St. John The Baptist Parish

CONTRACT DOCUMENTS
and
SPECIFICATIONS

FOR

Utilities Generators Replacement Project

FEBRUARY
2024

PREPARED BY:

digital engineering
DIGITAL ENGINEERING & IMAGING, INC.
ST. JOHN THE BAPTIST PARISH
PURCHASING & PROCUREMENT DEPARTMENT
1811 W. Airline Highway
LaPlace, LA 70068

INVITATION TO BID
UTILITIES GENERATORS REPLACEMENT PROJECT

Bid No. 2024.14  Closing Date: March 28, 2024 at 9:45 A.M. Local Time

BIDS

Bids are due on or before the exact closing date and time. Bids received after the exact closing date and time will NOT be considered. If hand delivering, please allow enough time for travel and parking to submit by the closing date and time. The response (including copies) must be submitted in a sealed envelope or package clearly marked with the Bidder’s name and address, and “BID 2024.14 – Utilities Generators Replacement Project”.

A Mandatory Pre-Bid Conference will be held for Utilities Generators Replacement Project at 1801 W. Airline Hwy. on March 19, 2024 at 10:00 A.M. Site visits will occur immediately following the mandatory pre-bid meeting at each site included in the bid package.

Publish:
L’Observateur
St. John the Baptist Parish Web Page
Central Bidding

FOR FURTHER INFORMATION CONCERNING THIS BID, PLEASE CONTACT:
Peter Montz, Purchasing & Procurement Department
Phone: (985) 652-9569   E-mail: p.montz@stjohn-la.gov

QUESTIONS AND COMMENTS MUST BE SUBMITTED NO LATER THAN 10:00 A.M. Local Time
March 22, 2024
SIGNATURE PAGE

This page, signed by an authorized officer of your Company, must accompany your Bid as the cover page.

Bidder Information Form

Date: ________________________________

Name of Bid: __________________________________________

Company Name: _________________________________________

AUTHORIZED SIGNATURE: ________________________________

E-Mail Address: __________________________________________

Mailing Address: __________________________________________

City: _________________________ State: ___ Zip: ___________

Business Phone: ______________________________

Primary Contact Person: __________________________

Primary Contact Cell Phone: __________________________
# TABLE OF CONTENTS

Invitation for Bid................................................................................................................. 6

PAST CRIMINAL CONVICTIONS OF BIDDERS ATTESTATION (LA. R.S. 38:2227) ............. 16
NON-SOLICITATION AND UNEMPLOYMENT AFFIDAVIT...................................................... 17
CORPORATE RESOLUTION...................................................................................................... 18
CERTIFICATE OF AUTHORITY................................................................................................. 18
Certification Regarding Debarment, Suspension, and Other Responsibility Matters Primary Covered Transaction.............................................................................................................. 19
E-Verify Affidavit........................................................................................................................ 21
Exhibit A - Information for Bidders .......................................................................................... 22
LOUISIANA UNIFORM PUBLIC BID FORM........................................................................... 27
Agreement.................................................................................................................................. 29
Additional Contract Terms for FEMA Public Assistance Grant Funded or Assisted Projects for a Non-Federal Entity (State agency or Agency of a Political Subdivision of a State) (updated 6/7/2022)........... 31
CERTIFICATION REGARDING LOBBYING............................................................................ 41
GENERAL CONDITIONS .......................................................................................................... 42
ARTICLE 1 - Definitions .......................................................................................................... 42
ARTICLE 2 - Preliminary Matters ............................................................................................ 45
ARTICLE 3 - Contract Documents; Intent, Amending, Re-use ............................................... 47
ARTICLE 4 - Availability of Lands; Physical Conditions Reference Points (NOT USED) ....... 48
ARTICLE 5 - Bonds and Insurance.......................................................................................... 48
ARTICLE 6 - Contractor's Responsibilities............................................................................... 55
ARTICLE 7 – Other Work ......................................................................................................... 63
ARTICLE 8 - Owner's Responsibilities...................................................................................... 65
ARTICLE 9 - Engineer's Status during Construction................................................................. 66
ARTICLE 10 - Changes in the Work......................................................................................... 68
ARTICLE 11 - Change of Contract Price .................................................................................. 70
ARTICLE 12 - Change of Contract Time................................................................................... 74
ARTICLE 13 - Warranty and Guarantee; Tests and Inspections: Correction, Removal or Acceptance of Defective Work ................................................................................................................. 76
ARTICLE 14 - Payments to Contractor and Completion............................................................ 79
ARTICLE 15 - Suspension of Work and Termination................................................................ 84
ARTICLE 16 - Dispute Resolution............................................................................................ 86
ARTICLE 17 - Miscellaneous ................................................................................................... 87
TECHNICAL SPECIFICATIONS

DIVISION 01 – GENERAL REQUIREMENTS
SECTION 01010 SUMMARY OF WORK
SECTION 01025 MEASUREMENT AND PAYMENT
SECTION 01041 PROJECT COORDINATION
SECTION 01152 REQUESTS FOR PAYMENT
SECTION 01153 CHANGE ORDER PROCEDURES
SECTION 01200 PROJECT MEETINGS
SECTION 01310 CONSTRUCTION SCHEDULE
SECTION 01340 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES
SECTION 01380 CONSTRUCTION PHOTOGRAPHS
SECTION 01505 MOBILIZATION
SECTION 01510 TEMPORARY UTILITIES
SECTION 01530 PROTECTION OF EXISTING UTILITIES
SECTION 01550 SITE ACCESS
SECTION 01560 TEMPORARY ENVIRONMENTAL CONTROLS
SECTION 01580 JOB SIGN
SECTION 01600 MATERIAL AND EQUIPMENT
SECTION 01620 STORAGE AND PROTECTION
SECTION 01700 CONTRACT CLOSEOUT
SECTION 01710 CLEANING
SECTION 01720 PROJECT RECORD DOCUMENTS
SECTION 01730 OPERATING AND MAINTENANCE DATA
SECTION 01740 WARRANTIES AND BONDS

DIVISION 02 – EXISTING CONDITIONS
SECTION 02060 BUILDING DEMOLITION
SECTION 02272 GEOTEXTILE FABRIC
SECTION 02318 EXCAVATION AND EMBANKMENT
SECTION 02331 GRANULAR MATERIAL

DIVISION 3 – CONCRETE
SECTION 03100 CONCRETE FORMWORK
SECTION 03200 CONCRETE REINFORCEMENT
SECTION 03300 CAST-IN-PLACE CONCRETE
SECTION 03350 CONCRETE FINISHES
SECTION 03600 GROUT

DIVISION 09 – FINISHES
SECTION 09900 PAINTS & COATINGS

DIVISION 16 – ELECTRICAL
SECTION 16010 ELECTRICAL GENERAL PROVISIONS
SECTION 16120 WIRE AND CABLES
SECTION 16135 ELECTRICAL BOXES AND FITTINGS
SECTION 16160 CONTROL PANEL ENCLOSURES
SECTION 16181 OVERCURRENT PROTECTIVE DEVICES
SECTION 16190 SUPPORTING DEVICES
SECTION 16195 ELECTRICAL IDENTIFICATION
SECTION 16441 ENCLOSED SWITCHES
SECTION 16450 GROUNDING

DIVISION 48 – ELECTRICAL POWER GENERATION
SECTION 48101 EMERGENCY GENERATOR - LIONS WATER TREATMENT PLANT
SECTION 48102 EMERGENCY GENERATOR - WOODLAND WATER TREATMENT PLANT
SECTION 48103 EMERGENCY GENERATOR - RIVER ROAD WASTEWATER TREATMENT PLANT
SECTION 48104 EMERGENCY GENERATOR - RUDDOCK WELL SITE NO. 2
Invitation for Bid

UTILITIES GENERATORS REPLACEMENT PROJECT

BACKGROUND

St. John the Baptist Parish suffered extensive damage due to Hurricane Ida. This event has caused damage to the emergency generator equipment at the River Road Wastewater Treatment Plant, Lions Water Treatment Plant, Woodland Water Treatment Plant and Ruddock Well Site No. 2 facilities. The Parish wishes to hereby Invite Bids from firms interested in and qualified to fulfill this restoration need. The successful bidder will be issued an award letter and a purchase order.

This project consists of furnishing all supervision, labor, equipment, materials, and other resources necessary to furnish generator equipment and to perform the other required work and services at four utility facilities. Other work and services include installation of new electrical devices, installation of new light poles, and other miscellaneous electrical services, in addition to the demolition of two (2) existing generator buildings, decommissioning & salvaging of existing generator equipment & fuel tanks, and replacement of diesel fuel lines.

CONTRACTORS SHALL HOLD A LOUISIANA CONTRACTORS LICENSE IN ELECTRICAL WORK (STATEWIDE).

The BID package includes the following:

1. Signature Page
2. General Terms and Conditions
3. Corporate Resolution
4. Certificate of Authority
5. Past Criminal Convictions Attestation*
6. Non-Solicitation and Unemployment Affidavit*
7. Certificate Regarding Debarment*
8. E-Verify Affidavit*
9. Exhibit A – Information for Bidders

*These documents are due prior to executing an agreement with St. John the Baptist Parish. They are not required to be submitted with the BID.

GENERAL TERMS AND CONDITIONS

1.0 BID Process

1.1 This BID is subject to all applicable state and local laws, including the Louisiana Code of Governmental Ethics.

1.2 BID package, associated documents and addenda may be obtained from the Department of Purchasing and Procurement at 1811 W. Airline Hwy., LaPlace, LA 70068 or by downloading from the Parish’s website at www.sjbparish.com or Central Bidding at www.centralbidding.com. Electronic BIDS will be accepted only on www.centralbidding.com.

1.3 Written addenda to the BID may be issued to provide clarification, corrections, or to answer questions. It is the Company’s responsibility to periodically check either Parish website, or Central Bidding for addenda that may be issued to implement changes or clarifications to the BID, prior to due date. Checking the Parish website is HIGHLY recommended.
1.4 Questions and comments regarding this BID must be submitted in writing to St. John the Baptist Parish, Purchasing & Procurement Department, ATTN: Peter Montz, 1811 West Airline Highway, LaPlace, LA 70068 or via e-mail to p.montz@stjohn-la.gov no later than 10:00 A.M. Local Time March 22, 2024.

2.0 Submission of BID

2.1 Electronic BIDS shall be accepted only on www.centralbidding.com and/or Paper BIDs shall be addressed to St. John the Baptist Parish and delivered to the receptionist located in the St. John the Baptist Parish Government Complex, 1811 West Airline Hwy., LaPlace, LA no later than 9:45 A.M. local time on March 28, 2024.

2.2 BID package must be submitted in a sealed envelope or package clearly marked with the Bidder’s name and address, and “BID 2024.14 – Utilities Generators Replacement Project”.

2.3 The Parish will not be responsible for submissions forwarded through the U.S. Postal Service or any delivery service if lost in transit at any time before submission opening, or if hand-delivered to the incorrect location.

2.4 BIDs submitted by facsimile (FAX) or e-mail will not be accepted. Any BID received after 9:45 A.M. local time on March 28, 2024 will be deemed unresponsive and will be returned to Company unopened.

2.5 Per LA R.S. 38:2212(B)(2), the bidding documents shall require only the following to be submitted by a bidder on a public works project:

- Completed Louisiana Uniform Bid Form
- Bid Security or Bid Bond
- Acknowledgement of Addenda
- Base Bid
- Alternates
- Signature of Bidder
- Name, Title and Address of Bidder
- Name of Firm or Joint Venture
- Corporate Resolution or written evidence of the authority of the person signing the bid
- Louisiana Contractor’s License Number

If the Parish adds any additional requirements for information, unless mandated by State or Federal requirements, they shall be part of the ten day documents submittal package.

3.0 Pre-BID Conference

A Mandatory Pre-Bid Conference will be held at the St. John Government Complex at 1801 W. Airline Hwy. on March 19, 2024 at 10:00 A.M. Site visits will occur immediately following the mandatory pre-bid meeting at each site included in the bid package.

4.0 Opening

BIDs will be opened publicly at 10:00 A.M. local time on March 28, 2024 in the St. John the Baptist Parish Government Building, 1811 W. Airline Highway, LaPlace, LA 70068.

5.0 Public Disclosure
It is understood and agreed upon by the Company in submitting a BID that the Parish has the right to withhold all information regarding this procurement until after contract award, including but not limited to: the number received; competitive technical information; competitive price information; and the Parish’s evaluation concerns about competing BIDs. Information releasable after award is subject to the disclosure requirements of the Louisiana Public Records Act. Company specifically waives any claims against Parish related to the disclosure of any materials if made under a public records request.

6.0 Parish Commitment

6.1 Parish shall have the right to reject or accept any BID or offer at its sole discretion.

6.2 The Parish reserves the right to terminate this BID at any time prior to contract execution.

6.3 No prior, current, or post-award verbal conversation or agreement(s) with any officer, agent, or employee of the Parish shall affect or modify any terms or obligations of this BID, or any contract resulting from this procurement.

6.4 The Parish reserves the right to revise any part of the BID by issuing an addendum to the BID at any time in accordance with relevant Louisiana Revised Statutes. Issuance of this BID in no way constitutes a commitment by the Parish to award a contract. The Parish reserves the right to accept or reject, in whole or part, all BIDs submitted, and/or cancel this announcement if it is determined to be in the Parish’s best interest. All materials submitted in response to this announcement become the property of the Parish, and selection or rejection of a submittal does not affect this right.

7.0 Late, Modified, or Withdrawn BIDs

7.1 Any BID received after the exact time specified for receipt will not be accepted or opened.

7.2 No modification of a BID will be accepted.

7.3 No Company may withdraw his/her BID within forty-five (45) days after the actual date of opening thereof.

8.0 Evaluation and Selection

The Parish Administration will present its recommendation to St. John the Baptist Parish Council for award. This award will be made to the low responsive and responsible Bidder. The Parish also reserves the right to reject any and all BIDs.

9.0 Time of Completion and Liquidated Damages

The Owner will issue an Administrative Notice to Proceed authorizing the Contractor to initiate the submittal review process and place any necessary material and equipment orders. The Contractor shall provide the Owner with a schedule of all material and equipment orders and provide periodic updates should any changes occur. A full Notice to Proceed for construction will be issued once equipment lead times are confirmed and to authorize the Contractor to proceed with the construction of other scope of work to be initiated ahead of the receipt of new generator equipment to facilitate installation upon arrival. Construction contract time will not begin until the full Notice to Proceed is issued.

Bidder must agree to fully complete the project within 270 consecutive calendar days thereafter. Bidder must agree to pay as liquidated damages the sum of $500 for each consecutive calendar day thereafter until acceptance as hereinafter provided.

10.0 Insurance

Bidder shall obtain, pay for and keep in force, at its own expense, minimum insurance effective in all localities where Consultant/Company may perform the work hereunder, with such carriers as shall be acceptable to Council:
A. **Statutory Workman’s Compensation** covering all state and local requirements and Employer’s Liability Insurance covering all persons employed by Consultant/Company in connection with this agreement.

The limits for “A” above shall be not less than:
1. Employer’s liability limits of $1,000,000
2. Some contracts may require USL&H or maritime coverage. This should be verified with Insurance Department/Legal Dept.
3. No excluded classes of owners/officers or employees shall be allowed on Council’s premises.

**WAIVER OF SUBROGATION** in favor of St. John the Baptist Parish Council should be indicated on certificate.

B. **Commercial General Liability**—also require Builders Risk Coverage:
1. Contractual liability assumed by this agreement
2. Owner’s and Contractor’s Protective Liability (if Contractor is a General Contractor) may be required.
3. Personal and advertising liability
4. Completed operations
5. Medical payments

The limits for “B” above shall not be less than:
1. $5,000,000 each occurrence limit
2. $5,000,000 products/completed operations limit
3. $10,000,000 general aggregate limit
4. $1,000,000 personal and advertising injury limit
5. $50,000 fire damage limit
6. $5,000 medical expense limit (desirable but not mandatory)

St. John the Baptist Parish Council will be NAMED as additional insured and **WAIVER OF SUBROGATION** in favor of St. John the Baptist Parish Council should be indicated on certificate.

Some contracts may require Protection and Indemnity coverage. This should be verified with Insurance Department/Legal Dept.

C. **Comprehensive Automobile Liability** covering all owned, hired and other non-owned vehicles of the Company.

The limits for “C” above shall not be less than:
1. $500,000 per occurrence for bodily injury and property damage

This insurance shall include for bodily injury and property damage the following coverages:

1. Any automobiles;
2. Owned automobiles;
3. Hired automobiles;

St. John the Baptist Parish Council will be NAMED as additional insured and **WAIVER OF SUBROGATION** in favor of St. John the Baptist Parish Council should be included on certificate.

**WAIVER OF SUBROGATION** in favor of St. John the Baptist Parish Council shall be included on the Certificate.

**OTHER SPECIFIC COVERAGE RELATED TO THE TASK BEING PERFORMED MAY BE REQUIRED.**

All required insurance certificates shall be submitted to the Director of Purchasing & Procurement prior to commencement of work. Company shall maintain insurance in full force and effect during the entire period.
of performance of work. All policies must have a thirty (30) day non-cancellation clause giving the Parish thirty (30) days prior written notice in the event a policy is changed or canceled.

D. **Professional Liability Insurance** covering the Wrongful Acts of those professional firms and individuals performing services for St. John the Baptist Parish. Certain classifications of service providers will be required to provide evidence of Professional Liability Insurance. Examples of these providers include but are not limited to: Professional Engineers, Architects, Land Surveyors, Attorneys, and IT Consultants. The limits for “D” above shall not be less than:

1. $1,000,000 CSL

**WAIVER OF SUBROGATION** in favor of St. John the Baptist Parish Council shall be included on the Certificate.

**OTHER SPECIFIC COVERAGE RELATED TO THE TASK BEING PERFORMED MAY BE REQUIRED.**

All required insurance certificates shall be submitted to the Director of Purchasing & Procurement prior to commencement of work. Bidder shall maintain insurance in full force and effect during the entire period of performance of work. All policies must have a thirty (30) day non-cancellation clause giving the Parish thirty (30) days prior written notice in the event a policy is changed or canceled.

E. **Builders Risk**: The contractor will acquire builders risk coverage for the full value of the project, or in the case of a renovation, for the full value of the renovation which provides all risk coverage for direct physical loss or damage to buildings/contents or structures during the course of construction. This coverage shall not have a deductible higher than a $5,000 per occurrence. The deductible is the responsibility of the contractor, and should be taken into consideration when determining contract price.

F. **Owner’s and Contractor’s Protective Liability Insurance**: Refer to General Conditions Section 5.4.1.7.

**11.0 Submittals Required After Bid Opening**

Failure of the apparent low bidder to provide the following documentation any later than 10 days after the bid is opened shall be cause to declare the apparent low bidder non-responsive and award the bid to the next lowest bidder. (Pursuant to LA RS 38:2212)

- Past Criminal Convictions of Bidders Attestation
- Non-Solicitation and Unemployment Affidavit
- E-Verify Form
- Certification Regarding Debarment, Suspension, Lobbying, and Other Responsibility Matters

**12.0 Invoices / Applications for Payment:**

Applications for Payment will be processed by St. John the Baptist Parish.

Itemized invoices for payment of these services shall be submitted to the Purchasing and Procurement Director for approval prior to routing to Accounts Payable. Construction invoices shall be submitted using the AIA Application and Certification for Payment AIA G702 and AIAG703 forms unless otherwise determined.

St. John the Baptist Parish shall make progress payments on account of the Contract Price on the basis of CONTRACTOR’s Applications for Payment as recommended by ENGINEER, as provided below. All such payments will be measured by the schedule of values established.

St. John the Baptist Parish shall retain the following percentages of each progress payment until payment is due under the terms and conditions governing retainage payment:

<table>
<thead>
<tr>
<th>CONTRACT AMOUNT</th>
<th>RETAINAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0 - $499,999.99</td>
<td>10%</td>
</tr>
</tbody>
</table>
Refer to the Contract Documents and provisions under in the General Conditions Article 6 titled “Contractor’s Responsibilities” and Article 14 titled “Payments to Contractor and Completion”, in addition to any other pertinent provision of the General Conditions, for the requirements associated with the approval of work and completion of all corrective work to the satisfaction of the ENGINEER, submittal and processing of Applications for Payment, and procedures for progress payments and release of final payment, inclusive of CONTRACTOR required deliverables.

13.0 **Hold Harmless**

To the fullest extent permitted by law, Company shall indemnify, hold harmless, and defend the Parish Council and all of its Agents and Employees, from and against all claims, damages, losses and expenses, including but not limited to attorney’s fees, arising out of or resulting from performance of the work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including loss of use resulting therefrom, but only to the extent caused in whole or in part by negligent acts or omissions of Company.

14.0 **Non-Assignability**

No Company shall assign any interest in this contract by assignment, transfer, or novation, without prior written consent of the Parish. This provision shall not be construed to prohibit the contractor from assigning his bank, trust company, or other financial institution any money due or to become due from approved contracts without such prior written consent. Notice of any such assignment or transfer shall be furnished promptly to the Parish.

15.0 **Exclusions**

Pursuant to Louisiana Revised Statute 38:2227, Contractor must certify that he has not been convicted of, or has not entered into a plea of guilty or nolo contendere to public bribery, corrupt influencing, extortion, money laundering or their equivalent Federal crimes. Consultant must further certify that he has not been convicted of, or has not entered into a plea of guilty or nolo contendere to theft, identify theft, theft of a business record, false accounting, issuing worthless checks, bank fraud, forgery; contractors’ misapplication of payments, malfeasance in office, or their equivalent Federal crimes within the five (5) years prior to submitting the BID.

16.0 **Disclosure**

Company must disclose whether it provides services or pays commissions to any employee or elected official of St. John the Baptist Parish. If so, company must disclose to whom services are provided and/or commissions are paid. Both positive and negative responses must be submitted.

17.0 **Termination for Cause and Convenience**

Bidder acknowledges this contract contains termination provisions including the manner in which termination shall be affected and the basis for settlement. In addition, such provisions shall describe conditions for termination due to fault and for termination due to circumstances outside the bidder’s control.

18.0 **Severability Clause**

If any one or more of the provisions contained in this Agreement shall, for any reasons, be held to be invalid, illegal or unenforceable, in whole or in part, such invalidity, illegality, or unenforceability shall not affect any other provisions of this Agreement, and in such an event, this Agreement shall be construed as if such invalid, illegal, or unenforceable provisions had never been contained herein.
19.0 **Venue**

This Agreement shall be governed by the laws of the State of Louisiana. Proper venue for any lawsuit arising under the terms of this Agreement shall be the Fortieth Judicial District Court, St. John the Baptist Parish and any appropriate Appellate therefrom. Bidder hereby agrees and consents to personal and/or in rem jurisdiction of the trail and appropriate Appellate courts.

20.0 **Discrimination Clause**

The Bidder agrees to abide by the requirements of the following as applicable: Title VI of the Civil Rights Act of 1964 and Title VII of the Civil Rights Act of 1964, as amended by the Equal Employment Opportunity Act of 1972, Federal Executive Order 11246 as amended, the Rehabilitation Act of 1973, as amended, the Vietnam Era Veteran’s Readjustment Assistance Act of 1974, Title IX of the Education Amendments of 1972, the Age Discrimination Act of 1975, the Fair Housing Act of 1968 as amended, and Bidder agrees to abide by the requirements of the Americans with Disabilities Act of 1990.

21.0 **Equal Employment Opportunity**

During the performance of this contract, the contractor agrees to abide by 41 C.F.R. Part 60-1.4(b).

22.0 **Davis Bacon**

Not Applicable for FEMA Public Assistance Grants.

23.0 **Copeland Anti-Kickback Act**

Not Applicable for FEMA Public Assistance Grants.

24.0 **Contract Work Hours and Safety Standards Act**

The regulation at 29 C.F.R. § 5.5(b) provides contract clause language concerning compliance with the Contract Work Hours and Safety Standards Act.

Compliance with the Contract Work Hours and Safety Standards Act.

(1) **Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of $27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) **Withholding for unpaid wages and liquidated damages.** The PARISH shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by
the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

25.0 Rights to inventions made under a contract or agreement

Not Applicable for FEMA Public Assistance Grants

26.0 Clean Air Act

1. The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.

2. The contractor agrees to report each violation to the PARISH and understands and agrees that the PARISH will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

3. The contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FEMA.

27.0 Federal Water Pollution Control Act

1. The contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

2. The contractor agrees to report each violation to the PARISH and understands and agrees that the PARISH will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

3. The contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FEMA.

28.0 Suspension and Debarment

(1) This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor’s principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

(2) The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

(3) This certification is a material representation of fact relied upon by the parish. If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to the PARISH, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

(4) The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in
its lower tier covered transactions. a. Standard. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds.

29.0 **Procurement of Recovered Materials**

i. In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired—
1. Competitively within a timeframe providing for compliance with the contract performance schedule;
2. Meeting contract performance requirements; or
3. At a reasonable price.

ii. Information about this requirement, along with the list of EPA-designated items, is available at EPA’s Comprehensive Procurement Guidelines web site, [https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg](https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg).

iii. The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.”

30.0 **Access to Records**

The Contractor agrees to provide the Parish, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.

The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

The Contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.

In compliance with the Disaster Recovery Act of 2018, the Parish and the Contractor acknowledge and agree that no language in this contract is intended to prohibit audits or internal reviews by the FEMA Administrator or the Comptroller General of the United States.

31.0 **DHS Seal, Logo and Flags**

The contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre-approval.

32.0 **Changes**

No additional changes, enhancements, or modifications to any contract resulting from this BID shall be made without the prior approval of PARISH. Any modifications to the provisions of this contract shall be in writing, signed by all parties and approved the required authorities.

Changes to the contract include any change in compensation; beginning/ending date of the contract; scope of work; and/or Contractor change through the Assignment of Contract process. Any such changes, once approved, will result in the issuance of an amendment to the contract.

Change Orders shall be submitted using the Change Order AIA G701 form unless otherwise determined.

33.0 **Compliance with Federal Law, Regulations, and Executive Orders**

This is an acknowledgement that FEMA financial assistance will be used to fund all or a portion of the contract. The Contractor will comply with all applicable Federal law, regulations, executive orders, FEMA policies, procedures, and directives.
34.0 No Obligation by Federal Government

The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.

35.0 Program Fraud and False or Fraudulent Statements or Related Acts

The Contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the Contractor’s actions pertaining to this contract.

36.0 Substantial Completion

Substantial Completion shall be granted once the Parish, or its designated design consultant, identifies the project to be at the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. It is the responsibility of the Contractor to notify the Parish, and its designated design consultant, when the Contractor is of the opinion the project is substantially complete. Once determined the Work is identified as substantially complete a Certificate of Substantial Completion AIA G704 will be issued.
PAST CRIMINAL CONVICTIONS OF BIDDERS ATTESTATION (LA. R.S. 38:2227)

STATE OF LOUISIANA

PARISH OF _________________________________

BEFORE ME, the undersigned Notary Public PERSONALLY CAME AND APPEARED,

I, ___________________________________, (Appeared) the owner/authorized representative of ________________________________,

Submitter/ Individual / Legal Entity Name

Appeared, as a Bidder on the herein named Project, does hereby attest that:

A. No sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named herein, including any silent or dormant owner or manager, has been convicted of, or has entered a plea of guilty or nolo contendere to, any of the following state crimes or equivalent federal crimes:

- (a) Public bribery (R.S. 14:118)
- (b) Corrupt influencing (R.S. 14:120)
- (c) Extortion (R.S. 14:66)
- (d) Money laundering (R.S. 14:230)

B. For five years prior to the project bid date, no sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named herein, including any silent or dormant owner or manager, has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes, during the solicitation or execution of a contract or bid awarded pursuant to the provisions of Chapter 10 of Title 38 of the Louisiana Revised Statutes:

- (a) Theft (R.S. 14:67)
- (b) Identity Theft (R.S. 14:67.16)
- (c) Theft of business record (R.S. 14:67.20)
- (d) False accounting (R.S. 14:70)
- (e) Submitter’s misapplication of payments (R.S. 14:202)
- (f) Bank fraud (R.S. 14:71.1)
- (g) Forgery (R.S. 14:72)
- (h) Issuing worthless checks (R.S. 14:71)
- (i) Malfeasance in office (R.S. 14:134)

__________________________________________
Name of Bidder

__________________________________________
Signature of Authorized Signatory of Bidder

__________________________________________
Project Name/Number

__________________________________________
Title of Authorized Signatory

SUBSCRIBED AND SWORN BEFORE ME ON THIS ______ DAY OF____________________, 20______.

____________________________________________
Notary Signature

Printed Notary Name: __________________________

Notary/Bar Roll Number: _________________________

My Commission is For/Expires: ___________________
ST. JOHN THE BAPTIST PARISH

NON-SOLICITATION AND UNEMPLOYMENT AFFIDAVIT

(Pursuant to La. R.S. 38:2224 and La. R.S. 23:1726(B))

STATE OF _______________________________

PARISH/COUNTY OF_______________________

Before me, the undersigned authority, came and appeared,

I, ________________________________, the owner/authorized representative of

_________________________________________

Company/Individual/Legal Entity Name

who, being first duly sworn, deposed and state that I personally and as an authorized representative of the above identified legal person executes this continuing affidavit stating that neither the above named Submitter nor a person acting on its behalf, either directly or indirectly, employed, paid, nor promised any gift, consideration or commission to any person or legal entity to procure or assist in procuring this public contract, other than persons regularly employed by Submitter whose services were in the regular course of their duties for Submitter in connection with the construction, alteration or demolition of a public building or project.

The above named Submitter, if awarded, continually affirms that no part of the contract price received by Submitter was paid or will be paid to any person, corporation, firm, association, or other organization for soliciting the contract, other than the payment of their normal compensation to persons regularly employed by the affiant whose services were in the regular course of their duties for Submitter.

The above named Submitter hereby attests and certifies that it does not have any unpaid assessment or penalty levied against it regarding unemployment compensation and currently does and will continue to properly classify each employee.

SUBSCRIBED AND SWORN BEFORE ME ON THIS _______ DAY OF _________________________ 2024.

_______________________________________________
Signature of Authorized Signatory

_______________________________________________
Printed Name of Signatory

_______________________________________________
Title of Authorized Signatory

_______________________________________________
Project Name/Number

_______________________________________________
Notary Signature

___________________________
Printed Notary Name: 

___________________________
Notary/Bar Roll Number: 

My Commission is for/expires on: ___________________

Submitter verifies that Submitter will collect an affidavit in this form from any approved sub-contractor and forward a copy to: Saint John the Baptist Parish, 1811 West Airline Hwy, LaPlace, Louisiana 70068, no later than five business days after contracting with its sub-contractor; however, in no instance shall the affidavit be received after commencement of work by the sub-contractor.
CORPORATE RESOLUTION

(Corporations must use and submit their form)

1. The named signatory is the same individual authorized to sign pursuant to the contract language in the appearance clause.

2. An officer listed on the Corporation’s Secretary of State listing has certified the Corporate Resolution.

3. The corporate resolution shall not be more than one year old.

4. The company properly grants authority to a named individual to sign on behalf of the company (authority granted by a corporation is granted through its board of directors).

5. Document shall be submitted with the submittal.

CERTIFICATE OF AUTHORITY

(LLC must use and submit their form)

1. The named signatory is the same individual authorized to sign pursuant to the contract language in the appearance clause.

2. An officer listed on the LLC’s Secretary of State listing has certified the Certificate of Authority.

3. The Certificate of Authority shall not be more than one year old.

4. The Certificate of Authority is notarized.

5. The company properly grants authority to a named individual to sign on behalf of the company.

6. Document shall be submitted with the submittal.
This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 13 CFR Part 145. The regulations were published as Part VII of the May 26, 1988 Federal Register (pages 19160-19211). Copies of the regulations are available from local offices of the U. S. Small Business Administration.

(1) The prospective primary participant certifies to the best of its knowledge and belief that it and its principals:

(a) Are not presently debarred, suspended, proposed for disbarment, declared ineligible, or Voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this application been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within a three-year period preceding this application had one or more public transactions (Federal, State, or local Terminated for cause of default.

(2) Where the Prospective primary participant is unable to certify to any of the statements in this Certification, such prospective primary participant shall attach an explanation to this submittal.

Business Name: ________________________________

Date ________________________________ By ________________________________

Name and Title of Authorized Representative

Signature of Authorized Representative
INSTRUCTIONS FOR CERTIFICATION

1. By signing and submitting this submittal, the prospective primary participant is providing the certification set out below.

2. The inability of a person to provide the certification required below will not necessarily result in denial participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the Prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.

3. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

4. The prospective primary participant shall provide immediate written notice to the department or agency to which this submittal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "submittal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department or agency to which this submittal is submitted for assistance in obtaining a copy of those regulations (13 CFR Part 145).

6. The prospective primary participant agrees by submitting this submittal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

7. The prospective primary participant further agrees by submitting this submittal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered transaction, provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the ineligibility of its principals. Each participant may, but is not required to check the Non-Procurement List.

9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

10. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.
STATE OF LOUISIANA

PARISH OF _______________________

BEFORE ME, the undersigned Notary Public PERSONALLY CAME AND APPEARED,

I, ________________________________, the owner/authorized representative of

______________________________

Company/Individual/Legal Entity

Name

who hereby personally and as the authorized representative of the above identified legal person executes this affidavit, as the undersigned Company verification of its current and future compliance with L.S.A. R.S. 38:2212.10, stating affirmatively that it and each individual, firm or corporation associated with it and engaged in the physical performance of services in the State of Louisiana, under a contract with St. John the Baptist Parish has registered with, is participating in, and shall continue to participate in a federal work authorization program designated as such under the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, as amended, which is operated by the United States Department of Homeland Security, known as the “E-Verify” program. The Company hereby verifies the legal status of all existing and new employees in the State of Louisiana by attesting herein that each is a citizen of the United States or legal aliens as defined by now effective immigration laws of the United States of America.

Company shall not assign this Contract or any monies due or to become due hereunder, or subcontract any part of the Work without the prior written consent of St. John the Baptist Parish.

Company verifies that the Company will collect an affidavit in this form from any approved subcontractor and forward a copy to: St. John the Baptist Parish, 1801 West Airline Hwy, LaPlace, Louisiana 70068, no later than five business days of contracting with its subcontractor; however, in no instance shall the affidavit be received after commencement of work by the subcontractor.

__________________________   _______________________
Signature of Authorized Signatory   Date E-Verify ID Assigned

__________________________   _______________________
Printed Name of Signatory   E-Verify ID

__________________________
Title of Authorized Signatory

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE DAY OF _____, 20 _____

__________________________
Notary Signature

Printed Notary Name: __________________

Notary/Bar Roll Number: __________________

My Commission is For/Expires: ____________________
EXHIBIT A

Information for Bidders

1. The Owner may reject any and all bids for just cause; such actions will be in accordance with Title 38 of the Louisiana Revised Statutes. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw a bid within 45 days after the actual date of the opening thereof except as provided by law.

2. **Preparation of Bid:** Each bid must be submitted on the prescribed form. All blank spaces for bid prices must be filled in, in ink or typewritten, in both words and figures.

3. **Subcontractors:** The bidder is specifically advised that any person for or other party to whom it is proposed to award a subcontract under this contract must be acceptable to the Owner.

4. **Determination of Unit and Extended Prices:** In unit price bids, the total amount bid shall be in the sum of the correct extensions of the unit price bid on each item of work multiplied by the approximate quantity of work shown for the respective item. Each extension shall be carried to one hundredth of a dollar, and the last digit in the extension (or cents’ place) shall not be rounded off.

5. **Erasures:** The bid submitted must not contain erasures. Any and all interlineations or other corrections shall be suitably authenticated by affixing in the margin immediately opposite the correction the initials of the person or persons signing the bid.

6. **Prices:** In the event of a discrepancy between the prices quoted in words and those quoted in figures in the bid, the words shall control. The prices are to include the furnishing of all materials, plant, equipment, tools, and all other facilities, and the performance of all labor and services necessary or proper for the completion of the work except as may be otherwise expressly provided in the contract documents.

7. **Qualifications of Bidder:** The Owner may make such investigations deemed necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is responsible and is properly qualified to carry out the obligations of the contract and complete the work contemplated therein. Any conditions placed on a submitted bid shall result in rejection of such bid.

8. **Bid Security:** Each bid must be accompanied by cashier’s check or certified check of the bidder, or a bid bond, duly executed by the bidder as principal and having as surety thereon a surety company approved by the Owner, in the amount of 5 percent of the bid.
made payable to the Owner. Such cashier’s checks, certified checks, or bid bonds will be returned to all except the three lowest bidders within three days after the opening of bids, and the remaining cashier’s checks, certified checks, or bid bonds will be returned promptly after the Owner and the accepted bidder have executed the contract, or, if no award has been made within 45 days after the date of the opening of bids, upon demand of the bidder at any time thereafter, so long as he has not been notified of the acceptance of his bid.

Sureties used for obtaining bonds must appear as acceptable on the U.S. Department of the Treasury Circular 570.

9. Liquidated Damages for Failure to Enter into Contract: The successful bidder, upon his failure or refusal to execute and deliver the contract and bonds within 10 days after he receives notice of the acceptance of his bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his bid.

10. Time of Completion and Liquidated Damages: Bidder must agree to fully complete the project within **TWO HUNDRED AND SEVENTY (270) consecutive calendar days** from the date of the full Notice to Proceed letter. Bidder must agree to pay as liquidated damages the sum of **FIVE HUNDRED ($500) DOLLARS** for each consecutive calendar day thereafter until acceptance as hereinafter provided.

11. Conditions of Work: Each bidder must inform himself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his obligation to furnish all materials and labor necessary to carry out the provisions of his contract. Insofar as possible the contractor, in carrying out the work, must employ such methods or means as will not cause any interruption of or interference with the work of any other contractor.

12. Addenda and Interpretations: No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder orally.

All questions should be directed to Peter Montz, Director of Purchasing, 985-359-1037 or email: p.montz@stjohn-la.gov Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be emailed to all bidders.

Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents.

QUESTIONS AND COMMENTS MUST BE SUBMITTED NO LATER THAN **10:00 A.M. Local Time March 22, 2024**.

13. Security for Faithful Performance: Simultaneously with his delivery of the executed contract, the successful bidder shall furnish a surety bond or bonds as security for faithful
performance of this contract and for the payment of all persons performing labor on the
project under this contract and furnishing materials in connection with this contract. The
surety on such bond or bonds shall be a duly authorized surety company satisfactory to
the Owner. Only those surety companies currently on the U. S. Department of Treasury
Financial Management Services list (Circular 570) of approved bonding companies will be
accepted. The agent selling the bond must be currently licensed to do business in
Louisiana. This will be verified by the Owner.
The successful bidder will be required to file a performance bond in the full amount (100-
percent) of the contract price for the full period of the contract and a payment bond in
the full amount (100-percent) of the contract price for the full period of the contract.

14. **Power of Attorney**: Attorneys-in-fact who sign bid bonds or contract bonds must file with
each bond a certified and effectively dated copy of their power of attorney.

15. **Laws and Regulations**: The bidder's attention is directed to the fact that all applicable
State laws, municipal ordinances and rules and regulations of authorities having
jurisdiction over construction of the project shall apply to the contract throughout and
will be deemed to be included in the contract the same as written herein in full.

16. **Method of Award**: The contract, if awarded, will be awarded to the lowest responsive
and responsible bidder.

17. **Obligation of Bidder**: At the time of the opening of bids, each bidder will be presumed to
have inspected the site and to have read and to be thoroughly familiar with the plans and
contract documents (including all addenda). The failure or omission of any bidder to
examine any form, instrument or document shall in no way relieve any bidder from any
obligation with respect to his bid.

18. **Hold Harmless**: To the fullest extent permitted by law, Company/Consultant shall
indemnify, hold harmless, and defend the Parish Council and all of its Agents and
Employees, from and against all claims, damages, losses and expenses, including but not
limited to attorney’s fees, arising out of or resulting from performance of the work,
provided that such claim, damage, loss or expense is attributable to bodily injury,
sickness, disease or death, or to injury to or destruction of tangible property (other than
the work itself) including loss of use resulting therefrom, but only to the extent caused in
whole or in part by negligent acts or omissions of Company.

19. **Non-assignability**: No Company/Consultant shall assign any interest in this contract by
assignment, transfer, or novation, without prior written consent of the Owner. This
provision shall not be construed to prohibit the contractor from assigning his bank, trust
company, or other financial institution any money due or to become due from approved
contracts without such prior written consent. Notice of any such assignment or transfer
shall be furnished promptly to the Parish.

20. **Exclusions**: Pursuant to Louisiana Revised Statute 38:2227, Company must certify that
he has not been convicted of or has not entered into a plea of guilty or nolo contendere
to public bribery, corrupt influencing, extortion, money laundering or their equivalent Federal crimes. Consultant must further certify that he has not been convicted of or has not entered into a plea of guilty or nolo contendere to theft, identify theft, theft of a business record, false accounting, issuing worthless checks, bank fraud, forgery, contractors’ misapplication of payments, malfeasance in office, or their equivalent Federal crimes within the five (5) years prior to submitting the proposal.

21. Disclosure: Company/Consultant must disclose whether it provides services or pays commissions to any employee or elected official of St. John the Baptist Parish. If so, company must disclose to whom services are provided and/or commissions are paid. Both positive and negative responses must be submitted.

22. E-Verify Program: Pursuant to Louisiana Revised Statute 38:2212.10, contractor must certify that it and each individual, firm or corporation associated with it and engaged in the physical performance of services in the State of Louisiana, under a contract with St. John the Baptist Parish has registered with, is participating in, and shall continue to participate in a federal work authorization program designated as such under the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, as amended, which is operated by the United States Department of Homeland Security, known as the “E-Verify” program. Contractor must verify the legal status of all existing and new employees in the State of Louisiana by attesting herein that each is a citizen of the United States or legal aliens as defined by now effective immigration laws of the United States of America.

23. Invoices / Applications for Payments:

Applications for Payment will be processed by St. John the Baptist Parish.

Itemized invoices for payment of these services shall be submitted to the Purchasing and Procurement Director for approval prior to routing to Accounts Payable. Construction invoices shall be submitted using the AIA Application and Certification for Payment AIA G702 and G703 forms unless otherwise determined.

St. John the Baptist Parish shall make progress payments on account of the Contract Price on the basis of CONTRACTOR’s Applications for Payment as recommended by ENGINEER, as provided below. All such payments will be measured by the schedule of values established.

St. John the Baptist Parish shall retain the following percentages of each progress payment until payment is due under the terms and conditions governing retainage payment:

<table>
<thead>
<tr>
<th>CONTRACT AMOUNT</th>
<th>RETAINAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0 - $499,999.99</td>
<td>10%</td>
</tr>
<tr>
<td>$500,000.00 – Over</td>
<td>5%</td>
</tr>
</tbody>
</table>
Refer to the Contract Documents and provisions under in the General Conditions Article 6 titled “Contractor’s Responsibilities” and Article 14 titled “Payments to Contractor and Completion”, in addition to any other pertinent provision of the General Conditions, for the requirements associated with the approval of work and completion of all corrective work to the satisfaction of the ENGINEER, submittal and processing of Applications for Payment, and procedures for progress payments and release of final payment, inclusive of CONTRACTOR required deliverables.

24. **Insurance:** Bidder shall obtain, pay for and keep in force, at its own expense, minimum insurance effective in all localities where Consultant/Company may perform the work hereunder, with such carriers as shall be acceptable to Council.

25. **Site Visits:** Site visits will be conducted **March 19, 2024** immediately following the Mandatory Pre-bid Conference at 10:00 A.M. Bidders are encouraged to verify existing site conditions and take field measurements following the Mandatory Pre-Bid Conference. Contractors shall make every effort to attend the scheduled site visit to take any measurements and photographs needed to compile their bid. If additional site visits are needed contact Reed Alexander (r.alexander@stjohn-la.gov).
**LOUISIANA UNIFORM PUBLIC WORK BID FORM**

**TO:** St. John the Baptist Parish  
1811 W. Airline Highway  
LaPlace, LA 70068  

**(Owner to provide name and address of owner)**

**BID FOR:** St. John the Baptist Parish  
Utilities Generators Replacement Project  

**(Owner to provide name of project and other identifying information)**

The undersigned bidder hereby declares and represents that she/he: a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by: **Digital Engineering & Imaging, Inc.** and dated: **February 2024**

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA**: (Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging) ____________________________________________

**TOTAL BASE BID:** For all work required by the Bidding Documents (including any and all unit prices designated “Base Bid” * but not alternates) the sum of:

__________________________________________________________________________

Dollars ($ __________________)

**ALTERNATES:** For any and all work required by the Bidding Documents for Alternates including any and all unit prices designated as alternates in the unit price description.

**Alternate No. 1** *(Additive Alternate for Horizontal Directional Drill of 3-Inch Diameter DIPS DR-17 High Density Polyethylene Pipe)* for the lump sum of:

__________________________________________________________________________

Not Applicable Dollars ($ __________) Not Applicable

**Alternate No. 2** *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

__________________________________________________________________________

Not Applicable Dollars ($ __________) Not Applicable

**Alternate No. 3** *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

__________________________________________________________________________

Not Applicable Dollars ($ __________) Not Applicable

**NAME OF BIDDER:** ____________________________

**ADDRESS OF BIDDER:** ____________________________

**LOUISIANA CONTRACTOR’S LICENSE NUMBER:** ____________________________

**NAME OF AUTHORIZED SIGNATORY OF BIDDER:** ____________________________

**TITLE OF AUTHORIZED SIGNATORY OF BIDDER:** ____________________________

**SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER **:** ____________________________

**DATE:** ____________________________

* The Unit Price Form shall be used if the contract includes unit prices. Otherwise it is not required and need not be included with the form. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

** If someone other than a corporate officer signs for the Bidder/Contractor, a copy of a corporate resolution or other signature authorization shall be required for submission of bid. Failure to include a copy of the appropriate signature authorization, if required, may result in the rejection of the bid unless bidder has complied with La. R.S. 38:2212(B)(5).

**BID SECURITY** in the form of a bid bond, certified check or cashier’s check as prescribed by LA RS 38:2218.A is attached to and made a part of this bid.
**LOUISIANA UNIFORM PUBLIC WORK BID FORM**

**UNIT PRICE FORM**

**TO:**
St. John the Baptist Parish  
1811 W. Airline Highway  
LaPlace, LA 70068  

**BID FOR:**
St. John the Baptist Parish  
Utilities Generators Replacement Project  

*(Owner to provide name and address of owner)*

**UNIT PRICES:** This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>REF. NO.</th>
<th>QUANTITY</th>
<th>UNIT OF MEASURE</th>
<th>UNIT PRICE</th>
<th>UNIT PRICE EXTENSION (Quantity times Unit Price)</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Base Bid or ☐ Alt.# __ EMERGENCY GENERATOR SET AND OTHER ELECTRICAL EQUIPMENT AND ELECTRICAL SERVICES (LIONS WATER TREATMENT PLANT)</td>
<td>1</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☑ Base Bid or ☐ Alt.# __ EMERGENCY GENERATOR SET REMOVAL AND OTHER ELECTRICAL EQUIPMENT AND ELECTRICAL SERVICES (WOODLAND WATER TREATMENT)</td>
<td>2</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☑ Base Bid or ☐ Alt.# __ EMERGENCY GENERATOR SET AND OTHER ELECTRICAL EQUIPMENT AND ELECTRICAL SERVICES (RIVER ROAD WASTEWATER TREATMENT PLANT)</td>
<td>3</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☑ Base Bid or ☐ Alt.# __ EMERGENCY GENERATOR SET AND OTHER ELECTRICAL EQUIPMENT AND ELECTRICAL SERVICES (RUDDOCK WATER WELL NO. 2)</td>
<td>4</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☑ Base Bid or ☐ Alt.# __ DEMOLITION OF WOODLAND WATER TREATMENT PLANT GENERATOR BUILDING</td>
<td>5</td>
<td>1</td>
<td>LS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☑ Base Bid or ☐ Alt.# __ DEMOLITION OF LIONS WATER TREATMENT PLANT GENERATOR BUILDING</td>
<td>6</td>
<td>1</td>
<td>LS</td>
<td></td>
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</tr>
<tr>
<td>REF. NO.</td>
<td>QUANTITY</td>
<td>UNIT OF MEASURE</td>
<td>UNIT PRICE</td>
<td>UNIT PRICE EXTENSION (Quantity times Unit Price)</td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Wording for “DESCRIPTION” is to be provided by the Owner.

All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner.
AGREEMENT

THIS AGREEMENT, made this ___ day of ____________ 2024, by and between St. John the Baptist Parish, LA herein called “Owner,” acting herein through its Parish President, Jaclyn Hotard, and ___________________________ Parish of ____________, and State of ________________, herein after called “Contractor.”

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the OWNER, the CONTRACTOR hereby agrees with the OWNER to commence and complete the construction described as follows:

UTILITIES GENERATORS REPLACEMENT PROJECT

Hereinafter called the project, for the sum of ____________________ Dollars ($______) and all extra work in connection therewith, under the terms as stated in the specifications and at his/her (its/their) own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the specifications and contract documents.

Contractor hereby agrees to commence work under this contract on the date on the Notice to Proceed and to fully complete the project within 270 consecutive calendar days from the date of the full Notice to Proceed letter. The Contractor further agrees to pay, as Liquidated Damages, the sum of $500.00 for each consecutive calendar day thereafter as hereinafter provided for herein.

The Contractor hereby agrees to perform work under this contract in accordance with the contract terms for FEMA Public Assistance Grant Funded or Assisted Projects for a non-federal entity (State agency or agency of a political subdivision of the State), which is attached as part of this agreement.

The OWNER agrees to pay the CONTRACTOR in current funds for the performance of the contract, subject to additions and deductions.

St. John the Baptist Parish shall retain the following percentages of each progress payment until payment is due under the terms and conditions governing retainage payment:

<table>
<thead>
<tr>
<th>CONTRACT AMOUNT</th>
<th>RETAINAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0 - $499,999.99</td>
<td>10%</td>
</tr>
<tr>
<td>$500,000.00 – Over</td>
<td>5%</td>
</tr>
</tbody>
</table>
Contractor’s performance of its obligations hereunder shall be excused in the event and during the period that such performance is prevented or rendered unsafe by the following: acts of God; acts of war, riot, accident, flood or sabotage; pandemic, unavailability of fuel or power or materials; judicial or governmental laws, regulations, requirements, orders or actions; injunctions or restraining orders which are ultimately determined to have been wrongfully granted; the failure of any governmental body to issue or grant, or the suspension or revocation of, licenses, permits or other approvals or authorizations necessary for the performance of the services contemplated by this agreement; or national defense requirements.

IN WITNESS WHEREOF, the parties to these presents have executed this contract in three (3) counterparts, each of which shall be deemed an original, in the year and day first above mentioned.

ST. JOHN THE BAPTIST PARISH GOVERNMENT

(Owner)

By ________________________________

______________________________

(Title)

______________________________

(Contractor)

By ________________________________

______________________________

(Title)

______________________________

(Address and Zip Code)

NOTE: Secretary of the Owner should attest. If Contractor is a corporation, Secretary should attest.
Additional Contract Terms for

FEMA Public Assistance Grant Funded or Assisted Projects for a
Non-Federal Entity (State agency or Agency of a Political Subdivision of a State)
(Updated 6/7/2022)

Termination for Cause
Should the Parish determine that the Contractor has failed to comply with the Agreement's terms, the Parish may terminate the Agreement for cause by giving the Contractor written notice specifying the Contractor's failure. If the Parish determines that the failure is not correctable, then the Agreement shall terminate on the date specified in such notice. If the Parish determines that the failure may be corrected, the Parish shall give a deadline for the Contractor to make the correction. If the Parish determines that the failure is not corrected by the deadline, then the Parish may give additional time for the Contractor to make the corrections or the Parish may notify the Contractor of the Agreement termination date.

Termination for Convenience
Either Party may terminate the Agreement at any time without penalty by giving thirty (30) days written notice to the other Party of such termination or negotiating with the Parties regarding a termination date. Contractor shall be entitled to payment for deliverables in progress, to the extent that the work is acceptable.

Contract Provisions Applicable to Projects Fully or Partially Funded by the FEMA Public Assistance Program (Note: All such terms are also applicable to all appropriate subcontractors):


During the performance of this contract, the Contractor agrees as follows:

(1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:
Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

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

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

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

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

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

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

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

Provided, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

b. **Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708)** Where applicable, all contracts and subcontracts in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 C.F.R. Part 5).

Compliance with the Contract Work Hours and Safety Standards Act:

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages
shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of $26 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. FEMA or the State shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

c. **Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended**

If the Contract and Subcontracts are in excess of $150,000, the Contractor and Subcontractors shall comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act (42U.S.C. 7401-7671) and the Federal Water Pollution Control Act as amended (33U.S.C. 1251-1387). Violations shall be reported to Owner and the Federal awarding agency and the Regional Office of the Environmental Protection Agency (“EPA”).

**Clean Air Act**

1. The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.

2. The contractor agrees to report each violation to the Parish and understands and agrees that the Parish will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
3. The contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FEMA.

**Federal Water Pollution Control Act**

1. The Contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

2. The Contractor agrees to report each violation to the Parish and understands and agrees that the Parish will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

3. The Contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FEMA.

d. **Debarment and Suspension (Executive Orders 12549 and 12689)**

A contract award (see 2 C.F.R. § 180.220) shall not be made to parties listed on the government-wide exclusions in the System for Award Management (“SAM”), in accordance with the OMB guidelines at 2 C.F.R Part 180 that implement Executive Orders 12549 (3 C.F.R. part 1986 Comp., p. 189) and 12689 (3 C.F.R. part 1989 Comp., p. 235), “Debarment and Suspension.” SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

(1) This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor’s principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

(2) The Contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

(3) This certification is a material representation of fact relied upon by the Parish. If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to the Parish, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
(4) The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.


Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

**Contractor must complete attached Certification.**

f. **Procurement of Recovered Materials**

i. In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired—
   a) Competitively within a timeframe providing for compliance with the contract performance schedule;
   b) Meeting contract performance requirements; or
   c) At a reasonable price.

ii. Information about this requirement, along with the list of EPA-designated items, is available at EPA’s Comprehensive Procurement Guidelines web site, [https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program](https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program).

iii. The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.”

g. **Access to Records**

The following access to records requirements apply to this contract:

(1) The Contractor agrees to provide the State, Parish, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the
Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.

(2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

(3) The Contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.

(4) In compliance with the Disaster Recovery Act of 2018, the Parish and the Contractor acknowledge and agree that no language in this contract is intended to prohibit audits or internal reviews by the FEMA Administrator or the Comptroller General of the United States.

h. **DHS Seal, Logo, and Flags**

The contractor or its subcontractors shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre-approval.

i. **Compliance with Federal Law, Regulations, and Executive Orders**

This is an acknowledgement that FEMA financial assistance will be used to fund all or a portion of the contract. The contractor will comply with all applicable Federal law, regulations, executive orders, FEMA policies, procedures, and directives.

j. **No Obligation by Federal Government**

The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.

k. **Program Fraud and False or Fraudulent Statements or Related Acts**

The Contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the Contractor’s actions pertaining to this contract.

l. **§200.322 Domestic preferences for procurements.**

(a) As appropriate and to the extent consistent with law, the non-Federal entity should, to the greatest extent practicable under a Federal award, provide a preference for the purchase, acquisition, or use of goods, products, or materials
produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award.

(b) For purposes of this section:

(1) “Produced in the United States” means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

(2) “Manufactured products” means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

m. Affirmative Socioeconomic Steps.

If subcontracts are to be let, the prime contractor is required to take all necessary steps identified in 2 C.F.R. § 200.321(b)(1)-(5) to ensure that small and minority businesses, women’s business enterprises, and labor surplus area firms are used when possible.

n. License and Delivery of Works Subject to Copyright and Data Rights.

The Contractor grants to the Parish, a paid-up, royalty-free, nonexclusive, irrevocable, worldwide license in data first produced in the performance of this contract to reproduce, publish, or otherwise use, including prepare derivative works, distribute copies to the public, and perform publicly and display publicly such data. For data required by the contract but not first produced in the performance of this contract, the Contractor will identify 75 See 17 U.S.C. § 102. Contract Provisions Guide 35 such data and grant to the Parish or acquires on its behalf a license of the same scope as for data first produced in the performance of this contract. Data, as used herein, shall include any work subject to copyright under 17 U.S.C. § 102, for example, any written reports or literary works, software and/or source code, music, choreography, pictures or images, graphics, sculptures, videos, motion pictures or other audiovisual works, sound and/or video recordings, and architectural works. Upon or before the completion of this contract, the Contractor will deliver to the Parish data first produced in the performance of this contract and data required by the contract but not first produced in the performance of this contract in formats acceptable by the Parish.

o. 200.216 Prohibition on certain telecommunications and video surveillance services or equipment.

(a) Recipients and sub recipients are prohibited from obligating or expending loan or grant funds to:
1) Procure or obtain;
2) Extend or renew a contract to procure or obtain; or
3) Enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

   i. For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).
   
   ii. Telecommunications or video surveillance services provided by such entities or using such equipment.
   
   iii. Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

(b) In implementing the prohibition under Public Law 115-232, section 889, subsection (f), paragraph (1), heads of executive agencies administering loan, grant, or subsidy programs shall prioritize available funding and technical support to assist affected businesses, institutions and organizations as is reasonably necessary for those affected entities to transition from covered communications equipment and services, to procure replacement equipment and services, and to ensure that communications service to users and customers is sustained.

(c) See Public Law 115-232, section 889 for additional information.

(d) See also § 200.471.

p. Copyright and Data Rights

The Contractor grants to the Parish, a paid-up, royalty-free, nonexclusive, irrevocable, worldwide license in data first produced in the performance of this contract to reproduce, publish, or otherwise use, including prepare derivative works, distribute copies to the public, and perform publicly and display publicly such data. For data required by the contract but not first produced in the performance of this contract, the Contractor will identify such data and grant to the Parish or acquires on its behalf a license of the same
scope as for data first produced in the performance of this contract. Data, as used herein, shall include any work subject to copyright under 17 U.S.C. § 102, for example, any written reports or literary works, software and/or source code, music, choreography, pictures or images, graphics, sculptures, videos, motion pictures or other audiovisual works, sound and/or video recordings, and architectural works. Upon or before the completion of this contract, the Contractor will deliver to the Parish data first produced in the performance of this contract and data required by the contract but not first produced in the performance of this contract in formats acceptable by the Parish.
CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

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

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, “Disclosure Form to Report Lobbying,” in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

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

The Contractor, ________________________________, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

______________________________________________________________
Signature of Contractor’s Authorized Official

______________________________________________________________
Name and Title of Contractor’s Authorized Official

______________________________________________________________
Date
GENERAL CONDITIONS

ARTICLE 1 - Definitions

Wherever used in these General Conditions or in the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

Acceptance, Final Acceptance - The formal action by ENGINEER accepting the Work, or a specified part of the work thereof, as being complete in all respects, or the action by ENGINEER to place the equipment/facilities in operation for continuous utilization for their intended purposes.

Agreement - Refers to the written document signed by the OWNER and CONTRACTOR that is the legal instrument binding the parties to the work. The terms "Agreement" and "Contract" are synonymous.

Application for Payment - The form furnished by CONTRACTOR and approved by ENGINEER for requesting progress payments and an affidavit of CONTRACTOR and its Subcontractors that progress payments theretofore received from OWNER on account of the work have been applied by CONTRACTOR and its Subcontractors to discharge in full all of CONTRACTOR'S and its Subcontractors' obligations stated in the prior Application for Payment, and that the accuracy of the progress reported in the Application for Payment to have been completed by CONTRACTOR or its Subcontractors has been verified by CONTRACTOR. The application for Payment should include all supporting documentation as required by the Contract Documents.

Bid - Refer to definition of Proposal Document in Instructions to Bidders.

Bonds - Bid, performance and payment bonds and other instruments of security.

Change Order - A written order to CONTRACTOR in accordance with the Louisiana Bid Law and approved by OWNER authorizing an alteration, deviation, addition, deletion, and/or revision in the Work, or an adjustment in the Contract Price and/or the Contract Time.

Contract Documents - Those documents itemized herein and as may be further itemized in the Supplementary Conditions. The Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post-bid documentation submitted), the bonds, the General Conditions, the Technical Provisions, the Drawings as the same are more specifically identified in this Agreement, together with all Modifications issued after the execution of this Agreement shall be part of the Contract Documents.

Contract Price - The moneys payable by OWNER to CONTRACTOR under the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.9.1 in the case of Unit Price Work).

Contract Time - The number of days (computed as provided in paragraph 17.2) or the date stated in the Agreement for the completion of the Work.

CONTRACTOR - A person, firm or corporation with whom OWNER has entered into the Agreement for the Work designated under the Contract Documents. The term "CONTRACTOR" shall also mean CONTRACTOR or its authorized representative.

Correction Period - The time during which CONTRACTOR must repair defective work or remove defective work from the site and replace it with non-defective work, all at no cost to the OWNER, pursuant to Paragraph 13.12 of the General Conditions.

Day - A calendar day of twenty-four hours measured from midnight to the next midnight.
Defective - An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents or does not meet the requirements of any inspection, test, referenced standard or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER'S recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.8 or 14.10).

Drawings - The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by ENGINEER and are referred to in the Contract Documents. The terms "Drawing" and "Plan" are synonymous, and wherever used in the Contract Documents it should be interpreted according to the definition of "Drawings".

Effective date of the Agreement - The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

ENGINEER - The individual, firm or corporation named as ENGINEER in the Supplementary Conditions, who will have the rights and authority assigned to the ENGINEER in the Contract Documents. The term "ENGINEER" means the ENGINEER or its authorized representative. The terms "ENGINEER", "DESIGN ENGINEER", "ARCHITECT" and "ENGINEER/ARCHITECT" are synonymous, and wherever used in the Contract Documents they should be interpreted according to the definition of "ENGINEER".

Field Order - A written order issued by ENGINEER to CONTRACTOR on or after the effective date of the agreement requiring a minor change in work not requiring an adjustment in the Contract Price or Contract Time.

General Requirements - refers to these General Conditions. The terms "General Requirements" and "General Conditions" are synonymous.

Laws and Regulations; Laws or Regulations - Laws, rules, regulations, ordinances, codes and/or orders.

Notice of a Proposed Change - A written document issued on or after the effective date of the agreement initiated by a) OWNER requesting that CONTRACTOR figure the potential effect on Contract Price or time of the proposed change described in the Notice, if the proposed change is to be ordered, or b) CONTRACTOR to notify OWNER that in the CONTRACTOR'S opinion a change has been requested in a Field Order, or pursuant to ENGINEER'S approval of a shop drawings, or a written interpretation or clarification (pursuant to paragraph 9.4). A Notice of a Proposed Change shall not constitute an order to change the work, as no change shall be considered ordered until an appropriate change order, or Work Directive Change is executed by OWNER.

Notice of Award - The written notice by OWNER to the apparent successful Bidder stating that upon compliance by the apparent successful Bidder with the conditions precedent enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

Notice to Proceed - A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR'S obligation under the Contract Documents.

OWNER – St. John the Baptist Parish Government (SJBPG) which includes all Parish Departments, its elected and appointed officials, Agencies, Councils, Boards and Commissions, Districts, their officers, agents, servants and employees, including volunteers.
Operation, Initiation of - A point in time when OWNER initiates use of the entire work under the project for the purposes that it was planned, designed and built, setting forth commencement of the correction period.

