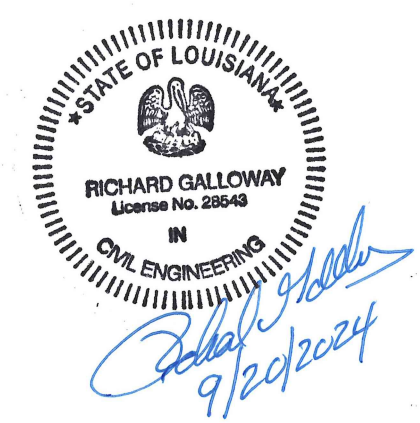
ST. TAMMANY PARISH

MICHAEL B. COOPER
PARISH PRESIDENT

DATE: September 20, 2024



Please find the following addendum to the below-mentioned BID.

Addendum No.: 1

Bid#: 24-42-2

Project Name: Dominion and Highland Oaks Sewer Consolidation

Bid Due Date: September 25, 2024

Receipt of this Addendum shall be acknowledged by inserting its number in the space provided on the Proposal.

GENERAL INFORMATION:

The non-mandatory Pre-Bid Conference was conducted on September 6th, 2024. The Attendance List is included in the attachments (52 pages).

Specification/Drawing Clarification: **Service voltage at both sites shall be 120/240V single phase. VFDs associated with each pump shall be capable of converting 240V single phase to 240V three phase and VFDs shall be sized accordingly.**

Specification Revision: **Section 09800 – Protective Coatings has been revised. Section D. New Concrete Surfaces (Corrosive Gas or Immersion Environment) has been updated to allow for either of the two listed systems. See Section 09800 – Protective Coatings for more details, in this Addendum below.**

Specification Revision: **Section 16200 – Standby Generator has been revised. See Section 16200 – Standby Generator for more details, in this Addendum below.**

Specification Revision: **Section 16400 – Service & Distribution System has been revised. See Section 16400 – Service & Distribution System for more details, in this Addendum below.**

Drawing Revision: **Sheet 11 – Ruelle De Chene DemolitionPlan has been revised to remove additional existing pavement under the existing treatment plant. See Sheet 11 – Ruelle De Chene DemolitionPlan for more details, in this Addendum below.**

Drawing Revision: **Sheet 14 – Ruelle De Chene Pump Station Site Layout Plan has been revised for the new location of the required natural gas generator. Revisions to the aggregate surface course, chain-link fence, and addition of a concrete generator pad have been made due to this new location. See Sheet 14 – Ruelle De Chene Pump Station Site Layout Plan for more details, in this Addendum below.**

Drawing Revision: **Sheet 15 – Highland Oaks Pump Station Site Layout Plan has been revised for the new configuration and layout of discharge piping. See Sheet 15 – Highland Oaks Pump Station Site Layout Plan for more details, in this Addendum below.**

Drawing Revision: **Sheet 16 – Ruelle De Chene Pump Station Plan and Elevation has been revised to install offset bend fittings on the discharge piping in the wet well. Also, the 'Pump Data Table – Motor Phase' has been updated for single phase power. See Sheet 16 – Ruelle De Chene Pump Station Plan and Elevation for more details, in this Addendum below.**

Drawing Revision: **Sheet 17 – Highland Oaks Pump Station Plan and Elevation has been revised to install bend fittings on the discharge piping to exit the side of the wet well. Also, the 'Pump Data Table – Motor Phase' has been updated for single phase power. See Sheet 17 – Highland Oaks Pump Station Plan and Elevation for more details, in this Addendum below.**

Drawing Revision: **Sheet 58 – Ruelle De Chene Pump Station Electrical Plan has been revised to install a service disconnect switch and to show the proposed generator location. Also, the 'Panel "R"' table has been revised. See Sheet 58 – Ruelle De Chene Pump Station Electrical Plan for more details, in this Addendum below.**

Drawing Revision: **Sheet 59 – Highland Oaks Pump Station Electrical Plan has been revised to install a service disconnect switch. Also, the 'Panel "H"' table has been revised. See Sheet 59 – Highland Oaks Pump Station Electrical Plan for more details, in this Addendum below.**

QUESTIONS & ANSWERS:

Question 1: No Attachment "D" – Insurance Requirements were included in the specifications. Article 24.00 of the General Conditions include "Insurance Requirements" however; typically, STP also issued Attachment "D" Insurance Requirements of which supersedes the General Conditions.

Response 1: Please refer to Attachment #1.

Question 2: Will OCP insurance be required on this project?

Response 2: Please refer to Response #1.

Question 3: Will Builder's Risk/All-Risk Insurance be required on this project?

Response 3: Please refer to Response #1.

Question 4: Could you please provide the dimensions of the manholes and the total number of manholes to be coated in the project?

Response 4: See Sheet 54 for standard manhole dimensions. The top and invert elevations are shown in the Plan and Profile sheets. There are a total of ten (10) sanitary sewer manholes that are to be coated in the overall project.

Question 5: The project plans specify that the wet wells should be coated with the Mainstay system from Madewell. However, the "Protective Coating" section of the specifications indicates that for new concrete surfaces, the Tnemec system should be used. Could you confirm whether the Madewell Mainstay system will be approved for coating both the manholes and wet wells for this project?

Response 5: Both systems will be accepted in accordance with the latest plans and specifications. See the updated Section 09800 – Protective Coatings, Section D. New Concrete Surfaces (Corrosive Gas or Immersion Environment) in the Attachments for allowable coatings for the manholes and wet wells.

ATTACHMENTS:

1. Section 06 – Insurance Requirements.
2. Section 09800 – Protective Coatings
3. Section 16200 – Standby Generator
4. Section 16400 – Service & Distribution System
5. Sheet 11 – Ruelle De Chene Demolition Plan
6. Sheet 14 – Ruelle De Chene Pump Station Site Layout Plan
7. Sheet 15 – Highland Oaks Pump Station Site Layout Plan
8. Sheet 16 – Ruelle De Chene Pump Station Plan and Elevation
9. Sheet 17 – Highland Oaks Pump Station Plan and Elevation
10. Sheet 58 – Ruelle De Chene Pump Station Electrical Plan
11. Sheet 59 – Highland Oaks Pump Station Electrical Plan
12. 24-42-2 Dominion and Highland Oaks Sewer Consolidation Project Pre-Bid Conference Attendance List (September 6th, 2024)

INSURANCE REQUIREMENTS*

Construction Project: Dominion and Highland Oaks Sewer Consolidation

Project/Quote/Bid#: 24-42-2

IMPORTANT – PLEASE READ

Prior to submitting your quote or bid, it is recommended that you review these insurance requirements with your insurance broker/agent.

These requirements modify portions of the insurance language found in the General Conditions and/or* Supplementary *General Conditions; however, there is no intention to remove all sections pertaining to insurance requirements and limits set forth in the General Conditions and/or Supplementary General Conditions, only to amend and specify those items particular for this Project.

A. The Provider shall secure and maintain at its expense such insurance that will protect it and St. Tammany Parish Government (the "Parish") from claims for bodily injury, death or property damage as well as from claims under the Workers' Compensation Acts that may arise from the performance of services under this agreement. All certificates of insurance shall be furnished to the Parish and provide thirty (30) days prior notice of cancellation to the Parish, in writing, on all of the required coverage.

B. All policies shall provide for and certificates of insurance shall indicate the following:

1. Waiver of Subrogation: The Provider's insurers will have no right of recovery or subrogation against the Parish of St. Tammany, it being the intention of the parties that all insurance policy(ies) so affected shall protect both parties and be the primary coverage for any and all losses covered by the below described insurance.

2. Additional Insured: St. Tammany Parish Government shall be named as Additional Insured with respect to general liability, automobile liability and excess liability coverages, as well as marine liability and pollution/environmental liability, when those coverages are required or necessary.

3. Payment of Premiums: The insurance companies issuing the policy or policies will have no recourse against St. Tammany Parish Government for payment of any premiums or for assessments under any form of policy.

4. Project Reference: The project(s) and location(s) shall be referenced in the Comment or Description of Operations section of the Certificate of Insurance (Project ##-###, or Bid # if applicable, Type of Work, Location).

C. Coverage must be issued by insurance companies authorized to do business in the State of Louisiana. Companies must have an A.M. Best rating of no less than A-, Category VII. St. Tammany Parish Risk Management Department may waive this requirement only for Workers Compensation coverage at their discretion.

Provider shall secure and present proof of insurance on forms acceptable to St. Tammany Parish Government, Office of Risk Management no later than the time of submission of the Contract to the Parish. However, should any work performed under this Contract by or on behalf of Provider include exposures that are not covered by those insurance coverages, Provider is not relieved of its obligation to maintain appropriate levels and types of insurance necessary to protect itself, its agents and employees, its subcontractors, St. Tammany Parish Government (Owner), and all other interested third parties, from any and all claims for damage or injury in connection with the services performed or provided throughout the duration of this Project, as well as for any subsequent periods required under this Contract.

The insurance coverages checked (✓) below are those required for this Contract.

☑ 1. **Commercial General Liability*** insurance – **Occurrence Form** - with a Combined Single Limit for bodily injury and property damage of at least $2,000,000 per Occurrence / $4,000,000 General Aggregate and $2,000,000 Products-Completed Operations. Contracts over $1,000,000 may require higher limits. The insurance shall provide for and the certificate(s) of insurance shall indicate the following coverages:

a) Premises - operations;
b) Broad form contractual liability;
c) Products and completed operations;
d) Personal/Advertising Injury;
e) Broad form property damage (for Projects involving work on Parish property);
f) Explosion, Collapse and Damage to underground property.
g) Additional Insured forms CG 2010 and CG 2037 in most current edition are required.

☑ 2. **Business Automobile Liability*** insurance with a Combined Single Limit of $1,000,000 per Occurrence for bodily injury and property damage, and shall include coverage for the following:

a) Any auto;
or
b) Owned autos; **and**
c) Hired autos; **and**
d) Non-owned autos.

☑ 3. **Workers' Compensation/Employers Liability insurance*** - Workers' Compensation coverage as required by State law. Employers' liability limits shall be a minimum of $1,000,000 each accident, $1,000,000 each disease, $1,000,000 disease policy aggregate. When water activities are expected to be performed in connection with this project, coverage under the USL&H Act, Jones Act and/or Maritime Employers Liability (MEL) must be included. **Coverage for owners, officers and/or partners in any way engaged in the Project shall be included in the policy.** The names of any excluded individual must be shown in the Description of Operations/Comments section of the Certificate**.**

☑ 4. **Pollution Liability and Environmental Liability*** insurance in the minimum amount of $1,000,000 per occurrence / $2,000,000 aggregate including full contractual liability and third party claims for bodily injury and/or property damage, for all such hazardous waste, pollutants and/or environmental exposures that may be affected by this project stemming from pollution/environmental incidents as a result of Contractor's operations.

If coverage is provided on a claims-made basis, the following conditions apply:

1) the retroactive date must be prior to or coinciding with the effective date of the Contract, or prior to the commencement of any services provided by the Contractor on behalf of the Parish, whichever is earlier; AND
2) continuous coverage must be provided to the Parish with the same retro date for 24 months following acceptance or termination of the Project by the Parish either by
    a) continued renewal certificates **OR**
    b) a 24 month Extended Reporting Period

*The Certificate must indicate whether the policy is written on an occurrence or claims-made basis and, if claims-made, the applicable retro date must be stated.

☑ 5. **Contractor's Professional Liability/Errors and Omissions*** insurance in the sum of at least $1,000,000 per claim / $2,000,000 aggregate is required when work performed by Contractor or on behalf of Contractor includes professional or technical services including, but not limited to, construction administration and/or management, engineering services such as design, surveying, and/or inspection, technical services such as testing and laboratory analysis, and/or environmental assessments. An occurrence basis policy is preferred.

If coverage is provided on a claims-made basis, the following conditions apply:

1) the retroactive date must be prior to or coinciding with the effective date of the Contract, or prior to the commencement of any services provided by the Contractor on behalf of the Parish, whichever is earlier; AND
2) continuous coverage must be provided to the Parish with the same retro date for 24 months following acceptance or termination of the Project by the Parish either by
    a) continued renewal certificates **OR**
    b) a 24 month Extended Reporting Period

*The Certificate must indicate whether the policy is written on an occurrence or claims-made basis and, if claims-made, the applicable retro date must be stated.

☐ 6. **Marine Liability/Protection and Indemnity*** insurance is required for any and all vessel and/or marine operations in the minimum limits of $1,000,000 per occurrence / $2,000,000 per project general aggregate. The coverage shall include, but is not limited to, the basic coverages found in the Commercial General Liability insurance and coverage for third party liability

***Excess/Umbrella Liability** insurance may be provided to meet the limit requirements for any Liability coverage. For example: if the General Liability requirement is $3,000,000 per occurrence, but the policy is only $1,000,000 per occurrence, then the excess policy should be at least $2,000,000 per occurrence thereby providing a combined per occurrence limit of $3,000,000.)

☑ 7. **Owners Protective Liability (OPL)** shall be furnished by the Contractor and shall provide coverage in the minimum amount of $3,000,000 CSL each occurrence / $3,000,000 aggregate. **St. Tammany Parish Government, ATTN: Risk Management Department, P. O. Box 628, Covington, LA 70434 shall be the first named insured on the policy**.

☑ 8. **Builder's Risk Insurance** written as an "all-risk" policy providing coverage in an amount at or greater than one hundred percent (100%) of the completed value of the contracted project. Any contract modifications increasing the contract cost will require an increase in the limit of the Builder's Risk policy. Deductibles should not exceed $5,000 and Contractor shall be responsible for all policy deductibles. This insurance shall cover materials at the site, stored off the site, and in transit. The Builder's Risk Insurance shall include the interests of the Owner, Contractor and Subcontractors and shall terminate only when the Project is accepted in writing. **St. Tammany Parish Government, ATTN: Risk Management Department, P. O. Box 628, Covington, LA 70434 shall be named as a Loss Payee on the policy**.

☐ 9. **Installation Floater Insurance**, on an "all-risk" form, shall be furnished by Contractor and carried for the full value of the materials, machinery, equipment and labor for each location. The Contractor shall be responsible for all policy deductibles. The Installation Floater Insurance shall provide coverage for property owned by others and include the interests of the Owner, Contractor and Subcontractors and shall terminate only when the Project is accepted in writing. **St. Tammany Parish Government, ATTN: Risk Management Department, P. O. Box 628, Covington, LA 70434 shall be named as a Loss Payee on the policy**.

D. All policies of insurance shall meet the requirements of the Parish prior to the commencing of any work. The Parish has the right, but not the duty, to approve all insurance coverages prior to commencement of work. If any of the required policies are or become unsatisfactory to the Parish as to form or substance; or if a company issuing any policy is or becomes unsatisfactory to the Parish, the Provider shall promptly obtain a new policy, timely submit same to the Parish for approval, and submit a certificate thereof as provided above. The Parish agrees not to unreasonably withhold approval of any insurance carrier selected by Provider. In the event that Parish cannot agree or otherwise authorize a carrier, Provider shall have the option of selecting and submitting a new insurance carrier within 30 days of said notice by the Parish. In the event that the second submission is insufficient or is not approved, then the Parish shall have the unilateral opportunity to thereafter select a responsive and responsible insurance carrier all at the cost of Provider and thereafter deduct from Provider's fee the cost of such insurance.

E Upon failure of Provider to furnish, deliver and/or maintain such insurance as above provided, this contract, at the election of the Parish, may be declared suspended, discontinued or terminated. Failure of the Provider to maintain insurance shall not relieve the Provider from any liability under the contract, nor shall the insurance requirements be construed to conflict with the obligation of the Provider concerning indemnification.

F. Provider shall maintain a current copy of all annual insurance policies and agrees to provide a certificate of insurance to the Parish on an annual basis or as may be reasonably requested for the term of the contract or any required Extended Reporting Period. Provider further shall ensure that all insurance policies are maintained in full force and effect throughout the duration of the Project and shall provide the Parish with annual renewal certificates of insurance evidencing continued coverage, without any prompting by the Parish.

G. It shall be the responsibility of Provider to require that these insurance requirements are met by all contractors and sub-contractors performing work for and on behalf of Provider. Provider shall further ensure the Parish is named as an additional insured on all insurance policies provided by said contractor and/or sub-contractor throughout the duration of the project.

H. Certificates of Insurance shall be issued as follows:

St. Tammany Parish Government
Attn: Risk Management
P O Box 628
Covington, LA 70434

To avoid contract processing delays, be certain the project name/number is included on all correspondence including Certificates of Insurance.

***NOTICE*: St. Tammany Parish Government reserves the rights to remove, replace, make additions to and/or modify any and all of the insurance requirements at any time.**

Any inquiry regarding these insurance requirements should be addressed to:

St. Tammany Parish Government
Office of Risk Management
P O Box 628
Covington, LA 70434
Telephone: 985-898-5226
Email: riskman@stpgov.org

SECTION 09800 - PROTECTIVE COATINGS – REVISION #1

PART 1 - GENERAL

1.01 SCOPE OF WORK

This Section covers materials, preparation of surfaces, performance, and completion of coating for all surfaces, unless specified otherwise elsewhere in the Contract Documents.

1.02 DELIVERY AND STORAGE

All materials delivered to job site shall be in original sealed and labeled containers of the paint manufactured.

1.03 SUBMITTALS

A. The Contractor shall submit manufacturer's literature for each product to be used giving the name, generic type, descriptive information and evidence of satisfactory past performance. Submittals shall include all specified performance data as specified herein under Paragraph 2.03, and as certified by a qualified testing laboratory.

B. Upon completion of installation, the Contractor shall submit written certification from the manufacturer that all work has been performed within the limits prescribed by the manufacturer.

PART 2 - PRODUCTS

2.01 COLORS

A. Colors, where not specified, shall be as selected by the Engineer. The Contractor shall furnish color chips for each protective coating system for review and selection.

