



ST. TAMMANY PARISH

MICHAEL B. COOPER
PARISH PRESIDENT

NOTICE TO BIDDERS

ST. TAMMANY PARISH

Sealed bids will be received by the Department of Procurement, until 2:00 p.m., **Thursday, February 15, 2024**, and then opened and read publicly at that time by the Procurement Staff for the following project:

Bid # 24-1-2 Safe Haven Water Utility Improvements

Each paper bid must be submitted in a sealed envelope. The outside of the envelope shall show the Name and Address of the Bidder, the State Contractor's License Number of the Bidder (if the work is estimated at \$50k or more), the Bid Name and the Bid Number.

The project classification is:

Municipal and Public Works Construction

This bid package is available online at www.bidexpress.com or LaPAC <https://wwwcfprd.doa.louisiana.gov/osp/lapac/pubmain.cfm>. It is the Vendor's responsibility to check Bid Express, or LaPAC frequently for any possible addenda that may be issued. The Parish is not responsible for a Vendor's failure to download any addenda documents required to complete a submission.

A Non-Mandatory pre-bid meeting will be held at St. Tammany Parish Government Office Complex, Building "B" 21454 Koop Dr. Mandeville, LA 70471, 3rd Floor Staff Conference Room on Thursday, January 25, 2024, from 2:00 PM to 3:00 PM. All bidders and sub-contractors are encouraged to attend.

Bids will be received at 21454 Koop Dr., Suite 2F, Mandeville, LA 70471 from each bidder or his agent and given a written receipt, by certified mail with return receipt requested, or electronically at www.bidexpress.com.

Procurement Department

BID PROPOSAL

ST. TAMMANY PARISH
GOVERNMENT



BID PACKAGE FOR

SAFE HAVEN WATER UTILITY IMPROVEMENTS

BID NO.: 24-1-2

DECEMBER 14, 2023

Engineers Estimate: \$311,500.00

Section 01

Table of Contents

Section 01	Table of Contents
Section 02	Instructions to Bidders
Section 03	Summary of Work
Section 04	LA Uniform Public Work Bid Form Unit Price Form
Section 05	Affidavits, Louisiana (Pursuant to LSA-R.S. 38:2224, 38:2227 and 38:2212.10)
Section 06	Insurance Requirements
Section 07	Project Sign
Section 08	General Conditions
Section 09	Sample Corporate Resolution
Section 10	Sample Certificate of Insurance
Section 11	Federal Clauses
Section 12	Sample Contract
Section 13	Technical Specifications
Section 14	Contract Drawings

Section 02

Instructions to Bidders

Bidders are urged to promptly review the requirements of this specification and submit questions for resolution as early as possible during the bid period. Questions or concerns must be submitted in writing to the Procurement Department no later than 2:00 CST seven (7) working days prior to the bid opening date. Otherwise, this will be construed as acceptance by the bidders that the intent of the specifications is clear and that competitive bids may be obtained as specified herein. Protests with regard to the specification documents will not be considered after bids are opened.

1. Bid security is required. Be sure that your bid includes such security as is necessary to meet Parish requirements and is properly signed. The bid must be fully completed. All applicable Louisiana license numbers must be affixed.
2. The Owner is the St. Tammany Parish Government (the "Parish").
3. The terms "he/his" and "it/its" may be used interchangeably.
4. The terms "Owner," the "Parish," and "St. Tammany Parish" may be used interchangeably.
5. The successful Bidder understands the limited contract time in the contract is **One hundred-twenty (120) days**, and shall submit any request for an extension of time in accordance with the General and Supplementary Conditions. Said request will reflect the days requested and the reason for same. No extension request is guaranteed or absolute.
6. Bidder specifically understands that acknowledgment of the General Conditions is required. Bidder specifically understands that signature of receipt of the General Conditions is mandated. **The Bidder's signature on the "Louisiana Uniform Public Work Bid Form" will serve as acknowledgment of the Bidder's receipt and understanding of the General Conditions as well as any Supplementary Conditions.**
7. ***If any additional work is performed by the contractor without written approval by owner, the cost of the work will be borne by the contractor and will not be reimbursed by the Parish.***
8. **Only** the Louisiana Uniform Public Bid Form, the Unit Price Form (if necessary), the bid security, and written evidence of authority of person signing the bid shall be submitted on or before the bid opening time and date provided for in the Bid Documents. Necessary copies of the Louisiana Uniform Public Work Forms and Unit Price Forms (if necessary) will be furnished for Bidding. Bound sets of the Contract Documents are for Bidder's information and should not be used in submitting Bids.
9. All other documents and information required are to be submitted by the low Bidder within ten (10) days after the opening of the bids, and at the same time of day and location as given for the opening of the bids in the Bid Documents.
10. Each Bid must be submitted in a sealed envelope, unless submitted electronically. The outside of the envelope shall show the name and address of the Bidder, the State Contractor's License Number of the Bidder (if work requires contractor's license), and the Project name and the Bid number. In the case of an electronic bid proposal, a contractor may submit an authentic digital signature on the electronic bid proposal accompanied by the contractor's license number, Project name and the Bid number.
11. The price quoted for the Work shall be stated in words and figures on the Bid Form, and in figures only on the Unit Price Form. The price in the Bid shall include all costs necessary for the complete performance of the Work in full conformity with the conditions of the Contract Documents, and shall include all applicable Federal, State, Parish, Municipal or other taxes. The price bid for the items listed on the Unit Price Form will include the cost of all related items not listed, but which are normally required to do the type of Work bid.

12. The Bid shall be signed by the Bidder. The information required on the Louisiana Uniform Public Work Bid Form must be provided. Evidence of agency, corporate, or partnership authority is required and shall be provided in conformance with LSA-R.S. 38:2212(B).
13. Only a Contractor licensed by the State to do the type of Work as indicated on the Notice to Bidders can submit a Bid. The Bidder's signature on the Bid Form certifies that he holds an active license under the provisions of Chapter 24 of Louisiana Revised Statutes Title 37. Failure to be properly licensed constitutes authority for the Owner to reject the Bid.
14. Bidders shall not attach any conditions or provisions to the Bid. Any conditions or provisions so attached may, at the sole option of the Owner, cause rejection of the Bid.
15. A Bid Guarantee of five percent (5%) of the amount of the total Bid, including Alternates, must accompany the Proposal and, at the option of the Bidder, may be a cashier's check, certified check or a satisfactory Bid Bond. The Bid Guarantee must be attached to the Louisiana Uniform Public Work Bid Form. No Bid will be considered unless it is so guaranteed. Cashier's check or certified check must be made payable to the order of the Owner. Cash deposits will not be accepted. The Owner reserves the right to cash or deposit the cashier's check or certified check. Such guarantees shall be made payable to the Parish of St. Tammany. In accordance with LSA-R.S. 38:2218(C), if a bid bond is used, it 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 with at least an A- rating in the latest printing of the A.M. Best's Key Rating Guide to write individual bonds up to ten percent of policyholders' surplus as shown in the A.M. Best's Key Rating Guide or by an insurance company in good standing licensed to write bid bonds which is either domiciled in Louisiana or owned by Louisiana residents. It is **not** required to be on any AIA form.
16. Bid securities of the three (3) lowest Bidders will be retained by the Owner until the Contract is executed or until final disposition is made of the Bids submitted. Bid securities of all other Bidders will be returned promptly after the canvas of Bids. Bids shall remain binding for forty-five (45) days after the date set for Bid Opening. The Parish shall act within the forty-five (45) days to award the contract to the lowest responsible bidder or reject all bids. However, the Parish and the lowest responsible bidder, by mutual written consent, may agree to extend the deadline for award by one or more extensions of thirty (30) calendar days. In the event the Owner issued the Letter of Award during this period, or any extension thereof, the Bid accepted shall continue to remain binding until the execution of the Contract.
17. A Proposal may be withdrawn at any time prior to the scheduled closing time for receipt of Bids, provided the request is in writing, executed by the Bidder or its duly authorized representative and is filed with the Owner prior to that time. When such a request is received, the Proposal will be returned to the Bidder unopened. A bid withdrawn under the provisions of LSA-R.S. 38:2214(C) cannot be resubmitted.
18. Written communications, over the signature of the Bidder, to modify Proposals will be accepted and the Proposal corrected in accordance therewith if received by the Owner prior to the scheduled closing time for receipt of Bids. Oral, telephonic or telegraphic Modifications will not be considered.
19. No oral interpretation obligating the Owner will be made to any Bidder as to the meaning of the Drawings, Specifications and Contract Documents. Every request for such an interpretation shall be made in writing and addressed and forwarded to the Owner. Inquiries received within seven (7) days prior to the day fixed for opening of the Bids may not be given consideration. Every interpretation made to the Bidder shall be in the form of an addendum to the Specifications. All such Addenda shall become part of the Contract Documents. Failure of the Owner to send or failure of Bidder to receive any such interpretation shall not relieve any Bidder from any obligation under this Bid as submitted without Modification. All Addenda shall be issued in accordance with the Public Bid Law, LSA-R.S. 38:2212(O).

20. The Owner reserves the right to reject any or all Bids for just cause in accordance with the Public Bid Law, LSA-R.S. 38:2214(B). Incomplete, informal, illegible, or unbalanced Bids may be rejected. Reasonable grounds for belief that any one Bidder is concerned directly or indirectly with more than one Bid will cause rejection of all Bids wherein such Bidder is concerned. If required, a Bidder shall furnish satisfactory evidence of its competence and ability to perform the Work stipulated in its Proposal. Incompetence will constitute cause for rejection. If the Parish determines that the bidder is not responsive or responsible for any reason whatsoever, the bid may be rejected in accordance with State law.
21. Contractor shall be liable without limitation to the Parish for any and all injury, death, damage, loss, destruction, damages, costs, fines, penalties, judgments, forfeitures, assessments, expenses (including attorney fees), obligations, and other liabilities of every name and description, which may occur or in any way arise out of any act or omission of Contractor, its owners, agents, employees, partners or subcontractors.
22. Upon notice of any claim, demand, suit, or cause of action against the Parish, alleged to arise out of or be related to this Contract, Contractor shall investigate, handle, respond to, provide defense for, and defend at its sole expense, even if the claim, demand, suit, or cause of action is groundless, false, or fraudulent. The Parish may, but is not required to, consult with or assist the Contractor, but this assistance shall not affect the Contractor's obligations, duties, and responsibilities under this section. Contractor shall obtain the Parish's written consent before entering into any settlement or dismissal.
23. It is understood and agreed that neither party can foresee the exigencies beyond the control of each party which arise by reason of an Act of God or force majeure; therefore, neither party shall be liable for any delay or failure in performance beyond its control resulting from an Act of God or force majeure. The Parish shall determine whether a delay or failure results from an Act of God or force majeure based on its review of all facts and circumstances. The parties shall use reasonable efforts, including but not limited to, use of continuation of operations plans (COOP), business continuity plans, and disaster recovery plans, to eliminate or minimize the effect of such events upon the performance of their respective duties under this Contract.
24. Contractor shall fully indemnify and hold harmless the Parish, without limitation, for any and all injury, death, damage, loss, destruction, damages, costs, fines, penalties, judgments, forfeitures, assessments, expenses (including attorney fees), obligations, and other liabilities of every name and description, which may occur or in any way arise out of any act or omission of Contractor, its owners, agents, employees, partners or subcontractors. The Contractor shall not indemnify for the portion of any loss or damage arising from the Parish's act or failure to act.
25. Contractor shall fully indemnify and hold harmless the Parish, without limitation, from and against damages, costs, fines, penalties, judgments, forfeitures, assessments, expenses (including attorney fees), obligations, and other liabilities in any action for infringement of any intellectual property right, including but not limited to, trademark, trade-secret, copyright, and patent rights.

When a dispute or claim arises relative to a real or anticipated infringement, the Contractor, at its sole expense, shall submit information and documentation, including formal patent attorney opinions, as required by the Parish.

If the use of the product, material, service, or any component thereof is enjoined for any reason or if the Contractor believes that it may be enjoined, Contractor, while ensuring appropriate migration and implementation, data integrity, and minimal delays of performance, shall at its sole expense and in the following order of precedence: (i) obtain for the Parish the right to continue using such product, material, service, or component thereof; (ii) modify the product, material, service, or component thereof so that it becomes a non-infringing product, material, or service of at least equal quality and performance; (iii) replace the product, material, service, or component thereof so that it becomes a non-infringing product, material, or service of at least equal quality and performance; or, (iv) provide the Parish monetary compensation for all payments made under the Contract related to the infringing product, material, service, or component, plus for all costs incurred

to procure and implement a non-infringing product, material, or service of at least equal quality and performance. Until this obligation has been satisfied, the Contractor remains in default.

The Contractor shall not be obligated to indemnify that portion of a claim or dispute based upon the Parish's unauthorized: i) modification or alteration of the product, material or service; ii) use of the product, material or service in combination with other products not furnished by Contractor; or, iii) use of the product, material or service in other than the specified operating conditions and environment.

26. Bidders shall familiarize themselves with and shall comply with all applicable Federal and State Laws, municipal ordinances and the rules and regulations of all authorities having jurisdiction over construction of the Project, which may directly or indirectly affect the Work or its prosecution. These laws and/or ordinances will be deemed to be included in the Contract, as though herein written in full.
27. Each Bidder shall visit the site of the proposed Work and fully acquaint itself with all surface and subsurface conditions as they may exist so that it may fully understand this Contract. Bidder shall also thoroughly examine and be familiar with drawings, Specifications and Contract Documents. The failure or omission of any Bidder to receive or examine any form, instrument, Drawing or document or to visit the site and acquaint itself with existing conditions shall in no way relieve any Bidder from any obligation with respect to its Bid and the responsibility in the premises.
28. The standard contract form enclosed with the Proposal documents is a prototype. It is enclosed with the Contract Documents for the guidance of the Owner and the Contractor. It has important legal consequences in all respects and consultation with an attorney is encouraged. Contractor shall be presumed to have consulted with its own independent legal counsel.
29. When one set of Contract plans show the Work to be performed by two or more prime Contractors, it is the responsibility of each Bidder to become knowledgeable of the Work to be performed by the other where the Work upon which this bid is submitted is shown to come into close proximity or in conflict with the Work of the other. In avoiding conflicts, pressure pipe lines must be installed to avoid conflict with gravity pipe lines and the Bidder of the smaller gravity pipe line in conflict with the larger gravity pipe line must include in his Bid the cost of a conflict box at these locations. The location of and a solution to the conflicts do not have to be specifically noted as such on the plans.
30. Bidder shall execute affidavit(s) attesting compliance with LSA-R.S. 38:2212.10, 38:2224, 38:2227, each as amended, and other affidavits as required by law, prior to execution of the contract.
31. Sealed Bids shall be delivered to St. Tammany Parish Government at the office of **St. Tammany Parish Government, Department of Procurement, 21454 Koop Drive, Suite 2-F, Mandeville, LA 70471**, and a receipt given, until the time and date denoted in Notice to Bidders, at which time and place the Bids shall be publicly opened and read aloud to those present. In accordance with LSA-R.S. 38:2212(H), the designer's final estimated cost of construction shall be read aloud upon opening bids. Sealed Bids may also be mailed by certified mail to **St. Tammany Parish Government, Department of Procurement, 21454 Koop Drive, Suite 2-F, Mandeville, LA 70471**, and must be received before the bid opening. Bids may also be submitted electronically. Information concerning links for electronic bidding is contained in the Notice to Bidders. It is the responsibility of the Bidders to ensure that bids are delivered in a timely fashion. **Late bids, regardless of reason, will not be considered, and will be returned to bidder.**

32. Paper bids shall be placed in a sealed envelope, marked plainly and prominently as indicated in the Notice to Bidders, and these Instructions, and addressed:

**St. Tammany Parish Government
Department of Procurement
21454 Koop Drive, Suite 2-F
Mandeville, LA 70471**

33. See Notice to Bidders for availability of Drawings, Specifications and Contract Documents via electronic methods.
34. The successful Bidder shall be required to post in each direction a public information sign, 4' x 4' in size, at the location of the project containing information required by the Owner. The Owner shall supply this information.
35. The award of the Contract, if it is awarded, will be to the lowest responsible Bidder, in accordance with State Law. No award will be made until the Owner has concluded such investigations as it deems necessary to establish the responsibility and qualifications of the Bidder to do the Work in accordance with the Contract Documents to the satisfaction of the Owner within the time prescribed as established by the Department based upon the amount of work to be performed and the conditions of same. The written contract and bond shall be issued in conformance with LSA-R.S. 38:2216. If the Contract is awarded, the Owner shall give the successful Bidder written notice of the award within forty-five (45) calendar days after the opening of the Bids in conformance with LSA-R.S. 38:2215(A), or any extension as authorized thereunder.
36. At least three days prior to the execution of the Contract, the Contractor shall deliver to the Owner the required Bonds.
37. Failure of the successful Bidder to execute the Contract and deliver the required Bonds within ten (10) days of the Notice of the Award shall be just cause for the Owner to annul the award and declare the Bid and any guarantee thereof forfeited. Award may then be made to the next lowest responsible bidder.
38. In order to ensure the faithful performance of each and every condition, stipulation and requirement of the Contract and to indemnify and hold harmless the Owner from any and all damages, either directly or indirectly arising out of any failure to perform same, the successful Bidder to whom the Contract is awarded shall furnish a Performance and Payment Bond in an amount of at least equal to one hundred percent (100%) of the Contract Price. The Contract shall not be in force or binding upon the Owner until such satisfactory Bond has been provided to and approved by the Parish. The cost of the Bond shall be paid for by the Contractor unless otherwise stipulated in the Special Provisions.
39. No surety Company will be accepted as a bondsman which has no permanent agent or representative in the State upon whom notices referred to in the General Conditions of these Specifications may be served. Service of said notice on said agent or representative in the State shall be equal to service of notice on the President of the Surety Company, or such other officer as may be concerned.
40. In conformance with LSA-R.S. 38:2219(A)(1)(a), (b), and (c):

Any surety bond written for a public works project 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 with at least an A- rating in the latest printing of the A.M. Best's Key Rating Guide, to write individual bonds up to ten percent of policyholders' surplus as shown in the A.M. Best's Key Rating Guide or by an insurance company that is either domiciled in Louisiana or owned by Louisiana residents and is licensed to write surety bonds.

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 being 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.

In addition, any surety bond written for a public works project shall be written by a surety or insurance company that is currently licensed to do business in the state of Louisiana. All contractors must comply with any other applicable provisions of LSA-R.S. 38:2219.

41. Should the Contractor's Surety, even though approved and accepted by the Owner, subsequently remove its agency or representative from the State or become insolvent, bankrupt, or otherwise fail, the Contractor shall immediately furnish a new Bond in another company approved by the Owner, at no cost to the Owner. The new Bond shall be executed under the same terms and conditions as the original Bond. The new bond shall be submitted within thirty (30) days of such time as the Owner notifies Contractor or from the time Contractor learns or has reason to know that the original surety is no longer financially viable or acceptable to the Parish, whichever occurs first. In the event that Contractor fails or refuses to timely secure additional surety, then the Owner may secure such surety and thereafter deduct such cost or expense from any sum due, or to become due to Contractor.
42. The Contractor's bondsman shall obligate itself to all the terms and covenants of these Specifications and of contracts covering the Work executed hereunder. The Owner reserves the right to do Extra Work or make changes by altering, adding to deducting from the Work under the conditions and in the manner herein before described without notice to the Contractor's surety and without in any manner affecting the liability of bondsman or releasing it from any of its obligations hereunder.
43. The Bond shall also secure for the Owner the faithful performance of the Contract in strict accordance with plans, specifications, and other Contract Documents. It shall protect the Owner against all lien laws of the State and shall provide for payment of reasonable attorney's fees for enforcement of Contract and institution or concursus proceedings, if such proceedings become necessary. Likewise, it shall provide for all additional expenses of the Owner occurring through failure of the Contractor to perform.
44. The surety of the Contractor shall be and does hereby declare and acknowledge itself by acceptance to be bound to the Owner as a guarantor, jointly and in solido, with the Contractor, for fulfillment of terms of the Contract.
45. The performance Bond and Labor and Material Bond forming part of this Contract shall be continued by Contractor and its Surety for a period of one (1) year from date of acceptance of the Work/Project by Owner to assure prompt removal and replacement of all defective material, equipment, components thereof, workmanship, etc., and to assure payment of any damage to property of Owner or others as a result of such defective materials, equipment, workmanship, etc.
46. Contractor, upon receipt of the executed contract, bond, change order, purchase order, and Notice to Proceed shall record the contract and bond with the Clerk of Court, obtain a Certificate of Recordation from the Clerk of Court, and forward this Certificate immediately to the Department of Procurement. The Department will not issue the purchase order until receipt of the Certificate of Recordation.
47. Contractor shall secure and maintain at its expense such insurance that will protect it and the Parish from claims for injuries to persons or damages to property which may arise from or in connection with the performance of Services or Work hereunder by the Contractor, his agents, representatives, employees, and/or subcontractors. The cost of such insurance shall be included in Contractor's bid.

48. The Contractor shall not commence work until it has obtained all insurance as required for the Parish Project. If the Contractor fails to furnish the Parish with the insurance protection required and begins work without first furnishing Parish with a currently dated certificate of insurance, the Parish has the right to obtain the insurance protection required and deduct the cost of insurance from the first payment due the Contractor. Further deductions are permitted from future payments as are needed to protect the interests of the Parish including, but not limited to, renewals of all policies.
49. Payment of Premiums: The insurance companies issuing the policy or policies shall have no recourse against the Parish of St. Tammany for payment of any premiums or for assessments under any form of policy.
50. Deductibles: Any and all deductibles in the described insurance policies shall be assumed by and be at the sole risk of the Contractor.
51. Authorization of Insurance Company(ies) and Rating: All insurance companies must be authorized to do business in the State of Louisiana and shall have an A.M. Best rating of no less than A-, Category VII.
52. Policy coverages and limits must be evidenced by Certificates of Insurance issued by Contractor's carrier to the Parish and shall reflect:

Date of Issue: Certificate must have current date.

Named Insured: The legal name of Contractor under contract with the Parish and its principal place of business shall be shown as the named insured on all Certificates of Liability Insurance.

Name of Certificate Holder: St. Tammany Parish Government, Office of Risk Management, P. O. Box 628, Covington, LA 70434

Project Description: A brief project description, including Project Name, Project Number and/or Contract Number, and Location.

Endorsements and Certificate Reference: All policies must be endorsed to provide, and certificates of insurance must evidence the following:

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

Additional Insured: The Parish of St. Tammany shall be named as additional named insured with respect to general liability, marine liability, pollution/environmental liability, automobile liability and excess liability coverages. *Policy endorsements required.*

Hold Harmless: Contractor's liability insurers shall evidence their cognizance of the Hold Harmless and Indemnification in favor of St. Tammany Parish Government by referencing same on the face of the Certificate(s) of Insurance.

Cancellation Notice: Producer shall provide thirty (30) days prior written notice to the Parish of policy cancellation or substantive policy change.

53. The types of insurance coverage the Contractor is required to obtain and maintain throughout the duration of the Contract shall be designated by a separate document issued by the Office of Risk Management.

54. It is the intent of these instructions that they are in conformance with State Bid Laws. Should there be any discrepancy or ambiguity in these provisions, the applicable State Bid Law shall apply.
55. The letting of any public contract in connection with funds that are granted or advanced by the United States of America shall be subject to the effect, if any, of related laws of said United States and valid rules and regulations of federal agencies in charge, or governing use and payment of such federal funds.
56. Protests based on alleged solicitation improprieties that are apparent before bid opening, or the time set for receipt of initial proposals must be filed with and received by the Procurement Department BEFORE these times. Any other protest shall be filed no later than ten (10) calendar days after: the opening of the bid; the basis of the protest is known; or the basis of the protest should have been known (whichever is earlier).
57. It is the Parish's policy to provide a method to protest exclusion from a competition or from the award of a contract, or to challenge an alleged solicitation irregularity. It is always better to seek a resolution within the Parish system before resorting to outside agencies and/or litigation to resolve differences. All protests must be made in writing, and shall be concise and logically presented to facilitate review by the Parish. The written protest shall include:

The protester's name, address, and fax and telephone numbers and the solicitation, bid, or contract number;

A detailed statement of its legal and factual grounds, including a description of the resulting prejudice to the protester;

Copies of relevant documents;

All information establishing that the protester is an interested party and that the protest is timely; and

A request for a ruling by the agency; and a statement of the form of relief requested.

The protest shall be addressed to St. Tammany Parish Government Department of Procurement, P.O. Box 628, Covington, LA 70434

The protest review shall be conducted by the Parish Legal Department.

Only protests from interested parties will be allowed. Protests based on alleged solicitation improprieties that are apparent before bid opening, or the time set for receipt of initial proposals, must be filed with and received by the Department of Procurement BEFORE those deadlines.

Any other protest shall be filed no later than ten (10) calendar days after the basis of the protest is known, or should have been known (whichever is earlier).

The Parish will use its best efforts to resolve the protest within thirty (30) days of the date that it is received by the Parish. The written response will be sent to the protestor via mail and fax, if a fax number has been provided by the protestor. The protester can request additional methods of notification.

58. The last day to submit questions and/or verification on comparable products will be no later than 2:00 pm CST, seven (7) working days prior to the opening date of the bid/proposal due date. Further, any questions or inquires must be submitted via fax to 985-898-5227, or via email to Procurement@stpgov.org. Any questions or inquiries received after the required deadline to submit questions or inquiries will not be answered.
59. St. Tammany Parish Government contracts to be awarded are dependent on the available funding and/or approval by members designated and/or acknowledged by St. Tammany

Parish Government. At any time, St. Tammany Parish Government reserves the right to cancel the award of a contract if either or both of these factors is deficient.

60. Any action by the Parish to disqualify any Bidder on the grounds that they are not a responsible Bidder shall be conducted in accordance with LSA-R.S. 38:2212(X).
61. Failure to complete or deliver within the time specified or to provide the services as specified in the bid or response will constitute a default and may cause cancellation of the contract. Where the Parish has determined the contractor to be in default. The Parish reserves the right to purchase any or all products or services covered by the contract on the open market and to charge the contractor with the cost in excess of the contract price. Until such assessed charges have been paid, no subsequent bid or response from the defaulting contractor will be considered.
62. If any part of the provisions contained herein and/or in the Specifications and Contract for the Work shall for any reason be held invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions of this Agreement or attachment, but it shall be construed as if such invalid, illegal, or unenforceable provision or part of a provision had never been contained herein.

Section 03

Summary of Work

I. Work to Include:

1. The work to be performed under this contract consists of furnishing and delivering all labor, materials, supervision, construction equipment, mechanical and electrical equipment not furnished by the St. Tammany Parish Department of Utilities, travel utilities, transportation, supplies, tools and services necessary for performing all work as specified in the Contract Documents, plus whatever work may be added as extra work under the provisions stated elsewhere in these documents.
2. The intent of the work is to:
 - a) Protect and maintain in service all utilities affected by the construction work. The Contractor shall note that existing underground utilities, in addition to water and sewer lines, may include direct buried conductors and cables, the exact location of which are unknown. It shall be the Contractor's responsibility to locate such utilities prior to excavating and to protect them during excavation and construction.
 - b) Clearing, grubbing, demolition, removal, excavation, filling, and grading required to construct the project and to restore affected areas to their original condition or as indicated on the Contract Drawings.
 - c) Work at Well Site No. 1:
 - i) Furnish and install new pumping unit.
 - ii) Improvements to chemical injection.
 - iii) Construct an 8'x8'x8' height concrete masonry unit building with metal roof.
 - iv) Furnish and install a flow meter.
 - v) Modifications to the well head and associated piping.
 - vi) Hypochlorite storage bulk and day tanks.
 - vii) Duplex Hypochlorite pump skid, complete with associated piping and control panel.
 - viii) Furnish and install an emergency shower/eye wash station.
 - ix) Furnish and install new facility control panel.
 - d) Work at Well Site No. 2:
 - i) Improvements to chemical injection.
 - ii) Construct an 8'x8'x8' height concrete masonry unit building with metal roof.
 - iii) Hypochlorite storage bulk and day tanks.
 - iv) Duplex Hypochlorite pump skid, complete with associated piping and control panel.
 - v) Furnish and install an emergency shower/eye wash station.
 - vi) Relocate existing facility Control Panel to the location indicated on the Drawings.
 - e) All piping shown on the Contract Drawings and/or specified herein, including fabricated elbows, specials, coupling, flanges, coatings, valves, manholes, pipe supports and other accessories and structures.
 - f) Furnish, install, and operational test new piping, pumps, and valves.
 - g) Installation and relocation of water piping as required by construction and tie-ins to existing systems.
 - h) Furnish all labor and materials necessary for painting, coating or otherwise protecting all mechanical and structural components.
 - i) Any items of work not specifically listed which are required to provide a complete and operating vacuum system constructed under this contract.
 - j) Furnish all labor and materials necessary to complete all required mechanical work.
 - k) Furnish all labor and materials necessary to complete all required electrical work.

- l) Complete clean up of the job sites.
3. This contract shall also include the excavation, demolition, backfilling, replacement, and repair to conditions existing prior to disturbance by the Contractor, of all ditches, drains, culverts, curbs, fences, sidewalks, pavements or other structures or obstacles the removal of which is necessary for the execution of this contract.
4. Provide all items, articles, materials, equipment, etc., mentioned herein or scheduled or shown on the drawings, and all labor, workmanship, tools, appliances, etc., required for the proper installation thereof, to accomplish the intention. In general, this Contract shall provide any item of labor or material which is obviously necessary for a completed system to accomplish the intention, whether specifically mentioned or not.

II. Location of Work:

Well #1 – Northlake Behavioral Health campus at the end of Cardinal Cove located on the St. Tammany Parish Safe Haven site at 23515 US Hwy 190, Mandeville, LA 70448.

Well #2 – Northlake Behavioral Health campus on Sparrow Road located on the St. Tammany Parish Safe Haven site at 23515 US Hwy 190, Mandeville, LA 70448.

III. Documents: Bid Documents dated December 14, 2023, and entitled:

Safe Haven Water Utility Improvements
Bid No.: 24-1-2

IV. OTHER REQUIREMENTS (as applicable)

The Contractor shall perform all his work in a way that minimizes interferences with the Department of Utility's (DU) operation of the facility and the public. All schedules and methods or work are subject to approval by the Engineer.

It will be assumed that all prospective bidders have inspected the site(s) and have anticipated themselves with the local conditions.

Because the location of the job site is on the grounds of the Safe Haven/Northlake Behavioral, it is imperative that the Contractor schedule and conduct his work in such a manner so as not to interfere in any way with the operation of the facility. Trucking through the facility, delivery and storing materials and equipment, and parking shall be done with the approval of the Engineer. The Contractor's personnel will be allowed to enter the facility and park private vehicles on the site; however, he will be allowed to bring equipment and company vehicles only into the facility as necessary in the execution of this Contract but may be required to remove them if their presence interferes with the operations of the Department of Utilities, all at the discretion of the Engineer.

The locations of all utilities shown on the plans are approximate. Contractor shall field verify all utilities and their tie-in prior to any work commences.

When not otherwise specified herein, all work and materials shall conform to the requirements of the Louisiana Department of Transportation and Development hereafter called LDOTD (2006 Edition of Louisiana Standard Specifications for Roads and Bridges).

Section 04

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: St. Tammany Parish Government
21454 Koop Dr., Suite 2F
Mandeville, La 70471

BID FOR: Safe Haven Water Utility
Improvements
Bid No.:24-1-2

(Owner to provide name and address of owner)

(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:

Kyle Associates, L.L.C. and dated: December 14, 2023

(Owner to provide name of entity preparing bidding documents.)

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 (Owner to provide description of alternate and state whether add or deduct) for the lump sum of:

N/A Dollars (\$)

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

N/A Dollars (\$)

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

N/A Dollars (\$)

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 FOLLOWING ITEMS ARE TO BE INCLUDED WITH THE SUBMISSION OF THIS LOUISIANA UNIFORM PUBLIC WORK BID FORM:

* 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.

** A CORPORATE RESOLUTION OR WRITTEN EVIDENCE of the authority of the person signing the bid for the public work as prescribed by 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 R.S. 38:2218(A) attached to and made a part of this bid.

*** W-9 - If a vendor has not done business with the Parish, the vendor should submit an updated W-9 with their response.

LOUISIANA UNIFORM PUBLIC WORK BID FORM

UNIT PRICE FORM

TO: St. Tammany Parish Government
 21454 Koop Drive, Suite 2F
 Mandeville, LA 70471

(Owner to provide name and address of owner)

BID FOR: Safe Haven Water Utility
 Improvements
 Bid No. 24-1-2

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

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.

DESCRIPTION;	X Base Bid or	Alt.#	UNIT OF MEASURE;	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
MOBILIZATION					
1	<input type="checkbox"/>		LUMP SUM		
WELL #1 IMPROVEMENTS					
2	<input type="checkbox"/>		LUMP SUM		
WELL #2 IMPROVEMENTS					
3	<input type="checkbox"/>		LUMP SUM		

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.

Section 05

**AFFIDAVIT PURSUANT TO LSA-R.S. 38:2224 and 38:2227
FOR BIDDERS FOR PUBLIC WORKS CONTRACTS**

STATE OF _____

PARISH/COUNTY OF _____

BEFORE ME, the undersigned authority, in and for the above stated State and Parish (or County), personally came and appeared:

Print Name

who, after first being duly sworn, did depose and state:

1. That affiant is appearing on behalf of _____, who is seeking a public contract with St. Tammany Parish Government.
2. That affiant employed no person, corporation, firm, association, or other organization, either directly or indirectly, to secure the public contract under which he received payment, other than persons regularly employed by the affiant whose services in connection with the construction, alteration or demolition of the public building or project or in securing the public contract were in the regular course of their duties for affiant; and
3. That no part of the contract price received by affiant 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 in connection with the construction, alteration or demolition of the public building or project were in the regular course of their duties for affiant.
4. If affiant is a sole proprietor, that after July 2, 2010, he/she has not been convicted of, or has not entered a plea of guilty or *nolo contendere* to any of the crimes or equivalent federal crimes listed in LSA-R.S. 38:2227(B).
5. If affiant is executing this affidavit on behalf of a juridical entity such as a partnership, corporation, or LLC, etc., that no individual partner, incorporator, director, manager, officer, organizer, or member, who has a minimum of a ten percent ownership in the bidding entity, has been convicted of, or has entered a plea of guilty or *nolo contendere* to any

of the crimes or equivalent federal crimes listed in LSA-R.S. 38:2227(B).

- 6. If affiant is a sole proprietor, that neither affiant, nor his/her immediate family is a public servant of St. Tammany Parish Government or the Contract is not under the supervision or jurisdiction of the public servant's agency.

- 7. If affiant is executing this affidavit on behalf of a juridical entity such as a partnership, corporation, or LLC, etc., that no public servant of St. Tammany Parish Government, or his/her immediate family, either individually or collectively, has more than a 25% ownership interest in the entity seeking the Contract with St. Tammany Parish Government if the Contract will be under the supervision or jurisdiction of the public servant's agency.

Printed Name: _____
Title: _____
Entity name: _____

THUS SWORN TO AND SUBSCRIBED BEFORE ME,
THIS _____, DAY OF _____, 202__.

Notary Public
Print Name: _____
Notary I.D./Bar No.: _____
My commission expires: _____

**AFFIDAVIT PURSUANT TO LSA-R.S. 38:2212.10 CONFIRMING
REGISTRATION AND PARTICIPATION IN A STATUS VERIFICATION
SYSTEM**

STATE OF _____

PARISH/COUNTY OF _____

BEFORE ME, the undersigned authority, in and for the above stated State and Parish (or County), personally came and appeared:

Print Name

who, after first being duly sworn, did depose and state:

1. That affiant is appearing on behalf of _____, a private employer seeking a bid or a contract with St. Tammany Parish Government for the physical performance of services within the State of Louisiana.

2. That affiant is registered and participates in a status verification system to verify that all employees in the state of Louisiana are legal citizens of the United States or are legal aliens; and

3. That affiant shall continue, during the term of the contract, to utilize a status verification system to verify the legal status of all new employees in the state of Louisiana.

4. That affiant shall require all subcontractors to submit to the affiant a sworn affidavit verifying compliance with this law.

Printed Name: _____

Title: _____

Name of Entity: _____

THUS SWORN TO AND SUBSCRIBED BEFORE ME,
THIS _____, **DAY OF** _____, **202** __.

Notary Public

Print Name: _____

Notary I.D./Bar No.: _____

My commission expires: _____



Section 06

INSURANCE REQUIREMENTS*

Construction Project: Safe Haven Water Utility Improvements

Project/Quote/Bid#: 24-1-2

*****IMPORTANT – PLEASE READ*****

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

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

- A. The Provider shall secure and maintain at its expense such insurance that will protect it and St. Tammany Parish Government (the "Parish") from claims for bodily injury, death or property damage as well as from claims under the Workers' Compensation Acts that may arise from the performance of services under this agreement. All certificates of insurance shall be furnished to the Parish and provide thirty (30) days prior notice of cancellation to the Parish, in writing, on all of the required coverage.
- B. All policies shall provide for and certificates of insurance shall indicate the following:
1. Waiver of Subrogation: The Provider's insurers will have no right of recovery or subrogation against the Parish of St. Tammany, it being the intention of the parties that all insurance policy(ies) so affected shall protect both parties and be the primary coverage for any and all losses covered by the below described insurance.
 2. Additional Insured: St. Tammany Parish Government shall be named as Additional Insured with respect to general liability, automobile liability and excess liability coverages, as well as marine liability and pollution/environmental liability, when those coverages are required or necessary.
 3. Payment of Premiums: The insurance companies issuing the policy or policies will have no recourse against St. Tammany Parish Government for payment of any premiums or for assessments under any form of policy.
 4. Project Reference: The project(s) and location(s) shall be referenced in the Comment or Description of Operations section of the Certificate of Insurance (Project ##-###, or Bid # if applicable, Type of Work, Location).
- C. Coverage must be issued by insurance companies authorized to do business in the State of Louisiana. Companies must have an A.M. Best rating of no less than A-, Category VII. St. Tammany Parish Risk Management Department may waive this requirement only for Workers Compensation coverage at their discretion.

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

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

- 1. **Commercial General Liability*** insurance – **Occurrence Form** - with a Combined Single Limit for bodily injury and property damage of at least \$1,000,000 per Occurrence / \$2,000,000 General Aggregate and \$2,000,000 Products-Completed Operations. Contracts over \$1,000,000 may require higher limits. The insurance shall provide for and the certificate(s) of insurance shall indicate the following coverages:
 - a) Premises - operations;
 - b) Broad form contractual liability;
 - c) Products and completed operations;
 - d) Personal/Advertising Injury;
 - e) Broad form property damage (for Projects involving work on Parish property);
 - f) Explosion, Collapse and Damage to underground property.
 - g) Additional Insured forms CG 2010 and CG 2037 in most current edition are required.

- 2. **Business Automobile Liability*** insurance with a Combined Single Limit of \$1,000,000 per Occurrence for bodily injury and property damage, and shall include coverage for the following:
 - a) Any auto;
 - or**
 - b) Owned autos; **and**
 - c) Hired autos; **and**
 - d) Non-owned autos.

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

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

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

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

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

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

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

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

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

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

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

7. **Owners Protective Liability (OPL)** shall be furnished by the Contractor and shall provide coverage in the minimum amount of \$1,000,000 CSL each occurrence / \$1,000,000 aggregate. **St. Tammany Parish Government, ATTN: Risk Management Department, P. O. Box 628, Covington, LA 70434 shall be the first named insured on the policy.**

8. **Builder's Risk Insurance** written on an "all-risk" policy form shall be furnished by Contractor for 100% of the contract cost. Any contract modifications increasing the contract cost will require an increase in the limit of the Builder's Risk policy. Deductibles should not exceed \$5,000 and Contractor shall be responsible for all policy deductibles. This insurance shall cover materials at the site, stored off the site, and in transit. The Builder's Risk Insurance shall include the interests of the Owner, Contractor and Subcontractors and shall terminate only when the Project is accepted in writing. **St. Tammany Parish Government, ATTN: Risk Management Department, P. O. Box 628, Covington, LA 70434 shall be the first named insured on the policy.**

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

- D. All policies of insurance shall meet the requirements of the Parish prior to the commencing of any work. The Parish has the right, but not the duty, to approve all insurance coverages prior to commencement of work. If any of the required policies are or become unsatisfactory to the Parish as to form or substance; or if a company issuing any policy is or becomes unsatisfactory to the Parish, the Provider shall promptly obtain a new policy, timely submit same to the Parish for approval, and submit a certificate thereof as provided above. The Parish agrees not to unreasonably withhold approval of any insurance carrier selected by Provider. In the event that Parish cannot agree or otherwise authorize a carrier, Provider shall have the option of selecting and submitting a new insurance carrier within 30 days of said notice by the Parish. In the event that the second submission is insufficient or is not approved, then the Parish shall have the unilateral opportunity to thereafter select a responsive and responsible insurance carrier all at the cost of Provider and thereafter deduct from Provider's fee the cost of such insurance.
- E. Upon failure of Provider to furnish, deliver and/or maintain such insurance as above provided, this contract, at the election of the Parish, may be declared suspended, discontinued or terminated. Failure of the Provider to maintain insurance shall not relieve the Provider from any liability under the contract, nor shall the insurance requirements be construed to conflict with the obligation of the Provider concerning indemnification.
- F. Provider shall maintain a current copy of all annual insurance policies and agrees to provide a certificate of insurance to the Parish on an annual basis or as may be reasonably requested for the term of the contract or any required Extended Reporting Period. Provider further shall ensure that all insurance policies are maintained in full force and effect throughout the duration of the Project and shall provide the Parish with annual renewal certificates of insurance evidencing continued coverage, without any prompting by the Parish.
- G. It shall be the responsibility of Provider to require that these insurance requirements are met by all contractors and sub-contractors performing work for and on behalf of Provider. Provider shall further ensure the Parish is named as an additional insured on all insurance policies provided by said contractor and/or sub-contractor throughout the duration of the project.
- H. Certificates of Insurance shall be issued as follows:

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

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

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

Any inquiry regarding these insurance requirements should be addressed to:

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

Section 07

Project Signs

1. General

- a. Work to include providing and installing two (2) project signs – one at each well site.

2. Materials

- a. The printed project sign(s) shall be 3/8" primed Medium Density Overlay (MDO) **OR** 3-millimeter corrugated plastic secured to exterior plywood (4' x 4').
- b. Contractor shall not use previously provided templates and/or fonts.

3. Execution

- a. The sign(s) shall be printed on a project-by-project basis in black and white, using the template and font provided to the Contractor by the St. Tammany Parish Government Project Manager.
- b. All signage proofed and approved by State Tammany Parish Government before project sign(s) are to be produced by the Contractor.
- c. Exact placement of the project sign(s) must be coordinated with, and approved by, the St. Tammany Parish Government Project Manager prior to sign installation.
- d. The sign(s) is to be installed such that the bottom of the sign is a minimum of 5' above the existing ground elevation.
- e. Sign(s) is to be maintained throughout the period of construction. If sign(s) is damaged or destroyed, repair and/or replacement of sign(s) will be at Contractor's expense.
- f. Contractor is responsible for the removal of all project signs upon issuance of final acceptance by the St. Tammany Parish Government Project Manager at no direct pay.
- g. Cost to be included in "Mobilization" bid item.

Blank Template of Parish Project Sign:

PROGRESS



MICHAEL B. COOPER
Parish President

Councilmember Name
Council District X

\$XXX,XXX.XX

Total Dollar \$
amount specified here

Project Name

Description of
Project Work

Name of Street, Bridge,
Subdivision, etc. stated here

Short Description of Project stated here
(if deemed applicable by the Parish)

Example of a Completed Parish Project Sign:

PROGRESS



MICHAEL B. COOPER
Parish President

RYKERT O. TOLEDANO, JR
Council District 5

\$514,444.40

**Dove Park
Subdivision Drainage**
Drainage Improvements along
Swallow St., Sparrow St.,
Partridge St. and Egret St.

Section 08

General Conditions for St. Tammany Parish Government

This index is for illustrative purposes only and is not intended to be complete nor exhaustive.

All bidders/contractors are presumed to have read and understood the entire document. Some information contained in these conditions may not be applicable to all projects.

GENERAL CONDITIONS INDEX

A.A.S.H.T.O	01.01
A.C.I.	01.02
ADDENDA	01.03, 01.05, 01.12, 02.13, 02.13, 06.02, 06.03
ADVERTISEMENT	01.04, 01.12, 02.21, 02.22, 02.23
AGREEMENT	01.05, 01.11, 01.12, 01.14, 01.15, 01.19, 03.02, 03.03, 03.04, 06.01, 06.02, 10.01, 11.03, 12.01, 14.02, 29.06, 32.01, 32.02, 33.06, 33.07
APPLICATION FOR PAYMENT	01.06, 29.07
A.S.T.M.	01.07
AWARD	03.00, 03.01, 03.04, 03.05
BID	01.08, 01.12, 01.26, 02.02, 02.04, 02.08, 02.09, 02.10, 02.13, 02.14, 02.17, 02.19, 02.21, 03.01, 03.04, 04.02, 14.03, 22.01, 23.01, 28.08
BIDDER	01.04, 01.08, 01.09, 01.26, 01.28, 02.02, 02.04, 02.06, 02.08, 02.09, 02.10, 02.12, 03.13, 02.14, 02.16, 02.17, 02.19, 02.20, 02.21, 02.24, 03.01, 03.04, 03.05, 23.01
BONDS	01.10, 01.12, 02.02, 02.09, 03.00, 03.03, 03.04, 03.05, 03.07, 03.08, 03.10, 03.12, 03.13, 27.06
CHANGE ORDER	01.11, 01.19, 04.01, 09.04, 11.07, 16.02, 16.06, 16.07, 21.06, 21.08, 21.10, 21.11, 29.06, 33.07
CLAIMS	02.15, 04.05, 09.05, 14.01, 16.04, 16.05, 21.16, 24.01
CLOSING ROADS COMMENCE WORK	16.06, 16.07, 16.15 04.04, 07.04, 09.02, 11.02, 14.02, 16.13, 24.02
COMPLETION OF WORK OR PROJECT	01.14, 02.15, 08.03, 09.01, 09.04, 11.00, 11.03, 12.01, 13.01, 13.11, 20.01, 25.01, 28.02, 29.04
CONDITIONS AT JOB SITE	16.17
CONTRACT DOCUMENTS	01.03, 01.03, 01.10, 01.12, 01.13, 01.16, 01.17, 01.18, 01.19, 01.29, 01.22, 01.25, 01.30, 01.33, 02.02, 02.05, 02.13, 02.17, 02.18, 02.23, 03.01, 03.02, 04.01, 04.02, 04.03, 04.04, 04.05, 06.00, 06.01, 06.02, 06.03, 07.02, 07.03, 07.05, 08.01, 10.06, 11.03, 13.01, 13.02, 21.01, 21.09, 21.10, 21.11, 28.01, 28.04, 33.01
CONTRACT PRICE	01.11, 01.13, 03.05, 04.01, 12.01, 14.02, 21.06, 21.10, 21.11, 27.05, 28.01, 28.02, 28.03, 28.08

CONTRACT TIME	01.11, 01.14, 01.22, 10.06, 11.01, 21.06, 29.04
CONTRACTOR - (Defined)	01.15
DAMAGE	02.15, 03.05, 03.12, 04.05, 09.05, 11.09, 13.11, 14.01, 14.02, 16.01, 16.02, 16.03, 16.04, 16.05, 19.01, 19.03, 20.01, 20.08, 23.03, 24.01, 24.07, 24.12, 26.03, 28.05, 28.01, 28.10, 33.07
DEFECTIVE WORK	01.16, 10.03, 21.00, 21.01, 21.07, 21.08, 21.09, 21.10, 28.03
DELAYS	07.02, 11.05, 11.09, 12.01, 16.07, 18.02, 19.01, 28.04
DRAWINGS	01.12, 01.17, 02.13, 02.17, 02.23, 06.01, 06.02, 06.03, 13.15, 22.02, 01.27, 01.33, 03.12, 04.01, 06.02, 09.01, 10.01, 10.02, 11.07, 13.00, 13.01, 13.03, 13.05, 13.11, 13.12, 13.15, 14.02, 14.07, 14.08, 14.09, 16.09, 16.13, 21.01, 21.06, 21.07, 21.14, 24.07, 27.05, 27.07, 28.01, 28.05, 28.10, 29.03, 13.00, 13.11
ENGINEER STATUS (NOT APPLICABLE)	15.00
EXTRA WORK	03.09, 14.00, 14.03, 14.04, 14.05, 14.08, 14.09, 14.10, 14.11, 14.12, 16.01, 22.02
FAILURE OF CONTRACTOR	03.10, 04.05, 06.02, 09.05, 10.01, 10.03, 13.10, 16.03, 20.01, 24.09, 27.02, 28.10
FAILURE OF OWNER	02.13
FAILURE OF SUCCESSFUL BIDDER	02.13, 02.17, 03.04
FIELD ORDER	01.18
FORCE ACCOUNT	14.04, 14.05, 14.11, 14.12
FUNDING	33.09
INDEMNIFY / HOLD HARMLESS	02.15, 03.05, 04.05, 13.11, 16.04, 16.05, 20.02, 24.06, 24.09
INDEMNIFYING INFRINGEMENT CLAUSE	02.15
INJURIES	16.00, 16.01, 16.02, 19.01, 19.03, 20.01, 24.02, 24.07
INSPECTION FEES	13.12
INSPECTIONS, GENERALLY	01.16, 13.05, 16.13, 21.00, 21.03, 21.04, 21.05, 21.06, 21.14, 21.15, 28.04, 29.02, 29.03
INSURANCE	01.05, 14.05, 16.13, 24.00 - 12, 27.07, 28.05
INTENTION OF CONTRACT DOCUMENTS	06.00, 06.01
INTENTION OF GENERAL CONDITIONS	31.00

LABOR	01.33, 03.12, 09.01, 13.00, 13.01, 13.02, 13.08, 13.10, 13.11, 13.12, 14.05, 16.06, 16.07, 21.06, 21.07, 21.15, 27.01, 28.10, 29.03
LAWS	01.10, 01.20, 02.06, 02.13, 02.14, 02.16, 02.20, 03.01, 03.10, 13.12, 16.06, 16.07, 20.02, 21.02, 21.09, 27.01, 29.06, 33.00, 33.01, 33.08
LIQUIDATED DAMAGES	11.03, 12.00, 12.01, 29.04
MATERIALS	01.33, 03.12, 04.01, 06.02, 07.01, 09.01, 10.01, 10.02, 13.00, 13.01, 13.03, 13.04, 13.05, 13.12, 13.13, 13.15, 14.01, 14.11, 20.01, 12.01, 21.07, 21.14, 21.15, 23.03, 27.01, 27.05, 27.07, 28.01, 28.05, 28.07, 28.08, 28.10
MODIFICATIONS	01.12, 01.19, 02.12, 02.13, 06.01, 06.02, 24.07, 32.02
NOTICE OF AWARD	01.20, 03.01, 03.04, 04.01
NOTICE OF DEFAULT	12.01, 33.08
NOTICE TO BIDDER	2.21
NOTICE TO CONTRACTOR	01.12, 01.21, 21.11, 30.01
NOTICE TO OWNER	13.07, 24.06, 27.07
NOTICE TO PROCEED	01.22, 09.02, 11.01, 11.03
OBSTRUCTIONS	16.09, 16.11, 16.15, 23.00, 23.01, 23.02
OCCUPANCY	25.00
ORAL INTERPRETATIONS	02.13
OWNER - (Defined)	01.23
PAYMENT	01.30, 03.10, 03.12, 03.13, 04.12, 09.03, 11.04, 11.09, 14.04, 14.12, 16.02, 16.16, 19.02, 21.07, 21.08, 21.09, 21.10, 21.11, 21.16, 24.02, 24.03, 24.12, 27.01, 27.07, 28.00, 28.01, 28.02, 28.03, 28.04, 28.05, 28.06, 28.08, 28.09, 28.10, 29.00, 29.03, 29.05, 29.07
PERMITS	13.00, 13.12, 16.13, 28.08
PRICE	02.05, 14.02, 14.03, 14.04, 14.05, 22.01
PROGRESS PAYMENT	01.06, 28.06
PROGRESS SCHEDULE	09.03, 09.05, 21.11
PROGRESS OF WORK	09.00, 11.09, 13.07, 16.01, 16.12, 21.11, 21.12, 22.02, 27.02
PROJECT	01.24, 01.29, 01.30, 02.04, 03.07, 06.01, 07.03, 10.02, 11.04, 11.06, 13.08, 13.13, 14.08, 14.11, 16.15, 24.07, 24.11, 28.07, 29.03, 29.07

PROJECT REPRESENTATIVE	01.23, 21.16
PROPERTY	16.00, 16.01, 16.02, 16.03, 16.12, 16.13, 16.17, 18.01, 19.00, 19.01, 19.02, 19.03, 23.03, 24.01, 24.07, 26.03, 28.10, 29.08, 33.05
PROPOSAL	01.26, 02.00, 02.01, 02.03, 02.05, 02.06, 02.07, 02.08, 02.09, 02.10, 02.11, 02.12, 02.14, 02.18, 02.21, 02.22, 11.03, 12.01, 14.01, 14.02, 14.03, 19.02, 23.02, 28.08
PROTESTS	33.10
PUNCH LIST	29.03, 29.04
QUANTITIES OF ESTIMATES	14.00, 14.01, 14.02, 14.04
RAILROADS	16.13, 19.01
RECORD DRAWINGS	08.00, 18.01, 18.02, 18.03
RECORDATION OF DOCUMENTS	03.13, 28.03, 29.05, 29.06
REJECTION OF BIDS	02.03, 02.07, 02.08, 02.10, 02.14, 03.01
RENTAL OF EQUIPMENT	14.07, 14.09
RIGHTS OF WAY	18.00
SAFETY	16.01, 16.07, 16.14, 16.17
SANITARY PROVISIONS	13.01, 17.00
SCHEDULE OF WORK	09.03, 09.04, 9.05, 11.06, 13.09
SEVERABILITY	32.01, 32.02
SHOP DRAWINGS	01.27, 06.03, 07.00, 07.01, 07.02, 07.03, 07.04, 07.05
SITE	02.17, 7.04, 13.05, 13.07, 13.11, 14.06, 16.09, 21.08, 21.09, 21.12, 22.02, 23.01, 24.07
SOLICITATION OF EMPLOYMENT	13.14
SPECIFICATIONS	01.01, 01.02, 01.05, 01.07, 01.12, 01.28, 02.13, 02.17, 02.23, 03.06, 03.09, 03.10, 03.13, 06.01, 06.02, 06.03, 07.04, 07.05, 11.03, 13.05, 13.15, 20.01, 21.12, 22.02, 28.01, 28.04, 32.01
SUBCONTRACTOR	01.27, 01.29, 04.01, 04.02, 04.03, 04.04, 04.05, 16.02, 16.04, 16.05, 20.01, 20.02, 21.07, 24.01, 24.07, 27.01, 28.07
SUBCONTRACTS	04.00, 13.09
SUBSURFACE CONDITIONS	02.17, 22.00, 22.01, 22.02
SUBSTANTIAL COMPLETION	01.30, 11.04, 21.09, 28.04, 29.01, 29.02, 29.03, 29.04, 29.06
SUPERINTENDENT	01.21, 01.31, 13.07, 14.05

SUPERVISION	13.01, 13.06
SURETY	01.05, 01.10, 02.09, 03.05, 03.06, 03.07, 03.08, 03.09, 03.11, 03.12, 04.05, 05.01, 14.03, 27.03, 27.05
SURVEY	13.02, 26.00, 26.01
TAXES	02.05, 13.00, 13.12, 13.13, 14.05, 28.07, 28.08, 28.10
TERMINATION OF CONTRACT	13.10, 24.09, 27.00, 27.01, 27.02, 27.03, 27.04, 27.05, 27.06, 27.07
TESTS, GENERALLY	21.00, 21.02, 21.03, 21.04, 21.05, 21.06
TIME	01.32
TRAFFIC	16.06, 16.07, 16.10, 16.15, 16.16
TRAFFIC HAZARDS	16.16
TREES AND SHRUBS	19.02
VERBAL INSTRUCTIONS	21.16
WAIVERS	24.06, 29.03, 33.08
WARNING DEVICES	16.13, 16.14, 16.15
WARRANTY	21.01, 21.08, 21.09, 33.04, 33.06
WORK	01.31, 20.01
WORK BY OTHERS	10.03, 10.04, 10.05
WORK BY OWNER	10.02, 10.04, 10.05
WORK FOR OTHER, RESTRICTIONS	16.12
WORK ORDER	28.01

01.00 DEFINITIONS OF TERMS

Whenever used in these General Conditions or in other Contract Documents, the following terms shall have the meanings indicated, and these shall be applicable to both the singular and plural thereof.

- 01.01 A.A.S.H.T.O American Association of State Highway and Transportation Officials. When A.A.S.H.T.O. is referred to in these Specifications it takes the meaning of the specification for materials and methods of testing specified by this association and the specification stated is considered to be a part of the Specifications as if written herein in full.
- 01.02 A.C.I American Concrete Institute. When A.C.I. is referred to in these Specifications it takes the meaning of the specification for materials and methods of testing specified by this institute and the specification stated is considered to be a part of the Specifications as if written herein in full.
- 01.03 Addenda Written or graphic instruments issued prior to the opening of bids which clarify, correct, modify or change the bidding or Contract Documents.
- 01.04 Advertisement The written instrument issued by the Owner at the request of the Owner used to notify the prospective bidder of the nature of the Work. It becomes part of the Contract Documents.
- 01.05 Agreement The written agreement or contract between the Owner and the Contractor covering the Work to be performed and the price that the Owner will pay. Other documents, including the Proposal, Addenda, Specifications, plans, surety, insurance, etc., are made a part thereof.
- 01.06 Application for Payment The form furnished by the Owner which is to be used by the Contractor in requesting incremental (progress) payments and which is to include information required by Section 28.01 and an affidavit of the Contractor. The affidavit shall stipulate that progress payments theretofore received from the Owner on account of the Work have been applied by Contractor to discharge in full of all Contractor's obligations reflected in prior applications for payment.
- 01.07 A.S.T.M. American Society of Testing Materials. When A.S.T.M. is referred to in these Specifications it takes the meaning of the specification for materials and methods of testing specified by this society and the specification stated is considered to be a part of the Specifications as if written herein in full.
- 01.08 Bid The offer or Proposal of the Bidder submitted on the prescribed form setting forth all the prices for the Work to be performed.
- 01.09 Bidder Any person, partnership, firm or corporation submitting a Bid for the Work.
- 01.10 Bonds Bid, performance and payment bonds and other instruments of security, furnished by the Contractor and its surety in accordance with the Contract Documents and Louisiana law.
- 01.11 Change Order A written order to the Contractor signed by the Owner authorizing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time after execution of the Agreement.
- 01.12 Contract Documents The Agreement, Addenda, Contractor's Bid and any documentation accompanying or post-bid documentation when attached as an exhibit, the Bonds, these General Conditions, the Advertisement for Bid, Notice to Contractor, all supplementary conditions, the Specifications, the Drawings, together with all Modifications issued after the execution of the Agreement.
- 01.13 Contract Price The total monies payable to the Contractor under the Contract Documents.

- 01.14 Contract Time The number of consecutive calendar days stated in the Agreement for the completion of the Work.
- 01.15 Contractor The person, firm, corporation or provider with whom the Owner has executed the Agreement.
- 01.16 Defective Work When work which is unsatisfactory, faulty or deficient for any reason whatsoever, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, test or approval referred to in the Contract Documents, or has been damaged prior to the Owner's recommendation or acceptance.
- 01.17 Drawings The Drawings and plans which show the character and scope of the Work to be performed and which have been prepared or approved by the Owner and are referred to in the Contract Documents.
- 01.18 Field Order A written order issued by the Owner or his agent which clarifies or interprets the Contract Documents.
- 01.19 Modification (a) A written amendment of the Contract Documents signed by both parties, (b) A Change Order, (c) A written clarification or interpretation issued by the Owner or his agent. Modification may only be issued after execution of the Agreement.
- 01.20 Notice of Award The written notice by Owner to the lowest responsible Bidder stating that upon compliance of the conditions enumerated in the Notice of Award, or enumerated in the Bid documents, the Owner will deliver the Contract Documents for signature. The time for the delivery of the Contract Documents can be extended in conformance with Louisiana Law.
- 01.21 Notice to Contractor Instructions, written or oral given by Owner to Contractor and deemed served if given to the Contractor's superintendent, foreman or mailed to Contractor at his last known place of business.
- 01.22 Notice to Proceed A written notice given by the Owner fixing the date on which the Contract Time will commence, and on which date the Contractor shall start to perform his obligation under the Contract Documents. Upon mutual consent by both parties, the Notice to Proceed may be extended.
- 01.23 Owner St. Tammany Parish Government, acting herein through its duly constituted and authorized representative, including but not limited to the Office of the Parish President or its designee, its Chief Administrative Officer, and/or Legal Counsel. St. Tammany Parish Government (hereinafter, the "Parish") and Owner may be used interchangeably.
- 01.24 Project The entire construction to be performed as provided in the Contract Documents.
- 01.25 Project Representative The authorized representative of the Owner who is assigned to the Project or any parts thereof.
- 01.26 Proposal The Bid submitted by the Bidder to the Owner on the Proposal form setting forth the Work to be done and the price for which the Bidder agrees to perform the Work.
- 01.27 Shop Drawings All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, Subcontractor, Manufacturer, Supplier or Distributor and which illustrate the equipment, material or some portion of the Work.
- 01.28 Specifications The Instructions to Bidders, these General Conditions, the Special Conditions and the Technical Provisions. All of the documents listed in the "Table of Contents."
- 01.29 Subcontractor An individual, firm or corporation having a direct Contract with the Contractor or with any other Subcontractor for the performance of a part of the Project Work.
- 01.30 Substantial Completion The date as certified by the Owner or its agent when the construction of the Project or a specified part thereof is sufficiently complete in accordance with the Contract Documents so that the Project or specified part can be utilized for the

purposes for which it was intended; or if there is no such certification, the date when final payment is due in accordance with Section 28.

- 01.31 Superintendent Contractor's site representative. The person on the site who is in full and complete charge of the Work.
- 01.32 Time Unless specifically stated otherwise, all time delays shall be calculated in calendar days.
- 01.33 Work Any and all obligations, duties and responsibilities necessary to the successful completion of the Project assigned to or undertaken by the Contractor under the Contract Documents, usually including the furnishing of all labor, materials, equipment and other incidentals.
- 01.34 The terms "he/himself" may be used interchangeably with "it/itself."