Partial Utilization - Placing a portion of the Work in service for the purpose for which it is intended (or a related purpose) before reaching Substantial Completion for all the Work.

Project - The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

Shop Drawings - All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for CONTRACTOR to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted to CONTRACTOR to illustrate material or equipment for some portion of the Work.

Specifications - Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

Subcontractor - An individual, partnership, corporation, joint venture, or other combination thereof who has a contract with Contractor to perform any part of the work at the site. The term "Subcontractor" shall also mean any individual, partnership, corporation, joint venture, or other combination thereof who has a contract with another Subcontractor to perform any part of the work at the site.

Substantial Completion - The finishing of the Work, or a specified part of the Work, in accordance with the Contract Documents, to the extent that Owner can use or occupy all or the specified part of the Work for the use for which it is intended without any concurrent Work at the site except as required to complete Punch List items with cumulative value under one percent (1%) of the Contract Price. Prerequisites for Substantial Completion include: (a) all systems have been successfully tested and demonstrated by the CONTRACTOR for their intended use, and (b) the Owner receiving all occupancy certifications and approvals from those State and local Public Entities with jurisdiction.

Supplementary Conditions - Section following General Conditions which amends or supplements the General Conditions and is a part of the Contract Documents and is located in the Book of Contract Documents.

Supplier - A manufacturer, fabricator, supplier, distributor, material man or vendor.

Testing, Pre-operational - All field inspections, installation checks, water tests, performance tests, and necessary corrections required of CONTRACTOR to demonstrate that individual components of the work have been properly erected and found to operate in accordance with the Contract Documents, so that they can be utilized continuously for their intended purposes.

Testing, Start-up - A pre-defined trial period required for achieving Substantial Completion during which CONTRACTOR is to operate the work, or a part specified thereof, under actual and simulated operating conditions and performing as defined in the Contract Documents, for the purposes of a) making such minor adjustments and changes as may be found necessary to comply with the requirements of the Contract Documents, and b) to comply with the final test requirements outlined in the Contract Documents.
Underground Facilities - All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials; electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

Prices: Project to be paid on a lump sum basis.

Work - Any and all obligations, duties, responsibilities, labor, materials, equipment, temporary facilities, and incidentals, and the furnishing thereof necessary to complete the construction assigned to, or undertaken by CONTRACTOR, pursuant to the Contract Documents. Also, the completed construction or parts thereof required to be provided under the Contract Documents, including all materials, equipment, and supplies incorporated or to be incorporated in the construction.

Work Directive Change - A written directive to CONTRACTOR, issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed as provided in paragraph 4.2 or 4.3 or to emergencies under paragraph 6.20. A Work Directive Change may not change the Contract Price or the Contract Time, but is evidence that the parties expect that the change directed or documented by a Work Directive Change will be incorporated in a subsequently issued Change Order following successful negotiations by the parties as to its effect, if any, on the Contract Price or Contract Time as provided in paragraph 10.2.

ARTICLE 2 - Preliminary Matters

2.1 DELIVERY OF BONDS: When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish in accordance with paragraph 5.1.

2.2 COPIES OF DOCUMENTS: OWNER shall furnish to CONTRACTOR up to five copies (unless otherwise provided in the Supplementary Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

2.3 COMMENCEMENT OF CONTRACT TIME; NOTICE TO PROCEED: A Notice to Proceed may be given at any time within thirty days after the effective date of the agreement. However, upon mutual written consent by both parties, the notice to proceed may be extended. The Contract Time will commence at the time specified in such notice to proceed or, if no notice is given, thirty days following the Effective Date of the Agreement.

2.4 STARTING THE PROJECT: CONTRACTOR shall start to perform the Work on the date when the Contract Time commences to run, but no Work shall be done at the site prior to the date on which the Contract Time commences to run, except with the written consent of OWNER.

2.5 BEFORE STARTING CONSTRUCTION: Before undertaking each part of the Work, CONTRACTOR shall (a) study and compare the Contract Documents with each other and against manufacturers, representations, (b) verify dimensions and field measurements, (c) coordinate requirements of dependent Work (location, dimensions, access, fit, completeness, class, codes, etc.), and (d) notify ENGINEER in writing of any conflict, error, omission or deviation from manufacturers' recommendations discovered.
CONTRACTOR shall be responsible for any delay and all costs resulting from performing any Work before obtaining a written clarification or interpretation from ENGINEER, if CONTRACTOR had actual knowledge, or should have reasonably known that any such Work (a) involves a conflict, error or omission, or (b) is subject to specific method of installation, performance or test procedure or result which is contrary to the recommendation of the corresponding manufacturer. **Contractor shall also be responsible for locating all property lines and right-of-way lines prior to beginning construction.**

2.6 **SCHEDULE SUBMITTALS**: Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit four copies of the following schedules to ENGINEER for review:

2.6.1 An estimated progress schedule indicating the starting and completion dates of the various stages of the Work in accordance with the Contract Documents.

2.6.2 A preliminary schedule of Shop Drawing submissions.

2.6.3 A preliminary schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Price and will subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work which will be confirmed in writing by CONTRACTOR at the time of submission. The Schedule of Values will be organized along the Divisions, and sub-divisions, of the Technical Specifications.

2.7 **INSURANCE CERTIFICATES**: Before any Work at the site is started, CONTRACTOR shall deliver to OWNER, with a copy of ENGINEER, certificates (and other evidence of insurance requested by OWNER) which CONTRACTOR is required to purchase and maintain in accordance with paragraphs 5.4, 5.5, and 5.6. Certificates of Insurance must be accompanied by a letter from the Contractor's Insurance Agent certifying that the insurance being provided meets the limits and requirements of the specifications. An explanation of any abbreviations used on the certificates must also be provided.

2.8 **PRE-CONSTRUCTION CONFERENCE**: Within twenty days after the effective date of the Agreement, but before CONTRACTOR starts the Work at the site, a conference attended by CONTRACTOR, ENGINEER and others as appropriate will be held to discuss the schedules referred to in paragraph 2.6, to discuss procedures for handling Shop Drawings and other submittals and for processing Applications for Payment, and to establish a working understanding among the parties as to the Work.

2.9 **FINALIZING SCHEDULES**: At least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER and others as appropriate will be held to finalize the schedules submitted in accordance with paragraph 2.6. The finalized progress schedule will be acceptable to ENGINEER as providing an orderly progression of the Work to completion within the Contract Time, but such acceptance will neither impose on ENGINEER responsibility for the progress or scheduling of the Work nor relieve CONTRACTOR from full responsibility therefore. The finalized schedule of Shop Drawing submissions will be acceptable to ENGINEER as providing a workable arrangement for processing the submissions. The finalized schedule of values will be acceptable to ENGINEER as to form and substance.
ARTICLE 3 - Contract Documents; Intent, Amending, Re-use

3.1 INTENT: The Contract Documents comprise the entire Agreement between OWNER and CONTRACTOR concerning the Work. The Contract Documents are complementary; what is called for by one is binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.

3.2 FUNCTIONALLY COMPLETE PROJECT: It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result will be supplied whether or not specifically called for. When words which have a well known technical or trade meaning are used to describe Work, materials or equipment such words shall be interpreted in accordance with such meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or be implication, shall mean the latest standard specifications, manual, code or Laws or Regulations in effect at the time of opening of Bids (or, on the effective date of the Agreement if there were no Bids), even though reference may be specifically made to an earlier standard. However, no provision of any referenced standard specifications, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR or ENGINEER, or any of their consultants, agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to ENGINEER, or any of ENGINEER’S consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of subparagraph 9.13.3 or 9.13.4. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided for in paragraph 9.4. In the event of any conflict between any of these standard specifications, manuals, or codes and any Divisions of the Book of Technical Specifications, the latter requirements shall be binding on Contractor. In the event that two or more standard specifications, manuals, or codes conflict with one another, the requirement ultimately enforced shall be binding on CONTRACTOR. In this event it will be considered that the higher cost requirement has been considered in the CONTRACTOR’S Bid Proposal and the CONTRACTOR further agrees and acknowledges that compliance with this condition shall not warrant an increase in Contract Price nor Contract Time.

3.3 CONFLICT IN CONTRACT DOCUMENTS: If, during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, CONTRACTOR shall so report to ENGINEER in writing at once and before proceeding with the Work affected thereby shall obtain a written interpretation or clarification from ENGINEER; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error or discrepancy in the Contract Documents unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof. Until interpretation, clarification or instruction is obtained from ENGINEER, any work done by CONTRACTOR (or Subcontractors) after the discovery of such a conflict, error, or discrepancy, which is directly or indirectly affected by same, will be at his own risk and he shall bear all cost arising therefrom.

3.4 AMENDING AND SUPPLEMENTING CONTRACT DOCUMENTS: The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:

3.4.1 A Change Order (pursuant to paragraph 10.4), or

As indicated in paragraphs 11.2 and 12.1, Contract Price and Contract Time may only be changed by a Change Order.
3.5 **WORK DIRECTIVE CHANGE:** In addition, the requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by a Work Directive Change required by one or more of the following actions:

3.5.1 A Field Order (pursuant to paragraph 9.5 and 10.7)

3.5.2 ENGINEER’S approval of a Shop Drawing or sample (pursuant to paragraphs 6.24), or

3.5.3 ENGINEER’S written interpretation or clarifications (pursuant to paragraph 9.4)

3.6 **RE-USE OF DOCUMENTS:** Neither CONTRACTOR nor any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with OWNER shall have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER; and they shall not re-use any of them on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaptation by ENGINEER.

3.7 **INTERPRETATION OF DRAWINGS AND SPECIFICATIONS:**

3.7.1 All figures and dimensions on the drawings and specifications shall be carefully checked by CONTRACTOR, who shall note all conflicts, errors, or discrepancies. CONTRACTOR will be held responsible for any conflict, error, or discrepancy not discovered before the work is executed, unless contractor could not have reasonably known about the conflict, error, or discrepancy. CONTRACTOR shall promptly notify ENGINEER in writing of any discrepancies, errors, or omissions discovered in review of the Contract Documents. ENGINEER will promptly investigate the matter and respond to CONTRACTOR.

3.7.2 In all cases, figured dimensions shall govern over scaled dimensions, but work not dimensioned shall be as directed, and work not particularly shown, identified, sized, or located shall be the same as similar parts that are shown or specified. Further, detail drawings shall govern over general drawings, larger scale details take precedence over smaller scale drawings, change order drawings govern over contract drawings, and contract drawings over shop drawings. Specifications shall govern as to products, execution and workmanship, and drawings shall govern as to locations, dimensions, or quantities to be furnished. Further, in all cases where specifications, notes or details in two drawings conflict, the more restrictive requirement as to quantities, product, execution, workmanship, or performance shall be binding on CONTRACTOR, unless otherwise directed by OWNER.

3.7.3 After the Agreement date, CONTRACTOR shall be furnished with a maximum number of five (5) sets of Plans, Specifications and Addenda in addition to those CONTRACTORS purchased during the bid period. Additional Specifications or Drawings requested by CONTRACTOR will be provided in complete sets and at the expense of CONTRACTOR.

**ARTICLE 4 - Availability of Lands; Physical Conditions Reference Points** (NOT USED)

**ARTICLE 5 - Bonds and Insurance**

5.0 ST. JOHN THE BAPTIST PARISH GOVERNMENT, DEFINED.

For the purposes of this Article, the terms “St. John the Baptist Parish Government,” “SJBP,” and “OWNER” shall include, but may not be limited to, all of the following entities and persons: the St. John the Baptist Parish Government (a political subdivision of the State of Louisiana); the St. John the Baptist Parish Council (the governing body of St. John the Baptist Parish); their elected and appointed officials, all
parish departments, districts, agencies, councils, boards, and commissions, officers, agents, servants, employees and volunteers; and the elected and appointed officials, departments, officers, agents, servants, employees and volunteers of those departments, districts, agencies, councils, boards, and commissions.

5.1 PERFORMANCE AND OTHER BONDS

5.1.1 Unless otherwise provided for in the Louisiana Public Bid Law, CONTRACTOR shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR’S obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date of final payment, except as otherwise provided by Law or Regulation or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds when required by the Supplementary Conditions. All Bonds shall be in the forms prescribed by Law or Regulation or by the Contract Documents and be executed by such Sureties as are named in the current list of “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of such agent’s authority.

Any bond prescribed by the contract documents shall be written by a surety or insurance company currently on the U.S. Department of the Treasury Financial Management Service list of approved bonding companies which is published annually in the federal Register, or by a Louisiana domiciled insurance company currently possessing a rating of no less than A- in the latest printing of the A.M. Best’s Key Rating Guide, to write individual bonds up to the percent of policyholders’ surplus as shown in the A.M. Best’s Key Rating Guide.

In addition, any surety bond written for a public works project shall be written by a surety or insurance company that is currently licensed and approved to do business in the state of Louisiana.

For any public works project, no surety or insurance company shall write a bond which is in excess of the amount indicated as approved by the U.S. Department of the Treasury Financial Management Service list or by a Louisiana domiciled insurance company with an A- rating by A.M. Best up to a limit of ten percent of policyholders’ surplus as shown by A.M. Best; companies authorized by this Paragraph who are not on the treasury list shall not write a bond when the penalty exceeds fifteen percent of its capital and surplus, such capital and surplus in the amount by which the company’s assets exceed its liabilities as reflected by the most recent financial statements filed by the company with the Department of Insurance.

5.1.2 If the Surety on any Bond or any insurance company providing any insurance overages furnished by CONTRACTOR is declared bankrupt, becomes insolvent, or its right to do business is terminated in any state where any part of the Project is located, or it ceases to meet the requirements of this Article, CONTRACTOR shall within five (5) days thereafter, substitute another Bond and Surety and/or insurance company, both of which shall be acceptable to OWNER. The OWNER reserves the right to mandate the cessation of all work on the Project until the receipt of evidence of acceptable replacement Bonds and/or insurance.

5.1.3 If, at any time during the Contract Period, the CONTRACTOR fails to provide satisfactory evidence of all Bond and insurance requirements or fails to take all corrective action required by the OWNER, the OWNER reserves the right to mandate the cessation of all work on the Project until receipt of acceptable evidence of Bonds and insurance and/or corrective action undertaken.
5.2 INDEMNIFICATION AGREEMENT

To the fullest extent permitted by law, the CONTRACTOR shall protect, defend, indemnify, save and hold harmless the OWNER from and against any and all claims, demands, expense, losses, suits, costs, actions, fines, penalties, and liability, whether actual or alleged, arising out of or resulting from injury, sickness, disease or death to any person or the damage, loss, expense or destruction of any property, including loss of use resulting therefrom, which may occur, be caused by, or in any way result from any actual or alleged act, omission, negligence, misconduct, or strict liability of CONTRACTOR, its agents, its sub-contractors, partners, servants, officers, employees, volunteers, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, related to the performance or non-performance of the contract herein entered into, including any and all costs, fines, penalties, expense and/or attorney fees, including but not limited to expert witness fees, incurred by the OWNER as a result of any such claims, demands, losses and/or causes of action including any costs associated with the enforcement of this indemnity provision except those arising out of the sole negligence of OWNER. This indemnification does not apply to any strict liability of the St. John the Baptist Parish Government. The CONTRACTOR shall investigate, adjust, settle, contest to resolution, resist claims, handle, respond to, provide defense for and defend any such claims, demands, proceedings, judgments, or suits at its sole expense related thereto, even if such claim, proceeding, judgment, demand or suit is groundless, false or fraudulent.

5.3 POLICIES AND CERTIFICATES

All policies and certificates of insurance of the Contractor/Subcontractor shall contain the following clauses:

5.3.1 The Contractor/ Subcontractor's insurer will have no right of recovery or subrogation against the OWNER it being the intention of the parties that the insurance policies so affected shall protect both parties and shall be primary coverage for any and all losses covered by the below described insurance. Contractor’s insurers shall waive all rights against the Owner

5.3.2 The OWNER shall be named as an additional insured as respects to liability arising out of activities performed by or on behalf of the Contractor: products and completed operations of the Contractor, premises owned, occupied or used by Contractor. The Commercial General Liability Policy shall include ISO Forms CG 20 10 or its equivalent.

5.3.3 The insurance companies issuing the policy or policies shall have no recourse against the OWNER for payment of any premiums or for assessments under any form of policy.

5.3.4 Any and all deductibles and/or self insured retentions in the below described insurance policies shall be assumed and be for the account of, and shall be borne solely by the Contractor/Subcontractor and at his sole expense without any right of reimbursement from the OWNER, and shall not exceed $10,000 per policy.

5.4 INSURANCE

The Contractor/Subcontractor, prior to commencing work, shall provide at his own expense, proof to the OWNER of the following insurance coverages required by the contract. Insurance is to be placed with insurance companies authorized to do business and approved in the State of Louisiana with an A.M. Best's rating of no less than A-.VI. This requirement will be waived for workers’ compensation coverage only for those contractors whose workers’ compensation coverage is placed with companies who participate in the State of Louisiana Workers’ Compensation Assigned Risk Pool or the Louisiana Workers’ Compensation Corporation. Policies are to be on an Occurrence basis, Claims Made policies are not acceptable. Contractor shall provide an "All-Risk" Builder's Risk Insurance Policy covering all perils
typically found and which shall include coverage for wind damage and flood.

5.4.1 All notices will name the Contractor/Subcontractor and identify the contract number. Insurance coverage specified in the GENERAL CONDITIONS is to be provided by the Contractor with the following minimum limits:

5.4.1.1 Workers’ Compensation—Statutory in compliance with the Compensation Law of the State of Louisiana. Employer’s liability to be $1,000,000. Alternate Employer Endorsement in favor of OWNER; Waiver of Subrogation in favor of OWNER; and Thirty (30) days prior written notice of cancellation, non-renewal, and adverse material change to OWNER. The OWNER and the Contractor mutually agree that it is their intention to recognize the OWNER as the statutory employer of the contractor’s employees (whether direct employees or statutory employees of the contractor) when any of the contractor’s employees are doing work and/or providing service under this agreement.

5.4.1.2 Commercial General Liability Insurance: See Invitation for Bid Section 10.0 Insurance. This insurance shall include products/completed operations, contractual liability, personal injury, and without written prior approval of the OWNER, the Commercial General Liability coverages shall not exclude any standardized coverage included in the basic form or limit any coverages for this project in any way that would prohibit or limit the reporting of any claim, suit and the subsequent defense and indemnity that would normally be provided by the policy. The Certificate of Insurance shall indicate which of the seven (7) coverage requirements below are not included in the policy, if any:

1. Premises - Operations;
2. Broad Form Contractual Liability;
3. Products and Completed Operations;
4. Use of Contractors and Subcontractors;
5. Personal Injury;
6. Broad Form Property Damage;
7. Explosion, Collapse, and Underground (XCU) Coverage

Note: On the certification of insurance, under the description of operations, the following wording is required: THE AGGREGATE LOSS LIMIT APPLIES TO EACH PROJECT, or a copy of ISO form CG2503 (Ed. 11-85) shall be submitted.

Waiver of Subrogation to cover both oral and written contracts in favor of the OWNER and Thirty (30) days notice of cancellation, non-renewal or material change. If unable to provide and grant 30 days notice of cancellation, this should be brought to the attention of the Risk Management Department for approval.

5.4.1.3 Business Automobile Liability Insurance with a combined single limit of $500,000 per occurrence for bodily injury and property damage. This insurance shall include for bodily injury and property damage the following coverages:

1. Any automobiles;
2. Owned automobiles;
3. Hired automobiles;

5.4.1.4 An Umbrella Policy may be used to meet minimum requirements.
5.4.1.5 All property losses shall be made payable to and adjusted with OWNER.

5.4.1.6 All policies of insurance shall be approved by contracting OWNER prior to the inception of any work.

5.4.1.7 (OMITTED)

5.4.1.8 If, at any time any of the said policies shall be or become unsatisfactory to OWNER, as to form or substance, or if a company issuing any such policy shall be or become unsatisfactory to OWNER, the Contractor/Subcontractor shall promptly obtain a new policy, submit the same to OWNER for approval and submit a certificate thereof as herein above provided. Upon failure of the Contractor/Subcontractor to furnish, deliver and maintain such insurance as above provided, this contract, at the election of OWNER, may be forthwith declared suspended, discontinued or terminated. Failure of the Contractor/Subcontractor to take out and/or to maintain any required insurance shall not relieve the Contractor/Subcontractor from any liability under the contract, nor shall the insurance requirements be construed to conflict with obligations of the Contractor/Subcontractor concerning indemnification.

5.4.2 Thirty (30) days prior notice of cancellation shall be given to OWNER by registered mail, return receipt requested, on all of the required coverage provided to OWNER in the event of cancellation, non-renewal and/or any changes by insurers with regard to limits, terms or conditions (material changes). All notices will name the Contractor/Subcontractor and identify the contract number.

5.5 INFORMATION TO BIDDERS

RISKS AND INDEMNIFICATIONS ASSUMED BY THE CONTRACTOR. Neither the acceptance the completed work nor payment therefore shall release the Contractor/Subcontractor from his obligations from the insurance requirements or indemnification agreement.

5.5.1 Additional insurance may be required on an individual basis for extra hazardous contracts and specific service agreements. If such additional insurance is required for a specific contract, that requirement will be described in the “Special Conditions” section of the contract specifications.

5.5.1.1 The contractor will acquire builders risk coverage for the full value of the project, or in the case of a renovation, for the full value of the renovation which provides all risk coverage for direct physical loss or damage to buildings/contents or structures during the course of construction. This coverage shall not have a deductible higher than a $5,000 per occurrence. The deductible is the responsibility of the contractor, and should be taken into consideration when determining contract price.

5.5.2 If any of the insurance requirements are not complied with at their renewal dates, payments to the Contractor/Subcontractor will be withheld until those requirements have been met, or at the option of OWNER, OWNER may pay the Renewal Premium and withhold such payments from any monies due the Contractor/Subcontractor. However, under no circumstances shall OWNER be responsible for the payment or provision of fees to any Broker, Wholesaler, Agent or Producer involved in the placement or renewal of the policy(ies) in question.

5.5.2.1 The contractor shall purchase and maintain boiler and machinery insurance or additional property insurance as may be required by Laws and Regulations which will include the interest of OWNER, Contractor, Subcontractor, Architect and Architect’s Consultants (or ENGINEER and Engineer's Consultants) in the work all of whom shall be listed as insured
or additional insured parties.

5.5.3 All policies and certificates of insurance SHALL BE APPROVED BY OWNER PRIOR TO THE INITIATION OF ANY WORK. If OWNER has any objection to the coverage afforded by or any other provisions of the insurance required to be purchased and maintained by the Contractor in accordance with the insurance requirements for the work on the basis of non-conformance with the Contract Documents, OWNER shall notify the Contractor in writing within fifteen (15) days after receipt of the certificates. The Contractor shall provide a written response to OWNER with objections within ten (10) days from the date of the letter request.

5.5.4 Other coverage may be required by OWNER based on specific needs. If such other coverage is required for this contact, that coverage will be described in the "Special Conditions" of the contract specifications.

5.5.6 Contractors Pollution coverage with minimum limits of $1,000,000.00 naming OWNER as an Additional Insured due to the nature of work being performed.

5.5.7 SUBCONTRACTORS - Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates for each subcontractor. All coverage for subcontractors shall be subject to all of the requirements stated herein for the Contractor.

5.5.8 CERTIFICATE OF INSURANCE AND INDEMNIFICATION AGREEMENT - Contractor shall furnish OWNER with certificates of insurance effecting coverage required. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. THESE CERTIFICATES ARE TO BE RECEIVED AND APPROVED BY OWNER BEFORE WORK COMMENCES, AND THEREAFTER UPON RENEWAL OR REPLACEMENT OF EACH REQUIRED COVERAGE. OWNER reserves the right to require complete, certified copies of all required insurance policies at any time and upon request.

5.5.9 INSURANCE REQUIREMENTS FOR CONTRACTORS - Contractors shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or subcontractors. The cost of such insurance shall be included in the bid.

5.6 MINIMUM SCOPE OF INSURANCE

Coverage shall be at least as broad as:

5.6.1 COVERAGE:

5.6.1.1 Insurance Services Office Commercial General Liability coverage ("occurrence form CG 00 01"). "Claims Made" form is unacceptable. The "occurrence form" shall not have "sunset clause".

5.6.1.2 Insurance Services Office form number CA0001 covering Automobile Liability. The policy shall provide coverage for any auto or owned, hired, and non-owned coverage. If an automobile is to be utilized in the execution of this contract, and the vendor/contractor does not own a vehicle, then proof of hired and non-owned coverage is sufficient.

5.6.1.3 Workers' Compensation insurance as required by the Labor Code of the State of Louisiana, including Employers Liability insurance.
5.6.2 MINIMUM LIMITS OF INSURANCE: Contractor shall maintain limits no less than:

5.6.2.1 Commercial General Liability: See Invitation for Bid Section 10.0 Insurance for coverage terms and limits.

5.6.2.2 Automobile Liability: $500,000 combined single limit per accident, for bodily injury and property damage.

5.6.2.3 Workers' Compensation and Employers Liability: Workers' Compensation limits as required by the Labor Code of the State of Louisiana (Statutory Benefits). Employers Liability limit is to be $1,000,000.

5.6.3 DEDUCTIBLES AND SELF-INSURED RETENTIONS - Any deductibles or self-insured retentions must be declared to and approved by OWNER. At the option of the OWNER either: The insurer shall reduce or eliminate such deductibles or self-insured retentions as respects OWNER; or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

5.6.4 OTHER INSURANCE PROVISIONS: The policies are to contain, or be endorsed to contain, the following provisions:

5.6.4.1 General Liability and Automobile Liability Coverages

a) OWNER is to be added as "additional insured" as respects liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor, premises owned, occupied or used by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to OWNER. It is understood that the business auto policy under "Who is an insured" automatically provides liability coverage in favor of OWNER.

b) Any failure to comply with reporting provisions of the policy shall not affect coverage provided to OWNER.

c) The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

5.6.4.2 Workers' compensation and Employer's Liability Coverage - The insurer shall agree to waive all rights of subrogation against OWNER for losses arising from work performed by the Contractor for OWNER.

5.6.4.3 All Coverages - Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, non-renewed, voided, canceled thirty (30) days prior written notice by certified mail, return receipt requested to OWNER.

5.6.5 ACCEPTABILITY OF INSURERS - Insurance is to be placed with insurers with A.M. BEST'S RATING OF NO LESS THAN A-:VI. This requirement will be waived for workers’ compensation coverage only for those contractors whose workers’ compensation coverage is placed with companies who participate in the State of Louisiana Workers’ Compensation Corporation Assigned Risk Pool or Louisiana Workers’ Compensation Corporation.

5.7 PARTIAL UTILIZATION - PROPERTY INSURANCE

If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial
Completion of all the Work, such use or occupancy may be accomplished in accordance with paragraph 14.10; provided that no such use or occupancy shall commence before the insurers providing the property insurance have acknowledged notice thereof and in writing effected the changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or allowed to lapse on account of any such partial use of occupancy.

5.8 PRIMARY COVERAGE

OWNER and CONTRACTOR intend that any policies provided in response to paragraphs 5.4.1.2, 5.5.1.1, and 5.5.2.1 shall protect all of the parties insured and provide primary coverage for all losses and damages caused by the perils covered thereby. Accordingly, all such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurer shall have no rights of recovery against any of the parties named as insured or additional insured, and if the insurers require separate waiver forms to be signed by ENGINEER, engineer's consultant or subcontractor, CONTRACTOR will obtain the same.

ARTICLE 6 - Contractor's Responsibilities

6.1 SUPERVISION: CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of others in the design of construction which is indicated in and required by the Contract Documents. CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.

6.2 CONTRACTOR'S SUPERINTENDENT:

6.2.1 CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR'S representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR. If OWNER, at any time objects to the superintendent, CONTRACTOR shall provide a replacement superintendent at no increase in Contract Price or Contract Time.

6.2.2 The Superintendent shall, as a minimum, be required to be present at a monthly meeting of the Owner in order to address any applicable questions which may arise during construction of the project and to submit request for consideration and approval of any and all applications for payment. It shall be the Contractor's responsibility to ascertain and verify the time, date and location of said meeting. In the event the Superintendent fails to attend the said meeting, Owner may at his option refrain from approving any outstanding applications for payment until the requirements of this provision are fully complied with.

6.3 WORK HOURS: CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site.

6.3.1 Except in connection with the safety or protection of persons or the work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work under the project site shall be performed during normal working hours, and CONTRACTOR will not permit overtime Work or the performance of Work on Saturday, Sunday, legal holidays observed by the OWNER, or December 25th through January 1st of each year, without OWNER'S written consent given after prior written notice to ENGINEER.
6.3.2 Normal working hours shall be defined as CONTRACTOR'S normal eight-hour working period occurring between the hours set forth at the pre-construction conference, or if none are set forth, beginning at 7:00 a.m. and ending at 5:00 p.m., exclusive of Saturdays, Sundays, or legal holidays. Work during other than normal working hours may be scheduled as a regular procedure by CONTRACTOR if he first obtains written permission from OWNER. OWNER shall be entitled to recover costs for overtime inspection related to work done during other than normal working hours.

6.3.3 If CONTRACTOR, after reviewing the Contract Documents, and for his convenience and at no increase in Contract Price, feels that scheduled work during other than normal work hours will be required to complete the work within the Contract Time, CONTRACTOR shall submit a proposed schedule for said work with the construction schedule as described in Paragraph 2.6 of the General Conditions. This schedule will be reviewed for acceptance by OWNER and discussed at the pre-construction conference as described in Paragraph 2.8 of the General Conditions. If the schedule is accepted by OWNER, OWNER will not seek to recover costs for overtime inspection. OWNER'S approval of CONTRACTOR'S schedule will not be considered a basis for a change in the Contract Price. Changes in Contract Price will be resolved in accordance with Article 11 of the General Conditions.

6.3.4 If at any time subsequent to the submission of the construction schedule, an event within the control of CONTRACTOR occurs which, in the opinion of CONTRACTOR, requires him to request approval to schedule Work during other than normal working hours, for his convenience and at no increase in Contract Price, he shall submit at least three (3) working days in advance of overtime period proposed a revised schedule to ENGINEER. If OWNER accepts the schedule, CONTRACTOR will be notified in writing.

6.3.5 If the work performed during other than normal working hours is not scheduled in accordance with the procedures described above, or if CONTRACTOR'S schedule is not accepted by OWNER, OWNER will invoice CONTRACTOR for the costs of overtime inspection which will include but may not be limited to costs for engineering, administrative expenses and other related costs. In the event CONTRACTOR fails to pay such costs within 30 days after receipt of an invoice from OWNER, the unpaid amount will be deducted from CONTRACTOR'S pay estimates and charged to the Contract.

6.3.6 CONTRACTOR shall light the parts of the work performed during other than normal working hours as required to comply with the Municipality or Agency with jurisdiction.

6.4 MATERIALS, EQUIPMENT AND LABOR: CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water and sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

6.5 MATERIALS AND EQUIPMENT:

6.5.1 All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable Supplier except as otherwise provided in the Contract Documents; but no provision of any such instructions will be effective to assign to ENGINEER, or any of engineer's consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of subparagraphs 9.13.3 or 9.13.4.

6.5.1.1 Manufacturer's warranty for all material, products and equipment to be furnished by the CONTRACTOR and to be incorporated into the completed work shall be furnished to the OWNER through the CONTRACTOR.
6.5.1.2 The manufacturer of all materials, products and equipment shall furnish complete information as to any special conditions, or restriction to be applied in the use of these items. Should the manner or method of installation, specified performance or test results as set forth in these specifications be contrary to the manufacturer's recommendations for use of the product, the manufacturer shall at once notify the CONTRACTOR who shall forward same to the ENGINEER for appropriate action. Lack of such notification shall be certification by the CONTRACTOR that specification requirements will be met by the material, products and equipment under project conditions.

6.5.1.3 Data submitted on all equipment shall include complete maintenance instructions and parts lists in sufficient detail to facilitate ordering replacements.

6.5.2 Any equipment proposed for installation by the CONTRACTOR shall meet the intent and provisions of the specifications. All equipment shall be equal in performance to that specified. Performance shall mean equal in quality of construction and materials, efficiency, ease of maintenance, reliability and ability to meet the design parameters on which the specifications are based. Service over the life of the equipment is another factor on which the specification is based and the CONTRACTOR shall provide a written assurance that local service and a manufacturers' representative are currently available to provide service.

6.5.3 It shall be the responsibility of the CONTRACTOR to make certain that any equipment included in his bid meets the above-listed requirements. The CONTRACTOR shall submit to the ENGINEER a list of similar installations by the manufacturer of all major items of equipment to enable ENGINEER to determine their compliance with these drawings and specifications in regard to performance, design, arrangement and capacity. ENGINEER's out-of-pocket expenses to investigate and inspect similar installations of major items of equipment shall be paid by the CONTRACTOR.

6.6 ADJUSTING PROGRESS SCHEDULE: CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.6.1) adjustments in the progress schedule to reflect the impact thereon of new developments; these will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

6.7 SUBSTITUTES OR "OR-EQUAL" ITEMS:

6.7.1 CONTRACTOR is to furnish only material and equipment named or specified in the Contract Documents except where the Contract specifically allows for substitutions after the Contract award. Provisions to submit proposals for substitute and "Or Equal" materials and equipment before Bid opening are included in the Instructions to Bidders.

6.7.2 If an item of material or equipment named or specified in the Contract Documents is unavailable after Contract award, CONTRACTOR shall provide prompt written notice to the ENGINEER, and with such notice propose a substitute item with sufficient data to allow ENGINEER's review to determine if the proposed substitute has the essential characteristics of the item named or specified and desired. Any such request for substitution shall be made in sufficient time (including time for ENGINEER's review of the request, OWNER's issuance of a Change Order or Work Directive Change, shop drawing submittal and review, fabrication and delivery of the item, etc.) in advance of the scheduled time for installation of the item to avoid delay to the work. Any cost savings resulting from such substitution shall be credited to the OWNER in a Change Order. Any increased costs resulting from the substitution shall be borne by the CONTRACTOR and the unavailability of the item shall not entitle the CONTRACTOR to an extension of Contract time, unless CONTRACTOR can establish that due to no fault of CONTRACTOR, CONTRACTOR's subcontractors or Suppliers, it was not possible to determine availability of the item before the Contract was awarded.

6.7.3 If a specific means, method, technique, sequence or procedure of construction is indicated in or
required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to ENGINEER, if CONTRACTOR submits sufficient information to allow ENGINEER to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in paragraph 6.7.1 as applied by ENGINEER.

6.7.4 ENGINEER will be allowed a reasonable time within which to evaluate each proposed substitute. ENGINEER will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without ENGINEER’S prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing.

6.8 CONCERNING SUBCONTRACTORS, SUPPLIERS AND OTHERS:

6.8.1 CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization (including those acceptable to OWNER and ENGINEER as indicated in paragraph 6.8.2), whether initially or as a substitute, against whom OWNER or ENGINEER may have reasonable objection as to their responsibility. CONTRACTOR shall not be required to employ any Subcontractor, Supplier or other person or organization to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

6.8.2 A Subcontractor or other person or organization identified in CONTRACTOR’S Bid and not objected to in writing by OWNER prior to the execution of the Agreement will be deemed acceptable to OWNER. All other Subcontractors shall be deemed to have been accepted if OWNER does not deliver a written objection thereto within 45 days after CONTRACTOR’S written identification of such Subcontractors. However, if, in accordance with the Louisiana Public Bid Law, OWNER has reasonable objection as to the responsibility of any Subcontractor whether identified in the Bid or subsequently, CONTRACTOR shall submit an acceptable substitute without entitlement to any change in the Contract Price. After acceptance by OWNER of any particular Subcontractor, CONTRACTOR shall make no substitution without written approval of OWNER. No acceptance by OWNER of any such Subcontractor, supplier, or other person or organization shall constitute a waiver of any right of OWNER to reject defective work.

6.9 RESPONSIBILITY OF CONTRACTOR FOR SUBCONTRACTORS AND SUPPLIERS:

6.9.1 CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR’S own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

6.9.2 The CONTRACTOR shall coordinate the Work of Subcontractors to avoid conflicts and to assure clearances. Shop drawings of various trades shall be compared by CONTRACTOR before submittal to the ENGINEER for approval, to ascertain that the installation proposed does not conflict with the structured support or space requirement. The CONTRACTOR shall have full responsibility for satisfactory coordination and completion of all subcontract items.

6.9.3 The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade. The Divisions of the Specifications are complementary, and anything mentioned or shown in a Division of the Specifications or in a Specific Trade Drawing shall be of like effect as if shown in all Divisions of the Specifications and in all Drawings.
6.9.4 All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER and contains waiver provisions as required by paragraph 5.8. CONTRACTOR shall pay each Subcontractor a just share of any insurance moneys received by CONTRACTOR on account of losses under policies issued pursuant to paragraphs 5.4.1.2 and 5.5.2.1.

6.10 PATENT FEES AND ROYALTIES: (NOT USED)

6.11 PERMITS: Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses including appropriate NPDES/LPDES permits. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or if there are no Bids on the Effective Date of the Agreement, CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto such as plant investment fees.

6.12 LAWS AND REGULATIONS:

6.12.1 CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work including appropriate NPDES/LPDES regulations. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR’S compliance with any Laws or Regulations.

6.12.2 If CONTRACTOR observes that the Specifications or Drawings are at variance with any Laws or Regulations, CONTRACTOR shall give ENGINEER prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in paragraph 3.4. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to such Laws or Regulations, and without such notice to ENGINEER, CONTRACTOR shall bear all costs arising therefrom; however, it shall not be CONTRACTOR’S primary responsibility to make certain that the Specifications and Drawings are in accordance with such Laws and Regulations.

6.13 TAXES: CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.14 USE OF PREMISES: CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Project site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the Work. Should any claim be made against OWNER or ENGINEER by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim by arbitration or by law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold OWNER and ENGINEER harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against OWNER or ENGINEER to the extent based on a claim arising out of CONTRACTOR’S performance of the Work.
6.15 CLEANING PREMISES: During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the work CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by OWNER. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.

6.16 LOADING STRUCTURES: CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.17 RECORD DOCUMENTS: CONTRACTOR shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Directive Changes, Field Orders and written interpretations and clarifications (issued pursuant to paragraph 9.4) in good order and annotated to show all changes made during the construction. These record documents together with all approved samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, samples and Shop Drawings will be delivered to ENGINEER for OWNER.

6.18 SAFETY AND PROTECTION: CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

6.18.1 All employees on the Work and other persons and organizations who may be affected thereby;

6.18.2 All the Work and materials and equipment to be incorporated whether in storage on or off the site.

6.18.3 Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and Underground Facilities not designated for removal, relocation or replacement in the course of construction.

CONTRACTOR shall comply with all applicable Laws and Regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them and shall cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property referred to in paragraph 6.18.2 or 6.18.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR). CONTRACTOR’S duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.13 that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.19 SAFETY REPRESENTATIVE: CONTRACTOR shall designate a responsible representative at the site whose duty shall be the prevention of accidents. This person shall be CONTRACTOR’S superintendent unless otherwise designated in writing by CONTRACTOR to OWNER.
6.20 **EMERGENCIES**: In emergencies affecting the safety or protection of persons, the Work, or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from ENGINEER or OWNER, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give ENGINEER prompt written notice if any significant changes in the Work or variations from the Contract Documents have been caused thereby. If ENGINEER determines that a change in the Contract Documents is required because of the action taken in response to an emergency, a Work Directive Change or Change Order will be issued to document the consequences of the changes or variations.

6.21 **SHOP DRAWINGS**: After checking and verifying all field measurements, CONTRACTOR shall submit to ENGINEER for review and approval in accordance with the accepted schedule of Shop Drawing submissions (see paragraph 2.9), five copies of all Shop Drawings, unless otherwise indicated in the Supplemental Conditions, which will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to the review of the submission. All submissions will be identified as ENGINEER may require. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specific performance and design criteria, materials and similar data to enable ENGINEER to review the information as required.

6.22 **SAMPLES**: CONTRACTOR shall also submit to ENGINEER for review and acceptance with such promptness as to cause no delay in Work, all samples required by the Contract Documents. All samples will have been checked by and accompanied by a specific written indication that CONTRACTOR has satisfied CONTRACTOR'S responsibilities under the Contract Documents with respect to the review of the submission and will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended.

6.23 **SHOP DRAWINGS AND SAMPLES SUBMISSION REQUIREMENTS**:

6.23.1 Before submission of each Shop Drawing or sample, CONTRACTOR shall have determined and verified all quantities, dimensions, specific performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed or coordinated each Shop Drawing or sample with other Shop Drawings and samples and with the requirements of the Work and the Contract Documents.

6.23.2 At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of each variation that the Shop Drawings or samples may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to ENGINEER for review and acceptance of each such variation.

6.24 **ENGINEER'S REVIEW OF SHOP DRAWINGS AND SAMPLES**:

6.24.1 ENGINEER will review and approve with reasonable promptness Shop Drawings and samples, but ENGINEER'S review and approval will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, sequences, techniques or procedures of construction or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make any corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit as required new samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

6.24.2 After his first review and comments on the Shop Drawings and samples the ENGINEER will either give his approval in accordance with the provisions of paragraphs 6.24.1, or request changes and corrections as noted. The CONTRACTOR shall then make changes and corrections noted and return them to the ENGINEER. If the Shop Drawings and samples are then acceptable, the ENGINEER will return them to
the CONTRACTOR, as approved. However, if further revisions are required, ENGINEER’S cost and expenses of further review shall be paid by the CONTRACTOR.

6.24.3 ENGINEER’s review and approval of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER’S attention to such variation at the time of submission as required by paragraph 6.23.2 and ENGINEER has given written approval of each such variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing or sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the Shop Drawings or from responsibility for having complied with the provisions of paragraph 6.23.1 and 6.23.2.

6.24.4 Where a Shop Drawing or sample is required by the Specifications, any related Work performed prior to ENGINEER'S review and approval of the pertinent submission will be the sole expense and responsibility of CONTRACTOR.

6.25 CONTINUING THE WORK: CONTRACTOR shall carry on the work and adhere to the progress schedule during all disputes or disagreements with OWNER. No work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.5 or as CONTRACTOR and OWNER may otherwise agree in writing.

6.26 INDEMNIFICATION:

6.26.1 To the fullest extent permitted by law, the CONTRACTOR shall protect, defend, indemnify, save and hold harmless the OWNER, including all Parish Departments, its elected and appointed officials, Agencies, Councils, Boards and Commissions, Districts, their officers, agents, servants and employees, including volunteers, from and against any and all claims, demands, expense, losses, suits, costs, actions, fines, penalties, actions, and liability, whether actual or alleged, arising out of or resulting from injury, sickness, disease or death to any person or the damage, loss, expense or destruction of any property, including loss of use resulting therefrom, which may occur, be caused by, or in any way resulting from any actual or alleged act, omission, negligence, misconduct, or strict liability of CONTRACTOR, its agents, its sub-contractors, partners, servants, officers employees, volunteers, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, related to the performance or non-performance of the contract herein entered into, including any and all costs, fines, penalties, expense and/or attorney fees, including but not limited to expert witness fees, incurred by the OWNER, all Parish Departments, its elected and appointed officials, Agencies, Councils, Districts, Boards and Commissions, their officers, agents, servants and employees, including volunteers, as a result of any such claims, demands and/or causes of action except those arising out of the.... sole .....negligence of the OWNER, all Parish Departments, its elected and appointed officials, Districts, Agencies, Councils Boards and Commissions, their officers, agents servants and employees, including volunteers. The CONTRACTOR shall investigate, adjust, settle, contest to resolution, resist claims, handle, respond to, provide defense for and defend any such claims, demands, proceedings, judgments, or suits at its sole expense related thereto, even if such claim, proceeding, judgment, demand or suit is groundless, false or fraudulent.

6.26.2 In any and all claims against OWNER or ENGINEER or any of their consultants, agents or employees by any employee of CONTRACTOR, any Subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, the indemnification obligation under this paragraph 6.26 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR or any such Subcontractor or other person or organization under workers’ or workmen's compensation acts, disability benefit acts or other employee benefit acts.

6.26.3 The obligations of CONTRACTOR under this paragraph 6.26 shall not extend to the liability of
ENGINEER, his agents or employees arising out of the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs or Specifications.

6.27 PROJECT MEETINGS: CONTRACTOR, along with appropriate Subcontractors, shall attend project meetings requested by OWNER for the purpose of discussing and resolving matters concerning the various elements of the work.

6.28 CONTRACTOR shall perform all work under this Agreement as an independent contractor and shall not be considered as an agent, employee, or servant of OWNER, nor shall CONTRACTOR'S subcontractors, employee's agents or servants, be considered to be agents, employees, or servants of OWNER.

6.29 QUALITY CONTROL:

6.29.1 CONTRACTOR shall establish a quality control system, narrative in style, to perform sufficient supervision, inspection and testing of all items of work including that of his Subcontractors to insure conformance to applicable Specifications and Drawings with respect to the material, workmanship, construction, finish, functional performance and identification. CONTRACTOR'S quality control system will specifically include the surveillance of the tests required in the technical provisions of the Specifications. A person shall be placed in charge of the CONTRACTOR'S quality control system and that person shall be other than the CONTRACTOR'S superintendent.

6.29.2 CONTRACTOR'S quality control will specifically include the checking, approval and coordination of all Shop Drawings, the ascertaining of the compliance of all items with specification requirements and the tests required in the technical provisions of the specifications, a procedure for preparing non-conformance reports, and completing a Daily Quality Control Report.

6.29.3 CONTRACTOR has the sole responsibility for compliance of the construction with the requirements of the Drawings and Specifications and the quality control system shall be such that this compliance is assured.

6.29.4 The quality control person shall, in the presence of the OWNER'S, check all contractor established elevations, the location of all underground pipelines and electrical conduits before covering begins, all reinforcing steel before pouring concrete, and any other item which cannot be located and inspected when work is complete. Data obtained shall be recorded by the quality control person on the record documents.

6.29.5 Within ten days after the date of the Agreement, CONTRACTOR shall furnish ENGINEER a quality control plan which shall include the name and experience record of the person in charge, procedures, instructions and reports to be used.

6.29.6 The form of Quality Control Daily Report is shown in Exhibit "B". This form shall be completed by the CONTRACTOR and each sub-contractor. This daily report shall include complete information as to personnel and equipment being utilized on the project along with a summary of work activities, (i.e., footage of various pipe laid, piles driven, equipment installed etc.) for each days work. These daily reports shall be included with CONTRACTOR'S monthly application for payment. The application for payment will be considered incomplete and will not be processed without inclusion of the Quality Control Daily Reports.

ARTICLE 7 - Other Work

7.1 RELATED WORK AT SITE: OWNER may perform other work related to the Project at the site by OWNER'S own forces, have other work performed by utility owners or let other direct contracts which shall contain General Conditions similar to these. If the fact that such other work is to be performed was
not noted in the Contract Documents, written notice thereof will be given to CONTRACTOR prior to starting any such other work.

7.2 **ACCESS TO THE SITE:** CONTRACTOR shall afford each utility owner and other contractor who is a party to such a direct contract (or OWNER, if OWNER is performing the additional work with OWNER'S employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the Work with theirs. CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected.

7.3 **ACCEPTANCE OF THE WORK OF OTHERS:** If any part of CONTRACTOR'S Work depends for proper execution or results upon the work of any such other CONTRACTOR or utility owner (or OWNER), CONTRACTOR shall inspect and promptly report to ENGINEER in writing any delays, defects or deficiencies in such work that render it unsuitable for such proper execution and results. CONTRACTOR'S failure so to report shall constitute an acceptance of the other work as fit and proper for integration with CONTRACTOR'S Work except for latent or non-apparent defects and deficiencies in the other work.

7.4 **COORDINATION:**

7.4.1 Whenever Work to be performed by CONTRACTOR is dependent upon the work of other parties, CONTRACTOR shall coordinate that Work with the dependent work to the same extent that CONTRACTOR is required to coordinate dependent Subcontractor Work. Installation of Work by CONTRACTOR, directly or through a Subcontractor, in any given area, shall constitute acceptance by CONTRACTOR (including the Subcontractor) of all previously placed dependent work.

7.4.2 If OWNER contracts with other parties for other work, ENGINEER will have the authority and responsibility for coordinating activities of CONTRACTOR and those parties, unless another person or organization with specific authority and responsibility for coordination of the CONTRACTOR and those other parties is expressly designated in the Supplementary Conditions or at the pre-construction conference.

7.4.3 If OWNER contracts with other parties for other work, CONTRACTOR shall be responsible for cooperating with ENGINEER fully in the coordination of CONTRACTOR's Submittals with dependent Submittals of those other parties whose work in any way relates or depends upon the Work, or visa versa. When submitted to ENGINEER any such coordinated Submittal of CONTRACTOR shall identify by specific notation, within or attached to that Submittal, each and every item of interface with the other work.

7.5 **MUTUAL DUTIES AND RESPONSIBILITIES:**

7.5.1 If CONTRACTOR causes damage to the work or property of others, or if a claim arising out of CONTRACTOR'S execution of Work is made by another party against CONTRACTOR, OWNER, or ENGINEER, CONTRACTOR shall promptly attempt to settle with that party by agreement or otherwise resolve the claim. CONTRACTOR shall defend, indemnify and hold harmless OWNER, ENGINEER and others as provided in paragraph 5.2, from and against all claims arising out of or resulting from damage by CONTRACTOR to the work or property of others or from CONTRACTOR'S execution of the Work.

7.5.2 If another party causes damage to Work or property of CONTRACTOR, or if the performance of other work results in any claim by CONTRACTOR, CONTRACTOR shall promptly attempt to settle with that party by agreement or otherwise resolve the claim. CONTRACTOR shall not begin any action against OWNER or ENGINEER, their consultants, agents or any of their directors, officers, shareholders, agents or employees, or others indemnified as provided in paragraph 5.0, or permit any action against them to be
maintained in CONTRACTOR's name or for CONTRACTOR's benefit before any court or tribunal, which action seeks to impose any liability or recover any damages from OWNER or ENGINEER for such claim.

7.5.3 Except as excluded in paragraph 7.5.4, if any party performing other work causes suspension of Work resulting in unreasonable delay under the circumstances, and if, upon a request from CONTRACTOR, OWNER concludes that any such delay requires a change in Contract Price or Contract Time, OWNER shall, pursuant to Articles 10 through 12, authorize such a change in Contract Price or Contract Time, or both.

7.5.4 If a party performing other work is granted an extension in a contract time only (based on unreasonable delay under circumstances not caused in whole or in part by acts or omissions of that party, OWNER, ENGINEER or OWNER's representative on that other work), and if, upon a request from CONTRACTOR, OWNER concludes that the extension granted to the other work requires a change in a coterminous Contract Time in the Contract Documents, OWNER shall authorize the necessary change in Contract Time only.

7.6 CONTRACTOR'S RESPONSIBILITY FOR OWNER COSTS: If CONTRACTOR becomes involved in settling or otherwise resolving claims with other persons performing other work arising out of events covered under paragraphs 7.5.1 or 7.5.2, or because of any other similar controversy, including damage to the Work or other work or a dispute about responsibility for clean-up or any other issue, neither OWNER, ENGINEER, nor any of their consultants, agents or directors, officers, stockholders nor employees will be involved in any way in such actions (except if subpoenaed). If OWNER incurs costs contrary to the provisions of this Article, CONTRACTOR shall reimburse those costs to the OWNER.

ARTICLE 8 - Owner's Responsibilities

8.1 Written communications from OWNER to CONTRACTOR will generally be issued through ENGINEER. If the need arises to issue written communication directly, a copy will be issued concurrently to ENGINEER. Written communications from CONTRACTOR to OWNER shall be issued to ENGINEER (and include two (2) copies for OWNER); from Subcontractor or Suppliers shall be issued through CONTRACTOR.

8.2 In case of termination of the employment of ENGINEER, OWNER shall appoint another ENGINEER whose status under the Contract Documents shall be that of the former ENGINEER. Any dispute in connection with such appointment shall be subject to the provisions of Article 16.

8.3 OWNER shall furnish the data required of OWNER under the Contract Documents promptly and shall make payments to CONTRACTOR promptly after they are due as provided in paragraphs 14.4 and 14.13.

8.4 OWNER'S duties in respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER'S identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the site and in existing structures which have been utilized by ENGINEER in preparing the Drawings and Specifications.

8.5 OWNER is obligated to execute Change Orders, either unilateral or negotiated, in OWNER's sole discretion, covering necessary changes in the work.

8.6 OWNER'S responsibility in respect to certain inspections, tests and approvals is set forth in paragraph 13.4.

8.7 In connection with OWNER'S right to stop Work or suspend Work, see paragraphs 13.10 and 15.1. Paragraph 15.2 deals with OWNER'S right to terminate services of CONTRACTOR under certain circumstances.
ARTICLE 9 - Engineer's Status during Construction

9.1 OWNER'S REPRESENTATIVE: The OWNER will provide an OWNER'S representative during the construction period. The duties and responsibilities and the limitations of authority of OWNER'S representative during construction are set forth in the Contract Documents and shall not be extended without written consent of OWNER.

9.2 VISITS TO SITE: In addition to the OWNER's representative, ENGINEER will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. Neither the OWNER's representative nor the ENGINEER will be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. ENGINEER'S efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform to the Contract Documents. On the basis of such visits and on-site observations as an experienced and qualified design professional, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defects and deficiencies in the Work.

9.4 CLARIFICATIONS AND INTERPRETATIONS: ENGINEER will issue with reasonable promptness such written clarification of interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If CONTRACTOR believes that a written clarification or interpretation justifies an increase in the Contract Price or Contract Time, CONTRACTOR may make a claim therefore as provided in Article 11 or Article 12 of the General Conditions.

9.5 AUTHORIZED VARIATIONS IN WORK:

9.5.1 ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER, and also on CONTRACTOR who shall perform the Work involved promptly. If CONTRACTOR believes that a Field Order justifies an increase in the Contract Price or an extension of the Contract Time and the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a claim therefore as provided in Article 11 or 12.

9.5.2 ENGINEER shall prepare change orders at OWNER'S request, and when required by the contract documents, ENGINEER shall set the price and/or time adjustments he deems reasonable.

9.6 REJECTING DEFECTIVE WORK: ENGINEER, based on its observations, reports of resident engineer(s) will have authority to disapprove or reject Work at any time during the construction of the Work, which does not conform to the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the work as provided in Paragraph 13.9, whether or not the Work is fabricated, installed, or completed. When CONTRACTOR has been notified by ENGINEER of disapproval or rejection of non-conforming Work, CONTRACTOR shall take immediate action to correct same.

9.7 SHOP DRAWINGS: In connection with ENGINEER'S responsibility for Shop Drawings and samples, see paragraphs 6.21 through 6.25, inclusive.

9.8 CHANGE ORDERS: In connection with ENGINEER'S responsibilities for Change Orders, see Articles 10, 11 and 12.

9.9 PAYMENTS: In connection with ENGINEER'S responsibilities in respect of Applications for Payment, etc., see Article 14.
9.10 DETERMINATIONS FOR UNIT PRICES: ENGINEER will determine the actual quantities and classifications of unit price work performed by CONTRACTOR. Engineer will review with CONTRACTOR ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application of Payment or otherwise). ENGINEER's written decision will be final and binding on CONTRACTOR, unless within ten days after the date of any such decision, CONTRACTOR delivers to the ENGINEER and OWNER written notice of intention to appeal the ENGINEER's decision.

9.11 DECISIONS ON DISPUTES: ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and claims under Articles 11 and 12 in respect of changes in the Contract Price or Contract Time will be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph, which ENGINEER will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter shall be delivered by the claimant to ENGINEER and the other party to the Agreement promptly (but in no event later than thirty days) after the occurrence of the event giving rise thereto, and written supporting data will be submitted to ENGINEER and the other party within sixty days of after such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim.

9.12 When functioning as interpreter and judge under paragraphs 9.10 and 9.11, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to paragraph 9.10 and 9.11 with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.16) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such claim, dispute or other matter.

9.13 LIMITATIONS ON ENGINEER'S RESPONSIBILITIES:

9.13.1 Neither ENGINEER'S authority to act under this Article 9 or elsewhere in the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

9.13.2 Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed", "as approved", or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper" or "satisfactory" or adjectives of like effect or import are used to describe requirement, direction, review or judgment of ENGINEER as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.13.3 or 9.13.4.

9.13.3 ENGINEER will not be responsible for CONTRACTOR'S means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and ENGINEER will not be responsible for CONTRACTOR'S failure to perform or furnish the Work in accordance with the Contract Documents.
9.13.4 ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

**ARTICLE 10 - Changes in the Work**

Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by a Change Order, Field Order, or a Work Directive Change. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

**10.1 CHANGE ORDERS:** Change Orders shall be submitted using the Change Order AIA G701 form unless otherwise determined. Change orders may be issued by OWNER in one of the following manners:

10.1.1 Bilateral change order: Type of order issued to CONTRACTOR when OWNER and CONTRACTOR have agreed on the price and time adjustment made necessary by the particular change order.

10.1.2 Unilateral change order: Type of order issued to CONTRACTOR when OWNER and CONTRACTOR cannot agree on the price and/or time adjustment necessitated by the particular change order, within the scope of the project. The OWNER will issue the unilateral change order setting forth such price and/or time adjustments that ENGINEER shall deem reasonable. Any dispute in connection with the issuance of a unilateral change order shall be subject to the provisions of paragraph 9.11 and Article 16.

**10.2 CHANGE ORDER CLAIM:** If OWNER and CONTRACTOR are unable to agree as to the extent, if any, of an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a Work Directive Change or Change Order, a claim may be made therefore as provided in Article 11 or Article 12.

**10.3 CONTRACTOR** shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in paragraphs 3.4 and 3.5, except in the case of an emergency as provided in paragraph 6.20 and except in the case of uncovering Work as provided in paragraph 13.9.

**10.4 OWNER** and CONTRACTOR shall execute appropriate Change Orders covering:

10.4.1 Changes in the Work which are ordered by OWNER pursuant to Article 10, are required because of acceptance of defective Work under paragraph 13.13 or correcting defective Work under paragraph 13.14 or are agreed to by the parties;

10.4.2 Changes in the Contract Price or Contract Time which are agreed to by the parties; and

10.4.3 Changes in the Contract Price or Contract Time which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 9.11; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.25.

**10.5 If** notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Time) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR'S responsibility,
and the amount of each applicable Bond will be adjusted accordingly.

10.6 WRITTEN PROPOSALS: At any time ENGINEER may request a quotation from CONTRACTOR for a proposed change in the Work. Within 15 calendar days after receipt of a Notice of a Proposed Change, unless otherwise indicated in the Notice, CONTRACTOR shall submit a written and detailed proposal for an increase or decrease in the Contract Price or Contract Time corresponding to the proposed change. The proposal shall include an itemized estimate of all costs and time for performance that will result directly or indirectly from the proposed change. Unless otherwise directed, itemized estimates shall be in accordance with the requirements of Articles 11 and 12 and in sufficient detail to reasonably permit an analysis by ENGINEER of all material, labor, equipment, subcontract, and overhead costs and fees and shall cover all aspects of the work involved in the change, whether such was deleted, added, changed, or impacted. Any amount claimed for subcontracts shall be similarly supported. Itemized schedule adjustments shall be in sufficient detail to permit an analysis of impact. Notwithstanding the request for quotation, CONTRACTOR shall carry on the Work and maintain the progress schedule. Delays in the submittal of the written and detailed quotation will not constitute a basis for an increase in contract time.

10.7 FIELD ORDER: ENGINEER may authorize minor changes in the Work not involving an adjustment in the Contract Price or the Contract Time, which are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order or in the approval of a shop drawing or sample, and shall be binding on CONTRACTOR. CONTRACTOR shall proceed with the performance of the changes in the Work so authorized by ENGINEER unless CONTRACTOR believes that such Field Order or approved shop drawing or sample entitles him to a change in the Contract Price or Time, or both, in which case CONTRACTOR shall give ENGINEER a written Notice of a Proposed Change thereof along with supporting documentation within 3 days of receipt of the Field Order or the approved shop drawing or sample and prior to commencing work. CONTRACTOR shall document the basis for the change in Contract Price or Time in accordance with paragraph 10.6 and the requirements of Article 11 and Article 12. Request for a Change Order to adjust Contract Price or Time arising out of a Field Order or an approved shop drawing will not be considered without the attachment thereto of a copy of the referenced Field Order or approved shop drawing. No claim by CONTRACTOR will be allowed if the Notice of Proposed Change is submitted after Work on the Field Order or the approved shop drawing or sample has commenced, or after Final Payment under this Agreement.

10.8 CONTRACTOR'S ACCEPTANCE OF A CHANGE ORDER: The increase or decrease in Contract Price or Contract Time, or both stated in a Change Order signed by CONTRACTOR shall unequivocally comprise the total price and/or time adjustment due or owed for the Work or changes defined in the Change Order. By executing a Change Order, CONTRACTOR acknowledges and agrees that the stipulated increases or decreases in Contract Price and/or time represent full compensation for all increases or decreases in the cost of or the time required to perform the entire Work under the contract arising directly or indirectly from the change, including the costs and delays associated with the interruption of schedules, extended overheads, delay, loss of momentum, acceleration to overcome delays and loss of momentum, and cumulative impacts or ripple effect on all other non-affected work under this contract. Such signing of a Change Order constitutes full and mutual accord and satisfaction for the adjustment in Contract Price or time as a result of increases or decreases in costs and time of performance caused directly and indirectly from the change, subject to the current scope of the Work as set forth in the Contract Documents. Acceptance of this waiver constitutes an agreement between OWNER and CONTRACTOR that the Change Order represents an equitable adjustment to the Contract, and that CONTRACTOR will waive all rights to file a claim on the Change Order after it is properly executed by OWNER and CONTRACTOR.

10.9 If upon the review of any proposal or claim submitted by CONTRACTOR, ENGINEER or OWNER determines that an adjustment or that no adjustment in Contract Price or Contract Time is justified under the Contract documents, that determination shall be final and binding on CONTRACTOR unless CONTRACTOR files a subsequent written notice of claim in the form of a Notice of Proposed Change in accordance with Articles 11 and 12, referencing the disputed determination, and CONTRACTOR furnishes any additional supporting data requested by ENGINEER or OWNER.
ARTICLE 11 - Change of Contract Price

11.1 The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

11.2 The Contract Price may only be changed by a Change Order CONTRACTOR shall notify ENGINEER by means of a Written Notice of a Proposed Change within fifteen days, or earlier if so required elsewhere in the Contract Documents, of the occurrence of an event which CONTRACTOR believes entitles him to a change in the Contact Price. Supporting data shall be delivered within fifteen days of such notice or within thirty days of such occurrence, whichever is later, unless OWNER allows an additional period of time to ascertain accurate cost data. CONTRACTOR must prove that additional costs were necessarily incurred which meet the criteria set forth in Paragraph 10.4, despite CONTRACTOR'S reasonable, prudent, and diligent efforts to prevent such costs. Failure of CONTRACTOR to comply with the time requirements for written Notice of a Proposed Change or for submittal of supporting data shall be considered to be a waiver by CONTRACTOR of any claim for an addition to the Contract Price.

11.3 The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

11.3.1 LUMP SUM PRICES INCLUDED IN THE CONTRACT: Where the Work involved is covered by lump sum prices included in the Proposal Documents, Schedule of Contract Items and Unit Price; the Contract Price shall be adjusted by the lump sum prices.