B. Safety Color Code for Marking Physical Hazards. The safety color selected for the marking of physical hazards and safety, firefighting and protection equipment shall be in accordance with OSHA 1910.144.

1. Safety Color Selection

Colors shall meet the tests specified in ANSI Z53.1. The colors used shall conform to the color chips identified by numbers specified in Federal Standard 595.

Color	Standard	Color	Standard
Red	11105	Blue	15120
Yellow	13655	Purple	17142
Orange	12246	White	17875
Green	14260	Black	17038

C. Color selection for the items not covered by OSHA Color Standards shall either be in accordance with the Painting Schedule, or to be determined after submittal of color chips by Contractor.

2.02 COATING SCHEDULE

A. Ferrous Metal Surfaces - Exterior Environment (UV exposure)

1. Surface Preparation for Carbon Steel: SSPC-SP6/NACE 3 Commercial Blast Cleaning.

2. Surface Preparation for Cast Iron & Ductile

3. Iron: Clean as required to remove all soluble surface contaminants. Abrasive blast all surfaces to be coated in accordance with NAPF 500-03-04 to remove all insoluble surface contaminants and to achieve a minimum surface profile of 1.5 mils.

4. Coating System

		Dry Film Thickness (mils)
1st Coat	Polyamidoamine Epoxy Tnemec Series N69	4.0 - 6.0
2nd Coat	Polyamidoamine Epoxy Tnemec Series N69	4.0 - 6.0
3rd Coat	Polyamide Epoxy Tnemec Series 1074U	2.5 - 3.0
		Total 10.5 - 15

5. Description: All ferrous metal surfaces without appropriate factory finish and not installed within an enclosed structure including piping, fittings, couplings, adaptors, valves, vaults, control panel enclosures, etc.

6. Primer (1st Coat) shall be factory-applied. Intermediate and top coats (2nd Coat and 3rd Coat) shall be factory-applied or field-applied. Where coating is field applied, it shall only be done with the Engineer or Engineer's representative present to witness coating application and verify thickness.

B. Ferrous Metal Surfaces - Corrosive Gas or Immersion Environment

1. Surface Preparation for Carbon Steel SSPC-SP10/NACE 2 Near-White Blast Cleaning

2. Surface Preparation for Cast Iron & Ductile Iron: Clean as required to remove all soluble surface contaminants. Abrasive blast all surfaces to be coated in accordance with NAPF 500-03-04 to remove all insoluble surface contaminants and to achieve a minimum surface profile of 1.5 mils

3. Coating System

		Dry Film Thickness (mils)
1st Coat	Polyamidoamine Epoxy Tnemec Series N69	4.0 - 6.0
2nd Coat	Cycloaliphatic Amine Epoxy Tnemec Series 104	5.0 - 6.0
3rd Coat	Cycloaliphatic Amine Epoxy Tnemec Series 104	5.0 - 6.0
		Total 14 - 18

4. Description: Ferrous metal surfaces exposed or immersed in lift station, wet well, manholes immediate upstream of wet wells, discharge manholes, or similar locations, including piping, fittings, valves, pumps, brackets, supports, etc.

5. Primer (1st Coat) shall be factory-applied. Intermediate and top coats (2nd Coat and 3rd Coat) shall be factory-applied or field-applied. Where coating is field applied, it shall only be done with the Engineer or Engineer's representative present to witness coating application and verify thickness.

C. Interior of Existing Concrete Structures (corrosive gas or immersion environment):

1. Structures that hold liquids or are subject to corrosive gases and liquids: Buried concrete or brick structures holding liquids such as wet wells and manholes. Any one of the following three systems specified herein; System A, System B, or System C, may be used.

2. Application procedures shall conform to recommendations of the manufacturer, including materials handling, mixing, environmental controls during application, safety and spray equipment.

3. System A- 100% Solids Epoxy (Tnemec Perma-Shield H_2S or equal)

a. Surface Preparation: Prepare concrete surfaces in accordance with NACE No. 6/SSPC-SP13. Abrasive blast to remove laitance, form

release agents, curing compounds, sealers, or other contaminants, and to achieve a surface profile equivalent to ICRI CSP 5.

b. Materials:

		Dry Film Thickness
1st Coat:	Surfacer: Cementitious Epoxy Resurfacer	
	Tnemec Series 218 Mortarclad (for lightly exposed aggregate)	1/16" - 1/4"
	Tnemec Series 217 Mortarcrete (for exposed aggregate and rebar)	1/4" - 2"
2nd Coat:	Lining: 100% Solids Polyamine Epoxy Mortar	1/8"
	Tnemec Series 434 Perma-Shield H_2S	
3rd Coat:	Glaze Coat: 100% Solids Polyamine Epoxy	12 - 15 mils
	Tnemec Series 435 Perma-Glaze	

4. System B - Cementitious Coating (Dinjer, or equal)

a. Surface Preparation: The use of high pressure water cleaning, hydro blasting, abrasive blasting, grinding and detergent water cleaning shall conform to manufacturer's recommendations. All surface defects repair materials and procedures shall conform to manufacturer's recommendations.

b. Materials:

		Dry Film Thickness
1st Coat:	Cementitious Epoxy Resurfacer Dinjer CMS-10K	1/16" - 1/4"
2nd Coat:	Amine Epoxy Mortar Dinjer SG Mastic	100 mils

c. Cementitious Coating: Shall be quick setting, high strength, sulfide resistant, calcium aluminate-based or portland cement material; suitable for troweling or rotary spray application to inside of structure. Additives shall be used to increase corrosion resistance or bond strength at manufacturer's direction and with Engineer's approval.

5. System C - Cementitious Composite Coating (Mainstay, or equal)

a. Surface Preparation: The use of high pressure water cleaning, hydro blasting, abrasive blasting, grinding and detergent water cleaning shall conform to manufacturer's recommendations. All surface defects repair materials and procedures shall conform to manufacturer's recommendations.

b. Materials:

		Dry Film Thickness
1st Coat:	Cementitious Microsilica Blend Mainstay ML-72	1/2”
2nd Coat:	100% Solids Hi Build Epoxy Mainstay DS-5	50 - 125 mils

D. New Concrete Surfaces (Corrosive Gas or Immersion Environment)

1. Description: New cast-in-place or pre-cast structures that hold liquids or are subject to corrosive gases or liquids such as manholes, valve pits, and wet wells. Either one of the following two systems specified herein; System A or System B, may be used.

2. Application procedures shall conform to recommendations of the manufacturer, including materials handling, mixing, environmental controls during application, safety and spray equipment.

3. System A - 100% Solids Epoxy (Tnemec Perma-Shield H_2S or equal)

a. Surface Preparation: Allow new concrete to cure for 28 days, verify dryness by ASTM D4263. Abrasive blast to remove laitance, form release agents, curing compounds, sealers, or other contaminants and to achieve a surface profile equivalent to ICRI CSP 5 and SSPC-SP13/NACE No. 6.

b. Materials:

		Dry Film Thickness
1st Coat:	Surfacer: Epoxy Modified Cementitious Mortar Tnemec Series 218 Mortarclad (for light exposed aggregate)	1/16”
2nd Coat:	Lining: Modified Aliphatic Amine Tnemec Series 434 Perma-Shield H_2S	1/8”
3rd Coat:	Glaze Coat: Modified Polyamine Epoxy Tnemec Series 435 Perma-Glaze	12 - 15 mils

4. System B - Cementitious Composite Coating (Mainstay, or equal)

a. Surface Preparation: Allow new concrete to cure for 28 days, verify dryness by ASTM D4263. Abrasive blast to remove laitance, form release agents, curing compounds, sealers, or other contaminants and to achieve a surface profile equivalent to ICRI CSP 5 and SSPC-SP13/NACE No. 6.

b. Materials:

		Dry Film Thickness
1st Coat:	Cementitious Microsilica Blend Mainstay ML-72	1/2”
2nd Coat:	100% Solids Hi Build Epoxy Mainstay DS-5	50 - 125 mils

2.03 PERFORMANCE REQUIREMENTS

A. Polyamidoamine Epoxy: Polyamidoamine epoxy shall contain no lead or soluble chromates. Polyamidoamine epoxy shall be able to weather sixty (60) days prior to top coating with itself or aliphatic urethanes. Scarify surface before top coating if exposed to sunlight for 60 days or longer.

1) Minimum Solids per Gallon: 67.0 +/- 2.0%
2) Abrasion: No more than 115 mg loss after 1000 cycles (ASTM D 4060, CS-17 Wheel, 1,000 grams load)
3) Adhesion: Not less than 1600 psi pull average of three trials (ASTM D 4541 Elcometer Adhesion Tester)
4) Exterior Exposure: No blistering, cracking or delamination of the film. No more rust creepage at scribe or after seventy-two months exposure.
5) Fresh Water Immersion: No blistering, cracking, softening or delamination of the film after 4 years immersion in 77 F. tap water (ASTM D 870).
6) Hardness: Must pass 3H (ASTM D 3363)
7) Salt Fog: No blistering, rusting, cracking, softening or delamination of the film. No more than 1/8 inch rust creepage at scribe after 8,000 hours exposure (ASTM B117).
8) Manufacturer: Tnemec N69 Hi-Build Epoxoline II or equal.

B. Cycloaliphatic Amine Epoxy:

1) Minimum Solids per Gallon: 82.0 +/- 2.0%
2) Abrasion: No more than 120 mg loss after 1000 cycles (ASTM D 4060, CS-17 Wheel, 1,000 grams load)
3) Chemical Resistance: No blistering, cracking, softening or delamination of the film after seven days exposure at 75°F to 10% sulfuric acid, 50% sodium hydroxide, 10% hydrochloric acid, 10% phosphoric acid and 5% sodium chloride.
4) Salt Spray Resistance: No blistering, rusting, cracking, softening or delamination of the film. No more than 1/32 inch rust creepage at scribe after 1,500 hours exposure (ASTM B 117-73).
5) Manufacturer: Tnemec 104 H.S. Epoxy or equal.

C. Modified Aliphatic Amine Epoxy Mortar: Aggregate - reinforced 100% solids, hybrid epoxy mortar:

1) Minimum Solids per Gallon: 100%
2) Volatile Organic Compounds: 0.15 lbs/gal (EPA Method 24)
3) Chemical Resistance: No blistering, cracking, erosion, softening, swelling, or loss of adhesion or gloss after 98 day continuous immersion at 100F and 25% sulfuric acid (ASTM D 868 Atlas Cell).

4) Impact Resistance: No visible cracking or delamination after 160 in-lbs (ASTM D 2794, direct impact).
5) ASTM G 210 Severe Wastewater Analysis Test: Minimal initial impedance of 10 Log Z (Z in ohms cm2 @ 0.1 hz). No blistering, cracking, checking or loss of adhesion. Final impedance greater than 9 Log Z after 28 days exposure.
6) Manufacturer: Tnemec 434 Perma-Shield H_2S or equal.

D. Modified Polyamine Epoxy: 100% solids epoxy:
1) Minimum Solids per Gallon: 100%
2) Volatile Organic Compounds: 0.23 lbs/gal (EPA Method 24)
3) Chemical Resistance: No blistering, cracking, erosion, softening, swelling, or loss of adhesion or gloss after 98 day continuous immersion at 100F and 25% sulfuric acid (ASTM D 868 Atlas Cell).
4) ASTM G210 Severe Wastewater Analysis Test: Minimal initial impedance of 11 Log Z (Z in ohms cm2 @ 0.1 hz). No blistering, cracking, checking or loss of adhesion. Final impedance greater than 11 Log Z after 28 days exposure.
5) Manufacturer: Tnemec 435 Perma-Glaze or equal.

E. Cementitious Repair Mortar:
1) Compressive Strength: Minimum - 10,650 psi (ASTM C579).
2) Drying Shrinkage: Maximum 0% (ASTM C596).
3) Linear Shrinkage: Maximum 0.0220% (ASTM C531).
4) Splitting Tensile Strength: Minimum 850 psi (ASTM C496).
5) Thermal Expansion: Maximum 7.46x10-6 in/in/ºF linear coefficient (ASTM C531).
6) Volatile Organic Compounds: 0.0 lbs/gal.
7) Manufacturer: Tnemec 217 Mortarcrete, or equal.

F. Epoxy Modified Cementitious Mortar:
1) Minimum Solids per Gallon: 100%
2) Bond Strength: Minimum 1,040 by slant sheer; average of 3 tests (ASTM C882).
3) Compressive Strength: Minimum 7,100 psi (ASTM C579).
4) Drying Shrinkage (56 day cure): Maximum $2.5x10^{-6}$ inches; average of 5 tests (ASTM C596).
5) Shrinkage: Maximum $3.1x10^{-6}$ inches (ASTM C531).
6) Splitting Tensile Strength: Minimum 640 psi (ASTM C496).
7) Thermal Expansion: Maximum 3.15x10-6 in/in/ºF linear coefficient (ASTM C531).
8) Volatile Organic Compounds: 0.15 lbs/gal (unthinned)
9) Manufacturer: Tnemec 218 Mortarclad or equal.

G. Aliphatic Acrylic Polyurethane:
1) Minimum Solids per Gallon: 100% ± 2% (mixed)
2) Exterior Exposure: No blistering, cracking, or chalking. No less than 97% retention (2 units gloss change) and 0.11 DED Hunter Lab Scale color change after 500 MJ exposure. (ASTM D4141 Method C).

3) No blistering, cracking, or chalking. No less than 64% gloss retention (33 unites gloss change) and 2.46 DED FMCII (MacAdam units) color change after 7,000 hours exposure.
4) Flexibility: Minimum 12.6% elongation; average of 3 tests. (ASTM D522, Method A, Conical Mandrel).
5) Abrasion: Maximum 116 mg loss after 1,000 cycles (ASTM D4060, CS-17 wheel, 1,000 gram loaded).
6) Humidity: No blistering, cracking, rusting, or delamination of film after 2,500 hours exposure (ASTM D4585).
7) Volatile Organic Compounds: 2.59 lbs/gal (unthinned) (EPA Method 24)
8) Manufacturer: Tnemec 1074U Endurashield II or equal.

H. Cementitious Coating:
1) Compressive Strength: One day minimum - 2,000 psi (ASTM C109).
2) Compressive Strength: 28 days minimum - 5,500 psi (ASTM C109).
3) Bond Strength: 28 days minimum - 1,640 psi (ASTM C882)
4) Flexural Strength: 28 days minimum - 1,500 psi (ASTM C78).
5) Density when applied: 135 lb./cf. +/- 5 lb./cf.
6) Manufacturer: Dinjer CMS-10K, or equal.

I. Cementitious Composite Coating:
1) Compressive Strength: One day minimum - 3,000 psi (ASTM C109).
2) Compressive Strength: 28 days minimum - 10,000 psi (ASTM C109).
3) Bond Strength: 28 days minimum - 3,440 psi (ASTM C882)
4) Flexural Strength: One day minimum - 535 psi (ASTM C293).
5) Flexural Strength: 28 days minimum - 1,505 psi (ASTM C293).
6) Tensile Strength: One day minimum - 330 psi (ASTM C496).
7) Tensile Strength: 28 days minimum - 910 psi (ASTM C496).
8) Shrinkage: 28 days @ 90% Rh - 0% (ASTM C596).
9) Density when applied: 135 lb./cf.
10) Manufacturer: Mainstay ML-72, or equal.

PART 3 - EXECUTION

3.01 GENERAL

A. All surface preparation, coating and painting shall conform to applicable standards of the Steel Structures Painting Council (SSPC), and the manufacturer's printed instructions. Material applied prior to approval of the surface by the Engineer shall be removed and reapplied to the satisfaction of the Engineer at the expense of the Contractor.

B. All work shall be performed by skilled craftsmen qualified to perform the required work in a manner comparable with the best standards of practice. Continuity of personnel shall be maintained and transfers of key personnel shall be coordinated with the Engineer.

C. The Contractor shall provide a supervisor at the work site during cleaning and application operation. The supervisor shall have the authority to sign change orders, coordinate work and make decisions pertaining to the fulfillment of the contract.

D. Dust, dirt, oil, grease or any foreign matter that will affect the adhesion or durability of the finish must be removed by washing with clean rags dipped in an approved cleaning solvent and wiped dry with clean rags as per SSPC SP1.

E. Coating and painting systems include surface preparations, prime coating and finish coatings. Any off-site work that does not conform to this specification is subject to rejection by the Engineer.

F. Shop applied prime coatings, which are damaged during transportation, construction or installation shall be thoroughly cleaned and touched up in the field as directed by the Engineer. The Contractor shall use repair procedures that insure the complete protection of all adjacent primer. The specified repair method and equipment may include wire brushing, hand, or power tool cleaning or dry air blast cleaning. In order to prevent injury to surrounding painted areas, blast cleaning may require use of lower air pressure, small nozzle and abrasive particle sizes, short blast nozzle, distance from surface, shielding and masking. If damage is too extensive or uneconomical to tough-up, then the item shall be re-cleaned and coated or painted as directed by the Engineer.

G. The Contractor's coating and painting equipment shall be designed for application of materials specified and shall be maintained in first class working condition. Compressors shall have suitable traps and filters to remove water and oils from the air. Contractor's equipment shall be subject to approval of the Engineer.

H. Application of the first coat shall follow immediately after surface preparation and cleaning and within an eight-hour working day. Any cleaned areas not receiving first coat within eight-hour period shall be re-cleaned prior to application of first coat.

I. Prior to assembly, all surfaces made inaccessible after assembly shall be prepared as specified herein and shall receive the coating or paint system specified.

J. Coatings shall be applied during good painting and coating weather. Air and surface temperatures a well as dew point shall be within limits prescribed by the manufacturer for the coating being applied and work areas shall be reasonably free of airborne dust at the time of application and while coating is drying.

