

**NOTICE TO BIDDERS** 

ST. TAMMANY PARISH

Sealed bids will be received by the Department of Procurement, until 2:00 p.m., Wednesday, May

1, 2024, and then opened and read publicly at that time by the Procurement Staff for the following

project:

Bid # 24-11-2 – Les Bois Sewer Consolidation

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** 

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.

bid

This

A Non-Mandatory pre-bid meeting will be held at the Staff Conference Room, 3rd Floor,

located at St. Tammany Parish Government Administrative Complex, 21454 (Building B)

Koop Drive, Mandeville, LA 70471 on Thursday, April 11, 2024 from 2:00 PM to 4 PM.

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**

### LES BOIS SEWER CONSOLIDATION

BID NO.: 24-11-2

MARCH 7, 2024

Engineers Estimate: \$947,363.00



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### **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.
- The successful Bidder understands the limited contract time in the contract is **One Hundred Eighty (180) calendar 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 <u>written approval</u> 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).
- 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.
- A Bid Guarantee of five percent (5%) of the amount of the total Bid, including Alternates, 15. 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.
- 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. In accordance with Louisiana Law, all Corporations (See LA R.S. 12:26.1) and Limited Liability Companies (See LA R.S. 12:1308.2) must be registered and in good standing with the Louisiana Secretary of State in order to hold a contract.

- 32. 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.
- 33. 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

- 34. See Notice to Bidders for availability of Drawings, Specifications and Contract Documents via electronic methods.
- 35. 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.
- 36. 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.
- 37. At least three days prior to the execution of the Contract, the Contractor shall deliver to the Owner the required Bonds.
- 38. 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.

- 39. 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.
- 40. 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.
- 41. 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.

42. 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.

- 43. 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.
- 44. 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.
- 45. 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.
- 46. 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.
- 47. 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. Contractor agrees to execute an excerpt or extract of this agreement for recordation purposes. If Contractor fails to execute such an excerpt, then the Parish shall file and record the entire Contract and all attachments at the expense of Contractor and Parish is hereby authorized to deduct all related costs from any proceeds due to the Contractor.
- 48. 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.
- 49. 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.

- 50. <u>Payment of Premiums:</u> 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.
- 51. <u>Deductibles</u>: Any and all deductibles in the described insurance policies shall be assumed by and be at the sole risk of the Contractor.
- 52. <u>Authorization of Insurance Company(ies) and Rating</u>: 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.
- 53. 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.

<u>Named Insured</u>: 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

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

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

<u>Waiver of Subrogation:</u> 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. Version 2023 Q1

Tammany Parish Government by referencing same on the face of the Certificate(s) of Insurance.

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

- 54. 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.
- 55. 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.
- 56. 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.
- 57. 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).
- 58. 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.

- 59. 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 <a href="mailto:Procurement@stpgov.org">Procurement@stpgov.org</a>. Any questions or inquiries received after the required deadline to submit questions or inquiries will not be answered.
- 60. 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.
- 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).
- 62. 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.
- 63. 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.

### Summary of Work

### I. Work to Include:

Improvements to Les Bois Sewer Lift Station and the discharge force main installed by directional drilling. Work shall include installation of sewer gravity from existing lift station to the new lift station. A generator shall be provided for the new lift station.

### II. Location of Work:

Les Bois Sewer Lift Station located at 236 LeCirque, Madisonville, Louisiana.

### **III.** Documents: Bid Documents dated March 7, 2024, and entitled:

Les Bois Sewer Consolidation

Bid No.: 24-11-2

### IV. OTHER REQUIREMENTS (as applicable)

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 (2016 Edition of Louisiana Standard Specifications for Roads and Bridges). Additionally, all materials used in sanitary sewer and/or potable water construction shall conform to the requirements of the State Sanitary Code and St. Tammany Parish Department of Utilities.

### LOUISIANA UNIFORM PUBLIC WORK BID FORM

BID FOR: Les Bois Sewer Consolidation

TO:

TO:	St. Tammany Parish Government	BID FOR: Les Bois Sewer Consolidation
	21454 Koop Dr., Suite 2F	Bid No.: 24-11-2
	Mandeville, La 70471	
	(Owner to provide name and address of owner)	(Owner to provide name of project and other identifying information.)
Docun any ac materi constru	nents, b) has not received, relied on, or based hi Idenda, c) has personally inspected and is fam als, tools, appliances and facilities as required	ts that she/he; a) has carefully examined and understands the Bidding s bid on any verbal instructions contrary to the Bidding Documents or illiar with the project site, and hereby proposes to provide all labor, to perform, in a workmanlike manner, all work and services for the ct, all in strict accordance with the Bidding Documents prepared by:
(Owner	to provide name of entity preparing bidding documents.)	
	•	knowledges receipt of the following <b>ADDENDA:</b> (Enter the number the is acknowledging)
	AL BASE BID: For all work required by the Bid" * but not alternates) the sum of:	he Bidding Documents (including any and all unit prices designated
		Dollars (\$)
design	ated as alternates in the unit price description.  ate No. 1 (Owner to provide description of alternate and	•
N/A		Dollars (\$)
Altern	nate No. 2 (Owner to provide description of alternate and	state whether add or deduct) for the lump sum of:
N/A		
Altern	nate No. 3 (Owner to provide description of alternate and	state whether add or deduct) for the lump sum of:
N/A		Dollars (\$)
NAMI	E OF BIDDER:	
ADDF	RESS OF BIDDER:	
	SIANA CONTRACTOR'S LICENSE NUMB	
	E OF AUTHORIZED SIGNATORY OF BID	
TITLI	E OF AUTHORIZED SIGNATORY OF BID	DER:
SIGN. DATE		F BIDDER **:
THE		LUDED WITH THE SUBMISSION OF THIS LOUISIANA

### **UNIFORM PUBLIC WORK BID FORM:**

- \* The <u>Unit Price Form</u> 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.

### LOUISIANA UNIFORM PUBLIC WORK BID FORM

### **UNIT PRICE FORM**

ST. TAMMANY PARISH GOVERNMENT 21454 KOOP DRIVE, SUITE 2F MANDEVILLE, LA 70471 TO:

(Owner to provide name and address of owner)

BID FOR: LES BOIS SEWER CONSOLIDATION BID NO. 24-11-2 PROJECT NO. TU23000174

(Owner to provide name of project and other identifying

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.

UNIT PRICES:	This form shall be used for any	and all work required by th	e Bidding Documents, and described as unit prices. Amount	s shall be stated in figures and only in figures.
DESCRIPTION:	✓ BASE BID OR □ ALT.#	MOBILIZATION		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
1	1	LS		
DE005/DE1011	(D1000000000000000000000000000000000000			
DESCRIPTION:	✓ BASE BID OR □ ALT.#	TEMPORARY SIGNS AN		LINIT PRIOF EVERNOLON (O
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
2	1	LS		
DESCRIPTION:	✓ BASE BID OR □ ALT.#	PAVEMENT REMOVAL	ALL TYPES, ALL THICKNESSES)*	
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
3	150	SY		
DESCRIPTION:	✓ BASE BID OR □ ALT.#	DEMOLITION		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
4	1	LS		Committee of the commit
DESCRIPTION:	✓ BASE BID OR □ ALT.#	CLASS II BASE COURSE	E (THEORETICAL MEASURE)*	
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
5	50	CY		
DESCRIPTION:	✓ BASE BID OR □ ALT.#	MODIFY EXISTING WET	WELL	
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
6	1	LS		
DESCRIPTION:	✓ BASE BID OR □ ALT.#	NEW WET WELL		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
7	1	LS		
DESCRIPTION:	✓ BASE BID OR □ ALT.#	SELF-PRIMING CENTRI	FUGAL WASTEWATER PUMP AND ACCESSORIES	
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
8	1	LS		
DESCRIPTION:	✓ BASE BID OR □ ALT.#	STATION PIDING VALVE	ES, AND ACCESSORIES	
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
9	1	LS	- CHILL HOLE	C.ITHOLESTEROIST (Additity unios officiales)
	·			
DESCRIPTION:	✓ BASE BID OR □ ALT.#	SETUP FOR HORIZONT	AL DIRECTIONAL DRILL	
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
10	1	LS		
DESCRIPTION:	✓ BASE BID OR □ ALT.#	PLASTIC SANITARY SE	WER FORCE MAIN, HDPE DR17 BY HORIZONTAL DIREC	TIONAL DRILL
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
11	991	LF		
	<u> </u>			

DESCRIPTION	V DACE DID OD - ALT#	DI ACTIC CANITADY CE	WED FORCE MAIN BY OREN CUT	
DESCRIPTION:	✓ BASE BID OR □ ALT.#	UNIT OF MEASURE:	WER FORCE MAIN, BY OPEN CUT	LINIT DDICE EVENISION (Quantity times Linit Drice)
REF. NO.	QUANTITY:		UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
12	2,663	LF		
DESCRIPTION:	✓ BASE BID OR □ ALT.#	PLASTIC SANITARY SE	WER GRAVITY LINE	
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
13	500	LF		
DESCRIPTION	V DASE DID OD - ALT#	SEWER MANHOLE		
REF. NO.	✓ BASE BID OR □ ALT.# QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	LINIT DDICE EVTENSION (Quantity times Unit Drice)
14	2	EA	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
14	2	T EA		
DESCRIPTION:	✓ BASE BID OR □ ALT.#	4" AIR RELEASE VALVE	(ARV) AND VAULT	
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
15	3	EA		
DESCRIPTION:	✓ BASE BID OR □ ALT.#	DUCTILE IRON FITTING	g g	
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
			ONIT PRICE	ONLY PRICE EXTENSION (Quantity times Only Price)
16	1500	LB		
DESCRIPTION:	✓ BASE BID OR □ ALT.#	CONTROL PANEL AND	SENSORS	
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
17	1	LS		
DESCRIPTION:	✓ BASE BID OR □ ALT.#	ELECTRICAL WORK		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
18	1	LS	ONITPRICE	ONT PRICE EXTENSION (Quantity times only rice)
10	,			
DESCRIPTION:	✓ BASE BID OR □ ALT.#	PORTLAND CEMENT CO	ONCRETE APRON (6" THICK)*	
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
19	150	SY		
DESCRIPTION:	✓ BASE BID OR □ ALT.#	LIFT STATION COVER S	TRUCTURE	
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
20	1	LS	3	Committee Division (diamity miles of miles)
	•			
DESCRIPTION:	✓ BASE BID OR □ ALT.#	GENERATOR		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
21	1	EA		
DESCRIPTION:	✓ BASE BID OR □ ALT.#	SITE RESTORATION		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
22	1	LS	<u> </u>	
DESCRIPTION:	✓ BASE BID OR □ ALT.#	LINING MANHOLE COAT	TING*	
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
23	50	SF		
DESCRIPTION:	✓ BASE BID OR □ ALT.#	INSERTION OF 6.00MM	CIPP IN 8 INCH PIPE*	
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
		LF		and the state of t
24	400	<u> </u> LF		

DESCRIPTION:	✓ BASE BID OR 🗆 ALT.#	REMOTE CUT AND BRUSH SERVICES*		
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
25	5	EA		
DESCRIPTION:	✓ BASE BID OR □ ALT.#	INTERNALLY TRIM PRO	TRUDING SERVICE CONNECTIONS*	
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
26	5	EA		
DESCRIPTION:	✓ BASE BID OR □ ALT.#	ADJUSTING ELEVATION OF EXISTING MANHOLE (NOT MORE THAN 18" UP OR DOWN)		
REE NO	OLIANTITY	LINIT OF MEASURE:	LINIT PRICE	LINIT PRICE EXTENSION (Quantity times Unit Price)

27

Wording for "DESCRIPTION" is to be provided by Owner.
All quantities are estimated. The contractor will be paid upon actual quantities as verified by Owner.

EΑ

 $<sup>^{\</sup>star}$  ITEM TO BE USED AT THE DISCRETION OF A/E & ST. TAMMANY PARISH REPRESENTATIVE.

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

STATE OF				
PARISH/CO	OUNTY OF			
	ORE ME, the undersigned authority, in and for the above stated State and Ponally came and appeared:	'arish (or		
	Print Name			
who, after firs	st 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			

for affiant.

the public building or project were in the regular course of their duties

- 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.
- 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 SWO	ORN TO AND SUBSCRIBI	ED BEFORE ME,	
THIS	, DAY OF	, 202	
	<b>Notary Public</b>		
Print Name	: <sub></sub>		
Notary I.D.	/Bar No.:		
My commis	sion expires:		

# AFFIDAVIT PURSUANT TO LA R.S. 38:2212.10 CONFIRMING REGISTRATION AND PARTICIPATION IN A STATUS VERIFICATION SYSTEM

	OUNTY OF	
	ORE ME, the undersigned authority, in and for the above stated State and Parish (cronally came and appeared:	r
	Print Name	
who, after fi	rst being duly sworn, did depose and state:	
1.	That affiant is appearing on behalf of, private employer seeking a bid or a contract with St. Tammany Paris Government for the physical performance of services within the State Louisiana.	
2.	That affiant is registered and participates in a status verification system to verification system to verificate all employees in the state of Louisiana are legal citizens of the United State or are legal aliens; and	
3.	That affiant shall continue, during the term of the contract, to utilize a state verification system to verify the legal status of all new employees in the state Louisiana.	
4.	That affiant shall require all subcontractors to submit to the affiant a swor affidavit verifying compliance with this law.	rn
	Printed Name:	
	Title:	
	Name of Entity:	
THUS SWO	DRN TO AND SUBSCRIBED BEFORE ME,	
THIS	_, DAY OF, 202	
	Notary Public	



### **INSURANCE REQUIREMENTS\***

Construction Project: Les Bois Sewer Consolidation

Project/Quote/Bid#: 24-11-2

### \*\*\*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. <u>Waiver of Subrogation</u>: 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. <u>Additional Insured</u>: 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. <u>Payment of Premiums</u>: 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. <u>Project Reference</u>: 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. <u>Commercial General Liability\*</u> 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. <u>Business Automobile Liability\*</u> 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.	<u>Contractor's Professional Liability/Errors and Omissions*</u> 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
		<ul> <li>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</li> <li>a) continued renewal certificates <u>OR</u></li> <li>b) a 24 month Extended Reporting Period</li> </ul>
		*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.)
V	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.
V	8.	Builder's Risk Insurance written as an "all-risk" policy providing coverage in an amount at or greater than one hundred percent (100%) of the completed value of the contracted project. Any contract modifications increasing the contract cost will require an increase in the limit of the Builder's Risk policy. Deductibles should not exceed \$5,000 and Contractor shall be responsible for all policy deductibles. This insurance shall cover materials at the site, stored off the site, and in transit. The Builder's Risk Insurance shall include the interests of the Owner, Contractor and Subcontractors and shall terminate only when the Project is accepted in writing. St. Tammany Parish Government, ATTN: Risk Management Department, P. O. Box 628, Covington, LA 70434 shall be named as a Loss Payee on the policy.
	9.	Installation Floater Insurance, on an "all-risk" form, shall be furnished by Contractor and carried for the full value of the materials, machinery, equipment and labor for <u>each location</u> . The Contractor shall be responsible for all policy deductibles. The Installation Floater Insurance shall provide coverage for property owned by others and include the interests of the Owner, Contractor and Subcontractors and shall terminate only when the Project is accepted in writing. St. Tammany Parish Government, ATTN: Risk Management Department, P. O. Box 628, Covington, LA 70434 shall be named as a Loss Payee on the policy.

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

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

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

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

Any inquiry regarding these insurance requirements should be addressed to:

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

### **Project Signs**

#### 1. General

a. Work to include providing and install one (1) project sign at the location to be determined in the field.

### 2. Materials

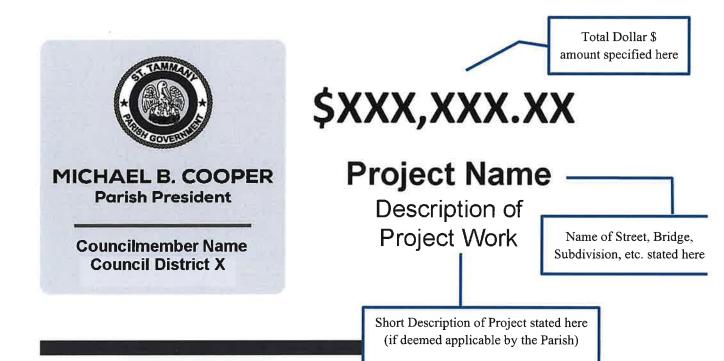
- a. The printed project sign(s) shall be 3/8" primed Medium Density Overlay (MDO) **OR** 3-millimeter corrugated plastic secured to exterior plywood (4' x 4').
- b. Contractor shall not use previously provided templates and/or fonts.

### 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 cost.

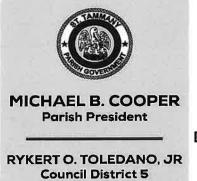
### **Blank Template of Parish Project Sign:**

# **PROGRESS**



### **Example of a Completed Parish Project Sign:**

## **PROGRESS**



\$514,444.40

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

### 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.

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## 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 <u>A.A.S.H.T.O</u> 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.
- O1.04 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.
- O1.05 <u>Agreement</u> 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.
- O1.06 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 <u>A.S.T.M.</u> 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 <u>Bid</u> 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 <u>Bonds</u> 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 <u>Change Order</u> 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.
- O1.12 <u>Contract Documents</u> 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 <u>Contract Time</u> The number of consecutive calendar days stated in the Agreement for the completion of the Work.
- 01.15 <u>Contractor</u> The person, firm, corporation or provider with whom the Owner has executed the Agreement.
- 01.16 <u>Defective Work</u> 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 <u>Drawings</u> 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 <u>Field Order</u> A written order issued by the Owner or his agent which clarifies or interprets the Contract Documents.
- 01.19 <u>Modification</u> (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 <u>Notice to Contractor</u> 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 <u>Notice to Proceed</u> 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.

- Once Other 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 <u>Project Representative</u> The authorized representative of the Owner who is assigned to the Project or any parts thereof.
- 01.26 <u>Proposal</u> 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 <u>Shop Drawings</u> 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 <u>Subcontractor</u> 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 <u>Substantial Completion</u> 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 <u>Superintendent</u> Contractor's site representative. The person on the site who is in full and complete charge of the Work.
- 01.32 <u>Time</u> 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).
- O2.07 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.
- O2.09 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

- O4.01 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 \$1,500.00 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 \$1,500.00 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 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 unity 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 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 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 <u>Deductibles</u>: Any and all deductibles in the described insurance policies shall be assumed by and be at the sole risk of the Contractor.
- 24.05 <u>Authorization of Insurance Company(ies) and Rating</u>: 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.

<u>Named Insured</u>: 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

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

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

<u>Waiver of Subrogation:</u> 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*.

<u>Additional Insured:</u> 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*.

<u>Hold Harmless:</u> 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.

<u>Cancellation Notice</u>: 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. <u>Commercial General Liability</u> 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 <u>Per Project</u>. 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. <u>Marine Liability/Protection and Indemnity</u> 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. <u>Contractors' Pollution Liability and Environmental Liability</u> 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. <u>Business Automobile Liability</u> 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. <u>Builder's Risk Insurance</u> 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. <u>Professional Liability</u> (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@stpgov.org

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 <u>TERMINATION OF THE CONTRACT, OWNER'S AND CONTRACTORS RIGHT TO</u> 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 Pubic 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, resubmission 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 protester 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 <a href="mailto:Procurement@stpgov.org">Procurement@stpgov.org</a>. 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 MEETIN	G OF THE BOARD OF DIRECTORS OF
INCORPORATED.	
AT THE MEETING OF DIRECTORS OF _	
INCORPORATED, DULY NOTICED ANI	
A QUORUM BEING THERE PRESENT, O	ON MOTION DULY MADE AND SECONDED. IT
WAS:	
RESOLVED THAT	, BE AND IS HEREBY
	IGN ATED AS AGENT AND ATTORNEY-IN-
	J LL POWER AND AUTHORITY TO ACT ON
BEHALF OF THIS CORPORATION IN A	LL NEGOTIATIONS, BIDDING, CONCERNS
AND TRANSACTIONS WITH THE PARIS	SH OF ST. TAMMANY OR ANY OF ITS
	EES OR AGENTS, INCLUDING BUT NOT
	BIDS, PAPERS, DOCUMENTS, AFFIDAVITS,
	ACTS AND TO RECEIVE ALL PURCHASE
	JANT TO THE PROVISIONS OF ANY SUCH BIE
OR CONTRACT, THIS CORPORATION I	
	AND EVERY SUCH ACT PERFORMED BY
SAID AGENT AND ATTORNEY-IN-FAC	T.
	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
	SECRETART-TREASURER
	DATE
	DAIL

#### 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:

<u>Waiver of Subrogation</u>: 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



#### 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)

certificate holder in lieu of such endors	semen	it(s).					
PRODUCER				CONTA NAME:	СТ		
		PHONE   FAX (A/C, No, Ext): (A/C, No):					
				E-MAIL ADDRE	ee.	[ [PB 0, 110].	
				ADDRE		RDING COVERAGE	NAIC#
				INSURE	ERA:		
INSURED				INSURER B:			
				INSURER C:			
				INSURE	ER D :		
				INSURE	ER E :		
				INSURE			
COVERAGES CER	TIFIC	ATE	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 S	SUBR	POLICY NUMBER		POLICY EFF POLICY EXP (MM/DD/YYYY)	LIMITS	
GENERAL LIABILITY					, , , , , , , , , , , , , , , , , , , ,	EACH OCCURRENCE \$	
COMMERCIAL GENERAL LIABILITY						DAMAGE TO RENTED PREMISES (Ea occurrence) \$	
CLAIMS-MADE OCCUR						MED EXP (Any one person) \$	
						PERSONAL & ADV INJURY \$	
						GENERAL AGGREGATE \$	
GEN'L AGGREGATE LIMIT APPLIES PER:						PRODUCTS - COMP/OP AGG \$	
POLICY PRO- JECT LOC						\$	
AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident) \$	
ANY AUTO						BODILY INJURY (Per person) \$	
ALL OWNED SCHEDULED AUTOS AUTOS						BODILY INJURY (Per accident) \$	
AUTOS AUTOS NON-OWNED AUTOS AUTOS						PROPERTY DAMAGE (Per accident) \$	
						\$	
UMBRELLA LIAB OCCUR						EACH OCCURRENCE \$	
EXCESS LIAB CLAIMS-MADE						AGGREGATE \$	
DED RETENTION \$						\$	
WORKERS COMPENSATION AND EMPLOYERS' LIABILITY						WC STATU- OTH- TORY LIMITS ER	
ANY PROPRIETOR/PARTNER/EXECUTIVE	N/A					E.L. EACH ACCIDENT \$	
OFFICER/MEMBER EXCLUDED? (Mandatory in NH)						E.L. DISEASE - EA EMPLOYEE \$	
If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - POLICY LIMIT \$	
DESCRIPTION OF OPERATIONS / LOCATIONS / VEHIC	LES (At	tach A	ACORD 101, Additional Remarks	Schedule	e, if more space is required)	•	
Project Name: Contract #:							
	0.05.5	44:t:-	anal inqurad)				
(Name St. Tammany Parish Government a	s an a	aaiiic	mai insured).				
						-	
OFFICIAL LIGHT				0.000	2511 471011		
CERTIFICATE HOLDER				CANC	CELLATION		
St. Tammany Parish Government P.O. Box 628		SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.					
Covington, LA 70434		AUTHORIZED REPRESENTATIVE					

#### **Section 11**

Bond No.:
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# CONTRACT AGREEMENT BETWEEN PARISH AND CONTRACTOR

DV. CT TANAMANIN DADICH COMEDNIMENT	UNITED STATES OF
BY: ST. TAMMANY PARISH GOVERNMENT	AMERICA
WITH:	STATE OF LOUISIANA
	ST. TAMMANY PARISH
This agreement is entered into this	day of
20, by and between: «txtREQCompany Name», here	inafter called the "Contractor", whose
business address is «txtREQAddress», «txtREQCity», «t	xtREQState» «txtREQZip» and the St
Tammany Parish Government, hereinafter called the "P	arish", whose business address is P.O
Box 628, Covington, LA 70434 (collectively, the "Partie	s") for «txtPROJECTNAME» project
Witnessed that the Contractor and the Parish, in cons	ideration of premises and the mutua
covenants, consideration and agreement herein contained	l, 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.

Bond No.:
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#### 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 _	<del>,</del>
herein acting for	(Name of Attorney in Fact), a corporation organized
and existing under the laws of the State of	, and duly authorized
to transact business in the State of Louisiana, as sur	ety, who declared that having
taken cognizance of this Contract and of the Constr	uction Documents mentioned
herein, he hereby in his capacity as its Attorney in F	Fact obligates his company, as
surety for the said Contractor, unto the said	Parish, up to the sum of
«curREQGrandTotal». The condition of this perf	formance 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.

Bond No.:
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#### 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.

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:	CONTRACTOR:
Signature	Signature
Print Name	Print Name
Signature	Title
Print Name	Date

WITNESSES:	ST. TAMMANY PARISH GOVERNMENT:
Signature	Michael B. Cooper
Print Name	Parish President
Signature	Date
Print Name	
APPROVED BY:	
Assistant District Attorney Civil Division	(Surety)
	Signature

Date

Bond No.:\_\_\_\_\_

**Print Name** 

#### Section 12

# Department of the Treasury (DOT) & American Rescue Plan Act (ARPA) Federal Contract Clauses WATER SECTOR PROGRAM 31 CFR Part 35 Subpart A

#### 1. EQUAL EMPLOYMENT OPPORTUNITY

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

- (1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

  Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- (2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- (3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- (4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- (8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States. The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: *Provided*, That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon

contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

2. DAVIS-BACON ACT, as amended (40 U.S.C. 3141-3148). When required by Federal program legislation, all prime construction contracts in excess of \$2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

#### 3. COMPLIANCE WITH THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT.

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

than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

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

  (3) Withholding for unpaid wages and liquidated damages. The Parish shall upon its own action or upon written request of an authorized representative of the Department of Labor or U.S. Treasury withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or
- cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.
- (4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

#### 4. RIGHTS TO INVENTIONS MADE UNDER A CONTRACT OR AGREEMENT

If the Federal award meets the definition of "funding agreement" under 37 CFR § 401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

#### 5. CLEAN AIR ACT

- (1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C.§ 7401 *et seq*.
- (2) The Contractor agrees to report each violation to the Parish and understands and agrees that the Parish will, in turn, report each violation as required to assure notification to the federal awarding agency, and the appropriate Environmental Protection Agency Regional Office.
- (3) The Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by ARPA.

#### 6. FEDERAL WATER POLLUTION CONTROL ACT

- (1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. § 7401 *et seq.*
- (2) The Contractor agrees to report each violation to the Parish and understands and agrees that the Parish will, in turn, report each violation as required to assure notification to the Federal awarding agency, and the appropriate Environmental Protection Agency Regional Office.
- (3) The Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by ARPA.

#### 7. SUSPENSION AND DEBARMENT

- (1) This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).
- (2) The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
- (3) This certification is a material representation of fact relied upon by the Parish. If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to the Parish, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- (4) The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

#### 8. BYRD ANTI-LOBBYING ACT

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

#### 9. PROCUREMENT OF RECOVERED MATERIALS

In the performance of this Contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired—

- i. Competitively within a timeframe providing for compliance with the Contract performance schedule;
- ii. Meeting Contract performance requirements; or
- iii. At a reasonable price.

Information about this requirement, along with the list of EPA-designate items, is available at EPA's Comprehensive Procurement Guidelines web site, https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program.

## 10. PROHIBITION ON CONTRACTING FOR COVERED TELECOMMUNICATIONS EQUIPMENT OR SERVICES.

- (a) *Definitions*. As used in this clause, the terms backhaul; covered foreign country; covered telecommunications equipment or services; interconnection arrangements; roaming; substantial or essential component; and telecommunications equipment or services have the meaning as defined in Public Law 115-232, section 889, Prohibitions on Expending ARPA Award Funds for Covered Telecommunications Equipment or Services (Interim), as used in this clause—
  (b) *Prohibitions*.
- (1) Section 889(b) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232, and 2 C.F.R. § 200.216 prohibit the head of an executive agency on or after Aug.13, 2020, from obligating or expending grant, cooperative agreement, loan, or loan guarantee funds on certain telecommunications products or from certain entities for national security reasons.

- (2) Unless an exception in paragraph (c) of this clause applies, the contractor and its subcontractors may not use grant, cooperative agreement, loan, or loan guarantee funds from a federal Agency to:
- (i) Procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system;
- (ii) Enter into, extend, or renew a contract to procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system;
- (iii) Enter into, extend, or renew contracts with entities that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system as described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities). (a) For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities). (bi) Telecommunications or video surveillance services provided by such entities or using such equipment. (c) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country; or (iv) Provide, as part of its performance of this contract, subcontract, or other contractual instrument, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. (3) In implementing the prohibition under Public Law 115-232, section 889, subsection (f), paragraph (1),
- (3) In implementing the prohibition under Public Law 115-232, section 889, subsection (1), paragraph (1), heads of executive agencies administering loan, grant, or subsidy programs shall prioritize available funding and technical support to assist affected businesses, institutions and organizations as is reasonably necessary for those affected entities to transition from covered communications equipment and services, to procure replacement equipment and services, and to ensure that communications service to users and customers is sustained.
- (4) See Public Law 115-232, section 889 for additional information.
- (5) See also § 200.471.
- (c) Exceptions.
- (1) This clause does not prohibit contractors from providing—
- (i) A service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or
- (ii) Telecommunications equipment that cannot route or redirect user data traffic or permit visibility into any user data or packets that such equipment transmits or otherwise handles.
- (2) By necessary implication and regulation, the prohibitions also do not apply to:
- (i) Covered telecommunications equipment or services that:
- i. Are not used as a substantial or essential component of any system; and
- ii. Are *not used* as critical technology of any system.
- (ii) Other telecommunications equipment or services that are not considered covered telecommunications equipment or services.
- (d) Reporting requirement.
- (1) In the event the contractor identifies covered telecommunications equipment or services used as a substantial or essential component of any system, or as critical technology as part of any system, during contract performance, or the contractor is notified of such by a subcontractor at any tier or by any other source, the contractor shall report the information in paragraph (d)(2) of this clause to the recipient or subrecipient, unless elsewhere in this contract are established procedures for reporting the information.
- (2) The Contractor shall report the following information pursuant to paragraph (d)(1) of this clause:

- (i) Within one business day from the date of such identification or notification: The contract number; the order number(s), if applicable; supplier name; supplier unique entity identifier (if known); supplier Commercial and Government Entity (CAGE) code (if known); brand; model number (original equipment manufacturer number, manufacturer part number, or wholesaler number); item description; and any readily available information about mitigation actions undertaken or recommended.
- (ii) Within 10 business days of submitting the information in paragraph (d)(2)(i) of this clause: Any further available information about mitigation actions undertaken or recommended. In addition, the contractor shall describe the efforts it undertook to prevent use or submission of covered telecommunications equipment or services, and any additional efforts that will be incorporated to prevent future use or submission of covered telecommunications equipment or services.
- (e) Subcontracts. The Contractor shall insert the substance of this clause, including this paragraph (e), in all subcontracts and other contractual instruments.

#### 11. DOMESTIC PREFERENCES FOR PROCUREMENTS.

As appropriate, and to the extent consistent with law, the contractor should, to the greatest extent practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States. This includes, but is not limited to iron, aluminum, steel, cement, and other manufactured products.

For purposes of this clause:

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

Manufactured products mean items and construction materials composed in whole or in part of nonferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe;

#### 12. COMPLIANCE WITH FEDERAL EXECUTIVE ORDERS

aggregates such as concrete; glass, including optical fiber; and lumber.

This is an acknowledgement that American Rescue Plan Act will be used to fund the Contract only. The Contractor will comply will all applicable federal law, regulations, executive orders, policies, procedures, and directives.

#### 13. NO OBLIGATION BY THE FEDERAL GOVERNMENT

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

#### 14. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS OR RELATED ACTS

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

## 15. CONTRACTING WITH SMALL AND MINORITY BUSINESSES, WOMEN'S BUSINESS ENTERPRISES, AND LABOR SURPLUS AREA FIRMS.

- (a) Any party to this contract must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible. These steps are also required for the hiring of any subcontractors under this contract.
- (b) Affirmative steps must include:
- (1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
- (2) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
- (3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;

- (4) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises; and
- (5) Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

#### 16. COPYRIGHT AND DATA RIGHTS

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

Note:

Davis-Bacon Act is NOT applicable to this project.

## Municipal Facilities Clean Water State Revolving Fund Project

## LDEQ Requirements

#### Guidance for preparing

#### Plans and Specifications

for

#### Clean Water State Revolving Fund Projects

The Clean Water State Revolving Fund (CWSRF) program is a state program that is receiving Federal assistance. CWSRF projects will have to meet the following Federal requirements:

- 1. Cost and Effectiveness analysis.
- 2. Presidential Executive Orders 11625, 12138, and 12432, Women's and Minority Business Enterprise.
- 3. Presidential Executive Order 12549, Debarment and Suspension.
- 4. Presidential Executive Order 11246, Equal Employment Opportunity.
- 5. Davis-Bacon and Related Acts.
- 6. Use of American iron and steel.

## The following form shall be signed by the Loan Recipient or Consulting Engineer and submitted with the final set of Plans and Specifications and is required prior to LDEO approval.

1. RF-602 Cost & Effectiveness Certification (signed by Loan Recipient or Consulting Engineer and submitted with final plans and specifications)

The following forms shall be included in the bid documents.

2. RF-200	Prospective Prime Contractor's (Bidder) Statement About Six Good Faith Efforts
3. EPA 5700-49	Certification Regarding Debarment, Suspension, and Other Responsibility Matters
4. EPA 6100-2	Subcontractor Participation Form
5. EPA 6100-3	Subcontractor Performance Form
6. EPA 6100-4	Subcontractor Utilization Form
7. RF-373	MBE/WBE Certification (signed by Loan Recipient)

The above forms must be completed and signed by the successful bidder except for form RF-373. The RF-373 must be signed by the authorized representative of the loan recipient. It is a good idea to include the remaining forms in the special/supplementary conditions with instructions clarifying that the successful bidder will be required to complete and sign all forms except RF-373.

It is a Federal requirement that all procurement made with Federal funds utilize six Good Faith Efforts to utilize disadvantaged business enterprises (DBE's) in the areas of construction, services, equipment, and supplies. In order to advise prospective bidders of these requirements, the attached EXPLANATION OF GOOD FAITH EFFORTS must be included verbatim in the information/instruction for bidders section of the contract documents. The documentation requested from the successful bidder should be included with the bid document package submitted to DEQ.

It is a requirement of the CWSRF Loan Program that surety companies providing bonding to contractors be included in the most current version of the U.S. Treasury Department's listing of approved sureties,

Circular 570. The latest version of this circular can be found on the Internet at <a href="https://www.fiscal.treasury.gov/fsreports/ref/suretyBnd/c570">https://www.fiscal.treasury.gov/fsreports/ref/suretyBnd/c570</a> a-z.htm.

Surety companies that are utilized also must be currently licensed to do business in the state of Louisiana. These requirements should be noted in the section of the contract documents that discusses bonding requirements.

The attached REQUIRED CLAUSES FOR CONTRACT DOCUMENTS must be included verbatim in the contract documents (special/supplementary conditions) to satisfy these laws.

Some portions of the project that do not meet Federal eligibility requirements may not be funded through the CWSRF. If any portions of the project are not eligible, these should be listed separately and identified as ineligible in the bid proposal.

The DEQ Project Engineer will review the plans and specifications to ensure the following:

- 1. That the CWSRF Program requirements discussed above have been met.
- 2. That adequate information is given to bid and construct the project.
- 3. That the design is in accordance with the approved Preliminary Engineering Report (if applicable).
- 4. That the facilities are properly designed according to accepted design criteria and will be capable of handling the expected hydraulic and organic loadings and (for treatment works) of meeting the expected effluent limits.

The design engineer must take into account the need for reliability in the operation of any treatment works that he or she designs. An important aspect of reliability is the need for multiple units and back up units for the major unit operations in a treatment work. Please refer to our Guidance on Component Reliability Criteria for State Revolving Fund Loan Projects.

In order to enable the DEQ Project Engineer to adequately review the design of treatment works and collection/transportation systems, it is requested that the consulting engineer submit a design summary with the plans and specifications. The design summary should contain the relevant data, design criteria, assumptions, methods, and sample calculations used to design the major components of treatment and/or collection/transportation facilities. Normally, a design summary is not required for a sewer rehabilitation project.

The CWSRF staff does review bid documents and will issue a letter to the recipient authorizing a contract award, so bidding schedules should be planned to allow time for this activity. We do not plan to take an active role in the resolution of any bid protests, except insofar as any Federal requirements of the CWSRF program may be involved.

The CWSRF program does allow loans to include reimbursement for work already performed. It is allowable for the recipient to receive bids and to award construction contracts before the loan agreement is signed, however, no payments can be made until after the loan agreement is signed and there may be some limitations on making large payments immediately after the loan agreement is signed. Recipients may also proceed to construction prior to approval of facilities plans, plans and specifications, addenda, and bid documents; however; the recipient must accept the risk of loss of financial assistance for any elements of the project that are not approvable. Reimbursements for construction contracts already bid cannot be made unless the provisions specified in this guidance were included in the contract documents that were bid.

While we strongly discourage recipients from taking any action based on documents that have not been approved, we recognize that some recipients may have compliance schedules that do not allow time for the normal review and approval process. We will attempt to assist these recipients as much as possible but we cannot guarantee that financial assistance will be available until all program requirements have been met.

#### REQUIRED CLAUSES FOR CONTRACT DOCUMENTS

### I. EQUAL OPPORTUNITY CLAUSE: 40 CFR PART 8.

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

- (1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this equal opportunity clause.
- (2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- (3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract, or understanding, a notice to be provided by the agency contracting officer, advising the labor union or worker's representative of the contractor's commitments under this equal opportunity clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (4) The contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (5) The contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and.
- (6) In the event of the contractors noncompliance with the equal opportunity clause of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended, in whole or in. part, and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- (7) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

#### II. HISTORICAL PRESERVATION CLAUSE: 36 CFR PART 800.

The contractor agrees that, should evidence of historical or archeological sites be discovered during construction, all work in the area will cease immediately and the owner will be informed of the discovery.

The owner will, in turn, promptly notify the Clean Water State Revolving Fund Program of the Louisiana Department of Environmental Quality (DEQ).

After consulting with the appropriate State and Federal agencies the DEQ will advise the owner of any protective measurers that may be required.

## III. ENDANGERED SPECIES CLAUSE: ENDANGERED SPECIES ACT OF 1973, AS AMENDED

The contractor agrees that, should plants or animals belonging to either endangered or threatened species be discovered in the area of construction or adjacent areas, all work in that area will cease immediately, and the owner will be informed of the discovery. The owner will, in turn, promptly notify the Clean Water State Revolving Fund Program of the Louisiana Department of Environmental Quality (DEQ).

After consulting with the appropriate State and Federal agencies, the DEQ will advise the owner of any protective measurers that may be required.

#### IV. PRESIDENTIAL EXECUTIVE ORDERS

The contractor is required to comply with the following Presidential Executive Orders:

- (1) 11625, 12138, and 12432 Women's and Minority Business Enterprise;
- (2) 12549 Debarment and Suspension
- (3) 11246 Equal Employment Opportunity.

#### V. USE OF AMERICAN IRON AND STEEL

The following text must be included the bidding documents:

"In accordance with Section 608 of the Clean Water Act as amended by the Water Resources Reform and Development Act of 2014, the contractor agrees that all of the iron and steel products used in the performance of the contract will be produced in the United States."

For additional information including published waivers, please see the EPA website: <a href="http://water.epa.gov/grants-funding/aisrequirement.cfm">http://water.epa.gov/grants-funding/aisrequirement.cfm</a>

### VI. DAVIS BACON AND RELATED ACTS

The bidding documents must include the current U.S. Department of Labor wage rates for the project. Wage rates may be downloaded from <a href="http://www.wdol.gov/">http://www.wdol.gov/</a> and clicking on "Selecting DBA WDs". Select the appropriate Wage Determination for your project and include it in the specifications when you advertise for bids. Recheck the Wage Determination ten days before bid opening, and if it has been revised, the revised version must be issued to bidders as an addendum.

Some consulting engineers have staff members that are capable of monitoring Davis-Bacon and Related Acts requirements, and others may not. There are administrative consultants that specialize in monitoring and managing contractor submittals and conformance with Davis-Bacon and Related Acts requirements. An administrative consultant engaged for this purpose is considered an eligible project cost.

The following text must be included in the bidding documents:

#### Wage Rate Requirements Under The Clean Water Act, Section 513

#### Preamble

With respect to the Clean Water State Revolving Funds, EPA provides capitalization grants to each State which in turn provides sub grants or loans to eligible entities within the State. Typically, the sub recipients are municipal or other local governmental entities that manage the funds. For these types of recipients, the provisions set forth under Roman numeral I, below, shall apply. Although EPA and the State remain responsible for ensuring sub recipients' compliance with the wage rate requirements set forth herein, those sub recipients shall have the primary responsibility to maintain payroll records as described in Section 3(ii)(A), below and for compliance as described in Section 1-5.

Occasionally, the sub recipient may be a private for profit or not for profit entity. For these types of recipients, the provisions set forth in Roman Numeral II, below, shall apply. Although EPA and the State remain responsible for ensuring sub recipients' compliance with the wage rate requirements set forth herein, those sub recipients shall have the primary responsibility to maintain payroll records as described in Section II-3(ii)(A), below and for compliance as described in Section II-5.

## I. Requirements Under The Water Resources Reform and Development Act of 2014 (WRRDA) For Sub recipients That Are Governmental Entities:

The following terms and conditions specify how recipients will assist EPA in meeting its Davis-Bacon (DB) responsibilities when DB applies to EPA awards of financial assistance under the Water Resources Reform and Development Act of 2014 (WRRDA) - with respect to State recipients and sub recipients that are governmental entities. If a sub recipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient. If a State recipient needs guidance, the recipient may contact Mr. Dannell Brown at <a href="mailto:brown.danell@epa.gov">brown.danell@epa.gov</a> or 214-665-7279, of EPA Region 6 Grants Management Office, - for guidance. The recipient or sub recipient may also obtain additional guidance from DOL's web site at <a href="http://www.dol.gov/whd/">http://www.dol.gov/whd/</a>

#### 1. Applicability of the Davis- Bacon (DB) prevailing wage requirements.

Under the Water Resources Reform and Development Act of 2014 (WRRDA) -, DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving. If a sub recipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the sub recipient must discuss the situation with the recipient State before authorizing work on that site.

#### 2. Obtaining Wage Determinations.

- (a) Sub recipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.
  - (i) While the solicitation remains open, the sub recipient shall monitor www.wdol.gov weekly to ensure that the wage determination contained in the solicitation remains current. The sub recipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the sub recipients may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the sub recipient.

- (ii) If the sub recipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State recipient, at the request of the sub recipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The sub recipient shall monitor <a href="www.wdol.gov">www.wdol.gov</a> on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.
- (b) If the sub recipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the sub recipient shall insert the appropriate DOL wage determination from <a href="https://www.wdol.gov">www.wdol.gov</a> into the ordering instrument.
- (c) Sub recipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.
- (d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a sub recipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the sub recipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the sub recipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The sub recipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

#### 3. Contract and Subcontract provisions.

(a) The Recipient shall insure that the sub recipient(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF - financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or -FY 2015 Water Resource Reform and Development Act, the following clauses:

#### (1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any

additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Sub recipients may obtain wage determinations from the U.S. Department of Labor's web site, www.dol.gov.

- (ii)(A) The sub recipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the sub recipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the sub recipient (s) to the State award official. The State award official will transmit the request, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.
- (C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the sub recipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
- (iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- (iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

- (2) Withholding. The sub recipient(s), shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.
- (3) Payrolls and basic records.
- (i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainèes under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.
- (ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the sub recipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the sub recipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <a href="http://www.dol.gov/whd/forms/wh347instr.htm">http://www.dol.gov/whd/forms/wh347instr.htm</a> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the sub recipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sub recipient(s).
- (B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

- (1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;
- (2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
- (3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- (C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.
- (D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.
- (iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

### (4) Apprentices and trainees

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or sub contractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for

the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- (ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and Individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- (iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended and 29 CFR part 30.
- (5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.
- (6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may by appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.
- (7) Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
- (8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.
- (9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and sub recipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.
- (10) Certification of eligibility.

- (i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- (ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- (iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

#### 4. Contract Provision for Contracts in Excess of \$100,000.

- (a) Contract Work Hours and Safety Standards Act. The sub recipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.
- (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.
- (3) Withholding for unpaid wages and liquidated damages. The sub recipient, upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.
- (4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.
- (b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Sub recipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Sub

recipient shall insert in any such contract a clause providing hat the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

#### 5. Compliance Verification

- (a) The sub recipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The sub recipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.
- (b) The sub recipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. Sub recipients must conduct more frequent interviews if the initial interviews or other information indicated that there is a risk that the contractor or subcontractor is not complying with DB.

  Sub recipients shall immediately conduct interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence."
- (c) The sub recipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The sub recipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable, the sub recipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Sub recipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the sub recipient shall verify evidence of fringe benefit plans and payments there under by contractors and subcontractors who claim credit for fringe benefit contributions.
- (d) The sub recipient shall periodically review contractors and subcontractor's use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.
- (e) Sub recipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <a href="http://www.dol.gov/whd/america2.htm">http://www.dol.gov/whd/america2.htm</a>.

## II. Requirements Under The Water Resource Reform and Development Act of 2014 (WRDA) -) For Sub recipients That Are Not Governmental Entities:

The following terms and conditions specify how recipients will assist EPA in meeting its DB responsibilities when DB applies to EPA awards of financial assistance under –FY 2014 Water Resource Reform and Development Act with respect to sub recipients that are not governmental entities. If a sub recipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient for guidance. If a State recipient needs guidance, the recipient may contact Mr. Dannell Brown at <a href="mailto:brown.dannell@epa.gov">brown.dannell@epa.gov</a> or 214-665-7279, of EPA Grants Management Office for guidance. The recipient or sub recipient may also obtain additional guidance from DOL's web site at <a href="http://www.dol.gov/whd/">http://www.dol.gov/whd/</a>

<u>Under these terms and conditions, the sub recipient must submit its proposed DB wage determinations to the State recipient for approval prior to including the wage determination in any solicitation, contract task orders, work assignments, or similar instruments to existing contractors.</u>

#### Applicability of the Davis- Bacon (DB) prevailing wage requirements.

Under the FY 2015 Water Resource Reform and Development Act -, DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund -. If a sub recipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the sub recipient must discuss the situation with the recipient State before authorizing work on that site.

#### 2. Obtaining Wage Determinations.

- (a) Sub recipients must obtain proposed wage determinations for specific localities at <a href="www.wdol.gov">www.wdol.gov</a>. After the Sub recipient obtains its proposed wage determination, it must submit the wage determination to Mr. Dannell Brown at <a href="mailto:brown.dannell@epa.gov">brown.dannell@epa.gov</a> or 214-665-7279, of EPA Grants Management office for approval prior to inserting the wage determination into a solicitation, contract or issuing task orders, work assignments or similar instruments to existing contractors (ordering instruments unless subsequently directed otherwise by the State recipient Award Official.)
- (b) Sub recipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.
  - (i) While the solicitation remains open, the sub recipient shall monitor www.wdol.gov on a weekly basis to ensure that the wage determination contained in the solicitation remains current. The sub recipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the sub recipients may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the sub recipient.
  - (ii) If the sub recipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State recipient, at the request of the sub recipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The sub recipient shall monitor <a href="www.wdol.gov">www.wdol.gov</a> on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.
- (c) If the sub recipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the sub recipient shall insert the appropriate DOL wage determination from <a href="www.wdol.gov">www.wdol.gov</a> into the ordering instrument.
- (d) Sub recipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.
- (e) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a sub recipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the sub recipient has failed to incorporate a wage determination or has used a wage determination that clearly does not

apply to the contract or ordering instrument. If this occurs, the sub recipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The sub recipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

#### 3. Contract and Subcontract provisions.

(a) The Recipient shall insure that the sub recipient(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF - or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or the FY 2015 Water Resource Reform and Development Act -, the following clauses:

#### (1) Minimum wages:

(i) All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Sub recipients may obtain wage determinations from the U.S. Department of Labor's web site, www.dol.gov.

- (ii)(A) The sub recipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and

- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the sub recipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the sub recipient(s) to the State award official. The State award official will transmit the report, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.
- (C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the sub recipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request, and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
- (iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- (iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.
- (2) Withholding. The sub recipient(s) shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.
- (3) Payrolls and basic records.
- (i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work.

Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

- (ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the sub recipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the sub recipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the sub recipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sub recipient(s).
- (B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
- (1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;
- (2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
- (3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- (C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

- (D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.
- (iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

#### (4) Apprentices and trainees-

- (i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractors registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- (ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe

benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- (iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended and 29 CFR part 30.
- (5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.
- (6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may by appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.
- (7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
- (8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.
- (9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and Sub recipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.
- (10) Certification of eligibility.
- (i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- (ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- (iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.
- 4. Contract Provision for Contracts in Excess of \$100,000.
- (a) Contract Work Hours and Safety Standards Act. The sub recipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

- (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.
- (3) Withholding for unpaid wages and liquidated damages. The sub recipient shall upon the request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (a)(2) of this section.
- (4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.
- (c) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Sub recipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Sub recipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

#### 5. Compliance Verification

- (a) The sub recipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The sub recipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.
- (b) The sub recipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. Sub recipients must conduct more frequent interviews if the initial interviews or other information indicated that there is a risk that the contractor or subcontractor is not complying with DB. Sub recipients shall immediately

conduct interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence."

- (c). The sub recipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The sub recipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable the sub recipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Sub recipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the sub recipient shall verify evidence of fringe benefit plans and payments there under by contractors and subcontractors who claim credit for fringe benefit contributions.
- (d). The sub recipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.
- (e) Sub recipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <a href="http://www.dol.gov/whd/america2.htm">http://www.dol.gov/whd/america2.htm</a>.

Note that "subrecipient" in the preceding regulations refers to the municipality.

### VII.EXPLANATION OF SIX GOOD FAITH EFFORTS

It is a Federal requirement that all procurement made with Federal funds utilize six (6) good faith efforts to utilize disadvantaged business enterprises (DBE's) in the areas of construction, services, equipment, and supplies as follows:

- 1. Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local and Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
- 2. Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
- 3. Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
- 4. Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.
- 5. Use the services and assistance of the SBA and the Minority Business Development Agency of the Department of Commerce.
- 6. If the prime contractor awards subcontracts, require the prime contractor to take the steps in paragraphs (1) through (5) of this section.

The PRO-Net database can be accessed by typing www.sba.gov to reach the SBA Webpage. The PRO-Net database allows you to conduct a search for firms based on a number of criteria such as locality, SIC codes, bonding capability, etc. This database also allows you to locate firms that have been certified through the 8(a) program which certifies that the company has at least 2 years experience, has adequate financing and bonding to perform, and has references from previous jobs. If you do not have Internet access, you can contact the New Orleans office of the SBA at (504) 589-2847.

The MBDA also maintains a database which can be accessed by typing www.mbda.gov to reach their opportunity database. Information you submit to this database about the job you have for MBE/WBE participation will be compared with information in the Phoenix database of minority companies. When a match is made, the eligible minority companies will receive a copy of your opportunity by email and/or fax and you will receive (via email or fax) a list of the minority companies to which your opportunity has been referred. The phone number for the MBDA is (214) 767-8001.

The Louisiana Department of Transportation and Development (DOTD) also has an online list of DBE firms that have been certified by DOTD. Typing www.dotd.state.la.us/cgibin/construction.cgi will take you to the site where you can select the most current list of DBE firms. The phone number for DOTD is (225) 379-1382.

The successful bidder must provide documentation to demonstrate that the affirmative action steps were pursued. Documentation might include records of telephone calls, records of utilization of the MBDA and SBA Web sites, and relevant correspondence. Where DBEs are contacted but not utilized, an explanation as to why each one contacted was not utilized should be provided.

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### EXPLANATION OF AFFIRMATIVE ACTION STEPS

It is a Federal requirement that all procurement made with the Federal funds utilize six (6) affirmative action steps to utilize small business enterprises (SBE's), minority business enterprises (MBE's), women's business (WBE's), and small businesses in rural areas (SBRA's) in the areas of construction, services, equipment, and supplies. These six steps are as follows:

- 1. Include MBE's, WBE's, SBE's, and SBRA's on the solicitation lists;
- 2. Assure that MBE's, WBE's, SBE's, and SBRA's, once they are identified, are solicited whenever they are potential sources;
- 3. When economically feasible, divide total requirements into smaller tasks or quantities to permit maximum participation by MBE's, WBE's, SBE's, and SBRA's;
- 4. Where feasible, establish delivery schedules which encourage participation by MBE's, WBE's, SBE's, and SBRA's;
- 5. Using the services and assistance of the U.S. Department of Commerce's Minority Business Development Agency (MBDA) and the Small Business Administration (SBA); and
- 6. Requiring the prime contractor to take the affirmative steps outlined here. If the successful bidder does not plan to award subcontracts, these steps should still be taken in procuring equipment and supplies.

Step number five (5) is not mandatory if other sources to identify MBE's, WBE's, SBE's, and SBRA's are utilized. However, the use of these resources is encouraged. There are several outline databases that list qualifying firms, some of which may be identified as disadvantaged business enterprises (DBE) rather than MBE, WBE, SBE, or SBRA firms.

One of these databases in the PRO-Net database which can be accessed by typing <a href="https://www.sba.gov">www.sba.gov</a> to reach the SBA Webpage. The PRO-Net database allows you to conduct a search for firms based on a number of criteria such as locality, SIC codes, bonding capability, etc. This database also allows you to locate firms that have been certified through the 8(a) program which certifies that the company has at least 2 years' experience, has adequate financing and bonding to perform, and has references from previous jobs. If you do not have Internet access you can contact the New Orleans office of the SBA at (504) 589-2847.

The MBDA also maintains a database which can be accessed by typing <a href="www.mbda.gov">www.mbda.gov</a> to reach their opportunity database. Information you submit to this database about the job you have for MBE/WBE participation will be compared with information in the Phoenix database of minority companies. When a match is made, the eligible minority companies will receive a copy of your opportunity by email and/or fax and you will receive (via email or fax) a list of the minority companies to which your opportunity has been referred. The phone number for the MBDA is (214) 767-8001.

The Louisiana Department of Transportation and Development (DOTD) also has an online list of DBE firms that have been certified by DOTD. Typing <a href="www.dotd.state.la.us/cgibin/construction.cgi">www.dotd.state.la.us/cgibin/construction.cgi</a> will take you to the site where you can select the most current list of DBE firms. The phone number for DOTD is (225) 379-1382.

The successful bidder must provide documentation to demonstrate that the affirmative action steps were pursed. In addition to the use of forms RF-245 and RF 248, documentation might include records of telephone calls, records of utilization of the MBDA and SBA Web sites, and relevant correspondence. Where MBE's, WBE's, SBE's, and/or SBRA's are contacted but not utilized, an explanation as to why each one contacted was not utilized should be provided.

United States Environmental Protection Agency Washington, DC 20460

# Certification Regarding Debarment, Suspension, and Other Responsibility Matters

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

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency.
- (b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

Typed Name & Title of Authorized Representative		
Signature of Authorized Representative	Date	
I am unable to certify to the above statements. My explanation is attached.		
EPA Form 5700-49 (11-88)		

## CONTRACTOR'S GUIDE & RECORD FOR IMPLEMENTATION OF SIX AFFIRMATIVE ACTIONS

It is a Federal requirement that all procurement made with Federal funds utilize six (6) affirmative action steps to utilize disadvantaged business enterprises (DBEs) in the areas of construction, services, equipment, and supplies. For each of the following six steps, please state what actions were taken to comply with that step or reasons that no action was taken.

Signa	ature of Contractor Date
6.	Require that each party to a sub-agreement or contract award take the affirmative steps outlined here.
5.	Using the services and assistance of the Small Business Administration, and the Minority Business Development Agency of the Department of Commerce to identify qualified DBEs.
4.	Establishing delivery schedules, where the requirement permits, which encourage participation by DBEs.
3.	Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by DBEs.
2.	Assuring that DBEs, once identified, are solicited whenever they are potential sources.
1.	Placing qualified DBEs on solicitation lists.

### DBE CERTIFICATION

Loan Recipie	nt	
Project Numb	perDEQ Contrac	t No
The Loan Reawarded to di	ecipient has determined that a fair share of sub-agreem sadvantaged, minority and/or women's businesses on this part of the same of sub-agreem.	ents CAN/CANNOT be project.
Determination project have another certif	n has been made that the Disadvantaged Business Enterp been certified by the State of Louisiana's Unified Cert lying agency.	rises participating in this ification Program or by
The following	g is the Loan Recipients effort to show compliance with DI	EQ's policy.
Prime Constr	uction Contractor	-
Construction	Contract Amount	
WBE MBE	Name of Firm	Subcontract Amount
( ) ( )		-
( ) ( )		_
( ) ( )		<del>-</del> -
( ) ( )		- K
( ) ( )		
( ) ( )		
*Attach addit	ional sheets if necessary	
 Date	Authorized Representative	of Recipient



SUBCONTRACTOR NAME

OMB Control No: 2090-0030

Approved: 8/13/2013 Approval Expires: 8/31/2015

## Disadvantaged Business Enterprise (DBE) Program DBE Subcontractor Participation Form

An EPA Financial Assistance Agreement Recipient must require its prime contractors to provide this form to its DBE subcontractors. This form gives a DBE¹ subcontractor² the opportunity to describe work received and/or report any concerns regarding the EPA-funded project (e.g., in areas such as termination by prime contractor, late payments, etc.). The DBE subcontractor can, as an option, complete and submit this form to the EPA DBE Coordinator at any time during the project period of performance.

PROJECT NAME

BID/PROPOSA	AL NO.		SISTANCE AGREEMENT NO. (IF KNOWN)	POINT OF CONTACT
ADDRESS				
TELEPHONE	NO.		E-MAIL ADDRESS	
PRIME CONT	RACTOR NAME		ISSUING/FUNDING ENT	ITY:
	Description of Work Re	ceive	ed from the Prime	
Contract Item Number	Contractor Involving Co Equipment or Supplies			Amount Received by Prime Contractor

EPA FORM 6100-2 (DBE Subcontractor Participation Form)

<sup>&</sup>lt;sup>1</sup> A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

<sup>&</sup>lt;sup>2</sup> Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



OMB Control No: 2090-0030 Approved: 8/13/2013 Approval Expires: 8/31/2015

### Disadvantaged Business Enterprise (DBE) Program DBE Subcontractor Participation Form

ise the space below to report any concerns re	garding the above EPA-funded project
Subcontractor Signature	Print Name
Title	Date

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

EPA FORM 6100-2 (DBE Subcontractor Participation Form)



SUBCONTRACTOR NAME

OMB Control No: 2090-0030 Approved: 8/13/2013

Approval Expires: 8/31/2015

## Disadvantaged Business Enterprise (DBE) Program DBE Subcontractor Performance Form

This form is intended to capture the DBE<sup>1</sup> subcontractor's<sup>2</sup> description of work to be performed and the piece of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

PROJECT NAME

BID/PROPOSA	AL NO.	SISTANCE AGREEMENT NO. (IF KNOWN)	POINT OF CONTACT
ADDRESS			
TELEPHONE	NO.	E-MAIL ADDRESS	
PRIME CONT	RACTOR NAME	ISSUING/FUNDING ENT	ITY:
Contract Item Number	Description of Work Sul Involving Construction, Supplies	ted to the Prime Contractor ices, Equipment or	Price of Work Submitted to the Prime Contractor
DBE Certified Other:	i By:DOTS	Meets/exceeds EPA cer	

<sup>&</sup>lt;sup>1</sup> A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

<sup>&</sup>lt;sup>2</sup> Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance. EPA FORM 6100-3 (DBE Subcontractor Performance Form)



OMB Control No: 2090-0030

Approved: 8/13/2013 Approval Expires: 8/31/2015

### Disadvantaged Business Enterprise (DBE) Program DBE Subcontractor Performance Form

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	Date

Subcontractor Signature	Print Name
Title	Date

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

EPA FORM 6100-3 (DBE Subcontractor Performance Form)



SUBCONTRACTOR NAME

OMB Control No: 2090-0030 Approved: 8/13/2013

Approval Expires: 8/31/2015

### Disadvantaged Business Enterprise (DBE) Program DBE Subcontractor Utilization Form

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE¹ subcontractors² and the estimated dollar amount of each subcontract. An EPA Financial Assistance Agreement Recipient must require its prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

PROJECT NAME

BID/PROPOSAL NO.		SSISTANCE AGREEM NO. (IF KNOWN)	ENT	POINT O	F CC	ONTACT
ADDRESS						
TELEPHONE NO.		E-MAIL ADDRESS				
PRIME CONTRACTOR NAM	Æ	ISSUING/FUNDING	ENTI	TY:		
I have identified potential D	BE certified su	bcontractors		Yes		No
If yes, please complete the ta						
Subcontractor Name/ Company Name	Company A	Address/Phone/Email		Estimated Dollar Amount		Currently DBE Certified?
		1 1 12 1 1				

EPA FORM 6100-4 (DBE Subcontractor Utilization Form)

Continue on back if needed

<sup>&</sup>lt;sup>1</sup> A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33,204-33,205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33,202.

<sup>&</sup>lt;sup>2</sup> Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



OMB Control No: 2090-0030

Approved: 8/13/2013 Approval Expires: 8/31/2015

### Disadvantaged Business Enterprise (DBE) Program DBE Subcontractor Utilization Form

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	Date

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

EPA FORM 6100-4 (DBE Subcontractor Utilization Form)

[Code of Federal Regulations]
[Title 29 Volume 1J]
[Revised as of July 1, 200B]
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[Page 115-121]

#### TITLE 29—LABOR

PART 5 LABOR STANDARDS PROVISIONS APPLICABLE TO CONTRACTS COVERING FEDERALLY FINANCED AND ASSISTED CONSTRUCTION

Subpart A - Davis-Bacon and Related Acts Provisions and Procedures

Sec.5.5 Contract provisions and related matters.

- (a) The Louisiana Department of Environmental Quality requires the contracting officer to insert in full in any contract in excess of \$2,000 ~'1hich is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a public building or public \10rk, or building or work financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except \-1here a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in Sec. 5.1, the following clauses (or any modifications thereof to meet the particular needs of the agency, Provided, That such modifications are first approved by the Department of Labor):
- (1) Minimum wages. (i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1 (b) (2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a) (1) (iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in Sec. 5.5(a) (4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional

classification and wage rates conformed under paragraph (a) (1) (ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

- (ii) (A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination: and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, Hill issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a) (1) (ii) (8) or (C) of this section, shall be paid to all, workers performing work in the classification under this contract from the first day on which work is performed in the classification.
- (iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- (iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or

mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

- (2) Withholding. The (write in name of the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, the Louisiana Department of Environmental Quality may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.
- (3) Payrolls and basic records. (i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such \10rker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section l(b) (2) (B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a) (1) (iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section l(b) (2) (B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or

(ii) (A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payroll's to the Louisiana Department of Environmental Quality if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the

trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates

prescribed in the applicable programs.

Louisiana Department of Environmental Quality. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under Sec. 5.5(a) (3) (i) of Regulations, 29 CFR part 5. This information may be submitted in any form desired. Optional Form NH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington DC 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

- (B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
- (1) That the payroll for the payroll period contains the information required to be maintained under Sec. 5.5 (a) (3) (i) of Regulations, 29 CFR part 5 and that such information is correct and complete;
- (2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
- (3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- (C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a) (3) (ii) (B) of this section.
- (D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 10 and section 231 of title 31 of the United States Code.
- (iii) The contractor or subcontractor shall make the records required under paragraph la) (3) (i) of this section available for inspection, copying, or transcription by authorized representatives of the Louisiana Department of Environmental Quality or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Louisiana Department of Environmental Quality may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.
- (4) Apprentices and trainees—(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training,

Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance \lith the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5. 16, trainees shall not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeyman on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is' an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable

wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor h'ill no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- (iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.
- (5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.
- (6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a) (1) through (10) and such other clauses as the Louisiana Department of Environmental Quality may by appropriate instructions require, and a 1 so a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or other tier subcontractor ~lith all the contract clauses in 29 CFR 5.5.
- (7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
- (8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.
- (9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.
- (10) Certification of eligibility. (i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor I 5 firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 C,R 5.12(a) (1).
- (ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a) (1).
- (iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S. C. 1001.
- (b) Contract Work Hours and Safety Standards Act. The Secretary of the Louisiana Department of Environmental Quality shall cause or require the contracting officer to insert the following clauses set forth in paragraphs (b) (1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the

clauses required by Sec. 5.5(a) or 4.6 of part 4 of this title. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

- (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such work week.
- (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b) (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic I including watchmen and guards, employed in violation of the clause set forth in paragraph (b) (1) of this section, in the sum of SID for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b) (1) of this section.
- (3) Withholding for unpaid wages and liquidated damages. The (write in the name of the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, \'1 hich is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b) (2) of this section.
- (4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b) (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b) (1) through (4) of this section.
- (c) In addition to the clauses contained in paragraph (b), in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in Sec. 5.1, the Secretary of the Louisiana Department of Environmental Quality shall cause or require the contracting officer to insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number; correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Secretary of the Louisiana Department of Environmental Quality shall cause or require the contracting officer to insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the Louisiana Department of Environmental Quality and the

Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

# Davis-Bacon Wage Decision

The Davis-Bacon Agreement (DBA), as amended, requires that each contract over \$2,000 to which the United States or the District of Columbia is a party for the construction, alteration, and/or repair (including painting or decorating) of public buildings or public works shall contain a clause setting forth the minimum wages to be paid to various classes of laborers and mechanics employed under the contract. This project falls under the provisions required by the current DBA.

Under the provisions of the DBA, contractors or their subcontractors are required to pay <u>laborers</u> and <u>mechanics</u> employed directly upon the site of the work no less than the locally prevailing wages and fringe benefits paid on projects of a similar character. The DBA directs the Department of Labor to determine such local prevailing wage rates (WDs). The WDs, also known as "general schedules", are then to be placed in covered contracts by Federal agency contracting officials.

In addition to the DBA itself, Congress has added prevailing wage provisions to approximately 60 statutes which assist construction projects through grants, loans, loan guarantees, and insurance. These "related Acts" involve construction in such areas as transportation, housing, air and water pollution reduction, and health.

The geographic scope of the DBA is limited to the 50 States and the District of Columbia. The scope of each related Act is determined by the terms of the particular statute under which the Federal assistance is provided.

### Section 13

SECTION 01010: SUMMARY OF WORK

#### PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Special and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this section.
- 1.2 Scope of Work: The Work of this Contract comprises of improvements to Les Bois Sewer Lift Station and the discharge force main installed by directional drilling. Work shall include installation of sewer gravity from existing lift station to the new lift station. A generator shall be provided for the new lift station.

#### 1.3 General:

- A. The Contractor shall furnish all labor, materials, equipment, tools, services, and incidentals to complete all work required by these Specifications and as shown on the Drawings.
- B. The Contractor shall perform the work complete, in place and ready for continuous service, and shall include repairs, replacements, and restoration required as a result of damages caused during this construction.
- C. Furnish and install all materials, equipment, and labor which is reasonably and properly inferable and necessary for the proper completion of the work, whether specifically indicated in the Contract Documents or not.
- D. Protect all existing work from damage. It is intended that any existing Work in place shall be repaired to original condition if damaged by Work of this Contract.
- E. Contractor shall verify all field and job conditions prior to preparing his bid. Any conditions not described in these drawings and specifications shall be brought to the attention of the A/E prior to bid date. Failure to do so shall render the contractor responsible for correction of this condition should he be awarded the contract.
- F. The word "Provide" as used in these specifications and on the drawings will be termed to mean "furnish and install" and includes all items necessary for the proper execution and completion of the work.
- G. Visit and examine the job site, and 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. Pay all costs and fees for utility connections.
- H. All work shall be performed in a neat and workmanlike manner, and in accordance with all codes, standards, and requirements of the industry.

- I. Check all specifications and all drawings and bring to attention any conflicts or variations as shown or noted.
- J. Specifications and accompanying drawings apply to all material and/or labor for construction of work specified herein and shown on drawings.
- K. For any points which are not clear, or from items and/or details which the Contractor feels are in need of clarification, consult the A/E before submission of a proposal.
- L. The drawings and the specifications are complementary and what is shown and/or called for one shall be furnished and installed the same as if shown and/or called for in the other.
- M. In case of discrepancies and/or ambiguities in the drawings and/or in the specifications, the A/E shall be consulted prior to submission of a proposal. Failure to do so on the part of the successful bidder shall be construed as explicit agreement on his part to abide by the A/E's decision in such matters.
- 1.4 Contract: Construct Work under unit price contract.
- 1.5 Work Sequence: Contractor is responsible for work sequence. Bypass pumping shall not begin until work at that specific lift station is set to begin.
- 1.6 Contractor Use of Premises:
  - A. Confine operations at site to areas permitted by law, ordinances, permits, Contract Documents.
  - B. Do not unreasonably encumber site with materials or equipment. Assume full responsibility for protection and safekeeping of products stored on premises. Move any stored products which interfere with operations of Owner.
  - C. Do not load structures with weight that will endanger structure.
  - D. Use of Site: Limit use of site for work and storage. Coordinate parking areas, materials delivery, and storage areas at site with Owner.
  - E. In no case shall the Work interfere with existing streets, drives, walks, passageways, pedestrian traffic, and the like. Comply with provisions of the Conditions of the Contract and regulatory ordinances.
  - F. Contractor shall at all times conduct his operations as to insure the least inconvenience to the general public.

#### 1.7 Construction Areas:

- A. Contractor shall limit his use of the construction areas for work and for storage to allow for work by other Contractors, Owners use, and Public use as applicable.
- B. Coordinate use of work site under direction of Owner.

- C. Assume full responsibility for the protection and safekeeping of Products under this Contract, stored on site.
- D. Move any stored Products, under Contractor's control, which interfere with operations of the Owner or separate contractor.
- E. Obtain and pay for the use of additional storage or work areas needed for operation.
- 1.8 Partial Owner Occupancy: The Contractor shall schedule his operations for completion of portions of the Work, as designated, for the Owner's occupancy prior to Substantial Completion of the entire Work.

## 1.9 Noise During Construction:

- A. Contractor shall adhere to all parish ordinances.
- B. The noise generated by construction of this Work may at times create a problem for the Owner.
- C. The Owner recognizes and can tolerate the normal level of noise created by a majority of construction activity and, therefore, does not feel any need to set certain hours of the day between morning civil twilight and evening civil twilight when noise will be restricted.
- D. However, the Owner also recognizes that, during certain construction work, the noise level is unusually higher than normal. These higher levels of noise generation may conflict with a specific activity being simultaneously conducted by the Owner.
- E. It is required of the Contractor that agreement be secured from the Owner prior to scheduling any such unusually noise activity, and that the Contractor cooperate if an on-going-activity becomes objectionable by its longevity or overlapping into a program started later by the Owner. It is understood and agreed that both parties will cooperate to the end that neither will unduly inconvenienced by this requirement.

#### 1.10 Miscellaneous Conditions:

- A. CAD Drawings: All bidders are advised that the Architect's CAD drawings will not be available for use during construction. This includes all drawings and any variation thereof for piling and foundation location, sprinkler heads, fire alarm systems, etc. The cost of drafting from scratch of any drawings shall be included in the cost of contractor's bid.
- B. Work Stoppage Due to Publically Declared Emergency: If there is an emergency declared by the Federal, State or Local government in St. Tammany Parish or in any portion thereof, then all work on this project shall cease until such time as the contractor is instructed to resume work by Department Director (no one else) who has jurisdiction over the project. If there is any type of work which must proceed to prevent harm to persons or property, or damage to the project itself; then contractor should immediately contact the Department Director for necessary instructions. If

contractor is unable to contact the Department Director, contractor may perform the work necessary to prevent such harm in accordance with industry safety standards. Contactor shall be entitled to an extension of time for the period of the stoppage, but shall not be entitled to any additional compensation by reason thereof.

### C. Construction Schedule:

- A. Contractor shall submit a detailed construction schedule to the A/E ten (10) days after receipt of Notice of Award.
- B. Contractor shall submit a revised construction schedule at the Pre-Construction Conference.
- C. Contractor shall submit revised construction schedules to the A/E monthly thereafter.

### SECTION 01011: INSURANCE

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract, (General, Special and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Provisions: A/E shall be named as an additional insured on all policies except as applied to Worker's Compensation Coverage. Contractor shall provide A/E with a Certificate of Insurance. A/E shall be listed as Certificate Holder.
- 1.3 Submittals: A sample Certificate of Insurance is attached.

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<u></u>	-1	1		FIRE DAMAGE (Any one fire)	\$	
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HIRED AUTOS NON-OWNED AUTOS				BODILY INJURY (Per accident)	5	
1			0	PROPERTY DAMAGE	5	
GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	s	
ANY AUTO			ļ	OTHER THAN AUTO ONLY:		
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ESCRIPTION OF OPERATIONS/LOCATIONS/VI	HICLES/SPECIAL ITEMS		I		- K	
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CERTIFICATE HOLDER CANCELLATION						
		1	269	CRIBED POUCIES BE CANC	ELIED REFORE THE	
		EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL				
Meyer Engineer		30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY				
P.O. Box 763		ACCUSED OF THE PROPERTY OF THE				
Metairie, LA		OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.  AUTHORIZED REPRESENTATIVE				
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ACORD 25-S (3/93)

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## SECTION 01012: REQUESTS FOR CLARIFICATION OR INTERPRETATION

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract, (General, Special and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Request For Information (RFI): The Contractor may, after exercising due diligence to locate required information, request from the Consultant clarification or interpretation of the requirements of the Contract Documents. The Consultant shall, with reasonable promptness, respond to such Contractor's requests for clarification or interpretation. However, if the information requested by the Contractor is apparent or reasonably inferable, the Contractor shall be responsible to the Client for all reasonable costs charged by the Consultant to the Client for the Additional Services required to provide such information.
- 1.3 Time: No additional Contract Time shall be allowed for RFI's relative to information that is available from field observations, is contained in the Contract Documents, or is reasonably inferable from them.
- 1.4 Submittals: RFI's may be submitted verbally or in writing. Each RFI will address one topic only.
- 1.5 Recordation: The Consultant will log each RFI received and send a copy to the Contractor monthly.

#### SECTION 01025: UNIT PRICES

1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.

#### 1.2 General:

- A. Unit prices are included on the bid form for changing quantities of work items from those indicated by the Contract Documents upon written instructions from the A/E. When quantities are listed in the Bid Form, they are to be considered as approximate and are to be used only for the comparison of bids. Payment to the Contractor will be made only for the actual quantities of work performed and materials furnished in accordance with the Contract, and if upon completion of the construction, the actual quantities shall show either an increase or decrease from the quantities given in the approximate estimate, the unit price mentioned in the Bid Form will still prevail, except as otherwise provided.
- B. Basis of Bid: Bidder must include all unit prices shown on the bid form; failure to comply may be cause for rejection.
- C. Unit prices shall include all labor, materials, bailing, shoring, sheeting, removal, overhead, profit, insurance, all taxes, etc. to cover the finished work of the several kinds called for. Changes shall be processed in accordance with the Conditions of the Contract. Without invalidating the Contract, the Owner may make reasonable changes by altering, adding to, or deducting from the work, the Contract Price being adjusted accordingly. No claim for extra work or materials shall be allowed and no alteration of or deduction from the work shall be made, unless same is ordered in writing by the Owner. Where changes ordered by the Owner involve a monetary consideration, the Contract shall be adjusted by negotiation with the terms of said negotiation being expressed in a supplemental agreement or Change Order signed by the Owner, the Contractor and the A/E.

