwriters Laboratories.
B. Conform to the requirements of ANSI/NFPA 70.
C. Transformers are to be manufactured and tested in accordance with NEMA ST20.
D. Transformers losses shall conform to NEMA TP1 requirements
E. Transformers losses shall be tested in accord with NEMA TP2 procedures

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Transformers shall be as manufactured by Square D Company, Cutler Hammer, or General Electric Company.
B. Approved manufacturers shall be registered firms in accordance with ISO 9001:1994 SIC 3612 (US); which is the design and manufacture of low voltage dry type power, distribution and specialty transformers.

2.02 RATINGS INFORMATION

A. All insulating materials are to exceed NEMA ST20 standards and be rated for 220°C UL component recognized insulation system.

B. Transformers 15kVA and larger shall be 150°C temperature rise above 40°C ambient. Transformers 25kVA and larger shall have a minimum of 4 - 2.5% full capacity primary taps. Exact voltages and taps to be as designated on the plans or the transformer schedule.

C. Transformers shall be low loss type with minimum efficiencies per NEMA TP1 when operated at 35% of full load capacity. Efficiency shall be tested in accord with NEMA TP2.

Single Phase		Three Phase	
kVA	Efficiency	kVA	Efficiency
15	97.7%	15	97.0%
25	98.0%	30	97.5%
37.5	98.2%	45	97.7%
50	98.3%	75	98.0%
75	98.5%	112.5	98.2%
100	98.6%	150	98.3%
167	98.7%	225	98.5%
250	98.8%	300	98.6%
333	98.9%	500	98.7%
		750	98.8%

E. The transformer(s) shall be rated as indicated on the plans.

2.03 CONSTRUCTION

A. Transformer coils shall be of the continuous wound construction and shall be impregnated with nonhygroscopic, thermosetting varnish

B. All cores to be constructed with low hysteresis and eddy current losses. Magnetic flux densities are to be kept well below the saturation point to prevent core overheating. Cores for transformers greater than 500kVA shall be clamped utilizing insulated bolts through the core laminations to ensure proper pressure throughout the length of the core. The completed core and coil shall be bolted to the base of the enclosure but isolated by means of rubber vibration-absorbing mounts. There shall be no metal-to-metal contact between the core and coil and the enclosure except for a flexible safety ground strap. Sound isolation systems requiring the complete removal of all fastening devices will not be acceptable.

C. The core of the transformer shall be visibly grounded to the enclosure by means of a flexible grounding conductor sized in accordance with applicable UL and NEC standards.

D. The transformer enclosures shall be ventilated and be fabricated of heavy gauge, sheet steel construction the entire enclosure shall be finished utilizing a continuous process consisting of degreasing, cleaning and phosphatizing, followed by electrostatic deposition of polymer polyester powder coating and baking cycle to provide uniform coating of all edges and surfaces. The coating shall be UL recognized for outdoor use. The coating color shall be ANSI 49.

2.04 SOUND LEVELS

A. Sound levels shall be warranted by the manufacturer not to exceed the following:

15 to 50KVA - 45dB; 51 to 150kVA - 50dB; 151 to 300kVA - 55dB; 301 to 500kVA - 60dB; 501 to 700kVA - 62dB; 701 to 1000kVA - 64dB; 1001 to 1500kVA - 65dB; 1501 to 2000kVA- 66dB

2.05 OPTIONAL ACCESSORIES

A. Lug Kits shall be supplied with all transformers.

END OF SECTION

SECTION 16470

LIGHTING SPECIFICATIONS

Lighting System with LED Light Source

PART 1 – GENERAL

1.1 SUMMARY

A. Work covered by this section of the specifications shall conform to the contract documents, engineering plans as well as state and local codes.

B. The purpose of these specifications is to define the lighting system performance and design standards for Gore Park using an LED Lighting source. The manufacturer / contractor shall supply lighting equipment to meet or exceed the standards set forth in these specifications.

C. The sports lighting will be for the following venues:

1. Softball
2. Football
3. Basketball
4. Tennis
5. Practice Area

D. The primary goals of this sports lighting project are:

1. Guaranteed Light Levels: Selection of appropriate light levels impact the safety of the players and the enjoyment of spectators. Therefore light levels are guaranteed to not drop below specified target values for a period of 25 years.
2. Environmental Light Control: It is the primary goal of this project to minimize spill light to adjoining properties and glare to the players, spectators and neighbors.
3. Cost of Ownership: In order to reduce the operating budget, the preferred lighting system shall be energy efficient and cost effective to operate. All maintenance costs shall be eliminated for the duration of the warranty.
4. Control and Monitoring: To allow for optimized use of labor resources and avoid unneeded operation of the facility, customer requires a remote on/off control system for the lighting system. Fields should be proactively monitored to detect luminaire outages over a 25-year life cycle. All communication and monitoring costs for 25-year period shall be included in the bid.

E. All lighting designs shall comply with local ordinances and lighting standards.

1.2 LIGHTING PERFORMANCE

A. Illumination Levels and Design Factors: Playing surfaces shall be lit to an average target illumination level and uniformity as specified in the chart below. Lighting calculations shall be developed and field measurements taken on the grid spacing with the minimum number of grid points specified below. Appropriate light loss factors shall be applied and submitted for the basis of design. Average illumination level shall be measured in accordance with the IESNA LM-5-04 (IESNA Guide for Photometric Measurements of Area and Sports Lighting Installations). Illumination levels shall not to drop below desired target values in accordance to IES RP-6-15, Page 2, Maintained Average Illuminance and shall be guaranteed for the full warranty period.

Area of Lighting	Average Target Illumination Levels	Maximum to Minimum Uniformity Ratio	Grid Points	Grid Spacing

Softball	50/30 fc	2:1 / 2.5:1	25 / 71	20’ x 20’
Football	30fc	2.5:1	72	30’ x 30’
Basketball	30fc	2.5:1	50	10’ x 10’
Tennis	30fc	2.5:1	15	20’ x 20’
Practice Area	20fc	2.5:1	72	20’ x 20’

B. Color: The lighting system shall have a minimum color temperature of 5700K and a CRI of 75.

C. Mounting Heights: To ensure proper aiming angles for reduced glare and to provide better playability, minimum mounting heights shall be as described below. Higher mounting heights may be required based on photometric report and ability to ensure the top of the field angle is a minimum of 10 degrees below horizontal.

# of Poles	Pole Designation	Pole Height
2	A1 A2	60’
8	BT1-BT4, P1-P4	50’
6	F1-F4, B ,B2	70’

1.3 ENVIRONMENTAL LIGHT CONTROL

A. Light Control Luminaires: All luminaires shall utilize spill light and glare control devices including, but not limited to, internal shields, louvers and external shields. No symmetrical beam patterns are accepted.

C. Glare Control: Maximum candela values at a distance of 150 feet from the field boundaries and a height of 3 feet shall not exceed 6000 candela.

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D. The first page of a photometric report for all luminaire types proposed showing horizontal and vertical axial candle power shall be provided to demonstrate the capability of achieving the specified performance. Reports shall be certified by a qualified testing laboratory with a minimum of five years experience or by a manufacturer’s laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products. A summary of the horizontal and vertical aiming angles for each luminaire shall be included with the photometric report.

1.4 Cost of Ownership

A. Manufacturer shall submit a 25 year Cost of Ownership summary that includes energy consumption, anticipated maintenance costs, and control costs. All costs associated with faulty luminaire replacement - equipment rentals, removal and installation labor, and shipping - are to be included in the maintenance costs.

PART 2 – PRODUCT

2.2 SPORTS LIGHTING SYSTEM CONSTRUCTION

A. Manufacturing Requirements: All components shall be designed and manufactured as a system. All luminaires, wire harnesses, drivers and other enclosures shall be factory assembled, aimed, wired and tested.

B. Durability: All exposed components shall be constructed of corrosion resistant material and/or coated to help prevent corrosion. All exposed carbon steel shall be hot dip galvanized per ASTM A123. All exposed aluminum shall be powder coated with high performance polyester or anodized. All exterior reflective inserts shall be anodized, coated, and protected from direct environmental

exposure to prevent reflective degradation or corrosion. All exposed hardware and fasteners shall be stainless steel, passivated and coated with aluminum-based thermosetting epoxy resin for protection against corrosion and stress corrosion cracking. Structural fasteners may be carbon steel and galvanized meeting ASTM A153 and ISO/EN 1461 (for hot dipped galvanizing), or ASTM B695 (for mechanical galvanizing). All wiring shall be enclosed within the cross-arms, pole, or electrical components enclosure.

C. System Description: Lighting system shall consist of the following:

1. Galvanized steel poles and cross-arm assembly. Alternate: Concrete pole with a minimum of 8,000 psi and installed with concrete backfill will be an acceptable alternative provided building code, wind speed and foundation designs per specifications are adhered to.
2. Non-approved pole technology:
    a. Square static cast concrete poles will not be accepted.
    b. Direct bury steel poles which utilize the extended portion of the steel shaft for their foundation will not be accepted due to potential for internal and external corrosive reaction to the soils and long term performance concerns.
3. Lighting systems shall use concrete foundations. See Section 2.4 for details.
    a. For a foundation using a pre-stressed concrete base embedded in concrete backfill the concrete shall be air-entrained and have a minimum compressive design strength at 28 days of 3,000 PSI. 3,000 PSI concrete specified for early pole erection, actual required minimum allowable concrete strength is 1,000 PSI. All piers and concrete backfill must bear on and against firm undisturbed soil.
    b. For anchor bolt foundations or foundations using a pre-stressed concrete base in a suspended pier or re-enforced pier design pole erection may occur after 7 days. Or after a concrete sample from the same batch achieves a certain strength.
4. Manufacturer will supply all drivers and supporting electrical equipment
    a. Remote drivers and supporting electrical equipment shall be mounted approximately 10 feet above grade in aluminum enclosures. The enclosures shall be touch-safe and include drivers and fusing with indicator lights on fuses to notify when a fuse is to be replaced for each luminaire. Disconnect per circuit for each pole structure will be located in the enclosure. Integral drivers are not allowed.
    b. Manufacturer shall provide surge protection at the pole equal to or greater than 40 kA for each line to ground (Common Mode) as recommended by IEEE C62.41.2_2002.
5. Wire harness complete with an abrasion protection sleeve, strain relief and plug-in connections for fast, trouble-free installation.
6. All luminaires, visors, and cross-arm assemblies shall withstand 150 mi/h winds and maintain luminaire aiming alignment.
7. Control cabinet to provide remote on-off control and monitoring.
8. Manufacturer shall provide lightning grounding as defined by NFPA 780 and be UL Listed per UL 96 and UL 96A.
    a. Integrated grounding via concrete encased electrode grounding system.
    b. If grounding is not integrated into the structure, the manufacturer shall supply grounding electrodes, copper down conductors, and exothermic weld kits. Electrodes and conductors shall be sized as required by NFPA 780.The grounding electrode shall be minimum size of 5/8 inch diameter and 8 feet long, with a minimum of 10 feet embedment. Grounding electrode shall be connected to the structure by a grounding electrode conductor with a minimum size of 2 AWG for poles with 75 feet mounting height or less, and 2/0 AWG for poles with more than 75 feet mounting height.

9. Enhanced corrosion protection package: Due to the potentially corrosive environment for this project, manufacturers must provide documentation that their products meet the following enhanced requirements in addition to the standard durability protection specified above:
    a) Exposed carbon steel horizontal surfaces on the crossarm assembly shall be galvanized to no less than a five (5) mil average thickness.
    b) Exposed die cast aluminum components shall be Type II anodized per MIL-STD-8625 and coated with high performance polyester.
    c) Exposed extruded aluminum components shall be Type II anodized per MIL-STD-8625 and coated with high performance polyester.

D. Safety: All system components shall be UL listed for the appropriate application.

2.2 ELECTRICAL

A. Electric Power Requirements for the Sports Lighting Equipment:
1. Maximum total voltage drop: Voltage drop to the disconnect switch located on the poles shall not exceed three (3) percent of the rated voltage.

B. Energy Consumption: The kW consumption for the field lighting system shall be 62.76 including security circuit.

2.3 CONTROL

A. Instant On/Off Capabilities: System shall provide for instant on/off of luminaires.

B. Lighting contactor cabinet(s) constructed of NEMA Type 4 aluminum, designed for easy installation with contactors, labeled to match field diagrams and electrical design. Manual off-on-auto selector switches shall be provided.

C. Dimming: System shall provide for 3-stage 4-stage dimming (high-medium-low-blackout). Dimming will be set via scheduling options (Website, app, phone, fax, email) or via an onsite user interface tablet or device.

D. Remote Lighting Control System: System shall allow owner and users with a security code to schedule on/off system operation via a web site, phone, fax or email up to ten years in advance. Manufacturer shall provide and maintain a two-way TCP/IP communication link. Trained staff shall be available 24/7 to provide scheduling support and assist with reporting needs.

The owner may assign various security levels to schedulers by function and/or fields. This function must be flexible to allow a range of privileges such as full scheduling capabilities for all fields to only having permission to execute “early off” commands by phone. Scheduling tool shall be capable of setting curfew limits.

Controller shall accept and store 7-day schedules, be protected against memory loss during power outages, and shall reboot once power is regained and execute any commands that would have occurred during outage.

E. Remote Monitoring System: System shall monitor lighting performance and notify manufacturer if individual luminaire outage is detected so that appropriate maintenance can be scheduled. The controller shall determine switch position (manual or auto) and contactor status (open or closed).

F. Management Tools: Manufacturer shall provide a web-based database and dashboard tool of actual field usage and provide reports by facility and user group. Dashboard shall also show current status of luminaire outages, control operation and service. Mobile application will be provided suitable for IOS, Android and Blackberry devices.

Hours of Usage: Manufacturer shall provide a means of tracking actual hours of usage for the field

lighting system that is readily accessible to the owner.

1. Cumulative hours: shall be tracked to show the total hours used by the facility
2. Report hours saved by using early off and push buttons by users.

G. Communication Costs: Manufacturer shall include communication costs for operating the control and monitoring system for a period of 25 years.

H. Communication with luminaire drivers: Control system shall interface with drivers in electrical components enclosures by means of powerline communication.

2.4 **STRUCTURAL PARAMETERS**

A. Wind Loads: Wind loads shall be based on the 2020 Florida Building Code. Wind loads to be calculated using ASCE 7-10, an ultimate design wind speed of 140mph

B. Pole Structural Design: The stress analysis and safety factor of the poles shall conform to AASHTO 2013 Standard Specification for Structural Supports for Highway Signs, Luminaires, and Traffic Signals (LTS-6).

C. Foundation Design: The foundation design shall be based on soil parameters as outlined in the geotechnical report. If no geotechnical report is available, the foundation design shall be based on soils that meet or exceed those of a Class 4 material as defined by 2017 FBC Table 1806.2.

C. Foundation Drawings: Project specific foundation drawings stamped by a registered engineer in the state where the project is located are required. The foundation drawings must list the moment, shear (horizontal) force, and axial (vertical) force at ground level for each pole. These drawings must be submitted at time of bid to allow for accurate pricing.

PART 3 – EXECUTION

3.1 SOIL QUALITY CONTROL

A. It shall be the Contractor's responsibility to notify the Owner if soil conditions exist other than those on which the foundation design is based, or if the soil cannot be readily excavated. Contractor may issue a change order request / estimate for the Owner's approval / payment for additional costs associated with:

1. Providing engineered foundation embedment design by a registered engineer in the State of Florida for soils other than specified soil conditions;
2. Additional materials required to achieve alternate foundation;
3. Excavation and removal of materials other than normal soils, such as rock, caliche, etc.

3.2 DELIVERY TIMING

A. Delivery Timing Equipment On-Site: The equipment must be on-site 4-6 weeks from receipt of approved submittals and receipt of complete order information.

3.3 FIELD QUALITY CONTROL

A. Illumination Measurements: Upon substantial completion of the project and in the presence of the Contractor, Project Engineer, Owner's Representative, and Manufacturer's Representative, illumination measurements shall be taken and verified. The illumination measurements shall be conducted in accordance with IESNA LM-5-04.

B. Field Light Level Accountability

1. Light levels are guaranteed not to fall below the target maintained light levels for the entire warranty period of 25 years. These levels will be specifically stated as "guaranteed" on the illumination summary provided by the manufacturer.

2. The contractor/manufacturer shall be responsible for conducting initial light level testing and an additional inspection of the system, in the presence of the owner, one year from the date of commissioning of the lighting.
3. The contractor/manufacturer will be held responsible for any and all changes needed to bring these fields back to compliance for light levels and uniformities. Contractor/Manufacturer will be held responsible for any damage to the fields during these repairs.

C. Correcting Non-Conformance: If, in the opinion of the Owner or his appointed Representative, the actual performance levels including footcandles and uniformity ratios are not in conformance with the requirements of the performance specifications and submitted information, the Manufacturer shall be required to make adjustments to meet specifications and satisfy Owner.

3.4 WARRANTY AND GUARANTEE

A. 25-Year Warranty: Each manufacturer shall supply a signed warranty covering the entire system for 25 years from the date of shipment. Warranty shall guarantee specified light levels. Manufacturer shall maintain specifically-funded financial reserves to assure fulfillment of the warranty for the full term. Warranty does not cover weather conditions events such as lightning or hail damage, improper installation, vandalism or abuse, unauthorized repairs or alterations, or product made by other manufacturers.

B. Maintenance: Manufacturer shall monitor the performance of the lighting system, including on/off status, hours of usage and luminaire outage for 25 years from the date of equipment shipment. Parts and labor shall be covered such that individual luminaire outages will be repaired when the usage of any field is materially impacted. Manufacturer is responsible for removal and replacement of failed luminaires, including all parts, labor, shipping, and equipment rental associated with maintenance. Owner agrees to check fuses in the event of a luminaire outage.

PART 4 – ALTERNATE APPROVAL

4.0 POST-BID SUBMITTAL REQUIREMENTS (Non-Musco)

A. Design Approval: The owner / engineer will review post-bid submittals per section 4.0.B from all the manufacturers to ensure compliance to the specification after the bid for a proposed deductive alternate price.

B. Approved Product: Musco's Light-Structure System™ with TLC for LED™ is the approved product. All substitutions must provide a complete submittal package for approval as outlined in Submittal Information at the end of this section. Special manufacturing to meet the standards of this specification may be required.

C. All listed manufacturers not pre-approved shall submit the information at the end of this section upon request.

D. Bidders are required to bid only products that have been approved by this specification or addendum by the owner or owner's representative. Bids received that do not utilize an approved system/design, will be rejected.

REQUIRED SUBMITTAL INFORMATION FOR ALL BIDDERS POST BID

All items listed below are mandatory, shall comply with the specification and be submitted according to post-bid submittal requirements. Complete the Yes/No column to indicate compliance (Y) or noncompliance (N) for each item. ***Submit checklist below with submittal.***

Yes/ No	Tab	Item	Description
	A	Letter/ Checklist	Listing of all information being submitted must be included on the table of contents. List the name of the manufacturer's local representative and his/her phone number. Signed submittal checklist to be included.
	B	Equipment Layout	Drawing(s) showing field layouts with pole locations
	C	On Field Lighting Design	Lighting design drawing(s) showing: a. Field Name, date, file number, prepared by b. Outline of field(s) being lighted, as well as pole locations referenced to the center of the field (x & y), Illuminance levels at grid spacing specified c. Pole height, number of fixtures per pole, horizontal and vertical aiming angles, as well as luminaire information including wattage, lumens and optics d. Height of light test meter above field surface. e. Summary table showing the number and spacing of grid points; average, minimum and maximum illuminance levels in foot candles (fc); uniformity including maximum to minimum ratio, coefficient of variance (CV), coefficient of utilization (CU) uniformity gradient; number of luminaries, total kilowatts, average tilt factor; light loss factor.
	D	Off Field Lighting Design	Lighting design drawing showing initial spill light levels along the boundary line (defined on bid drawings) in footcandles. Lighting design showing glare along the boundary line in candela. Light levels shall be taken at 30-foot intervals along the boundary line. Readings shall be taken with the meter orientation at both horizontal and aimed towards the most intense bank of lights.
	E	Photometric Report	Provide first page of photometric report for all luminaire types being proposed showing candela tabulations as defined by IESNA Publication LM-35-02. Photometric data shall be certified by laboratory with current National Voluntary Laboratory Accreditation Program or an independent testing facility with over 5 years experience.
	F	Performance Guarantee	Provide performance guarantee including a written commitment to undertake all corrections required to meet the performance requirements noted in these specifications at no expense to the owner. Light levels must be guaranteed to not fall below target levels for warranty period.
	G	Structural Calculations	Pole structural calculations and foundation design showing foundation shape, depth backfill requirements, rebar and anchor bolts (if required). Pole base reaction forces shall be shown on the foundation drawing along with soil bearing pressures. Design must be stamped by a structural engineer in the state of Florida, if required by owner. (May be supplied upon award).
	H	Control & Monitoring System	Manufacturer of the control and monitoring system shall provide written definition and schematics for automated control system. They will also provide ten (10) references of customers currently using proposed system in the state of Florida.
	I	Electrical Distribution Plans	Manufacturer bidding an alternate product must include a revised electrical distribution plan including changes to service entrance, panels and wire sizing, signed by a licensed Electrical Engineer in the state of Florida.
	J	Warranty	Provide written warranty information including all terms and conditions. Provide ten (10) references of customers currently under specified warranty in the state of Florida.
	K	Project References	Manufacturer to provide a list of 10 projects where the technology and specific fixture proposed for this project has been installed in the state of Florida. Reference list will include project name, project city, installation date, and if requested, contact name and contact phone number.

	L	Product Information	Complete bill of material and current brochures/cut sheets for all product being provided.
	M	Delivery	Manufacturer shall supply an expected delivery timeframe from receipt of approved submittals and complete order information.
	N	Non-Compliance	Manufacturer shall list all items that do not comply with the specifications. If in full compliance, tab may be omitted.
	O	Cost of Ownership	Document cost of ownership as defined in the specification. Identify energy costs for operating the luminaires. Maintenance cost for the system must be included. All costs should be based on 25 Years
	P	Environmental Light Control Design	Environmental glare impact scans must be submitted showing the maximum candela from the field edge on a map of the surrounding area until 500 candela or less is achieved.

The information supplied herein shall be used for the purpose of complying with the specifications for Gore Park. By signing below I agree that all requirements of the specifications have been met and that the manufacturer will be responsible for any future costs incurred to bring their equipment into compliance for all items not meeting specifications and not listed in the Non-Compliance section.

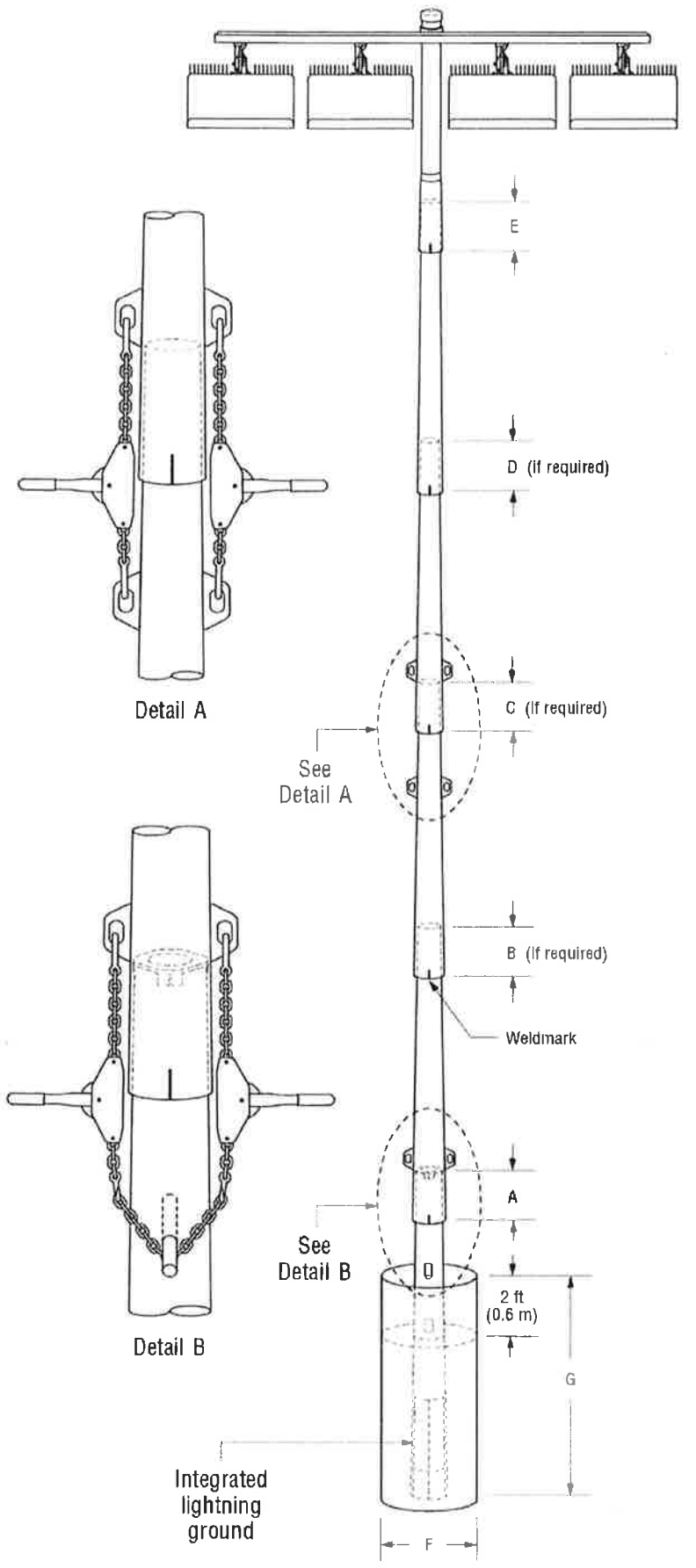
Manufacturer: _____ **Signature:** _____

Contact Name: _____ **Date:** _____/_____/_____

Contractor: _____ **Signature:** _____

Deductive Price from low Bidder: $_____

PRELIMINARY FOUNDATION AND POLE ASSEMBLY DRAWING



R60-62-00_A

TABLE 1: POLE ASSEMBLY			
POLE ID	POLE HEIGHT ft (m)	# OF LUMINAIRES	ASSEMBLED POLE WEIGHT [3] lb (kg)
A1	60 (18.3)	5	1459 (662)
A2	60 (18.3)	4	1394 (632)
A3	60 (18.3)	5	1459 (662)
A4	60 (18.3)	4	1394 (632)
A5	60 (18.3)	5	1459 (662)
A6	60 (18.3)	4	1394 (632)
A7	60 (18.3)	5	1459 (662)
A8	60 (18.3)	4	1394 (632)
A9	60 (18.3)	5	1459 (662)
A10	60 (18.3)	4	1394 (632)
B1	70 (21.3)	15	4335 (1966)
B2	70 (21.3)	15	4335 (1966)
B3	70 (21.3)	14	4335 (1966)
B4	70 (21.3)	15	4335 (1966)
B5	70 (21.3)	15	4335 (1966)
C1	60 (18.3)	7	2119 (961)
C2	60 (18.3)	7	2119 (961)
C3	60 (18.3)	7	2119 (961)
C4	60 (18.3)	7	2119 (961)
C5	60 (18.3)	7	2119 (961)
C6	60 (18.3)	7	2119 (961)
C7	60 (18.3)	7	2119 (961)
C8	60 (18.3)	7	2119 (961)
C9	60 (18.3)	7	2119 (961)
C10	60 (18.3)	7	2119 (961)

Pole Assembly Notes:

1. Steel pole should overlap concrete base and be seated tight with 1 1/2 ton come-alongs (contractor provided).
2. Align weldmarks on steel sections before assembling.
3. Assembled pole weight includes steel sections, crossarms, luminaires, and electrical components enclosures.
4. Section overlap must be pulled together until tight. Overlap measurement should be +/- 6 in (150 mm).
5. This document is not intended for use as an assembly instruction. See *Installation Instructions: Light-Structure System™ Lighting System* for complete assembly procedure.

TABLE 2: FOUNDATION DETAILS							
POLE ID	CONCRETE BASE WEIGHT lb(kg)	BURIAL INFORMATION [3,4] F in (mm)	G ft (m)	CONCRETE BACKFILL [1,2] yd³ (m³)	CUT BASE	LIGHTNING GROUND [5] TYPE	SUPPLEMENTAL INSTRUCTION
A1	2710 (1229)	30 (762)	12 (3.7)	1.5 (1.1)	NO	INTEGRATED [6]	N/A
A2	2710 (1229)	30 (762)	12 (3.7)	1.5 (1.1)	NO	INTEGRATED [6]	N/A
A3	2710 (1229)	30 (762)	12 (3.7)	1.5 (1.1)	NO	INTEGRATED [6]	N/A
A4	2710 (1229)	30 (762)	12 (3.7)	1.5 (1.1)	NO	INTEGRATED [6]	N/A
A5	2710 (1229)	30 (762)	12 (3.7)	1.5 (1.1)	NO	INTEGRATED [6]	N/A
A6	2710 (1229)	30 (762)	12 (3.7)	1.5 (1.1)	NO	INTEGRATED [6]	N/A
A7	2710 (1229)	30 (762)	12 (3.7)	1.5 (1.1)	NO	INTEGRATED [6]	N/A
A8	2710 (1229)	30 (762)	12 (3.7)	1.5 (1.1)	NO	INTEGRATED [6]	N/A
A9	2710 (1229)	30 (762)	12 (3.7)	1.5 (1.1)	NO	INTEGRATED [6]	N/A
A10	2710 (1229)	30 (762)	12 (3.7)	1.5 (1.1)	NO	INTEGRATED [6]	N/A
B1	7630 (3461)	36 (914)	18 (5.5)	2.8 (2.2)	NO	INTEGRATED [6]	N/A
B2	7630 (3461)	36 (914)	18 (5.5)	2.8 (2.2)	NO	INTEGRATED [6]	N/A
B3	7630 (3461)	36 (914)	18 (5.5)	2.8 (2.2)	NO	INTEGRATED [6]	N/A
B4	7630 (3461)	36 (914)	18 (5.5)	2.8 (2.2)	NO	INTEGRATED [6]	N/A
B5	7630 (3461)	36 (914)	18 (5.5)	2.8 (2.2)	NO	INTEGRATED [6]	N/A
C1	3750 (1701)	30 (762)	14 (4.3)	1.6 (1.2)	NO	INTEGRATED [6]	N/A
C2	3750 (1701)	30 (762)	14 (4.3)	1.6 (1.2)	NO	INTEGRATED [6]	N/A
C3	3750 (1701)	30 (762)	14 (4.3)	1.6 (1.2)	NO	INTEGRATED [6]	N/A
C4	3750 (1701)	30 (762)	14 (4.3)	1.6 (1.2)	NO	INTEGRATED [6]	N/A
C5	3750 (1701)	30 (762)	14 (4.3)	1.6 (1.2)	NO	INTEGRATED [6]	N/A
C6	3750 (1701)	30 (762)	14 (4.3)	1.6 (1.2)	NO	INTEGRATED [6]	N/A
C7	3750 (1701)	30 (762)	14 (4.3)	1.6 (1.2)	NO	INTEGRATED [6]	N/A
C8	3750 (1701)	30 (762)	14 (4.3)	1.6 (1.2)	NO	INTEGRATED [6]	N/A
C9	3750 (1701)	30 (762)	14 (4.3)	1.6 (1.2)	NO	INTEGRATED [6]	N/A
C10	3750 (1701)	30 (762)	14 (4.3)	1.6 (1.2)	NO	INTEGRATED [6]	N/A

Foundation Notes:

1. Concrete backfill is calculated to 2 ft (0.6m) below grade (no overage included). Top 2 ft (0.6m) to be class 5 soil compacted to 95% density of surrounding undisturbed soil unless otherwise specified in stamped structural design.
2. Concrete backfill required 3000 lb/in² (20 MPa) minimum.
3. Foundation design per 2017 FBC, 140 mph, exposure category C, variation STD (Risk Category II).
4. Assumes IBC class 5 soils.
5. Standard bases include integrated lightning protection. If bases are cut, supplemental lightning protection is required. Contact Musco for materials and instruction.
6. Lightning protection is a manufacturer installed concrete encased electrode and connector. Ground connection is made when concrete base is installed and footing is poured. No additional steps required.

Lynn Haven Sports Complex - Panama City, FL, USA

Date:	02/22/2021	Scale:	N/A
Rep:	Danny Sheldon	Page:	1 of 1
Project:	199890		Preliminary

APPENDIX
A

CITY OF CALLAWAY

CITY OF CALLAWAY
GORE PARK – SITE WORK

CITY OF CALLAWAY
6601 East Highway 22
Callaway, FL 32404

Pamn Henderson, Mayor
Scott Davis, Commissioner
David Griggs, Commissioner
Ron Fairbanks, Commissioner
Mike Jones, Commissioner
Eddie Cook, City Manager
Tim Legare, Director of Leisure Services
Bill Frye, Public Works Director

Contractor:

_____

_____

_____

Engineer:

PANHANDLE ENGINEERING, INC.

3005 Lynn Haven Parkway
Lynn Haven, FL 32444

Chris Forehand, P.E., Engineer of Record

Note: Sign shall be ¾" thick by 4'x8' with painted white background and all logos shall be in color. Engineer will provide digital file of City and Engineer logos to the design/build team. Posts shall be pressure treated 4"x4". Location of sign shall be coordinated with the Engineer.

APPENDIX
B

MAGNUM ENGINEERING INC
GEOTECHNICAL ENGINEERING CONSULTANTS

GEOTECHNICAL ENGINEERING REPORT

GORE PARK FOOTBALL FIELDS
CALLAWAY, FLORIDA

PREPARED FOR:

MR. CHRIS FOREHAND, P.E.
PANHANDLE ENGINEERING, INC.
3005 SOUTH HIGHWAY 77
LYNN HAVEN, FLORIDA 32444

1026 PIERSON DRIVE
LYNN HAVEN, FLORIDA 32444
TELEPHONE (850) 258.0994

MAGNUM ENGINEERING INC

GEOTECHNICAL ENGINEERING CONSULTANTS

October 16, 2019

Panhandle Engineering, Inc.
Mr. Chris Forehand, P.E.
3005 South Highway 77
Lynn Haven, Florida 32444

SUBJECT: Gore Park Football Field – Geotechnical Services
Bay County, Florida
MEI Project No. M119-107-185

Dear Mr. Forehand:

This letter forwards the results of our Geotechnical Services for the proposed Gore Park Football Field to be constructed at the existing Gore Park in Callaway, Florida. Our exploration consisted of Two (2) 20-feet deep Standard Penetration (SPT) borings in the concession area and Ten (10) 5-feet deep hand auger borings in the field and pavement areas. The subsurface exploration was conducted to provide information needed in the design of effective foundation system and pavement section for the proposed development. The following report presents the results of our study as well as our evaluation and recommendations pertaining to the geotechnical aspects of the project. Upon completion of our field testing, the samples were brought back to the office for visual inspection, classification, and analysis by our engineering staff.

