ST. TAMMANY PARISH

MICHAEL B. COOPER
PARISH PRESIDENT

NOTICE TO BIDDERS

ST. TAMMANY PARISH

Sealed bids will be received by the Department of Procurement, until 2:00 p.m., **Tuesday, July 8, 2025,** and then opened and read publicly at that time by the Procurement Staff for the following project:

Bid #25-20-2 – St Tammany Parish Fishing Pier

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:

Highway, Street and Bridge Construction

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

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

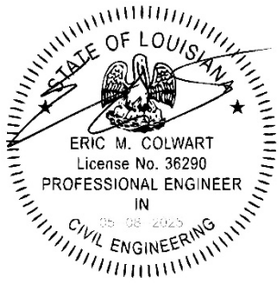
ST. TAMMANY PARISH
GOVERNMENT

BID PACKAGE FOR

St. Tammany Parish Fishing Pier

BID NO.: 25-20-2

May 8, 2025



Section 01

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Section 02

Instructions to Bidders

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

1. Bid security is required. Be sure that your bid includes such security as is necessary to meet Parish requirements and is properly signed. The bid must be fully completed. All applicable Louisiana license numbers must be affixed.

2. The Owner is the St. Tammany Parish Government (the "Parish").

3. The terms "he/his" and "it/its" may be used interchangeably.

4. The terms "Owner," the "Parish," and "St. Tammany Parish" may be used interchangeably.

5. The successful Bidder understands the limited contract time in the contract is **two hundred seventy (270) 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 *written approval* by owner, the cost of the work will be borne by the contractor and will not be reimbursed by the Parish.**

8. **Only** the Louisiana Uniform Public Bid Form, the Unit Price Form (if necessary), the bid security, and written evidence of authority of person signing the bid shall be submitted on or before the bid opening time and date provided for in the Bid Documents. Necessary copies of the Louisiana Uniform Public Work Forms and Unit Price Forms (if necessary) will be furnished for Bidding. Bound sets of the Contract Documents are for Bidder's information and should not be used in submitting Bids.

9. All other documents and information required are to be submitted by the low Bidder within ten (10) days after the opening of the bids, and at the same time of day and location as given for the opening of the bids in the Bid Documents.

10. Each Bid must be submitted in a sealed envelope, unless submitted electronically. The outside of the envelope shall show the name and address of the Bidder, the State Contractor's License Number of the Bidder (if work requires contractor's license), and the Project name and the Bid number. In the case of an electronic bid proposal, a contractor may submit an authentic digital signature on the electronic bid proposal accompanied by the contractor's license number, Project name and the Bid number.

11. The price quoted for the Work shall be stated in words and figures on the Bid Form, and in figures only on the Unit Price Form. The price in the Bid shall include all costs necessary for the complete performance of the Work in full conformity with the conditions of the Contract Documents, and shall include all applicable Federal, State, Parish, Municipal or other taxes. The price bid for the items listed on the Unit Price Form will include the cost of all related items not listed, but which are normally required to do the type of Work bid.

12. The Bid shall be signed by the Bidder. The information required on the Louisiana Uniform Public Work Bid Form must be provided. Evidence of agency, corporate, or partnership authority is required and shall be provided in conformance with LSA-R.S. 38:2212(B).

13. Only a Contractor licensed by the State to do the type of Work as indicated on the Notice to Bidders can submit a Bid. The Bidder's signature on the Bid Form certifies that he holds an active license under the provisions of Chapter 24 of Louisiana Revised Statutes Title 37. Failure to be properly licensed constitutes authority for the Owner to reject the Bid.

14. Bidders shall not attach any conditions or provisions to the Bid. Any conditions or provisions so attached may, at the sole option of the Owner, cause rejection of the Bid.

15. A Bid Guarantee of five percent (5%) of the amount of the total Bid, including Alternates, must accompany the Proposal and, at the option of the Bidder, may be a cashier's check, certified check or a satisfactory Bid Bond. The Bid Guarantee must be attached to the Louisiana Uniform Public Work Bid Form. No Bid will be considered unless it is so guaranteed. Cashier's check or certified check must be made payable to the order of the Owner. Cash deposits will not be accepted. The Owner reserves the right to cash or deposit the cashier's check or certified check. Such guarantees shall be made payable to the Parish of St. Tammany. In accordance with LSA-R.S. 38:2218(C), if a bid bond is used, it shall be written by a surety or insurance company currently on the U.S. Department of the Treasury Financial Management Service list of approved bonding companies which is published annually in the Federal Register, or by a Louisiana domiciled insurance company with at least an A- rating in the latest printing of the A.M. Best's Key Rating Guide to write individual bonds up to ten percent of policyholders' surplus as shown in the A.M. Best's Key Rating Guide or by an insurance company in good standing licensed to write bid bonds which is either domiciled in Louisiana or owned by Louisiana residents. It is **not** required to be on any AIA form.

16. Bid securities of the three (3) lowest Bidders will be retained by the Owner until the Contract is executed or until final disposition is made of the Bids submitted. Bid securities of all other Bidders will be returned promptly after the canvas of Bids. Bids shall remain binding for forty-five (45) days after the date set for Bid Opening. The Parish shall act within the forty-five (45) days to award the contract to the lowest responsible bidder or reject all bids. However, the Parish and the lowest responsible bidder, by mutual written consent, may agree to extend the deadline for award by one or more extensions of thirty (30) calendar days. In the event the Owner issued the Letter of Award during this period, or any extension thereof, the Bid accepted shall continue to remain binding until the execution of the Contract.

17. A Proposal may be withdrawn at any time prior to the scheduled closing time for receipt of Bids, provided the request is in writing, executed by the Bidder or its duly authorized representative and is filed with the Owner prior to that time. When such a request is received, the Proposal will be returned to the Bidder unopened. A bid withdrawn under the provisions of LSA-R.S. 38:2214(C) cannot be resubmitted.

18. Written communications, over the signature of the Bidder, to modify Proposals will be accepted and the Proposal corrected in accordance therewith if received by the Owner prior to the scheduled closing time for receipt of Bids. Oral, telephonic or telegraphic Modifications will not be considered.

19. No oral interpretation obligating the Owner will be made to any Bidder as to the meaning of the Drawings, Specifications and Contract Documents. Every request for such an interpretation shall be made in writing and addressed and forwarded to the Owner. Inquiries received within seven (7) days prior to the day fixed for opening of the Bids may not be given consideration. Every interpretation made to the Bidder shall be in the form of an addendum to the Specifications. All such Addenda shall become part of the Contract Documents. Failure of the Owner to send or failure of Bidder to receive any such interpretation shall not relieve any Bidder from any obligation under this Bid as submitted without Modification. All Addenda shall be issued in accordance with the Public Bid Law, LSA-R.S. 38:2212(O).

20. The Owner reserves the right to reject any or all Bids for just cause in accordance with the Public Bid Law, LSA-R.S. 38:2214(B). Incomplete, informal, illegible, or unbalanced Bids may be rejected. Reasonable grounds for belief that any one Bidder is concerned directly or indirectly with more than one Bid will cause rejection of all Bids wherein such Bidder

is concerned. If required, a Bidder shall furnish satisfactory evidence of its competence and ability to perform the Work stipulated in its Proposal. Incompetence will constitute cause for rejection. If the Parish determines that the bidder is not responsive or responsible for any reason whatsoever, the bid may be rejected in accordance with State law.

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

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

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

24. Contractor shall fully indemnify and hold harmless the Parish, without limitation, for any and all injury, death, damage, loss, destruction, damages, costs, fines, penalties, judgments, forfeitures, assessments, expenses (including attorney fees), obligations, and other liabilities of every name and description, which may occur or in any way arise out of any act or omission of Contractor, its owners, agents, employees, partners or subcontractors. The Contractor shall not indemnify for the portion of any loss or damage arising from the Parish's act or failure to act.

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

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

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

    The Contractor shall not be obligated to indemnify that portion of a claim or dispute based upon the Parish's unauthorized: i) modification or alteration of the product, material or service; ii) use of the product, material or service in combination with other products not

furnished by Contractor; or, iii) use of the product, material or service in other than the specified operating conditions and environment.

26. Bidders shall familiarize themselves with and shall comply with all applicable Federal and State Laws, municipal ordinances and the rules and regulations of all authorities having jurisdiction over construction of the Project, which may directly or indirectly affect the Work or its prosecution. These laws and/or ordinances will be deemed to be included in the Contract, as though herein written in full.

27. Each Bidder shall visit the site of the proposed Work and fully acquaint itself with all surface and subsurface conditions as they may exist so that it may fully understand this Contract. Bidder shall also thoroughly examine and be familiar with drawings, Specifications and Contract Documents. The failure or omission of any Bidder to receive or examine any form, instrument, Drawing or document or to visit the site and acquaint itself with existing conditions shall in no way relieve any Bidder from any obligation with respect to its Bid and the responsibility in the premises.

28. The standard contract form enclosed with the Proposal documents is a prototype. It is enclosed with the Contract Documents for the guidance of the Owner and the Contractor. It has important legal consequences in all respects and consultation with an attorney is encouraged. Contractor shall be presumed to have consulted with its own independent legal counsel.

29. When one set of Contract plans show the Work to be performed by two or more prime Contractors, it is the responsibility of each Bidder to become knowledgeable of the Work to be performed by the other where the Work upon which this bid is submitted is shown to come into close proximity or in conflict with the Work of the other. In avoiding conflicts, pressure pipe lines must be installed to avoid conflict with gravity pipe lines and the Bidder of the smaller gravity pipe line in conflict with the larger gravity pipe line must include in his Bid the cost of a conflict box at these locations. The location of and a solution to the conflicts do not have to be specifically noted as such on the plans.