K. Field touch up painting shall be required on scratched or damaged surfaces.

3.02 SURFACE PREPARATION

A. The latest revision of the following surface preparation specifications of the SSPC shall form a part of this specification.

1. Solvent Cleaning (SSPC SP): Removal of oil, grease soil and other contaminants by use of solvents, emulsions, cleaning compounds, steam cleaning or similar materials and methods which involve a solvent or cleaning action.

2. Hand Tool Cleaning (SSPC SP2): Removal of loose rust, loose mill scale and other detrimental foreign matter to degree specified by hand chipping, scraping, sanding and wire brushing.

3. Power Tool Cleaning (SSPC-SP3): Removal of loose rust, loose mill scale and other detrimental foreign matter to degree specified by power wire brushing, power impact tools or power sanders.

4. White Metal Blast Cleaning (SSPC-SP5): Blast cleaning to a gray-white uniform metallic color until each element of surface area is free of all visible residues.

5. Commercial Blast Cleaning (SSPC-SP6): Blast cleaning until at least two thirds of each element of surface area is free of all visible residues.

6. Brush-Off Blast Cleaning (SSPC-SP7): Blast cleaning to remove loose rust, loose mill scale and other detrimental foreign matter to degree specified.

7. Near White Blast Cleaning (SSPC-SP10): Blast cleaning to nearly white metal cleanliness, until at least 95 percent of each element of surface area is free of all visible residues.

B. Slag and weld metal accumulation and spatters not removed by the fabricator, erector or installer shall be removed by chipping and grinding. All sharp edges shall be peened, ground or otherwise blunted as required by the Engineer.

C. Field blast cleaning for all surfaces shall be by dry method unless otherwise directed.

D. Particle size of abrasives used in blast cleaning shall be that which will produce a 1 1/2 - 2 mil (37.5 microns - 50.0 microns) surface profile or in accordance with recommendations of the manufacturer of the specified coating or paint system to be applied.

E. Abrasive used in blast cleaning operations shall be new, washed, graded, and free of contaminants that would interfere with adhesion of coating or paint and shall not be reused unless specifically approved by the Engineer.

F. Surface preparation will be based upon comparison with: "Pictorial Surface preparation Standards for Painting Steel Surfaces", SSPC-Vis 1 ASTM Designation D220; "Standards Methods of Evaluation Degree of Rusting on Painted Steel Surfaces", SSPC-Vis-2 ASTM Designation D610; "Visual Standard for Surfaces of New Steel Air blast Cleaned with Sand Abrasive".

G. During blast cleaning operations, caution shall be exercised to insure that existing coatings or paint are not exposed to abrasion from blast cleaning.

H. The Contractor shall keep the area of his work in a clean condition and shall not

permit blasting materials to accumulate as to constitute a nuisance or hazard to the prosecution of the work or the operation of the existing facilities.

I. Blast cleaned surfaces shall be cleaned prior to application of specified coatings or paint. No coatings or paint shall be applied over damp or moist surfaces.

3.03 APPLICATION

A. Coating and paint application shall conform to the requirements of the Steel Structures Painting Council Paint Application Specification SSPC-PA latest revision for "Shop Field and Maintenance Painting", and the manufacturer of the coating and paint materials.

B. Thinning shall be permitted only as recommended by the manufacturer and approved by the Engineer.

C. Each application of coating or paint shall be applied evenly, free of brush marks, sags, runs, with no evidence of poor workmanship. Care shall be exercised to avoid lapping on glass or hardware. Coatings and paints shall be sharply cut to lines. Finished surfaces shall be free from defects or blemishes.

D. Protective coverings or drop cloths shall be used to protect floors, fixtures, and equipment. Care shall be exercised to prevent coatings or paints from being splattered onto surfaces that are not to be coated or painted. Surfaces from which materials cannot be removed satisfactorily shall be recoated or repainted as required to produce a finish satisfactory to the Engineer.

E. When two coats of paint are specified, where possible, the first coat shall contain sufficient approved color additive to act as an indicator of coverage or the two coats must be of contracting color.

F. Film thicknesses per coat specified are the minimum required. Contractor shall apply additional coats as necessary to achieve the specified thickness.

G. No coating or paint shall be applied: When the surrounding air temperature or the temperature of the surface to be coated or painted is below 40 degrees F., too wet or damp surfaces or in rain, snow, fog or mist; when the temperature is less than 5 degrees F. above the dew point; when it is expected the air temperature will drop below 40 degrees F. six hours after application of coating and paint. Dew point shall be measured by use of an instrument such as a Sling Psychrometer in conjunction with U.S. Department of Commerce Weather Bureau Psychrometric Tables.

H. If above conditions are prevalent, coating or painting shall be delayed or postponed until conditions are favorable. The day's coating or painting shall be completed in time to permit the film sufficient drying time prior to damage by atmospheric conditions.

I. All material shall be applied as per manufacturer's recommendations.

J. All welds and irregular surfaces shall receive a brush coat of the specified product prior to application of the first complete coat.

K. All parts that can be disassembled such as vents and manhole covers shall be removed and coated inside and out as per applicable coating systems. Upon completion of coating, those parts disassembled shall be reassembled prior to placing in service.

3.04 ACCEPTANCE OF WORK

A. All surface preparation and repairs shall be approved by the Engineer/Owner before primer is applied.

B. The Contractor shall request and receive acceptance of each coat before applying next coat.

C. The Contractor shall correct work that is not acceptable and request reinspection.

D. Thickness of coatings and or the paint shall be checked with a non-destructive, magnetic type thickness gauge. (Use an instrument such as a Tooke Gauge if a destructive tester is deemed necessary.) Coating integrity of interior coated surfaces shall be tested with approved inspection devices. Holiday detection shall be performed prior to application of aluminum or metallic finish coats. Non-destructive holiday detector shall not exceed 67.5 volts nor shall destructive holiday detector exceed the voltage recommended by the manufacturer of the coating system. For thicknesses between 10 and 20 mils (250 microns and 500 microns) a non-sudsing type setting agent, such as Kodak Photo-Flo, shall be added to the water and detector sponge prior to detector use. All pinholes shall be marked and repaired in accordance with the manufacturer's printed recommendations and retested. No pinholes or other irregularities shall be permitted in the final coating.

E. The Contractor shall furnish, until final acceptance of coating and painting, inspection devices in good working condition for detection of holidays and measurement of dry-film thickness of coating and paint. The Contractor shall also furnish U.S. Department of Commerce, National Bureau of Standards certified thickness calibration plates to test accuracy of dry-film thickness gauge and certified instrumentation to test accuracy of holiday detectors.

F. The Contractor shall require regular checks with these devices to insure dry-film thicknesses meet specifications. The Engineer shall at his discretion use the Contractors or his own equipment to perform similar inspections.

G. Dry-film thickness gauges and holiday detectors shall be made available for the Engineer's use at all times until final acceptance of application. Holiday detection device shall be operated in the presence of the Engineer.

H. Concrete surfaces in immersion service must have void - and pinhole-free coating application. Inspection of coating system with 5X magnification will provide these assurances.

I. Warranty inspection shall be conducted during the eleventh month following completion of all coating and painting work. All defective work shall be repaired in accordance with this specification and to the satisfaction of the Engineer/Owner.

J. In accordance with requirements set forth by regulatory agencies applicable to the construction industry and manufacturer's printed instructions and appropriate technical bulletins and manuals, the Contractor shall provide and require use of personnel protective lifesaving equipment for persons working in, or about the project site.

K. Equipment shall include protective helmets that shall be worn by all persons while in the vicinity of the work. In addition, workers engaged in or near the work during sandblasting shall wear eye and face protection devices and air purifying, half-mask or mouthpiece respirator with appropriate filter. Barrier creams shall be used on any exposed areas of skin.

L. Where ventilation is used to control hazardous exposure, all equipment shall be explosion proof. Ventilation shall reduce the concentration of air contaminant to the degree a hazard does not exist. Air circulation and exhausting of solvent vapors shall be continued until coatings have fully cured.

M. Whenever the occupational noise exposure exceeds maximum allowable sound levels, the Contractor shall provide and require the use of approved ear protective devices.

N. Adequate illumination shall be provided while work is in progress, including explosion-proof lights and electrical equipment. Whenever required by the Engineer, the Contractor shall provide additional illumination and necessary supports to cover all areas to be inspected. The level of illumination for inspection purposes shall be determined by the Engineer.

O. All temporary ladders and scaffolding shall conform to applicable safety requirements. They shall be erected where requested by the Engineer to facilitate inspection and be moved by the Contractor to locations requested by the Engineer.

P. All coatings and paints shall be stored in enclosed structures to protect them from weather and excessive heat or cold. Flammable coatings or paint must be stored to conform to City, Parish, State, and Federal safety codes for flammable coating or paint materials. At all times, coatings and paints shall be protected from freezing.

3.05 CLEAN UP

Upon completion of the work, all staging, scaffolding and containers shall be removed from the site or destroyed in a manner approved by the Engineer. Coating or paint spots and oil or stains upon adjacent surfaces shall be removed and the job site cleaned. All

damage to surfaces resulting from the work of painting contractor or subcontractor shall be cleaned, repaired, or refinished to the satisfaction of the Engineer at no cost to the Owner.

END OF SECTION

SECTION 16200 - STANDBY POWER GENERATOR – REVISION 1

Part1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes **TWO (2)** packaged engine-generator sets suitable for use in applications with the features as specified and indicated where the engine generators will be used as the Standby power source for the system.

1.3 DEFINITIONS

A. Emergency Standby Power (ESP): Per ISO 8528: The maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a utility power outage or under test conditions for up to 200 hours of operation per year with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. The permissible average power output (Ppp) over 24 hours of operation shall not exceed 70 percent of the ESP unless otherwise agreed by the RIC engine manufacturer.

B. Operational Bandwidth: The total variation from the lowest to highest value of a parameter over the range of conditions indicated, expressed as a percentage of the nominal value of the parameter.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of packaged engine generator indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. In addition, include the following:

1. Thermal damage curve for generator.

2. Time-current characteristic curves for generator protective device.

3. Sound test data, based on a free field requirement.

B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, and location and size of each field connection.

1. Dimensioned outline plan and elevation drawings of engine-generator set and other components specified.

2. Wiring Diagrams: Control interconnection, Customer connections.

C. Certifications:

1. Submit statement of compliance which states the proposed product(s) is certified to the emissions standards required by the location for EPA, stationary non-emergency application.

1.5 INFORMATIONAL SUBMITTALS

A. Source quality-control test reports.

1. Certified summary of prototype-unit test report. See requirements in Part 2 "Source Quality Control" Article Part A. Include statement indicating torsional compatibility of components.

2. Certified Test Report: Provide certified test report documenting factory test per the requirements of this specification, as well as certified factory test of generator set sensors per NFPA110 level 1.

3. List of factory tests to be performed on units to be shipped for this Project.

4. Report of exhaust emissions and compliance statement certifying compliance with applicable regulations.

B. Warranty:

1. Submit manufacturer’s warranty statement to be provided for this Project.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Manufacturer Qualifications: A qualified manufacturer. Maintain, within 75 of Project site, a service center capable of providing training, parts, and emergency maintenance repairs.

C. Source Limitations: Obtain packaged generator sets and auxiliary components through one source from a single manufacturer.

D. Comply with NFPA 37 (Standard For the Installation and Use of Stationary Combustion Engines and Gas Turbines).

E. Comply with NFPA 70 (National Electrical Code. Equipment shall be suitable for use in systems in compliance to Article 700, 701, and 702).

F. Comply with NFPA 110 (Emergency and Standby Power Systems) requirements for Level 1 emergency power supply system.

1.7 WARRANTY

A. Base Warranty: Manufacturer shall provide base warranty coverage on the material and workmanship of the generator set for a minimum of twenty-four (24) months for Standby product and twelve (12) months for Prime/Continuous product from registered commissioning and start-up.

B. Extended Warranty: Manufacturer shall offer extend coverage of 5 years from date of registered commissioning and start-up.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: The basis for this specification is Cummins Power Generation equipment, approved equals may be considered if equipment performance is shown to meet the requirements herein.

2.2 ENGINE-GENERATOR SET

A. Factory-assembled and -tested, engine-generator set.

B. Mounting Frame: Maintain alignment of mounted components without depending on concrete foundation; and have lifting attachments.

1. Rigging Information: Indicate location of each lifting attachment, generator-set center of gravity, and total package weight in submittal drawings.

C. Capacities and Characteristics:

1. Highland Oaks Lift Station:

a. Power Output Ratings: Electrical output power rating for Standby operation of not less than 30.0, at 80 percent lagging power factor, 120/240V, single phase, 3 -wire, 60 hertz

b. Alternator shall be capable of accepting maximum 30.0 kVA in a single step and be capable of recovering to a minimum of 90% of rated no load voltage. Following the application of the specified kVA load at near zero power factor applied to the generator set.

c. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component. The engine-generator nameplate shall include information of the power output rating of the equipment.

2. Ruelle De Chenes Lift Station:

a. Power Output Ratings: Electrical output power rating for Standby operation of not less than 50.0, at 80 percent lagging power factor, 120/240V, single phase, 3 -wire, 60 hertz.

b. Alternator shall be capable of accepting maximum 50.0 kVA in a single step and be capable of recovering to a minimum of 90% of rated no load voltage. Following the application of the specified kVA load at near zero power factor applied to the generator set.

c. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component. The engine-generator nameplate shall include information of the power output rating of the equipment.

D. Generator-Set Performance:

1. Steady-State Voltage Operational Bandwidth: 1.0 percent of rated output voltage from no load to full load.

2. Transient Voltage Performance: Not more than 20 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within 5 seconds. On application of a 100% load step the generator set shall recover to stable voltage within 10 seconds.

3. Steady-State Frequency Operational Bandwidth: 0.5 percent of rated frequency from no load to full load.

4. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.

5. Transient Frequency Performance: Not more than 15 percent variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within 5 seconds. On application of a 100% load step the generator set shall recover to stable frequency within 10 seconds.

6. Output Waveform: At full load, harmonic content measured line to line or line to neutral shall not exceed 5 percent total and 3 percent for any single harmonic. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50.

7. Sustained Short-Circuit Current: (For engine-generator sets using a PMG-excited alternator) For a 3-phase, bolted short circuit at system output terminals, system shall supply a minimum of 300 percent of rated full-load current for not less than 8 seconds without damage to generator system components. For a 1-phase, bolted short circuit at system output terminals, system shall regulate both voltage and current to prevent over-voltage conditions on the non-faulted phases.

8. Start Time: Comply with NFPA 110, Level 1, Type 10, system requirements.

9. Ambient Condition Performance: Engine generator shall be designed to allow operation at full rated load in an ambient temperature under site conditions, based on highest ambient condition. Ambient temperature shall be as measured at the air inlet to the engine generator for enclosed units, and at the control of the engine generator for machines installed in equipment rooms.

2.3 ENGINE

A. Fuel: Natural Gas

B. Rated Engine Speed: 1800RPM.

C. Lubrication System: The following items are mounted on engine or skid:

1. Lube oil pump: shall be positive displacement, mechanical, full pressure pump.

2. Filter and Strainer: Provided by the engine manufacturer of record to provide adequate filtration for the prime mover to be used.

3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.

D. Engine Fuel System: The engine fuel system shall be installed in strict compliance to the engine manufacturer's instructions

E. Coolant Jacket Heater: Electric-immersion type, factory installed in coolant jacket system. Comply with NFPA 110 requirements for Level 1 equipment for heater capacity and performance.

1. Designed for operation on a single 120 VAC, Single phase, 60Hz power connection. Heater voltage shall be shown on the project drawings.

2. Installed with isolation valves to isolate the heater for replacement of the element without draining the engine cooling system or significant coolant loss.

3. Provided with a 12VDC thermostat, installed at the engine thermostat housing

F. Governor: Adjustable isochronous, with speed sensing. The governing system dynamic capabilities shall be controlled as a function of engine coolant temperature to provide fast, stable operation at varying engine operating temperature conditions. The control system shall actively control the fuel rate as appropriate to the state of the engine generator. Fuel rate shall be regulated as a function of starting, accelerating to start disconnect speed, accelerating to rated speed, and operating in various isochronous states.

G. Cooling System: Closed loop, liquid cooled

1. The generator set manufacturer shall provide prototype test data for the specific hardware proposed demonstrating that the machine will operate at rated standby load in an outdoor ambient condition of 40 deg C.

2. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.

3. Size of Radiator overflow tank: Adequate to contain expansion of total system coolant from cold start to 110 percent load condition.

4. Expansion Tank: Constructed of welded steel plate and rated to withstand maximum closed-loop coolant system pressure for engine used. Equip with gage glass and petcock.

5. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.

6. Duct Flange: Generator sets installed indoors shall be provided with a flexible radiator duct adapter flange.

H. Muffler/Silencer: Selected with performance as required to meet sound requirements of the application, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements. For generator sets with outdoor enclosures the silencer shall be inside the enclosure.

I. Air-Intake Filter: Engine-mounted air cleaner with replaceable dry-filter element and restriction indicator.

J. Starting System: 12 or 24V, as recommended by the engine manufacturer; electric, with negative ground.

1. Components: Sized so they will not be damaged during a full engine-cranking cycle with ambient temperature at maximum specified in Part 1 "Project Conditions" Article.

2. Cranking Cycle: As required by NFPA 110 for level 1 systems.

3. Battery Cable: Size as recommended by engine manufacturer for cable length as required. Include required interconnecting conductors and connection accessories.

4. Battery Compartment: Factory fabricated of metal with acid-resistant finish.

5. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation. The battery charging alternator shall have sufficient capacity to recharge the batteries with all parasitic loads connected within 4 hours after a normal engine starting sequence.