Project Description and Scope of Services

The subject site is located at the existing Gore Park, which is west of Beulah Avenue and south of Minneola Street in Callaway, Florida. New construction will include new football fields, a AA baseball field, concession stand, and associated parking along Minneola Street,.

No structural or grading information has been provided at this time, however, based on similar facilities we have worked on in the past, we estimate that structures will be lightly loaded with wall loads on the order of 2 kips per linear feet and isolated column loads of 15 kips.

The scope of services did not include an environmental assessment for determining the presence or absence of wetlands or hazardous materials in the air, surface water(s), soil, or groundwater on or in the vicinity of the subject site.

Subsurface Conditions

Concession Stand

The borings in the concession stand area (B-1 and B-2) generally encountered very loose to medium dense slightly silty fine sands, slightly clayey fine sands, and clayey fine sands from the ground surface to roughly 6 feet to 8 feet below existing grade underlain by very loose to medium dense silty fine sands and slightly silty fine sands to the boring termination depth of 20 feet below existing grade.

Pavement Borings and Field Borings

The pavement borings and field borings (HA-1 through HA-10) generally encountered clean fine sands, slightly silty fine sands, and clayey fine sands from the ground surface to the boring termination depth of 5 feet below existing grade.

The above subsurface descriptions are of a generalized nature, provided to highlight the major soil strata encountered. The Logs of Boring should be reviewed for specific subsurface conditions at each boring location. The stratifications shown on the Logs of Boring represent the subsurface conditions at the actual boring locations only, and variations in the subsurface conditions can and may occur between boring locations and should therefore be expected. The stratifications represent the approximate boundary between subsurface materials, and the transitions between strata may be gradual.

Please refer to the attached Logs of Boring presented as Figure #2 for a detailed description of the subsurface conditions encountered.

Groundwater Conditions

Groundwater was encountered in the borings ranging from 1.6 feet to greater than 5.0 feet below existing grade at the time of drilling (September 19 and October 3, 2019), which was during a period of slightly below normal seasonal rainfall. Groundwater levels will fluctuate with rainfall and could vary several feet during typical seasonal fluctuations. Larger fluctuations are possible under severe weather conditions. We recommend that the Contractor verify the actual groundwater levels at the time of construction to determine potential impacts groundwater will have on construction procedures.

CONCLUSIONS AND RECOMMENDATIONS

General

The following geotechnical related design recommendations have been developed on the basis of the previously described project characteristics and subsurface conditions encountered. If there are any changes in these project criteria, including project location on the site, a review should be made by Magnum Engineering to determine if modifications to the recommendations are warranted.

Once final design plans and specifications are available, a general review by Magnum Engineering is recommended as a means to check that the evaluations made in preparation of this report are correct and that earthwork and foundation recommendations are properly interpreted and implemented.

Site Preparation

If encountered, the site should be cleared and grubbed of surface vegetation. As a minimum, it is recommended the clearing operations extend at least five feet beyond the development perimeters.

The subgrade soils should be compacted to at least 95 percent of the Modified Proctor (ASTM D-1557) maximum dry density to a depth of 12 inches below footing and floor slab bottoms. Fill required to elevate existing grades to building subgrade level should consist of clean fine sands, as described below, placed in level lifts not exceeding 12 inches loose, with each lift compacted to a firm and unyielding condition and a minimum of 95 percent of the soils Modified Proctor value, prior to placement of successive lifts.

Engineered Fill

All fill used to raise the building area to final grades should consist of sandy soils with less than 15 percent passing the No. 200 sieve. These soils should be free of rubble, organics, clay, debris and other unsuitable material. Fill should be placed in lifts on the order of 12 inches or less (in loose thickness) and compacted to 95 percent of the soil's Modifies Proctor maximum dry density, per ASTM D-1557.

Foundations

With proper subgrade preparation and compaction/densification as described herein, the site soils should be capable of supporting the proposed structures on shallow foundations. The existing near surface soils and fill soils should be prepared as previously recommended to improve foundation support and reduce total and differential settlements.

Based on the anticipated construction and site preparation requirements recommended herein, it is our opinion that the buildings can be supported on shallow foundations designed for a net maximum allowable bearing pressure of 2,000 pounds per square foot (psf). The following geotechnical related recommendations should be used for design and construction of the foundations.

- The foundation and floor slab should bear on properly improved existing subgrade or on properly placed and compacted cohesionless (sand) fill.
- The soils to a depth of one foot below the footings and floor slabs and all new fill should be compacted to 95 percent of the soil's Modified Proctor (ASTM D-1557) density.
- Exterior footings should be embedded so that the bottom of the foundation is a minimum of 18 inches below the adjacent compacted grades.
- Strip or wall footings should be a minimum of 18 inches wide and pad or column footings should be a minimum of 3 feet wide. The minimum footing sizes should be used regardless of whether or not the foundation loads and allowable bearing pressures dictate a smaller size.
- All footings should be constructed in a "dry" fashion.
- Structural elements should be centered on the footings such that the load is transferred evenly unless the footings are proportioned for eccentric loads.

Settlement

The settlement of shallow foundations supported on sandy soils should occur rapidly after loading. The majority of expected settlement should occur during construction as dead loads are imposed. Total settlements of footings are estimated to be less than 1 inch, with differential settlement on the order of 50 percent of the total settlements. Total and differential settlements of these magnitudes are usually considered tolerable for the anticipated construction; however, the tolerance of the proposed structures to the predicted total and differential settlements should be confirmed by the structural engineer.

Pavements

Initially, the pavement areas should be cleared, grubbed, and stripped of topsoil and other deleterious material. Special care should be taken to insure that all stumps and root systems are removed from beneath the proposed pavement areas.

Fill soils, if required, should consist of sandy soils with less than 15 percent passing the No. 200 sieve. These soils should be free of rubble, organics, clay, debris and other unsuitable material. Fill should be placed in lifts on the order of 12 inches or less (in loose thickness) and compacted to 95 percent of the soil's Modifies Proctor maximum dry density, per ASTM D-1557.

Prior to placing fill soils, where applicable, the top of the ground surface should be compacted to a minimum soil density of 95% of the Modified Proctor Test (ASTM D1557). Structural fill soils should be placed in maximum 12-inch lifts and compacted to a minimum soil density of 95% of the Modified Proctor Test (ASTM D1557). The top 12 inches of subgrade should be compacted to a minimum soil density of 98% of the Modified Proctor Test (ASTM D1557). The top 12 inches of subgrade should have a minimum LBR value of 40. We recommend that structural fill soils, where planned, have a minimum LBR of 40.

Based on the subsurface conditions encountered in the test borings, we recommend using a graded aggregate base (i.e. limerock or crushed concrete). The base course should be compacted to a minimum soil density of 98% of the Modified Proctor Test (ASTM D1557).

Without benefit of traffic loads, volumes, and serviceability parameters, a pavement section cannot be designed. However, typical parking lots in the local area generally consist of a minimum of 1½ inches of FDOT Superpave Mix SP-12.5 or SP-9.5 asphaltic concrete and a minimum of 6 inches of base. Moderate duty traffic areas (e.g. main entrance areas) typically have a minimum pavement section consisting of 2 inches of FDOT Superpave Mix SP-12.5 asphaltic concrete and 8 inches of base. The above sections represent minimum thicknesses representative of typical, local construction practices, and as such periodic maintenance should be anticipated. All pavement materials and construction procedures should conform to FDOT and/or appropriate city or county requirements

While specific traffic loads and volumes for the project have not been provided, we are providing recommended light-duty and medium-duty pavement sections, which have been successfully utilized for this type of development in the Northwest Florida area.

Light Duty (General roadway and parking areas)

- 1 ½ inches Asphalt Concrete (FDOT Superpave Mix SP-12.5 or SP-9.5)
- 6 inches Crushed Limerock or Graded Aggregate Base
- 12 inches stabilized subgrade (minimum LBR 40)

Medium Duty (Entrance Lanes)

- 2 inches Asphaltic Concrete (FDOT Superpave Mix SP-12.5)
- 8 inches Crushed Limerock or Graded Aggregate Base
- 12 inches Stabilized Subgrade (minimum LBR 40)

The above recommended pavement sections represent minimum design thicknesses and, as such, periodic maintenance should be anticipated. Also, these recommended pavement sections should be confirmed or modified by your Civil Engineer, based on actual traffic and the owner's requirements. The pavement section materials and construction should comply with the Florida DOT and local municipality requirements.

Warranty and Limitations of Study

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This warranty is in lieu of all other warranties, either expressed or implied. Magnum Engineering, Inc. is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploration and laboratory test data presented in this report.

We wish to point out that a geotechnical study is inherently limited in that the engineering recommendations are developed from information obtained from test borings that only depict subsurface conditions at the specific locations, times and depth shown on the logs. Soil conditions at other locations may differ from those encountered in the test borings, and the passage of time may cause the soils conditions to change from those described in this report.

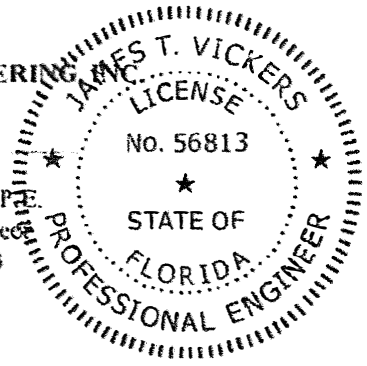
This report is intended for use by the designers of this project. While we have no objections to it being provided for review by parties to this project, it is not a specification document and is not to be used as a part of the specifications. If desired, we can assist in the development of specifications for this project based upon our exploration.

The nature and extent of variation and change in the subsurface conditions at the site may not become evident until the course of construction. Construction monitoring by the geotechnical engineer or his representative is therefore considered necessary to verify the subsurface conditions. If significant variations or changes are in evidence, it may be necessary to reevaluate the recommendations in this report.

Furthermore, if the project characteristics are altered significantly from those discussed in this report, if the project information contained in this report is incorrect or if additional information becomes available, a review must be made by this office to determine if any modifications in the recommendations will be necessary.

We hope this letter provides sufficient information for the present. If you have any questions or comments, please feel free to call.

Sincerely,
MAGNUM ENGINEERING, INC.



JAMES T. VICKERS, P.E.
Sr. Geotechnical Engineer
Florida Reg. No. 56813

ATTACHMENTS:

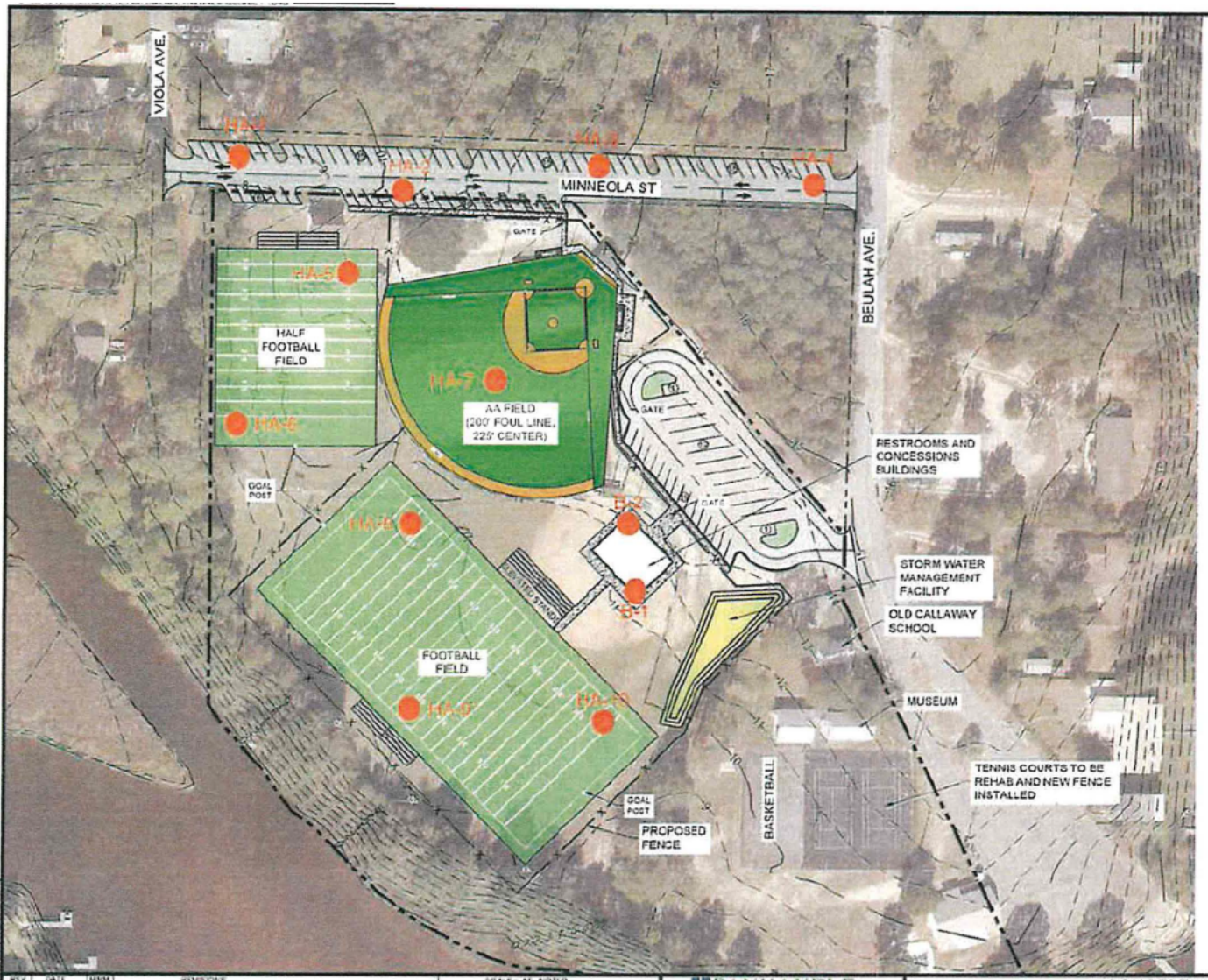
Figure #1 Boring Location Plan
Figure #2 Logs of Borings

MAGNUM ENGINEERING INC

GEOTECHNICAL ENGINEERING CONSULTANTS

BORING LOCATION PLAN

FIGURE # 1



PARKING DATA

PARKING REQUIRED:

- ATHLETIC FIELD: 30 PARKS PER PLAY
- BASKETBALL COURT: 2 PARKS PER COURT
- TENNIS COURT: 2 PARKS PER ACRE
- ESTIMATED PARKING REQUIRED: 96 PARKS

PARKING SHOWN
88 REGULAR PARKS
4 ADA PARKS
12 TRUCK & TRAILER PARKS
104 TOTAL PARKS SHOWN

LEGEND

= PROPOSED CONCRETE

= PROPOSED ASPHALT

= EXISTING ASPHALT

PREPARED WITHOUT BENEFIT OF TOPO OR BOUNDARY SURVEY AND SOIL PERCOLATION TEST, THEREFORE SITE LAYOUT & ANY STORMWATER BASIN SIZING IS PRELIMINARY.

REV	DATE	MM	REVISIONS

NOT RELEASED FOR CONSTRUCTION BY: DATE:

SCALE: AS NOTED
DESIGNED BY: CSF
DRAWN BY: JAH
REVIEWED BY: CSF
ISSUE DATE: MARCH 2019
ACADFILE NAME: 740_B_CSP_Conc

PANHANDLE ENGINEERING, INC.
ENVIRONMENTAL ENGINEERS • CIVIL ENGINEERS • LAND PLANNERS
3029 South Highway 77 Lynn Haven, Florida 32444
(850)763-5200 Fax (850)769-0750 www.panhandleengineering.com

CONCEPTUAL SITE PLAN 'C'
GORE PARK
FOOTBALL FIELDS
CALLAWAY, FLORIDA

DPR CLEARINGHOUSE NO: 19-7806
SHEET NO: 1 OF 1
PROJECT NUMBER: 28018

MAGNUM ENGINEERING INC

GEOTECHNICAL ENGINEERING CONSULTANTS

LOGS OF BORING

FIGURE # 2

Magnum Engineering, Inc.
1026 Pierson Drive
Lynn Haven, Florida 32444
Telephone: 8502658332

BORING NUMBER B-1

CLIENT Panhandle Engineering, Inc.
PROJECT NAME Gore Park Football
PROJECT NUMBER M119-107-185
PROJECT LOCATION Callaway Florida
DATE STARTED 9/19/19 COMPLETED 9/19/19
GROUND ELEVATION HOLE SIZE
DRILLING CONTRACTOR Fontaine Drilling Inc
GROUND WATER LEVELS:
DRILLING METHOD Standard Penetration Test (SPT)
▽ DEPTH TO GROUNDWATER AT TIME OF DRILLING 1.6 ft
LOGGED BY J. Fontaine CHECKED BY J. Vickers
ESTIMATED SEASONAL HIGH GWT ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Orange Slightly Clayey Fine SAND (SP-SC)	SS 1		4-5-6 (11)							
		Tan/Orange Slightly Silty Fine SAND (SP-SM)	SS 2		6-7-9 (16)							
5		Gray Clayey Fine SAND (SC)	SS 3		3-2-2 (4)							
		Gray Silty Fine SAND (SM)	SS 4		1-2-2 (4)							
			SS 5		1-2-2 (4)							
10												
		Tan/Gray Medium to Fine SAND	SS 6		5-5-6 (11)							
15												
		Gray Silty Fine SAND (SM)	SS 7		1-1-1 (2)							
20		Boring Termination Depth at 20.0 feet.										

GEOTECH BH COLUMNS GORE PARK FOOTBALL.GPJ GINT STD US LAB.GDT 10/8/19

Magnum Engineering, Inc.
1026 Pierson Drive
Lynn Haven, Florida 32444
Telephone: 8502658332

BORING NUMBER B-2

CLIENT Panhandle Engineering, Inc.
PROJECT NAME Gore Park Football
PROJECT NUMBER M119-107-185
PROJECT LOCATION Callaway, Florida
DATE STARTED 9/19/19 COMPLETED 9/19/19
GROUND ELEVATION HOLE SIZE
DRILLING CONTRACTOR Fontaine Drilling Inc
GROUND WATER LEVELS:
DRILLING METHOD Standard Penetration Test (SPT)
▽ DEPTH TO GROUNDWATER AT TIME OF DRILLING 1.8 ft
LOGGED BY J. Fontaine CHECKED BY J. Vickers
ESTIMATED SEASONAL HIGH GWT ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Orange Slightly Silty Fine SAND with Trace of Clay (SP-SM)	SS 1		2-3-4 (7)							
		Tan Slightly Silty Fine SAND (SP-SM)	SS 2		5-5-6 (11)							
5		Gray Clayey Fine SAND (SC)	SS 3		3-2-2 (4)							
			SS 4		1-2-2 (4)							
		Gray Silty Fine SAND (SM)	SS 5		1-2-2 (4)							
10												
		Gray Slightly Silty Fine SAND (SP-SM)	SS 6		3-5-7 (12)							
15												
			SS 7		4-4-2 (6)							
20		Boring Termination Depth at 20.0 feet										

GEOTECH BH COLUMNS GORE PARK FOOTBALL.GPJ GINT STD US LAB.GDT 10/8/19

Magnum Engineering, Inc.
1026 Pierson Drive
Lynn Haven, Florida 32444
Telephone: 8502658332

BORING NUMBER HA-1

CLIENT Panhandle Engineering, Inc.
PROJECT NAME Gore Park Football
PROJECT NUMBER M119-107-185
PROJECT LOCATION Callaway, Florida
DATE STARTED 10/3/19 COMPLETED 10/3/19
GROUND ELEVATION ____ HOLE SIZE ____
DRILLING CONTRACTOR ____
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger Boring
▽ DEPTH TO GROUNDWATER AT TIME OF DRILLING 4.0 ft
LOGGED BY J. Cotton CHECKED BY J. Vickers
ESTIMATED SEASONAL HIGH GWT --
NOTES ____
AFTER DRILLING --

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Gray/Brown Slightly Silty Fine SAND (SP-SM)	AU									
4		▽ Gray/Red/Orange Clayey Fine SAND (SC)										
5		Boring Termination Depth at 5.0 feet.										

GEOTECH BH COLUMNS GORE PARK FOOTBALL.GPJ GINT STD US LAB.GDT 10/8/19

Magnum Engineering, Inc.
1026 Pierson Drive
Lynn Haven, Florida 32444
Telephone: 8502658332

BORING NUMBER HA-10

CLIENT Panhandle Engineering, Inc.
PROJECT NAME Gore Park Football
PROJECT NUMBER M119-107-185
PROJECT LOCATION Callaway, Florida
DATE STARTED ____ COMPLETED ____
GROUND ELEVATION ____ HOLE SIZE ____
DRILLING CONTRACTOR ____
GROUND WATER LEVELS:
DRILLING METHOD ____
DEPTH TO GROUNDWATER AT TIME OF DRILLING ---
LOGGED BY ____ CHECKED BY ____
ESTIMATED SEASONAL HIGH GWT ---
NOTES ____
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Tan Slightly Silty Fine SAND (SP-SM)	AU									
1												
2												
3												
4												
5		Boring Termination Depth at 5.0 feet										

GEOTECH BH COLUMNS GORE PARK FOOTBALL.GPJ GINT STD US LAB.GDT 10/8/19

Magnum Engineering, Inc.
1026 Pierson Drive
Lynn Haven, Florida 32444
Telephone: 8502658332

BORING NUMBER HA-2

CLIENT Panhandle Engineering, Inc.
PROJECT NAME Gore Park Football
PROJECT NUMBER M119-107-185
PROJECT LOCATION Callaway, Florida
DATE STARTED ____ COMPLETED ____
GROUND ELEVATION ____ HOLE SIZE ____
DRILLING CONTRACTOR ____
GROUND WATER LEVELS:
DRILLING METHOD ____
▽ DEPTH TO GROUNDWATER AT TIME OF DRILLING 4.2 ft
LOGGED BY ____ CHECKED BY ____
ESTIMATED SEASONAL HIGH GWT ---
NOTES ____
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Gray/Brown Slightly Silty Fine SAND (SP-SM)	AU									
1												
2												
3												
4												
		Light Gray Fine SAND (SP) ▽										
5												
		Boring Termination Depth at 5.0 feet.										

Magnum Engineering, Inc.
1026 Pierson Drive
Lynn Haven, Florida 32444
Telephone: 8502658332

BORING NUMBER HA-3

CLIENT Panhandle Engineering, Inc.
PROJECT NAME Gore Park Football
PROJECT NUMBER M119-107-185
PROJECT LOCATION Callaway, Florida
DATE STARTED ____ COMPLETED ____
GROUND ELEVATION ____ HOLE SIZE ____
DRILLING CONTRACTOR ____
GROUND WATER LEVELS:
DRILLING METHOD ____
▽ DEPTH TO GROUNDWATER AT TIME OF DRILLING 4.5 ft
LOGGED BY ____ CHECKED BY ____
ESTIMATED SEASONAL HIGH GWT ---
NOTES ____
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Tan Fine SAND (SP)	AU									
1												
2												
3												
4		Light Gray Fine SAND (SP)										
5		▽										
		Boring Termination Depth at 5.0 feet.										

Magnum Engineering, Inc.
1026 Pierson Drive
Lynn Haven, Florida 32444
Telephone: 8502658332

BORING NUMBER HA-4

CLIENT Panhandle Engineering, Inc.
PROJECT NAME Gore Park Football
PROJECT NUMBER M119-107-185
PROJECT LOCATION Callaway, Florida
DATE STARTED _____ COMPLETED _____
GROUND ELEVATION _____ HOLE SIZE _____
DRILLING CONTRACTOR _____
GROUND WATER LEVELS:
DRILLING METHOD _____
DEPTH TO GROUNDWATER AT TIME OF DRILLING ---
LOGGED BY _____ CHECKED BY _____
ESTIMATED SEASONAL HIGH GWT ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		Tan Fine SAND (SP)	AU									
1												
2												
3												
4												
5		Boring Termination Depth at 5.0 feet.										

Magnum Engineering, Inc.
1026 Pierson Drive
Lynn Haven, Florida 32444
Telephone: 8502658332

BORING NUMBER HA-5

CLIENT Panhandle Engineering, Inc.
PROJECT NAME Gore Park Football
PROJECT NUMBER M119-107-185
PROJECT LOCATION Callaway, Florida
DATE STARTED ____ COMPLETED ____
GROUND ELEVATION ____ HOLE SIZE ____
DRILLING CONTRACTOR ____
GROUND WATER LEVELS:
DRILLING METHOD ____
▽ DEPTH TO GROUNDWATER AT TIME OF DRILLING 3.8 ft
LOGGED BY ____ CHECKED BY ____
ESTIMATED SEASONAL HIGH GWT ---
NOTES ____
AFTER DRILLING —

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Tan Slightly Silty Fine SAND (SP-SM)	AU									
1												
2												
3												
4		▽										
5		Tan/Light Gray Slightly Silty Slightly Clayey Fine SAND (SC-SM)										
		Boring Termination Depth at 5.0 feet.										

Magnum Engineering, Inc.
1026 Pierson Drive
Lynn Haven, Florida 32444
Telephone: 8502658332

BORING NUMBER HA-6

CLIENT Panhandle Engineering, Inc.
PROJECT NAME Gore Park Football
PROJECT NUMBER M119-107-185
PROJECT LOCATION Callaway, Florida
DATE STARTED ___ COMPLETED ___
GROUND ELEVATION ___ HOLE SIZE ___
DRILLING CONTRACTOR ___
GROUND WATER LEVELS:
DRILLING METHOD ___
▽ DEPTH TO GROUNDWATER AT TIME OF DRILLING 3.5 ft
LOGGED BY ___ CHECKED BY ___
ESTIMATED SEASONAL HIGH GWT ---
NOTES ___
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Gray/Brown Slightly Silty Fine SAND (SP-SM)	AU									
2		Tan Slightly Silty Fine SAND (SP-SM)										
4		Light Gray Slightly Silty Slightly Clayey Fine SAND (SC-SM)										
5		Boring Termination Depth at 5.0 feet.										

Magnum Engineering, Inc.
1026 Pierson Drive
Lynn Haven, Florida 32444
Telephone: 8502658332

BORING NUMBER HA-7

CLIENT Panhandle Engineering, Inc.
PROJECT NAME Gore Park Football
PROJECT NUMBER M119-107-185
PROJECT LOCATION Callaway, Florida
DATE STARTED ____ COMPLETED ____
GROUND ELEVATION ____ HOLE SIZE ____
DRILLING CONTRACTOR ____
GROUND WATER LEVELS:
DRILLING METHOD ____
▽ DEPTH TO GROUNDWATER AT TIME OF DRILLING 3.7 ft
LOGGED BY ____ CHECKED BY ____
ESTIMATED SEASONAL HIGH GWT ---
NOTES ____
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Tan Slightly Silty Fine SAND (SP-SM)	AU									
1												
2												
3												
4		▽										
		Light Gray Fine SAND (SP)										
5												
		Boring Termination Depth at 5.0 feet.										

Magnum Engineering, Inc.
1026 Pierson Drive
Lynn Haven, Florida 32444
Telephone: 8502658332

BORING NUMBER HA-8

CLIENT Panhandle Engineering, Inc.
PROJECT NAME Gore Park Football
PROJECT NUMBER M119-107-185
PROJECT LOCATION Callaway, Florida
DATE STARTED _____ COMPLETED _____
GROUND ELEVATION _____ HOLE SIZE _____
DRILLING CONTRACTOR _____
GROUND WATER LEVELS:
DRILLING METHOD _____
DEPTH TO GROUNDWATER AT TIME OF DRILLING ---
LOGGED BY _____ CHECKED BY _____
ESTIMATED SEASONAL HIGH GWT ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Red/Orange Clayey Fine SAND (SC)	AU									
1												
2												
3												
4		Tan Slightly Silty Fine SAND (SP-SM)										
5												
		Boring Termination Depth at 5.0 feet.										

Magnum Engineering, Inc.
1026 Pierson Drive
Lynn Haven, Florida 32444
Telephone: 8502658332

BORING NUMBER HA-9

CLIENT Panhandle Engineering, Inc.
PROJECT NAME Gore Park Football
PROJECT NUMBER M119-107-185
PROJECT LOCATION Callaway, Florida
DATE STARTED _____ COMPLETED _____
GROUND ELEVATION _____ HOLE SIZE _____
DRILLING CONTRACTOR _____
GROUND WATER LEVELS:
DRILLING METHOD _____
DEPTH TO GROUNDWATER AT TIME OF DRILLING ---
LOGGED BY _____ CHECKED BY _____
ESTIMATED SEASONAL HIGH GWT ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Gray/Brown Slightly Silty Fine SAND (SP-SM)	AU									
1												
2												
3												
4												
5		Boring Termination Depth at 5.0 feet.										

MAGNUM ENGINEERING INC

GEOTECHNICAL ENGINEERING CONSULTANTS

GEOTECHNICAL ENGINEERING REPORT

GORE PARK STORMWATER POND

PE PROJECT #26018
CALLAWAY, FLORIDA

PREPARED FOR:

Mr. Doug Crook, P.E.
Panhandle Engineering, Inc.
3005 South Highway 77
Lynn Haven, FL 32444

1026 PIERSON DRIVE
LYNN HAVEN, FLORIDA 32444
TELEPHONE (850) 258.0994

MAGNUM ENGINEERING INC
GEOTECHNICAL ENGINEERING CONSULTANTS

April 17, 2020

Mr. Doug Crook, P.E.
Panhandle Engineering, Inc.
3005 South Highway 77
Lynn Haven, FL 32444

SUBJECT: Gore Park Stormwater Pond – Geotechnical Services
Callaway, Florida
MEI Project No. M120-107-207
Panhandle Engineering Job# 26018

Dear Mr. Crook:

This letter forwards the results of our Geotechnical services for the proposed stormwater treatment area(s) at the subject property in Bay County, Florida. The purpose of this exploration was to evaluate the subsurface conditions present in the proposed stormwater treatment area and to provide soil related data to aid in the design of an effective stormwater management area in accordance with the ERP and/or local municipal requirements.

Project Description and Scope of Services

The subject site is located at the existing Gore Park, which is west of Beulah Avenue and south of Minneola Street in Callaway, Florida. At the time of our exploration, the site of the proposed stormwater area was clear with the exception of surficial grasses. Our exploration consisted of one (1) Double Ring Infiltrometer test and One (1) 56feet deep hand auger boring in the proposed stormwater management area. Upon completion of our field testing, the samples were brought back to the office for visual inspection, classification and analysis by our engineering staff.

If any of the above information is incorrect, please inform Magnum Engineering, Inc. so that we can review and update our recommendations, as needed.

The scope of services did not include an environmental assessment for determining the presence or absence of wetlands or hazardous materials in the air, surface water(s), soil, or groundwater on or in the vicinity of the subject site.

Figure #1 shows the boring location plan and Figure #2 shows the Log of Boring for HA-1. The subsurface conditions encountered in the test boring will be discussed in general terms below.

Subsurface Conditions

The hand auger boring generally encountered dark gray, brown, and tan slightly silty fine sands from the ground surface to roughly 4.0 feet below existing grade underlain by tan silty fine sands with trace of clay to the boring termination depth of 6 feet below existing grade.

Groundwater Conditions

Groundwater was encountered at roughly 5.1 feet below existing grade at the time of drilling on (April 8, 2020), which was during a period of normal seasonal rainfall. By definition, the normal seasonal high groundwater table elevation is the highest level of the saturated zone in the soil during a year with normal rainfall. The procedure used in estimating the seasonal high groundwater table is based on adjusting the existing groundwater table encountered upward or downward and taking into consideration factors such as antecedent rainfall, redoximorphic features (identifying soil mottling) and vegetative indicators. **Based on the resources and methodology provided, we have estimated the seasonal high groundwater level to be roughly 4.0 feet below existing grade at location HA-1.** Groundwater levels will fluctuate with rainfall and tidal influences and could vary several feet during typical seasonal fluctuations. Larger fluctuations are possible under severe weather conditions.

Double Ring Infiltrometer Test

One (1) Double Ring Infiltrometer test was performed in the field in general accordance with the procedures outlined in ASTM D-3385, ``Infiltration Rate of Soils in Field using Double Ring Infiltrometers". Testing consisted of initially clearing all surface vegetation and topsoil from within the test area. The Infiltration test was performed approximately 1.0 feet below existing grade at test location DRI-1. The outer ring, which is approximately 24 inches in diameter, was then driven to a depth of 6 inches below the exposed ground surface. The inner ring, approximately 12 inches in diameter, was then centrally located within the outer ring and driven to a depth of 2 inches. The two rings were then simultaneously filled with water to a height of 4 inches above the exposed ground surface test soils. The water level was maintained at this height throughout the test period, with the required amount of water added to maintain this level in both rings recorded at time intervals of 5 minutes.

The infiltration rate for the inner ring and the annular space between the rings is determined by dividing (a) the water volume used (within each specific area) during the stabilized flow period of the test, by (b) the specific area and (c) the time interval. Infiltration rates are generally converted to units of inches per hour. The infiltration rate for the inner ring, if different than the infiltration rate of the annular area between the rings, according to ASTM, should be used as the infiltration rate for the soils.

INFILTRATION DATA

LOCATION	ORIENTATION	TEST DEPTH (feet)	SUSTAINED INFILTRATION RATE (in/hr)
DRI-1	$K_{V\ (unsaturated)}$	1.0	5.2*

*** Note: The above infiltration rate has not been factored and is up to the designer to apply an appropriate factor of safety.**

We recommend using a transformation ratio of 1 horizontal to 1 vertical (i.e. the estimated ratio of horizontal to vertical permeability).

ENVIRONMENTAL RESOURCE PERMITTING (ERP) DESIGN PARAMETERS

DESCRIPTION	LOCATION	DESIGN PARAMTER
SUSTAINED INFILTRATION RATE (K_{VU})	DRI-1	5.2* in/hr
TEST DEPTH	DRI-1	1.0 ft
FILLABLE POROSITY	DRI-1	25%
DEPTH TO EXISTING GROUNDWATER TABLE	DRI-1	5.1 feet
DEPTH TO ESTIMATED SEASONAL HIGH GROUNDWATER TABLE	DRI-1	4.0 feet

Warranty and Limitations of Study

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This warranty is in lieu of all other warranties, either expressed or implied. Magnum Engineering, Inc. is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploration and laboratory test data presented in this report.