30. Bidder shall execute affidavit(s) attesting compliance with LSA-R.S. 38:2212.10, 38:2224, 38:2227, each as amended, and other affidavits as required by law, prior to execution of the contract.

31. 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) should 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. 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.

51. Deductibles: Any and all deductibles in the described insurance policies shall be assumed by and be at the sole risk of the Contractor.

52. Authorization of Insurance Company(ies) and Rating: All insurance companies must be authorized to do business in the State of Louisiana and shall have an A.M. Best rating of no less than A-, Category VII.

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.

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

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

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

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

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

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

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

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

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 two (2) working days of the bid opening. 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 to Procurement shall be no later than 2:00 pm CST, seven (7) working days prior to the opening of bids, and verification on comparable products will be no later than 2:00 pm CST, fourteen (14) working days prior to the opening date of the bid/proposal due date. Further, any questions or inquiries must be submitted via fax to 985-898-5227, or via email to Procurement@stpgov.org. Any questions or inquiries received after the required deadline to submit questions or inquiries will not be answered.

Schedule of Events

	Date	Time (CT)
Bid Due Date	July 23, 2025	2:00 PM
Inquiry Deadline	July 14, 2025	2:00 PM
Addendum Deadline	July 18, 2025	2:00 PM

NOTE: The Parish reserves the right to revise this schedule. Any such revision will be formalized by the issuance of an addendum to the Bid Request.

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.

61. 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.

Section 03

Summary of Work

I. Work to Include:

Removal of damaged timber fishing pier, and the construction of new "hardened" fishing pier, including steel framing, steel decking, and steel piles. Work also includes lighting, a dry pipe sprinkler system, and other amenities.

II. Location of Work:

St. Tammany Parish Fishing Pier
54001 Howze Beach Road
Slidell, LA 70461

III. Documents: Bid Documents dated May 8, 2025, and entitled:

St. Tammany Parish Fishing Pier
Bid No.: 25-20-2

IV. OTHER REQUIREMENTS (as applicable)

Contractor must comply and assures compliance with Section 12 – Federal Clauses.

This project is federally grant funded and therefore requires the Contractor to have a Unique Entity Identification number (UEI). The Contractor should submit with their response their UEI number. If the Contractor does not have a UEI already, then they must register at the below link before an award can be made.

https://sam.gov/content/entity-registration

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).

Table 3.1

Liquidated Damages	
Original Contract Amount	**Daily Charge**
Dollars	Dollars
0 - 250,000	500
250,000 – 1 Million	1,000
> 1 Million – 5 Million	1,500
> 5 Million – 10 Million	2,000
> 10 Million	3,000

- Parish reserves the right to increase the Daily charge rate due to additional provisions required in order to complete the project as described in the specifications

LOUISIANA UNIFORM PUBLIC WORK BID FORM

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

(Owner to provide name and address of owner)

BID FOR: St. Tammany Parish Fishing Pier

Bid No. 25-20-2

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

The undersigned bidder hereby declares and represents that she/he; a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by: MEYER ENGINEERS, LTD. and dated: MAY 8, 2025.
(Owner to provide name of entity preparing bidding documents.)

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

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

_____Dollars ($ _____)

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

Alternate No. 1 *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

N/A _____Dollars ($ _____)

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

N/A _____Dollars ($ _____)

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

N/A _____Dollars ($_____)

NAME OF BIDDER: _____

ADDRESS OF BIDDER: _____

_____

LOUISIANA CONTRACTOR'S LICENSE NUMBER: _____

NAME OF AUTHORIZED SIGNATORY OF BIDDER: _____

TITLE OF AUTHORIZED SIGNATORY OF BIDDER: _____

SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER **: _____

DATE: _____

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

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

**** A CORPORATE RESOLUTION OR WRITTEN EVIDENCE** of the authority of the person signing the bid for the public work as prescribed by LA R.S. 38:2212(B)(5).

BID SECURITY in the form of a bid bond, certified check or cashier's check as prescribed by LA R.S. 38:2218(A) attached to and made a part of this bid.

LOUISIANA UNIFORM PUBLIC WORK BID FORM
UNIT PRICE FORM

TO:

St. Tammany Parish Government

21454 Koop Drive, Suite 2F

Mandeville, LA. 70471

(OWNER TO PROVIDE NAME AND ADDRESS OF OWNER)

BID FOR:

St. Tammany Parish Fishing Pier

Bid No. 25-20-2

(OWNER TO PROVIDE PROJECT NAME & OTHER IDENTIFYING INFO)

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

Description:	☑ BASE BID OR ☐ ALT #		8" Chain Link Fence	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
1	675	LF		
Description:	☑ BASE BID OR ☐ ALT #		Aggregate Surface Course (4" Thick) (Parking Lot)	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
2	6250	SY		
Description:	☑ BASE BID OR ☐ ALT #		Asphalt Path Pavement Patching	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
3	800	SF		
Description:	☑ BASE BID OR ☐ ALT #		Riprap Replacement	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
4	250	CY		

Wording for "description" is to be provided by the Owner. All Quantities Estimated. The Contractor will be paid based upon actual quantities as verified by the Owner.

Version 2017 Q2

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

Description:	☑ BASE BID OR	☐ ALT #	Pathway Light Pole Foundation	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
5	6	EA		
Description:	☐ BASE BID OR	☐ ALT #		
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
Description:	☐ BASE BID OR	☐ ALT #		
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
Description:	☐ BASE BID OR	☐ ALT #		
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
Description:	☐ BASE BID OR	☐ ALT #		
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
Description:	☐ BASE BID OR	☐ ALT #		
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**

Wording for "description" is to be provided by the Owner. All Quantities Estimated.   The Contractor will be paid based upon actual quantities as verified by the Owner.

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

STATE OF _____

PARISH/COUNTY OF _____

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

_____

Print Name

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

1. That affiant is appearing on behalf of _____, who is seeking a public contract with St. Tammany Parish Government.

2. That affiant employed no person, corporation, firm, association, or other organization, either directly or indirectly, to secure the public contract under which he received payment, other than persons regularly employed by the affiant whose services in connection with the construction, alteration or demolition of the public building or project or in securing the public contract were in the regular course of their duties for affiant; and

3. That no part of the contract price received by affiant was paid or will be paid to any person, corporation, firm, association, or other organization for soliciting the contract, other than the payment of their normal compensation to persons regularly employed by the affiant whose services in connection with the construction, alteration or demolition of the public building or project were in the regular course of their duties for affiant.

4. If affiant is a sole proprietor, that after July 2, 2010, he/she has not been convicted of, or has not entered a plea of guilty or nolo contendere to any of the crimes or equivalent federal crimes listed in LSA-R.S. 38:2227(B).

5. If affiant is executing this affidavit on behalf of a juridical entity such as a partnership, corporation, or LLC, etc., that no individual partner, incorporator, director, manager, officer, organizer, or member, who has a minimum of a ten percent ownership in the bidding entity, has been convicted of, or has entered a plea of guilty or *nolo contendere* to any

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

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

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

_____

Printed Name: _____

Title: _____

Entity name: _____

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

_____

Notary Public

Print Name: _____

Notary I.D./Bar No.: _____

My commission expires: _____

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

STATE OF _____

PARISH/COUNTY OF _____

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

_____

Print Name

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

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

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

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

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

_____

Printed Name: _____

Title: _____

Name of Entity: _____

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

_____

Notary Public

Print Name: _____

Notary I.D./Bar No.: _____

My commission expires: _____

INSURANCE REQUIREMENTS*

Construction Project: St Tammany Parish Fishing Pier

Project/Quote/Bid#: 25-20-2

IMPORTANT – PLEASE READ

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

H. Certificates of Insurance shall be issued as follows:

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

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

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

Any inquiry regarding these insurance requirements should be addressed to:

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

Section 07

Project Signs

1. General

a. Work to include providing and installing project sign(s) at the beginning of the project. Some projects may require multiple signs. Should more than one sign be required, it will be reflected in the bidding documents.

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.