11.3.4 NEGOTIATED LUMP SUM: If the Contract Price is adjusted on the basis of an agreed to Lump Sum, and the costs are estimated in accordance with this Article 11.

11.3.5 COST OF THE WORK: If OWNER and CONTRACTOR cannot agree that any of the methods described in 11.3.1, 11.3.2, 11.3.3 or 11.3.4 above are appropriate for the proposed work, OWNER may direct CONTRACTOR to proceed on the basis of actual costs in accordance with Article 11.

11.3.6 UNILATERAL CHANGE ORDER: If OWNER and CONTRACTOR cannot agree on the price and/or time adjustment necessitated by the particular proposed change order, the OWNER may issue a unilateral change order setting forth such price and/or time adjustments that ENGINEER shall deem reasonable.

11.4 COST OF THE WORK: The term Cost of the Work means the sum of all costs necessarily incurred and paid by the CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.5:

11.4.1 The Cost of the Work involved includes payroll costs for CONTRACTOR's craft labor, including foremen, assigned to the site and engaged in furnishing and incorporating materials or equipment in the Work involved. Labor work hours shall not exceed current "Means open Shop Building Construction Cost data" applicable to the work involved. Payroll costs shall include wages and may include those labor burdens expressly certified in advance by a duly authorized financial representative of CONTRACTOR and so approved by OWNER. Examples of labor burdens include social security, unemployment taxes, worker's compensation, health and retirement benefits, vacation and holiday pay. When determining actual payroll costs under paragraph 11.3.5: (a) contemporaneously, daily time sheets certified by CONTRACTOR and verified by ENGINEER along with certified payroll records shall be valid records; (b) after-the-fact daily time sheets shall be valid only if they expressly correlate to the Work involved, and if recorded at that time and used for payroll.
11.4.2 The Cost of the Work involved includes payments by CONTRACTOR to Suppliers for material and equipment used in the Work involved, including transportation, storage and necessary Suppliers’ field services. All trade discounts, rebates and refunds and all returns from sale of surplus items shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained. If required by OWNER, CONTRACTOR shall obtain bids for designated materials or equipment and nominate at least two (2) Suppliers for selection by OWNER. When determining actual Supplier costs, invoices segregating items associated with the Work involved shall be the record upon which to base actual costs.

11.4.3 The Cost of the work involved includes payments made by the CONTRACTOR to Subcontractor for the Work involved performed by the Subcontractor. The methods for calculating Subcontractors’ costs shall be the same as for CONTRACTOR costs, except that the term Subcontractor shall replace the term "CONTRACTOR", context permitting. If OWNER requires, CONTRACTOR shall obtain detailed competitive sub-bids and nominate at least two (2) Subcontractors for the performance of any work involved for selection by OWNER.

11.4.3.1 All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

11.4.4 Construction Equipment Costs: The Cost of the work involved includes costs for individual construction equipment with replacement value in excess of $1,000,000. Transportation, loading and unloading, installation, dismantling and removal costs shall be allowed only if prior consent is obtained from ENGINEER, and if equipment is, or was, transported to the site solely for the Work involved. Shipping costs will be allowed if the equipment requires the use of a carrier, and provided the travel distance does not exceed that for equipment in St. John the Baptist Parish. When multiple attachments are used, only the highest cost attachment shall be recoverable. Equipment costs shall cease when the equipment is no longer needed for the Work involved. Payroll costs for labor operating the equipment are as specified in paragraph 11.4.1. Equipment costs shall be computed using the same accounting and estimating rules and prices, whether related to added or deleted Work.

11.4.4.1 When determining actual construction equipment costs under paragraph 11.3.5: (a) contemporaneously, daily logs of the equipment, operators and actual usage, verified by ENGINEER, shall be the valid records; (b) after-the-fact, such daily records shall be valid only if developed when the Work involved was performed and used for accounting purposes.

11.4.4.2 Rented or owned equipment at the site, idled solely by actions of OWNER or ENGINEER, shall be paid at the rates for rented equipment, or based on fifty percent (50%) of the rates for owned equipment, respectively, provided that the idle period exceeds that normally experienced for such equipment and occurs during normal working hours.

11.4.4.3 Rented or Leased Construction Equipment: Construction equipment rented or leased from third parties shall be priced using either the specific rates negotiated between OWNER and CONTRACTOR (based on the actual rental or lease agreements), or in the event that no agreement is reached, using those rates listed in the Rental Rate “Blue Book” published by Dataquest, Inc. for the region covering the New Orleans metropolitan area and applicable to the equipment (model number and year), but in no event shall the rate exceed those issued by local equipment rental companies within St. John the Baptist Parish. The equipment rate for second or third shift Work shall not exceed fifty percent (50%) of the base rate. Operating costs shall not exceed the hourly operation rate in the Blue Book. Hourly rates for equipment previously in use on the work for at least a month shall be based on the monthly rate divided by 176 hours. Equipment previously in use for only one week or not previously in use at the site shall not be invoiced to OWNER at rates higher than the following schedule of equipment use and payment category: applicable to equipment listed in the Rental Rate "Blue Book"
11.4.4.4 Owned Construction Equipment: Construction equipment Owned by CONTRACTOR, or rented or leased from lessors associated with or owned by CONTRACTOR, shall be priced using either the specific rates negotiated between OWNER and CONTRACTOR (based on rates consistent with CONTRACTOR's normal accounting practices), or in the event that no agreement is reached, using the rates listed in the "Contractor's Equipment Cost Guide" published by Dataquest, Inc. for the region covering the New Orleans metropolitan area, but in no event shall the equipment ownership costs exceed rental rates of local equipment rental companies within St. John the Baptist Parish and operating costs shall not exceed the hourly operation rate in the Blue Book. For multiple shifts, rates shall not exceed the shift Work adjustments recommended in the "Contractor's Equipment Cost Guide".

11.4.5 Supplemental costs including the following:

11.4.5.1 The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR'S employees incurred in discharge of duties connected with the Work.

11.4.5.2 Costs of field supplies and purchase costs (less market value if not consumed) of tools individually valued at less than $1,000 that are not owned by the workers, if CONTRACTOR provides an itemized list of the field supplies and tools required for the performance of the Work involved; however, no such costs shall be allowed over 4% of the labor costs under paragraph 11.4.1, excluding burdens, unless CONTRACTOR furnishes detailed data sufficient to allow verification that a higher percentage is appropriate for the work involved.

11.4.5.3 Sales, consumer, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

11.4.5.4 Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

11.4.5.5 Losses and damages (and related expenses), not compensated by insurance or otherwise, to the Work or otherwise sustained by CONTRACTOR in connection with the performance and furnishing of the Work, provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's Fee. If, however, any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid for services a fee proportionate to that stated in paragraph 11.6.2.

11.4.5.6 The costs of utilities, fuel and sanitary facilities at the site.

11.4.5.7 Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

11.4.5.8 Cost of premiums for additional Bonds and insurance required because of changes in the Work.
11.5 The term Cost of the Work shall not include any of the following:

11.5.1 Payroll costs and other compensation of CONTRACTOR'S officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, lawyers, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in his principal or a branch office for general administration of the Work, all of which are to be considered administrative costs covered by the Contractor's Fee.

11.5.2 Expenses of CONTRACTOR'S principal and branch offices other than CONTRACTOR'S office at the site.

11.5.3 Any part of CONTRACTOR'S capital expenses, including interest on CONTRACTOR'S capital employed for the Work and charges against CONTRACTOR for delinquent payments.

11.5.4 Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by subparagraph 11.4.4.9 above).

11.5.5 Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

11.5.6 Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.4.

11.5.7 Attorney's Fees and/or Court Costs.

11.5.8 Costs or fees of consultants retained or utilized by CONTRACTOR, or his agents, for the purpose of making or filing a claim against OWNER, pursuing litigation or defending any claim and/or dispute.

11.5.9 CONTRACTOR shall not be allowed to include as part of the Cost of the Work involved any construction equipment or supplemental costs that cannot be shown to increase on account of, or are not directly attributable to, the performance of the Work involved. Payroll costs for the full time resident superintendent included within the requirements of paragraph 6.2.1 are but one example of such costs.

11.6 CONTRACTOR'S FEE: The CONTRACTOR'S fee allowed to CONTRACTOR for overhead and profit shall be determined by negotiations. The objective of negotiations shall be the exercise of sound business judgment including a fair and reasonable profit based on assumptions of risk, exposure to weather, size of the change, percent of subcontracted work, equipment requirements, and time of performance. In no case, however, shall the fee for overhead and profit exceed the following percentages of the various portions of the Cost of the Work:

11.6.1 For costs incurred under paragraphs 11.4.1 and 11.4.2, the CONTRACTOR'S fee shall not exceed 15%;

11.6.2 For costs incurred under paragraph 11.4.3, and for work performed by a CONTRACTOR'S Subcontractor, the CONTRACTOR'S fee shall not exceed 10% and the Subcontractor's fee shall not exceed 15%; for costs incurred under paragraph 11.4.3, and Work performed by a Subcontractor's Subcontractor, the CONTRACTOR'S and the Subcontractor's fee shall not exceed 5% and 5%, and the Subcontractor's fee shall not exceed 15%.
11.6.3 No fee shall be payable on the basis of costs itemized under paragraphs 11.4.4 and 11.5.

11.6.4 The amount of credit to be allowed by CONTRACTOR to OWNER for any such a change which results in a net decrease in cost will be the amount of the actual net decrease plus a deduction in CONTRACTOR'S fee in accordance with the following:

11.6.5 When both additions and credits are involved in one change, and the additions exceed the credits, the adjustment in CONTRACTOR'S fee shall be computed on the amount by which the additions exceed the credits, except that no adjustments shall be allowed on the costs developed in accordance with paragraph 11.3.1;

11.6.6 When both additions and credits are involved in one change, and the credits exceed the additions, CONTRACTOR will be allowed to retain fee on the amount by which the credits exceed the additions, except that no adjustment shall be allowed on the costs developed in accordance with paragraph 11.3.2.

11.7 Whenever the cost of any Work is to be determined pursuant to paragraph 11.4 or 11.5, CONTRACTOR will submit in form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

11.8 Bidders shall submit the included Louisiana Uniform Public Work Bid Form with bid. Each bid item shall be its own Item unit price or "Lump Sum" unit price, whichever applicable. Upon receipt of contract, the Contractor shall provide an itemized Schedule of Values.

11.9 UNIT PRICE WORK: (NOT USED)

11.9.1 Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER in accordance with Paragraph 9.10.

11.9.2 Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR'S overhead and profit for each separately identified item.

11.9.3 Unit Prices contained in the initial Contract shall not be changed under any circumstances. (Reference Louisiana Public Bid Law).

11.9.4 If CONTRACTOR believes a variation from estimated quantities of Unit Price Work is such as to require an increase in the Contract Time, CONTRACTOR shall within seven days of knowledge of the variation in quantities, submit a written Notice of a Proposed Change to ENGINEER, and proceed to substantiate his claim within fifteen days of the delivery of the notice with the analysis and documentation required in this Section of the General Requirements.

ARTICLE 12: Change of Contract Time

12.1 The Contract Time may only be changed by a Change Order. Any claim or request for an extension in the Contract Time shall be based on a written Notice of a Proposed Change delivered to ENGINEER within seven days, or earlier if so required in the Contract Documents, of the occurrence of the event giving rise to the request or claim. Supporting data as to the extent of the request or claim shall be delivered within fifteen days of such Notice, or within twenty-two days of the event giving rise to the occurrence, whichever
is later, unless ENGINEER allows an additional period of time to ascertain more accurate data. CONTRACTOR must prove that extensions to the Contract Time have materialized which meet the combined criteria set forth in paragraph 12.2 below and Official Progress Schedules of the General Requirements, despite CONTRACTOR'S reasonable, prudent, and diligent efforts to prevent or overcome such delays. Failure of CONTRACTOR to comply with the time requirements for written Notice or for submittal of supporting data shall be considered to be a waiver by CONTRACTOR of any claim for an extension in the Contract Time.

12.2 The Contract Time will be extended in an amount equal to the time lost due to delays beyond the control and without the fault of CONTRACTOR, and which CONTRACTOR could not have guarded against, if a claim is made therefore as provided in Paragraph 12.1 and is substantiated to the satisfaction of OWNER. Such delays may include, but not limited too, unusually severe weather, sink holes, archaeological finds, acts of God, acts of the public enemy, acts of OWNER in either its sovereign or contractual capacity, furnishing of lands, right-of-way or easements by OWNER, acts of another CONTRACTOR in the performance of a Contract with OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, or delays of Subcontractors of Suppliers at any tier arising from causes other than normal weather beyond the control and without the fault or negligence of both CONTRACTOR and such Subcontractors and Suppliers; and further provided that

12.2.1 The Contract Time is extended only to the extent that the delay is unreasonable under the Contract, which is the extent the delays set forth in paragraph 12.2 above exceed the Total Float Time available in the Official Schedule and extend completion of the Work, or specified part of the work, beyond the corresponding Contract Time.

12.3 If upon evaluation of CONTRACTOR's analysis, OWNER justifies an extension in Contract Time under paragraph 12.1 through 12.3 for delay not caused in whole or in part by acts or omissions within the control of OWNER or ENGINEER, the OWNER shall authorize the necessary change in Contract Time only.

12.4 COMPENSABLE DELAY:

12.4.1 Unless otherwise excluded in the Contract Documents, an extension in Contract Time may be combined with an increase in Contract Price to the extent the delay was not concurrent with CONTRACTOR delay, was caused in whole or in part by acts or omissions within the control of OWNER or ENGINEER and is due to one of the following: Underground Facilities that are not shown (i.e., previously unknown); an emergency; objection, for OWNER's convince, to a Subcontractor, historic resources, uncovering of work not found to be defective under paragraph 13.9; delay under paragraph 7.5.3 or any other suspension of Work; changes in the Work; differing site conditions; and variation in quantities.

12.4.2 Changes in Contract Price for extensions in Contract Time may include increase in the Cost of the Work, as provided in Article 11, related to the extension in Contract Time, but shall exclude costs that are unaffected or do not relate to the extension in Contract Time, such as: (a) operating costs of construction equipment assigned to the Work on a continuous basis but primarily used in the furnishing and incorporating of materials/equipment into the Work, (b) operating costs and owned/rental costs of construction equipment used solely in the furnishing and incorporating of materials/equipment into the Work (crane used for specific lifts, concrete pump used for specific pours, etc.), and fully paid site facilities, tools, etc.

12.4.3 If a delay meeting the conditions of paragraph 12.4.1 delays Substantial completion of the Work beyond the Contract Time for Substantial Completion, OWNER shall negotiate with CONTRACTOR the reimbursement of an amount to cover administrative costs (under paragraphs 11.5.1 through 11.5.4) that will be or were unabsorbed prior to the expiration date of that contract Time. Reimbursement shall be based on the lesser of (a) five percent (5%) times that portion of the Contract Price remaining un-billed, less retainage, prior to the expiration of that Contract Time, or (b) the product of that un-billed portion of the
Contract Price times the (company wide) ratio of CONTRACTOR's administrative costs to billings, or (c) that amount derived by an application of the Eichleay formula.

12.4.4 CONTRACTOR shall not recover from OWNER (a) acceleration costs incurred to overcome delays which warrant extensions in Contract Time but exclude changes in Contract Price, (b) escalation costs for any part of the Work not delayed beyond the Late Dates in the Official Schedule, or (c) delay costs not expressly allowed in this Article.

**ARTICLE 13 - Warranty and Guarantee; Tests and Inspections: Correction, Removal or Acceptance of Defective Work**

13.1 **WARRANTY AND GUARANTEE:** CONTRACTOR warrants and guarantees to OWNER and ENGINEER that all Work will be in accordance with the Contract Documents and will not be defective. Prompt notice of observed defects shall be given to CONTRACTOR. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this Article 13.

13.1.1 The obligations of CONTRACTOR under this Paragraph 13.1 shall be in addition to and not in limitation of any obligation imposed upon him by special guarantees required by the Contract Documents or otherwise prescribed by law.

13.1.2 In special circumstances where a particular item of equipment or part of the Work reaches Substantial Completion upon successful performance of Pre-operational Testing, and notwithstanding anything in the Contract Documents to the contrary, CONTRACTOR shall maintain the particular item of equipment or part of the Work in good order and in proper working condition during the period between Substantial Completion and Initiation of Operation, and for such maintenance CONTRACTOR shall receive no adjustment to the Contract Price.

13.1.3 The warranty or guarantee provided by CONTRACTOR under Paragraph 13.1 of the General Conditions shall remain in full effect throughout the period from the date of Initiation of Operation of the entire work to the end of the Correction Period (as that term is defined in these General Conditions).

13.2 **ACCESS TO WORK:** ENGINEER and ENGINEER's representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspection and testing. CONTRACTOR shall provide proper and safe conditions for such access.

13.3 **NOTICE OF TESTS AND INSPECTIONS:** CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests or approvals.

13.4 **TESTS AND INSPECTIONS:** If any laws or regulations of any public body having jurisdiction requires any Work (or part thereof) to specifically be inspected, tested or approved, CONTRACTOR shall assume full responsibility therefore, pay all costs in connection therewith and furnish ENGINEER the required certificates of inspection, testing or approval. CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with OWNER'S or ENGINEER's acceptance of a Supplier of materials or equipment proposed to be incorporated in the Work, or of materials or equipment submitted for approval to CONTRACTOR'S purchase thereof for incorporation in the work.

13.4.1 All construction testing and certifications required under the Specifications shall be performed by Certified Technicians from an Independent Testing Laboratory. The CONTRACTOR shall propose a private testing laboratory in writing to the ENGINEER, together with a copy of the instruction provisions of his proposed sub-agreement, so that the ENGINEER may determine the proper instructions are included.
in compliance with the specification. Upon approval by the ENGINEER, the CONTRACTOR shall cooperate with the testing laboratory by furnishing material for testing, space for storage and transportation of the samples as necessary. Compensation for testing and certification shall be included within price bid for associated items of work. No separate measurement or additional compensation shall be allowed.

13.4.2 The Testing Laboratory shall submit to the ENGINEER three (3) typed copies and to the CONTRACTOR one (1) typed copy, of all applicable test data, certifications and reports as required. All required test data and material certifications for each respective item of work must be submitted to the ENGINEER prior to application for payment. Any applications not accompanied by required test data and/or certifications shall be recommended for payment at an amount not to exceed 50% of contract until cost of required test data and certifications are submitted and subsequently approved.

13.4.3 Upon completion of the project and prior to substantial completion, the testing laboratory shall address a letter to the OWNER in which the laboratory shall certify that all testing and certification requirements of the specification have been satisfactorily met.

13.4.4 The CONTRACTOR is cautioned to provide termination provisions in its sub-agreement with the testing laboratory. In the event that the testing services prove not up to recognized standards, the ENGINEER reserves the right to withdraw his approval and require another laboratory to be furnished by the CONTRACTOR at no increase in Contract Price.

13.5 All inspections, tests or approvals other than those required by laws or regulations of any public body having jurisdiction shall be performed by organizations acceptable to OWNER and CONTRACTOR (or by ENGINEER if so specified).

13.6 If any Work (including the work of others) that is to be inspected, tested or approved is covered without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation. Such uncovering shall be at CONTRACTOR'S expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR'S intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

13.7 Neither observations by ENGINEER nor inspections, tests or approvals by others shall relieve CONTRACTOR from CONTRACTOR'S obligations to perform the Work in accordance with the Contract Documents.

13.8 UNCOVERING WORK: If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER'S observation and replaced at CONTRACTOR'S expense.

13.9 PAYMENT FOR UNCOVERING WORK: If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER'S request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such work is defective, CONTRACTOR shall bear all direct, indirect and consequential costs of such uncovering, exposure, observation, inspection and testing, and of satisfactory reconstruction, (including but not limited to fees and charges of Engineers, Architects, Attorneys and other professionals), and OWNER shall be entitled to an appropriate decrease in the Contract Price, if the parties are unable to agree as to the amount thereof, may make a claim therefore as provided in Article 11. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price of an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction; and, if the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a claim therefore as provided in Articles 11 and 12.
13.10 **OWNER MAY STOP THE WORK:** If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workmen or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any other party. In the event the OWNER stops the work pursuant to this paragraph 13.10, CONTRACTOR shall not be entitled to delay damages, including without limitation, demands for extended job site overhead, home office overhead, cumulative impacts, loss of productivity and efficiency, learning curve impacts, equipment down time and/or interest penalties, occasioned directly or indirectly by the stop work order.

13.11 **CORRECTION OR REMOVAL OF DEFECTIVE WORK:** If required by ENGINEER, CONTRACTOR shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by ENGINEER, remove it from the site and replace it with non-defective Work. CONTRACTOR shall bear all direct, indirect and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, architects, attorneys and other professionals, and court costs) made necessary thereby. CONTRACTOR shall not be entitled to time extension of the Contract Time for correction or removal of defective work.

13.12 **ONE YEAR CORRECTION PERIOD:** If within the period from the date of Substantial Completion of a particular item of equipment or a designated part of the work to one year after the date of Initiation of Operation for the Project, the particular item of equipment or designated part of the work is found to be defective, CONTRACTOR shall promptly, without an adjustment in Contract Price and in accordance with ENGINEER'S written instructions, either correct such defective Work, or if it has been rejected by ENGINEER, remove it from the site and replace it with non-defective work. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all direct, indirect and consequential costs of such removal and replacement, (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) will be paid by CONTRACTOR.

13.12.1 Subject to the conditions set forth in paragraphs 13.1.2 and 13.1.3 and the adjustments described in Subparagraphs 13.12.2, below, the Correction Period shall be one year.

13.12.2 Unless another date is indicated in the Contract Documents the date the Work is Substantially Complete shall be the date for Initiation of Operation to occur. However, OWNER may at its sole option advance or delay the date for Initiation of Operation, and CONTRACTOR'S obligations to extend warranties and guarantees in accordance with paragraph 13.1.2 and 13.1.3 or to maintain the Work in accordance with paragraph 13.1.2 until then shall remain absolute. Applicable Change Orders shall be executed by the parties to adjust the Contract Price, as appropriate.

13.12.3 CONTRACTOR'S responsibilities under the paragraph 13.12, including sub-paragraphs, are in addition to, not in lieu of, all other obligations imposed by these contract documents, or imposed by applicable State laws.

13.13 **ACCEPTANCE OF DEFECTIVE WORK:** If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER'S recommendations of final payment, also ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall bear all direct, indirect and consequential costs attributable to OWNER'S evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness and to include but not be limited to fees and charges of engineers, architects, attorneys and other professionals). If any such acceptance occurs prior to ENGINEER'S recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof,
OWNER may make a claim therefore as provided in Article 11. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

13.14 OWNER MAY CORRECT DEFECTIVE WORK: If CONTRACTOR fails within a reasonable time after written notice of ENGINEER to proceed to correct and to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.11, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR'S services related thereto, take possession of CONTRACTOR'S tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER'S representatives, agents and employees such access to the site as may be necessary to enable OWNER to exercise the rights and remedies under this paragraph. All direct, indirect and consequential costs of OWNER in exercising such rights and remedies shall be charged against CONTRACTOR in an amount approved as to reasonableness by ENGINEER, and a Change Order shall be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, OWNER may make a claim therefore as provided in Article 11. Such direct, indirect and consequential costs will include but not be limited to fees and charges of engineers, architects, attorneys and other professionals, all court and arbitration costs and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR'S defective Work. CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by OWNER of OWNER'S rights and remedies hereunder.

ARTICLE 14 - Payments to Contractor and Completion

14.1 SCHEDULE OF VALUES: The schedule of values established as provided in paragraph 2.9 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.2 APPLICATION FOR PROGRESS PAYMENT: At least fifty-five days before each progress payment falls due (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents and also as ENGINEER may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by such data, satisfactory to OWNER, as will establish OWNER'S title to the material and equipment and protect OWNER'S interest therein, including applicable insurance. Only major items of material and equipment to be incorporated in the project will be eligible for payment. These items must be easily accountable by the ENGINEER. Payment for these materials will be invoice prices for the material, submitted with the request for payment, which price shall not exceed the appropriate portion of the contract items in which such materials are to be incorporated. The amount of retainage with respect to progress payments will be as stipulated in the Agreement. Construction invoices shall be submitted using the AIA Application and Certification for Payment AIA G702 and G703 forms unless otherwise determined.

14.2.1 Notwithstanding any other provisions of these contract documents to the contrary, OWNER is under
no duty or obligation whatsoever to any Subcontractor, laborer or other party to ensure that payments due and owing by CONTRACTOR to any of them are or will be made. Such parties shall rely only on CONTRACTOR'S surety bonds for remedy of nonpayment by CONTRACTOR.

14.3 CONTRACTOR’S WARRANTY OF TITLE: CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

14.4 REVIEW OF APPLICATIONS FOR PROGRESS PAYMENT: ENGINEER will, within ten days after receipt of each application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER, or return the Application to CONTRACTOR indicating in writing ENGINEER’S reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and re-submit the Application. Forty-five (45) days after presentation of the Application for Payment with ENGINEER’S recommendation, the amount recommended will (subject to the provisions of the last sentence of paragraph 14.7) become due and when due will be paid by OWNER to CONTRACTOR.

14.5 ENGINEER’S recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER’S on-site observations of the Work in progress as an experienced and qualified design professional and on ENGINEER’S review of the Application for Payment and the accompanying data and schedules that the Work has progressed to the point indicated; that, to the best of ENGINEER’S knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.10, and to any other qualifications stated in the recommendation); and that CONTRACTOR is entitled to payment of the amount recommended. However, by recommending any such payment ENGINEER will not thereby be deemed to have represented that exhaustive or continuous on-site inspections have been made to check the quality or quantity of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents or that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or OWNER to withhold payment to CONTRACTOR.

14.6 ENGINEER’S recommendation of final payment will constitute an additional representation by ENGINEER to OWNER that the conditions precedent to CONTRACTOR’S being entitled to final payment as set forth in paragraph 14.13 have been fulfilled.

14.7 ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER’S opinion, it would be incorrect to make such representations to OWNER. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify and such payment previously recommended, to such extent as may be necessary in ENGINEER’S opinion to protect OWNER from loss because:

14.7.1 the Work is defective, or completed Work has been damaged requiring correction or replacement,

14.7.2 the Contract Price has been reduced by Change Order,

14.7.3 OWNER has been required to correct defective Work or complete Work in accordance with paragraph 13.14, or

14.7.4 of ENGINEER’S actual knowledge of the occurrence of any of the events enumerated in paragraphs 15.2.1 through 15.2.9 inclusive.
14.7.5 OWNER may refuse to make payment of the full amount recommended by ENGINEER because claims have been made against OWNER, or OWNER has claims against CONTRACTOR including but not limited to liquidated damages for anticipated or actual late completion, on account of CONTRACTOR'S performance or furnishing of the Work, or Liens have been filed in connection with the Work or there are other items entitling OWNER to a set-off against the amount recommended, but OWNER must give CONTRACTOR prompt written notice (with a copy to ENGINEER) stating the reasons for such action.

14.8 **SUBSTANTIAL COMPLETION:** When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Within a reasonable time thereafter, OWNER, CONTRACTOR and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reason therefore. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion, which shall fix the date of substantial completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which he may make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within twenty-eight days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating his reasons. If after consideration of OWNER'S objections, ENGINEER considers the WORK substantially complete, ENGINEER will within said twenty-eight days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be complete or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion, ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, heat, utilities, insurance and warranties. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER prior to ENGINEER'S issuing the definitive certificate of Substantial Completion ENGINEER'S aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment. Once determined the Work is identified as substantially complete a Certificate of Substantial Completion AIA G704 will be issued.

14.9 **EXCLUSION OF CONTRACTOR FROM SITE:** OWNER shall have the right to exclude CONTRACTOR from the Work after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

14.10 **PARTIAL UTILIZATION:** Use by OWNER of any finished part of the Work, which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER without significant interference with CONTRACTOR'S performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following:

14.10.1 OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees, CONTRACTOR will certify to OWNER and ENGINEER that said part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR and ENGINEER shall make an
inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefore. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraphs 14.8 and 14.9 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

14.10.2 OWNER may at any time request CONTRACTOR in writing to permit OWNER to take over operation of any such part of the Work although it is not substantially complete. A copy of such request will be sent to ENGINEER and within a reasonable time thereafter OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion and will prepare a list of the items remaining to be completed or corrected thereon before final payment. If CONTRACTOR does not object in writing to OWNER and ENGINEER that such part of the Work is not ready for separate operation by OWNER, ENGINEER will finalize the list of items to be completed or corrected and will deliver such list to OWNER and CONTRACTOR together with a written recommendation as to the division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, utilities, insurance, warranties and guarantees for that part of the Work which will become binding upon OWNER and CONTRACTOR at the time when OWNER takes over such operation (unless they shall have otherwise agreed in writing and so informed ENGINEER). During such operation and prior to Substantial Completion of such part of the Work OWNER, shall allow CONTRACTOR reasonable access to complete or correct items on said list and to complete other related Work.

14.10.3 No occupancy or separate operation of part of the Work will be accomplished prior to compliance with the requirements of paragraph 5.7 in respect of property insurance.

14.11 LIEN PERIOD: Within twenty-one (21) days of the receipt of the definitive Certificate of Substantial Completion from ENGINEER, OWNER shall adopt and record a Resolution of Acceptance with the Recorder of Mortgages of the Parish in which the Agreement has been recorded. The recording of this Resolution of Acceptance shall commence a lien period of not less than forty-five (45) consecutive calendar days, during which period the retainage will be withheld by OWNER. After the said lien period, CONTRACTOR shall be responsible for obtaining from the Recorder of Mortgages a Certificate that the Agreement at the end of said forty-five day period, is clear of all liens, privileges, judgments or encumbrances of any nature whatsoever, which certificate he shall submit with his application for final payment to ENGINEER.

14.12 FINAL INSPECTION: Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of the particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies.

14.13 FINAL APPLICATION FOR PAYMENT: After CONTRACTOR has completed all such corrections to the satisfaction of the ENGINEER, and delivered four (4) sets of all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents (as provided in paragraph 6.17) and other documents, all as required by the Contract Documents, and after ENGINEER has indicated that the Work is acceptable (subject to the provisions of paragraph 14.17), CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to OWNER) of all Liens arising out of or filed in connection with the Work. In lieu thereof and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full; an affidavit of CONTRACTOR that the releases
and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER'S property might in any way be responsible, have been paid or otherwise satisfied; and consent of the surety, if any, to final payment. If any Subcontractor or Supplier fails to furnish a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

14.13.1 Notwithstanding any provision of the Contract Documents to the contrary, OWNER shall not be deemed to have accepted the work or to have waived claims against CONTRACTOR as provided in Paragraph 14.16 until (i) Initiation of Operation and (ii) payment of all remaining amount of the Contract Price.

14.13.2 As a condition to payment of all remaining portions of the Contract Price of the Unit Price Agreement, CONTRACTOR shall perform all Startup Testing and shall notify ENGINEER that the work is ready for final inspection. Such Startup Testing and notice to ENGINEER may be accomplished only after CONTRACTOR delivers written notice of the expected date of Initiation of Operation.

14.13.3 The requirements and provisions of Paragraphs 14.11, 14.12, and 14.13 of the General Conditions shall apply to payment of the remaining Contract Price pursuant to the Unit Price Agreement, as well to final payment under the Unit Price Agreement.

14.14 FINAL PAYMENT AND ACCEPTANCE: If, on the basis of ENGINEER'S observation of the Work during construction and final inspection, and ENGINEER'S review of the final Application for Payment and accompanying documentation - all as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR'S other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the Final Application for Payment, indicate in writing ENGINEER'S recommendation of payment and present the Application to OWNER for payment. Thereupon ENGINEER will give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.17. Otherwise, ENGINEER will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and re-submit the Application. Thirty days after presentation to OWNER of the Application and accompanying documentation, in appropriate form and substance, and with ENGINEER'S recommendation and notice of acceptability, the amount recommended by ENGINEER will become due and will be paid by OWNER to CONTRACTOR.

14.15 If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR'S final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.1, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

14.16 CONTRACTOR'S CONTINUING OBLIGATION: CONTRACTOR'S obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by ENGINEER, nor the issuance of a certificate of Substantial Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor any review and approval of Shop Drawing or sample submission, nor the issuance of a
notice of acceptability by ENGINEER pursuant to paragraph 14.14, nor any correction of defective Work by OWNER will constitute an acceptance of Work not in accordance with the Contract Documents or a release of CONTRACTOR'S obligation to perform the Work in accordance with the Contract Documents (except as provided in paragraph 14.17).

**14.17 WAIVER OF CLAIMS:** The making and acceptance of any final payment will constitute:

14.17.1 A waiver of all claims by OWNER against CONTRACTOR, except claims previously made in writing and still unsettled, or claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.12 or from failure to comply with the Contract Documents or the terms of any special guarantees specified herein; however, it will not constitute a waiver by OWNER of any rights in respect of CONTRACTOR'S continuing obligations under the Contract Documents; and

14.17.2 a waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

**ARTICLE 15 - Suspension of Work and Termination**

**15.1 OWNER MAY SUSPEND WORK:** OWNER may, at any time and without cause, suspend the Work or any portion thereof by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work shall be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if CONTRACTOR makes an approved claim therefore as provided in Articles 11 and 12. If OWNER stops work under Paragraph 13.10 or suspends CONTRACTOR'S services under paragraph 13.14, or suspends the work or any portion thereof because of CONTRACTOR'S failure to prosecute the Work without endangering persons and property, CONTRACTOR shall be entitled to no extension of Contract Time or increase in Contract Price.

**15.2 OWNER MAY TERMINATE:** OWNER may terminate CONTRACTOR's services for cause upon the occurrence of any one or more of the following events:

15.2.1 If CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency;

15.2.2 If a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

15.2.3 If CONTRACTOR makes a general assignment for the benefit of creditors;

15.2.4 If a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR'S creditors;

15.2.5 If CONTRACTOR admits in writing an inability to pay its debts generally as they become due;

15.2.6 If CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.9 as revised from time to time);
15.2.7 If CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;
15.2.8 If CONTRACTOR disregards the authority of ENGINEER; or
15.2.9 If CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;

In such case, CONTRACTOR shall not be entitled to receive any further payment beyond an amount equal to the value of the Work actually completed and the value of materials and equipment not incorporated in the Work but delivered and suitably stored, less the aggregate of payments previously made. If the direct and indirect costs of completing the Work exceed the unpaid balance of the Contract Price, CONTRACTOR shall pay the difference to OWNER. Such costs incurred by OWNER shall be incorporated in a Change Order, but in finishing the Work, OWNER shall not be required to obtain the lowest figure for the work performed. CONTRACTOR’S obligations to pay the difference between such costs and such unpaid balance shall survive termination of the Agreement.

15.3 Where CONTRACTOR’S services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.4 TERMINATION FOR CONVENIENCE: Upon seven days' written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement.

15.4.1 In any termination for convenience, CONTRACTOR shall be paid for (a) Work completed, in accordance with the Contract Documents, before receipt of the notice of termination, and (b) reasonable termination settlement costs for commitments that have become firm before the termination. CONTRACTOR shall not be paid any anticipated and unrealized supplemental costs, administrative expenses and profit for uncompleted Work. If no agreement can be reached as to reasonable termination costs, OWNER and CONTRACTOR shall follow the provisions in federal regulation FAR 52.249-2, found in 48 CFR Part 52.

15.4.2 Upon termination for convenience, OWNER shall have full power and authority to take possession of the Work, assume any sub-agreements with Subcontractors and Suppliers that OWNER selects, and prosecute the Work to completion by contract or as OWNER may deem expedient.

15.4.3 If after notice of termination of the services of CONTRACTOR for cause, it is determined that CONTRACTOR was not in default, the termination shall be deemed to have been for the convenience of OWNER. In such event, CONTRACTOR may recover from OWNER payment for Work completed and reasonable termination costs as provided in paragraph 15.4.1.

15.5 CONTRACTOR MAY STOP WORK OR TERMINATE: If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety days by OWNER or ENGINEER fails to act on any Application for Payment within sixty days after it is submitted, or OWNER fails for sixty days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days' written notice to OWNER and ENGINEER, terminate the Agreement and recover from OWNER payment for all Work executed and any expense sustained plus reasonable termination expenses. In addition and in lieu of terminating the Agreement, if ENGINEER has failed to act on an Application for Payment or OWNER has failed to make any payment as aforesaid, CONTRACTOR may upon seven days' written notice to OWNER and ENGINEER stop the Work until payment of all amounts then due. The provisions of this paragraph shall not relieve CONTRACTOR of his obligations under paragraph 6.29 to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with
ARTICLE 16 - Dispute Resolution

16.1 Subject to the conditions set forth in subparagraphs 16.2, 16.2.1 and 16.2.2 hereof, all claims, disputes and other matters and questions arising out of or relating to the Contract Documents or the breach thereof, except claims waived by the making and accepting of final payment as provided in Section 14.17, shall be decided by arbitration between the parties. This agreement to arbitrate shall be specifically enforceable under the Louisiana Arbitration Act and the award rendered by the arbitrators shall be final and a judgment may be entered thereon in the State District Court for the Parish of St. John the Baptist, State of Louisiana.

16.2 Any arbitration provided for hereunder will be conducted in accordance with the Construction Arbitration Rules of the American Arbitration Association (AAA), subject to the following:

16.2.1 OWNER shall not be compelled to arbitrate any dispute without its express consent given in writing after demand is made for arbitration.

16.2.2 Arbitration shall be conducted in St. John the Baptist Parish, Louisiana and the laws of the State of Louisiana shall be controlling as to matters of law.

16.3 Subject to any recognized privilege, discovery shall be available to each party to the arbitration as it would be available in the District Court for the Parish of St. John the Baptist under the provisions of the LA Code of Civil Procedure in effect at the time of demand for arbitration. Notices, time periods and other procedural matters shall be governed by the rules that apply in Louisiana District Courts which shall be enforced by the AAA in the same manner as in the Louisiana District Court.

16.4 A pre-hearing conference shall be held not sooner than sixty (60) days after the filing of the answer, at which time a pre-hearing summary shall be filed by each party, setting forth all claims and counterclaims with specificity, all witnesses expected to be called at the hearing, all documents proposed to be introduced, and all items of claimed damages including dollar amounts therefore.

16.5 All discovery and amendments to the pre-hearing summary shall be concluded thirty (30) days prior to the arbitration date. Failure on the part of the CONTRACTOR to provide the foregoing discovery and disclosure shall render any claim supported by witnesses or documents not so disclosed null, void and waived.

16.6 In the event of any arbitration demanded and agreed to by the OWNER, each party shall select an arbitrator and the two so selected shall select a third from a panel proposed by the AAA. In the event that the two cannot agree upon an neutral arbitrator from the AAA list within thirty (30) days, then the third arbitrator shall be designated by the AAA.

16.7 In the event OWNER so elects, CONTRACTOR shall be required to participate in a consolidated arbitration to include the ENGINEER.

16.8 The arbitrators shall render a written decision, with conclusions of law and findings of fact,
breaking down the items of any award on the claim or counterclaim in sufficient detail to enable OWNER to seek any grant reimbursement as may be available.

16.9 Notwithstanding anything else in the Contract Documents to the contrary, the CONTRACTOR shall carry on the work and maintain its progress during litigation or any arbitration proceedings, and OWNER shall continue to perform and pay as otherwise required by the Contract Documents.

16.10 In the event OWNER elects not to arbitrate one or more disputes, the dispute or disputes which the OWNER elects not to arbitrate shall be decided under the laws of the State of Louisiana in the 40nd Judicial District Court in and for the Parish of St. John the Baptist, State of Louisiana.

16.11 In the event OWNER is required to defend itself against any claim for delay, the OWNER shall be entitled to recover costs, including without limitation, administrative costs, attorneys' fees and court costs, from the party causing the delay.

ARTICLE 17 - Miscellaneous

17.1 GIVING NOTICE: Whenever any provisions of the Contract Documents requires the giving of written notice, it shall be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.2 COMPUTATION OF TIME:

17.2.1 When any period of time is referred to in the Contract Documents by days, it shall be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.2.2 A calendar day of twenty-four hours measured from midnight to the next midnight shall constitute a day.

17.3 UTILIZATION OF LOCAL LABOR (STATE RESIDENTS): Contractor shall make every effort to use local labor to the fullest extent possible.

17.4 GENERAL: Should OWNER or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

17.5 DUTIES AND OBLIGATIONS: The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 6.26, 13.1, 13.12, 13.14, 14.3 and 15.2 and all of the rights and remedies available to OWNER and ENGINEER
thereunder, are in addition to, and shall not be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph shall be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. All representations, warranties and guarantees made in the Contract Documents will survive final payment and termination or completion of this Agreement. Also, the obligation of CONTRACTOR to maintain the Work until Initiation of Operation shall survive final payment and termination and completion of this Agreement.
TECHNICAL SPECIFICATIONS
PART 1 – GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS/REQUIREMENTS INCLUDED

A. Scope of Work: The Work of this Contract comprises of furnishing complete emergency generator sets and for performing other necessary associated electrical services and other miscellaneous work at the St. John the Baptist Parish Lions Water Treatment Plant, Woodland Water Treatment Plant, River Road Wastewater Treatment Plant, and Ruddock Water Well No. 2 facilities, in addition to the demolition of the existing generator buildings at the Lions Water Treatment Plant and the Woodland Water Treatment Plant sites as detailed in Section 01025 Measurement and Payment.

B. The Contractor shall furnish all labor, materials, equipment, tools, services, and incidentals to complete all work required by these specifications and as shown in the drawings.

C. The Contractor shall perform the work complete, in place and ready for continuous service, and shall include repairs, replacements, and restoration required as a result of damage caused during this construction.

D. The Contractor shall furnish and install all materials, equipment, labor, and incidentals which is reasonably and properly inferable and necessary for the proper completion of the work, whether specifically indicated in the Contract Documents or not.

E. The Contractor shall be responsible for coordination with the Parish to provide access to the site, including buildings, as needed to perform the required work.

1.02 CONTRACTS

The Contract consists of a Base Bid Price. The base bid shall include all labor, materials, equipment, and incidentals required to construct the project complete in place. No extras shall be granted for any additional work unless specifically defined as a unit price item.

1.03 CONSTRUCTION AREAS

A. Contractor shall limit his use of the construction areas for work and storage to allow for:

1) Work by other contractors.
2) Owner use.
3) Public use.

B. Coordinate use of work site under the direction of Engineer.

C. Assume full responsibility for the protection and safekeeping of products under this contract, stored on the site.

D. Move any stored products, under Contractor's control, which interfere with operations of the Owner or separate contractor.

E. Obtain and pay for the use of additional storage or work areas needed for operations.

1.04 OWNER OCCUPANCY

A. Cooperate with Owner's representative in all construction operations to minimize conflict, and to facilitate Owner usage.

B. Contractor shall at all times conduct his operations as to insure the least inconvenience to the general public.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION
SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 GENERAL

A. Refer to Proposal Bid Form

B. Payment shall include all compensation to be received by the Contractor for furnishing all tools, equipment, supplies, maintenance, and manufactured articles, and for all labor, operations, and incidentals appurtenant to complete the work being described, as necessary to complete the various items of the work all in accordance with the requirement of the Contract Documents, including all costs of compliance with the regulations of public agencies having jurisdiction. The Contractor is hereby on notice that no separate payment will be made for any item not specifically called out, but that is required to properly complete the project.

C. All estimated quantities stipulated in the Bid Form or other Contract Documents are approximate and are to be used only as a basis for estimating the probable cost of the work, and for the purpose of comparing the bids submitted for the work. The basis of payment for work and materials will be the actual amount of work done and materials furnished. No compensation will be given for any quantities not used.

D. This is a unit price contract and the quantities shown on the “Bid Form” are for comparison of bids only. The actual quantities installed will be on an as needed basis and may vary significantly from estimated quantities.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

PART 4 MEASUREMENT AND PAYMENT

4.01 GENERAL

The total Bid Price shall cover all work required by the Contract Documents. All costs in connection with the proper and successful completion of the work, including furnishing all equipment, supplies, maintenance, and appurtenances; providing all construction equipment, and tools; performing all necessary labor and supervision to fully complete the work, shall be included in the bid price. All

01025-1
work not specifically set forth as a pay item in the Bid Form shall be considered a subsidiary obligation of the Contractor and all costs in connection therewith shall be included in the prices bid.

4.02 MEASUREMENT AND PAYMENT

The per each bid price shall include all tools, equipment, supplies, and manufactured articles, and for all labors, operations, and incidentals appurtenant to complete the work as shown in the drawings and detailed in the contract documents. Prior to beginning construction, the Contractor shall provide a detailed itemized cost Schedule of Values (SOV) to be used for processing monthly payment applications.

4.03 EMERGENCY GENERATOR SET AND OTHER ELECTRICAL EQUIPMENT AND ELECTRICAL SERVICES (LIONS WATER TREATMENT PLANT) (ITEM NO. 1)

A. Measurement: Measurement for payment for furnishing a complete emergency generator set, furnishing all other required electrical equipment and components, and performing all other required electrical services at the Lions Water Treatment Plant site shall be per lump sum.

B. Payment: Payment for furnishing a complete emergency generator set, furnishing all other required electrical equipment and components, and performing all other required electrical services at the Lions Water Treatment Plant site shall be paid at the lump sum price bid complete with all necessary ancillary equipment, labor, tools, hardware, materials, supplies, operations, and other incidentals required by the Contract Documents not provided by the Owner or specifically included under other pay items. Refer to the Contract Documents for materials and services to be provided by the Owner. All equipment costs, inclusive of all applicable taxes, shipping, delivery, and handling charges shall be included in the lump sum price bid.

The lump sum price bid shall constitute payment for all Contractor required work and expenses, including but not limited to, construction layout; erosion control; site preparation; staging, mobilization, and de-mobilization of equipment; decommissioning & removal of the existing emergency permanent generator equipment and components from existing generator building slab; comprehensive set-up and installation of the new complete emergency generator set, load bank, and other associated equipment on the existing concrete slab; removal
and replacement of generator fuel lines; installation of new light poles; disconnection & reinstallation of existing lighting panel from generator building to new electrical service rack; installation of new electrical service rack, including new receptacle & associated panels; installation of new and/or reconnection of existing electrical power services required for the complete installation of the new emergency generator and other electrical equipment; post-construction site cleanup; transporting and delivery of equipment to be returned to Owner and/or to be salvaged to the Parish identified laydown yard; hauling and disposal of construction debris; new equipment start-up assistance, training, and performance testing services; and providing required equipment manufacturer warranty documentation, shop drawings, operation and maintenance manuals, and other closeout documentation.

All work associated with the demolition of the existing generator building at the Lions Water Treatment Plant site will be paid for under a separate pay item.

4.04 EMERGENCY GENERATOR SET REMOVAL AND OTHER ELECTRICAL EQUIPMENT AND ELECTRICAL SERVICES (WOODLAND WATER TREATMENT PLANT) (ITEM NO. 2)

A. Measurement: Measurement for payment for removal of existing permanent generator set and equipment, furnishing all required electrical equipment and components, and performing all other required electrical services at the Woodland Water Treatment Plant site shall be per lump sum.

B. Payment: Payment for removal of existing permanent generator set and equipment, furnishing all required electrical equipment and components, and performing all other required electrical services at the Woodland Water Treatment Plant site shall be paid at the lump sum price bid complete with all necessary ancillary equipment, labor, tools, hardware, materials, supplies, operations, and other incidentals required by the Contract Documents not provided by the Owner or specifically included under other pay items. Refer to the Contract Documents for materials and services to be provided by the Owner. All equipment costs, inclusive of all applicable taxes, shipping, delivery, and handling charges shall be included in the lump sum price bid.

The lump sum price bid shall constitute payment for all Contractor required work and expenses, including but not limited to, construction
layout; erosion control; site preparation; staging, mobilization, and de-mobilization of equipment; decommissioning & removal of the existing emergency permanent generator equipment and components from existing generator building slab; removal of the existing generator fuel tank & tank supports; removal & disposal of existing generator fuel lines; disconnection & relocation of existing disconnect switch from generator building to MCC Room of the Reverse Osmosis Building; installation of new Manual Transfer Switch in the MCC Room of the Reverse Osmosis Building; installation of concrete pad & bollards for portable generator set power service conduit stub-ups; installation of new and/or reconnection of existing electrical power services required for the necessary electrical equipment; post-construction site cleanup; transporting and delivery of equipment to be returned to Owner and/or to be salvaged to the Parish identified laydown yard; hauling and disposal of construction debris; new equipment start-up assistance, training, and performance testing services; and providing required equipment manufacturer warranty documentation, shop drawings, operation and maintenance manuals, and other closeout documentation.

All work associated with the demolition of the existing generator building at the Woodland Water Treatment Plant site will be paid for under a separate pay item.

4.05 EMERGENCY GENERATOR SET AND OTHER ELECTRICAL EQUIPMENT AND ELECTRICAL SERVICES (RIVER ROAD WASTEWATER TREATMENT PLANT) (ITEM NO. 3)

A. Measurement: Measurement for payment for furnishing a complete emergency generator set, furnishing all other required electrical equipment and components, and performing all other required electrical services at the River Road Wastewater Treatment Plant site shall be per lump sum.

B. Payment: Payment for furnishing a complete emergency generator set, furnishing all other required electrical equipment and components, and performing all other required electrical services at the River Road Wastewater Treatment Plant site shall be paid at the lump sum price bid complete with all necessary ancillary equipment, labor, tools, hardware, materials, supplies, operations, and other incidentals required by the Contract Documents not provided by the Owner or specifically included under other pay items. Refer to the
Contract Documents for materials and services to be provided by the Owner. All equipment costs, inclusive of all applicable taxes, shipping, delivery, and handling charges shall be included in the lump sum price bid.

The lump sum price bid shall constitute payment for all Contractor required work and expenses, including but not limited to, construction layout; erosion control; site preparation; staging, mobilization, and de-mobilization of equipment; decommissioning & removal of the existing permanent emergency generator equipment and components from existing generator slab; comprehensive set-up and installation of the new complete emergency generator set, load bank, and other associated equipment on the existing concrete slab; removal and replacement of generator fuel lines; installation of a new Automatic Transfer Switch in the MCC1 Building; installation of new and/or reconnection of existing electrical power services required for the complete installation of the new emergency generator and other necessary electrical equipment; post-construction site cleanup; transporting and delivery of equipment to be returned to Owner and/or to be salvaged to the Parish identified laydown yard; hauling and disposal of construction debris; new equipment start-up assistance, training, and performance testing services; and providing required equipment manufacturer warranty documentation, shop drawings, operation and maintenance manuals, and other closeout documentation.

4.06 EMERGENCY GENERATOR SET AND OTHER ELECTRICAL EQUIPMENT AND ELECTRICAL SERVICES (Ruddock Water Well No. 2) (ITEM NO. 4)

A. Measurement: Measurement for payment for furnishing a complete portable trailer mounted emergency generator set, furnishing all other required electrical equipment and components, and performing all other required electrical services at the Ruddock Water Well No. 2 site shall be per lump sum.

B. Payment: Payment for furnishing a complete portable trailer mounted emergency generator set, furnishing all other required electrical equipment and components, and performing all other required electrical services at the Ruddock Water Well No. 2 site shall be paid at the lump sum price bid complete with all necessary ancillary equipment, labor, tools, hardware, materials, supplies, operations, and other incidentals required by the Contract Documents not provided by the Owner or included under other pay items. Refer to the Contract Documents for materials and services to be provided by the Owner.
All equipment costs, inclusive of all applicable taxes, shipping, delivery, and handling charges shall be included in the lump sum price bid.

The lump sum price bid shall constitute payment for all Contractor required work and expenses, including but not limited to, construction layout; erosion control; site preparation; staging, mobilization, and de-mobilization of equipment; comprehensive set-up and installation of the new complete portable trailer mounted emergency generator set equipped with a fuel tank, load bank, & other associated equipment; decommissioning & removal of the existing permanent emergency generator equipment and components from existing generator area slab; removal of the existing generator fuel tank & tank supports; removal & disposal of existing generator fuel lines; installation of new portable generator disconnect panel; disconnection & relocation of existing lighting panel from generator building to MCC Building; disconnecting & salvaging existing generator transfer switch panel box in generator building; installation of new and/or reconnection of existing electrical power services required for the complete installation of the new portable emergency generator and other necessary electrical equipment; post-construction site cleanup; transporting and delivery of equipment to be returned to Owner and/or to be salvaged to the Parish identified laydown yard; hauling and disposal of construction debris; new equipment start-up assistance, training, and performance testing services; and providing required equipment manufacturer warranty documentation, shop drawings, operation and maintenance manuals, and other closeout documentation.

4.07 DEMOLITION OF WOODLAND WATER TREATMENT PLANT GENERATOR BUILDING (ITEM NO. 5)

A. Measurement: Measurement for payment for the demolition of the Woodland Water Treatment Plant Generator Building shall be per lump sum.

B. Payment: Payment for the demolition of the Woodland Water Treatment Plant Generator Building shall be paid at the lump sum price bid complete with all necessary equipment, labor, tools, hardware, materials, supplies, operations, and other incidentals required by the Contract Documents

The lump sum price bid shall constitute payment for all work and expenses associated with staging, mobilization and de-mobilization of
equipment; demolition of the existing generator building structure in its entirety to the existing concrete slab, including but not limited to CMU block walls, metal louvres, doors/frames, window units, wood framed metal panel roof structure, flashing, fascia, soffits, etc.; removal of mechanical and electrical system equipment, fixtures, and other components not indicated to be relocated and/or reused as part of the project; and hauling and disposal of construction debris.

All other electrical services and other work associated with the Lions Water Treatment Plant site will be paid for under a separate pay item.

4.08 DEMOLITION OF LIONS WATER TREATMENT PLANT GENERATOR BUILDING
(ITEM NO. 6)

A. Measurement: Measurement for payment for the demolition of the Lions Water Treatment Plant Generator Building shall be per lump sum.

B. Payment: Payment for the demolition of the Lions Water Treatment Plant Generator Building shall be paid at the lump sum price bid complete with all necessary equipment, labor, tools, hardware, materials, supplies, operations, and other incidentals required by the Contract Documents.

The lump sum price bid shall constitute payment for all work and expenses associated with staging, mobilization and de-mobilization of equipment; demolition of the existing generator building structure in its entirety to the existing concrete slab, including but not limited to CMU block walls, metal louvres, doors/frames, window units, wood framed asphalt shingle roof structure, flashing, fascia, soffits, etc.; removal of mechanical and electrical system equipment, fixtures, and other components not indicated to be relocated and/or reused as part of the project; and hauling and disposal of construction debris.

All other electrical services and other work associated with the Lions Water Treatment Plant site will be paid for under a separate pay item.

END OF SECTION
SECTION 01041

PROJECT COORDINATION

PART 1 – GENERAL

1.01 SCOPE

This section covers the work required by the Contractor to coordinate and administer the project.

1.02 PROJECT COORDINATION

A. Contractor shall plan, schedule, and coordinate with the Owner and Engineer all work to be performed on utilities in a manner conducive to timely and efficient progress in the execution of the contract.

B. The Contractor shall plan, schedule, and coordinate a pre-demolition conference on-site with the Owner and Engineer for any building demolition and/or other major site demolition work.

1.03 NOTICES TO OWNERS AND AUTHORITIES

A. Contractor shall, as provided in General Conditions, notify owners of adjacent property and utilities when prosecution of the Work may affect them.

B. When it is necessary to temporarily deny access by owners or tenants to their property, or when any utility service connection must be interrupted, Contractor shall give notices sufficiently in advance to enable the affected persons to provide for their needs. Notices will conform to any applicable local ordinance and, whether delivered orally or in writing, will include appropriate information concerning the interruption and instructions on how to limit their inconvenience.

C. All utilities and other concerned agencies shall be contacted at least 24 hours in advance, unless otherwise specified, prior to cutting or closing streets or other traffic areas, excavating near underground utilities or pole lines or temporary shutdown of existing facilities.

1. Notice to Entergy. The Contractor shall review, prior to bidding, with Entergy the construction methods to be used in the vicinity of power lines. This review shall establish which lines, if any, need temporary relocation or de-energizing and the cost to accomplish this work. At least two weeks notice is required from the Contractor by Entergy prior to any temporary relocating or de-energizing work being required.

2. Notice to Gas Companies. The Contractor shall review with the Gas Company any work to be done in the vicinity of gas lines. Where temporary
exposure or complete relocation of gas lines is required, the Contractor shall meet with the Gas Company as soon as possible, but no less than thirty (30) days in advance of when work is required.

3. Notice to Parish Utilities. The Contractor shall review with the Utilities Department any work in the vicinity of existing water utilities and with the Department of Public Works concerning work in the vicinity of existing drain lines. Contractor shall also coordinate and notify work in the vicinity of telephone and cable lines with AT&T and Cox Cable Company.

4. Notice to Telecommunication Companies and Companies with Equipment Located at the Wastewater Treatment Plants, Water Treatment Plants, and Water Well Facilities. The Contractor shall coordinate with Telecommunication companies and companies with equipment located at the wastewater and/or water facilities. Contractor shall be responsible for coordinating the handling, movement, and storage of equipment, if necessary, with the companies while work is in progress at the sites. Contractor is responsible for any damages to existing equipment if companies are not coordinated with prior to the commencement of work.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION
SECTION 01152

REQUESTS FOR PAYMENT

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

Submit applications for payment to the Engineer in accordance with the schedule established by Conditions of the Contract.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Agreement between owner and Contractor: Total Bid Price.

B. Conditions of the Contract: Progress Payments, Retainages and Final Payment.

C. Section 01380: Construction Photographs.

D. Section 01700: Contract Closeout.

1.03 FORMAT AND DATA REQUIRED

A. Submit payment requests in the form required by Owner with itemized data typed on 8 ½ x 11 white paper continuation sheets.

B. Provide itemized data on continuation sheet: format, schedules, line items and values.

1.04 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

A. All payment requests must be accompanied by a short progress narrative describing work performed since previous payment submittal, progress photos as per Section 01380, current project schedule, and invoices for any stored materials billed.

B. The contractor shall submit an updated construction schedule and certified payrolls if required with the monthly request for payment.

C. When the Owner or the Engineer requires additional substantiating data, the Contractor shall submit suitable information, with a cover letter.

D. Submit one copy of all data required with a cover letter for each monthly pay request. Any additional substantiating data requested shall also be submitted as required above.
E. Quantities of “Stored Materials” must be approved by the Engineer prior to purchase of materials. Contractor shall submit invoices and delivery statements with pay requests.

1.05 PREPARATION OF APPLICATION FOR FINAL PAYMENT

A. Fill in application form as specified for progress payments.

B. Use continuation sheet for presenting the final statement of accounting as specified in section 01700 - Contract Closeout.

1.06 SUBMITTAL PROCEDURE

A. Submit applications for payment to the Engineer at the times stipulated in the Agreement.

B. Number: Two copies of each application.

C. When the Engineer finds application properly completed and correct, he will transmit certificate for payment to the Owner.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION
SECTION 01153

CHANGE ORDER PROCEDURES

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

A. Promptly implement change order procedures.

1. Provide full written data required to evaluate changes.
2. Maintain detailed records of work done on a time-and-material/force account basis.
3. Provide full documentation to the Engineer on request.

B. Designate in writing the member of Contractor's organization.

1. Who is authorized to accept changes in the Work.
2. Who is responsible for informing others in the contractors employ of the authorization of changes in the Work.

C. Owner will designate in writing the person who is authorized to execute Change Orders.

1.02 DEFINITIONS

A. Change order: See General Conditions.

1.03 PRELIMINARY PROCEDURES

A. Owner or Engineer may initiate changes by submitting a Proposal Request to Contractor. Request will include:

1. Detailed description of the Change, Products, and location of the change in the Project.
2. Supplementary or revised Drawings and Specifications.
3. The projected time span for making the change, and a specific statement as to whether overtime work is, or is not, authorized.
4. A specific period of time during which the requested price will be considered valid.
5. Such request is for information only, and is not an instruction to execute the changes, nor to stop work in progress.

B. Contractor may initiate changes by submitting a written notice to Engineer, containing:
1. Description of the proposed changes.
2. Statement of the reason for making the changes.
4. Statement of the effect on the work of separate contractors.
5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

1.04 DOCUMENTATION OF PROPOSALS AND CLAIMS

A. Support each quotation for a lump-sum proposal, and for each unit price which has not previously been established, with sufficient substantiating data to allow Engineer to evaluate the quotation.

B. On request, provide additional data to support time and cost computations:
   1. Labor required.
   2. Equipment required.
   3. Products required.
      a. Recommended source of purchase and unit cost.
      b. Quantities required.
   4. Taxes, insurance, and bonds.
   5. Credit for work deleted from Contract, similarly documented.
   6. Overhead and profit.

C. Support each claim for additional costs, and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal, plus additional information.
   1. Name of the Owner’s authorized agent who ordered the work, and date of the order.
   2. Dates and times work was performed, and by whom.
   3. Time record, summary of hours worked, and hourly rates paid.
   4. Receipts and invoices for:
      a. Equipment used, listing dates and times of use.
      b. Products used, listing of quantities.
      c. Subcontracts.

1.05 PREPARATION OF CHANGE ORDERS

A. Engineer will prepare each Change Order.

B. Form: Owner’s Form, to be provided to the Contractor.

C. Change Order will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.
D. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

1.06 LUMP SUM/FIXED PRICE CHANGE ORDER

A. Content of Change Orders will be based on, either:

1. Engineer's Proposal Request and contractor's responsive Proposal as mutually agreed between Owner and Contractor.
2. Contractor's Proposal for a change, as recommended by Engineer.

B. Owner and Engineer will sign and date the Change Order as authorization for the Contractor to proceed with the changes.

C. Contractor may sign and date the Change Order to indicate agreement with the terms therein.

1.07 UNIT PRICE CHANGE ORDER

A. Content of Change Orders will be based on, either:

1. Engineer's definition of the scope of the required changes.
2. Contractor's Proposal for a change, as recommended by Engineer.
3. Survey of completed work.

B. The amounts of the unit prices to be:

1. Those stated in the Agreement.
2. Those mutually agreed upon between Owner and Contractor.

C. When quantities of each of the items affected by the Change Order can be determined prior to start of the work:

1. Owner and Engineer will sign and date the Change Order as authorization for Contractor to proceed with the changes.
2. Contractor may sign and date the Change Order to indicate agreement with the terms therein.

D. When quantities of the items cannot be determined prior to start of the work:

1. Engineer or Owner will issue a construction change authorization directing Contractor to proceed with the change on the basis of unit prices and will cite the applicable unit prices.
2. At completion of the change, Engineer will determine the cost of such work based on the unit prices and quantities used.
   a. Contractor shall submit documentation to establish the number of
units of each item and any claims for a change in Contract Time.

3. Engineer will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.

4. Owner and contractor will sign and date the change Order to indicate their agreement with the terms therein.

1.08 CORRELATION WITH CONTRACTOR'S SUBMITTALS

A. Periodically revise Schedule of Values and Application for Payment forms to record each change as a separate item of work, and to record the adjusted Contract Sum.

B. Periodically revise the Construction Schedule to reflect each change in Contract Time.

1. Revise subschedules to show changes for other items of work affected by the changes.

C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION
SECTION 01200

PROJECT MEETINGS

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

A. Engineer shall schedule and administer pre-construction meeting, periodic progress meetings, and specially called meetings throughout progress of the work. At a minimum, Engineer shall perform the following duties:

1) Prepare agenda for meetings.
2) Make physical arrangements for meetings.
3) Preside at meetings.
4) Record the minutes; include significant proceedings and decisions.
5) Reproduce and distribute copies of minutes within three days after each meeting.

