



Indian River County Purchasing Division

1800 27th Street

Vero Beach, FL 32960

Phone (772) 226-1416

Invitation to Bid

Project Name:	Hobart Park Baseball Field
Bid #:	2020005
Bid Bond Required:	5% if bid over \$35,000
Public Construction Bond Required:	Yes, if total award is over \$100,000
Pre-Bid Meeting and project site walk through	Non-Mandatory Monday, September 9, 2019 9:00 a.m. Parks Maintenance Conference Room 5500 77 th Street, Vero Beach, FL 32967 <i>(no additional walk throughs will be scheduled, but the project site will be available for bidders to view on their own)</i>

Bid Opening Date: **October 2, 2019**

Bid Opening Time: **2:00 P.M.**

All bids must be received by the Purchasing Division, 1800 27th Street, Vero Beach, Florida 32960 prior to the date and time shown above. Late bids will be returned unopened.

PLEASE SUBMIT (1) ONE MARKED ORIGINAL AND (1) COPY OF YOUR BID.

Refer All Questions to:

Jennifer Hyde, Purchasing Manager

Phone: (772) 226-1416

Email: purchasing@ircgov.com

ADVERTISEMENT FOR BID

Notice is hereby given that the Indian River County Board of County Commissioners is calling for and requesting bids for the following:

Bid # 2020005
Hobart Park Baseball Field Project

Detailed specifications are available at: www.demandstar.com or by selecting "Current Solicitations" at <http://www.ircgov.com/Departments/Budget/Purchasing>.

Deadline for receipt of bids has been set for ***2:00 P.M. on October 2, 2019***. Only bids received on or before the time and date listed will be considered. Bids should be addressed to Purchasing Division, 1800 27th Street, Vero Beach, Florida 32960. All bids will be opened publicly and read aloud at 2:00 PM. Bids submitted after 2:00 PM on the day specified above, will not be opened or considered.

A Non-Mandatory pre-bid conference will be held on Monday, September 9, 2019 at 9:00 a.m. at the Parks and Conservation Resources Office, located at 5500 77th Street, Vero Beach, FL 32967, and will include a guided walk through of the adjacent project site. Attendance is HIGHLY ENCOURAGED.

BID SECURITY in the sum of not less than five percent (5%) of the total bid must accompany each bid over \$35,000.

The Board of County Commissioners reserves the right to accept or reject any and all bids in whole or in part and to waive any technicality or irregularity.

PURCHASING MANAGER
INDIAN RIVER COUNTY

Publish: For Publication in the Indian River Press Journal

Date: August 29, 2019

Please furnish Tear Sheet, Affidavit of Publication, and Invoice to:

Indian River County
Purchasing Division
1800 27th Street
Vero Beach, FL 32960

Statement of No Bid

Should you elect not to bid, please complete and send this page by email (purchasing@ircgov.com), fax (772-770-5140) or by mail to Indian River County Purchasing, 1800 27th Street, Vero Beach, FL 32960.

Please select all of the following that apply. Our decision not to bid on the subject project was based on:

- Project is located too far from our base of operations
- Project value too low
- Project specifications unclear (please explain below)
- Material availability may be a challenge
- Our current schedule will not allow us to perform
- Unable to meet insurance requirements
- Other:
- Other:

General comments regarding the bid and/or plans and specifications:

Instructions to Bidders

General Terms and Conditions

Cone of Silence. Potential bidders/respondents and their agents must not communicate in any way with the Board of Commissioners, County Administrator or any County staff other than Purchasing personnel in reference or relation to this solicitation. This restriction is effective from the time of bid advertisement until the Board of County Commissioners meets to authorize award. Such communication may result in disqualification.

Sealed Bids and Envelope Markings: All bids must be submitted in a sealed opaque envelope. The outside of the envelope must be clearly marked with the Sealed Bid #, Title of the Bid, Date of the Bid opening, and Time of the Bid Opening and name of firm submitting.

Opening Location: It will be the sole responsibility of the Bidder to deliver personally or by mail or other delivery service, their proposal to the office of the Indian River County Purchasing Division. Bids should be delivered to 1800 27th Street, Vero Beach, FL 32960, on or before the closing hour and date shown for receipt of bids. Bids received in person or by mail after the stated time and date will not be considered.

Bid Submission: All bids must be signed with the legal Firm name and by an Officer or employee having authority to bind the company or firm by his / her signature. Bids must be submitted on forms provided by Indian River County. **Bids not submitted on the attached form(s) shall be rejected.** Submittal of one marked original bid and one copy is required otherwise instructed.

Bid Security and Public Construction Bond: Bid security must accompany each Bid over \$35,000, and must be in the form of an AIA Document A310 Bid Bond, properly executed by the Bidder and by a qualified surety, or a certified check or a cashier's check, drawn on any bank authorized to do business in the State of Florida. Bid Security for bids over \$35,000 must be in the sum of not less than five percent (5%) of the total amount of the bid, made payable to Indian River County Board of County Commissioners. In the event the Contract is awarded to the Bidder, Bidder will enter into a Contract with the County and furnish the required 100% Public Construction Bond and insurance certificates within the timeframe set by the County. If Bidder fails to do so, the Bid Security will be retained by the County as liquidated damages and not as a penalty. If bid does not exceed \$100,000, no Public Construction Bond will be required. Bid Security of other Bidders whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

Withdrawal of Bids: A bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time of opening of bids. If, within 24 hours after Bids are opened, any bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that bidder may withdraw its bid and bid security will be returned. Thereafter, if the work is rebid, that bidder may be disqualified from further bidding on the work.

Delivery Requirements: Delivery is "FOB Destination" unless delivery terms are specified otherwise in the specifications. If County agrees in writing to reimburse Seller for transportation costs, County shall have the right to designate the method of shipment. In either case, the title and all risk of loss of the goods shall remain with the Seller until the goods are received and accepted by the County. Rejected materials will be returned to Seller at the Seller's risk and expense.

Price and Discount Requirements: Quote net prices after deducting trade discounts. All discounts must be incorporated in the prices contained in the bid, and not shown separately. Invoices submitted must agree with the prices formally bid.

Direct Purchase: Indian River County reserves the option to purchase certain tangible materials necessary for the performance of the Contract, and thereby save the amount of the sales tax thereon by virtue of the Owner's status as a Tax Exempt Institution. For the purpose of these procedures, the Contractor will assign to the County any rights the Contractor may have under quotes, contracts or commitments received from the particular vendor or supplier for the materials described in the requisition. The invoiced amount of County Purchased Materials and applicable sales tax, had the purchases not been tax exempt, once finalized through the Owner's Purchase Order and after confirmation of completed delivery and acceptance, will be deducted from the Contractor's Contract price via Change Order.

Taxes: Indian River County is exempt from any taxes imposed by State and / or Federal Government. Exemption Certificates, if required, are to be furnished by the successful bidder and will be filled out by the County.

Delivery and Completion Dates: Indicate delivery and completion dates. This may be a determining factor in the award of the bid. The County may, at its option, grant additional time for any delay or failure to perform hereunder if the delay will not adversely affect the best interests of the County and is due to causes beyond the control of the Bidder. Such grant must be in writing and made part of the resulting Agreement.

Irrevocable Offer: Bidder warrants by virtue of bidding that the prices quoted in this bid will remain firm and be considered an irrevocable offer for a period of sixty (60) days, during which time one or more of the bids received may be accepted by Indian River County.

Assignment/Delegation: No right, obligation or interest in an awarded Agreement may be assigned or delegated by the Bidder without prior written consent of the County, without prejudice to County's other rights and remedies.

Consideration of Bids: Verbal, emailed or faxed bids will not be considered.

Affirmative Steps: [required for all federal contracts] CONTRACTOR must take the following affirmative steps to ensure minority business, women's business enterprises and labor surplus area firms are used when possible:

1. Placing qualified small and minority businesses and women's business enterprises on solicitation lists.
2. Ensuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources.
3. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises.
4. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises.
5. Using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

Indemnification: The successful Bidder shall indemnify and hold harmless the County, and its commissioners, officers and employees, from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the contractor and persons employed or utilized by the contractor in the performance of the construction contract.

Public Access: The Bidder shall allow public access to all documents and materials in accordance with the provisions of Chapter 119, Florida Statutes. If this project is federally-funded, the Department of Homeland Security (DHS) seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials shall not be used by the Bidder without specific FEMA pre-approval.

Records/Audit: The Bidder shall maintain books, records and documents pertinent to performance under this Invitation and any resulting Agreement in accordance with generally accepted accounting principles consistently applied. The County and the Florida Office of the Inspector General shall have inspection and audit rights to such records for audit purposes during the term of the contract and for three years following the termination of obligations hereunder. Records which relate to any litigation, appeals or settlements of claims arising from performance under this work or purchase shall be made available until a final disposition has been made of such litigation, appeals, or claims.

Acceptance: Receipt of an item shall not be an indication that the items are acceptable. Final acceptance and authorization of payment shall be given after a thorough inspection indicates that the item is delivered in accordance with the Bid Specifications. Suppliers are advised that in the event the delivered item does not meet specifications, payment will be withheld until such time the supplier takes necessary corrective action.

Permits, Impact and Inspection Fees. In accordance with Florida Statutes Section 218.80, the "Public Bid Disclosure Act", Indian River County as OWNER is obligated to disclose all license, permit, impact, or inspection fees that are payable to Indian River County in connection with the construction of the Work by the accepted bidder. All permit, impact, or inspection fees payable to Indian River County in connection with the work on this County project will be paid by Indian River County, with the exception of re-inspection fees. The Bidder shall not include ANY PERMIT, IMPACT, NOR INSPECTION FEES payable to **Indian River County** in the bid.

Descriptive Information: Descriptive literature including Specifications must accompany your bid. Manufacturer's name and model numbers are used herein solely for the purpose of establishing a standard of design, quality, and use of the merchandise required. Products of other manufacturers will be acceptable if they meet or exceed established standards with the exception of those items specified "NO SUBSTITUTION".

Variations to Specifications: For purposes of evaluation, *Bidder must indicate any variances from the specifications and / or conditions on the form provided with this Invitation to Bid.* Otherwise, it will be assumed that the product or service fully complies with the specifications. Items specifically described, as alternates shall be reviewed as an alternative bid to be considered by the County, in lieu of the primarily specified item(s). However, item(s) varying from the published specifications shall be considered substitutes, and the County reserves the right to consider or not to consider substitute bids. Substitutes shall be subject to disqualification if the County does not approve the substitution.

Interpretations: No oral interpretations will be made to any Bidder as to the meaning of the Specifications. Every request for such an interpretation shall be made in writing, addressed and forwarded to Indian River County (purchasing@ircgov.com) ten (10) or more days before the date fixed for opening of the bids. The County shall not be responsible for oral interpretations given by any County employee. Every interpretation made to bidder will be in the form of an Addendum to the specifications, which if issued, will be sent promptly as is practical to all persons to whom specifications have been issued. All such Addenda shall become part of the specifications. Further, it shall be the responsibility of each bidder, prior to submitting their bid, to contact Indian River County's Purchasing Division at (772) 226-1416 to determine if addenda were issued and to make such addenda a part of their bid.

Default Provision: In case of default by the Bidder, Indian River County may procure the articles or services from other sources and hold the Bidder responsible for excess costs incurred thereby, and may take such action, as it deems appropriate, including legal action for Damages or Specific Performance.

Manufacturer's Certification: Indian River County reserves the right to request from the Bidder a separate manufacturer's certification of all statements made in the proposal.

Signed Bid Considered an Offer: This signed bid shall be considered an offer on the part of the Bidder. Indian River County Board of County Commissioners shall deem the offer accepted upon approval.

Non-Collusion: By signing and submitting the Bid Form, the Bidder certifies that,

- This bid has been arrived at by the Bidder independently and has been submitted without collusion, and without any agreement, understanding, or planned common course, or action with, any vendor of materials, supplies, equipment, or services described in the invitation to bid, designed to limit independent bidding or competition, and
- The contents of the bid have not been communicated by the Bidder or its employees or agents to any person not an employee or an agent of the bidder or its surety on any bond furnished with the bid, and will not be communicated to any such person prior to the official opening of the bid.
- No attempt has been made or will be made by the Bidder to induce any other person(s) or firm(s) to submit or not to submit a bid for the purpose of restricting competition.

Public Entity Crimes: Pursuant to Florida Statutes Section 287.133(2)(a), all Bidders are hereby notified that a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity (defined as the State of Florida, any of its departments or agencies, or any political subdivision); may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Florida Statutes Section 287.017 for CATEGORY TWO [currently \$35,000] for a period of 36 months from the date of being placed on the convicted vendor list. A "public entity crime" 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 with the United States, including, but not limited to, any bid, proposal, reply, or contract for goods or services, any lease for real property, or any contract for the construction or repair of a public building or public work, involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

Suspension and Debarment: Indian River County will not make award to parties listed on the government-wide exclusions in the System for Award Management (SAM). The bidder agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

Scrutinized Companies Lists: The bidder certifies that it and those related entities of respondent as defined by Florida law are not on the Scrutinized Companies that Boycott Israel List, created pursuant to s. 215.4725 of the

Florida Statutes, and are not engaged in a boycott of Israel. In addition, if this agreement is for goods or services of one million dollars or more, Contractor certifies that it and those related entities of respondent as defined by Florida law are not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to Section 215.473 of the Florida Statutes and are not engaged in business operations in Cuba or Syria. The County may terminate this Contract if Company is found to have submitted a false certification as provided under section 287.135(5), Florida Statutes, been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or been engaged in business operations in Cuba or Syria, as defined by section 287.135, Florida Statutes. County may terminate this Contract if Company, including all wholly owned subsidiaries, majority-owned subsidiaries, and parent companies that exist for the purpose of making profit, is found to have been placed on the Scrutinized Companies that Boycott Israel List or is engaged in a boycott of Israel as set forth in section 215.4725, Florida Statutes.

Accordingly, firms responding to this solicitation shall return with their response an executed copy of the attached "Certification Regarding Prohibition Against Contracting With Scrutinized Companies." Failure to return this executed form with submitted bid/proposal/statement of qualifications will result in the response being deemed non-responsive and eliminated from consideration.

Non-Discrimination: Indian River County will not knowingly do business with vendors or contractors who discriminate on the basis of race, color or national origin, sex, sexual orientation, gender identity, age and/or disability. Through the course of providing services to the County, Contractors shall affirmatively comply with all applicable provisions of Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987 and the Florida Civil Rights Act of 1992, as well as all other applicable regulations, guidelines and standards. Any person who believes their rights have been violated should report such discrimination to the County's Title VI/Nondiscrimination Coordinator through the office of the County Attorney.

Local Preference: Indian River County has no local ordinance or preferences, as set forth in Florida Statutes section 255.0991(2) in place, therefore no preference prohibited by that section will be considered in the acceptance, review or award of this bid.

Energy Policy and Conservation Act – The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

Regulations: It shall be the responsibility of the bidder to assure compliance with any OSHA, EPA and / or other Federal or State of Florida rules, regulations, or other requirements, as each may apply.

Applicable Law and Venue: The resulting Agreement and all rights and duties of the parties hereto shall be governed by the laws of the State of Florida, including but not limited to the provisions of the Florida Uniform Commercial Code Chapters 671-679 F.S., for any terms and conditions not specifically stated within. Venue for any lawsuit brought by either party against the other party or otherwise arising out of this Contract shall be in Indian River County, Florida, or, in the event of a federal jurisdiction, in the United States District Court for the Southern District of Florida.

Conflict of Interest: Any entity submitting a bid or proposal or entering into a contract with the County shall disclose any relationship that may exist between the contracting entity and a County Commissioner or a County Employee. The relationship with a County Commissioner or a County Employee that must be disclosed is as follows: *father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law,*

mother-in-law, daughter-in-law, son-in-law, brother-in-law, sister-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, stepsister, half brother, half sister, grandparent, or grandchild. The term “affiliate” includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of the entity. The disclosure of relationships shall be a sworn statement made on a County approved form. Failure to submit the form may be cause for rejection of the bid or proposal.

Cancellation: It is the intention of Indian River County to purchase material and / or services from sources of supply that will provide prompt and convenient shipment and service. Any failure of the supplier to satisfy the requirements of the County shall be reason for termination of the award.

Errors: When an error is made in the bid extension of generating total bid prices or in any other process of completing the bid, the original unit prices submitted will govern. Carelessness in quoting prices, or in preparation of the bid otherwise, will not relieve the bidder from performance.

Bid Rejection: Failure to comply with all the above instructions *may* result in rejection of the bid.

Bid Protest: Any actual or prospective bidder or proposer who is aggrieved in connection with a competitive selection process may protest to the Purchasing Manager. The protest shall be submitted to the Purchasing Manager in writing within seven (7) calendar days after the bidder or proposer knows or should have known of the facts giving rise to the protest. If the protest is not resolved by mutual agreement, the Purchasing Manager shall promptly issue a decision in writing, after consulting the Department and the Office of the County Attorney.

Co-Operative Purchasing: It is the intent of the Invitation of Bid to secure goods or services to be used by Indian River County. However, by virtue of bidding, the bidder accepts the right of other Florida Governmental agencies to purchase from this bid proposal. The successful bidder and the requesting Governmental agency, apart from Indian River County, shall handle any such purchases separately. Further, Indian River County assumes no liability for materials or services ordered by any other Governmental agency by virtue of this bid. *(Bidders that find this condition unsatisfactory should indicate this by showing exception on the Bid Form.)*

Supplemental Information: The County reserves the right to conduct such investigations as it deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of Bidders, proposed subcontractors, suppliers, and other relevant parties to perform and furnish the work. To demonstrate qualifications to perform the work, each Bidder must be prepared to submit, within 5 days of Owner's request, written evidence, such as financial data, previous experience, present commitments, and other such data as may be necessary to prove to the satisfaction of the Owner that the Bidder is qualified by experience to do the work and is prepared to complete the work within the stated time period. Failure to provide any requested information may result in the determination of the Bidder as non-responsible.

Awards: The County reserves the right to cancel the bid, reject any and all bids or waive any irregularity or technicality in bids received. When it is determined there is no competition to the lowest responsive, responsible Bidder, evaluation of other bids is not required. Bidders are cautioned to make no assumptions unless their bid has been evaluated as being responsive. The County reserves the right to not make any award(s) under this bid.

Termination by the County: The County reserves the right to terminate a contract by giving thirty (30) days notice, in writing, of the intention to terminate, if at any time the contractor fails to abide by or fulfill any of the terms and conditions of the contract. The County also reserves the right to terminate this contract for convenience of the County and / or with or without cause.

Compliance with Laws and Regulations: Bidder agrees that they will comply with all Federal, State, and Local Laws and Regulations applicable to the production, sale, and delivery of the goods or the furnishing of any labor or services called for by the resulting Agreement, and any provisions required thereby to be included herein shall be deemed to be incorporated herein by reference. Noncompliance may be considered grounds for termination of contracts.

Public Record Law: Correspondence, materials, and documents received pursuant to this Invitation for Bid become public records subject to the provisions of Chapter 119, Florida Statutes. Should the Bidder assert any exemptions to the requirements of Chapter 119, Florida Statutes, and related statutes, the burden of establishing such exemption, by the way of injunctive or other relief as provided by law, shall be upon the Bidder.

Insurance:

- **Owners and Subcontractors Insurance:** The Contractor shall not commence work until they have obtained all the insurance required under this section, and until such insurance has been approved by the owner, nor shall the contractor allow any subcontractor to commence work until the subcontractor has obtained the insurance required for a contractor herein and such insurance has been approved unless the subcontractor’s work is covered by the protections afforded by the Contractor’s insurance.
- **Worker’s Compensation Insurance:** The Contractor shall procure and maintain worker’s compensation insurance to the extent required by law for all their employees to be engaged in work under this contract. In case any employees are to be engaged in hazardous work under this contract and are not protected under the worker’s compensation statute, the Contractor shall provide adequate coverage for the protection of such employees.
- **Public Liability Insurance:** The Contractor shall procure and maintain broad form commercial general liability insurance (including contractual coverage) and commercial automobile liability insurance in amounts not less than shown below. The owner shall be an additional named insured on this insurance on this insurance with respect to all claims arising out of the operations or work to be performed.

Commercial General (Public) Liability, other than Automobile \$1,000,000.00 Combined single limit for Bodily Injury and Property Damage	Commercial General A. Premises / Operations B. Independent Contractors C. Products / Completed Operations D. Personal Injury E. Contractual Liability F. Explosion, Collapse, and Underground Property Damage
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Automobile \$1,000,000.00 Combined single limit Bodily Injury and Damage Liability	A. Owner Leased Automobiles B. Non-Owned Automobiles C. Hired Automobiles D. Owned Automobiles
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- **Proof of Insurance:** The Contractor shall furnish the owner a certificate of insurance in a form acceptable to the owner for the insurance required. Such certificate or an endorsement provided by the contractor must state that the owner will be given thirty (30) days written notice prior to cancellation or material change in coverage. Copies of an endorsement-naming owner as Additional Insured must accompany the Certificate of Insurance.

Indian River County reserves the right to accept or reject any or all bids in whole or in part and waive all any technicality or irregularity.

Note: Any and all special conditions attached hereto, which may vary from these General Conditions, shall have precedence.

End of General Terms and Conditions

Technical Specifications

The work consists of furnishing all materials, labor and equipment (unless otherwise specified) necessary for the construction of a baseball field complex at 58th Avenue and 77th Street, to include the following elements: one College regulation baseball field (converted from an existing adult softball field), upgrading one existing softball/little league field, one new softball field, relocating existing field lighting poles from one field to another, installing new field lighting on one field, new concession and restroom building, a sanitary sewer line connection to a County force main, walkways, a parking lot, irrigation, drainage, performance turf, as per specifications.

The full Scope of Work is provided in the Project Plans, included as Attachment 1.

In order to provide consistency in parts, programming and controls with the other County athletic fields, all Athletic Field Lighting must conform to the Specification for the Musco Lighting Field Lighting Specifications provided as Attachment 2. Please reference Direct Purchase paragraph under General Terms and Conditions, as the County may elect to exercise the option to direct purchase the lighting, with the cost to be deducted from the awarded bid.

Minimum Requirements:

At the time of submittal, bidder must:

- A. Be actively registered by the State of Florida as a Certified General Contractor or Certified Building Contractor. Awarded bidder must be actively register with the Indian River County Building Division prior to execution of the agreement.
- B. Have a minimum of five (5) years experience under his/her current business name.
- C. Demonstrate that it has full-time key personnel with the necessary experience to perform the Project's Scope of Work. This experience shall include work in successfully completed projects performed by the expressly identified key personnel whose bulk of work (at minimum fifty-one percent (51%) of the work) is performed on projects similar to the Project's Scope of Work described in these Solicitation Documents. Bidder shall demonstrate the required experience by providing a detailed description of at least three (3) projects whose scope included the construction/renovation of athletic fields, which are similar to the Project's Scope of Work described in this Solicitation Document and in which the Bidder's identified key personnel is currently actively engaged or has completed the work, which has been accepted by the Owner, within the past five (5) years. List and describe the aforementioned projects and indicate whether the Work was performed for the County, and/or other government agencies as clients, or private entities. Agency and/or entity and project names / numbers shall be included. The description must identify and describe for each project:
 - a) The identified key personnel and their assigned roles and responsibilities for the listed project, key personnel include, without limitation, the Contractor's Project Manager and the Construction Manager or Construction Supervisor;
 - b) The client's name and address including a contact person, email address, and phone number for reference verification;
 - c) Description of Work;
 - d) Total dollar value of the Contract;
 - e) Contract duration;

- f) Statement or notation of whether Bidder's identified key personnel is/was employed by the Prime Contractor or Subcontractor; and
- g) For completed projects, provide letters of certification of final acceptance or similar project closure documentation issued by the client and include available Contractor's performance evaluations.

The County reserves the right to request additional / supplemental information and/or contact listed persons pertaining to Bidder's experience / minimum requirements.

End of Technical Specifications

Indian River County Purchasing Division

1800 27th Street
 Vero Beach, FL 32960
 Phone (772) 226-1416



Bid Form

Hobart Park Baseball Field Project

Bid #: 2020005
 Bid Opening Date and Time: October 2, 2019 2:00 P.M.
 Bid Opening Location: Purchasing Division
 1800 27th Street
 Vero Beach, FL 32960

The following addenda are hereby acknowledged:

Addendum Number	Date
_____	_____
_____	_____
_____	_____
_____	_____

In accordance with all terms, conditions, specifications, and requirements, the Bidder offers the following:

Item and Description	Unit	Unit Price	Qty	Total
EROSION AND SEDIMENT CONTROL				
1. Erosion and Sediment Control	LS	\$	1	\$
GENERAL				
2. Mobilization	LS	\$	1	\$
3. Clearing & Stripping	AC	\$	5.75	\$
4. Excavation	CY	\$	6,280	\$
5. Import Fill	CY	\$	11,525	\$
6. Import Fill (Special - Infield Clay)	CY	\$	4,500	\$
7. Grading	SY	\$	48,000	\$
8. Inline Drain (15")	EA	\$	6	\$
9. Type "C" Inlet	EA	\$	5	\$

Item and Description		Unit	Unit Price	Qty	Total
11	New Stormwater Control Structure	LS	\$	1	\$
12	HDPE - 12" Dia.	LF	\$	733	\$
14	RCP - 18" Dia.	LF	\$	894	\$
15	MES - 18" Dia. RCP	EA	\$	3	\$
16	Parking Area - Asphalt 1.5" SP12.5	SY	\$	2,640	\$
17	Parking Area - Cemented Coquina Rock 6" Thick (Surface)	SY	\$	2,700	\$
18	Parking Area - 8" Stabilized Subgrade	SY	\$	2,750	\$
19	Sidewalks (6' wide 4" Thick)	SY	\$	1,111	\$
20	Fencing (Remove & Reinstall per Plan)	LF	\$	1,380	\$
21	Thermoplastic Parking Striping /Signs	LS	\$	1	\$
UTILITIES					
22	Sewer Wet Tap (12" x 4")	LS	\$	1	\$
23	Sewer Lateral (6" PVC)	LF	\$	120	\$
24	Sewer Lift Station	LS	\$	1	\$
25	Sewer Force Main (4" PVC)	LF	\$	190	\$
26	Potable Water Wet Tap Connection (24" x 6")	LS	\$	1	\$
27	Potable Water Fire Hydrant Assembly w/ Valve	LS	\$	1	\$
28	Potable Water Service	LS	\$	1	\$
29	Potable Water - RPZ	LS	\$	1	\$
IRRIGATION					
30	Irrigation	LS	\$	1	\$
TURF					
31	Grassing - Performance Turf (Sprigged)	SY	\$	12,900	\$
	Grassing - Performance Turf (Sprigged)	SY	\$	7,400	\$
SOD					
32	Grassing - Seed & Mulch (Bahia)	SY	\$	27,700	\$
CONCRETE / MASONARY					
33	Concrete / Masonary	LS	\$	1	\$
STEEL					
34	Steel	LS	\$	1	\$

Item and Description	Unit	Unit Price	Qty	Total	
CONCESSION BUILDING					
35	Concession Building	LS	\$	1	\$
EQUIPMENT / SPECIAL					
36	Dugouts/Relocate Batting Cage/Flagpole/Scoreboard	LS	\$	1	\$
PLUMBING					
37	Plumbing	LS	\$	1	\$
BALLFIELD LIGHTING					
38	College Field New Lighting (furnish)	LS	\$	1	\$
38a	College Field New Lighting (install)	LS	\$	1	\$
39	Softball Field Salvage Lighting (furnish)				
39a	Softball Field Salvage Lighting (install)	LS	\$	1	\$
ELECTRICAL					
40	Electrical	LS	\$	1	\$
SURVEYING					
41	Stake-Out/ As-Built Survey (Project Record Documents)	LS	\$	1	\$
LANDSCAPING					
42	Landscaping	LS	\$	1	\$
TREE MITIGATION FEE ASSESSMENT					
43	Tree Mitigation Fee Assessment	LS	\$	1	\$
REMOVE / RELOCATE CABBAGE PALMS					
44	Remove / Relocate Cabbage Palms	LS	\$	1	\$
MISCELLANEOUS					
45	Miscellaneous*	LS	\$	1	\$
				Subtotal	\$
Contingency		15%		\$	
Total Bid Price		\$			

Total Bid Price in Words

**Includes any work described on the Construction Plans including electric and irrigation adjustments not specifically paid for in other items*

The undersigned hereby certifies that they have read and understand the contents of this solicitation and agree to furnish at the prices shown any or all of the items above, subject to all instructions, conditions, specifications, and attachments hereto. Failure to have read all the provisions of this solicitation shall not be cause to alter any resulting contract or request additional compensation.

Company Name: _____

Company Address: _____

City, State _____ Zip Code _____

Telephone: _____ Fax: _____

E-mail: _____

Business Tax Receipt Number: _____ FEIN Number: _____

Authorized Signature: _____ **Date:** _____

Name: _____ Title: _____
(Type / Printed)

Qualifications Questionnaire

This form **must** be submitted with your bid.

1. Licensing and Corporate Status:
 - a. Is Contractor License current? _____
 - b. Bidder’s Contractor License No: _____ [Attach a copy of Contractor’s License to the bid]
 - c. Attach documentation from the State of Florida Division of Corporations that indicates the business entity’s status is active and that lists the names and titles of all officers.

2. Number of years the firm has performed business as a Contractor in construction work of the type involved in this contract: _____

3. What is the last project OF THIS NATURE that the firm has completed?

4. Has the firm ever failed to complete work awarded to you? _____

 [If your answer is “yes”, then attach a separate page to this questionnaire that explains the circumstances and list the project name, Owner, and the Owner’s telephone number for each project in which the firm failed to complete the work.]

5. Has the firm ever been assessed liquidated damages? _____

 [If your answer is “yes”, then attach a separate page to this questionnaire that explains the circumstances and list the project name, Owner, and the Owner’s telephone number for each project in which liquidated damages have been assessed.]

6. Has the firm ever been charged by OSHA for violating any OSHA regulations? _____

 [If your answer is “yes”, then attach a separate page to this questionnaire that explains the circumstances and list the project name, Owner, and the Owner’s telephone number for each project in which OSHA violations were alleged.]

7. Has the firm ever been charged with noncompliance of any public policy or rules?

 [If your answer is “yes”, then attach a separate page to this questionnaire that explains the circumstances and list the project name, Owner, and the Owner’s telephone number for each project.]

8. Attach to this questionnaire, a notarized financial statement and other information that documents the firm’s financial strength and history.

9. Has the firm ever defaulted on any of its projects? _____

[If your answer is “yes”, then attach a separate page to this questionnaire that explains the circumstances and list the project name, Owner, and the Owner’s telephone number for each project in which a default occurred.]

10. Attach a separate page to this questionnaire that summarizes the firm’s current workload and that demonstrates its ability to meet the project schedule.

11. Name of person who inspected the site of the proposed work for the firm:

Name: _____ Date of Inspections: _____

12. Name of on-site Project Foreman: _____

Number of years of experience with similar projects as a Project Foreman: _____

13. Name of Project Manager: _____

Number of years of experience with similar projects as a Project Manager: _____

14. State your total bonding capacity: _____

15. State your bonding capacity per job: _____

DRUG-FREE WORKPLACE CERTIFICATION

(Please include this form with your bid)

The undersigned vendor in accordance with Florida Statute 287.087 hereby certifies that _____ does:

(Name of Business)

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's 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. Give 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), notify 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 5 days after such conviction.
5. Impose a sanction on, or require 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. Make a good faith effort to continue to maintain a drug-free workplace through implementation of Section 287.087.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

Company Name

Bidder's Signature

Date: _____

SWORN STATEMENT UNDER SECTION 105.08, INDIAN RIVER COUNTY CODE, ON DISCLOSURE OF RELATIONSHIPS

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

1. This sworn statement **MUST** be submitted with Bid, Proposal or Contract No. 2020005 for Hobart Park Baseball Fields

2. This sworn statement is submitted by: _____

(Name of entity submitting Statement)

whose business address is:

and its Federal Employer Identification Number (FEIN) is _____

3. My name is _____
(Please print name of individual signing)

and my relationship to the entity named above is _____

4. I understand that an "affiliate" as defined in Section 105.08, Indian River County Code, means:

The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of the entity.

5. I understand that the relationship with a County Commissioner or County employee that must be disclosed as follows:

Father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law, mother-in-law, daughter-in-law, son-in-law, brother-in-law, sister-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, stepsister, half brother, half sister, grandparent, or grandchild.

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

_____ Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, have any relationships as defined in section 105.08, Indian River County Code, with any County Commissioner or County employee.

_____ The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents, who are active in management of the entity have the following relationships with a County Commissioner or County employee:

Name of Affiliate or entity	Name of County Commissioner or employee	Relationship
_____	_____	_____
_____	_____	_____
_____	_____	_____

(Signature)

(Date)

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me this ____ day of _____, 20____, by _____, who is personally known to me or who has produced _____ as identification.

NOTARY PUBLIC

SIGN: _____

PRINT: _____

Notary Public, State at large
My Commission Expires:

(Seal)

**CERTIFICATION REGARDING PROHIBITION AGAINST CONTRACTING
WITH SCRUTINIZED COMPANIES**

(This form MUST be submitted with your bid)

I hereby certify that neither the undersigned entity, nor any of its wholly owned subsidiaries, majority-owned subsidiaries, parent companies, or affiliates of such entities or business associations, that exists for the purpose of making profit have been placed on the Scrutinized Companies that Boycott Israel List created pursuant to s. 215.4725 of the Florida Statutes, or are engaged in a boycott of Israel.

In addition, if this solicitation is for a contract for goods or services of one million dollars or more, I hereby certify that neither the undersigned entity, nor any of its wholly owned subsidiaries, majority-owned subsidiaries, parent companies, or affiliates of such entities or business associations, that exists for the purpose of making profit are on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to s. 215.473 of the Florida Statutes, or are engaged in business operations in Cuba or Syria as defined in said statute.

I understand and agree that the County may immediately terminate any contract resulting from this solicitation upon written notice if the undersigned entity (or any of those related entities of respondent as defined above by Florida law) are found to have submitted a false certification or any of the following occur with respect to the company or a related entity: (i) it has been placed on the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel, or (ii) for any contract for goods or services of one million dollars or more, it has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or it is found to have been engaged in business operations in Cuba or Syria.

Name of Respondent: _____

By: _____
(Authorized Signature)

Title: _____

Date: _____

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements
(This form MUST be submitted with each bid or offer exceeding \$100,000)

The undersigned Contractor certifies, to the best of his or her knowledge, that:

- 1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- 2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- 3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. § 3801 et seq., apply to this certification and disclosure, if any.

Signature of Contractor's Authorized Official

Name and Title of Contractor's Authorized Official

Date

Sample Agreement

THIS AGREEMENT is by and between INDIAN RIVER COUNTY, a Political Subdivision of the State of Florida organized and existing under the Laws of the State of Florida, (hereinafter called OWNER)

and _____
(hereinafter called CONTRACTOR). OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 - WORK

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

Furnishing all materials, labor and equipment (unless otherwise specified) necessary for the construction of a baseball field complex to include the following elements: one College regulation baseball field (converted from an existing adult softball field), upgrading one existing softball/little league field, one new softball field, relocating existing field lighting poles from one field to another, installing new field lighting on one field, new concession and restroom building, a sanitary sewer line connection to a County force main, walkways, a parking lot, irrigation, drainage, performance turf, as per specifications.

ARTICLE 2 - THE PROJECT

The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Project Name:	Hobart Park Baseball Field Project
Bid Number:	2020005
Project Address:	Northeast Corner of 58 th Avenue and 77 th Street Vero Beach, FL 32967

ARTICLE 3 - CONTRACT TIMES

3.01 *Time of the Essence*

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

3.02 *Days to Achieve Substantial Completion, Final Completion and Final Payment*

- A. The Work will be completed and ready for final payment on or before the 270th day after the date when the Contract Times commence to run.

3.03 *Liquidated Damages*

- A. CONTRACTOR and OWNER recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 3.02 above, plus any extensions thereof allowed in writing as a change order to this Agreement. Liquidated damages will commence for this portion of work. The parties also recognize the delays, expense, and difficulties involved in proving in a legal proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty), CONTRACTOR shall pay OWNER \$1,148.00 for each calendar day that expires after the time specified in paragraph 3.02 for completion and readiness for final payment until the Work is completed and ready for final payment.

ARTICLE 4 - CONTRACT PRICE

- 4.01 OWNER shall pay CONTRACTOR for completion of the Work an amount in current funds equal to the sum of the amounts determined pursuant to paragraph 4.01.A and summarized in paragraph 4.01.B, below:
 - A. For all Work, at the prices stated in CONTRACTOR’s Bid, attached hereto as an exhibit.
 - B. THE CONTRACT SUM subject to additions and deductions provided in the Contract Documents:

Numerical Amount: \$ _____

Written Amount: _____

ARTICLE 5 - PAYMENT PROCEDURES

- 5.01 *Progress Payments.*
 - A. The OWNER shall make progress payments to the CONTRACTOR on the basis of the approved partial payment request as recommended by ENGINEER in accordance with the provisions of the Local Government Prompt Payment Act, Florida Statutes section 218.70 et. seq. The OWNER shall retain ten percent (10%) of the payment amounts due to the CONTRACTOR until fifty percent (50%) completion of the work. After fifty percent (50%) completion of the work is attained as certified to OWNER by ENGINEER in writing, OWNER shall retain five percent (5%) of the payment amount due to CONTRACTOR until final completion and acceptance of all work to be performed by CONTRACTOR under the Contract Documents. Pursuant to Florida Statutes section 218.735(8)(b), fifty percent (50%) completion means the point at which the County as OWNER has expended fifty percent (50%) of the total cost of the construction services work purchased under the Bid and Specification Documents, together with all costs associated with existing change orders and other additions or modifications to the construction services work provided under the Contract Documents.

- 5.02 *Pay Requests.*

- A. Each request for a progress payment shall contain the CONTRACTOR’S certification. All progress payments will be on the basis of progress of the work measured by the schedule of values established, or in the case of unit price work based on the number of units completed. After fifty percent (50%) completion, and pursuant to Florida Statutes section 218.735(8)(d), the CONTRACTOR may submit a pay request to the County as OWNER for up to one half (1/2) of the retainage held by the County as OWNER, and the County as OWNER shall promptly make payment to the CONTRACTOR unless such amounts are the subject of a good faith dispute; the subject of a claim pursuant to Florida Statutes section 255.05(2005); or otherwise the subject of a claim or demand by the County as OWNER or the CONTRACTOR. The CONTRACTOR acknowledges that where such retainage is attributable to the labor, services, or materials supplied by one or more subcontractors or suppliers, the Contractor shall timely remit payment of such retainage to those subcontractors and suppliers. Pursuant to Florida Statutes section 218.735(8)(c)(2005), CONTRACTOR further acknowledges and agrees that: 1) the County as OWNER shall receive immediate written notice of all decisions made by CONTRACTOR to withhold retainage on any subcontractor at greater than five percent (5%) after fifty percent (50%) completion; and 2) CONTRACTOR will not seek release from the County as OWNER of the withheld retainage until the final pay request.

5.03 Paragraphs 5.01 and 5.02 do not apply to construction services work purchased by the County as OWNER which are paid for, in whole or in part, with federal funds and are subject to federal grantor laws and regulations or requirements that are contrary to any provision of the Local Government Prompt Payment Act. In such event, payment and retainage provisions shall be governed by the applicable grant requirements and guidelines.

5.04 *Acceptance of Final Payment as Release.*

- A. The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER from all claims and all liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with the work under this Agreement and for every act and neglect of the OWNER and others relating to or arising out of the work. Any payment, however, final or otherwise, shall not release the CONTRACTOR or its sureties from any obligations under this Agreement, the Invitation to Bid or the Public Construction Bond.

ARTICLE 6 - INDEMNIFICATION

6.01 CONTRACTOR shall indemnify and hold harmless the OWNER, and its officers and employees, from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney’s fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the CONTRACTOR and persons employed or utilized by the CONTRACTOR in the performance of the Work.

ARTICLE 7 - CONTRACTOR’S REPRESENTATIONS

7.01 In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

- A. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Invitation to Bid documents.
- B. CONTRACTOR has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. CONTRACTOR is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, including applying the specific means, methods, techniques, sequences, and procedures of construction, if any, expressly required by the Contract Documents to be employed by CONTRACTOR, and safety precautions and programs incident thereto.
- E. CONTRACTOR does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- F. CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Contract Documents.
- G. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
- H. CONTRACTOR has given OWNER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents, and the written resolution thereof by OWNER is acceptable to CONTRACTOR.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 8 - CONTRACT DOCUMENTS

8.01 *Contents*

- A. The Contract Documents consist of the following:
 - (1) This Agreement (pages 1 to __, inclusive);
 - (2) Notice to Proceed

- (3) Public Construction Bond (pages __ to __, inclusive);
- (4) Certificate(s) of Liability Insurance
- (5) Invitation to Bid 2020005
- (6) Addenda (numbers __ to __, inclusive);
- (7) CONTRACTOR’S Bid Form (pages __ to __, inclusive);
- (8) Bid Bond (pages __ inclusive);
- (9) Bidders Questionnaire (pages __ to __, inclusive);
- (10) Drug Free Workplace Form (pages __ to __, inclusive)
- (11) Sworn Statement Under Section 105.08, Indian River County Code, on Disclosure of Relationships (pages __ to __, inclusive);
- (12) Certification Regarding Prohibition Against Contracting with Scrutinized Companies
- (13) Certification Regarding Lobbying
- (14) The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - a) Written Amendments;
 - b) Work Change Directives;
 - c) Change Order(s).

ARTICLE 9 - MISCELLANEOUS

9.01 *Terms*

- A. Terms used in this Agreement will have the meanings indicated in the Invitation to Bid.

9.02 *Assignment of Contract*

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

9.03 *Successors and Assigns*

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

9.04 *Severability*

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

9.05 *Venue*

- A. This Agreement shall be governed by the laws of the State of Florida. Venue for any lawsuit brought by either party against the other party or otherwise arising out of this Agreement shall be in Indian River County, Florida, or, in the event of a federal jurisdiction, in the United States District Court for the Southern District of Florida.

9.06 *Public Records Compliance*

- A. Indian River County is a public agency subject to Chapter 119, Florida Statutes. The Contractor shall comply with Florida's Public Records Law. Specifically, the Contractor shall:
 - (1) Keep and maintain public records required by the County to perform the service.
 - (2) Upon request from the County's Custodian of Public Records, provide the County with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119 or as otherwise provided by law.
 - (3) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the County.
 - (4) Upon completion of the contract, transfer, at no cost, to the County all public records in possession of the Contractor or keep and maintain public records required by the County to perform the service. If the Contractor transfers all public records to the County upon completion of the contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon completion of the contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be

provided to the County, upon request from the Custodian of Public Records, in a format that is compatible with the information technology systems of the County.

B. IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

(772) 226-1424
publicrecords@ircgov.com
Indian River County Office of the County Attorney
1801 27th Street
Vero Beach, FL 32960

C. Failure of the Contractor to comply with these requirements shall be a material breach of this Agreement.

ARTICLE 10 –TERMINATION OF CONTRACT

A. The occurrence of any of the following shall constitute a default by CONTRACTOR and shall provide the OWNER with a right to terminate this Contract in accordance with this Article, in addition to pursuing any other remedies which the OWNER may have under this Contract or under law:

- (1) if in the OWNER’s opinion CONTRACTOR is improperly performing work or violating any provision(s) of the Contract Documents;
- (2) if CONTRACTOR neglects or refuses to correct defective work or replace defective parts or equipment, as directed by the Engineer pursuant to an inspection;
- (3) if in the OWNER’s opinion CONTRACTOR’s work is being unnecessarily delayed and will not be finished within the prescribed time;
- (4) if CONTRACTOR assigns this Contract or any money accruing thereon or approved thereon; or
- (5) if CONTRACTOR abandons the work, is adjudged bankrupt, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for CONTRACTOR or for any of his property.

B. OWNER shall, before terminating the Contract for any of the foregoing reasons, notify CONTRACTOR in writing of the grounds for termination and provide CONTRACTOR with ten (10) calendar days to cure the default to the reasonable satisfaction of the OWNER.

C. If the CONTRACTOR fails to correct or cure within the time provided in the preceding Sub-Article B, OWNER may terminate this Contract by notifying CONTRACTOR in writing. Upon receiving such notification, CONTRACTOR shall immediately cease all work hereunder and shall forfeit any further right to possess or occupy the site or any materials thereon; provided, however, that the OWNER may authorize CONTRACTOR to restore any work sites.

D. The CONTRACTOR shall be liable for:

- (1) any new cost incurred by the OWNER in soliciting bids or proposals for and letting a new contract; and
- (2) the difference between the cost of completing the new contract and the cost of completing this Contract;
- (3) any court costs and attorney's fees associated with any lawsuit undertaken by OWNER to enforce its rights herein.

E. TERMINATION FOR CONVENIENCE: OWNER may at any time and for any reason terminate CONTRACTOR's services and work for OWNER's convenience. Upon receipt of notice of such termination CONTRACTOR shall, unless the notice directs otherwise, immediately discontinue the work and immediately cease ordering of any materials, labor, equipment, facilities, or supplies in connection with the performance of this Contract. Upon such termination Contractor shall be entitled to payment only as follows:

- (1) the actual cost of the work completed in conformity with this Contract and the specifications; plus,
- (2) such other costs actually incurred by CONTRACTOR as are permitted by the prime contract and approved by the OWNER.

Contractor shall not be entitled to any other claim for compensation or damages against the County in the event of such termination.

F. TERMINATION IN REGARDS TO F.S. 287.135: TERMINATION IN REGARDS TO F.S. 287.135: CONTRACTOR certifies that it and those related entities of CONTRACTOR as defined by Florida law are not on the Scrutinized Companies that Boycott Israel List, created pursuant to s. 215.4725 of the Florida Statutes, and are not engaged in a boycott of Israel. In addition, if this agreement is for goods or services of one million dollars or more, CONTRACTOR certifies that it and those related entities of CONTRACTOR as defined by Florida law are not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to Section 215.473 of the Florida Statutes and are not engaged in business operations in Cuba or Syria.

OWNER may terminate this Contract if CONTRACTOR is found to have submitted a false certification as provided under section 287.135(5), Florida Statutes, been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or been engaged in business operations in Cuba or Syria, as defined by section 287.135, Florida Statutes.

OWNER may terminate this Contract if CONTRACTOR, including all wholly owned subsidiaries, majority-owned subsidiaries, and parent companies that exist for the purpose of making profit, is found to have been placed on the Scrutinized Companies that Boycott Israel List or is engaged in a boycott of Israel as set forth in section 215.4725, Florida Statutes.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in duplicate. One counterpart each has been delivered to OWNER and CONTRACTOR. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or on their behalf.

This Agreement will be effective on _____, 20__ (the date the Agreement is approved by the Indian River County Board of County Commissioners, which is the Effective Date of the Agreement).

OWNER:

INDIAN RIVER COUNTY _____

By: _____
Bob Solari, Chairman

By: _____
Jason E. Brown, County Administrator

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

By: _____
Dylan Reingold, County Attorney

Jeffrey R. Smith, Clerk of Court and Comptroller

Attest: _____
Deputy Clerk

(SEAL)

Designated Representative:

Name:

Title:

Address:

Phone

Email

CONTRACTOR:

By: _____
(Contractor)

(CORPORATE SEAL)

Attest _____

Address for giving notices:

License No. _____
(Where applicable)

Agent for service of process: _____

Designated Representative:

Name: _____

Title: _____

Address:

Phone: _____

Email: _____

(If CONTRACTOR is a corporation or a partnership,
attach evidence of authority to sign.)

PUBLIC CONSTRUCTION BOND

INSTRUCTION FOR PUBLIC CONSTRUCTION BOND

The front or cover page to the required public construction/payment and performance bond shall contain the information required by Fla. Stat. 255.05(1)(a), and be substantially in the format shown on the first page following this instruction.

The Public Construction Bond shall be in the form suggested by Fla. Stat. 255.05(3) as shown on the second page following this instruction.

A Power of Attorney from a surety insurer authorized to do business in Florida, authorizing the signature of the Attorney in Fact who executes the Public Construction Bond shall accompany that Bond.

**Public Work
F.S. Chapter 255.05 (1)(a)
Cover Page**

THIS BOND IS GIVEN TO COMPLY WITH SECTION 255.05 OR SECTION 713.23 FLORIDA STATUTES, AND ANY ACTION INSTITUTED BY A CLAIMANT UNDER THIS BOND FOR PAYMENT MUST BE IN ACCORDANCE WITH THE NOTICE AND TIME LIMITATION PROVISIONS IN SECTION 255.05(2) OR SECTION 713.23 FLORIDA STATUTES.

BOND NO: _____

CONTRACTOR NAME: _____

CONTRACTOR ADDRESS: _____

CONTRACTOR PHONE NO: _____

SURETY COMPANY NAME: _____

**SURETY PRINCIPAL
BUSINESS ADDRESS:** _____

SURETY PHONE NO: _____

OWNER NAME: _____

OWNER ADDRESS: _____

OWNER PHONE NO: _____

OBLIGEE NAME: _____
(If contracting entity is different from
the owner, the contracting public entity)

OBLIGEE ADDRESS: _____

OBLIGEE PHONE NO: _____

BOND AMOUNT: _____

CONTRACT NO: _____
(If applicable)

DESCRIPTION OF WORK: _____

PROJECT LOCATION: _____

LEGAL DESCRIPTION: _____
(If applicable)

FRONT PAGE

All other bond page(s) are deemed subsequent to this page regardless of any page number(s) that may be printed thereon.

PUBLIC CONSTRUCTION BOND

Bond No. _____
(enter bond number)

BY THIS BOND, We _____, as Principal and _____, _____ a corporation, as Surety, are bound to _____, herein called Owner, in the sum of \$_____, for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs the contract dated _____, _____, between Principal and Owner for construction of _____, the contract being made a part of this bond by reference, at the times and in the manner prescribed in the contract; and
2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in the contract; and
3. Pays Owner all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that Owner sustains because of a default by Principal under the contract; and
4. Performs the guarantee of all work and materials furnished under the contract for the time specified in the contract, then this bond is void; otherwise it remains in full force.

Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2), Florida Statutes.

Any changes in or under the contract documents and compliance or noncompliance with any formalities connected with the contract or the changes does not affect Surety's obligation under this bond.

DATED ON _____,

(Name of Principal)

By _____
(As Attorney in Fact)

(Name of Surety)

Attachment 1 – Construction Plans and Details

CONSTRUCTION PLANS

for

HOBART PARK BASEBALL FIELD IMPROVEMENTS

in

INDIAN RIVER COUNTY, FLORIDA

MARCH 2018

INDEX OF SHEETS

CIVIL ENGINEERING PLANS

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8. SITE GRADING PLAN "B"
9. COLLEGE BASEBALL FIELD DETAILS & GRADING PLAN
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- E1.3. ELECTRICAL DETAILS
- P1.1. PLUMBING PLAN



IRC PROJECT #1759

DATUM
THE DATUM AND DESIGN GRADES SHOWN
WITHIN THESE PLANS REFER TO THE
NORTH AMERICAN VERTICAL DATUM OF 1988
(NAVD 1988)

UTILITIES

LOCATION OF UTILITIES SHOWN ON THESE PLANS ARE PLOTTED FROM INFORMATION FURNISHED BY UTILITY COMPANIES AND ARE APPROXIMATE ONLY. CONTRACTOR IS TO FAMILIARIZE HIMSELF WITH, AND VERIFY CONDITIONS AT SITE. CONTRACTOR SHALL MAKE DILIGENT INQUIRY AT THE OFFICE OF THE UTILITY COMPANIES AND MUNICIPAL AUTHORITIES TO DETERMINE THE EXACT LOCATION OF UTILITY STRUCTURES. THE CONTRACTOR SHALL NOTIFY, IN WRITING, THE UTILITY COMPANIES, MUNICIPALITY AND OWNERS INVOLVED OF THE NATURE AND SCOPE OF THE PROJECT, AND OF HIS OPERATIONS THAT AFFECT THEIR FACILITIES OF PROPERTY.

Call 48 hours before you dig in Florida



VICINITY MAP (NOT TO SCALE)



OWNER

INDIAN RIVER COUNTY
1801 27th STREET
VERO BEACH, FL 32960
Phone: (772) 567-8000

APPLICANT

INDIAN RIVER COUNTY
1801 27th STREET
VERO BEACH, FL 32960
Phone: (772) 567-8000

ENGINEER

MASTELLER AND MOLER, INC.
1655 27TH STREET, SUITE 2
VERO BEACH, FLORIDA 32960
Phone: (772) 567-5300 / Fax: (772) 794-1106
mostmolr@bellsouth.net

ARCHITECT

DONADIO & ASSOCIATES, ARCHITECTS, P.A.
609 17th STREET
VERO BEACH, FLORIDA 32960
Phone: (772) 794-2929

SURVEYOR

INDIAN RIVER COUNTY
1801 27th STREET
VERO BEACH, FL 32960
Phone: (772) 226-1220

STRUCTURAL ENGINEER

ML ENGINEERING, INC.
2030 37th AVENUE
VERO BEACH, FLORIDA 32960
Phone: (772) 569-1257 / Fax: (772) 569-4041
mostmolr@bellsouth.net

ELECTRICAL ENGINEER

TREASURE COAST ENGINEERING
4925 13th LANE
VERO BEACH, FLORIDA 32966
Phone: (772) 567-1007

LANDSCAPE ARCHITECT

SARTAIN ASSOCIATES
5099 HIGHWAY A-1-A, SUITE 3
VERO BEACH, FL 32966
Phone: (772) 234-1133

HOBART PARK BASEBALL FIELDS

MASTELLER & MOLER, INC.

CONSULTING ENGINEERS
1655 27th STREET, SUITE #2, VERO BEACH, FLORIDA, 32960
(772) 567-5300 / FAX (772) 794-1106
CERTIFICATE OF AUTHORIZATION NUMBER 4204

STEPHEN E. MOLER, P.E. FL#33193

NO.	DATE	DESCRIPTION	DR/APP
7.	9/18/18	REVISED PER IRC COMMENTS 9/17/18	SH/SEM
6.	8/28/18	REVISED PER IRC UTIL MARKUPS	SH/SEM
5.	8/28/18	REVISED PER IRC COMMENTS EMAILED ON 7/31/18	SH/SEM
4.	8/11/18	ADDED DATUM NOTE PER SURVMD	SH/SEM
3.	7/31/18	REVISED PER IRC COMMENT LETTERS OF 6/20 & 6/30/18	SH/SEM
2.	6/11/18	REVISED PER IRC TRC COMMENT LETTER OF 6/14/18	SH/SEM
1.	5/10/18	REVISED PER IRC PRE-APP COMMENTS	SH/SEM
REVISIONS			

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LEGEND

DESCRIPTION	EXISTING	PROPOSED
BLOCK NUMBER	(A)	(A)
BUILDING OR STRUCTURE	[Symbol]	[Symbol]
CENTERLINE	[Symbol]	[Symbol]
HEAD WALL	[Symbol]	[Symbol]
CURB	[Symbol]	[Symbol]
CUT AND PATCH	[Symbol]	[Symbol]
EASEMENT LINE	[Symbol]	[Symbol]
FENCE (AS INDICATED)	[Symbol]	[Symbol]
LOT LINE	[Symbol]	[Symbol]
LOT NUMBER	2	(2)
PHASE LINE	[Symbol]	[Symbol]
PROPERTY LINE	[Symbol]	[Symbol]
RAILROAD TRACKS	[Symbol]	[Symbol]
RIGHT-OF-WAY LINE	[Symbol]	[Symbol]
SIGN (POST MOUNTED)	[Symbol]	[Symbol]
TRAFFIC FLOW ARROW	[Symbol]	[Symbol]
ASPHALT DRIVE	AD	[Symbol]
GRAVEL DRIVE	GD	[Symbol]
CONCRETE DRIVE	CD	[Symbol]
EDGE OF PAVEMENT	[Symbol]	[Symbol]
MAILBOX/NEWSPAPER BOX	[Symbol]	[Symbol]
TREE	[Symbol]	[Symbol]
BENCH MARK	[Symbol]	[Symbol]
CONCRETE FLUME	[Symbol]	[Symbol]
CONCRETE MITER END	[Symbol]	[Symbol]
COURTS	[Symbol]	[Symbol]
CURB INLET	[Symbol]	[Symbol]
DRAINAGE FLOW ARROW	[Symbol]	[Symbol]
FINISH FLOOR	F.F.=20.00	F.F.=20.00
INLET	[Symbol]	[Symbol]
SAND CEMENT RIP-RAP	[Symbol]	[Symbol]
SOIL BORING LOCATION AND NUMBER	[Symbol]	[Symbol]
SPOT ELEVATION	[Symbol]	[Symbol]
STORM DRAIN PIPE	[Symbol]	[Symbol]
STORM MANHOLE	[Symbol]	[Symbol]
STRUCTURE NUMBER	S-1	S-1
SWALE	[Symbol]	[Symbol]
BASIN DIVIDE	[Symbol]	[Symbol]
SILT FENCE	[Symbol]	[Symbol]
CLEAN OUT	[Symbol]	[Symbol]
UNDERDRAIN	[Symbol]	[Symbol]
DITCH BLOCK	[Symbol]	[Symbol]
PLUG, BLOW-OFF & TERMINAL RESTRAINTS	[Symbol]	[Symbol]
REDUCER	[Symbol]	[Symbol]
FIRE HYDRANT W/ GATE VALVE VALVE BOX, HYDRANT TEE & RESTRAINTS	[Symbol]	[Symbol]
GATE VALVE & BOX	[Symbol]	[Symbol]
WATERMAIN W/ 3' COVER TYPICAL	[Symbol]	[Symbol]
1" SERVICE LATERAL W/ METER BOX	[Symbol]	[Symbol]
1-1/2" SERVICE LATERAL W/ (2) METER BOXES	[Symbol]	[Symbol]
RESTRAINED JOINT TEE	[Symbol]	[Symbol]
RESTRAINED BEND	[Symbol]	[Symbol]
TELEPHONE JUNCTION BOX	[Symbol]	[Symbol]
TELEPHONE LINE	[Symbol]	[Symbol]
UNDERGROUND ELECTRIC LINE	[Symbol]	[Symbol]
OVERHEAD WIRE	[Symbol]	[Symbol]
LIGHT POLE	[Symbol]	[Symbol]
WATER WELL	[Symbol]	[Symbol]
POWER POLE	[Symbol]	[Symbol]
GUY WIRE	[Symbol]	[Symbol]
TV CABLE BOX	[Symbol]	[Symbol]
GAS MAIN	[Symbol]	[Symbol]
UNDERGROUND CABLE TV	[Symbol]	[Symbol]

GENERAL NOTES

- THE CONTRACTOR SHALL NOTIFY THE OWNER (772) 794-7827 AND ENGINEER (772) 567-5300 A MINIMUM OF (48) HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- ALL WORK SHALL BE COMPLETED IN CONFORMANCE WITH 62-555.314, F.A.C., THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION MOST CURRENT EDITION, AND (LOCAL AGENCY) DESIGN STANDARDS, AS APPLICABLE.
- CONTRACTOR IS ADVISED TO FAMILIARIZE HIMSELF WITH THE OVERALL SCOPE OF WORK TO BE PERFORMED PRIOR TO SUBMITTING A BID.
- SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO MANUFACTURE.
- ALL BACKFILL OVER PIPES UNDER PLANNED PAVEMENT AREAS SHALL BE COMPACTED PER F.D.O.T. STANDARD SPECIFICATIONS, SECTION 125.83, TO 98% OF THE MAXIMUM DENSITY PER AASHTO T-180.
- LOCATION OF EXISTING UTILITIES DEPICTED ON THE PLANS ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES PRIOR TO START OF CONSTRUCTION AND VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN, IN ORDER TO PREVENT DAMAGE TO EXISTING UTILITIES, AND THE ADJUSTMENT AND/OR RELOCATION OF SAME IF REQUIRED. THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANY AND ENGINEER OF ANY DAMAGE DURING HIS CONSTRUCTION EFFORTS, AND REPLACE OR REPAIR DAMAGE TO THE SATISFACTION OF THE UTILITY COMPANY, AT NO ADDITIONAL COST TO THE OWNER.
- ALL GENERAL CONSTRUCTION, MATERIAL TESTING AND METHODS OF INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER, AND ENGINEER OF RECORD.
- INSPECTION OR FAILURE TO INSPECT ANY MATERIALS OR WORK BY THE OWNER, PERMITTING AGENCIES, OR ENGINEER OF RECORD SHALL IN NO WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PERFORM THE WORK IN ACCORDANCE WITH APPLICABLE PLANS, SPECIFICATIONS AND LAWS.
- ALL DIMENSIONS MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR AND IF ANY DISCREPANCIES ARE DISCOVERED, THE ENGINEER OF RECORD SHALL BE NOTIFIED IMMEDIATELY.
- OWNER SHALL PROVIDE SELECTED CONTRACTOR WITH COPIES OF PERMITS RECEIVED FOR THE PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL PERMITS NOT PROVIDED BY THE OWNER.
- CONTRACTOR SHALL COORDINATE CONNECTIONS TO EXISTING WATER PLANT PIPING AND SHALL VERIFY LOCATION AND ELEVATION OF SAID FACILITIES PRIOR TO THE START OF CONSTRUCTION. ANY FACILITIES DISTURBED SHALL BE REPAIRED TO EQUAL OR BETTER THAN EXISTING CONDITIONS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNER OR ENGINEER OF ANY CHANGES OR DEVIATIONS FROM THE ORIGINAL PLANS PRIOR TO CONSTRUCTION OF SAID CHANGE OR DEVIATION.
- POTABLE WATER SOURCE IS INDIAN RIVER COUNTY DEPARTMENT OF UTILITY SERVICES (IRCUDS).
- CONTRACTOR SHALL PROVIDE MAINTENANCE OF TRAFFIC PLAN.
- CONTRACTOR SHALL NOT REMOVE ANY TREES FROM PROJECT SITE WITHOUT PRIOR AUTHORIZATION FROM PROJECT OWNER OR ENGINEER.
- THE ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE PRIOR TO ANY INSPECTIONS.
- CONTRACTOR SHALL SOIL ALL DISTURBED AREAS. HYDROSEED & MULCH MAY BE APPLIED IF APPROVED BY THE ENGINEER.
- CONTRACTOR SHALL MAINTAIN DRAINAGE AT ALL TIMES, TO INCLUDE THE USE OF TEMPORARY PIPING AND/OR SWALES.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN THE SITE IN A CLEAN AND ORDERLY MANNER DURING CONSTRUCTION. ALL TRASH AND DEBRIS IS TO BE REMOVED ON A DAILY BASIS, OR IN A REUSE CONTAINER APPROVED BY THE LOCAL WASTE MANAGEMENT AUTHORITY, AND REGULAR REMOVAL IS TO BE SCHEDULED BY THE CONTRACTOR.
- ALL PROPOSED MODIFICATIONS TO APPROVED PLANS SHALL BE SUBMITTED TO THE ENGINEER IN WRITING FOR CONSIDERATION. NO FIELD CHANGES OR DEVIATIONS FROM THE APPROVED DESIGN SHALL BE MADE WITHOUT PRIOR CONSULTATION WITH THE ENGINEER.
- CONTRACTOR SHALL OBTAIN ALL NECESSARY INSURANCE AND BONDS REQUIRED BY THE OWNER FOR THIS PROJECT.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ANY PUBLIC LAND CORNER, GPS CONTROL POINT, OR OTHER SURVEY BENCHMARK WITHIN THE PROJECT LIMITS. ANY SURVEY BENCHMARK DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL NOTIFY THE ENGINEER AND GEODETIC INFORMATION CENTER OF ANY NGVD 1929 MONUMENT DISTURBED OR IN DANGER OF BEING DISTURBED IN THE PROJECT LIMITS.
- GEODETIC INFORMATION CENTER
MARK MAINTENANCE SECTION
ATTN: NCG-182
8001 EXECUTIVE BLVD.
ROCKVILLE, MD 20852
TELEPHONE: (301) 443-8319
- CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE, AT ALL TIMES, ONE COPY OF APPROVED CONSTRUCTION PLANS, SPECIFICATIONS, CONSTRUCTION PERMITS, AND ANY SPECIAL PROVISIONS.
- CONTRACTOR SHALL COORDINATE ALL WORK WITH UTILITY COMPANIES PRIOR TO START OF CONSTRUCTION IN ORDER TO PREVENT DAMAGE TO EXISTING UTILITIES AND THE ADJUSTMENT AND/OR RELOCATION OF SAME IF REQUIRED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL REQUIRED ROAD CROSSING PERMITS.
- CONTRACTOR SHALL ENSURE THAT ALL DENSITY TESTS ARE PERFORMED PER AASHTO T-180 METHOD.
- THE DEWATERING OF ANY EXCAVATION AREAS AND THE DISPOSAL OF WATER SHALL BE IN STRICT ACCORDANCE WITH THE LATEST REVISION OF ALL LOCAL AND STATE GOVERNMENT RULES AND REGULATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY REQUIRED DEWATERING PERMIT FROM THE APPROPRIATE AGENCIES PRIOR TO COMMENCING DEWATERING OPERATIONS.