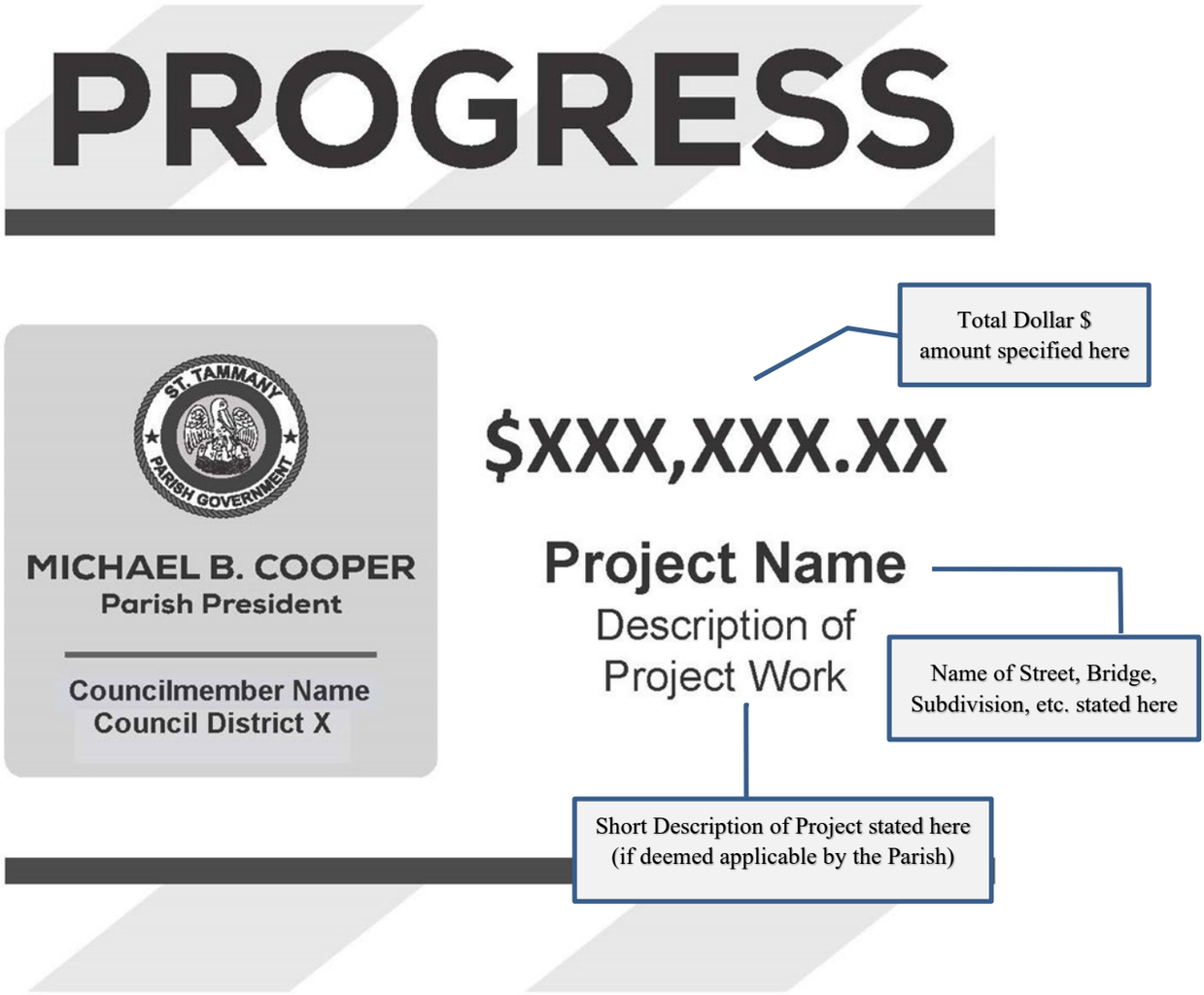
d. The sign(s) is to be installed such that the bottom of the sign is a minimum of 5' above the existing ground elevation.

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.

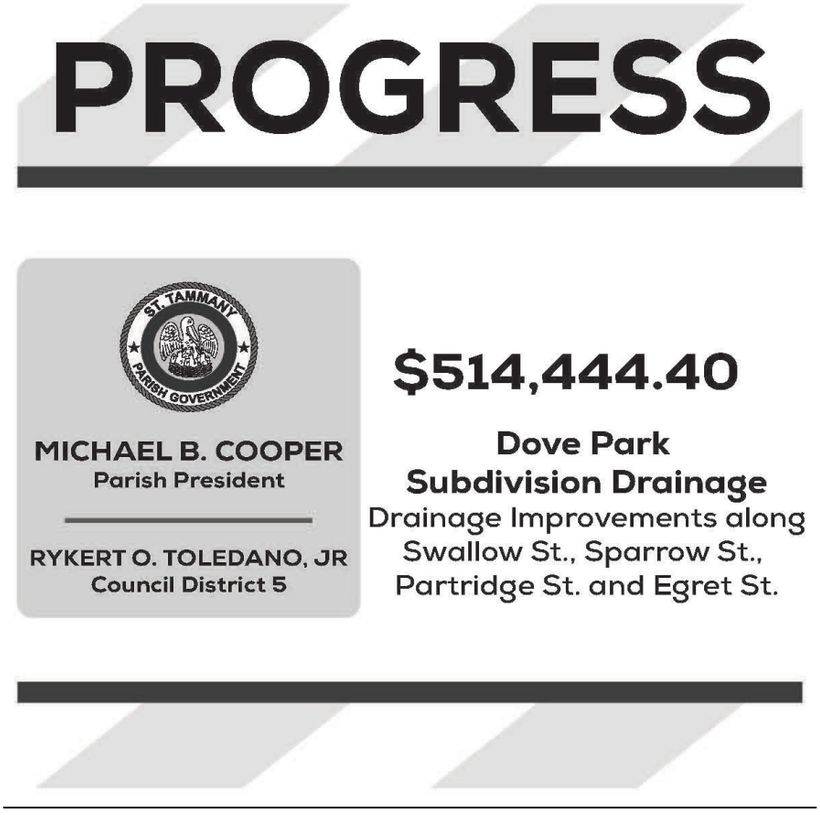
f. Contractor is responsible for the removal of all project signs upon issuance of final acceptance by the St. Tammany Parish Government Project Manager at no direct pay.

g. Cost to be included in "Temporary Signs and Barricades

Blank Template of Parish Project Sign:



Example of a Completed Parish Project Sign:



Section 08

General Conditions for St. Tammany Parish Government

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

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

GENERAL CONDITIONS INDEX

01.00 DEFINITIONS OF TERMS

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

01.01 A.A.S.H.T.O American Association of State Highway and Transportation Officials. When A.A.S.H.T.O. is referred to in these Specifications it takes the meaning of the specification for materials and methods of testing specified by this association and the specification stated is considered to be a part of the Specifications as if written herein in full.

01.02 A.C.I American Concrete Institute. When A.C.I. is referred to in these Specifications it takes the meaning of the specification for materials and methods of testing specified by this institute and the specification stated is considered to be a part of the Specifications as if written herein in full.

01.03 Addenda Written or graphic instruments issued prior to the opening of bids which clarify, correct, modify or change the bidding or Contract Documents.

01.04 Advertisement The written instrument issued by the Owner at the request of the Owner used to notify the prospective bidder of the nature of the Work. It becomes part of the Contract Documents.

01.05 Agreement The written agreement or contract between the Owner and the Contractor covering the Work to be performed and the price that the Owner will pay. Other documents, including the Proposal, Addenda, Specifications, plans, surety, insurance, etc., are made a part thereof.

01.06 Application for Payment The form furnished by the Owner which is to be used by the Contractor in requesting incremental (progress) payments and which is to include information required by Section 28.01 and an affidavit of the Contractor. The affidavit shall stipulate that progress payments theretofore received from the Owner on account of the Work have been applied by Contractor to discharge in full of all Contractor's obligations reflected in prior applications for payment.

01.07 A.S.T.M. American Society of Testing Materials. When A.S.T.M. is referred to in these Specifications it takes the meaning of the specification for materials and methods of testing specified by this society and the specification stated is considered to be a part of the Specifications as if written herein in full.

01.08 Bid The offer or Proposal of the Bidder submitted on the prescribed form setting forth all the prices for the Work to be performed.

01.09 Bidder Any person, partnership, firm or corporation submitting a Bid for the Work.

01.10 Bonds Bid, performance and payment bonds and other instruments of security, furnished by the Contractor and its surety in accordance with the Contract Documents and Louisiana law.

01.11 Change Order A written order to the Contractor signed by the Owner authorizing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time after execution of the Agreement.

01.12 Contract Documents The Agreement, Addenda, Contractor's Bid and any documentation accompanying or post-bid documentation when attached as an exhibit, the Bonds, these General Conditions, the Advertisement for Bid, Notice to Contractor, all supplementary conditions, the Specifications, the Drawings, together with all Modifications issued after the execution of the Agreement.

01.13 Contract Price The total monies payable to the Contractor under the Contract Documents.

01.14 Contract Time The number of consecutive calendar days stated in the Agreement for the completion of the Work.

01.15 Contractor The person, firm, corporation or Contractor with whom the Owner has executed the Agreement.

01.16 Defective Work When work which is unsatisfactory, faulty or deficient for any reason whatsoever, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, test or approval referred to in the Contract Documents, or has been damaged prior to the Owner's recommendation or acceptance.

01.17 Drawings The Drawings and plans which show the character and scope of the Work to be performed and which have been prepared or approved by the Owner and are referred to in the Contract Documents.

01.18 Field Order A written order issued by the Owner or his agent which clarifies or interprets the Contract Documents.

01.19 Modification (a) A written amendment of the Contract Documents signed by both parties, (b) A Change Order, (c) A written clarification or interpretation issued by the Owner or his agent. Modification may only be issued after execution of the Agreement.

01.20 Notice of Award The written notice by Owner to the lowest responsible Bidder stating that upon compliance of the conditions enumerated in the Notice of Award, or enumerated in the Bid documents, the Owner will deliver the Contract Documents for signature. The time for the delivery of the Contract Documents can be extended in conformance with Louisiana Law.

01.21 Notice to Contractor Instructions, written or oral given by Owner to Contractor and deemed served if given to the Contractor's superintendent, foreman or mailed to Contractor at his last known place of business.

01.22 Notice to Proceed A written notice given by the Owner fixing the date on which the Contract Time will commence, and on which date the Contractor shall start to perform his obligation under the Contract Documents. Upon mutual consent by both parties, the Notice to Proceed may be extended.

01.23 Owner St. Tammany Parish Government, acting herein through its duly constituted and authorized representative, including but not limited to the Office of the Parish President or its designee, its Chief Administrative Officer, and/or Legal Counsel. St. Tammany Parish Government (hereinafter, the “Parish”) and Owner may be used interchangeably.

01.24 Project The entire construction to be performed as provided in the Contract Documents.

01.25 Project Representative The authorized representative of the Owner who is assigned to the Project or any parts thereof.