02.00 PROPOSAL

- 02.01 All papers bound with or attached to the Proposal Form are a necessary part thereof and must not be detached.
- 02.02 For submitting Bids, the only forms allowed shall be the "Louisiana Uniform Public Work Bid Form", "Louisiana Uniform Public Works Bid Form Unit Price Form" (if necessary), the Bid Bond, and written evidence of authority of person signing the bid. Necessary copies of the Louisiana Uniform Public Work Forms will be furnished for Bidding. Bound sets of the Contract Documents are for Bidder's information and should not be used in submitting Bids.
- 02.03 Proposal forms must be printed in ink or typed, unless submitted electronically. Illegibility or ambiguity therein may constitute justification for rejection of the Bid.
- 02.04 Each Bid must be submitted in a sealed envelope, unless submitted electronically. The outside of the envelope shall show the name and address of the Bidder, the State Contractor's License Number of the Bidder (if work requires contractor's license), and the Project name and number for which the Bid is submitted, along with the Bid number.
- 02.05 The price quoted for the Work shall be stated in words and figures on the Bid Form, and in numbers only on the Unit Price Form. The price in the Proposal shall include all costs necessary for the complete performance of the Work in full conformity with the conditions of the Contract Documents, and shall include all applicable Federal, State, Parish, Municipal or other taxes. The price bid for the items listed on the Unit Price Form will include the cost of all related items not listed, but which are normally required to do the type of Work bid.
- 02.06 The Bid shall be signed by the Bidder. The information required on the Louisiana Uniform Public Work Bid Form must be provided. Evidence of agency, corporate, or partnership authority is required and shall be provided in conformance with LSA-R.S. 38:2212(B).
- 02.07 Only the Contractors licensed by the State to do the type of Work involved can submit a Proposal for the Work. The envelope containing the Proposal shall have the Contractor's license number on it. Failure to be properly licensed constitutes authority by the Owner for rejection of Bid.
- 02.08 Bidders shall not attach any conditions or provisions to the Proposal. Any conditions or provisions so attached may, at the sole option of the Owner, cause rejection of the Bid or Proposal.
- 02.09 A Bid Guarantee of five percent (5%) of the amount of the total Bid, including Alternates, must accompany the Proposal and, at the option of the Bidder, may be a cashier's check, certified check or a satisfactory Bid Bond. The Bid Guarantee must be attached to the Louisiana Uniform Public Work Bid Form. No Bid will be considered unless it is so guaranteed. Cashier's check or certified check must be made payable to the order of the Owner. Cash deposits will not be accepted. The Owner reserves the right to cash or deposit the cashier's check or certified check. Such guarantees shall be made payable to the Parish

of St. Tammany. In accordance with LSA-R.S. 38:2218(C), if a bid bond is used, it 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 with at least an A- rating in the latest printing of the A.M. Best's Key Rating Guide to write individual bonds up to ten percent of policyholders' surplus as shown in the A.M. Best's Key Rating Guide, or by an insurance company in good standing licensed to write bid bonds which is either domiciled in Louisiana or owned by Louisiana residents. It is **not** required to be on any AIA form.

- 02.10 Bid securities of the three (3) lowest Bidders will be retained by the Owner until the Contract is executed or until final disposition is made of the Bids submitted. Bid securities of all other Bidders will be returned promptly after the canvas of Bids. Bids shall remain binding for forty-five (45) days after the date set for Bid Opening. The Parish shall act within the forty-five (45) days to award the contract to the lowest responsible bidder or reject all bids as permitted by Public Bid Law. However, the Parish and the lowest responsible bidder, by mutual written consent, may agree to extend the deadline for award by one or more extensions of thirty (30) calendar days. In the event the Owner issued the Letter of Award during this period, or any extension thereof, the Bid accepted shall continue to remain binding until the Execution of the Contract.
- 02.11 A Proposal may be withdrawn at any time prior to the scheduled closing time for receipt of Bids, provided the request is in writing, executed by the Bidder or its duly authorized representative and is filed with the Owner prior to that time. When such a request is received, the Proposal will be returned to the Bidder unopened.
- 02.12 Written communications, over the signature of the Bidder, to modify Proposals will be accepted and the Proposal corrected in accordance therewith if received by the Owner prior to the scheduled closing time for receipt of Bids. Oral, telephonic or telegraphic Modifications will not be considered.
- 02.13 No oral interpretation obligating the Owner will be made to any Bidder as to the meaning of the Drawings, Specifications and Contract Documents. Every request for such an interpretation shall be made in writing and addressed and forwarded to the Owner. No inquiry received within seven (7) days prior to the day fixed for opening of the Bids shall be given consideration. Every interpretation made to the Bidder shall be in the form of an addendum to the Specifications. All such Addenda shall become part of the Contract Documents. Failure of Bidder to receive any such interpretation shall not relieve any Bidder from any obligation under this Bid. All Addenda shall be issued in accordance with the Public Bid Law, LSA-R.S. 38:2212(O)(2)(a) and (b).
- 02.14 The Owner reserves the right to reject any or all Bids for just cause in accordance with the Public Bid Law, LSA-R.S. 38:2214(B). Incomplete, informal or unbalanced Bids may be rejected. Reasonable grounds for belief that any one Bidder is concerned directly or indirectly with more than one Bid will cause rejection of all Bids wherein such Bidder is concerned. If required, a Bidder shall furnish satisfactory evidence of its competence and ability to perform the Work stipulated in its Proposal. Incompetence will constitute cause for rejection. If the Parish determines that the bidder is not responsive or responsible for any reason whatsoever, the bid may be rejected in accordance with State law.
- 02.15 The Contractor shall indemnify and hold harmless the Owner from any and all suits, costs, penalties or claims for infringement by reason of use or installation of any patented design, device, material or process, or any trademark and copyright in connection with the Work agreed to be performed under this Contract, and shall indemnify and hold harmless the Owner for any costs, expenses and damages which it may be obliged to pay by reason of any such infringement at any time during the prosecution or after completion of the Work.
- 02.16 Bidders shall familiarize themselves with and shall comply with all applicable Federal and State Laws, municipal ordinances and the rules and regulations of all authorities having jurisdiction over construction of the Project, which may directly or indirectly affect the Work or its prosecution. These laws and/or ordinances will be deemed to be included in the Contract, as though herein written in full.
- 02.17 Each Bidder shall visit the site of the proposed Work and fully acquaint itself with all surface and subsurface conditions as they may exist so that it may fully understand this

Contract. Bidder shall also thoroughly examine and be familiar with drawings, Specifications and Contract Documents. The failure or omission of any Bidder to receive or examine any form instrument, Drawing or document or to visit the site and acquaint itself with existing conditions, shall in no way relieve any Bidder from any obligation with respect to its Bid and the responsibility in the premises.

- 02.18 The standard contract form enclosed with the Proposal documents is a prototype. It is enclosed with the Contract Documents for the guidance of the Owner and the Contractor. It has important legal consequences in all respects and consultation with an attorney is encouraged. Contractor shall be presumed to have consulted with its own independent legal counsel.
- 02.19 When one set of Contract plans show the Work to be performed by two or more prime Contractors, it is the responsibility of each Bidder to become knowledgeable of the Work to be performed by the other where the Work upon which this bid is submitted is shown to come into close proximity or into conflict with the Work of the other. In avoiding conflicts, pressure pipe lines must be installed to avoid conflict with gravity pipe lines and the Bidder of the smaller gravity pipe line in conflict with the larger gravity pipe line must include in his Bid the cost of a conflict box at these locations. The location of and a solution to the conflicts do not have to be specifically noted as such on the plans.
- 02.20 Bidder shall execute affidavit(s) attesting compliance with LSA-R.S. 38:2212.10, 38:2224, 38:2227, each as amended, and other affidavits as required by law, prior to execution of the contract.
- 02.21 Sealed Proposals (Bid) shall be received by St. Tammany Parish Government at the office of St. Tammany Parish Government, Department of Procurement, 21454 Koop Drive, Suite 2-F, Mandeville, LA 70471, until the time and date denoted in Notice to Bidders, at which time and place the Proposals (Bids), shall be publicly opened and read aloud to those present. In accordance with LSA-R.S. 38-2212(A)(3)(c)(i), the designer's final estimated cost of construction shall be read aloud upon opening bids. Sealed Proposals (Bids) may also be mailed by certified mail to St. Tammany Parish Government, Department of Procurement, 21454 Koop Drive, Suite 2-F, Mandeville, LA 70471, and must be received before the bid opening. Bids may also be submitted electronically. Information concerning links for electronic bidding is contained in the Notice to Bidders.
- 02.22 Proposals (Bids) shall be executed on Forms furnished and placed in a sealed envelope, marked plainly and prominently as indicated in the Notice to Bidders, and these General Conditions, and addressed:

St. Tammany Parish Government
Department of Procurement
21454 Koop Drive, Suite 2-F
Mandeville, LA 70471

- 02.23 Complete sets of Drawings, Specifications, and Contract Documents may be secured at the Office of the Owner. See Notice to Bidders for deposit schedule.
- 02.24 The successful bidder shall be required to post in each direction a public information sign, 4' x 8' in size, at the location of the project containing information required by the Owner. The Owner shall supply this information.

03.00 AWARD, EXECUTION OF DOCUMENTS, BONDS, ETC.

- 03.01 The award of the Contract, if it is awarded, will be to the lowest responsible Bidder, in accordance with State Law. No award will be made until the Owner has concluded such investigations as it deems necessary to establish the responsibility, qualifications and financial ability and stability of the Bidder to do the Work in accordance with the Contract Documents to the satisfaction of the Owner within the time prescribed as established by the Department based upon the amount of work to be performed and the conditions of same. The written contract and bond shall be issued in conformance with LSA-R.S. 38:2216. The Owner reserves the right to reject the Bid of any Bidder in accordance with the Public Bid Law, LSA-R.S. 38:2214. If the Contract is awarded, the Owner shall give the successful Bidder written notice of the award within forty-five (45) calendar days after

the opening of the Bids in conformance with LSA-R.S. 38:2215(A), or any extension as authorized thereunder.

- 03.02 At least three counterparts of the Agreement and of such other Contract Documents as practicable shall be signed by the Owner and the Contractor. The Owner shall identify those portions of the Contract Documents not so signed and such identification shall be binding on both parties. The Owner and the Contractor shall each receive an executed counterpart of the Contract Documents.
- 03.03 Prior to the execution of the Agreement, the Contractor shall deliver to the Owner the required Bonds.
- 03.04 Failure of the successful Bidder to execute the Agreement and deliver the required Bonds within twenty (20) days of the Notice of the Award shall be just cause for the Owner to annul the award and declare the Bid and any guarantee thereof forfeited.
- 03.05 In order to ensure the faithful performance of each and every condition, stipulation and requirement of the Contract and to indemnify and save harmless the Owner from any and all damages, either directly or indirectly arising out of any failure to perform same, the successful Bidder to whom the Contract is awarded shall furnish a surety Bond in an amount of at least equal to one hundred percent (100%) of the Contract Price. The Contract shall not be in force or binding upon the Owner until such satisfactory Bond has been provided to and approved by the Parish. The cost of the Bond shall be paid for by the Contractor unless otherwise stipulated in the Special Provisions.
- 03.06 No surety Company will be accepted as a bondsman who has no permanent agent or representative in the State upon whom notices referred to in the General Conditions of these Specifications may be served. Services of said notice on said agent or representative in the State shall be equal to service of notice on the President of the Surety Company, or such other officer as may be concerned.
- 03.07 In conformance with LSA-R.S. 38:2219(A)(1)(a), (b), and (c):

Any surety bond written for a public works project 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 with at least an A- rating in the latest printing of the A.M. Best's Key Rating Guide, to write individual bonds up to ten percent of policyholders' surplus as shown in the A.M. Best's Key Rating Guide or by an insurance company that is either domiciled in Louisiana or owned by Louisiana residents and is licensed to write surety bonds.

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 being 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.

In addition, any surety bond written for a public works project shall be written by a surety or insurance company that is currently licensed to do business in the state of Louisiana. All contractors must comply with any other applicable provisions of LSA-R.S. 38:2219.

- 03.08 Should the Contractor's Surety, even though approved and accepted by the Owner, subsequently remove its agency or representative from the State or become insolvent, bankrupt, or otherwise fail, the Contractor shall immediately furnish a new Bond in another company approved by the Owner, at no cost to the Owner. The new Bond shall be executed under the same terms and conditions as the original Bond. The new bond shall be submitted within thirty (30) days of such time as the Owner notifies Contractor or from the time Contractor learns or has reason to know that the original surety is no longer financially viable or acceptable to the Parish, whichever occurs first. In the event that Contractor fails

or refuses to timely secure additional surety, then the Owner may secure such surety and thereafter deduct such cost or expense from any sum due or to become due Contractor.

- 03.09 The Contractor's bondsman shall obligate itself to all the terms and covenants of these Specifications and of contracts covering the Work executed hereunder. The Owner reserves the right to do Extra Work or make changes by altering, adding to deducting from the Work under the conditions and in the manner herein before described without notice to the Contractor's surety and without in any manner affecting the liability of bondsman or releasing it from any of its obligations hereunder.
- 03.10 The Bond shall also secure for the Owner the faithful performance of the Contract in strict accordance with plans and Specifications. It shall protect the Owner against all lien laws of the State and shall provide for payment of reasonable attorney fees for enforcement of Contract and institution or concursus proceedings, if such proceedings become necessary. Likewise, it shall provide for all additional expenses of the Owner occurring through failure of the Contractor to perform.
- 03.11 The surety of the Contractor shall be and does hereby declare and acknowledge itself by acceptance to be bound to the Owner as a guarantor, jointly and in solido, with the Contractor, for fulfillment of terms of Section 03.00.
- 03.12 The performance Bond and Labor and Material Bond forming part of this Contract shall be continued by Contractor and its Surety for a period of one (1) year from date of acceptance of this Contract by Owner to assure prompt removal and replacement of all defective material, equipment, components thereof, workmanship, etc., and to assure payment of any damage to property of Owner or others as a result of such defective materials, equipment, workmanship, etc.
- 03.13 Contractor shall pay for the cost of recording the Contract and Bond and the cost of canceling same. Contractor shall also secure and pay for all Clear Lien and Privilege Certificates (together with any updates) which will be required before any final payment is made, and that may be required before any payment, at the request of the Owner, its representative, agent, architect, engineer and the like. All recordation and Clear Lien and Privilege Certificate requirements shall be in accordance with those requirements noted herein before in contract Specifications.

04.00 SUBCONTRACTS

- 04.01 Contractor shall be fully responsible for all acts and omissions of its Subcontractors and of persons and organizations for whose acts any of them may be liable to the same extent that it is responsible for the acts and omissions of persons directly employed by it. Nothing in the Contract Documents shall create any contractual relationship between Owner and any Subcontractor or other person or organization having a direct Contract with Contractor, nor shall it create any obligation on the part of the Owner to pay or to see to the payment of any monies due any Subcontractor.
- 04.02 Nothing in the Contract Documents shall be construed to control the Contractor in dividing the Work among approved Subcontractors or delineating the Work to be performed by any trade.
- 04.03 The Contractor agrees to specifically bind every Subcontractor to all of the applicable terms and conditions of the Contract Documents prior to commencing Work. Every Subcontractor, by undertaking to perform any of the Work, shall thereby automatically be deemed bound by such terms and conditions.
- 04.04 The Contractor shall indemnify and hold harmless the Owner and their agents and employees from and against all claims, damages, losses and expenses including Attorney's fees arising out of or resulting from the Contractor's failure to bind every Subcontractor and Contractor's surety to all of the applicable terms and conditions of the Contract Documents.

05.00 ASSIGNMENT

05.01 Neither party to this Contract shall assign or sublet its interest in this Contract without prior written consent of the other, nor shall the Contractor assign any monies due or to become due to it under this Contract without previous written consent of the Owner, nor without the consent of the surety unless the surety has waived its right to notice of assignment.

06.00 CORRELATION, INTERPRETATION AND INTENT OF CONTRACT DOCUMENTS.

06.01 It is the intent of the Specifications and Drawings to describe a complete Project to be constructed in accordance with the Contract Documents. The Contract Documents comprise the entire Agreement between Owner and Contractor. Alterations, modifications and amendments shall only be in writing between these parties.

06.02 The Contract Documents are intended to be complimentary and to be read *in pari materii*, and what is called for by one is as binding as if called for by all. If Contractor finds a conflict, error or discrepancy in the Contract Documents, it shall call it to the Owner's attention, in writing, at once and before proceeding with the Work affected thereby; however, it shall be liable to Owner for its failure to discover any conflict, error or discrepancy in the Specifications or Drawings. In resolving such conflicts, errors and discrepancies, the documents shall be given precedence in the following order: Agreement, Modifications, Addenda, Special Conditions, General Conditions, Construction Specifications and Drawings. The general notes on the plans shall be considered special provisions. Figure dimensions on Drawings shall govern over scale dimensions and detail Drawings shall govern over general Drawings. Where sewer connections are shown to fall on a lot line between two lots, the Contractor shall determine this location by measurement not by scale. Any Work that may reasonably be inferred from the Specifications or Drawings as being required to produce the intended result shall be supplied whether or not it is specifically called for. Work, materials or equipment described herein which so applied to this Project are covered by a well-known technical meaning or specification shall be deemed to be governed by such recognized standards unless specifically excluded.

06.03 Unless otherwise provided in the Contract Documents, the Owner will furnish to the Contractor (free of charge not to exceed ten (10) copies) Drawings and Specifications for the execution of Work. The Drawings and Specifications are the property of the Owner and are to be returned to it when the purpose for which they are intended have been served. The Contractor shall keep one copy of all Drawings and Specifications, including revisions, Addenda, details, Shop Drawings, etc. on the Work in good order and available to the Owner or the regulatory agency of the governmental body having jurisdiction in the area of the Work.

07.00 SHOP DRAWINGS, BROCHURES AND SAMPLES

07.01 After checking and verifying all field measurements, Contractor shall submit to Owner for approval, five copies (or at Owner's option, one reproducible copy) of all Shop Drawings, which shall have been checked by and stamped with the approval of Contractor and identified as Owner may require. The data shown on the Shop Drawings will be complete with respect to dimensions, design criteria, materials of construction and the like to enable Owner to review the information as required.

07.02 Contractor shall also submit to Owner, for review with such promptness as to cause no delay in Work, all samples as required by the Contract Documents. All samples will have been checked by and stamped with the approval of Contractor identified clearly as to material, manufacturer, any pertinent catalog numbers and the use for which intended. At the time of each submission, Contractor shall in writing call Owner's attention to any deviations that the Shop Drawings or samples may have from the requirements of the Contract Documents.

07.03 Owner will review with reasonable promptness Shop Drawings and samples, but its review shall be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents. The review 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 Owner and shall return the required number of

corrected copies of Shop Drawings and resubmit new samples for review. Contractor shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections called for by Owner on previous submissions. Contractor's stamp of approval on any Shop Drawing or sample shall constitute a representation to Owner that Contractor has determined and verified all quantities, dimensions, field construction criteria, materials catalog numbers and similar data and thereafter assumes full responsibility for doing so, and that it has reviewed or coordinated each Shop Drawing or sample with the requirements of the Work and the Contract Documents.

07.04 Where a Shop Drawing or sample submission is required by the Specifications, no related Work shall be commenced until the submission has been reviewed by Owner. A copy of each reviewed shop Drawing and each inspected sample shall be kept in good order by Contractor at the site and shall be available to Owner.

07.05 Owner's review of Shop Drawings or samples shall not relieve Contractor from its responsibility for any deviations from the requirements of the Contract Documents unless Contractor has in writing called Owner's attention to such deviation at the time of submission and Owner has given written approval to the specific deviation, nor shall any review by Owner relieve Contractor from responsibility for errors or omissions in the Shop Drawings. The mere submittal of shop drawings which contain deviations from the requirements of plans, specifications and/or previous submittals in itself does not satisfy this requirement.

08.00 RECORD DRAWINGS

08.01 The Contractor shall keep an accurate record in a manner approved by the Owner of all changes in the Contract Documents during construction. In Work concerning underground utilities, the Contractor shall keep an accurate record in a manner approved by the Owner of all valves, fittings, etc. Before the Work is accepted by the Owner, and said acceptance is recorded, the Contractor shall furnish the Owner a copy of this record.

08.02 Contractor shall keep an accurate drawing measured in the field to the nearest 0.1' of the location of all sewer house connections. The location shown shall be the end of the connection at the property line measured along the main line of pipe from a manhole.

08.03 Contractor shall keep an accurate drawing of the storm water drainage collection system. Inverts to the nearest 0.01' and top of castings shall be shown as well as location of all structures to the nearest 0.1'. Upon completion of the Work, the plan will be given to the Owner.

09.00 PROGRESS OF WORK

09.01 Contractor shall conduct the Work in such a professional manner and with sufficient materials, equipment and labor as is considered necessary to ensure its completion within the time limit specified.

09.02 The Owner shall issue a Notice to Proceed to the Contractor within twenty (20) calendar days from the date of execution of the Contract. Upon mutual consent by both parties, the Notice to Proceed may be extended. The Contractor is to commence Work under the Contract within ten (10) calendar days from the date the Notice to Proceed is issued by the Owner.

09.03 The Contractor, immediately after being awarded the Contract, shall prepare and submit for the Owner's approval an estimated progress schedule for the work to be performed, as well as a construction signing layout for all roads within the project area. The Contractor shall not start work or request partial payment until the work schedule has been submitted to the Owner for approval.

09.04 Revisions to the original schedule will be made based on extension of days granted for inclement weather or change orders issued under the contract. No other revision shall be made which affects the original completion or updated completion date, whichever is applicable.

09.05 Failure of the Contractor to submit an estimated progress schedule or to complete timely and on schedule the Work shown on the progress schedule negates any and all causes or claims by the Contractor for accelerated completion damages. These accelerated damage claims shall be deemed forfeited.

09.06 Meetings will be held as often as necessary to expedite the progress of the job. Meetings will be held during normal working hours at the jobsite and shall be mandatory for the Contractor and all Sub-Contractors working on the project. Meetings may be requested by the Owner at any time and at the discretion of the Owner.

10.00 OWNER'S RIGHT TO PROCEED WITH PORTIONS OF THE WORK

10.01 Upon failure of the Contractor to comply with any notice given in accordance with the provisions hereof, the Owner shall have the alternative right, instead of assuming charge of the entire Work, to place additional forces, tools, equipment and materials on parts of the Work. The cost incurred by the Owner in carrying on such parts of the Work shall be payable by the Contractor. Such Work shall be deemed to be carried on by the Owner on account of the Contractor. The Owner may retain all amounts of the cost of such Work from any sum due Contractor or those funds that may become due to Contractor under this Agreement.

10.02 Owner may perform additional Work related to the Project by itself or it may let any other direct contract which may contain similar General Conditions. Contractor shall afford the other contractors who are parties to such different contracts (or Owner, if it is performing the additional Work itself) reasonable opportunity for the introduction and storage of materials and equipment and the execution of Work, and shall properly connect and coordinate its Work with the subsequent work.

10.03 If any part of Contractor's Work depends upon proper execution or results upon the Work of any such other contractor (or Owner), Contractor shall inspect and promptly report to Owner in writing any defects or deficiencies in such Work that render it unsuitable for such proper execution and results. Failure to so report shall constitute an acceptance of the other Work as fit and proper for the relationship of its Work except as to defects and deficiencies which may appear in the other Work after the execution of its Work.

10.04 Whatever Work is being done by the Owner, other Contractors or by this Contractor, the parties shall respect the various interests of the other parties at all times. The Owner may, at its sole discretion, establish additional rules and regulations concerning such orderly respect of the rights of various interests.

10.05 Contractor shall do all cutting, fitting and patching of its Work that may be required to integrate its several parts properly and fit to receive or be received by such other Work. Contractor shall not endanger any Work of others by cutting, excavating or otherwise altering Work and will only alter Work with the written consent of Owner and of the other contractors whose Work will be affected.

10.06 If the performance of additional Work by other contractors or Owner is not noted in the Contract Documents, written notice thereof shall be given to Contractor prior to starting any such additional Work. If Contractor believes that the performance of such additional Work by Owner or others may cause additional expense or entitles an extension of the Contract Time, the Contractor may make a claim therefor. The claim must be in writing to the Owner within thirty (30) calendar days of receipt of notice from the Owner of the planned additional Work by others.

11.00 TIME OF COMPLETION

11.01 The Notice to Proceed will stipulate the date on which the Contractor shall begin work. That date shall be the beginning of the Contract Time charges.

11.02 Contractor shall notify the Owner through its duly authorized representative, in advance, of where Contractor's work shall commence each day. A daily log shall be maintained by Contractor to establish dates, times, persons contacted, and location of work. Specific notice shall be made to the Owner if the Contractor plans to work on Saturday, Sunday, or

a Parish approved holiday. If notice is not received, no consideration will be given for inclement weather and same shall be considered a valid work day.

11.03 The Work covered by the Plans, Specifications and Contract Documents must be completed sufficiently for acceptance within the number of calendar days specified in the Proposal and/or the Contract, commencing from the date specified in the Notice to Proceed. It is hereby understood and mutually agreed, by and between the Contractor and the Owner, that the time of completion is an essential condition of this Contract, and it is further mutually understood and agreed that if the Contractor shall neglect, fail or refuse to complete the Work within the time specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as partial consideration for the awarding of this Contract, to pay the Owner \$500.00 per day as specified in the Contract, not as a penalty, but as liquidated damages for such breach of contract for each and every calendar day that the Contractor shall be in default after the time stipulated in the Contract for completing the Work. It is specifically understood that the Owner shall also be entitled to receive a reasonable attorney fee and all costs in the event that Contractor fails to adhere to this agreement and this contract is referred to counsel for any reason whatsoever. Reasonable attorney fees shall be the prevailing hourly rate of the private sector, and in no event shall the hourly rate be less than \$175.00 per hour. All attorney fees shall be paid to the operating budget of the Office of the Parish President.

11.04 Prior to final payment, the Contractor may, in writing to the Owner, certify that the entire Project is substantially complete and request that the Owner or its agent issue a certificate of Substantial Completion. See Section 29.00.

11.05 The Owner may grant an extension(s) of time to the Contractor for unusual circumstances which are beyond the control of the Contractor and could not reasonably be foreseen by the Contractor prior to Bidding. Any such request must be made in writing to the Owner within seven (7) calendar days following the event occasioning the delay. The Owner shall have the exclusive and unilateral authority to determine, grant, and/or deny the validity of any such claim.

11.06 Extensions of time for inclement weather shall be processed as follows:

Commencing on the start date of each job, the Parish Inspector assigned to same shall keep a weekly log, indicating on each day whether inclement weather has prohibited the Contractor from working on any project within the specific job, based upon the following:

1. Should the Contractor prepare to begin work on any day in which inclement weather, or the conditions resulting from the weather, prevent work from beginning at the usual starting time, and the crew is dismissed as a result, the Contractor will not be charged for a working day whether or not conditions change during the day and the rest of the day becomes suitable for work.
2. If weather conditions on the previous day prevent Contractor from performing work scheduled, provided that no other work can be performed on any project within the package. The Parish Inspector shall determine if it is financially reasonable to require the Contractor to deviate from the schedule and relocate to another location.
3. If the Contractor is unable to work at least 60% of the normal work day due to inclement weather, provided that a normal working force is engaged on the job.

Any dispute of weather conditions as related to a specific job shall be settled by records of the National Weather Service.

11.07 Extensions of time for change orders

When a change order is issued, the Owner and Contractor will agree on a reasonable time extension, if any, to implement such change. Consideration shall be given for, but not limited to, the following:

1. If material has to be ordered;
2. Remobilization and or relocation of equipment to perform task; and
3. Reasonable time frame to complete additional work.

Time extensions for change orders shall be reflected on the official document signed by the Owner and Contractor.

- 11.08 At the end of each month, the Owner or its agent will furnish to the Contractor a monthly statement which reflects the number of approved days added to the contract. The Contractor will be allowed fourteen (14) calendar days in which to file a written protest setting forth in what respect the monthly statement is incorrect; otherwise, the statement shall be considered accepted by the Contractor as correct.
- 11.09 Apart from extension of time for unavoidable delays, no payment or allowance of any kind shall be made to the Contractor as compensation for damages because of hindrance or delay for any cause in the progress of the Work, whether such delay be avoidable or unavoidable.

12.00 LIQUIDATED DAMAGES

- 12.01 In case the Work is not completed in every respect within the time that may be extended, it is understood and agreed that per diem deductions of the sum of \$500.00 for liquidated damages, as stipulated in the Proposal and/or Contract, shall be made from the total Contract Price for each and every calendar day after and exclusive of the day on which completion was required, and up to the completion of the Work and acceptance thereof by the Owner. It is understood and agreed that time is of the essence to this Contract, and the above sum being specifically herein agreed upon in advance as the measure of damages to the Owner on account of such delay in the completion of the Work. It is further agreed that the expiration of the term herein assigned or as may be extended for performing the Work shall, *ipso facto*, constitute a putting in default, the Contractor hereby waiving any and all notice of default. The Contractor agrees and consents that the Contract Price, reduced by the aggregate of the entire damages so deducted, shall be accepted in full satisfaction of all Work executed under this Contract. It is further understood and agreed that Contractor shall be liable for a reasonable attorney fee and all costs associated with any breach of this agreement, including but not limited to this subsection. In the event that any dispute or breach herein causes referrals to counsel, then Contractor agrees to pay a reasonable attorney fee at the prevailing hourly rate of the private sector. In no event shall the hourly rate be less than \$175.00 per hour.

13.00 LABOR, MATERIALS, EQUIPMENT, SUPERVISION, PERMITS AND TAXES

- 13.01 The Contractor shall provide and pay for all labor, materials, equipment, supervision, subcontracting, transportation, tools, fuel, power, water, sanitary facilities and all incidentals necessary for the completion of the Work in substantial conformance with the Contract Documents.
- 13.02 The Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. It shall at all times maintain good discipline and order at the site.
- 13.03 Unless otherwise specifically provided for in the Specifications, all workmanship, equipment, materials, and articles incorporated in the Work covered by this Contract are to be new and of the best grade of their respective kinds for the purpose intended. Samples of materials furnished under this Contract shall be submitted for approval to the Owner when and as directed.
- 13.04 Whenever a material or article required is specified or shown on the plans by using the name of a proprietary product or of a particular manufacturer or vendor, any material or article which shall perform adequately the duties imposed by the general design will be considered equal, and satisfactory, providing the material or article so proposed is of equal substance and function and that all technical data concerning the proposed substitution be approved by the Owner prior to the Bidding. The Owner shall have the exclusive and unilateral discretion to determine quality and suitability in accordance with LSA-R.S. 38:2212(T)(2).

- 13.05 Materials shall be properly and securely stored so as to ensure the preservation of quality and fitness for the Work, and in a manner that leaves the material accessible to inspection. Materials or equipment may not be stored on the site in a manner such that it will interfere with the continued operation of streets and driveways or other contractors working on the site.
- 13.06 The Contractor, by entering into the Contract for this Work, sets itself forth as an expert in the field of construction and it shall supervise and direct the Work efficiently and with its best skill and attention. It shall be solely responsible for the means, methods, techniques, sequences and procedures of construction.
- 13.07 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 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 the Contractor. Owner specifically reserves the right to approve and/or disapprove the retention of a new superintendent, all to not be unreasonably withheld.
- 13.08 Any foreman or workman employed on this Project who disregards orders or instructions, does not perform his Work in a proper and skillful manner, or is otherwise objectionable, shall, at the written request of the Owner, be removed from the Work and shall be replaced by a suitable foreman or workman.
- 13.09 The Contractor and/or its assigned representative shall personally ensure that all subcontracts and divisions of the Work are executed in a proper and workmanlike manner, on scheduled time, and with due and proper cooperation.
- 13.10 Failure of the Contractor to keep the necessary qualified personnel on the Work shall be considered cause for termination of the Contract by the Owner.
- 13.11 Only equipment in good working order and suitable for the type of Work involved shall be brought onto the job and used by the Contractor. The Contractor is solely responsible for the proper maintenance and use of its equipment and shall hold the Owner harmless from any damages or suits for damages arising out of the improper selection or use of equipment. No piece of equipment necessary for the completion of the Work shall be removed from the job site without approval of the Owner.
- 13.12 All Federal, State and local taxes due or payable during the time of Contract on materials, equipment, labor or transportation, in connection with this Work, must be included in the amount bid by the Contractor and shall be paid to proper authorities before acceptance. The Contractor shall furnish all necessary permits and certificates and comply with all laws and ordinances applicable to the locality of the Work. The cost of all inspection fees levied by any governmental entity whatsoever shall be paid for by the Contractor.
- 13.13 In accordance with St. Tammany Police Jury Resolution 86-2672, as amended, the Contractor must provide in a form suitable to the Owner an affidavit stating that all applicable sales taxes for materials used on this project have been paid.
- 13.14 During the period that this Contract is in force, neither party to the Contract shall solicit for employment or employ an employee of the other.
- 13.15 All materials or equipment shown on the Drawings or included in these specifications shall be furnished unless written approval of a substitute is obtained from the Designer, or Owner if no separate designer.
- 13.16 If a potential supplier wishes to submit for prior approval a particular product other than a product specified in the contract documents, he shall do so no later than seven working days prior to the opening of bids. Within three days, exclusive of holidays and weekends, after such submission, the prime design professional shall furnish to both the public entity and the potential supplier written approval or denial of the product submitted. The burden of proof of the equality of the proposed substitute is upon the proposer and only that information formally submitted shall be used by the Designer in making its decision.

13.17 The decision of the Designer/Owner shall be given in good faith and shall be final.

14.00 QUANTITIES OF ESTIMATE, CHANGES IN QUANTITIES, EXTRA WORK

14.01 Whenever the estimated quantities of Work to be done and materials to be furnished under this Contract are shown in any of the documents, including the Proposal, such are given for use in comparing Bids and the right is especially reserved, except as herein otherwise specifically limited, to increase or diminish same not to exceed twenty-five percent (25%) by the Owner to complete the Work contemplated by this Contract. Such increase or diminution shall in no way vitiate this Contract, nor shall such increase or diminution give cause for claims or liability for damages.

14.02 The Owner shall have the right to make alterations in the line, grade, plans, form or dimensions of the Work herein contemplated, provided such alterations do not change the total cost of the Project, based on the originally estimated quantities, and the unit prices bid by more than twenty-five percent (25%) and provided further that such alterations do not change the total cost of any major item, based on the originally estimated quantities and the unit price bid by more than twenty-five (25%). (A major item shall be construed to be any item, the total cost of which is equal to or greater than ten percent (10%) of the total Contract Price, computed on the basis of the Proposal quantity and the Contract unit price). Should it become necessary, for the best interest of the Owner, to make changes in excess of that herein specified, the same shall be covered by supplemental agreement either before or after the commencement of the Work and without notice to the sureties. If such alterations diminish the quantity of Work to be done, such shall not constitute a claim for damages for anticipated profits for the Work dispensed with, but when the reduction in amount is a material part of the Work contemplated, the Contractor shall be entitled to only reasonable compensation as determined by the Owner for overhead and equipment charges which it may have incurred in expectation of the quantity of Work originally estimated, unless specifically otherwise provided herein; if the alterations increase the amount of Work, the increase shall be paid according to the quantity of Work actually done and at the price established for such Work under this Contract except where, in the opinion of the Owner, the Contractor is clearly entitled to extra compensation.

14.03 Without invalidating the Contract, the Owner may order Extra Work or make changes by altering, adding to, or deducting from the Work, the Contract sum being adjusted accordingly. The consent of the surety must first be obtained when necessary or desirable, all at the exclusive discretion of the Owner. All the Work of the kind bid upon shall be paid for at the price stipulated in the Proposal, and no claims for any Extra Work or material shall be allowed unless the Work is ordered in writing by the Owner.

14.04 Extra Work for which there is no price or quantity included in the Contract shall be paid for at a unit price or lump sum to be agreed upon in advance in writing by the Owner and Contractor. Where such price and sum cannot be agreed upon by both parties, or where this method of payment is impracticable, the Owner may, at its exclusive and unilateral discretion, order the Contractor to do such Work on a Force Account Basis.

14.05 In computing the price of Extra Work on a Force Account Basis, the Contractor shall be paid for all foremen and labor actually engaged on the specific Work at the current local rate of wage for each and every hour that said foremen and labor are engaged in such Work, plus ten percent (10%) of the total for superintendence, use of tools, overhead, direct & indirect costs/expenses, pro-rata applicable payroll taxes, pro-rata applicable workman compensation benefits, pro-rata insurance premiums and pro-rata reasonable profit. The Contractor shall furnish satisfactory evidence of the rate or rates of such insurance and tax. The Contractor will not be able to collect any contribution to any retirement plans or programs.

14.06 For all material used, the Contractor shall receive the actual cost of such material delivered at the site of the Work, as shown by original receipted bill, to which shall be added five percent (5%). There will be absolutely no additional surcharges or additional fees attached hereto with respect to this subsection.

14.07 For any equipment used that is owned by the Contractor, the Contractor shall be allowed a rental based upon the latest prevailing rental price, but not to exceed a rental price as determined by the Associated Equipment Distributors (A.E.D. Green Book).

- 14.08 The Contractor shall also be paid the actual costs of transportation for any equipment which it owns and which it has to transport to the Project for the Extra Work. There will be absolutely no additional surcharges or additional fees attached hereto with respect to this subsection.
- 14.09 If the Contractor is required to rent equipment for Extra Work, but not required for Contract items, it will be paid the actual cost of rental and transportation of such equipment to which no percent shall be added. The basis upon which rental cost are to be charged shall be agreed upon in writing before the Work is started. Actual rental and transportation costs shall be obtained from receipted invoices and freight bills.
- 14.10 No compensation for expenses, fees or costs incurred in executing Extra Work, other than herein specifically mentioned herein above, will be allowed.
- 14.11 A record of Extra Work on Force Account basis shall be submitted to the Owner on the day following the execution of the Work, and no less than three copies of such record shall be made on suitable forms and signed by both the Owner or his representative on the Project and the Contractor. All bids for materials used on extra Work shall be submitted to the Owner by the Contractor upon certified statements to which will be attached original bills covering the costs of such materials.
- 14.12 Payment for Extra Work of any kind will not be allowed unless the same has been ordered in writing by the Owner.
- 15.00 STATUS OF THE ENGINEER (NOT APPLICABLE)
- 16.00 INJURIES TO PERSONS AND PROPERTY
- 16.01 The Contractor shall be held solely and exclusively responsible for all injuries to persons and for all damages to the property of the Owner or others caused by or resulting from the negligence of itself, its employees or its agents, during the progress of or in connection with the Work, whether within the limits of the Work or elsewhere under the Contract proper or as Extra Work. This requirement will apply continuously and not be limited to normal working hours or days. The Owner's construction review is for the purpose of checking the Work product produced and does not include review of the methods employed by the Contractor or to the Contractor's compliance with safety measures of any nature whatsoever. The Contractor agrees to pay a reasonable attorney fee and other reasonable attendant costs of the Owner in the event it becomes necessary for the Owner to employ an attorney to enforce this section or to protect itself against suit over the Contractor's responsibilities. Attorney fees shall be at the prevailing hourly rate of the private sector. The attorney fee hourly rate shall not be less than \$175.00 per hour. All attorney fees collected shall be paid to the operating budget of the Office of the Parish President.
- 16.02 The Contractor must protect and support all utility infrastructures or other properties which are liable to be damaged during the execution of its Work. It shall take all reasonable and proper precautions to protect persons, animals and vehicles or the public from the injury, and wherever necessary, shall erect and maintain a fence or railing around any excavation, and place a sufficient number of lights about the Work and keep same burning from twilight until sunrise, and shall employ one or more watchmen as an additional security whenever needed. The Contractor understands and agrees that the Owner may request that security be placed on the premises to ensure and secure same. The Owner shall have exclusive authority to request placement of such security. Contractor agrees to retain and place security as requested, all at the sole expense of Contractor. Additional security shall not be considered a change order or reason for additional payment by the Owner. The Contractor must, as far as practicable and consistent with good construction, permit access to private and public property and leave fire hydrants, catch basins, streets, etc., free from encumbrances. The Contractor must restore at its own expense all injured or damaged property caused by any negligent act of omission or commission on its part or on the part of its employees or subcontractors, including, but not limited to, sidewalks, curbing, sodding, pipes conduits, sewers, buildings, fences, bridges, retaining walls, tanks, power lines, levees or any other building or property whatsoever to a like condition as existed prior to such damage or injury.

- 16.03 In case of failure on the part of the Contractor to restore such property or make good such damage, the Owner may upon forty-eight (48) hours' notice proceed to repair or otherwise restore such property as may be deemed necessary, and the cost thereof will be deducted from any monies due or which may become due under its Contract.
- 16.04 Contractor agrees to protect, defend, indemnify, save, and hold harmless St. Tammany Parish Government, its elected and appointed officials, departments, agencies, boards and commissions, their officers, agents servants, employees, including volunteers, from and against any and all claims, demands, expense and liability arising out of injury or death to any person or the damage, loss or destruction of any property to the extent caused by any negligent act or omission or willful misconduct of Contractor, its agents, servants, employees, and subcontractors, or any and all costs, expense and/or attorney fees incurred by St. Tammany Parish Government as a result of any claim, demands, and/or causes of action that results from the negligent performance or non-performance by Contractor, its agents, servants, employees, and subcontractors of this contract. Contractor agrees to investigate, handle, respond to, provide defense for and defend any such claims, demand, or suit at its sole expense and agrees to bear all other costs and expenses related thereto caused by any negligent act or omission or willful misconduct of Contractor, its agents, servants, employees, and subcontractors.
- 16.05 As to any and all claims against Owner, its agents, assigns, representatives or employees by any employee of Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts as may be liable, the indemnification obligation under Paragraph 16.04 shall not be limited in any way or by any limitation on the amount or type of damages, compensation or benefits payable by or for Contractor or any Subcontractor under workmen's compensation acts, disability benefit acts or other employee benefit acts.
- 16.06 No road shall be closed by the Contractor to the public except by written permission of the Owner. If so closed, the Contractor shall maintain traffic over, through and around the Work included in his Contract, with the maximum practical convenience, for the full twenty-four hours of each day of the Contract, whether or not Work has ceased temporarily. The Contractor shall notify the Owner at the earliest possible date after the Contract has been executed and, in any case, before commencement of any construction that might in any way inconvenience or endanger traffic, in order that necessary and suitable arrangements may be determined. Any and all security, maintenance, labor or costs associated with traffic control herein shall be at the sole expense of Contractor. This expense shall be paid directly by the Contractor. This expense shall not be considered as a change order nor shall it allow the Contractor any additional cost reimbursement whatsoever. All traffic deviations herein shall be coordinated with the appropriate law enforcement officials of this Parish.
- 16.07 The convenience of the general public and residents along the Works shall be provided for in a reasonable, adequate and satisfactory manner. Where existing roads are not available as detours, and unless otherwise provided, all traffic shall be permitted to pass through the Work. In all such cases, the public shall have precedence over Contractor's vehicles insofar as the traveling public's vehicles shall not be unduly delayed for the convenience of the Contractor. In order that all unnecessary delay to the traveling public may be avoided, the Contractor shall provide and station competent flagmen whose sole duties shall consist of directing and controlling the movement of public traffic either through or around the Work. Any and all security, maintenance, labor or costs associated with traffic control herein shall be at the sole expense of Contractor. This expense shall be paid directly by the Contractor. This expense shall not be considered as a change order nor shall it allow the Contractor any additional cost reimbursement whatsoever. All traffic deviations herein shall be coordinated with the appropriate law enforcement officials of this Parish.
- 16.08 The Contractor shall arrange its Work so that no undue or prolonged blocking of business establishments will occur.
- 16.09 Material and equipment stored on the right of way or work site shall be so placed and the Work at times shall be so conducted as to ensure minimum danger and obstruction to the traveling public.
- 16.10 During grading operations when traffic is being permitted to pass through construction, the Contractor shall provide a smooth, even surface that will provide a satisfactory passageway

for use of traffic. The road bed shall be sprinkled with water if necessary to prevent a dust nuisance, provided the dust nuisance is a result of the Work.

- 16.11 Fire hydrants shall be accessible at all times to the Fire Department. No material or other obstructions shall be placed closer to a fire hydrant than permitted by ordinances, rules or regulations or within fifteen (15) feet of a fire hydrant, in the absence of such ordinance, rules or regulations.
- 16.12 The Contractor shall not, without the written permission of the Owner, do Work for a resident or property owner abutting the Work at the time that this Work is in progress.
- 16.13 No Work of any character shall be commenced on railroad right-of-way until the Railroad Company has issued a permit to the Owner and has been duly notified by the Contractor in writing (with a copy forwarded to the Owner) of the date it proposes to begin Work, and until an authorized representative of the Railroad Company is present, unless the Railroad Company waives such requirements. All Work performed by the Contractor within the right-of-way limits of the railroad shall be subject to the inspection and approval of the chief engineer of the Railroad Company or its authorized representative. Any precautions considered necessary by said chief engineer to safeguard the property, equipment, employees and passengers of the Railroad Company shall be taken by the Contractor without extra compensation. The Contractor shall, without extra compensation, take such precautions and erect and maintain such tell-tale or warning devices as the Railroad Company considers necessary to safeguard the operation of its trains. The temporary vertical and horizontal clearance specified by the chief engineer of the Railroad Company in approving these shall be maintained at all times. No steel, brick, pipe or any loose material shall be left on the ground in the immediate vicinity of the railway track. Before any Work is done within Railroad right of way, the Contractor shall provide and pay all costs of any special insurance requirements of the Railroad.
- 16.14 The Contractor, shall, without extra compensation, provide, erect, paint and maintain all necessary barricades. Also, without extra compensation, the Contractor shall provide suitable and sufficient lights, torches, reflectors or other warning or danger signals and signs, provide a sufficient number of watchmen and flagmen and take all the necessary precautions for the protection of the Work and safety of the Public.
- 16.15 The Contractor shall erect warning signs beyond the limits of the Project, in advance of any place on the Project where operations interfere with the use of the road by traffic, including all intermediate points where the new Work crosses or coincides with the existing road. All barricades and obstructions shall be kept well painted and suitable warning signs shall be placed thereon. All barricades and obstructions shall be illuminated at night and all lights or devices for this purpose shall be kept burning from sunset to sunrise.
- 16.16 Whenever traffic is maintained through or over any part of the Project, the Contractor shall clearly mark all traffic hazards. No direct payment will be made for barricades, signs and illumination therefore or for watchmen or flagmen.
- 16.17 The Contractor will be solely and completely responsible for conditions on the job site, including safety of all persons and property during performance of the Work. This requirement will apply continuously and not be limited to normal working hours. The duty of the Owner to conduct construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures, in, or near the construction site.

17.00 SANITARY PROVISIONS

- 17.01 The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of its employees as may be necessary to comply with the rules and regulations of the State Health Agency or of the other authorities having jurisdiction and shall permit no public nuisance.

18.00 RIGHTS OF WAY

18.01 The Owner will furnish the Contractor with all necessary rights-of-way for the prosecution of the Work. The rights of way herein referred to shall be taken to mean only permission to use or pass through the locations or space in any street, highway, public or private property in which the Contractor is to prosecute the Work.

18.02 It is possible that all lands and rights of way may not be obtained as herein contemplated before construction begins, in which event the Contractor shall begin its Work upon such land and rights of way as the Owner may have previously acquired. Any delay in furnishing these lands by the Owner can be deemed proper cause for adjustment in the Contract amount and/or in the time of completion.

19.00 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE

19.01 The Contractor shall not enter upon private property for any purpose without first obtaining permission from the Owner, as well as the private property owner and/or and private property Lessees. The Contractor shall use every precaution necessary for the preservation of all public and private property, monuments, highway signs, telephone lines, other utilities, etc., along and adjacent to the Work; the Contractor shall use every precaution necessary to prevent damage to pipes, conduits, and other underground structures; and shall protect carefully from disturbance or damage all land monuments and property marks until an authorized agent has witnessed or otherwise referenced their location and shall not remove them until directed. The street and highway signs and markers that are to be affected by the Work shall be carefully removed when the Work begins and stored in a manner to keep them clean and dry. The Contractor must obtain all necessary information in regard to existing utilities and shall give notice in writing to the owners or the proper authorities in charge of streets, gas, water, pipes, electric, sewers and other underground structures, including conduits, railways, poles and pole lines, manholes, catch basins, fixtures, appurtenances, and all other property that may be affected by the Contractor's operations, at least forty-eight (48) hours before its operations will affect such property. The Contractor shall not hinder or interfere with any person in the protection of such Work or with the operation of utilities at any time. When property, the operation of railways, or other public utilities are endangered, the Contractor shall at its own expense, maintain flagmen or watchmen and any other necessary precautions to avoid interruption of service or damage to life or property, and it shall promptly repair, restore, or make good any injury or damage caused by its negligent operations in an acceptable manner. The Contractor must also obtain all necessary information in regard to the installation of new cables, conduits, and transformers, and make proper provisions and give proper notifications, in order that same can be installed at the proper time without delay to the Contractor or unnecessary inconvenience to the Owner.

19.02 The Contractor shall not remove, cut or destroy trees, shrubs, plants, or grass that are to remain in the streets or those which are privately owned, without the proper authority. Unless otherwise provided in the Special Provisions or the Proposal, the Contractor shall replace and replant all plants, shrubs, grass and restore the grounds back to its original good condition to the satisfaction of the Owner and/or the property owner. The Contractor shall assume the responsibility of replanting and guarantees that plants, shrubs, grass will be watered, fertilized and cultivated until they are in a growing condition. No direct payment will be made for removing and replanting of trees, shrubs, plants or grass unless such items are set forth in the Proposal.

19.03 When or where direct damage or injury is done to public or private property by or on account of any negligent act, omission, neglect or otherwise of the Contractor, it shall make good such damage or injury in an acceptable manner.

20.00 CONTRACTORS RESPONSIBILITY FOR WORK

20.01 Until final acceptance of the Work by the Owner as evidence by approval of the final estimate, the Work shall be in the custody and under the charge and care of the Contractor and it shall take every necessary precaution against injury or damage to any part thereof by the action of the elements or from the non-execution of the Work; unless otherwise provided for elsewhere in the Specifications or Contract. The Contractor shall rebuild, repair, restore and make good, without extra compensation, all injuries or damages to any portion of the Work occasioned by any of the above causes before its completion and

acceptance, and shall bear the expenses thereof. In case of suspension of the Work from any cause whatever, the Contractor shall be responsible for all materials and shall properly and securely store same, and if necessary, shall provide suitable shelter from damage and shall erect temporary structures where necessary. If in the exclusive discretion of the Owner, any Work or materials shall have been damaged or injured by reason of failure on the part of the Contractor or any of its Subcontractors to so protect the Work, such materials shall be removed and replaced at the sole expense of the Contractor. Such amount shall be deducted from any sum due or to be due Contractor.

20.02 The Contractor shall give all notice and comply with all Federal, State, and local laws, ordinances, and regulations in any manner affecting the conduct of the Work, and all such orders and decrees as exist, or may be enacted by bodies or tribunals having any jurisdiction or authority over the Work, and shall indemnify and hold harmless the Owner against any claim or liability arising from, or based on, the violation of any such law, ordinance, regulation, order or decree, whether by itself, its employees or Subcontractors.

21.00 TESTS AND INSPECTIONS CORRECTION & REMOVAL OF DEFECTIVE WORK

21.01 Contractor warrants and guarantees to Owner that all materials and equipment will be new unless otherwise specified and that all Work will be of good quality and free from faults or defects and in accordance with the requirements of the Contract Documents. All unsatisfactory Work, all faulty or Defective Work and all Work not conforming to the requirements of the Contract Documents at the time of acceptance shall be considered Defective. Prompt and reasonable notice of all defects shall be given to the Contractor.

21.02 If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any Work to specifically be inspected, tested or approved by some public body, Contractor shall assume full responsibility therefor, pay all costs in connection therewith and furnish Owner the required certificates of inspection, testing or approval. All other inspections, tests and approval required by the Contract Documents shall be performed by organizations acceptable to Owner and Contractor and the costs thereof shall be borne by the Contractor unless otherwise specified.

21.03 Contractor shall give Owner timely notice of readiness of the Work for all inspections, tests or approvals. If any such Work required to be inspected, tested or approved is covered without written approval of Owner, it must, if requested by Owner, be uncovered for observation, and such uncovering shall be at Contractor's expense unless Contractor has given Owner timely notice of its intention to cover such Work and Owner has not acted with reasonable promptness in response to such notice.

21.04 Neither observations by Owner nor inspections, tests or approvals shall relieve Contractor from its obligations to perform the Work in accordance with the requirements of the Contract Document.

21.05 Owner and its representatives will at reasonable times have access to the Work. Contractor shall provide proper and safe facilities for such access and observation of the Work and also for any inspection or testing thereof by others.

21.06 If any Work is covered contrary to the written request of Owner, it must, be uncovered for Owner's observation and replaced at Contractor's expense. If any Work has been covered which Owner has not specifically requested to observe prior to its being covered, or if Owner considers it necessary or advisable that covered Work be inspected or tested by others, the Contractor, at Owner's request, shall uncover, expose or otherwise make available for observations, inspections or testing as Owner 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 the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, including compensation for additional professional services, and an appropriate deductive Change Order shall be issued. If, however, such Work is not found to be Defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction.

- 21.07 If the Work is Defective, or Contractor fails to supply sufficient skilled workmen or suitable materials or equipment, or if the Contractor fails to make prompt payments to Subcontractors or for labor, materials or equipment, Owner may order Contractor to stop the Work, or any portion thereof, until the cause of 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.
- 21.08 Prior to approval of final payment, Contractor shall promptly, without cost to Owner and as specified by Owner, either correct any Defective Work, whether or not fabricated, installed or completed, or if the Work has been rejected by Owner, remove it from the site and replace it with non-defective Work. If Contractor does not correct such Defective Work or remove and replace such rejected Work within a reasonable time, all as specified in a written notice from Owner, Owner may have the deficiency corrected or the rejected Work removed and replaced. All direct or indirect costs of such correction or removal and replacement including compensation for additional professional services shall be paid by Contractor, and an appropriate deductive Change Order shall be issued. Contractor shall also bear the expense of making good all Work of others destroyed or damaged by its correction, removal or replacement of its Defective Work.
- 21.09 If, after the approval of final payment and prior to the expiration of one year after the date of Substantial Completion or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, any Work is found to be Defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions, either correct such Defective Work or if it has been rejected by Owner, remove it from the site and replace it with non-defective Work. If Contractor does not promptly comply with the terms of such instructions, Owner may have the Defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, shall be paid by Contractor. The Contractor agrees to pay a reasonable attorney fee and other reasonable attendant costs of the Owner in the event it becomes necessary for the Owner to employ an attorney to enforce this section or to protect itself against suit over the Contractor's responsibilities. Attorney fees shall be at the prevailing hourly rate of the private sector. The attorney fee hourly rate shall not be less than \$175.00 per hour. All attorney fees collected shall be paid to the operating budget of the Office of the Parish President.
- 21.10 If, instead of requiring correction or removal and replacement of Defective Work, Owner (and prior to approval of final payment) prefers to accept it, the Owner may do so. In such case, if acceptance occurs prior to approval of final payment, a Change Order shall be issued incorporating the necessary revisions in the Contract Documents, including appropriate reduction in the Contract Price, or, if the acceptance occurs after approval of final payment, an appropriate amount shall be paid by Contractor to Owner.
- 21.11 If Contractor should fail to progress the Work in accordance with the Contract Documents, including any requirements of the Progress Schedule, Owner, after seven (7) days written Notice to Contractor, may, without prejudice to any other remedy Owner may have, make good such deficiencies and the cost thereof including compensation for additional professional services shall be charged against Contractor. In such cases, a Change Order shall be issued incorporating the necessary revisions in the Contract Documents including an appropriate reduction in the Contract Price. If the payments then or thereafter due Contractor are not sufficient to cover such amount, Contractor shall pay the difference to Owner.
- 21.12 The Owner may appoint representatives to make periodic visits to the site and observe the progress and quality of the executed Work. These representatives shall be governed by the same restrictions placed on the Owner by these Specifications. The governing body of the Federal, State or local government exercising authority in the area of the Work may appoint representatives to observe the progress and quality of the Work. Contractor shall cooperate with and assist these representatives in the performance of their duties.
- 21.13 The Contractor shall be responsible for the faithful execution of its Contract and the presence or absence of the Owner's or Government's Representative is in no way or manner to be presumed or assumed to relieve in any degree the responsibility or obligation of the Contractor.

- 21.14 The Contractor shall notify the Owner and the Governmental Agency having jurisdiction as to the exact time at which it is proposed to begin Work so the Owner may provide for inspection of all materials, foundations, excavations, equipment, etc., and all or any part of the Work and to the preparation or manufacture of materials to be used whether within the limits of the Work or at any other place.
- 21.15 The Owner or its representatives shall have free access to all parts of the Work and to all places where any part of the materials to be used are procured, manufactured or prepared. The Contractor shall furnish the Owner all information relating to the Work and the material therefor, which may be deemed necessary or pertinent, and with such samples of materials as may be required. The Contractor, at its own expense, shall supply such labor and assistance as may be necessary in the handling of materials for proper inspection or for inspection of any Work done by it.
- 21.16 No verbal instructions given to the Contractor by the Owner, Project Representative or any of their agents shall change or modify the written Contract. Contractors shall make no claims for additional payments or time based upon verbal instructions.

22.00 SUBSURFACE CONDITIONS

- 22.01 It is understood and agreed that the Contractor is familiar with the subsurface conditions that will be encountered and its price bid for the Work includes all of the costs involved for Work in these conditions and it is furthermore agreed that it has taken into consideration, prior to its Bid and acceptance by Owner, all of the subsurface conditions normal or unusual that might be encountered in the location of the Work.
- 22.02 Should the Contractor encounter during the progress of the Work subsurface conditions at the site materially differing from those shown on the Drawings or indicated in the Specifications, the attention of the Owner shall be directed to such conditions before the conditions are disturbed. If the Owner finds that the conditions materially differ from those shown on the Drawings or indicated in the Specifications, it shall at once make such changes in the Drawings or Specifications as it may find necessary, and any increase or decrease in cost or extension of time resulting from such changes shall be adjusted in the same manner as provided for changes for Extra Work. The Contractor shall submit breakdowns of all costs in a manner as instructed and approved by the Owner.

23.00 REMOVAL AND DISPOSAL OF STRUCTURES AND OBSTRUCTIONS

- 23.01 Bidder shall thoroughly examine the site of the Work and shall include in its Bid the cost of removing all structures and obstructions in the way of the Work.
- 23.02 The Contractor shall remove any existing structures or part of structures, fence, building or other encumbrances or obstructions that interfere in any way with the Work. Compensations for the removal of any structure shall be made only if the item(s) to be removed was/were listed as pay item(s) on the Proposal.
- 23.03 If called for in the Special Conditions, all privately and publicly owned materials and structures removed shall be salvaged without damage and shall be piled neatly and in an acceptable manner upon the premises if it belongs to an abutting property owner, otherwise at accessible points along the improvements. Materials in structures which is the property of the Owner or property of any public body, private body or individual which is fit for use elsewhere, shall remain property of the original Owner. It shall be carefully removed without damage, in sections which may be readily transported; same shall be stored on or beyond the right of way. The Contractor will be held responsible for the care and preservation for a period of ten (10) days following the day the last or final portion of the materials stored at a particular location are placed thereon. When privately owned materials are stored beyond the right of way, the Contractor will be held responsible for such care and preservation for a period of ten (10) days responsibility period for care and preservation of the materials begins. The Contractor must furnish the Owner with evidence satisfactory that the proper owner of the materials has been duly notified by the Contractor that the said owner must assume responsibility for its materials on the date following the Contractor's ten (10) day responsibility.

24.00 INSURANCE

- 24.01 Contractor shall secure and maintain at its expense such insurance that will protect it and the Parish from claims for injuries to persons or damages to property which may arise from or in connection with the performance of Services or Work hereunder by the Contractor, his agents, representatives, employees, and/or subcontractors. The cost of such insurance shall be included in Contractor's bid.
- 24.02 The Contractor shall not commence work until it has obtained all insurance as required for the Parish Project. If the Contractor fails to furnish the Parish with the insurance protection required and begins work without first furnishing Parish with a currently dated certificate of insurance, the Parish has the right to obtain the insurance protection required and deduct the cost of insurance from the first payment due the Contractor. Further deductions are permitted from future payments as are needed to protect the interests of the Parish including, but not limited to, renewals of all policies.
- 24.03 Payment of Premiums: The insurance companies issuing the policy or policies shall have no recourse against the Parish of St. Tammany for payment of any premiums or for assessments under any form of policy.
- 24.04 Deductibles: Any and all deductibles in the described insurance policies shall be assumed by and be at the sole risk of the Contractor.
- 24.05 Authorization of Insurance Company(ies) and Rating: All insurance companies must be authorized to do business in the State of Louisiana and shall have an A.M. Best rating of no less than A-, Category VII.
- 24.06 Policy coverages and limits must be evidenced by Certificates of Insurance issued by Contractor's carrier to the Parish and shall reflect:

Date of Issue: Certificate must have current date.

Named Insured: The legal name of Contractor under contract with the Parish and its principal place of business shall be shown as the named insured on all Certificates of Liability Insurance.

Name of Certificate Holder: St. Tammany Parish Government, Office of Risk Management, P. O. Box 628, Covington, LA 70434

Project Description: A brief project description, including Project Name, Project Number and/or Contract Number, and Location.

Endorsements and Certificate Reference: All policies must be endorsed to provide, and certificates of insurance must evidence the following:

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

Additional Insured: The Parish of St. Tammany shall be named as additional named insured with respect to general liability, marine liability, pollution/environmental liability, automobile liability and excess liability coverages. *Policy endorsements required.*

Hold Harmless: Contractor's liability insurers shall evidence their cognizance of the Hold Harmless and Indemnification in favor of St. Tammany Parish Government by referencing same on the face of the Certificate(s) of Insurance.

Cancellation Notice: Producer shall provide thirty (30) days prior written notice to the Parish of policy cancellation or substantive policy change.

