City of
Hampton, FL

BID PACKAGE
CDBG & Legislative Appropriations
Potable Water Well 1R Replacement Project

Bid #26-01

CDBG Grant #23DB-N02

Legislative Appropriations #L0047

MAY 2026

The proposed project will replace existing Potable Water Well No. 1 with a proposed new Potable Water Well No. 1R in the City of Hampton, FL.

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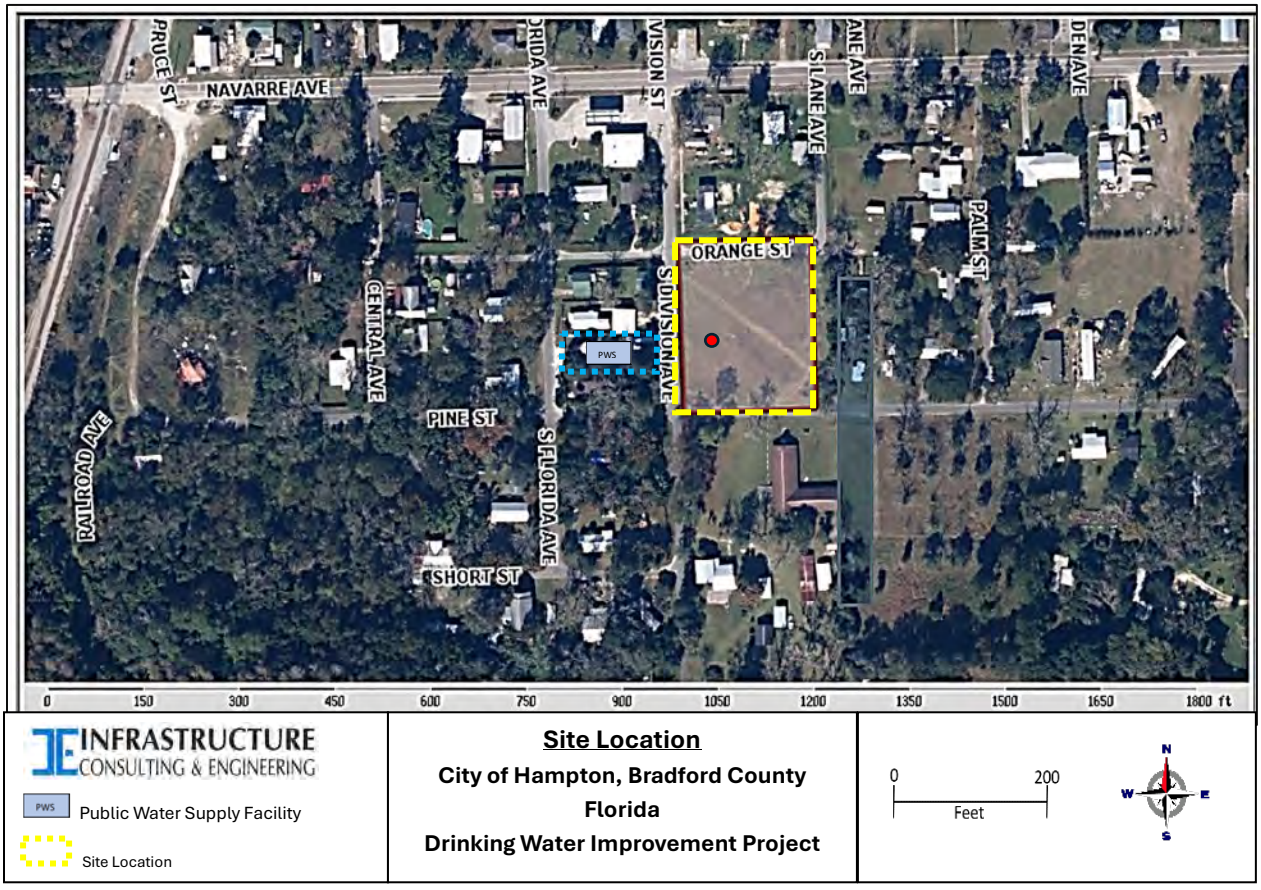
SCOPE OF WORK

The City of Hampton "City" is seeking sealed Bids from a licensed contractor(s) for the description detailed below and in Exhibit B—Technical Specifications and Exhibit C—Design Plans.

The City of Hampton Public Works Department focuses on areas that need rehabilitation and improvement to protect and ensure the health and safety of the residents and provide for their utility needs. The proposed project will replace the failed Well No. 1 located at the existing Water Yard at 10019 S. Florida Avenue.

The location of the improvements is indicated on the map as shown below:



As part of the project close-out documentation, the contractor must provide the City with As-built drawings in the latest version of Auto CAD and shape files (GIS).

This is a federally funded project under the Community Development Block Grant (CDBG) program by the Department of Housing and Urban Development (HUD), and Florida Legislative Appropriations funding. All HUD federal rules and regulations State of Florida Governmental Appropriations rules and regulations are applicable to this project.

Federal Davis-Bacon Wage Rates for work classifications are specified and must be complied with. Where applicable, fringe benefits must be added to the prevailing hourly rates.

Bidders must comply with Section 3 of the Housing and Urban Development Act of 1968, which requires that economic opportunities to the greatest extent feasible be given to low and very low-income persons and businesses that provide economic opportunities for these persons.

The Bidder must comply with the following requirements:

1. The Federal Davis-Bacon Prevailing Wage Rates for each type of work are specified in the Bid and must be complied with, including applicable fringe benefits. The awarded Contractor will be required to provide certified payroll at regular intervals for the duration of the Contract. The Federal Davis-Bacon Prevailing Wage Rates are listed in Exhibit C.

2. Federal Grant Department of Housing and Urban Development (HUD) A Community Development Block Grant Project (CDBG) A Boiler Plate for Community Development Block Grant Projects of the Bid documents must be used for each of the different types of works listed in the Bid documents. The most current Prevailing Wage Rates are to be utilized for the entire duration of the Project.

3. LA grant requirements.

LOCATION OF WORK

As indicated in Exhibits A, B and C, the work is located within the City of Hampton, Bradford County, Florida.

WORKING HOURS

The contractor may work from 7:00 a.m. to 5:00 p.m., Monday through Saturday, six (6) days a week, excluding the City's observed holidays, within 45 calendar days from the Notice to Proceed.

BID PACKAGE

This Bid contains the following, which must be reviewed by proposing firms.

- Exhibit A – Contract Administration Documents
- Exhibit B – Technical Specifications
- Exhibit C – Design Plans
- Exhibit D – Forms and Documents Required by the Small Cities CDBG Program and Legislative Appropriations
- Exhibit E – Appendix II to Part 200 Title 2
- Any addenda released

PERMITS

Under Florida Statute Section 218.80, the City hereby discloses that the following licenses, permits, fees and their costs are issued by the City/State/County for construction. Licenses, permits, and fees applicable to this Project must be obtained and/or paid by the awarded Bidder. The successful Bidder is responsible for identifying and obtaining all applicable licenses and permits and paying all such related fees. The costs of all license permits and their respective fees applicable to this Project are to be secured and paid for by the awarded Bidder.

INSURANCE REQUIREMENTS

The awarded bidder(s) will be required to obtain and maintain the insurance requirements as outlined below.

CERTIFICATES OF INSURANCE REQUIRED

Award of a contract shall require general liability insurance in the amount of $1,000,000 with a $2,000,000 aggregate limit, automobile liability insurance in the amount of $1,000,000, and workers' compensation insurance in the amount of $1,000,000. Certificates of insurance shall be made payable to the City of Hampton and delivered upon execution of the Agreement.

The insurance requirements must be held for the life of the Contract. The Certificate of Insurance is required to be provided within the time specified in the notification provided by the Purchasing Officer or designee after the City Council awards the contract.

ADVERTISEMENT (TO BE ADVERTISED)

THIS IS A COPY OF THE ADVERTISEMENT FOR THIS PROJECT

Legal Classified Advertising: Published on May 7, 2026, Florida Times Union

INVITATION TO BID (ITB): BID #26-01

NOTICE TO RECEIVE SEALED BIDS

INVITATION TO BID (ITB): BID #26-01

Date of Publication for this bid notice: May 7, 2026

The City of Hampton will receive sealed bids from any qualified person, company or corporation interested in constructing the following project:

City of Hampton Potable Water Well 1R Replacement Project

This project will include the deep well drilling and installation of all mechanical equipment needed for a new potable water well to supplement the existing potable water supply in Hampton, Florida. This project will be funded by a Community Development Block Grant ***(Grant #-23DB-N02****) and a Legislative Appropriation (****Grant #L0047****) and is subject to State and Federal regulations as indicated in the specifications.*

TO OBTAIN SPECIFICATIONS/ DRAWINGS/PLANS (BID PACKAGE): Interested parties should send an email to Jeffrey.antonacci@ice-eng.com to request an electronic copy of the bid package, and remit payment of $50.00 to: **City of Hampton City Clerk/Administrator at 5784 Navarre Ave, Hampton, FL 32044. However, if the payment is sent by USPS, send it to: City of Hampton, P. O. Box 250, Hampton, FL 32044.**

NON-MANDATORY PRE-BID MEETING: A **NON** mandatory Virtual Pre-Bid Meeting will be held on **May 19, 2026,** at 10:00 AM local time. Interested parties should check the City of Hampton website (**www.Hamptonfl.com**) for the Teams meeting link and information. The link will also be provided to those parties requesting a bid package. LAST DAY FOR QUESTIONS**:** Any questions are to be submitted via email to Jeffrey.antonacci@ice-eng.com no later than **May 28, 2026**. Answers to questions received will be released via addendum. Changes, if any, to the scope of the services or bid procedures will be transmitted only via written addendum and will be sent to those that requested a bid package and to others upon request.

BIDS ARE TO BE SUBMITTED TO: Mary Lou Hildreth, City Clerk/Administrator, 5784 Navarre Avenue, Hampton, Florida 32044. Bids shall be delivered by USPS or other mail delivery method, or in-person (electronic bid submissions will not be accepted). **For bids submitted by USPS, send them to: Clerk/Administrator, City of Hampton, P. O. Box 250, Hampton, FL 32044. For bids delivered in person, City Hall will be open to receive bids M-F between the hours of 10:00 am to 2:00 pm from May 27, 2026 to June 11, 2026.** Bids must be submitted no later than 11:00 A.M

on **June 11, 2026** local time. Bids received after this time and date will be considered nonresponsive. Submit one original and two copies of your bid in a sealed envelope with the words "Sealed Bid for City of Hampton Well 1R: #26-01" written on the outside of the envelope.

BID OPENING: On **June 11, 2026, at 11:10 AM.** The city will open bids at the City Hall at 5784 Navarre Ave, Hampton FL 32044. The bid must conform to Section 287.133(3) Florida Statutes, on public entity crimes. Also, the completion date for this project will be **180 days** from the date of the Notice to Proceed presented to the successful bidder. Results of all bids will be posted on the City's Website (**www.Hamptonfl.com**) within 7 days after the bid openings. The City of Hampton reserves the right to waive informalities in any bid, to accept and/or reject any or all bids, and to accept the bid that in their judgment will be in the best interest of the City.

STATEMENT REGARDING RESPONSIBLE VENDOR DETERMINATION: Respondent is hereby notified that Section 287.05701, Florida Statutes, requires that the City may not request documentation of or consider a vendor's social, political, or ideological interests when determining if the vendor is a responsible vendor. **The City of Hampton is a Fair Housing-Equal Employment Opportunity-Handicap Access Jurisdiction.**

MINIMUM QUALIFICATION REQUIREMENTS

This Bid/Project contains Minimum Qualification Requirements (MQRs) that firms must meet to respond. Please read the MQRs found in the Bid document.

BID BOND: As per CDBG and Legislative Appropriations (FDEP) requirements and the City of Hampton Procurement Policy, each proposer must provide with the submission a Proposal Guarantee/Bond in the form of Bid Bond in the amount of five percent (5%) of the Bid Price payable to the City of Hampton. These funds are not cashed. These funds are retained, guaranteeing the firm submitting the proposal will not withdraw the proposal for such period of time as the Council provides a Resolution for the award of the contract. If the firm withdraws the proposal, or the awarded firm does not furnish bonds as required and does not accept a contract that is awarded, the Proposal Guarantee Bond is forfeited.

PERFORMANCE AND LABOR MATERIALS PAYMENT BOND: 100% of the total contract submitted fifteen (15) days after receipt of Notification of Award.

MINIMUM QUALIFICATION REQUIREMENTS

1. This ITB contains Minimum Qualification Requirements (MQRs) that the Proposer must meet for the Firm to be considered responsive.

2. **Please read the MQRs to ensure the Firm meets these requirements before submitting a response to this ITB.**

3. **All Minimum Qualification Requirements (MQRs) must be submitted with the Firm's response.**

4. Proposer(s) that do not comply with MQRs will be determined non-responsive and disqualified from the evaluation process, and their Proposal will not be evaluated.

5. The proposer awarded the Contract will be required to maintain Minimum Qualification Requirements # 2 and # 3 during the contract's term and any Contract extensions.

MINIMUM QUALIFICATION REQUIREMENT # 1: EXHIBIT C SECTION 3 CDBG GRANT REQUIREMENTS:

The bidder must complete and submit with your response Exhibit B, Forms and Documents Required by the Small Cities CDBG Program. Forms must be submitted with Bidder's response as follows:

a. Section 6 - Certification Regarding Debarment, Suspension, and Other Responsibility Matters; Appendix D – Forms and Documents Required by the Small Cities CDBG Program for Additional Requirements.

b. MBE/WBE Solicitation and Section 3 Forms must be filled out by the selected contractor. These can be submitted with your bid package.

For MQR # 1, none of the forms stipulated above, 'a', will be accepted after the Bid due date. There will be "No" exceptions.

MINIMUM QUALIFICATION REQUIREMENT # 2: YEARS IN BUSINESS- SUNBIZ:

a. Proposer must be incorporated through Sunbiz with a status of "Active".

b. Provide a copy of your Sunbiz with your Bid showing a date filed of **2026** or earlier.

MINIMUM QUALIFICATION REQUIREMENT # 3: GENERAL CONTRACTOR LICENSE:

a. Bidder must be licensed as a **Certified General Contractor** by the State of Florida Department of Business and Professional Regulations. http://www.myfloridalicense.com/dpr/

OR

b. Bidder must be licensed as a **Certified Underground Utility Contractor** by the State of Florida Department of Business and Professional Regulations. http://www.myfloridalicense.com/dpr/
c. The proposing firm must provide a copy of the applicable license(s) along with the firm's response.

MINIMUM QUALIFICATION REQUIREMENT # 4: 5% BID BOND REQUIREMENT:

As per CDBG requirements and the City of Hampton Procurement Policy, each proposer must provide with the submission of the Bid a Security Bid Bond issued by a surety company licensed to do business in the state in an amount equal to five percent (5%) of the Bid Price submitted. A Firm shall forfeit the Security Bid Bond if the Firm refuses or fails to execute the Agreement within fifteen (15) calendar days from the Notice to Proceed.

MINIMUM QUALIFICATION REQUIREMENT # 5: BONDING CAPACITY LETTER:

Provide documentation of the bidder's total and single project bonding capacity and the name and current financial rating (A.M. Best) of the surety company utilized by your Firm.

MINIMUM QUALIFICATION REQUIREMENT # 6: PREVIOUS EXPERIENCE:

a. Please note that the information for the projects/contacts below must be the same as the projects/contracts provided within the Reference Check Form.

b. Proposers must provide the information for MQR # 6 on the following tables:

Name and Location of Contract #1	
Name of the Prime Firm Awarded the Contract	
Date Contract Started	
Date Contracted Completed	
Contact Name, Phone Number & Email for the project.	Name: Phone: Email:

CONTRACT TERMS

The work shall be completed and ready for final payment in accordance with the Construction Contract within 180 calendar days from the Project initiation date specified in the Notice to Proceed or otherwise stipulated in the Agreement.

The City Council will award the contract to the lowest responsive, responsible bidder. Should the awarded Bidder be unable to perform and provide the services stipulated in the Bid and

agreement, the City reserves the right to move forward with the contract award to the 2nd lowest responsive and responsible Bidder.

The Contractor shall not assign, transfer, or subcontract any work, either in whole or in part, without the City's prior written approval.

The submittal responses shall be valid until the City Council awards a contract based on this Bid. The City reserves the right to request additional information or clarification from the Bidder where it may serve the City's best interest.

Notwithstanding anything to the contrary contained herein, the City reserves the right to waive formalities in any proposal and further reserves the right to take any other action that may be necessary in the best interest of the City. The City further reserves the right to reject any or all proposals, with or without cause, to waive technical errors and informalities or to accept the proposal which in its judgment, best serves the City.

DEFINITIONS

"Addenda or Addendum" means additional directions, modifications, and alternations to the solicitation, which is issued as a separate document prior to the time of receipt of Bids or proposals.

"Award" means the acceptance of a proposal, offer, or proposal by the proper authorized designee. The City Council must approve all awards under the purchasing authority of the City Manager, except for emergency purchases.

"Bidder" means any individual, Firm, qualified joint venture, or corporation submitting a bid for this Project, acting directly or through a duly authorized representative.

"Bid Prices" A listing of elements, systems, items, Acceptance Testing and Training, or other subdivisions of the work, establishing a value for each, the total, of which equals the contract sum. The Schedule of Bid Prices establishes the cash flow for the Project.

"Bond" means a bid, performance, or payment guarantee issued by and, on the form provided by the City (where applicable), written through a reputable and responsible surety bond agency licensed to do business in the State of Florida and with a surety which holds a certificate of authority authorizing it to write surety bonds in Florida, with a rating by AM Best Company of "A" or better, "Class V".

"Contract Administrator" means the City's representative duly authorized by the City Council or City Manager to provide directions to the Consultant regarding services provided pursuant to this RFP and the Contract.

"City" is the City of Hampton or the City Council, a State of Florida municipal corporation.

"City's Project Manager" means the City's representative duly authorized by the City Manager to provide direction to the Contractor regarding services provided pursuant to this RFP and the Contract.

"Conflict of Interest Resolution Proven" means that the Consultant will disclose to the City's Contract Administrator that City's interests are those of a second or more than two clients in conflict and will clearly state how the conflict will be resolved.

"Consultant" is the individual(s) or Firm(s) to whom the award is made and who executes the Contract Documents.

"Contract" and "Contract Documents" means the Agreement for this Project to be entered between the City and the Successful Proposer/Contractor.

"Contractor" is the individual(s) or Firm(s) to whom the award is made and who executes the Contract Documents.

"Contract Time" means the original time between commencement and completion, including any milestone dates thereof, established, as may be amended by Change Order.

"Notice to Proceed" means the written notice given by the City to the Contractor of the date and time for work to start.

"Project Manager" means the Consultant's representative authorized to make and execute decisions on behalf of the Consultant.

"Proposal/Response" means the proposal/response/Bid or submission submitted by a Proposer.

"Proposer" means one who submits a Proposal in response to a solicitation. Interchangeable with "Operator" and "Firm".

"Proposal/Bid Documents" is the Request for Proposals, Instructions to Proposers, Technical specifications, plans, and attachments, and the proposed Contract Documents (including all Addenda issued prior to the opening of Proposals).

"Purchasing Officer" is the City Manager or their designee and shall serve as the central purchasing officer of the City for all contracts or agreements.

PERFORMANCE AND LABOR MATERIALS PAYMENT BOND

A Performance and Labor Materials Payment Bond equal to one hundred (100%) percent of the total Contract amount awarded must be submitted by the Awarded Contractor within fifteen (15) days after receipt of Notification of Award. The Notification of Award is when the City Council meeting is held to award the contract. An original Performance and Labor Materials Payment Bond must be provided equal to 100% of the Contract price issued by a surety company licensed to do business in the State of Florida. (F.S. 255.05). On approval of any Contract change increasing the Contract price, the Contractor shall ensure that the performance bond and payment bond are increased so that each reflects the total Contract price as increased.

CONFLICT OF INTEREST

If you are an employee, board member, an elected official(s), or an immediate family member of any such person, please indicate the relationship on the Conflict-of-Interest Notification Requirement Questionnaire provided in the Form's Section. Pursuant to the City's Standards of Ethics, any potential conflict of interest must be disclosed, and if requested, a conflict-of-interest opinion or waiver from the City Council must be obtained prior to entering into a contract with the City of Hampton.

BID PRICE SHEET

I. Bidder must use the Bid Price Sheet below to submit Bidder's price for this Project.

II. The bidder shall hold the unit Bid Prices firm throughout the Contract period. The bidder guarantees the response time necessary for a crew to return to correct unfinished or unsatisfactory services.

III. The City reserves the right to increase, decrease, and/or choose the items and quantities below for the Project to meet its available budget using the unit prices provided below.

IV. Bidder must completely fill out each column below, i.e., unit price and total.

V. Not applicable or "N/A" is not acceptable and will cause the Bidder to be determined non-responsive. Per the Bidder's Sunbiz, an authorized officer must sign the Total Bid Price Sheet.

VI. The award will be determined based upon City Council approval.

VII. Bids will be valid for ninety (90) days from the date of bid opening. If a bidder submits a bid and a notice to proceed (NTP) is not issued in that 90-day period, then the bidder is no longer obligated to provide construction services at the stated bid price.

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Bid Table
Well No. 1 Abandonment and Replacement Well Construction and Testing
City of Hampton, Florida

ITEM #	ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE	EXTENDED PRICE
1	Mobilization & Demobilization and Permits (includes temporary erosion and sediment controls and security fencing)	Lump Sum	1		
2	Furnish, Install, and Operate Fluid Management System	Lump Sum	1		
3	Drill Pilot Hole and 24-inch Borehole for Surface Casing, per foot	Linear feet	70		
4	Drill Pilot Hole and 18-inch Borehole for Surface Casing, per foot	Linear feet	80		
5	Furnish, Install, and Grout 18-inch Surface Casing, per foot	Linear feet	70		
6	Furnish, Install, and Grout 12-inch Final Casing, per foot	Linear feet	150		
7	Drill Nominal 12-inch Open Hole, per foot (reverse air)	Linear feet	125		
8	Geophysical Logging and Video Inspection	Lump Sum	1		
9	Furnish, Install, and Operate all Equipment and Conduct 8-Hour Step-Drawdown Pumping Test	Lump Sum	1		
10	Furnish, Install, and Operate all Equipment and Develop Well	Lump Sum	1		
11	Furnish, Install, and Operate all Equipment and Disinfect Well	Lump Sum	1		
	TOTAL FOR 1 REPLACEMENT WELL		**TOTAL**		
12	Furnish All Equipment and Labor to Abandon Existing Well No. 1	Lump Sum	1		
13	Contractor Standby Time	Hours	24		
	GRAND TOTAL (One Replacement Well Complete, Plus Line Items 12, and 13)		**GRAND TOTAL**		

Bid Table
Civil Site Improvements
City of Hampton, Florida

ITEM #	ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE	EXTENDED PRICE
1	MAINTENANCE OF TRAFFIC	LS	1		
2	SEDIMENT BARRIER	LF	526		
3	CLEARING & GRUBBING	LF	1		
4	REGULAR EXCAVATION	CY	30		
5	EMBANKMENT	CY	72		
6	OPTIONAL BASE, BASE GROUP 1	SY	35		
7	OPTIONAL BASE, BASE GROUP 4	SY	114		
8	OPTIONAL BASE, BASE GROUP 11	SY	4		
9	SUPERPAVE ASPHALTIC CONCRETE, TRAFFIC C	TN	1.5		
10	CONCRETE CLASS II	CY	3.89		
11	DESILTING PIPE, 0-24"	LF	36		
12	MITERED END SECTION, OPTIONAL ROUNF, 12" CD	EA	2		
13	FENCING, TYPE B, 6.1' - 7.0', STANDARD	LF	100		
14	FENCE GATE, TYPE B, SINGLE 12.1' - 18.0' OPENING	EA	2		
15	PERFORMANCE TURF	SY	21		
16	LANDSCAPE - LARGE SHRUB, VIBURNUM OBOVATUM - WALTER VIBURNUM, 7-14 GAL.	EA	72		
	TOTAL FOR CIVIL SITE IMPROVEMENTS		**TOTAL**		

Bid Table
Alternate No. 1-Additional Improvements at New Well 1R
City of Hampton, Florida

ITEM #	ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE	EXTENDED PRICE
1	Control Equip. (gauges, transmitters, sensors, meters):	LSUM			
2	Well casing water level probe, transmitter and display	LSUM			
3	Hypochlorite Pumps-Variable Speed w/Flow Pacing	LSUM			
4	Lighting upgrades for electrical/chemical building	LSUM			
5	Basic control system upgrades-new relay panel	LSUM			
	TOTAL FOR 1 REPLACEMENT WELL		**TOTAL**		**$0**
6 7					
	GRAND TOTAL (Additional Items at New Well 1R, Plus Line Items 6 and 7)		**GRAND TOTAL**		$0

Bid Table
Alternate No. 2-Additional Improvements at Existing Water Yard
City of Hampton, Florida

ITEM #	ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE	EXTENDED PRICE
6	Control Equip. (gauges, transmitters, sensors, meters):	LSUM			
7	GST level transmitter	LSUM			
8	Electrical upgrades:	LSUM			
9	New PLC control system with HMI (Operator setpoints and all process controls)	LSUM			
10	Exhaust Fan-Electrical Room	LSUM			
11	Security Lighting	LSUM			
12	Canopy (Roof Struct)	LSUM			
13	Upgrade Chlorine Disinfectant System	LSUM			
14	Fencing	LSUM			
	TOTAL FOR 1 REPLACEMENT WELL		**TOTAL**		**$0**
15					
16					

	GRAND TOTAL (Additional Items at Existing Water Yard, Plus line Items 15, 16)		**GRAND TOTAL**		$0

Bid Table
Summary of Prices
City of Hampton, Florida

ITEM #	ITEM DESCRIPTION	UNIT PRICE	EXTENDED PRICE
1	Base Bid-Well Construction and Testing		
2	Base Bid-Civil Site Construction		
	TOTAL (Base Bid)		
3	Alternate No.1-Additional Items at New Well 1R		
	TOTAL (Base Bid+Alternate No. 1)		
4	Alternate No. 2-Additional Items at Existing Water Yard		

	TOTAL (Base Bid+Alternate No. 1+Alternate No. 2)		

REQUIRED FORMS

Proposers must complete and include all the following forms within the proposal submission.

Form A: Proposal Submitted by

Form B: Variance Form

Form C: Legal Proceedings

Form D: Public Entity Crimes

Form E: Conflict of Interest Notification Requirement Questionnaire

Form F: Drug-Free Workplace

Form G: Anti-Kickback Affidavit

Form H: Confidentiality Form

Form I: Scrutinized Firm

Form J: Request to Withdraw Proposal

Form K: Byrd Anti-Lobbying Amendment Certification

Form L: Non-Collusion Affidavit

Form M: Americans with Disabilities Act Affidavit

Form N: Acknowledgement

Please refer to EXHIBIT D - Forms and Documents Required by the Small Cities CDBG Program for additional requirements.

FORM A: RFP COVER PAGE

Name of Firm, Entity or Organization:
Federal Employer Identification Number (FEIN): **State of Florida License Number (If Applicable):** **Name of Contact Person:** **Title:** **E-Mail Address:**
Mailing Address: **Street Address (if different):** **City, State, Zip:** **Telephone:** **Fax:**
Organizational Structure – Please Check One: **Corporation** ☐ **Partnership** ☐ **Proprietorship** ☐ **Joint Venture** ☐ **Other** ☐ **If Corporation:** **Date of Incorporation:** **State of Incorporation:** **States Registered in as Foreign Corporation:**
Authorized Signature: **Print Name:** _____ **Signature:** _____ **Title:** _____ **Phone:** _____
This document must be completed and returned with your Submittal.

FORM B: VARIANCE

The Proposer must provide and state any and all variances to this Bid, specifications, and the Terms and Conditions on this variance form (provide additional pages if necessary).

After the Contract is awarded through the City Council via Resolution, the awarded Firm's Variance Form will be reviewed by the appropriate City Staff, and the City Attorney. If the Variances presented by the Firm are acceptable to the City, an Agreement will be routed to the awarded Firm for execution by the authorized officer per Sunbiz. The Project Manager will manage the execution of the agreement process.

Variances requested to either the ITB, Terms and Conditions and Agreement may result in the City rescinding the award of the Contract.

If the Firm has no Variances, it must state "None" below. The Firm must provide this form back in its response.

FORM C: LEGAL PROCEEDINGS

The Proposing Firm must provide items a - e with its response. Provide all applicable documents per category checked as an attachment. The firm must ensure the response addresses each item a-e below by title. If an item(s) is not applicable, the Firm must check off as applicable, stating "N/A," and the authorized officer per Sunbiz must provide a signature.

a. Arbitrations: List all arbitration demands filed by or against your Firm in the last five (5) years, and identify the nature of the claim, the amount in dispute, the parties, and the ultimate resolution of the proceedings.

☐ Check here and provide documentation ☐ Check here if Not Applicable (N/A)

b. Lawsuits: List all lawsuits filed by or against your Firm in the last five (5) years, and identify the nature of the claim, the amount in dispute, the parties, and the ultimate resolution.

☐ Check here and provide documentation ☐ Check here if Not Applicable (N/A)

c. Other Proceedings: Identify any lawsuits, administrative proceedings, or hearings initiated by the National Labor Relations Board, Occupational Safety and Health, or similar state agencies in the past five (5) years concerning any labor practices or project safety practices by your Firm. Identify the nature of any proceeding and its ultimate resolution.

☐ Check here and provide documentation ☐ Check here if Not Applicable (N/A)

d. Bankruptcies: Has your Firm, its parents, or any subsidiaries ever filed a Bankruptcy Petition in its name, voluntarily or involuntarily? (If yes, specify the date, circumstances, and resolution).

☐ Check here and provide documentation ☐ Check here if Not Applicable (N/A)

e. Settlements: Identify all settlements for your Firm in detail in the last five (5) years.

☐ Check here and provide documentation ☐ Check here if Not Applicable (N/A)

I, _____, _____
Name of Authorized Officer per Sunbiz Title

of _____
Name of Firm as it appears on Sunbiz

(FORM C)

I hereby attest that I have the authority to sign this notarized certification and certify that the above-referenced information is true, complete, and correct.

_____ _____

Signature of Authorized Officer per SunBiz Print Name of Authorized Officer per SunBiz

FORM D: PUBLIC ENTITY CRIMES

SWORN STATEMENT PURSUANT TO SECTION 287.133(2) (a), FLORIDA STATUTES,

"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; 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 Section 287.017, for CATEGORY TWO for a period of 36 months following the date of being placed on the convicted vendor list."

_____
Authorized Signature

_____
Date Signed

State of: _____

County of:
_____

Sworn to and subscribed before me this _____day of _____, 20__

Personally known _____ or Produced Identification_____

(Specify Type of Identification)

_____
Signature of Notary

My Commission Expires: _____

(seal)

FORM E: CONFLICT OF INTEREST NOTIFICATION REQUIREMENT QUESTIONNAIRE

If you are an employee, board member, elected official(s), or an immediate family member of any such person, please indicate the relationship below. Pursuant to the City of Hampton's Standards of Ethics, any potential conflict of interest must be disclosed, and if requested, a conflict-of-interest opinion or waiver from the Attorney General must be obtained prior to entering into a contract with the City.

_____

1. Name of Firm submitting a response to this RFP.

   _____

2. Describe each affiliation or business relationship with an employee, board member, elected official(s), or an immediate family member of any such person of the City of Hampton; if none so state.

   _____

3. Name of City of Hampton employee, board member, elected official(s), or immediate family member with whom filer/respondent/Firm has affiliation or business relationship; if none so state.

   _____

4. Describe any other affiliation or business relationship that might cause a conflict of interest; if none so state.

   _____

_____ _____

Signature of person/Firm Date

FORM F: DRUG-FREE WORKPLACE FORM

The undersigned vendor, in accordance with Florida Statute 287.087

Hereby certified 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 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 1893 or any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on or require 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 the implementation of this section.

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

_____ _____

FIRM'S (AUTHORIZED) SIGNATURE DATE

FORM G: ANTI-KICKBACK AFFIDAVIT

STATE OF _____)

) SS:

COUNTY OF _____)

I, the undersigned, hereby duly sworn, depose and say that no portion of the sum herein Bid/RFP will be paid to any employees of the City of Hampton and its elected officials as a commission, kickback, reward, or gift, directly or indirectly by me or any member of my Firm or by an officer of the corporation.

By: _____
Signature of Authorized Officer per Sunbiz

_____
Print Name of Authorized Officer per Sunbiz

_____
Title of Authorized Officer per Sunbiz

Sworn and subscribed before me this _____ day of _____, 20____.

NOTARY PUBLIC

State of Florida

My Commission Expires: _____

FORM H: CONFIDENTIALITY FORM

Sealed bids/proposals or replies received by an agency pursuant to a competitive solicitation are exempt from Chapter 119, Florida Statutes. The Proposer must include any materials it asserts to be exempted from public disclosure under Chapter 119, Florida Statutes, in a separately bound document labeled "Attachment to Invitation to Bid, BID Number and Name - Confidential Material."

The Proposer must identify the specific Statute that authorizes exemption from the Public Records Law. Any claim of confidentiality on materials the Proposer asserts to be exempt from public disclosure and placed elsewhere in the proposal will be considered waived by the Proposer upon submission, effective after opening.

Proposers should note this as it relates to proprietary information that might be included in this solicitation.

If N/A, please circle: N/A

I, _____, _____

Name of authorized Officer per Sunbiz or legal documentation Title

of _____

Name of Firm as it appears on Sunbiz or legal documentation hereby attests that I have the authority to sign this notarized certification and certify that the Firm complies with the above requirements.

_____ _____

Signature Title

FORM I: SCRUTINIZED COMPANIES

The undersigned vendor, in accordance with Florida Statute § 287.135

I, _____, am the _____ of
(Authorized Representative's Name) (Title)

_____, (the "Vendor"), and am authorized to represent

and _____ contractually bind Vendor.
(Vendor's Legal Name)

I do hereby attest to the best of my knowledge and belief, the following:

The Vendor submitting this Response is not listed on any of the following lists:

- Scrutinized Companies with Activities in Sudan List
- Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List
- Scrutinized Companies that Boycott Israel List

I understand that pursuant to section 287.135, Florida Statutes, submitting a false certification may subject the Vendor to immediate contract termination, civil penalties, attorney's fees, and/or other costs.

_____ _____
Company Name Signature

_____ _____
Authorized Representative Name and Title Date

FORM J: REQUEST TO WITHDRAW PROPOSAL

Requests to withdraw proposals will be considered if received by the City via email to ********** before the deadline for receipt of proposals.

This form must be provided back before the deadline for receipt of proposals.

I, _____, _____

Name of authorized Officer per Sunbiz or legal documentation Title

of _____

Name of Firm as it appears on Sunbiz or legal documentation request to withdraw Firm's proposal for **BID # ****** POTABLE WATER WELL 1R REPLACEMENT PROJECT

_____ _____

Signature Title

Date: _____

Time: _____

FORM K: BYRD ANTI-LOBBYING AMENDMENT CERTIFICATION

The undersigned [CONTRACTOR] certifies, to the best of his or her knowledge and belief, 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 CONTRACTOR 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. § 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

_____

COMPANY NAME:

_____ _____

NAME OF AUTHORIZED OFFICIAL TITLE

_____ _____

SIGNATURE OF AUTHORIZED OFFICIAL DATE

FORM L: NON-COLLUSION AFFIDAVIT

STATE OF _____)

) SS:

COUNTY OF _____)

I, the undersigned, hereby duly sworn, depose and say that:

1. He/she is the Bidder who has submitted the attached bid proposal.

2. He/she is fully informed regarding the preparation and contents of the attached bid proposal and all pertinent circumstances respecting such bid proposal.

3. Such bid proposal is genuine and is not a collusive or sham bid proposal.

4. Neither the said Bidder nor any of its officers, partners, owners, agent representatives, employees or parties in interest including this affiant, has in any way, colluded, conspired, or agreed, directly or indirectly, with any other bidder, firm or person, to submit a collusive or sham proposal in connection with the Agreement for which the attached bid proposal has been submitted or to refrain from proposing in connection with such Agreement, or has in any manner, directly or indirectly, sought by Agreement or collusion or communication or conference with any other bidder, firm or person to fix the price or prices in the attached bid proposal or of any other bidder, or to fix any overhead, profit or cost element of the bid proposal price or the bid proposal price of any other bidder, or to secure through any collusion, conspiracy, connivance or unlawful Agreement any advantage against the City of Hampton, Florida, or any person interested in the proposed Agreement.

5. The price or prices quoted in the attached bid proposal are fair and proper and are not tainted by any collusion, conspiracy, or unlawful Agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties of interest, including affiant.

By: _____

Signature of Authorized Officer per Sunbiz

_____ _____

Print Name of Authorized Officer per Sunbiz Title of Authorized Officer per Sunbiz

Sworn and subscribed before me this _____ day of _____, 20_____.

NOTARY PUBLIC

_____ _____

State of Florida My Commission Expires:

FORM M: AMERICANS WITH DISABILITIES ACT AFFIDAVIT

The undersigned swears that the information herein contained is true and correct and that none of the information supplied was for the purpose of defrauding the City of Hampton, Florida.

The Contractor shall not discriminate against any employee or applicant for employment because of physical or mental handicap regarding any position for which the employee or applicant is qualified. The Contractor agrees to comply with the rules, regulations, and relevant orders issued pursuant to the Americans with Disabilities Act (ADA), 42 USC s. 12101 et seq. It is understood that in no event shall the City of Hampton be held liable for the actions or omissions of the Contractor or any other party or parties to the Agreement for failure to comply with the ADA. The Contractor agrees to hold harmless and indemnify the City of Hampton, its agents, officers or employees from any and all claims, demands, debts, liabilities or causes of action of every kind or character, whether in law or equity, resulting from the Contractor's acts or omissions in connection with the ADA.

By: _____
Signature of Authorized Officer per Sunbiz

_____
Print Name of Authorized Officer per Sunbiz

_____
Title of Authorized Officer per Sunbiz

Sworn and subscribed before me this _____ day of _____, 20_____.

NOTARY PUBLIC

State of Florida

My Commission Expires: _____

FORM N: ACKNOWLEDGEMENT OF ADDENDA

Instructions: Complete Part I or Part II, whichever is applicable.

The Proposer shall indicate below each Addendum received. The Proposer may contact the City Clerk at 352-468-1201 or clerk@hamptonfl.gov to confirm the number of addenda (if any) that have been issued.

PART I: Please list each Addendum received in connection with this solicitation below. Please include the Addendum number; the title is not required. If none, skip to Part II.

Addendum #

PART II:

_____ No Addendum was received in connection with this solicitation.

Authorized Signature: _____ Date: _____

Print Name: _____ Title: _____

Firm Name: _____

REFERENCES

Please note that the three (3) references provided below must be the same as the projects/contracts provided in response to MQR # 6. THE BELOW FORM MUST BE COMPLETED BY YOUR REFERENCE AND PROVIDED WITH YOUR PROPOSAL SUBMISSION.

BID # 26-01: COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG) POTABLE WATER WELL 1R REPLACEMENT PROJECT

PROPOSING FIRM'S NAME(S):

PROJECT NAME:

NAME OF FIRM THAT WAS AWARDED THE AGREEMENT:

WAS THE FIRM THE PRIME CONTRACTOR FOR THE PROJECT:

YES ☐ **NO** ☐

Name of Reference: **Phone:**
Title of Reference: **E-mail Address:**
Company/Employer

Please answer the following questions regarding services provided by the Proposer named above.

1. Did the Firm devote the time and personnel necessary to complete the project successfully? If there were delays, what were the reasons?

2. How would you rate the quality of the contractor's work? Were there any issues with the materials or workmanship that needed to be addressed?

3. How effective was the contractor in communicating project updates and addressing concerns? Were they responsive to questions and issues that arose during the project?

4. Was the project completed within the agreed budget? If there were cost overruns, what were the reasons, and how were they handled?

5. Did the contractor adhere to all relevant regulations and safety standards? Were there any safety incidents or compliance issues during the project?

6. How satisfied were you with the contractor's performance overall? Would you hire this contractor again for a similar project? Why or why not?

SIGNATURE: _____ **Date:** _____

EXHIBITS

Exhibit A – Contract Administration Documents

Exhibit B – Technical Specifications

Exhibit C – Design Plans

Exhibit D – Forms and Documents Required by the Small Cities CDBG Program and Legislative Appropriations.

Exhibit E – Appendix II to Part 200 Title 2

EXHIBIT A

CONTRACT ADMINISTRATION DOCUMENTS

AGREEMENT

THIS AGREEMENT, made this ____day of _____ _____, 20____, by and between the **City of Hampton**, hereinafter called "OWNER" and_____ doing business as a corporation, hereinafter called "CONTRACTOR".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR will commence and complete the construction of

Water well replacement project
CDBG Project No. 23DB-N02

2. The CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the PROJECT described herein.

3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS within **10** calendar days after the date of the NOTICE TO PROCEED and will complete the same within **one hundred eighty (180)** calendar days unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.

4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of **_____ and no/100 ($_____)**, or as shown in the BID schedule.

5. The term "CONTRACT DOCUMENTS" means and includes the following:

(A) ADVERTISEMENT FOR BIDS

(B) INFORMATION FOR BIDDERS

(C) BID BOND

(D) PROPOSAL

(E) AGREEMENT

(F) PAYMENT BOND

(G) PERFORMANCE BOND

(H) NOTICE OF AWARD

(I) NOTICE TO PROCEED

(J) CHANGE ORDER

(K) GENERAL CONDITIONS

(L) SUPPLEMENTAL GENERAL CONDITIONS

(M) ARPA SUPPLEMENTAL GENERAL CONDITIONS

(N) SPECIAL SPECIFICATIONS

(O) SPECIFICATIONS prepared or issued, dated _____2026

(P) ADDENDA

No._____, dated _____ , 20___

No._____, dated _____, 20___

No._____, dated _____, 20___

No._____, dated _____, 20___

No._____, dated _____, 20___

6. The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the General Conditions such amounts as required by the CONTRACT DOCUMENTS.

7. This AGREEMENT shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in five (5) counterparts, each of which shall be deemed an original on the date first above written.

OWNER:

City of Hampton

BY _____

Name _____
(Please Type)

Title Mayor

(SEAL)

ATTEST:

_____

Name _____
(Please Type)

Title _____

CONTRACTOR:

_____

BY _____

Name _____
(Please Type)

(SEAL)

Address _____

_____

ATTEST:

_____

Name: _____
(Please Type)

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,_____

_____ as Principal,

and _____ as Surety, are held and firmly bound unto the **City of**

_____ as OWNER in the penal sum of _____ for the

payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns. Signed, this _____ day of _____, 20____.

The Condition of the above obligation is such that whereas the Principal has submitted to _____ a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the

Water well replacement project
CDBG Project No. 23DB-N02

NOW THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection herewith, and shall in all other respects perform the agreement created by the acceptance of said BID,

then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

_____

(Name of Contractor)

_____

(Address of Contractor)

a _____, herein called Principal, and
(Corporation, Partnership of Individual)

_____

(Name of Surety)

_____

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

City of Hampton
5784 Navarre Avenue, Hampton, Florida, 32044

hereinafter called OWNER, in the penal sum of _____ _____ **and no/100 ($_____)** in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 20__, a copy of which is hereto attached and made a part hereof for the construction of:

Water well replacement project
CDBG Project No. 23DB-N02

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be

performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in **five (5)** counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20__.

ATTEST:

_____ _____

(Principal) Secretary Principal

(SEAL)

By _____ (s)

_____ _____

Witness as to Principal (Address)

_____

(Address)

_____

ATTEST:

_____ _____

(Surety) Secretary Surety

(SEAL)

_____ By _____

Witness as to Surety Attorney-in-Fact

_____ _____

(Address) (Address)

_____ _____

NOTE: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the PROJECT is located.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

_____

(Name of Contractor)

_____

(Address of Contractor)

a_____, hereinafter called Principal, and
(Corporation, Partnership, or Individual)

_____

(Name of Surety)

_____

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

City of Hampton
5784 Navarre Avenue, Hampton, Florida, 32044

hereinafter called OWNER, in the penal sum of _____ _____ **and no/100 ($_____)** in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____day of_____, 20__, a copy of which is hereto attached and made a part hereof for the construction of:

Water well replacement project
CDBG Project No. 23DB-N02

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its

obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in **five (5)** counterparts, each on of which shall be deemed an original, this the _____day of _____, 20__.

ATTEST:

_____ _____

(Principal) Secretary Principal

(SEAL)

By _____(s)

_____ _____

Witness as to Principal (Address)

_____

_____

(Address)

_____

ATTEST:

_____ _____

(Surety) Secretary Surety

(SEAL)

_____ By _____

Witness as to Surety Attorney-in-Fact

_____ _____

(Address) (Address)

_____ _____

NOTE: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

NOTICE OF AWARD

To: _____

_____

_____

PROJECT Description: **City of Hampton Water well replacement project, CDBG Project No. 23DB-N02**

The OWNER has considered the BID submitted by you for the above-described WORK in response to its Advertisement for Bids dated _____, 20__, and Information for Bidders.

You are hereby notified that your BID has been accepted for items in the amount of **_____ and no/100 ($_____)**

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, Payment BOND and certificates of insurance within fifteen (15) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said BONDS within fifteen (15) days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this _____day of _____, 20__.

City of Hampton

BY _____

Title Mayor

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged

by _____,

this the _____day of _____, 20__

By _____

Title _____

NOTICE TO PROCEED

To: _____ Date: _____

_____

_____

Project Description: **City of Hampton water well replacement project, CDBG Project No. 23DB-N02**

You are hereby notified to commence WORK in accordance with the Agreement dated

_____ _____

, 20__, on or before , 20__, and you are

to complete the WORK within one hundred twenty (120) consecutive calendar days thereafter.

The date of completion of all WORK is therefore _____, 20___.

City of Hampton

BY _____

Title Mayor

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged

by _____

this the ____ day of _____, 20__

By _____

Title _____

CHANGE ORDER

Order No.

Date:

Agreement Date:

NAME OF PROJECT:

OWNER:

CONTRACTOR:

The following changes are hereby made to the CONTRACT DOCUMENTS:

Justification:

Change to CONTRACT PRICE:

Original CONTRACT PRICE: $

Current CONTRACT PRICE adjusted by previous CHANGE ORDER $

The CONTRACT PRICE including this CHANGE ORDER will be (increased) (decreased) by:
$
The new CONTRACT PRICE including this CHANGE ORDER will be $

Change to CONTRACT TIME:

The CONTRACT TIME will be (increased) (decreased) by _____ calendar days.

The date for completion of all work will be _____(Date).

Approvals Required:
To be effective this Order must be approved by the Federal agency if it changes the scope or objective of the PROJECT, or as may otherwise be required by the SUPPLEMENTAL GENERAL CONDITIONS.

Requested by:

Recommended by:

Ordered by:

Accepted by:

Federal Agency Approval (where applicable)

EXHIBIT B

TECHNICAL SPECIFICATIONS

TABLE OF CONTENTS

TECHNICAL SPECIFICATIONS

No.	Item	Pages
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012300	Alternates	1- 2
012900	Payment Procedures	1- 5
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013300	Submittal Procedures	1- 10
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	Forms: Daily Drilling Report	
	Figure 1, City of Hampton Replacement Well 1R Site Plan	
	Figure 2, City of Hampton Replacement Well 1R Construction Diagram	
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02672	Well Pumping Test	1- 4
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END OF SECTION

SECTION 01 00 01
GENERAL REQUIREMENTS

PART 1 GENERAL

1.01 DEFINITIONS

A. **Owner**: City of Hampton

B. **Contractor**: TBD

C. **Engineer**: Infrastructure Consulting and Engineering (ICE), 5550 W. Idlewild Avenue, Suite 115, Tampa, Florida 33634.

D. **Project Site (Site):** Owner's Water Yard, 10019 S. Florida Avenue, Hampton, Florida

PART 2 SUMMARY OF WORK

2.01 PROJECT DESCRIPTION

A. This Project includes the abandonment and replacement of the Owner's existing Well No. 1, situated within the Water Yard. The existing well is constructed with an 8-inch casing, reportedly extending to a depth of 136 feet below land surface (bls), with a total well depth of 192 feet bls. Abandonment of the existing well shall be performed in accordance with Section 02670, Water Wells, and as detailed below.

B. Existing Well No. 1 Abandonment Procedures:

1. The Contractor shall obtain all necessary well abandonment permits from the Suwannee River Water Management District (SRWMD) and any other applicable regulatory authorities. The Contractor is responsible for all associated fees and submittal of required documentation.
2. Mobilize the abandonment rig and all necessary equipment to the designated Site.
3. Remove any protective coverings and insert a tremie pipe to the bottom of the well to verify total depth prior to abandonment. If substantial backfill or debris is present, the Contractor shall clean the borehole to restore its original depth.
4. Perform well abandonment activities in accordance with Section 02670, Water Wells.
5. Place pea gravel from the bottom of the borehole up to a point 10 feet below the base of the 8-inch casing. Grout shall then be pumped from the top of the pea gravel to the land surface using the tremie method, in accordance with Section 02670, Water Wells.
6. Cut the 8-inch casing to a minimum depth of 3 feet below finished grade.

7. Demolish, remove, and properly dispose of the existing concrete well pad.

C. The replacement well shall be installed on City-owned property approximately 150 feet east of the existing well location, as depicted in Figure 1 of Section 02670, Water Wells. The Contractor shall construct one (1) replacement well completed in the upper Floridan aquifer, in accordance with Section 02670, Water Wells. Construction shall include installation of an 18-inch surface casing to a depth of approximately 70 feet bls, followed by a 12-inch final casing to a depth of approximately 150 feet bls. The open borehole interval shall be drilled to a depth of approximately 275 feet bls, or as otherwise directed by the Engineer. The Contractor shall be responsible for both construction and performance testing of the replacement well as outlined below.

D. Upper Floridan Aquifer Replacement Well Construction and Testing Sequence:

1. The Contractor shall be responsible for obtaining the well construction permits from the SRWMD and other regulatory agencies prior to starting well construction activities.
2. Clear the Site as necessary to facilitate access and accommodate well construction operations.
3. Install temporary silt fencing to mitigate erosion and prevent silt migration throughout construction and testing activities.
4. Commence construction of the upper Floridan aquifer well by drilling an 8-inch pilot hole from land surface to a depth of 70 feet bls, in accordance with Section 02670, Water Wells.
5. Collect lithologic samples in accordance with Section 02670, Water Wells.
6. Ream the pilot hole to a nominal 24-inch diameter and install approximately 70 feet of 18-inch surface casing. Grout the surface casing in accordance with Section 02670, Water Wells.
7. Drill an 8-inch pilot hole from the base of the installed surface casing to a total depth of 275 feet bls. Collect lithologic samples per Section 02670, Water Wells.
8. Ream pilot hole to a nominal 18-inch borehole and install approximately 150 feet of 12-inch final casing. Grout the final casing in accordance with Section 02670, Water Wells.
9. Drill a nominal 12-inch borehole from the base of the 12-inch final casing to a depth of approximately 275 feet bls using reverse-air rotary methods. Collect both reverse-air water quality samples and lithologic samples in accordance with Section 02670, Water Wells.
10. Conduct short-term air-lift drill stem capacity tests during reverse-air drilling operations, as specified in Section 02670, Water Wells
11. Develop the well in accordance with Section 02670, Water Wells.
12. With the borehole drilled to 275 feet bls, install a test pump and conduct an 8-hour step drawdown pumping test in accordance with Section 02672, Well Pumping Test.

13. Perform geophysical logging under both static and dynamic conditions in accordance with Section 02674, Geophysical Logging of Wells.
14. Conduct video survey of completed well in accordance with Section 02673, Well Video Inspection.
15. Following completion of the step-drawdown pumping test, collect a comprehensive water quality sample in accordance with Section 02670, Water Wells. The Contractor shall be solely responsible for sample collection, delivery to the laboratory, and coordination and payment of all associated laboratory fees.
16. Disinfect the well in accordance with Section 02519, Disinfection of Water Systems.
17. Install a temporary 12-inch blind flange in accordance with Section 02670, Water Wells.
18. Demobilize all equipment and restore the Site to its original condition.

E. The Contractor shall prepare and submit a contingency plan addressing procedures for casing installation through potential lost circulation zones. This plan must be submitted to the Engineer for review and approval prior to commencement of any related work.

F. The Contractor shall develop and submit a fluids management and discharge plan for implementation during drilling and testing activities. The plan must be approved by the Engineer prior to initiation of any work. At a minimum, the plan shall address the following components:

1. Lost circulation zones
2. Reverse-air discharge
3. Discharge during development and pumping
4. Management of turbidity

2.02 SPECIFICATIONS AND DRAWINGS

A. The Specifications and Drawings define the required performance criteria, quality standards, material and equipment locations, and general layout, and serve as the baseline for workmanship and appearance. Any questions regarding the applicability or interpretation of specific sections or portions of the Specifications or Drawings shall be directed to the Owner prior to submitting a proposal for the Work under this Contract.

2.01 REASONABLY IMPLIED PARTS OF THE WORK SHALL BE DONE THOUGH ABSENT FROM SPECIFICATIONS

A. Any portion of the Work that is necessary to ensure satisfactory performance and legal operability, regardless of whether it is explicitly identified in the Specifications or shown on the Drawings, shall be executed as incidental work and treated as though fully detailed in the Contract Documents.

PART 3 SEQUENCE OF OPERATIONS

3.01 SCHEDULING

A. Prior to starting the Work, confer with Owner to develop an approved work Schedule. The estimated start date for well construction is DATE and Notice to Proceed (NTP) shall be issued 14 days prior to the estimated start date. All drilling and testing work described herein will require completion within 120 days from the date of Owner's NTP.

B. Normal working hours are Monday through Friday from 7:00 am to 7:00 pm. Work conducted outside normal working hours shall be scheduled in advance with the Owner. Contractor shall notify Engineer in advance of work outside of normal working hours.

3.02 COORDINATION

A. If other contractors are performing work on the Site, that is unrelated to well construction, Contractor shall cooperate in the coordination of their separate activities in a manner that will provide the least interference to the work of others.

B. If any difficulty or dispute should arise in the accomplishment of the above, the problem shall be brought immediately to the attention of the Owner.

PART 4 SITE CONDITIONS

4.01 CUTTINGS AND SOLID WASTES

A. All cuttings and drill mud generated as a result of mud-rotary drilling shall be disposed of offsite at an approved disposal facility. Contractor shall provide Owner and Engineer the proposed disposal facility prior to starting any work.

B. All cuttings generated during reverse-air drilling shall be disposed of offsite.

C. The Contractor shall be responsible for disposal costs for all cuttings and drilling mud generated during drilling operations.

D. The Contractor shall be responsible for developing and implementing a drilling fluids management and discharge plan, which shall be submitted to and approved by the Engineer prior to starting any work.

4.02 SAFETY

A. Contractor shall conduct work in accordance with Owner safety requirements.

PART 5 TEMPORARY CONSTRUCTION UTILITIES AND FACILITIES

5.01 CONTRACTOR'S WORK AREA

A. The designated site work area encompasses approximately 200 feet by 200 feet. All construction activities shall be confined within the established limits and conducted in accordance with the Owner's agreement. Additional space may be available onsite for material staging; however, use of any supplemental area must be approved by the Owner prior to commencement of construction.

B. The Contractor shall install temporary construction fencing and silt fencing within the defined construction limits to control soil erosion and prevent silt migration throughout all phases of construction and testing.

C. Materials shall be so stored as to ensure the preservation of their quality and fitness for the Work.

D. Temporary water (fire hydrant) is available at the Site property. Contractor shall make provisions for conveying water supply to the Site.

E. The Contractor shall furnish a chemical toilet for use during construction activities and shall ensure the unit is maintained in a clean and sanitary condition at all times.

F. The Contractor is responsible for securing the Site and all drilling and testing equipment.

G. Site Restoration: Contractor is responsible for restoring the Site back to its original condition following completion of the well.

H. Erosion and Sediment Control: The Contractor shall furnish, maintain, and operate temporary erosion and sediment control measures to safeguard the Work and any adjacent wetland areas throughout the construction and testing phases.

I. Security Requirements:

1. The Contractor shall notify the Owner at least 24 hours in advance of any scheduled deliveries to the Site.
2. The Contractor shall furnish a list of all personnel assigned to the Site, including names and job titles.
3. All non-company vehicles shall be parked exclusively within the designated contractor parking area.

PART 6 SUBMITTALS DURING CONSTRUCTION

6.01 GENERAL

A. Submittals must be received by the Engineer, at a minimum of 1 week prior to delivery of materials to the Site.

B. Submittals to Engineer shall be emailed to:

WATERCO
Erik Svenson, P.G.
erik.svenson@watercoeng.com

Cc: Jeffrey Antonacci, jeffrey.antonacci@ice-eng.com.com
Mike Dykes, mike.dykes@watercoeng.com
Dustin Dykes, dustin.dykes@watercoeng.com
Larry Gunn, larry.gunn@watercoeng.com

C. Submitted data shall be fully sufficient in detail for determination of compliance with the Contract Documents.

D. Contract Closeout Submittals:

1. Final Well Logs: Two copies.
2. Replacement Well 1R Video Log (MP4 Video File).
3. Field Geophysical Logs: Provide electronic copies of the ASCII files in *.LAS format and PDF format for each log on an external USB drive before leaving the Site.
4. Final Geophysical Logs: Email version of the ASCII files in *.LAS format and PDF files of each log.
5. Copies of well abandonment and completion reports and other relevant correspondence submitted to the regulatory agencies.

6.02 SCHEDULE OF VALUES

A. Schedule of values has been submitted for all work under the agreement.
1. Unit Price Work: Reflect unit price quantity and price breakdown.
2. Lump Sum Work: Reflect total price.
3. Front-end loaded Schedule of Values will not be acceptable.
4. Summation of the complete schedule of values representing all Work under the agreement shall equal the Contract Price.

END OF SECTION

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Phased construction.
4. Work performed by Owner.
5. Multiple Work Packages.
6. Work under Owner's separate contracts.
7. Future work not part of this Project.
8. Owner's product purchase contracts.
9. Owner-furnished/Contractor-installed (OFCI) products.
10. Owner-furnished/Owner-installed (OFOI) products.
11. Contractor-furnished/Owner-installed (CFOI) products.
12. Contractor's use of site and premises.
13. Coordination with occupants.
14. Work restrictions.
15. Specification and Drawing conventions.
16. Miscellaneous provisions.

B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.
2. Section 017300 "Execution" for coordination of Owner-installed products.

1.2 DEFINITIONS

A. Work Package: A group of specifications, drawings, and schedules prepared by the design team to describe a portion of the Project Work for pricing, permitting, and construction.

1.3 PROJECT INFORMATION

A. Project Identification: Potable Water Well 1R Replacement Project .

1. Project Location: Division Ave. and Pine St., Hampton, FL 32044 .

B. Owner: City of Hampton, 5784 Navarre Avenue, Hampton, FL 32044 .

1. Owner's Representative: .

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C. Engineer: Infrastructure Consulting and Engineering .

1. Engineer's Representative: Jeffrey S. Antonacci, P.E., PTOE; jeffrey.antonacci@ice-eng.com .

D. Engineer's Consultants: Engineer has retained the following design professionals, who have prepared designated portions of the Contract Documents:

1. Design of Water Well : WaterCo .

a. Design of Water Well Representative: Dustin Dykes, P.E.; dustin.dykes@watercoeng.com .

E. Web-Based Project Software: Project software will be used for purposes of managing communication and documents during the construction stage.

1. See Section 013100 "Project Management and Coordination" for requirements for using web-based Project software.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and includes, but is not limited to, the following:

1. Drilling of a new potable water well, installation of all mechanical and electrical equipment associated with new water well, installation of new water main to existing water yard facilities and other Work indicated in the Contract Documents.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.5 CONTRACTOR'S USE OF SITE AND PREMISES

A. Unrestricted Use of Site: Each Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.

B. Limits on Use of Site: Limit use of Project site to Work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Limits on Use of Site: Confine construction operations to the work site as shown in the contract plans .
2. Driveways, Walkways and Entrances: Keep driveways parking garage, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.

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a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.6 WORK RESTRICTIONS

A. Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets, work on public streets, rights of way, and other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work to between 7:00 a.m. to 5:00 p.m., Monday through Friday, unless otherwise indicated. Work hours may be modified to meet Project requirements if approved by Owner and authorities having jurisdiction.

1. Weekend Hours: Contractor shall not perform any construction operations at the project site on Sundays .
2. Hours for Utility Shutdowns: Temporary utility shutdowns shall be scheduled between 9:00 AM and 3:00 PM, and shall be coordinated with the owner and Engineer 48 hours in advance. .

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging for temporary utility services according to requirements indicated:

1. Notify Construction Manager not less than Insert number days in advance of proposed utility interruptions.
2. Obtain Construction Manager's Owner's written permission before proceeding with utility interruptions.

D. Noise, Vibration, Dust, and Odors: Coordinate operations that may result in high levels of noise and vibration, dust, odors, or other disruption to Owner occupancy with Owner.

1. Notify Construction Manager Owner not less than two days in advance of proposed disruptive operations.
2. Obtain Construction Manager's Owner's written permission before proceeding with disruptive operations.

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1.7 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Hypertext: Text used in the Specifications may contain hyperlinks. Hyperlinks may allow for access to linked information that is not residing in the Specifications. Unless otherwise indicated, linked information is not part of the Contract Documents.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 00 Contracting Requirements: General provisions of the Contract, including General and Supplementary Conditions, apply to all Sections of the Specifications.

C. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

D. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings and .

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

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SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include, as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation, whether or not indicated as part of alternate.

B. Execute accepted alternates under the same conditions as other Work of the Contract.

C. Schedule: A Part 3 "Schedule of Alternates" Article is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No. 1 : Additional Items at Well 1R .

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1. Alternate: Canopy (Roof Structure) as detailed and specified on drwaing S-01 "Roof Structure Plan and Details".
2. Alternate: Main Power distribution Upgrades (LP-100) as indicated on Drawing E1.1, E2.2 and as specified in Section 26 05 00 " Basic Electrical Requirements ."

B. Alternate No. 2: Additional Improvements at Existing Water Yard

C. 1. Alternate:

END OF SECTION 012300

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SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Requirements:

1. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.2 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule. Cost-loaded Critical Path Method Schedule may serve to satisfy requirements for the schedule of values.

1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
2. Submit the schedule of values to Engineer at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
3. Subschedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values coordinated with each phase of payment.
4. Subschedules for Separate Elements of Work: Where the Contractor's construction schedule defines separate elements of the Work, provide subschedules showing values coordinated with each element.
5. Subschedules for Separate Design Contracts: Where the Owner has retained design professionals under separate contracts who will each provide certification of payment requests, provide subschedules showing values coordinated with the scope of each design services contract, as described in Section 011000 "Summary."

B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the schedule of values:

a. Project name and location.
b. Owner's name.

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c. Owner's Project number.
d. Name of Engineer.
e. Engineer's Project number.
f. Contractor's name and address.
g. Date of submittal.

2. Arrange schedule of values consistent with format of AIA Document G703 .
3. Arrange the schedule of values in tabular form, with separate columns to indicate the following for each item listed:

   a. Related Specification Section or division.
   b. Description of the Work.
   c. Name of subcontractor.
   d. Name of manufacturer or fabricator.
   e. Name of supplier.
   f. Change Orders (numbers) that affect value.
   g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.

      1) Labor.
      2) Materials.
      3) Equipment.

4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

   a. Differentiate between items stored on-site and items stored off-site.

6. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
7. Purchase Contracts: Provide a separate line item in the schedule of values for each Purchase contract. Show line-item value of Purchase contract. Indicate Owner payments or deposits, if any, and balance to be paid by Contractor.
8. Overhead Costs, Proportional Distribution: Include total cost and proportionate share of general overhead and profit for each line item.
9. Overhead Costs, Separate Line Items: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
10. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

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1.3 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments, as certified by Engineer and Construction Manager and paid for by Owner.

B. Payment Application Times: The date for each progress payment is indicated in the Owner/Contractor Agreement. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Times: Submit Application for Payment to Engineer by the last day of the month. The period covered by each Application for Payment is one month, ending on the last day of the month .

1. Submit draft copy of Application for Payment seven days prior to due date for review by Engineer.

D. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

1. Other Application for Payment forms proposed by the Contractor may be acceptable to Engineer and Owner. Submit forms for approval with initial submittal of schedule of values.

E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

F. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.
2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
3. Provide summary documentation for stored materials indicating the following:

a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.

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b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

G. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Engineer by a method ensuring receipt within 24 hours . One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application .

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

I. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule (preliminary if not final).
4. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
5. Products list (preliminary if not final).
6. Sustainable design action plans, including preliminary project materials cost data.
7. Schedule of unit prices.
8. Submittal schedule (preliminary if not final).
9. List of Contractor's staff assignments.
10. List of Contractor's principal consultants.
11. Copies of building permits.
12. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
13. Initial progress report.
14. Report of preconstruction conference.
15. Certificates of insurance and insurance policies.
16. Performance and payment bonds.

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17. Data needed to acquire Owner's insurance.

J. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.

    a. Complete administrative actions, submittals, and Work preceding this application, as described in Section 017700 "Closeout Procedures."

2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

K. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Certification of completion of final punch list items.
3. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
4. Updated final statement, accounting for final changes to the Contract Sum.
5. AIA Document G706.
6. AIA Document G706A.
7. AIA Document G707.
8. Evidence that claims have been settled.
9. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
10. Final liquidated damages settlement statement.
11. Proof that taxes, fees, and similar obligations are paid.
12. Waivers and releases.

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

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SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Startup construction schedule.
2. Contractor's Construction Schedule.
3. Construction schedule updating reports.
4. Daily construction reports.
5. Material location reports.
6. Site condition reports.
7. Unusual event reports.

B. Related Requirements:

1. Section 012900 "Payment Procedures" for schedule of values and requirements for use of cost-loaded schedule for Applications for Payment.

1.2 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources.

1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

B. Cost Loading: The allocation of the schedule of values for completing an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum.

C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine the critical path of Project and when activities can be performed.

D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

E. Event: The starting or ending point of an activity.

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F. Float: The measure of leeway in starting and completing an activity.

1. Float time belongs to Owner .
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

G. Resource Loading: The allocation of labor and equipment necessary for completing an activity as scheduled.

1.3 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:

1. Working electronic copy of schedule file.
2. PDF file.
3. Two paper copies, of sufficient size to display entire period or schedule, as required.

B. Startup construction schedule.

1. Submittal of cost-loaded startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.

C. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.

D. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

1. Submit a working digital copy of schedule, using software indicated, and labeled to comply with requirements for submittals.

E. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports to contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.

1. Activity Report: List of activities sorted by activity number and then early start date, or actual start date if known.
2. Logic Report: List of preceding and succeeding activities for each activity, sorted in ascending order by activity number and then by early start date, or actual start date if known.
3. Total Float Report: List of activities sorted in ascending order of total float.
4. Earnings Report: Compilation of Contractor's total earnings from the Notice to Proceed until most recent Application for Payment.

F. Construction Schedule Updating Reports: Submit with Applications for Payment.

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G. Daily Construction Reports: Submit at monthly intervals.

H. Material Location Reports: Submit at monthly intervals.

I. Site Condition Reports: Submit at time of discovery of differing conditions.

J. Unusual Event Reports: Submit at time of unusual event.

K. Qualification Data: For scheduling consultant.

1.4 QUALITY ASSURANCE

A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours ofEngineer's request.

B. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's Construction Schedule, including, but not limited to, the following:

1. Review software limitations and content and format for reports.
2. Verify availability of qualified personnel needed to develop and update schedule.
3. Discuss constraints, including phasing interim milestones .
4. Review delivery dates for Owner-furnished products.
5. Review schedule for work of Owner's separate contracts.
6. Review submittal requirements and procedures.
7. Review time required for review of submittals and resubmittals.
8. Review requirements for tests and inspections by independent testing and inspecting agencies.
9. Review time required for Project closeout and Owner startup procedures .
10. Review and finalize list of construction activities to be included in schedule.
11. Review procedures for updating schedule.

1.5 COORDINATION

A. Coordinate Contractor's Construction Schedule with the schedule of values, [**list of subcontracts,**] submittal schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from entities involved.
2. Coordinate each construction activity in the network with other activities, and schedule them in proper sequence.

1.6 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Computer Scheduling Software: Prepare schedules using current version of a program

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that has been developed specifically to manage construction schedules.

1. Use Microsoft Project Primavera for current Windows operating system.

B. Scheduling Consultant: Engage a consultant to provide planning, evaluation, and reporting, using CPM scheduling.

1. In-House Option: Owner may waive requirement to retain a consultant if Contractor employs skilled personnel with experience in CPM scheduling and reporting techniques. Submit qualifications.
2. Meetings: Scheduling consultant to attend all meetings related to Project progress, alleged delays, and time impact.

C. Time Frame: Extend schedule from date established for the Notice of Award to date of Final Completion .

1. Contract completion date to not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.
2. Work under More Than One Contract: Include a separate activity for each contract.
3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
6. Work Restrictions: Show the effect of the following items on the schedule:

    a. Uninterruptible services.
    b. Partial occupancy before Substantial Completion.
    c. Use-of-premises restrictions.
    d. Provisions for future construction.
    e. Seasonal variations.
    f. Environmental control.

7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:

    a. Subcontract awards.
    b. Submittals.
    c. Purchases.
    d. Fabrication.
    e. Sample testing.

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f. Deliveries.
g. Installation.
h. Tests and inspections.
i. Curing.
j. Startup and placement into final use and operation.
k. Commissioning.

8. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:

a. Completion of mechanical installation.
b. Completion of electrical installation.
c. Substantial Completion.

E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion

F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:

1. Unresolved issues.
2. Unanswered Requests for Information.
3. Rejected or unreturned submittals.
4. Notations on returned submittals.
5. Pending modifications affecting the Work and the Contract Time.

G. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate Final Completion percentage for each activity.

H. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.

I. Distribution: Distribute copies of approved schedule to Engineer, Construction Manager, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

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1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

1.7 STARTUP CONSTRUCTION SCHEDULE

A. Gantt-Chart Schedule: Submit startup, horizontal, Gantt-chart-type construction schedule within seven days of date established for commencement of the Work .

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

1.8 GANTT-CHART SCHEDULE REQUIREMENTS

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's Construction Schedule within 30 days of date established for the Notice to Proceed .

1. Base schedule on the startup construction schedule and additional information received since the start of Project.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION (Not Used)

END OF SECTION 013200

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SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Engineer's and Construction Manager's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Engineer's and Construction Manager's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.3 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Engineer and Construction Manager and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal Schedule: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal Schedule: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule as required to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.

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b. Specification Section number and title.
c. Submittal Category: Action; informational.
d. Name of subcontractor.
e. Description of the Work covered.
f. Scheduled date for Engineers and Construction Manager's final release or approval.
g. Scheduled dates for purchasing.
h. Scheduled date of fabrication.
i. Scheduled dates for installation.
j. Activity or event number.

1.4 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Engineer.
4. Name of Construction Manager.
5. Name of Contractor.
6. Name of firm or entity that prepared submittal.
7. Names of subcontractor, manufacturer, and supplier.
8. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier and alphanumeric suffix for resubmittals.
9. Category and type of submittal.
10. Submittal purpose and description.
11. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
12. Drawing number and detail references, as appropriate.
13. Indication of full or partial submittal.
14. Location(s) where product is to be installed, as appropriate.
15. Other necessary identification.
16. Remarks.
17. Signature of transmitter.

B. Options: Identify options requiring selection by Architect.

C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Engineer and Construction Manager on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

D. Paper Submittals:

1. Place a permanent label or title block on each submittal item for identification; include name of firm or entity that prepared submittal.
2. Provide a space approximately 6 by 8 inches on label or beside title block to

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record Contractor's review and approval markings and action taken by Engineer **and Construction Manager**] .

3. Action Submittals: Submit three paper copies of each submittal unless otherwise indicated. Engineer, through Construction Manager, will return two copies.
4. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Engineer and Construction Manager will not return copies.
5. Additional Copies: Unless additional copies are required for final submittal, and unless Architect [**or Construction Manager**] observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
6. Transmittal for Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using AIA Document G810 transmittal form.

E. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

F. Submittals Utilizing Web-Based Project Software: Prepare submittals as PDF files or other format indicated by Project management software.

1.5 SUBMITTAL PROCEDURES

A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Email: Prepare submittals as PDF package and transmit to Architect by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Architect.

    a. Engineer, through Construction Manager, will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.

2. Web-Based Project Management Software: Prepare submittals in PDF form, and upload to web-based Project management software website. Enter required data in web-based software site to fully identify submittal.
3. Paper: Prepare submittals in paper form and deliver to Architect.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections, so processing will not be delayed because of need to review

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submittals concurrently for coordination.

a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Engineer and to Engineer's consultants, allow 15 days for review of each submittal. Submittal will be returned to Engineer before being returned to Contractor.

a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Engineer and Construction Manager .

D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block, and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Engineer's action stamp.

E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Engineer's action stamp.

1.6 SUBMITTAL REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard

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published data are unsuitable for use, submit as Shop Drawings, not as Product Data.

2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's catalog cuts.
    b. Manufacturer's product specifications.
    c. Standard color charts.
    d. Statement of compliance with specified referenced standards.
    e. Testing by recognized testing agency.
    f. Application of testing agency labels and seals.
    g. Notation of coordination requirements.
    h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

    a. Wiring diagrams that show factory-installed wiring.
    b. Printed performance curves.
    c. Operational range diagrams.
    d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before Shop Drawings, and before or concurrently with Samples.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data .

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

    a. Identification of products.
    b. Schedules.
    c. Compliance with specified standards.
    d. Notation of coordination requirements.
    e. Notation of dimensions established by field measurement.
    f. Relationship and attachment to adjoining construction clearly indicated.
    g. Seal and signature of professional engineer if specified.

2. Paper Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches .

    a. Two opaque (bond) copies of each submittal. Engineer**, through Construction Manager,**] will return one copy(ies).

C. Samples: Submit Samples for review of type, color, pattern, and texture for a check of these characteristics with other materials.

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1. Transmit Samples that contain multiple, related components, such as accessories together in one submittal package.
2. Identification: Permanently attach label on unexposed side of Samples that includes the following:

    a. Project name and submittal number.
    b. Generic description of Sample.
    c. Product name and name of manufacturer.
    d. Sample source.
    e. Number and title of applicable Specification Section.
    f. Specification paragraph number and generic name of each item.

3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics and identification information for record.
4. Web-Based Project Management Software: Prepare submittals in PDF form, and upload to web-based Project software website. Enter required data in web-based software site to fully identify submittal.
5. Paper Transmittal: Include paper transmittal, including complete submittal information indicated.
6. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

    a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

7. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units, showing the full range of colors, textures, and patterns available.

    a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Engineer, through Construction Manager, will return submittal with options selected.

8. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

    a. Number of Samples: Submit three sets of Samples. Engineer and Construction Manager will retain two Sample sets; remainder will be

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returned. Mark up and retain one returned Sample set as a project record Sample.

1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.

E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.

G. Certificates (When appicable):

1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
2. Installer Certificates: Submit written statements on manufacturer's letterhead, certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead, certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
4. Material Certificates: Submit written statements on manufacturer's letterhead, certifying that material complies with requirements in the Contract Documents.
5. Product Certificates: Submit written statements on manufacturer's letterhead, certifying that product complies with requirements in the Contract Documents.
6. Welding Certificates: Prepare written certification that welding procedures and

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personnel comply with requirements in the Contract Documents. Submit record of AWS B2.1/B2.1M on AWS forms. Include names of firms and personnel certified.

H. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for substrate preparation and primers required.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

    a. Name of evaluation organization.
    b. Date of evaluation.
    c. Time period when report is in effect.
    d. Product and manufacturers' names.
    e. Description of product.
    f. Test procedures and results.
    g. Limitations of use.

1.7 DELEGATED DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated Design Services Certification: In addition to Shop Drawings, Product Data,

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and other required submittals, submit digitally signed PDF file paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

1.8 CONTRACTOR'S REVIEW

A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer and Construction Manager .

B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp . Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1. Engineer and Construction Manager will not review submittals received from Contractor that do not have Contractor's review and approval.

1.9 ENGINEER’S AND CONSTRUCTION MANAGER'S REVIEW

A. Action Submittals:Engineer and Construction Manager will review each submittal, indicate corrections or revisions required , and return .

1. PDF Submittals: Engineer and Construction Manager will indicate, via markup on each submittal, the appropriate action .
2. Paper Submittals: Engineer and Construction Manager will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action .

B. Informational Submittals: Engineer and Construction Manager will review each submittal and will not return it, or will return it if it does not comply with requirements. Engineer and Construction Manager will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Engineer and Construction Manager .

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Enginer and Construction Manager will return without review submittals received from sources other than Contractor.

F. Submittals not required by the Contract Documents will be returned by Architect

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without action.

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

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SECTION 02670
WATER WELLS

PART 1 GENERAL

1.01 REFERENCES

A. The following is a list of standards which may be referenced in this section:

1. American Petroleum Institute (API):
   a. SPEC 5L, Specification for Line Pipe, 38th Edition.
   b. API 10-A, Specification for Materials and Testing for Well Cements.
2. American Society for Testing and Materials (ASTM):
   a. A53, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded, and Stainless.
   b. A139, Standard Specification for Electric-Fusion (Arc)-Welded Steel Pipe (NPS 4 and Over).
   c. C33, Fine Aggregate.
   d. C150, Standard Specification for Portland Cement.
   e. C494, Standard Specifications for Chemical Admixtures for Concrete.
   f. D1586, Standard Specification for Penetration Test and Split-Barrel Sampling of Soils
   g. D1785, Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedule 40, 80, and 120.
   h. F480, Standard Specification for Thermoplastic Well Casing Pipe and Couplings Made in Standard Dimension Ratios (SDR), Schedule 40 and Schedule 80
3. American Water Works Association (AWWA):
   a. A100, Standard for Water Wells.
   b. C200, Standard for Steel Water Pipe, 6 Inches or Larger.
   c. C206, Standard for Field Welding of Steel Water Pipe.
4. Florida Administrative Code (FAC)
   d. Chapter 62-550, Drinking Water Standards, Monitoring, and Reporting
   e. Chapter 62-160, Quality Assurance
5. U.S. Environmental Protection Agency (EPA)
   f. National Primary Drinking Water Regulations
   g. National Secondary Drinking Water Regulations
6. Florida Department of Environmental Protection (FDEP)
   h. Standard Operating Procedures (SOP) FS 2200 Groundwater Sampling
   i. Form FD 9000-24: Groundwater Sampling Log

1.02 SUBMITTALS

A. Copy of well abandonment and construction permit issued by the SRWMD and/or other regulatory agencies.

B. The Contractor shall submit a statement of qualifications for the selected water testing laboratory, including a FDEP-approved quality assurance and quality control (QA/QC) plan, to the Engineer for review and approval prior to initiating sampling activities.

C. Contractor shall submit an all-inclusive list of water quality sampling parameters, with corresponding method detection limits (MDLs) from the proposed Florida-certified laboratory to the Engineer for approval prior to sampling.

D. Quality Control Submittals:

1. Daily drilling log.
2. Manufacturer's Mill Certificate on surface and final steel casings prior to installation.
3. Grouting plan for surface and final casings
4. Well abandonment plan for existing Well 1
5. Fluids management and discharge plan
6. Contingency plan for lost circulation control
7. Drilling Fluid Additives: NSF/ANSI Standard 60 certification for potable use.
8. Grout Seal Additives: NSF/ANSI Standard 60 certification for potable use.
9. Proposed approach to abandon existing Well No. 1.

E. Contract Closeout Submittals:

1. Final well logs (Two copies).
2. Replacement Well 1R Video Log (MP4 Video File).
3. Field Geophysical Logs for Replacement Well 1R: Provide electronic copies of ASCII raw data files in *.LAS format and PDF files of each log on an external USB drive before leaving the site.
4. Final Geophysical Logs for Replacement Well 1R: Email final version of ASCII files in *.LAS format and PDF files of each log to the Engineer within 10 working days of completion of logging.
5. Copies of well completion report for Well 1R and abandonment report for existing Well 1 and other correspondence submitted to the regulatory agencies.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Packing and Shipping: Deliver dry cement to site in bags or bulk and store and protect from contamination and precipitation in accordance with AWWA A100.

1.04 SCHEDULING AND SEQUENCING

A. The Contractor shall notify the Owner and Engineer of the proposed drilling start date no less than five (5) working days in advance of commencement. The Owner shall be promptly informed of any anticipated delays as they become known, as well as any planned weekend or after-hours work.