6. Battery Chargers: Unit shall comply with UL 1236, provide fully regulated, constant voltage, current limited, battery charger for each battery bank. It will include the following features:

    a. Operation: Equalizing-charging rate based on generator set manufacturer's recommendations shall be initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved at battery terminals. Unit shall then be automatically switched to a lower float-charging mode and shall continue to operate in that mode until battery is discharged again.

    b. Automatic Temperature Compensation: Adjust float and equalize voltages for variations in ambient temperature from minus 20 deg C to plus 40 deg C to prevent overcharging at high temperatures and undercharging at low temperatures.

    c. Automatic Voltage Regulation: Maintain constant output voltage regardless of input voltage variations up to plus or minus 10 percent.

    d. Safety Functions: Sense abnormally low battery voltage and close contacts providing low battery voltage indication on control and monitoring panel. Sense high battery voltage and loss of ac input or dc output of battery charger. Either condition shall close contacts that provide a battery-charger malfunction indication at system control and monitoring panel.

    e. Provide LED indication of general charger condition, including charging, faults, and modes. Provide a LCD display to indicate charge rate and battery voltage. Charger shall provide relay contacts for fault conditions as required by NFPA110.

    f. Enclosure and Mounting: NEMA, Type 1, wall-mounted cabinet.

2.4 CONTROL AND MONITORING

A. Engine generator control shall be microprocessor based and provide automatic starting, monitoring, protection and control functions for the unit.

B. Automatic Starting System Sequence of Operation: When mode-selector switch on the control and monitoring panel is in the automatic position, remote-control contacts in one or more separate automatic transfer switches initiate starting and stopping of generator set. When mode-selector switch is switched to the on position, generator set starts. The off position of same switch initiates generator-set shutdown. (Switches with different configurations but equal functions are acceptable.) When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms. Operation of the local (generator set-mounted) and/or remote emergency-stop switch also shuts down generator set.

C. Manual Starting System Sequence of Operation: Switching on-off switch on the generator control panel to the on position starts generator set. The off position of same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms. Operation of the local (generator set-mounted) and/or remote emergency-stop switch also shuts down generator set.

D. Configuration: Operating and safety indications, protective devices, system controls, engine gages and associated equipment shall be grouped in a common control and monitoring panel. Mounting method shall isolate the control panel from generator-set vibration. AC output power circuit breakers and other output power equipment shall not be mounted in the control enclosure.

E. Indicating and Protective Devices and Controls: As required by NFPA 110 for Level 1 system, and the following:

1. AC voltmeter (3-phase, line to line and line to neutral values).

2. AC ammeter (3-phases).

3. AC frequency meter.

4. AC kVA output (total and for each phase). Display shall indicate power flow direction.

5. Ammeter-voltmeter displays shall simultaneously display conditions for all three phases.

6. Emergency Stop Switch: Switch shall be a red “mushroom head” pushbutton device complete with lock-out/tag-out provisions. Depressing switch shall cause the generator set to immediately stop the generator set and prevent it from operating.

7. Fault Reset Switch: Supply a dedicated control switch to reset/clear fault conditions.

8. DC voltmeter (alternator battery charging).

9. Engine-coolant temperature gage.

10. Engine lubricating-oil pressure gage.

11. Running-time meter.

12. Generator-voltage and frequency digital raise/lower switches. Rheostats for these functions are not acceptable. The control shall adjustment of these parameters in a range of plus or minus 5% of the voltage and frequency operating set point (not nominal voltage and frequency values.)

13. AC Protective Equipment: The control system shall include over/under voltage, over current, short circuit, loss of voltage reference, and over excitation shut down protection. There shall be an overload warning, and overcurrent warning alarm.

14. Status LED indicating lamps to indicate remote start signal present at the control, existing alarm condition, not in auto, and generator set running.

15. A graphical display panel with appropriate navigation devices shall be provided to view all information noted above, as well as all engine status and alarm/shutdown conditions (including those from an integrated engine emission control system). The display shall also include integrated provisions for adjustment of the gain and stability settings for the governing and voltage regulation systems.

16. Panel lighting system to allow viewing and operation of the control when the generator room or enclosure is not lighted.

17. DC control Power Monitoring: The control system shall continuously monitor DC power supply to the control, and annunciate low or high voltage conditions. It shall also provide an alarm indicating imminent failure of the battery bank based on degraded voltage recover on loading (engine cranking).

2.5 GENERATOR, EXCITER, AND VOLTAGE REGULATOR

A. Comply with NEMA MG 1.

B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.

C. Electrical Insulation: Class H

D. Temperature Rise: 150 / Class H, Standby environment.

E. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, over speed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.

F. Shunt Excitation

G. Enclosure: Drip-proof.

H. Voltage Regulator: SCR type, Separate from exciter, providing performance as specified. The voltage regulation system shall be microprocessor-controlled, full wave rectified, and provide a pulse-width modulated signal to the exciter. No exceptions or deviations to these requirements will be permitted.

I. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.

J. Subtransient Reactance: 15 percent maximum, based on the rating of the engine generator set.

2.6 OUTDOOR GENERATOR-SET ENCLOSURE

A. Description: Weather Aluminum housing. Multiple panels shall be lockable and provide adequate access to components requiring maintenance. Instruments, control, and battery system shall be mounted within enclosure.

B. Construction:

1. Hinged Doors: With padlocking provisions. Restraint/Hold back hardware to prevent door to keep door open at 180 degrees during maintenance. Rain lips over all doors.

2. Exhaust System:

a. Muffler Location: Within enclosure.

3. Hardware: All hardware and hinges shall be stainless steel.

4. Wind Rating: Wind rating shall be 150 mph

5. Mounting Base: Suitable for mounting on sub-base fuel tank or housekeeping pad.

6. A weather protective enclosure shall be provided which allows the generator set to operate at full rated load with a static pressure drop equal to or less than 0.5 inches of water.

C. Engine Cooling Airflow through Enclosure: Housing shall provide ample airflow for engine generator operation at rated load in an ambient temperature of 40 deg C.

D. Sound Performance: Reduce the sound level of the engine generator while operating at full rated load to a maximum of 73 dBA measured at any location 7 m from the engine generator in a free field environment.

E. Site Provisions:

1. Lifting: Complete assembly of engine generator, enclosure shall be designed to be lifted into place as a single unit, using spreader bars.

2.7 VIBRATION ISOLATION DEVICES

A. Vibration Isolation: Generators installed on grade shall be provided with elastomeric isolator pads integral to the generator, unless the engine manufacturer requires use of spring isolation.

2.8 FINISHES

A. Indoor and Outdoor Enclosures and Components: Powder-coated and baked over corrosion-resistant pretreatment and compatible primer. Manufacturer's standard color or as directed on the drawings.

2.9 SOURCE QUALITY CONTROL

A. Prototype Testing: Factory test engine-generator set using same engine model, constructed of identical or equivalent components and equipped with identical or equivalent accessories.

1. Tests: Comply with NFPA 110, Level 1 Energy Converters. In addition, the equipment engine, skid, cooling system, and alternator shall have been subjected to actual prototype tests to validate the capability of the design under the abnormal conditions noted in NFPA110. Calculations and testing on similar equipment which are allowed under NFPA110 are not sufficient to meet this requirement.

B. Project-Specific Equipment Tests: Before shipment, factory test engine-generator set manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests:

1. Test engine generator set manufactured for this Project to demonstrate compatibility and functionality.

2. Full load run.

3. Maximum power.

4. Voltage regulation.

5. Steady-state governing.

6. Single-step load pickup.

7. Simulated safety shutdowns.

8. Provide 14 days' advance notice of tests and opportunity for observation of tests by Owner's representative.

2.10 AUTOMATIC TRANSFER SWITCH

A. The automatic transfer switch(es) shall be furnished by the manufacturer of the engine- generator set so as to maintain system compatibility and local service responsibility for the complete emergency power system. It shall be listed by Underwriter's Laboratory, Standard 1008. Representative production samples of the transfer switch supplied shall have demonstrated through tests the ability to withstand at least 10,000 mechanical operation cycles. One operation cycle is the electrically operated transfer from normal to emergency and back to normal. Wiring must comply with NEC table 373-6(b). The manufacturer shall furnish schematic and wiring diagrams for the particular automatic transfer switch and a typical wiring diagram for the entire system.

B. The automatic transfer switch at **Highland Oaks Lift Station** shall be rated for 200 amperes continuous operation in ambient temperatures of -40 Degrees Fahrenheit (-40 Degrees Celsius) to +122 Degrees Fahrenheit (+50 Degrees Celsius) and is **NOT** required to be service entrance listed. The automatic transfer switch at **Ruelle De Chenes Lift Station** shall be rated for 225 amperes continuous operation in ambient temperatures of -40 Degrees Fahrenheit (-40 Degrees Celsius) to +122 Degrees Fahrenheit (+50 Degrees Celsius) and is **NOT** required to be service entrance listed. Main power switch contacts shall be rated for 250 Volt AC minimum. Where the line side overcurrent protection is provided by circuit breakers, the short circuit withstand and closing ratings shall be 35,000 amperes RMS. These RMS symmetrical fault current ratings shall be the rating listed in the UL listing or component recognition procedures for the transfer switch. All withstand test shall be performed with the overcurrent protective devices located external to the transfer switch.

C. The transfer switch shall be double throw construction, positively electrically and mechanically interlocked to prevent simultaneous closing and mechanically held in both normal and emergency positions. Independent break before make action shall be used to positively prevent dangerous source to source connections. When switching the neutral, this action prevents the objectionable ground currents and nuisance ground fault tripping that can result from overlapping designs. The transfer switch shall be approved for manual operation. The electrical operating means shall be by electric solenoid. Every portion of the contactor is to be positively mechanically connected. No clutch or friction drive mechanism is allowed, and parts are to be kept to a minimum. This transfer switch shall not contain integral overcurrent devices in the main power circuit, including molded case circuit breakers or fuses.

D. The transfer switch electrical actuator shall have an independent disconnect means

to disable the electrical operation during manual switching. Maximum electrical transfer time in either direction shall be 160 milliseconds, exclusive of time delays. Main switch contacts shall be high pressure silver alloy contacts to resist burning and pitting for long life operation.

E. There shall be two SPDT, 10 ampere, 250 volt auxiliary switches on both normal and emergency sides, operated by the transfer switch. Full rated neutral bar with lugs for normal, emergency and load conductors shall be provided inside the cabinet.

F. All control equipment shall be mounted on the inside of the cabinet door in a metal lockable enclosure with transparent safety shield to protect all solid state circuit boards. This will allow for ease of service access when main cabinet lockable door is open, but to prevent access by unauthorized personnel. Control boards shall have installed cover plates to avoid shock hazard while making control adjustments. The solid state voltage sensors and time delay modules shall be plug-in circuit boards with silver or gold contacts for ease of service.

G. A solid state undervoltage sensor shall monitor all phases of the normal source and provide adjustable ranges for field adjustments for specific application needs. Pick-up and drop-out settings shall be adjustable from a minimum of 70% to a maximum of 95% of nominal voltage. A utility sensing interface shall be used, stepping down line voltage to 24VAC, helping to protect the printed circuit board from voltage spikes and increasing personnel safety when troubleshooting.

H. The control unit shall signal the engine-generator set to start in the event of a power interruption. A set of contacts shall close to start the engine and open for engine shutdown. A solid state time delay start (adjustable, .1 to 10 seconds) shall delay this signal to avoid nuisance start-ups on momentary voltage dips or power outages.

I. The control units shall transfer the load to the engine-generator set after it reaches proper voltage and frequency. A solid state time delay (adjustable, 5 seconds-3 minutes) shall delay this transfer to allow the engine-generator to warm-up before application of load. There shall be a switch to bypass this warm-up timer when immediate transfer is required.

J. The controller shall retransfer the load to the line after normal power restoration. A return to utility timer (adjustable, 1-30 minutes) shall delay this transfer to avoid short term normal power restoration.

K. The operating power for transfer and retransfer shall be obtained from the source to which the load is being transferred. Controls shall provide an automatic retransfer of the load from emergency to normal if the emergency source fails with the normal source available.

L. The control shall signal the engine-generator to stop after the load retransfers to

normal. A solid state engine cool down timer (adjustable, 1-30 minutes) shall permit the engine to run unloaded to cool down before shutdown.

M. Provide an engine minimum run timer (adjustable, 5-30 minutes) to ensure an adequate engine run period.

N. Provide a solid state plant exercise clock to start the generator set exercise period. Clock shall have a one week cycle and be powered by the load side of the transfer switch. A battery must be supplied to maintain the circuit board clock operation when the load side of the transfer switch is de-energized. Include a switch to select if the load will transfer to the engine-generator set during the exercise period.

O. Control shall include a digital display interface enabling the operator to establish unit exercise time within a twenty four hour period. Additional switch settings enable any combination of days within a week for unit exercise. This control is completely self-contained, eliminating the need for the operator to handle pins and jumper wires.

P. Front mounted controls shall include a selector switch to provide for a NORMAL TEST mode with full use of time delays, FAST TEST mode which bypasses all time delays to allow for testing the entire system in less than one minute, or AUTOMATIC mode to set the system for normal operation.

Q. Provide bright lamps to indicate the transfer switch position in either UTILITY (white) or EMERGENCY (red). A third lamp is needed to indicate STANDBY OPERATING (amber). These lights must be energized from utility or the engine-generator set.

R. Provide a manual operating handle to allow for manual transfer. This handle must be mounted inside the lockable enclosure so accessible only by authorized personnel.

S. Provide LED status lights to give a visual readout of the operating sequence. This shall include utility on , engine warmup, engine warmup bypass, standby voltage "ready", standby frequency "ready", standby on, transfer to standby, inphase monitor, time delay neutral, return to utility, engine cool down, engine minimum run and fast test mode.

T. The transfer switch mechanism and controls are to be mounted in a NEMA 4X Stainless Steel enclosure.

U. The transfer switch(es) shall be provided with an additional set of lugs for mechanical connecting load side conductors.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with packaged engine-generator manufacturers' written installation, application, and alignment instructions and with NFPA 110.

B. Equipment shall be installed by the contractor in accordance with final submittals and contract documents. Installation shall comply with applicable state and local codes as required by the authority having jurisdiction. Install equipment in accordance with manufacturer's instructions and instructions included in the listing or labeling of UL listed products.

C. Installation of equipment shall include furnishing and installing all interconnecting wiring between all major equipment provided for the on-site power system. The contractor shall also perform interconnecting wiring between equipment sections (when required), under the supervision of the equipment supplier.

D. Equipment shall be installed on concrete housekeeping pads. Equipment shall be permanently fastened to the pad in accordance with manufacturer’s instructions and seismic requirements of the site.

E. Equipment shall be initially started and operated by representatives of the manufacturer. All protective settings shall be adjusted as instructed by the consulting engineer.

F. All equipment shall be physically inspected for damage. Scratches and other installation damage shall be repaired prior to final system testing. Equipment shall be thoroughly cleaned to remove all dirt and construction debris prior to initial operation and final testing of the system.

G. On completion of the installation by the electrical contractor, the generator set supplier shall conduct a site evaluation to verify that the equipment is installed per manufacturer’s recommended practice.

3.2 ON-SITE ACCEPTANCE TEST

A. The complete installation shall be tested to verify compliance with the performance requirements of this specification following completion of all site work. Testing shall be conducted by representatives of the manufacturer, with required fuel supplied by Contractor. The Engineer shall be notified in advance and shall have the option to witness the tests. The generator set manufacturer shall provide a site test specification covering the entire system. Tests shall include:

B. Prior to start of active testing, all field connections for wiring, power conductors, and bus bar connections shall be checked for proper tightening torque.

C. Installation acceptance tests to be conducted on site shall include a "cold start" test, a two hour full load (resistive) test, and a one-step rated load pickup test in accordance with NFPA 110. Provide a resistive load bank and make temporary connections for full load test, if necessary.

D. Perform a power failure test on the entire installed system. This test shall be conducted by opening the power supply from the utility service, and observing proper operation of the system for at least 2 hours. Coordinate timing and obtain approval for start of test with site personnel.

3.3 TRAINING

A. The equipment supplier shall provide training for the facility operating personnel covering operation and maintenance of the equipment provided. Training date shall be coordinated with the facility owner.

3.4 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

3.5 SERVICE AND SUPPORT

A. The generator set supplier shall maintain service parts inventory for the entire power system at a central location which is accessible to the service location 24 hours per day, 365 days per year. The inventory shall have a commercial value of $3 million or more. The manufacturer of the generator set shall maintain a central parts inventory to support the supplier, covering all the major components of the power system, including engines, alternators, control systems, paralleling electronics, and power transfer equipment.

B. The generator set shall be serviced by a local service organization that is trained and factory certified in generator set service. The supplier shall maintain an inventory of critical power system replacement parts in the local service location. Service vehicles shall be stocked with critical replacement parts. The service organization shall be on call 24 hours per day, 365 days per year. The service organization shall be physically located within 75 of the site.

C. The manufacturer shall maintain model and serial number records of each generator set provided for at least 20 years.

3.6 SERVICE AGREEMENT:

A. The supplier shall include in the base price, a one-year service agreement. The maintenance shall be performed by factory authorized service technicians capable of servicing both the engine generator set and the transfer switch (es). This agreement shall include the following:

1. Generator supplier must have an in-house rental fleet with equipment sized to back up this project site.
2. All engine maintenance as recommended by the service manual.
3. All electrical controls maintenance and calibrations as recommended by the manufacturer.
4. All auxiliary equipment as a part of the emergency systems.
5. The supplier shall guarantee emergency service.
6. All expendable maintenance items are to be included in this agreement.
7. A copy of this agreement and a schedule shall be given to the Owner at the time of his acceptance, showing what work is to be accomplished and when.

END OF SECTION 16200

THIS PAGE LEFT BLANK INTENTIONALLY

SECTION 16400 - SERVICE & DISTRIBUTION SYSTEM – REVISION 1

PART 1 - GENERAL

1.01 SERVICE

A. The Electrical Service at both sites shall be 120/240 volts, single phase, three (3) wire. Contractor is referred to Drawings for details of work at the service(s).