PAVEMENT

- STRIP THE PROPOSED CONSTRUCTION LIMITS, INCLUDING A MARGIN OF AT LEAST FIVE (5) FEET BEYOND PAVEMENT EDGES, OF VEGETATION, ROOTS, RUBBLE AND OTHER DELETERIOUS MATERIALS. WE EXPECT AVERAGE CLEARING AND GRUBBING TO DEPTHS OF UP TO 6" TO 12" IN MOST AREAS OF THE ROADWAYS; HOWEVER AT SOME LOCATIONS, GRUBBING DEPTHS OF UP TO SEVERAL FEET MAY BE NECESSARY TO REMOVE LOCALIZED POCKETS OF ROOT MATS AND/OR LARGE STUMPS. THIS STRIPPED AND GRUBBED SURFACE SHOULD BE EXAMINED AND APPROVED BY THE ENGINEER BEFORE PLACEMENT OF SUBSEQUENT FILL. ANY EXISTING COLLAPSIBLE OR LEAK PRONE UTILITIES SHOULD BE COMPLETELY REMOVED FROM PAVEMENT AREAS.
- PROOF ROLL THE STRIPPED SURFACE WITH A VIBRATORY ROLLER WEIGHING AT LEAST 5 TONS UNDER THE SUPERVISION OF THE ENGINEER TO LOCATE ANY UNIFORM SOFT AREAS OF UNSUITABLE SOILS. TO INCREASE THE DENSITY OF THE SHALLOW VERY LOOSE FINE SAND SOILS, AND TO PREPARE THE EXCAVATED SURFACE FOR THE ADDITION OF THE FILL SOILS. EACH PASS SHOULD OVERLAP THE PRECEDING PASS BY 30% TO INSURE COMPLETE COVERAGE. IF DEEMED NECESSARY, IN AREAS THAT CONTINUE TO YIELD, REMOVE ALL DELETERIOUS MATERIALS AS INDICATED BY ENGINEER PERSONNEL AND REPLACE WITH A CLEAN COMPACTED SAND BACKFILL. THE PROOF-ROLLING SHOULD OCCUR AFTER STRIPPING AND BEFORE FILLING.
- CONTINUE COMPACTION EFFORTS UNTIL A SOIL DENSITY OF AT LEAST 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D 1557) IS ACHIEVED TO A DEPTH OF 12" BELOW THE STRIPPED SURFACE, INCLUDING THE FIVE FEET MARGIN. (DEPENDENT ON WEATHER CONDITIONS OR OTHER FACTORS, THE ADDITION OR DRAINAGE OF WATER MAY BE NECESSARY TO AID COMPACTION EFFORTS. ADDITIONAL PASSES AND/OR OVER-EXCAVATION AND RE-COMPACTION MAY BE NECESSARY IF THESE MINIMUM DENSITY REQUIREMENTS ARE NOT ACHIEVED BY THE REQUIRED PROOF-ROLLING).
- FILL TO SUBGRADE LEVEL USING CLEAN SANDS WITH LESS THAN 5% SOIL FINES PASSING THE NO. 200 SIEVE. STRUCTURAL FILL SHOULD BE FREE OF ANY ORGANICS OR OTHER DELETERIOUS MATERIAL. THE FILL SHOULD BE PLACED IN UNIFORM 12" LOOSE LIFTS AND COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DRY DENSITY (AASHTO T-180, ASTM D 1557).
- THE OWNER RESERVES THE RIGHT TO REQUEST FROM THE CONTRACTOR ASPHALTIC CONCRETE SURFACE COURSE MIX CERTIFICATIONS TO ASSURE COMPLIANCE WITH F.D.O.T. SPECIFICATIONS.
- IMPROPER DRAINAGE OF PAVED AREAS AND DRAINAGE SWALES WILL NOT BE ACCEPTED. ANY PONDING OR IMPROPERLY DRAINED AREAS WILL BE COMPLETELY STRIPPED OUT AND RE-GRADED OR RE-PAVED UNTIL ALL DEFECTIVE DRAINAGE IS CORRECTED, AT NO ADDITIONAL COST.
- TRAFFIC CONTROL SIGNAGE SHALL BE ERECTED AND PAVEMENT MARKINGS SHALL BE PAINTED AS REQUIRED BY ORDINANCE AND THE GOVERNING AGENCY'S SPECIFICATIONS. ALL TRAFFIC PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY SHALL BE EXTRUDED ALKYLID BASE THERMOPLASTIC.

DRAINAGE & STRUCTURES

- ALL STORM WATER PIPES SHALL BE REINFORCED CONCRETE PIPE (RCP), CLASS III OR CORRUGATED ALUMINUM PIPE (CAP), RESPECTIVELY, AS NOTED ON THE PLANS, AND IN ACCORDANCE WITH THE SPECIFICATIONS OR APPROVED EQUAL.
- BACKFILL OVER ANY STORM PIPE IS TO BE COMPACTED IN 6" LIFTS MAXIMUM WITH A MECHANICAL TAMPER OR OTHER MEANS ACCEPTABLE TO THE OWNER AND/OR ENGINEER. UNSUITABLY SIZED STONES (REFERENCE AWWA SPECIFICATIONS) SHALL BE REMOVED FROM THE TRENCH FOR A DEPTH OF SIX INCHES BELOW THE BOTTOM OF THE PIPE. COMPACTION SHALL BE TO 95% MODIFIED PROCTOR (98% UNDER EXISTING OR PROPOSED PAVING) IN ACCORDANCE WITH AASHTO T-180. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH COMPACTION TEST RESULTS AT 200' INTERVALS AT HIS EXPENSE.
- INLETS SHALL BE PRE-CAST IN CONFORMANCE WITH F.D.O.T. STANDARD SPECIFICATIONS WITH 28 DAY 4000 PSI CONCRETE.
- ADJUSTMENT OF INLET AND MANHOLE TOPS SHALL BE INCLUDED IN THE CONTRACTOR'S BID. NO CLAIM SHALL BE MADE AGAINST THE OWNER AND/OR ENGINEER IN THE EVENT ADJUSTMENTS ARE NECESSARY.
- ALL CORRUGATED ALUMINUM PIPE (CAP) SHALL BE SPIRAL RIBBED WITH A MANNING'S $n=0.012$.
- ALL POND & SWALE SLOPES OF 5:1 OR GREATER WILL BE SOUDED.

UTILITIES

- ALL POTABLE & RAW WATER PIPING, JOINTING, AND PACKING MATERIALS, INTERNAL COATING AND LININGS, FITTINGS, AND APPURTENANCES USED IN THIS PROJECT SHALL BE IN CONFORMANCE WITH THE CORRESPONDING AWWA STANDARDS AND NSF REQUIREMENTS AS APPLICABLE.
- ALL CONSTRUCTION SHALL COMPLY WITH THE STANDARDS AND SPECIFICATIONS SET FORTH IN THE CONTRACT DOCUMENTS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER AND ENGINEER FOR ALL SEWER AND WATER APPURTENANCES PRIOR TO FABRICATION.
- ALL PIPE AND FITTINGS AS WELL AS SOLDER AND FLUX INSTALLED OR USED IN THE CONSTRUCTION OF THIS PROJECT ARE TO COMPLY WITH 62-555.322 F.A.C. WITH REGARD TO LEAD.
- ALL PVC PIPE 4" - 12" DIAMETER FOR POTABLE WATER MAINS SHALL BE THICKNESS CLASS DR-18 MEETING AWWA C900 AND SHALL BE BLUE OR APPROVED EQUAL. RAW WATER PIPE SHALL BE WHITE WITH BLUE LONGITUDINAL STRIPING AND MARKED "RAW WATER".
- ALL PVC PIPE 3" OR SMALLER FOR WATER MAINS SHALL BE THICKNESS CLASS SUR-21 MEETING ASTM D2421 AND SHALL BE BLUE OR APPROVED EQUAL.
- ALL DIP FOR WATER MAINS SHALL BE PRESSURE CLASS 350 MEETING AWWA C150.
- ALL PVC PIPE FOR GRAVITY SEWER MAINS SHALL BE SUR-35 MEETING ASTM C-76 AND SHALL BE GREEN OR APPROVED EQUAL.
- ALL PVC PIPE FOR SEWER FORCE MAIN SHALL BE AWWA C-900 DR-18 AND SHALL BE GREEN OR APPROVED EQUAL.
- ALL PE PIPE 4" THROUGH 54" DIAMETER SHALL BE AWWA C905, PE-3408, DR-11 OR APPROVED EQUAL. POTABLE & RAW WATER PE PIPE SHALL CONFORM TO AND BEAR THE MARKINGS OF NSF STANDARD 61. PE PIPE SHALL HAVE A COLOR-CODED LONGITUDINAL STRIPE AS FOLLOWS: BLUE FOR POTABLE WATER, WHITE FOR RAW WATER, PURPLE FOR REUSE WATER, AND GREEN FOR WASTEWATER.
- BENDS SHALL BE INSTALLED ON WATER MAINS AS NECESSARY TO AVOID CONFLICT WITH PROPOSED OR EXISTING STRUCTURES AT NO ADDITIONAL COST TO THE OWNER.
- WATER MAIN AND FORCE MAINS SHALL BE INSTALLED WITH 36" MINIMUM COVER AND SHALL BE CONSTRUCTED SO AS TO AVOID EXISTING AND KNOWN FUTURE UTILITY LOCATIONS.
- THE BACKFILL OVER ANY WATER MAIN, FORCE MAIN AND SANITARY SEWER IS TO BE COMPACTED IN 6" LIFTS MAXIMUM WITH A MECHANICAL TAMPER OR OTHER MEANS ACCEPTABLE TO THE OWNER AND/OR ENGINEER. UNSUITABLY SIZED STONES (REFERENCE AWWA SPECIFICATIONS) SHALL BE REMOVED FROM THE TRENCH FOR A DEPTH OF SIX INCHES BELOW THE BOTTOM OF THE PIPE. COMPACTION SHALL BE TO 98% MODIFIED PROCTOR IN ACCORDANCE WITH AASHTO T-180. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH COMPACTION TEST RESULTS AT 200' INTERVALS AT HIS EXPENSE.
- ALL PRESSURE AND BACTERIOLOGICAL TESTING FOR WATER MAINS, TWIN-FILTRATION TESTS FOR GRAVITY SEWER AND PRESSURE TEST FOR FORCE MAINS, SHALL BE COMPLETED AT THE CONTRACTOR'S EXPENSE AND COORDINATED WITH THE OWNER AND ENGINEER. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH ALL TEST RESULTS.
- MAGNETIC IDENTIFICATION TAPE SHALL BE INSTALLED OVER ALL PVC WATER MAINS AND SEWER FORCE MAINS.
- THE OWNER WILL PROVIDE THE CONTRACTOR WITH A BASELINE AND A BENCHMARK FOR THE CONTRACTOR'S USE IN CONSTRUCTING THE SANITARY SEWER AND POTABLE WATER SYSTEM. THE CONTRACTOR SHALL PERFORM, AT HIS OWN EXPENSE, ANY ADDITIONAL SURVEY WORK SUCH AS GRADE STAKES, OFF-SET STAKES AND CUT SHEETS.
- CONTRACTOR SHALL OBTAIN A COPY OF THE F.D.E.P. WATER PERMITS AND PERFORM SAMPLING & TESTING IN CONFORMANCE WITH THE PERMIT CONDITIONS.
- WATER MAINS AND FORCE MAIN SHALL BE FLUSHED AT A MINIMUM VELOCITY OF 2.5 FPS PRIOR TO PRESSURE TESTING AND DISINFECTION.
- THE CONTRACTOR SHALL DISINFECT THE NEW WATER SYSTEM IN CONFORMANCE WITH AWWA C851, C852, AND C853 AS APPLICABLE, EXCEPT THAT BACTERIOLOGICAL EVALUATIONS TO VERIFY PROPER DISINFECTION SHALL BE CONDUCTED IN ACCORDANCE WITH 62-555.340 F.A.C. THE CONTRACTOR SHALL HAVE WATER SAMPLES TESTED AT HIS EXPENSE, WHICH SAMPLES SHALL BE PROVIDED TO THE ENGINEER TO ASSURE OBTAINMENT OF REQUIRED CHLORINE RESIDUALS. FOLLOWING SATISFACTORY CHLORINATION, THE SYSTEM SHALL BE FLUSHED TO ACHIEVE NORMAL CHLORINE RESIDUALS. BACTERIOLOGICAL SAMPLES SHALL BE TAKEN ON TWO (2) CONSECUTIVE DAYS, AT THE CONTRACTOR'S EXPENSE, AND RESULTS SHALL BE PROVIDED TO THE ENGINEER. IF THE SYSTEM PRESSURE DROPS FOLLOWING (2) SUCCESSFUL DISINFECTIONS, THE WATER SYSTEM SHALL BE SUBJECT TO RE-TESTING. TESTING LOCATIONS SHALL BE PER FDEP PERMIT REQUIREMENTS.
- WATER SYSTEM PRESSURE TESTS SHALL BE COMPLETED IN THE PRESENCE OF THE ENGINEER OR HIS REPRESENTATIVE, FOR TWO (2) HOURS IN DURATION OR AS ACCEPTABLE TO THE UTILITY OWNER. AT AN AVERAGE PRESSURE OF 150 PSI, ALLOWABLE LEAKAGE WILL BE COMPUTED BASED ON AWWA C825 FOR PVC PIPE AND AWWA C600 FOR DIP AS FOLLOWS.

$$L = \frac{NDP \cdot 12}{7.400} \quad \text{WHERE: } L = \text{LEAKAGE ALLOWABLE (GPH)}$$

$$N = \text{NUMBER OF PIPE JOINTS}$$

$$D = \text{NOMINAL PIPE DIAMETER (INCHES)}$$

$$P = \text{AVERAGE TEST PRESSURE (PSI GAUGE)}$$

- PRESSURE TESTING OF PE PIPE SHALL COMPLY WITH AWWA MANUAL M55, ASTM F 2184, AND PLASTIC PIPE INSTITUTE (PPI) HANDBOOK OF POLYETHYLENE PIPE. PE PIPE SHALL BE TESTED AFTER INSTALLATION (i.e. DIRECTIONAL BORE), ZERO LEAKAGE WILL BE ALLOWED.
- FORCE MAINS (SANITARY SEWER & RECLAIMED) SHALL BE PRESSURE TESTED THE SAME AS WATER MAINS, EXCEPT THAT TEST PRESSURE SHALL AVERAGE NO LESS THAN 100 PSI.
- USE POTABLE WATER FOR PRESSURE TESTS.
- ALL POTABLE WATER MAINS SHALL BE CONSTRUCTED OF P.V.C. PIPE UNLESS NOTED OTHERWISE.
- GRAVITY SEWER AND MANHOLES SHALL BE CLEANED OF ALL DEBRIS, GRIT AND OTHER MATERIALS FOLLOWING COMPLETION OF THE SYSTEM. THE SYSTEM SHALL BE TESTED BY THE CONTRACTOR, AT HIS EXPENSE, IN THE PRESENCE OF THE ENGINEER. FOR INFILTRATION, INFILTRATION SHALL NOT EXCEED 53 GALLONS/FOOT/INCH DIAMETER/FEET. TELEVISION TESTING FOR ALL GRAVITY SEWERS SHALL ALSO BE REQUIRED.
- ADJUSTMENT OF MANHOLE TOPS SHALL BE INCLUDED IN THE CONTRACTOR'S UNIT PRICE AND NO CLAIM SHALL BE MADE AGAINST THE ENGINEER AND/OR OWNER FOR THESE ADJUSTMENTS, IF REQUIRED.
- LATERALS AND CLEANOUTS SHALL BE INSTALLED AS REQUIRED BY APPLICABLE PLUMBING CODES.
- THE CONTRACTOR SHALL SUPPLY THE OWNER AND ENGINEER WITH TWO COPIES OF AS-COINTEGRATED INFORMATION SHOWING THE CONSTRUCTED LOCATION OF ALL MAINS, FITTINGS, VALVES, LATERALS (AT THE MAIN AND TERMINAL POINT), MANHOLES AND OTHER WATER AND SEWER APPURTENANCES. THE FORMAT SHALL BE APPROVED BY THE OWNER PRIOR TO SUBMISSION.

FDEP SEPARATION NOTES

- FROM 62-555.314, F.A.C.
- HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.
 - NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
 - NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.
 - NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET AND PREFERABLY TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.
 - NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.006(2), F.S., AND RULE 646-6.002, F.A.C.
 - VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, AND RECLAIMED WATER PIPELINES.
 - NEW OR RELOCATED UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
 - NEW OR RELOCATED UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
 - AT THE UTILITY CROSSINGS DESCRIBED IN PARAGRAPHS (A) AND (B) ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY- OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
 - SEPARATION BETWEEN WATER MAINS AND SANITARY OR STORM SEWER MANHOLES.
 - NO WATER MAIN SHALL PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A SANITARY SEWER MANHOLE.
 - EFFECTIVE AUGUST 28, 2003, WATER MAINS SHALL NOT BE CONSTRUCTED OR ALTERED TO PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE OR INLET STRUCTURE, WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THIS REQUIREMENT (I.E., WHERE THERE IS A CONFLICT IN THE ROUTING OF A WATER MAIN AND A STORM SEWER AND WHERE ALTERNATIVE ROUTING OF THE WATER MAIN OR THE STORM SEWER IS NOT TECHNICALLY FEASIBLE OR IS NOT ECONOMICALLY SENSIBLE). THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THIS REQUIREMENT (I.E., THE DEPARTMENT SHALL ALLOW CONSTRUCTION OF CONFLICT MANHOLES), BUT SUPPLIES OF WATER OR PERSONS PROPOSING TO CONSTRUCT CONFLICT MANHOLES MUST FIRST OBTAIN A SPECIFIC PERMIT FROM THE DEPARTMENT IN ACCORDANCE WITH PART V OF THIS CHAPTER AND MUST PROVIDE IN THE PRELIMINARY DESIGN REPORT OR DRAWINGS, SPECIFICATIONS, AND DESIGN DATA ACCOMPANYING THEIR PERMIT APPLICATION THE FOLLOWING INFORMATION:
 - TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH CONFLICT MANHOLE.
 - A STATEMENT IDENTIFYING THE PARTY RESPONSIBLE FOR MAINTAINING EACH CONFLICT MANHOLE.
 - ASSURANCE OF COMPLIANCE WITH THE DESIGN AND CONSTRUCTION REQUIREMENTS IN SUB-SUBPARAGRAPHS A THROUGH D BELOW.
 - EACH WATER MAIN PASSING THROUGH A CONFLICT MANHOLE SHALL HAVE A FLEXIBLE, WATER-TIGHT JOINT ON EACH SIDE OF THE MANHOLE TO ACCOMMODATE DIFFERENTIAL SETTLING BETWEEN THE MAIN AND THE MANHOLE.
 - WITHIN EACH CONFLICT MANHOLE, THE WATER MAIN PASSING THROUGH THE MANHOLE SHALL BE INSTALLED IN A WATER-TIGHT CASING PIPE HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE).
 - EACH CONFLICT MANHOLE SHALL HAVE AN ACCESS OPENING, AND SHALL BE SIZED, TO ALLOW FOR EASY CLEANING OF THE MANHOLE.
 - GRATINGS SHALL BE INSTALLED AT ALL STORM SEWER INLETS UPSTREAM OF EACH CONFLICT MANHOLE TO PREVENT LARGE OBJECTS FROM ENTERING THE MANHOLE.
 - SEPARATION BETWEEN FIRE HYDRANT DRAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS. NEW OR RELOCATED FIRE HYDRANTS WITH UNDERGROUND DRAINS SHALL BE LOCATED SO THAT THE DRAINS ARE AT LEAST THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AT LEAST THREE FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER AT LEAST SIX FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AND AT LEAST TEN FEET FROM ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.006(2), F.S., AND RULE 646-6.002, F.A.C.
 - IN THE EVENT THAT FDEP AND LOCAL UTILITY STANDARDS CONFLICT, THE MORE STRINGENT STANDARD SHALL APPLY.

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CONSTRUCTION NOTES

HOBART PARK

BASEBALL FIELD IMPROVEMENTS

FLORIDA

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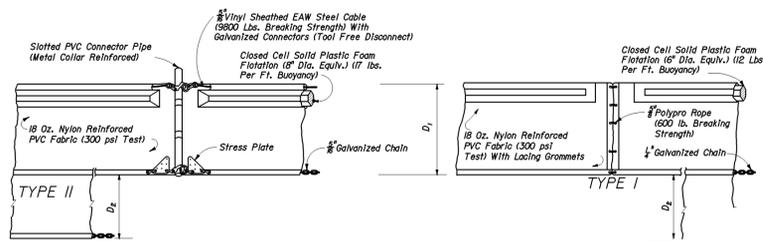
MASTELLER & MOLER, INC.

CONSULTING ENGINEERS
1655 27th STREET, SUITE #2, VERO BEACH, FLORIDA, 32960
(772) 567-5300 / FAX (772) 794-1106
CERTIFICATE OF AUTHORIZATION NUMBER 4204

INDIAN RIVER COUNTY

NO.	DATE	DESCRIPTION	DR/APP
2.	6/11/18	REVISED PER IRC TRC COMMENT LETTER OF 6/14/18	SH/SEM
1.	5/10/18	REVISED PER IRC PRE-APP COMMENTS	SH/SEM
REVISIONS			

DRAWN	SH
DESIGNED	SH
CHECKED	SEM
DATE	3/18
SCALE	NTS
SHEET	2 OF 15
PROJECT NO.	1756

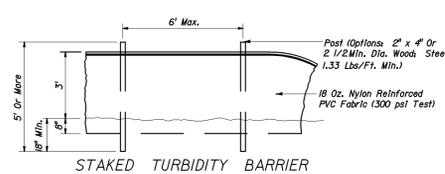


NOTICE: COMPONENTS OF TYPES I AND II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.

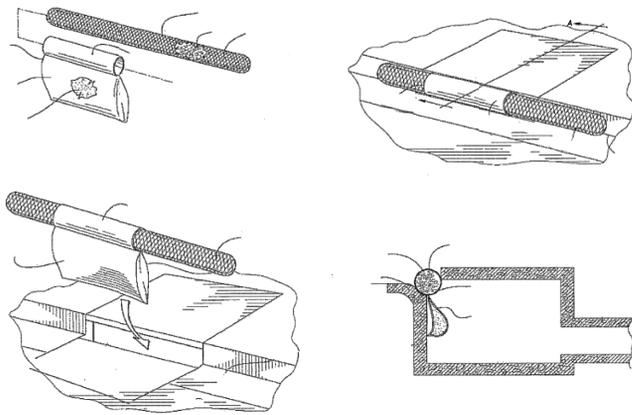
FLOATING TURBIDITY BARRIERS

NOTES:

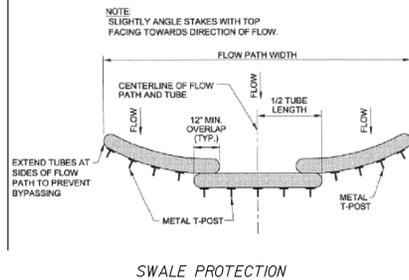
1. Turbidity barriers are to be used in all permanent bodies of water regardless of water depth.
2. Number and spacing of anchors dependent on current velocities.
3. Deployment of barrier around pile locations may vary to accommodate construction operations.
4. Navigation may require segmenting barrier during construction operations.
5. For additional information see Section 104 of the Standard Specifications.



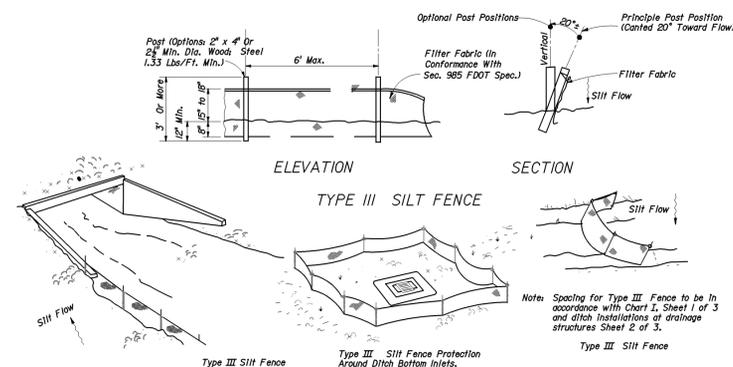
STAKED TURBIDITY BARRIER



STORM INLET PROTECTION



SWALE PROTECTION



SILT FENCE APPLICATIONS

NPDES NOTES

NOTICE TO CONTRACTORS: THIS PROJECT IS REQUIRED TO COMPLY WITH THE REQUIREMENTS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) AS ADMINISTERED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP).

THE CONTRACTOR SHALL THEREFORE COMPLY WITH THE REQUIREMENTS OF FDEP'S "GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES" PER FDEP DOCUMENT NUMBER 62-621.300(4) (A). IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL AND MAINTAIN BMP'S AT THE SITE IN ACCORDANCE WITH THE CONDITIONS OF THE "GENERIC PERMIT". THE CONTRACTOR SHALL BE CONSIDERED TO BE THE "OPERATOR" AS DEFINED HEREIN.

THE OPERATOR IS DEFINED AS: THE LEGAL ENTITY THAT OWNS OR OPERATES THE CONSTRUCTION ACTIVITY AND THAT HAS THE AUTHORITY TO CONTROL THOSE ACTIVITIES AT THE PROJECT NECESSARY TO ENSURE COMPLIANCE WITH THE TERMS AND CONDITIONS OF THE PERMIT. THE OPERATOR'S RESPONSIBILITIES ARE AS A MINIMUM AS FOLLOWS:

1. PREPARE STORMWATER POLLUTION PREVENTION PLAN AND MAINTAIN THE SITE IN ACCORDANCE WITH THAT PLAN.
2. FILE A "NOTICE OF INTENT", (DEP FORM 62-621.300(4) (D)), INCLUDING APPLICABLE PERMIT PROCESSING FEES 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION. A COPY OF THE "NOI" OR A LETTER FROM THE FDEP CONFIRMING COVERAGE UNDER THE PERMIT SHALL BE POSTED ON SITE FOR PUBLIC VIEWING.
3. PROVIDE A "QUALIFIED INSPECTOR" TO PERFORM THE REQUIRED INSPECTIONS IN ACCORDANCE WITH THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES, DEP DOC #62-621(4) (A).

4. BEFORE CONDUCTING ANY PROJECT ACTIVITIES THE OPERATOR AND ALL SUBCONTRACTORS SHALL SIGN AND PROVIDE TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, THE OWNER/DEVELOPER AND THE ENGINEER A COPY OF THE FOLLOWING:

"I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND AND SHALL COMPLY WITH THE TERMS AND CONDITIONS OF THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES (FDEP DOC #62-621.300(4) (A)) AND THE STORM WATER POLLUTION PREVENTION PLAN."

THE CERTIFICATION MUST INCLUDE THE NAME AND TITLE OF THE PERSON PROVIDING THE SIGNATURE, THE NAME, ADDRESS, AND TELEPHONE NUMBER OF THE CONTACTING FIRM, AND THE DATE THE CERTIFICATION IS MADE.

5. WITHIN 14 DAYS OF A DIFFERENT OPERATOR TAKING RESPONSIBILITY OF THE CONSTRUCTION ACTIVITIES A "NOTICE OF TERMINATION" (DEP FORM 62-621.300(6)) SHALL BE SUBMITTED. IF A "N.O.T." IS SUBMITTED DUE TO A CHANGE OF OPERATOR, WITHIN 48 HOURS BEFORE ASSUMING CONTROL OF THE CONSTRUCTIONS ACTIVITIES, THE NEW OPERATOR SHALL FILE A SIGNED "N.O.I." IN ACCORDANCE WITH THIS PERMIT.

6. WITHIN 14 DAYS OF THE FINAL STABILIZATION OF THE SITE, OPERATOR SHALL FILE A "NOTICE OF TERMINATION" (DEP FORM 62-621.300(6)), TO THE F.D.E.P. WITH COPIES TO THE OWNER AND ENGINEER.

EROSION CONTROL NOTES

1. CONTRACTOR SHALL OBTAIN FDEP NPDES (NOI) PERMIT. PROOF OF NOI SHALL BE PROVIDED TO ENGINEER PRIOR TO PRE-CONSTRUCTION MEETING.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION CONTROL USING BEST MANAGEMENT PRACTICES FOR THE DURATION OF THE PROJECT UNTIL SUCH TIME AS THE PROJECT HAS BEEN CERTIFIED AS COMPLETE.
3. ATTENTION IS DIRECTED TO THE FACT THAT BMP'S ARE PERFORMANCE-BASED. IN THE EVENT THAT INSTALLED BMP'S FAIL TO CONTROL EROSION AND/OR STORM - WATER POLLUTION ADDITIONAL BMP'S MAY BE REQUIRED.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR NPDES PERMITTING, INSPECTION, REPORTING, AND COMPLIANCE.
5. THE CONTRACTOR SHALL SOO ALL OPEN SPACE AREAS TO BE GRASSED IMMEDIATELY FOLLOWING FINAL GRADING AND COMPLETION OF ALL UNDERGROUND UTILITIES. HYDROSEED & MULCH MAY BE APPLIED IF APPROVED BY THE ENGINEER.
6. SILT FENCE SHALL BE INSTALLED ALONG LIMITS OF CONSTRUCTION.
7. SILT FENCES SHALL BE INSPECTED AFTER EACH RAINFALL AND REPAIRED IMMEDIATELY IF DAMAGED.
8. ALL SIDE SLOPES OF STORMWATER MANAGEMENT AREAS SHALL BE SODDON ON COMPLETION OF FINAL GRADING.
9. ALL INLETS SHALL BE PROTECTED FROM COLLECTION OF ERODED MATERIALS BY INSTALLATION OF TEMPORARY FILTER FABRIC AND/OR HAY BALES.
10. FLOATING TURBIDITY BARRIERS SHALL BE INSTALLED WITHIN ALL WATER BODIES DOWNSTREAM OF CONSTRUCTION ACTIVITIES WHERE TURBID WATERS DISCHARGE MAY OCCUR.
11. THE CONTRACTOR SHALL PROVIDE DUST CONTROL, SUCH AS AN ONSITE WATER TRUCK.

LAND CLEARING AND ENVIRONMENTAL NOTES

GRUBBING, TREE REMOVAL AND LAND CLEARING SHALL BE CONDUCTED UNDER THE PROJECT'S ENVIRONMENTAL RESOURCE PERMIT AND IRC LAND CLEARING & TREE REMOVAL PERMIT. THE CONTRACTOR SHALL MAINTAIN A COPY OF THE PERMITS AT THE SITE DURING LAND CLEARING AND TREE REMOVAL OPERATIONS.

PRIOR TO COMMENCING LAND CLEARING OPERATIONS THE ENGINEER, OWNER, AND CONTRACTOR SHALL INSPECT THE SITE TO IDENTIFY PRESERVATION TREES AND OTHER RESOURCES. CONTRACTOR SHALL INSTALL BMP'S PRIOR TO COMMENCEMENT.

PROTECTED/LISTED SPECIES
PRIOR TO COMMENCEMENT OF LAND CLEARING THE OWNER SHALL CONDUCT A LISTED SPECIES SURVEY AND REMOVE ANY LISTED SPECIES FROM THE CONSTRUCTION AREA. THE CONTRACTOR SHALL COMPLY WITH THE CONDITIONS OF ALL ENVIRONMENTAL PERMITS.

IF PROTECTED/LISTED SPECIES ARE ENCOUNTERED IN THE DEVELOPMENT AREA AT ANY TIME DURING CONSTRUCTION THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.

PRESERVATION TREES
EXISTING NATIVE VEGETATION TO BE SAVED IS INTENDED TO BE INCORPORATED INTO THE LANDSCAPE PLAN. PROTECTIVE BARRIERS SHALL BE INSTALLED PRIOR TO LAND CLEARING TO PREVENT DAMAGE TO VEGETATION TO BE SAVED.

SPECIMEN TREES
SPECIMEN TREES (IE: LARGE OAK TREES, ETC) SHALL NOT BE DISTURBED OR DAMAGED. CONTRACTOR SHALL BE LIABLE FOR FINES, MITIGATION AND OTHER PENALTIES INCURRED BY DAMAGE TO SPECIMEN TREES.

PROHIBITED AND UNDESIRABLE EXOTIC VEGETATION
ALL PROHIBITED AND UNDESIRABLE EXOTIC VEGETATION MUST BE REMOVED AT THE TIME OF CLEARING. PROHIBITED AND UNDESIRABLE EXOTIC VEGETATION SHALL NOT BE USED TO MEET THE TREE OR LANDSCAPING REQUIREMENTS OF THE LAND DEVELOPMENT CODE.

STORMWATER POLLUTION PREVENTION PLAN

Nature of Construction Activity: CONSTRUCT BASEBALL/SOFTBALL FIELDS, CONCESSIONS, DUGOUTS/BLEACHERS, PAVEMENT, UTILITIES, AND DRY RETENTION POND

Sequence of Construction Events:

1. Install silt fence and other erosion control devices.
2. Clear and grub site.
3. Rough grading.
4. Construct stormwater management system.
5. Construct underground utilities.
6. Construct paved areas and structures
7. Final grading/landscaping

Total Area of the Site: 22.73 acres

Area to be Disturbed: 14.21 acres

Soil Description: Pomello Sand
EauGallie Fine Sand
Myakka-Myakka Wet, Fine Sands

Drainage Area Size: 14.21 acres

Best Management Practices (BMP's)

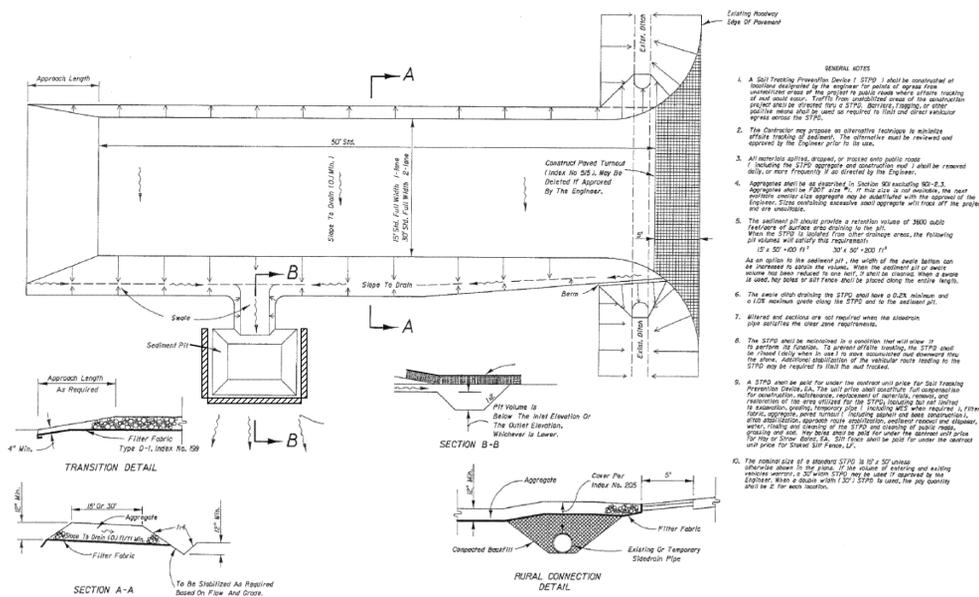
Silt fence, Inlet protection.
Construction sequence minimizes time for potential erosion, gravel entrance limits soil on adjacent paved roadways.

Potential Pollutants: Portable toilet chemicals will be properly handled and disposed.

Inspections: Site will be inspected for erosion problems daily and after each rainfall event greater than 0.5 inches. A rain gage shall be installed on site to monitor rainfall.

Contractor is responsible for installing additional erosion control as necessary to meet State and Local requirements.

Operator/Responsible Authority: CONTRACTOR (T.B.D.)



- GENERAL NOTES
1. A Silt Fencing Prevention Device (SFD) shall be constructed of heavy polypropylene. The engineer or owner shall determine the location of the SFD in relation to the site. The SFD shall be installed in a location that will prevent erosion and sediment from leaving the site. The SFD shall be installed in a location that will prevent erosion and sediment from leaving the site.
 2. The Contractor may process an alternative technique to achieve effective trapping of sediment. The alternative must be reviewed and approved by the Engineer prior to its use.
 3. All materials, during, storage, or transfer into public roads including the SFD, shall be covered with a tarp or other material that will prevent erosion and sediment from leaving the site.
 4. Appropriate shall be placed in the SFD. The SFD shall be installed in a location that will prevent erosion and sediment from leaving the site. The SFD shall be installed in a location that will prevent erosion and sediment from leaving the site.
 5. The sediment pit shall provide a retention volume of 3600 cubic feet of sediment. The retention volume shall be calculated as follows: $V = 30' \times 30' \times 400' = 3,600,000 \text{ cu ft}$. The retention volume shall be calculated as follows: $V = 30' \times 30' \times 400' = 3,600,000 \text{ cu ft}$.
 6. The sediment pit shall be installed in a location that will prevent erosion and sediment from leaving the site. The sediment pit shall be installed in a location that will prevent erosion and sediment from leaving the site.
 7. Allered and sections are not required when the alternative is used.
 8. The SFD shall be installed in a location that will prevent erosion and sediment from leaving the site. The SFD shall be installed in a location that will prevent erosion and sediment from leaving the site.
 9. A SFD shall be used for the entire site. The SFD shall be used for the entire site. The SFD shall be used for the entire site.
 10. The retention volume of a sediment SFD is 3600 cubic feet. The retention volume of a sediment SFD is 3600 cubic feet.

STORMWATER POLLUTION PREVENTION PLAN

M MASTELLER & MOLER, INC.
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CERTIFICATE OF AUTHORIZATION NUMBER 4204

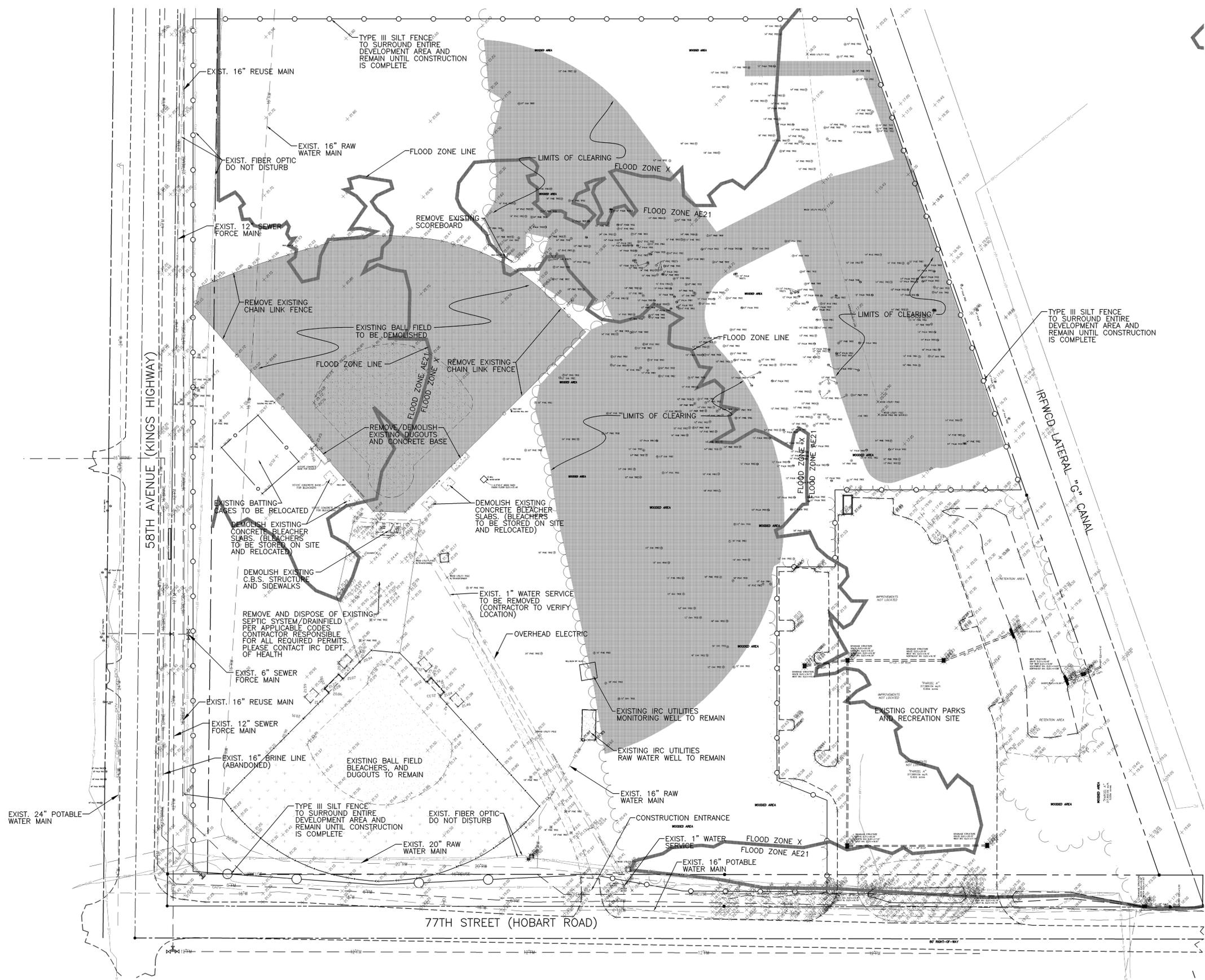
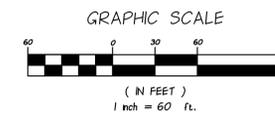
HOBART PARK
BASEBALL FIELD IMPROVEMENTS

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STEPHEN E. MOLER, P.E. FL#33193

DRAWN	SH
DESIGNED	SH
CHECKED	SEM
DATE	3/18
SCALE	NTS
SHEET	3 OF 15
PROJECT NO.	1756

NO.	DATE	DESCRIPTION	DR/APP
I.	5/10/18	REVISED PER IRC PRE-APP COMMENTS	SH/SEM
REVISIONS			



EXISTING CONDITIONS, DEMOLITION, & CLEARING PLAN

NO.	DATE	DESCRIPTION	DR/APP
4.	8/28/18	REVISED PER IRC COMMENTS EMAILED ON 7/31/18	SH/SEM
3.	7/31/18	REVISED PER IRC COMMENT LETTERS OF 6/20 & 6/30/18	SH/SEM
2.	6/11/18	REVISED PER IRC TRC COMMENT LETTER OF 6/14/18	SH/SEM
1.	5/10/18	REVISED PER IRC PRE-APP COMMENTS	SH/SEM

REVISIONS

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HOBART PARK

BASEBALL FIELD IMPROVEMENTS

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DATE	11/17
SCALE	1"=60'
SHEET	4 OF 15
PROJECT NO.	1756

STEPHEN E. MOLER, P.E. FL#33193

INDIAN RIVER COUNTY

FLORIDA

SITE DATA

Owner / Applicant
 INDIAN RIVER COUNTY
 1801 27th STREET
 VERO BEACH, FL 32960
 TEL: (772) 567-8000

Engineer
 MASTELLER & MOLER, INC.
 1655 27th STREET, SUITE 2
 VERO BEACH, FL 32960
 TEL: (772) 567-5300

Surveyor
 INDIAN RIVER COUNTY
 1801 27th STREET
 VERO BEACH, FL 32960
 TEL: (772) 226-1220

Construction Schedule
 START DATE: September 2018
 FINISH DATE: December 2018

Site Information
 SITE ADDRESS: 5790 7th STREET
 VERO BEACH, FL 32967
 TAX ID #: 31 39 33 00000 5000 00003.0

PARCEL AREA: 84.52 AC
 SITE AREA: 27.73 AC
 LESS UNDISTURBED NORTH AREA: 5.49 AC
 LESS UNDISTURBED SOUTH AREA: 8.03 AC
 EXIST. PARKS & REC. SITE:
 DEVELOPMENT AREA: =14.21 AC

PROPOSED USE: PARK
 EXISTING ZONING: A-1 (22.04 ACRES) RS-6 (5.69 ACRES)
 FUTURE LAND USE: REC REC

EXISTING SOILS:
 EAUGALLIE FINE SAND
 MYAKKAHMYAKKA, VET. FINE SAND
 QUARTZIP/SAMMENTS
 EAUGALLIE FINE SAND
 POMELLO SAND

FEMA FLOOD ZONE: ZONE X and ZONE "AE 21" Ref. FIRM 12061C0087F DATED 12/4/12 (AREA CURRENTLY IN DISPUTE)

POTABLE WATER: INDIAN RIVER COUNTY UTILITIES
 WASTEWATER: INDIAN RIVER COUNTY UTILITIES

LEGAL DESCRIPTION: (See Survey for Full Legal Description of Parcels)

Zoning Criteria (A-1)

REQUIRED	PROPOSED	REQUIRED	PROPOSED
DENSITY (MAX): 0.2 U./AC	N/A	DENSITY (MAX): 6 U./AC	N/A
LOT SIZE (MIN): 200,000 SF	958,532 SF	LOT SIZE (MIN): 7,000 SF	247,967 SF
LOT WIDTH: 157'	463.51'	LOT WIDTH: 70'	310.57'
FRONT YARD SETBACK: 30'	30'	FRONT YARD SETBACK: 23'	23'
SIDE YARD SETBACK: 30'	30'	SIDE YARD SETBACK: 10'	10'
REAR YARD SETBACK: 30'	30'	REAR YARD SETBACK: 20'	20'
BUILDING HEIGHT: 35' (MAX)	9'4"	BUILDING HEIGHT: 35' (MAX)	N/A
BUILDING COVERAGE: 20% (MAX)	0.06%	BUILDING COVERAGE: 30% (MAX)	N/A
OPEN SPACE: 60%	88.0%	OPEN SPACE: 40%	99.57%

Zoning Criteria (RS-6)

REQUIRED	PROPOSED
DENSITY (MAX): 0.2 U./AC	N/A
LOT SIZE (MIN): 200,000 SF	958,532 SF
LOT WIDTH: 157'	463.51'
FRONT YARD SETBACK: 30'	30'
SIDE YARD SETBACK: 30'	30'
REAR YARD SETBACK: 30'	30'
BUILDING HEIGHT: 35' (MAX)	9'4"
BUILDING COVERAGE: 20% (MAX)	0.06%
OPEN SPACE: 60%	88.0%

Open Space Computations

Required: A-1 ZONING: 22.04 Acres X 60% = 13.22 Acres
 RS-6 ZONING: 5.69 Acres X 25% = 1.42 Acres

Proposed: A-1 ZONING: 19.31 Acres = 87.6%
 RS-6 ZONING: 5.69 Acres = 99.6%

Total Site Improvements Coverage Summary (Includes Exist. Parks / Rec Development)

EXISTING	PROPOSED	TOTAL
SITE AREA: 1,207,869 SF	27.73 AC (100%)	
EXISTING BUILDING AREA: 3,513 SF	0.13 AC (0.46%)	
EXISTING CONCRETE / PAVED AREA: 74,952 SF	1.72 AC (6.21%)	
PROPOSED BUILDING FLOOR AREA: 1,056 SF	0.02 AC (0.09%)	
PROPOSED PAVING & CONCRETE: 39,472 SF	0.91 AC (3.27%)	
EXISTING BUILDING CONCRETE TO BE REMOVED: 1,988 SF	0.05 AC (0.16%)	
TOTAL IMPERVIOUS: 119,009 SF	2.73 AC (9.85%)	

Development Area Improvements Coverage Summary

EXISTING	PROPOSED	TOTAL
DEVELOPMENT AREA: 819,081 SF	14.21 AC	
BUILDING FLOOR AREA: 1,056 SF	0.02 AC	
PAVING & CONCRETE: 39,472 SF	0.91 AC	
EXISTING BUILDING CONCRETE TO BE REMOVED: 1,988 SF	0.05 AC	
TOTAL IMPERVIOUS: 39,540 SF	0.89 AC	

Parking Calculations

Required: STADIUMS: ONE (1) SPACE PER THREE (3) SEATS OF THE SEATING CAPACITY = 300 SEATS X 1 SPACE / 3 SEATS = 100 SPACES

Required: PUBLIC PARKS: TWO (2) SPACES PER ACRE OF REMAINING AVAILABLE OPEN SPACE = 1.39 AC X 2 SPACES = 3 SPACES

Required: PUBLIC PARKS: ONE (1) SPACE PER 300 SF OF GROSS BUILDING AREA = 1,056 X 1 SPACES / 300 = 4 SPACES

Required Total: 107 SPACES

Proposed: STANDARD PAVED = 42
 HANDICAP PAVED = 8
 STANDARD GRASS = 50
 TOTAL = 100

* AS NO MORE THAN ONE BALL FIELD WILL BE USED AT ONE TIME, PARKING WAS BASED ON SEATING CAPACITY FOR THE LARGEST STADIUM

- Site Plan Notes:**
- NO WETLANDS EXIST WITHIN DEVELOPMENT AREA.
 - ALL OUTDOOR LIGHTING SHALL BE SHIELDED FROM ADJACENT PROPERTIES AND ROADWAYS.
 - ALL NUISANCE EXOTIC VEGETATION SHALL BE REMOVED IN CONJUNCTION WITH SITE DEVELOPMENT.
 - SURVEY DATA IS PROVIDED BY INDIAN RIVER COUNTY.
 - CONTRACTOR SHALL COORDINATE WITH IRC TELECOMMUNICATIONS (772-226-1318) DIVISION TO LOCATE AND MARK EXISTING IRC FIBER-OPTIC CABLE PRIOR TO CONSTRUCTION.
 - STREET DESIGNATION SIGNS SHALL BE 6" IN HEIGHT WITH 6" LETTERS.
- General Notes:**
- ALL SOLID NON BREAKAWAY OBJECTS (RAILINGS, POSTS/COLUMNS, BOLLARDS, LIGHT POLES, ETC.) ALONGSIDE INTERIOR STREETS AND DRIVING AISLES, SHALL BE LOCATED OUTSIDE THE CLEAR ZONE. FOR STREETS/DRIVING AISLES WITH A DESIGN SPEED OF 45 MPH AND AN ADT 1500, THE MINIMUM CLEAR ZONE IS 11 FEET FROM THE EDGE OF THE OUTSIDE MOTOR VEHICULAR TRAVELED WAY. THIS APPLIES TO PUBLIC AND PRIVATE PROPERTY.
 - ALL SOLID NON BREAKAWAY OBJECTS (RAILINGS, POSTS/COLUMNS, BOLLARDS, LIGHT POLES, ETC.) ALONGSIDE INTERIOR STREETS AND DRIVING AISLES, SHALL BE LOCATED OUTSIDE THE CLEAR ZONE. FOR STREETS/DRIVING AISLES WITH A DESIGN SPEED OF 25 MPH OR LESS, THE MINIMUM CLEAR ZONE IS 15 FEET FROM THE FACE OF CURB (TYPE D OR F) OR 6 FEET FROM THE EDGE OF THE TRAVEL LANE. THIS APPLIES TO PUBLIC AND PRIVATE PROPERTY.

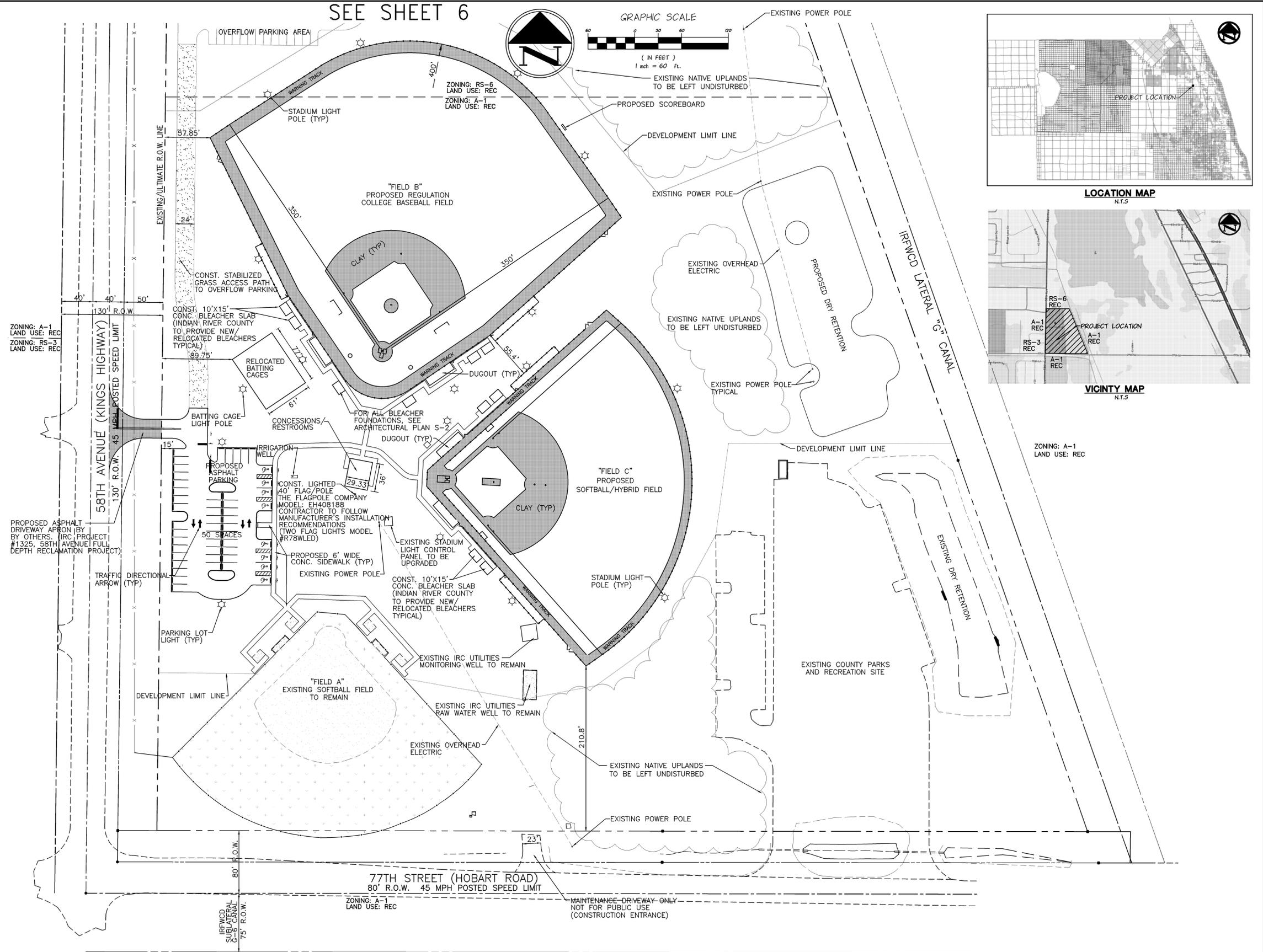
- Specific Land Use Criteria:**
- NO OFF-STREET PARKING OR LOADING AREAS OF BUILDINGS AND STRUCTURES ARE DESIGNED BE LOCATED CLOSER THAN 20' TO ANY PROPERTY LINE ADJUTING A RESIDENTIALLY DESIGNATED DISTRICT. (NOT APPLICABLE TO THIS PROJECT AS ALL PROPERTY LINES ADJUT EITHER CANAL OR ROAD RIGHTS-OF-WAY.)
 - ANY RECREATIONAL USE IS EQUIPPED WITH LIGHTING TO ALLOW THE USE OF THE FACILITY AFTER SUNSET AND IS DESIGNED SUCH THAT:
 - ALL LIGHTS DEPICTED ARE SHIELDED FROM SHINING INTO RESIDENTIALLY DESIGNATED ADJACENT PROPERTIES; (OUTDOOR LIGHTING FOR THIS PROJECT HAS BEEN DESIGNED SO THAT LIGHTING WILL BE SHIELDED AND DIRECTED AWAY FROM ANY RESIDENTIALLY DESIGNATED AREAS AS DEPICTED ON THE ILLUMINATION GRID SUMMARY PROVIDED BY MUSD. LIGHTING FIXTURES, LIGHT POLES, LAMP STYLES, AND SHIELDS ARE SUBMITTED SEPARATELY.)
 - HOURS OF OPERATION AND/OR SPECIAL DESIGN TECHNIQUES ARE TO BE USED TO MITIGATE NOISE IMPACTS, ESPECIALLY DURING EVENING AND NIGHT TIME HOURS. (THIS IS AN BASEBALL / SOFTBALL PARK WITH AN EXISTING PRESSBOX. THE NEW PRESSBOX SHALL BE OVER 700 FEET AWAY FROM THE NEAREST RESIDENCE AND PRESSBOX SPEAKERS WILL BE DIRECTED AWAY FROM THAT AREA.)
 - BUFFERING OF THE PROJECT SHALL BE SUFFICIENT TO NOT ADVERSELY AFFECT ADJACENT PROPERTY. (THIS IS AN EXISTING BASEBALL / SOFTBALL PARK WITH NO EXISTING SIGNIFICANT LANDSCAPE BUFFERING. THE DESIGN OF THE PROJECT IMPROVEMENTS INCLUDES LANDSCAPE BUFFERING PER IRC CODE WHICH IS EXPECTED TO IMPROVE THE SITE BUFFERING FOR AESTHETICS, LIGHTING, AND NOISE IMPACTS OFFSITE.)