PART 2 PRODUCT

2.01 CASING

A. Materials Permanently Installed in Replacement Well: Install new steel pipe conforming to ASTM A53, Grade B, featuring a single longitudinal electric resistance weld (ERW). The final casing shall have an outside diameter (OD) of 12.75 inches with a wall thickness of 0.375 inches. The surface casing shall have an OD of 18 inches with a wall thickness of 0.375 inches.

B. Dimensions:

Nominal Diameter (inches)	**Inside/Outside Diameter (inches)**	**Wall Thickness (inches)**	**Weight lbs per ft**
12 (Steel)	12.00/12.75	0.375	49.56
18 (Steel)	17.25/18.00	0.375	70.59

C. Pipe designated for field butt-welding shall be supplied with ends that are accurately trued and beveled to facilitate proper joint formation.

D. Fittings shall be of standard manufacture, suitable for the intended application, and fully compatible with the well casing.

2.02 GROUT SEAL

A. Portland Cement: Conform to ASTM C150 Type II, or conform to ASTM C595. Type 1L.

B. Grout Additives:

1. Additives, including bentonite to mitigate shrinkage and admixtures conforming to ASTM C494 for reducing permeability, enhancing fluidity, and controlling set time, shall be appropriate for use in public water supply well construction.
2. The selection and use of additives, as well as the composition of the resulting slurry, shall be subject to review and approval by the Engineer.

2.03 GROUT MIXES

A. Neat Cement: 1 cubic foot of Portland cement to not more than 6 gallons of water.

PART 3 EXECUTION

3.01 DRILLING EQUIPMENT

A. Provide a rotary drilling rig and accessories required to complete the well as specified.

3.02 TEMPORARY PIPING

A. Provide temporary settling tanks, piping, and appurtenances to filter and pump water produced during drilling or by development to a designated location to be determined by Owner.

B. Up to 200 feet of temporary piping may be required.

3.03 DRILLING

A. Wells shall be drilled by the direct circulation rotary method prior to setting surface and final casings, unless otherwise approved by Engineer.

B. Wells shall be drilled by the reverse-air circulation rotary method after setting casing into the top of the Floridan aquifer and when drilling through the Floridan aquifer.

C. Drilling Fluids and Additives:

1.04 Approved for use in public water supply wells.
2.04 Suitable to complete well as specified.

3.04 PILOT HOLE DRILLING, SAMPLING AND TESTING

A. Prior to casing installation, the Contractor shall drill an exploratory pilot hole to the full intended depth of each casing string. Pilot holes shall have a diameter ranging from 6 to 8 inches.

B. The Contractor shall drill a nominal 12-inch open borehole below the installed 12-inch final casing using reverse-air drilling methods unless otherwise approved by the Engineer.

C. As borehole advance, the Contractor shall collect representative formation samples at 10-foot intervals. Each sample shall be approximately one pint in volume and placed in a permeable cloth sample bag. Bags shall be clearly and permanently labeled with the date, well identification, and depth of collection. Samples shall be stored onsite in a location protected from direct sunlight and precipitation. The Contractor shall be solely responsible for the proper collection, labeling, protection, and delivery of all formation samples to the Engineer.

D. Lithologic Samples: Formation samples shall be placed in permeable cloth bags equipped with affixed labeling tags. An acceptable example includes the 4½-inch by 6-inch sample bag manufactured by Hubco, or equivalent.

E. Drill Stem Capacity Tests: The Contractor shall perform short-duration (approximately 15 minutes) air-lift drill stem capacity tests during reverse-air drilling operations. These tests shall be conducted at 30-foot intervals of borehole advancement through the upper Floridan aquifer, unless otherwise directed by the Engineer. The Contractor shall measure and document the estimated reverse-air pumping rate and static water level using a water level indicator approved by the Engineer. All testing shall be performed using consistent methodology and under the supervision and direction of the Engineer, unless instructed otherwise.

3.05 WATER SAMPLES

Water Quality Samples during Pilot-hole Drilling:

A. During reverse-air circulation drilling, the Contractor shall collect representative water samples at intervals of every 30 feet or upon each change of drill rod.

B. Water samples shall be collected in new plastic bottles with a minimum capacity of 16 fluid ounces, equipped with nonmetallic caps. Each bottle shall be rinsed twice with the water to be sampled prior to final sample collection

C. All sample bottles shall be clearly and permanently labeled with the well identification, depth, time, and date of collection. The Contractor shall be solely responsible for the proper collection, labeling, protection, and delivery of water samples to the Engineer.

D. Prior to sample collection, the borehole shall be circulated until water is free of solids or as directed by Engineer.

Water Quality Samples during Pumping Tests:

A. Upon completion of the final pumping test as outlined in Section 02672, the Contractor shall collect water samples for laboratory analysis in accordance with the primary and secondary drinking water standards specified in Florida Administrative Code (FAC) Chapter 62-550, Drinking Water Standards, Monitoring, and Reporting.

B. The Contractor shall obtain a separate water quality sample for laboratory analysis of major ions, along with a duplicate sample to account for potential laboratory error or data loss. The following parameters shall be included in the analysis:

- Chloride.
- Sulfate.
- Magnesium.
- Field Temperature.
- Specific Conductivity
- Total Iron.
- Total Dissolved Solids.
- Calcium.
- Sodium.
- Potassium.
- Carbonate.
- Total Hardness.
- Sulfides.
- Bicarbonate – total alkalinity if pH is 6.9 or lower.

C. The Contractor shall submit a comprehensive list of water quality sampling parameters and associated method detection limits (MDLs) from the proposed Florida-certified laboratory to the Engineer for approval prior to initiating sampling activities.

D. The Contractor shall be fully responsible for sample collection, delivery to the laboratory, and coordination of all related activities and costs. The selected laboratory must be certified by the Florida Department of Health (FDOH), and all analytical results shall comply with the standards of the National Environmental Laboratory Accreditation Conference (NELAC). No standby compensation will be provided for delays resulting from the Engineer awaiting laboratory results.

E. Contractor shall perform water sampling in accordance with the FDEP SOPs which are incorporated by reference in FAC Chapter, 62-160, Quality Assurance.

F. The Contractor shall submit an electronic copy of the sampling results in Adobe Acrobat PDF format immediately upon completion of sampling. The report shall conform to FDEP SOPs and include, at a minimum, the following information:

- Well Identification
- Water Sample Identification
- Signature of Inspector
- Test Methods

- Time and Date of Sample
- Laboratory name, telephone number, address, QA-QC contact
- Chain-of-Custody
- Carbonate.

G. The Contractor is responsible for compensation to the selected laboratory for all analytical services.

3.06 BOREHOLE

A. Drill boreholes to the specified dimensions and depths indicated in Figure 2 or as otherwise directed by the Engineer.

B. Ensure boreholes are drilled sufficiently straight and plumb to accommodate casing installation in compliance with the requirements of the Straightness and Alignment Test.

C. Prior to conducting geophysical and video logging, condition each borehole to facilitate unobstructed passage of logging tools to total depth.

3.07 LOGS

A. Maintain up-to-date daily logs of drilling progress.

B. Maintain current copy of logs at drill site for inspection.

C. Maintain Borehole Log Containing:

1. Description of geologic materials and depth encountered.
2. Depths of lost circulation.
3. Methods used to regain circulation.
4. Time, depth, and description of unusual occurrences or problems during drilling.
5. Diameter and length of casing installed.

D. Daily Log: Use Daily Drilling Report form located at the end of this Section.

E. Final Well Log:

1. Borehole diameters.
2. Depth to bottom of casing and bottom of borehole.
3. Diameters and wall thicknesses of casing.
4. Range of depth of each cemented zone and quantity of cement used.
5. Other information from daily logs pertinent to well construction.

3.08 DISPOSAL OF CUTTINGS AND DRILLING FLUIDS

A. The Contractor shall be responsible for the collection, containment, and offsite disposal of all drill cuttings and drilling fluids. The designated disposal facility

must be approved by the Owner, and all disposal activities shall comply with applicable local, state, and federal regulations.

B. The well site work area encompasses approximately 200 feet by 200 feet. All drilling operations shall be confined to the designated construction limits established for well installation.

C. The Contractor shall ensure that well construction activities, including the handling of drilling fluids, do not result in adverse environmental impacts or regulatory violations

3.09 PROTECTION OF WATER QUALITY

A. Prevent contaminated water, gasoline, or other harmful substances from entering well, either through opening or by seepage into ground.

B. Do not allow cuttings or drilling fluids to contaminate ground or surface water.

3.10 INSTALLATION OF CASING

A. Install surface casing to an approximate depth of 70 feet bls and final casing to an approximate depth of 150 feet bls. Casing installation for the replacement well shall conform to the approximate depths indicated in Figure 2 or as otherwise directed by the Engineer.

B. Join Casing Ends Watertight:

1. Steel: Welded. Welding, if used, shall be in conformance with AWWA C206.

C. Install Casing Centralizers:

1. One set 5 feet above bottom.
2. One set 40 feet above bottom.
3. One set 100 feet above bottom.
4. One set every 100 feet thereafter to nearest 100 feet from ground surface.

D. A centralizer set includes four equally spaced centralizing guides equally spaced around the casing at each required depth.

E. Attach Centralizers Vertically to Casing:

1. Arranged in four vertical and straight lines along casing.
2. Spaced 90 degrees apart to allow maximum clearance for tremie pipes.

F. Casings: Install and cement in hole not less than 5 inches greater in diameter than nominal diameter of casing, unless otherwise approved by Engineer.

3.11 STRAIGHTNESS AND ALIGNMENT TEST

A. The well shall be constructed sufficiently straight and plumb to ensure unobstructed installation and reliable operation of the permanent pump and associated appurtenances.

B. A well shall be considered adequately plumb if the horizontal deviation from vertical does not exceed two-thirds the diameter of the inner casing per 100 feet within the cased interval. If required by the Owner, an alignment test shall be performed in accordance with Appendix C of AWWA Standard A100.

C. Alignment testing shall be performed on the final 12-inch casing when directed by the Owner and Engineer.

3.12 MIXING AND PLACING GROUT

A. The Engineer shall review the consistency and mixing method prior to commencement of grouting operations. Each grout stage shall be tagged using a tremie pipe, and subsequent grout placement shall occur with the tremie pipe positioned within two feet of the established tag depth, unless otherwise directed by the Engineer.

B. The Engineer shall evaluate and approve the grout placement methodology. The following requirements shall apply:

1. Grout shall be placed under pressure from the bottom of the casing to the ground surface.
2. Grouting shall be performed in a continuous operation to fill the entire annular space; if continuous placement is not feasible, cement shall be staged in separate lifts.
3. No drilling operations shall proceed until the grout has adequately cured.
4. Minimum curing time shall be 8 hours between staged lifts and 24 hours following completion of all cementing activities.

3.13 MIXING AND PLACING GROUT FOR BACKPLUGGING AND ABANDONMENT

A. The Engineer shall review the consistency and mixing methodology prior to commencement of grouting operations.

B. Grout shall be placed from the total borehole depth up to the designated target elevation using the tremie method. Where lost circulation zones are encountered, a short interval of gravel may be required.

C. To complete abandonment of the existing well, the Contractor shall fill the open borehole with pea gravel from the bottom of the well to a point within 10 feet of the base of the existing 8-inch casing, as illustrated in Figure 3. Grout shall then

be placed atop the gravel and extended to land surface using the tremie method. Multiple grout stages may be necessary.

D. Prior to introducing gravel and grout via tremie pipe, the Contractor shall perform a physical tag of the bottom of existing Well 1.

E. A minimum curing period of 8 hours shall be observed between grout stages. The depth of each cement stage shall be verified by physical tag using the tremie pipe and reported to the Engineer prior to placement of the subsequent stage.

F. The Engineer shall review and approve the grout placement methodology.

3.14 WELL DEVELOPMENT

A. The Contractor shall develop the well until discharge water is free of sand and suspended solids, and the well achieves its maximum production capacity. During development at peak production rate, sand content shall not exceed 5 milligrams per liter (mg/L).

B. Well development shall conform to AWWA Standard A100. The Contractor shall install an air line and initiate development by vigorous surging with air, followed by high-rate continuous air lifting.

C. Development shall continue until discharge water is free of turbidity and sand, and no further increase in production capacity is observed, as directed by the Engineer.

D. The air lifting compressor and associated equipment shall be capable of delivering a minimum flow rate of 200 gallons per minute (gpm) through the casing during continuous air lifting operations.

E. The static water level in the well shall be allowed to recover overnight prior to initiating the well pumping test.

3.15 TEMPORARY CASING SEAL

A. The Contractor shall install a steel casing flange with a leak-proof companion steel blind flange on the final joint of the 12-inch final casing. The flange face shall be set at the specified elevation.

B. The casing flange shall be welded perpendicular to the casing axis and verified for level using a precision machinist level with a minimum accuracy of 0.01 inch per foot.

3.16 SUPPLEMENTS

A. The supplements listed below, following "END OF SECTION," are a part of this Specification.
   1. Forms: Daily Drilling Report.
   2. Figure 1, City of Hampton Replacement Well 1R site Plan
   3. Figure 2, City of Hampton Replacement Well 1R Construction Diagram
   4. Figure 3, City of Hampton Existing Well No. 1 Abandonment Plan

END OF SECTION

SUPPLEMENT-1

DAILY DRILLING REPORT

Date:_____ Owner:_____

Well No.:_____

Casing/Hole Diameter _____ inch

Depth of Well

Start of Shift _____ feet

End of Shift _____ feet

Depth to Water (belowground)

Start of Shift _____ feet

End of Shift _____ feet

Log of Materials Encountered

Description	Depth From	Depth To

Remarks: (Character of drilling, casing added, miscellaneous work items)

_____

_____

_____

Driller:_____

Helper:_____

(Use other side for more comments)

SUPPLEMENT-2-4

SUPPLEMENT-2-4

WATERCO

Figure 1.
Replacement Well 1R Site Plan
City of Hampton Well Abandonment and Replacement Project

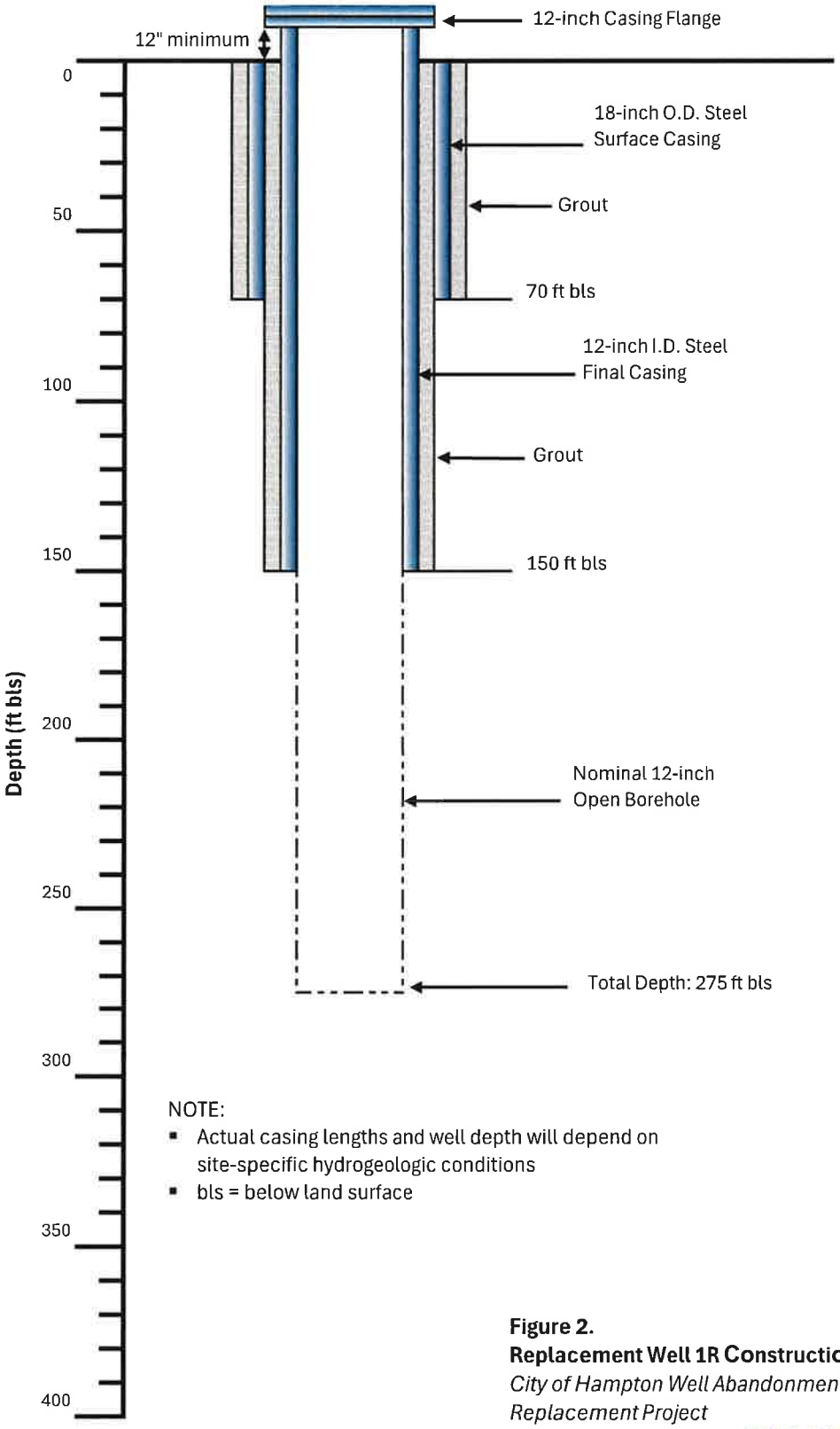
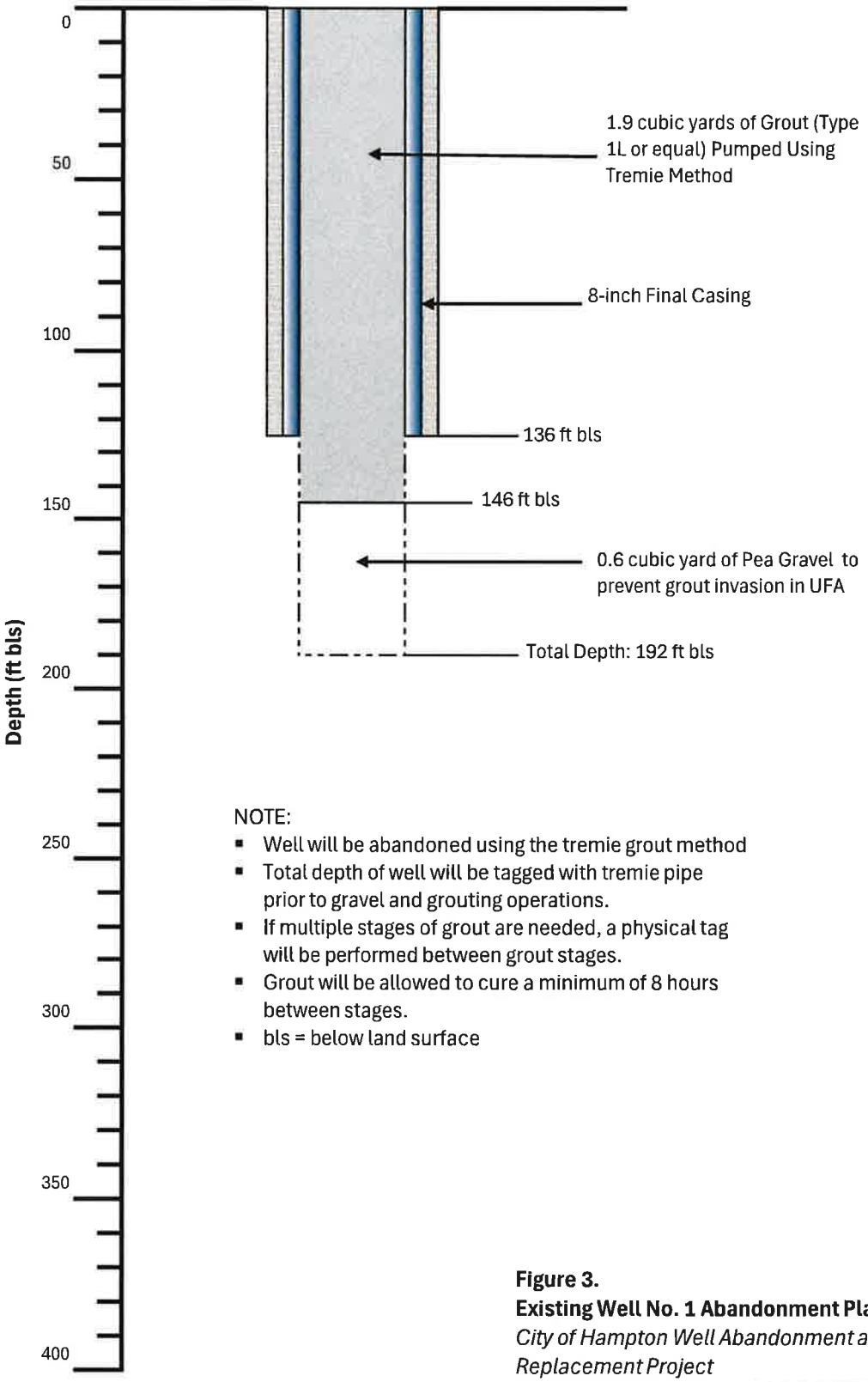


Figure 2.
Replacement Well 1R Construction Diagram
City of Hampton Well Abandonment and Replacement Project

WATERCO



NOTE:

- Well will be abandoned using the tremie grout method
- Total depth of well will be tagged with tremie pipe prior to gravel and grouting operations.
- If multiple stages of grout are needed, a physical tag will be performed between grout stages.
- Grout will be allowed to cure a minimum of 8 hours between stages.
- bls = below land surface

Figure 3.
Existing Well No. 1 Abandonment Plan
City of Hampton Well Abandonment and Replacement Project

WATERCO

SUPPLEMENT-1

DAILY DRILLING REPORT

Date:_____ Owner:_____

Well No.:_____

Casing/Hole Diameter _____ inch

Depth of Well

Start of Shift _____ feet

End of Shift _____ feet

Depth to Water (belowground)

Start of Shift _____ feet

End of Shift _____ feet

Log of Materials Encountered

Description	Depth From	Depth To

Remarks: (Character of drilling, casing added, miscellaneous work items)

_____

_____

_____

Driller:_____

Helper:_____

(Use other side for more comments)

SECTION 02672
WELL PUMPING TEST

PART 1 GENERAL

1.01 SUBMITTALS

A. Flow meter calibration certification

B. Shop Drawings:

1. List and description of equipment proposed for well pumping during testing and logging.
2. Sketch of discharge piping, valving, flowmeters, etc.
3. Submittals must be reviewed and approved by Engineer prior to testing.

1.02 SUEQUENCING AND SCHEDULING

A. A step drawdown pumping test shall be performed on the completed replacement well following completion of the open hole to total depth and subsequent well development. The Contractor shall furnish a test pump capable of delivering a flow rate of 350 gallons per minute (gpm). The test shall be conducted for a minimum duration of eight (8) hours, or as otherwise directed by the Engineer.

1.03 SITE CONDITIONS

A. Environmental Requirements: Water generated during pumping activities shall be managed and disposed of in an environmentally responsible manner, in full compliance with applicable federal, state, and local regulations. Discharge water shall be directed to prevent flooding, erosion, or other adverse site impacts. Temporary discharge piping may be required to convey water to the designated open area located approximately 150 feet northeast of the well. If discharge to this area is not feasible, the Contractor shall be solely responsible for the collection, containment, and offsite disposal of all produced water in accordance with regulatory requirements.

PART 2 PRODUCTS (EQUIPMENT)

2.01 TEST PUMP AND DRIVER

A. Test Pump for Step Drawdown Pumping Test and Geophysical Logging: Provide a submersible pump, or approved equivalent, complete with all necessary drop pipe, shafting, discharge piping, and fittings. The pump shall be capable of delivering a flow rate of 350 gpm when set at a depth of 140 feet, with an estimated pumping water level of 120 feet bls.

B. The Contractor shall provide an engine and gear drive assembly capable of sustaining continuous pump operation for a minimum duration of eight (8) hours

C. The Contractor shall be responsible for securing the necessary electrical power to support all testing and operational requirements.

2.02 FLOW MEASUREMENT AND CONTROL

A. During the step drawdown pumping test, provide machined orifice plate(s) capable of measuring pump discharge within ±5 percent accuracy across flow rates ranging from 100 to 350 gallons per minute (gpm). The flow measurement device shall include a manometer for manual readings and a ¼-inch threaded port for installation of a pressure transducer to enable electronic measurements.

B. Install a backup totalizing flowmeter within 50 feet of the pumping well. The flowmeter shall be properly aligned and capable of measuring discharge flow within ±5 percent of actual flow

C. Flowmeters used for the step drawdown test shall be recently calibrated, within six (6) months of use. The Contractor shall submit the calibration certificate for the totalizing flowmeter to the Engineer prior to initiating testing

D. During dynamic geophysical logging, the flowmeter shall be properly aligned and positioned within 50 feet of the pumping well, upstream of the throttling valve. The device shall measure discharge flow within ±5 percent accuracy for flow rates between 100 and 350 gpm.

E. Provide a gate valve, or approved equivalent, on the discharge side of the pump to allow adjustment of flow rates down to 50 gpm during capacity testing and dynamic logging

F. The pumping unit's prime mover, control system, and associated appurtenances shall be capable of continuous, uninterrupted operation for a minimum duration of eight (8) hours

2.03 DISCHARGE

A. Water discharged from the test pump shall be routed to the northwest of the well, directed toward the area identified in Figure 2 of Section 02670, Water Wells. To promote sheet flow, Visqueen or other impermeable sheet material shall be installed at the discharge pipe terminus. Erosion and sediment transport shall be mitigated through the use of hay bales or equivalent control measures, as necessary.

2.04 WATER LEVEL MEASUREMENT

A. The Contractor shall provide and install two 1-inch ID pipes to permit installation of a water level measuring device and electronic pressure transducer. The pipe

shall terminate approximately 2 feet above the pump and be of sufficient strength to remain open for the duration of the test. The end of the pipe shall be capped and several 3/16-inch diameter holes drilled in the lowermost 10 feet of each access pipe. Access pipes shall be properly secured to the pump column

B. Water level measuring devices and the electronic pressure transducers shall be supplied by the Engineer.

C. The Contractor shall provide all necessary fittings required for the installation of data-logging pressure transducers in both the pumped well.

PART 3 EXECUTION

3.04 STEP DRAWDOWN PUMPING TEST:

A. The Contractor shall perform a step drawdown pumping test on the replacement well. The estimated duration of the test is approximately eight (8) hours, followed by a minimum recovery period of twenty-four (24) hours. Final durations for both the pumping and recovery phases shall be determined by the Engineer, who may adjust the schedule as necessary.

B. The anticipated pumping rates for the step drawdown test shall be 50%, 75%, 100%, and 125% of the design flow rate of 300 gpm. Each flow rate shall be maintained for approximately 120 minutes, resulting in a total test duration of eight (8) hours. Actual flow rates and durations shall be coordinated with the Engineer

C. Prior to the step drawdown test, the Contractor shall conduct a preliminary pumping test to verify equipment functionality and provide data for final test design. The pumping system shall be operated continuously at discharge rates specified by the Engineer. The preliminary test is expected to last approximately 30 minutes, or as otherwise directed, and shall support planning for the official step drawdown pumping test.

D. Background water level data shall be collected in the pumped well for a minimum of 24 hours prior to initiating the pumping test. The actual duration of background monitoring shall be coordinated with the Engineer.

E. Upon completion of the pumping test, the Contractor shall collect water quality samples from the well in accordance with Section 02670, Water Wells.

F. Using a water level indicator, the Contractor shall maintain an independent record both the pump discharge flow rate and water levels in the pumped well. Water level measurements shall be recorded to the nearest 0.01 foot.

3.02 PREPARATION

A. Access and Safety: Confirm that site access is sufficient to accommodate equipment setup and safe operation throughout the duration of the Work.

B. Verify that water, electrical power, and other necessary utilities are available and adequate to support execution of the Work.

C. The Contractor shall be responsible for securing the site and all associated equipment.

3.03 OPERATION

A. The Contractor shall provide a qualified operator for the full duration of all pumping operations, as directed by the Owner or Engineer. The operator shall be responsible for operating the prime mover, regulating discharge via throttling devices, and recording flow rate and water level measurements throughout the pumping process

B. If pumping operations are interrupted due to equipment malfunction, operator error, labor disputes, or any other cause prior to the Engineer's determination of test completion, the entire test shall be repeated at no additional cost to the Owner.

3.04 FURTHER DEVELOPMENT

A. If significant quantities of fines are discharged during the step drawdown pumping test, the Contractor shall perform additional well development as necessary to mitigate sediment production and improve well performance at no additional cost to the Owner.

3.05 FIELD QUALITY CONTROL

A. Provide qualified operators onsite for the full duration of the test to continuously monitor and operate all test equipment, and to regulate the pumping rates as required.

END OF SECTION

SECTION 02673
WELL VIDEO INSPECTION

PART 1 GENERAL

1.01 SUBMITTALS

A. Administrative Submittals: Schedule 30 days prior to performing inspections.

B. Shop Drawings:

1. Description of video equipment proposed for well inspection and recording information.
2. Provide a sketch showing dimensions of downhole tools, camera, light source, and showing approximate field of view when the camera is vertical in the well bore.

C. Quality Control Submittals:

1. Provide Engineer with one copy of video (MP4 Video File) before leaving Site.

D. Contract Closeout Submittals:

1. FMP4 Video File as permanent record of video well inspection

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 EQUIPMENT

A. Furnish all necessary equipment and supplies for downhole video inspection, including but not limited to: a video camera with integrated lighting, power source, and cabling specifically engineered for underwater use in wells. The system shall produce clear, focused, and well-illuminated images, and include a mechanism for controlled lowering and retrieval of the camera. A compatible video monitor and recording device shall also be provided.

B. Capture video footage directly to MP4 file.

C. The camera lens shall be capable of upward rotation from a true vertical position to 90 degrees, and full 360-degree horizontal rotation for comprehensive imaging.

3.02 PREPARATION

A. Notify Owner and Engineer at least 1 week prior to start of video inspection and recording.

B. Clean and sterilize equipment and support system with chlorine solution before lowering equipment into well.

3.03 INSPECTION AND TAPING

A. Perform video inspection and recording only while water in well is clear.

B. During inspection maintain continuous image on video monitor and continuously record image on video.

C. If video inspection is conducted under dynamic condition, Contractor shall install centralizers on video camera to prevent or minimize camera rotation during video inspection.

D. During inspection, display date and numbers indicating depth of camera below top of casing on video monitor. Record numbers with image on video.

END OF SECTION

SECTION 02674
GEOPHYSICAL LOGGING

PART 1 GENERAL

1.01 SUBMITTALS

A. Shop Drawings:

1. List of downhole equipment including manufacturer, manufacturer's specifications, and physical dimensions of downhole tools.
2. Type of recording equipment.
3. Wire line size, type, and weight rating.

B. Quality Control Submittals:

1. Verification of equipment calibration.
2. Calibration data.

C. Contract Closeout Submittals:

1. Field Geophysical Logs for Replacement Well 1R: Provide electronic copies of ASCII raw data files in *.LAS format and PDF files of each log on an external USB drive before leaving the site.
2. Final Geophysical Logs for Replacement Well 1R: Email final version of ASCII files in *.LAS format and PDF files of each log to the Engineer within 10 working days of completion of logging.

1.02 SUEQUENCING AND SCHEDULING

A. Geophysical logging shall be performed immediately after well completion and development

B. Perform geophysical logging after conditioning the well for logging.

C. Coordinate logging with pumping test as necessary.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

A. Geophysical Logging shall be conducted on the 12-inch borehole:

1. Electric: Resistivity (16-inch and 64-inch normal) and Single Point Resistance.

2. Natural gamma ray.
3. Caliper.
4. Temperature (static and dynamic).
5. Fluid resistivity (static and dynamic).
6. Flowmeter (static and dynamic).

A. Conduct geophysical logging over the full depth of the well or borehole, unless otherwise directed by the Engineer.

B. Record all geophysical logs in digital format.

C. Report logs in graphic (analog) form.

D. Use a vertical scale of 5 inches per 100 feet of depth for all graphic logs.

E. Record logs at the highest sensitivity that minimizes off-scale deflection, or as directed by the Engineer.

F. Include scale settings, calibration data, standardization parameters, and other relevant metadata on each log.

G. Record a duplicate (repeat) section of each log equal to 20% of the total logged depth for wells up to 250 feet, and 10% for wells deeper than 250 feet, up to a maximum of 100 feet. The Engineer shall designate the location of the duplicate section.

H. Under static (non-pumping) conditions, operate the flowmeter tool within the 12-inch casing at a minimum of three distinct tool speeds. Record corresponding flowmeter outputs and tool speeds, and submit the data electronically to the Engineer prior to demobilization.

I. Perform static flow logging from the base of the final 12-inch casing to total depth, and again from total depth back to the base of the casing.

J. Conduct all dynamic geophysical logs at a minimum pumping rate of 300 gallons per minute (gpm).

END OF SECTION

SECTION 02683
DISINFECTION OF WATER SYSTEMS

PART 1 GENERAL

1.01 REFERENCES

A. The following is a list of standards which may be referenced in this Section:

1. American Water Works Association (AWWA):
   a. B300, Hypochlorites.
   b. B301, Liquid Chlorine.
   c. B303, Sodium Chlorite.
   d. C654, Disinfection of Wells.

1.02 SUEQUENCING AND SCHEDULING

A. Commence Initial Disinfection after Completion of Following: Pump testing, geophysical logging, and borehole video of completed well.

PART 2 PRODUCTS

2.01 WATER FOR DISINFECTION AND TESTING

A. Clean, uncontaminated, and potable.

B. Contractor shall supply potable quality water and convey in disinfected pipelines or containers.

2.02 CONTRACTOR'S EQUIPMENT

A. Furnish chemicals and equipment, such as pumps and hoses, to accomplish disinfection.

2.03 MIXING DISINFECTANT

A. Use Following Proportions of Hypochlorite or Chlorine to Water:

1. Chlorine Gas or Liquid (100 Percent Cl): 1 pound per 11.75 gallons water.
   a. Apply liquid chlorine gas-water solution by means of a solution feed chlorinating device.
2. Calcium Hypochlorite (65 to 70 Percent Cl): 1 pound per 7.5 gallons water.
   a. If calcium hypochlorite is used, first mix dry powder with water to make a thick paste, then thin to a 1 percent solution (10,000 ppm chlorine).
3. Sodium Hypochlorite (5.25 Percent Cl): 1 gallon per 4.25 gallons water.

a. If sodium hypochlorite procedure is used, dilute the liquid with water to obtain a 1 percent solution (10,000 ppm chlorine).

PART 3 EXECUTION

3.03 GENERAL

A. Disinfect all wells installed under this Project, that intended to hold, transport, or otherwise contact raw water.

B. Prior to application of disinfectants, clean all tanks and pumps of loose and suspended material. Flush pumping system until clear of suspended solids and color. Use water suitable for flushing and disinfecting.

C. Conform to AWWA C654 for wells, except as modified in these Specifications.

3.02 WELLS

A. Disinfection Procedures: In accordance with AWWA C654, unless herein modified.

1. After well has been completed and tested, it shall be cleaned of all foreign substances. Swab the inner lining using alkalies if necessary to remove oil, grease, or other extraneous matter.
2. Use chlorine solution of a volume and strength so that a concentration of at least 50 ppm of free chlorine is contained in the well.
3. Prepare and apply chlorine solution in accordance with manufacturer's directions.
4. Chlorine solution shall be placed into the well and the well surged for at least 5 minutes. After 4 hours, the well shall be pumped or bailed until the chlorine concentration is less than 5 ppm.
5. Temporary pump bowls, column, and air-line shall be thoroughly washed, first with clear water and then with a 200 ppm free chlorine solution immediately before being placed into the well.
6. Prior to capping place additional chlorine solution into the well in such volume and strength to result in a concentration of at least 50 ppm of free chlorine in all parts of the well.
7. Allow chlorine solution to stay in the well for 24 hours prior to capping. Then pump solution out of the well and dispose in accordance with applicable regulations and as described in this section.
8. Thoroughly wash the inside of the well casing above the water surface with 200 ppm free chlorine solution before capping.

3.03 DISPOSAL OF DISINFECTING WASTEWATER

A. Do not allow flow into a waterway without neutralizing disinfectant residual.

1. See AWWA C652-92 for acceptable neutralization methods.

B. The Contractor shall obtain all permits required for discharge.

3.04 TESTING

A. Contractor to collect bacteriological samples in accordance with F.A.C. 62-555.315 and is responsible for lab analysis and reports. Once the disinfection of the casing is complete, samples will be collected for analysis.

B. If the samples required above are not bacterially negative, the disinfecting procedures and bacteriological testing shall be repeated until bacterial limits are met at no additional cost to Owner.

END OF SECTION

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Concrete standards.
2. Concrete materials.
3. Curing materials.
4. Repair materials.
5. Concrete mixture materials.
6. Concrete mixture class types.
7. Concrete mixing.

B. Related Requirements:

1. Section 312000 "Earth Moving" for drainage fill under slabs-on-ground.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site .

1. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:

a. Contractor's superintendent.
b. Independent testing agency responsible for inspections and acceptance testing of concrete at Project site.
c. Ready-mix concrete manufacturer.
d. Concrete Subcontractor.
e. Special concrete finish Subcontractor.

2. Review the following:

a. Special inspection and testing and inspecting agency procedures for field quality control.
b. Construction joints, control joints, isolation joints, and joint-filler strips.
c. Semirigid joint fillers.
d. Vapor-retarder installation.
e. Anchor rod and anchorage device installation tolerances.
f. Cold- and hot-weather concreting procedures.
g. Concrete finishes and finishing.
h. Curing procedures.
i. Forms and form-removal limitations.
j. Shoring and reshoring procedures.

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k. Methods for achieving specified floor and slab flatness and levelness.
l. Floor and slab flatness and levelness measurements.
m. Concrete repair procedures.
n. Concrete protection.
o. Initial curing of standard-cured and field curing of field-cured test cylinders (ASTM C31/C31M.)
p. Protection of field cured field test cylinders.
q. Distribution of test reports.

1.3 ACTION SUBMITTALS

A. Product Data:

1. Portland cement.
2. Blended hydraulic cement.
3. Performance-based hydraulic cement.
4. Fly ash.
5. Slag cement.
6. Silica fume.
7. Natural or other pozzolans.
8. Aggregates.
9. Ground calcium carbonate and aggregate mineral fillers.
10. Admixtures:

    a. Include limitations of use. Admixtures that do not comply with reference ASTM International requirements must be submitted with test data for approval.

11. Color pigments.
12. Fiber reinforcement.
13. Vapor retarders.
14. Floor and slab treatments.
15. Liquid floor treatments.
16. Curing materials.

    a. Include documentation from color pigment manufacturer, indicating that proposed methods of curing are recommended by color pigment manufacturer.

17. Joint fillers.
18. Repair materials.

B. Design Mixtures: For each concrete mixture, include the following:

1. Mixture identification.
2. Compressive strength at 28 days or other age as specified.
3. Compressive strength required at stages of construction.
4. Durability exposure classes for Exposure Categories F, S, W, and C.
5. Maximum w/cm ratio.
6. Slump or slump flow limit.

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7. Air content.
8. Nominal maximum aggregate size.
9. Synthetic microfiber content.
10. Synthetic macrofiber content.
11. Intended placement method.
12. Submit adjustments to design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant changes.

C. Shop Drawings:

1. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.

    a. Location of construction joints is subject to approval of the Engineer.

D. Concrete Schedule: For each location of each class of concrete indicated in "Concrete Mixture Class Types" Article, including the following:

1. Concrete class designation. Concrete shall be FDOT Class I..

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For the following:

1. Installer: Include copies of applicable ACI certificates, if applicable.
2. Testing Agency: Include documentation indicating compliance with ASTM E329 or ASTM C1077 and copies of applicable ACI certificates for testing technicians or ACI Concrete Construction Special Inspector - MH, ASCC.

B. Material Certificates: For each of the following:

1. Cementitious materials.
2. Admixtures.
3. Fiber reinforcement.
4. Curing compounds.
5. Repair materials.

C. Material Test Reports: For the following:

1. Portland cement.
2. Fly ash.
3. Aggregates.
4. Admixtures.

D. Field quality-control reports.

E. Minutes of preinstallation conference.

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1.5 QUALITY ASSURANCE

A. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.

1. Manufacturer's production facilities and delivery vehicles certified in accordance with NRMCA's certification requirements or equivalent approval by a State DOT.

B. Laboratory Testing Agency Qualifications: A testing agency qualified in accordance with ASTM C1077 and ASTM E329 for testing that performs duties on behalf of the Architect/Engineer.

1. Personnel performing laboratory tests to be an ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Level 1. Testing agency laboratory supervisor tests to be an ACI-certified Concrete Laboratory Testing Technician, Level 2.

C. Field Quality-Control Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

1. Personnel conducting field tests on plastic concrete properties are to be qualified as an ACI Concrete Field Testing Technician, Grade 1, in accordance with policies from ACI CPP 610.1 or an equivalent certification program.

1.6 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with **ACI 301** as follows:

1. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
2. When air temperature has fallen to, or is expected to fall below **40 deg F** during the protection period, maintain delivered concrete mixture temperature within the temperature range required by **ACI 301**.
3. Do not use frozen materials or materials containing ice or snow.
4. Do not place concrete in contact with surfaces less than **35 deg F**, other than reinforcing steel.

B. Hot-Weather Placement: Comply with **ACI 301** and **ACI 305.1**, and as follows:

1. Maintain concrete temperature at time of discharge to not exceed 95 deg F .
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

1.7 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to furnish replacement sheet vapor retarder/termite barrier material and accessories for sheet vapor retarder/ termite

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barrier and accessories that do not comply with requirements or that fail to resist penetration by termites within specified warranty period.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CONCRETE MATERIALS

A. Source Limitations:

1. Obtain all concrete mixtures from a single ready-mixed concrete manufacturer for entire Project.
2. Obtain each type of admixture from single source from single manufacturer.

B. Cementitious Materials:

1. Portland Cement: ASTM C150/C150M, Type I , gray .
2. Slag Cement: ASTM C989/C989M, Grade 100 or 120.
3. Silica Fume: ASTM C1240.

C. Normal-Weight Aggregates:

1. Coarse Aggregate: ASTM C33/C33M, Class 3S
2. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
3. Fine Aggregate: ASTM C33/C33M.
4. Recycled Aggregate: Provide documentation of characteristics of recycled aggregate and mechanical properties and durability of proposed concrete, which incorporates recycled aggregate to conform to appliable requirements for the class of concrete.

2.2 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately **9 oz./sq. yd.** when dry.

B. Water: Potable water that does not cause staining of the surface.

C. Clear, Waterborne, Membrane-Forming, Curing and Sealing Compound: ASTM C1315, Type 1, Class A.

2.3 CONCRETE MIXTURE MATERIALS

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, in accordance with **ACI 301**.

1. Use a qualified testing agency for preparing and reporting proposed mixture

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designs, based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland or hydraulic cement in concrete assigned to Exposure Class F3 as follows:

1. Fly Ash or Other Pozzolans: 25 percent by mass.
2. Slag Cement: 50 percent by mass.
3. Silica Fume: 10 percent by mass.
4. Total of Fly Ash or Other Pozzolans, Slag Cement, and Silica Fume: 50 percent by mass, with fly ash or pozzolans not exceeding 25 percent by mass and silica fume not exceeding 10 percent by mass.
5. Total of Fly Ash or Other Pozzolans and Silica Fume: 35 percent by mass with fly ash or pozzolans not exceeding 25 percent by mass and silica fume not exceeding 10 percent by mass.

C. Admixtures: Use admixtures in accordance with manufacturer's written instructions.

1. Use corrosion-inhibiting admixture in concrete mixtures where indicated.
2. Use permeability-reducing admixture in concrete mixtures where indicated.

PART 3 - EXECUTION

3.1 TOLERANCES

A. Comply with **ACI 117**.

3.2 INSTALLATION OF CAST-IN-PLACE CONCRETE

A. Before placing concrete, verify that installation of formwork, reinforcement, embedded items, and vapor retarder is complete and that required inspections are completed.

1. Immediately prior to concrete placement, inspect vapor retarder for damage and deficient installation, and repair defective areas.
2. Provide continuous inspection of vapor retarder during concrete placement and make necessary repairs to damaged areas as Work progresses.

B. Notify Engineer and testing and inspection agencies 24 hours prior to commencement of concrete placement.

C. Water addition in transit or at the Project site must be in accordance with ASTM C94/C94M and must not exceed the permitted amount indicated on the concrete delivery ticket.

D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness.

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1. If a section cannot be placed continuously, provide construction joints as indicated.
2. Deposit concrete to avoid segregation.
3. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
4. Consolidate placed concrete with mechanical vibrating equipment in accordance with **ACI 301**.

    a. Do not use vibrators to transport concrete inside forms.
    b. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least **6 inches** into preceding layer.
    c. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity.
    d. At each insertion, limit duration of vibration to time necessary to consolidate concrete, and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Do not place concrete floors and slabs in a checkerboard sequence.
2. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
3. Maintain reinforcement in position on chairs during concrete placement.
4. Screed slab surfaces with a straightedge and strike off to correct elevations.
5. Level concrete, cut high areas, and fill low areas.
6. Slope surfaces uniformly to drains where required.
7. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface.
8. Do not further disturb slab surfaces before starting finishing operations.

3.3 INSTALLATION OF JOINTS

A. Construct joints true to line, with faces perpendicular to surface plane of concrete.

B. Construction Joints: Coordinate with floor slab pattern and concrete placement sequence.

1. Install so strength and appearance of concrete are not impaired, at locations indicated on Drawings or as approved by Engineer.
2. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Control Joints in Slabs-on-Ground: Form weakened-plane control joints, sectioning concrete into areas as indicated. Construct control joints for a depth equal to at least one-fourth of concrete thickness as follows:

1. Grooved Joints: Form control joints after initial floating by grooving and finishing each edge of joint to a radius of **1/8 inch**. Repeat grooving of control joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

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2. Sawed Joints: Form control joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut **1/8-inch** wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random cracks.

3.4 APPLICATION OF FINISHING FLOORS AND SLABS

A. Scratch Finish:

1. While still plastic, texture concrete surface that has been screeded and bull-floated or darbied.

B. Float Finish:

1. When bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operation of specific float apparatus, consolidate concrete surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats.
2. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture and complies with **ACI 117** tolerances for conventional concrete.
3. Apply float finish to surfaces to receive trowel finish .

C. Trowel Finish:

1. After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel.
2. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance.
3. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
4. Do not add water to concrete surface. Use of an approved finishing aid is acceptable.
5. Do not apply troweled finish to concrete, which has a total air content greater than 3 percent.
6. Apply a trowel finish to surfaces exposed to view .

D. Trowel and Fine-Broom Finish: First apply a trowel finish to surfaces indicated on Drawings . While concrete is still plastic, slightly scarify surface with a fine broom perpendicular to main traffic route.

1. Coordinate required final finish with Engineer before application.
2. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.

E. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and locations indicated on Drawings.

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

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3.5 INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

A. Filling in:

1. Fill in holes and openings left in concrete structures after Work of other trades is in place unless otherwise indicated.
2. Mix, place, and cure concrete, as specified, to match color and texture with in-place construction exposed to view.
3. Provide other miscellaneous concrete filling indicated or required to complete the Work.

3.6 APPLICATION OF CONCRETE CURING

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

1. Comply with **ACI 301** for cold weather protection during curing.
2. Comply with **ACI 301** and **ACI 305.1** for hot-weather protection during curing.

B. Curing Unformed Surfaces: Comply with **ACI 308.1** as follows:

1. Begin curing after finishing concrete.

3.7 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a special inspector to perform field tests and inspections and prepare testing and inspection reports.

B. Testing Agency: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.

1. Testing agency to be responsible for providing curing facility for initial curing of strength test specimens on-site and verifying that test specimens are cured in accordance with standard curing requirements in ASTM C31/C31M.
2. Testing agency to immediately report to Engineer, Contractor, and concrete manufacturer any failure of Work to comply with Contract Documents.
3. Testing agency to report results of tests and inspections, in writing, to Owner, Engineer, Contractor, and concrete manufacturer within 48 hours of inspections and tests.

    a. Test reports to include reporting requirements of ASTM C31/C31M, ASTM C39/C39M, and **ACI 301**, including the following as applicable to each test and inspection:

        1) Project name.
        2) Name of testing agency.
        3) Names and certification numbers of field and laboratory technicians performing inspections and testing.
        4) Name of concrete manufacturer.

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5) Date and time of inspection, sampling, and field testing.
6) Date and time of concrete placement.
7) Location in Work of concrete represented by samples.
8) Date and time sample was obtained.
9) Truck and batch ticket numbers.
10) Design compressive strength at 28 days.
11) Concrete mixture designation, proportions, and materials.
12) Field test results of fresh concrete, including slump or slump flow, air content, temperature and density.
13) Information on storage and curing of samples at the Project site, including curing method and maximum and minimum temperatures during initial curing period.
14) Type of fracture and compressive break strengths at seven days and 28 days.

4. Provide a space and source of power or other resources for curing and access to test specimens by the testing agency.

C. Delivery Tickets: comply with ASTM C94/C94M.

D. Inspections:

1. Verification of use of required design mixture.
2. Concrete placement, including conveying and depositing.
3. Curing procedures and maintenance of curing temperature.
4. Verification of concrete strength before removal of shores and forms from beams and slabs.

E. Concrete Tests: Testing of composite samples of fresh concrete obtained in accordance with ASTM C 172/C 172M to be performed in accordance with the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture. **5 cu. yd. 25 cu. yd.50 cu. yd.**.
2. Slump: ASTM C143/C143M:

a. One test at point of delivery for each composite sample, but not less than one test for each day's pour of each concrete mixture.
b. Perform additional tests as needed.

3. Slump Flow: ASTM C1611/C1611M:

a. One test at point of delivery for each composite sample when strength test specimens are cast, but not less than one test for each day's pour of each concrete mixture.
b. Perform additional tests as needed.

4. Concrete Temperature: ASTM C1064/C1064M:

a. One test hourly when air temperature is **40 deg F** and below or **80 deg F** and above, and one test for each composite sample when strength test

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specimens are cast.

5. Concrete Density: ASTM C138/C138M:

   a. One test for each composite sample when strength test specimens are cast.

6. Compression Test Specimens: ASTM C31/C31M:

   a. Cast and standard cure two sets of four **6 inches** by **12-inches** or **4-inch** by **8-inch** cylindrical specimens for each composite sample.
   b. Cast, and field cure two sets of two standard cylindrical specimens for each composite sample.

7. Compressive-Strength Tests: ASTM C39/C39M.

   a. Test one set of two standard cured specimens at seven days and one set of two specimens at 28 days.
   b. Test one set of two field-cured specimens at seven days and one set of two specimens at 28 days.
   c. A compressive-strength test to be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.

8. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor to evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
9. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests of standard cured cylinders equals or exceeds specified compressive strength, and no compressive-strength test value falls below specified compressive strength by more than **500 psi** if specified compressive strength is **5000 psi**, or no compressive strength test value is less than 10 percent of specified compressive strength if specified compressive strength is greater than **5000 psi**.
10. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
11. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

END OF SECTION 033000

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SECTION 26 05 00

BASIC ELECTRICAL REQUIREMENTS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

A. Section includes basic electrical requirements specifically applicable to all works required and covered under the project.

1.03 SCOPE

A. This scope covers the furnishing, installation, testing, adjusting and placing in operation all electrical equipment, devices, facilities, materials, and auxiliary items necessary for the complete and successful operation of all electrical equipment as herein described, shown on the plans, or deemed necessary for the completion of the electrical portion of the project. It is the intent of these specifications to outline the electrical requirements of the contract in order to provide the information necessary for the construction of a fully operational system as shown on the plans and as herein described. Electrical scope of work includes but is not limited to the following:

1. Power / electrical system
2. Grounding system
3. Connection of electrically powered mechanical equipment
4. Instrumentation and controls
5. Temporary construction power
6. All Incidentals necessary for a complete and fully operational electrical system.

B. Additive alternate pricing shall be provided for the following:

1. Demolition of two existing 200 amp main breakers including line / load side conductors, conduits, and wireway as determined during construction.

2. Demolition of two existing motor starters for the chlorinator and the air compressor including line / load side conductors, conduits, and wireway as determined during construction.

3. Demolition of the existing low voltage panelboard and repowering of existing to remain branch circuits from new panel LP-100.

4. Installation of a new 400 amp main circuit breaker panelboard LP-100 with new line / load side conductors and conduits.

5. Relocation / adjustment of adjacent motor starters to accommodate the installation of new panel LP-100.

6. Repowering of existing air compressor from new panel LP-100.

1.04 WORKING CLEARANCES

A. Working clearances around equipment requiring electrical services shall be verified by CONTRACTOR to comply with Code requirements. Should there be apparent violations of clearances, the CONTRACTOR shall notify the ENGINEER before proceeding with connection or placing of equipment.

B. In the case of panelboards, safety switches and other equipment requiring wire and cable terminations, the CONTRACTOR shall ascertain that lug sizes and wiring gutters or space allowed for proper accommodation and termination of the wires and cables are adequate.

1.05 WORKMANSHIP

A. Workmanship under this Division shall be accomplished by persons skilled in the performance of the required task. All work shall be done in keeping with conventions of the trade. Work of this Division shall be closely coordinated with work of other trades to avoid conflict and interference.

1.06 PROTECTION OF ELECTRICAL EQUIPMENT

A. Electrical equipment shall be protected by the weather, especially from water dripping or splashing upon it, at all times during shipment, storage and after installation. Should any apparatus be subjected to possible injury by water, it shall be thoroughly dried out and put through a dielectric test, at the expense of the CONTRACTOR, to ascertain the suitability of this apparatus. The results of the test shall be submitted to the ENGINEER and

if the apparatus is found to be unsuitable, the CONTRACTOR shall replace it without additional cost to the OWNER.

1.07 UTILITIES

A. The electrical CONTRACTOR shall install a fully operational electrical service as described in the plans.

B. Arrange with the utility company for the services and install the services in accordance with their requirements, regulations and recommendations.

1.08 WARRANTY

A. The CONTRACTOR shall guarantee all electrical systems, materials and unless otherwise noted, workmanship to be free from defects for a period of one (1) year from the date of substantial completion. He shall correct all defects arising within this period upon notification by the OWNER or ENGINEER, without additional compensation.

B. It is understood that the rights and benefits given the OWNER by the guarantees found in the technical specifications are in addition to and not in derogation of any rights or benefits found in the special and general provisions of the contract.

1.09 TEMPORARY POWER AND LIGHTS DURING CONSTRUCTION

A. It shall be the responsibility of the CONTRACTOR to provide and maintain adequate temporary power and lighting at all times during construction, so that the various other trades can accomplish their work in a flawless manner and to maintain at all times plant operations. Particular attention will be given to power and lighting for masonry, drywall, painting, tile work and any other finish work.

B. CONTRACTOR shall provide temporary portable power as required to maintain plant operational capabilities at all times. Coordinate temporary power and process equipment operational capabilities during construction with the OWNER. All fuel needed for temporary power shall be borne by the CONTRACTOR.

1.10 MATERIAL STANDARDS

A. Material shall be new and comply with standards of Underwriters' Laboratories, Inc., where standards have been established for the particular

product and the various NEMA, ANSI, ASTM, IEEE, AEIC, IPCEA or other publications referenced.

1.11 TEST EQUIPMENT

A. The CONTRACTOR shall provide all test equipment and supplies deemed necessary by the ENGINEER at no extra cost to the OWNER. These supplies shall include but not be limited to the following: volt meters, amp meters, clamp-on ground rod test meter, light meters, generator load banks and temporary cables, watt meters, harmonic distortion test equipment, thermal image camera, megger tester, high pot test equipment, power quality analyzers, recording power meter, and oscilloscopes.

1.12 REFERENCES

A. ANSI/NFPA 70 – National Electrical Code.

B. ANSIC2 – National Electrical Safety Code.

C. NEMA – National Electrical Manufacturer's Assoc.

D. UL – Underwriters Laboratories

E. NFPA – National Fire Protection Assoc.

F. IEEE – The Institute of Electrical and Electronics Engineers

G. IESNA – The Illuminating Engineering Society of North America

H. NETA – International Electrical Testing Association

I. API – American Petroleum Institute

J. AGA – American Gas Association

K. Recommended Standards for Water Works and Wastewater Facilities as published by Great Lakes – Upper Mississippi River Board of State Public Health and Environmental Managers.

1.13 SUBMITTALS

A. Submit under provisions of Section 01 33 00 the following certification:

1. The CONTRACTOR installing all Electrical work shall review and approve all electrical shop drawings prior to submittal to the

ENGINEER for review. As part of the review, the installer shall certify the following:

a. I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is in compliance with the contract drawing and specifications, can be installed in the allocated space, will be stored in accordance with the manufacturers recommendation, will be installed per NEC, and is submitted for approval.

Certified by:_____ Date: _____

B. Submit shop drawings and product data grouped to include complete submittal of related systems, products, and accessories in a single submittal to the requirements of Section 01 33 00. No electrical work may be performed until shop drawings are approved. Submit Shop Drawings on the Following Systems as Grouped Below:

1. Low Voltage Power/Electrical System

   a. Conduit and Conduit Fittings
   b. Wire
   c. Pull Boxes
   d. Circuit Breakers
   e. Disconnects
   f. Fuses
   g. Conduit Support Systems
   h. Wiring Devices
   i. Surge Protection Equipment
   j. Motor Control Centers
   k. Breaker Coordination Study **(NO BREAKERS OR FUSES WILL BE APPROVED WITHOUT AN APPROVED COORDINATION STUDY)**

2. Lighting System

   a. All Light Fixtures
      i. Computer Printout of Lighting Layout
      ii. IES Photometric Files
   b. Poles and Foundations

3. Miscellaneous Electrical Equipment

a. Miscellaneous Electrical Parts

4. Drawings

a. Coordination drawing of all electrical areas
b. Conduit layout drawings
c. Duct drawings
d. As-Built Drawings

C. Mark dimensions and values in units to match those specified.

1.14 REGULATORY REQUIREMENTS

A. Conform to applicable sections of the Building Code and all local rules, regulations and ordinances.

B. Electrical: Conform to NFPA 70 & National Electric Safety Code.

C. Obtain permits, and request inspections from authority having jurisdiction.

D. References listed in Paragraph 1.11, this section.

1.15 FINAL INSPECTION AND TESTING

A. After the electrical installation is complete, the CONTRACTOR shall deliver to the ENGINEER the following information with his request for final inspection.

1. One set of contract drawings marked to show all significant changes in equipment ratings and locations, alterations in locations of conduit runs, or of any data differing from the contract drawings. This shall include revised or changed panelboard and switchgear schedules.

2. Certificates of final inspection from local authority.

3. A tabulation of all motors listing their respective manufacturer, horsepower, nameplate voltage and current, actual running current after installation and overload heater rating.

B. The electrical work shall be thoroughly tested to demonstrate that the entire system is in proper working order and in accordance with the plans and specifications. Each motor with its control shall be run as nearly as possible under operating conditions for a sufficient length of time to demonstrate correct alignment, wiring capacity, speed and satisfactory operation. All

main switches and circuit breakers shall be operated, but not necessarily at full load. CONTRACTOR may be required during final inspection, at the request of the ENGINEER to furnish test instruments for use during the testing.

C. All wiring shall be given a megger test using a 1000 Volt megger. This test shall be performed after conductors are pulled, but before final connections are made. The ENGINEER shall be given two (2) days' written notice of the anticipated test date so that he may witness the test if so desired. In any event, the CONTRACTOR shall record the circuit designation and the megger reading on each phase. This written record shall be submitted to the ENGINEER. The cost of this test or any retest caused by insufficient megger readings shall be the responsibility of the CONTRACTOR (All tests shall be done in accordance with NETA Standards).

1.16 AS-BUILT DRAWINGS

A. The As-Built drawings shall include detailed drawings of all duct banks, underground conduit, above ground conduit, motor control centers, PLC control panels, control drawings. These drawings shall indicate exact location of all duct banks, underground electrical wiring, and fiber optic cable.

1. The location shall indicate the following:

a. Centerline location
b. Width / Cross section
c. Depth

B. The ENGINEER will provide PDF electronic copies of all drawings of the conformed plans set on a CD for use by the CONTRACTOR.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 26 05 19

LOW VOLTAGE POWER CONDUCTORS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

A. Section Includes:

1. Wires and cables rated 600 V and less.

2. Connectors, splices, and terminations rated 600 V and less.

3. VFD Rated Cable, 1000V Insulation.

1.03 DEFINITIONS

A. VFD: Variable frequency drive.

1.04 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.05 INFORMATIONAL SUBMITTALS

A. Qualification Data: For testing agency.

B. Field quality-control reports.

C. Standard Test Record Sheets.

1.06 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with NFPA 70.

1.07 WARRANTY

A. Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace equipment or materials that fail in materials or workmanship within specified warranty period.

1. Warranty Period: One year from date of Substantial Completion.

PART 2 PRODUCTS

2.01 CONDUCTORS AND CABLES

A. Manufacturers: Subject to compliance with requirements provide products by use of the following:

1. Alpha Wire.

2. Belden Inc.

3. Encore Wire Corporation.

4. General Cable Technologies Corporation.

5. Southwire Incorporated.

6. Lutze Inc.

7. SAB North America

B. Copper Conductors: Comply with NEMA WC 70/ICEA S-95-658. Unless specifically shown on the plans as aluminum.

C. Conductor Insulation: Comply with NEMA WC 70/ICEA S-95-658 for Type THHN-2-THWN-2, Type XHHW-2, RHW-2 Low Smoke, SOW and Type SO.

D. Multiconductor Cable: Comply with NEMA WC 70/ICEA S-95-658 for metal-clad cable, Type MC, Type SO with ground wire.

E. VFD Rated Cable: VFD Rated cable shall be installed on the output of the drive for all VFD applications. Cable shall be high flexible stranded Class K circuit conductors or better with XLPE 0.03 in minimum insulation, tinned copper strands, foil shield and braid. For 1 AWG and above cable must have three symmetrically positioned ground conductors for common mode rejection. For 1 AWG and below 2 mil dual foil shield shall be allowed. The cable shall be rated for a minimum of 1000V but may require higher based on design requirements. The cable shall be ran intact and as close to the VFD and motor terminals as possible for maximum shielding protection. Both ends

of cable shall be installed with shielded gland plates that are rated for a corrosive environment for proper grounding and dielectric grease applied to prevent corrosion of cable. Follow all manufacturers' installation procedures and recommendations. The cable shall be Lutze DRIVEFLEX, SAB VFD Symmetrical XLPE TR or Belden Extra Flexible series.

2.02 CONNECTORS AND SPLICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. AFC Cable Systems, Inc.
2. Gardner Bender.
3. Hubbell Power Systems, Inc.
4. Ideal Industries, Inc.
5. IIsco; a branch of Bardes Corporation.
6. NSi Industries LLC.
7. O-Z/Gedney; a brand of the EGS Electrical Group.
8. 3M; Electrical; Markets Division.
9. Tyco Electronics.
10. Polaris Electrical Connectors.

B. Description: Factory-fabricated connectors and splices of size, capacity rating, material, type, and class for application and service indicated.

C. Motor feeder cables shall be connected with Polaris ITG Series insulated lugs within the motor termination box to facilitate operations and maintenance activities.

PART 3 EXECUTION

3.01 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

B. General Branch Circuits in building for lighting and receptacles: Copper. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.

3.02 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

A. All water and wastewater facilities:

1. Feeders concealed in concrete, below slabs-on-grade, and underground: Type XHHW-2, single conductors in raceway.

2. Branch Circuits concealed in ceilings, walls, and partitions of an air conditioned space: Type THHN-THWN, single conductors in raceway metal-clad cable, Type MC.

3. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and underground: Type XHHW-2, single conductors in raceway.

4. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless-steel, wire mesh, strain relief device at terminations to suit application.

5. Class 1 and 2 Control Circuits: Type XHHW-2, in raceway.

3.03 INSTALLATION OF CONDUCTORS AND CABLES

A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.

B. Complete raceway installation between conductor and cable termination points prior to pulling conductors and cables.

C. Use manufacturers-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufactures recommended maximum pulling tensions and sidewall pressure values.

D. Use pulling means; including fish tape, cable, rope, and blanket-weave wire/cable grips that will not damage cables or raceway.

E. Support cables according to Section 26 05 29 “Hangers and Supports”.

3.04 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B. All torque tightening equipment shall be calibrated before use with calibration records available for inspection.

B. Make splices, terminations and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than un-spliced conductors.

1. Use oxide inhibitor in each splice, termination, and tap for aluminum conductors.

C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.

3.05 IDENTIFICATION

A. Identify and color-code conductors and cables according to Section 26 05 53 "Identification for Electrical Systems."

B. Identify each spare conductor at each end with identity number and location of other end of conductor and identify as spare conductor.

3.06 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 26 05 31, "Sleeves and Sleeve Seals."

3.07 FIRESTOPPING

A. Apply fire stopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to the project specifications.

3.08 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Record all results and submit to engineer for approval. Certify compliance with

manufacturer's test parameters, in the absence of Manufacturer's published data; certify compliance with the table listed in NETA Acceptance Testing Specification.

2. All testing must be carried out to competent persons.

3. NETA Acceptance Testing Specification is the minimum level of testing that will be required on all projects with the most relevant inspection and test procedures extracted as listed below. The following list includes additional tests that will be required unless stated otherwise.

    a. Pre-connection
        i Visual mechanical inspection.
        ii Perform resistance measurements through bolted connections with a low resistance DC Ohmmeter or an insulation resistance test meter.
        iii Continuity of all protective conductors to be recorded using a low resistance DC Ohmmeter or an insulation resistance test meter.
        iv Check polarity of all conductors.
        v Perform insulation resistance test on each conductor with respect to ground and all adjacent conductors using an insulation resistance test meter. Each conductor must be tested for 1 minute.
        vi Verify uniform resistance of all parallel conductors.
    b. Post-connection
        i Test and record the impedance at the supply origin.
        ii Test and record the ground fault loop impedance between all live conductors and ground at the furthest extents of each final circuit. This test is to be completed using a Fault Loop Impedance tester and all results must be in compliance with the Overcurrent Protective Device (OCPD) limits from the Manufacturer.
        iii Test and record the operating trip time of all GFI and GFCI's devices to ensure compliance with NEC and Manufacturer's published data. This test is to be completed using a GFCI test meter.
        iv Other functional testing may be listed here if required.

B. Test and Inspection Reports: Prepare a written report to record the following:

1. Procedures used.

2. List of test personal with resumes.

3. Summit all test results on the enclosed test forms, see form to follow.

4. Test equipment shall be calibrated prior to testing and equipment information shall be included in the final test reports.

5. Results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

C. Cables will be considered defective if they do not pass tests and inspections.

END OF SECTION

SECTION 26 05 26

GROUNDING AND BONDING

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

B. For definitions of grounding and bonding terms see NFPA 70.

1.02 SECTION INCLUDES

A. Section includes grounding and bonding systems and equipment.

1. Underground distribution grounding.

2. Ground bonding common with lightning protection system.

3. Foundation steel electrodes.

B. Scope of work includes the complete installation of a site grounding grid consisting of ground rods, ground test wells, ground grid conductors, interconnects to new lightning protection down comers, connections to existing / proposed equipment and facilities, and interconnects to existing ground systems installed at the facility in accordance with these Specifications and the Contract Documents.

1. Existing grounding systems shall be bonded with the new grounding systems at a minimum of two locations. Should the CONTRACTOR encounter any abnormal grounding conditions, they shall bring it to the attention of the ENGINEER for review and approval before proceeding with the installation.

1.03 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1.04 INFORMATIONAL SUBMITTALS

A. As-Built Data: Plans showing dimensioned as-built locations of grounding features specified in "Field Quality Control" Article, including the following:

1. Test wells.

2. Ground rods.

3. Ground rings.

4. Grounding arrangements and connections for separately derived systems.

B. Field quality-control reports.

1.05 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For grounding to include in emergency, operation, and maintenance manuals.

1. In addition to items specified in Section 01 78 23 "Operation and Maintenance Data," include the following:

2. Instructions for periodic testing and inspection of grounding features at test wells ground rings grounding connections for separately derived systems based on NETA MTS

a. Tests shall determine if ground-resistance or impedance values remain within specified maximums, and instructions shall recommend corrective action if values do not.
b. Include recommended testing intervals.

1.06 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

1.07 WARRANTY

A. Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace equipment or materials that fail in materials or workmanship within specified warranty period.

1. Warranty Period: One year from date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Burndy; Part of Hubbell Electrical Systems.

2. ERICO International Corporation.

3. Harger Lightning and Grounding.

4. ILSCO.

5. O-Z/Gedney; A Brand of the EGS Electrical Group.

6. Robbins Lightning, Inc.

7. Siemens Power Transmission & Distribution, Inc.

8. Or Engineer approved equal

2.02 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

2.03 CONDUCTORS

A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:

1. Solid Conductors: ASTM B 3.

2. Stranded Conductors: ASTM B 8.

C. Grounding Bus: Predrilled rectangular bars of annealed copper, 1/4 by 4 inches in cross section, with 9/32-inch holes spaced 1-1/8 inches apart. Stand-off insulators for mounting shall comply with UL 891 for use in switchboards, 600 V and shall be Lexan or PVC, impulse tested at 5000 V.

D. Grounding and Bonding Conductors

1. All raceways and equipment shall be provided with an equipment grounding conductor as shown on the drawings. When the equipment grounding conductor is not shown on the drawings, provide an equipment grounding conductor per Table 250.122 of the NEC.
2. All Service Entrance Equipment shall be provided with a grounding electrode conductor between the service entrance ground and the grounding electrode system as shown on the drawings. When the grounding electrode conductor is not shown on the drawing, provide a grounding electrode conductor per Table 250.66 of the NEC.
3. Main bonding jumper installed between the service entrance ground and neutral and shall be sized per Table 250.66 of the NEC.
4. System bonding jumper installed between the separately derived system ground and neutral and shall be sized per Table 250.66 of the NEC.

2.04 CONNECTORS

A. Listed and labeled by a Nationally Recognized Testing Laboratory (NRTL) acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy.

C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

D. Bus-Bar Connectors: Mechanical type, cast silicon bronze, solderless compression-type wire terminals, and long-barrel, two-bolt connection to ground bus bar.

2.05 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad steel, sectional type; 3/4 inch by 20 feet min.

B. Chemical-Enhanced Grounding Electrodes (where required and called for on the drawings): Copper tube, straight or L-shaped, charged with nonhazardous electrolytic chemical salts.

1. Termination: Factory-attached No. 4/0 AWG bare conductor at least 48 inches long.

2. Backfill Material: Electrode manufacturers recommended material.

PART 3 EXECUTION

3.01 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.

B. Underground Grounding Conductors: Install bare copper conductor, No. 2/0 AWG minimum.

1. Bury at least 24 inches below grade.

2. Duct-Bank Grounding Conductor: Bury 12 inches above duct bank when indicated as part of duct-bank installation.

C. Isolated Grounding Conductors: Green-colored insulation with continuous yellow stripe. On feeders with isolated ground, identify grounding conductor where visible to normal inspection, with alternating bands of green and yellow tape, with at least three bands of green and two bands of yellow.

D. Grounding Bus: Install in electrical equipment rooms, in rooms housing service equipment, and elsewhere as indicated.

1. Install bus horizontally, on insulated spacers 2 inches minimum from wall, 6 inches above finished floor unless otherwise indicated.

2. Where indicated on both sides of doorways, route bus up to top of door frame, across top of doorway, and down; connect to horizontal bus.

E. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.

2. Underground Connections: Welded connectors except at test wells and as otherwise indicated.

3. Connections to Ground Rods at Test Wells: Bolted connectors.

4. Connections to Structural Steel: Welded connectors.

3.02 GROUNDING UNDERGROUND DISTRIBUTION SYSTEM COMPONENTS

A. Comply with IEEE C2 grounding requirements.

B. Grounding Manholes and Handholes: Install a driven ground rod through manhole or handhole floor, close to wall, and set rod depth so 4 inches will extend above finished floor. If necessary, install ground rod before manhole is placed and provide No. 1/0 AWG bare, copper conductor from ground rod into manhole through a waterproof sleeve in manhole wall. Protect ground rods passing through concrete floor with a double wrapping of pressure-sensitive insulating tape or heat-shrunk insulating sleeve from 2 inches above to 6 inches below concrete. Seal floor opening with waterproof, nonshrink grout.

C. Grounding Connections to Manhole Components: Bond exposed-metal parts such as inserts, cable racks, pulling irons, ladders, and cable shields within each manhole or handhole, to ground rod or grounding conductor. Make connections with No. 4 AWG minimum, stranded, hard-drawn copper bonding conductor. Train conductors level or plumb around corners and fasten to manhole walls. Connect to cable armor and cable shields according to written instructions by manufacturer of splicing and termination kits.

D. Pad-Mounted Transformers and Switches: Install two ground rods and ground ring around the pad. Ground pad-mounted equipment and noncurrent-carrying metal items associated with substations by connecting them to underground cable and grounding electrodes. Install copper conductor not less than No. 2 AWG for ground ring and for taps to equipment grounding terminals. Bury ground ring not less than 6 inches from the foundation. Bond the pad-mounted transformer ground ring to other ground electrodes. The ground electrodes shall not be separate.

3.03 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Air-Duct Equipment Circuits: Install insulated equipment grounding conductor to duct-mounted electrical devices operating at 120 V and more, including air cleaners, heaters, dampers, humidifiers, and other duct electrical equipment. Bond conductor to each unit and to air duct and connected metallic piping.

C. Water Heater, Heat-Tracing, and Antifrost Heating Cables: Install a separate insulated equipment grounding conductor to each electric water

heater and heat-tracing cable. Bond conductor to heater units, piping, connected equipment, and components.

D. Isolated Grounding Receptacle Circuits: Install an insulated equipment grounding conductor connected to the receptacle grounding terminal. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service unless otherwise indicated.

E. Isolated Equipment Enclosure Circuits: For designated equipment supplied by a branch circuit or feeder, isolate equipment enclosure from supply circuit raceway with a nonmetallic raceway fitting listed for the purpose. Install fitting where raceway enters enclosure and install a separate insulated equipment grounding conductor. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service unless otherwise indicated.

F. Poles Supporting Outdoor Lighting Fixtures: Install grounding electrode and a separate insulated equipment grounding conductor in addition to grounding conductor installed with branch-circuit conductors.

3.04 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Ground Bonding Common with Lightning Protection System: Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor and install in conduit.

C. Ground Rods: Drive rods until tops are 2 inches below finished floor or final grade unless otherwise indicated.

1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.

2. When service grounding is not detailed on the drawings, install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.

D. Test Wells: Ground rod driven through drilled hole in bottom of handhole. Handholes are specified in Section 26 05 33 "Raceways and Boxes," and shall be at least 12 inches deep, with cover.

1. Test Wells: Install at least one test well for each service unless otherwise indicated. Install at the ground rod electrically closest to service entrance. Set top of test well flush with finished grade or floor.

E. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.

1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.

2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.

3. Use exothermic-welded connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.

4. Install green insulated grounding electrode bonding jumper conductors, sized per NEC, across all non-metallic liquid tight flexible conduit utilizing insulated grounding bushings.

F. Grounding and Bonding for Piping:

1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes; use a bolted clamp connector or bolt a lug-type connector to a pipe flange by using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.

2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.

3. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.

G. Grounding for Steel Building Structure: Install a driven ground rod at base of each corner column and at intermediate exterior columns at distances not more than 60 feet (18 m) apart.

H. Ground Ring: Install a grounding conductor, electrically connected to each building structure ground rod and to each steel column, extending around the perimeter of area.

1. Install copper conductor not less than No. 2/0 AWG or as shown on the drawing for ground ring and for taps to building steel.

2. Bury ground ring not less than 24 inches from building's foundation.

I. Concrete-Encased Grounding Electrode (Ufer Ground): Fabricate according to NFPA 70; using electrically conductive coated steel reinforcing bars or rods, at least 20 feet long. If reinforcing is in multiple pieces, connect together by the usual steel tie wires or exothermic welding to create the required length.

J. Grounding installations within existing facilities shall conform to the contract drawings, with a minimum of two (2) ground connections between existing ground system and proposed ground system.

3.05 FIELD QUALITY CONTROL

A. Perform tests and inspections.

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.

2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.

3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, at ground test wells and at individual

ground rods. Make tests at ground rods before any conductors are connected.

a. Measure ground resistance no fewer than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
b. Perform tests by fall-of-potential method according to IEEE 81 and NETA Standards.

4. Prepare dimensioned Drawings locating each test well, ground rod and ground-rod assembly, and other grounding electrodes. Identify each by letter in alphabetical order, and key to the record of tests and observations. Include the number of rods driven and their depth at each location and include observations of weather and other phenomena that may affect test results. Describe measures taken to improve test results.

B. Grounding system will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

D. Report measured ground resistances that exceed the following values:

1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 5 ohms.

2. Power and Lighting Equipment or System with Capacity of 500 to 1000 kVA: 5 ohms.

3. Power and Lighting Equipment or System with Capacity More Than 1000 kVA: 3 ohms.

4. Power Distribution Units or Panelboards Serving Electronic Equipment: 3 ohm(s).

5. Substations and Pad-Mounted Equipment: 5 ohms.

6. Manhole Grounds: 10 ohms.

E. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Engineer promptly and include recommendations to reduce ground resistance.

END OF SECTION

SECTION 26 05 29

HANGERS AND SUPPORTS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SECTION INCUDES

A. This Section includes the following:

1. Hangers and supports for electrical equipment and systems.

2. Construction requirements for concrete bases.

1.03 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design supports for multiple raceways, including comprehensive engineering analysis by a qualified Florida registered professional engineer, using performance requirements and design criteria indicated.

B. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.

C. Design equipment supports capable of supporting combined operation weight of supported equipment and connected systems and components.

D. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for the Project, with a minimum structural safety factor of five times the applied force.

1.04 ACTION SUBMITTALS

A. Product Data: For the following:

1. Steel slotted support systems.

2. Nonmetallic slotted support systems.

B. Shop Drawings: Signed and sealed by a qualified professional engineer in the state of Florida. Show fabrication and installation details and include calculations for the following:

1. Trapeze hangers: Include product data for components.

2. Steel slotted channel systems: Include product data for components.

3. Nonmetallic slotted channel systems: Include product data for components.

4. Equipment supports.

1.05 INFORMATIONAL SUBMITTALS

A. Welding Certificates

1.06 QUALITY ASSURANCE

A. WELDING: Qualify procedures and personnel according to AWA D1.1/D1.1M, “Structural Welding Code- Steel.”

B. Comply with NFPA 70.

1.07 WARRANTY

A. Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace equipment or materials that fail in materials or workmanship within specified warranty period.

1. Warranty Period: One year from date of Substantial Completion.

1.08 COORDINATION

A. Coordinate size and location of concrete bases. Cast anchor-bolts inserts into bases. Concrete, reinforcement, and framework requirements are specified together with concrete Specifications.

B. Coordinate installation of roof mounted electrical with structural and architectural specification and drawings.

PART 2 PRODUCTS

2.01 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. Allied Tube & Conduit
    b. Cooper B-Line, Inc.
    c. ERICO International Corporation.
    d. GS Metals Corp.
    e. Thomas & Betts Corporation.
    f. Unistrut; Atkore International.
    g. Wesanco, Inc.
    h. Or approved equal

2. Metallic Coatings: Hot dip galvanized after fabrication and applied according to MFMA-4.

3. Painted Coatings: Manufacturers standard painted coating applied according to MFMA-4.

4. Channel Dimensions: Selected for applicable load criteria.

B. Nonmetallic Slotted Support Systems: Structural-grade, factory-formed, glass-fiber-resin channels and angles with 9/16-inch diameter holes at a maximum of 8 inches o.c., in at least 1 surface.

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. Allied Tube & Conduit.
    b. Cooper B-Line, INC.
    c. Fabco Plastics Wholesale Limited.
    d. Seasafe, Inc.
    e. Or approved equal.