24.07 The types of insurance coverage the Contractor is required to obtain and maintain throughout the duration of the Contract, include, but is not limited to:

1. Commercial General Liability insurance with a Combined Single Limit for bodily injury and property damage of at least \$1,000,000 per Occurrence/\$3,000,000 General Aggregate/Products-Completed Operations Per Project. The insurance shall provide for and the certificate(s) of insurance shall indicate the following coverages:
 - a) Premises - operations;
 - b) Broad form contractual liability;
 - c) Products and completed operations;
 - d) Personal Injury;
 - e) Broad form property damage;
 - f) Explosion and collapse.
2. Marine Liability/Protection and Indemnity insurance is required for any and all vessel and/or marine operations in the minimum limits of \$1,000,000 per occurrence/\$2,000,000 per project general aggregate. The coverage shall include, but is not limited to, the basic coverages found in the Commercial General Liability insurance and coverage for third party liability.
3. Contractors' Pollution Liability and Environmental Liability insurance in the minimum amount of \$1,000,000 per occurrence, \$2,000,000 general aggregate and include coverage for full contractual liability and for all such environmental and/or hazardous waste exposures affected by this project.
4. Business Automobile Liability insurance with a Combined Single Limit of \$1,000,000 per Occurrence for bodily injury and property damage, and shall include coverage for the following:
 - a) Any automobiles;
 - b) Owned automobiles;
 - c) Hired automobiles;
 - d) Non-owned automobiles;
 - e) Uninsured motorist.
5. Workers' Compensation/Employers Liability insurance: worker's compensation insurance coverage and limits as statutorily required; Employers' Liability Coverage shall be not less than \$1,000,000 each accident, \$1,000,000 each disease, \$1,000,000 disease policy aggregate, except when projects include exposures covered under the United States Longshoremen and Harbor Workers Act, Maritime and/or Jones Act and/or Maritime Employers Liability (MEL) limits shall be not less than \$1,000,000/\$1,000,000/\$1,000,000. *Coverage for owners, officers and/or partners shall be included in the policy and a statement of such shall be made by the insuring producer on the face of the certificate.*
6. Owners Protective Liability (OPL) (formerly Owners and Contractors Protective Liability (OCP) Insurance) shall be furnished by the Contractor naming St. Tammany Parish Government as the Named Insured and shall provide coverage in the minimum amount of \$1,000,000 combined single limit (CSL) each occurrence, \$2,000,000 aggregate. Any project valued in excess of \$3,000,000 shall be set by the Office of Risk Management. The policy and all endorsements shall be addressed to St. Tammany Parish Government, Office of Risk Management, P. O. Box 628, Covington, LA 70434.
7. Builder's Risk Insurance shall be required on buildings, sewage treatment plants and drainage pumping stations, and shall be written on an "all-risk" or equivalent policy form in the amount of the full value of the initial Contract sum, plus value of subsequent Contract modifications and cost of materials supplied or installed by others, comprising 100% total value for the entire project including foundations. Deductibles should not exceed \$5,000 and Contractor shall be responsible for any and all policy deductibles. This insurance shall cover portions of the work stored off the site, and also portions of the work in transit. In addition, Installation Floater

Insurance, on an “all-risk” form, will be carried on all pumps, motors, machinery and equipment on the site or installed. Both the Builder’s Risk Insurance and the Installation Floater Insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors and shall terminate only when the Project has been accepted. St. Tammany Parish Government, P. O. Box 628, Covington, LA 70434 shall be the first named insured on the Builder’s Risk and Installation Floater Insurance.

8. Professional Liability (errors and omissions) insurance in the sum of at least One Million Dollars (\$1,000,000) per claim with Two Million Dollars (\$2,000,000) annual aggregate.
 9. An umbrella policy or excess policy may be required and/or allowed to meet minimum coverage limits, subject to the review and approval by St. Tammany Parish Government, Office of Risk Management.
- 24.08 All policies of insurance shall meet the requirements of the Parish of St. Tammany prior to the commencing of any work. The Parish of St. Tammany has the right, but not the duty, to approve all insurance policies prior to commencing of any work. If at any time, it becomes known that any of the said policies shall be or becomes unsatisfactory to the Parish of St. Tammany as to form or substance; or if a company issuing any such policy shall be or become unsatisfactory to the Parish of St. Tammany, the Contractor shall promptly obtain a new policy, timely submit same to the Parish of St. Tammany for approval and submit a certificate thereof as provided above. The Parish agrees to not unreasonably withhold approval of any insurance carrier selected by Contractor. In the event that Parish cannot agree or otherwise authorize said carrier, Contractor shall have the option of selecting and submitting new insurance carrier within 30 days of said notice by the Parish. In the event that the second submission is insufficient or is not approved, then the Parish shall have the unilateral opportunity to thereafter select a responsive and responsible insurance carrier all at the cost of Contractor and thereafter deduct from Contractor's fee the cost of such insurance.
- 24.09 Upon failure of Contractor to furnish, deliver and/or maintain such insurance as above provided, the contract, at the election of the Parish of St. Tammany, may be forthwith declared suspended, discontinued or terminated. Failure of the Contractor to maintain insurance shall not relieve the Contractor from any liability under the contract, nor shall the insurance requirements be construed to conflict with the obligation of the Contractor concerning indemnification.
- 24.10 Contractor shall maintain a current copy of all annual insurance policies and provide same to the Parish of St. Tammany as may be reasonably requested.
- 24.11 It shall be the responsibility of Contractor to require that these insurance requirements are met by all contractors and sub-contractors performing work for and on behalf of Contractor. Contractor shall further ensure the Parish is named as additional insured on all insurance policies provided by said contractor and/or sub-contractor throughout the duration of the project, and that renewal certificates for any policies expiring prior to the Parish’s final acceptance of the project shall be furnished to St. Tammany Parish Government, Department of Legal, Office of Risk Management, without prompting.

NOTICE:

These are only an indication of the coverages that are generally required. Additional coverages and/or limits may be required for projects identified as having additional risks or exposures. Please note that some requirements listed may not necessarily apply to your specific services. St. Tammany Parish Government reserves the right to remove, replace, make additions to and/or modify any and all of the insurance requirement language upon review of the final scope of services presented to Office of Risk Management prior to execution of a contract for services.

For inquiries regarding insurance requirements, please contact:

St. Tammany Parish Government

Office of Risk Management

P. O. Box 628

Covington, LA 70434

Telephone: 985-898-5226

Email: riskman@stp.gov

24.12 Nothing contained in these insurance requirements is to be construed as limiting the extent of the Contractor's Responsibility for payment of damages resulting from its operations under this Contract.

25.00 OWNER'S RIGHT TO OCCUPANCY

25.01 The Owner shall have the right to use, at any time, any and all portions of the Work that have reached such a stage of completion as to permit such occupancy, provided such occupancy does not hamper the Contractor or prevent its efficient completion of the Contract or be construed as constituting an acceptance of any part of the Work.

25.02 The Owner shall have the right to start the construction of houses, structures or any other building concurrent with the Contractor's Work.

26.00 SURVEY HORIZONTAL AND VERTICAL CONTROL

26.01 The Owner shall provide surveys for construction to establish reference points which in its judgment are necessary to enable Contractor to layout and proceed with its Work. Contractor shall be responsible for surveying and laying out the Work and shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of the Owner. Contractor shall report to Owner whenever any reference point is lost or destroyed and the Owner shall decide if the reference point shall be replaced by its or the Contractor's forces.

26.02 The Contractor shall establish lines and grades with its own forces in sufficient number and location for the proper execution of the Work.

26.03 If the Contractor, during the construction, damages the established property corners and/or other markers and thereafter requests the Owner to re-stake same in order to complete the project, this expense will be borne solely by the Contractor.

27.00 TERMINATION OF THE CONTRACT, OWNER'S AND CONTRACTORS RIGHT TO STOP WORK.

27.01 If the Contractor should be adjudged bankrupt (voluntarily or involuntarily) or if it should make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of its insolvency, or if it should persistently or repeatedly refuse or should fail (except in cases for which extension of time is provided) to supply enough properly skilled workmen or proper materials, or if it should fail to make prompt payment to Subcontractors or for material or labor, or persistently disregard laws, ordinances or the instructions of the Owner, or otherwise be guilty of a substantial violation of any provision of the Contract, then the Owner, upon the certificate of the Owner that, in its unilateral

discretion and judgment, believes sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor ten (10) calendar days written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools and appliances thereon and finish the Work by whatever method the Owner may deem expedient.

- 27.02 Failure of the Contractor to start the Work within the time limit specified herein or substantial evidence that the progress being made by the Contractor is sufficient to complete the Work within the specified time shall be grounds for termination of the Contract by the Owner.
- 27.03 Before the Contract is terminated, the Contractor and its surety will first be notified in writing by the Owner of the conditions which make termination of the Contract imminent. When after ten (10) calendar days' notice is given and if satisfactory effort has not been made by the Contractor or its surety to correct the conditions, the Owner may declare, in its exclusive discretion, that the Contract is terminated and so notify the Contractor and its surety accordingly.
- 27.04 Upon receipt of notice from the Owner that the Contract has been terminated, the Contractor shall immediately discontinue all operations. The Owner may then proceed with the Work in any lawful manner that it may elect until Work is finally completed.
- 27.05 The exclusive right is reserved to the Owner to take possession of any machinery, implements, tools or materials of any description that shall be found upon the Work, to account for said equipment and materials, and to use same to complete the Project. When the Work is finally completed, the total cost of same will be computed. If the total cost is less than the Contract Price, the difference will not be paid to the Contractor or its surety.
- 27.06 In case of termination, all expenses incident to ascertaining and collecting losses under the Bond, including legal services, shall be assessed against the Bond.
- 27.07 If the Work should be stopped under any order of any court or public authority for period of sixty (60) calendar days, through no act or fault of the Contractor or anyone employed by it, or if the Owner shall fail to pay the Contractor within a reasonable time any sum certified by the Owner, then the Contractor may, upon ten (10) calendar days written notice to the Owner, stop Work or terminate this Contract and recover from the Owner payment for all Work properly and professionally executed in a workmanlike manner. This loss specifically includes actual cost of materials and equipment, together with all wages inclusive of all federal, state, and local tax obligations. This loss specifically includes reimbursement of all insurances on a pro-rata basis from the date of termination to date of policy period. This loss excludes and specifically does not include recovery by the Contractor for lost profit, indirect & direct expenses, overhead, and the like.

28.00 PAYMENTS TO THE CONTRACTOR

- 28.01 Monthly certificates for partial payment, in a form approved by the Owner, shall be transmitted to the Owner upon receipt from the Contractor and acceptance by the Owner. In accordance with LSA-R.S. 38:2248(A), when the Contract Price is less than five hundred thousand dollars, these certificates shall be equal to ninety percent (90%) of both the Work performed and materials stored at the site; and when the Contract Price is five hundred thousand dollars or more, these certificates shall be equal to ninety-five percent (95%) of both the Work performed and materials stored at the site. Partial payment certificates shall include only Work, materials and equipment that are included in official Work Order and which meet the requirements of plans, Specifications and Contract Documents. These monthly estimates shall show the amount of the original estimate for each item, the amount due on each item, the gross total, the retained percentage, the amount previously paid and the net amount of payment due.
- 28.02 After final completion and acceptance by the Owner of the entire Work, and when the Contract Price is less than five hundred thousand dollars, the Owner shall issue to the Contractor Certificate of Payment in sum sufficient to increase total payments to ninety percent (90%) of the Contract Price. After final completion and acceptance by the Owner of the entire Work, and when the Contract Price is five hundred thousand dollars or more,

the Owner shall issue to the Contractor Certificate of Payment in sum sufficient to increase total payments to ninety-five percent (95%) of the Contract Price.

- 28.03 When the Contract Price is less than five hundred thousand dollars, the final payment certificate of the remaining ten percent (10%) of the Contract Price, minus any deduction for deficient or Defective Work or other applicable deductions, will be issued by the Owner forty-five (45) days after filing acceptance in the Mortgage Office of the Parish and a Clear Liens and Privilege Certificate has been secured. When the Contract Price is five hundred thousand dollars or more, the final payment certificate of the remaining five percent (5%) of the Contract Price, minus any deduction for deficient or Defective Work or other applicable deductions, will be issued by the Owner forty-five (45) days after filing acceptance in the Mortgage Office of the Parish and a Clear Liens and Privilege Certificate has been secured. Before issuance of the final payment certificate, the Contractor shall deposit with the Owner a certificate from the Clerk of Court and Ex-Officio Recorder of Mortgages from the Parish in which the Work is performed to the effect that no liens have been registered against Contract Work.
- 28.04 When, in the opinion of the Contractor, the Work provided for and contemplated by the Contract Documents has been substantially completed, the Contractor shall notify the Owner in writing that the Work is substantially complete and request a final inspection. The Owner shall proceed to perform such final inspection accompanied by the Contractor. Any and all Work found by this inspection to be Defective or otherwise not in accordance with the plans and Specifications shall be corrected to the entire satisfaction of the Owner and at the sole expense of the Contractor. If the Contract is found to be incomplete in any of its details, the Contractor shall at once remedy such defects, and payments shall be withheld and formal acceptance delayed until such Work has been satisfactorily completed.
- 28.05 If payment is requested on the basis of materials and equipment not incorporated in the Work, but delivered and suitably stored and protected from damage and theft at the site, the Request for Payment shall also be accompanied by such data, satisfactory to the Owner, as will establish Owner's title to the material and equipment and protect its interest therein, including applicable insurance.
- 28.06 Each subsequent Request for Payment shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied to discharge in full all of Contractor's obligations reflected in prior Request for Payment.
- 28.07 Each subsequent request for payment shall include an affidavit by Contractor that Contractor, all subcontractors, agents, material suppliers and all other persons supplying material to the project upon which State of Louisiana and/or St. Tammany sales taxes are lawfully due have paid these taxes and that all supplies and materials purchased for this project and for which Contractor has been paid have had all lawfully due State and/or St. Tammany sales taxes paid.
- 28.08 The Bid Proposal, unless otherwise modified in writing, and the Contract constitute the complete Project. The Contract Prices constitute the total compensation payable to Contractor and the cost of all of the Work and materials, taxes, permits and incidentals must be included into the Bid submitted by the Contractor and included into those items listed on the Proposal.
- 28.09 Any additional supporting data required by the Owner in order to substantiate Contractor's request for payment shall be furnished by Contractor at no cost to the Owner.
- 28.10 Owner may withhold from payment to Contractor as may be necessary to protect itself from loss on account of:
- (1) Defective and/or inferior work;
 - (2) Damage to the property of Owner or others caused by Contractor;
 - (3) Failure by Contractor to make payments properly to sub-contractors or to pay for labor, materials or equipment used on this project;
 - (4) Failure by Contractor to pay taxes due on materials used on this project;
 - (5) Damage by Contractor to another Contractor;
 - (6) Insolvency;
 - (7) Bankruptcy, voluntary or involuntary;
 - (8) Revocation of corporate status;

- (9) Failure to follow corporate formalities;
- (10) Unprofessional activities;
- (11) Unworkmanlike performance;
- (12) Fraud and/or misrepresentation of any kind.

29.00 ACCEPTANCE AND FINAL PAYMENT(S)

- 29.01 Upon receipt of written notice from Contractor that the work is substantially complete and usable by Owner or the Public in suitable manner, the Owner and the Contractor shall jointly inspect the work.
- 29.02 If the Owner by inspection determines that the work is not substantially complete in a suitable manner for use by the Owner or the Public, then the Owner shall so notify the Contractor in writing stating such reason. All reasons need not be disclosed unless actually known. The Owner is afforded an opportunity to amend said notices as are reasonably possible.
- 29.03 If the Owner by its inspection determines that the work is substantially complete, it shall prepare a list of all items not satisfactorily completed and shall notify the Contractor and Owner in writing that the work is substantially complete and subject to satisfactory resolution of those items on the list (punch list). Punch lists may be amended from time to time by Owner in the event that additional deficiencies are discovered. In accordance with LSA-R.S. 38:2248(B), any punch list generated during a construction project shall include the cost estimates for the particular items of work the design professional has developed based on the mobilization, labor, material, and equipment costs of correcting each punch list item. The design professional shall retain his working papers used to determine the punch list items cost estimates should the matter be disputed later. The contract agency shall not withhold from payment more than the value of the punch list. Punch list items completed shall be paid upon the expiration of the forty-five (45) day lien period. The provisions of this Section shall not be subject to waiver.
- 29.04 Upon determination of substantial completeness with the punch list, the Contract Time is interrupted and the Contractor is given a reasonable time not to exceed thirty (30) consecutive calendar days to effect final completion by correcting or completing all of those items listed on the punch list. If the items on the punch list are not completed in a satisfactory manner within the thirty day period, then the Contract Time will begin to run again and will include for purposes of determining liquidated damages the thirty day period the grace period being withdrawn.
- 29.05 Upon receipt by Owner of written determination that all work embraced by the contract has been completed in a satisfactory manner, the Owner shall provide a written acceptance to Contractor who shall record Owner's written acceptance with the recorder of Mortgages, St. Tammany Parish. The Contractor shall properly prepare, submit and pay for all costs associated with said Acceptance. The Contractor is also responsible for preparation, re-submission and payment of any and all updated certificates.
- 29.06 Retainage monies, minus those funds deducted in accordance to the requirements of this agreement including but not limited to Paragraph 28.10, shall be due Contractor not earlier than forty-six (46) calendar days after recordation of certificate of Owner's acceptance provided the following:
- (1) Contractor shall prepare, secure, pay for and submit clear lien and privilege certificate, signed and sealed by Clerk of Court or Recorder of Mortgages, Parish of St. Tammany and dated at least forty-six (46) days after recordation of certificate of acceptance;
 - (2) Ensure that the official representative of the Owner has accepted as per LSA-R.S. 38:2241.1, *et seq.* and that all following sub-sections have been properly satisfied as per law;
 - (3) Ensure that all signatures are affixed and that there exists the requisite authority for all signatures;
 - (4) Ensure accurate and proper legal descriptions;

- (5) Properly identify all parties and/or signatories;
- (6) Properly identify all mailing addresses;
- (7) Correctly set for the amount of the contract, together with all change orders;
- (8) Set out a brief description of the work performed;
- (9) Reference to any previously recorded contract, lien or judgment inscription that may affect the property;
- (10) Certification that substantial completion has occurred, together with any applicable date(s);
- (11) Certification that no party is in default and/or that the project has been abandoned.

29.07 After securing the clear lien and privilege certificate the Contractor shall prepare its final application for payment and submit to Owner. The Owner shall approve application for payment, or state its objections in writing and forward to Contractor for resolution.

30.00 NOTICE AND SERVICE THEREOF

30.01 Any Notice to Contractor from the Owner relative to any part of this Contract shall be in writing and shall be considered delivered and the service thereof completed when said notice is posted; by certified mail, return receipt requested to the said Contractor at its last given address, or delivered in person to said Contractor or its authorized representative on the Work.

31.00 INTENTION OF THESE GENERAL CONDITIONS

31.01 These General Conditions shall be applicable to all contracts entered into by and between the Owner and Contractors, except as may be altered or amended with the consent of the Owner, and/or provided for in the Special Conditions of each contract. Contractor shall be presumed to have full knowledge of these General Conditions which shall be applicable to all contracts containing these General Conditions, whether Contractor has obtained a copy thereof or not.

32.00 SEVERABILITY

32.01 If any one or more or part of any of the provisions contained herein and/or in the Specifications and Contract for the Work shall for any reason be held invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions of this Agreement or attachment, but it shall be construed as if such invalid, illegal, or unenforceable provision or part of a provision had never been contained herein.

32.02 CHANGING THESE CONDITIONS: Owner reserves the right to change or modify these General Conditions as it deems best, or as required by law. The General Conditions may also be modified for a particular project by the use of Special Conditions prior to the issuance of the Advertisement for Bid. However, once an advertisement for bid is made for any specific project, any changes to the General Conditions as they affect that specific project must be made in writing and issued via an addendum in accordance with State Law.

33.00 LAW OF THE STATE OF LOUISIANA

33.01 The Contract Documents shall be governed by the Law of the State of Louisiana.

33.02 The Contractor agrees to pay reasonable attorney's fees and other reasonable attendant costs, in the event that it becomes necessary for the Owner to employ an attorney in order to enforce compliance with or any remedy relating to any covenants, obligations, or

conditions imposed upon the Contractor by this Agreement. Attorney fees shall be based upon the prevailing hourly rate of attorney rates in the private sector. In no case shall the hourly rate be less than \$175.00 per hour. All attorney fees collected shall be paid the operating budget of the Office of the Parish President.

- 33.03 The jurisdiction and venue provisions shall apply to all contractors, sureties, and subcontractors. The 22nd Judicial District for the Parish of St. Tammany shall be the court of exclusive jurisdiction and venue for any dispute arising from these General Conditions and/or any contract executed in conjunction with these General Conditions. All parties specifically waive any rights they have or may have for removal of any disputes to Federal Court, or transfers to different State District Court.
- 33.04 Contractor warrants that it has and/or had received a copy of these General Conditions at all times material hereto; Contractor further agrees that it has read and fully and completely understands each and every condition herein.
- 33.05 The property description will be more fully set out by an attached exhibit.
- 33.06 The Contractor warrants that it has the requisite authority to sign and enter this agreement.
- 33.07 It is specifically understood and agreed that in the event Contractor seeks contribution from the Parish or pursues its legal remedies for any alleged breach of this agreement by the Parish, then the following list of damages SHALL NOT BE RECOVERABLE BY CONTRACTOR. This list includes, but is not limited to:

1. indirect costs and/or expenses;
2. direct costs and/or expenses;
3. time-related costs and/or expenses;
4. award of extra days;
5. costs of salaries or other compensation of Contractor's personnel at Contractor's principal office and branch offices;
6. expenses of Contractor's principal, branch and/or field offices;
7. any part of Contractor's capital expenses, including any interest on Contractor's capital employed for the work;
8. any other charges related to change orders;
9. overhead and general expenses of any kind or the cost of any item not specifically and expressly included in Cost of Work.

33.08 DEFAULT AND WAIVERS

It is understood that time is of the essence. It is specifically understood between the parties that Contractor waives any and all notice to be placed in default by the Owner. This subsection shall supersede and prime any other subsection herein above that is in conflict. The Owner specifically reserves its right and specifically does not waive the requirement to be placed in default by the Contractor as per law.

- 33.09 St. Tammany Parish Government contracts to be awarded are dependent on the available funding and/or approval by members designated and/or acknowledged by St. Tammany Parish Government. At any time St. Tammany Parish Government reserves the right to cancel the award of a contract if either or both of these factors is deficient.
- 33.10 It is the Parish's policy to provide a method to protest exclusion from a competition or from the award of a contract, or to challenge an alleged solicitation irregularity. It is always better to seek a resolution within the Parish system before resorting to outside agencies and/or litigation to resolve differences. All protests must be made in writing, and shall be concise and logically presented to facilitate review by the Parish. The written protest shall include:
1. The protester's name, address, and fax and telephone numbers and the solicitation, bid, or contract number;
 2. A detailed statement of its legal and factual grounds, including a description of the resulting prejudice to the protester;
 3. Copies of relevant documents;

4. All information establishing that the protester is an interested party and that the protest is timely; and
5. A request for a ruling by the agency; and a statement of the form of relief requested.

The protest shall be addressed to Director of Procurement, St. Tammany Parish Government, P.O. Box 628, Covington, LA 70434.

The protest review shall be conducted by the Parish Procurement Department.

Only protests from interested parties will be allowed. Protests based on alleged solicitation improprieties that are apparent before bid opening, or the time set for receipt of initial proposals must be filed with and received by the Procurement Department BEFORE those deadlines.

Any other protest shall be filed no later than ten (10) calendar days after the basis of the protest is known, or should have been known (whichever is earlier).

The Parish will use its best efforts to resolve the protest within thirty (30) days of the date that it is received by the Parish. The written response will be sent to the protestor via mail and, fax, if a fax number has been provided by the protestor. The protestor can request additional methods of notification.

Last day to submit questions and/or verification on comparable products will be no later than 2:00 pm CST, seven (7) working days prior to the opening date of the bid/proposal due date. Further any questions or inquires must be submitted via fax to 985-898-5227, or via email to Procurement@stpgov.org. Any questions or inquires received after the required deadline to submit questions or inquires will not be answered.

Section 09

CORPORATE RESOLUTION

EXCERPT FROM MINUTES OF MEETING OF THE BOARD OF DIRECTORS OF INCORPORATED.

AT THE MEETING OF DIRECTORS OF _____ INCORPORATED, DULY NOTICED AND HELD ON _____, A QUORUM BEING THERE PRESENT, ON MOTION DULY MADE AND SECONDED. IT WAS:

RESOLVED THAT _____, BE AND IS HEREBY APPOINTED, CONSTITUTED AND DESIGNATED AS AGENT AND ATTORNEY-IN-FACT OF THE CORPORATION WITH FULL POWER AND AUTHORITY TO ACT ON BEHALF OF THIS CORPORATION IN ALL NEGOTIATIONS, BIDDING, CONCERNS AND TRANSACTIONS WITH THE PARISH OF ST. TAMMANY OR ANY OF ITS AGENCIES, DEPARTMENTS, EMPLOYEES OR AGENTS, INCLUDING BUT NOT LIMITED TO, THE EXECUTION OF ALL BIDS, PAPERS, DOCUMENTS, AFFIDAVITS, BONDS, SURETIES, CONTRACTS AND ACTS AND TO RECEIVE ALL PURCHASE ORDERS AND NOTICES ISSUED PURSUANT TO THE PROVISIONS OF ANY SUCH BID OR CONTRACT, THIS CORPORATION HEREBY RATIFYING, APPROVING, CONFIRMING, AND ACCEPTING EACH AND EVERY SUCH ACT PERFORMED BY SAID AGENT AND ATTORNEY-IN-FACT.

I HEREBY CERTIFY THE FOREGOING TO BE A TRUE AND CORRECT COPY OF AN EXCERPT OF THE MINUTES OF THE ABOVE DATED MEETING OF THE BOARD OF DIRECTORS OF SAID CORPORATION, AND THE SAME HAS NOT BEEN REVOKED OR RESCINDED.

SECRETARY-TREASURER

DATE

Section 10

Certificate of Insurance Instructions

The below information is intended to guide Contractors on what information is needed to be listed on the Certificate of Insurance. All Insurance limit requirements can be found in Attachment D.

- **Certificate Holder** – STPG must be listed as the certificate holder, and it must include our address of: P.O. Box 628, Covington, LA 70434
 - Reason: the certificate holder is where cancellations of coverage, or updated certificates are mailed. If a vendor terminates a policy, we will be notified.
- **Additional Insured** – We must be named as an additional insured so that if there is a lawsuit against the vendor for a project, their coverage will cover STPG as well if we are named in the lawsuit.
 - We must be named in the Description of Operations box – reason: there could be other additional insureds, and we want to have no doubt that we are one of the additional insureds.
 - We must be named as additional insured on the following coverages: General liability, Auto Liability, Umbrella/Excess Liability, Environmental/Pollution Liability.
 - Professional Liability policies do not allow for an additional insured by most carriers.
- **Project Name & Contract #** - We need this listed in the Description of Operations, again so that if there is a lawsuit, we have proof that coverage was active for that project.
- **Waiver of Subrogation** – This can either be listed in the Description of Operations or checked off in the appropriate columns.

From the Insurance Requirement form:

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

- **Owners Protective Liability (OPL) or (OCP)** – Certificate of Insurance for OCP names St. Tammany Parish Government as the Insured and the Certificate Holder.
- Sample of Certificate of Insurance (COI) can be found on page 2.
- Please refer to this section in the package labeled “Insurance Requirements” for limits required for this project

Any questions regarding insurance requirements please contact the Risk Department at 985-898-5226 or email riskman@stpgov.org



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
	PHONE (A/C, No. Ext):	FAX (A/C, No):
	E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE	NAIC #
INSURED	INSURER A :	
	INSURER B :	
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	GENERAL LIABILITY						EACH OCCURRENCE \$
	<input type="checkbox"/> COMMERCIAL GENERAL LIABILITY						DAMAGE TO RENTED PREMISES (Ea occurrence) \$
	<input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR						MED EXP (Any one person) \$
							PERSONAL & ADV INJURY \$
							GENERAL AGGREGATE \$
	GEN'L AGGREGATE LIMIT APPLIES PER:						PRODUCTS - COMP/OP AGG \$
	<input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC						\$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident) \$
	<input type="checkbox"/> ANY AUTO						BODILY INJURY (Per person) \$
	<input type="checkbox"/> ALL OWNED AUTOS	<input type="checkbox"/>	<input type="checkbox"/>				BODILY INJURY (Per accident) \$
	<input type="checkbox"/> HIRED AUTOS	<input type="checkbox"/>	<input type="checkbox"/>				PROPERTY DAMAGE (Per accident) \$
							\$
	UMBRELLA LIAB						EACH OCCURRENCE \$
	<input type="checkbox"/> OCCUR						AGGREGATE \$
	EXCESS LIAB						\$
	<input type="checkbox"/> CLAIMS-MADE						
	DED						
	RETENTION \$						
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY						WC STATUTORY LIMITS
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)						OTHER
	If yes, describe under DESCRIPTION OF OPERATIONS below	<input type="checkbox"/> Y / <input type="checkbox"/> N	<input type="checkbox"/> N / <input type="checkbox"/> A				E.L. EACH ACCIDENT \$
							E.L. DISEASE - EA EMPLOYEE \$
							E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Project Name:
Contract #:

(Name St. Tammany Parish Government as an additional insured).

CERTIFICATE HOLDER**CANCELLATION**St. Tammany Parish Government
P.O. Box 628
Covington, LA 70434

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Section 11

Housing and Urban Development (HUD) 24 CFR 85.36

1. Equal Employment Opportunity

The Contractor agrees to comply with Executive Order 11246 of September 24, 1965 entitled “Equal Employment Opportunity,” as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor regulations (41 CFR Chapter 60).

2. Copeland Anti-Kickback Act

The Contractor agrees to comply with the Copeland “Anti-Kickback” Act (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR Part 3). These regulations are herein incorporated by reference in this contract.

3. Davis Bacon and Related Acts

The Contractor agrees to comply with the Davis-Bacon Act (40 U.S.C. 276a to 276a-7) as supplemented by Department of Labor regulations (29 CFR Part 5). These regulations are herein incorporated by reference in this contract. (Construction contracts in excess of \$2,000 awarded by grantees and subgrantees when required by Federal grant program legislation)

4. Contract Work Hours and Safety Standards Act

The Contractor agrees to comply with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) as supplemented by Department of Labor regulations (29 CFR Part 5). These regulations are herein incorporated by reference in this contract.

5. Rights to Inventions, Copyrights, and Rights in Data

The Contractor agrees to comply with requirements and regulations pertaining to copyrights and rights in data.

6. Records Access and Retention

The Contractor agrees to grant access by Parish, the State, Federal agencies, the Comptroller General of the United States, or any of their duly authorized representatives to any books, documents, papers, and records of the contractor which are directly pertinent to that specific contract for the purpose of making audit, examination, excerpts, and transcriptions.

The Contractor agrees to retain all required records for three (3) years after final payments have been made and/or all other pending matters are closed.

7. Debarment and Suspension

The Contractor is prohibited from awarding any subcontract expected to equal or exceed \$25,000 to persons (individuals or organizations) listed on the Excluded Parties List System (EPLS) which is available at www.epls.gov.

8. Energy and Environmental Conservation

The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency

which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163, 89 Stat. 871). [53 FR 8045, 8087, Mar. 11, 1998, as amended at 60 FR 19639, 19641, Apr. 19, 1995; 61 FR 7166, Feb. 26, 1996]. These regulations are herein incorporated by reference in this contract.

9. Reporting

The Contractor agrees to comply with all Federal, State, and Parish requirements and regulations pertaining to reporting on projects receiving Federal, State, or Parish funding.

10. Clean Air and Water Acts

The Contractor agrees to comply with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR Part 15). These regulations are herein incorporated by reference in this contract.

11. Legal Remedies

Contracts must include administrative, contractual, and legal remedies for use in cases in which contractors violate or breach contract terms. The contract must also make clear the remedial actions which you may take.

12. Termination

Contracts in excess of \$10,000 must explain the conditions under which you may terminate them for cause or for your convenience, including the process for bringing about the termination and the basis for settlement.

Section 12

Bond No.: _____

CONTRACT AGREEMENT BETWEEN PARISH AND CONTRACTOR

BY: ST. TAMMANY PARISH GOVERNMENT

WITH:

**UNITED STATES OF
AMERICA**

**STATE OF LOUISIANA
ST. TAMMANY PARISH**

This agreement is entered into this _____ day of _____, 20____, by and between: «txtREQCompanyName», hereinafter called the "Contractor", whose business address is «txtREQAddress», «txtREQCity», «txtREQState» «txtREQZip» and the St. Tammany Parish Government, hereinafter called the "Parish", whose business address is P.O. Box 628, Covington, LA 70434 (collectively, the "Parties") for «txtPROJECTNAME» project. Witnessed that the Contractor and the Parish, in consideration of premises and the mutual covenants, consideration and agreement herein contained, agree as follows:

1. SCOPE OF SERVICES

The Contractor shall furnish all labor and materials and perform all of the work required to build, construct and/or complete in a thorough and workmanlike manner:

«txtScopeSummary»

2. CONSTRUCTION DOCUMENTS

It is recognized by the Parties herein that said Construction Documents, including by way of example and not of limitation, the plans and Specifications, General Conditions, Supplementary General Conditions, any addenda thereto, the drawings (if any), and the bid, quote or other procurement documents impose duties and obligations upon the Parties herein, and said Parties thereby agree that they shall be bound by said duties and obligations. For these purposes, all of the provisions contained in the aforementioned Construction Documents are incorporated herein by reference with the same force and effect as though said Construction Documents were herein set out in full. Copies of the aforementioned Construction Documents are in the possession of both the Contractor and the Parish for reference.

3. TIME FOR COMPLETION

The work shall be commenced on a date to be specified in a written order of the Parish and shall be completed within «intCompletionTime» calendar days from and after said date.

4. COMPENSATION TO BE PAID TO THE CONTRACTOR

The Parish will pay and the Contractor will accept in full consideration for the performance of the Contract the sum of «curREQGrandTotal» dollars.

5. PERFORMANCE AND PAYMENT BOND

To these presents personally came and intervened _____,
(Name of Attorney in Fact)
herein acting for _____, a corporation organized
(Surety)
and existing under the laws of the State of _____, and duly authorized to transact business in the State of Louisiana, as surety, who declared that having taken cognizance of this Contract and of the Construction Documents mentioned herein, he hereby in his capacity as its Attorney in Fact obligates his company, as surety for the said Contractor, unto the said Parish, up to the sum of «curREQGrandTotal». The condition of this performance and payment bond

shall be that should the Contractor herein not perform the Contract in accordance with the terms and conditions hereof, or should said Contractor not fully indemnify and save harmless the Parish from all costs and damages which he may suffer by said Contractor's non-performance or should said Contractor not pay all persons who have fulfilled obligations to perform labor and/or furnish materials in the prosecution of the work provided for herein, including by way of example, workmen, laborers, mechanics, and furnishers of materials, machinery, equipment and fixtures, then said surety agrees and is bound to so perform the Contract and make said payment(s).

Contractor and Parish specifically agree to and recognize (1) the statutory employer relationship existing between the Parish and any employees performing work under this Contract as employees of the Contractor or employees of the "Sub-Contractor", and (2) that the work performed by the employees of the Contractor and the employees of the "Sub-Contractor" is part of the Parish's business, occupation or trade and is essential to the ability of the Parish to generate their products or services, all of which is in accordance with LSA-R.S. 23:1061, and as may be amended.

6. LIABILITY AND INDEMNIFICATION

A. Duty to Defend

Upon notice of any claim, demand, suit, or cause of action against the Parish, alleged to arise out of or be related to this Contract, Contractor shall investigate, handle, respond to, provide defense for, and defend at its sole expense, even if the claim, demand, suit, or cause of action is groundless, false, or fraudulent. The Parish may, but is not required to, consult with or assist the Contractor, but this assistance shall not affect the Contractor's obligations, duties, and responsibilities under this section. Contractor shall obtain the Parish's written consent before entering into any settlement or dismissal.

B. Contractor Liability

Contractor shall be liable without limitation to the Parish for any and all injury, death, damage, loss, destruction, damages, costs, fines, penalties, judgments, forfeitures, assessments, expenses (including attorney fees), obligations, and other liabilities of every name and description, which may occur or in any way arise out of any act or omission of Contractor, its owners, agents, employees, partners or subcontractors.

C. Force Majeure

It is understood and agreed that neither party can foresee the exigencies beyond the control of each party which arise by reason of an Act of God or force majeure; therefore, neither party shall be liable for any delay or failure in performance beyond its control resulting from an Act of God or force majeure. The Parish shall determine whether a delay or failure results from an Act of God or force majeure based on its review of all facts and circumstances. The parties shall use reasonable efforts, including but not limited to, use of continuation of operations plans (COOP), business continuity plans, and disaster recovery plans, to eliminate or minimize the effect of such events upon the performance of their respective duties under this Contract.

D. Indemnification

Contractor shall fully indemnify and hold harmless the Parish, without limitation, for any and all injury, death, damage, loss, destruction, damages, costs, fines, penalties, judgments, forfeitures, assessments, expenses (including attorney fees), obligations, and other liabilities of every name and description, which may occur or in any way arise out of any act or omission of Contractor, its owners, agents,

employees, partners or subcontractors. The Contractor shall not indemnify for the portion of any loss or damage arising from the Parish's act or failure to act.

E. Intellectual Property Indemnification

Contractor shall fully indemnify and hold harmless the Parish, without limitation, from and against damages, costs, fines, penalties, judgments, forfeitures, assessments, expenses (including attorney fees), obligations, and other liabilities in any action for infringement of any intellectual property right, including but not limited to, trademark, trade-secret, copyright, and patent rights.

When a dispute or claim arises relative to a real or anticipated infringement, the Contractor, at its sole expense, shall submit information and documentation, including formal patent attorney opinions, as required by the Parish.

If the use of the product, material, service, or any component thereof is enjoined for any reason or if the Contractor believes that it may be enjoined, Contractor, while ensuring appropriate migration and implementation, data integrity, and minimal delays of performance, shall at its sole expense and in the following

order of precedence: (i) obtain for the Parish the right to continue using such product, material, service, or component thereof; (ii) modify the product, material, service, or component thereof so that it becomes a non-infringing product, material, or service of at least equal quality and performance; (iii) replace the product, material, service, or component thereof so that it becomes a non-infringing product, material, or service of at least equal quality and performance; or, (iv) provide the Parish monetary compensation for all payments made under the Contract related to the infringing product, material, service, or component, plus for all costs incurred to procure and implement a non-infringing product, material, or service of at least equal quality and performance. Until this obligation has been satisfied, the Contractor remains in default.

The Contractor shall not be obligated to indemnify that portion of a claim or dispute based upon the Parish's unauthorized: i) modification or alteration of the product, material or service; ii) use of the product, material or service in combination with other products not furnished by Contractor; or, iii) use of the product, material or service in other than the specified operating conditions and environment.

7. MODIFICATION OF CONTRACT TERMS

Provided that any alterations which may be made in the terms of the Contract or in the work to be done under it, or the giving by the Parish of any extensions of time for the performance of the Contract, or any other forbearance on the part of either the Parish or the Contractor to the other shall not in any way release the Contractor or the Surety from their liability hereunder, notice to the Surety of any such alterations, extensions or other forbearance being hereby waived.

8. TERMINATION, CANCELLATION, AND SUSPENSION

A. Termination

The term of this Contract shall be binding upon the Parties hereto until the work has been completed by the Provider and accepted by the Parish, and all payments required to be made to the Provider have been made. But, this Contract may be terminated upon thirty (30) days written notice under any or all of the following conditions:

- 1) By mutual agreement and consent of the Parties hereto;

- 2) By the Parish as a consequence of the failure of the Provider to comply with the terms, progress, or quality of the work in a satisfactory manner, proper allowances being made for circumstances beyond the control of the Provider;
- 3) By either party upon failure of the other party to fulfill its obligations as set forth in this Contract;
- 4) By the Parish with less than thirty (30) days' notice due to budgetary reductions and changes in funding priorities by the Parish;
- 5) In the event of the abandonment of the project by the Parish.

Upon termination, the Provider shall be paid for actual work performed prior to the Notice of Termination, either based upon the established hourly rate for services actually performed, or on a pro-rata share of the basic fee based upon the phase or percentage of work actually completed, depending on the type of compensation previously established under this Contract.

Upon Termination, the Provider shall deliver to the Parish all original documents, notes, drawings, tracings, computer files, and other files pertaining to this Contract or the Work performed, except for the Provider's personal and administrative files.

B. Cancellation

The continuation of this Contract is contingent upon the appropriation of funds to fulfill the requirements of the Contract by the Parish. If the Parish fails to appropriate sufficient monies to provide for the continuation of this or any other Contract, or if such appropriation is reduced by the veto of Parish President by any means provided in the appropriations Ordinance to prevent the total appropriation for the year from exceeding revenues for that year, or for any other lawful purpose, and the effect of such reduction is to provide insufficient monies for the continuation of the Contract, the Contract shall terminate on the date of the beginning of the first fiscal year for which funds are not appropriated. It is understood and agreed that paragraph (9)(C) below may preempt this paragraph, all at the exclusive and unilateral option of the Parish.

C. Suspension

Should the Parish desire to suspend the work, but not definitely terminate the Contract, the Parish shall supply the Provider with thirty (30) days' notice. The Parish will also supply Provider thirty (30) days' notice that the work is to be reinstated and resumed in full force. Provider shall receive no additional compensation during the suspension period. The Parties may revisit the terms of this Contract during the suspension period.

The suspension shall not exceed six (6) months, unless mutually agreed upon between the Parties.

- D.** Failure to complete or deliver within the time specified or to provide the services as specified in the bid or response will constitute a default and may cause cancellation of the contract. Where the Parish has determined the contractor to be in default. The Parish reserves the right to purchase any or all products or services covered by the contract on the open market and to charge the contractor with the cost in excess of the contract price. Until such assessed charges have been paid, no subsequent bid or response from the defaulting contractor will be considered.
- E.** In the event of a default and/or breach of this agreement and this matter is forwarded to legal counsel, then the prevailing party may be entitled to collect a reasonable attorney fees and all costs associated therewith whether or not litigation is initiated. Attorney fees shall be based upon the current, reasonable prevailing rate for counsel in the private sector. The Parties agree to be responsible for such attorney fees, together for all with legal interest from date of agreement breach, plus all costs of collection.

- F. Termination or cancellation of this agreement will not affect any rights or duties arising under any term or condition herein.
- G. As to the filing of voluntary or involuntary bankruptcy by Provider, Provider agrees that if any execution or legal process is levied upon its interest in this Contract, or if any liens or privileges are filed against its interest, or if a petition in bankruptcy is filed against it, or if it is adjudicated bankrupt in involuntary proceedings, or if it should breach this Contract in any material respect, the Parish shall have the right, at its unilateral option, to immediately cancel and terminate this Contract. In the event that Provider is placed in any chapter of bankruptcy, voluntarily or involuntarily, or otherwise triggers any provision of the preceding sentence herein, it is understood and agreed that all materials, goods and/or services provided shall be and remain the property of the Parish. All rights of Provider as to goods, wares, products, services, materials and the like supplied to Parish shall be deemed forfeited.

9. RECORDATION OF CONTRACT

Contractor authorizes Parish to deduct from any payment due herein costs and service fees for recordation of this Contract in full or an excerpt hereof, or any revisions or modifications thereof as required by law.

10. AUTHORITY TO ENTER CONTRACT

The undersigned representative of Contractor warrants and personally guarantees that he/she has the requisite and necessary authority to enter and sign this Contract on behalf of the corporate entity, partnership, etc. The undersigned Parties warrant and represent that they each have the respective authority and permission to enter this Contract. In the event that Contractor is a member of a corporation, partnership, L.L.C., L.L.P., or any other juridical entity, the Parish requires, as an additional provision, that Contractor supply a certified copy of a corporate resolution authorizing the undersigned to enter and sign this Contract. Another option to fulfill this additional provision he/she can supply Louisiana Secretary of State Business filings confirming that he/she is a managing member of a corporation, partnership, L.L.C., L.L.P., or any other juridical entity which authorizes the undersigned to enter and sign this Contract.

Bond No.: _____

In Witness thereof, the Parties hereto on the day and year first above written have executed this Contract in **One (1)** counterpart, each of which shall, without proof or accountancy for the other counterparts, be deemed an original thereof.

WITNESSES:

Signature

Print Name

Signature

Print Name

CONTRACTOR:

Signature

Print Name

Title

Date

Bond No.: _____

WITNESSES:

**ST. TAMMANY PARISH
GOVERNMENT:**

Signature

Print Name

Michael B. Cooper
Parish President

Signature

Date

Print Name

APPROVED BY:

Assistant District Attorney
Civil Division

(Surety)

Signature

Date

Print Name

SECTION 13 – TECHNICAL SPECIFICATIONS

SECTION 00010

TABLE OF CONTENTS - TECHNICAL SPECIFICATIONS

DIVISION 01 - GENERAL REQUIREMENTS

01015	Control of Work	01015-1	-	01015-4
01025	Measurement and Payment	01025-1	-	01025-2
01027	Applications for Payment	01027-1	-	01027-2
01095	Codes and Standards	01095-1	-	01095-4
01153	Change Order Procedures	01153-1	-	01153-6
01300	Submittals	01300-1	-	01300-10
01301	Schedule of Values	01301-1	-	01301-2
01532	Site Conditions Surveys	01532-1	-	01532-1
01700	Project Closeout	01700-1	-	01700-1

DIVISION 02 - SITEWORK

02410	Demolition	02410-1	-	02410-4
02665	Waterlines and Accessories	02665-1	-	02665-10

DIVISION 03 - CONCRETE

03300	Cast-in-Place Concrete	03300-1	-	03300-8
-------	------------------------	---------	---	---------

DIVISION 04 - MASONRY

04220	Concrete Unit Masonry	04220-1	-	04220-8
-------	-----------------------	---------	---	---------

DIVISION 05 - METALS

(Not Used)

DIVISION 06 - WOOD AND PLASTICS

06100	Rough & Finished Carpentry	06100-1	-	06100-3
-------	----------------------------	---------	---	---------

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

(Not-Used)

DIVISION 08 - DOORS AND WINDOWS

08113	Steel Doors and Frames	08113-1	-	08113-8
-------	------------------------	---------	---	---------

DIVISION 09 - FINISHES

09800	Protective Coatings	09800-1	-	09800-9
-------	---------------------	---------	---	---------

DIVISION 10 - SPECIALTIES

(Not-Used)

DIVISION 11 - EQUIPMENT

11150	Horizontal Split Case Centrifugal Pumps	11150-1	-	11150-6
-------	---	---------	---	---------

11259	Chemical Metering Pumps	11259-1	-	11259-4
-------	-------------------------	---------	---	---------

DIVISION 12 - FURNISHINGS

(Not Used)

DIVISION 13 - SPECIAL CONSTRUCTION

13675	Double Wall HDPE Chemical Storage Tanks	13675-1	-	13675-8
-------	---	---------	---	---------

DIVISION 14 - CONVEYING SYSTEMS

(Not Used)

DIVISION 15 - MECHANICAL

15100	Valves and Appurtenances	15100-1	-	15100-5
-------	--------------------------	---------	---	---------

DIVISION 16 - ELECTRICAL

16010	Basic Electrical Requirements	16010-1	-	16010-6
16100	Basic Electrical Materials and Methods	16100-1	-	16100-9
16400	Panelboards	16400-1	-	16400-6
16900	Process Instrumentation and Control	16900-1	-	16900-22

SECTION 01015
CONTROL OF WORK

PART 1 - GENERAL

1.01. GENERAL WORK DESCRIPTION

- A. The Contractor shall furnish personnel and equipment which will be efficient, appropriate, and large enough to secure a satisfactory quality of work and a rate of progress which will ensure the completion of the work within the time stipulated in the Contract. If at any time such personnel or equipment appears to the Engineer to be inefficient, inappropriate, or insufficient for securing the quality of work required for producing the rate of aforesaid progress, he may order the Contractor to increase the efficiency, change the character, or increase the personnel and equipment, and the Contractor shall conform to such order. Failure of the Engineer to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the work and rate of progress required.

1.02. PRIVATE LAND

- A. The Contractor shall not enter or occupy private land outside of the rights-of-way, easements, or servitudes, except by permission of the Owner.

1.03. WORK LOCATIONS

- A. Work shall be located substantially in the areas that are indicated herein, but the Engineer reserves the right to make such modifications in locations as may be found desirable to avoid interference with existing structures or for other reasons.
- B. Staging areas will be determined at the Pre-Construction Conference.

1.04. OPEN EXCAVATIONS

- A. All open excavations shall be safeguarded by providing temporary barricades and fencing, caution 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. Bridges provided for access to work areas during construction shall be removed when no longer required. The length of open trench will be controlled by the particular surrounding conditions, but may be confined to the limits prescribed by the Engineer. If the excavation becomes a hazard, or if it excessively restricts traffic at any point, the Engineer may require special construction procedures such as limiting the length of open trench, prohibiting stacking excavated material in the street, and requiring that the trench shall not remain open overnight.
- B. The Contractor shall take precautions to prevent injury to the public due to open trenches. All trenches, excavated material, equipment, or other obstacles which could be dangerous to the public shall be barricaded and well lighted at all times when appropriate to ensure safety and when construction is not in progress.

1.05. UTILITIES

- A. Disruption of the normal functioning of the utilities shall be held to the minimum extent possible.
- B. If it appears that utility service will be interrupted for an extended period, the Engineer may order the Contractor to provide temporary service lines. Inconvenience to the users shall be minimized, consistent with existing conditions. The safety and integrity of the system are of prime importance

in scheduling work

- C. The Contractor shall not move, cut, or relocate private utilities (gas, electric, telephone, cable T.V.) without the permission of the appropriate utility company.
- D. The Contractor shall submit a plan for the rerouting of traffic if it becomes necessary to complete the work along with a proposed schedule for this work to the Engineer for approval.

1.06. PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

- A. The Contractor shall assume full responsibility for the protection of all buildings, structures, and utilities, public or private, including poles, signs, services to building utilities, gas pipes, water pipes, hydrants, sewers, drains, and electric and telephone cables, whether or not they are shown on the Drawings. The Contractor shall carefully support and protect all such structures and utilities from injury of any kind. Any damage resulting from the Contractor's operation shall be repaired by him at his expense, or in the case of private utilities, repaired by that utility at the Contractor's expense.
- B. The Contractor shall bear full responsibility for obtaining locations of all underground structures and utilities. Services to buildings shall be maintained, and all costs or charges resulting from damage thereto shall be paid by the Contractor.
- C. If relocation of a privately owned utility is required, the Contractor shall notify the utility company as expeditiously as possible. The Contractor shall fully cooperate with the Owner and the utility company and shall have no claim for delay due to such relocation. The Contractor shall notify public and private utility companies in writing at least 48 hours (excluding Saturdays, Sundays, and legal holidays) before excavating near their utilities.

1.07. 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. 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 be included in the unit or lump sum price(s) established in the Contractor's Bid.

1.08. MAINTENANCE OF TRAFFIC

- A. Open pits, trenches, unpaved streets, debris, or other obstructions due to construction that will prevent the normal flow of traffic during an extended construction stoppage for any reason, shall be minimized. In the event an extended construction stoppage is found to be necessary, Contractor shall, at his own expense, provide normal traffic flow during extended construction stoppage. Extended stoppage will be defined by the Engineer.
- B. All excavated material shall be placed so that vehicular and pedestrian traffic may be maintained at all times. If the Contractor's operations cause traffic hazards, he shall repair the road surface, provide temporary roadways, erect wheel guards or fences, or take other measures for safety satisfactory to the Engineer.
- C. Detours around construction areas will be subject to the approval of the Owner and the Engineer. Where detours are permitted the Contractor shall provide all necessary barricades and signs as required to divert the flow of traffic. While traffic is detoured the Contractor shall expedite

construction operations and periods when traffic is being detoured will be strictly controlled by the Owner.

- D. Traffic detour plans shall be provided to the Engineer prior to the need to divert the flow of traffic. All plans must be stamped by an experienced traffic engineer that meets the Engineer's approval. Plans must be submitted at least 30 days prior to the commencing of any work requiring traffic rerouting.

1.09. WATER FOR CONSTRUCTION PURPOSES

- A. The Contractor shall obtain a construction water meter in order to use City water for construction purposes.
- B. Hydrants shall only be operated under the supervision of the Utility Operator. No hydrants shall be left uncapped when construction personnel are not on the site.

1.10. MAINTENANCE OF EXISTING FLOW

- A. The Contractor shall at his own cost, provide for the flow of sewers, drains, and water courses (storm drainage) interrupted during the progress of the Work, and shall immediately cart away and remove all offensive matter. The entire procedure of maintaining existing flow shall be fully discussed with the Engineer well in advance of the interruption of any flow.

1.11. CLEANUP

A. DURING CONSTRUCTION

1. 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.
2. Provide on-site containers for the collection of waste materials, debris and rubbish. Dispose of all waste material daily including containers, food debris, and other miscellaneous materials in on-site containers and/or remove from the site.
3. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal disposal areas away from the site.

B. FINAL CLEANING

1. Remove all waste materials, debris and rubbish from the project site and dispose of at legal disposal areas away from the site.
2. Remove all tools, temporary facilities, traffic control devices, project signs, and equipment from the project site
3. Broom clean exterior paved surfaces; rake clean other surfaces of the grounds and dispose of all debris resulting from cleaning at legal disposal areas away from the site.
4. Repair any damage to landscaping within the project limits and adjacent property resulting from the work to original or better condition as determined by the Engineer.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01015

THIS PAGE LEFT INTENTIONALLY BLANK

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01. SCOPE

- A. This section covers methods of measurement and payment for items of Work included under this contract.

1.02. GENERAL

- A. 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 materials, equipment, supplies and appurtenances; providing all construction equipment and tools; and performing all necessary labor and supervision to fully complete the Work, shall be included in the unit prices or lump sum prices bid. All Work not specifically set forth as a pay item in the Bid Form shall be considered a subsidiary obligation of Contractor and all costs in connection therewith shall be included in the prices bid.

1.03. ESTIMATED QUANTITIES

- A. All estimated quantities stipulated in the Bid Form or other Contract Documents are approximate and are to be used only (a) as a basis for estimating the probable cost of the Work and (b) for the purpose of comparing the bids submitted for the Work. The actual amounts of work done and materials furnished under unit price items may differ from the estimated quantities. The basis of payment of work and materials will be the actual amount of work done and materials furnished. Contractor agrees that he will make no claim for damages, anticipated profits, or otherwise on account of any difference between the amounts of work actually performed and materials actually furnished and the estimated amounts there for.

1.04. EXCAVATION AND TRENCHING

- A. Except where otherwise specified, the unit or lump sum price bid for each item of work which involves excavation or trenching shall include all costs for such work. All excavation and trenching shall be unclassified as to materials which may be encountered; in addition, trenches shall be unclassified as to depth.

1. Trenching for Pipelines:

- a. No separate payment shall be made for excavation and trenching work required for pipelines except as otherwise specified herein. All such work shall be considered a subsidiary obligation of the Contractor and all costs in connection therewith shall be included in the unit price bid per linear foot of pipe in place.

2. Sheeting, Shoring, and Bracing:

- a. No separate payment shall be made in connection with sheeting, shoring, and bracing, unless specified herein otherwise. All costs of labor, equipment, material, and other appurtenant work required for sheeting and bracing shall be included in the unit prices and lump sum prices bid.

1.05. MOBILIZATION (REF NO.: 1)

- A. Mobilization shall consist of preparatory work and operations, including but not limited to those necessary for the movement of personnel, equipment, supplies and incidentals to the project sites at Well #1 and Well #2; the establishment of all offices, buildings and other facilities necessary for work on the project; the cost of bonds and any required insurance; and other preconstruction expenses necessary for the start of the work, excluding the cost of construction materials.
- B. All work covered by this item shall be paid for at the contract lump sum price bid. The lump sum price shall not exceed 5% of the total project bid. No partial payments will be made. No payment adjustments will be made for this item due to changes in the contract price.

1.06. WELL #1 IMPROVEMENTS (REF NO.: 2)

- A. Well #1 Improvements shall consist of all work items specified in Section 03 – Summary of Work, Paragraph I, 2, c and indicated as Well #1 work on Drawing Sheet C1.0, all work on Drawing Sheet C1.1 and detailed on Well #1 Chemical Building Detail on Sheet C1.3 and further detailed on Sheets S1.0, S1.1, E1.1, and E2.1. Note that electrical work includes installation of a new Contractor supplied control panel.
- B. All work associated with this item will be paid for at the contract lump sum price bid. Progress payments shall be based on the approved Schedule of Values for the estimated percentage of the work completed per month.

1.07. WELL #2 IMPROVEMENTS (REF NO.: 3)

- A. Well #2 Improvements shall consist of all work items specified in Section 03 – Summary of Work, Paragraph I, 2, d and indicated as Well #2 work on Drawing Sheet C1.0, all work on Drawing Sheet C1.2 and detailed on Well #2 Chemical Building Detail on Sheet C1.3 and further detailed on Sheets S1.0, S1.1, and E1.2. Note that electrical work includes relocation of an existing control panel.
- B. All work associated with this item will be paid for at the contract lump sum price bid. Progress payments shall be based on the approved Schedule of Values for the estimated percentage of the work completed per month.

1.08. SITE RESTORATION

- A. No separate payment will be made in connection with site restoration. All work required to restore the projects sites shall be included in the lump sum price bid for each project site.
- B. Each well site shall be restored to its pre-construction condition including removing all debris and trash from the project site, replacement of any signage or items removed to facilitate construction, and all other incidental work required to restore the site to the satisfaction of the Owner.

END OF SECTION

SECTION 01027

APPLICATIONS FOR PAYMENT

PART 1 - GENERAL

1.01. SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's Applications for Payment.

1.02. APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments paid for by the Owner.
- B. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.
- C. Payment Application Times: Payment application times will be monthly.
- D. Payment Application Forms: Use AIA Document G702 and Continuation Sheets G703.
- E. Application Preparation: Complete every entry on the form, including execution by person authorized to sign legal documents on behalf of the Contractor. Incomplete applications will be returned without action.
 - 1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions have been made.
 - 2. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.
 - 3. Include itemized materials invoices for all amounts listed in the stored materials column.
- F. Transmittal: Submit a sufficient number of executed copies of each Application for Payment to the Engineer. All copies shall be complete, including waivers of lien and similar attachments, as required by the Owner.
- G. Transmit each copy with a transmittal letter listing attachments, and recording appropriate information related to the application to the Owner.
- H. The Owner reserves the right to designate which entities involved in the Work must submit waivers.
- I. Initial Application for Payment: Provide the following, if applicable, administrative actions and submittals prior to or with the first Application for Payment:
 - 1. List of subcontractors.
 - 2. List of principal suppliers and fabricators.
 - 3. Schedule of Values.
 - 4. Contractor's Construction Schedule (preliminary if not final).

5. Schedule of principal products.
 6. Schedule of unit prices.
 7. Submittal Schedule (preliminary if not final).
 8. List of Contractor's staff assignments.
 9. Copies of permits
 10. Certificates of insurance and insurance policies.
 11. Documentation of recorded agreement and bonds.
- J. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion. Provide the following prior to or with this application:
1. Occupancy permits and similar approvals.
 2. Warranties.
 3. Maintenance instructions.
 4. Final cleaning.
 5. Final progress photographs.
 6. List of incomplete Work, recognized as exceptions to Owner's Certificate of Substantial Completion.
- K. Final Payment Application: Provide the following administrative actions and submittals prior to or with submittal of the final payment Application for Payment:
1. Completion of Project closeout requirements.
 2. Completion of items specified for completion after Substantial Completion.
 3. Transmittal of required Project construction records to Owner.
 4. Consent of surety.
 5. Removal of temporary facilities and services
 6. Removal of surplus materials, rubbish and similar elements.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01095

CODES AND STANDARDS

PART 1 - GENERAL

1.01. DESCRIPTION

- A. Whenever reference is made to conforming to the standards of any technical society, organization, body, code, or standard, it shall be construed to mean the latest standard, code, specification, or tentative specification adopted and published at the time of the Advertisement for Bids. This shall include the furnishing of materials, testing of materials, fabrication, and installation practices. In those cases where the Contractor's quality standards establish more stringent quality requirements, the more stringent requirement shall prevail. Such standards are made a part hereof to the extent which is indicated or intended.
- B. The inclusion of an organization under one category does not preclude that organization's standards from applying to another category.
- C. In addition, all work shall comply with the applicable local codes, utilities, and other authorities having jurisdiction.
- D. All material and equipment, for which a UL standard, an AGA or NSF approval or an ASME requirement is established, shall be so approved and labeled or stamped. The label or stamp shall be conspicuous and not covered, painted, or otherwise obscured from visual inspection.
- E. The standards which apply to this project are not necessarily restricted to those organizations which are listed in Article 1.02.