### 1.3 Description of Unit Prices:

A. <a href="Item 1 - Mobilization">Item 1 - Mobilization</a> consists of mobilization and demobilization shall cover all preparatory work, obtaining all permits, insurance and bonds, movement of personnel, equipment, supplies and incidentals to the project site, preconstruction photographs and videos, the establishment of temporary offices, and other construction facilities necessary for work on this project. It shall include removal of all personnel, equipment, supplies and incidentals from the project site, removal of temporary offices and other construction facilities necessary for work on this project, all as required for the proper performance and completion of the work,

excluding the cost of construction materials. Partial payments for mobilization and demobilization will be made in accordance with the following schedule up to a maximum of 5 percent of the total contract amount (including this item), and payment of any remaining amount will be made upon completion of all work under the contract.

Percent of Total Contract Amount Earned	Allowable Percent of the Lump Sum Price for the Item
Amount Lamed	Earny Sum i nee for the item
1st Partial Estimate	25%
10%	50%
25%	75%
50%	100%

No price adjustments will be made for this item due to changes in the work. Mobilization will be measured and paid per Lump Sum completed and accepted.

- B. <a href="Item 2">Item 2 Temporary Signs and Barricades</a> consists of furnishing all materials, equipment, tools, labor, and incidentals necessary for all barricades, signs, temporary striping, flagmen, and other traffic control devices shall conform to the latest edition of Manual of Uniform Traffic Control Devices. Temporary Signs and Barricades will be measured and paid per Lump Sum removed and accepted.
- C. <u>Item 3 Pavement Removal (All Types, All Thicknesses)</u> includes the removal of concrete pavement and base material down to natural material or to embankment material, as determined by the Engineer, hauling, disposal, and for all materials, equipment, tools, labor, and incidentals necessary to complete the work. Removal of Pavement will be measured and paid per Square Yard removed and accepted.
- D. <u>Item 4 Demolition</u> includes furnishing all materials, equipment, tools, excavation, bedding, backfill, labor, and incidentals necessary to remove existing concrete manholes and boxes six feet in diameter and smaller. Removal of Structures will be measured and paid per Lump Sum removed and accepted.
- E. <a href="Item 5 Class II Base Course">Item 5 Class II Base Course (Theoretical Measure)</a> includes furnishing, installing, shaping, and compacting Class II Base Course to the line and grade required, recompacting and adding material as necessary and for all materials, equipment, tools, labor, and incidentals necessary to complete the work. Class II Base Course will be measured and paid per Cubic Yard initially installed and accepted (net section).
- F. <u>Item 6 Modify Existing Wet Well</u> includes all materials, equipment, tools, labor, and incidentals necessary to modify the existing wet well with grout and install a wall sleeve with link seal. Modify

- Existing wet well will be measured and paid per Lump Sum repaired and accepted.
- G. <u>Item 7 New Wet Well</u> includes furnishing all materials, equipment, tools, labor, and incidentals necessary to install a new lift station wet well. Wet well, top and bottom slab, wall sleeve(s), and accessories items will be measured and paid per Lump Sum installed and accepted.
- H. <u>Item 8 Self-Priming Centrifugal Wastewater Pump and Accessories</u> includes furnishing all materials, equipment, tools, labor, and incidentals necessary to install all pumps, and accessories for the new lift station wet well. Pumps and accessories items will be measured and paid per Lump Sum installed and accepted.
- Item 9 Station Piping, Valves, and Accessories includes furnishing all materials, equipment, tools, labor, and incidentals necessary to install all piping, valves, and accessories within the new lift station wet well. Station Piping, valves, and accessories items will be measured and paid per Lump Sum installed and accepted.
- J. <u>Item 10 Setup for Horizontal Directional Drill</u> includes furnishing all materials, equipment, tools, labor, pre and post installation video inspection and cleaning and incidentals, the necessary insertion pits excavation and backfill at each location. Setup for Horizontal Directional Dill will be measured and paid per Lump Sum installed and accepted. Tie in to the existing structures and surface restoration shall be paid under separate bid items.
- K. Item 11 Plastic Sanitary Sewer Force Main, HDPE DR17 by Horizontal Directional Drill includes all materials, equipment, tools, excavation, bedding, backfill, labor, and incidentals necessary to install HDPE Pipe by horizontal directional drilling. These pay items include all necessary fusing of pipe, pipe fittings and couplings not covered by other specific pay items. HDPE Pipe (HDD) will be measured and paid per Linear Foot horizontally along the centerline of pipeline installed and accepted.
- L. <u>Item 12 Plastic Sanitary Sewer Force Main, By Open Cut</u> includes all materials, equipment, tools, excavation, bedding, backfill, labor, and incidentals necessary to install, or remove and replace, HDPE (DR17) or PVC (C-900) Pressure Pipe by open cut. These pay items include all necessary pipe fittings and couplings not covered by other specific pay items. These items will be measured and paid per Linear Foot horizontally along the centerline of pipeline complete and in place.
- M. <u>Item 13 Plastic Sanitary Sewer Gravity Line</u> includes all materials, equipment, tools, excavation, bedding, backfill, labor, and incidentals necessary to install, or remove and replace, a Gravity Sewer. These pay items include all necessary pipe fittings and couplings not covered by other specific pay items. Gravity Sewer will

- be measured and paid per Linear Foot horizontally through manholes along the centerline of pipeline complete and in place.
- N. <u>Item 14 Sewer Manhole</u> includes all materials, equipment, tools, excavation, bedding, backfill, labor, and incidentals necessary to install precast concrete manholes. Manholes will be measured and paid per Each installed and accepted.
- O. <a href="Item 15 4" Air Release Valve (ARV)">Item 15 4" Air Release Valve (ARV)</a> and Vault includes all materials, equipment, tools, excavation, bedding, backfill, labor, and incidentals necessary to install a 4" Air Release Valve (ARV) and vault. Pay item includes concrete slabs. Air Release Valve (ARV) and vault will be measured and paid per Each installation complete and accepted.
- P. <u>Item 16 Ductile Iron Fittings</u> includes all materials, equipment, tools, excavation, bedding, backfill, labor, and incidentals necessary to install ductile iron fittings. Ductile Iron Fittings shall include bends, crosses, tees, reducers and any other required parts to make sound and functional connections and will be measured and paid by the Pound based on the weights published by the manufacturer.
- Q. <u>Item 17 Control Panel and Sensors</u> includes control panel rack system, framing, all miscellaneous materials, equipment, tools, labor, and incidentals necessary to install a control panel and sensors. Control Panel will be measured and paid per Lump Sum installed and accepted.
- R. <u>Item 18 Electrical Work</u> includes all electrical wiring, miscellaneous materials, equipment, tools, labor, and incidentals necessary to hook up the pump station electrical system. Electrical Work will be measured and paid per Lump Sum installed and accepted.
- S. <u>Item 19 Portland Cement Concrete Apron (6" Thick)</u> includes subgrade compaction, Class II base course, furnishing, installing, shaping, finishing, and curing concrete, joints and joint material, and for all other materials, equipment, tools, labor, and incidentals necessary to complete the work. Concrete Drive will be measured and paid per Square Yard installed and accepted.
- T. <u>Item 20 Lift Station Cover Structure</u> includes all steel framing and roof, miscellaneous materials, equipment, tools, labor, and incidentals necessary to erect a Lift Station Cover Structure. Lift Station Cover Structure will be measured and paid per Each installed and accepted.
- U. <u>Item 21 Generator</u> includes all electrical, generator, miscellaneous materials, equipment, tools, excavation, concrete slab, bedding, backfill, labor, and incidentals necessary to install a generator. Generator will be measured and paid per Each installed and accepted.

- V. <u>Item 22 Site Restoration</u> includes bed preparation, sod placement, rolling, watering, and maintenance during the period of establishment, and for all materials, equipment, tools, labor, and incidentals necessary to complete the work. Site Restoration will be measured and paid per Lump Sum installed and accepted.
- W. <u>Item 23 Lining Manhole Coating</u> includes all materials, equipment, tools, labor, and incidentals necessary to complete the work. Lining Manhole Coating will be measured and paid per Square Foot installed and accepted.
- X. <u>Item 24 Insertion of 6.00MM CIPP in 8 Inch Pipe</u> includes all materials, equipment, tools, labor, and incidentals necessary to complete the work. Insertion of 6.00MM in 8 Inch Pipe will be measured and paid per Linear Feet installed and accepted.
- Y. <u>Item 25 Remote Cut and Brush Services</u> includes all materials, equipment, tools, labor, and incidentals necessary to complete the work. Remote Cut and Brush Services will be measured and paid per Each installed and accepted.
- Z. <u>Item 26 Internally Trim Protruding Service Connections</u> includes all materials, equipment, tools, labor, and incidentals necessary to complete the work. Internally Trim Protruding Service Connections will be measured and paid per Each installed and accepted.
- AA. Item 27 Adjusting Elevation of Existing Manhole (Not More Than 18" Up or Down) includes payment for adjusting elevation of existing manhole (not more than 18" up or down) will be full compensation for all labor, materials, and equipment necessary to remove and dispose of existing deteriorated concrete manhole riser rings and replace with new precast concrete manhole riser rings or install new precast concrete manhole riser rings on top of existing ring; including traffic control, external seal wraps, excavation, backfill, and disposal of surplus excavated material, if required, and paid per Each installed and accepted.

#### SECTION 01027: APPLICATIONS FOR PAYMENT

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract, (General, Special and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 General: Submit Applications for Payment to A/E in accordance with the schedule established by Conditions of the Contract and Agreement Between Owner and Contractor.
- 1.3 Format and Data Required: Submit itemized applications typed on sheets with the same exact language on either AIA Document G702, Application and Certificate for Payment, and continuation sheets G703, or NSPE Document NSPE-1910-8-E, Application for payment, or Owner's form, whichever is applicable.
- 1.4 Preparation of Application for Each Progress Payment:
  - A. Application Form:
    - 1. Fill in required information, including that for Change Orders executed prior to the date of submittal of application.
    - 2. Fill in summary of dollar values to agree with the respective totals indicated on the continuation sheets.
    - 3. Execute certification with the signature of a responsible officer of the contract firm.
  - B. Continuation Sheets:
    - Fill in total list of all scheduled component items of Work, with item number and the scheduled dollar value for each item.
    - 2. Fill in the dollar value in each column for each scheduled line item when Work has been performed or products stored.
    - 3. List each Change Order executed prior to the Date of submission, at the end of the continuation sheets. List by Change Order Number, and description, as for an original component item of work.
  - C. A/E and Owner project numbers must appear on <u>all</u> documentation.
- 1.5 Substantiating Data for Progress Payments:
  - A. When the Owner or the A/E requires substantiating data, Contractor shall submit suitable information, with a cover letter identifying
    - 1. Project.
    - 2. Application number and date.
    - 3. Detailed list of enclosures.
    - 4. For stored products:
      - a. Item number and identification as shown on application.

- b. Description of specific material.
- c. Copy of invoice showing project and amount.
- d. Location of material.
- e. Copy of <u>paid</u> invoice will be required for following pay request.
- B. Submit one copy of data and cover letter for each copy of application. If applicable to project, a duplicate original and one (1) copy of tickets are required for sand, asphalt concrete and granular materials.
- C. Submit Record Drawings for review by A/E. A/E will return Record Drawings after review.
- 1.6 Preparation of Application for Final Payment:
  - A. Fill in Application form as specified for progress payments.
  - B. Use continuation sheet for presenting the final statement of accounting as specified.
- 1.7 Submittal Procedure:
  - A. Submit Applications for Payment to A/E at the times stipulated in the Conditions of the Contract.
  - B. Number: Two copies of each Application with substantiating data.
  - C. Contractor must submit a Project Schedule with each Application for Payment. The Project Schedule must be up to date and included in each and every Application for Payment submittal. Each schedule shall indicate the original schedule with the current schedule immediately below it.
  - D. When A/E finds the Application properly completed and correct, he will transmit a certificate for payment to Owner, with a copy to Contractor.

SECTION 01041: PROJECT COORDINATION

## PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Special and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 General: This section covers the work required by the Contractor to coordinate and administer the project.
- 1.3 Coordination: Contractor shall plan, schedule, and coordinate his operations in a manner that will facilitate the simultaneous progress of work included under other contracts outside the scope of these Contract Documents. Contractor shall plan, schedule and coordinate with all utilities in a manner conducive to timely and efficient progress in the execution of the contract.

### 1.4 Notice to Owners and Authorities:

- A. Contractor shall, as provided in General Conditions, notify owners of adjacent property and utilities when prosecution of the Work may effect them. Notification shall include names and telephone numbers for key project personnel so that property owners can report problems. These contact telephone numbers shall be given so that appropriate personnel can be contacted 24 hours a day, seven days a week.
- B. When it is necessary to temporarily deny access by owners or tenants to their property, or when any utility service connection must be interrupted, Contractor shall give notices sufficiently in advance to enable the affected persons to provide for their needs. Notices will conform to any applicable local ordinance and, whether delivered orally or in writing, will include appropriate information concerning the interruption and instructions on how to limit their inconvenience.
- C. All utilities and other concerned agencies shall be contacted at least 24 hours in advance, unless otherwise specified, prior to cutting or closing streets or other traffic areas, excavating near underground utilities or pole lines or temporary shutdown of existing facilities.
  - 1. Notice to local electric company: The Contractor shall review with the local electric company the construction methods to be used in the vicinity of power lines. This review shall establish which lines, if any, need temporary relocation or de-energizing. At least two weeks notice is required from the Contractor by local electric company prior to any temporary relocating or de-energizing work being required.

- 2. Notice to local gas company: The Contractor shall review with the local gas company any work to be done in the vicinity of gas lines. Where temporary relocation of gas lines or reinforcement of coating is required the Contractor shall meet with the Louisiana Gas Company as soon as possible, but no less than 30 days in advance of when relocation is required. For temporary shutdown of gas mains and notification as required by the company when working in the vicinity of gas mains at least 48 hours notice is required, by calling ONE CALL at 1-800-272-3020.
- Mechanical and Electrical Coordination: Contractor shall coordinate all details of the equipment with other related parts of the Work, including verification that all structures, piping, wiring, and equipment components are compatible. Contractor shall be responsible for all structural and other alterations in the Work required to accommodate equipment differing in dimensions or other characteristics from that contemplated in the Drawings or Specifications.

SECTION 01043: JOB SITE ADMINISTRATION

PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Special and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Site Administration: Contractor shall be responsible for all areas of the site used by him, by other contractors, and all Subcontractors in the performance of the Work. He will exert full control over the actions of all employees and other persons with respect to the use and preservation of property and existing facilities, except such controls as may be specifically reserved to Owner or others. Contractor has the right to exclude from the site all persons who have no purpose related to the Work or its inspection.
- 1.3 Unfavorable Construction Conditions:
  - A. Contractor shall confine his operations to work which will not be affected adversely by unfavorable weather, wet ground, or other unsuitable construction conditions. No portion of the Work shall proceed under conditions, which would affect adversely the quality or efficiency of the Work, unless suitable special precautions or countermeasures are taken by Contractor. No work day will be considered as a non-work day if the Contractor has the opportunity to work on any part of this project at least four (4) hours on any one day.
  - B. Contractor's construction schedule shall include at least the number of days as defined in the General/Supplementary Conditions for the construction period. Non-work days shall be determined jointly by Contractor and Resident Project Representative, and shall be those days when it was not practical to work due to inclement weather and essentially no work was performed.
- 1.4 Non-Work Days: Non-work days shall be agreed upon on a weekly basis between the Project Representative and the Contractor; and forwarded to A/E for approval. Non-work days must be claimed by the Contractor in an invoice period. Contractor may not claim non-work days from a previous invoice period. The amount of non-work days for the invoice period shall be furnished to the A/E with each application for progress payment. This amount shall be in accordance with the above and shall be agreed to by the A/E prior to transmitting each application for progress payment. An extension of time for approved non-work days will only be granted for nonfor the contract period as set forth the davs General/Supplementary Conditions.

## SECTION 01045: CUTTING AND PATCHING

#### PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract, (General, Special and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: The work done under this section includes the furnishing of all labor, materials, equipment and services necessary to complete the cutting, fitting and patching required in the execution of this Project.
- 1.3 Description: Contractor shall be responsible for all cutting, fitting and patching, including attendant excavation and backfill, required to complete the Work and/or to:
  - A. Make its several parts fit together properly.
  - B. Uncover portions of the Work to provide for installation of ill timed work.
  - C. Remove and replace defective work.
  - D. Remove and replace work not conforming to requirements of the Contract Documents.
  - E. Remove samples of installed work as specified for testing.
  - F. Provide routine penetrations of non-structural surfaces for installation of piping and electrical conduit.

#### 1.4 Submittals:

- A. Submit a written request to A/E three (3) working days in advance of executing any cutting or alteration which affects:
  - 1. The structural value or integrity of any element of the Project.
  - 2. The integrity or effectiveness of weather-exposed or moisture-resistant elements or systems.
  - 3. The efficiency, operational life, maintenance, or safety of operational elements.
  - 4. The visual quality of sight-exposed elements.
- B. The request shall include:
  - 1. Identification of the Project.
  - 2. Description of the affected work.
  - 3. The necessity for cutting, alteration, or excavation.
  - 4. The effect on the structural or weatherproof integrity of the Project.
  - 5. Description of the proposed work:
    - a. The scope of cutting, patching, alteration, or excavation.
    - b. The trades who will execute the work.
    - c. Products proposed to be used.

- d. The extent of refinishing to be done.
- 6. Alternatives to cutting and patching.
- 7. Cost proposal, when applicable.
- 8. Written permission of any separate contractor whose work will be affected.
- C. Should conditions of the work or the schedule indicate a change of products from the original installation, Contractor shall submit a request for substitution.
- D. Submit a written notice to A/E designating the date and the time the work will be uncovered.

## PART 2: PRODUCTS

2.1 Materials: Comply with specifications and standards for each specific product involved.

#### PART 3: EXECUTION

## 3.1 Inspection:

- A. Inspect existing conditions of the Project, including elements subject to damage or to movement during cutting and patching.
- B. After uncovering work, inspect the conditions affecting the installation of products, or performance of the work.
- C. Report unsatisfactory or questionable conditions to the A/E in writing; do not proceed with the work until the A/E has provided further instructions.

## 3.2 Preparation:

- A. Provide adequate temporary support as necessary to assure the structural value or integrity of the affected portion of the Work.
- B. Provide devices and methods to protect other portions of the Project from damage.
- C. Provide protection from the elements for that portion of the Project, which may be exposed by cutting and patching work.
- D. Maintain excavations free from water.
- E. The Contractor shall be responsible for and shall properly protect all conduit, wires, equipment, drains, pipes, and other property of the Owner's or public service corporations which are not noted to be demolished or removed.

#### 3.3 Performance:

- A. Execute cutting and patching by methods which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs.
- B. Execute excavating and backfilling by methods which will prevent settlement or damage to other work.

- C. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances, and finishes.
- D. Restore work which has been cut or removed: install new products to provide completed Work in accordance with requirements of Contract Documents.
- E. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes:
  - 1. For continuous surfaces, refinish to nearest expansion joint.
  - 2. For an assembly, refinish the entire unit.

SECTION 01050: FIELD ENGINEERING

#### PART 1: GENERAL

1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.

#### 1.2 General:

- A. Provide and pay for field engineering services and survey work required in execution of the Project.
- B. Owner's Representative will identify existing control points indicated on the Drawings, as required.
- 1.3 Qualifications of Surveyor: Qualified Louisiana registered land surveyor, acceptable to Contractor and Owner.
- 1.4 Survey Reference Points:
  - A. Existing basic horizontal and vertical control points for the Project are those designated on Drawings.
  - B. Locate and protect control points prior to starting work, and preserve all permanent reference points during construction.
    - 1. Make no changes or relocations without prior written notice to A/E.
    - 2. Report to A/E when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
    - 3. Require surveyor to replace Project control points which may be lost or destroyed. Establish replacements based on original survey control.
- 1.5 Project Survey Requirements:
  - A. Establish survey control points as indicated on the Drawings. Record locations, with horizontal and vertical data, on Project Record Documents.
  - B. Establish lines and levels, locate and lay out, by instrumentation and similar appropriate means, Project baselines, batter boards for structures, sleeve locations. Provide markers as indicated on Drawings.
  - C. From time to time, verify layouts by the same methods.
- 1.6 Records: Maintain a complete, accurate log of all control and survey work as it progresses.

#### 1.7 Submittals:

- A. Submit name and address of Surveyor to A/E.
- B. On request of A/E, submit documentation to verify accuracy of field engineering work.
- C. Include all survey and field engineering work as part of Project Record Documents.
- Slab elevation shall be as indicated on the contract drawings. After the slab has been poured the contractor shall hire and pay for a registered surveyor, licensed to practice in the State of Louisiana to verify that the slab elevation of the building is a the elevation noted on the drawings. Surveyor shall submit five (5) certified benchmark certificates with a live signature and seal by said registered surveyor, licensed to practice in the State of Louisiana, certifying that the actual slab elevation is as noted on the contract drawings.

#### SECTION 01200: PROJECT MEETINGS

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Special and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 General: This section covers project meetings required for the project.

## 1.3 Description:

- A. The Architect/Engineer shall coordinate the scheduling and administer the pre-construction meeting, periodic progress meetings, and specially called meetings throughout the progress of the work.
  - 1. Prepare agenda for meetings.
  - 2. Distribute written notice of each meeting four days in advance of meeting date.
  - 3. Make physical arrangements for meetings.
  - 4. Preside at meetings.
  - 5. Record the minutes; include all significant proceedings and decisions.
  - 6. Reproduce and distribute copies of minutes within three working days after each meeting.
- B. Representatives of contractors, subcontractors, and suppliers attending the meetings shall be qualified and authorized to act on behalf of the entity each represents.

## 1.4 Pre-Construction Meeting:

- A. Schedule pre-construction meeting prior to beginning on-site construction.
- B. Location: Project site or other location as coordinated with A/E and Owner.
- C. Attendance:
  - 1. Owner's Representative.
  - 2. A/E
  - 3. Resident project representative, if applicable.
  - Contractor's Superintendent.
  - 5. Major subcontractors.
  - Major suppliers.
  - 7. Others as appropriate.
- D. Suggested Agenda:
  - 1. Distribution and discussion of list of major subcontractors and suppliers.
  - 2. Projected construction schedules.
  - 3. Critical work sequencing.
  - 4. Major Equipment deliveries and priorities.
  - 5. Project coordination and designation of responsible personnel.

- 6. Procedures and processing of field decisions, proposal requests, submittals, Change Orders, Applications for Payment.
- 7. Adequacy of distribution of Contract Documents.
- 8. Procedures for maintaining Record Documents.
- 9. Use of premises: office, work, and storage areas; Owner's requirements.
- 10. Construction facilities, controls, and construction aids.
- 11. Temporary utilities.
- 12. Safety and first-aid procedures.
- 13. Security procedures.
- 14. Housekeeping procedures.

## 1.5 Progress Meetings:

- A. The Architect/Engineer shall schedule regular periodic meetings, as required. Hold called meetings as required by progress of work.
- B. Location of Meetings: The Owner's office.
- C. Attendance: A/E, Owner's Representative, subcontractors, and suppliers as appropriate to the agenda, others as required.
- D. Suggested Agenda:
  - 1. Review, approval of minutes of previous meeting.
  - 2. Review of work progress since previous meeting.
  - 3. Field observations, problems, conflicts.
  - 4. Problems which impede Construction Schedule.
  - 5. Review off-site fabrication, delivery schedules.
  - 6. Corrective measures and procedures to regain projected schedule.
  - 7. Revisions to Construction Schedule.
  - 8. Plan progress, schedule, during succeeding work period.
  - 9. Coordination of schedules.
  - 10. Review submittal schedules; expedite as required.
  - 11. Maintenance of quality standards.
  - Review proposed changes for effect on Construction Schedule, completion date.
  - Other business.

SECTION 01300: SUBMITTALS

## PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this section.
- 1.2 Correspondence: Six copies of all transmittal letters accompanying shop drawings, product data, operations and maintenance data and manuals, layout data, and other information shall be sent to the Owner's Program Management Office at an address to be supplied to the contractor at the pre-construction conference.

## 1.3 Progress Reports:

- A. A progress report shall be furnished to A/E with each application for progress payment. If the Work falls behind schedule, Contractor shall submit additional progress reports at such intervals as A/E may request.
- B. Each progress report shall include sufficient narrative to describe current and anticipated delaying factors, their effect on the construction schedule, and proposed corrective actions. Any work reported complete, but which is not readily apparent to A/E must be substantiated with satisfactory evidence.
- C. Each progress report shall also include three prints of the accepted graphic schedule marked to indicate actual progress.
- Survey Data: All field books, notes, and other data developed by Contractor in performing surveys required as part of the Work shall be available to A/E for examination throughout the construction period. All such data shall be submitted to A/E with the other documentation required for final acceptance of the Work.
- Layout Data: Contractor shall keep neat and legible notes of measurements and calculations made by him in connection with the layout of the Work. Copies of such data shall be furnished to the Resident Project Representative for use in checking Contractor's layout as provided. All such data considered of value to Owner will be transmitted to Owner by A/E with other records upon completion of the work.

### 1.6 Schedule of Values:

- A. A tentative Schedule of Values reflecting the total cost of the work shall be submitted at the pre-construction conference.
- B. After review of the tentative schedule at the pre-construction conference and before submission of the first application for payment, Contractor shall prepare and submit to A/E a schedule of

- values covering each lump sum item. The schedule of values, showing the value of each kind of work, shall be acceptable to A/E before any partial payment estimate is prepared. Price per activity, other than material purchased, shall not exceed \$50,000.
- C. The sum of the items listed in the schedule of values shall equal the contract lump sum price. Such items as bond premium, temporary construction facilities, and plant may be listed separately in the schedule of values, provided the amounts can be substantiated. Overhead and profit shall not be listed as separate items.
- An unbalanced schedule of values providing for overpayment to Contractor on items of Work which would be performed first will not be accepted. The schedule of values shall be revised and resubmitted until acceptable to the A/E. An electronic file shall be provided to Owner.
- E. Final acceptance by A/E shall indicate only consent to the schedule of values as a basis for preparation of applications for progress payments and shall not constitute an agreement as to the value of each indicated item.
- F. Within 30 days after award of contract, Contractor shall furnish to A/E a schedule of estimated monthly payments. The schedule shall be revised and resubmitted each time an application for payment varies more than 10 percent from the estimated payment schedule.
- 1.7 Submittals to other Concerned Agencies: The Contractor shall comply with all submittals required by utility companies and other concerned agencies as specified. Submittals to other agencies shall be submitted to A/E for information purposes only.

#### 1.8 Schedule:

- A. Contractor shall submit a detailed construction schedule to the A/E ten (10) day after receipt of Notice of Award.
- B. Contractor shall submit a revised construction schedule at the Pre-Construction Conference.
- C. Contractor shall submit revised construction schedules to the A/E monthly thereafter.

## SECTION 01340: SHOP DRAWINGS, PROJECT DATA, AND SAMPLES

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Special, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section. No requirements of the Supplementary or Special Conditions shall be superseded by this Section but format of submittals shall be as follows.
- 1.2 General:
  - A. Submit, to the A/E, shop drawings, project data, and samples required by specification sections.
  - B. Prepare and submit, with Construction Schedule, a separate schedule listing dates for submission and date reviewed shop drawings, project data, and samples will be needed for each product.
- 1.3 Shop Drawings: Original drawings, prepared by Contractor, Subcontractor, Supplier, or Distributor, which illustrate some portion of the Work; showing fabrication, layout, setting, or erection details.
  - A. Prepared by a qualified detailer.
  - B. Identify details by reference to sheet and detail numbers shown on Contract Drawings.
  - C. Maximum Sheet Size: 24" x 36".
  - D. Submit three (3) copies of each submittal.
- 1.4 Manufacturer's Literature, Project Data:
  - A. Manufacturer's standard schematic drawings.
    - 1. Modify drawings to delete information to provide additional information applicable to project.
    - 2. Supplement standard information to provide additional information applicable to project.
  - B. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data.
    - 1. Clearly mark each copy to identify pertinent materials, products, or models.
    - Show dimensions and clearances required.
    - 3. Show performance characteristics and capacities.
    - 4. Show wiring diagrams and control.
- 1.5 Samples: Physical examples to illustrate materials, equipment, or workmanship, and to establish standards by which completed work is judged.
  - A. Office samples: Of sufficient size and quantity to clearly illustrate:
    - 1. Functional characteristics of product or material, with integrally related parts and attachment devices.
    - 2. Full range of color samples.
  - B. Field Samples and Mock-Ups.
    - 1. Erect at project site at location acceptable to A/E.

2. Construct each sample or mock-up complete, including work of all trades required in finished work.

## 1.6 Contractor Responsibilities:

- A. Contractor shall submit a schedule of the submittals needed prior to construction.
- B. Contractor shall review each submittal, project data, and samples and verify in writing to the A/E that each submittal conforms with the contract documents prior to submitting. Contractor shall list any deviations from that specified and in addition, shall cause a specific notation to be made on each shop drawing and sample submitted to the A/E for review and approval of each such variation.
- C. Verify field measurements, field construction criteria, catalog numbers, and similar data.
- D. Coordinate each submittal with requirements of Work and of Contract Documents.
- E. Contractor's responsibility for errors and omissions in submittals is not relieved by A/E's review of submittals.
- F. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by A/E's review of submittals, unless A/E gives written acceptance of specific deviations.
- G. Begin no work which requires submittals until return of submittals with A/E's stamp and initials or signature indicating review.
- H. After A/E's review, distribute copies.
- I. Contractor shall direct specific attention, in writing, to the A/E of the failure to receive reviewed submittals after a reasonable time and shall denote consequences of an excessive review period with regard to the progress of work.

## 1.7 Submission Requirement:

- A. Schedule submissions at least 21 days before dates reviewed submittals will be needed.
- B. Shop Drawings: Submit three (3) of each submittal.
- C. Manufacturer's Literature: Number of copies of Project Datum which Contractor requires for distribution plus 2 copies which will be retained by A/E, plus one (1) copy retained by the Consulting A/E for mechanical or electrical submittals.
- D. Submit number of Samples specified in each of specification sections.
- E. Accompany submittals with transmittal letter containing: date; project title and number; Contractor's name and address; the number of each Shop Drawings, Project Datum, and Sample submitted; notification of deviations from Contract Documents; other pertinent data.
- F. Submittals shall include:
  - 1. Date and revision dates.
  - 2. Project title, A/E Project number, and Owner's Project number, if any.

- 3. The names of: A/E; Contractor; Subcontractor; Supplier; Manufacturer.
- 4. Identification of product or material.
- 5. Relation to adjacent structure or materials.
- 6. Field dimensions, clearly identified as such.
- 7. Applicable standards, such as ASTM number or Federal Specification.
- 8. A blank space, 8" x 8" for the A/E's stamp.
- 9. Identification of deviations from Contract Documents.
- 10. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of field measurements, and compliance with Contract Documents.
- 11. Applicable standards, such as ASTM number or Federal Specification number.

## 1.8 Resubmission Requirements:

- A. Shop Drawings: Revise initial drawings as required and resubmit as specified for initial submittal. Indicate on drawings any changes which have been made other than those requested by A/E.
- B. Project Data and Samples: Submit new datum and samples as required for initial submittal.
- C. Contractor shall accept full responsibility for the completeness of each submission, and, in the case of a resubmission, shall verify that all exceptions previously noted by A/E have been taken into account. In the event that more than one resubmission is required because of failure of Contractor to account for exceptions previously noted, Contractor shall reimburse Owner for the charges of A/E for review of the additional resubmissions.
- D. Any need for more than one resubmission, or any other delay in obtaining A/E's review of submittals, will not entitle Contractor an extension of the Contract Time unless delay of the Work is directly caused by a change in the Work authorized by a Change Order or by failure of A/E to return any submittal within a reasonable time after its receipt in A/E's office.
- E. When the drawings and data are returned marked SUBMIT SPECIFIED ITEM the Contractor shall do so. When the drawings and data are returned marked REVISE AND RESUBMIT, the corrections shall be made as noted thereon and as instructed by the A/E and nine corrected copies (or one corrected reproducible copy) resubmitted.

### 1.9 Distribution of Submittals after Review:

- A. Distribute copies of Shop Drawings and Project Datum which carry A/E stamp to:
  - 1. Contractor's file
  - 2. Job site file
  - 3. Record Documents file
  - 4. Subcontractors

- 5. Supplier or fabricator
- 6. Other affected Contractors
- 7. Owner
- B. Distribute samples as directed.

#### 1.10 A/E's Duties:

- A. Review submittals with reasonable promptness.
- B. Review for design concept of project and information given in Contract Documents.
- C. Review of separate item does not constitute review of an assembly in which item functions.
- D. Affix stamp and initials or signature certifying to review of submittal.
- E. Return sepia of Shop Drawings and other submittals to Contractor for distribution, or for resubmission. Contractor is responsible obtaining number of opaque prints from sepia necessary for distribution.
- The Design Professional shall review Contractor submittals, such as F. shop drawings, product data, samples and other data, as required by the Design Professional, but only for the limited purpose of checking for conformance with the design conception and the information expressed in the contract documents. This review shall not include review of the accuracy or completeness of details, such as quantities, dimensions, weights or gauges, fabrication processes, construction means or methods, coordination of the work with other trades or construction safety precautions, all of which are the sole responsibility The Design Professional's review shall be of the Contractor. conducted with reasonable promptness while allowing sufficient time in the Design Professional's judgement to permit adequate review. Review of a specific item shall not indicate that the Design Professional has reviewed the entire assembly of which the item is a component. The Design Professional shall not be responsible for any deviations for the contract documents not brought to the attention of the Design Professional in writing by the Contractor. The Design Professional shall not be required to review partial submissions or those for which submissions or correlated items have not been received.

## SECTION 01380: CONSTRUCTION PROGRESS PHOTOGRAPHS AND/OR VIDEO

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 General: Provide and transmit to A/E, periodically as specified below, photographs adequate to show construction progress.
- 1.3 Construction Progress Photographs:
  - A. General: All photographs shall be produced by a professional photographer acceptable to A/E. CD's of the photos shall be marked with the name and number of the contract, name of Contractor, and/or Sub-Contractor, description and location of view and date photographed. All photography shall be at the Contractor's expense. A/E shall transmit one copy of each photograph and CD to Owner.
  - B. Number required per submittal: At least two different views of typical construction.
  - C. Schedule:
    - 1. Prior to beginning of work. Existing conditions.
    - 2. Deliver two (2) sets of CD's to A/E with each Application for Payment.
    - 3. Prior to final inspection.
  - D. Direction of view/vantage points: As directed by A/E.
- 1.4 CD:
  - A. CD of the pictures shall be transmitted to the A/E at the time the pictures are transmitted.
- 1.5 Technique for Still Photographs:
  - A. Factual presentation
  - B. Correct exposure and focus.
    - High resolution and sharpness.
    - 2. Maximum depth-of-field.
    - Minimum distortion.
- 1.6 Views Required for Still Photographs
  - A. Contractor shall photographs from locations to adequately illustrate condition of construction and state of progress. Consult with A/E at each period of photography for instructions concerning views required.
  - B. In addition, the Contractor shall photograph the sites of each major portion of the work prior to the beginning of work at each site. Views shall be as required by the A/E. In addition, the same sites shall be

- photographed utilizing the same views at the completion of construction.
- C. The Contractor shall also inspect and photograph any structure within 100 feet of each construction site prior to beginning of work. Photographs of any existing damaged areas shall be taken.

SECTION 01386: SITE CONDITION SURVEY

## PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Special and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- General: Prior to the start of construction on the Contract, the Contractor shall furnish to the A/E, the site condition survey of the construction areas. The survey will remain available for use by the Contractor and may be used for any assistance that the survey may provide in resolving disputes which arise with the property owners claiming improper restoration of their properties. The survey will also be used as a guide by the A/E, prior to issuance of final payments, in determining the adequacy of restoration and the extent of damages attributable to the Contractor's work.
- 1.3 General: Contractor shall conduct a thorough survey of the entire job route. Interior conditions surveys and interior photos shall be included for all structures. This survey should be adequate to ascertain pre/post construction conditions (including existing elevations) of all public and private property within and adjacent to the construction limits. Sufficient data shall be provided by the Contractor and submitted to the A/E to resolve any damage claims which may arise due to the construction of this project.
- 1.4 Requirements: This survey shall include, but not be limited to, elevations of drives and walks taken at approximately 20 foot intervals and at the point of juncture with any structure to which they are attached. In addition, elevations shall be taken of all house slabs and structures along the job route.
- 1.5 Submittals: All photographs, and survey data shall be submitted to the A/E for record purposes within seven weeks prior to commencement of any construction activities and at the completion of the job. Data shall be shown complete with stationing expressed in engineering symbols. All data shall reflect date of information.
- 1.6 Implementation: All survey work shall be accomplished by a Land Surveyor registered in the State of Louisiana.

## SECTION 01410: TESTING LABORATORY SERVICES

#### PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 General: This section covers the requirements of obtaining and payment or testing laboratory services.
- 1.3 Selection and Payment: The Contractor shall contract and pay for the services of an independent testing laboratory to perform inspection and tests of materials and construction as defined in the Conditions of the Contract.
- 1.4 Contractor's Responsibilities:
  - A. Cooperate with laboratory personnel, provide access to Work.
  - B. Provide to the laboratory the preliminary design mix proposed to be used for concrete, and other materials mixes which require control by the testing laboratory. Material supplier shall provide laboratory with field mix data for each delivery.
  - C. Make available, without cost, samples of all materials to be tested in accordance with applicable standard specifications.
  - D. Furnish such nominal labor and sheltered working space as is necessary to obtain samples at the Project.
  - E. Advise the laboratory of the identity of materials sources and instruct the suppliers to allow tests or inspections by the laboratory.
  - F. Notify the laboratory sufficiently in advance of operations to allow for completion of initial tests and assignment of inspection personnel.
  - G. Notify the laboratory sufficiently in advance of cancellation of required testing operations. The Contractor shall be responsible to the laboratory for charges due to failure to notify if requirements for testing are canceled.
  - H. Make arrangements with laboratory and pay for additional samples and tests required for Contractor's convenience.
  - Contractor shall pay all fees and charges, including any additional design services required, incurred for retesting due to failure of initial test or other deficiencies that are the contractor's responsibility.
- 1.5 Test Methods: Tests and inspections shall be conducted in accordance with the latest standards of ASTM or other recognized authorities.
- 1.6 Test Reports: The laboratory shall promptly submit written reports of each test and inspection made to the Owner, A/E, Contractor, and to such other parties as the Owner may specify.

1.7 Extent of Laboratory Tests and Inspections: The A/E will recommend to the Owner the type and number of tests to be performed on the Project. The Contractor will be advised of the number and type of tests to be performed by the testing laboratory.

SECTION 01505: MOBILIZATION

## PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0, Supplemental Conditions) and Division 1 as appropriate, apply to the Work specified in this Section.
- Description: This work consists of preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidentals to the project site; for the establishment of all offices, buildings, and other facilities necessary for work in the Project, and the costs of bonds and insurance, and for all other work and operations which must be performed, or costs incurred for mobilization, prior to beginning work on the various construction times on the Project.

#### 1.3 Materials:

- A. The Contractor shall furnish all materials, supplies, and incidentals for this item.
- B. These materials, supplies and incidentals will not be considered as a part of the various items of the completed contract.

# 1.4 Basis of Payment:

- A. All preconstruction expenses incurred by the Contractor in connection with mobilization will be considered incidental to the Work and no direct payment will be made therefore.
- B. Mobilization will be paid for at the contract lump sum price by partial payments in accordance with the following schedule:
  - 1. When the first partial estimate is earned and submitted for payment, 25 per cent of the amount bid for mobilization will be paid.
  - 2. When 10 per cent of the original contract amount is earned, an additional 25 per cent of the amount bid for mobilization will be paid.
  - 3. When 25 per cent of the original contract amount is earned, an additional 25 per cent of the amount bid for mobilization will be paid.
  - When 50 percent or more of the original contract amount is earned, the final 25 per cent of the amount bid for mobilization will be paid.
- C. In the event this contract is cancelled by the Owner, the Contractor will be paid for the actual cost incurred for mobilization at the time of cancellation, which cost will not exceed the total amount bid under the mobilization item.

D. Nothing herein shall be construed to limit or preclude partial payments otherwise provided by the Contract.

# 1.4 Method of Measurement:

- A. The Contract Bid Price is limited to an amount up to a maximum of 10 percent of the Contractor's total bid including this item.
- B. This item will be measured by lump sum, acceptably performed. When the quantities of work vary or there is extra work or force account work or there are eliminated items, these conditions will not be related to this item and any additional cost of mobilization that may be necessary for the added item of work will be included in the price agreed upon for the added item.

# SECTION 01510: TEMPORARY UTILITIES

1.1 Related Documents: The general provisions of the Contract including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.

# 1.2 General:

- A. Comply with Federal, State, and Local codes and regulations and with utility company requirements.
- B. Materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

## 1.3 Job Conditions:

- A. Establish and initiate use of each temporary facility at time first reasonably required for proper performance of the Work. Terminate use and remove facilities at earliest reasonable time, when no longer needed or when permanent facilities have, with authorized use, replaced the need.
- B. Install, operate, maintain and protect temporary facilities in a manner and at locations which will be safe, non-hazardous, sanitary and protective of persons and property, and free of deleterious effects.

# 1.4 Temporary Water:

- A. Provide water for construction purposes; pay all costs for installation, maintenance and removal, and service charges for water used.
- B. Install branch piping as necessary, with taps located so that water is available throughout the construction by the use of hoses. Protect piping and fittings against freezing.
- Temporary Sanitary Facilities: Contractor shall provide and maintain an adequate number of temporary toilets with proper enclosures as necessary for use of workmen during construction. Keep toilets clean and comply with all local and state health requirements and sanitary regulations. Toilet facilities shall consist of the prefabricated chemical type.

# 1.6 Temporary Electricity and Lighting:

- A. Comply with National Electric Code.
- B. Arrange with utility company, provide service required for power and lighting, and pay all costs for service and for power used.
- C. Install circuit and branch wiring, with area distribution boxes located so that power and lighting is available throughout the construction by the use of construction type power cords.
- D. Provide adequate artificial lighting for all areas of work when natural light is not adequate for work, and for areas accessible to the public.

# 1.7 Temporary Heat and Ventilation:

- A. Provide temporary heat and ventilation as required to maintain adequate environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for the installation of materials, and to protect materials and finishes from damage due to temperature or humidity.
- B. Provide adequate forced ventilation of enclosed areas for curing of installed materials, to disperse humidity, and to prevent hazardous accumulations of dust, fumes, vapors, or gases.
- C. Portable heaters shall be standard approved units complete with controls.
- D. Pay all costs of installation, maintenance, operation and removal, and for fuel consumed.
- E. After building is completely enclosed, the Contractor may utilize the permanent mechanical equipment which he furnishes and installs under this Contract, with the qualifications herein stipulated. Supply any additional equipment required. Any permanent equipment so used shall be turned over to the Owner in the condition and the time required by the Specifications. The Contractor's use of the permanent equipment is hereby qualified as follows:
  - 1. Do not use the permanent equipment for temporary heat or cooling unless and until all safety devices specified or required for safe operation of the equipment are installed and operating properly.
  - 2. The Contractor shall pay all fuel costs and assume all responsibility for the use of the permanent equipment.
  - 3. The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work.
  - 4. The warranty period on the equipment shall not commence until final acceptance of the project.

#### 1.8 Removal:

- A. Completely remove temporary materials and equipment when their use is no longer required. Clean and repair damage caused by temporary installations or use of temporary facilities.
- B. Restore any permanent facilities used for temporary services to specified condition. Prior to final inspection, remove temporary lamps and install new lamps.

## SECTION 01550: TEMPORARY ACCESS

1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.

# 1.2 General:

- A. Comply with Federal, State, and Local codes and regulations and with utility company requirements.
- B. Materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

# 1.3 Job Conditions:

- A. Establish and initiate use of each temporary facility at time first reasonably required for proper performance of the Work. Terminate use and remove facilities at earliest reasonable time, when no longer needed or when permanent facilities have, with authorized use, replaced the need.
- B. Install, operate, maintain and protect temporary facilities in a manner and at locations which will be safe, non-hazardous, sanitary and protective of persons and property, and free of deleterious effects.

# 1.4 Temporary Access:

- A. Do not disturb any lawn areas. Construct and maintain in good, usable condition required temporary access and appurtenances; when no longer required, remove temporary construction.
- B. Make access to site for delivery of construction materials and equipment only from locations approved by the Architect/Engineer and Owner.
- C. Designated existing on-site streets and driveways may be used for construction traffic. Provide temporary additional roads as needed for required construction access. Maintain existing construction, and restore to original, or specified condition, and restore to original, or specified, condition at completion of Work.
- D. Designated areas of existing parking facilities may be used for parking of construction personnel's private vehicles and of Contractor's light-weight vehicles. Do not allow heavy vehicles or construction equipment in parking areas.
- E. Except as otherwise indicated, develop subgrade and subbase of permanent roadways at earliest possible date, and provide temporary surfacing to serve as temporary roads during construction. Surface sufficiently to provide all-weather, uninterrupted access to construction area, for every form of transportation which can be reasonably expected. Maintain

temporary roads during construction. Extend temporary roadway development and surfacing in and around construction site as reasonably required to accommodate construction activities. When no longer needed as temporary roadways, remove temporary surfacing and restore subbases to conditions required by contract documents for permanent development.

## 1.5 Removal:

- A. Completely remove temporary materials and equipment when their use is no longer required. Clean and repair damage caused by temporary installations or use of temporary facilities.
- B. Restore existing facilities used for temporary services to specified, or to original condition.
- C. Restore any permanent facilities used for temporary services to specified condition.

SECTION 01569: TEMPORARY SEWERAGE FLOW CONTROL

# PART 1: GENERAL

1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this section.

## 1.2 General:

- A. It shall be the responsibility of the Contractor to provide the necessary equipment, materials, labor, and supervision for the plugging/blocking and/or pumping/bypassing of sewer flows in the designated areas for the purpose of providing uninterrupted sewerage flows during the construction of the proposed improvements.
- B. It shall be the responsibility of the Contractor to make provisions to meet all requirements of these specifications and to correct any problems which may arise as a result of the operations.
- C. When new improvements are being constructed and connections being made between new and existing, the flows shall be rerouted by pumping or bypassing of the flows and plugging or blocking of the flows.
- D. Manual operation, start-up and shutdown of pumping stations will be performed by the Contractor. Owner will assist the Contractor in performing this work.
- Plugging or Blocking: A sewer line plug shall be inserted into the line at a manhole upstream from the section being inspected and/or worked. The plug shall be so designed that all or any portion of the sewage flows can be released. During the inspection, testing, or sealing portion of the operation, flows shall be shut off. After the work tasks have been completed, flows shall be restored to normal.

# 1.4 Pumping and Bypassing:

A. When pumping/bypassing is required, the Contractor shall supply the necessary pumps, conduits, and other equipment to divert the flow of wastewater around the area in which work is to be performed. The bypass system shall be of sufficient capacity to handle existing flows plus additional flow that may occur during periods of a rainstorm. Six-inch or eight-inch trailer-mounted electric or diesel pumps shall be used. The bypass pumps shall be sound attenuated with a maximum decibel level of 100 dbA. No other type of pump will be acceptable without prior approval of the A/E. The Contractor shall be responsible for furnishing the necessary power, labor, and supervision to set up and operate the pumping and bypassing system. If pumping is required on a 24-hour basis, all equipment shall be operated in a

- manner to keep the pump noise at a minimum.
- B. Bypassing of wastewater to storm drainage systems or canals will not be allowed.
- 1.5 Flow Control Precautions: Whenever flows in a sewer line are blocked, plugged, or bypassed, sufficient precautions shall be taken to protect the sewer lines from damage that might be inflicted by excessive sewer surcharging. Further, precautions shall be taken to ensure that sewer flow control operations do not cause flooding or damage to public or private property being served by the sewers involved.

# SECTION 01601: MATERIAL AND EQUIPMENT

## PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 General: Material and Equipment Incorporated into the Work:
  - A. Conform to applicable specifications and standards.
  - B. Comply with size, make, type, and quality specified, or as specifically approved in writing by the A/E.
  - C. Manufactured and Fabricated Products:
    - 1. Design, fabricate, and assemble in accordance with the best engineering and shop practices.
    - 2. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.
    - 3. Two or more items of the same kind shall be identical, by the same manufacturer.
    - 4. Products shall be suitable for service conditions.
    - 5. Equipment capacities, sizes, and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
  - D. Do not use material or equipment for any purpose other than that for which it is designed or is specified.
- 1.3 Reuse of Existing Material:
  - A. Except as specifically indicated or specified, materials and equipment removed from the existing structure shall not be used in the completed Work.
  - B. For material and equipment specifically indicated or specified to remain or to be used in the Work.
    - 1. Use special care in removal, handling, storage, add reinstallation to assure proper function and finishing of the completed Work.
    - 2. Arrange transportation, storage, and handling of products which require off-site storage, restoration, or renovation. Pay all costs for such work.
- 1.4 Manufacturer's Instructions:
  - A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including two copies to A/E. Maintain one set of complete instructions at the job site during installation and until completion.
  - B. Handle, install, connect, clean, condition, and adjust products in strict accordance with such instructions and in conformity with specified requirements.

- 1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with A/E for further instructions.
- 2. Do not proceed with work without clear instructions.
- C. Perform work in accordance with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

# 1.5 Transportation and Handling:

- A. Arrange deliveries of Products in accordance with construction schedules, coordinate to avoid conflict with work and conditions at the site.
  - 1. Deliver Products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
  - 2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that Products are properly protected and undamaged.
- B. Provide equipment and personnel to handle Products by methods to prevent soiling or damage to Products or packaging.

# 1.6 Storage and Protection:

- A. Store Products in accordance with manufacturer's instructions, with seals and labels intact and legible.
  - 1. Store products subject to damage by the elements in weathering enclosures.
  - 2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.
- B. Exterior Storage:
  - 1. Store fabricated products above the ground, on blocking or skids, prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
  - 2. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- C. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored Products to assure that Products are maintained under specified conditions, and free from damage or deterioration.
- D. Protection After Installation: Provide substantial coverings as necessary to protect installed Product from damage from traffic and subsequent construction operations. Remove when no longer needed.

# 1.6 Substitutions and Product Options:

- A. Products List: Within five days after Contract Date, Submit to A/E a complete list of major products proposed to be used, with the name of the manufacturer and the installing subcontractor.
- B. Contractor's Options:
  - 1. For Products specified only by reference standard, select any product meeting that standard.
  - 2. For Products specified by naming several products or manufacturers, select any one of the products or manufacturers named, which comply with the specifications.
  - 3. For Products specified by naming one or more products or manufacturers and "or approved equal", Contractor must submit a request prior to Bid Date as for substitutions for any product or manufacturer not specifically named.
  - 4. For Products specified by naming only one product and manufacturer, there is no option.

# C. Substitutions:

- Substitutions are only allowed by approval 7 working days prior to Bid Date as stipulated in the Instructions to Bidders or Supplementary Conditions.
- 2. If a Product that is specified becomes unavailable due to no fault of the Contractor, an item that has been approved prior to Bid Date may be substituted.
- 3. If prior approved items are unavailable or if no prior approval exists for the unavailable item, the A/E will consider written requests from Contractor for substitution of Products.
- 4. Submit a separate request for each Product, supported with complete data, with drawings and samples as appropriate, including:
  - a. Comparison of the qualities of the proposed substitution with that specified.
  - b. Changes required in other elements of the work because of the substitution.
  - c. Effect on the construction schedule.
  - d. Cost data comparing the proposed substitution with the Product specified.
  - e. Any required license fees or royalties.
  - f. Availability of maintenance service, and source of replacement materials.
- D. Contractor's Representation: A request for a substitution constitutes a representation that Contractor:
  - Has investigated the proposed Product and determined that it is equal to or superior in all respects to that specified.
  - 2. Will provide the same warranties or bonds for the substitution as for the Product specified.

- 3. Will coordinate the installation of an accepted substitution into the Work, and make such other changes as may be required to make the Work complete in all respects.
- 4. Waives all claims for additional costs, under his responsibility, which may subsequently become apparent.
- E. A/E will review requests for substitutions with reasonable promptness, and notify Contractor, in writing, of the decision to accept or reject the requested substitution.

# SECTION 01635 - SUBSTITUTION PROCEDURES

#### PART 1: GENERAL

1.1 Related Documents: Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

## 1.2 Summary:

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Sections:
  - 1. Division 1 Section "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.
  - 2. Division 2 through 16 sections for specific requirements and limitations for substitutions.

#### 1.3 Definitions:

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
  - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
  - 2. Substitutions for Convenience: Changes proposed by Contractor that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

#### 1.4 Submittals:

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - 1. Substitution Request Form: Use copy of form provided in the Project Manual.
  - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable. The burden of proof of the merit of the proposed substitute is upon the proposers.
    - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
    - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
    - c. Detailed comparison (point by point) of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section. Significant qualities may include attributes such as

performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

- 1) Detailed comparison (point by point) <u>must</u> be included in all substitution request documentation submitted for review by the A/E.
- d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
- e. Certificates and qualification data, where applicable or requested.
- f. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
- g. Construction Schedule (After Contract Execution): Cost information, including a proposal of change, if any, in the Contract Sum.
- h. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
- Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

#### 3. A/E's Action:

- a. Prior to the Bid Date: If necessary, A/E will request additional information or documentation for evaluation within seven (7) working days of receipt of a request for substitution. Prior to the bid date the A/E will notify the contractor/supplier of acceptance or rejection of proposed substitution within three (3) working days of the bid date.
  - 1) Forms of Acceptance: Signed "Contractor/Supplier Substitution Required Form, Addendum, Change Order, Construction Change Directive, or A/E's supplementary instructions for minor changes in the work.
  - 2) Use product specified if A/E does not issue a decision on use of a proposed substitution within time allocated.
  - 3) The A/E's decision of approval or disapproval will be final.
- b. After Contract Execution: A/E will notify Contractor of acceptance or rejection of proposed substitution <u>during</u> <u>construction</u> within fifteen (15) working days of receipt of request, or seven (7) working days of receipt of additional information or documentation, whichever is later.
  - 1) Forms of Acceptance: Signed "Contractor/Supplier Substitution Required Form, Addendum, Change Order, Construction Change Directive, or A/E's

- supplementary instructions for minor changes in the work.
- 2) Use product specified if A/E does not issue a decision on use of a proposed substitution within time allocated.
- 3) The A/E's decision of approval or disapproval will be final.

# 1.5 Quality Assurance

- A. The contractor represents that he has personally investigated the proposed substitution and determined that it is equal or superior in all respects to that specified.
- B. The contractor represents that he will provide the same warranty for the substitution that he would for that specified.
- C. The contractor certifies that the cost data presented is complete and includes all related costs under this Contract but excludes costs under separate contracts, and any additional A/E redesign costs, as well as waives all claims for additional costs related to the substitution which subsequently become apparent.
- D. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.
- E. Bidders/Contractor is advised that any acceptable substitution that requires a change or modifications to other parts of the project shall be his responsibility including any additional cost required thereof. Any cost associated for other parts of the projects due to a substitution shall be the responsibility of the Contractor.
- 1.6 Procedures: Coordination: Modify or adjust affected work as necessary to integrate work of the approved substitutions.

#### PART 2: PRODUCTS

# 2.1 Substitutions – Pre-Bid

- A. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than seven (7) working days prior to date for receipt of bids.
  - 1. Conditions: A/E will consider Supplier's / Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, A/E will return requests without action, except to record noncompliance with these requirements:
    - a. Through General Contractor: Request submitted through a general contractor that has picked up a complete set of bidding documents for the project. Substitutions by a subcontractor, material supplier, manufacturer's representative, etc. not submitted through a general contractor will be returned without action.
    - b. Requested substitution is consistent with the Contract Documents and will produce indicated results.

- c. Substitution request is fully documented as outlined under submittals and properly submitted on required form.
- d. Requested substitution is compatible with other portions of the Work.
- e. Requested substitution provides specified warranty.
- B. Substitutions for Convenience: A/E will consider requests for substitution if received within seven (7) working days prior to date for receipt of bids. Requests received after that time will be rejected.
  - 1. Conditions: A/E will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, A/E will return requests without action, except to record noncompliance with these requirements:
    - a. Through General Contractor: Request submitted through a general contractor that has picked up a complete set of bidding documents for the project. Substitutions by a subcontractor, material supplier, manufacturer's representative, etc. not submitted through a general contractor will be returned without action.
    - b. Requested substitution does not require extensive revisions to the Contract Documents.
    - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    - d. Substitution request is fully documented as outlined under submittals and properly submitted on required form.
    - e. Requested substitution is compatible with other portions of the Work.
    - f. Requested substitution provides specified warranty.

# 2.2 Substitutions – After Contract Execution

- A. In the interest of keeping the project on schedule, the A/E will not continuously and exhaustively review proposed substitutes for each specification section. The A/E will review only one (1) proposed substitution per product per specification section. If that proposed substitution is rejected for any reason, the contractor shall use the product specified.
- B. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than fifteen (15) days prior to time required for preparation and review of related submittals.
  - 1. A/E will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, A/E will return requests without any action, except to record noncompliance with these requirements.
    - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    - b. Substitution request is fully documented as outlined under submittals herein and properly submitted on required form.
    - c. Requested substitution will not adversely affect Contractor's construction schedule.
    - d. Requested substitution has received necessary approval of authorities having jurisdiction.
    - e. Requested substitution is compatible with other portions of the Work.

- f. Requested substitution has been coordinated with other portions of the Work.
- g. Requested substitution provides specified warranty.
- h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- C. Substitutions for Convenience: A/E will consider requests for substitution.
  - 1. Conditions: A/E will consider the Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, A/E will return requests without action, except to record noncompliance with these requirements.
    - a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to A/E for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
    - b. Requested substitution does not require extensive revisions to the Contract documents.
    - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    - d. Substitution request is fully documented as outlined under submittals and properly submitted on the required form.
    - e. Requested substitution will not adversely affect Contractor's construction schedule.
    - f. Requested substitution has received necessary approvals of authorities having jurisdiction.
    - g. Requested substitution is compatible with other portions of the Work.
    - h. Requested substitution has been coordinated with other portions of the Work.
    - i. Requested substitution provides specified warranty.
    - j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

# CONTRACTOR / SUPPLIER SUBSTITUTION REQUEST FORM

Project:	Substitution Request Number: —	
	From:	
То:	Date:	
Re:	A/E Project Number:	
	Contract For:	
Specification Title:	Description:	
Section: Page:	Article/Paragraph:	
Proposed Substitution:		
Manufacturer: Address:	Phone:	
Trade Name:	Model No.:	
Installer: Address:	Phone:	
History: New product 2-5 years old 5	5-10 yrs old  More than 10 years old	
Differences between proposed substitution and specific	ed product:	
2 molecules connecting proposed control and appropriate control and appropriat		
Point-by-point comparative data attached - REQUI	IRED BY A/E	
Reason for substitution request:		
Similar Installation:		
Project:	Architect:	
Address;	Owner:	
·	Date Installed:	
Proposed substitution affects other parts of Work:	No	
Supporting Data Attached: Drawings P	Product Data Samples Tests Reports	

# **CONTRACTOR / SUPPLIER SUBSTITUTION REQUEST FORM**

(Continued)

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.

<ul> <li>Proposed substitution does not affect dimensions and functional clearances.</li> <li>Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.</li> </ul>	
Submitted by:	
Signed by:	
Firm:	
Address:	
Telephone:	
Fax:	
Email:	
Attachments:	
SECTION TO BE COMPLETED BY A/E:	
A/E's REVIEW AND ACTION	
<ul> <li>Substitution approved - Provided all Contract Documents requirements are met.</li> <li>Substitution approved as noted.</li> <li>Substitution rejected - Does not meet Contract Documents - Use specified materials.</li> <li>Substitution Request received too late − Not Approved. Received less than seven (7) working days prior to Bid Date. Insuffice in accordance with R.S. 38:2295.</li> <li>Substitution rejected − Insufficient information submitted to make determination.</li> <li>Submit model or catalog numbers.</li> <li>Submit information following Specification format in enough detail to make comparison to product specified.</li> </ul>	ient time
Signed by: Date:	
	-
Additional Comments:	

# SECTION 01700: CONTRACT CLOSEOUT

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 General: Comply with requirements stated in Conditions of the Contract and in Specifications for administrative procedures in closing out the Work.

# 1.3 Substantial Completion:

- A. When Contractor considers the Work substantially complete, he shall submit to A/E written notice that the Work, or designated portion thereof, is substantially complete, and a list of items to be completed or corrected. This can be a joint list, but must have cost with mobilization, overhead and profit. This "Costed Punch List" is withheld from the Contractor's final check until the work is complete.
- B. Within a reasonable time after receipt of such notice, A/E will determine the status of completion.
- C. Should A/E determine that the Work is not substantially complete:
  - 1. A/E will promptly notify the Contractor in writing, giving the reasons therefore.
  - 2. Contractor shall remedy the deficiencies in the Work, and send a second written notice of substantial completion to the A/E.
  - 3. A/E will reinspect the Work.
- D. When A/E concurs that the Work is substantially complete, he will recommend acceptance of the work to the Owner and if required for acceptance he will:
  - 1. Prepare a Certificate of Substantial Completion accompanied by Contractor's list of items to be completed or corrected, as verified and amended by the A/E.
  - 2. Submit the Certificate to Owner and Contractor for their written acceptance of the responsibilities assigned to them in the Certificate.
  - 3. Request the Contractor to make closeout submittals.

# 1.4 Final Inspection:

- A. When Contractor considers the Work is complete, he shall submit written certification that:
  - 1. Contract Documents have been reviewed.
  - 2. Work has been inspected for compliance with Contract Documents.
  - 3. Work has been completed in accordance with Contract Documents.
  - 4. Equipment and systems have been tested in presence of the Owner's representative and are operational.
  - 5. Work is completed and ready for final inspection.

- 6. As-Builts are completed and submitted to A/E for acceptance.
- B. A/E will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.
- C. Should A/E consider that the Work is incomplete or defective:
  - 1. A/E will promptly notify the Contractor in writing, listing the incomplete or defective work.
  - 2. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to A/E that the Work is complete.
  - 3. A/E will reinspect the Work.
- D. When the A/E concurs that the Work is complete, he will request the Contractor to make closeout submittals.
- 1.5 Contractor's Closeout Submittals to A/E:
  - A. Evidence of compliance with requirements of governing authorities and all Certificates of Inspection.
  - B. Project Record Documents: To requirements of General Conditions.
  - C. Warranties and Bonds: To requirements of Specification Sections.
  - D. Operation and Maintenance Materials: To the requirements of Specifications Sections.
  - E. Evidence of Payment and Release of Liens: To requirements stated in the Conditions of the Contract.
- 1.6 Final Adjustment of Accounts:
  - A. Submit a final statement of accounting to the A/E.
  - B. The Statement shall reflect all adjustments to the Contract Sum:
    - 1. The Original Contract Sum.
    - 2. Additions and deductions resulting from:
      - a. Previous Change Orders.
      - b. Unit Prices.
      - c. Deductions for uncorrected Work.
      - d. Deductions for liquidated damages.
      - e. Deductions for reinspection payments.
      - f. Other adjustments.
    - 3. Total Contract Sum, as adjusted.
    - 4. Previous payments.
    - 5. Sum remaining due.
  - C. A/E will prepare a final Change Order, reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders.
- 1.7 Final Application for Payment: Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in the Conditions of the Contract.

# 1.8 Post-Construction Inspection:

- A. Prior to expiration of one year from date of Acceptance, A/E will make visual inspection of Project in company with Owner and Contractor to determine whether correction of Work is required, in accordance with provisions of the Conditions of the Contract.
- B. For guarantees and warranties beyond one year, A/E will make inspections at request of Owner, after notification to Contractor. A/E will promptly notify Contractor of any observed deficiencies.

SECTION 01710: CLEANING

# PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- General: Execute cleaning, during progress of the Work, and at completion of the Work and as required by Conditions of the Contract. For cleaning for specific Products or work, see the Specification Section for that work.
- Disposal Requirements: Conduct cleaning and disposal operations to comply with codes, ordinances, regulations, and anti-pollution laws.

## PART 2: PRODUCTS

## 2.1 Materials:

- A. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.
- B. Use only cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.
- C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

## PART 3: EXECUTION

# 3.1 During Construction:

- A. Execute periodic cleaning to keep the Work, the site, and adjacent properties free from accumulations of waste materials, rubbish, and windblown debris resulting from construction operations.
- B. Provide on-site containers for the collection of waste materials, debris, and rubbish.
- C. Remove waste materials, debris, and rubbish from the site periodically and dispose of at legal disposal areas away from the site.
- 3.2 Dust Control: Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly-coated surfaces.

# 3.3 Final Cleaning:

- A. Employ skilled workmen for final cleaning.
- B. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces.

- C. Broom clean exterior paved surfaces; rake clean other surfaces of the grounds.
- D. Prior to final completion, or Owner occupancy, Contractor shall conduct an inspection of sight-exposed interior and exterior surfaces, and all work areas, to verify that the entire Work is clean.

## SECTION 01720: PROJECT RECORD DOCUMENTS

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 General: Maintenance of Documents:
  - A. Maintain at job site one copy of: Contract Drawings; Specifications; Addenda; Reviewed Shop Drawings; Change Orders; Other Modifications to Contract; Field Test Records. Also keep Louisiana State Fire Marshall's approved contract documents in temporary field office; documents furnished to Contractor by A/E or Owner.
  - B. Store documents in temporary field office, apart from documents used for construction.
  - C. Provide files and racks for storage of documents.
  - D. Maintain documents in clean, dry, legible condition.
  - E. Do not use record documents for construction purposes.
  - F. Make documents available at all times for inspection by A/E and Owner.
- 1.3 Marking Devices: Provide felt waterproof marking pens for all markings.
- 1.4 Recording:
  - A. Label each document "PROJECT RECORD" in printed letters.
  - B. Keep record documents current.
  - C. Do not permanently conceal any work until required information has been recorded.
  - D. Project Record Drawings: Legibly mark Contract Drawings to record actual construction:
    - 1. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements. Locate underground bends, cleanouts, connections, branches, valves, cut-offs or stops, end of sewers, etc. by offset distances from buildings only. Note all invert elevations of the storm and sanitary sewer systems.
    - 2. Location of new and/or relocated internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
    - 3. Field changes of dimension and detail.
    - 4. Changes made by Change Order or Field Order.
    - 5. Details not on original Contract Drawings.
  - E. Specifications and Addenda: Legibly mark each Section to record:
    - Manufacturer, trade name, catalog number, and Supplier of each Product and item of equipment actually installed.
    - Changes made by Change Order or Field Order.

F. Shop Drawings: Maintain as record documents; legibly annotate drawings to record any changes made after review.

#### 1.5 Submittal:

- A. Prior to each pay request, present project record documents for review by A/E. Documents shall be annotated as required herein to include those portions of work of which payment is requested. Failure to have properly maintained Project Documents will be considered as incomplete work.
- B. At Contract close-out, deliver record documents to A/E. Provide 2 copies of the Project Record Drawings; 1 copy of other required record documents.
- C. Accompany submittal with transmittal letter containing:
  - 1. Date
  - 2. Project title and number.
  - 3. Contractor's name and address.
  - 4. Title and number of each record document.
  - 5. Signature of Contractor or his authorized representative.

\* \* :

# SECTION 01730: OPERATING AND MAINTENANCE DATA

1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Special, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.

#### 1.2 General:

- A. Compile product data and related information appropriate for Owner's maintenance and operation of products furnished under the Contract. Prepare operating and maintenance data as specified in this Section and as referenced in other pertinent sections of Specifications.
- B. Instruct Owner's personnel in the maintenance of products and in the operation of equipment and systems.
- 1.3 Quality Assurance: Preparation of data shall be done by personnel trained and experienced in maintenance of products and in the operation of equipment and systems.

# 1.4 Form of Submittals:

- A. Prepare data in the form of an instructional manual for use by Owner's personnel.
- B. Format:
  - 1. Size: 8 1/2 inches x 11 inches.
  - 2. Paper: White, for typed pages.
  - 3. Text: Manufacturer's printed data, or neatly typewritten.
  - 4. Drawings: Provide reinforced punched binder tab, bind in with text. Fold larger drawings to the size of the text pages.
  - 5. Provide fly-leaf for each separate product, or each piece of operating equipment. Provide typed description of product; and major component parts of equipment. Provide indexed tabs.
  - 6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List title of Project, identity of separate structure as applicable, identity of general subject matter covered in the manual.
- C. Binders: Commercial quality three-ring binders with durable and cleanable plastic covers. When multiple binders are used, correlate the data into related consistent groupings.

#### 1.5 Contents of Manual:

- A. Neatly typewritten table of contents for each volume, arranged in a systematic order.
  - 1. Contractor, name of responsible principal, address, and telephone number.
  - 2. A list of each product required to be included, indexed to the content of the volume.

- 3. List, with each product, the name, address, and telephone number of subcontractor or installer, maintenance contractor, as appropriate. Identify the area of responsibility of each and identify the local source of supply for parts replacement.
- 4. Identify each product by product name and other identifying symbols as set forth in Contract Documents.
- B. Product Data: Include only those sheets which are pertinent to the specific product. Annotate each sheet to clearly identify the specific product or part installed and the data applicable to the installation. Delete references to inapplicable information.
- C. Drawings: Supplement product data with drawings as necessary to clearly illustrate relations of component parts of equipment and systems, control and flow diagrams. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation. Do not use Project Record Documents as maintenance drawings.
- D. Written text, as required to supplement product data for particular installation. Organize in a consistent format under separate headings for different procedures. Provide a logical sequence of instructions for each procedure.
- E. Provide a copy of each warranty, bond, and service contract issued. Provide information sheet for Owner's personnel, giving proper procedures in the event of failure and instances which might affect the validity of warranties or bonds.

#### 1.6 Manual for Materials and Finishes:

- A. Content, for Architectural Products, Applied Materials, and Finishes:
  - Manufacturer's data, giving full information on products. Catalog number, size, composition. Color and texture designations. Information required for re-ordering special manufactured products.
  - 2. Instructions for Care and Maintenance: Manufacturer's recommendation for types of cleaning agents and methods. Cautions against cleaning agents and methods which are detrimental to the product. Recommended schedule for cleaning and maintenance.
- B. Provide complete information for products specified in the respective sections of Specifications.

# 1.7 Manual for Equipment and Systems:

- A. Content, for Each Unit of Equipment and Systems (as appropriate):
  - Description of Unit and Component Parts: Function, normal operating characteristics, and limiting conditions. Performance curves, engineering data, and tests. Complete nomenclature and commercial number of all replaceable parts.

- 2. Operating Procedures: Start-up, break-in, routine, and normal operating instructions. Regulation, control, stopping, shut-down, and emergency instructions. Summer and winter operating instructions. Special operating instructions.
- 3. Maintenance Procedures: Routine operations. Guide to "trouble-shooting". Disassembly, repair, and reassembly. Alignment, adjusting, and checking.
- 4. Servicing and lubrication schedule. List of lubricants required.
- 5. Manufacturer's printed operating and maintenance instructions. Original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- 6. As-installed control diagrams and description of sequence of operation by controls manufacturer.
- 7. Each contractor's coordination drawings and as-installed color coded piping diagrams.
- 8. Charts of valve tag numbers, with the location and function of each valve.
- 9. Other data as required under pertinent sections of Specifications.
- B. Content, for Each Electric and Electronic System (as appropriate):
  - Operating characteristics, and limiting conditions. Performance curves, engineering data, and tests. Complete nomenclature and commercial number of replaceable parts.
  - 2. Circuit directories of panelboards. Electrical service. Controls. Communications.
  - 3. As-installed color coded wiring diagrams.
  - 4. Operating Procedures: Routine and normal operating instructions. Sequences required. Special operating instructions.
  - 5. Maintenance Procedures: Routine operations. Guide to "trouble-shooting". Disassembly, repair, and reassembly. Adjustment and checking.
  - 6. Manufacturer's printed operating maintenance instructions.
  - 7. Other data as required under pertinent sections of Specifications.
- C. Prepare and include additional data when the need for each data becomes apparent during instruction of Owner's personnel.
- D. Provide complete information for products specified in the respective section of Specifications.

# 1.8 Submittal Schedule:

- A. Submit one (1) copy of preliminary draft of proposed format and outline of contents prior to start of work. A/E will review draft and return copy with comments.
- B. Submit one (1) copy of completed data in final form 15 days prior to anticipated date of Substantial Completion. Copy will be returned with comments.

- C. Submit three (3) hard copies and one (1) electronic copy on CD of approved data in final form at Contract Closeout.
- 1.9 Instruction of Owner's Personnel:
  - A. Prior to final inspection or acceptance, fully instruct Owner's designated operating and maintenance personnel in the operation, adjustment, and maintenance of all products, equipment, and systems.
  - B. Operating and maintenance manual shall constitute the basis of instruction. Review contents of manual with personnel in full detail to explain all aspects of operations and maintenance.

# SECTION 01740: WARRANTIES AND BONDS

1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Special, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.

#### 1.2 General:

- A. Compile specified warranties, bonds, and service and maintenance contracts. Co-execute submittals when so specified.
- B. Review submittals to verify compliance with Contract Documents.
- C. Submit to A/E for review and transmittal to Owner.

# 1.3 Submittal Requirements:

- A. Assemble warranties, bonds, and maintenance manuals, executed by each of the respective manufacturers, suppliers, and subcontractors.
- B. Number of original signed copies required: Two each.
- C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.
  - 1. Product or work item.
  - 2. Firm, with name of principal, address, and telephone number.
  - Scope
  - 4. Date of beginning and duration of warranty, bond, or service and maintenance contract.
  - 5. Provide information for Owner's personnel giving proper procedure in case of failure and instances which might affect the validity of warranty or bond.
  - 6. Contractor, name of responsible principal, address, and telephone number.

# 1.4 Form of Submittals:

- A. Prepare in duplicate packets.
- B. Format:
  - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8 -1/2 inches x 11 inches paper. Fold larger sheets to fit into binders.
  - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
  - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES", Project name, and name of Contractor.

- 4. Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide table of contents at beginning of document.
- C. Provide additional copies of each warranty to include in operation and maintenance manuals.

# 1.5 Time of Submittals

- A. Make submittals at Contract close-out, prior to final request for payment.
- B. For items of Work where acceptance is delayed beyond the Date of Project Acceptance, provide updated submittal within ten days after acceptance of the delayed items of work, listing the date of acceptance of the delayed items of work as the start of the warranty period.
- C. Submit written warranties on request of A/E for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
  - 1. In accordance with Louisiana State Law (LSA-R.S. 9:2774) the commencement date for ALL warranties or guarantees of every nature or kind shall be the date of responsibility to ensure that all written warranties include this commencement time. Also, in accordance with LSA-R.S. 9:2774 the provision of this Section shall not be subject to waiver by contract.
- 1.6 Submittals Required: Submit warranties, bonds, service and maintenance contracts as specified in the respective sections of Specifications.