2. Fittings and Accessories: Products of channel and angle manufacturer and designed for use with those items.

3. Fitting and Accessory Materials: Same as channels and angles, except metal items maybe stainless steel.

4. Rated Strength: Selected to suit applicable load criteria.

C. Raceway and Cable Supports: As described in NECA 1 and NECA 101.

D. Conduit and Cable Support Devices shall be as indicated below:

1. PVC Conduit – PVC, Fiberglass, Aluminum, or Stainless Steel (unless atmosphere is corrosive to Stainless Steel)

2. Aluminum Conduit – Aluminum or Stainless Steel

3. PVC Coated ARC – Stainless Steel (unless atmosphere is corrosive to Stainless Steel); if atmosphere is corrosive to stainless steel then use fiberglass

E. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.

F. Structured Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars, black and galvanized.

G. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:

1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened Portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.

a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
i Hilti, Inc.
ii ITW Ramset/Red Head; Illinois Tool Works, Inc.
iii MKT Fastening, LLC.
iv Simpson Strong-Tie Co., Inc.
v Or Approved Equal

2. Mechanical-Expansion Anchors: Insert-wedge type, stainless steel, for use in hardened Portland cement concrete with tensions, shear, and pullout capacities appropriate for supported loads and building materials in which used.

    a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
        i Cooper B-Line, Inc.
        ii Empire Tool and Manufacturing Co., Inc.
        iii Hilti, Inc.
        iv ITW Ramset/Red Head; Illinois Tool Works, Inc.
        v MKT Fastening, LLC.
        vi Or Approved Equal

3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MMS Type 18; complying with MFMA-4 or MSS SP-58.

4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.

5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.

6. Toggle Bolts: All-steel springhead type.

7. Hanger Rods: Threaded steel.

2.02 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

A. Description: Welded or bolted, structural-steel, shop or field fabricated to fit dimensions of supported equipment.

PART 3 EXECUTION

3.01 APPLICATION

A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and system except if requirements in this Section are more stringent.

B. Maximum, Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for RMC as scheduled in NECA 1, where its Table 1 lists maximum spacing less than stated in NFPA 70. Minimum rod size shall be ¼ inch in diameter.

C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted or other support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.

1. Secure raceways and cables to these supports with single-bolt conduit clamps.

3.02 SUPPORT INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.

B. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200lb.

C. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:

1. To Wood: Fasten with lag screws or through bolts.

2. To New Concrete: Bolt to concrete inserts.

3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.

4. To Existing Concrete: Expansion anchor fasteners.

5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches thick.

6. To Steel: Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69.

7. To Light Steel: Sheet metal screws.

8. Items Mounted Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panel boards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate by means that meet seismic-restraint strength and anchorage requirements.

D. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.03 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Cut, fit, and replace miscellaneous metal supports accurately in location, alignment and elevation to support and anchor electrical materials and equipment.

B. Field Welding: Comply with AWS D1.1/D1.1M.

3.04 CONCRETE BASES

A. Construct concrete bases of dimensions indicated but not less than 4 inches larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.

B. Use 3000-psi 28-day compressive-strength concrete. Concrete materials, reinforcement, and placement requirements as specified in the contract documents.

C. Anchor equipment to concrete base.

1. Place and secure anchorage devices. Use supported equipment manufacturer’s setting drawings, templates, diagrams, instruction, and directions furnished with items to be embedded.

2. Install anchor bolts to elevations required for proper attachment to supported equipment.

3. Install anchor bolts according to anchor-bolt manufacturer’s written instructions.

3.05 PAINTING

A. Touch-up: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA1 requirements for touching up field-painted surfaces.

1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.

B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION

SECTION 26 05 31

SLEEVES AND SLEEVE SEALS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

A. Section Includes:

1. Sleeves for raceway and cable penetration of non-fire-rated construction walls and floors.

2. Sleeve-seal systems.

3. Sleeve-seal fittings.

4. Grout.

5. Silicone sealants.

1.03 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.04 INFORMATIONAL SUBMITTALS

A. Qualification Data: For testing agency.

B. Field quality-control reports.

C. Standard Test Record Sheets.

1.05 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with NFPA 70.

1.06 WARRANTY

A. Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace equipment or materials that fail in materials or workmanship within specified warranty period.

1. Warranty Period: One year from date of Substantial Completion.

PART 2 PRODUCTS

2.01 SLEEVES

A. Wall Sleeves:

1. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, zinc coated, plain ends.

B. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies: Galvanized-steel sheet; 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint, with tabs for screw-fastening the sleeve to the board.

C. PVC-Pipe Sleeves: ASTM D 1785, Schedule 40. (For use with grounding electrode conductors only.)

D. Molded-PVC Sleeves: With nailing flange for attaching to wooden forms.

E. Molded-PE or -PP Sleeves: Removable, tapered-cup shaped, and smooth outer surface with nailing flange for attaching to wooden forms.

F. Sleeves for Rectangular Openings:

1. Material: Galvanized sheet steel.

2. Minimum Metal Thickness:

a. For sleeve cross-section rectangle perimeter less than 50 inches and with no side larger than 16 inches, thickness shall be 0.052 inch.

b. For sleeve cross-section rectangle perimeter 50 inches or more and one or more sides larger than 16 inches, thickness shall be 0.138 inch.

2.02 SLEEVE-SEAL SYSTEMS

A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Advance Products & Systems, Inc.
b. CALPICO, Inc.
c. Metraflex Company (The).
d. Pipeline Seal and Insulator, Inc.
e. Proco Products, Inc.
f. or Approved Equal.

2. Sealing Elements: EPDM rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.

3. Pressure Plates: Stainless steel.

4. Connecting Bolts and Nuts: Stainless steel of length required to secure pressure plates to sealing elements.

2.03 SLEEVE-SEAL FITTINGS

A. Description: Manufactured plastic, sleeve-type, waterstop assembly made for embedding in concrete slab or wall. Unit shall have plastic or rubber waterstop collar with center opening to match piping OD.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Presealed Systems.
b. or Approved Equal.

2.04 GROUT

A. Description: Nonshrink; recommended for interior and exterior sealing openings in non-fire-rated walls or floors.

B. Standard: ASTM C 1107/C 1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.

C. Design Mix: 5000-psi, 28-day compressive strength.

D. Packaging: Premixed and factory packaged.

2.05 SILICONE SEALANTS

A. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below.

1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces that are not fire rated.

B. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.

PART 3 EXECUTION

3.01 SLEEVE INSTALLATION FOR NON-FIRE-RATED ELECTRICAL PENETRATIONS

A. Comply with NECA 1.

B. Comply with NEMA VE 2 for cable tray and cable penetrations.

C. Sleeves for Conduits Penetrating Above-Grade Non-Fire-Rated Concrete and Masonry-Unit Floors and Walls:

1. Interior Penetrations of Non-Fire-Rated Walls and Floors:

a. Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint.

b. Seal space outside of sleeves with mortar or grout. Pack sealing material solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect material while curing.

2. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.

a. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and raceway or cable unless sleeve seal is to be installed or unless seismic criteria require different clearance.

b. Install sleeves for wall penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection

of walls. Cut sleeves to length for mounting flush with both surfaces of walls. Deburr after cutting.

c. Install sleeves for floor penetrations. Extend sleeves installed in floors 2 inches above finished floor level. Install sleeves during erection of floors.

D. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies:

a. Use circular metal sleeves unless penetration arrangement requires rectangular sleeved opening.

b. Seal space outside of sleeves with approved joint compound for gypsum board assemblies.

E. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.

F. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.

G. Underground, Exterior-Wall and Floor Penetrations: Install steel pipe sleeves. Size sleeves to allow for 1-inch annular clear space between raceway or cable and sleeve for installing sleeve-seal system.

3.02 SLEEVE-SEAL-SYSTEM INSTALLATION

A. Install sleeve-seal systems in sleeves in exterior concrete walls and slabs-on-grade at raceway entries into building.

B. Install type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.03 SLEEVE-SEAL-FITTING INSTALLATION

A. Install sleeve-seal fittings in new walls and slabs as they are constructed.

B. Assemble fitting components of length to be flush with both surfaces of concrete slabs and walls. Position waterstop flange to be centered in concrete slab or wall.

C. Secure nailing flanges to concrete forms.

D. Using grout, seal the space around outside of sleeve-seal fittings.

END OF SECTION

SECTION 26 05 33

RACEWAYS AND BOXES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

A. Section Includes:

1. Metal conduits, tubing, and fittings.
2. Nonmetal conduits, tubing, and fittings.
3. Metal wireways and auxiliary gutters.
4. Nonmetal wireways and auxiliary gutters.
5. Surface raceways.
6. Boxes, enclosures, and cabinets.
7. Handholes and boxes for exterior underground cabling.

1.03 ACTION SUBMITTALS

A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

B. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, and attachment details.

1.04 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of items involved:

1. Structural members in paths of conduit groups with common supports.
2. HVAC and plumbing items and architectural features in paths of conduit groups with common supports.

B. Seismic Qualification Certificates: For enclosures, cabinets, and conduit racks and their mounting provisions, include those for internal components, from manufacturer.

1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.

2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.

3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

4. Detailed description of conduit support devices and interconnections on which the certification is based and their installation requirements.

C. Source quality-control reports.

1.05 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with NFPA 70.

1.06 WARRANTY

A. Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace equipment or materials that fail in materials or workmanship within specified warranty period.

1. Warranty Period: One year from date of Substantial Completion.

PART 2 PRODUCTS

2.01 METAL CONDUITS, TUBING, AND FITTINGS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. AFC Cable Systems, Inc.

2. Allied Tube & Conduit.

3. Anamet Electrical, Inc.

4. Electri-Flex Company.

5. O-Z/Gedney.

6. Picoma Industries.

7. Republic Conduit.

8. Robroy Industries.

9. Southwire Company.

10. Thomas & Betts Corporation.

11. Western Tube and Conduit Corporation.

12. Wheatland Tube Company.

13. or Approved Equal.

B. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. ARC: Comply with ANSI C80.5 and UL 6A.

1. PVC-Coated Rigid Aluminum Conduit

2. Comply with NEMA RN 1.

3. Coating Thickness: 0.040 inch, minimum.

D. FMC: Comply with UL 1; zinc-coated steel or aluminum.

E. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.

F. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.

1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886 and NFPA 70.

2. Expansion Fittings: PVC or steel to match conduit type, complying with UL 651, rated for environmental conditions where installed, and including flexible external bonding jumper.

3. Coating for Fittings for PVC-Coated Aluminum Conduit: Minimum thickness of 0.040 inch with overlapping sleeves protecting threaded joints.

G. Joint Compound for ARC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

2.02 NONMETALLIC CONDUITS, TUBING, AND FITTINGS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. AFC Cable Systems, Inc.
2. Anamet Electrical, Inc.
3. Arnco Corporation.
4. CANTEX Inc.
5. CertainTeed Corporation.
6. Condux International, Inc.
7. Electri-Flex Company.
8. Kraloy.
9. Electrical Products.
10. Niedax-Kleinhuis USA, Inc.
11. RACO; Hubbell.
12. Thomas & Betts Corporation.
13. or Approved Equal.

B. Listing and Labeling: Nonmetallic conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. See Evaluations for descriptions of nonmetallic conduit types.

D. RNC: Type EPC-40-PVC, or EPC-80-PVC, complying with NEMA TC 2 and UL 651 unless otherwise indicated.

E. LFNC: Comply with UL 1660.

F. Rigid HDPE: Comply with UL 651A.

G. Continuous HDPE: Comply with UL 651B.

H. Coilable HDPE: Preassembled with conductors or cables and complying with ASTM D 3485.

I. RTRC: Comply with UL 1684A and NEMA TC 14.

J. Fittings for RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.

K. Fittings for LFNC: Comply with UL 514B.

2.03 METAL WIREWAYS AND AUXILIARY GUTTERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Cooper B-Line, Inc.

2. Hoffman.

3. Mono-Systems, Inc.

4. Square D.

5. or Approved Equal.

B. Description: Sheet metal, complying with UL 870 and NEMA 250, Type 1 for interior or Type 4X stainless steel for exterior unless otherwise indicated, and sized according to NFPA 70.

1. Metal wireways installed outdoors shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Fittings and Accessories: Include covers, couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.

D. Wireway Covers: Hinged type for NEMA 1 and hinged, flanged-and-gasketed type for NEMA 4X unless otherwise indicated.

E. Finish: Manufacturer's standard enamel finish.

2.04 NONMETALLIC WIREWAYS AND AUXILIARY GUTTERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Allied Moulded Products, Inc.

2. Hoffman.

3. Carlon Electrical Products.

4. Niedax-Kleinhuis USA, Inc.

5. or Approved Equal.

B. Listing and Labeling: Nonmetallic wireways and auxiliary gutters shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Description: Fiberglass polyester or PVC, extruded and fabricated to required size and shape, and having hinged cover with captive screws.

D. Fittings and Accessories: Couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings shall match and mate with wireways as required for complete system.

2.05 BOXES, ENCLOSURES, AND CABINETS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Adalet.

2. Cooper Technologies Company; Cooper Crouse-Hinds.

3. EGS/Appleton Electric.

4. Erickson Electrical Equipment Company.

5. FSR Inc.

6. Hoffman.

7. Hubbell Incorporated.
8. Kraloy.
9. Milbank Manufacturing Co.
10. Mono-Systems, Inc.
11. O-Z/Gedney.
12. RACO; Hubbell.
13. Robroy Industries.
14. Spring City Electrical Manufacturing Company.
15. Stahlin Non-Metallic Enclosures.
16. Thomas & Betts Corporation.
17. Wiremold / Legrand.
18. or Approved Equal.

B. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.

C. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.

D. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy or aluminum to match raceway type, Type FD, with gasketed cover.

E. Nonmetallic Outlet and Device Boxes: Comply with NEMA OS 2 and UL 514C.

F. Luminaire Outlet Boxes: Nonadjustable, designed for attachment of luminaire weighing 50 lb (23 kg). Outlet boxes designed for attachment of luminaires weighing more than 50 lb (23 kg) shall be listed and marked for the maximum allowable weight.

G. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

H. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, cast aluminum with gasketed cover, unless otherwise noted.

I. Device Box Dimensions: 4 inches square by 2-1/8 inches deep, unless otherwise noted.

J. Gangable boxes are prohibited, unless specifically noted.

K. Hinged-Cover Enclosures: Comply with UL 50 and NEMA 250, Type 4X Stainless Steel for outdoor locations, Type 12 for indoor locations, with continuous-hinge cover with flush latch unless otherwise indicated.

1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.

2. Nonmetallic Enclosures: Fiberglass.

3. Interior Panels: Steel; all sides finished with manufacturer's standard enamel.

L. Cabinets:

1. NEMA 250, Type 4X Stainless Steel for outdoor locations, Type 12 for indoor locations, with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.

2. Hinged door in front cover with flush latch and concealed hinge.

3. Key latch to match panelboards.

4. Metal barriers to separate wiring of different systems and voltage.

5. Accessory feet where required for freestanding equipment.

6. Nonmetallic cabinets shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.06 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING

A. General Requirements for Handholes and Boxes:

1. Boxes and handholes for use in underground systems shall be designed and identified as defined in NFPA 70, for intended location and application.

2. Boxes installed in wet areas shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

3. Boxes installed in incidental traffic areas shall be heavy duty H-10 or H-20 rated, listed, and installed per manufacturer's recommendations to prevent damage to the box.

B. Polymer-Concrete Handholes and Boxes with Polymer-Concrete Cover: Molded of sand and aggregate, bound together with polymer resin, and reinforced with steel, fiberglass, or a combination of the two.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Armorcast Products Company.
b. Carson Industries LLC.
c. NewBasis.
d. Oldcastle Precast, Inc.
e. Quazite: Hubbell Power System, Inc.
f. Synertech Moulded Products.
g. Or approved equal.

2. Standard: Comply with SCTE 77.

3. Configuration: Designed for flush burial with open bottom unless otherwise indicated.

4. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure and handhole location.

5. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.

6. Cover Legend: Molded lettering, as required to identify system indicated on the drawings.

7. Conduit Entrance Provisions: Conduit-terminating fittings shall mate with entering ducts for secure, fixed installation in enclosure wall.

8. Handholes 12 Inches Wide by 24 Inches Long and Larger: Have inserts for cable racks and pulling-in irons installed before concrete is poured.

C. Fiberglass Handholes and Boxes: Molded of fiberglass-reinforced polyester resin, with frame and covers of fiberglass unless otherwise noted.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. Armorcast Products Company.
    b. Carson Industries LLC.
    c. NewBasis.
    d. Nordic Fiberglass, Inc.
    e. Oldcastle Precast, Inc; Christy Concrete Products.
    f. Quazite: Hubbell Power System, Inc; Hubbell Power Systems.
    g. Synertech Moulded Products.
    h. Or Approved Equal.

2. Standard: Comply with SCTE 77.

3. Color of Frame and Cover: Gray.

4. Configuration: Designed for flush burial with open bottom unless otherwise indicated.

5. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure and handhole location.

6. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.

7. Cover Legend: Molded lettering, as required to identify system indicated on the drawings

8. Conduit Entrance Provisions: Conduit-terminating fittings shall mate with entering ducts for secure, fixed installation in enclosure wall.

9. Handholes 12 Inches Wide by 24 Inches Long and Larger: Have inserts for cable racks and pulling-in irons installed before concrete is poured.

2.07 SOURCE QUALITY CONTROL FOR UNDERGROUND ENCLOSURES

A. Handhole and Pull-Box Prototype Test: Test prototypes of handholes and boxes for compliance with SCTE 77. Strength tests shall be for specified tier ratings of products supplied.

1. Tests of materials shall be performed by an independent testing agency.

2. Strength tests of complete boxes and covers shall be by either an independent testing agency or manufacturer. A qualified registered professional engineer in the State of Florida shall certify tests by manufacturer.

3. Testing machine pressure gages shall have current calibration certification complying with ISO 9000 and ISO 10012 and traceable to NIST standards.

PART 3 EXECUTION

3.01 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below unless otherwise indicated:

1. Exposed Conduit: PVC Coated aluminum rigid conduit (ARC)

2. Concealed Conduit, Aboveground: RNC, Type EPC-40-PVC, unless otherwise indicated on drawings.

3. Underground Conduit: RNC, Type EPC-40-PVC when concrete encased, Type EPC-80-PVC when direct buried.

4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC unless otherwise indicated otherwise on drawings.

5. Underground transition to aboveground conduit: PVC Coated aluminum rigid conduit (ARC).

6. Boxes and Enclosures, Aboveground: NEMA 250, Type 4X Stainless steel unless otherwise indicated on drawings.

B. Indoors: Apply raceway products as specified below unless otherwise indicated:

1. Exposed, Not Subject to Physical Damage: ARC.

2. Exposed, Not Subject to Severe Physical Damage: ARC.

3. Exposed and Subject to Severe Physical Damage: ARC.

4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.

5. Damp or Wet Locations: ARC unless otherwise noted.

6. Boxes and Enclosures: NEMA 250, Type 12, except use NEMA 250, Type 4X stainless steel in institutional and commercial kitchens and damp or wet locations, unless otherwise noted.

7. Corrosive environments: Type EPC-80-PVC

C. Minimum Raceway Size: 3/4-inch trade size.

D. Raceway Fittings: Compatible with raceways and suitable for use and location.

1. PVC Externally Coated, Rigid Aluminum Conduits: Use only fittings listed for use with this type of conduit. Patch and seal all joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Use sealant recommended by fitting manufacturer and apply in thickness and number of coats recommended by manufacturer.

2. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.

E. Install nonferrous conduit or tubing for circuits operating above 60 Hz. Where aluminum raceways are installed for such circuits and pass through concrete, install in nonmetallic sleeve.

F. Do not install aluminum conduits, boxes, or fittings in contact with concrete or earth.

G. Install surface raceways only where indicated on Drawings.

H. Do not install nonmetallic conduit where ambient temperature exceeds 120 deg F.

3.02 INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.

B. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

C. Complete raceway installation before starting conductor installation.

D. Arrange stub-ups so curved portions of bends are not visible above finished slab.

E. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches of changes in direction.

F. Conceal conduit within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.

G. Support conduit within 12 inches of enclosures to which attached.

H. Raceways Embedded in Slabs:

1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support. Secure raceways to reinforcement at maximum 10-foot intervals.

2. Raceways transitioning through concrete foundations and under-ground elbows shall be PVC coated aluminum rigid conduit.

3. Arrange raceways to cross building expansion joints at right angles with expansion fittings.

4. Arrange raceways to keep a minimum of 3 inches of concrete cover in all directions.

5. Do not embed threadless fittings in concrete unless specifically approved by Engineer for each specific location.

6. Some authorities having jurisdiction may not permit nonmetallic tubing in fire-rated slabs in subparagraph below.

7. Change from ENT to ARC before rising above floor.

I. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.

J. Coat field-cut threads on PVC-coated raceway with a corrosion-preventing conductive compound prior to assembly.

K. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch trade size and insulated throat metal bushings on 1-1/2-inch trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.

L. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.

M. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.

N. Cut conduit perpendicular to the length. For conduits 2-inch trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.

O. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.

P. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings according to NFPA 70.

Q. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways at the following points:

1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.

2. Where an underground raceway enters a building or structure.

3. Where otherwise required by NFPA 70.

R. Comply with manufacturer's written instructions for solvent welding RNC and fittings.

S. Expansion-Joint Fittings:

1. Provide expansion joint fitting any time conduit systems cross building expansion joints or structural expansion joints.

2. Provide expansion fittings as recommended by the manufacturer of the conduit.

3. Provide expansion fittings per NFPA 70.

4. Formula in first subparagraph below provides about 15 percent safety factor (extra expansion-contraction capability).

5. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at time of installation. Install conduit supports to allow for expansion movement.

T. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches of flexible conduit for recessed and semi-recessed luminaires, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.

1. Use LFMC in damp or wet locations subject to severe physical damage.

2. Use LFMC or LFNC in damp or wet locations not subject to severe physical damage.

3. Provide a separate ground for all flex conduits with insulated grounding bushings.

U. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.

V. Provide a flat surface for a raintight connection between boxes and cover plate or supported equipment and box.

W. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.

X. Locate boxes so that cover or plate will not span different building finishes.

Y. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose.

Z. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

AA. Set metal floor boxes level and flush with finished floor surface.

BB. Set nonmetallic floor boxes level. Trim after installation to fit flush with finished floor surface.

3.03 INSTALLATION OF UNDERGROUND CONDUIT

A. Direct-Buried Conduit:

1. Excavate trench bottom to provide firm and uniform support for conduit.

2. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction per 95 percent modified proctor density.

3. Install manufactured rigid ARC conduit elbows for stub-ups at poles and equipment and at building entrances through floor.

   a. Couple ARC conduits to ducts with adapters designed for this purpose and encase coupling with 3 inches of concrete for a minimum of 12 inches on each side of the coupling.
   b. For stub-ups at equipment mounted on outdoor concrete bases and where conduits penetrate building foundations, extend ARC conduit horizontally a minimum of 60 inches from edge of foundation or equipment base. Install insulated grounding bushings on terminations at equipment.

4. Underground Warning Tape: Comply with requirements in Section 26 05 53 "Identification for Electrical Systems."

B. Underground handholes shall be installed per manufacturers' recommendations. Handholes in incidental traffic rated areas shall be heavy duty H-10 or H-20 rated. No handholes shall be installed in roadways or deliberate traffic areas.

C. Concrete-Encased Conduit:

1. Excavate trench bottom to provide firm and uniform support for conduit.

2. After installing conduit, fill with concrete per details, after concrete has cured complete backfilling with normal compaction per 95 percent modified proctor density.

3. Underground Warning Tape: Comply with requirements in Section 26 05 53 "Identification for Electrical Systems."

3.04 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 26 05 31 "Sleeves and Sleeve Seals."

3.05 PROTECTION

A. Protect coatings, finishes, and cabinets from damage and deterioration.

1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.

2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION

SECTION 26 05 53

IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

A. This Section includes the following:

1. Identification for raceway and metal-clad cable.
2. Identification for conductors and communication and control cable.
3. Underground-line warning tape.
4. Warning labels and signs.
5. Instruction signs.
6. Equipment identification labels.
7. Miscellaneous identification products.

1.03 ACTION SUBMITTALS

A. Product Data: For each electrical identification product indicated.

B. Equipment Nameplate Schedule: A schedule of equipment identification shall be submitted for review and approval. The schedule shall illustrate equipment tag numbers and equipment identification on a per nameplate text line basis. For example:

Qty	Text Line 1	Text Line 2	Text Line 3	Type	Material
1	High Service Pump 101	VFD-101	P-101	Nameplate	Phenolic
1	Lighting Panel 100	LP-100	208Y/120V	Nameplate	Phenolic
1	Effluent Flow Meter	FIT-101		ID Tag	304L SS

C. Samples: For each type of label and sign to illustrate size, colors, lettering style, mounting provisions, and graphic features of identification products.

1.04 QUALITY ASSURANCE

A. Comply with ANSI A13.1, ANSI C2, and ANSI Z635.4.

B. Comply with NFPA 70.

C. Comply with 29 CFR 1910.145

1.05 WARRANTY

A. Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace equipment or materials that fail in materials or workmanship within specified warranty period.

1. Warranty Period: One year from date of Substantial Completion.

1.06 COORDINATION

A. Coordinate identification names, abbreviations, colors, and other features with requirements in the Contract Documents, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual, and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.

B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.

C. Coordinate installation of identifying devices with location of access panels and doors.

D. Install identifying devices before installing acoustical ceilings and similar concealment.

E. Install all signs and labels horizontal (level) and consistent for similar equipment and panels.

PART 2 PRODUCTS

2.01 RACEWAY AND METAL-CLAD CABLE IDENTIFICATION MATERIALS

A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.

B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.

C. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeves, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

D. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; 2 inches wide; compounded for outdoor use.

2.02 CONDUCTOR AND CABLE IDENTIFICATION MATERIALS

A. Aluminum Wraparound Marker Labels: For use in below grade manholes and handholes. Cut from 0.014-inch- thick aluminum sheet, with stamped, embossed, or scribed legend, and fitted with tabs and matching slots for permanently securing around wire or cable jacket or around groups of conductors.

B. Self-Adhesive Vinyl Labels: For use within equipment enclosures and at termination locations. Preprinted, flexible label laminated with a clear, weather and chemical resistant coating and matching wraparound adhesive tape for securing ends of legend label.

2.03 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Cable Ties: Fungus-inert, self-extinguishing, 1-piece, self-locking, Type 6/6 nylon cable ties.

1. Minimum width: 3/16 inch.

2. Tensile Strength: 50lb, minimum.

3. Temperature Range: Minus 40 to plus 185 deg F.

4. Color: Black, except where used for color-coding.

B. Paint: Paint materials and application requirements are specified in Division 9 “Finishes” section.

PART 3 EXECUTION

3.01 APPLICATION

A. Accessible Raceways and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits More Than 30 A: Identify with snap-around label.

1. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeves, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

B. Accessible Raceways and Cables of Auxiliary Systems: Identify the following systems with color-coded, snap-around, color-coding bands:

1. Snap-Around Labels: Slit, pre-tensioned, flexible, preprinted, color-coded acrylic sleeves, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

2. Fire Alarm System: Red.

3. Fire-Suppression Supervisory and Control System: Red and yellow.

4. Combined Fire Alarm and Security System: Red and blue.

5. Security System: Blue and yellow.

6. Mechanical and Electrical Supervisory System: Green and blue.

7. Telecommunication System: Green and yellow.

8. Control Wiring: Green and red.

C. Power-Circuit Conductor Identification: For primary and secondary conductors No. 1/0 AWG and larger in vaults, pull and junction boxes, manholes, and hand holes use metal tags. Identify source and circuit number of each set of conductors. For single conductor cables, identify phase in addition to the above.

1. Metal Tags: Brass or aluminum, 2 by 2 by 0.05 inch, with stamped legend, punched for use with self-locking nylon tie fastener.

D. Conductor and cable identification: Self-Adhesive Vinyl Labels: For use within equipment enclosures and at termination locations. Preprinted, flexible label laminated with a clear, weather and chemical resistant coating and matching wraparound adhesive tape for securing ends of legend label.

1. Conductors and cables shall be identified with “FEEDER MARK” followed by a CONTRACTOR assigned sequence number for multiconductor cables and “FROM” location. For example:

a. First Line of Text for FEEDER MARK “C001-1”

b. Second Line of Text for FROM “LP-100-24”

2. Spare conductors and cables shall be identified with “FEEDER MARK” followed by a CONTRACTOR assigned sequence number for multiconductor cables and “FROM” location. For example:

a. First Line of Text for FEEDER MARK “C001-1-SPARE”
b. Second Line of Text for FROM “LP-100-24”

E. Branch-Circuit Conductor Identification: Where there are conductors for more than two branch circuits in same junction or pull box, use color-coding conductor tape. Identify each ungrounded conductor according to source and circuit number found in the conduit and cable schedule or the panel schedules.

1. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide.

F. Conductor Color Code Identification: Where the premises wiring system has branch circuits supplied from more than one nominal voltage system, each ungrounded conductor of a given branch circuit shall be identified by color coded tape or cable insulation at all termination, connection or splice points.

G. Conductors to Be Extended in the Future: Attach write-on tags to conductors and list source and circuit number.

1. Write-On Tags: Polyester tag, 0.015-inch-thick, with corrosion-resistant grommet and polyester or nylon tie for attachment to conductor or cable.

2. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.

H. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, signal, sound, intercommunications, voice, and data connections.

1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.

2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.

3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and Operation and Maintenance Manual.

4. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

I. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable. Install underground-line warning tape for both direct-buried cables and cables in raceway. During backfilling of trenches install continuous underground-line warning tape directly above line at 12 inches above duct. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches overall.

1. Description:

a. Permanent, bright-colored, continuous-printed, polyethylene tape.
b. Not less than 6 inches wide by 4 mils thick.
c. Compounded for permanent direct-burial service.
d. Embedded continuous metallic strip or core.
e. Printed legend shall indicate type of underground line.

J. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Comply with 29 CFR 1910.145 and apply self-adhesive warning labels.

1. Identify system voltage with black letters on an orange background. Apply to exterior of door, cover, or other access.

2. Equipment with Multiple Power or Control Sources: Apply to door or cover of equipment including, but not limited to, the following:

a. Power transfer switches.
b. Controls with external control power connections. Equipment Requiring Workspace Clearance According to NFPA 70: Unless otherwise indicated, apply to door or cover of

equipment but not on flush panelboards and similar equipment in finished spaces.

3. Comply with NFPA 70 and 29 CFR 1910.145.

4. Self-Adhesive Warning Labels: Factory printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment, unless otherwise indicated.

5. Baked-Enamel Warning Signs: Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for application. 1/4-inch grommets in corners for mounting. Nominal size, 7 by 10 inches.

6. Metal-Backed, Butyrate Warning Signs: Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch galvanized-steel backing; and with colors, legend, and size required for application. 1/4-inch grommets in corners for mounting. Nominal size, 10 by 14 inches.

    a. Warning label and sign shall include, but are not limited to, the following legends:
    b. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
    c. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES."

K. Instruction Signs:

1. Operating Instructions: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with ENGINEER/OWNER APPROVED instructions where needed for system or equipment operation. Instructions are needed for all equipment unless otherwise noted.

    a. Signs shall be engraved, laminated acrylic or melamine plastic, minimum 1/16-inch-thick for signs up to 20 sq. in. and 1/8 inch thick for larger sizes.

b. The engraved legend shall be ½ -inch white letters on brown face and punched or drilled for mechanical fasteners.
c. The signs shall be installed with stainless hardware.

2. Emergency Operating Instructions: Install emergency operating instruction signs at equipment used for power transfer, safety shutdown, or any other locations requiring operation in an emergency.

a. Signs shall be engraved, laminated acrylic or melamine plastic, minimum 1/16-inch-thick for signs up to 20 sq. in. and 1/8 inch thick for larger sizes.
b. The engraved legend shall be ½ -inch white letters on red face and punched or drilled for mechanical fasteners.
c. The signs shall be installed with stainless hardware.

L. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.

1. Labeling Instructions:

a. Indoor and Outdoor Equipment: Use engraved, laminated acrylic or melamine labels, punched or drilled for screw mounting. Identification labels shall have white letters on a black background. Unless otherwise indicated, provide a single line of text with 1/2-inch high letters on 1 1/2-inch high label; where 2 lines of text are required, use labels 2 inches high. Mount labels with stainless hardware.
b. Electrical gear labels: Labels shall include the P&ID tag number, equipment tag number, and description of the load.
c. Load equipment labels: Labels shall include the P&ID tag number, equipment tag number, description of the load, and the power source location.
d. Elevated Components: Increase the size of the labels and letters to those appropriate for viewing from the floor.

2. Equipment to Be Labeled:

a. Identification labeling of some items listed below may be required by individual Sections or by NFPA 70.
b. Panelboards, electrical cabinets, and enclosures.
c. Transformers.
d. Disconnect switches.
e. Motor starters.
f. Push-button stations.
g. Voice and data cable terminal equipment.
h. Monitoring and control equipment.
i. Uninterruptible power supply equipment.
j. Terminals, racks, and patch panels for voice and data communication and for signal and control functions.
k. Control systems
l. Field mounted control devices
m. Field mounted instruments

3.02 INSTALLATION PRACTICES

A. Verify identity of each item before installing identification products.

B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.

C. Attach non-adhesive signs and plastic labels with screws and auxiliary hardware appropriate to the location and substrate.

D. Color-Coding for Phase and Voltage Level Identification, 600 V and Less: Use the colors listed below for ungrounded service, feeder, and branch-circuit conductors.

1. Color shall be factory applied or, for sizes LARGER than No. 10 AWG if authorities having jurisdiction permit, field applied.

2. Colors for 208Y/120-V Circuits:

a. Phase A: Black.
b. Phase B: Red.
c. Phase C: Blue.

3. Colors for 480Y/277-V Circuits:

a. Phase A: Brown.

b. Phase B: Orange.
c. Phase C: Yellow.

4. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.

5. Where the premises wiring system has branch circuits supplied from more than one nominal voltage system, the color codes used to identify each phase, neutral (if applicable) and ground conductor throughout the system shall be permanently posted at each branch-circuit panelboard or similar branch-circuit distribution equipment. Provide factory printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment, unless otherwise indicated.

E. Aluminum Wraparound Marker Labels and Metal Tags: Secure tight to surface of conductor or cable at a location with high visibility and accessibility.

F. Painted Identification: Prepare surface and apply paint according to Division 9.

END OF SECTION

SECTION 26 27 26

WIRING DEVICES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

A. Work described in this Section includes furnishing all labor, materials, equipment, tools and incidentals required for a complete and operable installation of wall switches, receptacles, device plates and box covers. All equipment shall be installed, adjusted, tested and placed in operation in accordance with these Specifications, the manufacturer's recommendations and as shown on the Drawings.

B. Contract drawings show only functional features and some of the required external connections. They do not show all components required for a complete installation nor exact dimensions particular to any manufacturer's equipment. Contractor shall supply all parts, devices and equipment necessary to meet the requirements of the Contract Documents and shall make all dimensional adjustments particular to the equipment being furnished. All costs associated with such changes and adjustments shall be considered as being included in the price bid for the work shown and specified.

1.03 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Submittals shall be made in accordance with the requirements of the General Conditions of the Contract Documents.

1.04 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. All products covered by these specifications shall be in conformance with NEMA standards and shall be UL approved.

C. Manufacturers include:

1. Arrow Hart
2. Bryant
3. GE
4. Hubbell
5. Leviton Specmaster
6. Pass and Seymour
7. Sierra
8. Crouse Hinds
9. Appleton

1.05 WARRANTY

A. Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace equipment or materials that fail in materials or workmanship within specified warranty period.

1. Warranty Period: One year from date of Substantial Completion.

PART 2 PRODUCTS

2.01 SWITCHES

A. General Purpose: NEMA WD-1; FS W-S-896; 20 amp, 120/277 volt, specification grade; horsepower rated; quiet type; back and side wiring provisions; toggle handle.

B. Corrosive and Outdoor Areas: Switches shall be 20 Amp pressure switch type with weatherproof/corrosion resistant neoprene plate. Switches shall be mounted in "FD" type copper-free aluminum or PVC mounting boxes.

C. Mechanical timer switches shall be spring wound, 0 – 60 minute adjustable with stainless steel cover plate, Intermatic FF06MC or equivalent.

D. Device Colors: Brown or black for specific use devices, otherwise as selected by the Engineer.

2.02 RECEPTACLES

A. General Purpose: Receptacles shall be NEMA WD-1; FS W-C-596, 20 AMP, 125 Volt, specification grade; impact resistant nylon face; back and side wiring provision; grounding screws; duplex.

B. Corrosive Areas: Receptacles shall be duplex; 20 Amp, NEMA 5-20R. Receptacle and plug shall be corrosion resistance; marine duty; polycarbonate with weatherproof lift cover.

C. Ground Fault Interrupter (GFI) Receptacles: Provide duplex specification grade GFI receptacles tripping at 5 milliamps; rated 20 amps, 120 volts, NEMA Configuration 5-20R. Use units meeting NEMA WD 1, fitting standard sized outlet boxes having provision for testing, and ivory in color. Use standard model where ground fault protection is needed. Do not use feed-thru model. Acceptable manufacturers: Equal to: Square D, General Electric.

D. Specific Use Receptacles: NEMA WD-1 or WD-5; type as indicated. For branch circuits serving a single device, match device rating to branch circuit rating.

E. Plug Caps: Male plug caps for receptacles shall be of the cord grip armored type with heavy phenolic housing of the same manufacturer as the receptacle.

F. Three Phase Receptacles and Plugs: Receptacles shall be suitable for 480V, 3 phase, 4 wire service with ampere rating as specified. The grounding pole shall be permanently connected to the housing. The grounding pole shall make contact before the line poles are engaged when the plug is connected to the receptacle housing. The plug sleeve shall also make contact with the receptacle housing before the line and load poles make contact. Receptacles shall be provided complete with cast back box, angle adapter, gaskets, a gasketed screw-type, weathertight cap with chain fastener and one plug.

2.03 WALL PLATES

A. Damp Area Cover Plates: Unbreakable nylon, Lexan, or noryl, smooth finish, color to match devices.

B. Weatherproof Cover Plate: Gasketed cast metal with hinged, gasketed, spring loaded device covers to be closed in “in-use” application. Flat covers will not be accepted.

C. Lockable Cover Plate: Equipment local disconnect (power or control circuits) with padlockable, NEMA rated for the location, equal to Appleton FSK-IVS, Carlon E98TSL or Arrow Hart 7949.

PART 3 EXECUTION

3.01 Installation

A. Secure devices to outlet boxes without depending on device plates to pull them tight. Install a bonding jumper between all devices and metallic outlet boxes.

B. Install switches with off position down; and receptacles with grounding pole on bottom.

C. For cord and plug connected equipment, coordinate receptacle configuration with equipment supplied.

D. Install device plates on switch, receptacle, and blank outlets. Use jumbo size plates for devices installed in masonry walls.

E. Mounting heights from the finished floor to the centerline of the various boxes and equipment shall be at elevation allowing all operators and pilot devices to be between 36 and 66 inches from the finished floor or as indicated on the Contract Drawings.

F. Mounting heights from the finished floor to the centerline of the various boxes and equipment shall be as follows except as otherwise indicated on the Contract Drawings.

1.	Thermostats	60 inches
2.	Light Switches	54 inches
3.	Receptacles (Inside-dry)	24 inches
4.	Receptacles (Inside-damp)	48 inches
5.	Receptacles (Outside)	48 inches

END OF SECTION

SECTION 27 10 00

COMMUNICATIONS CABLING

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

A. Specifications for Instrumentation Cables

B. Specifications for Profibus Cables

C. Specifications for Ethernet Cables

D. Specification for Optical Fiber Cables.

1.03 REFERENCE STANDARDS

A. National Fire Protection Association (NFPA):

1. 70, National Electrical Code (NEC)

2. 70E Standard for Electrical Safety in the Workplace 2012

B. The Institute of Electrical and Electronics Engineers (IEEE)

C. International Society of Automation (ISA)

D. Telecommunications Industry Association (TIA)

E. Underwriters Laboratory (UL)

F. Insulated Cable Engineers Association (ICEA)

1.04 QUALITY CONTROL

A. The CONTRACTOR shall inspect all materials in the field for compliance with Contract requirements prior to compliance testing with the Engineer.

B. The CONTRACTOR shall demonstrate, to the satisfaction of the Owner's Engineer, that materials meet the intent of the Contract Documents.

C. The Integrator shall remove or replace any materials or programming that do not comply with the Contract Documents.

D. All test equipment shall be calibrated in accordance with the manufacturer's written documentation. The CONTRACTOR shall provide acceptable proof of calibration with all test reports.

1.05 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.06 INFORMATIONAL SUBMITTALS

A. Qualification Data: For testing agency.

B. Field quality-control reports.

C. Standard Test Record Sheets.

1.07 ABBREVIATIONS

A. BICSI: Building Industry Consulting Service International.

B. EMI: Electromagnetic interference.

C. IDC: Insulation displacement connector.

D. LAN: Local area network.

E. RCDD: Registered Communications Distribution Designer.

PART 2 PRODUCTS

2.01 General

A. Furnish network media products as indicated in the contract drawings and specifications.

B. All products shall meet all requirements stated in this specification.

2.02 INSTRUMENTATION CABLE

A. Manufacturers:

1. Belden.

2. Or ENGINEER approved equal.

B. Flame Rating: LSZH

C. Analog Control Cable

1. Analog signal cable (4-20 mA) shall be 18-gauge twisted shielded single pair/triad or multiple pair/triad tinned copper stranded conductors as indicated on the drawings.

2. The pair shall have a minimum lay of 2 inches per twist.

3. The shield shall be aluminum-polyester with a 20 AWG stranded tinned copper drain wire and an overall Teflon jacket rated at 300 volts.

4. The pair/triad shall be individually shielded plus overall shielded for multiple pair/triad.

5. Color code shall be red and black.

6. Cable shall be suitable for plenum, conduit and submerged service.

D. Discrete Signal Wire

1. Soft drawn copper conforming to ASTM Standard B-3.

2. All wire shall be single conductor type unless otherwise indicated.

3. All wire shall be stranded in accordance with ASTM Standard B-8.

4. Instrumentation discrete signal wire shall be a minimum of #16 AWG.

5. Wiring within the panels shall be a minimum of #18 AWG.

6. Discrete digital input conductors shall be blue.

7. Discrete digital output conductors shall be red or pink.

PART 3 EXECUTION

3.01 GENERAL

A. Provide all labor, materials, field-test instruments and equipment required to complete the installation, testing and commissioning of the required network media in accordance with the contract documents.

B. In order to conform to the overall project schedule, the CONTRACTOR shall survey the work area and coordinate cable testing with the other applicable trades.

END OF SECTION

SECTION 311000 - SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling rock.
5. Removing above- and below-grade site improvements.
6. Temporary erosion and sedimentation control.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site .

1.3 INFORMATIONAL SUBMITTALS

A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.

1. Use sufficiently detailed photographs or video recordings.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plant designated to remain.

B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.4 QUALITY ASSURANCE

A. Topsoil Stripping and Stockpiling Program: Prepare a written program to systematically demonstrate the ability of personnel to properly follow procedures and handle materials and equipment during the Work. Include dimensioned diagrams for placement and protection of stockpiles.

1.5 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

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1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed trafficways if required by Owner or authorities having jurisdiction.

B. Improvements on Adjoining Property: Authority for performing site clearing indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.

1. Do not proceed with work on adjoining property until directed by the Engineer.

C. Utility Locator Service: Notify utility locator service Call Before You Dig for area where Project is located before site clearing.

D. Do not commence site clearing operations until temporary erosion- and sedimentation-control measures are in place.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 312000 "Earth Moving."

1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

PART 3 - EXECUTION (Not Used)

END OF SECTION 311000

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SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Controlled low-strength material.

B. Related Requirements:

   1. Section 013200 "Construction Progress Documentation" Section 013233 "Photographic Documentation" for recording preexcavation and earth-moving progress.
   2. Section 311000 "Site Clearing" for site stripping, grubbing, stripping topsoil, and removal of above- and below-grade improvements and utilities.
   3. Section 329200 "Turf and Grasses" for finish grading in turf and grass areas, including preparing and placing planting soil for turf areas.
   4. Section 329300 "Plants" for finish grading in planting areas and tree and shrub pit excavation and planting.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct preexcavation conference at Project site .

   1. Review methods and procedures related to earthmoving, including, but not limited to, the following:

      a. Personnel and equipment needed to make progress and avoid delays.
      b. Coordination of Work with utility locator service.
      c. Coordination of Work and equipment movement with the locations of tree- and plant-protection zones.
      d. Extent of trenching by hand or with air spade.
      e. Field quality control.

1.3 ACTION SUBMITTALS

A. Product Data: For each type product.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified testing agency.

B. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:

   1. Classification according to ASTM D2487.
   2. Laboratory compaction curve according to ASTM D698 ASTM D1557 .

C. Preexcavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be

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misconstrued as damage caused by earth-moving operations. Submit before earth moving begins.

1.5 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E329 and ASTM D3740 for testing indicated.

1.6 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Improvements on Adjoining Property: Authority for performing earth moving indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.

1. Do not proceed with work on adjoining property until directed by the Engineer.

C. Utility Locator Service: Notify utility locator service "Call Before You Dig" for area where Project is located before beginning earth-moving operations.

D. Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures specified in Section 311000 "Site Clearing" are in place.

E. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Foot traffic.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: Soil Classification Groups A-1, A-2-4, A-2-5, and A-3 according to AASHTO M 145 , or a combination of these groups; free of rock or gravel larger than in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

1. Liquid Limit: TBD .

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2. Plasticity Index: TBD .

C. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a **1-1/2-inch** sieve and not more than 12 percent passing a **No. 200** sieve.

D. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 95 percent passing a **1-1/2-inch** sieve and not more than 8 percent passing a **No. 200** sieve.

E. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a **1-1/2-inch** sieve and not more than 12 percent passing a **No. 200** sieve.

F. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; except with 100 percent passing a **1-inch** sieve and not more than 8 percent passing a **No. 200** sieve.

G. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D448; coarse-aggregate grading Size 57; with 100 percent passing a **1-1/2-inch** sieve and zero to 5 percent passing a **No. 8** sieve.

H. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D448; coarse-aggregate grading Size 67; with 100 percent passing a **1-inch** sieve and zero to 5 percent passing a **No. 4** sieve.

I. Sand: ASTM C33/C33M; fine aggregate.

J. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 ACCESSORIES

A. Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, **6 inches** wide and **4 mils** thick, continuously inscribed with a description of the utility; colored as follows:

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:

1. Determine prior to placement of fill that site has been prepared in compliance

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with requirements.

2. Determine that fill material classification and maximum lift thickness comply with requirements.
3. Determine, during placement and compaction, that in-place density of compacted fill complies with requirements.

B. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.

C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

D. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.

E. Compaction Testing: Testing agency will test compaction of soils in place according to ASTM D1556, ASTM D2167, ASTM D2937, and ASTM D6938, as applicable. Tests will be performed at the following locations and frequencies:

1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 100 sq. ft. or less of paved area or building slab but in no case fewer than three tests.
2. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 50 ft. or less of trench length but no fewer than two tests.

F. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

END OF SECTION 312000

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SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Seeding.
2. Hydroseeding.
3. Sodding.
4. Plugging.
5. Sprigging.
6. Turf renovation.

B. Related Requirements:

1. Section 329300 "Plants" for trees, shrubs, ground covers, and other plants as well as border edgings and mow strips.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site .

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For landscape Installer.

B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

1. Certification of each seed mixture for turfgrass sod . Include identification of source and name and telephone number of supplier.

C. Product Certificates: For fertilizers, from manufacturer.

D. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of turf during a calendar year. Submit before expiration of required

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maintenance periods.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf establishment.

1. Professional Membership: Installer shall be a member in good standing of either the National Association of Landscape Professionals or AmericanHort.
2. Experience: Five years' experience in turf installation in addition to requirements in Section 014000 "Quality Requirements."
3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
4. Personnel Certifications: Installer's field supervisor shall have certification in the following categories from the National Association of Landscape Professionals:

    a. Landscape Industry Certified Technician - Exterior.
    b. Landscape Industry Certified Lawn Care Manager.
    c. Landscape Industry Certified Lawn Care Technician.

5. Pesticide Applicator: State licensed, commercial.

1.6 FIELD CONDITIONS

A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of planting completion .

1. Planting: April through October, or as approved by the Engineer .

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 SEED

A. Seed Species:

1. Quality, State Certified: State-certified seed of grass species as listed below for solar exposure.
2. Quality, Non-State Certified: Seed of grass species as listed below for solar exposure, with not less than 85 percent germination, not less than 95 percent pure seed, and not more than 0.5 percent weed seed:
3. Full Sun, Warm-Season Grass: Bermudagrass (Cynodon dactylon).

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4. Full Sun, Cool-Season Grass: Kentucky bluegrass (Poa pratensis), a minimum of three cultivars.
5. Sun and Partial Shade, Cool-Season Grass: Proportioned by weight as follows:

    a. 50 percent Kentucky bluegrass (Poa pratensis).
    b. 30 percent chewings red fescue (Festuca rubra variety).
    c. 10 percent perennial ryegrass (Lolium perenne).
    d. 10 percent redtop (Agrostis alba).

6. Shade, Cool-Season Grass: Proportioned by weight as follows:

    a. 50 percent chewings red fescue (Festuca rubra variety).
    b. 35 percent rough bluegrass (Poa trivialis).
    c. 15 percent redtop (Agrostis alba).

2.2 MULCHES

A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

B. Sphagnum Peat Mulch: Partially decomposed sphagnum peat moss, finely divided or of granular texture, and with a pH range of 3.4 to 4.8.

C. Muck Peat Mulch: Partially decomposed moss peat, native peat, or reed-sedge peat, finely divided or of granular texture, with a pH range of 6 to 7.5, and having a water-absorbing capacity of 1100 to 2000 percent, and containing no sand.

D. Compost Mulch: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through **1-inch** sieve; soluble salt content of 2 to 5 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:

    1. Organic Matter Content: 50 to 60 percent of dry weight.
    2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.

E. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.

F. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.

G. Asphalt Emulsion: ASTM D977, Grade SS-1; nontoxic and free of plant-growth or germination inhibitors.

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PART 3 - EXECUTION

3.1 SODDING

A. Lay sod within 24 hours of harvesting [**unless a suitable preservation method is accepted by Architect prior to delivery time**] . Do not lay sod if dormant or if ground is frozen or muddy.

B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to soil or sod during installation. Tamp and roll lightly to ensure contact with soil, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.

1. Lay sod across slopes exceeding 1:3.
2. Anchor sod on slopes exceeding 1:6 with wood pegs [**or steel staples**] spaced as recommended by sod manufacturer but not less than two anchors per sod strip to prevent slippage.

C. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of **1-1/2 inches** below sod.

3.2 TURF MAINTENANCE

A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of **4 inches**.

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
2. Watering to be for a period of four consecutive weeks.
3. Water turf with fine spray at a minimum rate of **1 inch** per week unless rainfall precipitation is adequate.

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3.3 MAINTENANCE SERVICE

A. Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in "Turf Maintenance" Article. Begin maintenance immediately after each area is planted and continue until acceptable turf is established, but for not less than the following periods:

1. Seeded Turf: 60 days from date of planting completion .

    a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.

2. Sodded Turf: 30 days from date of planting completion .

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SECTION 329300 - PLANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Plant materials.
2. Fertilizers.
3. Weed-control barriers.
4. Mulches.
5. Herbicides and pesticides.
6. Tree-stabilization materials.
7. Landscape edgings.

B. Related Requirements:
1. Section 329200 "Turf and Grasses" for turf (lawn) and meadow planting, hydroseeding, and erosion-control materials.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site .

1.3 ACTION SUBMITTALS

A. Product Data:

1. Plant materials.
2. Fertilizers.
3. Weed-control barriers.
4. Mulches.
5. Herbicides and pesticides.
6. Landscape edgings.

B. Product Data Submittals: For each product.

1. Plant Materials: Include quantities, sizes, quality, and verified sources for plant materials.

C. Samples for Verification: Actual sample of finished products for each of the following:

1. Organic Mulch: 1-quart volume of each organic mulch required; typical of the lot of material to be furnished, in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Provide an accurate representation of color, texture, and organic makeup.
2. Mineral Mulch: 5 lb of each mineral mulch required; typical of the lot of material to be furnished, in sealed plastic bags labeled with source of mulch. Provide

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accurate indication of color, texture, and makeup.

3. Weed-Control Barrier: All landscaping areas around perimeter fence. **12 by 12 inches**.
4. Proprietary Root-Ball-Stabilization Device: One unit.
5. Edging Materials and Accessories: Manufacturer's standard size, to verify color selected.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Statements: For landscape Installer. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.

B. Product Certificates: For each type of manufactured product, from manufacturer, and complying with manufacturer's certified analysis of standard products.

C. Pesticides and Herbicides: Product label and manufacturer's written application instructions specific to Project.

D. Sample Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of plants during a calendar year. Submit before expiration of required maintenance periods.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful establishment of plants.

1. Installer's Field Supervision: Maintain an experienced full-time supervisor on Project site when work is in progress.

B. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.

1. Selection of plants purchased under allowances is made by Engineer, who tags plants at their place of growth before they are prepared for transplanting.

C. Measurements: Measure in accordance with ANSI Z60.1. Do not prune to obtain required sizes.

1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container-grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements **6 inches** above the root flare for trees up to **4-inch** caliper size, and **12 inches** above the root flare for larger sizes.

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2. Other Plants: Measure with stems, petioles, and foliage in their normal position.

D. Plant Material Observation: Engineer may observe plant material either at place of growth or at site before planting for compliance with requirements for genus, species, variety, cultivar, size, and quality. Architect may also observe trees and shrubs further for size and condition of balls and root systems, pests, disease symptoms, injuries, and latent defects and may reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.

1. Notify Engineer of sources of planting materials seven days in advance of delivery to site.

1.7 FIELD CONDITIONS

A. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.

B. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.

1. Spring Planting: April through June .
2. Fall Planting: Mid September through October .

C. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions in accordance with manufacturer's written instructions and warranty requirements.

1.8 WARRANTY

A. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner.
b. Structural failures, including plantings falling or blowing over.
c. Faulty performance of edgings .
d. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Periods: From date of planting completion .

a. Trees, Shrubs, Vines, and Ornamental Grasses: 12 months.
b. Ground Covers, Biennials, Perennials, and Other Plants: 12 months.
c. Annuals: Three months.

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3. Include the following remedial actions as a minimum:

    a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
    b. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
    c. A limit of one replacement of each plant is required except for losses or replacements due to failure to comply with requirements.
    d. Provide extended warranty for period equal to original warranty period, for replaced plant material.

PART 2 - PRODUCTS

2.1 PLANT MATERIALS

A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant List, Plant Schedule, or Plant Legend indicated on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

1. Trees with damaged, crooked, or multiple leaders; with tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); with crossing trunks; with cut-off limbs more than **3/4 inch** in diameter; or with stem girdling roots are unacceptable.
2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.

B. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to Architect, with a proportionate increase in size of roots or balls.

C. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which begins at root flare in accordance with ANSI Z60.1.

D. Labeling: Label each plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for plant.

E. If formal arrangements or consecutive order of plants is indicated on Drawings, select stock for uniform height and spread, and number the labels to ensure symmetry in planting.

F. Annuals and Biennials: Provide healthy, disease-free plants of species and variety shown or listed, with well-established root systems reaching to sides of the container to

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maintain a firm ball, but not with excessive root growth encircling the container. Provide only plants that are acclimated to outdoor conditions before delivery and that are in bud but are not yet in bloom .

2.2 TREE-STABILIZATION MATERIALS

A. Trunk-Stabilization Materials:

1. Upright and Guy Stakes: Rough-sawn, sound, new hardwood , free of knots, holes, cross grain, and other defects, **2-by-2-inch nominal** by length indicated, pointed at one end.
2. Wood Deadmen: Timbers measuring **8 inches** in diameter and **48 inches** long, treated with specified wood pressure-preservative treatment.
3. Flexible Ties: Wide rubber or elastic bands or straps of length required to reach stakes or turnbuckles .
4. Guys and Tie Wires: ASTM A641/A641M, Class 1, galvanized-steel wire, two-strand, twisted, **0.106 inch** in diameter.
5. Tree-Tie Webbing: UV-resistant polypropylene or nylon webbing with brass grommets.
6. Guy Cables: Five-strand, **3/16-inch-** diameter, galvanized-steel cable, with zinc-coated turnbuckles , a minimum of **3 inches** long, with two **3/8-inch** galvanized eyebolts.
7. Flags: Standard surveyor's plastic flagging tape, white, **6 inches** long.
8. Proprietary Staking-and-Guying Devices: Proprietary stake or anchor and adjustable tie systems to secure each new planting by plant stem; sized as indicated and in accordance with manufacturer's written instructions.

    a. Basis-of-Design Product: Subject to compliance with requirements, provide <**Insert manufacturer's name; product name or designation**> or comparable product by one of the following:

        1) [**Arborbrace**]
        2) [**Better Bilt Products, Inc.**]
        3) [**DeepRoot Green Infrastructure, LLC**]
        4) [**J. R. Partners**]
        5) [**MacLean Power Systems**]
        6) [**Villa Root Barrier; Villa Landscape Products**]
        7) <**Insert manufacturer's name**>

B. Root-Ball Stabilization Materials:

1. Upright Stakes and Horizontal Hold-Down: Rough-sawn, sound, new hardwood or softwood, free of knots, holes, cross grain, and other defects, **2-by-2-inch nominal** by length indicated; stakes pointed at one end.
2. Wood Screws: ASME B18.6.1.
3. Proprietary Root-Ball Stabilization Devices: Proprietary at- or below-grade stabilization systems to secure each new planting by root ball and that do not encircle the trunk; sized in accordance with manufacturer's written instructions unless otherwise indicated.

    a. Basis-of-Design Product: Subject to compliance with requirements, provide

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<**Insert manufacturer's name; product name or designation**> or comparable product by one of the following:

1) [**Border Concepts, Inc**]
2) [**MacLean Power Systems**]
3) [**Tree Staple, Inc.**]
4) <**Insert manufacturer's name**>

2.3 LANDSCAPE EDGINGS

A. Steel Edging: Standard commercial-steel edging, fabricated in sections of standard lengths, with loops stamped from or welded to face of sections to receive stakes.

1. Basis-of-Design Product: Subject to compliance with requirements, provide <**Insert manufacturer's name; product name or designation**> or comparable product by one of the following:

a. [**Border Concepts, Inc**]
b. [**COLMET**]
c. [**J. D. Russell Company (The)**]
d. [**Sure-loc Edging Corporation.**]
e. <**Insert manufacturer's name**>

2. Edging Size: 1/8 inch thick by 6 inches deep .
3. Stakes: Tapered steel, a minimum of 12 inches long.
4. Accessories: Standard tapered ends, corners, and splicers.
5. Finish: Zinc coated .

a. Paint Color: Black .

PART 3 - EXECUTION

3.1 INSTALLATION OF TREE-STABILIZATION MATERIALS

A. Trunk Stabilization by Upright Staking and Tying: Install trunk stabilization as follows unless otherwise indicated:

1. Upright Staking and Tying:

a. Stake trees of **2- through 5-inch** caliper. Stake trees of less than **2-inch** caliper only as required to prevent wind tip out. Use a minimum of two stakes of length required to penetrate at least **18 inches** below bottom of backfilled excavation and to extend to the dimension indicated on Drawings above grade. Set vertical stakes and space to avoid penetrating root balls or root masses.
b. Stake trees with two stakes for trees up to **12 ft.** high and **2-1/2 inches** or less in caliper; three stakes for trees less than **14 ft.** high and up to **4 inches** in caliper. Space stakes equally around trees.

2. Support trees with bands of flexible ties at contact points with tree trunk. Allow

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enough slack to avoid rigid restraint of tree.

3. Support trees with two strands of tie wire, connected to the brass grommets of tree-tie webbing at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.

B. Trunk Stabilization by Staking and Guying: Install trunk stabilization as follows unless otherwise indicated on Drawings. Stake and guy trees more than **14 ft.** in height and more than **3 inches** in caliper unless otherwise indicated.

1. Site-Fabricated, Staking-and-Guying Method: Install no fewer than three guys spaced equally around tree.

   a. Securely attach guys to stakes **30 inches** long, driven to grade. Adjust spacing to avoid penetrating root balls or root masses. Provide turnbuckle for each guy wire and tighten securely.
   b. For trees more than 6 inches in caliper , anchor guys to wood deadmen buried at least **36 inches** below grade. Provide turnbuckle for each guy wire and tighten securely.
   c. Support trees with bands of flexible ties at contact points with tree trunk and reaching to turnbuckle . Allow enough slack to avoid rigid restraint of tree.
   d. Support trees with multiple strands of tie wire , connected to brass grommets of tree-tie webbing at contact points with tree trunk and reaching to turnbuckle . Allow enough slack to avoid rigid restraint of tree.
   e. Attach flags to each guy wire, **30 inches** above finish grade.
   f. Paint turnbuckles with luminescent white paint.

2. Proprietary Staking and Guying Device: Install staking and guying system sized and positioned as recommended by manufacturer unless otherwise indicated and in accordance with manufacturer's written instructions.

C. Root-Ball Stabilization: Install at- or below-grade stabilization system to secure each new planting by root ball unless otherwise indicated.

1. Wood Hold-Down Method: Place vertical stakes against side of root ball and drive them into subsoil; place horizontal wood hold-down stake across top of root ball and screw at each end to one of vertical stakes.

   a. Install stakes of length required to penetrate at least to dimension indicated on Drawings below bottom of backfilled excavation. Saw stakes off at horizontal stake.
   b. Install screws through horizontal hold-down and penetrating at least **1 inch** into stakes. Predrill holes if necessary to prevent splitting wood.
   c. Install second set of stakes on other side of root trunk for larger trees.

2. Proprietary Root-Ball Stabilization Device: Install root-ball stabilization system sized and positioned as recommended by manufacturer unless otherwise indicated and in accordance with manufacturer's written instructions.

D. Palm Bracing: Install bracing system at three or more places equally spaced around perimeter of trunk to secure each palm until established unless otherwise indicated.

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1. Site-Fabricated Palm-Bracing Method:

    a. Place battens over padding and secure battens in place around trunk perimeter with at least two straps, tightened to prevent displacement. Ensure that straps do not contact trunk.
    b. Place diagonal braces and cut to length. Secure upper ends of diagonal braces with galvanized nails into battens or into nail-attached blocks on battens. Do not drive nails, screws, or other securing devices into palm trunk; do not penetrate palm trunk in any fashion. Secure lower ends of diagonal braces with stakes driven into ground to prevent outward slippage of braces.

2. Proprietary Palm-Bracing Device: Install palm-bracing system sized and positioned as recommended by manufacturer unless otherwise indicated and in accordance with manufacturer's written instructions.

3.2 INSTALLATION OF ROOT BARRIER

A. Install root barrier where trees are planted within 48 inches of paving or other hardscape elements, such as walls, curbs, and walkways, unless otherwise indicated on Drawings.

B. Align root barrier with bottom edge angled at 20 degrees away from the paving or other hardscape element , and run it linearly along and adjacent to paving or other hardscape elements to be protected from invasive roots.

C. Install root barrier continuously for distance of 60 inches in each direction from tree trunk, for total distance of 10 ft. per tree. If trees are spaced closer, use single continuous piece of root barrier.

1. Position top of root barrier in accordance with manufacturer's written instructions .
2. Overlap root barrier minimum of **12 inches** at joints.
3. Do not distort or bend root barrier during construction activities.
4. Do not install root barrier surrounding the root ball of tree.

3.3 INSTALLATION OF MULCHES

A. Install weed-control barriers before mulching in accordance with manufacturer's written instructions. Completely cover area to be mulched, overlapping edges minimum of 6 inches , and secure seams with galvanized pins.

B. Mulch backfilled surfaces of planting areas and other areas indicated.

1. Trees and Treelike Shrubs in Turf Areas: Apply organic mulch ring of 3-inch average thickness, with 24-inch radius around trunks or stems. Do not create a mulch cone or place mulch within 3 inches of trunks or stems.
2. Organic Mulch in Planting Areas: Apply 2-inch average thickness of organic mulch over whole surface of planting area , and finish level with adjacent finish grades. Do not place mulch within 3 inches of trunks or stems.
3. Mineral Mulch in Planting Areas: Apply 3-inch average thickness of mineral

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mulch over whole surface of planting area , and finish level with adjacent finish grades. Do not place mulch within [**3 inches**][**6 inches**]<**Insert distance**> of trunks or stems.

3.4 INSTALLATION OF LANDSCAPE EDGINGS

A. Steel Edging: Install steel edging where indicated in accordance with manufacturer's written instructions. Anchor with steel stakes spaced approximately **30 inches** apart, driven below top elevation of edging.

B. Mow-Strip Installation:
1. Apply nonselective, pre-emergent herbicide that inhibits growth of grass and weeds.
2. Install steel edging, delineating the edge of mow strip.
3. Install weed-control barrier before mulching, covering area of mow strip, and overlapping and pinning edges of barrier at least **6 inches** and in accordance with manufacturer's written instructions.
4. Place indicated thickness of organic mulch, fully covering weed barrier.
5. Rake mulch to uniform surface level with adjacent finish grades.

3.5 PLANT MAINTENANCE

A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.

B. Fill in, as necessary, soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.

C. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices when possible to minimize use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

D. All plants shall be guaranteed for 12 months after planting. Any plants that do not survive in the 12 month period shall be replaced and guanteed for another 12 months from the date of replanting.

END OF SECTION 329300

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SECTION 40 60 01

CONTROL SYSTEM INTEGRATOR

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract and Division 01 Specification Sections apply to this Section.

1.02 SECTION INCLUDES

A. Requirements for the CONTRACTOR to provide a Control System Integrator (CSI) who shall be responsible for integrating the proposed equipment, material, and software into a fully operational control system.

B. Requirements specific to the CSI and specific integration work associated with the contract plans and specifications.

C. CSI shall be responsible for the coordination, supply, and testing of the following:

1. Section 40 61 24 - Functional Description

2. Section 40 70 00 - Field Instruments

3. Section 40 90 01 - Control Panel Construction

1.03 CITED STANDARDS

A. NFPA 70, National Electrical Code (NEC)

B. NFPA 70E Standard for Electrical Safety in the Workplace

C. The Institute of Electrical and Electronics Engineers (IEEE)

D. International Society of Automation (ISA)

1.04 OVERVIEW OF INTEGRATOR'S SCOPE

A. The Control System Integrator may also be referred in this contract as the Integrator or the CSI.

B. The intent of the work shall be in accordance with the contract drawings, specifications, terms of reference, applicable codes, existing documents, and any applicable listings.

C. The control system shall include but not be limited to: monitoring, control, data acquisition, communications, and networking.

D. The Integrator's scope of work is to include but not necessarily be limited to:

1. Perform discovery work as required for implementing further detailed design to meet the requirements detailed herein.

2. Supply and installation of materials and equipment including:

   a. WTP Instrumentation & Control Panel (CP-100)
   b. Chemical Storage and Feed Systems (If not provided by others)
   c. Field Instrumentation and Field Instrument Connection Boxes

3. Provide detailed design as described.

4. Coordinate activities with other divisions to ensure complete and fully operational systems are provided.

5. Coordinate with manufacturers as applicable to interface with manufacturer's panels.

6. Provide new control panels in accordance with Contract Drawings and Specifications.

7. Ensure all devices and components are set, tested, and calibrated for proper operation.

8. Develop new software applications for PLC control logic as described in the Contract Documents.

9. Develop graphic displays in the OIT for the pump station control processes.

10. Provide drawings and submittal documents as listed in this Section.

11. Perform factory acceptance testing (FAT), commissioning assistance, and site acceptance testing (SAT) for control systems.

12. Schedule and provide operator training.

E. The Integrator shall provide a detailed design and programming of the PLC control logic elements defined in the contract documents.

F. The Integrator shall provide support for additional programming and integration as directed by the ENGINEER during the FAT or in the field.

G. The Integrator shall install and configure communication equipment including commissioning of the autodialer with alarm monitoring and communications services for a minimum of 2 years.

H. The Integrator shall be required to meet minimum qualification levels as defined herein.

I. The Integrator shall assume responsibility and maintain equipment identified for upgrade or replacement in the Contract Plans and Specifications during the project period.

J. The Integrator shall adhere to national and local code requirements for installation and commissioning.

K. The Integrator shall protect all supplied equipment against damages and replace any failures during the entire project period.

L. The CONTRACTOR and CSI are required to install all wiring, piping, conduits and necessary mounting hardware and accessory equipment to provide a complete and fully operational control system as indicated in the Drawings and Specifications.

M. CSI shall plan and lead two coordination meetings including the following entities; electrician, instrumentation supplier, control system integrator, control panel fabricator, ENGINEER, and the OWNER. The purpose of the meetings is to fully understand the scope of work, sequencing of construction activities, and functional programming requirements of each facility.

1. A preliminary coordination meeting shall be scheduled during development of the construction schedule and prior to shop drawing submittals.

2. A final coordination meeting shall be scheduled a minimum of 2 weeks after final approved pump factory acceptance test curves have been supplied to the ENGINEER. Meeting shall also take place prior to final control panel and programming factory acceptance testing, to allow time for final revisions to the functional programming.

1.05 QUALITY CONTROL

A. The CSI, working under the direction of the CONTRACTOR, shall implement quality assurance and control measures to include the following:

1. Factory Acceptance Test (FAT) procedures.

a. The Factory Acceptance Test (FAT) shall allow the Integrator to demonstrate simulated operation and functionality of the control system to the OWNER and ENGINEER prior to delivery and installation. Notify OWNER and ENGINEER two weeks in advance to allow for attendance during FAT testing.
b. The Integrator shall provide all hardware and software for simulation.

2. Installation and Commissioning Procedures

a. The Integrator shall follow installation and commissioning Procedures to reduce risk and to safeguard personnel and equipment during installation.

3. Site Acceptance Test (SAT) procedures.

a. The SAT shall allow the Integrator to demonstrate and document proper operational readiness and functionality of the control system, to the OWNER and ENGINEER after installation and on-site I/O checkout.
b. Include site system integration into Owner’s overall control system and verify functionality within Owner’s remote operations system.

B. To ensure quality, all components shall be UL listed or certified by an approved NRTL.

1.06 SUBMITTALS

A. Provide all submittals in accordance with these specifications.

B. Shop Drawings and Product Data

1. As part of the requirements of this section of the specifications, the CONTRACTOR shall provide shop drawings and descriptive literature of the control system package for the ENGINEER's review. No fabrication, programming, or installation of any control system

equipment shall take place without such review. No partial shop drawing submittals will be accepted.

2. Shop drawings for the control system shall be submitted in accordance with the requirements of the general requirements of these specifications. Shop drawings for the control system shall include, as a minimum, the following:

    a. Elementary wiring diagrams and panel elevations for control panels.
    b. Control schematics for equipment.
    c. Interconnection wiring diagrams detailing wiring or cabling to the field devices, sensors, or instruments as well as network or other communication cables necessary for integration.
    d. Manufacturer’s Data Sheets with complete model numbers and any applicable manufacturer’s recommended practices for the equipment.
    e. Software data sheets. Complete software descriptions and version numbers shall be provided for review and approval.
    f. Diagram of the control system communication architecture. The diagram shall show all hardware and communication components.
    g. Screenshots or diagrams of all proposed graphic display screens for the OIT.

C. Integration services to design, program, install, commission, and test the pump station control system and communication configuration for remote access to monitoring data.

D. Final Documentation

1. Shop Drawings and Product Data:

2. As part of the requirements of this section of the specifications, the CONTRACTOR shall provide shop drawings and descriptive literature of the control system package for the ENGINEER's review. No fabrication, programming, or installation of any control system equipment shall take place without such review. No partial shop drawing submittals will be accepted.

3. Shop drawings for the control system shall be submitted in accordance with the requirements of the general requirements of

these specifications. Shop drawings for the control system shall include, as a minimum, the following:

a. Elementary wiring diagrams and panel elevations for control panels.
b. Control schematics for equipment.
c. Interconnection wiring diagrams detailing wiring or cabling to the field devices, sensors, or instruments as well as network or other communication cables necessary for integration.
d. Manufacturer's data sheets with complete model numbers and any applicable manufacturer's recommended practices for the equipment.
e. Software data sheets. Complete software descriptions and version numbers shall be provided for review and approval.
f. Diagram of the control system communication architecture. The diagram shall show all hardware and communication components.
g. Screenshots or diagrams of all proposed graphic display screens for the OIT.

PART 2 PRODUCTS

2.01 CONTROL SYSTEM

A. The control system shall be a complete integrated system furnished and configured by the CSI who shall provide all the equipment and appurtenances and shall be responsible for the satisfactory operation of the entire system. The control system shall include all hardware and software components required for complete system operation.

B. Programmable logic controllers (PLC) shall provide the primary interface between the field devices and the control system HMI.

C. The control system shall be fully equipped to monitor all equipment status, alarm, and instrumentation system analog signals; and control selected equipment operations.

D. The control system shall be configured to provide all output signals required for control system operation including digital output signals for remote alarm monitoring, digital output signals for remote control interlocking, and analog output signals for remote indication and equipment control.

E. The CSI shall provide complete system configuration submittal data, including detailed I/O signal listings, proposed ladder logic, etc. for coordination and approval prior to implementation.

F. The CSI shall provide all control system PLC and HMI programming and shall configure all network communications.

G. The preliminary control system installation, including HMI development, communications system configuration, and PLC operation shall be loaded, and tested at the CSI manufacturing facility, and shall be witnessed and approved by OWNER and the ENGINEER. The performance demonstration shall utilize the actual components to be installed.

H. System startup and testing shall be provided by the CSI and shall be witnessed and approved by OWNER and the ENGINEER.

2.02 HMI GRAPHICS

A. Graphical screens should be in accordance with industry standards.

B. Include equipment tag names as referenced in the Drawings and ensure description matches P&IDs (i.e. P-104, PIT-103).

C. Adjustable setpoints shall utilize a slider scale for operator adjustment.

D. HMI system colors shall be as follows:

1. Green – Normal / Closed / Stopped

2. Red – Alarm / Open / Running

3. Orange – Override / Fault

E. Graphical screens such as but not limited to:

1. Overview Screen: This screen shall include all major components and equipment for the complete facility. Operational status for each piece of equipment shall be displayed as well as relevant system instrument output values. Include facility alarms on the overview screen relevant to the complete facility operational status. For larger facilities, the alarms screen may be a separate screen.

2. Pump screen: This screen shall include an overview of each pump. Each pump should have the following indicators: Auto Status,

Normal, Pump Mode, Pump Fail, and Motor Temperature. Each motor shall also have a drop-down menu to place each motor into Hand or Auto modes. When hand is selected there shall be a vertical slider scale that is displayed to set the speed of the motor which shall be in accordance with the facility's functional description manual where required for VFD motor controlled pumps. This screen shall also include the number of starts and the number of hours each motor has ran.

a. Pump screen should include such things as HOA switch, run command button, speed command button, speed indication, run status, fault status, auto status, motor temp alarm where applicable.
b. Include "Locked out of Service" control and designator for each pump so the operators can take a pump out of service if necessary, with reset.
c. Pump runtimes should be displayed.

3. Process Setpoint Screen: This screen should include vertical slider scale for all PITs and FITs with adjustable setpoints. The set points should be in accordance with the facility's functional description manual. Below each vertical slider scale there should be displays to indicate the low and high setpoints for their respective vertical slider scale.

4. Alarm Setpoint Screen: This screen should have vertical slider scale for both Chlorine with adjustable setpoints. The set points should be in accordance with the facility's functional description manual. Below each vertical slider scale there should be displays to indicate the low and high setpoints.

2.03 TRAINING

A. The CONTRACTOR shall provide training of field operations personnel at the project site prior to the 5 day performance test. The CONTRACTOR shall coordinate with OWNER for availability of operators to schedule training. Training may be broken up over multiple days in blocks so that different shift operators can be present for the training at the request of the OWNER. CONTRACTOR shall submit a training plan for review and approval at least 21 days in advance of planned training activities.

B. The training shall consist of the following:

1. New equipment training.

2. Control system functionality and operational training.

3. OIT training.

4. Trouble-shooting procedures.

2.04 WARRANTY FOR INTEGRATION SUPPORT

A. The warranty shall be one year from the date of substantial completion.

B. The warranty period shall provide the following:

1. Replacement of any newly installed equipment for 1 year.

2. Software and application programming support to correct any errors or omissions in control logic, graphic displays in the OIT, communication configuration for remote access.

3. Integrator support during or after testing at the OWNER's discretion to make enhancements or changes to the PLC or graphics.

PART 3 EXECUTION

3.01 CONTROL SYSTEMS INTEGRATOR (CSI)

A. The Integrator shall:

1. Provide integration and supply of controls related hardware and software shown on the design drawings to include, but not limited to:

a. PLC equipment
b. Control panel equipment
c. Cable and wiring for a complete functional control system
d. Overseeing terminations and testing of wiring to PLC, I/O, sensors, control and monitoring panels, control elements, other systems interface, OIT and communications system.
e. Terminal boxes as required.
f. Required PLC and OIT application software
g. Miscellaneous items required for a fully operational control system.

2. Provide and install all software development for the project. This software shall include but not be limited to the following:

a. PLC application software

b. PLC Control Logic application code
c. OIT application software
d. OIT graphic displays
e. Reporting applications
f. Database configurations
g. Miscellaneous software as required to produce a fully operational control system.

3. Remote access configuration and written procedure for accessing data from remote location.

4. Provide record documentation as specified.

5. Provide training as specified.

3.02 CONTROL SYSTEM INTEGRATOR QUALIFICATIONS

A. The Integrator shall be one of the following City of Hampton approved providers:

1. General Control Systems Inc.

2. DSI Innovations

3. C2i Control Instruments Inc.

4. Southern Flow Inc.

5. Engineer approved equal

B. The Integrator's staff shall meet the following requirements:

1. Programmers:

a. As a minimum, all programmers shall have a minimum of 5 years of experience in industrial PLC and HMI programming.

2. Field Service Technicians:

a. All service technicians shall have a minimum of five years of experience in PLC systems and HMIs.
b. All service technicians shall be capable of programming minor edits in the project PLC's and uploading or downloading PLC applications.

c. All service technicians shall have experience troubleshooting: motor starters, PLC's, computers, HMI systems, and basic electrical controls.

END OF SECTION

SECTION 40 61 24

FUNCTIONAL DESCRIPTION

PART 1 - GENERAL

1.01 SCOPE:

A. Drawings and general provisions of the Contract and Division 01 Specification Sections apply to this Section.

B. This specification section describes required work and station functionality associated with the following:

1. **City of Hampton Water Treatment Plant -** Part 2 of these specifications provides process functional descriptions.

C. This section describes the general function of each Primary process loop to be modified or included. The Control System Integrator shall provide additional functions as needed to adhere to good control and engineering practices. These additional functions shall be outlined and explained as part of the submittal process for review and approval by the Engineer and Owner.

D. Functional process control and system setpoints have been established using preliminary information provided by pump suppliers during the detailed design process. The CSI may receive a revision to the functional process control and system setpoints after the Contractor has final approved pump datasheets, curves, and shop drawings. Finalization and approval of the functional process control and system setpoints will not be acceptable prior to approval of pump factory test curves.

E. The Contractor will be responsible for securing a Control System Integrator (CSI) for completing all control, SCADA, and integration work described herein, within project Specifications, and as reflected on the Drawings to provide a fully operational water treatment plant.

F. Refer to the following specifications for additional requirements and coordination:

1. Section 40 61 01 - Control System Integrator

2. Section 40 90 01 - Control Panel Construction

3. Section 40 70 00 - Field Instruments

1.02 GENERAL:

A. Overall requirements of the control system are as described in these specifications as well as the Process Flow Diagrams (PFDs) and Process & Instrumentation Diagrams (P&IDs) included with the drawings.

B. OIT graphics and screen development shall utilize any existing City of Hampton graphics as a basis of design. Where existing graphics are not available, graphics shall follow industry standards. Coordinate with the Owner to receive example screens. Include such screens as:

1. Overall facility status screen
2. Facility power system status and control
3. Well pumping status and setpoint screen
4. High service pumping and setpoint screen
5. Ground storage tank status and setpoint screen
6. Chemical storage and feed status and setpoint screen
7. Instrumentation status and setpoint screen
8. Alarms screen

C. CSI shall work closely with City of Hampton operators and technicians to develop and implement system screens and updates to incorporate the new water treatment plant into the overall SCADA system including functionality typical to City of Hampton water system facilities.