B. Contractor shall furnish all materials, labor, coordination, and other Work in connection with the electrical service as shown on the Drawings. Coordinate with Entergy for the new service(s).

1.02 DISTRIBUTION EQUIPMENT

A. The Contractor shall furnish and install apparatus (panelboards, breakers, disconnects, etc.) required for a complete installation.

PART 2 - PRODUCTS

2.01 PANELBOARDS

A. The panels designated as “R”, & “H” shall be Square D type NQOD or approved equivalent. All breakers shall have an interrupting capacity of 10,000 amperes.

B. All circuit breakers shall be bolt on type. All buses shall be copper.

C. Provide separate ground and neutral bus bars in all panels. Ground and neutral shall be bonded together only at the service entrance.

D. Panels shall be arranged essentially as scheduled on Drawings. Contractor shall provide a copy of panel schedules as drawn for use by the supplier in preparing Shop Drawings for approval.

2.02 SAFETY DISCONNECTS

A. Disconnect switches shall be general duty type, fusible or non-fusible as shown, with enclosure, voltage, amperage, etc. as shown.

B. For each disconnect whose purpose is not readily apparent (such as by location immediately adjacent to load served), provide an engraved identifying nameplate describing the load or use of the disconnect and a matching or coordinating label for the load.

2.03 FUSES

A. Fuses shall be Class RK-5, 250 volts dual element time-delay type, with 200,000 a.i.c.

PART 3 - EXECUTION

3.01 INSTALLATION

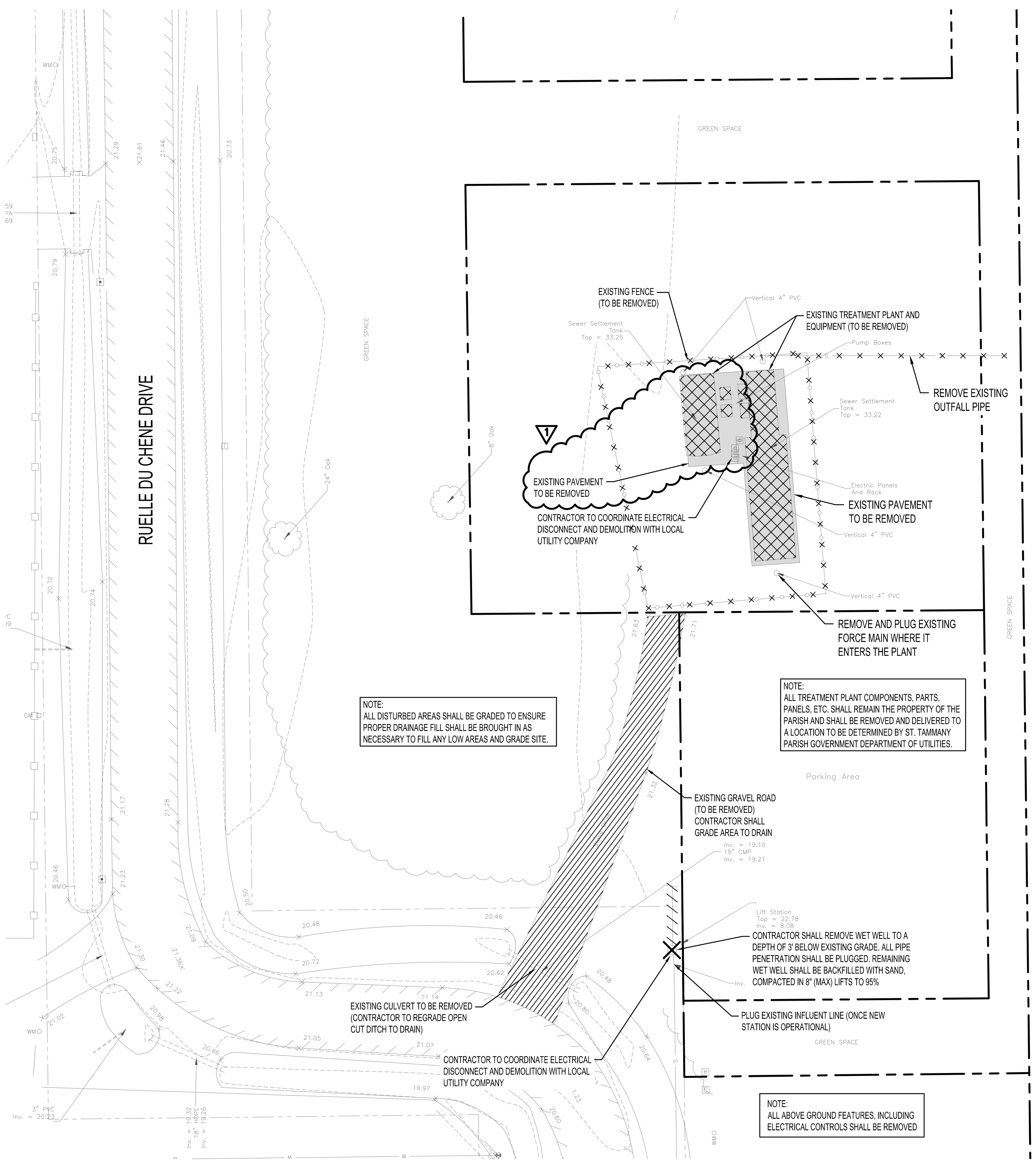
A. Where practicable, install all panels with the top of the trim at 6'-6" above the finished floor.

B. Tighten all lugs, connectors, screws, terminals, etc. to manufacturer's specifications or UL Standards.

C. Provide a typewritten directory or engraved labels (as applicable) for each panel for branch circuit identification. Use permanent room numbering and names where applicable.

D. Provide engraved labels identifying all panels, secured with screws or permanent adhesive.

END OF SECTION 16400



VICINITY MAP
N.T.S.

DEMOLITION NOTES

1. THE INTENT OF THE DEMOLITION PLAN IS TO IDENTIFY THOSE ITEMS ON THE SURVEY THAT WILL NEED TO BE REMOVED TO FACILITATE THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LIMITS OF DEMOLITION AND REMOVAL REQUIRED TO CONSTRUCT PROPOSED IMPROVEMENTS.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSAL, IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES, OF ALL EXISTING MATERIALS NECESSARY TO FACILITATE CONSTRUCTION OF THE REQUIRED IMPROVEMENTS.
3. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING OF THE DEBRIS (UNLESS OTHERWISE NOTED) IN A LAWFUL MANNER, DAILY. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.
4. **THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THE PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER/PARISH ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES FOR ON SITE LOCATIONS OF THE EXISTING UTILITIES.**
5. SITE IS OCCUPIED BY EXISTING UTILITIES. IT IS THE CONTRACTORS RESPONSIBILITY TO CONTACT ALL UTILITY COMPANIES THAT MAY HAVE UTILITIES ON THE SITE TO GET A DETERMINATION IF ANY EXISTING UTILITIES WILL BE IMPACTED.
6. THE CONTRACTOR SHALL COORDINATE WITH THE RESPECTIVE UTILITY COMPANY PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAYBE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.
7. ALL AREAS WHERE PAVEMENT, UTILITIES, CONDUITS, AND/OR UTILITY STRUCTURES HAVE BEEN REMOVED SHALL BE BACKFILLED WITH STRUCTURAL FILL MATERIAL. ALL STRUCTURAL FILL MATERIAL SHALL BE PLACED AND COMPACTED PER THE REQUIREMENTS OF THE SPECIFICATIONS.
8. ADEQUATE EROSION CONTROL DEVICES ARE TO BE INSTALLED PRIOR TO THE START OF DEMOLITION ACTIVITIES.
9. ANY DAMAGE TO EXISTING IMPROVEMENTS TO REMAIN SHALL BE REPLACED AT CONTRACTOR'S EXPENSE. IMPROVEMENTS SHALL BE EQUAL TO OR BETTER THAN EXISTING.
10. PRIOR TO THE BEGINNING OF DEMOLITION, CONTRACTOR SHALL LOCATE AND MARK LIMITS OF CONSTRUCTION. NO CONSTRUCTION ACTIVITIES SHALL TAKE PLACE OUTSIDE OF THOSE LIMITS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE SITE PRIOR TO SUBMITTING A BID TO DETERMINE THE COMPLETE SCOPE OF SERVICES.
12. PRIOR TO ANY WORK, THE CONTRACTOR SHALL CONTACT THE LOUISIANA ONE CALL SYSTEM AT 811. THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY REMOVALS WHETHER LOCATED BY THE ONE CALL SYSTEM OR NOT.
13. THE CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION MEETING ON SITE WITH ALL UTILITY COMPANIES TO COORDINATE REMOVAL AND RELOCATION BEFORE ANY CONSTRUCTION ACTIVITIES BEGIN.
14. ALL DISTURBED AREAS SHALL BE GRADED, RECEIVE 4" OF TOP SOIL, SEED OR SODDED AND WATERED AS NECESSARY UNTIL A HEALTHY STAND OF VEGETATION IS ACHIEVED.
15. PLUG ANY EXISTING WATER SERVICE LINES TO THE SITE.

LEGEND

×	EXISTING SITE FEATURE TO BE REMOVED
—×—×—×—	EXIST. FEATURE TO BE REMOVED
\\\\\\\\	EXIST. FORCEMAIN TO BE ABANDONED IN PLACE AND FILL WITH FLOWABLE FILL
(crosshatch)	EXIST. EQUIPMENT TO BE REMOVED
(hatch)	EXIST. GRAVEL TO BE REMOVED
(shaded)	EXIST. PAVEMENT TO BE REMOVED

NOTE:
CONTRACTOR SHALL KEEP EXISTING LIFT STATION AND TREATMENT PLANT IN OPERATION UNTIL NEW RUELLE DU CHENE PUMP STATION IS FULLY OPERATIONAL.
CONTRACTOR SHALL THEN PLUG EXISTING LINES, RE-ROUTE SEWER, SHUT DOWN LIFT STATIONS, TREATMENT PLAT, ETC. AS INDICATED IN THE SUGGESTED SEQUENCE OF CONSTRUCTION (OR OTHER APPROVED PLAN)

SEWER TREATMENT PLANT DEMOLITION NOTES:
- ALL RESIDUAL WASTEWATER, SOLIDS, SLUDGE, ETC. SHALL BE REMOVED AND PROPERLY DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS AND REQUIREMENTS.
- RESIDUAL WASTEWATER, SOLIDS AND SLUDGE CANNOT BE LEFT IN PLACE OR RELEASED TO THE GROUND OR SURFACE WATERS.
- SLUDGES AND OTHER SOLIDS MUST BE DISPOSED OF IN A PROPER SOLID WASTE DISPOSAL FACILITY.
- CONTRACTOR SHALL OBTAIN ALL PERMITS AND APPROVALS REQUIRED FOR DISPOSAL.

RUELLE DU CHENE
DEMOLITION PLAN

SCALE IN FEET
10 5 0 10 20 30

HIGH TIDE CONSULTANTS LLC
409 W 21ST AVENUE – SUITE B
COVINGTON, LA 70433
www.hightidela.com
HTC PROJ# 23-162

DEPT. OF UTILITIES
ST. TAMMANY PARISH GOVERNMENT
620 N. TYLER STREET
COVINGTON, LA 70433

No.	DESCRIPTION OF REVISION	DATE:
1	ADDENDUM 1	9/20/2024

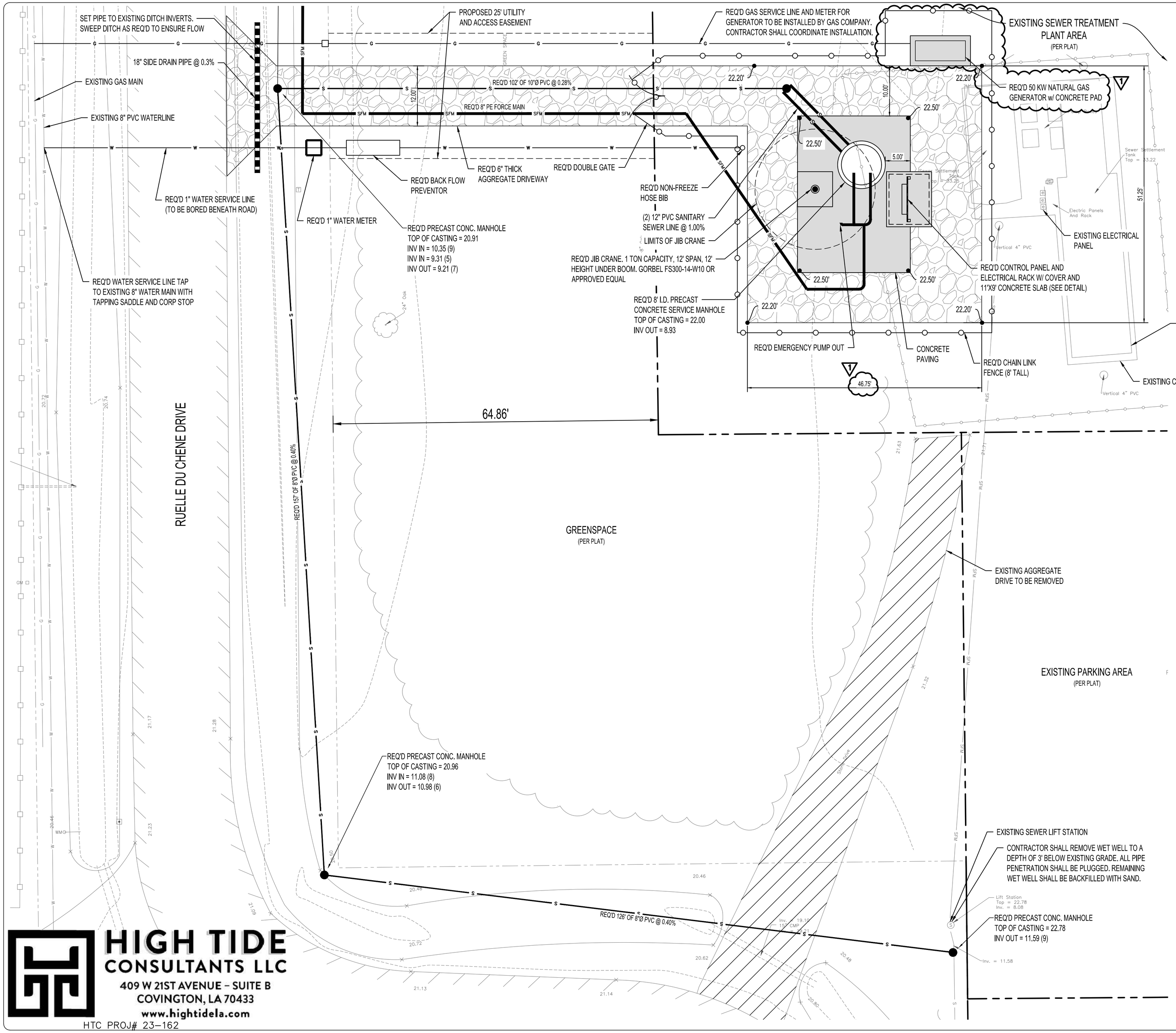
DESIGNED BY:	RCG
DRAWN BY:	KRG
CHECKED BY:	BSG
SUBMITTED BY:	HIGH TIDE CONSULTANTS
PROJECT No.:	TU23000169 TU23000172
ISSUE DATE:	8/12/24
APPROVED BY:	RCG
SHEET SIZE:	ANSI D
SCALE:	AS SHOWN

STATE OF LOUISIANA — RICHARD GALLOWAY, REG. No. 28543, REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING
9/20/2024

DOMINION AND HIGHLAND OAKS SEWER CONSOLIDATION
COVINGTON, LOUISIANA
PROJECT No.: TU23000169 & TU23000172

RUELLE DU CHENE DEMOLITION PLAN

SHEET NO.
11
SHEET 11 of 59



LEGEND - REQUIRED

- MANHOLE
- GRAVITY SEWER LINE
- SEWER FORCE MAIN
- 5" PORTLAND CEMENT CONCRETE PAVEMENT
- 6" AGGREGATE SURFACE COURSE
- 22.25' — SPOT ELEVATION
- WATER SERVICE LINE
- GAS LINE
- CHAINLINK FENCE (8' TALL)

NOTE:
CONTRACTOR SHALL GRADE SITE AS SHOWN AND ALL DISTURBED AREAS SHALL RECEIVE SEEDING, HYDROMULCH, AND WATER UNTIL SUBSTANTIAL GROWTH IS OBTAINED AT NO DIRECT PAY.

NOTE:
CONTRACTOR SHALL INSTALL A PERMANENT ALUMINUM BENCHMARK DISK, ENCASED IN CONCRETE AT THE CORNER OF PUMP STATION FACILITY. DISK SHALL HAVE DATE OF INSTALLATION AND ELEVATION IN FEET. DATUM IS TO BE NAVD83. INSTALLATION SHALL BE BY A LICENSED SURVEYOR.