01.26 Proposal The Bid submitted by the Bidder to the Owner on the Proposal form setting forth the Work to be done and the price for which the Bidder agrees to perform the Work.

01.27 Shop Drawings All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, Subcontractor, Manufacturer, Supplier or Distributor and which illustrate the equipment, material or some portion of the Work.

01.28 Specifications The Instructions to Bidders, these General Conditions, the Special Conditions and the Technical Provisions. All of the documents listed in the "Table of Contents."

01.29 Subcontractor An individual, firm or corporation having a direct Contract with the Contractor or with any other Subcontractor for the performance of a part of the Project Work.

01.30 Substantial Completion The date as certified by the Owner or its agent when the construction of the Project or a specified part thereof is sufficiently complete in accordance with the Contract Documents so that the Project or specified part can be utilized for the purposes for which it was intended; or if there is no such certification, the date when final payment is due in accordance with Section 28.

01.31 Superintendent Contractor's site representative. The person on the site who is in full and complete charge of the Work.

01.32 Time Unless specifically stated otherwise, all time delays shall be calculated in calendar days.

01.33 Work Any and all obligations, duties and responsibilities necessary to the successful completion of the Project assigned to or undertaken by the Contractor under the Contract Documents, usually including the furnishing of all labor, materials, equipment and other incidentals.

01.34 The terms “he/himself” may be used interchangeably with “it/itself.”

02.00 PROPOSAL

02.01 All papers bound with or attached to the Proposal Form are a necessary part thereof and must not be detached.

02.02 For submitting Bids, the only forms allowed shall be the “Louisiana Uniform Public Work Bid Form”, “Louisiana Uniform Public Works Bid Form Unit Price Form” (if necessary), the Bid Bond, and written evidence of authority of person signing the bid. Necessary copies of the Louisiana Uniform Public Work Forms will be furnished for Bidding. Bound sets of the Contract Documents are for Bidder's information and should not be used in submitting Bids.

02.03 Proposal forms must be printed in ink or typed, unless submitted electronically. Illegibility or ambiguity therein may constitute justification for rejection of the Bid.

02.04 Each Bid must be submitted in a sealed envelope, unless submitted electronically. The outside of the envelope shall show the name and address of the Bidder, the State Contractor’s License Number of the Bidder (if work requires contractor’s license), and the Project name and number for which the Bid is submitted, along with the Bid number.

02.05 The price quoted for the Work shall be stated in words and figures on the Bid Form, and in numbers only on the Unit Price Form. The price in the Proposal shall include all costs necessary for the complete performance of the Work in full conformity with the conditions of the Contract Documents, and shall include all applicable Federal, State, Parish, Municipal or other taxes. The price bid for the items listed on the Unit Price Form will include the cost of all related items not listed, but which are normally required to do the type of Work bid.

02.06 The Bid shall be signed by the Bidder. The information required on the Louisiana Uniform Public Work Bid Form must be provided. Evidence of agency, corporate, or partnership authority is required and shall be provided in conformance with LSA-R.S. 38:2212(B).

02.07 Only the Contractors licensed by the State to do the type of Work involved can submit a Proposal for the Work. The envelope containing the Proposal shall have the Contractor's license number on it. Failure to be properly licensed constitutes authority by the Owner for rejection of Bid.

02.08 Bidders shall not attach any conditions or provisions to the Proposal. Any conditions or provisions so attached may, at the sole option of the Owner, cause rejection of the Bid or Proposal.

02.09 A Bid Guarantee of five percent (5%) of the amount of the total Bid, including Alternates, must accompany the Proposal and, at the option of the Bidder, may be a cashier's check, certified check or a satisfactory Bid Bond. The Bid Guarantee must be attached to the Louisiana Uniform Public Work Bid Form. No Bid will be considered unless it is so guaranteed. Cashier's check or certified check must be made payable to the order of the Owner. Cash deposits will not be accepted. The Owner reserves the right to cash or deposit the cashier's check or certified check. Such guarantees shall be made payable to the Parish of St. Tammany. In accordance with LSA-R.S. 38:2218(C), if a bid bond is used, it shall be written by a surety or insurance company currently on the U.S. Department of the Treasury Financial Management Service list of approved bonding companies which is published annually in the Federal Register, or by a Louisiana domiciled insurance company

with at least an A- rating in the latest printing of the A.M. Best's Key Rating Guide to write individual bonds up to ten percent of policyholders' surplus as shown in the A.M. Best's Key Rating Guide, or by an insurance company in good standing licensed to write bid bonds which is either domiciled in Louisiana or owned by Louisiana residents. It is **not** required to be on any AIA form.

02.10 Bid securities of the three (3) lowest Bidders will be retained by the Owner until the Contract is executed or until final disposition is made of the Bids submitted. Bid securities of all other Bidders will be returned promptly after the canvas of Bids. Bids shall remain binding for forty-five (45) days after the date set for Bid Opening. The Parish shall act within the forty-five (45) days to award the contract to the lowest responsible bidder or reject all bids as permitted by Public Bid Law. However, the Parish and the lowest responsible bidder, by mutual written consent, may agree to extend the deadline for award by one or more extensions of thirty (30) calendar days. In the event the Owner issued the Letter of Award during this period, or any extension thereof, the Bid accepted shall continue to remain binding until the Execution of the Contract.

02.11 A Proposal may be withdrawn at any time prior to the scheduled closing time for receipt of Bids, provided the request is in writing, executed by the Bidder or its duly authorized representative and is filed with the Owner prior to that time. When such a request is received, the Proposal will be returned to the Bidder unopened.

02.12 Written communications, over the signature of the Bidder, to modify Proposals will be accepted and the Proposal corrected in accordance therewith if received by the Owner prior to the scheduled closing time for receipt of Bids. Oral, telephonic or telegraphic Modifications will not be considered.

02.13 No oral interpretation obligating the Owner will be made to any Bidder as to the meaning of the Drawings, Specifications and Contract Documents. Every request for such an interpretation shall be made in writing and addressed and forwarded to the Owner. No inquiry received within seven (7) days prior to the day fixed for opening of the Bids shall be given consideration. Every interpretation made to the Bidder shall be in the form of an addendum to the Specifications. All such Addenda shall become part of the Contract Documents. Failure of Bidder to receive any such interpretation shall not relieve any Bidder from any obligation under this Bid. All Addenda shall be issued in accordance with the Public Bid Law, LSA-R.S. 38:2212(O)(2)(a) and (b).

02.14 The Owner reserves the right to reject any or all Bids for just cause in accordance with the Public Bid Law, LSA-R.S. 38:2214(B). Incomplete, informal or unbalanced Bids may be rejected. Reasonable grounds for belief that any one Bidder is concerned directly or indirectly with more than one Bid will cause rejection of all Bids wherein such Bidder is concerned. If required, a Bidder shall furnish satisfactory evidence of its competence and ability to perform the Work stipulated in its Proposal. Incompetence will constitute cause for rejection. If the Parish determines that the bidder is not responsive or responsible for any reason whatsoever, the bid may be rejected in accordance with State law.

02.15 The Contractor shall indemnify and hold harmless the Owner from any and all suits, costs, penalties or claims for infringement by reason of use or installation of any patented design, device, material or process, or any trademark and copyright in connection with the Work agreed to be performed under this Contract, and shall indemnify and hold harmless the Owner for any costs, expenses and damages which it may be obliged to pay by reason of any such infringement at any time during the prosecution or after completion of the Work.

02.16 Bidders shall familiarize themselves with and shall comply with all applicable Federal and State Laws, municipal ordinances and the rules and regulations of all authorities having jurisdiction over construction of the Project, which may directly or indirectly affect the Work or its prosecution. These laws and/or ordinances will be deemed to be included in the Contract, as though herein written in full.

02.17 Each Bidder shall visit the site of the proposed Work and fully acquaint itself with all surface and subsurface conditions as they may exist so that it may fully understand this Contract. Bidder shall also thoroughly examine and be familiar with drawings, Specifications and Contract Documents. The failure or omission of any Bidder to receive or examine any form instrument, Drawing or document or to visit the site and acquaint

itself with existing conditions, shall in no way relieve any Bidder from any obligation with respect to its Bid and the responsibility in the premises.

02.18 The standard contract form enclosed with the Proposal documents is a prototype. It is enclosed with the Contract Documents for the guidance of the Owner and the Contractor. It has important legal consequences in all respects and consultation with an attorney is encouraged. Contractor shall be presumed to have consulted with its own independent legal counsel.

02.19 When one set of Contract plans show the Work to be performed by two or more prime Contractors, it is the responsibility of each Bidder to become knowledgeable of the Work to be performed by the other where the Work upon which this bid is submitted is shown to come into close proximity or into conflict with the Work of the other. In avoiding conflicts, pressure pipe lines must be installed to avoid conflict with gravity pipe lines and the Bidder of the smaller gravity pipe line in conflict with the larger gravity pipe line must include in his Bid the cost of a conflict box at these locations. The location of and a solution to the conflicts do not have to be specifically noted as such on the plans.

02.20 Bidder shall execute affidavit(s) attesting compliance with LSA-R.S. 38:2212.10, 38:2224, 38:2227, each as amended, and other affidavits as required by law, prior to execution of the contract.

02.21 Sealed Proposals (Bid) shall be received by St. Tammany Parish Government at the office of St. Tammany Parish Government, Department of Procurement, 21454 Koop Drive, Suite 2-F, Mandeville, LA 70471, until the time and date denoted in Notice to Bidders, at which time and place the Proposals (Bids), shall be publicly opened and read aloud to those present. In accordance with LSA-R.S. 38-2212(A)(3)(c)(i), the designer's final estimated cost of construction shall be read aloud upon opening bids. Sealed Proposals (Bids) may also be mailed by certified mail to St. Tammany Parish Government, Department of Procurement, 21454 Koop Drive, Suite 2-F, Mandeville, LA 70471, and must be received before the bid opening. Bids may also be submitted electronically. Information concerning links for electronic bidding is contained in the Notice to Bidders.