Soil conditions at other locations may differ from those encountered in the test borings, and the passage of time may cause the soils conditions to change from those described in this report.

This report is intended for use by the designers of this project. While we have no objections to it being provided for review by parties to this project, it is not a specification document and is not to be used as a part of the specifications. If desired, we can assist in the development of specifications for this project based upon our exploration.

The nature and extent of variation and change in the subsurface conditions at the site may not become evident until the course of construction. Construction monitoring by the geotechnical engineer or his representative is therefore considered necessary to verify the subsurface conditions and to check that the soils connected construction phases are properly carried out. If significant variations or changes are in evidence, it may be necessary to reevaluate the recommendations in this report.

Furthermore, if the project characteristics are altered significantly from those discussed in this report, or if the project information contained in this report is incorrect and additional information becomes available, a review must be made by this office to determine if any modifications in the recommendations will be necessary.

We hope this letter provides sufficient information for the present. If you have any questions or comments, please feel free to call.

Sincerely,
MAGNUM ENGINEERING, INC.

JAMES T. VICKERS, P.E.
Sr. Geotechnical Engineer
Florida Reg. #56813

JAMES T. VICKERS LICENSE No. 56813 STATE OF FLORIDA PROFESSIONAL ENGINEER

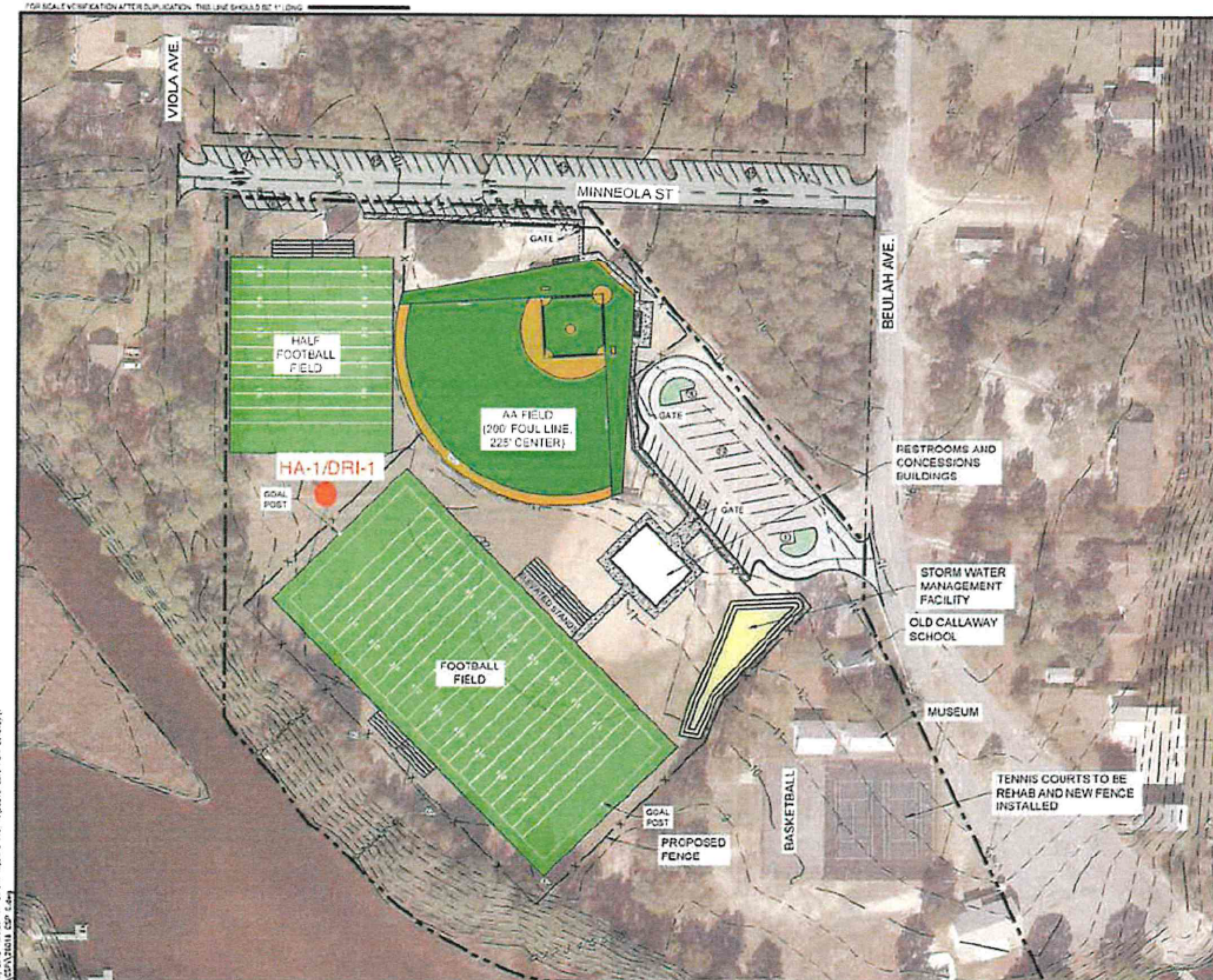
James T. Vickers, P.E.
Digitally signed by James T. Vickers, P.E.
Date: 2020.04.17 11:50:52 -05'00'

Attachments: Figure #1 – Boring Location Plan
Figure #2 – Log of Boring
Appendix (A) – Double Ring Infiltrometer Field Data

MAGNUM ENGINEERING INC
GEOTECHNICAL ENGINEERING CONSULTANTS

BORING LOCATION PLAN

FIGURE # 1



PARKING DATA

PARKING REQUIRED:

- ATHLETIC FIELD: 30 PARKS PER PLAY
- BASKETBALL COURT: 2 PARKS PER COURT
- TENNIS COURT: 2 PARKS PER ACRE

- ESTIMATED PARKING REQUIRED: 96 PARKS

PARKING SHOWN
88 REGULAR PARKS
4 ADA PARKS
12 TRUCK & TRAILER PARKS
104 TOTAL PARKS SHOWN

LEGEND

= PROPOSED CONCRETE

= PROPOSED ASPHALT

= EXISTING ASPHALT

SCALE 1"=100'

PREPARED WITHOUT BENEFIT OF TOPO OR BOUNDARY SURVEY AND SOIL PERCOLATION TEST, THEREFORE SITE LAYOUT & ANY STORMWATER BASIN SIZING IS PRELIMINARY.

REV	DATE	MMM	REVISIONS
NOT	RELEASED FOR CONSTRUCTION	BY:	DATE:

SCALE: AS NOTED
DESIGNED BY: CBF
DRAWN BY: JAH
REVIEWED BY: CBF
ISSUE DATE: MARCH 2019
ACAD FILE NAME: 26018 CSP C.dwg

PANHANDLE ENGINEERING, INC.
ENVIRONMENTAL ENGINEERS • CIVIL ENGINEERS • LAND PLANNERS
3205 South Highway 77 Lynn Haven, Florida 32444

CONCEPTUAL SITE PLAN 'C'
GORE PARK
FOOTBALL FIELDS
CALLAWAY, FLORIDA

DPR CERTIFICATION No. EB-7806
SHEET NO: 1 OF 1
PROJECT NUMBER: 26018

MAGNUM ENGINEERING INC
GEOTECHNICAL ENGINEERING CONSULTANTS

LOGS OF BORINGS

FIGURE # 2

Magnum Engineering, Inc.
1026 Pierson Drive
Lynn Haven, Florida 32444
Telephone: 8502658332

BORING NUMBER HA1

CLIENT Panhandle Engineering, Inc.
PROJECT NAME Gore Park Stormwater Pond
PROJECT NUMBER M119-107-207
PROJECT LOCATION Callaway, Florida
DATE STARTED 4/8/20 COMPLETED 4/8/20
GROUND ELEVATION ___ HOLE SIZE ___
DRILLING CONTRACTOR ___
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger Boring
▽ DEPTH TO GROUNDWATER AT TIME OF DRILLING 5.1 ft
LOGGED BY J. Vickers CHECKED BY J. Vickers
▼ ESTIMATED SEASONAL HIGH GWT 4.0 ft
NOTES ___
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		Brown Slightly Silty Fine SAND (SP-SM)	AU									
2.5		Gray/Tan Slightly Silty Fine SAND (SP-SM)										
		Tan Silty Fine SAND (SM)										
5.0		Boring Termination Depth at 6.0 feet.										

GEOTECH BH COLUMNS GORE PARK FOOTBALL GPJ GINT STD US LAB GDT 4/17/20

MAGNUM ENGINEERING INC
GEOTECHNICAL ENGINEERING CONSULTANTS

DOUBLE RING INFILTROMETER TEST RESULTS

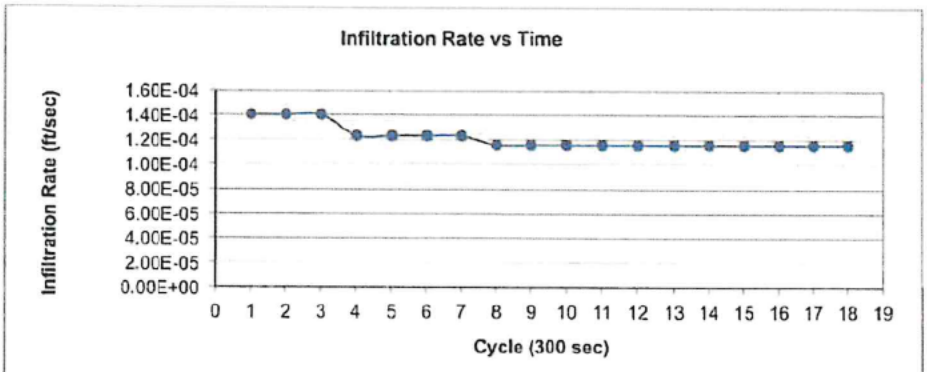
APPENDIX A

MAGNUM ENGINEERING INC
GEOTECHNICAL ENGINEERING CONSULTANTS

Double-Ring Field Infiltration Test

Test Location:	DRI-1	
Project Name:	Gore Park	
Project Location:	Callaway, Florida	
Test Depth:	1 ft	
Depth to GWT:	5.1 ft	
Inner Ring Diameter:	12 in	0.3048 m
Outer Ring Diameter:	24 in	0.6096 m
Pre-Saturation	30 min	
Area Outer Ring:	3.1416 ft^2	0.002026835 m^2
Area Inner Ring:	0.7854 ft^2	0.000506709 m^2
Net Outer Ring Area:	2.3562 ft^2	0.001520126 m^2

	Inner Ring		
Cycle	ElapTime (sec)	Vol Used (in^3)	Infiltration Rate (ft/sec)
1	300	57	1.40E-04
2	300	57	1.40E-04
3	300	57	1.40E-04
4	300	50	1.23E-04
5	300	50	1.23E-04
6	300	50	1.23E-04
7	300	50	1.23E-04
8	300	47	1.15E-04
9	300	47	1.15E-04
10	300	47	1.15E-04
11	300	47	1.15E-04
12	300	47	1.15E-04
13	300	47	1.15E-04
14	300	47	1.15E-04
15	300	47	1.15E-04
16	300	47	1.15E-04
17	300	47	1.15E-04
18	300	47	1.15E-04
Results	Sustained Rate	49	1.21E-04



Infiltration Rate: **3.69E-03 cm/sec** **5.2 in/hr**

APPENDIX C

APPLICATION AND CERTIFICATE FOR PAYMENT

TO (OWNER):
CITY OF CALLAWAY, FLORIDA
ATTN:

FROM (CONTRACTOR):

PROJECT: GORE PARK - Site Work
PROJECT: PE No. 26018
PROJECT: PANHANDLE ENGINEERING, INC
3005 LYNN HAVEN PARKWAY
LYNN HAVEN, FLORIDA 32444
ATTN: CHRIS FOREHAND, P.E., ENGINEER

APPLICATION NO:
PERIOD TO:
APPLICATION DATE:
CONTRACT DATE:

CONTRACTOR'S APPLICATION FOR PAYMENT

CHANGE ORDER SUMMARY			
Change Orders approved in previous months by Owner		ADDITIONS	DEDUCTIONS
TOTAL			
Number	Date Approved		
1			
2			-
TOTALS		$0.00	$0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information, and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for for which previous Certificates for Payment were issued and payments received from the Owner, and that the current payment shown herein is now due.

CONTRACTOR
TYPE COMPANY NAME HERE

By: _____ Date: _____
TYPE NAME HERE

State of: Florida County of: Bay
Subscribed and sworn to before me this day of
Notary Public:

1.	ORIGINAL CONTRACT SUM		
2.	NET CHANGE BY CHANGE ORDERS		$0.00
3.	CONTRACT SUM TO DATE (Line 1 + Line 2)		$0.00
4.	EARNED TO DATE		
	a. Work Completed (See Attached)		
	b. Stored Materials Including Owner Issued POs (See Attached)		
	TOTAL COMPLETED & STORED TO DATE		$0.00
5.	TAX SAVINGS AGREEMENT: (Through Summary No.)		
	a. Total Purchase Orders Issued by Owner (To Date)		
	b. Anticipated Tax Savings on Owner Issued POs		
	c. Vendor Invoices Paid @ Contractors Request (To Date)		
	d. Vendor Retainages Unpaid @ Contractors Request (To Date)		
6.	Total Tax Savings Agreement Deduction (Sum of Line 5a and 5b)		$0.00
7.	TOTAL EARNED LESS TAX AGREEMENT DEDUCTIONS (Line 4 less Line 6 Total)		$0.00
8.	RETAINAGE: (10% of Line 7)		$0.00
9.	TOTAL EARNED LESS RETAINAGE (Line 7 less Line 8)		$0.00
10.	LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 9 from prior Certificate)		
11.	CURRENT PAYMENT DUE		$0.00
12.	BALANCE TO FINISH, PLUS RETAINAGE (Line 3 - Line 6 - Line 9)		$0.00

ENGINEER'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising the above application, the Engineer certifies to the Owner that to the best of the Engineer's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

ENGINEER:
AMOUNT CERTIFIED _____
(Attach explanation if amount certified differs from the amount applied for.)
By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment, and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

APPENDIX D

Northwest Florida Water Management District

700 U.S. Highway 331 South, DeFuniak Springs, FL 32435

Phone: (850) 951-4660 • Fax: (850) 892-8007

Brett J. Cyphers
Executive Director

June 08, 2020

Eddie Cook
City of Callaway
6601 East Highway 22
Callaway, FL 32404

RE: Notice of Final Agency Action - Approval
Individual Environmental Resource Permit
Project Number: IND-005-292921-1
Permit Name: Gore Park Improvements

Dear Sir/Madam:

Enclosed is the approved individual Environmental Resource Permit (ERP) for the above referenced project as authorized on June 08, 2020 by the Northwest Florida Water Management District.

Please be sure to read the enclosed permit and all exhibits in their entirety, paying close attention to the permit conditions in Exhibit A that require you to perform maintenance activities on your stormwater system and to have inspections performed by a Registered Professional at specified times throughout the life of the stormwater system.

Please be advised that you are required to fully execute and submit the following documents:

- "Construction Commencement Notice" [Form 62-330.350(1)] - Submitted to the District no later than 48 hours prior to commencement of any part of the activity authorized by the enclosed permit.

- "As-Built Certification and Request for Conversion to Operational Phase" [Form 62-330.310(1)] Submitted to the District no later than 30 days after the activity has been completed.

Copies of these and other ERP forms are attached and are also available for download on the District website at
http://www.nwfwater.com/Permits/Environmental-Resource-Permits/Application-Forms

Please be advised that the District ***has not*** published a notice in the newspaper of local circulation advising the public that a permit has been issued for this activity. Publication, using the District form, notifies the public of their rights to challenge the issuance of this permit. If proper notice is given by publication, third parties have a 21-day time limit to file a petition opposing the issuance of the permit. If you do not publish, a party's right to challenge the issuance of the permit may extend indefinitely. If you wish to have certainty that the period for filing such a challenge is closed, then you may publish, at your expense, such a notice in a

newspaper of general circulation. A sample notice form is attached for your information. If you choose to publish such a notice, please submit a copy to the District for our records.

The issuance of an Environmental Resource Permit for this activity does not eliminate the need to obtain all necessary permits or approvals from other agencies.

Should you have any questions regarding your permit or its conditions, please contact your permit reviewer, Janet Strutzel, at (850) 539-5999 or by e-mail: Janet.Strutzel@nwfwater.com and Brandon Winter, at (850) 539-5999 or by e-mail: Brandon.Winter@nwfwater.com

Sincerely,

Terry Wells

Terry Wells
Division of Regulatory Services ▯ ERP Bureau Chief

cc:

Consultant:
James Doug Crook
Panhandle Engineering, Inc
3005 Lynn Haven Parkway
Lynn Haven, FL 32444

Enc:

Environmental Resource Permit Number: IND-005-292921-1
Construction Commencement Notice [Form 62-330.350(1)]
As-Built Certification and Request for Conversion to Operational Phase [Form 62-330.310(1)]
Notice of Rights
Sample Newspaper Notice

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT

PERMIT NO: IND-005-292921-1 **DATE ISSUED:** June 08, 2020
PROJECT NAME: Gore Park Improvements
CONSTRUCTION PHASE EXPIRATION DATE: June 08, 2025

A PERMIT AUTHORIZING:
The construction of a new parking lot, football field, athletic field, sidewalks, and the relocation of the tennis and basketball courts at Gore Park in Callaway, (Bay County). The proposed surface water management system will consist of the construction, operation and maintenance of a wet detention pond located in the western portion of the development. The wet detention pond has been designed with a single control structure located in the southwestern portion of pond. The control structure will consist of a modified Type C Inlet with an approximately 0.88-inch orifice set at an elevation of 6.00 feet and top of grate set an elevation of 9.50 feet. The control structure will discharge to the west into a stormwater ditch that ultimately discharges into Callaway Bayou. The existing dry retention pond will be expanded and regraded to provide additional treatment volume. There are no changes proposed for the existing control structure and will continue to discharge to the south into Callaway Bayou.There are wetlands located at the south end of the park property on the shoreline adjacent to Callaway Bayou. Wetlands are located outside of the project area. A 25-foot upland buffer will be maintained adjacent to the wetlands. The project as proposed will not cause any primary or secondary impacts to adjacent wetlands.The surface water management system is in accordance with the approved plans prepared by Panhandle Engineering.

LOCATION:
Section(s): 17 Township(s): 4S Range(s): 13W
Bay County

ISSUED TO:
City of Callaway
6601 East Highway 22
Callaway, FL 32404

Permittee agrees to hold and save the Northwest Florida Water Management District and its successors harmless from any and all damages, claims, or liabilities which may arise from permit issuance. Said application, including all plans and specifications attached thereto, is by reference made a part hereof.

This permit does not convey to any permittee any property rights nor any rights or privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This permit is issued pursuant to Part IV of Chapter 373, Florida Statute (F.S.), and Chapter 62-330, Florida Administrative Code, (F.A.C.), and may be revoked, modified or transferred at any time pursuant to the appropriate provisions of Chapter 373, Florida Statutes.

This permit also constitutes certification compliance with water quality standards under Section 401 of the Clean Water Act, 33 U.S. Code 1341.

PERMIT IS CONDITIONED UPON:

See conditions on attached "Exhibit A", dated June 08, 2020

AUTHORIZED BY: Northwest Florida Water Management District
Division of Resource Regulation

By: Terry Wells

Terry Wells
Division of Regulatory Services ﾖ ERP Bureau Chief

"EXHIBIT A"
CONDITIONS FOR ISSUANCE OF PERMIT NUMBER IND-005-292921-1
Gore Park Improvements
DATED June 08, 2020

1. All activities shall be implemented following the plans, specifications and performance criteria approved by this permit. Any deviations must be authorized in a permit modification in accordance with Rule 62-330.315, F.A.C. Any deviations that are not so authorized may subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.

2. A complete copy of this permit shall be kept at the work site of the permitted activity during the construction phase, and shall be available for review at the work site upon request by the Agency staff. The permittee shall require the contractor to review the complete permit prior to beginning construction.

3. Activities shall be conducted in a manner that does not cause or contribute to violations of state water quality standards. Performance-based erosion and sediment control best management practices shall be installed immediately prior to, and be maintained during and after construction as needed, to prevent adverse impacts to the water resources and adjacent lands. Such practices shall be in accordance with the *State of Florida Erosion and Sediment Control Designer and Reviewer Manual (Florida Department of Environmental Protection and Florida Department of Transportation June 2007)*, and the *Florida Stormwater Erosion and Sedimentation Control Inspector's Manual (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008)*, which are both incorporated by reference in subparagraph 62-330.050(9)(b)5., F.A.C., unless a project-specific erosion and sediment control plan is approved or other water quality control measures are required as part of the permit.

4. At least 48 hours prior to beginning the authorized activities, the permittee shall submit to the Agency a fully executed Form 62-330.350(1), "Construction Commencement Notice," [October 1, 2013], incorporated by reference herein (http://www.flrules.org/Gateway/reference.asp?No=Ref-02505), indicating the expected start and completion dates.A copy of this form may be obtained from the Agency, as described in subsection 62-330.010(5), F.A.C. If available, an Agency website that fulfills this notification requirement may be used in lieu of the form.

5. Unless the permit is transferred under Rule 62-330.340, F.A.C., or transferred to an operating entity under Rule 62-330.310, F.A.C., the permittee is liable to comply with the plans, terms and conditions of the permit for the life of the project or activity.

6. Within 30 days after completing construction of the entire project, or any independent portion of the project, the permittee shall provide the following to the Agency, as applicable:
    1. For an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex "Construction Completion and Inspection Certification for Activities Associated With a Private Single-Family Dwelling Unit" [Form 62-330.310(3)]; or
    2. For all other activities "As-Built Certification and Request for Conversion to Operational Phase" [Form 62-330.310(1)].

3. If available, an Agency website that fulfills this certification requirement may be used in lieu of the form.

7. If the final operation and maintenance entity is a third party:
    1. Prior to sales of any lot or unit served by the activity and within one year of permit issuance, or within 30 days of as- built certification, whichever comes first, the permittee shall submit, as applicable, a copy of the operation and maintenance documents (see sections 12.3 thru 12.3.3 of Volume I) as filed with the Department of State, Division of Corporations and a copy of any easement, plat, or deed restriction needed to operate or maintain the project, as recorded with the Clerk of the Court in the County in which the activity is located.
    2. Within 30 days of submittal of the as- built certification, the permittee shall submit "Request for Transfer of Environmental Resource Permit to the Perpetual Operation Entity" [Form 62-330.310(2)] to transfer the permit to the operation and maintenance entity, along with the documentation requested in the form. If available, an Agency website that fulfills this transfer requirement may be used in lieu of the form.

8. The permittee shall notify the Agency in writing of changes required by any other regulatory agency that require changes to the permitted activity, and any required modification of this permit must be obtained prior to implementing the changes.

9. This permit does not:
    1. Convey to the permittee any property rights or privileges, or any other rights or privileges other than those specified herein or in Chapter 62-330, F.A.C.;
    2. Convey to the permittee or create in the permittee any interest in real property;
    3. Relieve the permittee from the need to obtain and comply with any other required federal, state, and local authorization, law, rule, or ordinance; or
    4. Authorize any entrance upon or work on property that is not owned, held in easement, or controlled by the permittee

10. Prior to conducting any activities on state-owned submerged lands or other lands of the state, title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund, the permittee must receive all necessary approvals and authorizations under Chapters 253 and 258, F.S. Written authorization that requires formal execution by the Board of Trustees of the Internal Improvement Trust Fund shall not be considered received until it has been fully executed.

11. The permittee shall hold and save the Agency harmless from any and all damages, claims, or liabilities that may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any project authorized by the permit.

12. The permittee shall notify the Agency in writing:
    1. Immediately if any previously submitted information is discovered to be inaccurate; and
    2. Within 30 days of any conveyance or division of ownership or control of the property or the system, other than conveyance via a long-term lease, and the new owner shall request transfer of the permit in accordance with Rule 62-330.340, F.A.C. This does not apply to the sale of lots or units in residential or commercial subdivisions or condominiums where the stormwater management system has been completed and converted to the operation phase

13. Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the project or activities to ensure conformity with the plans and specifications authorized in the permit.

14. If any prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, work involving subsurface disturbance in the immediate vicinity of such discoveries shall cease. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section, at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Such subsurface work shall not resume without verbal or written authorization from the Division of Historical Resources. If unmarked human remains are encountered, all work shall stop immediately and notification shall be provided in accordance with Section 872.05, F.S.

15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under Rule 62-330.201, F.A.C., provides otherwise.

16. The permittee shall provide routine maintenance of all components of the stormwater management system to remove trapped sediments and debris. Removed materials shall be disposed of in a landfill or other uplands in a manner that does not require a permit under Chapter 62-330, F.A.C., or cause violations of state water quality standards.

17. This permit is issued based on the applicant's submitted information that reasonably demonstrates that adverse water resource-related impacts will not be caused by the completed permit activity. If any adverse impacts result, the Agency will require the permittee to eliminate the cause, obtain any necessary permit modification, and take any necessary corrective actions to resolve the adverse impacts.

18. A Recorded Notice of Environmental Resource Permit may be recorded in the county public records in accordance with subsection 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.

19. **Record-keeping.** The permittee shall be responsible for keeping records documenting that relevant permit conditions are met. This documentation shall include, at a minimum, the date of each inspection, the name and qualifications of the inspector, any maintenance actions taken, and a determination by the inspector as to whether the system is operating as intended. Inspection documentation must be readily available and shall be submitted annually to the District by the anniversary date of the permit.

20. Once project construction has been deemed complete, including the re-stabilization of all side slopes, embankments, and other disturbed areas, and before the transfer to the Operation and Maintenance phase, all obsolete erosion control materials shall be removed.

21. Grassed areas of the retention system shall be fertilized only as needed to maintain vegetation, and shall be mowed regularly in order to be kept at a manageable length as required for system functionality, maintenance, and safety.

22. Percolation performance shall be evaluated within the pond at least every third year. If there is evidence of inadequate percolation, the pond bottom must be re-scarified or deep-raked to restore percolation characteristics. If reworking the pond bottom fails to restore adequate percolation, additional retention area restoration shall be performed as follows:
    a. Remove the top layer of the retention area bottom material to a depth of 2 to 3 inches and scarify or deep-rake the excavated bottom.
    b. Replace excavated bottom material with suitably permeable material and restore the pond bottom to design grade.

23. **Inspections by the Permittee.**
    - The stormwater system shall be inspected periodically for accumulation of debris and trash. Accumulations of debris and trash that negatively affect the function of the system shall be removed upon discovery.
    - The stormwater system shall be inspected periodically for silt accumulation. Accumulations of silt that negatively affect the function of the system shall be removed.
    - The overflow weir and skimmer, if applicable, shall be inspected annually to confirm that it is free-flowing and clear of debris.

24. **Inspections by a Registered Professional.** The stormwater management system shall be inspected by a registered professional to evaluate whether the system is functioning as designed and permitted. Percolation performance should specifically be addressed. The Registered Professional may record his inspection on Form No 62-330.311(1), Operation and Maintenance Inspection Certification or may provide his evaluation in any other format; however any report must be signed and sealed by the Registered Professional. Submittal of the inspection report to the District shall occur within 30 days of the inspection. Inspections shall be made by the Registered Professional in accordance with this schedule:
    - On the first anniversary of the date of conversion to Operation and Maintenance Phase.
    - Every fifth year on the anniversary of conversion to Operation and Maintenance phase, after the first year of successful operation.

25. **Reporting by a Registered Professional.** Within 30 days of any failure of a stormwater management system or deviation from the permit, a report shall be submitted to the District on Form 62-330.311(1), Operation and Maintenance Inspection Certification, describing the remedial actions taken to resolve the failure or deviation. This report shall be signed and sealed by a Registered Professional.

26. The wet detention area shall be inspected periodically for debris and trash built up around the discharge structures. Accumulations of debris and trash that negatively affect the function of the system shall be removed upon discovery.

27. Prior to construction, the limits of the proposed construction shall be demarcated (clearly flagged and/or staked): particularly in areas adjacent to remaining natural wetlands. All construction personnel shall be shown the location(s) of all wetland areas outside of the

construction area so as to prevent encroachment form heavy equipment into these areas.

28. All wetland areas and water bodies, which are outside the specific limits of construction authorized by this permit, must be protected from erosion, siltation, scouring and/or dewatering using best management practices. Erosion controls shall be positioned at the edge of permitted fill slopes where they are adjacent to wetlands in order to prevent turbid run-off, erosion, and sedimentation. At no time shall there be any discharge in violation of water quality standards in Chapter 62.302, Florida Administrative Code. Turbidity/erosion controls shall be installed prior to any clearing (with the exception of the minimal clearing necessary to install appropriate erosion control device), excavation or placement of fill material and shall be maintained in an effective condition at all locations until construction is completed, disturbed areas are stabilized, and turbidity levels have fallen to less than 29 NTU's above background. The District must be notified immediately if turbidity levels have exceeded 29 NTUs above background. Once conditions are met, the turbidity and erosion control devices shall be removed within 14 days.

29. This permit does not authorize the permittee to cause any adverse impact or "take" of state listed species and other regulated species of fish and wildlife. Compliance with state laws regulating the take of fish and wildlife is the responsibility of the owner or applicant associated with this project. Please refer to Chapter 68A-27 of the Florida Administrative Code for definitions of "take" and a list of fish and wildlife species. If listed species are observed onsite, appropriate FWC staff are available to provide decision support information or assist in obtaining the appropriate FWC permits. Most marine endangered and threatened species are statutorily protected and a "take" permit cannot be issued. Requests for further information or review can be sent to FWCConservationPlanningServices@MyFWC.com.

NOTICE OF RIGHTS

Northwest Florida Water Management District
152 Water Management Drive, Havana, FL 32333-4712
(850) 539-5999 Fax (850) 539-2693
www.nwfwater.com

The following information addresses procedures to be followed if you desire an administrative hearing or other review of agency action.

PETITION FOR FORMAL ADMINISTRATIVE PROCEEDINGS

Any person whose substantial interests are or may be affected by the action described in the enclosed Notice of Agency Action, may petition for an administrative hearing in accordance with the requirements of section 28-106.201, Florida Administrative Code, or may choose to pursue mediation as an alternative remedy under section 120.573, Florida Statutes, before the deadline for filing a petition. Pursuit of mediation will not adversely affect the right to administrative proceedings in the event mediation does not result in a settlement. Petitions for an administrative hearing must be filed with the Agency Clerk of the Northwest Florida Water Management District, 81 Water Management Drive, Havana, Florida 32333-9700 by the deadline specified in the attached cover letter. Failure to file a petition within this time period shall constitute a waiver of any rights such person may have to request an administrative determination (hearing) under section 120.57, Florida Statutes, concerning the subject permit application. Petitions which are not filed in accordance with the above provisions are subject to dismissal.

DISTRICT COURT OF APPEAL

A party who is adversely affected by final agency action on the permit application and who has exhausted available administrative remedies is entitled to judicial review in the District Court of Appeal pursuant to section 120.68, Florida Statutes. Review under section 120.68, Florida Statutes, is initiated by filing a Notice of Appeal in the appropriate District Court of Appeal in accordance with Florida Rule of Appellate Procedure 9.110.

SECTION 28-106.201, FLORIDA ADMINISTRATIVE CODE, INITIATION OF PROCEEDINGS

(1) Unless otherwise provided by statute, and except for agency enforcement and disciplinary actions that shall be initiated under Rule 28-106.2015, F.A.C., initiation of proceedings shall be made by written petition to the agency responsible for rendering final agency action. The term "petition" includes any document that requests an evidentiary proceeding and asserts the existence of a disputed issue of material fact. Each petition shall be legible and on 8 1/2 by 11 inch white paper. Unless printed, the impression shall be on one side of the paper only and lines shall be double-spaced.

(2) All petitions filed under these rules shall contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, any e-mail address, any facsimile number, and telephone number of the petitioner, if the petitioner is not represented by an attorney or a qualified representative; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination;

(c) A statement of when and how the petitioner received notice of the agency decision;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action;

(f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and

(g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

(3) Upon receipt of a petition involving disputed issues of material fact, the agency shall grant or deny the petition, and if granted shall, unless otherwise provided by law, refer the matter to the Division of Administrative Hearings with a request that an administrative law judge be assigned to conduct the hearing. The request shall be accompanied by a copy of the petition and a copy of the notice of agency action.

Rulemaking Authority 14.202, 120.54(3), (5) FS. Law Implemented 120.54(3) FS. History–New 4-1-97, Amended 9-17-98, 1-15-07, 2-5-13.

NOTICING PUBLICATION INFORMATION

The District's action regarding the issuance or denial of a permit, a petition or qualification for an exemption only becomes closed to future legal challenges from members of the public ("third parties"), if 1) "third parties" have been properly notified of the District's action regarding the permit or exemption, and 2) no "third party" objects to the District's action within a specific period of time following the notification.

Notification of "third parties" is provided through publication of certain information in a newspaper of general circulation in the county where the proposed activities are to occur. Publication of notice informs "third parties" of their right to have a 21-day time limit in which to file a petition opposing the District's action. However, if no notice to "third parties" is published, there is no time limit to a party's right to challenge the District's action. The District has not published a notice to "third parties" that it has taken final action on your application. If you want to ensure that the period of time in which a petition opposing the District's action regarding your application is limited to the time frame state above, you may publish, at your own expense, a notice in a newspaper of general circulation. A copy of the Notice of Agency Action the District uses for publication is attached. You may use this format or create your own, as long as the essential information is included.

If you do decide to publish a Notice of Final Agency Action, please provide the District a copy of the Proof of Publication when you receive it. That will provide us notice that action on this permit application is closed after the 21 days following publication.

Notice of Final Agency Action Taken by the
Northwest Florida Water Management District

Notice is given that Environmental Resource permit number IND-005-292921-1 was issued on June 08, 2020 to Eddie Cook
City of Callaway for the construction of a new surface water management system designed to provide treatment for additions to the Gore Park in Callaway, (Bay County). The proposed project will consist of the construction of a new parking lot, football field, athletic field, sidewalks, and the relocation of the tennis and basketball courts. The proposed surface water management system will consist of the construction, operation, and maintenance of a wet detention pond located in the western portion of the development. The wet detention pond has been designed with a single control structure located in the southwestern portion of pond. The control structure will consist of a modified Type C Inlet with an approximately 0.88-inch orifice set at an elevation of 6.00 feet and top of grate set an elevation of 9.50 feet. The control structure will discharge to the west into a stormwater ditch that ultimately discharges into Callaway Bayou. There are wetlands located at the south end of the park property on the shoreline adjacent to Callaway Bayou. Wetlands are located outside of the project area. A 25-foot upland buffer will be maintained adjacent to the wetlands. The project as proposed will not cause any primary or secondary impacts to adjacent wetlands. There is an existing dry retention pond located near the center of the park that is proposed to be be expanded to provide more treatment volume. No changes to the discharge structure are proposed. The project is located at 522 Beulah Avenue, Bay County.