\* \* :

SECTION 02051: SITE DEMOLITION

# PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: Furnish all labor, materials, equipment, and incidentals required for demolition and disposal of existing obstructions to the installation of new pipelines and to other work. Obstructions may include but are not limited to existing structures, foundations, slabs, mechanical, electrical, and miscellaneous appurtenances encountered during construction operations.
- 1.3 General: These specifications call attention to certain activities necessary to maintain and facilitate operation during and immediately following construction and do not purport to cover all of the activities necessary.
- 1.4 Rules and Regulations:
  - A. The Building Code of the appropriate governing body shall control the demolition or alteration of the existing buildings, or appurtenances.
  - B. No building, structure, or appurtenance, or any part thereof, shall be demolished until an application has been filed by the Contractor with the Building Inspector, and a permit issued. The fee for this permit shall be the Contractor's responsibility.
- 1.5 Traffic and Access:
  - A. Conduct demolition and removal operations to ensure minimum interference with roads, streets, walks, both on site and off site, and to ensure minimum interference with occupied or used facilities.
  - B. Do not close or obstruct streets, walks, or other coupled or used facilities without permission from the A/E. Provide alternate routes around closed or obstructed traffic access ways.
- 1.6 Protection: Conduct operations to minimize damage by falling debris or other causes to adjacent buildings, structures, roadways, and other facilities, including persons. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structures to be demolished and adjacent facilities to remain.
- 1.7 Damage: Promptly repair damage caused to adjacent facilities by demolition operations as directed by the A/E at no cost to the Owner.

#### 1.8 Utilities:

- A. Maintain existing utilities as directed by the A/E to remain in service and protect against damage during demolition operations.
- B. Do not interrupt existing utilities serving occupied or used facilities, except when authorized by the A/E. Provide temporary services during interruptions to existing utilities as acceptable to the A/E.
- C. The Contractor shall cooperate with the Owner to shut off utilities serving structures of the existing facilities as required by demolition operations.
- D. The Contractor shall be solely responsible for making all necessary arrangements and for performing any necessary work involved in connection with the discontinuance, re-routing, and/or interruption of all public and private utilities or services under the jurisdiction of the utility companies.
- E. All utilities being abandoned shall be disconnected and terminated at the service mains in conformance with the requirement of the utility companies or the governing body owning or controlling them.
- 1.9 Extermination: If required, before starting demolition, employ a certified rodent and vermin exterminator and treat the facilities in accordance with governing health laws and regulations.

### 1.10 Pollution Control:

- A. For pollution control, use water sprinkling, temporary enclosures, and other suitable methods as necessary to limit the amount of dust and dirt rising and scattering in the air to the lowest level of air pollution practical for the condition of work. Comply with the governing regulations.
- B. Clean adjacent structures and improvements of all dust, dirt, and debris caused by demolition operations as directed by the A/E. Return areas to conditions existing prior to the start of work.

#### PART 2: PRODUCTS

(NOT USED)

### PART 3: EXECUTION

- Items to be Demolished: Remove and dispose of all items shown on the Drawings or where necessary for the construction of new work.
- 3.2 Backfill: Cavities or trenches left by demolition, removal, and disposal work shall be backfilled to the level of the surrounding ground and compacted to a minimum of 95% density or as approved by A/E.

## 3.3 Disposal of Material:

A. Demolished material shall become the Contractors property and must be removed from the site.

- B. The storage or sale of removed items on the site will not be allowed.
- C. Any equipment and material specified to remain the property of the Owner shall be removed and delivered to a location as designated by the Owner. Equipment and material not retained by the Owner shall become the property of the Contractor and shall be removed from the site by him.

3.4 Salvage Schedule: None.

SECTION 02053: DEMOLITION OF EXISTING PIPING

### PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: Furnish all labor, materials, equipment, and incidents required for demolition and disposal of existing piping and miscellaneous appurtenances encountered during construction operations.
- 1.3 General: These specifications call attention to certain activities necessary to maintain and facilitate operation during and immediately following construction and do not purport to cover all of the activities necessary. The Contractor shall exercise due concern for existing piping operation and shall diligently direct all his activities toward maintaining continuous operation of the existing piping and minimizing operation inconvenience.

### 1.4 Rules and Regulations

- A. The Building Code of the appropriate governing body shall control the demolition, or alteration of the existing structures or appurtenances.
- B. No structure, building, or appurtenance, or any part thereof, shall be demolished until an application has been filed by the Contractor with the Building Inspector, and a permit issued. The fee for this permit shall be the Contractor's responsibility.

#### 1.5 Traffic and Access:

- A. Conduct demolition and removal operations to ensure minimum interference with roads, streets, walks, both on site and off site, and to ensure minimum interference with occupied or used facilities.
- B. Do not close or obstruct streets, walks, or other coupled or used facilities without permission from the A/E. Provide alternate routes around closed or obstructed traffic access ways.
- 1.6 Protection: Conduct operations to minimize damage by falling debris or other causes to adjacent buildings, structures, roadways, and other facilities, including persons. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structures to be demolished and adjacent facilities to remain.
- 1.7 Damage: Promptly repair damage caused to adjacent facilities by demolition operations as directed by the A/E at no cost to the Owner.

### 1.8 Utilities:

- A. Maintain existing utilities as directed by the A/E to remain in service and protect against damage during demolition operations.
- B. Do not interrupt existing utilities serving occupied or used facilities, except when authorized by the A/E. Provided temporary services during interruptions to existing utilities as acceptable to the A/E.
- C. The Contractor shall cooperate with the Owner to shut off utilities serving structures of the existing facilities as required by demolition operations.
- D. The Contractor shall be solely responsible for making all necessary arrangements and for performing any necessary work involved in connection with the discontinuance, re-routing, and/or interruption of all public and private utilities or services under the jurisdiction of the utility companies.
- E. All utilities being abandoned shall be disconnected and terminated at the service mains in conformance with the requirement of the utility companies or the governing body owning or controlling them.
- 1.9 Extermination: If required, before starting demolition, employ a certified rodent and vermin exterminator and treat the facilities in accordance with governing health laws and regulations.

#### 1.10 Pollution Control:

- A. For pollution control, use water sprinkling, temporary enclosures, and other suitable methods as necessary to limit the amount of dust and dirt rising and scattering in the air to the lowest level of air pollution practical for the condition of work. Comply with the governing regulations.
- B. Clean adjacent structures and improvements of all dust, dirt, and debris caused by demolition operations as directed by the A/E. Return areas to conditions existing prior to the start of work.

# PART 2: PRODUCTS (NOT USED)

### PART 3: EXECUTION

## 3.1 Piping:

- A. Remove all piping as indicated on the Drawings. Pipes not removed shall have open ends plugged with concrete. The A/E will review the location of where pipes are to be plugged.
- B. The Drawings show the limits of existing and temporary piping to be abandoned. These pipelines shall be abandoned in place and the ends of the pipelines plugged with concrete.

- 3.2 Backfill: Cavities or trenches left by demolition, removal, and disposal work shall be backfilled to the level of the surrounding ground and compacted to a minimum of 95% density or as approved by A/E.
- 3.3 Disposal of Material:
  - A. Demolished material shall become the Contractor's property and must be removed from the site.
  - B. The storage or sale of removed items on the site will not be allowed.
- 3.4 Salvage Schedule: As noted elsewhere in these Specifications.

#### SECTION 02081: REMOVAL OF EXISTING PUMP STATION EQUIPMENT

PART 1: GENERAL

1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.

### 1.2 Scope of Work:

- A. Furnish all labor, equipment, materials, and incidentals required and remove all existing equipment, all pipe, fittings, valves, and appurtenances. Removal will be consistent with the final configuration of the new systems as indicated on the Drawings, as specified herein, or as required by the A/E. The equipment and piping shall be removed from the existing pumping stations and shall be transported to a site as directed by the St. Tammany Parish Department of Utilities.
- B. Work shall be completed in accordance with Construction Schedule established.
- C. A general description of each station to be abandoned and/or replaced is indicated on the Drawings. Further information on each abandoned station is available for inspection in the A/E's office.

PART 2: PRODUCTS

(NOT USED)

PART 3: EXECUTION

#### 3.1 General:

- A. The Contractor shall not proceed with the removal of any equipment, piping, or appurtenances without specific approval of the A/E. Any equipment, piping, or appurtenances removed without prior authorization, which are necessary for the operation of the existing pumping stations, shall be replaced to the satisfaction of the A/E at the Contractor's expense.
- B. All existing tubing, insulation, hangers, and supports shall become the property of the Contractor immediately upon removal from their present locations. The Contractor shall remove such material from the job site at his own expense and it shall not be reused.
- C. Wherever piping is removed for disposition, adjacent pipe and headers that are to remain in service shall be blanked off or plugged and then anchored in an approved manner.
- D. Equipment to be retained by the Owner shall be carefully removed from the present location, cleaned, and immediately transported to a

- site as directed by the St. Tammany Parish Department of Utilities.
- E. The Contractor shall take all necessary precautions against damaging the material and equipment to be stored. The Contractor shall repair any damage resulting from his operations, as directed by and to the satisfaction of the A/E. Itemized lists of materials removed and stored shall be given to the A/E daily. A final typed itemized list shall be furnished to the A/E in six copies at the completion of construction.

## 3.2 Equipment to be Retained:

- A. The following is a list of items which shall be removed and remain the property of the Owner. Items shall be stored as specified elsewhere in these Specifications. The list is not intended to be complete, but only to convey the general types of equipment to be retained by the Owner.
  - 1. All electric panels and motor control centers
  - 2. All pumps and drive units
  - 3. All sump pumps
  - 4. Interior Piping and valves greater than 3-inches in diameter
  - 5. All liquid level floats
  - 6. All steel grating and steel support beams
  - 7. Wastewater Treatment Plant For Wastewater Treatment Plant PTU, Contractor responsible for dewatering and cleaning prior to return to St. Tammany Parish.
  - 8. Blowers
  - Electrical
- B. If the Owner elects not to retain ownership of a certain item indicated in the above list, the A/E will notify the Contractor within seven (7) days and the item shall become the property of the Contractor and shall be removed from the job site at the Contractor's expense.

SECTION 02140: DEWATERING

PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: Furnish all labor, materials, equipment, and incidentals required to prevent surface water and subsurface or ground water from flowing into excavations and from flooding the project site and surrounding area. The Contractor shall dewater and dispose of the water so as not to cause injury to public or private property, or to cause a nuisance or a menace to the public. It shall be the sole responsibility of the Contractor to have adequate equipment and personnel at the site at all times to comply with these requirements.

#### 1.3 Submittals:

- A. Prior to beginning dewatering operations, the Contractor shall submit in writing to the A/E, as required, his proposed plan to comply with the requirements of this section. Submittal shall contain proposed equipment, methods of conveyance, and discharge point for water removed from excavations.
- B. These submittals are for record purposes only and shall be submitted in accordance with requirements of Division 1.
- 1.4 Quality Assurance: All dewatering of excavations shall conform to all requirements necessary to comply with local code and authorities having jurisdiction.

PART 2: PRODUCTS

(NOT USED)

#### PART 3: EXECUTION

3.1 General: The Contractor shall install all equipment necessary for dewatering. He shall have on hand, at all times, sufficient pumping equipment and machinery in good working condition and shall have available, at all times, competent workmen for the operation of the pumping equipment. Adequate standby equipment shall be kept available at all times to insure efficient dewatering and maintenance of dewatering operation during power failures.

## 3.2 Drainage:

- A. The Contractor shall control surface runoff to prevent entry or collection of water in excavations. The static water level shall be controlled in the vicinity of the excavation to maintain the undisturbed state of the foundation soils and allow the placement of any fill or backfill to the required density. The dewatering system shall be installed and operated so that the ground water level outside the excavation is not altered to an extent that would damage or endanger adjacent structures or property.
- B. The Contractor shall furnish all materials and equipment and perform all incidental work required to install and maintain the drainage system he proposes for handling ground water or surface water encountered. He shall assume all responsibility for the adequacy of the methods, materials, and equipment employed. Construction shall not begin until the A/E is assured that the proposed method will be satisfactory. The Contractor must alter his drainage methods, if, in the opinion of the A/E, the excavation bottom is unsatisfactory.
- C. The Contractor shall provide pumping equipment and devices to properly remove and dispose of all water entering excavations. The grade shall be maintained acceptably dry until the structures to be built therein are completed. All drainage shall be performed without damage to the excavation, pavements, pipes, electrical conduits, or other utilities.
- D. Pipe and masonry shall not be laid in water or submerged within 24 hours after being placed. Water shall not flow over new masonry within four days after placement.
- E. In no event shall water rise to cause unbalanced pressure on structures until the concrete or mortar has set at least 24 hours. The Contractor shall prevent flotation of the structure by promptly placing backfill.
- F. Where other methods of handling water prove inadequate, the Contractor shall furnish, install, operate, and remove proper well point facilities.
- Groundwater: The control of ground water shall be such that softening of the bottom of excavations or formation of unstable conditions during excavation shall be prevented. Dewatering systems shall be designed and operated to prevent erosion of the natural soils. Care shall be taken to prevent disturbance, due to the method of dewatering, of bedding already in place in the excavation. The Contractor is fully responsible for maintaining the integrity of previously placed structures and bedding during dewatering and the release of groundwater. During excavation, construction of structures, installation of pipelines and sewers, placement of the structure and trench backfill, and the placing and setting of concrete, excavations shall be kept free of water.

- 3.4 Handling and Disposal of Water:
  - A. The Contractor shall remove any water, which may be found or may accumulate in the trenches and shall perform all work necessary to keep them clean of water while the work is in progress.
  - B. The Contractor shall use due vigilance and care so that no water originating on his work, or due to his work, or which he is obligated to handle and dispose of as part of his work, shall discharge or be discharged to swales, ditches, trenches, or pits of other contractors, private individuals, or the Owner, unless by mutual agreement of parties affected. Should any dispute arise from this cause, the matter shall be referred to the A/E for final settlement. Nothing in this section is to be construed as preventing the reasonable use by any Contractor of any ditch, canal, or gutter, which is designed and used for drainage.
  - C. The Contractor shall keep his completed work reasonably free of water and shall free it entirely at such times as may be required for the purposes of installation, inspection, etc.
  - D. Gutters or drains parallel with the trench must be maintained unobstructed. When necessary, a proper platform shall be built over them and the excavated dirt placed thereon so as to permit the free passage of all drainage water.
- 3.5 Release of Groundwater: The release of groundwater to its static level shall be performed in such a manner as to maintain the undisturbed state of the natural foundation soils, prevent disturbance of compacted backfill, and prevent flotation or movement of structures, pipelines, and sewers.

## SECTION 02150: SHORING AND BRACING

#### PART 1: GENERAL

1.1 Summary:

- A. Shore and brace sidewalls in deep excavations with steel soldier piles and timber lagging as required to protect existing buildings, utilities, roadways, and improvements, and to prevent cave-ins or loss of ground.
- B. Maintain shoring and bracing during construction, activities, and remove shoring and bracing when construction and filling is complete.
- 1.2 Submittals: Submit for approval shop drawings and information on methods proposed for use.
- Quality Assurance: Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

### PART 2: PRODUCTS

2.1 Materials:

- A. Soldier piles: Steel H-beams in serviceable condition.
- B. Timber lagging: Heavy timber pressure treated with wood preservative.

#### PART 3: EXECUTION

3.1 Installation: Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections.

SECTION 02210: GRADING

### PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: Furnish all materials, labor and equipment for the installation of fill, grading, excavation, compacting, disposal of surplus materials and restoration of existing surfaces as indicated on the Drawings or specified elsewhere herein. Provide all necessary supplementary items for a complete installation intended by documents.

#### 1.3 Protection:

- A. Maintain carefully all benchmarks, monuments, and other reference points. If disturbed or destroyed, replace as directed. If found at variance with the Drawings, notify the A/E before proceeding to lie out Work.
- B. Protect as may be necessary any existing vegetation, trees, or the like immediately adjacent to the limits of Work which are not stated or directed to be removed. Any such damaged plant shall be replaced at no cost to Owner with like species and size.
- C. In the event any excavation must be made immediately adjacent to the existing portion of buildings, covered walks or other Work, which is to remain, thoroughly crib and shore. Any settling or damage to that portion of the existing Work which is to remain, as a direct result of excavation Work, will be the responsibility of Contractor who shall repair the damage at no cost to Owner.
- D. Restore all existing curbs and paving damaged in performance of this Work without extra cost to Owner in the manner prescribed by authorities having jurisdiction.
- E. Protect all existing fencing and other work to remain, from damage. If damaged, restore or replace at no additional cost to Owner.
- F. Where trees are to be left in place in areas to be graded, adequately protect from damage. Natural surface of ground shall be left undisturbed to the drip line of the existing trees.

## 1.4 Existing Utilities:

A. Follow rules and regulations of the authority having jurisdiction in executing all Work under this article. Adequately protect active utilities shown on the Drawings from damage and remove or relocate only as indicated or specified. Where active utilities are encountered, but are not shown on the Drawings, advise the A/E.

- B. Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of support and protection during earthwork operations.
- C. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities operation. Repair damaged utilities to satisfaction of utility owner.
- D. Do not interrupt existing utilities serving facilities occupied and used by Owner or others, except when permitted in writing by A/E and then only after acceptable temporary utility services have been provided.
- E. Provide minimum of 48-hour notice to A/E, and receive written notice to proceed before interrupting any utility. Contractor shall be responsible for notifying applicable agency.
- F. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shut-off of services if lines are active.
- G. Remove, plug or cap inactive and abandoned utilities encountered in excavating and grading operations as directed.

## 1.5 Compaction Standards:

- A. Densities: Required densities of compaction are expressed hereinafter in terms of percentages. Such terms shall mean percentages of maximum density at optimum moisture content, as determined and controlled in accordance with the American Society of Testing and Materials, "Standard Test Methods for Moisture Density Relationships of Soils and Soil Aggregate Mixtures" using 5.5 lb. (2.49 kg) Rammer and 12 inch (305mm) Drop.
- B. Field density determinations shall be made at locations as directed by the A/E.
- C. If tests indicate insufficient density, compact as required and have additional testing performed until required densities are met. The Contractor shall pay for all such additional testing.

## 1.6 Quality Assurance:

- A. Testing Agency: In-place soil compaction tests to be performed by the designated testing laboratory.
- B. Reference Standards:
  - Granular Material Reference Standards:
    - a. American Society for Testing and Materials (ASTM) D698-78, Moisture-Density Relations of "Soils Using 5.5-lb. (2.49-kg) Hammer and 12-in. (305-mm) Drop.
    - b. ASTM D 2487, Classification of Soils for Engineering Purpose.
  - 2. Bedding Material Reference Standards:
    - American Society for Testing and Materials (ASTM)
       D4253 for Moisture-Density Relations.

- b. ASTM D4254 for calculation of relative density.
- C. Contractor is responsible for the payment of all retests.
- 1.7 Job Conditions: Existing conditions are generally shown on the Drawings. Contractor shall visit the site, familiarize himself with actual conditions and verify existing conditions in the field. The Contractor is required to accept actual conditions at the site and do the Work specified without additional compensation for possible variation from grades and conditions shown, whether surface or sub-surface.

### PART 2: PRODUCTS

- Granular Material: Fill shall be AASHTO A-2-4 or better or clean sand well graded from fine to coarse, free of debris, organic or other deleterious matter and approved by A/E. A/E shall approve all fill materials. Legally remove from site, stockpile on site, or waste over lawn areas as directed any material found unsuitable by A/E.
- 2.2 Topsoil: For final grading of areas adjacent to structure, use existing. Provide topsoil from off-site borrows when on-site topsoil:
  - A. Is not sufficient to complete the work.
  - B. Does not meet the requirements set forth below, or
  - C. Is deemed unsuitable by A/E.

Topsoil shall be free from slag, cinders, stones, lumps of soil, sticks, trash or other material over 1-1/2 inches diameter. Topsoil shall be free from viable plants and plant parts. Topsoil shall also be free from debris, noxious weeds, toxic substances, or other materials harmful to plant growth. Topsoil shall have a minimum PI of 4, a maximum PI of 12, a pH of 5.5-8.0, a minimum organic content of 2%, and shall be capable of supporting adequate vegetation. Pump sand may not be used for topsoil under any circumstances.

## PART 3: EXECUTION

## 3.1 Preparation:

- A. Lay out and maintain grade stakes as required. Reference layout work to base lines, property lines, easements, and/or rights-of-way as indicated.
- B. Where new grades tie into existing grades, verify existing grades. If existing conditions are at variance with the Drawings, notify A/E before proceeding with the Work and make adjustments only as directed by the A/E.
- C. The Contractor shall verify that preceding work affecting work of this section has been satisfactorily completed.
- D. Correct conditions adversely affecting work of this section.

3.2 Stripping and Stockpiling of Topsoil: Carry out this Work when dry weather exists and the topsoil is reasonably loose and dry. Remove topsoil a minimum of four (4") inches to remove all vegetation, roots, and foreign matter, from areas to receive fill. Pile topsoil in designated or approved locations where it will not interfere with construction operations. Stockpiles shall be of such size and shape as will keep loss of topsoil by erosion and wind to a minimum.

## 3.3 Disposal of Materials:

- A. Excavated material shall be stacked without excessive surcharge on the excavation or obstructing free access to street, drives, walks, utility appurtenances, and private property. Excessive inconvenience to traffic and adjacent property owners shall not be allowed. Excavated material shall be segregated for use in topsoil as specified below.
- B. All excavated material which is either unsuitable for topsoil or which will not be used for topsoil in the same location shall be legally removed from the site by the Contractor.

### 3.4 Excavation:

- A. Excavated areas shall be cleared of all debris, water, slush, muck, and soft or loose earth and shall be conditioned to the entire satisfaction of the A/E.
- B. All material excavated shall be placed so as to minimize interference with public travel and to permit proper access for inspection of the work.
- C. Stumps, roots, and logs, which are encountered within the excavated area, shall be cut to a depth of one (1') foot below the required excavation. The Contractor shall fill this excavated space with granular material.
- D. The Contractor shall probe one (1') foot below the established bottom on the excavation. If this probing discovers any stump, roots, logs, etc., the Contractor shall cut them out just as if they had been visible in the trench.
- E. Blasting will not be allowed for the removal of stumps.

# 3.5 Site Grading:

- A. Execute all Work in an orderly and careful manner with due consideration for any and all surroundings areas and planting which are to remain. Periodically water as required to allay dust and dirt. Protect any adjacent property and improvements from damage and replace any portions damaged through this operation.
- B. Finish grade all areas affected by Work of this project. Accomplish proper and positive surface drainage with no areas that pond water. Provide a sloping earth berm around all construction of this project and swales as required for positive drainage.

- C. Do all cutting, filling, compaction of fills, and rough grading to bring the entire project area outside of construction to grades indicated on the Drawings and as required to provide proper and positive drainage away from construction.
- D. Where fill is required to rise the existing grades outside of construction to the new elevation required or indicated, place and compact such fill as specified.
- E. Remove all debris subject to termite attack, rot, or corrosion, and all other deleterious materials from areas to be filled. The moisture content of the loosened material shall be such that it will readily bond with the first layer of fill material.
- Place the material in successive horizontal layers in loose depth for the full width of the cross section. Deposit fill in layers not more than nine (9") inches thick under lawn and planted areas. If necessary, moisten soil, or allow to dry to the correct moisture content, before compaction. Do not deposit any fill on a subgrade that is muddy, frozen, or that contains frost.
- G. Compact fills under lawns and planting areas to 95% density unless otherwise specified.
- Distribution of Topsoil: Spread stockpiled topsoil that is acceptable to A/E to a depth of four (4") inches over open graded areas to be planted with grass, seeded, or where required elsewhere. After topsoil is spread, remove all hard lumps of clay, stones over one (1") inch in diameter, roots, limbs, and other deleterious matter, which would be harmful, or prevent proper establishment or maintenance of lawn and planting areas.
- 3.7 Field Quality Control:
  - A. Rough grading of all areas within the project, including excavated and filled sections and adjacent transition areas, shall be reasonably smooth, compacted, and free from irregular surface changes.
  - B. Finish all swales and gutters to drain readily, unless otherwise indicated; evenly slope the grade to provide drainage toward public drainage system or as indicated elsewhere at a grade not less than 1/2" to 3/4" per foot or more than two (2") inches per foot.
  - C. Tolerances of topsoil shall be within 1/2" of grades required.
- Repair: Where any existing lawn areas are damaged, rutted, or otherwise disturbed, repair to original condition.
- 3.9 Disposal: Burning of materials on the site will not be permitted. Legally remove rubbish and debris from the site as it accumulates.

SECTION 02222: EXCAVATING, BACKFILLING, AND COMPACTING FOR UTILITIES

#### PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: This section includes earthwork for installation of pipelines and appurtenances including manholes, and including excavation, backfilling, filling, compacting, disposal of surplus material, and restoration of trench surfaces.

#### 1.3 Provisions:

- A. Existing conditions are shown on the Drawings. Contractor shall visit the site, familiarize himself with actual conditions and verify existing conditions in the field. The Contractor is required to accept actual conditions at the site and do the Work specified without additional compensation for possible variation from grades and conditions shown, whether surface or sub-surface.
- B. Execute all Work in an orderly and careful manner with due consideration for any and all surroundings areas and planting which are to remain. Periodically water as required to lay dust and dirt. Protect any adjacent property and improvements from damage and replace any portions damaged through this operation.
- C. Finish grade all areas affected by Work of this project. Accomplish proper and positive surface drainage with no areas that pond water. Provide a sloping earth berm around all construction of this project and swales as required for positive drainage.

#### 1.4 Protection:

- A. Maintain carefully all benchmarks, monuments, and other reference points. If disturbed or destroyed, replace as directed. If found at variance with the Drawings, notify the A/E before proceeding to lie out Work.
- B. Protect as may be necessary any existing vegetation, trees, or the like immediately adjacent to the limits of Work which are not stated or directed to be removed. Any such damaged plant shall be replaced at no cost to Owner with like species and size.
- C. In the event any excavation must be made immediately adjacent to the existing portion of buildings, covered walks or other Work, which is to remain, thoroughly crib and shore. Any settling or damage to that portion of the existing Work which is to remain, as a direct result of excavation Work will be held the responsibility of Contractor who shall repair the damage at no cost to Owner.

- D. Restore all existing curbs and paving damaged in performance of this Work without extra cost to Owner in the manner prescribed by authorities having jurisdiction.
- E. Protect all existing fencing, street signs, signs, bushes, and other work to remain, from damage. If damaged, restore or replace at no additional cost to Owner.
- F. Where trees are to be left in place in areas to be graded, adequately protect from damage. Natural surface of ground shall be left undisturbed to the drip line of the existing trees. If trees are damaged, Contractor shall replace. Contractor shall use a chain saw to cut roots of trees exposed during excavation. Contractor shall not break roots by pulling them with digging machines.
- G. Contractor shall brace power and telephone poles adjacent to excavation. Bracing shall remain in place after backfilling until compaction standards have been met. Complete work promptly once excavation has begun adjacent to poles (no direct payment).

## 1.5 Existing Utilities:

- A. Follow rules and regulations of the authority having jurisdiction in executing all Work under this article. Adequately protect active utilities shown on the Drawings from damage and remove or relocate only as indicated or specified. Where active utilities are encountered, but are not shown on the Drawings, advise the A/E.
- B. Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of support and protection during earthwork operations.
- C. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.
- D. Do not interrupt existing utilities serving facilities occupied and used by Owner or others, except when permitted in writing by A/E and then only after acceptable temporary utility services have been provided.
- E. Provide minimum of 48-hour notice to A/E, and receive written notice to proceed before interrupting any utility. Contractor shall be responsible for notifying applicable agency.
- F. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shut-off of services if lines are active.
- G. Remove, plug or cap inactive and abandoned utilities encountered in excavating and grading operations as directed.

## 1.6 Compaction Standards:

- A. Densities for Granular Material, Topsoil and Excavation Material:
  - 1. Required densities of compaction are expressed hereinafter in terms of percentages. Such terms shall mean percentages of maximum density at optimum moisture content, as determined and controlled in accordance with the American Society For Testing and Materials, "Standard Test Methods for Moisture Density Relationships of Soils and Soil Aggregate Mixtures" using 5.5 lb. (2.49kg) Hammer and 12 inch (305mm) Drop. Use relative density test for the bedding material.
  - 2. Densities for Bedding Material: Standard test methods for moisture density relationships of soils and soil-aggregate mixtures.
- B. Field density determinations shall be made at locations as directed by the A/F
- C. If tests indicate insufficient density, compact as required and have additional testing performed until required densities are met. The Contractor shall pay for all such additional testing.

## 1.7 Quality Assurance

- A. Testing Agency: In-place soil compaction tests to be performed by the designated testing laboratory.
- B. Reference Standards:
  - 1. Granular Material Reference Standards:
    - a. American Society for Testing and Materials (ASTM) D698-78, Moisture-Density Relations of "Soils Using 5.5-lb. (2.49-kg) Hammer and 12-in. (305-mm) Drop.
    - b. ASTM D 2487, Classification of Soils for Engineering Purpose.
  - Bedding Material Reference Standards:
    - a. American Society for Testing and Materials (ASTM) D4253 for Moisture-Density Relations.
    - b. ASTM D4254 for calculation of relative density.
- C. Contractor is responsible for the payment of all retests.

## 1.8 Job Conditions:

- A. Time of construction should be kept to a minimum.
- B. Sheeting, shoring, and dewatering during construction should be properly designed to keep a stable excavation at all times and to prevent disturbance of the in place soils.
- C. As specified in these Specifications, the Contractor shall provide, operate, and maintain all necessary pumps, discharge lines, well points, etc., in sufficient number and capacity to keep all excavation, bases, pits, etc. in conformance with the indicated foundation construction condition at each structure at all times throughout the period of construction.

- D. As specified in these Specifications, the Contractor shall assume all responsibility for security of the excavation required, employing bracing, lining, or other accepted means necessary to accomplish same.
- E. Excavated areas shall be cleared of all debris, water, slush, muck, and soft or loose earth and shall be conditioned to the entire satisfaction of the A/E.
- F. All excavated material unsuitable for use, or which will not be used, shall be legally disposed of as specified.
- G. All excavations encountering stumps, roots, logs, etc. at the designated bottom grade of the pit shall be removed of such items by the Contractor and refilled with proper material, as specified.

### PART 2: PRODUCTS

2.1 Bedding Material: Material shall be limestone and from a source approved by the Owner. Graded aggregate for 16 inch or less pipes shall be No. 67. Graded aggregate for 18 inch or greater pipes shall be No. 57.

The limestone shall meet the following gradations when tested in accordance with DOTD TR 113:

U.S. Sieve	#57 Percent	#67 Percent
1 1/2" 1" 3/4"	100 95 - 100	 100 90 - 100
3/4 1/2" 3/8"	25 - 60 	90 - 100  20 - 55
#4 #8	0 - 10 0 - 5	0 - 10 0 - 5

The limestone shall have an absorption rate of not more than 1.5 percent and an abrasion loss of not more than 30 percent when tested in accordance with test method AASHTO T96.

Granular Material: Fill shall be AASHTO A-2-4 or better or clean sand, well graded from fine to course, free of debris, organic or other deleterious matter and approved by A/E. A/E shall approve all fill and backfill materials. Backfill all streets and driveways with AASHTO A-2-4 or better.

## 2.3 Select Backfill Material:

A. Composition: Only approved material shall be used for backfill, free from organic matter. Excavated earth free from debris or organic material may be used for backfilling, as specified.

- B. Excavated clay soils free of debris, organic material, or large lumps of clay shall be used only when indicated by geotechnical recommendations, when available.
- Topsoil: Use existing. When on-site topsoil is not sufficient to complete the work, or when existing topsoil is deemed unsuitable by A/E, provide topsoil from off-site borrows. Borrow topsoil shall be loose soil consisting of a friable mixture of clay, silt, and sand (maximum sand content 45 percent, minimum clay content 30 percent), with a varying content of fine, friable, organic matter. All topsoil shall be free of roots, stones, debris, and other materials detrimental to lawn maintenance and shall be approved by A/E before use. Pump sand may not be used for topsoil under any circumstances.

#### PART 3: EXECUTION

## 3.1 Preparation:

- A. Lay out and maintain grade stakes as required. Reference layout work to base lines, property lines, easements, and/or rights-of-way as indicated.
- B. Where new grades tie into existing grades, verify existing grades. If existing conditions are at variance with the Drawings, notify A/E before proceeding with the Work and make adjustments only as directed by the A/E.
- C. The Contractor shall verify that preceding work affecting work of this Section has been satisfactorily completed.
- D. Correct conditions adversely affecting work of this Section.

#### 3.2 Disposal of Materials:

- A. Excavated material shall be stacked without excessive surcharge on the excavation or obstructing free access to street, drives, walks, utility appurtenances, and private property. Excessive inconvenience to traffic and adjacent property owners shall not be allowed. Excavated material shall be segregated for use as backfilling and/or topsoil as specified below.
- B. All excavated material which is either unsuitable for backfill or will not be used for backfill on the project shall become the Contractor's property and must be removed and legally disposed of off site.
- C. All excavated material which is either unsuitable for backfill or will not be used for backfill on the project shall be removed from the site by Contractor.
- D. Should conditions make it impractical or unsafe to stack material adjacent to the excavation, the material shall be hauled and stored at a location provided by the Contractor. When required, it shall be rehandled and used in backfilling the excavation.

### 3.3 Excavation:

- A. Excavation shall extend to the width and depth shown on the Drawings or as specified. Where not specified, Contractor shall confine his excavation to the least width practicable and shall provide suitable room for installing pipe, structures, and appurtenances.
- B. The Contractor shall furnish and place all sheeting, bracing, a supports and shall remove from the excavation all materials which are unsuitable for backfill or which the A/E may deem unsuitable for backfilling. The bottom of the excavation shall be firm, dry, and in all respects, acceptable. The Contractor shall deposit pipe bedding, or refill for excavation below grade, directly on the bottom of the trench, immediately after excavation has reached the prior depth, and before the bottom of the trench has become softened or disturbed by any cause whatever. It shall also include the wasting or disposal of surplus excavated material in a manner and in locations approved by the A/E. If the bottom of the excavation is carried below the level called for by the Drawings, or made mucky or unstable due to the Contractor's operations or carelessness, the excavation shall be deepened to undisturbed soil. Also, the thickness of the bedding material or depth of fill material, as determined by the A/E, shall be increased accordingly, without additional compensation to the Contractor.
- C. Control the grading so that ground is pitched to prevent water from running into the excavated areas or damaging the structures.

  Maintain all pits and trenches free of water at all times.
- D. Pumping: The Contractor shall keep all excavations free from water, at his own expense, while work is in progress. He shall provide for the disposal of the water removed from excavations in such a manner as not to cause injury to the public health, to public or private property, or to any portion of the work completed or in progress, or shall he cause any impediment to the use of the streets by the public.
- E. All material excavated shall be placed so as to minimize interference with public travel and to permit proper access for inspection of the work.
- F. Trenching shall be not more than 200 feet ahead of pipe laying or only so far in advance of pipe laying as to reveal obstructions.
- G. Stumps, roots, and logs, which are encountered within the trench area, shall be cut to a depth of one (1') foot below the bottom of the trench. The Contractor shall fill this excavated space with bedding material.
- H. When so required by the A/E, the Contractor shall probe one (1') foot below the established bottom on the trench. If this probing discovers any stump, roots, logs, etc., the Contractor shall cut them out just as if they had been visible in the excavation.
- I. Blasting will not be allowed for the removal of stumps.

- J. Existing sheeting may exist adjacent to existing utility structures. Contractor shall remove existing sheeting if sheeting conflicts with new work (no cost to Owner).
- 3.4 Test Pits: Test pits for the purpose of locating underground utilities or structures in advance of the construction may be excavated by the Contractor. Test pits shall be backfilled immediately after the desired information has been obtained. The backfilled surface shall be restored and maintained in a manner satisfactory to the A/E.

### 3.5 Pipe Embedment:

- A. Bedding shall conform to the details on the Drawings, and as specified. When laying pipe, the groove for the pipe and bell hole must be accurately shaped, and the bedding and backfill must be closely packed adjacent to the pipe.
- B. Bedding material shall be placed and compacted as shown on the Drawings. All foundation lumber (i.e., planking, sills, and stringers in the trench bottom) shall be hard wood suitable for the purpose. Installation of foundation lumber and piling shall be in accordance with the Drawings.
- C. Bedding material compaction shall consist of the placement of bedding in lifts not exceeding 12 inches and compacted by a drum roller or plate vibrating compactor. This mechanical compactor must make a minimum of two (2) passes over every area of the bedding. Compacted bedding shall be enclosed in a filter fabric in areas that require a granular material backfill, i.e. under roads, sidewalks, or other structural items.
- D. Compact all bedding material to 75 percent relative density.

## 3.6 Backfilling:

- A. As soon as practicable after the pipe has been laid, jointed, and tested (if required), backfilling shall begin and thereafter be prosecuted expeditiously.
- B. After the required bedding has been placed as shown on the Drawings, backfill material free from stones, pieces of lumber, and other foreign material shall be hand placed and hand tamped to a depth over the top of the pipe as shown on the Drawings.
- C. Where the pipes are laid cross-country, the remainder of the trench shall be filled with select backfill material as shown on the Drawings and thoroughly compacted and mounded six (6") inches above the existing grade, or as directed.

- D. Wherever a grassed or aggregate surface exists prior to cross country excavations, it shall be removed, conserved, and replaced to the full original depth as part of the work under the pipe items. In some areas it may be necessary to remove excess material during the clean-up process, so that the ground may be restored to its original level and condition. If the Contractor prefers not to store grass and topsoil, he shall seed excavated areas as specified.
- E. Where the pipes are laid in or two (2') feet adjacent to paving, the remainder of the trench above the bedding and up to the bottom of the specified paving shall be backfilled with granular material in layers not to exceed nine (9") inches, and thoroughly compacted by flooding.
- F. Backfill around manholes shall be compacted by flooding. All backfill shall be compacted, especially under and over pipes connected to the manholes.
- G. All road surfaces adjacent to backfilling operations shall be broomed and hose-cleaned immediately after backfilling. Dust control measures, as specified, shall be employed at all times.
- H. Compact all granular material backfill to 95 percent density. Compact all select backfill material to 90 percent of maximum density.

## 3.7 Restoring Trench Surface:

- A. Where the trench occurs adjacent to paved streets, in shoulders, sidewalks, or in cross-country areas, the Contractor shall thoroughly consolidate the backfill and shall maintain the surface as the work progresses. If settlement takes place, he shall immediately deposit additional fill to restore the level of the ground.
- B. The surface of any driveway or other area which is disturbed by the trench excavation and which is not a part of the paved street shall be restored by the Contractor to a condition at least equal to that existing before work began.
- C. In sections where the pipeline passes through grassed areas, the Contractor shall regrade and reseed all disturbed areas as specified.

# 3.8 Site Grading:

- A. Do all cutting, filling, compaction of fills, and rough grading to bring the entire project area outside of construction to grades indicated on the Drawings and as required to provide proper and positive drainage away from construction.
- B. Where fill is required to raise the existing grades to the new elevation required or indicated, place and compact such fill as specified.
- C. Remove all debris subject to termite attack, rot, or corrosion, and all other deleterious materials from areas to be filled. The moisture content of the loosened material shall be such that it will readily bond with the first layer of fill material.

- D. Place the material in successive horizontal layers in loose depths for the full width of the cross section. Deposit fill in layers not more than nine (9") inches thick under lawn and planted areas. If necessary, moisten soil, or allow to dry to the correct moisture content, before compaction. Do not deposit any fill on a subgrade that is muddy, frozen, or that contains frost.
- E. Compact fills under lawns and planting areas to the compaction obtained by routing spreading equipment uniformly over the area.
- 3.9 Field Quality Control:
  - A. Rough grading of all areas within the project, including excavated and filled sections and adjacent transition areas, shall be reasonably smooth, compacted, and free from irregular surface changes.
  - B. Finish all swales and gutters to drain readily.
- 3.10 Repair: Where any existing lawn areas are damaged, rutted, or otherwise disturbed, repair to original condition.
- 3.11 Disposal: Burning of materials on the site will not be permitted. Remove and legally dispose of rubbish and debris from the site as it accumulates.
- Barricades and Flares: The Contractor shall provide temporary fencing, barricades, flares, signs, etc., as necessary, to protect vehicles and pedestrians at locations where there exists an open excavation, trench, or any other obstacle. Barricades shall bear the Contractor's name and any other information required by the A/E or public authorities. Where on public roadways all barricade signs and flares shall be of a type and located in a manner that conforms to recommendations of the Louisiana Manual on Uniform Traffic Control Devices, latest edition as revised, or as specified herein, subject to the approval of the A/E.

SECTION 02224: EXCAVATING, BACKFILLING, AND COMPACTING FOR UTILITY STRUCTURES

### PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: This section includes earthwork for installation of utility structures and appurtenances, including excavation, backfilling, filling, compacting, disposal of surplus material, and restoration of ground surfaces.

#### 1.3 Provisions:

- A. Existing conditions are shown on the Drawings. Contractor shall visit the site, familiarize himself with actual conditions and verify existing conditions in the field. The Contractor is required to accept actual conditions at the site and do the Work specified without additional compensation for possible variation from grades and conditions shown, whether surface or sub-surface.
- B. Execute all Work in an orderly and careful manner with due consideration for any and all surroundings areas and planting which are to remain. Periodically water as required to allay dust and dirt. Protect any adjacent property and improvements from damage and replace any portions damaged through this operation.
- C. Finish grade all areas affected by Work of this project. Accomplish proper and positive surface drainage with no areas that pond water. Provide a sloping earth berm around all construction of this project and swales as required for positive drainage.

#### 1.4 Protection:

- A. Maintain carefully all benchmarks, monuments, and other reference points. If disturbed or destroyed, replace as directed. If found at variance with the Drawings, notify the A/E before proceeding to lie out Work.
- B. Protect as may be necessary any existing vegetation, trees, or the like immediately adjacent to the limits of Work which are not stated or directed to be removed. Any such damaged plant shall be replaced at no cost to Owner with like species and size.

- C. In the event any excavation must be made immediately adjacent to the existing portion of buildings, covered walks or other Work, which is to remain, thoroughly crib and shore. Any settling or damage to that portion of the existing Work which is to remain, as a direct result of excavation Work, will be the responsibility of Contractor who shall repair the damage at no cost to Owner.
- D. Restore all existing curbs and paving damaged in performance of this Work without extra cost to Owner in the manner prescribed by authorities having jurisdiction.
- E. Protect all existing fencing, street signs, signs, bushes, and other work to remain, from damage. If damaged, restore or replace at no additional cost to Owner.
- F. Where trees are to be left in place in areas to be graded, adequately protect from damage. Natural surface of ground shall be left undisturbed for a distance of eight (8') feet from tree on all sides except as approved or directed by A/E. If the trees are damaged Contractor shall replace. Contractor shall use a chain saw to cut roots of trees exposed during excavation. Contractor shall not break roots by pulling them with digging machines.
- G. Contractor shall brace power and telephone poles adjacent to excavation. Bracing shall remain in place after backfilling until compaction standards have been met. Complete work promptly once excavation has begun adjacent to poles (no direct payment).

# 1.5 Existing Utilities:

- A. Follow rules and regulations of the authority having jurisdiction in executing all Work under this article. Adequately protect active utilities shown on the Drawings from damage and remove or relocate only as indicated or specified. Where active utilities are encountered, but are not shown on the Drawings, advise the A/E.
- B. Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of support and protection during earthwork operations.
- C. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.
- D. Do not interrupt existing utilities serving facilities occupied and used by Owner or others, except when permitted in writing by A/E and then only after acceptable temporary utility services have been provided.
- E. Provide minimum of 48-hour notice to A/E, and receive written notice to proceed before interrupting any utility. Contractor shall be responsible for notifying applicable agency.

- F. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shut-off of services if lines are active.
- G. Remove, plug or cap inactive and abandoned utilities encountered in excavating and grading operations as directed.

## 1.6 Compaction Standards:

- A. Densities for Granular Material, Topsoil and Excavation Material:
  - 1. Required densities of compaction are expressed hereinafter in terms of percentages. Such terms shall mean percentages of maximum density at optimum moisture content, as determined and controlled in accordance with the American Society For Testing and Materials, "Standard Test Methods for Moisture Density Relationships of Soils and Soil Aggregate Mixtures" using 5.5 lb. (2.49kg) Hammer and 12 inch (305mm) Drop. Use relative density test for the bedding material.
  - Densities for Bedding Material: Standard test methods for moisture density relationships of soils and soil-aggregate mixtures.
- B. Field density determinations shall be made at locations as directed by the A/E.
- C. If tests indicate insufficient density, compact as required and have additional testing performed until required densities are met. The Contractor shall pay for all such additional testing.

## 1.7 Quality Assurance

- A. Testing Agency: In-place soil compaction tests to be performed by the designated testing laboratory.
  - 1. Granular Material Reference Standards:
    - a. American Society for Testing and Materials (ASTM) D698-78, Moisture-Density Relations of "Soils Using 5.5-lb. (2.49-kg) Hammer and 12-in. (305-mm) Drop.
    - b. ASTM D 2487, Classification of Soils for Engineering Purpose.
  - Bedding Material Reference Standards:
    - a. American Society for Testing and Materials (ASTM) D4253 for Moisture-Density Relations.
    - b. ASTM D4254 for calculation of relative density.
- B. Contractor is responsible for the payment of all retests.

#### 1.8 Job Conditions:

- A. Time of construction should be kept to a minimum.
- B. Sheeting, shoring, and dewatering during construction should be properly designed to keep a stable excavation at all times and to prevent disturbance of the in place soils.

- C. As specified in these Specifications, the Contractor shall provide, operate, and maintain all necessary pumps, discharge lines, well points, etc., in sufficient number and capacity to keep all excavation, bases, pits, etc. in conformance with the indicated foundation construction condition at each structure at all times throughout the period of construction.
- D. As specified in these Specifications, the Contractor shall assume all responsibility for security of the excavation required, employing bracing, lining, or other accepted means necessary to accomplish same.
- E. Excavated areas shall be cleared of all debris, water, slush, muck, and soft or loose earth and shall be conditioned to the entire satisfaction of the A/E.
- F. All excavated material unsuitable or use, or which will not be used, shall be disposed of as specified.
- G. All excavations encountering stumps, roots, logs, etc. shall be removed of such items by the Contractor and refilled with proper material, as specified.

#### PART 2: PRODUCTS

2.1 Bedding Material: Material shall be limestone No. 57 and from a source approved by the Owner.

The limestone shall meet the following gradations when tested in accordance with DOTD TR 113:

<u>U.S. Sieve</u>	#57 Percent
1 1/2" 1"	100 95 - 100
3/4"	and the second
1/2"	25 - 60
3/8"	(222
#4	0 - 10
#8	0 - 5

The limestone shall have an absorption rate of not more than 1.5 percent and an abrasion loss of not more than 30 percent when tested in accordance with test method AASHTO T96.

2.2 Granular Material: Fill shall be AASHTO A-2-4 or better or clean sand, well graded from fine to course, free of debris, organic or other deleterious matter and approved by A/E. A/E shall approve all fill and backfill materials. Backfill all streets and driveways with AASHTO A-2-4 or better.

### 2.3 Select Backfill Material:

- A. Composition: Only approved material shall be used for backfill, free from organic matter. Excavated earth free from debris or organic material may be used for backfilling as specified.
- B. Excavated clay soils free of debris, organic material, or large lumps of clay shall be used only when indicated by geotechnical recommendations, when available.
- Topsoil: For final grading of areas adjacent to structure use existing. When on-site topsoil is not sufficient to complete the work, or when existing topsoil is deemed unsuitable by A/E, provide topsoil from off-site borrows. Borrow topsoil shall be loose soil consisting of a friable mire of clay, silt, and sand (maximum sand content 45 percent, minimum clay content 30 percent), with a varying content of fine, friable, organic matter. All topsoil shall be free of roots, stones, debris, and other materials detrimental to lawn maintenance and shall be approved by A/E before use. Pump sand may not be used for topsoil under any circumstances.

#### PART 3: EXECUTION

### 3.1 Preparation:

- A. Lay out and maintain grade stakes as required. Reference layout work to base lines, property lines, easements, and/or rights-of-way as indicated.
- B. Where new grades tie into existing grades, verify existing grades. If existing conditions are at variance with the Drawings, notify A/E before proceeding with the Work and make adjustments only as directed by the A/E.
- C. The Contractor shall verify that preceding work affecting work of this Section has been satisfactorily completed.
- D. Correct conditions adversely affecting work of this Section.
- 3.2 Stripping and Stockpiling of Topsoil: Carry out this Work when dry weather exists and the topsoil is reasonably loose dry. Remove topsoil a minimum of four (4") inches to remove all vegetation, roots, and foreign matter, from areas to receive fill. Pile topsoil in designated or approved locations where it will not interfere with construction operations. Stockpiles shall be of such size and shape as will keep loss of topsoil by erosion and wind to a minimum.

### 3.3 Disposal of Materials:

- A. Excavated material shall be sacked without excessive surcharge on the excavation or obstructing free access to street, drives, walks, utility appurtenances, and private property. Excessive inconvenience to traffic and adjacent property owners shall not be allowed. Excavated material shall be segregated for use as backfilling and/or topsoil as specified below.
- B. All excavated material which is either unsuitable for backfill or which will not be used for backfill in the same location shall be removed from the site by the Contractor.
- C. Should conditions make it impractical or unsafe to stack material adjacent to the excavation, the material shall be hauled and stored at a location provided by the Contractor. When required, it shall be rehandled and used in backfilling the excavation.

#### 3.4 Excavation:

- A. Excavation shall extend to the width and depth shown on the Drawings or as specified. Where not specified, Contractor shall confine his excavation to the least width practicable and shall provide suitable room for installing structures and appurtenances.
- The Contractor shall furnish and place all sheeting, bracing, and B. supports and shall remove from the excavation all materials which are unsuitable for backfill or which the A/E may deem unsuitable for backfilling. The bottom of the excavation shall be firm, dry, and in all respects, acceptable. The Contractor shall deposit bedding, or refill for excavation below grade, directly on the bottom of the excavation, immediately after excavation has reached the proper depth, and before the bottom has become softened or disturbed by any cause whatever. It shall also include the wasting or disposal of surplus excavated material in a manner and in locations approved by the A/E. If the bottom of the excavation is carried below the level called for by the Drawings, or made mucky or unstable due to the Contractor's operations or carelessness, the excavation shall be deepened to undisturbed soil. Also, the thickness of bedding material or depth of fill material, as determined by the A/E, shall be increased accordingly, without additional compensation to the Contractor.
- C. Shore, sheet-pile, and brace excavations as required to maintain them secure and to safeguard life. Remove shoring as the backfilling progresses, but only when banks are safe against caving or collapse and backfill meets required densities.
- D. Control the grading so that ground is pitched to prevent water from running into the excavated areas or damaging the structures. Maintain all pits and trenches free of water at all times.

- E. Pumping: The Contractor shall keep all excavations free from water, at his own expense, while work is in progress. He shall provide for the disposal of the water removed from excavations in such a manner as not to cause injury to the public health, to public or private property, or to any portion of the work completed or in progress, or shall he cause any impediment to the use of the streets by the public.
- F. All material excavated shall be placed so as to minimize interference with public travel and to permit proper access for inspection of the work.
- G. All excavation shall be made within an area bounded by lines five (5') feet outside of, and parallel to, exterior walls of the structure to allow for correct forming, shoring, and inspection of foundation work. Pouring of concrete against earth sidewalls will not be permitted.
- H. Where soil conditions permit, footing trenches may be excavated to the exact dimensions of the concrete footing and side form omitted.
- I. When bedding material is to rest on an excavated surface, care shall be taken not to disturb the bottom of the excavation. Final removal and replacement of the foundation material and sub base compaction to grade shall not be made until just before the structure is placed.
- J. When any excavation is completed, the Contractor shall notify the A/E who will make an inspection of the excavation. No concrete or masonry shall be placed until the excavation has been approved by the A/E
- K. The elevation of the bottoms of footings and base slabs, as shown on the Drawings, shall be considered as approximate only and the A/E may order, in writing, such changes in dimensions or elevation of footings as may be necessary to secure a satisfactory foundation.
- L. Stumps, roots, and logs, which are encountered within the excavated area, shall be cut to a depth of one (1') foot below the bottom of the excavation. The Contractor shall fill this excavated space with bedding material.
- M. When so required by the A/E, the Contractor shall probe one (1') foot below the established bottom on the excavation. If this probing discovers any stump, roots, logs, etc., the Contractor shall cut them out just as if they had been visible in the excavation.
- N. Blasting will not be allowed for the removal of stumps.
- O. Existing sheeting may exist adjacent to existing utility structures. Contractor shall remove existing sheeting if sheeting conflicts with new work (no cost to Owner).

### 3.5 Bedding:

- A. A minimum layer of bedding, as shown on the Drawings, shall be placed as a foundation for the concrete base slab and footings. When the base foundation is in clay or organic soils, twice the above thickness of bedding shall be provided, unless otherwise directed by the A/E.
- B. Bedding material compaction shall consist of the placement of bedding in lifts not exceeding 12 inches and compacted by a drum roller or pile vibrating compactor. This mechanical compactor must make a minimum of two (2) passes over every area of the bedding. Compacted bedding shall be enclosed in a filter fabric in areas that require a granular material backfill, i.e. under roads, sidewalks, or other structural items.
- C. Compact all bedding material to 75 percent relative density.

### 3.6 Backfilling:

- A. Backfill shall not be placed until the structure footings or other portions of the structure or facility have been inspected by the A/E, and approved for backfilling.
- B. Select backfill material may be used for each concrete structure. Granular material shall be used as the backfill material for each fiberglass structure. All backfill material shall be placed in uniform layers not more than 12 inches thick and shall be tamped to a density as specified. The Contractor shall securely tamp the backfill around all walls with a pneumatic hammer. The method of compaction shall be satisfactory to the A/E.
- C. Backfilling around the entire perimeter of the structure and releasing of hydrostatic pressure shall be performed periodically as the structure placement, and/or pouring of cast in place concrete advance out of the excavation. The net increase in load shall not exceed 300 psi, unless acceptable to the A/E.
- D. The Contractor will be responsible for checking and controlling uplift during all stages of construction and after structure completion, to insure an adequate factor of safety against flotation.
- E. In areas where the structure is under roadways, backfill shall be granular material up to the required base and sub-base that is defined by the local Department or Agency having jurisdiction of the roadways.
- F. Compaction of backfill by ponding and jetting will be permitted when, as determined by the A/E, the backfill material is of such character that it will be self-draining when compacted and that foundation materials will not soften or be otherwise damaged by the applied water and no damage from hydrostatic pressure will result to the structure. Ponding and jetting of the upper two (2') feet below finished subgrade will not be permitted in roadways areas. When ponding and jetting is permitted, material for use in backfill shall be

- place and compacted in layers not exceeding four (4') feet in thickness. The work shall be performed without damage to the structure and embankment, and in such a manner that water will not be impounded.
- G. Surplus material resulting from the prosecution of the excavation and backfill shall be used in grading the site or removed from the site and disposed of as directed by the A/E. In no case shall any surplus material be deposited on adjacent lands. Fill used for grading shall be placed in layers not to exceed 12 inches in thickness and shall be compacted by suitable means to a density equal to that of the surrounding natural ground.
- H. Compact all granular material backfill to 95 percent density. Compact all select backfill material to 90 percent of maximum density.

## 3.7 Site Grading:

- A. Do all cutting, filling, compaction of fills, and rough grading to bring the entire project area outside of construction to grades indicated on the Drawings and as required to provide proper and positive drainage away from construction.
- B. Where fill is required to rise the existing grades outside of construction to the new elevation required or indicated, place and compact such fill as specified.
- C. Remove all debris subject to termite attack, rot, or corrosion, and all other deleterious materials from areas to be filled. The moisture content of the loosened material indicated, place and compact such fill as specified, shall be such that it will readily bond with the first layer of fill material.
- D. Place the material in successive horizontal layers in loose depths for the full width of the cross section. Deposit fill in layers not more than nine (9") inches thick under lawn and planted areas. If necessary, moisten soil, or allow to dry to the correct moisture content, before compaction. Do not deposit any fill on a subgrade that is muddy, frozen, or that contains frost.
- E. Compact fills under lawns and planting areas to the compaction obtained by routing spreading equipment uniformly over the area.
- 3.8 Distribution of Topsoil: Spread stockpiled topsoil that is acceptable to A/E to a depth of four (4") inches over open graded areas to be planted with grass. After topsoil is spread, remove all hard lumps of clay, stones over one (1") inch in diameter, roots, limbs, and other deleterious matter, which would be harmful, or prevent proper establishment or maintenance of lawn and planting areas.

- 3.9 Field Quality Control: All tests to insure that embedment, fill, and backfill materials and their placement comply with specified requirements shall be made by an independent testing laboratory at the expense of the Owner. As a minimum the following tests will be required.
  - A. Two (2) initial radiation tests for each type of embedment fill, or backfill material and one additional gradation test for each additional 500 tons of each material.
  - B. Two (2) moisture-density (Proctor) tests or two (2) relative density tests for each type of embedment, fill, or backfill material proposed.
  - C. Copies of all reports will be submitted to the A/E for review.
- 3.10 Repair: Where any exiting lawn areas are damaged, rutted, or otherwise disturbed, repair to original condition.
- 3.11 Disposal: Burning of materials on the site will not be permitted. Remove rubbish and debris from the site as it accumulates.
- Barricades and Flares: The Contractor shall provide temporary fencing, barricades, flares, signs, etc., as necessary, to protect vehicles and pedestrians at locations where there exists an open excavation, trench, or any other obstacle. Barricades shall bear the Contractor's name and any other information required by the A/E or public authorities. Where on public roadways all barricade signs and flares shall be of a type and located in a manner that conforms to recommendations of the Louisiana Manual on Uniform Traffic Control Devices, latest edition as revise, or as specified herein, subject to the approval of the A/E.

## SECTION 02272: GEOTEXTILE FABRIC (FILTER CLOTH)

### PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: Furnish all necessary materials, labor and equipment for the complete installation of geotextile fabric. Provide all necessary supplementary items for a complete installation intended by documents.
- 1.3 Submittals: The characteristics and properties of the geotextile fabric to be installed shall be submitted to the A/E prior to the installation of the fabric in accordance with Division 1.

### PART 2: PRODUCTS

- 2.1 Materials: Geotextile fabric shall be manufactured and fabricated in strict conformance to ASTM and other industry standards.
  - A. Underdrains, Bedding, and around Pipe Joints:

Fabric Property		Minimum Specifications
1.	Weight, ASTM D-3776-79	3.0 oz./sq. yd.
2.	Equivalent Opening Size	
	ASTM D-4751-87	50+
3.	Average Grab Tensile,	
	ASTM D-4632-86	90 lb./in.
4.	Grab Elongation (any	
	direction), ASTM D-4632-86	70%
5.	Permittivity Factor,	

ASTM D-4491-85 0.8 sec<sup>-1</sup>

B. Under Base: The fabric shall be installed between the base and subbase layers.

Property	Minimum Specifications
Equivalent Opening Size	40+
Permittivity Factor,	
ASTM D-4491-85	0.2 sec <sup>-1</sup>
UV Radiation Stability,	
ASTM D-4355	70%
Grab Tensile Strength,	
ASTM D-4632-86	200 lb/in.
Grab Elongation,	
	30%
ASTM D-4833-88	85 lbs
	Permittivity Factor, ASTM D-4491-85 UV Radiation Stability, ASTM D-4355 Grab Tensile Strength, ASTM D-4632-86

# 7. Mullen Burst Strength ASTM D-3786-87

400 psi

# 2.2 Approved Products:

- A. Underdrains, Bedding, and around Pipe Joints: Mirafi 140 NL, Mirafi 140 NS, Trevira 1112, or approved equal.
- B. Under Base: Mirafi 500X, Mirafi 600X, Trevira 1135, or approved equal.
- 2.3 Manufacturer: The manufacturer of the geotextile fabric shall have been normally engaged in the manufacture or fabrication of this geotextile fabric for at least five (5) continuous years.
- 2.4 Fabrication: The geotextile fabric shall be furnished to the Contractor by the manufacturer as a continuous sheet in the widths required for installation in the trench. The length of each sheet shall be such that the total number of sheets to be joined in the field is minimized.

#### PART 3: EXECUTION

# 3.1 Handling:

- A. The Contractor shall handle and store the sheets in accordance with manufacturer's recommendations to avoid any damage to the sheets. Geotextile fabric shall be stored such that it is not exposed to sunlight.
- B. Damaged geotextile fabric will not be acceptable for installation until and unless it has been replaced to the satisfaction of the A/E.

#### 3.2 Installation:

- A. The geotextile fabric shall be installed in a prepared area as specified in the Specifications or as indicated on the Plans.
- B. Manufacturer's recommendations shall be followed during the installation of the fabric. Care shall be taken during pipe laying, embedment and backfilling operations to avoid damage to the geotextile fabric. Any portion of the fabric damaged during installation shall be removed and replaced or repaired to the satisfaction of the A/E prior to continuing the installation of the geotextile fabric or pipe laying.
  - 1. Field Joints: The number of field joints shall be minimized. Lap joints shall be used to join sections in the field.
  - 2. Lap joints shall be formed by lapping the edges of the fabric sections a minimum of 18 inches.
- C. Pipe joints shall be wrapped with geotextile filter cloth for a minimum of 12 inches on each side of the joint. Ends of the cloth shall be lapped at least 10 inches and edges and ends of the cloth shall be suitably secured.

- D. Underdrains: Completed trenches for perforated pipe shall be lined with filter cloth. Adjoining sheets of cloth shall be spliced by lapping at least 18 inches and satisfactorily securing, or by use of sewn or heat-bonded splices. A sufficient width of cloth shall be placed in the trench to permit the cloth to lap over the top of the trench for the full width of the trench.
- E. Bedding: Completed trenches for bedding material shall be lined with filter cloth, encapsulating the bedding material. Adjoining sheets of cloth shall be spliced by lapping at least 18 inches and satisfactorily securing, or by use of sewn or heat-bonded splices. A sufficient width of cloth shall be placed in the trench to permit the cloth to lap over the bedding material for the full width of the trench.
- F. Care shall be taken during placement of the cloth, pipe, bedding material, backfill, and other material to avoid damaging the filter cloth.
- G. The Contractor shall satisfactorily repair or replace any damaged filter cloth.
- Field Quality Control: The Contractor is fully responsible for the installation of the geotextile fabric.

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# SECTION 02510: CONCRETE WALKS

## PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract (General and Supplementary and other Conditions, Division 0) and Division 1 as appropriate, apply to work specified in this section.
- 1.2 Scope of Work: Furnish all necessary materials, labor and equipment for the complete installation of concrete walks, as shown on the drawings and specified herein. Provide all necessary supplementary items for a complete installation intended by documents.

# 1.3 Quality Assurance:

- A. Codes and Standards: Comply with local governing regulations if more stringent than herein specified.
- B. Concrete formwork, reinforcing steel, and related items shall be in accordance with the following:
  - 1. ACI 304 "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete"
  - 2. ACI 305 "Recommended Practice for Hot Weather Concreting"
  - 3. ACI 306R "Recommended Practice for Cold Weather Concreting"
  - 4. ACI 315 "Manual of Standard Practice for Concrete Formwork"
  - 5. ACI 318 "Building Code Requirements for Reinforced Concrete".
  - 6. Concrete Reinforcing Steel Institute, "Manual of Standard Practice".
  - 7. ASTM C33 "Concrete Aggregates"
  - 8. ASTM C150 "Portland Cement"
  - 9. ASTM C260 "Air Entraining Admixtures for Concrete"
  - 10. ASTM C94 "Ready-Mixed Concrete"
- C. Mixing and Transporting Concrete: In accordance with "Specifications for Ready Mixed Concrete" (ASTM C 94) except complete discharge from the hauling containers within 60 minutes after the cement has been added to the aggregate and water in the mixer.
- D. Allowable Tolerances: Flatwork true to plane 1/8 inch in 10 feet. No open paving shall pond water.
- E. Testing:
  - Laboratory shall prepare and furnish to the A/E, in triplicate, reports of concrete mix and all inspection and testing complete with summary of results. Laboratory also furnishes copy of all reports to the concrete supplier.
  - 2. Contractor shall furnish samples of the various materials and the concrete mix for laboratory test.

- 3. The required laboratory testing and control shall be as follows:
  - a. Prepare and furnish the concrete mixes to be used for all concrete on this job.
  - b. Test gradation of aggregate used in the concrete mix for compliance with the specifications.
  - c. Make concrete cylinders to perform compressions tests of cylinders taken from concrete used on the job. Make a minimum of 2 sets of cylinders per day or one set of cylinders per 50 yards, whichever is greater. Each set shall consist of 2 cylinders. Make compression tests at 7 days with both cylinders of each set.
  - d. Make minimum of 4 slump tests per day or one per 25 yards, whichever is greater.
- 4. If tests indicate insufficient concrete strength and if additional tests are ordered (cores, etc.), Contractor shall pay for such additional tests.

## 1.4 Submittals:

- A. Detailed shop drawings, showing layout, sizes, arrangements, bar supports, etc. for all reinforcing steel, joints, curbs, etc.
- B. Submit to A/E in writing concrete curing method for A/E approval.
- C. Furnish samples, manufacturer's product data and test reports.
- D. Submit in accordance with requirements of Division 1.
- 1.5 Storage of Materials: Store all paving related materials above ground on suitable supports and keeps free of foreign materials, corrosion, damage, etc.

#### PART 2: PRODUCTS

## 2.1 Materials:

- A. Forms: Steel, wood, or other suitable material of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal. Use straight forms, free of distortion and defects.
  - 1. Use flexible spring steel forms or laminated boards to form radius bends as required.
  - 2. Coat forms with a non-staining form release agent that will not discolor or deface surface of concrete.
- B. Welded Wire Mesh: Welded plain cold-drawn steel wire fabric, ASTM A185, (70,000 psi yield point).
  - 1. Furnish in flat sheets, not rolls, unless otherwise acceptable to A/E.
- C. Reinforcing Bars: Deformed steel bars, ASTM A 615, Grade 60, (60,000 psi yield point).

- D. Joint Dowel Bars: Plain steel bars, ASTM A 615, Grade 40. Cut bars true to length with ends square and free of burrs.
- E. Tie Wire: Annealed steel, black, 16 gauge minimum.
- 2.2 Concrete: ASTM C 94. HIGH EARLY STRENGTH.
  - A. Cement: Type I, ASTM C I50.
  - B. Admixture:
    - Water reducing Admixture: ASTM C 494, Type A: Eucon WR-75 by Euclid Chemical Co., Pozzolith 300 N by Master Builders, Plastocrete 160 by Silea Chemical Corporation or approved equal.
    - 2. Water Reducing, Retarding Admixture: ASTM C 494 Type D: Eucon Retarder 75 by Euclid Chemical Co., Pozzolith 300-R by Master Builders, Plastiment by Silea Chemical Co. or approved equal.
    - 3. Air Entraining: ASTM C 260, Master Builders MB-VR, Chem-Masters Adz-air, Glifford-Hill Air-Tite, or approved equal, at exterior paving only.
  - C. Fine Aggregate: Sand, ASTM C 33.
  - D. Coarse Aggregate: Gravel, ASTM C 33, size number 47 (1 inch to No. 4).
  - E. Water: Clean and free from oil, alkali, sugar or other deleterious substances.
  - F. Slump: Maximum 4 inches.
  - G. Air Content: 6% +/- I% in exterior exposed concrete only. H. Mix Proportioning:
    - 1. 7 day compressive strength of moist cured laboratory samples, 3000 psi minimum.
    - 2. Minimum Cement Content: 540 pounds per cubic yard.
    - 3. Admixture: Use in accordance with manufacturer's recommendations.
- 2.3 Curing Material: ASTM C 171, waterproof paper or polyethylene film.
- 2.4 Mixes: ASTM C 94. Mix concrete only in quantities for immediate use. Do not retemper or use set concrete.
- 2.5 Expansion Joint Materials: Expansion Joint Filler: Redwood or Treated Wood Strips.

#### PART 3: EXECUTION

- 3.1 Surface Preparation:
  - A. Remove loose material from compacted subbase surface immediately before placing concrete.

B. Proof-roll prepared subbase surface to check for unstable areas and need for additional compaction. Do not begin paving work until such conditions have been corrected and are ready to receive paving.

## 3.2 Form Construction:

- A. Set forms to required grades and lines, rigidly braced and secured. Install sufficient quantity of forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement.
- B. Check completed formwork for grade and alignment to following tolerances:
  - 1. Top of forms not more than 1/8" in 10'.
  - 2. Vertical face on longitudinal axis, not more than 1/4" in 10'.
- C. Clean forms after each use, and coat with form release agent as often as required to ensure separation from concrete without damage.

## 3.3 Placing Reinforcement:

- A. Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.
- B. Clean Reinforcement of loose rust and mill scale, earth, ice, and other materials, which reduce or destroy bond with concrete.
- C. Accurately position, support and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as required.
- D. Place Reinforcement as shown on plans or to obtain at least minimum coverage for concrete protection. Arrange, space and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, and toward exposed concrete surfaces.
- E. Install welded wire fabric in as long lengths as practicable. Lap adjoining pieces at least on full mesh and lace splices with wire. Offset end laps in adjacent widths to prevent continuous laps in either direction.

#### 3.4 Concrete Placement:

- A. General: Comply with specifications herein for mixing and placing concrete.
- B. Do not place concrete until subbase and forms have been checked for line and grade. Moisten subbase if required to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

- C. Place concrete using methods, which prevent segregation of mix. Consolidate concrete along face of forms and adjacent to transverse joints with internal vibrator. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocation of reinforcing, dowels, and joint devices.
- D. Deposit and consolidate concrete in a continuous operation between transverse joints, until complete section has been placed. Where complete section cannot be placed or if interrupted for more than 1/2-hour, place a construction joint.

## 3.5 Joints:

- A. General: Construct expansion, weakened-plane (contraction), and construction joints true-to-line with face perpendicular to surface of concrete. Construct transverse joints at right angles to the centerline, unless otherwise indicated. When joining existing structures, place transverse joints to align with previously placed joints, unless otherwise indicated.
- B. Weakened-Plane (Contraction) Joints: Provide weakened-plane (contraction) joints, sectioning concrete into areas as shown on drawings. Construct weakened-plane joints for a depth equal to at least 1/4 concrete thickness, as follows:
  - 1. Tooled Joints: Form weakened-plane joints in fresh concrete by grooving top portion with a recommended cutting tool and finishing edges with a jointer.
  - 2. Sawed Joints: Form weakened-plane joints using powered saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut joints into hardened concrete as soon as surface will not be torn, abraded, or otherwise damaged by cutting action.
  - 3. Inserts: Use embedded strips of metal or sealed wood to form weakened-plane joints. Set strips into plastic concrete and carefully remove strips after concrete has hardened.
- C. Construction Joints: Place construction joints at end of placements and at locations where placement operations are stopped for a period of more than 1/2-hour, except where such placements terminate at expansion joints.
  - 1. Construct joints as shown or, if not shown, use standard metal keyway-section forms.
  - 2. Where load transfer-slip dowel devices are used install so that one end of each dowel bar is free to move.
- D. Expansion Joints: Provide joint filler for expansion joints abutting concrete curbs, catch basins, manholes, inlets, structures, walks and other fixed objects, unless otherwise indicated.
  - 1. Locate expansion joints as indicated on Drawings.
  - 2. Extend joint fillers full-width and depth of joint.

- 3. Furnish joint fillers in one-piece lengths for full width being placed.
- Protect top edge of joint filler during concrete placement.

E. Joint Fillers (Installation):

- 1. Clean joint surfaces immediately before installation of joint fillers.
- 2. Tool each side of expansion joint filler of abutting edge to concrete to achieve smooth and consistent radius edge.

# 3.6 Concrete Finishing:

- A. After striking-off and consolidating concrete, smooth surface by screening and floating. Use hand methods only where mechanical floating is not possible. Adjust floating to compact surface and produce uniform texture.
- B. After floating, test surface for trueness with a 10' straight edge. Distribute concrete as required to remove surface irregularities, and refloat repaired areas to provide a continuous smooth finish.
- C. Work edges of slabs, gutters, back top edge of curb, and formed joints with an edging tool, and round to 1/2" radius, unless otherwise indicated. Eliminate tool marks on concrete surface.
- D. After completion of floating and troweling when excess moisture or surface sheen has disappeared, complete surface finishing, as follows:
  - 1. Broom finish, by drawing a fine-hair broom across concrete surface, perpendicular to line of traffic. Repeat operation if required to provide a fine line texture acceptable to A/E.
  - 2. On inclined slab surfaces, provide a coarse, non-slip finish scoring surface with a stiff-bristled broom, perpendicular to line of traffic.
  - 3. Burlap finish, by dragging a seamless strip of damp burlap across concrete, perpendicular to line of traffic. Repeat operation to provide a gritty texture acceptable to A/E.
- E. Do not remove forms for 24 hours after concrete has been placed. after form removal, clean ends of joints and point-up any minor honeycombed areas. Remove and replace areas or sections with major defects, as directed by A/E.

# 3.7 Curing Concrete - General:

- A. Prior to installation of concrete walks contractor shall submit in writing concrete curing method to be used to A/E for approval.
- B. Protect freshly placed concrete from premature drying and excessive cold or hot temperature, and maintain without drying at relatively constant temperature for period of time necessary for hydration of the cement and proper hardening of concrete.
- C. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting; keep continuously moist for not less than 72 hours.

- D. Begin final curing procedures immediately following initial curing and before concrete have dried. Final curing shall continue for at least seven (7) consecutive days maintaining concrete exposure air temperature above 50 degrees.
- E. Avoid rapid drying at the end of final curing period.

## 3.8 Curing Methods:

- A. Moisture Curing: Covering concrete surface with specified absorptive cover, thoroughly saturating cover with water, and keeping continuously wet. Place absorptive cover so as to provide coverage of concrete surfaces and edges with a 4" lap over adjacent absorptive covers.
- B. Temperature of Concrete During Curing
  - Maintain concrete temperature as uniformly as possible, and protect from rapid atmospheric temperature changes. Avoid temperature changes in concrete, which exceed 5 degrees F. in any one hour and 50 degrees F. in any 24-hour period.
  - 2. Comply with requirements of ACI 305 and 306.
- C. Protection from Injury: During curing period, protect from damaging mechanical disturbances including load stresses, heavy shock, excessive vibration, and from damage.

# 3.9 Repairs and Protection:

- A. Contractor shall provide the necessary protection to prevent vandalism or damage to concrete finish. Damage and/or vandalism of concrete finish will be cause for rejection of affected paving. Patching or topping is unacceptable. Removal and replacement of any such rejected paving will be at Contractor's expense, including any charges for retesting.
- B. Repair or replace broken or defective concrete, as directed by A/E.
- C. Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least 7 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Sweep concrete pavement and wash free of stains, discolorations, dirt and other foreign material just prior to final inspection.

# SECTION 02515: PORTLAND CEMENT CONCRETE PAVING

## PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the conditions of the Contract (General, Supplementary, and other conditions, Division 0), and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: Furnish all necessary materials, labor and equipment for the complete installation of all portland cement concrete paving work, as shown on the Drawings and specified herein. Provide all necessary supplementary items for a complete installation intended by documents.

## 1.3 Provisions:

- A. All work shall comply with applicable provisions of the State of Louisiana Department of Transportation and Development latest edition "Louisiana Standard Specifications for Roads and Bridges" (DOTD), except as modified herein.
- B. Where DOTD is modified herein, unaltered provisions of standard specifications shall remain in effect.
- C. Where general provisions (General, Supplementary Conditions, etc.) of this specification conflict with DOTD, this specification shall govern. DOTD provisions not affected shall remain as part of contract.
- D. Whenever the "Department" is referenced in DOTD, change to read the "A/E" and/or the "Owner" as applicable throughout.

#### PART 2: PRODUCTS

2.1 Materials: All materials shall comply with the DOTD sections entitled "Portland Cement Concrete Pavement", "Concrete Walks, Drives, and Incidental Paving", and "Curbs and Gutters", and "Base Course" as required. Fly ash will not be allowed in the concrete mix.

## PART 3: EXECUTION

- 3.1 Workmanship: All workmanship shall comply with the DOTD sections listed above.
- 3.2 Acceptance of Work: Work will not be acceptable if it does not meet the requirements for 100% payment, as indicated in DOTD.
- 3.3 Cleaning: After completion of paving operations, clean surfaces of excess of spilled materials in a workmanlike manner.