   (a) To participants in the meeting
   (b) To parties affected by decisions made at the meeting

B. Representative of contractors, subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.

C. The Contractor shall attend and identify at the meetings the actual status of the Contract Work. When the Work is not being performed consistently with the Contract Documents and construction schedules, the Contractor shall identify at the meetings the steps being taken to resolve the inconsistency.

1.02 RELATED REQUIREMENTS

A. Instructions to Bidders: Pre-bid Conferences.

B. Section 01340: Shop Drawings, Product Data and Samples.

1.03 PRE-CONSTRUCTION MEETING

A. The Contractor shall participate in a preconstruction meeting to be held after the effective date of the Agreement and prior to the date of Notice to Proceed.

B. Location: A central site, convenient for all parties, designated by the Engineer.
C. Attendance:

1) Owner's Representative and other staff as appropriate.
2) Engineer and his professional consultants as appropriate.
3) Resident Project Representative.
4) Contractor's Representative and Construction Superintendent.
5) Subcontractors as appropriate.
6) Major suppliers as appropriate.
7) Others as appropriate.

D. The following matters are expected to be addressed:

1) Distribution and discussion of:
   (a) List of major subcontractors and suppliers.
   (b) Projected Construction Schedules.
   (c) Values for progress payment purposes.

2) Critical work sequencing.

3) Major equipment deliveries and priorities.

4) Project Coordination:
   (a) Designation of responsible personnel.

5) Procedures and processing of:
   (a) Field decisions.
   (b) Proposal requests.
   (c) Submittals.
   (d) Change Orders.
   (e) Applications for Payment.


7) Procedures for maintaining Record Documents.

8) Use of premises:
(a) Work and storage areas.
(b) Owner’s requirements.

9) Construction facilities, controls, and construction aids.

10) Temporary utilities.

11) Security procedures.

12) Housekeeping procedures.

13) Insurance certificates.

14) Liquidated damages for delay.

15) Notice to Proceed and Final Completion Date.

1.04 CONSTRUCTION PROGRESS MEETINGS

A. Construction progress meetings will be held monthly with the first meeting 30 days or less after the date of Notice to Proceed.

B. Special construction progress meetings will be held as required by progress of the Work.

C. Location of the meetings: As designated by the Engineer.

D. Attendance:

1) Owner Representative and other staff as appropriate.
2) Engineer, and his professional consultants, as appropriate.
3) Contractor.
4) Subcontractors, as appropriate.
5) Suppliers, as appropriate.
6) Others.

E. The following matters are expected to be addressed:

1) Review, approval of minutes of previous meeting.
2) Review of work progress.
3) Field observations, problems, conflicts.
4) Problems which impede Construction Schedule.
5) Review of off-site fabrication, delivery schedules.

6) Corrective measures and procedures to regain projected schedule.

7) Revisions to Construction Schedule.

8) Progress, schedule, during succeeding work period.

9) Coordination of schedules.

10) Review submittal schedules; expedite as required.

11) Maintenance of quality standards.

12) Pending changes and substitutions.

13) Review proposed changes for:

   (a) Effect on Construction Schedule and on completion date.
   (b) Effect on other contracts of the project.

14) Other business.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION
SECTION 01310

CONSTRUCTION SCHEDULE

PART 1 – GENERAL

1.01 PROGRAM DESCRIPTION

A. A Critical Path Method (CPM) construction schedule shall be used to control the work of this Contract and to provide a definitive basis for determining job progress. The construction schedule shall be prepared, maintained, and updated by the Contractor. The construction schedule shall be reviewed by the Engineer as described herein. All work shall be done in accordance with the established CPM schedule and the Contractor and his/her subcontractors shall be responsible for cooperating fully with the Engineer and the Owner in effectively utilizing the CPM schedule.

B. The CPM schedule to be prepared and submitted by the Contractor shall consist of a CPM network (diagram of activities) in the Time Scale Logic and a computer-generated schedule (print-out) as specified herein.

C. Within ten calendar days following written Notice to Proceed, the Contractor shall submit to the Engineer for review and approval a Preliminary Guideline CPM Schedule covering the first 60 calendar days of Work to be performed.

D. The Preliminary Guideline CPM Schedule shall:

1. Illustrate a feasible CPM schedule for completion of the work under this Contract within the time specified.

2. Provide an elementary example of a CPM schedule in the format to be used for the detailed CPM schedule specified. The Preliminary Guideline CPM Schedule is not as detailed as the CPM schedule required under this Contract.


E. The Preliminary Guideline CPM Schedule is not to be considered binding except for the time required for contract completion and the mandatory milestones.

F. Contractor shall develop his own outline of the Work and prepare his proposed CPM schedule. The computer-based schedule shall be the product of a recognized commercial computer software producer and shall meet all of the requirements defined herein.
1.02 QUALIFICATIONS

A. Have the capability of preparing and utilizing the specified CPM scheduling technique. A statement of CPM capability shall be submitted in writing to the Engineer within ten calendar days after the award of the Contract and will verify that either the Contractor's organization has in-house capability qualified to use the technique or that the Contractor employs a consultant who is so qualified. Capability shall be verified by description of the construction projects to which the Contractor or his/her consultant has successfully applied the CPM scheduling technique and which were controlled throughout the duration of the project by means of systematic use and updating of a computer-based CPM schedule. The submittal shall include the name of the individual on the Contractor's staff who will be responsible for the CPM schedule and for providing the required updating information.

1.03 NETWORK REQUIREMENTS

A. The network shall show the order and inter-dependence of activities and the sequence in which the work is to be accomplished as planned by the Contractor. The basic concept of a network analysis diagram shall be followed to show how the start of a given activity is dependent on the completion of preceding activities and its completion restricts the start of following activities.

B. Detailed network activities shall include: construction activities, the submittal and approval of samples of materials and shop drawings, the procurement of materials and equipment, fabrication of materials and equipment and their delivery, installation and testing, start-up and training. Break the work into activities with duration no longer than 20 working days each, except as to non-construction activities (such as procurement of materials and delivery of equipment) and any other activities for which the Engineer may approve the showing of longer duration. To the extent feasible, activities related to a specific physical area of the work shall be grouped on the network for ease of understanding and simplification.

C. Separate activities shall be provided for each significant identifiable function in each trade area in each facility. Activities shall be so identified that there will be no reasonable doubt as to how much work remains on each. Specific activities which shall be included are: all sub contract work, all interface work between subcontractors and between the Contractor and subcontractors leakage tests of tanks and pipelines, electrical connections to each item of equipment, supplier and manufacturer technical assistance, mechanical connections to each item of equipment all tests concrete finishing, each item of site work, (including restraints on other activities) and all utilities, fuels and chemicals.

D. Each activity on the network shall have the following indicated on the node representing it.
1. A single duration (i.e., the single best estimate of elapsed time considering the scope of the work involved in the activity and the resources planned for accomplishing the activity) expressed in working days.

2. A five-character (or less) code indicative of the party responsible for accomplishing the activity.

3. A cost estimate for each activity which, when accumulated with the cost of all activities, equals the total contract cost. Estimated overhead and profit shall be prorated throughout all activities. Materials costs shall be assigned to delivery activities.

4. A brief description of the activity.

5. Manpower estimate for each activity.

E. The selection and number of activities shall be subject to the Engineer's approval. The detailed network shall be time scaled. In addition to the brief description, submit a separate list of all activities containing a detailed narrative of the scope of each activity, including the trades and subcontractors involved, the activity duration, and the cost of each activity as it pertains to the pay items on the Schedule of Values.

F. To the extent that the network or any revision thereof shows anything not jointly agreed upon or fails to show anything jointly agreed upon, it shall not be deemed to have been approved by the Engineer. Failure to include on a network any element of work required for the performance of this Contract shall not excuse the Contractor from completing all work required within any applicable completion date, notwithstanding the review of the network by the Engineer.

G. Except where earlier completions are specified, CPM schedules which show completion of all work prior to the contractor completion date may be approved by the Engineer but in no event shall they be acceptable as a basis for claim for delay against the Owner or Engineer by the Contractor.

1.04 COMPUTER-GENERATED SCHEDULE REQUIREMENTS

A. Each computer-generated schedule submittal from the CPM activity network shall include the following tabulations: a list of activities in numerical order, a list of activity precedence's, a schedule sequenced by Early Start Date and a schedule sequenced by Total Float. Each schedule shall include the following minimum items:

1. Activity numbers
2. Estimated duration
3. Activity description
4. Early start date (calendar dated)
5. Early finish date (calendar dated)
6. Latest allowable start date (calendar dated)
7. Latest allowable finish date (calendar dated)
8. Status (whether critical)
9. Estimated cost of the activity
10. Total float and free float

B. In addition, each schedule shall be prefaced with the following summary data:

1. Contract name and number
2. Contractor's name
3. Contract duration
4. Contract schedule
5. The effective or starting date of the schedule (the date indicated in the Notice to Proceed).

C. The work day to calendar date correlation shall be based on an 8-hour day and 40-hour week with adequate allowance for holidays, adverse weather and all other special requirements of the work.

1.05 INITIAL CONFERENCE

A. Within ten days following the receipt of the Notice to Proceed, meet with the Engineer to discuss and agree on the proposed standards for the CPM schedule. At this conference submit to the Engineer a preliminary network defining the planned operations during the first 60 calendar days after Notice to Proceed. The general approach for the balance of the project shall be indicated. Cost of activities expected to be completed or partially completed before submission and approval of the complete network shall be included.
1.06  APPROVED CPM SCHEDULE

A. Within 45 days following the receipt of the Notice to Proceed, submit two prints of the proposed CPM activity network and a computer-generated schedule to the Engineer. Following review by the Engineer and Owner, the Contractor shall incorporate the Engineer's continents into the network and submit five prints and two reproducible of the revised network and two copies of the computer-generated schedule. This final submittal shall be delivered to the Engineer within 60 days after the Notice to Proceed.

B. CPM schedules which contain activities showing negative float or which extend beyond the contract completion date in the computer-generated schedule will not be approved.

C. The Contractor shall participate in the initial review and evaluation of the proposed network diagram and schedule by the Engineer. The approved network shall then be approved CPM schedule to be used for planning, organizing and directing the work, and reporting progress.

D. Approval of the CPM activity network by the Engineer is advisory only and shall not relieve the Contractor of responsibility for accomplishing the work within the contract completion date. Omissions and errors in the approved CPM schedule shall not excuse performance less than that required by the Contract Approval by the Engineer in no way makes the Engineer an insurer of the CPM schedule's success or liable for time or cost overruns flowing from its shortcomings. The Owner hereby disclaims any obligation or liability by reason of approval by its agent, the Engineer, of the CPM schedule.

E. The CPM activity network shall be prepared in accordance with the format used in the Preliminary Guideline CPM Schedule noted above. The network shall be submitted on sheets 24-in by 36-in and may be divided into as many separate sheets as required.

1.07  PROGRESS REPORTING

A. Progress under the approved CPM schedule shall be evaluated monthly by the Contractor and the Engineer. Not less than seven days prior to each monthly progress meeting, they shall meet at the job-site and jointly evaluate the status of each activity on which work has started or is due to start, based on the preceding CPM schedule; to show actual progress, to identify those activities started and those completed during the previous period, to show the estimated time required to complete or the percent complete of each activity started but not yet completed and to reflect any changes indicated for the network. Activities shall not be considered to be complete until they are, in fact, 100 percent complete.
B. At each progress meeting, submit a narrative report based on the CPM schedule evaluation described above, in a format agreed upon by the Contractor and the Engineer. The report shall include a description of the progress during the previous period in terms of completed activities, and explanation of each activity which is showing a delay, a description of problem areas, current and anticipated delaying factors and their estimated impact on performance of other activities and completion dates and an explanation of corrective action taken or proposed. This report, as well as the CPM Status Report, will be discussed at each progress meeting.

1.08 RESPONSIBILITY FOR SCHEDULE COMPLIANCE

A. Whenever it becomes apparent from the current CPM schedule and CPM Status Report that delays to the critical path have resulted and the contract completion date will not be met, or when so directed by the Engineer, Contractor shall take some or all of the following actions at no additional cost to the Owner. He shall submit to the Engineer for approval, a written statement of the steps intended to take to remove or arrest the delay to the critical path in the approved schedule.

1. Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of work.

2. Increase the number of working hours per shift, shifts per day, working days per week, the amount of construction equipment, or any combination of the foregoing, sufficiently to substantially eliminate the backlog of work.

3. Reschedule activities to achieve maximum practical concurrence of accomplishment of activities and comply with the revised schedule.

B. If when so requested by the Engineer, failure to submit a written statement of the steps intended to take or should fail to take such steps as approved by the Engineer, the Engineer may direct the Contractor to increase the level of effort in man-power (trades), equipment and work schedule (overtime, weekend and holiday work, etc) to be employed by the Contractor in order to remove or arrest the delay to the critical path in the approved schedule and the Contractor shall promptly provide such level of effort at no additional cost to the Owner.

1.09 ADJUSTMENT OF CONTRACT SCHEDULE AND COMPLETION TIME

A. If the Contractor desires to make changes in his/her method of operating which affect the approved CPM schedule, he/she shall notify the Engineer in writing stating what changes are proposed and the reason for the change. If the Engineer approves these changes, the Contractor shall review and submit for approval, without additional cost to the Owner, all of the affected portions of the CPM
network. The CPM schedule shall be adjusted by the Contractor only after prior approval of his/her proposed changes by the Engineer. Adjustments may consist of changing portions of the activity sequence, activity durations, division of approved activities, or other adjustments as maybe approved by the Engineer. The addition of extraneous, non-working activities and activities which add unapproved restraints to the CPM schedule shall not be approved.

B. If the completion of any activity, whether or not critical, falls more than 100 percent behind its approved duration, submit for approval a schedule adjustment showing each such activity divided into two activities reflection completed versus uncompleted work.

C. Shop drawings which are not approved on the first submittal or within the schedule time and equipment which do not pass the specified tests shall be immediately rescheduled.

D. The contract completion time will be adjusted only for causes specified in this Contract. In the event the Contractor requests an extension of any contract completion date, he/she shall furnish such justification and supporting evidence as the Engineer may deem necessary to determine whether the Contractor is entitled to an extension of time under the provisions of this Contract. The Engineer will after receipt of such justification and supporting evidence, make findings offset and will advise the Contractor in writing thereof. If the Engineer finds that the Contractor is entitled to any extension of any contract completion date, the Engineer's determination as to the total number of days extension shall be based upon the currently approved CPM schedule and on all data relevant to the extension. Such data shall be included in the next updating of the schedule. Actual delays in activities which, according to the CPM schedule, do not affect any contract completion date shown by the critical path in the network will not be the basis for a change therein.

E. Each request for change in any contract completion date shall be submitted by the Contractor to the Engineer within 30 days after the beginning of the delay for which a time extension is requested but before the date of final payment under this Contract. No time extension will be granted for requests which are not submitted within the foregoing time limit.

1. From time to time it may be necessary for the contract schedule or completion time to be adjusted by the Owner to reflect the effects of job conditions, weather, technical difficulties, strikes, unavoidable delays on the part of the Owner or its representatives and other unforeseeable conditions which may indicate schedule adjustments or completion time extensions. Under such conditions, the Engineer will direct the Contractor to reschedule the work or contract completion time to reflect the changed conditions and the Contractor shall revise his/her schedule accordingly. No additional compensation will be made to the Contractor for such
schedule changes except for unavoidable overall contract time extensions beyond the actual completion of all unaffected work, in which case the Contractor shall take all possible action to minimize any time extension and any additional cost to the Owner. Available float time in the CPM schedule may be used by the Owner as defined by the Engineer, as well as by the Contractor.

F. The Owner controls the float time in the approved CPM network and, therefore, without obligation to extend either the overall completion date or any intermediate completion dates set out in the CPM network, the Owner may initiate changes to the work that absorb float time only. Owner initiated changes that affect the critical path on the approved CPM network shall be the sole grounds for extending (or contracting) said completion dates. Contractor-initiated changes that encroach on the float time identified in the approved CPM network may be accomplished with the Owner's concurrence. Such changes, however, shall give way to Owner-initiated changes competing for the same float time.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION
SECTION 01340

SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

Submit shop drawings, product data, and samples required by Contract Documents.

1.02 RELATED REQUIREMENTS

A. Conditions of the Contract: Definitions and Additional responsibilities of parties.

B. Designate in a separate schedule, the dates for submission and the dates that reviewed shop drawings, product data, and samples will be needed.

1.03 SHOP DRAWINGS

A. Drawings shall be presented in a clear and thorough manner.

   1) Details shall be identified by reference to sheet and detail as shown on contract drawings.

B. Minimum sheet size: 8 ½ inches by 11 inches.

1.04 PRODUCT DATA

A. Preparation

   1) Clearly mark each copy to identify pertinent products or models.

   2) Show performance characteristics and capacities.

   3) Show dimensions and clearances required.

   4) Show wiring or piping diagrams and controls.

B. Manufacturer's standard schematic drawings and diagrams.

   1) Modify drawings and diagrams to delete information which is not applicable to the work.
2) Supplement standard information to provide information specifically applicable to the work.

1.05 SAMPLES

A. Office samples shall be of sufficient size and quantity to clearly illustrate:

1) Functional characteristics of the product, with integrally related parts and attachment devices.
2) Full range of color, texture, and pattern.

1.06 CONTRACTOR RESPONSIBILITIES

A. Review shop drawings, product data, and samples prior to submission.

B. Determine and verify:

1) Field measurements
2) Field construction criteria
3) Catalog numbers and similar data
4) Conformance with specifications
5) Confirm compatibility of equipment to be supplied within location to be erected.

C. Coordinate each submittal with requirements of the work and of the contract documents.

D. Notify the Engineer in writing, at time of submission, of any deviations in the submittals from requirements of the contract documents.

E. Begin no fabrication or work which requires submittals until return of submittals with Engineer approval.

1.07 SUBMISSION REQUIREMENTS

A. Make submittals promptly in accordance with approved schedule, and in such sequence as to cause no delay in the work or in the work of any other contractor.

B. Number of Submittals required:

1) Shop Drawings and Product Data: Submit one (1) set of prints and (1) set of pdfs of each shop drawing submittal for review. After final review in which there are no exceptions noted or referenced the contractor shall
furnish the Engineer six (6) complete sets for use, unless otherwise determined, by the Engineer and Owner.

2) Samples: Submit the number stated in each specification section.

C. Submittals shall contain:

1) The date of submission and the dates of any previous submissions.

2) The project title and number.

3) Contract identification.

4) The names of:

   (a) Contractor
   (b) Supplier
   (c) Manufacturer

5) Identification of the product, with the specification section number.

6) Field dimensions, clearly identified as such.

7) Relation to adjacent or critical features of the work or materials.

8) Applicable standards, such as ASTM or Federal specification numbers.

9) Identification of deviations from Contract Documents.

10) Identification of revisions on resubmittals.

11) A blank space for Contractor and Engineer stamps.

12) Contractor's stamp, initialed or signed, certifying to review of submittal, verification of products, field measurements and field construction criteria, and coordination of the information within the submittal with requirements of the work and of Contract Documents.

1.08 RESUBMISSION REQUIREMENTS

A. Make any corrections or changes in the submittals required by the Engineer and resubmit until no exceptions are taken by the Engineer.

B. Shop Drawings and Product Data:
1) Revise initial drawings or data, and resubmit as specified for the initial submittal.

2) Indicate any changes which have been made other than those requested by the Engineer.

C. Samples: Submit new samples as required for initial submittal.

1.09 DISTRIBUTION

A. Distribute reproductions of Shop Drawings and copies of Product Data which carry the Engineer review stamp to:

1) Job site file
2) Record Documents file
3) Other affected contractors
4) Subcontractors
5) Supplier or Fabricator

B. Distribute samples which carry the Engineer review stamp as directed by the Engineer.

1.10 ENGINEER DUTIES

A. Review submittals within 15 calendar days.

B. Affix review stamp and initials or signature, and indicate requirements, if any, for resubmittal.

C. Return submittals to Contractor.

1.11 ENGINEER'S ACTION

A. Final unrestricted release. Work may proceed, provided it complies with contract documents, when submittal is returned with the following:

1) Marking: No exceptions taken

B. Final-But-Restricted Release. Work may proceed, provided it complies with notations and corrections on submittal and with contract documents, when submittal is returned with the following:

1) Marking: Revised as Noted.

C. Returned for Resubmittal. Do not proceed with work. Revise submittal in accordance with notations thereon, and resubmit without delay to obtain a
different action marking. Do not allow submittals with the following marking (or unmarked submittals where a marking is required) to be used in connection with performance of the work:

1) Marking: Amend and Resubmit or Rejected - See Remarks

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION
SECTION 01380

CONSTRUCTION PHOTOGRAPHS

PART 1 - GENERAL

A. Contractor shall be responsible for the production of pre-construction photographs to document site conditions prior to construction and for production of construction progress photographs for each repair as provided herein.

PART 2 - PRODUCTS

A. All photographs shall be digital and produced by a competent photographer. Digital photos shall be submitted in the “.jpg format” with the description of view and date taken and address/location. Compact Disk, USB or digital copies shall be turned in with each payment of the work performed during that pay period.

PART 3 - EXECUTION

A. Minimum of four (4) digital photographs (two pre-construction, two-post construction) of pertinent features shall be taken at each location work is to be performed. The same view taken at preconstruction is to be re-photographed after restoration is completed, and submitted with Contractor’s application for payment. Photographs must include address, latitude and longitude coordinates, date and description of work performed. Payment will not be approved for restoration work if photographs are not submitted with the pay request. The Contractor is reminded that the number of photographs is a “minimum”, and dependent on site conditions, it may be prudent to take as many photographs as necessary to document pre-existing conditions. The Contractor is required to photograph the pre-existing conditions from the most advantageous angle possible. The intent of this section is to have detailed photographs from as many different angles as required to adequately document the pre-existing conditions.

PART 4 - MEASUREMENT AND PAYMENT

A. Payment for pre and post construction photographs is considered incidental to conducting repairs and will not be considered for separate payment, unless specifically included in the bid price for another contract bid item.

END OF SECTION
Mobilization shall include obtaining all permits, insurance, and bonds; moving onto the site of all plant and equipment; furnishing and erecting any construction facilities; all as required for the proper performance and completion of the work. The Contractor shall provide all items of work covered in this section which shall include but not be limited to the following principal items:

1. Moving on the site of all Contractor's plant and equipment required for first month operations.
2. Installing temporary construction power, wiring, and lighting facilities.
3. Establishing fire protection system.
4. Developing construction water supply.
5. Providing on-site sanitary facilities and potable water facilities as specified.
6. Arranging for and erection of Contractor's work and storage yard.
7. Procurement and submittal of all required subcontractor insurance certificates and bonds.
8. Obtaining all required permits.
9. Posting all OSHA required notices and other information as required by Federal, State and Local Agencies. Establishment of safety programs.
10. Have the contractor's superintendent at the job site full time.
11. Have provided a detailed construction schedule acceptable to the Owner for project use as specified.
12. Erection of project sign(s) as necessary.
14. Provide construction photographs and pre-construction videos, if necessary.
PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION
SECTION 01510

TEMPORARY UTILITIES

PART 1 – GENERAL

1.01 SCOPE OF WORK

It shall be the Contractor's responsibility to provide plant and equipment that is adequate for the performance of the work under this contract within the time specified. All plant and equipment shall be kept in satisfactory operating condition, shall be capable of safely and efficiently performing the required work, and shall be subject to inspection and approval by the Owner's representative at any time within the duration of the Contract. All work hereunder shall conform to the applicable requirements of the OSHA Standards for Construction. In addition, all work shall conform with requirements of the latest National Electric Code, Building codes, and any other applicable federal, state, and local codes and ordinances.

1.02 RELATED REQUIREMENTS

Section 01010: Summary of Work

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.01 POWER AND LIGHTING

A. Power. The Contractor shall provide, at his own expense, all necessary power required for the operations under the Contract, and shall provide and maintain all temporary power lines required to perform the work in a safe and satisfactory manner.

B. Construction Lighting. All work conducted at night or under conditions of deficient daylight shall be suitably lighted to insure proper work and to afford adequate facilities for inspection and safe working conditions.

C. Approval of Electrical Connections. All temporary connections for electricity shall be subject to approval of the Owner and the power company representative, and shall be removed in like manner at the Contractor's expense prior to final acceptance of the work.
D. Separation of Circuits. Unless otherwise permitted by the Engineer, lighting circuits shall be separate from power circuits.

E. Construction Wiring. All wiring for temporary electric light and power shall be properly installed and maintained and shall be securely fastened in place. All electrical shall conform to the facilities requirements of Subpart K of the OSHA Safety and Health Standards for Construction and be approved by the Owner.

3.02 WATER SUPPLY

A. General. The Contractor shall provide, at his own expense, an adequate supply of water for construction purposes unless otherwise specified elsewhere for the work being performed. The Contractor shall pay the water utility for water used at the job site and any meter fees required by the Owner.

B. The Contractor shall provide and operate all pumping facilities, pipelines, valves, hydrants, storage tanks, and all other equipment necessary for the adequate development and operation of the temporary water supply system. The Contractor shall be solely responsible for the adequate functioning of its water supply system and shall be solely liable for any claims arising from the use of same, including discharge or waste of water therefrom.

C. Potable Water. All drinking water on the site during construction shall be furnished by the Contractor.

D. Water Connections. The contractor shall not make connection to, or draw water from, any fire hydrant or Pipeline without first obtaining permission of the authority having jurisdiction over the use of said fire hydrant or pipeline and from the agency owning the affected water system. For each connection made, the Contractor shall first attach to the fire hydrant or pipeline a valve and a meter, if required by the said authority, of a size and type acceptable to said authority and agency. Only approved hydrant wrenches may be used to open and close hydrants. In instances where connections are made to water pipelines for the purpose of pressure testing newly constructed force mains or sewers, a double check valve system and pressure gage shall be utilized to prevent back flow into the water main system. In addition, all such testing should be performed in the presence of the Owner.

E. Removal of Water Connections. Before final acceptance of the Work on the project, all temporary connections and piping installed by the Contractor shall be entirely removed, and all affected improvements shall
be restored to their original condition, or better, to the satisfaction of the Engineer and to the agency owning the affected utility.

F. Fire Protection. The construction plant and all other parts of the work shall be connected with the Contractor's water supply system and shall be adequately protected against damage by fire. Hose connections and hose, water casks, chemical equipment, or other sufficient means shall be provided for fighting fires in the temporary structures and other portions of the work, and responsible persons shall be designated and instructed in the operation of such fire apparatus so as to prevent or minimize the hazard of fire. The Contractor’s fire protection program shall conform to the requirements of Subpart F of the OSHA Standards for Construction.

3.03 SANITATION

A. Toilet Facilities. Fixed or portable chemical toilets shall be provided wherever needed for the use of employees. Toilets at construction job sites shall conform to the requirements of Subpart D, Section 1026.51 of the OSHA Standards for Construction.

B. Sanitary and Other Organic Wastes. The Contractor shall establish regular collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities provided by the Contractor or organic materials wastes from any other source related to the Contractor's operations shall be disposed of away from the site in a manner satisfactory to the Engineer and in accordance with all laws and regulations pertaining thereto. Disposal of all such wastes shall be at the Contractor's expense.

3.04 COMMUNICATIONS

A. Telephone Services. The Contractor shall provide and maintain at all times during the progress of the Work, at its own expense, not less than one telephone in good working order, at its own field construction office, or, if no Contractor field office is provided, near the site of the work included in the Contract. Each such telephone shall be connected to an established exchange for toll service and with all other telephones utilized by the Contractor.

B. Telephone Use. The Contractor shall permit the Engineer, the Owner, or their authorized representatives or employees free and unlimited use of said telephone facilities for all calls that do not involve published toll charges. Call originated by the Engineer, the Owner, their authorized representatives or employees which involve toll or message unit charges shall be billed to the Engineer by the Contractor at the rates charged by the telephone company.
3.05 SAFETY

A. General. Appropriate first aid facilities and supplies shall be kept and maintained by the Contractor at the site of the work. In addition, all employees of the Contractor and his subcontractors shall be provided with, and required to use, personal protective and life saving equipment as set forth in Subpart E of the OSHA Safety and Health Standards for Construction (29 CFR 1926).

B. Public Safety. During the performance of the work the Contractor shall erect and maintain temporary fences, bridges, railings, and barriers and shall take all other necessary precautions and place proper guards for the prevention of accidents and he shall erect and maintain suitable and sufficient lights and other signals.

END OF SECTION
SECTION 01530

PROTECTION OF EXISTING FACILITIES AND PROPERTY

PART 1 – GENERAL

1.01 DESCRIPTION

The Contractor shall protect all existing utilities, structures, and improvements not designated for removal and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than they were prior to such damage or temporary relocation, all in accordance with requirements specified herein, and in accordance with the requirements of the Contract Documents.

1.02 CARE AND PROTECTION OF PROPERTY

A. The Contractor shall be responsible for the preservation of all public and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition similar or equal to that existing before the damage was done, or he shall make good the damage in another manner acceptable to the Engineer.

B. Along the location of this Work all fences, walks, brushes, trees, shrubbery, and other physical features shall be protected and restored in a thoroughly workmanlike manner. Fences and other features removed by the Contractor shall be replaced in the location indicated by the Engineer as soon as conditions permit. All grass areas beyond the limits of construction which have been damaged by the Contractor shall be regraded and sodded.

C. Trees close to the Work shall be boxed or otherwise protected against injury. The Contractor shall trim all branches that are liable to damage because of his operations, but in no case shall any tree be cut or removed without prior notification of the Engineer. All injuries to bark, trunk, limbs, and roots of trees shall be repaired by dressing, cutting, and painting according to approved methods, using only approved tools and materials.

D. The protection, removal, and replacement of existing physical features along the line of work shall be a part of the work under the Contract, and all costs in connection therewith shall in included in the unit and/or lump sum prices established under the items in the bid form.
1.03 OPEN EXCAVATIONS

All open excavations shall be adequately safeguarded by providing temporary barricades, cautions signs, lights, and other means to prevent accidents to persons, and damage to property. The Contractor shall, at his own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen.

1.04 UTILITY EXPLORATION

A. Test pits for the purpose of locating underground pipelines or structures in advance of the construction shall be excavated and backfilled by the Contractor prior to commencement of construction. Test pits shall be backfilled immediately after their purpose has been satisfied and the surface restored and maintained in a manner satisfactory to the Engineer.

B. The Contractor shall determine the exact locations and depths of all utilities indicated on the drawings. In addition to those indicated, the Contractor shall make exploratory excavations of all utilities. All such exploratory excavations shall be performed as soon as practicable after award of contract and, in any event, a sufficient time in advance of construction to avoid possible delays to the Contractor's work. When such exploratory excavations show the utility location as indicated on the drawings to be in error, the Contractor shall so notify the Engineer. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment of the utility.

C. The locations of underground and other nonvisible utilities shown have been determined from data either furnished by the agencies controlling such data and/or extracted from records made available by agencies controlling such records. Where found, the surface features of locations are shown. The actual nonvisible locations may vary from those shown. Each agency should be contacted relative to the precise location of its underground installation prior to any reliance upon the accuracy of such location shown. Prior to excavating, the Contractor shall call Louisiana One Call (1-800-272-3020) to mark the construction area.

1.05 RIGHTS-OF-WAY

A. The Contractor shall not do any work that would affect any oil, gas, railroad, sewer, or water pipeline; any telephone, telegraph, or electric transmission line; any fence; or any other structure, nor shall the Contractor enter upon the rights-of-way involved until the Contractor has secured authority therefore from the proper party. After authority has been obtained, the Contractor shall give said party due notice of his intention to begin work, and shall give said party convenient access and every facility for removing,
shoring, supporting, or otherwise protecting such pipeline, transmission line, ditch, fence, or structure, and for replacing same. When 2 or more contracts are being executed at one time on the same or adjacent land in such manner that work on one contract may interfere with that on another, the Owner shall decide which Contractor shall progress at the same time, and in what manner. When the territory of one contract is the necessary or convenient means of access for the execution of another contract, such privilege of access or any other reasonable privilege may be granted by the Owner to the Contractor so desiring, to the extent, amount, in the manner, and at the times permitted. No such decision as to the method or time of conducting the work or the use of territory shall be made the basis of any claim for delay or damage, except as provided for temporary suspension of the work in the General Conditions of the Contract.

B. The Contractor shall be aware that his work will be performed adjacent to private property. The Contractor shall notify all property owners adjacent to and along the route once at the award of the contract and once at least 48 hours in advance of construction by means of either a printed circular or form letter of the general details of the construction. The letter shall also include names and telephone numbers for key project personnel so that property owners can report problems. These contact telephone numbers shall be given so that appropriate personnel can be contacted 24 hours a day, seven days a week.

1.06 PROTECTION OF STREET OR ROADWAY MARKERS AND TRAFFIC SIGNS

The Contractor shall not destroy, remove, or otherwise disturb any existing survey markers or other existing street or roadway markers without proper authorization. It shall be the Contractor's responsibility to notify the proper representatives of the Owner of the time and location that work will be done. Such notification shall be sufficiently in advance of construction so that there will be no delay due to waiting for survey points to be satisfactorily referenced for restoration. All survey markers or points disturbed, without proper authorization by the Engineer, will be accurately restored at the Contractors expense. All traffic signs shall be restored to the original condition and location at the Contractors expense.

1.07 NOTIFICATION BY THE CONTRACTOR

Prior to any excavation in the vicinity of any existing underground facilities, including all water, sewer, storm drain, gas, petroleum products, or other pipeline; all buried electric power, communications, or television cables; all traffic signal and street lighting facilities; and all roadway and state highway rights-of-way the Contractor shall notify the respective authorities representing the owners or agencies responsible for such facilities five (5) working days, or as otherwise stated elsewhere or required by authority with jurisdictional authority, prior to excavation so that a representative of said Owners or agencies can be present during
such work if they so desire. The Contractor shall request that each utility Owner mark (or stakeout) in the field the location of existing facilities.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.01 EXISTING UTILITIES AND IMPROVEMENTS

A. General:

The Contractor shall protect all utilities and other improvements which may be impaired during construction operations. It shall be the Contractors responsibility to ascertain the actual location of all existing utilities and other improvements indicated on the drawings that will be encountered in his construction operations and to see that such utilities or other improvements are adequately protected from damage due to such operations. The Contractor shall take all possible precautions for the protection of unforeseen utility lines to provide for uninterrupted service and to provide such special protection as may be directed by the Engineer.

B. Owner's Right of Access:

The right is reserved to the Owner and to the owners of public utilities and franchises to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the work of this Contract.

C. Known Utilities:

Existing utility lines that are shown on the drawings or the locations of which are made known to the Contractor prior to excavation and that are to be retained, and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired by the Contractor at his expense.

D. Unknown Utilities:

The Contractor is required to use care in preparing excavations and shall conduct Utility Explorations including utility excavations and field investigations to assess the layout of subsurface facilities at each excavation site prior to the commencement of work. The Contractor shall uncover subsurface obstructions in advance of construction so that existing subsurface facilities may
be identified before the work reaches the obstruction. The Contractor shall proceed at all times with caution while excavating.

E. Should the Contractor encounter subsurface and/or latent conditions at the site substantially different from those shown on the Drawings or indicated in the Specifications, he shall immediately give notification to the Engineer of such conditions. The Engineer shall thereon promptly investigate the conditions and if he finds that they are substantially different from those shown on the Plans or Specifications, he shall make such changes in the Plans and/or Specifications as he may find necessary. Any increase or decrease in the cost resulting from these changes when appropriate shall be adjusted under the applicable provisions of the contract documents.

F. Utilities to be Removed:

When utility lines that are to be removed are encountered within the area of operations, the Contractor shall notify the Utility Owner and the Engineer a sufficient time in advance for the necessary measures to be taken to prevent interruption of the service.

G. Approval of Repairs:

All repairs to a damaged improvement shall be inspected and approved by an authorized representative of the improvement owner before being concealed by backfill or other work.

H. Relocation of Utilities:

Where the proper completion of the work requires the temporary or permanent removal and/or relocation of an existing utility or other improvement which is shown on the drawings, the Contractor shall at his own expense and with prior approval from the Owner of the utility, remove and, without unnecessary delay, temporarily replace or relocate such utility or improvement in a manner satisfactory to the Owner of the facility. In all cases of such temporary removal or relocation, restoration to former location shall be accomplished by the Contractor in a manner that will restore or replace the utility or improvement as nearly as possible to its former locations and to as good or better condition than found prior to removal. In the event that the Utility Owner prefers its personnel to perform the above described work, the Contractor shall fully reimburse said utility Owner for any costs associated with such work.

I. Maintaining in Service:

All oil and gasoline pipelines, power, and telephone or other communication cable ducts, gas and water mains, irrigation lines, sewer
lines, storm drain lines, poles, and overhead power and communication wires and cables encountered along the line of the work shall be maintained continuously in service during all the operations under the Contract, unless other arrangements are made satisfactory to the Owner or jurisdictional authority of said pipelines, duct, main, irrigation line, sewer, storm drain, pole or wire or cable. The Contractor shall be responsible for and shall make good all damage due to its operations, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

3.02 SUBSURFACE OBSTRUCTIONS

A. The Contractor shall, field determine before pipeline trench and associated excavations are begun the depth and location of existing utilities. Utility locations indicated on the plans were obtained from the records available, but have not been field verified, nor have depths been measured or observed. The Contractor shall submit descriptions, depths, and locations of subsurface obstructions to the Engineer for review at the time if it is determined that obstructions exist before or after excavation.

B. In excavation, backfilling, and in laying pipe, care shall be taken not to remove, disturb, or injure existing pipes, conduits or structures. If necessary, the Contractor at his own expense, shall sling, shoreup, and maintain such structures in operation.

C. The Contractor shall obtain the permission of and give sufficient notice to the proper authorities of their intention to remove or disturb any pipe, conduit, etc., and shall abide by their regulations governing such work.

D. In the event that subsurface structures are broken or damaged in the prosecution of the Work, the Contractor shall immediately notify the proper authorities and the Engineer, and at the option of said authority, either repair the damage at once at his own expense, or pay the proper charges for repairing said damage. Repairs shall be made to the satisfaction of the Owner. The Contractor shall be responsible for any damage to, persons or property caused by such breaks, or due to his own neglect in reporting and/or repairing such damages.

3.03 TREES AND SHRUBS WITHIN RIGHTS-OF-WAY AND PROJECT LIMITS

A. General:

The Contractor shall exercise all necessary precautions so as not to damage or destroy any trees or shrubs, including those lying within street rights-of-way and within or outside the project limits, and shall not trim, remove or
relocate any trees unless such trees have been approved for trimming, removal or relocation by the Engineer and the jurisdictional agency or Owner. All existing trees and shrubs which are damaged during construction shall be trimmed, replaced, or relocated by a certified tree company under permit from the jurisdictional Agency or Owner. Tree trimming, replacement, and relocation shall be accomplished in accordance with the following paragraphs or as otherwise required in the Contract Documents. The cost of such work shall be considered incidental to the construction of the facilities proposed and no direct payment will be made.

B. Preserve:

Contractor shall take extra measures to protect trees designated to be preserved, such as erecting barricades, trimming to prevent damage from construction equipment, and installing pipe and other Work by means of hand excavation or tunneling methods. Such trees shall not be endangered by stockpiling excavated material or storing equipment against trunk or over root system.

C. Trimming:

Symmetry of the tree and shrubs shall be preserved; no stubs or splices or torn branches left; clean cuts shall be made close to trunk or large branch. Spikes shall not be used for climbing live trees. All cuts over 1-1/2 inches in diameter shall be coated with an asphaltic emulsion material.

END OF SECTION
SECTION 01550

SITE ACCESS

PART 1 – GENERAL

1.01 HIGHWAY LIMITATIONS

The Contractor shall make its own investigation of the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress to the site of the Work. It shall be the Contractor's responsibility to, construct and maintain, at its own expense, any haul roads required for his construction operations.

1.02 TEMPORARY CROSSINGS

A. General

Wherever necessary or required for the convenience of the public or individual residents at street or highway crossings, private driveways, or elsewhere, the Contractor shall provide suitable temporary bridges over unfilled excavations, except in such cases as the Contractor shall secure the written consent of the individuals or authorities concerned to omit such temporary bridges, which written consent shall be delivered to the Engineer prior to excavation. All such bridges shall be maintained in service until access is provided across the backfilled excavation. Temporary bridges for street and highway crossing shall conform to the requirements of the authority having jurisdiction in each case, and the Contractor shall adopt designs furnished by said authority for such bridges, or shall submit designs to said authority for approval, as may be required.

B. Street Use

Nothing herein shall be construed to entitle the Contractor to the exclusive use of any public street, alleyway, or parking area during the performance of the Work hereunder, and he shall so conduct his operations as not to interfere unnecessarily with the authorized work of utility companies or other agencies in such streets, alleyways, or parking areas. No street shall be closed in the public without first obtaining permission of the Owner and proper governmental authority. Where excavation is being performed in primary streets or highways, one lane in each direction shall be kept open to traffic at all times unless otherwise provided or shown. Toe boards shall be provided to retain excavated material if required by the Engineer or the agency having jurisdiction over the street or highway. Fire hydrants on or adjacent to the Work shall be kept accessible to fire-fighting equipment at all times. Temporary provisions shall be made by the Contractor to assure the use...
of sidewalks and the proper functioning of all gutters, sewer inlets, or other drainage facilities.

C. Street Closure

If closure of any street is required during construction, a formal application for a street closure shall be made to the authority having jurisdiction at least 30 days prior, unless otherwise required by jurisdictional authority, to the required street closure in order to review necessary signing and detour requirements.

END OF SECTION
SECTION 01560

TEMPORARY ENVIRONMENTAL CONTROLS

PART 1 – GENERAL

1.01 EXPLOSIVES AND BLASTING

The use of explosives on the work will not be permitted.

1.02 DUST ABATEMENT

The Contractor shall furnish all labor, equipment, and means required and shall carry out effective measures wherever and as often as necessary to prevent its operation from producing dust in amounts damaging to property, cultivated vegetation, or domestic animals, or causing a nuisance to persons living in or occupying buildings in the vicinity. The Contractor shall be responsible for any damage resulting from any dust originating from its operations. The dust abatement measures shall be continued until the Contractor is relieved of further responsibility by the Engineer.

1.03 RUBBISH CONTROL

During the progress of the work, the Contractor shall keep the site of the work and other areas used by it in a neat and clean condition, and free from any accumulation of rubbish. The Contractor shall dispose of all rubbish and waste materials of any nature occurring at the work site, and shall establish regular intervals of collection and disposal of such materials and waste. The Contractor shall also keep its haul roads free from dirt, rubbish, and unnecessary obstructions resulting from its operations. Equipment and material storage shall be confined to areas approved by the Engineer. Disposal of all rubbish and surplus materials shall be off the site of construction, at the Contractor's expense, all in accordance with local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable safety laws, and to the particular requirements of Subpart H, Section 1926.252 of the OSHA Safety and Health Standards for Construction.

1.04 CHEMICALS

All chemicals used during project construction or furnished for project operation, whether defoliant, soil sterilant, herbicide, pesticide, disinfectant, polymer, reactant or of other classification, shall show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture. Use of all such chemicals and disposal of residues shall be in strict accordance with the printed instructions of the manufacturer.
1.05 **EROSION CONTROL**

A. Contractor shall prevent erosion of soil on the site and adjacent property resulting from his construction activities. Effective measures shall be initiated prior to the commencement of clearing, grading, excavation, or other operation that will disturb the natural protection.

B. Work shall be scheduled to expose areas subject to erosion for the shortest possible time, and natural vegetation preserved to the greatest extent practicable. Temporary storage and construction buildings shall be located, and construction traffic routed, to minimize erosion. Temporary fast growing vegetation or other suitable ground cover shall be provided as necessary to control runoff.

1.06 **POLLUTION CONTROL**

Contractor shall prevent the pollution of drains and watercourses by sanitary wastes, sediment, debris and other substances resulting from construction activities. No sanitary wastes will be permitted to enter any drain or watercourse other than sanitary sewers. No sediment, debris or other substance will be permitted to enter sanitary sewers and reasonable measures will be taken to prevent such materials from entering any drain or watercourse.

1.07 **NOISE ABATEMENT**

It shall be the responsibility of the Contractor to provide for noise abatement for all equipment and procedures that might be required for execution of the project.

**PART 2 – PRODUCTS**

Not Used.

**PART 3 – EXECUTION**

Not Used.

**END OF SECTION**
SECTION 01580

JOB SIGN

PART 1 - GENERAL

1.01 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, apply to the Work specified in this Section.

1.02 General:
   A. Comply with Federal, State, and Local codes and regulations and with utility company requirements.
   B. Materials may be new or used but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate the requirements of applicable codes and standards.

1.03 Job Conditions: Install, maintain, and protect sign in a manner and at location which will be safe, non-hazardous, and protective of persons and property, and free of deleterious effects.

1.04 Job Sign:
   A. Construct and maintain job sign as detailed. All lumber shall be treated pine. Signs shall be 3/4-inch-thick exterior grade plywood with "B" or better face, PVC, metal or coroplast. Contractor to coordinate with A/E to provide the current information and general layout for the project sign prior to ordering,
   B. See Project Construction Specifications and Contract Documents Title Sheet for text of Project Title and Owner's Name(s). Consult A/E for specific requirements within seven (7) days of execution of contract.
   C. Locate job signs where directed by A/E. One (1) movable job sign minimum will be typically placed at each site for the duration of the work at that respective location. A sign shall be moved from one site to another as work progresses and work at a site is completed. Contractor shall plan to install/remove project sign(s) up to 4 times during the progression of the project.
   D. 4 x 4 Treated Pine Posts. Brace as required.
   E. Job Sign shall be erected within two weeks of Notice to Proceed and shall be maintained through duration of project.
   F. At his option, Contractor may provide and maintain a separate job sign, approved by the A/E, for listing of subcontractors. If approved, paint by professional sign painter in identical colors as project sign.
   G. Do not allow other signs or advertisements at or near the project site.

1.05 Removal:
   A. Completely remove temporary materials and equipment at completion of job or when notified by A/E. Clean and repair damage caused by temporary installations or use of temporary facilities.
B. Restore existing facilities used for temporary services to specified, or to original condition.
C. Restore any permanent facilities used for temporary services to specified condition.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

PART 4 MEASUREMENT AND PAYMENT

A. Payment for job sign(s) is considered incidental to the work and will not be considered for separate payment.
SECTION 01600

MATERIAL AND EQUIPMENT

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

A. Material and equipment incorporated into the work:

1) Conform to applicable specifications and standards.

2) Comply with size, make, type and quality specified, or as specifically approved, in writing, by the Engineer.

3) Manufactured and Fabricated Products:

   (a) Design, fabricate and assemble in accord with the best engineering and shop practices.

   (b) Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.

   (c) Two or more items of the same kind shall be identical, by the same manufacturer.

   (d) Products shall be suitable for service conditions.

4) Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.02 RELATED REQUIREMENTS

A. Conditions of the Contract

B. Section 01010: Summary of Work

C. Section 01340: Shop Drawings, Working Drawings and Samples

D. Section 01710: Cleaning

E. Section 01730: Operating and Maintenance Data
1.03 REUSE OF EXISTING MATERIAL

Except as specifically indicated or specified, materials and equipment removed from the existing structure shall not be used in the completed work.

1.04 MANUFACTURER'S INSTRUCTIONS

A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain, and distribute copies of such instructions to parties involved in the installation, including two (2) copies to the Engineer.

1) Maintain one (1) set of complete instructions at the job site during installation and until completion.

B. Handle, install, connect, clean, condition and adjust products in strict accord with such instructions and in conformity with specified requirements.

1) Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Engineer for further instructions.

2) Do not proceed with work without clear instructions.

C. Perform work in accord with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

1.05 TRANSPORTATION AND HANDLING

A. Arrange deliveries of products in accord with construction schedules; coordinate to avoid conflict with work and conditions at the site.

1) Deliver products in undamaged condition, in manufacturer’s original containers or packaging, with identifying labels intact and legible.

2) Immediately upon delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that products are properly protected and undamaged.

B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.
1.06  STORAGE AND PROTECTION

A.  Store products in accord with manufacturer's instructions, with seals and labels intact and legible.

   1)  Store products subject to damage by the elements in weathertight enclosure.

   2)  Maintain temperature and humidity within the ranges required by manufacturer's instructions.

B.  Exterior Storage

   1)  Store fabricated products above the ground, on blocking or skids, prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.

   2)  Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter and entrance to drainage systems.

C.  Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.

D.  Protection after Installation

   1)  Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove when no longer needed.

1.07  SUBSTITUTIONS AND PRODUCT OPTIONS

A.  Products List

   1)  Within 30 days after contract date, submit to the Engineer a complete list of major products proposed to be used, with the name of the manufacturer, supplier, and the installing contractor or subcontractor.

B.  Contractor's Options

   1)  For products specified only by reference standard, select any product meeting that standard.
2) For products specified by naming several products or manufacturers, select any one of the products or manufacturers named, which complies with the specifications.

3) For products specified by naming one or more products or manufacturers and "or equal", Contractor must submit a request as for substitutions for any product or manufacturer not specifically named.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION
SECTION 01620

STORAGE AND PROTECTION

PART 1 – GENERAL

1.01 SCOPE OF WORK

Provide secure storage and protection for products to be incorporated before and after installation and until completion of the Work.

1.02 STORAGE

A. Store products immediately on delivery and protect until installed in the Work.

1. Store in accordance with manufacturer's instructions, with seals and labels intact and legible.

B. Store Products subject to damage by elements in substantial weather tight enclosures.

1. Maintain temperatures within ranges required by manufacturer's instructions.

2. Provide humidity control for sensitive products, as required by manufacturer's instruction.

3. Store unpacked products on shelves, in bins or in neat piles, accessible for inspection.

C. Exterior Storage

1. Provide substantial platforms, blocking or skids to support fabricated products above ground, prevent soiling or staining.

   a. Cover products, subject to discoloration or deterioration from exposure to the elements, with impervious sheet coverings. Provide adequate ventilation to avoid condensation.

2. Store loose granular materials on solid surfaces such as paved areas or provide plywood or sheet materials to prevent mixing with foreign matter.

   a. Provide surface drainage to prevent flow or ponding of rainwater.

   b. Prevent mixing of refuse or chemically injurious materials or liquids.

D. Arrange storage in a manner to provide easy access for inspection.

END SECTION
SECTION 01700

CONTRACT CLOSEOUT

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

Comply with requirements stated in Conditions of the Contract and in specifications for administrative procedures in closing out the work.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Conditions of the Contract. Fiscal provisions, legal submittals, and additional administrative requirements.

B. Section 01710: Cleaning.

C. Section 01720: Project Record Documents.

D. Section 01730: Operating and Maintenance Data.

E. Section 01740: Warranties and Bonds.

1.03 SUBSTANTIAL COMPLETION

A. When the Contractor considers the work is substantially complete, he shall submit to the Engineer:

1) A written notice that the Work, or designated portion thereof, is substantially complete.

2) A list of items to be completed or corrected.

B. Within a reasonable time after receipt of such notice, the Engineer will make an inspection to determine the status of completion.

C. Should the Engineer determine that the work is not substantially complete:

1) The Engineer will promptly notify the Contractor, in writing, giving the reasons therefor.

2) The Contractor shall remedy the deficiencies in the work and send a second written notice of substantial completion to the Engineer.

3) The Engineer will reinspect the work.
D. When the Engineer finds that the work is substantially complete, he will:

1) Prepare and deliver to the Owner a tentative Certificate of Substantial Completion on the appropriate City or Parish form with - a tentative list of items to be completed or corrected before final payment.

2) After consideration of any objections made by the Owner as provided in Conditions of the Contract, and when the Engineer considers the work substantially complete, he will execute and deliver to the Owner and the contractor a definite Certificate of Substantial Completion with a revised tentative list of items to be completed or corrected.

1.04 FINAL INSPECTION

A. When Contractor considers the work is complete, he shall submit written certification that:

1) Contract Documents have been reviewed.

2) Work has been inspected for compliance with Contract Documents.

3) Work has been completed in accordance with Contract Documents.

4) Equipment and systems have been tested in the presence of the Owner's representative and are operational.

5) Work is completed and ready for final inspection.

B. Engineer will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.

C. Should Engineer consider that the work is incomplete or defective:

1) Engineer will promptly notify the contractor, in writing, listing the incomplete or defective work.

2) Contractor shall take immediate steps to remedy the stated deficiencies and send a second written certification to Engineer that the work is complete.

3) Engineer will reinspect the work.
D. When the Engineer finds that the work is acceptable under the Contract Documents, he shall request the Contractor to make closeout submittals.

1.05 REINSPECTION FEES

A. Should the Engineer perform reinspections due to failure of the work to comply with the claims of status of completion made by the Contractor:

1) Owner will compensate Engineer for such additional services.

2) Owner will deduct the amount of such compensation from the final payment to the Contractor.

1.06 FINAL ADJUSTMENT OF ACCOUNTS

A. Submit a final statement of accounting to the Engineer.

B. Statement shall reflect all adjustments to the Contract Sum:

1) The original Contract Sum.

2) Additions and deductions resulting from:
   (a) Previous Change Orders
   (b) Unit Prices
   (c) Penalties and Bonuses
   (d) Deductions for liquidated damages
   (e) Deductions for reinspection payments
   (f) Other adjustments

3) Total Contract Sum, as adjusted.

4) Previous payments.

5) Sum remaining due.

C. Engineer will prepare a final Change order, reflecting approved adjustments to the contract sum which are not previously made by change orders.

1.07 FINAL APPLICATION FOR PAYMENT

Contractor shall submit the final application for payment in accordance with procedures and requirements stated in the Conditions of the Contract.
1.08 CONTRACTOR'S CLOSEOUT SUBMITTALS TO ENGINEER

A. Project Record Documents.

B. Warranties and Bonds.

C. Evidence of Payment and Release of Liens: To requirements of General and Supplementary conditions.

D. Certificates of Insurance for Products and Completed operations.

E. GPS Locations of installed meters.

F. Maintenance Manuals.

G. User / Operating Manuals.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION
SECTION 01710

CLEANING

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

Execute cleaning, during progress of the work, and at completion of the work, as required by General conditions.

1.02 RELATED REQUIREMENTS

A. Conditions of the Contract.

B. Each Specification Section: Cleaning for specific products or work.

1.03 DISPOSAL REQUIREMENTS

Conduct cleaning and disposal operations to comply with codes, ordinances, regulations, and anti-pollution laws.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.

B. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.

C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 – EXECUTION

3.01 DURING CONSTRUCTION

A. Execute periodic cleaning to keep the work, the site and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations.

B. Provide on-site containers for the collection of waste materials, debris, and rubbish.
C. Remove waste materials, debris, and rubbish from the site periodically and dispose of legal disposal areas away from the site in accordance with applicable local, state, and federal codes, ordinances, and other requirements.

3.02 FINAL CLEANING

A. Employ skilled, workmen for final cleaning.

B. Rake the surfaces of the grounds clean.

C. Prior to final completion, or Owner occupancy, Contractor shall conduct an inspection of sight-exposed exterior surfaces, and all work areas, to verify that the entire work is clean.

D. Upon completion of the work, all staging, equipment, 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 contractor or subcontractors shall be cleaned, repaired, or refinished to the satisfaction of the Engineer at no cost to the Owner.

END OF SECTION
SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1 – GENERAL

1.01 DESCRIPTION

The Contractor shall maintain at the site for the Owner’s permanent records one copy of:

1. Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other Modifications to the Contract.
5. Engineer Field Orders or Written Instructions.
6. Approved Shop Drawings, Product Data, Warranties.
7. Field Test Records.
8. Construction Photographs.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01340: Shop Drawings, Product Data and Samples.
B. Section 01700: Contract Closeout.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.01 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. The Contractor shall store documents and samples in Contractor’s field office or safely on-site apart from documents used for construction.

B. The Contractor shall provide files and racks for storage of documents.

C. The Contractor shall maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.

D. The Contractor shall make documents and samples available at all times for inspection by the Engineer and Owner.
3.02 MARKING-UP RECORD DRAWINGS

The Contractor shall mark with red erasable pencil and, where necessary, use other pencil colors, as required.

3.03 RECORDING

A. Label each document (including record prints and shop drawings) "PROJECT RECORD" in neat large, printed letters.

B. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.

C. GPS Locations of Installed Water Meters (if applicable):
   1. Contractor shall provide GPS location information (x, y, and z coordinates) of each new water meter installed. The z coordinate shall use the NAVD 88 datum.
   2. The GPS coordinates shall be submitted with each payment application for the meters that were installed during the period of that payment application.

D. Specifications and Addenda. The Contractor shall legibly mark each Section to record:
   1. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.
   2. Changes made by Field Order or by Change Order.

3.04 SUBMITTALS

A. At Contract close-out deliver record documents to the Engineer including specifications, addenda, change orders and other modifications to contract; Engineers field orders and written instructions, approved shop drawings, product data, field test records and any other documents which serve as a record of actual field installation and construction different from the original contract documents. Engineer will submit them to Owner.

B. Accompany submittals with transmittal letters in duplicates containing:
   1. Date
   2. Project title and number
   3. Contractor’s name and address
   4. Title and number of each Record Document
   5. Signature of Contractor or his authorized representative

END OF SECTION
SECTION 01730

OPERATING AND MAINTENANCE DATA

PART I - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Compile product data and related information appropriate for Owner's maintenance and operation of products furnished under contract. Prepare operating and maintenance data as specified in this section and as referenced in other pertinent sections of the specifications.

B. Instruct Owner's personnel in maintenance of products and in operation of equipment and systems.

1.02 RELATED REQUIREMENTS

A. Section 01340: Shop Drawings, Product Data and Samples.

B. Section 01700: Contract Closeout.

C. Section 01740: Warranties and Bonds.

1.03 FORM OF SUBMITTALS

A. Prepare data in form of an instructional manual for use by Owner’s personnel.

B. Format:

1. Size: 8 1/2" X 11".
2. Paper: 20 pound minimum, white, for typed pages.
3. Text: Manufacturer’s printed data, or neatly typewritten.
4. Drawings:
   a. Provide reinforced punched binder tab, bind in with text.
   b. Fold larger drawings to size of text pages.
5. Provide fly-leaf for each separate product or each piece of operating equipment.
   a. Provide typed description of product and major component parts of equipment.
   b. Provide indexed tabs:
6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS".
   List:
   a. Title of project.
   b. Identity of separate structure as applicable.
   c. Identity of general subject matter covered in the manual.
C. Binders:

1. Commercial quality 3-ring binders with durable and cleanable plastic covers.
2. Maximum ring size: 1”
3. When multiple binders are used, correlate the data into related consistent groupings.

1.04 MANUAL FOR EQUIPMENT AND SYSTEMS

A. Submit five (5) copies of complete manual in final form unless otherwise specified elsewhere.

B. Content, for each unit of equipment and system, as appropriate:

1. Description of unit and component parts.
   a. Function, normal operating characteristics, and limiting conditions.
   b. Performance curves, engineering data and tests.
   c. Complete nomenclature and commercial number of replaceable parts, which are cross-referenced with manufacturer's parts list.

2. Operating procedures:
   a. Start-up, break-in, routine, and normal operating instructions.
   b. Regulation, control, stopping, shutdown, and emergency instructions.
   c. Summer and winter operating instructions (if applicable).
   d. Special operating instructions.

3. Maintenance Procedures:
   a. Routine operations.
   b. Guide to "trouble-shooting".
   c. Disassemble, repair, and reassemble.
   d. Alignment, adjusting and checking.

4. Servicing and lubrication schedule.
   a. List of lubricants required.

5. Manufacturer's printed operating and maintenance instructions.

6. Description of sequence of operation by control manufacturer.

7. Original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance.
   a. Predicted life of parts subject to wear.
   b. Items recommended to be stocked as spare parts.

8. As-installed control diagrams by controls manufacturer.
9. Each contractor’s coordination drawings.
   a. As-installed color-coded piping diagrams.

10. Charts of valve tag numbers, with location and function of each valve.

11. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.

12. Other data as required under pertinent sections of specifications.

C. Content, for each electric and electronic system, as appropriate:

1. Description of system and component parts.
   a. Function, normal operating characteristics, and limiting conditions.
   b. Performance curves, engineering data and tests.
   c. Complete nomenclature and commercial number of replaceable parts.

2. Circuit directories of panel boards.
   a. Electrical service.
   b. Controls.
   c. Communications.

3. As-installed color-coded wiring diagrams.

4. Operating procedures:
   a. Routine and normal operating instructions.
   b. Sequences required.
   c. Special operating instructions.

5. Maintenance procedures:
   a. Routine operations.
   b. Guide to "trouble-shooting".
   c. Disassembly, repair and reassembly.
   d. Adjustment and checking.

6. Manufacturer's printed operating and maintenance instructions.

7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.

8. Other data as required under pertinent sections of specifications.

D. Prepare and include additional data when the need for such data becomes apparent during instruction of Owner's personnel.
E. Additional requirements for operating and maintenance data: Respective sections of specifications.

1.05 SUBMITTAL SCHEDULE

A. Submit two (2) copies of preliminary draft of proposed formats and outlines of contents. Engineer will review draft and return one copy with comments.

B. Submit one (1) copy of completed data in final form fifteen (15) days prior to final inspection. Copy will be returned after final inspection with comments.

C. Submit specified number of copies of approved data in final form ten (10) days after final inspection.

1.06 INSTRUCTION OF OWNER'S PERSONNEL

A. Prior to final inspection or acceptance, fully instruct Owner's designated operating and maintenance personnel in operation, adjustment, and maintenance of products, equipment and systems.

B. Operating and maintenance manual shall constitute the basis of instruction. Review contents of manual with personnel, in full detail, to explain all aspects of operations and maintenance.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION
PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

A. Compile specified warranties and bonds.
B. Compile specified service and maintenance contracts.
C. Co-execute submittals when so specified.
D. Review submittals to verify compliance with Contract Documents.
E. Submit to Engineer for review and transmittal to Owner.

1.02 RELATED REQUIREMENTS

A. Invitation to Bid, Information for Bidders: Bid Bonds.
B. Conditions of the Contract: Performance Bond and Labor and Material Payment Bond.
C. Conditions of the Contract: General Warranty of Construction.
D. Section 01700: Contract Closeout.

1.03 SUBMITTAL REQUIREMENTS

A. Assemble warranties, bonds and service and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.
B. Number of original signed copies required: Two (2) each.
C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.

1. Product or work item.
2. Firm, with name of principal, address, and telephone number.
4. Date of beginning of warranty, bond or service and maintenance contract.
5. Duration of warranty, bond, or service maintenance contract.
6. Provide information for Owner's personnel:
   a. Proper procedure in case of failure.
b.  Instances which might affect the validity of warranty or bond.

7.  Contractor, name of responsible principal, address, and telephone number.

1.04  FORM OF SUBMITTALS

A.  Prepare in duplicate packets.

B.  Format:

   1.  Size 8 ½” x 11”, punch sheets for standard 3-ring binder. Fold larger sheets to fit into binders.

   2.  Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS". List:
       a.  Title of project.
       b.  Name of Contractor.

C.  Binders: Commercial quality, 3-ring, with durable and cleanable plastic covers.

1.05  TIME OF SUBMITTALS

A.  Make submittals within ten days after Date of Substantial Completion, prior to final request for payment.

B.  For items of work, where acceptance is delayed materially beyond Date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.06  SUBMITTALS REQUIRED

Submit warranties, bonds, service and maintenance contracts as specified in respective sections of specifications.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION
SECTION 02060

BUILDING DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 General Requirements Specification Sections, apply to this Section.