The application file is available online and can be accessed through the District's e-Permitting Portal at:
https://permitting.sjrwmd.com/nwepermitting/jsp/Search.do?theAction=PermitNumSearch. If you have any questions or are experiencing difficulty viewing the electronic application, please contact us at (850) 951-4660.

A person whose substantial interests are affected by the District permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S., or may choose to pursue mediation as an alternative remedy under Section 120.573, Florida Statutes, and Rules 28-106.111 and 28-106.401-404, Florida Administrative Code. Petitions must comply with the requirements of Florida Administrative Code, Chapter 28-106 and be filed with (received by) the District Clerk located at District Headquarters, 81 Water Management Drive, Havana, FL 32333-4712. Petitions for administrative hearing on the above application must be filed within twenty-one (21) days of publication of this notice or within twenty-six (26) days of the District depositing notice of this intent in the mail for those persons to whom the District mails actual notice. Failure to file a petition within this time period shall constitute a waiver of any right(s) such person(s) may have to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., concerning the subject permit. Petitions which are not filed in accordance with the above provisions are subject to dismissal.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the District's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the District on the application have the right to petition to become a party to the proceedings, in accordance with the requirements set forth above.

GORE PARK IMPROVEMENTS SITE PACKAGE
CALLAWAY, FLORIDA

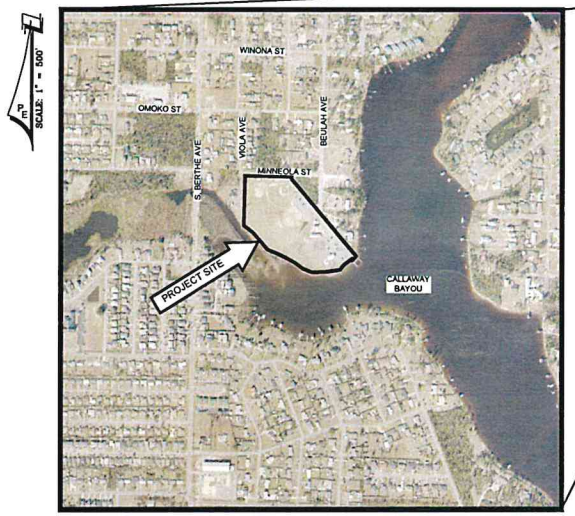
PREPARED FOR:
CITY OF CALLAWAY

ADDRESS
6601 EAST HIGHWAY 22
CALLAWAY, FLORIDA 32404
PHONE:(850) 871-6000

CITY OF CALLAWAY OF CITY OFFICIALS:

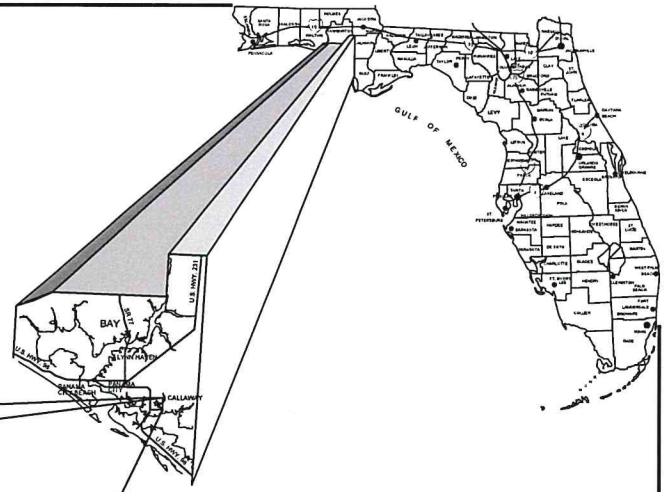
MS. PAMN HENDERSON, MAYOR
MR. SCOTT DAVIS, WARD I COMMISSIONER
MR. DAVID GRIGGS, WARD II COMMISSIONER
MR. BOB PELLETIER, WARD III COMMISSIONER
MR. FRANK MANCINELLI, WARD IV COMMISSIONER

MR. KEITH "EDDIE" COOK, CITY MANAGER
MR. BILL FRYE, PUBLIC WORKS DIRECTOR
MR. TIM LEGARE, DIRECTOR OF LEISURE SERVICES
MS. JANICE PETERS, CITY CLERK



ADDRESS: 522 BEULAH AVE(17-4S-13W)
LAT – 30° 08' 15"
LONG – 85° 34' 19"

VICINITY MAP



RELEASED FOR BIDDING PURPOSES ONLY. NOT RELEASED FOR CONSTRUCTION

FEBRUARY 2022

PROJECT No. 26018

DRAWING INDEX

No. - TITLE

PREPARED BY:

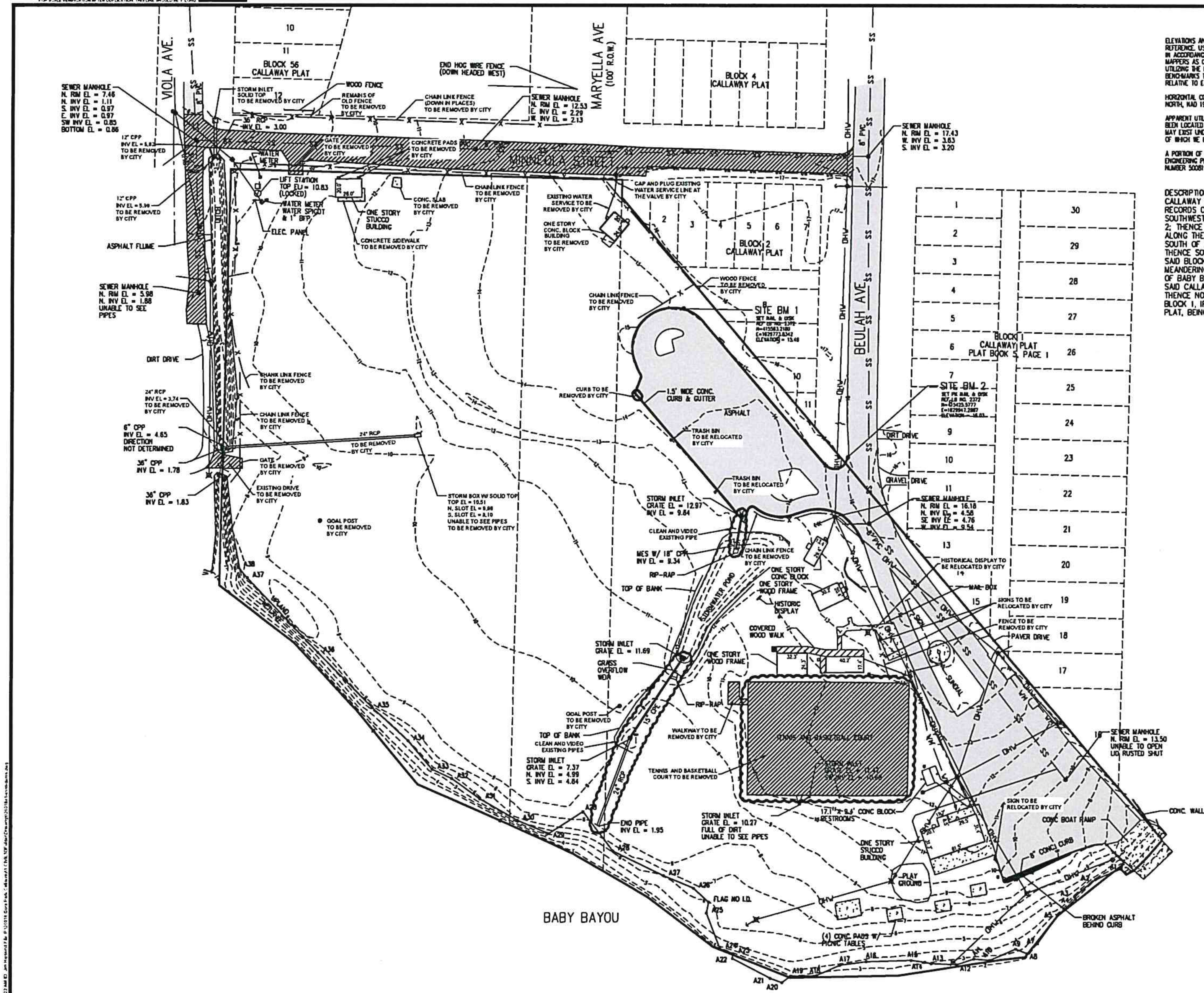
PANHANDLE ENGINEERING, INC.
ENVIRONMENTAL ENGINEERS • CIVIL ENGINEERS • LAND PLANNERS
600 Ohio Avenue Lynn Haven, Florida 32444
(850)763-5200 www.panhandleengineering.com

Always call 811 two full business days before you dig to have underground utilities located and marked.

Sunshine811.com

ENGINEER OF RECORD: CHRIS FOREHAND, P.E. (FL REG NO. 58028)

26018 GORE PARK IMPROVEMENTS COVER



ELEVATIONS AND BENCHMARKS SHOWN HEREON ARE BASED ON THE NOTED ELEVATION REFERENCE. USE OF THE BENCHMARKS FOR VERTICAL CONTROL SHOULD BE PERFORMED IN ACCORDANCE WITH STANDARDS OF PRACTICE FOR PROFESSIONAL SURVEYORS AND MAPPERS AS OUTLINED IN RULE 5J-17, FLORIDA ADMINISTRATIVE CODE. PRIOR TO UTILIZING THE BENCHMARKS FOR VERTICAL CONTROL, USER SHALL CHECK PROVIDED BENCHMARKS TO ENSURE THAT THEY HAVE NOT BEEN DISTURBED AND THAT THEY ARE RELATIVE TO EACH OTHER.

HORIZONTAL CONTROL SHOWN HEREON IS REFERENCED TO STATE PLANE ZONE: FLORIDA NORTH, NAD 1983, NCS ADJUSTMENT YEAR 2007.

APPARENT UTILITIES, UNDERGROUND UTILITIES AND BURIED PIPES SHOWN HEREON HAVE BEEN LOCATED AND ARE INDICATED IN THEIR RELATIVE POSITIONS. HOWEVER, THERE MAY EXIST UNDERGROUND UTILITIES AND BURIED PIPES WHICH WERE NOT LOCATED OR OF WHICH WE HAVE NO KNOWLEDGE.

A PORTION OF THE UNDERGROUND UTILITIES SHOWN HEREON WAS TAKEN FROM CIVIL ENGINEERING PLANS FOR GORE PARK BOAT RAMP PREPARED BY DEWBERRY. PROJECT NUMBER 50081990, DATED MAY 2017.

DESCRIPTION: BEGIN AT THE SOUTHEAST CORNER OF BLOCK 2 OF THE CALLAWAY PLAT AS RECORDED IN PLAT BOOK 5, PAGE 1 OF THE PUBLIC RECORDS OF BAY COUNTY, FLORIDA. THENCE NORTHWESTERY ALONG THE SOUTHWESTERLY LINE OF BLOCK 2 TO THE SOUTHWEST CORNER OF BLOCK 2; THENCE NORTH TO THE NORTHWEST CORNER OF BLOCK 2; THENCE WEST ALONG THE SOUTH LINE OF MINNEOLA STREET TO A POINT THAT IS 60 FEET SOUTH OF THE SOUTHWEST CORNER OF BLOCK 56 OF SAID CALLAWAY PLAT; THENCE SOUTH ALONG A LINE THAT IS EXTENDED FROM THE WEST LINE OF SAID BLOCK 56 TO THE WATER'S EDGE OF BABY BAYOU; THENCE MEANDERING SOUTHEASTERLY AND NORTHERLY ALONG THE WATER'S EDGE OF BABY BAYOU TO A POINT ON THE SOUTHWESTERLY LINE OF BLOCK 1 OF SAID CALLAWAY PLAT, IF SAID LINE WAS EXTENDED TO THE WATER'S EDGE; THENCE NORTHWESTERLY ALONG THE SAID SOUTHWESTERLY LINE OF BLOCK 1, IF EXTENDED TO THE SOUTHEAST CORNER OF BLOCK 2 OF SAID PLAT, BEING THE POINT OF BEGINNING.

SYMBOLS & ABBREVIATIONS

P.O.C.	POINT OF COMMENCEMENT
P.O.B.	POINT OF BEGINNING
N	NORTH
S	SOUTH
E	EAST
W	WEST
°	DEGREES
'	MINUTES OR FEET
"	SECONDS OR INCHES
FD.	FOUND
COR.	CORNER
LS	LAND SURVEYOR
LB	LAND SURVEYOR BUSINESS
NO.	NUMBER
I.D.	IDENTIFICATION
CONC.	CONCRETE
MON.	MONUMENT
R.O.W.	RIGHT OF WAY
±	MORE OR LESS
NAVD	NORTH AMERICAN VERTICAL DATUM
EL.	ELEVATION
B.M.	BENCHMARK
F.F.	FINISHED FLOOR
MH	MANHOLE
RCP	REINFORCED CONCRETE PIPE
CPP	CORRUGATED PLASTIC PIPE
PVC	POLYVINYL CHLORIDE
INV.	INVERT
ELEC.	ELECTRIC
AC	AIR CONDITIONING
BFP	BACKFLOW PREVENTER
-P-	AERIAL UTILITY LINE
-W-	WATER MAIN
-S-	SANITARY SEWER MAIN
	WATER VALVE
	FIRE HYDRANT
	WATER METER
	CLEANOUT
	MANHOLE
	LIGHT POLE
	POWER POLE
	GUY ANCHOR
	SIGN POLE
	STORM INLET

SYMBOL LEGEND

- EXISTING CONTOURS
- EXISTING CONCRETE TO REMAIN
- EXISTING CONCRETE TO BE REMOVED
- EXISTING ASPHALT TO REMAIN
- LIMITS OF ASPHALT FULL DEPTH RECLAMATION

SCALE: 1" = 50'

SURVEY PROVIDED BY:
BUCHANAN & HARPER, INC.
735 WEST 11TH STREET
PANAMA CITY, FL 32401
PHONE: (850) 763-7427

REV	DATE	BY	REVISIONS
NOT	RELEASED FOR CONSTRUCTION BY:	DATE:	

SCALE:	AS NOTED
DESIGNED BY:	CBF
DRAWN BY:	JAH
REVIEWED BY:	CBF
ISSUE DATE:	FEBRUARY 2022
ACAD FILE NAME:	26018c1-exist-demo.dwg

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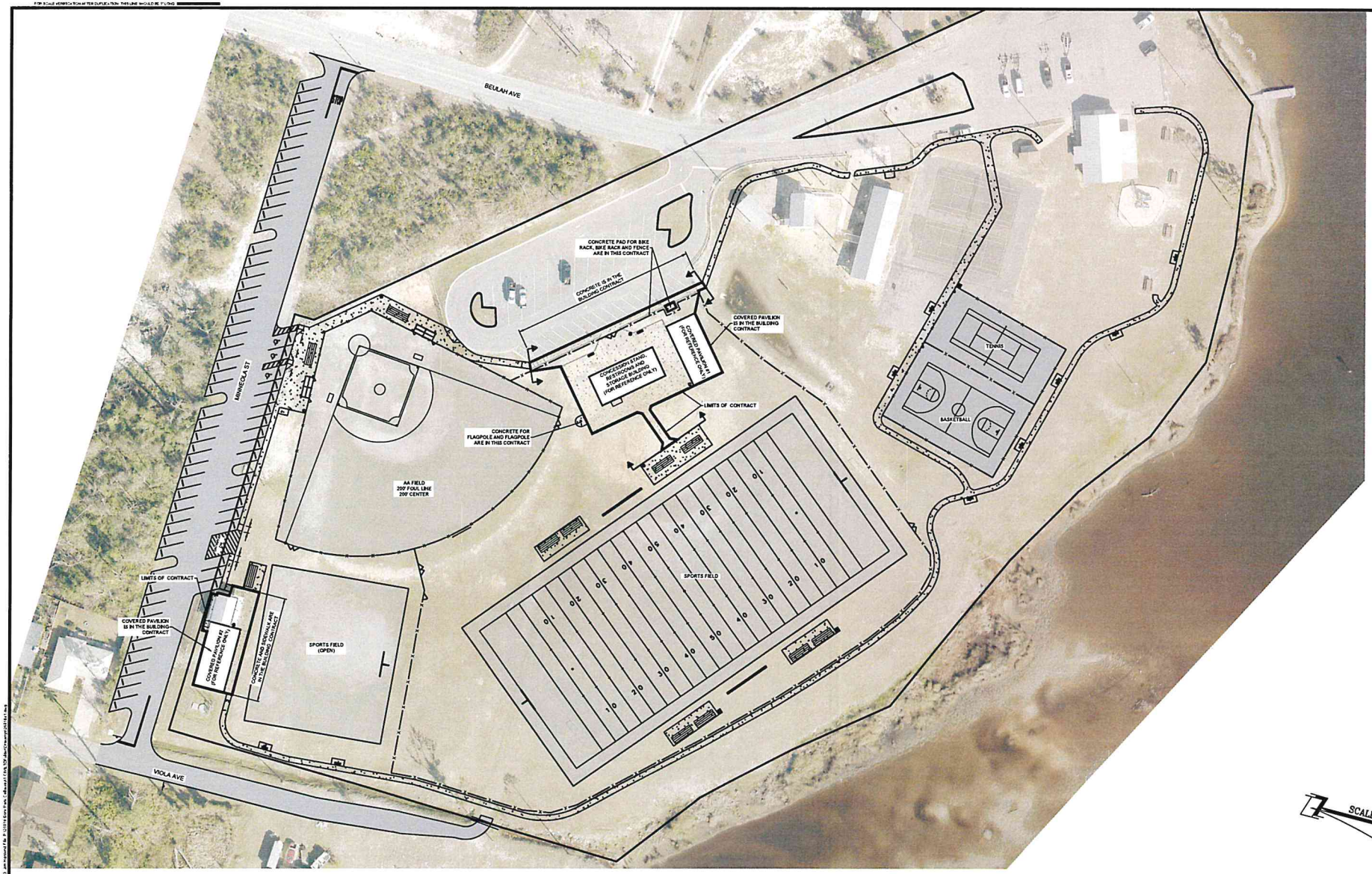
EXISTING CONDITIONS AND DEMOLITION PLAN
GORE PARK
IMPROVEMENTS
CALLAWAY, FLORIDA

DPR CERTIFICATION #EB-7906

SHEET NUMBER
C1
PROJECT NUMBER
26018



REV	DATE	BY	REVISIONS

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ISSUE DATE:	FEBRUARY 2022
ACAD FILE NAME:	26018x1.dwg

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900 Ohio Avenue Lynn Haven, Florida 32444
(850)763-5200 www.panhandleengineering.com

SITE PLAN WITH AERIAL
GORE PARK IMPROVEMENTS
CALLAWAY, FLORIDA

James H. Ubanks, P.E. 19197
Christopher B. Forehand, P.E. 59028
Stephen C. Price, P.E. 71041
J. Doug Crews, P.E. 44159

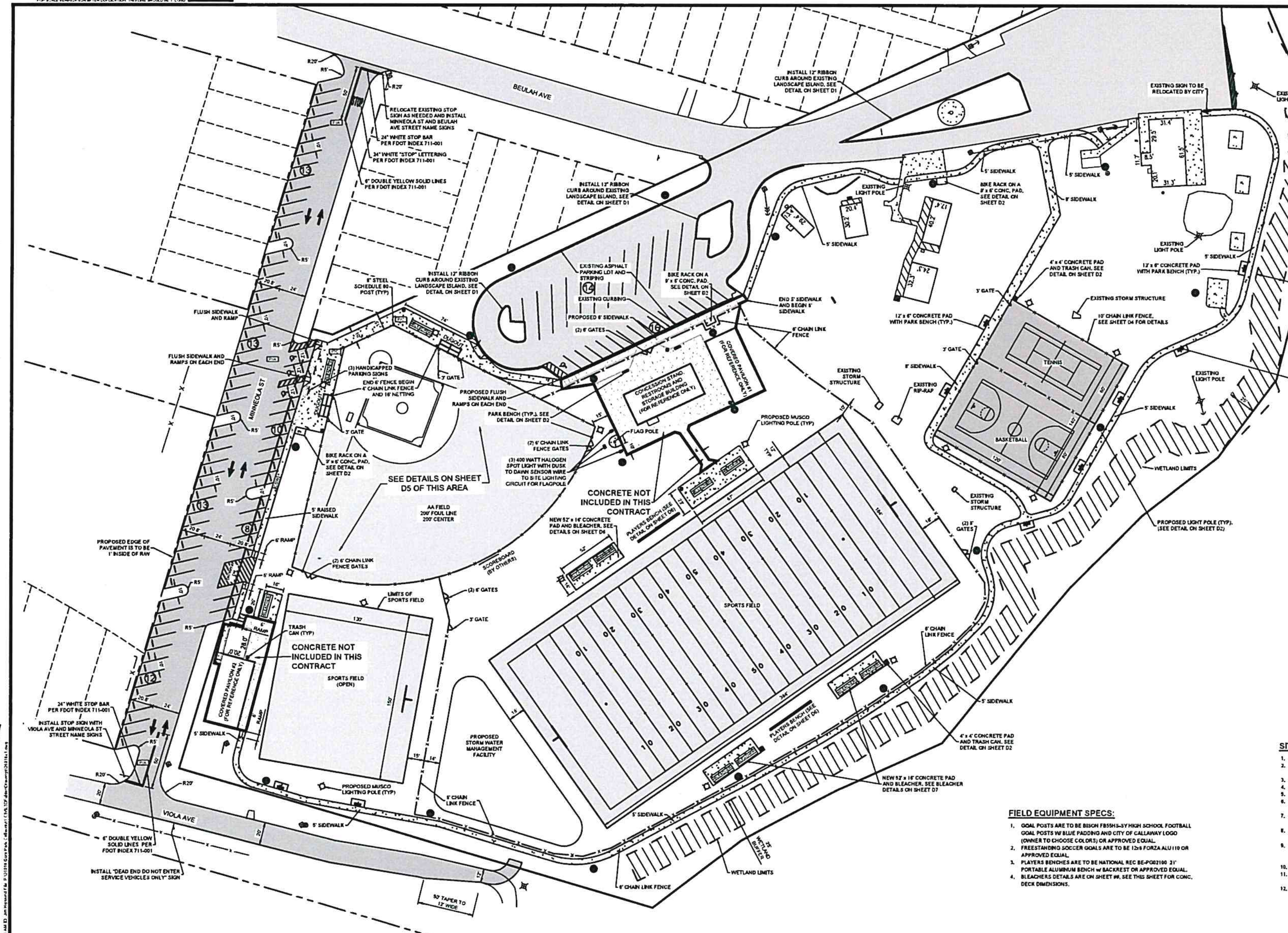
DPR CERTIFICATION #EB-7806

CHRISTOPHER B. FOREHAND LICENSE NO. 59028 STATE OF FLORIDA PROFESSIONAL ENGINEER

SHEET NUMBER C2

PROJECT NUMBER 26018

26018 GORE PARK IMPROVEMENTS SITE PLAN WITH AERIAL Sheet C2



LEGEND

- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING CLEANOUT
- EXISTING MANHOLE
- EXISTING LIGHT POLE
- EXISTING POWER POLE
- EXISTING GUY ANCHOR
- EXISTING SIGN POLE
- EXISTING STORM INLET
- SIGN
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- HANDICAP PARKING
- CONCRETE SIDE WALK
- PROPOSED LIGHT POLE
- PROPOSED MUSCO LIGHTING POLE
- PROPOSED TRASH CAN
- PROPOSED ASPHALT PAVEMENT
- EXISTING ASPHALT
- 25' WETLAND BUFFER
- PROPOSED CONCRETE
- EXISTING CONCRETE
- DETECTABLE WARNING SURFACE (DWS)

NOTES
1. ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS SHALL BE FIELD VERIFIED PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR TO NOTIFY ENGINEER IMMEDIATELY UPON IDENTIFICATION OF CONFLICTS.

PARKING DATA

EXISTING PARKING LOT
29 REGULAR PARKING SPACES
1 HANDICAPPED PARKING SPACES
30 TOTAL PARKING SPACES

PROPOSED PARKING ON MINNEOLA ST
66 REGULAR PARKING SPACES
3 HANDICAPPED PARKING SPACES
69 TOTAL PARKING SPACES

TOTAL PARKING
95 REGULAR PARKING SPACES
4 HANDICAPPED PARKING SPACES
99 TOTAL PARKING SPACES

FIELD EQUIPMENT SPECS:

1. GOAL POSTS ARE TO BE BISON FB55HS-SY HIGH SCHOOL FOOTBALL GOAL POSTS W/ BLUE PADDING AND CITY OF CALLAWAY LOGO (OWNER TO CHOOSE COLORS) OR APPROVED EQUAL.
2. FREESTANDING SOCCER GOALS ARE TO BE 12x6 FORZA ALU110 OR APPROVED EQUAL.
3. PLAYERS BENCHES ARE TO BE NATIONAL REC BE-PG02100 21' PORTABLE ALUMINUM BENCH w/ BACKREST OR APPROVED EQUAL.
4. BLEACHERS DETAILS ARE ON SHEET ##, SEE THIS SHEET FOR CONC. DECK DIMENSIONS.

SITE NOTES:

1. ABOVE GROUND STRUCTURES ARE SHOWN ON THIS SHEET.
2. ALL TRAFFIC STRIPING TO BE PAINT PER STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SEC.711.
3. INSTALL CENTIPEDE SOD ON ALL DISTURBED AREAS. ALL SOD TO BE STAGGERED & PINNED.
4. PLACE DOUBLE 18" OR SINGLE ROLL 30" STRIP OF SOD AT EDGE OF DRIVE.
5. NO LANE CLOSURES BETWEEN THE HOURS OF 8 AM TO 9 AM AND 3 PM TO 6 PM.
6. CONTRACTOR TO FIELD VERIFY ALL UTILITIES ABOVE OR BELOW GROUND AND NOTIFY ALL UTILITY COMPANIES 3 DAYS PRIOR TO CONSTRUCTION.
7. FOR MAINTENANCE OF TRAFFIC CONTROL THROUGH WORK ZONES REFER TO FDOT STD. PLANS INDEX 102-612 & 102-613 AS APPLICABLE.
8. ALL DEMOLISHED MATERIALS (i.e. SIGNS, CONCRETE, ASPHALT, ETC.) TO BE REMOVED AND DISPOSED OF IN LEGAL MANNER.
9. TESTING REQUIREMENTS SHALL BE IN ACCORDANCE WITH CITY AND OR COUNTY REQUIREMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE AND SCHEDULE ALL TESTS.
10. FOR SIGHT DISTANCE TRIANGLES SEE FDOT DESIGN MANUAL 212.11, CLEAR SIGHT TRIANGLES.
11. ALL SIGNS TO BE INSTALLED PER FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TO BE MOUNTED TO GALVANIZED PIPE.
12. STREET SIGNS SHALL COMPLY WITH THE CITY OF CALLAWAY STANDARDS.

REV	DATE	BY	REVISIONS

NOT RELEASED FOR CONSTRUCTION BY: DATE:

SCALE: AS NOTED
DESIGNED BY: CBF
DRAWN BY: JAH
REVIEWED BY: CBF
ISSUE DATE: FEBRUARY 2022
ACAD FILE NAME: 26018s1.dwg

PANHANDLE ENGINEERING, INC.
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600 Ohio Avenue Lynn Haven, Florida 32444
(850)763-5200 www.panhandleengineering.com

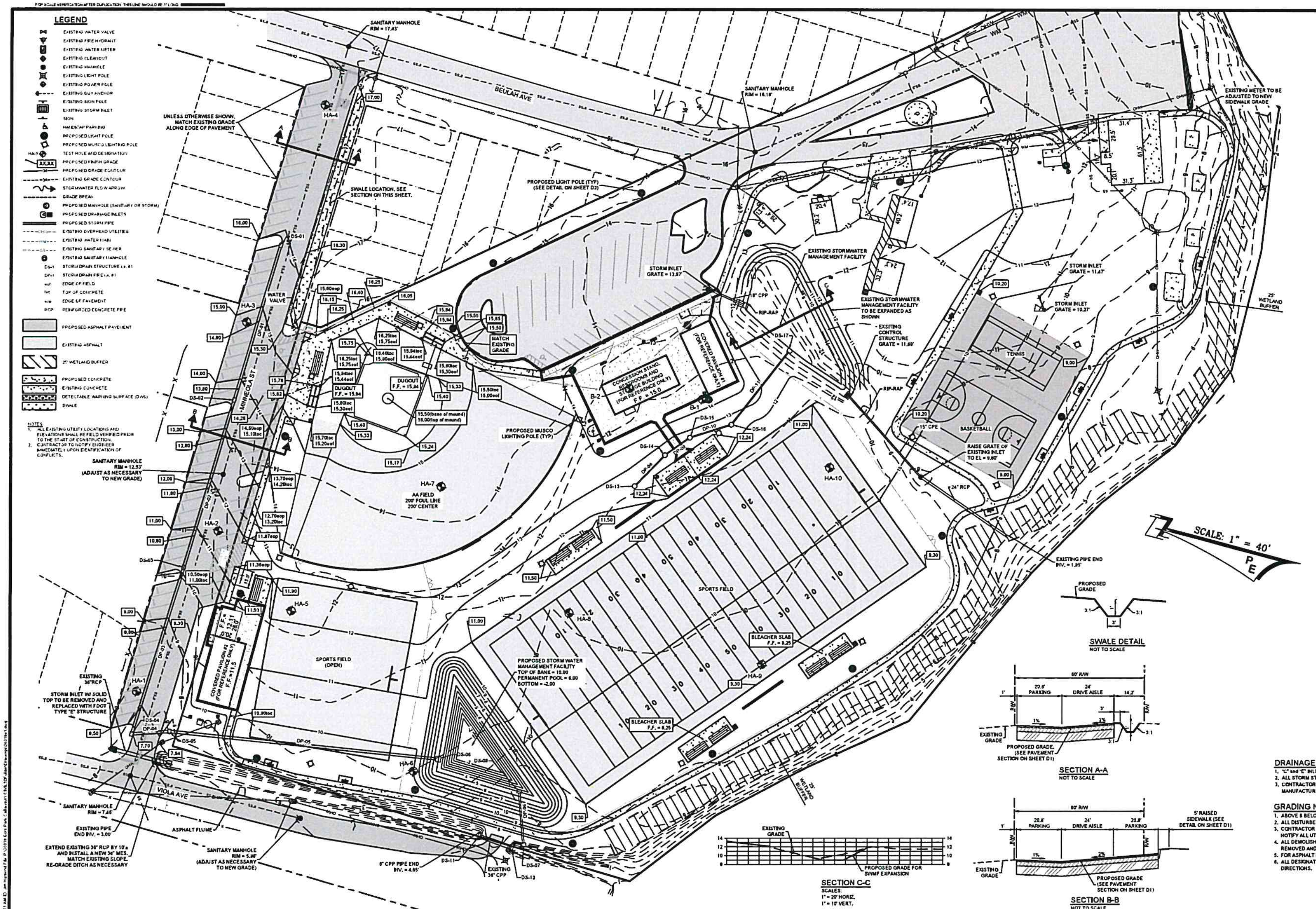
SITE PLAN
GORE PARK
IMPROVEMENTS
CALLAWAY, FLORIDA

DPR CERTIFICATION #EB-7908

CHRISTOPHER B. FOREHAND LICENSE NO. 58029 STATE OF FLORIDA PROFESSIONAL ENGINEER

SHEET NUMBER C3
PROJECT NUMBER 26018

26018 GORE PARK IMPROVEMENTS SITE PLAN Sheet C3



DRAINAGE STRUCTURE TABLE			
NO.	STRUCTURE TYPE	TOP ELEV	PIPE INVERTS
DS-01	Index No. 232 - Ditch Bottom Inlet - Type C	15.55'	(W) 12.90' (DP-01)
DS-02	Index No. 232 - Ditch Bottom Inlet - Type C	13.54'	(E) 10.59' (DP-01) (W) 10.59' (DP-02)
DS-03	Index No. 232 - Ditch Bottom Inlet - Type C	10.11'	(E) 7.11' (DP-02) (W) 7.11' (DP-03)
DS-04	Index No. 232 - Ditch Bottom Inlet - Type C	7.75'	(E) 5.35' (DP-03) (S) 5.35' (DP-04)
DS-05	Index No. 232 - Ditch Bottom Inlet - Type C	7.75'	(N) 5.25' (DP-04) (S) 5.25' (DP-05)
DS-06	Index No. 272 - Cross Drain MES with 1:4 Slope - Single Elliptical Conc. Pipe	4.95'	(N) 4.95' (DP-05)
DS-07	Index No. 272 - Cross Drain MES with 1:2 Slope - Single Round Conc. Pipe	5.06	(E) 3.50' (DP-06)
DS-08	Index No. 232 - Ditch Bottom Inlet - Type C	8.50'	(W) 4.50' (DP-06)
DS-11	Index No. 272 - Cross Drain MES with 1:2 Slope - Single Round Conc. Pipe	4.55'	(S) 1.79' (EXISTING 36 CPP)
DS-12	Index No. 272 - Cross Drain MES with 1:2 Slope - Single Round Conc. Pipe	5.04'	(N) 1.83' (EXISTING 36 CPP)
DS-13	NYLOPLAST 12" DRAIN BASIN NON TRAFFIC INSTALLATION	11.50'	(SE) 10.50' (DP-08)
DS-14	NYLOPLAST 12" DRAIN BASIN NON TRAFFIC INSTALLATION	11.50'	(NW) 10.40' (DP-08) (SE) 10.40' (DP-09)
DS-15	NYLOPLAST 12" DRAIN BASIN NON TRAFFIC INSTALLATION	11.50'	(NW) 10.30' (DP-09) (SE) 10.30' (DP-10)
DS-16	NYLOPLAST 12" DRAIN BASIN NON TRAFFIC INSTALLATION	11.50'	(NW) 10.20' (DP-10) (SE) 10.20' (DP-11)
DS-17	Index No. 272 - Cross Drain MES with 1:2 Slope - Single Round Conc. Pipe	10.05'	(NW) 9.07' (DP-11)

DRAINAGE PIPE TABLE					
NO.	SIZE	DESCRIPTION	LF	SLOPE	INVERTS
DP-01	14"x23"	Horizontal Elliptical Concrete Pipe	157'	1.46%	DS-01 = 12.90' DS-02 = 10.59'
DP-02	14"x23"	Horizontal Elliptical Concrete Pipe	162'	2.15%	DS-02 = 10.54' DS-03 = 7.11'
DP-03	14"x23"	Horizontal Elliptical Concrete Pipe	162'	1.09%	DS-03 = 7.11' DS-04 = 5.35'
DP-04	14"x23"	Horizontal Elliptical Concrete Pipe	35'	0.29%	DS-04 = 5.35' DS-05 = 5.25'
DP-05	14"x23"	Horizontal Elliptical Concrete Pipe	248'	0.26%	DS-05 = 5.25' DS-06 = 4.60'
DP-06	15"	ADS HP	48'	1.03%	DS-07 = 3.50' DS-08 = 4.00'
DP-08	8"	ADS HP	40'	0.25%	DS-13 = 10.50' DS-14 = 10.40'
DP-09	4"	ADS HP	28'	0.36%	DS-14 = 10.40' DS-15 = 10.30'
DP-10	10"	ADS HP	40'	0.25%	DS-15 = 10.30' DS-16 = 10.20'
DP-11	12"	ADS HP	87'	1.38%	DS-16 = 10.20' DS-17 = 3.90'

DRAINAGE STRUCTURE NOTES:

1. "C" and "E" INLETS PER FDOT STD. PLANS INDEX 425-052 (SEE DETAILS SHEET D2)
2. ALL STORM STRUCTURES TO HAVE 18" SUMPS.
3. CONTRACTOR MAY UTILIZE ADS (N-12) (OR EQUAL) WHERE COVER EXCEEDS MANUFACTURER AND FDOT CRITERIA.