Jurisdictional Permitting Requirements

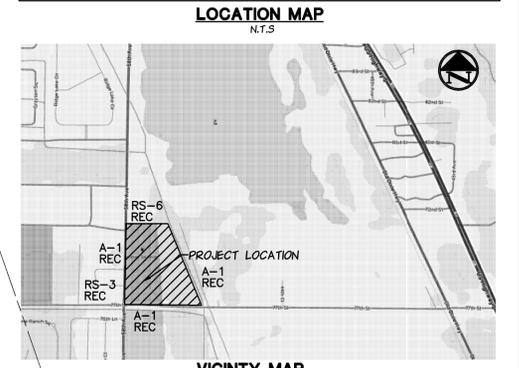
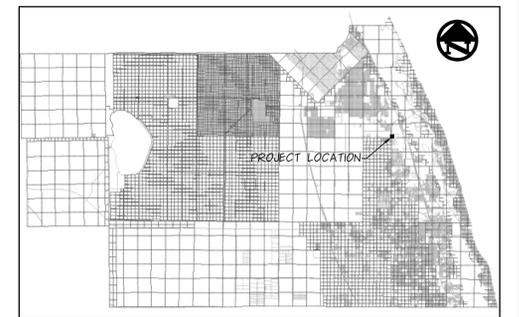
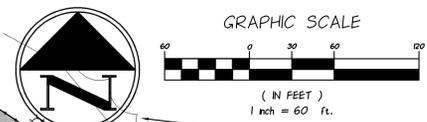
INDIAN RIVER COUNTY:	SITE PLAN APPROVAL
INDIAN RIVER COUNTY:	TYPE "B" STORMWATER PERMIT
INDIAN RIVER COUNTY:	CONCURRENCY CERTIFICATE
INDIAN RIVER COUNTY:	LAND CLEARING
INDIAN RIVER COUNTY:	TREE REMOVAL
INDIAN RIVER COUNTY:	RIGHT OF WAY UTILITIES
INDIAN RIVER COUNTY:	UTILITIES CONSTRUCTION PERMIT
SURVIMD:	ENVIRONMENTAL RESOURCE PERMIT
FCR:	SEWER MAIN EXTENSION GENERAL PERMIT
IRVWCD:	CLAVENT CONNECTION PERMIT

NO.	DATE	DESCRIPTION	DR/APP
4.	8/28/18	REVISED PER IRC COMMENTS EMAILED ON 7/31/18	SH/SEM
3.	7/31/18	REVISED PER IRC COMMENT LETTERS OF 6/20 & 6/30/18	SH/SEM
2.	6/11/18	REVISED PER IRC TRC COMMENT LETTER OF 6/14/18	SH/SEM
1.	5/10/18	REVISED PER IRC PRE-APP COMMENTS	SH/SEM

REVISIONS



SEE SHEET 6



SITE PLAN A

**HOBART PARK
 BASEBALL FIELD IMPROVEMENTS**

M MASTELLER & MOLER, INC.
 CONSULTING ENGINEERS
 1655 27th STREET, SUITE #2, VERO BEACH, FLORIDA, 32960
 (772) 567-5300 / FAX (772) 794-1106
 CERTIFICATE OF AUTHORIZATION NUMBER 4204

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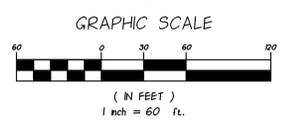
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SHEET	5 of 15
PROJECT NO.	1756

STEPHEN E. MOLER, P.E. FL#33193

INDIAN RIVER COUNTY

FLORIDA



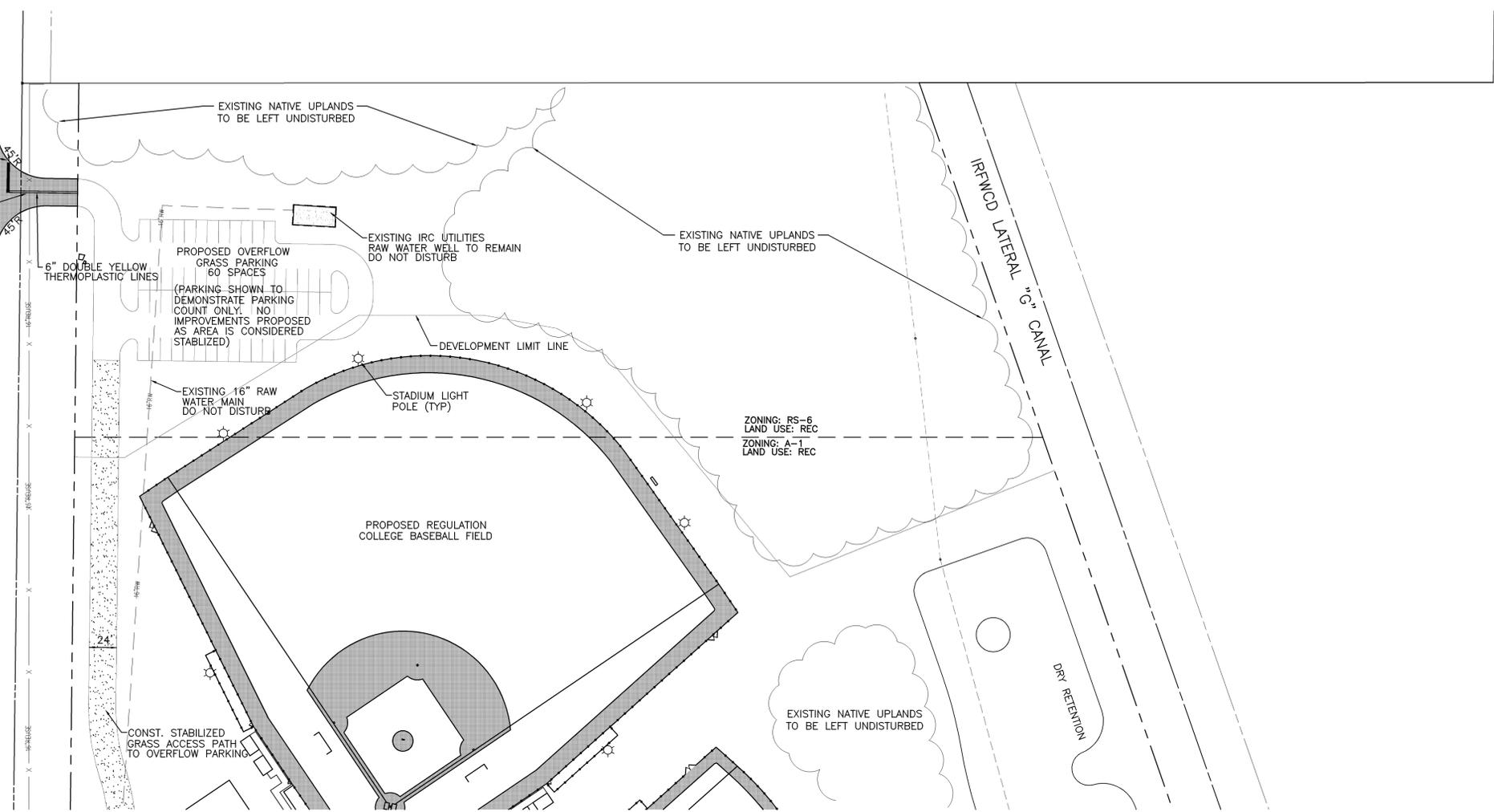
R1-1, 30" STOP SIGN
 W/24" WIDE WHITE
 THERMOPLASTIC STOP BAR

PROPOSED ASPHALT
 DRIVEWAY APRON BY
 OTHERS. (IRC PROJECT
 #1325, 58TH AVENUE FULL
 DEPTH RECLAMATION PROJECT)

58TH AVENUE (KINGS HIGHWAY)
 130' R.O.W. 45 MPH POSTED SPEED LIMIT

ZONING: A-1
 LAND USE: REC

ZONING: RS-3
 LAND USE: REC



SEE SHEET 5

SITE PLAN B

**HOBART PARK
 BASEBALL FIELD IMPROVEMENTS**

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3.	7/31/18	REVISED PER IRC COMMENT LETTERS OF 6/20 & 6/30/18	SH/SEM
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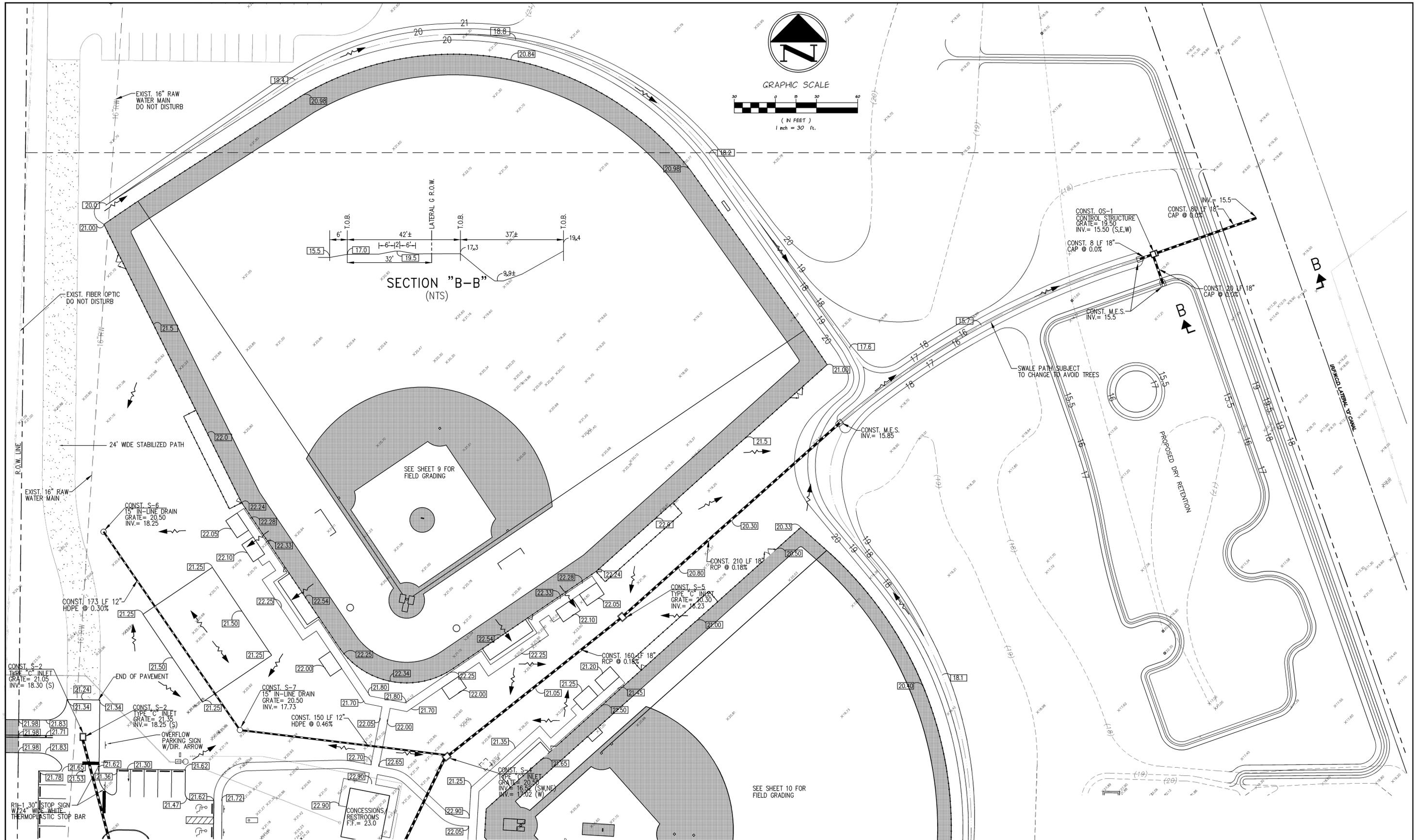
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SEE SHEET 7

SITE GRADING PLAN 'B'

NO.	DATE	DESCRIPTION	DR/APP
4.	8/28/18	REVISED PER IRC COMMENTS EMAILED ON 7/31/18	SH/SEM
3.	7/31/18	REVISED PER IRC COMMENT LETTERS OF 6/20 & 6/30/18	SH/SEM
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HOBART PARK
BASEBALL FIELD IMPROVEMENTS

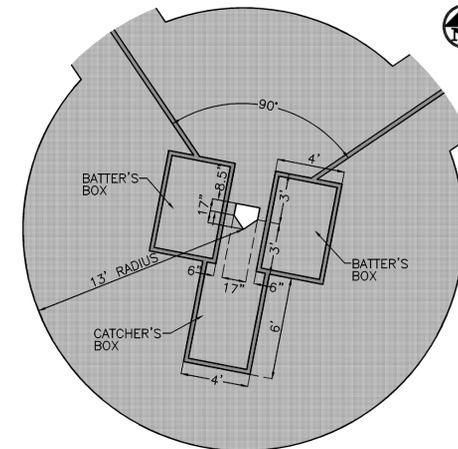
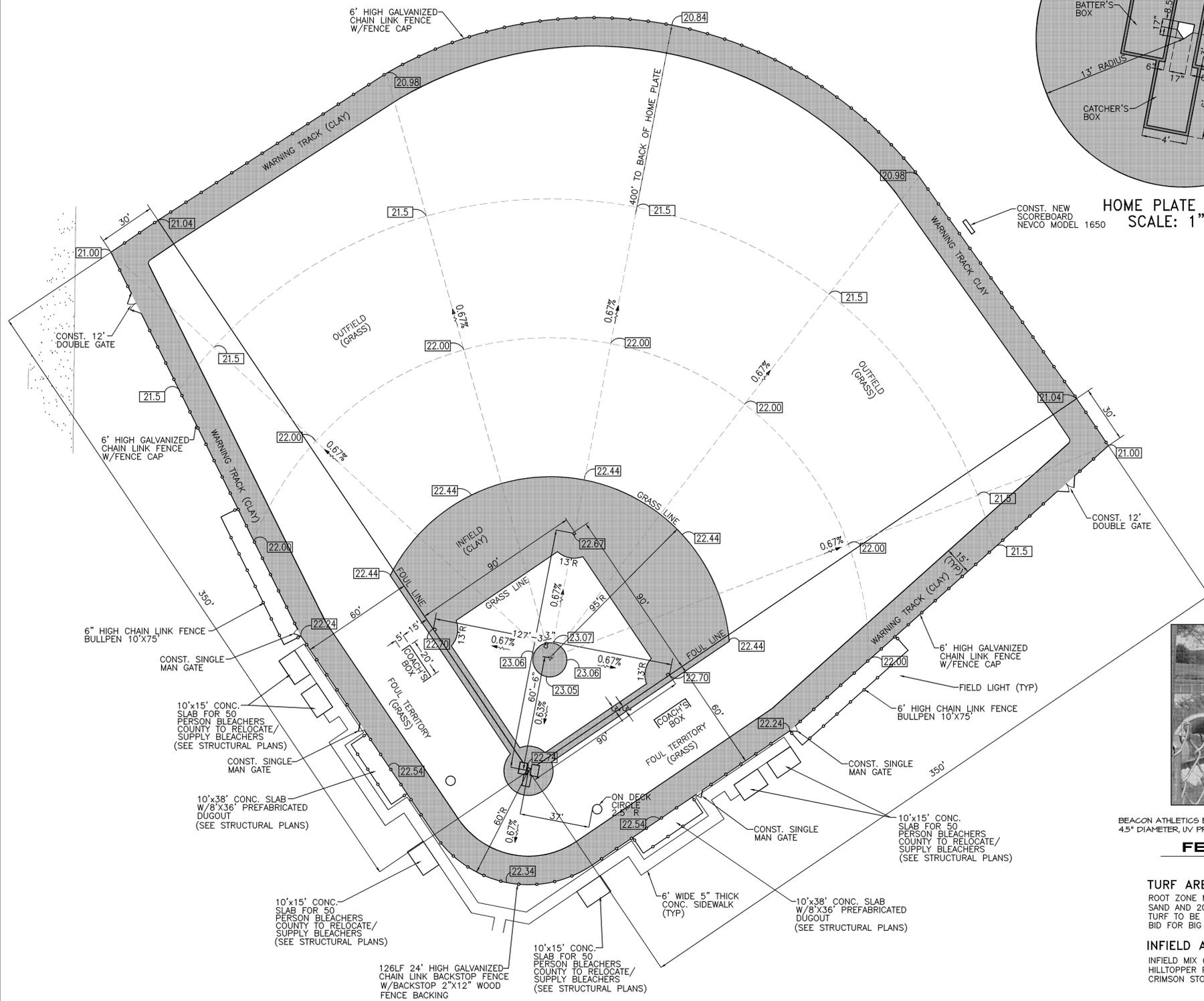
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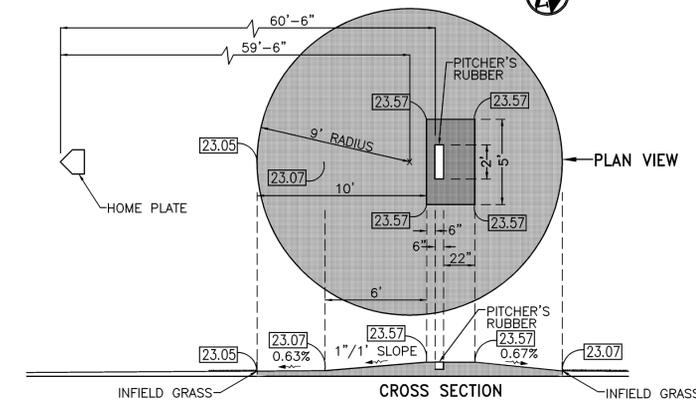
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INDIAN RIVER COUNTY

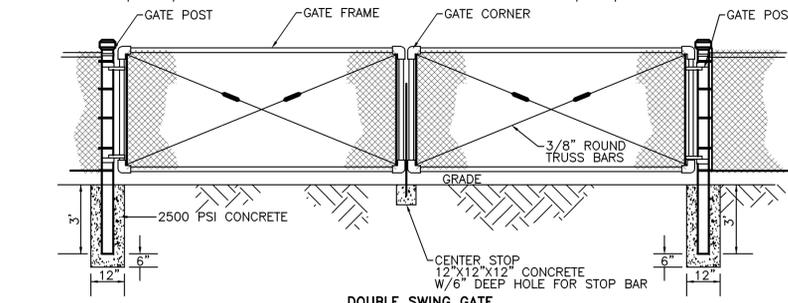
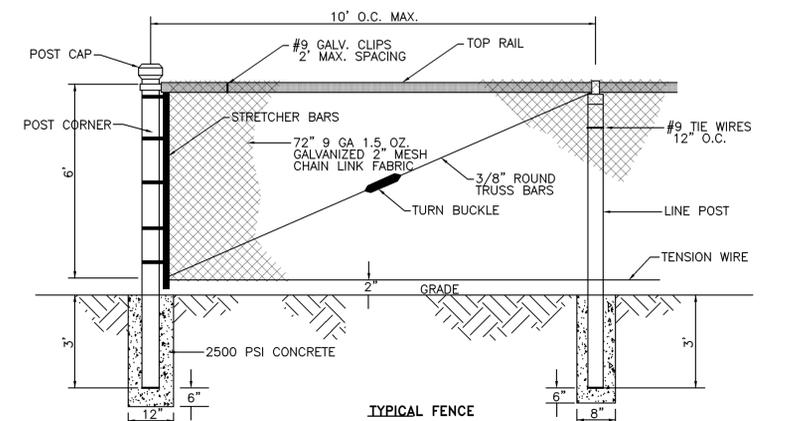
FLORIDA



HOME PLATE DETAILS
SCALE: 1"=5'

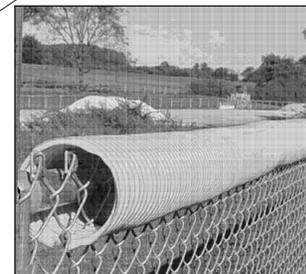


PITCHER'S MOUND DETAILS
SCALE: 1"=5'



NOTE: TRUSS BARS ARE REQUIRED FOR EACH GATE SECTION AND THE FIRST SPAN ON EACH SIDE OF CORNER POST ONLY.

CHAIN LINK FENCE DETAIL
(NTS)



BEACON ATHLETICS ECONOMY FENCE CAP OR APPROVED EQUAL 4.5\"/>

FENCE CAP DETAIL

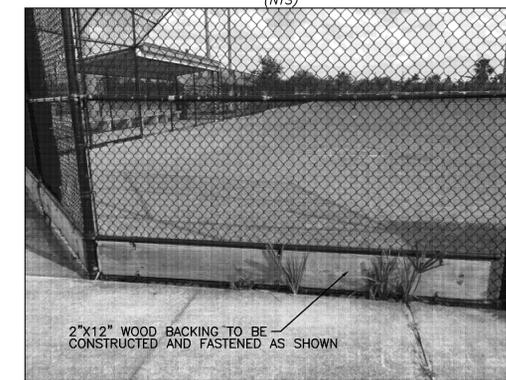
(N.T.S.)

TURF AREA BOTH FIELDS (INSIDE FENCES)

ROOT ZONE MIX 6\"/>

INFIELD AREA BOTH FIELDS

INFIELD MIX (70/30 SAND/CLAY) 4\"/>



BACKSTOP WOODEN FENCE BACKING

COLLEGE BASEBALL FIELD DETAILS & GRADING

M MASTELLER & MOLER, INC.
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HOBART PARK
BASEBALL FIELD IMPROVEMENTS

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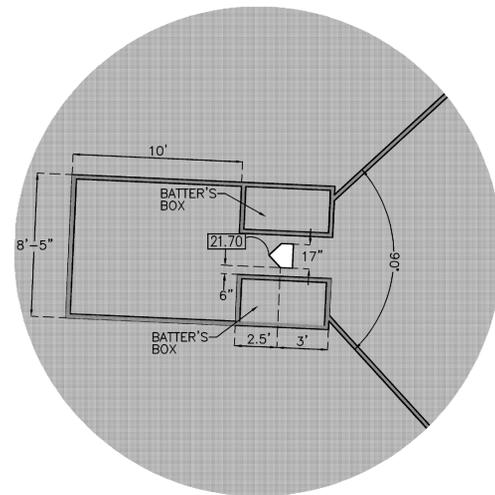
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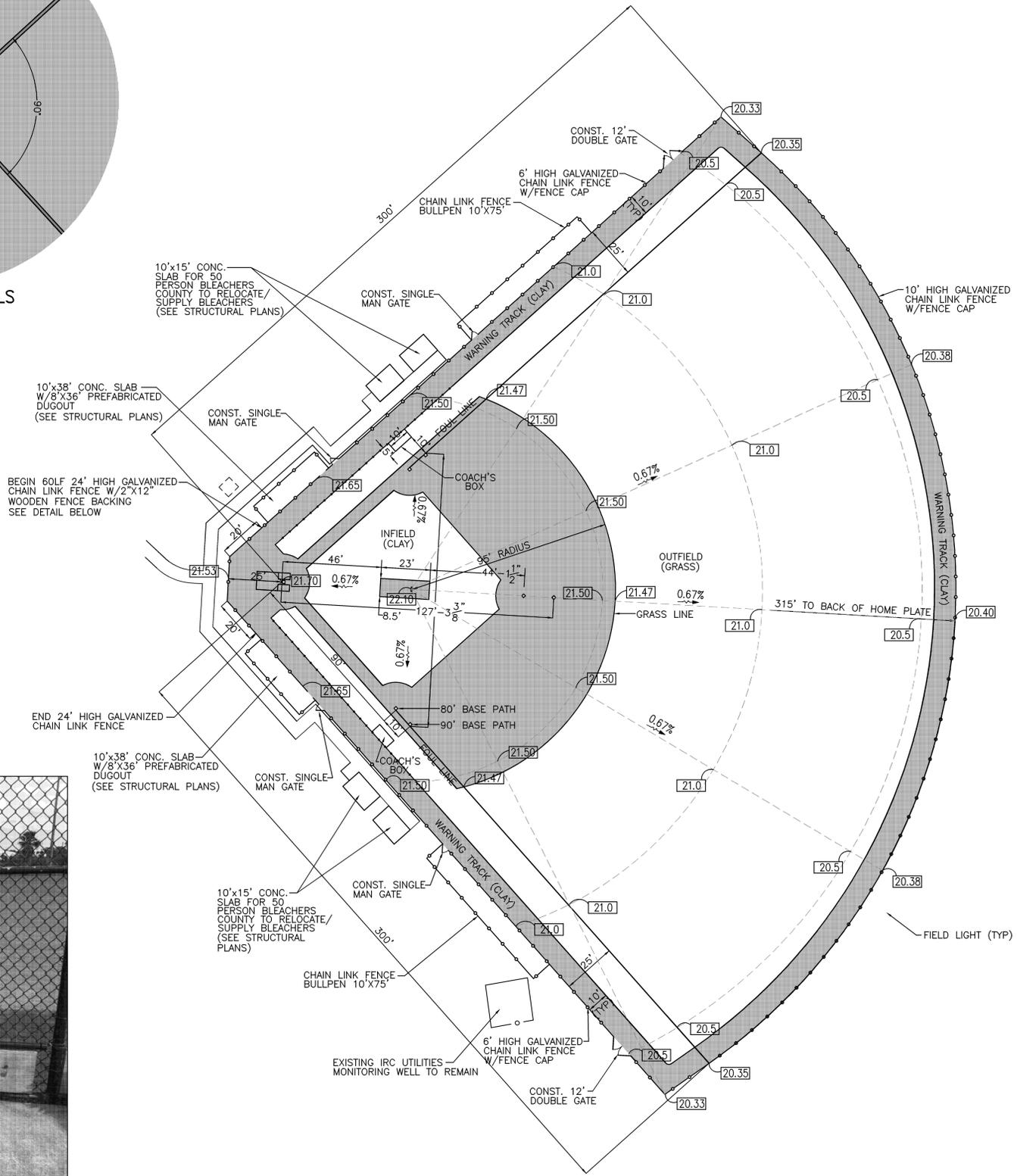
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INDIAN RIVER COUNTY

FLORIDA



HOME PLATE DETAILS
SCALE: 1"=5'



BACKSTOP WOODEN FENCE BACKING

SOFTBALL/HYBRID FIELD DETAILS & GRADING

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2.	6/11/18	REVISED PER IRC TRC COMMENT LETTER OF 6/14/18	SH/SEM
1.	5/10/18	REVISED PER IRC PRE-APP COMMENTS	SH/SEM
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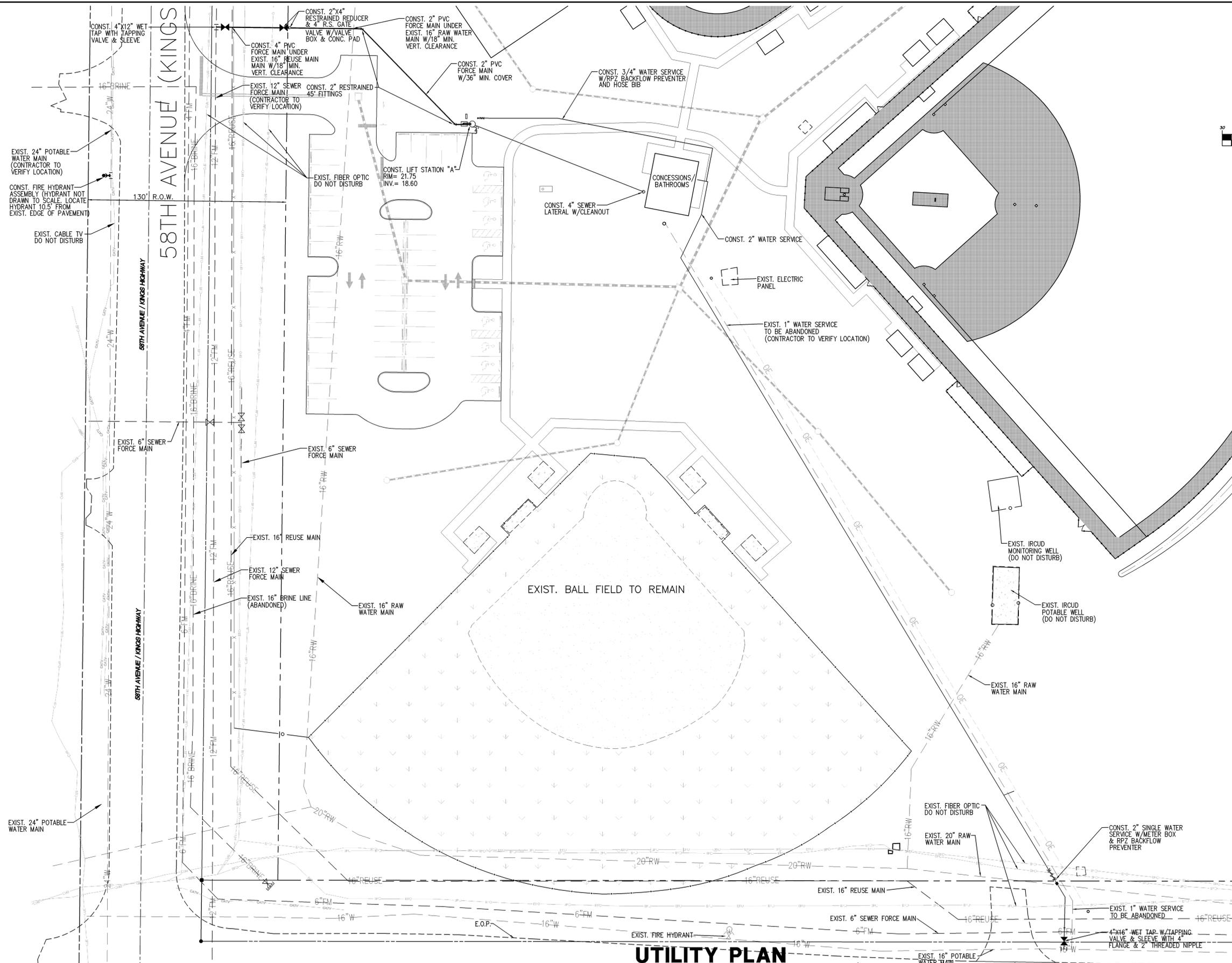
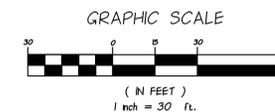
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UTILITY PLAN

NO.	DATE	DESCRIPTION	DR/APP
4.	8/28/18	REVISED PER IRC UTIL MARKUPS	SH/SEM
3.	8/28/18	REVISED PER IRC COMMENTS EMAILED ON 7/31/18	SH/SEM
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PROJECT NO.	1756

STEPHEN E. MOLER, P.E. FL#33193

SECTION 26 56 66 – EXTERIOR ATHLETIC LIGHTING

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 specifications is to define the lighting system performance and design standards for Hobart 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. Baseball Field (1)
 2. Softball Field (1)
 3. Parking Lot
- E. 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. The LED design should provide better control than a good HID design.
 3. **Life-cycle Cost:** 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.
- F. All lighting designs shall comply with these specifications.

1.2 LIGHTING PERFORMANCE

- A. **Illumination Levels and Design Factors:** Playing surfaces shall be lit to an average target illumination level and uniformly 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 drop below desired target values in accordance to IES RP-5-15, 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
Baseball	50 Footcandles (infield) 30 footcandles (outfield)	2.0:1.0 (infield) 2.5:1.0 (outfield)	25 (infield) 113 (outfield)	30' x 30'
Softball	50 Footcandles (infield) 30 footcandles (outfield)	2.0:1.0 (infield) 2.5:1.0 (outfield)	25 (infield) 77 (outfield)	30' x 30'
Parking Lot	5.38 Footcandles	N/A	70	20' x 20'

- B. Hours of usage: Designs shall be based on the following hours of usage

Area of Lighting	Annual Usage Hours	25 year Usage Hours
Baseball	500	12,500
Softball	500	12,500

- C. Color: The lighting system shall have a minimum color temperature of 5700K and a CRI of 75.

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.
- B. **Spill Scans:** Spill scans must be submitted indicating the amount of horizontal and vertical footcandles along the specified lines. 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. Illumination level shall be measured in accordance with the IESNA LM-5-04 after 1 hour warm up.
- C. **Spill Light and Glare Control:** To minimize impact on adjacent properties, spill light and candela values must not exceed the following:

	Average	Maximum
Baseball - 150' Spill	1800 Cd	6200 Cd
Softball - 150' Spill	1000 Cd	7300 Cd
- D. **Glare Control:** Maximum candela per fixture with any NEMA type shall not exceed 1,000 candela at 15 degrees in the vertical plane above zero aiming point. Manufacturer must supply with the contractor's bid an ILL report for verification. If ILL report cannot be provided, bid will be automatically rejected. Reports shall be certified by a qualified independent 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.
- E. Lighting Manufacturer must show compliance, pass/fail to the International Dark Skies Award of Excellence Program. Manufacturer will absorb any and all costs in obtaining such report.

1.4 LIFE-CYCLE COSTS

- A. Manufacturer shall submit a 25-year life cycle cost calculation as outlined in the required submittal information.
- B. Preventative and Spot Maintenance: Manufacturer shall provide all preventative and spot maintenance, including parts and labor for 25 years from the date of equipment shipment. Individual outages shall be repaired when the usage of any field is materially impacted. Owner agrees to check fuses in the event of a luminaire outage.

PART 2 – PRODUCT

2.1 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 of 18-8 grade or better, 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.
 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 2.3 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-inforced 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.
 5. Manufacturer shall provide surge protection at the pole equal to or greater than 50 KA for each line to ground (Common Mode) as recommended by IEEE C62.41.2_2002. Surge protection will also be monitored and advised for no cost through the duration of the 25 year warranty.
 6. Wire harness complete with an abrasion protection sleeve, strain relief and plug-in connections for fast, trouble-free installation.
 7. Cross-arm assemblies shall withstand 160 mph winds.
 8. Control cabinet to provide remote on-off control and monitoring of the lighting system. See Section 2.4 for further details.
 9. 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.
 10. 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.

2.2 ELECTRICAL

- A. **Electric Power Requirements for the Sports Lighting Equipment:**
 1. Electric power: 480 Volt, Single Phase
 2. 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 not exceed 106.95 kW.

2.3 STRUCTURAL PARAMETERS

- A. **Wind Loads:** Wind loads shall be based on the 2017 Florida Building Code. Wind loads to be calculated using ASCE 7-10, an ultimate design wind speed of 160 and exposure category C.
- B. **Pole Structural Design:** The stress analysis and safety factor of the poles shall conform to 2013 AASHTO 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.
- D. **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.

2.4 CONTROL

- A. **Instant On/Off Capabilities:** System shall provide for instant on/off of luminaires.
- B. **Lighting Controller 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. **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.
- D. **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).
- E. **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.
- F. **Communication Costs:** Manufacturer shall include communication costs for operating the controls and monitoring system for a period of 25 years.

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 6-8 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.
 2. The contractor/manufacturer shall be responsible for an additional inspection one year from the date of commissioning of the lighting system and will utilize the owner's light meter in the presence of the owner.
 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. Manufacturer to provide all equipment necessary to complete the warranty work and will be responsible for any site damage to this park (i.e. ruts, concrete or asphalt).
- 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. Owner agrees to check fuses in the event of a luminaire outage.

NOTE:

THE LIGHTING VENDOR SHALL, TO SUPPORT ISSUANCE OF A BUILDING PERMIT FOR THIS PROJECT, SUBMIT WITH SHOP DRAWINGS, THE DESIGN OF THE LIGHTING SYSTEM INCLUDING STRUCTURAL ENGINEERING SIGNED AND SEALED BY A FLORIDA LICENSED ENGINEER.

FIELD LIGHTING SPECIFICATIONS

M MASTELLER & MOLER, INC.

CONSULTING ENGINEERS

1655 27th STREET, SUITE #2, VERO BEACH, FLORIDA, 32960
(772) 567-5300 / FAX (772) 794-1106
CERTIFICATE OF AUTHORIZATION NUMBER 4204

HOBART PARK

BASEBALL FIELD IMPROVEMENTS

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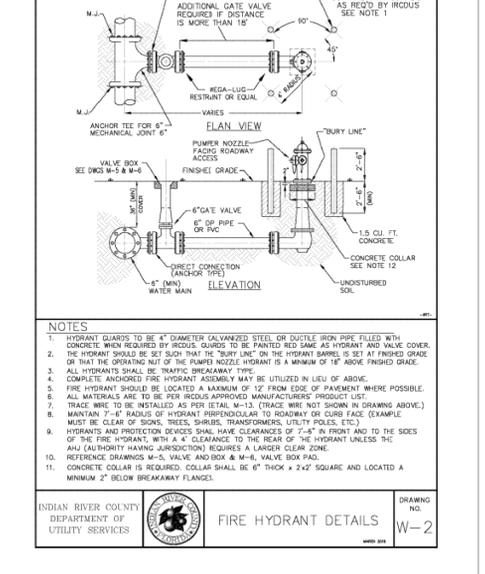
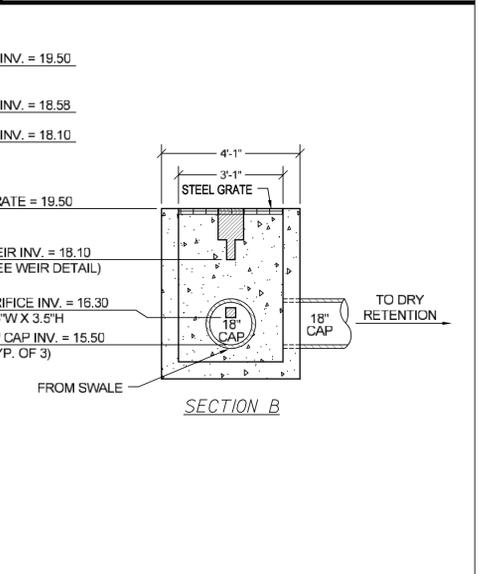
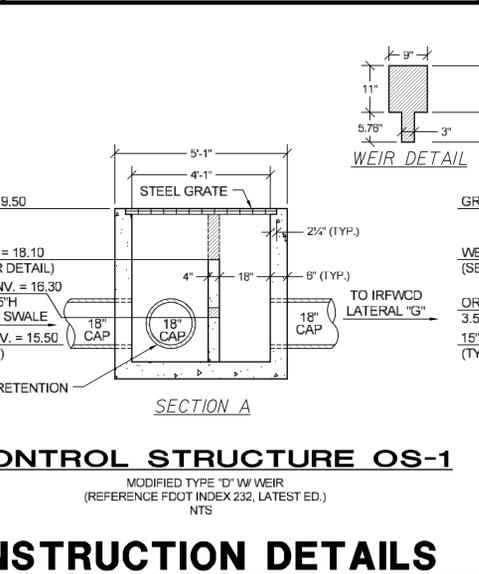
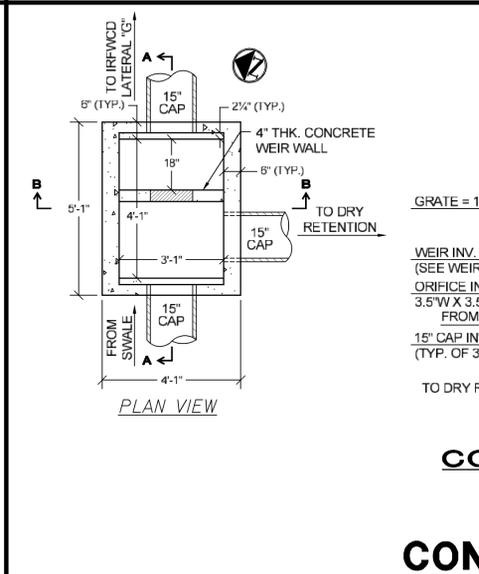
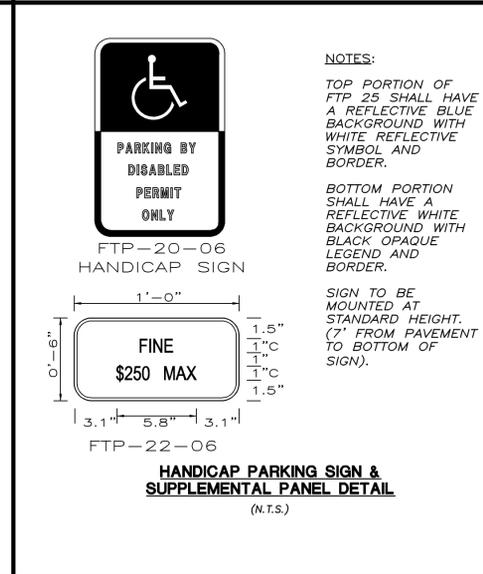
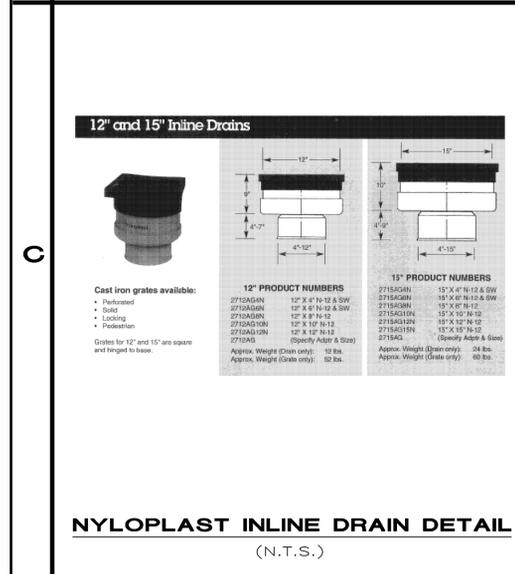
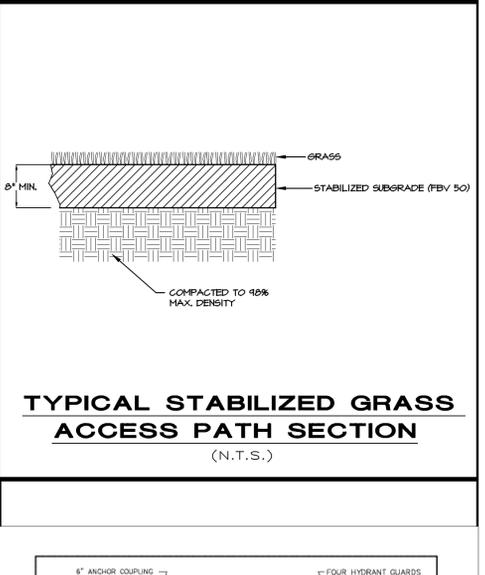
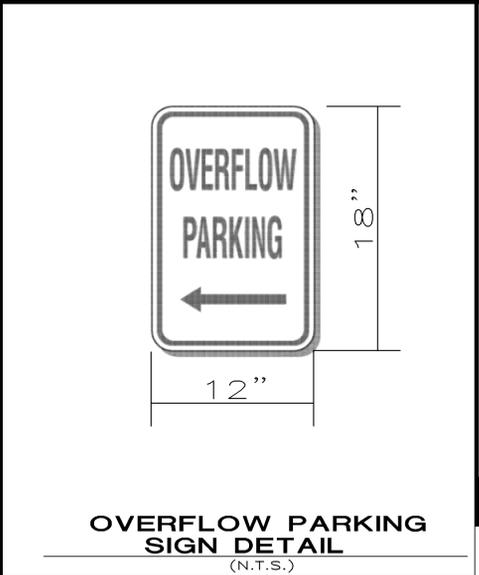
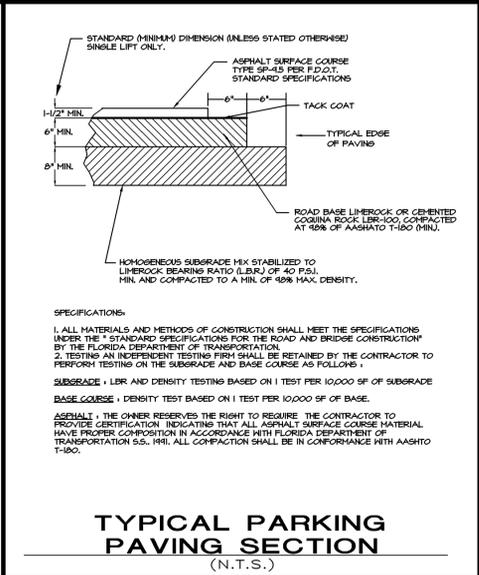
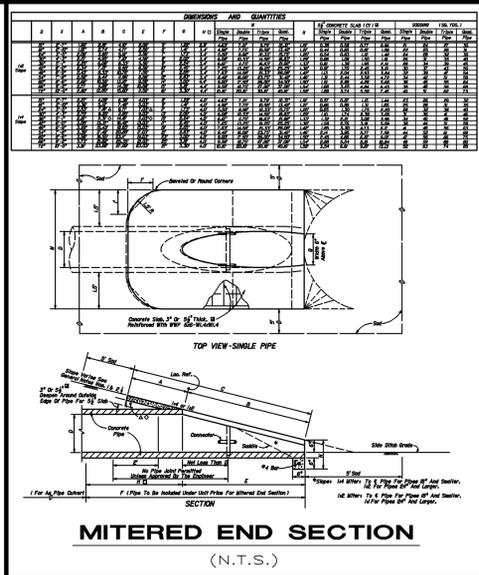
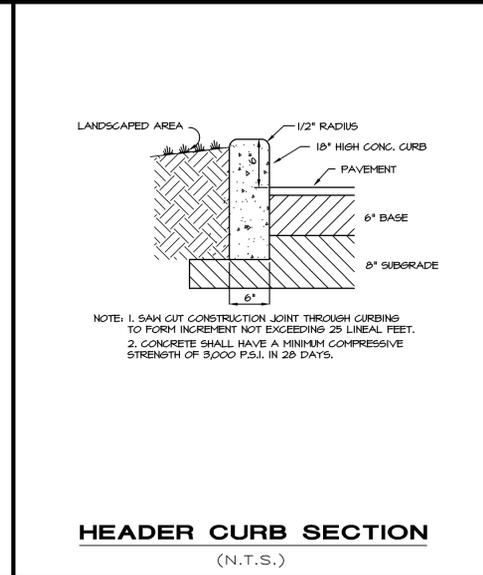
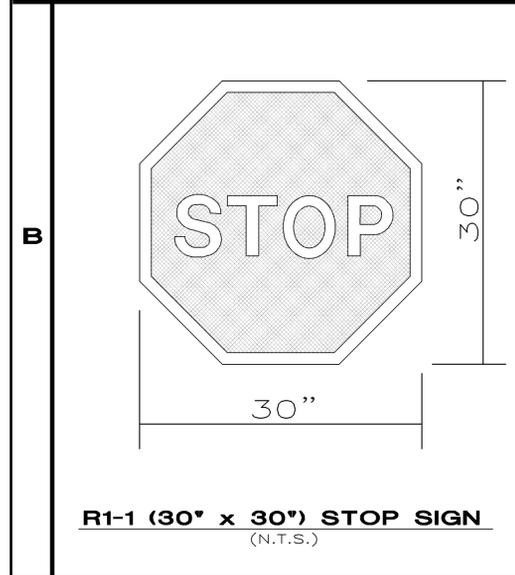
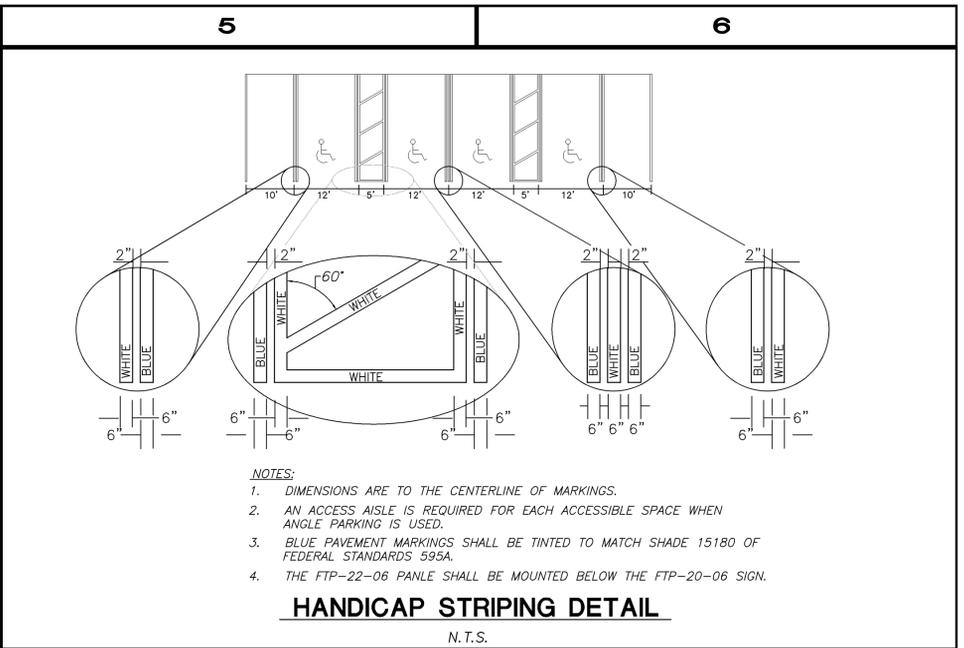
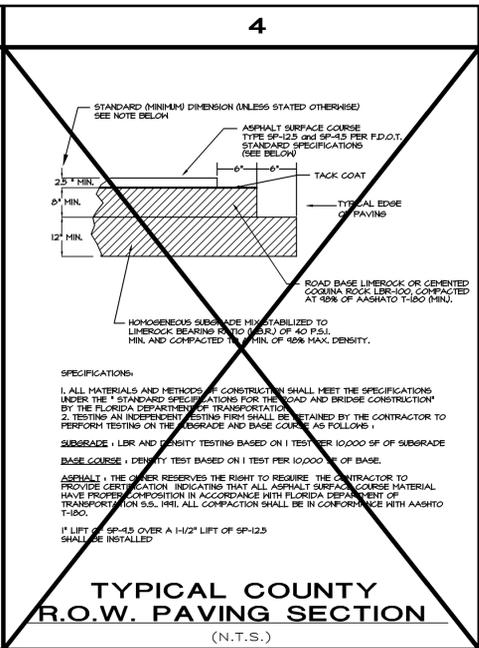
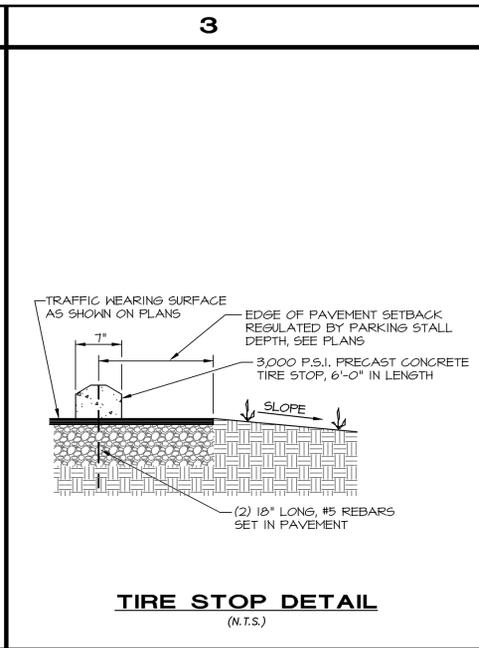
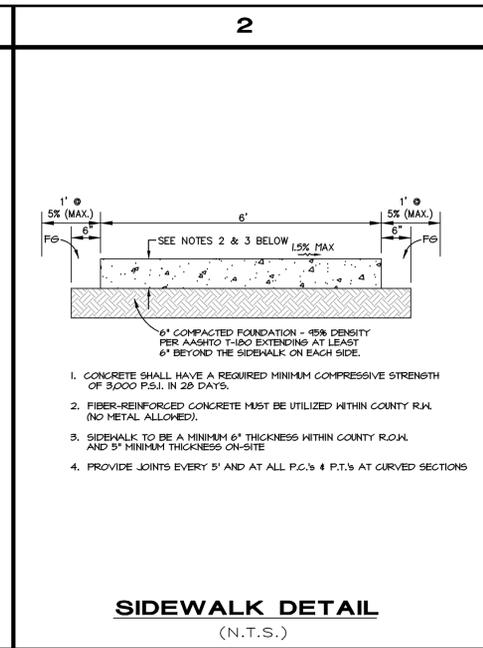
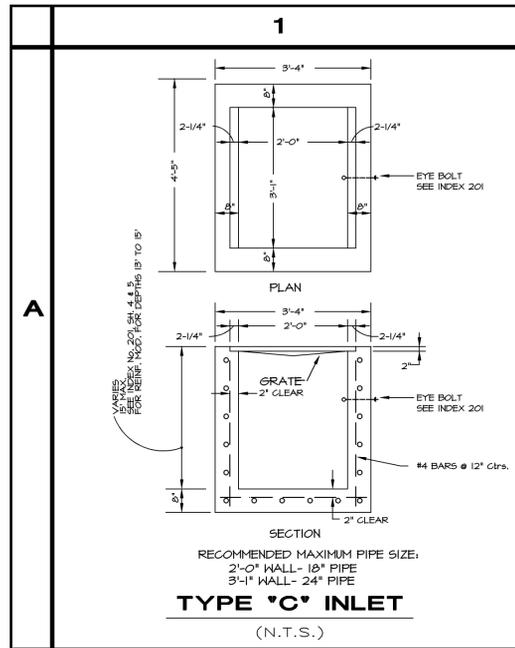
DRAWN	SH
DESIGNED	SH
CHECKED	SEM
DATE	3/18
SCALE	NTS
SHEET	13 OF 15
PROJECT NO.	1756

STEPHEN E. MOLER, P.E. FL#33193

FLORIDA

INDIAN RIVER COUNTY

NO.	DATE	DESCRIPTION	DR/APP
4.	9/18/18	REVISED PER IRC COMMENTS EMAILED 9/17/18	SH/SEM
3.	7/31/18	REVISED PER IRC COMMENT LETTERS OF 6/20 & 6/30/18	SH/SEM
2.	6/11/18	REVISED PER IRC TRC COMMENT LETTER OF 6/14/18	SH/SEM
1.	5/10/18	REVISED PER IRC PRE-APP COMMENTS	SH/SEM
REVISIONS			



NO.	DATE	DESCRIPTION	DR/APP
5.	8/28/18	REVISED PER IRC UTIL MARKUPS	SH/SEM
4.	8/28/18	REVISED PER IRC COMMENTS EMAILED ON 7/31/18	SH/SEM
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REVISIONS			

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CERTIFICATE OF AUTHORIZATION NUMBER 4204

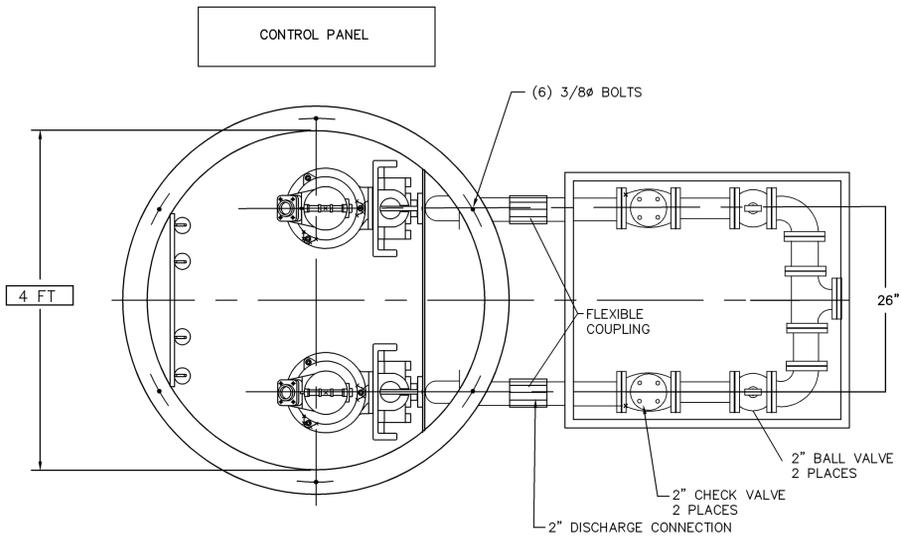
HOBART PARK
BASEBALL FIELD IMPROVEMENTS

FLORIDA

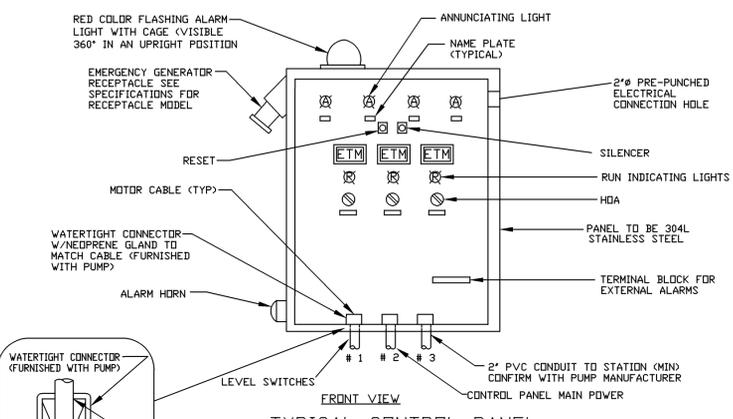
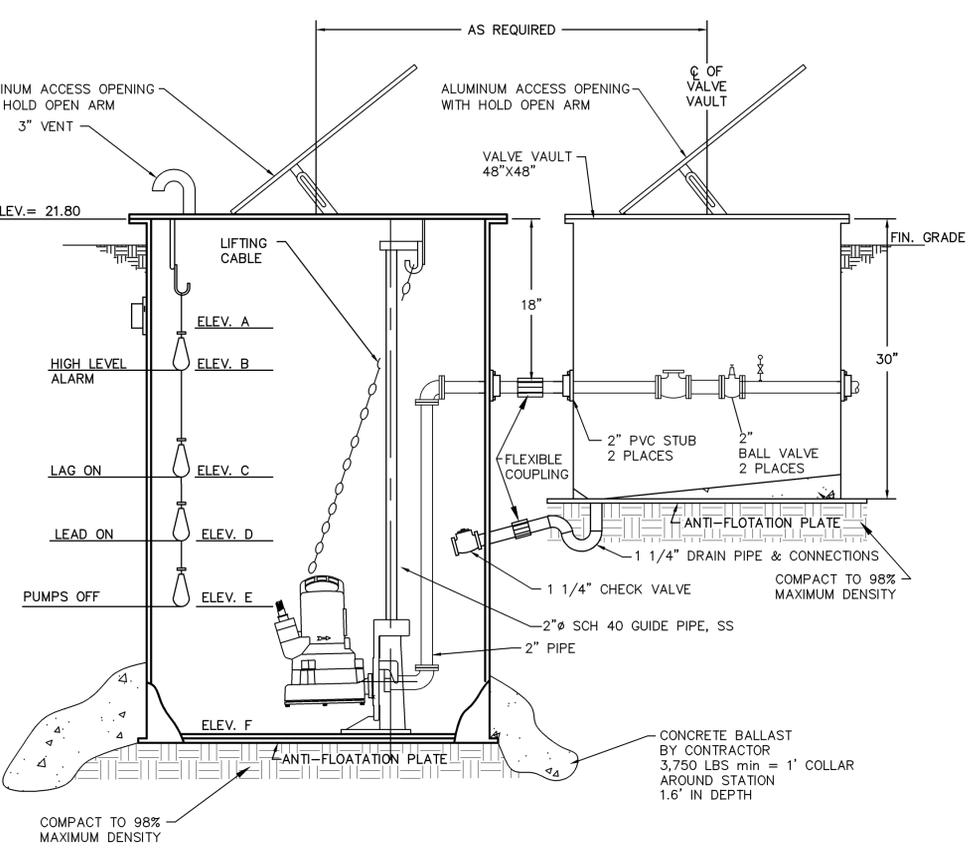
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DATE	3/18
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SHEET	14 OF 15
PROJECT NO.	1756

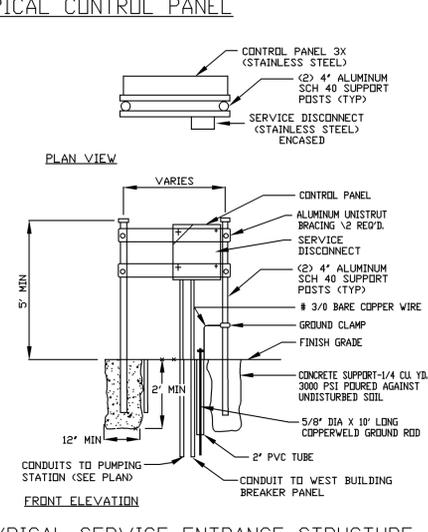
STEPHEN E. MOLER, P.E. FL#33193



LIFT STATION NUMBER- PUMP STATION 'A'	
PUMPING CAPACITY G.P.M.	39
TOTAL HEAD (±) FEET	41
MIN. SOLIDS PASS. IMPELLER INCHES	GRINDER
PUMP MODEL NUMBER	S20/2
PUMP IMPELLER	143
PUMP SPEED (DESIGN) R.P.M.	3450
VOLTAGES	230 1 PHASE
MOTOR NAMEPLATE H.P.	H.P. 2.1
MAX. PUMP BRAKE H.P.	H.P. --
MAX. NPSHR @ SECONDARY FEET	--
MAX. MOTOR SPEED R.P.M.	--
AVG. INFLUENT FLOW G.P.M.	5
MIN. PUMP CYCLE TIME MINS.	10
INFLUENT PIPE INV. ELEV. ELEV. FT.	18.50
ALARM SIGNAL ON ELEV. ELEV. FT.	18.15
LAG PUMP ON ELEV. ELEV. FT.	17.80
LEAD PUMP ON ELEV. ELEV. FT.	17.30
PUMPS OFF ELEVATION ELEV. FT.	15.80
BOTTOM OF WET WELL ELEV. FT.	15.80
PUMP MANUFACTURER	SULZER
* CONTRACTOR TO VERIFY ELECTRICAL SERVICE	



- NOTES**
- ALARM HORN SHALL BE SEALED TO PREVENT LEAKAGE.
 - BOTTOM OF PANEL TO BE 28" TO 34" ABOVE GROUND.
 - DISCONNECT BETWEEN METER AND PANEL TO BE STAINLESS STEEL NON FUSABLE.
 - ALL HARDWARE AND FASTENERS TO BE STAINLESS STEEL.
 - CONTROL PANEL SHALL MEET THE REQUIREMENTS OF SERVICE ENTRANCE BY PROPERLY BONDING OR SHALL BE UL SERVICE ENTRANCE RATED.