02.22 Proposals (Bids) shall be executed on Forms furnished and placed in a sealed envelope, marked plainly and prominently as indicated in the Notice to Bidders, and these General Conditions, and addressed:

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

02.23 Complete sets of Drawings, Specifications, and Contract Documents may be secured at the Office of the Owner. See Notice to Bidders for deposit schedule.

02.24 The successful bidder shall be required to post in each direction a public information sign, 4' x 8' in size, at the location of the project containing information required by the Owner. The Owner shall supply this information.

03.00 AWARD, EXECUTION OF DOCUMENTS, BONDS, ETC.

03.01 The award of the Contract, if it is awarded, will be to the lowest responsible Bidder, in accordance with State Law. No award will be made until the Owner has concluded such investigations as it deems necessary to establish the responsibility, qualifications and financial ability and stability of the Bidder to do the Work in accordance with the Contract Documents to the satisfaction of the Owner within the time prescribed as established by the Department based upon the amount of work to be performed and the conditions of same. The written contract and bond shall be issued in conformance with LSA-R.S. 38:2216. The Owner reserves the right to reject the Bid of any Bidder in accordance with the Public Bid Law, LSA-R.S. 38:2214. If the Contract is awarded, the Owner shall give the successful Bidder written notice of the award within forty-five (45) calendar days after the opening of the Bids in conformance with LSA-R.S. 38:2215(A), or any extension as authorized thereunder.

03.02 At least three counterparts of the Agreement and of such other Contract Documents as practicable shall be signed by the Owner and the Contractor. The Owner shall identify those portions of the Contract Documents not so signed and such identification shall be binding on both parties. The Owner and the Contractor shall each receive an executed counterpart of the Contract Documents.

03.03 Prior to the execution of the Agreement, the Contractor shall deliver to the Owner the required Bonds.

03.04 Failure of the successful Bidder to execute the Agreement and deliver the required Bonds within twenty (20) days of the Notice of the Award shall be just cause for the Owner to annul the award and declare the Bid and any guarantee thereof forfeited.

03.05 In order to ensure the faithful performance of each and every condition, stipulation and requirement of the Contract and to indemnify and save harmless the Owner from any and all damages, either directly or indirectly arising out of any failure to perform same, the successful Bidder to whom the Contract is awarded shall furnish a surety Bond in an amount of at least equal to one hundred percent (100%) of the Contract Price. The Contract shall not be in force or binding upon the Owner until such satisfactory Bond has been provided to and approved by the Parish. The cost of the Bond shall be paid for by the Contractor unless otherwise stipulated in the Special Provisions.

03.06 No surety Company will be accepted as a bondsman who has no permanent agent or representative in the State upon whom notices referred to in the General Conditions of these Specifications may be served. Services of said notice on said agent or representative in the State shall be equal to service of notice on the President of the Surety Company, or such other officer as may be concerned.

03.07 In conformance with LSA-R.S. 38:2219(A)(1)(a), (b), and (c):

> Any surety bond written for a public works project shall be written by a surety or insurance company currently on the U.S. Department of the Treasury Financial Management Service list of approved bonding companies which is published annually in the Federal Register, or by a Louisiana domiciled insurance company with at least an A- rating in the latest printing of the A.M. Best's Key Rating Guide, to write individual bonds up to ten percent of policyholders' surplus as shown in the A.M. Best's Key Rating Guide or by an insurance company that is either domiciled in Louisiana or owned by Louisiana residents and is licensed to write surety bonds.
>
> For any public works project, no surety or insurance company shall write a bond which is in excess of the amount indicated as approved by the U.S. Department of the Treasury Financial Management Service list or by a Louisiana domiciled insurance company with an A- rating by A.M. Best up to a limit of ten percent of policyholders' surplus as shown by A.M. Best; companies authorized by this Paragraph who are not on the treasury list shall not write a bond when the penalty exceeds fifteen percent of its capital and surplus, such capital and surplus being the amount by which the company's assets exceed its liabilities as reflected by the most recent financial statements filed by the company with the Department of Insurance.
>
> In addition, any surety bond written for a public works project shall be written by a surety or insurance company that is currently licensed to do business in the state of Louisiana. All contractors must comply with any other applicable provisions of LSA-R.S. 38:2219.

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

03.09 The Contractor's bondsman shall obligate itself to all the terms and covenants of these Specifications and of contracts covering the Work executed hereunder. The Owner reserves the right to do Extra Work or make changes by altering, adding to deducting from the Work under the conditions and in the manner herein before described without notice to the Contractor's surety and without in any manner affecting the liability of bondsman or releasing it from any of its obligations hereunder.

03.10 The Bond shall also secure for the Owner the faithful performance of the Contract in strict accordance with plans and Specifications. It shall protect the Owner against all lien laws of the State and shall provide for payment of reasonable attorney fees for enforcement of Contract and institution or concursus proceedings, if such proceedings become necessary. Likewise, it shall provide for all additional expenses of the Owner occurring through failure of the Contractor to perform.

03.11 The surety of the Contractor shall be and does hereby declare and acknowledge itself by acceptance to be bound to the Owner as a guarantor, jointly and in solido, with the Contractor, for fulfillment of terms of Section 03.00.

03.12 The performance Bond and Labor and Material Bond forming part of this Contract shall be continued by Contractor and its Surety for a period of one (1) year from date of acceptance of this Contract by Owner to assure prompt removal and replacement of all defective material, equipment, components thereof, workmanship, etc., and to assure payment of any damage to property of Owner or others as a result of such defective materials, equipment, workmanship, etc.

03.13 Contractor shall pay for the cost of recording the Contract and Bond and the cost of canceling same. Contractor shall also secure and pay for all Clear Lien and Privilege Certificates (together with any updates) which will be required before any final payment is made, and that may be required before any payment, at the request of the Owner, its representative, agent, architect, engineer and the like. All recordation and Clear Lien and Privilege Certificate requirements shall be in accordance with those requirements noted herein before in contract Specifications.

04.00 SUBCONTRACTS

04.01 Contractor shall be fully responsible for all acts and omissions of its Subcontractors and of persons and organizations for whose acts any of them may be liable to the same extent that it is responsible for the acts and omissions of persons directly employed by it. Nothing in the Contract Documents shall create any contractual relationship between Owner and any Subcontractor or other person or organization having a direct Contract with Contractor, nor shall it create any obligation on the part of the Owner to pay or to see to the payment of any monies due any Subcontractor.

04.02 Nothing in the Contract Documents shall be construed to control the Contractor in dividing the Work among approved Subcontractors or delineating the Work to be performed by any trade.

04.03 The Contractor agrees to specifically bind every Subcontractor to all of the applicable terms and conditions of the Contract Documents prior to commencing Work. Every Subcontractor, by undertaking to perform any of the Work, shall thereby automatically be deemed bound by such terms and conditions.

04.04 The Contractor shall indemnify and hold harmless the Owner and their agents and employees from and against all claims, damages, losses and expenses including Attorney's fees arising out of or resulting from the Contractor's failure to bind every Subcontractor and Contractor's surety to all of the applicable terms and conditions of the Contract Documents.

05.00 ASSIGNMENT

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

06.00 CORRELATION, INTERPRETATION AND INTENT OF CONTRACT DOCUMENTS.

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

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

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

07.00 SHOP DRAWINGS, BROCHURES AND SAMPLES

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

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

07.03 Owner will review with reasonable promptness Shop Drawings and samples, but its review shall be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents. The review of a separate item as such will not indicate approval of the assembly in which the item functions. Contractor shall make any corrections required by Owner and shall return the required number of corrected copies of Shop Drawings and resubmit new samples for review. Contractor shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections called for by Owner on previous submissions. Contractor's stamp of approval on any Shop Drawing or sample shall constitute a representation to Owner that Contractor has determined and verified all quantities, dimensions, field construction criteria, materials catalog numbers and similar data and thereafter assumes full responsibility for doing so, and that it has reviewed or coordinated each Shop Drawing or sample with the requirements of the Work and the Contract Documents.

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

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

08.00 RECORD DRAWINGS

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

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

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

09.00 PROGRESS OF WORK

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

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

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

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

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

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

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

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

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

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

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

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

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

11.00 TIME OF COMPLETION

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

11.02 Contractor shall notify the Owner through its duly authorized representative, in advance, of where Contractor’s work shall commence each day. A daily log shall be maintained by Contractor to establish dates, times, persons contacted, and location of work. Specific notice shall be made to the Owner if the Contractor plans to work on Saturday, Sunday, or a Parish approved holiday. If notice is not received, no consideration will be given for inclement weather and same shall be considered a valid work day.

11.03 The Work covered by the Plans, Specifications and Contract Documents must be completed sufficiently for acceptance within the number of calendar days specified in the Proposal and/or the Contract, commencing from the date specified in the Notice to Proceed. It is hereby understood and mutually agreed, by and between the Contractor and the Owner, that the time of completion is an essential condition of this Contract, and it is further mutually understood and agreed that if the Contractor shall neglect, fail or refuse to complete the Work within the time specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as partial consideration for the awarding

of this Contract, to pay the Owner based on **Table 3.1** 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 per **Table 3.1** 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 Contractor, any material or article which shall perform adequately the duties imposed by the general design will be considered equal, and satisfactory, providing the material or article so proposed is of equal substance and function and that all technical data concerning the proposed substitution be approved by the Owner prior to the Bidding. The Owner shall have the exclusive and unilateral discretion to determine quality and suitability in accordance with LSA-R.S. 38:2212(T)(2).