NOTE:
SEE SHEET 6 FOR SUGGESTED SEQUENCE OF CONSTRUCTION

RUELLE DU CHENE PUMP STATION SITE LAYOUT PLAN

SCALE IN FEET
10 5 0 10 20 30

HIGH TIDE CONSULTANTS LLC
409 W 21ST AVENUE – SUITE B
COVINGTON, LA 70433
www.hightidela.com
HTC PROJ# 23–162

ST. TAMMANY PARISH GOVERNMENT

DEPT. OF UTILITIES
ST. TAMMANY PARISH GOVERNMENT
620 N. TYLER STREET
COVINGTON, LA 70433

No.	DESCRIPTION OF REVISION	DATE:
1	ADDENDUM 1	9/20/2024

DESIGNED BY: RCG
DRAWN BY: KRG
CHECKED BY: BSG
SUBMITTED BY: HIGH TIDE CONSULTANTS
PROJECT No.: TU23000169
TU23000172
ISSUE DATE: 8/12/24
APPROVED BY: RCG
SHEET SIZE: ANSI D
SCALE: AS SHOWN

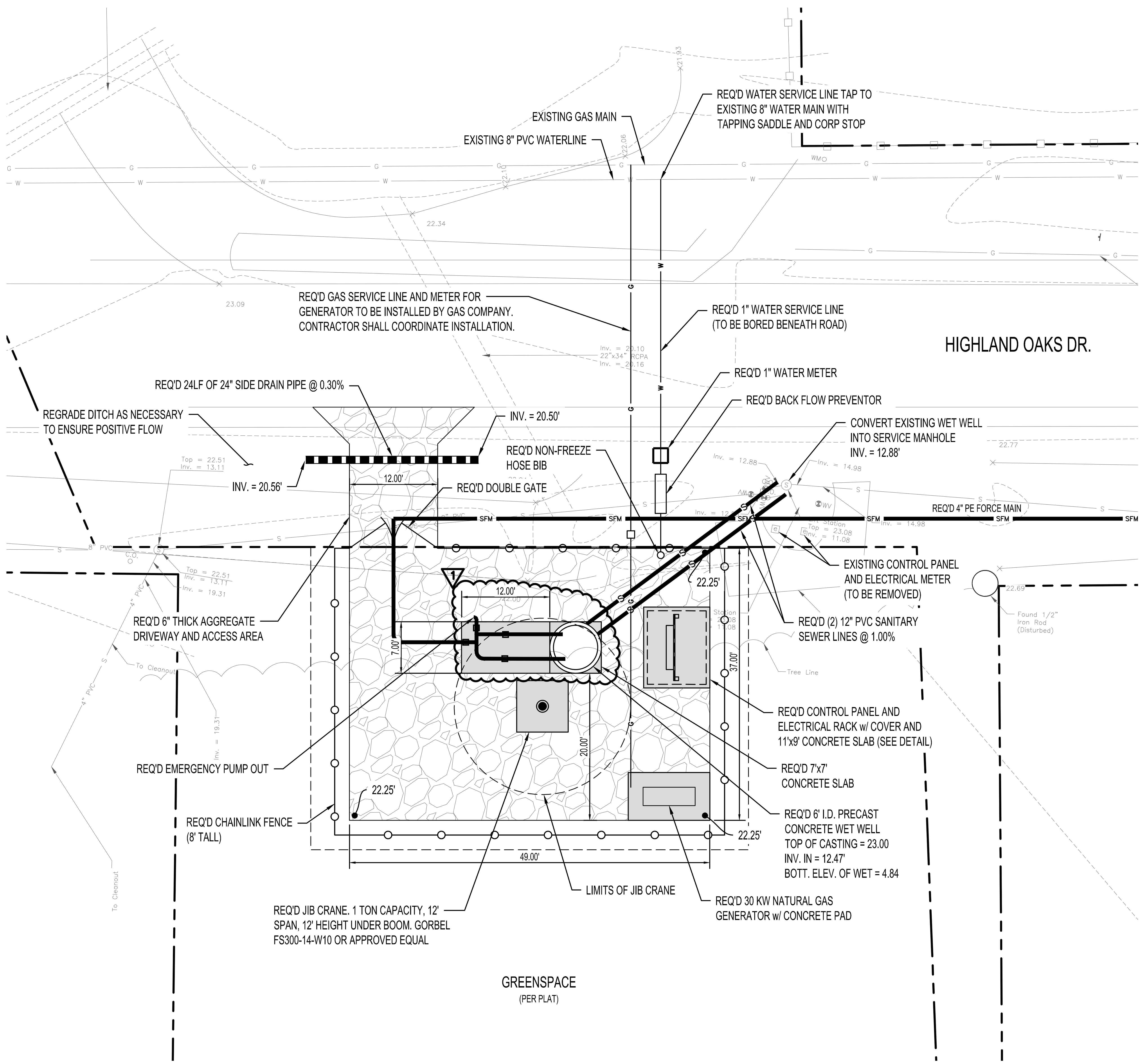
STATE OF LOUISIANA
RICHARD GALLOWAY
REG. NO. 36614
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING
9/20/2024

DOMINION AND HIGHLAND OAKS
SEWER CONSOLIDATION
COVINGTON, LOUISIANA
PROJECT No.: TU23000169 & TU23000172

RUELLE DU CHENE PUMP STATION
SITE LAYOUT PLAN

SHEET NO.
14
SHEET 14 of 59

HIGHLAND OAKS PUMP STATION SITE LAYOUT PLAN



LEGEND - REQUIRED

Symbol	Description
S	GRAVITY SEWER LINE
SFM	SEWER FORCE MAIN
	5" PORTLAND CEMENT CONCRETE PAVEMENT
	6" AGGREGATE SURFACE COURSE
22.25'	SPOT ELEVATION
W	WATER SERVICE LINE
G	GAS LINE
	CHAINLINK FENCE (8' TALL)

NOTE:
CONTRACTOR SHALL GRADE SITE AS SHOWN AND ALL DISTURBED AREAS SHALL RECEIVE SEEDING, HYDROMULCH, AND WATER UNTIL SUBSTANTIAL GROWTH IS OBTAINED AT NO DIRECT PAY.

SCALE IN FEET: 10 5 0 10 20 30

HIGH TIDE CONSULTANTS LLC
409 W 21ST AVENUE - SUITE B
COVINGTON, LA 70433
www.hightidela.com
HTC PROJ# 23-162

DEPT. OF UTILITIES
ST. TAMMANY PARISH GOVERNMENT
620 N. TYLER STREET
COVINGTON, LA 70433

No.	DESCRIPTION OF REVISION	DATE:
1	ADDENDUM 1	9/20/2024

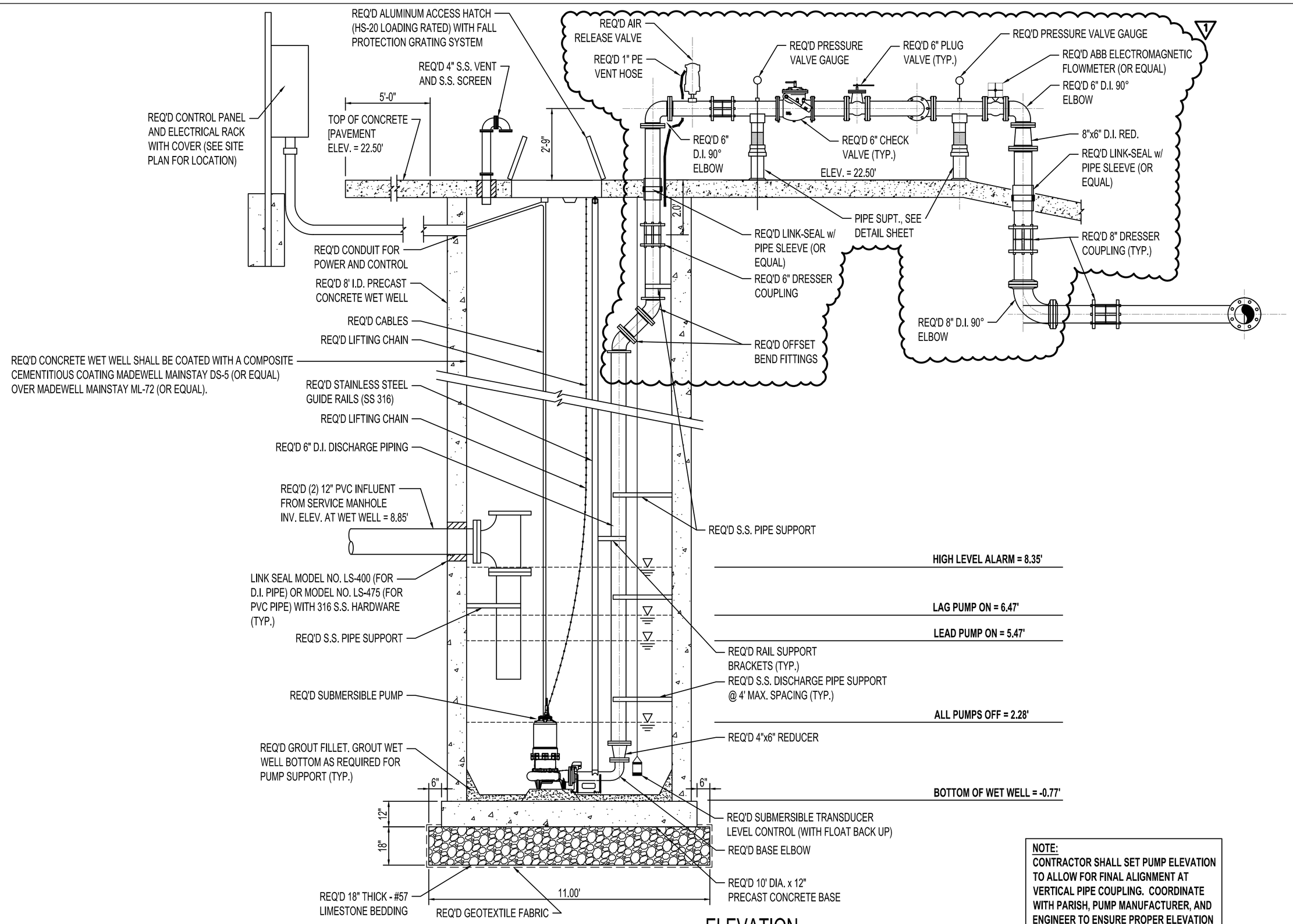
DESIGNED BY:	RCG
DRAWN BY:	KRG
CHECKED BY:	BSG
SUBMITTED BY:	HIGH TIDE CONSULTANTS
PROJECT No.:	TU23000169 TU23000172
ISSUE DATE:	8/12/24
APPROVED BY:	RCG
SHEET SIZE:	ANSI D
SCALE:	AS SHOWN

STATE OF LOUISIANA
RICHARD GALLOWAY
REG. No. 28543
REGISTERED PROFESSIONAL ENGINEER
IN CIVIL ENGINEERING
9/20/2024

DOMINION AND HIGHLAND OAKS
SEWER CONSOLIDATION
COVINGTON, LOUISIANA
PROJECT No.: TU23000169 & TU23000172

HIGHLAND OAKS PUMP STATION
SITE LAYOUT PLAN

SHEET NO.
15

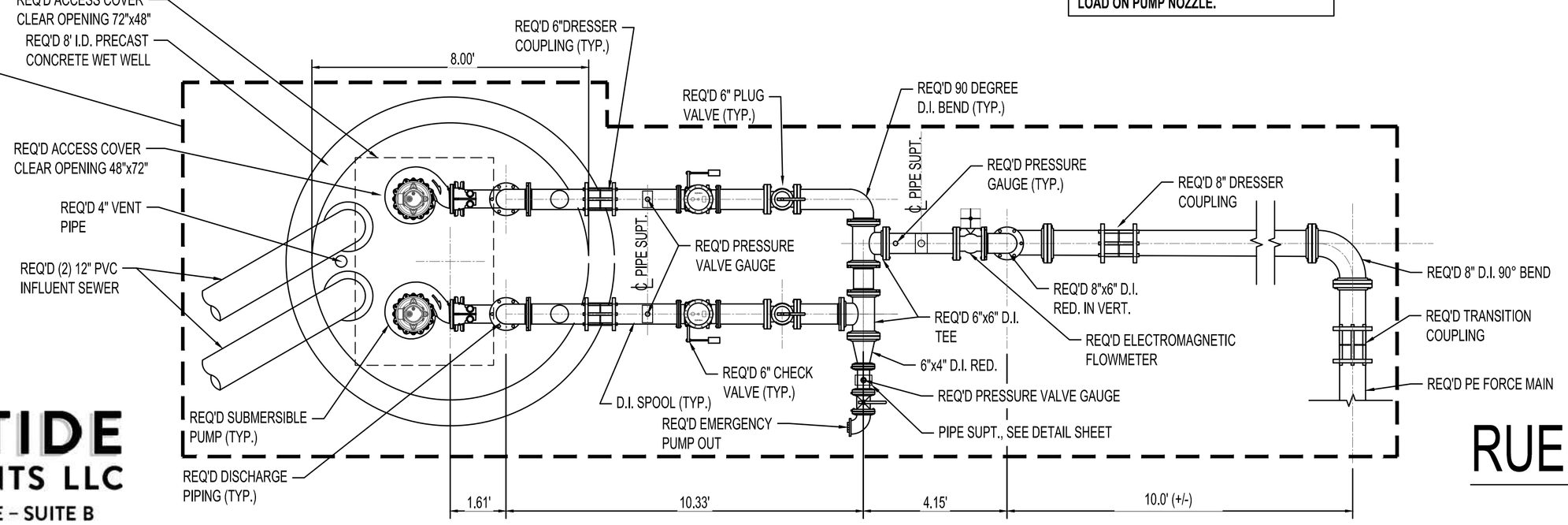


ELEVATION

N.T.S

NOTE:
CONTRACTOR SHALL SET PUMP ELEVATION TO ALLOW FOR FINAL ALIGNMENT AT VERTICAL PIPE COUPLING. COORDINATE WITH PARISH, PUMP MANUFACTURER, AND ENGINEER TO ENSURE PROPER ELEVATION CONTROLS ARE SET FOR PUMPS. PIPE SHALL BE SUPPORTED TO ACHIEVE ZERO LOAD ON PUMP NOZZLE.

NOTE:
ALL WORK, MATERIALS, AND EQUIPMENT INSTALLED/CONSTRUCTED IN THIS AREA TO BE INCLUDED IN ITEM NO. 122



PLAN

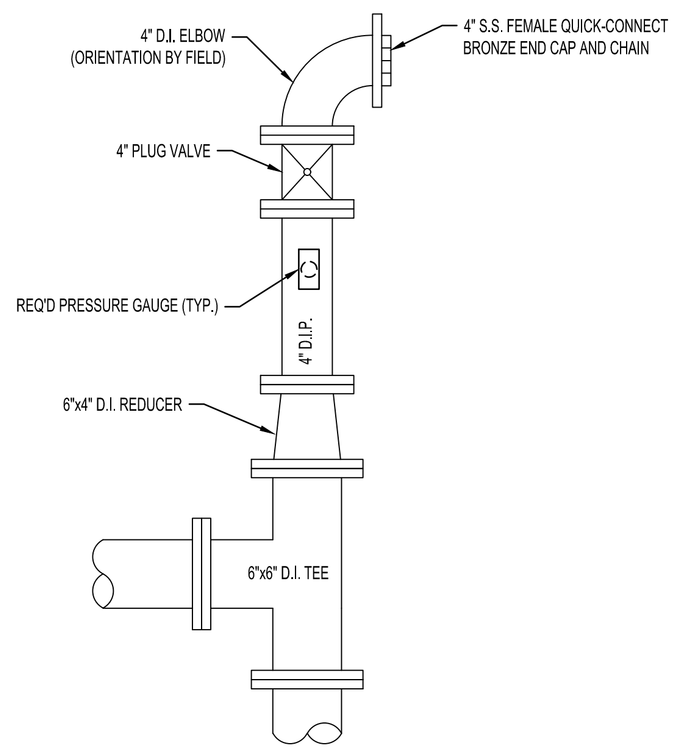
N.T.S

NOTES

1. PUMPS, GUIDE RAILS, BASE ELBOWS, AND ACCESS HATCHES SHALL BE SUPPLIED BY THE PUMP SUPPLIER, OR CERTIFIED AS COMPATIBLE BY THE RESPECTIVE MANUFACTURERS.
2. THE PRECISE LOCATION OF HATCHES, AND LOCATION/ SPACING OF PUMPS, GUIDE RAILS, AND BASE ELBOWS, SHALL BE AS RECOMMENDED BY THE MANUFACTURER.
3. ALL GUIDE RAILS, BRACKETS, CHAINS, LIFTING CABLES, BOLTS, NUTS, FASTENERS, AND ANY HARDWARE WITHIN THE WET WELL SHALL BE TYPE 316 STAINLESS STEEL.
4. ALL INTERNAL PIPING AND FITTINGS SHALL BE FLANGED DUCTILE IRON. PIPING SHALL BE INDEPENDENTLY SUPPORTED BY 316 STAINLESS STEEL ASSEMBLIES. THE THROUGH-WALL MECHANICAL SEALS SHALL NOT BE RELIED UPON FOR WEIGHT BEARING OR THRUST RESTRAINT.
5. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW OF A COMPLETE SET OF SHOP DRAWINGS OF EACH STRUCTURE AND FOR ALL EQUIPMENT IN THE WET WELL AND VALVE BOX SEPARATELY DETAILING DIMENSIONS, PIPE/ VALVES CLEARANCE, SIZES AND ANY OTHER NECESSARY DETAILS.
6. NON-BURIED PIPES, VALVES, AND FITTINGS SHALL BE COATED IN ACCORDANCE WITH SECTION 09800.
7. BEDDING MATERIAL SHALL BE 12" THICK COMPACTED LIMESTONE UNDERLAIN BY GEOTEXTILE FABRIC (GEOTEX 200ST OR EQ.)
8. ACCESS HATCHES AND GRATING SYSTEM SHALL MEET THE REQUIREMENTS OF OSHA STANDARD 29 CFR 1926.502(C). HOLD OPEN DEVICE AND HARDWARE SHALL BE TYPE 316 STAINLESS STEEL, HATCH AND GRATE SHALL BE BILCO OR EQUAL APPROVED BY ENGINEER.