1.03 ALARM CONDITIONS:

A. All alarm conditions for the proposed equipment shall adhere to the following:

1. Be displayed on the facility OIT.
2. Be recorded in the plant historian alarm database.
3. Trigger alarm conditions within the facility control system as indicated within the Drawings.
4. Adjustable operator setpoints shall define alarm levels.

1.04 PASSWORD PROTECTION:

A. Provide password protection for programming functions at the request of the Owner to prevent accidental manipulation of pump control loop settings.

Coordinate with Owner and Engineer for additional items to be password protected.

B. System shall have login functions for Admin (Full read/write control), Engineer (Full read/write control), and Operator (Limited visibility and setpoint adjustment).

1.05 DATA ARCHIVAL AND TRENDING:

A. The OIT shall be configured to trend all points connected to the station control system within the available memory as indicated in the I/O lists shown on the Drawings and consistent with industry standards.

PART 2 WATER TREATMENT PLANT FUNCTIONAL DESCRIPTION

2.01 SYSTEM DESCRIPTION:

A. This project includes work at the proposed City of Hampton Water Treatment Plant including the following proposed process systems.

1. Well pumping and high service pumping systems
2. Ground storage tank systems
3. Hypochlorite storage and feed systems
4. Power distribution and backup power generation systems
5. Instrumentation and control systems

2.02 CONSTRUCTION SEQUENCING:

A. The water treatment plant is designed to be installed and commissioned in a phased approach whereby the existing WTP shall remain online with only brief outages during construction. A minimum of one well pump and one high service pump shall be in operation at any given time unless approved otherwise by the Owner during construction.

2.03 GENERAL FUNCTIONALITY:

A. In general, all process functional control and annunciation shall be available at the CP-100 HMI. SCADA control and annunciation shall be in accordance with industry or City of Hampton Standards where available.

B. General functionality of the motor driven equipment includes Hand-Off-Auto selector switches at the local control panels. In the “Auto” position, the motors shall be controlled by the PLC or remotely from the CP-100 HMI based on the descriptions provided in these specifications. In the “Hand”

position, the motors shall be controlled from local OIT's or control devices on the local panels.

C. The control system shall limit the number of starts per hour for the pumps based on the motor manufacturer's recommendations, or to a maximum of 6 starts, whichever is more restrictive.

D. The control system shall automatically promote a lesser hierarchy pump to a higher hierarchy if any pump set has faulted or is locked out of service.

E. Each pump shall be labeled as to its assigned hierarchy on the OIT.

F. For variable speed pumps, the actual speed of each pump shall be displayed on the OIT.

G. The control system shall monitor the fault status of each pump. If a fault status tripped while a pump is running, the control system shall shut down the pump and alarm the OIT. The pump shall automatically be placed in the last lag position and remaining pumps shall be promoted in hierarchy until the alarm is manually reset by operators through SCADA or the face of the OIT.

H. All high service pump alarm conditions and their associated pump actions (on or off) shall be delayed by a variable time delay between 0 seconds and 60 seconds to alleviate nuisance shutdowns due to temporary surges in system pressures or levels.

2.04 WELL PUMPING SYSTEM PROCESS CONTROL NARRATIVE:

A. There are two (2) Well Pumps powered by across the line motor controllers. Primary well pump operation will be controlled by the level transducers in the ground storage tank with secondary well pump operation through the level float switches during transducer failure or PLC failure.

B. Operation of the well pump will be controlled by maintaining an operator adjustable level setpoint in the ground storage tanks as sensed by GST level transmitter (LT-201).

C. Normal well pump operations shall generally be as follows:

1. Upon falling liquid level in the GST, call logic energizes, and the contactor closes.

2. Well pump backup shutdown shall be by the high level in the GST.

3. Initial GST level settings shall be as follows and shall be confirmed in the field during startup and commissioning:

DESCRIPTION	HEIGHT (FT)	ELEVATION (FT)
Top of Tank	24.9	157.00
HWL Alarm	22.9	155.00
Lead Well Pump Off	22.4	154.50
Lead Well Pump On	16.4	148.50
LWL Alarm	12.9	145.00
HSP Lockout	2.4	134.50
Tank Bottom	0.0	132.1

D. PLC or communications failure will enable backup ground storage tank level float switch operation for well pumping. High level float switches (LSH-201) and low level float switches (LSL-201) interconnected with time delay relays (HLR, LLR) in the main PLC panel CP-100 shall start / stop the well pump P-101.

1. Relay LLR (GST-201 low level relay) located in CP-100. This relay shall be an adjustable time delay relay initially set to 0 seconds. Upon PLC or communications failure, this relay shall call well pump P-101 to run until HLR (GST-201 high level relay) is activated. HLR shall be an adjustable time delay relay initially set to 0 seconds. HLR shall also act as a permissive for well pump operation and shall input to the motor starter to prevent well pump operation.

2. Upon restoration of PLC communications, the system shall return to normal operations.

2.05 HIGH SERVICE PUMP PROCESS CONTROL NARRATIVE:

A. There are two (2) High Service Pumps (P-401, P-402) powered by across the line motor starters with operation controlled by low / high pressure conditions as sensed by pressure transmitter PIT-401. The operator shall be able to select the primary discharge pressure setpoint on the HMI controlling the station operations.

B. Normal high service pump operation shall generally be as follows:

1. The high service pumps are fed directly from the onsite ground storage tank. The high service pumps operate in a staged approach of 2 pumps to deliver water to the City of Hampton water system. The control system shall call the pumps to meet the target discharge pressure setpoints as input by facility operators at the OIT.

2. Initial discharge pressure target setpoints are as follows and shall be confirmed in the field during startup and commissioning. All setpoints shall be operator adjustable:

a.	High Pressure Alarm	70 PSI
b.	All HSPs Off	65 PSI
c.	HSP Target Pressure	62 PSI
d.	Lag HSP on	53 PSI
e.	Lead HSP on	58 PSI
f.	Low Discharge Pressure Alarm	45 PSI

C. PLC or communications failure will enable backup pressure switch operation for high service pumping. Backup pressure switches (PSH-403, PSL-402) interconnected with time delay relays (HPR, LPR) in the main PLC panel CP-100 shall call the high service pumps P-401 and P-402 in a staged approach to maintain discharge pressure.

1. Relay LPR1 (Discharge low pressure relay) located in CP-100. This relay shall be an adjustable time delay relay initially set to 30 seconds. Upon PLC or communications failure, this relay shall call high service pump HSP-401 to run until the pressure reaches the high limit.

2. Relay LPR2 (Discharge low pressure relay) located in CP-100. This relay shall be an adjustable time delay relay initially set to 240 seconds. Upon PLC or communications failure, this relay shall call high service pump HSP-402 to run until the pressure reaches the high limit.

3. Relay HPR (Discharge high pressure relay) located in CP-100. This relay shall be an adjustable time delay relay initially set to 30 seconds. This relay shall act as a permissive for high service pump operation. Upon PLC or communications failure this relay shall input to HSP motor starters and shall prevent the HSPs from operating.

4. Upon restoration of PLC communications, the system shall return to normal operations.

2.06 ADDITIONAL SYSTEMS NARRATIVE:

A. Ground Storage Tank:

1. GST-201 Level:

a. LT-201 analog reporting in feet of depth, displayed on the HMI. The HMI shall display the following Alarms:

- High Water Level (HWL) Alarm
- Low Water Level (LWL) Alarm

2. GST-201 Back-up Signals:

   a. The GST shall have two backup discrete signals (floats) LSL-201 and LSH-201, that shall be set to match the LW alarm level and the HW alarm Level respectively. These floats shall also serve as start / stop for well pump operation and stop for high service pump operation during transducer failure, PLC failure, or PLC communications failure.

   b. If LSL-201 is achieved, it shall alarm the HMI and perform the staged pump shutoff of the high service pumps. It shall also perform well pump startup.

   c. If LSH-201 is achieved, it shall alarm the HMI and perform pump shutoff of the well pump.

B. Sodium Hypochlorite Feed Pump:

1. Well Discharge / Pre GST Injection

   a. The control system shall control and monitor the hypochlorite feed pumps (P- 501, P-502) dedicated to dosing into the combined well header ahead of the GST.

   b. The control system shall control the speed of the hypochlorite feed pumps based on the combined flow from the well pumps as measured through FE/FIT-101 and FE/FIT-201. Feed rate shall be automatically adjusted based on well pump flow with the dosage manually set by the operator.

   c. The control system shall alternate the pumps to equalize runtime after each run cycle, every 24 hours, or as determined to best equalize runtimes.

   d. Chemical system operation, dosing, and inputs shall be as shown in the P&IDs.

C. Residual Chlorine Analyzer:

1. The control system shall monitor the residual chlorine level of the water leaving the water treatment plant. An adjustable setpoint between 0 mg/L and 7.5 mg/L shall be determined by the system operator and set at the CP-100 HMI.

2. The control system HMI shall be configured to display the following:

   a. Instantaneous residual CL level.

b. In the trending area of the HMI, the control system shall allow the operator to trend residual chlorine for a period of time of up to 12 months.

D. Instrumentation:

1. PIT-401:

a. New pressure transmitter on the discharge pressure header.

b. PIT-401 analog reporting in psi, sampled every 0.25 seconds and averaged over the previous 1 seconds, displayed on the OIT in trend screen.

c. High pressure alarm, Operator adjustable value, initial = 70 psi.

d. Low pressure alarm, Operator adjustable value, initial = 45 psi.

2. PSH-403, PSL-402, PSLL-401:

a. Existing high/low pressure switches on the discharge pressure header.

b. PSH-403, PSL-402, PSLL-401 are a discrete input to CP-100 for high service pump call to start / stop during PLC or communications failure, displayed on the OIT in the instrumentation screen.

c. PSH-403, PSL-402, PSLL-401 are dry contacts with loop power from the CP-100. Pressure switches will interlock with the respective high service pump starters through a time delay relay.

d. High pressure HSP Stop, Operator adjustable value, initial = 65 psi.

e. Low pressure HSP Start, Operator adjustable value, initial = 58 psi.

3. FE/FIT-101:

a. Proposed flow meter on the 4” Well No. 1 discharge line. Meter measures Well No. 1 flow.

b. FE/FIT-101 analog reporting in gpm, sampled every 0.25 seconds and averaged over the previous 1 seconds, displayed on the OIT in trend screen.

c. High flow alarm, Operator adjustable value, initial = 1,000 gpm.

4. FE/FIT-201:

a. Existing flow meter on the 4" GST fill line. Meter measures total well flow into GST.

b. FE/FIT-201 analog reporting in gpm, sampled every 0.25 seconds and averaged over the previous 1 seconds, displayed on the OIT in trend screen.

c. High flow alarm, Operator adjustable value, initial = 1,000 gpm.

5. Pump Run Time Meters:

a. Totalized run time, reported in whole hours for each pump, displayed on the OIT. A run-time reset button shall be provided on the OIT for each pump, with passcode protection to enact.

b. Operator shall be able to manually select lead pump at the OIT if desired, to balance pump run-time hours.

E. Electrical Gear:

1. Automatic Transfer Switches

a. PLC shall monitor or control the following conditions:

- Utility / Emergency power available
- Utility / Emergency switch position
- Go to emergency command

2. Generator

a. PLC shall monitor or control the following conditions:
- Generator running
- Generator fault

2.07 SCADA:

A. The control system shall output digital information to the autodialer alarm system.

B. Minimum signals to be monitored from the autodialer include, but are not limited to:

1. Discharge low pressure

2. Well no flow

3. Generator running and fault

4. Loss of normal power

5. Chlorine analyzer fault

6. GST low level alarm

C. Full functional control and annunciation shall be available through the local PLC HMI.

D. Remote alarm annunciation shall be accomplished via the existing autodialer.

END OF SECTION

SECTION 40 70 00

FIELD INSTRUMENTS

PART 1 GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and general provisions of the Contract and Division 01 Specification Sections apply to this Section.

1.02 SECTION INCLUDES:

A. This Section includes the following:

1. Pressure Transmitters
2. Level Transmitters
3. Flow Meters

1.03 SUBMITTALS:

A. Submit shop drawings in accordance with these specifications.

B. Product Data including rated capacities of each unit, weights (shipping, installed, and operating), furnished specialties, accessories, and the following:

1. Sensor housing, NEMA rating.
2. Power requirements.
3. Sensitivity ranges.
4. Mounting requirements.

C. Shop Drawings from manufacturer detailing equipment assemblies and indicating dimensions, weights, loadings, required clearances, method of field assembly, components, and location and size of each field connections.

D. Coordination Drawings, including plumbing/connection plans and sections drawn accurately to scale. Submit with Shop Drawings. Show layout and relationships between components and adjacent structural and mechanical elements. Show support locations, type of support, and weight on each support. Indicate and certify field measurements.

E. Wiring diagrams detailing wiring for power and control systems and differentiating clearly between manufacturer-installed and field-installed wiring.

F. O&M manuals shall be submitted in accordance with these specifications.

1.04 QUALITY ASSURANCE:

A. Electrical Component Standard: Provide components that comply with NFPA 70 and that are listed and labeled by UL where available.

B. NEMA Compliance: Motors and electrical accessories shall comply with NEMA standards.

1.05 DELIVERY, STORAGE AND HANDLING:

A. Deliver units as factory-assembled units, to the extent allowable by shipping limitations, with protective crating and covering.

B. Lift and support units with the manufacturer’s designated lifting and covering.

1.06 PROJECT CONDITIONS:

A. Field Measurements: Verify dimensions by field measurements. Verify clearances for installation.

B. Project Altitude: Base air ratings on sea-level conditions.

C. Operating Temperature: 0 degrees F to 100 degrees F.

D. Environment: Potable Water.

1.07 COORDINATION AND SCHEDULING:

A. Coordinate with the Engineer for the mounting locations of each instrument prior to installation.

1.08 SPARE PARTS:

A. Furnish any spare parts that are expected to be replaced within a 1-year period in sufficient quantity to keep monitoring equipment operating for a minimum period of one year.

1.09 WARRANTY:

A. Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace equipment or materials that fail in materials or workmanship within specified warranty period.

1. Warranty Period: One year from date of Substantial Completion.

PART 2 PRODUCTS

2.01 PRODUCTS: The use of a manufacturer's tradename and catalog number is not intended to indicate preference but only the type and quality of the product desired. Products of reputable manufacturers of equal quality and functional type will be acceptable. Substitutes which tend to lower the quality of the work will not be permitted.

2.02 PRESSURE TRANSMITTERS

A.	Manufacturer:	Rosemount 3051
B.	Analog Output:	4-20mA
C.	Pressure Range:	Refer to drawings
D.	Options:	1-inch Flush Diaphragm Seal
E.	Options:	Stainless Steel

2.03 FLOW METER

A.	Manufacturer:	McCrometer Ultramag
B.	Principal:	Electromagnetic
C.	Power:	AC Power 120VAC
D.	Analog Output:	4-20mA
E.	Transmitter:	ProComm Converter

2.04 LEVEL TRANSMITTER:

A.	Manufacturer:	Blue Ribbon BR313L
B.	Principal:	Pressure sensor
C.	Analog Output:	4-20mA
D.	Options:	Lead length based on GST depth

2.05 SURGE ARRESTER ENCLOSURES:

A. Furnish integrated surge protection devices or custom built surge arrester junction boxes for all existing and proposed outdoor field mounted instrument transmitters such as pressure transmitters, level transmitter, and flow transmitters.

B. Integrated surge protection devices shall be Citel Model CAD2 with Nema 4X enclosures with signal and power line protection. Where mounted in an outdoor Nema 3R enclosure, provide a toggle switch for AC power disconnection.

C. Custom built surge arrester junction boxes shall include the following:

1. Minimum 10” x 8” x 4” stainless steel hinged cover junction box with white 14ga carbon steel backplane.

2. Citel DLA-24D32, 24VDC surge arrester

3. Citel DS42S-120/G 120VAC surge arrester

4. Wago terminal blocks, end clamps, and grounding blocks

5. Blackburn ground lug ADR11-21

6. Commercial grade 20A, 120VAC toggle switch

PART 3 EXECUTION

3.01 TRAINING:

A. Train Owner’s maintenance personnel on procedures and schedules related to startup and shutdown, troubleshooting, servicing, and preventative maintenance. Allow for one 8 hour day for training of Owner’s personnel at the project location.

3.02 INSTALLATION:

A. Install according to manufacturer’s written instructions.

B. Install units with clearances for service and maintenance.

C. All instruments and devices shall be provided with a stainless steel identification tag minimum 1” x 2” with two lines of text corresponding to identification as seen on P&IDs and conduit / cable list.

D. All pressure transmitters shall be installed using a stainless-steel isolation valve and stainless steel pipe nipple. Provide a stainless-steel diaphragm seal for each pressure transmitter.

E. All field mounted transmitters with indicating displays shall be provided with sun/rain hoods. Instruments with displays shall be mounted such that the display is facing in the northern direction where possible.

F. Field instruments shall be factory calibrated and delivered to the project site with certificates. Contractor shall coordinate process ranges in the field and document as-built I/O list with calibrated process ranges for turnover to the Owner.

3.03 CONNECTIONS:

A. Electrical: Conform to applicable requirements in Division 26 Sections.

B. Grounding: Tighten electrical connectors and terminals, including grounding connections, according to manufacturer's published torque-tightening values or use those specified in UL 486A and UL 486B.

3.04 FIELD QUALITY CONTROL:

A. Manufacturer's Field Service: Provide services of a factory-authorized service representative to supervise the field assembly of components and installation and electrical connections, and to report results in writing.

B. Contractor shall install all equipment and related accessories before having the manufacturer's field service. If additional trips are required due to incorrect installation, Contractor shall pay for the costs for the field services.

END OF SECTION

SECTION 40 90 01

CONTROL PANEL CONSTRUCTION

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract and Division 01 Specification Sections apply to this Section.

1.02 SECTION INCLUDES

A. Requirements for the CONTRACTOR to furnish and install control panels referenced on the Contract Drawings and specified herein.

B. Control panel fabrication shall be performed by the Control System Integrator (CSI) or by a fabricator working as a direct subcontractor to the CSI to ensure the panels are constructed, tested, and delivered in accordance with the contract documents.

C. Control panels shown or described in the Contract documents are diagrammatic in nature and may not depict all required components necessary. This in no way limits the CONTRACTOR'S and CSI's responsibility to provide a complete and fully functional system as required to operate the facility according to Section 40 61 24 of these specifications.

D. Control panels to be furnished and installed are as follows:

1. Instrumentation Control Panel (CP-100)

1.03 REFERENCED SECTIONS

A. Section 26 05 19 – Low Voltage Electrical Power Conductors

B. Section 27 10 00 – Communications Cabling

C. Section 40 60 01 – Control System Integrator

D. Section 40 61 24 – Functional Description

1.04 REFERENCE STANDARDS

A. National Fire Protection Association (NFPA)

B. Occupational Safety & Health Administration (OSHA)

C. The Institute of Electrical and Electronics Engineers (IEEE)

D. International Society of Automation (ISA)

E. Building Industry Consulting Service International

F. Telecommunications Industry Association (TIA)

G. Underwriters' Laboratories, Inc. (UL)

H. National Electric Manufacturers Association (NEMA)

I. American National Standards Institute (ANSI)

1.05 NOTED RESTRICTIONS

A. The "Delegate" ENGINEER of Record for the Control System shall be responsible for the detailed design of all custom built control panels based on the information contained in the drawings. In addition, the "Delegate" ENGINEER of Record for the Control System shall be responsible for all interconnection and loop drawings associated with the custom built control panels.

1.06 QUALITY ASSURANCE

A. The control panel components shall be of the most current and proven design. Specifications and Drawings call attention to certain features but do not purport to cover all details entering into the design of the control panels. The components provided by the Control Panel Builder shall be compatible with the functions required and shall form a complete working system.

B. The entire control system shall bear a UL 508A serialized label "Enclosed Industrial Control Panel". The use of the label "Industrial Control Panel Enclosure" without the UL508A serialized label is not acceptable.

1.07 ACTION SUBMITTALS

A. Shop drawings shall be submitted in accordance with these specifications and shall include at a minimum the following:

1. Catalog information and descriptive literature of all components, wiring diagrams, and panel layout drawings showing dimensions to all devices.

2. Loop diagram and field wiring diagrams for each control panel.

3. Network installation drawings/schematics related to the panel.

4. Material test certifications and manufacturer's material certifications.

5. Heat load calculations for equipment containing active electronic components.

6. Power supply load calculations.

7. CONTRACTOR's installation methods, equipment, materials, and product data.

8. Material Safety Data Sheets (MSDSs) for all materials to be used to meet the requirements of this section.

1.08 ARC FLASH HAZARD MITIGATION AND REDUNDANCY

A. The control panel shall be constructed so as to allow the panel to remain in service and to limit the exposure to voltages above 50VAC while in the process of maintaining devices within the panel.

1.09 SPARE PARTS

A. Spare parts shall be furnished including but not limited to the following:

1. 10% spare fuses of each type provided but not less than two of each type.

2. 20% spare I/O within installed I/O modules by the panel fabricator

3. 10% spare terminal blocks (preinstalled by the control panel fabricator)

4. Spare parts shall be packaged individually in boxes that are clearly labeled with part name and manufacturer's part/stock number.

1.10 WARRANTY

A. Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace equipment or materials that fail in materials or workmanship within specified warranty period.

1. Warranty Period: One year from date of Substantial Completion.

PART 2 PRODUCTS

2.01 CONTROL PANEL

A. Approved Manufacturers:

1. General Control Systems Inc.
2. DSI Innovations
3. C2i Control Instruments Inc.
4. Southern Flow Inc.
5. Engineer approved equal

B. The control panel enclosure shall be designed and sized in accordance with the requirements of the Drawings and as specified herein. The control panel enclosure shall be manufactured by Hoffman or ENGINEER approved equal.

C. Control panel enclosures located in conditioned spaces shall be NEMA 12, minimum 14 USS gauge.

1. Panels with any dimension greater than 36-inch shall be 12 USS gauge minimum.
2. Piano type hinged, overlapping doors with neoprene gasket. Doors shall be equipped with a heavy-duty 3-point latching mechanism operated by a padlocking handle.
3. Following fabrication, the control panel shall be degreased and cleaned.
4. All panels shall have continuously welded seams.

D. Control panel enclosures located in unconditioned spaces or outside shall be NEMA, 4X, 0.125 inch marine grade aluminum or 316L SS panels shall be equipped with the following:

1. Piano type hinged, overlapping doors with neoprene gasket. Doors shall be equipped with a heavy-duty 3-point latching mechanism operated by a padlocking handle.

2. Following fabrication, the control panel shall be degreased and cleaned. Stainless steel panels shall also be treated with a phosphatizing process.

3. All panels shall have continuously welded seams.

4. Outdoor panel enclosures shall be equipped with aluminum sun shields of the same grade and thickness material as the panel. Sunshields shall be mounted with 1.5 inch of separation from the panel, in a manner that maintains the NEMA rating of the panel.

5. Where panels are installed in non-conditioned spaces, they shall be constructed with thermostatically controlled anti-condensation space heaters.

E. Panel Finishes

1. Marine Grade Aluminum: Factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting polyester powder topcoat.

2. Carbon Steel: Factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting powder topcoat.

3. Fungus Proofing: Permanent fungicidal treatment for overcurrent protective devices and other components.

F. Hardware / Fasteners:

1. All Hardware and Fasteners shall be 316 stainless steel.

2. All mounting screws shall be drilled and tapped, no self-tapping screws are allowed.

G. Provide a plastic data pocket in the control panel. Data pocket shall be attached to the lower portion of the enclosure door or the lower right door of two (2) door models.

1. Panel drawings shall be laminated, attached to the door and in color. Drawings shall be printed on 8.5 x 11 if 11 x 17 is too large to fit on the door. One full set of electrical drawings printed with a Laser

Printer and in color shall be inserted in the door pocket. Ink jet is not accepted.

H. Instrumentation Wire

1. Cable for 4-20mA analog instrumentation circuits shall be multi-conductor twisted, tinned, 18 AWG, with a FOIL and BRAIDED shield.

2. Insulation is to be stripped back 6-inch from the terminal connection to allow clamp on measurement of 20ma loop.

I. Discrete Signal Wire

1. Cable for 24VDC to 120VAC discrete signal control circuits shall be minimum #16 awg stranded ASTM Standard B-8.

2. Insulation is to be stripped back 6-inch from the terminal connection.

2.02 PANEL MOUNTED DEVICES

A. Control Circuit Breakers

1. Control circuit breakers shall be of energy-limiting design and field-mountable for selective applications.

2. Circuit breakers shall mount on a DIN rail.

3. Control Circuit breakers fed by an integral Control Power Transformer shall have a UL/CSA Rated Interrupt Capacity of 10,000 amps.

B. Surge Protection Devices

1. The Control Panel will have a minimum Type 2 SPD with a surge capacity of 40 kA at 8 x 20 us or above.

2. All surge protection devices shall be monitored by a discrete input to the PLC.

3. The surge suppression listed in TABLE 1-1 are all approved for the application listed or ENGINEER approved equals.

TABLE 1-1: CITEL Surge Arrestors

Part Number	Application
DLAW-24D3	Analog
DS220S-24DC	24VDC
DS42S-120/G	120 VAC
DS42S-230	240 VAC

C. 24 Volt DC Power Supplies

1. All control devices such as PLC, HMI and other such devices shall be on its own clean 24VDC power supply and is to be separate from the field power.

2. Provide a second Power supply for 24Vdc power for control device communications power.

3. All Field Power is to have its own power supply dedicated for control loops such as 4-20ma.

4. UPS

    a. All control devices such as PLC, HMI and other such devices shall be on its own UPS.
    b. Provide a second UPS for 24Vdc power for control device communications power.

5. 24 volt DC power supplies shall be mounted in control panels to supply 24 volt DC power for the programmable controller inputs and for the 2-wire instrumentation and for 4-Wire instrumentation and communications power.

6. The power supplies shall be sized as required plus 25% spare capacity. Load calculations shall be provided with the control panel shop drawing submittal.

7. The 24 volt DC power supplies shall be manufactured by:

    a. Puls
    b. Engineer Approved Equal

8. Grounds common and power for each electrical device shall have its own wire connected to one central distribution. Daisy chained shall not be accepted.

D. Selector Switches (Where specified on drawings)

1. Selector switches shall be 30.5 mm, heavy-duty, and non-illuminated.

2. Switches shall have double-break silver contacts and shall be maintained contact type unless otherwise indicated on the Drawings. Auxiliary contact blocks shall be provided on switches where indicated on the Drawings or in the Description of Operation.

3. Selector switches shall carry the same NEMA rating as the panel on which installed.

4. Provide a white legend plate for each switch with black engraving as indicated on the Drawings.

5. Selector switches shall be manufactured by:

a. Rockwell (Allen-Bradley)
b. Square D
c. General Electric
d. or ENGINEER approved equal

E. Push Buttons (Where specified on drawings)

1. Push buttons shall be 30.5 mm, heavy-duty, non-illuminated.

2. Push buttons shall have double-break silver contacts, momentary contact type and shall be color-coded as indicated on the Drawings. Push Buttons without a color indication shall be black.

3. Push buttons shall carry the same NEMA rating as the panel on which installed.

4. All push buttons shall have flush heads unless otherwise indicated on the Drawings.

5. Provide a white legend plate for each push button with black engraving as indicated on the Drawings.

6. Push buttons shall be manufactured by:

    a. Rockwell (Allen-Bradley)
    b. Square D
    c. General Electric
    d. or ENGINEER approved equal

F. Pilot Lights (Where specified on drawings)

1. Pilot lights shall be 30.5 mm, heavy-duty, push to test, with universal LED lamps. Lens color shall be as indicated on the drawings.

2. Pilot lights shall carry the same NEMA rating as the panel on which installed.

3. Provide a white legend plate for each pilot light with black engraving as indicated on the Drawings.

4. Pilot lights shall be manufactured by:

    a. Rockwell (Allen-Bradley)
    b. Square D
    c. General Electric
    d. or ENGINEER approved equal

G. Relays, General Purpose

1. General purpose relays as shown on the drawings shall be UL labeled, industrial grade as manufactured by:

    a. Finder
    b. IDEC
    c. Schneider Electric
    d. Phoenix Contact
    e. Engineer Approved Equal

2. Relays shall have LED indication of energized/de-energized state.

3. Relays shall have latching Levers.

H. Interposing Relays – Used with PLC I/O

1. Interposing relays shall be miniature industrial type with 120 VAC coils or pluggable miniature type for 24 VDC coils.

2. Relays shall have LED indication of energized/de-energized state.

3. Relays shall be SPDT or DPDT type with AgNi contacts rated for 6A resistive minimum.

4. Interposing relays shall be manufactured by:

   a. Finder
   b. IDEC
   c. Schneider Electric
   d. Phoenix Contact
   e. Engineer Approved Equal

I. Fuses (Where specified in the drawings)

1. All fuses shall be sized as required for the circuit they are protecting.

2. Fuses shall be rated at 600 VAC/170 VDC (1/2-20 A) and 480 VAC/300 VDC (25 – 60 A).

3. Fuses shall be listed UL Std. 248.

4. Fuses shall be supplied with manufacturer recommended fuse blocks.

5. Fuses shall be manufactured by:

   a. Cooper Bussman, Inc.
   b. Ferraz Shawmut, Inc.
   c. Littlefuse, Inc.
   d. Edison Fuse, Inc.
   e. or ENGINEER approved equal

J. Terminal Blocks

1. Terminal Blocks shall be by:

   a. Phoenix Contact
   b. Wago
   c. Or approved equivalent

2. The minimum size shall be 4mm.

3. Terminals colors are to match UL508A voltage color code

4. All field wiring shall land on din-rail mounted terminal blocks near the bottom of the control panel prior to distribution within the control panel.

5. All spare I/O shall be brought out to terminal blocks for future use.

6. Like devices, equipment, or signals shall be grouped together on terminal blocks. Terminal block layout shall provide for future expansion without the need for renumbering.

7. All terminal blocks shall be rated for 600 volts AC and shall be identified with a permanent machine printed marking.

8. A maximum of two (2) wires shall be provided per terminal block.

K. GFCI Convenience Outlet

1. GFCI convenience outlets shall be UL labeled, industrial grade, and DIN rail mounted. GFCI outlets shall be rated for 120 VAC, 15 A.

2. GFCI convenience outlets shall be labeled with the tag number indicated in the Contract Drawings and shall clearly indicate the maximum current available.

L. Wiring

1. Type and Identification

a. All Wire Colors in the panel are to follow the UL508A standards.
b. Control Wiring shall be numbered / lettered at each end. Wire numbers / letters shall be Flattened Polyolefin Heat Shrink Markers for Permanent Wire and Cable Identification (Panduit) or approved equal.

2. All interior control panel control wiring shall be stranded copper #18 AWG, 600V, Type RHW2.

3. All interior control panel analog signal wiring shall be 18 gauge, twisted-shielded pairs with foil shield and drain wire. Analog signal wire shall be manufactured with 600V, 75° insulation.

4. All control cabinet wiring to the PLC and control devices shall be terminated with ferrules.

5. All wiring and terminal strips shall be isolated by voltage levels to the greatest possible extent.

6. Wiring shall be continuous with no splices.

7. Exterior panel wiring shall be as indicated on the Drawings.

M. Wiring Duct

1. Wiring Duct shall be as follows

   a. Panduit Wide Slot with a Hinged Cover. Non hinged covers will not be accepted. An example part number is H1.5X2LG6 / HC1.5LG6 but not limited to this size.

2. Wiring duct shall have a maximum fill limit of 40%.

3. The outside edge of the Panduit can be placed no closer than 2 inches to the nearest terminal edge or component. This is to allow adequate space to wire the terminals.

4. Wire Duct installed on the outside edges of the back panel must be a minimum of 2 inches from the edge of the back panel.

N. Grounding Bus

1. Provide a copper isolated grounding bus inside the control panel for terminating all ground wires.

2. Grounding busses shall be 2-inch x ¼-inch x 12-inch long and manufactured of copper. Grounding busses used for isolated grounds shall be provided with a standard hardware kit that includes fixtures for isolation from the panel. The installation kit shall include at least one (1) #2 compression lug.

3. Grounding busses shall be manufactured by:

   a. Cooper Industries (SBTGBK)
   b. Panduit
   c. Eritech
   d. or ENGINEER approved equal

O. Nameplates

1. Nameplates are to be provided for all individual panels, instruments and panel mounted devices.

2. Use plastic laminate nameplates having engraved white letters on a black background.

3. Letters must be a minimum of 24 Font.

4. Nameplate must be visible when devices are wired

P. Programmable Logic Controllers

1. PLC system shall be Allen Bradley, Schnieder Electric, or ENGINEER approved equal.

2. Provide a complete PLC system with processors, communication modules, local and remote I/O modules and other system components as shown on the Drawings or as required for proper operation. All PLC hardware components shall be configured to perform the functions shown on the Drawings and within these specifications.

3. The PLC shall be suitable for use under the following environmental conditions:

   a. Operating temp: 0°C to 60°C for horizontal configuration
      0°C to 40°C for vertical configuration
   b. Relative humidity: 95% at 25°C, non-condensing

4. The PLC shall be provided with approximately 20% spare I/O points.

   a. All spares are to be wired to terminals

5. The CONTRACTOR shall provide all Ethernet switches, adapters, connectors, and interconnection cables necessary to connect the PLCs to the network. Network isolators shall be required on all ethernet based networks originating from field devices outside of the main pump building.

6. Analog Input modules shall be isolated from the backplane and each channel shall be individually isolated from each other.

7. Each Input module shall have two fuses to divide the inputs.

PART 3 EXECUTION

3.01 PREPARATION

A. Factory acceptance testing shall be performed at the panel fabricators facility or a facility chosen by the CSI. CSI shall coordinate all testing requirements, notifications to OWNER and ENGINEER, and reporting results. CSI or panel fabricator shall prepare a FAT testing protocol document and submit to the OWNER and ENGINEER for review and approval at least 3 weeks in advance of planned FAT testing.

B. Start-up and Testing

1. Check the panel for conformity with the approved shop drawings for the panel being supplied.

2. Provide a minimum of sixteen (16) hours for onsite support to be used at the direction of the OWNER or ENGINEER for field required modifications to the control panels.

3. Test the operation of the control panel and all controls including communications equipment.

4. All start-up and testing shall be performed in the presence of City of Hampton and the ENGINEER.

5. Any field revisions to the control panels shall be documented and incorporated into final O&M manuals. Additionally, shop drawings shall be updated and resubmitted to the ENGINEER for record keeping purposes.

C. Training

1. Provide up to sixteen (16) hours of training for the OWNER's personnel on the operation of the control panel.

2. Training shall be provided on at least two separate days and two separate shifts, as necessary, to accommodate personnel on all work schedules and shifts.

3. Training shall include operation of the controls and troubleshooting procedures.

END OF SECTION

EXHIBIT C

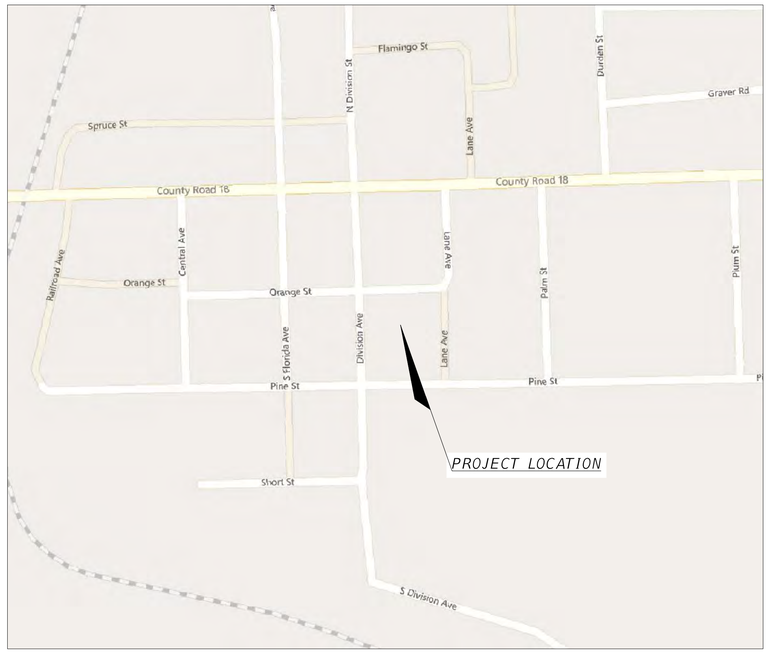
DESIGN PLANS

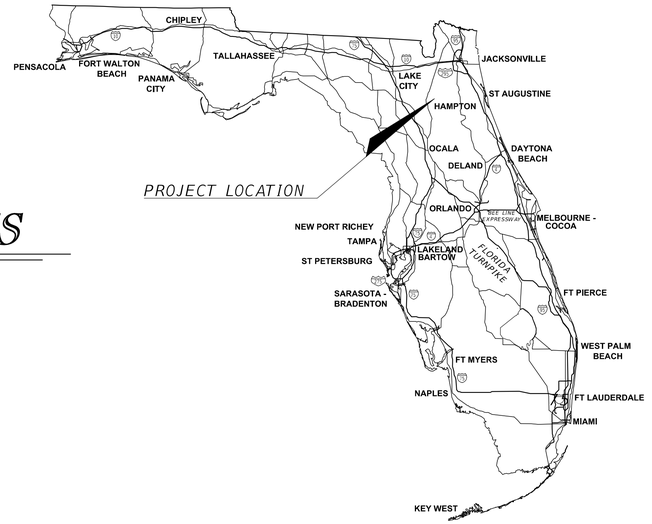
CONSTRUCTION PLANS FOR CITY OF HAMPTON

BRADFORD COUNTY, FLORIDA

HAMPTON UTILITY IMPROVEMENTS

CITY OF HAMPTON WELL 1R





PROJECT LOCATION: BRADFORD COUNTY
SECTION 30, TOWNSHIP 07 S, RANGE 22 E

CITY COUNCIL

MAYOR - DALE WISEMAN
COUNCIL CHAIRMAN - WILLIAM GOODGE
COUNCIL VICE CHAIRMAN - DOUGLAS WILLIAMSON
COUNCIL MEMBER - FRANK BRYANT
COUNCIL MEMBER - LILLIAN SAMS
COUNCIL MEMBER - DOROTHY SHEALEY

CITY CLERK/ADMINISTRATOR - MARY LOU HILDRETH,MMC

INDEX OF UTILITY SHEETS	
Sheet Number	Sheet Title
G-01	COVER SHEET
G-02	SIGNATURE SHEET
G-03	GENERAL NOTES
G-04	EXISTING CONDITIONS & PROJECT LAYOUT
C-01	SITE PLAN & PROFILE
C-02	SITE DETAILS
C-03	GRADING PLAN (1)
C-04	GRADING PLAN (2)
C-05	GRADING PROFILES & CROSS SECTIONS (1)
C-06	GRADING PROFILES & CROSS SECTIONS (2)
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E0.1	ELECTRICAL LEGEND
E1.1	ONE-LINE DIAGRAM AND CALCULATIONS
E1.2	SCHEDULES AND SCHEMATICS
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E2.2	ENLARGED ELECTRICAL PLANS
E2.3	SCHEDULES AND SCHEMATICS
I0.1	INSTRUMENTATION LEGEND
I1.1	PUMPING AND GST P&ID
I2.1	CONTROL DIAGRAMS & DETAILS
1 of 1	TOPOGRAPHIC SURVEY

PREPARED BY:
INFRASTRUCTURE CONSULTING & ENGINEERING
5550 WEST IDLEWILD AVENUE,SUITE 115
TAMPA, FLORIDA 33634
(813)330-2701
CERTIFICATE OF AUTHORIZATION NO.: 30862

NOTE: SCALE OF THESES PLANS MAY HAVE CHANGED DUE TO REPRODUCTION

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CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer:	Checked by:
JSA	JD
Technician:	ICE Proj. No.:
CB	21-51.11

Notes:

REVISIONS

No.	Description	Date	By

Project Name:
CITY OF HAMPTON WELL 1R

Drawing Name:
COVER SHEET

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
Scale:	Sheet Number:
N/A	G-01

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5550 WEST IDLEWILD AVENUE
SUITE 115
TAMPA, FLORIDA 33634
JEFFREY S. ANTONACCI. P.E. NO. 89638

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

Sheet Number	Sheet Title
G-01	COVER SHEET
G-02	SIGNATURE SHEET
G-03	GENERAL NOTES
G-04	EXISTING CONDITIONS & PROJECT LAYOUT
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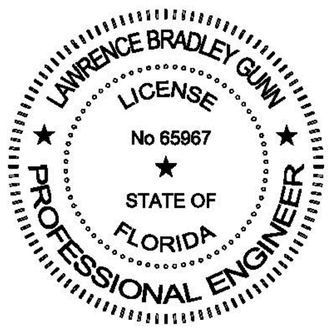
S-01	ROOF STRUCTURE PLAN AND DETAILS
1 of 1	TOPOGRAPHIC SURVEY



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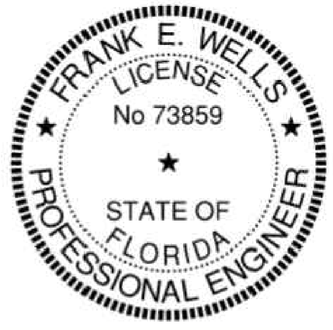
WATER CO ENGINEERING AND CONSTRUCTION, LLC
MELROSE, FLORIDA 32666
LAWRENCE B. GUNN P.E. NO. 65967

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

Sheet Number	Sheet Title
G-02	SIGNATURE SHEET
M-01	DEMOLITION & FUTURE CONNECTION PLAN
M-02	OVERALL SITE PLAN
M-03	WELLHEAD AND RAW WATERMAIN PLAN
M-04	WELLHEAD PLAN & SECTION
M-05	PROCESS MECHANICAL SPECIFICATIONS
M-06	PROCESS MECHANICAL DETAILS



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EVANLILY ENGINEERING
JACKSONVILLE, FLORIDA
FRANK E. WELLS. P.E. NO. 73859

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

Sheet Number	Sheet Title
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E0.1	ELECTRICAL LEGEND
E1.1	ONE-LINE DIAGRAM AND CALCULATIONS
E1.2	SCHEDULES AND SCHEMATICS
E2.1	ELECTRICAL SITE PLAN
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INFRASTRUCTURE
CONSULTING & ENGINEERING
5550 WEST IDLEWILD AVE. SUITE 115
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CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer:	Checked by:
JSA	JD
Technician:	ICE Proj. No.:
CB	21-51.11

Notes:

REVISIONS

No.	Description	Date	By

Project Name:

CITY OF HAMPTON
WELL 1R

Drawing Name:

SIGNATURE SHEET

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GENERAL NOTES

1. CONTRACTOR SHALL PROVIDE CITY OF HAMPTON WITH A DETAILED WORK PLAN SCHEDULE PRIOR TO INITIATING WORK.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRS TO DAMAGE TO UTILITIES, STRUCTURES, AND PROPERTY ON AND ADJACENT TO THE SITE CAUSED BY CONSTRUCTION ACTIVITIES.
3. THE CONSTRUCTION LENGTHS INDICATED IN THESE PLANS ARE APPROXIMATE. CONTRACTOR TO VERIFY QUANTITIES, LENGTHS AND LIMITS PRIOR TO BIDDING.
4. ALL AREAS OF EXPOSED EARTH RESULTING FROM CONSTRUCTION ACTIVITIES SHALL BE SODDED.
5. DURING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE STAKEOUT OF THE PROJECT, I.E., LINE, GRADE, SLOPE STAKE, OR ANY OTHER STAKEOUT (INCLUDING AS-BUILTS) THAT MAY BE REQUIRED TO COMPLETE THE PROJECT IN ACCORDANCE WITH PLANS AND SPECIFICATIONS. ALL SURVEY WORK STATED HEREIN SHALL BE PERFORMED BY A PROFESSIONAL LAND SURVEYOR, LICENSED TO PRACTICE IN THE STATE OF FLORIDA.
6. OVERALL CLEAN UP SHALL BE ACCOMPLISHED BY THE CONTRACTOR IN ACCORDANCE WITH CITY STANDARDS OR AS DIRECTED BY THE ENGINEER. ANY AND ALL EXPENSE INCURRED FOR THIS WORK SHALL BE INCLUDED IN THE BID PRICE FOR THE RELATED ITEM.
7. ANY DAMAGE TO STATE, COUNTY OR LOCAL ROADS CAUSED BY THE CONTRACTOR'S HAULING OR EXCAVATING EQUIPMENT SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.
8. CONTRACTOR TO PROVIDE, AT THIER OWN COST, TO PROVIDE A WATER TRUCK AND WATER NEW SOD FOR 1 MONTH (30 DAYS).
9. ALL CONSTRUCTION ACTIVITIES SHALL BE COORDINATED WITH BRADFORD COUNTY UTILITY AUTHORITY AND THE CITY OF HAMPTON TOWN MANAGER AND WATER ADMINISTRATOR, A MINIMUM OF 48 HOURS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.
10. ALL CONSTRUCTION ON THIS PROJECT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE BRADFORD COUNTY UTILITY AUTHORITY TECHNICAL SPECIFICATIONS, THE AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARD AND/OR THE CURRENT EDITION OF FDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
11. COORDINATES ON WHICH THE SURVEY IS BASED ARE REFERENCED TO THE FLORIDA STATE PLANE COORDINATION SYSTEM (WEST ZONE). NORTH AMERICAN VERTICAL DATUM OF 1983 (NAD 83 (2011) U.S. SURVEY FEET.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL CONDITIONS AND REQUIREMENTS OF ALL PERMITS AND ALL GOVERNING FEDERAL, STATE, AND LOCAL AGENCIES. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS THAT ARE NOT PROVIDED IN THE BID DOCUMENTS AT NO ADDITIONAL COST TO THE OWNER.
13. EXISTING UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN LOCATED FROM THE BEST AVAILABLE SURVEY AND RECORDS AND THEIR LOCATIONS MUST ONLY BE CONSIDERED AS APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES SHOWN IN THE PLANS AND ANY OTHER UTILITIES WHICH MAY NOT BE SHOWN IN THE PLANS. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES IN THE AREA AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION. CALL SUNSHINE STATE 811 TO VERIFY UTILITIES IN THE PROJECT AREA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE UNINTERRUPTION OF SERVICE AND REPLACEMENT OF DAMAGED UTILITIES.
14. THE CONTRACTOR SHALL USE ALL NECESSARY SAFETY PRECAUTIONS TO AVOID CONTACT WITH OVERHEAD AND UNDERGROUND UTILITIES, POWER LINES, ETC.
15. THE CONTRACTOR SHALL PROVIDE PROPER WARNING SIGNS, BARRICADES, TEMPORARY FENCING AND OTHER APPROPRIATE SAFETY DEVICES DURING THE EXECUTION OF THE WORK TO PROVIDE PUBLIC PROTECTION AND SAFETY.
16. ALL CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO WITHIN THE CITY OF HAMPTON'S RIGHT-OF-WAY AND/OR EASEMENTS AS SHOWN IN PLANS.
17. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH IN THE FIELD THE RIGHT-OF-WAY LINES, BASELINES, BENCHMARKS (ELEVATION), CENTERLINES, AND STATIONING AS REQUIRED TO CONSTRUCT THIS PROJECT.
18. THE CONTRACTOR SHALL COORDINATE THE CUTTING OF DRIVEWAYS WITH THE PROPERTY OWNER PRIOR TO CUTTING. ALL DRIVEWAYS WILL BE IN PASSABLE CONDITION AT THE END OF THE WORK DAY AND FULLY RESTORED.
19. A RIGHT OF ENTRY AGREEMENT SHALL BE OBTAINED FROM THE PROPERTY OWNER BEFORE ANY DRIVEWAY CONSTRUCTION WORK IS DONE OUTSIDE OF THE RIGHT-OF-WAY OR EASEMENT.
20. BACKFILL OF PIPE INSTALLATION SHALL BE INCLUDED IN THE PRICE FOR THAT ITEM.

UTILITY CONTACTS

WATER AND SEWER:
CITY OF HAMPTON
(904) 529-9078

GAS:
SEACOAST GAS (TECO)
(813) 743-7164

ELECTRIC:
FLORIDA POWER & LIGHT
(855) 939-3840

COMMUNICATIONS:
AT&T- TELEPHONE
BURIED WIRE DEPT,
(800) 924-9420

VERIZON (MCI)- FIBER
(800) 624-9675

MAINTENANCE OF TRAFFIC NOTES

1. UTILIZE APPLICABLE INDICES FROM THE LATEST FDOT DESIGN STANDARDS FOR TRAFFIC CONTROL FOR UTILITY WORK OUTSIDE THE ROADWAY UNLESS OTHERWISE NOTED IN THE PLANS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING A DETAILED TRAFFIC CONTROL PLAN FOR CONSTRUCTION. THE PLAN SHALL BE PREPARED AND SIGN AND SEALED BY REGISTERED AND QUALIFIED PROFESSIONAL ENGINEER AND SUBMITTED TO THE TOWN MANAGER PRIOR TO CONSTRUCTION.

EROSION CONTROL GENERAL NOTES

1. THE CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES AND MAINTAIN THEM THROUGHOUT CONSTRUCTION AND COMPLY WITH SECTION 104 OF THE LATEST FDOT STANDARD SPECIFICATIONS. REMOVE THE TEMPORARY EROSION CONTROL MEASURES WHEN CONSTRUCTION IS COMPLETE.
2. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL APPLICABLE RULES, REGULATIONS AND WATER QUALITY GUIDELINES.
3. CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES DAILY AND PERFORM NECESSARY REPAIRS TO ALL AFFECTED MEASURES PROMPTLY.

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TAMPA, FLORIDA 33634 (813) 330-2701
CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer:	Checked by:
JSA	JD
Technician:	ICE Proj. No.:
CB	21-51.11

Notes:

REVISIONS

No.	Description	Date	By

Project Name:

CITY OF HAMPTON
WELL 1R

Drawing Name:

GENERAL NOTES

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
Scale:	Sheet Number:
N/A	G-03

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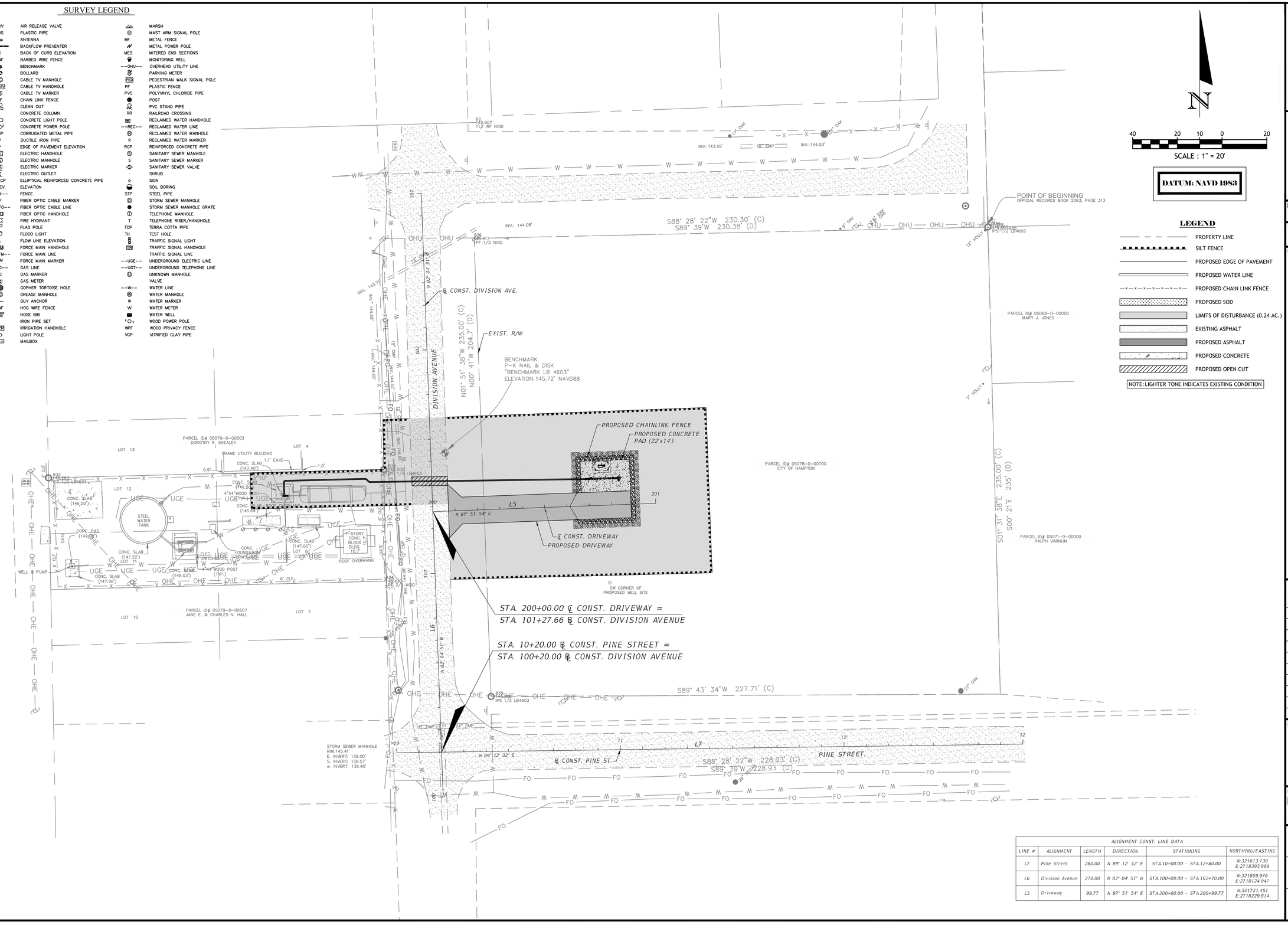
SURVEY LEGEND

ARV	AIR RELEASE VALVE		MARSH
ABS	PLASTIC PIPE		MAST ARM SIGNAL POLE
	ANTENNA	MF	METAL FENCE
	BACKFLOW PREVENTER		METAL POWER POLE
BC	BACK OF CURB ELEVATION	MES	MITERED END SECTIONS
BWF	BARBED WIRE FENCE		MONITORING WELL
	BENCHMARK	--OHU--	OVERHEAD UTILITY LINE
	BOLLARD		PARKING METER
	CABLE TV MANHOLE	PED	PEDESTRIAN WALK SIGNAL POLE
CATV	CABLE TV HANDHOLE	PF	PLASTIC FENCE
	CABLE TV MARKER	PVC	POLYVINYL CHLORIDE PIPE
CLF	CHAIN LINK FENCE		POST
	CLEAN OUT		PVC STAND PIPE
	CONCRETE COLUMN	RR	RAILROAD CROSSING
	CONCRETE LIGHT POLE		RECLAIMED WATER HANDHOLE
	CONCRETE POWER POLE	--REC--	RECLAIMED WATER LINE
CMP	CORRUGATED METAL PIPE		RECLAIMED WATER MANHOLE
DIP	DUCTILE IRON PIPE	R	RECLAIMED WATER MARKER
EP	EDGE OF PAVEMENT ELEVATION	RCP	REINFORCED CONCRETE PIPE
	ELECTRIC HANDHOLE		SANITARY SEWER MANHOLE
	ELECTRIC MANHOLE	S	SANITARY SEWER MARKER
	ELECTRIC MARKER		SANITARY SEWER VALVE
	ELECTRIC OUTLET		SHRUB
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE		SIGN
ELEV.	ELEVATION		SOIL BORING
--X--	FENCE	STP	STEEL PIPE
F	FIBER OPTIC CABLE MARKER		STORM SEWER MANHOLE
--FO--	FIBER OPTIC CABLE LINE		STORM SEWER MANHOLE GRATE
FO	FIBER OPTIC HANDHOLE		TELEPHONE MANHOLE
	FIRE HYDRANT	T	TELEPHONE RISER/HANDHOLE
	FLAG POLE	TCP	TERRA COTTA PIPE
	FLOOD LIGHT	TH	TEST HOLE
FL	FLOW LINE ELEVATION		TRAFFIC SIGNAL LIGHT
FM	FORCE MAIN HANDHOLE	TS	TRAFFIC SIGNAL HANDHOLE
--FM--	FORCE MAIN LINE		TRAFFIC SIGNAL LINE
FM	FORCE MAIN MARKER	--UGE--	UNDERGROUND ELECTRIC LINE
---G---	GAS LINE	--UGT--	UNDERGROUND TELEPHONE LINE
G	GAS MARKER		UNKNOWN MANHOLE
	GAS METER		VALVE
	GOPHER TORTOISE HOLE	--W--	WATER LINE
	GREASE MANHOLE		WATER MANHOLE
	GUY ANCHOR	W	WATER MARKER
HWF	HOG WIRE FENCE	W	WATER METER
HB	HOSE BIB		WATER WELL
	IRON PIPE SET		WOOD POWER POLE
IRR	IRRIGATION HANDHOLE	WPF	WOOD PRIVACY FENCE
	LIGHT POLE	VCP	VITRIFIED CLAY PIPE
	MAILBOX		



LEGEND

- PROPERTY LINE
- SILT FENCE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED WATER LINE
- PROPOSED CHAIN LINK FENCE
- PROPOSED SOD
- LIMITS OF DISTURBANCE (0.24 AC.)
- EXISTING ASPHALT
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED OPEN CUT

NOTE: LIGHTER TONE INDICATES EXISTING CONDITION

ALIGNMENT CONST. LINE DATA					
LINE #	ALIGNMENT	LENGTH	DIRECTION	STATIONING	NORTHING/EASTING
L7	Pine Street	280.00	N 89° 12' 32" E	STA.10+00.00 - STA.12+80.00	N:321613.730 E:2718393.999
L6	Division Avenue	270.00	N 02° 04' 51" W	STA.100+00.00 - STA.102+70.00	N:321859.976 E:2718124.947
L5	Driveway	99.77	N 87° 51' 54" E	STA.200+00.00 - STA.200+99.77	N:321721.451 E:2718229.814

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CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer:	Checked by:
JSA	JD
Technician:	ICE Proj. No.:
CB	21-51.11

Notes:

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No.	Description	Date	By

Project Name:

CITY OF HAMPTON
WELL 1R

Drawing Name:

EXISTING CONDITIONS & PROJECT LAYOUT

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
Scale:	Sheet Number:
1" = 20'	G-04

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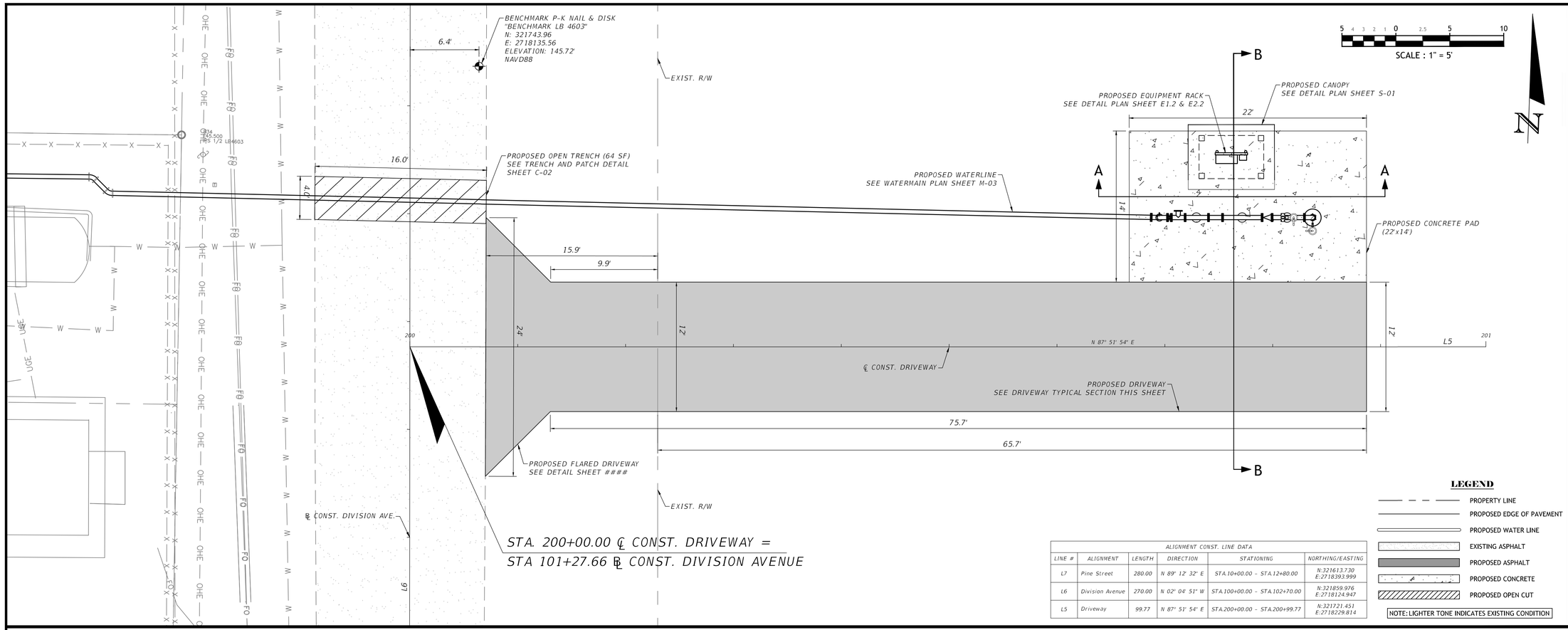
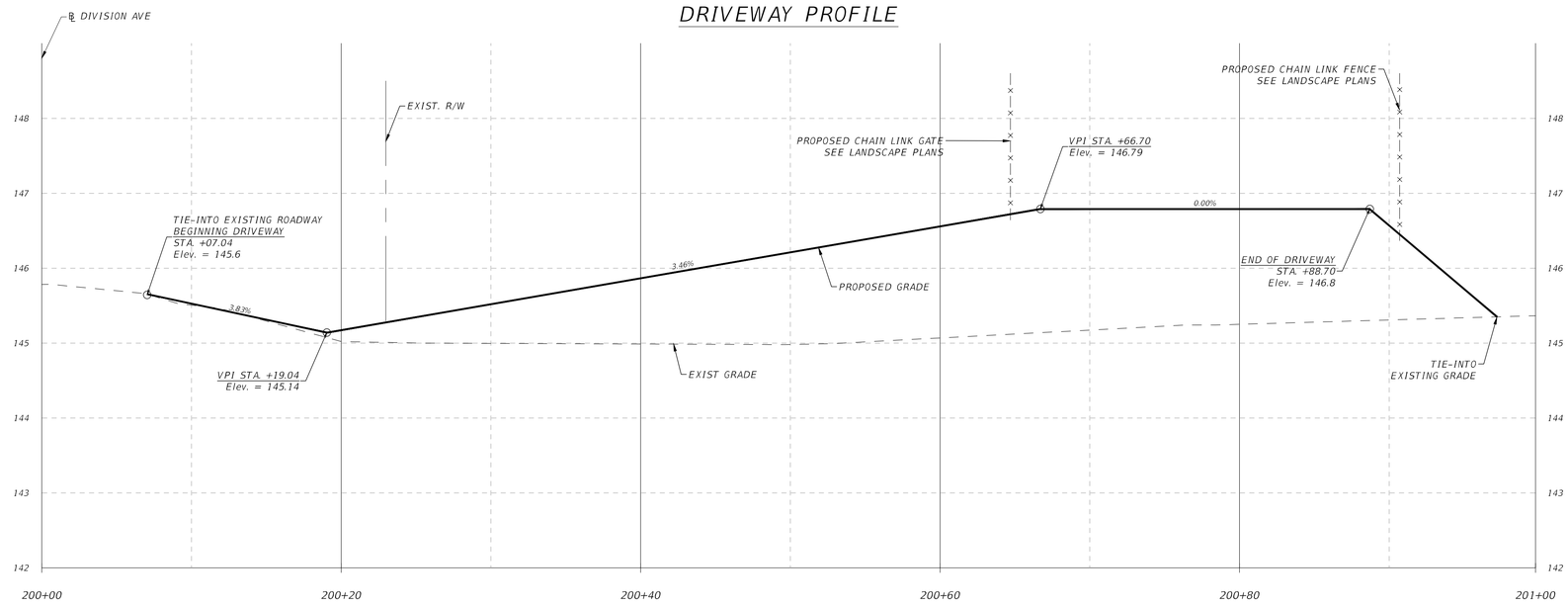


ALIGNMENT CONST. LINE DATA

LINE #	ALIGNMENT	LENGTH	DIRECTION	STATIONING	NORTHING/EASTING
L7	Pine Street	280.00	N 89° 12' 32" E	STA.10+00.00 - STA.12+80.00	N:321613.730 E:2718393.999
L6	Division Avenue	270.00	N 02° 04' 51" W	STA.100+00.00 - STA.102+70.00	N:321859.976 E:2718124.947
L5	Driveway	99.77	N 87° 51' 54" E	STA.200+00.00 - STA.200+99.77	N:321721.451 E:2718229.814

DRIVEWAY PROFILE



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Notes:

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Project Name:

CITY OF HAMPTON
WELL 1R

Drawing Name:

SITE PLAN & PROFILE

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
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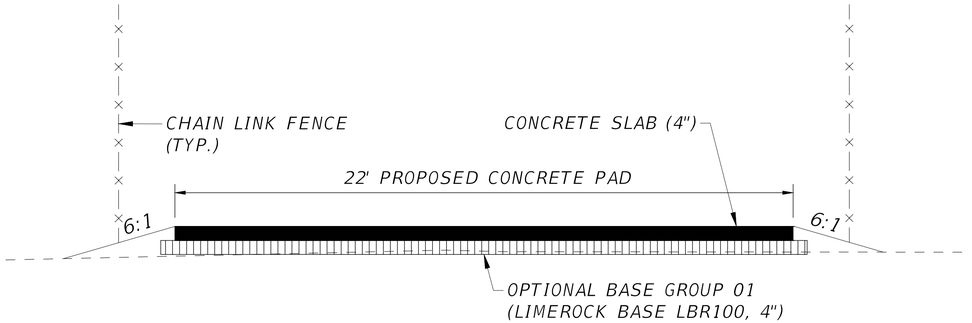
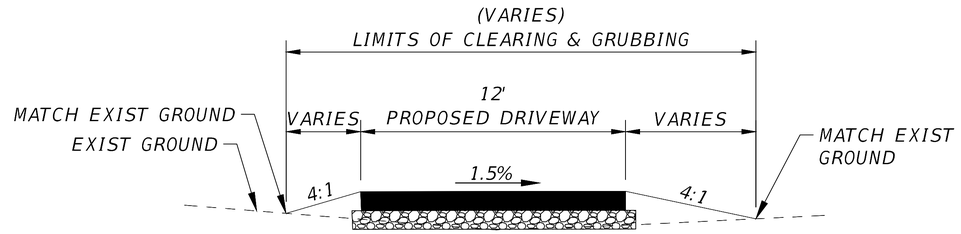
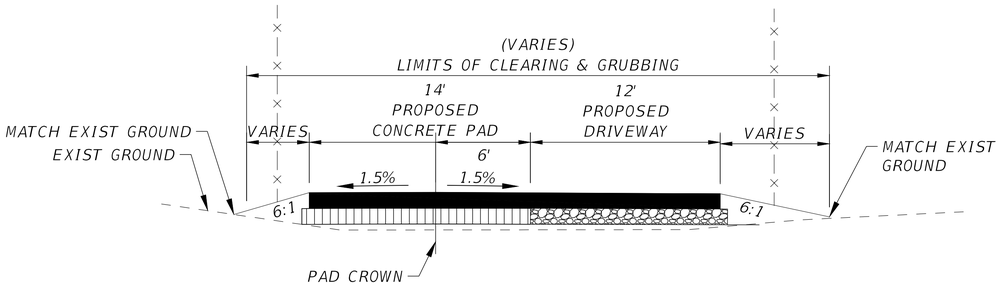


SECTION A-A
TYPICAL SECTION - CONCRETE SLAB

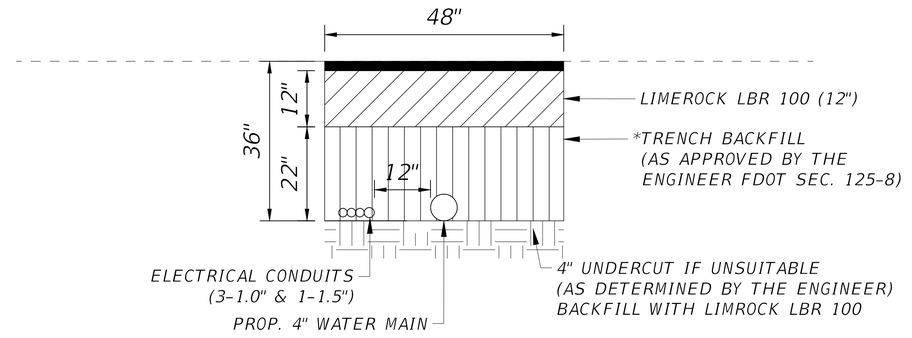


DRIVEWAY TYPICAL SECTION
STA. 200+07.05 TO STA. 200+88.70

OPTIONAL BASE GROUP 4, LIMEROCK BASE (LBR 100, 6")
TYPE SP STRUCTURAL COURSE, SP-12.5 (TRAFFIC C) (1.5" THICK)



SECTION B-B
TYPICAL SECTION



TRENCH AND PATCH DETAIL
DIVISION AVENUE
STA. 300+18.13 TO STA. 300+34.02

OPTIONAL BASE GROUP 11, LIMEROCK BASE (LBR 100, 12")
TYPE SP STRUCTURAL COURSE, SP-12.5 (TRAFFIC C) (2.0" THICK)

* (INCLUDED IN THE PRICE FOR 4" CDLI PC350 UNDERGROUND WATER MAIN)

INFRASTRUCTURE
CONSULTING & ENGINEERING
5550 WEST IDLEWILD AVE. SUITE 115
TAMPA, FLORIDA 33634 (813) 330-2701
CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer:	Checked by:
JSA	JD
Technician:	ICE Proj. No.:
CB	21-51.11

Notes:

REVISIONS

No.	Description	Date	By

Project Name:

CITY OF HAMPTON
WELL 1R

Drawing Name:

SITE DETAILS

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
Scale:	Sheet Number:
N/A	C-02

File Path: C:\Users\corey.brown\Box\ICE\TPA\TRANSPORTATION\PROJECTS\21-51.11\CAD\Utilities\PLANRD01.dwg Date: 3/26/2026 9:29 AM

MATCHLINE "A" - STA. 101+80.00
SEE SHEET C-04

GRADING & DRAINAGE NOTES

1. TWO PERMANENT BENCHMARKS ON-SITE SHALL BE ESTABLISHED BY CONTRACTOR PRIOR TO STARTING CONSTRUCTION.
2. PROPOSED SPOT ELEVATIONS ARE TO THE TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
3. ALL REQUIRED FILL SHALL BE CLEAN, SUITABLE MATERIAL AS APPROVED BY THE ENGINEER.
4. ALL AREAS DISTURBED OUTSIDE LIMITS OF GRADING SHOWN ON THE PLANS SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER BY THE CONTRACTOR.
5. CONTRACTOR SHALL MEET AND MATCH EXISTING (M.E.) PAVEMENT ALONG SAW-CUT LIMITS.
6. ALL FILL SHOULD BE PLACED IN THIN, HORIZONTAL LOOSE LIFTS, MAXIMUM 6 INCHES, AND COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698). A FLORIDA REGISTERED PROFESSIONAL SOILS ENGINEER SHALL CERTIFY THE SOIL COMPACTION PRIOR TO THE INSTALLATION OF PAVEMENTS, CURBS, SIDEWALKS OR FOOTINGS OF ANY TYPE. COMPACTION OF THE UPPER 8 INCHES OF SOIL BENEATH PAVEMENTS AND SLAB-ON-GRADE SHOULD BE COMPACTED TO AT LEAST 98%.
7. REFER TO LANDSCAPE PLAN, SHEET C-09, FOR REQUIRED TREE AND GROUND COVER PLANTINGS.
8. 4:1 MAXIMUM CUT AND FILL SLOPES
9. ALL TRENCHING AND BACKFILL OPERATIONS SHALL COMPLY WITH FDOT STANDARDS SPECIFICATIONS AND GOVERNING JURISDICTIONAL STANDARDS.

LEGEND

- ⊗ 1.00 — PROPOSED SPOT ELEVATION
- ⊗ M.E. ±1.00 — MATCH EXISTING ELEVATION
- #% — PROPOSED SLOPE INDICATOR
- OPEN TRENCH
- X.XX — PROPOSED CONTOURS
- X.XX — EXISTING CONTOURS

NOTE: LIGHTER TONE INDICATES EXISTING CONDITION

EXISTING PERVIOUS/IMPERVIOUS

PERVIOUS	
OPEN SPACE:	47,333.33 SF/ 1.09 AC/ 100%
TOTAL PERVIOUS AREA:	47,333.33 SF/ 1.09 AC/ 100%

PROPOSED PERVIOUS/IMPERVIOUS

PERVIOUS	
BUFFER AREA:	45,609.33 SF/ 1.05 AC/ 96.5%
LANDSCAPE AREA:	400 SF/ 0.01 AC/ 0.8%
TOTAL PERVIOUS AREA:	45,209.33 SF/ 1.06 AC/ 97.3%
IMPERVIOUS	
ASPHALT PAVEMENT AREA:	1,016 SF/ 0.02 AC/ 2.1%
CONCRETE PAVEMENT AREA:	308 SF/ 0.01 AC/ 0.6%
TOTAL IMPERVIOUS AREA:	1,324 SF/ 0.03 AC/ 2.7%

N

5 4 3 2 1 0 2.5 5 10

SCALE : 1" = 5'

EXIST. EOP

EXIST. R/W

145.5

145.0

BL Division Avenue
STA. 101+55.68
OFFSET: 16.30
N: 321746.32
E: 2718145.39

BL Driveway
STA. 200+07.07
OFFSET: 11.98
N: 321729.97
E: 2718136.74
EL. 145.67

BL Division Avenue
STA. 101+33.68
OFFSET: 19.03
N: 321724.44
E: 2718148.91
EL. 145.20

100.00

BL Driveway
STA. 200+13.05
OFFSET: 6.00
N: 321724.22
E: 2718142.94
EL. 145.34

BL Driveway
STA. 200+13.02
OFFSET: 6.00
N: 321712.22
E: 2718143.35
EL. 145.25

DIVISION AVENUE

200

L6

101+00.00

℄ CONST. DIVISION AVE.