1.2 SUMMARY:
A. This Section includes the following:
   1. Demolition and removal of buildings and site improvements.
   2. Removing below-grade construction.
   3. Disconnecting, capping or sealing, and removing site utilities.
B. Related Sections include the following:
   1. Section 01380 for Construction Photographs for pre- & post-construction photographs taken before & after building demolition.
   2. Section 01510 for Temporary Utilities.
   3. Section 01530 for Protection of Existing Utilities.
   4. Section 01560 for Temporary Environmental Controls.

1.3 DEFINITIONS:
A. Demolish: Completely remove and legally dispose of off-site.
B. Recycle: Recovery of demolition waste for subsequent processing in preparation for reuse.
C. Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner designated location and/or laydown yard. Include fasteners or brackets needed for reattachment elsewhere.

1.4 MATERIALS OWNERSHIP:
A. Unless otherwise indicated, demolition waste becomes property of Contractor.
B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
   1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 SUBMITTALS:
A. Qualification Data: For refrigerant recovery technician (if applicable).
B. Schedule of Building Demolition Activities: Indicate the following:
   1. Detailed sequence of demolition work, with starting and ending dates for each activity.
   2. Temporary interruption of utility services.
   3. Shutoff and capping of utility services.
C. Predemolition Photographs: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by building demolition operations. Comply with Division 1 Section Construction Photographs. Submit before the Work begins.

D. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

E. Statement of Refrigerant Recovery (if applicable): Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.6 QUALITY ASSURANCE:
A. Refrigerant Recovery Technician Qualifications (if applicable): Certified by EPA-approved certification program.
B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
C. Standards: Comply with ANSI A10.6 and NFPA 241.
D. Predemolition Conference: Conduct conference at Project site.

1.7 PROJECT CONDITIONS:
A. Buildings to be demolished will be in use by Owner as needed for normal site operations. Coordinate in advance with Owner for the buildings to be vacated and their use discontinued before start of the demolition Work.
B. Owner assumes no responsibility for buildings and structures to be demolished.
   1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical, unless noted otherwise.
C. On-site storage or sale of removed items or materials is not permitted, unless otherwise indicated in the Contract Documents and/or pre-approved.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 DEMOLITION CONTRACTORS:
A. Qualified Demolition Contractor:
   1. Demolition Firm Qualifications: An experienced firm that is specialized in demolition work similar in material and extent to that indicated for this project.

3.2 EXAMINATION:
A. Verify that utilities have been disconnected and capped before starting demolition operations.
B. Review available Project Record Documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
C. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during building demolition operations.

D. Verify that hazardous materials have been remediated before proceeding with building demolition operations.

3.3 PREPARATION:
A. Refrigerant: Remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction before starting demolition.

B. Existing Utilities: Locate, identify, disconnect, and seal or cap off indicated utilities serving buildings and structures to be demolished.
(Note: Plans and other drawings may not reflect all building components, site features, utilities, and other equipment. Contractor shall examine each project site, including the interior and exterior of buildings and other areas where work will be required, prior to bidding and before any demolition activities and be knowledgeable of all existing conditions affecting the work.)
1. Arrange to shut off indicated utilities with utility companies.
2. If removal, relocation, or abandonment of utility services will affect adjacent occupied buildings, structures, or other site equipment, then provide temporary utilities that bypass buildings, structures, and other site equipment to be demolished and that maintain continuity of service to other buildings, structures, and equipment to remain operational until new required utility services are completed.
3. Cut off pipe or conduit a minimum of 24 inches (610 mm) below grade, unless otherwise indicated. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing according to requirements of authorities having jurisdiction.

C. Existing Utilities: Refer to project Contract Documents and other applicable specification Sections for shutting off, disconnecting, removing, and sealing or capping utilities. Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing.

D. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction being demolished.
1. Strengthen or add new supports when required during progress of demolition.

3.4 PROTECTION:
A. Existing Facilities: Protect adjacent public and private site features & improvements and existing perimeter fence.

B. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction and/or as indicated. Comply with requirements in Section 01530 Protection of Existing Utilities and other applicable Division 1 Sections.
1. Protect existing site improvements, appurtenances, and landscaping to remain.
2. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
3. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
4. Provide protection to ensure safe passage of people around building demolition area.
C. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.

3.5 DEMOLITION, GENERAL:
A. General: Demolish indicated existing buildings and site improvements completely, or as otherwise indicated in the Contract Documents. Protect existing slabs, site paving, and other features indicated to remain and/or to be reused during demolition activities. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
2. Maintain fire watch during and for at least 24 hours after flame cutting operations.
3. Maintain adequate ventilation when using cutting torches.
4. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
B. Engineering Surveys: During demolition, perform surveys to detect hazards that may result from building demolition activities.
C. Site Access and Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, drives, walks, walkways, and other adjacent occupied and used facilities.
1. Do not close or obstruct streets, drives, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
D. Explosives: Use of explosives is not permitted.

3.6 DEMOLITION BY MECHANICAL MEANS:
A. Proceed with demolition of structural framing members systematically, from higher to lower level. Complete building demolition operations above each floor or tier before disturbing supporting members on the next lower level.
B. Remove debris from elevated portions of the building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
1. Remove structural framing members and lower to ground by method suitable to minimize ground impact and dust generation.
2. Existing slab to remain, unless otherwise indicated.
3. Refer to project Contract Documents and other applicable specification Sections for shutting off, disconnecting, removing, and sealing or capping utilities.

C. Existing Utilities: Demolish and remove existing utilities and below-grade utility structures at the service mains in conformance with the requirements of the utility companies or governing body owning or controlling them.
   1. Piping: Disconnect piping at unions, flanges, valves, or fittings.
   2. Wiring Ducts: Disassemble into unit lengths and remove plug-in and disconnecting devices.
   3. Stake location of abandoned, sealed, plugged or capped utilities.

3.7 SITE RESTORATION:
   A. Below-Grade Areas: Completely fill below-grade areas and voids resulting from building demolition operations with satisfactory soil materials according to backfill requirements per the Contract Documents.
   B. Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.

3.8 REPAIRS:
   A. Promptly repair damage to adjacent buildings and other site features and improvements caused by demolition operations.

3.9 DISPOSAL OF DEMOLISHED MATERIALS:
   A. Remove demolition waste materials from Project site. Refer to the Contract Documents and other applicable specification Sections for recycling, salvaging, and disposal of demolition waste.
   B. Remove demolition waste materials from Project site and legally dispose of them in an EPA-approved landfill acceptable to authorities having jurisdiction. Any components or equipment to be salvaged or temporarily stored for reuse as part of the project shall be transported and delivered to the Owner designated location.
      1. Do not allow demolished materials to accumulate on-site.
      2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
   C. Do not burn demolished materials.

3.10 CLEANING:
   A. Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.

END OF SECTION 02060
PART 1 - GENERAL

1.01 SCOPE

This work consists of furnishing all labor, materials, equipment and incidentals required to furnish and install the geotextile fabric at the locations shown on the plans, or as directed, in conformance with manufacturer’s directions and these specifications.

1.02 SUBMITTALS

The characteristics and properties of the geotextile fabric to be installed shall be submitted to the Engineer prior to the installation of the fabric in accordance with Section 01340.

PART 2 - PRODUCTS

2.01 ACCEPTABLE PRODUCTS

The geotextile fabric should meet or exceed the material requirements for Class C geotextile fabric as presented in Section 1019.01 of the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition.

2.02 MATERIALS

A. The geotextile fabric shall be a woven high strength fabric with high burst and puncture strength. It shall be a woven fabric composed of at least 85% by weight polyester, polyolefins or polyamides. Geotextile fabric shall meet the requirements as shown in the table below:

<table>
<thead>
<tr>
<th>Property</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>AOS US Sieve Min. (ASTM D4751)</td>
<td>50</td>
</tr>
<tr>
<td>Grab Tensile, lb., Min. (ASTM D4632-86)</td>
<td>130</td>
</tr>
<tr>
<td>Elongation, Min. (ASTM D4632-86)</td>
<td>50%</td>
</tr>
<tr>
<td>Burst Strength, psi., Min. (ASTM D3787)</td>
<td>210</td>
</tr>
<tr>
<td>Trapezoidal Tear, lb., Min. (ASTM D4533)</td>
<td>40</td>
</tr>
<tr>
<td>Puncture Resistance, lb., Min. (ASTM D4833)</td>
<td>40</td>
</tr>
<tr>
<td>Permittivity Sec min. (ASTM D4491)</td>
<td>1.0</td>
</tr>
<tr>
<td>Strength Retained at 150 hr. weatherometer, % min. (ASTM D4632; DOTD TR)</td>
<td>70</td>
</tr>
</tbody>
</table>
B. The manufacturer of the geotextile fabric shall have been normally engaged in the manufacture of the fabrication of this geotextile fabric for at least five continuous years.

2.03 FABRICATION

The geotextile fabric shall be furnished to the Contractor by the manufacturer as a continuous sheet in the widths required for installation in the trench. The length of each sheet shall be such that the total numbers of sheets to be joined in the field are minimized.

PART 3 - EXECUTION

3.01 HANDLING

A. The Contractor shall handle and store the sheets in accordance with the recommendations of the manufacturer to avoid any damage. Geotextile fabric shall be stored such that it is not exposed to sunlight.

B. Damaged geotextile fabric will not be acceptable for installation until and unless it has been replaced to the satisfaction of the Engineer.

3.02 INSTALLATION

A. The geotextile fabric shall be placed without folds or wrinkles and in accordance with manufacturer’s recommendations. Laps shall be as recommended by the manufacturer but in no case shall be less than 24”.

B. The recommendations of the manufacturer shall be followed during the installation of the fabric. Care shall be taken during pipe laying, embedment and backfilling operations to avoid damage to the geotextile fabric. Any portion of the fabric damaged during installation shall be removed and replaced or repaired to the satisfaction of the Engineer prior to continuing the installation of the geotextile fabric.

1. Field Joints. The number of field joints shall be minimized. Lap joints shall be used to join sections in the field.

END OF SECTION
SECTION 02318

EXCAVATION AND EMBANKMENT

PART 1 - GENERAL

1.01. DESCRIPTION

This work consists of excavation, disposal, placement and compaction of embankment material and other materials that are not provided for under other sections of these specifications, including excavation and embankment construction, and all other grading operations necessary for the work in accordance with these specifications and in conformity with lines, grades, thicknesses and typical cross sections shown on the plans or established by the Engineer. Except as modified herein, this work shall be in accordance with Section 203 of the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition and its latest revisions.

General excavation for utility trenches and other foundations/pads shall be in accordance with Section 203.02. General excavation also includes unsuitable material in accordance with Section 203.04. All excavation work shall be at no direct payment.

1.02 MATERIAL

Backfill material for electrical service conduits trench work shall be usable on-site excavated earth material or borrow material free from waste, rubbish, trees, or other unsuitable material in accordance with Section 203.06.1 and 203.06.6 of the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition, unless otherwise indicated or directed. Backfill shall be compacted to at least 90% of maximum density for the depth of the backfill.

Backfill material under concrete or over excavation shall be granular material. Refer to specification Section 02331.

1.03 GENERAL

Selected soils as determined by the Engineer shall be stockpiled on jobsite, transported, placed, and compacted as directed by the Engineer and/or project plans and specifications.

1.04 UNSUITABLE SOILS

If in the opinion of the Engineer unsuitable soils such as organic matter, including stumps, roots, logs, etc.; muck humus; organic clay; or other soils unsuitable for construction operations are present at the excavation limits, additional excavation beyond the lines and grades shown in the plans may be required. Voids from excavated unsuitable soils shall be backfilled with usable on-site excavated earth material or borrow material in accordance with Section 203.06.1 and 203.06.6 of the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition.
1.05 **DISPOSAL OF UNSUITABLE EXCAVATION**

Unsuitable excavated material as deemed by the Engineer that is not utilized as backfill material shall be removed and disposed of in accordance with Section 203.04 at no direct pay.

1.06 **SUBMITTAL**

Manufacturer’s data sheet for geotextile fabric along with representative sample must be submitted and approved by Engineer before installation of filter cloth. Submittal must be in accordance with submittal procedure as outlined in the general specifications.

1.07 **INSTALLATION**

Installation of geotextile must be in strict accordance with manufacturer’s instructions and requirements. All overlaps shall be a minimum of two (2) feet, unless otherwise shown on the plan. Overlaps will not be measured for payment.

END OF SECTION
SECTION 02331

GRANULAR MATERIAL

1.01 DESCRIPTION

This work consists of furnishing and placing granular material in accordance with these specifications and in conformity with the lines, grades, typical sections and other miscellaneous details shown in the plans or as directed by the Engineer. All work shall conform to Section 723 of the Louisiana Standard Specifications, 2016 Edition, and its latest revisions.

1.02 MATERIAL

Sand base material under concrete pavement and/or sand backfill for over excavations shall comply with Section 1003.09 of the Louisiana Standard Specifications for Roads and Bridges (2016 Edition and latest revisions). The sand base shall be placed in 1’ maximum layers and to at least 95% relative density at optimum water content in accordance with ASTM D 1557, or as indicated otherwise.

1.03 MEASUREMENT AND PAYMENT

There will be no direct measurement and payment for granular material unless otherwise indicated.

END OF SECTION
PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, materials, equipment and incidentals required and cut, remove, repair or otherwise modify parts of existing concrete structures or appurtenances as shown on the Drawings and as specified herein. Work under this Section shall also include bonding new concrete to existing concrete.

B. Secure to forms as required or set for embedment as required, all miscellaneous metal items, sleeves, reglets, anchor bolts, inserts and other items furnished under other Sections and required to be cast into concrete, or approved in advance by the Engineer.

1.02 RELATED WORK

A. Concrete Reinforcement is included in Section 03200.

B. Concrete Joints and Joint Accessories are included in Section 03250.

C. Cast-in-Place Concrete is included in Section 03300.

1.03 SUBMITTALS

A. Submit to the Engineer, in accordance with the General Conditions, shop drawings and product data showing materials of construction and details of installation for:

   1. Form release agent
   2. Form ties

B. Samples

   1. Demonstrate to the Engineer on a designated area of the concrete substructure exterior surface that the form release agent will not adversely affect concrete surfaces to be painted, coated or otherwise finished and will not affect the forming materials.

1.04 REFERENCE STANDARDS

A. American Concrete Institute (ACI)

   1. ACI 301 - Standard Specification for Structural Concrete
   2. ACI 318 - Building Code Requirements for Reinforced Concrete
   3. ACI 347 - Formwork for Concrete
B. American Plywood Association (APA)

1. Material grades and designations as specified

C. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.05 SYSTEM DESCRIPTION

A. General: Architectural Concrete is wall, slab, beam or column concrete which will have surfaces exposed to view in the finished work. It includes similar exposed surfaces in water containment structures from the top of walls to 2-ft below the normal water surface in open tanks and basins.

B. Formwork shall be designed and erected in accordance with the requirements of ACI 301 and ACI 318 and as recommended in ACI 347 and shall comply with all applicable regulations and codes. The design shall consider any special requirements due to the use of plasticized and/or retarded set concrete.

PART 2 - PRODUCTS

2.01 GENERAL

A. The usage of a manufacturer's name and model or catalog number is for the purpose of establishing the standard of quality and general configurations desired.

2.02 MATERIALS

A. Forms for cast-in-place concrete shall be made of wood, metal, or other approved material. Construct wood forms of sound lumber or plywood of suitable dimensions and free from knotholes and loose knots. Where used for exposed surfaces, dress and match boards. Sand plywood smooth and fit adjacent panels with tight joints. Metal forms may be used when approved by the Engineer and shall be of an appropriate type for the class of work involved. All forms shall be designed and constructed to provide a flat, uniform concrete surface requiring minimal finishing or repairs.

B. Wall Forms

1. Forms for all exposed exterior and interior concrete walls shall be "Plyform" exterior grade plywood panels manufactured in compliance with the APA and bearing the trademark of that group, or equal acceptable to the Engineer. Provide B grade or better veneer on all faces to be placed against concrete during forming. The class of material and grades of interior plies shall be of sufficient strength and stiffness to provide a flat, uniform concrete surface requiring minimal finishing and grinding.

2. All joints or gaps in forms shall be taped, gasketed, plugged, and/or caulked with an approved material so that the joint will remain watertight and will withstand placing pressures without bulging.
C. Rustication strips shall be at the location and shall conform to the details shown on the Drawings. Moldings for chamfers and rustications shall be milled and planed smooth. Rustications and corner strips shall be of a nonabsorbent material, compatible with the form surface and fully sealed on all sides to prohibit the loss of paste or water between the two surfaces.

D. Form Release Agent

1. Coat all forming surfaces in contact with concrete using an effective, non-staining, non-residual, water based, bond-breaking form coating unless otherwise noted. Form release agents used in potable water containment structures shall be suitable for use in contact with potable water and shall be non-toxic and free of taste or odor and meet the requirements of NSF/ANSI Standard 61. Form release agent shall be Farm Fresh by Unitex or approved equal.

E. Form Ties

1. Form ties encased in concrete other than those specified in the following paragraphs shall be designed so that, after removal of the projecting part, no metal shall remain within 1-1/2-in of the face of the concrete. The part of the tie to be removed shall be at least 1/2-in diameter or be provided with a wood or metal cone at least 1/2-in diameter and 1-1/2-in long. Form ties in concrete exposed to view shall be the cone-washer type.

2. Form ties for exposed exterior and interior walls shall be as specified in the preceding paragraph except that the cones shall be of approved wood or plastic.

3. Flat bar ties for panel forms, if used, shall have plastic or rubber inserts having a minimum depth of 1-1/2-in and sufficient dimensions to permit proper patching of the tie hole.

4. Ties for liquid containment structures shall have an integral waterstop that is tightly welded to the tie.

5. Common wire shall not be used for form ties.

6. Alternate form ties consisting of tapered through-bolts at least 1-in in diameter at smallest end or through-bolts that utilize a removable tapered sleeve of the same minimum size may be used at the Contractor's option. Obtain Engineer's acceptance of system and spacing of ties prior to ordering or purchase of forming. Clean, fill and seal form tie hole with non-shrink cement grout. A vinyl plug shall be inserted into the hole to serve as a waterstop. The Contractor shall be responsible for water-tightness of the form ties and any repairs needed.
PART 3 - EXECUTION

3.01 GENERAL

A. Forms shall be used for all cast-in-place concrete including sides of footings. Forms shall be constructed and placed so that the resulting concrete will be of the shape, lines, dimensions and appearance indicated on the Drawings.

B. Forms for walls shall have removable panels at the bottom for cleaning, inspection and joint surface preparation. Forms for walls of considerable height shall have closable intermediate inspection ports. Tremies and hoppers for placing concrete shall be used to allow concrete inspection, to prevent segregation and to prevent the accumulation of hardened concrete on the forms above the fresh concrete.

C. Molding, bevels, or other types of chamfer strips shall be placed to produce block outs, rustications, or chamfers as shown on the Drawings or as specified herein. Chamfer strips shall be provided at horizontal and vertical projecting corners to produce a 3/4-in chamfer. Rectangular or trapezoidal moldings shall be placed in locations requiring sealants where specified or shown on the Drawings. Sizes of moldings shall conform to the sealants manufacturer's recommendations.

D. Forms shall be sufficiently rigid to withstand construction loads and vibration and to prevent displacement or sagging between supports. Construct forms so that the concrete will not be damaged by their removal. The Contractor shall be entirely responsible for the adequacy of the forming system.

E. Before form material is re-used, all surfaces to be in contact with concrete shall be thoroughly cleaned, all damaged places repaired, all projecting nails withdrawn and all protrusions smoothed. Reuse of wooden forms for other than rough finish will be permitted only if a "like new" condition of the form is maintained.

3.02 FORM TOLERANCES

A. Forms shall be surfaced, designed and constructed in accordance with the recommendations of ACI 347 and shall meet the following additional requirements for the specified finishes.

1. Formed Surface Exposed to View: Edges of all form panels in contact with concrete shall be flush within 1/16-in and forms for plane surfaces shall be such that the concrete will be plane within 3/16-in in 4-ft. Forms shall be tight to prevent the passage of mortar, water and grout. The maximum deviation of the finish wall surface at any point shall not exceed 1/4-in from the intended surface as shown on the Drawings. Form panels shall be arranged symmetrically and in an orderly manner to minimize the number of seams.

2. Formed surfaces not exposed to view or buried shall meet requirements of Class "C" Surface in ACI 347.

3. Formed rough surfaces including mass concrete, pipe encasement, electrical duct encasement and other similar installations shall have no minimum requirements
for surface smoothness and surface deflections. The overall dimensions of the concrete shall be plus or minus 1-in.

3.03 FORM PREPARATION

A. Wood forms in contact with the concrete shall be coated with an effective release agent prior to form installation.

B. Steel forms shall be thoroughly cleaned and mill scale and other ferrous deposits shall be sandblasted or otherwise removed from the contact surface for all forms, except those utilized for surfaces receiving a rough finish. All forms shall have the contact surfaces coated with a release agent.

3.04 REMOVAL OF FORMS

A. The Contractor shall be responsible for all damage resulting from removal of forms. Forms and shoring for structural slabs or beams shall remain in place in accordance with ACI 301 and ACI 347. Form removal shall conform to the requirements specified in Section 03300 and a curing compound applied.

3.05 INSPECTION

A. The Engineer on site shall be notified when the forms are complete and ready for inspection at least 6 hours prior to the proposed concrete placement.

B. Failure of the forms to comply with the requirements specified herein or to produce concrete complying with requirements of Section 03300 shall be grounds for rejection of that portion of the concrete work. Rejected work shall be repaired or replaced as directed by the Engineer at no additional cost to the Owner. Such repair or replacement shall be subject to the requirements of this Section and approval of the Engineer.

END OF SECTION
SECTON 03200

CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.01 SCOPE OF WORK

Furnish all labor, materials, equipment and incidentals required and install all concrete reinforcement complete as shown on the Drawings and as specified herein.

1.02 RELATED WORK

A. Concrete Formwork is included in Section 03100.

B. Cast-in-place Concrete is included in Section 03300.

1.03 SUBMITTALS

A. Submit to the Engineer, in accordance with the General Conditions, shop drawings and product data showing materials of construction and details of installation for:

1. Reinforcing steel. Placement drawings shall conform to the recommendations of ACI 315. All reinforcement in a concrete placement shall be included on a single placement drawing or cross referenced to the pertinent main placement drawing. The main drawing shall include the additional reinforcement (around openings, at corners, etc) shown on the standard detail sheets. Bars to have special coatings and/or to be of special steel or special yield strength are to be clearly identified.

2. Bar bending details. The bars shall be referenced to the same identification marks shown on the placement drawings.

3. Schedule of all placements to contain synthetic reinforcing fibers. The amount of fibers per cubic yard to be used for each of the placements shall be noted on the schedule. The name of the manufacturer of the fibers and the product data shall be included with the submittal.

B. Submit Test Reports, in accordance with Section 01340, of each of the following items.

1. Certified copy of mill test on each steel proposed for use showing the physical properties of the steel and the chemical analysis.

2. Welder's certification. The certification shall be in accordance with AWS D1.4 when welding of reinforcement required.

1.04 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM)

1. ASTM A82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.

03200 - 1

3. ASTM A185 - Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement

4. ASTM A496 - Standard Specification for Steel Wire, Deformed, for Concrete Reinforcement

5. ASTM A497 - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement

6. ASTM A615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

7. ASTM A616 - Standard Specification for Rail-Steel Deformed and Plain Bars for Concrete Reinforcement

8. ASTM A617 - Standard Specification for Axle-Steel Deformed and Plain Bars for Concrete Reinforcement


10. ASTM A767 - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement


B. American Concrete Institute (ACI)

   1. ACI 301 - Standard Specification for Structural Concrete
   2. ACI 315 - Details and Detailing of Concrete Reinforcement.
   3. ACI 318 - Building Code Requirements for Structural Concrete
   4. ACI SP-66 - ACI Detailing Manual

C. Concrete Reinforcing Steel Institute (CRSI)

   1. Manual of Standard Practice

D. American Welding Society (AWS)

   1. AWS D1.4 - Structural Welding Code Reinforcing Steel
E. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.05 QUALITY ASSURANCE

Provide services of a manufacturer's representative, with at least 2 years experience in the use of the reinforcing fibers for a preconstruction meeting and assistance during the first placement of the material.

1.06 DELIVERY, HANDLING AND STORAGE

A. Reinforcing steel shall be substantially free from mill scale, rust, dirt, grease, or other foreign matter.

B. Reinforcing steel shall be shipped and stored with bars of the same size and shape fastened in bundles with durable tags, marked in a legible manner with waterproof markings showing the same "mark" designations as those shown on the submitted Placing Drawings.

C. Reinforcing steel shall be stored off the ground and kept free from dirt, oil, or other injurious contaminants.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Materials shall be new, of domestic manufacture and shall comply with the following material specifications.

B. Deformed Concrete Reinforcing Bars: ASTM A615, Grade 60 deformed bars.

C. Concrete Reinforcing Bars required on the Drawings to be Welded: ASTM A706.


E. Welded Deformed Steel Wire Fabric: ASTM A497.

F. Welded Plain Bar Mats: ASTM A704 and ASTM A615 Grade 60 plain bars.

G. Fabricated Deformed Steel Bar Mats: ASTM A184 and ASTM A615 Grade 60 deformed bars.

H. The following alternate materials are allowed:

1. ASTM A615 Grade 60 may be used for ASTM A706 provided the following requirements are satisfied:
a. The actual yield strength of the reinforcing steel based on mill tests shall not exceed the specified yield strength by more than 18,000 psi. Retests shall not exceed this value by more than an additional 3000 psi.

b. The ratio of the actual ultimate tensile strength to the actual tensile yield strength of the reinforcement shall not be less than 1.25.

c. The carbon equivalency (CE) of bars shall be 0.55 or less.

I. Reinforcing Steel Accessories


3. Precast Concrete Block Bar Supports: CRSI Bar Support Specifications, Precast Blocks. Blocks shall have equal or greater strength than the surrounding concrete.

4. Steel Protected Bar Supports: #4 Steel Chairs with plastic or rubber tips.

J. Tie Wire

1. Tie Wires for Reinforcement shall be 16-gauge or heavier, black annealed wire or stranded wire.

2.02 FABRICATION

A. Fabrication of reinforcement shall be in compliance with the CRSI Manual of Standard Practice.

B. Bars shall be cold bent. Bars shall not be straightened or rebent.

C. Bars shall be bent around a revolving collar having a diameter of not less than that recommended by the ACI 318.

D. Bar ends that are to be butt spliced, placed through limited diameter holes in metal, or threaded, shall have the applicable end(s) saw-cut. Such ends shall terminate in flat surfaces within 1-1/2 degrees of a right angle to the axis of the bar.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Surface condition, bending, spacing and tolerances of placement of reinforcement shall comply with the CRSI Manual of Standard Practice. The Contractor shall be solely responsible for providing an adequate number of bars and maintaining the spacing and clearances shown on the Drawings.
B. Except as otherwise indicated on the Drawings, the minimum concrete cover of reinforcement shall be as follows:

1. Concrete cast against and permanently exposed to earth: 3-in

2. Concrete exposed to soil, water, sewage, sludge and/or weather: 2-in (Including bottom cover of slabs over water or sewage)

3. Concrete not exposed to soil, water, sewage, sludge and/or weather:
   a. Slabs (top and bottom cover), walls, joists, shells and folded plate members – 3/4-in
   b. Beams and columns (principal reinforcement, ties, spirals and stirrups) - 1-1/2-in

C. Reinforcement which will be exposed for a considerable length of time after being placed shall be coated with a heavy coat of neat cement slurry.

D. No reinforcing steel bars shall be welded either during fabrication or erection unless specifically shown on the Drawings or specified herein, or unless prior written approval has been obtained from the Engineer. All bars that have been welded, including tack welds, without such approval shall be immediately removed from the work. When welding of reinforcement is approved or called for, it shall comply with AWS D1.4.

E. Reinforcing steel interfering with the location of other reinforcing steel, conduits or embedded items, may be moved within the specified tolerances or one bar diameter, whichever is greater. Greater displacement of bars to avoid interference shall only be made with the approval of the Engineer. Do not cut reinforcement to install inserts, conduits, mechanical openings or other items without the prior approval of the Engineer.

F. Securely support and tie reinforcing steel to prevent movement during concrete placement. Secure dowels in place before placing concrete.

G. Reinforcing steel bars shall not be field bent except where shown on the Drawings or specifically authorized in writing by the Engineer. If authorized, bars shall be cold-bent around the standard diameter spool specified in the CRSI. Do not heat bars. Closely inspect the reinforcing steel for breaks. If the reinforcing steel is damaged, replace, Cadweld or otherwise repair as directed by the Engineer. Do not bend reinforcement after it is embedded in concrete unless specifically shown otherwise on the Drawings.

3.02 REINFORCEMENT AROUND OPENINGS

A. Unless specific additional reinforcement around openings is shown on the Drawings, provide additional reinforcing steel on each side of the opening equivalent to one half of the cross-sectional area of the reinforcing steel interrupted by an opening. The bars shall have sufficient length to develop bond at each end beyond the opening or penetration.
3.03 SPICING OF REINFORCEMENT

A. Splices designated as compression splices on the Drawings, unless otherwise noted, shall be 30 bar diameters, but not less than 12-in. The lap splice length for column vertical bars shall be based on the bar size in the column above.

B. Tension lap splices shall be provided at all laps in compliance with ACI 318. Splices in adjacent bars shall be staggered. Class A splices may be used when 50 percent or less of the bars are spliced within the required lap length. Class B splices shall be used at all other locations.

C. Splicing of reinforcing steel in concrete elements noted to be "tension members" on the Drawings shall be avoided whenever possible. However, if required for constructability, splices in the reinforcement subject to direct tension shall be welded to develop, in tension, at least 125 percent of the specified yield strength of the bar. Splices in adjacent bars shall be offset the distance of a Class B splice.

D. Install wire fabric in as long lengths as practicable. Wire fabric from rolls shall be rolled flat and firmly held in place. Splices in welded wire fabric shall be lapped in accordance with the requirements of ACI-318 but not less than 12-in. The spliced fabrics shall be tied together with wire ties spaced not more than 24-in on center and laced with wire of the same diameter as the welded wire fabric. Do not position laps midway between supporting beams, or directly over beams of continuous structures. Offset splices in adjacent widths to prevent continuous splices.

E. Mechanical reinforcing steel splicers shall be used only where shown on the Drawings. Splices in adjacent bars shall be offset by at least 30 bar diameters. Mechanical reinforcing splices are only to be used for special splice and dowel conditions approved by the Engineer.

3.04 ACCESSORIES

A. Determine, provide and install accessories such as chairs, chair bars and the like in sufficient quantities and strength to adequately support the reinforcement and prevent its displacement during the erection of the reinforcement and the placement of concrete.

B. Use precast concrete blocks where the reinforcing steel is to be supported over soil.

C. Stainless steel bar supports or steel chairs with stainless steel tips shall be used where the chairs are set on forms for a concrete surface that will be exposed to weather, high humidity, or liquid (including bottom of slabs over liquid containing areas). Use of galvanized or plastic tipped metal chairs is permissible in all other locations unless otherwise noted on the Drawings or specified herein.

D. Alternate methods of supporting top steel in slabs, such as steel channels supported on the bottom steel or vertical reinforcing steel fastened to the bottom and top mats, may be used if approved by the Engineer.
3.05 INSPECTION

A. In no case shall any reinforcing steel be covered with concrete until the installation of the reinforcement, including the size, spacing and position of the reinforcement has been observed by the Engineer and the Engineer's release to proceed with the concreting has been obtained. The Engineer shall be given ample prior notice of the readiness of placed reinforcement for observation. The forms shall be kept open until the Engineer has finished his/her observations of the reinforcing steel.

END OF SECTION
SECTION 03300
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 WORK INCLUDED

The Contractor shall furnish all labor, materials, tools, equipment and related items required to do the cast-in-place concrete work as specified herein.

1.02 RELATED WORK

A. Section 03100: Concrete Formwork
B. Section 03200: Concrete Reinforcement
C. Section 03250: Concrete Joint and Joint Accessories

1.03 QUALITY ASSURANCE

Perform cast-in-place concrete work in accordance with ACI 318, unless specified otherwise in this section.

1.04 TESTING LABORATORY SERVICES

A. Inspection and testing will be performed in accordance with General Conditions
B. Provide free access to work and cooperate with the testing firm.
C. Submit proposed mix design of each class of concrete to the Engineer for review prior to commencement of work.
D. Tests of cement and aggregates may be performed to ensure conformance with requirements stated herein.
E. A minimum of four (4) concrete test cylinders will be taken for every pour.
F. A minimum of one (1) slump test will be taken for each set of test cylinders taken. However, slump tests may be taken as often as required by the Engineer or his representative.

1.05 REFERENCES

A. ASTM C33 - Concrete Aggregates
B. ASTM C150 - Portland cement
C. ACI 318 - Building Code Requirements for Reinforced Concrete
D. ASTM C260 - Air Entraining Admixtures for Concrete
E. ASTM C494 - Chemical Admixtures for Concrete
F. ASTM C94 - Ready-Mixed Concrete
G. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete
H. ACI 305 - Recommended Practice for Hot Weather Concreting
I. ACI 306 - Recommended Practice for Cold Weather Concreting
J. ACI 301 - Specifications for Structural Concrete for Buildings

PART 2 – PRODUCTS

2.01 CONCRETE

Materials shall conform to Section 706 of Louisiana Standard Specifications for Roads and Bridges, 2006 Edition and its latest revisions. Select fill embankment obtained from general excavation, subject to approval of engineer, or granular material shall be used as base material to meet grades at no direct pay. Slump shall not exceed 4.5” at placement and the compressive strength shall reach 4000 psi minimum at no later than 28 calendar days. Reinforcing steel shall be grade 60 steel, conforming to section 1009 of LA DOTD Standard Specifications for Roads and Bridges, latest edition and revisions.

Mix for concrete shall be as listed below or as otherwise approved by the Engineer.

Mix for 1 C.Y. of Portland Cement Concrete

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>28-day strength</td>
<td></td>
<td>4000 psi</td>
</tr>
<tr>
<td>Cement (ASTM C-150, Type I/II)</td>
<td></td>
<td>4.64 sacks (436 lbs.)</td>
</tr>
<tr>
<td>Fly Ash (ASTM C-618)</td>
<td></td>
<td>1.16 sacks (109 lbs.)</td>
</tr>
<tr>
<td>Gravel (ASTM C-33, Grade A)</td>
<td></td>
<td>1775 lbs.</td>
</tr>
<tr>
<td>Sand (ASTM C-33)</td>
<td></td>
<td>1226 lbs.</td>
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<tr>
<td>Water (potable)</td>
<td></td>
<td>30 gallons (250 lbs.) Type A Water</td>
</tr>
<tr>
<td>Reducer (ASTM C-494)</td>
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<td>16.35 lbs.</td>
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<tr>
<td>Air entrainment</td>
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<td>5% by volume, use per manufacturers specifications</td>
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PART 3 – EXECUTION

3.01 PLACING CONCRETE

A. Place concrete in accordance with ACI 304.

B. Notify Engineer minimum 24 hours prior to commencement of concreting operations.

C. Verify anchors, seats, plates, and other items to be cast into concrete are placed, held securely, and will not cause hardship in placing concrete. Rectify same and proceed with work.

D. Maintain records of poured concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.

E. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints, are not disturbed during concrete placement.

F. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify the Engineer upon discovery.

G. Conform to ACI 305 when concreting during hot weather.

H. Conform to ACI 306 when concreting during cold weather.

3.02 PATCHING

Allow the Engineer to inspect concrete surfaces immediately upon removal of forms. Patch imperfections as directed.

3.03 DEFECTIVE CONCRETE

A. Modify or replace concrete not conforming to required lines, details and elevations.

B. Repair or replace concrete not properly placed resulting in excessive honeycombing and other defects. Do not patch, fill, touch-up, repair, or replace concrete except upon express direction of the Engineer for each individual area.

3.04 CURING AND PROTECTION

Beginning immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

END OF SECTION

03300-3
SECTION 03350

CONCRETE FINISHES

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, materials, equipment and incidentals required and finish cast-in-place concrete surfaces as shown on the Drawings and as specified herein.

1.02 RELATED WORK

A. Concrete Formwork is included in Section 03100.
B. Cast-In-Place Concrete is included in Section 03300.
C. Grout is included in Section 03600.

1.03 SUBMITTALS

A. Submit to the Engineer, in accordance with Section 01340, shop drawings and product data showing materials of construction and details of installation for:

1. Concrete sealer. Confirmation that the sealer is compatible with additionally applied coatings shall also be submitted.

1.04 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM)
B. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.05 QUALITY ASSURANCE

A. Finishes

1. For concrete which will receive additional applied finishes or materials, the surface finish specified is required for the proper application of the specified manufacturer's products. Where alternate products are approved for use, determine if changes in finishes are required and provide the proper finishes to receive these products.

2. Changes in finishes made to accommodate products different from those specified shall be performed at no additional cost to the Owner. Submit the proposed new finishes and their construction methods to the Engineer for approval.

3. Services of Manufacturer's Representative
4. Make available at no extra cost to the Owner, upon 72 hours notification, the services of a qualified field representative of the manufacturer of curing compound, sealer or hardener to instruct the user on the proper application of the product under prevailing job conditions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Chemical hardener shall be Lapidolith by Sonneborn; Hornolith by A.C. Horn; Penalith by W.R. Meadows or equal fluosilicate base material.

B. Concrete sealer shall be "Kure-N-Seal", by Sonneborn, Minneapolis, MN or equal.

PART 3 - EXECUTION

3.01 FORMED SURFACES

A. Forms shall not be removed before the requirements of Section 03300, have been satisfied.

B. Exercise care to prevent damaging edges or obliterating the lines of chamfers, rustications or corners when removing the forms or performing any other work adjacent thereto.

C. Clean all exposed concrete surfaces and adjoining work stained by leakage of concrete.

D. Rough-Form Finish

1. Immediately after stripping forms and before concrete has changed color, carefully remove all fins and projections.

2. Promptly fill holes left by tie cones and defects as specified in Section 03300.

E. Rubbed Finish

1. Immediately upon stripping forms and before concrete has changed color, carefully remove all fins. While the wall is still damp apply a thin coat of medium consistency neat cement slurry by means of bristle brushes to provide a bonding coat within all pits, air holes or blemishes in the parent concrete. Avoid coating large areas with the slurry at one time.

2. Before the slurry has dried or changed color, apply a dry (almost crumbly) grout proportioned by volume and consisting of 1 part cement to 1-1/2 parts of clean masonry sand having a fineness modulus of approximately 2.3 and complying
with the gradation requirements of ASTM C33 for such a material. Grout shall be uniformly applied by means of damp pads of coarse burlap approximately 6-in square used as a float. Scrub grout into the pits and air holes to provide a dense mortar in all imperfections.

3. Allow the mortar to partially harden for 1 or 2 hours depending upon the weather. If the air is hot and dry, keep the wall damp during this period using a fine, fog spray. When the grout has hardened sufficiently so it can be scraped from the surface with the edge of a steel trowel without damaging the grout in the small pits or holes, cut off all that can be removed with a trowel. (Note: Grout allowed to remain on the wall too long will harden and will be difficult to remove.)

4. Allow the surface to dry thoroughly and rub it vigorously with clean dry burlap to completely remove any dried grout. No visible film of grout shall remain after this rubbing. The entire cleaning operation for any area must be completed the day it is started. Do not leave grout on surfaces overnight. Allow sufficient time for grout to dry after it has been cutoff with the trowel so it can be wiped off clean with the burlap.

5. On the day following the repair of pits, air holes and blemishes, the walls shall again be wiped off clean with dry, used pieces of burlap containing old hardened mortar which will act as a mild abrasive. After this treatment, there shall be no built-up film remaining on the parent surface. If, however, such a film is present, a fine abrasive stone shall be used to remove all such material without breaking through the surface film of the original concrete. Such scrubbing shall be light and sufficient only to remove excess material without changing the texture of the concrete.

6. A thorough wash-down with stiff bristle brushes shall follow the final bagging or stoning operation. No extraneous materials shall remain on the surface of the wall. The wall shall be sprayed with a fine fog spray periodically to maintain a continually damp condition for at least 3 days after the application of the repair grout.

F. Abrasive Blast Finish

1. Coordinate with Rubbed Finish application. Do not begin until Rubbed Finish operation is complete or before concrete has reached minimum 7-day strength. The Rubbed Finish application may be deleted by the Engineer if the unfinished concrete surface is of superior quality. Apply the abrasive blast finish only where indicated on Drawings.

2. Prepare a sample area of minimum 4-ft high by 16-ft wide Blast Finish as directed by Engineer on a portion of new wall construction which will not be exposed in the final work. Sample area shall contain a variety of finishes obtained with...
different nozzles, nozzle pressures, grit materials and blasting techniques for selection by Engineer. Final accepted sample shall remain exposed until completion of all Blast Finish operations.

3. Blast finish operation shall meet all regulatory agency requirements. Blast Finish contractor shall be responsible for obtaining all required permits and/or licenses.

4. Perform abrasive blast finishing in as continuous an operation as possible, utilizing the same work crew to maintain continuity of finish on each surface or area of work. Maintain patterns or variances in depths of blast as present on the accepted sample.

5. Use an abrasive grit of proper type and gradation as well as equipment and technique to expose aggregate and surrounding matrix surfaces as follows:


7. Abrasive blast corners and edge of patterns carefully, using back-up boards, to maintain uniform corner or edge line. Determine type of nozzle, nozzle pressure and blasting techniques required to match Architect’s samples.

8. Upon completion of the Blast Finish operation, thoroughly flush finished surfaces with clean clear water to remove residual dust and grit. Allow to air dry until curing of concrete is complete.

9. After the concrete has cured for a minimum of 28 days, apply a clear acrylic sealer as directed by manufacturer.

3.02 FLOORS AND SLABS

A. Floated Finish

1. Machine Floating

   a. Screed floors and slabs with straightedges to the established grades shown on the Drawings. Immediately after final screeding, a dry cement/sand shake in the proportion of two sacks of portland cement to 350 lbs of coarse natural concrete sand shall be sprinkled evenly over the surface at the rate of approximately 500 lbs /1,000 sq ft of floor. Do not sprinkle neat, dry cement on the surface.

   b. The application of the cement/sand shake may be eliminated at the discretion of the Engineer if the base slab concrete exhibits adequate fattiness and homogeneity and the need is not indicated. When the concrete has hardened sufficiently to support the weight of a power float without its digging into or disrupting the level surface, thoroughly float the
shake into the surface with a heavy revolving disc type power compacting machine capable of providing a 200 lb compaction force distributed over a 24-in diameter disc.

c. Start floating along walls and around columns and then move systematically across the surface leaving a matte finish.

d. The compacting machine shall be the "Kelly Power Float with Compaction Control" as manufactured by Kelley Industries of SSP Construction Equipment Inc., Pomona, CA or equal. Troweling machines equipped with float (shoe) blades that are slipped over the trowel blades may be used for floating. Floating with a troweling machine equipped with normal trowel blades will not be permitted. The use of any floating or troweling machine which has a water attachment for wetting the concrete surface during finishing will not be permitted.

2. Hand Floating

a. In lieu of power floating, small areas may be compacted by hand floating. The dry cement/sand shake previously specified shall be used unless specifically eliminated by the Engineer. Screed the floors and slabs with straightedges to the established grades shown on the Drawings. While the concrete is still green, but sufficiently hardened to support a finisher and kneeboards with no more than 1/4-in indentation, wood float to a true, even plane with no coarse aggregate visible. Use sufficient pressure on the wood floats to bring moisture to the surface.

3. Finishing Tolerances

a. Level floors and slabs to a tolerance of plus or minus 1/8-in when checked with a 10-ft straightedge placed anywhere on the slab in any direction. Where drains occur, pitch floors to drains such that there are no low spots left undrained. Failure to meet either of the above requirements shall be cause for removal, grinding, or other correction as directed by the Engineer.

B. Broom Finish

1. Screed slabs with straightedges to the established grades indicated on the Drawings. When the concrete has stiffened sufficiently to maintain small surface indentations, draw a stiff bristle broom lightly across the surface in the direction of drainage, or, in the case of walks and stairs, perpendicular to the direction of traffic to provide a non-slip surface.

C. Steel Trowel Finish
1. Finish concrete as specified in Paragraph 3.04 and 3.05. Then, hand steel trowel to a perfectly smooth hard even finish free from high or low spots or other defects.

D. Concrete Sealer

1. Prepare and seal surfaces indicated on the room finish schedule to receive a sealer as follows:

2. Finish concrete as specified in the preceding paragraphs and in accordance with the Schedule in Paragraph 3.05 below.

3. Newly Placed Concrete: Surface must be sound and properly finished. Surface is application-ready when it is damp but not wet and can no longer be marred by walking workmen.

4. Newly-Cured Bare Concrete: Level any spots gouged out by trades. Remove all dirt, dust, droppage, oil, grease, asphalt and foreign matter. Cleanse with caustics and detergents as required. Rinse thoroughly and allow to dry so that surface is no more than damp, and not wet.

5. Aged Concrete: Restore surface soundness by patching, grouting, filling cracks and holes, etc. Surface must also be free of any dust, dirt and other foreign matter. Use power tools and/or strippers to remove any incompatible sealers or coatings. Cleanse as required, following the procedure indicated under cured concrete.

6. Methods: Apply sealer so as to form a continuous, uniform film by spray, soft-bristle pushbroom, long-nap roller or lambswool applicator. Ordinary garden-type sprayers, using neoprene hose, are recommended for best results.

7. Applications: For curing only, apply first coat evenly and uniformly as soon as possible after final finishing at the rate of 200 to 400 sq ft per gallon. Apply second coat when all trades are completed and structure is ready for occupancy at the rate of 400 to 600 sq ft per gallon.

8. To meet guarantee and to seal and dustproof, two coats are required. For sealing new concrete, both coats shall be applied full-strength. On aged concrete, when renovating, dustproofing and sealing, the first coat should be thinned 10 to 15 percent with reducer per manufacturer's directions.

3.03 CONCRETE RECEIVING CHEMICAL HARDENER

A. After 28 days, minimum, concrete cure, apply chemical hardener in three applications to a minimum total coverage of the undiluted chemical of 100 sq ft per gallon and in accordance with manufacturer's recommendations as reviewed.
3.04 APPROVAL OF FINISHES

A. All concrete surfaces, when finished, will be inspected by the Engineer.

B. Surfaces which, in the opinion of the Engineer, are unsatisfactory shall be refinished or reworked.

C. After finishing horizontal surfaces, regardless of the finishing procedure specified, the concrete shall be cured in compliance with Section 03300 unless otherwise directed by the Engineer.

3.05 SCHEDULE OF FINISHES

A. Concrete shall be finished as specified either to remain as natural concrete to receive an additional applied finish or material under another section.

B. Concrete for the following conditions shall be finished as noted on the Drawings and as further specified herein:

1. Concrete to Receive Dampproofing: Rough-form finish. See Paragraph 3.01D above.

2. Concrete Not Exposed to View and Not Scheduled to Receive an Additional Applied Finish or Material: Rough-form finish. See Paragraph 3.01D above.

3. Exterior Vertical Concrete Above Grade Exposed to View: Rubbed finish. See Paragraph 3.01E above.

4. Interior Vertical Concrete Exposed to View Except in Water Containment Areas: Rubbed finish. See Paragraph 3.01E above.

5. Vertical Concrete in Water Containment Areas. Rubbed finish on exposed surfaces and extending to two feet below normal operating water level: Rough-form finish on remainder of submerged areas. See Paragraphs 3.01E and 3.01D above.

6. Interior and Exterior Underside of Concrete Exposed to View: Rubbed finish. See Paragraph 3.01E above.

7. Exterior surfaces exposed to view and indicated to have an abrasive blast finish. See Paragraph 3.01F above.

8. Interior or Exterior Horizontal Concrete not Requiring Floor Hardener or Sealer: Floated finish. See Paragraph 3.02A above.

9. Concrete for Exterior Walks, Interior and Exterior Stairs: Broomed finish perpendicular to direction of traffic. See Paragraph 3.02B above.
10. Concrete Slabs On Which Process Liquids Flow or In Contact with Sludge: Steel trowel finish. See Paragraph 3.02C above.

11. Concrete to Receive Hardener: See Paragraph 3.03 above.

12. Concrete to Receive Floor Sealer: See Paragraph 3.02D above.

13. Concrete tank bottoms to be covered with grout: See Section 03600.

END OF SECTION
SECTION 03600

GROUT

PART 1 - GENERAL

1.01 SCOPE OF WORK
A. Furnish all labor, materials, equipment and incidentals required and install grout complete as shown on the Drawings and as specified herein.

1.02 RELATED WORK
A. Formwork is included in Section 03100.
B. Concrete Reinforcement is included in Section 03200.
C. Concrete Joints and Joint Accessories are included in Section 03350.
D. Cast-in-Place Concrete is included in Section 03300.

1.03 SUBMITTALS
A. Submit to the Engineer shop drawings and product data showing materials of construction and details of installation for:
   1. Commercially manufactured nonshrink cementitious grout. The submittal shall include catalog cuts, technical data, storage requirements, product life, working time after mixing, temperature considerations, conformity to required ASTM standards and Material Safety Data Sheet.
   2. Commercially manufactured nonshrink epoxy grout. The submittal shall include catalog cuts, technical data, storage requirements, product life, working time after mixing, temperature considerations, conformity to required ASTM standards and Material Safety Data Sheet.
   3. Cement grout. The submittal shall include the type and brand of the cement, the gradation of the fine aggregate, product data on any proposed admixtures and the proposed mix of the grout.
   4. Concrete grout. The submittal shall include data as required for concrete as delineated in Section 03300 and for fiber reinforcement as delineated in Section 03200. This includes the mix design, constituent quantities per cubic yard and the water/cement ratio.
B. Laboratory Test Reports

1. Submit laboratory test data as required under Section 03300 for concrete to be used as concrete grout.

C. Certifications

1. Certify that commercially manufactured grout products and concrete grout admixtures are suitable for use in contact with potable water after 30 days of curing.

D. Qualifications

1. Grout manufacturers shall submit documentation that they have at least 10 years experience in the production and use of the proposed grouts which they will supply.

1.04 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM)

1. ASTM C531 - Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical Resistant Mortars, Grouts and Monolithic Surfacings and Polymer Concretes

2. ASTM C579 - Standard Test Method for Compressive Strength of Chemical Resistant Mortars, Grouts and Monolithic Surfacings and Polymer Concretes

3. ASTM C827 - Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens from Cementitious Mixtures


B. U.S. Army Corps of Engineers Standard (CRD)

1. CRD C-621 - Corps of Engineers Specification for Nonshrink Grout

C. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.05 QUALITY ASSURANCE

A. Qualifications

1. Grout manufacturer shall have a minimum of 10 years experience in the production and use of the type of grout proposed for the work.
B. Pre-installation Conference

1. Well in advance of grouting, hold a pre-installation meeting to review the requirements for surface preparation, mixing, placing and curing procedures for each product proposed for use. Parties concerned with grouting shall be notified of the meeting at least 10 days prior to its scheduled date.

C. Services of Manufacturer's Representative

1. A qualified field technician of the nonshrink grout manufacturer, specifically trained in the installation of the products, shall attend the pre-installation conference and shall be present for the initial installation of each type of nonshrink grout. Additional services shall also be provided, as required, to correct installation problems.

D. Field Testing

1. All field testing and inspection services required shall be provided by the Owner. The Contractor shall assist in the sampling of materials and shall provide any ladders, platforms, etc, for access to the work. The methods of testing shall comply in detail with the applicable ASTM Standards.

2. The field testing of Concrete Grout shall be as specified for concrete in Section 03300.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to the jobsite in original, unopened packages, clearly labeled with the manufacturer's name, product identification, batch numbers and printed instructions.

B. Store materials in full compliance with the manufacturer's recommendations. Total storage time from date of manufacture to date of installation shall be limited to 6 months or the manufacturer's recommended storage time, whichever is less.

C. Material which becomes damp or otherwise unacceptable shall be immediately removed from the site and replaced with acceptable material at no additional expense to the Owner.

D. Nonshrink cement-based grouts shall be delivered as preblended, prepackaged mixes requiring only the addition of water.

E. Nonshrink epoxy grouts shall be delivered as premeasured, prepackaged, three component systems requiring only blending as directed by the manufacturer.

1.07 DEFINITIONS
A. Nonshrink Grout: A commercially manufactured product that does not shrink in either the plastic or hardened state, is dimensionally stable in the hardened state and bonds to a clean base plate.

PART 2 - PRODUCTS

2.01 GENERAL

A. The use of a manufacturer's name and product or catalog number is for the purpose of establishing the standard of quality desired.

B. Like materials shall be the products of one manufacturer or supplier in order to provide standardization of appearance.

2.02 MATERIALS

A. Nonshrink Cementitious Grout

1. Nonshrink cementitious grouts shall meet or exceed the requirements of ASTM C1107, Grades B or C and CRD C-621. Grouts shall be portland cement based, contain a pre-proportioned blend of selected aggregates and shrinkage compensating agents and shall require only the addition of water. Nonshrink cementitious grouts shall not contain expansive cement or metallic particles. The grouts shall exhibit no shrinkage when tested in conformity with ASTM C827.

2. General purpose nonshrink cementitious grout shall conform to the standards stated above and shall be SikaGrout 212 by Sika Corp.; Set Grout by Master Builders, Inc.; Gilco Construction Grout by Gifford Hill & Co.; Euco NS by The Euclid Chemical Co.; NBEC Grout by U. S. Grout Corp. or equal.

3. Flowable (Precision) nonshrink cementitious grout shall conform to the standards stated above and shall be Masterflow 928 by Master Builders, Inc.; Hi-Flow Grout by the Euclid Chemical Co.; SikaGrout 212 by Sika Corp.; Supreme Grout by Gifford Hill & Co.; Five Star Grout by U. S. Grout Corp. or equal.

B. Nonshrink Epoxy Grout

1. Nonshrink epoxy-based grout shall be a pre-proportioned, three component, 100 percent solids system consisting of epoxy resin, hardener, and blended aggregate. It shall have a compressive strength of 14,000 psi in 7 days when tested in conformity with ASTM D695 and have a maximum thermal expansion of 30 x 10-6 when tested in conformity with ASTM C531. The grout shall be Ceilcote 648 CP by Master Builders Inc.; Five Star Epoxy Grout by U.S. Grout Corp.; Sikadur 42 Grout-Pak by Sika Corp.; High Strength Epoxy Grout by the Euclid Chemical Co. or equal.
C. Cement Grout

1. Cement grouts shall be a mixture of one part portland cement conforming to ASTM C150, Types I, II, or III and 1 to 2 parts sand conforming to ASTM C33 with sufficient water to place the grout. The water content shall be sufficient to impart workability to the grout but not to the degree that it will allow the grout to flow.

D. Concrete Grout

1. Concrete grout shall conform to the requirements of Section 033000 except as specified herein. It shall be proportioned with cement, coarse and fine aggregates, water, water reducer and air entraining agent to produce a mix having an average strength of 2900 psi at 28 days, or 2500 psi nominal strength. Coarse aggregate size shall be 1/2-in maximum. Slump should not exceed 5-in and should be as low as practical yet still retain sufficient workability.

E. Water

1. Potable water, free from injurious amounts of oil, acid, alkali, organic matter, or other deleterious substances.

PART 3 - EXECUTION

3.01 PREPARATION

A. Grout shall be placed over cured concrete which has attained its full design strength unless otherwise approved by the Engineer.

B. Concrete surfaces to receive grout shall be clean and sound; free of ice, frost, dirt, grease, oil, curing compounds, laitance and paints and free of all loose material or foreign matter which may effect the bond or performance of the grout.

C. Roughen concrete surfaces by chipping, sandblasting, or other mechanical means to a minimum of ¼” amplitude or provide a raked finish in order to ensure bond of the grout to the concrete. Remove loose or broken concrete. Irregular voids or projecting coarse aggregate need not be removed if they are sound, free of laitance and firmly embedded into the parent concrete.

1. Air compressors used to clean surfaces in contact with grout shall be the oilless type or equipped with an oil trap in the air line to prevent oil from being blown onto the surface.

D. Remove all loose rust, oil or other deleterious substances from metal embedments or bottom of baseplates prior to the installation of the grout.
E. Concrete surfaces shall be washed clean and then kept moist for at least 24 hours prior to the placement of cementitious or cement grout. Saturation may be achieved by covering the concrete with saturated burlap bags, use of a soaker hose, flooding the surface, or other method acceptable to the Engineer. Upon completion of the 24 hour period, visible water shall be removed from the surface prior to grouting. The use of an adhesive bonding agent in lieu of surface saturation shall only be used when approved by the Engineer for each specific location of grout installation.

F. Epoxy-based grouts do not require the saturation of the concrete substrate. Surfaces in contact with epoxy grout shall be completely dry before grouting.

G. Construct grout forms or other leakproof containment as required. Forms shall be lined or coated with release agents recommended by the grout manufacturer. Forms shall be of adequate strength, securely anchored in place and shored to resist the forces imposed by the grout and its placement.

1. Forms for epoxy grout shall be designed to allow the formation of a hydraulic head and shall have chamfer strips built into forms.

H. Level and align the structural or equipment bearing plates in accordance with the structural requirements and the recommendations of the equipment manufacturer.

I. Equipment shall be supported during alignment and installation of grout by shims, wedges, blocks or other approved means. The shims, wedges and blocking devices shall be prevented from bonding to the grout by appropriate bond breaking coatings and removed after grouting unless otherwise approved by the Engineer.

3.02 INSTALLATION – GENERAL

A. Mix, apply and cure products in strict compliance with the manufacturer's recommendations and this Section.

B. Have sufficient manpower and equipment available for rapid and continuous mixing and placing. Keep all necessary tools and materials ready and close at hand.

C. Maintain temperatures of the foundation plate, supporting concrete, and grout between 40 and 90 degrees F during grouting and for at least 24 hours thereafter or as recommended by the grout manufacturer, whichever is longer. Take precautions to minimize differential heating or cooling of baseplates and grout during the curing period.

D. Take special precautions for hot weather or cold weather grouting as recommended by the manufacturer when ambient temperatures and/or the temperature of the materials in contact with the grout are outside of the 60 and 90 degrees F range.

E. Install grout in a manner which will preserve the isolation between the elements on either side of the joint where grout is placed in the vicinity of an expansion or control joint.
F. Reflect all existing underlying expansion, control and construction joints through the grout.

3.03 INSTALLATION - CEMENT GROUTS AND NONSHRINK CEMENTITIOUS GROUTS

A. Mix in accordance with manufacturer's recommendations. Do not add cement, sand, pea gravel or admixtures without prior approval by the Engineer.

B. Avoid mixing by hand. Mixing in a mortar mixer (with moving blades) is recommended. Pre-wet the mixer and empty excess water. Add premeasured amount of water for mixing, followed by the grout. Begin with the minimum amount of water recommended by the manufacturer and then add the minimum additional water required to obtain workability. Do not exceed the manufacturer's maximum recommended water content.

C. Placements greater than 3-in in depth shall include the addition of clean, washed pea gravel to the grout mix when approved by the manufacturer. Comply with the manufacturer's recommendations for the size and amount of aggregate to be added.

D. Place grout into the designated areas in a manner which will avoid segregation or entrapment of air. Do not vibrate grout to release air or to consolidate the material. Placement should proceed in a manner which will ensure the filling of all spaces and provide full contact between the grout and adjoining surfaces. Provide grout holes as necessary.

E. Place grout rapidly and continuously to avoid cold joints. Do not place cement grouts in layers. Do not add additional water to the mix (retemper) after initial stiffening.

F. Just before the grout reaches its final set, cut back the grout to the substrate at a 45 degree angle from the lower edge of bearing plate unless otherwise approved by the Engineer. Finish this surface with a wood float (brush) finish.

G. Begin curing immediately after form removal, cutback, and finishing. Keep grout moist and within its recommended placement temperature range for at least 24 hours after placement or longer if recommended by the manufacturer. Saturate the grout surface by use of wet burlap, soaker hoses, ponding or other approved means. Provide sunshades as necessary. If drying winds inhibit the ability of a given curing method to keep grout moist, erect wind breaks until wind is no longer a problem or curing is finished.

3.04 INSTALLATION - NONSHRINK EPOXY GROUTS

A. Mix in accordance with the procedures recommended by the manufacturer. Do not vary the ratio of components or add solvent to change the consistency of the grout mix. Do not overmix. Mix full batches only to maintain proper proportions of resin, hardener and aggregate.
B. Monitor ambient weather conditions and contact the grout manufacturer for special placement procedures to be used for temperatures below 60 or above 90 degrees F.

C. Place grout into the designated areas in a manner which will avoid trapping air. Placement methods shall ensure the filling of all spaces and provide full contact between the grout and adjoining surfaces. Provide grout holes as necessary.

D. Minimize "shoulder" length (extension of grout horizontally beyond base plate). In no case shall the shoulder length of the grout be greater than the grout thickness.

E. Finish grout by puddling to cover all aggregate and provide a smooth finish. Break bubbles and smooth the top surface of the grout in conformity with the manufacturer's recommendations.

F. Epoxy grouts are self curing and do not require the application of water. Maintain the formed grout within its recommended placement temperature range for at least 24 hours after placing, or longer if recommended by the manufacturer.

3.05 INSTALLATION - CONCRETE GROUT

A. Screed underlying concrete to the grade shown on the Drawings. Prepare the surface according to 3.01B. Protect and keep the surface clean until placement of concrete grout.

B. Remove the debris and clean the surface by sweeping and vacuuming of all dirt and other foreign materials. Wash the tank slab using a strong jet of water. Flushing of debris into tank drain lines will not be permitted.

C. Saturate the concrete surface for at least 24 hours prior to placement of the concrete grout. Saturation may be maintained by ponding, by the use or soaker hoses, or by other methods acceptable to the Engineer. Remove excess water just prior to placement of the concrete grout. Place a cement slurry immediately ahead of the concrete grout so that the slurry is moist when the grout is placed. Work the slurry over the surface with a broom until it is coated with approximately 1/16 to 1/8-in thick cement paste. (A bonding grout composed of 1 part portland cement, 1.5 parts fine sand, an approved bonding admixture and water, mixed to achieve the consistency of thick paint, may be substituted for the cement slurry.)

D. Provide grout control joints as indicated on the Drawings.

E. Finish and cure the concrete grout as specified for cast-in-place concrete.

3.06 SCHEDULE

A. The following list indicates where the particular types of grout are to be used:

B. General purpose nonshrink cementitious grout: Use at all locations where non shrink grout is called for on the plans except for base plates greater in area than 3-ft wide by 3-ft
long and except for the setting of anchor rods, anchor bolts or reinforcing steel in concrete.

C. Flowable nonshrink cementitious grout: Use under all base plates greater in area than 3-ft by 3-ft. Use at all locations indicated to receive flowable nonshrink grout by the Drawings. The Contractor, at his/her option and convenience, may also substitute flowable nonshrink grout for general purpose nonshrink cementitious grout.

D. Nonshrink epoxy grout: Use for the setting of anchor rods, anchor bolts and reinforcing steel in concrete and for all locations specifically indicated to receive epoxy grout.