1.02. STANDARD ORGANIZATIONS

AA	Aluminum Association
AABC	Associated Air Balance Council
AAMA	American Architectural Manufacturers' Association
AAN	American Association of Nurserymen
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ACIL	American Council of Independent Laboratories
ACPA	American Concrete Pipe Association
ADC	Air Diffusion Council
AEIC	Association of Edison Illuminating Companies
AFBMA	Anti-Friction Bearing Manufacturers' Association
AGA	American Gas Association
AGMA	American Gear Manufacturers' Association
AHA	American Hardboard Association
AI	Asphalt Institute
AIA	American Institute of Architects
A.I.A.	American Insurance Association
AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALI	Automotive Lift Institute
AMCA	Air Movement & Control Association
ANSI	American National Standards Institute
APA	American Plywood Association
APHA	American Public Health Association

API	American Petroleum Institute
APWA	American Public Works Association
AREA	American Railway Engineering Association
ARI	American Refrigeration Institute
ARMA	Asphalt Roofing Manufacturers Association
ASA	American Standards Association
ASAE	American Society of Agricultural Engineers
ASC	Adhesive and Sealant Council
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating & Air-Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASPE	American Society of Plumbing Engineers
ASQC	American Society of Duality Control
ASSE	American Society of Sanitary Engineering
ASTM	American Society of Testing and Materials
AWI	Architectural Woodwork Institute
AWPA	American Wood Preservers' Association
AWPB	American Wood Preservers' Bureau
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders' Hardware Manufacturers' Association
BIA	Brick Institute of America
CBMA	Certified Ballast Manufacturers' Association
CDA	Copper Development Association
CEMA	Conveyor Equipment Manufacturers Association
CFR	Code of Federal Regulations
CGA	Compressed Gas Association
CISPI	Cast Iron Soil Pipe Institute
COE	Corps of Engineers (U.S. Department of the Army)
CMAA	Crane Manufacturers' Association of America
CRSI	Concrete Reinforcing Steel Institute
CSI	Construction Specifications Institute
CTI	Cooling Tower Institute
DEMA	Diesel Engine Manufacturers Association
DHI	Door and Hardware Institute
DIPRA	Ductile Iron Pipe Research Association
EDA	Economic Development Administration
EIA	Electronic Industries Association
EIMA	Exterior Insulation Manufacturers Association
EJCDC	Engineers Joint Contracts Documents Committee
EPA	Environmental Protection Agency
Fed. Spec.	Federal Specifications
FCC	Federal Communications Commission
FCI	Fluid Controls Institute
FGMA	Flat Glass Marketing Association
FHA	Federal Housing Administration (U.S. Department of HUD)
FM	Factory Mutual Insurance Corp.
FmHA	Farmers Home Administration
FS	Federal Specifications
GA	Gypsum Association
HEI	Heat Exchange Institute
HI	Hydraulic Institute
HMA	Hardwood Manufacturers Association
HMI	Hoist Manufacturers' Institute
HPMA	Hardwood Plywood Manufacturers Association
HTI	Hand Tools Institute
IAI	International Association of Identification

ICBO	International Conference of Building Officials
ICEA	Insulated Cable Engineers Association
IEC	International Electromechanical Commission
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society of North America
IAR	International Institute of Ammonia Refrigeration
IME	Institute of Makers of Explosives
IPC	Institute of Printed Circuits
IPCEA	Insulated Power Cable Engineer's Association
IRI	Industrial Risk Insurers
ISA	Instrumentation, Systems, and Automation Society
ISANTA	International Staple, Nail, and Tool Association
ISDSI	Insulated Steel Door Systems Institute
ISEA	Industrial Safety Equipment Association
ISO	International Organization for Standardization
ITE	Institute of Traffic Engineers
LADOTD	Louisiana Department of Transportation and Development
LDEQ	Louisiana Department of Environmental Quality
LPI	Lightning Protection Institute
LSSRB	Louisiana Standard Specifications for Roads and Bridges
MBMA	Metal Building Manufacturers Association
MCAA	Mechanical Contractors Association of America
MMA	Monorail Manufacturers' Association
MSS	Manufacturers Standardization Society
NAAMM	National Association of Architectural Metal Manufacturers
NACE	National Association of Coatings Engineers
NAGDM	National Association of Garage Door Manufacturers
NAPA	National Asphalt Pavement Association
NB	National Board of Boiler and Pressure Vessel Inspectors
NBFU	National Board of Fire Underwriters
NBMA	National Builders' Hardware Association
NBS	National Bureau of Standards (U.S. Department of Commerce)
NCCLS	National Committee for Clinical Laboratory Standards
NCMA	National Concrete Masonry Association
NEC	National Electrical Code
NEMA	National Electrical Manufacturers' Association
NESC	National Electric Safety Code
NFPA	National Fire Protection Association
(NFPA)	National Fluid Power Association
NFSA	National Fertilizer Solutions Association
NHLA	National Hardwood Lumber Association
NISO	National Information Standards Organization
NLMA	National Lumber Manufacturers' Association
NRMA	National Ready-Mix Association
NSF	National Sanitation Foundation
NWMA	National Woodwork Manufacturers' Association
NWWDA	National Wood Window and Door Association
OECI	Overhead Electrical Crane Institute
OPEI	Outdoor Power Equipment Institute
OSHA	Occupational Safety and Health Act (both Federal & State)
PCA	Portland Cement Association
PCI	Pre-stressed Concrete Institute
PDI	Plumbing and Drainage Institute
PFMA	Power Fan Manufacturers Association
PPI	Plastic Pipe Institute
PS	Product Standards Sections - U.S. Department of Commerce
PTI	Power Tool Institute

REA	Rural Electrification Administration
RIA	Robotic Industries Association
RMA	Rubber Manufacturers' Association
SAE	Society of Automotive Engineers
SAMA	Scientific Apparatus Makers Association
SBC	Standard Building Code
SDI	Steel Deck Institute
S.D.I.	Steel Door Institute
SJI	Steel Joist Institute
SI	Salt Institute
SIA	Scaffold Industry Association
SMA	Screen Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors Association
SMC	Standard Mechanical Code
SPC	Standard Plumbing Code
SPI	Society of the Plastics Industry
SPRI	Single-Ply Roofing Institute
SSPC	Society for Protective Coatings
TCA	Tile Council of America
TEMA	Tubular Exchanger Manufacturers' Association
TIA	Telecommunications Industries Association
TIMA	Thermal Insulation Manufacturers Association
UBC	Uniform Building Code
UL	Underwriter's Laboratories
Uni-Bell	PVC Pipe Association
USDC	United States Department of Commerce
VRCI	Variable Resistive Components Institute
WEF	Water Environment Federation
WRI	Wire Reinforcement Institute
WWPA	Western Wood Products Association
W.W.P.A.	Woven Wire Products Association

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 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 Contractor's 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: A written order to Contractor signed by Owner authorizing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time issued after execution of the Agreement.
- B. Construction Change Authorization: A written order to the Contractor, signed by Owner and Engineer, which amends the Contract Documents as described and authorizes Contractor to proceed with a change which affects the Contract Sum or the Contract Time, for inclusion in a subsequent Change Order.
- C. Field Order: A written order to the Contractor signed by the Engineer and the Contractor, which is issued to interpret/clarify the Contract Documents, order minor changes in the work and/or memorialize trade-off agreements. The work described by a Field Order is to be accomplished without change to the Contract Sum, Contract Time, and/or claims for other costs.

1.03. PRELIMINARY PROCEDURES

- A. Owner or Engineer may initiate changes by submitting a Request for Proposal (RFP) 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.
 3. Statement of the effect on the Contract Sum and the Contract Time.
 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. WORK DIRECTIVE CHANGE AUTHORIZATION

- A. In lieu of a Request for Proposal (RFP), Engineer may issue a work directive authorization for Contractor to proceed with a change for subsequent inclusion in a Change Order.
- B. Authorization will describe changes in the work, both additions and deletions, with attachments of revised Contract Documents to define details of the change and will designate the method of determining any change in the Contract Sum and any change in Contract Time.
- C. Owner and Engineer will sign and date the Work Directive Change Authorization as authorization for the Contractor to proceed with the changes.
- D. Contractor will sign and date the Construction Change Authorization to indicate agreement with the terms therein.

1.05. 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 including:
 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.
 7. Justification for any change in Contract Time.

- 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.

1.06. PREPARATION OF CHANGE ORDERS AND FIELD ORDERS

- A. Engineer will prepare each Change Order and Field Order.
- B. Change Order will describe changes in the work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.
- C. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.
- D. Field Order will describe interpretations or clarifications of Contract Documents, order minor changes in the work, and/or memorialize trade-off agreements.
- E. Field Order work will be accomplished without change in the Contract Sum, Contract Time, and/or claims for other costs.

1.07. 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 will sign and date the Change Order to indicate agreement with the terms therein.

1.08. 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 will 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.

1.09. TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/WORK DIRECTIVE CHANGE AUTHORIZATION

- A. Engineer and Owner will issue a Work Directive Change Authorization directing Contractor to proceed with the changes.
- B. At completion of the change, submit itemized accounting and supporting data as provided in the Article "Documentation of Proposals and Claims" of this Section.
- C. Engineer will determine the allowable cost of such work, as provided in General Conditions and Supplementary Conditions.
- D. Engineer will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
- E. Owner and Contractor will sign and date the Change Order to indicate their agreement therewith.

1.10. CORRELATION WITH CONTRACTOR'S SUBMITTALS

- A. Periodically revise Schedule of Values and Request 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

THIS PAGE LEFT BLANK INTENTIONALLY

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.01. SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals required for performance of the Work, including:
 - 1. Contractor's construction schedule.
 - 2. Submittal schedule.
 - 3. Daily construction reports.
 - 4. Shop Drawings.
 - 5. Product Data.
 - 6. Samples.
- B. Administrative Submittals: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:
 - 1. Permits.
 - 2. Applications for payment.
 - 3. Insurance certificates.
 - 4. List of Subcontractors.

1.02. SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
- B. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
- C. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
- D. The Owner reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received. Submittals requiring color selection shall be held until all applicable submittals are received and color selections have been made.
- E. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.

1. Allow seven days for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Owner will return the submittal with no action taken when a submittal must be delayed for coordination with other submittals.
- F. If an intermediate submittal is necessary, process the same as the initial submittal.
- G. Allow seven days for reprocessing each submittal.
- H. No extension of Contract Time will be authorized because of failure to transmit submittals to the Engineer sufficiently in advance of the Work to permit processing.
- I. Submittal Preparation: Prepare an 8½" x 11" cover sheet on the Contractor's letterhead. Indicate the name of the person that prepared the submittal. Include a copy of the cover sheet with each submittal. Provide a space approximately 7" x 7½" on the cover sheet to record the review and approval markings, and the action taken. Use the sample form at end of this Section as a guide. Include the following information on the cover sheet for processing and recording action taken:
 1. Date
 2. Project Name and Number
 3. Specification section number and name.
 4. Contractor's Stamp.
- J. Submittal Transmittal: Package each set of submittals separately for transmittal and handling. Transmit each submittal from Contractor to Owner using the prescribed transmittal form and cover sheet. Fill in all blanks. Submittals received from other sources other than the Contractor or not in the specified forms will be returned without action.
- K. Record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.
- L. Transmittal Form: Use the sample form at the end of this Section for transmittal of submittals.

1.03. CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart type Contractor's construction schedule that can be used to plan, organize and execute the work, record and report actual performance and progress. **Submit within 7 days from the date of the "Notice to Proceed."**
- B. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the "Schedule of Values". Include the following information on the schedule:
 1. Activity description.
 2. Durations in work days for each activity.
 3. Earliest start date (by calendar date).

4. Earliest finish date (by calendar date).
 5. Latest start date (by calendar date).
 6. Latest finish date (by calendar date).
 7. Slack or float in work days.
 8. Percentage of activity completed.
 9. Schedule shall be value-loaded to coordinate with the schedule of values.
- C. Prepare the schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.
- D. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically sequences necessary for completion of related portions of the Work.
- E. Coordinate the Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests and other schedules.
- F. Area Separations: Provide a separate time bar to identify each major construction area for each major portion of the Work. Indicate where each element in an area must be sequenced or integrated with other activities.
- G. Distribution: Following response to the initial submittal, print and distribute copies to the Owner, subcontractors, and other parties required to comply with scheduled dates.
- H. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

1.04. SUBMITTAL SCHEDULE

- A. Concurrently with the development and the acceptance of the Contractor's construction schedule, prepare a complete schedule of submittals. Submit the schedule with the Contractor's construction schedule.
- B. Coordinate submittal schedule with the list of subcontracts, schedule of values and the list of products as well as the Contractor's construction schedule.
- C. Prepare the schedule in chronological order of construction. Provide the following information:
1. Scheduled date for the first submittal.
 2. Related Section number.
 3. Submittal category.
 4. Name of subcontractor.
 5. Description of the part of the Work covered.

6. Scheduled date for resubmittal
 7. Scheduled date the Owner's final release or approval.
- D. Distribution: Distribute copies to the Owner, subcontractors, and other parties required to comply with submittal dates indicated.
- E. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- F. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

1.05. DAILY CONSTRUCTION REPORTS

- A. Prepare a daily construction report, recording the following information concerning events at the site; and submit duplicate copies to the Owner at weekly intervals:
1. List of subcontractors at the site.
 2. Approximate count of personnel at the site, high and low temperatures, general weather conditions.
 3. Accidents and unusual events.
 4. Meetings and significant decisions.
 5. Stoppages, delays, shortages, losses.
 6. Emergency procedures.
 7. Orders and requests of governing authorities.
 8. Change Orders received, implemented.
 9. Services connected, disconnected.
 10. Equipment or system tests and start-ups.
 11. Partial Completions, occupancies.
 12. Substantial Completions authorized.

1.06. SHOP DRAWINGS

- A. Submit newly prepared information, drawn to accurate scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not considered Shop Drawings.
- B. Copies, manufacturer's data sheets and other information which is illegible will cause the

submission to be returned to the contractor for resubmission in legible form.

- C. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. Include the following information:
 - 1. Dimensions.
 - 2. Identification of products and materials included.
 - 3. Compliance with specified standards.
 - 4. Notation of coordination requirements.
 - 5. Notation of dimensions established by field measurement.
- D. Submittals:
 - 1. Submit electronic copies of each required submittal.
 - 2. Submittals for each item shall be consecutively numbered without division by subcontracts or trades. Resubmittals shall bear the number of the first submittal followed by a letter (A,B, etc.) to indicate the sequence of resubmittal.
- E. Do not use Shop drawings without an appropriate final stamp indicating action taken in connection with construction.
- F. Coordinate distribution of shop drawings to appropriate personnel. Maintain additional copies for project record documents.
- G. Coordination drawings are a special type of Shop Drawing that show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or function as intended.
- H. Preparation of coordination Drawings is specified in section "Project Coordination" and may include components previously shown in detail on Shop Drawings or Product Data.
- I. Submit coordination Drawings for integration of different construction elements. Show sequences and relationships of separate components to avoid conflicts in use of space.

1.07. PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."
- B. Mark submittals to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark to indicate the applicable information. Include the following information:
 - 1. Manufacturer's printed recommendations.
 - 2. Compliance with recognized trade association standards.

3. Compliance with recognized testing agency standards.
 4. Application of testing agency labels and seals.
 5. Notation of dimensions verified by field measurement.
 6. Notation of coordination requirements.
- C. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
- D. Submittals:
1. Submit electronic copies of each required submittal.
 2. Submittals for each item shall be consecutively numbered without division by subcontracts or trades. Resubmittals shall bear the number of the first submittal followed by a letter (A,B, etc.) to indicate the sequence of resubmittal.
- E. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
- F. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
- G. Do not proceed with installation until an applicable copy of Product Data applicable is in the installer's possession.
- H. Do not permit use of unmarked copies of Product Data in connection with construction.

1.08. SAMPLES

- A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture and pattern. Include the following:
1. Generic description of the Sample.
 2. Sample source.
 3. Product name or name of manufacturer.
 4. Compliance with recognized standards.
 5. Availability and delivery time.
- B. Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
- C. Where variation in color, pattern, texture or other characteristics are inherent in the material or

product represented, submit multiple units (not less than 3), that show approximate limits of the variations.

- D. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation and similar construction characteristics.
- E. Refer to other Sections for Samples to be returned to the Contractor for incorporation in the Work. Such Samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.
- F. Maintain sets of Samples, as returned, at the Project site, for quality comparisons throughout the course of construction.
- G. Sample sets may be used to obtain final acceptance of the construction associated with each set.
- H. Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.

1.09. ENGINEER'S ACTION

- A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Engineer will review each submittal, mark to indicate action taken, and return promptly. Compliance with specified characteristics is the Contractor's responsibility.
- B. Action Stamp: The Engineer will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:
 - 1. Where submittals are marked "CONFORMS WITH CONCEPT", that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
 - 2. When submittals are marked "CONFORMS AS NOTED" that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
 - 3. When submittals are marked "REJECTED" or "REVISE AND RESUBMIT" or "SUBMIT SPECIFIED ITEM", do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
- C. Do not permit submittals marked "REJECTED" and "REVISE AND RESUBMIT", or "CONFORMS AS NOTED" or "SUBMIT SPECIFIED ITEM", to be used at the Project site, or elsewhere where Work is in progress.
- D. Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, unmarked with only date and signature.

PART 2 - PRODUCTS (NOT USED).

PART 3 - EXECUTION (NOT USED).

END OF SECTION

Contractor's Letterhead
SUBMITTAL TRANSMITTAL

DATE:

TO: Kyle Associates, LLC
638 Village Lane North
Mandeville, LA 70471

RE: _____

PRODUCT/MATERIAL: Provide general description of material. (Example: PVC Pipe).

SECTION NUMBER AND NAME: Refer to Specification Section or Table of Contents. (Example: 02665 – Pipelines and Accessories).

TYPE OF SUBMITTAL: State type of Submittal(s): Shop Drawings, Coordination Drawings, Samples, Product Data, or other Submittals.

NUMBER OF COPIES: State number of copies or samples.

NUMBER OF SHEETS: State number of sheets in submittal.

CONTRACTORS SUBMITTAL NO.: Indicate submittal number shown on the Contractor's Submittal Schedule.

DATE OF SUBMITTAL: Indicate date on Contractor's stamp on submittal.

SUBCONTRACTOR: Indicate name of entity performing work.

SUPPLIER: Indicate name of entity supplying product.

DEVIATIONS: Indicate any deviation from the specifications. If no deviations from products specified, indicate that no deviations exist.

REMARKS: Indicate any supplement comments concerning this submittal. Example: This submittal is required for installation of drainage. Please expedite as soon as possible.

BY: _____
Name of person preparing Submittal.
Contractor's Name.

Contractor's Letterhead
COVER SHEET

DATE:

RE: _____

This space reserved for stamps.

SECTION 01301
SCHEDULE OF VALUES

PART 1 -- GENERAL

1.1 PRELIMINARY SCHEDULE OF VALUES

A. The Contractor shall submit a preliminary Schedule of Values for the major components of the work at the Preconstruction Conference. The listing shall include, at a minimum, the proposed value for the following major work components:

1. Mobilization.
2. For Well Site #1:
 - a. Demolition
 - b. CMU Building
 - c. Concrete Pad at well discharge manifold
 - d. Well pump and motor
 - e. Piping, valves, gauges, Instruments, etc.
 - f. Bulk chemical storage tank, 65 gallon
 - g. Day chemical storage tank, 10 gallon
 - h. Eye wash station and associated piping and valves
 - i. Chemical pump skid
 - j. Modifications to the existing well casing/discharge piping
 - k. Furnish and install new well pump control panel
 - l. Miscellaneous electrical work
3. For Well Site #2:
 - a. Demolition
 - b. CMU Building
 - c. Bulk chemical storage tank, 65 gallon
 - d. Day chemical storage tank, 10 gallon
 - e. Eye wash station and associated piping and valves
 - f. Chemical pump skid
 - g. Relocate and install existing well pump control panel

h. Miscellaneous electrical work

- B. The Contractor and Engineer shall meet and jointly review the preliminary Schedule of Values and make any adjustments in value allocations if, in the opinion of the Engineer, these are necessary to establish fair and reasonable allocation of values for the major work components. Front end loading will not be permitted. The Engineer may require reallocation of major work components from items in the above listing if in the opinion of the Engineer such reallocation is necessary.

1.2 SCHEDULE OF VALUES

- A. Any necessary revisions to the preliminary Schedule of Values required by the Engineer shall be completed within ten (10) days of the Notice to Proceed.
- B. After review and approval, the Schedule of Values shall be used for progress payments in accordance with Section 01025 – Measurement and Payment.

1.3 CHANGES TO SCHEDULE OF VALUES

- A. Changes to the CPM Schedule which add activities not included in the original schedule but included in the original work (schedule omissions) shall have values assigned as approved by the Engineer. Other activity values shall be reduced to provide equal value adjustment increases for added activities as approved by the Engineer.
- B. In the event that the Contractor and Engineer agree to make adjustments to the original Schedule of Values because of inequities discovered in the original accepted detailed Schedule of Values, increases and equal decreases to values for activities may be made.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- PART 3 -- EXECUTION (NOT USED)

END OF SECTION

SECTION 01532

SITE CONDITIONS SURVEYS

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall conduct thorough pre-construction and post-construction Site conditions surveys of the entire Project. Site conditions surveys shall consist of photographs and videotape recordings.

1.2 CONTRACTOR SUBMITTALS

- A. Video surveys, photographs, and other data of the preconstruction conditions shall be submitted to the ENGINEER for record purposes prior to, but not more than three weeks before, commencement of any construction activities.
- B. A complete set of all photographs of the post-construction conditions shall be completed and submitted prior to final inspection by the OWNER and ENGINEER. Photographs shall be in digital format.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION

3.1 PHOTOGRAPHS AND VIDEO RECORDINGS

- 1. In accordance with the requirements of the Special Provisions, CONTRACTOR, as a minimum, shall document pre- and post-construction conditions by preparing videotape surveys of the following:
 - 2. Roadways used to access the Site or haul materials and equipment to the Site.
 - 3. Work areas, including actual work sites, materials processing and stockpiling areas, access corridors, disposal areas, and staging areas.
 - 4. Any work completed by other contractors at the Site that will be connected to or otherwise affected by the WORK.
 - 5. Driveways, sidewalks, and buildings which might be affected by the WORK.
- B. Supplement videotape surveys with photographs as required to thoroughly document the original condition and location of existing features and facilities.
- C. Videotape records shall be in DVD format.

END OF SECTION

SECTION 01700

PROJECT CLOSEOUT

PART 1 -- GENERAL

1.1 FINAL CLEANUP

- A. The CONTRACTOR shall promptly remove from the vicinity of the completed WORK, all rubbish, unused materials, concrete forms, construction equipment, and temporary structures and facilities used during construction. Final acceptance of the WORK by the OWNER will be withheld until the CONTRACTOR has satisfactorily performed the final cleanup of the Site.

1.2 CLOSEOUT TIMETABLE

- A. The CONTRACTOR shall establish dates for equipment testing, acceptance periods, and on-site instructional periods (as required under the Contract). Such dates shall be established not less than one week prior to beginning any of the foregoing items, to allow the OWNER, the ENGINEER, and their authorized representatives sufficient time to schedule attendance at such activities.

1.3 FINAL SUBMITTALS

- A. The CONTRACTOR, prior to requesting final payment, shall obtain and submit the following items to the ENGINEER for transmittal to the OWNER:
 - 1. Written guarantees, where required.
 - 2. Technical Manuals and instructions.
 - 3. Maintenance stock items; spare parts; special tools.
 - 4. Completed record drawings in accordance with Section 01300 - Submittals.
 - 5. Certificates of inspection and acceptance by local governing agencies having jurisdiction.
 - 6. Releases from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of law.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION (NOT USED)

END OF SECTION

SECTION 02410

DEMOLITION

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. The Contractor shall demolish existing civil, structural, and mechanical facilities as indicated, in accordance with the Contract Documents.

1.2 COORDINATION

- A. The Contractor shall carefully coordinate the work in areas where existing facilities are interconnected with new facilities and where existing facilities remain operational. The work as indicated is not all inclusive, and the Contractor shall be responsible to perform the demolition indicated plus that which can be reasonably inferred from the Contract Documents as necessary to complete the Project. The Specifications and Drawings identify the major facilities that shall be demolished, but auxiliary utilities such as water, drainage, electrical wiring, controls, and instrumentation are not necessarily shown.
- B. The Contractor shall note that the Drawings used to indicate demolition are based on the survey and a visual inspection of the existing facilities. The Contract Drawings have been prepared to show existing conditions and to clarify the scope of WORK as much as possible. Prior to bidding, the Contractor shall conduct a comprehensive survey at the Site to verify the correctness and exactness of the Drawings, the scope of work, and the extent of auxiliary utilities.
- C. While demolition is being performed, the Contractor shall provide adequate access for the continued operation and maintenance of equipment and processes. The Contractor shall erect and maintain fences, warning signs, barricades, and other devices around the demolition area as required for the protection of the Contractor's employees and the Owner's personnel. The Contractor shall remove such protection when construction activities are complete, or as work progresses, or when directed by the Engineer.

1.3 CONTRACTOR SUBMITTALS

- A. Demolition activities and procedures, including operational sequence, shall be submitted to the Engineer for approval. The procedures shall provide for safe conduct of the work, careful removal and disposition of materials and equipment, protection of existing facilities which are to remain undisturbed, coordination with existing facilities to remain in service, and timely disconnection and reconnection of utility services. The procedures shall include a detailed description and time schedule of the methods and equipment to be used for each operation and the sequence of operation. A storage plan for salvaged items shall be included.

1.4 DEMOLITION

- A. Existing pavement, structures, equipment and related appurtenances such as anchors, supports, and hardware indicated or required to be demolished as part of the work shall be removed and disposed of unless otherwise indicated. Removal of buried structures, utilities, and appurtenances includes the related excavation and backfill as required. Removed items shall be disposed of offsite by the Contractor or as directed by the Owner.

1.5 REHABILITATION

- A. Existing civil, landscaping, structural, mechanical, electrical, and instrumentation work disturbed or damaged by demolition activities shall be repaired and rehabilitated as indicated or required by the Contract Documents.
- B. Damaged items shall be repaired or replaced with new items to restore items or surfaces to a condition equal to and matching that existing prior to damage.

1.6 DISPOSAL

- A. The Contractor shall be responsible for the offsite disposal of debris resulting from demolition in compliance with local, state, and federal codes and requirements.

PART 2 -- PRODUCTS (NOT USED)

PART 3 -- EXECUTION

3.1 GENERAL

- A. The Contractor shall coordinate demolition work with the Owner and Engineer. Unless otherwise indicated, the Contractor shall be responsible for the sequence of activities. Work shall be performed in accordance with applicable safety rules and regulations.
- B. The Contractor shall verify that any utilities connected to structures, equipment, and facilities to be removed, relocated, salvaged, replaced, or abandoned are rendered inoperable, replaced with new utilities, or adequately bypassed with temporary utilities before proceeding with demolition.
- C. The Contractor shall take precautions to avoid damage to adjacent facilities and to limit the work activities to the extent indicated. If demolition beyond the scope indicated is required, the Contractor shall obtain approval from the Engineer prior to commencing.

3.2 PROTECTION OF EXISTING FACILITIES

- A. Before beginning any demolition, the Contractor shall carefully survey the existing facilities and examine the Specifications and Drawings to determine the extent of demolition and coordination with the work. Existing facilities not subject to demolition shall be protected and maintained in accordance with Section 01015 –Control of Work. Damaged existing facilities shall be repaired to the previous condition or replaced.
- B. Persons shall be afforded safe passages around areas of demolition.
- C. Structural elements shall not be overloaded. The Contractor shall be responsible for shoring, bracing, or adding new supports as may be required for adequate structural support as a result of work performed under this Section. The Contractor shall remove temporary protection when the work is complete or when so authorized by the Engineer.
- D. The Contractor shall carefully consider bearing loads and capacities before placement of equipment and material on Site. In the event of any questions as to whether an area to be loaded has adequate bearing capacity, the Contractor shall consult with the Engineer prior to the placement of such equipment or material.

3.3 DEMOLITION, SALVAGE, AND RELOCATION

- A. The Contract Documents indicate existing facilities to be demolished, salvaged, and/or relocated. Auxiliary utilities including such services as water, drainage, electrical wiring, controls, and instrumentation are not necessarily indicated. The Contractor shall verify the scope of the work to

remove the equipment indicated; coordinate its shutdown, removal, replacement, or relocation; and submit an outage plan to the Engineer prior to beginning work. The removal of existing facilities for demolition, salvage, and relocation shall include the following requirements:

1. Asphalt and concrete pavement, curbs, and gutters shall be removed as necessary to perform the work. The limits of removal shall be saw cut. When the required improvements have been constructed, new asphalt and concrete pavement, curbs, and gutters shall be placed to match the original unless otherwise indicated.
 2. Below-grade areas and voids resulting from demolition shall be completely filled and compacted. After fill and compaction, surfaces shall be graded to meet adjacent contours and to provide flow to surface drainage structures, or as indicated.
- B. The Contractor shall perform a functional test of existing equipment that is relocated and reinstalled to ensure the equipment functions in the manner documented during the initial inspection. The Contractor shall inform the Engineer in writing a minimum of 5 Days prior to the functional testing in order for the Owner and Engineer to witness the test. If, in the opinion of the Engineer, the relocated equipment does not function in a satisfactory manner, the Contractor shall make repairs and modifications necessary to restore the equipment to its original operating condition at no additional cost to the Owner.

3.4 REHABILITATION

- A. Certain areas of existing structures, piping, conduits, and the like will be affected by work necessary to complete modifications under this Contract. The Contractor shall be responsible to rehabilitate those areas affected by its construction activities.
- B. When new piping is to be connected to existing piping, the existing piping shall be cut square and ends properly prepared for the connection. Any damage to the lining and coating of the existing piping shall be repaired. Dielectric insulating joints shall be installed at interconnections between new and existing piping.

3.5 DISPOSAL

- A. Demolition and removal of debris shall minimize interference with roads, streets, walks, and other adjacent occupied or used facilities which shall not be closed or obstructed without permission from the Owner. Alternate routes shall be provided around closed or obstructed traffic ways.
- B. Site debris, rubbish, and other materials resulting from reconstruction operations shall be legally removed and disposed of. Structures and equipment to be demolished shall be cleaned prior to demolition and the wash water properly disposed of. No trace of these structures shall remain prior to placing of backfill in the areas from which structures were removed.
- C. Refuse, debris, and waste materials resulting from demolition and clearing operations shall not be burned.

3.6 OCCUPANCY AND POLLUTION CONTROL

- A. Water sprinkling, temporary enclosures, chutes, and other suitable methods shall be used to limit dust and dirt rising and scattering in the area. The Contractor shall comply with government regulations pertaining to environmental protection.
- B. Water shall not be used if it creates hazardous or objectionable conditions such as ice, flooding, or pollution.

3.7 CLEANING

- A. During and upon completion of work, the Contractor shall promptly remove tools and equipment, surplus materials, rubbish, debris, and dust and shall leave areas affected by work in a clean, approved condition.
- B. Adjacent structures shall be cleaned of dust, dirt, and debris caused by reconstruction, as directed by the Engineer or governing authorities, and adjacent areas shall be returned to condition existing prior to start of work.
- C. The Contractor shall clean and sweep the yard paving within the construction area and access roads to the construction area weekly and as directed by the Owner or Engineer.

END OF SECTION 02410

SECTION 02665

WATERLINES AND ACCESSORIES

PART 1 - GENERAL

1.01. WORK INCLUDED

- A. The Contractor shall furnish all materials, equipment, transportation, tools and labor necessary and complete the waterline in substantial conformance with the lines, grades, and locations shown on the Drawings.
- B. Pressure testing of waterlines is covered in Section 02660 – Testing of Pipelines.
- C. Valves are covered in Section 15100 – Valves and Appurtenances.

1.02. REFERENCED SPECIFICATIONS

- A. Those parts of the referenced specifications which are applicable hereto shall be considered as if written herein in full.
- B. ASTM: American Society of Testing Materials.
- C. AWWA: American Water Works Association.

1.03. SUBMITTALS

- A. Complete shop drawings and product data and engineering data for all products shall be submitted to the Engineer in accordance with the requirements of Section 01300 of these Specifications.
- B. The Contractor shall submit written certification from the manufacturer(s) that the products furnished comply with all applicable requirements of these Specifications.

1.04. TRANSPORTATION AND HANDLING

- A. Unloading: Furnish equipment and facilities for unloading, handling, distributing and storing pipe, fittings, valves and accessories. Make equipment available at all times for use in unloading. Do not drop or dump materials. Any materials dropped or dumped will be subject to rejection without additional justification. Pipe handled on skids shall not be rolled or skidded against the pipe on the ground.
- B. Handling: Handle pipe, fittings, valves and accessories carefully to prevent shock or damage. Handle pipe by rolling on skids, forklift, or front end loader. Do not use material damaged in handling. Slings, hooks or pipe tongs shall be padded and used in such a manner as to prevent damage to the exterior coatings or internal lining of the pipe.

1.05. STORAGE AND PROTECTION

- A. Store all pipe that cannot be distributed along the route. Use suitable storage areas.
- B. Stored materials shall be kept safe from damage. The interior of all pipe, fittings and other appurtenances shall be kept free from dirt or foreign matter at all times. Valves and hydrants shall be drained and stored in a manner that will protect them from damage by freezing.

- C. Pipe shall not be stacked higher than the limits recommended by the manufacturer. The bottom tier shall be kept off the ground on timbers, rails or concrete. Pipe in tiers shall be alternated: bell, plain end; bell, plain end. At least two rows of timbers shall be placed between tiers and chocks, affixed to each other in order to prevent movement. The timbers shall be large enough to prevent contact between the pipe in adjacent tiers.
- D. Stored mechanical and push-on joint gaskets shall be placed in a cool location out of direct sunlight. Gaskets shall not come in contact with petroleum products. Gaskets shall be used on a first-in, first-out basis.
- E. Mechanical-joint bolts shall be handled and stored in such a manner that will ensure proper use with respect to types and sizes.

PART 2 - PRODUCTS

2.01. DUCTILE IRON FITTINGS

- A. Fittings shall be ductile iron and shall conform to AWWA C110 or AWWA C153 with a minimum rated working pressure of 250 psi. Fittings shall be furnished with a fusion bonded epoxy coating and lining meeting the requirements of AWWA C116 and AWWA C213.
- B. Joints for fittings:
 - 1. Unless shown or specified otherwise, joints shall be standard mechanical restrained joints for fittings. Mechanical joints shall conform to AWWA C111.
 - 2. Restrained joints shall be ductile iron retainer glands, Megalug Series 2000 as manufactured by EBBA Iron, Inc., or equal. Castings shall be furnished with a fusion bonded coating and meeting the requirements of AWWA C116 and AWWA C213.
 - 3. Provide the appropriate gaskets for mechanical joints.
 - 4. All bolts shall be stainless steel machine bolts conforming to ASTM A193, Grade B8M. Nuts shall be heavy hex, stainless-steel conforming to ASTM A194, Grade B8M.

2.02. POLYVINYL CHLORIDE PIPE - AWWA TYPE

- A. Polyvinyl chloride pipe (PVC) shall have belled ends for push-on type jointing and shall conform to AWWA C900, ductile iron pipe equivalent (DIPS) outside diameters. The pipe shall have a Dimension Ratio (DR) of 18 and shall be capable of withstanding a working pressure of 235 psi. Pipe shall be supplied in minimum lengths of 20 feet. Pipe shall be approved for potable water use by the National Sanitation Foundation (NSF) and shall conform to NSF 61.
- B. Restrained joints for PVC pipe, as required, shall be retainer glands, Megalug Series 2800 as manufactured by EBAA Iron, Inc., or equal.
- C. The Contractor shall install a plastic bonded solid 16-gauge copper wire on the top of all PVC waterlines. The wire shall be continuous along the entire length of the pipe and grounded to gate valves, fire hydrants, and flushing valves.
- D. Each length of pipe shall be labeled "NSF Approved" or "NSF-61", "AWWA C900", "DR-18", and the pipe diameter.

2.03. DUCTILE IRON PIPE

- A. Ductile iron pipe shall be designed in accordance with AWWA C150 and manufactured in accordance with AWWA C151. Joints shall conform to AWWA C111 or C115 as applicable and

shall be of the push on or mechanical type except where flanged joints are indicated on the plans. Ductile iron pipe 4" in diameter shall be of thickness Class 51 and pipe 6" and greater in diameter shall be of thickness Class 50, except pipe with threaded flanges shall be Class 53. Pipe interior shall be coated with a standard thickness cement mortar lining in accordance with the latest revision of ANSI/AWWA C104/A21.4. Pipe and fittings shall be certified to conform to NSF International Standard 61. Pipe shall be provided in standard 18-ft to 20-ft lengths.

- B. Ductile Iron Pipe (Restrained Joint), in locations designated on the plans, conforming to ANSI- A-21.51 (AWWA C151) Grade 60-42-10 Ductile iron thickness Class 50. Pipe interior shall be cement mortar lined per ANSI A-21.4 (AWWA C104). Pipe joints shall be restrained with mechanical restraint devices, or the pipe shall be "Flex-Ring Joint", "Fast-Grip Joint", or "Loc-Ring Joint" as manufactured by American Ductile Iron Pipe, or equal.
- C. Fittings for ductile iron pipe shall conform to the requirements of AWWA C153 or AWWA C110 and shall have a minimum pressure rating of 250 psi.
- D. Exterior protection of pipe
 - 1. Exterior Coating of Exposed Piping: The exterior surfaces of pipe which will be exposed to the atmosphere inside structures or above ground shall be thoroughly cleaned and then given a shop coat of rust-inhibitive epoxy primer and finish coating conforming to the requirements of Section 09800 – Protective Coatings.
 - 2. Exterior Coating of Buried Piping: The exterior coating shall be an asphaltic coating approximately 1 mil thick.

2.04. VALVE BOXES

- A. All valves shall be equipped with valve boxes. Valve boxes shall be cast iron two-piece screw type with drop covers. Valve boxes shall have a 5.25-inch inside diameter. Valve box covers shall weigh a minimum of 13 pounds. Valve boxes shall be adjustable to 6-inches up or down from the nominal required cover over the pipe. Valve boxes shall be of sufficient length that the bottom flange of the lower belled portion of the box is below the valve operating nut. Ductile or cast iron extensions shall be provided as necessary. Covers shall have "WATER" cast into them. Valve boxes shall be manufactured in the United States.

2.05. PLUGS AND CAPS

- A. The Contractor shall provide, install, and remove standard plugs or caps as required for testing. Plugs and caps shall be suitable for permanent service.
- B. The Contractor shall plug, cap or otherwise cover all piping work in progress.
- C. Permanent plugs shall be restrained mechanical joint ductile iron.

2.06. TRANSITION COUPLINGS/ADAPTORS

- A. Between different types of pipe and/or fittings special couplings or adapters may be required to provide proper connection. Some of these may be indicated on the Drawings or specified with individual types of pipe. However, it is the Contractor's responsibility to ensure proper connection between various types of pipe, and between pipe and valves, fittings and other appurtenances. The Contractor shall provide all adapters as required for a functioning pipeline, whether specifically noted or not.
- B. Couplings and adapters shall be suitable for direct bury, with proper dielectric insulation (if necessary) and if metallic and not stainless steel, with two coats of high solids epoxy.

2.07. CONCRETE

- A. Cast in place concrete shall have a compressive strength of not less than 3,000 psi, with not less than 5.5 bags of cement per cubic yard and a slump between 3 and 5-inches. Ready-mixed concrete shall be mixed and transported in accordance with ASTM C94. Reinforcing steel shall conform to the requirements of ASTM A615, Grade 60. Precast concrete shall have a compressive strength of not less than 5,000 psi.

2.08. DETECTION TAPE

- A. Detection tape shall be composed of a solid aluminum foil encased in a protective plastic jacket. Tapes shall be color coded in accordance with APWA color codes with the following legends: Water Systems, Safety Precaution Blue, "Caution Water Line Buried Below". Colors may be solid or striped. Tape shall be permanently printed with no surface printing allowed. Tape width shall be a minimum of 2-inches. Detection tape shall be equal to Lineguard Type III Detectable, or Allen Systems Detectatape, or equal.

PART 3 - EXECUTION

3.01. EXISTING UTILITIES AND OBSTRUCTIONS

- A. The Drawings indicate utilities or obstructions that are known to exist according to the best information available to the Owner. The Contractor shall call the Louisiana One Call Center (1-800-272-3020) as required by Louisiana Law and all utilities, agencies or departments that own and/or operate utilities in the vicinity of the construction work site at least 72 hours (three business days) prior to construction to verify the location of the existing utilities.
- B. Existing Utility Location: The following steps shall be exercised to avoid interruption of existing utility service.
 - 1. Provide the required notice to the utility owners and allow them to locate their facilities according to Louisiana law. Field utility locations are valid for only 10 days after original notice. The Contractor shall ensure, at the time of any excavation that a valid utility location exists at the point of excavation.
 - 2. Expose the facility, for a distance of at least 80 feet in advance of pipeline construction, to verify its true location and grade. Repair, or have repaired, any damage to utilities resulting from locating or exposing their true location.
 - 3. Avoid utility damage and interruption by protection with means or methods recommended by the utility owner.
 - 4. Maintain a log identifying when phone calls were made, who was called, area for which utility relocation was requested and work order number issued, if any. The Contractor shall provide the Engineer with an updated copy of the log monthly, or more frequently if required.
- C. Conflict with Existing Utilities
 - 1. Horizontal Conflict: Horizontal conflict shall be defined as when the actual horizontal separation between a utility, main, or service and the proposed water main does not permit safe installation of the water main by the use of sheeting, shoring, tying-back, supporting, or temporarily suspending service of the parallel or crossing facility. The Contractor may change the proposed alignment of the water main to avoid horizontal conflicts if the new alignment remains within the available right-of-way or easement, complies with regulatory agency requirements and after a written request to and subsequent approval by the Engineer. Where such relocation of the water main is denied by the Engineer, the Contractor shall arrange to have the utility, main, or service relocated.

2. Vertical Conflict: Vertical conflict shall be defined as when the actual vertical separation between a utility, main, or service and the proposed water main does not permit the crossing without immediate or potential future damage to the utility, main, service, or the water main. The Contractor may change the proposed grade of the water main to avoid vertical conflicts if the changed grade maintains adequate cover and complies with regulatory agencies requirements after written request to and subsequent approval by the Engineer. Where such relocation of the water main is denied by the Engineer, the Contractor shall arrange to have the utility, main, or service relocated.
- D. Electronic Locator: The Contractor shall have available at all times an electronic pipe locator and a magnetic locator, in good working order, to aid in locating existing pipe lines or other obstructions.
- E. Water and Sewer Separation
1. Water mains should maintain a minimum 10-foot edge-to-edge separation from sewer lines, whether gravity or pressure. If the main cannot be installed in the prescribed easement or right-of-way and provide the 10-foot separation, the separation may be reduced, provided the bottom of the water main is a minimum of 18-inches above the top of the sewer. If neither of these two separation criteria is possible, the water main shall be installed below the sewer with a minimum vertical separation of 18-inches.
 2. The water main, when installed below the sewer, shall be encased in concrete with a minimum 6-inch concrete depth to the first joint in each direction. Where water mains cross the sewer, the pipe joint adjacent to the pipe crossing the sewer shall be cut to provide maximum separation of the pipe joints from the sewer.

3.02. CONSTRUCTION ALONG HIGHWAYS, STREETS AND ROADWAYS

- A. Install pipe lines and appurtenances along highways, streets and roadways in accordance with the applicable regulations of Plaquemines Parish with reference to construction operations, safety, traffic control, road maintenance and repair.
- B. Construction Operations
1. Perform all work along highways, streets and roadways to minimize interference with traffic.
 2. Stripping: Where the pipe line is laid along road right-of-way, strip and stockpile all sod, topsoil and other material suitable for right-of-way restoration.
 3. Trenching, Laying and Backfilling: Do not open the trench any further ahead of pipe laying operations than is necessary. Backfill and remove excess material immediately behind laying operations. Complete excavation and backfill for any portion of the trench in the same day.
 4. Shaping: Reshape damaged slopes, side ditches, and ditch lines immediately after completing backfilling operations. Replace topsoil, sod and any other materials removed from shoulders.
- C. Excavated Materials: Do not place excavated material along highways, streets and roadways in a manner which obstructs traffic. Sweep all scattered excavated material off of the pavement in a timely manner.
- D. Drainage Structures: Keep all side ditches, culverts, cross drains, and other drainage structures clear of excavated material. Care shall be taken to provide positive drainage to avoid ponding or concentration of runoff.

- E. Landscaping Features: Landscaping features shall include, but are not necessarily limited to: fences; property corners; cultivated trees and shrubbery; manmade improvements; subdivision and other signs within the right-of-way and easement. The Contractor shall take extreme care in moving landscape features and promptly re-establishing these features.
- F. Maintaining Highways, Streets, Roadways and Driveways
 - 1. Maintain streets, highways, roadways and driveways in suitable condition for movement of traffic until completion and final acceptance of the work.
 - 2. During the time period between pavement removal and completing permanent pavement replacement, maintain highways, streets and roadways by the use of steel running plates. Running plate edges shall have asphalt placed around their periphery to minimize vehicular impact. The backfill above the pipe shall be compacted as specified elsewhere up to the existing pavement surface to provide support for the steel running plates.
 - 3. Furnish a road grader or front-end loader for maintaining highways, streets, and roadways. The grader or front-end loader shall be available at all times.
 - 4. Immediately repair all driveways that are cut or damaged. Maintain them in a suitable condition for use until completion and final acceptance of the work.

3.03. PIPE DISTRIBUTION

- A. Pipe shall be distributed and placed in such a manner that will not interfere with traffic.
- B. No street or roadway may be closed for unloading of pipe without first obtaining permission from Plaquemines Parish or LADOTD. The Contractor shall furnish and maintain proper warning signs and obstruction lights for the protection of traffic along highways, streets and roadways upon which pipe is distributed.
- C. No distributed pipe shall be placed inside drainage ditches.
- D. Distributed pipe shall be placed as far as possible from the roadway pavement, but no closer than 15 feet from the roadway pavement, including shoulders, as measured edge-to-edge.

3.04. LAYING AND JOINTING PIPE AND ACCESSORIES

- A. Lay all pipe and fittings to accurately conform to the lines and grades established by the Engineer.
- B. Pipe Installation
 - 1. Proper implements, tools and facilities shall be provided for the safe performance of the work. All pipe, fittings, valves and hydrants shall be lowered carefully into the trench by means of slings, ropes or other suitable tools or equipment in such a manner as to prevent damage to materials and protective coatings and linings. Under no circumstances shall waterline materials be dropped or dumped into the trench.
 - 2. All pipe, fittings, valves, hydrants and other appurtenances shall be examined carefully for damage and other defects immediately before installation. Defective materials shall be marked and held for inspection by the Engineer, who may prescribe corrective repairs or reject the materials.
 - 3. All lumps, blisters and excess coating shall be removed from the socket and plain ends of each pipe, and the outside of the plain end and the inside of the bell shall be wiped clean and dry and free from dirt, sand, grit or any foreign materials before the pipe is laid. No pipe containing dirt shall be laid.

4. Foreign material shall be prevented from entering the pipe while it is being placed in the trench. No debris, tools, clothing or other materials shall be placed in the pipe at any time.
 5. As each length of pipe is placed in the trench, the joint shall be assembled and the pipe brought to correct line and grade. The pipe shall be secured in place with approved backfill material.
 6. Applying pressure to the top of the pipe, such as with a backhoe bucket, to lower the pipe to the proper elevation or grade, shall not be used.
 7. Detection tape shall be buried 6 to 12-inches deep.
- C. Alignment and Gradient
1. Lay pipe straight in alignment and gradient or follow true curves as nearly as practicable. Do not deflect any joint more than the maximum deflection recommended by the manufacturer.
 2. Maintain a transit, level and accessories on the job to layout angles and ensure that deflection allowances are not exceeded.
- D. Expediting of Work: Excavate, lay the pipe, and backfill as closely together as possible. Do not leave un-jointed pipe in the trench overnight. Backfill and compact the trench as soon as possible after laying and jointing is completed. Cover the exposed end of the installed pipe each day at the close of work and at all other times when work is not in progress, If necessary to backfill over the end of an uncompleted pipe or accessory, close the end with a suitable plug, either push-on, mechanical joint, restrained joint or as approved by the Engineer.
- E. Joint Assembly: Push-on and restrained type joints shall be assembled in accordance with the manufacturer's recommendations.
- F. Cutting Pipe: Cut PVC pipe using a suitable saw; remove all burrs and smooth the end before jointing. The Contractor shall cut the pipe and bevel the end, as necessary, to provide the correct length of pipe necessary for installing the fittings, valves, accessories and closure pieces in the correct location.
- G. Valve and Fitting Installation
1. Prior to installation, valves shall be inspected for direction of opening, number of turns to open, freedom of operation, tightness of pressure-containing bolting and test plugs, cleanliness of valve ports and especially seating surfaces, handling damage and cracks, Defective valves shall be corrected or held for inspection by the Engineer. Valves shall be closed before being installed.
 2. Valves, fittings, plugs and caps shall be set and joined to the pipe in the manner specified in this Section for cleaning, laying and joining pipe, except that 12-inch and larger valves shall be provided with special support, such as crushed stone, concrete pads or a sufficiently tamped trench bottom so that the pipe will not be required to support the weight of the valve. Valves shall be installed in the closed position.
 3. A valve box shall be provided on each underground valve. They shall be carefully set, centered exactly over the operating nut and truly plumbed. The valve box shall not transmit shock or stress to the valve. The bottom flange of the lower belled portion of the box shall be placed below the valve operating nut. This flange shall be set on compacted crushed stone, so arranged that the weight of the valve box and superimposed loads will bear on the base and not on the valve or pipe. Extension stems shall be installed where depth of bury places the operating nut in excess of 30-inches beneath finished grade so as to set the top

of the operating nut 30-inches below finished grade. The valve box cover shall be flush with the surface of the finished area or such other level as directed by the Engineer.

4. In no case shall valves be used to bring misaligned pipe into alignment during installation. Pipe shall be supported in such a manner as to prevent stress on the valve.

3.05. JOINT RESTRAINT

- A. Retainer Glands: Provide retainer glands where shown on the Drawings and on all associated fittings and valves. Retainer glands shall be installed in accordance with the manufacturer's recommendations, particularly, the required torque of the set screws. The Contractor shall furnish a torque wrench to verify the torque on all set screws which do not have inherent torque indicators.

3.06. DISINFECTING PIPELINE

- A. After successfully pressure testing each pipeline section, disinfect in accordance with AWWA C651 and these Specifications.
- B. Specialty Contractor: Disinfection shall be performed by an approved specialty contractor. Before disinfection is performed, the Contractor shall submit a written procedure for approval before being permitted to proceed with the disinfection. This plan shall also include the steps to be taken for the neutralization of the chlorinated water.
- C. Chlorination
 1. Apply chlorine solution to achieve a concentration of at least 50 milligrams per liter free chlorine in new line. Retain chlorinated water for 4 hours.
 2. Chlorine concentration shall be recorded at every outlet along the line at the beginning and end of the 4 hour period.
 3. After 4 hours, all samples of water shall contain at least 50 milligrams per liter free chlorine. Re-chlorinate if required results are not obtained on all samples.
- D. Disposal of Chlorinated Water: Reduce chlorine residual of disinfection water to less than one milligram per liter if discharged directly to a body of water or to less than two milligrams per liter if discharged onto the ground prior to disposal. Treat water with sulfur dioxide or other reducing chemicals to neutralize chlorine residual. Flush all lines until residual is equal to existing system residual in the area.
- E. Bacteriological Testing: After final flushing and before the water main is placed in service, the Contractor shall collect samples from the line and have tested for bacteriological quality in accordance with the rules of the Louisiana Department of Health and Hospitals (LADHH). The bacteriological samples shall be analyzed for both coliform and non-coliform growth. Testing shall be performed by a laboratory certified by the LADHH. Two or more successive sets of samples, as required by the LADHH, taken at 24-hour intervals, shall indicate bacteriologically satisfactory water and the results shall be submitted to the LADHH. Re-chlorinate lines until required results are obtained.

3.07. PROTECTION AND RESTORATION OF WORK AREA

- A. General: Return all items and all areas disturbed, directly or indirectly by work under these Specifications, to their original condition or better, as quickly as possible after work is started.
 1. The Contractor shall plan, coordinate, and prosecute the work such that disruption to personal property and business is held to a practical minimum.

2. All construction areas abutting lawns and yards of residential or commercial property shall be restored promptly. Backfilling of underground facilities, ditches, and disturbed areas shall be accomplished on a daily basis as work is completed. Finishing, dressing, and grassing shall be accomplished immediately thereafter, as a continuous operation within each area being constructed and with emphasis placed on completing each individual yard or business frontage. Care shall be taken to provide positive drainage to avoid ponding or concentration of runoff.
 3. Handwork, including raking and smoothing, shall be required to ensure that the removal of roots, sticks, rocks, and other debris is removed in order to provide a neat and pleasing appearance.
- B. Man-Made Improvements: Protect, or remove and replace with the Engineer's approval, all fences, walkways, mail boxes, pipe lines, drain culverts, power and telephone lines and cables, property pins and other improvements that may be encountered in the work.
 - C. Cultivated Growth: Do not disturb cultivated trees or shrubbery unless approved by the Engineer. Any such trees or shrubbery which must be removed shall be heeled in and replanted under the direction of an experienced nurseryman.
 - D. Cutting of Trees: Do not cut trees for the performance of the work, except as absolutely necessary and as approved by the Engineer. Protect trees that remain in the vicinity of the work from damage from equipment. Do not store spoil from excavation against the trunks. Remove excavated material stored over the root system of trees within 30 days to allow proper natural watering of the root system. Repair any damaged tree over 3-inches in diameter, not to be removed, under the direction of an experienced nurseryman. All trees and brush that require removal shall be promptly and completely removed from the work area and disposed of by the Contractor. No stumps, wood piles, or trash piles will be permitted on the work site.
 - E. Disposal of Rubbish: Dispose of all materials cleared and grubbed during the construction of the Project in accordance with the applicable codes and rules of the appropriate county, state and federal regulatory agencies.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture.
- C. Steel Reinforcement Shop Drawings: Placing drawings showing all fabrication dimensions and locations for placing reinforcement shall be submitted for review. All submittals shall be made on sheets having a minimum size of 22" x 34". The procedure and quantity of submittals shall be in accordance with the requirements given in the submittal section of the project specifications.
- D. Formwork Shop Drawings: Submittal of shop drawings or procedures for formwork, shoring, or reshoring will not be required or reviewed by the Structural Engineer. Design, placement, and removal of shoring, reshoring, and formwork are the responsibility of the Contractor. No review, comments, or approval of the structural adequacy or time of removal of shores, reshores, or forms will be made by the Structural Engineer.

1.3 INFORMATIONAL SUBMITTALS

- A. Material certificates.
- B. Material test reports.
- C. Floor surface flatness and levelness measurements. Unless directed otherwise, all floor slabs in excess of 10,000 square feet shall be tested for flatness in accordance with ACI 117 and shall have minimum F numbers of FF =25 and FL=20.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- B. Testing Agency Qualifications: An independent agency qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

- C. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301, "Specifications for Structural Concrete."
 - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- D. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures. The Contractor shall submit the concrete mix design to the testing laboratory for review. Every mix for the project shall have a unique identifying name or number and this identification shall appear on the mix design submittal, the backup documentation, and on all tickets for the concrete actually delivered to the site. The Testing Laboratory shall submit a written review of the design mix to the Engineer prior to commencement of concrete work. The Laboratory shall verify that the mix submitted meets all requirements of this specification, including the identification criteria listed above.
- E. Pre-installation Conference: Conduct conference at location to be determined by the Architect.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material Provide lumber dressed on at least two edges and one side for tight fit.

2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615, Grade 60, deformed.
- B. Plain-Steel Welded Wire Reinforcement: ASTM A 185, plain, fabricated from as-drawn steel wire into flat sheets. Wire for welded wire fabric shall conform to ASTM A82.
- C. Deformed-Steel Welded Wire Reinforcement: ASTM A 497, flat sheet.
- D. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice.
- E. No field bending or straightening of reinforcement partially embedded in concrete (including existing reinforcement) will be allowed.

2.3 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
 - 1. Portland Cement: ASTM C 150, Contractor may supplement with the following:

- a. Fly Ash: Class C fly ash conforming to ASTM C618 may be used in the mix providing it constitutes no more than 20% of the total weight of the cementitious material.
 - b. Ground Granulated Blast-Furnace Slag: Blast furnace slag conforming to ASTM C989 may be used providing it constitutes no more than 20% of the total weight of the cementitious material.
- B. Normal-Weight Aggregates: ASTM C 33, graded.
- 1. Maximum Coarse-Aggregate Size: 1-1/2 inches nominal.
 - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Water: ASTM C 94 and potable.

2.4 ADMIXTURES

- A. Air-Entraining Admixture: Unless indicated otherwise on the drawings, air entrainment will not be required. Where it is required it shall comply with ASTM C 260.
- B. Chemical Admixtures: Admixtures may be used in concrete at contractor's option and with the approval of the Testing Laboratory and Structural Engineer. Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride. When admixtures (plasticizers, water reducers, etc.) are utilized to increase slump the admixtures shall be added at the job site and the slump shall be measured prior to introduction of the admixture.
- 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
 - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 - 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 - 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.5 WATERSTOPS

- A. Waterstops (where indicated): Type, size, and location as detailed on the drawings.

2.6 VAPOR RETARDERS

- A. Sheet Vapor Retarder: ASTM E 1745, Class A for commercial projects. Include manufacturer's recommended adhesive or pressure-sensitive tape. Polyethylene sheet, ASTM D 4397, not less than 10 mils thick for residential projects.

2.7 CURING MATERIALS

- A. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, non-dissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering.

2.8 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751.

2.9 CONCRETE MIXTURES

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
- B. Cementitious Materials: Contractor may use fly ash and ground granulated blast-furnace slag as needed to reduce the total amount of Portland cement. The contractor shall not use less than 60% Portland cement. Concrete that is pumped shall have at least 0.5 more sacks of cementitious material per cubic yard than concrete of the same strength that is not pumped.
- C. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use admixtures in concrete, as required, for placement and workability.
 - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
 - 3. Use water-reducing admixture as required.
- D. Proportions of concrete mixtures shall be determined by the following:
 - 1. Minimum Compressive Strength: as shown on the drawings.
 - 2. Slump Limit: 4 inches, plus or minus 1 inch.

2.10 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.11 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94, and furnish batch ticket information.
- B. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

- C. Chamfer exterior corners and edges of permanently exposed concrete where detailed.
- D. Earth cuts may be used as forms for footings or grade beams providing dimensions are controlled. The contractor shall be responsible for providing any dewatering or dry bottoms necessary to place concrete to the dimensions and elevations shown on the drawings.

3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

3.3 VAPOR RETARDER

- A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer's written instructions.

1. Lap joints 6 inches minimum or per manufacturers recommendations and seal with manufacturers recommended tape.

3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
2. Unless shown otherwise on the drawings all reinforcement shall be continued through construction joints and bonded on both sides of the joint.
3. Reinforcement or other items bonded to the concrete (except dowels bonded to only one side of joints) shall not be permitted to extend continuously through any expansion joints.
4. Maximum spacing of expansion joints in non-pile supported sidewalks shall be 10 feet. Expansion joint filler shall be ASTM D1751 or D1752.

3.5 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fifth of concrete thickness as follows:
- D. Waterstops: Install in construction joints and at other joints indicated according to manufacturer's written instructions.
- E. All control, construction, or expansion joints in paving shall extend continuously through any curbs, sidewalks, etc. poured with or on the paving.

3.6 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections and field reviews have been performed.
- B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
 - 1. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
- C. Cold-Weather Placement: Comply with ACI 306.1.
- D. Hot-Weather Placement: Comply with ACI 301.

3.7 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
 - 1. Apply to concrete surfaces not exposed to public view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
 - 1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, to be covered with a coating or covering material applied directly to concrete.
- C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:
 - 1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
 - 2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part Portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white Portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.8 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch in one direction.
 - 1. Apply scratch finish to surfaces where indicated, to receive concrete floor toppings, and to receive mortar setting beds for bonded cementitious floor finishes.
- C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraighening until surface is left with a uniform, smooth, granular texture.
 - 1. Apply float finish to surfaces where indicated to receive trowel finish, and to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo
- D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
 - 1. Apply a trowel finish to surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.
- E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces indicated and or where ceramic or quarry tile is to be installed by either thickset or thin-set method. While concrete is still plastic, slightly scarify surface with a fine broom.
 - 1. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.
- F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.

3.9 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot- weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Cure concrete according to ACI 308.1.

1. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.
2. As noted on drawings.

3.10 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

3.11 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Inspection and testing shall be performed by a firm selected and paid for by the Owner in accordance with the Quality Control section of this specification and Section 1.6 of ACI 301-99. Additional concrete cylinders requested by the Contractor for his information shall be paid for by the Contractor.
- B. Testing reports for concrete delivered to the site shall contain the unique identification of the specific mix for the concrete being supplied for the reported pour.
- C. Nondestructive testing shall not be used to establish concrete strength or suitability unless specifically authorized by the Structural Engineer.
- D. For any concrete pour the strength level of the concrete will be considered satisfactory only if the results of every compressive cylinder break for that concrete pour equals or exceeds the specified compressive strength.
- E. Prior to placing any concrete notify Architect and Structural Engineer when reinforcing steel placement and all other necessary preparations will be complete. Give a minimum of twenty-four (24) and maximum of forty-eight (48) hours notice.

END OF SECTION

SECTION 04220 - CONCRETE UNIT MASONRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Concrete masonry units (CMU's).
2. Decorative concrete masonry units.
3. Pre-faced concrete masonry units.
4. Steel reinforcing bars.
5. Masonry-cell insulation.

1.2 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Owner will engage a qualified independent testing agency to perform preconstruction testing indicated below. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.

1. Concrete Masonry Unit Test: For each type of unit required, according to ASTM C 140 for compressive strength.
2. Mortar Test (Property Specification): For each mix required, according to ASTM C 109/C 109M for compressive strength.
3. Mortar Test (Property Specification): For each mix required, according to ASTM C 780 for compressive strength.
4. Grout Test (Compressive Strength): For each mix required, according to ASTM C 1019.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For reinforcing steel. Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement".

1.4 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each type and size of product indicated.

B. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C 109/C 109M for compressive strength, ASTM C 1506 for water retention, and ASTM C 91 for air content.
2. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.

1.5 QUALITY ASSURANCE

- A. Masonry Standard: Comply with ACI 530.1/ASCE 6/TMS 602 unless modified by requirements in the Contract Documents.

1.6 PROJECT CONDITIONS

- A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
- B. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS

2.1 MASONRY UNITS, GENERAL

- A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects will be exposed in the completed Work.
- B. Fire-Resistance Ratings: Where indicated, provide units that comply with requirements for fire-resistance ratings indicated as determined by testing according to ASTM E 119, by equivalent masonry thickness, or by other means, as acceptable to authorities having jurisdiction.

2.2 CONCRETE MASONRY UNITS

- A. Shapes: Provide shapes indicated and for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
- B. CMU's: ASTM C 90.
 - 1. Unit Compressive Strength: per general notes.
 - 2. Density Classification: Normal weight.

2.3 MASONRY LINTELS

- A. General: Provide one of the following:
- B. Masonry Lintels: Prefabricated or built-in-place masonry lintels made from bond beam CMUs with reinforcing bars placed as indicated and filled with coarse grout.

2.4 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II. Provide natural color or white cement as required to produce mortar color indicated.

- B. Hydrated Lime: ASTM C 207, Type S.
- C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.
- D. Aggregate for Mortar: ASTM C 144.
 - 1. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
- E. Aggregate for Grout: ASTM C 404.
- F. Water: Potable.

2.5 REINFORCEMENT

- A. Uncoated Steel Reinforcing Bars: ASTM A 615 or ASTM A 996, Grade 60.
- B. Masonry Joint Reinforcement, General: ASTM A 951.
 - 1. Interior Walls: galvanized, carbon steel.
 - 2. Exterior Walls: Hot-dip galvanized steel.
 - 3. Wire Size for Side Rods: 0.187-inch diameter.
 - 4. Wire Size for Veneer Ties: 0.187-inch diameter.
 - 5. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches o.c.
 - 6. Provide in lengths of not less than 10 feet, with prefabricated corner and tee units.