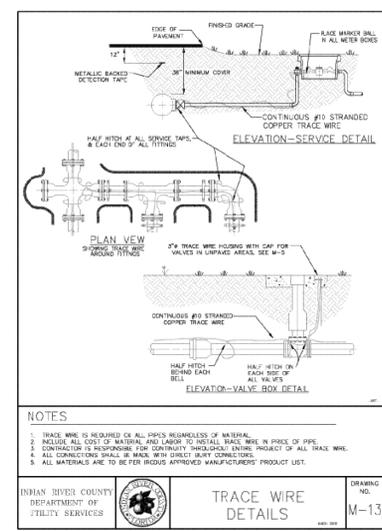


PUMP STATION 'A' DETAILS

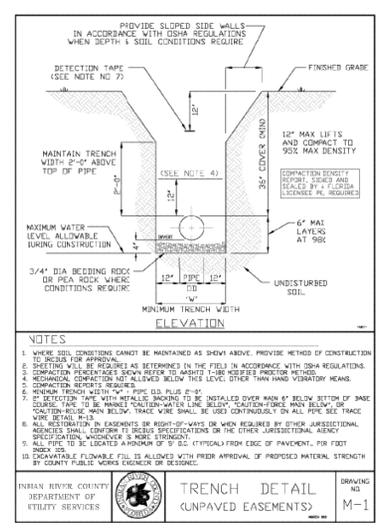
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PUMP STATION GENERAL NOTES

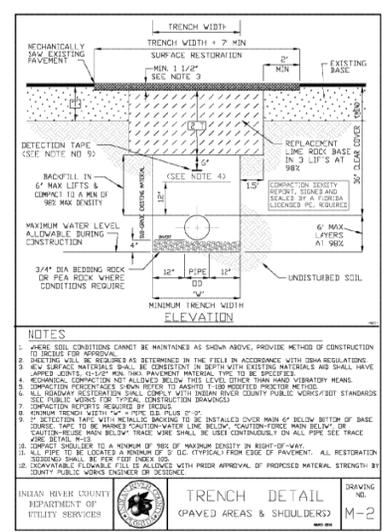
- CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS AGAINST FLOATATION OF WET WELL UNTIL ALL BACK FILL IS IN PLACE.
- ALL BACKFILL AROUND THE PUMP STATION SITE SHALL BE COMPACTED @ 98% DENSITY.
- WET WELL WALL SHALL CONTAIN A MIN. OF 0.22 SQ. IN./LINEAR FOOT REINFORCEMENT, IN THE VERTICAL AND HORIZONTAL DIRECTIONS.
- ALL PIPING AT THE PUMP STATION SITE SHALL BE RESTRAINED.
- PUMPS SHALL BE SULZER, S 20/2 PIRANA GRINDER PUMPS.
- STAINLESS STEEL CABLE HOLDER SHALL BE LOCATED ON OPPOSITE SIDE OF WET WELL FROM THE INFLUENT PIPE.
- BUDYANCY CALCULATIONS SHALL BE REQUIRED FOR ALL PUMP STATIONS ALONG WITH THE REQUIRED PUMP STATION CALCULATIONS.
- NO UNI-FLANGE PIPE CONNECTIONS ALLOWED.
- MAINTAIN MINIMUM OF 6' BETWEEN ANY PIPING, FITTINGS, ETC. AND PRECAST CONCRETE.
- PUMP STATION CONTROL PANEL SHALL BE PROVIDED WITH APPROPRIATE LIGHTNING ARRESTOR. VERIFY ALL DRIVER GROUNDS PER N.E.S.C.
- PUMP STATION AND VALVE BOX HATCHES TO BE PROVIDED WITH LOCKABLE HASPS.
- CONTROL PANEL TO HAVE DURABLE WEATHER RESISTANT SIGN POSTING EMERGENCY CONTACT NUMBER.



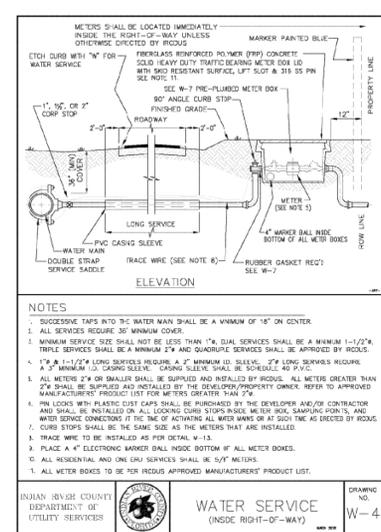
INDIAN RIVER COUNTY DEPARTMENT OF UTILITY SERVICES TRACE WIRE DETAILS DRAWING NO. M-13



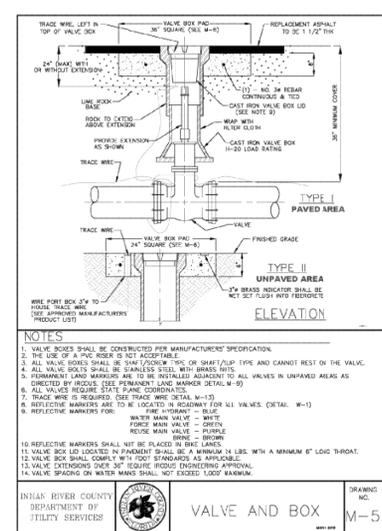
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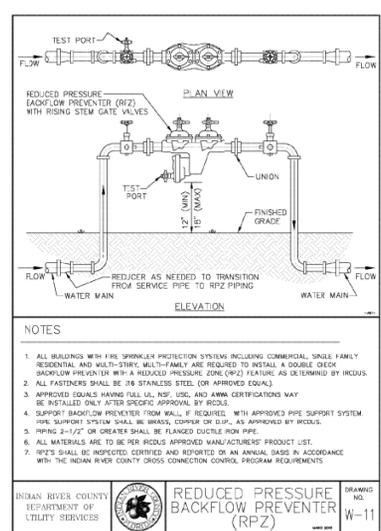
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INDIAN RIVER COUNTY DEPARTMENT OF UTILITY SERVICES WATER SERVICE (INSIDE RIGHT-OF-WAY) DRAWING NO. W-4



INDIAN RIVER COUNTY DEPARTMENT OF UTILITY SERVICES VALVE AND BOX DRAWING NO. M-5



INDIAN RIVER COUNTY DEPARTMENT OF UTILITY SERVICES REDUCED PRESSURE BACKFLOW PREVENTER (RPZ) DRAWING NO. W-11

NO.	DATE	DESCRIPTION	DR/APP
4.	8/28/18	REVISED PER IRC UTIL MARKUPS	SH/SEM
3.	8/28/18	REVISED PER IRC COMMENTS EMAILED ON 7/31/18	SH/SEM
2.	6/11/18	REVISED PER IRC TRC COMMENT LETTER OF 6/14/18	SH/SEM
1.	5/10/18	REVISED PER IRC PRE-APP COMMENTS	SH/SEM

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 CERTIFICATE OF AUTHORIZATION NUMBER 4204

UTILITY DETAILS

HOBART PARK

BASEBALL FIELD IMPROVEMENTS

INDIAN RIVER COUNTY FLORIDA

DRAWN: SH
 DESIGNED: SH
 CHECKED: SEM
 DATE: 3/18
 SCALE: NTS
 SHEET: 15 OF 15
 PROJECT NO.: 1756

STEPHEN E. MOLER, P.E. FL#33193

Issues:

No.:	Date:	Description:
A.	01.30.18	CLIENT REVIEW
B.	02.20.18	CLIENT REVIEW
C.	02.22.18	CLIENT REVIEW
D.	12.04.18	FINAL DOCUMENTS



Drawing Title:
SITE LIGHTING PLAN & LIGHTING SCHEDULES

Reference North



Dwn:	ABJ	Dwg. File:
Chd:	XREF	XREF File:
Project No.:	2018-04	Plot File:
Sheet No.:		

Cart. No.: FL PE 65050
Date Signed: E0.1

MUSCO LIGHTING EQUIPMENT SCHEDULE

CALLOUT	SYMBOL	DESCRIPTION	VOLTS	AMPS	KVA	CIRCUIT	WIRE CALLOUT	POLE
C1	○	BASEBALL FIELD LIGHTING	480V 2P 2W	16.4	7.87	P2-1,3	1" C, 2#10, #10G	A1
C2	○	BASEBALL FIELD LIGHTING	480V 2P 2W	16.4	7.87	P2-5,7	1" C, 2#10, #10G	A2
C3	○	BASEBALL FIELD LIGHTING	480V 2P 2W	29.8	14.3	P2-9,11	1" C, 2#6, #8G	B1
C4	○	BASEBALL FIELD LIGHTING	480V 2P 2W	29.8	14.3	P2-13,15	1" C, 2#6, #8G	B2
C5	○	BASEBALL FIELD LIGHTING	480V 2P 2W	17.8	8.54	P2-17,19	1" C, 2#6, #6G	C1
C6	○	BASEBALL FIELD LIGHTING	480V 2P 2W	17.8	8.54	P2-21,23	1" C, 2#6, #6G	C2
C7	○	BASEBALL FIELD LIGHTING	480V 2P 2W	17.8	8.54	P2-25,27	1" C, 2#6, #6G	D1
C8	○	BASEBALL FIELD LIGHTING	480V 2P 2W	17.8	8.54	P2-29,31	1" C, 2#6, #6G	D2
C9	○	SOFTBALL FIELD LIGHTING	480V 2P 2W	16.4	7.87	P2-33,35	1" C, 2#10, #10G	A3
C10	○	SOFTBALL FIELD LIGHTING	480V 2P 2W	16.4	7.87	P2-2,4	1" C, 2#10, #10G	A4
C11	○	SOFTBALL FIELD LIGHTING	480V 2P 2W	22.4	10.75	P2-6,8	1" C, 2#8, #8G	B3
C12	○	SOFTBALL FIELD LIGHTING	480V 2P 2W	22.4	10.75	P2-10,12	1" C, 2#8, #8G	B4
C13	○	SOFTBALL FIELD LIGHTING	480V 2P 2W	17.8	8.54	P2-14,16	1" C, 2#6, #6G	C3
C14	○	SOFTBALL FIELD LIGHTING	480V 2P 2W	17.8	8.54	P2-18,20	1" C, 2#6, #6G	C4
C15	○	PARKING LOT LIGHTING	480V 2P 2W	2	0.96	P2-22,24	1" C, 2#12, #12G	P1
C16	○	PARKING LOT LIGHTING	480V 2P 2W	2	0.96	P2-22,24	1" C, 2#12, #12G	P2
C17	○	BATTING CAGE LIGHTING	480V 2P 2W	4.5	2.16	P2-26,28	1" C, 2#12, #12G	A1
C18	○	BATTING CAGE LIGHTING	480V 2P 2W	4.5	2.16	P2-30,32	1" C, 2#12, #12G	P3

SEE MUSCO LIGHTING SCHEDULE FOR EXACT DESCRIPTION AND REQUIREMENTS. MANY OF THE CIRCUIT CONDUCTORS HAVE BEEN UPSIZED FOR VOLTAGE DROP. BOTH HOT CONDUCTORS FROM THE POLE HAND HOLE TAP TO POLE DISCONNECT CAN BE REDUCED TO BREAKER RATING IF DESIRED. PLANVIEW CALLOUT TOP LABEL IS THE RELAY WHILE THE BOTTOM IS THE POLE.

VOLTAGE DROP SCHEDULE

DEVICE	FEEDER		BRANCH CIRCUIT			FEEDER VOLTAGE DROP	TOTAL VOLTAGE DROP
	VOLTAGE DROP	WIRE SIZE	MAX VOLTAGE DROP	WIRE SIZE	LENGTH		
TXH	0%		-	-	-	0%	0%
P2	0.41%	(2)#3/0	2.82% (CKT 25,27)	#6	858'	0.41%	3.23%
			P2-1,3: 2.38%	#10	333'		
			P2-5,7: 1.84%	#10	258'		
			P2-9,11: 2.65%	#6	481'		
			P2-13,15: 2.32%	#6	422'		
			P2-17,19: 2.53%	#6	769'		
			P2-21,23: 2.23%	#6	679'		
			P2-25,27: 2.82%	#6	858'		
			P2-29,31: 2.4%	#6	730'		
			P2-33,35: 1.48%	#10	207'		
			P2-2,4: 1.18%	#10	165'		
			P2-6,8: 2.2%	#8	341'		
			P2-10,12: 1.89%	#8	293'		
			P2-14,16: 2.03%	#6	616'		
			P2-18,20: 1.79%	#6	544'		
			P2-22,24: 0.74%	#12	528'		
			P2-26,28: 0.73%	#12	371'		
			P2-30,32: 0.76%	#12	390'		
LS	3%	#4	-	-	-	1.29%	3%

THREE-PHASE % VOLTAGE DROP = CALCULATED CURRENT IN AMPS * EFFECTIVE Z * (FEEDER LENGTH / 1,000) * 100 / LINE-TO-NEUTRAL VOLTAGE.
 SINGLE-PHASE % VOLTAGE DROP = CALCULATED CURRENT IN AMPS * EFFECTIVE Z * (FEEDER LENGTH / 1,000) * 100 * 2 / LINE-TO-NEUTRAL VOLTAGE.
 CALCULATED CURRENT IN AMPS IS BASED UPON THE TOTAL DEMAND CALCULATED CURRENT ASSUMING A BALANCED LOAD FOR THE FEEDER AND THE ACTUAL CURRENT FOR THE BRANCH CIRCUIT. TOTAL VOLTAGE DROP SHOWN IS THE MAX BETWEEN 2 SOURCES STARTING AT ANY ATS SWITCH.
 EFFECTIVE Z = R COS(THETA) + X SIN(THETA), WHERE THETA IS THE POWER FACTOR AND EQUALS 0.85 (NEC TABLE 9 NOTE 2)
 TRANSFORMERS VOLTAGE DROP CALCULATIONS ARE INCLUDED USING THE TRANSFORMERS %Z AND X/R RATIO.

JUNCTION BOX SCHEDULE

CALLOUT	SYMBOL	NOTE 1
JUNCTION BOX	□	FLUSH IN-GROUND CHRISTY #N16 BOX WITH LABEL "LIGHTING", TO BE LOCATED ADJACENT TO SPORTS LIGHTING POLE ASSEMBLY. FIELD VERIFY EXACT LOCATION FOR BEST SITE COORDINATED LOCATION WITH RESPECT TO SPORTS LIGHTING POLE. BOTH HOT CONDUCTORS FROM TAP TO POLE DISCONNECT CAN BE REDUCED TO BREAKER RATING IF DESIRED.

SUNSHINE STATE ONE CALL OF FLORIDA (SSOCOF)
 CALL BEFORE DIGGING: CONTRACTOR MUST CALL 811, (800) 432-4770 OR (386) 575-2025 BEFORE BEGINNING ANY EXCAVATION OR DEMOLITION SO SSOCOF CAN NOTIFY ITS MEMBERS WITH UNDERGROUND FACILITIES NEAR THE JOB SITE TO MARK OFF THE AREA OF WORK.

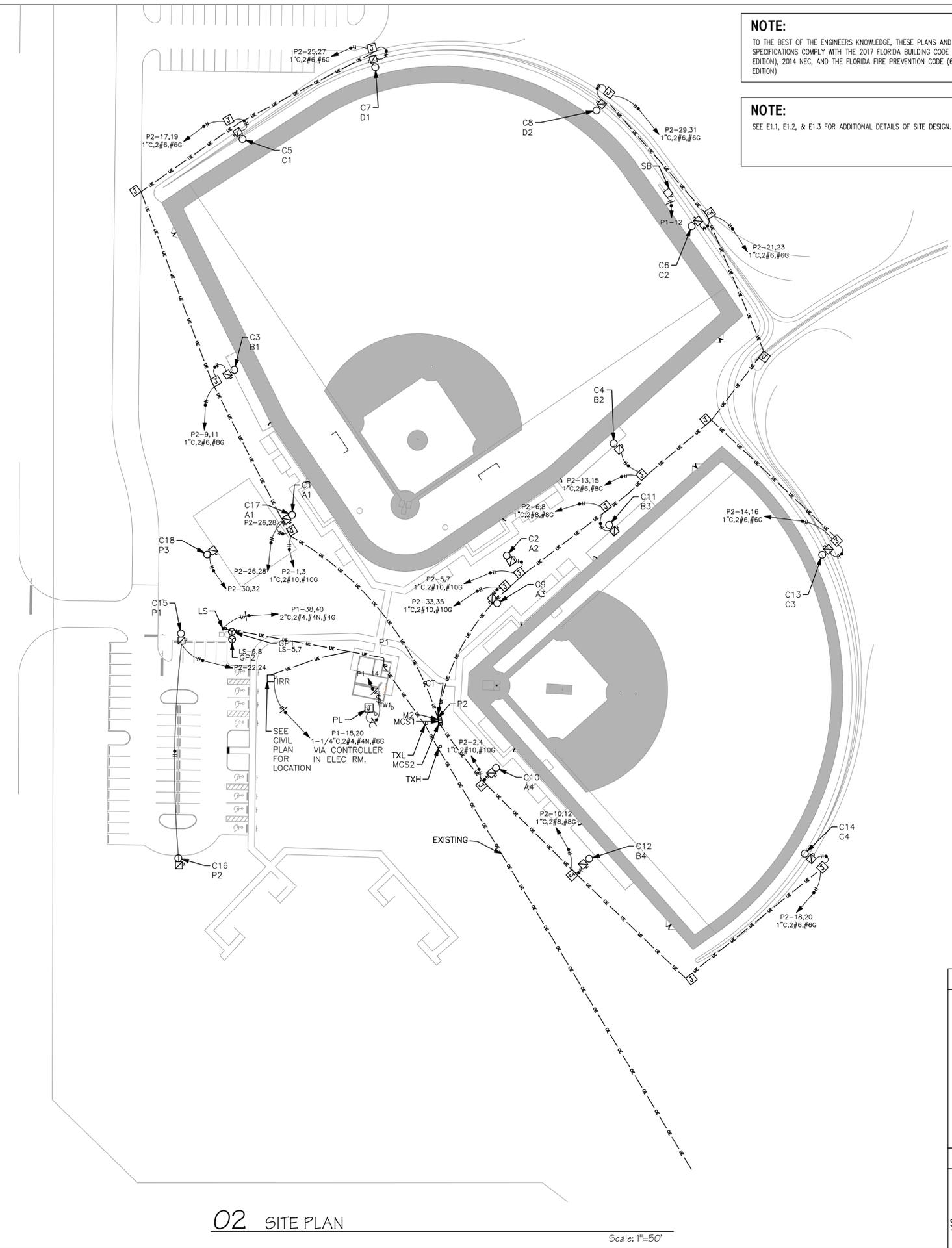
CONDUIT LEGEND

- CONDUIT TURNING UP
- CONDUIT TURNING DOWN
- ┌ CONDUIT STUB
- CONDUIT CONTINUED
- ~ FLEXIBLE CONDUIT
- UE- UNDERGROUND ELECTRICAL
- OE- OVERHEAD ELECTRICAL
- UC- UNDERGROUND CONDUIT
- T- UNDERGROUND TELEPHONE
- G- GROUNDING CONDUCTOR

CIRCUITING LEGEND

NOTE:
 TO THE BEST OF THE ENGINEERS KNOWLEDGE, THESE PLANS AND SPECIFICATIONS COMPLY WITH THE 2017 FLORIDA BUILDING CODE (6TH EDITION), 2014 NEC, AND THE FLORIDA FIRE PREVENTION CODE (6TH EDITION)

NOTE:
 SEE E1.1, E1.2, & E1.3 FOR ADDITIONAL DETAILS OF SITE DESIGN.



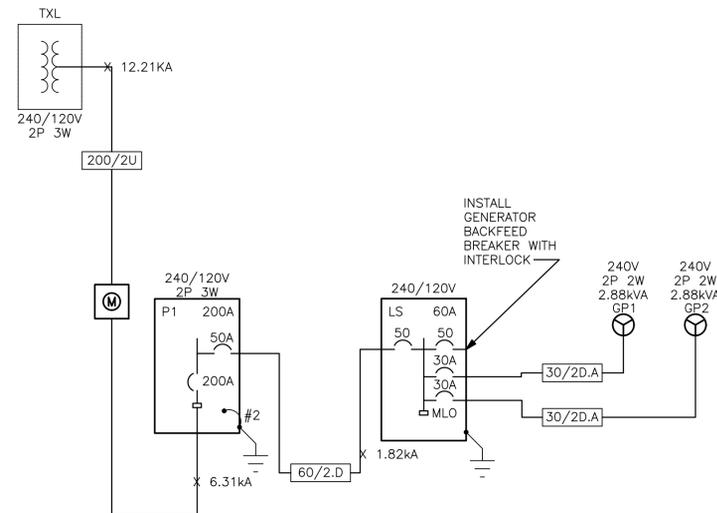
02 SITE PLAN

Scale: 1"=50'

SITE EQUIPMENT SCHEDULE

CALLOUT	SYMBOL	DESCRIPTION	VOLTS	AMPS	KVA	HP	CIRCUIT	WIRE CALLOUT	NOTES
GP1	⊕	GRINDER PUMP 1	240	12	2.88	2 HP	LS-5,7	1/2"C,2#10,#10G	SEE CIVIL DRAWINGS FOR EXACT DETAILS
GP2	⊕	GRINDER PUMP 2	240	12	2.88	2 HP	LS-6,8	1/2"C,2#10,#10G	SEE CIVIL DRAWINGS FOR EXACT DETAILS
IRR	□	IRRIGATION EQUIPMENT (SEE CIVIL)	240/120	40	9.6	7.5 HP	P1-18,20	1-1/4"C,2#4,#4N,#6G	RAN THROUGH IRRIGATION CONTROLLER IN ELECTRICAL ROOM
PL	⌈	QUANTITY TWO (2) OF THE FLAG POLE COMPANY R78WLED NEMA BEAM SPREAD OF 3H X 3V NARROW BEAM.	120	0.75	0.09		P1-14	1#12,#12N,#12G	SPACE QUANTITY TWO (2) FIXTURES OPPOSITE OF EACH EQUALLY SPACED FROM THE POLE.
PL	⌈	QUANTITY TWO (2) OF THE FLAG POLE COMPANY R78WLED NEMA BEAM SPREAD OF 3H X 3V NARROW BEAM.	120	1.48	0.18		P1-14	1#12,#12N,#12G	SPACE QUANTITY TWO (2) FIXTURES OPPOSITE OF EACH EQUALLY SPACED FROM THE POLE.
SB	□	NEVCO MODEL 1650 (OUTDOOR) BASEBALL/SOFTBALL SCOREBOARD W/ MPCX2 CONTROL	120	0.7	0.08		P1-12	1#12,#12N,#12G	SCOREBOARD IS INTENDED TO BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF ARTICLE 600 OF THE NEC. THIS INCLUDES PROPER GROUNDING AND BONDING OF THE SCOREBOARD.

SEE CIVIL SCHEDULE FOR EXACT DESCRIPTION AND REQUIREMENTS.



BUILDING ELECTRICAL ONE-LINE

ONE-LINE NOTES

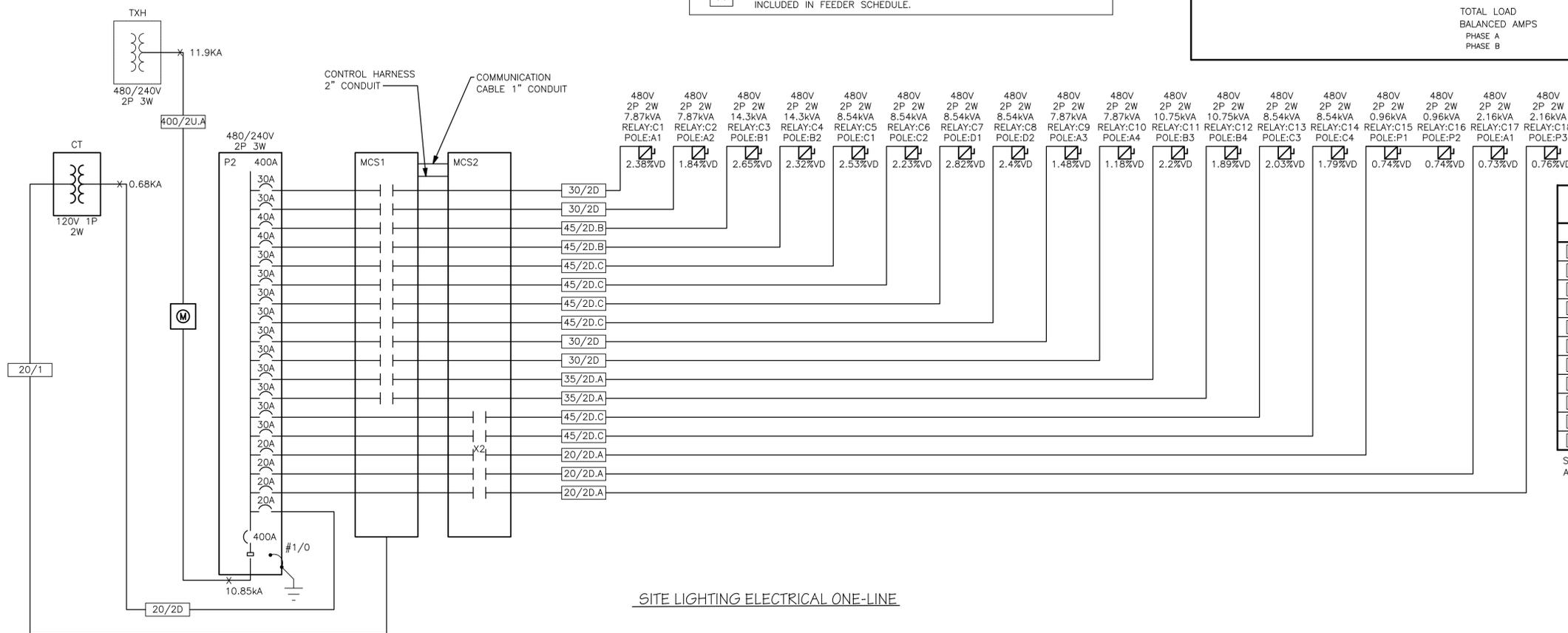
REPRESENT A N-G BONDED GROUNDING ELECTRODE CONDUCTOR. TYPICALLY SHOWN AT SERVICE ENTRANCES OR OUTPUT OF A SEPARATELY DERIVED SYSTEM SUCH AS AN ISOLATION TRANSFORMER. SEE GROUNDING DETAIL FOR CONDUCTOR SIZING. IF MORE THAN ONE SYMBOL IS SHOWN THEN THE SYMBOL WILL ALSO SHOW THE GEC SIZED SPECIFICALLY FOR THAT DEVICE.

REPRESENT AN ISOLATED N-G BONDED GROUNDING ELECTRODE CONDUCTOR. TYPICALLY SHOWN AT SEPARATE STRUCTURES. SEE GROUNDING DETAIL FOR CONDUCTOR SIZING.

"X" ---KA INDICATE THE AVAILABLE SHORT-CIRCUIT CURRENT LEVELS AT THE LOCATION SHOWN. FAULT CALCULATIONS ARE BASED ON "IEEE STD 242-1975 RECOMMENDED PRACTICE FOR PROTECTION AND COORDINATION OF INDUSTRIAL AND COMMERCIAL POWER SYSTEMS". THE SHORT-CIRCUIT CALCULATIONS INCLUDES MOTOR CONTRIBUTIONS EQUAL TO 4 TIMES THE RATED CURRENT OF THE MOTOR AND AN X/R RATIO OF 4.

AIC AIC RATINGS SHOWN AT THE EQUIPMENT WILL BE BASED ON THE SUPPLY VOLTAGE, AVAILABLE FAULT CURRENT AND THE OVER CURRENT DEVICE PROTECTING THE EQUIPMENT. THE SSCR OF ALL EQUIPMENT SHALL MEET OR EXCEED THE AIC RATING SHOWN. PLEASE NOTE THAT AIC APPLIES ONLY TO OVERCURRENT PROTECTION DEVICES (CIRCUIT BREAKERS, FUSES, ETC.) AND SSCR APPLIES TO A FULLY ASSEMBLED DEVICE (I.E., PANELBOARDS, CONTRACTORS, STARTERS), WHICH MAY USE SPECIFIC AIC-RATED OVERCURRENT PROTECTION DEVICES.

X SEE FEEDER SCHEDULE TO IDENTIFY NUMBER OF CONDUITS. THE QUANTITY OF PHASE, NEUTRAL, & EGC IS PER CONDUIT. GEC ARE NOT INCLUDED IN FEEDER SCHEDULE.



SITE LIGHTING ELECTRICAL ONE-LINE

P2

ROOM	SITE ELECTRIC CAGE	VOLTS	480/240V 2P 3W	AIC	22,000		
MOUNTING	SURFACE	BUS AMPS	400	MAIN BKR	400		
FED FROM	TXH	NEUTRAL	100%	LUGS	STANDARD		
NOTE SQ D NF IN NEMA 3R W/ 400 LA BKR							
CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION	CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	30/2	7.87	C1	a 2	30/2	7.87	C10
3	-/1	0	SPACE	b 4	-/1	0	SPACE
5	30/2	7.87	C2	a 6	30/2	10.8	C11
7	-/1	0	SPACE	b 8	-/1	0	SPACE
9	40/2	14.3	C3	a 10	30/2	10.8	C12
11	-/1	0	SPACE	b 12	-/1	0	SPACE
13	40/2	14.3	C4	a 14	30/2	8.54	C13
15	-/1	0	SPACE	b 16	-/1	0	SPACE
17	30/2	8.54	C5	a 18	30/2	8.54	C14
19	-/1	0	SPACE	b 20	-/1	0	SPACE
21	30/2	8.54	C6	a 22	20/2	1.92	C15, C16
23	-/1	0	SPACE	b 24	-/1	0	SPACE
25	30/2	8.54	C7	a 26	20/2	2.16	C17
27	30/2	8.54	C8	b 28	20/2	2.16	C18
31	30/2	7.87	C9	a 30	-/1	0	SPACE
35	-/1	0	SPACE	b 32	-/1	0	SPACE
37	-/1	0	SPACE	a 34	-/1	0	SPACE
39	-/1	0	SPACE	b 36	-/1	0	SPACE
41	-/1	0	SPACE	a 38	-/1	0	SPACE
43	-/1	0	SPACE	b 40	20/2	1	XFMR CT
49	-/1	0	SPACE	a 42	-/1	0	SPACE
		CONN KVA	CALC KVA			CONN KVA	CALC KVA
LIGHTING		139	174 (125%)	TOTAL LOAD		175	
CONTINUOUS		1	1.25 (125%)	BALANCED AMPS		365	
				PHASE A		99.3%	
				PHASE B		101%	

LS

ROOM	SURFACE	VOLTS	240/120V 2P 3W	AIC	22,000		
MOUNTING	P1	BUS AMPS	60	MAIN BKR	MLO		
FED FROM	P1	NEUTRAL	100%	LUGS	STANDARD		
NOTE INSTALL GENERATOR BACKFEED BREAKER WITH INTERLOCK							
CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION	CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	50/2	0	BACKFEED	a 2	50/2	0	MAIN
3	-/1	0	SPACE	b 4	-/1	0	SPACE
5	30/2	2.88	PUMP 1	a 6	30/2	2.88	PUMP 2
7	-/1	0	SPACE	b 8	-/1	0	SPACE
9	15/1	0.5	CONTROL	a 10	15/1	0.36	GFCI REC
		CONN KVA	CALC KVA			CONN KVA	CALC KVA
LARGEST MOTOR		2.88	0.72 (25%)	MOTORS		5.76	5.76 (100%)
				RECEPTACLES		0.36	0.36 (50%>10)
				CONTINUOUS		0.5	0.625 (125%)
				TOTAL LOAD		7.47	
				BALANCED AMPS		31.1	
				PHASE A		113%	
				PHASE B		87%	

FEEDER SCHEDULE

ID	CONDUIT AND FEEDER
20/1	1#12,#12N,#12G
20/2D	2#12,#12G
20/2D.A	1"C,2#12,#12G
30/2D	1"C,2#10,#10G
30/2D.A	1/2"C,2#10,#10G
35/2D.A	1"C,2#8,#8G
45/2D.B	1"C,2#6,#6G
45/2D.C	1"C,2#6,#6G
60/2D	2"C,2#4,#4N,#4G
200/2U	2"C,2#3/0,#3/0N
400/2U.A	(2)2"C,2#3/0,#3/0N

SIZING METHOD: COPPER, 60°C #12 THROUGH #1, 75°C 1/0 AND ABOVE PVC (EXCEPT WHERE NOTED)

HOBART PARK CONCESSION & RESTROOM BUILDING

INDIAN RIVER COUNTY, FLORIDA

Key Plan:

Issues:	No.:	Date:	Description:
	A.	01.30.18	CLIENT REVIEW
	B.	02.20.18	CLIENT REVIEW
	C.	02.22.18	CLIENT REVIEW
	D.	12.04.18	FINAL DOCUMENTS



Consultant:



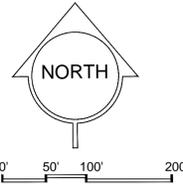
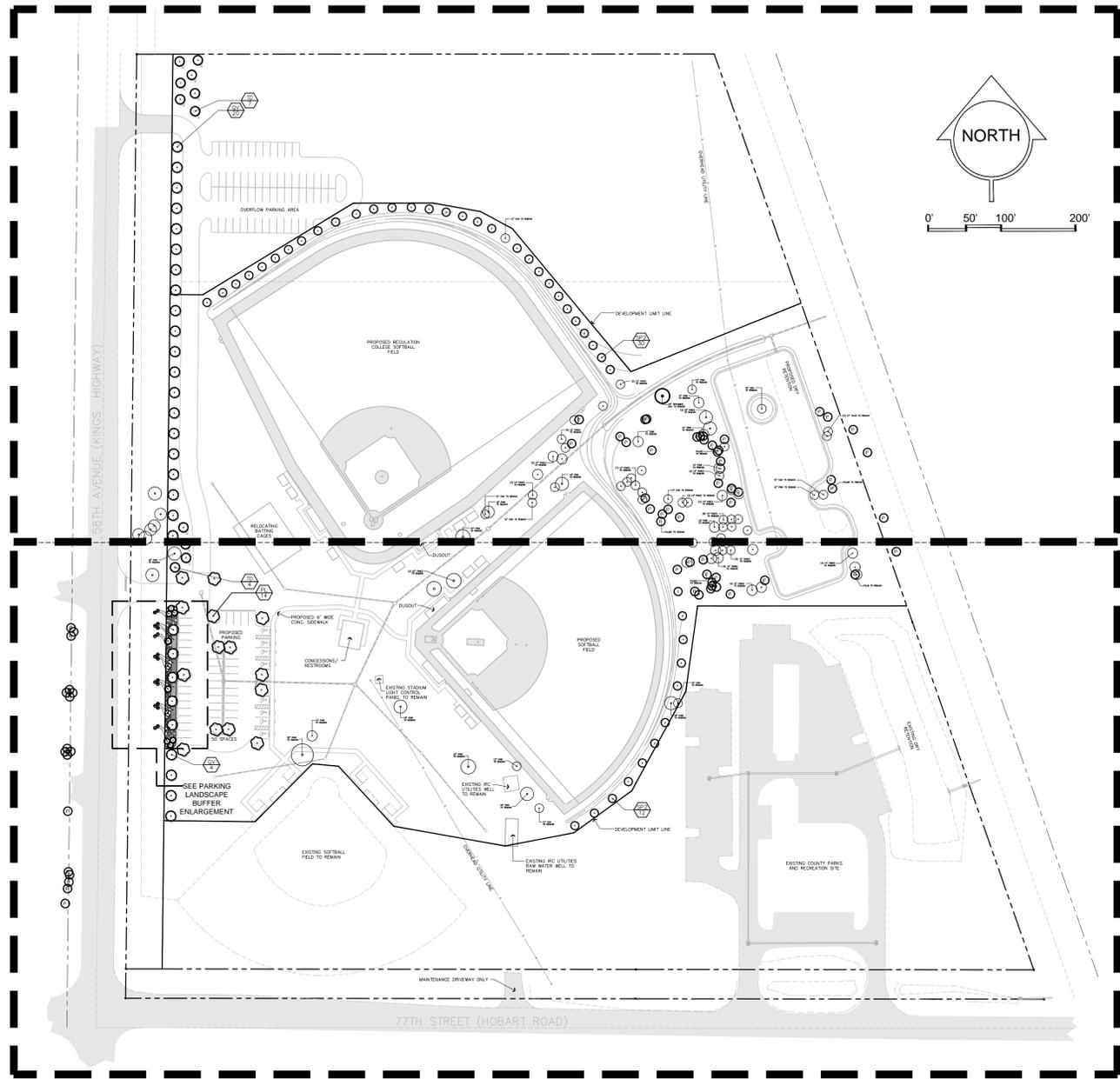
Drawing Title:
ELECTRICAL ONE-LINES
& SITE LIGHTING PANEL SCHEDULE



Drawn:	Dwg. File:
ABJ	XREF File:
A.J.D.	Plot File:
Project No.:	Sheet No.:
2018-04	

Cert. No.: FL PE 65050

Date Signed: E0.2



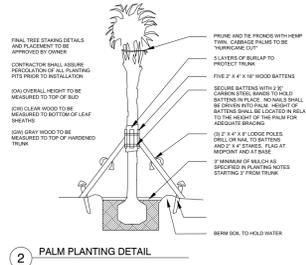
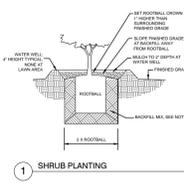
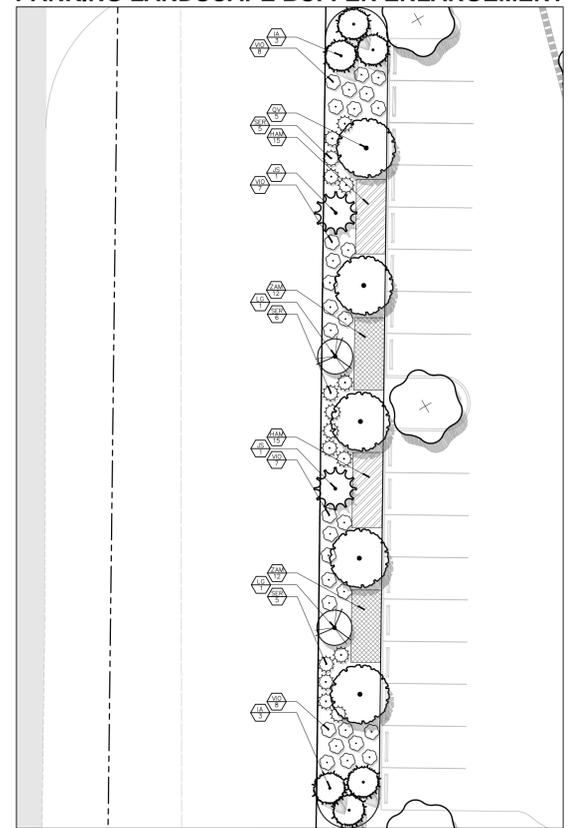
LANDSCAPE NOTES:

- ALL PROPOSED PLANT MATERIAL USED ON SITE SHALL BE FLORIDA GRADE A NUMBER 1 OR BETTER, IN ACCORDANCE WITH "GRADES AND STANDARDS FOR NURSERY PLANTS" PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE. ALL PLANT MATERIAL ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT BEFORE, DURING, AND AFTER INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THESE PLANS BEFORE PRICING AND PERFORMING THE WORK.
- SOD AREAS PROPOSED FOR THIS SITE SHALL BE STENOTAPHRUM SECUNDATUM / ST. AUGUSTINE FLORITAM. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXACT QUANTITY.
- ALL PROPOSED LANDSCAPE PLANTING AREAS SHALL RECEIVE AN APPROVED MIX OF SUPPLEMENTAL PLANTING SOIL. A MINIMUM OF 1/2 CUBIC YARDS ARE REQUIRED FOR EACH TREE, 1/4 CUBIC YARDS FOR EACH LARGE SHRUB, AND 1 CUBIC YARD PER 50 SMALL SHRUBS OR GROUNDCOVERS.
- THE CONTRACTOR SHALL ENSURE THAT ALL PLANTINGS RECEIVE ADEQUATE WATER DURING INSTALLATION AND DURING THE WARRANTY PERIOD. DEEP WATERING IS REQUIRED FOR ALL TREES AND PALMS. SUPPLEMENTAL WATERING MAY BE NEEDED IN ADDITION TO IRRIGATION AND RAINFALL TO ENSURE HEALTHY PLANT ESTABLISHMENT.
- TABLETIZED FERTILIZER EQUAL TO AGRIFORM PLANTING TABLETS (20-10-15) 21 GRAM, SHALL BE PROVIDED FOR ALL PLANT MATERIAL. APPLICATION RATES AND INSTALLATION PROCEDURES SHALL BE IN CONFORMANCE WITH MANUFACTURERS MINIMUM RECOMMENDATIONS.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL UTILITIES AND TO REPAIR ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE CONSTRUCTION.
- ANY PLANT MATERIAL WHICH IS DISEASED, DISTRESSED, DEAD, OR REJECTED (PRIOR TO SUBSTANTIAL COMPLETION) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE MEETING ALL PLANT LIST SPECIFICATIONS.
- THE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL PLANT MATERIAL FOR A MINIMUM PERIOD OF 90 DAYS FOLLOWING SUBSTANTIAL COMPLETION. THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS DURING THE NORMAL PLANTING SEASON.
- WHERE SHOWN ON THE PLANS AND DETAILS, PLANTING BEDS ARE TO BE COMPLETELY COVERED WITH NATURAL MULCH FROM A LOCAL SOURCE HARVESTED IN A SUSTAINABLE MANNER TO A MINIMUM DEPTH OF THREE (3) INCHES.

IRRIGATION NOTES:

- ALL LANDSCAPE AREAS ARE TO RECEIVE IRRIGATION FROM AN AUTOMATIC SYSTEM THAT PROVIDES 100% COVERAGE, WITH 20% MINIMUM OVERLAP IN GROUND COVER AND SHRUB AREAS. A WIRELESS RAINSWITCH MUST BE INCLUDED WITH THE SYSTEM, INSTALL AT ROOF OF BUILDING (PLACE WITH NO OVERHEAD OBSTRUCTION INCLUDING TREES).
- THE CONTRACTOR MUST VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO PERFORMING ANY WORK ON THE SYSTEM. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT OF ALL UTILITIES AND TO REPAIR ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE CONSTRUCTION.
- IRRIGATION CONTRACTOR SHALL SECURE ANY AND ALL NECESSARY PERMITS FOR THE WORK PRIOR TO COMMENCEMENT OF HIS OPERATIONS ON-SITE. COPIES OF THE PERMITS SHALL BE SENT TO THE OWNER/GENERAL CONTRACTOR. WORK IN THE R.O.W. SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF LOCAL AND/OR STATE JURISDICTION.
- THE IRRIGATION SYSTEM SHALL BE DESIGNED TO CONFORM TO THE REQUIREMENTS OF INDIAN RIVER COUNTY AND THE RESTRICTIONS ON IRRIGATION USE AS SPECIFIED BY THE ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT.

PARKING LANDSCAPE BUFFER ENLARGEMENT



PLANT SCHEDULE

CANOPY TREES	CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT	SIZE
	PL	14	Platanus occidentalis / American Sycamore Straight Trunk, Uniform Branching, Dense Canopy	12' Ht. X 4.5' Spr.	2" Cal
	QV	29	Quercus virginiana / Live Oak Straight Trunk, Uniform Branching, Dense Canopy	18'-20' H X 7'-8' W	2" Cal
	TD	11	Taxodium distichum / Bald Cypress Straight Trunk, Uniform Branching, Dense Canopy	12' Ht. X 4.5' Spr.	2" Cal
PALM TREES	CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT	SIZE
	SP2	42	Relocated Sabal palmetto / Cabbage Palmetto On-Site Relocation	FG	
UNDERSTORY TREES	CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT	SIZE
	IA	6	Ilex x attenuata 'East Palatka' / East Palatka Holly Straight Trunk, Uniform Branching, Dense Canopy	6' Ht. Min.	1.5" Cal
	JS	2	Juniperus silicicola / Southern Red Cedar Straight Trunk, Uniform Branching, Dense Canopy	6' Ht. Min.	1.5" Cal
	LG	2	Ligustrum japonicum / Tree Form Ligustrum Multi-Trunk Specimen, Dense Canopy	7' Ht. X 7' Spr.	1.5" Cal. Combined
SHRUBS	CODE	QTY	BOTANICAL NAME / COMMON NAME	SIZE	FIELD2
	SER	16	Serenoa repens / Saw Palmetto Dense, Full to Base	7 Gal Min.	20" x 20" Min
	VIO	30	Viburnum odoratissimum / Sweet Viburnum	7 Gal Min.	36" Ht
SHRUB AREAS	CODE	QTY	BOTANICAL NAME / COMMON NAME	CONT	FIELD2
	HAM	30	Hamelia patens / Fire Bush Dense, Full to Base	3 Gal Min.	20" x 20" Min.
	ZAM	24	Zamia pumila / Coontie	3 Gal Min.	20" x 20" Min.

LANDSCAPE REQUIREMENTS

WEST PERIMETER - 58TH AVE - 15' WIDTH - 997' LINEAL FEET *USING 20' WIDTH BUFFER REQUIREMENTS PER IRC
Excludes Driveways and Walkways

REQUIRED	PROPOSED
4 CANOPY TREES PER 100' = 40	** 29 LIVE OAK ** 11 BALD CYPRESS

* NATIVE PLANT MATERIAL
^ DROUGHT TOLERANT PLANT MATERIAL

WEST PERIMETER LANDSCAPE BUFFER AT PARKING - 58TH AVE 15' WIDTH - 200' LINEAL FEET *USING 20' WIDTH BUFFER REQUIREMENTS PER IRC

REQUIRED	PROPOSED
5 UNDERSTORY TREES PER 100' = 10	** 6 EAST PALATKA HOLLY ** 2 SOUTHERN RED CEDAR ** 2 LIGUSTRUM
50 SHRUBS PER 100' = 100	** 16 SAW PALMETTO ** 30 SWEET VIBURNUM ** 30 FIRE BUSH ** 24 COONTIE

* NATIVE PLANT MATERIAL
^ DROUGHT TOLERANT PLANT MATERIAL

NON-VEHICULAR AREA LANDSCAPE
254,750 sf of NVU AREA (Development Area: 618,987 sf - 364,237 sf = 254,750 sf)
Excludes:
RS-6 Zoning - 33,594 sf
ImperVIOUS - 38,540 sf
Baseball Fields - 239,017 sf
Landscape Buffer - 19,940 sf (997 LF X 20)
Parking Interior Landscape - 33,146 sf
Total Excluded: 364,237 sf

REQUIRED	PROPOSED
1 CANOPY TREE PER 3000' = 85	422 TREE CREDITS APPLIED TO NVU +

* NATIVE PLANT MATERIAL
^ DROUGHT TOLERANT PLANT MATERIAL

PARKING INTERIOR LANDSCAPE - 33,146 sf
Driving Aisles: 8,193 sf, Driveway: 14,007 sf, Parking Spaces: 10,946 sf

REQUIRED	PROPOSED
12% X IMPERVIOUS AREA = 3,978 SQ FT LANDSCAPE AREA	** 14 AMERICAN SYCAMORE
1 CANOPY TREE PER 300' = 14	

* NATIVE PLANT MATERIAL
^ DROUGHT TOLERANT PLANT MATERIAL

TREE CREDITS
CANOPY TREES:
(8) 12" DBH OAK TREE PRESERVED X 4 CREDITS = 32 CREDITS
(1) 20" DBH SPECIMEN OAK TREE PRESERVED X 8 CREDITS = 8 CREDITS
(35) 12" DBH PINE TREES PRESERVED X 4 CREDITS = 140 CREDITS
(21) 14" DBH PINE TREES PRESERVED X 6 CREDITS = 126 CREDITS
(1) 16" DBH PINE TREE PRESERVED X 6 CREDITS = 6 CREDITS
(7) 18" DBH PINE TREES PRESERVED X 6 CREDITS = 42 CREDITS
(4) 20" DBH PINE TREES PRESERVED X 8 CREDITS = 32 CREDITS
(1) 30" DBH PINE TREE PRESERVED X 8 CREDITS = 8 CREDITS

(44) PALM TREES PRESERVED (3 PALMS = 1 CREDIT) = 14 CREDITS
(42) RELOCATED PALMS PRESERVED (3 PALMS = 1 CREDIT) = 14 CREDITS

TOTAL CREDITS = 422 CREDITS

MITIGATION REQUIREMENTS

REMOVED	PROPOSED
(3) 18" DBH OAKS = 54 DBH	78" DBH REMOVED
(1) 24" DBH OAKS = 24 DBH	FEE ASSESSMENT
	78" DBH x \$100 PER INCH = \$7,800 PAYABLE TO INDIAN RIVER COUNTY
42 PALMS REMOVED	42 PALMS RELOCATED

COMBINED FEE ASSESSMENT = \$7,800

TOTAL LANDSCAPE	REQUIRED	PROPOSED
CANOPY TREES	111	54 + 422 CREDITS
UNDERSTORY TREES	10	
SHRUBS	100	100

LANDSCAPE POINT SYSTEM OPTION	POINTS
MOISTURE SENSING CONTROLLER	5
WATER USAGE ZONES INDICATED	5
76% to 100% DROUGHT TOLERANT SHRUBS	10
76% to 100% DROUGHT TOLERANT TREES	10

DATE: _____

REVISIONS: _____

NO. _____

SARTAIN AND ASSOCIATES LLC
VERO BEACH, FL 32903
772-251-3870
REGISTRATION # LC2600075

SARTAIN
A S S O C I A T E S

LICENSED LANDSCAPE ARCHITECT
MARK P. SARTAIN
LICENSE NUMBER 6667134

DATE: _____

DRAWN BY: _____

MPS

LANDSCAPE PLAN

Hobart Park
Baseball Field Improvements
VERO BEACH
FLORIDA

SHEET NUMBER
LC-1

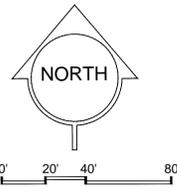


58TH AVENUE (KINGS HIGHWAY)

OVERFLOW PARKING AREA

PROPOSED REGULATION COLLEGE SOFTBALL FIELD

RELOCATING BATTING CAGES



OVERHEAD UTILITY LINE

DEVELOPMENT LIMIT LINE

PROPOSED DRY RETENTION

SEE LC-3

TREE SYMBOL LEGEND

	EXISTING SPECIMEN TREE TO REMAIN
	SPECIMEN TREE TO BE REMOVED
	NON-SPECIMEN TREE TO REMAIN
	NON-SPECIMEN TREE TO BE REMOVED
	EXISTING PALM TREE TO REMAIN
	EXISTING PALM TREE TO BE REMOVED

NO.	REVISIONS	DATE:

SARTAIN AND ASSOCIATES LLC
 VERO BEACH, FL 32903
 772.251.3870
 REGISTRATION # LC2600075



LICENSED LANDSCAPE ARCHITECT
 MARK P. SARTAIN
 LICENSE NUMBER 6667134
 DATE: _____

NUMBER 18_09	DATE 09/21/18	MPS

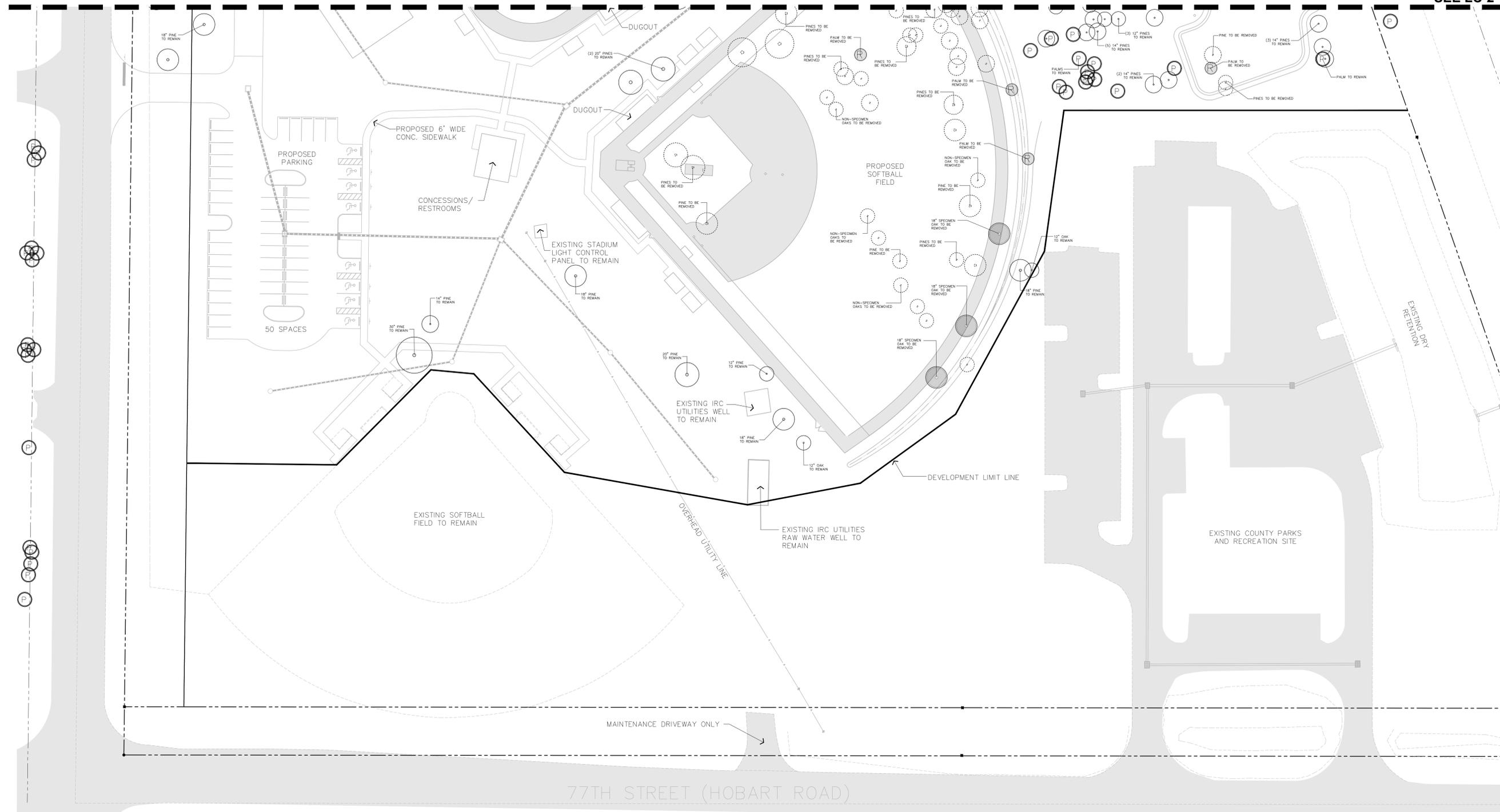
TREE PLAN

Hobart Park
 Baseball Field Improvements
 VERO BEACH
 FLORIDA

SHEET NUMBER
LC-2



SEE LC-2



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 772.221.3870
 REGISTRATION # LC2600075