SECTION 02622E: POLYVINYL CHLORIDE PIPE (PVC) (E)

## PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: This section covers materials for PVC pipe and fitting for water mains, sewage force mains, gravity sewerage systems, and storm drainage.

## PART 2: PRODUCTS

## 2.1 Materials:

- A. Wastewater and Stormwater Gravity Lines
  - 1. Pipe: All PVC pipe shall be specifically designed to carry domestic sewage by gravity flow and shall meet the requirements of ASTM D-3034 (latest revision) with a maximum SDR of 26 and a minimum F/Y stiffness of 115 psi as tested in conformance with ASTM D-2412 (latest revision) for sizes up to and including 15". Pipes 18" and larger shall meet requirements of ASTM F-679-80.
  - 2. Joints: All joints shall consist of an integral bell with a factory installed "locked in" gasket. The spigot end of each joint shall be factory beveled.
  - 3. Fittings: All fittings shall be standard manufacturer fittings approved by the pipe manufacturer for use on his pipe. All fittings shall meet the requirements of the pipe. All fittings shall be of the same or greater strength as the pipe.
  - Caps and Permanent Plugs: Caps and permanent plugs for sewerage service line shall be as manufactured by Vassalko or approved equal; and shall meet the requirements set forth in ASTM D-3034.
- B. Water Lines:
  - 1. 14" and Larger: PVC pipe 14" and larger shall be UNI-B-11-84 minimum pressure 150 psi; maximum DR of 18.
  - 2. 4" thru 12": PVC pipe 4" and greater shall be AWWA C-900 DR18 integral bell with locked gaskets and ductile iron O.D.
  - 3. Smaller than 4:
    - a. PVC pipe shall be Schedule 40, conforming to the requirements of ASTM D1784, Type I, Grade I and ASTM D1785.
    - b. PVC fittings shall be Schedule 40 socket type, conforming to the requirements of ASTM D1784, Type I, Grade 1 and ASTM D2466.

## C. Wastewater Pressure Lines:

- 1. Pipe: PVC pipe up to and including 12" shall be specifically designed to carry domestic sewage by pumping and shall conform to the requirements of ASTM D2241 for PVC plastic pipe for PR 160 with a maximum SDR of 26. Pipe and fitting compound shall conform to ASTM D1784.
- 2. PVC pipe 14" to 24" shall conform to UNI-B-11 DR25.
- 3. PVC pipe 24" to 30" shall conform to UNI-B-11 DR 25.
- 4. Joints to be locked in gasket type that conforms to ASTM F477.

#### D. Restrained Joints:

- 1. Polyvinyl chloride (PVC) pipe (4" to 10") shall be restrained using the Series 5500 mechanical joint thrust restraint as manufactured by EBAA Iron, Inc., or approved equal.
- 2. Polyvinyl chloride (PVC) pipe (14" to 24") shall be restrained using the Series 1100 PV or 1100 HV MEGALUG mechanical joint thrust restraint as manufactured by EBAA Iron, Inc., or series 1300 or 1350 large diameter restrainers as manufactured by Uni-Flange, a Division of NAPPCO, Inc., or approved equal.
- 3. The EBAA Iron Series 5500, 1100 PV or 1100 HV MELUG assembly shall be cast completely of closely controlled ductile iron conforming to ASTM A536, latest revision, and furnished with silicon bronze bolts, IFI 140, Grade 655. All bolts made of corrosion resistant steel and ductile iron will not be permitted. All glands and bolts shall be field coated with two (2) coats of coal tar epoxy, Koppers 300-M Bitumastic, or approved equal, with a minimum dry film thickness of eight (8) mils per coat.
- 4. Restraining glands shall be wrapped with an eight (8) mil thick polyethylene tube for additional protection. The polyethylene wrap shall extend a minimum of two feet (2') in either direction from the gland and secured on the end with circumferential turns of tape.
- 5. All restrained joints shall be inspected at the job site after installation. Field touch-up and repair if needed shall be made by the Contractor under the supervision and inspection of a representative of the coating supplier.
- 6. Follow manufacturers' specifications when installing the restrained joints. Using a torque wrench tighten bolts to recommended torque and in the proper sequence. Supplier to provide on-site training in the proper installation of joint restrainers.
- 7. The Uni-Flange series 1300 or 1350 large diameter restrainer assembly shall be manufactured of structural steel ASTM-A36 and furnished with silicon bronze bolts, IFI 140, Grade 655. All bolts made of corrosion resistant steel and ductile iron will not be permitted. All glands and bolts shall be field coated with

two (2) coats of coal tar epoxy, Koppers 300-M Bitumastic, or approved equal, with a minimum dry film thickness of eight (8) mils per coat.

E. Transition Couplings: Long body transition couplings, 12" minimum length, shall be used to connect new pipe to old pipe.

PART 3: EXECUTION: See other Sections.

SECTION 02623: POLYETHYLENE PIPE

#### PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: This section covers materials for high-density polyethylene pipe and fittings.
- 1.3 Quality Assurance: The pipe manufacturer shall provide, upon request, an outline of quality control procedures performed on polyethylene system components. Each length of pipe shall also be clearly marked at intervals not to exceed 5 feet with the following:
  - A. Name and/or trademark of the pipe manufacturer.
  - B. Nominal pipe size.
  - C. Dimension ratio.
  - D. The letters PE followed by the polyethylene grade per ASTM D1248, followed by Hydrostatic Design basis in 100's of psi, e.g., PE 3408.
  - E. Manufacturing Standard Reference, e.g., ASTM F714-81.
  - F. A production code from which the date and place of manufacture can be determined.

#### PART 2: PRODUCTS

- 2.1 Pipe and Fittings: Reference Specifications:
  - A. ASTM F714-81 polyethelene (PE) plastic pipe SDR 17, 100 psi based on inside diameter.
  - B. ASTM D-1248-78 Polyethylene Plastics Molding and Extrusion Compounds.
  - C. CGSB-41-GP-25M Pipe, Polyethylene for the Transport of Liquids.
  - D. CSA B137.1 Polyethylene Pipe for Cold Water Services.

#### 2.2 Materials:

- A. The pipe shall be made from polyethylene resin compound qualified as Type III, Category 5, Class C, Grade P34 in ASTM D-1248-78. This material shall have Long Term Hydrostatic Strength of 1450 psi or 1600 psi when tested and analyzed by ASTM D2837.
- B. The raw material shall contain a minimum of 2% carbon black, well dispersed. Additives, which can be conclusively proven not to be detrimental to the pipe may also be used, provided the pipe produced meets the requirements of this standard.

- C. The pipe shall contain no recycled compound except that generated in the manufacturer's own plant from resin of the same specification from the same raw material supplier.
- D. Compliance with the requirements of this paragraph shall be certified in writing by the pipe supplier, upon request.
- E. The cell classification shall be PE 345534C for PE 3408 materials, per ASTM D3350/F 714-81.

# 2.3 Pipe Design:

- A. The pipe shall be designed in accordance with the relationships of the ISO-modified formula (see ASTM F 14-81, CGSB 41-GP-25M).
- B. The design pressure rating shall be derived using the ISO-modified formula above, and shall be its normal working pressure in pounds per square inch in temperatures up to 73 degrees F.
- C. The Hydrostatic Design Stress shall be 725 psi for PE 3407 materials or 800 psi for PE 3408 materials.
- D. Pipe diameter shall be inside pipe dimensions as called out on plans.
- 2.4 Fittings: Fittings to be made from the same Class and Schedule as pipe and be fully pressure rated.

# 2.5 Jointing Methods:

- A. Wherever possible the polyethylene pipe should be joined by the method of thermal butt-fusion, as outlined in ASTM-D2657, Heat Joining Polyethylene Pipe and Fittings. Butt-fusion joining of pipe and fittings shall be performed in accordance with the procedures recommended by the manufacturer. The temperature of the heater plate should not exceed 170 degrees C +/- 5 degrees C (340 degrees F + 10 degrees F) and the joining pressure should not exceed 23 pounds per square inch of projected end area, excluding an allowance for friction.
- B. The polyethylene pipe may be adapted to fittings or other systems by means of an assembly consisting of a polyethylene stub-end, butt-fused to the pipe, a back-up flange of ductile iron, made to Class 150, ANSI B16.5 dimensional standards with exceptions, bolts of stainless steel and a gasket of suitable red rubber or asbestos-rubber compound cut to fit the joint. In all cases, the bolts shall be drawn up evenly and in line.
- C. Polyethylene pipes of the same outside diameter but different wall thicknesses shall be joined by means of a flange assembly as designated above.
- D. The pipe supplier shall be consulted to obtain machinery and expertise for the joining by butt-fusion of polyethylene pipe and fittings. No pipe or fittings shall be joined by fusion by any Contractor unless he is adequately trained and has manufacturer certified technicians to perform the work.

PART 3: EXECUTION

NONE

SECTION 02638: REMOVAL AND REPLACEMENT OR RELOCATION OF EXISTING UTILITIES

## PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: Furnish all labor materials, equipment, and incidentals required to remove and replace or relocate and repair all utilities, both known and unknown. All work shall be in accordance with requirements of the respective relocated utilities company.
- General: The Contractor shall be responsible for removal and replacement or relocation of all utilities, which are in conflict with his operations. The local gas, electric, telephone, and television cable companies shall remove and replace or relocate, if necessary, all their own utilities in conflict with the operations of the Contractor. Those utilities located within publicly owned right-of-ways shall be removed and replaced or relocated at the expense of the concerned utility. Utilities located within privately owned right-of-ways shall be removed and replaced or relocated at the expense of the Contractor. Other utilities belonging to the Owner and other public agencies shall be removed and replaced or relocated by and at the expense of the Contractor.
- Governing Standard: Removal and replacement or relocation of utilities shall be done according to the latest standards and standard details of the company or agency owning or having jurisdiction over the utility, as indicated on the Drawings and as specified herein. In the event of a conflict between these specifications and the latest standards of the concerned company or agency owning or having jurisdiction over the utility, the latest standards of the company or agency owning or having jurisdiction over the utility shall govern.
- Unknown Utilities: The Drawings attempt to indicate the location of all known utilities within the limits of the work. However, the Contractor shall be responsible to inspect the entire project to verify all existing utilities and determine the existence of any additional utilities conflicting with his work. In the event the Contractor encounters an unknown utility in his operations and such an item will interfere with his work and will require removal and replacement or relocation, the Contractor shall expeditiously notify the A/E and arrange to relocate the utility in conformance with the applicable section of the Specifications.

- 1.6 Coordination of Utilities Relocation: The Contractor shall be completely responsible to contact and schedule such relocation of utilities in a manner to prevent any delay in his operations.
- 1.7 Privately Owned Utilities: The Contractor shall review and resolve with the owner of each utility any conflicts with his operation. All submittals required shall comply with the requirements in the submittals section.

## PART 2: PRODUCTS

- 2.1 All materials shall be new, and shall conform to the latest ASTM and industry standards. Materials for the removal and replacement or relocation of utilities shall conform to the standards of the company or agency owning or having jurisdiction, or as indicated on the Drawings and as specified.
- 2.2 Water Mains and Sewerage Force Mains: All adjustments shall be constructed using ductile iron pipe with restrained push-on joints. Any couplings required shall be epoxy coated ductile iron with neoprene gaskets, and restrained joints on both ends. All bolts and nuts shall be stainless steel.

## PART 3: EXECUTION

- Gas Mains: On gas lines that are exposed during construction, the Contractor shall be careful to avoid damage to the existing coating on the gas main. Damage to coating shall be replaced by the local gas company at the expense of the Contractor. The Contractor shall review with the local gas company construction methods to be used in the vicinity of their gas mains and shall comply with the requirements of the local gas company for protection of their facilities.
- 3.2 Electric: As required by the local power company, the contractor shall conduct his operations and maintain his equipment away from all electric lines at all times. Verify minimum distances and clearances with local electric company representative. The local electric company shall be notified as soon as these clearances have to be violated.

# 3.3 Publicly Owned Utilities:

#### A. General

1. The Contractor shall furnish all labor, equipment and material and perform all work required for removal and replacement or relocation of publicly owned utilities. Utility relocation shall be as indicated on the Drawings and specified herein. Damage to any utilities by the Contractor, subcontractors, material and equipment suppliers and other persons, until the job has been accepted, shall be repaired by the Contractor to the satisfaction of the A/E and Owner.

2. Removal and replacement of utilities shall be done in close coordination with the Owner. Removal and replacement or relocation work shall be planned in advance so the inconvenience to the Owner and utility users caused by the disruption of service is minimized. The Contractor shall perform work on utilities in off-peak hours of usage as required by the A/E and Owner.

## B. Water Mains:

- The Contractor shall be responsible for immediately notifying the Owner and A/E of existing water mains that interfere with his work. The Contractor is responsible for conducting operations in the vicinity of water mains that do not interfere with the work such that main breaks and disruption of water service is avoided. Water mains removed by the Contractor shall be replaced or relocated with cast iron or ductile iron as indicated on the Drawings and specified in the governing standard and herein. Restrained pipe joints are required to resist thrust forces.
- 2. At no time will the contractors be allowed to operate water main valves unless they are directly supervised by a Water Department employee. Contractor shall notify all affected residents and the Water Department of water shut downs at least 48 hours in advance. All materials needed to perform the work will be verified on the site before the water pressure is shut off. After the valves have been closed, certification is required that the line has been isolated from the source before any work will be allowed on the water main.
- C. Sewer Mains: Sewer mains removed by the Contractor shall be replaced or relocated with PVC or ductile iron as indicated on the Drawings and specified in the governing standard and herein. Restrained pipe joints are required to resist thrust forces.
- D. Service Connections: The Contractor is responsible for locating water and sewer house service connections and other building connections. The operations of the Contractor shall be conducted with due care and regard for service connections. Any damage to a service connection due to the operations of the Contractor shall be repaired to its original or better condition by the Contractor. Materials used and work on service connections shall be in accordance with the governing standard unless required otherwise by the A/E.
- 3.4 Payment: The removal and replacement or relocation of utilities will be paid for as specified herein.
  - A. Privately Owned Utilities: The Contractor shall be responsible for removal and replacement or relocation of all utilities, which are in conflict with his operations. The local gas, electric, telephone, and television cable companies shall remove and replace or relocate, if

necessary, all their own utilities in conflict with the operations of the Contractor. Those utilities located within publicly owned right-of-ways shall be removed and replaced or relocated at the expense of the concerned utility. Utilities located within privately owned right-of-ways shall be removed and replaced or relocated at the expense of the Contractor.

- B. Publicly Owned Utilities: The removal, replacement, or relocation of any City owned utilities which are shown on the Drawings or which can reasonably be anticipated by the Contractor will be paid for as specified below:
  - Sewers: No separate payment shall be made in connection with any work required on existing sewer gravity lines or force mains. 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 or lump sum price bid items.
  - Water Mains: No separate payment will be made in connection with the removal and replacement or relocation of water lines shown on the Drawings. The removal or replacement of all waterlines 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 for pipe in place.
  - 3. Drain Pipe: No separate payment will be made in connection with the removal and replacement or relocation of drainpipe. The removal or replacement of all drain pipe shall be considered a subsidiary obligation of the Contractor and all costs in connection herewith shall be included in the unit price bid per linear foot for pipe in place.
  - 4. Drainage Catch Basins: No separate payment will be made in connection with the removal and replacement of drainage catch basins or drop inlets. The removal or replacement of all drainage catch basins and drop inlets 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 for pipe in place.
  - 5. Service Connections: No separate payment will be made on any work required by the operations of the Contractor in connection with house or other service connections. Any work required by the operations of the Contractor in connection with water, sewer, gas, and other house service connections shall be considered a subsidiary obligation of the Contractor and all costs in connection therewith shall be included in the unit prices bid for pipe in place.
  - 6. Public Owned Utilities: Relocate, construct, or remove infrastructure items, which are not shown or differ substantially from what is shown on the plans or could not be

reasonably anticipated and are found during construction, when authorized by the Engineer. When the costs for necessary relocation, repairs, or removal are to be paid for by the Owner, the Contractor shall keep accurate records of all time, material, and equipment used and shall submit a copy of said report on a daily basis (same day) to the Resident Project Representative for review. The actual costs of any work as described herein shall be determined as set forth in the General Conditions and Supplementary Conditions as appropriate.

## SECTION 02639: MODIFICATION OF EXISTING PIPING

## PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- Scope of Work: Furnish all labor, materials, equipment, and incidentals required to modify, alter, and/or convert existing piping as shown, as specified, and as required for the installation of new mechanical equipment, pumping units, piping, and appurtenances. Existing piping shall be removed and dismantled as necessary for the performance of alterations in accordance with the requirements herein specified.

## PART 2: PRODUCTS

- 2.1 Field Cut Joints: Field cut joints shall be Can-Tex "C-T Adapters", Dickey "Field Unions", Fernco "Flexible Couplings", or Mission "Band-Seal", with stainless steel shear ring, or equal.
- 2.2 Connections to Other Piping Materials: Connections to other piping materials shall be Can-Tex, "C-T Adapters", Dickey "Coupling Adapters", Ferno "PVC Donuts", Fernoo "Flexible Couplings", Mission "Bushing Adapters", Nashua re-Cast Corporation "Flex-O-Joint", or equal.

#### PART 3: EXECUTION

#### 3.1 General:

- A. The Contractor shall cut, repair, reuse, excavate, demolish, or otherwise remove parts of the existing piping or appurtenances, as indicated on the Drawings, herein specified, or necessary to permit completion of the work under this Contract. He shall dispose of surplus materials resulting from the above work in an acceptable manner.
- B. The Contractor shall dismantle and remove all existing piping and other appurtenances required for the completion of the work. Where called for or required, he shall cut existing pipelines for the purpose of making connections thereto.
- C. No existing piping or appurtenance shall be shifted, cut, removed, or otherwise altered except with the express approval of, and to the extent approved, by the A/E.
- D. When removing materials, the Contractor shall take all precautions and use all necessary barriers and other protective devices so as not to damage the piping beyond the limits necessary for the new work.

- E. All work of altering existing piping shall be done at such time and in such manner as will comply with the approved time schedule. So far as possible, before any part of the Work is started, all tools, equipment, and materials shall be assembled and made ready so that the work can be completed without delay.
- F. All workmanship and new materials involved in constructing the alterations shall conform to the Specifications for the classes of work insofar as such specifications are applicable.
- G. Where necessary or required for the purpose of making connections, the Contractor shall cut existing pipe lines in a manner to provide an approved joint. Where required, he shall weld beads, flanges, or provide Dresser Couplings, all as required. Existing piping to be abandoned in place shall have open ends plugged or capped, as specified elsewhere in these Specifications.
- H. The Contractor shall provide flumes, hoses, piping, etc. to divert or provide suitable plugs, bulkheads, or other means to hold back the flow of wastewater, water, or other liquids, all as required in the performance of the Work under this Contract.
- I. Blasting will not be permitted to complete any work under this Contract. Care shall be taken not to damage any part of existing buildings or foundations or outside structures.

SECTION 02648: METALLIC TAPE

## PART 1: GENERAL

- 1.1 Related Requirements: Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: Furnish all labor, materials, equipment, and incidentals required, and install metallic tape in the locations shown on the Drawings or as specified.
- 1.3 General: Material and Equipment
  - A. Conform to applicable specifications and standards.
  - B. Comply with size, make, type, and quality specified, or as specifically approved in writing by the A/E.
  - C. Do not use material for any purpose other than that for which it is designed or is specified.
  - D. Furnish all necessary labor and material necessary for compliance with all requirements of this contract.

# PART 2: PRODUCTS

2.1 Metallic Tape: Metallic tape shall be 3" wide, yellow, with the words "CAUTION SEWER LINE BURIED BELOW" printed on it. Tape shall be "Detectable Marking Tape, Type III", as manufactured by Line Guard, Inc., or equal.

## PART 3: EXECUTION

3.1 Metallic Tape: Metallic tape shall be installed over PVC force mains.

SECTION 02650: PRESSURE PIPING TESTING

#### PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of work: This section covers field hydrostatic and leakage testing of all force mains, waterlines, and pump station piping.
- 1.3 Governing Standard: Except as modified or otherwise provided herein, the pressure and leakage testing of all force mains, waterlines, and pump station piping shall conform to the requirements of AWWA C600, Section 4.
- 1.4 General Requirements:
  - A. Force Mains: See Sewer Standard Notes.
  - B. Waterlines: N/A
- Testing Plan: A testing plan shall be submitted to the A/E in accordance with Division 1. The plan shall include a complete description of the methods to be used for the pressure and leakage tests and the equipment to be used to measure leakage. Furthermore, the Contractor will supply a copy of the pressure records and charts to the A/E after the tests have been made.

#### PART 2: PRODUCTS

- 2.1 Testing Equipment and Materials:
  - A. The Contractor shall provide all necessary equipment for the pressure test. The Contractor is responsible for providing all pumping equipment, water, meters, pressure recorders, charts, stopwatches, all necessary piping connections, gauges, and all other equipment, materials, facilities, and personnel required to complete the tests.
  - B. The Contractor shall provide and install all temporary sectionizing devices, bulkheads, bracing, and flanges needed to withstand test pressures. All temporary devices will be removed after completion of the test. The installation of all bracing, bulkheads, and sectionizing devices shall be placed such that they do not exert concentrated loads or horizontal thrusts on the pipe.
  - C. Water meters and pressure gauges shall be accurately calibrated and shall be subject to review and acceptance by the A/E. All testing equipment and other materials found to be defective shall be removed immediately and replaced with new and acceptable materials, by and at the expense of the Contractor.

#### PART 3: EXECUTION

# 3.1 Testing Procedures:

- A. The contractor shall adequately vent the line to remove air as it is being filled. Sufficient backfill placed as specified in the Excavating, Backfilling and Compacting for Utilities section, shall be placed around the pipeline to prevent movement under test pressures.
- B. The line to be tested shall be slowly filled to prevent water hammer. Care shall be taken to ensure that all air valves and other venting facilities are open and all air is expelled from the pipeline. A record of the numbers of gallons needed to fill the test sections will be accurately maintained and furnished to the A/E prior to testing.
- C. Pipe trenches shall be backfilled, but all valves shall be left uncovered during the tests.

# 3.2 Pressure Testing:

- A. The pipelines shall be subjected to a pressure test for the purpose of testing the line for stability and for defective materials or workmanship. The test may be applied to individual sections of line isolated between successive access manholes or may be applied to shorter sections of lines at the Contractor's option and concurrent acceptance of the A/E.
- B. After the section of line or segment of pipe to be tested has been filled with water, the specified test pressure shall be applied and maintained for a period of not less than four (4) hours and for whatever longer period as may be necessary for inspection of the line and for the Contractor to locate any and all defective joints and pipeline materials.
- C. If any pipes, fittings, valves, and joints prove to be cracked or defective, each such unit shall be removed and replaced by the Contractor with sound material as directed by the A/E. The test shall then be repeated to the satisfaction of the A/E.
- D. The test pressure shall be held consistently during the test period and monitored with pressure gauges and recorders to be installed at points specified by the A/E. All tests shall be scheduled 24 hours in advance with the A/E.
- E. Discharge of Water. All water used in the test shall be discharged in a manner to prevent flooding of the trench or adjacent property. All water discharged shall be routed into the existing storm drainage systems. Water shall not be allowed to discharge into any sanitary sewer systems. Before the Contractor can begin discharging water he shall receive permission from the A/E regarding the location and amount of discharge.
- F. All thrust blocks shall be permanent and constructed to withstand test pressures, and temporary bracing must not be resorted to, except at test ends.

- G. If test ends are used, the open end can be sealed with a line cap and shall be adequately braced with a temporary thrust block.
- H. Where any section of a main is provided with concrete reaction backing, the hydrostatic pressure test shall not be made until at least five (5) days have elapsed after the concrete reaction backing was installed. If high-early-strength cement is used in the concrete reaction backing, the hydrostatic pressure test shall not be made until at least two (2) days have elapsed.

## 3.3 Leakage:

- A. All joints shall be watertight and free from leaks. Each leak which is discovered within the correction period stipulated in the General Conditions shall be repaired by and at the expense of the Contractor.
- B. The line shall then be re-tested after the leaks are located and repaired by the Contractor. All leaks shall be repaired working from the outside of the pipe using methods that have been approved, in advance, by the A/E.

## SECTION 02731: SEWERAGE COLLECTION LINES

#### PART 1: GENERAL

- 1.1 Related Requirements: Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: Furnish all labor, equipment, and incidentals required, and install in the locations shown on the Drawings, all piping, fittings, and appurtenances for sewerage collection lines as specified. Piping and other materials are specified elsewhere.
- 1.3 General: Material and Equipment
  - A. Conform to applicable specifications and standards.
  - B. Comply with size, make, type, and quality specified, or as specifically approved in writing by the A/E.
  - C. Manufactured and Fabricated Products:
    - 1. Design and fabricate, and assemble in accordance with the best engineering and shop practices.
    - 2. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.
    - 3. Two or more items of the same kind shall be identical, by the same manufacturer.
    - 4. Products shall be suitable for service conditions.
  - D. Do not use material or equipment for any purpose other than that for which it is designed or is specified.
  - E. Comply with all local, state and federal laws and regulations.
  - F. Furnish all necessary labor, material or equipment necessary for compliance with all requirements of this contract.
- Governing Standards: Installation shall conform to the latest standards of the governing authority. In the event of a conflict between these specifications and the latest standards of the Owner and/or governing authority, the latest standards of the Owner and/or governing authority shall govern.

PART 2: PRODUCTS

NONE

## PART 3: EXECUTION

## 3.1 Unknown Utilities:

- A. The drawings attempt to indicate the location of all known underground facilities within the limits of the work. However, the Contractor shall be responsible to inspect the entire project to verify all underground facilities and determine the existence of any additional facilities conflicting with his work. In addition the Contractor shall be required to prospect ahead of the work to locate and verify all underground facilities.
- B. In the event the Contractor encounters an unknown underground facility in his operations and such an item will interfere with his work and will require removal and replacement or relocation, the Contractor shall immediately notify the A/E and Owner and/or appropriate governing authority and arrange for relocation.
- 3.2 Coordination: Removal and replacement of other utility facilities shall be done in close coordination with the Owner and/or governing authority. Removal and replacement or relocation work shall be planned in advance so the inconvenience to the Owner and utility users caused by the disruption of service is minimized. The Contractor shall reform work on utilities in off-peak hours of usage as required by the A/E and Owner.
- 3.3 Handling: Pipe, fittings, and accessories shall be handled in a manner that will insure installation in sound, undamaged condition. Equipment, tools, and methods used in handling and installing pipe and fittings shall not damage the pipe and fittings. Hooks inserted in ends of pipe shall have broad, well-padded contact surfaces. All pipe coating, which has been damaged, shall be repaired by the Contractor before installing the pipe.

## 3.4 Cutting Pipe:

- A. Pipe to be installed shall be done with sections and fittings such that pipe cutting is not required. Should pipe cutting be required, cutting shall be done in a neat manner, without damage to the pipe or to the lining. Cuts shall be smooth, straight, and at right angles to the pipe axis. After cutting, the end of the pipe shall be dressed with a file to remove all roughness and sharp corners.
- B. All cutting of cast iron pipe shall be done with mechanical pipe cutters except where the use of mechanical cutters would be difficult or impracticable. Ends of ductile iron pipe shall be cut with a saw, abrasive wheel, or acetylene torch. Field cut holes for saddles shall be cut with mechanical cutters; oxyacetylene cutting will not be permitted.

# 3.5 Cleaning:

- A. The interior of all pipe and fittings shall be thoroughly cleaned of foreign matter before being installed and shall be kept clean until the work has been accepted. Before jointing, all joint contact surfaces shall be wire brushed if necessary, wiped clean, and kept clean until jointing is completed.
- B. Precautions shall be taken to prevent foreign material from entering the pipe during installation. Debris, tools, clothing, or other materials shall not be placed in or allowed to enter the pipe.
- 3.6 Inspection: Pipe and fittings shall be carefully examined for cracks and other defects immediately before installation; spigot ends shall be examined with particular care. All defective pipe and fittings shall be removed from the site of the work.

## 3.7 Pipe Laying:

- A. All sewer lines shall be laid to lines and grades shown on the Drawings.
- B. Bell and spigot pipe shall be installed with bell upgrade. Not more than two lengths of pipe shall be made up outside of trench, and then with the use of racks to insure true alignment. Before being set in place, each length of pipe shall be thoroughly cleaned, free of earth, or foreign material. No water shall be permitted in the trench when laying or joining sewer pipes, nor before the pipe joint has properly set.
- C. Each pipe shall be laid to form a close joint with the adjoining pipe sections having a continuous invert to the established line and grade.
- D. Raising the sewer pipe to grade by ramming or tamping of earth and bedding material will not be permitted. Upon proper bedding of the pipe, the opening under its bell shall be properly filled in a manner such as not to disturb its position or joint. At points where work is temporarily suspended, all open ends of pipe shall be securely sealed to prevent entrance of water, earth, or other substances.
- Bulkhead or Closure for Connections: Connections between new work and existing piping shall be made using fittings suitable for the conditions encountered and as indicated on the drawings. Each connection with an existing pipe shall be made at a tee and under conditions which will least interfere with service to customers and as authorized by the A/E. Facilities shall be provided for proper dewatering and for disposal of all water removed from the dewatered lines and excavations without damage to adjacent property. Bulkhead shall be provided at the end of new piping for future connections as indicated on the drawings.

- 3.9 Field Joints: Joints in buried locations shall be mechanical joint or push-on type unless otherwise indicated on the drawing or directed by the A/E. All joints shall be watertight and free from leaks.
- 3.10 Push-On Joints: The pipe manufacturer's instructions and recommendations for proper jointing operations shall be followed. All joint surfaces shall be lubricated with heavy vegetable soap solution immediately before the joint is completed. Lubricant shall be suitable for use in potable water, shall be stored in closed containers, and shall be kept clean. Each spigot end shall be suitably beveled to facilitate assembly.
- 3.11 Leakage: All joints shall be watertight and free from leaks. Each leak, which is discovered within the correction period stipulated in the General Conditions, shall be repaired by and at the expense of the Contractor. For testing force mains and for testing gravity lines, see the appropriate section in these specifications.
- 3.12 Contractor shall install a watertight cap or permanent plug at the end of each line, service connection, etc.

SECTION 02732: SEWERAGE FORCE MAINS

#### PART 1: GENERAL

- 1.1 Related Requirements: Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: Furnish all labor, equipment, and incidentals required, and install in the locations shown on the Drawings, all piping, fittings, and appurtenances for sewerage force mains as specified. Piping and other materials are specified elsewhere.
- 1.3 General: Material and Equipment
  - A. Conform to applicable specifications and standards.
  - B. Comply with size, make, type, and quality specified, or as specifically approved in writing by the A/E.
  - C. Manufactured and Fabricated Products:
    - 1. Design and fabricate, and assemble in accord with the best engineering and shop practices.
    - 2. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.
    - 3. Two or more items of the same kind shall be identical, by the same manufacturer.
    - 4. Products shall be suitable for service conditions.
  - D. Do not use material or equipment for any purpose other than that for which it is designed or is specified.
  - E. Comply with all local, state and federal laws and regulations.
  - F. Furnish all necessary labor, material or equipment necessary for compliance with all requirements of this contract.
- Governing Standards: Installation shall conform to the latest standards of the governing authority. In the event of a conflict between these specifications and the latest standards of the Owner and/or governing authority, the latest standards of the Owner and/or governing authority shall govern.

## PART 2: PRODUCTS

NONE

## PART 3: EXECUTION

#### 3.1 Unknown Utilities:

- A. The drawings attempt to indicate the location of all known underground facilities within the limits of the work. However, the Contractor shall be responsible to inspect the entire project to verify all underground facilities and determine the existence of any additional facilities conflicting with his work. In addition the Contractor shall be required to prospect ahead of the work to locate and verify all underground facilities.
- B. In the event the Contractor encounters an unknown underground facility in his operations and such an item will interfere wit hhis work and will require removal and replacement or relocation, the Contractor shall immediately notify the A/E and Owner and/or appropriate governing authority and arrange for relocation.
- 3.2 Coordination: Removal and replacement of other utility facilities shall be done in close coordination with the Owner and/or governing authority. Removal and replacement or relocation work shall be planned in advance so the inconvenience to the Owner and utility users caused by the disruption of service is minimized. The Contractor shall perform work on utilities in off-peak hours of usage as required by the A/E and Owner.
- 3.3 Handling: Pipe, fittings, and accessories shall be handled in a manner that will insure installation in sound, undamaged condition. Equipment, tools, and methods used in handling and installing pipe and fittings shall not damage the pipe and fittings. Hooks inserted in ends of pipe shall have broad, well-padded contact surfaces. All pipe coating, which has been damaged, shall be repaired by the Contractor before installing the pipe.

## 3.4 Cutting Pipe:

- A. Pipe to be installed shall be done with sections and fittings such that pipe cutting is not required. Should pipe cutting be required, cutting shall be done in a neat manner, without damage to the pipe or to the lining. Cuts shall be smooth, straight, and at right angles to the pipe axis. After cutting, the end of the pipe shall be dressed with a file to remove all roughness and sharp corners.
- B. All cutting of cast iron pipe shall be done with mechanical pipe cutters except where the use of mechanical cutters would be difficult or impracticable. Ends of ductile iron pipe shall be cut with a saw, abrasive wheel, or oxyacetylene torch. Field cut holes for saddles shall be cut with mechanical cutters; oxyacetylene cutting will not be permitted.

# 3.5 Cleaning:

- A. The interior of all pipe and fittings shall be thoroughly cleaned of foreign matter before being installed and shall be kept clean until the work has been accepted. Before jointing, all joint contact surfaces shall be wire brushed if necessary, wiped clean, and kept clean until jointing is completed.
- B. Precautions shall be taken to prevent foreign material from entering the pipe during installation. Debris, tools, clothing, or other materials shall not be placed in or allowed to enter the pipe.
- 3.6 Inspection: Pipe and fittings shall be carefully examined for cracks and other defects immediately before installation; spigot ends shall be examined with particular care. All defective pipe and fittings shall be removed from the site of the work.

# 3.7 Pipe Laying:

- A. All sewer lines shall be laid to lines and grades shown on the Drawings.
- B. Bell and spigot pipe shall be installed with bell upgrade. Not more than two lengths of pipe shall be made up outside of trench, and then with the use of racks to insure true alignment. Before being set in place, each length of pipe shall be thoroughly cleaned, free of earth, or foreign material. No water shall be permitted in the trench when laying or joining sewer pipes, nor before the pipe joint has properly set.
- C. Each pipe shall be laid to form a close joint with the adjoining pipe sections having a continuous invert to the established line and grade.
- D. Raising the sewer pipe to grade by ramming or tamping of earth and bedding material will not be permitted. Upon proper bedding of the pipe, the opening under its bell shall be properly filled in a manner such as not to disturb its position or joint. At points where work is temporarily suspended, all open ends of pipe shall be securely sealed to prevent entrance of water, earth, or other substances.
- E. Ductile iron pipe shall be used at all locations requiring restrained joints.
- F. Pipe laid before and after a restrained joint shall be a whole length. For non-restrained jointed pipe, the Contractor shall not install a pipe, which is less than half of a supplied length.
- G. Verify location of bends prior to installation.

- Bulkhead or Closure for Connections: Connections between new work and existing piping shall be made using fittings suitable for the conditions encountered and as indicated on the drawings. Each connection with an existing pipe shall be made at a time and under conditions which will least interfere with service to customers and as authorized by the A/E. Facilities shall be provided for proper dewatering and for disposal of all water removed from the dewatered lines and excavations without damage to adjacent property. Bulkhead shall be provided at the end of new piping for future connections as indicated on the drawings.
- Field Joints: Joints in buried locations shall be mechanic joint or push-on type unless otherwise indicated on the drawing or directed by the A/E. Restrained push on joints shall be used to resist thrust forces. All joints shall be watertight and free from leaks.

#### 3.10 Mechanical Joints:

- A. Mechanical joints shall be carefully assembled in accordance with the manufacturer's recommendations. If effective sealing is not obtained, the joint shall be disassembled, thoroughly cleaned and reassembled. Over-tightening bolts to compensate for poor installation practice will not be permitted.
- B. The holes in mechanical joints with tie rods shall be carefully aligned to permit installation of the tie rods. In flange and mechanical joint pieces, holes in the mechanical joint bells and the flanges shall straddle the top (or side for vertical piping) centerline. The top (or side) centerline shall be marked on each flange and mechanical joint piece at the foundry.
- 3.11 Push-On Joints: The pipe manufacturer's instructions and recommendations for proper jointing operations shall be followed. All joint surfaces shall be lubricated with heavy vegetable soap solution immediately before the joint is completed. Lubricant shall be suitable for use in potable water, shall be stored in closed containers, and shall be kept clean. Each spigot end shall be suitably beveled to facilitate assembly.
- 3.12 Leakage: All joints shall be watertight and free from leaks. Each leak, which is discovered within the correction period stipulated in the General Conditions, shall be repaired by and at the expense of the Contractor. For testing force mains and for testing gravity lines, see the appropriate section in these specifications.

## SECTION 02760: TESTING OF GRAVITY SEWER AND DRAIN LINES

#### PART 1 GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: Furnish all necessary materials, labor and equipment for complete field testing and lamping of gravity sewer and drain lines, as specified herein. Provide all necessary supplementary items for a complete installation intended by documents.
- Governing Standard: The testing and lamping of all gravity sewer and drain lines shall be done as specified herein unless required otherwise by the governing authority. In the event of a conflict between these specifications and the latest standards of the Owner and/or governing authority, the latest standards of the Owner and/or governing authority shall govern.
- General Requirements: All tests and lamping shall be made by and at the expense of the Contractor in the presence of, and to the satisfaction of the A/E. All pipe joints shall be watertight and the Contractor shall repair all leaks discovered during the tests or any time within the correction period stipulated in the General Conditions. Trenches shall be backfilled prior to testing.
- 1.5 Testing Plan: A testing plan shall be submitted to the A/E in accordance with Division 1. The plan shall include a complete description of the methods to be used for the pressure and leakage tests and the equipment to be used to measure leakage. Furthermore, the Contractor will supply a copy of the pressure records and charts to the A/E after the tests have been made.

#### PART 2: PRODUCTS

- 2.1 Testing Equipment and Materials:
  - A. The Contractor shall provide all necessary equipment for the test and lamping. The Contractor is responsible for providing all pumping equipment, water, meters, pressure recorders, charts, stop watches, all necessary piping connections, gages, mirrors, battery operated lamps, gas masks and all other equipment, materials, facilities and personnel required to complete the tests.
  - B. The Contractor shall provide and install all temporary sectionizing devices, bulkheads, bracing, and flanges needed. All temporary devices will be removed after completion of the test. The installation of all bracing, bulkheads and sectionizing devices shall be placed

- such that they do not exert concentrated loads or horizontal thrusts on the pipe.
- The Contractor shall provide a V-notch sharp crested weir suitable for insertion in the collection lines for each pipe diameter used in the project. The weirs shall be set vertically and in proper alignment, and shall provide that no leakage occurs between the periphery of the pipe and the outer edge of the weir. The depth of the V-notch shall be a minimum of 2 inches, and the lowest point of the notch shall be 2 inches above the invert of the pipe.
- D. In lieu of the above method, an approved type dam may be constructed in the end of the pipe section being tested to which shall be attached a 1-inch or 1-1/4 inch diameter outlet pipe. The flow through the outlet pipe shall be gauged with a stopwatch and a graduated measuring pin.

# PART 3: EXECUTION

- 3.1 Infiltration Tests: Infiltration tests shall be conducted between each manhole and catch basin. The sewers, manholes, catch basins, and all connections shall not leak under the exterior ground-water pressure in excess of a rate of 50 gallons per inch of diameter per day per mile of pipe.
- 3.2 Lamping: All sewer and drain lines shall be "lamped" between manhole sections. The full cross section of the pipe shall be visible when lamped. Failure to obtain a full cross-section shall be sufficient reason to reject the portion of the line.

### 3.3 Leakage:

- A. All joints shall be watertight and free from leaks. Each leak, which is discovered within the correction period stipulated in the General Conditions, shall be repaired by and at the expense of the Contractor.
- B. The line shall then be re-tested after the leaks are located and repaired by the Contractor. All leaks shall be repaired working from the outside of the pipe using methods that have been approved, in advance, by the A/E.
- Deflection Tests: Deflection tests shall be performed on all flexible pipe. The test shall be conducted after the final backfill has been in place at least 30 days. The test shall consist of hand pulling a 5% deflection mandrel through the pipe. The pipe section will not be accepted unless this test is successfully completed. The mandrel diameter is based upon 95% of the nominal average outside diameter minus two times the minimum wall thickness, as given in Table 1, ASTM D 303A and ASTM F-679 (T-1 Wall). Contractor shall provide all material required to test the pipe at no cost to the Owner.

#### **SECTION 02765**

#### PIPE REHABILITATION BY INSTALLATION OF CURED-IN-PLACE PIPE

#### 1.00 GENERAL

It is the intent of this specification to provide for the reconstruction of existing sanitary and storm sewer pipes by forming a new pipe within an existing structurally deteriorated pipe, which has generally maintained its original shape. The cured-in-place- pipe (CIPP) shall provide flow capacity equal to or greater than "100% of the original pipe's flow capacity when new". The installation of the CIPP shall be accomplished by the use of either the Insituform Process, LMK, or National Liner Process. The process is defined as the reconstruction of sanitary and storm sewer pipe by installation of a thermosetting, resin impregnated, flexible felt fiber tube (coated on one side with polyethylene) into the existing sanitary and storm sewer pipe utilizing a water column. Curing is accomplished by circulating hot water (or other approved fluid) throughout the length of the tube to cure the thermosetting resin into a hard impermeable pipe. The pipe shall extend the full length of the original pipe and shall provide a structurally sound, jointless, closed-fitting, cured-in-place-pipe.

Rehabilitation of pipelines by pulled-in-place installation of a cured-in-place thermosetting resin pipe shall be used only with approval of the Director of Sewerage, or when noted on the work order issued by Jefferson Parish.

Any process, including those named above, or submitted as an approved equal, which have not been installed previously in Jefferson Parish, shall be required to meet the requirements in the General Conditions of these specifications to prove the acceptability of the product.

#### 1.01 REFERENCED SPECIFICATIONS

This specification references ASTM F 1216 (Rehabilitation of pipelines by the inversion and curing of a resin-impregnated tube) and ASTM F1743 (Rehabilitation of pipelines by pulled-in-place installation of a cured-in-place thermosetting resin pipe). ASTM D790, (Test Methods for flexural properties of non-reinforced plastics), which are made a part hereof by such reference, and shall be the latest edition and revision thereof in case of conflicting requirements between this specification and these referenced documents, this specification will govern.

#### 1.02 GENERAL CORROSION REQUIREMENTS

The CIPP shall be fabricated from materials which, when cured, will be chemically resistant to withstand internal exposure to permitted storm-water and sanitary sewerage.

#### 1.03 MATERIALS

- A. The flexible felt fiber tube shall be fabricated to a size that, when installed, will neatly fit the internal circumference of the conduit specified by the Department of Sewerage. An allowance shall be made for some circumferential stretching during inversion. Minimum tube thickness shall be as indicated on the bid form. Additional thickness will be used if required by site conditions.
- B. The minimum length shall be that deemed necessary by the Contractor to effectively span the distance from the inlet to the outlet of the respective manholes or other termination points, unless otherwise specified. The Contractor shall verify the lengths in the field before impregnation of the tube with resin. Individual insertion runs can be made over one or more manhole sections, as determined in the field by the Contractor.
- C. Unless otherwise specified, the Contractor shall furnish either polyester, or vinyl ester resin, and a compatible catalyst system that provides cured physical strengths as specified herein. Epoxy vinyl ester resins shall be Derakene 411 series, or approved equal. Polyester resins shall be manufactured by Alpha Owens Corning, or approved equal.
- D. The materials used shall result in an installed CIPP flow capacity equal to, or greater than, 100% of the original pipe's flow capacity when new.
- E. Physical Strength: The CIPP shall conform to the minimum structural standards listed below, or to the then current standards approved by Insituform Technologies or National liner.

Physical <u>Characteristic</u>	<u>Test Method</u>	Minimum Values
Flexural Stress	#101 Modified ASTM D-790	4,500 psi
Flexural Modules Of Elasticity	#101 Modified ASTM D-790	250,000 psi

#### 1.04 PRE-INSTALLATION PROCEDURES

The following installation procedures shall be adhered to, unless otherwise approved by PWIRS and/or Director of the Department of Sewerage.

- A. Safety The Contractor shall carry out his operations in strict accordance with all applicable OSHA standards. Particular attention is drawn to those safety requirements involving work on an elevated platform and entry into a confined space.
- B. Pre-inversion Cleaning Cleaning and CCTV performed immediately prior to installation. It shall be the responsibility of the Contractor to remove all loose debris located within the sanitary or storm sewer pipe. Cost shall be incidental to work.
- C. Pre-inversion Inspection- Inspection of sanitary or storm sewer pipe shall be performed by experienced personnel trained in locating breaks, obstacles, and connections by closed circuit television inspection. The interior of the pipe shall be carefully inspected to determine the location of any condition which may prevent proper installation of the CIPP, and it shall be noted so that these conditions can be corrected. A videotape and suitable log shall be kept for later reference by the Department of Sewerage and/or Contractor. Cost shall be incidental to work.
- D. Line Obstructions If inspection reveals an obstruction that cannot be removed by conventional pipe cleaning equipment, such as attached mortar, dropped joints, protruding taps, or collapsed pipe, that will prevent completion of the inversion process, then a point repair excavation shall be made by the Department of Sewerage, or the Department of Sewerage's designated Contractor, or shall be authorized under this contract to uncover and remove or repair the obstruction.
- E. Protruding Tap Removal A robotic machine capable of grinding off clay and concrete lateral protrusions and reinstatement cutting will be used. The machine will work inside the parent and relined pipe without damaging parent or relined pipe walls.

Protruding laterals will be ground back to a ¼ inch protrusion or less. Grinding will be done using a slow speed (1,000 to 1,500 rpm) diamond chip covered ball grinder of nominal 1.50 inch to 2.0 inch diameter. Segmented, notched, or chipping type cutters, which crack and chip the lateral pipe, resulting in broken or cracked laterals will not be accepted.

F. By-passing - When required for 'acceptable completion of an inversion process task and/or to avoid damages due to sewer spills or overflows, the Contractor shall provide for sanitary or storm water flow maintenance around the section or sections of pipe designated for the inversion process. The bypass shall typically be made by plugging the line at an existing upstream manhole and pumping the flow into a downstream manhole or adjacent system. The pump and by-pass of sanitary sewerage into the storm-water system will not be allowed.

The Contractor will notify all parties whose service laterals will be out of service and to advise against water usage until the mainline is back in service. Notification will be at least 24 hours prior to CIPP installation, and no more that 72 hours prior to lining. Notification will be provided by a "door hanger" approved by the Director of the Department of Sewerage.

# 1.05 INSTALLATION PROCEDURES

- A. Wet-Out The Contractor shall designate a location where the tube will be impregnated ("wet out") with resin, using distribution rollers and vacuum to thoroughly saturate the felt fiber tube prior to installation. The Contractor shall allow PWIRS and/or Director of the Department of Sewerage to inspect the materials and wet out procedure. A catalyst system compatible with the resin and tube shall be used.
- B. Insertion The wet out tube shall be inserted through an existing manhole or other approved access and the application of a fluid column sufficient to fully extend it to the next designated manhole or termination point. The fluid column will be adjusted to be of sufficient height to cause the impregnated tube to hold tight against the existing pipe wall, produce dimples at side connections, and flared ends at the manholes.

C. Curing - After the insertion is completed, the Contractor shall supply a suitable heat source and fluid re-circulation system capable of delivering hot fluid uniformly throughout the section to effect a consistent cure of the resin. The curing temperature shall be that recommended by the resin/catalyst system manufacturer

The heat source shall be fitted with suitable monitors to gauge the temperature of the incoming and outgoing fluid supply. Another such gauge shall be placed between the impregnated tube and the invert of the original pipe at the manholes(s) or other termination points to determine the temperatures during the resin curing process. Initial cure shall be considered completed when the exposed portions of the GIPP appear to be hard and the remote temperature sensing device indicates the cure period to be of adequate duration, as recommended by the resin/catalyst system manufacturer, and modified for the inversion process.

- D. Cool-down The Contractor shall cool the hardened CIPP to a temperature below 100 degrees Fahrenheit before relieving the fluid column. Cool fluid may be added to the fluid column while draining hot fluid from a small hole at the opposite end of the GIPP, so that a constant fluid column height is maintained until cool-down is completed. Care shall be taken in the release of the fluid column so that a vacuum will not be developed that could damage the newly installed CIPP.
- E. Warranty- The finished CIPP shall be continuous over the entire length of an inversion run and be as free as commercially practicable from visual defects, such as foreign inclusions, dry spots, pinholes, and delamination. It shall also meet the water-tightness test requirement specified below. During the warranty period any defects, which will affect the integrity or strength of the CIPP shall be repaired at the Contractor's expense in a manner mutually agreed to by the Department of Sewerage and the Contractor. The warranty period is for five years from the date of completion, after acceptance by Department of Sewerage.

#### 1.06 SEALING AT MANHOLES

If the GIPP fails to make a tight seal at a manhole or other termination point, the Contractor shall apply a seal at that point. The seal shall be of a material compatible with the CIPP material.

# 1.07 RESTORATION OF SANITARY SEWER SERVICE CONNECTIONS

After the CIPP has been cured in place, the Contractor shall re-open the existing active sanitary or storm sewer connections as designated by PWIRS and/or Director of the Department of Sewerage. This shall be done usually without excavation, and in the case of non-man-entry pipe, (i.e. pipe less than 24" in diameter) from the interior of the pipeline, by means of a television camera and a cutting device that re-establishes the sanitary or storm sewer connections to not less than 90% of their original size (when new) and shall be fully functional. Restored openings should be neatly and smoothly cut and without rough edges. Care must be exercised not to damage the CIPP or the existing main or lateral pipes. Cutting devices that use high pressure water shall not be used since they may cause damage to the lateral. All liner materials shall be removed from the internal wall of lateral connection. When fiberglass or other reinforcing fibers are used, that may cause wicking at lateral openings, the lateral opening edges must be sealed with a resin mixture compatible with the tube resin. Connections should not be over cut, as this could damage the pipe, break the CIPP seal. and/or interfere with future lining of the lateral.

Lateral reinstatement shall be done using either a wire steel brush cutter or a coarse carbide crystal surface type cutter. This method of cutting shall not damage the lateral pipe material and shall result in a smoothed even surface, which is flush with and follows the lateral pipe internal wall contour regardless of penetration geometry. Drill or router bits shall not be allowed. Holes cut outside the lateral opening or oversized cutting (more than 105%) must be corrected to PWIRS and/or Department of Sewerage satisfaction.

If under normal circumstances the CIPP interior method of tap cutting does not prove satisfactory, an external tie-in of the house connection will be required. This external tie-in shall be made by the Contractor at his expense.

#### 1.08 TESTING

The water-tightness of the CIPP shall be gauged by monitoring the water level in the inversion tube while curing. The water testing must be done directly on the finished product and not on an intermediary hose, which is not part of the final product.

For each installation the Contractor shall perform tests on a sample of the cured installed liner. Tests conducted shall include the following:

- a. Thickness of sample
- b. Flexural strength
- Flexural modules of elasticity

The method for taking the sample shall be as follows:

Place a short section of pipe in the manhole aligned with and the same size as the existing sewer. Run the impregnated tube through the pipe and cure the CIPP under restrained conditions. Label samples with the project number, date of installation, location, manhole number, and specified thickness.

These tests will be conducted in accordance with Modified A.S.T.M. D-790. The testing shall be accomplished by an independent, certified testing laboratory, provided and paid for by Jefferson Parish.

# 1.09 CLEAN-UP

Upon acceptance of the installation work and testing, the Contractor shall reinstate the project area affected by his operations.

#### 1.10 POST VIDEOS

At the completion of the rehabilitation of a pipe-line the Contractor will electronically provide PWIRS and/or the Director of the Department of Sewerage with video inspections of the completed line segment. This inspection will be used to determine if the line has been restored in a satisfactory fashion.

This inspection shall be performed, one section at a time, by closed circuit color television, using radial view camera. The flow entering the section being inspected shall be plugged as required and previously described. The television camera used for this inspection shall be one that is specifically designed and constructed for such conditions. Picture quality and definition shall be to the complete satisfaction of PWIRS and/or Director of the Department of Sewerage.

If necessary, equipment shall be removed and no payment made until satisfactory inspection is made. The camera shall be pulled through the pipe slowly, in order to fully inspect for any defects. Location records shall be kept by the Contractor, which will clearly show the exact location, in relation to adjacent manholes, of all house connections. Electronically computer-generated copies of this log and data shall be supplied to PWIRS and/or Director of the Department of Sewerage.

# 1.11 SERVICE RECONSTRUCTION/REPLACEMENT PRIOR TO CIPP

For deteriorated or damaged connections, or, ones which are protruding and cannot be cut internally, the Contractor will excavate and make the repair prior to installation of the CIPP.

After the liner has been put into place, allowed to normalize to ambient temperature, and recover from any imposed stretch, each existing service connection shall be reconnected to the new liner. A portion of the existing sanitary sewer main, or "Carrier pipe", around each service connection shall be removed to expose the liner pipe and to provide sufficient working space for installing a pre-fabricated polyethylene saddle, or an approved alternate. The polyethylene saddle must be a one-piece saddle equipped with a neoprene gasket, so that a complete seal is accomplished when the strap-on saddle is tightened with two (2) stainless steel bands; one on each side. The stub-out attached to the saddle must protrude into the liner a distance equal to the wall thickness of the liner in place. The new 4 inch, 6 inch, or 8 inch stub-out, or lateral, shall be connected to the existing service line with a flexible "Fernco" PVC coupling, with stainless sleeves, or an approved equal. A service reconnection shall consist of the removal and replacement of any cracked. offset, or leaking existing service, up to a distance of eight (8) feet from the center of the new liners, measured horizontally.

The new flexible coupling shall be secured to the existing service lateral, and new stub and/or stack, with stainless steel bands.

# 1.12 PATENTS:

The Contractor shall warrant that the methods, materials, and equipment used herein, where covered by license, are furnished in accordance with such license, and the prices included in this proposal include applicable royalties and fees in accordance with such license. The Contractor shall warrant and save harmless Jefferson Parish against all claims for patent infringement and any loss thereof.

SECTION 02830: CHAIN LINK FENCING

#### PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: This section includes fence framework, fabric, gates, related hardware and accessories indicated on drawings, in specifications or necessary for a complete installation.
- 1.3 Product Handling: Deliver materials with manufacturer's tags and labels intact. Handle and store so as to avoid damage.

### PART 2: PRODUCTS

- 2.1 General: Fence components galvanically compatible. Overall height of new fencing, when erected shall be indicated on Drawings. Weld all connections at gates. Use standard connections at other fencing.
- 2.2 Polymer Coated Steel Fabric: ASTM F668, the wire gauge specified for polymer-coated wire is that of the metallic coated steel core wire.
  - a. Class 1 extruded.
  - b Class 2a extruded and adhered.
  - c. Class 2b fused and adhered.
  - d. Color: [dark green] [olive green] [brown] [black] in compliance with ASTM F934.
  - e. See ASTM F668 Specification for Polymer Coated Chain Link Fence Fabric
  - f. See ASTM F934 Specification for Standard Colors for Polymer-Coated Chain Link.

# 2.3 Framework:

- A. All material shall be hot-dipped galvanized with a minimum coating of 1.2 ounces per square foot of surface. Steel pipe shall be standard weight, Type I, Schedule 40, ASTM A 53. Weld all joints fully at gates, and apply touch-up coating.
- B. Polymer Coated Framework: Polymer coated framework shall have a [PVC] [Polyolefin] [Polyester] coating fused and adhered to the exterior zinc coating of the post or rail. PVC and polyolefin coatings shall have minimum thickness 10-mils (0.254 mm), polyester coating minimum thickness 3 mils (0.0076 mm) per ASTM F1043. Color to match fabric [dark green] [olive green] [brown] [black] per ASTM F934.

C. Posts and Rails: Size members as indicated on Drawings and/or as specified, steel pipe as follows.

Outside Diameter, inches	Weight, #/ft
1 3/8	1.34
1 5/8	2.27
2	2.72
2 1/2	3.65
3	5.79
4	9.11

- 2.4 Truss Rods: 3/8 inch diameter rod with adjustable take-up, diagonal truss. Provide at bottom bay each side of each gate and at top and bottom bays each side of corner posts.
- 2.5 Accessories: Manufacturer's standard as required, all galvanized. Provide caps at tops of all posts.
- 2.6 Bottom Tension Wire: Minimum 7 gauge, galvanized unless otherwise noted on Drawings.
- 2.7 Gates: Sizes as indicated on Drawings. Frame of 2 inch o.d. steel pipe, all joints welded and hot-dip galvanized after welding. Fabric same as fence fabric. Provide 1-5/8 inch o.d. intermediate steel pipe, welded and galvanized. Properly brace to eliminate any possible sagging condition. Standard type hinges, size to accommodate gate frame and post. Fork type latches, operable from either side of gate; padlock hasp integral part of latch.
- 2.8 Touch-Up Coating: MIL-P-21035 zinc-rich galvanizing repair compound.
- 2.9 Concrete: As specified or as indicated on plans.

### PART 3: EXECUTION

- 3.1 Preparation: Measure and lay out complete fence lines. Locate line posts at equal distance spacing, not exceeding 10 foot centers. Locate corner posts at positions where fence changes direction more than 10 degrees.
- 3.2 Installation:
  - A. Posts: Minimum post hole diameters to be 12 inches; minimum depths to be 40 inches or as indicated on drawings. Place concrete in hole to depth of bottom of grade beam at locations wherever concrete slab will be poured over footings. Set posts plumb to 1/4 inch in 10 feet.
  - B. Fence Fabrics: Stretch fabric tight between terminal posts. Join ends of fabric by weaving with single strand of fabric wire to form continuous mesh pattern with selvage twisted to match balance of fabric. Attach fabric directly to posts, using wire ties or clips, spacing

- not to exceed 15 inches o.c. Attach to all rails or bottom tension wire using wire ties or clips, spacing not to exceed 24 inches o.c.
- C. Gates: Install gates plumb and level to 1/4 inch in 10 feet. Install ground-set items in concrete. Adjust hardware to provide smooth operation.
- D. Welding: Conform to requirements of American Welding Society, "Specifications for Iron and Steel Arc-Welding Electrodes." Electrodes shall be suitable for conditions of intended use. Make joint surfaces free from fins and tears and grind rough surfaces smooth.
- 3.3 Adjust and Clean: Adjust brace rails and tension rods for rigid installation. Wire brush to expose bare steel at welds, cuts, abrasions, etc. and apply 2 coats of zinc rich coating. Tighten hardware, fasteners, and accessories. Remove excess and waste materials from project site.

# SECTION 02940: RESODDING

# PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: The work done under this section includes the furnishing of all labor, materials, equipment, and services necessary for the repair of all lawn areas damaged during the construction of this project.

### 1.3 Provisions:

- A. All work shall comply with applicable provisions of the State of Louisiana Department of Transportation and Development latest edition "Louisiana Standard Specifications for Roads and Bridges" (DOTD), except as modified herein.
- B. Where DOTD is modified herein, unaltered provisions of Standard Specifications shall remain in effect.
- C. Where general provisions (General, Supplementary Conditions, etc.) of this Specification conflict with DOTD, this Specification shall govern. DOTD provisions not affected shall remain as part of Contract.
- D. Whenever "the Department" is referenced in DOTD, change to read "the A/E" and/or "the Owner" as applicable throughout.

#### PART 2: PRODUCTS

2.1 Materials: All materials shall comply with the DOTD Section 714 entitled "Sodding". Damaged lawn areas shall be resodded with grass of the same type that was damaged, or as directed by the A/E.

#### PART 3: EXECUTION

- 3.1 Workmanship: All workmanship shall comply with the DOTD Section listed above.
- 3.2 Cleaning: After completion of the resodding operation, clean all surfaces of excess or spilled materials in a workmanlike manner.

SECTION 03100: CONCRETE FORMWORK

# PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: Furnish all necessary materials, labor and equipment for the complete installation of formwork for cast-in-place concrete, with shoring, bracing, anchorage and other accessories, as shown on the drawings and specified herein. Provide all necessary supplementary items for a complete installation intended by documents.
- 1.3 Reference Standards: Concrete formwork shall be in accordance with the "Building Code Requirements for Reinforced Concrete" (ACI 318), "Recommended Practice for Concrete Formwork" (ACI 347), and Manual of Standard Practice for Concrete Formwork" (ACI 315).

### 1.4 Tolerances:

- A. Construct formwork to provide completed cast-in-place concrete surfaces complying with the tolerances specified in ACI 347 and as follows:
  - 1. Variation from plumb in lines and surfaces of columns, piers, walls, and arises: 1/4" per 10 ft. but not more than 1". For exposed corner columns, control joint grooves and other conspicuous lines, 1/4" in any bay or 20 ft. maximum; 1/2" maximum in 40 ft. or more.
  - 2. Variation from level or grade in slab soffits, ceilings, beam soffits, and in arises 1/4" in 10 ft., 3/8" in any bay or 20 ft. maximum, and 3/4" in 40 ft. or more. For exposed lintels, sills, parapets, horizontal grooves and other conspicuous lines, 1/4" in any bay or 20 ft. maximum and 1/2" in 40 ft. or more.
  - 3. Variation from position of the linear building lines and related columns, walls, and partitions, 1/2" in any bay or 20 ft. maximum and 1" in 40 ft. or more.
  - 4. Variation in sizes and locations of sleeves, floor openings, and wall openings, 1/4".
  - 5. Variation in cross-sectional dimensions of columns and beams and thickness of slabs and walls, minus 1/4" and plus 1/2".
  - 6. Variation in steps: In flight of stairs, 1/8" for rise and 1/4" for treads. In consecutive steps: 1/16" for rise and 1/8" for treads.
- B. Before concrete placement, check the lines and levels of erected formwork. Make corrections and adjustments to ensure proper size and location of concrete members and stability of forming systems.

During concrete placement, check formwork and related supports to ensure that forms are not displaced and that completed work will be within specified tolerances.

#### PART 2: PRODUCTS

### 2.1 Materials:

- A. Forms: Steel, wood, or other suitable material of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal. Use straight forms, free of distortion and defects.
  - 1. Use flexible spring steel forms or laminated boards to form radius bends as required.
  - 2. Coat forms with a non-staining form release agent that will not discolor or deface surface of concrete.
- B. General: Unless otherwise indicated, construct formwork for concrete surfaces with plywood, metal, metal formed plywood faced or other acceptable panel-type materials, to provide continuous, straight, sooth surfaces. Furnish in largest practicable sizes to minimize number of joints. Provide form materials of sufficient thickness to withstand pressure of newly-placed concrete without bow or deflection.
  - 1. Plywood: Use plywood complying with U.S. Product Standard PS-1, B-B Ply form, Grade 1, exterior grade or better, mill-oiled and edge-sealed.
  - 2. Lumber: Form lumber shall be No. 2 DENSE, of good quality, free from loose knots, holes, twists, shakes, or decay.
- C. Form Coatings: Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces.
- D. Form Ties: Provide factory fabricated, adjustable length, removable or snap-off form-ties, designed to prevent form deflection, and to prevent spalling concrete surfaces upon removal.

# PART 3: EXECUTION

Design forms and falsework to include assumed values of live load, dead load, weight of moving equipment operated on formwork, concrete mix, height of concrete drop, vibrator frequency, ambient temperature, foundation pressures, stresses, lateral stability, and other factors pertinent to safety of structure during construction.

#### 3.2 Form Construction

A. Construct forms complying with ACI 347 to the exact sizes, shapes, lines and dimensions shown, and as required to obtain accurate

- alignment, location, grades, level and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required. Use selected materials to obtain required finishes.
- B. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage case concrete surfaces. Kerf wood inserts for forming keyways, recesses and the like to prevent swelling and assure ease of removal.
- C. Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement, and for placement of concrete mortar. Locate temporary openings in as inconspicuous locations as possible.
- D. Form intersecting planes to provide true, clean-cut corners, with edge grain of plywood not exposed as form for concrete.
- E. Provide formwork sufficiently tight to prevent leakage of cement paste during concrete placement. Solidly butt joints and provide backup material at joints are required to prevent leakage and fins.
- F. Provide shores and struts with positive means of adjustment capable of taking up formwork settlement during concrete placing operations, using wedges or jacks or a combination thereof. Provide trussed supports when adequate foundations for shore and struts cannot be secured.
- G. Support form facing materials by structural members spaced sufficiently close to prevent deflection. Fit forms placed in successive units for continuous surfaces to accurate alignment, free from irregularities and within allowable tolerances. Provide camber in formwork as required for anticipated deflections due to weight and pressures of fresh concrete and construction loads for longspan members without intermediate supports.
- 3.3 Coating Forms: Coat form contact surfaces with form-coating compound before reinforcement is placed. Do not allow excess form coating material to accumulate in the forms or to come into contact with surfaces, which will be bonded, to fresh concrete. Apply in compliance with manufacturer's instructions.
- 3.4 Installing Embedded Items:
  - A. General: Set and built into the work anchorage devices and other embedded items required for other work that is attached to or supported by cast-in-place concrete. Use setting drawings, diagrams, instructions and directions provided by suppliers of the items to be attached thereto.
  - B. Edge Forms and Pipe Screeds for Slabs: Set edge forms or bulkheads and intermediate pipe screed strips for slabs to obtain

- required elevations and contours in the finished slab surface. Provide ad secure units to support pipe screeds as required.
- Reposition forms to true alignment prior to, during, and after concrete placement, if necessary.
- D. Where electrical or telephone conduit is run at slabs, install beneath required slab thickness. Conduit runs are not allowed in foundation beam trenches. Where conduit must cross foundation beams or where short runs of conduit must be placed within foundation beams, place conduit within top 1/3 of foundation beam.
- E. Where vertical runs of conduit or piping interrupt more than 12 inches of concrete slab in any direction, such as at electrical and telephone panels, double the slab thickness for a distance of not less than 24 inches from the group of conduit.

# 3.5 Cleaning Forms:

- A. Remove debris and foreign matter from formwork prior to concrete placement.
- B. Remove rust or dirt from reusable hardware prior to installation into formwork.

# 3.6 Removing Forms:

- A. Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed no sooner than 24 hours, provided the concrete of sufficient strength as not been damaged and curing and protection operations are maintained.
- B. Do not remove supporting forms and shores from beams, floors and columns until fourteen (14) days have elapsed from time of pouring and these structural members have attained eighty (80%) per cent of design strength and are capable of carrying their own weight and that of any superimposed load. Do not at any time exceed design live load.

#### 3.7 Form Reuse:

- A. Withdraw projecting nails; clean concrete form contact surfaces. Replace with new material when necessary or when directed.
- B. Reuse forms only when contact surfaces equal those specified for original use.
- C. Floor level shall conform to latest edition of ACI Code and Commentary. Floor level shall be 1/8" per 10' 0" as stated in code.
- 3.8 Site Cleaning: Remove debris from project site upon completion of work, or sooner, if directed.

SECTION 03200: CONCRETE REINFORCEMENT

#### PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: This section includes reinforcing bars, wire, mesh, accessories, etc. for concrete construction indicated on the Drawings and in specifications. Provide all necessary supplementary items for a complete installation intended by documents.
- 1.3 Reference Standards: Furnish and install all reinforcing steel and accessories in accordance with "Building Code Requirements for Reinforced Concrete" (ACI 318), "Manual of Standard Practice for Detailing Reinforced Concrete Structures" (ACI 315), "Concrete Sanitary Engineering Structures" (ACI 350)", and CRSI.

#### 1.4 Submittals:

- A. Provide detailed shop drawings, showing layout, sizes, arrangements, bar supports, etc. for all reinforcing steel, joints, curbs, accessories, etc. Furnish samples, manufacturer's product data, test reports, and materials certifications for joint fillers and sealers.
- B. Submit in accordance with requirements of Division 1.
- 1.5 Storage of Materials: Store materials above ground on suitable supports and keep free of foreign material and corrosion, damage, etc., as far as practical.

## PART 2: PRODUCTS

#### 2.1 Materials:

- A. Reinforcing Bars: Deformed billet steel bars in accordance with ASTM A 615 Supplement S1, having a minimum yield of 60,000 psi.
- B. Joint Dowel Bars: Plain steel bars, ASTM A 615, Grade 60. Cut bars true to length with ends square and free of burrs.
- C. Welded Wire Fabric: Electrically-welded wire fabric of cold-drawn wire (70,000 psi yield point) of gage and mesh size indicated on the Drawings. Conform to ASTM A 185 and ASTM A497. Furnish in flat sheets.
- D. Tie Wire: Annealed steel, black, 16 gage minimum.
- E. Metal Keys: Heckman No. 95, 16 gage tongue and groove joint, Dayton Superior Screed-Load key, or approved equal, with both stake pin and dowel holes. Provide No. 88, 18 gage tapered channel type stake pins, 15 inches long. Provide approved type

- metal bar supports as indicated on the Drawings.
- F. Bar Support Chairs: CRSI Class I hot dipped galvanized, plastic, ceramic, or stainless steel protected.
- 2.2 Fabrication: In accordance with CRSI Manual of Standard Practice.

### PART 3: EXECUTION

- 3.1 Placing Reinforcement, General:
  - A. Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.
  - B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials, which reduce or destroy bond with concrete.
  - C. Accurately position, support and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as required.
  - D. Place reinforcement as shown on plans or to obtain at least minimum coverages for concrete protection. Arrange, space and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

# 3.2 Installation:

- A. Placement: Bar supports, CRSI 65. Reinforcing bars, CRSI 63.
- B. Steel Adjustment: Move within allowable tolerances to avoid interference with other reinforcing steel, conduits, or embedded items. Do not move bars beyond allowable tolerances without concurrence of A/E. Do not heat, bend, or cut bars without concurrence of A/E.
- C. Splices: All splices, laps, and dowels shall be at a minimum Class C per ACI. Tie securely with wire to prevent displacement of splices during placement of concrete. Do not splice bars except at locations shown on the Drawings without concurrence of A/E. Stagger all laps.
  - 1. Lap top bars at mid-span and bottom bars at pile. Lap all bars a minimum of 15 inches.
  - 2. Provide standard 90 degree hooks at all top bars at discontinuous ends.
  - 3. Provide corner bars at all discontinuous ends, same number and size as outside beam bars and with a lap of 15 inches minimum each way.
  - 4. Lap all continuous bars a minimum of 30 bar diameters. Stagger laps in slabs a minimum of 24 inches.
- D. Wire Fabric: Install in longest practicable length. Lap adjoining pieces two full wire spaces minimum and tie splices with 16 gage wire. Do not make end laps midway between supporting beams, or

directly over beams of continuous structures. Offset end laps in adjacent widths to prevent continuous laps. In lieu of adequate support for mesh, left the mesh during placing of concrete so that it is completely surrounded by concrete and not less than two (2") inches above the bottom of slabs.

- E. Cleaning: Remove dirt, grease, oil, loose mill scale, excessive rust, and foreign matter that will reduce bond with concrete.
- F. Protection During Concreting: Keep reinforcing steel in proper position during concrete placement.

SECTION 03300: CAST-IN-PLACE CONCRETE

### PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract (General and Supplementary and other Conditions, Division 0) and Division 1 as appropriate, apply to work specified in this section.
- 1.2 Scope of Work: Furnish all necessary materials, labor and equipment for the complete installation of cast-in-place concrete, as shown on the Drawings and specified herein. Provide all necessary supplementary items for a complete installation intended by documents.

# 1.3 Quality Assurance:

- A. Codes and Standards: Comply with local governing regulations if more stringent than herein specified.
- B. Concrete form work, reinforcing steel, and related items shall be in accordance with the following:
  - 1. ACI 301 "Specifications for Structural Concrete for Buildings."
  - 2. CI 304 "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete."
  - 3. ACI 305 "Recommended Practice for Hot Weather Concreting."
  - 4. ACI 306R "Recommended Practice for Cold Weather Concreting."
  - 5. ACI 350 "Concrete Sanitary Engineering Structures "
  - 6. ASTM C33 "Concrete Aggregates."
  - 7. ASTM C150 "Portland Cement."
  - 8. ASTM C260 "Air Entraining Admixtures for Concrete."
  - 9. ASTM C494 "Chemical Admixtures for Concrete."
  - 10. ASTM C94 "Ready-Mixed Concrete."
- C. Mixing and Transporting Concrete: In accordance with "Specifications for Ready Mixed Concrete" (ASTM C 94) except complete discharge from the hauling containers within 60 minutes after the cement has been added to the aggregate and water in the mixer.
- D. Allowable Tolerances: Flatwork true to plane 1/8 inch in 10 feet. No open paving shall pond water. At floor slabs, grind smooth any defects of sufficient magnitude to show through floor coverings.
- E. Testing:
  - Laboratory shall prepare and furnish to the A/E, in triplicate, reports of concrete mixed all inspection and testing complete with summary of results. Laboratory shall also furnish copy of all reports to the concrete supplier.
  - 2. Contractor shall furnish samples of the various materials and the concrete mix for laboratory test.
  - 3. The required laboratory testing and control shall be as follows:
    - a. Review the proposed concrete mixes submitted by the Contractor for all concrete to be used on this job.

- b. Test gradation of aggregate used in the concrete mix for compliance with the Specifications.
- c. Make concrete cylinders to perform compression tests of cylinders taken from concrete used on the job. Make a minimum of two (2) sets of cylinders per day or one (1) set of cylinders per 50 yards, whichever is greater. For regular strength concrete, each set shall consist of three (3) cylinders. Make compression tests at seven (7) days (with one cylinder of each set) and at 28 days (with remaining 2 cylinders of each set). For high early strength concrete, each set shall consist of two (2) cylinders. Make compression tests at seven (7) days with both cylinders of each set.
- d. Make a minimum of 4 slump tests per day or one per 25 yards, whichever is greater.
- 4. If tests indicate insufficient concrete strength and if additional tests are ordered (cores, etc.), Contractor shall pay for such additional tests.

### PART 2: PRODUCTS

- 2.1 Concrete: ASTM C 94
  - A. Cement: Type II, ASTM C 150.
  - B. Admixture:
    - 1. Water Reducing Admixture: ASTM C 494, Type A: Eucon WR-75 by Euclid Chemical Co., Pozzolith 300 N by Master Builders, Plastocrete 160 by Silea Chemical Corporation.
    - 2. Water Reducing, Retarding Admixture: ASTM C 494 Type D: Eucon Retarder 75 by Euclid Chemical Co., Pozzolith 300-R by Master Builders, Plastiment by Silea Chemical Co.
    - 3. Air Entraining: ASTM C 260, Master Builders MB-VR, Chem-Masters Adz-air, or approved equal, at exterior paving only.
  - C. Fine Aggregate: Sand, ASTM C 33.
  - D. Coarse Aggregate: Gravel, ASTM C 33, size number 57 (1 inch to No. 4).
  - E. Fly Ash (Type C or F): The Contractor will be permitted partial substitution of fly ash for portland cement in concrete mixes up to 25%. Fly ash, if used, shall be incorporated into the mix by methods such that the fly ash will be uniformly distributed throughout the mixture. Fly ash may be weighed cumulatively in the same hopper with the cement, provided the cement is weighed first. The amount of fly ash used in the mix shall be recorded and certified by the plant's Concrete Batcher or Concrete Technician. For mixes including partial replacement of cement with fly ash, the minimum cement content

- shown below apply to the total cement/fly ash content of the mix.
- F. Water: Clean and free from oil, alkali, sugar or other deleterious substances.
- G. Slump: Maximum 5 inches. With a High Range Water Reducer (Superplastizier) Maximum 9 inches.
- H. Air Content: 2% minimum, 5% maximum in exterior exposed concrete only.
- I. Mixes:
  - 1. Unless noted or specified otherwise, all concrete shall be 4,000 psi, regular strength.