BL Division Avenue
STA. 101+21.68
OFFSET: 19.04
N: 321712.45
E: 2718149.36
EL. 145.08

BL Driveway
STA. 200+07.00
OFFSET: 12.00
N: 321706.00
E: 2718137.56
EL. 145.59

STA. 200+00.00 ℄ CONST. DRIVEWAY =
STA 101+27.66 ℄ CONST. DIVISION AVENUE

BL Division Avenue
STA. 101+07.08
OFFSET: 15.57
N: 321697.73
E: 2718146.42
EL. 145.05

EXIST. EOP

EXIST. R/W

145.5

STA. 200+66.70
OFFSET: 20.00
N: 321740.20
E: 2718196.02
EL. 146.88

146

PROPOSED CONCRETE PAD
(22'x14')

146.5

STA. 200+88.70
OFFSET: 20.00
N: 321741.02
E: 2718218.01
EL. 146.88

PROPOSED WATERLINE
SEE WATERMAIN PLAN SHEET M-03

1.5%

Concrete PAD CROWN
STA. 200+81.94
OFFSET: 11.98
N: 321732.76
E: 2718211.55
EL. 147.00

℄ CONST. DRIVEWAY

BL Driveway
STA. 200+66.70
OFFSET: 6.00
N: 321726.21
E: 2718196.54
EL. 146.88

BL Driveway
STA. 200+88.70
OFFSET: 6.00
N: 321727.03
E: 2718218.53
EL. 146.88

BL Driveway
STA. 200+66.70
OFFSET: 6.00
N: 321714.22
E: 2718196.99
EL. 146.70

BL Driveway
STA. 200+88.70
OFFSET: 6.00
N: 321715.04
E: 2718218.98
EL. 146.70

201

L5

145.0

MATCHLINE "B" - STA. 100+90.00
SEE SHEET C-04

ALIGNMENT CONST. LINE DATA					
LINE #	ALIGNMENT	LENGTH	DIRECTION	STATIONING	NORTHING/EASTING
L7	Pine Street	280.00	N 89° 12' 32" E	STA.10+00.00 - STA.12+80.00	N:321613.730 E:2718393.999
L6	Division Avenue	270.00	N 02° 04' 51" W	STA.100+00.00 - STA.102+70.00	N:321859.976 E:2718124.947
L5	Driveway	99.77	N 87° 51' 54" E	STA.200+00.00 - STA.200+99.77	N:321721.451 E:2718229.814

INFRASTRUCTURE CONSULTING & ENGINEERING
5550 WEST IDLEWILD AVE. SUITE 115
TAMPA, FLORIDA 33634 (813) 330-2701
CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer:	Checked by:
JSA	JD
Technician:	ICE Proj. No.:
CB	21-51.11

Notes:

REVISIONS

No.	Description	Date	By

Project Name:
CITY OF HAMPTON
WELL 1R

Drawing Name:
GRADING PLAN (1)

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
Scale:	Sheet Number:
1" = 5'	C-03

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ALIGNMENT CONST. LINE DATA					
LINE #	ALIGNMENT	LENGTH	DIRECTION	STATIONING	NORTHING/EASTING
L7	Pine Street	280.00	N 89° 12' 32" E	STA.10+00.00 - STA.12+80.00	N:321613.730 E:2718393.999
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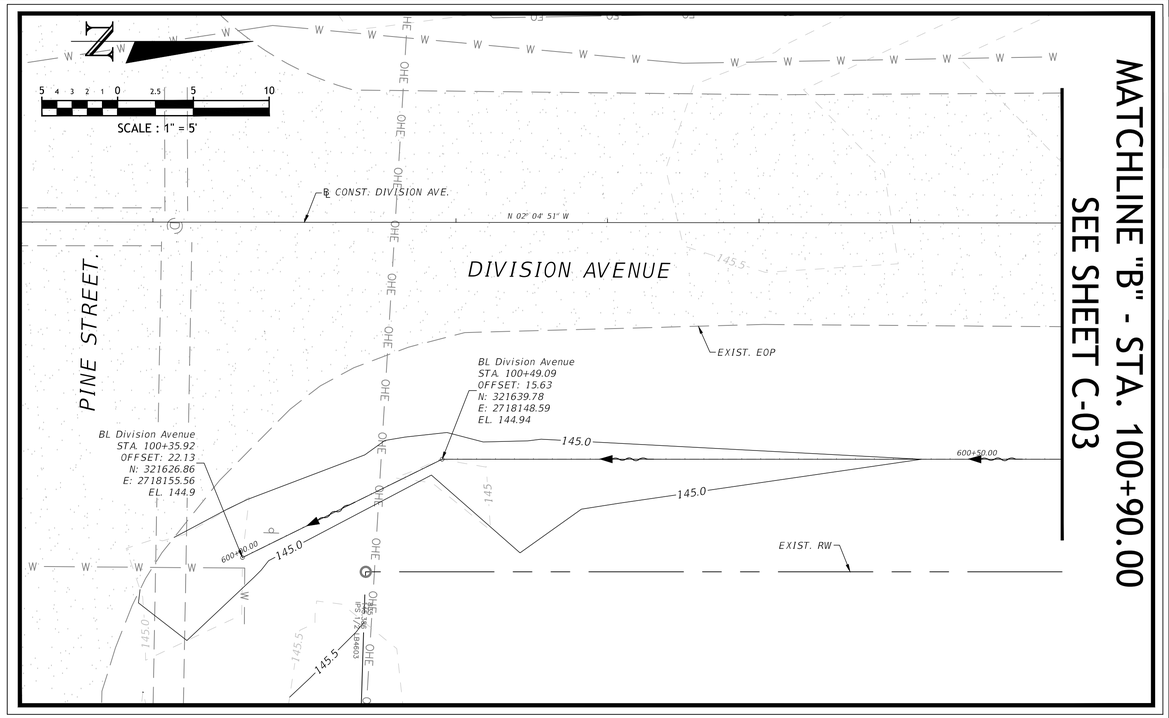
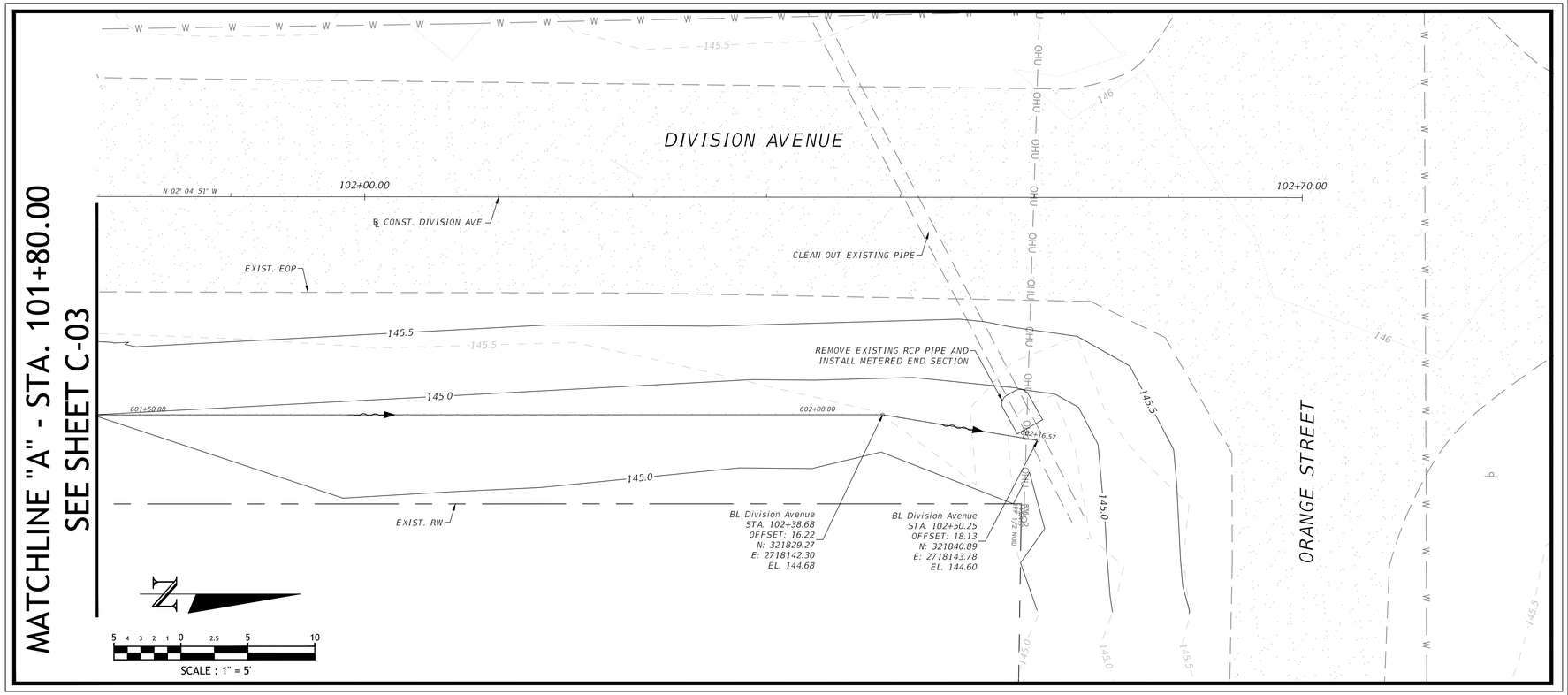
L5	Driveway	99.77	N 87° 51' 54" E	STA.200+00.00 - STA.200+99.77	N:321721.451 E:2718229.814





INFRASTRUCTURE CONSULTING & ENGINEERING
5550 WEST IDLEWILD AVE. SUITE 115
TAMPA, FLORIDA 33634 (813) 330-2701
CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer:	Checked by:
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Technician:	ICE Proj. No.:
CB	21-51.11

Notes:

REVISIONS

No.	Description	Date	By

Project Name:

CITY OF HAMPTON
WELL 1R

Drawing Name:

GRADING PLAN (2)

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
Scale:	Sheet Number:
1" = 5'	C-04

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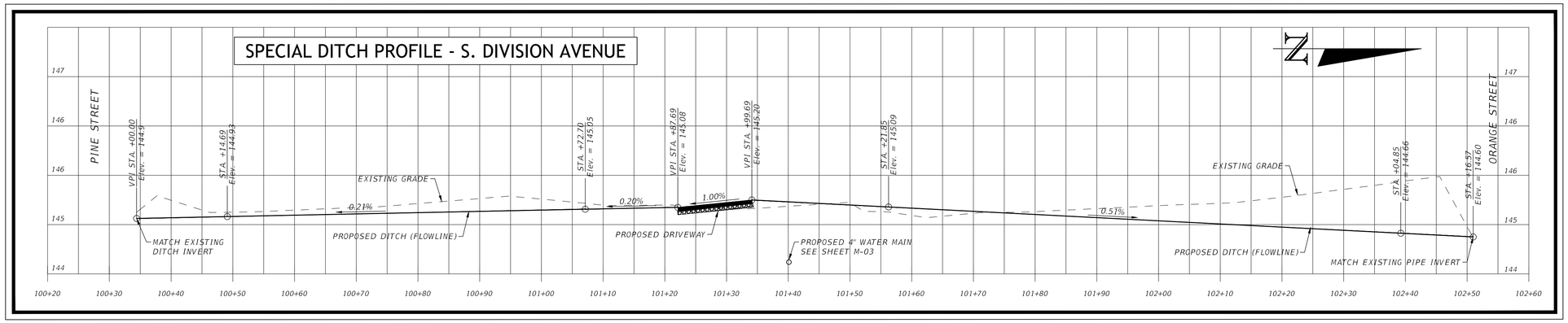
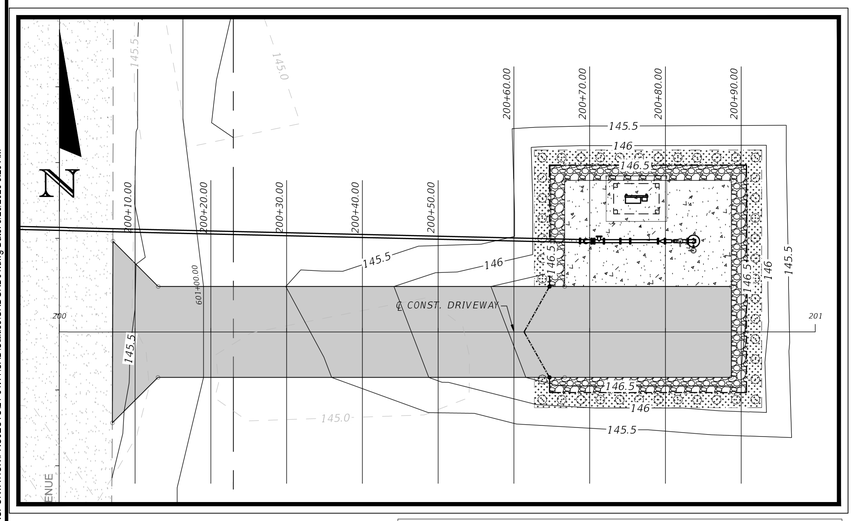
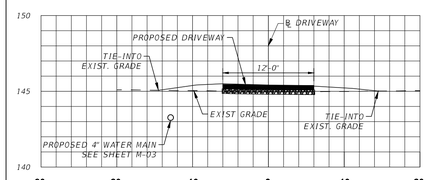




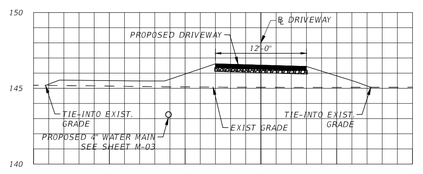
ALIGNMENT CONST. LINE DATA					
LINE #	ALIGNMENT	LENGTH	DIRECTION	STATIONING	NORTHING/EASTING
L7	Pine Street	280.00	N 89° 12' 32" E	STA.10+00.00 - STA.12+80.00	N:321613.730 E:2718393.999
L6	Division Avenue	270.00	N 02° 04' 51" W	STA.100+00.00 - STA.102+70.00	N:321859.976 E:2718124.947
L5	Driveway	99.77	N 87° 51' 54" E	STA.200+00.00 - STA.200+99.77	N:321721.451 E:2718229.814

HORIZ: 20'
VERT: 10'

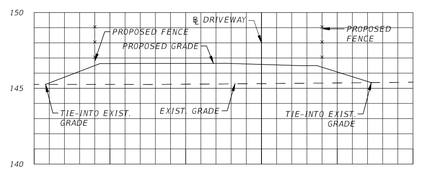
200+30.00



200+60.00



200+90.00



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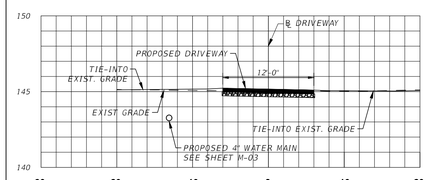
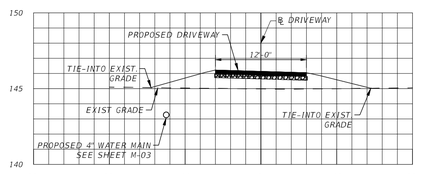


200+50.00



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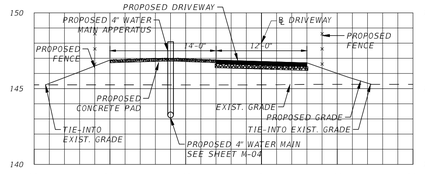

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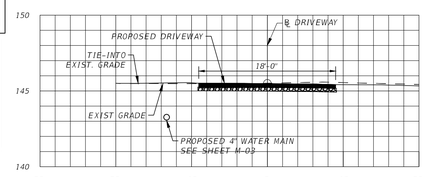

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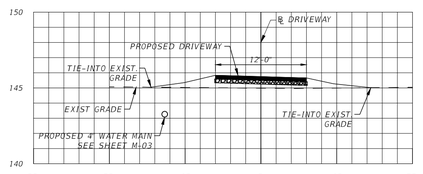
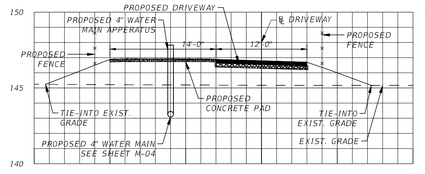


200+70.00



CITY OF HAMPTON, FLORIDA
Est. in 1925

INFRASTRUCTURE CONSULTING & ENGINEERING
5550 WEST IDLEWILD AVE. SUITE 115
TAMPA, FLORIDA 33634 (813) 330-2701
CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer:	Checked by:
JSA	JD
Technician:	ICE Proj. No.:
CB	21-51.11

Notes:

REVISIONS

No.	Description	Date	By

Project Name:

CITY OF HAMPTON WELL 1R

Drawing Name:

GRADING PROFILES & CROSS SECTIONS (1)

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
Scale:	Sheet Number:
1" = 5'	C-05

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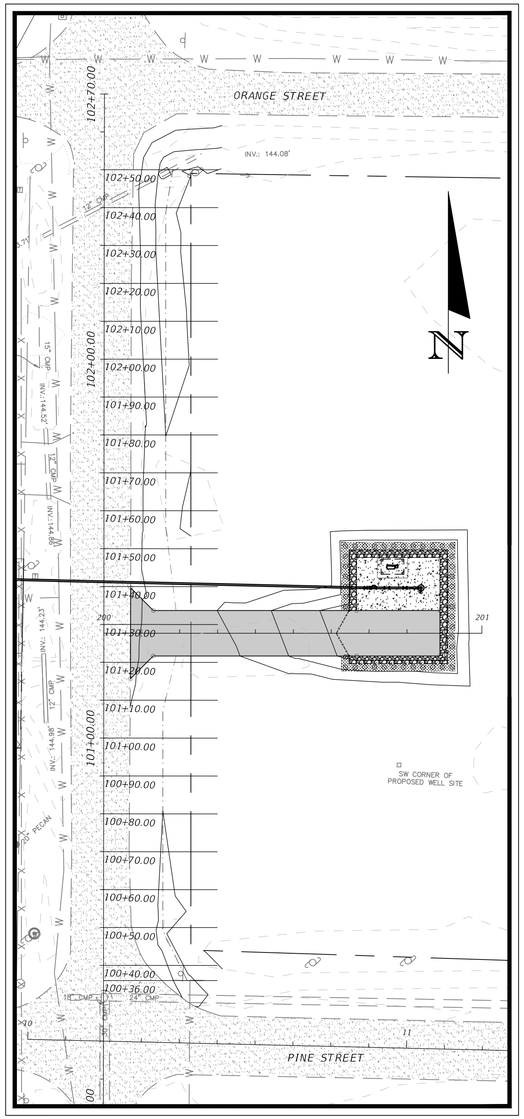
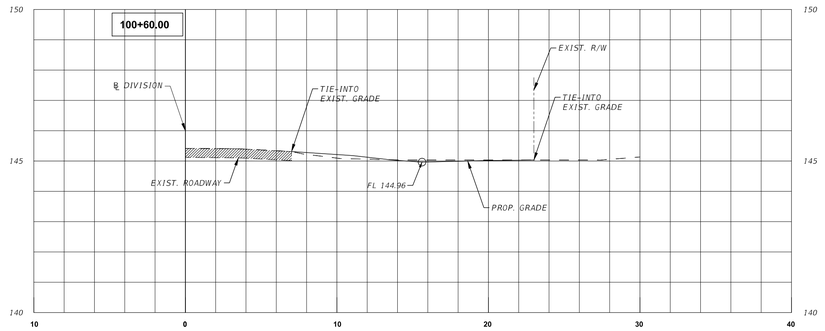
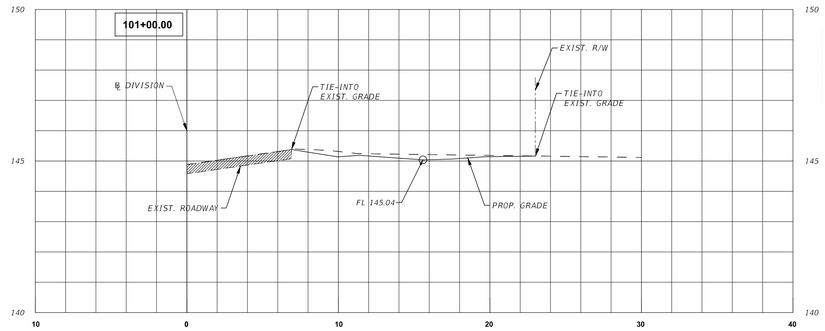
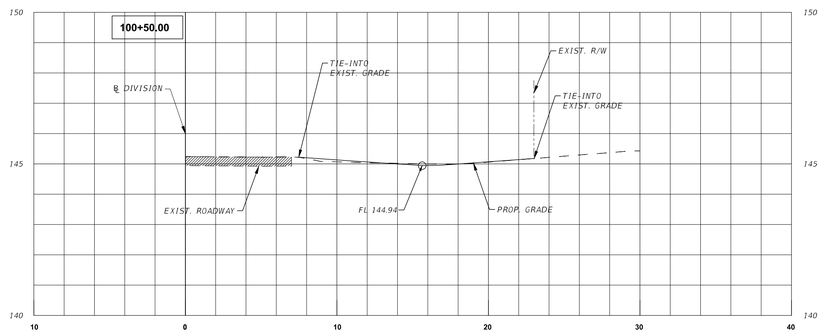


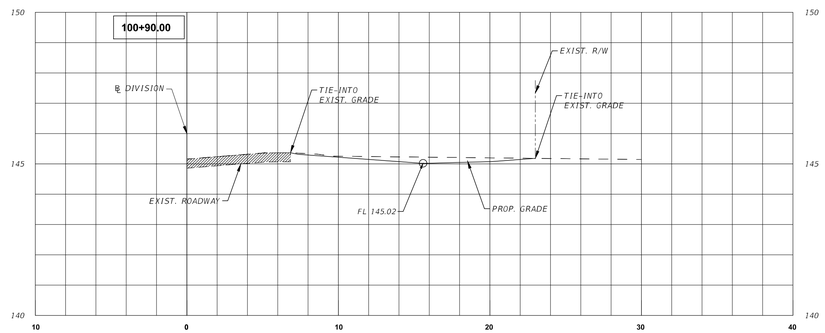
ALIGNMENT CONST. LINE DATA					
LINE #	ALIGNMENT	LENGTH	DIRECTION	STATIONING	NORTHING/EASTING
L7	Pine Street	280.00	N 89° 12' 32" E	STA.10+00.00 - STA.12+80.00	N:321613.730 E:2718393.999
L6	Division Avenue	270.00	N 02° 04' 51" W	STA.100+00.00 - STA.102+70.00	N:321859.976 E:2718124.947
L5	Driveway	99.77	N 87° 51' 54" E	STA.200+00.00 - STA.200+99.77	N:321721.451 E:2718229.814

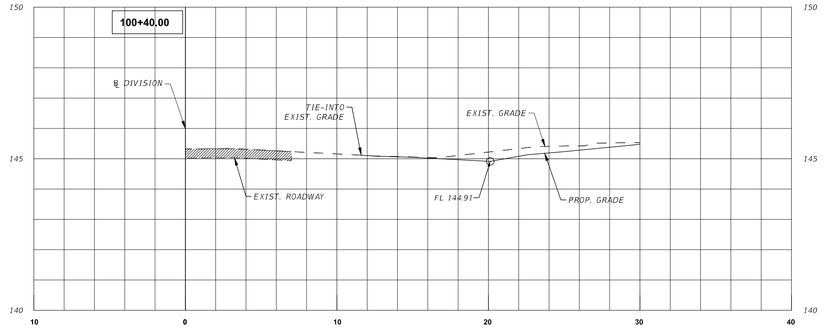
HORIZ: 20'
VERT: 10'

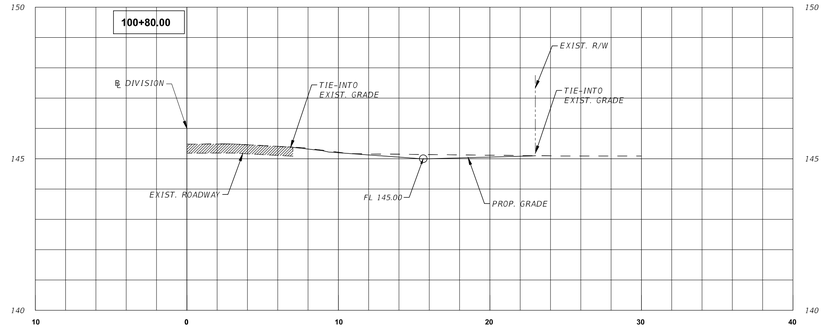


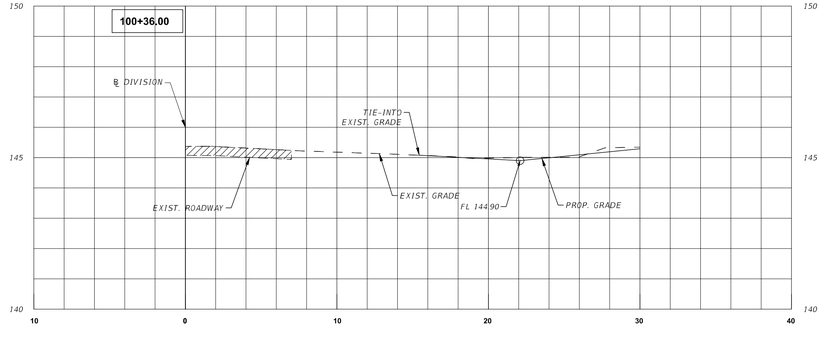


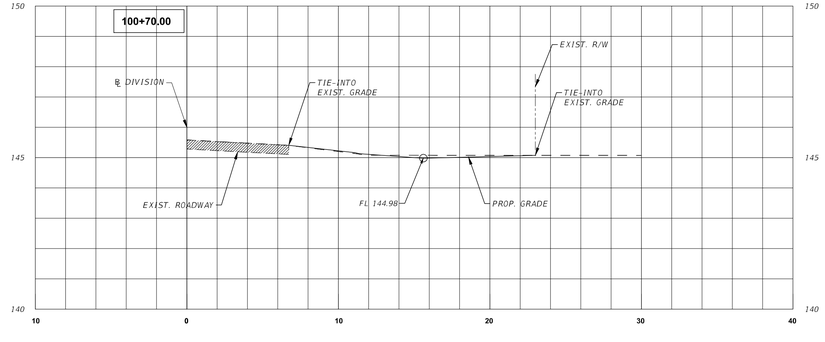












INFRASTRUCTURE CONSULTING & ENGINEERING
5550 WEST IDLEWILD AVE. SUITE 115
TAMPA, FLORIDA 33634 (813) 330-2701
CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer:	Checked by:
JSA	JD
Technician:	ICE Proj. No.:
CB	21-51.11

Notes:

REVISIONS

No.	Description	Date	By

Project Name:

CITY OF HAMPTON
WELL 1R

Drawing Name:

GRADING PROFILES & CROSS SECTIONS (2)

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
Scale:	Sheet Number:
1" = 5'	C-06

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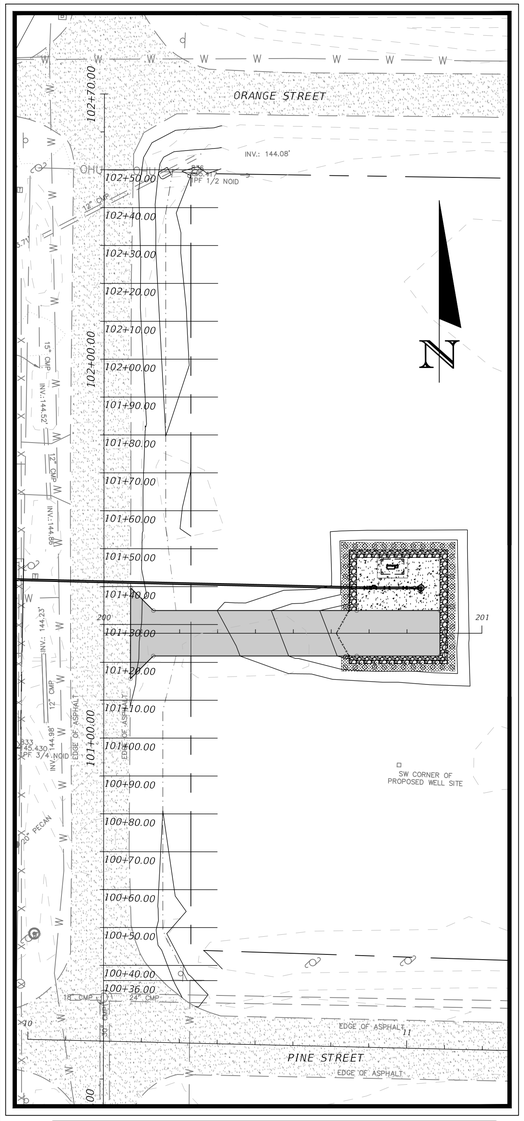

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HORIZ: 20'
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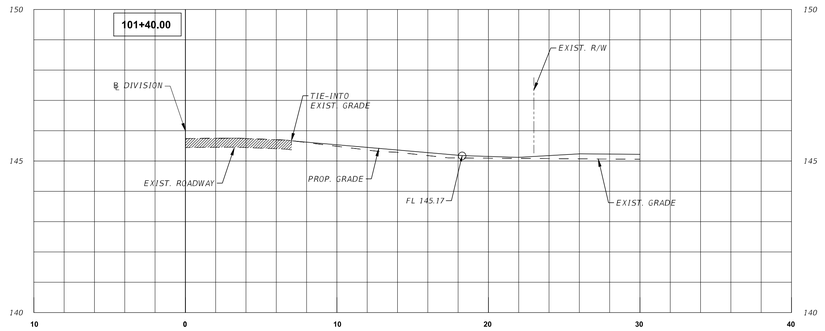

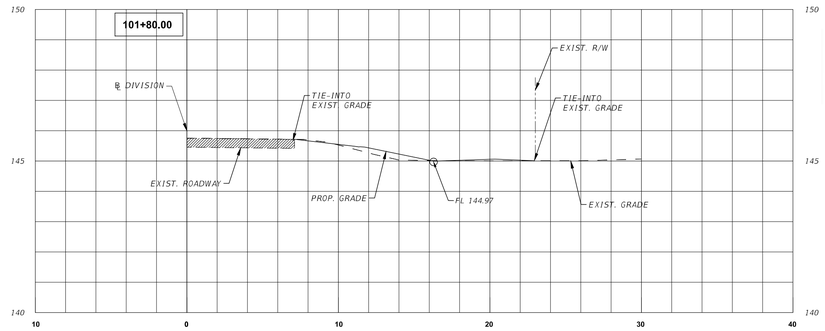

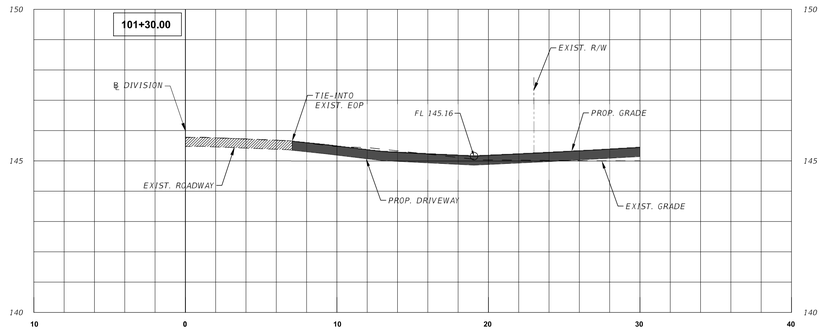

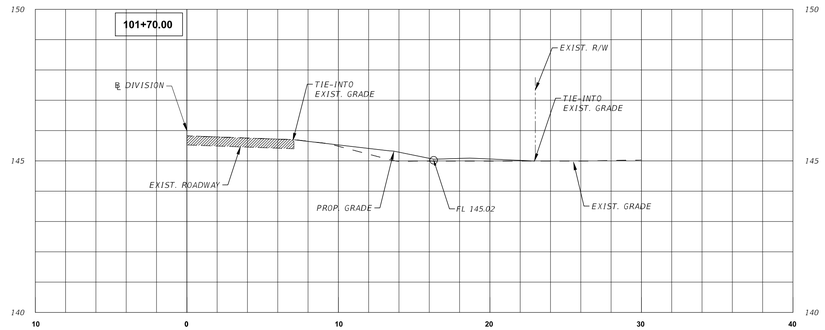

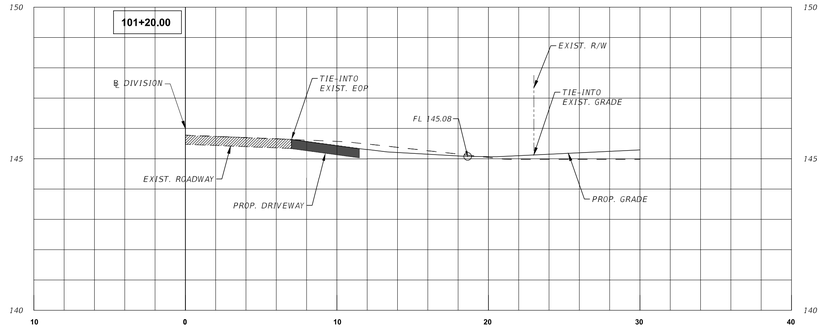

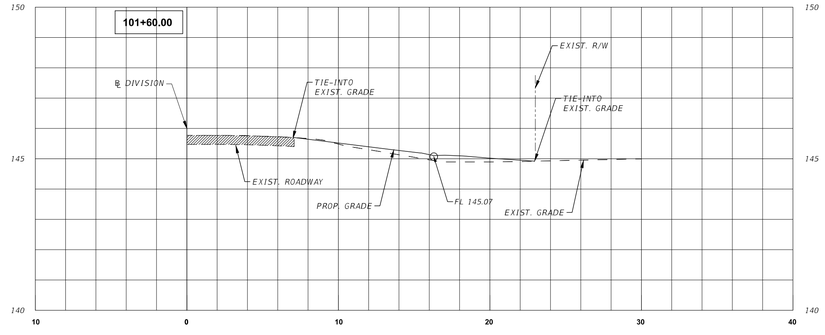

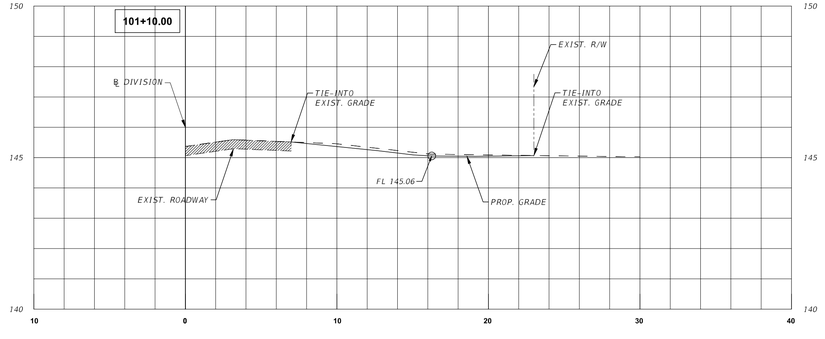

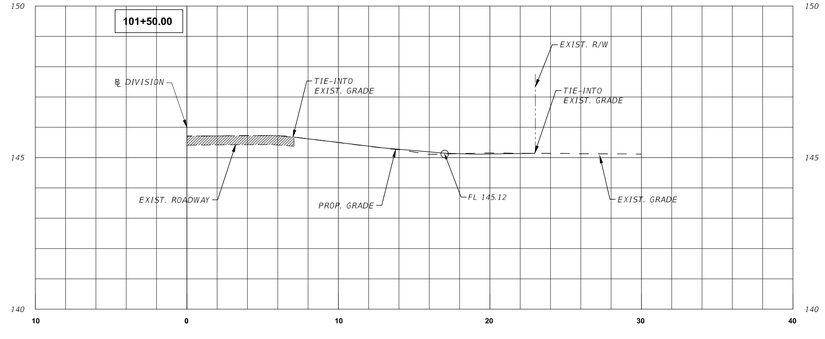

INFRASTRUCTURE CONSULTING & ENGINEERING
5550 WEST IDLEWILD AVE. SUITE 115
TAMPA, FLORIDA 33634 (813) 330-2701
CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer:	Checked by:
JSA	JD
Technician:	ICE Proj. No.:
CB	21-51.11

Notes:

REVISIONS

No.	Description	Date	By

Project Name:

CITY OF HAMPTON
WELL 1R

Drawing Name:

GRADING PROFILES & CROSS SECTIONS (3)

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
Scale:	Sheet Number:
1" = 5'	C-07

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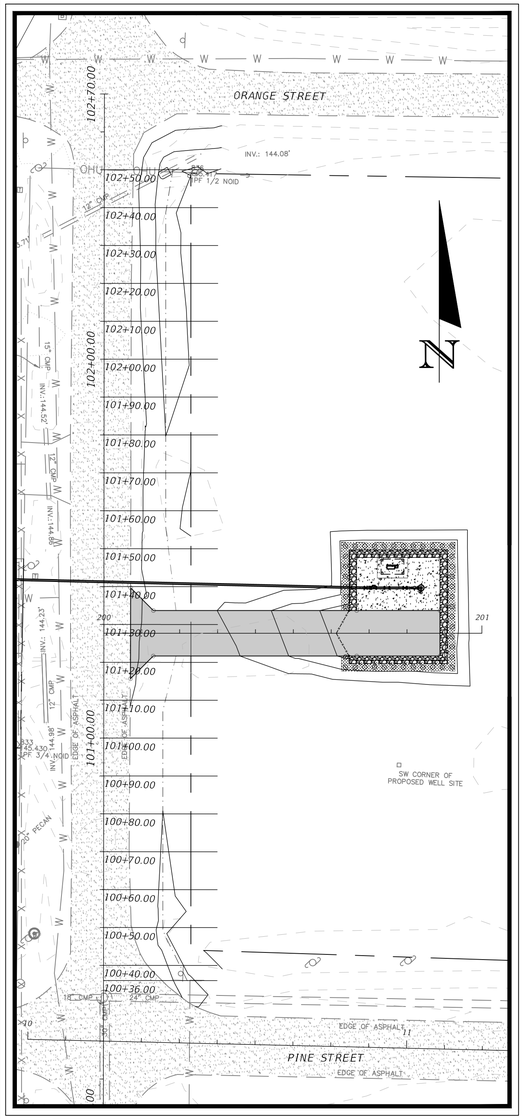

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L6	Division Avenue	270.00	N 02° 04' 51" W	STA.100+00.00 - STA.102+70.00	N:321859.976 E:2718124.947
L5	Driveway	99.77	N 87° 51' 54" E	STA.200+00.00 - STA.200+99.77	N:321721.451 E:2718229.814

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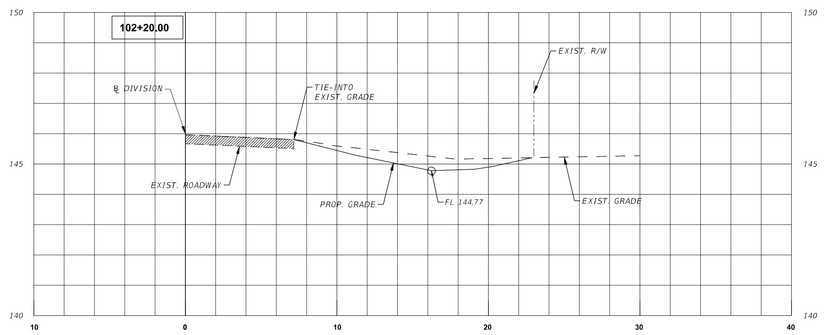

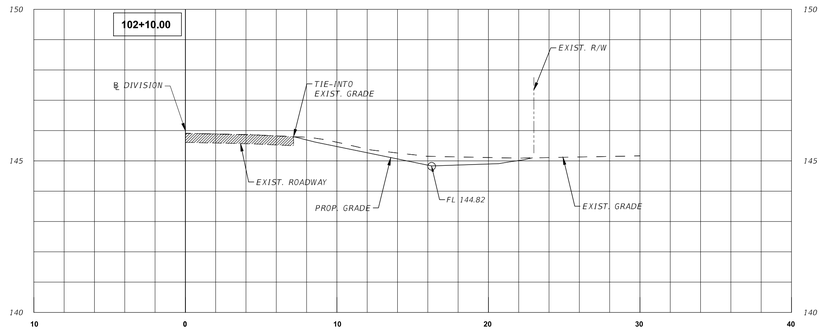

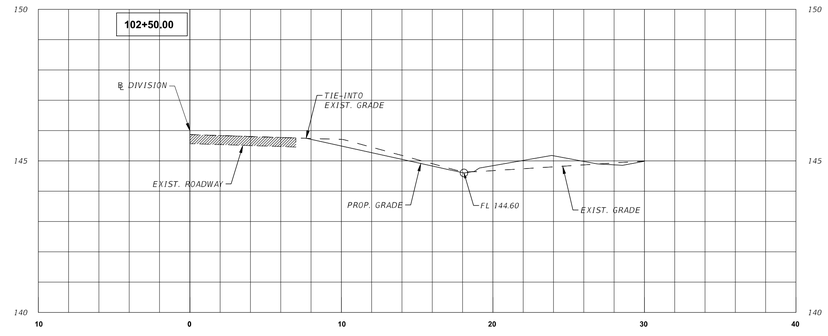

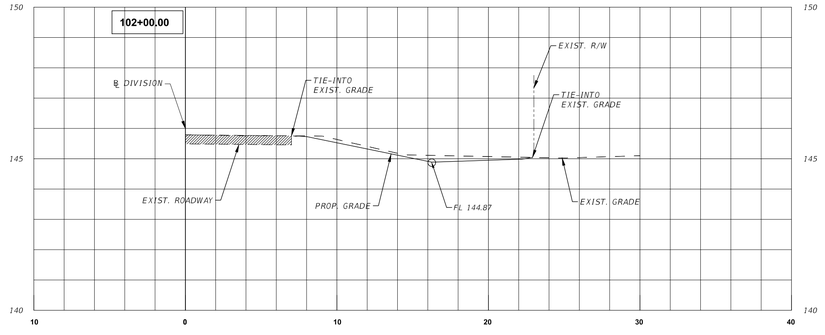

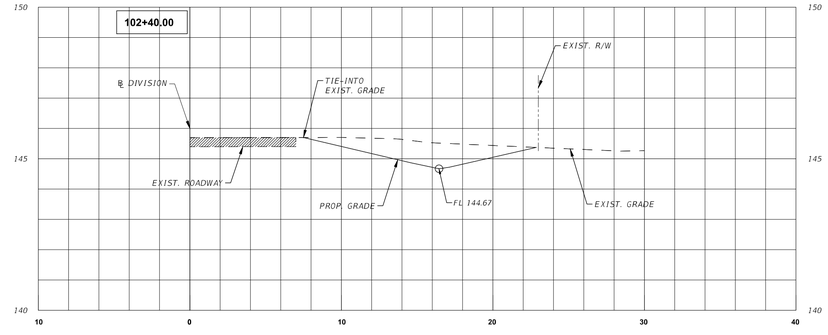

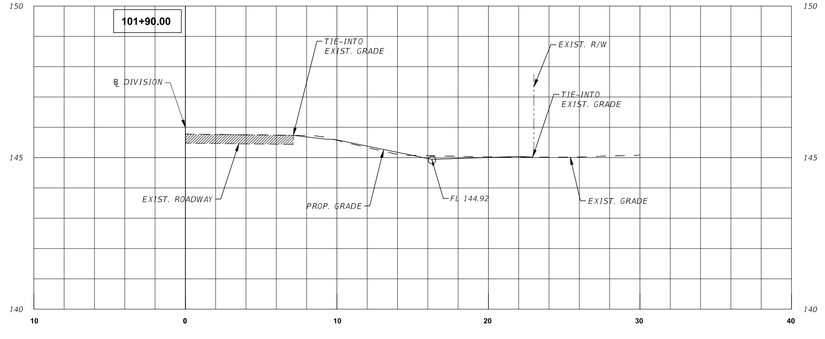

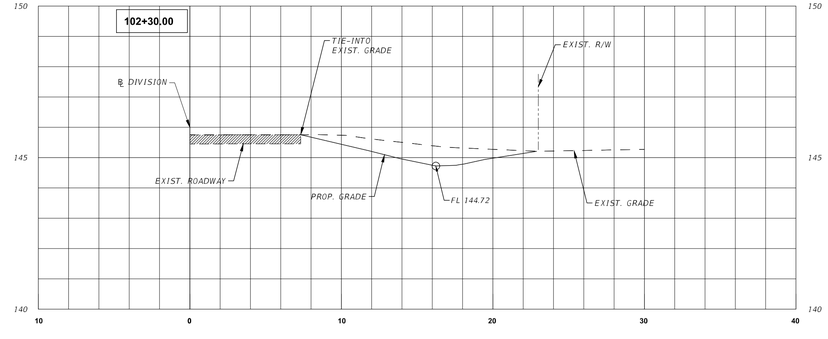

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GRADING PROFILES & CROSS SECTIONS (4)

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GENERAL GRADING AND PLANTING NOTES

BY SUBMITTING A PROPOSAL FOR THE LANDSCAPE PLANTING SCOPE OF WORK, THE CONTRACTOR CONFIRMS THAT HE HAS READ, AND WILL COMPLY WITH, THE ASSOCIATED NOTES, SPECIFICATIONS AND DETAILS WITH THIS PROJECT.

THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL EXISTING VEGETATION (EXCEPT WHERE NOTED TO REMAIN).

IN THE CONTEXT OF THESE PLANS, NOTES, AND SPECIFICATIONS, "FINISH GRADE" REFEREES TO THE FINAL ELEVATION OF THE SOIL SURFACE (NOT TOP OF MULCH).

a. BEFORE STARTING WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE ROUGH GRADES OF ALL LANDSCAPE AREAS ARE WITHIN ±0.1' OF FINISH GRADE. SEE SPECIFICATIONS FOR MORE DETAILED INSTRUCTION ON TURF AREA AND PLANTING BED PREPARATION.
b. CONSTRUCT AND MAINTAIN FINISH GRADES AS SHOWN ON GRADING PLANS, AND CONSTRUCT AND MAINTAIN SLOPES AS RECOMMENDED. ALL LANDSCAPE AREAS SHALL HAVE POSITIVE DRAINAGE AWAY FROM STRUCTURES AT THE MINIMUM SLOPE SPECIFIED IN GRADING PLANS, AND AREAS OF POTENTIAL PONDING SHALL BE REGRADED TO BLEND IN WITH THE SURROUNDING GRADES AND ELIMINATE PONDING POTENTIAL.
c. THE LANDSCAPE CONTRACTOR SHALL DETERMINE WHETHER OR NOT THE EXPORT OF ANY SOIL WILL BE NEEDED, TAKING INTO THE ACCOUNT THE ROUGH GRADE PROVIDED, THE AMOUNT OF SOIL AMENDMENTS TO BE ADDED (BASED ON A SOIL TEST, PER SPECIFICATIONS), AND THE FINISH GRADES TO BE ESTABLISHED.
d. ENSURE THAT THE FINISH GRADE IN SHRUB AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES, AFTER INSTALLING SOIL AMENDMENTS, IS 3" BELOW THE ADJACENT FINISH SURFACE, IN ORDER TO ALLOW PROPER MULCH DEPTH. TAPER THE SOIL SURFACE TO MEET FINISH GRADE, AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE WALKS.
e. ENSURE THAT THE FINISH GRADE IN TURF AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES. AFTER INSTALLING SOIL AMENDMENTS, IS 1" BELOW THE FINNISH SURFACE OF THE WALKS. TAPER THE SOIL SURFACE TO MEET FINISH GRADE, AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE WALKS.
f. SHOULD ANY CONFLICTS AND/OR DISCREPANCIES ARISE BETWEEN THE GRADING PLANS, THESES NOTES AND PLANS, AND ACTUAL CONDITIONS, THE CONTRACTOR SHALL IMMEDIATELY BEING SUCH ITEMS TO THE ATTENTION OF THE LANDSCAPE ARCHITECT, GENERAL CONTRACTOR, AND OWNER.

ALL PLANT LOCATIONS ARE DIAGRAMMATIC. ACTUAL LOCATIONS SHALL BE VERIFIED WITH THE LANDSCAPE ARCHITECT OR DESIGNER PRIOR TO PLANTING. THE LANDSCAPE CONTRACTOR SHALL ENSURE THAT ALL REQUIREMENTS OF THE PERMITTING AUTHORITY ARE MET (I.E., MINIMUM PLANT QUANTITIES, PLANTING METHODS, TREE PROTECTION METHODS, ETC.).

a. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR DETERMINING PLANT QUANTITIES; PLANT QUANTITIES SHOWN ON THE LEGENDS AND CALLOUTS ARE FOR GENERAL INFORMATION ONLY. IN THE EVENT OF A DISCREPANCY BETWEEN THE PLAN AND THE PLANT LEGEND, THE PLANT QUANTITY AS SHOWN ON THE PLAN (FOR INDIVIDUAL SYMBOLS) OR CALLOUTS (FOR GROUNDCOVER PATTERNS) SHALL TAKE PRECEDENCE.

b. NO SUBSTITUTIONS OF PLANT MATERIALS SHALL BE ALLOWED WITHOUT THE WRITTEN PERMISSION OF THE LANDSCAPE ARCHITECT. IS SOME OF THE PLANTS ARE NOT AVAILABLE. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING (VIA PROPER CHANNELS).

c. THE CONTRACTOR SHALL, AT THE MINIMUM, PROVIDE REPRESENTATIVE PHOTOS OF ALL PLANTS PROPOSED FOR THE PROJECT. THE CONTRACTOR SHALL ALLOW THE LANDSCAPE ARCHITECT AND THE OWNER/OWNER'S REPRESENTATIVE TO INSPECT, AND APPROVE OR REJECT, ALL PLANTS DELIVERED TOE THE JOB SITE. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR SUBMITTALS.

THE CONTRACTOR SHALL MAINTAIN THE LANDSCAPE IN A HEALTHY CONDITION FOR 90 DAYS AFTER ACCEPTABLE BY THE OWNER. REFER TO SPECIFICATIONS FOR CONDITIONS OF ACCEPTANCE FOR THE START OF THE MAINTENANCE PERIOD, AND FOR FINAL ACCEPTANCE AT THE END OF THE MAINTENANCE PERIOD.

SEE SPECIFICATIONS AND DETAILS FOR FURTHER REQUIREMENTS.

LANDSCAPE CALCULATIONS

JURISDICTION:	CITY OF HAMPTON, FL
TOTAL LANDSCAPE AREA:	4,000 SF (0.01 AC)

PLANTING LEGEND

SYMBOL	BOTANIC NAME	COMMON NAME	MIN. SIZE	SPACING	QUANTITY	NATIVE	CANOPY (sf)
SHRUBS / HEDGES							
VW	Viburnum obovatum	Walters Viburnum	48" ht. min., Full	36" o.c.	42	YES	
GROUNDCOVERS / ORNAMENTAL GRASSES							
		Mulch	1 gal., 12" ht. min., Full	30" o.c.	- - -	- - -	
SOD / TURF							
		Crushed stone		- - -	- - -	- - -	

N

5 4 3 2 1 2.5 5 10

SCALE : 1" = 5'

MULCHES

AFTER ALL PLANTING IS COMPLETE, CONTRACTOR SHALL INSTALL 3" THICK LAYER OF 1-1/2" SHREDDED WOOD MULCH, NATURAL (UNDYED), IN ALL PLANTING AREAS (EXCEPT FOR TURF AND SEEDED AREAS). CONTRACTOR SHALL SUBMIT SAMPLES OF ALL MULCHES TO LANDSCAPE ARCHITECT AND OWNER FOR APPROVAL PRIOR TO CONSTRUCTION. ABSOLUTELY NO EXPOSED GROUND SHALL BE LEFT SHOWING ANYWHERE ON THE PROJECT AFTER MULCH HAS BEEN INSTALLED (SUBJECT TO THE CONDITIONS AND REQUIREMENTS OF THE "GENERAL GRADING AND PLANTING NOTES" AND SPECIFICATIONS).

IRRIGATION CONCEPT

ALL NON-TURF PLANTED AREAS ALL SHALL BE IRRIGATED.

ALL PLANTS SHARING SIMILAR HYDROZONE CHARACTERS SHALL BE PLACED ON A VALVE DEDICATED TO PROVIDE THE NECESSARY WATER REQUIREMENTS SPECIFIC TO THAT HYDROZONE.

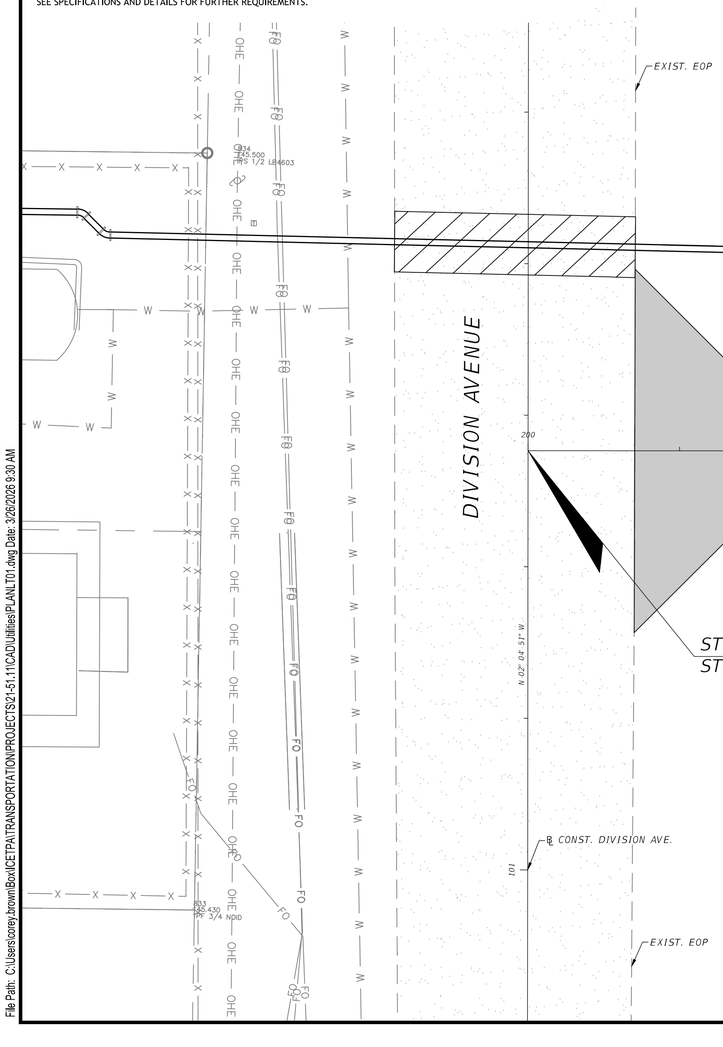
THE IRRIGATION SYSTEM SHALL BE DESIGNED AND INSTALLED, TO THE MAXIMUM EXTENT POSSIBLE, TO CONSERVE WATER BY USING THE FOLLOWING DEVICES AND SYSTEMS: MATCHED PRECIPITATION RATE TECHNOLOGY ON ROTOR AND SPRAY HEADS (WHENEVER POSSIBLE), RAIN SENSORS, AND MULTI-PROGRAM COMPUTERIZED IRRIGATION CONTROLLERS FEATURING SENSORY INPUT CAPABILITIES.

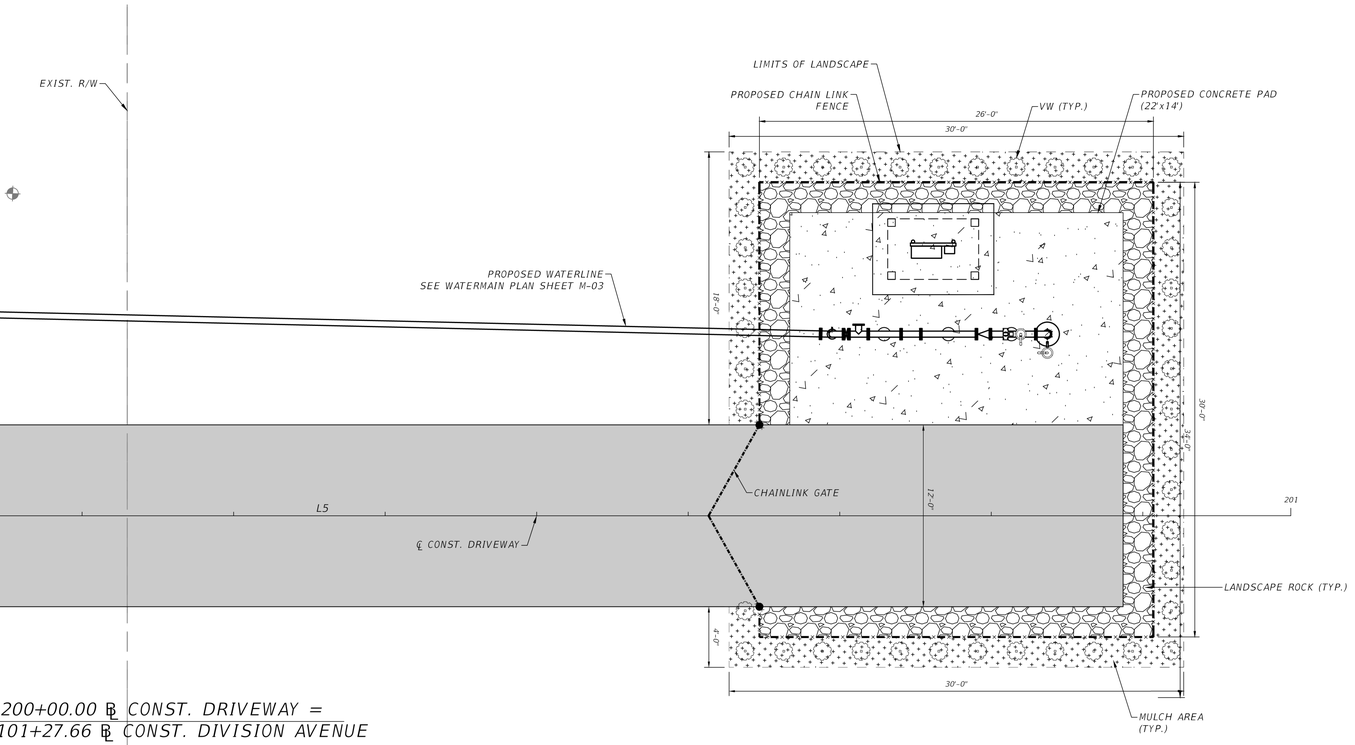
RESPONSIBILITY OF LANDSCAPE MAINTENANCE

THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE ESTABLISHMENT AND MAINTENANCE OF ALL LANDSCAPED AREA WHICH SHALL BE MAINTAINED IN GOOD CONDITION SO AS TO PRESENT A HEALTHY, NEAT AND ORDERLY APPEARANCE, FREE OF REFUSE, DEBRIS AND WEEDS.

SOD MAINTENANCE

SODDING TO BE UTILIZED AROUND ACCESS ROADWAY AND CONCRETE PAD.
SEEDING TO BE UTILIZED IN DITCH RECONSTRUCTION ALONG DIVISION AVENUE.





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L6	Division Avenue	270.00	N 02° 04' 51" W	STA.100+00.00 - STA.102+70.00	N:321859.976 E:2718124.947
L5	Utility Driveway	99.77	N 87° 51' 54" E	STA.200+00.00 - STA.200+99.77	N:321721.451 E:2718229.814

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WELL 1R

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LANDSCAPE PLAN

Date: MARCH 27, 2026	Issue: BID DOCUMENTS
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PLANTING SPECIFICATIONS

GENERAL

A. QUALIFICATIONS OF LANDSCAPE CONTRACTOR
   1. ALL LANDSCAPE WORK SHOWN ON THESE PLANS SHALL BE PERFORMED BY A SINGLE FIRM SPECIALIZING IN LANDSCAPE PLANTING.
   2. A LIST OF SUCCESSFULLY COMPLETED PROJECTS OF THIS TYPE, SIZE AND NATURE MAY BE REQUESTED BY THE OWNER FOR FURTHER QUALIFICATION MEASURES.
   3. THE LANDSCAPE CONTRACTOR SHALL HOLD A VALID CONTRACTOR'S LICENSE ISSUED BY THE APPROPRIATE LOCAL JURISDICTION.

B. SCOPE OF WORK
   1. WORK COVERED BY THESE SECTIONS INCLUDES THE FURNISHING AND PAYMENT OF ALL MATERIALS, LABOR, SERVICES, EQUIPMENT, LICENSES, TAXES AND ANY OTHER ITEMS THAT ARE NECESSARY FOR THE EXECUTION, INSTALLATION AND COMPLETION OF ALL WORK, SPECIFIED HEREIN AND / OR SHOWN ON THE LANDSCAPE PLANS, NOTES, AND DETAILS.
   2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER SUCH WORK, INCLUDING ALL INSPECTIONS AND PERMITS REQUIRED BY FEDERAL, STATE AND LOCAL AUTHORITIES IN SUPPLY, TRANSPORTATION AND INSTALLATION OF MATERIALS.
   3. THE LANDSCAPE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITY LINES (WATER, SEWER, ELECTRICAL, TELEPHONE, GAS, CABLE, TELEVISION, ETC.) PRIOR TO THE START OF ANY WORK.

PRODUCTS

A. ALL MANUFACTURED PRODUCTS SHALL BE NEW.
B. CONTAINER AND BALLED-AND-BURLAPPED PLANTS:
   1. FURNISH NURSERY-GROWN PLANTS COMPLYING WITH ANSI Z60.1-2014. PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK FREE OF DISEASE, INSECTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT. ALL PLANTS WITHIN A SPECIES SHALL HAVE SIMILAR SIZE, AND SHALL BE OF A FORM TYPICAL FOR THE SPECIES. ALL TREES SHALL BE OBTAINED FROM SOURCES WITHIN 200 MILES OF THE PROJECT SITE, AND WITH SIMILAR CLIMACTIC CONDITIONS.
   2. ROOT SYSTEMS SHALL BE HEALTHY, DENSELY BRANCHED ROOT SYSTEMS, NON-POT-BOUND, FREE FROM ENCIRCLING AND/OR GIRDLING ROOTS, AND FREE FROM ANY OTHER ROOT DEFECTS (SUCH AS J-SHAPED ROOTS).
   3. TREES MAY BE PLANTED FROM CONTAINERS OR BALLED-AND-BURLAPPED (B&B), UNLESS SPECIFIED ON THE PLANTING LEGEND. BARE-ROOT TREES ARE NOT ACCEPTABLE.
   4. ANY PLANT DEEMED UNACCEPTABLE BY THE LANDSCAPE ARCHITECT OR OWNER SHALL BE IMMEDIATELY REMOVED FROM THE SITE AND SHALL BE REPLACED WITH AN ACCEPTBLE PLANT OF LIKE TYPE AND SIZE AT THE CONTRACTOR'S OWN EXPENSE. ANY PLANTS APPEARING TO BE UNHEALTHY, EVEN IF DETERMINED TO STILL BE ALIVE, SHALL NOT BE ACCEPTED. THE LANDSCAPE ARCHITECT AND OWNER SHALL BE THE SOLE JUDGES AS TO THE ACCEPTABILITY OF PLANT MATERIAL.
   5. ALL TREES SHALL BE STANDARD IN FORM, UNLESS OTHERWISE SPECIFIED. TREES WITH CENTRAL LEADERS WILL NOT BE ACCEPTED IF LEADER IS DAMAGED OR REMOVED. PRUNE ALL DAMAGED TWIGS AFTER PLANTING.
   6. CALIPER MEASUREMENTS FOR STANDARD (SINGLE TRUNK) TREES SHALL BE AS FOLLOWS: SIX INCHES ABOVE THE ROOT FLARE FOR TREES UP TO AND INCLUDING FOUR INCHES IN CALIPER, AND TWELVE INCHES ABOVE THE ROOT FLARE FOR TREES EXCEEDING FOUR INCHES IN CALIPER.
   7. MULTI-TRUNK TREES SHALL BE MEASURED BY THEIR OVERALL HEIGHT, MEASURED FROM THE TOP OF THE ROOT BALL. WHERE CALIPER MEASUREMENTS ARE USED, THE CALIPER SHALL BE CALCULATED AS ONE-HALF OF THE SUM OF THE CALIPER OF THE THREE LARGEST TRUNKS.
   8. ANY TREE OR SHRUB SHOWN TO HAVE EXCESS SOIL PLACED ON TOP OF THE ROOT BALL, SO THAT THE ROOT FLARE HAS BEEN COMPLETELY COVERED, SHALL BE REJECTED.
C. SOD: PROVIDE WELL-ROOTED SOD OF THE VARIETY NOTED ON THE PLANS. SOD SHALL BE CUT FROM HEALTHY, MATURE TURF WITH SOIL THICKNESS OF 3/4" TO 1". EACH PALLET OF SOD SHALL BE ACCOMPANIED BY A CERTIFICATE FROM SUPPLIER STATING THE COMPOSITION OF THE SOD.
D. TOPSOIL: SANDY TO CLAY LOAM TOPSOIL, FREE OF STONES LARGER THAN ½ INCH, FOREIGN MATTER, PLANTS, ROOTS, AND SEEDS.
E. COMPOST: WELL-COMPOSTED, STABLE, AND WEED-FREE ORGANIC MATTER, pH RANGE OF 5.5 TO 8; MOISTURE CONTENT 35 TO 55 PERCENT BY WEIGHT; 100 PERCENT PASSING THROUGH 3/4-INCH SIEVE; SOLUBLE SALT CONTENT OF 5 TO 10 DECISIEMENS/M; NOT EXCEEDING 0.5 PERCENT INERT CONTAMINANTS AND FREE OF SUBSTANCES TOXIC TO PLANTINGS. NO MANURE OR ANIMAL-BASED PRODUCTS SHALL BE USED.
F. FERTILIZER: GRANULAR FERTILIZER CONSISTING OF NITROGEN, PHOSPHORUS, POTASSIUM, AND OTHER NUTRIENTS IN PROPORTIONS, AMOUNTS, AND RELEASE RATES RECOMMENDED IN A SOIL REPORT FROM A QUALIFIED SOIL-TESTING AGENCY (SEE BELOW).
G. PALM MAINTENANCE SPIKES: AS MANUFACTURED BY THE LUTZ CORP, (800) 203-7740, OR APPROVED EQUAL.
H. MULCH: SIZE AND TYPE AS INDICATED ON PLANS, FREE FROM DELETERIOUS MATERIALS AND SUITABLE AS A TOP DRESSING OF TREES AND SHRUBS.
I. TREE STAKING AND GUYING
   1. STAKES: 6' LONG GREEN METAL T-POSTS.
   2. GUY AND TIE WIRE: ASTM A 641, CLASS 1, GALVANIZED-STEEL WIRE, 2-STRAND, TWISTED, 0.106 INCH DIAMETER.
   3. STRAP CHAFING GUARD: REINFORCED NYLON OR CANVAS AT LEAST 1-1/2 INCH WIDE, WITH GROMMETS TO PROTECT TREE TRUNKS FROM DAMAGE.
I. PRE-EMERGENT HERBICIDES: ANY GRANULAR, NON-STAINING PRE-EMERGENT HERBICIDE THAT IS LABELED FOR THE SPECIFIC ORNAMENTALS OR TURF ON WHICH IT WILL BE UTILIZED. PRE-EMERGENT HERBICIDES SHALL BE APPLIED PER THE MANUFACTURER'S LABELED RATES.

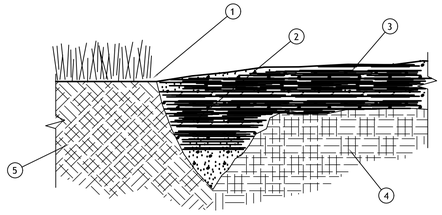
METHODS

A. SOIL PREPARATION
   1. BEFORE STARTING WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE GRADE OF ALL LANDSCAPE AREAS ARE WITHIN +/-0.1' OF FINISH GRADE. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY SHOULD ANY DISCREPANCIES EXIST.
   2. SOIL TESTING:
      a. AFTER FINISH GRADES HAVE BEEN ESTABLISHED, CONTRACTOR SHALL HAVE SOIL SAMPLES FROM THE PROJECT'S LANDSCAPE AREAS TESTED BY AN ESTABLISHED SOIL TESTING LABORATORY. EACH SAMPLE SUBMITTED TO THE LAB SHALL CONTAIN NO LESS THAN ONE QUART OF SOIL, TAKEN FROM BETWEEN THE SOIL SURFACE AND 6" DEPTH. IF NO SAMPLE LOCATIONS ARE INDICATED ON THE PLANS, THE CONTRACTOR SHALL TAKE A MINIMUM OF THREE SAMPLES FROM VARIOUS REPRESENTATIVE LOCATIONS FOR TESTING.
      b. THE CONTRACTOR SHALL HAVE THE SOIL TESTING LABORATORY PROVIDE RESULTS FOR THE FOLLOWING: SOIL TEXTURAL CLASS, GENERAL SOIL FERTILITY, pH, ORGANIC MATTER CONTENT, SALT (CEC), LIME, SODIUM ADSORPTION RATIO (SAR) AND BORON CONTENT.
      c. THE CONTRACTOR SHALL ALSO SUBMIT THE PROJECT'S PLANT LIST TO THE LABORATORY ALONG WITH THE SOIL SAMPLES.
      d. THE SOIL REPORT PRODUCED BY THE LABORATORY SHALL CONTAIN RECOMMENDATIONS FOR THE FOLLOWING (AS APPROPRIATE): SEPARATE SOIL PREPARATION AND BACKFILL MIX RECOMMENDATIONS FOR GENERAL ORNAMENTAL PLANTS, XERIC PLANTS, TURF, AND NATIVE SEED, AS WELL AS PRE-PLANT FERTILIZER APPLICATIONS AND RECOMMENDATIONS FOR ANY OTHER SOIL RELATED ISSUES. THE REPORT SHALL ALSO PROVIDE A FERTILIZER PROGRAM FOR THE ESTABLISHMENT PERIOD AND FOR LONG-TERM MAINTENANCE.
   3. THE CONTRACTOR SHALL INSTALL SOIL AMENDMENTS AND FERTILIZERS PER THE SOILS REPORT RECOMMENDATIONS. ANY CHANGE IN COST DUE TO THE SOIL REPORT RECOMMENDATIONS, EITHER INCREASE OR DECREASE, SHALL BE SUBMITTED TO THE OWNER WITH THE REPORT.
   4. FOR BIDDING PURPOSES ONLY, THE SOIL PREPARATION SHALL CONSIST OF THE FOLLOWING:
      a. TURF: INCORPORATE THE FOLLOWING AMENDMENTS INTO THE TOP 8" OF SOIL BY MEANS OF ROTOTILLING AFTER CROSS-RIPPING:
         i. NITROGEN STABILIZED ORGANIC AMENDMENT - 4 CU. YDS. PER 1,000 S.F.
         ii. PREPLANT TURF FERTILIZER (10-20-10 OR SIMILAR, SLOW RELEASE, ORGANIC) - 15 LBS PER 1,000 S.F.
         iii. "CLAY BUSTER" OR EQUAL - USE MANUFACTURER'S RECOMMENDED RATE
      b. TREES, SHRUBS, AND PERENNIALS: INCORPORATE THE FOLLOWING AMENDMENTS INTO THE TOP 8" OF SOIL BY MEANS OF ROTOTILLING AFTER CROSS-RIPPING:
         i. NITROGEN STABILIZED ORGANIC AMENDMENT - 4 CU. YDS. PER 1,000 S.F.
         ii. 12-12-12 FERTILIZER (OR SIMILAR, ORGANIC, SLOW RELEASE) - 10 LBS. PER CU. YD.
         iii. "CLAY BUSTER" OR EQUAL - USE MANUFACTURER'S RECOMMENDED RATE
         iv. IRON SULPHATE - 2 LBS. PER CU. YD.
   5. IN THE CONTEXT OF THESE PLANS, NOTES, AND SPECIFICATIONS, "FINISH GRADE" REFERS TO THE FINAL ELEVATION OF THE SOIL SURFACE (NOT TOP OF MULCH) AS INDICATED ON THE GRADING PLANS.
      a. BEFORE STARTING WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE ROUGH GRADES OF ALL LANDSCAPE AREAS ARE WITHIN +/-0.1' OF FINISH GRADE. SEE SPECIFICATIONS FOR MORE DETAILED INSTRUCTION ON TURF AREA AND PLANTING BED PREPARATION.
      b. CONSTRUCT AND MAINTAIN FINISH GRADES AS SHOWN ON GRADING PLANS, AND CONSTRUCT AND MAINTAIN SLOPES AS RECOMMENDED BY THE GEOTECHNICAL REPORT. ALL LANDSCAPE AREAS SHALL HAVE POSITIVE DRAINAGE AWAY FROM STRUCTURES AT THE MINIMUM SLOPE SPECIFIED IN THE REPORT AND ON THE GRADING PLANS, AND AREAS OF POTENTIAL PONDING SHALL BE REGRADED TO BLEND IN WITH THE SURROUNDING GRADES AND ELIMINATE PONDING POTENTIAL.
      c. THE LANDSCAPE CONTRACTOR SHALL DETERMINE WHETHER OR NOT THE EXPORT OF ANY SOIL WILL BE NEEDED, TAKING INTO ACCOUNT THE ROUGH GRADE PROVIDED, THE AMOUNT OF SOIL AMENDMENTS TO BE ADDED (BASED ON A SOIL TEST, PER SPECIFICATIONS), AND THE FINISH GRADES TO BE ESTABLISHED.
      d. ENSURE THAT THE FINISH GRADE IN SHRUB AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES, AFTER INSTALLING SOIL AMENDMENTS, IS 3" BELOW THE ADJACENT FINISH SURFACE, IN ORDER TO ALLOW FOR PROPER MULCH DEPTH. TAPER THE SOIL SURFACE TO MEET FINISH GRADE, AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE WALKS.
      e. ENSURE THAT THE FINISH GRADE IN TURF AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES, AFTER INSTALLING SOIL AMENDMENTS, IS 1" BELOW THE FINISH SURFACE OF THE WALKS. TAPER THE SOIL SURFACE TO MEET FINISH GRADE, AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE WALKS.
      f. SHOULD ANY CONFLICTS AND/OR DISCREPANCIES ARISE BETWEEN THE GRADING PLANS, GEOTECHNICAL REPORT, THESE NOTES AND PLANS, AND ACTUAL CONDITIONS, THE CONTRACTOR SHALL IMMEDIATELY BRING SUCH ITEMS TO THE ATTENTION OF THE LANDSCAPE ARCHITECT, GENERAL CONTRACTOR, AND OWNER.
   6. ONCE SOIL PREPARATION IS COMPLETE, THE LANDSCAPE CONTRACTOR SHALL ENSURE THAT THERE ARE NO DEBRIS, TRASH, OR STONES LARGER THAN 1" REMAINING IN THE TOP 6" OF SOIL.

B. SUBMITTALS
   1. THE CONTRACTOR SHALL PROVIDE SUBMITTALS AND SAMPLES, IF REQUIRED, TO THE LANDSCAPE ARCHITECT, AND RECEIVE APPROVAL IN WRITING FOR SUCH SUBMITTALS BEFORE WORK COMMENCES.
   2. SUBMITTALS SHALL INCLUDE PHOTOS OF PLANTS WITH A RULER OR MEASURING STICK FOR SCALE, PHOTOS OR SAMPLES OF ANY REQUIRED MULCHES, AND SOIL TEST RESULTS AND PREPARATION RECOMMENDATIONS FROM THE TESTING LAB (INCLUDING COMPOST AND FERTILIZER RATES AND TYPES, AND OTHER AMENDMENTS FOR TREE/SHRUB, TURF, AND SEED AREAS AS MAY BE APPROPRIATE).
   3. SUBMITTALS SHALL ALSO INCLUDE MANUFACTURER CUT SHEETS FOR PLANTING ACCESSORIES SUCH AS TREE STAKES AND TIES, EDGING, AND LANDSCAPE FABRICS (IF ANY).
   4. WHERE MULTIPLE ITEMS ARE SHOWN ON A PAGE, THE CONTRACTOR SHALL CLEARLY INDICATE THE ITEM BEING CONSIDERED.
C. GENERAL PLANTING
   1. REMOVE ALL NURSERY TAGS AND STAKES FROM PLANTS.
   2. EXCEPT IN AREAS TO BE PLANTED WITH ORNAMENTAL GRASSES, APPLY PRE-EMERGENT HERBICIDES AT THE MANUFACTURERS RECOMMENDED RATE.
   3. TRENCHING NEAR EXISTING TREES:
      a. CONTRACTOR SHALL NOT DISTURB ROOTS 1-1/2" AND LARGER IN DIAMETER WITHIN THE CRITICAL ROOT ZONE (CRZ) OF EXISTING TREES, AND SHALL EXERCISE ALL POSSIBLE CARE AND PRECAUTIONS TO AVOID INJURY TO TREE ROOTS, TRUNKS, AND BRANCHES. THE CRZ IS DEFINED AS A CIRCULAR AREA EXTENDING OUTWARD FROM THE TREE TRUNK, WITH A RADIUS EQUAL TO 1' FOR EVERY 1" OF TRUNK DIAMETER-AT-BREAST-HEIGHT (4.5' ABOVE THE AVERAGE GRADE AT THE TRUNK).
      b. ALL EXCAVATION WITHIN THE CRZ SHALL BE PERFORMED USING HAND TOOLS. NO MACHINE EXCAVATION OR TRENCHING OF ANY KIND SHALL BE ALLOWED WITHIN THE CRZ.
      c. ALTER ALIGNMENT OF PIPE TO AVOID TREE ROOTS 1-1/2" AND LARGER IN DIAMETER. WHERE TREE ROOTS 1-1/2" AND LARGER IN DIAMETER ARE ENCOUNTERED IN THE FIELD, TUNNEL UNDER SUCH ROOTS. WRAP EXPOSED ROOTS WITH SEVERAL LAYERS OF BURLAP AND KEEP MOIST. CLOSE ALL TRENCHES WITHIN THE CANOPY DRIP LINES WITHIN 24 HOURS.
      d. ALL SEVERED ROOTS SHALL BE HAND PRUNED WITH SHARP TOOLS AND ALLOWED TO AIR-DRY. DO NOT USE ANY SORT OF SEALERS OR WOUND PAINTS.
D. TREE PLANTING
   1. TREE PLANTING HOLES SHALL BE EXCAVATED TO MINIMUM WIDTH OF TWO TIMES THE WIDTH OF THE ROOTBALL, AND TO A DEPTH EQUAL TO THE DEPTH OF THE ROOTBALL LESS TWO TO FOUR INCHES.
   2. SCARIFY THE SIDES AND BOTTOM OF THE PLANTING HOLE PRIOR TO THE PLACEMENT OF THE TREE. REMOVE ANY GLAZING THAT MAY HAVE BEEN CAUSED DURING THE EXCAVATION OF THE HOLE.
   3. FOR CONTAINER AND BOX TREES, TO REMOVE ANY POTENTIALLY GIRDLING ROOTS AND OTHER ROOT DEFECTS, THE CONTRACTOR SHALL SHAVE A 1" LAYER OFF OF THE SIDES AND BOTTOM OF THE ROOTBALL OF ALL TREES JUST BEFORE PLACING INTO THE PLANTING PIT. DO NOT "TEASE" ROOTS OUT FROM THE ROOTBALL.
   4. INSTALL THE TREE ON UNDISTURBED SUBGRADE SO THAT THE TOP OF THE ROOTBALL IS TWO TO FOUR INCHES ABOVE THE SURROUNDING GRADE.
   5. BACKFILL THE TREE HOLE UTILIZING THE EXISTING TOPSOIL FROM ON-SITE. ROCKS LARGER THAN 1" DIA. AND ALL OTHER DEBRIS SHALL BE REMOVED FROM THE SOIL PRIOR TO THE BACKFILL. SHOULD ADDITIONAL SOIL BE REQUIRED TO ACCOMPLISH THIS TASK, USE STORED TOPSOIL FROM ON-SITE OR IMPORT ADDITIONAL TOPSOIL FROM OFF-SITE AT NO ADDITIONAL COST TO THE OWNER. IMPORTED TOPSOIL SHALL BE OF SIMILAR TEXTURAL CLASS AND COMPOSITION IN THE ON-SITE SOIL.
   6. TREES SHALL NOT BE STAKED UNLESS LOCAL CONDITIONS (SUCH AS HEAVY WINDS OR SLOPES) REQUIRE STAKES TO KEEP TREES UPRIGHT. SHOULD STAKING BE REQUIRED, THE TOTAL NUMBER OF TREE STAKES (BEYOND THE MINIMUMS LISTED BELOW) WILL BE LEFT TO THE LANDSCAPE CONTRACTOR'S DISCRETION. SHOULD ANY TREES FALL OR LEAN, THE LANDSCAPE CONTRACTOR SHALL STRAIGHTEN THE TREE, OR REPLACE IT SHOULD IT BECOME DAMAGED. TREE STAKING SHALL ADHERE TO THE FOLLOWING GUIDELINES:

a.	1"-2" TREES	TWO STAKES PER TREE
b.	2-1/2"-4" TREES	THREE STAKES PER TREE
c.	TREES OVER 4" CALIPER	GUY AS NEEDED
d.	MULTI-TRUNK TREES	THREE STAKES PER TREE MINIMUM, QUANTITY AND POSITIONS AS NEEDED TO STABILIZE THE TREE

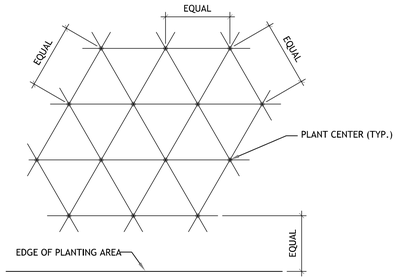
   7. UPON COMPLETION OF PLANTING, CONSTRUCT AN EARTH WATERING BASIN AROUND THE TREE. COVER THE INTERIOR OF THE TREE RING WITH MULCH (TYPE AND DEPTH PER PLANS).
E. SHRUB, PERENNIAL, AND GROUNDCOVER PLANTING
   1. DIG THE PLANTING HOLES TWICE AS WIDE AND 2" LESS DEEP THAN EACH PLANT'S ROOTBALL. INSTALL THE PLANT IN THE HOLE. BACKFILL AROUND THE PLANT WITH SOIL AMENDED PER SOIL TEST RECOMMENDATIONS.
   2. WHEN PLANTING IS COMPLETE, INSTALL MULCH (TYPE AND DEPTH PER PLANS) OVER ALL PLANTING BEDS, COVERING THE ENTIRE PLANTING AREA.
F. SODDING
   1. SOD VARIETY TO BE AS SPECIFIED ON THE LANDSCAPE PLAN.
   2. LAY SOD WITHIN 24 HOURS FROM THE TIME OF STRIPPING. DO NOT LAY IF THE GROUND IS FROZEN.
   3. LAY THE SOD TO FORM A SOLID MASS WITH TIGHTLY FITTED JOINTS. BUTT ENDS AND SIDES OF SOD STRIPS - DO NOT OVERLAP. STAGGER STRIPS TO OFFSET JOINTS IN ADJACENT COURSES.
   4. ROLL THE SOD TO ENSURE GOOD CONTACT OF THE SOD'S ROOT SYSTEM WITH THE SOIL UNDERNEATH.
   5. WATER THE SOD THOROUGHLY WITH A FINE SPRAY IMMEDIATELY AFTER PLANTING TO OBTAIN AT LEAST SIX INCHES OF PENETRATION INTO THE SOIL BELOW THE SOD.
G. MULCH
   1. INSTALL MULCH TOPDRESSING, TYPE AND DEPTH PER MULCH NOTE, IN ALL PLANTING AREAS AND TREE RINGS.
   2. DO NOT INSTALL MULCH WITHIN 6" OF TREE ROOT FLARE, EXCEPT AS MAY BE NOTED ON THESE PLANS. MULCH COVER WITHIN 6" OF CONCRETE WALKS AND CURBS SHALL NOT PROTRUDE ABOVE THE FINISH SURFACE OF THE WALKS AND CURBS. MULCH COVER WITHIN 12" OF WALLS SHALL BE AT LEAST 3" LOWER THAN THE TOP OF WALL.
H. CLEAN UP
   1. DURING LANDSCAPE PREPARATION AND PLANTING, KEEP ALL PAVEMENT CLEAN AND ALL WORK AREAS IN A NEAT, ORDERLY CONDITION.
   2. DISPOSED LEGALLY OF ALL EXCAVATED MATERIALS OFF THE PROJECT SITE.
I. INSPECTION AND ACCEPTANCE
   1. UPON COMPLETION OF THE WORK, THE LANDSCAPE CONTRACTOR SHALL PROVIDE THE SITE CLEAN, FREE OF DEBRIS AND TRASH, AND SUITABLE FOR USE AS INTENDED. THE LANDSCAPE CONTRACTOR SHALL THEN REQUEST AN INSPECTION BY THE OWNER TO DETERMINE FINAL ACCEPTABILITY.
   2. WHEN THE INSPECTED PLANTING WORK DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS, THE LANDSCAPE CONTRACTOR SHALL REPLACE AND/OR REPAIR THE REJECTED WORK TO THE OWNER'S SATISFACTION WITHIN 24 HOURS.
   3. THE LANDSCAPE MAINTENANCE PERIOD WILL NOT COMMENCE UNTIL THE LANDSCAPE WORK HAS BEEN RE-INSPECTED BY THE OWNER AND FOUND TO BE ACCEPTABLE. AT THAT TIME, A WRITTEN NOTICE OF FINAL ACCEPTANCE WILL BE ISSUED BY THE OWNER, AND THE MAINTENANCE AND GUARANTEE PERIODS WILL COMMENCE.
J. LANDSCAPE MAINTENANCE
   1. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL WORK SHOWN ON THESE PLANS FOR 90 DAYS BEYOND FINAL ACCEPTANCE OF ALL LANDSCAPE WORK BY THE OWNER. LANDSCAPE MAINTENANCE SHALL INCLUDE WEEKLY SITE VISITS FOR THE FOLLOWING ACTIONS (AS APPROPRIATE): PROPER PRUNING, RESTAKING OF TREES, RESETTING OF PLANTS THAT HAVE SETTLED, MOWING AND AERATION OF LAWNS, WEEDING, TREATING FOR INSECTS AND DISEASES,REPLACEMENT OF MULCH, REMOVAL OF LITTER, REPAIRS TO THE IRRIGATION SYSTEM DUE TO FAULTY PARTS AND/OR WORKMANSHIP, AND THE APPROPRIATE WATERING OF ALL PLANTINGS. THE LANDSCAPE CONTRACTOR SHALL MAINTAIN THE IRRIGATION SYSTEM IN PROPER WORKING ORDER, WITH SCHEDULING ADJUSTMENTS BY SEASON TO MAXIMIZE WATER CONSERVATION.
   2. SHOULD SODDED AREAS NOT BE COVERED BY AN AUTOMATIC IRRIGATION SYSTEM, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING THESE AREAS AND OBTAINING A FULL, HEALTHY STAND OF PLANTS AT NO ADDITIONAL COST TO THE OWNER.
   3. TO ACHIEVE FINAL ACCEPTANCE AT THE END OF THE MAINTENANCE PERIOD, ALL OF THE FOLLOWING CONDITIONS MUST OCCUR:
      a. THE LANDSCAPE SHALL SHOW ACTIVE, HEALTHY GROWTH (WITH EXCEPTIONS MADE FOR SEASONAL DORMANCY). ALL PLANTS NOT MEETING THIS CONDITION SHALL BE REJECTED AND REPLACED BY HEALTHY PLANT MATERIAL PRIOR TO FINAL ACCEPTANCE.
      b. ALL HARDSCAPE SHALL BE CLEANED PRIOR TO FINAL ACCEPTANCE.
      c. SODDED AREAS MUST BE ACTIVELY GROWING AND MUST REACH A MINIMUM HEIGHT OF 1 1/2 INCHES BEFORE FIRST MOWING. BARE AREAS LARGER THAN TWELVE SQUARE INCHES MUST BE RESODDED PRIOR TO FINAL ACCEPTANCE. ALL SODDED TURF SHALL BE NEATLY MOWED.
K. WARRANTY PERIOD, PLANT GUARANTEE AND REPLACEMENTS
   1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL TREES, SHRUBS, PERENNIALS, SOD, AND IRRIGATION SYSTEMS FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE OWNER'S FINAL ACCEPTANCE (90 DAYS FOR ANNUAL PLANTS). THE CONTRACTOR SHALL REPLACE, AT HIS OWN EXPENSE AND TO THE SATISFACTION OF THE OWNER, ANY PLANTS WHICH DIE IN THAT TIME, OR REPAIR ANY PORTIONS OF THE IRRIGATION SYSTEM WHICH OPERATE IMPROPERLY.
   2. AFTER THE INITIAL MAINTENANCE PERIOD AND DURING THE GUARANTEE PERIOD, THE LANDSCAPE CONTRACTOR SHALL ONLY BE RESPONSIBLE FOR REPLACEMENT OF PLANTS WHEN PLANT DEATH CANNOT BE ATTRIBUTED DIRECTLY TO OVERWATERING OR OTHER DAMAGE BY HUMAN ACTIONS.
L. PROVIDE A MINIMUM OF (2) COPIES OF RECORD DRAWINGS TO THE OWNER UPON COMPLETION OF WORK. A RECORD DRAWING IS A RECORD OF ALL CHANGES THAT OCCURRED IN THE FIELD AND THAT ARE DOCUMENTED THROUGH CHANGE ORDERS, ADDENDA, OR CONTRACTOR/CONSULTANT DRAWING MARKUPS.