GRADING NOTES:

1. ABOVE & BELOW GROUND STRUCTURES, Etc... ARE SHOWN ON THIS SHEET.
2. ALL DISTURBED AREA TO BE SODDED.
3. CONTRACTOR TO FIELD VERIFY ALL UTILITIES ABOVE OR BELOW GROUND AND NOTIFY ALL UTILITY COMPANIES 2 DAYS PRIOR TO CONSTRUCTION.
4. ALL DEMOLISHED MATERIALS (i.e. SIGNS, CONCRETE, ASPHALT, ETC...) TO BE REMOVED AND DISPOSED OF IN LEGAL MANNER.
5. FOR ASPHALT PAVEMENT CROSS SECTION SEE DETAILS ON SHEET D1.
6. ALL DESIGNATED HANDICAP PARKING NOT TO EXCEED 1:50 SLOPE IN ALL DIRECTIONS.

REV	DATE	BY	REVISIONS
NOT			RELEASED FOR CONSTRUCTION BY: DATE:

SCALE: AS NOTED
DESIGNED BY: CBF
DRAWN BY: JAH
REVIEWED BY: CBF
ISSUE DATE: FEBRUARY 2022
ACAD FILE NAME: 26018c1.dwg

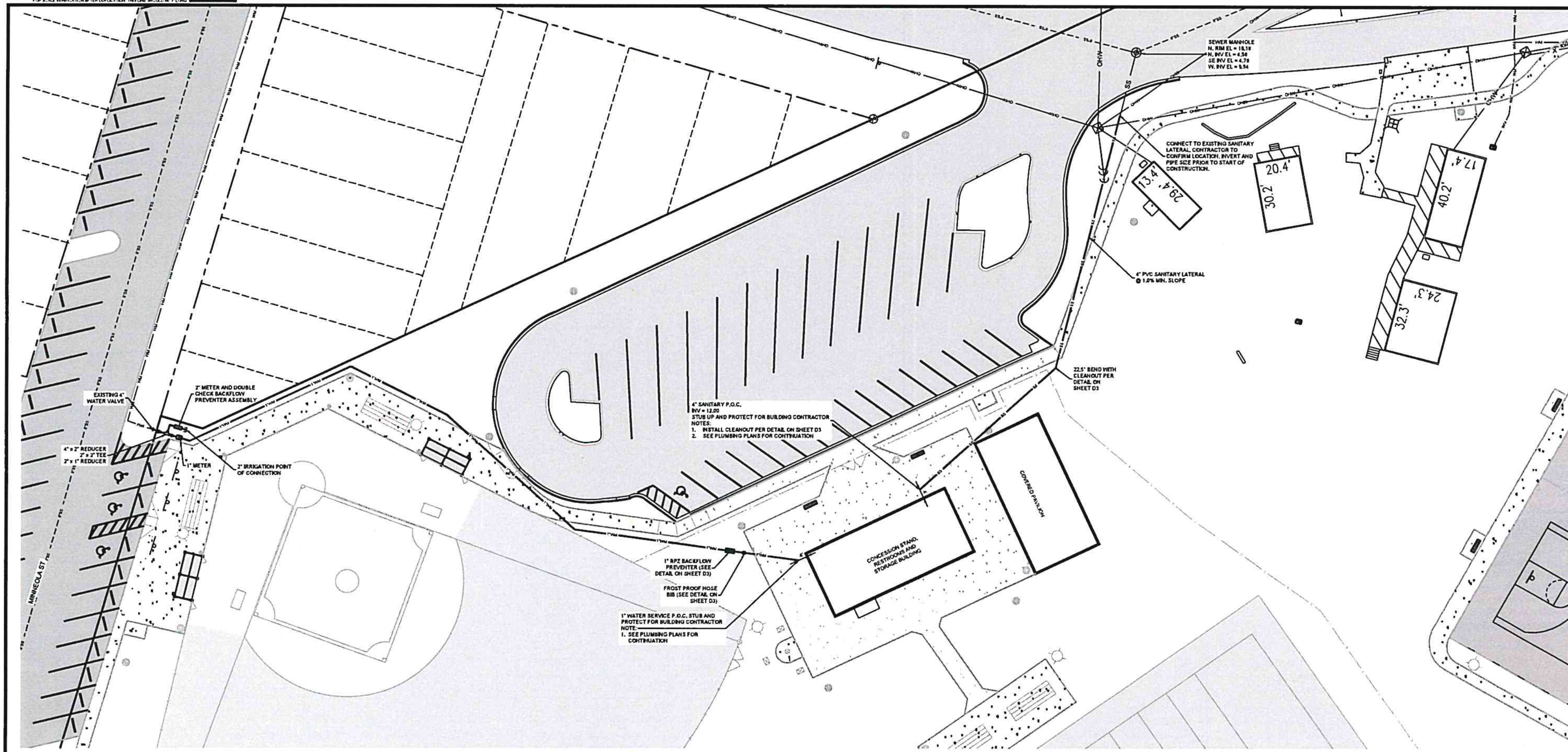
PANHANDLE ENGINEERING, INC.
ENVIRONMENTAL ENGINEERS • CIVIL ENGINEERS • LAND PLANNERS
800 Ohio Avenue Lynn Haven, Florida 32444
(850)763-5200 www.panhandleengineering.com

GRADING AND DRAINAGE PLAN
GORE PARK IMPROVEMENTS
CALLAWAY, FLORIDA

DPR CERTIFICATION #EB-7806

CHRISTOPHER B. FOREHAND LICENSE NO. 58028 STATE OF FLORIDA PROFESSIONAL ENGINEER

SHEET NUMBER C4
PROJECT NUMBER 26018



LEGEND

- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING CLEANOUT
- EXISTING MANHOLE
- EXISTING LIGHT POLE
- EXISTING POWER POLE
- EXISTING GUY ANCHOR
- PROPOSED LIGHT POLE
- PROPOSED MUSCO LIGHTING POLE
- EXISTING OVERHEAD UTILITIES
- EXISTING WATER MAIN
- EXISTING SANITARY SEWER
- EXISTING SANITARY MANHOLE

NOTES
1. ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS SHALL BE FIELD VERIFIED PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR TO NOTIFY ENGINEER IMMEDIATELY UPON IDENTIFICATION OF CONFLICTS.

SCALE: 1" = 20'

REV	DATE	BY	REVISIONS
NOT			RELEASED FOR CONSTRUCTION BY: DATE:

SCALE:	AS NOTED
DESIGNED BY:	CBF
DRAWN BY:	JAH
REVIEWED BY:	CBF
ISSUE DATE:	FEBRUARY 2022
ACAD FILE NAME:	26018e1.dwg

PANHANDLE ENGINEERING, INC.
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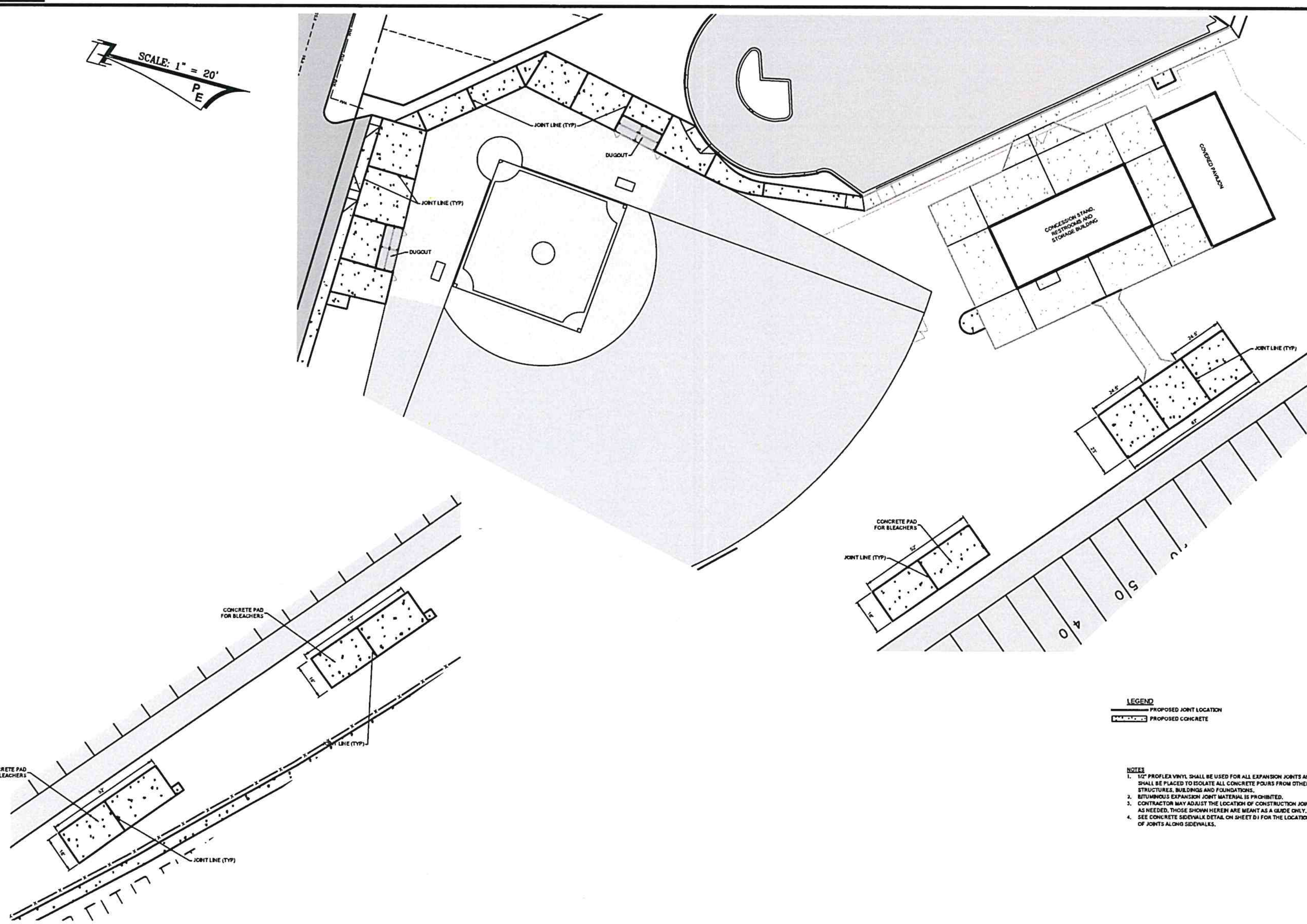
600 Ohio Avenue Lynn Haven, Florida 32444
(850)763-5200 www.panhandleengineering.com

UTILITY PLAN
GORE PARK
IMPROVEMENTS
CALLAWAY, FLORIDA

James H. [illegible], P.E. [illegible]
Christopher B. Forehand, P.E. 59029
Stephen E. Price, P.E. [illegible]
J. Doug Crook, P.E. [illegible]
DPR CERTIFICATION #EB-7806

CHRISTOPHER B. FOREHAND
LICENSE
NO. 59029
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SHEET NUMBER
C5
PROJECT NUMBER
26018



LEGEND

PROPOSED JOINT LOCATION

PROPOSED CONCRETE

NOTES

1. 1/2" PROFLEX VINYL SHALL BE USED FOR ALL EXPANSION JOINTS AND SHALL BE PLACED TO ISOLATE ALL CONCRETE POURS FROM OTHER STRUCTURES, BUILDINGS AND FOUNDATIONS.
2. BITUMINOUS EXPANSION JOINT MATERIAL IS PROHIBITED.
3. CONTRACTOR MAY ADJUST THE LOCATION OF CONSTRUCTION JOINTS AS NEEDED. THOSE SHOWN HEREIN ARE MEANT AS A GUIDE ONLY.
4. SEE CONCRETE SIDEWALK DETAIL ON SHEET D1 FOR THE LOCATIONS OF JOINTS ALONG SIDEWALKS.

REV	DATE	BY	REVISIONS
NOT	RELEASED FOR CONSTRUCTION BY:	DATE:	

SCALE:	AS NOTED
DESIGNED BY:	CBF
DRAWN BY:	JAH
REVIEWED BY:	CBF
ISSUE DATE:	FEBRUARY 2022
ACAD FILE NAME:	26018e1.dwg

PANHANDLE ENGINEERING, INC.
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600 Ohio Avenue Lynn Haven, Florida 32444
(850)763-5200 www.panhandleengineering.com

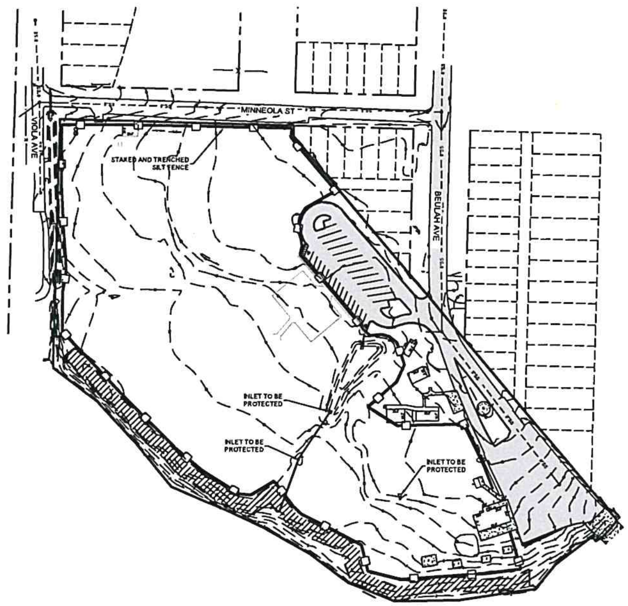
CONCRETE JOINT LAYOUT PLAN
GORE PARK
IMPROVEMENTS
CALLAWAY, FLORIDA

James H. Sturdivant, P.E. 39197
Christopher B. Forehand, P.E. 59029
Stephen E. Price, P.E. 71645
J. Doug Crook, P.E. 46555
DPR CERTIFICATION #EB-7806

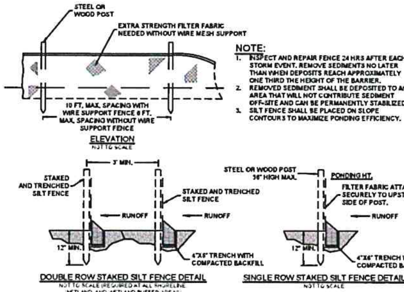
CHRISTOPHER B. FOREHAND
LICENSE
NO. 59029
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

SHEET NUMBER
C6

PROJECT NUMBER
26018



SCALE: 1" = 100'



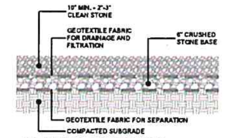
NOTE:
1. INSPECT AND REPAIR FENCE 24 HRS AFTER EACH STORM EVENT. REMOVE SEDIMENTS NO LATER THAN WHEN DEPOSITS REACH APPROXIMATELY ONE THIRD THE HEIGHT OF THE BARRIER.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

ELEVATION
NOT TO SCALE

DOUBLE ROW STAKED SILT FENCE DETAIL
NOT TO SCALE (REQUIRED AT ALL SHORELINE, WETLAND, AND WETLAND BUFFER AREAS)

SINGLE ROW STAKED SILT FENCE DETAIL
NOT TO SCALE

STANDARD SILT FENCE DETAIL
NOT TO SCALE



CONSTRUCTION ENTRANCE NOTES:
1. GRADE SLOPE TO SITE.
2. PROVIDE CULVERT AS REQUIRED TO CARRY PRE-EXISTING DITCH FLOW. (SEE EXISTING PLAN VIEW FOR LOCATION)
3. CONTRACTOR TO LOCATE TEMPORARY CONSTRUCTION FENCING, JERSEY BARRIERS, OR BOTH ALONG THE SIDES OF THE CONSTRUCTION EXIT TO PREVENT CONSTRUCTION TRAFFIC FROM SHORT CIRCUITING/BYPASSING THE EXIT.
4. ALL MATERIALS SPILLED, DROPPED OR TRACKED ONTO PUBLIC ROADS (INCLUDING AGGREGATE STONE AND CONSTRUCTION MUD) SHALL BE REMOVED DAILY.

CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE

ENVIRONMENTAL SEQUENCE

THE CONTRACTOR SHALL AT A MINIMUM IMPLEMENT THE CONTRACTOR'S REQUIREMENTS OUTLINED BELOW AND THOSE MEASURES SHOWN ON THE EROSION CONTROL PLAN. IN ADDITION THE CONTRACTOR SHALL UNDERTAKE ADDITIONAL MEASURES REQUIRED TO BE IN COMPLIANCE WITH APPLICABLE PERMIT CONDITIONS AND STATE WATER QUALITY STANDARDS. DEPENDING ON THE NATURE OF MATERIALS AND METHODS OF CONSTRUCTION THE CONTRACTOR MAY BE REQUIRED TO ADD FLOCCULANTS TO THE RETENTION SYSTEM PRIOR TO PLACING THE SYSTEM INTO OPERATION.

SEQUENCE OF MAJOR ACTIVITIES:

THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
2. INSTALL SILT FENCES AND HAY BALES, AS REQUIRED.
3. CONSTRUCT SEDIMENTATION BASIN.
4. CLEAR AND GRUB FOR DIVERSION SWALES/DIKES AND SEDIMENT BASIN AT PERMANENT POND LOCATION.
5. CONTINUE CLEARING AND GRUBBING.
6. STOCKPILE TOP SOIL IF REQUIRED.
7. PERFORM PRELIMINARY GRADING ONSITE, AS REQUIRED.
8. STABILIZE DENUDED AREA AND STOCKPILES AS SOON AS PRACTICABLE.
9. INSTALL UTILITIES, STORM SEWER, CURBS AND GUTTER.
10. APPLY BASE TO PROJECT.
11. COMPLETE GRADING AND INSTALL PERMANENT SEEDING/SOD AND PLANTING.
12. COMPLETE FINAL PAVING.
13. REMOVE ACCUMULATED SEDIMENT FROM BASINS.
14. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE IS STABILIZED, REMOVE ANY TEMPORARY DIVERSION SWALES/DIKES AND RESEED/ SOD, AS REQUIRED.

TIMING OF CONTROLS/MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, THE SILT FENCES AND HAY BALES, STABILIZED CONSTRUCTION ENTRANCE AND SEDIMENT BASIN WILL BE CONSTRUCTED PRIOR TO CLEARING OR GRADING OF ANY OTHER PORTIONS OF THE SITE. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICAL IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, THAT AREA WILL BE STABILIZED PERMANENTLY IN ACCORDANCE WITH THE PLANS. AFTER THE ENTIRE SITE IS STABILIZED, THE ACCUMULATED SEDIMENT WILL BE REMOVED FROM THE SEDIMENT TRAPS AND THE EARTH DIKE/SWALES WILL BE REGRADED/REMOVED AND STABILIZED IN ACCORDANCE WITH THE EROSION AND TURBIDITY CONTROL PLAN.

DEWATERING NOTES:

CONTRACTOR SHALL OBTAIN A GENERAL PERMIT FOR DEWATERING FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION NPDES SECTION. (CONTACT: KEVIN HARGETT, FDEP NW DIST. WASTEWATER SECTION, EMAIL: kevin.hargett@dep.state.us PHONE: 850.595.0687)

CONTRACTOR SHALL PROVIDE A DETAILED DEWATERING PLAN WITH METHODS TIME TABLE & DISCHARGE LOCATION TO ENGINEER FOR APPROVAL BEFORE COMMENCEMENT.

"DEWATERING EFFLUENT OF UNCONTAMINATED GROUNDWATER SHALL BE DISCHARGED SO AS TO PREVENT NEGATIVE IMPACTS TO PUBLIC HEALTH OR SAFETY, PROPERTY, OR THE WATER RESOURCE. DEWATERING OPERATIONS SHALL BE DIRECTED TO A SEDIMENT CONTROL DEVICE OR NATURAL ATTENUATION AREA PRIOR TO DISCHARGE TO WETLANDS OR OTHER SURFACE WATERS. A SEDIMENT CONTROL DEVICE MEANS A SETTLING POND, EXCAVATED SEDIMENT TRAP OR BASIN, DEWATERING TRAP OR TEMPORARY SEDIMENT CONTROL MEASURE. A NATURAL ATTENUATION AREA MEANS A NORMALLY DRY, GRASSED MEADOW OR OPEN AREA WITH EXISTING VEGETATION THAT IS NOT SUBJECT TO EROSION. IF A NATURAL ATTENUATION AREA IS USED, A MINIMUM 50 FOOT SETBACK SHALL BE MAINTAINED FROM THE RECEIVING WATERS OR WETLANDS. WHEN WATER IS UNAVOIDABLY DISCHARGED TO WETLANDS OR OTHER SURFACE WATERS, THE WATER DISCHARGED SHALL BE DONE IN A MANNER THAT DOES NOT CAUSE EROSION OR OTHER DAMAGE TO ADJACENT LANDS, AND DOES NOT CAUSE OR CONTRIBUTE TO VIOLATIONS OF WATER QUALITY STANDARDS. SETTLING PONDS AND SEDIMENT TRAPS OR BASINS SHALL BE IMPLEMENTED, AT A MINIMUM, IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 11.0, NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT APPLICANT'S HANDBOOK VOLUME I." IN ADDITION, DEWATERING ACTIVITIES MAY REQUIRE ADDITIONAL PERMITS FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (INDUSTRIAL WASTEWATER) AND THE NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT (CONSUMPTIVE USE).

PRIOR TO COMMENCEMENT OF CONSTRUCTION DEWATERING ACTIVITIES ANALYTICAL TEST OF UNTREATED GROUNDWATER FOR THE PARAMETERS LISTED IN TABLE 4-1 MUST BE PERFORMED FOR EACH LOCATION.

IF THE ANALYTICAL TESTS ARE WITHIN THE SCREENING VALUES LISTED IN TABLE 4-1 DEWATERING OF THE SITE MAY BEGIN IMMEDIATELY. A SUMMARY REPORT DESCRIBING THE PROPOSED ACTIVITY AND A COPY OF THE TEST REPORT SHOULD BE SENT TO THE LOCAL FDEP OFFICE WITHIN ONE WEEK AFTER DISCHARGE BEGINS.

ADDITIVE SAMPLES AND TESTING MUST BE PROVIDED WITHIN THIRTY DAYS AFTER INITIATION OF THE DISCHARGE AND THEN ONCE EVERY SIX MONTHS FOR THE DURATION OF THE PROJECT.

ALL ANALYTICAL TEST DATA, INCLUDING THIRTY DAY AND SIX MONTH TEST RESULTS SHOULD BE KEPT ON-SITE DURING DISCHARGE AND MADE AVAILABLE TO FDEP, IF REQUESTED.

DURING DEWATERING, APPROPRIATE FABRIC SILT SCREEN OR HAY BALES SHALL BE USED TO PREVENT TURBID DISCHARGES. WHEN POSSIBLE, ESTABLISH A DETENTION AREA TO ALLOW SUSPENDED SOLIDS TO SETTLE PRIOR TO DISCHARGE.

THE CONTRACTOR SHALL SELECT, IMPLEMENT AND OPERATE SUCH EROSION AND SEDIMENT CONTROL MEASURES NECESSARY TO PREVENT VIOLATIONS OF WATER QUALITY STANDARDS IN CHAPTER 62-302 F.A.C.

GROUNDWATER WITHDRAWALS FOR DEWATERING SHALL BE BY ONE OF THE FOLLOWING METHODS:

A) A CONVENTIONAL WELL POINT SYSTEM CONSISTING OF ONE OR MORE STAGES OF WELL POINTS INSTALLED NEAR THE PROPOSED EXCAVATION IN LINES OR RINGS. THE WELL POINTS SHALL BE INSTALLED IN VARIABLE SPACINGS AND CONNECTED TO A COMMON HEADER PRESSURIZED BY ONE OR MORE PUMPS.

B) VACUUM UNDERDRAIN SYSTEM CONSISTING OF AN UNDERDRAIN PIPE WITH FILTER SOCK COVERING PLACED HORIZONTALLY BELOW THE DESIGN EXCAVATION ELEVATION VIA TRENCHING MACHINE. THE UNDERDRAIN PIPE SHALL BE CONNECTED TO A PUMP WITH THE GROUNDWATER CONVEYED THROUGH THE PIPE AND DISCHARGED FROM THE PUMP.

C) VACUUM WELL(S) CONSISTING OF ONE OR MORE STAGES INSTALLED NEAR AN EXCAVATION IN LINES OR RINGS. THE VACUUM WELL(S) SHALL BE CONSTRUCTED WITH SIX INCH OR SMALLER PIPE WITH A SLOTTED SCREEN AREA NEAR THE BOTTOM OF THE WELL, AND CONNECTED TO A COMMON HEADER PUMPED BY ONE OR MORE PUMPS.

D) DEWATERING STORMWATER POND OR BASIN BY HYDRAULIC PUMP THROUGH THE EXISTING OR NEW DISCHARGE CONTROL STRUCTURE.

EROSION CONTROL NOTES:

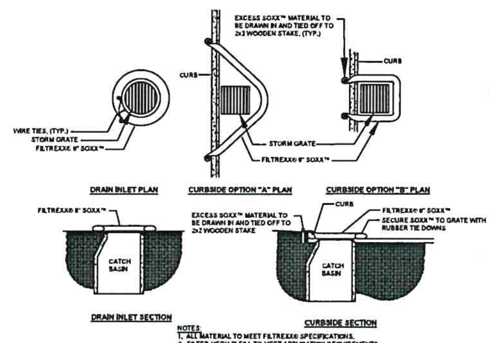
1. EROSION CONTROL MEASURES WILL BE UTILIZED THROUGHOUT THE CONSTRUCTION PHASE OF THIS PROJECT TO RESTRICT ANY TURBID RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
2. CONTROL OF SEDIMENT-LADEN RUNOFF SHALL BE PROVIDED WITH HAY BALES AND/OR GEOTECH STYLE FABRICS. ALL CONTROL MEASURES SHALL BE PROPERLY LOCATED AND CONSTRUCTED TO PREVENT SEDIMENT TRANSPORT. THE MEANS FOR RETAINING THE SEDIMENTS WILL BE MAINTAINED BY THE CONTRACTOR UNTIL PERMANENT IMPROVEMENTS ARE COMPLETE.
3. THE CONTRACTOR IS RESPONSIBLE FOR TREATING ALL ONSITE STORMWATER DRAINAGE AS REQUIRED TO MEET THE CRITERIA OF 62-3 FLORIDA ADMINISTRATIVE CODE, F.A.C. PRIOR TO DISCHARGE.
4. ALL CATCH BASINS, INLETS AND ACCESSES TO UNDERGROUND STORMWATER SYSTEMS SHALL BE PROTECTED IN ACCORDANCE WITH THE ATTACHED DETAILS.
5. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE TERMS AND CONDITIONS OF ANY STORMWATER PERMITS THAT MAY APPLY (FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, FLORIDA DEPARTMENT OF TRANSPORTATION, BAY COUNTY, WATER MANAGEMENT DISTRICT, ETC.).

EROSION CONTROL NOTES:
ALL INLETS SHALL HAVE HAY BALES OR SILT FENCE AROUND THEIR PERIMETER.

SILT FENCE IS REQUIRED ALONG WETLAND AREAS WHERE CONSTRUCTION OR RUNOFF DUE TO CONSTRUCTION IS TAKING PLACE.

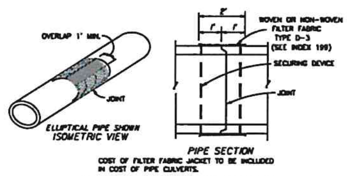
SILT FENCE AND HAY BALES ARE REQUIRED IN ALL AREAS AS DIRECTED BY THE ENGINEER.

PROTECTED TREES NOTE:
NO PROTECTED TREES WILL BE IMPACTED UNLESS PERMITTED INDEPENDENTLY.



NOTES:
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
2. FILTER MEDIA™ FILL TO MEET APPLICATION REQUIREMENTS.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

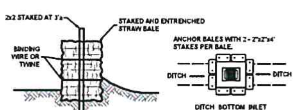
FILTREXX® INLET PROTECTION
NTS



COST OF FILTER FABRIC JACKET TO BE INCLUDED IN COST OF PIPE CULVERTS.

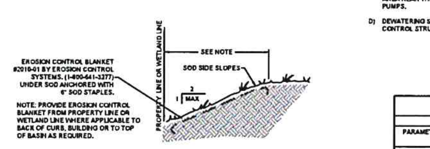
FOR ALL PIPE - CONCRETE PIPE SHOWN

FILTER FABRIC JACKET DETAIL
NOT TO SCALE



STRAW BALE BARRIER INSTALLATION DETAIL
NOT TO SCALE

NOTE:
ALL INLETS & STORM STRUCTURES TO HAVE HAY BALES ALL AROUND (SEE DETAILS THIS SHEET).



SLOPE STABILIZATION DETAIL
NOT TO SCALE

SLOPE STABILIZATION NOTES

FLAT TO 1:3 - SEED AND MULCH, HYDRO-SEED OR SOD.
1:3 TO 1:2 - SOD LAPPED AND PINNED.
1:2 TO 1:1 - EROSION CONTROL BLANKET AND SOD.
1:1 OR GREATER - RETAINING WALL OR ARMOR FORM.