#### CONCRETE MIX PROPORTIONING

		Min. Pounds Cement
Type of	Compressive	Per Cubic Yard
Regular	3000	430
J	4000	510
High Early		
Strength	3000	540
	4000	560

- 2. The compressive strength of moist cured laboratory samples shall reach design strength in 28 days for regular strength concrete and in 7 days for high early strength concrete.
- 3. Admixture: Use in accordance with manufacturer's recommendations.

# 2.2 Curing Material:

- A. ASTM C 171, waterproof paper or polyethylene film.
- B. At Contractor's option, ponding, continuous sprinkling, application of sand kept continuously wet, or application of other moisture-retaining covering may be used.
- C. ASTM C 309, clear liquid membrane curing material may be utilized provided it is compatible with all concrete finished and floor coverings. Verify with all manufacturers concerned. LM Scofield Co. Sealed 309 or approved equal.

# PART 3: EXECUTION

# 3.1 Surface Preparation:

- A. Remove loose material from compacted subbase surface immediately before placing concrete.
- B. Pre-roll prepared subbase surface to check for unstable areas and need for additional compaction. Do not begin paving work until such conditions have been corrected and are ready to receive paving.

Inspection: Contractor shall inspect his work to insure that excavations and form work are completed, that excess water is removed, and that reinforcement is secured in place. Contractor shall verify that expansion joint material, anchors, sleeves, and other embedded items are secured in position. After the Contractor verifies that the form work, placement of reinforcement, joints, anchors, etc. are complete and has been inspected by the Contractor for accuracy, he shall notify the A/E. This notification must be provided to the A/E on the day proceeding the concrete pour.

### 3.3 Form Construction:

- A. Set forms to required grades and lines, rigidly braced and secured. Install sufficient quantity of forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement.
- B. Check completed form work for grade and alignment to the following tolerances:
  - 1. Top of forms not more than 1/8" in 10'. Accumulative total not to exceed 1/2" from that required by documents.
  - 2. Vertical face on longitudinal axis, not more than 1/4" in 10'.
- C. Clean forms after each use, and coat with form release agent as often as required to insure separation from concrete without damage.

# 3.4 Concrete Placement:

- A. General: Comply with specifications herein for mixing and placing concrete.
- B. Do not place concrete until subbase and forms have been checked for line and grade. Moisten subbase if required to provide a uniform dampened condition at time concrete is place. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- C. Placing concrete: Convey concrete from mixer to final position by method, which will prevent separation or loss of material. Maximum height of concrete free fall, 4 feet. Regulate rate of placement so concrete remains plastic and flows into position. Deposit concrete in continuous operation until panel or section is completed. Place concrete in horizontal layers 18 inches maximum thickness. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocation of reinforcing, dowels, and joint devices.
- D. Deposit in a continuous operation between transverse joints, until complete section has been placed.
- E. Consolidating Concrete: Use mechanical vibrating equipment for consolidating. Vertically insert and remove hand-held vibrators at points 18 to 30 inches apart. Do not use vibrators to transport concrete in forms. Vibrate concrete minimum amount required for consolidation.

# 3.5 Joints:

- A. General: Construct expansion, weakened-plane (contraction), and construction joints true-to-line with face perpendicular to surface of concrete. Construct transverse joints at right angles to the centerline, unless otherwise indicated. When joining existing structures, place transverse joints to align with previously placed joints, unless otherwise indicated.
- B. Weakened-Plane (Contraction) Joints: Provide weakened-plane (contraction) joints, sectioning concrete into areas as shown on the Drawings. Construct weakened-plane joints for a depth equal to at least 1/4 concrete thickness, as follows:
  - 1. Tooled Joints: Form weakened-plane joints in fresh concrete by grooving top portion with a recommended cutting tool and finishing edges with a jointer.
  - 2. Sawed Joints: Form weakened-plane joints using powered saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut joints into hardened concrete as soon as surface will not be torn, abraded, or otherwise damaged by cutting action.
  - 3. Inserts: Use embedded strips of metal or sealed wood to for weakened-plane joints. Set strips into plastic concrete and carefully remove strips after concrete has hardened.
- C. Construction Joints: Place construction joints at end of placements and at locations where placement operations are stopped for a period of more than 1/2-hour, except where such placements terminate at expansion joints. Verify location of any joints not shown on plans with A/E.
  - 1. Construct joints as shown or, if not shown, use standard metal keyway-section forms.
  - 2. Where load transfer-slip dowel devices are used, install so that one end of each dowel bar is free to move.

# 3.6 Finishing Formed Concrete:

- A. Tops of Forms: Strike concrete smooth at tops of forms. Float to texture comparable to formed surfaces.
- B. Formed Surfaces: As-cast finish. Patch tie holes and defects after form removal. Remove fins from surfaces. Provide smooth rubbed finish to eliminate defects or unsightly texture.

# 3.7 Concrete Flatwork Finishing:

- A. After striking-off and consolidating concrete, smooth surface by screening and floating. Use hand methods only where mechanical floating is not possible. Adjust floating to compact surface and produce uniform texture.
- B. After floating, test surface for trueness with a 10' straightedge. Distribute concrete as required to remove surface irregularities, and refloat repaired areas to provide a continuous smooth finish.

- C. Slope uniformly at exterior surfaces as indicated. Insure uniform slopes. Method of screening and finishing shall produce uniform slope of entire slab.
- D. Work edges of slabs, gutters, back top edge of curb, and formed joints with an edging tool, and round to 1/2" radius, unless otherwise indicated. Eliminate tool marks on concrete surface.
- E. After completion of floating and troweling when excess moisture or surface sheen has disappeared, complete surface finishing, as follows:
  - 1. Troweled Finish: At interior slabs and where indicated on the Drawings, power trowel surface to smooth finish. Hand trowel areas inaccessible to power trowel.
  - 2. Broom Finish: At exterior walks, platforms, pads, slabs, etc., draw broom or brush across concrete surface, perpendicular to line of traffic. Repeat operation if required to provide a fine line texture acceptable to A/E.
  - 3. On exterior inclined slab surfaces, provide a coarse, non-slip finish by scoring surface with a stiff-bristled broom, perpendicular to line of traffic.
- P. Do not remove forms for 24 hours after concrete has been placed. After form removal, clean ends of joints and point-up any minor honeycombed areas. Remove and replace areas or sections with major defects, as directed by A/E.

# 3.8 Curing Concrete - General:

- A. Protect freshly placed concrete from premature drying and excessive cold or hot temperature, and maintain without drying at relatively constant temperature for period of time necessary for hydration of the cement and proper hardening of concrete.
- B. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 72 hours.
- C. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least seven (7) consecutive days during which concrete is not exposed to air temperature below 50 degrees F. Avoid rapid drying at the end of final curing period.

# 3.9 Curing Methods:

- A. Perform curing of concrete by one or combinations of the following methods. Use only water free of impurities, which could etch or discolor exposed, natural concrete surface. Do not use curing method or compounds, which would prevent or interfere with proper installation of finish materials by causing loss of bond or bleeding through of chemicals. Refer to Finish Schedule and Detail Drawings and coordinate as required.
  - 1. Moisture Curing any one of the following:

- a. Keeping surfaces of concrete continuously wet by covering with water.
- b. Continuous water-fog spray.
- c. Covering concrete surface with specified absorptive cover, thoroughly saturating cover with water, and keeping continuously wet. Place absorptive cover so as to provide coverage of concrete surfaces and edges with a 4" lap over adjacent absorptive covers.
- 2. Moisture Cover Curing Cover concrete surfaces with specified moisture-retaining cover for curing concrete, placing in widest practicable width with sides and ends lapped at least 3" and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during the curing period using cover material and waterproof tape.
- 3. Liquid Membrane Curing:
  - a. Apply approved membrane-forming curing compound to damp concrete surfaces as soon as water film has disappeared. Apply uniformly in two-coat continuous operation by power spray equipment in accordance with manufacturer's directions. Recoat areas, which are subjected to heavy rainfall within three (3) hours after initial application. Maintain continuity of coating and repair damage during entire curing period.
  - b. Do not use membrane curing compounds on surfaces which are to be covered with coating material applied directly to concrete or with covering material bonded to concrete.
- B. Temperature of Concrete During Curing
  - 1. Maintain concrete temperature as uniformly as possible, and protect from rapid atmospheric Temperature changes. Avoid temperature changes in concrete which exceed 5 degrees F. in any one (1) hour and 50 degrees F. in any 24 hour period.
  - Comply with requirements of ACI 305 and 306.

#### C. Protection:

- During curing period, protect from damaging mechanical disturbances including load stresses, heavy shock, excessive vibration, and from damage caused by rain or flowing water.
- 2. Protect all finished concrete surfaces from damage by subsequent construction operations.
- Contractor shall provide necessary protection to prevent any vandalism or damage to finish. Vandalism and damage of finish will be cause for rejection of effected concrete work. Patching and topping are unacceptable. All costs and fees for removal and replacement of such rejected paving will be the Contractor's responsibility, including any charges for retesting.
- 4. Protect concrete from damage until acceptance of work.

# 3.10 Corrections:

- A. Remove all excess projections and loose material from all concrete. Patch honeycombs and minor defects with mortar (1 part cement and 2 parts sand) until all exposed surfaces are smooth and acceptable to A/E.
- B. Repair or replace broken or defective concrete, as directed by A/E.

# 3.11 Cleaning:

- A. Remove all form material, stakes, excess concrete, all other debris from site.
- B. Sweep concrete pavement and wash free of stains, discolorations, dirt, and other foreign material just prior to final inspection.

SECTION 03411: FIBERGLASS WET WELL STRUCTURES (72" - 138" DIAMETER)

# PART 1: GENERAL

1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.

# 1.2 Scope of Work:

- A. The Contractor shall furnish all materials, labor, and equipment to construct wet wells and accessory items, consisting of fiberglass reinforced plastic (FRP) and concrete sections as shown on the Drawings and as specified herein.
- B. Included in the work of this Section:
  - 1. Wet well structure shown on the Drawings or similar.
  - 2. All concrete slabs, covers, structures, and members shown on plans associated with FRP members.
  - 3. All bearing plates and/or pads, inserts, FRP pipe sleeves, inserts, bolts, and all other required accessories which are cast into the FRP or concrete members.
  - 4. Furnishing and placing all anchor bolts, inserts, and other accessories in cast-in-place concrete and FRP members, as required for installation of the Work under this Section.
  - 5. Erection, including all necessary shimming, welding, and removal of lifting blocks.
  - 6. Excavation and backfill (specified elsewhere).

# 1.3 Submittals:

- A. Submit to the A/E shop drawings showing details of construction, reinforcing, and joints.
- B. Shop Drawings:
  - 1. The fiberglass reinforced plastic (FRP) manufacturer shall furnish and submit for approval complete shop drawings and calculations for all structures. Fabrication of structure shall not proceed until shop drawings are approved by the A/E and General Contractor.
  - 2. All inserts, pipe sleeves, blockouts, and other accessories required by various trades or as indicated, located, and detailed on the final approved drawings, will be cast as such. Any omission or changes in location or details by the Contractor, or the various trades, shall be done at the expense of the Contractor.
- C. Manufacturer's Literature: Manufacturer's recommended installation instructions.

- D. Manufacturer's certificates of material conformance with specifications.
- E. Test Reports: Reports of tests on concrete.
- F. The cylinders' manufacturer shall design, fabricate, and certify that the fiberglass cylinders conform to the requirements of these Specifications.
- G. Submit in accordance with requirements of Division 1.
- Tests: Test of specimens for strength at transfer shall be made by the fabricator and observed by the laboratory if so desired.

# 1.5 Inspection:

- A. The quality of all materials, the process of manufacture, and the finished sections shall be subject to inspection and approval by the A/E, or other representatives of the Owner. Such inspection may be made at the place of manufacture, or at the site after delivery, or at both places. The sections shall be subject to rejection at any time for failure to meet any of the Specification requirements, even though sample sections may have been accepted as satisfactory at the place of manufacture. Sections rejected after delivery to the job shall be marked for identification and shall be removed from the job at once. All sections, which have been damaged after delivery will be rejected, and if already installed, shall be acceptably repaired, if permitted, or removed and replaced, entirely at the Contractor's expense.
- B. At the time of inspection, the sections will be carefully examined for compliance with the criteria of these Specifications, and with the approved manufacturer's drawings. All sections shall be inspected for general appearance, dimensions, blisters, cracks, roughness, soundness, etc.
- C. Imperfections may be repaired, subject to the approval of the A/E, after demonstration by the manufacturer that strong and permanent repairs result. Repairs shall be carefully inspected before final approval.

#### PART 2: PRODUCTS

- 2.1 Fiberglass Reinforced Plastic Wet Wells 72" 138" Diameters:
  - A. General Description: Fiberglass Reinforced Plastic wet wells shall be cylinders made of composite laminate. The laminate shall consist of thermo-setting chemical resistant polyester resin, Fiberglass reinforcement, and additions as required. Structures shall be sized on the Drawings for the applicable stations. Wet wells shall be as manufactured by Fluid Containment, BELCO or equal.
  - B. Applicable Specifications: The following specifications are applicable for materials, workmanship, and reference:
    - 1. ASTM D 3753 "Glass Fiber Reinforced Polyester Manholes".

2. AWWA C 950 - "Glass Fiber Reinforced Thermosetting Resin Pressure Pipe."

# C. Design Criteria:

- The wet wells shall be suitable for use in corrosive environments including storm, industrial, and sanitary sewers with a temperature range of -40 degrees F to 150 degrees F.
- 2. Cylinders shall be designed and fabricated to provide sufficient strength for the following loading conditions:
  - a. Resistant to buckling when empty and when the ground water elevation is at grade.
  - b. The anchoring water stop rib and wall structure at the embedment within the reinforced concrete base zone shall be designed to resist the external hydrostatic water forces of an empty or full cylinder with the ground water at grade elevation.
- 3. The FRP wells shall be manufactured to the diameters and heights shown on the Drawings. They shall be designed by the manufacturer to perform as underground structures at the depth required and to withstand the necessary lateral pressure with a minimum factor of safety of 3. The FRP structures shall be capable of supporting the top slab covers, frames, soil overburden, plus a live load equivalent to AASHTO H-20 loading.
- 4. All cutouts shown in the plans for FRP wet wells shall be capable of maintaining the units structural integrity with up to a maximum single cutout diameter of 45" and a maximum sum of the diameters of all cutouts of 100".

# 2.2 Concrete Section:

- A. Concrete and reinforcing steel for foundation wet well slabs, top wet well slabs, and other concrete sections shall comply with all applicable sections of these Specifications.
- B. All concrete cast-in-place members shall conform to the Building Code Requirements for Reinforced Concrete ACI 318, latest edition.
- C. The top slab sections shall be fitted with watertight hatches as specified in these Specifications. The frames and covers will be sized for the openings shown on the Drawings and will be coordinated with the equipment supplied by the Contractor.
- D. A vent pipe shall be furnished and installed. It shall be a 6-inch threaded schedule 40 PVC pipe. The vent pipe shall be installed as shown on the Drawings.
- E. Fillets shall be provided and installed in the wet wells as shown on the Drawings. They shall be constructed using fill and shall conform to the appropriate sections of these Specifications.
- F. Cast-in-place structures shall be constructed to the dimensions as shown on the Drawings and as specified in these Specifications.

- G. Inserts through concrete walls shall be made as shown on the Drawings and as specified in these Specifications.
- Access Cover: Wet wells shall be furnished with the necessary aluminum access frames, complete with hinged and hasp-equipped covers. The frames shall be securely mounted. Doors shall have safety locking handle in open position. Doors shall be of aluminum checkered and shall be Model "JD" with stainless steel hardware as manufactured by the Bilco Company, equal by Babcock-Davis, equal by Holliday Products, or approved equal. All covers shall be designed for H-20 loading.

### PART 3: EXECUTION

### 3.1 Installation:

- A. The wet wells are underground vertical vessels described as "fiberglass cylinders" and include poured in-place reinforced concrete bases and reinforced concrete tops, unless otherwise specified. The fiberglass cylinders will have entering and existing piping penetration sleeves passing through the cylinder's walls. Unless otherwise specified, the piping sleeves shall be factory installed.
- B. The forms, dimensions, concrete, and construction methods shall be approved by the A/E in advance of construction.
- C. These specifications are intended to give a general description of what is required, but do not purport to cover all the structural design details which will vary in accordance with the requirements of the equipment as offered. It is, however, intended to cover the furnishing, shop testing, delivery, and complete installation of all fiberglass reinforced plastic and concrete structures whether specifically mentioned in these specifications or not.
- D. The supplier of the fiberglass reinforced plastic wet wells and accessory items shall coordinate his work with that of the Contractor to the end that the unit will be delivered and installed in the excavation provided by the Contractor, in accordance with the Contractor's construction schedule.
- E. The contractor will ensure coordination of the FRP structures installation with the equipment supplied to achieve the proper structural top slab openings, spacings, and related dimensions for the selected equipment frames and covers. The top slabs, frames, covers, and subsurface FRP structures shall be capable of supporting the overburden plus a live load equivalent to AASHTO H-20 loading.
- F. All Fiberglass Reinforced Plastic (FRP) elements shall be manufactured at an existing plant. The manufacturer of these elements must submit for approval by the A/E a record of his work for the last five years to substantiate that he has successfully manufactured fiberglass reinforced plastic (FRP) wet wells, not just

- underground tanks, and that he is capable of and has the organization and plant facilities for performing the work and of maintaining the protection output required.
- G. One manufacturer will supply all FRP tanks and FRP elements required.
- H. Earth excavation and backfill are specified elsewhere, but are to be done as part of the work under this Section, including any necessary sheeting and bracing. The Contractor shall be responsible for handling ground water to provide firm, dry subgrade for the structure, shall prevent water rising on new poured in place concrete or grouted joint sections within 24 hours after placing, and shall guard against flotation or other damage resulting from ground water or flooding.
- I. A minimum layer of bedding material, as shown on the Drawings, shall be placed as a foundation for the wet well base slabs.
- J. Backfill material around the wet wells and piping shall be selected material as specified elsewhere.
- K. The station base foundation shall not be cast into the excavation until the installation procedure and excavation have been approved by the A/E.
- L. The base of cast-in-place concrete, as specified in these Specifications, shall be placed on a thoroughly compacted subbase. The bottoms of the FRP sections shall be adjusted in grade so that the top slab section is at the approximate correct elevation.
- M. The selected FRP manufacturer's specifications must be adhered to in installation to assure the wet well will perform as design.
- N. The FRP wet wells may not be lifted with any concrete slabs attached.
- O. Cutouts may be made in the FRP wet well using a circular saw, saber saw, or similar equipment with a masonry-type blade. Axes, hammers, chisels, or similar impact type of tools may not be used.
- P. All FRP wall inserts and FRP sleeves for pipe shall be made as shown on the Drawings and in accordance with the manufacturer's FRP specifications for installation.

# 3.2 Handling and Storage Requirements:

- A. FRP wet wells may be lifted by the installation of three lifting lugs, as specified by the manufacturer, on the outside surface near the top or by a line or "choker" connection around the center. Use of chains or cables in contact with the wet well surface is prohibited. Wet wells may be lifted horizontally using one support point.
- B. FRP wet wells may be stored upright or horizontally. When stored and stacked horizontally the wet well vertical deflection should not exceed 4% of the diameter. The wet well shall not be dropped or impacted.
- C. Additional handling and installation instructions shall be in accordance with the FRP manufacturer's instructions.

D. Each FRP section, manufactured in accordance with the Drawings, shall be clearly marked to indicate the intended pump station installation location. The contractor shall be responsible for the installation of the correct FRP sections in their designed pump station locations.

SECTION 03600: GROUT

## PART 1: GENERAL

- 1.1 Related Requirements: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: Furnish all labor, materials, equipment and incidentals required to grout the areas indicated on the Drawings, or as specified. Unless otherwise specified, all grouting shall be done with non-shrinking grout.

#### PART 2: PRODUCTS

- 2.1 Non-shrinking Grout: Non-shrinking grout shall be Master Builders "Masterflow LL-713 Grout", Sauereisen Cements "F-100 Level Fill Grout", U. S. Grout "Five Star Grout", USM "Upcon", or equal.
- 2.2 Water shall be clean and free from deleterious substances.

# PART 3: EXECUTION

- 3.1 General: Non-shrinking grout shall be furnished factory premixed so only water is added at jobsite. Grout shall be mixed in a mechanical mixer. Mix grout in strict accordance with manufacturer's recommendations.
- 3.2 Preparation: The concrete foundation to receive nonshrinking grout shall be saturated with water 24 hours prior to grouting.
- 3.3 Placement: Grout shall be placed in strict accordance with the directions of the manufacturer so all spaces and cavities are completely filled without voids. Forms shall be provided where structural components will not confine the grout.
- Edge Finishing: The grout shall be finished smooth in all locations where the edge of the grout will be exposed to view after it has reached its initial set. Except where shown to be finished on a slope, the edges of grout shall be cut off flush at the baseplate, bedplate, member, or piece of equipment.
- 3.5 Curing: Non-shrinking grout shall be protected against rapid loss of moisture by covering with wet rags or polyethylene sheets. After edge finishing is completed, the grout shall be wet cured for at least 7 days.

SECTION 05120: STRUCTURAL STEEL

## PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: Furnish all necessary materials, labor and equipment for the complete installation of structural steel framing members, support members, sag rods, struts, secondary framing, base plates, and steel stud connectors, as shown on the drawings and specified herein. Provide all necessary supplementary items for a complete installation intended by documents.
- 1.3 Reference Standards: All structural steel shall conform to the latest revised edition of the "Specifications for the Design", Fabrication and Erection of Structural Steel for Building as adopted by the American Institute of Steel Construction.
- 1.4 Submittals: Submit detailed shop drawings showing the layout, sizes, connections, arrangements, etc. for all structural steel. Submit in accordance with requirements of Division 1.
- 1.5 Storage of Materials: Store steel above ground on suitable supports and keep free of foreign material and corrosion as far as practicable.

#### PART 2: PRODUCTS

# 2.1 Materials:

- A. Structural Steel, Shapes, Plates, Etc.: ASTM A 36 structural steel.
- B. Bolts for Structural Steel Connections: ASTM A 325 high strength bolts, except where noted otherwise.
- C. Welding Electrodes: Grade SAW-1 for submerged arc welding and E70 series electrodes for manual arc welding. All electrodes shall be in accordance with ASTM A 233.
- D. Primer Paint: Tnemec 99-G, Heavy Duty RIP 0900 by Southern Coating, Industrial H-1010, minimum dry film thickness of 2.4 mils.
- E. Grout: Embeco premixed grout as manufactured by Master Builders Co., Gifford-Hill Supreme Grout, or approved equal.

### 2.2 Fabrication:

A. Fabricate structural steel in accordance with AISC Specifications Structural Steel for Buildings and Architecturally Exposed Structural Steel as applicable.

- B. The Drawings show general details of connections including the bolting and/or welding required for such connections. Special connections shall be worked out with the Architect/Engineer. For connections not detailed, the Contractor shall design the beam connection for one half the total load for the given span length tabulated in the tables for "Allowable Loads on Beams," AISC Manual of Steel Construction for the given shapes. All connections shall be in accordance with the latest AISC Specification and subject to A/E's approval.
- C. No splices allowed except where shown on Drawings.
- D. Paint erection marks on all structural members.
- E. Provide all necessary erection clips, angles, seats, etc., to properly erect structural steel.
- Welding shall be in accordance with the requirements of the American Welding Society with all possible welding performed in the shop.
- G. Provide one shop coat of primer paint to all structural members, connectors, angles, etc.

## PART 3: EXECUTION

- 3.1 Examination: Erector shall verify in writing to A/E that field conditions are acceptable and are ready to receive work. List all discrepancies and non-conforming items found in field. Do not proceed with work affected by these items until directives for corrective actions are issued by the A/E.
- 3.2 Erection of Structural Steel:
  - A. Erect structural steel in accordance with AISC Specifications Structural Steel for Buildings and Architecturally Exposed Structural Steel as applicable.
  - B. Provide the false work, temporary bracing, and all tools, machinery and appliances, including drift pins and fitting-up bolts necessary for the expeditious handling of the work. False work and temporary bracing shall be properly designed and substantially constructed and maintained for the loads which will come upon it and shall remain in place until all permanent bracing is in place, all connections bolted and/or welded and all roof decks placed.
  - C. The structural systems and the individual structural members are designed to be self supporting only after all structural members are connected in place and decks placed. Provide for erection loads, and sufficient temporary bracing to maintain structure safe, plumb, and in true alignment until completion of erection and installation of permanent bracing.
  - D. The correction of minor misfits involving non-harmful amounts of reaming, cutting and chipping will be considered a legitimate part of the erection. However, any error in the shop fabrication or deformation resulting from handling and transportation which prevents the proper assembling and fitting-up of parts by the moderate use of drift pins or by a moderate amount of reaming and slight chipping or cutting shall

be reported immediately to the A/E and approval of the method of correction obtained. The Contractor shall be responsible for all misfits, errors, and injuries and shall make the necessary corrections and replacements.

- E. Erection and handling of all steel shall be performed under the supervision of an experienced skilled foreman.
- F. Position, plumb, and level individual pieces of structural steel so as not to have an error exceeding 1/4 inch and the overall structure is to be within the tolerance allowed by the AISC Specification.
- G. Finished members shall be true to line and free from twists, bends and open joints.
- H. Set base plates in accordance with details shown on the Drawings and grout. Use of wedges other than steel is not permitted.
- I. Do not field cut or alter structural members without documented approval of A/E.

# 3.2 Quality Control:

- A. Testing agency may be selected and compensated by the Owner.
- B. Testing agency (if selected by Owner) shall perform the following:
  - 1. Qualification of field high-strength bolted and welding procedures and personnel.
  - 2. Inspection of erected structural steel work for conformance with the requirements specified.
- C. Inspection of field assembled high strength bolted construction shall be in accordance with Section 6, AISC Specification for Structural Joints.
- D. Inspection of field welds shall be in accordance with Section 6 of AWS Building Code, visual and radiographic.
- E. Rework joints and connections that do not meet specified requirements and retest until requirements are met. All such retesting shall be paid for by the Contractor.

# 3.3 Field Painting:

- A. Field painting below is specifically excluded from this Section and is included under the Painting Section.
- B. After erection, remove all rust spots and then touch-up and clean surface, as well as all damaged spots, bolts, etc., with one coat of the same material as shop coat.
- C. Paint and touch up all structural steel to remain exposed as specified above, after which, apply a full field coat of the same kind of paint.
- D. Refer to Painting Section for finish coats on exposed surfaces.

\* \* \*

### **SECTION 09800**

## PROTECTIVE COATINGS

## PART 1 – GENERAL

#### 1.01 SCOPE OF WORK

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 DELIVERY AND STORAGE

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

#### 1.03 SUBMITTALS

- A. The Contractor shall submit manufacturer's literature for each product to be used giving the name, generic type, descriptive information and evidence of satisfactory past performance. Submittals shall include 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. Upon completion of installation, the Contractor shall submit written certification from the manufacturer that all work has been performed within the limits prescribed by the manufacturer.

#### **PART 2 - PRODUCTS**

#### 2.01 COLORS

- A. Colors, where not specified, shall be as selected by the Engineer. The Contractor shall furnish color chips for each protective coating system for review and selection.
- B. Safety Color Code for Marking Physical Hazards. The safety color selected for the marking of physical hazards and safety, fire fighting and protection equipment shall be in accordance with OSHA 1910.144.

## 1. Safety Color Selection

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

olor Standard
lue 15120
irple 17142
hite 17875
lack 17038

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

## 2.02 COATING SCHEDULE

- A. Interior of Existing Concrete Structures:
  - 1. Structures that hold liquids or are subject to corrosive gases and liquids: Buried concrete or brick structures holding liquids such as manholes.
  - 2. Application procedures shall conform to recommendations of the manufacturer, including materials handling, mixing, environmental controls during application, safety and spray equipment.
  - 3. Hydrogen Sulfide Resistant Cementitious Modified Silica Mortar and Amine Cured Epoxy Coating (Dinjer CMS 10-K and SG Mastic, or equal)
    - a. Surface Preparation: The use of high pressure water cleaning, hydro blasting, abrasive blasting, grinding and detergent water cleaning shall conform to manufacturer's recommendations. All surface defects repair materials and procedures shall conform to manufacturer's recommendations.
    - b. Cementitious Mortar (Dinjer CMS-10K, or equal)
      - 1) Quick setting, high strength, sulfide resistant, calcium aluminate-based or Portland cement material.
      - 2) Suitable for troweling or rotary spray application to inside of manhole.
      - 3) Applied thickness ½" minimum, or greater as shown on the Drawings.

- 4) Use additives to increase corrosion resistance or bond strength at manufacturer's direction and with Engineer's approval.
- 5) Density when applied: 135 lb./cf. + -5 lb./cf.
- 6) Compressive strength(ASTM C109) at 1 day Minimum acceptable:2,000 psi.
- 7) Compressive strength(ASTM C109) at 28 days Min. acceptable:5,500 psi.
- 8) Bond Strength (ASTM C882) at 28 days minimum acceptable: 1,640 psi.
- 9) Flexural Strength (ASTM C78) at 28 days minimum acceptable: 1,500 psi.
- 10) Shrinkage (ASTM C596) at 28 days: 0 percent.
- c. Amine Epoxy Lining (Dinjer SG Mastic, or equal)
  - 1) Final installation shall be a minimum of 100 mils at 16 square feet per gallon minimum.
  - 2) Compressive strength(ASTM D-695) at 1 day Min. acceptable:12,000 psi.
  - 3) Compressive strength(ASTM D-695) at 7 days Min. acceptable:13,000 psi.
  - 4) Bond Strength (ASTM C882) at 14 days minimum acceptable: 3,000 psi.
  - 5) Flexural Strength(ASTM D-790) at 28 days minimum acceptable:13,000 psi.
- B. Ferrous Metal Surfaces Exterior Environment (UV exposure)
  - 1. Surface Preparation for Carbon Steel: SSPC-SP6/NACE 3 Commercial Blast Cleaning.
  - 2. Surface Preparation for Cast Iron & Ductile Iron: Clean as required to remove all soluble surface contaminants. Abrasive blast all surfaces to be coated in accordance with NAPF 500-03-04 to remove all insoluble surface contaminants and to achieve a minimum surface profile of 1.5 mils.

## 3. Coating System

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

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

### B. Ferrous Metal Surfaces - Corrosive Gas or Immersion Environment

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

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

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

#### 2.03 PERFORMANCE REQUIREMENTS

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

- 1) Minimum Solids per Gallon: 67.0 +/- 2.0%
- 2) Abrasion: No more than 115 mg loss after 1000 cycles (ASTM D 4060, CS-17 Wheel, 1,000 grams load)
- 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 75oF 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: 100.0 +/- 2.0%
- 2) Abrasion: No more than 116 mg loss after 1000 cycles (ASTM D 4060, CS-17 Wheel, 1,000 grams load)

- 3) UV Resistance: No blistering, cracking, or chalking of the film, and no less than 64% gloss retention (33 units gloss change), after 7000 hours exposure (ASTM D 4587, UVA-340 bulbs, Cycle 4: 8 hours UV/4 hours condensation).
- 4) HumidityResistance: No blistering, rusting, cracking, or delamination of the film after 2,500 hours exposure (ASTM D 4585).
- 5) 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 tough-up, then the item shall be re-cleaned and coated or painted as directed by the Engineer.

- G. The Contractor's coating and painting equipment shall be designed for application of materials specified and shall be maintained in first class working condition. Compressors shall have suitable traps and filters to remove water and oils from the air. Contractor's equipment shall be subject to approval of the Engineer.
- H. Application of the first coat shall follow immediately after surface preparation and cleaning and within an eight-hour working day. Any cleaned areas not receiving first coat within eight-hour period shall be re-cleaned prior to application of first coat.
- I. Prior to assembly, all surfaces made inaccessible after assembly shall be prepared as specified herein and shall receive the coating or paint system specified.
- J. Coatings shall be applied during good painting and coating weather. Air and surface temperatures a well as dew point shall be within limits prescribed by the manufacturer for the coating being applied and work areas shall be reasonably free of airborne dust at the time of application and while coating is drying.
- K. Field touch up painting shall be required on scratched or damaged surfaces.

#### 3.02 SURFACE PREPARATION

- A. The latest revision of the following surface preparation specifications of the Steel Structures Painting Council (SSPC) shall form a part of this specification.
  - 1. Solvent Cleaning (SSPC SP): Removal of oil, grease soil and other contaminant 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  $1 \frac{1}{2} 2 \text{ mil } (37.5 \text{ microns} 50.0 \text{ microns})$  surface profile or in accordance with recommendations of the manufacturer of the specified coating or paint system to be applied.
- E. Abrasive used in blast cleaning operations shall be new, washed, graded, and free of contaminants that would interfere with adhesion of coating or paint and shall not be reused unless specifically approved by the Engineer.
- F. Surface preparation will be based upon comparison with: "Pictorial Surface preparation Standards for Painting Steel Surfaces", SSPC-Vis 1 ASTM Designation D220; "Standards Methods of Evaluation Degree of Rusting on Painted Steel Surfaces", SSPC-Vis-2 ASTM Designation D610; "Visual Standard for Surfaces of New Steel Air blast Cleaned with Sand Abrasive".
- G. During blast cleaning operations, caution shall be exercised to insure that existing coatings or paint are not exposed to abrasion from blast cleaning.
- H. The Contractor shall keep the area of his work in a clean condition and shall not permit blasting materials to accumulate as to constitute a nuisance or hazard to the prosecution of the work or the operation of the existing facilities.
- I. Blast cleaned surfaces shall be cleaned prior to application of specified coatings or paint. No coatings or paint shall be applied over damp or moist surfaces.

## 3.03 APPLICATION

A. Coating and paint application shall conform to the requirements of the Steel Structures Painting Council Paint Application Specification SSPC-PA latest

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

#### 3.04 ACCEPTANCE OF WORK

- A. All surface preparation and repairs shall be approved by the Engineer/Owner before primer is applied.
- B. The Contractor shall request and receive acceptance of each coat before applying next coat.
- C. The Contractor shall correct work that is not acceptable and request reinspection.
- D. Thickness of coatings and or the paint shall be checked with a non-destructive, magnetic type thickness gauge. (Use an instrument such as a Tooke Gauge if a destructive tester is deemed necessary.) Coating integrity of interior coated surfaces shall be tested with approved inspection devices. Holiday detection shall be performed prior to application of aluminum or metallic finish coats. Non-destructive holiday detector shall not exceed 67.5 volts nor shall destructive holiday detector exceed the voltage recommended by the manufacturer of the coating system. For thicknesses between 10 and 20 mils (250 microns and 500 microns) a non-sudsing type setting agent, such as Kodak Photo-Flo, shall be added to the water and detector sponge prior to detector use. All pinholes shall be marked and repaired in accordance with the manufacturer's printed recommendations and retested. No pinholes or other irregularities shall be permitted in the final coating.
- E. The Contractor shall furnish, until final acceptance of coating and painting, inspection devices in good working condition for detection of holidays and measurement of dry-film thickness of coating and paint. The Contractor shall also furnish U.S. Department of Commerce, National Bureau of Standards certified thickness calibration plates to test accuracy of dry-film thickness gauge and certified instrumentation to test accuracy of holiday detectors.
- F. The Contractor shall require regular checks with these devices to insure dry-film thicknesses meet specifications. The Engineer shall at his discretion use the Contractors or his own equipment to perform similar inspections.
- G. Dry-film thickness gauges and holiday detectors shall be made available for the Engineer's use at all times until final acceptance of application. Holiday detection device shall be operated in the presence of the Engineer.
- H. Concrete surfaces in immersion service must have void and pinhole-free coating application. Inspection of coating system with 5X magnification will provide these assurances.
- I. Warranty inspection shall be conducted during the eleventh month following completion of all coating and painting work. All defective work shall be repaired in accordance with this specification and to the satisfaction of the Engineer/Owner.

- J. In accordance with requirements set forth by regulatory agencies applicable to the construction industry and manufacturer's printed instructions and appropriate technical bulletins and manuals, the Contractor shall provide and require use of personnel protective lifesaving equipment for persons working in, or about the project site.
- K. Equipment shall include protective helmets that shall be worn by all persons while in the vicinity of the work. In addition, workers engaged in or near the work during sandblasting shall wear eye and face protection devices and air purifying, half-mask or mouthpiece respirator with appropriate filter. Barrier creams shall be used on any exposed areas of skin.
- L. Where ventilation is used to control hazardous exposure, all equipment shall be explosion proof. Ventilation shall reduce the concentration of air contaminant to the degree a hazard does not exist. Air circulation and exhausting of solvent vapors shall be continued until coatings have fully cured.
- M. Whenever the occupational noise exposure exceeds maximum allowable sound levels, the Contractor shall provide and require the use of approved ear protective devices.
- N. Adequate illumination shall be provided while work is in progress, including explosion-proof lights and electrical equipment. Whenever required by the Engineer, the Contractor shall provide additional illumination and necessary supports to cover all areas to be inspected. The level of illumination for inspection purposes shall be determined by the Engineer.
- O. All temporary ladders and scaffolding shall conform to applicable safety requirements. They shall be erected where requested by the Engineer to facilitate inspection and be moved by the Contractor to locations requested by the Engineer.
- P. All coatings and paints shall be stored in enclosed structures to protect them from weather and excessive heat or cold. Flammable coatings or paint must be stored to conform to City, Parish, State, and Federal safety codes for flammable coating or paint materials. At all times, coatings and paints shall be protected from freezing.

#### 3.05 CLEAN UP

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

SECTION 15062: DUCTILE IRON PIPE AND FITTINGS (FOR MECHANICAL WORK)

## PART 1: GENERAL

1.1 Related Documents: The general provision of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.

# 1.2 Scope of Work:

- A. Furnish all labor, materials, equipment, and incidentals required and install, in the locations inside buildings and structures as shown on the Drawings, all ductile iron piping, cast iron fittings, and appurtenances as specified herein. Buried piping is included in Division 2.
- B. Provide ductile iron pipe as shown on the Drawings. All interior flange pipe shall be ductile iron pipe unless otherwise noted.
- Qualifications: All of the ductile-iron pipe and cast-iron fittings shall be furnished by manufacturers who are fully experienced, reputable, and qualified in the manufacture of the materials to be furnished. The pipe and fittings shall be designed, constructed, and installed in accordance with the best practices and methods and shall comply with these Specifications as applicable.

## 1.4 Submittals:

- A. Submit to the A/E within ten (10) days after execution of the Contract a list of materials to be furnished, the names of the suppliers, and the date of delivery of materials to the site.
- B. All ductile-iron pipe and cast-iron fittings to be installed under this Contract shall be inspected and tested at the foundry as required by the standard specifications to which the materials are manufactured. Furnish in duplicate to the A/E sworn certificates of such tests and their results. In addition all ductile-iron pipe and cast-iron fittings to be installed under this Contract may be inspected at the foundry for compliance with these Specifications by an independent testing laboratory selected by the Owner. The manufacturer's cooperation shall be required in these inspections. The cost of the foundry inspection of all pipe approved for this Contract, plus the cost of inspection of a reasonable amount of the disapproved pipe, will be borne by the Owner.
- C. Shop Drawings including layouts within buildings and structures shall be submitted to the A/E for approval in accordance with Division 1 and shall include dimensioning, methods and locations of supports and all other pertinent technical specifications for all piping to be furnished.

## PART 2: PRODUCTS

## 2.1 Materials:

- A. Ductile-iron pipe shall conform to current ANSI requirements.
  - 1. Flanged ductile-iron pipe shall conform to current ANSI Specification A21.15 with factory applied screwed long hub flanges except as otherwise specified hereinafter. Flanges shall be faced and drilled after being screwed on the pipe, with flanges true to 90 degrees with the pipe axis and shall be flush with end of pipe conforming to ANSI B16.1, 1255 pound standard.
  - 2. Pipe for use with split-type flexible coupling joints shall have radius grooved ends.
  - 3. Fittings shall be cast-iron as specified herein. Flanges and flanged fittings shall be flat face and shall conform to ANSI A21.10 for 150 psi pressure rating. Full face type 1/16-inch thick rubber ring gaskets shall conform to AWWA CIII.
  - 4. Pipe thickness classes shall be a minimum of Class 53 for all sizes of pipes.
  - 5. Except as otherwise shown on the Drawings, either split type coupling or flange joints shall be used. Prior to commencing work systems for pipe shall be submitted to the A/E for approval.
  - 6. Pipe and fittings shall be standard thickness lined with Protecto 401 Ceramic Epoxy. Ring gaskets shall be of approval composition suitable for the required service.
  - 7. Pipe and fittings exposed to view in the finished work shall not receive the standard tar or asphalt coat on the outside surfaces but shall be shop primed on the outside with one coat of Koppers No. 621 Rust Inhibitive Primer or approved equal. All other pipe and fittings shall be shop coated on the outside with Koppers Bitumastic 300M coal tar enamel 16 mils thick dry film thickness and will not require any other coating. Should portions of the pipe inadvertently be given the outside coating of coal tar enamel instead of the rust inhibitive primer as required for exposed piping, the surfaces shall be sealed with a non-bleeding sealer coat such as Inertol Tar Stop, or Mobil Anti-Bleeding Aluminum Sealer. Sealing shall be a part of the work in this Section.
  - 8. Bolts and nuts on flanged fittings shall be Grade B, ASTM A-307, cadmium plated and conform to ANSI B16.1 for Class 125.
  - 9. Split Type Couplings:
    - a. Split type couplings shall be of the mechanical type designed to engage and lock grooved pipe ends in a positive connection.

- b. Couplings shall consist of ductile iron, ASTM Specification A536 housing clamps in two or more parts, a single chlorinated butyl composition sealing gasket with a "C" shaped cross-section and internal sealing lips projecting diagonally inward, and two or more oval track head type bolts with hexagonal heavy nuts conforming to ASTM Specification A183 and A194 to assembly the housing clamps. Bolts and nuts shall be cadmium plated. Housings shall be furnished with an enamel-coating. Split type couplings shall be equal to Coupling Style 31 as manufactured by the Victaulic Company of America. Couplings shall be suitable for both rigid joint grooves and flexible joint grooves.
- c. Pipe ends for use with split type couplings shall have radius grooved ends to provide either a rigid joint or flexible joint in the locations shown on the Drawings or as specified herein. Groove dimensions and tolerances shall fully conform to the coupling manufacturer's specifications.
- d. Flexible joint grooving shall permit expansion and contraction, and angular deflection. Rigid joint grooving shall allow no angular or linear movement.
- e. Split type couplings may be used in lieu of flanged connections however, the location and the number and type of joints shall be subject to the approval of the A/E.
- f. Flanged adapter connections at fittings, valves, and equipment shall be Vic-Flange Style 341 as manufactured by the Victaulic Company of America, or approved equal.
- 10. Wall castings shall be of the sizes and types as shown on the Drawings. Flanges and/or mechanical joints bells shall be drilled and tapped for studs where flush with the wall.
- 11. Wall castings shall be provided with an intermediate wall collar. The collar shall be located at the center of the overall length of casting for castings set flush with the wall. For castings which extend through the wall, the collar shall be located such that it is at least 3-inches into the wall. Collars shall either be cast integrally with the casting or shall be the assembled type as manufactured by U.S. Pipe and Foundry Company, consisting of two (2) mechanical joint retainer glands with gasket.
- 12. Base bends and base tees shall have machined and drilled bases.
- 13. Filler flanges and beveled filler flanges shall be furnished and installed as required. Filler flanges and beveled filler flanges shall be furnished faced and drilled complete with extra length bolts. Filler flanges shall be equal to Clow Fig. F-1984 and

- beveled filler flanges shall be equal to Clow Fig. F-1986.
- 14. Sleeves for pipe passage through floors and wall shall be galvanized Schedule 40 steel pipe. Sleeves dimensions shall conform to the details shown on the Drawings. Sleeve ends shall be cut and ground smooth. Sleeves shall be flush with walls and ceilings but shall extend above the floor as shown on the Drawings. Sleeves for use with mechanical type wall seals shall be sized in conformance with the seal manufacturers requirements. Mechanical type wall seals are specified elsewhere in these specifications.

## PART 3: EXECUTION

# 3.1 Handling Pipe and Fittings:

- A. Care shall be taken in loading, transporting, and unloading to prevent injury to the pipe or coatings. Pipe or fittings shall not be dropped. All pipe or fittings shall be examined before installation, and no piece shall be installed which is found to be defective. Any damage to the pipe coatings shall be repaired as directed by the A/E.
- B. All pipe and fittings shall be subjected to a careful inspection and hammer test just prior to being installed.
- C. If any defective pipe is discovered after is has been laid it shall be removed and replaced with a sound pipe in a satisfactory manner at no additional expense to the Owner. All pipe and fittings shall be thoroughly cleaned before laying, shall be kept clean until they are used in the work, and when installed or laid, shall conform to the lines and grades required.

# 3.2 Installing Interior Ductile-Iron Pipe and Fittings:

- A. All piping and fittings shall be installed true to alignment and rigidly supported thrust anchors shall be provided where required. Any damage to linings shall be repaired to the satisfaction of the A/E before the pipe is installed. Each length of pipe shall be cleaned out before erection.
- B. Sleeves shall be installed of proper size for all pipes passing through floor or walls as shown on the Drawings. Where indicated on the Drawings or required for liquid or gas-tightness, the pipe shall be sealed with a mechanical seal equal to Link-Seal as manufactured by Thunderline Corp., Wayne, Michigan.
- C. Concrete inserts for hangers and supports shall be furnished and installed in the concrete as it is placed. The inserts shall in accordance with the requirements of the piping layout and jointing method, and their locations shall be verified from approved piping layout drawings and the structural drawings. Pipe hangers and supports are specified elsewhere in these specifications.
- D. Except as otherwise shown on the Drawings, either split type couplings or flange joints may be used. Prior to approval of jointing,

method layouts for hanger and supports shall be submitted to the A/E for approval.

- E. Flanged joints shall be made with bolts, bolt studs with a nut on each end, or studs with nuts where the flange is tapped. The number and size of bolts shall conform to the same American Standard as the flanges. Bolts and nuts shall, except, as otherwise specified or noted on the drawings, be Grade B conforming to the ASTM Standard Specification for Low-Carbon Steel, Externally and Internally Threaded Standard Fasteners, Designation A307-68. Bolt studs and studs shall be of the same quality as machine bolts. Gaskets shall be ring gaskets of rubber with cloth insertion. Gaskets, 12-inches in diameter and smaller, shall be 1/16-inch thick; larger than 12-inches in diameter shall be 3/32-inch thick.
- F. Prior to assembly of split couplings, the grooves as well as other parts shall be thoroughly cleaned. The ends of the pipes and outside of the gaskets shall be moderately coated with petroleum jelly, cup grease, soft soap, or graphite paste, and the gasket shall be slipped over the pipe end. After the other pipe has been brought to the correct position, the housing sections then shall be placed. After the bolts have been inserted, the nuts shall be tightened until the housing sections are firmly in contact, metal-to-metal, without excessive bolt tension.
- G. All valves, fittings, equipment, and appurtenances needed upon the pipelines shall be set and jointed as indicated on the Drawings or as required. Valves and appurtenances are included elsewhere in these Specifications. All pipe and appurtenances connected to equipment shall be supported in such a manner as to prevent any strain being imposed on the equipment. When manufacturers have indicated requirements that piping loads shall not be transmitted to their equipment, a certification shall be submitted stating that such requirements have been complied with.
- Testing: After installation, all interior ductile-iron piping shall be tested at least 4 hours at 1.2 times the design working pressure for the class of pipe, unless a different test pressure is specified after installation. If any joint or pipe section proves to be defective, it shall be repaired to the satisfaction of the A/E.
- Surface Preparation and Painting: All piping and fittings exposed to view shall have the surface prepared and painted as specified in Division 9. Surface preparation and shop priming is a part of the work of this Section. Pipe marking is included in Division 9, but it shall be part of the work of this Section to assist, as required by the A/E, in identifying pipe contents, direction of flow, and all else required for proper marking of pipe.

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## SECTION 15094: PIPE HANGERS AND SUPPORTS

#### PART 1 GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: Furnish all labor, materials, equipment, and incidentals and install pipe hangers, supports, concrete inserts, and anchor bolts including all metallic hanging and supporting devices for supporting exposed piping.

#### 1.3 Qualifications:

- A. Hangers and supports shall be of approved standard design where possible and shall be adequate to maintain the supported load in proper position under all operating conditions. The minimum working factor of safety for pipe supports shall be five (5) times the ultimate tensile strength of the material, assuming 10 feet of water filled pipe being supported.
- B. All pipe and appurtenances connected to equipment shall be supported in such a manner as to prevent any strain being imposed on the equipment. When manufacturers have indicated requirements that piping loads shall not be transmitted to their equipment, the Contractor shall submit a certification stating that such requirements have been complied with.

## 1.4 Submittals:

- A. Submit to the A/E for approval, as provided in Division 1, shop drawings of the all items to be furnished under this Section.
- B. Submit to the A/E, for approval, samples of all materials specified herein.

## PART 2: PRODUCTS

#### 2.1 General:

- A. All pipe and tubing shall be supported as required to prevent significant stresses in the pipe or tubing material, valves, and fittings and to support and secure the pipe in the intended position and alignment. All supports shall be designed to adequately secure the pipe against excessive dislocation due to thermal expansion and contraction, internal flow forces, and all probable external forces such as equipment, pipe, and personnel contact. All pipe supports shall be approved prior to installation.
- B. All materials used in manufacturing hanger and supports shall be capable of meeting, the respective ASTM Standard Specifications

- with regard to tests and physical and chemical properties, and be in accordance with MSS SP-58.
- C. Hangers and supports shall be spaced in accordance with ANSI B31.1.0 except that the maximum unsupported span shall not exceed 10 feet unless otherwise specified herein.
- D. Unless otherwise specified herein, pipe hangers and supports shall be as manufactured by Grinnell Co., Inc., Carpenter and Patterson, Inc., or equal. Any reference to a specific figure number of a specific manufacturer is for the purpose of establishing a type and quality of product and shall not be considered as proprietary. Any item comparable in type, style, quality, design and performance will be considered for approval.

# 2.2 Pipe Hangers and Supports for Metal Pipe:

- A. Suspended single pipes shall be supported by hangers suspended by steel rods from galvanized concrete inserts, beam clamps, or ceiling mounting bolts as follows:
  - 1. Hangers

Grinnell Fig. No.
138R
97C
104
590
171

2. Hanger rods shall be rolled steel machine threaded with load ratings conforming to ASTM Specifications and the strength of the rod shall be based on root diameter. Hanger rods shall have the following minimum diameters.

Pipe Size, inches	Min. Rod Diameter, in.
Less than 2-1/2	3/8
2-1/2 through 4	1/2
4	5/8
6	3/4
8 - 12	7/8
14 - 18	1
20 - 30	1-1/4

- 3. Where applicable, structural attachments shall be beam clamps. Beam clamps, for rod sizes 1/2-inch through 3/4-inch shall be equal to Grinnell Fig. No. 229, and for rod sizes 7/8-inch through 1-1/4 inches shall be equal to Grinnell Fig. No. 228 or equal.
- 4. Concrete inserts for pipe hangers shall be, continuous metal inserts designed to be used in ceilings, wall or floor, spot inserts for individual pipe hangers, or ceiling mounting bolts for individual pipe hangers and shall be as manufactured by Unistruct Corp., Wayne, Michigan, Carpenter and Patterson,

Inc., Laconia, New Hampshire or equal and shall be as follows:

- a. Continuous concrete inserts shall be used where applicable and/or as shown on the sizes up to and including 3/4-inch diameter. Inserts to be used where supports are parallel to the main slab reinforcement shall be Series P3200 by Unistruct Corp., Fig. 1480 Type 21 by Carpenter and Patterson, Inc. or equal. Inserts to be used where supports are perpendicular to the main slab reinforcement shall be Series P3300 by Unistruct Corp., Fig 1480 Type I by Carpenter and Patterson, Inc., or equal.
- b. Spot concrete inserts shall be used where applicable and shall be used for hanger sizes up to and including 7/8-inch diameter. Inserts shall be Fig. 650 by Carpenter and Patterson, Inc. for hanger rod sizes 1/2-inch through and including 3/4-inch, and Fig. 266 by Carpenter and Patterson Inc., for 7/8-inch hanger rods.
- c. Ceiling mounting bolts shall be used where applicable and be for hanger rod sizes 1-inch through and including 1-1/4 inches and shall be Fig. 104M as manufactured by Carpenter and Patterson, Inc., or equal.
- 5. All pipe hangers shall be capable of vertical adjustment under load and after erection. Turnbuckles, as required and where applied, shall be equal to Grinnell Fig. No. 230.
- B. Wall or column supported pipes shall be supported by welded steel brackets equal to Grinnell Fig. 194, 195, and 199 as required, for pipe sizes up to and including 20-inch diameter. Additional wall bearing plates shall be provided where required.
  - 1. Where the pipe is located above the bracket, the pipe shall be supported by an anchor chair and U-bolt assembly supported by the bracket for pipes 4-inches and larger and by a U-bolt for pipes smaller than 4-inches. Anchor chairs shall be equal to Carpenter & Patterson Fig. No. 127. U-bolts shall be equal to Grinnell Fig. 120 and 137.
  - 2. Wall or column supported pipes 2-inches and smaller may be supported by hangers equal to Carpenter & Patterson Figures 74, 179, or 237 as required.
- C. Floor supported pipes 3-inches and larger in diameter shall be supported by either cast-in-place concrete supports or adjustable pipe saddle supports as directed by the A/E. In general, concrete supports shall be used when lateral displacement of the pipes is probable (unless lateral support is provided), and adjustable pipe saddle type supports shall be used where lateral displacement of the pipes is not probable.

- 1. Each concrete support shall conform to the details shown on the Drawings. Concrete shall be poured after the pipe is in place with temporary supports, top edges and vertical corners of each concrete support shall have 1-inch bevels. Each pipe shall be secured on each concrete support by a wrought iron or steel anchor strap anchored to the concrete with cast-in-place bolts or with expansion bolts. Where directed by the A/E, vertical reinforcement bars shall be grouted into drilled holes in the concrete floor to prevent overturning or lateral displacement of the concrete support. Unless otherwise approved by the A/E, maximum support height shall be five (5) feet.
- Concrete piers used to support base elbows and tees shall be similar to that specified above. Piers may be square or rectangular.
- 3. Each adjustable pipe saddle support shall be screwed or welded to the corresponding size 150 lb. companion flanges or slip-on welding flanges, respectively. Supporting pipe shall be of Schedule 40 steel pipe construction. Each flange shall be secured to the concrete floor by a minimum of two (2) expansion bolts per flange. Adjustable saddle supports shall be equal to Grinnell Fig. No. 264. Where used under base fittings, a suitable flange shall be substituted for the saddle.
- 4. Floor supported pipes less than 3-inches shall be supported by fabricated steel supports.
- D. Vertical piping shall be supported as follows:
  - 1. Where pipe change form horizontal to vertical, the pipes shall be supported on the horizontal runs within 2 feet of the change in direction by pipe supports as previously specified herein.
  - 2. For vertical runs exceeding 15 feet, pipes shall be supported by approved pipe collars, clamps, brackets, or wall rests at all points required to insure a rigid installation.
  - 3. Where vertical piping passes through a steel floor sleeve, the pipe shall be supported by a friction type pipe clamp which is supported by the pipe sleeve. Pipe clamps shall be equal to Grinnell Fig. 262.
- E. Anchor bolts shall be equal to Kwik-Bolt as manufactured by the McCullock Industries, Minneapolis, Minnesota or Wej-it manufactured by Wej-it Expansion Products, Inc., Bloomfield, Colorado.
- F. All rods, hangers, inserts, brackets, and components shall be furnished with galvanized finish.
- 2.3 Pipe Hangers and Supports for Plastic Pipe:
  - A. Single plastic pipes shall be supported by pipe supports as previously specified herein.

- B. Multiple, suspended, horizontal plastic pipe runs, where possible, and rubber hose shall be supported by ladder type cable trays such as the Electray Ladder by Husky-Burndy, the Globetray by the Metal Products Division of United States Gypsum, or equal. Ladder shall be of mild steel construction. Rung spacing shall be approximately 18 inches for plastic pipe and 12 inches for double runs of rubber hose. Ladder type cable trays shall be furnished complete with all hanger rods, rod couplings, concrete inserts, hanger clips, etc. required for a complete support system. Individual plastic pipes shall be secured to the rungs of the cable tray by strap clamps or fasteners equal to Globe Model M-CAS, Husky-Burndy Model SCR or approved equal. Spacing between clamps shall not exceed 9 feet. The cable trays shall provide continuous support along the length of the pipe.
- C. Individual clamps, hangers, and supports in contact plastic pipe shall provide firm support but not so firm as to prevent longitudinal movement due to thermal expansion and contraction.

#### PART 3: EXECUTION

#### 3.1 Installation:

- A. All pipes, horizontal and vertical, shall be rigidly supported from the building structure by approved supports. Supports shall be provided at changes in direction and elsewhere as shown in the Drawings or specified herein. No piping shall be supported from other piping or from metal stairs, ladders, and walkways, unless is so indicated on the Drawings, or specifically directed or authorized by the A/E.
- B. All pipe supports shall be designed with liberal strength and stiffness to support the respective pipes under the maximum combination of peak loading conditions to include pipe weight, liquid weight, liquid movement, and pressure forces, thermal expansion and contraction, vibrations, and all probable externally applied forces. Prior to installation, all pipe supports shall be approved by the A/E.
- C. Pipe supports shall be provided to minimize lateral forces through valves, both sides of split type couplings, and sleeve type couplings and to minimize all pipe forces on pump housings. Pump housing shall not be utilized to support connecting pipes.
- D. Pipe supports shall be provided as follows:
  - 1. Ductile iron shall be supported at a maximum support spacing of 10 feet-0-inches with a minimum of one support per pipe section at the joints.
  - 2. Individually supported PVC pipes shall be supported as recommended by the manufacturer except that the support spacing shall not exceed five (5) feet.
  - All vertical pipes shall be supported at each floor or at intervals of at least 15 feet by approved pipe collars, clamps,

brackets, or wall rests, and at all points necessary to insure rigid construction.

- E. Pipe supports shall not result in point loadings but shall distribute pipe loads evenly along the pipe circumference.
- F. Effects of thermal expansion and contraction of the pipe shall be accounted for in pipe support selection and installation.
- G. Inserts for pipe hangers and supports shall be installed on forms before concrete is poured. Before setting these items, all Drawings and figures shall be checked which have a direct bearing on the pipe location. Responsibility for the proper location of pipe supports is included under this Section.
- H. Continuous metal inserts shall be embedded flush with the concrete surface.

# 3.2 Prime Coating:

- A. Prior to prime coating, all pipe hangers and supports shall be thoroughly clean, dry, and free from all mill-scale, rust, grease, dirt, paint, and other foreign substances to the satisfaction of the A/E.
- B. All submerged pipe supports shall be prime coated with Koppers 654 Epoxy Primer or approved equal. All other pipe supports shall be prime coated with Rustinhibitive Primer No. 621 as manufactured by Koppers Company, Inc., Pittsburgh, PA., or equal.
- C. Finish coating shall be compatible with the prime coating used and shall be applied as specified in Division 9.

\* \* \*

## SECTION 15100: VALVES AND APPURTENANCES

### PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: Furnish all labor, materials, equipment, and incidentals required, and install complete and ready for operation all valves and appurtenances as shown on the Drawings and as specified herein. The equipment shall include, but not be limited to, the following:
  - A. Gate valves (sewerage)
  - B. Gate valves (water)
  - C. Ball valves for P.V.C. pipe
  - D. Check valves
  - E. Eccentric plug valves
  - F. Surge relief valves
  - G. Corporation cocks
  - H. Flexible couplings
  - I. Diaphragm seals
  - J. Unions
  - K. Flap valves
  - L. Pressure gauges
  - M. Quick connect couplings
  - N. Tapping sleeves
  - O. Flow control valves
  - P. Expansion joints
  - Q. Pressure switches
  - R. Air cushioned check valves
- 1.3 Description of Systems: All of the equipment and materials specified herein are intended to be standard for use in controlling the flow of sewage, sludges, water, sludge, chemicals, etc., depending on the applications.
- Qualifications: All of the types of valves and appurtenances shall be products of well established reputable 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.

#### 1.5 Submittals:

A. Submit to the A/E within 30 days after execution of the contract a list of materials to be furnished, the names of the suppliers, and the date of delivery of materials to the site.

- B. Complete shop drawings of all valves and appurtenances shall be submitted to the A/E for approval in accordance with the requirements of these Specifications.
- C. Submit in accordance with requirements of Division 1.
- 1.6 Tools: Special tools, if required for normal operation and maintenance, shall be supplied with the equipment.

## PART 2: PRODUCTS

- 2.1 Materials and Equipment: All valves and appurtenances shall be of the size shown on the Drawings. All equipment of the same type shall be from one (1) manufacturer. All valves and appurtenances shall have the name of the maker and the working pressure for which they are designed cast in raised letters upon some appropriate part of the body. All valves shall be capable of passing three (3") inch (minimum) diameter solids.
  - A. Gate Valves (Sewerage):
    - 1. Gate valves, unless otherwise specified or approved, shall be iron body, bronze mounted, solid wedge gate valves with flanged ends and conforming to the AWWA Standard Specification for Gate Valves for Ordinary Water Works Service, Designation C500 insofar as applicable.
    - 2. Exposed valves shall be outside screw and yoke type, and buried valves shall be non-rising stem.
    - 3. Face to face dimension shall conform to ANSI Standard Face to Face and End to End Dimensions of Ferrous Valves, (ANSI B16.10) for 125 pound cast-iron valves.
    - 4. Bronze gate rings shall be fitted into grooves of dovetail or similar shape in the gates. For grooves or other shapes, the rings shall be firmly attached to the gates with bronze rivets.
    - 5. Handwheels or chain wheels shall be turned counterclockwise to open the valves. Handwheels shall be of ample size and shall have an arrow and the word OPEN cast thereon to indicate the direction of opening.
    - 6. Stuffing box follower bolts and nuts shall be of stainless steel.
    - 7. The design of the valves shall be such as to permit packing the valves without undue leakage while they are wide open and in service. "O-Ring" stuffing boxes may be used.
    - 8. Valves 16 inches or larger shall be provided with bevel or spur gears depending on the position of the main valve as indicated on the Drawings. The gear cases shall be of the extended type to permit repacking the stuffing box of the valve without disassembly. Valves 16 inches or larger, designed to lie horizontally, shall be equipped with rollers or shoes to carry the weight of the wedge throughout its travel.
    - 9. Where indicated on the Drawings or necessary due to location, size, or inaccessibility, chain wheel operators shall be

- furnished with the valves. Such operators shall be designed with adequate strength for the valves with which they are supplied and to provide for easy operation of the valve. Chains for valve operators shall be galvanized.
- 10. Where required, gate valves shall be provided with a box cast in the slab and a box cover. Length of box shall be slab thickness. Box cover opening shall be for valve stem and nut. Valve wrenches and extension stems shall be provided by the manufacturer to actuate the valves. The floor box and cover shall be equal to those manufactured by Rodney Hunt Machine Company, Orange, Massachusetts, Clow, DeZurik, or equal.
- B. Gate Valves (Water): Valves shall be gate valves as manufactured by Mueller, Model #A-2380. Valves shall include valve boxes and concrete valve pads.
- C. Ball Valves for PVC pipe:
  - 1. Ball valves for PVC pipe shall be of PVC Type 1 with union, socket, threaded, or flanged ends, as required. Ball valves shall be full port, full flow, all plastic construction, 150 psi rated with teflon seat seals and T-handles. PVC ball valves shall be as manufactured by Celanese Piping Systems Inc., Wallace and Tiernan Inc., Plastiline, Inc., or equal.
  - 2. All valves shall be mounted in such a position that valve position indicators are plainly visible when standing on the floor.

## D. Check Valves:

- 1. Check valves for cast iron and ductile iron pipelines shall be swing type and shall meet the material requirements of AVWA Specification C508. The valves shall be iron body, bronze mounted, single disc, 150 psi working water pressure, nonshock, and hydrostatically tested at 300 psi. Ends shall be 125 pound ANSI B16.1 flanges or 125 pound ANSI B2.1 threaded fittings depending upon location.
- 2. When there is no flow through the line the disc shall hang lightly against its seat in practically a vertical position. When open, the disc shall swing clear of the waterway.
- 3. Check valves shall have bronze seat and body rings, extended bronze hinge pins, and bronze nuts on the bolts of bolted covers.
- 4. Valves shall be so constructed that disc and body seat may easily be removed and replaced without removing the valve from the line. Valves shall be fitted with an extended hinge arm with outside lever and spring. Springs with various tensions shall be provided and springs approved by the A/E shall be installed.
- Check valves for PVC pipe shall be of PVC Type 1, Series BC with union, socket, threaded or flanged ends as required.

- PVC ball check valves shall be as manufactured by Celanese Piping Systems, Inc., Wallace and Tiernan, Inc., Plastiline, Inc., or equal.
- 6. Check valves for ductile iron pipe shall be manufactured by APCO, Golden Anderson with provisions for addition of air cylinders by others. Where indicated on the Drawings, check valves shall be provided with limit switches that close when the valve opens.

# E. Plug Valves:

- 1. Interior Service:
  - a. Plug valves shall be non-lubricated eccentric type with semi-steel bodies, resilient faced plugs, and welded nickel or seats. Port areas shall be at least 70 per cent of full pipe area. All valves four (4") inches and larger shall be of the bolted design. All exposed nuts, bolts, springs, and washers shall be zinc plated, except exposed hardware for submerged valves shall be of stainless steel. Valve bodies shall be semi-steel with 125-pound ANSI Standard flanged ends, except that plug valves for use with threaded cast iron or ductile iron piping shall have screwed end connections.
  - b. All valves eight (8") inches and larger shall be equipped with gear actuators. All gearing shall be enclosed suitable for running in oil with seals provided on all shafts to prevent entry of dirt and water into the actuator. All shaft bearings shall be furnished with permanently lubricated bronze bearing bushings. Actuator shall clearly indicate valve position and an adjustable stop shall be provided. Construction of actuator housing shall be semi-steel.
  - c. All valves shall be as manufactured by Homestead Industries (1500 series) or DeZurik Corporation (100 series), or equal.
  - d. Plug valves installed such that actuators are six (6') feet or more above the floor, shall have chain wheels and chains provided.
  - e. All plug valves shall be installed so that the direction of flow through the valve is in accordance with the manufacturer's recommendations.
  - f. Extended shafts and operating nuts shall be provided where shown on the Drawings. Six (6") inch sleeves shall be provided for extended shafts in all floors; covers shall be provided. Shafts shall be of adequate strength to operate the valve and shall be carbon steel. Covers shall be cast iron.
- 2. Plug Valves for Yard Piping:

- a. Plug valves shall be rated for 150 psi pressure and a minimum 350 psi test pressure. Valves shall be semi-steel body, nickel seat, resilient plug, non-rising stem type fitted with "O-Ring" seals. The plug valves shall have mechanical joint ends, neoprene resilient plug facings and Buna (Vee) type packings all suitable for buried service. Except as otherwise specified or noted on the Drawings, the valve shall have extended operating nuts equal to the standard AVWVA two (2") inch square to the applicable provisions for gate valves above. All valves shall have single piece plug design. Valves shall have gearing as recommended by manufacturer.
- b. All parts of valves, housing, and actuators shall be designed for use in buried and outside service.
- c. Two (2) tee handle wrenches of suitable lengths shall be furnished to operate all valves with valve boxes.

## F. Surge Relief Valves:

- The wastewater surge relief valve shall be of 90-degree elbow body configuration, with cast iron body containing a securely fastened bronze or stainless steel ring.
- 2. The valve disc will have a resilient replaceable seat firmly held in place by a bronze or stainless steel ring fastened to the disc with screws. In the closed position with line pressures below the spring setting, the valve shall provide drop-tight closure. The disc movement shall be guided for proper alignment throughout its stroke and provide for full opening of the pipe line area when required. The valve body shall be furnished with an access opening to that area above the seat opening for flushing/cleaning.
- 3. External springs shall be enclosed in protective casings, and shall be in compression. Springs that appear to be under extension are not permitted. The disc stem bushing shall be bronze capped with a lantern type gland vented to the atmosphere for revealing seal leakage.
- 4. The valve normally closed shall open when the system pressure exceeds the spring adjustments setting. Its opening stroke shall be limited to that which is necessary to provide protection against surge exceeding the spring setting. The valve shall close at a slow speed consistent with adjustment of a self-contained oil cushion chamber that is provided with the valve. The cushioning device shall permit a range of adjustment for closing speeds to prevent hammer or bang.
- 5. The valve shall be a Model 625-D as manufactured by GA Industries, Inc., Fig. 625-D for size six (6") inch, or approved equal.

- G. Corporation Cocks: Corporation cocks for connections to cast-iron, ductile iron, or steel piping shall be all brass or bronze suitable for 150 psi operating pressure and similar to Mueller Co. H-10046 or equal by Clow Corp., and shall be of sizes required and/or noted on the Drawings.
- H. Flexible Couplings:
  - 1. Flexible couplings shall be either the split type or the sleeve type as shown on the Drawings.
    - a. Split type coupling shall be used with all interior piping and with exterior piping as noted on the Drawings. The couplings shall be mechanical type for radius groove piping. The couplings shall mechanically engage and lock grooved pipe ends in a positive couple and allow for angular deflection and contraction and expansion.
    - b. Couplings shall consist of malleable iron, ASTM Specifications A47, Grade 32510 housing clamps in two (2) or more parts, a single chlorinated butyl composition sealing gasket with a "C" shaped cross-section and internal sealing lips projecting diagonally inward, and two or more oval track head type bolts with hexagonal heavy nuts conforming to ASTM Specification A183 and A194 to assemble the housing clamps. Bolts and nuts shall be cadmium plated.
    - c. Victaulic type couplings and fittings may be used in lieu of flanged joints. Pipes shall be radius grooved as specified for use with the Victaulic couplings. Flanged adapter connections at fittings, valves, and equipment shall be Victaulic Vic Flange Style 741, equal by Gustin-Bacon Group, Division of Certain-Teed Products, Kansas City, Kansas, or equal.
    - d. Sleeve type couplings shall be used with all buried piping. The couplings shall be of steel and shall be Dresser Style 38, Smith Blair Style 413, Baker Allsteel, or equal. The coupling shall be provided with black steel bolts and nuts unless indicated otherwise.
    - e. All couplings shall be furnished with the pipe stop removed.
    - f. Couplings shall be provided with gaskets of a composition suitable for exposure to the liquid within the pipe.
    - g. If the Contractor decides to use victaulic couplings in lieu of flanged joints, he shall be responsible for supplying supports for the joints.
- I. Diaphragm Seals:
  - 1. Diaphragm seals shall be installed on pressure gauge connection to all lines where shown on the Drawings, to

protect pressure switches used to monitor excessive pressures on pipe lines. The diaphragm shall be "thread attached" to both piping and pressure switches. Diaphragm seals shall be constructed of cadium plated carbon steel, except for the lower housing which shall be specifically chosen according to the fluid pressure being monitored.

- Diaphragm seals shall have a flushing connection and be Type SB by Mansfield and Green; No. 877 Trerice; Ashcroft; or equal.
- J. Unions: Unions on ferrous pipe two (2") inches in diameter and smaller shall be 150 pounds malleable iron, zinc-coated. Unions on water piping 2-1/2 inches in diameter and larger shall be flange pattern, 125 pound class, zinc coated. Gaskets for flanged unions shall be of the best quality fiber, plastic, or leather. Unions shall not be concealed in walls, ceilings, or partitions.
- K. Flap Valves: Flap valves shall be Clow Fig. F-3016.
- L. Pressure Gauges:
  - 1. Each pressure gauge shall be direct mounted, cast aluminum case, with a 4-1/2 inch diameter dial and furnished with a clear glass crystal window, 1/4 inch shut-off valve, and a bronze pressure snubber. Provide diaphragm seals between shut-off valve and pressure gauge on all lines. All gauges shall be weather-proofed. The face dial shall be white finished aluminum with jet black graduations and figures. The face dial shall indicate the units of pressure being measured (e.g., feet, inches, etc.) or be dual scale.
  - 2. Each pump shall be furnished with gauges as follows:

Pump Type Discharge Pipe
Submersible 0-150 feet

- M. Quick Connect Couplings: Quick connect couplings shall consist of bronze female adapter with female threads. Coupling components shall be as manufactured by Ever-Tite Coupling Company, Inc., New York, New York, OPW Seal Fast Adapter as manufactured by OPW (Dover Corporation), or approved equal.
- N. Tapping Sleeves: Tapping sleeves for ductile iron pipe shall be Mueller No. H-610; for existing asbestos cement pipe, No. H-611. Stainless steel tapping sleeves for PVC, AC and DI pipe shall be in accordance with ASTM A536.71, ANSI B16.1 flange; and 18-8 Type 304 stainless steel body. Tapping sleeve for prestressed concrete pipe shall be in accordance with AWWA (H-9).

## PART 3: EXECUTION

## 3.1 Installation:

A. All valves and appurtenances shall be installed in the locations shown, true to alignment and rigidly supported. Any damage to the

- above items shall be repaired to the satisfaction of the A/E before they are installed.
- B. After installation, all valves and appurtenances shall be tested at least one (1) hour at the working pressure corresponding to the class of pipe, unless a different test pressure is specified. If any joint proves to be defective, it shall be repaired to the satisfaction of the A/E.
- C. Install all floor boxes, brackets, extension rods, guides, the various types of operators and appurtenances as shown on the Drawings that are in masonry floors or walls, and install concrete inserts for hangers and supports as soon as forms are erected and before concrete is poured. Before setting these items, the Contractor shall check all plans and figures which have a direct bearing on their location and he shall be responsible for the proper location of these valves and appurtenances during the construction of the structures.
- D. Pipe for use with flexible couplings shall have plain ends as specified in the respective pipe sections in these specifications.
- E. Buried flanged or mechanical joints shall be made with black steel bolts and nuts. All exposed bolts and nuts shall be heavily coated with two (2) coats of bituminous paint comparable to Inertol No. 66 Special Heavy.
- F. Prior to assembly of split couplings, the grooves, as well as other parts, shall be thoroughly cleaned. The ends of the pipes and outside of the gaskets shall be moderately coated with petroleum jelly, cup grease, soft soap, or graphite paste, and the gasket shall be slipped over one pipe end. After the other pipe has been brought to the correct position, the gasket shall be centered properly over the pipe ends with the lips against the pipes. The housing sections then shall be placed. After the bolt have been inserted, the nuts shall be tightened until the housing sections are firmly in contact, metal-to-metal, without excessive bolt tension
- G. Prior to the installation of sleeve-type couplings, the pipe ends shall be cleaned thoroughly for a distance of eight (8") inches. Soapy water may be used as a gasket lubricant. A follower and gasket, in that order, shall be slipped over each pipe to a distance of about six (6") inches from the end, and the middle ring shall be placed on the already laid pipe end until it is properly centered over the joint. The other pipe end shall be inserted into the middle ring and brought to proper position in relation to the pipe already laid. The gaskets and followers shall then be pressed evenly and firmly into the middle ring flares. After the bolts have been inserted and all nuts have been made up fingertight, diametrically opposite nuts shall be progressively and uniformly tightened all around the joint, preferably by use of a torque wrench of the appropriate size and torque for the bolts.
- 3.2 Inspection and Testing: Completed pipe shall be subjected to hydrostatic pressure test for four (4) hours at full working pressure. All leaks shall be

repaired and lines retested as approved by the A/E. Prior to testing, the gravity pipelines shall be supported in an approved manner to prevent movement during tests.