E. Cement grout: Cement grout may be used for grouting of incidental base plates for structural and miscellaneous steel such as post base plates for platforms, base plates for beams, etc. It shall not be used when nonshrink grout is specifically called for on the Drawings or for grouting of primary structural steel members such as columns and girders.

F. Concrete grout: Use for overlaying the base concrete under scraper mechanisms of clarifiers to allow more control in placing the surface grade and as shown on the drawings.

END OF SECTION
SECTION 09900

PAINTS & COATINGS

PART 1 - GENERAL

1.01 This specification covers preparation of surfaces, performance and completion of painting and coating of all surfaces unless specified otherwise elsewhere in the specifications and the drawings.

1.02 All materials, delivered to job-site, shall be in original sealed and labeled containers of the paint manufacturer.

1.03 Store materials in a protected area at temperatures that are in accordance with manufacturer's written instructions.

1.04 All coatings and paint 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 with City, Parish, State and Federal safety codes for flammable coating or paint materials. At all times, coatings and paints shall be protected from freezing.

1.05 Paints & coatings shall be applied during good painting and coating weather. Air and surface temperatures as well as dew point and relative humidity 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.

1.06 Upon completing the installation of the protective coatings, the Contractor must obtain written certification from the manufacturer that all work has been performed within the limits prescribed by the manufacturer.

1.07 The Contractor is responsible for complying with all Local, State and Federal Regulations associated with preparing the surfaces, applying surface coatings, and disposal of materials. The Contractor shall, at his own expense, obtain all permits, certificates, and licenses required of him by law for the execution of work.

PART 2 - PRODUCTS

2.01 MATERIALS

All materials specified herein are manufactured by Tnemec Co., Inc. These products are specified to establish standards of performance and quality and are approved for use on this project. Equivalent materials of other manufacturers may be substituted on approval of the Engineer.
2.02 SUBSTITUTIONS

A. Any substitute products shall meet the performance requirements outlined herein. Materials which decrease the film thickness, the number of coats applied, change the generic type of coating, or fail to meet the performance criteria of the specified materials will not be approved. All primers and topcoats, etc. shall be furnished by the same manufacturer to ensure compatibility.

B. Requests for substitute product submittals shall include the following performance data as certified by a qualified testing laboratory:

1. Abrasion - Fed. Test Method Std. No. 141, Method 6192, CS-17 Wheel, 1,000 grams load.
3. Exterior Exposure - Exposed at 45 degrees facing ocean (South Florida Marine Exposure).
4. Hardness - ASTM D3363-74
5. Humidity - ASTM D2247-68
6. Salt Spray (Fog) - ASTM B117-73

C. Contractor shall submit the following information to the Engineer for review of a proposed substitute item:

1. Product data sheets for each material
2. Painting / Coating Schedule
3. Product name & generic type of paint / coating
4. Performance Data
5. Material Safety Data Sheets
6. List of ten projects that have performed satisfactorily for five years in the Gulf Coast area.
7. Quality Control Program
2.03 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, fire fighting, and protection equipment shall be in accordance with OSHA 1910.144.

1. 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.

<table>
<thead>
<tr>
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<th>Standard</th>
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<tr>
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</tr>
<tr>
<td>Black</td>
<td>17038</td>
</tr>
</tbody>
</table>

C. Color Selection

1. The 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. Generally, different colors will be selected for pumps, equipment, piping, valves and electrical items, and for interior and exterior locations.

3. Generator fuel lines shall be yellow in color unless otherwise specified or indicated elsewhere.

2.04 COATING SCHEDULE

A. Metal Surfaces - Exterior Environment (not subject to corrosive gases)

Surface Preparation for Carbon Steel: SSPC-SP10 Near-White Blast Cleaning.

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.
1st Coat: Epoxy-Polyamide Primer  
2nd Coat: Epoxy-Polyamide Primer  
3rd Coat: Aliphatic Acrylic Polyurethane

Dry Film-Mils
5.0 - 6.0
5.0 - 6.0
2.5 - 3.0

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

Aluminum, Stainless Steel and Galvanized Steel shall not be coated unless approved by the Engineer or Owner.

2.05 PERFORMANCE REQUIREMENTS

A. Epoxy Polyamide: Epoxy polyamide shall contain no lead or soluble chromates. Epoxy-polyamide 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: 56.0 +/- 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 66 or approved equal.
B. Aliphatic Acrylic Polyurethane:

1. Minimum Solids per Gallon: 60.0 +/- 2.0%

2. QUV: No blistering, cracking, or delamination of film. No less than 80% gloss retention after 4,000 hours QUV exposure. (ASTM D 4587)

3. Humidity Resistance: No blistering, cracking, rusting or delamination of film after 5,000 hours of exposure. (ASTM D 4585)

4. Adhesion: No less than 1800 psi (ASTM D 4541).

5. Manufacturer: Tnemec 1094 or approved 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. Schedule painting & coating work to avoid excessive dust and airborne contaminants. Protect work areas from excessive dust and airborne contaminants during coating application and curing. 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.

3.02 SAFETY AND HEALTH REQUIREMENTS

A. Conform with all safety requirements set forth by regulatory agencies applicable to the construction industry and coating manufacturer's printed instructions and appropriate technical bulletins and manuals. Provide and require use of personal protective life-saving equipment for persons working in or about project site.

B. Observe proper safety precautions to protect against potential toxicity and flammability of coatings. Safe handling and application practices are required and should include, but not be limited to, provisions of:
   1. SSPC-PA3 - "Guide to Safety in Paint Application".
   2. SSPC-PS17.00: Section 8 -"Safety".
3.03 SURFACE PREPARATION

A. The latest revision of the following surface preparation specifications of the Steel Structures Painting Council (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.

3.04 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.

3.05 ACCEPTANCE OF WORK

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

B. Request acceptance of each coat before applying next coat.

C. 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 coating contractor is to regularly check his work with these devices to make sure that dry-film thickness meet specifications. The Engineer shall at his discretion use the Contractor's 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. The contractor shall warranty his work for a period of one year to the extent that he shall repair any defects due to faulty workmanship or materials which may appear on the structure during this period. 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.

3.06 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
PART 1 - GENERAL

1.01 RELATED DOCUMENTS: The general provisions of the Contract, including General and Special Provisions, and Division 1 - General. Sections included in the DIVISION 16 Specifications are as follows:

SECTION 16010 - ELECTRICAL GENERAL PROVISIONS
SECTION 16111 - RACEWAYS
SECTION 16120 - WIRES AND CABLES
SECTION 16135 - ELECTRICAL BOXES AND FITTINGS
SECTION 16160 - CONTROL PANEL ENCLOSES
SECTION 16181 - OVERCURRENT PROTECTIVE DEVICES
SECTION 16190 - SUPPORTING DEVICES
SECTION 16195 - ELECTRICAL IDENTIFICATION
SECTION 16441 - ENCLOSED SWITCHES
SECTION 16450 – GROUNDING

1.02 DESCRIPTION OF WORK:

A. This Section specifies several categories of provisions for electrical work, including:
   (1) Certain adaptive expansions of requirements specified in DIVISION 1, (2) General performance requirements within the electrical systems as a whole, and (3) General work to be performed as electrical work because of its close association.

B. These Specifications are intended to describe complete workable systems of the various types. Items of materials, work, or equipment not mentioned but normally necessary for the proper execution of this work, shall be provided as if specifically called for, at no additional cost to the Owner.

1.03 SUMMARY OF ELECTRICAL WORK:

A. Specifications:

1. Refer to the DIVISION 16 sections for the primary technical specifications of electrical work.

2. General Outline: This section of the specifications covers furnishing materials, equipment, constant competent supervision, special tools, test equipment, technicians, and labor necessary for installation of a complete working electrical system, all as indicated on the plans and in these Specifications.

B. Scope:
1. Under this part of the contract, electrical facilities will be constructed as indicated in these Specifications.

2. The work shall include, but not necessarily be limited to, furnishing and installing the following:

   Labor, material, and equipment required to install a 200 Amp service (with weatherhead), 30ft. wooden power pole, meter pan and disconnect with double lug on the load side. All enclosures shall be NEMA 3R and properly secured to the pole utilizing uni-struts. Contractor shall provide 2.5” PVC conduit (buried if possible) from weatherhead to existing control panel. New conductors shall be provided from the weatherhead (with 3’-0” excess) to the control panel and be connected to the control panel. Grounding conductor shall be a minimum #4 with all other conductors being 3/0. All work shall be in accordance with current Entergy requirements.

1.04 COORDINATION OF ELECTRICAL WORK:

   A. Arrange electrical work in a neat, well-organized manner with exposed conduit and similar services running parallel with primary lines of the building construction.

   B. Verify final locations for rough-ins with field measurements and with the manufacturer drawings detail requirements of the actual equipment to be connected.

   C. Verify all dimensions by field measurements.

   D. Arrange for sleeves, slots, and openings in other building components to allow for electrical installations.

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

   F. Sequence, coordinate and integrate installations of electrical materials and equipment for efficient flow of the work.

   G. Coordinate the cutting and patching of building components to accommodate the installation of electrical equipment and materials.

   H. Where mounting heights are not detailed or dimensioned, install electrical services and overhead equipment services and overhead equipment to provide the maximum headroom possible, in compliance with applicable OSHA requirements.

   I. Install electrical equipment to facilitate maintenance and repair or replacement of equipment for ease of disconnecting, with minimum of interference with other installations.
J. Coordinate connection of electrical systems with exterior underground utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies. Provide required connection for each service.

1.05 QUALITY ASSURANCE, STANDARDS:

A. General: In addition to standards specified in individual work sections, the following standards are imposed, as applicable to the work in each instance:

**NFPA 70, National Electrical Code (NEC)**

The electrical installation shall conform to the requirements of the 2017 edition of the National Electrical Code (NEC-NFPA 70).

**NFPA 70E, Standard for Electrical Safety Requirements for Employee Workplaces - 2018 Edition**

**NEMA/ANSI/ASTM**

Electrical material shall be built and tested in accordance with the applicable standards of the National Electrical Manufacturer’s Association (NEMA); the American National Standards Institute (ANSI); and the American Society of Testing and Materials (ASTM).

**Underwriters’ Laboratories (UL)**

Electrical materials shall be new and unused and shall be listed, inspected, approved and labeled by Underwriters’ Laboratories, Inc., where such labeling service is available.

**NFPA-101, Life Safety Code**

OSHA Code of Federal Regulations (for construction practices)

Applicable state and local codes/ordinances.

**OSHA 29.CFR1910. Subpart 3**

**NECA 1 - 2000**

Standard Practices for Good Workmanship in Electrical Contracting

**NECA/EGSA 404 - 2000**

Recommended Practice for Installing Generator Sets
IEEE-446-1195


NFPA 820

Standard for fire protection in wastewater treatment and collection facilities

B. Manufacturers: Only firms regularly engaged in manufacture of electrical products of types required, whose products have been in satisfactory use in similar service for not less than 3 years, shall be utilized.

1.06 ELECTRICAL SUBMITTALS

A. Refer to the Conditions of the Contract and Section 01340 for submittal definitions, requirements, and procedures.

B. Electrical Submittals: Submit to the Engineer for review and general compliance, complete descriptive, and dimensional data on the following materials, which Contractor proposes to use.

   a. Meter Box
   b. Instrument Transformer
   c. Disconnect Switch Box
   d. Pump Control Panel
   e. SCADA Components
   f. Panel Racks

C. Corrections or comments made on shop drawings during review do not relieve the Contractor from compliance with requirements of Contract Documents, Plans, and Specifications. Shop drawings must be accompanied by signed statement from Contractor stating that he has reviewed the submittal and that the shop drawings are in compliance with Plans and Specifications.

1.07 PRODUCT OPTIONS AND SUBSTITUTIONS:

A. Any item not specified herein but submitted for approval as a substitute for the specified item shall be accompanied by manufacturer’s documentation stating/illustrating the following applicable information in addition to the specific information requested in other sections:

1. Dimensions/weight.

2. Electrical ratings-voltage, amperage, short circuit capability, etc.
3. Construction - gauge of steel/aluminum, paint finish/application method, color NEMA type, etc.

4. Warranty.

5. Local manufacturer’s representative or nearest stocking distributor.

6. Length of time the product has been available to the public.

1.08 DELIVERY, STORAGE AND HANDLING:

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

B. Store equipment and materials at the site, unless offsite storage is authorized in writing. Protect stored equipment and materials from damage according to manufacturer’s instructions.

C. Coordinate deliveries of electrical materials and equipment to minimize construction site congestion.

1.09 WARRANTIES:

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

1.10 GUARANTEE:

A. The work installed shall be kept in perfect working order for one year from date of final written acceptance of the project, said guarantee to be based upon defective materials and/or workmanship. Furnish free of cost to the Owner materials and labor necessary to comply with this guarantee.

1.11 TESTS AND BALANCING:

A. At such times as the Engineer directs, the contractor shall conduct operating tests to demonstrate that the electrical systems are installed and will operate properly and in accordance with the requirements of this Specification. Tests shall be performed in the presence of the Engineer’s representative. The Contractor shall furnish instruments and personnel required for such tests. Additionally, Contractor shall provide a written report of such testing to the Engineer on a form approved by the Engineer prior to any testing.
B. Contractor shall perform tests in the presence of the Engineer to show that the power and lighting loads are equally divided among phases of feeders serving each piece of equipment and each panelboard.

C. Any work and materials tested and found varying from the requirements of the Drawings and Specifications shall be replaced by the Contractor without additional cost to the Owner.

D. This requirement is in addition to specific tests such as high-potential tests, meggar test, phasing tests, generator testing, etc. which may be called for in other sections.

1.12 WORKMANSHIP:

A. Install all materials and electrical components of the work in accordance with instructions of manufacturer following the best modern construction practices and conforming with the Contract Documents. Workmanship shall be first class, in both function and appearance, whether finally concealed or exposed and shall be performed by experienced workmen skilled in the type of work. As practicable, the lines of all components of the system shall be perpendicular or parallel. In general, workmanship shall conform to guidelines set for the in N.E.C.A. manuals.

1.13 SAFETY:

A. It shall be the Contractor’s responsibility to do all things necessary in the pursuit of the installation or testing to provide safe conditions in which to work.

B. Each Subcontractor shall have an OSHA [29CFR1926.404(b)(1)(iii)] approved equipment grounding conductor program in effect that shall be available for inspection by the Engineer. 480 or 240-volt plugs or cords should not be disconnected or handled without first turning off the switch box power.

C. Each Subcontractor shall have a lockout, tag-out procedure that complies with OSHA standards. Tools and equipment that do not comply with OSHA standards shall not be used. Daily pre-use inspection is required of all tools and equipment.

D. Scaffolding shall comply with OSHA standards. Barrels, boxes, cans, spools or other unstable objects shall not be used as work platforms or for the support of planking intended for use as scaffolding.

E. Subcontractors shall maintain a clean and clear work area at all times.

1.14 MOUNTING HEIGHTS:

A. The following mounting heights shall apply:
1. Heights of Outlet boxes - all heights measured from finished floor or working surface to top of box:

   a) Service Entrance meter  min 60”, max 72”

2. The mounting height of disconnect switches, circuit breakers, motor controllers, push button station, and other similar devices and equipment will vary depending upon location and whether individually or group mounted. For convenience and safety, operating levers, handles or buttons shall be mounted no more than 78” above the finished floor line or working surface.

3. Individual devices or pieces of equipment, unless otherwise specified, shall be located so that the operating handle, lever or button is located approximately 66” above the finished floor line or working surface.

END OF SECTION 16010
SECTION 16120
WIRES AND CABLES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. This section is a Division 16 Basic Materials and Methods section, and is part of each Division 16 section making reference to wires and cables specified herein.

B. Refer to Sub-Section 16195, “ELECTRICAL IDENTIFICATION,” for wire and cable color-coding instructions.

1.02 DESCRIPTION OF WORK:

A. Types of wire, cable and connectors in this section include the following:

1. Ground wire.
2. Power cable.

B. Applications for wire, cable and connectors required for project is as follows:

1. Power distribution circuitry.
2. Control power circuitry.

1.03 QUALITY ASSURANCE:

A. Manufacturers: Firms regularly engaged in manufacturer of electrical wire and cable products of types, sizes, and ratings required, whose products have been in satisfactory use in similar service.

B. Installer’s Qualifications: Firm with successful installation experience with projects utilizing electrical wiring and cabling work similar to that required for this project.

C. UL Compliance: Comply with applicable requirements of UL Std. 83, “Thermoplastic-Insulated Wires and Cables,” and Std. 486A, “Wire Connectors and Soldering Lugs for Use with Copper Conductors.”

D. UL Compliance: Provide wiring/cabling and connector products which are UL-listed and labeled.

E. ETL Compliance: Provide wiring/cabling and connector product, which are ETL-listed and labeled.


H. ASTM Compliance: Comply with applicable requirements of ASTM B1, 2, 3, 8, and D-753. Provide copper conductors with conductivity of not less than 98% at 20°C (68°F).

1.04 DELIVERY, STORAGE, AND HANDLING:

A. Deliver wire and cable properly packaged in factory-fabricated type containers, or wound on NEMA-specified type wire and cable reels.

B. Store wire and cable in clean and dry space in original container according to manufacturer’s recommendations. Protect products from weather, damaging fumes, construction debris and traffic.

C. Handle wires and cables carefully to avoid abrading, puncturing, and tearing wire and cable insulation and sheathing. Ensure dielectric resistance integrity of wires/cables is maintained.

D. Unloading equipment should not come in contact with the cable or its protective covering,

E. If crane type equipment is used to unload the cable, Contractor shall use a shaft through the arbor hole of the reel or a cradle evenly supporting both reel flanges,

F. If forklift type equipment is used for unloading, the Contractor shall have the equipment forks to evenly contact both flanges. Forklift supporting the reel from only one flange in any way shall not be acceptable,

G. Reel shall be rolled evenly on the ends of both reel flanges,

H. Reels shall not be rolled off any elevated platform on to the ground,

I. Multiple cable reels shall not be stacked on top of one another nor shall the reel be allowed to rest on the flat side of one flange, both flanges shall always be used to support the cable reel,

J. Cable reels shall be stored out of harm’s way to prevent both physical and environmental hazards,
K. In storage, cable ends shall always be effectively sealed to prevent the entrance of moisture.

PART 2 - PRODUCTS

2.01 WIRE AND CABLE:

A. General: Except as otherwise indicated, provide UL-listed wire, cable and connectors of manufacturer’s standard materials, as indicated by published product information, designed and constructed as recommended by manufacturer, and as required for the installation.

B. CLX Type MC-HL (XHHW-2) may be used instead of wire and conduit with prior approval.

2.02 CONDUCTORS UNDER 600V:

A. Provide factory-fabricated wire of sizes, ratings, materials and types indicated for each service. Where not indicated, provide proper selection as determined by Installer to comply with project’s installation requirements and NEC standards. Select from the following types, materials, conductor configuration, insulation and coverings:

1. UL Type: THHN/THWN-2.
2. Material: Copper.

B. Conductor Color coding:

Grounding Conductor: Green
Tech or Isolated Ground: Green with Yellow Stripe
Neutral (Grounded) Conductor: White
120/240V, 3 phase/4 W: Black/Orange/Blue with Orange for the High (Stinger) Leg
120/208V, 3 phase/4 W: Black/Red/Blue
480/277 V, 3 phase/4 W: Brown/Purple/Yellow
2.03 CONNECTORS:

A. General: Provide UL-type, solderless, factory-fabricated, metal connectors of sizes, ampacity ratings, materials, type and classes for applications and services indicated. Where not indicated, provide proper selection as determined by Installer to comply with project’s installation requirements, NEC and NEMA standards.

B. For #6 and smaller conductors, use pre-insulated 3M “Scotchlock” thread-on connectors. For larger conductors, use Kearney or Burndy two-bolt connectors insulated with rubber tape and covered with vinyl plastic electrical tape. Do not use split-bolt type connectors.

C. For control wiring terminations, use terminal blocks with 20-ampere, screw-pressure box terminals with insulating barriers and numbered terminals. Provide ten percent spare terminals with a minimum of two spare terminals.

PART 3 - EXECUTION

3.01 INSPECTION:

A. General: Install electrical cables and wires as indicated, in compliance with manufacturer’s written instructions, applicable requirements of NEC and NECA’s “Standard of Installation,” and in accordance with recognized industry practices.

B. Coordinate cable and wire installation work with electrical raceway and equipment installation work, as necessary for proper interface.

C. Do not pull conductors into raceways until raceway system (including all outlets, cabinets, bushings and fittings) is completed. Verify that all work of other trades, which may cause conductor damage, is completed. Use only approved cable lubricants when necessary.

D. Pull conductors together where more than one is being installed in a raceway.

E. Use pulling compound or lubricant, where necessary; compound must not deteriorate conductor or insulation.

F. Use UL-listed pulling means, including fish tape, cable or rope, which cannot damage raceway.

G. Install exposed cable, parallel and perpendicular to surfaces or exposed structural members and follow surface contours, where possible.

H. Use splice and tap connectors which are compatible with conductor material.

I. The system shall be properly grounded and continuously polarized (phase) throughout.
J. In general, conductors shall be of the same size from the last protective device to the load.

K. On termination at branch circuit outlets leave a minimum of eight inches (8") free conductor for installation of devices and fixtures.

L. Cover uninsulated splices, joints and free ends of conductor with rubber tape and PVC electrical tape. Plastic insulating caps may serve as insulation for wire sizes through #6, in combinations listed by the insulating cap manufacturer.

M. Do not use mechanical means to pull wire No. 8 or smaller.

N. Branch circuit conductors shall not be smaller than #12 AWG and shall be sized as required by the load served and for specific N.E.C. requirements.

O. Branch circuit wires, which come within 3” of a ballast within a light fixture, e.g., wires running through end-to-end connected fluorescent fixtures, must be rated for 90°C.

P. Control circuit conductors, unless indicated otherwise, shall be #14 AWG, minimum.

Q. All single conductor cables shall be installed in conduit.

R. Grounding conductors shall have green insulation.

S. Use anti-short insulating bushings to protect wires at the ends of the armor on Type AC cable.

3.02 FIELD QUALITY CONTROL:

A. Below 600 Volts:

1. General Branch Circuit Wiring.
2. Prior to energization, test cables and wire for continuity of circuitry, and also for short circuits.
3. Subsequent to wire and cable hook-ups, energize circuitry and demonstrate functioning in accordance with requirements.
4. Feeder Circuit Wiring:
   a. Megger test and record results on form, which will be furnished by the Engineer, all feeder conductors illustrated on the one line diagram. Submit results to Engineer for record purposes.
   b. All cable tested above shall read 50 (fifty) megohms or better, at 1000 volts DC, after 60 seconds. Use 120 volt motorized megger.

END OF SECTION 16120

16120-5
PART 1 - GENERAL

1.01 DESCRIPTION OF WORK:

A. Types of electrical boxes and fittings in this section include the following:

1. Wall and Ceiling Outlet boxes.
2. Junction and Pull boxes
3. Floor boxes.
4. Conduit bodies.
5. Bushings.

1.02 RELATED DOCUMENTS AND SECTIONS:

A. This section is a Division 16 Basic Materials and Methods section, and is part of each Division 16 section making reference to electrical wiring boxes and fittings specified herein.

1.03 REFERENCES FOR QUALITY ASSURANCE:

A. UL Compliance: Comply with applicable requirements of UL 50, UL 514-Series, and UL 886 pertaining to electrical boxes and fittings. Provide electrical boxes and fittings, which are UL-listed and labeled.

B. NEMA Compliance: Comply with applicable requirements of NEMA Stds/Pub FB1, No.’s OS1, OS2, and Pub 250 pertaining to outlet and device boxes, covers and box supports.

C. NECA: Comply with Standard of Installation.
PART 2 - PRODUCTS

2.01 FABRICATED BOXES:

A. Surface Mounted Weatherproof Outlet Box: Provide UL listed rugged, seamless, “FS”, “FD” or die cast aluminum, electrostatic painted with a baked weather resistant powder finish, 2½” x 2¾ x 2” deep box that will accept a single gang weatherproof cover or standard “FS” cover. The box shall have external mounting ears such that the back of the box fits flat on the mounting surface. Box may have knockout studs on back of box to provide alternate means for wall mounting. Box shall have threaded hub outlets for conduits and connectors. Threaded closure plugs shall be used to seal up all un-used openings. Deeper boxes or box extension shall be used to increase box volume to comply with NEC fill requirements.

B. Junction and Pull Boxes: Provide UL listed 304 stainless steel and cover of type, shape and size as required or as indicated on drawings. Enclosure shall be NEMA 4X for indoor or outdoor with appropriate cover fastened with stainless steel fasteners, unless indicated otherwise.

C. Hubs: Provide Myers hubs, grounding type, on all enclosures. Provide 304 ss corrosion-resistant box knockout closures where required. Provide conduit offset connectors etc., of types and sizes, to suit respective installation requirements and applications.

PART 3 - EXECUTION

3.01 INSTALLATION OF ELECTRICAL BOXES AND FITTINGS:

A. General: Verify locations of floor boxes and outlets prior to rough-in. Install electrical boxes and fittings where indicated, complying with manufacturer’s written instructions, applicable requirements of NEC and NECA’s “Standard of Installation,” and in compliance with recognized industry practices to ensure that products fulfill requirements.

B. Coordinate installation of electrical boxes and fittings with wire/cable and raceway installation work.

C. Provide weatherproof outlet boxes for interior and exterior locations exposed to weather or moisture.

D. Provide knockout closures to cap unused knockout holes where blanks have been removed.
E. Install junction and pull boxes and conduit bodies in those locations that ensure ready accessibility.

F. Install wall mounted boxes at elevations specified in Section 16010.1.17 - Mounting Heights.

G. Outlet boxes located on the interior walls of open-wall, metal buildings, install box secured to c-strut fastened between the wall girths, using aluminum plate sized to accommodate the mounting ears of the outlet box.

H. DO NOT install aluminum products in concrete.

I. Subsequent to installation of boxes, protect boxes from construction damage and vacuum clean all interior debris from enclosure.

J. Electrical boxes are shown on drawings in approximate locations unless dimensioned. Relocate box, under base bid, up to 10 feet if required to accommodate intended purpose.

L. Maintain headroom and present neat mechanical appearance.

M. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.

N. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches (150 mm) from ceiling access panel or from removable recessed luminaire.

O. Coordinate with architect the mounting heights and locations of outlets specified above counters, benches and backsplashes.

P. Locate outlet boxes to allow luminaries positioned as shown on reflected ceiling plan.

Q. Align adjacent wall mounted outlet boxes for switches, thermostats and similar devices.

R. Use flush mounting outlet box in finished areas.

S. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.

T. Do not install flush mounting box back-to-back in walls; provide minimum 6 inches separation. Provide minimum 24 inches separate in acoustic rated walls.
U. In stud constructed walls, secure flush outlet boxes to mounting brackets that are fastened between the framing members of the interior walls and partitions. The bracket shall be UL listed for the application, unless otherwise approved by the engineer for the project.

V. Use UL listed stamped steel bridges to fasten flush mounting outlet box between studs, especially in walls and partitions framed with metal studs.

W. Install flush mounting box without damaging wall insulation or reducing its effectiveness.

X. Use adjustable steel channel fasteners for hung ceiling outlet box.

Y. Do not fasten boxes to ceiling support wires.

Z. Support boxes independently of conduit.

AA. Use gang box where more than one device is mounted together. Do not use sectional box.

BB. Use gang box with plaster ring for single device outlets.

CC. Use cast outlet box in exterior locations exposed to the weather and wet locations.

DD. Use cast or non-metallic floor boxes for installations in slab on grade; formed steel boxes are acceptable for other installations.

EE. Set floor boxes level.

FF. Large Pull Boxes: Use enclosure with a hinged door for interior dry locations, surface-mounted cast metal box in other locations.
3.02 INTERFACE WITH OTHER PRODUCTS:
   A. Coordinate installation of outlet box for equipment connections.

3.03 ADJUSTING
   A. Adjust floor box flush with finish flooring material.
   B. Adjust flush-mounting outlets to make front flush with finished wall material.
   C. Install knockout closures in unused box openings.

3.04 CLEANING
   A. Clean interior of boxes to remove dust, debris and other material.
   B. Clean exposed surfaces and restore finish.

3.05 GROUNDING:
   A. Upon completion of the installation, properly ground electrical boxes and demonstrate compliance with requirements as specified.

END OF SECTION 16135
SUB-SECTION 16160
CONTROL PANEL ENCLOSURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Hinged cover enclosures.
B. Dead front interior swing panel, when required.
C. Plan pocket, when required.
D. Back panel.
E. Terminal blocks.
F. Accessories.

1.2 RELATED SECTIONS

A. Sub-Section 16190 - Supporting Devices and/or supporting devices indicated on plans.

1.3 REFERENCES

B. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
C. NEMA ICS 4 - Terminal Blocks for Industrial Control Equipment and Systems.
D. NFPA 70 - National Electrical Code.

1.4 SUBMITTALS FOR REVIEW

A. Product Data: Provide manufacturer's standard data for enclosures and cabinets.

1.5 SUBMITTALS FOR INFORMATION

A. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, and installation of Product.

1.6 REGULATORY REQUIREMENTS

A. Conform to requirements of NFPA 70.
B. Products: Listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose specified and indicated.

1.7 MAINTENANCE MATERIALS

A. Provide two (2) keys for each lockable cabinet.

PART 2 - PRODUCTS
2.1 MANUFACTURERS
   A. Electromate.
   B. Hoffman Manufacturing Co.
   C. Shahlin.
   D. B-Line Systems.
   E. Anicom, Inc.
   F. Allied Moulded Products, Inc.

2.2 HINGED COVER ENCLOSURES
   A. Construction: NEMA 250, Type 4X fiberglass unless indicated otherwise on drawing.
   B. Covers: Continuous hinge, held closed by hasp and staple for padlock. Provide stainless steel window where indicated on the drawings.
   C. Provide interior metal panel (min. 11 gauge) for mounting terminal blocks and electrical components; finish with white enamel.
   D. Enclosure Finish: Manufacturer's standard
   E. Provide accessory feet for free-standing equipment.
   F. Enclosure Size: Enclosure shall be a minimum of 8” deep with dimensions as indicated on the drawing or dimensional by Contractor acceptable to the Engineer.

2.3 DEAD FRONT INTERIOR SWING PANEL
   A. Mounts at the front of the enclosure.
   B. Hinged on one side, secured to the other.
   C. Preferable material choice is aluminum of standard gauge offered by manufacturer.
   D. Sized according to enclosure dimensions.

2.4 PLAN POCKET
   A. Plan pocket (9”x12”) to be included on inside of exterior door.

2.5 BACK PANEL OF ENCLOSURE
   A. Mounts to the rear wall of enclosure on weldnuts.
   B. Preferable material choice is aluminum of standard gauge offered by manufacturer.
   C. Sized according to enclosure dimensions.
2.6 TERMINAL BLOCKS

A. Manufacturers:
   1. Allen Bradley
   2. Gould Shawmut
   3. Ideal Industries, Inc.
C. Power Terminals: Unit construction type with closed back and tubular pressure screw connectors, rated 30 amp 600 volts.
D. Signal and Control Terminals: Modular construction type, suitable for channel mounting, with tubular pressure screw connectors, rated 300 volts, 20 amps.
E. Provide grounding bus terminal block, with adequate terminals for each grounding conductor and bond terminal block to metal of enclosure.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Not Used.
B. Install in accordance with NECA "Standard of Installation."
C. Install enclosures and boxes plumb. Anchor securely to wall and structural supports at each corner under the provisions of Sub-Section 16190.
D. Enter NEMA 4X enclosures through the bottom only, and then only with Meyers hubs, or with liquid tight fittings using “O” rings, if liquid tight conduit is allowed. Do not enter NEMA 4X enclosures through the top, back, sides or front for any reason. NEMA 4X enclosures shall be mounted only by using external mounting “ears” built onto the box. Do not drill mounting holes into the box interior for any reason.
E. Install proper label to exterior of enclosure door indicating if control panel has more than one source of power and specifically identify the power source or sources.

3.2 CLEANING

A. Vacuum clean electrical parts to remove conductive and harmful materials.
B. Vacuum clean dirt and debris from enclosure.
C. Refurbish any damage to exterior of enclosure to match original finish.

END OF SECTION
SECTION 16181

OVERCURRENT PROTECTIVE DEVICES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. This section is a Division 16 Basic Materials and Methods section, and is part of each Division 16 section making reference to overcurrent protective devices specified.

1.02 DESCRIPTION OF WORK:

A. Types of overcurrent protective devices in this section include the following:

1. Circuit breakers (600 volts and below).
2. Fuses (600 volts and below).

B. Refer to other Division 16 sections for cable/wire and connector work required in conjunction with overcurrent protective devices; not work of this section.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS:

A. Manufacturer: Subject to compliance with requirements, provide products of one of the following (for each type and rating of overcurrent protective device):

1. Circuit Breakers:
   a. General Electric Co. - Circuit breakers suited for exact panels specified in Sub-Section 16470
   b. Siemens - Circuit breakers suited for exact panels specified in Sub-Section 16470
   c. Square D Co. - Circuit breakers suited for exact panels specified in Sub-Section 16470
   d. Cutler-Hammer - Circuit breakers suited for exact panels specified in Sub-Section 16470

2. Fuses:
   a. Cooper Bussmann, Inc. - Fusetron
   b. Ferraz Shawmut - Amptrap 2000
   c. Littlefuse
B. Circuit Breakers:

C. General: Except as otherwise indicated, provide circuit breakers and ancillary components, of types, sizes, ratings and electrical characteristics indicated, which comply with manufacturer's standard design, materials, components, and construction in accordance with published product information and as required for a complete installation.

D. Molded-Case Circuit Breakers:

1. Provide bolt-on factory-assembled, molded-case circuit breakers of frame size, trip and interrupting rating as shown on the Panel Schedule and Drawings.

2. Provide breakers (100 & 150 ampere frame) with non-interchangeable permanent trip units. Provide thermal and instantaneous magnetic trips in each pole. Breakers above 150-ampere frame size shall have interchangeable trip units with non-adjustable bi-metallic thermal trip and adjustable magnetic trips. Construct with over center trip-free, toggle type-operating mechanisms with quick-make, quick-break action and positive handle indication. Construct breakers for mounting and operating, within specified ratings, in any physical position and in an ambient temperature of 40 degrees C. Provide with mechanical screw type removable connector lugs, AL/CU rated, and appropriate number of terminal lugs to provide one terminal for each circuit conductor for full frame amperes.

3. All molded case circuit breakers shall be listed per U.L. 489 to continuously carry 80% of its nameplate rating (unless noted otherwise) and shall meet the requirements of NEMA AB1, and the NEC-NFPA 70-99.

4. Accessories for molded case breakers shall include (when indicated on drawings and schedules) auxiliary switch, shunt trip, under voltage release, bell alarm, motor operator, and mechanical interlocks.
2.02 FUSES:

A. General: Except as otherwise indicated, provide fuses of types, sizes and ratings and electrical characteristics indicated, which comply with manufacturer's standard design, materials, and construction in accordance with published product information and with industry standards and configurations.

B. Class L Time-Delay Fuses: Provide UL Class L time-delay fuses, 600V, 60 HZ., with ampere rating as shown on drawings, with 200,000 RMS symmetrical interrupting current rating for protecting transformers, motors, above 600 amperes.

C. Class L Fast-Acting Fuses: Provide UL Class L fast-acting fuses, 600V, 60 Hz., with ampere rating as shown on drawings, with 200,000 RMS symmetrical interrupting current rating for protecting main feeders above 600 amperes.

D. Class RK5 Time-Delay Fuses: Provide UL Class RK5 dual element time-delay fuses rated as shown on drawings, 60 Hz., with 200,000 RMS symmetrical interrupting current rating for protecting motors, transformers, feeders, etc. below 600 amperes.

PART 3 - EXECUTION

3.01 INSTALLATION OF OVERCURRENT PROTECTIVE DEVICES:

A. Install overcurrent protective devices as indicated in accordance with the manufacturer's written instructions and with recognized industry practices to ensure that protective devices, especially the rejection feature, comply with requirements. Comply with NEC and NEMA standards for installation of overcurrent protective devices.

B. Coordinate with other work, including electrical wiring work, necessary to interface installation of overcurrent protective devices with other work.

C. Fasten circuit breakers without mechanical stresses, twisting or misalignment being exerted by clamps, supports, or cables.

D. Set field-adjustable circuit breakers for trip settings as indicated subsequent to installation of devices.

E. Install fuses, if any, in fuse holder with the labeling on the fuse right side up and positioned as that fuse label is readable with the enclosure door open.

F. Provide spare fuses (3 of each ampere rating used).
G. For Class R type fuses as specified, the fuse holder shall include the appropriate fuse rejection clip which accepts only Class R fuses.

3.02 ADJUST AND CLEAN:

A. Inspect circuit-breaker operating mechanisms for malfunctioning and, where necessary, adjust units for free mechanical movement.

3.03 FIELD QUALITY CONTROL:

A. Prior to energization of overcurrent protective devices; test devices for continuity of circuitry and for short-circuits. Correct malfunctioning units, and then demonstrate compliance with requirements.

END OF SECTION 16181
SECTION 16190
SUPPORTING DEVICES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. This section is a Division-16 Basic Materials and Methods sections, and is a part of each Division-16 section making reference to supports, anchors, sleeves, and seals specified herein.

1.02 DESCRIPTION OF WORK:

A. Types of supports, anchors, sleeves and seals specified in this section include the following:

1. Clevis hangers.
2. Riser clamps.
3. C-clamps.
4. I-beam clamps.
5. One-hole conduit straps.
6. Two-hole conduit straps.
7. Round steel rods.
8. Lead expansion anchors.
10. Wall and floor seals.

B. Supports, anchors, sleeves and seals furnished as part of factory-fabricated equipment, are specified as part of equipment assembly in other Division-16 sections.

1.03 QUALITY ASSURANCE:

A. NEC Compliance: Comply with NEC as applicable to construction and installation of electrical supporting devices.


C. MSS Compliance: Comply with applicable MSS standard requirements pertaining to fabrication and installation practices for pipe hangers and supports.
D. NECA Compliance: Comply with National Electrical Contractors Association's "Standard of Installation:" pertaining to anchors, fasteners, hangers, supports, and equipment mounting.

E. UL Compliance: Provide electric components, which are UL listed and labeled.

PART 2 - PRODUCTS

2.01 MANUFACTURED SUPPORTING DEVICES:

A. General: Provide supporting devices complying with manufacturer’s standard materials, design and construction in accordance with published product information, and as required for a complete installation and as herein specified. Where more than one type of device meets indicated requirements, selection is Installer’s option.

B. Manufacturer: Subject to compliance with requirements, provide hot-dip galvanized or aluminum C-strut of the following, unless otherwise noted on the drawings:

1. Power Strut - PS200 series, PS500 series
2. Unistrut Div. - P1000 series, P4100 series
3. B-Line - B22 series, B54 series

Unistrut channel, conduit straps, and bolts and nuts shall be aluminum for aluminum conduit and hot-dip galvanized steel for steel conduit. Hanger rods, beam clamps, concrete inserts and miscellaneous hardware shall be hot-dip galvanized.

Aluminum struts and supports, such as trapeze for multiple conduit runs, shall be insulated from threaded steel rods, washers and nuts, by fiber washers and from concrete or structural steel by 1/8” thick neoprene rubber pads.

C. Hardware:

All hardware items which are not part of manufactured equipment and which are supplied by the Contractor shall be aluminum or stainless steel, type 316, for use with aluminum materials or equipment, and hot-dip galvanized steel for use with galvanized materials or equipment. Cadmium plated hardware shall not be allowed.
PART 3 - EXECUTION

3.01 INSTALLATION OF SUPPORTING DEVICES:

A. Install hangers, anchors, sleeves and seals as indicated, in accordance with manufacturer's written instructions and with recognized industry practices to insure supporting devices comply with requirements. Comply with requirements of NECA, NEC and ANSI/NEMA for installation of supporting devices.

B. Coordinate with other electrical work, including raceway and wiring work, as necessary to interface installation of supporting devices with other work.

C. All equipment shall be mounted on or suspended from foundations and supports as specified herein and/or as required on the electrical drawings.

D. Furnish all steel angles, channels and other materials necessary for the proper support and erection of motor starters, disconnects, panelboards, cabinets, data gathering panels, transformers and any other electrical equipment and/or materials.

E. Panelboards, disconnects, cabinets, large pull boxes, cable support boxes and starters shall be secured to structure and floor slab and not supported from conduits. Small panelboards, etc., as approved by Engineer, may be supported on walls. Racks for support of conduit and heavy electrical equipment shall be secured to building construction by substantial structural supports.

F. Supports for conduit shall consist of malleable iron conduit clamps of an approved type, conduit hangers, pipe hangers designed for attachment to steel beams, steel c-strut trapeze hanger with all-thread rod hangers, or wall brackets, as required to suit special conditions.

G. Outlet boxes shall be supported to masonry or concrete construction by stainless steel expansion anchors and by hot-dip galvanized clamps to steel beams.

H. Vertical runs in chases and closets shall be supported at every floor; support intervals must not exceed seven (7) feet for conduits 1-1/4” in diameter or smaller and nine (9) feet for conduits larger than 1-1/4” in diameter.

I. Hangers for conduit shall be supported from the building structural members. Exposed rigid conduit and electrical metallic tubing (EMT) shall be supported every six (6) feet for conduits up to 1” and every eight (8) feet above 1” and within eighteen (18) inches of each outlet box, junction box, cabinet or fitting, unless indicated otherwise.
J. Supports for horizontal conduits shall be spaced not more than 8-feet apart, unless indicated otherwise, with not less than two supports for each 10-foot straight length and one support near each elbow or bend.

I. Provide a wrap of 3M heavy duty corrosion tape on all aluminum conduit fastened to hot dipped galvanized strut i.e where dissimilar metals are bolted together.

END OF SECTION 16190
SECTION 16195
ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. This section is a Division 16 Basic Materials and Methods section, and is part of each Division 16 section making reference to electrical identification specified herein.

1.02 DESCRIPTION OF WORK:

A. Types of electrical identification specified in this section include the following:

1. Cable/Conductor identification.
2. Operational instructions and warnings.
3. Danger signs.
4. Equipment/system identification signs.

PART 2 - PRODUCTS

2.01 ELECTRICAL IDENTIFICATION MATERIALS:

A. General:

1. Except as otherwise indicated, provide manufacturer’s standard products of categories and types required for each application. Where more than single type is specified for an application, selection is Installer’s option, but provide a unified manufacturer selection for each application.
B. Color-Coded Plastic Tape:

1. Provide manufacturer’s standard self-adhesive vinyl tape not less than 3 mils thick by 1-1/2” wide. Provide color as required to identify conductor/conduit.

C. Cable/Conductor Identification Bands:

1. Wire Markers: Provide computer-generated vinyl or plastic sleeve, slipover type, white background with black imprinting as required for specific application.

2. Color-Coded Plastic Tape: Provide manufacturer’s standard self-adhesive vinyl tape. Unless otherwise indicated, provide colors according to applicable codes or standards.

D. Operational Instructions and Warnings:

1. Provide manufacturer’s standard pre-printed, accident-prevention and operational tags, of plasticize card stock with matte finish suitable for writing, approximately 3-1/4” x 5-5/8”, with brass grommets and wire fasteners, and with appropriate pre-printed wording including large-size primary wording (as examples: “DANGER”, CAUTION, DO NOT OPERATE”).

2. Provide manufacturer’s standard, self-adhesive or pressure-sensitive, pre-printed, flexible vinyl signs for operational instructions or warnings, of sizes suitable for application areas and adequate for visibility, with proper wording for each application (as examples: “208V”, EXHAUST FAN”, “RECTIFIER”). Unless otherwise indicated or required by governing regulations, provide orange signs with black lettering.

E. Danger and Caution Signs:

1. Provide manufacturer’s standard “DANGER” signs of baked enamel finish on 20-gage steel, of standard red, black and white graphics, 14” x 10” size except where 10” x 7” is the largest size which can be applied where needed and except where larger size is needed for adequate vision, and with/wording: “DANGER HIGH VOLTAGE UNAUTHORIZED PERSONNEL KEEP OUT.”

2. Provide manufacturer’s standard “CAUTION” signs of pressure sensitive polyester, with stainless steel mounting screws, 2-1/4” x 9”. Wording shall be as scheduled. (Example: Caution-480 Volts; Caution-Buried Cable).
F. Equipment/System Identification Signs:

1. Provide engraved stock melamine plastic-laminate, complying with FS L-P-387, in sizes and thicknesses indicated, engraved with engraver’s standard letter style of sizes and wording indicated black and white core (letter color) except as otherwise indicated, punched for mechanical fastening except where adhesive mounting is necessary because of substrate.

All panels, disconnect switches, contactors, starters, timers, control panels, dry type transformers and each individual load in motor control centers and switchboards (when MCC’s or SWBDS. are in the job), shall be identified with engraved, plastic laminate labels. Embossed tape labels are not acceptable. All labels shall be sized to accommodate the lettering. Labels shall have white lettering on a black field, unless shown otherwise. Labels for emergency circuit devices shall have white letters on red field. Names of switchboards and MCC’s shall be 1/2” high, panel names shall be 1/4” high, and shall be on the first line of the label. Use 1/8” lettering for volts, amps, source of feed, and mo./yr. installed, on the 2nd, 3rd, 4th and 5th lines, respectively.

EXAMPLE: PANEL “A”
120/240 VOLTS, 1φ, 3W
100 AMPS - M.L.O.
FED FROM “MFDS”
INSTALLED 3/2005

The labels shall be secured to the front cover of the device using stainless steel mounting screws. Glue or double-sided tape is not acceptable.

The Contractor shall submit to the Architect/Engineer a schedule of proposed equipment labels for review, amending and approval, before making the labels.

2. Thickness: 1/16”, for units up to 20 sq. in. or 8” length, 1/8” for larger units.

G. Fasteners: Self-tapping stainless steel screws, except contact-type permanent adhesive where screws cannot or should not penetrate substrate.
2.02 LETTERING AND GRAPHICS

A. Coordinate names, abbreviations and other designations used in electrical identification work, with corresponding designations show, specified or scheduled. Provide numbers, lettering and wording as indicated or, if not otherwise indicated, as recommended by manufacturers or as required for proper identification and operation/maintenance of electrical systems and equipment.

PART 3 - EXECUTION

3.01 APPLICATION AND INSTALLATION:

A. General Installation Requirements:

1. Coordination: Where identification is to be applied to surfaces, which require finish, install identification after completion of painting.

2. Regulations: Comply with governing regulations and requests of governing authorities for identification of electrical work.

B. Cable/Conductor Identification:

1. Apply cable/conductor identification on each cable and conductor (line and load) in each box/enclosure/cabinet where wires are present, except where another form of identification (such as color-coded conductors) is provided. Match identification with marking system used in panelboards, shop drawings, contract documents, and similar previously established identification for project electrical work.

2. Conductors shall be clearly and permanently identified.

3. All control circuit and instrument circuit terminations shall be identified on both ends of each conductor according to control drawing.

4. For conductors #6 and smaller, conductor color-coding shall be color insulation. For conductor color-coding of wire larger than #6, use self-adhesive wraparound tape markers. Use markers at all panelboards, transformers, boxes, outlets, switches, circuit breakers and control centers.

5. All grounding conductors and these only: Green.
C. Equipment/System Identification Signs:

1. Provide engraved plastic-laminate, in sizes and thicknesses indicated, engraved with engraver’s standard letter style of sizes and wording indicated black and white core (letter color; except as otherwise indicated, punched for mechanical fastening except where adhesive mounting is necessary because of substrate.

2. Thickness: 1/16” for units up to 20 sq. in. or 8” in length, 1/8” for larger units.

D. Fasteners: Self-tapping stainless steel screws, except use contact-type permanent adhesive where screws cannot or should not penetrate substrate.

3.02 LETTERING AND GRAPHICS:

A. Coordinate names, abbreviation and other designations used in electrical identification work, with corresponding designations shown, specified or scheduled. Provide numbers, lettering and wording as indicated or, if not otherwise indicated, as recommended by manufacturers or as required for proper identification and operation/maintenance of electrical systems and equipment.

B. Junction Box Identification:

1. Apply panel and circuit identification numbers on the cover of all boxes located above ceilings or exposed. Utilize black lettering for normal power circuits and red lettering for emergency power circuits (use indelible ink marker pens).

C. Outlet Box Identification:

1. Each fire alarm system outlet box shall be marked “F.A.” on the interior rear wall of the box with a “red” indelible ink marker pen.
D. Equipment/System Identification:

1. Install engraved plastic-laminate sign on each major unit of electrical equipment in building unless unit is specified with its own self-explanatory identification. Except as otherwise indicated, provide single line of text, ½” high lettering on 1-1/2” high sign (2” high where 2 lines are required), white lettering in black field or white letters in red field for emergency circuits. Provide text matching terminology and numbering of the contract documents and shop drawings. Provide signs for the following pieces of electrical equipment:

   a. Panelboards, electrical cabinets and enclosures.
   
   b. Recess panel/doors to electrical facilities.
   
   c. Major electrical switchgear and motor control center.
   
   d. Disconnect switches.
   
   e. Starters and associated motors.
   
   f. Large junction boxes.
   
   g. Special application control switches.

E. Install signs at locations indicated, or, where not otherwise indicated, at location for best convenience of viewing without interference with operation and maintenance of equipment. Secure to substrate with fasteners, except use adhesive where fasteners should not or cannot penetrate the substrate.

END OF SECTION 16195
PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. This section is a Division 16 Basic Materials and Methods section, and is part of each Division 16 section-making reference to motor and circuit disconnect switches specified herein.

1.02 QUALITY ASSURANCE:

A. UL Compliance: Comply with requirements of UL 98, “Enclosed and Dead-Front Switches”. Provide circuit and motor disconnect switches which have been UL-listed and labeled.


PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS:

A. Manufacturer: Subject to compliance with requirements, provide products of one of the following (for each type of switch):

1. General Electric Co. - Type THF Spec setter
2. Siemens - Type MCS
3. Square D Company - Class 3110
4. Cutler-Hammer - DH Series

B. Heavy-Duty Safety Switches: Provide surface-mounted, heavy-duty type sheet-steel enclosed safety switches, of types, sizes and electrical characteristics indicated, horsepower rated, solid neutral, incorporating quick-make, quick-break type switches; so constructed that blades are visible in OFF position with door open. Equipment with operating handle which is integral part of enclosure base and whose position is easily recognizable, and is padlockable in OFF position; construct current carrying parts of high-conductivity copper, with silver-tungsten type switch contacts, and positive pressure type reinforced fuse clips. Provide NEMA type N4X enclosure outdoors, NEMA type 1 indoors, unless indicated otherwise.
C. All fusible switches shall accept only Class R fuses, and shall have U.L. listed Class R fuse rejection clips.

D. The U.L. short circuit rating shall be 200,000 RMS symmetrical amperes when Class R fuses are used.

E. All switches shall be U.L. listed for use with copper or aluminum wire whose ampacity and temperature rating are in compliance with NEC 110-14(C).

PART 3 - EXECUTION

3.01 INSTALLATION OF CIRCUIT DISCONNECT SWITCHES:

A. Install disconnect switches where indicated, complying with manufacturer’s written instructions, applicable requirements of NEC, NEMA, and NECA’s “Standard of Installation”, and in accordance with recognized industry practices to ensure that products fulfill requirements.

B. Coordinate circuit disconnect switch installation work with electrical raceway and cable work, as necessary for proper interface.

C. Install disconnect switches used for motor-driven appliances, and motors and controllers within sight of controller position unless otherwise indicated.

D. Label per SECTION 16195.

E. Circuit breakers for disconnecting air conditioning condensing units and other HVAC equipment containing more than one motor shall be HACR type.

F. Provide and install fuses where applicable. Fuse shall be mounted right side up, so its label can be read left to right or bottom to top when the enclosure door is open.

G. Vacuum clean debris from all enclosures.
3.02  GROUNDING:

A. Provide equipment grounding connections, sufficiently tight to assure a permanent and effective ground, for electrical disconnect switches where indicated.

3.03  FIELD QUALITY CONTROL:

A. Subsequent to completion of installation of electrical disconnect switches, energize circuitry and demonstrate capability and compliance with requirements. Where possible, correct malfunctioning units at project site, then retest to demonstrate compliance; otherwise remove and replace with new units and retest.

END OF SECTION 16441
SECTION 16450

GROUNDING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. Division 16 Basic Materials and Methods sections apply to work of this section.

1.02 QUALITY ASSURANCE:

A. Electric Code Compliance: Comply with applicable local electrical code requirements of the authority having jurisdiction, and NEC as applicable to electrical grounding and bonding, pertaining to systems, circuits and equipment.

B. UL Compliance: Comply with applicable requirements of UL Standards No.'s 467, "Electrical Grounding and Bonding Equipment", and 869, "Electrical Service Equipment", pertaining to grounding and bonding of systems, circuits and equipment. In addition, comply with UL Std. 486A, "Wire Connectors and Soldering Lugs for Use with Copper Conductors." Provide grounding and bonding products, which are UL-listed and labeled for their intended usage.

C. IEEE Compliance: Comply with applicable requirements and recommended installation practices of IEEE Standards 80, 81, 151 and 152 pertaining to grounding and bonding of systems, circuits and equipment.

1.03 NEMA COMPLIANCE:

A. Stds. Pub/No. LA1 Surge Arresters Stds. Pub/No. FB1 Fittings, Cast metal boxes and conduit bodies for conduit assembly.

1.04 DESCRIPTION OF WORK:

A. Main electric service equipment, conduit work, motors, panelboards and other electrical equipment shall be effectively and permanently grounded. Grounding connections and conductor sizes shall be in accordance with requirements of the National Electrical Code, Article 250, and local ordinances.

B. A separate grounding conductor, sized in accordance with NEC Table 250-122, unless indicated otherwise, shall be provided in the conduit with the circuit conductors for all branch circuits and feeder circuits. The grounding conductor covering shall be a green color. Conduit runs shall be increased in size where necessary to accommodate the grounding conductor in addition to circuit
conductors. The electrical continuity of all conduit runs shall be verified and corrected where necessary.

C. All electrical equipment enclosures and conductor enclosures shall be grounded. This includes but is not limited to metal raceways, outlet boxes, cabinets, switch boxes, motor frames, transformer cases, metal back panel of fiberglass enclosure and metallic enclosure for all electrical equipment.

D. Under no circumstances shall neutral conductors again be grounded after they have been grounded once at the transformer secondary (or main distribution panel, as indicated).

E. Types of grounding in this Section include the following:

1. Grounding:
   a. Metal water, sprinkler and gas piping.
   b. Metal building and structure frames.
   c. Grounding electrodes.
   d. Grounding rods.
   e. Grounding loops.
   f. Separately derived systems.
   g. Service equipment.
   h. Enclosures.
   i. Systems.
   j. Equipment.
   k. Metallic conduits of control and specialty systems.

F. Requirements of this section apply to electrical grounding work specified elsewhere in these specifications.

1.05 ELECTRONIC GROUNDING

A. Where required by work scope or drawing, an isolated (isolated from normal grounding) electronic grounding system shall be installed. The electronic grounding system shall be supplied complete with its own service ground rods. The electronic service ground shall be connected to the regular ground rod at a single point.

1.06 LIGHTNING GROUNDING

A. Where required by work scope or drawing, an isolated (isolated from normal grounding) lightning grounding system shall be installed. The lightning grounding system shall be supplied complete with its own service ground rods. The lightning service ground shall be connected to the regular ground rod at a single point.
PART 2 - PRODUCTS

2.01  GROUNDING:

A.  Materials and Components:

General: Except as otherwise indicated, provide each electrical grounding system indicated, with assembly of materials including, but not necessarily limited to, cables/wires, connectors, terminals (solderless lugs), grounding rods/electrodes and plate electrodes, bonding jumper, flexible braid, and other items and accessories needed for complete installation. Where more than one type meets indicated requirements, selection is Installer's option. Where materials or components are not otherwise indicated, comply with NEC, NEMA and established industry standards for applications indicated.

B.  General: Provide conduit, tube, duct and fittings complying with other Division 16 sections.

C.  Electrical Bonding Jumpers

D.  Bonding Jumper Braid: UL-listed copper braided tape, constructed of 30-gage bare copper wires and properly sized for indicated applications.


F.  Electrical Grounding Conductors:

Unless otherwise indicated, provide electrical grounding conductors for grounding connections matching power supply wiring materials and sized according to NEC.

G.  Bonding Connectors, Terminals and Clamps:

Provide electrical UL-listed bonding plates, connectors terminals and clamps as recommended by bonding plate, connector, terminal and clamp manufacturers for indicated applications. Materials shall be bronze.

H.  Ground Rods and Plates:

1.  Ground Rods: UL-listed steel with copper welded exterior, 3/4" dia. x 10'.

I.  Electrical Grounding Connection Accessories: Provide electrical UL-listed insulating tape, heat-shrinkable insulating tubing, solder, soldering flux, bonding straps, as recommended by accessories manufacturers for type services indicated.
PART 3 - EXECUTION

3.01 INSTALLATION OF GROUNDING SYSTEMS:

A. Install electrical grounding systems as indicated, in accordance with manufacturer’s written instructions and with recognized industry practices to ensure grounding and ground-fault protection devices comply with requirements. Comply with requirements of NEC, NESC, and NEMA standards for installation of grounding and ground-fault protection systems and devices.

B. Coordinate with other electrical work as necessary to interface installation of grounding system and ground-fault protection devices with other work.

C. Weld or bolt cable connections to ground rods.

D. Install braided type-bonding jumpers with ground clamps on water meter piping to electrically bypass water meter.

E. Install clamp-on connectors only on thoroughly cleaned metal contact surfaces, to ensure electrical conductivity and circuit integrity.

F. Bond electrical service entrance system neutral, grounding and grounding electrode conductors at one point in the service entrance equipment enclosure. Use bonding bushing with lay-in lug on all metallic conduits entering service entrance enclosure and at the other end of said conduits.

G. Ground each separately derived system neutral to:

1. Transformer housing.
2. Effectively grounded structural steel member (if building is steel-framed).
3. Grounding Grid.
4. Building main metal cold water, sprinkler and gas piping per NEC.
5. Driven ground rod.
6. Concrete foundation re-steel.

H. Terminate feeder and branch circuit insulated equipment-grounding conductors with grounding lug, bus, or bushing.

I. Tighten grounding and bonding connectors and terminals, including screws and bolts, in accordance with manufacturer’s published torque-tightening values for connectors and bolts. Where manufacturer’s torquing requirements are not indicated, tighten connections to comply with tightening torque values specified in UL 486A to assure permanent and effective grounding.

J. Route grounding connections and conductors to ground and protective devices in shortest and straightest paths as possible to minimize transient voltage rises.
K. Where a common connection point requires multiple grounding conductors, provide a grounding bar with at least the same number of terminal connection barrels as there are conductors. *Multiple conductors under one barrel lug will not be acceptable.*

L. Apply oxide inhibiting compound (i.e. T & B’s Contax or equal by ILSCO, or Penn-Union to field-connections, buried metallic grounding and bonding products, and places where factory applied protective coatings have been destroyed, which are subjected to corrosive action.

M. Apply oxide-inhibitor compound to all connections made outdoors or in damp locations according to manufacturer’s instructions.

END OF SECTION 16450
# Table of Contents

**GENERAL CONSIDERATIONS** ........................................................................................................ 3

**TEMPORARY PORTABLE EMERGENCY GENERATOR SET** ................................................................. 3

**EXISTING EMERGENCY GENERATOR SET** ...................................................................................... 4

**NEW EMERGENCY GENERATOR SET** ............................................................................................. 4

**DIESEL ENGINE EMERGENCY GENERATOR** .................................................................................. 6

**PART 1 GENERAL** .......................................................................................................................... 6

1.1 **REQUIREMENTS** ......................................................................................................................... 6

**PART 2 PRODUCTS** .......................................................................................................................... 6

2.1 **ACCEPTABLE MANUFACTURERS** ................................................................................................. 6

2.2 **EMERGENCY GENERATOR SET** .................................................................................................. 7

2.3 **EMERGENCY GENERATOR SET CONTROLLER** ......................................................................... 9

2.4 **OUTDOOR ENCLOSURE** ............................................................................................................ 10

2.5 **EMERGENCY GENERATOR, LIGHTS, ENCLOSURE RACK** ....................................................... 10

**PART 3 EXECUTION** ......................................................................................................................... 11

3.1 **INSTALLATION** ............................................................................................................................ 11

3.2 **WARRANTY** .................................................................................................................................. 12

**AUTOMATIC TRANSFER SWITCH** .................................................................................................. 13

**PART 1 GENERAL** .......................................................................................................................... 13

1.1 **REQUIREMENTS** ......................................................................................................................... 13

**LOAD BANK** ..................................................................................................................................... 14

**PART 1 GENERAL** .......................................................................................................................... 14

1.1 **REQUIREMENTS** ......................................................................................................................... 14

1.2 **INSTALLATION** ............................................................................................................................ 14

**PART 2 PRODUCTS** .......................................................................................................................... 15

2.1 **ACCEPTABLE MANUFACTURERS** ................................................................................................. 15

2.2 **RATINGS** ....................................................................................................................................... 15

2.3 **MATERIAL AND CONSTRUCTION** ............................................................................................... 15

2.4 **RESISTIVE LOAD ELEMENTS** .................................................................................................... 15

2.5 **COOLING** ..................................................................................................................................... 16

2.6 **PROTECTIVE DEVICES** .............................................................................................................. 16

2.7 **CONTROL PANEL** ..................................................................................................................... 16

2.8 **DOCUMENTATION** ..................................................................................................................... 17
PART 3.0 QUALITY ASSURANCE

3.1 QUALITY CONTROL

3.2 QUALIFICATIONS OF MANUFACTURER

ATTACHMENTS

I. EXISTING LIONS GENERATOR BUILDING

II. EXISTING LIONS GENERATOR

III. EXISTING LIGHTING PANEL / BATTERY CHARGER
GENERAL CONSIDERATIONS

1. Bid Package Contractor is responsible to provide all labor, materials, supervision, equipment, and insurance as required to complete the scope of work identified in the construction drawings and applicable specifications as described in this document.

2. Warranty of Emergency generator, Load Bank, Breakers, and associated equipment shall commence at emergency generator start up after installation by Contractor.

3. All required closeout information including Manufacturer drawings shall be provided in hard copy and electronic format. Operation/maintenance manuals, product data, and all other required information pertinent to the maintenance and operation of the emergency generator and associated equipment as it applies to the Work requirements of this Bid Package shall also be furnished in hard copies and electronic format. It is further understood that no final payments shall be released by the SJBP, prior to the receipt of said required information.

4. Construction sequence is as follows:
   a) Install temporary portable emergency generator
   b) Remove existing emergency generator building roof
   c) Remove existing emergency generator and associated equipment
   d) Demolish existing emergency generator building
   e) Install new emergency generator on existing emergency slab
   f) Remove temporary portable emergency generator

TEMPORARY PORTABLE EMERGENCY GENERATOR SET

1. Owner shall provide a temporary portable emergency generator for facility back-up power while the existing emergency generator is being replaced. The temporary portable emergency generator will be delivered on-site by the Owner.

2. Contractor to work with Owner to determine location of temporary portable emergency generator.

3. Contractor shall provide all equipment, material, and labor required to install and connect temporary portable emergency generator to the existing ATS.