2.6 TIES AND ANCHORS

- A. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated.
 - 1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82; with ASTM A 153, Class B-2 coating.
 - 2. Steel Plates, Shapes, and Bars: ASTM A 36.
- B. Adjustable Anchors for Connecting to Structural Steel Framing: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.
 - 1. Anchor Section for Welding to Steel Frame: Crimped 1/4-inch diameter, hot-dip galvanized steel wire.
 - 2. Tie Section: Triangular-shaped wire tie, sized to extend within 1 inch of masonry face, made from 0.25-inch diameter, hot-dip galvanized steel wire.
- C. Adjustable Anchors for Connecting to Concrete: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.
- D. Partition Top anchors: as detailed on drawings.

- E. Rigid Anchors: as detailed on drawings.

2.7 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Pre-molded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; formulated from neoprene, urethane, or PVC.
- B. Preformed Control-Joint Gaskets: designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.
- C. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

2.8 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
 - 1. Do not use calcium chloride in mortar or grout.
 - 2. Use portland cement-lime or mortar cement mortar unless otherwise indicated.
- B. Pre-blended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.
- C. Mortar for Unit Masonry: Comply with ASTM C 270, Specification. Provide the following types of mortar for applications stated unless another type is indicated.
 - 1. For masonry below grade or in contact with earth, use Type N.
 - 2. For reinforced masonry, use Type N.
 - 3. For mortar parge coats, use Type N.
 - 4. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type N.
- D. Grout for Unit Masonry: Comply with ASTM C 476.
 - 1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
 - 2. Proportion grout in accordance with ASTM C 476, paragraph 4.2.2 for specified 28-day compressive strength indicated, but not less than 1500 psi.
 - 3. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143/C 143M.

PART 3 - EXECUTION

3.1 TOLERANCES

- A. Dimensions and Locations of Elements: per ACI 530.1.

- B. Lines and Levels: per ACI 530.1.
- C. Joints: per ACI 530.1.

3.2 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- C. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
- D. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- E. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.
- F. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core.
- G. Fill cores in hollow CMU's with grout 24 inches under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.

3.3 MORTAR BEDDING AND JOINTING

- A. Lay hollow CMU's as follows:
 - 1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
 - 2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
 - 3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
 - 4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.
- B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.
- D. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.

3.4 MASONRY-CELL INSULATION

- A. Pour granular insulation into cavities to fill void spaces. Maintain inspection ports to show presence of insulation at extremities of each pour area. Close the ports after filling has been confirmed. Limit the fall of insulation to one story high, but not more than 20 feet.
- B. Install molded-polystyrene insulation units into masonry unit cells before laying units.

3.5 MASONRY JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.
 - 1. Space reinforcement not more than 16 inches o.c.
 - 2. Space reinforcement not more than 8 inches o.c. in foundation walls and parapet walls.
 - 3. Provide reinforcement not more than 8 inches above and below wall openings and extending 16 inches beyond openings in addition to continuous reinforcement.
- B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.
- C. Provide continuity at wall intersections by using prefabricated T-shaped units.
- D. Provide continuity at corners by using prefabricated L-shaped units.

3.6 ANCHORING MASONRY TO STRUCTURAL STEEL AND CONCRETE

- A. Anchor masonry to structural steel and concrete where masonry abuts or faces structural steel or concrete to comply with the following as detailed in the drawings.

3.7 REINFORCED UNIT MASONRY INSTALLATION

- A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.
 - 1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
 - 2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other loads that may be placed on them during construction.
- B. Placing Reinforcement: Comply with requirements in ACI 530.1/ASCE 6/TMS 602.
- C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.
 - 1. Comply with requirements in ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.

3.8 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform tests and inspections. Retesting of materials that fail to meet specified requirements shall be done at Contractor's expense.
- B. Inspections: Level 1 special inspections according to the "International Building Code."
 - 1. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.
 - 2. Place grout only after inspectors have verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.
 - 3. Place grout only after inspectors have verified proportions of site-prepared grout.
- C. Testing Prior to Construction: One set of tests.
- D. Testing Frequency: One set of tests for each 5000 sq. ft. of wall area or portion thereof.
- E. Concrete Masonry Unit Test: For each type of unit provided, according to ASTM C 140 for compressive strength.
- F. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, according to ASTM C 780.
- G. Mortar Test (Property Specification): For each mix provided, according to ASTM C 780. Test mortar for compressive strength.
- H. Grout Test (Compressive Strength): For each mix provided, according to ASTM C 1019.

3.9 PARGING

- A. Parge exterior faces of below-grade masonry walls, where indicated, in 2 uniform coats to a total thickness of 3/4 inch.
- B. Use a steel-trowel finish to produce a smooth, flat, dense surface. Form a wash at top of parging and a cove at bottom.
- C. Damp-cure parging for at least 24 hours and protect parging until cured.

3.10 REPAIRING, POINTING, AND CLEANING

- A. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- B. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - 1. Test cleaning methods on sample wall panel; leave one-half of panel un-cleaned for comparison purposes.
 - 2. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.

3.11 MASONRY WASTE DISPOSAL

- A. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.
- B. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION

SECTION 06100

ROUGH & FINISHED CARPENTRY

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. The general provisions of the contract, including General and Supplementary Conditions and other general requirement sections, shall pertain to and govern all work under this section.
- B. Submittals: Model code evaluation reports for wood-preservative treated wood, engineered wood products and metal framing anchors.

1.2 Quality Assurance and Controls:

- A. Grades specified shall conform to the most recent grading rules of the Southern Pine Association, the West Coast Lumber Inspection Bureau, American Plywood Association, or Western Wood Products Association, under whose rules the lumber was produced.
- B. Maximum moisture content: 15%.
- C. Grading Requirements: Grade and trade mark each piece of lumber (or bundle in bundled stock). Use only the recognized official marks of association under whose rule it is graded. Grade and trademarks will not be required if each shipment is accompanied by certificate of inspection issued by grading association. Provide best quality of its respective grades and kinds.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber:
 - 1. Provide dressed lumber, S4S, marked with grade stamp of inspection agency.
- B. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.

2.2 TREATED MATERIALS

- A. Preservative-Treated Materials: AWPA C2, except that lumber not in ground contact and not exposed to the weather may be treated according to AWPA C31 with inorganic boron (SBX)
 - 1. Use treatment containing no arsenic or chromium.
 - 2. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.

3. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

B. Provide preservative-treated materials for all rough carpentry, unless otherwise indicated.

1. Wood members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Concealed members in contact with masonry or concrete.
3. Wood framing members that are less than 18 inches above the ground.
4. Wood floor plates that are installed over concrete slabs-on-grade.

C. Fire-Retardant-Treated Materials: Comply with performance requirements in AWPAC20.

1. Use Exterior type for exterior locations and where indicated.
2. Use Interior Type A, High Temperature (HT) for enclosed roof framing, framing in attic spaces, and where indicated.
3. Use Interior Type A, unless otherwise indicated.
4. Identify with appropriate classification marking of a testing and inspecting agency acceptable to authorities having jurisdiction.

2.3 2.3 LUMBER

A. A. Dimension Lumber:

1. Maximum Moisture Content: 15 percent.
2. Framing Other Than Non-Load-Bearing Partitions: No. 2 Construction or No. 2 Construction, Stud, or No. 3: Hem-fir (north): NLGA; Southern pine: SPIB.

B. Miscellaneous Lumber: Construction, or No. 2 grade with 15 percent maximum moisture content of any species. Provide for nailers, blocking, and similar members.

2.4 ENGINEERED WOOD PRODUCTS

A. Engineered wood products with allowable design stresses, as published by manufacturer, that meet or exceed those indicated. Manufacturer's published values shall be demonstrated by comprehensive testing.

2.5 MISCELLANEOUS PRODUCTS

A. Fasteners – Untreated wood:

1. For roof and wall sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
2. Power-Driven Fasteners: CABO NER-272.

B. Fasteners – Treated Wood

1. Provide fasteners of Type 304 stainless steel.
2. Power-Driven Fasteners: CABONER-272.

3. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.
- C. Metal Framing Anchors: Structural capacity, type, and size indicated.
1. Use anchors made from hot-dip galvanized steel complying with ASTM A 653/A653M, G60 coating designation for interior locations where stainless steel is not indicated.
 2. Use anchors made from stainless steel complying with ASTM A 666, Type 304 for exterior locations and where indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Contractor to separate metal products from treated lumber using Ice and Water Shield. 2-ply membrane roofing system may be used on roof scope. Refer to architectural details for more information.
- C. Securely attach rough carpentry to substrates, complying with the following:
1. CABO NER-272 for power-driven fasteners.
 2. Published requirements of metal framing anchor manufacturer.
 3. Table 23-II-B-1, "Nailing Schedule," and Table 23-II-B-2, "Wood Structural Panel Roof Sheathing Nailing Schedule," in ICBO's Uniform Building Code.

END OF SECTION

SECTION 08113- STEEL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Steel doors and steel frames.
- B. Steel frame components for stick assemblies.

1.2 RELATED SECTIONS

- A. Section 04220 - Unit Masonry.

1.3 REFERENCES

- A. ANSI A250.8 - SDI-100 Recommended Specifications for Standard Steel Doors and Frames; 1998.
- B. ANSI A250.3 - Test Procedure and Acceptance Criteria for Factory Applied Finish Painted Steel Surfaces for Steel Doors and Frames.
- C. ANSI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 1998.
- D. ANSI A250.11, Recommended Erection Instructions for Steel Frames.
- E. ASTM A 366/A 366M - Standard Specification for Commercial Steel (CS) Sheet, Carbon, (0.15 Maximum Percent) Cold-Rolled; 1997.
- F. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-coated (Galvanized) by the Hot-Dip Process; 1998.
- G. ASTM E-90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
- H. DHI A115.1G - Installation Guide for Doors and Hardware; 1994.
- I. NFPA 80 - Standard for Fire Doors and Windows; 1999.
- J. NFPA 252 - Standard Methods of Fire Tests for Door Assemblies; 1995.
- K. UL 10B - Standard for Fire Tests of Door Assemblies; 1997.
- L. UL 10C - Positive Pressure Fire Tests of Door Assemblies.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Include schedule identifying each unit, with door marks or numbers referencing drawings. Show layout, profiles, product components and anchorages.
- D. Samples: 18 by 24 inches (457 by 610 mm) cut away sample door with provisions for lockset, hinge and corner section of frame.
- E. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- F. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic checking and adjustment of cable tension and periodic cleaning and maintenance of all railing and infill components.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum five years documented experience manufacturing products specified this Section.
- B. Installer Qualifications: Minimum five years documented experience installing products specified this Section.
- C. All products shall conform to the requirements of ANSI A250.8, "SDI 100 Recommended Specifications for Standard Steel Doors and Frames".
- D. Acoustical Doors shall have a minimum Sound Transmission Classification (STC) Rating of 38 with standard honeycomb core and be tested in accordance with ASTM E-90-87, "Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements". Optional STC openings available - 42, 43, 47, 48, 50 and 52 - all tested in accordance with ASTM E90 and E413.
- E. Insulated Doors shall have:
 - 1. A "U Factor" of 0.10 for a Polyurethane core.
 - 2. A "U Factor" of 0.13 for a Polystyrene core.
- F. Fire Rated Doors:
 - 1. Doors shall be tested in accordance with UL 10B, "Fire Tests of Door Assemblies", NFPA 252, "Fire Tests of Door Assemblies", and UL 10C, "Positive Pressure Fire Tests of Door Assemblies".
 - 2. Doors must have an approved marking or physical label, applied by an authorized facility, in accordance with the procedure set forth by an independent certification agency.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Handle, store and protect products in accordance with the manufacturers printed instructions and ANSI/SDI A250.10 and NAAMM/HMMA 840.

- B. Store frames in an upright position with heads uppermost under cover. Place on 4 inch (102 mm) high wood sills to prevent rust and damage. Store assembled frames five units maximum in a stack with 2 inch (51 mm) space between frames to promote air circulation.
- C. Do not store under non-vented plastic or canvas shelters.
- D. Remove wrappers immediately if they become wet.

1.7 SEQUENCING

- A. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
- B. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Amweld Building Products, Inc.
 2. Ceco Door Products; an Assa Abloy Group Company.
 3. Curries Company, an Assa Abloy Group.
 4. Mesker Door, Inc.
 5. Windsor Republic Doors.
 6. Steelcraft; an Ingersoll-Rand company.
 7. Republic Doors and Frames
- B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.

2.2 MATERIALS

- A. Uncoated Steel Sheet: Cold rolled commercial steel sheet complying with ASTM A 366/A 366M.
- B. Galvanized Steel Sheet: ASTM A 653/A 653M, commercial quality, hot-dipped.
 1. Coating Thickness: A40 coating - Embossed Panel Doors.
 2. Coating Thickness: A60 coating.
 3. Coating Thickness: G90 coating (Galvanized.)

2.3 DOORS AND FRAMES

- A. Doors: Full flush (No Vertical Face Seams), complying with ANSI A250.8; face panels laminated to core and complete unit closed with steel perimeter channels projection welded to face sheets.
 1. Thickness: 1-3/4 inches (44 mm).
 - a. ANSI Level 1, Model 1; 20 gage (0.8 mm) faces, visible edge seams.
 2. Faces:
 - a. Full flush.
 - b. Embossed in 4 panel design laminated to a polystyrene core.

3. Face Material:
 - a. Cold Roll steel sheet.
 4. Insulated Doors: Insulated; U-value of 0.10, polyurethane core.
 5. Insulated Doors: Insulated; U-value of 0.13, polystyrene core.
 6. Core: Doors fabricated by laminating panels to a specified core and the complete unit closed with steel perimeter channels, projection welded to the face sheets. Core shall be as follows:
 - a. Mineral fiber core.
 7. Steel Stiffened Doors: Steel reinforced with minimum 20 gage (0.794 mm) hat shaped stiffeners welded to the inside of each face sheet at maximum of 6 inches (150 mm) on center, with mineral wool filling spaces between stiffeners. Stiffeners shall be:
 - a. Minimum 20 gage (0.794 mm).
 8. Finish: Factory paint finish.
- B. Door Reinforcements:
1. Top and Bottom Channels: 16 gage steel, projection welded to both face sheets at a maximum of 2-1/2 inches (64 mm) on center.
 - a. For exterior Doors fill top channel with epoxy and grind smooth.
 2. Hinge Reinforcement: Hinge reinforcing channel shall be projection welded to both face sheets at a maximum of 5 inches (127 mm) on center.
 - a. DL Series: 1-3/4 inch (44 mm) thick. Reinforced with continuous 16 gage channel with additional 9 gage reinforcements located at each hinge preparation.
 3. Lock Reinforcing Channel: Lock reinforcing channel shall be projection welded to both face sheets.
 - a. DL Series: Non beveled and reinforced with a continuous 16 gage channel. 16 gage reinforcements for mortised or cylindrical locks are of an integral type in accordance with ANSI A115 standards.
 - b. DE Series: Non beveled and reinforced with a continuous 14 gage steel channel. 14 gage reinforcements for mortised or cylindrical locks are of an integral type in accordance with ANSI A115 standards.
 4. Closer Reinforcement: 12 gage box type reinforcement, 18 inches (457 mm) long.
- C. Fire Rated Doors: Ratings as indicated on Door Schedule, when tested in accordance with NFPA 252 or UL 10B.
1. Labeled by UL or WH.
 2. Stairwell Doors: 250 degrees F (139 degrees C) temperature rise rating as well as the required fire rating.
- D. Flush Honeycomb Core Acoustical Doors: Sound Transmission Classification (STC) Rating of 38 when tested according to ASTM E 90.

2.4 FRAMES CONSTRUCTION

- A. Frames: Formed steel sheet, with 2 inch (50 mm) wide face jambs and heads unless otherwise indicated; complying with ANSI A250.8.
1. Frame Depth: Fixed, as indicated on drawings.
 2. Frame Depth: Adjustable within 2 inches (50 mm) of nominal depth.
 3. ANSI Level 1 Doors: 16 gage (1.5 mm) frames.
 4. Material: Cold Roll steel sheet.
 5. Corners: Mitered; face welded and ground smooth.
 6. Finish: Factory prime finish.
- B. Reinforcements for 1-3/4 Inch (44 mm) Frames:
1. Hinge Reinforcements: 9 gage (3.8 mm).
 2. Strike Reinforcement: 10 gage (3.4 mm) equivalent.

3. Closer Reinforcements: 12 gage (2.6 mm).
- C. Reinforcements for 1-3/8 Inch (35 mm) Frames:
 1. Hinge Reinforcements: 11 gage (3.0 mm).
 2. Strike Reinforcement: 14 gage (1.9 mm) equivalent.
 3. Closer Reinforcements: 12 gage (2.6 mm).
- D. Frame Anchors: Minimum of six wall anchors and two base anchors. Provide with an additional anchor for every 30 inches (760 mm) over 90 inches (2286 mm).

2.5 STICK ASSEMBLIES

- A. Architectural Stick Assemblies: Standard profile frame material, notched or mitered to coordinate with adjoining frame members and forming square corners.
 1. Thickness: 16 gage (1.3 mm).

2.6 FACTORY FINISH

- A. All doors, frames, and stick components shall be cleaned and finished in accordance with ANSI A250.10, "Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames".
- B. Preparation: Clean and phosphatize surfaces of steel doors and frames".
- C. Primer: Apply one coat of a gray, alkyd acrylic enamel primer, forced cured.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify that substrate conditions are acceptable for installation of doors and frames in accordance with manufacturer's installation instructions and technical bulletins.
- C. Verify door frame openings are installed plumb, true, and level.
- D. Select fasteners of adequate type, number, and quality to perform intended functions.
- E. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install frames plumb, level, rigid and in true alignment in accordance with ANSI A250.11, "Recommended Erection Instructions for Steel Frames" and ANSI A115.IG, "Installation Guide for Doors and Hardware".
- C. All frames other than slip-on types shall be fastened to the adjacent structure to retain their position and stability. Drywall slip-on frames shall be installed in prepared wall openings, and shall use pressure type and sill anchors to maintain stability.
- D. Where grouting is required in masonry installations, frames shall be braced or fastened to prevent the pressure of the grout from deforming the frame members. Grout shall be mixed to provide a 4 inch (102 mm) maximum slump and hand troweled into place. Grout mixed to a thin "pumpable" consistency shall not be used.
- E. Install fire-rated doors and frames in accordance with NFPA 80 and local code authority requirements.
- F. Install doors to maintain alignment with frames to achieve maximum operational effectiveness and appearance. Adjust to maintain perimeter clearances as required. Shim as needed to assure the proper clearances are achieved.
- G. Install hardware as specified in Section 08 71 00 in accordance with the hardware manufacturer's recommendations and templates. ANSI A115.IG, "Installation Guide for Doors and Hardware" shall be consulted for other pertinent information.

3.4 CLEARANCES

- A. Clearance between the door and frame head and jambs for both single swing and pairs of doors shall be 1/8 inch (3.2 mm).
- B. Clearance between the meeting edges of pairs of doors shall be 3/16 inch plus or minus 1/16 inch (5 mm plus or minus 1.6 mm). For fire rated applications, the clearance between the meeting edges of pairs of doors shall be 1/8 inch plus or minus 1/16 inch (3.2 mm plus or minus 1.6 mm).
- C. Bottom clearance shall be 3/4 inch (19 mm). (Standard)
- D. The clearance between the face of the door and door stop shall be 1/16 inch to 1/8 inch (1.6 mm plus or minus 3.2 mm).
- E. All clearances shall be, unless otherwise specified, subject to a tolerance of plus or minus 1/32 inch (.4 mm).

3.5 ADJUSTING AND CLEANING

- A. Adjust doors for free swing without binding.
- B. Adjust hinge sets, locksets, and other hardware. Lubricate using a suitable lubricant compatible with door and frame coatings.

- C. Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions before owner's acceptance.
- D. Remove from project site and legally dispose of construction debris associated with this work.

3.6 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 09800
PROTECTIVE 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 manufactured.
- 1.03 Coatings shall be applied during good painting and coating weather. Air and surface temperatures as well as dew point shall be within limits prescribed by the manufacturer for the coating being applied and work areas shall be reasonably free of airborne dust at the time of application and while coating is drying.
- 1.04 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.
- 1.05 For field applied materials, the contractor shall provide a mechanical or electronic dry mill thickness gauge (for dry mil measurement) and a wet mil thickness gauge (notched gauge).
- 1.06 The inspector shall be present during coating so it can be measured for wet mil thickness. Alternatively, the inspector can measure after paint is dry. But regardless contractor has to provide the gauges for the inspector to use to verify thickness.

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.

2.02 SUBSTITUTIONS

- A. Equivalent materials of other manufacturers may be substituted on approval of the Engineer. Requests for substitution shall include Manufacturer's literature for each product giving the name, generic type, descriptive information and evidence of satisfactory past performance. 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.
 - 2. Adhesion - Elcometer Adhesion Tester.
 - 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

- B. Bidders desiring to use coatings other than those specified shall submit their proposal in writing to the Engineer. Substitutions that 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. Prime and finish coats of all surfaces shall be furnished by the same manufacturer.

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.

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

- 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.

2.04 COATING SCHEDULE

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

- 1. Surface Preparation for Carbon Steel: SSPC-SP10 Near-White Blast Cleaning.
- 2. Surface Preparation for Cast Iron & Ductile Iron: Clean as required to remove all soluble surface contaminants. Abrasive blast all surfaces to be coated in accordance with NAPF 500-03-04 to remove all insoluble surface contaminants and to achieve a minimum surface profile of 1.5 mils.

- 3. Coating System

		<u>Dry Film-Mils</u>
1st Coat:	Epoxy-Polyamide Primer Tnemec Series N69	4.0 - 6.0
2nd Coat:	Epoxy-Polyamide Primer Tnemec Series N69	4.0 - 6.0
3rd Coat	Aliphatic Acrylic Polyurethane Tnemec Series 1074U	2.5 - 3.0

Total 10.5 - 15

4. 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.
5. Primer shall be factory-applied. Intermediate and top coats shall be factory applied or field-applied. When coating is field applied, the Engineer or Engineer's representative shall be present to witness coating application and verify thickness. If Engineer or Engineer's Representative is not present during coating, the item shall not be paid for by the Owner.

B. Ferrous Metal Surfaces - Corrosive Gas or Immersion Environment

1. Surface Preparation for Carbon Steel SSPC-SP10 Near-White Blast Cleaning
2. Surface Preparation for Cast Iron & Ductile Iron: Clean as required to remove all soluble surface contaminants. Abrasive blast all surfaces to be coated in accordance with NAPF 500-03-04 to remove all insoluble surface contaminants and to achieve a minimum surface profile of 1.5 mils

3. Coating System

		<u>Dry Film-Mils</u>
1st Coat:	Polyamidoamine Epoxy Tnemec Series N69	4.0 - 6.0
2nd Coat:	Cycloaliphatic AmineEpoxy Tnemec Series 104	5.0 - 6.0
3rd Coat:	Cycloaliphatic AmineEpoxy Tnemec Series 104	5.0 - 6.0
Total		14 - 18

4. Description: Metal surfaces exposed or immersed in lift station, wet well, manholes immediate upstream of wet wells, discharge manholes or similar locations including piping and fittings, valves, pumps, brackets, supports, etc.
5. Primer shall be factory-applied. Intermediate and top coats shall be factory applied or field-applied. When coating is field applied, the Engineer or Engineer's representative shall be present to witness coating application and verify thickness. If Engineer or Engineer's Representative is not present during coating, the item shall not be paid for by the 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: 67.0 +/- 2.0%
 - 2) Abrasion: No more than 115 mg loss after 1000 cycles (ASTM D 4060, CS-17 Wheel, 1,000 grams load)
 - 3) Adhesion: Not less than 1600 psi pull average of three trials (ASTM D 4541 Elcometer Adhesion Tester)
 - 4) Exterior Exposure: No blistering, cracking or delamination of the film. No more rust creepage at scribe or after seventy-two months exposure.

- 5) Fresh Water Immersion: No blistering, cracking, softening or delamination of the film after 4 years immersion in 77 F. tap water (ASTM D 870).
- 6) Hardness: Must pass 3H (ASTM D 3363)
- 7) Salt Fog: No blistering, rusting, cracking, softening or delamination of the film. No more than 1/8 inch rust creepage at scribe after 8,000 hours exposure (ASTM B117).
- 8) Manufacturer: Tnemec N69 Hi-Build Epoxoline II or equal.

B. Cycloaliphatic Amine Epoxy:

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

C. Aliphatic Acrylic Polyurethane

- 1) Minimum Solids per Gallon: 100% ± 2% (mixed)
- 2) Exterior Exposure: No blistering, cracking, or chalking. No less than 97% retention (2 units gloss change) and 0.11 DED Hunter Lab Scale color change after 500 MJ exposure. (ASTM D4141 Method C).
- 3) No blistering, cracking, or chalking. No less than 64% gloss retention (33 unites gloss change) and 2.46 DED FMCII (MacAdam units) color change after 7,000 hours exposure.
- 4) Flexibility: Minimum 12.6% elongation; average of 3 tests. (ASTM D522, Method A, Conical Mandrel).
- 5) Abrasion: Maximum 116 mg loss after 1,000 cycles (ASTM D4060, CS-17 wheel, 1,000 gram loaded).
- 6) Humidity: No blistering, cracking, rusting, or delamination of film after 2,500 hours exposure (ASTM D4585).
- 7) Volatile Organic Compounds: 2.59 lbs/gal (unthinned) (EPA Method 24)
- 8) Manufacturer: Tnemec 1074U Endurashield II or equal.

PART 3 - EXECUTION

3.01 GENERAL

- A. All surface preparation, coating and painting shall conform to applicable standards of the Steel Structures Painting Council (SSPC), and the manufacturer's printed instructions. Material applied prior to approval of the surface by the Engineer shall be removed and reapplied to the satisfaction of the Engineer at the expense of the Contractor.
- B. All work shall be performed by skilled craftsmen qualified to perform the required work in a manner comparable with the best standards of practice. Continuity of personnel shall be maintained and transfers of key personnel shall be coordinated with the Engineer.
- C. The Contractor shall provide a supervisor at the work site during cleaning and application operation. The supervisor shall have the authority to sign change orders, coordinate work and make decisions pertaining to the fulfillment of the contract.
- D. Dust, dirt, oil, grease or any foreign matter that will affect the adhesion or durability of the finish must be removed by washing with clean rags dipped in an approved cleaning solvent and wiped dry with clean rags as per SSPC SP1.
- E. Coating and painting systems include surface preparations, prime coating and finish coatings. Any off-site work that does not conform to this specification is subject to rejection by the Engineer.
- F. Shop applied prime coatings, which are damaged during transportation, construction or installation shall be thoroughly cleaned and touched up in the field as directed by the Engineer. The Contractor shall use repair procedures that insure the complete protection of all adjacent primer. The specified repair method and equipment may include wire brushing, hand, or power tool cleaning or dry air blast cleaning. In order to prevent injury to surrounding painted areas, blast cleaning may require use of lower air pressure, small nozzle and abrasive particle sizes, short blast nozzle, distance from surface, shielding and masking. If damage is too extensive or uneconomical to touch-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 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.

3.03 APPLICATION

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

- B. Thinning shall be permitted only as recommended by the manufacturer and approved by the Engineer.
- C. Each application of coating or paint shall be applied evenly, free of brush marks, sags, runs, with no evidence of poor workmanship. Care shall be exercised to avoid lapping on glass or hardware. Coatings and paints shall be sharply cut to lines. Finished surfaces shall be free from defects or blemishes.
- D. Protective coverings or drop cloths shall be used to protect floors, fixtures, and equipment. Care shall be exercised to prevent coatings or paints from being splattered onto surfaces that are not to be coated or painted. Surfaces from which materials cannot be removed satisfactorily shall be recoated or repainted as required to produce a finish satisfactory to the Engineer.
- E. When two coats of paint are specified, where possible, the first coat shall contain sufficient approved color additive to act as an indicator of coverage or the two coats must be of contrasting color.
- F. Film thicknesses per coat specified are the minimum required. Contractor shall apply additional coats as necessary to achieve the specified thickness.
- G. No coating or paint shall be applied: When the surrounding air temperature or the temperature of the surface to be coated or painted is below 40 degrees F., too wet or damp surfaces or in rain, snow, fog or mist; when the temperature is less than 5 degrees F. above the dew point; when it is expected the air temperature will drop below 40 degrees F. six hours after application of coating and paint. Dew point shall be measured by use of an instrument such as a Sling Psychrometer in conjunction with U.S. Department of Commerce Weather Bureau Psychrometric Tables.
- H. If above conditions are prevalent, coating or painting shall be delayed or postponed until conditions are favorable. The day's coating or painting shall be completed in time to permit the film sufficient drying time prior to damage by atmospheric conditions.
- I. All material shall be applied as per manufacturer's recommendations.
- J. All welds and irregular surfaces shall receive a brush coat of the specified product prior to application of the first complete coat.
- K. All parts that can be disassembled such as vents and manhole covers shall be removed and coated inside and out as per applicable coating systems. Upon completion of coating, those parts disassembled shall be reassembled prior to placing in service.

3.04 ACCEPTANCE OF WORK

- A. All surface preparation and repairs shall be approved by the Engineer/Owner before primer is applied.
- B. 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 Contractors or his own equipment to perform similar inspections.
- G. Dry-film thickness gauges and holiday detectors shall be made available for the Engineer's use at all times until final acceptance of application. Holiday detection device shall be operated in the presence of the Engineer.
- H. Concrete surfaces in immersion service must have void - and pinhole-free coating application. Inspection of coating system with 5X magnification will provide these assurances.
- I. Warranty inspection shall be conducted during the eleventh month following completion of all coating and painting work. All defective work shall be repaired in accordance with this specification and to the satisfaction of the Engineer/Owner.
- J. In accordance with requirements set forth by regulatory agencies applicable to the construction industry and manufacturer's printed instructions and appropriate technical bulletins and manuals, the Contractor shall provide and require use of personnel protective lifesaving equipment for persons working in, or about the project site.
- K. Equipment shall include protective helmets that shall be worn by all persons while in the vicinity of the work. In addition, workers engaged in or near the work during sandblasting shall wear eye and face protection devices and air purifying, half-mask or mouthpiece respirator with appropriate filter. Barrier creams shall be used on any exposed areas of skin.
- L. Where ventilation is used to control hazardous exposure, all equipment shall be explosion proof. Ventilation shall reduce the concentration of air contaminant to the degree a hazard does not exist. Air circulation and exhausting of solvent vapors shall be continued until coatings have fully cured.
- M. Whenever the occupational noise exposure exceeds maximum allowable sound levels, the Contractor shall provide and require the use of approved ear protective devices.
- N. Adequate illumination shall be provided while work is in progress, including explosion-proof lights and electrical equipment. Whenever required by the Engineer, the Contractor shall provide additional illumination and necessary supports to cover all areas to be inspected. The level of illumination for inspection purposes shall be determined by the Engineer.
- O. All temporary ladders and scaffolding shall conform to applicable safety requirements. They shall be erected where requested by the Engineer to facilitate inspection and be moved by the Contractor to locations requested by the Engineer.
- P. All coatings and paints shall be stored in enclosed structures to protect them from weather and excessive heat or cold. Flammable coatings or paint must be stored to conform to City, Parish,

State, and Federal safety codes for flammable coating or paint materials. At all times, coatings and paints shall be protected from freezing.

3.05 CLEAN UP

Upon completion of the work, all staging, scaffolding and containers shall be removed from the site or destroyed in a manner approved by the Engineer. Coating or paint spots and oil or stains upon adjacent surfaces shall be removed and the job site cleaned. All damage to surfaces resulting from the work of painting contractor or subcontractor shall be cleaned, repaired, or refinished to the satisfaction of the Engineer at no cost to the Owner.

END OF SECTION

SECTION 11150

HORIZONTAL SPLIT CASE CENTRIFUGAL PUMPS

PART 1 - GENERAL

1.01. THE REQUIREMENT

- A. The CONTRACTOR shall provide pumps and pumping appurtenances, complete and operable, in accordance with the Contract Documents.
- B. The provisions of this Section shall apply to pumps and pumping equipment except where otherwise indicated in the Contract Documents.
- C. Unit Responsibility: The pump manufacturer shall be made responsible for furnishing the work and for coordination of design, assembly, testing, and installation of the work of each pump Section; however, the CONTRACTOR shall be responsible to the OWNER for compliance with the requirements of each pump Section.
- D. Single Manufacturer: Where 2 or more pump systems of the same type or size are required, the pumps shall be produced by the same manufacturer.

1.02. CONTRACTOR SUBMITTALS

- A. Furnish submittals in accordance with Section 01300 - Submittals.
- B. Shop Drawings: Shop Drawings shall contain the following information:
 - 1. Pump name, identification number, and specification section number.
 - 2. Performance data curves showing head, capacity, horsepower demand, NPSH required, and pump efficiency over the entire operating range of the pump. The head, capacity, horsepower demand, overall efficiency, and minimum submergence required at the design flow conditions and the maximum and minimum flow conditions shall be separately indicated. Performance curves at intervals of 100 rpm from minimum speed to maximum speed shall be furnished for each centrifugal pump equipped with a variable speed drive.
 - 3. The CONTRACTOR shall require the manufacturer to indicate the limits on the performance curves recommended for stable operation without surge, cavitation, or excessive vibration. The stable operating range shall be as wide as possible based on actual hydraulic and mechanical tests.
 - 4. Assembly and installation drawings including shaft size, seal, coupling, bearings, anchor bolt plan, part nomenclature, material list, outline dimensions, and shipping weights.
 - 5. Data for the electric motor proposed for each type of pump.
 - 6. Elevation of proposed local control panel showing panel-mounted devices, details of enclosure type, single line diagram of power distribution, and current draw of panel, and list of terminals required to receive inputs or to transmit outputs from the local control panel.
 - 7. Wiring diagram of field connections with identification of terminations between local control panels, junction terminal boxes, and equipment items.
 - 8. Complete electrical schematic diagram.

- C. Technical Manual: The Technical Manual shall contain the required information for each pump section.
- D. Spare Parts List: A spare parts list shall contain the required information for each pump section.
- E. Factory Test Data: Signed, dated, and certified factory test data for each pump system which requires factory testing, submitted before shipment of equipment.
- F. Certifications
 - 1. Manufacturer's certification of proper installation.
 - 2. CONTRACTOR'S certification of satisfactory field testing.

1.03. REFERENCE STANDARDS

- A. The work in this section is subject to the requirements of applicable portions of the following standards:
 - a. Hydraulic Institute Standards
 - b. IEEE Standards
 - c. NEMA Standards
 - d. OSHA Rules and Regulations

PART 2 - PRODUCTS

2.01. GENERAL DESCRIPTION

The pump shall be a single-stage centrifugal horizontal split case pump, Aurora Pump Model 411 Size 2x2-1/2x12 or engineer approved equal.

2.02. MATERIALS OF CONSTRUCTION

Casing.....Cast Iron (ASTM A48)
 ImpellerBronze (ASTM B62)
 ShaftCarbon Steel (AISI C1045)
 Shaft SleeveBronze (ASTM B62)
 Case Wear RingBronze (ASTM B62)
 Pump to be NSF 372 construction for NO LEAD.

2.03. CASING

- A. The casing will be of the horizontal split case design. The casing shall have tapped and plugged holes for priming, vent and drain. Removal of the upper half of the casing must allow removal of the rotating element without disconnecting the suction or discharge piping.
- B. The lower or upper half of the casing shall be furnished with cored passageways from the high-pressure area of the volute to each seal box for positive lubrication without the use of external flushing lines. The bearing arms shall be cast integrally with the lower half of the casing to assure positive bearing alignment. In no case will bolt on bearing arms be acceptable. Each bearing arm will provide a reservoir area for accumulation of weepage from the stuffing box, and a drilled and tapped opening will be provided at the lower portion to allow piping by the Contractor to the nearest floor drain.

2.04. IMPELLER

The impeller shall be designed to give the characteristics outlined under "Performance". It shall be of the enclosed type, cast in one piece. It shall be furnished all over, the exterior being turned and the interior being furnished smooth and cleaned of all burrs, trimmings and irregularities. The impeller will be dynamically balanced. It shall be held securely to the shaft by a key of ample size and shall be locked in place by threaded shaft sleeves.

2.05. SHAFT SLEEVES

The shaft sleeves shall be extended from the hub of the impeller, through the seal box area, and beyond the gland. They shall be sealed at the impeller hub by a Buna O-ring to prevent pumped liquid from contacting the shaft. They shall be threaded to hold them securely in place, and designed so as to lock the impeller.

2.06. CASE WEARING RING

The pump casing shall be fitted with case wear rings to minimize abrasive and corrosive wear to the casing. The wear rings shall be of the radial type, shall have a shoulder machined around the circumference to match a machined shoulder in the casing to provide two sealing faces and to locate the rings in the casing. The rings shall be securely located from rotation by means of pins to the lower casing half.

2.07. MECHANICAL SEAL

Seal assemblies shall be unbalanced elastomeric seals having a stainless steel spring, and be of a carbon face rotating against a ceramic face with a Bun-N elastomeric bellow.

2.08. SEAL GLAND

Mechanical seal glands shall be cast iron with O-ring gaskets.

2.09. SHAFT

The pump shaft shall be one-piece, finished and polished on all sections. The shaft shall be of ample strength and rigidity and the shortest practicable distance between bearings shall be used to keep deflection and vibration to a minimum. The maximum allowable deflection of the shaft is 0.002" at any point of operation on the pump curve.

2.10. BEARINGS

The pump shall be supplied with a single row inboard bearing primarily for radial loads and a double row outboard bearing primarily for thrust loads. Both bearings shall be re-greaseable lubrication ball type, designed for 250,000 hours average life. Each bearing shall be mounted in a machined housing that is moisture and dust proof. The housing shall have registered fits to assure alignment, pinned to prevent rotation, and bolted to the bearing arms. Each housing shall be supplied with a grease fitting and a plugged relief port.

2.11. COUPLING

A flexible coupling shall be provided to connect the pump shaft to the motor shaft. The coupling shall be of an all metal type with a flexible rubber insert. The entire rotating coupling element shall be enclosed by a coupling guard.

2.12. BASEPLATE

The pump and motor shall be mounted on a groutable steel baseplate or a steel driprim baseplate with integral drip channels incorporated on each side. Each channel shall include an NPT connection and plug. The base shall be sufficiently rigid to support the pump and motor without the use of additional supports or members.

2.13. MOTOR

A. The motor shall be premium efficient, horizontal, and in accordance with the latest NEMA standards, and shall have the following characteristics:

- 1. EnclosureTEFC
- 2. Number of Phases.....Three
- 3. Cycles.....60 Hz.
- 4. Voltages460 Volt
- 5. Speed1775 RPM
- 6. Horsepower10 hp

B. Each motor shall be inverter rated and have a sufficient horsepower rating to operate the pump at any point on the pump's head-capacity curve without overloading the nameplate horsepower rating of the motor, regardless of service factor. The motor shall have a service factor of at least 1.15. The service factor is reserved for variations in voltage and frequency.

2.14. PERFORMANCE

A. CONDITIONS OF SERVICE

1. The following conditions of service shall be strictly adhered to:

- a. Number of Units1
- b. Type of DriveVFD Rated
- c. Discharge Size, minimum2 in
- d. Suction Size, minimum2-1/2 in
- e. Design Capacity.....180 US gpm
- f. Design Head106 ft
- g. Impeller Size11.25 in
- h. Efficiency at Design minimum.....60.1%
- i. Rotative Speed, maximum.....1775 RPM
- j. Shut-off Head, minimum140 ft
- k. Drive Horsepower, minimum10 hp
- l. NPSHR at Design, maximum8.6 ft

2.15. INSPECTION AND FACTORY TESTS

Each centrifugal pump furnished under these specifications shall be tested at the factory to verify individual performance. Certified copies of all test reports shall be submitted to the Engineer for approval prior to shipment. Each unit shall be hydrostatically tested in accordance with the Hydraulic Institute Standards.

PART 3 - EXECUTION

3.01. SERVICES OF MANUFACTURER

- A. Inspection, Startup, and Field Adjustment: Where required by the individual pump sections, an authorized service representative of the manufacturer shall visit the Site for the number of Days indicated in those sections to witness the following and to certify in writing that the equipment and controls have been properly installed, aligned, lubricated, adjusted, and readied for operation.
1. Installation of the equipment
 2. Inspection, checking, and adjusting the equipment
 3. Startup and field testing for proper operation
 4. Performing field adjustments to ensure that the equipment installation and operation comply with requirements
- B. Instruction of the OWNER's Personnel
1. Where required by the individual pump sections, an authorized training representative of the manufacturer shall visit the Site for the number of Days indicated in those sections to instruct the OWNER's personnel in the operation and maintenance of the equipment, including step-by-step troubleshooting with necessary test equipment. Instruction shall be specific to the models of equipment provided.
 2. The representative shall have at least 2 years' experience in training. A resume for the representative shall be submitted.
 3. Training shall be scheduled a minimum of 3 weeks in advance of the first session.
 4. Proposed training material and a detailed outline of each lesson shall be submitted for review. Comments shall be incorporated into the material.
 5. The training materials shall remain with the trainees.
 6. The OWNER may videotape the training for later use with the OWNER's personnel.

3.02. INSTALLATION

- A. General: Pumping equipment shall be installed in accordance with the manufacturer's written recommendations.
- B. Alignment: Equipment shall be field tested to verify proper alignment and freedom from binding, scraping, shaft runout, or other defects. Pump drive shafts shall be measured just prior to assembly to ensure correct alignment without forcing. Equipment shall be secure in position and neat in appearance.
- C. Lubricants: The CONTRACTOR shall provide any necessary oil and grease for initial operation.

3.03. PROTECTIVE COATING

- A. Materials and equipment shall be coated as required in Section 09800 - Protective Coating.

3.04. FIELD TESTS

- A. Each pump system shall be field tested after installation to demonstrate:
 - 1. Satisfactory operation without excessive noise and vibration.
 - 2. No material loss caused by cavitation.
 - 3. No overheating of bearings.
 - 4. Indicated head, flow, and efficiency at design point.
- B. The following field testing shall be conducted:
 - 1. Startup, check, and operate the pump system over its entire speed range. If the pump is driven by a variable speed drive, the pump and motor shall be tested at 100 RPM increments. If the pump is driven at constant speed, the pump and motor shall be tested at max RPM. Unless otherwise indicated, vibration shall be within the amplitude limits recommended by the Hydraulic Institute Standards at a minimum of four pumping conditions defined by the ENGINEER.
 - 2. Obtain concurrent readings of motor voltage, amperage, pump suction head, and pump discharge head for at least 4 pumping conditions at each pump rotational speed if variable speed at 100 RPM increment or at max RPM if constant speed. Check each power lead to the motor for proper current balance.
 - 3. Determine bearing temperatures by contact type thermometer. A run time until bearing temperatures have stabilized shall precede this test, unless insufficient liquid volume is available.
 - 4. Electrical and instrumentation tests shall conform to the requirements of the sections under which that equipment is specified.
- C. Field testing will be witnessed by the ENGINEER. The CONTRACTOR shall furnish a minimum 1 week advance notice of field testing to the ENGINEER.
- D. In the event any pumping system fails to meet the indicated requirements, the pump shall be modified or replaced and re-tested as above until it satisfies the requirements.
- E. After each pumping system has satisfied the requirements, the CONTRACTOR shall certify in writing that it has been satisfactorily tested and that final adjustments have been made. Certification shall include the date of the field tests, a listing of persons present during the tests, and the test data.
- F. The CONTRACTOR shall be responsible for costs of field tests, including related services of the manufacturer's representative, except for power and water, which the OWNER will bear. If available, the OWNER's operating personnel will provide assistance in field testing.

SECTION 11259

CHEMICAL METERING PUMPS

PART 1 -- GENERAL

1.1 THE REQUIREMENT

- A. Chemical metering pumps shall be skid mounted and designed to safely feed the chemicals shown in the Schedule. The chemical metering skid(s) shall include (2) identical, mechanically actuated chemical metering pumps and accessories as specified herein.

1.2 SCHEDULE

NAME	HYPOCHLORITE PUMP 1	HYPOCHLORITE PUMP 2
CHEMICAL	SODIUM HYPOCHLORITE, 12.5%	SODIUM HYPOCHLORITE, 12.5%
CAPACITY, LITERS PER HOUR	3.4	3.4

PART 2 -- PRODUCTS

2.1 SKIDS

- A. Skids shall be constructed from solid black high density polyethylene having a minimum thickness of 1/2". The skid shall be assembled using thermal welding technology. Bolted construction shall not be used.
- B. The design of the skid shall include a solid base, back panel and side panels with an open front and top. A minimum 2" lip shall be provided at the front to provide containment and a drain plug shall be provided for wash down purposes. Pedestals shall be provided to elevate the metering pumps above the containment level.
- C. All piping shall be schedule 80 PVC. The skid manufacturer shall perform assembly in a controlled shop environment. All pipes shall be squarely cut with precision equipment. All socket-welded connections shall follow the guidelines set by the pipefitting manufacturer for proper cleaning, priming and gluing procedures. A medium bodied solvent suitable for use with the chemical shown in the Schedule shall be used. All threaded connections will utilize Teflon tape, a suitable thread sealant or a combination of both. Piping shall include isolation valves and unions for all serviceable components. Accessories shall be constructed of materials suitable for use with the chemical shown in the schedule.
- D. The piping shall be attached to the chemical feed skid with non-metallic corrosion resistant support systems. All supports shall be welded to the chemical feed skid. Straps shall be removable and reusable for servicing. All inlet/outlet connections shall be marked clearly for installation. The skid system shall be tested at the factory on a computerized calibrated test stand to ensure rated flow, pressure, and hydrostatic conditions are met. Inlet and outlet piping sizes shall match the connecting piping sizes as shown on the Drawings.

2.2 METERING PUMPS

- A. General: The metering pumps shall be of the positive displacement, mechanically actuated diaphragm type. Each pump shall be complete with TEFC motor, manual stroke length adjustment

and integral microprocessor based pump control. All metering pumps shall be from the product line of a single manufacturer. Parts coming into contact with the liquid shall be selected to ensure optimum corrosion resistance to the liquid being pumped as shown in the Schedule.

- B. Type and Range: Each metering pump shall be of the mechanically actuated diaphragm type. An eccentric mechanism shall convert the rotary motion of the motor shaft to reciprocating push rod motion through a worm gear arrangement. The worm gear arrangement shall have all wearing parts immersed in oil for lubrication to reduce wear. Lubrication shall not require the recirculation of oil by an auxiliary pump. Each pump shall include an oil dipstick. The eccentric mechanism shall drive the diaphragm push rod, which is mechanically attached to the diaphragm. Forward motion of the push rod and the attached diaphragm shall produce the discharge stroke and a spring shall return the push rod to produce the suction stroke. The maximum stroking rate shall be 140 strokes per minute.
- C. Each pump shall deliver a maximum capacity as shown in the Schedule at 150 psig. Dial operated manual stroke length adjustment shall provide positive repeatable settings for capacity adjustment over a 10:1 range while the pump is operating. The stroke adjustment dial shall have a locking mechanism.
- D. The metered liquid shall enter the metering head at the bottom and exit at the top through ball type check valves. These valves shall be gravity seating or spring-loaded type with valve seats and shall be guided to accurately control vertical and sideways motion of the ball. Primed pumps shall have a minimum suction lift capability of 11 feet of water. Liquid head connections shall be screwed union type to eliminate clamping bars and other metal parts subject to corrosion. Plastic parts shall be molded and stress relieved for strength.
- E. The molded elastomer EPDM diaphragm shall be Teflon coated. A back-up plate shall support the diaphragm. Pumps shall have an isolation chamber formed by a Hypalon splash deflector located behind the diaphragm to protect the pump body in case of diaphragm leakage. This chamber shall have a drainage port that shall be fitted with a leakage probe with a contact that can turn the pump off or initiate an alarm.
- F. The pump housing shall be aluminum and protected by a two-part epoxy coating. The worm and gear type speed reducer shall be fully enclosed within the housing. The high-speed shaft shall have ball bearings. There shall be an oil seal at the push rod extension to permit diaphragm replacement without draining the lubricating oil.
- G. Pumps shall be driven by a maximum 1/6 hp, flange-mounted c-face motor capable of a minimum 140:1 stroke frequency turndown ratio.

2.3 ACCESSORIES

- A. The following accessories shall be included on the chemical feed skid system:
 - 1. One calibration column shall be provided and installed in the chemical supply piping as close to the metering pumps as possible. The top of the calibration column shall be vented back to the supply container for overflow protection.
 - 2. Two pressure relief valves shall be provided to provide protection against excess line pressure. The pressure relief valves shall be constructed of PVC with a Teflon diaphragm. Pressure relief valves shall be model PRM2050-PS as manufactured by Griffco Valve, Inc., or equal.
 - 3. Two pulsation dampeners shall be provided and sized for a minimum of 90% dampening. Pulsation dampeners shall be of the inline design with materials suitable for the chemical shown in the Schedule. Each dampener shall include a 2 ½" pressure gauge and gas charging valve. Pulsation dampeners shall be model RC-10X-V50 as manufactured by Blacoh Fluid Control, Inc., or equal.

4. Piping shall be solvent welded schedule 80 PVC, and isolation valves shall be diaphragm valves with Viton O-rings and diaphragms. Diaphragm valves shall be true union style.
5. Two diaphragm protected pressure gauges shall be provided for indication of system pressure. PVC gauges shall be utilized and the isolators shall have a PVC body with Teflon sealing diaphragm and suitable liquid filling.
6. One Y-strainer shall be installed in the main suction line of the skid system.
7. Each skid shall have a control panel as specified herein.

2.4 CONTROL PANEL

- A. Each metering pump skid shall be equipped with a microprocessor control, which provides local and remote speed frequency control via a local pressure sensitive keypad or from a remote pulse, 4-20mA or 0-20mA process signal. The controller shall be powered by 120 volts, single phase, 60 Hertz. The controller shall be pre-wired and include a 6-foot long power cable that with a standard 3 prong plug. The pump controller shall be housed in a NEMA 4X protected enclosure and be mounted on the pump by the factory, opposite the liquid end. The controller shall be equipped with a self-diagnostic package, such that it carries out a "self-check" which switches off the pump if no stroke has been carried out two seconds after startup of the motor, or the stroke sensor has malfunctioned. The microprocessor controller shall include, but not limited to, the following: adjustable maximum and minimum speed frequency, local and remote interface for both ON/OFF, speed frequency programming in "INTERNAL" mode or by remote 4-20mA, 0-20mA input signal in "EXTERNAL", Pulse contact multiplication and division control, green "POWER ON" indication light, green "EXTERNAL" indication light, and red "ALARM" indication light. The controller shall be capable of stable operation over an ambient temperature range of 50 degrees F. to 104 degrees F. Other features provided by the control shall be: input signal greater than 20mA, input signal less than 4mA, tank refill level indication, tank empty indication, pump SPM, overpressure or stroke error, and current programmed mode of operation. Messages for the above failures shall be displayed locally on the LCD display.

2.5 SPARE PARTS

- A. A spare parts kit shall be provided for each size pump. Kits shall include a complete set of O-rings, gaskets, valve seats, valve balls, valve diaphragms, and the pump diaphragm.

2.6 MANUFACTURER

- A. The chemical feed metering pumps shall be Series MAGDOS as manufactured by Lutz-JESCO America Corporation, or equal.

PART 3 -- EXECUTION

3.1 INSTALLATION

- A. The CONTRACTOR shall install the multiple pump chemical metering skids as indicated on the Drawings, specified herein, and in compliance with the manufacturer's instructions.
- B. Upon completion of the installation, a full operating test shall be performed in the presence of the ENGINEER and a qualified manufacturer's representative. The CONTRACTOR shall furnish all the labor, materials and equipment required for such a test and shall correct any installation related deficiencies noted.
- C. The CONTRACTOR shall provide a 24-month manufacturer's warranty for the metering pump systems. The warranty shall cover all materials and moving parts of the metering pump skids.

- D. Manufacturer's Field Services: The CONTRACTOR shall provide a minimum of two (2) day(s) of service at the site by a qualified representative of the system manufacturer to inspect the installation of their respective unit, make any necessary adjustments, test the equipment, place the equipment in initial hands-free operation and instruct the operating personnel in its operation and maintenance.

END OF SECTION

SECTION 13675

DOUBLE WALL HDPE CHEMICAL STORAGE TANKS

PART 1 -- GENERAL

1.1 SCOPE

- A. The CONTRACTOR shall supply and install all materials, equipment, appurtenances, specialty items, and services required to provide upright, double wall, flat bottom, closed top, polyethylene storage tanks for storage of the chemical application(s) described in Table I.

1.2 REFERENCE STANDARDS

- A. ASTM (American Society for Testing and Materials) Standards:
 - D618 Conditioning Plastics and Electrical Insulating Materials for Testing
 - D638 Tensile Properties of Plastics
 - D790 Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
 - D883 Definitions of Terms Relating to Plastics
 - D1505 Density of Plastics by the Density-Gradient Technique
 - D1525 Test Method for Vicat Softening Temperature of Plastics
 - D1693 Test Method for Environmental Stress-Cracking of Ethylene Plastics
 - D1998 Standard Specification for Polyethylene Upright Storage Tanks
 - D2765 Degree of Crosslinking in Crosslinked Ethylene Plastics as Determined by Solvent Extraction
 - D2837 Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials
 - D3892 Practice for Packaging/Packing of Plastics
 - F412 Definitions of Terms Relating to Plastic Piping Systems
- B. ARM (Association of Rotational Molders) Standards: Low Temperature Impact Resistance (Falling Dart Test Procedure).
- C. ANSI Standards: B-16.5 Pipe Flanges and Flanged Fittings
- D. OSHA Standards: 29 CFR 1910.106 Occupational Safety and Health Administration, Flammable and Combustible Liquids.
- E. UBC CODE: Uniform Building Code 2006 Edition.
- F. IBC CODE: International Building Code 2009 Edition.
- G. CBC Code: California Building Code 2010 Edition.
- H. NSF/ANSI Standard 61 – Drinking Water System Components (Type II resin).
- I. 40 CFR-264.193.

1.3 SUBMITTALS

- A. CONTRACTOR shall submit for review sufficient literature, detailed specifications, and drawings to show dimensions, materials used, design features, internal construction, weights and any other information required by the ENGINEER for review of storage tanks and accessories.

- B. Information to be included with submittals are specified below:
1. Shop drawings for the tanks shall include as a minimum the following:
 - a. Service Conditions: Chemical environment and temperature.
 - b. Statement that fabrication shall be in accordance with ASTM D 1998, where applicable.
 - c. Sizing and description of the fittings and accessories for each tank that are to be supplied by the tank manufacturer.
 - d. Layouts and assembly schedules for each tank identifying the location and elevation from the bottom of the tank for all connections and appurtenances supplied by the tank manufacturer.
 2. Resin - A copy of the resin data sheet from the resin manufacturer for the tank shall be provided and the tank manufacturer shall certify that it will be the resin used in the manufacture of the tank. Certification shall be provided.
 3. Wall thickness - Prior to the manufacture of the tank the designed wall thickness audit shall be provided based upon 600 psi hoop stress (ASTM D 1998) @ 100 degrees F.
 4. Supporting information on fittings and accessories shall be provided; heat system, insulation, mastic coating, etc.
- C. Technical Manuals: The tank manufacturer's "Guideline for Use & Installation" shall be provided.
- D. Installation certificate: Certification that the tank system has been installed according to the tank manufacturer's "Guidelines for Use & Installation" shall be provided.
- E. Manufacturer Qualifications: Certification that the manufacturer has produced rotationally molded polyethylene tanks based upon ASTM D 1998 utilizing Type I and Type II resins for the last 10 years shall be provided.
- F. Factory Test Report: Upon completion of tank fabrication, the manufacturer's inspection report shall be provided for each tank. Test results in accordance with Paragraph 2.3 herein as follows:
1. Verification of wall thickness
 2. Impact test
 3. Hydrostatic test
 4. Verification of fitting placement
 5. Visual inspection
 6. Verification of materials

1.4 SERVICE CONDITIONS

Table I – Service Conditions

Identification	Chemical Stored	Concentration / Specific Gravity	Tank Location	Operating Temperature of Chemical
Bulk Storage	Sodium Hypochlorite	12.5% / 1.26	Chemical Building	Ambient

1.5 CHEMICAL COMPATIBILITY

- A. Chemical compatibility of materials shall be according to the following chemical resistance guides:
Compass Publications -
Pruett, Kenneth M., "Chemical Resistance Guide for Plastics"
Pruett, Kenneth M., "Chemical Resistance Guide for Metals and Alloys"
Pruett, Kenneth M., "Chemical Resistance Guide for Elastomers III"

1.6 WARRRANTY

- A. The tank shall be warranted for three years in regards to defects in materials and workmanship. The warranty on fittings and accessories that are supplied by the tank manufacturer shall be for one year.

1.7 MARKING, PACKING AND PACKAGING

- A. The tanks shall be marked to identify the product, date (month and year) of manufacture, capacity, and serial number. The tank shall be shipped with a 3 of 9, HRI bar code label containing tank description, manufacturing order number, part number, serial number, manufacturer, and date.
- B. The proper caution or warning signs as prescribed by OSHA standard 29 CFR 1910.106 shall be supplied.
- C. All packing, packaging, and marking provisions of ASTM Practice D3892 shall apply to this Section.
- D. All fittings that do not interfere with tank shipment shall be installed unless otherwise specified. Fittings and accessories that interfere with tank shipment or could be broken during shipment shall be shipped separately.

PART 2 -- PRODUCTS

2.1 GENERAL

- A. The double wall assembly shall consist of one cylindrical closed top inner primary tank and one open top containment outer secondary tank. Each tank shall be molded in one-piece seamless construction by rotational molding. The tanks shall be designed for above-ground, vertical installation and shall be capable of containing chemicals at atmospheric pressure. The assembly shall be designed to prevent rainwater from entering the containment tank. The design shall allow direct primary tank base retention for up to seismic conditions per IBC code requirements. The containment tank shall be designed to hold a minimum of 115% of the normal fill capacity of the primary tank. Tank capacities are listed in Table II.

2.2 MATERIALS-RESIN CLASSIFICATION

- A. All Tanks shall be Type II - Tanks molded from cross-linked polyethylene resin.
- B. The material used shall be virgin polyethylene resin as compounded and certified by the manufacturer. Type II tanks shall be made from high density cross-linked polyethylene (HDXLPE) resin as manufactured by ExxonMobil Chemical, or resin of equal physical and chemical properties.
- C. All polyethylene resin material shall contain a minimum of a U.V. 15 stabilizer as compounded by the resin manufacturer. Pigments added shall not exceed 0.25% (dry blended) of the total weight.

- D. Mechanical Properties of Type II tank material: High density Cross-linked (HDXLPE) shall be as shown below:

PROPERTY	ASTM	VALUE
Density (Resin)	D1505	0.941-0.948 g/cc
Tensile (Yield Stress 2"/min)	D638	3000 PSI
Elongation at Break (2"/min.)	D638	>1000%
ESCR (100% Igepal, Cond. A, F50)	D1693	550 hours
ESCR (10% Igepal, Cond. A, F50)	D1693	50 hours
Vicat Softening Degrees F. Temperature	D1525	235
Flexural Modulus	D790	130,000 PSI

2.3 DESIGN REQUIREMENTS

- A. The minimum required wall thickness of the cylindrical shell at any fluid level shall be determined by the following equation, but shall not be less than 0.187 in. thick.

$$T = P \times O.D./2 SD = 0.433 \times S.G. \times H \times O.D./2 SD$$

T = wall thickness
SD = hydrostatic design stress, PSI
P = pressure (.433 x S.G. x H), PSI
H = fluid head, ft.
S.G. = specific gravity
O.D. = outside diameter, in

- B. The hydrostatic design stress shall be determined by multiplying the hydrostatic design basis, determined by ASTM D2837 using rotationally molded samples, with a service factor selected for the application. The hydrostatic design stress is 600 PSI at 73 degrees Fahrenheit for Type II materials. In accordance with the formula in 7.1, the tank shall have a tapered wall thickness.
- C. The hydrostatic design stress shall be derated for service above 100 degrees Fahrenheit and for mechanical loading of the tank.
- D. The standard design specific gravity shall be 1.5 or 1.9.
- E. The minimum required wall thickness for the cylinder straight shell shall be sufficient to support its own weight in an upright position without any external support. Secondary containment tanks shall be designed per the manufacturer's standard containment thickness requirements. The secondary containment shall be configured to allow shipment of the primary tank inside of the secondary tank without the aid of additional spacer blocks, which could be lost during shipment causing tank damage.
- F. The top head must be integrally molded with the cylinder shell. The minimum thickness of the top head shall be equal to the top of the straight wall. The primary tank top shall be configured to prevent rain water from entering the secondary containment tank. The top head of tanks with 550 or more gallons of capacity shall be designed to provide a minimum of 1300 square inches of flat area for fitting locations. The primary tank shall be keyed to the secondary tank preventing primary tank rotation. The secondary containment shall have 115% of the normal fill capacity of the primary tank.
- G. Tanks with 550 or more gallons of capacity shall have a minimum of 3 lifting lugs integrally molded into the top head. The lifting lugs shall be designed to allow erection of empty primary and secondary tanks. Tanks shall be capable of being lifted into position as a unit (primary and secondary tanks).

Table II – Tank Schedule

Identification	Bulk Storage	Day Tank
Capacity - Side Wall (gal)	65	10, min.
Specific Gravity- design		
Primary Tank	1.5 - 1.9	1.5 – 1.9
Secondary Tank	1.5 - 1.9	1.5 – 1.9
Diameter, (nominal) (inches)	48	14 (square)
Height, maximum (inches)	26-1/4	22
Color	Opaque White	Opaque White
Lid	Threaded	Threaded
Fitting Material	PVC	PVC
Gasket Material	Viton	Viton
Bolt Material	Titanium	Titanium

2.4 TEST METHODS

A. Quality Assurance & Testing

1. The tanks of the same material furnished under this Section shall be supplied by a manufacturer who has been regularly engaged in the design and manufacturing of rotationally molded polyethylene chemical storage tanks using high density cross-linked polyethylene for over ten years.

B. Dimensions and Tolerances

1. All dimensions shall be taken with the tank in the vertical position, unfilled. Tank dimensions will represent the exterior measurements.
2. The tolerance for the outside diameter, including out of roundness, shall be per ASTM D1998.
3. The tolerance for fitting placements shall be +/- 0.5 in. in elevation and 2 degrees radial at ambient temperature.