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#### **SECTION 15110: AIR RELEASE VALVES**

## PART 1: GENERAL

- 1.1 Related Documents: The general provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.
- 1.2 Scope of Work: Furnish all labor, materials, equipment, valve pits and incidentals required, and install air release valves and necessary appurtenances in the locations shown on the Drawings or as specified.
- 1.3 General: Material and Equipment
  - A. Conform to applicable specifications and standards.
  - B. Comply with size, make, type, and quality specified, or as specifically approved in writing by the A/E.
  - C. Do not use material for any purpose other than that for which it is designed or is specified.
  - D. Furnish all necessary labor and material necessary for compliance with all requirements of this contract.

### PART 2: PRODUCTS

- 2.1 Air Release Valves:
  - A. Model as manufactured by A.R.I.; or equal.
  - B. The air release valves shall be designed to withstand a pressure of 150 psi.

#### PART 3: EXECUTION

3.1 Installation: Contractor shall furnish and install air release valves as per manufacturer's instructions.

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# SECTION 15199: CLEANING AND STORAGE OF EXISTING EQUIPMENT

## PART 1: GENERAL

1.1 Related Documents: The general provisions of the Contract including Conditions of the Contract (General, Supplementary, and other Conditions, Division 0) and Division 1 as appropriate, apply to the Work specified in this Section.

# 1.2 Scope of Work:

- A. Furnish all labor, equipment, materials, power, and incidentals required to clean and store all existing equipment to be retained by the Owner. The equipment will be removed from its existing installation and stored as noted in these Specifications.
- B. Any items of equipment, damaged or lost due to the Contractor's carelessness, mishandling, or faulty procedures and workmanship, shall be repaired or replaced in kind to the satisfaction of the A/E.
- 1.3 Submittals: Submit to the A/E the following:
  - A. Description of the salvaging procedure for each item of equipment, covering the cleaning, preparation, and protection aspects of the operation.
  - B. Submittals shall include the type of rust resistant coatings and all other material to be used.
  - C. Submit in accordance with requirements of Division 1.

#### PART 2: PRODUCTS

(NOT USED)

#### PART 3: EXECUTION

# 3.1 Surface Preparation:

- A. The surfaces of all equipment and materials to be salvaged and stored shall be thoroughly cleaned, dried, and free of all rust, loose paint, dirt, and foreign matter. If required, in the opinion of the A/E, equipment and materials shall be steam cleaned.
- B. The interior of all equipment shall be cleaned, flushed, and dried. Oil shall be flushed from all oil lubricated gear reducers, etc.
- C. Gears, bearing surfaces, other similar surfaces, and other surfaces which have started to rust shall be given a coat of grease or other suitable rust resisting coating.

- 3.2 Protection: All equipment and materials to be salvaged and stored shall be properly protected from damage. All nozzles and overhung loads shall be braced so as to prevent the development of any damaging stresses.
- 3.3 Storage:
  - A. Store products in accord with the Owner's instructions.
  - B. Store products above the ground, on blocking or skids, prevent soiling or staining.
  - C. Arrange storage in a manner to provide easy access for inspection.

\* \* \*

## 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

16800 - Generator and ATS



#### 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 architectural plans, as well as power wiring for the equipment specified in DIVISION 15 – MECHANICAL.

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

The drawings and specifications are complementary and what is shown and/or called for on

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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.

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.

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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.

#### **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: RMC.

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- 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.

#### 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 coredrilled 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:

Receptacles 18" above floor
 Toggle Switches 48" above floor

3. Panelboards 72" to top

4. Meter Can 60"-72" to centerline

Mounting heights may be adjusted in masonry applications to simplify installation where approved by the Architect.

**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.

## 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.

## 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 16800 - GENERATOR

## PART 1 - GENERAL

#### **SUMMARY**

This Section includes generator and transfer switch.

## **SUBMITTALS**

Product Data: For generator and transfer switch. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

Shop Drawings: For each, 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. Short-circuit current rating of generator, ATS, and overcurrent protective devices.
  - c. Features, characteristics, ratings, and factory settings of individual overcurrent protective devices.
- 2. Wiring Diagrams: Power, signal, and control wiring.

Operation and maintenance data.

#### 1.1 Summary

- A This section includes the following items from a single supplier:
  - 1. Engine Generator Set.
  - 2. Enclosure
  - 3. Related Accessories as specified

## B Related Requirements

- 1. It is the intent of this specification to secure an engine-driven generator set that has been prototype tested, factory built, production-tested, and site-tested together with all accessories necessary for a complete installation as shown on the plans and drawings and specified herein.
- 2. Any exceptions to the published specifications shall be subject to the approval of the engineer and submitted minimum 10 days prior to the closing of the bid with a line by line summary description of all the items of compliance, any items that

- have been are omitted or have been taken exception to, and a complete description of all deviations.
- 3. It is the intent of this specification to secure a generator set system that has been tested during design verification, in production, and at the final job site. The generator set will be a commercial design and will be complete with all of the necessary accessories for complete installation as shown on the plans, drawings, and specifications herein. The equipment supplied shall meet the requirements of the National Electrical Code and applicable local codes and regulations.
- 4. All equipment shall be new and of current production by an international, power system manufacturer of generators, transfer switches, and paralleling switchgear. The manufacturer shall be a supplier of a complete and coordinated system. There will be single-source responsibility for warranty, parts, and service through a factory-authorized representative with factory-trained technicians.

#### 1.2 Submittals

## A Action Submittals

- 1. Product Data
- a The submittal shall include prototype test certification and specification sheets showing all standard and optional accessories to be supplied; schematic wiring diagrams, dimension drawings, and interconnection diagrams identifying by terminal number each required interconnection between the generator set, the transfer switch, and the remote annunciator panel if it is included elsewhere in these specifications.

## B Informational Submittal

- 1. Certificates
- a The generator set shall be listed to UL 2200 or submitted to an independent third party certification process to verify compliance as installed.

## C Closeout Submittal

- 1. Maintenance Contracts
- 2. Operation And Maintenance Data
- 3. Warranty Documentation
- 4. Record Documentation

## 1.3 Quality Assurance

## A Regulatory Agency

- 1. The generator set shall conform to the requirements of the following codes and standards:
- a CSA C22.2, No. 14-M91 Industrial Control Equipment.
- b EN50082-2, Electromagnetic Compatibility-Generic Immunity Requirements, Part 2: Industrial.
- c EN55011, Limits and Methods of Measurement of Radio Interference Characteristics of Industrial, Scientific and Medical Equipment.
- d IEC8528 part 4, Control Systems for Generator Sets.

- e IEC Std 61000-2 and 61000-3 for susceptibility, 61000-6 radiated and conducted electromagnetic emissions.
- f IEEE446 Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications.
- g NFPA 70, National Electrical Code, Equipment shall be suitable for use in systems in compliance to Article 700, 701, and 702.
- h NFPA 99, Essential Electrical Systems for Health Care Facilities.
- i NFPA 110, Emergency and Standby Power Systems. The generator set shall meet all requirements for Level 1 systems. Level 1 prototype tests required by this standard shall have been performed on a complete and functional unit. Component level type tests will not substitute for this requirement.
- 2. Qualifications
- a The equipment shall be produced by a manufacturer who is ISO 9001 certified for the design, development, production and service of its complete product line.
- The power system shall be produced by a manufacturer who has produced this type of equipment for a period of at least 10 years and who maintains a service organization available twenty-four hours a day throughout the year.
- 3. Manufacturers
- a The power system shall be furnished by a single manufacturer who shall be responsible for the design, coordination, and testing of the complete system. The entire system shall be installed as shown on the plans, drawings, and specifications herein.
- b The generator set described herein is as manufactured by Kohler.

#### 1.4 Warranty or Bond

## A Manufacturer's Warranty

- 1. The generator set shall include a standard warranty covering one (1) year or 2000 hours, whichever occurs first, to guarantee against defective material and workmanship in accordance with the manufacturer's published warranty from the date of initial startup.
- 2. The generator set manufacturer and its distributor shall maintain a 24-hour parts and service organization. This organization shall regularly engage in maintenance contract programs to perform preventive maintenance and service on equipment similar to that specified. A service agreement shall be available and shall include system operation under simulated operating conditions; adjustment to the generator set, transfer switch, and switchgear controls as required, and certification in the owner's maintenance log of repairs made and functional tests performed on all systems.

## 1.5 Maintenance Service

A. Maintenance: Beginning at owner acceptance, provide 12 months' full maintenance by skilled employees of the manufacturer's designated service organization. Include routine preventative maintenance as recommended by manufacturer and adjusting as required for proper operation. Provide parts and supplies as used in the manufacture and installation of original equipment.

## **PART 2 PRODUCTS**

## 2.1 Equipment

## A Equipment

1. The generator set shall be as manufactured by Kohler. It shall provide 48 kVA and 40 kW when operating at 120/240 volts, 3 phase, 60 Hz, 0.80 power factor. The generator set shall be capable of a 130°C Standby rating while operating in an ambient condition of less than or equal to 77 °F and a maximum elevation of 500 ft above sea level. The standby rating shall be available for the duration of the outage.

## B Engine

- . The minimum 6.2 liter displacement engine shall deliver a minimum of 103 HP at a governed engine speed of 1800 rpm, and shall be equipped with the following:
  - a. Electronic isochronous governor capable of 0.5% steady-state frequency regulation
  - b. 12-volt positive-engagement solenoid shift-starting motor
  - c.130-ampere automatic battery charging alternator with a solid-state voltage regulation
  - d. Positive displacement, full-pressure lubrication oil pump, cartridge oil filters, dipstick, and oil drain
  - e.Dry-type replaceable air cleaner elements for normal applications
  - f. The engine shall be turbo charged and fueled by Natural Gas. LP vapor fuel.
  - g. The engine shall have a minimum of 8 cylinders and be liquid-cooled
- 2. The engine shall be EPA certified from the factory
- 3. The generator must accept rated load in one-step.

## C Cooling System

1. The engine shall be liquid-cooled by a closed loop, unit mounted radiator rated to operate the generator set at full load at an ambient temperature of 50 degrees C (122 degrees F). The radiator fan and other rotating engine parts shall be guarded against accidental contact.

#### D Standard Air Cleaner

1. The air cleaner shall provide engine air filtration which meets the engine manufacturer's specifications under typical operating conditions.

## E Battery

1. Each genset requires a BCI group 31 batteries which must meet the engine manufactures' specifications for the ambient conditions specified in Part 1 Project Conditions and shall comply with the NFPA requirements for engine cranking cycles. Each battery shall be rated according to SAE Standards J-537 with a minimum cold cranking amp of 950 amps and a minimum reserve capacity of 185 Minutes at 80F. The battery plates shall be constructed of a Calcium-Lead alloy to provide long waterless operation and extended battery life. The battery elements must be

anchor-locked with full-frame grids and tight-packed commercial plates to resist the effects of vibration. The battery must contain a handle to aid in lifting and the case must be constructed of polypropylene to resist breakage and extend service life. Removable cell covers shall be provided to allow for checking of electrolyte specific gravity.

2. Battery rack and battery cables capable of holding the manufacturer's recommended batteries shall be supplied.

## F Housing

- 1. Level 1 Sound Attenuated Enclosure, Weather Enclosure
- a The generator set shall be supplied with a Sound Attenuated Enclosure, providing a sound pressure of 65 dB(A) while the generator is operating at 100% load at 7 meters (23 feet) free field using acoustic insulation and acoustic-lined inlet hoods, constructed from a minimum of 0.125 inch thick formed heavy duty aluminum panels. The acoustic insulation used shall meet UL 94 HF1 flammability classification. The enclosure shall be manufactured from bolted panels to facilitate service, future modifications, or field replacement. The enclosure shall use external vertical air inlet and outlet hoods with 90 degree angles to discharge air up and reduce noise. The enclosure shall have an integral rodent guard and skid end caps and shall have bracing to meet 241 kph (150 mph) wind loading.
- b The generator set enclosure shall be a factory assembled package constructed from a minimum of high strength, low alloy 14-gauge steel. The enclosure shall have a pitched enclosure roof to prevent water accumulation, and a radiator fill panel to provide easy service access to the radiator. The enclosure shall be manufactured from bolted panels to facilitate service, future modifications, or field replacement.
- c The enclosure components and skid shall be cleaned with a two-stage alkaline cleaning process to remove grease, grit, and grime from parts. Components shall then be subjected to a Zirconium-based conversion coating process to prepare the metal for electrocoat (e-coat) adhesion. All enclosure parts shall receive an 100% epoxy primer electrocoat (e-coat) with high-edge protection. Following the e-coat process, the parts shall be finish coated with powder baked paint for superior finish, durability, and appearance with a Power ArmorTM industrial finish that provides heavy duty durability in harsh conditions, and is fade-, scratch- and corrosion-resistant.
- d The enclosure must surpass a 3,000 hour salt spray corrosion test per ASTM B-1117.
- e Enclosures will be finished in the manufacturer's standard color.
- f The enclosures shall allow the generator set to operate at full load in an ambient temperature of 50°C with no additional derating of the electrical output of the generator set.
- g Enclosures shall be equipped with sufficient side and end doors to allow access for operation, inspection, and service of the unit and all options. Minimum requirements are two doors per side. When the generator set controller faces the rear of the generator set, an additional rear facing door is required. Access to the con-

- troller and main line circuit breaker shall meet the requirements of the National Electric Code.
- h Doors shall be fitted with hinges, hardware, and the doors shall be removable.
- i Doors shall be equipped with lockable latches. Locks shall be keyed alike. Door locks shall be recessed to minimize potential of damage to door/enclosure.
- j A duct between the radiator and air outlet shall be provided to prevent recirculation of hot air.
- k The complete exhaust system shall be internal to the enclosure.

#### G Controller

## 1. APM402 Generator Set Controller

- a. The generator set controller shall be a microprocessor based control system that will provide automatic starting, system monitoring, and protection. The controller system shall also provide local monitoring and remote monitoring. The control system shall be capable of PC based updating of all necessary parameters, firmware, and software.
- b. The controller shall be mounted on the generator set and shall have integral vibration isolation. The controller shall be prototype and reliability tested to ensure operation in the conditions encountered.

#### 2. Codes and Standards

- a. The generator set controller shall meet NFPA 110 Level 1 requirements and shall include an integral alarm horn as required by NFPA.
- b. The controller shall meet NFPA 99 and NEC requirements.
- c. The controller shall be UL 508 listed.

## 3. Applicability

- a. The controller shall be a standard offering in the manufacturer's controller product line.
- b. The controller shall support 12-volt and 24volt starting systems.
- c. The controller's environmental specification shall be: -40°C to 70°C operating temperature range and 5-95% humidity, non-condensing.
- d. The controller shall mount on the generator or remotely within 40 feet with viewable access.

## 4. Controller Buttons, Display and Components

- a. The generator set controller shall include the following features and functions:
  - 1. Push button Master Control buttons. The buttons shall be tactile-feel membrane with an indicator light to initiate the following functions:
    - a. Run Mode: When in the run mode the generator set shall start as directed by the operator.
    - b. Off/Reset Mode: When in the Off/Reset mode the generator set shall stop, the reset shall reset all faults, allowing for the restarting of the generator set after a shutdown.

- c. Auto Mode: When in Auto the mode the generator set shall be ready to accept a signal from a remote device.
- 2. Emergency Stop Switch. The remote stop switch shall be red in color with a "mushroom" type head. Depressing the stop button will immediately stop the generator set and lockout the generator set for any automatic remote starting.
- 3. Push Button/Rotary Selector dial. This dial shall be used for selection of all Menus and sub-menus. Rotating the dial moves you through the menus, pushing the dial selects the menu and function/features in that menu. Pushing the button selects the feature/function and sub-menus.
- 4. Digital Display. The digital display shall be alphanumeric, with 2 lines of data and approximately 24 charters. The display shall have back lighting for ease of operator use in high and low light conditions. The display shall display status of all faults and warnings. The display shall also display any engine faults. While the generator set is running, the display shall scroll all-important information across the screen for ease of operator use. The scroll can be stopped by pushing the rotary dial. The display shall fall asleep when the generator set is not running and will wake-up when the generator set starts or the rotary dial is depressed.
- 5. Fault Light. The controller shall have an annunciator fault light that glows red for faults and yellow for warnings. These faults and warnings shall be displayed in the digital display. The fault light will also glow yellow when not in AUTO.
- 6. Alarm Horn. The controller shall provide an alarm horn that sounds when any faults or warnings are present. The horn shall also sound when the controller is not in the AUTO mode.
- 7. Alarm Silence/Lamp Test Button. When this button is depressed, it shall test all controller lamps. This button will also silence the alarm horn when the unit is not AUTO.
- 8. USB Connection. The controller shall have a USB connection on the face of the controller. This connection shall allow for updating of all software and firmware. This port shall also allow for all servicing of generator set parameters, fault diagnostics and viewing of all controller information via use a laptop computer.
- 9. Dedicated user inputs. The controller shall have dedicated inputs for remote emergency stop switch, remote 2-wire star for transfer switch and auxiliary shutdown.
- 10. The controller shall have auto resettable circuit protection integral on the circuit board.
- 5. System Controller Monitoring and Status Features and Functions
  - a. The generator controller shall display and monitor the following engine and alternator functions and allow adjustments of certain parameters at the controller:

- 1. Overview menu
  - a. Active shutdowns and warnings shall be displayed if present and without the need of operator interface
  - b. Engine runtime with total hours
  - c. Average line to line voltage
  - d. Coolant temperature
  - e. Fuel level or pressure
  - f. Oil pressure
  - g. Battery voltage
  - h. Software version
  - i. Frequency
  - j. Average current
- 2. Engine metering menu.
  - a. Engine speed
  - b. Oil pressure
  - c. Coolant temperature
  - d. Battery voltage
- 3. Generator metering menu.
  - a. Total power in VA
  - b. Total power in W
  - c. Rated power % used
  - d. Voltage L-L and L-N for all phases
  - e. Current L1, L2, L3
  - f. Frequency
- 4. Generator set information.
  - a. Generator set model number
  - b. Generator set serial number
  - c. Controller set number
- 5. Generator set run time.
  - a. Engine run time total hours
  - b. Engine loaded total hours
  - c. Number of engine starts
  - d. Total energy in kW
- 6. Generator set system
  - a. System voltage
  - b. System frequency 50/60Hz
  - c. System phase, single/three phase
  - d. Power rating kW
  - e. Amperage rating
  - f. Power type standby/prime
  - g. Measurement units, metric/English units adjustable
  - h. Alarm silence, always or auto only
- 7. Generator set calibration, the following are adjustable at the controller.
  - a. Voltage L-L and L-N all phases
  - b. Current L1, L2, L3

- c. Reset all calibrations
- 8. Voltage regulation, +/-0.5% regulation, the following is adjustable at the controller.
  - a. Voltage Adjustable +/- 10%
- 9. Digital and Analog Inputs and outputs
  - a. Displays settings and status
- 10. Event Log
  - a. Stores event history, up to 1000 events

## 6. Controller Engine control features and functions

- a. Automatic restart the controller has automatic restart feature that initiates the start routine and re-crank after a failed start attempt.
- b. Cyclic cranking the controller shall have programmable cyclic cranking
- c. Engine starting aid the controller shall have the capability of providing control for an optional engine starting aid.
- d. The control system shall include time delays for engine start and cool
- e. The control system shall interface with the engine ECM and display engine fault codes and warnings. The ECM shall also include sender failure monitoring to help distinguish between failed senders and actual failure conditions.
- f. The controller shall monitor and display engine governor functions with include steady state and transient frequency monitoring

## 7. Controller Alternator control features and functions

- a. Integrated hybrid voltage regulator. The system shall have integral microprocessor based voltage regulator system that provides +/- 5% voltage regulation, no-load to full load with three phase sensing. The system is prototype tested and control variation of voltage to frequency. The voltage regulator shall be adjustable at the controller with maximum +/- 10% adjustable of nominal voltage.
- b. AC output voltage regulator adjustment. The system shall allow for adjustment of the integral voltage regulator with maximum of +/- 10% adjustment of the system voltage.
- c. Alternator thermal overload protection. The system shall have integral alternator overload and short circuit protection matched to each alternator for the particular voltage and phase configuration.
- d. Power metering. The controller digitally displays power metering of kW and kVA.

## 8. Other control features and functions

- a. Event logging. The controller keeps a record of up to 1000 events, for warning and shutdown faults. This fault information becomes a stored record of systems events and can be reset.
- b. Historical data logging. The controller total number of generator set

- successful start shall be recorded and displayed.
- c. Programmable access. The control system shall include a USB port that gives service technicians the ability to provide software and firmware upgrades. The system shall also be capable of allowing setting of all critical parameters using the service software and a laptop computer. All parameters and setting should be capable to being stored on a laptop for future upgrades of printing for analysis.

## 9. Generator Set Warning, Shutdown Alarm and Status

- a. The generator set shall have alarms and status indication lamps that show non-automatic status and warning and shutdown conditions. The controller shall indicate with a warning lamp and or alarm and on the digital display screen any shutdown, warning or engine fault condition that exists in the generator set system. The following alarms and shutdowns shall exist as a minimum:
  - 1. Engine functions
    - a. Critical high fuel level (alarm)
    - b. ECM communication loss (shutdown)
    - c. ECM diagnostics (alarm & shutdown)
    - d. Engine overspeed (shutdown)
    - e. Engine start aid active
    - f. Engine under speed (shutdown)
    - g. Fuel tank leak (alarm & shutdown)
    - h. High DC battery voltage (alarm)
    - i. High coolant temperature (alarm & shutdown)
    - i. High fuel level (alarm)
    - k. Low DC battery voltage (alarm)
    - l. Low coolant level (shutdown)
    - m. Low coolant temperature (alarm)
    - n. Low cranking voltage (alarm)
    - o. Low engine oil level (alarm & shutdown)
    - p. Low fuel level (alarm & shutdown)
    - q. Low fuel pressure (alarm)
    - r. Low oil pressure (alarm & shutdown)
    - s. No coolant temperature signal (shutdown)
    - t. No oil pressure signal (shutdown)
    - u. Overcrank (shutdown)
    - v. Speed sensor fault (alarm)
  - 2. Generator functions
    - a. AC sensing loss over & under current (alarm & shutdown)
    - b. Alternator protection (shutdown)
    - c. Ground fault input (alarm)
    - d. kW overload (shutdown)
    - e. Locked rotor (shutdown)
    - f. Over-frequency (shutdown)

- g. Over AC voltage (shutdown)
- h. Under-frequency (shutdown)
- i. Under AC voltage (shutdown)
- j. Emergency stop (shutdown)
- 3. Other General functions
  - a. Battery charger fault (alarm)
  - b. Common fault (shutdown)
  - c. Common warning (alarm)
  - d. Master switch not in auto (alarm)
  - e. Generator running
  - f. Input/Output fault (alarm)
- 4. The generator set controller shall also be capable of meeting all necessary NFPA 110 level 1 requirements that include several of the above along with; EPS supplying load, Master switch "not in auto", and contacts for local and remote common alarm.

## 10. Communications

- a. The controller shall communicate with the ECM for control, monitoring, diagnosis, and meet SAE J1939 standards
- b. Kohler proprietary RBUS communication shall be available.
- c. A RBUS shall be able to monitor and alter parameters, and start or stop a generator.
- d. The controller shall have the capability to communicate to a personal computer (IBM or compatible) and appropriate application software
- e. A variety of connections shall be available based on requirements:
  - 1. A single control connection to a PC via USB
  - 2. Internet connection via Ethernet
- f. Generator and transfer switch controls shall be equipped with communications modules capable of connecting to the same communication network.

#### H Generator Overcurrent and Fault Protection

- 1. The generator shall be provided with a factory installed, 80% rated line circuit breaker rated at 150 amperes that is UL489 listed. Line circuit breakers shall be sized for the rated ampacity of the loads served by the breaker per the NEC.
- 2. Load side lugs shall be provided from the factory. The line circuit breaker shall include auxiliary contacts, shunt trip, undervoltage trip, alarm switch, and overcurrent switch functionality. Load side breaker connections made at the factory shall be separated from field connections.
- 3. When GFI is required per the NEC, additional neutrals shall be factory installed, and the alarm indication shall be integrated with the other generatorset alarms.
- 4. Barriers to provide segregation of wiring from an emergency source to emergency loads from all other wiring and equipment, if required by the NEC,

shall be provided.

#### I Alternator

- 1. The alternator shall be salient-pole, brushless, 2/3-pitch, with 4 bus bar provision for external connections, self-ventilated, with drip-proof construction and amortisseur rotor windings, and skewed for smooth voltage waveform. The ratings shall meet the NEMA standard (MG1-32.40) temperature rise limits. The insulation shall be class H per UL1446 and the varnish shall be a vacuum pressure impregnated, fungus resistant epoxy. Temperature rise of the rotor and stator shall be limited to 130°C Standby. The PMG based excitation system shall be of brushless construction controlled by a digital, three phase sensing, solid-state, voltage regulator. The AVR shall be capable of proper operation under severe nonlinear loads and provide individual adjustments for voltage range, stability and volts-per-hertz operations. The AVR shall be protected from the environment by conformal coating. The waveform harmonic distortion shall not exceed 5% total RMS measured line-to-line at full rated load. The TIF factor shall not exceed 50.
- 2. The alternator shall have a maintenance-free bearing, designed for 40000 hour B10 life. The alternator shall be directly connected to the flywheel housing with a semi-flexible coupling between the rotor and the flywheel.
- 3. The generator shall be inherently capable of sustaining at least 300% of rated current for at least 10 seconds under a 3-phase symmetrical short circuit without the addition of separate current-support devices.
- 4. Motor starting performance and voltage dip determinations shall be based on the complete generator set. The generator set shall be capable of supplying sufficient LRKVA for starting the second motor while the first motor is running with a maximum instantaneous voltage dip of 35%, as measured by a digital RMS transient recorder in accordance with IEEE Standard 115. Motor starting performance and voltage dip determination that does not account for all components affecting total voltage dip, i.e., engine, alternator, voltage regulator, and governor will not be acceptable. As such, the generator set shall be prototype tested to optimize and determine performance as a generator set system.

## J Vibration Isolation

1. Vibration isolators shall be provided between the engine-alternator and heavyduty steel base.

## 2.2 Accessories

- 1. The generator set shall be supplied with a 6-ampere automatic float/equalize battery charger capable of charging both lead-acid and gel-cell type batteries, with the following features:
  - a. Automatic 3-stage float to equalization charge
  - b. 1% steady-state voltage regulation from no load to full load over 10% AC input line voltage variation
  - c. Indicator LED lamps for charge state indication (bulk charge/absorption/float)
  - d. Ambient temperature operating range: -40°C to 70°C

- e. Potting for durability and waterproofing
- f. Short-circuit and reverse polarity protection
- g. UL 1236 listed
- h. UL 2200 compliant
- i. CSA certified
- j. Ring terminals for battery connection.
- 2. Battery rack and battery cables capable of holding the manufacturer's recommended batteries shall be supplied.
- 3. The generator shall be supplied with a thermostatically controlled strip heater to prevent the accumulation of moisture and dampness and to maintain the stator windings above the dew point. The heater shall be wired to be "on" at all times that the generator set is not operating.
- 4. The generator set shall be furnished with rodent guards to prevent rodent intrusion and protect internal components.
- 5. The air cleaner restriction indicator shall indicate the need for maintenance of the air cleaners
- 6. The generator set shall be provided with a run relay which shall provide a three-pole, double-throw relay with 10-amp/ 250 VAC contacts to indicate that the generator is running. The run relay dry contacts can be used for energizing or de-energizing customer devices while the generator is running (e.g. louvers, indicator lamps, etc.)
- 7. The exhaust piping shall be gas proof, seamless, stainless steel, flexible exhaust bellows and includes the flex exhaust tube and the mounting hardware.
- 8. Supply flexible fuel lines to provide a flexible connection between the engine fuel fittings and the fuel supply tank piping and for the fuel return lines from the injector pump per engine manufacturer's recommendations. Flex line shall have a protective steel wire braid to protect the hose from abrasion.
  - 9. Block Heater The block heater shall be thermostatically controlled, 1,800 watt, 110-120 VAC single phase, with isolating valves, to maintain manufacturers recommended engine coolant temperature to meet the start-up requirements of NFPA 99 and NFPA 110, Level 1.

## 2.3 Source Quality Control

## A. Non-Conforming Work

- 1. To ensure that the equipment has been designed and built to the highest reliability and quality standards, the manufacturer and/or local representative shall be responsible for three separate tests: design prototype tests, final production tests, and site tests.
- a. **Design Prototype Tests.** Components of the emergency system, such as the engine/generator set, transfer switch, and accessories, shall not be subjected to prototype tests because the tests are potentially damaging. Rather, similar design prototypes and preproduction models shall be subject to the following tests:
  - i. Maximum power (kW)
  - ii. Maximum motor starting (kVA) at 35% instantaneous voltage dip.

- iii. Alternator temperature rise by embedded thermocouple and/or by resistance method per NEMA MG1-32.6.
- iv. Governor speed regulation under steady-state and transient conditions.
- v. Voltage regulation and generator transient response.
- vi. Harmonic analysis, voltage waveform deviation, and telephone influence factor.
- vii. Three-phase short circuit tests.
- viii. Alternator cooling air flow.
- ix. Torsional analysis to verify that the generator set is free of harmful torsional stresses.
- x. Endurance testing.
- b. **Final Production Tests.** Each generator set shall be tested under varying loads with guards and exhaust system in place. Tests shall include:
  - i. Single-step load pickup
  - ii. Safety shutdown device testing
  - iii. Rated Power @ 0.8 PF
  - iv. Maximum power
  - v. Upon request, a witness test, or a certified test record sent prior to shipment.
- c. **Site Tests.** The manufacturer's distribution representative shall perform an installation check, startup, and building load test. The engineer, regular operators, and the maintenance staff shall be notified of the time and date of the site test. The tests shall include:
  - i. Fuel, lubricating oil, and antifreeze shall be checked for conformity to the manufacturer's recommendations, under the environmental conditions present and expected.
  - ii. Accessories that normally function while the set is standing by shall be checked prior to cranking the engine. These shall include: block heaters, battery chargers, alternator strip heaters, remote annunciators, etc.
  - iii. Generator set startup under test mode to check for exhaust leaks, path of exhaust gases outside the building, cooling air flow, movement during starting and stopping, vibration during operation, normal and emergency line-to-line voltage and frequency, and phase rotation.
  - iv. Automatic start by means of a simulated power outage to test remote-automatic starting, transfer of the load, and automatic shutdown. Prior to this test, all transfer switch timers shall be adjusted for proper system coordination. Engine coolant temperature, oil pressure, and battery charge level along with generator set voltage, amperes, and frequency shall be monitored throughout the test.
  - v. Load bank testing. The test shall consist of four hours of continuous operation using a portable resistive load bank. Adjust the load bank load to provide one half hour each at zero load,

25 percent, 50 percent, and 75 percent of full load. Followed by 2 hours of operation at rated standby load and then starting both motors 1 at a time. The second motor shall be started while the first is running. Furnish the portable load bank, all connecting cables, metering equipment, and other equipment or devices required to perform the on-site testing. During the test, readings shall be taken every 15 minutes showing % load, voltage, amps, oil pressure, water temperature, and battery charge.

#### 2.4 TRAINING

# TRAINING AND AS BUILT DOCUMENTATION SHALL APPLY TO THE AUTOMATIC TRANSFER SWITCH AND THE GENERATOR.

- A. Before Substantial Completion, provide the services of a representative of the transfer system manufacturer to instruct designated Owner personnel in the operation and maintenance of system. Instruction time shall be 1 day, unless directed by owner.
- B. Coordinate training with architect to arrange a 4-hour minimum training session, a minimum of 4 sets of manuals and training literature shall be made available for the owner.
- C. A training guide shall be included as part of project's final deliverables and close out package.

## 2.5 AS-BUILT DOCUMENTATION

- D. Submit service manuals including the following:
  - 1. Detailed explanation of the operation of the system.
  - 2. Instructions for routine maintenance.
  - 3. Detailed instructions for repair of major components of the system.
  - 4. Pictorial parts list and part numbers.
  - 5. Pictorial and schematic electrical drawings of wiring systems, including operating and safety devices, and major components.
  - 6. Installation instructions for system components.
  - 7. Final test report.
  - 8. Reproducible set of record drawings showing the system exactly as it was installed including exact location of components.

**END OF SECTION 16800** 

# S-001 HORIZONTAL SELF-PRIMING CENTRIFUGAL PUMP

#### PART 1 - GENERAL

#### 1.01 PERFORMANCE CRITERIA

- A. The pump manufacturer must be ISO 9001:2008 revision certified, with scope of registration including design control and service after sales activities.
- B. The pump manufacturer must be registered to the ISO 14001 Environmental Management System standard and as such is committed to minimizing the impact of its activities on the environment and promoting environmental sustainability by the use of best management practices, technological advances, promoting environmental awareness and continual improvement.
- C. Pumps must be designed to handle raw, unscreened, domestic sanitary sewage. Each pump shall be selected to perform under following operating conditions:

		<u>3" Pumps</u>
1.	Capacity (GPM)	<u>134</u>
2.	Total Dynamic Head (FT)	57.4
3.	Maximum Repriming Lift (FT)	VIF

4. Pumps shall be Gorman Rupp Model T3A3S-BIF or engineer approved equal.

## D. Pump Performance Certifications

- 1. Solids Handling Capability
  - a. All internal passages, impeller vanes, and recirculation ports shall pass a 3" spherical solid. Smaller internal passages that create a maintenance nuisance or interfere with priming and pump performance shall not be permitted. Upon request from the engineer, manufacturer's certified drawings showing size and location of the recirculation port(s) shall be submitted for approval.

## E. Reprime Performance

- Consideration shall be given to the sanitary sewage service anticipated, in which debris
  is expected to lodge between the suction check valve and its seat, resulting in the loss
  of the pump suction leg, and siphoning of liquid from the pump casing to the
  approximate center line of the impeller. Such occurrence shall be considered normal,
  and the pump must be capable of automatic, unattended operation with an air release
  line installed.
- During unattended operation, the pump shall retain adequate liquid in the casing to ensure automatic repriming while operating at its rated speed in a completely open system. The need for a suction check valve or external priming device shall not be required.
- 3. Pump must reprime required vertical ft. at the specified speed and impeller diameter. Reprime lift is defined as the static height of the pump suction above the liquid, while operating with only one-half of the liquid remaining in the pump casing. The pump must

PS-05190 Revised: 08/12 reprime and deliver full capacity within five minutes after the pump is energized in the reprime condition. Reprime performance must be confirmed with the following test set-up:

- a. A check valve to be installed down stream from the pump discharge flange. The check valve size shall be equal (or greater than) the pump discharge diameter.
- b. A length of air release pipe shall be installed between pump and the discharge check valve. This line shall be open to atmosphere at all times duplicating the air displacement rate anticipated at a typical pump station fitted with an air release valve.
- c. The pump suction check valve shall be removed. No restrictions in the pump or suction piping will prevent the siphon drop of the suction leg. Suction pipe configuration for reprime test shall incorporate a 2 feet minimum horizontal run, a 90° elbow and vertical run at the specified lift. Pipe size shall be equal to the pump suction diameter.
- d. Impeller clearances shall be set as recommended in the pump service manual.
- e. Repeatability of performance shall be demonstrated by testing five consecutive reprime cycles. Full pump capacity (flow) shall be achieved within five minutes during each cycle.
- f. Liquid to be used for reprime test shall be water.
- g. Upon request from the engineer, certified reprime performance test results, prepared by the manufacturer, and certified by a registered professional engineer, shall be submitted for approval prior to shipment.

## F. Certified Pump Performance Test

- Tests shall be conducted in accordance with Hydraulic Institute Standards 14.6.3.4
   Acceptance Grade 2B at the specified head, capacity, rated speed and horsepower.
   The performance tests will validate the correct performance of the equipment at the design head, capacity and speed.
- 2. For pumps utilizing up to (13 HP) motors; but larger than (1.3 HP), tests shall be conducted in accordance with Hydraulic Institute Standards 14.6.3.4.1, as the specified head, capacity, rated speed and horsepower.

## G. Manufacturer's Warranty

- 1. The pump manufacturer shall warrant the pump equipment to be of quality construction, free of defects in material and workmanship. A written warranty shall include specific details described below.
- 2. All equipment, apparatus, and parts furnished shall be warranted for sixty (60) months, excepting only those items that are normally consumed in service, such as oils, grease, packing, gaskets, O-rings, etc. The pump manufacturer shall be solely responsible for warranty of the pump equipment and all components.

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- 3. Components failing to perform as specified by the engineer, or as represented by the manufacturer, or as proven defective in service during the warranty period, shall be replaced, repaired, or satisfactorily modified by the manufacturer.
- 4. It is not intended that the pump manufacturer assume liability for consequential damages or contingent liabilities arising from failure of any vendor supplied product or part which fails to properly operate, however caused. Consequential damages resulting from defects in design, or delays in delivery are also beyond the manufacturer's scope of liability.
- 5. This limited warranty shall be valid only when installation is made and use and maintenance is performed in accordance with manufacturer recommendations. The warranty shall become effective on the date of acceptance by the purchaser or the purchaser's authorized agent, or sixty (60) days after installation, or ninety (90) days after shipment from the factory, whichever occurs first.

#### PART 2 - PRODUCT

#### 2.01 MANUFACTURER

- A. The specifications and project drawings depict equipment and materials manufactured by The Gorman-Rupp Company which are deemed most suitable for the service anticipated. The contractor shall prepare his bid based on the specified equipment for purposes of determining low bid. Award of a contract shall constitute an obligation by the contractor to furnish the specified equipment and materials. Pumps shall be offered and sold only by a factory authorized sales agent of the manufacturer of the pump offered.
- B. After execution of the contract, the contractor may offer substitutions to the specified equipment for consideration. The equipment proposed for substitution must be superior in construction and performance to that specified in the contract, and the higher quality must be demonstrated by a list of current users of the proposed equipment in similar installations. Pumps to be furnished must be manufactured in the USA. See Sections 01635 & 01635A for submittal procedures.
- C. In event the contractor obtains engineer's approval for equipment substitution, the contractor shall, at his own expense, make all resulting changes to the enclosures, buildings, piping or electrical systems as required to accommodate the proposed equipment. Revised detail drawings illustrating the substituted equipment shall be submitted to the engineer prior to acceptance.
- D. It will be assumed that if the cost to the contractor is less for the proposed substitution, then the contract price shall be reduced by an amount equal to the savings. For quality control reasons and future pump and parts availability, all major castings shall be sourced and machined in North America and the pumps must be manufactured in the USA.

#### 2.02 PUMP DESIGN

A. Pumps shall be horizontal, self-priming centrifugal type, designed specifically for handling raw, unscreened, domestic sanitary sewage. Pump solids handling capability and performance criteria shall be in accordance with requirements listed under PART 1 - GENERAL of this section.

- B. The pump manufacturer must be ISO 9001:2008 revision certified, with scope of registration including design control and service after sales activities.
- C. Materials and Construction Features
  - 1. Pump casing shall be cast iron Class 30 with integral volute scroll. Casing shall incorporate following features:
    - a. Mounting feet sized to prevent tipping or binding when pump is completely disassembled for maintenance.
    - b. Fill port coverplate, 3 1/2" diameter, shall be opened after loosening a hand nut/clamp bar assembly. In consideration for safety, hand nut threads must provide slow release of pressure, and the clamp bar shall be retained by detente lugs. A Teflon gasket shall prevent adhesion of the fill port cover to the casing.
    - c. Casing drain plug shall be at least 1 1/4" NPT to insure complete and rapid draining.
    - d. Liquid volume and recirculation port design shall be consistent with performance criteria listed under PART 1 GENERAL of this section.
  - 2. Coverplate assembly shall be cast iron Class 30. Design must incorporate following maintenance features:
    - a. A lightweight inspection coverplate, retained by acorn nuts, for access to pump interior for removal of stoppages. Designs that require removal of complete coverplate assembly for access to the impeller will not be accepted.
    - b. Retained by acorn nuts for complete access to pump interior. Back coverplate removal must allow service to the impeller, seal, wear plate or check valve without removing suction or discharge piping. Back coverplate shall incorporate an obstruction free flow path by combining four support posts into a two-point "webbed" plate design for increased durability, reduced clogging, and increased operational efficiency.
    - c. Aggressive Self-Cleaning Wear Plate
      - A replaceable wear plate made of G-R Hard Iron or approved equal shall be secured to the back cover plate by studs and nuts. Wear plate shall be selfcleaning design ensuring that debris is cleared away and does not collect on the impeller vanes.
      - 2) The nature of the conveyed medium poses significant challenges to the continuous operation of the pump. Of particular concern is the clogging of the impeller by debris in the pumped medium including but not limited to long rags, fibers, and like debris which are able to wrap around the impeller vanes, stick to the center of the vanes or hub, or lodge within the spaces between the impeller and the housing.
      - 3) The extra thick aggressive self-cleaning wear plate shall have integral, water jet cut notches and grooves in combination with an oversized, lacerating "tooth" designed to cut, chop and tear the solids, allowing them to pass through the pump.

- d. In consideration for safety, a pressure relief valve shall be supplied in the inspection coverplate. Relief valve shall open at 75-200 PSI.
- e. One O-ring of Buna-N or approved equal material shall seal inspection coverplate to back coverplate.
- f. Two O-rings of Buna-N or approved equal material shall seal back coverplate to pump casing.
- g. Pusher bolt capability to assist in removal of inspection coverplate or back coverplate. Pusher bolt threaded holes shall be sized to accept same retaining cap screws as used in rotating assembly.
- h. Easy-grip handle shall be mounted to face of inspection coverplate.
- 3. Rotating assembly, which includes impeller, shaft, mechanical shaft seal, lip seals, bearings, seal plate and bearing housing, must be removable as a single unit without disturbing the pump casing or piping. Design shall incorporate following features:
  - a. Seal plate shall be G-R Hard Iron or approved equal and bearing housing shall be cast iron Class 30. Separate oil filled cavities, vented to atmosphere, shall be provided for shaft seal and bearings. Cavities must be cooled by the liquid pumped. Three lip seals will prevent leakage of oil.
    - 1) The bearing cavity shall have an oil level sight gauge and fill plug check valve. The clear sight gauge shall provide easy monitoring of the bearing cavity oil level and condition of oil without removal of the fill plug check valve. The check valve shall vent the cavity but prevent introduction of moist air to the bearings.
    - 2) The seal cavity shall have an oil level sight gauge and fill/vent plug. The clear sight gauge shall provide easy monitoring of the seal cavity oil level and condition of oil without removal of the fill/vent plug.
    - 3) Double lip seal shall provide an atmospheric path providing positive protection of bearings, with capability for external drainage monitoring.
  - b. Impeller shall be G-R Hard Iron or approved equal, continuous vane, semi-open, non-clog, with integral pump out vanes on the back shroud. Impeller shall thread onto the pump shaft and be secured with a Grade 8 socket head cap screw and lock washer.
  - c. Shaft shall be AISI 17-4 pH stainless steel.
  - d. Bearings shall be anti-friction ball type of proper size and design to withstand all radial and thrust loads expected during normal operation. Bearings shall be oil lubricated from a dedicated reservoir. Pump designs which use the same oil to lubricate the bearings and shaft seal shall not be acceptable.
  - e. Shaft seal shall be component seal, oil lubricated, mechanical type. The stationary and rotating seal faces shall be silicon carbide alloy. Each mating surface shall be lapped to within three light bands flatness (35 millionths of an inch), as measured by an optical flat under monochromatic light. The stationary seal seat shall be double

floating by virtue of a dual O-ring design; an external O-ring secures the stationary seat to the seal plate, and an internal O-ring holds the faces in alignment during periods of mechanical or hydraulic shock (loads which cause shaft deflection, vibration, and axial/radial movement). Elastomers shall be viton; cage and spring to be stainless steel. Seal shall be oil lubricated from a dedicated reservoir. The same oil shall not lubricate both shaft seal and shaft bearings. Seal shall be warranted in accordance with requirements listed under PART 1 - GENERAL of this section.

- f. Pusher bolt capability to assist in removal of rotating assembly. Pusher bolt threaded holes shall be sized to accept same capscrews as used for retaining rotating assembly.
- 4. Adjustment of the impeller face clearance (distance between impeller and wearplate) shall be accomplished by external means.
  - a. Clearances shall be maintained by a four point external shimless coverplate adjustment system, utilizing a four collar and four adjusting screw design allowing for incremental adjustment of clearances by hand as required. Each of the four points shall be lockable to prevent inadvertent clearance increases or decreases due to equipment vibration or accidental operator contact. The four point system also allows for equal clearance gaps at all points between the impeller and wear plate. Requirement of realignment of belts, couplings, etc., shall not be acceptable. Coverplate shall be capable of being removed without disturbing clearance settings. Clearance adjustment systems that utilize less than four points will not be considered.
  - b. There shall be provisions for additional clearance adjustment in the event that adjustment tolerances have been depleted from the coverplate side of the pump. The removal of stainless steel shims from the rotating assembly side of the pump shall allow for further adjustment as described above
  - c. Clearance adjustment which requires movement of the shaft only, thereby adversely affecting seal working length or impeller back clearance, shall not be acceptable.
- 5. Suction check valve shall be molded Neoprene with integral steel and nylon reinforcement. A blow-out center shall protect pump casing from hydraulic shock or excessive pressure. Removal or installation of the check valve must be accomplished through the coverplate opening, without disturbing the suction piping. Sole function of check valve shall be to save energy by eliminating need to reprime after each pumping cycle. Pumps requiring a suction check valve to assist reprime will not be acceptable.
- 6. Spool flanges shall be one-piece cast iron, class 30 fitted to suction and/or discharge ports. Each spool shall have one 1-1/4" NPT and one 1/4" NPT tapped hole with pipe plugs for mounting gauges or other equipment.

### **PART 3 - EXECUTION**

### 3.01 EXAMINATION

A. Contractor shall off-load equipment at installation site using equipment of sufficient size and design to prevent injury or damage. Immediately after off-loading, contractor shall inspect complete pump and appurtenances for shipping damage or missing parts. Any damage or

PS-05190 Revised: 08/12 discrepancy shall be noted in written claim with shipper prior to accepting delivery. Validate all pump serial numbers and parts lists with shipping documentation. Notify the manufacturer's representative of any unacceptable conditions noted with shipper.

### 3.02 INSTALLATION

- A. Install, level, align, and lubricate pump(s) as indicated on project drawings. Installation must be in accordance with written instructions supplied by the manufacturer at time of delivery.
- B. Suction pipe connections are vacuum tight. Fasteners at all pipe connections must be tight. Install pipe with supports and thrust blocks to prevent strain and vibration on pump piping. Install and secure all service lines (level control, air release valve or pump drain lines) as required in wet well.
- C. Check motor and control data plates for compatibility to site voltage. Install and test the station ground prior to connecting line voltage to control panel.
- D. Prior to applying electrical power to any motors or control equipment, check all wiring for tight connection. Verify that protective devices (fuses and circuit breakers) conform to project design documents. Manually operate circuit breakers and switches to ensure operation without binding. Open all circuit breakers and disconnects before connecting utility power. Verify line voltage, phase sequence and ground before actual start-up.
- E. After all anchor bolts, piping and control connections are installed, completely fill the grout dam in the pump station base with non-shrink grout.

### 3.03 FIELD QUALITY CONTROL

### A. Operational Test

- Prior to acceptance by owner, an operational test of all pumps, drives, and control
  systems shall be conducted to determine if the installed equipment meets the purpose
  and intent of the specifications. Tests shall demonstrate that all equipment is electrically,
  mechanically, structurally, and otherwise acceptable; it is safe and in optimum working
  condition; and conforms to the specified operating characteristics.
- 2. After construction debris and foreign material has been removed form the wet well, contractor shall supply clear water volume adequate to operate station through several pumping cycles. Observe and record operation of pumps, suction and discharge gage readings, ampere draw, pump controls, and liquid level controls. Check calibration of all instrumentation equipment, test manual control devices, and automatic control systems. Be alert to any undue noise, vibration or other operational problems.

### **SECTION S-002**

### DUPLEX FLOAT SWITCH CONTROLLED PUMP CONTROL PANELS

### PART 1 GENERAL

### 1.01 SCOPE

A. The contractor shall furnish and install control panels to provide un-attended automatic operation of pumps. The control panel shall be completely assembled, wired and tested. The panel manufacturer shall be certified by Underwriters Laboratories, (UL) to manufacture UL 508A and 698A control panels and shall present their certification documentation with submittal drawings.

### 1.02 REFERENCES

- A. NFPA 70 –National Electrical Code, National Fire Protection Association, Latest Edition.
- B. U.L. 508 A Industrial Control Panels, Underwriters Laboratories, Inc., Latest Edition.
- C. NEMA 250 Enclosures for Electrical Equipment (1000 Volts Maximum)

### **PART 2 PRODUCTS**

### 2.01 CONTROLS

- A. The control panel shall be enclosed in a NEMA 4X Stainless Steel enclosure with an inner safety door to isolate all power components and protect the operator. HOA selectors and run lights shall be provided for each pump. An alternating relay shall be provided to alternate pumps on successive cycles of operation. Provisions shall be made to provide simultaneous operation of both pumps on high demand. A terminal strip shall be provided to connect all float switches and remote pilot devices. All electrical devices shall be finger safe or have finger safe covers to prevent incidental contact with energized components. Only control panels with high quality individual industrial components with high withstand capability to power surges will be acceptable. Unitized printed circuit board type control panels will not be meet this specification.
- B. Based on wet well level, three float switches shall be used for the duplex operation of the lift station pumps. The lower switch shall turn off all pumps, the middle switch shall start the lead pump and the upper switch shall start the lag pump. A fourth switch shall activate a high level alarm light mounted on the enclosure. As liquid level rises in the wet well, it shall close the lower "stop" float switch and enable the pumps to run when called for. As level continues to rise, it shall close the "start lead" float switch, causing one of the pumps to run. The lead pump shall run until the wet well level recedes to the lower float switch and cause pump to stop. If, however, the level

rises faster than the capacity of the lead pump, the liquid shall close the "start lag" float switch, thereby starting the lag pump. Both pumps shall run until the liquid level has receded to the lower float switch causing both pumps to stop. If level continues to rise past both "start lead" and "start lag" float switches, it shall cause the "high level" float switch to activate a visual alarm located on the top of the control panel. The high level alarm float switch shall automatically de-activate as liquid falls in the wet well.

### 2.02 TRANSFORMER

A. All 480 volt control panels shall contain a control power transformer (CPT), with fused primary and secondary, to reduce the control voltage to 120 VAC and shall be sized to meet all control requirements. Transformers required to power receptacles or external devices shall be furnished by the electrical contractor and mounted outside of the control panel. On 208 volt and 240 volt panels, a neutral wire shall be brought to the panel by the electrical contractor for connection to the control panel neutral block.

### 2.03 CIRCUIT BREAKERS

A. The control panel shall contain back panel mounted branch thermal magnetic motor circuit breakers for each motor. The protector operating mechanism shall be quick make, quick break and trip free.

### 2.04 MOTOR STARTERS

A. The motor starters shall be full voltage, non-reversing, horsepower rated with Class 10 ambient compensated overload relays and sized for the specified pumps. The overload relays shall contain an additional N.O. (normally open) contact to provide a crossover circuit enabling the opposite pump to run on an overload trip.

### 2.05 SINGLE PHASE MOTOR STARTING MODULES

A. Furnish when required by the pump manufacturer, all necessary start relay(s), start capacitor(s) and run capacitor(s) needed for the correct operation of single phase motors. All start/run components and circuits shall be compatible with the pump motor(s) being used. (Applies to single-phase control panels only.)

### 2.06 MOISTURE DETECTION

A. Where submersible pumps are utilized, a moisture detection circuit shall be provided to sense moisture in the pump seals. Provide moisture detection relays and other devices as recommended by the particular pump manufacturer. A warning light inside the panel shall illuminate upon this condition, but shall not cause the pump to lockout. However, where the moisture detector is internally connected in series with the over temperature detector, it shall stop the pump.

### 2.07 OVER TEMPERATURE PROTECTION

A. The panel shall be wired to connect an over temperature device in or on the pump that will activate on high temperature and stop the pump. The temperature device shall

automatically reset when the temperature drops to normal. The accompanying high temp pilot light shall also auto reset.

### 2.08 ALTERNATOR

A. Pump sequencing shall be attained by an alternator. The alternator shall switch when power is removed from the switching terminal. Alternator shall also contain a toggle switch to allow for pump 1 or pump 2 to be the lead pump each cycle. Alternator shall plug into a standard 11 pin socket for easy replacement and shall be a standard off the shelf device available from multiple sources.

### 2.09 PILOT DEVICES

- A. 22 mm HOA selector switches and indicator lights shall be provided as required and mounted on the inner safety door.
- B. Light colors shall be as follows:
  - 1. Run Red
  - 2. Alarm Amber

### 2.10 FLOAT SWITCHES

- A. The floats shall use fiber optic cable to transmit a beam of light from a transmitter in the control panel to the float where the beam makes and breaks depending on the tilt of the float. The receiver in the control panel shall detect the presence or absence of light and operate a relay in the receiver. The float shall have no electrical components or metallic wires that could cause arcs and sparks in an explosive atmosphere.
- B. The transceivers (transmitter and receiver combination) shall be dual din rail mounted UL Listed units capable of connection to 2 floats. Provide one dual transceiver for every 2 floats. The fiber optic cable shall be custom made for the float and shall consist of dual plastic fibers with an overall specially blended PVC sheath for flexibility. No special tools or experience shall be required for connection of the optical cable to the transceivers. The float color shall be two-tone with the lighter color on the dome for easier viewing underwater when tilted up.
- C. The float switches and transceivers shall be the Optical Float® level detection system by Cox Research and Technology, Inc., Baton Rouge, LA. or approved equal. The dual transceivers shall be model TR2, and the floats shall be Opti-Float® model F1 or approved equal.

### 2.11 CONTROL PANEL CONSTRUCTION

A. Control panel shall be constructed in accordance with the means and methods of the patented Control Assembly Maintenance Option (CAMO<sup>TM</sup>) by Cox Research and Technology, Inc. Baton Rouge, LA. or approved equal.

- B. The control panel shall be designed for the quick removal of the entire interior of the panel complete with all components or, if desired, only the inner safety door. The control enclosure shall be capable of being left in place with conduits and external wiring attached. All control and small power wiring to be disconnected shall be by separable terminal strips.
- C. Enclosure shall be a standard outdoor NEMA 4X / UL Type 4X, stainless steel enclosure, Hoffman with the CAMO<sup>TM</sup> system installed, or equal. Enclosures shall have quick release or latches allowing for fast entry and shall be capable of attaching the Owners padlocks.
- D. Should the entire assembly be desired to be removed, both the interior swing panel and the back plate with all components shall be capable of being removed simultaneously thus emptying the entire enclosure.
- E. Special handles placed at optimum locations on the back plate shall be installed to facilitate quick and safe withdrawal of the assemblies.
- F. In addition, the control panels shall provide for easy maintenance. Multiple stations shall contain identical controls as much as practical. The Owner may have spare assemblies placed in storage and when maintenance is required, the entire assembly shall be capable of being switched out and the malfunctioning unit brought back to the repair location for repairs or sent back to the manufacturer for repair or complete refurbishing.
- G. To ensure product support, the Manufacturer shall have been in the business of manufacturing pump station control panels for at least 10 years, shall maintain an adequate parts stock.

### PART 3 EXECUTION

### 3.01 INSTALLATION

- A. The contractor shall install the control panel in accordance with the manufacturers instructions and as shown on the drawings.
- B. The panel shall be installed such that sewer gasses cannot enter the panel.
- C. The contractor shall verify the correct control voltage is present before energizing the control circuit.

### 3.02 STORAGE

A. The panel shall be stored in a weather protected location until installation.

### END OF SECTION

### **Section 14**

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03/07/2024 PLANS PREPARED BY AND RECOMMEND FOR APPROVAL:

MEYER ENGINEERS, LTD. MATTHEW FALATI, P.E.

03/27/2024

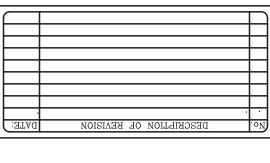
TITLE SHEET

PROJECT No.: TU23000174 MANDEVILLE, LOUISIANA BOIS SEWER CONSOLIDATION

NO.		of 24
SHEET	$\overline{}$	SHEET 1

# LES BOIS SEWER CONSOLIDATION ST. TAMMANY PARISH DEPARTMENT OF UTILITIES PROJECT NO::TU23000174

MADISONVILLE, ST. TAMMANY PARISH, LOUISIANA BID NO.: 24-11-2



# PARISH PRESIDENT

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

PARISH COUNCIL

MICHAEL B. COOPER

# COUNCIL MEMBERS

DISTRICT 1	DISTRICT 3	DISTRICT 4	DISTRICT 5	DISTRICT 6	DISTRICT 7	DISTRICT 8	DISTRICT 9	DISTRICT 10	DISTRICT 11	DISTRICT 12	DISTRICT 13	DISTRICT 14
RICHARD "RICK" SMITH	LARKT RULLING MARTHA J. CAZAUBON	KATHY SEIDEN	"PAT" PHILLIPS	CHERYL S. TANNER	JOSEPH "JOE" IMPASTATO	PATRICK "PAT" BURKE III	DAVID COUGLE	MAUREEN "MO" O'BRIEN	ARTHUR LAUGHLIN	"JERRY" BINDER	JEFFREY "JEFF" CORBIN	JIMMY "GUMBY" STRICKLAND III



# PROJECT LOCATION TCHEFUNCTE PARC DR.

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OF QUANTITIES

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LIFT STATION ELECTRICAL SITE PLAN
LIFT STATION ELECTRICAL SITE PLAN
ELECTRICAL LIFT STATION DETAILS
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### LOCATION MAP (1" = 1000")

LOCATION IN LOUISIANA (ST. TAMMANY PARISH)

TAMMANY PARISH DEPARTMENT OF UTILTIES: #\_AI125944\_ SEWER SYSTEM

CLASSIFICATION: MUNICIPAL AND PUBLIC WORKS CONSTRUCTION

NOTE:

PERMIT НОП

P23-09-103-155

CONSTRUCTION TYPE:
CONSTRUCT NEW WATER MAIN
PARALLEL TO EXISTING WATER MAIN
USING OPEN-CUT AND TRENCHLESS
METHODS.

VICINITY MAP

A/E PROJECT No.: 23-1130-0031

## NOTES GENERAL

- CONTRACTOR SHALL NOT DAMAGE TREES. IF DAMAGED, CONTRACTOR SHALL REPLACE AT HIS OWN COST. CONTRACTOR SHALL USE A CHAIN SAW TO CUT ROOTS OF TREES EXPOSED DURING EXCAVATION. CONTRACTOR SHALL NOT BREAK ROOTS BY PULLING THEM WITH DIGGING MACHINES. ROOT AND BRANCH PROTECTANT SHALL BE SPRAYED OR PAINTED ON BRANCHES OR ROOTS WHICH HAVE BEEN CUT.
- THE CONTRACTOR SHALL PROVIDE A LOUISIANA LICENSED ARBORIST TO PERFORM ANY NECESSARY TREE TRIMMING, ROOT PRUNING, OR RECOMMENDATION OF REMOVAL OF ANY TREE PRIOR TO BEGINNING EXCAVATION. CONTRACTOR SHALL GET ALL NECESSARY APPROVALS INVOLVING TREE TRIMMING OR TREE REMOVAL IN ACCORDANCE WITH LOCAL REGULATIONS. NO DIRECT PAYMENT.
- PROTECT ALL EXISTING TREES, PLANTING AND LAWNS FROM DAMAGE. ALL STREET SIGNS, FENCES, SHRUBBERY, MAILBOXES, ETC. RELOCATED DURING CONSTRUCTION SHALL BE RETURNED TO THIER ORIGINAL LOCATION AND IN ORIGINAL CONDITIONS. DIRECT PAYMENT.
  - THE CONTRACTOR SHALL NOT PLACE EXCAVATED MATERIAL OR EQUIPMENT ON T THE ROOTS OF TREES GENERALLY EXTEND TO THE DRIP OF TREES).
    - THE OWNER MAY PROVIDE AND PAY FOR THE SERVICES OF A TESTING LAB TO MONITOR VIBRATIONS NEAR RESIDENCES DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE TO PAY FOR A TESTING LAB FOR ALL OTHER TESTING REQUIREMENTS. CONTRACTOR SHALL SELECT A TESTING LAB FROM AN APPROVED VENDOR LIST.
- EXISTING UTILITY LOCATIONS AND DEPTHS SHOWN ON THE PLANS ARE APPROXIMATE. CONTRACTOR SHALL MAKE PROVISIONS TO PROTECT EXISTING UTILITIES WHEN EXCAVATING IN THESE AREAS SO AS NOT TO DAMAGE OR DISRUPT THESE UTILITIES. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF UTILITIES PRIOR TO EXCAVATION. 6
- CAVITIES OR TRENCHES LEFT BY REMOVAL WORK, IF WITHIN 3' FROM PAVEMENT, SHALL BE BACKFILLED TO THE LEVEL OF SURROUNDING GGRANULAR MATERIAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN SERVICES, SUPPLYING MATERIALS, AND LABOR NECESSARY TO PROVIDE SHEETING, SHORING AND BRACING OR SUPPORTS AS REQUIRED TO PROVIDE A SAFE WORKING CONDITION FOR CONTRACTOR'S PERSONNEL AND TO PROVIDE FOR PROTECTION OF UTILITIES, BUILDINGS, LEVEES, AND STRUCTURES. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH THESE REQUIREMENTS. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE SYSTEM TO WITHSTAND LATERAL PRESSURE. SHEET DESIGN AND INSTALLATION SHALL BE INCLUDED IN THE COST OF THE PROJECT.
  - ALL GRASS AREAS AFFECTED BY CONSTRUCTION SHALL BE SODDED, AS DIRECTED OWNER'S PROJECT REPRESENTATIVE. WATER AREA IMMEDIATELY. <u>ი</u>

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- CONTRACTOR SHALL REGRADE ALL AREAS AFFECTED BY CONSTRUCTION TO PROVIDE POSITIVE DRAINAGE. WORK SHALL BE IN A WORKMAN LIKE MANNER AND IN ACORDANCE WITH A/E REQUIREMENTS. IF CONTRACTOR DETERMINES THAT ANY AREAS AFFECTED BY CONSTRUCTION CANNOT BE REGRADED TO DRAIN, CONTRACTOR SHALL DOCUMENT (I.E., TAKE ELEVATIONS, PICTURES, ETC.) EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
- WIDE IF SIDEWALK REPLACEMENT IS REQUIRED IT SHALL BE A MINIMUM OF 4'-0" 4" THICK. PROVIDE TOOLED JOINTS AT INTERVALS EQUAL TO THE WIDTH OF SIDEWALK AND EXPANSION JOINTS EVERY 20'-0".
- CONTRACTOR SHALL GIVE THOSE AFFECTED BY CONSTRUCTION 24 HOURS NOTICE PRIOR TO DISRUPTION OF DRIVEWAYS. DRIVEWAYS AND STREETS SHALL NOT REMAIN CLOSED OVERNIGHT. 12.
- $\mathbb{A}$ CONTRACTOR SHALL COORDINATE AND PAY FOR THE DE—ENERGIZING AND RE—ENERGIZING OF POWER LINES FOR CONSTRUCTION PURPOSES AS REQUIRED LOCAL, STATE, AND FEDERAL AGENCIES. 13.
- CONTRACTOR SHALL CONTACT THE UTILITY COMPANIES OR DEPARTMENTS LISTED BELOW PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE IF THERE ARE ANY OTHER UTILITIES IN THE AREA AND TO CONTACT THE APPROPRIATE UTILITIES.

LOUISIANA ONE CALL
DOTD/CARDNO
ATMOS ENERGY
CLECO POWER
AT&T
CHARTER COMMUNICATIONS

- 1-800-272-3020 (512) 605-2640 (888) 286-6700 (318) 484-7400 (985) 892-0649 (877) 906-9121
- CONTRACTOR SHALL NOTIFY THOSE AFFECTED BY CONSTRUCTION 24 HOURS PRIOR TO DISRUPTION OF WATER, SEWER OR OTHER UTILITY SERVICE. UTILITY SERVICES SHALL BE PROMPTLY REPAIRED AND NOT REMAIN OUT OF SERVICE OVERNIGHT. 15. 16.
  - CONTRACTOR SHALL BRACE POWER AND COMMUNICATION POLES ADJACENT TO EXCAVATION. BRACING SHALL REMAIN IN PLACE AFTER BACKFILLING UNTIL COMPACTION STANDARDS HAVE BEEN MET. COMPLETE WORK PROMPTLY ONCE EXCAVATION HAS BEGUN ADJACENT TO POLES.
- WITH THE IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE DIRECTLY VAPPROPRIATE UTILITY COMPANIES TO HAVE THE UTILITIES RELOCATED.
- THE CONTRACTOR IS TO FULLY AND CAREFULLY EXAMINE ALL ADJOINING OR ADJACENT STRUCTURES. THE CONTRACTOR SHALL PHOTOGRAPH INTERIOR AND EXTERIOR OF ALL ADJACENT STRUCTURES SO AS TO FULLY DEPICT EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION. HE SHALL VISIT THESE STRUCTURES AT REGULAR INTERVALS AND NOTE CONDITIONS AND SUPPLEMENT WITH ADDITIONAL PHOTOGRAPHS. THE CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY DAMAGE DONE TO THE ADJACENT STRUCTURES CAUSED FROM THE CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL SEE THAT ADJACENT OR ADJOINING STRUCTURES ARE PROPERLY BRACED IF REQUIRED TO WITHSTAND VIBRATIONS DURING THE CONSTRUCTION ACTIVITIES. <u>∞</u>
  - PORTLAND CEMENT CONCRETE SHALL BE 4,000 PSI, UNLESS NOTED OTHERWISE 19.

). SUGGESTED SEQUENCE OF CONSTRUCTION:
INSTALL NEW LIFT STATION AND SEWER FORCE MAIN AND GRAVITY SEWER SYSTEM FROM EXISTING LIFT STATION TO NEW LIFT STATION.
ENSURE NEW LIFT STATION IS OPERATIONAL.
CONNECT EXISTING WETWELL TO NEW GRAVITY SEWER SYSTEM.
DEMOLISH EXISTING LIFT STATION.
DECOMMISSION EXISTING WASTEWATER TREATMENT PLANT. 20. §

# **SEWER NOTES**

ALL VALVES SHALL BE MANUFACTURED BY MUELLER OR APPROVED EQUAL.

# (CONT.) SEWER NOTES

TEMPORARY BY-PASS PUMPING PLAN TO THE ENGINEER PRIOR TO CONSTRUCTION. THERE WILL BE NO DOWNTIME ALLOWED UNLESS APPROVED BY THE OWNER AND THE ENGINEER. (NCLUDING

DETAILS SHOWN ARE STANDARD AND SHALL APPLY IN ACCORDANCE WITH PAY LISTED IN THE BID PROPOSAL OR SUMMARY SHEET (IF INCLUDED). DETAILS APPLY AND FOR WHICH THERE IS NO SEPARATE PAY ITEM SHALL HAVE THE INCLUDED IN VARIOUS PAY ITEMS BID.

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MENT MARKINGS, E WITH "THE AS REVISED.

THE CONTRACTOR SHALL DESIGN AND APPLY ALL SIGNALS, PAVEMENT CHANNELIZING DEVICES, AND ALL WARNING SIGNS IN ACCORDANCE WIT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", 1988 EDITION AS F

(TO BE USED IN CONJUNCTION WITH LA DOTD STANDARD DRAWINGS TC-00(A)), TC-03, AND TC-04)

TRAFFIC NOTES

NOTES

DETAIL

- CONTRACTOR SHALL VERIFY PUMP STATION DIMENSIONS WITH EQUIPMENT MANUFACTURER'S SHOP DRAWINGS TO INSURE PROPER FIT WITHIN THE STRUCTURE IF EQUIPMENT IS OTHER THAN SPECIFIED.
- THE CONTRACTOR SHALL SUBMIT MANUFACTURER'S SHOP DRAWINGS TO THE ENGINEER FOR REVIEW BEFORE START OF LIFT STATION CONSTRUCTION.

  ALL FLANGED 90 DEGREE DUCTILE IRON BENDS SHOWN ON THESE PLANS SHALL BE SHORT RADIUS, UNLESS OTHERWISE SPECIFIED.
  - WORK MUST BE SCHEDULED AND SEQUENCED IN ORDER THAT SERVICE OF THE STATION IS NOT INTERRUPTED. 6.
  - CONTRACTOR SHALL NOT BE ALLOWED TO DISCHARGE SEWAGE FLOWS INTO CANALS OR STORM DRAINAGE SYSTEM.
- CONTRACTOR SHALL CONTACT ST. TAMMANY PARISH PRIOR TO DISTURBING ANY EXISTING SEWER FACILITIES. CONTRACTOR SHALL COORDINATE BY—PASS PLAN PRIOR TO BEGINNING WORK.

# DEMOLITION AND SALVAGE NOTES 1. CONTRACTOR TO COORDINATE WITH ST. TAMMANY PARISH FOR A LIST OF EQUIPMENT.

- a.) PUMPS/MOTORS OF EXISTING LIFT STATION
  b.) CONTROL PANEL OF EXISTING LIFT STATION
  c.) BLOWERS, BLOWER MOTORS AND CONTROL PANEL OF EXISTING WWTP
- CONTRACTOR TO DELIVER TO ST. TAMMANY PARISH ALL EQUIPMENT DESIGNATED FOR SALVAGE

# PAVING NOTES

- PORTLAND CEMENT CONCRETE PAVEMENT SHALL BE IN ACCORDANCE WITH SECTIONS 601 & 901 OF THE DOTD STANDARD SPECIFICATIONS FOR ROADS & BRIDGES (LATEST EDITION) AND SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
- PAVEMENT SHALL NOT BE OPENED TO TRAFFIC UNTIL 28 DAYS AFTER PLACEMENT WITHOUT THE APPROVAL OF THE ENGINEER.
  - ALL DRAINAGE AND SEWER STRUCTURES IN PAVEMENT SHALL BE BOXED OUT. 3.
- BASE COURSE SHALL CONSIST OF AASHTO A-4 OR BETTER SOILS LIMITED TO A MAXIMUM LIQUID LIMIT OF 25 AND A MAXIMUM PLASTICITY INDEX OF 6, "PUMPED" RIVER SAND GENERALLY MEETS THIS REQUIREMENT. BASE SHALL BE A MINIMUM 12" THICKNESS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- AN APPROVED TESTING LABORATORY, SELECTED BY THE ENGINEER, SHALL BE RETAINED BY THE CONTRACTOR AND SHALL PROVIDE ALL REQUIRED TESTING. TEST REPORT MUST BE FURNISHED TO THE DEPARTMENT OF UTILITIES, MEYER ENGINEERS, LTD. AND THE CONTRACTOR. 5
- NO CONCRETE SHALL BE POURED WITHOUT THE SERVICES OF THE TESTING LAB TECHNICIAN TO WITNESS THE POUR, MAKE SLUMP TESTS AND MAKE TEST CYLINDERS. 6.
- ANY CONCRETE POURED WITHOUT THE SERVICES OF THE TESTING LAB TECHNICIAN SHALL BE SUBJECT TO DISCRETIONARY TESTING ORDERED BY THE DEPARTMENT OF UTILITIES AT THE EXPENSE OF THE CONTRACTOR. SUBDIVISION STREETS WILL NOT BE ACCEPTED FOR MAINTENANCE IF CONTRACTOR HAS NOT PAID TESTING LABORATORY FOR THE DISCRETIONARY TESTING.
- CONTRACTOR MUST NOTIFY THE TESTING LAB AND THE ENGINEER, AT LEAST 48 HOURS PRIOR TO POURING CONCRETE.

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- A REPRESENTATIVE OF THE DESIGN ENGINEER MUST BE PRESENT TO WITNESS CONCRETE POURS. <u>ი</u>
- CONCRETE PAVEMENT REMOVED FOR TIE—INS AND FOR UTILITY CROSSINGS SHALL BE REMOVED FROM JOINT TO JOINT AND REPLACED WITH CONCRETE CONTAINING A MINIMUM OF 7 SACKS OF CEMENT PER CUBIC YARD, AND HAVING A 4" MAXIMUM SLUMP. 10.
- IMMEDIATELY AFTER COMPLETION OF FINISHING OPERATIONS AND AS SOON AS MARRING OF CONCRETE WILL NOT OCCUR, THE PAVEMENT SURFACE SHALL BE CURED BY OVERING WITH A WHITE PIGMENTED CURING COMPOUND IN CONFORMANCE WITH DOTD STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES LATEST EDITION.
  - CONTRACTOR SHALL USE THE NECESSARY SAND BASE TO OBTAIN THE ROADWAY GRADES SHOWN ON THE PLANS. THIS MAY REQUIRE MORE THAN THE MINIMUM SAND BASE.

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- JOINT SEALER SHALL BE IN ACCORDANCE WITH SECTION 1005.02 OF DOTD STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, 2000 EDITION. THE SEALANT AND BACKER MATERIALS SHALL BE APPROVED PRODUCTS LISTED IN DOTD'S QUALIFIED PRODUCT LIST 67. 13.
- 14. JOINTS ENDING AT CURVES SHALL BE CARRIED INTO THE CURB AND PAVEMENT AT RIGHT ANGLES TO THE TANGENT AT THAT POINT.

# SEWER TREATMENT PLANT NOTES

- EXISTING SEWER TREATMENT PLANT SHALL BE DECOMMISSIONED AND SALVAGED. ANY RESIDUAL WASTEWATER OR SOLIDS MUST BE PROPERLY DISPOSED. ONCE ALL RESIDUALS HAVE BEEN REMOVED, CONTRACTOR SHALL DELIVER WWTP TO A LOCATION WITHIN 30 MILES OF THE PROJECT SITE AS DESIGNATED BY THE PARISH AS PART OF THIS CONTRACT.
  - CONTRACTOR SHALL COORDINATE HIS SCHEDULE WITH THE PARISH PRIOR TO STARTING THE DECOMMISSIONING OF THE PACKAGE TREATMENT UNIT (PTU).  $\ddot{c}$
- RESIDUAL WASTEWATER: THE RESPONSIBLE PARTY MAY HIRE A LICENSED WASTEWATER HAULER TO REMOVE RESIDUAL LIQUID WASTES. CONTRACTOR SHALL NOT RELEASE ANY RESIDUAL WASTEWATER AND/OR SLUDGE TO THE GROUND. THE CONTRACTOR SHALL CLEAN—UP ANY SPILLS OF WASTEWATER OR SLUDGE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL AND STATE REGULATIONS. THE CONTRACTOR SHALL DISPOSE OF ALL WASTEWATER AND SLUDGE IN ACCORDANCE WITH ALL FEDERAL AND STATE REGULATIONS.
- THE PTU AND ALL APPURTENANCES SHALL BE RETURNED TO THE PARISH, UNLESS OTHERWISE DIRECTED BY THE PARISH.

## GOVERNMENT 620 N. TYLER STREET COVINGTON, LA 7010 DEI ST. DATE: MANHOLES SHALL BE VACUUM TESTED IMMEDIATELY AFTER ASSEMBLY OF MANHOLE AND CONNECTING PIPES AND BEFORE ANY BACKFILL IS PLACED AROUND MANHOLE. SEE SPECIFICATIONS FOR TEST PROCEDURES. FRAMES AND COVERS FOR MANHOLES AND TOP, DOME AND CONE SECTIONS SHALL BE DESIGNED FOR A.A.S.H.T.O. H-20 LIVE LOAD PLUS IMPACT TRAFFIC LOADS. ALL CONCRETE USED FOR MANHOLE COMPONENTS SHALL BE 4000 PSI MIN. STRENGTH AT 28 DAYS. UNLESS OTHERWISE NOTED, USE CALCAREOUS (LIMESTONE OR DOLOMITE) COARSE AGGREGATE ONLY. WHERE REQUIRED BY DWGS., WATERTIGHT MANHOLE COVERS SHALL HAVE MACHINEDFRAME AND COVER FACINGS WITH 1/8" FLAT OR O-RING GASKET W/SS CLAMPS. HAVE A WATERTIGHT PLUG

PROVIDE FIXED STEPS AND/OR LADDER RUNGS IN ALL MANHOLES UNLESS OTHERWISE NOTED IN THE DWGS.