NOTE:
AREAS NOT SODDED TO BE STABILIZED WITH HYDROSEEDING.
SEE SLOPE STABILIZATION DETAIL THIS SHEET

TABLE 4-1 GROUNDWATER DISCHARGE - SCREENING VALUES	
PARAMETER	SCREENING VALUES FOR DISCHARGE INTO FRESH WATER
TOTAL ORGANIC CARBON (TOC)	10.0 mg/L
PH, STANDARD UNITS	6.0 - 8.5
TOTAL RECOVERABLE MERCURY	0.012 ug/L
TOTAL RECOVERABLE CADMIUM	9.3 ug/L
TOTAL RECOVERABLE COPPER	2.9 ug/L
TOTAL RECOVERABLE LEAD	0.03 ug/L
TOTAL RECOVERABLE ZINC	86.0 ug/L
TOTAL RECOVERABLE CHROMIUM (HEX.)	11.0 ug/L
BENZENE	1.0 ug/L
NAPHTHALENE	100.0 ug/L

mg/L = milligrams per liter
ug/L = micrograms per liter

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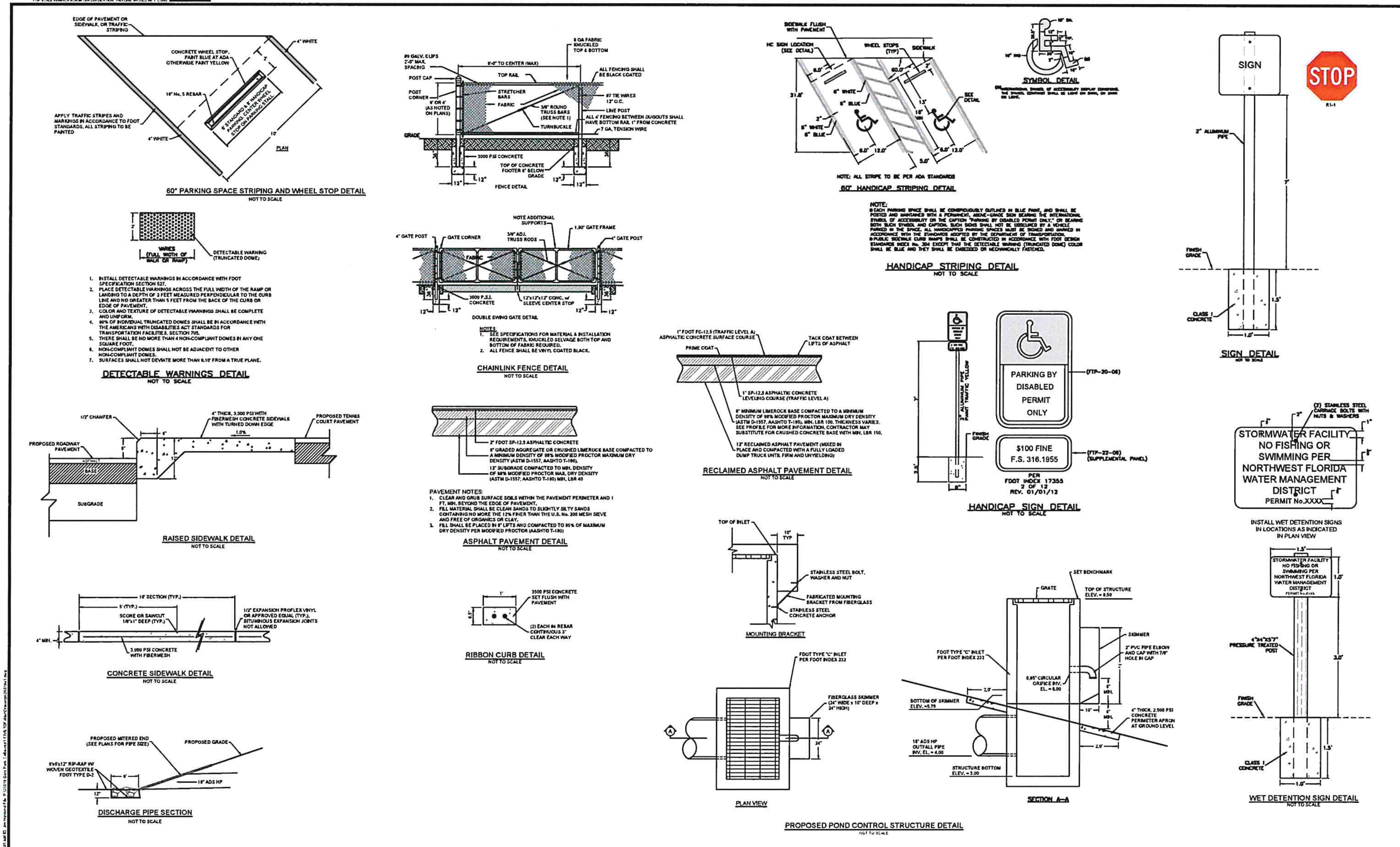
EROSION CONTROL PLAN
GORE PARK IMPROVEMENTS
CALLAWAY, FLORIDA

James H. Bunns, P.E. 39197
Christopher B. Forehand, P.E. 58028
Stephen E. Price, P.E. 71645
J. Doug Crook, P.E. 66555
DPR CERTIFICATION #EB-7906

CHRISTOPHER B. FOREHAND LICENSE NO. 58028 STATE OF FLORIDA PROFESSIONAL ENGINEER

SHEET NUMBER
C7

PROJECT NUMBER
26018



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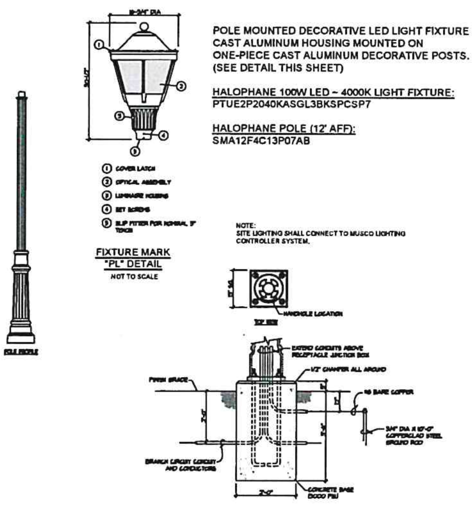
CONSTRUCTION DETAILS
GORE PARK
IMPROVEMENTS
CALLAWAY, FLORIDA

DPR CERTIFICATION #EB-7906

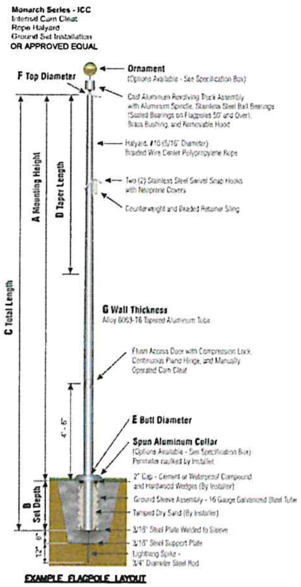
CHRISTOPHER B. FOREHAND LICENSE NO. 58028 STATE OF FLORIDA PROFESSIONAL ENGINEER

SHEET NUMBER D1
PROJECT NUMBER 26018



FIXTURE "PL" TYPICAL POLE FOUNDATION DETAIL

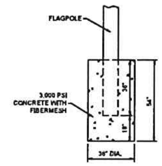
NOT TO SCALE



EXAMPLE FLAGPOLE LAYOUT

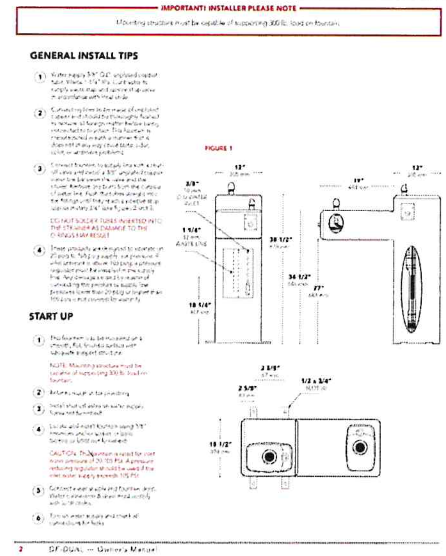
SPECIFICATIONS:

40 FT. IN HEIGHT WITH INTERNAL CAM ROPE HALYARD SYSTEM. CONTRACTOR TO SUBMIT SHOP DRAWING FOR CITY APPROVAL.



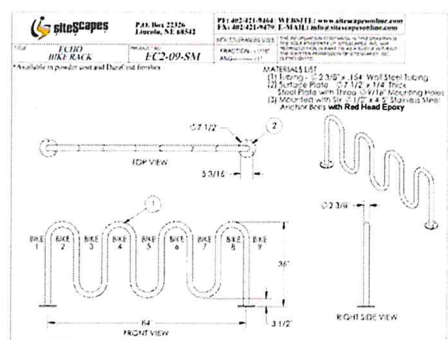
FLAGPOLE FOUNDATION DETAIL

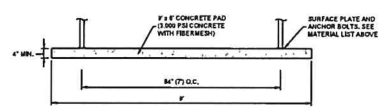
NOT TO SCALE



DRINKING FOUNTAIN DETAIL

NOT TO SCALE





BICYCLE RACK DETAIL

NOT TO SCALE

NOTE: PROVIDE (8) TRASH CANS TO BE PLACED BY THE CITY

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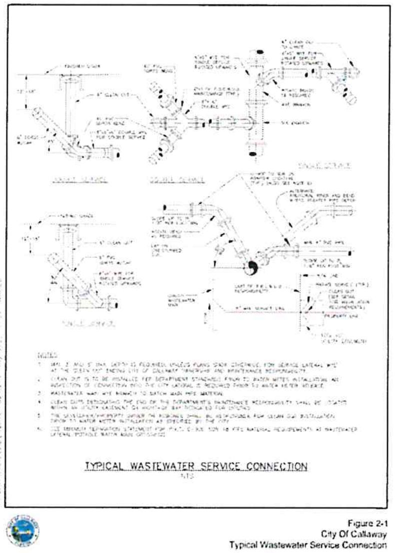
CONSTRUCTION DETAILS
GORE PARK
IMPROVEMENTS
CALLAWAY, FLORIDA

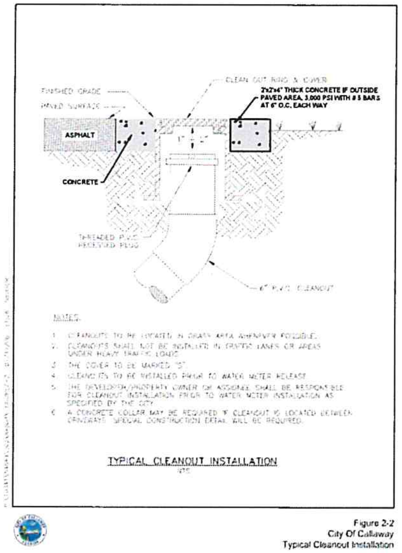
DPR CERTIFICATION #EB-7806

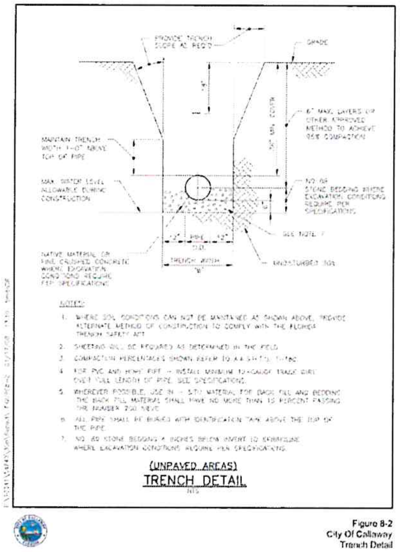
CHRISTOPHER B. FOREHAND LICENSE NO. 58028 STATE OF FLORIDA PROFESSIONAL ENGINEER

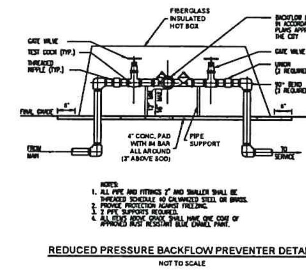
SHEET NUMBER D2

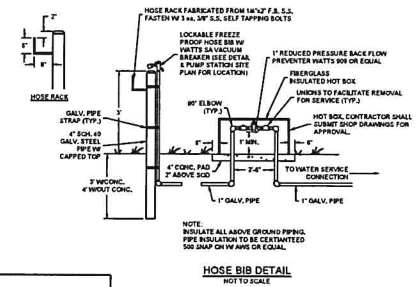
PROJECT NUMBER 26018

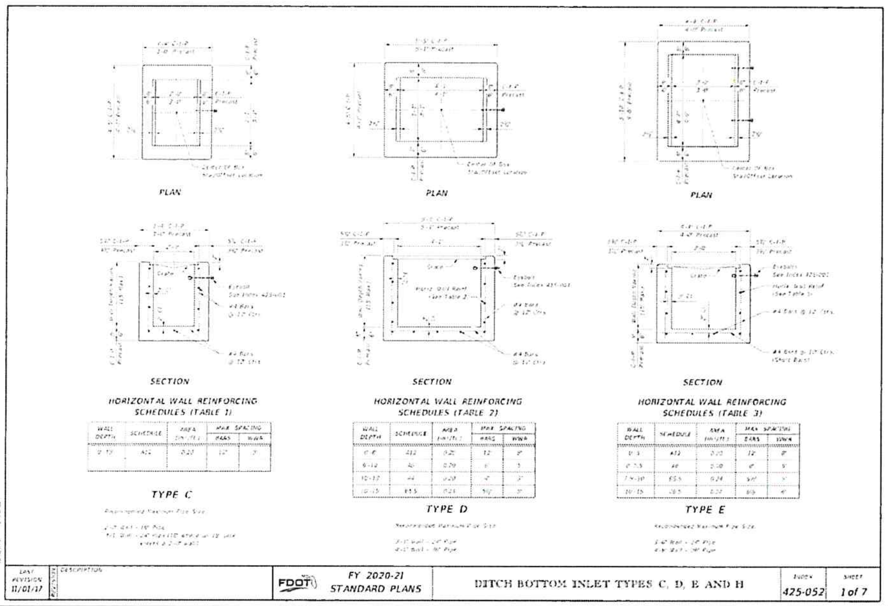


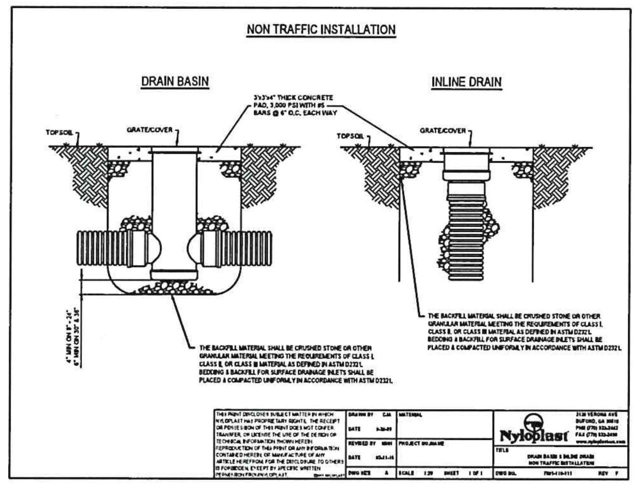


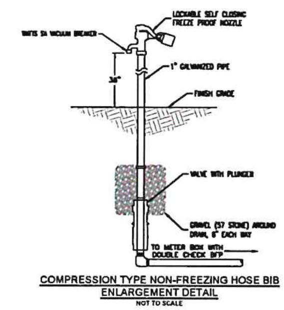












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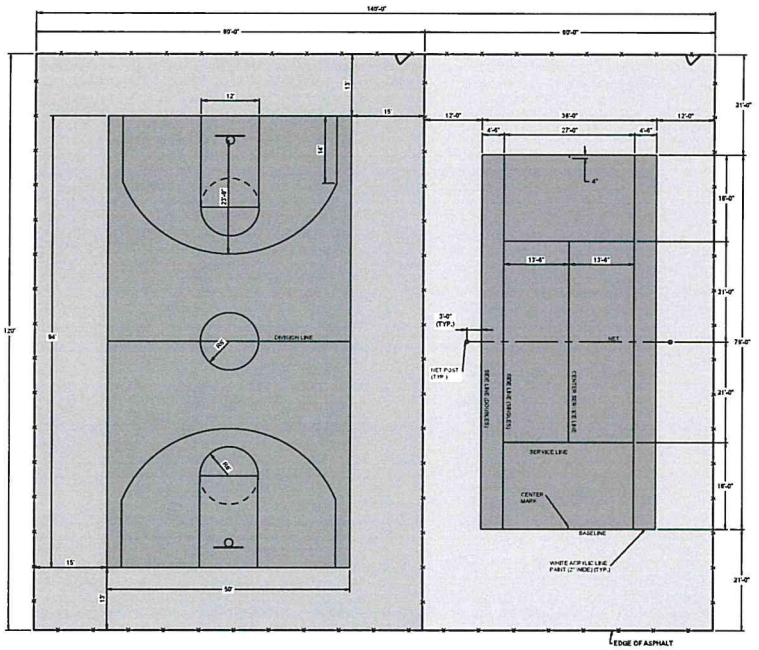
CONSTRUCTION DETAILS
GORE PARK
IMPROVEMENTS
CALLAWAY, FLORIDA

DPR CERTIFICATION #EB-7806

CHRISTOPHER B. FOREHAND LICENSE NO. 58028 STATE OF FLORIDA PROFESSIONAL ENGINEER

SHEET NUMBER
D3
PROJECT NUMBER
26018

FOR SCALE VERIFICATION AFTER DUPLICATION THIS LINE SHOULD BE 1" LONG



TENNIS COURT LEGEND

- DARK GREEN (OR COLOR AS SELECTED BY OWNER) TWO TONE PLEXIPAVE BASE
- BRICK RED (OR COLOR AS SELECTED BY OWNER) TWO TONE PLEXIPAVE BASE

NOTES:

1. ALL MEASUREMENTS FOR COURT MARKINGS ARE TO THE OUTSIDE OF LINES EXCEPT FOR THOSE INVOLVING THE CENTER SERVICE LINE WHICH IS EQUALLY DIVIDED BETWEEN THE LEFT AND RIGHT SERVICE COURTS.
2. ALL COURT MARKINGS ON BOTH COURTS SHALL BE 2" WIDE.
3. CONTRACTOR SHALL HAVE A PRE-APPROVED GEOTECHNICAL TESTING LAB PERFORM 8 COMPACTION TESTS FOR BASE AND SUBGRADE FOR THE TENNIS COURTS. LOCATIONS WILL BE DETERMINED BY THE ENGINEER, (FOUR (4) FOR BASE AND FOUR (4) FOR SUBGRADE).

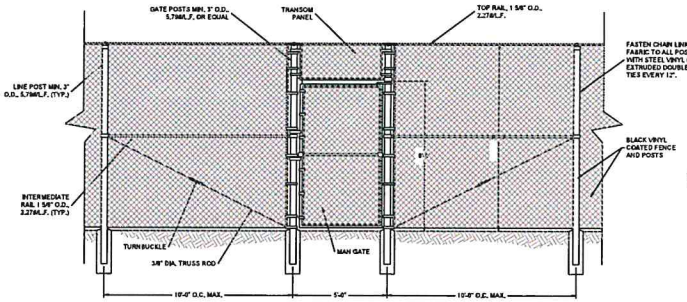
TENNIS COURT AND BASKET BALL COURT DIMENSIONS & MARKINGS DETAIL
NOT TO SCALE

NOTES:

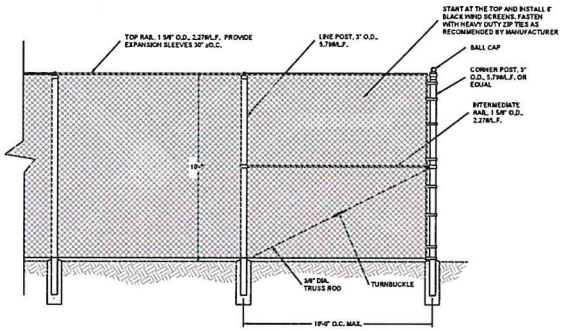
1. FENCE SHALL BE 10' HIGH, 11 GAUGE 1 3/4" MESH CHAIN LINK.
2. FENCE POSTS SHALL BE A MINIMUM OF SCHEDULE 40 WEIGHT REGARDLESS OF CROSS SECTIONAL CONFIGURATION.
3. FENCE SHALL BE CHAIN LINK WITH BLACK GALVANIZED VINYL COATING PER ASTM A392.
4. REINFORCING TENSION WIRE IS TO HAVE A MINIMUM TENSILE STRENGTH OF 80,000 P.S.I.
5. HOG RINGS OF .110" DIAMETER ALUMINUM WIRE SHALL BE USED TO ATTACH FENCE TO REINFORCING TENSION WIRE 2'-0" O.C.
6. TIE WIRE OF .144" DIAMETER ALUMINUM ALLOY SHALL BE USED TO ATTACH FENCE TO TOP RAIL AND INTERMEDIATE POSTS AT 14" O.C.
7. TENSION BARS OF 14" x 3/4" OR 3/16" x 3/4" GALVANIZED STEEL WOVEN THROUGH THE FENCE ARE TO BE FASTENED TO TERMINAL AND GATE POSTS WITH 11 GAUGE x 1" WIDE GALVANIZED STEEL BANDS AT 14" O.C.
8. SELVAGE TOP AND BOTTOM IS TO BE KNUCKLED.
8. ALL FERROUS METAL PARTS ARE TO BE HOT DIPPED GALVANIZED AFTER FABRICATION.
10. CONCRETE FOOTINGS SHALL BE A MINIMUM 9" DIAMETER. CONCRETE SHALL CONFORM TO ASTM C94, MAXIMUM 3/4" AGGREGATE, MINIMUM 3,000 P.S.I. COMPRESSIVE STRENGTH (F'c) AT 28 DAYS.
11. THE FENCE SHALL BE FASTENED TO THE COURT SIDE OF ALL POSTS AND RAILS.
12. THE BOTTOM OF THE FENCE SHALL BE 1" ABOVE THE FINISHED COURT SURFACE.
13. THE FENCE SHALL HAVE A 9' HIGH WINDSCREEN INSTALLED ON ALL NEW FENCE SECTIONS AND SHALL BE REMOVABLE.

MATERIAL SPECIFICATIONS
FABRIC: 100% LENO POLYPROPYLENE
WINDBREAK: OPEN MESH-75% CLOSED MESH-25 %
WEIGHT PER SQUARE YARD: OPEN MESH 5.5OZ CLOSED MESH 7.4OZ
TENSILE STRENGTH: 295 X 204
COLOR: BLACK

14. THE WINDSCREEN SHALL HAVE ANTI BILLOW TABS AS WELL AS 8"X12" OPENINGS PLACED 5' TO 10' APART.
15. AS A BID ALTERNATE THE CONTRACTOR SHALL PRICE THE OPTION OF BLACK VINYL COATED CHAIN LINK FENCE.



TYPICAL GATE ELEVATION
NOT TO SCALE



TYPICAL FENCE ELEVATION
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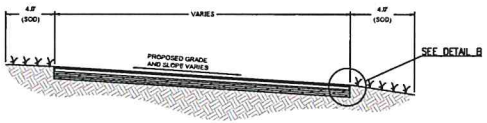

TYPICAL COURT SECTION
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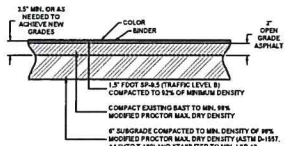
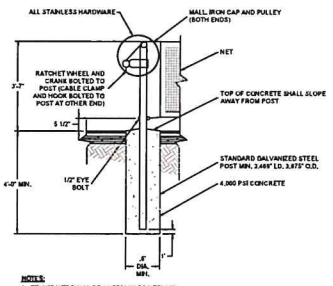
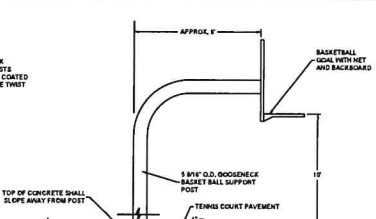


DETAIL B
NOT TO SCALE

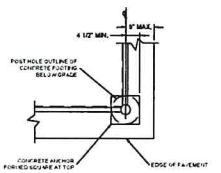


NOTES:
1. TENNIS NET SHALL BE AMERICAN PRO TENNIS CO. STOCK NO. 50-1200 OR EQUAL.
2. HARDWARE SHALL BE STAINLESS STEEL 304.

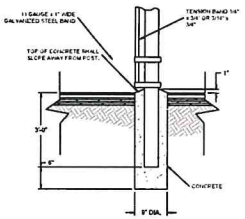
TENNIS NET POST FOOTING DETAIL
NOT TO SCALE



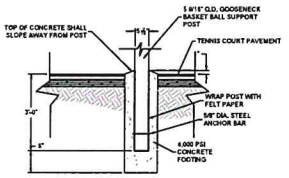
BASKETBALL GOAL POST ASSEMBLY
NOT TO SCALE



CORNER POST DETAIL
NOT TO SCALE



TYPICAL FENCE POST SECTION
NOT TO SCALE



BASKETBALL GOAL POST FOOTING
NOT TO SCALE

REV	DATE	BY	REVISIONS
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SCALE: AS NOTED
DESIGNED BY: CBF
DRAWN BY: JAH
REVIEWED BY: CBF
ISSUE DATE: FEBRUARY 2022
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TENNIS COURT DETAILS
GORE PARK IMPROVEMENTS
CALLAWAY, FLORIDA

James H. Morton P.E. 74151
Christopher B. Forehand P.E. 58028
Stephen E. Price P.E. 71665
J. Doug Crook P.E. 66556

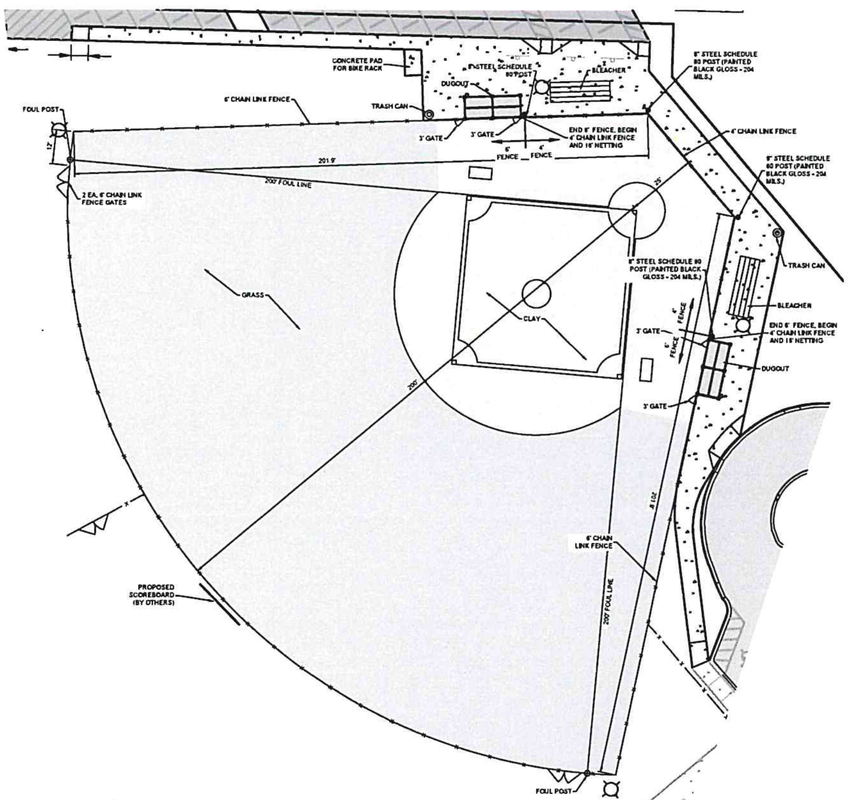
CHRISTOPHER B. FOREHAND LICENSE NO. 58028 STATE OF FLORIDA PROFESSIONAL ENGINEER

DPR CERTIFICATION #EB-7906

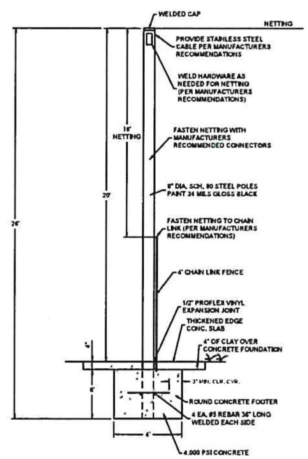
SHEET NUMBER
D4

PROJECT NUMBER
26018

26018 GORE PARK IMPROVEMENTS TENNIS COURT DETAILS Sheet D4



AA FIELD DETAIL
SCALE: 1" = 20'



NOTES:
1. DEWATER PRIOR TO POURING CONCRETE.

NETTING POST DETAIL
NOT TO SCALE

Turfgrass Tech Sheet

TifTuf® Bermudagrass

Cynodon dactylon (L.) Pers. x Cynodon transvaalensis Burtt Davy

TIFTUF

Description: [illegible]

Uses: [illegible]

Adaptability: [illegible]

Adaptability Zones: [illegible]

Dormancy: [illegible]

Shade Tolerance: [illegible]

Drought Tolerance & Water Management: [illegible]

Weed Tolerance: [illegible]

Insect Tolerance: [illegible]

Disease Resistance: [illegible]

Traffic & Wear Tolerance: [illegible]

Fertility: [illegible]

Soil pH: [illegible]

Mowing Height: [illegible]

Establishment: [illegible]

Quality: [illegible]

For more info and pictures, visit **supersod.com**

NOTE:
THE TIFTUF SOD SHALL BE SUPPLIED BY MCCALL SOD FARM, OR APPROVED EQUAL.

Specifications Sheet

NETTING Professionals

Netting Professionals, LLC

Premium #24 Nylon Backstop Netting

MATERIALS
- A. Backstop Net:
  - 1-3/4" square mesh netting that complies with:
  - a. Yarn / Thread Type: 100% DuPont™ Twisted Knotted nylon
  - b. Factory Procedure: Black UV Bond
  - c. Weight: 0.03 lbs per square foot
  - d. Twine size: #24
  - **e. Minimum Break Strength: 275 lbs**
  - **f. Weather Treatment: Secondary UV DURA-DIP Paint Treatment**
  - g. Lacing Cord: #84 braided black UV resistant Nylon cord 800 lb tensile
  - h. Rope edging: 3/8" black High Tenacity Polypropylene HTPP
  - i. Wind Passage / 89% open mesh
- B. Cable and connection hardware:
  - **a. Main cable and vertical cables: 1/4" stainless steel 7 X 19 construction aircraft**
  - **b. Min. 3 cable clamps per connection - malleable wire rope clamps 1/4" stainless steel**
  - **c. Turnbuckles, shackles, eyebolts: All stainless steel**

Netting Professionals, LLC - www.nettingpros.com - eli@nettingpros.com
PO Box 17183, Fernandina Beach, FL 32035 - (904) 805-2233

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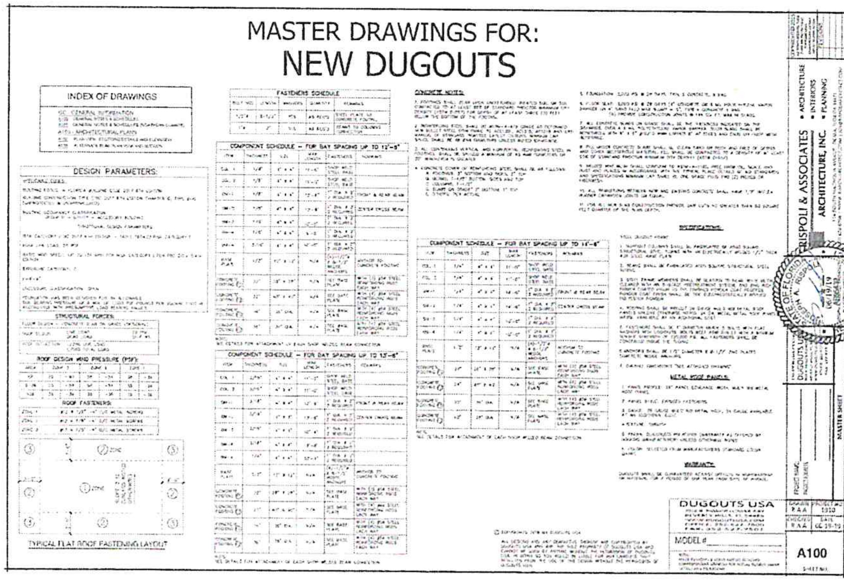
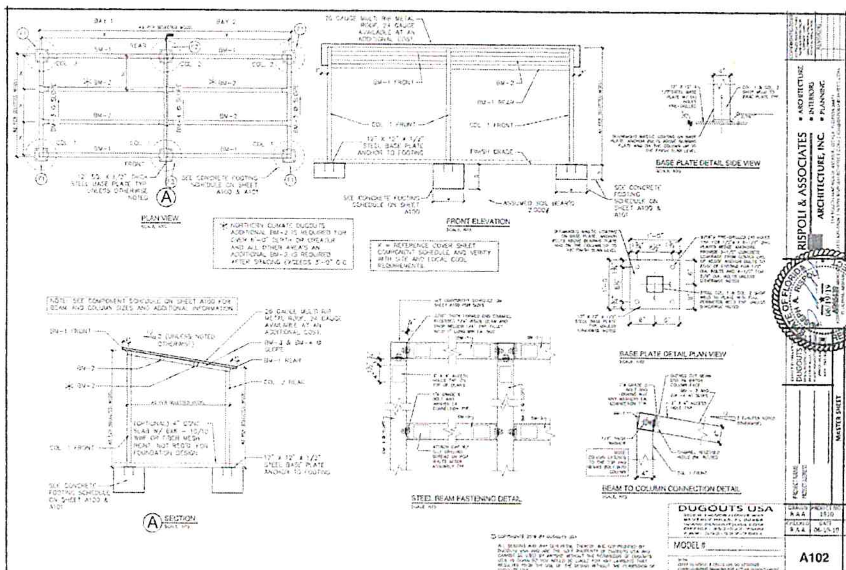
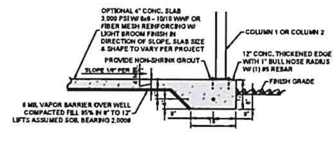
AA FIELD DETAIL AND NETTING PLAN AND DETAILS
GORE PARK
IMPROVEMENTS
CALLAWAY, FLORIDA

James H. Sturkie, P.E. 39197
Christopher B. Forehand, P.E. 59029
Stephen E. Price, P.E. 71646
J. Doug Crook, P.E. 66559
DPR CERTIFICATION #EB-7906
CHRISTOPHER B. FOREHAND LICENSE NO. 59029 STATE OF FLORIDA PROFESSIONAL ENGINEER

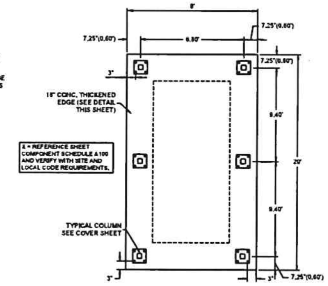
SHEET NUMBER
D5
PROJECT NUMBER
26018



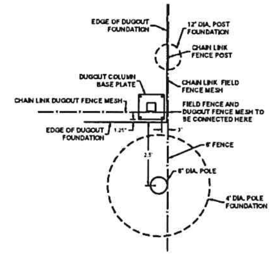




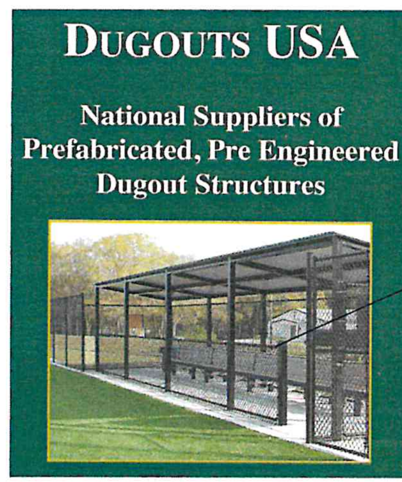
DUGOUT THICKENED EDGE SLAB AND COLUMN FOOTING SECTION
N.T.S.



TYPICAL SLAB PLAN VIEW
N.T.S.



DUGOUT FOUNDATION COORDINATION DETAIL
N.T.S.



FENCE IN FRONT OF DUGOUT SHALL BE 6' WITH GATE AS SHOWN ON PLAN VIEW

JAYPRO SPORTS
15' PLAYER'S BENCH WITH BACK REST, PB-20SM
LIST OF MATERIALS

PIECE NO.	PART NO.	DESCRIPTION	QTY.
1	AR5044	Bolt Clip With Slot	12
2	AR5045	End Cap	4
3	HB5030	Carriage Bolt 5/16"-18 X 3"	12
4	EP0018	2" x 2" End Plug	6
5	HS5035	#8 Pan Head Screw x ½"	8
6	HN5046	5/16" Flange Nut	12
7	AR5043	Seat Plank x 15'	2
8	PBSM-1	Bench Leg	3

ASSEMBLY INSTRUCTIONS

TOOLS REQUIRED: Phillips Screwdriver Bit With Electric Drill (1), ½" Socket Wrench Or Adjustable Wrench (1)

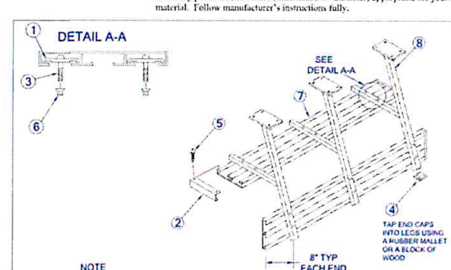
1) Slip the end caps (2) snugly onto each end of the plank (7). Using the electric drill, assemble a self-drilling screw (5) through the cap and into the flange of the plank. Two screws are required per end cap.

2) For easiest assembly, position seat plank (7) on a level raised surface such as a desk top, bleacher seat or work bench. Place the carriage bolt (3) and bolt clips (1) approximately into place within the slots of the plank. Note that the legs should be no more than 8" from the plank edge.

3) Position the legs as shown and loosely assemble the hardware illustrated in detail 'A-A'. Do not fully tighten the hardware at this time.

4) Stand the unit upright and assemble the backrest plank (7) as illustrated. Level the bench and make sure the legs are adequately spaced apart. Tighten all fasteners fully.

5) Locate assembled bench into position and carefully mark the hole locations for each mounting plate. Use fasteners (minimum 3/8" diameter) appropriate for your surface material. Follow manufacturer's instructions fully.