1. FINISH GRADE FOR LAWN
2. EARTH/SPACE EDGE WITH 5"-6" OF MULCH AT EDGE (FLUSH WITH TOP OF LAWN).
3. MULCH PER SPECIFICATIONS
4. SOIL MIX PER SPECIFICATIONS
5. EXISTING SOIL

NOTES:
USE WHEREVER MULCHED TRANSITION TO TURF AREA, INCLUDING ALL TREE MULCH RINGS, SHRUBS, BEDS, MASS PLANTING, ETC., EXCEPT WHERE NOTED OR STEEL EDGING HAS BEEN CALLED OUT.

A EARTH/SPADE EDGE
SCALE: NOT TO SCALE



NOTE: ALL PLANTS SHALL BE PLANTED AT EQUAL TRIANGULAR SPACING (EXCEPT WHERE SHOWN ON PLANS AS INFORMAL GROUPINGS). REFER TO PLANT LEGEND FOR SPACING DISTANCE BETWEEN PLANTS.

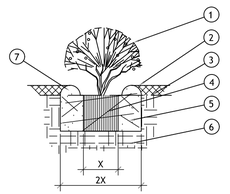
1) STEP 1: DETERMINE TOTAL PLANTS FOR THE AREA WITH THE FOLLOWING FORMULA:
TOTAL AREA / AREA DIVIDER = TOTAL PLANTS

PLANT SPACING	AREA DIVIDER	PLANT SPACING	AREA DIVIDER
6"	0.22	18"	1.95
8"	0.39	24"	3.46
10"	0.60	30"	5.41
12"	0.87	36"	7.79
15"	1.35		

2) STEP 2: SUBTRACT THE ROW (S) OF PLANTS THAT WOULD OCCUR AT THE EDGE OF THE PLANTED AREA WITH THE FOLLOWING FORMULA: TOTAL PERIMETER LENGTH / PLANT SPACING = TOTAL PLANT SUBTRACTION

EXAMPLE: PLANTS AT 18" O.C. IN 100 SF PLANTING AREA, 40 LF PERIMETER
STEP 1: 100 SF/1.95 = 51 PLANTS
STEP 2: 51 PLANTS - (40 LF / 1.95 = 21 PLANTS) = 30 PLANTS TOTAL

B PLANT SPACING
SCALE: NTS



1. SHRUB, PERENNIAL, OR ORNAMENTAL GRASS.
2. MULCH, TYPE AND DEPTH PER PLANS. PLACE NO MORE THAN 1" OF MULCH WITHIN 6" OF PLANT CENTER.
3. FINISH GRADE.
4. ROOT BALL.
5. BACKFILL. AMEND AND FERTILIZE ONLY AS RECOMMENDED IN SOIL FERTILITY ANALYSIS.
6. UNDISTURBED NATIVE SOIL.
7. 3" HIGH EARTHEN WATERING BASIN.

C SHRUB AND PERENNIAL PLANTING
SCALE: NTS

CITY OF HAMPTON, FLORIDA
Est. in 1925

INFRASTRUCTURE CONSULTING & ENGINEERING
5550 WEST IDLEWILD AVE. SUITE 115
TAMPA, FLORIDA 33634 (813) 330-2701
CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer:	Checked by:
JSA	JD
Technician:	ICE Proj. No.:
CB	21-51.11

Notes:

REVISIONS

No.	Description	Date	By

Project Name:
CITY OF HAMPTON WELL 1R

Drawing Name:
LANDSCAPING DETAILS

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
Scale:	Sheet Number:
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LEGEND:

- WORK ZONE SIGN
- WORK ZONE
- TYPE III BARRICADE

TRAFFIC CONTROL GENERAL NOTES:

1. EXISTING REGULATORY AND WARNING SIGNS WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES UNLESS DIRECTED BY THE ENGINEER.
2. THE CONTRACTOR SHALL RESTORE SAFE ROADSIDE CONDITIONS AT THE END OF EACH WORK PERIOD IN ACCORDANCE WITH FDOT INDEX 600.
3. ALL LANES MUST BE OPENED TO NORMAL TRAFFIC WITHIN 12 HOURS OF AN EVACUATION NOTICE FOR A HURRICANE OR ANY OTHER EMERGENCY EVENT AND SHALL REMAIN OPEN FOR THE DURATION OF THE EVENT AS DIRECTED BY THE ENGINEER.

CONTRACTOR SHALL PROTECT ALL ITEMS OUTSIDE LIMITS OF CONSTRUCTION UNLESS OTHERWISE NOTED IN THE CONSTRUCTION PLANS AND SPECIFICATIONS

DESIGN STANDARDS:

TEMPORARY TRAFFIC CONTROL PLAN TO USE INDICIES 102-600 IN ACCORDANCE WITH LATEST EDITION OF FDOT DESIGN STANDARDS.

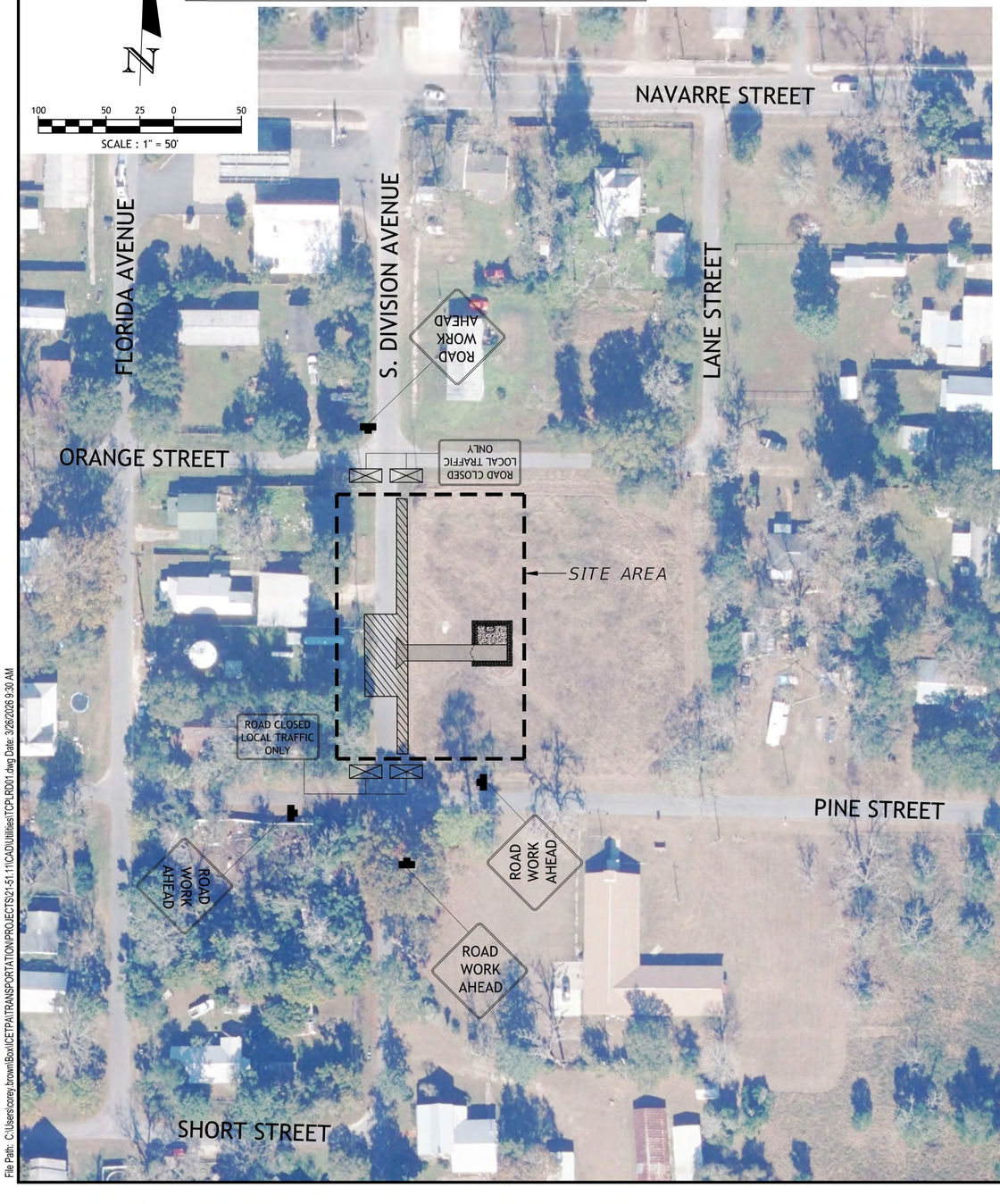
R9-9 (24"x12") — ROAD WORK AHEAD

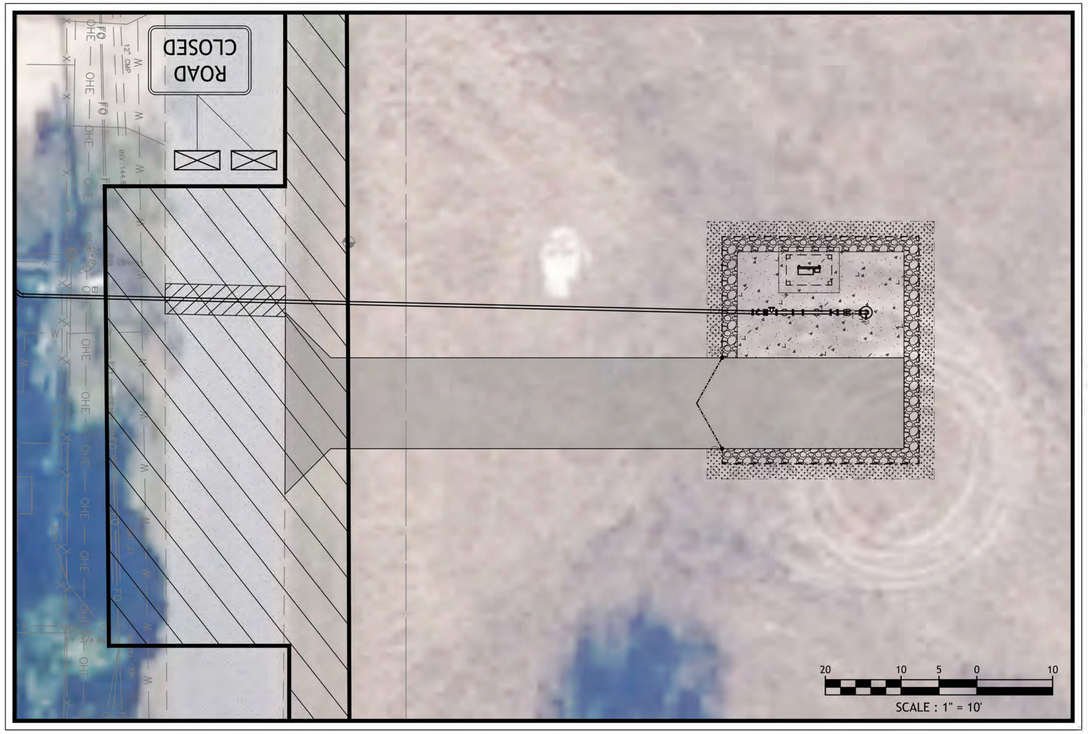
ROAD CLOSED LOCAL TRAFFIC ONLY — R11-2 (48"x30")

N

100 50 25 0 50

SCALE : 1" = 50'





CITY OF HAMPTON, FLORIDA — Est. in 1925

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CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer:	Checked by:
JSA	JD
Technician:	ICE Proj. No.:
CB	21-51.11

Notes:

REVISIONS

No.	Description	Date	By

Project Name:

CITY OF HAMPTON WELL 1R

Drawing Name:

MAINTENANCE OF TRAFFIC

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
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1" = 50'	C-11

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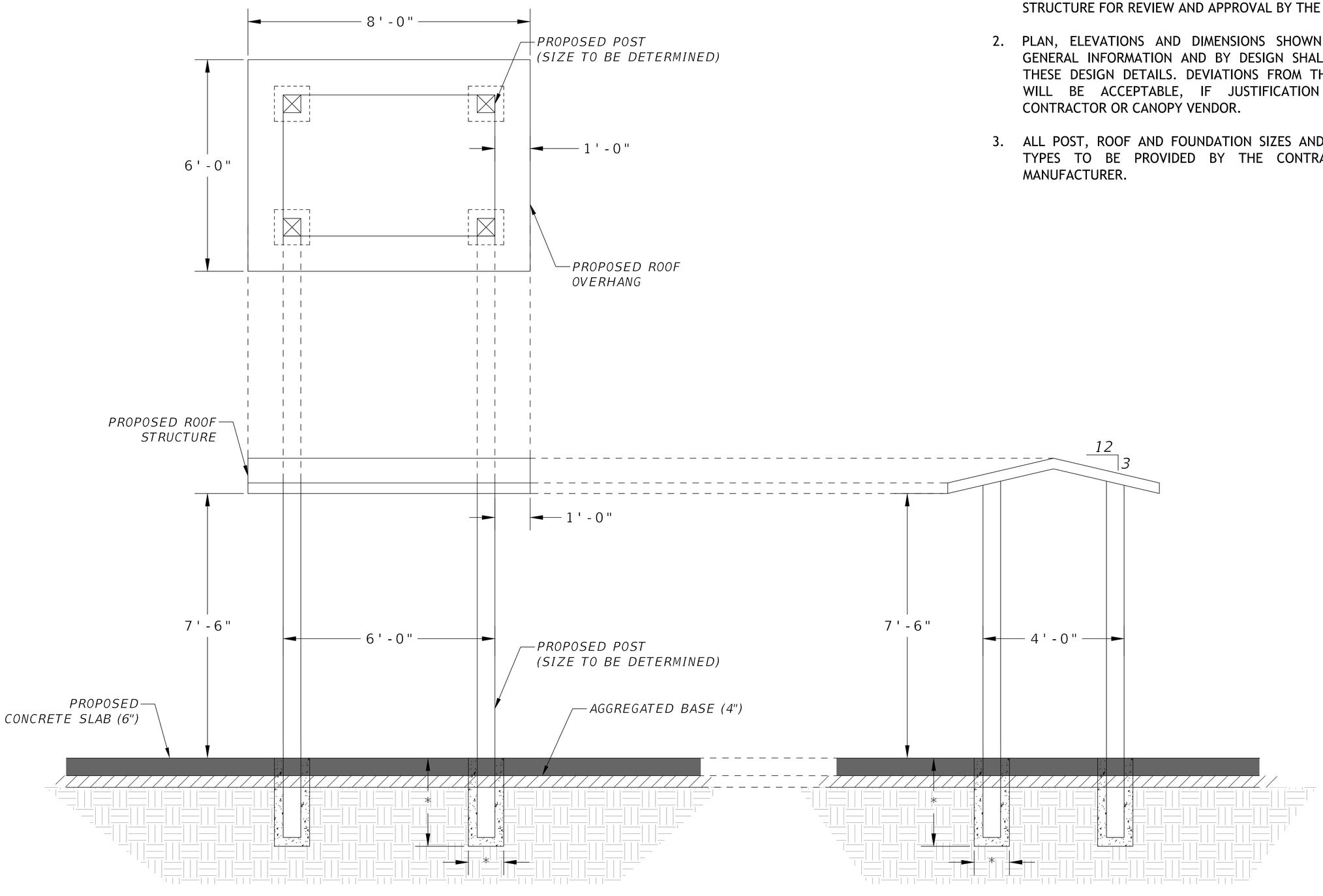

NOTES

1. CONTRACTOR TO PROVIDE COMPLETE DESIGN OF CANOPY, STRUCTURE FOR REVIEW AND APPROVAL BY THE ENGINEER.

2. PLAN, ELEVATIONS AND DIMENSIONS SHOWN ARE FOR GENERAL INFORMATION AND BY DESIGN SHALL REFLECT THESE DESIGN DETAILS. DEVIATIONS FROM THE DETAILS WILL BE ACCEPTABLE, IF JUSTIFICATION BY THE CONTRACTOR OR CANOPY VENDOR.

3. ALL POST, ROOF AND FOUNDATION SIZES AND MATERIAL TYPES TO BE PROVIDED BY THE CONTRACTOR OR MANUFACTURER.

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JSA	JD
Technician:	ICE Proj. No.:
CB	21-51.11

Notes:

REVISIONS

No.	Description	Date	By

Project Name:

CITY OF HAMPTON
WELL 1R

Drawing Name:

ROOF STRUCTURE PLAN AND DETAILS

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
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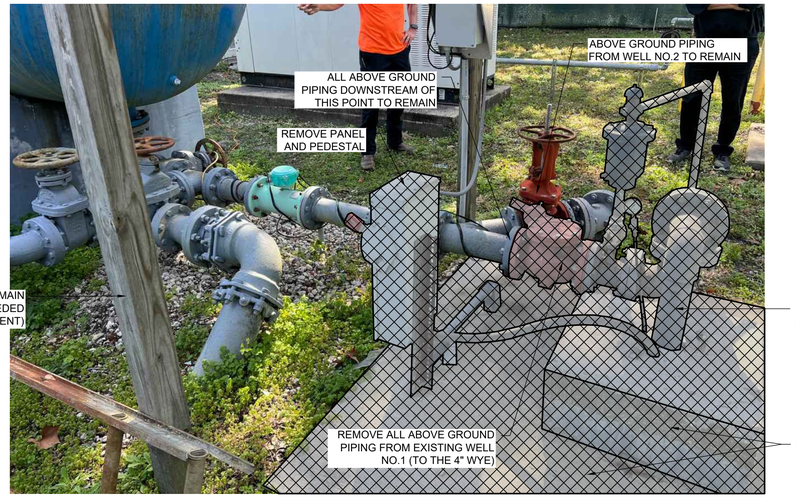
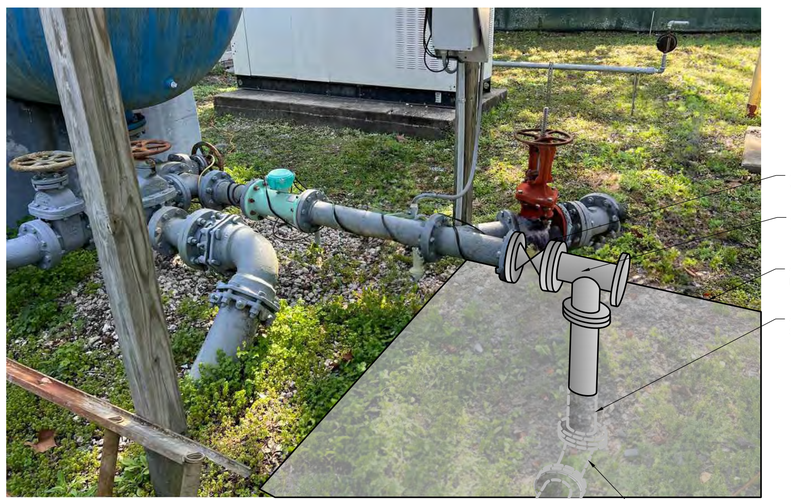


1 DEMOLITION
NTS



2 FUTURE CONNECTION
NTS

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WaterCo
Water Co Engineering and Construction, LLC
Dustin Dykes - 904.813.1274 - dustin.dykes@watercoeng.com

CITY OF HAMPTON, FLORIDA
Est. in 1925

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5550 WEST IDLEWILD AVE. SUITE 115
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CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer:	Checked by:
L. GUNN	D. DYKES
Technician:	ICE Proj. No.: 21-51.09

Engineer or Record:

LAWRENCE GUNN, FL PE 65967
DATE:

Notes:

REVISIONS

No.	Description	Date	By

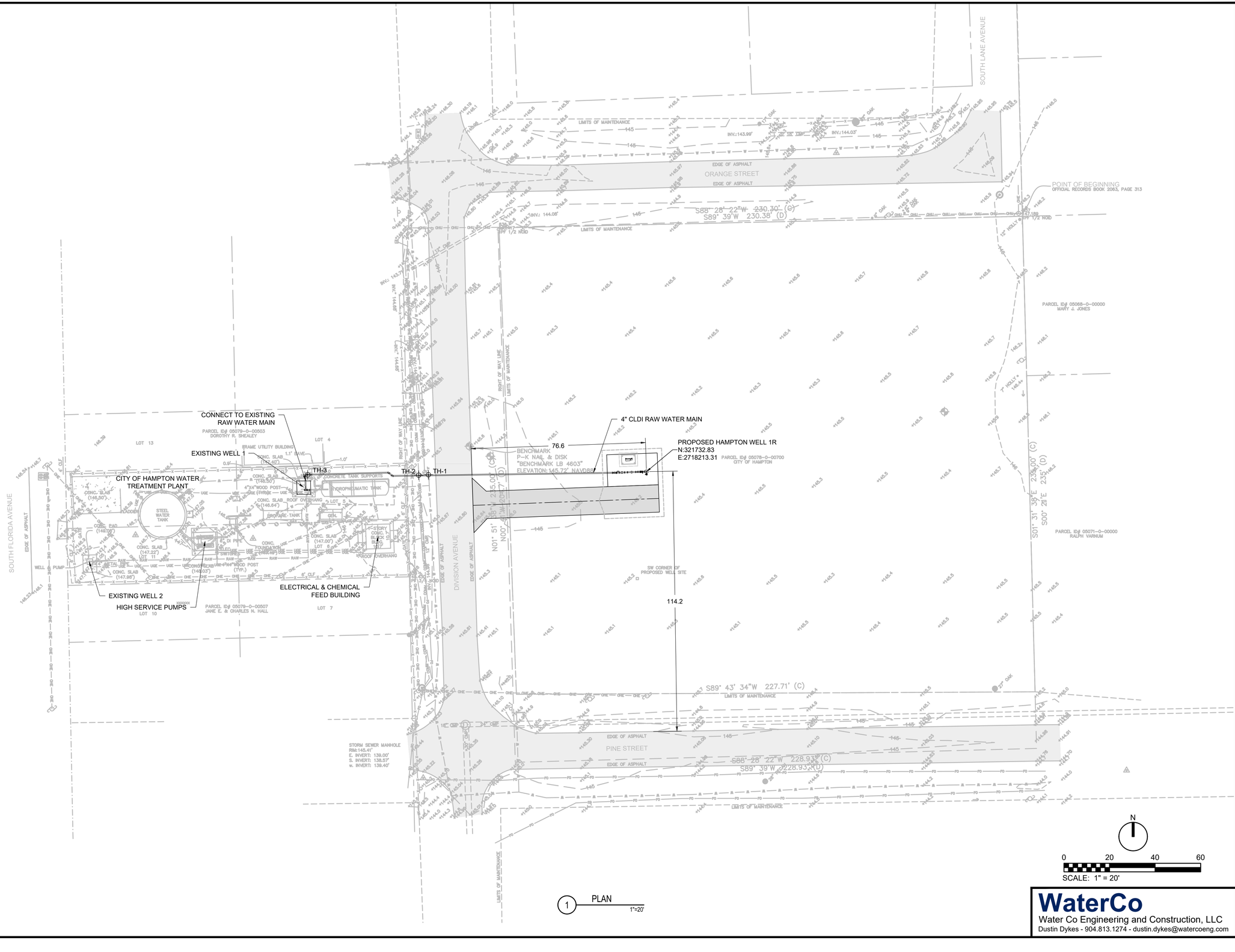
Project Name:

CITY OF HAMPTON
WELL 1R

Drawing Name:

DEMOLITION & FUTURE CONNECTION PLAN

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
Scale: AS SHOWN	Drawing Number: M-01



1 PLAN
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CITY OF HAMPTON, FLORIDA
Est. in 1925

INFRASTRUCTURE
CONSULTING & ENGINEERING
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Project Name:

CITY OF HAMPTON
WELL 1R

Drawing Name:

OVERALL SITE PLAN

Date:	Issue:
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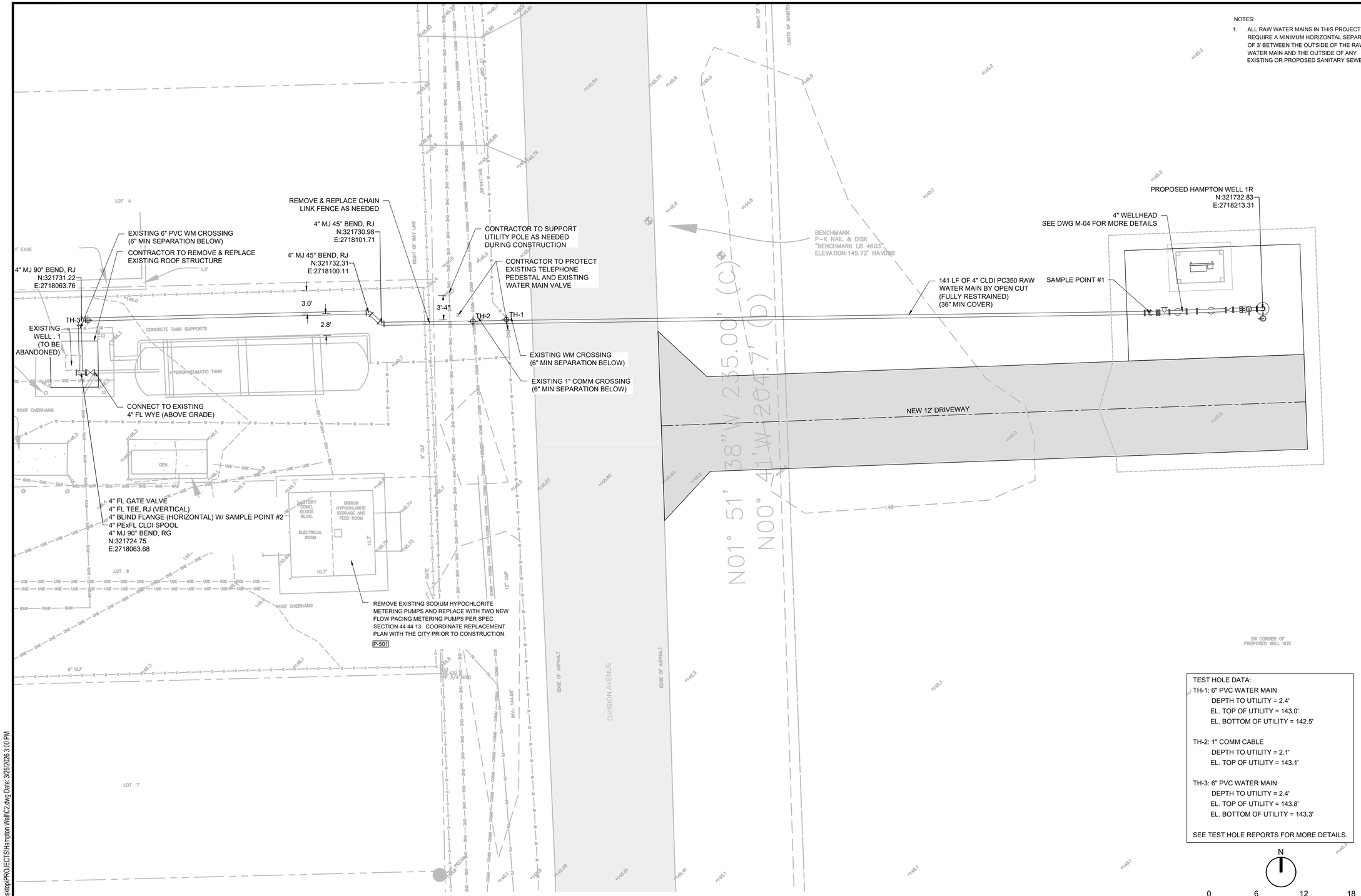

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Est. in 1925

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LAWRENCE GUNN, FL PE 65967
DATE:

Notes:

REVISIONS

No.	Description	Date	By

Project Name:

CITY OF HAMPTON
WELL 1R

Drawing Name:

WELLHEAD AND RAW WATER MAIN PLAN

Date:	Issue:
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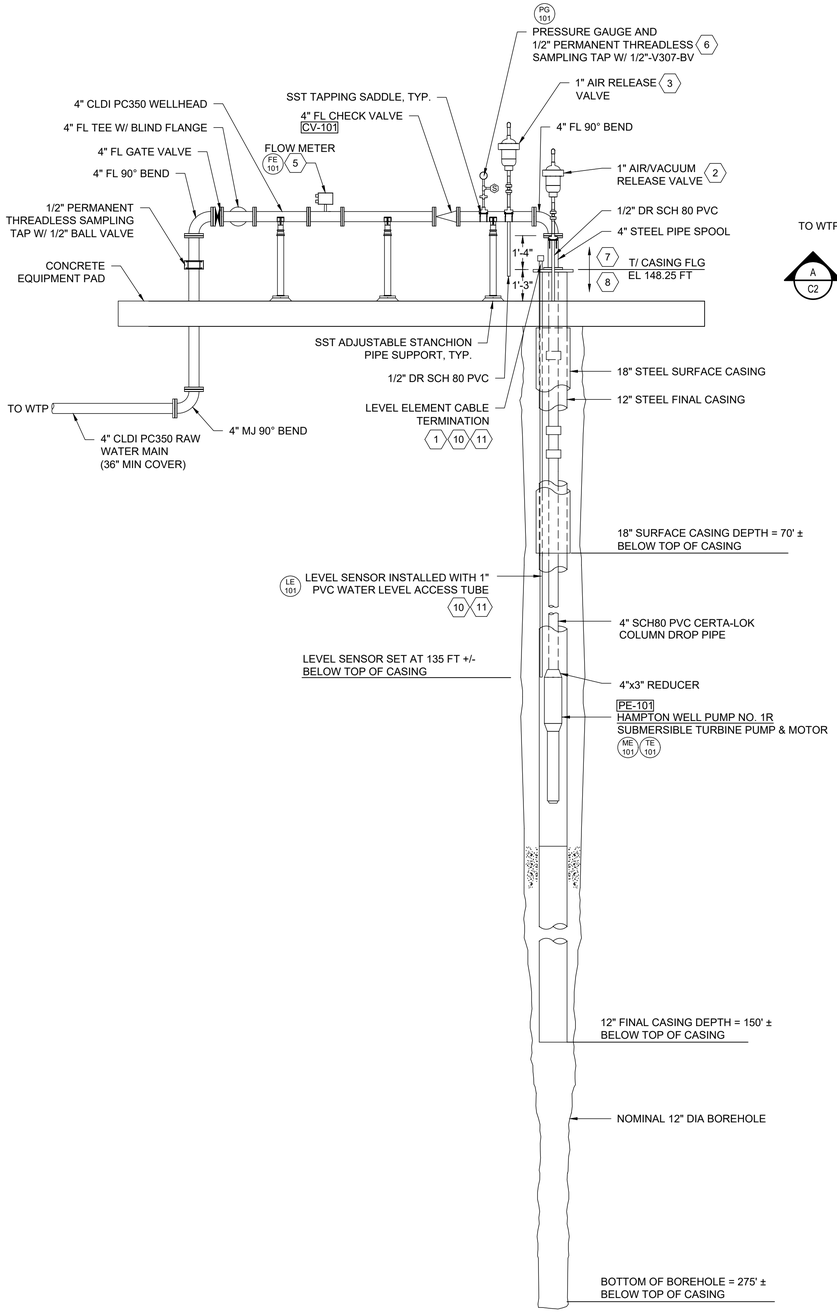
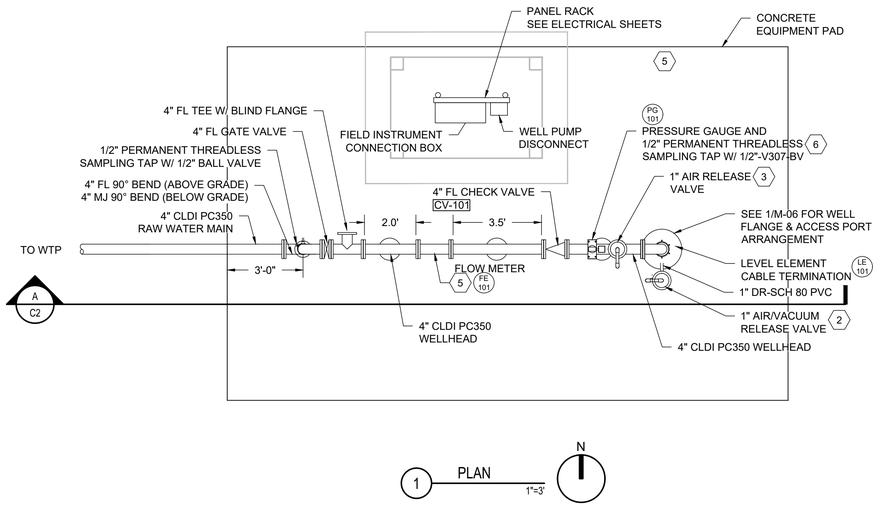


A SECTION 1"=3'



1 PLAN 1"=3'

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SHEET KEYNOTES

1. THREAD THE 1-INCH PVC WATER LEVEL ACCESS TUBE INTO UNDERSIDE OF DISCHARGE HEAD. STRAP (SST) ACCESS TUBE TO PUMP COLUMN EVERY 10-FEET. TERMINATE ACCESS TUBE 5-FEET ABOVE THE SUBMERSIBLE PUMP MOTOR. CAP BOTTOM OF ACCESS TUBE. DRILL 1/4-INCH HOLES THROUGH ACCESS TUBE EVERY 3-FEET THROUGHOUT THE TUBE. DRILL 1/4-INCH HOLE THROUGH BOTTOM CAP.
2. 1" AIR/VACUUM RELEASE VALVE, BALL VALVE AND 1" SST PIPING INSTALLED ON ACCESS PORT. 1/2" SCH 80 PVC DISCHARGE PIPING TO BE TERMINATED 1' ABOVE CONCRETE SLAB. CONTRACTOR TO SUPPORT ASSEMBLY AS NEEDED. UNIONS FOR EASY DISASSEMBLY OF ARV. PAINT PVC PIPE WITH SYSTEM 25.
3. 1" AIR RELEASE VALVE, 1" BALL VALVE AND 1" SST PIPING INSTALLED ON PIPE SADDLE. 1/2" SCH 80 PVC DISCHARGE PIPING TO BE TERMINATED 1' ABOVE CONCRETE SLAB. CONTRACTOR TO SUPPORT ASSEMBLY AS NEEDED. PROVIDE UNIONS FOR EASY DISASSEMBLY OF ARV. PAINT PVC PIPE WITH SYSTEM 25.
4. PRIOR TO CONSTRUCTION, WELLHEAD CONTRACTOR SHALL SUBMIT A PLAN REPRESENTING CONTROL AND INSTRUMENTATION PANEL AND CONDUIT LAYOUT.
5. SEE ELECTRICAL SHEETS FOR FLOW METER REQUIREMENTS.
6. PRESSURE GAUGE 0-60 PSI RANGE, SEE DWG O-G-040 FOR THE PRESSURE GAUGE SPECIFICATION OF ASHCROFT DURAGAUGE 1279 PLUS!.
7. COAT PIPE AND VALVES WITH SYSTEM NO. 5A.
8. FIELD COAT WITH SYSTEM 6.
9. SAW CUT CONTROL JOINTS TO PREVENT CRACKING, SEE CIVIL PLAN. CLEAN, INSTALL BACKER ROD, AND FILL SAWCUT WITH SIKAFLEX 1A. PROVIDE 1' MIN. SEPARATION FROM ANY STRUCTURAL ELEMENT (INCLUDING CONTROL PIPE SUPPORTS AND SCADA ANTENNA BASE PLATE). TERMINATE SAWCUT IN SLAB 3" FROM TRENCH DRAIN, ELECTRICAL PANEL SUPPORT RACK BASEPLATES AND CONDUITS.
10. MARK SENSOR CABLE WITH COLOR TAPE AT SPECIFIED DEPTH OF SUBMERGENCE.
11. INSTALL LEVEL SENSOR PER MANUFACTURER'S RECOMMENDATIONS, USING WATER TIGHT CABLE GLAND AT WELLHEAD. PROVIDE STRAIGHT MALE CONNECTOR CONTA-CLIP CATALOG NUMBER 20901.

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No.	Description	Date	By

Project Name:

CITY OF HAMPTON WELL 1R

Drawing Name:

WELLHEAD PLAN & SECTION

Date:	Issue:
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Scale: AS SHOWN	Drawing Number: M-04

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SECTION 40 27 00 PIPING

1. ALL MATERIALS THAT COME IN CONTACT WITH FINISHED OR RAW WATER SHALL BE NSF 61 APPROVED.
2. ALL PRESSURE PIPING IN THIS PROJECT SHALL BE RESTRAINED. ALL BURIED DUCTILE IRON PIPING SHALL BE COLOR CODED BLUE.
3. DUCTILE IRON PIPE AND FITTINGS:
   A. BURIED PIPING USING MECHANICAL OR PROPRIETARY RESTRAINED JOINTS: AWWA C111/A21.11, AND WWA C151/A21.51, 4-INCH PIPE SIZE SHALL HAVE A MINIMUM WORKING PRESSURE OF 350 PSI. FOLLOWER GLANDS SHALL BE DUCTILE IRON.
   B. EXPOSED PIPING USING FLANGE JOINTS: AWWA C115/A21.15, 4-INCH PIPE SIZE SHALL HAVE A MINIMUM WORKING PRESSURE OF 350 PSI.
   C. BURIED FITTINGS: MECHANICAL JOINT PER AWWA C110/A21.10, AWWA C111/A21.11, AND AWWA C153/A21.53 DUCTILE IRON, 250 PSI MINIMUM WORKING PRESSURE. FOLLOWER GLANDS SHALL BE DUCTILE IRON.
   D. EXPOSED FITTINGS: FLANGED JOINT PER AWWA C110/A21.10 DUCTILE IRON, FACED AND DRILLED, CLASS 125 FLAT FACE. GRAY CAST IRON WILL NOT BE ALLOWED.
   E. DUCTILE IRON PIPING SHALL BE LINED WITH CEMENT-MORTAR CONFORMING TO AWWA C104/A21.4.
   F. BOLTING: MANUFACTURER'S STANDARD
   G. GASKETS:
      I. MECHANICAL AND PROPRIETARY RESTRAINED JOINTS: HALOGENATED BUTYL OR EPDM, SHORE A HARDNESS DUROMETER 60, CONFORMING TO AWWA C111/A21.11.
      II. FLANGED JOINTS: FULL FACE, 1/8_INCH-THICK, HOMOGENEOUS BLACK RUBBER (EPDM), HARDNESS 60-80 (SHORE A), RATED TO 275 DEGREES F, CONFORMING TO ASME B16.21 AND ASTM D1330.
   H. MANUFACTURERS AND PRODUCTS:
      I. AMERICAN CAST IRON PIPE COMPANY
      II. U.S. PIPE
      III. MCWANE DUCTILE
4. STAINLESS STEEL PIPE AND FITTINGS:
   II. 2" AND SMALLER: THREADED PIPE SCHEDULE 40S: ASTM A312/A312M, TYPE 304, SEAMLESS, PICKLED AND PASSIVATED. FITTINGS SHALL BE THREADED PER ASTM A182/A182M, TYPE 304, CONFORMING TO MSS SP-114 CLASS 1000.
5. PRESSURE TESTING:
   A. EXPEL AIR FROM PIPING SYSTEM DURING FILLING.
   B. MAINTAIN 150 PSI HYDROSTATIC TEST PRESSURE CONTINUOUSLY FOR 2 HOURS MINIMUM
   C. DETERMINE ACTUAL LEAKAGE BY MEASURING QUANTITY OF WATER NECESSARY TO MAINTAIN SPECIFIED TEST PRESSURE FOR DURATION OF TEST.
   D. MAXIMUM ALLOWABLE LEAKAGE: $L = \frac{SD(P)^{1/2}}{148{,}000}$

   WHERE:

   L = ALLOWABLE LEAKAGE, IN GALLONS PER HOUR.
   S= LENGTH OF PIPE TESTED, IN FEET.
   D= NOMINAL DIAMETER OF PIPE, IN INCHES.
   P= TEST PRESSURE DURING LEAKAGE TEST, IN PSI

   E. CORRECT LEAKAGE GREATER THAN ALLOWABLE, AND RETEST AS SPECIFIED.
6. FLUSHING:
   A. FOLLOWING ASSEMBLY AND PRESSURE TESTING, FLUSH PIPELINES WITH CLEAN WATER AT 2.5 FPS MINIMUM FLUSHING VELOCITY UNTIL FOREIGN MATTER IS REMOVED.
7. DISINFECTION:
   A. DISINFECTION PROCEDURES AND TESTING SHALL CONFORM TO AWWA C651 FOR PIPES AND PIPELINES.

SECTION 40 27 01 PIPING SPECIALTIES

1. SERVICE SADDLES: REQUIRED ON ALL DUCTILE IRON PIPE TAPS.
   A. FULL CIRCLE OR DOUBLE-STRAP DESIGN RATED 150 PSI MINIMUM WORKNG PRESSURE.
   B. RUN DIAMETERS COMPATIBLE WITH THE OUTSIDE DIAMETER OF THE PIPE ON WHICH THE SADDLE IS INSTALLED.
   C. TAPS WITH IRON PIPE THREADS.
   D. MANUFACTURERS AND MODELS:
      I. FORD METER BOX CO.; MODEL FC-202
      II. JCM INDUSTRIES; MODEL 406
2. PIPE SADDLE SUPPORTS:
   A. TYPE 304 STAINLESS STEEL, ADJUSTABLE PIPE SADDLE SUPPORT PER MSS SP-59 TYPE 38
   B. MANUFACTURERS AND MODELS:
      I. EMPIRE INDUSTRIES.; FIGURE 428KT
      II. OR APPROVED EQUAL

SECTION 40 27 02 VALVES

1. ALL MATERIALS THAT COME IN CONTACT WITH FINISHED OR RAW WATER SHALL BE NSF 61 APPROVED.
2. VALVE FACTORY FINISHING EPOXY LINING AND COATING
   I. SHALL BE IN ACCORDANCE WITH AWWA C550
   J. SHALL BE EITHER TWO-PART LIQUID MATERIAL OR HEAT-ACTIVATED (FUSION) MATERIAL EXCEPT ONLY HEAT-ACTIVATED MATERIAL IF SPECIFIED AS "FUSION"OR "FUSION BONDED"EPOXY.
   C.MINIMUM 7-MIL DRY FILM THICKNESS EXCEPT WHERE LIMITED BY VALVE OPERATING TOLERANCES

GATE VALVES:

3. RESILIENT SEATED DUCTILE IRON GATE VALVE 3 INCHES TO 36 INCHES:
   A. DUCTILE IRON BODY, RESILIENT SEAT, BRONZE STEM AND STEM NUT, ASME B16.1 CLASS 125 FLANGED ENDS, IN ACCORDANCE WITH AWWA C515, MINIMUM DESIGN WORKING WATER PRESSURE 250 PSIG, FULL PORT, FUSION EPOXY COATED INSIDE AND OUTSIDE PER AWWA C550, NSF/ANSI 61 CERTIFIED.
   B. MANUFACTURERS AND PRODUCTS:
   I. AMERICAN FLOW CONTROL; SERIES 2500.
   II. M&H; STYLE 7000.

BALL VALVES:

4. STAINLESS STEEL BALL VALVE 2 INCHES AND SMALLER:
   A. THREE-PIECE, FULL PORT, ASTM A276 GR 316 OR ASTM A351/A351M GR CF8M STAINLESS STEEL BODY AND END PIECES, TYPE 316 STAINLESS STEEL BALL, NPT THREADED ENDS, REINFORCED PTFE SEATS, SEALS, AND PACKING, ADJUSTABLE PACKING GLAND, BLOWOUT-PROOF STAINLESS STEEL STEM, STAINLESS STEEL LEVER OPERATOR WITH VINYL GRIP, RATED 800 PSIG TO 1,000 PSIG CWP, COMPLIES WITH MSS SP 110.
   B. MANUFACTURERS AND PRODUCTS:
   I.CONBRACO APOLLO; 86R-100/86-500 SERIES.
   II.NIBCO; T-595-S6-R-66-LL.

CHECK VALVES:

5. RUBBER FLAPPER CHECK VALVE 2 INCHES TO 24 INCHES:
   A. IRON BODY, ASME B16.1, CLASS 125 FLANGES, STEEL-REINFORCED BUNA-N FLAPPER RAISED SEATING RING, RATED 150POUND CWP.
   B. MANUFACTURERS AND PRODUCTS:
   I. VAL-MATIC; 500 SERIES "SWINGFLEX"
   II. GA; FIGURE 200

AIR VACUUM RELEASE VALVES:

6. AIR AND VACUMM VALVE FOR WELL SERVICE:
   A.1/2 INCH THROUGH 3 INCHES EQUIPPED WITH STAINLESS STEEL DIFFUSER SCREEN TO BREAK UP SOLID WATER COLUMN BEFORE COMING IN CONTACT WITH FLOAT, 150 WSP ANGLE PATTERN GLOVE VALVE WITH LOCK SHIELD IN THE NPT OUTLET FOR THROTTLING.
   B. RATED 150 PSI WORKING PRESSURE, CAST IRON DUCTILE IRON OR SEMISTEEL BODY, COVER WITH STAINLESS STEEL FLOAT AND TRIM.
   C.MANUFACTURERS AND PRODUCTS
   I. WELLHEAD: VAL-MATIC VALVE, 1-INCH. MODEL: VM38 DISV
   II. WELL CASING: VAL-MATIC VALVE, 1-INCH. MODEL: VM101DISV

SECTION 44 42 56 - SUBMERSIBLE TURBINE WELL PUMP

1. FINAL SELECTION OF THE WELL PUMP WILL BE PERFORMED AFTER WELL CONSTRUCTION AND PERFORMACE TESTING HAS BEEN COMPLETED. FOR BIDDING PURPOSES, THE SUBMERSIBLE TURBINE WELL PUMP SHALL BE BASED ON THE FOLLOWING:
   A. PUMP: GRUNDFOS 300S200-5AA
   B. SUBMERSIBLE MOTOR: 20HP 240V 3PH FRANKLIN MOTOR
   C. CASING FLANGE SEAL: THE PUMP CABLE SHALL BE SEALED THROUGH THE WELL CASING WITH A 2-IN WELDED PORT AND A WATERTIGHT WIRE PACKER
   D. SETTING DEPTH: 140-FT BELOW TOP OF CASING
   E. COLUMN SIZE: 4-IN, WILL REQUIRE A 4-IN BY 3-IN REDUCER ON PUMP DISCHARGE
2. SEE DETAIL 1/M-06 FOR MORE DETAIL ON WELLHEAD FLANGE AND ACCESS PORT ARRANGEMENT

SECTION 44 44 13 - SODIUM HYPOCHLORITE METERING PUMPS

1. POSITIVE DISPLACEMENT SELF-COMPENSATING HYDRAULICALLY ACTIVATED DIAPHRAGM PUMP FOR SODIUM HYPOCHLORITE SERVICE, WITH INTERNAL AUTOMATIC PRESSURE RELIEF VALVE, EXTERNAL MANUALLY ADJUSTABLE STROKE POSITIONER FROM 0 PERCENT TO 100 PERCENT.
2. AUTOMATIC STROKE ADJUSTMENT: PROVIDE AUTOMATIC STROKE POSITION ADJUSTMENT USING EITHER MOTORIZED DRIVE OR ENERGY FROM PUMP. STROKE ADJUSTMENT SYSTEM SHALL BE CAPABLE OF RECEIVING AN EXTERNAL 4_20 MA DC CONTROL SIGNAL TO PROVIDE LINEAR ADJUSTMENT OF STROKE SETTING FROM ZERO TO 100 PERCENT. PROVIDE MANUAL OVERRIDE AS SPECIFIED ABOVE. PROVIDE SELECTION OF AUTO OR MANUAL POSITION ADJUSTMENT.
   A. MANUFACTURERS AND MODELS:

STENNER PUMPS; S SERIES - S3007AA201N

SECTION 31 23 23 TRENCH BACKFILL

1. MARKING TAPE:
   A. SOLID ALUMINUM FOIL, VISIBLE ON UNPRINTED SIDE, ENCASED IN PROTECTIVE HIGH VISIBILITY, INERT POLYETHYLENE PLASTIC JACKET. FOIL THICKNESS: MINIMUM 0.35 MILS. LAMINATE THICKNESS: MINIMUM 5 MILS. WIDTH: 6 INCHES. COLOR: POTABLE WATER BLUE.
   B. MANUFACTURERS AND PRODUCTS:
   I. REEF INDUSTRIES; TERRA TAPE, SENTRY LINE DETECTABLE.
   II. MUTUAL INDUSTRIES; DETECTABLE TAPE.
   III. PRESCO; DETECTABLE TAPE.
2. TRACER WIRE:
   A. MINIMUM 12_GAUGE SOLID COPPER OR COPPER JACKET WITH A STEEL CORE, WITH HIGH-DENSITY POLYETHYLENE (HDPE) OR HIGH-MOLECULAR WEIGHT POLYETHYLENE (HMWPE) INSULATION SUITABLE FOR DIRECT BURY.
   B. MANUFACTURERS AND PRODUCTS:
   I. COPPER HEAD INDUSTRIES; SOLOSHOT - 1230BHS500
   II. PRO-LINE SAFETY PRODUCTS; PROTRACE - 744120232
3. TRENCH STABILIZATION MATERIAL:
   A. BASE ROCK
   I. CLEAN, HARD, DURABLE 3_INCH MINUS CRUSHED ROCK OR GRAVEL, OR PIT RUN, FREE FROM CLAY BALLS, OTHER ORGANIC MATERIALS, OR DEBRIS.
   II. UNIFORMLY GRADED FROM COARSE TO FINE, LESS THAN 8 PERCENT BY WEIGHT PASSING THE 1/4_INCH SIEVE.
   B. GRANULAR BACKFILL
   I. CLEAN GRAVEL OR CRUSHED ROCK, REASONABLY WELL-GRADED FROM COARSE TO FINE. MAXIMUM PARTICLE SIZE: 1 INCH.
   II. DRY SAND, ACCEPTED BY ENGINEER, MAY BE PROVIDED FOR TRENCHES ABOVE MAXIMUM GROUNDWATER LEVEL.
4. BEDDING:
   A. FURNISH IMPORTED BEDDING MATERIAL WHERE, IN THE OPINION OF ENGINEER, EXCAVATED MATERIAL IS UNSUITABLE FOR BEDDING OR INSUFFICIENT IN QUANTITY. MINIMUM THICKNESS: 4INCHES.
5. BACKFILL:
   A. PIPE ZONE: BACKFILL MATERIAL UP TO A LEVEL 1 FOOT OVER THE TOP OF PIPE SHALL BE PLACED IN 6 INCH COMPACTED THICKNESS LAYERS AND SHALL BE COMPACTED TO 98% OF ITS MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST, ASTM D1557.
   B. ABOVE PIPE ZONE: BACKFILL MATERIAL FROM 1 FOOT OVER THE TOP OF THE PIPE OR BOTTOM OF STRUCTURES TO FINISHED GRADE SHALL BE PLACED IN 12-INCH COMPACTED THICKNESS LAYERS AND SHALL BE COMPACTED TO MATCH EXISTING CONDITIONS BUT NOT LESS THAN 95% OF ITS MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST, ASTM D1557.

WELL AND WELLHEAD MECHANICAL NOTES:

1. PUMP AND FINAL CASING FLANGE INSTALLATION SHALL BE PERFORMED BY A LICENSED WELL DRILLER (SUBCONTRACTOR). SUBCONTRACTOR SHALL REMOVE TEMPORARY CASING FLANGE AND INSTALL FINAL CASING FLANGE AT THE ELEVATION SHOWN IN THE DRAWINGS.
2. THE CONTRACTOR SHALL CONDUCT FIELD TESTS TO CONFIRM THE WELL CASING FLANGE IS LEVEL AND PLUMB AND MEETS THE REQUIREMENTS OF THE PUMP MANUFACTURER. THE PRECISION OF THE FIELD MEASUREMENTS TO DETERMINE THE WELL CASING FLANGE LEVEL SHALL BE AS RECOMMENDED BY THE PUMP MANUFACTURER.
   A. IF THE WELL CASING FLANGE DOES NOT MEET THE PUMP MANUFACTURER'S REQUIREMENTS, PERFORM THE FOLLOWING:
1. NOTIFY THE ENGINEER AND OWNER IMMEDIATELY.
2. SUBMIT MODIFICATIONS TO THE WELLHEAD FLANGE AND ACCESS PORT ARRANGEMENT ASSEMBLY TO ADJUST FOR THE WELL CASING FLANGE LEVEL TO PROVIDE A SUFFICIENTLY LEVEL BASE FOR THE PUMP DISCHARGE HEAD.
   B. IF THE WELL CASING FLANGE MEETS THE PUMP MANUFACTURER'S REQUIREMENTS, SUBMIT A CONFIRMING STATEMENT WITH THE PUMP SHOP DRAWING.
3. THE CONTRACTOR SHALL INSTALL THE PUMP IN ACCORDANCE WITH THE MANUFACTURER'S FIELD SERVICES TECHNICIAN'S INSTRUCTIONS.
4. FIELD FINISHING:
   A. DISCHARGE HEAD ASSEMBLY, EXTERIOR. PAINTING AND PROTECTIVE COATINGS - SYSTEM NO 5A. SUBMIT FINISH COLOR CHART FOR OWNER SELECTION.
   B. WELLHEAD FLANGE AND ACCESS PORT ARRANGEMENT ASSEMBLY, EXTERIOR. PAINTING AND PROTECTIVE COATINGS - SYSTEM NO 6. SUBMIT COLOR CHART FOR OWNER SELECTION.

SECTION 09 90 00 PAINTING AND COATING

1. COLOR:

WELLS TO AERATORS/STORAGE: RAW WATER PUMPS AND PIPING	OLIVE GREEN FED STD 5958 #34258 OWNER TO CONFIRM
ALL ELECTRIC MOTORS	RED FED STD 595B #11350
DO NOT PAINT ANY STAINLESS STEEL PIPING	

2. SYSTEM NO. 10 GALVANIZED METAL CONDITIONING: USE ON GALVANIZED SURFACES REQUIRING PAINTING.

SURFACE PREP.	PAINT MATERIAL	MIN. COATS, COVER
SOLVENT CLEAN (SP 1) FOLLOWED BY HAND TOOL (SP 2) OR POWER TOOL (SP 3)	WASH PRIMER OR COATING MANUFACTURER'S RECOMMENDATION	1 COAT, 0.4 MD FT

3. SYSTEM NO. 25 EXPOSED FRP, PVC: USE ON ALL EXPOSED-TO-VIEW PVC AND CPVC SURFACES, AND FRP SURFACES WITHOUT INTEGRAL UV-RESISTANT GEL COAT.

SURFACE PREP.	PAINT MATERIAL	MIN. COATS, COVER
IN ACCORDANCE WITH PARAGRAPH PLASTIC AND FRP SURFACE PREPARATION	ACRYLIC LATEX FLAT	2 COATS, 320 SFPG PC

4. SYSTEM NO. 27 ALUMINUM AND DISSIMILAR METAL INSULATION: USE ON CONCRETE EMBEDDED ALUMINUM SURFACES.

SURFACE PREP.	PAINT MATERIAL	MIN. COATS, COVER
SOLVENT CLEAN (SP1)	WASH PRIMER	1 COAT, 0.4 MDFT
	BITUMINOUS PAINT	1 COAT, 10 MDFT

5. SYSTEM NO. 5A: EXPOSED AND SUBMERGED DUCTILE IRON PIPE AND VALVES

SURFACE PREP.	PAINT MATERIAL	MIN. COATS, COVER
SOLVENT CLEAN (SP 1), FOLLOWED BY POWER TOOL (SP 3), ABRADE ALL SURFACES PER RECOMMENDED SURFACE PROFILE	PRIME COAT: ALL FACTORY PRIMED METAL WITH TNEMEC SERIES N 140 POTA POX PLUS	1 COAT, 3-5 MDFT
	STRIPE COAT: ALL EDGES WITH A 2-INCH ROLLER USING TNEMEC SERIES N 140 POTA POX PLUS	1 COAT, 3 - 5 MDFT
	FINAL FINISH COAT: ALL EXPOSED SURFACES WITH TNEMEC SERIES 1095	1 COAT, 3 - 5 MDFT

6. SYSTEM NO. 6: EXPOSED AND CONCRETE ENCASED PORTIONS OF WELL CASING, WELLHEAD FLANGE AND ACCESS PORT ARRANGEMENT.

SURFACE PREP.	PAINT MATERIAL	MIN. COATS, COVER
REMOVE ALL DIRT, OILS, GREASE BY HIGH PRESSURE WATER BLAST CLEANING, (3,000 PSI, 3 - 5 GPM) GRIND ALL WELD SEAMS AND ROUGH EDGES SMOOTH REMOVE ALL LOOSE RUST AND REMAINING OLD COATINGS WITH SP 10, NEAR-WHITE BLAST CLEANING	PRIME COAT: ALL BARE METAL WITH TNEMEC SERIES 135	1 COAT, 4 - 6 MDFT
	STRIPE COAT: ALL EDGES WITH A 2-INCH ROLLER USING TNEMEC SERIES 135	1 COAT, 4 - 6 MDFT
	FINAL FINISH COAT: ALL EXPOSED SURFACES WITH TNEMEC SERIES 1095	1 COAT, 3 - 5 MDFT

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CITY OF HAMPTON, FLORIDA
Est. in 1925

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LAWRENCE GUNN, FL PE 65967
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Notes:

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No.	Description	Date	By

Project Name:

CITY OF HAMPTON
WELL 1R

Drawing Name:

PROCESS MECHANICAL SPECIFICATIONS

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
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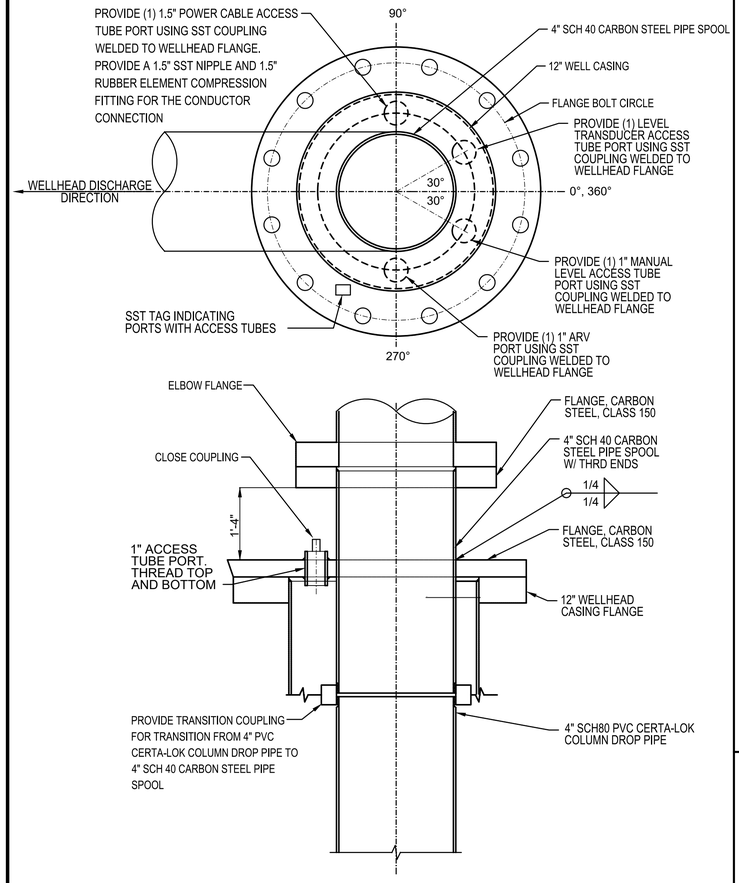
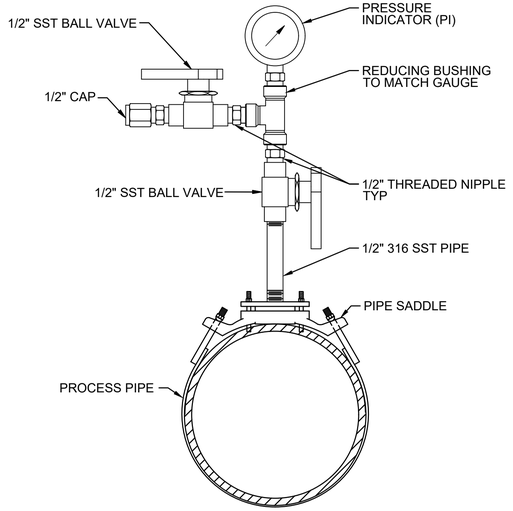


1 WELLHEAD FLANGE AND ACCESS PORT ARRANGEMENT

NTS



NOTES:

1. ALL PIPING/ FITTINGS SHALL BE 316 SST.

2 PRESSURE CONNECTION INSTALLATION DETAIL

NTS

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LAWRENCE GUNN, FL PE 65967
DATE:

Notes:

REVISIONS

No.	Description	Date	By

Project Name:

CITY OF HAMPTON WELL 1R

Drawing Name:

PROCESS MECHANICAL DETAILS

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
Scale: AS SHOWN	Drawing Number: M-06

WaterCo
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GENERAL NOTES

1. THE NATIONAL ELECTRICAL CODE, NATIONAL ELECTRIC SAFETY CODE, NECA STANDARD OF INSTALLATION (EDITIONS ADOPTED BY THE AHJ), AND ANSI/NEMA STANDARDS SHALL ESTABLISH THE MINIMUM REQUIREMENTS FOR INSTALLATION, BUT IN ADDITION, ALL WORK SHALL ALSO COMPLY WITH AHJ, OSHA, STATE, COUNTY, LOCAL OR MUNICIPAL CODE REQUIREMENTS. IN CASE OF CONFLICTS, CONFORM TO THE MORE STRINGENT REQUIREMENTS.

2. TO THE BEST OF THE ENGINEER'S KNOWLEDGE, THESE PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES AS DETERMINED BY THE LOCAL AUTHORITY IN ACCORDANCE WITH CHAPTER 553 AND 633 OF THE FLORIDA STATUTES. IN CASES OF CONFLICTS BETWEEN THESE DESIGN DOCUMENTS AND REQUIREMENTS OF ANY OF THE ABOVE CRITERIA, CONTACT THE ENGINEER BEFORE PROCEEDING.

3. THE CONTRACT DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INTEND TO CONVEY ELECTRICAL SCOPE OF WORK ONLY. NOT EVERY ELECTRICAL DETAIL, WIRE, OR CONDUIT IS SHOWN. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO PROCUREMENT AND CONSTRUCTION ACTIVITIES.

4. FIRE PROTECTION, LIFE SAFETY, AND FIRE ALARM GENERAL REQUIREMENTS IF SHOWN ON THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DESIGN IS DELEGATED IN ACCORDANCE WITH F.A.C. 61G15 OF THE FLORIDA ADMINISTRATIVE CODE TO A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA TO PROVIDE FIRE PROTECTION ENGINEERING AND DESIGN IN ACCORDANCE WITH APPLICABLE AND RELEVANT STANDARDS.

5. DEVIATIONS FROM THE INTENT OF THE CONTRACT DRAWINGS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND/OR OWNER PRIOR TO PROCEEDING WITH CONSTRUCTION.

6. TO "PROVIDE" MEANS TO PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, TRANSPORTATION, AND SUPERVISION REQUIRED TO FURNISH AND INSTALL.

7. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY COMPONENTS, EQUIPMENT, AND INCIDENTALS REQUIRED FOR A FULLY FUNCTIONAL AND OPERATIONAL ELECTRICAL SYSTEM AS DESCRIBED BY THE INTENT OF THE CONTRACT DRAWINGS AND SPECIFICATIONS. CONTRACTOR SHALL APPLY FOR, OBTAIN, AND PAY FOR ALL REQUIRED PERMITS AND INSPECTION CERTIFICATES, AND PAY FOR ALL FEES ASSOCIATED WITH THE PROJECT.

8. EQUIPMENT AND MATERIALS PROVIDED SHALL BEAR LISTING AND LABELING BY A NATIONALLY RECOGNIZED TESTING AGENCY WHERE SUCH STANDARD HAD BEEN ESTABLISHED FOR THAT TYPE OF EQUIPMENT / MATERIAL.

9. ALL SUBMITTALS SHALL BE REVIEWED BY THE PROJECT ENGINEER BEFORE INSTALLATION. SUBMIT SHOP DRAWINGS, CATALOG SHEETS, OR OTHER DESCRIPTIVE DATA WITH SUFFICIENT INFORMATION TO ESTABLISH DESIGN, QUALITY AND PERFORMANCE.

10. PROVIDE EQUIPMENT NAMEPLATES FOR ALL EQUIPMENT. NAMEPLATES SHALL BE ENGRAVED THREE-LAYER LAMINATED PLASTIC, BLACK LETTERS ON WHITE BACKGROUND. USE MINIMUM 1/8 INCH LETTERS FOR IDENTIFYING INDIVIDUAL EQUIPMENT AND LOADS AND 1/4 INCH LETTERS FOR GROUPED EQUIPMENT AND LOADS. PROVIDE ARC FLASH AND SHOCK HAZARD WARNING LABELS FOR ELECTRICAL EQUIPMENT PER NEC 110.16 AND OTHER ELECTRICAL LABELS AS REQUIRED BY OSHA AND NEC.

11. USE ONLY COPPER BUILDING WIRE WITH TYPE THWN/THHN (DUAL RATED) OR XHHW INSULATION (GROUND WIRES MAY BE TYPE TW FOR CIRCUITS RATED 100A OR LESS OR TYPE THW FOR CIRCUITS OVER 100A). WIRE SHALL BE SIZED AND COLOR CODED PER THE NEC. CONDUCTORS FOR POWER AND LIGHTING CIRCUITS SMALLER THAN #12 AWG ARE NOT PERMITTED.

12. ALL CIRCUITS SHALL BE RUN IN CONDUIT AND SHALL CONTAIN SEPARATE GROUNDING CONDUCTOR SIZED PER NEC TABLE 250.122. ALL CONDUIT SHALL BE SCHEDULE 80 PVC UNLESS OTHERWISE NOTED. FINAL CONNECTIONS (LESS THAN 6 FEET) TO ALL MOTORS AND OTHER VIBRATING EQUIPMENT SHALL BE MADE WITH LIQUID-TIGHT FLEXIBLE METAL CONDUIT (WITH GROUNDING CONDUCTOR). NONMETALLIC FLEX CONDUIT OR TUBING SHALL NOT BE USED. MINIMUM SIZE FOR CONDUIT SHALL BE 3/4". PROVIDE PULLWIRE FOR ALL EMPTY CONDUITS.

13. NO MORE THAN THREE (3) CURRENT CARRYING CONDUCTORS (ON ALTERNATING PHASES) SHALL BE COMBINED IN ONE CONDUIT. PROVIDE A DEDICATED NEUTRAL FOR ALL CIRCUITS REQUIRING A NEUTRAL.

14. CONTRACTOR SHALL CONFORM WITH ALL OSHA AND NFPA 70E, STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE, REQUIREMENTS FOR ELECTRICAL SAFETY, INCLUDING PROPER LOCK-OUT / TAG-OUT PROCEDURES AND WEARING APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE). CONTRACTOR'S EMPLOYEES SHALL HAVE RECEIVED NFPA 70E ARC FLASH TRAINING.

15. **CONTRACTOR SHALL PROVIDE SHORT CIRCUIT, PROTECTIVE DEVICE COORDINATION, AND ARC FLASH HAZARD ANALYSIS OF THE PROPOSED ELECTRICAL SYSTEM TO THE ENGINEER FOR REVIEW AND APPROVAL. AFFIX APPROVED ARC FLASH HAZARD LABELS TO ALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH OWNER STANDARDS, NFPA 70E, OSHA CFR PART 29, AND IEEE 1584 INCLUDING SUCH INFORMATION AS INCIDENT ENERGY LEVELS, SYSTEM DATA, EQUIPMENT IDENTIFICATION, DATES, APPROACH BOUNDARIES, AND PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS.**

ABBREVIATIONS

A OR AMP	AMPERES
AF	AMP FRAME
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AT	AMP TRIP
ATC	AUTOMATIC TRANSFER CONTROLLER
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
/C	CONDUCTOR
CB	CIRCUIT BREAKER
CT	CURRENT TRANSFORMER
CBL	CABLE
DS	DISCONNECT SWITCH
ESTOP	EMERGENCY STOP
EX	EXISTING
EP	EXPLOSION PROOF
EF	EXHAUST FAN
EG	EQUIPMENT GROUND
EGC	EQUIPMENT GROUND CONDUCTOR
EO	ELECTRICALLY OPERATED
F	FUSE
G OR GND	GROUND
GEC	GROUNDING ELECTRODE CONDUCTOR
GEN	GENERATOR
GF	GROUND FAULT
GFCI	GROUND FAULT CIRCUIT INTERRUPT
GFI	GROUND FAULT INTERRUPTING
H-O-A	HAND-OFF-AUTO
HP	HORSEPOWER
JB	JUNCTION BOX
kVA	KILOVOLT - AMPS
kW	KILOWATTS
kWH	KILOWATT-HOUR
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
ME	MOISTURE ELEMENT
MLO	MAIN LUGS ONLY
MSH	MOTOR SPACE HEATER
N	NEUTRAL
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OHE	OVERHEAD ELECTRICAL
PH, Ø	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PM	POWER MONITOR
REC	RECEPTACLE
SS	STAINLESS STEEL
SPD	SURGE PROTECTION DEVICE
SWBD	SWITCHBOARD
TE	TEMPERATURE ELEMENT
TSH	TEMPERATURE SWITCH
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITER'S LABORATORIES
V	VOLTS
VA	VOLT AMPS
VAC	VOLTS ALTERNATING CURRENT
VDC	VOLTS DIRECT CURRENT
VFD	VARIABLE FREQUENCY DRIVE
W	WATT
WH	WEATHERHEAD
WP	WEATHER PROOF
XFMR	TRANSFORMER

FIRE ALARM AND HVAC

- FACP — FIRE ALARM CONTROL PANEL
- F — MANUAL PULL STATION WALL MOUNTED AT 46 INCHES
- S — SMOKE DETECTOR CEILING MOUNTED
- SD — DUCT SMOKE DETECTOR
- F — AUDIO/STROBE LIGHT COMBINATION WALL MOUNTED AT 80 INCHES
- H — AUDIO UNIT WALL MOUNTED AT 80 INCHES
- T — THERMOSTAT
- R — FIRE ALARM RELAY
- FE — FIRE EXTINGUISHER
- FS — FLOW SWITCH
- PS — LOW PRESSURE SWITCH
- TS — TAMPER SWITCH

ELECTRICAL LEGEND

- UTILITY CONNECTION (VOLTAGE AND PHASES AS INDICATED)
- M — UTILITY METER
- TWO WINDING TRANSFORMER (VOLTAGE, RATING, IMPEDANCE, CONNECTION CONFIGURATION AS INDICATED) (ANSI STANDARD IMPEDANCE IF NOT SPECIFIED)
- LOW VOLTAGE MOLDED CASE CIRCUIT BREAKER. ("LSIG", "MCP", "GFI", "BLANK" THERMAL MAGNETIC) (AMP RATING AND NUMBER OF POLES AS INDICATED) (<< >> BRACKETS INDICATE DRAW-OUT DEVICE)
- FUSE (FUSE RATING AND CLASSIFICATION AS INDICATED)
- N, O, E, L — TRANSFER SWITCH ("A" AUTOMATIC, "M" MANUAL) (CURRENT RATING, POLES, BYPASS AS INDICATED)
- EARTH GROUND
- LIMITS OF DEMOLITION
- MISCELLANEOUS ELECTRICAL EQUIPMENT (AS INDICATED ON DRAWINGS)
- SWITCH (AMP RATING AND POLES AS INDICATED)
- INDUCTION MOTOR (HORSEPOWER RATING AS INDICATED)
- G — GENERATOR (RATING AND VOLTAGE AS INDICATED)
- CURRENT TRANSFORMER (CT) (RATIO AND QUANTITY AS INDICATED)
- POTENTIAL TRANSFORMER (PT) (RATIO AND QUANTITY AS INDICATED)
- X — FULL VOLTAGE NONREVERSING CONTACTOR (NEMA SIZE AS INDICATED)
- X — MOTOR OVERLOAD, CLASS 20, RATED FOR DEVICE ("E" ELECTRONIC, "T" THERMAL)
- F, R, X — FULL VOLTAGE REVERSING CONTACTOR (NEMA SIZE AS INDICATED)
- EXPOSED CONDUIT RUN MINIMUM SIZE 3/4-INCH
- CONCEALED CONDUIT RUN MINIMUM SIZE 1-INCH
- HOMERUN CIRCUIT WITH TERMINATION LOCATION AS DESIGNATED
- FLEXIBLE CONDUIT MINIMUM SIZE 3/4-INCH
- NON-FUSED DISCONNECT SWITCH (RATING AND POLES AS INDICATED)
- FUSED DISCONNECT SWITCH (RATING, FUSE SIZE, AND POLES AS INDICATED)
- MOTOR STARTER (RATING AND POLES AS INDICATED)
- HH — "HH" HAND HOLE, "MH" MANHOLE "PB" PULL BOX, "JB" JUNCTION BOX
- P-ATS-1 — CABLE/CONDUIT TAG ("P" POWER, "C" CONTROL, "I" INSTRUMENTATION) ("ATS" EQUIPMENT REFERENCE "1" SEQUENCE NO.)
- MSH — MOTOR SPACE HEATER
- TE — MOTOR TEMPERATURE ELEMENT
- ME — MOTOR MOISTURE ELEMENT
- ST — SHUNT TRIP
- SPD — SURGE PROTECTIVE DEVICE
- K — KIRK KEY INTERLOCK

GROUNDING & LIGHTNING PROTECTION

- CONNECTION TO GROUND GRID. (MECHANICAL / CADWELD PER SPECIFICATIONS)
- GROUND ROD
- GROUND TEST STATION
- G — G — GROUNDING GRID OR COUNTERPOISE SYSTEM CONDUCTOR
- LIGHTNING PROTECTION AIR TERMINAL
- LIGHTNING PROTECTION DISSIPATION AIR TERMINAL
- L — L — LIGHTNING PROTECTION SYSTEM CONDUCTOR
- LIGHTNING PROTECTION SYSTEM DOWN CONDUCTOR

OUTLETS AND RECEPTACLES

- LP1-12 — DUPLEX RECEPTACLE, 20A, 120V, MOUNTED AT 18 INCHES U.N.O. (CIRCUIT AS INDICATED)
- LP1-12 — QUADPLEX RECEPTACLE, 20A, 120V, MOUNTED AT 18 INCHES U.N.O. (CIRCUIT AS INDICATED)
- LP1-12 GFI — DUPLEX RECEPTACLE, GFI, 20A, 120V, MOUNTED AT 18 INCHES U.N.O. (CIRCUIT AS INDICATED)
- LP1-12 — SPECIAL PURPOSE RECEPTACLE MOUNTED AT 18 INCHES U.N.O. (SEE PLANS FOR DETAILS)
- LP1-12 — FLOOR MOUNTED DUPLEX RECEPTACLE, 20A, 120V (CIRCUIT AS INDICATED)
- J — JUNCTION BOX
- DATA OUTLET MOUNTED AT 18 INCHES U.N.O. (SEE PLANS FOR DETAILS)
- TELEPHONE OUTLET MOUNTED AT 18 INCHES U.N.O. (SEE PLANS FOR DETAILS)
- TELEPHONE / DATA COMBINATION OUTLET MOUNTED AT 18 INCHES U.N.O. (SEE PLANS FOR DETAILS)

LIGHTING

- A — CEILING MOUNTED FIXTURE (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- A — CEILING MOUNTED FIXTURE WITH 90 MIN BATTERY BACKUP (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- A — CEILING MOUNTED DOWN-LIGHT FIXTURE (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- A — CEILING MOUNTED DOWN-LIGHT FIXTURE W/ 90 MIN BATTERY BACKUP (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- A — SURFACE MOUNTED OR SUSPENDED INDUSTRIAL STRIP FIXTURE (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- A — WALL MOUNTED FIXTURE (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- A — TWIN HEAD FLOOD FIXTURE WITH BATTERY BACKUP (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- A — EXIT SIGN FIXTURE, DO NOT SWITCH, PROVIDE ARROWS AS INDICATED, SHADING DENOTES FACE OPERATION (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- A — POLE MOUNTED LIGHT FIXTURE (FIXTURE TYPE AND CIRCUIT AS INDICATED)
- $ — WALL SWITCH WALL MOUNTED AT 46 INCHES, 20A, 120/277V ("3" THREE WAY, "4" FOUR WAY, "D" DIMMER, "M" MOTOR RATED, "OS" INTEGRAL OCCUPANCY SENSOR)
- OS — LIGHTING CONTROL SENSOR (TYPE AS INDICATED)
- PC — PHOTOCELL

ALL DEVICES/PLATES TO BE IN OWNERS CHOICE OF COLORS.