5.

6.

ALL TRAFFIC CONTROL DEVICES NOT APPLYING TO AN APPROPRIATE SITUATION SHALL BE COVERED OR REMOVED.

ON CLOSED SECTIONS OF THE ROADWAY, THE CONTRACTOR SHALL PROVIDE ACCESS FOR LOCAL TRAFFIC ONLY.

5

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4.

(MARKINGS, SIGNS, BLITERATED BY THE BE RESTORED BY THE

ALL EXISTING OR TEMPORARY TRAFFIC CONTROL DEVICES ETC.), NO LONGER REQUIRED, SHALL BE REMOVED OR OE CONTRACTOR. THE ORIGINAL ROADWAY CONDITIONS SHALL CONTRACTOR.

3

MARK ALL III BARRICADES

D TO MARK R TYPE III B, LIGHTS.

CHANNELIZING AND DELINEATION DEVICES SHALL BE USED CONSTRUCTION AREAS. THESE SHALL BE TYPE II AND/OR AND/OR BARRELS, ALL FULLY REFLECTORIZED AND WITH I

SHALL HAVE -RING GASKET W/SS										
WATERTIGHT PLUG OR	NO									
-TS. EST ELEVATION OF OP PIPE TO BE SAME OP TO AND INCLUDING	OŁ KEAIZI									
R DROP CONNECTION. -1664 OR APPROVED	IPTION									
HE MANHOLE SHALL BE	EZCE									
PTHS PRIOR TO	DI									
JFACTURER										
ORTAR MIXES USED IN	.oN	• •								
NSTALLED PER		:KB							$\cap$	
		Y1B, S			7/L	<b>-</b> 2024				
	MJF		MJF	MEVER	73000	-7-50		ISNA		
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		J	Ŋ				)	Ī	7	_

CONCRETE WETWELL SHALL BE COATED WITH MAINSTAY DS-5 INSTALLED PER MANUFACTURER RECOMMENDATIONS.

XYPEX ADMIX C-1000 SHALL BE INCORPORATED INTO ALL MORTAR MIXES SANITARY SEWER MANHOLES AND WET WELLS.

15.

NOTE

ROAD SURFACE LINEATED AS IN

16.

CONSTRUCTION

CONTRACTOR SHALL PROVIDE TEMPORARY PEDESTRIAN ACCESS BARRICADES ARE BLOCKING THE EXISTING SIDEWALK.

12.

ALL MATERIALS/MACHINES SHALL BE STORED OUTSIDE OF CREATING NO SIGHT DISTANCE PROBLEMS, AND FULLY DEI NO. 2.

14.

CONCRETE TO CONTAIN XYPEX BIO-SAN C500 AS PER MANUFACTURER RECOMMENDATIONS.

EXCAVATION FOR DROP CONNECTION

BEYOND

TO FIRST

CASEMENT

EXTEND

10.

N A DAILY BASIS WHEN ON WEEKENDS, THEY

MORE ABOVE LOWEST BE INSTALLED. DROP 1H FOR SEWERS UP TO

Ξ

WHEN INVERT OF SEWER MAIN IS MANHOLE INVERTS, A DROP INLET DIAMETER AS SEWER DISCHARGING 12" SIZE.

OR

COMPACT BACKFILL UNIFORMLY AROUND MANHOLES IN 8" LIFTS.

SHALL

STUB-OUTS FOR FUTURE CONNECTIONS

7

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ALL EXCAVATIONS SHALL BE COVERED, BACKFILLED, OR PROTECTED AND FULLY DELINEATED AT NIGHT AND WHEN WORK IS NOT IN PROGRESS.

о О

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ROAD OPERATIONS, THE THE ROAD FOR NO WILL BE REQUIRED AS

WHEN APPROVED BY THE ENGINEER, DURING ONE—LANE ROAD CONTRACTOR SHALL BE PERMITTED TO TOTALLY BLOCK THE RC LONGER THAN 5 MINUTES AT A TIME. FLAGMAN CONTROL WILL PER STANDARD DRAWINGS HS—01.

R-1664

NEENAH CAT. NO.

SHALL JOINT

FRAME

MANHOLE COVER AND EQUAL.

THE MANHOLE SHALL

CONTRACTOR SHALL FIELD VERIFY ALL PRECAST MANHOLE DEPTHS PRIOR PURCHASE.

F NOT ON THE DRAWINGS: OTHERWISE, THE DIAMETER OF 48 INCHES.

12.

FLAGMAN AND/OR SHERIFF'S CONTROL SHALL BE PROVIDED AS NEEDED FOR SAFETY AT NO DIRECT PAYMENT.

CONTRACTOR SHALL CHECK TRAFFIC CONTROL DEVICES (BEGINNING AND ENDING THE WORK DAY, AS A MINIMUM. SHALL BE CHECKED AT A MINIMUM OF ONCE PER DAY.

13.

DEVICES REQUIRED BY BE PROVIDED BY THE

DURING CONSTRUCTION, ANY ADDITIONAL TRAFFIC CONTROI THE ENGINEER, THE OWNER, OR THE CONTRACTOR SHALL CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

10.

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QUANTITY

SUMMARY OF MATERIALS

ITEM DESCRIPTION

ITEM No.

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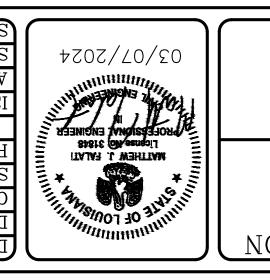
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MOBILIZATION	<b>~</b>	rs
TEMPORARY SIGNS AND BARRICADES	_	rs
PAVEMENT REMOVAL (ALL TYPES, ALL THICKNESSES) *	150	S
DEMOLITION	_	ST
CLASS II BASE COURSE (THEORETICAL MEASURE)	_	S
MODIFY EXISTING WET WELL	_	ST
NEW WET WELL	_	ST
SELF-PRIMING CENTRIFUGAL WASTEWATER PUMP AND ACCESSORIES	_	ST
STATION PIPING, VALVES, AND ACCESSORIES	_	ST
SETUP FOR HORIZONTAL DIRECTIONAL DRILL	_	ST
PLASTIC SANITARY SEWER FORCE MAIN, HDPE DR17 BY HORIZONTAL DIRECTIONAL DRILL	991	ᄕ
PLASTIC SANITARY SEWER FORCE MAIN, BY OPEN CUT	2,663	4
PLASTIC SANITARY SEWER GRAVITY LINE	500	4
SEWER MANHOLE	2	EA
4" AIR RELEASE VALVE (ARV) AND VAULT	3	EA
DUCTILE IRON FITTINGS	1,500	LB
CONTROL PANEL AND SENSORS	•	ST
ELECTRICAL WORK	_	ST
PORTLAND CEMENT CONCRETE APRON (6" THICK) *	150	S
LIFT STATION COVER STRUCTURE	-	ST
GENERATOR, KW & AUTOMATIC TRANSFER SWITCH	_	EA
SITE RESTORATION	_	ST
LINING MANHOLE COATING *	50	SF
INSERTION OF 6.00MM CIPP IN 8 INCH PIPE *	400	占
REMOTE CUT AND BRUSH SERVICES *	5	EA
INTERNALLY TRIM PROTRUDING SERVICE CONNECTIONS *	5	EA
ADJUSTING ELEVATION OF EXISTING MANHOLE (NOT MORE THAN 18" UP OR DOWN) *	5	EA
ITEM TO BE USED AT THE DISCRETION OF A/E & ST. TAMMANY PARISH REPRESENTATIVE		

### NOTES:

RESPONSIBLE FOR SHALL BE CONTRACTOR THE PLANS. CONSTRUCTION 里 N O SED 1. ALL MATERIAL QUANTITIES ARE ESTIMATED BA FIELD VERIFYING ALL MATERIAL QUANTITIES.

INCIDENTAL

- BID ITEM(S). THEREFORE, THE RESPECTIVE BID ITEM RESPECTIVE RESPECTIVE I IN UNIT TO THE CONSIDERED INCIDENTAL

  3 PITS SHALL BE INCLUD 2. THE COST OF LABOR, EQUIPMENT, TOOLS AND BID ITEM(S). 3. LAUNCHING AND RECEIVING PITS SHALL BE C OF CONSTRUCTING LAUNCHING AND RECEIVING
- DETAILS R STANDARD I BID ITEM(S). Y UTILITIES WATER THE RESPECTIVE B TH THE TAMMANY INCIDENTAL TO THE BE BACKFILLED IN ACCORDANCE BACKFILL MATERIALS SHALL LAUNCHING AND RECEIVING PITS SHALL BE ON SHEETS C-501 AND C-502. REQUIRED

SUMMARY OF MATERIALS

CENERAL NOTES AND

WYNDEAILLE,

BOIZ ZEMEK

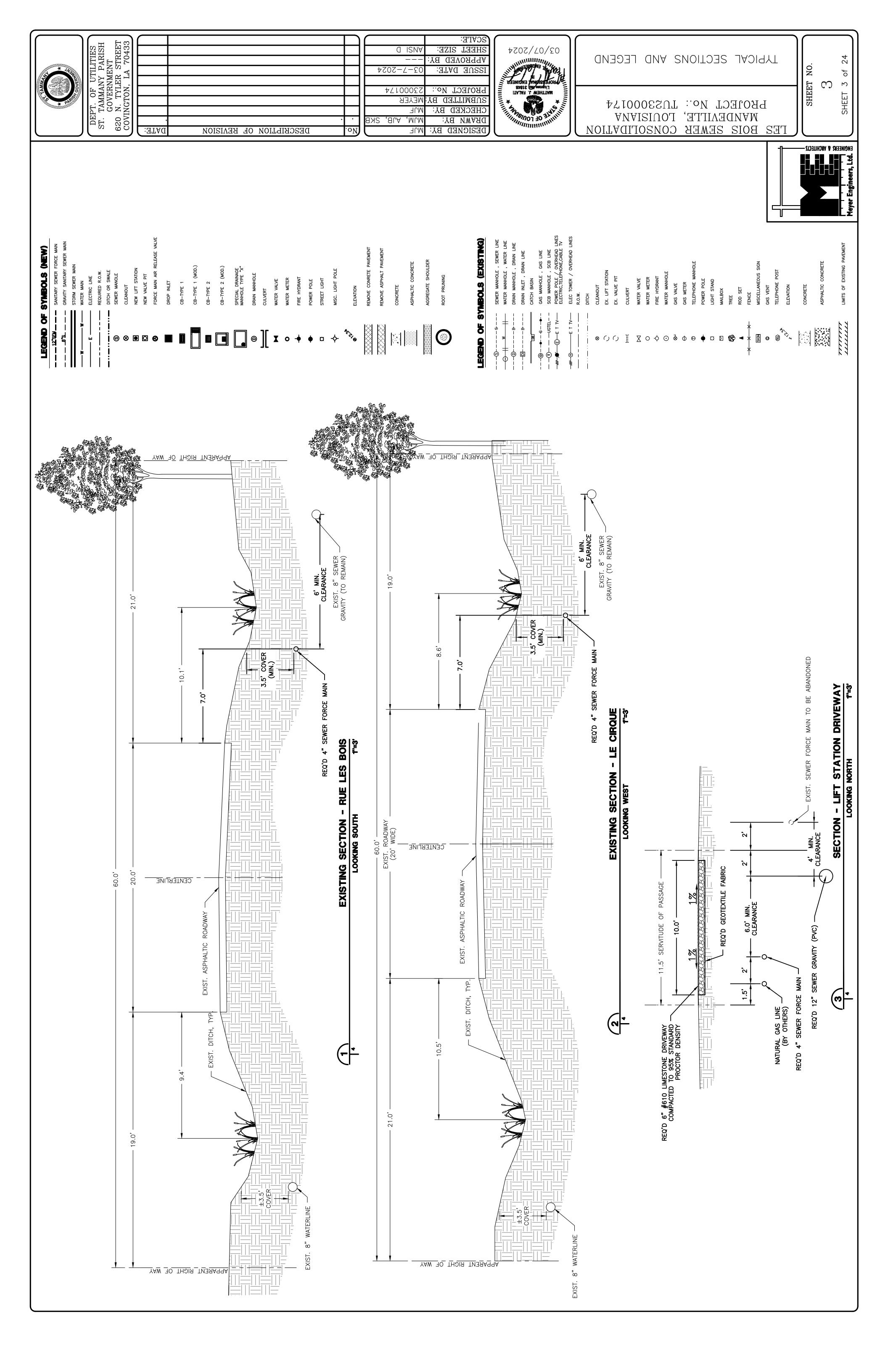
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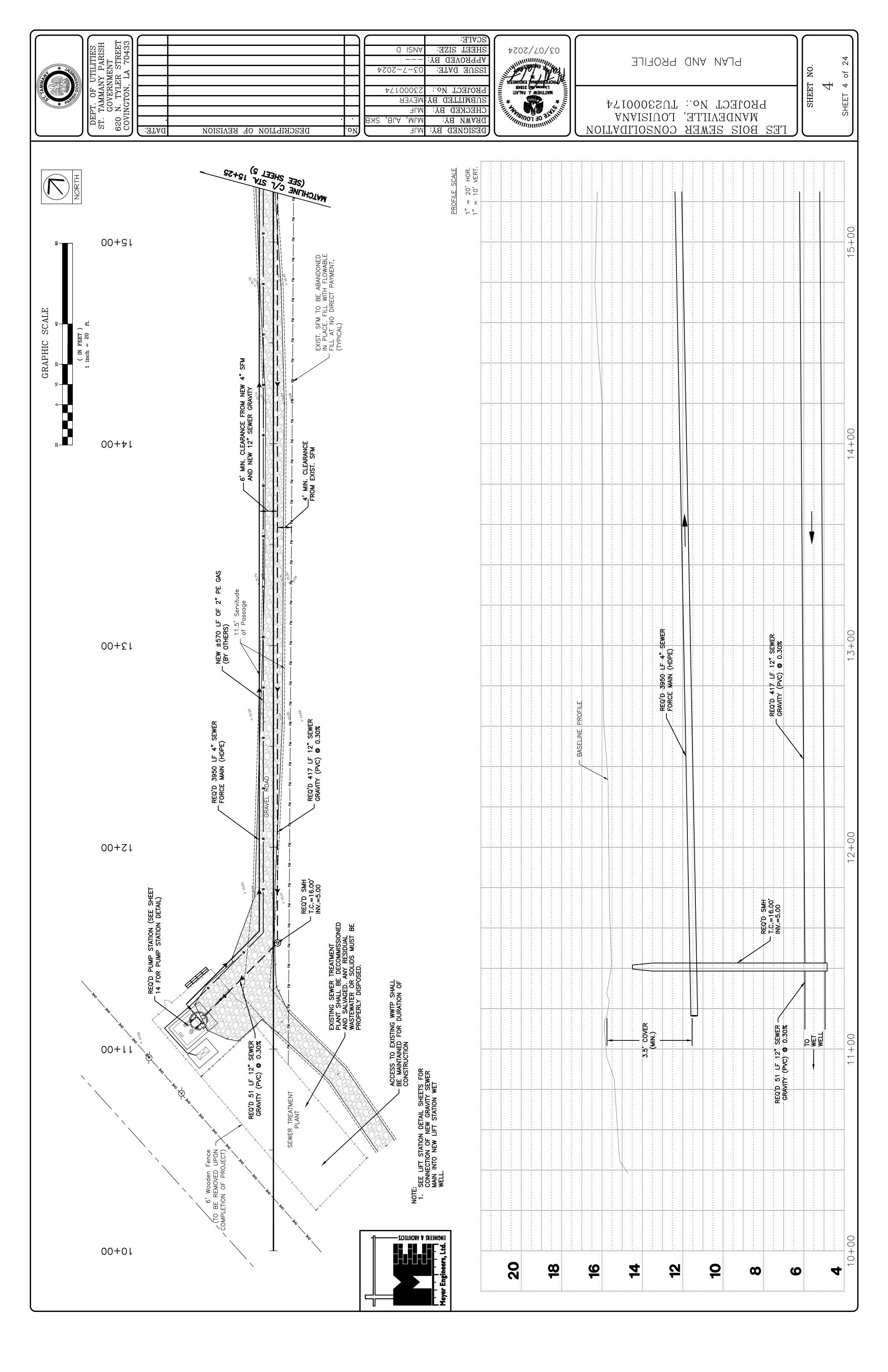
CONSOLIDATION

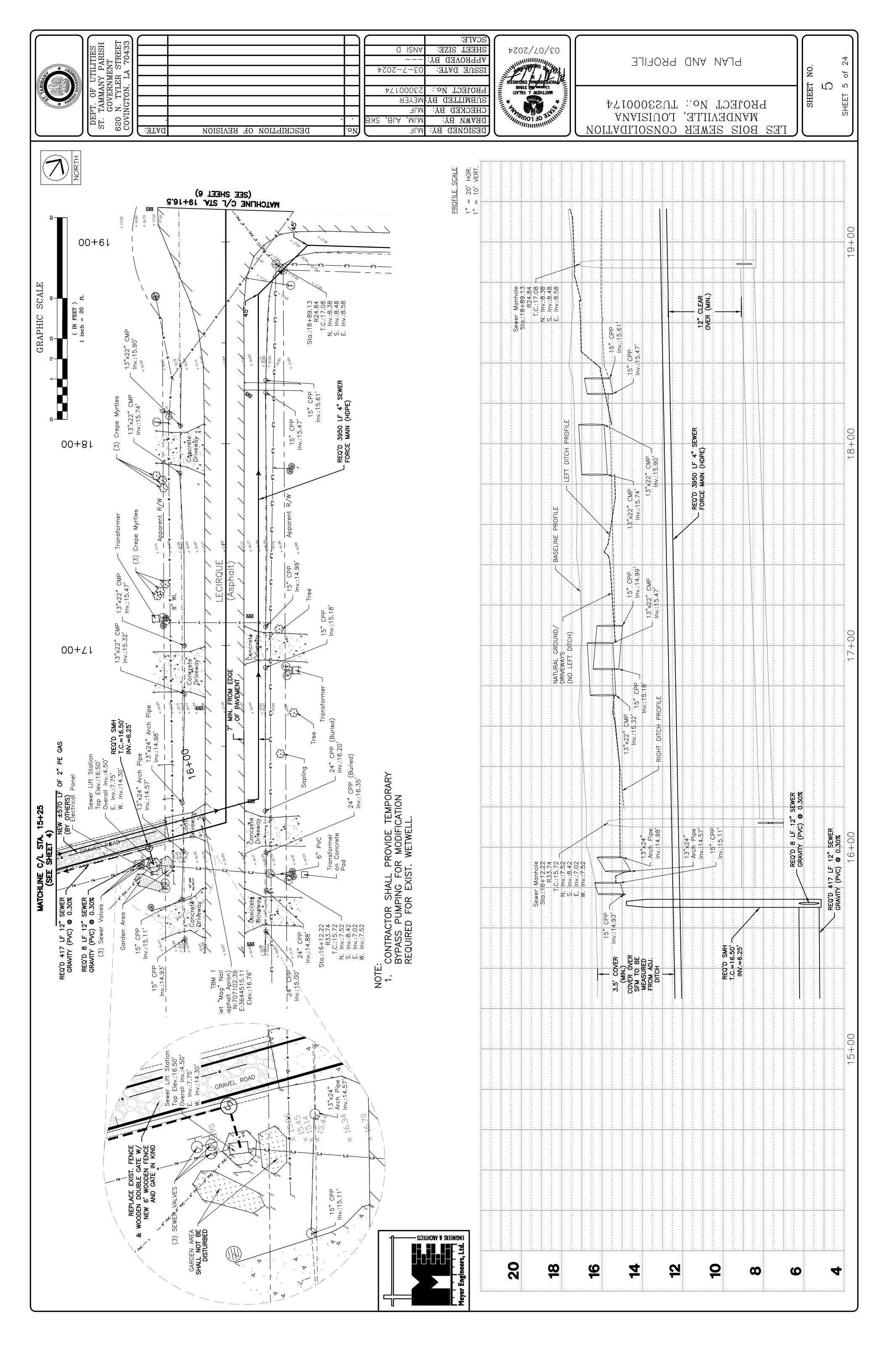
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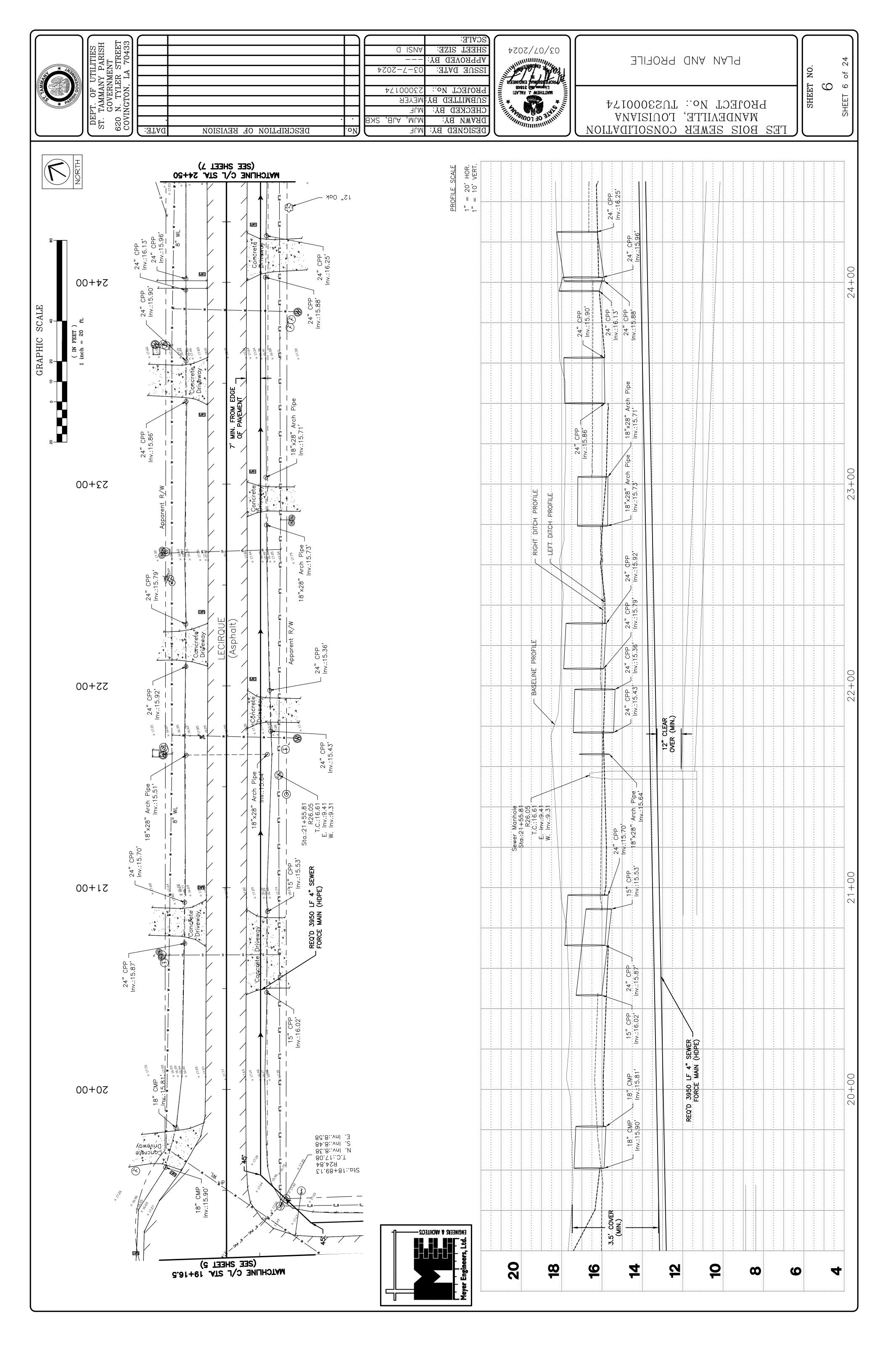
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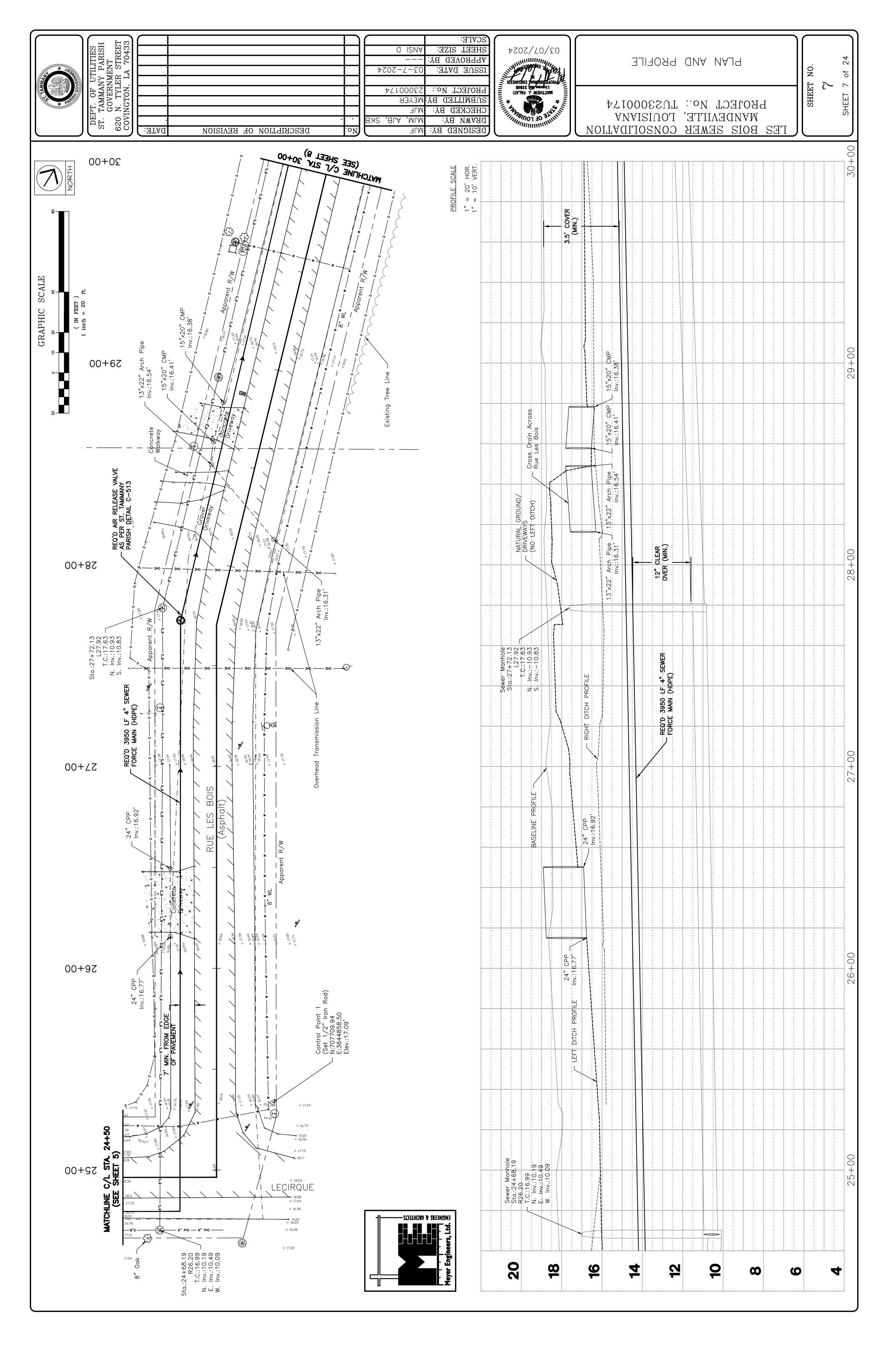
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PLAN AND PROFILE

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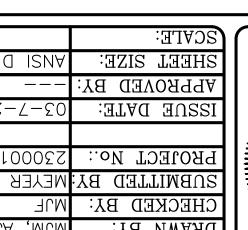
PROJECT No.: TU23000174 WYNDEAILLE, LOUISIANA

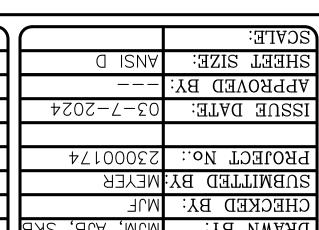
4202/70/20 PROFESSIONA ENGINEER

LIGHTON 31848

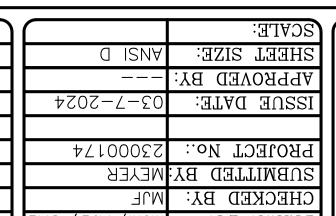
MATTHEW J. FALATI

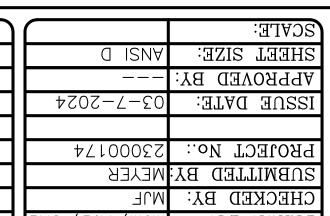
MATTHEW J. FAL

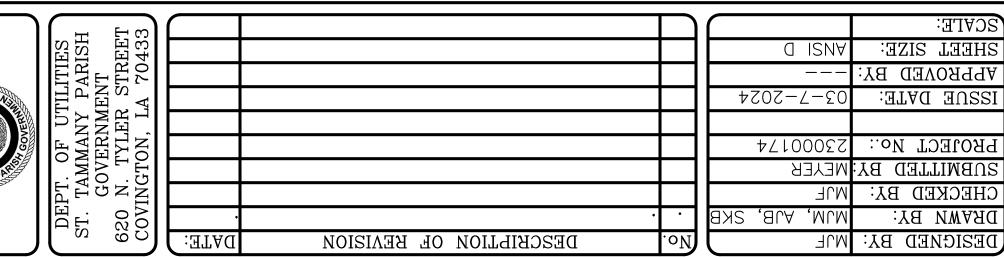


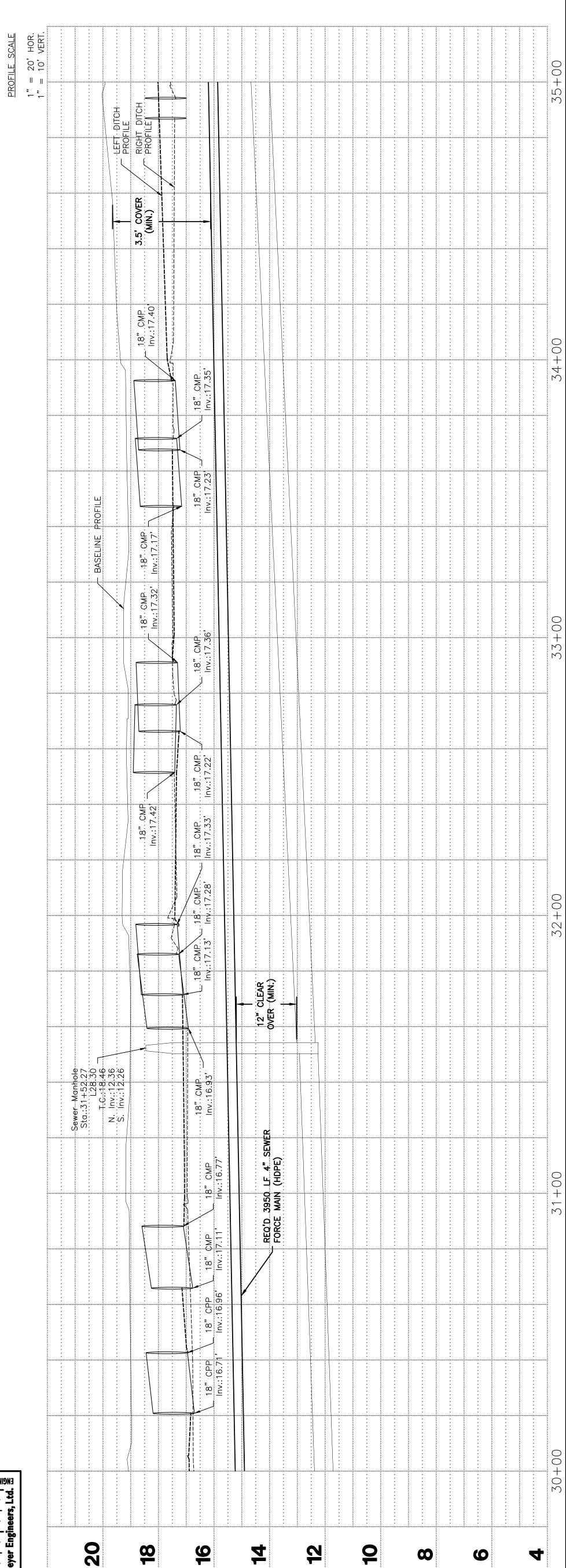


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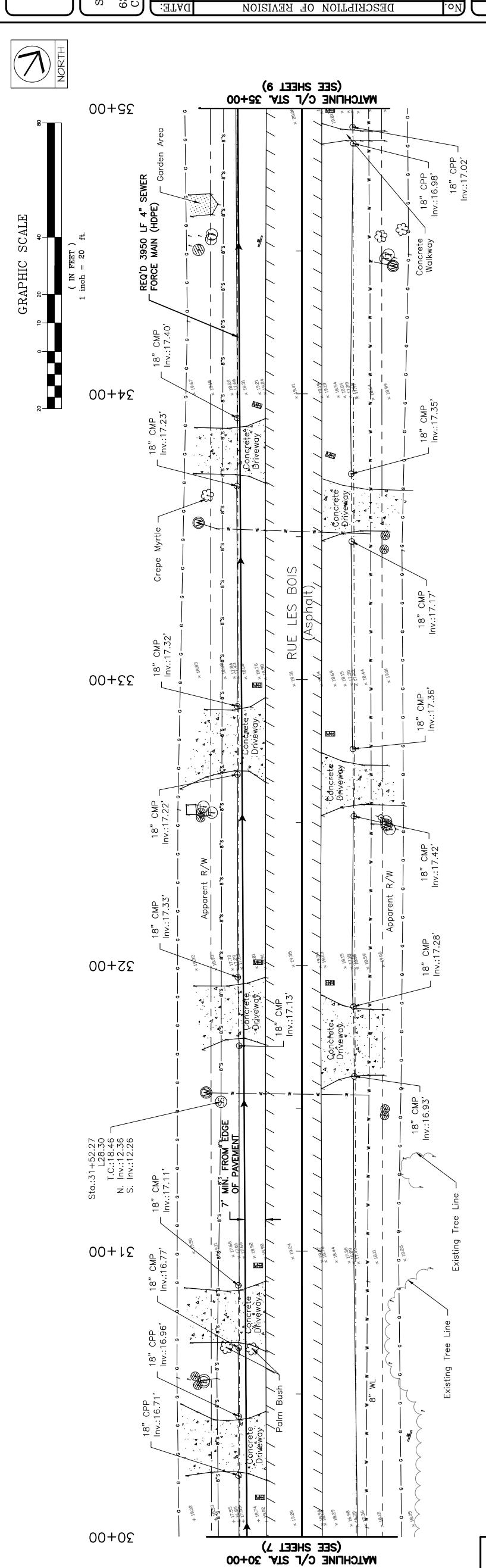


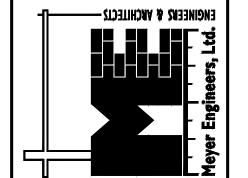
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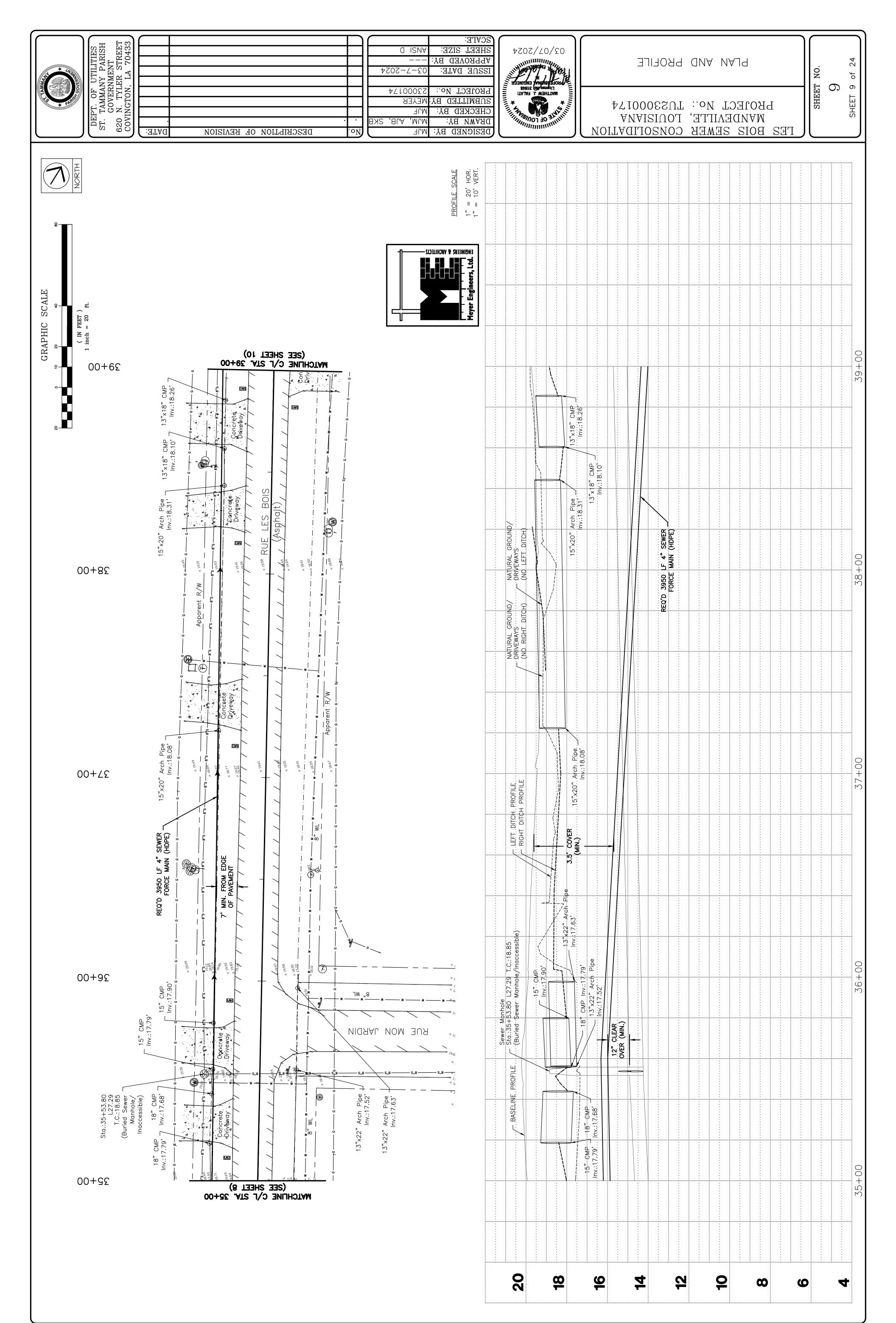


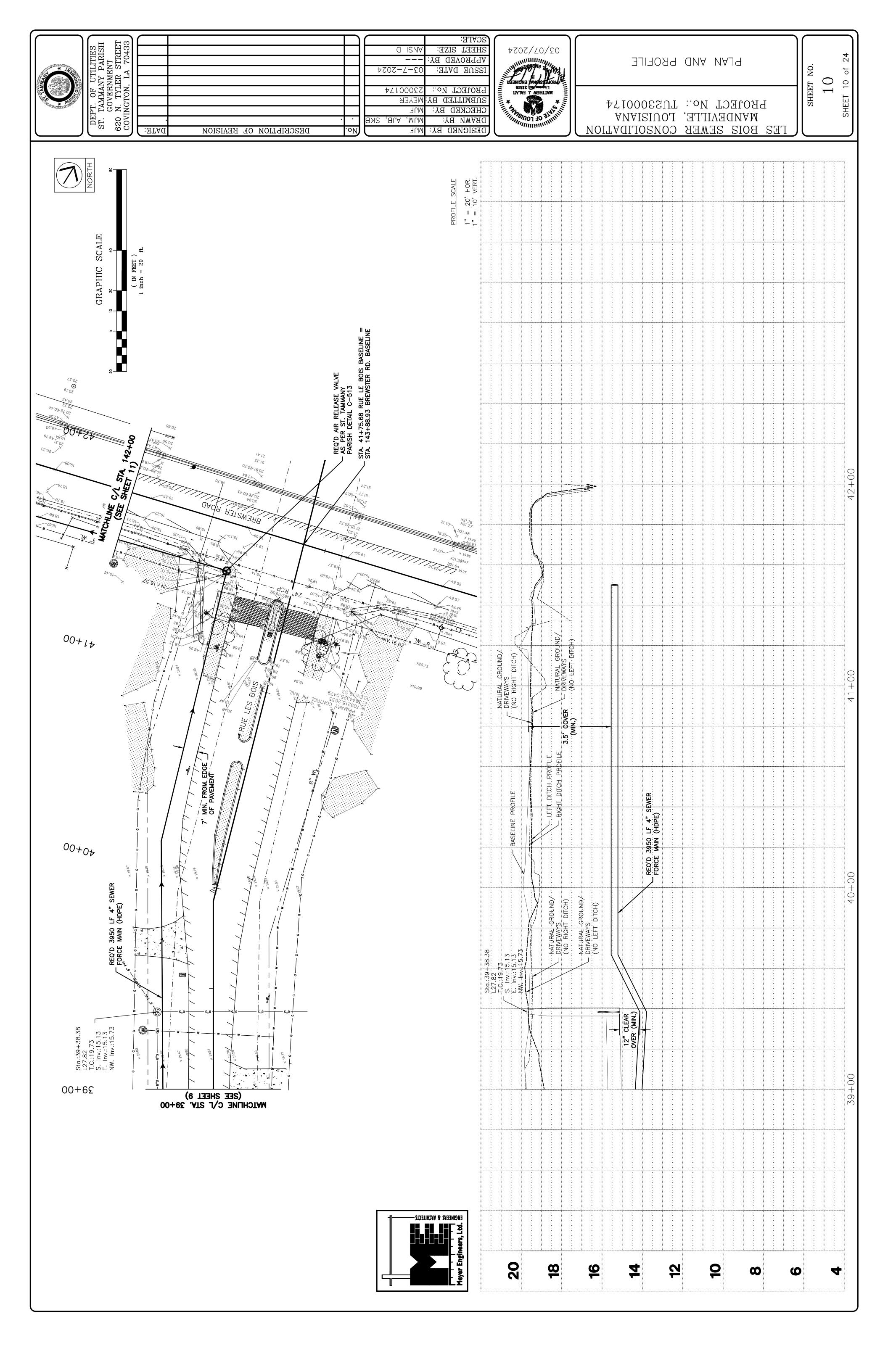


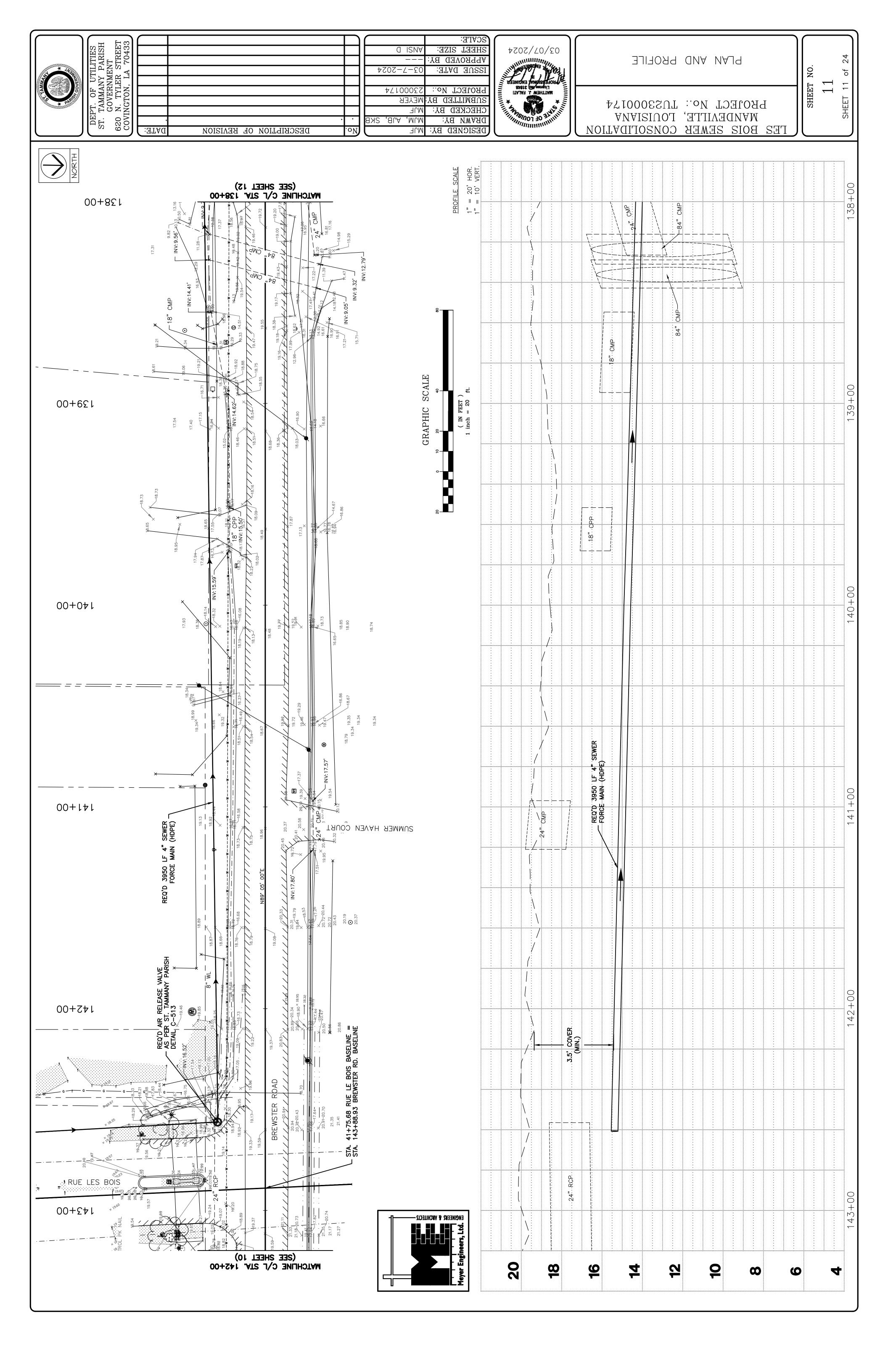
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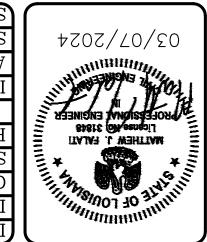


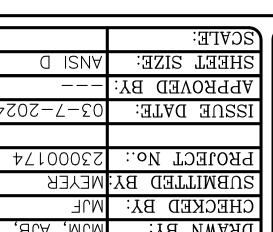




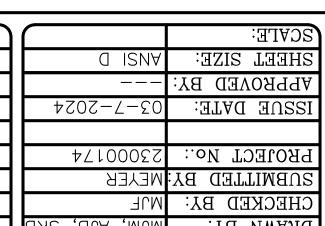
24 PLAN AND PROFILE  $\mathcal{O}$ SHEET 12 SHEET PROJECT No∴ TU23000174

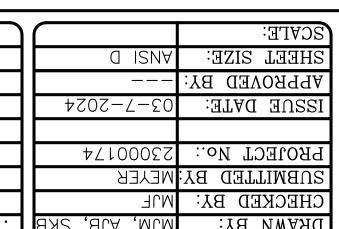
WANDEVILLE, LOUISIANA

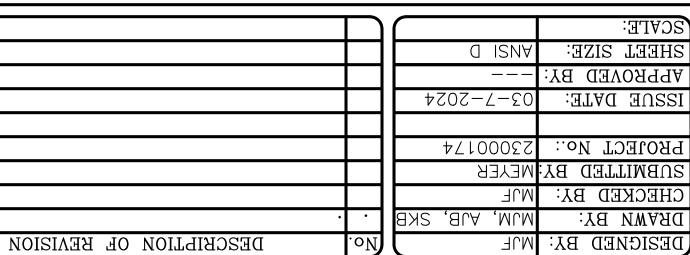


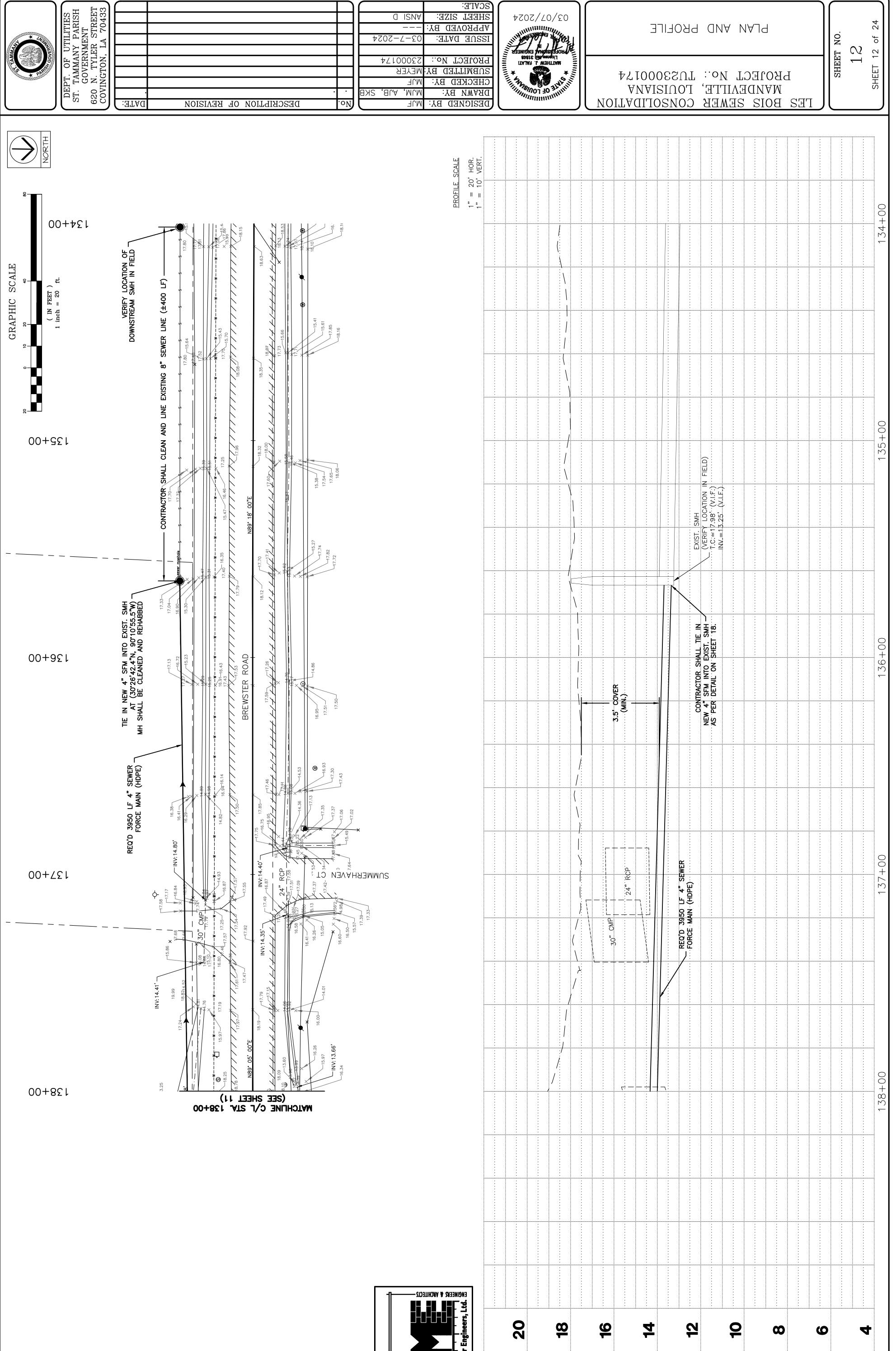


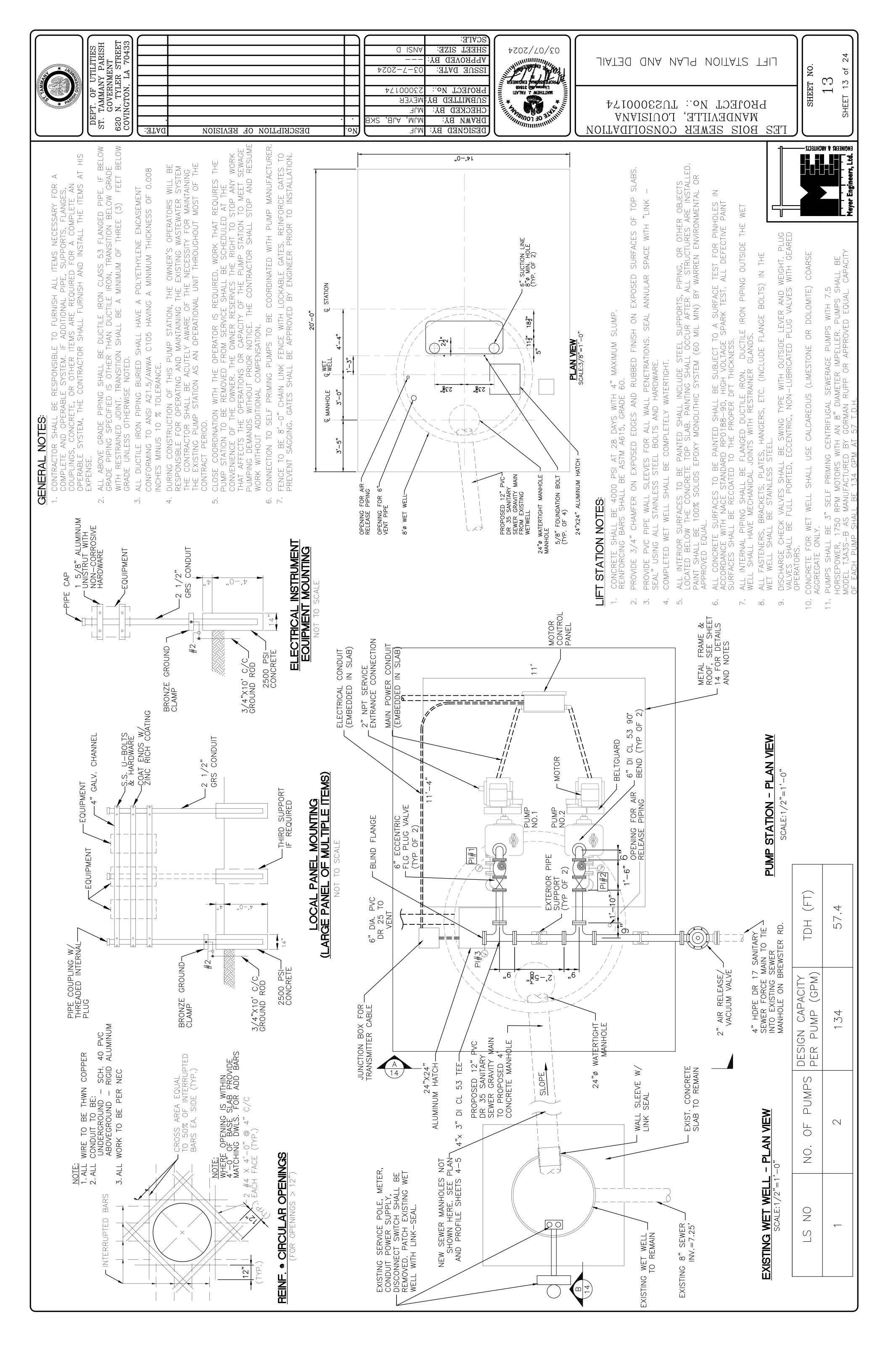
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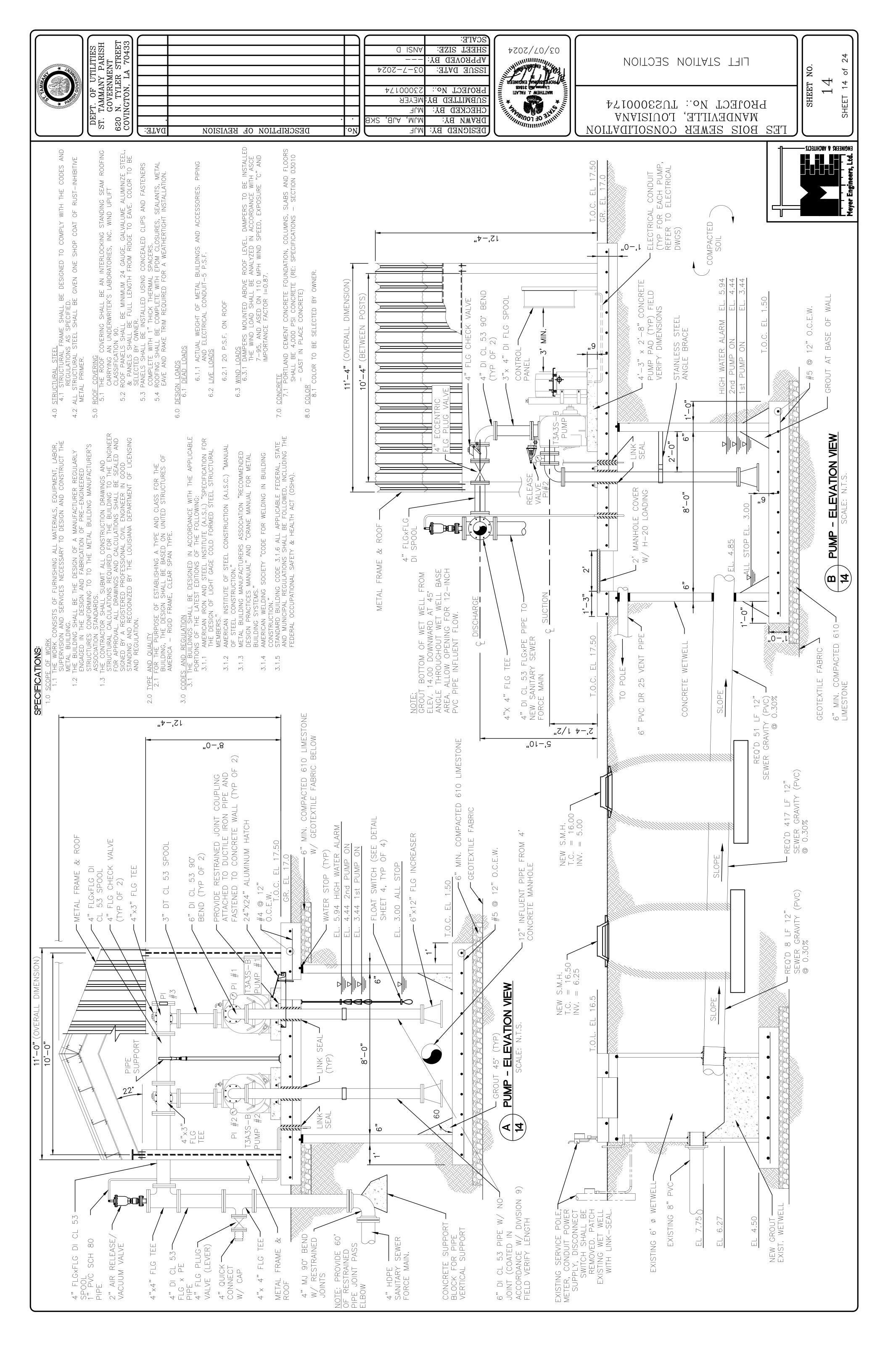


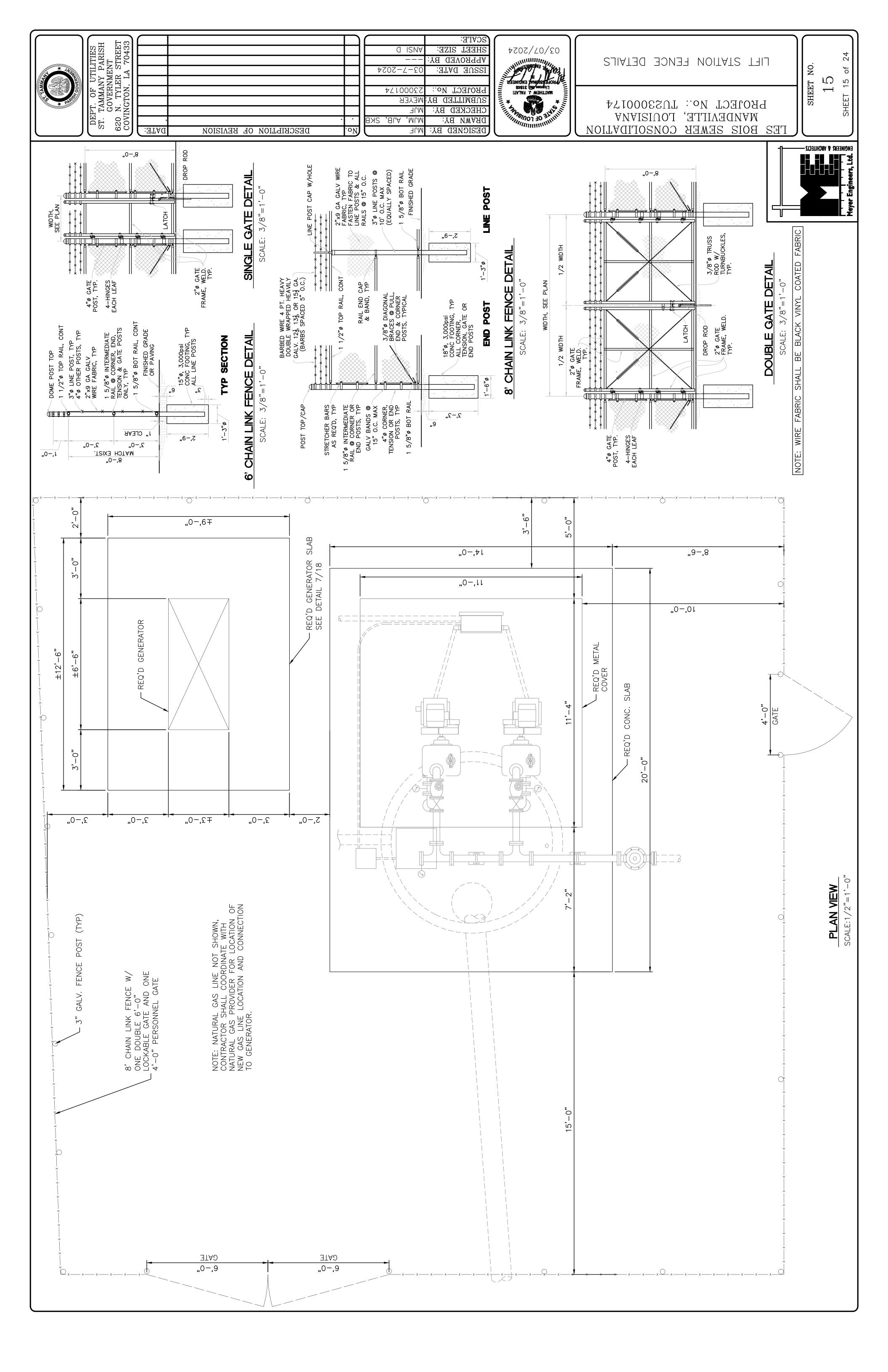












LIFT STATION ELECTRICAL SITE PLAN

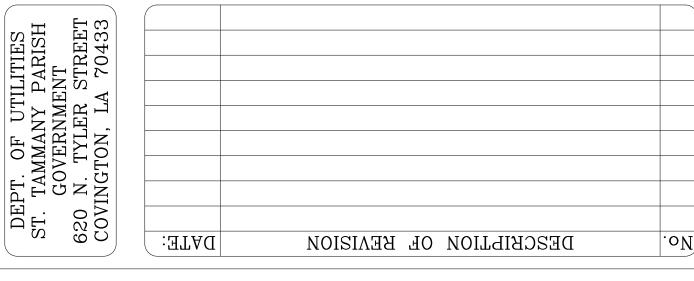
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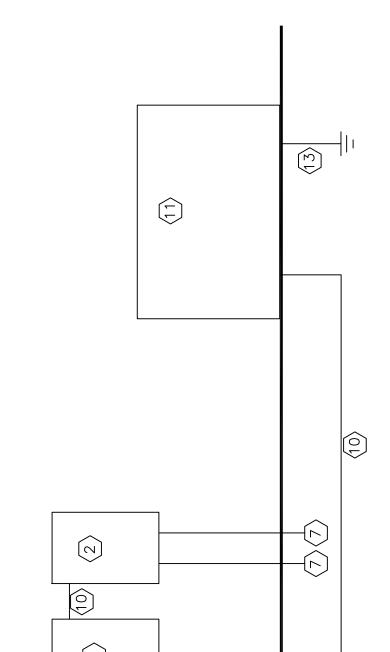


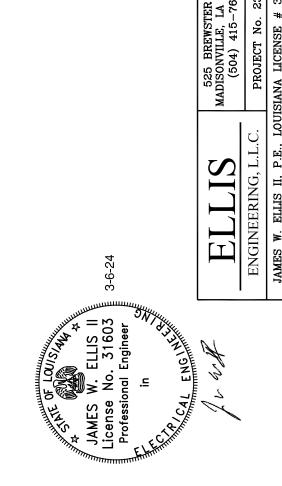
ALL CONDUIT ABOVE GRADE SHALL BE SCHEDULE 40 ALUMINUM UNLESS OTHERWISE NOTED. CONDUIT MINIMUM 24" BELOW GRADE, OUTSIDE OF CLASSIFIED AREA, AND TO UTILITY SERVICE, SHALL BE SCHEDULE 40 PVC EXCEPT UP SERVICE POLE. PACK AND SEAL ALL CONDUITS IN ACCORDANCE WITH NFPA 70, ART 501.15. CONDUITS BETWEEN JB AND WET WELL, AND INSIDE WET WELL, SHALL BE RIGID GALVANIZED STEEL PVC COATED INSIDE AND OUTSIDE (ROBROY OR EQUAL).	MOUNT EQUIPMENT ON GALVANIZED STEEL POLES AND STAINLESS STEEL C CHANNEL FRAMING. ALL FASTENERS SHALL BE STAINLESS STEEL.	CONDUIT SEALS SHALL BE WITHING 10' OF CLASSIFIED BOUNDARY.	PROVIDE TEMPORARY POWER AS NECESSARY TO OPERATE EXISTING OR TEMPORARY PUMPS TO OPERATE LIFT STATION DURING CONSTRUCTION. SEE CIVIL DRAWINGS FOR DETAILS. IF NECESSARY, PROVIDE A PROPERLY SIZED GENERATOR FOR ALL TESTING AND START UP. COORDINATE SWITCHING UTILITY POWER TO NEW LIFT STATION WITH ENGINEER.	ELECTRICAL ENCLOSURES SHALL BE OUTSIDE OF CLASSIFIED AREA AND 5 FEET MINIMUM FROM SEWER WET WELL EDGE, MEASURED ALONG GRADE.	ALL ELECTRICAL AND CONTROL PANELS AND ALL JUNCTION BOXES SHALL BE NEMA 4X AND HINGED.	REMOVE EXISTING ELECTRICAL GEAR AND LIGHTS, REMOVE POWER POLES THAT WILL NOT BE REUSED, SEE OTHER
<u>.</u>	ш	Э Ц		ij	 	

	POWER TO NEW LIFT STATION WITH ENGINEER.
_:	ELECTRICAL ENCLOSURES SHALL BE OUTSIDE OF CLASSIFIED AREA AND 5 FEET MINIMUM FROM SEWER WET WELL EDGE, MEASURED ALONG GRADE.
	ALL ELECTRICAL AND CONTROL PANELS AND ALL JUNCTION BOXES SHALL BE NEMA 4X AND HINGED.
	REMOVE EXISTING ELECTRICAL GEAR AND LIGHTS, REMO POWER POLES THAT WILL NOT BE REUSED. SEE OTHER
	DIVISIONS FOR TEMPORARY POWER FOR PUMPS, PROVI: NEW POWER POLE IF REQUIRED, COORDINATE WITH ENGINEER.
	SEE SHEET 17 FIRE CHATRIL DANE! HETA!! S THIS

$\vec{\lambda}$	K. SEE SHEET 17 FOR CONTROL PANEL DETAILS, THI DETAIL IS AS FURNISHED BY THE OWNER, ANY RE TO 240V SHALL BE CHANGED TO 208V, ANY REFE TO A "STINGER LEG" SHALL BE IGNORED, MAIN BUSHALL BE 200A MINIMUM
نـ	PROVIDE 4" MIN HOUSEKEEPING PAD FOR CLECO TRANSFORMER AS REQUIRED.
Ė	PROVIDE 2 ADDITIONAL 1P, 20A, BREAKERS IN CON PANEL. ONE FOR GENERATOR HEATER AND ONE FC GENERATOR BATTERY CHARGER. MAKE CONNECTION EACH.
ż	N. COORDINATE SERVICE REQUIREMENTS WITH CLECO AND

JUNCTION BOX FOR PUMP FLOAT CABLES





			525 BREWSTER RD. MADISONVILLE, LA 70447 (504) 415-7670	PROJECT No. 23013	SIANA LICENSE # 31603
	3-6-24		ELLIS	ENGINEERING, L.L.C.	JAMES W. ELLIS II, P.E., LOUISIANA LICENSE # 31603
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525 BREWSTER RD. MADISONVILLE, LA 70447 (504) 415-7670	PROJECT No. 23013	W. ELLIS II. P.E LOUISIANA LICENSE # 31603
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		525 BREWSTER RD.
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$\begin{array}{ c c c c c }\hline & & & & \\ \hline & & & & \\ \hline & & & & \\ \hline & & & &$		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	ONE LINE DIAGRAM n.t.s.

PUMP STATION - PLAN VIEW SCALE:1/2"=1'-0"

ELECTRICAL SITE PLAN SCALE: 1/4"=1'-0"

5 4# 4 6 #6	I EKMINATIONS.	4#1/0 AWG IN 2" ALUMINUM RIGID CONDUIT.	$\langle 6  angle$ #6 GRD TO 2-3/4"X10' COPPER BONDED, DRIVEN	TO NEUTRAL BUS. BOND NEUTRAL TO GROUND W
		(5) 4#	9# (9)	

ALL CONDUIT SHALL BE 3/4" MIN AND CONTAIN A #12 GRD MIN. ALL POWER WIRING SHALL BE MIN #12 AWG. FENCE SURROUNDING PROJECT SITE SHALL BE GROUNDED WITH A GROUND ROD AT EACH FIXED GATE POST AND AT EACH FIXED GATE POST AND AT THERE SHALL BE NO JUNCTION BOXES OR ELECTRICAL SPLICES IN WET WELL.