PUMP DATA TABLE

NUMBER OF PUMPS	2
EFFICIENCY	69.2%
DESIGN CAPACITY PER PUMP, GPM	320
TOTAL DYNAMIC HEAD, FEET	60
DESIGN SPEED, RPM	1800
MIN, MOTOR HORSEPOWER PER/PUMP	11
MIN SIZE SOLIDS PASSED, INCH	3"
DISCHARGE SIZE, INCH	4"
IMPELLER DIAMETER, INCH	8.3"
MOTOR VOLTAGE	230
MOTOR PHASE	1 V
MODEL, FLYGT (w/ SMART RUN CONTROLLER OR APPROVED EQUAL	NP 3127 HT3



REQ'D EMERGENCY PUMP OUT ASSEMBLY

N.T.S

RUELLE DU CHENE PUMP STATION
PLAN AND ELEVATION

HIGH TIDE CONSULTANTS LLC
409 W 21ST AVENUE – SUITE B
COVINGTON, LA 70433
www.hightidela.com
HTC PROJ# 23-162

DEPT. OF UTILITIES
ST. TAMMANY PARISH GOVERNMENT
620 N. TYLER STREET
COVINGTON, LA 70433

No.	DESCRIPTION OF REVISION	DATE:
1	ADDENDUM 1	9/20/2024

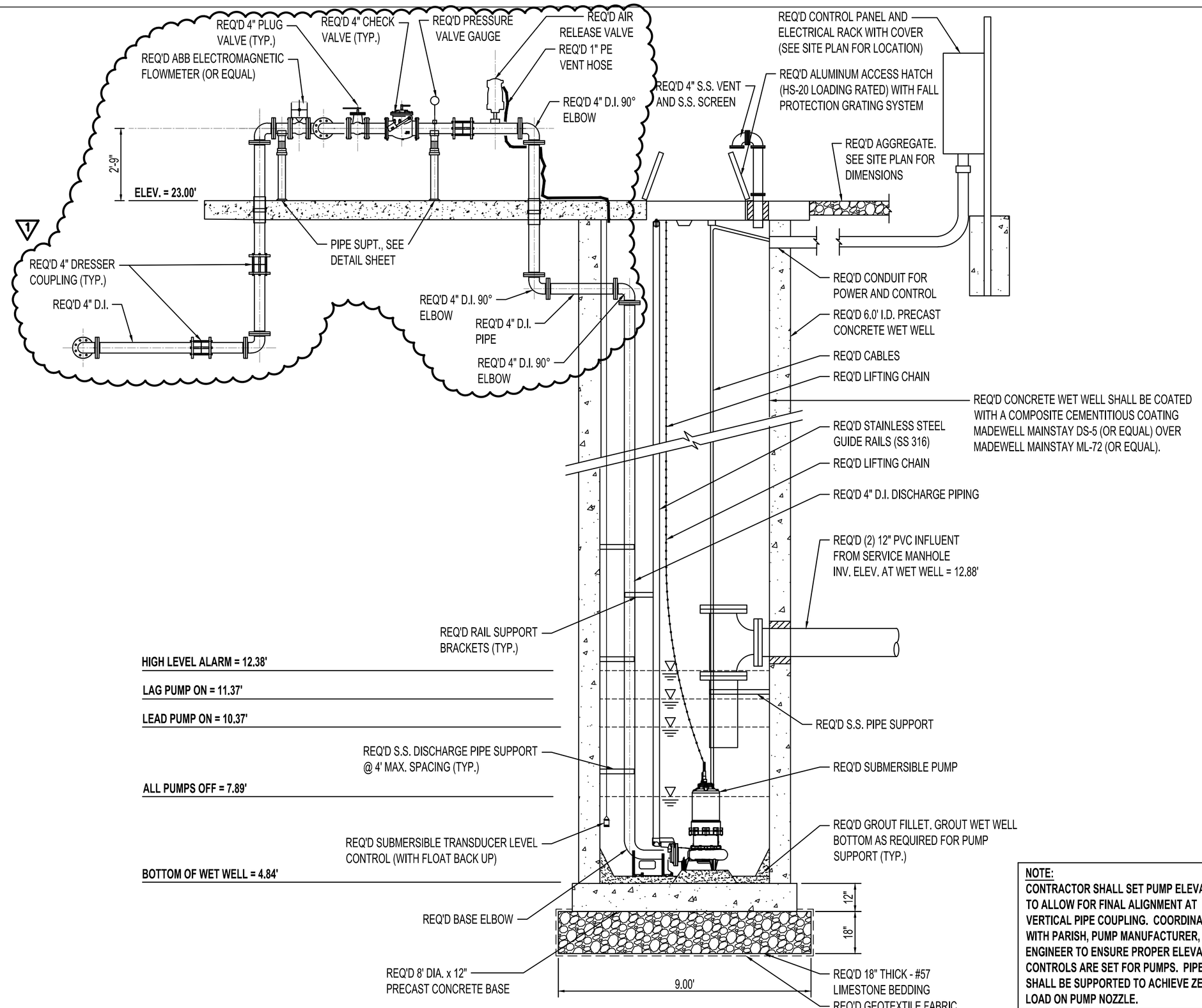
DESIGNED BY: RCG
DRAWN BY: KRC
CHECKED BY: BSG
SUBMITTED BY: HIGH TIDE CONSULTANTS
PROJECT No.: TU23000169
TU23000172
ISSUE DATE: 8/12/24
APPROVED BY: RCG
SHEET SIZE: ANSI D
SCALE: AS SHOWN

STATE OF LOUISIANA
RICHARD CALLOWAY
REG. No. 39443
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING
9/20/2024

DOMINION AND HIGHLAND OAKS
SEWER CONSOLIDATION
COVINGTON, LOUISIANA
PROJECT No.: TU23000169 & TU23000172

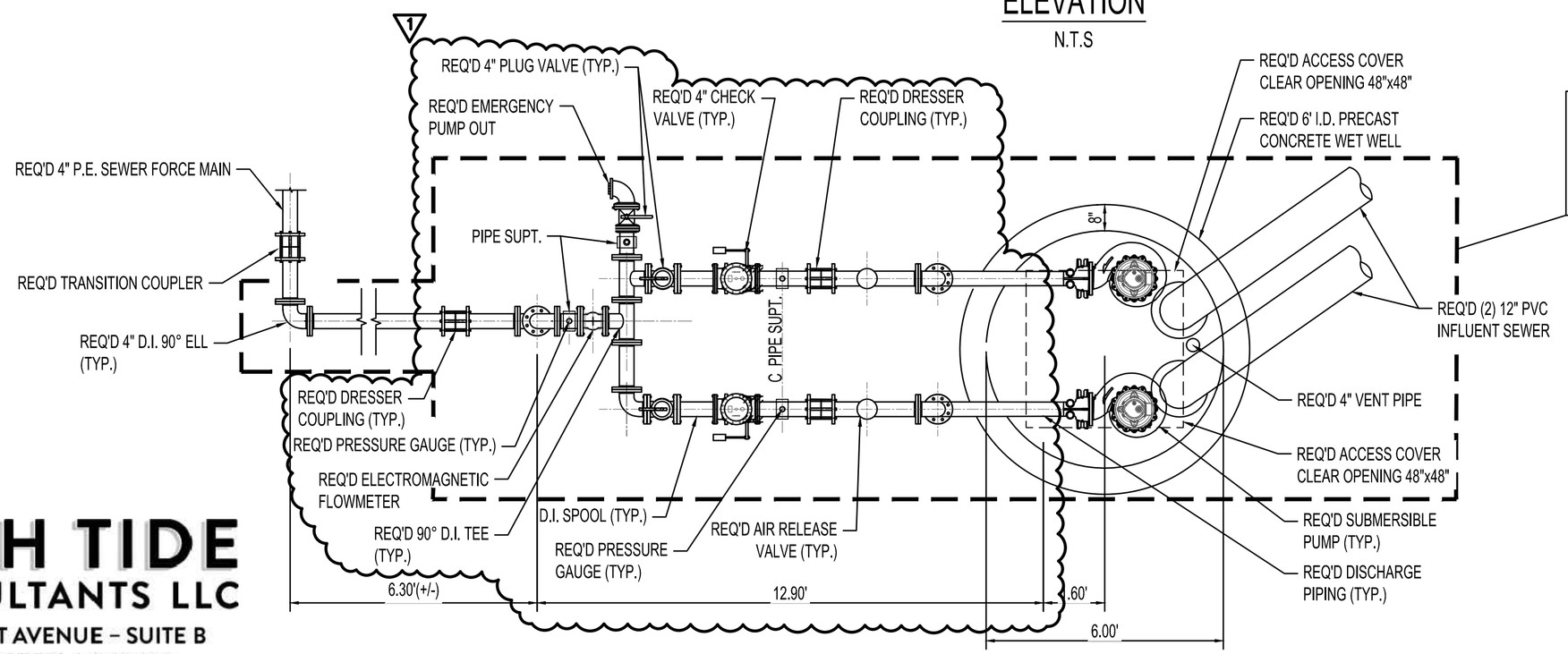
RUELLE DU CHENE PUMP STATION
PLAN AND ELEVATION

SHEET NO.
16
SHEET 16 of 59



ELEVATION
N.T.S

NOTE:
CONTRACTOR SHALL SET PUMP ELEVATION TO ALLOW FOR FINAL ALIGNMENT AT VERTICAL PIPE COUPLING. COORDINATE WITH PARISH, PUMP MANUFACTURER, AND ENGINEER TO ENSURE PROPER ELEVATION CONTROLS ARE SET FOR PUMPS. PIPE SHALL BE SUPPORTED TO ACHIEVE ZERO LOAD ON PUMP NOZZLE.



PLAN
N.T.S

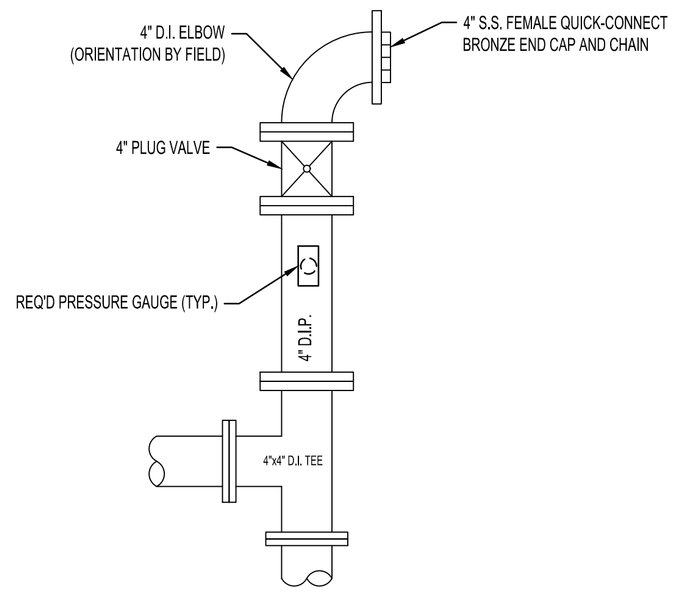
NOTE:
ALL WORK, MATERIALS, AND EQUIPMENT INSTALLED/CONSTRUCTED IN THIS AREA TO BE INCLUDED IN ITEM NO. 123

NOTES

1. PUMPS, GUIDE RAILS, BASE ELBOWS, AND ACCESS HATCHES SHALL BE SUPPLIED BY THE PUMP SUPPLIER, OR CERTIFIED AS COMPATIBLE BY THE RESPECTIVE MANUFACTURERS.
2. THE PRECISE LOCATION OF HATCHES, AND LOCATION/ SPACING OF PUMPS, GUIDE RAILS, AND BASE ELBOWS, SHALL BE AS RECOMMENDED BY THE MANUFACTURER.
3. ALL GUIDE RAILS, BRACKETS, CHAINS, LIFTING CABLES, BOLTS, NUTS, FASTENERS, AND ANY HARDWARE WITHIN THE WET WELL SHALL BE TYPE 316 STAINLESS STEEL.
4. ALL INTERNAL PIPING AND FITTINGS SHALL BE FLANGED DUCTILE IRON. PIPING SHALL BE INDEPENDENTLY SUPPORTED BY 316 STAINLESS STEEL ASSEMBLIES. THE THROUGH-WALL MECHANICAL SEALS SHALL NOT BE RELIED UPON FOR WEIGHT BEARING OR THRUST RESTRAINT.
5. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW OF A COMPLETE SET OF SHOP DRAWINGS OF EACH STRUCTURE AND FOR ALL EQUIPMENT IN THE WET WELL AND VALVE BOX SEPARATELY DETAILING DIMENSIONS, PIPE/ VALVES CLEARANCE, SIZES AND ANY OTHER NECESSARY DETAILS.
6. NON-BURIED PIPES, VALVES, AND FITTINGS SHALL BE COATED IN ACCORDANCE WITH SECTION 09800.
7. BEDDING MATERIAL SHALL BE 12" THICK COMPACTED LIMESTONE UNDERLAIN BY GEOTEXTILE FABRIC (GEOTEX 200ST OR EQ.)
8. ACCESS HATCHES AND GRATING SYSTEM SHALL MEET THE REQUIREMENTS OF OSHA STANDARD 29 CFR 1926.502(C). HOLD OPEN DEVICE AND HARDWARE SHALL BE TYPE 316 STAINLESS STEEL, HATCH AND GRATE SHALL BE BILCO OR EQUAL APPROVED BY ENGINEER.

PUMP DATA TABLE

NUMBER OF PUMPS	2
EFFICIENCY	60.4%
DESIGN CAPACITY PER PUMP, GPM	140
TOTAL DYNAMIC HEAD, FEET	85
DESIGN SPEED, RPM	3600
MIN, MOTOR HORSEPOWER PER/PUMP	7.5
MIN SIZE SOLIDS PASSED, INCH	3"
DISCHARGE SIZE, INCH	3"
IMPELLER DIAMETER, INCH	5.3"
MOTOR VOLTAGE	230
MOTOR PHASE	1 Ⓥ
MODEL, FLYGT (WITH SMART RUN CONTROLLER) OR APPROVED EQUAL	NP 3102 SH3



REQ'D EMERGENCY PUMP OUT ASSEMBLY
N.T.S

HIGHLAND OAKS PUMP STATION
PLAN AND ELEVATION

HIGH TIDE CONSULTANTS LLC
409 W 21ST AVENUE – SUITE B
COVINGTON, LA 70433
www.hightidela.com
HTC PROJ# 23-162

DEPT. OF UTILITIES
ST. TAMMANY PARISH GOVERNMENT
620 N. TYLER STREET
COVINGTON, LA 70433

No.	DESCRIPTION OF REVISION	DATE:
1	ADDENDUM 1	9/20/2024

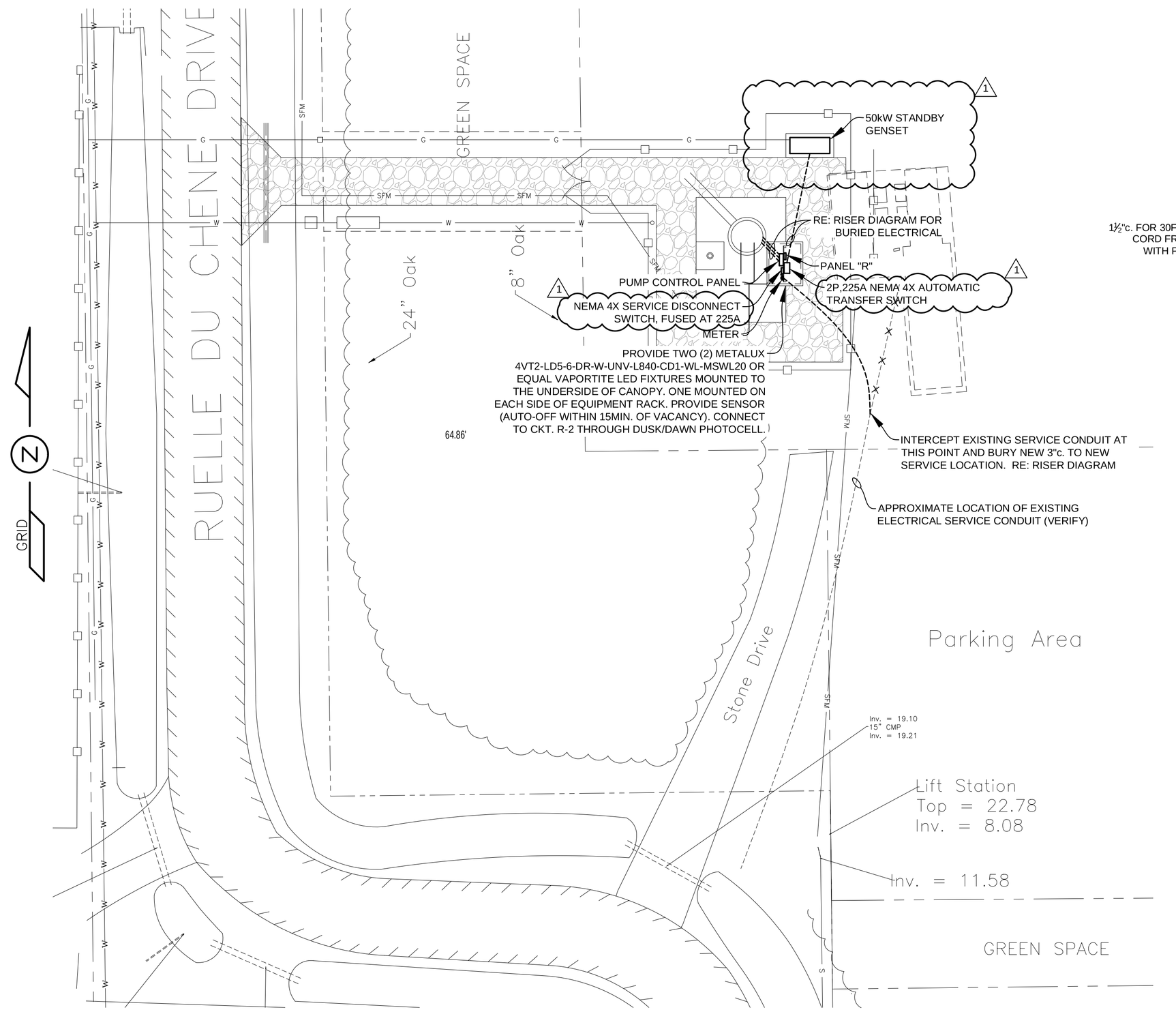
DESIGNED BY: RCG
DRAWN BY: KRC
CHECKED BY: BSG
SUBMITTED BY: HIGH TIDE CONSULTANTS
PROJECT No.: TU23000169
TU23000172
ISSUE DATE: 9/12/24
APPROVED BY: RCG
SHEET SIZE: ANSI D
SCALE: AS SHOWN