NOTE
DUE TO THE WIDE VARIATIONS IN FLOOR CONSTRUCTION AND MATERIALS, LEG ANCHORS AND ASSOCIATED HARDWARE ARE NOT PROVIDED. IT IS THE INSTALLERS RESPONSIBILITY TO DETERMINE THE SUITABILITY OF THE FASTENERS.

Jaypro Sports
976 Hartford Turnpike
Waterford, CT 06385 USA
(800)243-0533
(800)988-3363 Fax
www.jaypro.com

MODEL NO.: PB-20SM
PRODUCT NAME: 15' PLAYERS BENCH WITH BACK REST
DRAWN BY: JAC | EFFECTIVE DATE 5-1-03

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NOT	RELEASED FOR CONSTRUCTION	BY:	DATE:

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DESIGNED BY: CBF
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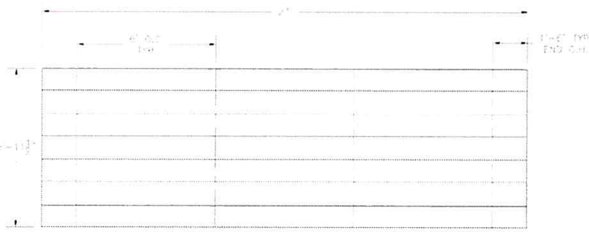
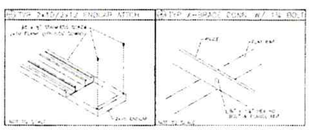
DUGOUT AND PLAYERS BENCH DETAILS
GORE PARK
IMPROVEMENTS
CALLAWAY, FLORIDA

DPR CERTIFICATION #EB-7908

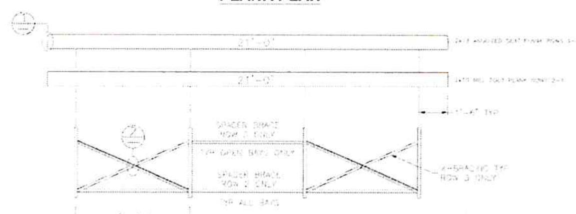
CHRISTOPHER B. FOREHAND LICENSE NO. 58029 STATE OF FLORIDA PROFESSIONAL ENGINEER

SHEET NUMBER D6
PROJECT NUMBER 26018

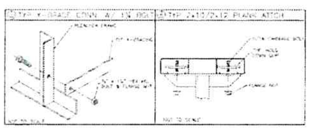


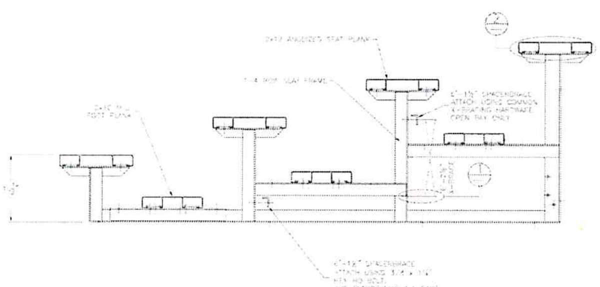


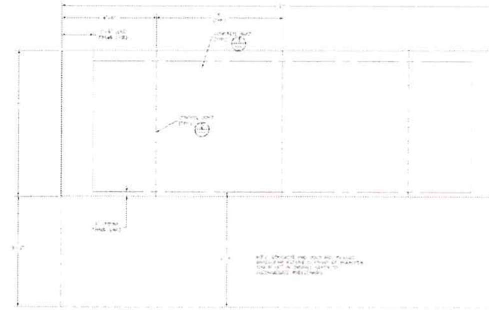
PLANK PLAN

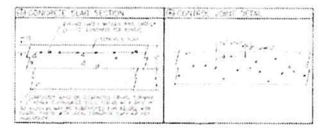


FRAMING PLAN

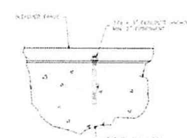


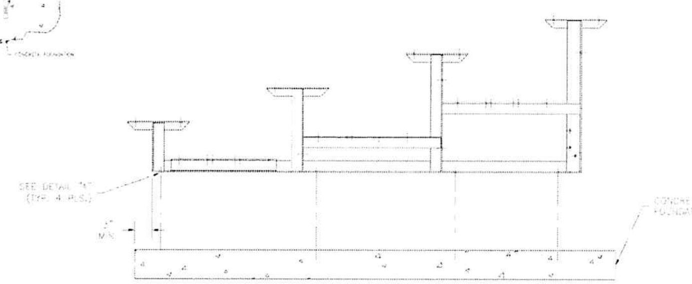






DETAIL "A" - CONC. ANCHOR ATTACHMENT





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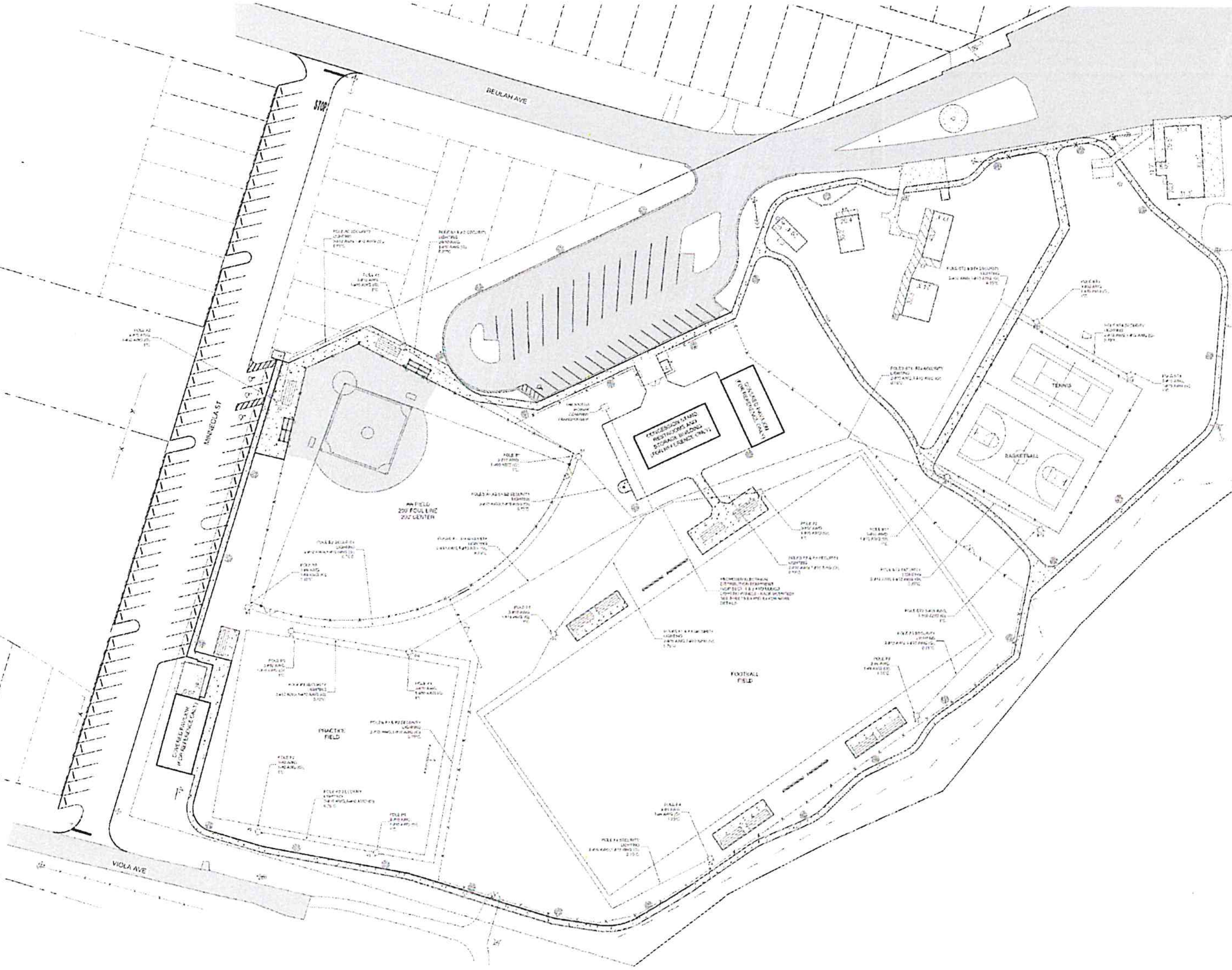
BLEACHER DETAILS
GORE PARK
IMPROVEMENTS
CALLAWAY, FLORIDA

CHRISTOPHER B. FOREHAND
LICENSE NO. 58028
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SHEET NUMBER
D7

PROJECT NUMBER
26018



GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH 2014 NEC AND ALL APPLICABLE LOCAL CODES.
2. ALL CONDUITS SHALL HAVE A BOND WIRE SIZED PER TABLE 250.122 OF THE NEC (UNLESS OTHERWISE NOTED). CONDUCTORS SHALL NOT BE SPLICED EXCEPT AS NOTED.
3. CONTRACTOR SHALL FIELD ADJUST LOCATION OF PANELS, TRANSFORMERS, DISCONNECT SWITCHES, ETC. AS REQUIRED TO MAINTAIN CLEAR WORKING SPACE AS REQUIRED BY THE 2014 NEC.
4. ALL ABOVE GRADE CONDUIT SHALL BE RIGID STEEL WITH SEALTITE FLEX FOR FINAL CONNECTIONS TO MECHANICAL EQUIPMENT UNLESS OTHERWISE NOTED AND/OR REQUIRED BY THE 2014 NEC CODE FOR THE AREA & CONDITIONS OF INSTALLATION. ALL BELOW GRADE CONDUIT SHALL BE RIGID PVC. ALL CONDUCTORS SHALL BE COPPER.
5. LABEL ALL ELECTRICAL EQUIPMENT AS REQUIRED BY THE 2014 NEC CODE. LOCATIONS FROM WHICH CIRCUITS ORIGINATE SHALL BE MARKED ON ALL EQUIPMENT.
6. ADJUST FEEDER AND BRANCH CIRCUIT SIZING AS REQUIRED TO INSURE TOTAL VOLTAGE DROPS DO NOT EXCEED 2%.
7. REFER TO SHEETS C2, C3, D2, & MUSCO DETAILS FOR MORE DETAILS FOR FIELD LIGHTING AND SIDEWALK LIGHTING.
8. PROVIDE PULLBOXES EVERY 200'. PULLBOX COVERS SHALL BE LABELLED "ELECTRICAL". PULLBOXES SHALL BE SIZED PER THE 2014 NEC AND SUITABLE FOR THE LOCATION THEY ARE INSTALLED.
9. COORDINATE WITH POWER COMPANY FOR FINAL LOCATION AND ADJUST WIRE/CONDUIT AS REQUIRED TO INSURE VOLTAGE DROP IS LESS THAN 1% FOR SERVICE CONDUCTORS.
10. COORDINATE WITH MUSCO FOR SECURITY LIGHTING CONTACTOR LAYOUT. MAY ONLY BE A SINGLE 3 POLE CONTACTOR. COMBINE CIRCUITS AS REQUIRED USING UL LISTED POWER TERMINAL BLOCKS OR POLARIS TAPS AND UTILIZE CIRCUIT BREAKER(S) IN MDP AS REQUIRED.
11. SPORTS LIGHTING ON EACH POLE SHALL BE FED FROM A SINGLE 3 PHASE HOME RUN FROM THE MUSCO CONTROL PANELS (SECURITY LIGHT ON EACH POLE IS FED FROM A SEPARATE CIRCUIT THAN THE SPORTS LIGHTING). SEE MUSCO DETAILS FOR MORE INFORMATION.

CHAD HALL, P.E.
ELECTRICAL ENGINEER
FL License # 65806

REV	DATE	BY	REVISIONS
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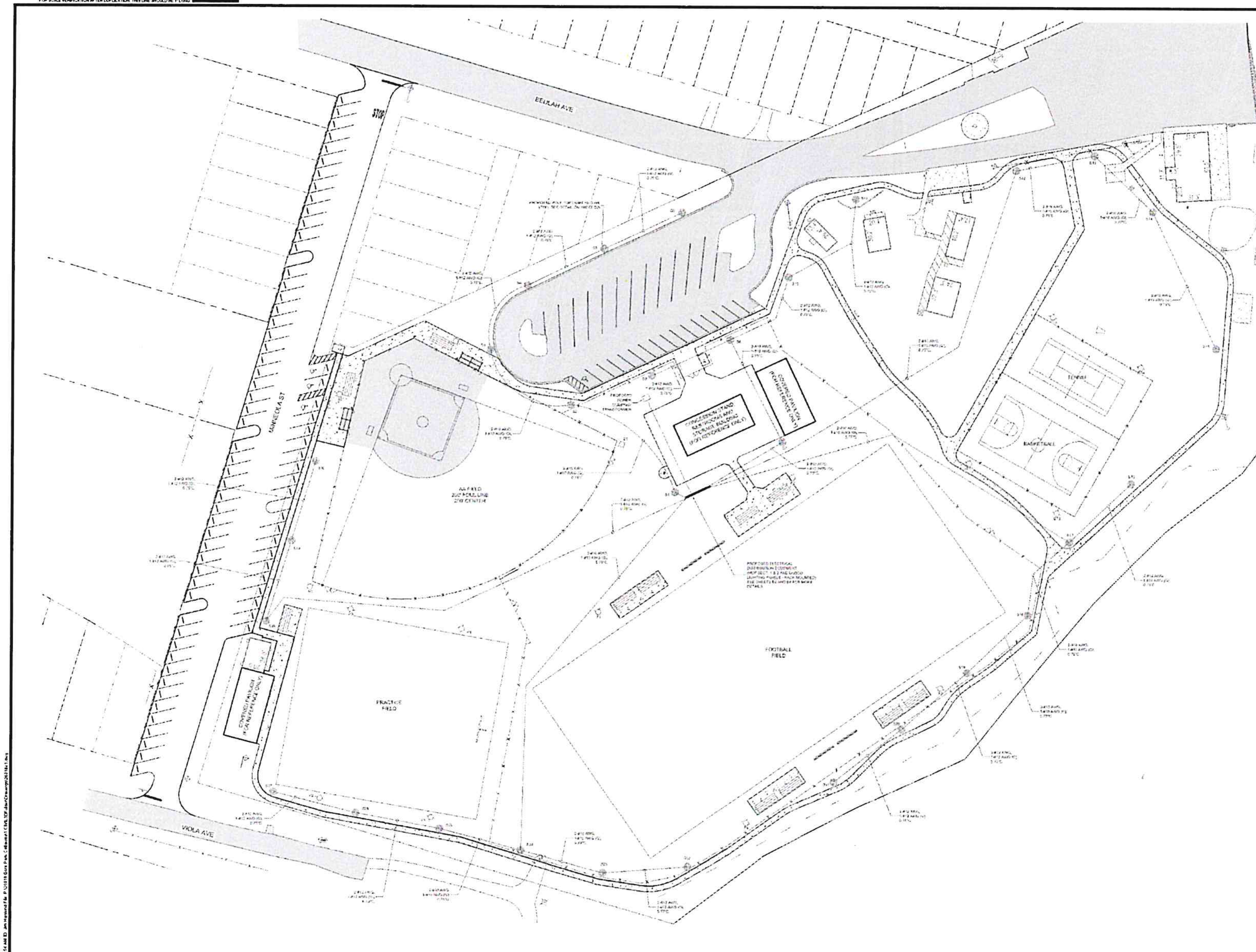
(850)763-5200 www.panhandleengineering.com

SPORTS & SECURITY LIGHTING SITE PLAN - SITE PACKAGE
GORE PARK IMPROVEMENTS
CALLAWAY, FLORIDA

DPR CERTIFICATION #EB-7906

SHEET NUMBER: E1
PROJECT NUMBER: 26018



GENERAL NOTES

1. SEE DETAILS ON SHEET D2 FOR SIDEWALK LIGHTING FIXTURE INFORMATION. COORDINATE WITH MUSCO FOR CONTROLS FOR THESE FIXTURES.
2. ALL WORK SHALL COMPLY WITH 2014 NEC AND ALL APPLICABLE LOCAL CODES.
3. ALL CONDUITS SHALL HAVE A BOND WIRE SIZED PER TABLE 250.122 OF THE NEC (UNLESS OTHERWISE NOTED). CONDUCTORS SHALL NOT BE SPLICED EXCEPT AS NOTED.
4. CONTRACTOR SHALL FIELD ADJUST LOCATION OF PANELS, TRANSFORMERS, DISCONNECT SWITCHES, ETC. AS REQUIRED TO MAINTAIN CLEAR WORKING SPACE AS REQUIRED BY THE 2014 NEC.
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7. ADJUST FEEDER AND BRANCH CIRCUIT SIZING AS REQUIRED TO INSURE TOTAL VOLTAGE DROPS DO NOT EXCEED 2%.
8. REFER TO SHEETS C2, C3, D2, & MUSCO DETAILS FOR MORE DETAILS FOR FIELD LIGHTING AND SIDEWALK LIGHTING.
9. PROVIDE PULLBOXES EVERY 200'. PULLBOX COVERS SHALL BE LABELLED "ELECTRICAL". PULLBOXES SHALL BE SIZED PER THE 2014 NEC AND SUITABLE FOR THE LOCATION THEY ARE INSTALLED.
10. COORDINATE WITH POWER COMPANY FOR FINAL LOCATION AND ADJUST WIRE/CONDUIT AS REQUIRED TO INSURE VOLTAGE DROP IS LESS THAN 1% FOR SERVICE CONDUCTORS.

CHAD HALL, P.E.
ELECTRICAL ENGINEER

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600 Ohio Avenue Lynn Haven, Florida 32444
(850)763-5200 www.panhandleengineering.com

SIDEWALK LIGHTING SITE PLAN - SITE PLAN
GORE PARK IMPROVEMENTS
CALLAWAY, FLORIDA

DPR CERTIFICATION #EB-7806

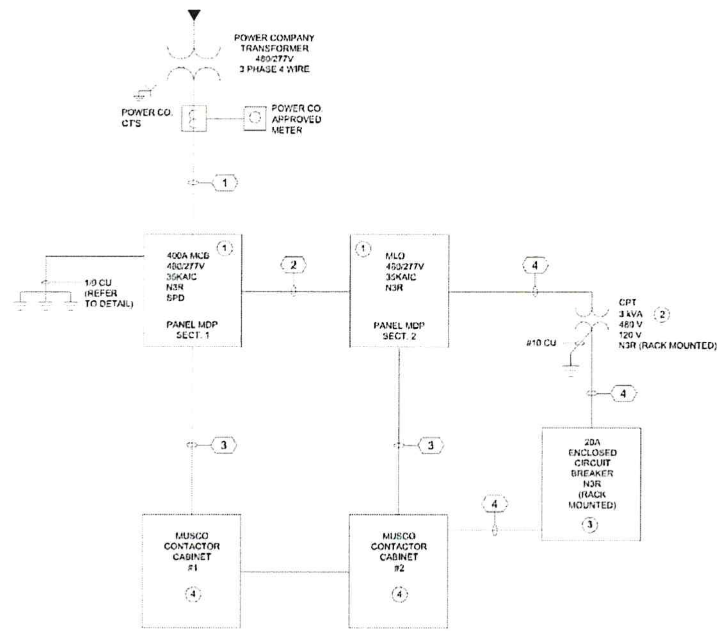
SHEET NUMBER: E2
PROJECT NUMBER: 26018

CONDUIT AND WIRE LEGEND
(NUMBERS REFERENCE THIS SHEET ONLY)

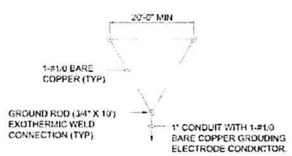
NO.	DESCRIPTION
1	4 - 500 KCMIL, 3" C.
2	4 - 500 KCMIL, 1 - #3 AWG (G), 3" C.
3	PER MUSCO CONTACTOR LAYOUT - COORDINATE WITH MUSCO
4	2 - #12 AWG, 1 - #12 AWG (G), 0.5" C.

EQUIPMENT SCHEDULE

1	MDP - 480/277V, 3PH/4W, 400A MAIN DISTRIBUTION PANEL, 35KAIC, N3R RACK MOUNTED PANELBOARD. PROVIDE WITH COPPER BUSSING. 160KA PER PHASE / 80KA PER MODE SPD. PROVIDE AS 2 SECTION PANELBOARD (400A MAIN BREAKER IN SECTION 1 WITH FEED THRU LUGS (FTL) AND FTL IN SECTION 2 FOR FUTURE SECTION 3 EXPANSION. PROVIDE WITH HINGED INTERIOR AND LOCKABLE EXTERIOR DOOR. PROVIDE LOCK OUT PROVISIONS FOR ALL CIRCUIT BREAKERS. SEE PANEL SCHEDULE ON SHEET E4 FOR BREAKER REQUIREMENTS.
2	CPT - 1PH, 3 KVA, 480V PRIMARY, 120V SECONDARY, N3R TRANSFORMER FOR MUSCO CONTROL POWER. RACK MOUNT.
3	ENCLOSED CIRCUIT BREAKER IN NEMA 3R ENCLOSURE, 480V/277V, 20A, 2P, 35KAIC, SQUARED D TYPE HG OR EQUAL.
4	MUSCO CONTROL & MONITORING CABINET (TYPICAL - FURNISHED BY MUSCO). COORDINATE WITH MUSCO FOR FINAL REQUIREMENTS AND CABINET QTY. SPORTS LIGHTING, SECURITY LIGHTING, AND SIDEWALK LIGHTING SHOULD ALL BE CONTROLLED BY MUSCO CONTROLS.



SINGLE LINE DIAGRAM



DETAIL - TYPICAL TRIAD GROUND ROD GRID

NOTES:

1. SEE ELECTRICAL SITE PLAN FOR CIRCUIT CONDUCTOR & CONDUIT SIZING TO EACH POLE. CONDUITS TO POLES SHALL NOT CROSS PLAYING FIELDS. COORDINATE WITH MUSCO FOR FINAL CONTACTOR ARRANGMENT IN EACH PANEL.
2. FURNISH TROUGH OR JUNCTION BOX ON RACK WITH UL LISTED POLARIS TAPS OR EQUAL TO REDUCE WIRE SIZE TO FIT CONTACTOR TERMINALS AS REQUIRED.
3. COORDINATE POWER COMPANY TRANSFORMER LOCATION AND METERING REQUIREMENTS WITH POWER COMPANY.

CHAD HALL, P.E.
ELECTRICAL ENGINEER

REV	DATE	BY	REVISIONS
NOT	RELEASED FOR CONSTRUCTION	BY:	DATE:

SCALE: AS NOTED
DESIGNED BY: CBF
DRAWN BY: JAH
REVIEWED BY: CBF
ISSUE DATE: FEBRUARY 2022
ACAD FILE NAME: 26018e1.dwg

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ELECTRICAL RISER & DETAILS - SITE PACKAGE
GORE PARK IMPROVEMENTS
CALLAWAY, FLORIDA

DPR CERTIFICATION #EB-7806

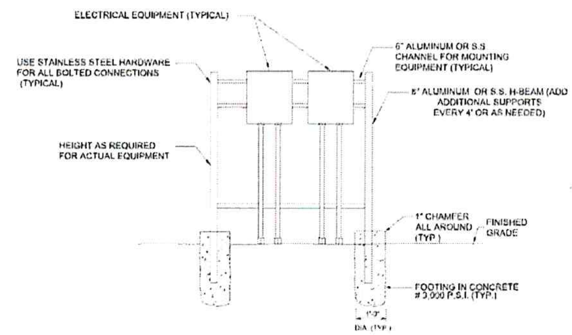
SHEET NUMBER E3
PROJECT NUMBER 26018

PANEL: MDP - SECTION 1												
3 PH 4 WIRE			VOLTAGE: L-L: 480 L-N: 277	MAIN: 400A MAIN BREAKER			AIC RATING: 35,000 MINIMUM		NEMA RATING: 3R MOUNTING: RACK			
LOCATION:			RACK - SEE SITE PLAN		PHASE	PHASE	PHASE	OPTIONS: BOLT ON BREAKERS, SPD, FEED THRU LUGS				
CKT#	BKR	POLE	DESCRIPTION	VOLT-AMP	A	B	C	VOLT-AMP	DESCRIPTION	POLE	BKR.	CKT#
1	--	--		2,078	6678			4,600		--	--	2
3	15	3	POLE A1 - SOFTBALL 1	2,078		6678		4,600	POLE B1 - SOFTBALL 1	3	30	4
5	--	--		2,078			6678	4,600		--	--	6
7	--	--		2,078	6678			4,600		--	--	8
9	15	3	POLE A2 - SOFTBALL 1	2,078		6678		4,600	POLE B2 - SOFTBALL 1	3	30	10
11	--	--		2,078			6678	4,600		--	--	12
13	--	--		5,016	10032			5,016		--	--	14
15	30	3	POLE F1 - FOOTBALL	5,016		10032		5,016	POLE F2 - FOOTBALL	3	30	16
17	--	--		5,016			10032	5,016		--	--	18
19	--	--		5,016	10032			5,016		--	--	20
21	30	3	POLE F3 - FOOTBALL	5,016		10032		5,016	POLE F4 - FOOTBALL	3	30	22
23	--	--		5,016			10032	5,016		--	--	24
25	--	--		831	1662			831		--	--	26
27	15	3	POLE BT1 - BASKETBALL / TENNIS	831		1662		831	POLE BT2 - BASKETBALL / TENNIS	3	15	28
29	--	--		831			1662	831		--	--	30
31	--	--		831	1662			831		--	--	32
33	15	3	POLE BT3 - BASKETBALL / TENNIS	831		1662		831	POLE BT4 - BASKETBALL / TENNIS	3	15	34
35	--	--		831			1662	831		--	--	36
37			SPD		0							38
39			SPD			0			MUSCO POWERLINE FEED	3	20	40
41			SPD				0					42
			TOTAL CONNECTED VA		36,744	36,744	36,744					

PANEL: MDP - SECTION 2												
3 PH 4 WIRE			VOLTAGE: L-L: 480 L-N: 277	MAIN: 400A MAIN LUGS			AIC RATING: 35,000 MINIMUM		NEMA RATING: 3R MOUNTING: RACK			
LOCATION:			RACK - SEE SITE PLAN		PHASE	PHASE	PHASE	OPTIONS: BOLT ON BREAKERS, FEED THRU LUGS				
CKT#	BKR	POLE	DESCRIPTION	VOLT-AMP	A	B	C	VOLT-AMP	DESCRIPTION	POLE	BKR.	CKT#
1	--	--		1,690	3380			1,690				2
3	15	3	POLE P1 - PRACTICE	1,690		3380		1,690	POLE P2 - PRACTICE	3	15	4
5	--	--		1,690			3380	1,690				6
7	--	--		1,690	3380			1,690				6
9	15	3	POLE P3 - PRACTICE	1,690		3380		1,690	POLE P4 - PRACTICE	3	15	10
11	--	--		1,690			3380	1,690				12
13	15	2	POLES A1, A2, B1, B2 - SECURITY FIXTURES	325	325							14
15				325		325			SPARE	3	30	16
17	15	2	POLES BT1 - BT4 - SECURITY FIXTURES	325			325					18
19				325	325				SPARE	1	15	20
21	15	2	POLES P1 - P4 - SECURITY FIXTURES	325		325			SPARE	1	20	22
23				325			16843	16,518	CONCESSION BUILDING (N.I.C.)	2	150	24
25	15	2	POLES F1 & F4 - SECURITY FIXTURES	163	16494.5			16,332				26
27				163		162.5			SPARE	2	15	28
29	15	2	POLES F2 & F3 - SECURITY FIXTURES	163			162.5					30
31				163	822.5			660	SIDEWALK POLES S1 - S6	1	15	32
33	20	2	CPT FOR MUSCO CONTROLS	660		1210		550	SIDEWALK POLES S7 - S11	1	15	34
35				660			1100	440	SIDEWALK POLES S12 - S15	1	15	36
37					660			660	SIDEWALK POLES S16 - S21	1	15	38
39	15	3	SPARE			660		660	SIDEWALK POLES S22 - S27	1	15	40
41							330	330	SIDEWALK POLES S28 - S30	1	15	42
			TOTAL CONNECTED VA		25,387	9,443	25,521					

GENERAL NOTES

1. "N.I.C." EQUIPMENT IN BUILDING CONTRACT. FURNISH BREAKER ONLY. WIRE AND CONDUIT WILL BE FURNISHED UNDER THE "BUILDING" CONTRACT.



TYPICAL ELECTRICAL EQUIPMENT RACK DETAIL

NOT TO SCALE

CHAU HALL, P.E.

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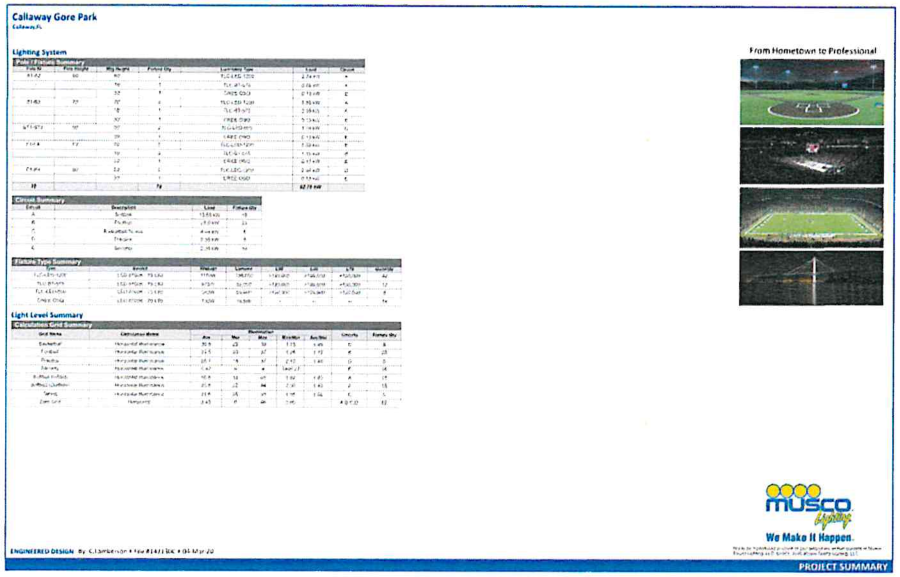
PANEL SCHEDULE & RACK DETAIL - SITE PACKAGE
GORE PARK
IMPROVEMENTS
CALLAWAY, FLORIDA

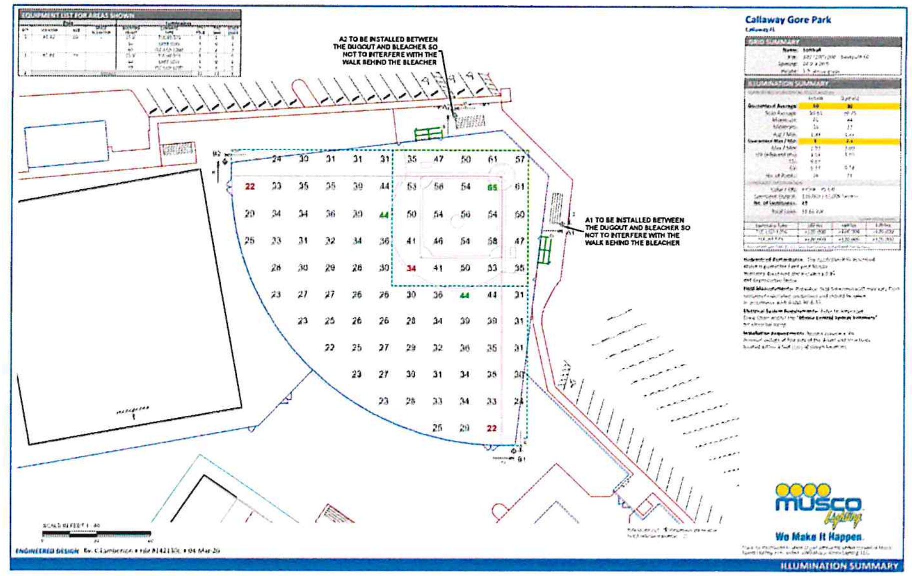
DPR CERTIFICATION #EB-7806

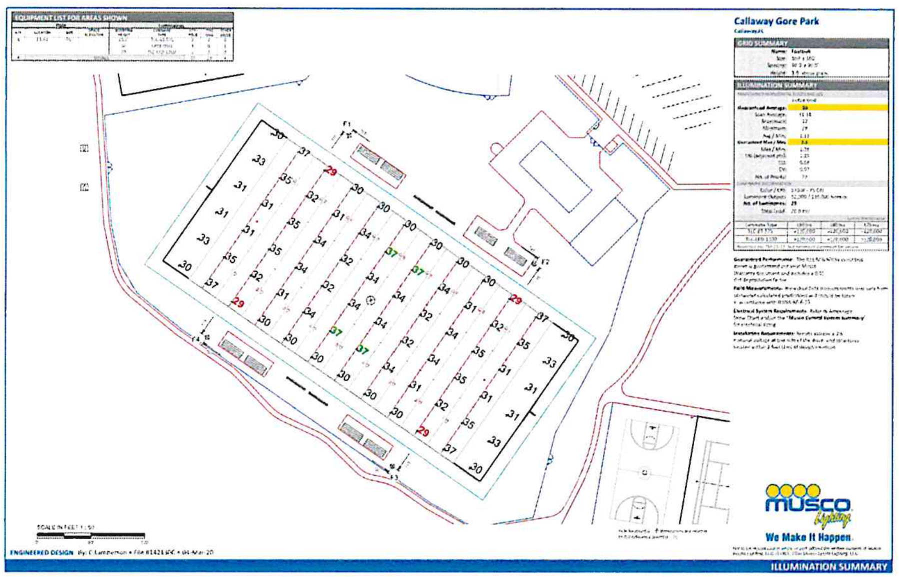
SHEET NUMBER
E4

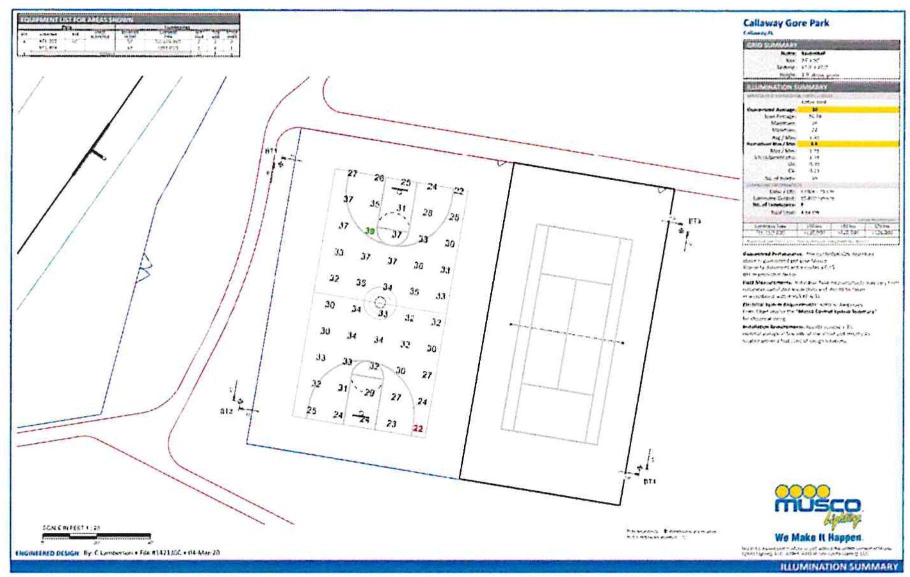
PROJECT NUMBER
26018

FOR SCALE VERIFICATION AFTER DUPLICATION THIS LINE SHOULD BE 1" LONG









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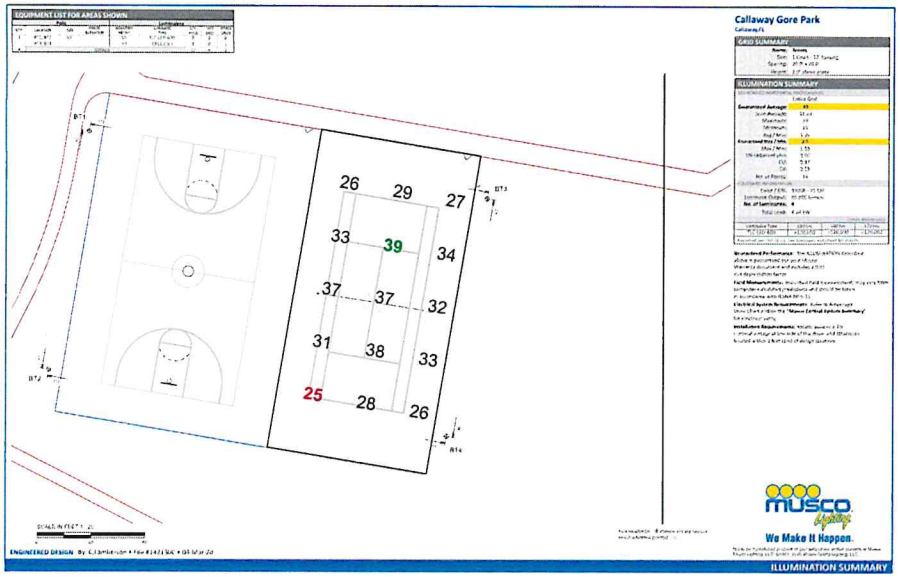
MUSCO LIGHTING DETAILS
GORE PARK
IMPROVEMENTS
CALLAWAY, FLORIDA