ELEMENTARY WIRING SCHEMATICS

- PRESSURE SWITCH - NORMALLY OPEN
- PRESSURE SWITCH - NORMALLY CLOSED
- DIFFERENTIAL PRESSURE SWITCH - NORMALLY OPEN
- DIFFERENTIAL PRESSURE SWITCH - NORMALLY CLOSED
- TIME DELAY SWITCH - TIMER ON DELAY (CLOSES AFTER TIMER EXPIRES)
- TIMER DELAY SWITCH - TIMER OFF DELAY (OPENS AFTER TIMER EXPIRES)
- VIBRATION SWITCH - NORMALLY OPEN
- VIBRATION SWITCH - NORMALLY CLOSED
- X — COIL CONTACTS ("C" CONTROL RELAY, "LC" LIGHTING CONTACTOR, "M" MOTOR RELAY, "TD" TIME DELAY)
- NORMALLY OPEN CONTACT
- NORMALLY CLOSED CONTACT
- LIMIT SWITCH - NORMALLY OPEN
- LIMIT SWITCH - NORMALLY CLOSED
- LIQUID LEVEL (FLOAT) SWITCH - NORMALLY OPEN
- LIQUID LEVEL (FLOAT) SWITCH - NORMALLY CLOSED
- TEMPERATURE SWITCH - NORMALLY OPEN
- TEMPERATURE SWITCH - NORMALLY CLOSED
- FLOW SWITCH - NORMALLY OPEN
- FLOW SWITCH - NORMALLY CLOSED
- X, TB# — TERMINAL BLOCK (TERMINAL NO. AND TERMINAL BLOCK AS INDICATED)
- X, TB#, X, TB# — EXTERNALLY MOUNTED DEVICE (DASHED LINE INDICATES WIRING EXTERNAL TO PANEL)
- 00X, X00 — SELECTOR SWITCH ("X" INDICATES SWITCH POSITION AND QUANTITY AS INDICATED)
- MOMENTARY PUSH BUTTON - NORMALLY OPEN
- MOMENTARY PUSH BUTTON - NORMALLY CLOSED
- REMOTE SHUTDOWN/STOP - NORMALLY CLOSED
- SV — SOLENOID VALVE
- RTM — RUN TIME METER
- HORN ELEMENT
- R — EXTERNALLY MOUNTED ALARM LIGHT
- PHOTOCELL
- PTT, X — PUSH TO TEST TYPE PANEL MOUNTED INDICATOR LIGHT ("A" AMBER, "G" GREEN, "R" RED, "W" WHITE, "B" BLUE)
- MOTOR SPACE HEATER

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CITY OF HAMPTON, FLORIDA — Est. in 1929

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Technician:	ICE Proj. No.:
F. WELLS	21-51.09

Engineer or Record:

FRANK E. WELLS, FL PE 73859
DATE: 03/27/2026

Notes:

REVISIONS

No.	Description	Date	By

Project Name:
CITY OF HAMPTON WELL 1R

Drawing Name:
ELECTRICAL LEGEND

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
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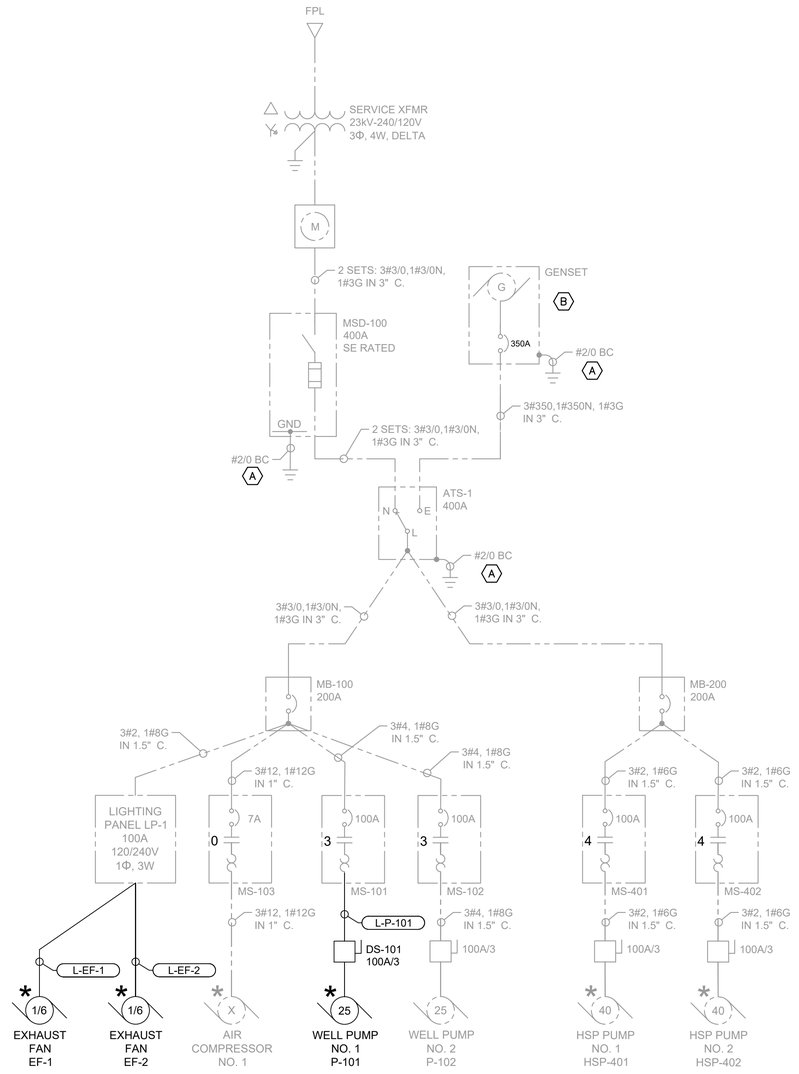
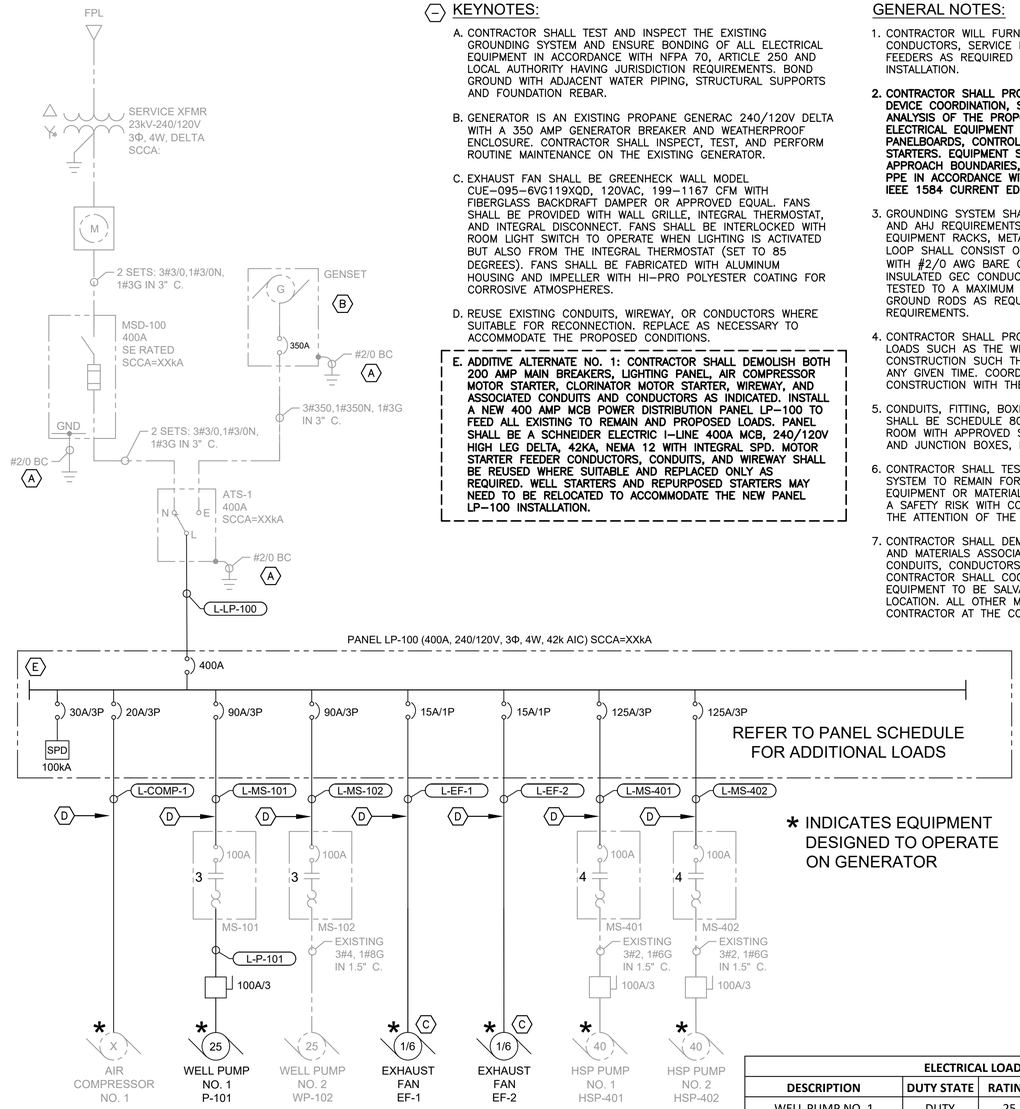


ONE-LINE DIAGRAM - PROPOSED BASE BID

NTS



ONE-LINE DIAGRAM - PROPOSED ADDITIVE ALTERNATE NO. 1

NTS

KEYNOTES:

A. CONTRACTOR SHALL TEST AND INSPECT THE EXISTING GROUNDING SYSTEM AND ENSURE BONDING OF ALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH NFPA 70, ARTICLE 250 AND LOCAL AUTHORITY HAVING JURISDICTION REQUIREMENTS. BOND GROUND WITH ADJACENT WATER PIPING, STRUCTURAL SUPPORTS AND FOUNDATION REBAR.

B. GENERATOR IS AN EXISTING PROPANE GENERAC 240/120V DELTA WITH A 350 AMP GENERATOR BREAKER AND WEATHERPROOF ENCLOSURE. CONTRACTOR SHALL INSPECT, TEST, AND PERFORM ROUTINE MAINTENANCE ON THE EXISTING GENERATOR.

C. EXHAUST FAN SHALL BE GREENHECK WALL MODEL CUE-095-6VG119XQD, 120VAC, 199-1167 CFM WITH FIBERGLASS BACKDRAFT DAMPER OR APPROVED EQUAL. FANS SHALL BE PROVIDED WITH WALL GRILLE, INTEGRAL THERMOSTAT, AND INTEGRAL DISCONNECT. FANS SHALL BE INTERLOCKED WITH ROOM LIGHT SWITCH TO OPERATE WHEN LIGHTING IS ACTIVATED BUT ALSO FROM THE INTEGRAL THERMOSTAT (SET TO 85 DEGREES). FANS SHALL BE FABRICATED WITH ALUMINUM HOUSING AND IMPELLER WITH HI-PRO POLYESTER COATING FOR CORROSIVE ATMOSPHERES.

D. REUSE EXISTING CONDUITS, WIREWAY, OR CONDUCTORS WHERE SUITABLE FOR RECONNECTION. REPLACE AS NECESSARY TO ACCOMMODATE THE PROPOSED CONDITIONS.

E. ADDITIVE ALTERNATE NO. 1: CONTRACTOR SHALL DEMOLISH BOTH 200 AMP MAIN BREAKERS, LIGHTING PANEL, AIR COMPRESSOR MOTOR STARTER, CLORINATOR MOTOR STARTER, WIREWAY, AND ASSOCIATED CONDUITS AND CONDUCTORS AS INDICATED. INSTALL A NEW 400 AMP MCB POWER DISTRIBUTION PANEL LP-100 TO FEED ALL EXISTING TO REMAIN AND PROPOSED LOADS. PANEL SHALL BE A SCHNEIDER ELECTRIC I-LINE 400A MCB, 240/120V HIGH LEG DELTA, 42KA, NEMA 12 WITH INTEGRAL SPD. MOTOR STARTER FEEDER CONDUCTORS, CONDUITS, AND WIREWAY SHALL BE REUSED WHERE SUITABLE AND REPLACED ONLY AS REQUIRED. WELL STARTERS AND REPURPOSED STARTERS MAY NEED TO BE RELOCATED TO ACCOMMODATE THE NEW PANEL LP-100 INSTALLATION.

GENERAL NOTES:

1. CONTRACTOR WILL FURNISH AND INSTALL ALL RACEWAYS, SERVICE CONDUCTORS, SERVICE EQUIPMENT, WIREWAYS, LOAD CENTERS, AND FEEDERS AS REQUIRED FOR A COMPLETE AND OPERATIONAL INSTALLATION.
2. **CONTRACTOR SHALL PROVIDE ARC FLASH HAZARD ANALYSIS, PROTECTIVE DEVICE COORDINATION, SHORT CIRCUIT STUDY, AND HARMONICS ANALYSIS OF THE PROPOSED ELECTRICAL SYSTEM, INCLUDING ALL ELECTRICAL EQUIPMENT SUCH AS MOTOR CONTROL CENTER, PANELBOARDS, CONTROL PANELS, DISCONNECT SWITCHES, AND MOTOR STARTERS. EQUIPMENT SHALL BE LABELED WITH SUCH THINGS AS APPROACH BOUNDARIES, INCIDENT ENERGY LEVELS, AND ACCEPTABLE PPE IN ACCORDANCE WITH OSHA 29 CFR, PART 1910, NEC, NFPA 70E, IEEE 1584 CURRENT EDITIONS, AND OWNER STANDARDS.**
3. GROUNDING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH NEC AND AHJ REQUIREMENTS INTERCONNECTING ALL ELECTRICAL EQUIPMENT, EQUIPMENT RACKS, METAL PIPING, AND FOUNDATION REBAR. GROUND LOOP SHALL CONSIST OF 3/4" x 10' COPPER CLAD GROUND RODS WITH #2/0 AWG BARE COPPER GROUND CONDUCTOR AND GREEN INSULATED GEC CONDUCTOR SIZED PER NEC 250.66. GRID SHALL BE TESTED TO A MAXIMUM RESISTANCE OF 5 OHMS. DRIVE ADDITIONAL GROUND RODS AS REQUIRED TO MEET MAXIMUM RESISTANCE REQUIREMENTS.
4. CONTRACTOR SHALL PROVIDE TEMPORARY POWER TO CRITICAL FACILITY LOADS SUCH AS THE WELL AND HIGH SERVICE PUMP STARTERS DURING CONSTRUCTION SUCH THAT ONLY ONE PUMP IS OUT OF SERVICE AT ANY GIVEN TIME. COORDINATE OUTAGES IN THE FIELD DURING CONSTRUCTION WITH THE OWNER.
5. CONDUITS, FITTING, BOXES, AND OUTLETS IN THE CHEMICAL ROOM SHALL BE SCHEDULE 80 PVC. SEAL PENETRATIONS TO ELECTRICAL ROOM WITH APPROVED SEALANT. DUCT SEAL ALL CONDUITS AT DEVICE AND JUNCTION BOXES, FIXTURES, AND EQUIPMENT ENCLOSURES.
6. CONTRACTOR SHALL TEST AND INSPECT THE EXISTING ELECTRICAL SYSTEM TO REMAIN FOR PROPER OPERATION. REPAIR OR REPLACE EQUIPMENT OR MATERIALS THAT ARE DEFORMED, DEFECTIVE, OR POSE A SAFETY RISK WITH CONTINUED OPERATION. BRING THESE ITEMS TO THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO REPLACEMENT.
7. CONTRACTOR SHALL DEMOLISH ALL EXISTING ELECTRICAL EQUIPMENT AND MATERIALS ASSOCIATED WITH EXISTING WELL NO. 1 INCLUDING ALL CONDUITS, CONDUCTORS, DISCONNECTS, JUNCTION BOXES, ETC. CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR MATERIALS OR EQUIPMENT TO BE SALVAGED AND DELIVERED TO AN OWNER SPECIFIED LOCATION. ALL OTHER MATERIALS SHALL BE DISPOSED OF BY THE CONTRACTOR AT THE CONTRACTORS EXPENSE.

LIGHTING FIXTURE SCHEDULE

MARK	MFR.	CATALOG NUMBER.	LAMP	VOLTAGE	MOUNTING	WATTS	HEIGHT	REMARKS
S1	HOLOPHANE	EMS L48 6000LM IMAFL MD GZ10 40K 80CRI	LED	120V	SUSPENDED	41	8'-0"	BLDG SURFACE LIGHTS (NOTE 6)
P1	AEL	ATBMIC P152 MVOLT R3 PCLL UMR	LED	120V	POLE	35	10'-0"	PROCESS AREA LIGHT (NOTE 4, 5)
EM	HOLOPHANE	DM30 WL LED	LED	120V	WALL	6.6	7'-6"	EMERGENCY - 7W BATTERY BACKUP

NOTES:	
1	CONTRACTOR SHALL PROVIDE FIXTURES SPECIFIED OR ENGINEER APPROVED EQUAL.
2	CONTRACTOR SHALL VERIFY ALL LOCATIONS AND MOUNTING HEIGHTS PRIOR TO CONSTRUCTION.
3	ALTERNATE FIXTURES ARE ACCEPTABLE WITH APPROVED PHOTOMETRIC CALCULATIONS AND ALL SUPPORTING DOCUMENTATION.
4	SITE LIGHT POLE SHALL BE A DIRECT BURIAL TAPERED FIBERGLASS POLE WITH A 10'-0" MOUNTING HEIGHT ACUITY BRANDS FRTFDB HLP OR EQUIVALENT.
5	PROVIDE TWIST LOCK AND PHOTOCELL.
6	FIXTURE TO BE NEMA 4X AND RATED FOR A MINIMUM OF 45 DEGREE CELCIUS.

ELECTRICAL LOAD CALCULATIONS

DESCRIPTION	DUTY STATE	RATING	UNITS	VOLTAGE	AMPS	KVA
WELL PUMP NO. 1	DUTY	25	HP	240	96.0	39.9
WELL PUMP NO. 2	STANDBY	25	HP	240	96.0	39.9
HSP NO. 1	DUTY	40	HP	240	68.0	28.3
HSP NO. 2	DUTY	40	HP	240	68.0	28.3
SITE AUXILIARY POWER	DUTY	25	KVA	240	60.1	25.0
				CONNECTED LOAD (KVA)		161
				NON-COINCIDNET LOAD (KVA)		40
				PEAK DEMAND LOAD (KVA)		121
				.25 X LARGEST MOTOR (KVA)		10
				MINIMUM SERVICE RATING (KVA)		131
				MINIMUM SERVICE AMPACITY @ 240V / 3 PH (AMPS)		316
				MINIMUM MAIN BREAKER RATING (AMPS)		395
ELECTRICAL SERVICE REQUIRED						
400A, 240/120V, 3 PHASE, 4 WIRE (HIGH LEG DELTA)						

LOAD CALCULATION

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INFRASTRUCTURE CONSULTING & ENGINEERING
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CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer:	Checked by:
F. WELLS	F. WELLS
Technician:	ICE Proj. No.:
F. WELLS	21-51.09

Engineer or Record:

FRANK E. WELLS, FL PE 73859
DATE: 03/27/2026

Notes:

REVISIONS

No.	Description	Date	By

Project Name:

CITY OF HAMPTON
WELL 1R

Drawing Name:

ONE-LINE DIAGRAM
AND CALCULATIONS

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
Scale:	Drawing Number:
AS SHOWN	E1.1

File Path: C:\Users\frank\OneDrive\Desktop\Engineering\Engineering Projects\Misc\Hampton Well 1R\Drawings\E1.1 ONELINE DIAGRAM & CALCULATIONS.dwg Date: 3/25/2026 1:19 PM

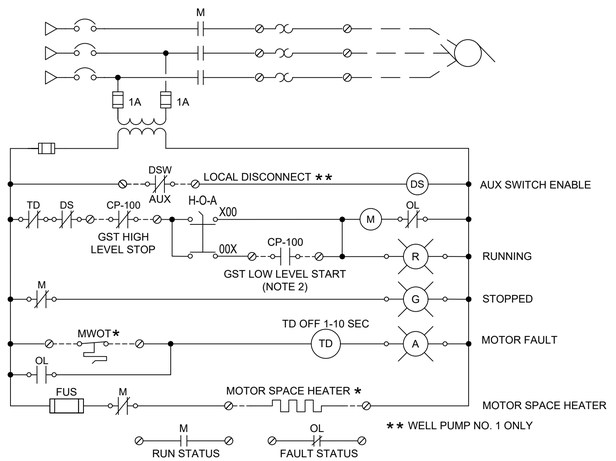
CONDUIT AND CONDUCTOR SCHEDULE

CIRCUIT ID	# OF SETS	CONDUIT SIZE	CONDUCTOR IN EACH SET	FROM	TO	NOTES
C-AD-1	1	3/4"	14#14, 1#14G	CP-100	AUTODAILER AD-1	
C-AIT-404	1	3/4"	4#14, 1#14G	CP-100	CHLORINE ANALYZER AIT-404	
C-ATS-1	1	3/4"	8#14, 1#14G	CP-100	TRANSFER SWITCH ATS-1	
C-FSL-201	1	1"	4#14, 1#14G	CP-100	FLOW SWITCH FSL-201	
C-GEN-1	1	1"	6#14, 1#14G	CP-100	GENERATOR CONTROL PANEL	
C-GST-201	1	1"	10#14, 1#14G	CP-100	GST-201 LEVEL FLOATS SWITCHES	
C-MS-101	1	3/4"	8#14, 1#14G	CP-100	WELL STARTER MS-101	
C-MS-102	1	3/4"	8#14, 1#14G	CP-100	WELL STARTER MS-102	
C-MS-401	1	3/4"	8#14, 1#14G	CP-100	HIGH SERVICE PUMP STARTER MS-401	
C-MS-402	1	3/4"	8#14, 1#14G	CP-100	HIGH SERVICE PUMP STARTER MS-402	
C-P-101	1	1"	6#14, 1#14G	WELL STARTER MS-101	WELL PUMP P-101	
C-PS-400	1	1"	6#14, 1#14G	CP-100	DISCHARGE PRESSURE SWITCHES	
I-AIT-404	1	3/4"	1-2PR#18 TWIS	CP-100	CHLORINE ANALYZER AIT-404	
I-FE-101	1	1"	PER MFR	WELL NO. 1 FLOW ELEMENT FE-101	FIELD INSTRUMENT CONNECTION BOX FICB-101	
I-FE-201	1	1"	PER MFR	TOTAL WELL FLOW ELEMENT FE-201	TOTAL WELL FLOW TRANSMITTER FIT-201	
I-FICB-101	1	1"	1-2PR#18 TWIS	CP-100	FIELD INSTRUMENT CONNECTION BOX FICB-101	
I-FIT-201	1	1"	1-2PR#18 TWIS	CP-100	TOTAL WELL FLOW TRANSMITTER FIT-201	
I-GST-201	1	1"	1-2PR#18 TWIS	CP-100	GST LEVEL TRANSMITTER LT-201	
I-LE-101	1	1"	PER MFR	WELL NO. 1 LEVEL TRANSDUCER LE-101	FIELD INSTRUMENT CONNECTION BOX FICB-101	
I-P-501	1	1"	1-2PR#18 TWIS	CP-100	HYPO PUMP P-501	
I-P-502	1	1"	1-2PR#18 TWIS	CP-100	HYPO PUMP P-502	
I-PIT-401	1	3/4"	1-2PR#18 TWIS	CP-100	DISCHARGE PRESSURE TRANSMITTER PIT-401	
L-AD-1	1	3/4"	1#12, 1#12N, 1#12G	PANEL LP-100	AUTODAILER AD-1	
L-AIT-404	1	3/4"	1#12, 1#12N, 1#12G	PANEL LP-100	CHLORINE ANALYZER AIT-404	
L-COMP-1	1	1"	3#10, 1#10G	PANEL LP-100	AIR COMPRESSOR	
L-CP-100	1	3/4"	1#12, 1#12N, 1#12G	PANEL LP-100	CP-100	
L-EF-1	1	3/4"	1#12, 1#12N, 1#12G	PANEL LP-100	EXHAUST FAN EF-1 / LIGHTS	
L-EF-2	1	3/4"	1#12, 1#12N, 1#12G	PANEL LP-100	EXHAUST FAN EF-2 / LIGHTS	
L-FICB-101	1	1"	1#10, 1#10N, 1#10G	PANEL LP-100	FIELD INSTRUMENT CONNECTION BOX FICB-101	
L-GEN-1	1	3/4"	1#10, 1#10N, 1#10G	PANEL LP-100	GENERATOR ACCESSORIES	
L-LP-100	1	4"	3#500, 1#500N, 1#2G	PANEL LP-100	TRANSFER SWITCH ATS-1	
L-LTS-1	1	1"	1#12, 1#12N, 1#12G	PANEL LP-100	SITE LIGHTS	
L-MS-101	1	1-1/2"	3#4, 1#8G	PANEL LP-100	WELL STARTER MS-101	
L-MS-102	1	1-1/2"	3#4, 1#8G	PANEL LP-100	WELL STARTER MS-102	
L-MS-401	1	1-1/2"	3#2, 1#6G	PANEL LP-100	HIGH SERVICE PUMP STARTER MS-401	
L-MS-402	1	1-1/2"	3#2, 1#6G	PANEL LP-100	HIGH SERVICE PUMP STARTER MS-402	
L-P-101	1	1-1/2"	3#2, 1#6G	MS-101	WELL PUMP P-101	VIA DISCONNECT DS-101
L-P-500	1	1"	1#12, 1#12N, 1#12G	PANEL LP-100	HYPO PUMP RECEPT	
L-REC-1	1	3/4"	1#12, 1#12N, 1#12G	PANEL LP-100	BUILDING RECEPTS	

CONDUIT AND CONDUCTOR SCHEDULE SHOWN IS BASED ON THE ADDITIVE ALTERNATE AND SHALL BE ADJUSTED AS REQUIRED TO ACCOMMODATE THE BASE BID SCOPE OF WORK. REUSE EXISTING CONDUITS, CONDUCTORS, AND WIREWAYS AS DETERMINED SUITABLE IN THE FIELD DURING CONSTRUCTION.

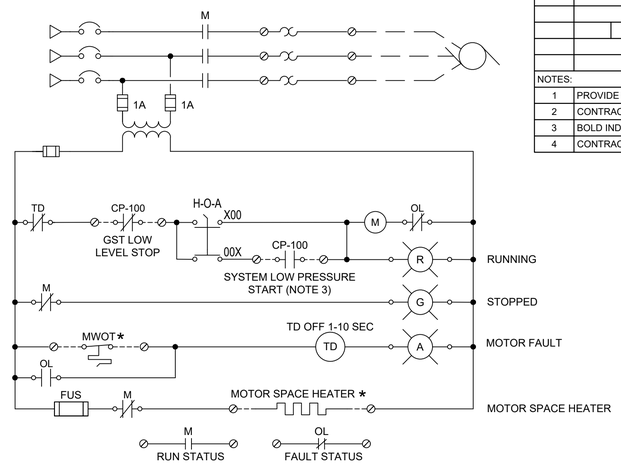
FIELD INSTRUMENT SCHEDULE

TAG	SERVICE	DESCRIPTION	SIZE	RANGE	UNITS	OUTPUT	POINT OF CONNECTION	NOTES
AIT-404	CHLORINE ANALYZER	HACH CL17		0-15	mg/L	4-20mA	CP-100	
FE-101	WELL FLOW	McCROMETER ULTRAMAG UM08 W/ REMOTE CONVERTOR	4-INCH	0-2,000	GPM	4-20mA	CP-100	
FE-201	WELL FLOW	McCROMETER ULTRAMAG UM08 W/ REMOTE CONVERTOR	4-INCH	0-2,000	GPM	4-20mA	CP-100	
PIT-201	DISCHARGE PRESSURE	ROSEMOUNT 3051		0-100	PSI	4-20mA	CP-100	
LE-101	WELL LEVEL	BLUE RIBBON BR313L		0-200	FEET	4-20mA	CP-100	
LT-201	GST LEVEL	BLUE RIBBON BR313L		0-25	FEET	4-20mA	CP-100	



WELL PUMP STARTER WIRING DIAGRAM

NTS



HIGH SERVICE PUMP STARTER WIRING DIAGRAM

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				LP-100 (ADD ALT NO. 1)				LOCATION:	ELECTRICAL BUILDING				
VOLTS L-L:	240			MAIN OVERCURRENT:	400A MCB		BUS MATERIAL:	Cu	MOUNTING:	SURFACE			
VOLTS L-N:	120			MAIN BUS RATING:	400A		NEUTRAL SIZE:	100%	ENCLOSURE TYPE:	NEMA 1			
PHASE:	3			MINIMUM A.I.C.:	42kA				GROUND:	EQUIPMENT			
WIRE:	4												
CKT#	BKR.	POLE	TYPE	DESCRIPTION	VA	PHASE A	PHASE B	PHASE C	VA	DESCRIPTION	TYPE	POLE	BKR.	CKT#
1					13301	13901			600	EXHAUST FAN EF-1		1	20	2
3	125	3		HIGH SERVICE PUMP STARTER MS-401	13301		13301							4
5					13301			13901	600	EXHAUST FAN EF-2		1	20	6
7					13301	13901			600					8
9	125	3		HIGH SERVICE PUMP STARTER MS-402	13301		13901		600	AIR COMPRESSOR STARTER MS-103		3	20	10
11					13301			13901	600					12
13					9422	10022			600	SITE LIGHTING		1	20	14
15	90	3		WELL PUMP STARTER MS-101	9422		9422							16
17					9422			9422		SPARE		1	20	18
19					9422	10622			1200	BUILDING RECEPTS		1	20	20
21	90	3		WELL PUMP STARTER MS-102	9422		9422							22
23					9422			9782	360	HIGH SERVICE PUMP RECEPTS		1	20	24
25	25	1		GENERATOR ACCESSORIES	1200	1800			600	HYPO PUMP RECEPT		1	15	26
27							0							28
29	20	1		AUTODAILER AD-1	360			1560	1200	WELL NO. 1 FICB-101		1	20	30
31	20	1		STATION CONTROL PANEL CP-100	1200	1800			600	CHLORINE ANALYZER AIT-404		1	20	32
33							0							34
35	20	1		SPARE				0		SPARE		1	20	36
37	20	1		SPARE		5			5	SPD (NOTE 1)		3	30	38
39							5		5					40
41	20	1		SPARE				5	5					42
				TOTAL CONNECTED LOAD (VA) PER PHASE:		52051	46051	48571						
				CONNECTED LOAD (AMPS) PER PHASE:		434	384	405						
				TOTAL CONNECTED LOAD (VA):		146673								
				TOTAL CONNECTED LOAD (AMPS):		353								

NOTES:

1. PROVIDE MANUFACTURER'S STANDARD INTERNAL UL 1449 5TH ED. 100KA SURGE PROTECTION DEVICE
2. PROVIDE PRINTED PANEL SCHEDULE AFFIXED TO INSIDE OF PANEL DOOR
3. CONTRACTOR SHALL CONFIRM ALL LOADS IN THE FIELD DURING CONSTRUCTION WITH PROVIDED EQUIPMENT AND ADJUST BREAKER RATINGS AS REQUIRED.
4. HIGH LEG DELTA SERVICE. NO SINGLE PHASE LOADS SHALL BE INSTALLED ON 'B' PHASE.
5. ALL BRANCH CIRCUITS WITHIN THE EXISTING LIGHTING PANEL SHALL BE RELOCATED TO THE NEW PANEL LP-100.

		EXISTING PANEL LP-1			LOCATION:		ELECTRICAL ROOM				
OPTIONS											
VOLTS L-L:	240	MAIN OVERCURRENT:	100A MCB		BUS MATERIAL:	Cu	MOUNTING:	SURFACE			
VOLTS L-N:	120	MAIN BUS RATING:	100A		NEUTRAL SIZE:	100%	ENCLOSURE TYPE:	NEMA 1			
PHASE:	1	MINIMUM A.I.C.:	14kA				GROUND:	EQUIPMENT			
WIRE:	3										
CKT#	BKR.	POLE	TYPE	DESCRIPTION	VA	PHASE	PHASE	VA	DESCRIPTION	TYPE	POLE	BKR.	CKT#
1	**20**	**1**		**CHLORINE ROOM RECEPTS**	**600**	**1800**		**1200**	**GENERATOR ACCESSORIES**		**1**	**20**	**2**
3	**20**	**1**		**EXHAUST FAN EF-1**	**600**		**1200**	**600**	**SITE LIGHTS**		**1**	**20**	**4**
5	**20**	**1**		**EXHAUST FAN EF-2**	**600**	**960**		**360**	**BLDG LIGHTS**		**1**	**20**	**6**
7	**20**	**1**		**CHLORINE ROOM RECEPTS**	**600**		**1320**	**720**	**BUILDING RECEPTS**		**1**	**20**	**8**
9	**20**	**1**		**STATION CONTROL PANEL CP-100**	**1200**	**1800**		**600**	**HIGH SERVICE PUMP AREA RECEPTS**		**1**	**20**	**10**
11	**20**	**1**		**SPARE**			**600**	**600**	**WELL NO. 1 LIGHTS & RECEPTS**		**1**	**20**	**12**
				TOTAL CONNECTED LOAD (VA) PER PHASE:		4560	3120						
				CONNECTED LOAD (AMPS) PER PHASE		38	26						
				TOTAL CONNECTED LOAD (VA):		7680							
				TOTAL CONNECTED LOAD (AMPS):		32							

NOTES:

1. PROVIDE UPDATED AND PRINTED PANEL SCHEDULE AFFIXED TO INSIDE OF PANEL DOOR.
2. CONTRACTOR SHALL CONFIRM ALL EXISTING CONDITIONS IN THE FIELD DURING CONSTRUCTION.
3. BOLD INDICATED PROPOSED WORK.
4. CONTRACTOR SHALL CONFIRM ALL LOADS IN THE FIELD DURING CONSTRUCTION WITH PROVIDED EQUIPMENT AND ADJUST BREAKER / CONDUCTOR SIZING AS REQUIRED.

LEGEND

- ⊘ TO/FROM PANEL
- ○ MOUNTED ON PANEL DEADFRONT
- * LOCATED IN FIELD

NOTES

1. INSTALL STARTER INDICATION LAMPS IN EACH STARTER AS INDICATED IN THE WIRING DIAGRAMS WHERE NOT EXISTING. LAMPS SHALL BE PUSH TO TEST, NEMA 4X, 30mm, AND WIRING SHALL BE #14 AWG MINIMUM.
2. PLC SHALL PREVENT SIMULTANEOUS WELL PUMP OPERATION AND LIMIT WELL PUMPS TO A SINGLE WELL OPERATING AT ANY GIVEN TIME. PLC SHALL ALTERNATE WELL OPERATION EVERY 24 HOURS OR AFTER EACH RUN TO EQUALIZE PUMP RUNTIMES.
3. PLC SHALL PROVIDE SEQUENTIAL HSP OPERATION AND SHALL ALTERNATE HSP OPERATION EVERY 24 HOURS OR AFTER EACH RUN TO EQUALIZE PUMP RUNTIMES.
4. CONDUIT AND CONDUCTOR SCHEDULE SHOWN IS BASED ON THE ADDITIVE ALTERNATE BEING EXERCISED. ADJUST AS REQUIRED TO ACCOMMODATE THE BASE BID SCOPE OF WORK AS DETERMINED IN THE FIELD DURING CONSTRUCTION.

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CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer: F. WELLS | Checked by: F. WELLS
Technician: F. WELLS | ICE Proj. No.: 21-51.09

Engineer or Record:

FRANK E. WELLS, FL PE 73859
DATE: 03/27/2026

Notes:

REVISIONS

No.	Description	Date	By

Project Name:
CITY OF HAMPTON WELL 1R

Drawing Name:
SCHEDULES AND SCHEMATICS

Date: MARCH 27, 2026 | Issue: BID DOCUMENTS
Scale: AS SHOWN | Drawing Number: E1.2

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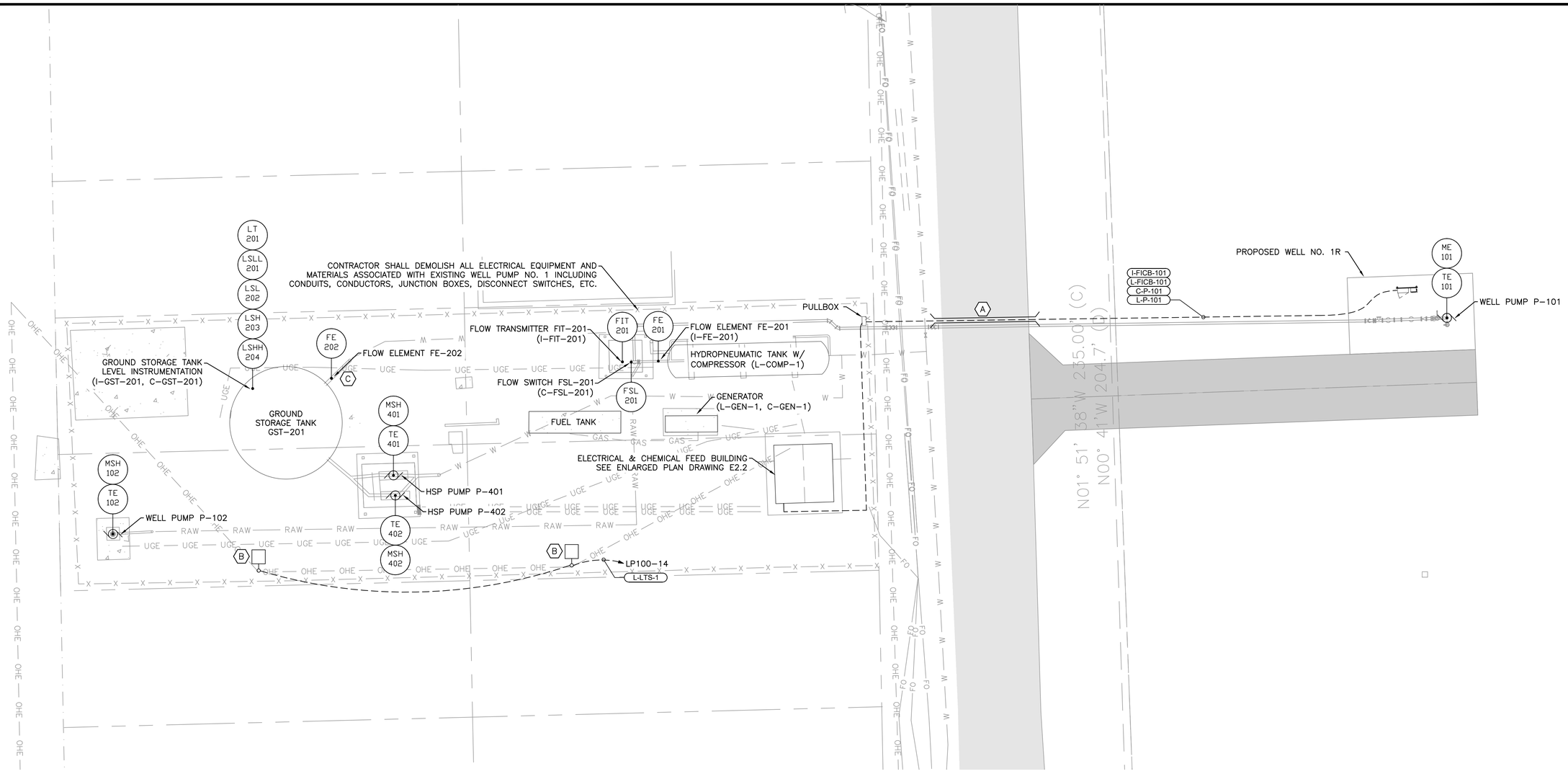

N

ELECTRICAL SITE PLAN

SCALE: 1" = 10'-0"

0 10' 20'

SCALE: 1" = 10'

KEYNOTES:

A. PROVIDE REINFORCED CONCRETE ENCASEMENT FOR DUCT BANKS CROSSING PAVED DRIVEWAYS.

B. CONTRACTOR SHALL INSPECT THE EXISTING YARD FLOODLIGHTING. REPAIR OR REPLACE DEFECTIVE OR DAMAGED COMPONENTS. ADJUST FLOODS TO LIGHT YARD AND LIMIT LIGHT TRESPASS TO ADJACENT PROPERTIES. INSTALL SHIELDS AS REQUIRED.

C. MANUALLY INDICATING NEPTUNE FLOW METER FE-202 SHALL REMAIN.

GENERAL NOTES:

1. SITE LIGHTING CIRCUIT SHALL BE 3#10 IN 1" SCH 40 PVC CONDUIT.

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ELECTRICAL SITE PLAN

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AS SHOWN	E2.1

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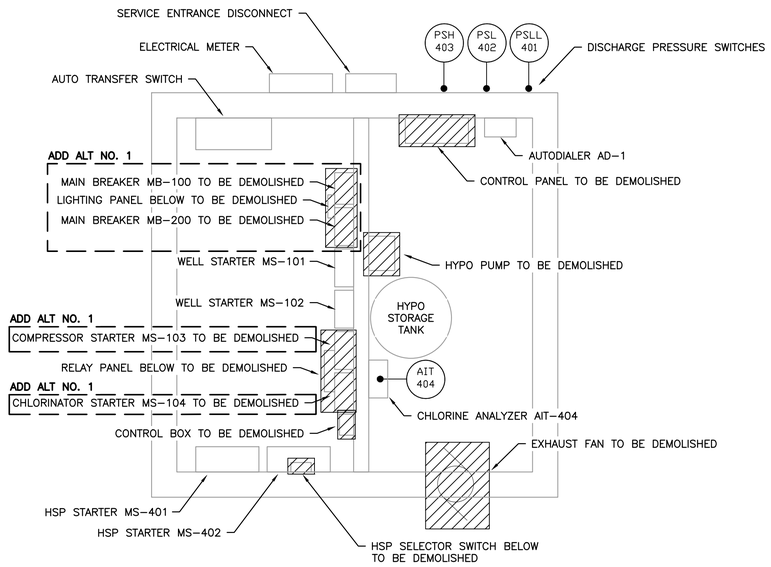

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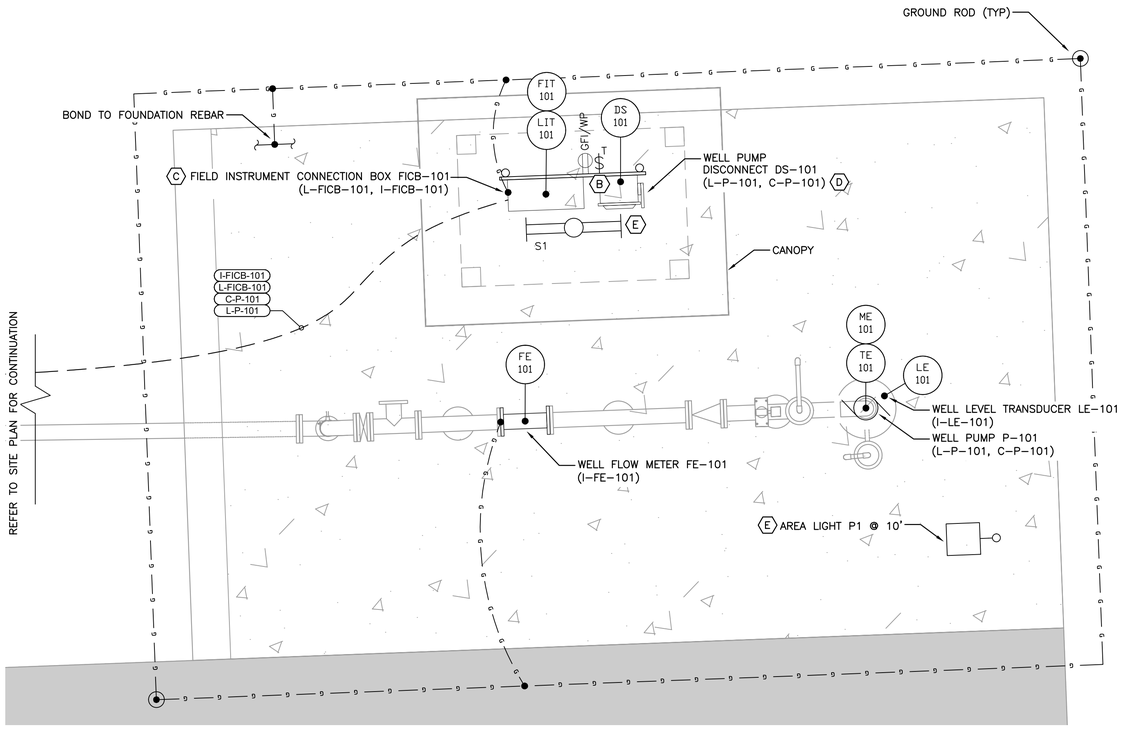
ENLARGED BUILDING - DEMO PLAN

SCALE: 1/2" = 1'-0"

0 1' 2' 4'

SCALE: 1/2" = 1'-0"



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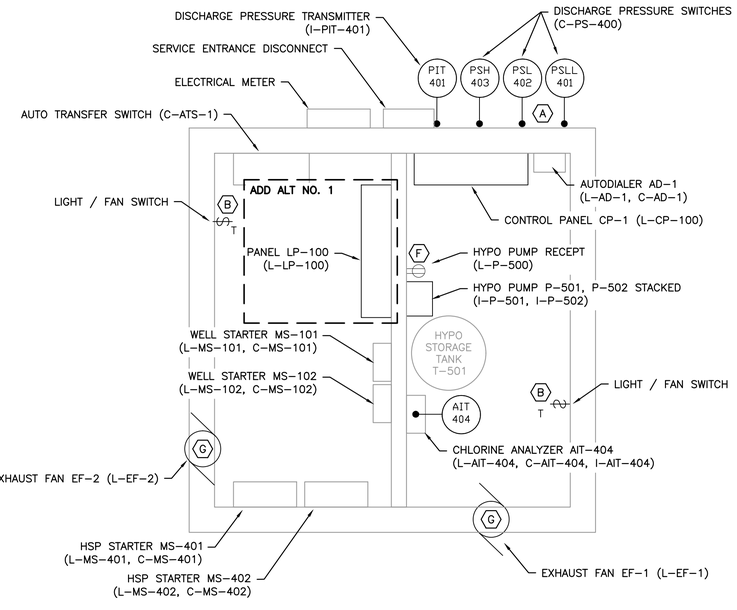
ENLARGED WELL SITE PLAN

SCALE: 1/2" = 1'-0"

0 1' 2' 4'

SCALE: 1/2" = 1'-0"



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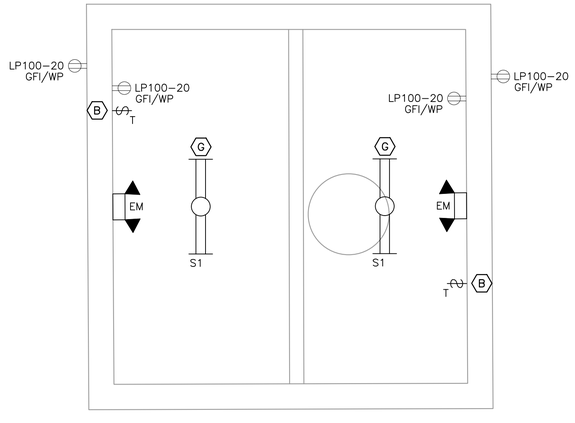
ENLARGED BUILDING - PROPOSED PLAN

SCALE: 1/2" = 1'-0"

0 1' 2' 4'

SCALE: 1/2" = 1'-0"



N

ENLARGED BUILDING - LIGHTING PLAN

SCALE: 1/2" = 1'-0"

0 1' 2' 4'

SCALE: 1/2" = 1'-0"

GENERAL NOTES:

1. CONTRACTOR SHALL INSPECT AND TEST THE COMPLETE EXISTING ELECTRICAL SYSTEM INSTALLATION. EQUIPMENT OR MATERIALS WHICH ARE DEFORMED, DEFECTIVE, OR DO NOT MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE SHALL BE REPAIRED FOR REPLACED. ITEMS WHICH ARE NOT LONGER IN SERVICE, DECOMMISSIONED, OR NOT REQUIRED AS PART OF THE PROPOSED INSTALLATION SHALL BE DEMOLISHED IN THEIR ENTIRETY.
2. CONTRACTOR SHALL COORDINATE WITH OWNER FOR MATERIALS TO BE SALVAGED AND RELOCATED TO OWNER DESIGNATED LOCATION. ALL OTHER MATERIALS TO BE DISPOSED OF BY THE CONTRACTOR AT THE CONTRACTORS EXPENSE.
3. CONTRACTOR SHALL COORDINATE ELECTRICAL CONSTRUCTION SEQUENCING AS INDICATED IN MECHANICAL PLANS AND CONSTRUCTION SEQUENCING SPECIFICATION. COORDINATE ALL OUTAGES WITH OWNER AT LEAST 3 WEEKS IN ADVANCE.
4. EMERGENCY LIGHTS SHALL BE CONNECTED TO THE CONSTANT HOT CONDUCTOR OF THE ROOM LIGHTING CIRCUIT.
5. **ADDITIVE ALTERNATE NO. 1 SHALL BE THE DEMOLITION OF THE TWO EXISTING 200 AMP MAIN BREAKERS, MOTORS STARTERS MS-103 / MS-104, AND THE INSTALLATION OF THE NEW PANEL LP-100 INCLUDING THE ASSOCIATED CONDUIT AND CONDUCTOR WORK AS WELL AS THE ADJUSTMENT OF THE ADJACENT MOTOR STARTERS TO ACCOMMODATE THE PANEL LP-100 INSTALLATION.**

KEYNOTES:

A. EXISTING PRESSURE HEADER PIPING SHALL BE MODIFIED AS REQUIRED TO ACCOMMODATE THE NEW DISCHARGE PRESSURE TRANSMITTER INSTALLATION. CONTRACTOR SHALL CLEAN UP PRESSURE HEADER, REMOVE EXISTING HEAT TRACE CONDUCTOR AND INSULATION, AND REWRAP THE ENTIRE HEADER WITH NEW INSULATION TO PREVENT FREEZING DURING COLD WEATHER EVENTS.

B. PROVIDE WEATHERPROOF 0-60 MINUTE MECHANICAL TIME SWITCH, INTERMATIC FF-60MC OR EQUIVALENT.

C. FIELD INSTRUMENT CONNECTION BOX WITH INSTRUMENT TRANSMITTERS AND CITEL MODEL CAD2 LOW VOLTAGE POWER AND SIGNAL SURGE SUPPRESSION. FIELD INSTRUMENT CONNECTION BOX SHALL BE A VENTILATED NEMA 3R ALUMINUM ENCLOSURE. SEE DETAILS.

D. DISCONNECT SWITCH SHALL BE PROVIDED WITH AUXILIARY CONTACT FOR STARTER ENABLE SERVES AS AN ENABLE FOR PUMP OPERATION.

E. PROVIDE DIRECT BURIED AREA LIGHT FIXTURE TYPE 'P1' AT 10' AFG. PROVIDE SURFACE MOUNT FIXTURE TYPE 'S1' UNDER CANOPY. LIGHTS SHALL BE SWITCHED VIA A LOCAL 60 MINUTE MECHANICAL TIME SWITCH AT ELECTRICAL RACK. LIGHTS AND RACK RECEPTACLE SHALL BE POWERED FROM THE FIELD INSTRUMENT CONNECTION BOX FICB-101 POWER SOURCE.

F. PROVIDE 20A DUPLEX GFI RECEPTACLE WITH WEATHERPROOF IN-USE COVER FOR HYPO PUMP CORD AND PLUG CONNECTIONS.

G. EXHAUST FAN SHALL BE CONTROLLED AUTOMATICALLY BY THE INTEGRAL FAN THERMOSTAT SWITCH INITIALLY SET TO 85 DEGREES. FAN SHALL ALSO BE INTERLOCKED WITH THE ROOM LIGHTING CIRCUIT FOR OPERATION WHEN LIGHTS ARE ON. REPAIR AND / OR REPLACE DOOR LOUVERS AS REQUIRED TO ACCOMMODATE AIR FLOW OF PROPOSED EXHAUST FANS.

CITY OF HAMPTON, FLORIDA
Est. in 1925

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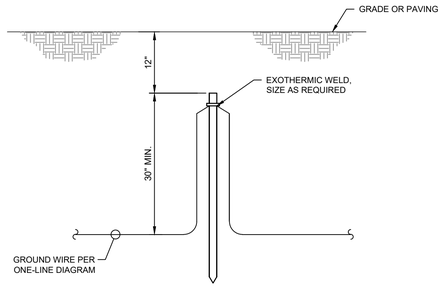
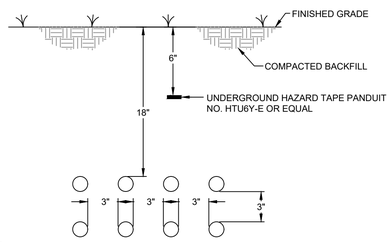


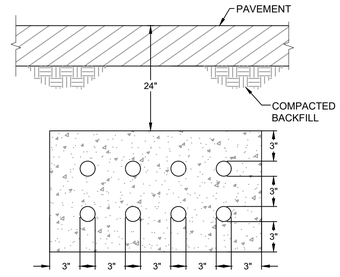
NOTE:
REFER TO SPECIFICATIONS FOR MINIMUM SYSTEM RESISTANCE TO GROUND. IF THIS RESISTANCE CANNOT BE MET WITH SINGLE 20' RODS, ADD ADDITIONAL SECTIONS TO RODS OR ADD NEW RODS AS REQUIRED SPACED WITH A DISTANCE EQUAL TO LENGTH OF GROUND ROD.

GROUND ROD ASSEMBLY
NTS



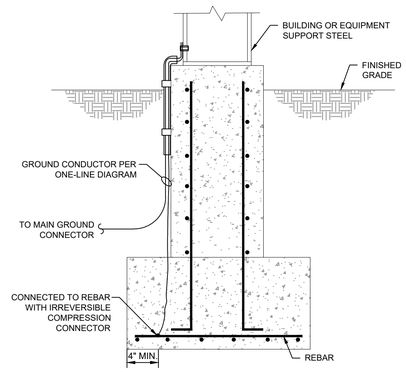
NOTES:
1. CONDUITS INSTALLED UNDERGROUND SHALL BE PROVIDED WITH CARLON "SNAP-N-STAC" COMBO SPACERS DESIGNED TO PROVIDE 3" CONDUIT SEPARATION. SPACERS SHALL BE INSTALLED PER MFG. RECOMMENDATIONS.
2. CONDUIT SEPERATION MAY BE REDUCED TO 1-1/2" WITHIN 10' OF HANDHOLE/MANHOLE PROVIDED "FLOWABLE FILL" IS USED AROUND CONDUIT FOR COMPACTION.

DIRECT BURIED CONDUIT INSTALLATION
NTS

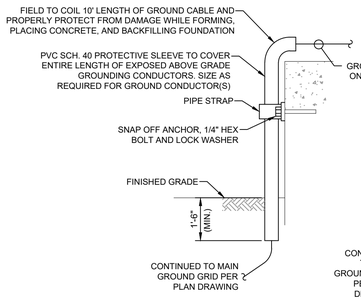


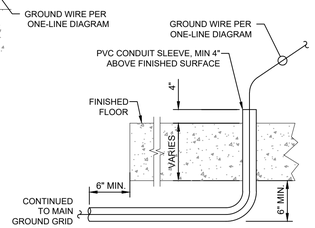
NOTES:
1. CONCRETE SHALL BE 3000 PSI FIBER REINFORCED (RED IN COLOR).
2. CONDUITS INSTALLED UNDERGROUND SHALL BE PROVIDED WITH CARLON "SNAP-N-STAC" COMBO SPACERS DESIGNED TO PROVIDE 3" CONDUIT SEPARATION. SPACERS SHALL BE INSTALLED PER MFG. RECOMMENDATIONS.
3. CONDUIT SEPARATION MAY BE REDUCED TO 1-1/2" WITHIN 10' OF HANDHOLE/MANHOLE PROVIDED "FLOWABLE FILL" IS USED AROUND CONDUIT FOR COMPACTION.

CONCRETE ENCASED CONDUIT INSTALLATION
NTS

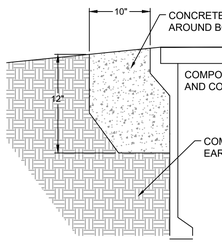


FOUNDATION GROUNDING
NTS



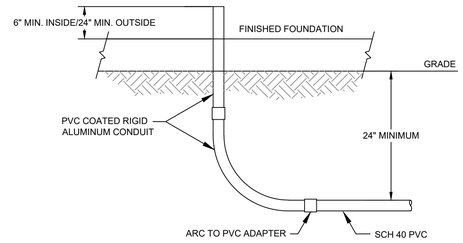


GROUND STUB UP INSTALLATION
NTS

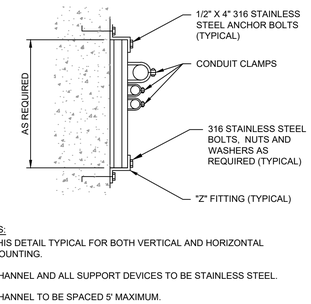


HANDHOLE NOTES:
1. CONCRETE ENCASEMENT TO BE 3,000 PSI FIBER REINFORCED.
2. HANDHOLES TO BE INSTALLED OVER 12" OF 3/4" CRUSHED STONE ON COMPACTED SUBGRADE.
3. HANDHOLE SHALL BE 24"W X 24"L X 24"D MINIMUM, LARGER AS REQUIRED BY NEC. UL LISTED FOR TIER 15 HEAVY DUTY LOAD; HEAVY DUTY COVER WITH "ELECTRIC", "CONTROL" OR "TELCOM" LOGO.
4. CONDUIT SHALL BE RUN THROUGH HORIZONTALLY (STACK BOXES AS REQUIRED).

HANDHOLE DETAIL
NTS

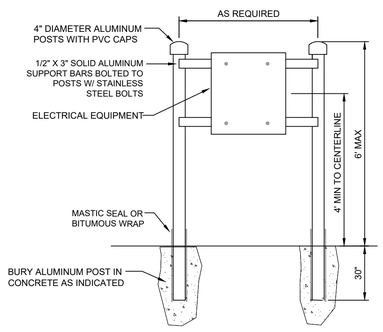


TYPICAL U/G PVC CONDUIT INSTALLATION DETAIL
NTS

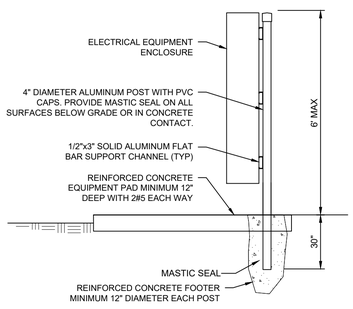


NOTES:
1. THIS DETAIL TYPICAL FOR BOTH VERTICAL AND HORIZONTAL MOUNTING.
2. CHANNEL AND ALL SUPPORT DEVICES TO BE STAINLESS STEEL.
3. CHANNEL TO BE SPACED 5' MAXIMUM.

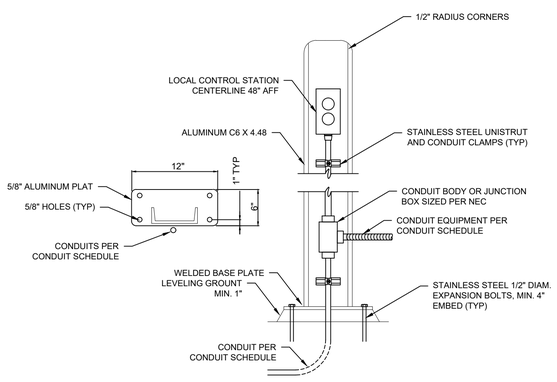
WALL SUPPORT FOR CONDUIT
NTS



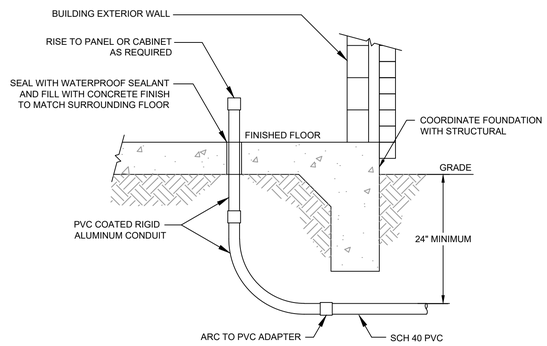
EQUIPMENT RACK FRONT DETAIL
NTS



EQUIPMENT RACK SIDE DETAIL
NTS



LOCAL CONTROL STATION
NTS



TYPICAL CONDUIT INSTALLATION AT BUILDING DETAIL
NTS

CITY OF HAMPTON, FLORIDA
Est. in 1925

INFRASTRUCTURE CONSULTING & ENGINEERING
5550 WEST IDLEWILD AVE. SUITE 115
TAMPA, FLORIDA 33634 (813) 330-2701
CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer:	Checked by:
F. WELLS	F. WELLS
Technician:	ICE Proj. No.:
F. WELLS	21-51.09

Engineer or Record:

FRANK E. WELLS, FL PE 73859
DATE: 03/27/2026

Notes:

REVISIONS

No.	Description	Date	By

Project Name:
CITY OF HAMPTON WELL 1R

Drawing Name:
SCHEDULES AND SCHEMATICS

Date: MARCH 27, 2026	Issue: BID DOCUMENTS
Scale: AS SHOWN	Drawing Number: E2.3

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INSTRUMENT IDENTIFICATION LETTERS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM OR PLC/DCS DISCRETE INPUT		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	BYPASS
C	CONDUCTIVITY (ELECTRICAL)			CONTROLLER	CLOSE
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL			DRIVE (VFD)
E	VOLTAGE (EMF)		(PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	BATTERY		GLASS, GAUGE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME OR TIME-SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOISTURE OR HUMIDITY	MOMENTARY			MIDDLE OR INTERMEDIATE
N	TORQUE		NOTIFY OR PLC/DCS DISCRETE INPUT	USER'S CHOICE	NORMAL
O	USER'S CHOICE		ORIFICE (RESTRICTION)		OPEN
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY	INTEGRATE OR TOTALIZE			
R	RADIATION	REMOTE CONTROL	RECORD OR PRINT		RUN
S	SPEED OR FREQUENCY	SAFETY		SWITCH	STOP
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALVE, DAMPER OR LOUVER	
W	WEIGHT, TORQUE, OR FORCE		WELL		
X	PLC COMMAND	X-AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y-AXIS		COMPUTE, CONVERT, RELAY	
Z	POSITION, DIMENSION, DIRECTION			DRIVE, ACTUATOR OR UNCLASSIFIED FINAL CONTROL ELEMENT	

INSTRUMENT AND FUNCTION SYMBOLS

	PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNT	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	NORMALLY INACCESSIBLE OR BEHIND THE PANEL DEVICES OR FUNCTIONS
DISCRETE INSTRUMENTS	XXX 000	XXX 000	XXX 000	XXX 000
SHARED DISPLAY, SHARED CONTROL (OIT, HMI)	XXX 000	XXX 000	XXX 000	XXX 000
PROGRAMMABLE LOGIC CONTROL	XXX 000	XXX 000	XXX 000	XXX 000
COMPUTER SYSTEMS & SOFTWARE	XXX 000	XXX 000	XXX 000	XXX 000

ABBREVIATIONS

AG	ABOVE GROUND
ALM	ALARM
A/M	AUTO-MANUAL SELECTOR
ATM	ATMOSPHERE
ATS	AUTO TRANSFER SWITCH
BG	BELOW GROUND
CL	CLOSE
EL	ELEVATION
ES	ELECTRIC SUPPLY
ESD	EMERGENCY SHUTDOWN
FC	FAIL CLOSED
FO	FAIL OPEN
FOR	FORWARD OFF REVERSE
HOA	HAND-OFF-AUTOMATIC SELECTOR
L/L	LEAD LAG SELECTOR
L/R	LOCAL-REMOTE SELECTOR
LCP	LOCAL CONTROL PANEL
LCS	LOCAL CONTROL STATION
LSA	LIGHTNING SURGE ARRESTOR
MCC	MOTOR CONTROL CENTER
MOP	MAXIMUM OPERATING PRESSURE
MSCP	MASTER STATION CONTROL PANEL
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OP	OPEN
O/C	OPEN-CLOSE SELECTOR
OSC	OPEN-STOP-CLOSE SELECTOR
PLC	PROGRAMMABLE LOGIC CONTROLLER
POS	POSITIONER
RCP	REMOTE CONTROL PANEL
RTD	RESISTENCE TYPE TEMPERATURE ELEMENT
RTU	REMOTE TELEMETRY UNIT
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SCP	STATION CONTROL PANEL
SP	SET POINT
SPFB	SET POINT FEEDBACK
S/S	START-STOP SELECTOR
TYP	TYPICAL
UCP	UNIT CONTROL PANEL
VFD	VARIABLE FREQUENCY DRIVE
W/	WITH

PIPING MATERIALS

CELDI	CERAMIC EPOXY LINED DUCTILE IRON
GLDI	GLASS LINED DUCTILE IRON
CLDI	CONCRETE LINED DUCTILE IRON
COP	COPPER
FRP	FIBERGLASS REINFORCED PLASTIC
PVC	POLYVINYL CHLORIDE
SST	STAINLESS STEEL
CLS	CHLORINE SOLUTION

PROCESS SERVICE

AL	ALUMINUM
ALP	AIR PRESSURE LOW
BS	BACKWASH SUPPLY
BWD	BACKWASH DRAIN
BYP	BYPASS
DEC	SUPERNATANT DECANT
DR	DRAIN
DS	DIGESTED SLUDGE
FE	FILTER EFFLUENT
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
ML	MIXED LIQUOR
NPW	NON POTABLE WATER
FTE	FILTER EFFLUENT
SAN	SANITARY
REW	RECLAIMED WATER
OF	OVERFLOW
PD	PLANT DRAIN
PLE	PLANT EFFLUENT
PW	POTABLE WATER
RAS	RETURN ACTIVATED SLUDGE
REJ	REJECT
RS	RAW SEWAGE
SAM	SAMPLE
SE	SECONDARY EFFLUENT
SHC	SODIUM HYPOCHLORITE
SPC	SUPPLEMENTAL CARBON
SRS	SCREENED RAW SEWAGE
SSM	SECONDARY SCUM
WAS	WASTE ACTIVATED SLUDGE

XX — SUFFIX TO DIFFERENTIATE BETWEEN DIFFERENT INSTRUMENTATION DEVICES WITH THE SAME LOOP NUMBER AND INSTRUMENT IDENTIFICATION.

(ZZZ) — DESIGNATIONS OF CONTROL FUNCTIONS (ZZZ) ASSOCIATED WITH INSTRUMENT OR OTHER COMPONENTS.

AHC	AUTO/HOLD/CLOSE	OSC	OPEN/STOP/CLOSED
AM	AUTO/MANUAL	POT	POTENTIOMETER
DEV	DEVIATION	RE	RESET
MOA	MANUAL/OFF/AUTO	RL	RAISE/LOWER
HOR	HAND/OFF/REMOTE	RS	RUN/STOP
LOS	LOCKOUT STOP	RSL	RAISE/STOP/LOWER
LR	LOCAL/REMOTE	SD	SHUTDOWN
OO	ON / OFF	SEL	SELECT
OC	OPEN/CLOSE	SP	SET POINT
		SR	START/RESET
		SS	STOP/START

XXX YY / 000 ZZ — PANEL MOUNTED PILOT LIGHT

DESIGNATIONS ASSOCIATED WITH PILOT LIGHTS:

FUNCTION (YY):
F - FAULT
R - RUNNING
S - STOPPED
- PERCENT

LENS/LAMP COLOR (ZZ):
A - AMBER
G - GREEN
R - RED
W - WHITE

LEGEND

- GATE VALVE (UNDEFINED VALVE)
- KNIFE GATE VALVE
- BALL VALVE
- PLUG VALVE
- GLOBE VALVE
- CHECK VALVE
- NEEDLE VALVE
- BUTTERFLY VALVE
- 3-WAY VALVE
- 4-WAY VALVE
- BLOCK & BLEED VALVE (INSTRUMENT)
- PRESSURE RELIEF VALVE
- SLUICE GATE
- DIAPHRAGM SEAL
- DIAPHRAGM ACTUATOR
- BACK PRESSURE REGULATOR
- PRESSURE-REDUCING REGULATOR
- 3-WAY TEMPERATURE REGULATOR SELF CONTAINED
- FLOW SIGHT GLASS
- ULTRASONIC METER
- MAG METER
- TURBINE/PROPELLER METER
- REDUCER (CONCENTRIC)
- REDUCER (ECCENTRIC)
- STRAINER ("Y" TYPE)
- PULSATION DAMPENER
- AIR RELEASE VALVE
- SOLENOID
- MOTOR ACTUATOR
- METERING PUMP
- MIXER
- VERTICAL TURBINE PUMP
- HORN
- FLOAT SWITCH
- CENTRIFUGAL PUMP
- SUBMERSIBLE PUMP
- BLOWER

LEGEND

- DISCRETE ELECTRICAL SIGNAL (INPUTS) WITH INTERPOSING RELAYS (OUTPUTS)
- ANALOG ELECTRICAL SIGNAL WITH LIGHTNING SURGE ARRESTORS ('TC' THERMOCOUPLE, 'RTD' RTD INPUT)
- FIBER OPTIC ('PN' PROFINET, 'PB' PROFIBUS)
- CAT 6 CABLE
- PACKAGE/SKID LIMITS
- INSTRUMENT OR PROCESS
- PNEUMATIC SIGNAL
- ELECTRIC SIGNAL
- HYDRAULIC SIGNAL
- CAPILLARY TUBE
- SOFTWARE OR DATA LINK ('PN' PROFINET, 'PB' PROFIBUS)
- ANALOG SIGNAL
- DISCRETE SIGNAL
- SERIAL SIGNAL
- FLOW STREAM NO. NN TO DRAWING NO. XX
- SIGNAL NO. NN FROM DRAWING NO. XX

GENERAL NOTES:

1. POWER SUPPLIES FOR LOOPS OR SYSTEMS SHALL BE FURNISHED BY THE INSTRUMENTATION SYSTEM SUPPLIER AND SHALL MATCH THE VOLTAGE AND CURRENT REQUIREMENTS OF THE DEVICES FOR WHICH THEY FEED.

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TAMPA, FLORIDA 33634 (813) 330-2701
CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer: F. WELLS	Checked by: F. WELLS
Technician: F. WELLS	ICE Proj. No.: 21-51.09

Engineer or Record:

FRANK E. WELLS, FL PE 73859
DATE: 03/27/2026

Notes:

REVISIONS

No.	Description	Date	By

Project Name:
CITY OF HAMPTON WELL 1R

Drawing Name:
INSTRUMENTATION LEGEND

Date: MARCH 27, 2026	Issue: BID DOCUMENTS
Scale: AS SHOWN	Drawing Number: I0.1

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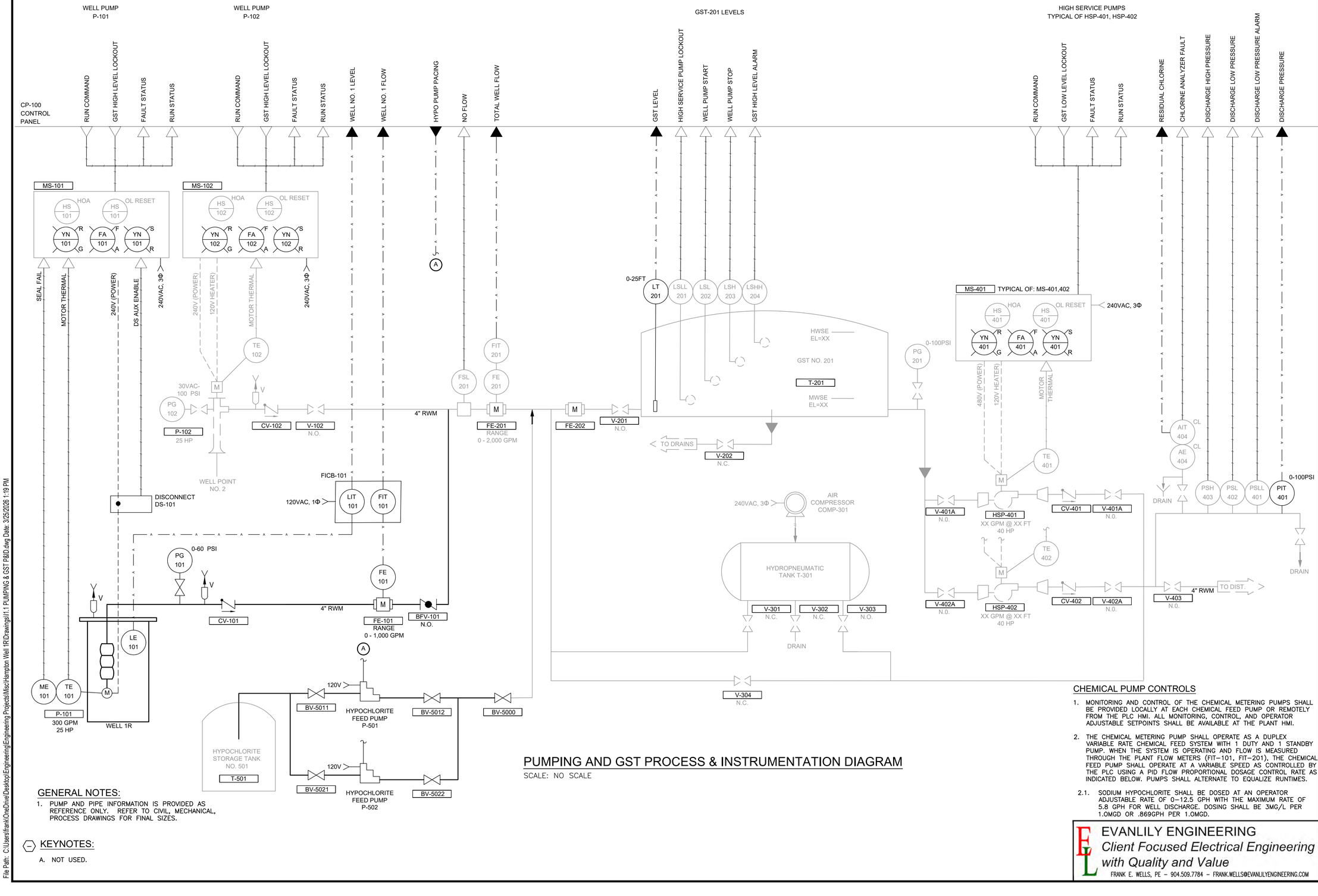

PUMPING AND GST PROCESS & INSTRUMENTATION DIAGRAM

SCALE: NO SCALE

GENERAL NOTES:

1. PUMP AND PIPE INFORMATION IS PROVIDED AS REFERENCE ONLY. REFER TO CIVIL, MECHANICAL, PROCESS DRAWINGS FOR FINAL SIZES.

KEYNOTES:

A. NOT USED.

CHEMICAL PUMP CONTROLS

1. MONITORING AND CONTROL OF THE CHEMICAL METERING PUMPS SHALL BE PROVIDED LOCALLY AT EACH CHEMICAL FEED PUMP OR REMOTELY FROM THE PLC HMI. ALL MONITORING, CONTROL, AND OPERATOR ADJUSTABLE SETPOINTS SHALL BE AVAILABLE AT THE PLANT HMI.

2. THE CHEMICAL METERING PUMP SHALL OPERATE AS A DUPLEX VARIABLE RATE CHEMICAL FEED SYSTEM WITH 1 DUTY AND 1 STANDBY PUMP. WHEN THE SYSTEM IS OPERATING AND FLOW IS MEASURED THROUGH THE PLANT FLOW METERS (FIT–101, FIT–201), THE CHEMICAL FEED PUMP SHALL OPERATE AT A VARIABLE SPEED AS CONTROLLED BY THE PLC USING A PID FLOW PROPORTIONAL DOSAGE CONTROL RATE AS INDICATED BELOW. PUMPS SHALL ALTERNATE TO EQUALIZE RUNTIMES.

2.1. SODIUM HYPOCHLORITE SHALL BE DOSED AT AN OPERATOR ADJUSTABLE RATE OF 0–12.5 GPH WITH THE MAXIMUM RATE OF 5.8 GPH FOR WELL DISCHARGE. DOSING SHALL BE 3MG/L PER 1.0MGD OR .869GPH PER 1.0MGD.

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TAMPA, FLORIDA 33634 (813) 330-2701
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Designer:	Checked by:
F. WELLS	F. WELLS
Technician:	ICE Proj. No.:
F. WELLS	21-51.09

Engineer or Record:

FRANK E. WELLS, FL PE 73859
DATE: 03/27/2026

Notes:

REVISIONS

No.	Description	Date	By

Project Name:

CITY OF HAMPTON WELL 1R

Drawing Name:

PUMPING AND GST P&ID

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
Scale:	Drawing Number:
AS SHOWN	I1.1

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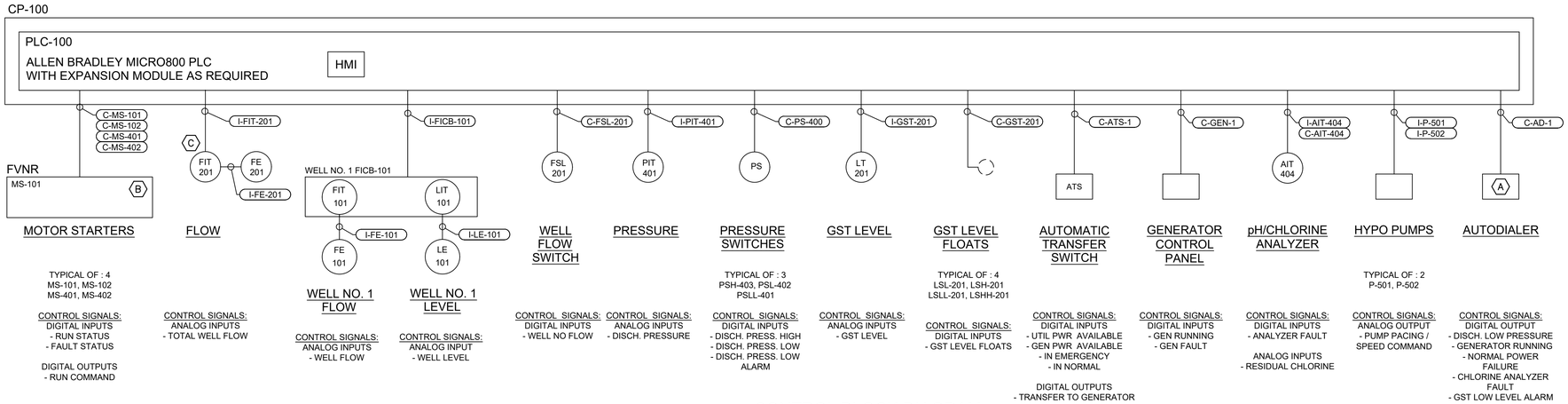
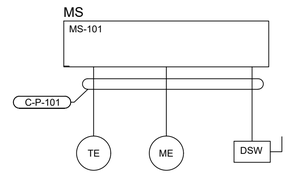


CONTROL BLOCK DIAGRAM
NTS



CONTROL BLOCK DIAGRAM
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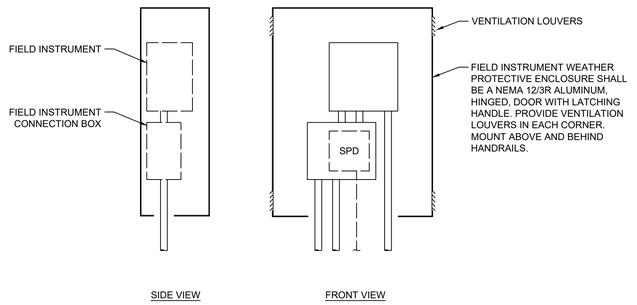
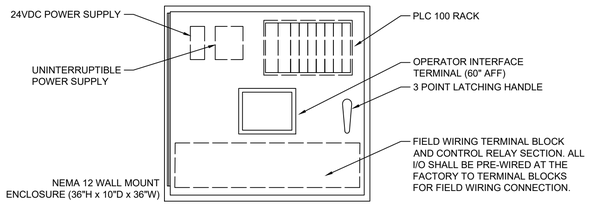
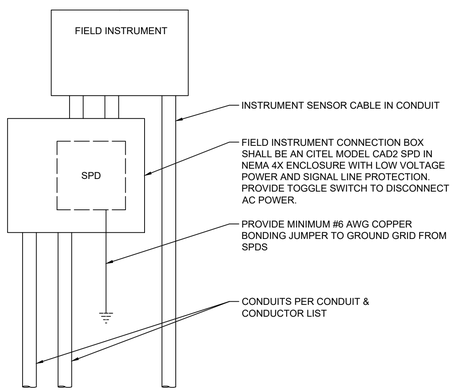


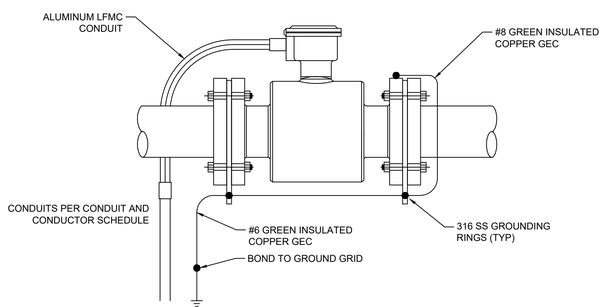
OUTDOOR FIELD INSTRUMENT ENCLOSURE DETAIL
NTS



CONTROL PANEL DETAIL
NTS



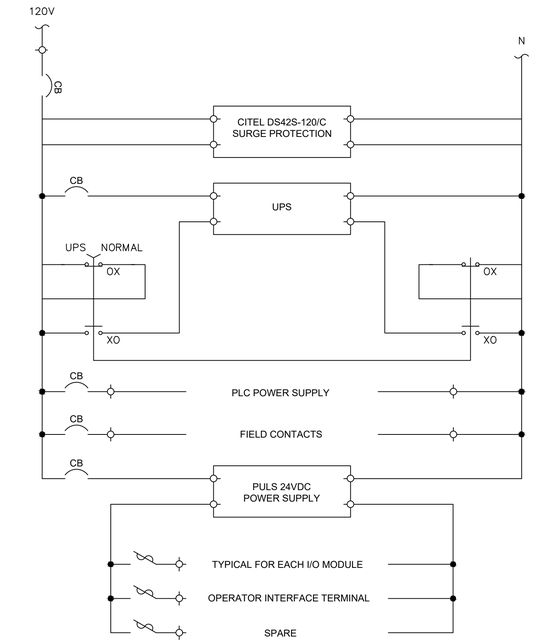
FIELD INSTRUMENT CONNECTION BOX DETAIL
NTS



NOTES:

1. FLOW TUBE SHALL HAVE 5 STRAIGHT UPSTREAM AND 2 STRAIGHT DOWNSTREAM PIPE DIAMETERS OR AS REQUIRED BY MANUFACTURER.
2. PROVIDE GROUNDING RINGS ON BOTH SIDE OF FLOW METER PER MANUFACTURER'S REQUIREMENTS.