13.05 Materials shall be properly and securely stored so as to ensure the preservation of quality and fitness for the Work, and in a manner that leaves the material accessible to inspection. Materials or equipment may not be stored on the site in a manner such that it will interfere with the continued operation of streets and driveways or other contractors working on the site.

13.06 The Contractor, by entering into the Contract for this Work, sets itself forth as an expert in the field of construction and it shall supervise and direct the Work efficiently and with its best skill and attention. It shall be solely responsible for the means, methods, techniques, sequences and procedures of construction.

13.07 Contractor shall keep on the Work, at all times during its progress, a competent resident Superintendent, who shall not be replaced without written Notice to Owner except under extraordinary circumstances. The Superintendent will be Contractor's representative at the site and shall have authority to act on behalf of Contractor. All communications given to the Superintendent shall be as binding as if given to the Contractor. Owner specifically reserves the right to approve and/or disapprove the retention of a new superintendent, all to not be unreasonably withheld.

13.08 Any foreman or workman employed on this Project who disregards orders or instructions, does not perform his Work in a proper and skillful manner, or is otherwise objectionable, shall, at the written request of the Owner, be removed from the Work and shall be replaced by a suitable foreman or workman.

13.09 The Contractor and/or its assigned representative shall personally ensure that all subcontracts and divisions of the Work are executed in a proper and workmanlike manner, on scheduled time, and with due and proper cooperation.

13.10 Failure of the Contractor to keep the necessary qualified personnel on the Work shall be considered cause for termination of the Contract by the Owner.

13.11 Only equipment in good working order and suitable for the type of Work involved shall be brought onto the job and used by the Contractor. The Contractor is solely responsible for the proper maintenance and use of its equipment and shall hold the Owner harmless from any damages or suits for damages arising out of the improper selection or use of equipment. No piece of equipment necessary for the completion of the Work shall be removed from the job site without approval of the Owner.

13.12 All Federal, State and local taxes due or payable during the time of Contract on materials, equipment, labor or transportation, in connection with this Work, must be included in the amount bid by the Contractor and shall be paid to proper authorities before acceptance. The Contractor shall furnish all necessary permits and certificates and comply with all laws and ordinances applicable to the locality of the Work. The cost of all inspection fees levied by any governmental entity whatsoever shall be paid for by the Contractor.

13.13 In accordance with St. Tammany Police Jury Resolution 86-2672, as amended, the Contractor must provide in a form suitable to the Owner an affidavit stating that all applicable sales taxes for materials used on this project have been paid.

13.14 During the period that this Contract is in force, neither party to the Contract shall solicit for employment or employ an employee of the other.

13.15 All materials or equipment shown on the Drawings or included in these specifications shall be furnished unless written approval of a substitute is obtained from the Designer, or Owner if no separate designer.

13.16 If a potential supplier wishes to submit for prior approval a particular product other than a product specified in the contract documents, he shall do so no later than fourteen working days prior to the opening of bids. Within ten 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 be paid directly by the Contractor. This expense shall not be considered as a change order nor shall it allow the Contractor any additional cost reimbursement whatsoever. All traffic deviations herein shall be coordinated with the appropriate law enforcement officials of this Parish.

16.07 The convenience of the general public and residents along the Works shall be provided for in a reasonable, adequate and satisfactory manner. Where existing roads are not available as detours, and unless otherwise provided, all traffic shall be permitted to pass through the Work. In all such cases, the public shall have precedence over Contractor's vehicles insofar as the traveling public's vehicles shall not be unduly delayed for the convenience of the Contractor. In order that all unnecessary delay to the traveling public may be avoided, the Contractor shall provide and station competent flagmen whose sole duties shall consist of directing and controlling the movement of public traffic either through or around the Work. Any and all security, maintenance, labor or costs associated with traffic control herein shall be at the sole expense of Contractor. This expense shall be paid directly by the Contractor. This expense shall not be considered as a change order nor shall it allow the Contractor any additional cost reimbursement whatsoever. All traffic deviations herein shall be coordinated with the appropriate law enforcement officials of this Parish.

16.08 The Contractor shall arrange its Work so that no undue or prolonged blocking of business establishments will occur.

16.09 Material and equipment stored on the right of way or work site shall be so placed and the Work at times shall be so conducted as to ensure minimum danger and obstruction to the traveling public.

16.10 During grading operations when traffic is being permitted to pass through construction, the Contractor shall provide a smooth, even surface that will provide a satisfactory passageway for use of traffic. The road bed shall be sprinkled with water if necessary to prevent a dust nuisance, provided the dust nuisance is a result of the Work.

16.11 Fire hydrants shall be accessible at all times to the Fire Department. No material or other obstructions shall be placed closer to a fire hydrant than permitted by ordinances, rules or regulations or within fifteen (15) feet of a fire hydrant, in the absence of such ordinance, rules or regulations.

16.12 The Contractor shall not, without the written permission of the Owner, do Work for a resident or property owner abutting the Work at the time that this Work is in progress.

16.13 No Work of any character shall be commenced on railroad right-of-way until the Railroad Company has issued a permit to the Owner and has been duly notified by the Contractor in writing (with a copy forwarded to the Owner) of the date it proposes to begin Work, and until an authorized representative of the Railroad Company is present, unless the Railroad Company waives such requirements. All Work performed by the Contractor within the right-of-way limits of the railroad shall be subject to the inspection and approval of the chief engineer of the Railroad Company or its authorized representative. Any precautions considered necessary by said chief engineer to safeguard the property, equipment, employees and passengers of the Railroad Company shall be taken by the Contractor without extra compensation. The Contractor shall, without extra compensation, take such precautions and erect and maintain such tell-tale or warning devices as the Railroad Company considers necessary to safeguard the operation of its trains. The temporary vertical and horizontal clearance specified by the chief engineer of the Railroad Company in approving these shall be maintained at all times. No steel, brick, pipe or any loose material shall be left on the ground in the immediate vicinity of the railway track. Before any Work is done within Railroad right of way, the Contractor shall provide and pay all costs of any special insurance requirements of the Railroad.

16.14 The Contractor, shall, without extra compensation, provide, erect, paint and maintain all necessary barricades. Also, without extra compensation, the Contractor shall provide suitable and sufficient lights, torches, reflectors or other warning or danger signals and signs, provide a sufficient number of watchmen and flagmen and take all the necessary precautions for the protection of the Work and safety of the Public.

16.15 The Contractor shall erect warning signs beyond the limits of the Project, in advance of any place on the Project where operations interfere with the use of the road by traffic, including all intermediate points where the new Work crosses or coincides with the existing road. All barricades and obstructions shall be kept well painted and suitable warning signs shall be placed thereon. All barricades and obstructions shall be illuminated at night and all lights or devices for this purpose shall be kept burning from sunset to sunrise.

16.16 Whenever traffic is maintained through or over any part of the Project, the Contractor shall clearly mark all traffic hazards. No direct payment will be made for barricades, signs and illumination therefore or for watchmen or flagmen.

16.17 The Contractor will be solely and completely responsible for conditions on the job site, including safety of all persons and property during performance of the Work. This requirement will apply continuously and not be limited to normal working hours. The duty of the Owner to conduct construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures, in, or near the construction site.

17.00 SANITARY PROVISIONS

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

18.00 RIGHTS OF WAY

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

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

19.00 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE

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

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

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

20.00 CONTRACTORS RESPONSIBILITY FOR WORK

20.01 Until final acceptance of the Work by the Owner as evidence by approval of the final estimate, the Work shall be in the custody and under the charge and care of the Contractor and it shall take every necessary precaution against injury or damage to any part thereof by the action of the elements or from the non-execution of the Work; unless otherwise provided for elsewhere in the Specifications or Contract. The Contractor shall rebuild, repair, restore and make good, without extra compensation, all injuries or damages to any portion of the Work occasioned by any of the above causes before its completion and acceptance, and shall bear the expenses thereof. In case of suspension of the Work from any cause whatever, the Contractor shall be responsible for all materials and shall properly and securely store same, and if necessary, shall provide suitable shelter from damage and shall erect temporary structures where necessary. If in the exclusive discretion of the Owner, any Work or materials shall have been damaged or injured by reason of failure on the part of the Contractor or any of its Subcontractors to so protect the Work, such materials shall be removed and replaced at the sole expense of the Contractor. Such amount shall be deducted from any sum due or to be due Contractor.

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

21.00 TESTS AND INSPECTIONS CORRECTION & REMOVAL OF DEFECTIVE WORK

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

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

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

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

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

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

21.07 If the Work is Defective, or Contractor fails to supply sufficient skilled workmen or suitable materials or equipment, or if the Contractor fails to make prompt payments to Subcontractors or for labor, materials or equipment, Owner may order Contractor to stop the Work, or any portion thereof, until the cause of such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor or any other party.

21.08 Prior to approval of final payment, Contractor shall promptly, without cost to Owner and as specified by Owner, either correct any Defective Work, whether or not fabricated, installed or completed, or if the Work has been rejected by Owner, remove it from the site and replace it with non-defective Work. If Contractor does not correct such Defective Work or remove and replace such rejected Work within a reasonable time, all as specified in a written notice from Owner, Owner may have the deficiency corrected or the rejected Work removed and replaced. All direct or indirect costs of such correction or removal and replacement including compensation for additional professional services shall be paid by Contractor, and an appropriate deductive Change Order shall be issued. Contractor shall

also bear the expense of making good all Work of others destroyed or damaged by its correction, removal or replacement of its Defective Work.