LICENSED LANDSCAPE ARCHITECT
 MARK P. SARTAIN
 LICENSE NUMBER 6667134
 DATE: _____

NUMBER	DATE	MPS
18_09	09/21/18	
DRAWN BY		

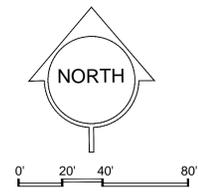
TREE PLAN

Hobart Park
 Baseball Field Improvements
 VERO BEACH
 FLORIDA

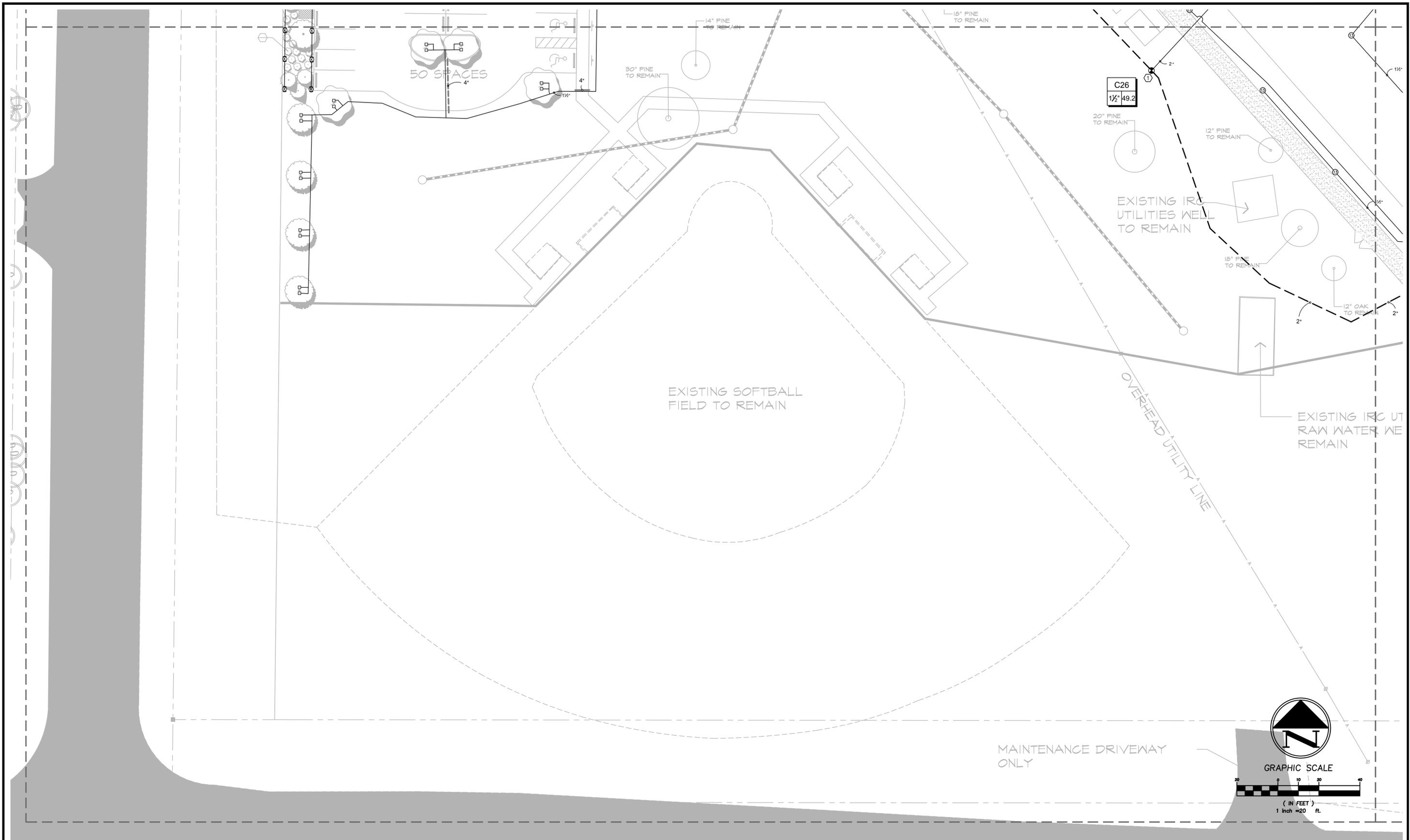
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LC-3

TREE SYMBOL LEGEND

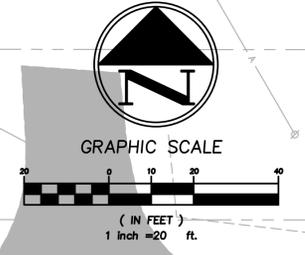
	EXISTING SPECIMEN TREE TO REMAIN
	SPECIMEN TREE TO BE REMOVED
	NON-SPECIMEN TREE TO REMAIN
	NON-SPECIMEN TREE TO BE REMOVED
	EXISTING PALM TREE TO REMAIN
	EXISTING PALM TO BE REMOVED



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IRRIGATION PLAN
 HOBART PARK
 BASEBALL FIELD IMPROVEMENTS



NO.	DATE	DESCRIPTION	DR/APP
REVISIONS			

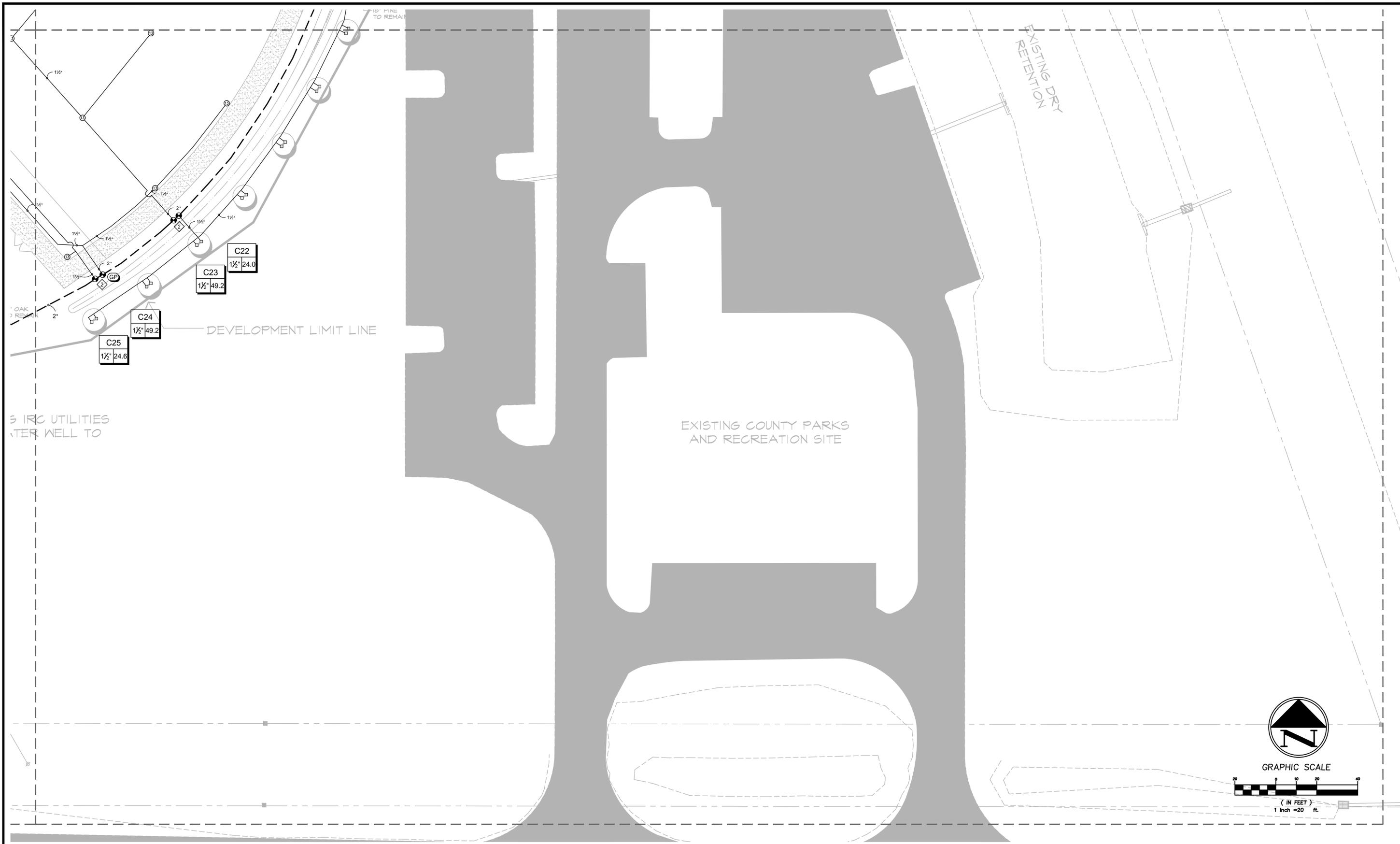
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 1655 27th STREET, SUITE #2, VERO BEACH, FLORIDA, 32960
 (772) 567-5300 / FAX (772) 794-1106
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INDIAN RIVER COUNTY
 FLORIDA

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 O: 706-356-0309 F: 706-356-1948
STEPHEN E. MOLER, P.E. FL#33193

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DESIGNED	MC
CHECKED	SEM
DATE	11/18
SCALE	1"=20'
SHEET	2 OF 10
PROJECT NO.	1756



EXISTING COUNTY PARKS
AND RECREATION SITE

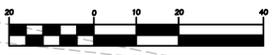
EXISTING DRY
RETENTION

DEVELOPMENT LIMIT LINE

3 IRC UTILITIES
WATER WELL TO



GRAPHIC SCALE



(IN FEET)
1 inch = 20 ft.

IRRIGATION PLAN

HOBART PARK
BASEBALL FIELD IMPROVEMENTS

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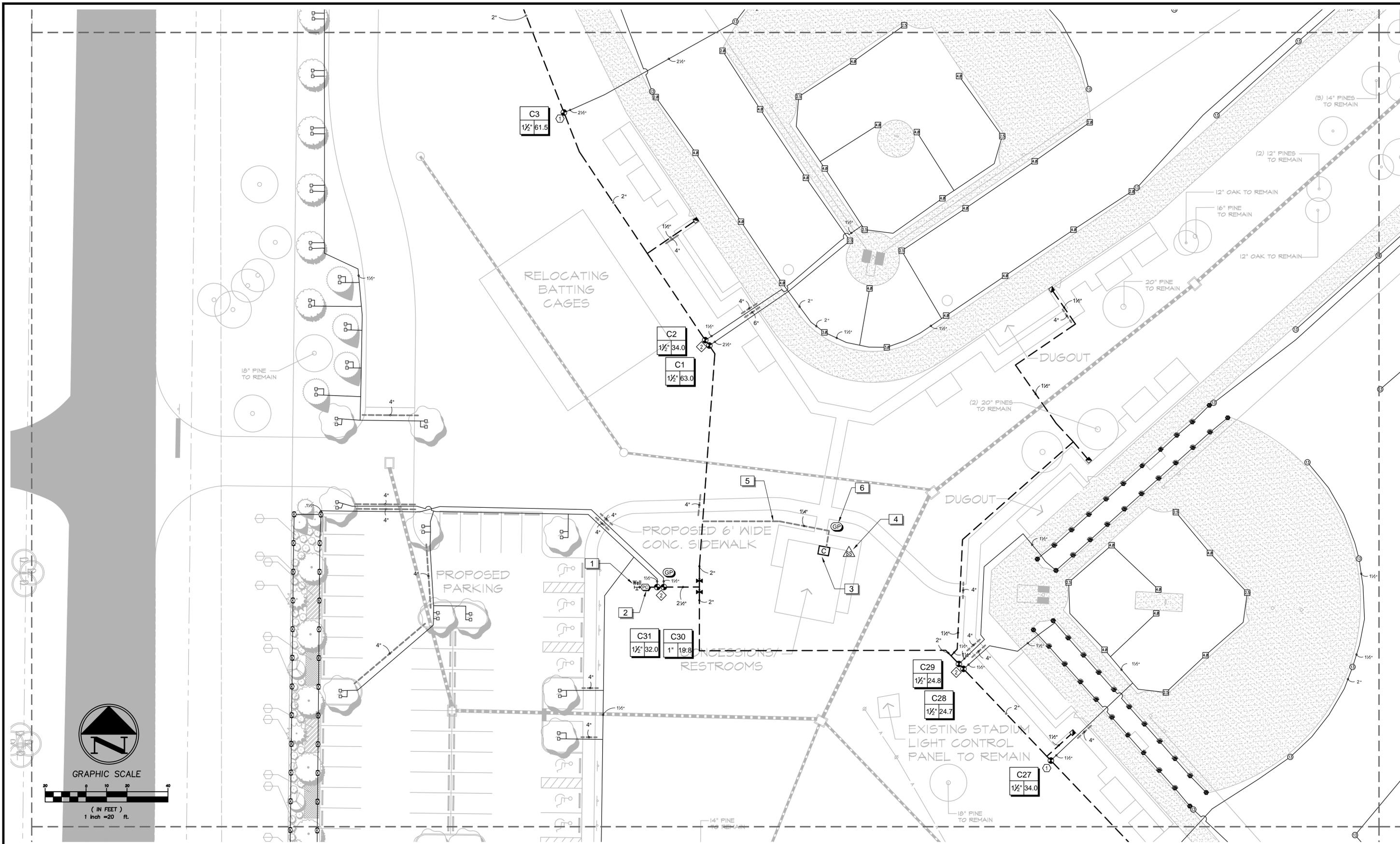
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DATE	11/18
SCALE	1"=20'
SHEET	3 of 10
PROJECT NO.	1756

NO.	DATE	DESCRIPTION	DR/APP
REVISIONS			

INDIAN RIVER COUNTY

FLORIDA

STEPHEN E. MOLER, P.E. FL#33193



IRRIGATION PLAN

HOBART PARK
BASEBALL FIELD IMPROVEMENTS

NO.	DATE	DESCRIPTION	DR/APP
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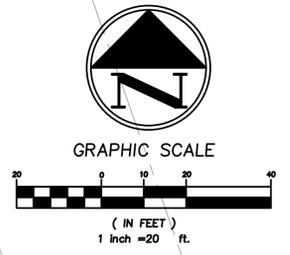
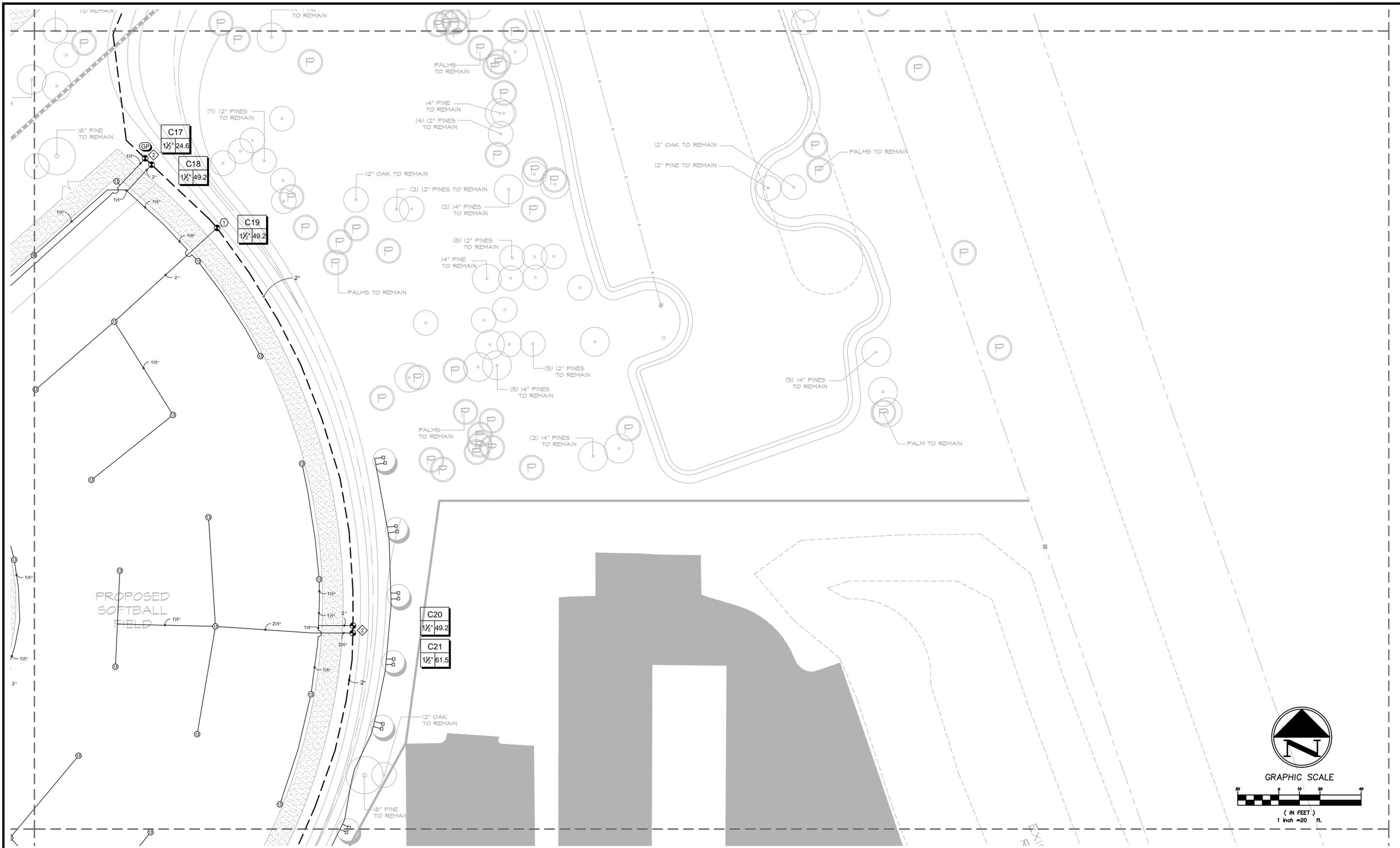
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DATE	11/18
SCALE	1"=20'
SHEET	4 of 10
PROJECT NO.	1756

STEPHEN E. MOLER, P.E. FL#33193



IRRIGATION PLAN

HOBART PARK
BASEBALL FIELD IMPROVEMENTS

NO.	DATE	DESCRIPTION	DR/APP
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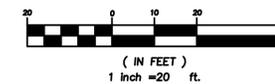
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SHEET	5 of 10
PROJECT NO.	1756

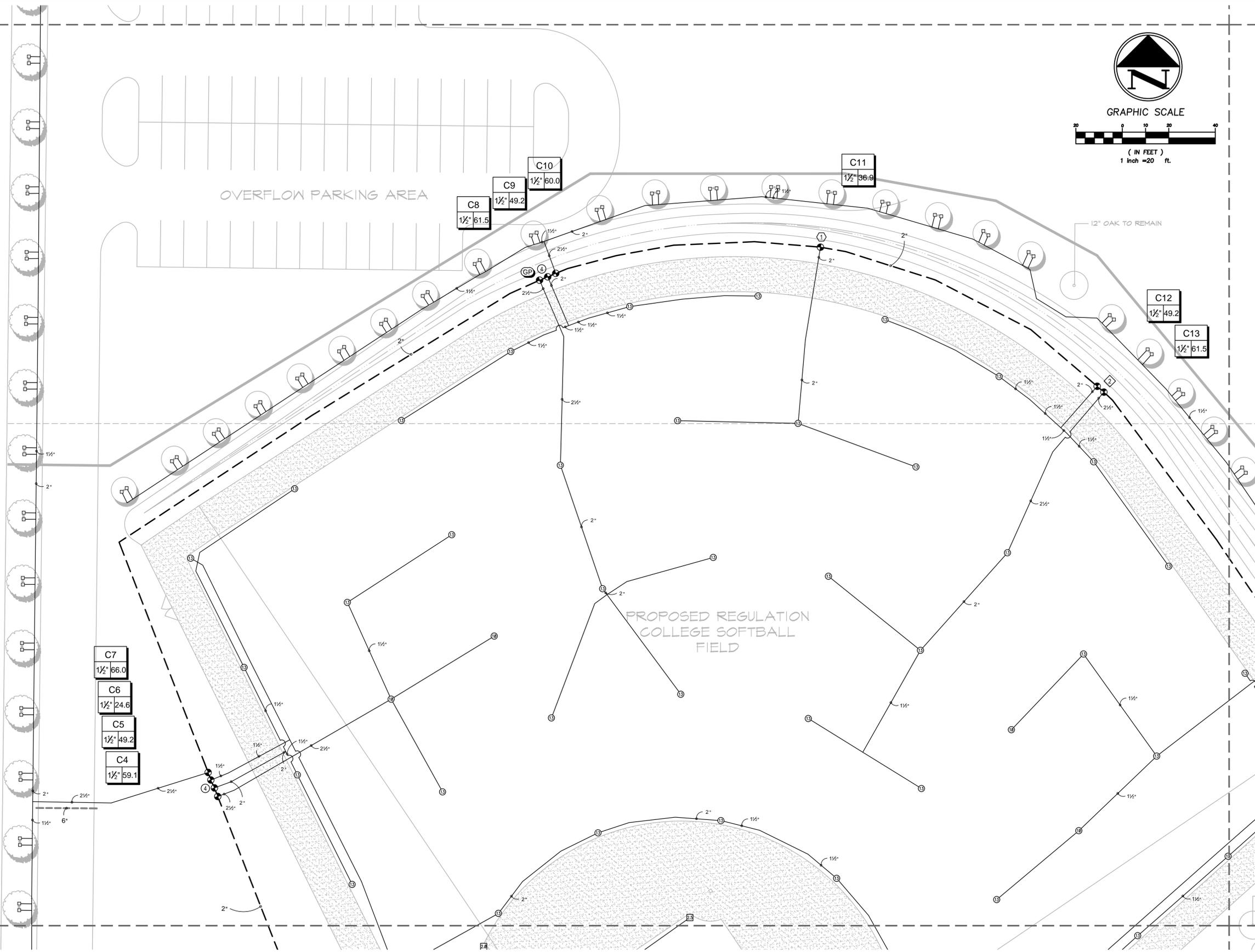
STEPHEN E. MOLER, P.E. FL#33193



GRAPHIC SCALE



OVERFLOW PARKING AREA



IRRIGATION PLAN

HOBART PARK BASEBALL FIELD IMPROVEMENTS

M M **MASTELLER & MOLER, INC.**
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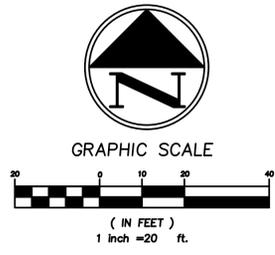
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DATE	11/18
SCALE	1"=20'
SHEET	6 OF 10
PROJECT NO.	1756

NO.	DATE	DESCRIPTION	DR/APP
REVISIONS			

INDIAN RIVER COUNTY

FLORIDA

STEPHEN E. MOLER, P.E. FL#33193



CRITICAL ANALYSIS

Generated: 2018-11-15 07:44

P.O.C. NUMBER: 01

Water Source Information: Irrigation Well

FLOW AVAILABLE
Custom Max Flow: 66.00 gpm
Flow Available: 66.00 gpm

PRESSURE AVAILABLE
Static Pressure at POC: 80.00 psi
Pressure Available: 60.00 psi

DESIGN ANALYSIS
Maximum Multi-valve Flow: 66.00 gpm
Flow Available at POC: 66.00 gpm
Residual Flow Available: 0.00 gpm

Critical Station: C13

Design Pressure: 60.00 psi

Friction Loss: 2.61 psi
Fittings Loss: 0.26 psi
Elevation Loss: 0.00 psi
Loss through Valve: 3.09 psi
Pressure Req. at Critical Station: 65.96 psi
Loss for Fittings: 0.88 psi
Loss for Main Line: 8.85 psi
Loss for POC to Valve Elevation: 0.00 psi
Loss for Backflow: 0.00 psi
Critical Station Pressure at POC: 75.69 psi
Pressure Available: 80.00 psi
Residual Pressure Available: 4.31 psi

VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	GPM	PSI	PSI @ POC	PRECIP
C1	Hunter ICV-G-FS	1-1/2"	Turf Rotor	63.00	51.64	54.75	0.60 in/h
C2	Hunter ICV-G-FS	1-1/2"	Turf Rotor	34.00	50.80		0.60 in/h
C3	Hunter ICV-G-FS	1-1/2"	Turf Rotor	61.50	67.21	72.82	0.79 in/h
C4	Hunter ICV-G-FS	1-1/2"	Turf Rotor	59.10	65.96	72.45	0.43 in/h
C5	Hunter ICV-G-FS	1-1/2"	Turf Rotor	49.20	65.38	72.52	0.83 in/h
C6	Hunter ICV-G-FS	1-1/2"	Turf Rotor	24.60	64.51	71.70	2.03 in/h
C7	Hunter ICV-G-FS	1-1/2"	Bubbler	66.00	38.35	45.58	4.31 in/h
C8	Hunter ICV-G-FS	1-1/2"	Turf Rotor	61.50	65.97	75.64	0.42 in/h
C9	Hunter ICV-G-FS	1-1/2"	Turf Rotor	49.20	64.03	73.72	0.82 in/h
C10	Hunter ICV-G-FS	1-1/2"	Bubbler	60.00	38.56	48.26	4.35 in/h
C11	Hunter ICV-G-FS	1-1/2"	Turf Rotor	36.90	63.46	73.35	0.40 in/h
C12	Hunter ICV-G-FS	1-1/2"	Turf Rotor	49.20	64.12	73.86	0.82 in/h
C13	Hunter ICV-G-FS	1-1/2"	Turf Rotor	61.50	65.96	75.69	0.41 in/h
C14	Hunter ICV-G-FS	1-1/2"	Turf Rotor	59.10	65.96	74.28	0.43 in/h
C15	Hunter ICV-G-FS	1-1/2"	Turf Rotor	49.20	64.76	73.75	0.82 in/h
C16	Hunter ICV-G-FS	1-1/2"	Turf Rotor	24.60	66.22	75.19	2.61 in/h
C17	Hunter ICV-G-FS	1-1/2"	Turf Rotor	24.60	65.15	74.61	1.65 in/h
C18	Hunter ICV-G-FS	1-1/2"	Turf Rotor	49.20	64.29	73.77	0.83 in/h
C19	Hunter ICV-G-FS	1-1/2"	Turf Rotor	49.20	64.94	74.57	0.45 in/h
C20	Hunter ICV-G-FS	1-1/2"	Turf Rotor	49.20	64.01	73.88	0.86 in/h
C21	Hunter ICV-G-FS	1-1/2"	Turf Rotor	61.50	64.85	74.71	0.46 in/h
C22	Hunter ICV-G-FS	1-1/2"	Bubbler	24.00	35.92	44.80	4.39 in/h
C23	Hunter ICV-G-FS	1-1/2"	Turf Rotor	49.20	64.93	73.99	0.44 in/h
C24	Hunter ICV-G-FS	1-1/2"	Turf Rotor	49.20	64.27	73.02	0.85 in/h
C25	Hunter ICV-G-FS	1-1/2"	Turf Rotor	24.60	65.10	73.82	1.64 in/h
C26	Hunter ICV-G-FS	1-1/2"	Turf Rotor	49.20	65.79	72.13	0.71 in/h
C27	Hunter ICV-G-FS	1-1/2"	Turf Rotor	34.00	49.74		0.68 in/h
C28	Hunter ICV-G-FS	1-1/2"	Turf Spray	24.69	33.17	37.20	1.68 in/h
C29	Hunter ICV-G-FS	1-1/2"	Turf Spray	24.77	33.94	37.81	1.70 in/h
C30	Hunter ICV-G-FS	1"	Shrub Rotary	19.83	45.68	45.81	0.63 in/h
C31	Hunter ICV-G-FS	1-1/2"	Bubbler	32.00	35.84	35.94	4.31 in/h

TWO WIRE CONTROL SYSTEM NOTES

1. ALL DECODER WIRE SPLICE CONNECTORS TO BE 3M DBY-6 OR BETTER.
2. ALL DECODER TO VALVE SOLENOID SPLICE CONNECTORS TO BE 3M DBY-6 OR BETTER.
3. ALL GROUNDING POINTS TO BE INSTALLED AS PER DETAIL.
4. ALL CONTROL SYSTEM PRODUCTS TO BE INSTALLED AND OPERATED AS PER THE MANUFACTURER'S RECOMMENDATIONS AND OR REQUIREMENTS.
5. IRRIGATION CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY MANUFACTURER'S INSTALLATION TRAINING PRIOR TO PROJECT START, NOTIFY IRRIGATION CONSULTANT WHEN TRAINING HAS BEEN COMPLETED.
6. IRRIGATION CONTRACTOR IS RESPONSIBLE FOR TRAINING OWNERS STAFF, AS NEEDED, ON THE OPERATION AND MAINTENANCE OF THE CONTROL SYSTEM.
7. IRRIGATION CONTRACTOR IS RESPONSIBLE FOR COMPLETE PROGRAMMING AND OPERATION OF THE CONTROL SYSTEM FOR 6 MONTHS FROM THE DAY THE CONTROLLER BECOMES FUNCTIONAL. CONTRACTOR TO PROVIDE THE OWNERS REPRESENTATIVE A COMPUTER SPREAD SHEET THAT SHOWS EACH PROGRAM, OPERATIONAL DAYS AND RUN TIMES PER ZONE.

CONTROLLER INSTALLATION NOTES

1. IRRIGATION CONTRACTOR TO COORDINATE EXACT LOCATION OF CONTROLLER WITH OWNER'S REPRESENTATIVE.
2. PROVIDE 120VAC 10 AMP POWER TO JUNCTION BOX AT CONTROLLER LOCATION.
3. IRRIGATION CONTRACTOR TO HARD WIRE CONTROLLER TO POWER SUPPLY AS PER PREVAILING CODE.
4. CONTROLLER TO BE SECURELY ATTACHED TO THE WALL USING METALLIC FASTENERS MADE FOR WALL TYPE.
5. ALL IRRIGATION CONTROL WIRE ABOVE GRADE TO BE ENCASED IN PVC ELECTRICAL CONDUIT.
6. IRRIGATION CONTRACTOR IS RESPONSIBLE FOR ALL POTENTIAL WALL PENETRATIONS AND THE SEALING OF THOSE PENETRATIONS.
7. CONTROLLER TO BE GROUNDED AS PER MANUFACTURERS RECOMMENDATIONS.

GENERAL NOTES

1. ALL TRENCHING TO BE OUTSIDE OF TREE DRIP LINE
2. MAINLINE TO HAVE MINIMUM OF 24" OF COVER AND A MINIMUM OF 24" OFF OF THE HARDSCAPE
3. LATERALS TO HAVE MINIMUM OF 18" OF COVER IN SPORTS FIELDS AND A MINIMUM OF 12" IN GENERAL LANDSCAPE AREAS. ALL LATERALS ARE TO BE A MINIMUM OF 18" OFF OF THE HARDSCAPE EDGE.
4. NO ROCKS, BOULDERS OR SHARP OBJECTS TO BE IN TRENCH BACKFILL
5. ALL PIPE TO BE INSTALLED AS PER MANUFACTURES SPECIFICATIONS
6. SPRINKLERS AND RELATED EQUIPMENT TO BE INSTALLED AS PER DETAILS
7. TWO WIRE CONTROL WIRE TO BE 14 GA UL 2 CONDUCTOR, JACKETED AND APPROVED BY 2-WIRE CONTROLLER MANUFACTURER
8. WIRE SPLICES TO BE DONE AS PER DETAILS
9. ALL WIRE SPLICES OUTSIDE OF CONTROL VALVE BOX TO BE IN 10" VALVE BOX
10. TWO WIRE CONDUCTORS TO BE COLOR CODED
11. CONTRACTOR SHALL INSTALL MANUFACTURES GROUNDING EQUIPMENT ON BOTH THE POWER AND OUTPUT SIDES OF CONTROLLER, ALL GROUNDING POINTS TO BE INSTALLED AS PER PLANS AND DETAILS
12. AT EACH VALVE AND CHANGE IN MAINLINE DIRECTION CONTRACTOR TO INSTALL A 30' LOOP OF EXTRA WIRE
13. SPRINKLERS ARE TO BE ADJUSTED TO AVOID OVER-SPRAY INTO NON-IRRIGATED AREAS
14. ELECTRIC CONTROL VALVES ARE TO BE INSTALLED IN VALVE BOXES AS FOLLOWS
14" RECTANGULAR MINIMUM FOR EACH ELECTRIC CONTROL VALVE
15. SPRINKLERS TO BE INSTALLED 12" FROM FOUNDATIONS AND 2' FROM HARDSCAPE
16. CONTRACTOR TO ADD RISER EXTENSIONS TO SPRINKLERS IF REQUIRED TO MAINTAIN PROPER COVERAGE
17. ALL PIPING TO BE FLUSHED PRIOR TO INSTALLATION OF SPRINKLERS
18. ALL VALVES, QUICK COUPLER VALVES, WIRE SPLICES TO BE IN LANDSCAPED BEDS WHEREVER POSSIBLE
19. CONTRACTOR IS RESPONSIBLE FOR OBTAINING PROPER COVERAGE OF AREA TO BE IRRIGATED, MAKE ADJUSTMENTS AS NECESSARY
20. CONTRACTOR SHALL EXERCISE CARE NOT TO DAMAGE EXISTING UTILITIES REPAIRING ANY DAMAGES AT HIS OWN COST
21. PLAN IS DIAGRAMMATIC TO IMPROVE CLARITY ALL IRRIGATION EQUIPMENT TO BE INSTALLED WITHIN PROPERTY LINES AND LANDSCAPED AREAS
22. ANY DISCREPANCIES BETWEEN THE PLAN AND THE SITE TO BE REFERRED TO THE OWNERS REPRESENTATIVE PRIOR TO CONSTRUCTION
23. CONTRACTOR TO PROVIDE 1 YEAR WARRANTY OF ALL PRODUCTS AND WORKMANSHIP TO INCLUDE WINTERIZATION AND SPRING START-UP
24. CONTRACTOR TO PROVIDE OWNER AND OR LANDSCAPE ARCHITECT RECORD DRAWING PRIOR TO SUBSTANTIAL COMPLETION.
25. INSTALLATION OF IRRIGATION SLEEVES IS THE IRRIGATION CONTRACTORS RESPONSIBILITY IRRIGATION CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR SLEEVE INSTALLATION PRIOR TO PAVEMENT INSTALLATION
26. CLEANUP AND DISPOSE OF ALL DEBRIS, WASTE AND EXCESS CONSTRUCTION MATERIALS LEAVE AREA NEAT, CLEAN AND READY FOR OWNERS USE PROVIDE CLEAN PAVEMENT SURFACES INCLUDING AREAS OF PUBLIC R.O.W.

IRRIGATION PLAN AND NOTES

NO.	DATE	DESCRIPTION	DR/APP
REVISIONS			

M M MASTELLER & MOLER, INC.
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CERTIFICATE OF AUTHORIZATION NUMBER 4204

HOBART PARK
BASEBALL FIELD IMPROVEMENTS

INDIAN RIVER COUNTY
FLORIDA

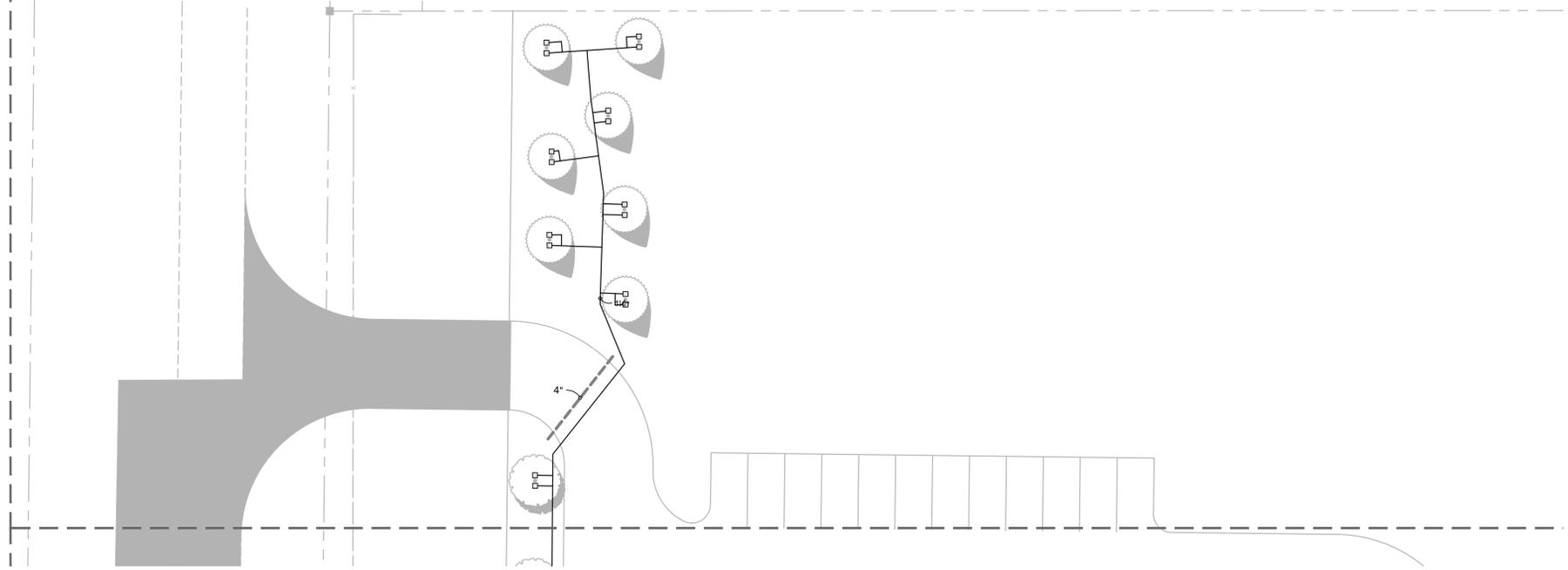
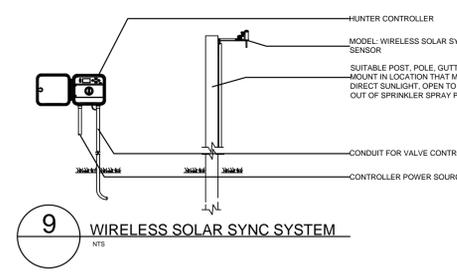
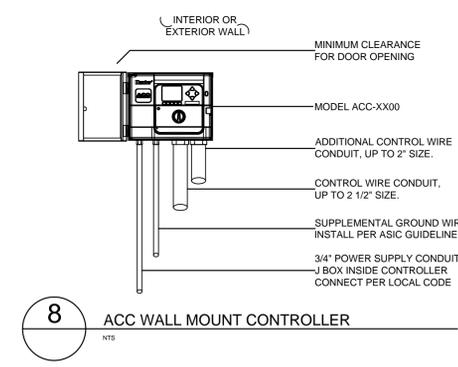
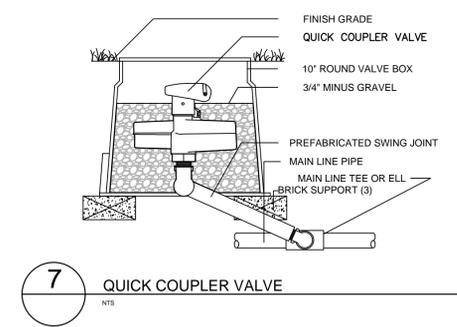
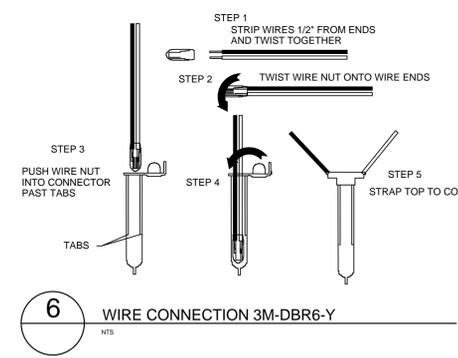
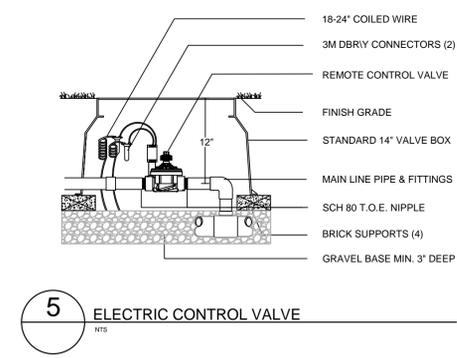
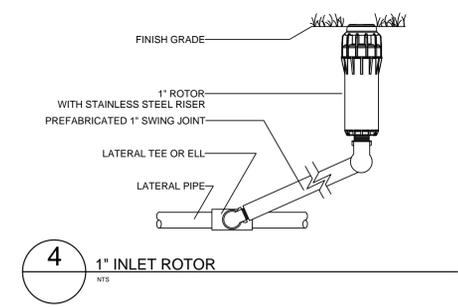
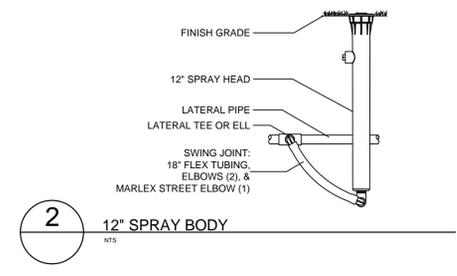
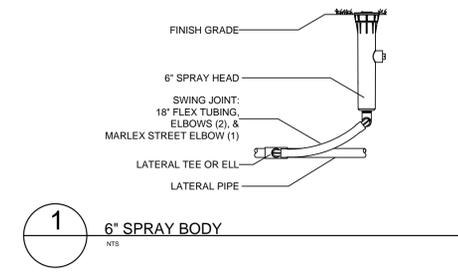
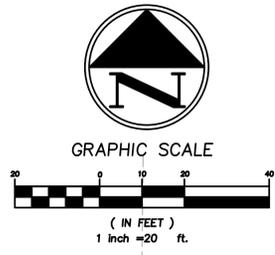
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Sustaining Landscapes. Conserving Water.
P.O. Box 693
Lavonia, Ga 30053
O: 706-356-0309
F: 706-356-1948

DRAWN	MC
DESIGNED	MC
CHECKED	SEM
DATE	11/18
SCALE	1"=20'
SHEET	7 of 10
PROJECT NO.	1756

STEPHEN E. MOLER, P.E. FL#33193



IRRIGATION PLAN AND DETAILS

NO.	DATE	DESCRIPTION	DR/APP
REVISIONS			

M M MASTELLER & MOLER, INC.
CONSULTING ENGINEERS
1655 27th STREET, SUITE #2, VERO BEACH, FLORIDA, 32960
(772) 567-5300 / FAX (772) 794-1106
CERTIFICATE OF AUTHORIZATION NUMBER 4204

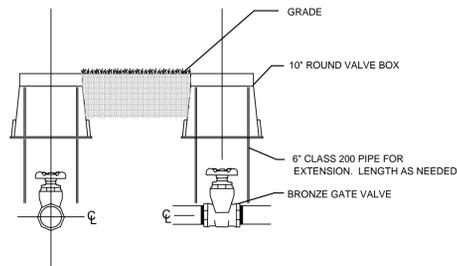
HOBART PARK
BASEBALL FIELD IMPROVEMENTS
INDIAN RIVER COUNTY
FLORIDA

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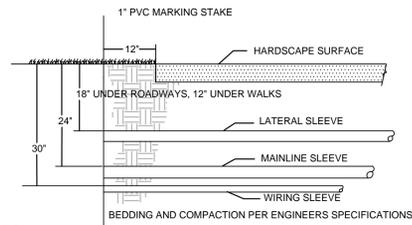
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DATE	11/18
SCALE	1"=20'
SHEET	8 of 10
PROJECT NO.	1756

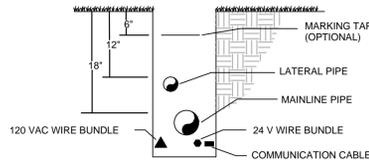
STEPHEN E. MOLER, P.E. FL#33193



10 ISOLATION VALVE DETAIL
NTS

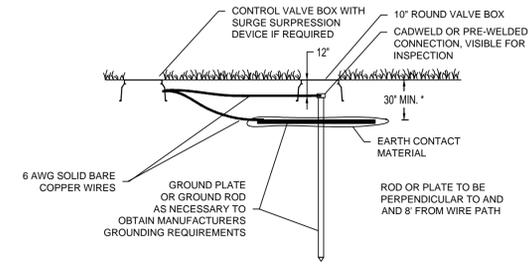


11 SLEEVING
NTS



12 TRENCH, PIPE AND WIRE
NTS

SIDE VIEW



13 TWO WIRE GROUNDING POINT DETAIL
NTS

PUMP STATION SPECIFICATIONS:
 NAME: HOBART PARK
 STATION MODEL: WIMSTY-5000-2-7.5-230-1-65-80
 STATION TOTAL PERFORMANCE: 65 GPM @ 80 PSI
 REGULATE PSI: 80
 PUMP HORSEPOWER:
 PUMP NO. 1 7.5HP
 CHECK VALVE SIZES:
 PUMP NO. 1 2"
 ISOLATION VALVE SIZES:
 DISCHARGE ISOLATION VALVE SIZE: 2"
 DISCHARGE MANIFOLD SIZE: 2"
 EXHAUST FAN REQUIREMENTS: 240CFM
 POWER REQUIREMENTS: 230 V, 60 HZ, 1 PHZ, 21 FLA

STATION COMPONENTS:
 A. PUMP AND MOTOR
 B. CHECK VALVE
 C. PRESSURE TRANSDUCER WITH GAUGE
 D. N/A
 E. FLOW SENSOR
 F. N/A
 G. STATION FAN HOOD MOUNTED
 H. DEAD-FRONT DISCONNECT PANEL
 I. PAINTED STEEL ENCLOSURE (SANDSTONE)
 J. PSI/VAC GAUGE LIQUID FILLED
 K. PAINTED STEEL BASE (SANDSTONE)
 L. LEVEL TRANSDUCER
 M. STATION DISCHARGE ISOLATION VALVE

<input type="checkbox"/> APPROVED AS SUBMITTED	7					DRAWN BY: ESP	DATE: 11/14/18	TITLE: HOBART PARK
<input type="checkbox"/> APPROVED AS NOTED	6					CHECKED BY:	DATE:	IRRIGATION PUMP STATION
<input type="checkbox"/> REVISE AND RESUBMIT	5					THIS DRAWING AND DESIGN IS THE PROPERTY OF WATERTRONICS AND IS NOT TO BE REPRODUCED IN WHOLE OR PART, NOR EMPLOYED FOR ANY PURPOSE OTHER THAN SPECIFICALLY PERMITTED IN WRITING BY WATERTRONICS. THIS DRAWING LOANED AND SUBJECT TO RETURN ON DEMAND.		
SIGNATURE:	4					SCALE: NTS SHEET 1 OF 1 SHEETS		
NAME:	3					JOB NO.: DRAWING NO. PRSU10627		
DATE:	2							
	1							
	NO.	DATE	BY	DESCRIPTION				

12 PUMP CONTROL SYSTEM
NTS

IRRIGATION DETAILS

HOBART PARK
BASEBALL FIELD IMPROVEMENTS

M M MASTELLER & MOLER, INC.
 CONSULTING ENGINEERS
 1655 27th STREET, SUITE #2, VERO BEACH, FLORIDA, 32960
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STEPHEN E. MOLER, P.E. FL#33193

FLORIDA

DESIGNED MC
 CHECKED SEM
 DATE 11/18
 SCALE NO SCALE
 SHEET 9 OF 10
 PROJECT NO: 1756

NO.	DATE	DESCRIPTION	DR/APP
REVISIONS			

WaterMax

5000-2
SUBMERSIBLE TURBINE
GENERAL SPECIFICATIONS

Project Name: Hobart Park
Project Location:
Pumping System Model #: WMSTV-5000-2-7.5-230-1-65-80
Total Design Criteria: Quantity of Pumps: 1
Station Design Capacity: 65 GPM @ 80 PSI Discharge

SCOPE OF WORK

It is the intention of this specification to describe a self-enclosed, automatic SUBMERSIBLE pump station for a commercial turf irrigation system. This is to be accomplished by using a completely prefabricated pump station conforming to the following specifications.

The pumping station shall be model number WaterMax WMSTV-5000-3 as manufactured by WATERTRONICS, INC. 525 Industrial Drive, P.O. Box 530, Hartland, Wisconsin 53029-0530, www.watertronics.com.

For Pricing Contact:
John VanDerCruyssen 262-269-2440
John.VanDerCruyssen@Watertronics.com

MANUFACTURER REQUIREMENTS

The pump station shall be manufactured by Watertronics, Inc., Hartland, Wisconsin. The following information must be furnished by the contractor or manufacturer's representative within 10 days before bid date, to the Consultant/Engineer for consideration as an equal brand.

- a. A complete specification and submittal of all major components for the proposed pump station with individual pump performance verification.
- b. A detailed pumping station proposal drawing complete with component location, sizes and dimensions specific to the installation.
- c. A complete electrical schematic for all high and low voltage circuits showing breaker/ fuse sizing, wire numbering and color.
- d. Pump station manufacturers U.L. file number for the electrical controls and pump station.
- e. A copy of the manufacturer's certificate of insurance.
- f. Product support technicians shall be capable of accessing all information pertaining to the pumping equipment, e.g. electrical schematics, pump curves, program data, bill of materials, etc. The manufacturer shall have no less than two technicians on call seven days a week.
- g. The pump station manufacturer shall provide factory authorized or factory direct service personnel for the set, start-up, preventative maintenance and general service of the pump system. A factory authorized or factory direct service technician must be located within one-hundred (100) mile radius of the project site. The pump systems technician must have a minimum of 5 years experience. The pump station manufacturer shall provide technical phone support twenty-four hours a day seven days a week.

SECTION 1: GENERAL

- 1.1 The pump station performance at enclosure limits shall be as noted in the technical specifications. The capacity, discharge pressure, and discharge pipe dimensions shall be per the technical specifications. The pump shall operate at no more than 3600 RPM. The power supply to the station shall be as noted in the technical specifications.
- 1.2 The station shall be completely wired, piped, dynamically flow and pressure tested prior to shipment.
- 1.3 Operational sequence: The pump shall activate automatically upon a drop in manifold pressure to an adjustable set point. Operation shall be maintained at an adjustable minimum flow. The pump shall be automatically retired when system flow drops below the minimum adjustable set point and the pressure set point has been met for an adjustable time delay.
- 1.4 Construction shall be of modular form utilizing a steel base structurally adequate to support piping, and electrical equipment as a single integral assembly. All nuts, bolts washers, and fasteners shall be stainless steel, zinc or cadmium plated for corrosion resistance.

SECTION 2: PUMP AND MOTOR

2.1 PUMP

Pump shall be submersible type. Bowl assembly including suction case, intermediate bowls and discharge bowls shall be of cast iron. The impellers shall be of bronze, statically balanced. Each pump shaft is to be turned, ground and polished stainless steel having a chromium content of not less than 12%. It shall be supported by bearings above and below each impeller. The size of each shaft shall be appropriate to transmit the horsepower required by the pump. The pump shall have a corrosive resistant basket type strainer with an area no larger than 1/4".

2.2 MOTOR Submersible

Motor shall be submersible type and meet applicable NEMA standards. The motor shall be of corrosion resistant construction, 316 Stainless Steel shell, splined stainless steel shaft, cast iron end bells, hermetically sealed windings, Kingsbury-type thrust bearings, pressure equalizing diaphragm, removable "water-bloc" lead connector and U.L. 778 recognized.

SECTION 3: PIPING MANIFOLD, VALVES, GAUGES AND OTHER MECHANICAL EQUIPMENT

3.1 FABRICATED PIPING

All fabricated piping shall conform to ASTM specifications A53 for Grade B welded or seamless schedule 40 pipe. All welded flanges shall be forged steel, slip-on or weld neck type. All welded fittings shall be seamless, ASTM Specification A234, with pressure rating not less than 150 PSI.

3.2 CHECK VALVE

Pump check valve shall be of the silent operating type that begin to close as forward velocity diminishes and be fully closed at zero velocity preventing flow reversal. Valve bodies shall be cast from ASTM-126C cast-iron or better and shall be free from blow holes, sand holes, and other impurities. The valve design shall incorporate a center guided, spring loaded poppet, guided at opposite ends and having a short linear stroke that generates a flow area equal to the pipe diameter. Internals shall be machined bronze disc, seat, and stem guide. Valves shall be sized to permit full pump capacity to discharge through them without exceeding a pressure drop of 2.5 PSI. Valves 4" and smaller to be pressure rated for 250 PSI.

3.3 STATION DISCHARGE ISOLATION VALVE

Isolation valves shall be butterfly type with ten position lever for sizes 4" and smaller and gear operators for sizes above 4". All shall be rated at 200 psi WOG working pressure. Trim shall include stainless steel stem, bronze or nickel coated iron, streamlined disc, and full faced resilient seat designed to eliminate need for flange gaskets.

3.4 DRAIN VALVES

Drains are to be provided from any possible low point in the system and are to consist of 1/4" brass petcocks.

3.5 PRESSURE GAUGES

A compound pressure gauge shall be located on the pump suction and on the discharge manifold for easy reading of the suction vacuum and discharge pressure. Pressure gauges shall be 304 stainless steel case and bezel construction. Gauges shall be 2-1/2" diameter, liquid filled. Pressure sensing connection shall be 1/4" NPT lower gauge connection.

3.6 HYDRAULIC PRESSURE REDUCING VALVE (Must be call for in Technical Specification)

A hydraulic pressure-reducing valve shall provide constant discharge pressure to the irrigation system under varying flow requirements. The valve shall be hydraulically operated, diaphragm actuated, angle pattern. The valve shall be equipped with a strainer for protecting the pilot valve, valve chamber and tubing from debris. The valve shall be equipped with an opening speed adjustment.

3.7 VARIABLE FREQUENCY DRIVE PRESSURE REGULATION (Replaces Pressure Reducing Valve) (Option must be called out in the Technical Specifications)

The variable frequency drive shall be IGBT based with selectable carrier frequency up to 15 KHZ. The VFD shall include terminals for incoming power, motor output power and control terminals.

The VFD shall generate a sine-coded, variable voltage/ frequency, three phase output for optimum speed control. The VFD shall incorporate power loss ride-through for a minimum of 2 seconds. VFD protective features shall include current limit, auto restart, short circuit protection, electronic motor overload protection and ground fault protection. The VFD shall have a push button programming display for easy access to operation parameters. The VFD shall be protected on the primary side by fuses of the appropriate amperage. Overload capacity: 120% rated output current for one minute. Voltage Fluctuation: +10%, -15%. Sine wave PWM with full range, automatic torque boost. Frequency Control Range: 0.1 to 400Hz. Frequency Accuracy: Digital, 0.01Hz, Analog, +1%. Motor overload protection, Instantaneous Over current of 180% of rated output current. Over voltage at 820VDC if 460V input. Under voltage: user adjustable. Momentary Power Loss: up to 2 second ride through. Electronic Ground Fault. LED capacitor charge indicator. Input Phase loss alarm. Ambient temperature range of 0 to 50 degrees C. Humidity of 95% non-condensing.

3.8 PRESSURE TRANSDUCER (Required when the VFD option is selected)

A solid state pressure transducer shall provide a noise free, linear output proportional to discharge pressure. Transducer shall be solid-state, strain gauge type with integral voltage regulation and output accuracy not less than 0.25%. Transducer shall be constructed of stainless steel and rated for the pump station discharge pressure called out in the technical specifications.

SECTION 4: ELECTRICAL CONTROLS

4.1 GENERAL PANEL UL FILE NO. E142155

The complete control panel assembly shall be built in accordance with the provisions of the National Electrical Code and shall bear the U.L. listing mark for NEMA 1 industrial control panels along with the pump station manufacturers' U.L. panel shop file number.

4.2 MOTOR COMBINATION STARTER-BREAKER

Each motor shall be protected by a MSP combination starter and breaker. Device will be UL 508 Type F. Motor starter protector and contactor are electrically and mechanically linked by means of a link module and adapter plate. All starters are suitable for use in group installation applications according to NEC-430-53(c).

4.3 MAIN STATION DISCONNECT AND FUSING

A three-pole, service rated main station disconnect shall be mounted in a separate NEMA 4 enclosure outside the pump station enclosure to completely isolate the pump station electrical system from incoming power. The service disconnect shall not be located inside the pump enclosure.

4.4 PROGRAMMABLE LOGIC CONTROLLER

The pump sequence controller shall be an industrial grade PLC with diagnostic LED for monitoring of discrete inputs and outputs. Not less than two additional analog inputs and outputs shall be standard for monitoring and control purposes. The PLC shall contain two communication ports for monitoring and programming purposes. The PLC shall contain an EEPROM, battery backed RAM and non volatile memory for storage of critical configuration data.

4.5 VARIABLE FREQUENCY DRIVE (VFD)

The variable frequency drive shall be IGBT based with selectable carrier frequency up to 15 KHZ. The VFD shall include terminals for incoming power, motor output power and control terminals. The VFD shall generate a sine-coded, variable voltage/frequency, three-phase output for optimum speed control. The VFD shall incorporate power loss ride-through. VFD protective features shall include current limit, short circuit protection, electronic motor overload protection and ground fault protection. The VFD shall have push button programming display for easy access to operation parameters. VFD must be designed for operation in 50 degree C temperature condition.

4.6 SECONDARY CONTROL CIRCUIT FUSES

Single-pole secondary distribution fuses with appropriate ratings shall supply power to the pump starter coil circuit, the control system and to other circuits as specified.

4.7 FLOW SENSOR

The pump station discharge manifold shall incorporate an insertion type, pulse frequency output flow sensor for continuous output to the pump station controls. The flow sensor output pulse shall be conditioned and fed directly to the PLC interrupt input for conversion and display in Gallons Per Minute and totalize. For accuracy and security considerations, conversion to an analog signal prior to PLC input shall not be accepted. Flow sensor accuracy shall be no less than 2% for flow velocities ranging from 1-30 feet per second.

4.8 NATIONAL ELECTRICAL CODE STANDARDS

Electrical controls shall conform to National Electrical Code Standards and be U.L. listed

4.9 LIGHTNING ARRESTOR

The main power supply to the pump station shall be equipped with a secondary lightning arrester having a breakdown current rating of not less than 60,000 Amps at 14,000 Volts discharge. Power supplies 300 Volts and less shall use a 300 Volt arrester with an 800 Volt spark-over Voltage. Power supplies up to 600 Volts shall use a 600 Volt rated arrester with a 1,000 Volt spark-over Voltage.

4.10 CORROSION INHIBITING MODULES

Corrosion inhibiting modules shall be installed in the main electrical control enclosure in accordance with the manufacturer's recommendations.

CONTROL ALARMS:

4.11 LOW DISCHARGE PRESSURE SAFETY SHUTDOWN

Low discharge pressure is to be sensed by the pump starting set point. When the station discharge pressure decreases to this point and maintains a start signal for the time called out in the Technical Specifications, the pumps will be de-energized and remain so until the circuit is manually reset. The operator interface shall illuminate to indicate a low discharge pressure shutdown has occurred.