4. Once the temporary portable emergency generator is in place and Contractor has all equipment, material, and personnel required for connecting the temporary portable emergency generator power cables to the ATS disconnect switch, primary power to the existing ATS is ready to be disconnected. The contractor shall coordinate with the Owner before disconnecting primary power. CONTRACTOR TO ENSURE THAT ALL DISCONNECTS ARE LOCKED OUT WITH CONTRACTOR’S AND OWNERS’ LOCKS, AND VERIFY THAT ALL CABLES ARE DE-ENERGIZED BEFORE STARTING ANY WORK ON THE GENERATOR.

5. Contractor, with Owner Supervision, shall disconnect existing emergency generator power cables that run from the Automatic Transfer Switch (ATS) disconnect switch to the emergency generator at the emergency generator disconnect switch and the ATS disconnect switch (both ends of the cable will be disconnected)

6. Connect power cables at the ATS disconnect switch and the temporary emergency generator
disconnect switch. Cables provided by the contractor, cable size is 750 MCM, 2 cables per phase

7. The temporary portable emergency generator shall be tested to ensure that power phasing is correct and generator is operating properly before starting any demolition work on the existing emergency generator or emergency generator building

8. Power interruption shall be limited to no longer than 2 hours per outage.

EXISTING EMERGENCY GENERATOR SET

1. Prior to starting the decommissioning, disconnecting, and removal of the existing emergency generator, the contractor should inspect and familiarize themselves with the existing emergency generator, the existing electrical system, and other equipment at the site, including but not limited to ATS, motor control centers (MCC), transformers, disconnects, breakers, & electrical cabling/wiring.

2. Contractor to provide all material and equipment required for generator removal including crane, crane operator, rigging and riggers, and other equipment as required.

3. The Owner will be responsible for draining fuel tank, supply line, return line, and vent hoses associated with the generator, in addition to the disposal of drained fuels.

4. Once the emergency generator fuel tank, supply line, return line, and vent hoses have been drained and/or vented, all other generator and building wiring to and from the existing generator, lights, and other equipment shall be disconnected. The contractor is to use caution when disconnecting wires to ensure that all are de-energized, and shall label and move out of the way of the building demolition all wires that will be reused for the new emergency generator.

5. Existing emergency generator shall be removed and delivered intact as scrap material to the Parish facility located at 425 Captain G. Bourgeois.

NEW EMERGENCY GENERATOR SET

1. All emergency generator materials and equipment costs, shipping, delivery costs, sales and use tax are to be included in the total cost of the emergency generator.

2. Emergency generator and all associated equipment shall be protected prior to shipping and shall remain protected until delivered to project site.

3. Scheduling of the delivery of the emergency generator, load bank, and associated equipment shall be coordinated with St. John the Baptist Parish (SJBP) and Engineer.

4. The new emergency generator, load bank, main and secondary breakers, supply and return fuel lines, exhaust system, enclosure rack, and associated equipment shall be installed at the SJBP Lions Water Treatment Plant located at 2062 LA-44, Reserve, Louisiana.

5. Emergency generator final unloading location shall be determined by Owner and Engineer. Receiving, unloading, setting, and installation will be by the Contractor. Contractor shall locate new emergency generator over top of existing conduit stub-ups if possible.

6. Existing emergency generator fuel tank shall be reused.
ST. JOHN THE BAPTIST PARISH
SECTION 48101 EMERGENCY GENERATOR
LIONS WATER TREATMENT PLANT

7. Existing supply and return fuel lines shall be removed and replaced. Contractor shall size the new supply and return fuel lines per generator manufacturer specifications. Fuel line shall be carbon steel, welded connections, schedule 40 pipe. The supply and return fuel lines shall be connected to the generator using flexible hose similar to the existing pipe. Supply pipe at the fuel tank shall have a block valve installed. Supply line shall also have a block valve installed by the generator where the metal pipe transitions to the flexible hose. Supply pipe coming off of the fuel tank shall have a check valve installed downstream of the block valve. Supply and return fuel pipe, block valves, and check valve shall be painted yellow per specification 09900 Paints and Coatings.

8. Existing power cabling between the emergency generator and plant ATS distribution panel shall be reused. Contractor to meg out all cables before reusing to certify that cable and insulation is undamaged. If existing cable length is not long enough to reach the new emergency generator connections, a splice kit shall be used to extend cable length. Splice kits shall be approved by the Engineer before being installed.

9. A new 12 AWG cable run in ¾” conduit shall be installed from the existing lighting panel to be relocated on the new enclosure rack to the emergency generator battery charger. Reference Section 2.5, E for lighting panel scope. Power for the battery charger shall come from Circuit #6 from the relocated lighting panel. If the conduit is run on top of the existing emergency generator slab, provisions shall be made to ensure that the conduit does not present a tripping hazard.

10. Once the new emergency generator is in place and Contractor has all equipment, material, and personnel required for connecting the new emergency generator to the ATS disconnect switch power cables, primary power to the existing ATS is ready to be disconnected. The contractor shall coordinate with the Owner before disconnecting primary power. CONTRACTOR TO ENSURE THAT ALL DISCONNECTS ARE LOCKED OUT WITH CONTRACTOR’S AND OWNERS’ LOCKS, AND VERIFY THAT ALL CABLES ARE DE-ENERGIZED BEFORE STARTING ANY WORK ON THE GENERATOR.

11. Power interruption shall be limited to no longer than 2 hours per outage.

12. Disconnect existing temporary portable emergency generator power cables that run from the ATS disconnect switch to the temporary portable emergency generator at the temporary portable emergency generator disconnect switch.

13. Connect the existing power cables that run from the ATS disconnect switch to the emergency generator at the emergency generator disconnect switch and at the ATS.

14. The emergency generator shall be tested to ensure that power phasing is correct and generator is operating correctly. Contractor shall assist in start-up of emergency generator and provide training to SJBP after installation.

15. Owner to remove the temporary portable emergency generator.

16. Contractor shall provide Maintenance and Operation manuals, both hard copy and electronic.

17. Complete warranty as required by the project bid documents for the emergency generator. This includes but not limited to warranties on equipment.
DIESEL ENGINE EMERGENCY GENERATOR

PART 1  GENERAL

1.1 REQUIREMENTS

A. Furnish and install a complete emergency generator package including engine/generator set, load bank, fuel feed lines, muffler, exhaust piping, and wiring as necessary to provide a complete emergency power system.

B. Connect the new emergency generator to the existing Automatic Transfer Switch (ATS) disconnect switch. Contractor shall verify by testing that the existing power cable ATS disconnect switch is sound and provide written test results for review and approval by the Engineer and Owner.

C. Equipment and installation shall comply with NFPA 37, NFPA 70 (NEC), NFPA 99, NFPA 110 Level 2, and UL 2200.

D. It is the intent of this specification to secure an engine-driven emergency generator set that has been prototype tested, factory built, production-tested, and site-tested together with all accessories necessary for a complete installation as shown on the plans and drawings and specified herein.

E. Any exceptions to the published specifications shall be subject to the approval of the engineer and submitted prior to the closing of the bid in accordance with current Louisiana bid law with a line-by-line summary description of all the items of compliance, any items that have been omitted or have been taken exception to, and a complete description of all deviations.

F. It is the intent of this specification to secure an emergency generator set system that has been tested during design verification, in production, and at the final job site. The emergency generator set will be a commercial design and will be complete with all of the necessary accessories for complete installation as shown on the plans, drawings, and specifications herein. The equipment supplied shall meet the requirements of the National Electrical Code and all applicable state and local codes and regulations.

G. All equipment shall be new and of current production by an international, power system manufacturer of emergency generators, and paralleling switchgear. The manufacture shall be a supplier of a complete and coordinated system. There will be single-source responsibility for warranty, parts, and service through a factory-authorized representative with factory-trained technicians.

H. The emergency generator set shall be listed to UL 2200 or submitted to an independent third-party certification process to verify compliance as installed.

PART 2  PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Emergency generator set shall be Caterpillar (Basis for Design), Generac, Cummins, or Kohler, and shall meet all the requirements of these specifications. Specifications are based on Caterpillar for quality and performance criteria.

B. Firms regularly engaged in manufacture of emergency generator systems of types,
sizes, and electrical characteristics required, and whose products are Listed and Labeled by UL, Inc. All replacement repair parts shall be as produced or supplied by the same manufacturer as the emergency generator system. Products of firms that do not maintain factory authorized service organization and spare parts stock are not acceptable for use on this project.

C. Manufacturers shall agree to make factory training/certification, product programs/software and/or operating systems, and continued product updates and/or Tech notes available to SJBP. Required software updates shall be made available at no cost. Software shall be capable of connecting to SJBP network with remote monitoring capability. Any licensing and/or proprietary agreements between the manufacturer/distributor and SJBP shall be completed and in place prior to the manufacture and/or product being acceptable for installation.

2.2 EMERGENCY GENERATOR SET

A. The emergency generator set shall be an Emergency rated, diesel engine-driven emergency generator, turbocharged/after-cooled 12-cylinder engine. It shall provide a rating of 650kW/812kVA when operating at 277/480 VAC, 3 phase, 60 Hz, 0.80 power factor. The rating shall be available for the duration of the outage.

B. The alternator shall be full load capacity with Class H insulation.

C. The emergency generator shall meet a minimum Emissions Certification of EPA Tier 2 – EPA Stationary Emergency Power.

D. The emergency generator set shall be capable of cranking and picking up the assigned loads, meeting the minimum frequency and voltage stability requirements of these specifications, less than 10 seconds after loss of utility power.

E. Engine shall be water cooled with a centrifugal type water pump. The engine shall be equipped with a primary and secondary fuel filter, lube oil filter, intake air filter, fuel oil cooler, and instruments, including a fuel pressure gauge, water temperature gauge, lubricating oil pressure gauge, battery charging ammeter, and engine hour meter.

F. Certified engine horsepower curves shall be submitted showing the manufacturer's approval of the engine rating for emergency generator set power application. Special ratings or "maximum" ratings are not acceptable.

G. Engine shall be provided with an electronic, isochronous, load sharing, temperature compensated, governor capable of keeping the frequency at any constant load, including no load, within a steady state band width of + 0.25% of rated frequency. The governor shall not permit frequency modulation (number of times per second that the frequency varies from the average frequency) to exceed one cycle per second. Single phase sensing control and speed ramp shall be included.

H. Engine shall be furnished with a 24 volt starting system with batteries. Batteries shall be industrial grade lead-acid. Batteries shall be oversized for proper starting in temperature extremes. Batteries shall be housed in the outdoor emergency generator enclosure. The emergency generator set shall be fitted with an integral accessory solid-state, current limiting, float equalizing battery charger. The charger shall be 120 volt input from an external source when the emergency generator is not operating with appropriate output for specific emergency generator set. The charger shall be driven by the prime mover and automatic voltage regulator, capable of charging and
maintaining the starting battery unit (and control battery, where used) in a fully charged condition during a running condition. The charger shall be capable of switching from one rate to another to meet the needs of the discharged battery. It shall be capable of recharging a completely discharged battery in a maximum of eight (8) hours. It shall have: overload protection, voltage surge suppressors, D.C. ammeter, D.C. voltmeter, low D.C. voltage alarm relay, a minimum continuous output of 10 amperes D.C., battery charger malfunction alarm contact, and be third party listed.

I. Engine shall be equipped with a jacket water heater with re-circulating pump. Heaters and pump shall be a single assembly with a single point 120/208 volt power feed connection.

J. Engine shall have radio frequency suppression.

K. Air flow shall be away from engine. The radiator shall be protected by a strong grille or screen guard and the fan shall be provided with a screen guard.

L. Engine shall be equipped with an institutional grade muffler-silencer, with all fittings and associated bolts required. Silencer shall be integral mounted within the outdoor enclosure. Exhaust piping shall be stainless steel. Exhaust pipe size shall be such that exhaust back pressure does not exceed maximum limitation required by engine manufacturer. Silencer shall have a maximum dbA level of 75 at a distance of 23 feet.

M. The emergency generator shall be a salient pole synchronous alternator of the single bearing type built to NEMA and IEEE standards, brushless type, with packaged high performance solid-state voltage regulator and voltage adjusting rheostat.

N. Emergency generator regulator package shall provide a voltage regulation of +0.5% of rated voltage. Voltage regulation shall apply to any load from no load to rated load at rated power factor.

O. The frequency regulation from no load to rated load shall conform with the engine governor performance. For any addition of load up to 90% of rated load, the frequency shall recover to the steady state frequency within 5 seconds.

P. For any addition of load up to and including 90% of rated, the voltage shall recover to and remain within the steady band in not more than 1.5 seconds. The maximum allowable voltage dip during inrush shall be 20%. Documentation regarding this performance shall be included in the shop drawing submittals.

Q. The emergency generator shall have 2/3 pitch. Stator insulation shall be Class "H" rated for 105 degree C rise by resistance above a 40 degree C ambient. Insulation shall be moisture proof.

R. Emergency generator shall have amortisseur windings with the end plates connected between poles to minimize harmonic content and provide good transient performance.

S. Emergency generator shall be equipped with taps or adjustments for voltage such that voltage can be adjusted to match the utility voltage at the ATS within +2%.

T. The emergency generator set shall be completely assembled and tested at the factory prior to shipping to the job site. The engine shall be run under full load conditions for a sufficient length of time to allow all piston rings to seat themselves prior to shipment to job site.
U. The emergency generator set shall be equipped with one (1) service entrance rated, unit mounted, main 1000A circuit breaker sized with appropriate short circuit rating and adjustable LSI settings, no ground fault trip, but shall include shunt trip for engine shut down tripping.

V. The emergency generator set shall be equipped with one (1) service entrance rated, unit mounted, secondary 300A circuit breaker sized with appropriate short circuit rating and adjustable LSI settings, no ground fault trip, but shall include shunt trip for engine shut down tripping.

W. Vibration Isolation
   1. Vibration isolators shall be provided between the engine-alternator and heavy-duty steel base.

2.3 EMERGENCY GENERATOR SET CONTROLLER

A. Emergency generator unit shall contain a emergency generator-mounted electronic modular control panel. Panel shall be environmentally sealed, solid-state, microprocessor-based for engine control and AC metering. The control panel shall have a digital display and keypad to provide access to data. The display provides complete and understandable information, and the keypad allows easy local access.

B. Alarm panel shall provide for automatic and manual starting and stopping of engine with programmable safety shutdowns and shall operate on 24 volts DC. Power shall be supplied from the emergency generator starting batteries.

C. Control panel shall be password protected

D. Control panel shall have integrated PLC programmable functions

E. Control panel shall meet a temperature range of -30 to 70 degrees C

F. Control Panel shall have a Graphic 128 X 64 LCD display.

G. Controls shall provide for automatic shutdown in case of high-water temperature, overspeed, overcrank, or low oil pressure.

H. The control panel shall be designed to meet NFPA 99 and 110 requirements for a Level 1 emergency power system.

I. The control panel shall have an alarm and event log. The alarms and indications shall comply with NFPA 110 and NEC Section 700, and shall include, but not be limited to, the following as a minimum:
   1. Battery charger malfunction
   2. Low lubricating oil pressure
   3. Low water temperature
   4. Excessive water temperature
   5. Overcrank
   6. Overspeed
   7. Ammeter with phase selector switch
   8. Emergency generator operating
   9. Alarm buzzer and silence switch (for all alarms)
10. Lamp test switch (for all lamps)
11. Normal utility power on
12. Emergency power system operating
13. Emergency bus volt meter with phase selector
14. Emergency bus frequency meter
15. D.C. voltmeter
16. Oil pressure
17. Coolant temperature
18. Running time meter
19. Low fuel
20. Fuel leak

2.4 OUTDOOR ENCLOSURE

A. Emergency generator shall be housed in an enclosure constructed of steel, intended for both weather protection as well as sound reduction. Housing shall be painted steel, 14 gauge with access doors with panic hardware. Doors (two (2) on each side) shall provide full access for operation and servicing and be vertically hinged to allow 180 degrees opening rotation and retention with door stays. Housing shall have a pitched roof for water run-off. Package (including height of pad) provided shall allow emergency generator access to control panel and service doors at a code compliant height without the need for a service platform. Color of enclosure shall be white (confirm during submittal stage).

B. Critical silencer and 100% lined with sound deadening material.

C. Air intake damper shall be sized to allow combustion and cooling air to enter with a face velocity to maintain a maximum ambient temperature of 110 degree F. Air discharge damper shall be gravity operated.

D. Air shall enter and discharge through sound attenuators at each damper and acoustic insulation material shall be installed to reduce engine emergency generator noise to an average of 75 dbA at 23 feet. Acoustic insulation material shall consist of sound absorbing material covered by a perforated liner; loose or adhesive sound foams are not acceptable.

E. Dimensions shall be sufficient to house emergency generator and associated equipment, including silencer and batteries.

F. Silencer shall be integral within the enclosure.

G. Engine shall be provided with oil and water drains to exterior of enclosure with a bronze body ball valve installed on engine and plumbed to exterior coupling with high quality hose. Fumes disposal shall be extended to radiator discharge using an oil resistant high quality hose.

H. Rodent proof stub up area.

2.5 EMERGENCY GENERATOR, LIGHTS, ENCLOSURE RACK

A. The existing generator is currently housed in a generator building. The generator building roof and walls will be demolished by this project and the new emergency
generator will be installed on the remaining emergency generator slab. The slab dimensions are 316”L x 208”W. Contractor shall confirm that the proposed emergency generator will fit on the existing generator slab, and that sufficient space is available to perform maintenance on the generator.

B. Two LED floodlights shall be installed, one on the west end and one on the east end of the generator slab. The lights shall be sized to provide a minimum of 700 lumens for the emergency generator area. The lights shall be installed on new metal poles designed to withstand wind speeds of 130 mph. The poles shall be a minimum of 15 feet tall. The floodlights shall be 120V, 1-phase, LED, and power shall be supplied from the relocated lighting panel installed on the enclosure rack. The location of the light poles to be verified in the field. See light pole concrete foundation detail in the plans. Conduit and wiring for the lights will come in the bottom or side of the light pole.

C. Power for the lights will come from circuits #1 and #3 in the lighting panel, using 12 AWG cable run in ¾” conduit. Conduit shall be run either underground around the outside edge of the existing emergency generator slab or on the side of the emergency generator slab. If the conduit is run on top of the existing emergency generator slab, provisions shall be made to ensure that the conduit does not present a tripping hazard.

D. The Contractor shall fabricate and install a new equipment rack. The rack shall be sized to accommodate all panels listed below and any others required for Lions emergency generator. The rack shall be constructed of Unistrut stainless steel type framing material using stainless steel hardware connectors. Panel rack shall be installed on the existing generator slab, in the same location as where the lighting panel was located.

E. The existing Lighting Panel is currently mounted on the generator building wall. Contractor to remove and store during building demolition and install on rack once demolition is complete. Contractor to pull back all wiring going from the lighting panel to the emergency generator, UV Building, and to the emergency generator building and move out of the way of building demolition. Once the emergency generator building is demolished and the lighting panel is installed on the enclosure rack, the following circuits will be reconnected:

1. Circuit #12 - UV Building receptacles
2. Circuit #14 - UV Building Optiview Panel
3. Circuit #16 - UV flow meter

The following circuits will be run from the lighting panel to new equipment

1. Circuit #1 – West lights
2. Circuit #2 – panel receptacle, provided by Contractor
3. Circuit #3 – East lights
4. Circuit #6 - emergency generator battery charger

PART 3 EXECUTION

3.1 INSTALLATION

A. Engine emergency generator set shall be mounted on heavy structural steel base which shall be installed on existing concrete slab. Emergency generator set shall be mounted using heavy duty, open, stable spring vibration dampers of the type approved for seismic areas. Vibration dampers shall be bolted to the base.
B. All power wiring to the emergency generator shall be in rigid metal conduit using seal-tight LMFC flex connection(s) at the emergency generator.

C. Existing power cabling between the emergency generator and plant distribution panel shall be reused. The contractor shall make every effort possible to mount the generator over the existing stub-ups, currently located under a wooden box in the generator building. Contractor to meg out all cables before reusing to certify that cable and insulation is undamaged.

D. If existing cable length is not long enough to reach the new emergency generator connections, a splice kit shall be used to extend cable length. Splice kits shall be approved by the Engineer before being installed.

E. Submittals and shop drawings shall include cut sheets, drawings, details, and instructions necessary for complete installation of the emergency generator set and all associated equipment such as fuel piping, wiring, alarms and controls, panel rack, light poles, etc.

F. Contractor shall provide a competent factory trained service engineer/technician to coordinate the installation, check-out, and start-up and testing of the complete emergency generator system.

G. On-site testing shall include testing of all safety devices and shall include a four hour running test consisting of one hour at 50% load, one hour at 75% load, and two hours at 100% load. Contractor shall furnish necessary load banks for testing. A copy of the load test report shall be sent to the engineer and SJBP. In addition, contractor shall refill fuel tank upon completion of load testing.

H. In addition, on-site testing shall include a complete power outage test with actual building loads to confirm proper operation of all modifications. Testing shall be coordinated with local utility and SJBP.

I. Supplier shall provide complete on-site training in the operation of the systems for SJBP at times chosen by the SJBP to include all work shifts.

J. Supplier shall provide, upon completion of installation but before final acceptance by SJBP, three complete sets of operating instructions, maintenance manuals, and drawings, showing full details for care and maintenance of each item of equipment. In addition, a simplified set of step-by-step operating instructions, encased in a suitable frame for placing at the emergency generator location, shall be provided with the operation and maintenance manuals.

3.2 WARRANTY

A. The emergency generator set and associated equipment shall be warranted by the manufacturer against defective parts or workmanship for a period of five (5) years from the date of final inspection and acceptance. Warranty conditions shall be included in submittals. Warranty shall include all parts, labor (including travel to and from the job site), expenses, equipment necessary to perform replacement and/or repairs, and costs of shipping equipment to and from the repair facility.
AUTOMATIC TRANSFER SWITCH

PART 1        GENERAL

1.1 REQUIREMENTS

A. The Automatic Transfer Switch is existing and will not require any work on it by this project.

B. Existing cables from the ATS disconnect switch will be reused to connect the emergency generator to the ATS. Contractor shall verify by testing that the existing power cable from the ATS disconnect switch to the generator is sound and provide written test results for review and approval by the Engineer and Owner.
LOAD BANK

PART 1 GENERAL

1.1 REQUIREMENTS

A. This specification contains the minimum requirements for the design, manufacture, and testing of a 200kW UL listed, radiator or enclosure top mounted style resistive load bank.

B. The load bank is required for periodic exercising and testing of the portable emergency generator. The load bank shall use the air discharge from the generator radiator for cooling.

C. This specification shall apply if the load bank is supplied to the purchaser, or as a part of other equipment.

D. Should the vendor take exception to any part of this specification, it shall be stated in the bid, and referenced to the specification line number.

E. The manufacturer shall submit for review technical data including features, performance, electrical characteristics, physical characteristics, ratings, accessories, and finishes.

F. Shop drawings shall include dimensional plans, front and side elevations and mounting details sufficient to properly install the load bank. Load bus configuration and load connections termination area shall be clearly identified.

G. Electrical schematic drawings shall be provided to detail the operation of the load bank and the provided safety circuits. Over-current protection and control devices shall be identified and their ratings marked. A system interconnection drawing shall be included for control wiring related to the load bank.

H. The equipment covered by this specification shall be designed with the latest applicable NFPA-70, NEMA, NEC, and ANSI standards.

I. The load bank shall be listed to UL Standard 508A.

1.2 INSTALLATION

A. The contractor is responsible for coordinating load bank installation on the emergency generator with the load bank manufacturer, generator manufacturer, and fabrication shop doing load bank installation. The load bank will be installed on top of the emergency generator enclosure. Contractor to work with the load bank and emergency generator manufacturers to ensure that the load bank has sufficient air flow for cooling and that recommended clearances for air discharge and that the emergency generator exhaust flow is not restricted.

B. The fabricator shall provide and install cable and conduit from the emergency generator secondary breaker to the load bank Main Power bus bar.

C. The cable shall be 250 MCM and is sized for a 200kW (240A), 480 Volts, 3-Phase circuit.
D. The cable size is based on the cable run being 50’ or less, with a 3% voltage drop. Contractor to confirm that the cable distance meets the distance criteria.

E. The fabricator shall install the load bank control panel on the side of the emergency generator enclosure. The control panel shall be provided in a NEMA 4X enclosure. The fabricator shall provide and install cable and conduit from the emergency generator power source to the load bank control panel.

**PART 2 PRODUCTS**

2.1 ACCEPTABLE MANUFACTURERS

A. Specified is Avtron 1500 series roof mounted load bank. Approved equivalent by Trystar LD-R and Hilkar are acceptable. Any alternate shall be submitted for approval to the consulting engineer prior to bid in accordance with current Louisiana bid law. Alternate bids must list any deviations from this specification.

2.2 RATINGS

A. The total capacity of the load bank shall be rated 200 kW at 480 Volts, 3-Phase, 3-Wire, 60 Hertz, 240 Amps per Phase at unity Power Factor.

B. The load step resolution shall be a nominal 20% of the load bank rating.

C. The load bank shall be designed for continuous duty cycle operation with no limitations.

D. Radiator/Duct mounted load banks are designed as a supplemental load to the generator set, and shall be sized at 50-60% of generator nameplate kW rating (not 100%).

2.3 MATERIAL AND CONSTRUCTION

A. The load bank shall be suitable for installation on the generator radiator core, within the radiator exhaust ductwork, or on the roof of the generator set enclosure.

B. Due to the high radiator exhaust from the generator, the load bank shall be constructed of heavy gauge of aluminized steel per ASTM A463. Aluminized steel provides superior corrosion protection and extended service life, with a better tolerance to high heat exposure compared to the more common galvanized steel.

C. The main input load bus, load step relays, fuses and control relays shall be located within the load bank enclosure.

D. The load bank shall have a self-contained 2” flange on the top and bottom edges for mounting. Load bank core size shall be calculated once the load bank manufacturer is selected. Load banks with a depth of 13” shall have provisions for overhead lifting and duct adaptors.

E. The load bank shall be designed for installation and operation outdoors. Load bank shall have a screened exhaust or a louver. Load bank will be painted ASA-61 grey and have a baked polyester powder coated finish with a film thickness of 2.8 +/- 0.4 mils per coat.

2.4 RESISTIVE LOAD ELEMENTS

A. Load elements shall be Avtron Helidyne, helically wound chromium alloy rated to
operate at approximately ½ of maximum continuous rating of wire. Elements must be fully supported across the entire length within the air stream by segmented ceramic insulators on stainless steel rods. Element supports shall be designed to prevent a short circuit to adjacent elements or to ground.

B. The change in resistance due to temperature shall be minimized by maintaining conservative watt densities.

C. The overall tolerance of the load bank shall be −0% to +5% kW at rated voltage. A − 5%, +5% rating allows the load bank to deliver less than rated kW and shall not be used. The load bank must deliver full rated kW at rated voltage.

D. Sealed wire type elements (which have the internal resistance wire totally enclosed) prevent internal cooling of the element wire and shall not be used.

2.5 COOLING
A. The engine generator shall provide sufficient CFM of air to cool the load bank. The load bank shall have a static pressure drop of approximately 0.1” H2O at design velocity (50 ft/min).

2.6 PROTECTIVE DEVICES
A. An over-temperature switch shall be provided to sense the load bank exhaust. The switch shall be electrically interlocked with the load application controls to prevent load from being applied in the event of an over temperature condition.

B. To provide for major fault protection, branch fuses shall be provided on all three phases of switched of all load steps. Branch fuses shall be current limiting type with an interrupting rating of 200K A.I.C.

C. The exterior of the load bank shall have appropriate warning/caution statements on access panels.

2.7 CONTROL PANEL
A. The control panel shall be remote 19” control panel housed in a NEMA 4 type wall mount enclosure shall be provided. The panel will be mounted on the emergency generator enclosure.

B. An integral control power transformer shall be provided to supply 120V, 1 phase, 60 Hz to the load banks control and safety circuitry. Transformer primary and secondary control circuits shall be fuse protected.

C. The control panel shall contain the following manual controls:
   1. Power ON/OFF switch
   2. Master load ON/OFF switch.
   3. Load step switches for ON/OFF application of individual load steps.

D. Control panel visual indicators shall be as follows:
   1. Power ON indication light.
   2. OVER TEMPERATURE light.

E. A standard remote load dump circuit shall be provided as part of the load bank control circuit. Provisions shall be provided to remove the load bank off-line from the operation of a remote normally closed set of auxiliary contacts from a transfer switch.
or other device. In the event of the remote contact opening, all load is removed.

F. A digital meter shall be installed in the control panel to show 3-line digital display of voltage, current, frequency, and power measurement. The software interface to the meter shall allow for real-time data acquisition and data logging from a laptop PC.

2.8 DOCUMENTATION

A. Installation and operation manuals shall be provided with the equipment and shall include complete details for the installation, commissioning, operation, and maintenance of the load bank.

B. The manuals shall include the electrical schematic and interconnect drawings for the power and control wiring for the load bank and all control devices.

C. A complete parts list with part numbers, device identification, rating shall be included in the manuals. The original manufacturers name and part number shall be included in the parts listing.

D. The manuals shall be provided electronically on a USB drive.

PART 3.0 QUALITY ASSURANCE

3.1 QUALITY CONTROL

A. The load bank shall be fully tested using a test specification written by the supplier. Tests shall include electrical functional testing, verifying conformance to assembly drawings and specifications. Each load step shall be cold resistance checked to verify proper calibration of resistive load steps and proper ohmic value.

B. The manufacturer shall maintain this data on file for inspection purposes by the purchaser. Tests using high potential equipment shall be performed to ensure isolation of the load circuits from the control circuits and to determine isolation of the load circuits from the load bank frame. Tests of all safety circuits shall be performed to verify conformance to the specification.

C. All electrical circuits shall have a high potential insulation resistance test performed at twice rated voltage plus 1000 VAC to assure insulation integrity.

D. All quality control test equipment shall be regularly maintained and calibrated to traceable national standards.

E. The Company’s Quality System shall be ISO9001 Certified.

3.2 QUALIFICATIONS OF MANUFACTURER

A. The load bank shall be manufactured by a firm regularly engaged in the manufacture of load banks and who can demonstrate at least twenty-five (25) years’ experience with at least twenty-five (25) installations of load banks similar or equal to the ones specified herein.

B. A two (2) year warranty shall be provided for both the resistors and the load bank. A longer warranty period shall be available as a purchased option.
I. EXISTING LIONS GENERATOR BUILDING
II. EXISTING LIONS GENERATOR
III. EXISTING LIGHTING PANEL / BATTERY CHARGER

LIGHTING PANEL - REMOVE FROM WALL AND STORE. PULL CABLE OUT OF THE WAY DURING BUILDING DEMOLITION. LIGHTING PANEL WILL BE INSTALLED ON NEW RACK AND REUSED. CABLE WILL BE REUSED.

BATTERY CHARGER - REMOVE FROM WALL AND GIVE TO OWNER
GENERAL CONSIDERATIONS

1. Contractor is responsible to provide all labor, materials, supervision, equipment, and insurance as required to complete the scope of work identified in the construction drawings and applicable specifications as described in this document.

2. Warranty of Manual Transfer Switch, Breakers, and associated equipment shall commence at portable emergency generator start up after installation by Contractor.

3. All required closeout information including Manufacturer drawings shall be provided in hard copy and electronic format. Operation/maintenance manuals, product data, and all other required information pertinent to the maintenance and operation of the portable emergency generator and associated equipment as it applies to the Work requirements of this Bid Package shall also be furnished in hard copies and electronic format. It is further understood that no final payments shall be released by the SJBP, prior to the receipt of said required information.

4. Construction sequence is as follows:
   a) Parish to move existing portable emergency generator to new location
   b) Remove roof from the existing emergency generator building
   c) Remove existing emergency generator and associated equipment
   d) Demolish existing generator building
   e) Replace Automatic Transfer Switch (ATS) with Manual Transfer Switch (MTS)
   f) Parish to move existing portable generator back to original location

EXISTING PORTABLE EMERGENCY GENERATOR SET

1. The Owner shall move the existing portable emergency generator to new temporary location, see Attachment I for proposed location.

2. Contractor to remove existing disconnect switch in the emergency generator building and relocate the switch in the MCC room of the RO Building. The existing portable emergency generator power cables will be run to the disconnect switch through the existing pull box mounted on the exterior of the RO Building. New cables will be installed on the disconnect switch of sufficient length to reach the MCC lugs. The disconnect switch shall be locked out with the Owners lock in the OFF position, and the cable ends shall be taped up and stored out of the way. Contractor shall not make any electrical connections to the existing portable emergency generator.

3. The above work shall not be started until all equipment, materials, etc. needed to perform the work is on-site in order to limit the length of time the facility is running on one power source.

EXISTING EMERGENCY GENERATOR SET

1. Prior to starting the decommissioning, disconnecting, and removal of the existing emergency generator, the contractor should inspect and familiarize themselves with the existing emergency generator, the existing electrical system, and other equipment at the site, including but not limited to ATS, motor control centers (MCC), transformers, disconnects, breakers, & electrical cabling/wiring.

2. Contractor to provide all material and equipment required for generator removal including crane, crane operator, rigging and riggers, and other equipment as required.
3. The Owner will be responsible for draining fuel tank, supply line, return line, and vent hoses associated with the generator, in addition to the disposal of drained fuels.

4. Once the emergency generator fuel tank, supply line, return line, and vent hoses have been drained and/or vented, all other generator and building wiring to and from the existing generator, lights, and other equipment shall be disconnected. The contractor is to use caution when disconnecting wires to ensure that all are de-energized.

5. Existing emergency generator shall be removed and delivered intact as scrap material to the Parish facility located at 425 Captain G. Bourgeois.

**REPLACE AUTOMATIC WITH MANUAL TRANSFER SWITCH**

1. The following work shall not be started until all equipment, materials, manpower, etc. needed to perform the work is on-site in order to limit the length of time the facility is shutdown. Power interruption shall be limited for no longer than 2 hours per outage.

2. The Entergy Main Disconnect in the MCC will be closed by Owner. OWNER AND CONTRACTOR TO ENSURE THAT ALL DISCONNECTS ARE LOCKED OUT WITH CONTRACTOR’S AND OWNERS’ LOCKS, AND VERIFY THAT ALL CABLES ARE DE-ENERGIZED BEFORE STARTING ANY WORK ON THE GENERATOR.

3. The power cable coming from the ATS to the MCC shall be removed. The power cables from the Entergy Main Disconnect shall be disconnected from the Main Disconnect and reconnected using the MCC lugs, see Attachment II.

4. In the event of an Entergy power failure, the Entergy power cables will be disconnected by the Owner, and the portable emergency generator cables will be connected.

5. The existing ATS cabinet shall have all cables disconnected and the cabinet shall be removed and taken to the Parish facility located at 425 Captain G. Bourgeois. If the cabinet needs to be taken apart for removal, the Contractor shall reassemble it before taking it to storage.

6. The new MTS cabinet shall be installed in the same location as the ATS cabinet.

7. The Entergy Main Disconnect shall be verified to be OFF. Once this is verified, the Entergy Main Disconnect power cables shall be connected to the new MTS.

**EXISTING PORTABLE EMERGENCY GENERATOR**

1. The existing portable emergency generator shall be moved from the temporary location to the original location by the Owner.

2. Power for the battery charger shall come from Lighting Panel 1P, circuit #15, located in the RO Building. Contractor to install ¾” conduit and #12 AWG cable from circuit #15 breaker to the existing portable emergency generator battery charger, using the trench dug for the power cable conduit. Owner will make the connection to the existing portable generator battery charger.

3. Power cabling between the existing emergency generator through the cable pull box shall be pulled back through the cable pull box and the cable and conduit abandoned.

4. New power cabling between the existing portable emergency generator and MTS shall be installed in 2 2 ½” conduits run from the cable pull box to the new portable emergency generator location. The conduits shall be stubbed-up and a slab shall be poured around them.
ST. JOHN THE BAPTIST PARISH
SECTION 48102 EMERGENCY GENERATOR
WOODLAND WATER TREATMENT PLANT

Cable shall be 500 MCM, 2 per phase, and shall be installed in the 2 ½” metal conduits. Owner shall make all connections to the existing portable emergency generator.

5. The power cables coming from the existing portable emergency generator shall be connected to the new MTS. Power interruption shall be limited for no longer than 2 hours per outage.

6. The Entergy Main Disconnect in the MCC will be closed by Owner. OWNER AND CONTRACTOR TO ENSURE THAT ALL DISCONNECTIONS ARE LOCKED OUT WITH CONTRACTOR’S AND OWNERS’ LOCKS, AND VERIFY THAT ALL CABLES ARE DE-ENERGIZED BEFORE STARTING ANY WORK.

7. The power cables from the Entergy Main Disconnect shall be disconnected from the MCC lugs and reconnected to the Entergy Main Disconnect. The power cable coming from the MTS to the MCC shall be reconnected.

8. The Entergy Main Disconnect in the MCC will be opened by Owner. Owner and Contractor to check to ensure that primary and secondary power is restored to the MCC.

9. Contractor shall assist in start-up of existing portable emergency generator.
PART 1 GENERAL

1.1 REQUIREMENTS

A. Contractor shall furnish, deliver, install and test the manual transfer switches as specified herein and in accordance with the drawings.

B. The contractor shall remove the existing Automatic Transfer Switch (ATS) cabinet. The new Manual Transfer Switch (MTS) cabinet shall be installed in the same location.

C. The Contractor shall remove the existing conduit and cable from the Cable pull box on the north wall of the RO Building. The existing conduit shall be removed so as not to obstruct installation of new conduit.

D. New conduit shall be installed through the Cable pull box to the existing portable emergency generator. The cable on the existing portable emergency generator end will be stubbed up one foot above grade. Once the cables are pulled, the conduit will be sealed with foam sealant. A new slab will be installed at the stub-ups. Four bollards will be installed around the slab, one at each slab corner. Owner will make the connection to the existing portable generator battery charger.

E. The cable shall be two (2) cables per phase, 500 MCM, copper THHN cable, installed in 2 - 2 1/2”” rigid metal conduit using seal-tight LFMC flex connection(s).

F. The cable size is based on the cable run being 100’ or less, with a 3% voltage drop. Contractor to confirm that the cable distance meets the distance criteria.

G. Equipment and resulting installation shall comply with all state and local codes.

1.2 REFERENCES

A. The transfer switch shall be designed, manufactured and tested in accordance with the following latest applicable standards:

1. UL 1008: Standard for Safety - Transfer Switch Equipment
2. CSA C22.2 No. 178: Automatic Transfer Switches
3. UL 991: Standard for Tests for Safety-Related Controls Employing Solid-State Devices
4. NFPA 70: National Electrical Code
5. NFPA 99: Essential Electrical Systems of Health Care Facilities
6. NFPA 110: Emergency and Standby Power Systems
7. NEMA ICS 10: Electromechanical AC Transfer Switch Equipment
8. IEEE 446: Recommended Practice for Emergency and Standby Power Systems
ST. JOHN THE BAPTIST PARISH
SECTION 48102 EMERGENCY GENERATOR
WOODLAND WATER TREATMENT PLANT

1.3 SUBMITTALS – FOR REVIEW/APPROVAL

A. The following information shall be submitted to the Engineer:

1. Front view and plan view of the assembly
2. Schematic diagram
3. Conduit space locations within the assembly.
4. Assembly ratings including:
   • Voltage rating
   • Continuous current rating
   • Withstand and closing current ratings
5. Cable terminal sizes
6. Product Data Sheets.

1.4 SUBMITTALS – FOR CONSTRUCTION

A. The following information shall be submitted for record purposes:

1. Final as-built drawings and information for items listed in section 1.03 and shall incorporate all changes made during the manufacturing process.
2. Wiring diagrams
3. Certified production test reports
4. Installation information

1.5 QUALIFICATIONS

A. The manufacturer of the assembly shall be the manufacturer of the major components within the assembly.

B. For the equipment specified herein, the manufacturer shall be ISO 9001 or 9002 certified.

C. The manufacturer of this equipment shall have produced similar electrical equipment for a minimum period of five (5) years. When requested by the Engineer, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.

1.6 DELIVERY, STORAGE AND HANDLING

A. Equipment shall be handled and stored in accordance with manufacturer’s instructions. One (1) copy of these instructions shall be included with the equipment at time of shipment.

B. Equipment being stored prior to installation shall be maintained in a clean and dry condition. If stored outdoors, indoor equipment shall be covered and heated, and outdoor equipment shall be heated.

1.7 OPERATION AND MAINTENANCE MANUALS

A. Equipment operation and maintenance manuals shall be provided with each assembly shipped and shall include instruction leaflets and instruction bulletins for the
PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Manual Transfer Switch specified is Eaton. Approved equivalent by ASCO, Cummings, or Generac are acceptable. Any alternate shall be submitted for approval to the consulting engineer prior to bid in accordance with current Louisiana bid law. Alternate bids must list any deviations from this specification.

B. The listing of specific manufacturers above does not imply acceptance of their products that do not meet the specified ratings, features and functions. Manufacturers listed above are not relieved from meeting these specifications in their entirety.

C. Provide complete 1000A main breaker, three-phase, four-pole with switched neutral, NEMA 1 steel enclosure, open transition MTS to the requirements as noted in the specifications.

2.2 CONSTRUCTION

A. Transfer switches shall be UL 1008 listed for application in their intended enclosures at 100% of continuous ampere rating and shall meet or exceed UL 1008 endurance test criteria to include rate of operation and number of operation cycles.

1. The transfer switch shall be designed and intended for switching the load connection between two power sources.

2. The transfer switch shall include mechanical interlocks to prevent unintentional paralleling of the power sources.

3. The transfer switch shall be of double throw construction and include molded case switches and/or circuit breakers in a fixed mount configuration, Eaton series or approved equal, with high-endurance characteristics capable of no-load and full-load interruptions at rated current equal to or exceeding UL 1008 endurance ratings.

4. Molded case circuit breakers shall include integral overcurrent protection equipped with a thermal-magnetic trip element for source1 and source 2.

5. Molded case switches/circuit breakers shall include a fixed instantaneous override trip element providing protection against high fault currents.

6. Molded case switches/circuit breakers shall be encased in a rigid housing constructed of durable high-strength insulating material with excellent dielectric characteristics capable of withstanding high-dynamic and thermal stresses. The molded case switch/circuit breaker interrupt current rating shall equal or exceed the transfer switch short-circuit withstand closing current rating.

7. Molded case switches/circuit breakers shall include arc extinguishers that confine, divide and extinguish an arc that may develop between the main contacts.

8. The transfer switch shall include a reliable mechanical operator mechanism that
ST. JOHN THE BAPTIST PARISH
SECTION 48102 EMERGENCY GENERATOR
WOODLAND WATER TREATMENT PLANT

is capable of opening and closing the main contacts.

9. Front access to all molded case switch/circuit breaker connection points shall be provided for ease of troubleshooting.

10. The transfer switch main contacts shall be of silver composition, manually operated and mechanically held in position.

11. A removeable, steel dead-front panel shall be mounted in front of each molded case switch/circuit breaker providing a physical barrier when the front door is open.

12. The transfer switch shall include a permanently affixed handle for manually initiating and operating a load transfer between the power sources under full-rated load conditions.

13. The transfer switch shall provide colored, mechanical indication of source 1 and source 2 main contact position (open/closed).

14. A copper ground bus shall be furnished firmly secured to the enclosure structure.

15. Control wire bundles shall be secured to the assembly with nylon ties, pre-punched lances or anchors. All current transformer secondary leads shall first be connected to shorting terminal blocks with shorting screws. Control wire shall be marked with an origin and destination over the entire length of the wire using a cured ink process to the maximum extent possible. Where ink marking is not possible, printed sleeve wire markers at each end of control wire shall be provided.

16. Mechanical type lugs shall be provided for all source 1, source 2, and load terminations suitable for copper or aluminum cable.

17. Two-hole compression type lugs shall be provided for all source 1, source 2, and load terminations suitable for copper or aluminum cable.

B. Transfer switches shall be open transition (break-before-make), and permit the manual operator to pause in the load disconnect (“neutral”) position.

C. Transfer switches requiring a switched neutral shall include a fully rated fourth pole that is identical to the other power poles. Switched neutral poles which are add-on, overlap, or not capable of breaking full rated load current are not acceptable.

D. Transfer switches requiring a solid neutral shall include a fully rated, solid neutral plate.

E. Transfer switches shall be capable of being operated manually under full-rated load conditions. Manual operation shall be accomplished by use of a permanently affixed handle. Removable handles are not acceptable. Manual operators requiring power source disconnection or de-energization prior to manual operation are not acceptable.

2.3 ENCLOSURE

A. Transfer switch shall be provided in a NEMA 1 enclosure suitable for use in environments indicated by the drawings.
ST. JOHN THE BAPTIST PARISH  
SECTION 48102 EMERGENCY GENERATOR  
WOODLAND WATER TREATMENT PLANT

B. Transfer switch steel enclosure shall include a light gray ANSI 61 finish.
C. The assembly shall be provided with adequate lifting means and shall be capable of being moved into installation position and mounted using the anchor points.
D. Surge protection device: Provide a 100KA surge protection device
E. Space heater: Provide a 100KW rated space heater with thermostat.

2.4 WITHSTAND AND CLOSING CURRENT RATINGS
A. Short-circuit
   1. The transfer switch shall be UL1008 listed and rated for use in a circuit capable of delivering the short-circuit current shown on the drawings.
   2. The transfer switch shall have a short-circuit withstand and closing current rating of 65 KA at 480 volts.

PART 3 EXECUTION

3.1 FACTORY TESTING
A. The following standard factory tests shall be performed on the equipment provided under this section. All tests shall be in accordance with the latest version of UL and NEMA standards.
   1. Insulation check to ensure the integrity of insulation and continuity of the entire system
   2. Visual inspection to ensure that the switch matches the specification requirements and to verify that the fit and finish meet quality standards
   3. Mechanical tests to verify that the switch's power sections are free of mechanical hindrances
   4. Electrical tests to verify the complete electrical operation of the switch and to set up time delays and voltage sensing settings of the logic

B. The manufacturer shall provide a certified copy of factory test reports.

3.2 INSTALLATION
A. The Contractors shall install all equipment per the manufacturer’s recommendations and the contract drawings.

B. All necessary hardware to secure the assembly in place shall be provided by the contractor.

3.3 TRAINING
A. The Contractor shall conduct a training session for up to five (5) owner’s representatives for 1 normal workday at Woodland Water Treatment Plant. The training program shall consist of the instruction on the operation of the transfer switch and the major components within the assembly.

3.4 FIELD SERVICE ORGANIZATION
A. The manufacturer of the MTS shall also have a national service organization that is available throughout the contiguous United States and is available on call 24 hours a day, 365 days a year.

3.5 WARRANTY

A. The MTS shall be guaranteed against defective parts or workmanship for a period of two (2) years from the date of final inspection and acceptance. Warranty conditions shall be included in submittals. Warranty shall include all parts and labor, including travel to and from the job site, expenses and equipment necessary to perform replacement and and/or repairs, and costs of shipping equipment to and from the repair facility.
ST. JOHN THE BAPTIST PARISH
SECTION 48102 EMERGENCY GENERATOR
WOODLAND WATER TREATMENT PLANT
ATTACHMENTS

I. EXISTING PORTABLE EMERGENCY GENERATOR PROPOSED LOCATION
II. ENTERGY POWER CONNECTION

DISCONNECT ATS AT THESE LUGS
RECONNECT ENTERGY POWER USING THESE LUGS
III. EXISTING GENERATOR
IV. EXISTING GENERATOR CONDUIT / DISCONNECT SWITCH
V. EXISTING AUTOMATIC TRANSFER SWITCH

EXISTING AUTOMATIC TRANSFER SWITCH CABINET TO BE REMOVED AND THE NEW MANUAL TRANSFER SWITCH CABINET TO BE INSTALLED IN THE SAME LOCATION.
VI. PORTABLE GENERATOR POWER CABLE PANEL
ST. JOHN THE BAPTIST PARISH
SECTION 48102 EMERGENCY GENERATOR
WOODLAND WATER TREATMENT PLANT

VII. LIGHTING PANEL
Table of Contents

GENERAL CONSIDERATIONS .................................................................................................................. 3
TEMPORARY PORTABLE EMERGENCY GENERATOR SET .................................................................... 3
EXISTING EMERGENCY GENERATOR SET .......................................................................................... 4
NEW EMERGENCY GENERATOR SET .................................................................................................. 4
DIESEL ENGINE EMERGENCY GENERATOR ..................................................................................... 7
PART 1 GENERAL ................................................................................................................................. 7
  1.1 REQUIREMENTS ............................................................................................................................ 7
PART 2 PRODUCTS ............................................................................................................................... 7
  2.1 ACCEPTABLE MANUFACTURERS ............................................................................................... 7
  2.2 EMERGENCY GENERATOR SET ............................................................................................... 8
  2.3 EMERGENCY GENERATOR SET CONTROLLER .................................................................... 10
  2.4 OUTDOOR ENCLOSURE ............................................................................................................. 11
  2.5 EMERGENCY GENERATOR LOCATION ..................................................................................... 11
PART 3 EXECUTION .............................................................................................................................. 12
  3.1 INSTALLATION ............................................................................................................................ 12
  3.2 WARRANTY .................................................................................................................................... 12
AUTOMATIC TRANSFER SWITCH ...................................................................................................... 14
PART 1 GENERAL ............................................................................................................................... 14
  1.1 REQUIREMENTS ............................................................................................................................ 14
  1.2 CODES AND STANDARDS ......................................................................................................... 14
PART 2 PRODUCTS ............................................................................................................................... 14
  2.1 ACCEPTABLE MANUFACTURERS ............................................................................................... 14
  2.2 MECHANICALLY HELD ATS ....................................................................................................... 15
  2.3 MICROPROCESSOR CONTROLLER .......................................................................................... 15
  2.4 ENCLOSURE ............................................................................................................................... 16
  2.5 CONTROLLER DISPLAY AND KEYBOARD .......................................................................... 16
  2.6 VOLTAGE, FREQUENCY AND PHASE ROTATION SENSING .................................................... 17
  2.7 TIME DELAYS ........................................................................................................................... 17
  2.8 ADDITIONAL FEATURES .......................................................................................................... 18
  2.9 WITHSTAND AND CLOSING RATINGS .................................................................................... 20
  2.10 TESTS AND CERTIFICATIONS ............................................................................................... 20
  2.11 SERVICE REPRESENTATION ................................................................................................. 20
PART 3 EXECUTION .............................................................................................................................. 20
ST. JOHN THE BAPTIST PARISH
SECTION 48103 EMERGENCY GENERATOR
RIVER ROAD WASTEWATER TREATMENT PLANT

GENERAL CONSIDERATIONS

1. Bid Package Contractor is responsible to provide all labor, materials, supervision, equipment, and insurance as required to complete the scope of work identified in the construction drawings and applicable specifications as described in this document.

2. Warranty of generator, Automatic Transfer Switch (ATS), Load Bank, Breakers, and associated equipment shall commence at generator start up after installation by Contractor.

3. All required closeout information including Manufacturer drawings shall be provided in hard copy and electronic format. Operation/maintenance manuals, product data, and all other required information pertinent to the maintenance and operation of the emergency generator and associated equipment as it applies to the Work requirements of this Bid Package shall also be furnished in hard copies and electronic format. It is further understood that no final payments shall be released by the SJBP, prior to the receipt of said required information.

4. Construction sequence is as follows:
   a) Install temporary portable emergency generator
   b) Remove existing emergency generator and associated equipment
   c) Install new emergency generator on existing emergency generator slab
   d) Install new ATS
   e) Remove temporary portable emergency generator

TEMPORARY PORTABLE EMERGENCY GENERATOR SET

1. Owner shall provide a temporary portable emergency generator for facility back-up power while the existing emergency generator is being replaced. The temporary portable emergency generator will be delivered on-site by the Owner.

2. Contractor to work with Owner to determine location of temporary portable emergency generator.

3. Contractor shall provide all equipment, material, and labor required to install and connect temporary portable emergency generator to the existing ATS.

4. Once the temporary portable emergency generator is in place and Contractor has all equipment, material, and personnel required for connecting the temporary portable emergency generator power cables to the ATS disconnect switch, primary power to the existing ATS is ready to be disconnected. The contractor shall coordinate with the Owner before disconnecting primary power. CONTRACTOR TO ENSURE THAT ALL DISCONNECTS ARE LOCKED OUT WITH CONTRACTOR’S AND OWNERS’ LOCKS, AND VERIFY THAT ALL CABLES ARE DE-ENERGIZED BEFORE STARTING ANY WORK ON THE GENERATOR.

5. Contractor, with Owner Supervision, shall disconnect existing emergency generator power cables that run from the Automatic Transfer Switch (ATS) disconnect switch to the emergency generator at the emergency generator disconnect switch and the ATS disconnect switch (both ends of the cable will be disconnected)

6. Connect power cables at the ATS disconnect switch and the temporary portable emergency generator disconnect switch. Cables provided by the contractor, cable size is 750 MCM, 2 cables per phase
7. The temporary portable emergency generator shall be tested to ensure that power phasing is correct and generator is operating properly before removing the existing generator.

8. Power interruption shall be limited to no longer than 2 hours per outage.

**EXISTING EMERGENCY GENERATOR SET**

1. Prior to starting the decommissioning, disconnecting, and removal of the existing emergency generator, the contractor should inspect and familiarize themselves with the existing emergency generator, the existing electrical system, and other equipment at the site, including but not limited to ATS, motor control centers (MCC), transformers, disconnects, breakers, & electrical cabling/wiring.

2. Contractor to provide all material and equipment required for generator removal including crane, crane operator, rigging and riggers, and other equipment as required.

3. The Owner will be responsible for draining fuel tank, supply line, return line, and vent hoses associated with the generator, in addition to the disposal of drained fuels.

4. Once the emergency generator fuel tank, supply line, return line, and vent hoses have been drained and/or vented, all other generator wiring to and from the existing generator and other equipment shall be disconnected. The contractor is to use caution when disconnecting wires to ensure that all are de-energized, and shall label all wires that will be reused for the new emergency generator.

5. Existing emergency generator shall be removed and delivered intact as scrap material to the Parish facility located at 425 Captain G. Bourgeois.

**NEW EMERGENCY GENERATOR SET**

1. All emergency generator materials and equipment costs, shipping, delivery costs, sales and use tax are to be included in the total cost of the emergency generator.

2. Emergency generator and all associated equipment shall be protected prior to shipping and shall remain protected until delivered to project site.

3. Scheduling of the delivery of the emergency generator, load bank, and associated equipment shall be coordinated with St. John the Baptist Parish (SJBP) and Engineer.

4. The new emergency generator, load bank, main and secondary breakers, supply and return fuel lines, exhaust system, enclosure rack, and associated equipment shall be installed at the SJBP River Road Wastewater Treatment Plant located at 144 Water Plant Road, LaPlace, Louisiana.

5. Emergency generator final unloading location shall be determined by Owner and Engineer. Receiving, unloading, setting, and installation will be by the Contractor. Contractor shall locate new emergency generator over top of existing conduit stub-ups if possible.

6. Existing emergency generator fuel tank shall be reused.

7. Existing supply and return fuel lines shall be removed and replaced. Contractor shall size the new supply and return fuel lines per generator manufacturer specifications. Fuel line shall be carbon steel, welded connections, schedule 40 pipe. The supply and return fuel lines shall be connected to the generator using flexible hose similar to the existing pipe. Supply pipe at the
fuel tank shall have a block valve installed. Supply line shall also have a block valve installed by the generator where the metal pipe transitions to the flexible hose. Supply pipe coming off of the fuel tank shall have a check valve installed downstream of the block valve. Supply and return fuel pipe, block valves, and check valve shall be painted yellow per specification 09900 Paints and Coatings.

8. Existing power cabling between the emergency generator and plant ATS shall be reused. Contractor to meg out all cables before reusing to certify that cable and insulation is undamaged. If existing cable length is not long enough to reach the new emergency generator connections, a splice kit shall be used to extend cable length. Splice kits shall be approved by the Engineer before being installed.

9. Existing battery charger cabling between the emergency generator and MCC 1 lighting panel shall be reused. Contractor to confirm that the existing cable and insulation is undamaged and suitable for the new emergency generator battery charger.

10. Once the new emergency generator is in place and Contractor has all equipment, material, and personnel required for connecting the new emergency generator to the ATS power cables, primary power to the existing ATS is ready to be disconnected. The contractor shall coordinate with the Owner before disconnecting primary power. CONTRACTOR TO ENSURE THAT ALL DISCONNECTS ARE LOCKED OUT WITH CONTRACTOR’S AND OWNERS’ LOCKS, AND VERIFY THAT ALL CABLES ARE DE-ENERGIZED BEFORE STARTING ANY WORK ON THE GENERATOR.

11. The power cable coming from the ATS to the MCC shall be removed. The power cables from the Entergy Main Disconnect shall be disconnected from the Main Disconnect and reconnected at the MCC lugs. The power cables that come from the temporary portable emergency generator shall be disconnected from the ATS, the ends taped up, and rolled up out of the way.

12. In the event of an Entergy power failure, the Entergy power cables will be disconnected by the Owner, and the temporary portable emergency generator cables will be connected.

13. The existing ATS cabinet shall have all cables disconnected and the cabinet shall be removed and taken to the Parish facility located at 425 Captain G. Bourgeois. If the cabinet needs to be taken apart for removal, the Contractor shall reassemble it before taking it to storage.

14. The new ATS cabinet shall be installed in the same location as the old ATS cabinet.

15. The Entergy Main Disconnect shall be verified to be OFF. Once this is verified, the Entergy Main Disconnect power cables shall be connected to the new ATS.

16. Connect the existing power cables that run from the ATS to the emergency generator at the emergency generator disconnect switch and at the ATS.

17. The emergency generator shall be tested to ensure that power phasing is correct and generator is operating correctly. Contractor shall assist in start-up of emergency generator and provide training to SJBP after installation.

18. Power interruption shall be limited to no longer than 2 hours per outage.

19. Owner to remove the temporary portable emergency generator.
20. Contractor shall provide Maintenance and Operation manuals, both hard copy and electronic.
PART 1 GENERAL

1.1 REQUIREMENTS

A. Furnish and install a complete emergency generator package including engine/generator set, ATS, load bank, supply and return fuel lines, muffler, exhaust piping, and wiring as necessary to provide a complete emergency power system.

B. Equipment and installation shall comply with NFPA 37, NFPA 70 (NEC), NFPA 99, NFPA 110 Level 2, and UL 2200.

C. It is the intent of this specification to secure an engine-driven emergency generator set that has been prototype tested, factory built, production-tested, and site-tested together with all accessories necessary for a complete installation as shown on the plans and drawings and specified herein.

D. Any exceptions to the published specifications shall be subject to the approval of the engineer and submitted prior to the closing of the bid in accordance with current Louisiana bid law with a line-by-line summary description of all the items of compliance, any items that have been omitted or have been taken exception to, and a complete description of all deviations.

E. It is the intent of this specification to secure an emergency generator set system that has been tested during design verification, in production, and at the final job site. The emergency generator set will be a commercial design and will be complete with all of the necessary accessories for complete installation as shown on the plans, drawings, and specifications herein. The equipment supplied shall meet the requirements of the National Electrical Code and all applicable state and local codes and regulations.

F. All equipment shall be new and of current production by an international, power system manufacturer of generators, Automatic Transfer Switches, and paralleling switchgear. The manufacture shall be a supplier of a complete and coordinated system. There will be single-source responsibility for warranty, parts, and service through a factory-authorized representative with factory-trained technicians.

G. The emergency generator set shall be listed to UL 2200 or submitted to an independent third-party certification process to verify compliance as installed.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Emergency generator set shall be Generac (Basis of Design), Caterpillar, Cummins, or Kohler, and shall meet all the requirements of these specifications. Specifications are based on Generac for quality and performance criteria.

B. Firms regularly engaged in manufacture of emergency generator systems of types, sizes, and electrical characteristics required, and whose products are Listed and Labeled by UL, Inc. All replacement repair parts shall be as produced or supplied by the same manufacturer as the emergency generator system. Products of firms that do
C. Manufacturers shall agree to make factory training/certification, product programs/software and/or operating systems, and continued product updates and/or Tech notes available to SJBP. Required software updates shall be made available at no cost. Software shall be capable of connecting to SJBP network with remote monitoring capability. Any licensing and/or proprietary agreements between the manufacturer/distributor and SJBP shall be completed and in place prior to the manufacture and/or product being acceptable for installation.

2.2 EMERGENCY GENERATOR SET

A. The emergency generator set shall be a Generac Industrial Model SD1000 diesel engine-driven emergency generator, turbocharged/aftercooled 12-cylinder engine or approved equal by other emergency generator manufacturers previously noted. It shall provide a rating of 1,000 kW/1,250 kVA when operating at 277/480 VAC, 3 phase, 60 Hz, 0.80 power factor. The rating shall be available for the duration of the outage.

B. The alternator shall be full load capacity with Class H insulation.

C. The emergency generator shall meet a minimum Emissions Certification of EPA Tier 2 – EPA Stationary Emergency Power.

D. The emergency generator set shall be capable of cranking and picking up the assigned loads, meeting the minimum frequency and voltage stability requirements of these specifications, less than 10 seconds after loss of utility power.

E. Engine shall be water cooled with a centrifugal type water pump. The engine shall be equipped with a primary and secondary fuel filter, lube oil filter, intake air filter, fuel oil cooler, and instruments, including a fuel pressure gauge, water temperature gauge, lubricating oil pressure gauge, battery charging ammeter, and engine hour meter.

F. Certified engine horsepower curves shall be submitted showing the manufacturer's approval of the engine rating for emergency generator set power application. Special ratings or "maximum" ratings are not acceptable.

G. Engine shall be provided with an electronic, isochronous, load sharing, temperature compensated, governor capable of keeping the frequency at any constant load, including no load, within a steady state band width of + 0.25% of rated frequency. The governor shall not permit frequency modulation (number of times per second that the frequency varies from the average frequency) to exceed one cycle per second. Single phase sensing control and speed ramp shall be included.

H. Engine shall be furnished with a 24 volt starting system with batteries. Batteries shall be industrial grade lead-acid. Batteries shall be oversized for proper starting in temperature extremes. Batteries shall be housed in the outdoor emergency generator enclosure. The emergency generator set shall be fitted with an integral accessory solid-state, current limiting, float equalizing battery charger. The charger shall be 120 volt input from an external source when the emergency generator is not operating with appropriate output for specific emergency generator set. The charger shall be driven by the prime mover and automatic voltage regulator, capable of charging and
maintaining the starting battery unit (and control battery, where used) in a fully charged condition during a running condition. The charger shall be capable of switching from one rate to another to meet the needs of the discharged battery. It shall be capable of recharging a completely discharged battery in a maximum of eight (8) hours. It shall have: overload protection, voltage surge suppressors, D.C. ammeter, D.C. voltmeter, low D.C. voltage alarm relay, a minimum continuous output of 10 amperes D.C., battery charger malfunction alarm contact, and be third party listed.

I. Engine shall be equipped with a jacket water heater with re-circulating pump. Heaters and pump shall be a single assembly with a single point 120/208 volt power feed connection.

J. Engine shall have radio frequency suppression.

K. Air flow shall be away from engine. The radiator shall be protected by a strong grille or screen guard and the fan shall be provided with a screen guard.

L. Engine shall be equipped with an institutional grade muffler-silencer, with all fittings and associated bolts required. Silencer shall be integral mounted within the outdoor enclosure. Exhaust piping shall be stainless steel. Exhaust pipe size shall be such that exhaust back pressure does not exceed maximum limitation required by engine manufacturer. Silencer shall have a maximum dbA level of 75 at a distance of 10 feet.