21.09 If, after the approval of final payment and prior to the expiration of one year after the date of Substantial Completion or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, any Work is found to be Defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions, either correct such Defective Work or if it has been rejected by Owner, remove it from the site and replace it with non-defective Work. If Contractor does not promptly comply with the terms of such instructions, Owner may have the Defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, shall be paid by Contractor. The Contractor agrees to pay a reasonable attorney fee and other reasonable attendant costs of the Owner in the event it becomes necessary for the Owner to employ an attorney to enforce this section or to protect itself against suit over the Contractor's responsibilities. Attorney fees shall be at the prevailing hourly rate of the private sector. The attorney fee hourly rate shall not be less than $175.00 per hour. All attorney fees collected shall be paid to the operating budget of the Office of the Parish President.

21.10 If, instead of requiring correction or removal and replacement of Defective Work, Owner (and prior to approval of final payment) prefers to accept it, the Owner may do so. In such case, if acceptance occurs prior to approval of final payment, a Change Order shall be issued incorporating the necessary revisions in the Contract Documents, including appropriate reduction in the Contract Price, or, if the acceptance occurs after approval of final payment, an appropriate amount shall be paid by Contractor to Owner.

21.11 If Contractor should fail to progress the Work in accordance with the Contract Documents, including any requirements of the Progress Schedule, Owner, after seven (7) days written Notice to Contractor, may, without prejudice to any other remedy Owner may have, make good such deficiencies and the cost thereof including compensation for additional professional services shall be charged against Contractor. In such cases, a Change Order shall be issued incorporating the necessary revisions in the Contract Documents including an appropriate reduction in the Contract Price. If the payments then or thereafter due Contractor are not sufficient to cover such amount, Contractor shall pay the difference to Owner.

21.12 The Owner may appoint representatives to make periodic visits to the site and observe the progress and quality of the executed Work. These representatives shall be governed by the same restrictions placed on the Owner by these Specifications. The governing body of the Federal, State or local government exercising authority in the area of the Work may appoint representatives to observe the progress and quality of the Work. Contractor shall cooperate with and assist these representatives in the performance of their duties.

21.13 The Contractor shall be responsible for the faithful execution of its Contract and the presence or absence of the Owner's or Government's Representative is in no way or manner to be presumed or assumed to relieve in any degree the responsibility or obligation of the Contractor.

21.14 The Contractor shall notify the Owner and the Governmental Agency having jurisdiction as to the exact time at which it is proposed to begin Work so the Owner may provide for inspection of all materials, foundations, excavations, equipment, etc., and all or any part of the Work and to the preparation or manufacture of materials to be used whether within the limits of the Work or at any other place.

21.15 The Owner or its representatives shall have free access to all parts of the Work and to all places where any part of the materials to be used are procured, manufactured or prepared. The Contractor shall furnish the Owner all information relating to the Work and the material therefor, which may be deemed necessary or pertinent, and with such samples of materials as may be required. The Contractor, at its own expense, shall supply such labor and assistance as may be necessary in the handling of materials for proper inspection or for inspection of any Work done by it.

21.16 No verbal instructions given to the Contractor by the Owner, Project Representative or any of their agents shall change or modify the written Contract. Contractors shall make no claims for additional payments or time based upon verbal instructions.

22.00 SUBSURFACE CONDITIONS

22.01 It is understood and agreed that the Contractor is familiar with the subsurface conditions that will be encountered and its price bid for the Work includes all of the costs involved for Work in these conditions and it is furthermore agreed that it has taken into consideration, prior to its Bid and acceptance by Owner, all of the subsurface conditions normal or unusual that might be encountered in the location of the Work.

22.02 Should the Contractor encounter during the progress of the Work subsurface conditions at the site materially differing from those shown on the Drawings or indicated in the Specifications, the attention of the Owner shall be directed to such conditions before the conditions are disturbed. If the Owner finds that the conditions materially differ from those shown on the Drawings or indicated in the Specifications, it shall at once make such changes in the Drawings or Specifications as it may find necessary, and any increase or decrease in cost or extension of time resulting from such changes shall be adjusted in the same manner as provided for changes for Extra Work. The Contractor shall submit breakdowns of all costs in a manner as instructed and approved by the Owner.

23.00 REMOVAL AND DISPOSAL OF STRUCTURES AND OBSTRUCTIONS

23.01 Bidder shall thoroughly examine the site of the Work and shall include in its Bid the cost of removing all structures and obstructions in the way of the Work.

23.02 The Contractor shall remove any existing structures or part of structures, fence, building or other encumbrances or obstructions that interfere in any way with the Work. Compensations for the removal of any structure shall be made only if the item(s) to be removed was/were listed as pay item(s) on the Proposal.

23.03 If called for in the Special Conditions, all privately and publicly owned materials and structures removed shall be salvaged without damage and shall be piled neatly and in an acceptable manner upon the premises if it belongs to an abutting property owner, otherwise at accessible points along the improvements. Materials in structures which is the property of the Owner or property of any public body, private body or individual which is fit for use elsewhere, shall remain property of the original Owner. It shall be carefully removed without damage, in sections which may be readily transported; same shall be stored on or beyond the right of way. The Contractor will be held responsible for the care and preservation for a period of ten (10) days following the day the last or final portion of the materials stored at a particular location are placed thereon. When privately owned materials are stored beyond the right of way, the Contractor will be held responsible for such care and preservation for a period of ten (10) days responsibility period for care and preservation of the materials begins. The Contractor must furnish the Owner with evidence satisfactory that the proper owner of the materials has been duly notified by the Contractor that the said owner must assume responsibility for its materials on the date following the Contractor's ten (10) day responsibility.

24.00 INSURANCE

24.01 Contractor shall secure and maintain at its expense such insurance that will protect it and the Parish from claims for injuries to persons or damages to property which may arise from or in connection with the performance of Services or Work hereunder by the Contractor, his agents, representatives, employees, and/or subcontractors. The cost of such insurance shall be included in Contractor’s bid.

24.02 The Contractor shall not commence work until it has obtained all insurance as required for the Parish Project. If the Contractor fails to furnish the Parish with the insurance protection required and begins work without first furnishing Parish with a currently dated certificate of insurance, the Parish has the right to obtain the insurance protection required and deduct the cost of insurance from the first payment due the Contractor. Further deductions are permitted from future payments as are needed to protect the interests of the Parish including, but not limited to, renewals of all policies.

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

24.04 Deductibles: Any and all deductibles in the described insurance policies shall be assumed by and be at the sole risk of the Contractor.

24.05 Authorization of Insurance Company(ies) and Rating: All insurance companies must be authorized to do business in the State of Louisiana and shall have an A.M. Best rating of no less than A-, Category VII.

24.06 Policy coverages and limits must be evidenced by Certificates of Insurance issued by Contractor's carrier to the Parish and shall reflect:

Date of Issue: Certificate must have current date.

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

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

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

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

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

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

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

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

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

1. Commercial General Liability insurance with a Combined Single Limit for bodily injury and property damage of at least $1,000,000 per Occurrence/$2,000,000 General Aggregate/Products-Completed Operations Per Project. The insurance shall provide for and the certificate(s) of insurance shall indicate the following coverages:

    a) Premises - operations;
    b) Broad form contractual liability;
    c) Products and completed operations;
    d) Personal Injury;
    e) Broad form property damage;
    f) Explosion and collapse.

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

3. Contractors' Pollution Liability and Environmental Liability insurance in the minimum amount of $1,000,000 per occurrence, $2,000,000 general aggregate and include coverage for full contractual liability and for all such environmental and/or hazardous waste exposures affected by this project.

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

    a) Any automobiles;
    b) Owned automobiles;
    c) Hired automobiles;
    d) Non-owned automobiles;
    e) Uninsured motorist.

5. Workers' Compensation/Employers Liability insurance: worker's compensation insurance coverage and limits as statutorily required; Employers' Liability Coverage shall be not less than $1,000,000 each accident, $1,000,000 each disease, $1,000,000 disease policy aggregate, except when projects include exposures covered under the United States Longshoremen and Harbor Workers Act, Maritime and/or Jones Act and/or Maritime Employers Liability (MEL) limits shall be not less than $1,000,000/$1,000,000/$1,000,000. *Coverage for owners, officers and/or partners shall be included in the policy and a statement of such shall be made by the insuring producer on the face of the certificate.*

6. Owners Protective Liability (OPL) (formerly Owners and Contractors Protective Liability (OCP) Insurance) shall be furnished by the Contractor naming St. Tammany Parish Government as the Named Insured and shall provide coverage in the minimum amount of $1,000,000 combined single limit (CSL) each occurrence, $2,000,000 aggregate. Any project valued in excess of $3,000,000 shall be set by the Office of Risk Management. The policy and all endorsements shall be addressed to St. Tammany Parish Government, Office of Risk Management, P. O. Box 628, Covington, LA 70434.

7. Builder's Risk Insurance shall be required on buildings, sewage treatment plants and drainage pumping stations, and shall be written on an "all-risk" or equivalent policy form in the amount of the full value of the initial Contract sum, plus value of subsequent Contract modifications and cost of materials supplied or installed by others, comprising 100% total value for the entire project including foundations. Deductibles should not exceed $5,000 and Contractor shall be responsible for any and all policy deductibles. This insurance shall cover portions of the work stored off the site, and also portions of the work in transit. In addition, Installation Floater Insurance, on an "all-risk" form, will be carried on all pumps, motors, machinery and equipment on the site or installed. Both the Builder's Risk Insurance and the Installation Floater Insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors and shall terminate only when the Project has been accepted. St. Tammany Parish Government, P. O. Box 628, Covington, LA 70434 shall be the first named insured on the Builder's Risk and Installation Floater Insurance.