4.11(a) HIGH DISCHARGE PRESSURE SAFETY SHUTDOWN

High discharge pressure is to be sensed by the pump starting set point. When the station discharge pressure increases to this point and maintains a start signal for the time called out in the Technical Specifications, the pumps will be de-energized and remain so until the circuit is manually reset. The operator interface shall illuminate to indicate a high discharge pressure shutdown has occurred.

4.12 VFD FAULT ALARM (Option required with VFD control system)

The operator interface shall illuminate to indicate a VFD shut off fault. Manual reset required.

SECTION 5: MOUNTING BASE & ENCLOSURE

5.1 MOUNTING BASE

Construction shall include a fabricated steel base assembly to support all components during shipping and to serve as the installed mounting base. Pump station base shall be formed from a single sheet of 1/4" plate resulting in a seamless, one-piece base with rounded edges and corners. The base shall be strategically reinforced beneath as required to provide additional support and strength. Standard base dimensions are 50" long, 34" wide, 3 1/2" high. The base shall be drilled and tapped allowing the pump and manifold to be secured to the base. The exterior of the base will be drilled to accept anchoring bolts. The base shall be shot blasted to bare metal prior to the painting process.

NO.	DATE	DESCRIPTION	DR/APP
		REVISIONS	

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(772) 567-5300 / FAX (772) 794-1106
CERTIFICATE OF AUTHORIZATION NUMBER 4204

INDIAN RIVER COUNTY FLORIDA

PUMP CONTROL SYSTEM SPECIFICATIONS

HOBART PARK

BASEBALL FIELD IMPROVEMENTS

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DRAWN	MC
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PROJECT NO.:	1756

STEPHEN E. MOLER, P.E. FL#33193

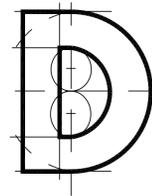
PROPOSED CONCESSION & RESTROOM BUILDING HOBART PARK, INDIAN RIVER COUNTY, FLORIDA

DECEMBER 4, 2018
FINAL DOCUMENTS

CIVIL ENGINEER
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Fax.: 772/794-1106

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Tel.: 772/569-1257
Fax.: 772/569-4041

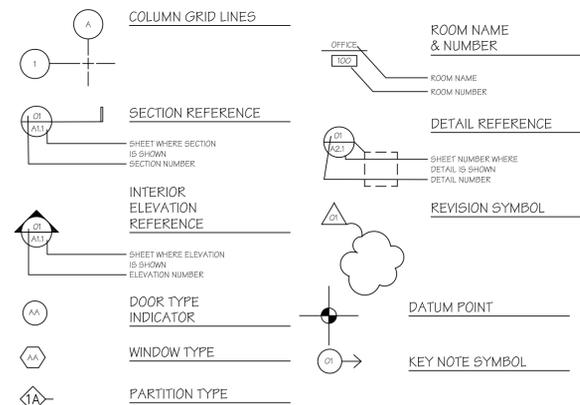
MECH., ELEC. & PLUMBING ENGINEER
TREASURE COAST ENGINEERING
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Fax. 772.562.8600
www.donadio-arch.com
License No. AA0002238

ARCHITECTURAL SYMBOLS



INDEX OF DRAWINGS

I/O	Dwg. No.	Drawing Name
<input checked="" type="checkbox"/>	A0.10	COVER SHEET & DRAWING INDEX

ARCHITECTURAL DRAWINGS

I/O	Dwg. No.	Drawing Name
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<input checked="" type="checkbox"/>	A2.10	FLOOR PLAN & REFLECTED CEILING PLAN
<input checked="" type="checkbox"/>	A2.20	ROOF PLAN & ROOF DETAILS
<input checked="" type="checkbox"/>	A2.30	ENLARGED PLANS & INTERIOR ELEVATIONS
<input checked="" type="checkbox"/>	A3.10	EXTERIOR ELEVATIONS
<input checked="" type="checkbox"/>	A4.10	SECTIONS
<input checked="" type="checkbox"/>	A6.10	FINISH & DOOR SCHEDULES AND DOOR & WINDOW DETAILS

STRUCTURAL DRAWINGS

I/O	Dwg. No.	Drawing Name
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<input checked="" type="checkbox"/>	S-2	TYPICAL SECTIONS & DETAILS, SCHEDULES & GENERAL NOTES

MECHANICAL DRAWINGS

I/O	Dwg. No.	Drawing Name
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ELECTRICAL DRAWINGS

I/O	Dwg. No.	Drawing Name
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<input checked="" type="checkbox"/>	E1.3	ELECTRICAL DETAILS

PLUMBING DRAWINGS

I/O	Dwg. No.	Drawing Name
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CODE REVIEW FOR HOBART PARK CONCESSION & RESTROOM BUILDING, VERO BEACH, FLORIDA

ARCHITECT'S PROJECT #2018-04/2.0

DATE: March 15, 2018

SCOPE OF WORK

The Project involves construction of a Single Story, 1,056 sq. ft. Building consisting of a Concession Area, Male and Female Toilet Rooms, Janitor's Closet, Storage and Electrical Room. The construction will be Concrete Slab CMU Walls with Stucco Finish, Pre-engineered Wood Trusses, CDX Plywood Sheathing, Peel/Stick Membrane and Standing Seam Metal Roof Panels.

CODE REFERENCES

- Florida Building Code 2017 - Building
- Florida Building Code 2017 - Accessibility
- Florida Building Code 2017 - Plumbing
- Florida Fire Prevention Code 6th Edition

CODE REVIEW

- USE AND OCCUPANCY CLASSIFICATION**
FBC CH.3; FBC 309 - MERCANTILE GROUP M
LSC 6.1.10; 36.1.2
- SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY**
FBC CH.4
N/A
- GENERAL BUILDING HEIGHTS AND AREAS**
FBC CH.5
 - Building Height and Number of Stories**
FBC 504, FBC TABLE 504.3
Maximum Building height permitted = 40'
Actual Building height = 15'
 - Allowable Number of Stories above Grade Plane**
FBC TABLE 504.4
Maximum number of Stories permitted = 1
Actual number of Stories = 1
 - Building Area**
FBC TABLE 506.2
Maximum area permitted = 9,000 sq. ft.
Actual Building area (per Floor) = 1,056 sq. ft.
- TYPES OF CONSTRUCTION**
FBC CH.6; 602.5 - TYPE V (B); NFPA 220; TYPE III (200)
 - Fire-Resistance Rating Requirements for Building Elements (Hours)**
FBC TABLE 601
 - Primary Structural Frame = 0
 - Bearing Walls (Exterior) (Type D-2 Block)
 - Exterior = 2
 - Interior = 0
 - Nonbearing Interior Walls/Partitions = 0
 - Roof Construction = 0
 - Fire Resistance Rating Requirements for Exterior Walls Based on Fire Separation Distance (Hours)**
FBC TABLE 602;
North, South, East and West > 30' = 0
- FIRE AND SMOKE PROTECTION FEATURES**
FBC CH.7
 - Exterior Walls**
FBC 705; 705.2
The only Projection from exterior walls is the 2'-0" Eaves overhang.
 - Maximum Area of Exterior Wall Openings Based on Fire-Separation Distance and Degree of Opening Protection**
FBC TABLE 705.8
North, South, East & West > 30' = No Limit
 - Concealed Spaces**
FBC 718
 - Draftstopping in Attics**
FBC 718.4.3
Roof area 1,056 sq. ft. < 3,000 sq. ft. - Draftstopping not required.
- INTERIOR FINISHES**
FBC CH.8; FBC TABLE 803.11; LSC 10.2; 36.3.3.2
All Room finishes to comply with the Schedule below:

Mercantile Occupancy Group "M"		
Interior Exit Stairways and Interior Exit Ramps and Passageways	Corridors and Enclosures for Exit Access Stairways and Ramps	Rooms and Enclosed Spaces
		C

Class C - Flame Spread Index - 76-200;
Smoke Developed Index - 0-450

 - Interior Floor Finish**
FBC 804; 804.4.2; LSC 10.2; 36.3.3.3.2
The minimum Critical Flux for all finishes to be Class II.

- FIRE PROTECTION SYSTEMS**
FBC CH.9; 903.2.7; LSC 36.3.5
Not Required
 - Portable Fire Extinguishers**
FBC 906; 906.1; LSC 9.9; 36.3.5.3
See Life Safety Plans for Locations.
 - Fire Alarm and Detection Systems**
FBC 907; 907.2.7; LSC 9-6; 36.3.4
Not Required
- MEANS OF EGRESS**
FBC CH.10; LSC CH.7; 36.2
 - General Means of Egress**
FBC 1003; 1003.2
The Ceiling height in all Means of Egress will be 9'-2" > 7'-6"
 - Occupant Load**
FBC TABLE 1004.1.2; LSC 7.3.1.2; 36.1.7
Concession Area Only
13.33' x 14' = 187 sq. ft. + 60 = 4 Occupants
 - Means of Egress Sizing**
FBC 1005.3.2; LSC 7.3; 36.2.3
Minimum Egress width required (Concessions) 4 x 0.2' = 0.8"
Minimum Egress width provided (Concessions) 1 x 36" = 36"
- Number of Exits and Exit Access Doorways**
FBC 1006
 - Space with one Exit or Exit Access Doorway**
FBC TABLE 1006.2.1
Occupant Load = 4 < 49; maximum common path of Travel 19' > 75'
- Means of Egress Illuminations**
FBC 1006; LSC 36.2.8
 - Illumination Required**
FBC 1006.1; LSC 7.8; 36.2.8
The Means of Egress, including Exit Discharge, will be illuminated at all times during Building Occupancy.
 - Illumination Level**
FBC 1006.2
Means of Egress Illumination Level shall not be less than 1 Footcandle (1 LUX) at the walking surface.
 - Emergency Power for Illumination**
FBC 1006.3; LSC 7.9; 36.2.9
An Emergency Power Supply will be provided to illuminate all Means of Egress components. The Emergency Supply will provide Power for a minimum of 90 minutes and will consist of Storage Batteries, Unit Equipment or an on-site Generator.
- Accessible Means of Egress**
FBC 1009
 - Toilet Facilities and Bathing Facilities**
FBC 213; 603
The Toilet Rooms meet the ADA required Standards in terms of Fixture Clear Floor Space, Turning Circles and Accessible Route.
 - Doors, Doorways and Gates**
FBC 404
All Doors meet the required maneuvering clearances for approach.
 - Drinking Fountains**
FBC 211
Combination "Hi-Lo" Drinking Foundation provided.
- Doors, Gates and Turnstiles**
FBC 1010.1.1; LSC 7.1; 36.2.2.2

Minimum Clear Width of Doors Allowed	= 32"
Minimum Width Provided	= 36"

All Doors will be no less than 80" in Height.

 - Door Swing**
FBC 1010.1.2; LSC 7.2.1
All Egress Doors are side hinged and swing in the Direction of Travel.
 - Doors, Gates and Turnstiles**
FBC 1010.1.3; LSC 7-2.1; 36.2.2.2
All Interior side-swinging doors (without closers) to comply with the following prescribed forces:
 - A maximum 5lb (22N) force shall swing door fully open.
 - A 15lb (67N) force shall release a latch.
 - A 30lb (133N) force shall set door in motion.
- Exit Access**
FBC 1016; LSC 36.2.7
All required Egress points go directly to the Building exterior without having to go through intervening spaces.

- Exit Access Travel Distance**
FBC Table 1017.2; LSC 7.6; 36.2.6.1
Maximum Travel Distance to an Exit Permitted = 150'
Actual Maximum Travel Distance to Exit Door = 19'
 - Exit Discharge**
FBC 1028.1; LSC 7.7; 36.2.7
All required Exits are continuous and discharge directly to the Building exterior.
- MINIMUM PLUMBING FIXTURE COUNT**
FBC TABLE 403 Mercantile Group M
Water Closets: 1 per 500 Male/Female;
Lavatories: 1 per 750 Male/Female;
Drinking Fountains: 1 per 1,000;
Service Sink = 1

MINIMUM PLUMBING FIXTURES COUNTY								
	WATER CLOSETS		LAVATORIES		DRINKING FOUNTAINS		SERVICE SINKS	
	Required	Provided	Required	Provided	Required	Provided	Required	Provided
Male		2 + 2 Urinals		3		1		1
Female		4		3				

Note: The NUMBER OF Water Closets provided for Male/Female will serve a population of (4 x 500) = 2,000 Occupants.

DESIGN PRESSURE / OPENING SCHEDULE

DOOR #	PRESSURES		MANUFACTURER	NOA # OR PRODUCT APPROVAL #
	+	-		
101	49	53.6	STEELCRAFT	01-1203.11
102	49	53.6	STEELCRAFT	01-1203.11
103	49	53.6	STEELCRAFT	01-1203.11
104	49	53.6	STEELCRAFT	01-1203.11
105	49	53.6	STEELCRAFT	01-1203.11
106	49	53.6	STEELCRAFT	01-1203.11
WINDOW#				
A	90	90	YKK	FL 14218.6
B	90	90	CORNELL	FL 17419
ROOFING				
STANDING SEAM	0	70	ENGLERT SERIES 2000	NOA NO. 16-0518.05

Design No. U905
Bearing Wall Rating - 2 HR.
Nonbearing Wall Rating - 2 HR
Load Restricted for Canadian Applications - See Guide BXUV7

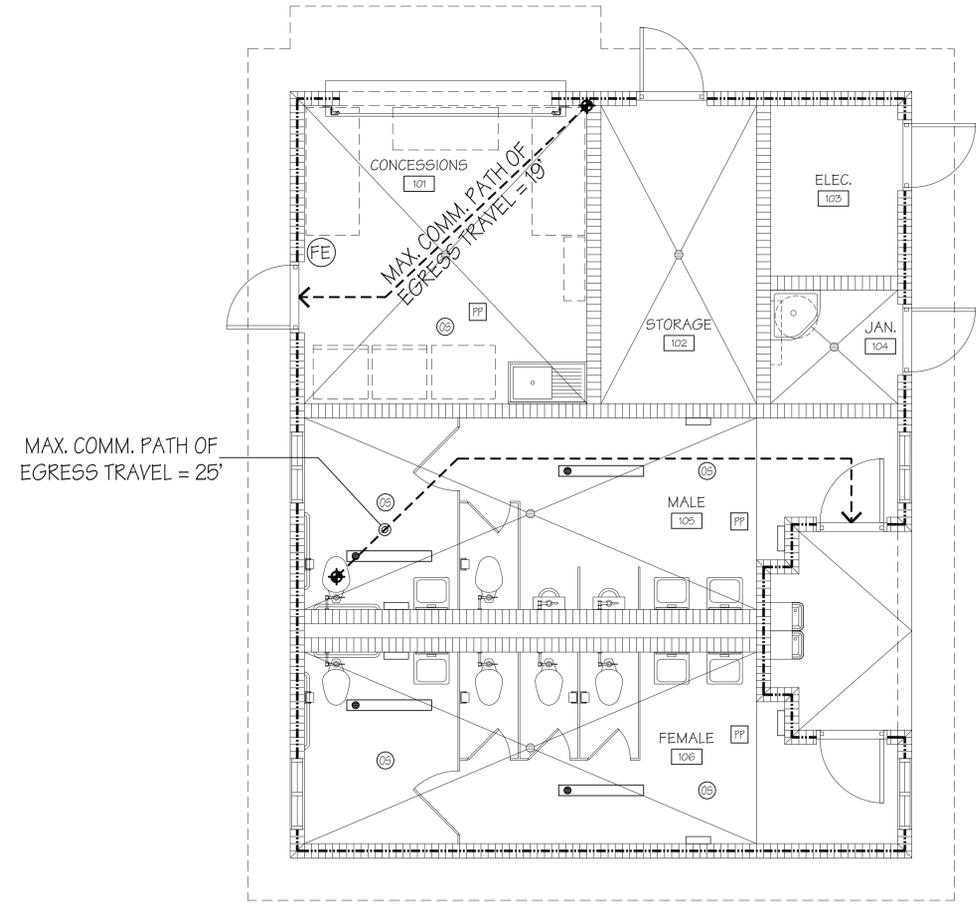
- Concrete Blocks*** - Various designs. Classification D-2 (2 hr). See Concrete Blocks category for list of eligible manufacturers. less than 2-1/4 and not more than 3-1/2 parts of clean sharp sand to 1 part Portland cement (proportioned by volume) and not more than 50 percent hydrated lime (by cement volume). Vertical joints staggered.
- Portland Cement Stucco or Gypsum Plaster** - Add 1/2 hr to classification if used. Where combustible members are framed in wall, plaster or stucco must be applied on the face opposite framing to achieve a max. Classification of 1-1/2 hr. Attached to concrete blocks (Item 1).
- Loose Masonry Fill** - If all core spaces are filled with loose dry expanded slag, expanded clay or shale (Rotary Kiln Process), water repellent vermiculite masonry fill insulation, or silicone treated perlite loose fill insulation add 2 hr to classification.
- Foamed Plastic*** - (Optional-Not Shown) - 1-1/2 in. thick max, 4 ft wide sheathing attached to concrete blocks (Item 1).
THE DOW CHEMICAL CO - Type Thermax
*Bearing the UL Classification Mark

Design No. U906
Bearing Wall Rating - 2 HR.
Nonbearing Wall Rating - 2 HR.
Load Restricted for Canadian Applications - See Guide BXUV7

- Concrete Blocks*** - Nominal 6 by 8 by 16 in, hollow or solid. Classification D-2 (2 hr).
ANCHOR CONCRETE PRODUCTS INC
GAGNE & SON CONCRETE BLOCK INC
Allowable compressive stress of 57% of max allowable compressive stress in accordance with the empirical design method.
OLDCASTLE APG NE DBA ARTHUR WHITCOMB
WESTBROOK CONCRETE BLOCK CO INC
Allowable compressive stress of 75.6% of max allowable compressive stress in accordance with the empirical design method.
- Mortar** - Blocks laid in full bed of mortar, nom. 3/8 in. thick, of not less than 2-1/4 and not more than 3-1/2 parts of clean sharp sand to 1 part Portland cement (proportioned by volume) and not more than 50 percent hydrated lime (by cement volume). Vertical joints staggered.
- Portland Cement Stucco or Gypsum Plaster** - Add 1/2 hr to Classification if used. Attached to concrete blocks (Item 1).
- Foamed Plastic*** - (Optional-Not Shown) - 1-1/2 in. thick max, 4 ft wide sheathing attached to concrete blocks (Item 1).
THE DOW CHEMICAL CO - Type Thermax
*Bearing the UL Classification Mark

LIFE SAFETY LEGEND

- SURFACE MOUNTED 1 X 4 LED FIXTURE WITH INTEGRAL BATTERY PACK
- FIRE EXTINGUISHER (WALL MOUNTED) (TYPE 2-A-10B-C)
- CEILING MOUNTED SENSOR
- POWER PACK
- MAXIMUM TRAVEL DISTANCE



Project:
HOBART PARK
CONCESSION & RESTROOM BUILDING
INDIAN RIVER COUNTY, FLORIDA

Key Plan:

No.:	Date:	Description:
A.	12.04.18	FINAL DOCUMENTS

Architect:

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Consultant:

Drawing Title:
LIFE SAFETY PLAN & CODE REVIEW

Reference North

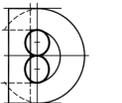
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Cld: XREF File:
A.J.D.
Project No.: Plot File:
2018-04
Sheet No.:
Cert. No.: 12,456
Date Signed: A1.10

CONCESSION &
RESTROOM BUILDING

Issues:

No.	Date	Description
A.	01.30.18	CLIENT REVIEW
B.	02.20.18	CLIENT REVIEW
C.	02.22.18	CLIENT REVIEW
D.	05.15.18	SPA SUBMISSION
E.	12.04.18	FINAL DOCUMENTS

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Consultant:

Drawing Title:
FLOOR PLAN &
REFLECTED CEILING PLAN

Reference North



Drawn:	JEL	Dwg. File:	
Chd:	A.J.D.	XREF File:	
Project No.:	2018-04	Plot File:	
Sheet No.:			

Cert. No.: 12,456

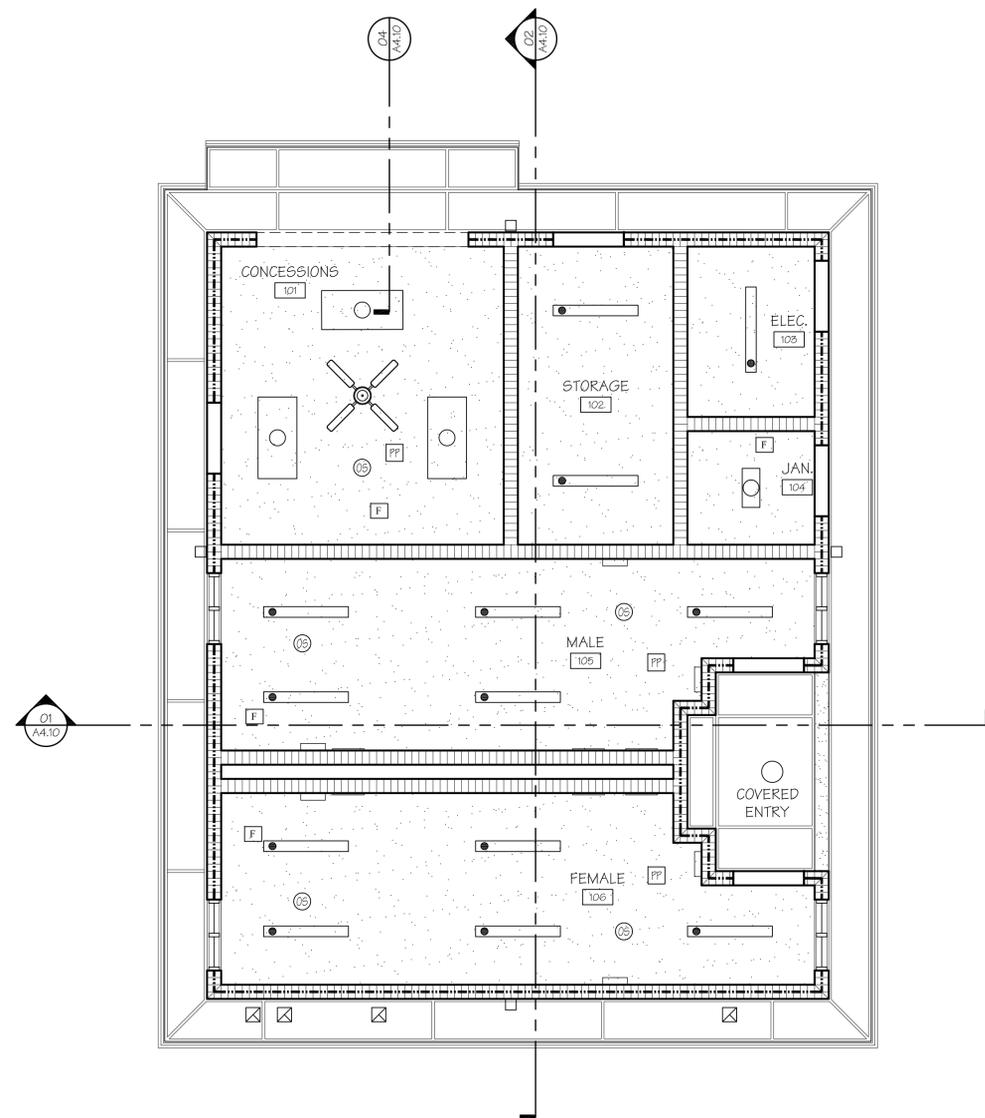
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REFLECTED CEILING LEGEND

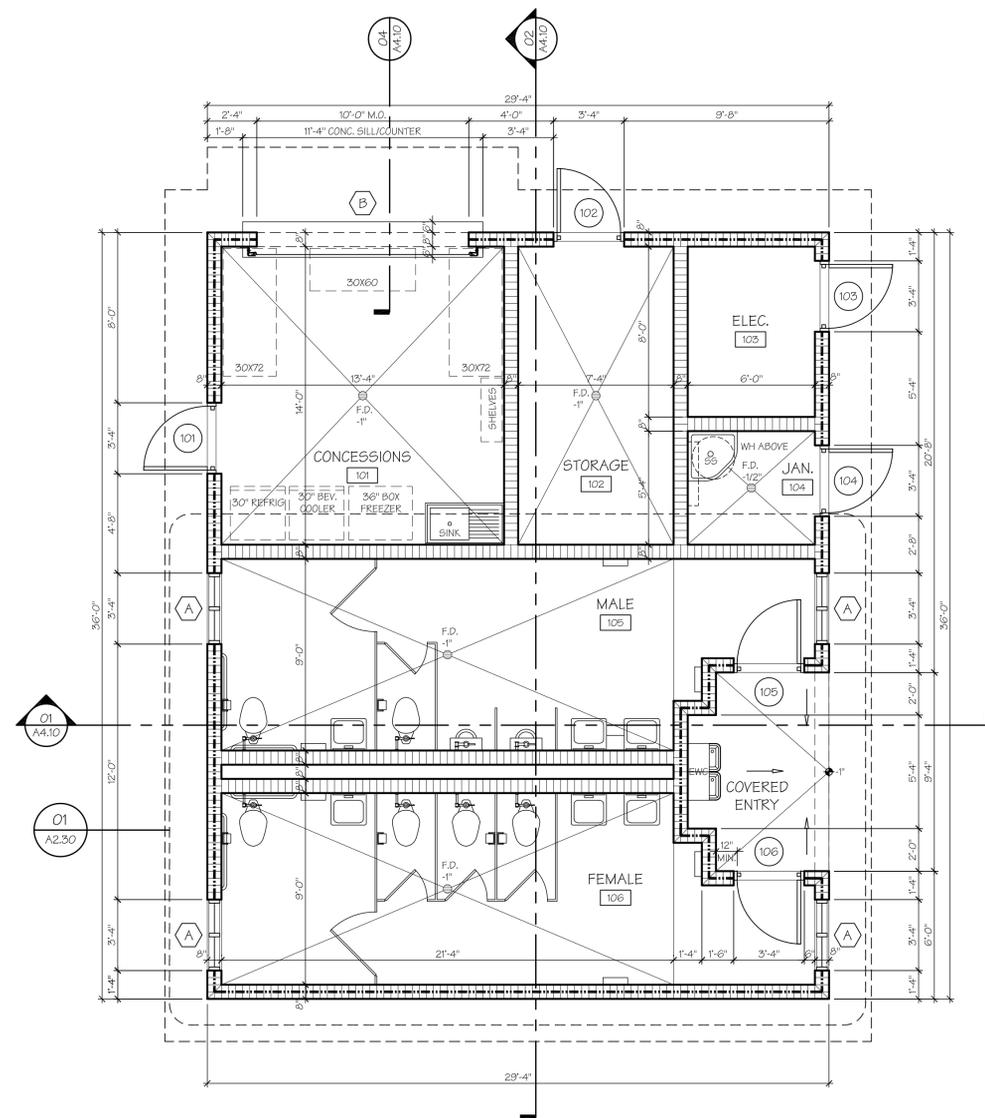
-  GYPSUM WALLBOARD CEILING
-  FIBER CEMENT SOFFIT PANELS AND PAINTED WOOD BATTENS
-  SURFACE MOUNTED LED FIXTURE
-  SURFACE MOUNTED 1 X 4 LED FIXTURE
-  SURFACE MOUNTED 1 X 2 LED FIXTURE
-  SURFACE MOUNTED 2 X 4 LED FIXTURE
-  LED WALL PACK FIXTURE
-  CEILING FAN
-  CEILING MOUNTED SENSOR
-  POWER PACK
-  EXHAUST FAN
-  SOFFIT EXHAUST GRILLE

WALL LEGEND

-  EXTERIOR 2-HR FIRE-RATED MASONRY WALL
8" CMU WITH MIN. 5/8" EXTERIOR STUCCO AND FOAM-FILLED CELLS. (USE CMU WITH A D-2 CLASSIFICATION AND CONSTRUCT PER UL DESIGN U905 OR U906) - SEE STRUCT. DWGS. FOR MASONRY WALL REINFORCING & THE REQUIREMENTS.
-  INTERIOR NON-RATED MASONRY WALL
8" CMU - SEE STRUCT. DWGS. FOR MASONRY WALL REINFORCING & THE REQUIREMENTS.



Scale: 1/4"=1'-0"

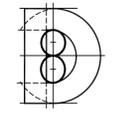


GROSS SQUARE FOOTAGE = 999 G.S.F.

Scale: 1/4"=1'-0"

Issues:		
No.	Date:	Description:
A.	12.04.18	FINAL DOCUMENTS

Architect:



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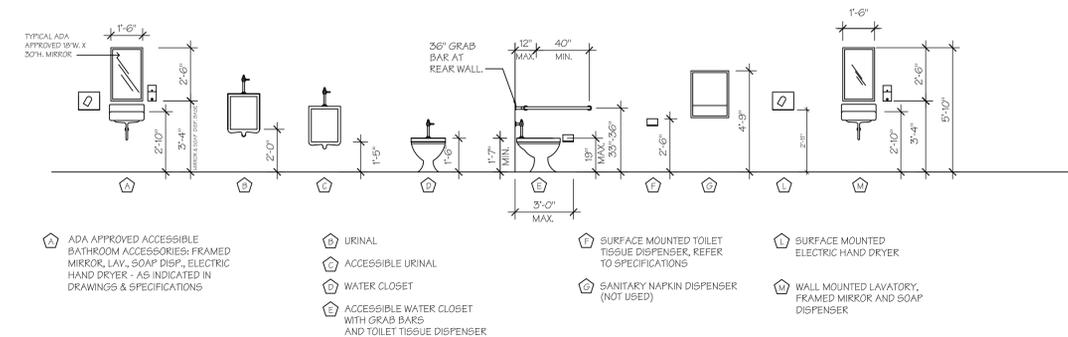
Consultant:

Drawing Title:
ENLARGED PLAN & INTERIOR ELEVATIONS



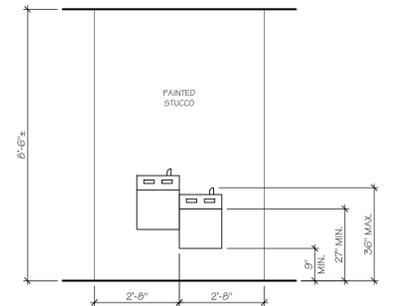
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Chd:	A.J.D.	XREF File:
Project No.:	2018-04	Plot File:
Sheet No.:		

Cert. No.: 12,456
 Date Signed: **A2.30**

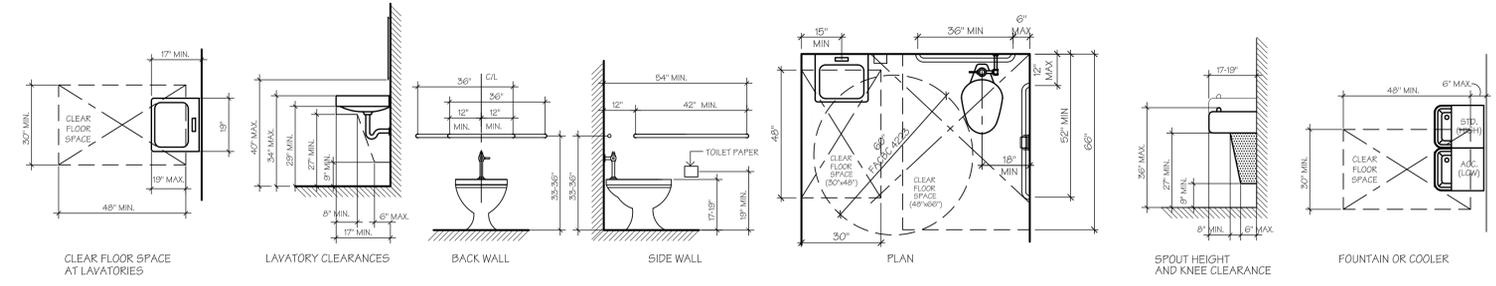


- GENERAL NOTES:**
- REFER TO FIXTURE AND ACCESSORY LEGEND FOR MOUNTING HEIGHTS (THIS SHEET)
 - PROVIDE SURFACE MOUNTED TOILET TISSUE DISPENSER IN ALL TOILET STALLS.
 - GROUT AROUND ALL WALL PENETRATIONS AFTER INSTALLATION OF RESTROOM FIXTURES AND EQUIPMENT, AND PROVIDE CAULKING AS NECESSARY.
 - LOCATE SHUT-OFF VALVES ACCESS PANELS UNDERNEATH LAVATORY COUNTERS. PAINT TO MATCH WALL TILE FINISH AND CAULK PERIMETER OF PANEL (COLOR TO MATCH GROUT.)
 - CONTRACTOR SHALL CAULK PERIMETER OF TOILET ACCESSORIES.
 - HOT WATER AND DRAIN PIPES UNDER LAVATORIES OR SINKS SHALL BE INSULATED OR OTHERWISE PROTECTED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES OR SINKS.
 - THE STRUCTURAL STRENGTH OF GRAB BARS AND SHOWER SEATS SHALL BE DESIGNED AND SUPPORTED AS TO WITHSTAND A LOAD OF NOT LESS THAN 250 POUNDS APPLIED AT ANY POINT, DOWNWARD OR HORIZONTALLY.
 - ALL TOILET PARTITIONS ARE TO BE 6'-10" A.F.F. TO TOP OF HEADRAIL, 5'-10" A.F.F. TO THE TOP OF PANEL AND 1'-0" A.F.F. TO THE BOTTOM OF PANEL.
 - PRIVACY PANELS BETWEEN URINALS TO BE 4'-8" A.F.F. TO THE TOP OF PANEL AND 1'-2" A.F.F. TO THE BOTTOM.

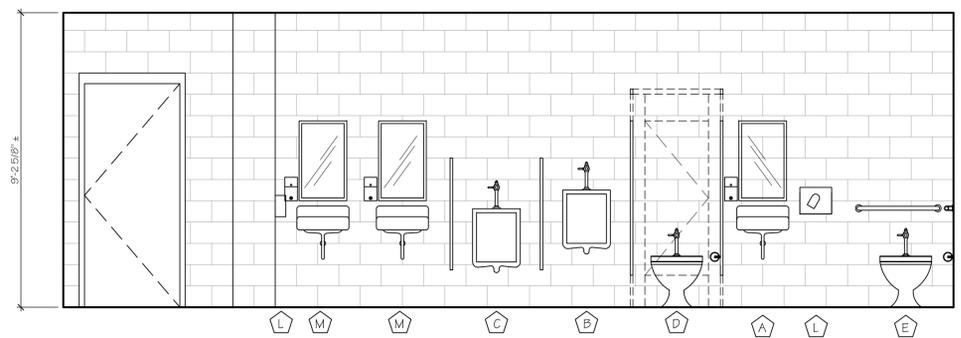
02 TYPICAL TOILET FIXTURE VERTICAL DIMENSIONS AND ACCESSORY LEGEND



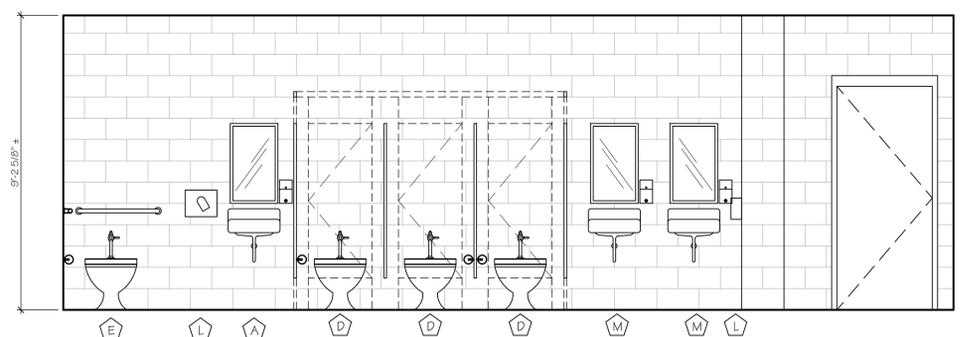
03 WATER COOLER ELEVATION
 Scale: 3/8"=1'-0"



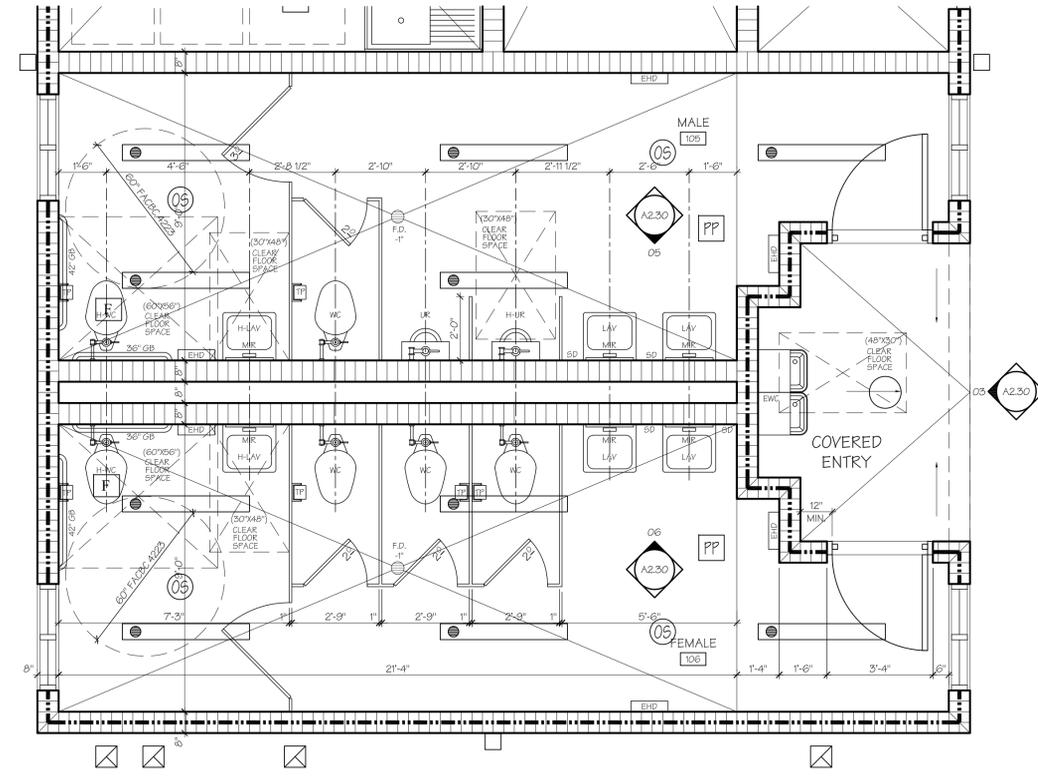
04 ADA DETAILS



05 MALE #105
 Scale: 3/8"=1'-0"



06 FEMALE #106
 Scale: 3/8"=1'-0"



01 ENLARGED PLAN - MALE #105 & FEMALE #106
 Scale: 3/8"=1'-0"

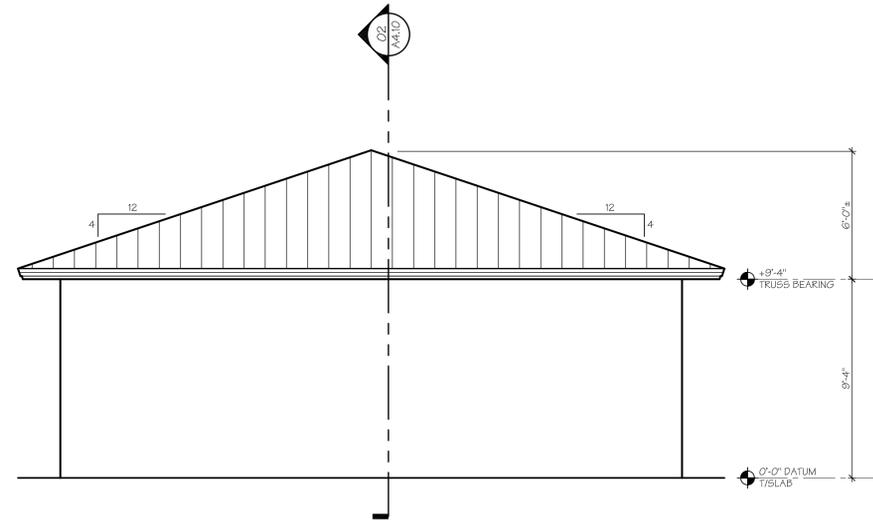
Project:
HOBART PARK
CONCESSION & RESTROOM BUILDING

INDIAN RIVER COUNTY, FLORIDA

Key Plan:

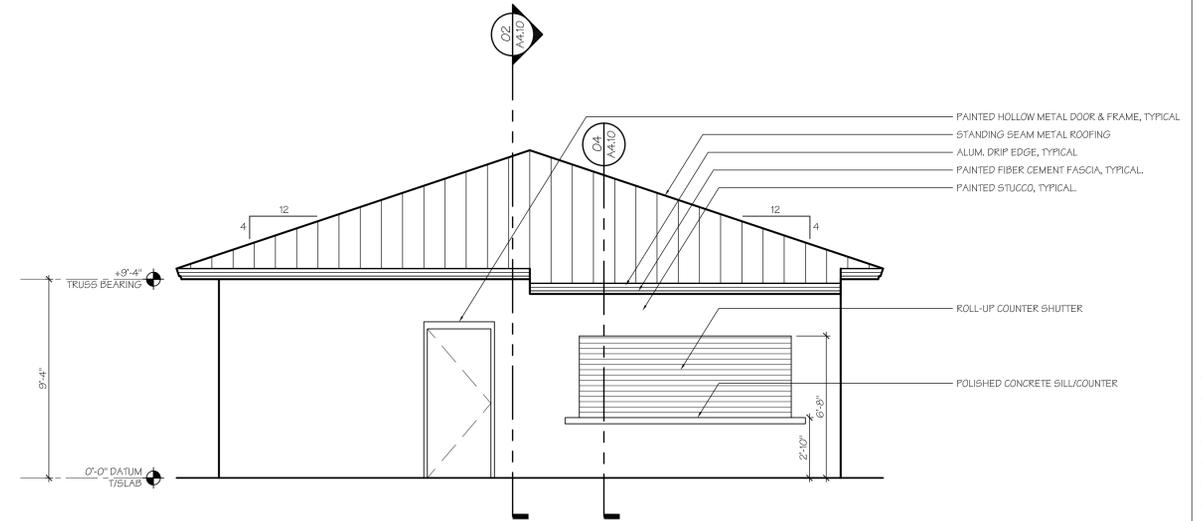
Issues:

No.:	Date:	Description:
A.	01.30.18	CLIENT REVIEW
B.	05.15.18	SFA SUBMISSION
C.	12.04.18	FINAL DOCUMENTS



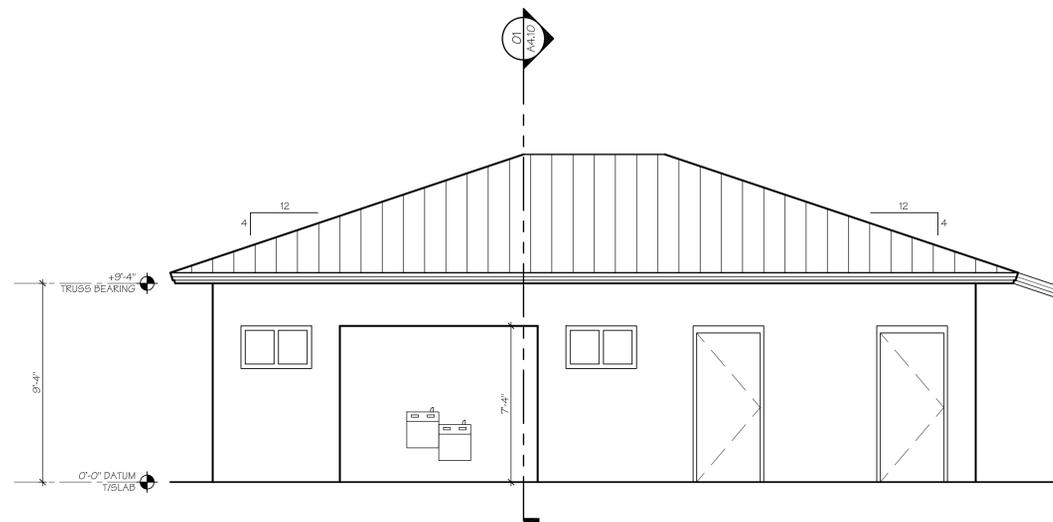
01 SOUTH ELEVATION

1/4" = 1'-0"



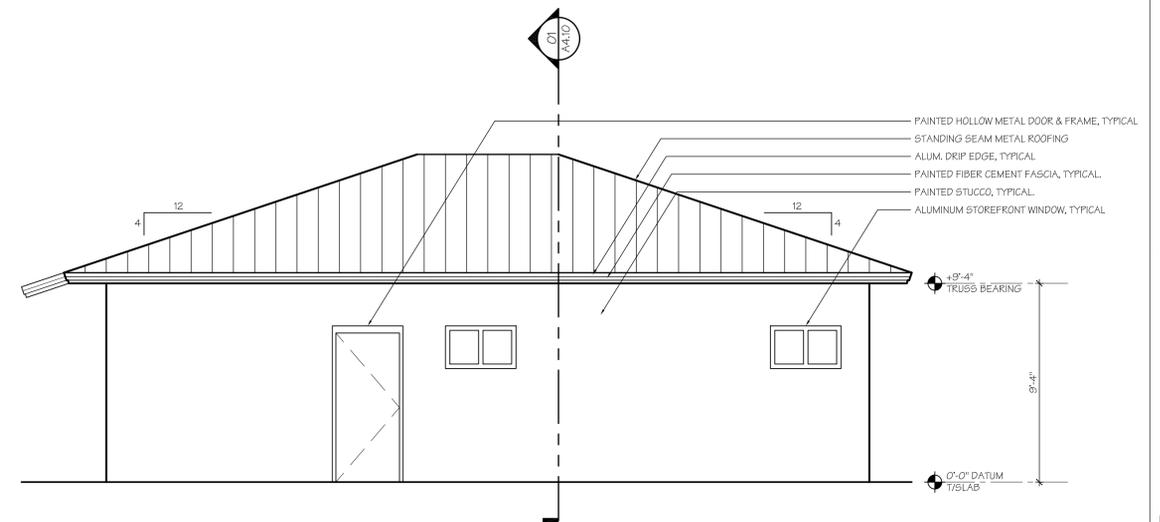
02 NORTH ELEVATION

1/4" = 1'-0"



03 EAST ELEVATION

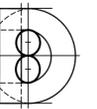
1/4" = 1'-0"



04 WEST ELEVATION

1/4" = 1'-0"

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Consultant:

Drawing Title:
 EXTERIOR ELEVATIONS

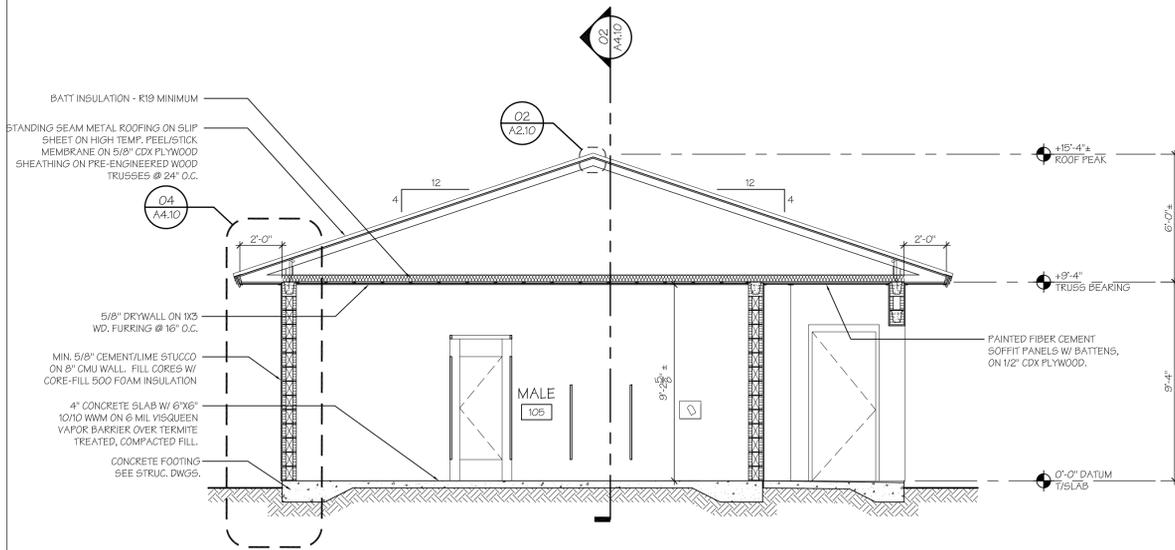


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S.M.	XREF File:
A.J.D.	Plot File:
Project No.:	Sheet No.:
2018-04	

Cert. No.: 12,456

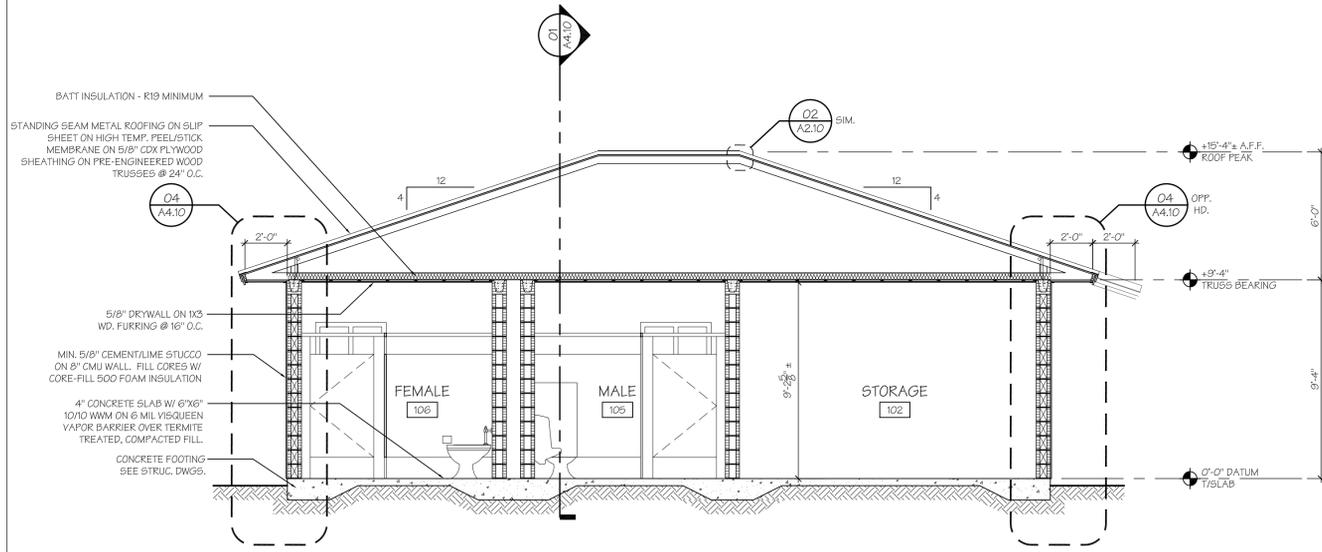
Date Signed: **A3.10**

Issues:		
No.:	Date:	Description:
A.	12.04.18	FINAL DOCUMENTS



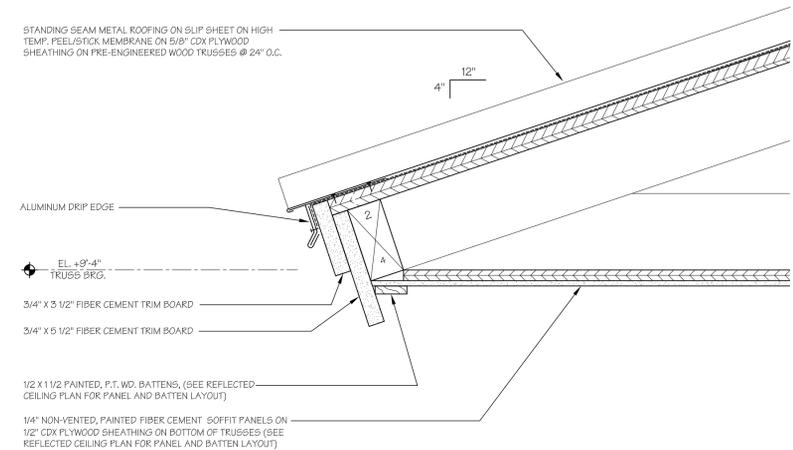
01 BUILDING SECTION

1/4" = 1'-0"



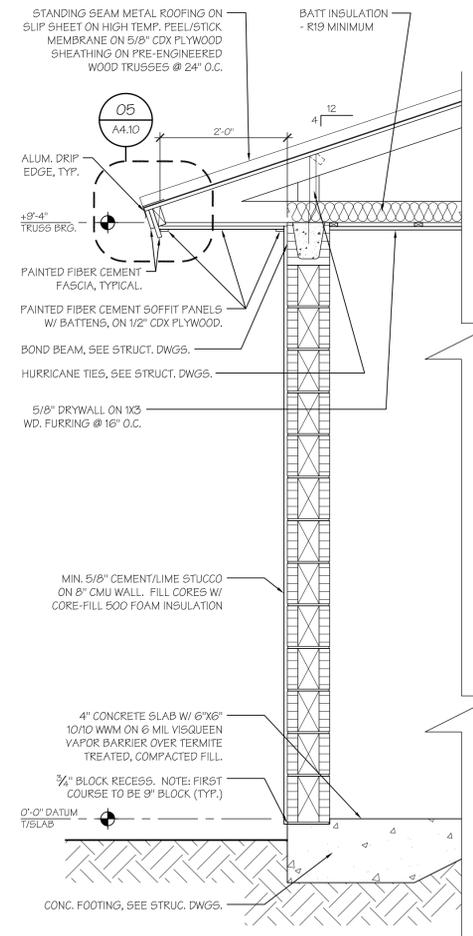
02 BUILDING SECTION

1/4" = 1'-0"



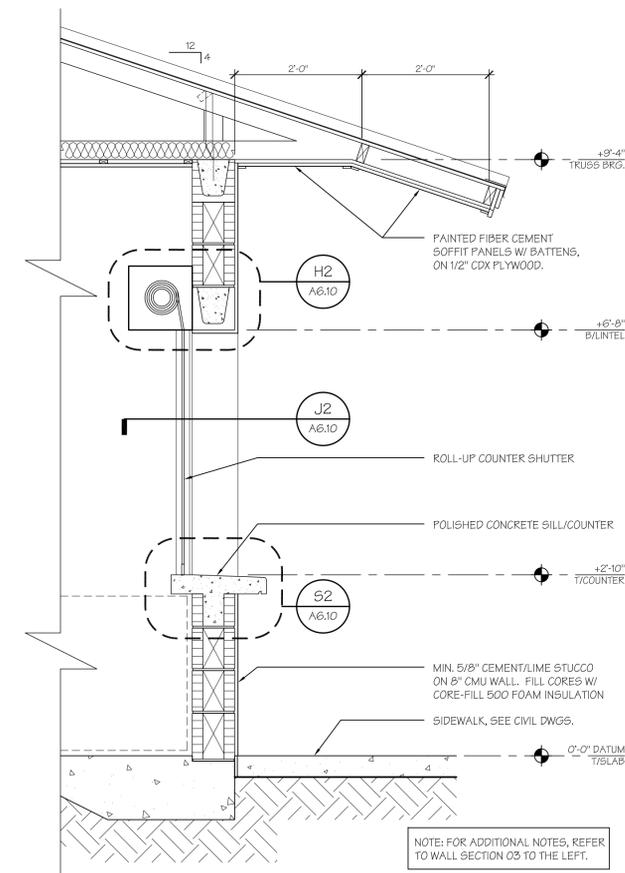
05 EAVE DETAIL

3" = 1'-0"



03 WALL SECTION

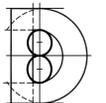
3/4" = 1'-0"



04 WALL SECTION

3/4" = 1'-0"

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Consultant:

Drawing Title:
SECTIONS

Reference North



Drawn:	S.M.	Dwg. File:	
Chd:	A.J.D.	XREF File:	
Project No.:	2018-04	Plot File:	
Sheet No.:			

Cert. No.: 12,456

Date Signed:

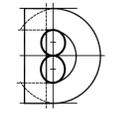
A4.10

Key Plan:

Issues:

No.	Date:	Description:
A.	07.20.06	CLIENT REVIEW
B.	12.04.18	FINAL DOCUMENTS

Architect:



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Consultant:

Drawing Title:
ROOM FINISH & DOOR SCHEDULES
DOOR & WINDOW DETAILS



Dwn:	JEL	Dwg. File:	
Chd:	A.J.D.	XREF File:	
Project No.:	2018-04	Plot File:	
Sheet No.:			

Cert. No.: 12.456
 Date Signed: **A6.10**

ROOM NUMBER	ROOM NAME	FLOOR		WALL				CEILING			REMARKS	ROOM NUMBER	
		MATERIAL	BASE	NORTH	SOUTH	EAST	WEST	MATERIAL	FINISH	HEIGHT			
		MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH				
FIRST FLOOR													
101	CONCESSION	SLC	WB	CMU	PNT	CMU	PNT	CMU	PNT	ACT	P	9'-0"	101
102	STORAGE	SLC	WB	CMU	PNT	CMU	PNT	CMU	PNT	GYP	PNT	9'-2 5/8"	102
103	ELECTRICAL ROOM	SLC	WB	CMU	PNT	CMU	PNT	CMU	PNT	GYP	PNT	9'-2 5/8"	103
104	JANITOR	SLC	WB	CMU	PNT	CMU	PNT	CMU	PNT	GYP	PNT	9'-2 5/8"	104
105	WALK	CT	WB	CMU	PNT	CMU	PNT	CMU	PNT	GYP	PNT	9'-2 5/8"	105
106	FEMALE	CT	WB	CMU	PNT	CMU	PNT	CMU	PNT	GYP	PNT	9'-2 5/8"	106

DOOR NUMBER	DOOR SIZE	DOOR				FRAME				THRESHOLD	FIRE RATING (IN MINUTES)	HARDWARE GROUP	REMARKS	DOOR NUMBER			
		DOOR TYPE	MATERIAL	GLASS	FINISH	FRAME TYPE	MATERIAL	DETAILS	DETAILS								
		WIDTH X HEIGHT X THICKNESS					SILL	JAMB	TRANSOM						HEAD		
FIRST FLOOR																	
01	3'-0" X 7'-0"	1-3/4"	F	HM	---	P	1	HM	---	US/A6.10	---	US/A6.10	ADA	---	01	IMPACT RESISTANT	101
02	3'-0" X 7'-0"	1-3/4"	F	HM	---	P	1	HM	---	US/A6.10	---	US/A6.10	ADA	---	02	IMPACT RESISTANT	102
03	3'-0" X 7'-0"	1-3/4"	F	HM	---	P	1	HM	---	US/A6.10	---	US/A6.10	ADA	---	03	IMPACT RESISTANT	103
04	3'-0" X 7'-0"	1-3/4"	F	HM	---	P	1	HM	---	US/A6.10	---	US/A6.10	ADA	---	04	IMPACT RESISTANT	104
05	3'-0" X 7'-0"	1-3/4"	F	HM	---	P	1	HM	---	US/A6.10	---	US/A6.10	ADA	---	05	IMPACT RESISTANT	105
06	3'-0" X 7'-0"	1-3/4"	F	HM	---	P	1	HM	---	US/A6.10	---	US/A6.10	ADA	---	06	IMPACT RESISTANT	106