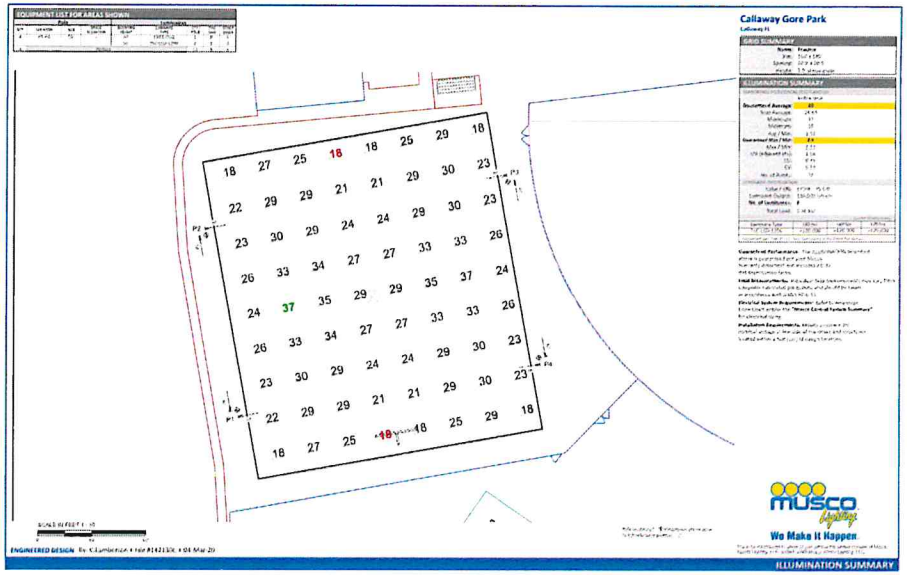
DPR CERTIFICATION #EB-7806

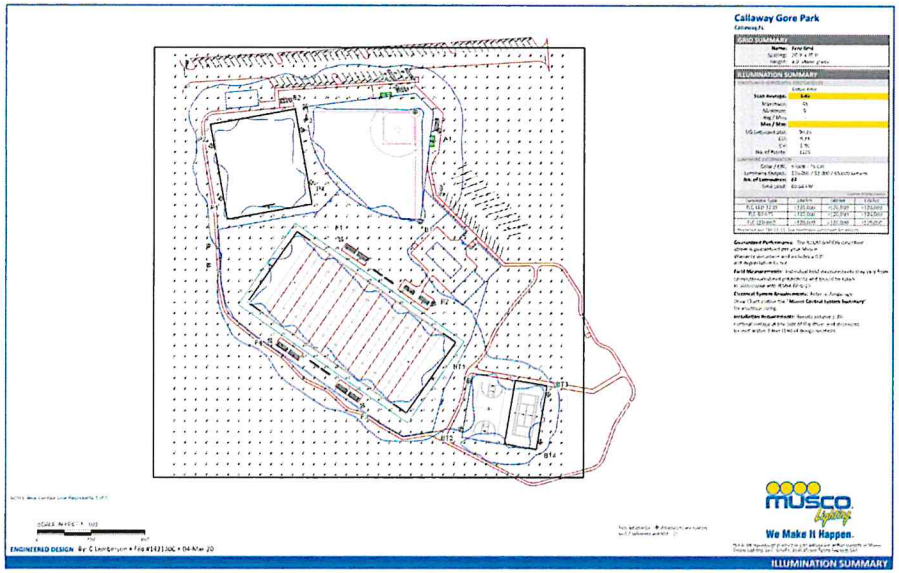
CHRISTOPHER B. FOREHAND • LICENSE • NO. 58028 • STATE OF FLORIDA • PROFESSIONAL ENGINEER

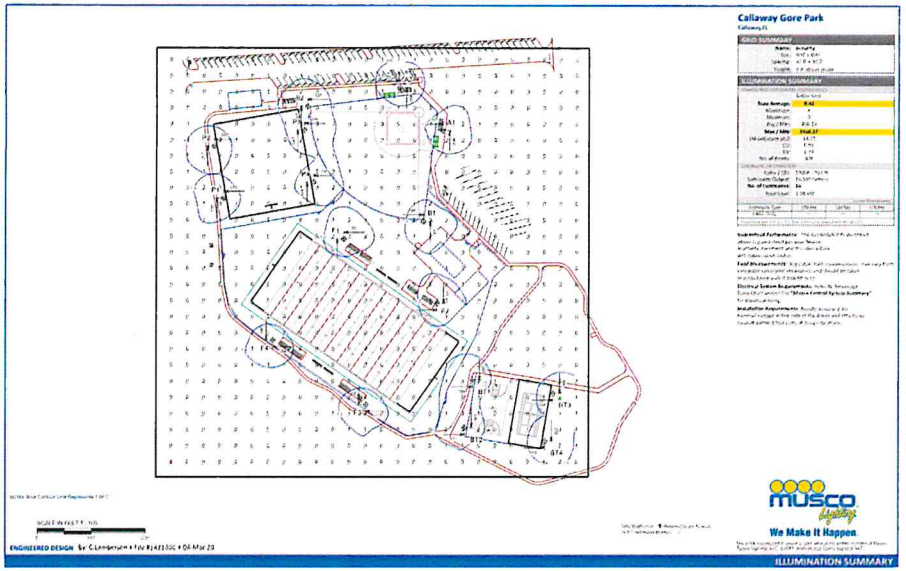
SHEET NUMBER
M1
PROJECT NUMBER
26018

26018 MUSCO LIGHTING DETAILS IMPROVEMENTS MUSCO LIGHTING DETAILS Sheet M1









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MUSCO LIGHTING DETAILS
GORE PARK
IMPROVEMENTS
CALLAWAY, FLORIDA

James H. Oliveria, P.E. 74197
Christopher B. Forehand, P.E. 59028
Stephen E. Price, P.E. 71645
J. Doug Crowe, P.E. 69558

CHRISTOPHER B. FOREHAND LICENSE NO. 59028 STATE OF FLORIDA PROFESSIONAL ENGINEER

DPR CERTIFICATION #EB-7806

SHEET NUMBER
M2

PROJECT NUMBER
26018

26018 MUSCO LIGHTING DETAILS IMPROVEMENTS MUSCO LIGHTING DETAILS Sheet M2

FOR SCALE VERIFICATION AFTER DUPLICATION THIS LINE SHOULD BE 1" LONG

Control System Summary

Project Specific Notes:

Project Information

Project #:	142130
Project Name:	Callaway Gore Park
Date:	03/04/20
Project Engineer:	Curt Lamberson
Sales Representative:	Danny Sheldon
Control System Type:	LED C&M
Communication Type:	PowerLine-ST
Scan:	142130C
Document ID:	142130P1V1-0304091949
Distribution Panel Location or ID:	Service 1
Total # of Distribution Panel Locations for Project:	1
Design Voltage/Hertz/Phase:	480/60/1
Control Voltage:	120

Equipment Listing

DESCRIPTION	APPROXIMATE SIZE
1.Control and Monitoring Cabinet	24 X 72
2.Control and Monitoring Cabinet	24 X 48

	QTY	SIZE
Total Contactors	17	30 AMP
Total Off/On/Auto Switches	5	

Materials Checklist

Contractor/Customer Supplied:

- ❑ A dedicated control circuit must be supplied per distribution panel location.
  - If the control voltage is NOT available, a control transformer is required.
- ❑ Electrical distribution panel to provide overcurrent protection for circuits
  - HID rated or D-curve circuit breaker sized per full load amps on Circuit Summary by Zone Chart
- ❑ Wiring
  - See chart on page 2 for wiring requirements
  - Equipment grounding conductor and splices must be insulated. (per circuit)
  - Lightning ground protection (per pole), if not Musco supplied.
- ❑ Electrical conduit wireway system
  - Entrance hubs rated NEMA 4: must be die-cast zinc, PVC, or copper-free die-cast aluminum
- ❑ Mounting hardware for cabinets
- ❑ Breaker lock-on device to prevent unauthorized power interruption to control power and power line connection (if present)
- ❑ Anti-corrosion compound to apply to ends of wire, if necessary

Call Control-Link Central™ operations center at 877/347-3319 to schedule activation of the control system upon completion of the installation. Note: Activation may take up to 1 1/2 hours.

IMPORTANT NOTES

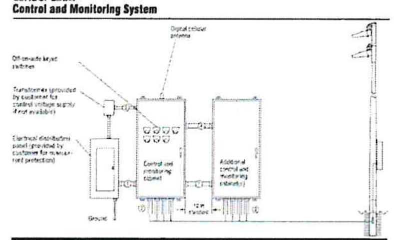
1. Please confirm that the design voltage listed above is accurate for the facility. [illegible]
2. In a 3 phase design, all 3 phases are to be run to each pole. [illegible]
3. One contactor is required for each pole. [illegible] All contactors are UL 100% rated for the published continuous load. All contactors are 3 pole.
4. If the lighting system will be fed from more than one distribution location, additional equipment may be required. Contact your Musco sales representative.
5. A single control circuit must be supplied per control system.
6. Size overcurrent devices using the full load amps column of the Circuit Summary By Zone chart. [illegible]

NOTE: Refer to Installation Instructions for more details on equipment information and the installation requirements.

Control System Summary

Callaway Gore Park / 142130 - 142130C
Service 1 - Page 2 of 5

Control-Link.
Control and Monitoring System



Conduit ID	Description	# of Wires	Wire (AWG)	Conduit (in)	Max. Wire Length (ft)	MUSCO Supplied	Notes
1	Line power to contactors, and equipment grounding conductor	*A	*B	*C	N/A	No	A,E
1	Power-line Communication Connection (dedicated 20A)	*A	12	*C	N/A	No	A,E
2	Load power to lighting circuits, and equipment grounding conductor	*A	*B	*C	N/A	No	A,E
3	Control power (dedicated 20A)	3	12	*C	N/A	No	C,E
4	Control harnesses	*F	12	2	*F	Yes	D,E,F

* Notes: [illegible]

Control System Summary

Callaway Gore Park / 142130 - 142130C
Service 1 - Page 3 of 5

SWITCHING SCHEDULE

Field/Zone Description	Zones
Softball	1
Football	2
Basketball	3
Tennis	3
Practice	4
Security	5

CONTROL POWER CONSUMPTION	
120V Single Phase	
VA loading of Musco Supplied Equipment	INRUSH: 4738.0
	SEALED: 517.8

CIRCUIT SUMMARY BY ZONE

POLE	CIRCUIT DESCRIPTION	# OF FIXTURES	# OF DRIVERS	*FULL LOAD AMPS	CONTACTOR SIZE (AMPS)	CONTACTOR ID	ZONE
A1	Softball	3	3	7.5	30	C1	1
A2	Softball	3	3	7.5	30	C2	1
B1	Softball	6	6	16.6	30	C3	1
B2	Softball	6	6	16.6	30	C4	1
F1	Football	7	7	18.1	30	C5	2
F2	Football	7	7	18.1	30	C6	2
F3	Football	7	7	18.1	30	C7	2
F4	Football	7	7	18.1	30	C8	2
BT1	Basketball	2	1	3.0	30	C9	3
BT2	Basketball	2	1	3.0	30	C10	3
BT3	Basketball	2	1	3.0	30	C11	3
BT4	Basketball	2	1	3.0	30	C12	3
P1	Practice	2	2	6.1	30	C13	4
P2	Practice	2	2	6.1	30	C14	4
P3	Practice	2	2	6.1	30	C15	4
P4	Practice	2	2	6.1	30	C16	4
A1,A2,B1,B2,BT1,BT2,BT3,BT4,F1,F2,F3,F4,P1,P2,P3,P4	Security	16	16	4.8	30	C17	5

*Full Load Amps based on amps per driver

Control System Summary

Callaway Gore Park / 142130 - 142130C
Service 1 - Page 4 of 5

PANEL SUMMARY

CABINET #	CONTROL MODULE LOCATION	CONTACTOR ID	CIRCUIT DESCRIPTION	FULL LOAD AMPS	DISTRIBUTION PANEL ID (BY OTHERS)	CIRCUIT BREAKER POSITION (BY OTHERS)
1	1	C1	Pole A1	7.51		
1	1	C2	Pole A2	7.51		
1	1	C3	Pole B1	16.60		
1	1	C4	Pole B2	16.60		
1	1	C5	Pole F1	18.05		
1	1	C6	Pole F2	18.05		
1	1	C7	Pole F3	18.05		
1	1	C8	Pole F4	18.05		
1	1	C9	Pole BT1	2.96		
1	1	C10	Pole BT2	2.96		
1	1	C11	Pole BT3	2.96		
1	1	C12	Pole BT4	2.96		
2	1	C13	Pole P1	6.06		
2	1	C14	Pole P2	6.06		
2	1	C15	Pole P3	6.06		
2	1	C16	Pole P4	6.06		
2	1	C17	Pole A1,A2,B1,B2,BT1,BT2,BT3,...	4.50		

ZONE SCHEDULE

ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	CIRCUIT DESCRIPTION: POLE ID	CIRCUIT DESCRIPTION: CONTACTOR ID
Zone 1	1	Softball	A1	C1
			A2	C2
			B1	C3
			B2	C4
Zone 2	2	Football	F1	C5
			F2	C6
			F3	C7
			F4	C8
Zone 3	3	Basketball	BT1	C9
			BT2	C10
			BT3	C11
			BT4	C12
Zone 4	4	Practice	P1	C13
			P2	C14
			P3	C15
			P4	C16
Zone 5	5	Security	A1	C17
			A2	C17
			B1	C17
			B2	C17
			BT1	C17
			BT2	C17
			BT3	C17
			BT4	C17

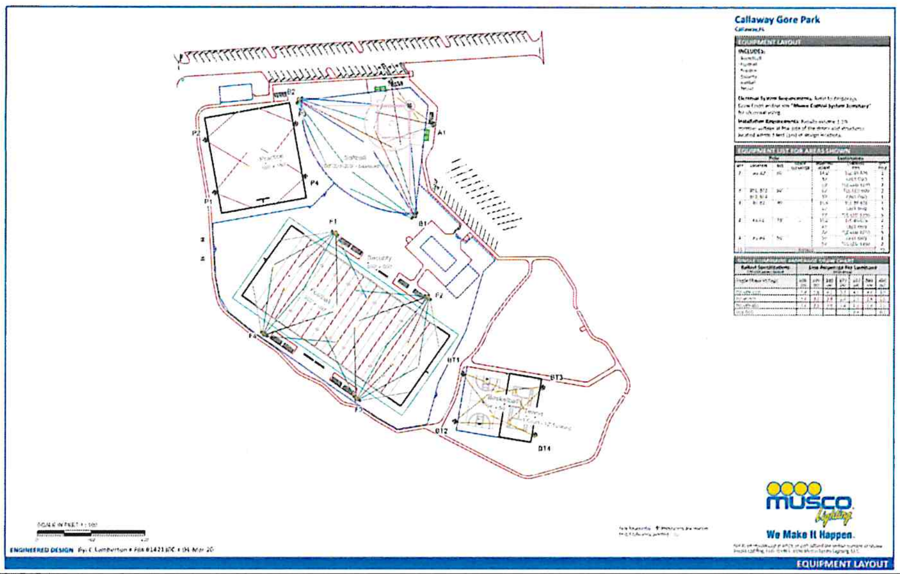
CONTINUED ON NEXT PAGE

Control System Summary

Callaway Gore Park / 142130 - 142130C
Service 1 - Page 5 of 5

ZONE SCHEDULE

ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	CIRCUIT DESCRIPTION: POLE ID	CIRCUIT DESCRIPTION: CONTACTOR ID
Zone 5	5	Security	F1	C17
			F2	C17
			F3	C17
			F4	C17
			P1	C17
			P2	C17
			P3	C17
			P4	C17



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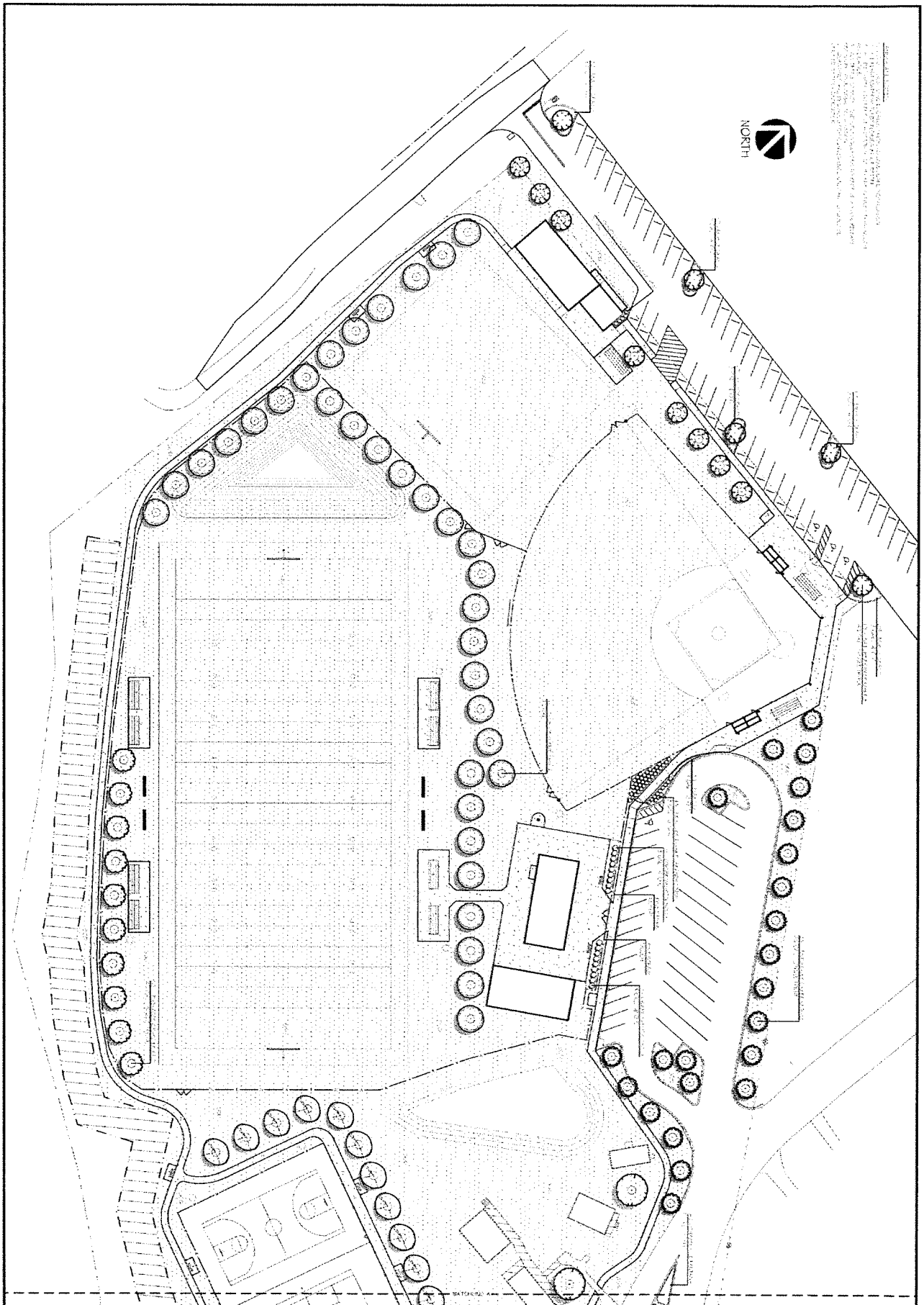
MUSCO LIGHTING DETAILS
GORE PARK
IMPROVEMENTS
CALLAWAY, FLORIDA

James H. [illegible] P.E. [illegible]
Christopher B. Forehand P.E. 58028
Stephen E. Price P.E. 71665
J. Doug Crook P.E. 66558
DPR CERTIFICATION #EB-7806
CHRISTOPHER B. FOREHAND LICENSE NO. 58028 STATE OF FLORIDA PROFESSIONAL ENGINEER

SHEET NUMBER M3
PROJECT NUMBER 26018



L1

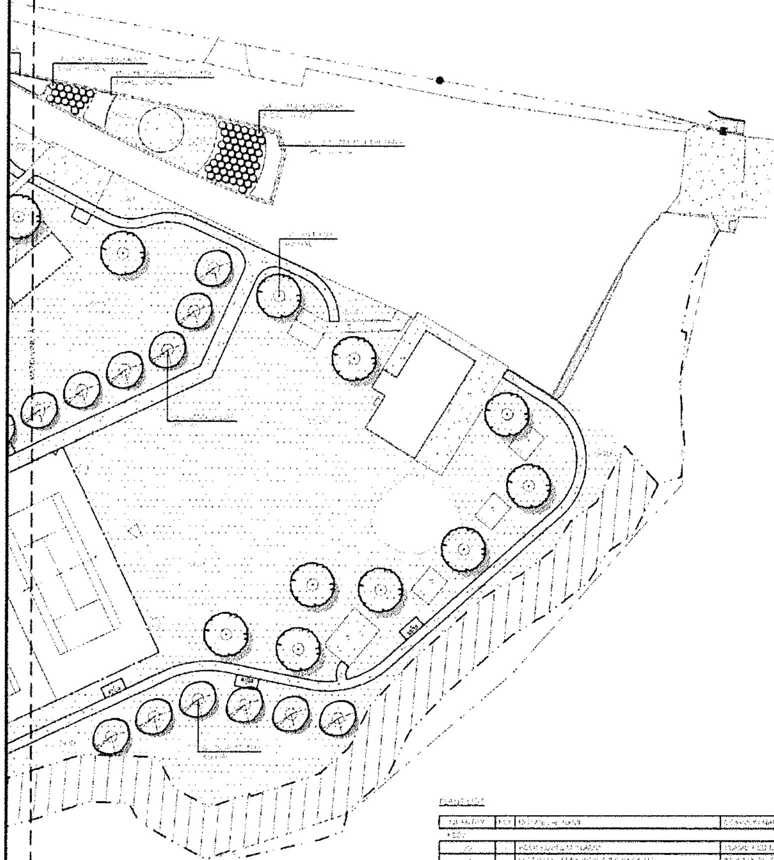
LANDSCAPE PLAN

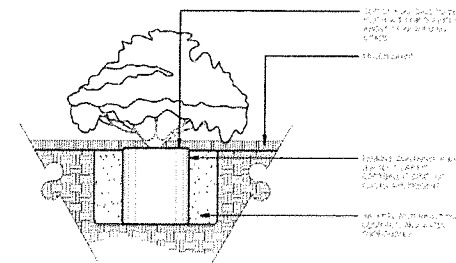
GORE PARK

CALLAWAY, FLORIDA

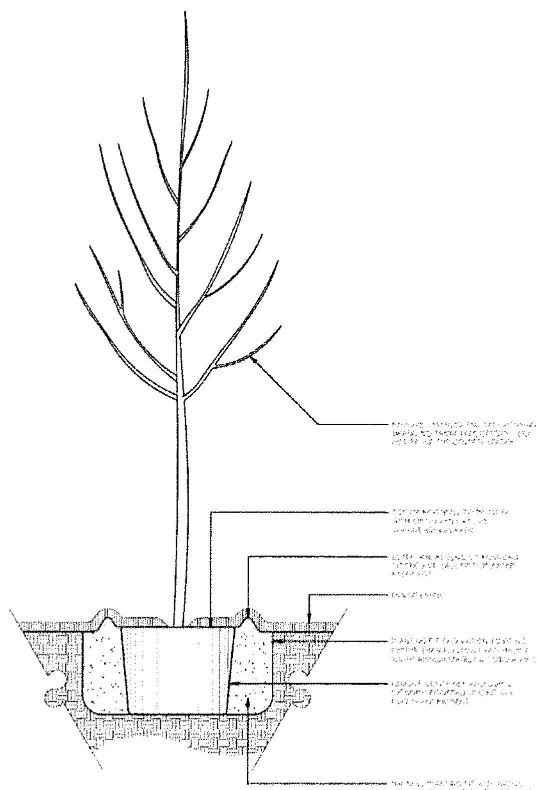
LAWNSCAPES, INC.

850-763-2975





1 / L2 CONTAINER SHRUB PLANTING



2 / L2 TREE PLANTING DETAIL

NORTH

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]		[illegible]					

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LANDSCAPE PLAN

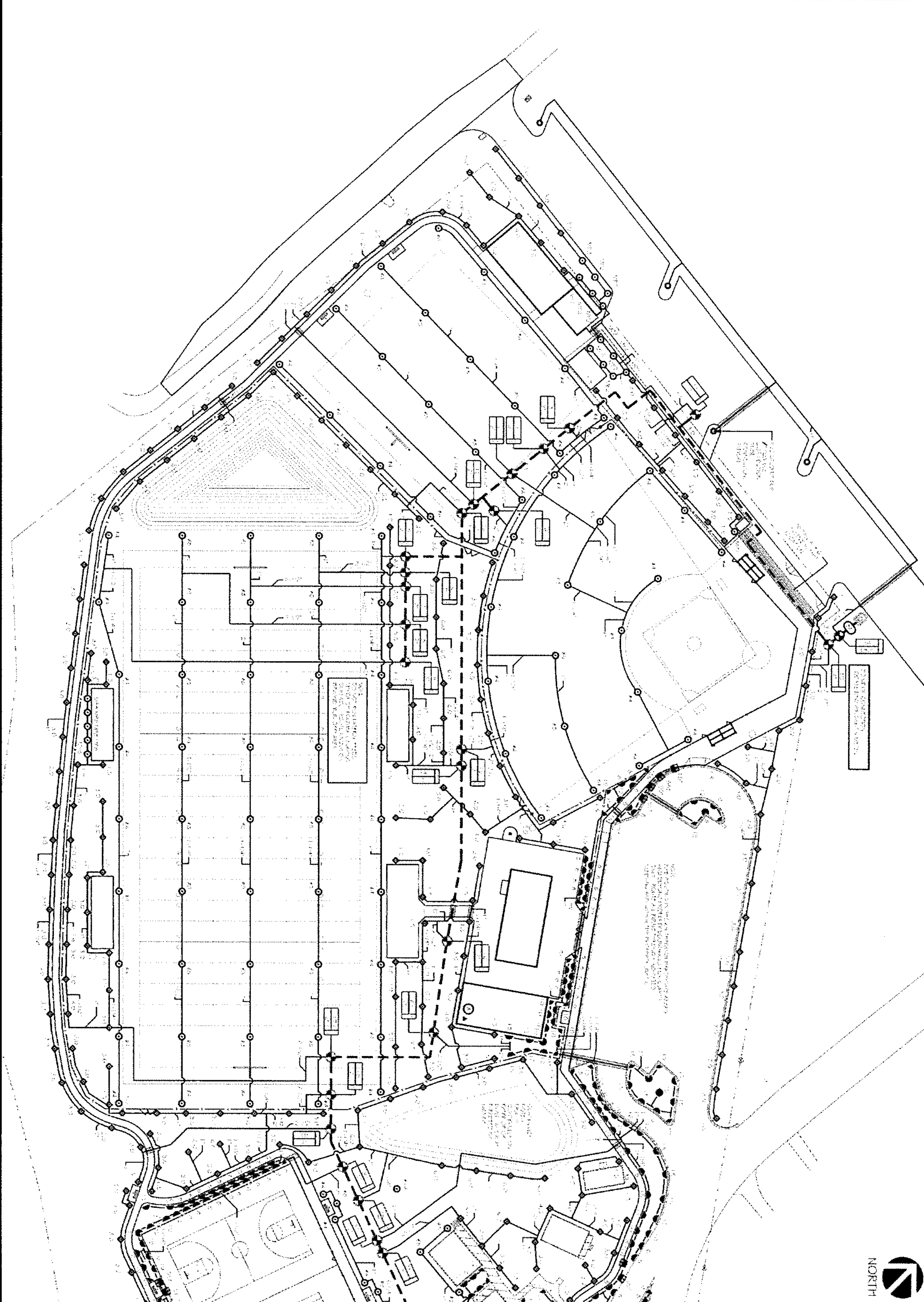
GORE PARK

CALLAWAY, FLORIDA

NO.	DATE	INITIALS	REVISION DESCRIPTION
			CLIENT REVIEW

SCALE: 1" = 30'

L2



NO.	DATE	INITIALS	REVISION DESCRIPTION
01	07.01.20		CLIENT REVIEW
02			
03			
04			
05			
06			
07			

IRRIGATION PLAN

GORE PARK

CALLAWAY, FLORIDA

L3

1" = 30'

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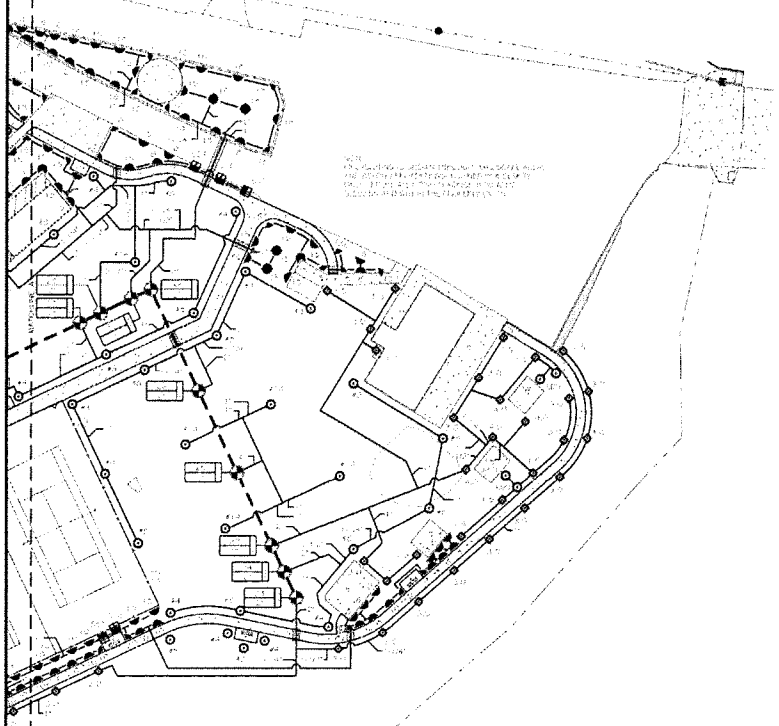
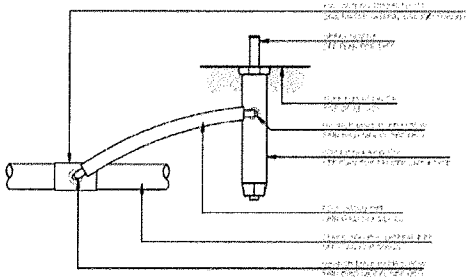
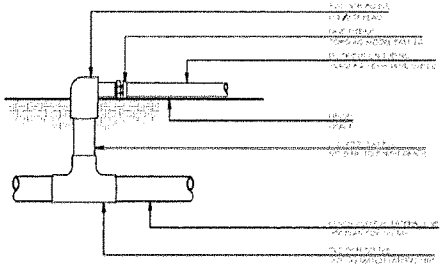
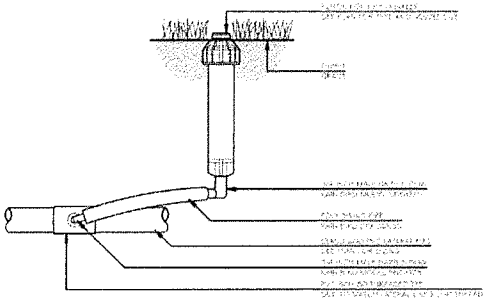




1/L4 SPRAYHEAD INSTALLATION



2/L4 DRIP DISTRIBUTION LINE CONNECTION



3/L4 POP-UP ROTOR INSTALLATION

NORTH

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IRRIGATION PLAN

GORE PARK

CARRABELLE, FLORIDA

1" = 30'

L4