C. Test Methods

1. Test specimens shall be taken from fitting location areas.

D. Low Temperature Impact Test

1. Test specimens shall be conditioned at (- 40) degrees Fahrenheit for a minimum of 2 hours.
2. The test specimens shall be impacted in accordance with the standard testing methods as found in ASTM D1998. Test specimens < 1/2" thickness shall be tested at 100 ft. lb. Test specimens > 1/2" thickness shall be tested at 200 ft. lb.

E. Ultrasonic Tank Thickness Test

1. All primary tanks 2000 gallons or larger shall be measured for tank wall thickness at 6", 1ft., 2ft. and 3ft. on the tank sidewall height at 0° and 180° around the tank circumference with 0° being the

tank manway and going counter-clockwise per ANSI standard drafting specifications. All tanks shall meet design thickness requirements and tolerances.

F. Hydrostatic Water Test

1. The hydrostatic water test shall consist of filling the primary tank to brim full capacity for a minimum of four hours and conducting a visual inspection for leaks.

G. Workmanship

- A. The finished tank wall shall be free, as commercially practicable, of visual defects such as foreign inclusions, air bubbles, pinholes, pimples, crazing, cracking and delamination that will impair the serviceability of the vessel. Fine bubbles are acceptable with Type II tanks to the degree in which they do not interfere with proper fusion of the resin melt.
- B. All cut edges where openings are cut into the tanks shall be trimmed smooth.

Table III – Fitting and Accessory Schedule

Tank ID	Bulk Storage
Description	Quantity - Size
Outlet Fitting UFO	1 - 1/2 inch
Threaded Lid	1 - 5 in. min.

2.5 TANK FITTINGS (NOZZLES)

A. Fittings – Unified Fitting Outlet (UFO)

1. The UFO shall provide a flexible containment seal between the inner primary tank and the outer secondary containment tank. The UFO shall provide access for connecting piping to the inner primary tank while maintaining containment integrity between the inner primary tank and the outer secondary containment tank.
2. The UFO shall consist of 1 ea. flexible polyethylene containment boot, 1 ea. appropriate fitting gasket, 1 ea. UFO gasket, 1 ea. solid Titanium or 316 stainless steel UFO flange, 1 ea. split Titanium or 316 stainless steel UFO flange, and 12 ea. 3/8 in. Titanium, Hastelloy, or 316 stainless steel bolt assemblies. Gaskets shall be a minimum of 1/4" thickness and constructed of 60-70 durometer Viton or EPM.

B. Flexible Connections

1. All tank fitting attachments shall be equipped with flexible couplers or other movement provisions. The tank will deflect based upon tank loading, chemical temperature and storage time duration. Tank piping flexible couplers shall be designed to allow 4% design movement. Movement shall be considered to occur both outward in tank radius and downward in fitting elevation from the neutral tank fitting placement.
2. The flexible connection shall be manufactured of the same material as the tank or other compatible material. If an elastomer flexible connection is used, control bolts shall be used if recommended by the manufacturer. The flexible connection shall be designed for a minimum of 4% movement. The flexible connection shall be designed with 150# flange connections to allow for attachment to the tank and the piping system. The flexible connection shall be attached as close as possible to the tank to reduce stress.

2.6 TANK ACCESSORIES

A. Vented Lid

1. Vented lid shall be 7 in. diameter in size.
2. The lid shall be constructed of polyethylene material. The gaskets shall be closed cell, crosslinked polyethylene foam and Viton O-rings to seal the bolts.

B. Internal Overflow

1. An internal overflow from the inner tank to the outer containment tank shall be provided.

2.8 MANUFACTURERS, OR EQUAL

- A. Snyder Industries, Inc.
- B. Assman Corporation of America
- C. Poly Processing Company

PART 3 -- EXECUTION

3.1 INSTALLATION

- A. Handling, storage of the tanks, and installation shall be in accordance with the manufacturer's printed instructions.
- B. The CONTRACTOR shall repair any damage to tank components or the insulation due to handling, storage or installation.
- C. All tank fitting attachments shall be installed with flexible couplers or other movement provisions.
- D. The CONTRACTOR shall certify in writing that the tank system has been installed according to the tank manufacturer's guidelines for use and installation.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

SECTION 15100

VALVES AND APPURTENANCES

PART 1 - GENERAL

1.01. SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required to install complete and ready for operation all valves and appurtenances complete with all accessories as shown on the Drawings and as specified herein.
- B. The equipment shall include, but not be limited to the following:
 - 1. Gate valves
 - 2. Check valves
- C. Piping appurtenances shall include, but not be limited to the following:
 - 1. Pressure gauges
- D. Valve boxes for buried valves are covered in Section 02665 – Waterlines and Accessories.

1.02. SUBMITTALS

- A. Submit materials required to establish compliance with these Specifications in accordance with Section 01300 for shop drawings. Submittals shall include the following:
 - 1. Manufacturer's literature, illustrations, specifications and engineering data including, dimensions, size, material of construction, weight, coatings, and actuator weight.
- B. Certificates
 - 1. Certificates of compliance where required by referenced standards: For each valve specified to be manufactured and/or installed in accordance with AWWA and other standards, submit an affidavit of compliance with the appropriate standards, including certified results of required tests and certification of proper installation.

1.03. REFERENCE STANDARDS

Work in this section shall be in compliance with the following unless specified otherwise.

- A. AWWA C509 – Resilient Seated Gate Valves for Water Supply.
- B. AWWA C508 – Swing-check Valves for Waterworks Service.
- C. AWWA C550 – Protective Epoxy Interior Coatings for Valves and Hydrants.
- D. ASTM A126 - Gray Iron Castings for Valves, Flanges and Pipe Fittings.
- E. ASTM A536 - Ductile Iron Castings.
- F. ASTM D2000 – Rubber Products.

- G. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.04. QUALITY ASSURANCE

- A. All of the types of valves and appurtenances shall be products of well-established firms who are fully experienced, reputable and qualified in the manufacture of the particular equipment to be furnished. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these specifications as applicable.
- B. All units of the same type shall be the product of one manufacturer.
- C. All items shall be new and unused.

1.05. SYSTEM DESCRIPTION

- A. All of the equipment and materials specified herein is intended to be standard for use in controlling the flow of potable water.
- B. All valves, appurtenances and miscellaneous items shall be installed as shown on the Drawings and as specified so as to form a complete workable system.
- C. All valves, except stainless steel, shall be fusion bonded epoxy coated on the interior and exterior.

PART 2 - PRODUCTS

2.01. GENERAL

- A. Valves shall have the name of the maker, nominal size, flow directional arrows, working pressure for which they are designed and standard to which they are manufactured cast in raised letters on some appropriate part of the body.
- B. Unless otherwise noted, valves shall have a minimum working pressure of 200 psi or be of the same working pressure as the pipe they connect to, whichever is higher and suitable for the pressures where they are installed.
- C. Valves shall be of the same nominal diameter as the pipe or fittings they are connected to. Except as otherwise noted, buried valves shall be mechanical joints, with joint restraint, and open counter-clockwise.
- D. Exposed Valves shall be flanged for 4 inch and larger.
- E. Unless otherwise noted, valves shall be manually actuated; non-buried valves shall have an operating wheel mounted on the operator; buried valves and those with operating nuts shall have a non-rising stem with an AWWA two inch nut.
- F. All actuators shall be capable of moving the valve from the full open to full close position and in reverse and holding the valve at any position part way between full open or closed. Each operating device shall have cast on it the word "OPEN" or "CLOSE" and an arrow indicating the direction of operation.

2.02. GATE VALVES

- A. Gate valves shall be resilient seat gate valve and shall fully comply with the latest revision of AWWA C509, and shall also be UL listed and FM approved. The valves shall be tested and certified to ANSI/NSF 61 and shall have a 250 psig working pressure.

- B. The valve type shall be NRS (non-rising stem). Valves shall be provided with a 2" square-operating nut for buried valves and a handwheel for exposed valves. Valves shall have an arrow cast on the operating nut or handwheel showing opening direction, which shall be counterclockwise. The bolt that attaches the operating nut to the stem shall be recessed into the operating nut so as not to interfere with valve wrench operation.
- C. The valve stem shall be made of bronze ASTM B-132 alloy C67600 bar stock material. The stem shall have at least one "anti-friction" thrust washer above and below the stem collar to reduce operating torque. The design of the NRS valve stem shall be such that if excessive input torque is applied, stem failure shall occur above the stuffing box at such a point as to enable the operation of the valve with a pipe wrench or other readily available tool. The stem material shall provide a minimum 70,000psi tensile strength with 15% elongation and yield strength of 30,000psi.
- D. The valve shall have a stuffing box that is O-ring sealed. Two O-rings shall be placed above and one O-ring below the stem thrust collar. The thrust collar shall be factory lubricated. The thrust collar and its lubrication shall be isolated by the O-rings from the waterway and from outside contamination providing permanent lubrication for long term ease of operation.
- E. All buried valves shall be furnished with extension stems, as necessary, to bring the operating nut to within 30-inches of the top of the valve box. Connection to the valve shall be with a wrench nut coupling and a set screw to secure the coupling to the valve's operating nut. The coupling and square wrench nut shall be welded to the extension stem. Extension stems shall be equal to Mueller A-26441; M & H Valve Style 3801; or equal.
- F. The valve body, bonnet, stuffing box, and disc shall be composed of ASTM A-126 Class B grey iron or ASTM A395 or A536 ductile iron. The body and bonnet shall also adhere to the minimum wall thickness as set forth in Table 2, section 4.3.1 of AWWA C509. All exterior bolts and nuts for the valves shall be Type 304 stainless steel.
- G. The valve disc and guide lugs must be fully (100%) encapsulated in SBR ASTM D2000 rubber material. The peel strength shall not be less than 75 pounds per inch. Guide caps of an acetyl bearing material shall be placed over solid guide lugs to prevent abrasion and to reduce the operating torque.
- H. The valve shall have all internal and external ferrous surfaces coated with a fusion bonded thermosetting powder epoxy coating of 10 mils nominal thickness. The coating shall conform to AWWA C550.
- I. Gate valve shall be Mueller, Kennedy, M&H, Clow, or equal.

2.03. SWING CHECK VALVES

- A. General: Swing check valves for water, sewage, sludge, and general service shall be of the outside lever and spring or weight type, in accordance with AWWA C 508 - Swing-Check Valves for Waterworks Service, 2-in. through 24-in. NPS, unless otherwise indicated, with full-opening passages, designed for a water-working pressure of 150 psi. They shall have a flanged cover piece to provide access to the disc. Where indicated, swing check valves shall be furnished with position indicators and 2 flanged connections for attachment of dashpots or hydraulic snubbers.
- B. Body: The valve body and cover shall be of cast iron conforming to ASTM A 126 - Gray Iron Castings for Valves, Flanges, and Pipe Fittings, with flanged ends conforming to ASME B 16.1 - Cast Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800, or mechanical joint ends, as indicated.
- C. Disc: The valve disc shall be of cast iron, ductile iron, or bronze conforming to ASTM B 584 - Copper Alloy Sand Castings for General Applications.

- D. Seat and Rings: The valve seat and rings shall be of bronze conforming to ASTM B 584 or B 148 - Aluminum-Bronze Castings, or of Buna-N.
- E. Hinge Pin: The hinge pin shall be of bronze or stainless steel.
- F. Manufacturers, or Equal
 - 1. American Flow Control (Darling)
 - 2. APCO (Valve and Primer Corp.)
 - 3. Mueller Company
 - 4. Golden Anderson

2.04. APPURTENANCES

A. PRESSURE GAUGES

- 1. Bosses, connections, or nipples for gauges shall be provided as acceptable to the Engineer. Unbossed tappings will not be acceptable. Where gauge tappings are not available in the pump suction or discharge flange, the necessary tapping in the adjacent piping shall be made.
- 2. Gauges shall be provided as part of a complete factory assembly, including gauge, snubber, diaphragm seal, liquid fill, ball valve for isolation, back flushing connection, and threaded stainless steel connecting piping.
- 3. Pressure gauges shall have a Type 316 stainless steel case, a 4-inch minimum diameter dial face, a full-sized Type 316 stainless steel Bourdon tube, and Type 316 stainless steel movement. The gauges shall be liquid filled with glycerin and shall be provided with a filler/breather cap. The socket shall be 1/4-inch NPT Type 316 stainless steel with a bottom connection and the dial shall be a white background with black markings. Gauges shall be ANSI Grade A plus or minus 1 percent of scale and shall have a blow-out back design.
- 4. Gauges shall be provided from standard ranges of the manufacturer, graduated in feet for the specific application, as approved by the Engineer.
- 5. Diaphragm seals shall be minimum 2-1/2-inch diameter, or as required for the connected pressure gauges. The diaphragm shall be "thread attached" to both piping and pressure gauges. The Contractor shall provide mineral oil fill between the diaphragm seal and the gauge.
 - a. Diaphragm seals shall have an upper housing of cadmium or nickel-plated carbon steel, with the lower housing of Type 304 stainless steel and Type 316 stainless steel bolts. Diaphragms shall be Teflon.
 - b. Each diaphragm seal shall be connected to its respective piping or equipment with threaded stainless-steel pipe and fittings. Pipe size, isolation valve size, and diaphragm tap size shall match the size of the tap on the equipment or piping, but shall not be less than 1/2 inch.
 - c. Each diaphragm seal shall have a minimum 1/4-inch NPT flush connection.
 - d. Pulsation dampeners shall be provided and shall be adequate to prevent pulsation and/or vibration of the gauge indicator under all system operating conditions.

PART 3 - EXECUTION

3.01. INSPECTION AND PREPARATION

- A. During installation of all valves and appurtenances, verify that all items are clean, free of defects in material and workmanship and function properly.

3.02. VALVES

- A. Buried valves shall be cleaned and manually operated before installation. Gate valves and boxes shall be set with the operating stem vertically aligned in the center of the valve box. Valves shall be set on a firm foundation and supported by tamping pipe-bedding material under the sides of the valve.
- B. Before backfilling buried valves, all exposed portions of any bolts and nuts shall be coated with two coats of bituminous paint comparable to Bitumastic No. 50 by Kop-Coat, Inc. or equal.

3.03. FIELD TESTS AND ADJUSTMENTS

- A. Conduct a functional field test of each valve, including actuators and valve control equipment, in presence of Engineer or Owner to demonstrate that each part and all components together function correctly. All testing equipment required shall be furnished by the Contractor.
- B. Valves shall be left in the open or closed position as designated by the Owner following substantial completion and final disinfection.

END OF SECTION

SECTION 16010 – BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

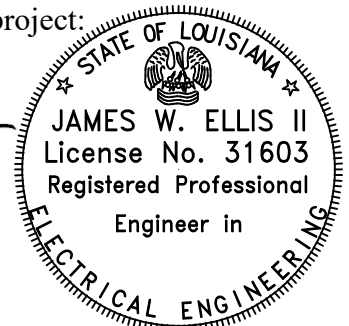
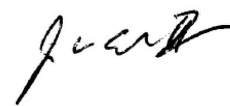
RELATED DOCUMENTS

All drawings and general provisions of the contract, including General Conditions, Supplementary Conditions, and other Division 1 Specifications, apply to this section.

Separation of Specifications into Sections is for convenience only and is not intended to establish limits of work or liability. The following sections apply to this project:

- 16010 – Basic Electrical Requirements
- 16100 – Basic Electrical Materials and Methods
- 16400 – Panelboards
- 16900 – Process Instrumentation and Control

3-10-23



DESCRIPTION OF WORK

Furnish all labor, tools, materials, fixtures, equipment, accessories, transportation, etc., required for a complete electrical lighting and power systems, complete with necessary auxiliaries as indicated on the drawings and specifications.

Also included in the work is the power wiring for connection of items indicated on the entire set of plans.

Removal of existing electrical equipment not being reused.

DRAWINGS AND SPECIFICATIONS

The drawings showing the layout of electrical work indicate the approximate location of transformers, switchboards, panelboards, disconnects, outlets, and conduit routing. The contractor shall refer to architectural, structural, and mechanical drawings as well as equipment manufacturer's shop drawings and rough-in drawings, and adjust work accordingly to provide a coordinated installation. All adjustments and minor deviations necessary shall be made without additional cost to the owner. It shall be the electrical contractor's responsibility to see that all equipment such as pull boxes, junction boxes, panelboards, and other apparatus, that may require maintenance from time to time, is made accessible. Any condition that may occur during construction which conflicts with accessibility to the proposed installation of the electrical equipment, shall be brought to the Architect's attention prior to the point at which a change in location would require additional cost and delays to construction.

All electrical gear shall be mounted at or above the first floor slab or base flood elevation, whichever is higher, unless noted otherwise.

The drawings and specifications are complementary and what is shown and/or called for on one shall be furnished and installed the same as if shown and/or called for on the other.

Where the Contractor is not certain about the method of installation, he shall ask the Architect for further installation details. Lack of details, not requested, will not be an excuse for improper installation.

When a color or other condition for a product is specified to be determined by the architect, the submittal for that item shall be clearly marked with the available options. (Do not select a color or other condition in the submittal) The architect shall be specifically asked by the contractor to provide the required information, and that product shall not be manufactured prior to obtaining such information.

LAWS, CODES, AND PERMITS

The latest accepted edition of the National Electrical Code (NFPA 70), National Fire Alarm Code (NFPA 72), and all State, Parish, City, and local building codes shall be considered a part of these specifications, and pertinent articles will not be repeated herein. These codes establish the minimum acceptable criteria where more stringent requirements have not been defined in these specifications and/or drawings.

The Contractor shall apply for all permits and pay all fees incidental to completing the electrical work. This Contractor shall give notice to the proper authorities in ample time for the work to be inspected and approved as it progresses, and no work shall be concealed until inspected and approved by authorized inspectors. If the plans or these specifications in any way conflict with the Code, State or Local Rules, these latter are to be followed, without expense to the Owner, but the Architect shall be notified of this condition and approval secured before changes are made.

Comply with utility company standards. Coordinate all work for installation of metering and all aspects of the service with the utility company prior to roughin.

Upon completion and before acceptance of work, a certificate of approval from the appropriate regulatory agency shall be furnished to the Architect.

No work shall be concealed until approved by the local inspector. Local regulations shall be adhered to.

The contractor shall assure that he does not install electrical equipment including raceways in or through areas restricted by the international building code and local building codes including elevator shafts and stairs.

JOB SITE

Prior to submitting quotation for electrical work, Contractor shall visit and examine the job site with all authorities concerned in order to become familiar with all existing conditions pertinent to the work to be performed thereon. No additional compensation will be allowed

for failure to be so informed.

Where existing equipment including raceways and wiring is in conflict with work of this project, the contractor shall rework/reroute/relocate this equipment as necessary.

TEMPORARY POWER

The Contractor shall be responsible for providing temporary light and power to the construction site as necessary to meet all of the OSHA requirements for construction, and as required by the general contractor and various sub-contractors.

SERVICE INTERRUPTIONS

Services to the buildings shall be kept in operation at all times during construction. If a situation occurs that the service needs to be interrupted, the Contractor shall be responsible for contacting the proper authorities to schedule the outage at a time that is convenient to the occupants. It shall be understood that this outage may have to be scheduled after regular working hours or on the weekends. Allowances shall be added to the Contractors bid to cover the cost of any overtime work. This shall come at no additional cost to the Owner after the bid date.

WARRANTY

The contractor shall guarantee all labor and materials for a period of twelve (12) months from the date of final acceptance. All defective materials and work shall be replaced with new materials or equipment. This shall come at no additional cost to the Owner.

PART 2 – PRODUCTS

MATERIALS

Equipment and materials shall be new and shall be listed by Underwriters Laboratories for the purpose for which they are being used. All material of similar use shall be of the same manufacturer.

Substitutions to materials listed on the drawings and specifications can be made as long as they are approved as acceptable by the Architect. Requests for prior approval shall be submitted no later than seven working days prior to bidding. All requests for prior approval shall be in writing by providing a hard copy of the submittal data to the engineer's office.

All termination lugs shall be rated 75 degree C minimum and shall be compatible with the number and size of wires to be terminated.

SUBSTITUTIONS

Names of manufacturers or catalog numbers are mentioned herein in order to establish a

standard as to design quality. Other products similar in design and of equal quality may be used if submitted to the architect and found acceptable by him. Refer to the general conditions for additional information.

Any substitution to items specified, that are not approved prior to bidding, shall be brought to the attention of the architect and engineer as an alternative product prior to the official submittal of electrical products along with the specific reason for the proposed substitution. Refer to the general conditions for additional information.

When the contractor elects to use an acceptable alternate manufacturer's equipment, the contractor shall be responsible to coordinate the change with all trades affected and pay for any additional work required under this or any other division affected by the substitution.

SUBMITTALS

Within thirty days of the award of the contract, the Contractor shall be responsible for submitting six (6) copies of submittals containing catalog cuts and performance data for all material and equipment proposed for use. These submittals shall be reviewed by the Architect for general compliance to the contract documents. The Architect's review of these submittals in no way modifies the contract or relieves the Contractor from compliance with the contract unless a difference is clearly stated in the submission and specific acceptance is given by the Architect as a change to the contract.

Submittals shall be identified with the project name and the contractor's name and have the contractor's stamp showing that he has reviewed the submittal and found it to be in accordance with the plans and specifications. Submittals shall be bound.

The complete fault current coordination study and an arc flash hazard study shall be included in the gear and panel board submittal.

Items of division 16 shall be submitted in one package.

Submittals that do not comply with the above may be returned, without review, for resubmission.

All shop drawings must be reviewed before the various factories start fabrication. The contractor shall allow a minimum of 30 days for this review.

Developing electronic or CAD files shall be the responsibility of the contractor. Electronic CAD drawings will not be provided to the contractor.

PART 3 – EXECUTION

INSTALLATION

Ask for details whenever uncertain about installation methods. Lack of details requested shall not excuse proper installation and corrections shall be the responsibility of the contractor.

AS-BUILT DRAWINGS & OPERATING INSTRUCTIONS

The Contractor shall be responsible for providing As-Built drawings to the Architect at the completion of the project. The Contractor shall make a reproducible set of the original contract drawings, and in a neat and understandable manner, show any significant changes made during construction. Unless noted otherwise in the contract documents, the Contractor shall provide one additional copy of these drawings to the Architect. The Contractor shall pay for all reproduction costs. Final payment shall be withheld until these drawings are accepted by the Architect.

The Contractor shall furnish two bound sets of any operating instructions and maintenance manuals to the Architect upon completion of the project.

CUTTING AND PATCHING

The Contractor shall be responsible for all cutting and patching that is required to complete the installation of the electrical systems. All work shall be coordinated between trades with strict accordance with the requirements of the General Conditions. Structural members shall not be cut or modified without the approval of the architect.

The Contractor shall be responsible for covering, caulking, or otherwise to make weatherproof all openings left in the structure for electrical work. This includes openings around conduit penetrations.

EXCAVATING AND BACKFILLING

The Contractor shall be responsible for all excavating and backfilling required to complete the installation of the electrical systems. All excess material and debris shall be removed. All backfilling shall be with sand. Backfilling shall be thoroughly tamped and compacted.

It shall be the Contractor's responsibility to locate all underground utilities before trenching and excavating. Care shall be taken to avoid damage to the existing utilities. Any damage shall be repaired or replaced by the Contractor at no expense to the Owner.

PAINTING

No painting shall be required under DIVISION 16, except for factory-finished items. Any damaged surfaces of factory items shall be repaired by the Contractor to an acceptable level determined by the Architect.

EXISTING EQUIPMENT

The Contractor shall be responsible for the removal and reinstallation of any electrical equipment, such as light fixtures, that shall be reused. Any existing electrical equipment that is removed and not reused shall be returned to the Owner. Any material that the Owner does not wish to keep shall be removed from the site by the Contractor.

When existing electrical items such as outlets are removed from service, care shall be taken to keep the integrity of the remaining electrical systems.

SERVICE EQUIPMENT MARKING

In addition to other marking requirements, all service equipment shall be marked with the available fault current and the date of calculation of the fault current. See other areas of these specifications for additional labeling requirements. Labels shall be engraved metal or laminated-plastic nameplate mounted with corrosion-resistant screws.

TESTING AND ADJUSTMENTS

Provide a complete fault current coordination study and an arc flash hazard study and tag all gear accordingly. Provide labeling on all switchgear and switch boards. Adjust all trip and parameter settings in accordance with the calculations.

END OF SECTION 16010

SECTION 16100 - BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

SUMMARY

This Section includes the following:

1. Raceways
2. Wires, cables, and connections
3. Wiring devices
4. Grounding
5. Safety Switches and fuses
6. Supporting devices for electrical components
7. Equipment for utility company's electricity metering

QUALITY ASSURANCE

Electrical Components, Devices, and Accessories shall be listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

Devices for Utility Company Electricity Metering shall comply with utility company published standards.

Comply with NFPA 70.

COORDINATION

Coordinate chases, slots, inserts, sleeves, and openings for electrical supports, raceways, and cable with general construction work.

Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work. Coordinate installing large equipment that requires positioning before closing in the building.

Coordinate electrical service connections to components furnished by utility companies.

Coordinate installation and connection of exterior underground and overhead utilities and services, including provision for service entrances and electricity-metering components.

Coordinate location of access panels and doors for electrical items that are concealed by finished surfaces.

Where electrical identification devices are applied to field-finished surfaces, coordinate installation of identification devices with completion of finished surface.

PART 2 - PRODUCTS

RACEWAYS

EMT: Electrical metallic tubing; ANSI C80.3, zinc-coated steel.

FMC: Flexible metal conduit; zinc-coated steel.

IMC: Intermediate metal conduit; ANSI C80.6, zinc-coated steel, with threaded fittings.

LFMC: Liquidtight flexible metal conduit; zinc-coated steel with sunlight-resistant and mineral-oil-resistant plastic jacket.

RMC: Rigid metal conduit; galvanized rigid steel; ANSI C80.1.

RAC: Rigid Aluminum conduit; Aluminum.

RNC: Rigid nonmetallic conduit; NEMA TC 2, Schedule 40 or 80 PVC, with NEMA TC3 fittings.

Raceway Fittings: Specifically designed for raceway type with which used.

WIRES, CABLES, AND CONNECTIONS

All conductors shall have 600V insulation type THHN/THWN

Conductors in outdoor underground raceways shall be type THWN

Conductors, No. 10 AWG and Smaller: Solid or stranded copper.

Conductors, Larger Than No. 10 AWG: Stranded copper.

No wire shall be smaller than #12 awg unless noted otherwise.

All conductors shall be copper.

Insulation: Thermoplastic, rated 600 V, 90 deg C minimum, Type THHN-THWN, or USE depending on application.

Wire Connectors and Splices: Units of size, ampacity rating, material, type, and class suitable for service indicated.

WIRING DEVICES

Wall Switches shall be 20A, 277V, AC type designed for quiet operation.

Duplex receptacles shall be 20A/2 pole, 3-wire, 125V, grounding type.

All devices shall be specification grade Hubbell, Leviton, or equal.

All device plates shall be brushed stainless steel with matching counter sunk screws unless noted otherwise. All boxes shall have a cover plate.

Consult with the Architect for color selections before ordering devices.

Use multigang plates where devices are grouped together.

Boxes and fittings shall comply with article 314 of the NEC. Particular attention shall be paid to the number of conductors allowed in an outlet box or junction box. Contractor shall make provisions to prevent overcrowding outlet and junction boxes regardless of the number of conductors shown on the plans at the outlets.

In locations where power, combination, and tele/data outlets are mounted together, care shall be taken to minimize the overall spacing along the wall. Consult with the Architect for specific details.

GROUNDING

The grounding system shall be in accordance with N.E.C. Article 250.

A grounding conductor shall be provided in all conduit.

SAFETY SWITCHES AND FUSES

Safety switches shall be of the quick-make, quick-break, heavy-duty, fusible or non-fusible type with cover interlock to prevent opening of the door when the switch is in the "ON" position. Use NEMA 3R enclosures outdoors and NEMA 1 enclosures indoors, unless otherwise noted.

Provide a complete set of dual-element, class RK-1 or class J fuses of ampere rating shown on the drawings. Furnish the owner with 20% spare fuses with at least one set for every rating.

All fuses shall have a minimum interrupting rating of 200,000 A.

Do not mount disconnect switches to equipment. Provide supports as necessary.

SUPPORTING DEVICES

Material: Cold-formed steel, with corrosion-resistant coating.

Metal Items for Use Outdoors or in Damp Locations: Hot-dip galvanized steel.

Slotted-Steel Channel: Flange edges turned toward web, and 9/16-inch- diameter slotted holes at a maximum of 2 inches o.c., in webs. Strength rating to suit structural loading.

Slotted Channel Fittings and Accessories: Recommended by the manufacturer for use with the type and size of channel with which used.

Raceway and Cable Supports: Manufactured clevis hangers, riser clamps, straps, threaded C-clamps with retainers, ceiling trapeze hangers, wall brackets, and spring-steel clamps or click-type hangers.

Pipe Sleeves: ASTM A 53, Type E, Grade A, Schedule 40, galvanized steel, plain ends.

Cable Supports for Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug for non-armored electrical cables in riser conduits. Plugs have number and size of conductor gripping holes as required to suit individual risers. Body constructed of malleable-iron casting with hot-dip galvanized finish.

Expansion Anchors: Carbon-steel wedge or sleeve type.

Toggle Bolts: All-steel springhead type.

Provide galvanized c channel framing as necessary to mount outdoor equipment.

EQUIPMENT FOR UTILITY COMPANY'S ELECTRICITY METERING

Comply with requirements of electrical power utility company for current transformer cabinets, meter sockets, and modular meter centers.

PART 3 - EXECUTION

ELECTRICAL EQUIPMENT INSTALLATION

Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom.

Materials and Components: Install level, plumb, and parallel and perpendicular to other building systems and components, unless otherwise indicated.

Equipment: Install to facilitate service, maintenance, and repair or replacement of components. Connect for ease of disconnecting, with minimum interference with other installations.

Right of Way: Give to raceways and piping systems installed at a required slope.

RACEWAY APPLICATION

Outdoor Installations:

1. Exposed: RAC.
2. Concealed: RNC.
3. Underground, Single Run: RNC.
4. Underground, Grouped: RNC.
5. Connection to Vibrating Equipment: LFMC.
6. Boxes and Enclosures: NEMA 250, Type 3R or Type 4, unless otherwise indicated.

Indoor Installations:

1. Exposed: RAL
2. Concealed in Walls or Ceilings: EMT.
3. In Concrete Slab: RNC.
4. Below Slab on Grade or in Crawlspace: RNC.
5. Connection to Vibrating Equipment: FMC; except in wet or damp locations: LFMC.
6. Boxes and Enclosures: NEMA 250, Type 1, unless otherwise indicated.

RACEWAY AND CABLE INSTALLATION

Conceal raceways and cables, unless otherwise indicated, within finished walls, ceilings, and floors.

Exposed conduits shall be installed with runs arranged perpendicular to walls and ceilings.

Keep legs of raceway bends in the same plane and keep straight legs of offsets parallel.

Install pull wires in empty raceways. Leave at least 12 inches of slack at each end of pull wires.

Connect motors and equipment subject to vibration, noise transmission, or movement with a maximum of 72-inches flexible metallic conduit. Install LFMC in wet or damp locations. Install separate ground conductor across flexible connections.

Set floor boxes level and trim after installation to fit flush to finished floor surface.

Unless a larger size is indicated, raceways, troughs, and junction boxes shall be sized in accordance with the fill requirements of the NEC.

Provide color-coding of wires and mark panels in accordance with NEC article 210.5 (C) and NEC article 215.12 (C) when more than one voltage is present for branch circuits.

WIRING METHODS FOR POWER, LIGHTING, AND CONTROL CIRCUITS

Application: Use wiring methods specified below to the extent permitted by applicable codes as interpreted by authorities having jurisdiction.

Exposed Feeders: Insulated single conductors in raceway

Concealed Feeders in Ceilings, Walls, and Gypsum Board Partitions: Insulated single conductors in raceway.

Concealed Feeders in Concrete: Insulated single conductors in raceway.

Exposed Branch Circuits: Insulated single conductors in raceway.

Concealed Branch Circuits in Ceilings, Walls, and Gypsum Board Partitions: Insulated single conductors in raceway.

Concealed Branch Circuits: Insulated single conductors in raceway.

Underground Feeders and Branch Circuits: Insulated single conductors in raceway.

Remote-Control Signaling and Power-Limited Circuits, Classes 1, 2, and 3: Insulated conductors in raceway unless otherwise indicated.

Not Allowed: NM for branch circuits.

Type MC cable shall not be acceptable.

WIRING INSTALLATION

Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

No wires shall be pulled in until the conduit system is complete. Ideal "Yellow 77" or other approved pulling lubricant shall be used.

Each circuit/homerun shown shall have a separate neutral for each phase conductor. 3 or 4 wire homeruns for multiple circuits are not acceptable. This does not apply to multi-phase circuits. Do not route more than 1 multi-phase circuit in a raceway.

ELECTRICAL SUPPORTING DEVICE APPLICATION

Damp Locations and Outdoors: Hot-dip galvanized materials or nonmetallic, slotted channel system components.

Dry Locations: Steel materials.

Strength of Supports: Adequate to carry present and future loads, times a safety factor of at least four with, 200-lb minimum design load for each support element.

SUPPORT INSTALLATION

Support parallel runs of horizontal raceways together on trapeze- or bracket-type hangers.

Size supports for multiple raceways or cable runs so capacity can be increased by a 25 percent minimum in the future.

Support individual horizontal single raceways with separate, malleable-iron pipe hangers or clamps except use spring-steel fasteners for 1-1/2-inch and smaller single raceways above suspended ceilings and for fastening raceways to slotted channel and angle supports.

Install sleeves for cable and raceway penetrations of concrete slabs and walls unless core-drilled holes are used. Install sleeves for cable and raceway penetrations of masonry and fire-rated gypsum walls and of all other fire-rated floor and wall assemblies. Install sleeves during erection of concrete and masonry walls.

Secure electrical items and their supports to building structure, using the following methods unless other fastening methods are indicated:

1. Wood: Wood screws or screw-type nails.
2. Gypsum Board: Toggle bolts. Seal around sleeves with joint compound, both sides of wall.
3. Masonry: Toggle bolts on hollow block and expansion bolts on solid block. Seal around sleeves with mortar, both sides of wall.
4. New Concrete: Concrete inserts with machine screws and bolts.
5. Existing Concrete: Expansion bolts.
6. Structural Steel: Spring-tension clamps.
7. Light Steel Framing: Sheet metal screws.
8. Fasteners for Damp, Wet, or Weather-Exposed Locations: Stainless steel.
9. Light Steel: Sheet-metal screws.
10. Fasteners: Select so load applied to each fastener does not exceed 25 percent of its proof-test load.

IDENTIFICATION MATERIALS AND DEVICES

Install at locations for most convenient viewing without interference with operation and maintenance of equipment.

Coordinate names, abbreviations, colors, and other designations used for electrical identification with corresponding designations indicated in the Contract Documents or required by codes and standards. Use consistent designations throughout Project.

Install continuous underground plastic markers during trench backfilling, for exterior underground power, control, signal, and communication lines.

ELECTRICITY-METERING EQUIPMENT

Install utility company metering equipment according to utility company's written requirements. Provide grounding and empty conduits as required by utility company.

FIRESTOPPING

Penetrations through rated construction shall be sealed with a material capable of preventing the passage of flames and hot gases when tested in accordance with ASTM-EB14.

- a) Notify the Architect for inspection of all completed fire and/or smoke barrier walls before any construction is installed that would conceal construction and prevent a proper inspection. Access to random selected areas may be required by the Architect at the time of final inspection if this notification is not given.
- b) Provide detailed instructive cut sheets of the fire penetration sealing system used to the Architect at the time of inspection. Random selective sampling by the Contractor will be observed by the Architect and the Fire Marshall's inspector.

MOUNTING HEIGHTS

Unless otherwise noted on the drawings or required by the Architect, the following mounting heights shall apply. Unless noted otherwise, mounting heights are to the centerline of the device:

1. Receptacles 18" above floor
2. Toggle Switches 48" above floor
3. Panelboards 72" to top
4. Telephone Outlets 18" above floor
5. Data Outlets 18" above floor
6. Meter Can 60"-72" to centerline

Mounting heights may be adjusted in masonry applications to simplify installation where approved by the Architect.

Coordinate counter top outlets with the height of the back splash.

END OF SECTION 16100

SECTION 16400 - PANELBOARDS

PART 1 - GENERAL

SUMMARY

This Section includes distribution and branch-circuit panelboards.

SUBMITTALS

Product Data: For each type of panelboard, overcurrent protective device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

Shop Drawings: For each panelboard, including the following:

1. Dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings. Include the following data:
 - a. Enclosure types and details for types other than NEMA 250, Type 1.
 - b. Bus configuration, and current, and voltage ratings.
 - c. Short-circuit current rating of panelboards and overcurrent protective devices.
 - d. Features, characteristics, ratings, and factory settings of individual overcurrent protective devices.
2. Wiring Diagrams: Power, signal, and control wiring.
3. The complete fault current coordination study and an arc flash hazard study.

Panelboard Schedules: For installation in panelboards. Submit final versions after load balancing.

Operation and maintenance data.

QUALITY ASSURANCE

Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

Comply with NEMA PB 1.

Comply with NFPA 70.

PART 2 - PRODUCTS

MANUFACTURERS

Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Siemens Energy & Automation, Inc.
2. Square D Co.
3. General Electric

FABRICATION AND FEATURES

Enclosures: Flush- and surface-mounted cabinets. NEMA PB 1, Type 1, suitable for environmental conditions at installed location.

1. Outdoor Locations: NEMA 250, Type 3R.
2. Other Wet or Damp Indoor Locations: NEMA 250, Type 4.
3. Hazardous Areas Indicated on Drawings: NEMA 250, Type 7C.

Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.

Finish: Manufacturer's standard enamel finish over corrosion-resistant treatment or primer coat.

Directory Card: A clear plastic directory holder shall be mounted inside panelboard door.

Provide arc flash hazard warning labels on all sections.

Bus: Hard-drawn copper, 98 percent conductivity.

Equipment Ground Bus: Adequate for feeder and branch-circuit equipment ground conductors; bonded to box.

Panelboard Short-Circuit Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

Panelboards with Main Service Disconnect: Listed for use as service equipment.

Spaces for Future Devices: Mounting brackets, bus connections, and necessary appurtenances required for future installation of devices.

Feed-through Lugs: Locate at opposite end of bus from incoming lugs or main device.

LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

Doors: Front mounted with concealed hinges; secured with flush latch with tumbler lock; keyed alike.

DISTRIBUTION PANELBOARDS

Doors: Front mounted, and secured with vault-type latch with tumbler lock; keyed alike.

Branch overcurrent protective devices shall be one of the following:

1. Bolt-on circuit breakers.
2. Fused switches.

INTEGRATED TRANSIENT VOLTAGE SURGE SUPPRESSION DEVICES

Surge Protective Device (SPD)

1. SPD shall be Listed and Component Recognized in accordance with UL 1449 Second Edition to include Section 37.3 highest fault current category. SPD shall be UL 1283 listed.
2. SPD shall be installed by and shipped from the electrical distribution equipment manufacturer's factory.
3. The TVSS devices in lighting and appliance panelboards shall be bus mounted between the main and branch devices. TVSS devices bussed off the end of the panelboard are not allowed. Panelboards with TVSS will accommodate thru-feed lugs and sub-feed circuit breakers in single section and multi-section panelboards.
4. The TVSS devices in power distribution panelboards shall be cable connected.
5. SPD shall provide surge current diversion paths for all modes of protection; L-N, L-G, N-G in WYE systems.
6. SPD shall be modular in design. Each mode including N-G shall be fused with a 200kAIR UL recognized surge rated fuse and incorporate a thermal cutout device. TVSS shall safely reach an end-of-life condition when subjected to fault current levels between 0 and 200 kA, including low level fault currents from 5 to 5000 amperes.
7. Audible diagnostic monitoring shall be by way of audible alarm. This alarm shall activate upon a fault condition. An alarm on/off switch shall be provided to silence the alarm. An alarm push to test switch shall be provided.
8. SPD shall meet or exceed the following criteria:
 - a. Minimum surge current capability (single pulse rated) per phase shall be:
 - 1) Service Entrance Panelboard locations: 240kA per phase
 - 2) Distribution and lighting and Appliance Panelboard locations: 160kA per phase
 - b. UL 1449 Suppression Voltage Ratings:

<u>VOLTAGE</u>	<u>LOCATION</u>	<u>L-N</u>	<u>L-G</u>	<u>N-G</u>
208Y/120V	Distribution:	400V	400V	400V
480Y/277V	Distribution:	800V	800V	800V

9. SPD shall have a minimum EMI/RFI filtering of up to -30 dB over the range of 100 kHz to 100 MHz.
10. SPD shall be provided with one set of NO/NC dry contacts.
11. The manufacturer of the electrical equipment in which the TVSS is installed shall warrant the integrated TVSS device to be free from defects in material and workmanship for a period of ten (10) years from the date of invoice the manufacturer or its authorized sales channel.

OVERCURRENT PROTECTIVE DEVICES

Molded-Case Circuit Breaker: NEMA AB 1, with interrupting capacity to meet available fault currents.

1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
2. GFCI Circuit Breakers: Single- and two-pole configurations with 5mA trip sensitivity.
3. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HACR for heating, air-conditioning, and refrigerating equipment.
4. Shunt Trip: 120-V trip coil energized from separate circuit, set to trip at 55 percent of rated voltage. Verify exact voltage of shunt trip with fire alarm vendor.

Fused Switch: NEMA KS 1, Type HD; clips to accommodate indicated fuses; lockable handle.

PART 2 - EXECUTION

INSTALLATION

Install panelboards and accessories according to NEMA PB 1.1.

Mounting Heights: Top of trim 86 inches above finished floor, unless otherwise indicated. Highest switch or breaker at 72" max above finished floor.

Mounting: Plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish.

Install filler plates in unused protective device spaces.

Wiring in Panelboard Gutters: Arrange conductors into groups and bundle and wrap with wire ties after completing load balancing.

Locate panelboards so that ratings are not reduced by heat from external sources.

IDENTIFICATION

Identify field-installed conductors, interconnecting wiring, and components; provide warning signs as specified in Division 16 Section "Basic Electrical Materials and Methods."

Panelboard Nameplates: Label each panelboard with engraved metal or laminated-plastic nameplate mounted with corrosion-resistant screws.

Circuit Directory: Create a directory to indicate installed circuit loads after balancing panelboard loads. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.

FIELD QUALITY CONTROL

Testing and Inspection: After installing panelboards and after electrical circuitry has been energized, demonstrate product capability and compliance with requirements.

Balancing Loads: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes as follows:

1. Measure as directed during period of normal system loading.
2. Perform load-balancing circuit changes outside normal occupancy/working schedule of the facility and at time directed. Avoid disrupting critical 24-hour services such as fax machines and on-line data-processing, computing, transmitting, and receiving equipment.
3. After circuit changes, recheck loads during normal load period. Record all load readings before and after changes and submit test records.
4. Tolerance: Difference exceeding 20 percent between phase loads, within a panelboard, is not acceptable. Rebalance and recheck as necessary to meet this minimum requirement.

TESTING AND ADJUSTMENTS

Provide a complete fault current coordination study and an arc flash hazard study and tag all gear accordingly, in compliance with NFPA 70, including the date of calculation. Provide labeling on all switchgear, motor control centers, switch boards, and additional equipment as required by NFPA 70. Adjust all trip and parameter settings in accordance with the calculations.

END OF SECTION 16400

SECTION 16900 – PROCESS INSTRUMENTATION AND CONTROL

PART 1 – GENERAL

1.01 WORK INCLUDED

The work covered under this section of the specifications includes the furnishing and installing of all instrumentation and control hereinafter specified to perform the intended function.

PART 2 – PRODUCTS

2.01 SYSTEM SUPPLIER

- A. All instrumentation and control systems equipment shall be furnished by a System Supplier. The System Supplier shall provide and be responsible for the proper operation of all Process Instrumentation and Controls and Control Panels. The System Supplier shall perform in house submittal drawings and assembly of products. Subcontracting submittal drawings and equipment assembly will not be permitted.
- B. Substitutions of functions or equipment specified will not be acceptable.
- C. The entire system shall be warranted for one year from date of substantial completion.
- D. The System Supplier shall be responsible for all coordination necessary in order to select, to furnish, to supervise installation and connections, to calibrate, and to place into operation all instrumentation and controls along with all other equipment and accessories as specified herein. The System Supplier shall be a licensed electrical contractor in the state of Louisiana.
- E. The System Supplier shall be one of established favorable reputation who has designed and produced similar systems and components for a period of at least (10) ten years.
- F. It shall be required of the System Supplier to execute and submit a guarantee to assume full responsibility as defined in Section 2.01, paragraph ‘A’ above. It is the duty of the Contractor to include this guarantee with his Bidding Documents.
- G. The System Supplier shall guarantee the following.

That the proposal offered provides for complete compliance with all requirements of this section of the project specifications without exceptions to these specifications.

Responsibility for all coordination necessary to select, to furnish, to supervise installation and connections, to calibrate, and to place into operation Process Instrumentation and Controls, Control Panels, and all other equipment and accessories needed to provide a complete operating system to comply with requirements of this section of the project specifications.

to provide all submittal drawings, instruction manuals, and qualified personnel for specified field services and training, all as defined within this section of the project specifications.”

2.02 SUBMITTAL DRAWINGS

- A. Descriptive literature and drawings for equipment and systems being furnished under this section shall be included in two submittals as a maximum. If two submittals are made, the first shall include all primary devices, transmitters, sensors, and field mounted equipment. The second submittal will include the balance of the submittal required. The submittal shall include as a minimum, equipment specifications, dimensional drawings, flow and other calculations, schematic drawings of each and every system within the complete offering, and such other information requested by the Engineer or considered necessary to the proper installation of the equipment. Furnish submittals in a Bound Booklet Form 8.5" X 11". No sheets shall be larger than 8.5" X 11". Foldout larger sheets will not be acceptable. This submittal shall include coordinated information and drawings for all items that the Single Source System Supplier is required to furnish under this section of the specifications, all in one integrated and coordinated manual. Each item of a submittal shall carry the appropriate title and be indexed against the appropriate specification item.
- B. A quantity of six (6) sets of submittals shall be furnished for the Engineer's approval.

2.03 INSTRUCTION MANUALS

Prior to 65% of the value of job completion, System Supplier shall furnish two (2) copies to the Engineer and one (1) copy to the Owner of all descriptive matter and complete system operation instruction manuals in separate indexed binders coordinated with the equipment that is furnished and installed for approval. System Supplier shall incorporate Engineer's comments and resubmit for approval within thirty (30) days of receipt of Engineer's comments. Once final approval is obtained, System Supplier shall furnish two (2) copies to the Owner and two (2) to the Engineer.

2.04 RELATED SYSTEM COMPONENTS

The attention of the System Supplier is called to sections concerned with electrical work, chemical feeders, valves, piping, etc., and such other devices not specified under this section, but related to it.

PART 3 – EXECUTION

3.01 ENGINEERING SUPERVISION

- A. The services of a qualified representative of the selected Single Source System Supplier shall be provided to inspect the completed installation, suggest all adjustments necessary to place the system in proper operation, and instruct operating personnel in the care and operation of the equipment furnished. A minimum of one (1) day and one (1) trip start-up service and training operating personnel shall be included. The services shall be furnished by the Contractor as a part of the work included under this section of the specifications.
- B. The System Supplier shall show satisfactory evidence that he maintains, a fully equipped factory organization capable of furnishing adequate service for the equipment furnished,

included replacement parts. Suppliers employing outside organizations for “ON CALL” service shall not be considered.

3.02 GENERAL INSTALLATION

- A. Installation of instrumentation and controls shall be in strict compliance with the manufacturer's instruction. The locations of these items as shown on the Contract Drawings are approximate only. Exact locations shall be as approved by the Engineer during construction. It is the duty of the Contractor to obtain, in the field, all relevant information required for proper placement of instrumentation and controls. In the case of interference with other work, proceed as instructed by the Engineer and provide all materials and labor required to prevent construction delays.
- B. Execution of the installation shall be in full accordance with codes and local rulings. The Contractor shall be responsible for any expenses that are a result of work performed contrary to said codes and regulations.
- C. The System Supplier shall coordinate with the Contractor the installation, the location of process equipment, and connections of process equipment to related equipment panels, subject to the Engineer's approval. The equipment being furnished with electrical controls or instrumentation must be submitted to the System Supplier for approval and coordination with all other control and instrumentation on this project. This engineer will not approve any equipment submittal until this coordination has been accomplished.

3.03 SPARE PARTS

A one-year supply of the manufactures' recommended spare parts shall be provided. The spare parts shall be packaged for long-term storage and shall be protected against humidity and temperature. A spare parts list shall be furnished listing manufacture, device model number, part number and quantity supplied.

3.04 DELIVERY AND HANDLING

After delivery to the jobsite, the Contractor shall store the control panel off of the ground in a dry location until such time as it is mounted and supplied with electrical service. The contractor shall also ensure that the pump power and control cords, as well as control floats, are protected from submergence until they are properly installed and sealed.

3.05 CONTROL PANEL STAND (when required)

Each control panel stand shall be fabricated per the detail indicated in the plans. Control panel stand legs shall be cemented into the ground a minimum of three feet (3') deep. The control panel shall be bolted at all four corners to the control panel stand with stainless steel hardware. Control panels shall be installed following manufacturer's instructions properly leveled. When installed, the bottom of the control panel shall be approximately four feet (4') above finished grade elevation.

PART 4 - CONTROL PANEL SPECIFICATIONS

4.01 GENERAL

- A. Enclosure shall be constructed of a minimum 14 gauge, type 304 stainless steel. Seams shall be continuously welded and ground smooth. Provide a seamless form-in-place gasket to assure water tight and dust tight seal. Provide a rolled lip around three sides of door and all sides of enclosure opening to exclude liquids and contaminants. Provide an internal 3-point latch and type 316L stainless steel padlocking powerglide handle to assure security and a water-tight seal while still allowing convenient access. Door shall be removable by pulling a stainless steel continuous hinge pin. Enclosure shall be painted inside and out with white polyester powder to reduce absorption of solar radiation to keep internal components cool. The enclosure shall be rated NEMA 4X and be manufactured by Hoffman or approved equal. The enclosure shall come complete with twelve-inch (12") stainless steel floor stand kit bolted onto the bottom of the enclosure.
- B. All power and control wires shall be stranded copper type MTW. All wiring shall be in covered plastic wireway.
- C. All points necessary for external connection in the controller, whether power or control, shall be wired to a terminal strip located at the top or bottom of the enclosure as directed by the engineer. The terminal strip shall be permanently marked with the same designation as the wire connected to it.
- D. All power and control wires shall be marked at both ends using self-adhering wire markers. No two wires having different functions within the control panel shall have the same markings.
- E. All circuit breakers, starters, and other control devices mounted within the controller panel shall be labeled for identification both within the panel and on the wiring schematic with corresponding designations.
- F. Control power shall be 120 volts and shall be protected by a correctly sized circuit breaker. If required, provide a properly sized control power transformer with primary over current protection.
- G. Each starter shall be provided with overload protection in all three phases and each individual starter shall have phase failure protection.
- H. All selector switches, pilot lights and control devices shall be visible and operable from the Controller exterior door or an interior deadfront panel when required. The deadfront panel shall be constructed of anodized aluminum and shall have a continuous aluminum hinge. An anodized aluminum deadfront shall be utilized when the Controller environment is not conducive to exposed controls or as specified on drawings.
- I. All approval drawings shall be prepared per J.I.C. standards for engineers review prior to any fabrication of control equipment. The Controller shall be produced by a UL 508 listed shop. Proof of label availability shall be submitted with above drawing.
- J. The controller manufacturer shall provide a written warranty with approval drawings covering all Control materials and parts furnished for a period ending one year after final acceptance of the project. This warranty shall cover all material replacement, all labor, and all travel expenses.
- K. The controller manufacturer shall show satisfactory evidence that he maintains a fully

equipped factory organization capable of furnishing adequate service for the equipment furnished, including replacement parts within a 200-mile radius of the job site. Suppliers employing outside organizations for "ON CALL" service shall not be considered.

- L. The controller manufacturer shall have a service department capable to respond in emergency condition twenty-four/seven and three-hundred sixty-five days a year (24/7/365).
- M. The quality establishing brand for the control panel(s) shall be that as manufactured by Control Systems, Inc. of Jackson, MS.

4.02 WELL CONTROL PANEL

- A. SERVICE ENTRANCE: Control panel shall be designed for 120/208-volt, three-phase, four-wire power. The control panel shall be rated NEMA 4X, as indicated on drawing.
- B. MAIN BREAKER: Provide a properly sized Main Breaker, as shown on the drawings. In addition, provide a through the door operator mounted on the interior deadfront. The operator shall prevent the deadfront from being opened while the breaker is in the "ON" position.
- C. POWER DISTRIBUTION BLOCKS: Provide properly sized Power Distribution Block(s) (PDB), as required for the control panel. Power distribution blocks shall be UL Listed and rated for the voltage and ampere rating as required; manufactured by Marathon, Square D, or approved equal. Provide necessary lugs for service entrance neutral.
- D. SERVICE ENTRANCE SURGE PROTECTION DEVICE: Provide a service entrance rated Type 2, AC power distribution Surge Protection Device (SPD-1), per Component Specifications, designed to protect all types of loads fed from the distribution panels, branch panels and/or individual equipment panels. Units shall be UL listed and shall bear a UL label. Surge Protection Device shall be rated for 120kA per phase and 60kA per mode.
- E. POWER MONITOR: Provide a service entrance rated Power Monitor (PM), per Component Specifications. Power monitor shall constantly monitor the three-phase voltages to detect harmful power line conditions, caused by single-phasing, low voltage, phase reversal, and voltage unbalance. When a harmful condition is detected, no three-phase motors shall be allowed to operate. Phase monitor shall be protected by 1 amp, 240 volt fuses on the primary side.
- F. PROPOSED WATER WELL: Provide a combination circuit breaker and Solid State Starter (SSS), per Component Specifications. The Solid State Starter shall come complete with a shorting contactor, overload protection. Starter shall be programmed to soft start and soft stop the motor. Acceptable soft start starter manufactures shall be Allen Bradley model SMC-Flex, Siemens model Sirius, or approved equal. Solid state starter shall be sized for the type required by the servicing power company and for the actual motor horsepower. The actual horsepower may differ than that indicated on drawing. In addition, provide the following equipment and controls for the proposed water well.

1. Provide a Simplex Well Controller (SWC-1), per Component Specifications. In the automatic mode, the Simplex Well Controller shall receive start and stop commands from the Pressure/Level Meter/Controller (LMC-PLT) based on local system pressure. The Simplex Well Controller shall be a standard, catalogued product of a water and wastewater automation equipment manufacturer regularly engaged in the design and manufacture of such equipment for a period of at least fifteen (15) years. The simplex well controller shall have the following indicators and controls:
 - a. Manual-Off-Automatic selector switch
 - b. Amber "Call" pilot light
 - c. Green "Well Running" pilot light
 - d. Red "Well Failure" pilot light
 - e. Red "Auxiliary" pilot light
 2. Provide a field adjustable well Backspin Timer (BST), per Component Specifications. The timer shall prevent the restarting of the well motor without a time delay.
 3. Provide necessary controls to activate well lube solenoid, if required.
- G. CHLORINE BOOSTER PUMP: Provide a properly sized combination circuit breaker and definite purpose contactor with overload, as shown on drawings, for the Chlorine Booster Pump. In addition, provide the following equipment and controls.
1. Provide a Simplex Controller (SC-2), per Component Specifications. In the automatic mode and after a field adjustable time delay, the Chlorine Booster Pump shall operate when the well operates. The chlorine booster pump controller shall have the following indicators and controls:
 - a. Manual-Off-Automatic selector switch
 - b. Amber "Call" pilot light
 - c. Green "Running" pilot light
 - d. Red "Failure" pilot light
 - e. Red "Auxiliary" pilot light
- H. SYSTEM PRESSURE/LEVEL METER/CONTROLLER: Provide a six (6) point Elevated Tank Level/Meter Controller (LMC-PLT), per Component Specifications. The controller shall receive an analog signal from the System Pressure/Level Transmitter (PLT). The Level Meter/Controller shall provide OFF-ON setpoint controls for the Simplex Well Controller (SWC). Provide the following set points for this controller.
1. High Level (Rising Level)
 2. System Full Well Stop (Rising Level)
 3. Well Start (Falling Level)
 4. System Low Level Alarm (Falling Level)
 5. Provide two (2) spare setpoint's for future use.
- I. ANALOG SIGNAL LINE FILTER: Provide analog signal Line Filter (LF-PLT), per Component Specifications, for System pressure/level transmitter. Line filter shall protect associated equipment from transient voltage surges and induced voltages.

- J. CONTROL RELAYS: Provide necessary control relays (CR), per Component Specifications, to start/stop the well motor, for power fail, for well running and for the well lube solenoid, if required
- K. DISTRIBUTION PANEL LP: Provide an eighteen (18) circuit Distribution Panel equal to Square D Company type NQ with 40 amp, 2-pole main breaker, and number of branch breakers as shown on drawing Distribution Panel Schedule.
- L. CONTROL POWER SURGE PROTECTOR: Provide a single phase, in-line (series) 120 volt, single-phase, 20A continuous power Surge Protection Device (SPD-2), per Component Specifications, designed to protect all of the loads fed from the control power circuit. Device shall have protection modes and protection status indication of each mode when power is present (L-N, L-G, N-G).
- M. GROUND FAULT INTERRUPTER RECEPTACLE: Provide a 120 Volt, 20 amp, Weather-proof Duplex GFCI Receptacle mounted on the side of enclosure for electrical hand tool use. Receptacle shall come complete with a weatherproof cover. Cover shall be UL listed for wet locations, with cover closed, and shall be constructed of tough plastic that is resistant to high impact and sunlight. In addition, the cover shall be non-corrosive, non-conductive and protect against rain, snow and ice.
- N. TELEMETRY SIGNALS: Provide the following telemetry signals required to interface with the owner's existing telemetry system.
 - 1. Power fail
 - 2. Well motor failure
 - 3. Chlorine booster pump failure
 - 4. Aux. well running contact
 - 5. Aux. chlorine booster pump running contact
 - 6. System Pressure transmitter failure
 - 7. System Pressure high level
 - 8. System Pressure low level

4.03 SYSTEM PRESSURE TRANSMITTER PANEL

- A. EQUIPMENT ENCLOSURE: The pressure/level transmitter and associated equipment shall be housed in a NEMA 3R rated enclosure complete with hinged cover and quarter-turn padlocking latch, as shown on drawing.
- B. PRESSURE/LEVEL TRANSMITTER: Provide an Pressure Level Transmitter (PLT), per Component Specifications, to monitor discharge/system pressure at the well site.
- C. VALVES: Provide ¼" ball valves with ¼" plastic tubing to isolate and bleed system pressure. Block and bleed valves, shall be housed in the enclosure.

PART 5 – FIELD INSTRUMENTATION

- 5.01 WELL DISCHARGE FLOWMETER: Provide a properly sized New Well Discharge Flowmeter (FM), per Component Specifications, to monitor the well discharge flow.

- 5.02 RESPONSIBILITY: The Contractor shall be responsible for coordinating all work covered in this section with the City, Contractor and Engineer. All work shall be performed based on the standards of the National Electric Code (NEC) currently in force by the Authority Having Jurisdiction (AHJ).
- 5.03 CONDUITS: All conduits entering control panels shall be properly sealed, per plans, to ensure corrosive gasses, and water/moisture does not enter into panel. It is the responsibility of the Contractor to provide and install adequate conduit seals. It is recommended that re-enterable sealant compounds are used; equal to 3M Scotchcast 2112C or Alesko Epoxy Sealing Putty.
- 5.04 GROUNDING: All control panels shall be properly grounded in accordance with the national electrical code. The Contractor shall provide certified test reports of ground resistance.
 - A. Certification that the materials and installation are in accordance with the drawings and specifications.
 - B. Certification by the Contractor that the complete installation has been properly installed and tested.

PART 6 – COMPONENT SPECIFICATIONS

- 6.01 SERVICE ENTRANCE SURGE PROTECTION DEVICE: The Surge Protection Device (SPD) shall be mounted in the control panel / motor control center section adjacent to the Main Breaker. The SPD is connected to the main bus in the panel with conductors of size and of no greater length than indicated in the Surge Protection Device manufacturer’s installation instructions. SPD shall be a Type 2 device ideal for distribution panels, branch panels and critical loads.
 - A. SPD shall provide transient voltage surge suppression and electrical high frequency noise filtering. Unit is designed for parallel connection to the main bus. SPD unit uses selenium cells and metal oxide varistors to achieve its performance. Products using gas tubes, spark gaps, silicon avalanche diodes or other components, which under failed conditions would cause system failure, are not acceptable.
 - B. Manufacturer qualifications: The product of a manufacturer engaged in the commercial design and manufacture of the type of product described herein for a minimum ten (10) years.
 - C. Standards: Product complies with the requirements of the following:
 - 1. cUL
 - 2. CE Compliant
 - 3. UL 1449 3rd Edition
 - 4. UL 1283 Listed
 - 5. NEMA LS1 Compliance
 - D. Operating Voltage: 120/208 volts, 3-phase, 4-wire + ground
 - E. Maximum Continuous Operating Voltage (MCOV): greater than 115 percent of nominal voltage for all products. All suppression filter systems comply with NEMA LS 1.
 - F. Frequency: Operating frequency range of 47 – 64 Hertz.

G. Protection Modes: all phases – phase to ground; all phases – phase to neutral; all phases – phase to phase; and neutral to ground.

H. Rated Single Pulse Surge Current Capacity: at rated voltage, no less than:

120,000 A Line to Line
60,000 A Line to Neutral
60,000 A Line to Ground
60,000 A Neutral to Ground

I. Tested Single Pulse Surge Current Capacity: Filter system is designed to withstand a single pulse surge current up to 150 percent of the design rating and tested at an independent test laboratory. In the absence of testing facilities capable of such testing, testing of individual components or sub-assemblies within a mode is accepted by ANSI C62.41-1991; the testing includes a Category C1 surge test followed by a second Category C1 test. The test results demonstrate the unit does not degrade by more than 10 percent from the initial test.

J. Clamping Voltage: Suppression filter system clamping voltages are in compliance NEMA LS1-1992.

K. High Frequency Filter: EMI-RFI noise rejection or attenuation values comply with test and evaluation procedures of NEMA LS1-1992.

L. Overcurrent Protection: Unit includes coordinated UL 489 or UL 198 listed or recognized overcurrent protection devices; if fuses are used unit incorporates non-encapsulated, field replaceable fuses.