AL = ALUMINUM
 ALG = ALUMINUM & GLASS
 LVR = FULL LOUVER
 MTL = METAL
 NOTE: ALL DOORS TO HAVE INSULATING CORES

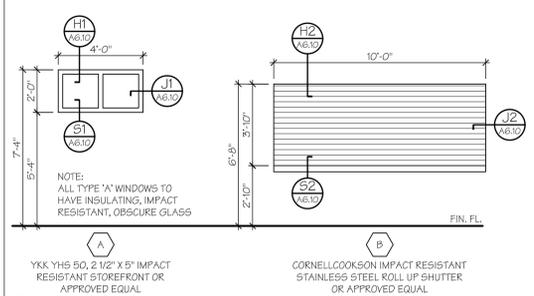
HM = HOLLOW CORE WOOD
 SCW = SOLID CORE WOOD
 LDF = LOW DENSITY FIBERBOARD
 IRG = IMPACT RESISTANT GLASS
 WP = WOOD

HM = HOLLOW METAL
 IHM = INSULATED HOLLOW METAL
 TP = TEMPERED
 WD = WOOD

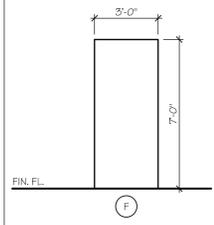
SFG = SAFETY GLASS
 FKE = FRENCH SINGLE LITE
 WR = WIRE GLASS
 AN = ANODIZED

PL = PLASTIC LAMINATE
 SF = STOREFRONT
 V = VINYL
 VP = VAPOR PROOF

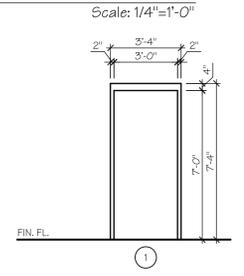
RG = RATED GLASS (FIRE LIGHT PLUS)
 F = FACTORY FINISH
 --- = NO OR NONE



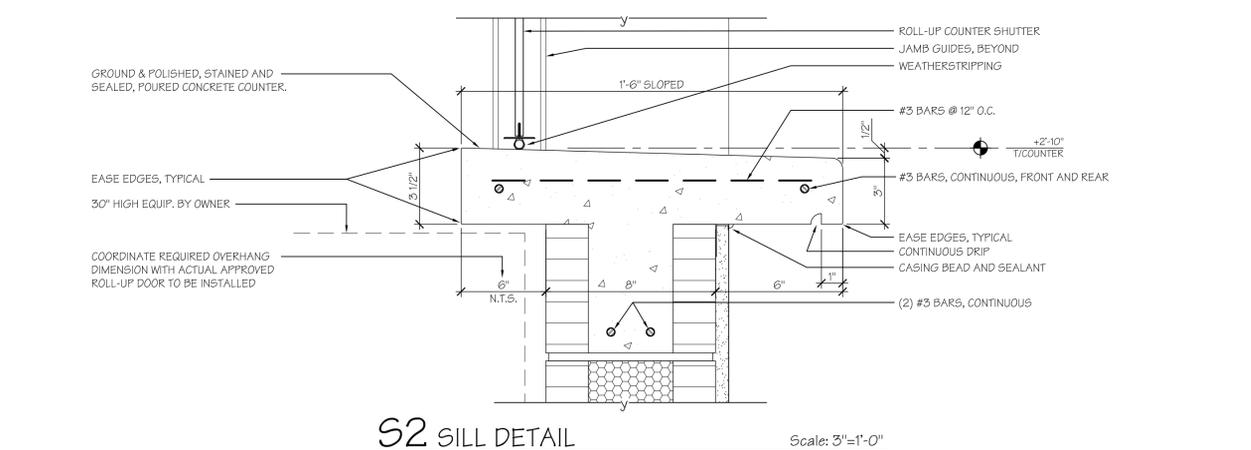
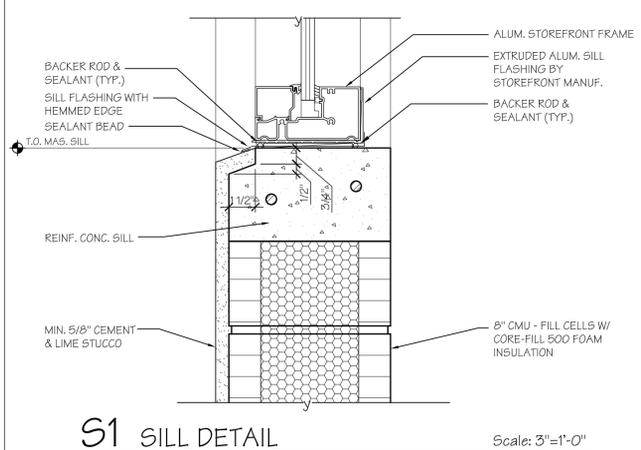
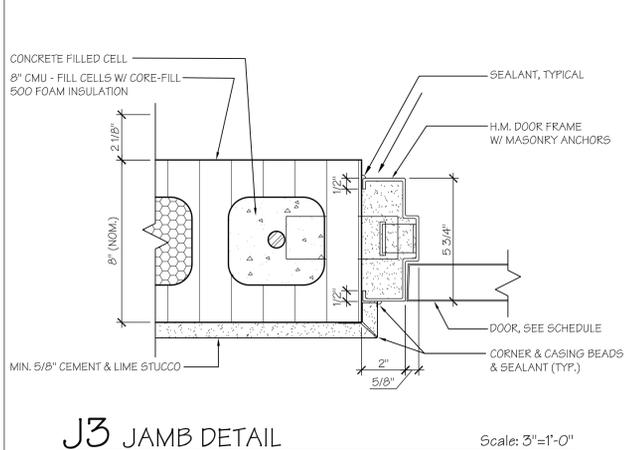
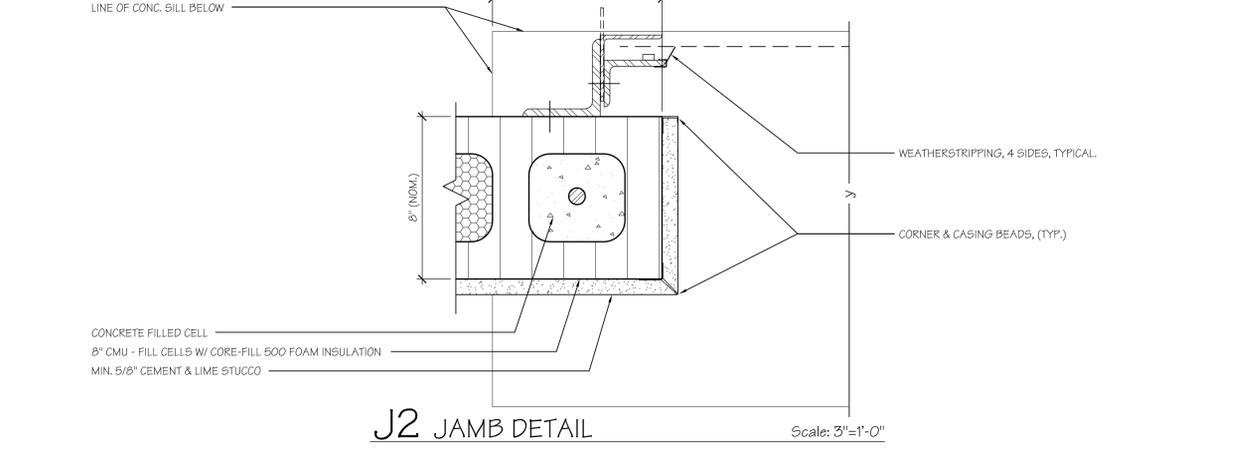
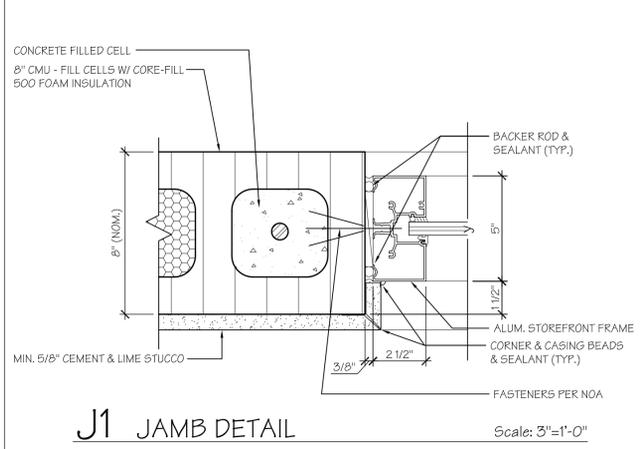
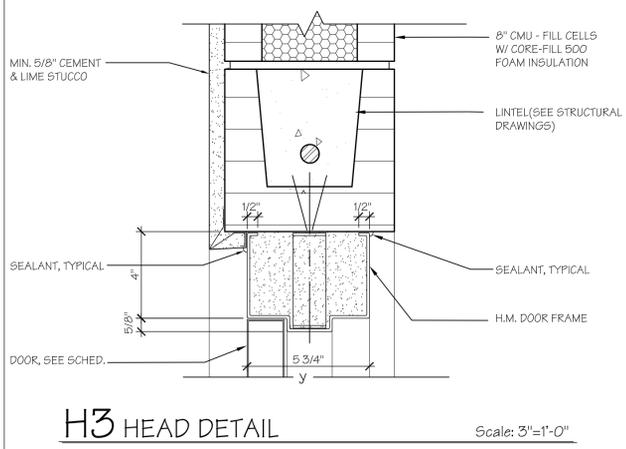
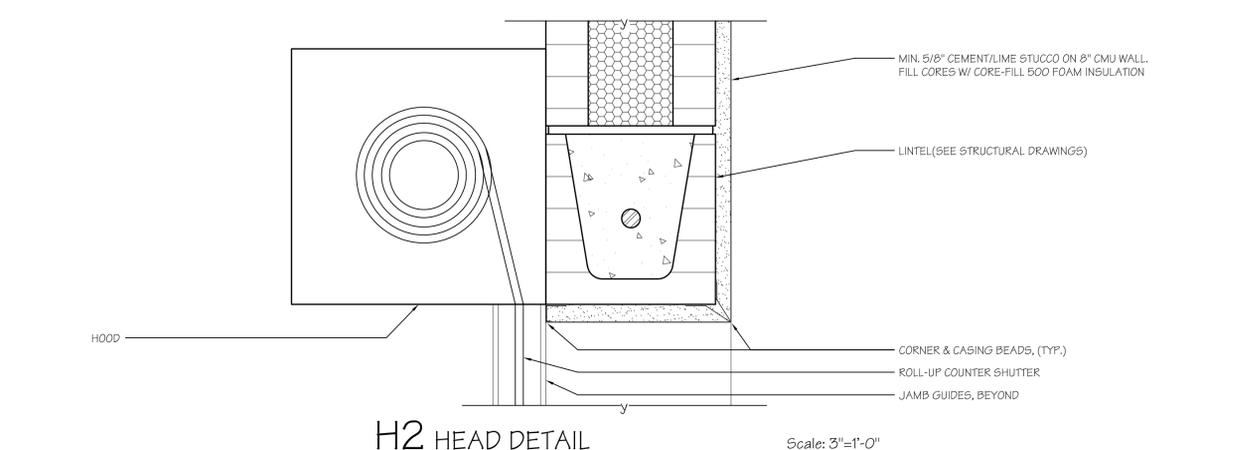
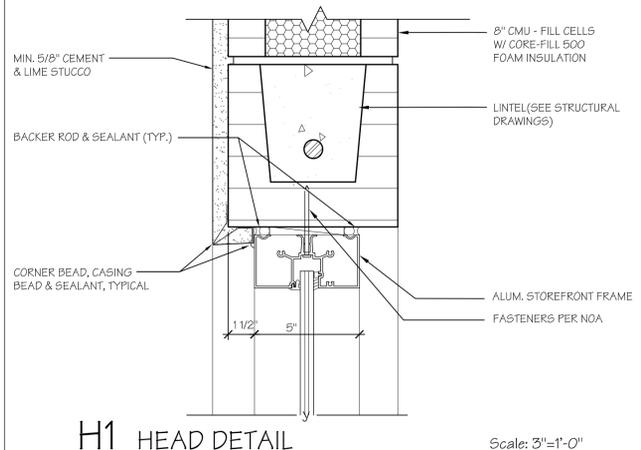
01 WINDOW TYPES



02 DOOR TYPES



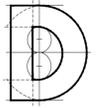
03 FRAME TYPES



Issues:

No.	Date:	Description:
	12.04.2018	FINAL DOCUMENTS

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Drawing Title:
**FOUNDATION & ROOF FRAMING
 PLANS, SECTIONS & DETAILS**

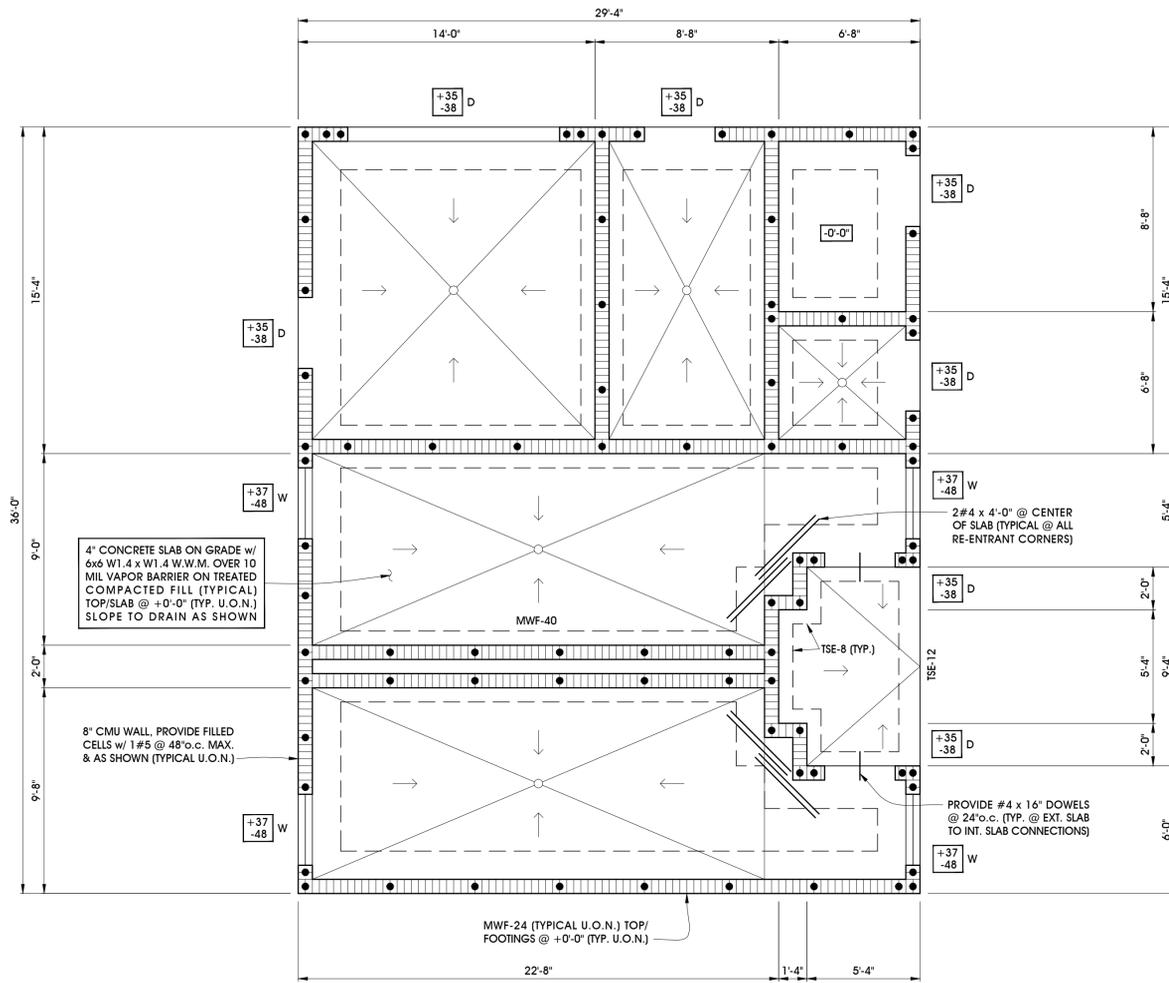


Dwn:	S.C. Baker	Drawing File:
Chd:	Mike Lue	XREF File:
Project No.:	18-137	Plot File:
Sheet No.:		

C.A. License No.: 9662
 FL P.E. No.: 47520

Date Signed:

S-1



FOUNDATION PLAN

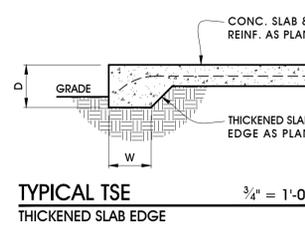
1/4" = 1'-0"

NOTES:

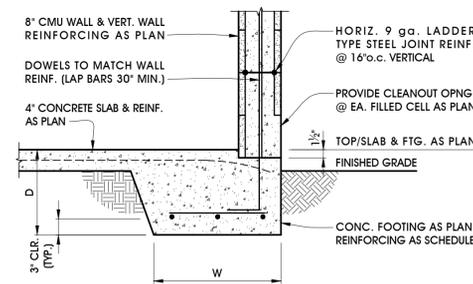
- ALL ELEVATIONS REFER TO TOP OF MAIN FIRST FLOOR SLAB @ +0'-0" (SEE SITE PLAN FOR ACTUAL ELEVATION). TOP OF FOUNDATIONS @ +1'-4" (TYPICAL U.O.N.)
- CONTRACTOR SHALL COORDINATE STRUCTURAL WORK WITH ARCHITECTURAL, MECHANICAL, PLUMBING & ELECTRICAL DRAWINGS FOR VERIFICATION OF LOCATIONS & DIMENSIONS OF ALL PROJECT REQUIREMENTS. ANY DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT OR ENGINEER OF RECORD BEFORE PROCEEDING WITH WORK.
- ALL DIMENSIONS ARE TO ROUGH OPENING OR CENTERLINE OF STRUCTURE (TYPICAL, UNLESS OTHERWISE NOTED).
- SEE ARCHITECTURAL DRAWINGS FOR ANY DIMENSIONS NOT SHOWN.
- S.C. DENOTES 1/8" WIDE x 1" DEEP SAW CUTS IN SLAB AS SHOWN IN PLAN, TO BE MADE AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY ENOUGH TO PREVENT THE AGGREGATE FROM BEING DISLODGED BY THE SAW BLADE.
- W.J.: DENOTES 1/2" VERTICAL CMU WALL JOINT AS SHOWN IN PLAN. SEE TYPICAL CMU WALL JOINT DETAIL.

LEGEND

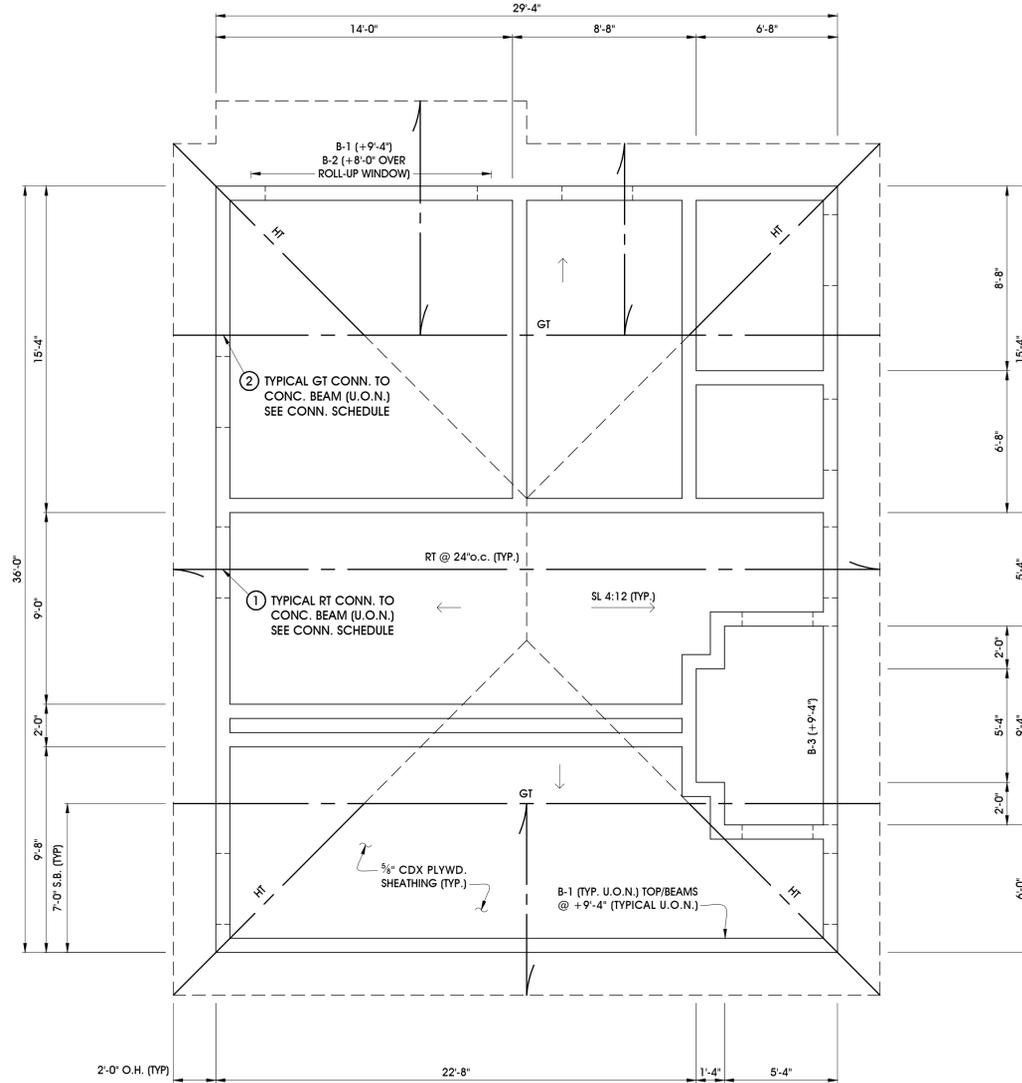
- +PSF / -PSF WINDOW & DOOR DESIGN PRESSURES (ALLOWABLE STRESS PSF) (TYPICAL AS SHOWN) SEE COMPONENT & CLADDING PRESSURES FOR DISTANCES OF END ZONES FOR EACH BUILDING
- D - DOOR
- W - WINDOW
- RW - ROLL UP WINDOW
- (C1) CONCRETE OR CMU COLUMN AS SHOWN



TYPICAL TSE THICKENED SLAB EDGE
 3/4" = 1'-0"



TYPICAL EXTERIOR WALL FOUNDATION
 3/4" = 1'-0"



ROOF FRAMING PLAN

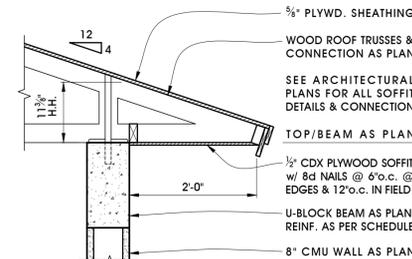
1/4" = 1'-0"

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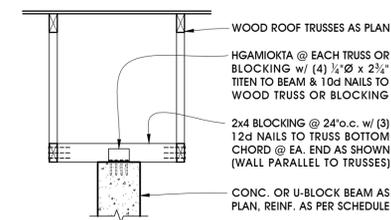
- ALL ELEVATIONS REFER TO TOP OF MAIN FIRST FLOOR SLAB @ +0'-0" (SEE SITE PLAN FOR ACTUAL ELEVATION). CONTRACTOR SHALL COORDINATE STRUCTURAL WORK WITH ARCHITECTURAL, MECHANICAL, PLUMBING & ELECTRICAL DRAWINGS FOR VERIFICATION OF LOCATIONS & DIMENSIONS OF ALL PROJECT REQUIREMENTS. ANY DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT OR ENGINEER OF RECORD BEFORE PROCEEDING WITH WORK.
- ALL DIMENSIONS ARE TO ROUGH OPENING OR CENTERLINE OF STRUCTURE (TYPICAL, UNLESS OTHERWISE NOTED).
- SEE ARCHITECTURAL DRAWINGS FOR ANY DIMENSIONS NOT SHOWN.

LEGEND

- (1) CONNECTOR DESIGNATIONS AS SHOWN, SEE SCHEDULE
- RT: WOOD ROOF TRUSS
- HT: WOOD ROOF HIP TRUSS
- GT: WOOD ROOF GIRDER TRUSS



TYPICAL ROOF TRUSS TO CONC. BEAM CONNECTION
 3/4" = 1'-0"



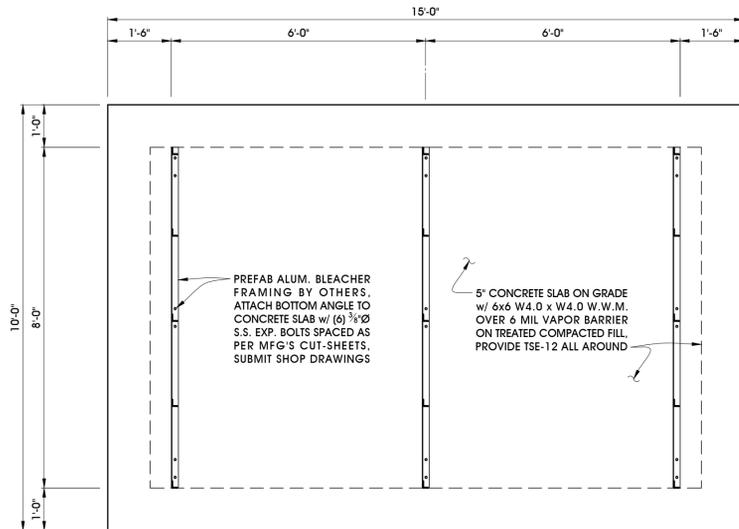
TYPICAL NON-BEARING CMU WALL BRACING DETAIL
 3/4" = 1'-0"

Project:

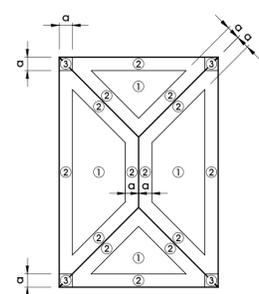
HOBART PARK CONCESSION & RESTROOM BUILDING

INDIAN RIVER COUNTY, FLORIDA

Key Plan

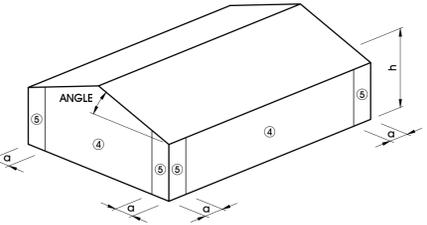
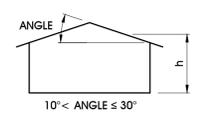


BLEACHER FOUNDATION PLAN - TYPICAL x 8
NOTE: SEE BALL FIELD SITE PLANS FOR LOCATIONS



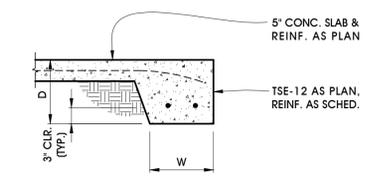
COMPONENT AND CLADDING PRESSURES (psf)									
ZONE	EFFECTIVE AREA (SQUARE FEET)								
	0 < 10	11 < 20	21 < 50	51 < 100					
ROOF	1	+22	-34	+20	-33	+17	-32	+15	-31
	2	+22	-60	+20	-55	+17	-48	+15	-44
	3	+22	-88	+20	-82	+17	-75	+15	-70
WALL	4	+37	-41	+36	-39	+33	-37	+32	-35
	5	+37	-50	+36	-47	+33	-42	+32	-39
	2								
SOFFIT	3								
	3								

NOTES:
1. END ZONE 5 IS WITHIN A DISTANCE OF (a) = 5.0 FT. FROM CORNERS
2. 160 MPH - EXPOSURE CATEGORY "B"
3. ROOF PITCH 4:12

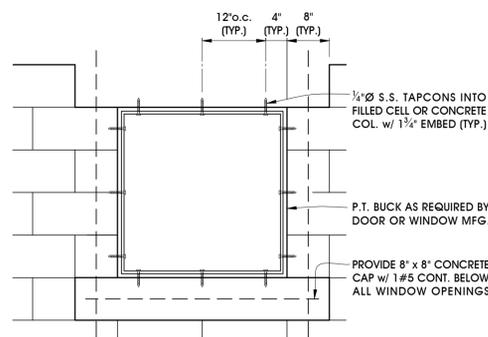


COMPONENT AND CLADDING PRESSURE ZONES NO SCALE

- NOTES:
1. PRESSURES ARE IN ALLOWABLE STRESS DESIGN (asd) FOR WINDOWS, DOORS, ROOFING, DECKING, WOOD TRUSSES AND ALL OTHER BUILDING COMPONENTS AND CLADDING.
2. POSITIVE PRESSURES INDICATE PRESSURES ACTING TOWARD A PROJECTED SURFACE. NEGATIVE PRESSURES INDICATE PRESSURES ACTING AWAY FROM A PROJECTED SURFACE.
3. NET DESIGN ROOF PRESSURES SHALL BE CALCULATED USING SELF WEIGHT OF MATERIAL. HOWEVER, THE APPLIED DEAD LOADS SHALL NOT EXCEED 12 PSF (U.N.O.) FOR THE ROOFS OF THE MAIN STRUCTURES.
4. END ZONE "a" = 5 FEET.

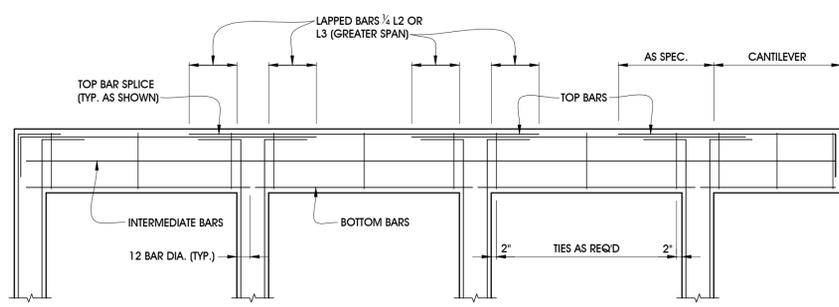


TYP. SECT. THRU TSE-12 3/4" = 1'-0"



TYPICAL WINDOW & DOOR BUCK ATTACHMENT DETAIL 3/4" = 1'-0"

- NOTES:
1. DOORS & WINDOWS SHALL BE DESIGNED, MANUFACTURED, INSTALLED & CERTIFIED TO WITHSTAND THE MIN. DESIGN WIND PRESSURES AS NOTED IN PLAN & SHALL BE IMPACT RATED.
2. WATERPROOF ALL DOOR & WINDOW PERIMETERS WITH APPLICABLE WATERPROOFING. (1) COAT BEFORE INSTALLING BUCKS & (1) COAT AFTER BUCK INSTALLATION.



TYPICAL CONCRETE BEAM REINFORCING DIAGRAM NO SCALE

MARK	SIZE D x W x L	FOUNDATION SCHEDULE				REMARKS
		BOT. REINF.		TOP REINF.		
		L.W.	S.W.	L.W.	S.W.	
TSE-8	8" x 8" x CONT.	1#5				THICKENED SLAB EDGE
TSE-12	12" x 12" x CONT.	2#5				THICKENED SLAB EDGE
MWF-24	18" x 24" x CONT.	3#6	#5 @ 24"			MONOLITHIC WALL FOOTING
MWF-40	18" x 40" x CONT.	4#6	#5 @ 24"			MONOLITHIC WALL FOOTING

MARK	ELEV. @ TOP	SIZE W" x D"	REINFORCING			TIES		REMARKS
			TOP	MID	BOT	SIZE & SPACING		
B-1	AS PLAN	8 x 8	1#5					1 COURSE U-BOND BLOCK
B-2	AS PLAN	8 x 16	1#5		1#5			2 COURSE U-BOND BLOCK
B-3	AS PLAN	8 x 24	1#5	1#5	1#5			3 COURSE U-BOND BLOCK

- NOTES:
1. PROVIDE STANDARD HOOK ON TOP BARS AT DISCONTINUOUS BEAM ENDS. PROVIDE CORNER BARS AT BEAM CORNERS & INTERSECTIONS TO MATCH BEAM REINFORCING.
2. PROVIDE PRECAST LINTELS 8F16-18 w/ 1#5 BAR @ ALL WINDOW, DOOR & LOUVER OPENINGS w/ 8" MINIMUM BEARING EACH END (TYPICAL U.O.N.)

ACI STANDARD HOOK LENGTHS								
BAR SIZE (#)	3	4	5	6	7	8	9	
LENGTH (INCH)	6	8	10	12	14	16	19	

LAP SPLICE LENGTHS (3000 PSI)								
BAR SIZE (#)	3	4	5	6	7	8	9	
TOP BARS	28"	37"	47"	56"	81"	93"	105"	
ALL OTHER BARS	18"	24"	30"	36"	42"	48"	54"	

TRUSS CONNECTOR SCHEDULE				
MARK	HARDWARE	UPLIFT (LBS.)	CAP (LBS.)	REMARKS
(1)	(1) HETA 20	1600	1810	TYPICAL WOOD TRUSS TO CONCRETE
(2)	(2) HETA 20	2000	2500	TYPICAL GIRDER TRUSS TO CONCRETE

- NOTES:
1. ALL CONNECTORS ARE BY SIMPSON STRONG-TIE (TYPICAL U.O.N.). INSTALL WITH MAXIMUM NAILS, BOLTS, SCREWS AS PER MANUFACTURER'S SPECIFICATIONS.
2. OFFSET MULTIPLE CONNECTORS TO OFFSET NAILING AND PREVENT SPLITTING OF WOOD. DO NOT BOLT THRU GUSSET PLATES.
3. REFER TO TRUSS MANUFACTURER DRAWINGS FOR TRUSS TO TRUSS CONNECTIONS (TYPICAL U.O.N.).
4. PROVIDE VERTICAL STUD UNDER TRUSSES IN METAL STUD WALLS (TYPICAL).

DESIGN CRITERIA
THE FLORIDA BUILDING CODE, 5th EDITION
ROOF LOADS
DEAD 25 PSF
LIVE 20 PSF
WIND LOADS PER ASCE 7
WIND SPEED REGION V_(adj) 160 MPH
V_(adj) 124 MPH

WIND BORNE DEBRIS REGION
ENCLOSED STRUCTURE
BUILDING RISK CATEGORY II
BUILDING DESIGN HEIGHT < 20 FT.
ROOF PITCH 4:12
INTERNAL PRESSURE COEFF ± 0.18
EXPOSURE C
HEIGHT & EXPOSURE COEFF 1.35

- STRUCTURAL NOTES**
1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
2. ALL CONSTRUCTION SHALL BE BRACED AND SHORED BY THE CONTRACTOR AS REQUIRED TO SAFELY PERFORM THE WORK.
3. ALL DOORS, WINDOWS AND HARDWARE MUST BE DESIGNED AND CERTIFIED TO WITHSTAND THE DESIGN WIND PRESSURES NOTED IN THIS DOCUMENT AND SHALL BE IMPACT RESISTANT AS REQUIRED BY THE FLORIDA BUILDING CODE.
4. THE MINIMUM STRUCTURAL SUBMITTALS SHALL BE AS PER SPECS AND AS FOLLOWS:
a. CONCRETE MIX DESIGNS
b. MASONRY & ACCESSORIES
c. REINFORCEMENT
d. PRE-ENGINEERED WOOD TRUSSES SIGNED & SEALED

- FOUNDATION**
1. FOUNDATIONS ARE DESIGNED BASED ON AN ALLOWABLE BEARING PRESSURE OF 2,500 PSF.
2. CONTRACTOR SHALL VERIFY THAT THE MINIMUM COMPACTION OF 95% OF ITS MODIFIED PROCTOR IN ACCORDANCE WITH ASTM D1557 IS OBTAINED PRIOR TO FOOTING PLACEMENT.
3. FOOTINGS SHALL BE PLACED ON COMPACTED SOIL FREE OF ORGANIC DEBRIS.
4. REFER TO SOILS INVESTIGATIVE REPORT BY KSM ENGINEERING & TESTING REPORT NO. 173042-6 FOR ALL SITE PREPARATION REQUIREMENTS.

- CONCRETE**
1. CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF A.C.I. 301 'SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS' AND A.C.I. 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
2. THE MINIMUM CONCRETE 28 DAY COMPRESSIVE STRENGTHS SHALL BE AS FOLLOWS:
FOUNDATIONS 3000 PSI SLUMP 5" ± 1"
SLAB ON GRADE 3000 PSI SLUMP 5" ± 1"
COLUMNS & BEAMS 3000 PSI SLUMP 5" ± 1"
MASONRY GROUT 3000 PSI SLUMP 10" ± 1"
3. REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A615 GRADE 60.
4. WELDED WIRE FABRIC SHALL BE IN ACCORDANCE WITH ASTM A185 AND SHALL BE ADEQUATELY SUPPORTED AT 36" o.c. E.W.
5. THE MINIMUM CONCRETE COVERAGES SHALL BE AS FOLLOWS:
CAST AGAINST EARTH 3" EXPOSED TO WEATHER 1-1/2" FORMED SURFACES 1"
6. PROVIDE 90° CORNER LAP SPLICES AT ALL INTERSECTIONS.
7. THE MINIMUM LAP SPLICE SHALL BE 30 BAR DIAMETERS OR AS NOTED IN SCHEDULE.
8. CONCRETE SHALL BE TESTED BY AN INDEPENDENT TESTING LABORATORY IN ACCORDANCE WITH ASTM C39. A MINIMUM OF (5) TEST CYLINDERS SHALL BE TAKEN FOR EACH POUR, AND ADDITIONAL SETS FOR EVERY 50 CUBIC YARDS OF POUR. CYLINDERS SHALL BE TESTED AS FOLLOWS:
1 AT 3 DAYS, 1 AT 7 DAYS, 1 AT 14 DAYS, 1 AT 28 DAYS & 1 AT 56 DAYS (IF THE MINIMUM STRENGTH IS NOT MET IN 28 DAYS)
9. CONTRACTOR SHALL PROVIDE SAW CUTS IN SLABS ON GRADE AND SECOND FLOOR PRECAST TOPPING SLABS AS PLAN OR AT A MAXIMUM SPACING OF 20'-0" o.c. EACH WAY OR 400 S.F. U.O.N. AND AT ALL RE-ENTERANT CORNERS. SAW CUTS SHALL BE 1/4 OF THE SLAB DEPTH AND SHALL BE PERFORMED AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY ENOUGH TO PREVENT THE AGGREGATE FROM BEING DISLODGED BY THE SAW BLADE. THIS IS AN EFFORT TO CONTROL THE STRESSES, AN INHERENT PROPERTY OF CONCRETE WHICH SOMETIMES RESULTS IN CRACKS, WHICH IS NOT UNCOMMON.

- CONCRETE MASONRY**
1. CONCRETE MASONRY WORK SHALL BE IN ACCORDANCE WITH ACI 530.1/ASCE 6/TMS 602. SPECIFICATION FOR CONCRETE MASONRY STRUCTURES AND ACI 530/ASCE 5/TMS 402. BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.
2. CONCRETE MASONRY UNITS SHALL BE IN CONFORMANCE WITH ASTM C90. GRADE N, TYPE II. MASONRY UNITS SHALL BE TESTED IN ACCORDANCE WITH ASTM C140 AND SHALL HAVE A MINIMUM NET AREA STRENGTH OF 1900 PSI (F_m = 1500 PSI).
3. GROUT SHALL BE IN CONFORMANCE WITH ASTM C476. COARSE TYPE WITH A 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI AND A SLUMP OF 9" TO 11".
4. MORTAR SHALL BE IN ACCORDANCE WITH ASTM C270, TYPE S.
5. PROVIDE CLEANOUTS FOR ALL GROUTED CONSTRUCTION AND LIMIT MORTAR PROTRUSIONS TO 1/2" MAX. IN GROUTED CELLS.
6. ALL MASONRY WALLS SHALL BE CONSTRUCTED IN RUNNING BOND WITH 9 GA. LADDER TYPE JOINT REINFORCING SPACED 16" o.c. VERTICALLY. LAP 8" MINIMUM AT ALL CORNERS & SPLICES.
7. PROVIDE PRECAST CONCRETE LINTEL WITH 1#5 HORIZ BAR GROUTED SOLID WITH 8" MINIMUM BEARING AT ALL MASONRY OPENINGS (TYP. UNLESS OTHERWISE NOTED).
8. PROVIDE HOOKED DOWELS IN FOOTINGS AND BEAMS WITH A MINIMUM LAP SPLICE OF 48 BAR DIAMETERS.

- TIMBER**
1. SUBMIT TRUSS SHOP DRAWINGS, SIGNED & SEALED, BY A FLORIDA REGISTERED ENGINEER FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SHALL INCLUDE TRUSS LAYOUT, DESIGN LOADS, TRUSS REACTIONS (DL & LL AND DL & WL) AND ALL OTHER INFORMATION REQUIRED FOR PROPER TRUSS INSTALLATION, ERECTION AND BRACING CRITERIA. DESIGN OF ROOF TRUSSES SHALL BE DESIGNED TO SUPPORT ALL GRAVITY AND UPLIFT LOADS AS PER THE F.B.C. 5TH EDITION.
2. WOOD ROOF TRUSSES SHALL BE DESIGNED WITH BOTTOM CHORD LATERAL BRACING AT A MINIMUM SPACING OF 8'-0" o.c. WHERE THERE IS NOT A RIGID CEILING ATTACHED TO TRUSS BOTTOM CHORDS.
3. ALL ROOF TRUSSES SHALL BE ANCHORED WITH A TRUSS CONNECTOR STRAP AS PER PLAN & SCHEDULE.
4. SECOND FLOOR SHEATHING SHALL BE 3/4" T&G MARINE GRADE PLYWOOD SHEATHING INSTALLED PERPENDICULAR TO FRAMING AND GLUED AND SCREWED WITH #10 SCREWS 6" o.c. AT PANEL EDGES AND 12" o.c. IN THE FIELD.
5. ROOF SHEATHING SHALL BE A MIN. OF 5/8" CDX SPAN RATED STRUCTURAL PLYWOOD, INSTALLED PERPENDICULAR TO ROOF FRAMING WITH 10d RING SHANK NAILS 4" o.c. AT PANEL EDGES AND 6" o.c. IN THE FIELD. PROVIDE 2x4 BLOCKING AT HIPS AND VALLEYS. SPACE NAILS AT 4" o.c. AT BLOCKING.
6. EXTERIOR WALL SHEATHING SHALL BE A MIN. OF 5/8" CDX SPAN RATED STRUCTURAL PLYWOOD, INSTALLED PERPENDICULAR TO ROOF FRAMING WITH 10d NAILS 4" o.c. AT PANEL EDGES AND 12" o.c. IN THE FIELD. PROVIDE 2x4 BLOCKING AT HIPS AND VALLEYS. SPACE NAILS AT 4" o.c. AT BLOCKING.
7. THE MINIMUM LUMBER GRADES SHALL BE:
INTERIOR NON-LOAD BEARING WALLS SPF #2
8. ALL NAILS SHALL BE COMMON WIRE NAILS. SPACE NAILS IN STRAPS SO AS NOT TO SPLIT WOOD.
9. ALL FASTENERS IN PRESSURE TREATED LUMBER SHALL BE CORROSION RESISTANT.
10. TRUSS SHOP DRAWINGS & CALCULATIONS SHALL BE SUBMITTED SIGNED AND SEALED FOR REVIEW PRIOR TO FABRICATION.

Issues:

No.	Date:	Description:
	12.04.2018	FINAL DOCUMENTS

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Drawing Title:
TYPICAL SECTIONS & DETAILS,
SCHEDULES & GENERAL NOTES



Dim:	Drawing File:
S.C. Baker	XREF File:
Chd:	Mike Lee
Project No.:	Plot File:
18-137	
Sheet No.:	

C.A. License No.: 0662
FL P.E. No.: 47520

Date Signed: 5-2

HVAC GENERAL NOTES

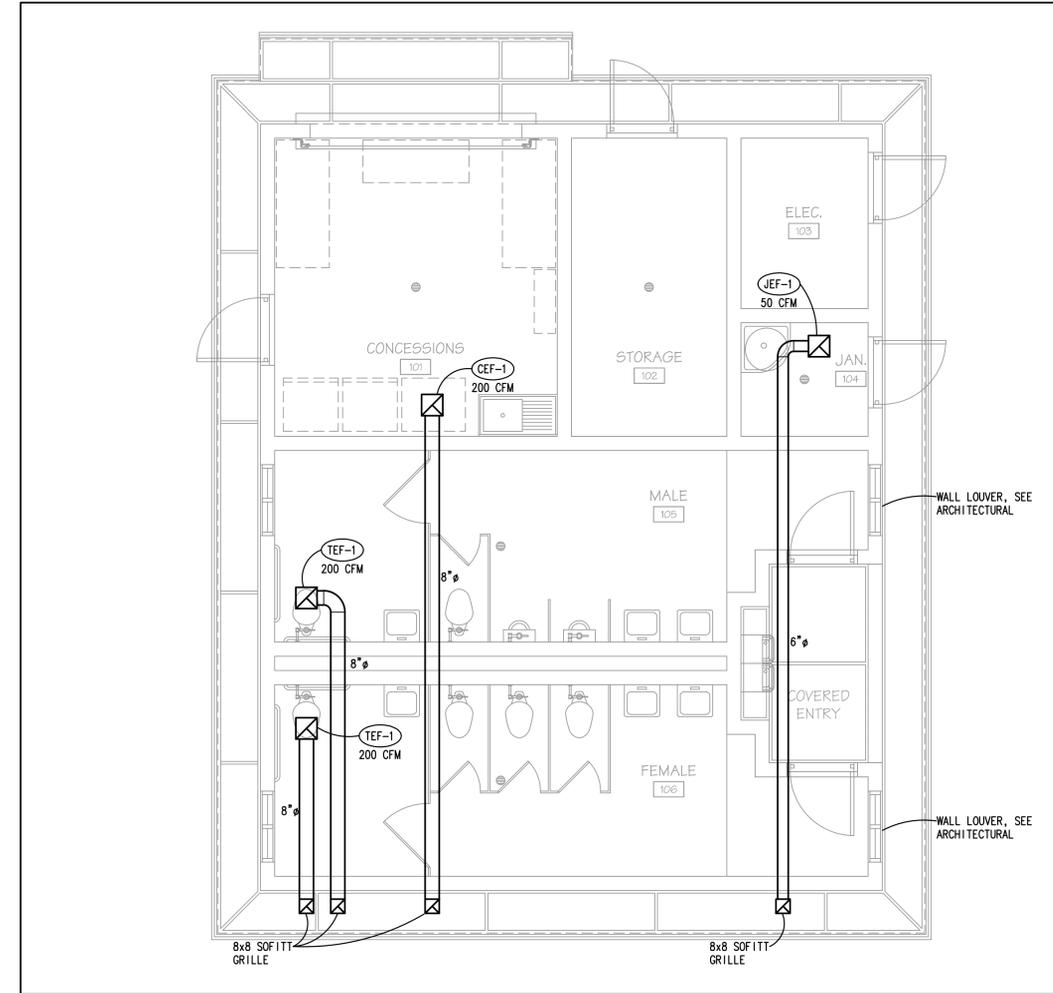
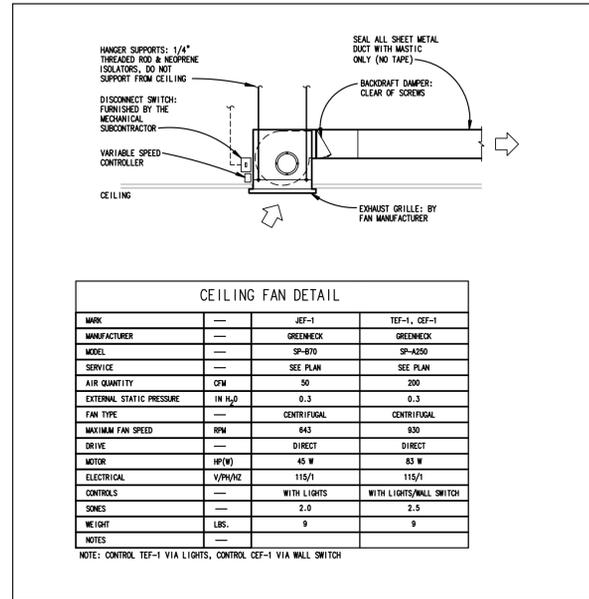
1. ALL WORK SHALL COMPLY WITH APPLICABLE NATIONAL, STATE AND LOCAL CODES. THIS INCLUDES THE 6TH EDITION FLORIDA BUILDING CODE AND FLORIDA MECHANICAL CODE, WITH LOCAL AMENDMENTS, THE APPLICABLE NFPA CODES AND THE FLORIDA ENERGY CODE.
2. ALL ELECTRICAL EQUIPMENT SHALL BE UL CLASSIFIED OR LISTED.
3. DEFINITIONS: "FURNISH" SHALL MEAN TO PURCHASE AND LOCATE AN ITEM ON THE JOBSITE. "INSTALL" SHALL MEAN TO PHYSICALLY INSTALL AN ITEM AND CONNECT IT TO ALL REQUIRED SERVICES TO MAKE THE ITEM FULLY FUNCTIONAL. "PROVIDE" SHALL MEAN TO BOTH FURNISH AND INSTALL THE ITEM.
4. TEST AND BALANCE SHALL BE PERFORMED BY THE MECHANICAL CONTRACTOR ON APPROVED FORMS USED BY AABC OR NEBB. THE MECHANICAL CONTRACTOR SHALL HAVE ALL SYSTEMS FULLY INSTALLED AND OPERATIONAL WITH CLEAN FILTERS INSTALLED PRIOR TO TEST AND BALANCE.

DUCTWORK

1. EXHAUST DUCT WORK SHALL BE GALVANIZED SHEET METAL WITH ALL JOINTS SEALED WITH MASTIC. ROUND DUCT WORK SHALL BE "THERMOFIN" OR SINGLE WALL SHEET METAL. DUCTS DO NOT NEED TO BE INSULATED UNLESS REQUIRED BY LOCAL JURISDICTION. ALL DUCT SHALL BE CONSTRUCTED AND INSTALLED PER SMACNA.
2. ALL DUCT SIZES DEPICTED ARE CLEAR INSIDE DIMENSIONS.
3. PROVIDE A FLEXIBLE CONNECTION FROM EACH AIR HANDLER AND FAN TO THE DUCT SYSTEM.
4. PROVIDE ACCESS PANELS IN DUCTS FOR ACCESS TO VOLUME DAMPERS, FIRE DAMPERS, FIRE/SMOKE DAMPERS, DUCT MOUNTED SMOKE DETECTORS AND WHERE REQUIRED TO MAINTAIN EQUIPMENT.

CONTROLS

1. LOW VOLTAGE CONTROL WIRING SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT FOR ALL CONTROL WIRING AS COORDINATED WITH THE MECHANICAL CONTRACTOR.
2. LINE VOLTAGE (110 VOLT OR HIGHER) POWER AND CONDUIT SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
3. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL DISCONNECT SWITCHES. DO NOT MOUNT DISCONNECT SWITCHES OVER NAMEPLATES OR SERVICE PANELS.
4. TEST AND BALANCE SHALL VERIFY THE OPERATION OF ALL CONTROLS AT THE COMPLETION OF THE PROJECT.



01 MECHANICAL FLOOR PLAN

GR056 SQUARE FOOTAGE = 999 G.S.F.

Scale: 1/4"=1'-0"

Project:

HOBART PARK

CONCESSION & RESTROOM BUILDING

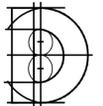
INDIAN RIVER COUNTY, FLORIDA

Key Plan:

Issues:

No.	Date:	Description:
A.	01.30.18	CLIENT REVIEW
B.	02.20.18	CLIENT REVIEW
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Drawing Title:

MECHANICAL PLAN

Reference North

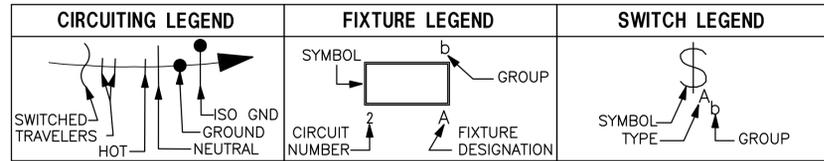


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JGS	XREF File:
Chd:	JWM
Project No.:	Plot File:
2018-04	Sheet No.:

Cert. No.: FL PE 54827

Date Signed:

M1.1



NOTE:
TO THE BEST OF THE ENGINEERS KNOWLEDGE, THESE PLANS AND SPECIFICATIONS COMPLY WITH THE 2017 FLORIDA BUILDING CODE (6TH EDITION), 2014 NEC, AND THE FLORIDA FIRE PREVENTION CODE (6TH EDITION)

NOTE:
SEE E0.2 FOR BUILDING ELECTRICAL ONE-LINE, LIFT STATION SCHEDULE, AND SITE EQUIPMENT SCHEDULE.

Project:
HOBART PARK
CONCESSION & RESTROOM BUILDING
INDIAN RIVER COUNTY, FLORIDA

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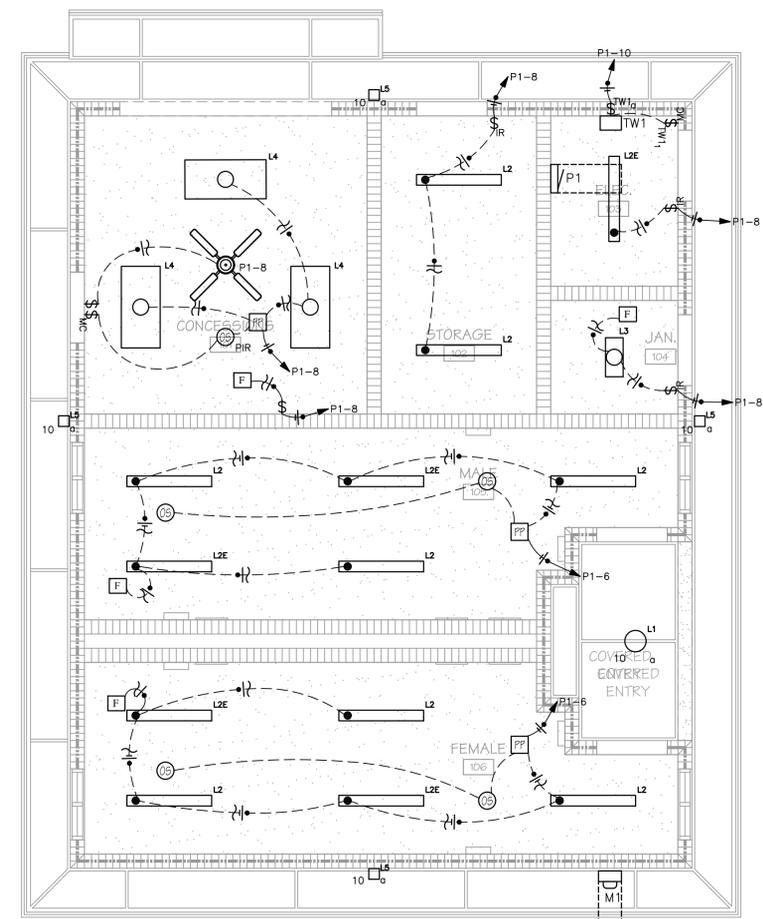
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Drawing Title:
LIGHTING PLAN & ELECTRICAL PLAN

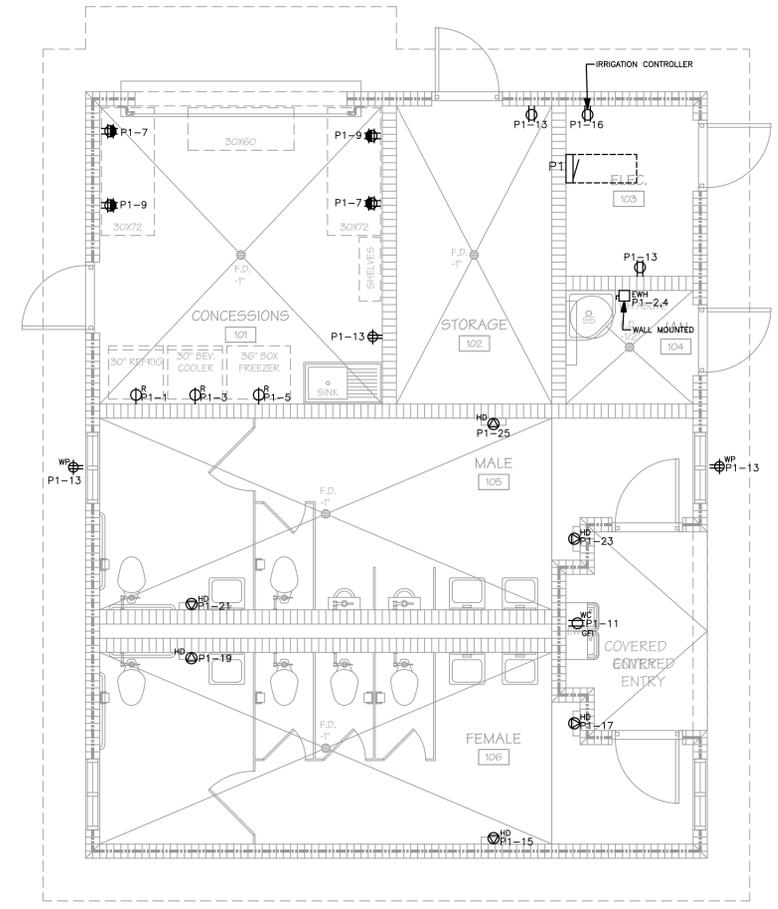


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Chd:	A.J.D.	XREF File:
Project No.:	2018-04	Plot File:
Sheet No.:		
Cert. No.:	FL PE 65050	
Date Signed:		E1.1



02 LIGHTING PLAN
Scale: 1/4"=1'-0"

SEE E0.1 & CIVIL PLAN FOR LOCATION
IRR P1-18,20 VIA CONTROLLER



01 ELECTRICAL PLAN
Scale: 1/4"=1'-0"

P1

ROOM ELECTRIC RM		VOLTS 240/120V 2P 3W		AIC 22,000			
MOUNTING SURFACE		BUS AMPS 200		MAIN BKR 200			
FED FROM TXL		NEUTRAL 100%		LUGS STANDARD			
NOTE SQ D Q0140M200							
CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION	CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	20/1	0.96	30" REFRIGERATOR	a 2	30/2	4.5	WATER HEATER
3	20/1	0.96	30" BEVERAGE COOLER	b 4			
5	20/1	0.96	30" BOX FREEZER	a 6	20/1	0.532	LIGHTING
7	20/1	0.72	CONCESSION COUNTERS, RECEPTACLE	b 8	20/1	0.595	FAN, LIGHTING
9	20/1	0.72	CONCESSION COUNTERS, RECEPTACLE	a 10	20/1	0.148	EXTERIOR LIGHTING
11	20/1	0.37	WATER COOLER	b 12	20/1	0.084	SCOREBOARD
13	20/1	0.9	RECEPTACLE	a 14	20/1	0.268	FLAG POLE LIGHT
15	20/1	1.45	HAND DRYER	b 16	20/1	0.5	IRRIGATION CONTROLLER
17	20/1	1.45	HAND DRYER	a 18	70/2	9.61	IRRIGATION SYSTEM
19	20/1	1.45	HAND DRYER	b 20			
21	20/1	1.45	HAND DRYER	a 22	-/1	0	SPACE
23	20/1	1.45	HAND DRYER	b 24	-/1	0	SPACE
25	20/1	1.45	HAND DRYER	a 26	-/1	0	SPACE
27	-/1	0	SPACE	b 28	-/1	0	SPACE
29	-/1	0	SPACE	a 30	-/1	0	SPACE
31	-/1	0	SPACE	b 32	-/1	0	SPACE
33	-/1	0	SPACE	a 34	-/1	0	SPACE
35	-/1	0	SPACE	b 36	-/1	0	SPACE
37	30/2	0	SURGE PROTECTION DEV.	a 38	50/2	6.62	LIFTSTATION CP
39				b 40			

	CONN KVA	CALC KVA		CONN KVA	CALC KVA		
OTHER LIGHTING	2	2	(100%)	9.6	2.4	(25%)	
CLUB LIGHTING	2	1,000 SF	(2 VA/SF)	MOTORS	15.7	15.7	(100%)
APPLIANCE	0.416	0.52	(125%)	RECEPTACLES	2.7	2.7	(50%>10)
	7.38	5.54	(75%)	CONTINUOUS	1.08	1.36	(125%)
				NONCONTINUOUS	8.7	8.7	(100%)
				DIVERSE	0.01	0	(0%)
				TOTAL LOAD		58.9	
				BALANCED AMPS		162	
				PHASE A		106%	
				PHASE B		94.3%	

RECEPTACLE SCHEDULE

SYMBOL	NEMA	VOLTS	FEATURES	NOTE 1
	5-15-2R	120V 1P 2W	GND	STANDARD WALL RECEPTACLE MOUNTED 15" AFF, AS NOTED (SEE ARCH DRAWINGS)
	5-15-2R	120V 1P 2W	GND	STANDARD WALL RECEPTACLE MOUNTED 15" AFF OR AS NOTED WITH GFCI PROTECTED
	5-15-2R	120V 1P 2W	GND	STANDARD WALL RECEPTACLE MOUNTED 18" AFF (WEATHER PROOF PER NEC, GFCI)
	5-15-4R	120V 1P 2W	GND	COUNTER MOUNT 42" AFF, AS NOTED, OR BACKSPASH WITH GFCI PROTECTED.
		120V 1P 2W	GND	CEILING FAN (SEE ARCHITECTS SPECS)
		240V 2P 2W	GND	ELECTRIC WATER HEATER
		120V 1P 2W	GND	EXCEL HAND DRYER WITH HEATER BRUSHED STAINLESS STEEL XLERATOR MODEL XL-SB-120
	5-15R	120V 1P 2W	GND	REFRIGERATION MOUNTED 42" AFF (GFCI PROTECTED)
		120V 1P 2W	GND	EXHAUST FAN, SPEC & LOCATE EXACT LOCATION FROM MECHANICAL DRAWINGS
	5-20-2R	120V 1P 2W	GFI, GND	WATER COOLER

SEE ARCHITECT SPECIFICATIONS FOR EXACT REQUIREMENTS. WP=WET OR DAMP RATED DEPENDING ON ENVIRONMENT, GFCI= RECEPTACLE MUST BE A GROUND FAULT CIRCUIT INTERRUPTER TYPE OR PROTECTED UPSTREAM BY ONE OR RATED BREAKER TYPE.