STATE OF LOUISIANA
RICHARD CALLOWAY
REG. No. 39443
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING
9/20/2024

DOMINION AND HIGHLAND OAKS
SEWER CONSOLIDATION
COVINGTON, LOUISIANA
PROJECT No.: TU23000169 & TU23000172

HIGHLAND OAKS PUMP STATION
PLAN AND ELEVATION

SHEET NO.
17
SHEET 17 of 59



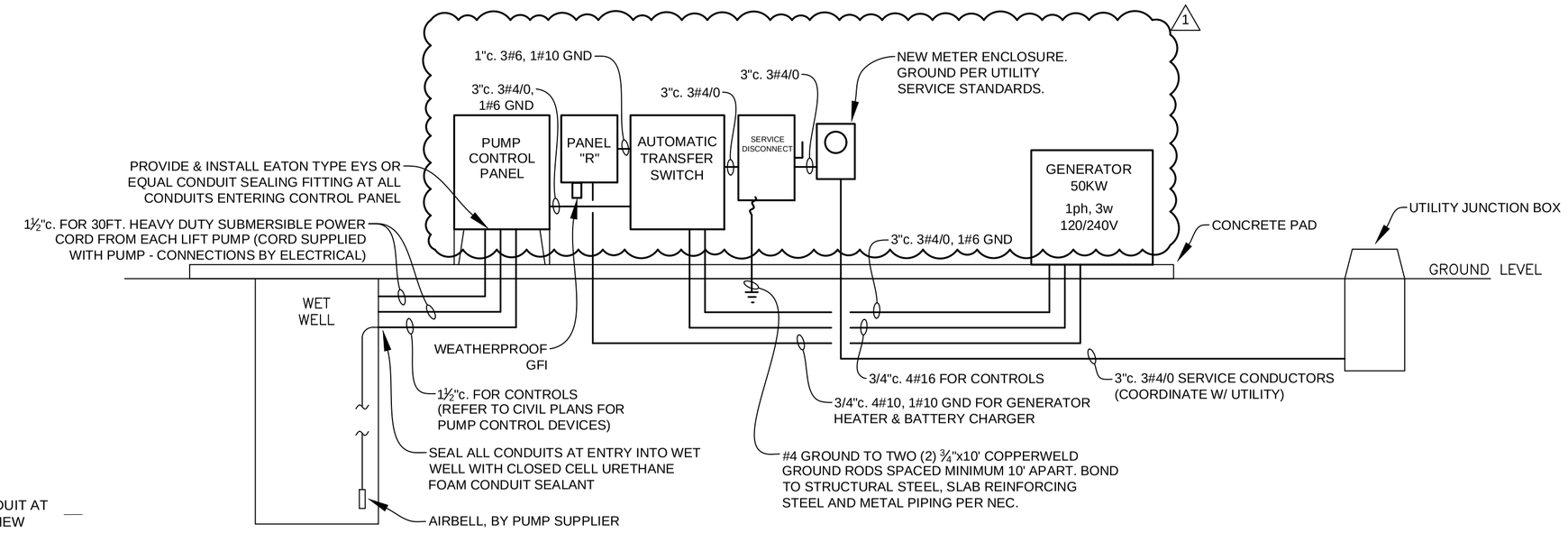
RUELLE DU CHENE PUMP STATION ELECTRICAL PLAN

SCALE IN FEET

20 10 0 20 40 60

GENERAL NOTES:

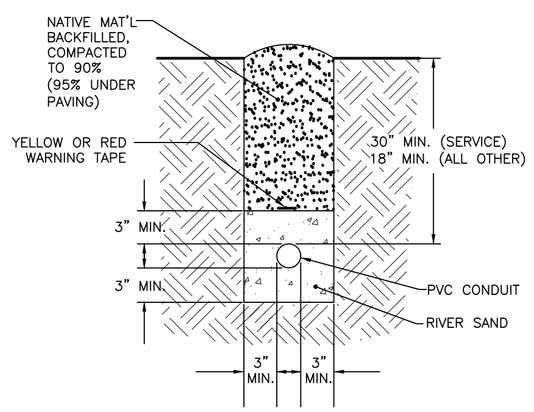
1. SECURE GENERATOR TO CONCRETE PAD WITH MINIMUM FOUR (4) ANCHOR BOLTS EMBEDDED IN CONCRETE.
2. ATS SHALL BE PROVIDED WITH ADDITIONAL SET OF LOAD SIDE LUGS FOR MECHANICALLY CONNECTING PUMP CONTROL PANEL AND PANEL "R".
3. REFER TO CONTROL DIAGRAMS ON CIVIL PLANS FOR FIELD WIRING INDICATED BY DASHED LINES & CONNECTIONS REQUIRED BY ELECTRICAL CONTRACTOR.
4. REFER TO CIVIL PLANS FOR DETAILS OF STRUCTURE FOR MOUNTING OF ELECTRICAL EQUIPMENT.



RISER DIAGRAM

PANEL: "R" — 120/208V, 1Ø, 3W NEMA 3R — MAIN CIRCUIT BREAKER 60A

POLE SPC.	CKT. NO.	POLES –TRIP	WIRE SIZE	CIRCUIT LOAD	CONN. LOAD A	CONN. LOAD B	CIRCUIT LOAD	WIRE SIZE	POLES –TRIP	CKT. NO.	POLE SPC.
1	1	1–20	#10	GEN. BATTERY CHARGER	180	720	LIGHTS	#12	1–20	2	2
3	3		#10	GEN. HEATER		1500	SPACE	–	–	–	4
5	5		#12	WP GFI	180						6
7	7		–	SPARE							8
9	9		–	SPARE							10
11	11		–	SPARE							12



CONDUIT BURIAL DETAIL

LA One Call 811

CASTAGNOS GOODWIN UTLEY ENGINEERS, L.L.C.
CONSULTING MECHANICAL & ELECTRICAL ENGINEERS

ST. TAMMANY PARISH GOVERNMENT

DEPT. OF UTILITIES
ST. TAMMANY PARISH GOVERNMENT
620 N. TYLER STREET
COVINGTON, LA 70433

No.	DESCRIPTION OF REVISION	DATE:
1	SINGLE PHASE SERVICE – ADDENDUM #1	9/19/24

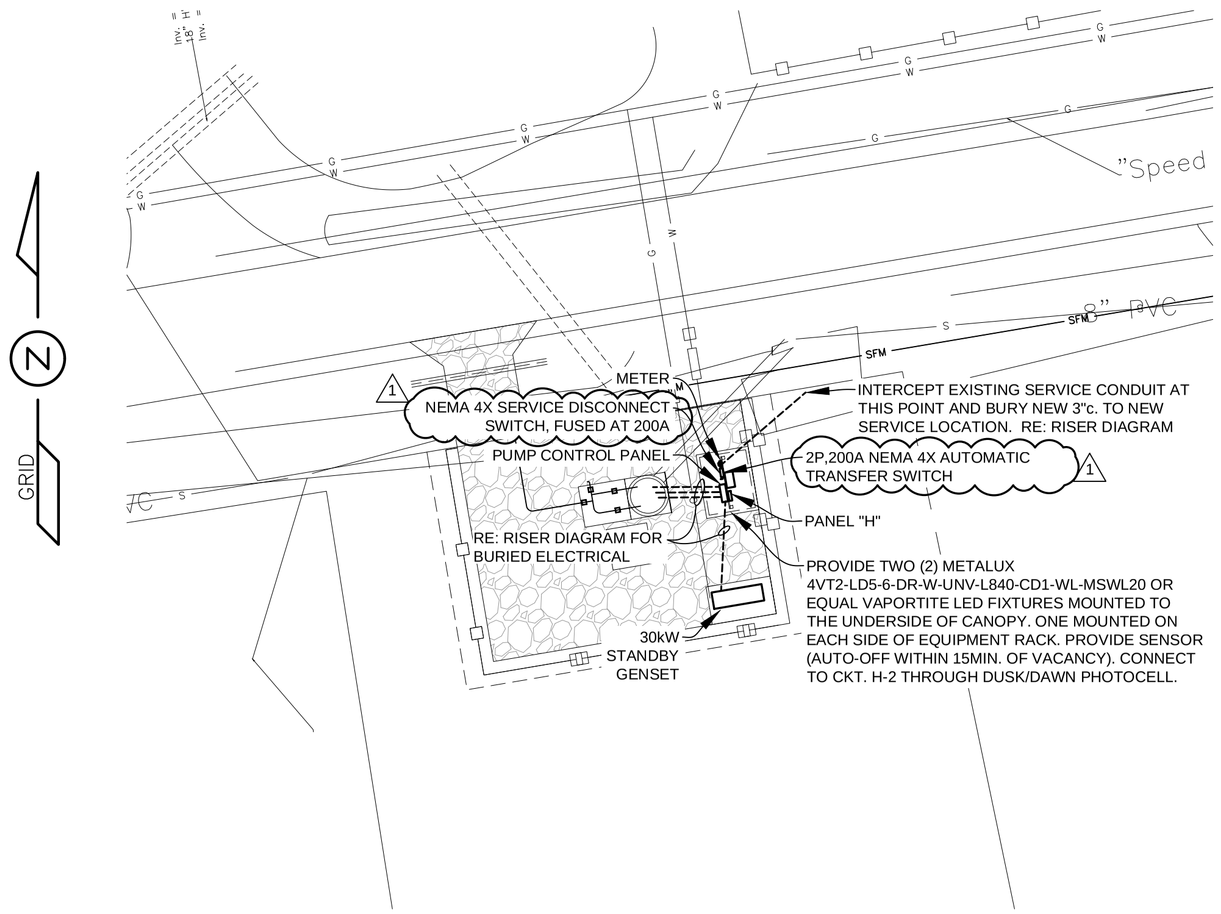
DESIGNED BY:	BCC
DRAWN BY:	BCC
CHECKED BY:	BCC
SUBMITTED BY:	HIGH TIDE CONSULTANTS
PROJECT No.:	TU23000169 & TU23000172
ISSUE DATE:	8/13/2024
APPROVED BY:	BCC
SHEET SIZE:	ANSI D
SCALE:	

STATE OF LOUISIANA — BRANDON C. CORTEZ — License No. 44125 — PROFESSIONAL ENGINEER

DOMINION AND HIGHLAND OAKS
SEWER CONSOLIDATION
COVINGTON, LOUISIANA
PROJECT No.: TU23000169 & TU23000172

RUELLE DU CHENE PUMP STATION
ELECTRICAL PLAN

SHEET NO.
58
SHEET 58 of 59



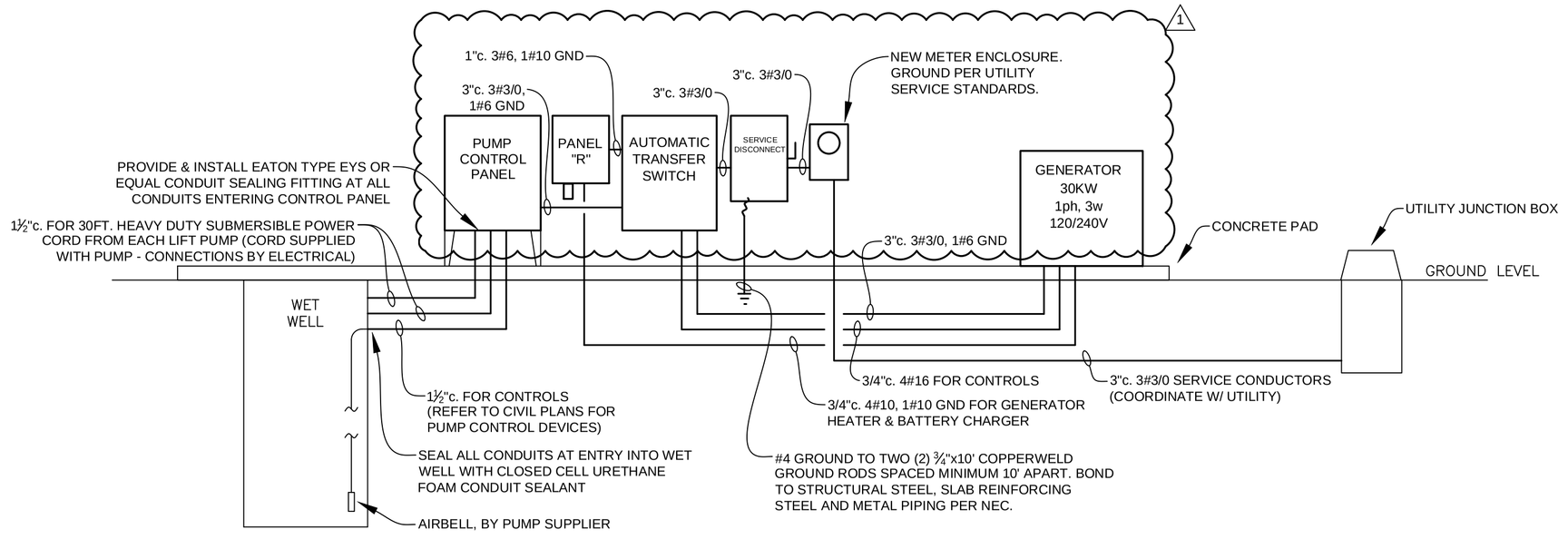
HIGHLAND OAKS PUMP STATION
ELECTRICAL PLAN

SCALE IN FEET

20 10 0 20 40 60

GENERAL NOTES:

1. SECURE GENERATOR TO CONCRETE PAD WITH MINIMUM FOUR (4) ANCHOR BOLTS EMBEDDED IN CONCRETE.
2. ATS SHALL BE PROVIDED WITH ADDITIONAL SET OF LOAD SIDE LUGS FOR MECHANICALLY CONNECTING PUMP CONTROL PANEL AND PANEL "H".
3. REFER TO CONTROL DIAGRAMS ON CIVIL PLANS FOR FIELD WIRING INDICATED BY DASHED LINES & CONNECTIONS REQUIRED BY ELECTRICAL CONTRACTOR.
4. REFER TO CIVIL PLANS FOR DETAILS OF STRUCTURE FOR MOUNTING OF ELECTRICAL EQUIPMENT.



RISER DIAGRAM

1

PANEL: "H" 120/208V, 1ø, 3W NEMA 3R — MAIN CIRCUIT BREAKER 60A

POLE SPC.	CKT. NO.	POLES -TRIP	WIRE SIZE	CIRCUIT LOAD	CONN. LOAD A	CONN. LOAD B	CIRCUIT LOAD	WIRE SIZE	POLES -TRIP	CKT. NO.	POLE SPC.
1	1	1–20	#10	GEN. BATTERY CHARGER	180	170	LIGHTS	#12	1–20	2	2
3	3		#10	GEN. HEATER		1500	SPACE	–	–	–	4
5	5		#12	WP GFI	180						6
7	7		–	SPARE							8
9	9		–	SPARE							10
11	11		–	SPARE							12

CASTAGNOS GOODWIN UTLEY ENGINEERS, L.L.C.
CONSULTING MECHANICAL & ELECTRICAL ENGINEERS

ST. TAMMANY PARISH GOVERNMENT

DEPT. OF UTILITIES
ST. TAMMANY PARISH GOVERNMENT
620 N. TYLER STREET
COVINGTON, LA 70433

No.	DESCRIPTION OF REVISION	DATE:
1	SINGLE PHASE SERVICE – ADDENDUM #1	9/19/24

DESIGNED BY:	BCC
DRAWN BY:	BCC
CHECKED BY:	BCC
SUBMITTED BY:	HIGH TIDE CONSULTANTS
PROJECT No.:	TU23000169
	TU23000172
ISSUE DATE:	8/13/2024
APPROVED BY:	BCC
SHEET SIZE:	ANSI D
SCALE:	

STATE OF LOUISIANA — BRANDON C. CORTEZ — License No. 44125 — PROFESSIONAL ENGINEER

DOMINION AND HIGHLAND OAKS SEWER CONSOLIDATION
COVINGTON, LOUISIANA
PROJECT No: TU23000169 & TU23000172

HIGHLAND OAKS PUMP STATION ELECTRICAL PLAN

SHEET NO.
59
SHEET 59 of 59

End of Addendum # 1

St. Tammany Parish Government
Office Complex, 21454 Koop Dr.
Mandeville, LA 70471

Non-Mandatory Pre-Bid Sign-In Sheet

September 6, 2024; 2:00 PM

Dominion and Highland Oaks Sewer Consolidation; BID No.: 24-42-2

Name	Company	Email	Phone
Bob Moeinian	STPGov – DW	BMoeinian@STPGov.org	985-893-1717
Craig Clement	BLD	dalbert@bldllc.net	504-466-1344
Dennis Rankin	Subt. Const. LLC	drankin@subtllc	504-416-5708
Larry Cazaux	Cazaux Contr LLC	ljcazaux@gmail.com	985-966-2229
Melissa Falvey	Command Construction LLC	michelle@commandindustries.com	504-232-3578
Elian Galarza	Python Corporation	egalarza@python-corp.com	(985) 377-4933
Rachel Forehand	STPGov - Procurement	rnforehand@stpgov.org	985 773 3242
Ricky Galloway	High Tide Consultants	rickyehightidela.com	985 227 5462
Brad Leckert	Kass Bros.	BLECKERT@KASSBROS.com	504-214-3845