MAGNETIC FLOW METER DETAIL
NTS



INSTRUMENTATION & CONTROL PANEL POWER DISTRIBUTION
NTS

GENERAL NOTES:

1. NOT USED.

KEYNOTES:

A. AUTODIALER SHALL BE REPROGRAMMED AND COMMISSIONED WITH THE NEW FACILITY ALARM SIGNALS AS INDICATED. COORDINATE MONITORED ALARMS, DIALER SERVICE, AND CALLOUT WITH OWNER DURING CONSTRUCTION.

B. PLC SHALL HAVE DEDICATED RELAY OUTPUTS FOR WELL AND HSP STARTERS TO PROVIDE SEQUENTIAL OPERATION OF HSPs AND SINGLE OPERATION OF WELL PUMPS TO PREVENT SIMULTANEOUS OPERATION OF WELL PUMPS.

C. EXISTING FLOW METER AND TRANSMITTER SHALL BE TESTED AND RECOMMISSIONED WITH THE NEW PLC SYSTEM.

INFRASTRUCTURE CONSULTING & ENGINEERING
5550 WEST IDLEWILD AVE. SUITE 115
TAMPA, FLORIDA 33634 (813) 330-2701
CERTIFICATE OF AUTHORIZATION NO.: 30862

Designer:	Checked by:
F. WELLS	F. WELLS
Technician:	ICE Proj. No.:
F. WELLS	21-51.09

Engineer or Record:

FRANK E. WELLS, FL PE 73859
DATE: 03/27/2026

Notes:

REVISIONS

No.	Description	Date	By

Project Name:
CITY OF HAMPTON
WELL 1R

Drawing Name:
CONTROL DIAGRAMS & DETAILS

Date:	Issue:
MARCH 27, 2026	BID DOCUMENTS
Scale:	Drawing Number:
AS SHOWN	I2.1

EVANLILY ENGINEERING
Client Focused Electrical Engineering with Quality and Value
FRANK E. WELLS, PE – 904.509.7784 – FRANK.WELLS@EVANLILYENGINEERING.COM

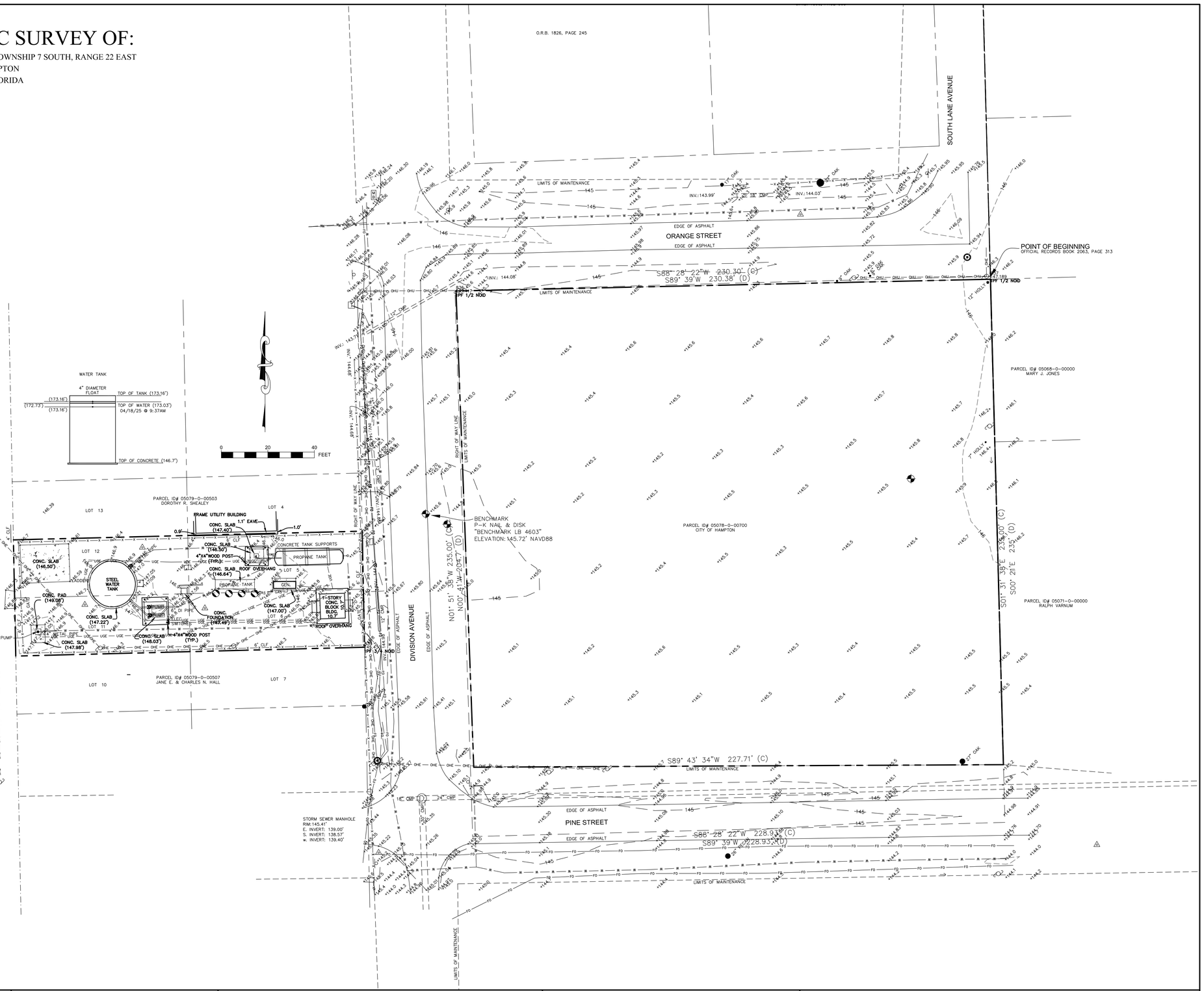
File Path: C:\Users\frank\OneDrive\Desktop\Engineering\Engineering Projects\Misc\Hampton Well 1R\Drawings\I2.1 CONTROL DIAGRAMS & DETAILS.dwg Date: 3/25/2026 1:19 PM

MAP SHOWING TOPOGRAPHIC SURVEY OF:

A PART OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 22 EAST
AND LOTS 5, 6, 11 AND 12, BLOCK 5 OF HAMPTON
CITY OF HAMPTON, BRADFORD COUNTY, FLORIDA

NOTES

1. THIS IS A TOPOGRAPHIC SURVEY AND DOES NOT PURPORT TO BE A BOUNDARY SURVEY. THE LOCATION OF THE BOUNDARY LINES SHOWN HEREON ARE BASED ON A BOUNDARY SURVEY BY DEGROVE DATED 04/24/2025.
2. COORDINATES ON WHICH THIS SURVEY IS BASED ARE REFERENCED TO THE FLORIDA STATE PLANE COORDINATE SYSTEM (WEST ZONE), NORTH AMERICAN VERTICAL DATUM OF 1983, (NADS(2011) U.S. SURVEY FEET.
3. ELEVATIONS SHOWN HEREON ARE BASED ON NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88), AS DERIVED FROM NATIONAL GEODETIC SURVEY BENCHMARKS BEING A BRASS DISK STAMPED "7411 D 1978", ELEVATION = 10.64', AND A BENCHMARK STAMPED "F2524A LB6969", ELEVATION = 5.77'.
4. UNDERGROUND FOUNDATIONS, TANKS AND OTHER SUBTERRANEAN FEATURES WERE NOT LOCATED, EXCEPT AS SHOWN.
5. SUBSURFACE UTILITIES WERE DETERMINED THROUGH THE USE OF ELECTROMAGNETIC AND GROUND PENETRATING RADAR. SUBSURFACE UTILITY DESIGNATION WERE COMPLETED IN ACCORDANCE WITH STANDARDS FOR A QUALITY LEVEL B UTILITY INVESTIGATION AS DEFINED BY THE AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) PUBLICATION 38-22.
6. THIS SURVEY WAS ORIGINALLY DELIVERED IN DIGITAL FORMAT AND HAD AN INTENDED VIEWING SCALE OF 1" = 20'.
7. TREES 4" OR GREATER IN DIAMETER WERE LOCATED FROM RIVERSIDE DRIVE TO THE WITHLACOOCHEE RIVER.
8. TREE CLUSTERS AND/OR TREE LINES WERE LOCATED ALONG COUNTY ROAD 40 AND 50TH STREET.



LEGEND

ARV	AIR RELEASE VALVE		MARSH
ABS	PLASTIC PIPE		MAST ARM SIGNAL POLE
	ANTENNA	MF	METAL FENCE
	BACKFLOW PREVENTER		METAL POWER POLE
BC	BACK OF CURB ELEVATION	MES	MITERED END SECTIONS
BWF	BARBED WIRE FENCE		MONITORING WELL
	BENCHMARK	--OHU--	OVERHEAD UTILITY LINE
	BOLLARD		PARKING METER
	CABLE TV MANHOLE	PED	PEDESTRIAN WALK SIGNAL POLE
CATV	CABLE TV HANDHOLE	PF	PLASTIC FENCE
	CABLE TV MARKER	PVC	POLYVINYL CHLORIDE PIPE
CLF	CHAIN LINK FENCE		POST
	CLEAN OUT		PVC STAND PIPE
	CONCRETE COLUMN	RR	RAILROAD CROSSING
	CONCRETE LIGHT POLE		RECLAIMED WATER HANDHOLE
	CONCRETE POWER POLE	--REC--	RECLAIMED WATER LINE
CMP	CORRUGATED METAL PIPE		RECLAIMED WATER MANHOLE
DIP	DUCTILE IRON PIPE	R	RECLAIMED WATER MARKER
EP	EDGE OF PAVEMENT ELEVATION	RCP	REINFORCED CONCRETE PIPE
E	ELECTRIC HANDHOLE	S	SANITARY SEWER MANHOLE
	ELECTRIC MANHOLE	S	SANITARY SEWER MARKER
	ELECTRIC MARKER		SANITARY SEWER VALVE
	ELECTRIC OUTLET		SHRUB
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE		SIGN
ELEV.	ELEVATION		SOIL BORING
--X--	FENCE	STP	STEEL PIPE
F	FIBER OPTIC CABLE MARKER		STORM SEWER MANHOLE
--FO--	FIBER OPTIC CABLE LINE		STORM SEWER MANHOLE GRATE
FO	FIBER OPTIC HANDHOLE	T	TELEPHONE MANHOLE
	FIRE HYDRANT	T	TELEPHONE RISER/HANDHOLE
	FLAG POLE	TCP	TERRA COTTA PIPE
	FLOOD LIGHT	TH	TEST HOLE
FL	FLOW LINE ELEVATION		TRAFFIC SIGNAL LIGHT
FM	FORCE MAIN HANDHOLE	TS	TRAFFIC SIGNAL HANDHOLE
--FM--	FORCE MAIN LINE		TRAFFIC SIGNAL LINE
FM	FORCE MAIN MARKER	--UGE--	UNDERGROUND ELECTRIC LINE
--G--	GAS LINE	--UGT--	UNDERGROUND TELEPHONE LINE
G	GAS MARKER		UNKNOWN MANHOLE
	GAS METER		VALVE
	GOPHER TORTOISE HOLE	--W--	WATER LINE
	GREASE MANHOLE		WATER MANHOLE
	GUY ANCHOR	W	WATER MARKER
HWF	HOG WIRE FENCE	W	WATER METER
HB	HOSE BIB		WATER WELL
	IRON PIPE SET		WOOD POWER POLE
IRR	IRRIGATION HANDHOLE	WPF	WOOD PRIVACY FENCE
	LIGHT POLE	VCP	VITRIFIED CLAY PIPE
	MAILBOX		

SURVEY DATE: 04/24/2025	DRAWING DATE: 04/24/2025
FIELD BOOK 928 PAGE(S) 18	DRAWING SCALE: 1"=20'
DRAFTED BY: GRN	REVISION DATE:
CHECKED BY: BDC	
COMPUTER FILE: 2025087 Hampton Well 1B.dwg	
JOB FILE No.: 2025087	

2131 CORPORATE SQUARE BOULEVARD,
JACKSONVILLE, FL 32216
904-722-0400
FAX 904-722-0402
DEGROVE@DEGROVE.COM
LICENSED BUSINESS NUMBER L.B.4603

DEGROVE
SURVEYORS, INC.
SURVEYING AND MAPPING CONSULTANTS

THIS SURVEY MEETS THE STANDARDS OF PRACTICE FOR PROFESSIONAL SURVEYORS AND MAPPERS IN THE STATE OF FLORIDA PURSUANT TO CHAPTER 5J-17.051 & 5J-17.052, F.A.C.

GORDON R. NILES FLORIDA SURVEYOR AND MAPPER
REGISTRATION # 4112; L.B. # 4603

CERTIFIED TO:

CITY OF HAMPTON

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER

EXHIBIT D

FORMS AND DOCUMENTS REQUIRED BY THE SMALL CITIES CDBG PROGRAM AND LEGISLATIVE APPROPRIATIONS

CDBG SUPPLEMENTAL CONDITIONS

1. Wage Decision
2. MBE/WBE Solicitation
3. Historic Preservation
4. Employment of low income persons (Section3)
5. CDBG Supplemental Conditions:

    1) Termination (Cause and Convenience)
    2) Access to Records
    3) Retention of Record
    4) Remedies
    5) Environmental Compliance (Clean Air Act and Clean Water Act)
    6) Energy Efficiency
    7) Special Equal Opportunity Provisions
    8) Conflict of Interest
    9) Utilization of Minority and Women's Businesses
    10) Federal Labor Standards Provisions (Davis-Bacon, Copeland, and Contract Work Hours Act)
    11) Guidance to Contractor for Compliance with Labor Standards Provisions
    12) E-Verify

1- Wage Decision

To: Contractors bidding on the

Water Well/Water Plant Improvements Project
City of Hampton, Florida
CDBG-NR Grant #23DB-N02

Re: Wage Decision (Davis-Bacon Act)

The purpose of this section is to inform contractors of the minimum wages that it must pay its workers as required by the federal Davis-Bacon Act. The wage decision is a list of the minimum wages by job classification that the contractor must pay its employees.

The Davis-Bacon Act was enacted in 1931 for the purpose of protecting communities and workers from the economic disruption caused by competition arising from non-local contractors coming into an area and obtaining federal construction contracts by underbidding local wage levels.

The attached wage decision is for heavy construction (including water/sewer projects).

"General Decision Number: FL20250100 01/03/2025

Superseded General Decision Number: FL20240100

State: Florida

Construction Type: Heavy

Counties: Bradford, Citrus, Dixie, Flagler, Hamilton, Lafayette, Levy, Madison, Sumter, Suwannee and Taylor Counties in Florida.

HEAVY CONSTRUCTION PROJECTS (including Sewer and Water Lines)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

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

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

Modification Number	Publication Date
0	01/03/2025

PAIN0164-005 06/01/2021

	Rates	Fringes
PAINTER: Brush and Spray	$ 20.21	12.38

SUFL2009-139 06/24/2009

	Rates	Fringes
LABORER: Common or General	$ 8.58 **	0.00
LABORER: Pipelayer	$ 12.60 **	1.01
OPERATOR: Backhoe/Excavator	$ 14.21 **	0.94
OPERATOR: Bulldozer	$ 13.30 **	1.92
OPERATOR: Loader	$ 11.00 **	0.00
TRUCK DRIVER: Distributor, Dump, Lowboy and Tandem	$ 11.55 **	0.00

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

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($17.75) or 13658 ($13.30). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

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

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

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

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007

6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

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

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

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

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor

200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

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

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

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

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

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END OF GENERAL DECISION"

2-MBE/WBE SOLICITATION

To: Contractors bidding on the

Water Well/Water Plant Improvements Project
City of Hampton, Florida
CDBG-NR Grant #23DB-N02

Re: MBE Solicitation

The purpose of this section is to provide Contractors bidding on the referenced construction project with a list of Minority Business Enterprise and Women Busines Enterprise (MBE/WBE) firms. Bidders are encouraged to use the attached list to solicit subcontractors for work on this project. The contractor that is awarded the contract for this project will need to show that at least three MBE/WBE firms where asked to provide a quote for sub contractor services. Solicitation of MBE/WBE firms is not required if the contractor does not plan to use subcontractors. A sample letter to send to MBE/WBE subcontractors is attached.

Minority/Women Owned Business Enterprise (MBE/WBE) Solicitation Request

Date: _____

From: (Prime Contractor)_____

To: MBE/WBE Subcontractor/Supplier:

Re: REQUEST FOR MBE/WBE SUBCONTRACTOR/SUPPLIER PARTICIPATION

Dear Sir or Madame:

Our Company is considering bids for goods and services from WBE/MBE suppliers and subcontractors. Please submit a bid for the following items:

List of items to be provided by sub-contractors:

Item	Unit	Units Needed	Unit Price	Extended Price	Notes

Additional Comments:

If you have any questions, please let us know.

Sincerely,

_____

Prime Contractor

City of Hampton MBE Procurement List for CDBG

Name	Designations	Address	City	State	Zip	County	Email
C & S Site Prep Inc	Woman Owned	22787 NW 34TH AVENUE	LAWTEY	FL	32058	Bradford	candsprep@gmail.com
R&B FENCING, INC	Woman Owned	19855 NW 45th ave	Hampton	FL	32091	Bradford	rbfence@yahoo.com
Teal Tile and Carpet, Inc.	Woman Owned	PO Drawer D	Starke	FL	32091	Bradford	robert@tealtilecarpet.com
AKEA, Inc	Asian American,	3603 NW 98th Street	Gainesville	FL	32606	Alachua	ajkwan@akeainc.com
ALL SOUTH CONSTRUCTION LLC	Woman Owned	18995 NW 218TH AVE	HIGH SPRI	FL	32643	Alachua	allsouthcon@gmail.com
Alta Systems Inc	Woman Owned	6825 NW 18th Avenue	Gainesville	FL	32653	Alachua	rickn@altainc.com
ASR Systems LLC	Woman Owned	540 Northeast 5th Avenue	Gainesville	FL	32601	Alachua	eblack@asrsystems.ws
Assurance Commercial Cleaning Ser	African Americar	2153 SE Hawthorne Road	Gainesville	FL	32641	Alachua	assuranceccs@gmail.com
Bell's Professional Cleaning Solutions	African Americar	3124 NW 19th Place	Gainesville	FL	32605	Alachua	info@bellscleaning.solutions
Cocovana, Inc.	Asian American	POST OFFICE BOX 13694	Gainesville	FL	32604	Alachua	sheldon.barrett@gmail.com
Coleman Construction Inc.	Woman Owned	25501 NW 8th Lane	Newberry	FL	32669	Alachua	kagornto@gmail.com
Cornerstone Barricades Inc.	African Americar	3712 NW 84th Drive	Gainesville	FL	32606	Alachua	chris@cornerstonebarricades.com
CREATIVE INDUSTRIAL SOLUTION	African Americar	5200 NW 43rd Street	Gainesville	FL	32606	Alachua	admin@creativeindustrialsolutions.com
D.C. of Mid-Florida, Inc.	Woman Owned	5200 NW 43rd Street	Gainesville	FL	32606	Alachua	dcmf01@aol.com
D&M Construction Group, Inc.	Hispanic Americ	5080 W. Newberry Road	Gainesville	FL	32607	Alachua	jsegarra@foresightcgi.com
E W Reshard, Inc	African Americar	5729 NW 27th Terrace	Gainesville	FL	32653	Alachua	ewreshard@cox.net
Elevated Design and Construction LL	African Americar	5080 W. Newberry Road	Gainesville	FL	32607	Alachua	michael@elevateddc.com
Ewing Waterproofing Systems,Inc.	Hispanic Americ	2521 NW 74th Place	Gainesville	FL	32653	Alachua	rdaugherty@ewingwaterproofing.com
first Choice Cleaning service	African Americar	1030 NE 22 AVE	Gainesville	FL	32609	Alachua	mallaryloretta@yahoo.com
Florida Fasteners &Tool Co.Inc	Woman Owned	2826 NE Waldo Road	Gainesville	FL	32609	Alachua	fft1974@netzero.net
Florida Janitorial Services	African Americar	1426 SE 1 Street	Gainesville	FL	32601	Alachua	arthurpayne1426@yahoo.com
Gainesville Ironworks, Inc	Woman Owned	2341 NW 66th Court	Gainesville	FL	32653	Alachua	vlowry@gainesvilleironworks.com
Gainesville Ironworks, Inc.	Woman Owned	2341 NW 66th Court	Gainesville	FL	32653	Alachua	vlowry@gainesvilleironworks.com
Gensis Door and Hardware Inc	Woman Owned	1925 NW 2nd Street, Suite C	Gainesville	FL	32609	Alachua	bill@genesisdoor.com
George Burns Enterprises, Inc.	Veteran	2836 NE 19th Drive	Gainesville	FL	32609	Alachua	george.burns@georgeburnsent.com
Innovative Waste Consulting Service	Asian American	3720 NW 43rd Street	Gainesville	FL	32606	Alachua	pjain@iwcs.biz
LPG Mechanical Contractors, Inc.	Woman Owned	20613 NW 190th Ave.	High Spring	FL	32643	Alachua	lcb55@windstream.net
Megrath Consulting, Inc	Woman Owned	2026 SW 77th Terrace	Gainesville	FL	32607	Alachua	dslaughter@moorebass.com
New Horizons of North Florida	Asian American,	7525 NW 4th Blvd	Gainesville	FL	32607	Alachua	Lcampbell@NHLeadership.com
Oelrich Construction, Inc.	Veteran	275 NW 137th Drive, Suite A	Jonesville	FL	32669	Alachua	derek@oelrichconstruction.com
P&J Cleaning Service	African Americar	5812 se 229th terrace	Hawthorne	FL	32640	Alachua	pabner5812@gmail.com
Phase III Building Supplies, Inc.	African Americar	PO BOX 1256	Gainesville	FL	32602	Alachua	phase3bsi@att.net
R Leon Electric, Inc.	Hispanic Americ	1915 SW 70TH TERRACE	GAINESVIL	FL	32607	Alachua	roger@rleonelectric.com
SouthArc, Inc.	Woman Owned	3700 NW 91st Street	Gainesville	FL	32606	Alachua	lucy@southarc.com
Spence Supply Company	Woman Owned	2332 NE 17th Terrace	Gainesville	FL	32609	Alachua	spsupply@bellsouth.net
Tee's cleaning service	Veteran, Woman	9401 s w 94 terr	Gainesville	FL	23608	Alachua	tlarkin59@yahoo.com
The Barfield Group, LLC	Woman Owned	6512 NW 39th Ave	Gainesville	FL	32606	Alachua	kristi@thebarfieldgroup.net
Thompson Concrete Finishing, Inc	Veteran	P.O. Box 6056	Gainesville	FL	32627-6056	Alachua	jns_thom@bellsouth.net
Unlimited Cabinetry Solutions, LLC	Hispanic Americ	15020 NW US Highway 441	Alachua	FL	32615	Alachua	bm@unlimitedcabinetrysolutions.com
Weisman Operations Inc.	Veteran	5200 NW 43rd St.	Gainesville	FL	32653	Alachua	weisman.dan@gmail.com
Above All Ceilings, Inc	Native American	5605 Florida Mining Blvd.	Jacksonville	FL	32257	Duval	aboveallceilings@bellsouth.net
acconcrete enterprise,s inc	African Americar	5430 dakota dr	Jacksonville	FL	32209	Duval	acconcrete@bellsouth.net

Aldan Electric Supply, Inc.	Woman Owned	2250 Emerson Street	Jacksonville	FL	32207	Duval	aldan@bellsouth.net
Alexander DeGance Barnett, P.A.	Woman Owned,	1500 Riverside Avenue	Jacksonville	FL	32204	Duval	mark.alexander@adblegal.com
Alpha & Omega Quality Cleaning Ser	African American	P.O.Box 54122	Jacksonville	FL	32245	Duval	alphaomega.qcs@gmail.com
Alpha Omega Global	African American	1010 East Adams Street	Jacksonville	FL	32202	Duval	frank@alphaomegaglobal.net
ANDERSON TILE & STONE, LLC	Veteran	3357 DREW STREET	JACKSONV	FL	32207	Duval	bs88a@yahoo.com
Atlantic Concrete and Mechanical Inc	African American	P.O. Box 551315	Jacksonville	FL	32255-1315	Duval	jbrown@acmfla.com
Aztec American Builders, Inc	Hispanic America	12335 Stockbridge Ct South	Jacksonville	FL	32258	Duval	aztecabguido@gmail.com
B&L Corporation: A Subsidiary of Brir	Woman Owned	301 West Bay Street	Jacksonville	FL	32202	Duval	carletha@brinsonlenhardt.com
Baker Construction Services LLC	Woman Owned	219 N. Newnan Street 2nd FL	Jacksonville	FL	32202	Duval	tbaker@bakerdesign.build
Baldwin's Quality Plumbing	African American	9556 Historic Kings Rd. S	Jacksonville	FL	32257	Duval	tmckenzie@baldwinsplumbing.com
Breaking Ground Contracting Compa	Woman Owned	4218 Highway Ave.	Jacksonville	FL	32254-4120	Duval	mary@breakinggroundcontracting.com
Bug Pro Florida	Woman Owned	P.O. Box 8085	Jacksonville	FL	32239	Duval	tammi@bugproflorida.com
BV Group & Associates, Inc.	Hispanic America	6501 arlington Ex Wy	Jacksonville	FL	32211	Duval	jvalbuena@bvandassociates.com
C. Vargas and Associates, Ltd. Cons	Hispanic America	8808 Arlington Expressway	Jacksonville	FL	32211	Duval	cvargas@cvaltd.com
C.C. Borden Construction, Inc.	Woman Owned	1019 Rosselle Street	Jacksonville	FL	32204	Duval	Camille@CCBorden.com
Carolyn's Cleaning Service	African American	6322 Ian Chad Drive West	Jacksonville	FL	32244	Duval	therolacks@bellsouth.net
CENTERLINE CONTRACTING INC.	Woman Owned	7005 LLOYD ROAD WEST	JACKSONV	FL	32220	Duval	CENTERLINECONTRACTING@AOL.C
Core Construction Company of Jacks	Asian American	8375 Baymeadows Way	Jacksonville	FL	32256	Duval	jaychung@core-constructionco.com
D Group Consulting Services, Inc.	Woman Owned	1650 Margaret Street	jacksonville	FL	32204	Duval	dorette@dgroupconsulting.com
D.A. Wallace Enterprises	African American	PO Box 8692	Jacksonville	FL	32239	Duval	dwallace@dawallacenterprises.com
D&M Construction Group, Inc.	Hispanic America	6801 Roosevelt Blvd.	Jacksonville	FL	32212	Duval	cbarroso@foresightcgi.com
DAK Resources, Inc	Veteran	841 Prudential Drive	Jacksonville	FL	32207	Duval	david@dakresources.com
ERS Corp	African American	760 Talleyrand Ave	Jacksonville	FL	32202	Duval	j.anderson@ersfl.com
EZAD LLC	Asian American,	7584 RED CRANE LANE	JACKSONV	FL	32256	Duval	EZAD40N@YAHOO.COM
F & G Construction General Contract	Woman Owned	2734 Edison Avenue	Jacksonville	FL	32254	Duval	donna@fandgconstruction.com
Felicia M. Boyd & Associates, Inc.	Woman Owned	1402 Declaration Drive	Jacksonville	FL	32250	Duval	fmb@bellsouth.net
First Choice Management Services, I	African American	841 Prudential Drive	Jacksonville	FL	32207	Duval	michael.bush@1stchoicems.com
first coast industrial supply	Woman Owned	2950 st augustine road	jacksonivlle	FL	32207	Duval	fircoast@aol.com
G. M. Hill Engineering, Inc.	Woman Owned	9640 Sunbeam Center Drive	Jacksonville	FL	32257	Duval	ginahill@gmhillengineering.com
Garrett Counseling, Inc.	Woman Owned	2099 Park St	Jacksonville	FL	32204	Duval	garrettcounseling@comcast.net
Gibbs Group, Inc	African American	7400 Baymeadows Way	Jacksonville	FL	32256	Duval	SGibbs@GibbsGroupEngineers.com
Giovanni Transport, LLC	Woman Owned,	3066 Shady Drive	Jacksonville	FL	32257	Duval	dispatch@giovannitrans.com
HAK Construction, LLC.	Woman Owned	11036 Castlemain Circle East	Jacksonville	FL	32256	Duval	hakimidenise@aol.com
Holman, Inc.	Woman Owned	1855 Cassat AVenue	Jacksonville	FL	32210	Duval	pam@holman-inc.com
Holy Hands Cleaning Service LLC	African American	PO Box 8331	Jacksonville	FL	32239	Duval	phurl06@yahoo.com
Increte of North Florida, Inc.	Veteran	9315 old kings rd S	Jacksonville	FL	32257	Duval	grantflorida62@yahoo.com
Indelible Solutions LLLP	African American	2930 Sandlin St	Jacksonville	FL	32207	Duval	jhaycpa@gmail.com
Integrated Facility Systems, Inc	Woman Owned	3312 Beach Blvd.	Jacksonville	FL	32207	Duval	kkearney@ifsbi.com
IP Construction & Consulting LLC	African American	3577 Cardinal Point Drive	Jacksonville	FL	32257	Duval	ipccbuilds@gmail.com
J 3's Pressure Washing	African American	9125 jennifer lane	Jacksonville	FL	32222	Duval	travisjones@j3spressurewashing.com
J.R. Dexter, Inc.	African American	13245 Atlantci Blvd.	Jacksonville	FL	32225	Duval	ckersee@jrdexter.com
JAXHUB LLC	Asian American,	9243 Starpass Dr	Jacksonville	FL	32256	Duval	nthesingh@jaxhub.com
JDH Hauling Inc	Woman Owned	113 Wamsley Road	Jacksonville	FL	32254	Duval	jdhhauling@aol.com

JJ Floor Care LLC	Hispanic America	11561 Twin Oaks trl	Jacksonville	FL	32258	Duval	manager@jj-floorcare.com
K&A Transporter LLC	Hispanic America	3545 St. Johns Bluff Rd., Sout	Jacksonville	FL	32224	Duval	kat@katransporter.com
kbt contracting corp	Woman Owned	5105 Blanding Blvd	Jacksonville	FL	32210	Duval	kbtcontracting@comcast.net
Kim's Electric, Inc.	Woman Owned	13619 N. Main Street	Jacksonville	FL	32218	Duval	kim.kimselectric@comcast.net
Lasa Construction, Inc	Hispanic America	8286 Western Way Circle	Jacksonville	FL	32256	Duval	chris.hernandez@lasa-usa.com
MACS Industrial Supplies, Inc.	Woman Owned	10418 New Berlin Road #103	Jacksonville	FL	32226	Duval	info@macsindustrial.net
Magellan Transport Logistics, Inc.	Veteran	2511 St Johns Bluff Rd	Jacksonville	FL	32246	Duval	government@magellanlogistics.com
Magic Drywall Finishing & Painting	African American	2669 W 45th St	Jacksonville	FL	32209	Duval	jspeights80@yahoo.com
Meridian Integration, LLC	African American	4685 Sunbeam Road	Jacksonville	FL	32257	Duval	dtheilacker@meridian-integration.com
Mike Hanson Trucking , Inc.	Woman Owned	109 Wamsley Road	Jacksonville	FL	32254	Duval	mikehansontrucking33@yahoo.com
MIRANDA CONTRACTING, LLC	Hispanic America	8442 W. Beaver Street	Jacksonville	FL	32220	Duval	jgarrison@mirandacontracting.com
Mister Gene Clean Janitorial Services	African American	10935 Acorn Park Ct	Jacksonville	FL	32218	Duval	mrgeneclean@yahoo.com
Morales Construction Co., Inc.	Hispanic America	6950 Philips Highway, Suite 15	Jacksonville	FL	32216	Duval	rick@moralesgroup.com
N.P.Construction of N. FL.,Inc	Hispanic America	6510 Columbia Park Drive #206	Jacksonville	FL	32258	Duval	nperaza@npconst.com
NAIWBE, LLC	Woman Owned,	2 Independent Drive	Jacksonville	FL	32202	Duval	sylvia@naiwbellc.net
New Leaf Construction, Inc.	Veteran	4348 Southpoint Blvd.	Jacksonville	FL	32216	Duval	rarsenault@newleafci.com
North Florida Building Maintenance, I	Woman Owned	3947 Boulevard Center Drive	Jacksonville	FL	32207	Duval	rturner@gocitywide.com
North Florida waste Management	Woman Owned	3633 lenox ave	Jacksonville	FL	32254	Duval	tonyzajni@gmail.com
Paint On You LLC	African American	6145 Whitsbury court	Jacksonville	FL	32258	Duval	Paintonyou@protonmail.com
Parks' Place Daycare & Learning Cer	African American	5500 Shindler Drive	Jacksonville	FL	32222	Duval	jparks@parksplacelearningcenter.com
Paryani Engineers, P.E., P.A.	Asian American	PO Box 19865	Jacksonville	FL	32245	Duval	gparyani@aol.com
PIJ BUILDERS LLC	Woman Owned,	10736 Majuro dr	jacksonville	FL	32246	Duval	pijbuilders@gmail.com
Plexi Chemie dba Industrial Flooring S	Woman Owned	606-6 Lane Avenue North	Jacksonville	FL	32254	Duval	epoxy@floorcure.com
Plummer & Associates	Woman Owned	12866 huntley manor drive	jacksonville	FL	32224	Duval	lindaplummer@comcast.net
PQH Group, Inc.	Hispanic America	4141 Southpoint Drive East	Jacksonville	FL	32216	Duval	perezj@pqh.com
Prime Time Sparkle and Shine	African American	7021 Alpine Street	Jacksonville	FL	32208	Duval	rejones2731@gmail.com
Prism Lighting Services, LLC	Asian American,	6971 Business Park Blvd N	Jacksonville	FL	32256	Duval	mkothari@prismlighting.net
Production Premier	Asian American,	P.O. Box 350405	Jacksonville	FL	32235	Duval	proprem@gmail.com
QB Electric LLC	African American	1228 lake forest blvd	Jacksonville	FL	32208	Duval	J.Thomas@qbelectricllc.com
Quality Electrical Service, Inc	Hispanic America	2758 Ernest Street	Jacksonville	FL	32205	Duval	ram@qualityjax.com
Quantum Construction, Inc	African American	PO Box 41483	Jacksonville	FL	32203	Duval	scott@quantumconstruct.com
Quantum Mechanical, LLC	Woman Owned,	1225 W. BEAVER STREET	JACKSONV	FL	32204	Duval	PATRICK@QUANTUMMECHANICAL.C
R & B Contracting, Inc.	Woman Owned	PO Box 11833	Jacksonville	FL	32239-1833	Duval	rbcontrg@bellsouth.net
R. M. Myers Company, Inc.	Hispanic America	4505 Lexington Avenue	Jacksonville	FL	32210	Duval	rmm@rmmyers.net
R&L Cleaning Service	African American	P.O. Box 23083	Jacksonville	FL	32241	Duval	rnlcleaning@msn.com
Radon Professional Services	Woman Owned	336 North Fourteenth Avenue	Jacksonville	FL	32250	Duval	radonpro@aol.com
RFE Construction & Fence Services,	African American	4622 castlewood dr e	jacksonville	FL	32206	Duval	ronetheridge@hotmail.com
Rivers Constructors, Inc.	Woman Owned	7855-703 Argyle Forest Blvd	Jacksonville	FL	32244	Duval	ginger@riversconstructorsinc.com
Sassy's Cleaning Service	Woman Owned	7020 Oakwood Dr	Jacksonville	FL	32211	Duval	ccreister@hotmail.com
Serenity Cleaning Solutions, Inc.	African American	7621 Lookout point Dr	Jacksonville	FL	32210	Duval	serenityjan@comcast.net
Serenity Restoration & Cleaning Solu	African American	7621 Lookout Point dr	Jacksonville	FL	32210	Duval	srcsinc@att.net
Servicefinders, LLC	African American	4573 Cape Sable Ct	Jacksonville	FL	32277	Duval	phillip@sf-llc.com
Shirley Singleton Inc	African American	2301 Gilmore St	Jacksonville	FL	32204	Duval	sysingleton@gmail.com

SIMMONS & CO, INC.	Woman Owned	12720 Dunn Creek Rd	Jacksonville	FL	32218	Duval	ASHLEY@COURTFORMSDONE.COM
Southside Lawn Care LLC	African Americar	13135 Yamasi TRL	Jacksonville	FL	32225	Duval	service@southsidelawncare.com
SPA Smiley Trucking, Inc.	African Americar	5040 Grann Lloyd Drive	Jacksonville	FL	32209	Duval	spasmileytrucking@gmail.com
Spatial Concepts Inc.	Woman Owned	9133 R.G. Skinner Parkway	Jacksonville	FL	32256	Duval	lourose@spatialconceptsinc.com
SSS Constructions Inc	Woman Owned,	9960 Watermark Lane West	Jacksonville	FL	32256	Duval	sssconinc@yahoo.com
Superior Fence and Rail of North Flo	Veteran	5470 Highway Avenue	Jacksonville	FL	32254	Duval	zach.peyton@superiorfenceandrail.com
SURVEVE INC	Veteran, Asian A	9511 Bent Oak Ct	Jacksonville	FL	32257	Duval	ssingh@whole9yardslandscaping.com
TB Solutions, LLC	African Americar	P.O. Box 380086	Jacksonville	FL	32205	Duval	tbsolutionsllc@gmail.com
The Desoto Group, LLC	Woman Owned,	400 East Bay Street	Jacksonville	FL	32202	Duval	sonya@desotogroup.com
The Ohmega Group, LLC	African Americar	1756 Silver Street	Jacksonville	FL	32206	Duval	cmccullough@ohmegagroup.com
The Rose Group LLC	African Americar	2933 N Myrtle Avenue	Jacksonville	FL	32209	Duval	ransley@therosegroupllc.com
Topac Enterprises LLC	Veteran	4027 Spring Park Circle	Jacksonville	FL	32207	Duval	topacenterprises@gmail.com
United Paving Inc.	African Americar	11868 Gran Meadows Way	Jacksonville	FL	32258	Duval	unitedpavingincorporated@gmail.com
V MITCHELL ENTERPRISE LLC	African Americar	7911 DWYER DR	JACKSONV	FL	32244	Duval	vmitchell06@gmail.com
ValorPoint LLC	Veteran, African	PO Box 551177	Jacksonville	FL	32255	Duval	info@valorpointllc.com
Vanguard Electrical Contractors	Woman Owned	3653 Regent Blvd. Suite #302	Jacksonville	FL	32224	Duval	giniphillippe@hotmail.com
Vanguard Electrical Contractors, Inc.	Woman Owned	3653 Regent Blvd.	Jacksonville	FL	32224	Duval	giniphillippe@hotmail.com
Waitz & Moye, Inc.	Hispanic Americ	3738 Southside Boulevard	Jacksonville	FL	32216	Duval	arelysmoye@comcast.net
Watergate Painting & Decorating Inc.	Woman Owned	3982 Kaden Drive East	Jacksonville	FL	32277	Duval	wpainting@aol.com
Williams & Williams General Contract	Woman Owned,	5975 Wakulla Springs Rd	Jacksonville	FL	32258	Duval	AngieWilliams@WilliamsandWilliamsLL(
Yown's Boiler	Veteran	3501 West 20th. Street	Jacksonville	FL	32254	Duval	cyown@yowns.com

3- Historic Preservation

To: Contractors bidding on the

Water Well/Water Plant Improvements Project
City of Hampton, Florida
CDBG-NR Grant #23DB-N02

Re: Historic Preservation

The purpose of this section is to inform contractors of the historic preservation requirements that must be following during construction activities.

Although no archaeological or historical resources are recorded within the project area, if there are unexpected discoveries of such resources during construction, please note the following procedures that must be complied with:

If prehistoric artifacts such as pottery or ceramics, stone tools or metal implements, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time, the project should cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. The contractor shall notify the Engineer immediately so that the Florida Department of State, Division of Historical Resource's, Compliance and Review Section can be contacted at 850-245-6333. The Engineer will also be able to contact the local government so that the appropriate funding agency office can be contacted.

Project activities should not resume without verbal and/or written authorization from the Division of Historical Resources.

If unmarked human remains are encountered during permitted activities, all work must stop immediately, and the proper authorities notified in accordance with Section 872.05, Florida Statute

4- Employment of Local Low- and Very Low-Income Residents (Section 3)

To: Contractors bidding on the

Water Well/Water Plant Improvements Project
City of Hampton, Florida
CDBG-NR Grant #23DB-N02

Re: Employment of Local Low- and Very Low-Income Residents (Section 3

The purpose of this section is to inform contractors of the Section 3 requirements that apply to this project.

The Housing and Urban Development Act of 1968 was enacted to expand the availability of mortgage funds for moderate income families using government-guaranteed mortgage-backed securities. Under Section 3 of the Act, wherever HUD (e.g., CDBG) financial assistance is expended for housing or community development, to the greatest extent feasible, economic opportunities will be given to Section 3 residents and businesses in that area. A Section 3 resident is someone that lives in government assisted housing or is defined as low income by HUD income standards.

The City of Hampton is helping to implement this policy in the following manner:

- If the selected contractor needs to hire additional employees for construction activities, they are encouraged to contact the local CareerSource Florida Office. This office maintains a list of potential job recruits. Phone numbers and addresses for this agency are shown on the following page.

- The City will post a notice at City Hall to inform residents that they may contact the selected contractor to find out if they are hiring (see attached sample notice).

- Also, please refer to the CDBG Supplemental Conditions for additional Section 3 information and requirements. In addition, the selected contractor will be required to fill out the following Section 3 project implementation forms.

FLORIDA COMMERCE

Small Cities Community Development Block Grant Program Form SC-52

Section 3 Participation Report
(Construction Prime Contractor)

Local Government: City of Hampton CDBG Contract #: 23DB-N02

This form must be completed by the prime contractor for any construction contract over $100,000. Voluntary reporting for contracts under $100,000 is encouraged.

Contractor's Name: _____

Contractor's DUNS Number: _____ Contract Amount: $ _____

1. Does the business qualify as a "Section 3 Business Concern" because	
a) It is at least 51% owned by Section 3 residents*, or	☐ Yes ☐ No
b) At least 30% of its permanent full-time employees are	
i) Currently Section 3 residents*, or	☐ Yes ☐ No
ii) Were Section 3 residents* within first three years of employment, or	☐ Yes ☐ No
c) Will at least 25% (dollar value) of construction subcontracts (no material/supplies/ equipment vendors unless they are also installing same) be to businesses meeting (a) or (b) above?	☐ Yes ☐ No

If ***yes***, list any Section 3 subcontractors and subcontract amount:

Subcontractors	Subcontract Amount
	$
	$
	$

2. Will the contractor be hiring any additional staff (office or field) for this project?	☐ Yes ☐ No

- If ***yes***, what types of jobs will be filled, and how many additional hires are estimated in each job type?

***Section 3 resident means:**

(1) A public housing resident; or

(2) An individual who resides in the metropolitan area or nonmetropolitan county in which the section 3 covered assistance is expended, and who is:

(i) *A low-income person,* as this term is defined in section 3(b)(2) of the 1937 Act (42 U.S.C. 1437a(b)(2)). Section 3(b)(2) of the 1937 Act defines this term to mean families (including single persons) whose incomes do not exceed 80 per centum of the median income for the area, as determined by the Secretary, with adjustments for smaller and larger families, except that the Secretary may establish income ceilings higher or lower than 80 per centum of the median for the area on the basis of the Secretary's findings that such variations are necessary because of prevailing levels of construction costs or unusually high or low-income families; or

(ii) *A very low-income person,* as this term is defined in section 3(b)(2) of the 1937 Act (42 U.S.C. 1437a(b)(2)). Section 3(b)(2) of the 1937 Act (42 U.S.C. 1437a(b)(2)) defines this term to mean families (including single persons) whose incomes do not exceed 50 per centum of the median family income for the area, as determined by the Secretary with adjustments for smaller and larger families, except that the Secretary may establish income ceilings higher or lower than 50 per centum of the median for the area on the basis of the Secretary's findings that such variations are necessary because of unusually high or low family incomes.

(3) A person seeking the training and employment preference provided by section 3 bears the responsibility of providing evidence (if requested) that the person is eligible for the preference.

Note: This contract is funded with federal funds, and this information is required for construction contracts over $100,000 for reporting purposes. See Section 3 portion of ***CDBG Supplemental Conditions for Construction Projects*** for additional information.

FLORIDA COMMERCE

Small Cities Community Development Block Grant Program Form SC-54

Documentation for Business Claiming Section 3 Status

Name of Business: _____

DUNS Number of Business: _____

Address of Business: _____

Type of Business:

- ☐ Corporation
- ☐ Partnership
- ☐ Sole Proprietorship
- ☐ Joint Venture

Attached is the following documentation as evidence of our Section 3 status:

For a business claiming status as a Section 3 resident-owned enterprise.

- ☐ Copy of resident lease
- ☐ Copy of evidence of participation in a public assistance program
- ☐ Copy of receipt of public assistance
- ☐ Other evidence

For a business claiming Section 3 status by subcontracting 25 percent of the dollar amount awarded to qualified Section 3 businesses.

- ☐ List of Section 3 subcontractor(s) and subcontract amount(s).

For a business claiming Section 3 status based on at least 30 percent of their workforce currently qualifying as Section 3 residents or having been qualified as Section 3 eligible residents within three years of date of first employment with the business.

- ☐ List of all current full-time employees, and
- ☐ List of employees claiming Section 3 status and for each such employee:
  - ☐ PHA/IHA Residential lease less than three years from date of employment, or
  - ☐ Other evidence of Section 3 status less than three years from day of employment.

I certify that the above information is correct.

_____
Signature

_____
Type Name and Title

_____
Date

If Contractor is not claiming Section 3 Status, sign and date here:

_____
Signature

_____
Date

Note: The local government shall maintain this form and supporting documentation in the CDBG project files for review during monitoring.

CAREERSOURCE FLORIDA

Find Your Local Team

The CareerSource Florida network stands ready to assist employers in finding talent to match specific business needs, from entry level to experienced workers. Our network of workforce professionals can assist with or oversee your recruiting and hiring needs through virtual career fairs, candidate screening, hiring events and more.

Gainesville

1112 North Main Street
Gainesville, FL 32601

352.955.2245

Hours:
Mon–Fri: 8 AM–5 PM

Veterans Services:
Tue: 8 AM - 5 PM

Starke

925 North Temple Ave.
STE C | Starke, FL 32091

904.964.8092

Hours:
Mon–Fri: 8 AM–5 PM

Closed: 12-1 PM (Lunch)

Notice to Residents

Employment Opportunities for Low- and - Moderate-Income Residents

This Notice Shall be posted by the City of Hampton

The City of Hampton has awarded a construction contract to the following Contractor:

Name of Contractor:_____
Contact Person:_____
Mailing Address:_____
Phone Number:_____

The construction activities will include water well/water plant improvement activities.

From time to time, the Contractor may need to hire additional workers for this project. The City of Hampton is committed to promoting and encouraging employment opportunities for its residents, particularly those with low and very low incomes. If you would like to find out if the Contractor is hiring, please call the phone number listed above.

Section 3
Project Implementation Plan
OVERVIEW

NOTE TO BIDDERS: You must return ALL applicable forms in this packet with your bid. Failure to do so may result in your bid being disqualified.

Section 3 Goals

Section 3 is a provision of the Housing and Urban Development (HUD) Act of 1968 that helps foster local economic development, neighborhood economic improvement, and individual self-sufficiency. The Section 3 program requires recipients of certain HUD financial assistance to provide job training, employment, and contracting, to the greatest extent feasible, for low- or very low-income residents in connection with projects and activities in their neighborhoods. Section 3 is race and gender-neutral and is NOT the same as WBE/MBE.

Contracts over $200,000 trigger Section 3. When triggered, best efforts must be made to extend Section 3 opportunities to verified Section 3 residents and business concerns to meet these *minimum* numeric goals:

1. Twenty-five percent (25%) of the total hours on a Section 3 project must be worked by Section 3 workers; and
2. Five percent (5%) of the total hours on a Section 3 project must be worked by Targeted Section 3 workers.

Programmatic Responsibilities

Contractors and/or Subcontractors are expected to meet the minimum goals listed above, to the greatest extent feasible. (Note: Section 3 maynot be required for all projects, but best efforts to comply with the minimum numerical goals are still highly recommended.) All efforts to utilize Section 3 businesses and workers should be documented, and this Section 3 Project Plan should be submitted for all relevant project bids.

Submit FORMS 1 & 2 for all projects or FORMS 1 – 5 for all Section 3-triggered projects (over $200,000) at the time of the bid submission or application for funding.

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Section 3 ***Project*** Implementation Plan

FORM 1 – SECTION 3 ASSESSMENT AND CERTIFICATIONS

This form to be filled out by the selected contractor

This form is required for ALL projects and must be submitted with bid or application for funding.

Project Information

Project Name:
Project Location or Address(es):

Developer/Contactor Information:

Name of Firm:	Address:
Authorized Representative:	Title:
Phone:	Email:

1. Check all that apply to your business:
   - ☐ Your business is at least 51% owned and controlled by low- or very low-income persons
   - ☐ Over 75% of the labor hours performed for your business over the past three-month period were performed by Section 3 workers
   - ☐ Your business is at least 51% owned and controlled by current public housing residents or residents who currently live in Section 8-assisted housing
   - ☐ None of the above
2. Will you be hiring new employees or providing new training opportunities because of this contract? ☐ Yes ☐ No
3. Will you be using subcontractors to complete this project? ☐ Yes ☐ No
4. Is your bid/contract amount greater than $200,000? ☐ Yes ☐ No

If response to item 4 above is "YES," Section 3 requirements will be fully enforced on this project. Failure to comply may result in the suspension offunding. Please complete the certifications below and submit FORMS 1-5 with your bid or application for funding.

If NO, Section 3 participation is strongly encouraged but not required. Please attempt to meet the Section 3 goals to the greatest extent feasible. You must still complete the certifications below as applicable and return FORMS 1 and 2 with your bid or application for funding.

Certifications		YES	NO	N/A
All Projects:	By completing and signing this form, I agree to comply with all applicable requirements of the Section 3 of the Housing and Urban Development Act of 1968 (24 CFR Part 75)	☐	☐	
	I understand that I must complete and submit FORMS 1 and 2 and submit them with my bid even if my bid is under $200,000.	☐	☐	
Projects over $200K:	I have included/will include the Section 3 Clause (FORM 5) in all subcontracts for which Section 3 compliance is required.	☐	☐	☐
	I understand that I am required to submit quarterly and final Section 3 reports (FORM 6), associated forms as applicable (FORMS 2, 3 and 4) and supporting documentation.	☐	☐	☐
	I agree that my company has made and will continue to make efforts "to the greatest extent feasible" to comply with Section 3 as required by HUD.	☐	☐	☐
	I understand the minimum numerical goals for Section 3 participation and I have completed FORMS 1 through 4 and attached them to my bid.	☐	☐	☐

I declare that all statements contained inthis form and any accompanying documents are true and correct, and made with full knowledge that all statements given are subjectto investigation and that any false or dishonest answer to any question may be grounds for denial or revocation of funding or other penalties as prescribed under 18 U.S. Code § 1001.

_____ _____

Authorized Representative Signature Date

Section 3 ***Project*** Implementation Plan

FORM 2 – SUBCONTRACTOR INFORMATION, VERSION (1, 2, 3)

This form to be filled out by the selected contractor

This form is required for ALL projects (regardless of whether Section 3 is triggered) and must be submitted with bid or application for funding. If project is over $200,000 in HUD funds, this form must be updated and re-submitted at the time of contract execution and again with the final Section 3 compliance report.

Project Name	Contract Execution Date	Construction Start Date	Today's Date

Check the box that applies and complete the table if applicable:

- ☐ This project WILL NOT utilize subcontractors.
- ☐ This project MAY utilize the following subcontractors:

No.	Sect3 Bus.	Subcontractor Name	Subcontractor Address and Phone Number	Trade	Subcontract Amount
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

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Section 3 ***Project*** Implementation Plan

FORM 3 – LIST OF PERMANENT EMPLOYEES, VERSION (1, 2)

This form to be filled out by the selected contractor

This form is required for all Section 3-triggered projects (over $200,000) and must be submitted with bid or application for funding and again with the final Section 3 compliance report.

Project Name	Contract Execution Date	Construction Start Date	Today's Date

Please list all current permanent employees (both full and part-time) employed by your company (or local/regional office) as of the signature date on FORM 1, as well as employees of all subcontractors working on this project. Use additional sheets as necessary. A computer-generated employee registry can be provided in lieu of this form if it includes the worker's name, employer and job category and indicates Section 3/targeted Section 3 status.

No.	Name of Worker	Employer	Job Category/Trade	Section 3 Worker (Y/N)	Targeted Section 3 Worker (Y/N)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Please note that your business may be eligible for Section 3 Business certification if at least 75% of your labor hours performed on all contracts over the past three-month period were performed by employees who meet one of the following categories below:

- The worker lives within one mile of the Section 3 project (or, if fewer than 5,000 people live within one mile of the Section 3 project, within a circle centered on the Section 3 project that is sufficient to encompass a population of 5,000 people according to the most recent U.S. Census);
- The worker is a HUD YouthBuild participant; or
- The worker's income for the previous or annualized calendar year is below 80% of the current area median income for the area in which the worker resides. (Use the worker's annual gross income based on AMI for a single-person household.) HUD income limits can be found at https://www.huduser.gov/portal/datasets/il.html.)

Section 3

Project Implementation Plan FORM 4

DOCUMENTATION OF QUALITATIVE EFFORTS

This form to be filled out by the City of Hampton

This form is required for all Section 3-triggered projects (over $200,000) and must be submitted with bid or application for funding, as well as with all quarterly or final compliance reports that indicate numeric goals were not met. Please fill out this form completely. Attach additional pages if needed.

Project Name	Contract Execution Date	Construction Start Date	Today's Date

1. Describe all efforts made to direct the employment and other economic opportunities generated by HUD financial assistance for housing and community development programs, to the greatest extent feasible, to Section 3 workers. Attach additional pages if needed.

   Attach supporting documentation such as:

   - Copies of all publications, notices, pictures of posted notices, and other outreach materials.
   - List of all Section 3 workers that responded to your responded to your outreach efforts (e.g., submitted job applications, phone logs, etc.); were any of them hired? If not, please explain why.

2. Describe all efforts made to notify Section 3 businesses of any subcontracting opportunities generated by HUD financial assistance for this project, to the greatest extent feasible. Attach additional pages if needed.

   Attach supporting documentation such as:

   - Section 3 Business List used in solicitation. Must have been provided by the City of Hampton priorto solicitation and should be no more than 30 days old at the time of solicitation.
   - List of Section 3 business included in solicitation and documentation of efforts (emails, letters, phone, logs, etc.).
   - List of Section 3 businesses that responded to your solicitation and/or outreach efforts; were any ofthem hired? If not, please explain why.
   - Copies of all publications, notices, pictures of posted notices, and any other outreach material utilized.

FORM 4 – DOCUMENTATION OF QUALITATIVE EFFORTS (CONTINUED)

DOCUMENTATION OF QUALITATIVE EFFORTS

This form to be filled out by the City of Hampton

3. Describe all additional qualitative efforts made to comply with Section 3 requirements. See below for examples. Attach all applicable supporting documentation.

4. If there are employment opportunities associated with your project, include a draft of the proposed signage. Section 3 signage should be posted at the construction site. Signage must be large enough to be visible from the street. The sign must (a) identify the name of the project, (b) state the project is a HUD Section 3 Project, and (c) include the name, phone number and email address of an appropriate point of contact regarding employment opportunities.

Examples of Qualitative Efforts

- Engage in outreach efforts to generate job applicants who are Targeted Section 3 workers
- Provide training or apprenticeship opportunities
- Provide technical assistance to help Section 3 workers compete for jobs (e.g., resume assistance, coaching)
- Assist or connect Section 3 workers with drafting resumes, preparing for interviews, and finding job opportunities
- Hold one or more job fairs
- Provide or refer Section 3 workers to services supporting work readiness and retention (e.g., work readiness activities, interview clothing, test fees, transportation, childcare)
- Provide assistance to apply for or attend community college, a four-year educational institution, or vocational/technical training
- Help Section 3 workers to obtain financial literacy training and/or coaching
- Engage in outreach efforts to identify and secure bids from Section 3 business concerns
- Provide technical assistance to help Section 3 business concerns understand and bid on contracts
- Divide contracts into smaller jobs to facilitate participation by Section 3 business concerns
- Provide bonding assistance, guaranties, or other efforts to support viable bids from Section 3 business concerns
- Promote use of business registries designed to create opportunities for disadvantaged and small businesses
- Outreach, engagement, or referrals with the state one-stop system as defined in Section 121(e)(2) of the Workforce Innovation and Opportunity Act
- Other:

Section 3 *Project* Implementation Plan

FORM 5 – SECTION 3 CONTRACT CLAUSE

The selected contractor will be required to comply with the following contract clauses:

All Section 3 covered contracts and subcontracts must include the following clause:

I. The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 USC.1701u (Section 3). The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance, or HUD-assisted projects covered by Section 3, shall to the greatest extent feasible be directed to low and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

II. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 75, which implement Section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 75 regulations.

III. The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this Section 3 Clause and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the Section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

IV. The contractor agrees to include this Section 3 Clause in every subcontract subject to compliance with regulations in 24 CFR part 75, and agrees to take appropriate actions, as provided in an applicable provision of the subcontract or in this Section 3 Clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 75. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 75.

V. The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 75 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 75.

VI. Noncompliance with HUD's regulations in 24 CFR part 75 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

VII. With respect to work performed in connection with Section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 USC 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of Section 3 and section 7(b) agree to comply with Section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).

Section 3 ***Project*** Implementation Plan

FORM 6 – SECTION 3 PROJECT COMPLIANCE REPORT

This form to be filled out by the selected contractor

This form is required for all Section 3-triggered projects (over $200,000) and must be submitted according to the following schedule:

Quarterly
January – March: Due April 15th
April – June: Due July 15th
July – September: Due October 15th
October – December: Due January 15th

Final
Must cover the entire project from start date to completion date. Final report is due 30 days after completion.

Project Name:	Contractor:
Project Location:	Report Type: ☐ Quarterly ☐ Final
Reporting Period Start Date:	Reporting Period End Date:

I. SECTION 3 CONTACT INFORMATION

Contractor Section 3 Point of Contact:	
Phone:	Email:

II. SECTION 3 HOURS WORKED – *Report the number of Section 3 hours for this reporting period. Attach time records to support the information provided.*

A. Total hours worked this period by all workers	B. Number of Section 3 hours worked this period	% Section 3 hours (Divide column B by column A)

III. TARGETED SECTION 3 HOURS WORKED – *Report the number of targeted Section 3 hours for this reporting period. Attach time records to support the information provided.*

A. Total hours worked this period by all workers	B. Number of targeted Section 3 hours worked this period	% Targeted Section 3 hours (Divide column B by column A)

IV. QUALITATIVE EFFORTS – If this report indicates numeric goals were not met, attach FORM 4 describing any qualitative efforts made to increase Section 3 participation for this reporting period.

V. ADDITIONAL ATTACHMENTS – For the final Section 3 compliance report, attach FORMS 2 and 3 with updated information (versions 2 or 3).

I declare that all statements contained inthis form and any accompanying documents are true and correct, and made with full knowledge that all statements given are subject to investigation and that any false or dishonest answer to any question may be grounds for denial or revocation of funding or other penalties as prescribed under 18 U.S. Code § 1001.

Signature:_____ Date: _____

Print Name:_____ Title: _____

Section 3 ***Project*** Implementation Plan

FORM 7 – SECTION 3 BUSINESS OUTREACH FORM

This form to be filled out by the selected contractor and subcontractor

Please complete this form to determine if your business may qualify as a Section 3 Business. Businesses that qualify will be contacted by the City of Hampton Section 3 Coordinator to complete a Section 3 Business Application and asked to provideadditional documentation to verify their status as a Section 3 Business.

What is Section 3?

Section 3 is a provision of the Housing and Urban Development Act of 1968 (24 CFR Part 75) that requires recipientsof certain HUD financial assistance, to the greatest extent possible, to provide job training, employment, and contract opportunities for low- or very low-income residents in connection with projects and activities in their neighborhood.

A business can qualify as Section 3 if it meets one of the following criteria:

A. It is at least 51% owned and controlled by low- or very low-income persons;
B. Over 75% of the labor hours performed for the business over the past three-month period were performed by workers who met at least one of the criteria below; or
C. It is at least 51% owned and controlled by current public housing residents or residents who currently live in Section 8-assisted housing.

Workers must meet one of the following criteria for a business to qualify as Section 3 under item B above:

- Reside within one mile of the Section 3 project (or, if fewer than 5,000 people live within one mile of the Section 3 project, within a circle centered on the Section 3 project that is sufficient to encompass a population of 5,000 people according to the most recent U.S. Census);
- Be a HUD YouthBuild participant; or
- Income for the previous or annualized calendar year is below 80% of the current area median income for the area in which the worker resides. (Use the worker's annual gross income based on AMI for a single-person household.) HUD income limits can be found at https://www.huduser.gov/portal/datasets/il.html.)

Subcontractor Information

Company Name:		
Contact Person:		
Address:		
City:	State:	Zip:
Phone:	Email:	

☐ I have reviewed the above information and my business MAY QUALIFY as a Section 3 Business. Please contact me about completing an application.

☐ I have reviewed the above information and my business DOES NOT QUALIFY as a Section 3 Business.

Signature of Business Owner _____ Date _____

Section 3 ***Project*** Implementation Plan

FORM 8 – SECTION 3 WORKER OUTREACH FORM

Each employee of the selected contractor will need to provide this information:

Please complete this form to determine if you may qualify as a Section 3 or Targeted Section 3 Worker. Workers who qualify will be contacted by the City of Hampton Section 3 Coordinator to complete a Section 3 Worker Application and asked to provide additional documentation to verify their status as a Section 3 or Targeted Section 3 Worker.

What is Section 3?

Section 3 is a provision of the Housing and Urban Development Act of 1968 (24 CFR Part 75) that requires recipients of certain HUD financial assistance, to the greatest extent possible, to provide job training, employment, and contract opportunities for low- or very low-income residents in connection with projects and activities in their neighborhood.

A worker can qualify as Section 3 if they meet one of the following criteria:

- Are employed by a Section 3 business concern;
- Are a HUD YouthBuild participant; or
- Their income for the previous or annualized calendar year is below 80% of the current area median income for the area in which the worker resides. (Use the worker's annual gross income based on AMI for a single-person household.) HUD income limits can be found at https://www.huduser.gov/portal/datasets/il.html.)

A worker can qualify as targeted Section 3 if they meet one of the following criteria:

- Are employed by a Section3 business concern.
- Are a HUD YouthBuild participant; or
- Reside within one mile of the Section 3 project (or, if fewer than 5,000 people live within one mile of the Section 3 project, within a circle centered on the Section 3 project that is sufficient to encompass a population of 5,000 people according to the most recent U.S. Census);

Worker Information

Name:		
Employer Name:		
Address:		
City:	State:	Zip:
Phone:	Email:	

☐ I have reviewed the above information and I MAY QUALIFY as a Section 3 or Targeted Section 3 worker. Please contact me about completing an application.

☐ I have reviewed the above information and I DO NOT QUALIFY as a Section 3 or Targeted Section 3 worker.

Signature _____ Date _____

Form **W-9**
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give Form to the requester. Do not send to the IRS.

Print or type. See Specific Instructions on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

___ - ___ - ____

or

Employer identification number

__ - _____

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here **Signature of U.S. person** ▶ **Date** ▶

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*

5-CDBG Supplemental Conditions

To: Contractors bidding on the:

Water Well/Water Plant Improvements Project
City of Hampton, Florida
CDBG-NR Grant #23DB-N02

Re: CDBG Supplemental Conditions

The purpose of this section is to inform Contractors of the grant related requirements and conditions that the selected contractor will need to comply with. This construction project is being funded by the Community Development Block Grant (CDBG) program. The following Supplemental Conditions describe in detail the following project conditions and requirements:

1. Termination (Cause and Convenience)
2. Access to Records
3. Retention of Records
4. Remedies
5. Environmental Compliance (Clean Air Act and Clean Water Act)
6. Energy Efficiency
7. Special Equal Opportunity Provisions
8. Conflict of Interest
9. Utilization of Minority and Women's Businesses
10. Federal Labor Standards Provisions (Davis-Bacon, Copeland, and Contract Work Hours Act)
11. Guidance to Contractor for Compliance with Labor Standards Provisions
12. E-Verify

The supplemental conditions contained in this section are intended to cooperate with, to supplement, and to modify the general conditions and other specifications. In case of disagreement with any other section of this contract, the Supplemental Conditions shall govern.

1. Termination (Cause and Convenience)
2. Access to Records
3. Retention of Records
4. Remedies
5. Buy America Preference
6. Environmental Compliance (Clean Air Act and Federal Water Pollution Control Act)
7. Energy Efficiency
8. Conflict of Interest
9. Utilization of Minority- and Women-Owned Business Enterprises (M/WBEs)
10. Davis-Bacon Act
11. Contract Work Hours and Safety Standards Act
12. Health and Safety
13. E-Verify
14. Equal Opportunity Provisions

1. Termination (Cause and Convenience)

A. This contract may be terminated in whole or in part in writing by either party in the event of substantial failure by the other party to fulfill its obligations under this contract through no fault of the terminating party, provided that no termination may be affected unless the other party is given:

(1) not less than ten (10) calendar days written notice (delivered by certified mail, return receipt requested) of intent to terminate; and

(2) an opportunity for consultation with the terminating party prior to termination.

B. This contract may be terminated in whole or in part in writing by the local government for its convenience, provided that the other party is afforded the same notice and consultation opportunity specified in l(a) above.

C. If termination for default is affected by the local government, an equitable adjustment in the price for this contract shall be made, but

(l) no amount shall be allowed for anticipated profit on unperformed services or other work, and

(2) any payment due to the contractor at the time of termination may be adjusted to cover any additional costs to the local government because of the contractor's default.

If termination for convenience is affected by the local government, the equitable adjustment shall include a reasonable profit for services or other work performed for which profit has not already been included in an invoice.

For any termination, the equitable adjustment shall provide for payment to the contractor for services rendered and expenses incurred prior to receipt of the notice of intent to terminate, in addition to termination settlement costs reasonably incurred by the contractor relating to commitments (e.g., suppliers, subcontractors) which had become firm prior to receipt of the notice of intent to terminate.

D. Upon receipt of a termination action under paragraphs (a) or (b) above, the contractor shall (1) promptly discontinue all affected work (unless the notice directs otherwise) and (2) deliver or otherwise make available to the local government all data, drawings, reports specifications,

summaries and other such information, as may have been accumulated by the contractor in performing this contract, whether completed or in progress.

E. Upon termination, the local government may take over the work and may award another party a contract to complete the work described in this contract.

F. If, after termination for failure of the contractor to fulfill contractual obligations, it is determined that the contractor had not failed to fulfill contractual obligations, the termination shall be deemed to have been for the convenience of the local government. In such event, adjustment of the contract price shall be made as provided in paragraph (c) above.

2. Access to Records

The Florida Department of Commerce, the Chief Financial Officer of the State of Florida, the Auditor General of the State of Florida, the Florida Office of Program Policy Analysis and Government Accountability, the U.S. Department of the Treasury, the Comptroller General of the United States, and any of their duly authorized representatives, shall have access to any books, documents, papers, and records, including electronic storage media, as they may relate this contract, for the purposes of conducting audits or examinations or making excerpts or transcriptions.

3. Retention of Records

The contractor shall retain all records relating to this contract for five years after the local government makes final payment and all other pending matters are closed.

4. Remedies

Unless otherwise provided in this contract, all claims, counter-claims, disputes and other matters in question between the local government and the contractor, arising out of or relating to this contract, or the breach of it, will be decided by arbitration, if the parties mutually agree, or in a Florida court of competent jurisdiction.

5. Buy America Preference

A. All iron and steel used in this project must be produced in the United States. This means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

B. All manufactured products used in this project must be produced in the United States. This means the manufactured product was manufactured in the United States, and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation.

C. All constructed materials used in this project must be manufactured in the United States. This means that all manufacturing processes for the construction material occurred in the United States.

D. The Buy America Preference only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project.

6. Environmental Compliance

If this contract exceeds $150,000, the contractor shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401–7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251–1387). Violations must be reported to the U.S. Department of the Treasury and the Atlanta Regional Office of the Environmental Protection Agency (EPA). The contractor shall include this clause in any subcontracts over $150,000.

7. Energy Efficiency

The contractor shall comply with any 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 (Public Law 94-163).

8. Conflict of Interest

No officer or employee of the local jurisdiction or its designees or agents, no member of the governing body, and no other public official of the locality who exercises any function or responsibility with respect to this contract, during his/her tenure or for one year thereafter, shall have any interest, direct or indirect, in any contract or subcontract, or the proceeds thereof, for work to be performed. Further, the contractor shall incorporate the language set forth in this paragraph prohibiting conflict of interest in all subcontracts.

9. Utilization of Minority- and Women-Owned Business Enterprises (M/WBEs)

The contractor shall take all necessary affirmative steps to assure that M/WBE firms are utilized when possible as suppliers and/or subcontractors, as applicable. Prior to contract award, the contractor shall document efforts to utilize M/WBE firms, including identifying what firms were solicited as suppliers and/or subcontractors, as applicable. Information regarding certified M/WBE firms can be obtained from:

- Florida Department of Management Services, Office of Supplier Diversity,
- Florida Department of Transportation (construction services, particularly highway),
- Minority Business Development Center in most major cities, and
- Local government M/WBE programs in many large counties and cities.

A firm recognized as an M/WBE by any of the above agencies is acceptable for the CDBG program.

10. Davis-Bacon Act (Applicable to contracts/subcontracts $2,000 or more)

1. Minimum Wages

(i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such

laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii) (A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination, and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

1. The work to be performed by the classification requested is not performed by a classification in the wage determination.
2. The classification is utilized in the area by the construction industry.
3. The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii) (B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably

anticipated in providing bona fide fringe benefits under a plan or program, *Provided*, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account asset for the meeting of obligations under the plan or program.

2. Withholding

The Department of Commerce shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, the Department of Commerce may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii) (A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Department of Commerce if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the Department of Commerce. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead, the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired.

Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the U.S. Department of the Treasury if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit them to the applicant, sponsor, or owner, as the case may be, for transmission to the Department of Commerce, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, sponsor, or owner).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

a. That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete.

b. That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3.

c. That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Department of Commerce or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees

(i) *Apprentices*. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) *Trainees*. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be

permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) *Equal Employment Opportunity*. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

5. Compliance with Copeland Act requirements

The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts

The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the U.S. Department of the Treasury may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment

A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards

Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

11. Contract Work Hours and Safety Standards Act (Applicable to contracts/subcontracts $100,000 or more)

1. Overtime requirements

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages

In the event of any violation of the clause set forth in paragraph (1.) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $31 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages

The Department of Commerce shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts

The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

12. Health and Safety

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 (formerly part 1518) and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54.83 State 96).

(3) The contractor shall include the provisions of this Article in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontract as the Secretary of the Treasury or the Secretary of Labor shall direct as a means of enforcing such provisions.

13. E-Verify

A. Section 448.095, Florida Statutes, requires the following:

1. Every public agency and its contractors and subcontractors shall register with and use the E-Verify system to verify the work authorization status of all newly hired employees. A public agency or a contractor or subcontractor thereof may not enter into a contract unless each party to the contract registers with and uses the E-Verify system.
2. An employer shall verify each new employee's employment eligibility within three (3) business days after the first day that the new employee begins working for pay as required

under 8 CFR 274a. Beginning July 1, 2023, a private employer with 25 or more employees shall use the E-Verify system to verify a new employee's employment eligibility.

B. E-Verify is an Internet-based system that allows an employer, using information reported on an employee's Form I-9, Employment Eligibility Verification, to determine the eligibility of all new employees hired to work in the United States. There is no charge to employers to use E-Verify. The Department of Homeland Security's E-Verify system can be found at:

https://www.e-verify.gov/.

C. If the contractor does not use E-Verify, the contractor shall enroll in the E-Verify system prior to hiring any new employee or retaining any contract employee after the effective date of this contract.

14. Equal Opportunity Provisions

A. Standard Federal Equal Employment Opportunity Construction Contract Specifications (Applicable to contracts/subcontracts above $10,000)

1. As used in these specifications:

(a). "Covered area" means the geographical area described in the solicitation from which this contract resulted.

(b). "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority.

(c). "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

(d). "Minority" includes:

(i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin).

(ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race).

(iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands).

(iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation, and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60–4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions

of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7 (a) through (p) of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the *Federal Register* in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

> (a). Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
>
> (b). Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
>
> (c). Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and

was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

(d). Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

(e). Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7(b) above.

(f). Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

(g). Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

(h). Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

(i). Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

(j). Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.

(k). Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR part 60–3.

(l). Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

(m). Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

(n). Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

(o). Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

(p). Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, sexual orientation, gender identity, or national origin.

11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60–4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

B. Contracts Not Subject to Executive Order 11246, as Amended (Applicable to contracts/subcontracts $10,000 and under)

During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

(2) The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

(3) Contractors shall incorporate foregoing requirements in all subcontracts.

C. Equal Opportunity Clause (Applicable to contracts/subcontracts above $10,000)

During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in

conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

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

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

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

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

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

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

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

D. Civil Rights Act of 1964

Under Title VI of the Civil Rights Act of 1964, no person shall, on the grounds of race, color, religion, sex, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

E. Age Discrimination in Employment Act of 1967, as Amended

It shall be unlawful for an employer-

(1) To fail or refuse to hire or to discharge any individual or otherwise discriminate against any individual with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's age.

(2) To limit, segregate, or classify his employees in any way which would deprive or tend to deprive any individual of employment opportunities or otherwise adversely affect his status as an employee, because of such individual's age.

(3) To reduce the wage rate of any employee in order to comply with this section.

F. Title II of the Genetic Information Nondiscrimination Act of 2008

(1) Under Title II of the Genetic Information Nondiscrimination Act (GINA), it is illegal to discriminate against employees or applicants because of genetic information. Employers are prohibited from using genetic information in making employment decisions. GINA restricts employers and other entities covered by Title II (employment agencies, labor organizations and joint labor-management training and apprenticeship programs - referred to as "covered entities") from requesting, requiring or purchasing genetic information, and strictly limits the disclosure of genetic information.

The law forbids discrimination on the basis of genetic information when it comes to any aspect of employment, including hiring, firing, pay, job assignments, promotions, layoffs, training, fringe benefits, or any other term or condition of employment.

(2) "Genetic information" includes information about an individual's genetic tests and the genetic tests of an individual's family members, as well as information about the manifestation of a disease or disorder in an individual's family members (i.e. family medical history). Family medical history is included in the definition of genetic information because it is often used to determine whether someone has an increased risk of getting a disease, disorder, or condition in the future.

G. Section 3 of the Housing and Urban Development Act of 1968

(1) The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (Section3), contributes to the establishment of stronger, more sustainable communities by ensuring that employment and other economic opportunities generated by Federal financial assistance for housing and community development programs are, to the greatest extent feasible, directed toward low- and very low-income persons, particularly those who receive Federal financial assistance for housing and those residing in communities where the financial assistance is expended.

(2) The parties to this contract agree to comply with HUD's regulations in 24 CFR part 75, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 75 regulations.

(3) The contractor agrees to send to each labor organization or representative or workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's

commitments under this Section 3 clause and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the Section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s)taking applications for each of the positions; and the anticipated date the work shall begin.

(4) The Contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 75, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 75. The Contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 75.

(5) The Contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the Contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 75 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 75.

(6) Noncompliance with HUD's regulations in 24 CFR part 75 may result in sanctions, termination of this Contract for default, and debarment or suspension from future HUD assisted contracts.

6- Certification

To: Contractors bidding on the

Water Well/Water Plant Improvements Project
City of Hampton, Florida
CDBG-NR Grant #23DB-N02

Re: Certification Regarding Debarment, Suspension and Other Matters

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The Prime Contractor and all sub contractors will need to certify that they are not debarred our suspended from doing work of federally funded projects. A certification form is provided for the prime contractor and one for subcontractors.

Certification Regarding Debarment, Suspension, and Other Responsibility Matters (Primary Covered Transactions)

April, 2015

Recipient: City of Hampton Contract Number: 23DB-N02

Name of Company Selected as a Prime Contractor: _____

DUNS Number: _____

1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

   (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

   (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

   (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1)(b) of this certification; and

   (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

_____ _____

Authorized Signature Date

_____

Name Typed

_____

Title

_____

Street Address

_____

City, State, Zip

(24 CFR 24.510 and 24 CFR, Part 24, Appendix A)

FLORIDA COMMERCE

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion (Subcontractor)

April, 2015

Recipient: City of Hampton Contract Number: 23DB-N02

Name of Subcontractor: _____

DUNS Number: _____

Lower Tier Covered Transactions

(1) The prospective lower tier participant certifies, by submission of this document, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) Where the prospective lower tier participant is unable to certify to the above statement, the prospective participant shall attach an explanation to this form.

_____ _____

Authorized Signature Date

_____

Name Typed

_____

Title

_____

Street Address

_____

City, State, Zip

(24 CFR 24.510 and 24 CFR, Part 24, Appendix A)

EXHIBIT E

APPENDIX II TO PART 200 TITLE 2

This content is from the eCFR and is authoritative but unofficial.

Title 2 —Grants and Agreements
Subtitle A —Office of Management and Budget Guidance for Grants and Agreements
Chapter II —Office of Management and Budget Guidance
Part 200 —Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards

Source: 85 FR 49543, Aug. 13, 2020, unless otherwise noted.
Source: 85 FR 49539, Aug. 13, 2020, unless otherwise noted.
Authority: 31 U.S.C. 503
Source: 78 FR 78608, Dec. 26, 2013, unless otherwise noted.

Appendix II to Part 200—Contract Provisions for Non-Federal Entity Contracts Under Federal Awards

In addition to other provisions required by the Federal agency or non-Federal entity, all contracts made by the non-Federal entity under the Federal award must contain provisions covering the following, as applicable.

(A) Contracts for more than the simplified acquisition threshold, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

(B) All contracts in excess of $10,000 must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be effected and the basis for settlement.

(C) Equal Employment Opportunity. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

(D) Davis-Bacon Act, as amended (40 U.S.C. 3141-3148). When required by Federal program legislation, all prime construction contracts in excess of $2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part

3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

(E) Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708). Where applicable, all contracts awarded by the non-Federal entity in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

(F) Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of "funding agreement" under 37 CFR § 401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

(G) Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended—Contracts and subgrants of amounts in excess of $150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

(H) Debarment and Suspension (Executive Orders 12549 and 12689)—A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

(I) Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)—Contractors that apply or bid for an award exceeding $100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any

other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.

(J) See § 200.323.

(K) See § 200.216.

(L) See § 200.322.

[78 FR 78608, Dec. 26, 2013, as amended at 79 FR 75888, Dec. 19, 2014; 85 FR 49577, Aug. 13, 2020]