M. The emergency generator shall be a salient pole synchronous alternator of the single bearing type built to NEMA and IEEE standards, brushless type, with packaged high performance solid-state voltage regulator and voltage adjusting rheostat.

N. Emergency generator regulator package shall provide a voltage regulation of \(+0.5\%\) of rated voltage. Voltage regulation shall apply to any load from no load to rated load at rated power factor.

O. The frequency regulation from no load to rated load shall conform with the engine governor performance. For any addition of load up to 90% of rated load, the frequency shall recover to the steady state frequency within 5 seconds.

P. For any addition of load up to and including 90% of rated, the voltage shall recover to and remain within the steady band in not more than 1.5 seconds. The maximum allowable voltage dip during inrush shall be 20%. Documentation regarding this performance shall be included in the shop drawing submittals.

Q. The emergency generator shall have 2/3 pitch. Stator insulation shall be Class "H" rated for 105 degree C rise by resistance above a 40 degree C ambient. Insulation shall be moisture proof.

R. Emergency generator shall have amortisseur windings with the end plates connected between poles to minimize harmonic content and provide good transient performance.

S. Emergency generator shall be equipped with taps or adjustments for voltage such that voltage can be adjusted to match the utility voltage at the ATS within \(+2\%\).

T. The emergency generator set shall be completely assembled and tested at the factory prior to shipping to the job site. The engine shall be run under full load conditions for a sufficient length of time to allow all piston rings to seat themselves prior to
shipment to job site.

U. The emergency generator set shall be equipped with one (1) service entrance rated, unit mounted, main 1600A circuit breaker sized with appropriate short circuit rating and adjustable LSI settings, no ground fault trip, but shall include shunt trip for engine shut down tripping.

V. The emergency generator set shall be equipped with one (1) service entrance rated, unit mounted, secondary 500A circuit breaker sized with appropriate short circuit rating and adjustable LSI settings, no ground fault trip, but shall include shunt trip for engine shut down tripping.

W. Vibration Isolation
   1. Vibration isolators shall be provided between the engine-alternator and heavy-duty steel base.

2.3 EMERGENCY GENERATOR SET CONTROLLER

A. Emergency generator unit shall contain a generator-mounted electronic modular control panel. Panel shall be environmentally sealed, solid-state, microprocessor-based for engine control and AC metering. The control panel shall have a digital display and keypad to provide access to data. The display provides complete and understandable information, and the keypad allows easy local access.

B. Alarm panel shall provide for automatic and manual starting and stopping of engine with programmable safety shutdowns and shall operate on 24 volts DC. Power shall be supplied from the emergency generator starting batteries.

C. Control panel shall be password protected

D. Control panel shall have integrated PLC programmable functions

E. Control panel shall meet a temperature range of -30 to 70 degrees C

F. Control Panel shall have a Graphic 128 X 64 LCD display.

G. Controls shall provide for automatic shutdown in case of high-water temperature, overspeed, overcrank, or low oil pressure.

H. The control panel shall be designed to meet NFPA 99 and 110 requirements for a Level 1 emergency power system.

I. The control panel shall have an alarm and event log. The alarms and indications shall comply with NFPA 110 and NEC Section 700, and shall include, but not be limited to, the following as a minimum:
   1. Battery charger malfunction
   2. Low lubricating oil pressure
   3. Low water temperature
   4. Excessive water temperature
   5. Overcrank
   6. Overspeed
   7. Ammeter with phase selector switch
8. Emergency generator operating
9. Alarm buzzer and silence switch (for all alarms)
10. Lamp test switch (for all lamps)
11. Normal utility power on
12. Emergency power system operating
13. Emergency bus volt meter with phase selector
14. Emergency bus frequency meter
15. D.C. voltmeter
16. Oil pressure
17. Coolant temperature
18. Running time meter
19. Low fuel
20. Fuel leak

2.4 OUTDOOR ENCLOSURE

A. Emergency generator shall be housed in an enclosure constructed of steel, intended for weather protection of the generator. Housing shall be painted steel, 14 gauge with access doors with panic hardware. Doors (two (2) on each side) shall provide full access for operation and servicing and be vertically hinged to allow 180 degrees opening rotation and retention with door stays. Housing shall have a pitched roof for water run-off. Package (including height of pad) provided shall allow emergency generator access to control panel and service doors at a code compliant height without the need for a service platform. Color of enclosure shall be white (confirm during submittal stage).

B. Air intake damper shall be sized to allow combustion and cooling air to enter with a face velocity to maintain a maximum ambient temperature of 110 degree F. Air discharge damper shall be gravity operated.

C. Dimensions shall be sufficient to house emergency generator and associated equipment.

D. Engine shall be provided with oil and water drains to exterior of enclosure with a bronze body ball valve installed on engine and plumbed to exterior coupling with high quality hose. Fumes disposal shall be extended to radiator discharge using an oil resistant high quality hose.

E. Rodent proof stub up area.

2.5 EMERGENCY GENERATOR LOCATION

A. The emergency generator will be installed at the existing River Road Wastewater Treatment Plant in the same location as the existing emergency generator. The existing emergency generator dimensions are 300” L x 144” W. Contractor shall confirm that the proposed emergency generator will fit on the existing generator slab, and that sufficient space is available to perform maintenance on the generator.
PART 3 EXECUTION

3.1 INSTALLATION

A. Emergency generator set shall be mounted on heavy structural steel base which shall be installed on the existing concrete slab. Emergency generator set shall be mounted using heavy duty, open, stable spring vibration dampers of the type approved for seismic areas. Vibration dampers shall be bolted to the base.

B. All power wiring to the emergency generator shall be in rigid metal conduit using seal-tight LFMC flex connection(s) at the emergency generator.

C. Existing power cabling between the emergency generator ATS shall be reused. The contractor shall mount the generator over the existing stub-ups. Contractor to meg out all cables before reusing to certify that cable and insulation is undamaged.

D. If existing cable length is not long enough to reach the new emergency generator connections, a splice kit shall be used to extend cable length. Splice kits shall be approved by the Engineer before being installed.

E. Submittals and shop drawings shall include cut sheets, drawings, details, and instructions necessary for complete installation of the emergency generator set and all associated equipment such as fuel piping, wiring, battery/charger, alarms and controls, etc.

F. Contractor shall provide a competent factory trained service engineer/technician to coordinate the installation, check-out, and start-up and testing of the complete emergency generator system.

G. On-site testing shall include testing of all safety devices and shall include a four hour running test consisting of one hour at 50% load, one hour at 75% load, and two hours at 100% load. Contractor shall furnish necessary load banks for testing. A copy of the load test report shall be sent to the engineer and SJBP. In addition, contractor shall refill fuel tank upon completion of load testing.

H. In addition, on-site testing shall include a complete power outage test with actual building loads to confirm proper operation of all modifications. Testing shall be coordinated with local utility and SJBP.

I. Supplier shall provide complete on-site training in the operation of the systems for SJBP at times chosen by the SJBP to include all work shifts.

J. Supplier shall provide, upon completion of installation but before final acceptance by SJBP, three complete sets of operating instructions, maintenance manuals, and drawings, showing full details for care and maintenance of each item of equipment. In addition, a simplified set of step-by-step operating instructions, encased in a suitable frame for placing at the emergency generator location, shall be provided with the operation and maintenance manuals.

3.2 WARRANTY

A. The emergency generator set and associated equipment shall be warranted by the manufacturer against defective parts or workmanship for a period of five (5) years from the date of final inspection and acceptance. Warranty conditions shall be
included in submittals. Warranty shall include all parts, labor (including travel to and from the job site), expenses, equipment necessary to perform replacement and/or repairs, and costs of shipping equipment to and from the repair facility.
AUTOMATIC TRANSFER SWITCH

PART 1   GENERAL

1.1 REQUIREMENTS

A. The contractor shall furnish and install an Automatic Transfer Switch (ATS), wiring, etc., as necessary to provide a complete emergency power system. Contractor to remove existing ATS cabinet and associated equipment.

B. Furnish and install ATS with number of poles, amperage, voltage, withstand and close-on ratings as shown on the plans. Each automatic ATS shall consist of a double throw power ATS mechanism and a microprocessor controller to provide automatic operation. All ATS and controllers shall be the products of the same manufacturer.

C. Equipment and resulting installation shall comply with all state and local codes.

1.2 CODES AND STANDARDS

A. The ATS and controls shall conform to the requirements of:

1. UL 1008 - Standard for ATS Equipment
2. IEC 947-6-1 Low-voltage Switchgear and Controlgear; Multifunction equipment; Automatic Transfer Switch Equipment
3. NFPA 70 - National Electrical Code
4. NFPA 110 - Emergency and Standby Power Systems
5. IEEE Standard 446 - IEEE Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications
6. NEMA Standard ICS10-1993 (formerly ICS2-447) - AC Automatic Transfer Switch
7. UL 508 Industrial Control Equipment

PART 2   PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Automatic Transfer Switch specified is Generac PSTS Series. Approved equivalent by ASCO, Cummings, or Eaton are acceptable. Any alternate shall be submitted for approval to the consulting engineer at prior to bid in accordance with current Louisiana bid law. Alternate bids must list any deviations from this specification.

B. Provide complete 1600A main breaker, three-phase, four-pole with switched neutral, NEMA 1 steel enclosure, open transition ATS to the requirements as noted in the specifications.

C. The Automatic ATS shall have the following certifications:

1. CSA C22.2
2. CUL Listed
3. UL1008
2.2 MECHANICALLY HELD ATS

A. The ATS shall be electrically operated and mechanically held. The electrical operator shall be a momentarily energized, single-solenoid mechanism. Main operators utilizing overcurrent disconnect devices, or linear motors shall not be acceptable. The ATS shall be mechanically interlocked to ensure only two possible positions, normal or emergency.

B. All ATS sizes shall use only one type of main operator for ease of maintenance and commonality of parts.

C. The ATS shall be positively locked and unaffected by momentary outages, so that contact pressure is maintained at a constant value and contact temperature rise is minimized for maximum reliability and operating life.

D. All main contacts shall be silver composition. ATS shall have segmented, blow-on construction for high withstand and close-on capability and be protected by separate arcing contacts.

E. Inspection of all contacts shall be possible from the front of the ATS without disassembly of operating linkages and without disconnection of power conductors. ATS shall have front removable and replaceable contacts. All stationary and moveable contacts shall be replaceable without removing power conductors and/or bus bars.

F. Designs utilizing components of molded-case circuit breakers, contactors, or parts thereof, which are not intended for continuous duty, repetitive switching or transfer between two active power sources are not acceptable.

G. Where neutral conductors are to be solidly connected as shown on the plans, a neutral conductor plate with fully rated AL-CU pressure connectors shall be provided.

2.3 MICROPROCESSOR CONTROLLER

A. The controller's sensing and logic shall be provided by a single built-in microprocessor for maximum reliability, minimum maintenance, with MODBUS through Ethernet communications.

B. A single controller shall provide twelve selectable nominal voltages for maximum application flexibility and minimal spare part requirements. Voltage sensing shall be true RMS type and shall be accurate to +/- 1% of nominal voltage. Frequency sensing shall be accurate to +/- 0.2%. The panel shall be capable of operating over a temperature range of -20 to +60 degrees C and storage from -55 to +85 degrees C.

C. The controller shall be connected to the ATS by an interconnecting wiring harness. The harness shall include a keyed disconnect plug to enable the controller to be disconnected from the ATS for routine maintenance. Sensing and control logic shall be provided on multi-layer printed circuit boards. Interfacing relays shall be industrial grade plug-in type with dust covers. The panel shall be enclosed with a protective cover and be mounted separately from the ATS unit for safety and ease of maintenance. The protective cover shall include a built-in pocket for storage of the operator's manuals.
D. The controller shall meet or exceed the requirements for Electromagnetic Compatibility (EMC) as follows:

1. EN 55011:1991 - Emission standard - Group 1, Class A
2. EN 50082-2:1995 - Generic immunity standard
3. EN 61000-4-2:1995 - Electrostatic discharge (ESD) immunity
4. ENV 50140:1993 - Radiated Electro-Magnetic field immunity
5. EN 61000-4-4:1995 - Electrical fast transient (EFT) immunity
6. EN 61000-4-5:1995 - Surge transient immunity
7. EN 61000-4-6:1996 Conducted Radio-Frequency field immunity
8. IEEE472 (ANSI C37.90A) Ring Wave Test

2.4 ENCLOSURE

A. The ATS shall be furnished in a NEMA 1 enclosure and installed in MCC 1 in the location of the existing ATS.

B. All standard door mounted switches and indicating lights shall be integrated into a flush-mounted, interface membrane or equivalent in the enclosure door for easy viewing & replacement. The panel shall include a manual locking feature to allow the user to lockout all membrane mounted control switches to prevent unauthorized tampering. The membrane panel shall be suitable for mounting by others when furnished on open type units.

2.5 CONTROLLER DISPLAY AND KEYBOARD

A. The Microprocessor-Based controller shall, as a minimum, have the following features:

1. A 2-line, 32-character Alphanumeric LCD display and keypad
2. Front Panel Mimic Diagram with colored LEDs for Source/Load Indication
3. Sensing and Programmable Setpoints for both Normal (S1) and Emergency (S2)
4. Under-voltage/Under-frequency, Over-voltage/Over-frequency
5. Voltage Unbalance Sensing and Phase Reversal for all phases
6. Adjustable Time Delay
7. Engine Start, Transfer Normal to Emergency & Emergency to Normal, Engine Cooldown, Emergency Fail
8. Pushbutton for Bypassing Time Delays on Transfer/Retransfer
9. Test Pushbutton
10. MODBUS Communication
11. Digital Programmable Plant Exerciser
   b. Adjustable 0-600 Minutes Run Time
   c. Selectable for Load or No Load
12. Auxiliary Contacts
a. Normal Source Present
b. Emergency Source Present
c. Normal Position Indication
d. Emergency Position Indication
e. Pre-Transfer Signal Contacts

B. All instructions and controller settings shall be easily accessible, readable and accomplished without the use of codes, calculations, or instruction manuals.

2.6 VOLTAGE, FREQUENCY AND PHASE ROTATION SENSING

A. Voltage and frequency on both the normal and emergency sources (as noted below) shall be continuously monitored, with the following pickup, dropout, and trip setting capabilities (values shown as % of nominal unless otherwise specified):

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Sources</th>
<th>Dropout / Trip</th>
<th>Pickup / Reset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under-voltage</td>
<td>N&amp;E, 3phase</td>
<td>70 to 98%</td>
<td>85 to 100%</td>
</tr>
<tr>
<td>Over-voltage</td>
<td>N&amp;E, 3phase</td>
<td>102 to 115%</td>
<td>2% below trip</td>
</tr>
<tr>
<td>Under-frequency</td>
<td>N&amp;E</td>
<td>85 to 98%</td>
<td>90 to 100%</td>
</tr>
<tr>
<td>Over-frequency</td>
<td>N&amp;E</td>
<td>102 to 110%</td>
<td>2% below trip</td>
</tr>
<tr>
<td>Voltage unbalance</td>
<td>N&amp;E</td>
<td>5 to 20%</td>
<td>1% below dropout</td>
</tr>
</tbody>
</table>

B. Repetitive accuracy of all settings shall be within ± 0.5% over an operating temperature range of -20°C to 60°C.

C. Voltage and frequency settings shall be field adjustable in 1% increments either locally with the display and keypad or remotely via the communications interface port.

D. The controller shall be capable (when activated by the keypad or the communications interface port) of sensing the phase rotation of both the normal and emergency sources. The source shall be considered unacceptable if the phase rotation is not the preferred rotation selected (ABC or CBA).

E. Source status screens shall be provided for both normal & emergency to provide digital readout of voltage on all 3 phases, frequency, and phase rotation.

2.7 TIME DELAYS

A. An adjustable time delay of 0 to 6 seconds shall be provided to override momentary normal source outages and delay all transfer and engine starting signals.

B. A time delay shall be provided on transfer to emergency, adjustable from 0 to 60 minutes, for controlled timing of transfer of loads to emergency.

C. Two time delay modes (which are independently adjustable) shall be provided on re-transfer to normal. One time delay shall be for actual normal power failures and the other for the test mode function. The time delays shall be adjustable from 0 to 60 minutes. Time delay shall be automatically bypassed if the emergency source fails and the normal source is acceptable.

D. A time delay shall be provided on shut down of emergency generator for cool down, adjustable from 0 to 60 minutes.
E. A time delay activated output signal shall also be provided to drive an external relay(s) for selective load disconnect control. The controller shall have the ability to activate an adjustable 0 to 5 minute time delay in any of the following modes:

1. Prior to transfer only.
2. Prior to and after transfer.
3. Normal to emergency only.
4. Emergency to normal only.
5. Normal to emergency and emergency to normal.
6. All transfer conditions or only when both sources are available.

F. All time delays shall be adjustable in 1 second increments, except the extended parallel time, which shall be adjustable in .01 second increments.

G. All time delays shall be adjustable by using the LCD display and keypad or with a remote device connected to the communications interface port.

2.8 ADDITIONAL FEATURES

A. The ATS shall have a Selector Switch for Auto/Manual Operation

B. The ATS enclosure shall have a minimum 100W Space Heater with adjustable thermostat

C. The ATS shall be able to be programmed for Load Shedding when on Emergency power

D. Normal Terminal Mechanical Lugs for the Customer Connection shall consist of four (4) 1/0-750MCM lugs per phase

E. Emergency Terminal Mechanical Lugs for the Customer Connection shall consist of four (4) 1/0-750MCM lugs per phase

F. Load Terminal Mechanical Lugs for the Customer Connection shall consist of four (4) 1/0-750MCM lugs per phase

G. Membrane-type switches shall be provided for the test and retransfer to normal functions. The test position will simulate a normal source failure. The retransfer to normal position shall bypass the time delays on retransfer to normal.

H. A SPDT contact, rated 5 amps at 30 VDC, shall be provided for a low-voltage engine start signal. The start signal shall prevent dry cranking of the engine by requiring the emergency generator set to reach proper output, and run for the duration of the cool down setting, regardless of whether the normal source restores before the load is transferred.

I. Auxiliary contacts, rated 10 amps, 250VAC shall be provided consisting of two contacts, closed when the ATS is connected to the normal source and two contacts closed, when the ATS is connected to the emergency source.

J. LED indicating lights shall be provided; one to indicate when the ATS is connected to the normal source (green) and one to indicate when the ATS is connected to the
emergency source (red).

K. LED indicating lights shall be provided and energized by controller outputs. The lights shall provide true source availability of the normal and emergency sources, as determined by the voltage sensing trip and reset settings for each source.

L. A membrane switch shall be provided on the membrane panel to test all indicating lights when pressed.

M. Provide the ability to select “commit/no commit to transfer” to determine whether the load should be transferred to the emergency generator if the normal source restores before the emergency generator is ready to accept the load.

N. An In-Phase monitor shall be provided in the controller. The monitor shall control transfer so that motor load inrush currents do not exceed normal starting currents, and shall not require external control of power sources. The In-Phase monitor shall be specifically designed for and be the product of the ATS manufacturer.

O. At the end of the specified duration the switch shall transfer the load back to normal and run the emergency generator for the specified cool down period. A 10-year life battery that supplies power to the real time clock in the event of a power loss will maintain all time and date information.

P. Self-Diagnostics – The controller shall contain a diagnostic screen for the purpose of detecting system errors. This screen shall provide information on the status input signals to the controller which may be preventing load transfer commands from being completed.

Q. Communications Interface – The controller shall be capable of interfacing, through an optional communications interface module, with a network of switches. It shall be able to connect via an RS-485 Serial communication module (up to 4000 ft. direct connect or multi-drop configuration), an Ethernet connectivity module (over standard 10baseT Ethernet networks) or remotely through PSTN dial-up modem communications.

R. Data Logging – The controller shall have the ability to log data and to maintain the last 99 events, even in the event of total power loss. The following events shall be time and date stamped and maintained in a non-volatile memory:

1. Event Logging
   a. Data and time and reason for transfer normal to emergency
   b. Data and time and reason for transfer emergency to normal
   c. Data and time and reason for engine start
   d. Data and time engine stopped
   e. Data and time emergency source available
   f. Data and time emergency source not available

2. Statistical Data
   a. Total number of transfers
   b. Total number of transfers due to source failure
   c. Total number of days controller is energized
   d. Total number of hours both normal and emergency sources are available
2.9 WITHSTAND AND CLOSING RATINGS

A. The ATS shall be rated to close on and withstand the available RMS symmetrical short circuit current of 100 kAIC at the ATS terminals.

B. The ATS shall be UL listed in accordance with UL 1008 and be labeled in accordance with that standard's 1½ and 3 cycle, long-time ratings. ATS’s which are not tested and labeled with 1½ and 3 cycle (any breaker) ratings and have series, or specific breaker ratings only, are not acceptable.

2.10 TESTS AND CERTIFICATIONS

A. The complete ATS shall be factory tested to ensure proper operation of the individual components and correct overall sequence of operation and to ensure that the operating transfer time, voltage, frequency and time delay settings are in compliance with the specification requirements.

B. Upon request, the manufacturer shall provide a notarized letter certifying compliance with all of the requirements of this specification including compliance with the above codes and standards, and withstand and closing ratings. The certification shall identify, by serial number(s), the equipment involved. No exceptions to the specifications, other than those stipulated at the time of the submittal, shall be included in the certification.

C. The ATS manufacturer shall be certified to ISO 9001 International Quality Standard and the manufacturer shall have third party certification verifying quality assurance in design/development, production, installation and servicing in accordance with ISO 9001.

2.11 SERVICE REPRESENTATION

A. The ATS manufacturer shall maintain a national service organization of company- employed personnel located throughout the contiguous United States. The service center’s personnel must be factory trained and must be on call 24 hours a day, 365 days a year.

B. The manufacturer shall maintain records of each switch, by serial number, for a minimum of 20 years.

PART 3 EXECUTION

3.1 INSTALLATION

A. Existing power cabling between the generator and ATS shall be reused. Contractor to meg out all cables before reusing to certify that cable and insulation is undamaged. The Engineer shall review megging results and approve use of existing cable.

B. Submittals and shop drawings shall include cut sheets, drawings, details, and instructions necessary for complete installation.

C. Supplier shall provide a competent factory trained service engineer/technician to coordinate the installation, check-out, start-up, and testing.

D. Supplier shall provide, upon completion of installation but before final acceptance by SJBP, three complete sets of operating instructions, maintenance manuals, and
drawings, showing full details for care and maintenance of each item of equipment. In addition, a simplified set of step-by-step operating instructions, encased in a suitable frame for placing at the emergency generator location, shall be provided with the operation and maintenance manuals.

3.2 WARRANTY

A. The automatic ATS shall be guaranteed against defective parts or workmanship for a period of two (2) years from the date of final inspection and acceptance. Warranty conditions shall be included in submittals. Warranty shall include all parts and labor, including travel to and from the job site, expenses and equipment necessary to perform replacement and and/or repairs, and costs of shipping equipment to and from the repair facility.
LOAD BANK

PART 1  GENERAL

1.1 REQUIREMENTS

A. This specification contains the minimum requirements for the design, manufacture, and testing of a 300kW UL listed, radiator or enclosure top mounted style resistive load bank.

B. The load bank is required for periodic exercising and testing of the portable emergency generator. The load bank shall use the air discharge from the generator radiator for cooling.

C. This specification shall apply if the load bank is supplied to the purchaser, or as a part of other equipment.

D. Should the vendor take exception to any part of this specification, it shall be stated in the bid, and referenced to the specification line number.

E. The manufacturer shall submit for review technical data including features, performance, electrical characteristics, physical characteristics, ratings, accessories, and finishes.

F. Shop drawings shall include dimensional plans, front and side elevations and mounting details sufficient to properly install the load bank. Load bus configuration and load connections termination area shall be clearly identified.

G. Electrical schematic drawings shall be provided to detail the operation of the load bank and the provided safety circuits. Over-current protection and control devices shall be identified and their ratings marked. A system interconnection drawing shall be included for control wiring related to the load bank.

H. The equipment covered by this specification shall be designed with the latest applicable NFPA-70, NEMA, NEC, and ANSI standards.

I. The load bank shall be listed to UL Standard 508A.

1.2 INSTALLATION

A. The contractor is responsible for coordinating load bank installation on the emergency generator with the load bank manufacturer, generator manufacturer, and fabrication shop doing load bank installation. The load bank will be installed on top of the emergency generator enclosure. Contractor to work with the load bank and emergency generator manufacturers to ensure that the load bank has sufficient air flow for cooling and that recommended clearances for air discharge and that the emergency generator exhaust flow is not restricted.

B. The fabricator shall provide and install cable and conduit from the emergency generator secondary breaker to the load bank Main Power bus bar.

C. The cable shall be 500 MCM and is sized for a 300kW (360A), 480 Volts, 3-Phase circuit.
D. The cable size is based on the cable run being 50’ or less, with a 3% voltage drop. Contractor to confirm that the cable distance meets the distance criteria.

E. The fabricator shall install the load bank control panel on the side of the emergency generator enclosure. The control panel shall be provided in a NEMA 4X enclosure. The fabricator shall provide and install cable and conduit from the emergency generator power source to the load bank control panel.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Specified is Avtron 1500 series roof mounted load bank. Approved equivalent by Trystar LD-RT and Hilkar are acceptable. Any alternate shall be submitted for approval to the consulting engineer prior to bid in accordance with current Louisiana bid law. Alternate bids must list any deviations from this specification.

2.2 RATINGS

A. The total capacity of the load bank shall be rated 300kW at 480 Volts, 3-Phase, 3-Wire, 60 Hertz, 240 Amps per Phase at unity Power Factor.

B. The load step resolution shall be a nominal 20% of the load bank rating.

C. The load bank shall be designed for continuous duty cycle operation with no limitations.

D. Radiator/Duct mounted load banks are designed as a supplemental load to the generator set, and shall be sized at 50-60% of generator nameplate kW rating (not 100%).

2.3 MATERIAL AND CONSTRUCTION

A. The load bank shall be suitable for installation on the generator radiator core, within the radiator exhaust ductwork, or on the roof of the generator set enclosure.

B. Due to the high radiator exhaust from the generator, the load bank shall be constructed of heavy gauge of aluminized steel per ASTM A463. Aluminized steel provides superior corrosion protection and extended service life, with a better tolerance to high heat exposure compared to the more common galvanized steel.

C. The main input load bus, load step relays, fuses and control relays shall be located within the load bank enclosure.

D. The load bank shall have a self-contained 2” flange on the top and bottom edges for mounting. Load bank core size shall be calculated once the load bank manufacturer is selected. Load banks with a depth of 13” shall have provisions for overhead lifting and duct adaptors.

E. The load bank shall be designed for installation and operation outdoors. Load bank shall have a screened exhaust or a louver. Load bank will be painted ASA-61 grey and have a baked polyester powder coated finish with a film thickness of 2.8 +/- 0.4 mils per coat.

2.4 RESISTIVE LOAD ELEMENTS

A. Load elements shall be Avtron Helidyne, helically wound chromium alloy rated to
operate at approximately ½ of maximum continuous rating of wire. Elements must be fully supported across the entire length within the air stream by segmented ceramic insulators on stainless steel rods. Element supports shall be designed to prevent a short circuit to adjacent elements or to ground.

B. The change in resistance due to temperature shall be minimized by maintaining conservative watt densities.

C. The overall tolerance of the load bank shall be –0% to +5% kW at rated voltage. A –5%, +5% rating allows the load bank to deliver less than rated kW and shall not be used. The load bank must deliver full rated kW at rated voltage.

D. Sealed wire type elements (which have the internal resistance wire totally enclosed) prevent internal cooling of the element wire and shall not be used.

2.5 COOLING

A. The engine generator shall provide sufficient CFM of air to cool the load bank. The load bank shall have a static pressure drop of approximately 0.1” H2O at design velocity (50 ft/min).

2.6 PROTECTIVE DEVICES

A. An over-temperature switch shall be provided to sense the load bank exhaust. The switch shall be electrically interlocked with the load application controls to prevent load from being applied in the event of an over temperature condition.

B. To provide for major fault protection, branch fuses shall be provided on all three phases of switched of all load steps. Branch fuses shall be current limiting type with an interrupting rating of 200K A.I.C.

C. The exterior of the load bank shall have appropriate warning/caution statements on access panels.

2.7 CONTROL PANEL

A. The control panel shall be remote 19” control panel housed in a NEMA 4 type wall mount enclosure shall be provided. The panel will be mounted on the emergency generator enclosure.

B. An integral control power transformer shall be provided to supply 120V, 1 phase, 60 Hz to the load banks control and safety circuitry. Transformer primary and secondary control circuits shall be fuse protected.

C. The control panel shall contain the following manual controls:
   1. Power ON/OFF switch
   2. Master load ON/OFF switch.
   3. Load step switches for ON/OFF application of individual load steps.

D. Control panel visual indicators shall be as follows:
   1. Power ON indication light.
   2. OVER TEMPERATURE light.

E. A standard remote load dump circuit shall be provided as part of the load bank control circuit. Provisions shall be provided to remove the load bank off-line from the operation of a remote normally closed set of auxiliary contacts from a transfer switch.
or other device. In the event of the remote contact opening, all load is removed.

F. A digital meter shall be installed in the control panel to show 3-line digital display of voltage, current, frequency, and power measurement. The software interface to the meter shall allow for real-time data acquisition and data logging from a laptop PC.

2.8 DOCUMENTATION

A. Installation and operation manuals shall be provided with the equipment and shall include complete details for the installation, commissioning, operation, and maintenance of the load bank.

B. The manuals shall include the electrical schematic and interconnect drawings for the power and control wiring for the load bank and all control devices.

C. A complete parts list with part numbers, device identification, rating shall be included in the manuals. The original manufacturers name and part number shall be included in the parts listing.

D. The manuals shall be provided electronically on a USB drive.

PART 3.0 QUALITY ASSURANCE

3.1 QUALITY CONTROL

A. The load bank shall be fully tested using a test specification written by the supplier. Tests shall include electrical functional testing, verifying conformance to assembly drawings and specifications. Each load step shall be cold resistance checked to verify proper calibration of resistive load steps and proper ohmic value.

B. The manufacturer shall maintain this data on file for inspection purposes by the purchaser. Tests using high potential equipment shall be performed to ensure isolation of the load circuits from the control circuits and to determine isolation of the load circuits from the load bank frame. Tests of all safety circuits shall be performed to verify conformance to the specification.

C. All electrical circuits shall have a high potential insulation resistance test performed at twice rated voltage plus 1000 VAC to assure insulation integrity.

D. All quality control test equipment shall be regularly maintained and calibrated to traceable national standards.

E. The Company’s Quality System shall be ISO9001 Certified.

3.2 QUALIFICATIONS OF MANUFACTURER

A. The load bank shall be manufactured by a firm regularly engaged in the manufacture of load banks and who can demonstrate at least twenty-five (25) years’ experience with at least twenty five (25) installations of load banks similar or equal to the ones specified herein.

B. A two (2) year warranty shall be provided for both the resistors and the load bank. A longer warranty period shall be available as a purchased option.
I. EXISTING RIVER ROAD GENERATOR
II. DIESEL FUEL LINE

DIESEL SUPPLY LINE - TO BE REPLACED, NEW BLOCK VALVE AND CHECK VALVE TO BE ADDED
III. EXISTING AUTOMATIC TRANSFER SWITCH LOCATED IN MCC 1

EXISTING ATS CABINET AND ASSOCIATED EQUIPMENT TO BE REMOVED. NEW ATS CABINET AND ASSOCIATED EQUIPMENT TO BE INSTALLED IN SAME LOCATION.
IV. EXISTING AUTOMATIC TRANSFER SWITCH CABLES

EXISTING CABLES FROM ATS TO GENERATOR TO BE REUSED
Table of Contents

GENERAL CONSIDERATIONS ........................................................................................................ 3
NEW PORTABLE EMERGENCY GENERATOR SET ................................................................. 3
EXISTING PORTABLE EMERGENCY GENERATOR SET ....................................................... 4
EXISTING EMERGENCY GENERATOR SET .............................................................................. 4
DIESEL ENGINE PORTABLE EMERGENCY GENERATOR ....................................................... 6
PART 1 GENERAL .................................................................................................................. 6
  1.1 REQUIREMENTS ......................................................................................................... 6
PART 2 PRODUCTS ................................................................................................................ 6
  2.1 ACCEPTABLE MANUFACTURERS ............................................................................... 6
  2.2 PORTABLE EMERGENCY GENERATOR SET ............................................................ 7
  2.3 PORTABLE EMERGENCY GENERATOR SET CONTROLLER ..................................... 9
  2.4 OUTDOOR ENCLOSURE ............................................................................................ 10
  2.5 PORTABLE EMERGENCY GENERATOR LOCATION .................................................. 10
PART 3 EXECUTION ............................................................................................................... 11
  3.1 INSTALLATION .......................................................................................................... 11
  3.2 WARRANTY .............................................................................................................. 11
MANUAL TRANSFER SWITCH .............................................................................................. 12
PART 1 GENERAL ................................................................................................................ 12
  1.1 REQUIREMENTS ....................................................................................................... 12
LOAD BANK .......................................................................................................................... 13
PART 1 GENERAL ................................................................................................................ 13
  1.1 REQUIREMENTS ....................................................................................................... 13
  1.2 INSTALLATION ......................................................................................................... 13
PART 2 PRODUCTS ................................................................................................................ 14
  2.1 ACCEPTABLE MANUFACTURERS ............................................................................... 14
  2.2 RATINGS .................................................................................................................. 14
  2.3 MATERIAL AND CONSTRUCTION ........................................................................... 14
  2.4 RESISTIVE LOAD ELEMENTS .................................................................................. 14
  2.5 COOLING ................................................................................................................ 15
  2.6 PROTECTIVE DEVICES ......................................................................................... 15
  2.7 CONTROL PANEL ................................................................................................... 15
  2.8 DOCUMENTATION ................................................................................................ 16
PART 3.0 QUALITY ASSURANCE .......................................................................................... 16
ST. JOHN THE BAPTIST PARISH
SECTION 48104 EMERGENCY GENERATOR
RUDDOCK WELL SITE 2 WATER PLANT

3.1 QUALITY CONTROL........................................................................................................ 16
3.2 QUALIFICATIONS OF MANUFACTURER ...................................................................... 16

ATTACHMENTS ................................................................................................................. 17

I. EXISTING RUDDOCK MANUAL TRANSFER SWITCH ......................................................... 17
II. MANUAL TRANSFER SWITCH TO DISCONNECT CONDUIT RUN ................................ 18
III. MANUAL TRANSFER SWITCH TO DISCONNECT CONDUIT RUN CONTINUED ............ 19
IV. PORTABLE EMERGENCY GENERATOR DISCONNECT SWITCH ................................. 20
ST. JOHN THE BAPTIST PARISH  
SECTION 48104 EMERGENCY GENERATOR  
RUDDOCK WELL SITE 2 WATER PLANT  

GENERAL CONSIDERATIONS  
1. Bid Package Contractor is responsible to provide all labor, materials, supervision, equipment, 
and insurance as required to complete the scope of work identified in the construction drawings 
and applicable specifications as described in this document.  

2. Warranty of portable emergency generator, Load Bank, Breakers, and associated equipment 
shall commence at portable emergency generator start up after installation by Contractor.  

3. All required closeout information including Manufacturer drawings shall be provided in hard 
copy and electronic format. Operation/maintenance manuals, product data, and all other 
required information pertinent to the maintenance and operation of the portable emergency 
generator and associated equipment as it applies to the Work requirements of this Bid Package 
shall also be furnished in hard copies and electronic format. It is further understood that no 
final payments shall be released by the SJBP, prior to the receipt of said required information.  

4. Construction sequence is as follows:  
   a) Install new portable emergency generator and associated disconnect, conduit and cabling  
   b) Remove existing portable emergency generator  
   c) Remove existing emergency generator, fuel tanks, and fuel lines  

NEW PORTABLE EMERGENCY GENERATOR SET  
1. All portable emergency generator materials and equipment costs, shipping, delivery costs, 
sales and use tax are to be included in the total cost of the portable emergency generator.  

2. Portable emergency generator and all associated equipment shall be protected prior to shipping 
and shall remain protected until delivered to project site.  

3. Scheduling of the delivery of the portable emergency generator, load bank, and associated 
equipment shall be coordinated with St. John the Baptist Parish (SJBP) and Engineer.  

4. The new portable emergency generator, fuel tank, load bank, main and secondary Breakers, 
and associated equipment shall be installed at the SJBP Ruddock Water Well #2 located at 
6243 Old US 51, Ruddock, Louisiana.  

5. The portable emergency generator and all associated equipment shall be mounted on a trailer. 
Portable emergency generator final unloading location shall be determined by SJBP, Engineer, 
and as indicated on the project site plan. Receiving, unloading, setting, and installation will be 
by the Contractor.  

6. A new 400A Disconnect shall be installed on the MCC building. The Disconnect shall be non- 
fusible, in a NEMA 3R enclosure, with visible ON/OFF indication.  

7. New power cabling between the new portable emergency generator disconnect switch and 
existing Manual Transfer Switch (MTS) shall be installed. Cable shall be 500 MCM and shall 
be installed in a 2 ½” metal conduit. Reference Attachments II and III for conduit and cable 
routing.  

8. Power cable for battery charger on the existing portable emergency generator shall be 
abandoned. The lighting panel in the generator building shall be disconnected and moved to 
the outside wall of the MCC by the new disconnect switch. The Contractor shall run a new 
120VAC circuit from a lighting panel in the MCC to the relocated lighting panel. The new 
circuit will be run in ¾” PVC conduit, using 10 AWG cable. Contractor to coordinate with 
Owner and Engineer to confirm the circuit to be used to power the relocated lighting panel.
9. The above work shall be completed and the new portable emergency generator shall be ready to be put into service before removing the existing portable emergency generator from the MTS.

10. The Entergy Main Disconnect shall be closed by Owner. OWNER AND CONTRACTOR TO ENSURE THAT ALL DISCONNECTS ARE LOCKED OUT WITH CONTRACTOR’S AND OWNERS’ LOCKS, AND VERIFY THAT ALL CABLES ARE DE-ENERGIZED BEFORE STARTING ANY WORK ON THE MTS.

11. At this time, the Contractor, with oversite from the Owner, shall remove the existing portable emergency generator power cables from the MTS and connect the new portable emergency generator power cables to the existing MTS. Power interruption shall be limited for no longer than 2 hours per outage.

12. Contractor to provide 500 MCM CLX cable of sufficient length to run from the new portable emergency generator to the new portable emergency generator disconnect switch.

13. Contractor to provide 10 AWG CLX cable of sufficient length to run from the new portable emergency generator battery charger to the relocated portable emergency generator lighting panel.

14. Once the above work is completed, the Entergy Main Disconnect will be opened by the Owner.

15. The portable emergency generator shall be tested to ensure that power phasing is correct and generator is operating correctly. Contractor shall assist in start-up of portable emergency generator and provide training to SJBP after installation.

16. Contractor shall provide Maintenance and Operation manuals (both hard copy and electronic forms).

17. Complete warranty as required by the project bid documents for the portable emergency generator. This includes but not limited to warranties on equipment.

EXISTING PORTABLE EMERGENCY GENERATOR SET

1. The Owner will be responsible for draining fuel tanks, supply lines, return lines, and vent hoses associated with the existing portable emergency generator, in addition to the disposal of drained fuels.

2. Existing portable emergency generator and fuel tanks indicated to be removed and delivered intact to the Parish storage yard by SJBP.

EXISTING EMERGENCY GENERATOR SET

1. Prior to starting the decommissioning, disconnecting, and removal of generators the contractor should inspect and familiarize themselves with the existing generator, the existing electrical system, and other equipment at the site, including but not limited to any MTS, motor control centers (MCC), transformers, disconnects, breakers, & electrical cabling/wiring.

2. Contractor to provide all material and equipment required for generator removal including crane, crane operator, rigging and riggers, and other equipment as required.

3. The Owner will be responsible for draining fuel tank, supply line, return line, and vent hoses associated with the generator, in addition to the disposal of drained fuels.

4. Once the emergency generator fuel tank, supply line, return line, and vent hoses have been drained and/or vented, all other generator and building wiring to and from the existing
generator, lights, and other equipment shall be disconnected. The contractor is to use caution when disconnecting wires to ensure that all are de-energized.

5. Existing emergency generator shall be removed and delivered intact as scrap material to the Parish facility located at 425 Captain G. Bourgeois.
ST. JOHN THE BAPTIST PARISH
SECTION 48104 EMERGENCY GENERATOR
RUDDOCK WELL SITE 2 WATER PLANT

DIESEL ENGINE PORTABLE EMERGENCY GENERATOR

PART 1  GENERAL

1.1 REQUIREMENTS
A. Furnish and install a complete portable emergency generator package including engine/generator set, fuel tank and associated piping, Load Bank, battery charger and batteries, muffler, exhaust piping, wiring, and trailer as necessary to provide a complete portable emergency power system.

B. Equipment and installation shall comply with NFPA 37, NFPA 70 (NEC), NFPA 99, NFPA 110 Level 2, and UL 2200.

C. It is the intent of this specification to secure an engine-driven portable emergency generator set that has been prototype tested, factory built, production-tested, and site-tested together with all accessories necessary for a complete installation as shown on the plans and drawings and specified herein.

D. Any exceptions to the published specifications shall be subject to the approval of the engineer and submitted prior to the closing of the bid in accordance with current Louisiana public bid law with a line-by-line summary description of all the items of compliance, any items that have been omitted or have been taken exception to, and a complete description of all deviations.

E. It is the intent of this specification to secure a portable emergency generator set system that has been tested during design verification, in production, and at the final job site. The portable emergency generator set will be a commercial design and will be complete with all of the necessary accessories for complete installation as shown on the plans, drawings, and specifications herein. The equipment supplied shall meet the requirements of the National Electrical Code and all applicable state and local codes and regulations.

F. All equipment shall be new and of current production by an international, power system manufacturer of portable emergency generators, and paralleling switchgear. The manufacture shall be a supplier of a complete and coordinated system. There will be single-source responsibility for warranty, parts, and service through a factory-authorized representative with factory-trained technicians.

G. The portable emergency generator set shall be listed to UL 2200 or submitted to an independent third-party certification process to verify compliance as installed.

PART 2  PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS
A. Portable emergency generator set shall be Generac (Basis of Design), Caterpillar, Cummins, or Kohler, and shall meet all the requirements of these specifications. Specifications are based on Generac for quality and performance criteria.

B. Firms regularly engaged in manufacture of emergency portable emergency generator systems of types, sizes, and electrical characteristics required, and whose products are Listed and Labeled by UL, Inc. All replacement repair parts shall be as produced or supplied by the same manufacturer as the portable emergency generator system.
Products of firms that do not maintain factory authorized service organization and spare parts stock are not acceptable for use on this project.

C. Manufacturers shall agree to make factory training/certification, product programs/software and/or operating systems, and continued product updates and/or Tech notes available to SJBP. Required software updates shall be made available at no cost. Software shall be capable of connecting to SJBP network with remote monitoring capability. Any licensing and/or proprietary agreements between the manufacturer/distributor and SJBP shall be completed and in place prior to the manufacture and/or product being acceptable for installation.

2.2 PORTABLE EMERGENCY GENERATOR SET

A. The generator set shall be an Emergency rated, diesel engine-driven generator, turbocharged/after-cooled 12-cylinder engine. It shall provide a standby rating of 250kW/312kVA when operating at 277/480 VAC, 3 phase, 60 Hz, 0.80 power factor. The standby rating shall be available for the duration of the outage.

B. The portable emergency generator, fuel tank, and all associated piping between the portable emergency generator and fuel tank shall be mounted on a trailer.

C. The trailer shall be tandem axle, have surge brakes, an adjustable pintle ring, rear stabilizer jack, and one (1) spare tire, and DOT approved tail, side, brake, and directional lights.

D. The fuel tank shall be double wall, have UN31A Certification, and be sized for 24 hours of run time at portable emergency generator 75% load.

E. The engine shall have fluid containment with sensor.

F. The alternator shall be full load capacity with Class H insulation.

G. The portable emergency generator shall meet a minimum Emissions Certification of EPA Tier 4 – EPA Stationary Emergency Generator Power.

H. The portable emergency generator trailer shall come equipped with interior enclosure lights.

I. The portable emergency generator set shall be capable of cranking and picking up the assigned loads, meeting the minimum frequency and voltage stability requirements of these specifications, less than 10 seconds after loss of utility power.

J. Engine shall be water cooled with a centrifugal type water pump. The engine shall be equipped with a primary and secondary fuel filter, lube oil filter, intake air filter, fuel oil cooler, and instruments, including a fuel pressure gauge, water temperature gauge, lubricating oil pressure gauge, battery charging ammeter, and engine hour meter.

K. Certified engine horsepower curves shall be submitted showing the manufacturer's approval of the engine rating for portable emergency generator set standby power application. Special ratings or "maximum" ratings are not acceptable.

L. Engine shall be provided with an electronic, isochronous, load sharing, temperature compensated, governor capable of keeping the frequency at any constant load, including no load, within a steady state band width of + 0.25% of rated frequency. The governor shall not permit frequency modulation (number of times per second that the frequency varies from the average frequency) to exceed one cycle per second.
ST. JOHN THE BAPTIST PARISH
SECTION 48104 EMERGENCY GENERATOR
RUDDOCK WELL SITE 2 WATER PLANT

Single phase sensing control and speed ramp shall be included.

M. Engine shall be furnished with a 24 volt starting system with batteries. Batteries shall be industrial grade lead-acid. Batteries shall be oversized for proper starting in temperature extremes. Batteries shall be housed in the outdoor portable emergency generator enclosure. The portable emergency generator set shall be fitted with an integral accessory solid-state, current limiting, float equalizing battery charger. The charger shall be 120 volt input from an external source when the portable emergency generator is not operating with appropriate output for specific portable emergency generator set. The charger shall be driven by the prime mover and automatic voltage regulator, capable of charging and maintaining the starting battery unit (and control battery, where used) in a fully charged condition during a running condition. The charger shall be capable of switching from one rate to another to meet the needs of the discharged battery. It shall be capable of recharging a completely discharged battery in a maximum of eight (8) hours. It shall have: overload protection, voltage surge suppressors, D.C. ammeter, D.C. voltmeter, low D.C. voltage alarm relay, a minimum continuous output of 10 amperes D.C., battery charger malfunction alarm contact, and be third party listed.

N. Engine shall be equipped with a jacket water heater with re-circulating pump. Heaters and pump shall be a single assembly with a single point 120/208 volt power feed connection.

O. Engine shall have radio frequency suppression.

P. Flow shall be away from engine. The radiator shall be protected by a strong grille or screen guard and the fan shall be provided with a screen guard.

Q. Engine shall be equipped with an institutional grade muffler-silencer, with all fittings and associated bolts required. Silencer shall be integral mounted within the outdoor enclosure. Exhaust piping shall be stainless steel. Exhaust pipe size shall be such that exhaust back pressure does not exceed maximum limitation required by engine manufacturer.

R. The portable emergency generator shall be a salient pole synchronous alternator of the single bearing type built to NEMA and IEEE standards, brushless type, with packaged high performance solid-state voltage regulator and voltage adjusting rheostat.

S. Portable emergency generator regulator package shall provide a voltage regulation of +0.5% of rated voltage. Voltage regulation shall apply to any load from no load to rated load at rated power factor.

T. The frequency regulation from no load to rated load shall conform with the engine governor performance. For any addition of load up to 90% of rated load, the frequency shall recover to the steady state frequency within 5 seconds.

U. For any addition of load up to and including 90% of rated, the voltage shall recover to and remain within the steady band in not more than 1.5 seconds. The maximum allowable voltage dip during inrush shall be 20%. Documentation regarding this performance shall be included in the shop drawing submittals.

V. The portable emergency generator shall have 2/3 pitch. Stator insulation shall be Class "H" rated for 105 degree C rise by resistance above a 40 degree C ambient.
Insulation shall be moisture proof.

W. Portable emergency generator shall have amortisseur windings with the end plates connected between poles to minimize harmonic content and provide good transient performance.

X. Portable emergency generator shall be equipped with taps or adjustments for voltage such that voltage can be adjusted to match the utility voltage at the ATS within +2%.

Y. The portable emergency generator set shall be completely assembled and tested at the factory prior to shipping to the job site. The engine shall be run under full load conditions for a sufficient length of time to allow all piston rings to seat themselves prior to shipment to job site.

Z. The portable emergency generator set shall be equipped with one (1) service entrance rated, unit mounted, main 400A circuit breaker sized with appropriate short circuit rating and adjustable LSI settings, no ground fault trip, but shall include shunt trip for engine shut down tripping.

AA. The portable emergency generator set shall be equipped with one (1) service entrance rated, unit mounted, secondary 100A circuit breaker sized with appropriate short circuit rating and adjustable LSI settings, no ground fault trip, but shall include shunt trip for engine shut down tripping.

BB. Vibration Isolation
   1. Vibration isolators shall be provided between the engine-alternator and heavy-duty steel base.

2.3 PORTABLE EMERGENCY GENERATOR SET CONTROLLER

A. Portable emergency generator unit shall contain a generator-mounted electronic modular control panel. Panel shall be environmentally sealed, solid-state, microprocessor-based for engine control and AC metering. The control panel shall have a digital display and keypad to provide access to data. The display provides complete and understandable information, and the keypad allows easy local access.

B. Alarm panel shall provide for automatic and manual starting and stopping of engine with programmable safety shutdowns and shall operate on 24 volts DC. Power shall be supplied from the portable emergency generator starting batteries.

C. Control panel shall be password protected

D. Control panel shall have integrated PLC programmable functions

E. Control panel shall meet a temperature range of -30 to 70 degrees C

F. Control Panel shall have a Graphic 128 X 64 LCD display.

G. Controls shall provide for automatic shutdown in case of high-water temperature, overspeed, overcrank, or low oil pressure.

H. The control panel shall be designed to meet NFPA 99 and 110 requirements for a Level I emergency power system.

I. The control panel shall have an alarm and event log. The alarms and indications shall comply with NFPA 110 and NEC Section 700, and shall include, but not be limited to, the following as a minimum:
1. Battery charger malfunction
2. Low lubricating oil pressure
3. Low water temperature
4. Excessive water temperature
5. Overcrank
6. Overspeed
7. Ammeter with phase selector switch
8. Portable emergency generator operating
9. Alarm buzzer and silence switch (for all alarms)
10. Lamp test switch (for all lamps)
11. Normal utility power on
12. Emergency power system operating
13. Emergency bus volt meter with phase selector
14. Emergency bus frequency meter
15. D.C. voltmeter
16. Oil pressure
17. Coolant temperature
18. Running time meter
19. Low fuel
20. Fuel leak

2.4 OUTDOOR ENCLOSURE

A. Portable emergency generator shall be housed in an enclosure constructed of steel, intended for weather protection. Housing shall be painted steel, 14 gauge with access doors with panic hardware. Doors (two (2) on each side) shall provide full access for operation and servicing and be vertically hinged to allow 180 degrees opening rotation and retention with door stays. Housing shall have a pitched roof for water run-off. Package provided shall allow portable emergency generator access to control panel and service doors at a code compliant height without the need for a service platform. Color of enclosure shall be white (confirm during submittal stage).

B. Air intake damper shall be sized to allow combustion and cooling air to enter with a face velocity to maintain a maximum ambient temperature of 110 degree F. Air discharge damper shall be gravity operated.

C. Dimensions shall be sufficient to house portable emergency generator and associated equipment, including battery charger and batteries.

D. Engine shall be provided with oil and water drains to exterior of enclosure with a bronze body ball valve installed on engine and plumbed to exterior coupling with high quality hose. Fumes disposal shall be extended to radiator discharge using an oil resistant high quality hose.

2.5 PORTABLE EMERGENCY GENERATOR LOCATION

A. The portable emergency generator will be installed inside of the SJBP Ruddock Well #2 fenced in area. See location drawings for specific details.
PART 3  EXECUTION

3.1 INSTALLATION

A. Power wiring from the MTS to the portable emergency generator disconnect switch located on the MCC building shall be in rigid metal conduit using seal-tight LMFC flex connections.

B. Battery charger wiring from an existing disconnect panel in the MCC building the relocated light panel located on the MCC building shall be in rigid metal conduit using seal-tight LMFC flex connections.

C. Submittals and shop drawings shall include cut sheets, drawings, details, and instructions necessary for complete installation of the portable emergency generator set and all associated equipment such as fuel piping, wiring, battery/charger, alarms and controls, etc.

D. Contractor shall provide a competent factory trained service engineer/technician to coordinate the installation, check-out, and start-up and testing of the complete portable emergency generator system.

E. On-site testing shall include testing of all safety devices and shall include a four hour running test consisting of one hour at 50% load, one hour at 75% load, and two hours at 100% load. Contractor shall furnish necessary load banks for testing. A copy of the load test report shall be sent to the engineer and SJBP. In addition, contractor shall refill fuel tank upon completion of load testing.

F. In addition, on-site testing shall include a complete power outage test with actual building loads to confirm proper operation of all modifications. Testing shall be coordinated with local utility and SJBP.

G. Supplier shall provide complete on-site training in the operation of the systems for SJBP at times chosen by the SJBP to include all work shifts.

H. Supplier shall provide, upon completion of installation but before final acceptance by SJBP, three complete sets of operating instructions, maintenance manuals, and drawings, showing full details for care and maintenance of each item of equipment. In addition, a simplified set of step-by-step operating instructions, encased in a suitable frame for placing at the portable emergency generator location, shall be provided with the operation and maintenance manuals.

3.2 WARRANTY

A. The portable emergency generator set and associated equipment shall be warranted by the manufacturer against defective parts or workmanship for a period of five (5) years from the date of final inspection and acceptance. Warranty conditions shall be included in submittals. Warranty shall include all parts, labor (including travel to and from the job site), expenses, equipment necessary to perform replacement and/or repairs, and costs of shipping equipment to and from the repair facility.
PART 1   GENERAL

1.1 REQUIREMENTS

A. The portable emergency generator will be connected to a new Disconnect Switch to be installed by this project, reference Attachment 4.

B. The new Disconnect Switch will be connected to the existing Manual Transfer Switch at SJBP Ruddock Water Well #2, reference Attachments 1-3.

C. The contractor shall provide and install cable and conduit from the MTS to the new disconnect. The disconnect shall be installed on an outside wall of the MCC Building, see Attachment 4 for location.

D. The disconnect switch shall be 400A, non-fusible, NEMA 3R, with lockable on-off handle.

E. New cable shall be one cable per phase, 500 MCM, copper THHN cable, installed in 2 1/2” rigid metal conduit using seal-tight LMFC flex connection(s).

F. The cable size is based on the cable run being 100’ or less, with a 3% voltage drop. Contractor to confirm that the cable meets the distance criteria.
PART 1   GENERAL

1.1 REQUIREMENTS

A. This specification contains the minimum requirements for the design, manufacture, and testing of a 75kW UL listed, radiator or enclosure top mounted style resistive load bank.

B. The load bank is required for periodic exercising and testing of the portable emergency generator. The load bank shall use the air discharge from the generator radiator for cooling.

C. This specification shall apply if the load bank is supplied to the purchaser, or as a part of other equipment.

D. Should the vendor take exception to any part of this specification, it shall be stated in the bid, and referenced to the specification line number.

E. The manufacturer shall submit for review technical data including features, performance, electrical characteristics, physical characteristics, ratings, accessories, and finishes.

F. Shop drawings shall include dimensional plans, front and side elevations and mounting details sufficient to properly install the load bank. Load bus configuration and load connections termination area shall be clearly identified.

G. Electrical schematic drawings shall be provided to detail the operation of the load bank and the provided safety circuits. Over-current protection and control devices shall be identified and their ratings marked. A system interconnection drawing shall be included for control wiring related to the load bank.

H. The equipment covered by this specification shall be designed with the latest applicable NFPA-70, NEMA, NEC, and ANSI standards.

I. The load bank shall be listed to UL Standard 508A.

1.2 INSTALLATION

A. The contractor shall install the load bank on top of the generator enclosure. Contractor to work with the load bank manufacturer to ensure that the load bank has sufficient air flow for cooling and recommended clearances for air discharge.

B. The contractor shall provide and install cable and conduit from the portable emergency generator secondary breaker to the load bank Main Power bus bar.

C. The cable shall be 1 AWG and is sized for a 200kW (100A), 480 Volts, 3-Phase circuit.

D. The cable size is based on the cable run being 50’ or less, with a 3% voltage drop. Contractor to confirm that the cable distance meets the distance criteria.

E. The fabricator shall install the load bank control panel on the side of the emergency generator enclosure. The control panel shall be provided in a NEMA 4X enclosure. The fabricator shall provide and install cable and conduit from the emergency
PART 2  PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Specified is Avtron 1500 series roof mounted load bank. Approved equivalent by Trystar LD-RT and Hilkar are acceptable. Any alternate shall be submitted for approval to the consulting engineer prior to bid in accordance with current Louisiana bid law. Alternate bids must list any deviations from this specification.

2.2 RATINGS

A. The total capacity of the load bank shall be rated 75kW at 480 Volts, 3-Phase, 3-Wire, 60 Hertz, 240 Amps per Phase at unity Power Factor.

B. The load step resolution shall be a nominal 20% of the load bank rating.

C. The load bank shall be designed for continuous duty cycle operation with no limitations.

D. Radiator/Duct mounted load banks are designed as a supplemental load to the generator set, and shall be sized at 50-60% of generator nameplate kW rating (not 100%).

2.3 MATERIAL AND CONSTRUCTION

A. The load bank shall be suitable for installation on the generator radiator core, within the radiator exhaust ductwork, or on the roof of the generator set enclosure.

B. Due to the high radiator exhaust from the generator, the load bank shall be constructed of heavy gauge of aluminized steel per ASTM A463. Aluminized steel provides superior corrosion protection and extended service life, with a better tolerance to high heat exposure compared to the more common galvanized steel.

C. The main input load bus, load step relays, fuses and control relays shall be located within the load bank enclosure.

D. The load bank shall have a self-contained 2” flange on the top and bottom edges for mounting. Load bank core size shall be calculated once the load bank manufacturer is selected. Load banks with a depth of 13” shall have provisions for overhead lifting and duct adaptors.

E. The load bank shall be designed for installation and operation outdoors. Load bank shall have a screened exhaust or a louver. Load bank will be painted ASA-61 grey and have a baked polyester powder coated finish with a film thickness of 2.8 +/- 0.4 mils per coat.

2.4 RESISTIVE LOAD ELEMENTS

A. Load elements shall be Avtron Helidyne, helically wound chromium alloy rated to operate at approximately ½ of maximum continuous rating of wire. Elements must be fully supported across the entire length within the air stream by segmented ceramic insulators on stainless steel rods. Element supports shall be designed to prevent a short circuit to adjacent elements or to ground.

B. The change in resistance due to temperature shall be minimized by maintaining
conservative watt densities.

C. The overall tolerance of the load bank shall be –0% to +5% kW at rated voltage. A – 5%, +5% rating allows the load bank to deliver less than rated kW and shall not be used. The load bank must deliver full rated kW at rated voltage.

D. Sealed wire type elements (which have the internal resistance wire totally enclosed) prevent internal cooling of the element wire and shall not be used.

2.5 COOLING

A. The engine generator shall provide sufficient CFM of air to cool the load bank. The load bank shall have a static pressure drop of approximately 0.1” H2O at design velocity (50 ft/min).

2.6 PROTECTIVE DEVICES

A. An over-temperature switch shall be provided to sense the load bank exhaust. The switch shall be electrically interlocked with the load application controls to prevent load from being applied in the event of an over temperature condition.

B. To provide for major fault protection, branch fuses shall be provided on all three phases of switched of all load steps. Branch fuses shall be current limiting type with an interrupting rating of 200K A.I.C.

C. The exterior of the load bank shall have appropriate warning/caution statements on access panels.

2.7 CONTROL PANEL

A. The control panel shall be remote 19” control panel housed in a NEMA 4 type wall mount enclosure shall be provided. The panel will be mounted on the emergency generator enclosure.

B. An integral control power transformer shall be provided to supply 120V, 1 phase, 60 Hz to the load banks control and safety circuitry. Transformer primary and secondary control circuits shall be fuse protected.

C. The control panel shall contain the following manual controls:
   1. Power ON/OFF switch
   2. Master load ON/OFF switch.
   3. Load step switches for ON/OFF application of individual load steps.

D. Control panel visual indicators shall be as follows:
   1. Power ON indication light.
   2. OVERTEMPERATURE light.

E. A standard remote load dump circuit shall be provided as part of the load bank control circuit. Provisions shall be provided to remove the load bank off-line from the operation of a remote normally closed set of auxiliary contacts from a transfer switch or other device. In the event of the remote contact opening, all load is removed.

F. A digital meter shall be installed in the control panel to show 3-line digital display of voltage, current, frequency, and power measurement. The software interface to the meter shall allow for real-time data acquisition and data logging from a laptop PC.
A. Installation and operation manuals shall be provided with the equipment and shall include complete details for the installation, commissioning, operation, and maintenance of the load bank.

B. The manuals shall include the electrical schematic and interconnect drawings for the power and control wiring for the load bank and all control devices.

C. A complete parts list with part numbers, device identification, rating shall be included in the manuals. The original manufacturers name and part number shall be included in the parts listing.

D. The manuals shall be provided electronically on a USB drive.

PART 3.0 QUALITY ASSURANCE

3.1 QUALITY CONTROL

A. The load bank shall be fully tested using a test specification written by the supplier. Tests shall include electrical functional testing, verifying conformance to assembly drawings and specifications. Each load step shall be cold resistance checked to verify proper calibration of resistive load steps and proper ohmic value.

B. The manufacturer shall maintain this data on file for inspection purposes by the purchaser. Tests using high potential equipment shall be performed to ensure isolation of the load circuits from the control circuits and to determine isolation of the load circuits from the load bank frame. Tests of all safety circuits shall be performed to verify conformance to the specification.

C. All electrical circuits shall have a high potential insulation resistance test performed at twice rated voltage plus 1000 VAC to assure insulation integrity.

D. All quality control test equipment shall be regularly maintained and calibrated to traceable national standards.

E. The Company’s Quality System shall be ISO9001 Certified.

3.2 QUALIFICATIONS OF MANUFACTURER

A. The load bank shall be manufactured by a firm regularly engaged in the manufacture of load banks and who can demonstrate at least twenty-five (25) years’ experience with at least twenty five (25) installations of load banks similar or equal to the ones specified herein.

B. A two (2) year warranty shall be provided for both the resistors and the load bank. A longer warranty period shall be available as a purchased option.
I. EXISTING RUDDOCK MANUAL TRANSFER SWITCH
II. MANUAL TRANSFER SWITCH TO DISCONNECT CONDUIT RUN
III. MANUAL TRANSFER SWITCH TO DISCONNECT CONDUIT RUN CONTINUED

- Install Unistrut on building for conduit support.
- Run new 2 1/2" conduit on side of building.
IV. PORTABLE EMERGENCY GENERATOR DISCONNECT SWITCH

- 480A NON-FUSED DISCONNECT SWITCH TO BE LOCATED APPROXIMATELY 4 FT FROM GRADE, DO NOT INSTALL UNDER AIR CONDITIONER
- 2 - 4" CONDUITS WITH CAPS
- 1 - 1 1/2" CONDUIT WITH CAP
- 2 1/2" CONDUIT FROM MANUAL TRANSFER SWITCH
- LIGHTING PANEL
- 3/4" CONDUIT WITH 10 AWG CABLE FOR LIGHTING PANEL