M. Documentation: Provide product data including equipment manual, electrical and mechanical drawings indicated dimensions weights, mounting provisions, connection details and layout diagram, certified tests of UL1449 Listing/Clamp Voltages and NEMA LS1 compliance, certified single pulse surge current capacity testing, and minimum repetitive surge current capacity testing.

N. Status Indicators: Unit has long-life, solid state, externally visible status indicators that monitor the on-line status of each phase of the unit.

O. Warranty: 15-years Unlimited Free Replacement for service entrance Surge Protection Device.

P. Service entrance Surge Protection Device system shall be equal to Surge Suppression Inc. Model SSMA12-3Y1.

<u>TAG</u>	<u>SERVICE</u>
SPD	Service Entrance Surge Protection Device

6.02 PHASE FAILURE/UNBALANCE/UNDER VOLTAGE/REVERSAL RELAY: Phase monitor shall be designed to protect 3-phase motors regardless of size and for use with 200 – 240 or 425 – 485 VAC, 50 to 60 Hz motors to prevent damage. The unit shall constantly monitor the three phase voltages to detect harmful power line conditions, caused by single phasing, low voltage,

phase reversal and voltage unbalance. When a harmful condition is detected, an output relay is deactivated after a trip delay. The output relay shall reactivate after power line conditions return to an acceptable level for the specified Restart Delay. The trip delay shall prevent nuisance tripping due to rapidly fluctuating power line conditions. Phase monitor shall have the following features and functions.

- A. Under Voltage:
 - Trip: -15% of setting for 230V (-10% for 480V)
 - Reset: -12% of setting for 230V (-8% for 480V)
- B. Over Voltage:
 - Trip: -15% of setting for 230V (-10% for 480V)
 - Reset: -12% of setting for 230V (-8% for 480V)
- C. Phase Unbalance:
 - Trip: 7% with 5 second trip delay
 - 15% with 1 second trip delay
 - Reset: 6%
- D. Trip Delay:
 - 5 seconds (delay is reduced to 1 second if Phase Unbalance is 15% or greater)
- E. Reset Delay:
 - 2 seconds standard (5-60 seconds optional)
- F. Voltage Range: 200V to 240V or 425V to 525V
- G. Output Rating: 10A resistive @ 240VAC
 - 6A resistive @ 240VAC
- H. Operating Temp: -40°C to +50°C, -38°F to +122°F
- I. Storage Temp: -45°C to +85°C, -47°F to +185°F
- J. Enclosure: Lexan, surface mount
- K. UL and cUL listed

<u>TAG</u>	<u>SERVICE</u>
PM	Electrical System Power Monitor

6.03 SOLID STATE STARTER: Provide a solid-state starter, including the following features for each motor.

A. GENERAL

This specification describes the requirements for a solid-state motor controller to provide voltage ramp soft starting of a standard AC induction motor. These controllers shall provide a superior alternative to other types of reduced voltage starting such as autotransformer, wye-delta, primary resistor, and part winding. Provide smooth stepless acceleration, reduced inrush current, smaller physical size, and higher duty cycle capability.

B. QUALIFICATIONS

1. Manufacturer

- a. The manufacturer shall have a minimum of fifteen (15) years experience in the manufacturer of solid state reduced voltage controllers.

2. Support

- a. The manufacturer shall maintain factory trained and authorized service facilities within one-hundred (100) miles of the project and shall have a demonstrated record of service for at least the previous ten (10) years.
- b. Support personnel are to be direct employees of the manufacturer.

3. Certification

- a. To insure all quality and corrective action procedures are documented and implemented all manufacturing locations shall be certified to the ISO-9001 Series of Quality Standards.
- b. Third party manufacturers and brand labeling shall not be allowed.

C. REFERENCES

1. The controller shall be designed to meet the applicable requirements of:

- a. EN
- b. IEC
- c. cULus
- d. NEMA
- e. IEEE
- f. VDE

2. These standards shall include:

- a. Creep distances and clearances 600V (UL/CSA) and 500V (IEC)
- b. Power terminal markings per EN 50005 and EN 60947
- c. Dielectric withstand per UL508 and IEC947
- d. Noise and radio frequency (RF) immunity per NEMA ICSA1-109
- e. Surge withstand per IEEE587 and IEC 801-5

D. WARRANTY

- 1. The manufacturer shall provide their standard parts warranty for eighteen (18) months from the date of shipment or twelve (12) months from the date of being energized, whichever occurs first.
- 2. This warranty applies only to stand alone solid state reduced voltage controllers.

E. RATINGS

- 1. The solid state reduced voltage controller shall accept an input voltage of 480 VAC, three-phase plus or minus ten percent (+/-10%).
- 2. Environmental Ratings
 - a. Storage ambient temperature range: -20 to 75 degrees C.
 - b. Operating ambient temperature range: 0 to 50 degrees C.
 - c. The relative humidity range: 5% to 95% non-condensing.
 - d. Operating elevation: up to 2000 Meters.

3. Definitions

- a. The Solid State Reduced Voltage Controller Unit shall refer to the actual controller unit that will be mounted within the specified enclosure.
- b. The Solid State Reduced Voltage Controller System shall refer to the controller unit and all items specified under Controller System Options.

F. SOLID STATE REDUCED VOLTAGE CONTROLLER UNIT DESIGN

1. The open-type controller device shall be modular, consisting of a power structure and a logic component.

2. Power Structure

- a. The power structure shall include an SCR bypass.
- b. The power structure shall include a built-in overload.
- c. For ratings 1 Amps to 1250 Amps, the power structure shall consist of three power poles with integral heatsinks.
- d. Power poles are to be modular in design that each is easily replaceable.
- e. Back-to-back SCR pairs shall be the only power switching semiconductor means acceptable. Diode-SCR (Silicon Controlled Rectifier) combinations shall not be acceptable.
- f. SCRs shall have the following minimum repetitive peak inverse voltage ratings.
 - i. 1400V for units rated 200 to 480V
 - ii. 1600V for units rated 200 to 600V
 - iii. 1800V for units rated 230 to 690V

3. Logic Component

- a. The logic component shall be a self-contained control module, compatible with the full range of power structures. The control module shall mount directly to the power structure.
- b. The control module shall provide digital microprocessor control and supervision of all controller operation, including pulse firing of the SCRs.
- c. The control module shall consist of the following:
 - i. Self-tuning power supply accepting control power input from 100 to 240 VAC or 24V AC/DC, 50/60 Hz.
 - ii. Logic control circuitry incorporating a latch circuit for three-wire control.
 - iii. SCR firing circuitry that incorporates an RC snubber network to prevent false firing.
 - iv. Input / output circuitry
 - v. Digital programming keypad.
 - vi. Backlit LCD display.
 - vii. DPI communication port.

- d. The control module shall be easily removed from the power structure, without the need to disassemble associated printed circuit board assemblies.
- e. The control terminals shall be easily accessible and located on the front top of the device. The terminals shall be UL rated for 300 Volts, 10 Amps maximum and accept a maximum of two wires rated number 18 to number 14 AWG.

G. CONTROLLER UNIT FEATURES

- 1. Starting Modes: The controller shall provide the following starting modes as standard.
 - a. Soft Start with Selectable Kickstart
 - i. Programmable initial torque value of 0 to 90 percent of locked rotor torque.
 - ii. Programmable acceleration ramp time from 0 to 30 seconds.
 - iii. A selectable kickstart, or boost, shall be provided at the beginning of the voltage ramp. The kickstart shall provide a current pulse of 550 percent of the full load current. The kickstart time shall be adjustable from 0 to 2 seconds.
 - b. Current Limit Start
 - i. Provides means of limiting the maximum starting current.
 - ii. Programmable for 50 to 600 percent of full load current.
 - c. Full Voltage Start
 - i. Provides across the line starting.
 - ii. Ramp time shall be less than 0.25 seconds.
 - d. Dual Ramp Start
 - i. Provides two separate soft start profiles with separately adjustable ramp times and initial torque settings.
 - ii. Programmable acceleration times from 0 to 30 seconds.
 - iii. Programmable initial torque values from 0 to 90 percent of locked rotor torque.
 - e. Soft Stop
 - i. The Soft Stop option shall provide a voltage ramp-down for an extended motor stopping time.
 - ii. Soft Stop shall be initiated by a Stop input. A coast-to-rest stop shall still be possible with a separate stop input.
 - iii. Programmable voltage ramp down time from 0 to 60 seconds.

- iv. The load shall stop when the motor voltage drops to a point where the load torque is greater than the motor torque.
- f. Preset Slow Speed
- i. Provides a slow speed for applications requiring a slow speed
 - ii. The Preset Slow Speed option shall provide two jog speeds in the forward direction: high (15 percent of base speed) and low (7 percent of base speed).
 - iii. The Preset Slow Speed option shall provide two jog speeds in the reverse direction: high (20 percent of base speed) and low (10 percent of base speed). Reverse operation of the motor shall be available in the jog mode without the use of a reversing contactor.
 - iv. The starting current for the slow speed operation shall be user adjustable from 0 to 450 percent of the motor's full load current rating.
 - v. The running current for the slow speed operation shall be user adjustable from 0 to 450 percent of the motor's full load current rating.
2. The controller shall provide options for the following mutually exclusive starting and stopping modes. Refer to the system specifications for the option (if any) required.
- a. Pump Control
- i. The Pump Control option shall be implemented to provide closed loop control of a motor to match the specific torque requirements of centrifugal pumps for both starting and stopping. This shall aid in eliminating the phenomena commonly referred to as "water hammer." Methods utilizing Soft Start with Soft Stop shall not be acceptable.
 - ii. Closed loop control shall be achieved without using external sensors or feedback devices.
 - iii. Pump Stop shall be initiated by a dedicated Pump Stop input. A coast-to-rest stop shall still be possible with a separate stop input.
 - iv. Programmable starting time from 0 to 30 seconds.
 - v. Programmable stopping time from 0 to 120 seconds.
3. LCD Display
- a. An alphanumeric, backlit LCD display shall be provided for controller set-up, diagnostics, status and monitoring. The display shall be four-line, 16 characters minimum.
 - b. Digital parameter adjustment shall be provided through a keypad. Analog potentiometer adjustments are not acceptable.
4. Overload Protection

- a. Shall meet applicable standards as a motor thermal protective device.
- b. Shall utilize three-phase current sensing. The use of two current transformers shall be unacceptable.
- c. Selectable trip classes of 10, 15, 20 and 30 shall be provided as standard.
- d. Electronic thermal memory shall provide enhanced motor protection.

5. Digital I/O

- a. A minimum of four (4) auxiliary contacts shall be provided for customer use.
- b. The contacts shall be rated for 240 Volts AC maximum.
- c. Contact configuration shall be programmable and contain the following configurations:
 - i. Normal Operation (N.O. or N.C.)
 - ii. Up-to-Speed Indication (N.O. or N.C.)
 - iii. External Bypass
 - iv. Fault Indication (N.O. or N.C.)
 - v. Alarm Indication (N.O. or N.C.)
 - vi. Network Controlled Output (N.O. or N.C.)

6. DPI Serial Communication Port

- a. A DPI serial communication port shall be provided as standard.
- b. Optional communication protocol interface modules shall be available for connection to Ethernet, Remote I/O, DH485, ControlNet, DeviceNet and RS232/422/485.

7. Monitoring

- a. The controller shall provide the following monitoring functions indicated through the LCD display.
 - i. Three-phase current
 - ii. Three-phase voltage
 - iii. Power in kW
 - iv. Power usage in kWh or mWh
 - v. Power factor
 - vi. Motor thermal capacity usage
 - vii. Elapsed time

8. Protection and Diagnostics

- a. The following protection shall be provided as standard with the controller.

- i. Pre-start line fault advising of shorted SCR or missing load connection with phase indication.
 - ii. Running line fault advising power loss, shorted SCR or missing load connection.
 - iii. Over temperature
 - iv. Open Gate with phase indication
- b. The following programmable protection shall be provided as standard with the controller.
 - i. Underload
 - ii. Undervoltage
 - iii. Overload
 - iv. Overvoltage
 - v. Voltage Unbalance
 - vi. Excessive Starts Per Hour
 - vii. Phase Reversal
 - viii. Stall
 - ix. Jam
- c. When fault conditions are detected, the controller shall inhibit starting or shut down SCR pulse firing.
- d. Fault diagnostics shall be indicated in descriptive text on the LCD display. The exclusive use of fault codes is unacceptable.
- e. An auxiliary contact that is programmable for fault indication shall be provided for customer use.

TAG

SSS

SERVICE

Well No.2 Solid State Starter

- 6.04 **SIMPLEX WELL CONTROLLER:** Provide a Simplex Well Controller including the following features:
- A. Manual-Off-Automatic selector switch, amber “Well Call” pilot light, green “Well Running” pilot light, red “Well Failure” pilot light and a red “Low Level” pilot light.
 - B. Well control inputs shall be optically isolated and their power limited to 24 Vdc with a maximum current of 16 mAdc for intrinsic safety.
 - C. Provide a field adjustable time delay to start the well after well “Call For” signal is received. This time delay shall be field adjustable to occur each time the well is called to operate for backspin protection. The timing period shall be adjustable from 13 to 165 seconds.
 - D. Provide Common Alarm controls, which include a dry-contact output and flashing exterior alarm light output. The controls shall activate the dry-contact output and flash the alarm light output during well failure or low level conditions.
 - E. Provide a well failure dry-contact output and flashing alarm indicator. The failure controls shall energize the dry-contact output, flash the well failure alarm indicator and energize the common alarm circuitry if the well fails to run when called for while in the Automatic mode of operation.
 - F. The Manual-Off-Automatic switch shall bypass all of the controls and energize the well call-for dry-contact output when placed in the Manual position. In the Manual and OFF positions, the well failure alarm shall be disabled.
 - G. The Manual-Off-Automatic switch shall be used to reset a well failure alarm after the failure

condition has been cleared, by manually switching the well to the Off position and back to Automatic.

- H. Provide an input alarm to indicate an “auxiliary” condition. Provide a red panel indicator and dry-contact output for the alarm. On alarm, flash the indicator, close the alarm dry-contact output, and energize the Common Alarm circuitry.
- I. Provide a field adjustable time delay to prevent well failure signal from being activated until the controller has had time to receive a well “Running” signal. The timing range shall be adjustable from 5 seconds to 5.25 minutes. During well failure conditions, provide the following controls.
 - 1. Red “Well Failure” pilot light on face of controller shall flash when activated.
 - 2. Activate the Common Alarm relay and exterior flashing light output.
 - 3. Provide a dry type contact closure for remote alarming that will activate during “Well Failure” condition.
- J. The Simplex Well Controller shall be solid state and easily replaceable. Conventional relay and/or timer construction is not acceptable.

<u>TAG</u>	<u>SERVICE</u>
SWC-1	Well No.2 Controller

6.05 DELAY TIMER: Delay timers shall be the adjustable quelling constant type and shall be adjustable in one-second increments from 1 to 1023 seconds. They shall have a repeat accuracy of $\pm 0.1\%$ with no first shot effect. Setting accuracy shall be $\pm 2\%$ with reset time of 50 milliseconds maximum. Recycle time shall be no more than 150 milliseconds during timing and 16 milliseconds after timing. Each timer shall be provided with two LED indicators, indicating timing and on. Timer output contacts shall be double pole double throw, rated at 10 Amperes resistive at 120 VAC.

<u>TAG</u>	<u>SERVICE</u>
BST	Well No.2 Backspin Timer

6.06 PROPELLER FLOWMETER: Meter shall be a velocity propeller type, magnetic drive, sealed housing, flanged tube meter for 150 psi working pressure. It shall comply with the applicable provisions of AWWA, except for the higher standard required in this specification. In the event of conflict, the specification herein shall prevail. The meter shall come complete with a sealed indicator having a range of 0 to _____ GPM and shall be equipped with a six (6) digit totalizer reading in units of total gallons and shall be accurate within $\pm 2\%$ of true flow within a range of 0 to _____ GPM. The meter assembly shall be constructed as follows:

A. METER TUBE shall be fabricated steel pipe and use 150 lb. AWWA Class “D” flat face steel flanges. The internal and external of the meter tube and meter head shall be blasted to near white metal and coated with 12-15 mils of NSF approved, fusion epoxy coating, applied by the fluidized bed method. Meter tubes shall have a constant nominal inside diameter to offer minimum obstruction to the flow and shall be furnished with four straightening vanes.

B. METER HEAD shall be connected to the tube by means of a flanged, o-ring sealed connec-

tion with stainless steel bolts. The meter head shall be designed for easy removal of water wetted parts from the tube for inspection or repair without having to remove the complete tube. Water wetted meter components that are permanently attached to the tube will not be accepted.

- C. GEARBOX shall be bronze, sealed and filled with a high grade lubricant. The drive mechanism shall be magnetically driven from the propeller, through a magnetic coupling and be isolated from the water flow by means of an o-ring sealed housing. A rigid stainless steel vertical shaft is required from the miter gear frame to the indicator-totalizer.
- D. PROPELLER shall utilize a water lubricated ceramic sleeve and spindle bearing system. The stainless steel/ceramic spindle on which the propeller is mounted shall be parallel to the direction of the water flow in the pipe. Dual ceramic thrust bearings shall be standard on all meters to handle flows in both the forward and reverse directions. The propeller shall be a conical shaped, three bladed propeller, injection molded of thermoplastic material, resistant to normal water corrosion and deformity due to high flow velocities. Propeller must be furnished with protective shields to preclude sand or other objects from entering the bearing or magnetic drive area.
- E. INDICATOR-TOTALIZER shall have a full 4" diameter indicator dial having a range of 0 to _____ (specify indicator range and units) and shall be equipped with a six digit, straight reading type totalizer with black numbers on white wheels at least 3/16" high. The totalizer shall read in units of gallons per minute (GPM) and shall have a test hand to check the accuracy of the indicator. The indicator drive mechanism shall be temperature compensated, so the indicator hand shall be accurate and linear within $\pm 1\%$ at all points on the dial when the unit is operated within the temperature range of 32°-140°F. The unit shall be equipped with change gears to facilitate easy change of registration without removing pressure from the line or removing the meter head from the meter tube. The indicator-totalizer shall be protected by an o-ring sealed bonnet made from injection molded 20% glass filled engineered grade of thermoplastic. The bonnet shall be attached to the meter head by screws located under the hinged lid, which has a padlock hasp.
- F. PARTS & SERVICE: Supplier must have test facilities, spare parts, personnel to maintain, instruct, train or whatever is necessary to assure meters will be maintained throughout the guarantee period.
- G. VOLUMETRIC TESTING of all meters must be performed and approved prior to shipment. The completed meter head assembly will be accuracy tested. The testing will be conducted in accordance to AWWA testing procedure, rates, and volume. The amount of water used to conduct the test shall be left on the totalizer. Prior to shipping, a tag shall be attached to the meter showing the totalizer reading after testing. The test facility must be certified annually to an accuracy of $\pm 0.25\%$ and be traceable to the National Institute of Standards and Technology. If desired, the test can be witnessed by the customer or their selected agent. Certified accuracy test records will be furnished at no charge.
- H. ONE MANUFACTURER shall make all meter sizes and styles required for this contract. The meters shall be manufactured and tested in the U.S.A. and shall be of a design in production in the U.S.A. for at least five (5) years. FIVE-YEAR GUARANTEE option must be available if requested.

TAG

SERVICE

RANGE

FM Well No.2 Flowmeter 0-___ GPM

6.07 CHLORINE BOOSTER PUMP CONTROLLER: Provide a Chlorine Booster Pump Controller including a properly sized combination circuit breaker magnetic motor starter for the voltage and horsepower required for Booster Pump Motor furnished.

- A. Manual-Off-Automatic selector switch, green “Booster Pump Running” pilot light, and red “Booster Pump Failure” pilot light.
- B. Provide a field adjustable time delay to start booster pump after well pump motor has been energized. Timing period shall be adjustable from 13 to 165 seconds. Also, provide a “Booster Pump Call” amber pilot light on face of controller.
- C. Provide a field adjustable time delay to prevent “Booster Pump Failure” signal from being activated until the controller has had time to receive a “Booster Pump Operating” signal from its' magnetic starter. The timing range shall be adjustable from 5 seconds to 5.25 minutes. During booster pump failure conditions, provide the following controls.
- D. Red “Booster Pump Failure” pilot light on face of controller shall flash when activated.
- E. During “Booster Pump Failure” condition, activate the outside alarm flasher circuit described for Well Pump Controller.
- F. Provide a dry type contact closure for remote alarming that will activate during “Booster Pump Failure” condition.
- G. The Chlorine Booster Pump Controller shall be face mounted on the Well Pump Controller deadfront panel.
- H. The Chlorine Booster Pump Controller shall be solid state and easily replaceable. Conventional relay and/or timer construction is not acceptable.

TAG SERVICE
SC-2 Well No.2 Chlorine Booster Pump Controller

6.08 CONTROL RELAYS: Provide a SnapTrack channel mounted relay board with LED status indicator and individual quick-connect terminals. The SnapTrack can be optionally snapped to a DIN rail. The indicator LED shall turn on when the relay is energized. The terminals shall be of the fixed screw cage clamp type, rated for at least 10 amps at 250 Volts. Tubular screw clamp types will not be accepted. The relay shall be rated for 10 amps. Surge suppression shall be provided on the coil side of the relay. The board shall include built-in transient protection across the coil. DC powered versions shall include a built-in diode across the coil to protect external devices from coil surges. The relay and connectors shall be UL approved.

TAG SERVICE
CR Misc. Control Relay(s)

6.09 LEVEL METER/CONTROLLER: Provide an electronic, solid-state, proportional Level Meter/Controller that will accept a 2-wire transmitter or four (4) to twenty (20) mA signal. In addition, condition the signal to provide a valid basis for control and then perform ON/OFF or OPEN/CLOSE discrete dry type set point contact conditions based on the input value of the ana-

log input signal. The Level Meter/Controller shall have the following features.

- A. Provided with a 3.5 digit LCD (or LED if required) readout meter in feet of water. The display shall be capable of being calibrated from the front of the unit and have a maximum display of 1999, with a decimal point that is user selectable.
- B. The display zero indication shall be able to be offset anywhere within the range of the meter, with a minimum range of 60 counts.
- C. Provide six (6) or twelve (12) separate setpoints each with discrete, isolated sealed SPDT relay output contacts.
- D. Provide excitation voltage to drive a transducer/transmitter and condition its output signal to provide a continuous display of level.
- E. The setpoints shall be field adjustable to operate on rising above or falling below the setpoint.
- F. An LED indicator shall be provided for each setpoint to indicate when it is activated.
- G. The actual setting of each setpoint shall be able to be displayed on the digital readout at any time.
- H. The setting of each setpoint shall be adjustable throughout the complete signal range from the front of the meter/controller.
- I. Provide a means of manually ramping the meter/controller, up and down, throughout its complete signal range, to test the operation of the setpoints.
- J. The meter/controller shall come complete with a four (4) to twenty (20) mA, or a one (1) to five (5) volt DC output signal for additional monitoring and control devices.
- K. Provide a signal failure relay option with two relays, to energize when the input signal goes above 20 mA or below 4 mA. The relays can energize on both high/low conditions or one can energize on high failure and the other on low failure. In addition, either relay may be set to 'flash' on and off during the failure condition. This failure alarm shall also energize a front panel flashing LED alarm indicator.
- L. Provide a Lamp Test feature to test the digital display and individual LED setpoint indicators.

<u>TAG</u>	<u>SERVICE</u>
LMC-SPLT	System Pressure Level Meter/Controller

- 6.10 TELEMETRY LINE FILTER: Provide a telemetry line filter with a fast-acting design to protect data and communications equipment from transient voltage surges and induced voltages. The filter shall be a low-impedance, two-stage hybrid design with a first stage consisting of a heavy-duty energy handling gas discharge tube having a breakdown voltage rating between 200 and 350 volts. Impulse breakdown at 100 volts per microsecond shall equal 600 volts. A filter capacitor shall be connected across the lines, rated a 1kv. The second stage shall consist of two current limiting resistors, a fast-acting solid-state transient voltage surge absorber from each line to ground to protect each line up to a maximum continuous voltage of 30V AC or 38V DC with a 50 nanosecond response time. In addition, a separate bi-directional transient voltage surge absorber rated at 1500W @ 33V DC, which is connected across the two lines, for maximum protection. Integral wiring terminal blocks shall be included for both line and equipment sides of the filter.

The filter shall be mountable directly on the panel backplate or be able to use track mounting if required.

<u>TAG</u>	<u>SERVICE</u>
LF-SPLT	System Pressure Analog Signal Line Filter

6.11 CONTROL POWER SURGE PROTECTION DEVICE (SPD): The surge protection device shall be mounted in the control panel in series with the control power circuit. Provide a single-phase, in-line series AC power line surge protector with the following features:

- A. Rated voltage shall be 120 VAC @ 60Hz.
- B. Current rating shall be 20 Amps @ 40°C.
- C. The protection circuitry shall automatically reset after the transient has passed.
- D. Protection modes shall be: Line to Neutral, Line to Ground, and Neutral to Ground.
- E. Provide three (3) Green LED indicators to indicate protection status of each mode when power is present (L-N, L-G, N-G).
- F. Varistors with integral thermally activated elements shall be used to open in the event of overheating due to the abnormal overvoltage, limited current conditions outlined in UL1449. The lower inductance of the varistors shall result in improved clamping performance to fast overvoltage transients.
- G. Metal Oxide Varistors (MOV) shall have cured, flame retardant epoxy polymer coating meeting UL94V-0 requirements.
- H. Electromagnetic Interference (EMI) filtration shall be incorporated into the unit to dampen unwanted signals from the protected side of the unit.
- I. Operating temperature shall be -40 to +70°C.
- J. Screw terminals shall be provided for all wiring.
- K. Maximum continuous operating VAC shall be 115% of rated line voltage.

<u>TAG</u>	<u>SERVICE</u>
SPD-2	Control Power Surge Protection Device

6.12 PRESSURE/LEVEL TRANSMITTER: Provide a level transducer to measure water pressure/level in the system for a range of 5 to 100 PSI with a maximum burst pressure of 500 PSI. Transient pressure peaks, up to a maximum of 500 PSI, shall not cause permanent sensor damage. Unit shall come complete with high contrast 4" Liquid Crystal Display (LCD) that is adjustable to provide best viewing angle. The display can be changed to be read from above, and rotated in 90 degree increments. User selectable parameters shall include display language, engineering units, zero point, span, and reversed output signal. Language settings include English, German, French, Spanish, or Italian. Engineering units can be set to PSI, bar, millibar, mA, % of span, millimeters, meters, inches, feet, Pa, or kPa. The display can be set to show two additional lines of text including minimum and maximum pressure readings and sensor temperature. The program keys shall be located behind the display and can be password protected to prevent unauthorized program changes. In addition, pressure transmitter shall have the following features and functions.

- A. Pressure Connection: 1/2 NPT male
- B. Case Material: Fiberglass reinforced PBT plastic (polybutene terephthalate)
- C. Pressure Connection Case Material: 316 and PH 17-4 stainless steel

- D. Supply Voltage: 12-36 DC volts
- E. Output Signal: 4-20 mA 2-wire
- F. Maximum Load: $RA \leq (UB-12V) / 0.023$ A, with RA in Ohms and UB in volts
- G. Response Time: ≤ 10 milliseconds
- H. Display: 1.75" square 4-digit liquid crystal display with bar graph, trend display, and 2 additional text display lines.
- I. Damping (display and signal): user-adjustable from 0 to 40 seconds
- J. Accuracy (linearity, including hysteresis): % of span ≤ 0.10 for ranges ≥ 600 PSI;
- K. Hysteresis: ≤ 0.04 % of span
- L. Repeatability: ≤ 0.05 % of span
- M. 1-Year Stability: ≤ 0.1 (under reference conditions) % of span
- N. Media Temperature: -22°F to +221°F (-30°C to +105°C)
- O. Ambient Temperature: -4°F to +158°F (-20°C to +70°C)
- P. Storage Temperature: -31°F to +176°F (-35°C to +80°C)
- Q. CE Conformity: Interference emission per EN 50 081-1 (March 1993) and EN50 081-2 (March 1994), Interference immunity per EN 50 082-2 (February 1996)
- R. Shock Resistance: 100g per IEC 770 for mechanical shock
- S. Vibration Resistance: 5g per IEC 770 for vibration under resonance conditions
- T. Electrical Connection: locking plug M20 x 1.5 with internal terminal block accepts cable diameter from 0.25" to 0.5", diameter to 0.1"
- U. Electrical Protection: protected against reverse polarity, short circuit, and overvoltage
- V. Environmental Protection: IP 65 {IP 67 (NEMA 4)}
- W. Weight lb: 1.5 (.7 kg)

<u>TAG</u>	<u>SERVICE</u>	<u>RANGE</u>
PLT	Pressure/Level Transmitter	0-100 psi

- 6.13 COMMON ALARM LIGHT: Alarm Light shall be RAB catalog number VBR100/GL100PGR or equal. Alarm light enclosure shall be constructed of die cast aluminum with a sturdy mounting bracket. Alarm light shall be suitable for wet location and comply with UL standard 1598, for hazardous locations where the lamp, socket and wiring require protection from rain, corrosive fumes, non-combustible dusts, moisture, non-explosive vapors and gases. The alarm light shall burn dim and steady during normal conditions to indicate electrical power "ON" and lamp good. During any alarm condition, the alarm light shall flash brightly. Alarm light mounted on the side of the enclosure or as directed by the project engineer.

<u>TAG</u>	<u>SERVICE</u>
AL	Common Alarm Light

END OF SECTION

Section 14

DEPARTMENT OF UTILITIES

SAFE HAVEN WATER UTILITY IMPROVEMENTS

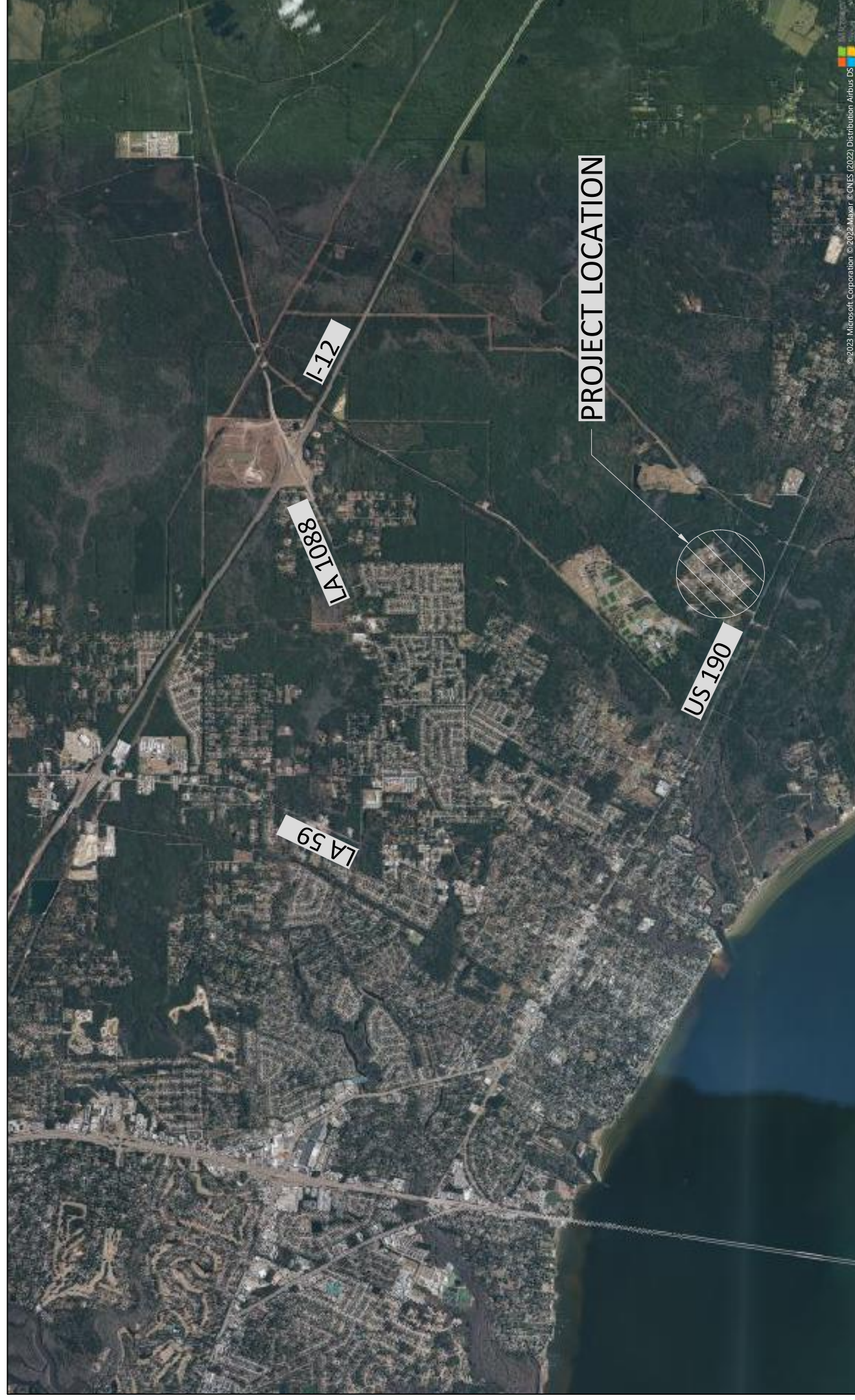
REPAIRS AND IMPROVEMENTS TO WATER WELLS AT SAFE HAVEN CAMPUS

NORTHLAKE BEHAVIORAL WATER SYSTEM: LA 1103039 LACOMBE, ST. TAMMANY PARISH, LOUISIANA

PROJECT NO: TU 21000145
BID NO: 24-1-2

INDEX OF SHEETS:

- | | | |
|-----|------|------------------------------|
| 1. | G0.0 | TITLE |
| 2. | C0.0 | OVERALL SITE PLAN |
| 3. | C1.0 | DEMOLITION PLANS |
| 4. | C1.1 | WELL #1 SITE PLAN |
| 5. | C1.2 | WELL #2 SITE PLAN |
| 6. | C1.3 | WELL DETAILS |
| 7. | S1.0 | CHLORINE BUILDING DETAILS |
| 8. | S1.1 | CHLORINE BUILDING DETAILS |
| 9. | E1.1 | WELL #1 ELECTRICAL SITE PLAN |
| 10. | E1.2 | WELL #2 ELECTRICAL SITE PLAN |
| 11. | E2.1 | WELL #1 ELECTRICAL DIAGRAMS |



LOCATION MAP
(NOT TO SCALE)

PARISH PRESIDENT

MICHAEL B. COOPER

PARISH COUNCIL

COUNCIL MEMBERS

- | | |
|------------------------------|-------------|
| RICK SMITH | DISTRICT 1 |
| LARRY ROLLING | DISTRICT 2 |
| MARTHA J. CAZAUBON | DISTRICT 3 |
| KATHY SEIDEN | DISTRICT 4 |
| PAT PHILLIPS | DISTRICT 5 |
| CHERYL S. TANNER | DISTRICT 6 |
| JOE IMPASTATO | DISTRICT 7 |
| PATRICK "PAT" BURKE III | DISTRICT 8 |
| DAVID COUGLE | DISTRICT 9 |
| MAUREEN "MO" O'BRIEN | DISTRICT 10 |
| ARTHUR LAUGHLIN | DISTRICT 11 |
| JERRY BINDER | DISTRICT 12 |
| JEFFREY CORBIN | DISTRICT 13 |
| JIMMY "GUMBY" STRICKLAND III | DISTRICT 14 |

PLANS PREPARED AND RECOMMENDED FOR APPROVAL:

KYLE ASSOCIATES, L.L.C. _____ DATE
KEVIN M. DRANE, P.E.

APPROVED BY:

ST. TAMMANY PARISH GOVERNMENT _____ DATE
DEPARTMENT OF UTILITIES
CHRISTOPHER P. TISSUE, P.E., DIRECTOR



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

No.	DESCRIPTION OF REVISION	DATE:

DESIGNED BY:	KMD
DRAWN BY:	GAL
CHECKED BY:	KMD
SUBMITTED BY:	KYLE ASSOC.
PROJECT No.:	TU 21000145
ISSUE DATE:	12/14/23
APPROVED BY:	---
SHEET SIZE:	ANSI D
SCALE:	



SAFE HAVEN
WATER UTILITY IMPROVEMENTS
LACOMBE, LOUISIANA
PROJECT No.: TU 2100145

SHEET NO.
GO.0






Kyle Associates, LLC
 Planning, Engineering, and Landscape Architecture
 250 Westbank Blvd., Metairie, LA 70001 • (504) 885-2222

SAFE HAVEN
 WATER UTILITY IMPROVEMENTS
 LACOMBE, LOUISIANA
 PROJECT No.: TU 2100145
 OVERALL SITE PLAN

12/14/2023


DESIGNED BY:	KMD
DRAWN BY:	GAL
CHECKED BY:	KMD
SUBMITTED BY:	KYLE ASSOC.
PROJECT No.:	TU 21000145
ISSUE DATE:	12/14/23
APPROVED BY:	---
SHEET SIZE:	ANSI D
SCALE:	

No.	DESCRIPTION OF REVISION	DATE:


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

SHEET NO.
CO.0



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

No.	DESCRIPTION OF REVISION	DATE:

DESIGNED BY: KMD	CHECKED BY: GAL	DRAWN BY: GAL	SUBMITTED BY: KYLE ASSOC.	PROJECT No.: TU 21000145	ISSUE DATE: 12/14/23	APPROVED BY: ---	SHEET SIZE: ANSI D	SCALE:
------------------	-----------------	---------------	---------------------------	--------------------------	----------------------	------------------	--------------------	--------



SAFE HAVEN
WATER UTILITY IMPROVEMENTS
LACOMBE, LOUISIANA
PROJECT No.: TU 2100145
DEMOLITION PLANS

SHEET NO.
C1.0

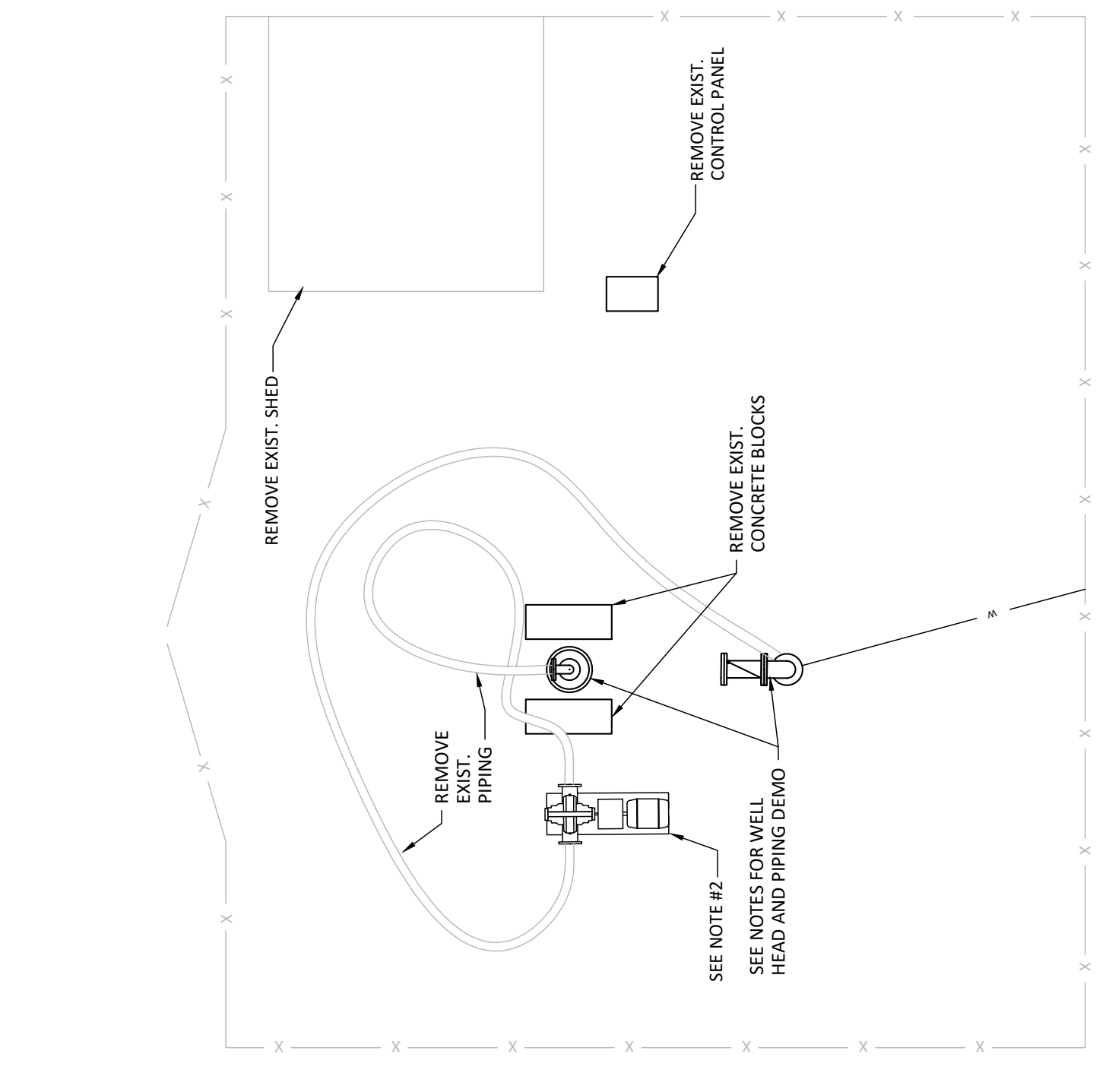


- WELL #2 DEMOLITION NOTES**
1. THE OWNER WILL TEMPORARILY RELOCATE THE EXISTING CHLORINE TANK AND PUMP PRIOR TO DEMOLITION OF EXISTING SHED.
 2. DEMOLITION OF EXISTING ELECTRICAL EQUIPMENT SHALL NOT BEGIN UNTIL PROPOSED DEMOLITION OF EXISTING ELECTRICAL EQUIPMENT SHALL BE REUSED AND RELOCATED WHERE INDICATED ON SHEETS C1.3 AND E1.2.
 3. THE EXISTING WELL CONTROL PANEL IS TO BE REUSED AND RELOCATED WHERE INDICATED ON SHEETS C1.3 AND E1.2.
 4. ALL WORK ON WELL #1 MUST BE COMPLETE AND APPROVED AND WELL #1 IN OPERATION PRIOR TO ANY ELECTRICAL OR MECHANICAL WORK ON WELL #2 BEGINNING.

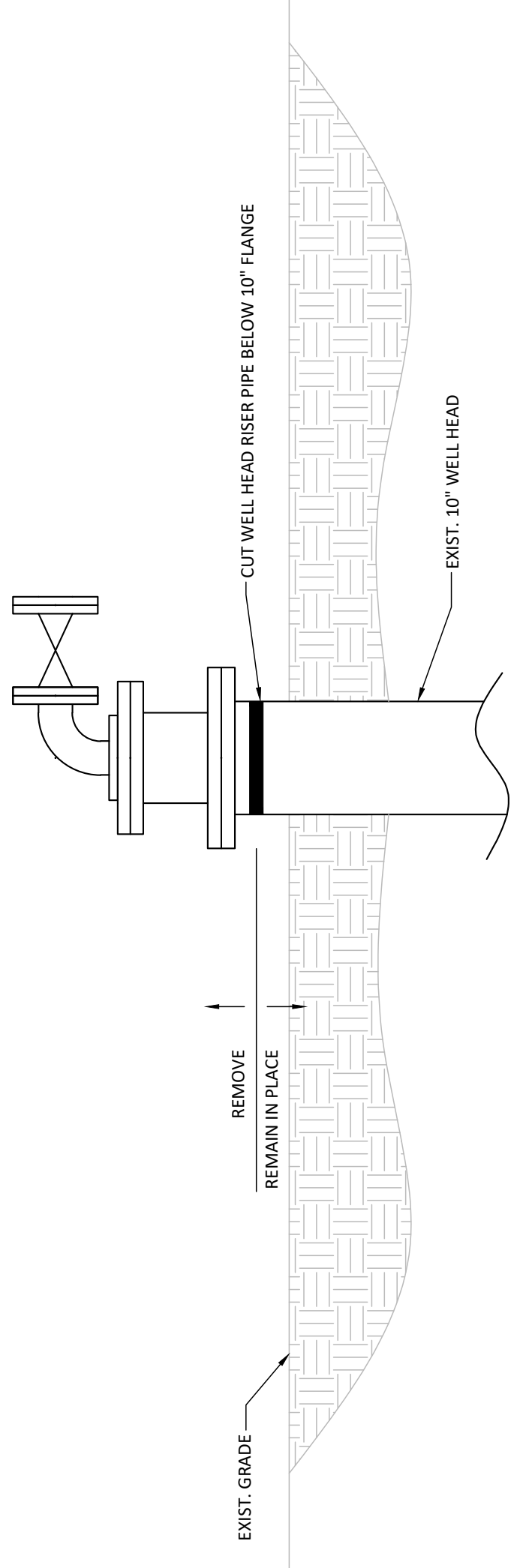


WELL #2 - DEMOLITION PLAN
1" = 4'-0"

- WELL #1 DEMOLITION NOTES**
1. THE OWNER WILL TEMPORARILY RELOCATE THE EXISTING CHLORINE TANK AND PUMP PRIOR TO DEMOLITION OF EXISTING SHED.
 2. DEMOLITION OF EXISTING ELECTRICAL EQUIPMENT SHALL NOT BEGIN UNTIL PROPOSED DEMOLITION OF EXISTING ELECTRICAL EQUIPMENT SHALL BE REUSED AND RELOCATED WHERE INDICATED ON SHEETS C1.3 AND E1.2.
 3. THE EXISTING WELL HEAD RISER SHALL BE CUT OFF BELOW THE EXISTING 10" FLANGE - SEE DETAIL.
 4. EXISTING ABOVE GRADE VERTICAL AND FIRST JOINT OF BELOW GRADE HORIZONTAL EXISTING WELL OPERATES UNDER APPROXIMATELY 20 PSI OF ARTESIAN PRESSURE.
 5. EXISTING WELL OPERATES UNDER APPROXIMATELY 20 PSI OF ARTESIAN PRESSURE.



WELL #1 - DEMOLITION PLAN
1" = 4'-0"



WELL #1 HEAD RISER DETAIL
1" = 1'-0"



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

No.	DESCRIPTION OF REVISION	DATE

DESIGNED BY: KMD	ISSUE DATE: 12/14/23	SCALE: 1" = 20'
DRAWN BY: GAL	APPROVED BY: ---	SHEET SIZE: ANSI D
CHECKED BY: KMD	PROJECT No.: TU 21000145	
SUBMITTED BY: KYLE ASSOC.		

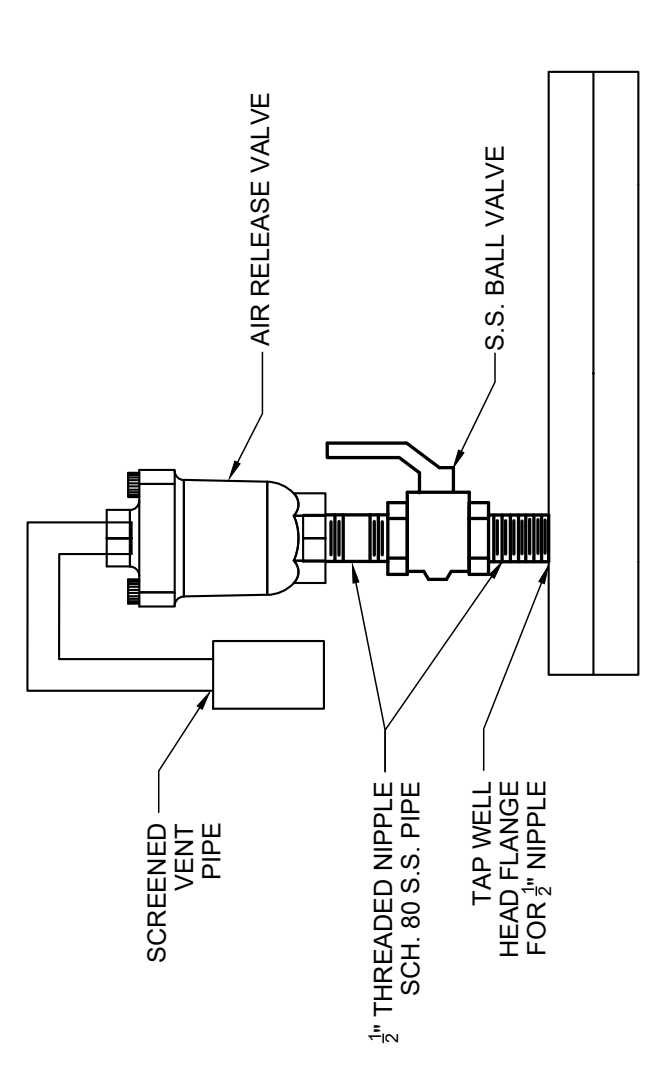


SAFE HAVEN
WATER UTILITY IMPROVEMENTS
LACOMBE, LOUISIANA
PROJECT No.: TU 2100145
WELL #1
SITE PLAN

SHEET NO.
C1.1



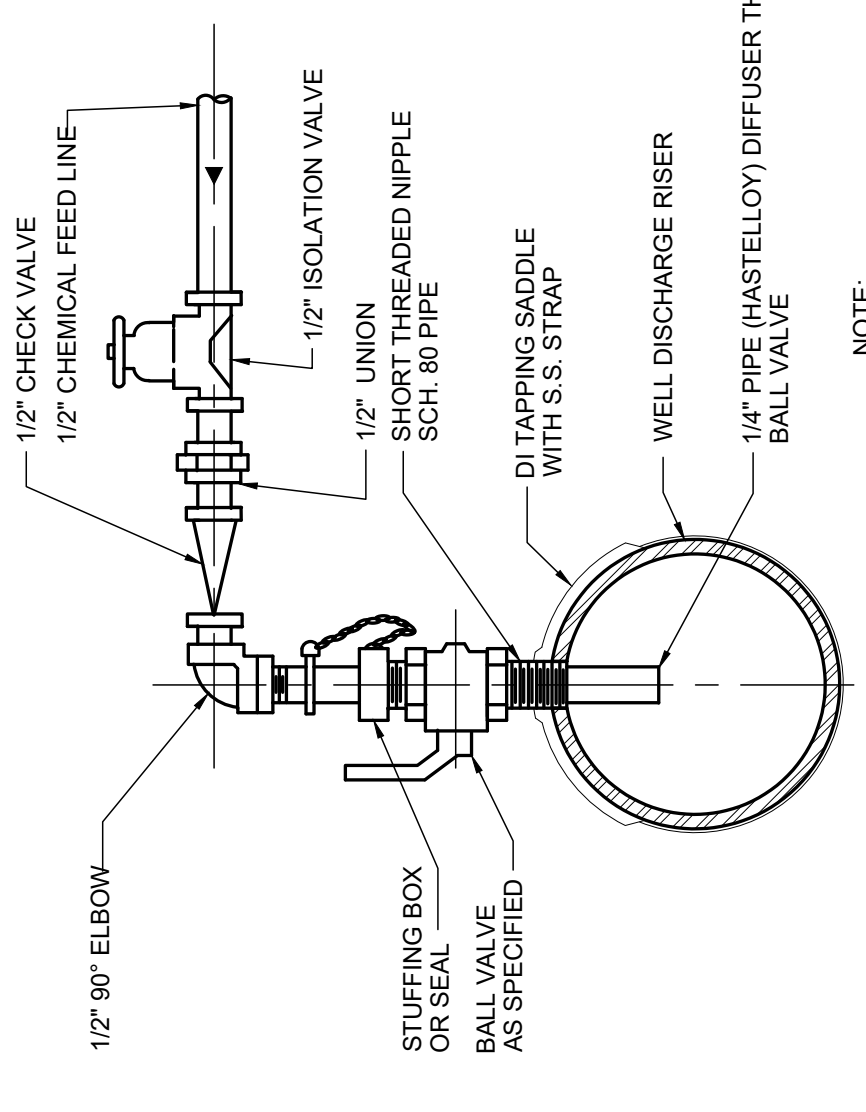
- NOTES:
- THE REQUIRED SCOPE OF WORK FOR WELL #1 IS AS FOLLOWS:
 - FURNISH AND INSTALL NEW PUMPING UNIT.
 - CONSTRUCT AN 8'X8' HEIGHT CONCRETE MASONRY UNIT BUILDING WITH METAL IMPROVEMENTS TO CHEMICAL INJECTION.
 - FURNISH AND INSTALL A NEW FLOW METER.
 - MODIFICATIONS TO THE WELL HEAD AND ASSOCIATED PIPING.
 - FURNISH AND INSTALL HYPOCHLORITE STORAGE BULK AND DAY TANKS.
 - FURNISH AND INSTALL A NEW DUPLEX HYPOCHLORITE PUMP SKID, COMPLETE WITH ASSOCIATED PIPING AND CONTROL PANEL.
 - FURNISH AND INSTALL NEW FACILITY CONTROL PANEL.
 - FURNISH AND INSTALL NEW FACILITY CONTROL PANEL.
 - ALL WORK ON WELL #1 MUST BE COMPLETE AND APPROVED AND WELL #1 IN OPERATION PRIOR TO ANY ELECTRICAL OR MECHANICAL WORK ON WELL #2 BEGINNING.
 - CONTRACTOR SHALL COORDINATE WITH STP DEPT. OF UTILITIES FOR ALL SHUT-DOWNS OR OUTSIDE OF WELL HEAD RISER PIPE SHALL BE COATED PER SPEC SECTION 09800-PROTECTIVE COATINGS, ABOVE GRADE AND AT LEAST 12" BELOW WELD.
 - CONTRACTOR SHALL INSPECT AND CONFIRM EXISTING PIPE O.D. PRIOR TO ORDERING MATERIALS.
 - CONTRACTOR SHALL PROVIDE SUFFICIENT PIPE AND FITTINGS TO MAKE CONNECTIONS TO EXISTING 6" WATER LINE, MAKING SURE TO ACCOUNT FOR PIPE REMOVED DURING DEMOLITION.
 - ALL SUB SURFACE JOINTS AND VERTICAL RISER PIPE ON THE DISCHARGE HEADER SHALL BE RESTRAINED.
 - ALL ABOVE GRADE PIPE AND FITTINGS SHALL BE NEW, FLANGED PIPE FITTINGS, SHALL BE 316 STAINLESS STEEL PIPE - STUB UP THROUGH SLAB AND APPROVED EQUAL MAINGUARD MODEL #6046WC WITH BOLTED FLANGE OPTION OR APPROVED EQUAL MODEL #92.
 - SAMPLING STATION UPSTREAM OF CHLORINE INJECTION SHALL BE KUPFERLE MAINGUARD MODEL #92.
 - ADJUST HEIGHT OF PUMP STAND AS NEEDED TO ACHIEVE MINIMUM CASING HEIGHT USING SHIMS OR LEVELING NUTS FOLLOWED BY NOKW-SHRINK GROUT.



NOTES:
1. AIR RELEASE VALVE SHALL BE #2 DEZURIK MODEL 50A.

WELL VENT WITH ARV

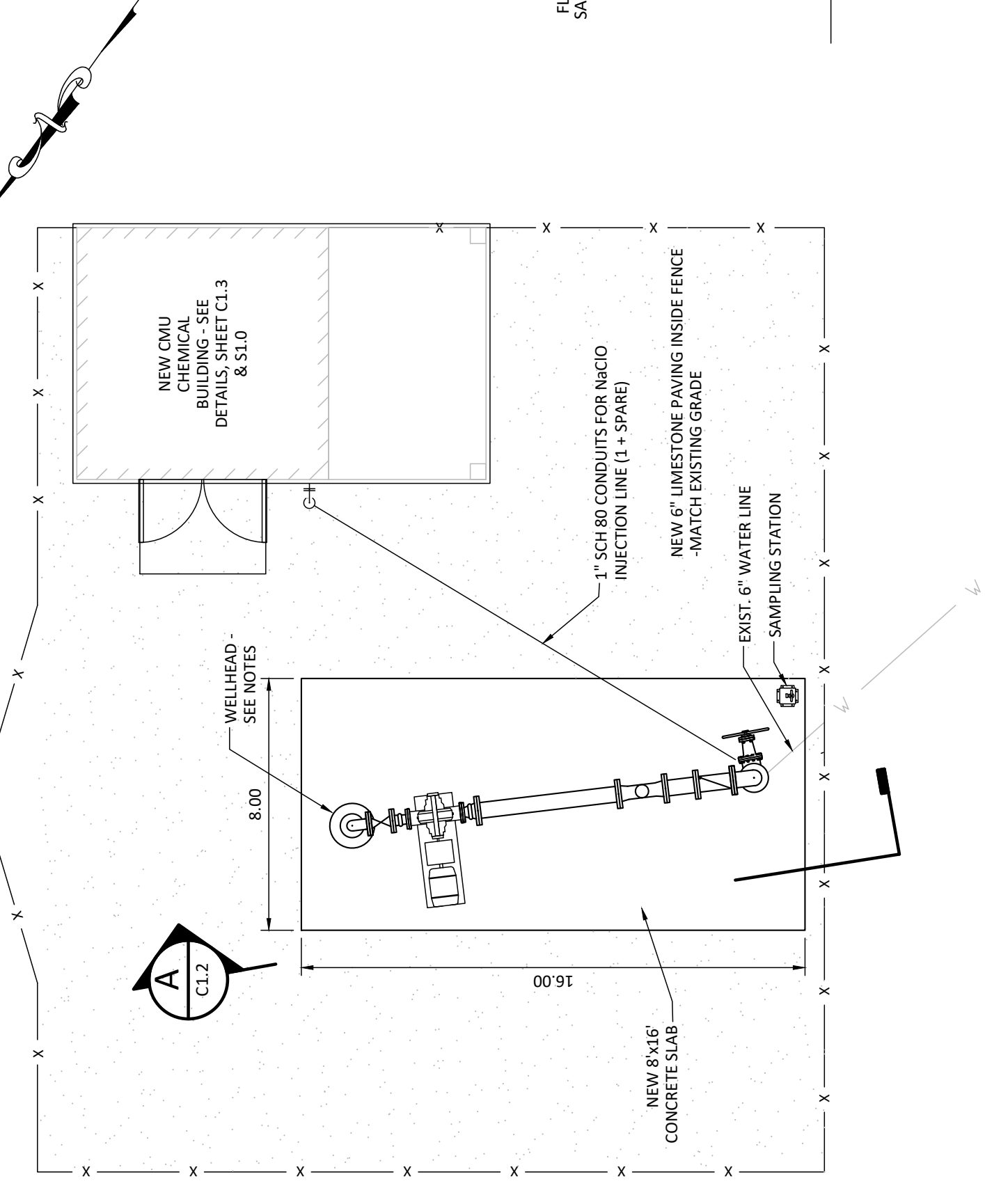
N.T.S.



NOTE:
1. DIFFUSER ASSEMBLY SHALL BE MANUFACTURED BY SAF-T-FLO OR EQUAL.

RETRACTABLE CHEMICAL DIFFUSER

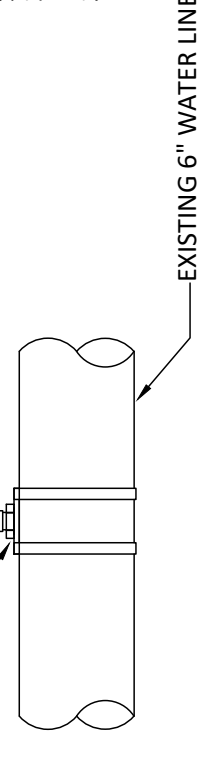
N.T.S.



WELL #1 - SITE PLAN

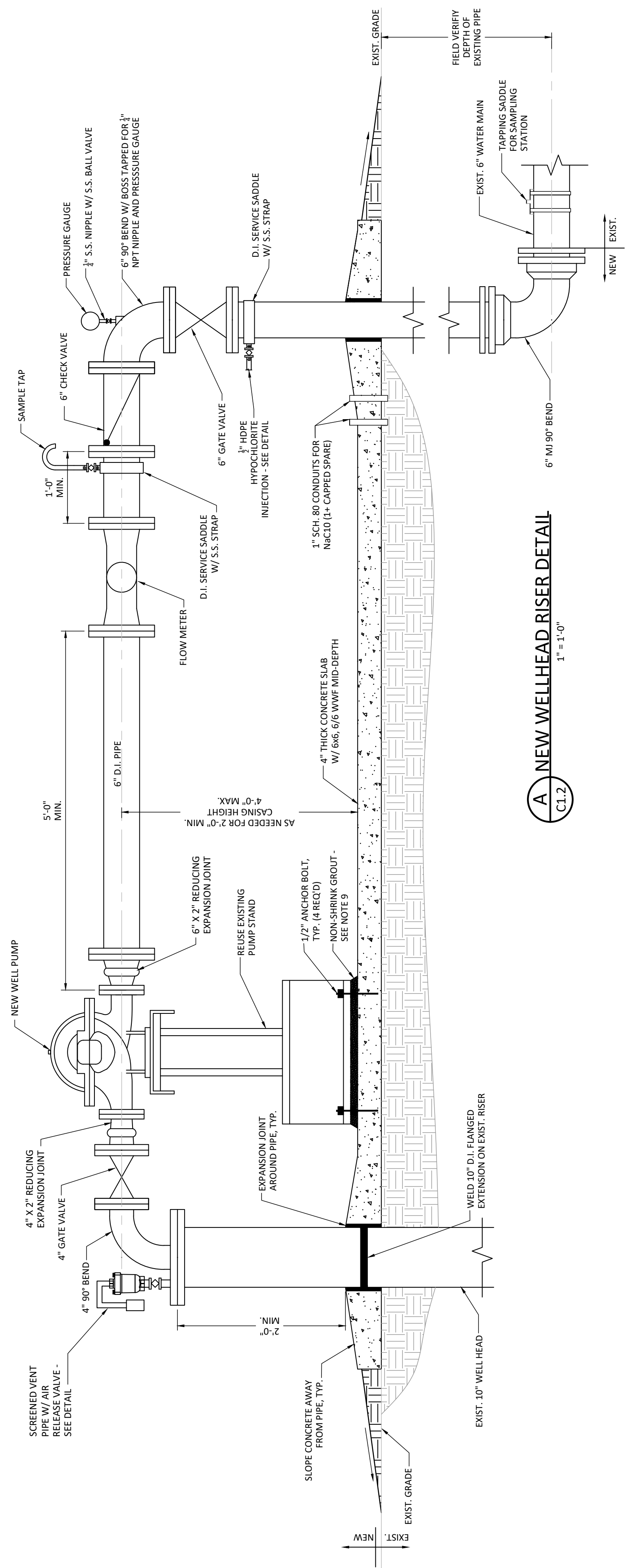
1" = 4'-0"

NOTES:
1. ALL BRASS SHALL BE LEAD FREE.
2. ALL ITEMS SHALL BE NSF 61 CERTIFIED FOR POTABLE WATER.
3. VERIFY SAMPLING STATION CONNECTION SIZE AND TYPE PRIOR TO INSTALLING STUB OUT.