WIRING METHODS & MATERIALS

- #
- 1 HE NATIONAL AND LOCAL ELECTRIC AND BUILDING CODES, AND THE ELECTRICAL REQUIREMENTS AS ESTABLISHED BY THE STATE AND LOCAL FIRE MARSHAL, AND RULES AND REGULATIONS OF THE POWER COMPANY SERVING THE PROJECT, ARE HEREBY MADE PART OF THIS SPECIFICATION. SHOULD ANY CHANGES BE NECESSARY IN THE DRAWINGS OR SPECIFICATIONS TO MAKE THE WORK COMPLY WITH THESE REQUIREMENTS, THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER. CIRCUITS SHOWN ON PLANS ARE TO DETERMINE LOAD DATA AND PANEL SIZE. MATERIALS, PRODUCTS, AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF SHALL BE NEW AND SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL).
- 2 CONTRACTOR TO INSTALL A COMPLETE ELECTRICAL SYSTEM FOR LIGHT AND POWER FROM THE POINT OF SERVICE OF THE POWER COMPANY TO AND THROUGH THE MAIN SERVICE DISCONNECT, DISTRIBUTION PANELS, AND BRANCH PANELS, INCLUDING ALL OUTLETS, DEVICES AND EQUIPMENT FURNISHED BY OTHERS AS MAY BE REQUIRED. UNTIL WORK IS COMPLETE, COST OF ALL POWER CONSUMED DURING CONSTRUCTION SHALL BE PAID BY THE PARTY DESIGNATED BY THE PRIME CONTRACTOR. CONTRACTOR MUST COORDINATE WITH UTILITY FOR INSTALLATION OF METER.
- 3 THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO BID AND FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE ELECTRICAL INSTALLATION AND MAKE PROVISIONS AS TO THE COST THEREOF.
- 4 IT IS THE INTENT OF THE PLANS AND SPECIFICATIONS TO PROVIDE A COMPLETE AND OPERATING INSTALLATION INCLUDING ALL OBVIOUSLY NECESSARY ITEMS EVEN THOUGH ITEMS ARE NOT INDICATED ON THE DRAWINGS OR SPECIFICATIONS. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, STATE SALES TAX, FEDERAL EXCISE TAX, ROYALTIES AND OTHER TAXES OR FEES AS REQUIRED FOR INSTALLATION OF A COMPLETE SYSTEM AS OUTLINED HEREIN AND AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL SECURE ALL NECESSARY LICENSES AND INSURANCE. WHERE THE MANUFACTURER ONLY IS NAMED, THE BIDS SHALL BE BASED ON FURNISHING EQUIPMENT OR MATERIALS BY THIS MANUFACTURER. PRODUCTS OF OTHER MANUFACTURERS WILL BE CONSIDERED FOR USE IF IN THE ENGINEER'S OPINION THE ITEM REQUESTED FOR SUBSTITUTION IS EQUAL TO THAT SPECIFIED. WHERE NO MANUFACTURERS ARE NAMED, THE CONTRACTOR SHALL SELECT EQUIPMENT OR MATERIAL WHICH MEETS THE SPECIFICATIONS; THE CONTRACT DRAWINGS INDICATE THE EXTENT AND GENERAL ARRANGEMENTS OF EQUIPMENT AND SYSTEMS. IF ANY DEPARTURES FROM THE CONTRACT DRAWINGS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREFOR SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. NO SUCH DEPARTURES SHALL BE MADE WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER. ALL OBVIOUS ERRORS AND/OR OMISSIONS IN THE ABOVE MENTIONED DOCUMENTS SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER AT LEAST FOUR DAYS PRIOR TO THE BID DATE. IF NOTIFICATION IS NOT RECEIVED, NO EXTRAS TO THE ORIGINAL DRAWINGS AND SPECIFICATIONS WILL BE AUTHORIZED. THE CONTRACTOR SHALL PROVIDE A GUARANTEE AGAINST DEFECTIVE WORKMANSHIP, MATERIALS OR EQUIPMENT FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE. THIS GUARANTEE SHALL INCLUDE ALL COSTS ENCOUNTERED IN THE REPLACING OF DEFECTIVE WORK OR MATERIALS. THE CONTRACTOR SHALL CONVEY TO THE OWNER ANY ADDITIONAL GUARANTEES OR WARRANTIES PROVIDED BY THE MANUFACTURER OF AN INDIVIDUAL ITEM, EQUIPMENT OR MATERIAL.
- 6 CONTRACTOR SHALL SUBMIT A LINE DRAWING AS-BUILT OF THE CONDUIT LOCATIONS AND PULL BOX LOCATIONS FOR APPROVAL BY ENGINEER/ARCHITECT BEFORE PROCEEDING ANY WORK.
- 8 PROVIDE CIRCUIT BREAKERS WITH UL LISTED INTERRUPTING RATING (RMS SYMMETRICAL AMPERES) GREATER THAN THE AVAILABLE FAULT CURRENT SHOWN ON THE ELECTRICAL ONE-LINE DIAGRAM. ALL SUB-FEED BREAKERS ALLOWED TO BE SERIES RATED AT 10KA
- 9 BOND RACEWAYS AND THE FRAMES AND ENCLOSURES OF MOTORS, BREAKERS, SWITCHES, AND OTHER ELECTRICAL EQUIPMENT TO THE BUILDING GROUNDING SYSTEM. INSTALL AN INSULATED EQUIPMENT GROUND CONDUCTOR IN EACH RACEWAY OR CONDUIT.
- 11 FOR LONG BURIED SERVICE AND FEEDER RUNS INSTALL HANDHOLES EVERY 500 FT AND AT MAJOR TURNS.
- 12 METAL FRAMING MEMBERS SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR FOR ANY CIRCUIT THAT MAY ENERGIZE THE BUILDING FRAMING AND BE SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE, TABLE 250.122. FOR THE PURPOSE OF THIS REQUIREMENT, A GROUNDED METAL OUTLET BOX ATTACHED TO THE FRAMING SHALL BE PERMITTED.
- 13 IDENTIFY NEW BRANCH CIRCUITS AT THE PANEL AND AT THE LOAD OUTLET, RECEPTACLE AND SWITCH. IDENTIFY THE PURPOSE OF INDIVIDUAL CIRCUIT BREAKERS, SAFETY SWITCHES AND MOTOR STARTERS BY MEANS OF NAMEPLATES AS INDICATED.
- 14 ROUTE CONDUITS TO SUIT EQUIPMENT AND BUILDING STRUCTURE, UNLESS OTHERWISE NOTED ON DRAWINGS OR NOT ALLOWED BY THE AHJ THE FOLLOWING SHALL APPLY: CONDUIT FOR ABOVE GRADE SHALL BE INTERMEDIATE METAL CONDUIT (IMC), RIGID METAL CONDUIT (RMC) OR ELECTRICAL METALLIC TUBING (EMT). [OPTIONAL: TYPE NM & NMS CAN BE USED IN THE BUILDING AS LONG AS IT ISN'T USED EXPOSED IN DROPPED OR SUSPENDED CEILINGS WHICH INCLUDES GYPSUM BOARD CEILINGS WITH ACCESS PANELS OR TYPE II & III STRUCTURES WITHOUT CONDUIT.] LIMIT THE USE OF EMT TO AREAS WHERE IT WILL NOT BE SUBJECT TO PHYSICAL DAMAGE, WET ENVIRONMENTS, OR CORROSION. USE IMC, RMC OR RIGID PVC SCH 40 FOR WORK EMBEDDED IN CONCRETE. ALL BURIED CONDUIT SHALL BE RIGID PVC SCH 40. GENERAL POWER AND LIGHTING HOME RUN CIRCUITS IN CONDUIT (IMC, RMC, EMT) WHEN RAN ABOVE CEILINGS (EXPOSED AND CONCEALED) SHALL BE RAN TO A JUNCTION BOX. METAL CLAD CABLE (MC) WILL BE PERMITTED FROM THE JUNCTION BOX DROPPED DOWN TO THE RECEPTACLE OUTLET OR SWITCH AT A MAXIMUM LENGTH OF 30 FEET. FLEXIBLE METAL CONDUIT OR MC CABLE MAY BE USED FOR TAP CONDUCTORS PER CODE FROM THE FIXTURES TERMINATION TO AN OUTLET BOX IN ACCESSIBLE CEILINGS. CONDUIT TERMINATIONS AT ELECTRICAL EQUIPMENT SUCH AS ELECTRIC MOTORS AND HEATERS SHALL BE MADE USING LIQUID-TIGHT, FLEXIBLE METAL CONDUIT. USE MINIMUM 3/4 INCH CONDUIT EXCEPT AS FOLLOWS: 1/2" CONDUIT MAY BE USED FOR 20 AMP GENERAL LIGHT AND POWER CIRCUITS AND FOR CONTROL CIRCUITS. CONDUIT EXPANSION FITTINGS AND GROUND BONDING JUMPERS SHALL BE INSTALLED ON ALL CONDUITS PASSING THROUGH BUILDING EXPANSION JOINTS TO PROVIDE MOVEMENT IN THE CONDUIT SYSTEM. WHERE GROUPS OF CONDUITS TERMINATE TOGETHER OR PASS THROUGH FLOORS, PROVIDE TEMPLATE TO HOLD CONDUITS IN PROPER RELATION TO EACH OTHER AND TO BUILDING.
- 15 OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN WET LOCATIONS AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS. [OPTIONAL: NON-METALLIC BOXES ARE ALLOWED WERE ONLY TYPE NM & NMS CABLE ENTERS THE BOX.]
- 16 ALL MEASUREMENTS ARE AFF (ABOVE FLOOR FINISH) AND MEASURED TO CENTER OF OPERABLE DEVICE.
- 17 MOUNT WALL SWITCHES AND CONTROLS 46" AFF, UNLESS OTHERWISE NOTED ON DRAWING. GANG SWITCHES WHERE EVER POSSIBLE. RECEPTACLES & COMMUNICATION OUTLETS SHALL BE LOCATED 18" AFF, UNLESS OTHERWISE NOTED. ABOVE-COUNTER RECEPTACLES SHALL BE MOUNTED 6" ABOVE BACK SPLASH TO CENTERLINE OF DEVICE.
- 18 DISCONNECT SWITCHES SHALL BE H.P. RATED, HEAVY DUTY, QUICK MAKE, QUICK BREAK, WITH ENCLOSURES AS REQUIRED BY EXPOSURE.
- 20 SEAL AROUND CONDUIT PENETRATIONS THROUGH INTERIOR WALLS AND FLOORS SEPARATING AREAS TO RESTORE SEAL PENETRATIONS THROUGH ROOF AND EXTERIOR WALLS TO MAKE WATERPROOF. REQUEST INSPECTION OF FIRE SEALS BY ELECTRICAL INSPECTOR FROM AUTHORITY HAVING JURISDICTION BEFORE AND AFTER PLACEMENT OF FIRE SEAL MATERIALS.
- 22 USE 12 AWG OR LARGER CONDUCTORS FOR POWER WIRING UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS OR SCHEDULE. USE 14 AWG STRANDED CONDUCTORS FOR CONTROL WIRING UNLESS OTHERWISE SPECIFIED, OR APPROVED BY THE MANUFACTURE, OR SHOWN ON THE DRAWINGS.
- 23 USE ONLY COPPER CONDUCTORS ON CIRCUITS 600V AND LESS. CONDUCTORS 10 AWG AND SMALLER SHALL BE SOLID AND 8 AWG AND LARGER AWG SHALL BE STRANDED. PROVIDE TYPE THHN/THWN WIRE INSULATION; XHHW INSULATION MAY BE USED FOR 1 AWG AND LARGER.
- 24 USE THE FOLLOWING CONDUCTOR COLOR CODES:
- | | | | |
|---------------|-----------|-----------|-----------|
| 120/240V | 120A/240V | 120Y/208V | 277Y/480V |
| PHASE A | BLACK | BLACK | BROWN |
| PHASE B | RED | ORANGE | RED |
| PHASE C | - | BLUE | YELLOW |
| NEUTRAL | WHITE | WHITE | GRAY |
| EQUIP. GROUND | GREEN | | |
- ISOLATED GROUND SHALL BE GREEN WITH YELLOW TRACER.
- 27 TEST CONDUCTORS FOR CONTINUITY AND FREEDOM FROM SHORTS AND UNINTENTIONAL GROUNDS.
- 28 KEEP JOB SITE IN AN ORDERLY CONDITION AND AT PROJECT COMPLETION, REMOVE ALL WASTE.
- 29 IF DIRECTED BY THE ARCHITECT OR ENGINEER, THE CONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE REASONABLE MODIFICATIONS IN THE LAYOUT AS NEEDED TO PREVENT CONFLICT WITH WORK OF OTHER TRADES OR FOR PROPER EXECUTION OF THE WORK.
- 30 ANY APPARATUS, APPLIANCE, MATERIAL OR WORK NOT SHOWN ON DRAWINGS OR ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE AND PERFECT IN ALL RESPECTS AND READY FOR OPERATION, EVEN IF NOT PARTICULARLY SPECIFIED, SHALL BE FURNISHED, DELIVERED AND INSTALLED BY THE CONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE OWNER.
- 31 WITH SUBMISSION OF BID, THE ELECTRICAL CONTRACTOR SHALL GIVE WRITTEN NOTICE TO THE ARCHITECT/ENGINEER OF ANY MATERIALS OR APPARATUS BELIEVED INADEQUATE OR UNSUITABLE, IN VIOLATION OF LAWS, ORDINANCES, RULES; AND ANY NECESSARY ITEMS OR WORK OMITTED. IN THE ABSENCE OF SUCH WRITTEN NOTICE, IT IS MUTUALLY AGREED THE CONTRACTOR HAS INCLUDED THE COST OF ALL REQUIRED ITEMS IN HIS PROPOSAL, AND THAT HE WILL BE RESPONSIBLE FOR THE APPROVED SATISFACTORY FUNCTIONING OF THE ENTIRE SYSTEM WITHOUT EXTRA COMPENSATION.
- 32 DO NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO ARCHITECT/CIVIL ENGINEERS PLANS AND ELEVATIONS FOR EXACT LOCATION OF ALL EQUIPMENT. ALWAYS CONFIRM WITH OWNER'S REPRESENTATIVE IF IN DOUBT. ANY QUALITIES SHOW IN SCHEDULES ARE FOR REFERENCE ONLY AND SHALL NOT BE USED AS AN EXACT TAKE OFF. CONTRACTOR IS RESPONSIBLE FOR ALL ACTUAL QUANTITY COUNTS.

LUMINAIRE SCHEDULE

CALLOUT	SYMBOL	DESCRIPTION	MANUFACTURE	CATALOG NUMBER	LAMP	TOTAL LUMENS	EGRESS MODE TOTAL LUMENS	VOLTS	WATTS	NOTE 1
L1		LED UNDERCANOPY LUMINAIRE	MCGRAW EDISON	TT-C1-LED-E1-MW-DP	(1) 28W LED	3922	0	120V 1P 2W	28	
L2		LED VANDAL 1X4	FAILSAFE	HVL8-4-LD4-1-STD-40-0-EDC-1-S-VRS	(1) 34.6W LED	3118	0	120V 1P 2W	34.6	
L2E		LED VANDAL 1X4 W/ INTEGRAL EM BATTERY PACK	FAILSAFE	HVL8-4-LD4-1-STD-40-0-EDC-1-S-VRS-EL7W	(1) 34.6W LED (1) 5W LED	3118 0	0 624	120V 1P 2W	34.6 5	CONNECT WITH 3 WIRE TO WITH ONE BEFORE AND ANOTHER AFTER LOCAL SWITCH.
L3		LED VANDAL 1X2	FAILSAFE	HVL8-2-LD4-1-LO-40-0-EDC-1-S-VRS	(1) 24.7W LED	2339	0	120V 1P 2W	24.7	
L4		SURFACE MTD 2X4	METALUX	24FP4740C / FPSURF24	(1) 40.3W LED	4858	0	120V 1P 2W	40.3	
L5		LED WALL PACK	MCGRAW EDISON	GWC-AF-01-LED-E1-SL2-DP	(1) 30W LED	6227	0	120V 1P 2W	30	

WP=WET OR DAMP RATED DEPENDING ON ENVIRONMENT.

SWITCH SCHEDULE

SYMBOL	DESCRIPTION
\$	DECORA TYPE, SPECIFICATION GRADE, RATED 20 AMPS.
\$ MC	MOMENTARY CONTACT SWITCH, GREENGATE GMS-W, WHEN TOGGLED, THE SWITCH MOMENTARILY MAKES A CONTACT CLOSURE TO THE LIGHTING CONTROL PANEL OR OCCUPANCY SENSOR, SENDING AN "ON" SIGNAL. WHEN NOT PRESSED, THE SWITCH IS IN THE (OPEN) POSITION.
Ⓢ	GREENGATE OAC-DT-1000-R CEILING MOUNTED SENSOR, MULTI-TECHNOLOGY PIR/ULTRASONIC VERSION, SELF-ADJUSTING - ADJ TIME DELAY. CONNECT WITH THREE WIRE TO POWER PACK WITH 120V INPUT/ 10-30 VDC OUTPUT.
Ⓢ PIR	GREENGATE OAC-P-1500-MV CEILING MOUNTED SENSOR, PIR VERSION, SELF-ADJUSTING - ADJ TIME DELAY. CONNECT WITH THREE WIRE TO POWER PACK WITH 120V INPUT/ 10-30 VDC OUTPUT.

NOTE DERATING OF GANGED DIMMERS AND LOAD WATTAGE DOES NOT EXCEED RATING BASED ON LAMP TYPE.

SWITCH SCHEDULE (CONT.)

SYMBOL	DESCRIPTION
\$ IR	PASSIVE INFRARED (PIR) VERSION, SELF-ADJUSTING, 1/2 HP MOTOR RATING, ADJ TIME DELAY, SETTABLE TO MANUAL TURN ON AUTO OFF.
PP	GREENGATE SP20-MV POWER PACK, USED TO CONTROL FIXTURE FROM OS. (SEE DETAIL)
\$ TWx	WALL MOUNT TIMER SWITCH CIRCUIT (SEE DETAIL). HOME RUN TO IDENTIFIED TIMER AND CHANNEL NUMBER.

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Drawing Title:
ELECTRICAL SCHEDULES &
ONE-LINE

Reference North

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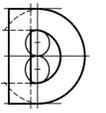
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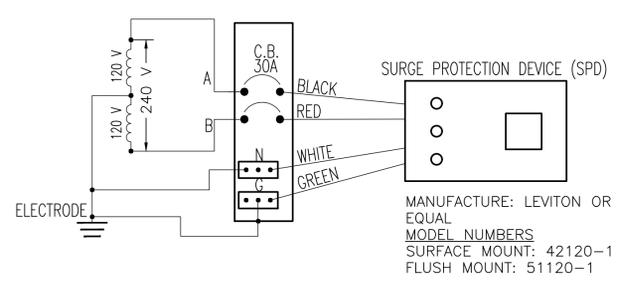
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Cart. No.: FL PE 65050

Date Signed: E1.3

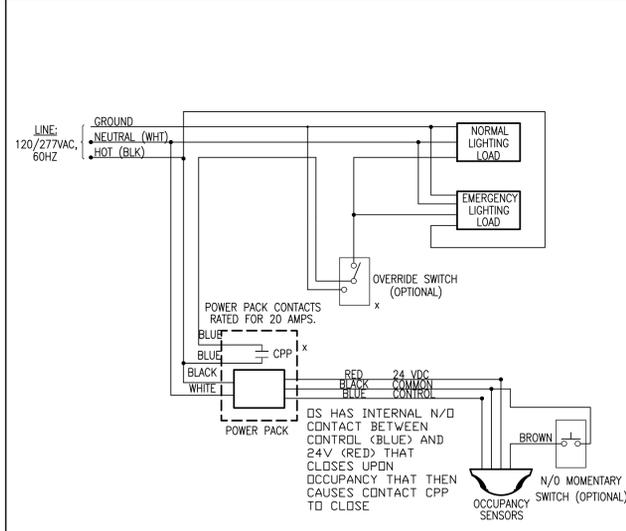
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NOTE: ONLY USE A SPD DESIGNED FOR A 120/240 SINGLE PHASE OTHER VOLTAGE WILL CAUSE SPD TO FAIL AND NOT PROTECT



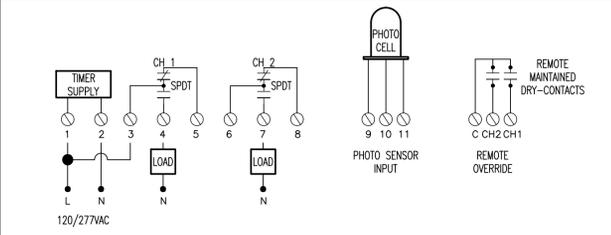
- GENERAL SPD INSTALLATION NOTES:**
- LOCATE THE SPD UNIT AS CLOSE AS POSSIBLE TO THE ELECTRICAL PANEL SERVING THE LOADS TO BE PROTECTED TO MINIMIZE THE EFFECTS OF CONNECTION LEAD-LENGTH RESISTANCE AND INDUCTANCE.
 - LEADS FROM THE SPD UNIT MUST BE CONNECTED TO THE POWER MAINS THROUGH A DISCONNECT AND FUSING MEANS. EITHER DEDICATED 30-AMP BRANCH CIRCUIT BREAKERS (INDEPENDENT SINGLE-POLE PREFERRED), OR A FUSED 30-AMP DISCONNECT SWITCH MAY BE USED.
 - THE TOTAL CONNECTION LENGTH BETWEEN THE BRANCH POWER LINES AND SPD DEVICE SHOULD BE AS SHORT AS POSSIBLE (18" MAX). LEADS FROM THE SPD UNITS SHOULD BE BUNDLED TOGETHER AND SECURED WITH CABLE TIES WHEN POSSIBLE.
 - THE SUPPRESSOR'S BLACK WIRES MAY BE CONNECTED TO L1 OR L2 WITHOUT REGARD TO PHASE.
 - DO NOT CONNECT THE GREEN WIRE TO ISOLATED GROUND CONDUCTOR(S).

SPD WIRING DETAIL - 1 PHASE, 3-WIRE
SCALE: NONE



NOTE: THE NUMBER OF DEVICES POWERED FROM A SINGLE POWER PACK VARIES WITH THE TYPE OF DEVICE. "x" ON POWER PACK, SWITCH, AND OS REPRESENTS THE SWITCH GROUP THE OCCUPANCY SENSOR IS CONTROLLING.

WIRING DIAGRAM-SINGLE POWER PACK APPLICATION WITH NORMAL & EMERGENCY LIGHTS
SCALE: NONE

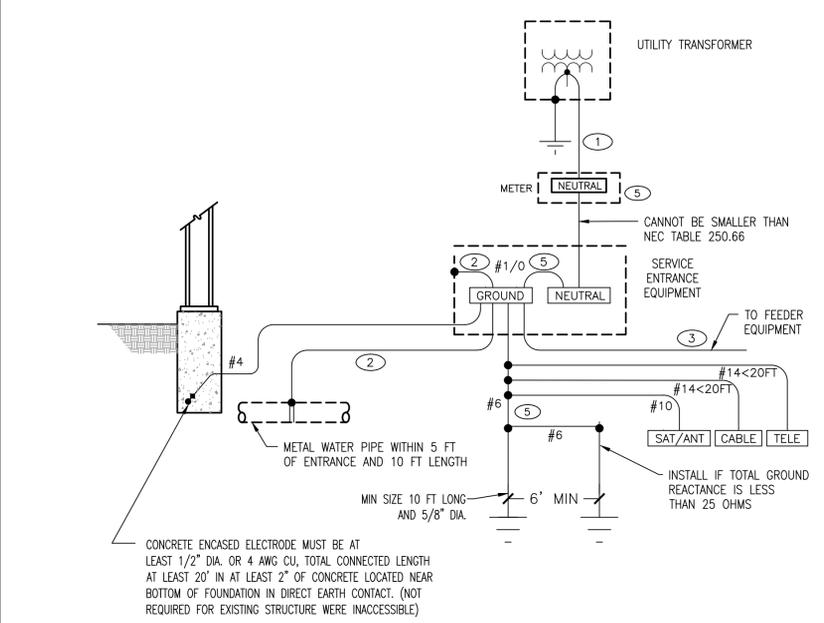


GENERAL DESCRIPTION:

- FURNISH AND INSTALL A 2 ZONE LIGHTING CONTROLLER W/ PHOTO SENSOR AND REMOTE OVERRIDE INPUT SUCH AS A TORK DGLC200A.
- EACH ZONE SHALL BE CAPABLE OF INDEPENDENT, USER SETTABLE TURN ON AND TURN OFF LIGHT LEVEL SET POINTS RANGING FROM 1 TO 100 FOOTCANDLES.
- TWO POSITION SLIDE SWITCHES SHALL BE PROVIDED FOR EACH OF THE 2 ZONES ALLOWING FOR USER SETTINGS BASED ON A) TIME OF DAY OR B) COMBINATION TIME OF DAY AND LIGHT LEVEL.
- UNIT SHALL BE CAPABLE OF SWITCHING 20 AMP BALLAST LOAD FOR EACH ZONE.
- EACH ZONE SHALL BE CAPABLE OF ASTRONOMIC FUNCTION.
- CONTROLLER SHALL PROVIDE AUTOMATIC DAYLIGHT SAVING TIME.
- CONTROLLER SHALL BE CAPABLE OF 56 SET POINTS WITH SEPARATE SCHEDULING FOR EACH DAY OF THE WEEK.
- CONTROLLER SHALL HAVE BACK-UP CAPABILITY.
- UNIT SHALL HAVE A NEMA TYPE 3, METAL INDOOR/OUTDOOR ENCLOSURE.

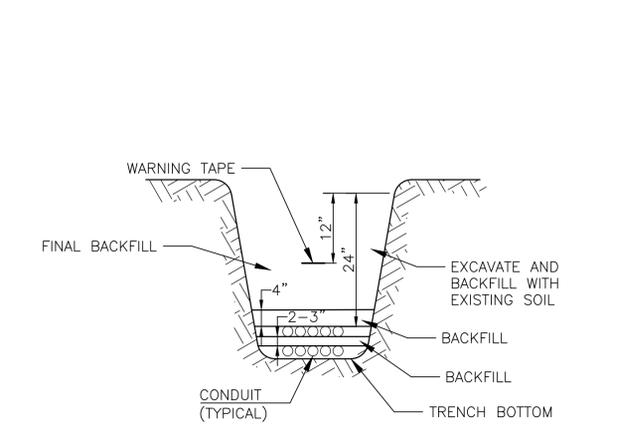
ELECTRICAL:
CONNECT CLOCK TO SAME CIRCUIT AS CH1 FIXTURE. WIRE FIXTURE TO LOAD CONTACT. MOUNT PHOTO CELL AT LEAST 10 FT UP ON NORTH SIDE OF BUILDING. CIRCUIT ON PLAN VIEW SHOULD SHOW SWITCH SYMBOL THAT REFERENCES TIMER NUMBER AND CHANNEL.

DIGITAL TIME SWITCH 2-CH. (SPDT) DETAIL W/OVERRIDE
SCALE: NONE



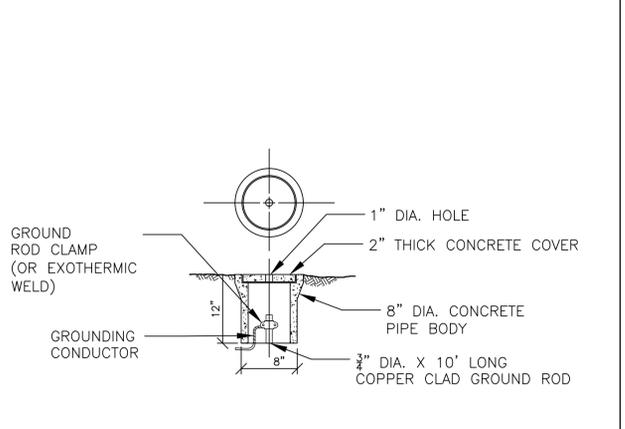
- KEYED NOTES**
- INSTALL GROUNDED (NEUTRAL) CONDUCTOR WITHOUT EGC. NEUTRAL CONDUCTOR CANNOT BE SMALLER THAN NEC TABLE 250.66. SEE ELECTRICAL ONE-LINE FOR SIZE.
 - INSTALL BONDING JUMPER THAT IS SIZED BASED ON NEC TABLE 250.66 USING THE SERVICE OR SEPARATELY-DERIVED SYSTEM PHASE CONDUCTOR SIZE.
 - INSTALL EQUIPMENT GROUNDING CONDUCTOR SIZED BASED ON NEC TABLE 250.122 USING THE FEEDER OVER CURRENT DEVICE SIZE. IF THE FEEDER SUPPLIES A SEPARATE STRUCTURE THEN DRIVE AN ADDITIONAL GROUND ROD AT STRUCTURE AND GROUND TO PANEL, BUT ISOLATE NEUTRAL.
 - INSTALL GROUNDING ELECTRODE CONDUCTOR THAT IS SIZED BASED ON NEC TABLE 250.66 USING THE SEPARATELY DERIVED SYSTEM PHASE CONDUCTOR SIZE.
 - GROUND ROD CAN BE CONNECTED TO NEUTRAL OF METER INSTEAD OF SE GROUND. MIN SIZE SHALL BE 5/8" X 10'
- GENERAL NOTES**
- EACH GROUNDING ELECTRODE SHOWN SHALL ONLY BE USED IF PRESENT AT EACH STRUCTURE/BUILDING SERVED. IF NONE ARE PART OF THE STRUCTURE/BUILDING THEN AT MINIMUM A GROUND ROD ELECTRODE SHALL BE INSTALLED. A METAL WATER PIPE SHALL NOT BE USED AS THE SOLE GROUNDING ELECTRODE SYSTEM (GES).
 - BOND GAS PIPE ON THE BUILDING SIDE OF THE GAS METER THAT IS SIZED BASED ON THE OCPD SERVING THE STRUCTURE/BUILDING USING NEC TABLE 250.122 WITH A MINIMUM SIZE OF #6 CU.
 - CONDUCTOR SIZES SHOWN ARE MINIMUM AND MAY BE LARGER THAN THE MINIMUM SIZES REQUIRED BY NEC.
 - INSTALL GROUNDING TERMINATIONS TO BUILDING STRUCTURE AND WATER PIPES AT LOCATIONS THAT ARE VISIBLE AND ACCESSIBLE FOR INSPECTION, MAINTENANCE, AND TESTING (EXCEPT IF ENCAPSULATED BY FIREPROOFING MATERIAL).
 - INSTALL AN INSULATED THROAT GROUNDING BUSHING ON EACH METALLIC SERVICE ENTRANCE CONDUIT. BOND TO GROUND BUS USING CONDUCTOR THAT IS SIZED BASED ON NEC TABLE 250.66 USING THE SERVICE PHASE CONDUCTOR SIZE.
 - INSTALL AN INSULATED THROAT GROUNDING BUSHING ON EACH METALLIC FEEDER CONDUIT. BOND TO GROUND BUS USING CONDUCTOR THAT IS SIZED BASED ON NEC TABLE 250.122 USING THE FEEDER CIRCUIT OVER CURRENT DEVICE SIZE OR THE SEPARATELY DERIVED SYSTEM OVER CURRENT DEVICE SIZE.
 - BOND HOT AND COLD WATER PIPING SYSTEMS.
 - INSTALL 5/8" X 10' GROUND ROD.
 - OTHER METAL PIPING OR EXPOSED STRUCTURAL METALS THAT ARE LIKELY TO BE ENERGIZED SHALL BE BONDED TO THE SERVICE EQUIPMENT ENCLOSURE USING THE LARGEST GROUND WIRE.

SERVICE ENTRANCE GROUNDING SYSTEM DETAIL
SCALE: NONE



NOTE: BACKFILL SHALL BE TAMPED TO 95% COMPACTION. 4" OF CONCRETE MAY BE NEEDED TO CREATE SOLID BASE. BACKFILL SHALL BE FINE CLEAN SAND. FINAL BACKFILL WILL CONSIST OF EXISTING SOIL AND CAN CONTAIN SOME STONES IN IT.

DIRECT BURIAL DUCT BANK TRENCHING DETAIL (TYP)
SCALE: NONE



GROUNDING ROD DETAILS (TYPICAL)
SCALE: NONE

PLUMBING FIXTURE SCHEDULE					
MARK	FIXTURE, MODEL #, DESCRIPTION	ROUGH-IN			
		WASTE	VENT	CW	HW
WC	WATER CLOSET AMERICAN STANDARD "MADERA" #2234.015 1.6 GALLON FLUSH WITH OLSONITE #95 OPEN FRONT SEAT LESS COVER, SLOAN #111 FLUSH VALVE.	3"	2"	1"	---
WC-HC	WATER CLOSET, HANDICAPPED AMERICAN STANDARD "MADERA" #3043.102 1.6 GALLON FLUSH WITH OLSONITE #95 OPEN FRONT SEAT LESS COVER, SLOAN #111 FLUSH VALVE.	3"	2"	1"	---
LAV	LAVATORY, WALL HUNG AMERICAN STANDARD "LUCERENE" #0355.012 20-1/2" x 18-1/4" WALL HUNG LAVATORY WITH #5400.962 FAUCET, 1-1/4" CP P-TRAP, STOP AND SUPPLIES.	1-1/2"	2"	1/2"	1/2"
LAV-HC	LAVATORY, WALL HUNG, HANDICAPPED AMERICAN STANDARD "LUCERENE" #0355.012 WITH #7401.172H 6" GOOSENECK FAUCET AND 4" WRIST BLADE HANDLES, 1-1/4" CP P-TRAP, STOP AND SUPPLIES.	1-1/2"	2"	1/2"	1/2"
UR	URINAL AMERICAN STANDARD "ALLBROOK" #6541.132 1.0 GALLON FLUSH WITH SLOAN ROYAL #186-1.0 FLUSH VALVE. MOUNT AT STANDARD HEIGHT.	2"	2"	3/4"	---
UR-HC	URINAL, HANDICAPPED AMERICAN STANDARD "ALLBROOK" #6541.132 1.0 GALLON FLUSH WITH SLOAN ROYAL #186-1.0 FLUSH VALVE. MOUNT AT HANDICAPPED HEIGHT.	2"	2"	3/4"	---
SCS	SINGLE COMPARTMENT SINK BK RESOURCES BKREBS-1-1824-14-24L SINGLE COMPARTMENT SINK WITH T&S BRASS 5F-8CW10 FAUCET, 1-1/4" CP P-TRAP, STOP AND SUPPLIES.	1-1/2"	2"	1/2"	1/2"
EWH	ELECTRIC WATER HEATER A.O. SMITH DEL-40 R-16 FOAM INSULATED, GLASS-LINED 40 GALLON TANK, THREE (3) YEAR WARRANTY WATER HEATER. 32" HIGH x 26" DIAMETER, 4.5 KW @ 208 VOLT, 1 PHASE ELECTRIC HEATER. PROVIDE 120 VOLT PLUG IN GRUNDOS RECIRC PUMP WITH AQUASTAT/TIMER.	---	---	3/4"	3/4"
EW-SL	ELECTRIC WATER COOLER, DUAL LEVEL, HANDICAPPED ELKAY VRCHD1L8SC COOLER, STANDARD COLOR, 1-1/2" 20 GAUGE CP P-TRAP, LESS CO. STOP AND SUPPLIES. MOUNT LOWER BOWL NOZZLE AT 30" A.F.F. FOR ADA.	1-1/2"	2"	1/2"	---
MSB	MOP SERVICE BASIN 1" AT MSB24 24"x24" MOLDED STONE MOP SERVICE BASIN WITH 830-AA FAUCET, 832-AA HOSE BRACKET AND HANGER.	3"	2"	3/4"	3/4"
FD	FLOOR DRAIN ZURN Z415-BB-P 6" FLOOR DRAIN WITH "SURE SEAL" TRAP SEAL AND TYPE "B" STRAINER.	3"	2"	---	---
WCO	WALL CLEANOUT ZURN Z144 D.C.C.I. BODY WITH STAINLESS STEEL ACCESS COVER AND SECURING SCREW.	SEE PLAN	---	---	---
FCO	FLOOR CLEANOUT ZURN Z1400 D.C.C.I. BODY ADJUSTABLE TO FINISHED FLOOR.	SEE PLAN	---	---	---
COTG	CLEANOUT TO GRADE ZURN Z1400-HD D.C.C.I. BODY ADJUSTABLE TO FINISHED GRADE WITH HEAVY DUTY TOP. SET IN 24"x24"x8" CONCRETE PAD.	SEE PLAN	---	---	---
TMV	THERMOSTATIC MIXING VALVE BRADLEY S89-2007 TWO INLETS, ONE OUTLET, SET TO 105 DEG. F. VALVE SHALL HAVE INTEGRAL CHECK STOPS, PROVIDE WITH WALL MOUNT BELOW SINK.	---	---	1/2"	1/2"
HB	HOSE BIBB JAY R. SMITH 5609QT WITH POSITIVE NON-FREEZE PROTECTION AND VACUUM BREAKER.	---	---	1/2"	---

- NOTES:
1. APPROVED MANUFACTURERS OF FIXTURES ARE AMERICAN STANDARD, ELJER AND KOHLER.
2. APPROVED MANUFACTURERS OF DRAINS AND CLEANOUTS ARE J.R. SMITH, ZURN AND WADE.
3. ALL SUPPLIES SHALL BE PROVIDED WITH CP BRASS ANGLE STOPS BY EASTMAN OR BRASSCRAFT.
4. ALL EXPOSED TRAPS AND WASTE ARMS SHALL BE CP BRASS BY MCGUIRE OR EQUAL.

PLUMBING GENERAL NOTES

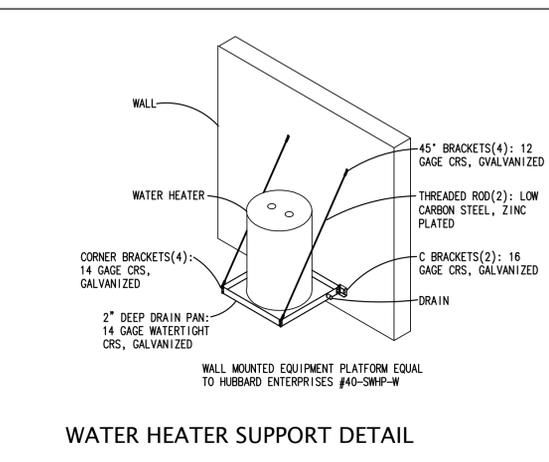
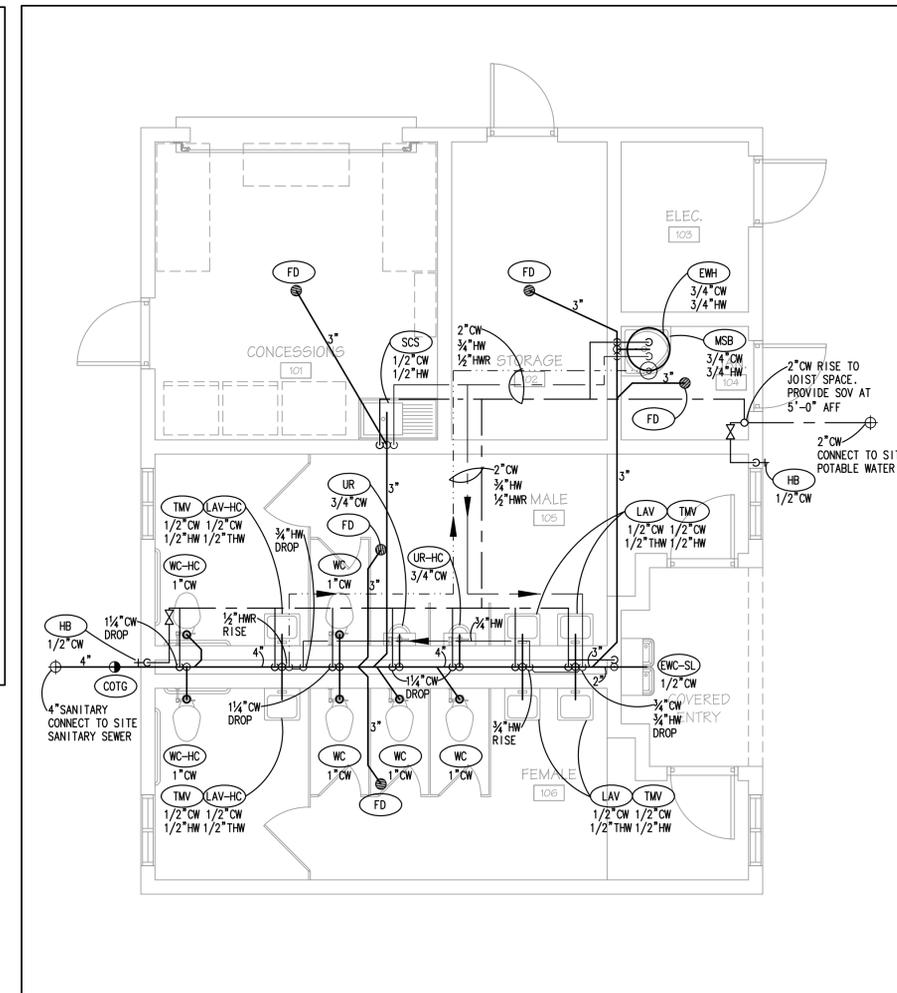
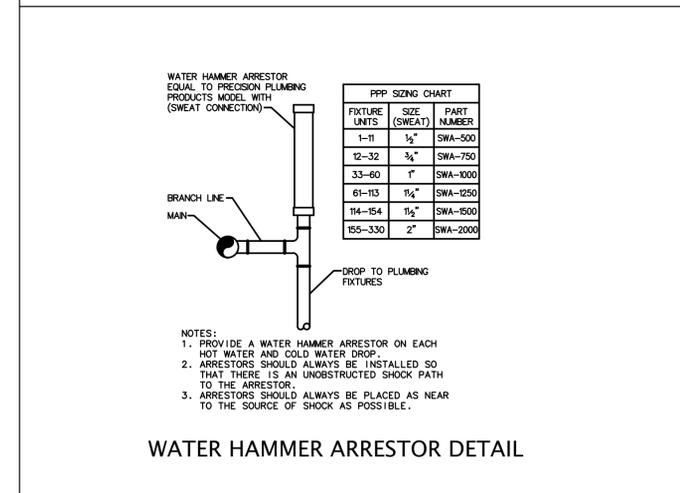
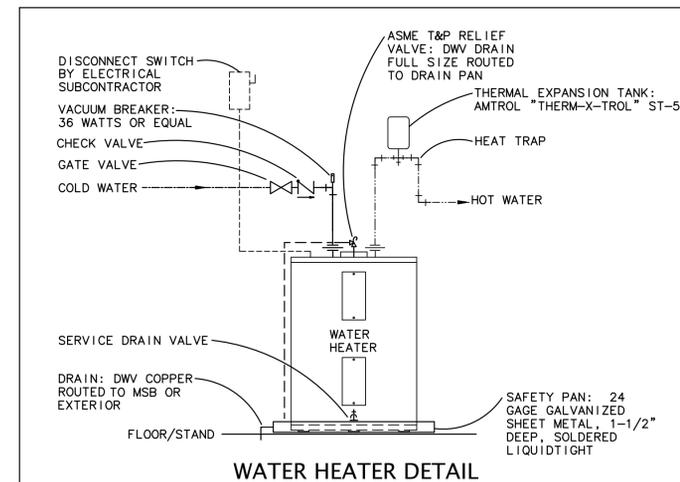
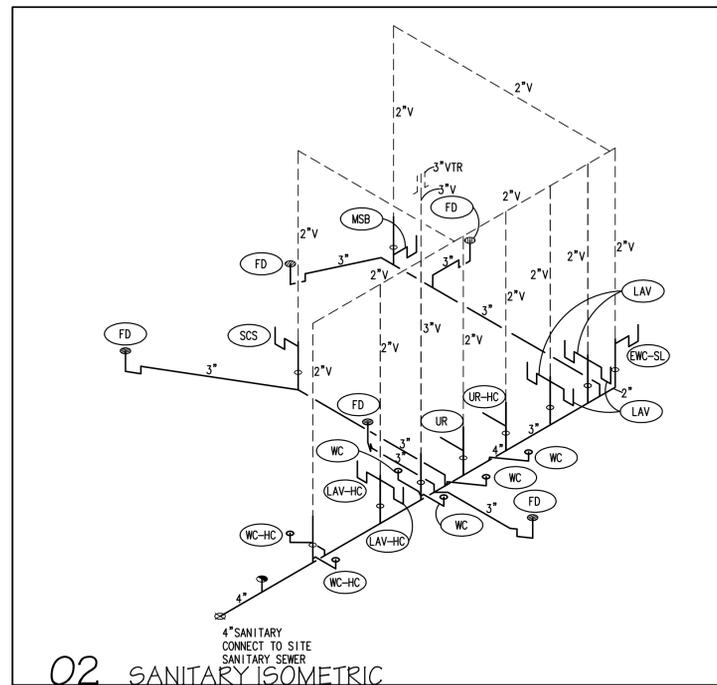
- ALL WORK SHALL COMPLY WITH NATIONAL, STATE AND LOCAL CODES. THIS SHALL INCLUDE THE 6TH EDITION FLORIDA BUILDING CODE, WITH LOCAL AMENDMENTS.
- REVIEW PLANS OF ALL TRADES PRIOR TO BIDDING. INSTALLATION TO INCLUDE ALL PLUMBING FOR COMPLETE SYSTEMS DEPICTED ON THE PLANS.
- COORDINATE WITH OTHER TRADES TO PREVENT CONFLICTS WITH HVAC DUCTS, ELECTRICAL LIGHTING AND STRUCTURAL ELEMENTS.
- THE PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL FIXTURES SHOWN ON THE PLUMBING FIXTURE SCHEDULE. VERIFY MOUNTING HEIGHT AND CONNECTION SIZES OF ALL PLUMBING FIXTURES PRIOR TO INSTALLATION.
- ALL WORK, BOTH MATERIAL AND INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM ACCEPTANCE BY THE OWNER.

WATER PIPING

- THE WATER PIPING SHALL BE CPVC WITH SOLVENT WELDED JOINTS, WITH MAIN RUNS BELOW SLAB.
- THE WATER SERVICE TO THE BUILDING IS NEW.
- THE MAIN BACKFLOW PREVENTER IS NEW.
- THE SITE WATER METER IS NEW.
- SUPPORT ALL PIPING WITH PIPE HANGERS EQUAL TO GRINNEL.
- PROVIDE EACH FIXTURE WITH A SHUT-OFF SUPPLY STOPS. EXPOSED STOPS AND SUPPLY PIPING SHALL BE CHROME PLATED, WITH CHROME ESCUTCHEON PLATE AND SET SCREW. STOPS SHALL BE 16" AFF FOR LAVATORIES.
- PROVIDE UNIONS FOR ALL CONNECTIONS TO SERVICEABLE EQUIPMENT. UNIONS SHALL BE DIELECTRIC WHERE DISSIMILAR METALS ARE CONNECTED.
- INSULATE ALL HOT WATER PIPING WITH 1" ARMAFLEX OR 1" FIBERGLASS EQUAL TO MANVILLE MICRO-LOK AP-T. VAPOR SEAL ALL BUTT JOINTS.
- PROVIDE WATER HAMMER ARRESTORS, EQUAL TO JR SMITH 5000 SERIES, IN ACCORDANCE WITH PDI STANDARD WH-201. FIELD FABRICATED SHOCK ABSORBERS ARE NOT ACCEPTABLE.
- PROVIDE VACUUM BREAKERS AS REQUIRED BY CODE.
- STERILIZE ALL WATER PIPING IN ACCORDANCE WITH HEALTH DEPARTMENT REGULATIONS.
- TEST ALL WATER PIPING AT 100 PSIG FOR SIX HOURS OR AS REQUIRED BY THE JURISDICTION.
- PROVIDE SHUT OFF VALVES FOR ALL EXTERIOR HOSE BIBS AND WALL HYDRANTS.
- PROVIDE SERVICE VALVES AT EACH BRANCH SUPPLY LINE, AS DEPICTED ON THE PLAN. ALL VALVES, CHECK STOPS, ETC. SHALL BE RATED FOR 125 LB SERVICE. VALVES SHALL BE BALL OR GATE TYPE, GLOBE VALVES ARE NOT ACCEPTABLE. VALVES SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION FOR SERVICING AND OPERATION.

SANITARY, WASTE AND VENT PIPING

- SANITARY WASTE, CONDENSATE AND VENT PIPING SHALL BE SCHEDULE 40 PVC DWV (ASTM-2665) WITH SOLVENT WELDED JOINTS.
- SLOPE OF SANITARY, CONDENSATE AND WASTE PIPING SHALL BE UNIFORM, WITH A MINIMUM OF 1/8" PER FOOT FOR 2" AND A MINIMUM OF 1/4" PER FOOT FOR LARGER PIPING.
- EXPOSED WASTE DRAINS IN RESTROOMS SHALL BE CHROME PLATED BRASS TUBING WITH MATCHING CHROME ESCUTCHEON PLATE.
- PROVIDE INTERIOR AND EXTERIOR CLEANOUTS AS REQUIRED BY CODE.
- FURNISH 4 LB LEAD OR 8 OZ COPPER VENT FLASHING FOR INSTALLATION BY THE GENERAL CONTRACTOR FOR ALL VENTS THROUGH ROOF. VERIFY TYPE OF ROOFING PRIOR TO INSTALLATION.
- TEST SANITARY, WASTE AND VENT PIPING USING A 10 FOOT WATER COLUMN FOR 2 HOURS OR AS REQUIRED BY THE JURISDICTION.



WATER DEMAND					
	OW EACH	HW EACH	TOTAL EACH	QTY	TOTAL ALL
WC	10	-	10	6	60
LAV	1.5	1.5	2	6	12
UR	5	-	5	2	10
SINK	2.0	2.0	3	1	3
MSB	1.5	1.5	2	1	2
HB	3.0	-	3	2	6
EWC	0.5	-	0.5	1	0.5
TOTAL WSFU					93.5
TOTAL GPM	64				PIPE SIZE = 2"

PLUMBING LEGEND	
SANITARY SEWER (SAN)	--->---
GREASE (GR)	--->---
VENT (V)	--->---
COLD WATER (CW)	--->---
HOT WATER (HW)	--->---
TEMPERED HOT WATER (THW)	--->---
HOT WATER RETURN (HWR)	--->---
LP GAS (G)	--->---
SHUT-OFF VALVE	--->---
SITE POINT OF CONNECTION	⊕

Project:
HOBART PARK
CONCESSION & RESTROOM BUILDING

INDIAN RIVER COUNTY, FLORIDA

Key Plan:

Issues:		
No.	Date:	Description:
A.	01.30.18	CLIENT REVIEW
B.	02.20.18	CLIENT REVIEW
C.	02.22.18	CLIENT REVIEW
D.	12.04.18	FINAL DOCUMENTS

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Your MEP Design Consultant
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4925 13th Lane, Vero Beach, FL 32966
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Drawing Title:
PLUMBING PLAN

Reference North

N
Dwn: JGG Dwg. File:
Chd: XREF File:
JWM
Project No.: 2018-04 Plot File:
Sheet No.:
Cort. No.: FL PE 54827
Date Signed: P1.1

Attachment 2 – Field Lighting Specifications

LIGHTING SPECIFICATION
PREPARED FOR

Hobart Park

Baseball/Softball Lighting Project
Vero Beach, FL
May 15, 2018

Project # 183601

SUBMITTED BY:

Musco Sports Lighting, LLC

2107 Stewart Road
PO Box 260
Muscatine, Iowa 52761
Local Phone: 563/263-2281
Toll Free: 800/756-1205
Fax: 800/374-6402



SECTION 26 56 68 – EXTERIOR ATHLETIC LIGHTING

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 specifications is to define the lighting system performance and design standards for Hobart 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. Baseball Field (1)
- E. 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. The LED design should provide better control than a good HID design.
 - 3. **Life-cycle Cost:** 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.
- F. All lighting designs shall comply with these specifications. General Contractor will not be awarded contract until submittals have been approved by the county and engineer.**

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 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
Baseball	50 Footcandles (infield) 30 footcandles (outfield)	2.0:1.0 (infield) 2.5:1.0 (outfield)	25 (infield) 113 (outfield)	30' x 30'

- B. **Hours of usage:** Designs shall be based on the following hours of usage

Area of Lighting	Annual Usage Hours	25 year Usage Hours
Baseball	500	12,500

- C. Color: The lighting system shall have a minimum color temperature of 5700K and a CRI of 75.

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.
- B. Spill Scans: Spill scans must be submitted indicating the amount of horizontal and vertical footcandles along the specified lines. 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. Illumination level shall be measured in accordance with the IESNA LM-5-04 after 1 hour warm up.
- C. Spill Light and Glare Control: To minimize impact on adjacent properties, spill light and candela values must not exceed the following.

	Average	Maximum
Baseball - 150' Horizontal Spill (Footcandles)	.10 FC	.50 FC
Baseball - 150' Spill (Candela)	4400 Cd	8800 Cd

- D. Glare Control: Maximum candela per fixture with any NEMA type shall not exceed 1,000 candela at 15 degrees in the vertical plane above zero aiming point. Manufacturer must supply with the contractor's bid an ITL report for verification. If ITL report cannot be provided, bid will be automatically rejected. Reports shall be certified by a qualified independent 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 LIFE-CYCLE COSTS

- A. Manufacturer shall submit a 25-year life cycle cost calculation as outlined in the required submittal information.
- B. Preventative and Spot Maintenance: Manufacturer shall provide all preventative and spot maintenance, including parts and labor for 25 years from the date of equipment shipment. Individual outages shall be repaired when the usage of any field is materially impacted. Owner agrees to check fuses in the event of a luminaire outage.

PART 2 – PRODUCT

2.1 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 of 18-8 grade or better, 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.

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 2.3 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-inforced 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.
5. Manufacturer shall provide surge protection at the pole equal to or greater than 50 kA for each line to ground (Common Mode) as recommended by IEEE C62.41.2_2002. Surge protection will also be monitored and advised for no cost through the duration of the 25 year warranty.
6. Wire harness complete with an abrasion protection sleeve, strain relief and plug-in connections for fast, trouble-free installation.
7. Cross-arm assemblies shall withstand 160 mph winds.
8. Control cabinet to provide remote on-off control and monitoring of the lighting system. See Section 2.4 for further details.
9. 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.
10. 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. Electric power: _____ Volt, _____ Phase
 2. 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 not exceed 106.95 kW.

2.3 **STRUCTURAL PARAMETERS**

- A. Wind Loads: Wind loads shall be based on the 2017 Florida Building Code. Wind loads to be calculated using ASCE 7-10, an ultimate design wind speed of 160 and exposure category C.
- B. Pole Structural Design: The stress analysis and safety factor of the poles shall conform to 2013 AASHTO 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.
- D. 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.

2.4 **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. 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.
- D. 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).
- E. 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
- F. Communication Costs: Manufacturer shall include communication costs for operating the controls and monitoring system for a period of 25 years.

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 6-8 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.
 - 2. The contractor/manufacturer shall be responsible for an additional inspection one year from the date of commissioning of the lighting system and will utilize the owner's light meter in the presence of the owner.
 - 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. Manufacturer to provide all equipment necessary to complete the warranty work and will be responsible for any site damage to this park (i.e. ruts, concrete or asphalt).
- 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. Owner agrees to check fuses in the event of a luminaire outage.

PART 4 – DESIGN APPROVAL

4.0 PRE-BID SUBMITTAL REQUIREMENTS (Non-Musco)

- A. Design Approval: The owner / engineer will review pre-bid submittals per section 4.0.B from all the manufacturers to ensure compliance to the specification 10 days prior to bid. If the design meets the design requirements of the specifications, a letter and/or addendum will be issued to the manufacturer indicating approval for the specific design submitted.
- 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 at least 10 days prior to bid. Special manufacturing to meet the standards of this specification may be required. An addendum will be issued prior to bid listing any other approved lighting manufacturers and designs.
- C. All listed manufacturers not pre-approved shall submit the information at the end of this section at least 10 days prior to bid. An addendum will be issued prior to bid; listing approved lighting manufacturers and the design method to be used.
- 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 MANUFACTURERS (NOT PRE-APPROVED) 10 DAYS PRIOR TO BID

All items listed below are mandatory, shall comply with the specification and be submitted according to pre-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: <ul style="list-style-type: none"> 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 luminaires, 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. 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	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.
	F	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.
	G	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.
	H	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).
	I	Control & Monitoring System	Manufacturer of the control and monitoring system shall provide written definition and schematics for automated control system to include monitoring. They will also provide ten (10) references of customers currently using proposed system in the state of Florida.
	J	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.
	K	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.
	L	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.
	M	Product Information	Complete bill of material and current brochures/cut sheets for all product being provided.
	N	Delivery	Manufacturer shall supply an expected delivery timeframe from receipt of approved submittals and complete order information.
	O	Non-Compliance	Manufacturer shall list all items that do not comply with the specifications. If in full compliance, tab may be omitted.
	P	Life-cycle Cost Calculation	Document life-cycle cost calculations as defined in the specification. Identify energy costs for operating the luminaires. Maintenance cost for the system must be included in the warranty. All costs should be based on 25 Years. (complete table below)