SPECIFIC NOTES

GENERAL

	(1) LOCATION OF SERVICE AND CONTROL PANEL LOCATION. MOUNT AT BFE+2
	MINIMUM.
$\langle 2 \rangle$	PUMP CONTROL PANEL. SEE DETAILS.
(3)	CLECO METER. GROUND AND INSTALL PER CLECO STANDARDS.
4	4 + 4 + 1/0 awg in 2" aluminum rigid conduit (PVC below grade). Route 25' minimum up cleco pole and provide slack for cleco terminations.
(2)	4#1/0 AWG IN 2" ALUMINUM RIGID CONDUIT.
9	$\#6~{\rm GRD}$ TO $2-3/4"$ X10' COPPER BONDED, DRIVEN, GROUND ROD. ROUTE TO NEUTRAL BUS. BOND NEUTRAL TO GROUND WITH $\#6~{\rm OR}$ MFG PROVIDED EQUIVALENT.
	$\langle 7 \rangle$ 3#6 AWG AND 1#10 GRD IN 1" C. CONTINUE TO AND MAKE CONNECTIONS TO PUMP MOTOR. SEAL CONDUIT. SEE DETAILS.
8	POLE OR CONDUIT MOUNT 1— LED LIGHT, 26W, AMERICAN ELECTRIC#ACC—P153—MVOLT—ZT—R3—4K—20K—NBR, MOUNTED 6' ABOVE Control Panel - Provide an additional 1P 15a Refakter in Control
	PANEL TO POWER LIGHT. PROVIDE A NEMA 4X SWITCH NEXT TO PANEL TO CONTROL LIGHT FOR MAINTENANCE. MAKE CONNECTIONS WITH #12 AWG IN
	3/4" C PROVIDE PHOTOCELL CONTROL FOR LIGHT

EQUIVALENT. $\langle 7 \rangle$ 3#6 AWG AND 1#10 GRD IN 1" C. CONTINUE TO AND MAKE CON TO PUMP MOTOR. SEAL CONDUIT. SEE DETAILS.	(8) POLE OR CONDUIT MOUNT 1— LED LIGHT, 26W, AMERICAN ELECTRIC#ACC—P153—MVOLT—ZT—R3—4K—20K—NBR, MOUNTED 6' AB CONTROL PANEL. PROVIDE AN ADDITIONAL 1P, 15A BREAKER IN CC PANEL TO POWER LIGHT. PROVIDE A NEMA 4X SWITCH NEXT TO PA CONTROL LIGHT FOR MAINTENANCE. MAKE CONNECTIONS WITH #12	3/4" C. PROVIDE PHOTOCELL CONTROL FOR LIGHT.
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ELECTRIC#ACC—P153—MVOLI—Z1—R3—4K—20K—NBR, MOUNIED 6 CONTROL PANEL. PROVIDE AN ADDITIONAL 1P, 15A BREAKER 1 PANEL TO POWER LIGHT. PROVIDE A NEMA 4X SWITCH NEXT T CONTROL LIGHT FOR MAINTENANCE. MAKE CONNECTIONS WITH 3/4" C. PROVIDE PHOTOCELL CONTROL FOR LIGHT. NEMA 4X. STAINLESS STEEL. 250V. 3P. 4W. SERVICE ENTRANCE
ELECTRIC#ACC—P1 SONTROL PANEL. PANEL TO POWER SONTROL LIGHT F 3/4" C. PROVIDE

PANEL TO POWER LIGHT. PROVIDE A NEMA 4X SWITCH NEXT	CONTROL LIGHT FOR MAINTENANCE. MAKE CONNECTIONS WITH	3/4" C. PROVIDE PHOTOCELL CONTROL FOR LIGHT.	NEMA 4X, STAINLESS STEEL, 250V, 3P, 4W, SERVICE ENTRANCE	TATOO TATAO TO A OTTO THE TOTAL OF THE CONTRACT OF TAXABLE CONTRACT.
ANEL TO PO	ONTROL LIGH	/4" C. PRO\	EMA 4X, STA	THE CITATION

PANEL TO POWER LIGHT. PROVIDE A NEMA 4X SWITCH NEXT	CONTROL LIGHT FOR MAINTENANCE. MAKE CONNECTIONS WITH		NEMA 4X, STAINLESS STEEL, 250V, 3P, 4W, SERVICE ENTRANCE	AFA1
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PANEL 10 POWER LIGHI. PROVIDE A NEMA 4X SWIICH NEXI 10	CONTROL LIGHT FOR MAINTENANCE. MAKE CONNECTIONS WITH ;	3/4" C. PROVIDE PHOTOCELL CONTROL FOR LIGHT.	NEMA 4X, STAINLESS STEEL, 250V, 3P, 4W, SERVICE ENTRANCE	I  -
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PROVIDE AN ADDITIONAL 1P, 15A BREAKER II	PANEL TO POWER LIGHT. PROVIDE A NEMA 4X SWITCH NEXT T	CONTROL LIGHT FOR MAINTENANCE. MAKE CONNECTIONS WITH		NEMA 4X, STAINLESS STEEL, 250V, 3P, 4W, SERVICE ENTRANCE
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CONTROL PANEL.	POWEF	LIGHT	3/4" C. PROVIDE PHOTOCELL CONTROL FOR LIGHT.	STAINL
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	PANEL	CONT	3/4"	VEMA

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ONTROL PANEL. PROVIDE AN ADDITIONAL 1P, 15A BREAKER IN	ANEL TO POWER LIGHT. PROVIDE A NEMA 4X SWITCH NEXT TC	ONTROL LIGHT FOR MAINTENANCE. MAKE CONNECTIONS WITH #	/4" C. PROVIDE PHOTOCELL CONTROL FOR LIGHT.	EMA 4X, STAINLESS STEEL, 250V, 3P, 4W, SERVICE ENTRANCE
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CONTROL PANEL: PROVIDE AN ADDITIONAL IF, 13A BREAKEN	PANEL TO POWER LIGHT. PROVIDE A NEMA 4X SWITCH NEXT	CONTROL LIGHT FOR MAINTENANCE. MAKE CONNECTIONS WITH	3/4" C. PROVIDE PHOTOCELL CONTROL FOR LIGHT.	NEMA 4X, STAINLESS STEEL, 250V, 3P, 4W, SERVICE ENTRANC

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	PANEL.	TROVIDE A	ADDI	IONAL	T,	מגואאנא
PANEL TO	) POWER	PANEL TO POWER LIGHT. PROVIDE A NEMA 4X SWITCH NEXT	ROVIDE /	√ NEMA	4X SWIT	CH NEXT
CONTROL	LIGHT FC	CONTROL LIGHT FOR MAINTENANCE. MAKE CONNECTIONS WITH	IANCE.	MAKE	CONNECTI	ONS WITH
3/4" C.	PROVIDE	3/4" C. PROVIDE PHOTOCELL CONTROL FOR LIGHT.	CONTR	OL FOR	LIGHT.	
VEMA 4X	, STAINLE	JEMA 4X, STAINLESS STEEL, 250V, 3P, 4W, SERVICE ENTRAN	250V, 3	3P, 4W,	SERVICE	ENTRAN

PANEL TO POWER LIGHT. PROVIDE A NEMA 4X SWITCH NEXT TO	CONTROL LIGHT FOR MAINTENANCE. MAKE CONNECTIONS WITH ;	NTROL FOR LIGHT.	NEMA 4X, STAINLESS STEEL, 250V, 3P, 4W, SERVICE ENTRANCE
PANEL TO POWER LIGHT. PRO	CONTROL LIGHT FOR MAINTENAN	3/4" C. PROVIDE PHOTOCELL CONTROL FOR LIGHT.	NEMA 4X, STAINLESS STEEL, 250V, 3P, 4W, SERVICE ENTRANCE

A 4X SWITCH NEXT I	CONNECTIONS WITH	OR LIGHT.	, SERVICE ENTRANCE
PANEL TO POWER LIGHT. PROVIDE A NEMA 4X SWITCH NEXT 1	CONTROL LIGHT FOR MAINTENANCE. MAKE CONNECTIONS WITH	5/4" C. PROVIDE PHOTOCELL CONTROL FOR LIGHT.	JEMA 4X, STAINLESS STEEL, 250V, 3P, 4W, SERVICE ENTRANCE
ANEL TO POWER L	CONTROL LIGHT FOR	3/4" C. PROVIDE F	JEMA 4X, STAINLES

'ANEL IO POWER LIGHI. PROVIDE A NEMA 4X SWIICH NEXI	CONTROL LIGHT FOR MAINTENANCE. MAKE CONNECTIONS WITH	FOR LIGHT.	IEMA 4X, STAINLESS STEEL, 250V, 3P, 4W, SERVICE ENTRANCE UTOMATIC TRANSFER SWITCH WITH 150A, 3 POLE, MAIN BREAK
Z	Μ	ROL	3P, 150/
HI. TROVIDE	MAINTENANCE.	TOCELL CONTI	STEEL, 250V, SWITCH WITH
ANEL IO POWER LIG	ONTROL LIGHT FOR I	;/4" C. PROVIDE PHOTOCELL CONTROL FOR LIGHT.	IEMA 4X, STAINLESS (UTOMATIC TRANSFER

	00A,	
	IEMA 4X, STAINLESS STEEL, 250V, 3P, 4W, SERVICE ENTRANCE RATED, 200A, UTOMATIC TRANSFER SWITCH WITH 150A, 3 POLE, MAIN BREAKER.	#1/0 AWG AND 1#6 GRD IN 2" ALUMINUM RIGID CONDUIT (PVC BELOW
LIGHT.	SERVIC POLE,	RIGID
/4" C. PROVIDE PHOTOCELL CONTROL FOR LIGHT.	3P, 4W, 150A, 3	ALUMINUM
NOO .	250V, WITH	" 2
)TOCELL	STEEL, SWITCH	GRD II
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C. PF	4X, £	) AWG
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JEMA AY STAINLESS STEEL 2501 3B AW SEBVICE ENTRANCE
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3/4 C. PROVIDE PHOTOCELL CONTROL FOR LIGHT.	VEMA	AUTOMATIC TRANSFER SWITCH WITH 150A, 3 POLE, MAIN BREAK	(a) THINDO OND AME ON 11 OF A MINIMINIA WE NI OBS 3#1 OND OWN O/1#7
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3/4 C. PROVIDE PHOLOCELL CONTROL FOR LIGHT.  (9) NEMA 4X, STAINLESS STEEL, 250V, 3P, 4W, SERVICE ENTRANCE RATED, 200A,  AUTOMATIC TRANSFER SWITCH WITH 150A, 3 POLE, MAIN BREAKER.	$\langle 10 \rangle$ 4#1/0 awg and 1#6 grd in 2" aluminum rigid conduit (PVC Below grade).	$\langle 11 \rangle$ 120/208V, 3 PHASE, NATURAL GAS GENERATOR WITH 150A OUTPUT BREAKER. ORIENT SO THAT AIR DISCHARGE SIDE OF GENERATOR FACES TO PLAN WEST.	(12) ALTHOUGH MOTORS ARE 10HP, PROVIDE 60A OUTPUT BREAKER FOR EACH MOTOR. SEE CONTROL DIAGRAM (CLOUDED) NEXT SHEET, TABLE A.	(13) #6 GRD TO 2-3/4"X10' COPPER BONDED, DRIVEN, GROUND ROD. GROUND GENERATOR. DO NOT BOND NEUTRAL TO GROUND. REMOVE NEUTRAL TO
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$^{\circ}$ #6 GRD TO 2-3/4"X10' COPPER BONDED, DRI	GENERATOR.	ROUND BOND	
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ENGINEERS & ARCHITECTS-

### PROVIDED BY OWNER LIFT STATION CONTROL PANEL

### PROJECT No.: WANDEVILLE, LOUISIANA TES BOISE SEMEK CONSOLIDATION

TSIJ STRAY DNA MARDAID ĐNIRIW

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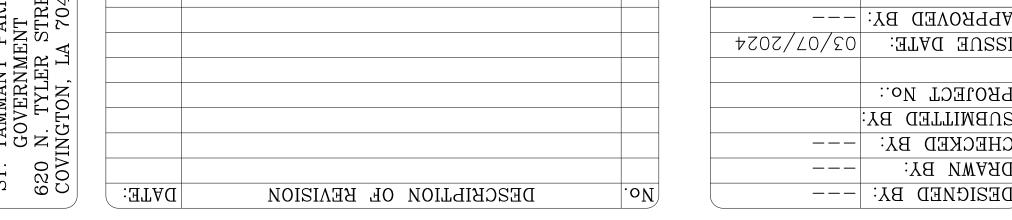
STANDARD CONTROL PANEL

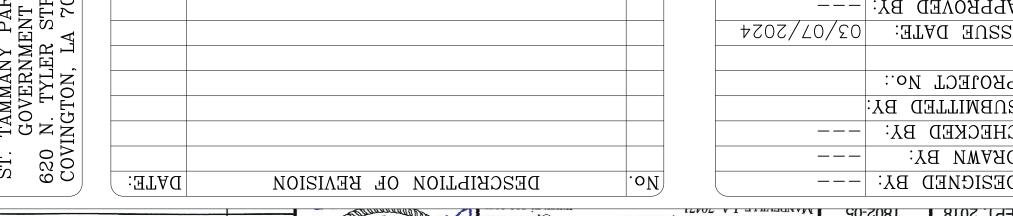
240 VOLT DUPLEX LIFT STATION 04S

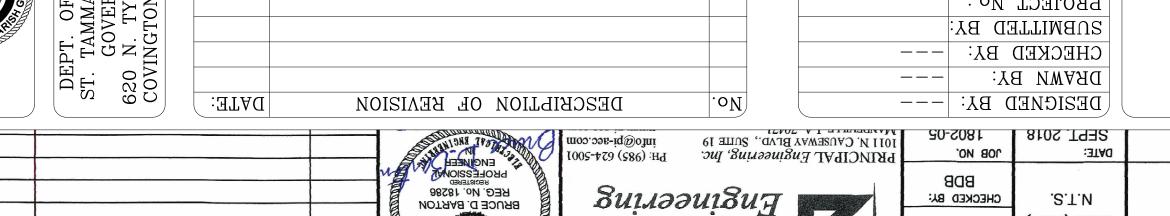
### **SCALE:** SHEEL SISE: **VPPROVED BY:** IZZOE DYLE: PROJECT No.: **SOBMILLED BX:** CHECKED BA: DEAWN BY:

SCALE: (11x17)

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KAIC, SQUARE D # Q0330 VH 45. CB6, CB7, - THERMAL-MAGNETIC SQUARE D, 3 POLE, 250 VOLTS, 30 AMP, 22 CELLUAR DEVICE. SQUARE D # Q015 41. CB5, THERMAL-MAGNETIC, 15/1, 125 VOLTS, FULL SIZE, 10KAIC, FOR EXTERNAL IDEC CAT# BNDN1000, WITH DIN RAIL END STOPS, CAT# BNL5 40. DIN RAIL, EXTRUDED ALUMINUM, DIN STD. DIMENSIONS, LENGTHS AS REQUIRED. (3x10), BLACK PHENOLIC BODY, MARATHON # 601CP10 39. CONTROL TERMINAL STRIPS (CTS), 20 AMP, 300 VOLT RATED, 10 TERMINALS EACH NEEDED), BLACK PHENOLIC BODY, MARATHON # 672RZ10 38. POWER TERMINAL STRIPS (PTS), 30 AMP, 600 VOLT RATED, 10 TERMINALS (AS RELAY WIRING. IDEC CAT# EB3C-R08A SAFETIES, 8 CHANNEL, 5 AMPS, 120 VOLTS, COMMON AND SEPARATE OUTPUT 37. ISBR- INTRINSICALLY SAFE BARRIER RELAY FOR FLOAT SWITCHES AND FOR MOTOR 36. RED ALARM LIGHT, LED EXTERIOR, NEMA 4X, 120 VOLT. 35. FLASHER BASE, SQUARE D #8501NR51 FOR ON\_TIME + INTERVAL, SQ D DIGEST PAGE 12-42)

AMPS, 8 PIN OCTAL BASE. SQUARE D, CAT# JCK51 (0-10 SEC, 2 KNOBS ON TOP 34. FLASHER, ADJUSTABLE ON AND OFF INTERVALS, 2 POLES, 120 VOLT AC COIL, 10 D # XB4BACe (SB4BACe [HEVD]' SB4BAOe2 [BODA]):

LENS. LABEL "ALARM SILENCED". SQUARE 33. PL3- LED TYPE PILOT LIGHT, 120 VOLT TRANSFORMER INPUT, 22MM BLUE SNAPON DIN RAIL MOUNT, 300 VOLT, 10 AMP. IDEC # SR3P--0622 OR SQUARE D 32. AS SOCKET BASE - 11 PIN OCTAL BASE, (SINGLE STACK TERMINALS), 3 POLE,

13P14 V20 (SQ D DIGEST PAGE 23-14) LICHT, 11 PIN OCTAL BASE. IDEC # RR3PA-UL, OR SQUARE D #8501 KPDR AND 3PDT CONTACTS, 10 AMP, RATED FOR "CONTINUOUS DUTY", "ON" PILOT 31. AS - ALARM SILENCE RELAY, 3 POLE "ICE CUBE" RELAY, 120 VOLT AC COIL

RETURN TO NC). XB4 METAL CAT# ZB4BHO4, ZBE205 CONTACT BLOCK (1 NO + 1 NC, SPRING VOLTS, 10 AMP RATED, CAP COLOR=RED, CAP TEXT=STOP. SQUARE D, HARMONY 30. ALARM SILENCE PUSHBUTTON SWITCH, 22mm, NON-ILLUMINATED, 1 POLE, 120

SQUARE D #8501NR61 POLE, SNAPON DIN RAIL MOUNT, 300 VOLT, 10 AMP. IDEC # SR3P-0622, 0R 29. HL, HLA SOCKET BASE - 11 PIN OCTAL BASE, (SINGLE STACK TERMINALS), 3 DICEST PAGE 23-14)

OCTAL BASE. IDEC # RRJPA-UL, OR SQUARE D #8501 KPDR 13P14 V20 (SQ D CONTACTS, 10 AMP, RATED FOR "CONTINUOUS DUTY", "ON" PILOT LIGHT, 11 PIN 28. HL, HLA - 3 POLE "ICE CUBE" RELAY, 120 VOLT AC COIL AND 3PDT

CAT# ZB4BHO2, ZBE205 CONTACT BLOCK (1 NO + 1 NC, SPRING RETURN TO NC). RATED, CAP COLOR=BLACK, CAP TEXT=RESET. SQUARE D, HARMONY XB4 METAL PUSH TO MOMENTARY OPEN, SPRING RETURN TO CLOSED, 120 VOLTS, 10 AMP 27. RESET (ALARM) PUSHBUTTON SWITCH, 22mm, NON-ILLUMINATED, 1 POLE, NC,

(1 NO + 1 NC), 1 ADDITIONAL ZBE505 CONTACT BLOCK (1 NO + 1 NC). XB4 METAL, ZB4BD3 (STD BLK 45 DECREE HANDLE), ZB4BZ105 CONTACT BLOCK OPERATOR. LABEL "ON-OFF-TEST". SQUARE D, HARMONY 26. ON-OFF-TEST SWITCH, METALLIC BODY, 22mm DIAMETER, KNOB

D # XB4BAC4 (ZB4BAC4 [HEVD]' ZB4BAO43 [BODA]).

RED LENS. LABEL "P1 RUN", "P2 RUN". SQUARE 25. PL1, PL2- LED TYPE PILOT LIGHTS, 120 VOLT TRANSFORMER INPUT, 22MM

18801NR61 SNAPON DIN RAIL MOUNT, 300 VOLT, 10 AMP. IDEC # SR3P-0622, OR SQUARE 24. RZ, R3 SOCKET BASE - 11 PIN OCTAL BASE, (SINGLE STACK TERMINALS), 3 POLE,

DICEST PAGE 23-14) OCTAL BASE. IDEC # RR3PA-UL, OR SQUARE D # 8501 KPDR 13P14 V20 (SQ D CONTACTS, 10 AMP, RATED FOR "CONTINUOUS DUTY", "ON" PILOT LIGHT, 11 PIN

23. R2, R3 - 3 POLE "ICE CUBE" RELAY, 120 VOLT AC COIL AND 3PDT 300 V, 10 AMP. IDEC # SR2P-06, OR SQUARE D # 8501NR51

22. TD1 SOCKET BASE, 8 PIN OCTAL BASE, (SINGLE STACK), SNAPON DIN RAIL MOUNT, TOP, SQ D DIGEST PAGE 23-42)

COIL. IDEC # RTE-P1AFZO, OR SQUARE D CAT #JCK11 (0-10 SEC, KNOB ON RESISTIVE, 7 AMPS INDUCTIVE, PILOT LIGHTS FOR "ON" AND "TIMING", 120 VOLT ON, ADJUSTABLE 0.1 SEC-600 HOURS, FORM "C" DPDT CONTACTS RATED 10 AMPS

21. TD1 — TIME DELAY RELAY, FOR START LAG PUMP. ANALOG, TIME DELAY MOUNT, 300 V, 10 AMP. IDEC # SR2P-06, OR SQUARE D #8501NR51 20. ALT RELAY SOCKET BASE - 8 PIN OCTAL BASE, (SINGLE STACK), SNAPON DIN RAIL

BASE. TIMEMARK CAT# 261-ST-120 AC, 1PDT, RATED 10 AMPS "CONTINUOUS DUTY", REQUIRES 8 PIN OCTAL 19. ALTERNATOR (ALT) WITH LEAD/LAG/OFF TOGGLE SELECTOR SWITCH, 125 VOLT

DOOR PANEL. REDINGTON MODEL 722 AC, NEMA 12/4X, RECTANGULAR HOLE PANEL MOUNT, MOUNT IN DEAD FRONT WITH 1/8" ANALOG NUMBERS, NON-RESETTABLE, 120 VOLTS

18. ETM1, ETM2, ELAPSED TIME METER, 100,000 HOURS, QUARTZ/DIGITAL (1 NO + 1 NC), 1 ADDITIONAL ZBE505 CONTACT BLOCK (1 NO + 1 NC). XB4 WETAL, ZB48BD3 (STD BLK 45 DEGREE HANDLE), ZB4BZ105 CONTACT BLOCK

OPERATOR. LABEL "HAND-OFF-AUTO". SQUARE D HARMONY

17. HOP1, HOP2, 3 POSITION MAINTAINED, METALLIC BODY, 22mm DIAMETER, KNOB D # 8501NR61 SNAPON DIN RAIL MOUNT, 300 VOLT, 10 AMP. IDEC # SR3P-0622, OR SQUARE 16. R1 SOCKET BASE - 11 PIN OCTAL BASE, (SINGLE STACK), FOR 3 POLE RELAY,

DICEST PAGE 23-14) OCTAL BASE. IDEC # RRJPA-UL, OR SQUARE D # 8501 KPDR 13P14 V20 (SQ D

CONTACTS, 10 AMP, RATED FOR "CONTINUOUS DUTY", "ON" PILOT LIGHT, 11 PIN

15. R1 - 3 POLE "ICE CUBE" RELAY, 120 VOLT AC COIL AND 3PDT SQUARE D # QO15 14. CB4, THERMAL-MAGNETIC, 15/1, 125 VOLTS, FULL SIZE, 10KAIC, FOR CONTROLS.

RECEPTACLE, SQUARE D # Q015 13. CB3, THERMAL-MAGNETIC, 15/1, 125 VOLTS, FULL SIZE, 10KAIC, FOR GFI

BACKPLANE 12. GFI RECEPTACLE, 15 AMP, 125 VOLTS, FLUSH MOUNT IN 16 BOX W/ COVER ON

ALLOY TYPE, MANUAL RESET, SELECT BASED ON PUMP MOTOR FLA 11. OL1 AND OL2 "HEATERS" — SQUARE D, BUILT 10TO STARTER OL FRAME, MELTING

HP, 4 NO/NC FORM "C" AUX CONTACTS, 120 VOLT COIL TYPE, 3 POLE, 600 VOLTS, NEMA SIZE SHOWN IN TABLE B BY PUMP MOTOR

10. M1, M2 MOTOR STARTER - SQUARE D, FVUR OPEN SHALL BE THROUGH LUGS ON BOTH ENDS.

240V AMPERAGE RATING, BY PUMP MOTOR HP AS SHOWN IN TABLE A. POWER 6. CB1, CB2 - THERMAL-MAGNETIC SQUARE D, 3 POLE, 600 VOLTS, 25 KAIC AT MOUNT, 300 VOLT, 10 AMP. IDEC # SR2P-06

8. PHASE MONITOR BASE - 8 PIN OCTAL BASE, (SINGLE STACK), SNAPON DIN RAIL FOR "A-B-C" ROTATION. DIVERISFIED ELECTRONICS # SLA-230-ASA LOSS, PHASE REVERSAL, PLUGIN OCTAL BASE, 8 PIN. RELAY ONLY ALLOWS

OKAY" PILOT LIGHT, SPDT 10 AMP RATED CONTACT, UNDERVOLTAGE, PHASE V. PHASE MONITOR — 3 PHASE, 190-270 VOLT, ADJUSTABLE, WITH GREEN "POWER 5 (FIVE) AMP 250 VOLT CLASS R FUSES, SQUARE D #FB3211R. 6. PMP1 PHASE MONITOR PROTECTOR — 3 POLE PHENOLIC FUSE HOLDER WITH 3 —

SQUARE D # SDSA3650D, OR DELTA #LA-303. KATED 40KA SURGE PER PHASE, MOUNT ON BRACKET INSIDE CONTROL PANEL. 5. LICHTNING ARRESTOR - 600 VOLTS MAX., DELTA TYPE SERVICE, 3 POLE, 4 WIRE,

4. SURGE CAPACITOR - RATED VOLTAGE 650V, 3 PHASE, 4 WIRE, DELTA # CA-603 3. GROUND TERMINAL STRIP - 20 POSITION, #6 WIRE MAX., MOUNT TO BACKPLANE CLEAR COVER #9080LB51

C. MFGR/CAT#: SQUARE D #9080LBA165106, DIMS: DXHXW=3.1"x5.5"x3.2", WITH 0/Z# OL +l#

B. DISTRIBUTION WIRE RANCE AND NUMBER - SIX SECONDARY PORTS PER POLE, A. INCOMING WIRE RANGE - 1 PRIMARY PORT PER POLE, #4 TO #500 KCMIL

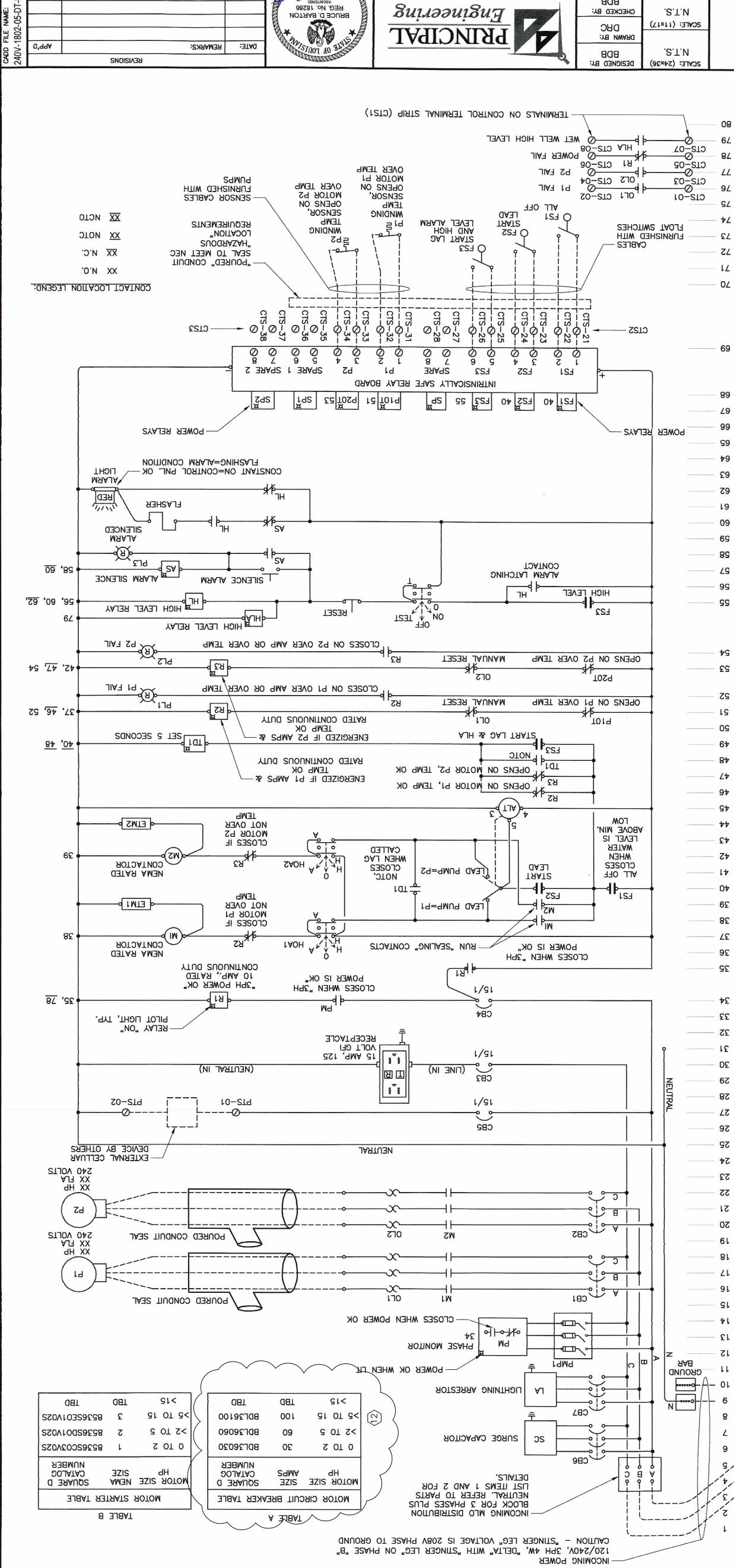
SAFE GUARDS

WITHSTAND RATING, ISOLATED, FINGER SAFE GUARD 2. NEUTRAL BLOCK- 380 AMP, BLACK PHENOLIC, 1P, 380 AMP, 600VOLT, 100KA CLEAR COVER #9080LB53

C. MFGR/CAT#: SQUARE D #9080LBA365106, DIMS.: DXHXW=3.1"x5.5"x8.5", WITH

0/2# OT +1# B. DISTRIBUTION WIRE RANGE AND NUMBER - SIX SECONDARY PORTS PER POLE, A. INCOMING WIRE RANGE - 1 PRIMARY PORT PER POLE, #4 TO #500 KCMIL

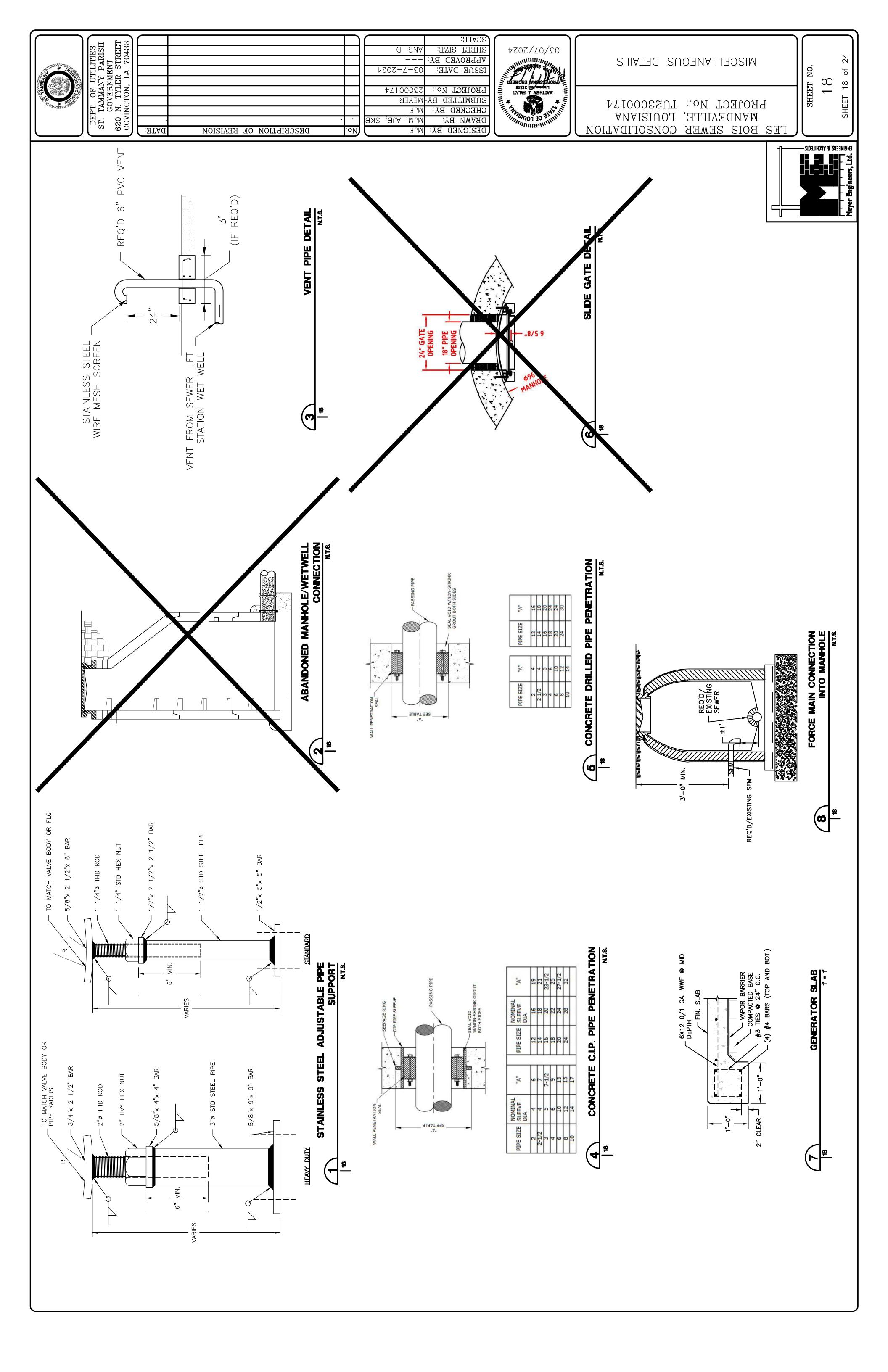
AMP, 600VOLT, 100KA WITHSTAND RATING WITH RK5 FUSE PROTECTION, FINGER 1. INCOMING MAIN POWER DISTRIBUTION BLOCK - BLACK PHENOLIC, 3 POLE, 380 PARTS LIST FOR 120/240 VOLT CONTROL PANEL

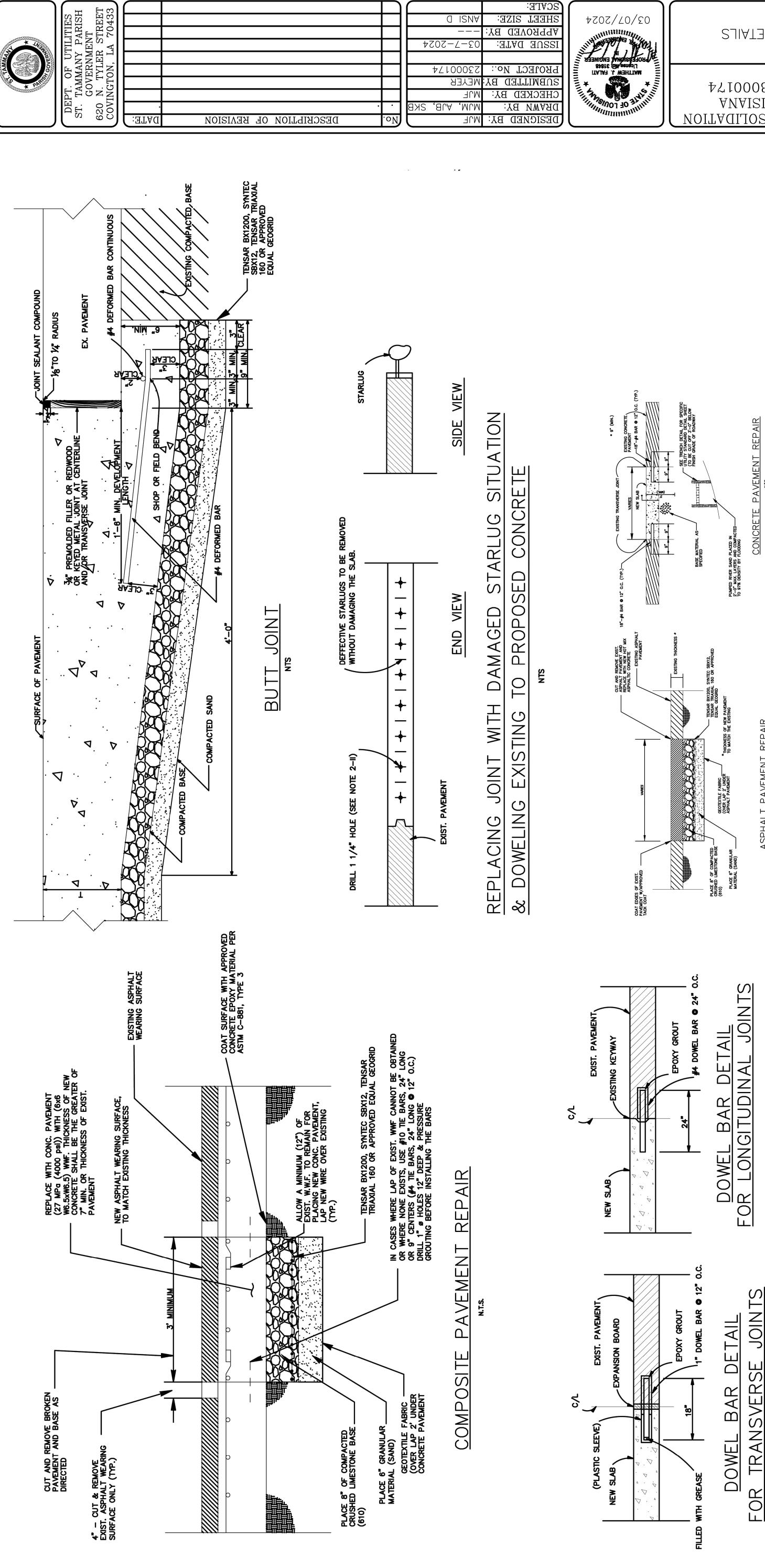


QUALITY DESIRED BY THE PARISH. ALL PRODUCTS BID MUST HAVE PRIOR APPROVAL AS "PRIOR APPROVED EQUIVALENTS". THE NAME OF ANY MANUFACTURER, BRAND OR MAKE LISTED ON THE DRAWING IS FOR THE PURPOSE OF ESTABLISHING A MINIMUM ACCEPTABLE STANDARD OF 4. ALL PROPOSED CONTROL PANELS SHALL BE SUBMITTED TO THE PARISH FOR APPROVAL PRIOR TO FABRICATION. ATTACHED WITH STAINLESS STEEL MACHINE SCREWS AND NUTS. ALL TEXT SHALL BE MINIMUM 1/8" HIGH.

3. NOMENCLATURE LABELS FOR ALL ITEMS SHALL BE RED FIELD WITH WHITE CHARACTERS, ENGRAVED LAMINATED NAMEPLATES GASKET, WHITE STEEL BACKPLANE, DEAD FRONT INNER DOOR WITH 1/4 TURN KNURLED KNOB FASTENING, BOND BOTH DOORS TO ENCLOSURE GROUND STRIP. 2. PANEL ENCLOSURE SHALL BE 36"W X 48"H X 12"D, NEMA 4X TYPE 304 STAINLESS STEEL, WITH HASPS ON 3 SIDES, RAISED LIP ON ENCLOSURE TO RECEIVE DOOR ON THE EXTERIOR SIDE WALL NEAR THE ALARM LIGHT, WHICH SHALL BE MOUNTED ON THE PANEL TOP. LICHTS, SELECTOR SWITCHES, PUSHBUTTONS, STARTER RESETS, AND CIRCUIT BREAKER HANDLE OPENINGS. THE ALARM SILENCE PUSHBUTTON SHALL BE MOUNTED 1. ALL PANEL ITEMS SHALL BE MOUNTED ON THE BACKPLANE EXCEPT AS NOTED OTHERWISE. ITEMS TO BE MOUNTED ON THE INNER DOOR FRONT ARE ALL PILOT

**CENERAL NOTES:** 





### MISCELLANEOUS DETAILS

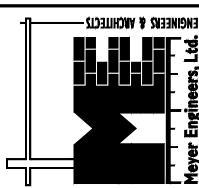
**SCALE:** 

SHEEL

SIZE:

USN

TU23000174 PROJECT No.: WYNDEAILLE, LOUISIANA TEZ BOIZ ZEMEK CONZOLIDATION

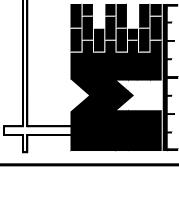


SHEET

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19

SHEET



Ö BUTT JOINT ONLY APPLICABLE WHERE EXISTING CONCRETE IS NOT SUITABLE FOR DOWELING. THE PLACEMENT OF THIS JOINT WILL BE DETERMINED BY PROJECT ENGINEER IN THE 8" CLASS II BASE COURSE & 6" EMBANKMENT TO BE INSTALLED ONLY IF EX. BASE IS DEEMED UNSUITABLE BY PROJECT ENGINEER. "T" = THICKNESS OF PAVEMENT

NOTE

POUR THE NEW SLAB WITH SMOOTH DOWEL BARS IN POSITION.

DO NOT TOE CONCRETE UNDER EXPANSION BOARD OR UNDER EXISTING PAVEMENT.

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I. REMOVE ALL OF THE STARLUGS FROM THE OLD EXISTING SECTION OF CONCRETE WITHOUT DAMAGING THE SLAB.

INSTALLING DOWEL BARS AT BUTT JOINTS

7

II. DRILL 1 1/4" HOLE 9" IN LENGTH BETWEEN STARLUG LOCATIONS IN THE EXISTING SLAB AT CENTER OF SLAB WHERE EXISTING CONCRETE IS > 5".

>

THE ENGINEER WILL DECIDE, PER EXISTING FIELD CONDITIONS, WHETHER TO SALVAGE EXISTING STARLUGS OR REPLACE WITH DOWEL BARS.

NOTES:

IV. GREASE THE REMAINDER OF THE DOWEL BAR AND SLIP A 4" PLASTIC SLEEVE FILLED WITH GREASE OVER END OF BAR AS SHOWN IN DETAIL.

3

NOTES:

ASPHALT PAVEMENT REPAIR

- FIELD.
- LOPE MAY BE PAROBOLIC OR TANGENT. SLOPE OF THE SHALL MATCH THE EXISTING SLAB.

BARS ARE TO BE 12" O.C. AT TRANSVERSE JOINTS AND 2 O.C. AT LONGITUDINAL JOINTS.

IF EXISTING CONCRETE IS < 5" A BUTT JOINT WILL BE PLACED ALONG THE FULL LENGTH OF THE TRANSVERSE JOINT.

INSERT A 1" PLASTIC COATED SMOOTH DOWEL BAR, 18" LONG, 9" DEEP INTO THE DRILLED HOLE AND GROUT WITH APPROVED EPOXY GROUT.

≡

IF THE EXPANSION BOARD IS DAMAGED AND CANNOT BE SALVAGED, REMOVE THE BOARD AND REPLACE WITH AN APPROVED FLEXIBLE JOINT MATERIAL.

MINIMUM BAR LENGTH IS TO BE 24"

# NOTES STANDARD SEWER

- APPLICABLE ALL MITH COMPLY STANDARDS AND SPECIFICATIONS. MATERIALS
- EXTENSIONS.
  YEARS FROM FOR ALL WITH THE  $\overset{\mathsf{C}}{\vdash}$ FURNISH THE CONTRACTOR SHALL PROVIDE A ONE—YEAR WARRANTY FOR A NEWLY INSTALLED SEWER INFRASTRUCTURE ASSOCIATED WITH T CONSTRUCTION OF THE PROJECT, INCLUDING BUT NOT LIMITED ANY SEWER FORCE MAIN AND GRAVITY SEWER MAIN EXTENSION THE WARRANTY SHALL EXTEND FOR A PERIOD OF FIVE YEARS FROM THE DATE OF FINAL ACCEPTANCE. THE CONTRACTOR SHALL FURNIAL MATERIALS AND LABOR REQUIRED TO CORRECT DEFICIENCIES THE SYSTEM AT NO COST TO DEPARTMENT OF UTILITIES.
- ENT OF UTILITIES, THE LL BE HELD 30—DAYS L PRE—CONSTRUCTION AT DEPARTMENT OF SHALL 뮖 RECORD SCHEDULE OF. NSTRUCTION MEETING WITH DEPARTMENT ON THE START OF CONSTRUCTION. ALL PRESHALL BE HELD ON THURSDAYS AT INTELINE IN COVINGTON. THE ENGINEER OF E WITH DEPARTMENT OF UTILITIES TO SCHEOF THE PRE—CONSTRUCTION MEETING. -CONSTRUCTION MEETING WI ACTOR, AND ENGINEER OF F TO THE START OF CONSTR GS SHALL BE HELD ON UTILITIES OFFICE COORDINATE WITH 9F A PRE-CUNS CONTRACTOR, 0 TIME MEETINGS AND
  - 3" BETWEEN
    BE LOWER SEPARATE CLEARANCE SHALL FORCE MAINS) AND WATER LINES SHALL BE LAID IN SEPA TRENCHES WITH THE HORIZONTAL CLEARANCE BETWEEN ALL WILLINES AND ALL SEWER LINES OF 10'. THE HORIZONTAL CLEARANCE MAINS SHALI O'. IN THE EVENT A WATER LINE CROSSES OVER A SEWER CROSS, THE MINIMUM VERTICAL CLEARANCE SHALL BE 18" BETWEEN WATER AND SEWER LINES. ALL SEWER LINES SHALL BE LOTTHAN WATER LINES. ANY CLEARANCES LESS THAN THE ABOVER A SEWER LINES. IR LINES. ANY CLEARANCES LESS THAN THE SHALL BE APPROVED BY DEPARTMENT OF UTILITIES. AND SEWER LINES **GRAVITY** (|E LINES SEWER MENTIONED PARALLEL
    - MITH ) STRUCTURES IN ACCORDANCE EXCAVATED, BEDDED AND BACKFILLED IN ACCOFNOTES BELOW AND THE PROVIDED SEWER DETAILS. AND SEWER LINES
      AND BACKFILLED
      CFWER EXCAVATIONS FOK ()
- שאיה שבאבר שבאבר שבאבר BY LIFTS AND COMPACTED TO 95% OF OPTIMAL DENSITY AS DETERMINED BY ASTM D698. SHALL MAINS FORCE AND SE.. SAND COMPL BEDDED IN A CLEAN SANC CLASSIFICATION. THE CLEAN PLACED IN LOOSE 8" LIFTS AN MAINS SEWER GRAVITY
- DDING MATERIAL UNDER FORCE MAINS SHALL BE ATIONS OUTLINED IN THE TERIAL SHALL EXTEND TO PIPE 0.D.). THE MORE THE MINIMUM THICKNESS FOR PIPE BEDDING ALL SEWER GRAVITY MAINS AND SEWER FORCE 6" OR AS DICTATED BY THE RECOMMENDATIONS GEOTECHNICAL REPORT. THE BEDDING MATERIAL THE SPRINGLINE OF THE PIPE (I.E. HALF PIPE THE SPRINGLINE OF THE PIPE (I.E. HALF STRINGENT REQUIREMENT SHALL CONTROL. TAleu Report. In . ف
- GEOTECHNICAL REPORT. HOWEVER AT A MINIMUM, A 6" THICK CRUSHED No. 57 LIMESTONE FOUNDATION SHALL BE USED TO STABILIZE A SOFT AND/OR WET EXCAVATION BOTTOM. A MINIMUM OF 6" OF THE SOFT AND/OR WET NATIVE MATERIAL SHALL BE REMOVED PRIOR TO PLACING THE CRUSHED LIMESTONE FOUNDATION. THE CRUSHED LIMESTONE FOUNDATION SHALL BE PLACE ON TOP OF A COMBINATION OF GEOTEXTILE AND BI-AXIAL GEOGRID FABRICS. THE CRUSHED LIMESTONE FOUNDATION SHALL BE PLACED IN LOOSE 8" LIFTS AND COMPACTED TO 90% OF THE RELATIVE DRY DENSITY AS DETERMINED BY ASTM D4253. THE GEOTEXTILE FABRIC SHALL ENCASE THE LIMESTONE FOUNDATION. THE MORE STRINGENT REQUIREMENTS SHALL CONTROL. BEEN ED IN BOITOM HAS BEELL BE STABILIZED OUTLINED IN THE BOTTOM WHEN A SOFT AND/OR WET EXCAVATION BC ENCOUNTERED, THE EXCAVATION BOTTOM SHALL ACCORDANCE WITH THE RECOMMENDATIONS (
- BE
  -AXIAL GE
  ALL BE PLACE.
  TEXTILE MANHOLES, WET WELLS, VALVE VAULTS, EQUIPMENT PADS) SHALL BE CONSTRUCTED ON No. 57 CRUSHED LIMESTONE BASE. THE MINIMUM THICKNESS OF THE LIMESTONE BASE AND THE USE OF GEO-SYNTHETIC FABRICS SHALL BE DICTATED BY THE RECOMMENDATIONS OUTLINED IN THE GEOTECHNICAL REPORT. HOWEVER, THE LIMESTONE BASE SHALL HAVE A MINIMUM MINIMUM ....

  GEO-SYNTHETIC FABINICAL

  RECOMMENDATIONS OUTLINED IN ....

  HOWEVER, THE LIMESTONE BASE SHALL BE PLACED ON THICKNESS 12" UNDER SEWER STRUCTURE AND 6" UNDER SEWEN STRUCTURE AND BI-AXIAL GEOGRID TOP OF A COMBINATION OF GEOTEXTILE AND BI-AXIAL BE PLACED TOP OF A COMBINATION OF GEOTEXTILE AND BI-AXIAL BE PLACED TOP OF A COMBINATION OF GEOTEXTILE AND SOMPACTED TO 90% OF THE RELATIVE ... THE CRUSHED LIMESTONE MATERIAL SHALL BE PLACED ... PASTM D4253. THE GEOTEXTILE ... PASE. THE MORE SEWER THE GEOTEXTILE E. THE MORE STRUCTURES SEWER IN LOOSE 8" LIFTS AND COMPACTED TO 9.
  DRY DENSITY AS DETERMINED BY ASTM D4:
  FABRIC SHALL ENCASE THE LIMESTONE
  STRINGENT REQUIREMENTS SHALL CONTROL. AND VALVES MAIN FORCE
- FINISHED GRADE AND 5' UNDER SEWER LINES AREAS AND AND ALL PIPE FOR FORCE MAINS) SEWER FORCE MAINS, 3' FOR LANDSCAPED 9F TOP 出 COVER BETWEEN AND LEAST SEWER BE GRAVITY ROADS. SHALL

7. THE LOCATION OF ALL NEW HOUSE CONNECTIONS SHALL BE IMPRESSED INTO THE CURB FACE OR STREET SURFACE WITH THE LETTERS "H†C" AND AN ARROW POINTING THE DIRECTION THE HOUSE TO THE CONNECTION. THE LETTERING SHALL BE 4" BY 8"; REFER TO THE SEWER STANDARD DETAILS. PRIOR THE CONSTRUCTION OF THE RESIDENCE, NEW HOUSE CONNECTIONS SHALL BE LOCATED USING A 2" BY 2" STAKE WITH A FLORESCENT GREEN FLAG/STREAMER OR 11. PAINTED FLORESCENT GREEN FOR EASE OF LOCATING BY DEPARTMENT OF UTILITIES INSPECTORS. THE STAKE SHALL EXTEND AT LEAST 3 FEET FROM THE EXISTING GROUND SURFACE. THE STAKE MUST BE MAINTAINED UNTIL THE RESIDENCE HAS BEEN CONNECTED TO THE SERVICE LINE.

DEPARTMENT OF UTILITIES REPRESENTATIVE SHALL BE ON—SITE FOR ALL TESTING REQUIRED FOR THE ACCEPTANCE OF THE DEVELOPMENT. THE DEVELOPER SHALL CONTACT DEPARTMENT OF UTILITIES AT LEAST 48—HOURS PRIOR TO TESTING. THE DEVELOPER SHALL CONTACT TAMMANY UTILITIES AT (985) 893—1717 TO SCHEDULE INSPECTIONS

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THE CONTRACTOR AND ENGINEER OF RECORD SHALL BE RESPONSIBLE FOR VERIFYING THE HORIZONTAL AND VERTICAL LOCATION OF ALL NEW SEWER INFRASTRUCTURE POST—CONSTRUCTION. THE FIELD VERIFICATION DATA SHALL BE REFLECTED AND CERTIFIED IN THE RECORD DRAWINGS/AS—BUILT PLANS TO BE PREPARED BY THE ENGINEER OF RECORD FOR THE PROJECT. DEPARTMENT OF UTILITIES SHALL NOT ACCEPT THE DEVELOPMENT UNTIL THE ENGINEER OF RECORD PROVIDES AN ACCURATE, VERIFIED SET OF RECORD DRAWINGS/AS—BUILT PLANS

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- SEWER EXISTING WATER TO NEW V LOCATION MAP AND
- SHEETS
- QUANTITIES FINAL MATERIAL QUANTITIES.
- ARY OF HOUSE CONNECTIONS. INFORMATION REGARDING THE CONNECTIONS SHALL BE TABULATED. THE LOCATION OF HOUSE CONNECTION SHALL BE DETERMINED BY MEASURING THE CENTERLINE OF THE SEWER GRAVITY MAIN FROM THE R. OF THE DOWNSTREAM MANHOLE. ADDITIONALLY, THE TION AND OFFSET OF EACH HOUSE CONNECTION SHALL BE LE. ADDITIONALLY, T CONNECTION SHALL SEWER (I.E. 35' L). HE DOWNSTREAM MANHOLE.
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INSTRUCTIONS. CC DETERMINE THE SC BEGINNING WORK.

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HE MANHOLE SECTIONS SHALL BE SEALED WITH R A RUBBER GASKET CONFORMING TO ASTM C433. SEALANT MATERIAL PROTRUDING FROM THE JOINT ON OF THE MANHOLE. INTERIOR JOINTS BE SEALED WITH A NON-SHRINK, NON-METALLIC

- SHEETS IN THE RECORD DRAWINGS/AS-BUIL. CONTAIN PROFILE PLANS
- THE GRAVITY SEWER LINE BE PROVIDED AS A DISTANCE BETWEEN PLAN-VIEW ONLY. 0F ^\ E SLOPE AND DIRECTION OF PLAN-VIEW ONLY. SLOPE OF E LABELED. SLOPE SHALL  $\leq$ -CENTER FLOW II -TO-OF CENTER-TC DIRECTION ( LABEL THE S LINES IN PLA SHALL BE PERCENTAGE. LABEL ALONG
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  MANHOLE OF-CASTING (TOC) AND INVERT SHOW INVERT ELEVATIONS AND 20.19) FOR ALL PIPES IN THE N -OF

'IRON CONFORMING SHALL EAST JORDAN RAMES AND COVERS

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OLE FRAMES AND COVERS SHALL BE GRAY IRON CONFOSTM A48. MANHOLE FRAMES AND COVERS SHALL EAST WORKS OR US FOUNDRY. ALL MANHOLE FRAMES AND COVERS AND COVERS OR US FOUNDRY ASHTO HS—20 LOADING. A "RAINSTAT SHALL BE INSTALLED WITH ALL NEW MANHOLE COVERS.

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O ASTM C923 AND

ALL PIPE PENETRATIONS INTO MANHOLES SHALL BICONNECTION OF SEWER PIPES TO MANHOLES SHATHE CONNECTIONS SHALL BE MADE WITH AN ELAMANHOLE CONNECTOR OR BOOT CONFORMING TO NON-METALLIC EPOXY GROUT.

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- BETWEEN nuw and Label Tie—in Locations Ewer infrastructure.
- E PLAN AND PROFILE SHEETS SHALL BE PROVIDED FOR STATION(S) AND FORCE MAIN(S). LABEL ALL VALVES AND ALONG THE FORCE MAIN. LABEL THE DISTANCE BETWEEN VES AND FITTINGS. LABEL VERTICAL AND HORIZONTAL SEPARATE F THE LIFT ST FITTINGS ALO ALL VALVES

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LINETYPES AND SYMBOLS	MEANING GRAVITY SEWER LINE	SERVICE	FORCE M	EFFLUENT FORCE MAIN	SINGLE SEWER HOUSE CONNECTION	DUAL SEWER HOUSE CONNECTION	SEWER CLEAN-OUT	SEWER MANHOLE	SEWER LIFT STATION	VALVE ON SEWER FORCE MAIN	LINETYPES AND SYMBOLS	MEANING	WATER MAIN		DUAL WATER SERVICE CONNECTION	WATER METER	FIRE HYDRANT	WATER VALVE & MANHOLE	BACK FLOW PREVENTER	VALVE, SYMBOLS		CHECK VALVE	ISOLATION VALVE	GATE VALVE	PLUG VALVE	TAPPING SLEEVE AND VALVE	AIR RELEASE VALVE	TEE, VALVE & FIRE HYDRANT ASSEMBLY	LINETYPES AND SYMBOLS	MEANING	RIGHT-OF-WAY	SERVITUDE / PROPERTY LINE	OVERHEAD POWER LINE	POWER POLE	UNDERGROUND POWER LINE	PAD MOUNTED TRANSFORMER		GAS VALVE & MANHOLE	DRAINAGE CULVERT, SUBSURFACE	TOP OF DITCH	DRAINAGE DROP INLET OR CATCH BASIN	DEMOLITION AND REMOVAL	PORTLAND CEMENT CONCRETE	GRANULAR BACKFILL, COMPACTED	BEDDING MATERIAL, COMPACTED	SELECT FILL (INSITU SOILS), COMPACTED
	SYMBOL S — ss — ss —		SFM SFM	EFM EFM	~	~	<b>\oint{\oint}</b>	$\odot$	[FS]	(\$\hat{x}\)	WATER I	SYMBOL	M — M —	•7	••	MM	•	<b>(8)</b>			SYMBOL	7	*		***	<b></b> X	<b>*4Ñ</b> + <u></u>	••	GENERAL	SYMBOL			— дно —— дно —— дно —		— UGE —— UGE ——	I	—— GAS ——— GAS ——	<b>\phi</b>					A			

DR TO RECEIVE FLOW USING ONE OF THE ELL MAINSTAY (ML72 ,/8" THICKNESS, DS5 NEMEC PERMASHIELD

4. EXISTING MANHOLES TO BE REFURBISHED AND/OR TO RECEIVE FLOW FROM A SEWER FORCE MAIN SHALL BE COATED USING ONE OF THE FOLLOWING COMPOSITE LINER SYSTEMS: MADEWELL MAINSTAY (ML72 TO REBUILD TO ORIGINAL THICKNESS OR MIN. 3/8" THICKNESS, DS5 EPOXY LINER WITH 125 MILS THICKNESS), TNEMEC PERMASHIELD (SERIES 217 MORTOR CLAD TO REBUILD TO ORIGINAL THICKNESS OR MIN. 3/8" THICKNESS, SERIES 434 PERMA—SHIELD EPOXY LINER WITH 125 MILS THICKNESS) OR XYPEX BIO—SAN MEGAMIX 2 (MIN. 3/8" THICKNESS). PRIOR TO APPLYING THE SELECTED COMPOSITE LINER SYSTEM, ALL SURFACES SHALL BE PREPARED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. THE COMPOSITE LINER SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. COORDINATE WITH DEPARTMENT OF UTILITIES TO DETERMINE THE SCOPE OF THE MANHOLE REFURBISHMENT PRIOR TO DETERMINE WICH AND ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

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DISCHARGE FROM A FORCE MAIN, (2) MANHOLES LIFT STATION, OR (3) MANHOLES WITH A DEPTH CONCRETE SHALL CONTAIN "CON—SHIELD" AT RAT

CEMENT OR (3) MANHOLES WINCRETE SHALL CONTAIN "CON-SHICTORIC YARD IN ADDITION TO XICOMENT OR XYPEX C500 BIO

CONCRETE SH PER CUBIC Y OF CEMENT CEMENT.

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CONCRETE SHALL BE FORTIFIED WITH THE CORROSION CONTROL ADDITIVE "CON-SHIELD" IN ADDITION TO XYPEX OR XYPEX C500 BIO-SAN FOR THE FOLLOWING CONDITIONS: (1) MANHOLES RECEIVING DISCHARGE FROM A FORCE MAIN, (2) MANHOLES WITHIN 100' OF A

# MAIN

- E A PIPE BETWEEN DIAMETER, POLYVINYL SHALL E THE GRAVITY SPIGOT" CONNECTIONS SPICED "BELL AND SPICE RUBBER SEAL SH D3034. NEW (
  SHALL HAVE CONNECTIONS 15" BE -. RUBBER GRAVITY SEWER LINES S "SEWER". AND SHALL 1. NEW GRAVITY SEWER LINES BETWEEN 6" AND INCLUDING HOUSE SERVICE CONNECTIONS, SHAL CHLORIDE (PVC) PIPE CONFORMING TO ASTM D30 SEWER LINES BETWEEN 6" AND 15" DIAMETER SHISTIFFNESS NO LESS THAN 115 PSI (SDR26). CONN PIPE LENGTHS SHALL BE OF AN INTEGRATED "B DESIGN WITH A RUBBER GASKET SEAL. RUBB CONFORM TO ASTM F477. NEW GRAVITY SEWER LINICOLOR GREEN AND LABELED AS "SEWER".
  - (PS115). RUBBER R LINES F679. INTEGRATED TWEEN 18" AND 48" DIAMETER SI
    ) PIPE CONFORMING TO ASTM F
    TWEEN 18" AND 48" DIAMETER SI
    O LESS THAN 115 PSI (PS1 SEWER BE POLYVINYL CHLORIDE (PVC) PIPE CONFORMING TO AS NEW GRAVITY SEWER LINES BETWEEN 18" AND 48" DIAMETI HAVE A PIPE STIFFNESS NO LESS THAN 115 PSI CONNECTIONS BETWEEN PIPE LENGTHS SHALL BE OF AN IN "BELL AND SPIGOT" DESIGN WITH A RUBBER GASKET SEAL. SEAL SHALL CONFORM TO ASTM F477. NEW GRAVITY SEW SHALL BE THE COLOR GREEN AND LABELED AS "SEWER". BETWEEN SEWER LINES -. vINYL
    ineW GRAVITY
    HAVE A NEW GRAVITY
- 8" INSIDE W GRAVITY FEET SEWER MAINS SHALL BE NO SMALLER THAN 8 PIPE WITH A MINIMUM SLOPE 0.4%. NEW SHALL HAVE MINIMUM VELOCITY OF 2 FE R PVC MAINS GRAVITY DIAMETER SECOND. SEWER
- NEW HOUSE SERVICE CONNECTIONS SHALL BE NO SMALLER THAN 6" INSIDE DIAMETER PVC PIPE. A NEW HOUSE SERVICE CONNECTIONS SHALL BE INSTALLED A PERPENDICULAR TO THE GRAVITY SEWER MAIN AND SHALL BE PROPERLY SECURED WITH A PVC CAP.
- BY THE SHALL THE LOCATION OF THE HOUSE SERVICE CONNECTIONS SHASTAMPED IN THE CURB FACE OR ROAD SURFACE USING LETTERING SHALL BE AT LEAST LETTERING "HTC",
- ) AT THE LOCATED BE LOCATED BE NOT SHALL BE CONNECTION ALL NEW HOUSE SERVICE CONNECTIONS LOT LINE. HOUSE SERVICE CONNECTION WITHIN THE DRIVEWAY.
- LEAKS FOR TESTED BE SHALL SYSTEM SEWER SMOKE TESTING. **GRAVITY**

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- GRAVITY SEWER PIPES SHALL BE CHECKED FOR ALIGNMENT BY MANDREL TESTING AND VIDEO INSPECTION. CLEAN WATER SHALL BE INTRODUCED INTO THE GRAVITY SEWER LINE UNDERGOING VIDEO INSPECTION TO DETERMINE IF THE GRAVITY SEWER LINE HAS ANY SAGS OR HIGH POINTS THAT WILL IMPEDE FLOW. A DEPARTMENT OF UTILITIES REPRESENTATIVE SHALL BE ON—SITE DURING THE VIDEO INSPECTION.
- IN IHE EVENT A SECTION OF GRAVITY SEWER PIPE FAILS INSPECTION AND TESTING, PIPES SHALL BE RE—LAID AND RE—CHECKED AT EXPENSE OF THE CONTRACTOR AND/OR THE DEVELOPER.

# NOTES STATION SEWER LIFT

- 1. WET WELLS SHALL HAVE A MINIMUM INSIDE DIAMETER OF 60 INCHES.
- LIFT STATION SERVITUDE SHALL BE CENTERED ON THE WET WELL AND MEASURE AT LEAST 25' BY 25'. THE ACCESS DRIVEWAY SHALL BE AT LEAST 12' WIDE. A SEPARATE SERVITUDE FOR THE ACCESS DRIVEWAY TO THE LIFT STATION SHALL BE PROVIDED IN ADDITION TO THE LIFT STATION SERVITUDE. LIFI
- LIFT STATIONS LOCATED IN A RESIDENTIAL OR COMMERCIAL SETTING SHALL BE SECURED BY A WOODEN PRIVACY FENCE. THE FENCE SHALL BE 6—FEET TALL. A DOUBLE SWING SERVITUDE. THE FENCE SHALL BE 6—FEET TALL. A DOUBLE SWING GATE SHALL BE PROVIDED FOR MAINTENANCE VEHICLE ACCESS, AND THE CLEAR OPENING FOR THE GATE SHALL BE 16—FEET. THE APPROPRIATE WARNING SIGNS AND DEPARTMENT OF UTILITIES SIGNS SHALL BE ATTACHED TO FENCE AND GATE
- TREATMENT. ADDITIONALLY, A DARK GREEN SHALL BE INSTALLED ON THE FENCE AND 3 E SHALL BE PROVIDED FOR MAINTENANCE THE CLEAR OPENING FOR THE GATE SHALL ROPRIATE WARNING SIGNS AND DEPARTMENT LL BE ATTACHED TO FENCE AND GATE. 4 STATION BARBED ONG A FENCE ALONG HIGHWAY SHALL BE SECURED BY A CHAIN LINK FENCE. THE I SHALL CONSTRUCTED ALONG THE PERIMETER OF LIFT STERVITUDE. THE FENCE SHALL BE 6—FEET TALL WITH A BY WIRE TOP—OF—FENCE TREATMENT. ADDITIONALLY, A DARK CATE. A ROLLER GATE SHALL BE INSTALLED ON THE FENCE GATE. A ROLLER GATE SHALL BE PROVIDED FOR MAINTEN VEHICLE ACCESS, AND THE CLEAR OPENING FOR THE GATE SECONTIFIES SIGNS SHALL BE ATTACHED TO FENCE. HH
  - STRUCTURE CONCRETE REINFORCED WET PRE-CAST, 뿔 COMPONENTS SHALL

STRUCTURE (CADING. C478. THE PRE—CAST WET WELL S MEET OR EXCEED AASHTO HS—20 NG TO ASTM (DESIGNED TO

- 6. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH 5. OF 4,000 PSI. REINFORCING STEEL SHALL BE GRADE 60 AND CONFORM TO ASTM A615. CONCRETE SHALL CONTAIN XYPEX C1000-R CONTENT OF AT LEAST 3% BY WEIGHT OF CEMENT AND SHALL BE FORTIFIED WITH A CORROSION CONTROL ADDITIVE SUCH AS "CON—SHIELD" OR XYPEX C500 BIO—SAN. CONCRETE SHALL CONTAIN "CON—SHIELD" AT RATE OF ONE GALLON PER CUBIC YARD IN ADDITION TO XYPEX C100R AT 3% BY WEIGHT OF CEMENT OR XYPEX C500 BIO—SAN BY 1% BY WEIGHT OF CEMENT. THE CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS FOR APPROVAL BY THE ENGINEER AND DEPARTMENT OF UTILITIES PRIOR TO ORDERING THE WET WELL.
  - LIFT STATION SECTIONS
    CONFORMING TO ASTM
    PROTRUDING FROM THE
    ELL SHALL BE TRIMMED
    THE WET WELL. INTERIOR
    -SHRINK, NON-METALLIC JOINTS IN THE WET WELL OF THE SEWER LIFT STATION SHALL BE SEALED WITH A RUBBER GASKET CONFORMING C433. EXCESS JOINT SEALANT MATERIAL PROTRUDING F JOINT ON THE INTERIOR OF THE WET WELL SHALL BE FLUSH WITH THE INTERIOR OF SURFACE OF THE WET WELL. JOINTS SHALL THEN BE SEALED WITH A NON—SHRINK, NONGROUT.
- GROUT AND MORTAR MIXES SHALL CONTAIN CONCRETE LISTED IN NOTE #6 ABOVE.
- 9. EXISTING WET WELLS TO BE REFURBISHED SHALL BE COATED USING ONE OF THE FOLLOWING COMPOSITE LINER SYSTEMS: MADEWELL MAINSTAY (ML72 TO REBUILD TO ORIGINAL THICKNESS OR MIN. 3/8" THICKNESS, DS5 EPOXY LINER WITH 125 MILS THICKNESS), TNEMEC PERMASHIELD (SERIES 217 MORTOR CLAD TO REBUILD TO ORIGINAL THICKNESS OR MIN. 3/8" THICKNESS, SERIES 434 PERMA-SHIELD EPOXY LINER WITH 125 MILS THICKNESS) OR XYPEX BIO-SAN MEGAMIX 2 (MIN. 3/8" THICKNESS), PRIOR TO APPLYING THE SELECTED COMPOSITE LINER SYSTEM, ALL SURFACES SHALL BE 100 PREPARED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. THE COMPOSITE LINER SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. COORDINATE WITH DEPARTMENT OF UTILITIES TO DETERMINE THE SCOPE OF THE WET 11. WELL REFURBISHMENT PRIOR TO BEGINNING WORK.
  - ALL PIPE PENETRATIONS INTO THE WET WELL SHALL BE CAST OR CORED. CONNECTION OF SEWER PIPES TO MANHOLES SHALL BE WATERTIGHT. THE CONNECTIONS SHALL BE MADE WITH AN ELASTOMERIC PIPE TO MANHOLE CONNECTOR OR BOOT CONFORMING TO ASTM C923 AND NON-METALLIC EPOXY GROUT.
- IMMEDIATELY NUMBER OF OLE AND WET 11.A COLLECTOR MANHOLE SHALL BE CONSTRUCTED IMMEDIATEL UPSTREAM OF THE WET WELL TO MINIMIZE THE NUMBER CORNETRATIONS IN THE WET WELL WALL. THE MANHOLE AND WE WELL SHALL BE CONNECTED USING 12" DIAMETER GRAVITY SEWER LINE WITH MINIMUM SLOPE OF 2.5%. THE GRAVITY SEWER LINE SETWEN THE MANHOLE AND WET WELL SHALL BE PVC PIFCONFORMING TO THE "GRAVITY SEWER NOTES" ABOVE. THE SEAL AROUND PIPE PENETRATIONS SHALL CONFORM TO THE "GRAVITY SEWER MANHOLE SHALL CONFORM TO THE "SEWER MANHOLE NOTES".
- SHALL AASHTO F AND COVERS BE RATED FOR 'ET WELL HATCH FRAMES ONSTRUCTED OF ALUMINUM AND

# FORCE MAIN NOTES

- SEWER FORCE ".". NEW SEWER MINIMUM INSIDE DIAMETER OF 4". NEW SE LIFT STATIONS INTERIOR TO A SUBDIVISION LIFT STATIONS) SHALL HAVE MINIMUM IN CONNECTING TO OTHER MAINS FORCE MAINS FOR I DAISY CHAIN OF L DIAMETER OF 3". HAVE
- MINIMUM VELOCITY IN ALL SEWER FORCE MAINS SHALL BE 3
  PER SECOND. MAXIMUM VELOCITY IN ALL SEWER FORCE N
  SHALL NOT EXCEED 8 FEET PER SECOND. VELOCITIES IN EXCES;
  8 FEET PER SECOND SHALL APPROVED BY DEPARTMENT
  UTILITIES.
- BE POLYVINYL CHLORIDE (PVC) OR HIGH-DENSITY POLYETHYLENE (HDPE) PIPE CONFORMING TO AWWA C906. SHALL C900 C SEWER FORCE MAINS CONFORMING TO AWWA
- CONNECTIONS
  N INTEGRATED
  BBER GASKET PIPE OF MAINS CONSTRUCTED USING PVC 0060 E AWWA C90 PVC SHALL IN DESIGN W

C111. NEW SEWER ABELED AS "SFM". GREEN COLOR SHALL ( BE THE SHALL SEAL. F FORCE

- USING PVC PIPE 3" AND 30" CLASS OF 160 PSI (SDR26).
  4S OF PVC SHALL BE OF AN H—ON DESIGN WITH A RUBBER SONFORM TO AWWA C1111. NEW COLOR GREEN AND LABELED MAINS CONSTRUCTED USING PIPE LENGTHS OF SPIGOT" PUSH-ON INTEGRATED "BELL AND S GASKET SEAL. RUBBER SI SEWER FORCE MAINS SH AS "SFM". ALL BE A BETWEEN FORCE CONNECTIONS
- ALL SEWER FORCE MAINS CONSTRUCTED USING HDPE PIPE BETWEEN 4" AND 48" DIAMETER SHALL HAVE A PRESSURE CLASS OF 160 PSI (DR13.5) AND CONFORM TO DUCTILE IRON PIPE SIZES (DIPS). CONNECTIONS BETWEEN PIPE LENGTHS SHALL BE FUSED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS AND RECOMMENDATIONS. NEW HDPE SEWER FORCE MAINS SHALL BE THE COLOR BLACK WITH A GREEN STRIPE. CONNECTIONS TO OTHER SEWER FORCE MAINS, INCLUDING THOSE OF DIFFERENT MATERIAL, SHALL BE MADE USING THE APPROPRIATE ADAPTERS AND FITTINGS.
- HORIZONTAL HIGH-DENSITY #5 ABOVE. NSING USE DIRECTIONAL DRILLING (HDD) METHODS SHALL U POLYETHYLENE (HDPE) PIPE CONFORMING TO NOTE

DESCRIPTION OF REVISION

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BACK

- THE A SCE MAINS SHALL
  S-BUILT PLANS. T
  1, THE SIZE OF T
  AND THE LENGTH CONSTRUCTION, DRILLING LOGS FOR ALL HDD INSTALLED FORCE PROVIDED WITH THE RECORD DRAWINGS/AS—BI FORCE MAIN, THE DEPTH OF INSTALLATION, AND THE SEGMENT.
- ALONG THE ENTIRE WIRE SHALL BE CONTRACTOR SHALL INSTALL A TRACER WIRE ASTH OF THE FORCE MAIN. THE TRACER ALLED SIMULTANEOUSLY WITH THE FORCE MAIN.
- JOINTS SHALL BE RESTRAINT HARNESS RESTRAINED WITH A SERIES 1900 SERRATED RE MANUFACTURED BY EBBA, INC. OR APPROVED EQUA PE BELL SERRATED PIPE RESTRAINTS
- BE RESTRAINED IN MINIMUM RESTRAINT CORDANCE WITH THE IN ACCORDANCE E PROVIDED DETAIL.
  JOINTS SHALL BE IN FORCE H THE I 1.ALL APPLICABLE FORCE ACCORDANCE WITH THE LENGTH FOR PVC PIPE J
- CTILE IRON FITTING
  FITTINGS SHALL BE
  TION BETWEEN THE
  RESTRAINED WITH A
  AL JOINT THRUST
  A APPROVED EQUAL.
  COATED COR—TEN IRON FITTING JOINTS DUCTILE DUCTILE IR T. FITTINGS WITH CONFORMING TO AWWA C111/A21.11. THE DUCTILE SHALL BE EPOXY COATED INSIDE AND OUT. FITTII MECHANICAL JOINT (MJ) FITTINGS. THE CONNECTION PVC FORCE MAIN AND THE FITTING SHALL BE REST 2000PV OR 2000SV MEGA—LUG MECHANICAL RESTRAINT MANUFACTURED BY EBBA, INC. OR AN APTHE NUTS AND BOLTS SHALL BE TEFLON CO. BE NEW SEWER FORCE MAIN FITTINGS SHALL FITTINGS CONFORMING TO AWWA C1110/A21.10 CONFORMING TO AWWA C111/A21.11. THE DSHALL BE EPOXY COATED INSIDE AND OUT.
- THE CONTRACTOR SHALL INSTALL IDENTIFICATION TAPE ALONG THE ENTIRE LENGTH OF THE NEW SEWER FORCE MAIN. IDENTIFICATION TAPE SHALL BE INSTALLED BY THE CONTRACTORS ONCE THE BACKFILL HAS BEEN PLACED AND COMPACTED TO AT LEAST 12" ABOVE THE TOP OF THE PIPE AND NOT MORE THAN 18" ABOVE THE CONNECTION. BE 20
- 90 MIHHIM LOCATED UPSTREAM ALONG THE LENGTH SE CONTAINED WITHIN RVS) SHALL BE LC AT HIGH POINTS AI ARVS SHALL BE .AIR RELEASE VALVES (ARVS) SHALL
  THE LIFT STATIONS AND AT HIGH PO
  THE FORCE MAIN. THE ARVS SHAL
  STANDARD PRE—CAST SEWER MANHOLE.
- HALL UNDERGO HYDROSTATIC
  NEW SEWER FORCE MAINS
  OURS. THERE SHALL BE NO
  IN THE EVENT THE SEWER
  ORCE MAIN PIPES SHALL BE
  THE FORCE MAIN SHALL BE TESTED A 150 PSI FOR 2 HOURS. THERE RE DROPS DURING THE TEST. IN THE EVENAIN FAILS THE TEST, THE FORCE MAIN FORCE DAND REPAIRED ACCORDINGLY. THE FORCE FORCE MAINS SEWER NEW SURE TESTING 1
  SHALL TES
  PRESSURE
  FORCE MA
  CHECKED ,

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DRAINAGE

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POWER

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SERVITUDE

RIGHT-OF

GENERAL

SYMBOL

OVERHEAD

TO SHEET G-202 FOR ADDITIONAL SEWER STANDARD NOTES

SEWER L	SEWER LINETYPES AND SYMBOLS
SYMBOL	MEANING
SS SS SS	GRAVITY SEWER LINE
	SEWER SERVICE LINE
SFM SFM	SEWER FORCE MAIN
EFM EFM	EFFLUENT FORCE MAIN
٩	SINGLE SEWER HOUSE CONNECTION
	DUAL SEWER HOUSE CONNECTION
<b>\oint\oint\oint\oint\oint\oint\oint\oint</b>	SEWER CLEAN-OUT
(S)	SEWER MANHOLE
[FS]	SEWER LIFT STATION
(S <sup>x</sup> )	VALVE ON SEWER FORCE MAIN

DATE:

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

DEP.

	· N		
VALVE & MANHOLE	┚┕	╁	<b> </b>
FLOW PREVENTER	ZKI		
	YNB,	)   \ \ \	
E SYMBOLS	'Μ	JEF	
MEANING	rw rw		20
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ATION VALVE	ВX	LED	шνα
VALVE	NMV	OIEC 3WLL ECKI	
VALVE	DK	INS	
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ELEASE VALVE	TINI.	iv *	NEER
VALVE & FIRE HYDRANT ASSEMBLY	NIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	TOOLS	IN ENG
	HIIIIII FO 37	ATTHEM	igissis:
ETYPES AND SYMBOLS	ilini.	W * :	PROI
MEANING			
-OF-WAY	N		
UDE / PROPERTY LINE	LIO	ŧ	
RHEAD POWER LINE			
R POLE	 	00	
ERGROUND POWER LINE			
MOUNTED TRANSFORMER			
INE IN			
VALVE & MANHOLE	LE ER		
NAGE CULVERT, SUBSURFACE			
OF DITCH	AHC S	CL	
NAGE DROP INLET OR CATCH BASIN	INV SIC		
OLITION AND REMOVAL			
AND CEMENT CONCRETE	SE	I	
NULAR BACKFILL, COMPACTED	ΤТ		
	_		_

OE

**GAADNATS** 

SHEEL

**SCALE:** 

SHEEL

PLUG VALVI

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A R

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CHECK

SYMBOL

VALVE

**VPPROVED** 

4202/70/20

**SIZE**:

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4202-7-20

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SHEET -0031 COMPACTED **102** 23-1130

SHEET

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MATERIAL,

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GRANULAR

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