SAMPLE TAP DETAIL

N.T.S.



A NEW WELLHEAD RISER DETAIL

1" = 1'-0"

C1.2



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

No.	DESCRIPTION OF REVISION	DATE

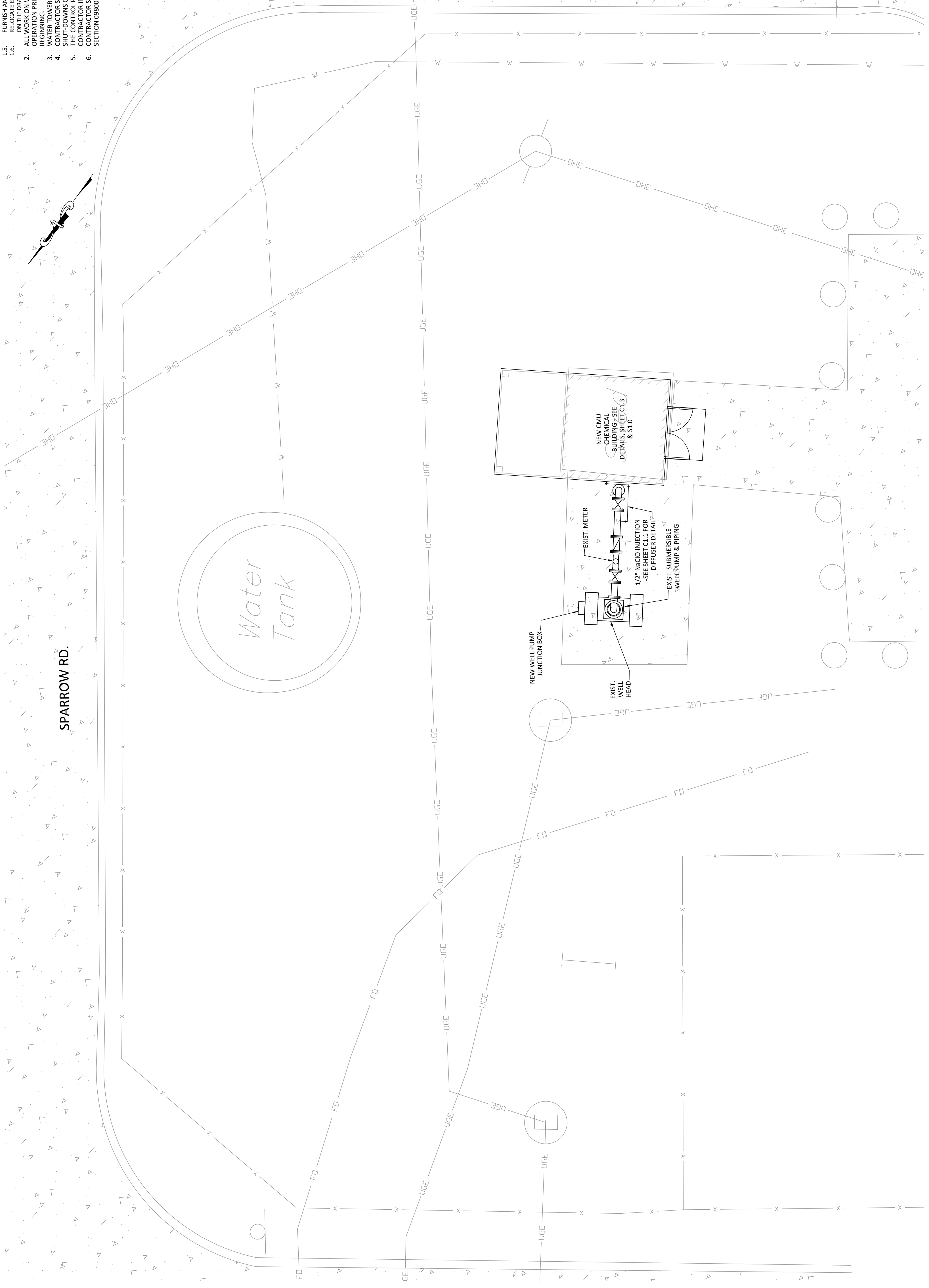
DESIGNED BY:	KMD
DRAWN BY:	GAL
CHECKED BY:	KMD
SUBMITTED BY:	KYLE ASSOC.
PROJECT No.:	TU 21000145
ISSUE DATE:	12/14/23
APPROVED BY:	---
SHEET SIZE:	ANSI D
SCALE:	1" = 20'



SAFE HAVEN
WATER UTILITY IMPROVEMENTS
LACOMBE, LOUISIANA
PROJECT No.: TU 2100145
WELL #2
SITE PLAN

SHEET NO.
C1.2

- NOTES:
1. THE REQUIRED SCOPE OF WORK FOR WELL #2 IS AS FOLLOWS:
 - 1.1. IMPROVEMENTS TO CHEMICAL INJECTION.
 - 1.2. CONSTRUCT AN 8'X8'X8' HEIGHT CONCRETE MASONRY UNIT BUILDING WITH REINFORCED CONCRETE FOUNDATION.
 - 1.3. FURNISH AND INSTALL HYPOCHLORITE STORAGE BULK AND DAY TANKS WITH ASSOCIATED PIPING AND CONTROL PANEL.
 - 1.4. FURNISH AND INSTALL A NEW DUPLEX HYPOCHLORITE PUMP SHD, COMPLETE WITH ASSOCIATED PIPING AND CONTROL PANEL.
 - 1.5. FURNISH AND INSTALL AN EMERGENCY SHOWER/EYE WASH STATION.
 - 1.6. FURNISH AND INSTALL AN EMERGENCY SHOWER/EYE WASH STATION FACILITY CONTROL PANEL TO THE LOCATION INDICATED ON THE DRAWINGS.
 2. ALL WORK ON WELL #1 MUST BE COMPLETE AND APPROVED AND IN OPERATION PRIOR TO ANY ELECTRICAL OR MECHANICAL WORK ON WELL #2.
 3. BEGINNINGER MUST REMAIN IN SERVICE AT ALL TIMES.
 4. CONTRACTOR SHALL COORDINATE WITH STP DEPT. OF UTILITIES FOR ALL SHUT-DOWNS OR TIE-INS.
 5. THE CONTROL PANEL FOR WELL #2 WILL BE OWNER PROVIDED AND CONTRACTOR INSTALLED.
 6. SECTION 09800-PROTECTIVE COATINGS.

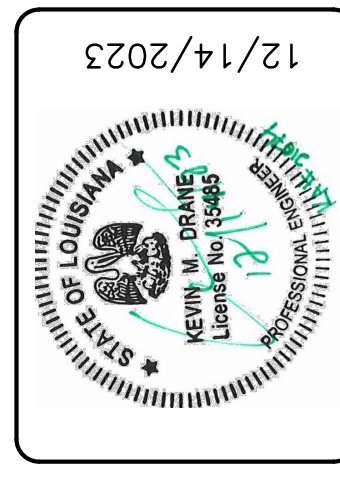




DEPT. OF UTILITIES
ST. TAMMANY PARISH
GOVERNMENT
620 N. TYLER STREET
COVINGTON, LA 70433

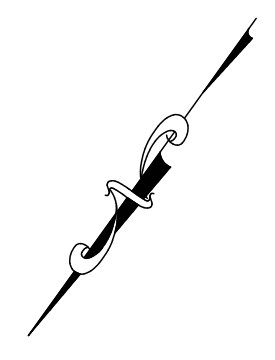
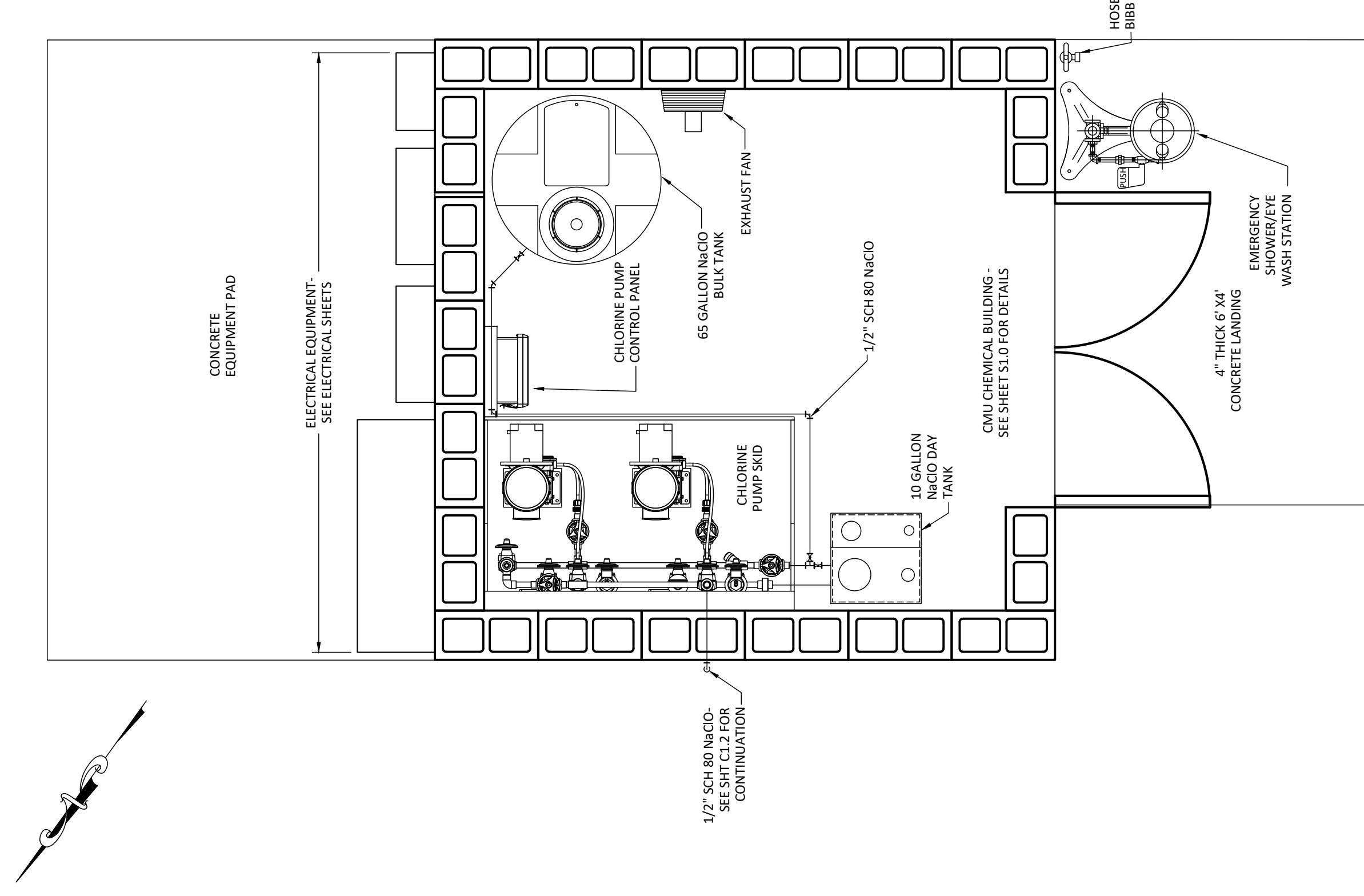
No.	DESCRIPTION OF REVISION	DATE:

DESIGNED BY:	KMD
DRAWN BY:	GAL
CHECKED BY:	KMD
SUBMITTED BY:	KYLE ASSOC.
PROJECT No.:	TU 21000145
ISSUE DATE:	12/14/23
APPROVED BY:	---
SHEET SIZE:	ANSI D
SCALE:	1" = 20'

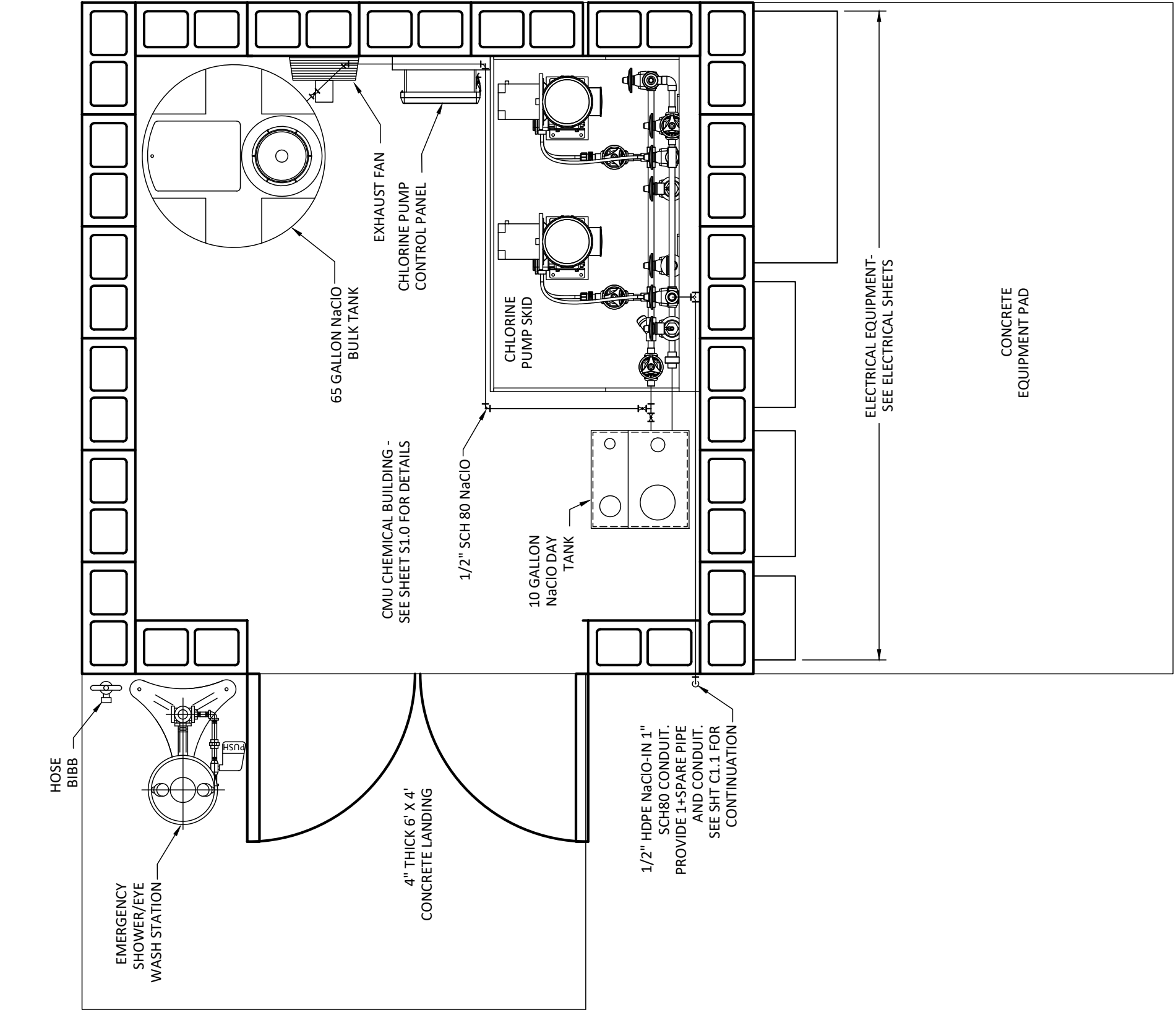


SAFE HAVEN
WATER UTILITY IMPROVEMENTS
LACOMBE, LOUISIANA
PROJECT No.: TU 2100145
WELL DETAILS

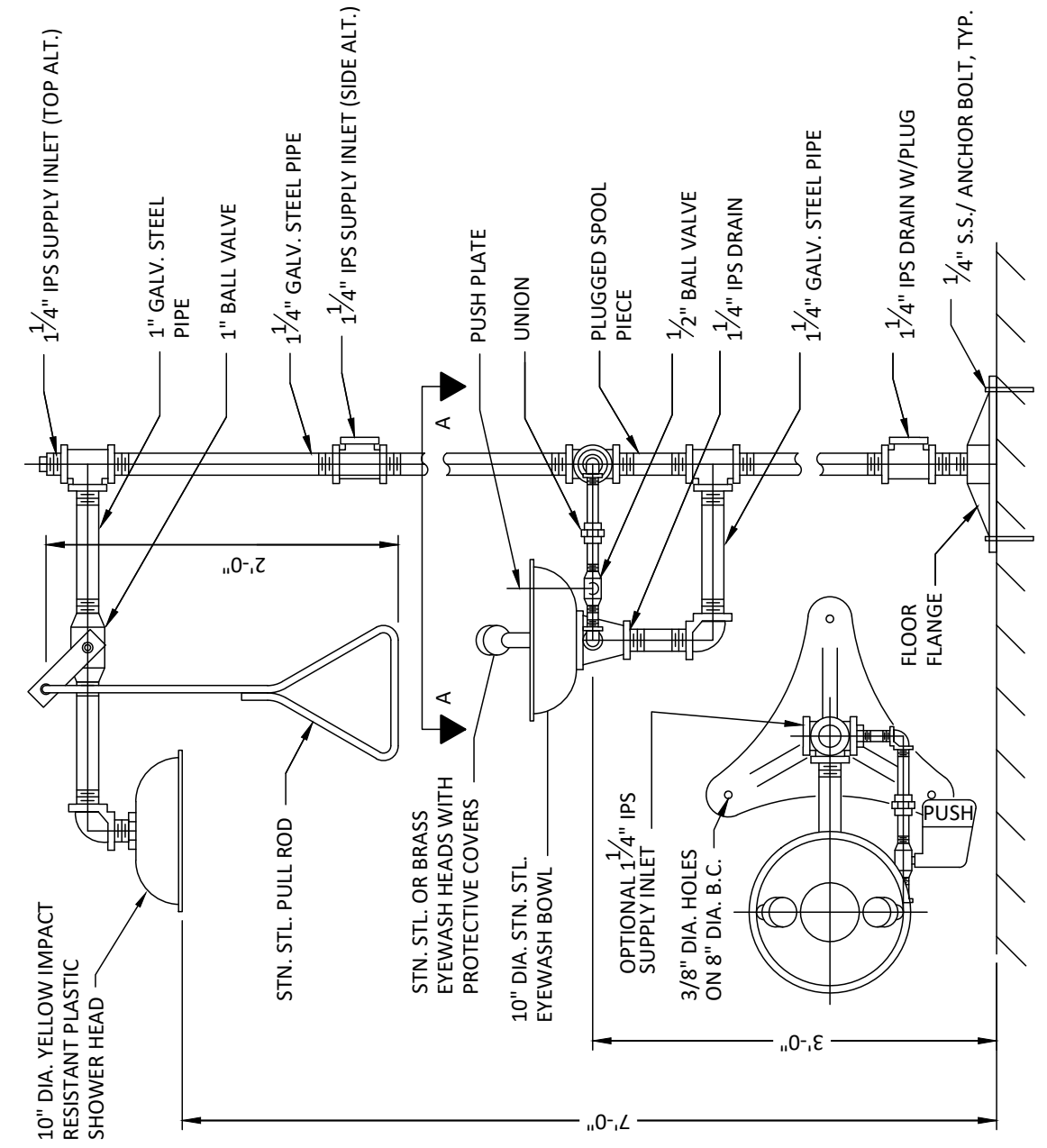
SHEET NO.
C1.3



WELL #1 - CHEMICAL BUILDING DETAIL
3/4" = 1'-0"



WELL #2 - CHEMICAL BUILDING DETAIL
3/4" = 1'-0"



NOTE: PAINT PIPE, FITTINGS AND FLOOR FLANGE SAFETY YELLOW AFTER FABRICATION.

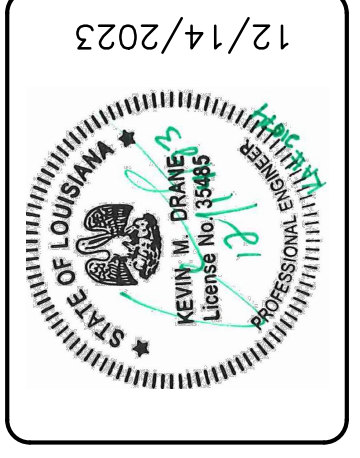
EMERGENCY SHOWER DETAIL
N.T.S.



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

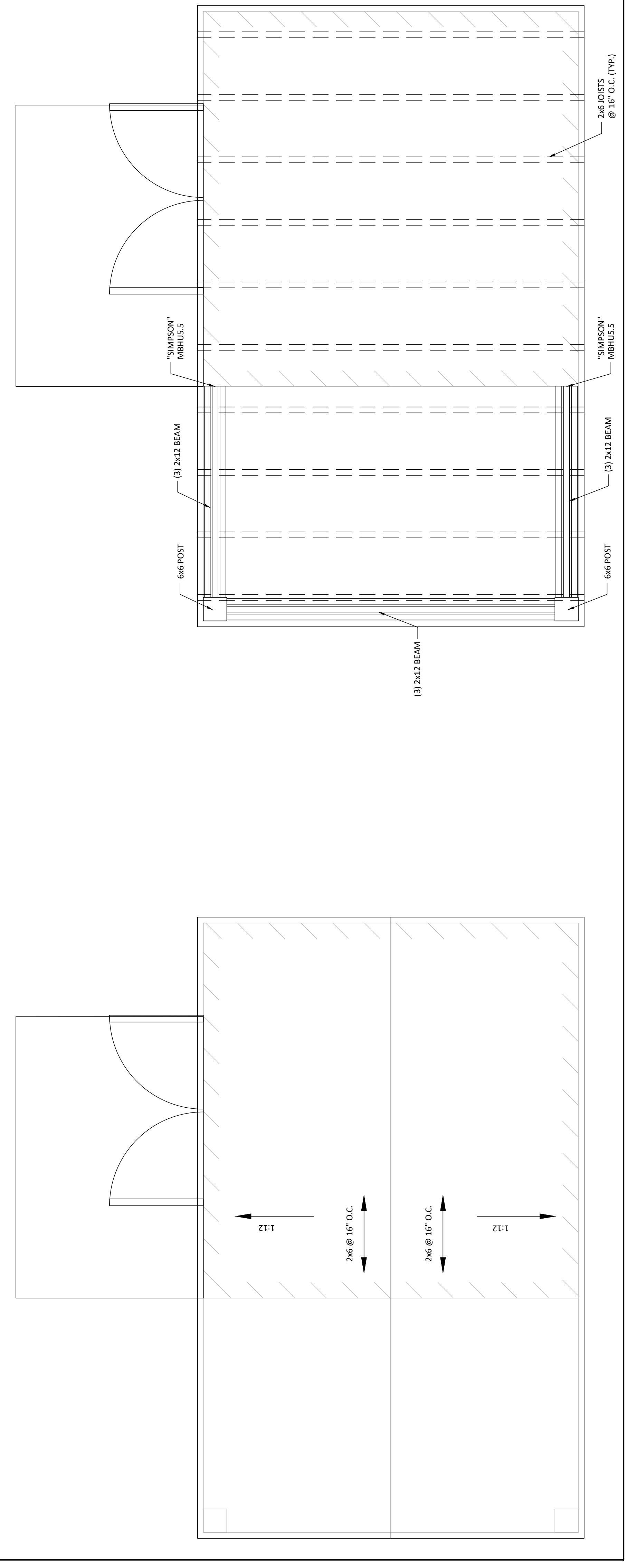
No.	DATE:	DESCRIPTION OF REVISION

DESIGNED BY:	KMD
DRAWN BY:	GAL
CHECKED BY:	KMD
SUBMITTED BY:	KYLE ASSOC.
PROJECT No.:	TU 2100145
ISSUE DATE:	12/14/23
APPROVED BY:	---
SHEET SIZE:	ANSI D
SCALE:	



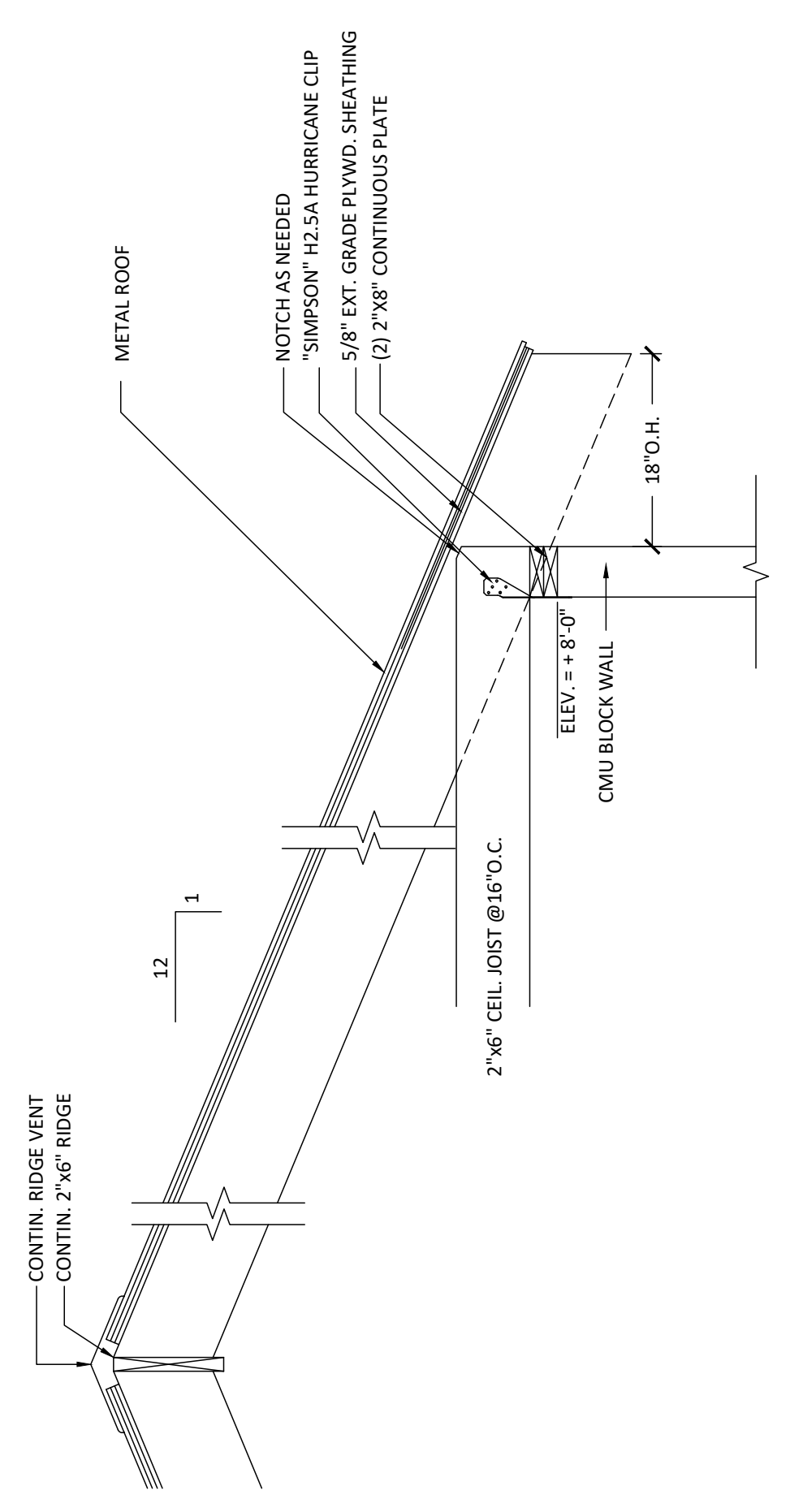
SAFE HAVEN
WATER UTILITY IMPROVEMENTS
LACOMBE, LOUISIANA
PROJECT No.: TU 2100145
CHLORINE BUILDING DETAILS

SHEET NO.
S1.1

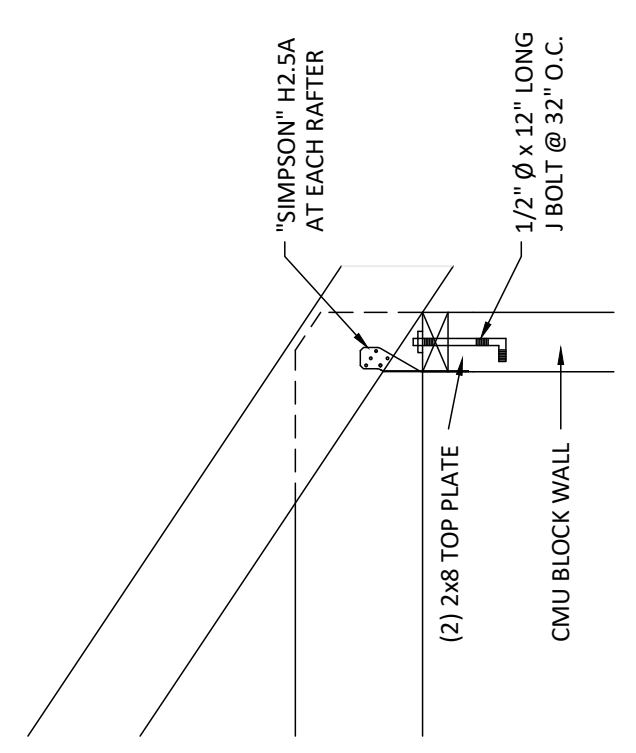


1
S1.0
3/4" = 1'-0"

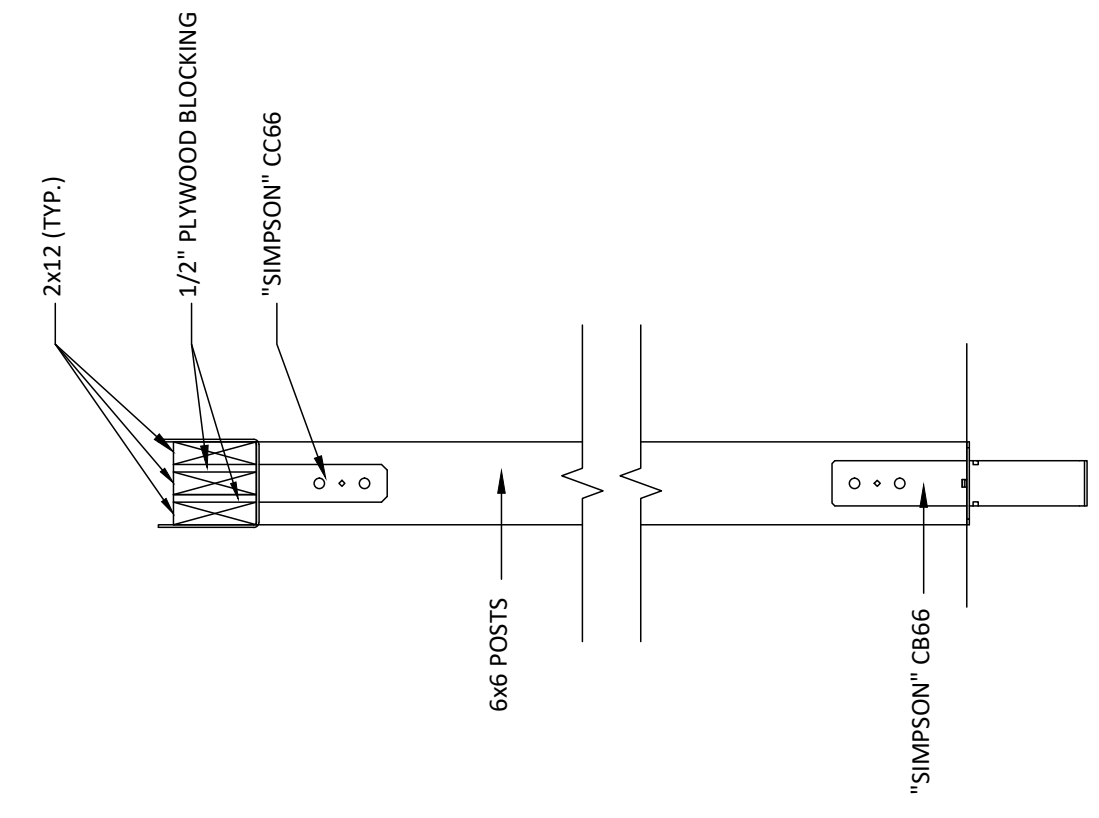
2
S1.1
3/4" = 1'-0"



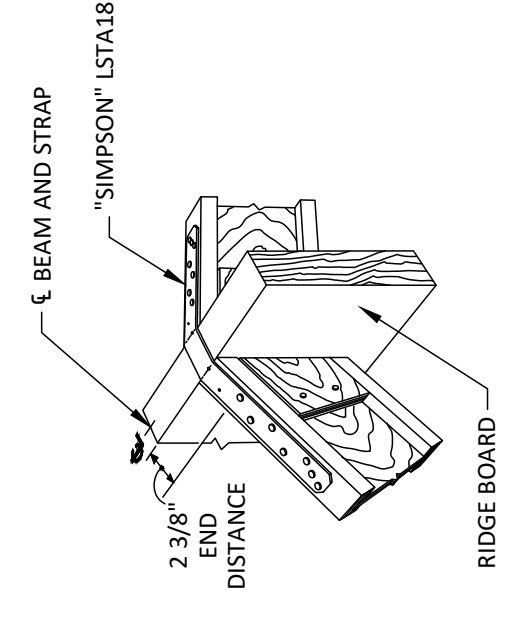
TYPICAL SECTION
3/4" = 1'-0"



TYPICAL STRAPPING DETAIL
3/4" = 1'-0"



TYPICAL STRAPPING DETAILS
1" = 1'-0"

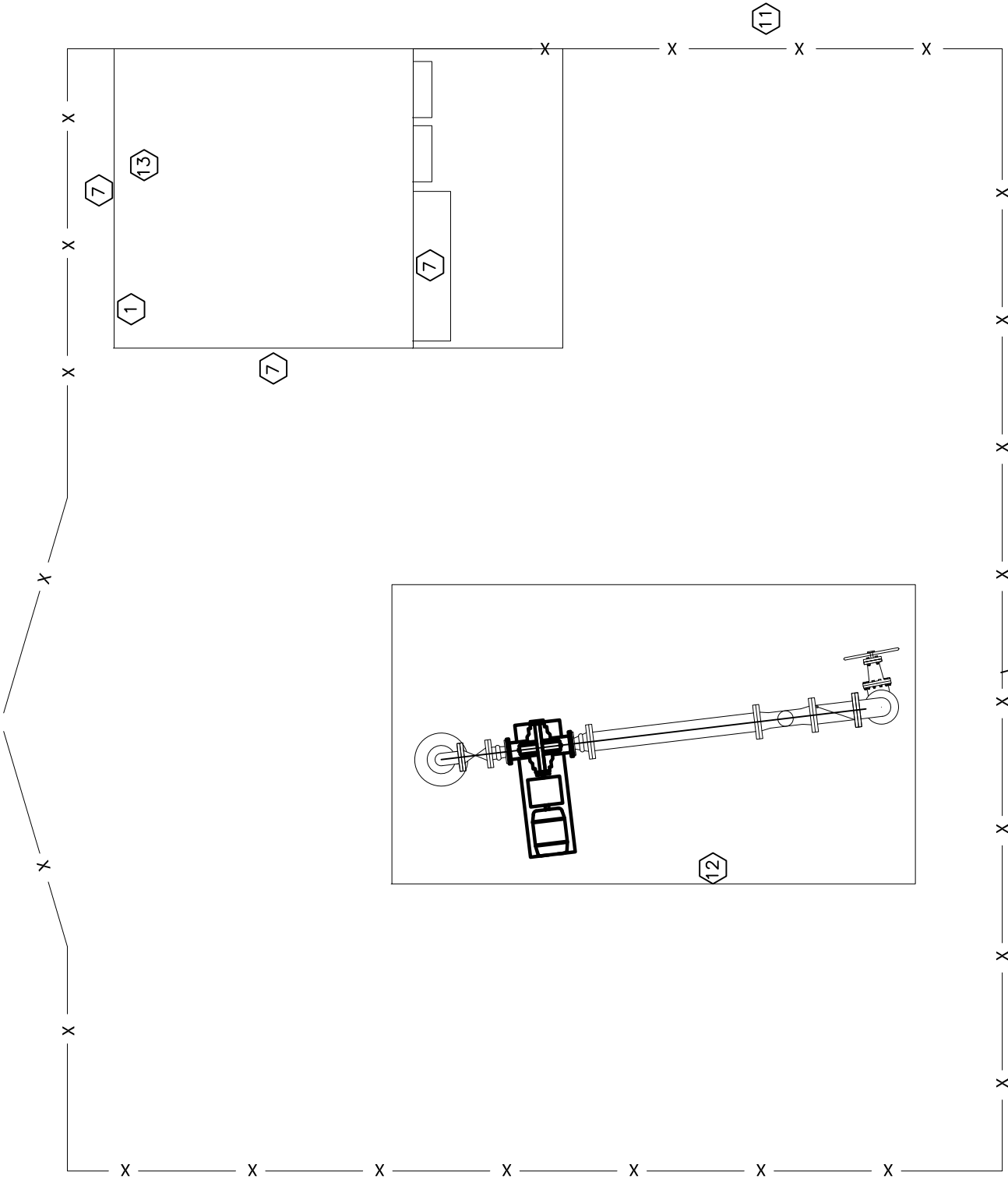


GENERAL NOTES ALL SHEETS

- A. ALL CONDUIT SHALL CONTAIN A #12 GND MINIMUM.
- B. ALL WORK SHALL BE DONE IN ACCORDANCE WITH NFPA 70 AND THE LOCAL AUTHORITY HAVING JURISDICTION.
- C. REMOVE EXISTING ELECTRICAL FEEDERS AND CONTROLS.
- D. EXPOSED CONDUIT INSIDE OF BUILDING AND ON BUILDING SHALL BE RIGID ALUMINUM.
- E. PROVIDE CONTROL WIRES AS SHOWN AND AS REQUIRED TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
- F. SEE SHEET E2.1 FOR DETAILS.

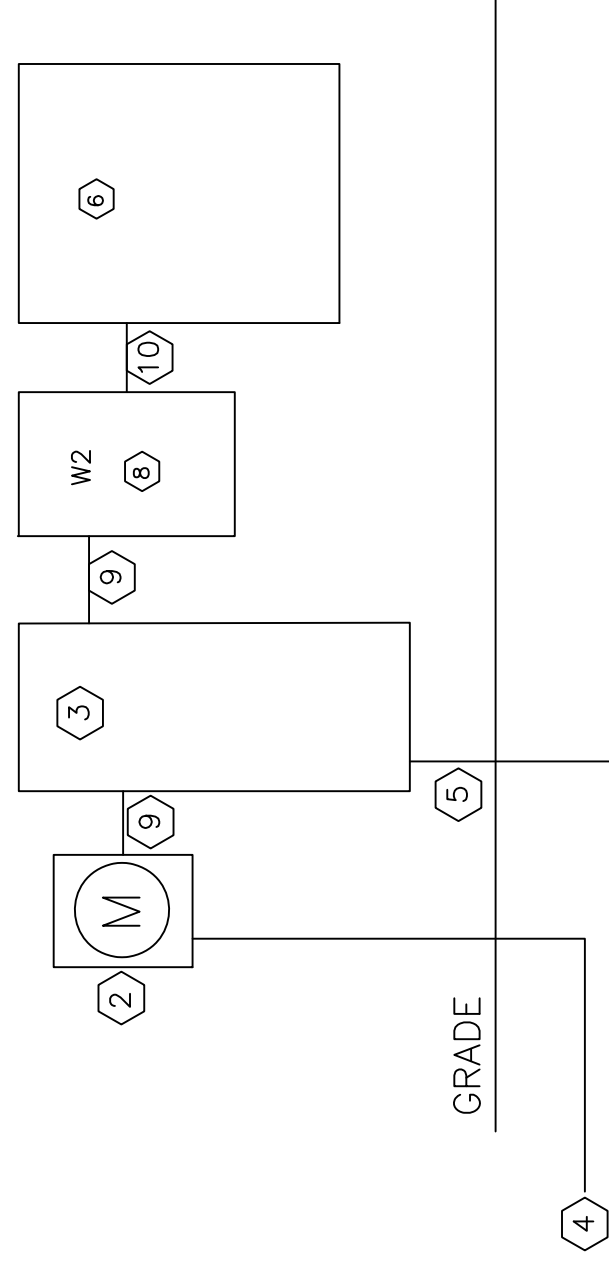
SPECIFIC NOTES THIS SHEET

- ① PROVIDE RECEPTACLE FOR CHLORINATOR IN BUILDING. COORDINATE PLACEMENT WITH CHLORINATOR SUPPLIER. HOME RUN 2#12 AWG AND 1#12 GND IN 3/4" C. TO CONTROL PANEL.
- ② CLECO METER. GROUND AND INSTALL IN ACCORDANCE WITH CLECO STANDARDS.
- ③ 120/208V, 3P, 4W, 100A, SERVICE ENTRANCE RATED, AUTOMATIC TRANSFER SWITCH WITH NEMA 4X ENCLOSURE AND 100A MAIN BREAKER.
- ④ 3" CONDUIT ROUTED TO CLECO POLE. ROUTE MINIMUM 25' UP POLE. INSTALL PER CLECO STANDARDS.
- ⑤ #6 GND TO 3/4"x10" COPPER BONDED, DRIVEN, GROUND ROD. ROUTE TO NEUTRAL IN A.I.S. BOND NEUTRAL TO GROUND WITH #6 OR WEG PROVIDED EQUIVALENT.
- ⑥ WELL CONTROL PANEL. SEE SHEET E2.1.
- ⑦ PROVIDE BECHTEL BSI100LED-2HT-LO-WT40-120-277-STANDARD COLOR. ROUTE 2#12 AWG AND 1#12 GND IN 3/4" THROUGH PHOTO CELL AND TO PANEL WZ. PROVIDE SWITCH INSIDE OF BUILDING NEXT TO DOOR JAMB ON C. THROUGH PHOTO CELL AND TO PANEL WZ.
- ⑧ PANEL WZ SHALL BE 120/208V, 3P, 4W, 100A WITH 4-80A, 3P BREAKER AND 6-20A, 1P BREAKERS. PROVIDE 240K TSS. SEE SPECIFICATIONS. PANEL SHALL BE 10K AC MINIMUM. COORDINATE AC RATING WITH ARC FLASH STUDY PRIOR TO ORDERING PANEL.
- ⑨ 4#3 AWG AND 1#6 GND IN 1 1/4".
- ⑩ APPROXIMATE LOCATION OF CLECO POLE.
- ⑪ PROVIDE STREETWORKS GUAN-SA1-C-740-U-TX-BZ FIXTURE WITH ALL MOUNTING ACCESSORIES, AND PROVIDE 1&W 10' POLE MODEL SSP10-40-11 WITH K-KLAD OVER GALVANIZING. PROVIDE BASE COVER AND ALL MOUNTING HARDWARE. MOUNT SO FIXTURE POINTS PLAN EAST. ROUTE 2#12 AWG AND 1#12 GND IN 3/4" C. THROUGH PHOTO CELL AND TO PANEL WZ. PROVIDE SWITCH INSIDE OF BUILDING NEXT TO DOOR JAMB ON LATCHING SIDE OF DOOR.
- ⑫ 2#12 AWG AND 1#12 GND IN 3/4" THROUGH PHOTO CELL AND TO PANEL WZ. PROVIDE A 3-WAY SWITCH ON THE PHOTO CELL AND TO PANEL WZ. PROVIDE 240V TSS. MAKE CONNECTIONS TO EXHAUST FAN. PROVIDE A 3-WAY SWITCH ON THE PHOTO CELL AND TO PANEL WZ. PROVIDE 240V TSS. MAKE CONNECTIONS TO CONTROL PAN. ROUTE FROM TO PANEL WZ AND PROVIDE A SINGLE POLE, 20A, BREAKER. MAKE ALL CONNECTIONS.



WELL #1 - SITE PLAN

1" = 4'-0"



ELECTRICAL SERVICE

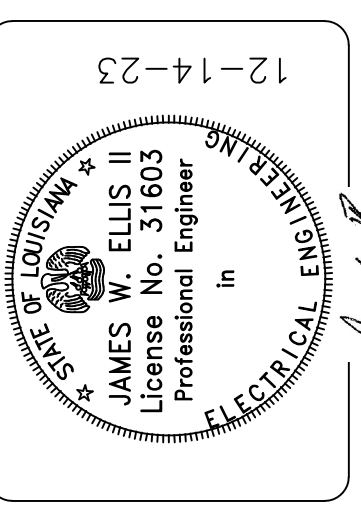
NO SCALE



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

DATE:	DESCRIPTION OF REVISION	No.

DESIGNED BY: JWE	CHECKED BY: JWE	DRAWN BY: JWE	PROJECT No.: TU21000145	ISSUE DATE: 12-14-23	APPROVED BY: ---	SHEET SIZE: ANSI D	SCALE: 1" = 20'
------------------	-----------------	---------------	-------------------------	----------------------	------------------	--------------------	-----------------



SAFE HAVEN
WATER UTILITY IMPROVEMENTS
LACOMBE, LOUISIANA
PROJECT No.: TU21000145
WELL #1 ELECTRICAL SITE PLAN

SHEET NO.
E1.1

ELLIS
ENGINEERING, L.L.C.
525 BREWSTER RD.
MADISONVILLE, LA 70447
(504) 415-7670
PROJECT No. 22016
JAMES W. ELLIS II, P.E., LOUISIANA LICENSE # 31603

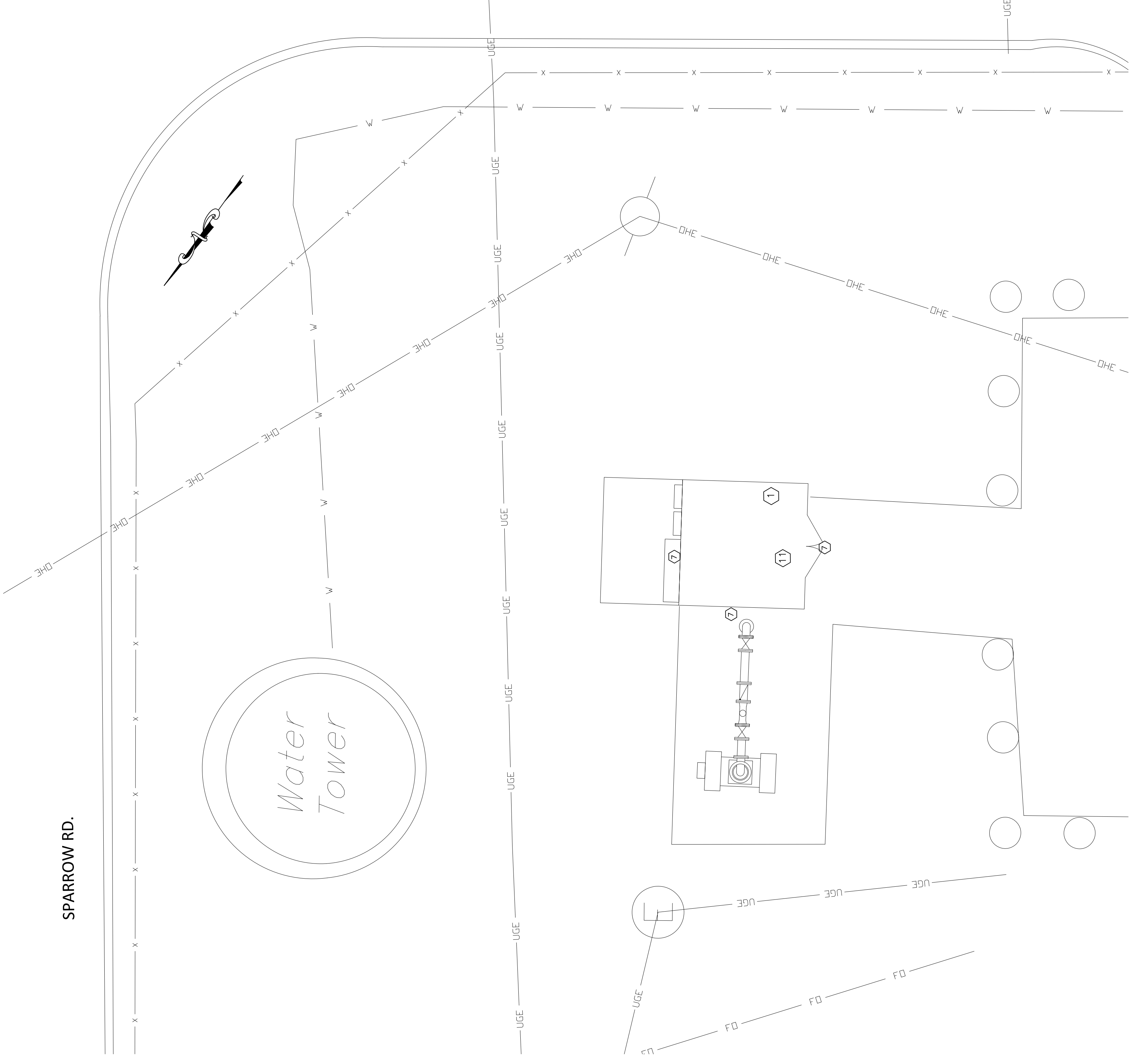
GENERAL NOTES ALL SHEETS

- A. ALL CONDUIT SHALL CONTAIN A #12 GROUND MINIMUM.
- B. ALL WORK SHALL BE DONE IN ACCORDANCE WITH NFPA 70 AND THE LOCAL AUTHORITY HAVING JURISDICTION.
- C. REMOVE EXISTING ELECTRICAL FEEDERS AND CONTROLS.
- D. EXPOSED CONDUIT INSIDE OF BUILDING AND ON BUILDING SHALL BE RIGID ALUMINUM.
- E. PROVIDE CONTROLS AS SHOWN AND AS REQUIRED TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM. THIS CONTROL PANEL IS EQUIVALENT TO THE CONTROL PANEL SHOWN ON E2.1 EXCEPT THE MOTOR HP IS 30 INSTEAD OF 15.

SPECIFIC NOTES THIS SHEET

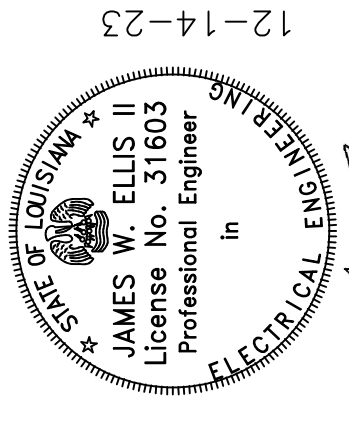
- 1 PROVIDE RECEPABLE FOR CHLORINATOR IN BUILDING. COORDINATE PLACEMENT WITH CHLORINATOR SUPPLIER. HOME RUN #12 AWG AND #12 GRD IN 3/4" C TO CONTROL PANEL.
- 2 CLECO METER. GROUND AND INSTALL IN ACCORDANCE WITH CLECO STANDARDS.
- 3 120/208V, 3P, 4W, 200A, SERVICE ENTRANCE RATED, AUTOMATIC TRANSFER SWITCH WITH NEMA 4X ENCLOSURE AND 200A MAIN BREAKER.
- 4 3" CONDUIT ROUTED TO CLECO POLE. ROUTE MINIMUM 25' UP POLE. INSTALL PER CLECO STANDARDS.
- 5 #2 GRD TO 3/4"x10" COPPER BONDED, DRIVEN, GROUND ROD. ROUTE TO NEUTRAL IN A.T.S. BOND NEUTRAL TO GROUND WITH #2 OR MFG PROVIDED EQUIVALENT.
- 6 EXISTING CONTROL PANEL AT WELL SITE TO BE RELOCATED. INSTALL AS SHOWN. THIS PANEL IS SIMILAR TO THE SPECIFIED PANEL.
- 7 PROVIDE BEGHELLI B5100LED-2HT-LO-WF4G-12U-277-STANDARD COLOR. ROUTE #12 AWG AND #12 GRD IN 3/4" C TO CONTROL PANEL INSIDE OF BUILDING AND TO PANEL W1. PROVIDE SWITCH INSIDE OF BUILDING NEXT TO DOOR JAMB ON LATHING SIDE OF DOOR.
- 8 PANEL W1 SHALL BE 120/208V, 3P, 4W, 200A, WITH 1-150A, 3P, BREAKER AND 6-20A, 1P, BREAKERS. PROVIDE 24X6 TYS. SEE SPECIFICATIONS. PANEL SHALL BE 10K AC MINIMUM, COORDINATE AIC RATING WITH ARC FLASH STUDY PRIOR TO ORDERING PANEL.
- 9 #4/2'0 AWG AND 1/8" GRD IN 2".
- 10 #12 AWG AND 1/8" GRD IN 3/4" C. MAKE CONNECTIONS TO EXHAUST FAN. PROVIDE A 3 WAY SWITCH ON THE INSIDE OF THE DOOR AND ON THE OUTSIDE OF THE DOOR OPPOSITE DOOR HINGES TO CONTROL FAN. HOME RUN TO PANEL W1 AND PROVIDE A SINGLE POLE, 20A, BREAKER. MAKE ALL CONNECTIONS.
- 11

SPARROW RD.



WELL #2 - SITE PLAN
1" = 4'-0"

SAFE HAVEN
WATER UTILITY IMPROVEMENTS
LACOMBE, LOUISIANA
PROJECT No.: TU21000145
WELL #2 ELECTRICAL SITE PLAN



12-14-23

DESIGNED BY:	JWE
DRAWN BY:	JWE
CHECKED BY:	JWE
SUBMITTED BY:	KYLE ASSOC.
PROJECT No.:	TU21000145
ISSUE DATE:	12-14-23
APPROVED BY:	---
SHEET SIZE:	ANSI D
SCALE:	1" = 20'

No.	DESCRIPTION OF REVISION	DATE:

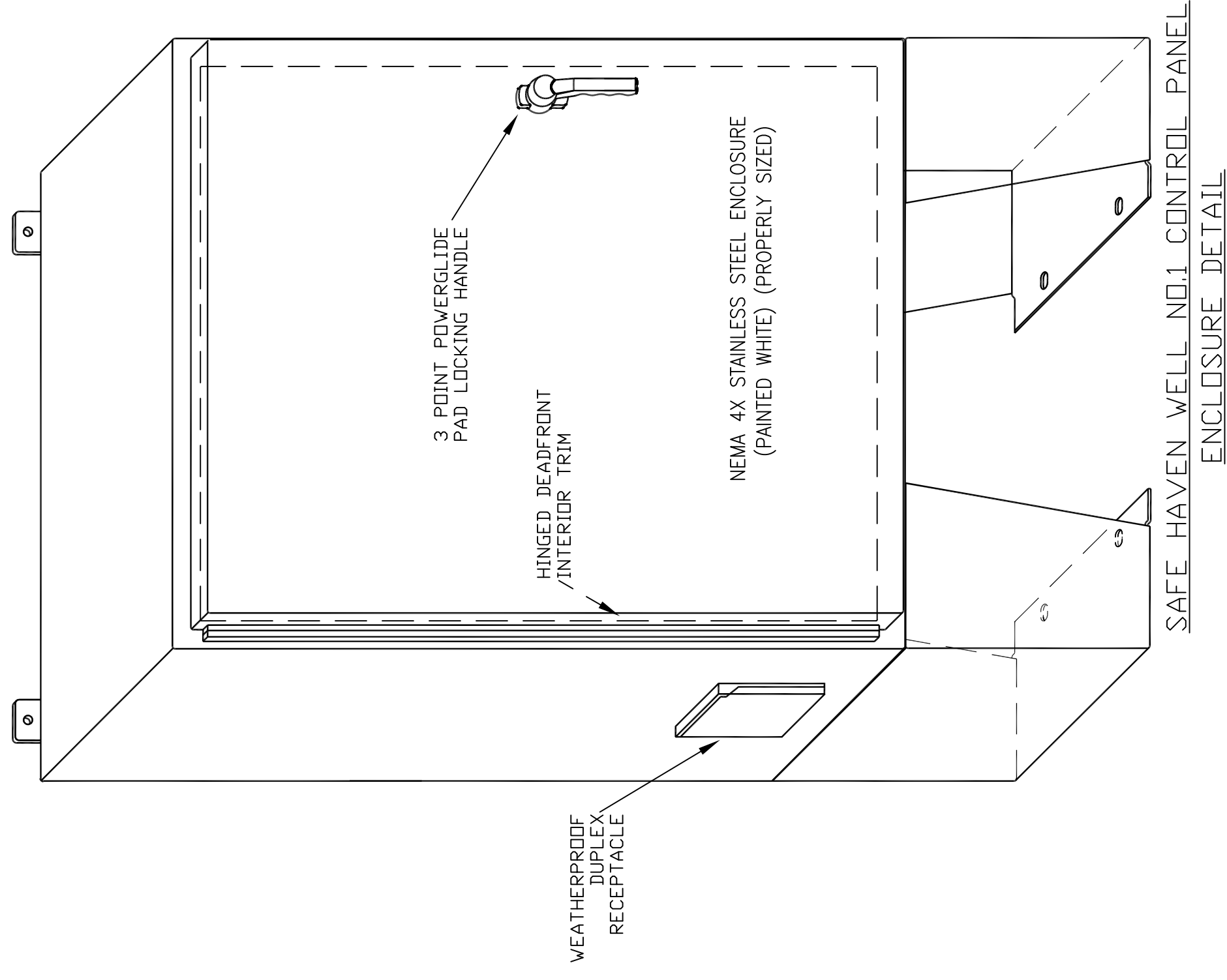
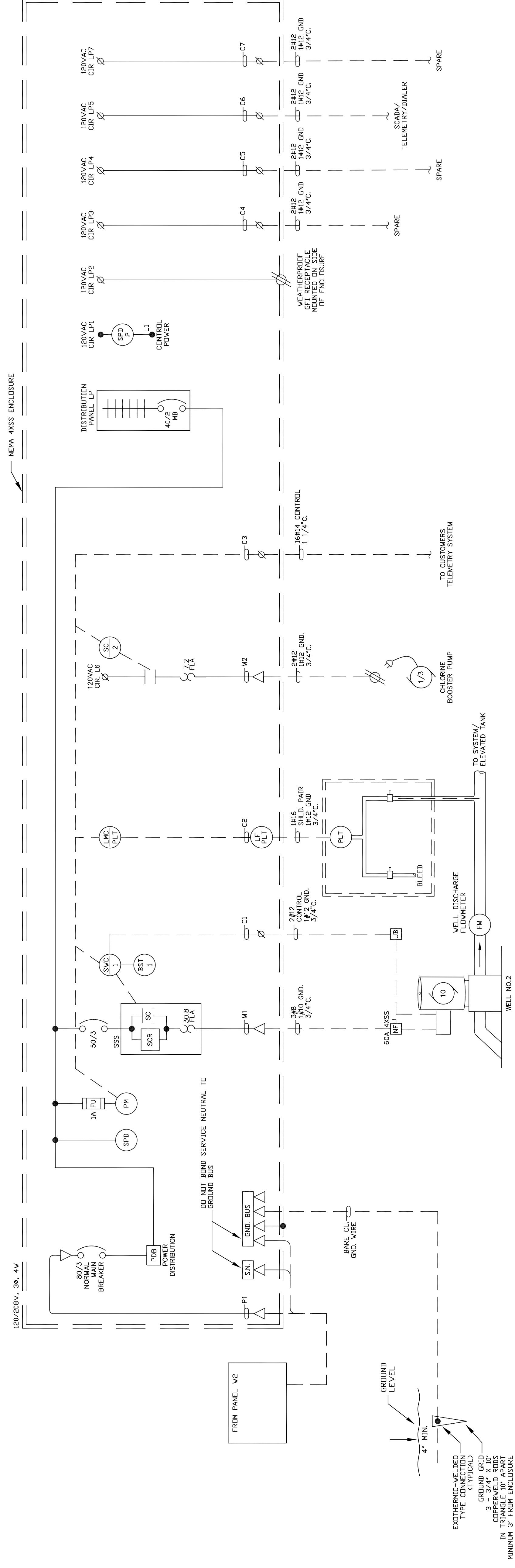
<p>ELLIS ENGINEERING, L.L.C.</p>	<p>525 BREWSTER RD. MADISONVILLE, LA, 70447 (504) 415-7670</p>
	<p>PROJECT No. 22016 JAMES W. ELLIS II, P.E., LOUISIANA LICENSE # 31603</p>

SHEET NO.
E1.2

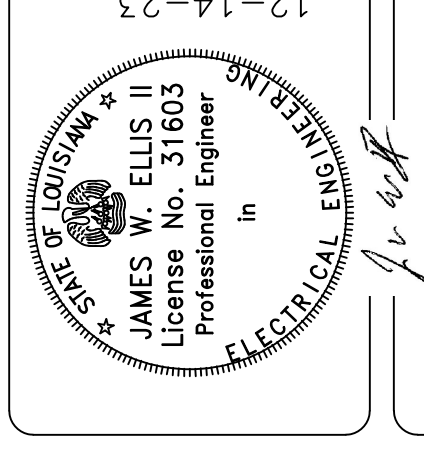
GENERAL NOTES ALL SHEETS

A. ALL CONDUIT SHALL CONTAIN A #12 GND MINIMUM.
 B. ALL WORK SHALL BE DONE IN ACCORDANCE WITH NFPA 70 AND THE LOCAL AUTHORITY HAVING JURISDICTION.

SAFE HAVEN WELL NO.1 CONTROL PANEL
 ONE LINE POWER DIAGRAM AND
 PROCESS AND INSTRUMENTATION DIAGRAM (P&ID)



SAFE HAVEN
 WATER UTILITY IMPROVEMENTS
 LACOMBE, LOUISIANA
 PROJECT No.: TU21000145
 WATER WELL ELECTRICAL



DESIGNED BY:	JWE
DRAWN BY:	JWE
CHECKED BY:	JWE
SUBMITTED BY:	KYLE ASSOC.
PROJECT No.:	TU21000145
ISSUE DATE:	12-14-23
APPROVED BY:	---
SHEET SIZE:	ANSI D
SCALE:	1" = 20'

No.	DESCRIPTION OF REVISION	DATE:

525 BREWSTER RD.
 MADISONVILLE, LA. 70447
 (504) 415-7670
 PROJECT No. 22016
 JAMES W. ELLIS II, P.E., LOUISIANA LICENSE # 51603

ELLIS
 ENGINEERING, L.L.C.

SHEET NO.
 E2.1