8. Professional Liability (errors and omissions) insurance in the sum of at least One Million Dollars ($1,000,000) per claim with Two Million Dollars ($2,000,000) annual aggregate.

9. An umbrella policy or excess policy may be required and/or allowed to meet minimum coverage limits, subject to the review and approval by St. Tammany Parish Government, Office of Risk Management.

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

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

24.10 Contractor shall maintain a current copy of all annual insurance policies and provide same to the Parish of St. Tammany as may be reasonably requested.

24.11 It shall be the responsibility of Contractor to require that these insurance requirements are met by all contractors and sub-contractors performing work for and on behalf of Contractor. Contractor shall further ensure the Parish is named as additional insured on all insurance policies provided by said contractor and/or sub-contractor throughout the duration of the project, and that renewal certificates for any policies expiring prior to the Parish's final acceptance of the project shall be furnished to St. Tammany Parish Government, Department of Legal, Office of Risk Management, without prompting.

NOTICE:

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

For inquiries regarding insurance requirements, please contact:
St. Tammany Parish Government
Office of Risk Management
P. O. Box 628
Covington, LA 70434
Telephone: 985-898-5226
Email: riskman@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 TERMINATION OF THE CONTRACT, OWNER'S AND CONTRACTORS RIGHT TO STOP WORK.

27.01 If the Contractor should be adjudged bankrupt (voluntarily or involuntarily) or if it should make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of its insolvency, or if it should persistently or repeatedly refuse or should fail (except in cases for which extension of time is provided) to supply enough properly skilled workmen or proper materials, or if it should fail to make prompt payment to Subcontractors or for material or labor, or persistently disregard laws, ordinances or the instructions of the Owner, or otherwise be guilty of a substantial violation of any provision of the Contract, then the Owner, upon the certificate of the Owner that, in its unilateral discretion and judgment, believes sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor ten (10) calendar days written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools and appliances thereon and finish the Work by whatever method the Owner may deem expedient.

27.02 Failure of the Contractor to start the Work within the time limit specified herein or substantial evidence that the progress being made by the Contractor is sufficient to complete the Work within the specified time shall be grounds for termination of the Contract by the Owner.

27.03 Before the Contract is terminated, the Contractor and its surety will first be notified in writing by the Owner of the conditions which make termination of the Contract imminent. When after ten (10) calendar days' notice is given and if satisfactory effort has not been made by the Contractor or its surety to correct the conditions, the Owner may declare, in its exclusive discretion, that the Contract is terminated and so notify the Contractor and its surety accordingly.

27.04 Upon receipt of notice from the Owner that the Contract has been terminated, the Contractor shall immediately discontinue all operations. The Owner may then proceed with the Work in any lawful manner that it may elect until Work is finally completed.

27.05 The exclusive right is reserved to the Owner to take possession of any machinery, implements, tools or materials of any description that shall be found upon the Work, to account for said equipment and materials, and to use same to complete the Project. When the Work is finally completed, the total cost of same will be computed. If the total cost is less than the Contract Price, the difference will not be paid to the Contractor or its surety.

27.06 In case of termination, all expenses incident to ascertaining and collecting losses under the Bond, including legal services, shall be assessed against the Bond.

27.07 If the Work should be stopped under any order of any court or public authority for period of sixty (60) calendar days, through no act or fault of the Contractor or anyone employed by it, or if the Owner shall fail to pay the Contractor within a reasonable time any sum

certified by the Owner, then the Contractor may, upon ten (10) calendar days written notice to the Owner, stop Work or terminate this Contract and recover from the Owner payment for all Work properly and professionally executed in a workmanlike manner. This loss specifically includes actual cost of materials and equipment, together with all wages inclusive of all federal, state, and local tax obligations. This loss specifically includes reimbursement of all insurances on a pro-rata basis from the date of termination to date of policy period. This loss excludes and specifically does not include recovery by the Contractor for lost profit, indirect & direct expenses, overhead, and the like.

28.00 PAYMENTS TO THE CONTRACTOR

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

28.02 After final completion and acceptance by the Owner of the entire Work, and when the Contract Price is less than five hundred thousand dollars, the Owner shall issue to the Contractor Certificate of Payment in sum sufficient to increase total payments to ninety percent (90%) of the Contract Price. After final completion and acceptance by the Owner of the entire Work, and when the Contract Price is five hundred thousand dollars or more, the Owner shall issue to the Contractor Certificate of Payment in sum sufficient to increase total payments to ninety-five percent (95%) of the Contract Price.

28.03 When the Contract Price is less than five hundred thousand dollars, the final payment certificate of the remaining ten percent (10%) of the Contract Price, minus any deduction for deficient or Defective Work or other applicable deductions, will be issued by the Owner forty-five (45) days after filing acceptance in the Mortgage Office of the Parish and a Clear Liens and Privilege Certificate has been secured. When the Contract Price is five hundred thousand dollars or more, the final payment certificate of the remaining five percent (5%) of the Contract Price, minus any deduction for deficient or Defective Work or other applicable deductions, will be issued by the Owner forty-five (45) days after filing acceptance in the Mortgage Office of the Parish and a Clear Liens and Privilege Certificate has been secured. Before issuance of the final payment certificate, the Contractor shall deposit with the Owner a certificate from the Clerk of Court and Ex-Officio Recorder of Mortgages from the Parish in which the Work is performed to the effect that no liens have been registered against Contract Work.

28.04 When, in the opinion of the Contractor, the Work provided for and contemplated by the Contract Documents has been substantially completed, the Contractor shall notify the Owner in writing that the Work is substantially complete and request a final inspection. The Owner shall proceed to perform such final inspection accompanied by the Contractor. Any and all Work found by this inspection to be Defective or otherwise not in accordance with the plans and Specifications shall be corrected to the entire satisfaction of the Owner and at the sole expense of the Contractor. If the Contract is found to be incomplete in any of its details, the Contractor shall at once remedy such defects, and payments shall be withheld and formal acceptance delayed until such Work has been satisfactorily completed.

28.05 If payment is requested on the basis of materials and equipment not incorporated in the Work, but delivered and suitably stored and protected from damage and theft at the site, the Request for Payment shall also be accompanied by such data, satisfactory to the Owner, as will establish Owner's title to the material and equipment and protect its interest therein, including applicable insurance.

28.06 Each subsequent Request for Payment shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied to discharge in full all of Contractor's obligations reflected in prior Request for Payment.

28.07 Each subsequent request for payment shall include an affidavit by Contractor that Contractor, all subcontractors, agents, material suppliers and all other persons supplying material to the project upon which State of Louisiana and/or St. Tammany sales taxes are lawfully due have paid these taxes and that all supplies and materials purchased for this project and for which Contractor has been paid have had all lawfully due State and/or St. Tammany sales taxes paid.

28.08 The Bid Proposal, unless otherwise modified in writing, and the Contract constitute the complete Project. The Contract Prices constitute the total compensation payable to Contractor and the cost of all of the Work and materials, taxes, permits and incidentals must be included into the Bid submitted by the Contractor and included into those items listed on the Proposal.

28.09 Any additional supporting data required by the Owner in order to substantiate Contractor's request for payment shall be furnished by Contractor at no cost to the Owner.

28.10 Owner may withhold from payment to Contractor as may be necessary to protect itself from loss on account of:

(1) Defective and/or inferior work;
(2) Damage to the property of Owner or others caused by Contractor;
(3) Failure by Contractor to make payments properly to sub-contractors or to pay for labor, materials or equipment used on this project;
(4) Failure by Contractor to pay taxes due on materials used on this project;
(5) Damage by Contractor to another Contractor;
(6) Insolvency;
(7) Bankruptcy, voluntary or involuntary;
(8) Revocation of corporate status;
(9) Failure to follow corporate formalities;
(10) Unprofessional activities;
(11) Unworkmanlike performance;
(12) Fraud and/or misrepresentation of any kind.

29.00 ACCEPTANCE AND FINAL PAYMENT(S)

29.01 Upon receipt of written notice from Contractor that the work is substantially complete and usable by Owner or the 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, re-submission and payment of any and all updated certificates.

29.06 Retainage monies, minus those funds deducted in accordance to the requirements of this agreement including but not limited to Paragraph 28.10, shall be due Contractor not earlier than forty-six (46) calendar days after recordation of certificate of Owner's acceptance provided the following:

(1) Contractor shall prepare, secure, pay for and submit clear lien and privilege certificate, signed and sealed by Clerk of Court or Recorder of Mortgages, Parish of St. Tammany and dated at least forty-six (46) days after recordation of certificate of acceptance;

(2) Ensure that the official representative of the Owner has accepted as per LSA-R.S. 38:2241.1, *et seq*. and that all following sub-sections have been properly satisfied as per law;

(3) Ensure that all signatures are affixed and that there exists the requisite authority for all signatures;

(4) Ensure accurate and proper legal descriptions;

(5) Properly identify all parties and/or signatories;

(6) Properly identify all mailing addresses;

(7) Correctly set for the amount of the contract, together with all change orders;

(8) Set out a brief description of the work performed;

(9) Reference to any previously recorded contract, lien or judgment inscription that may affect the property;

(10) Certification that substantial completion has occurred, together with any applicable date(s);

(11) Certification that no party is in default and/or that the project has been abandoned.

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

30.00 NOTICE AND SERVICE THEREOF

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

31.00 INTENTION OF THESE GENERAL CONDITIONS

31.01 These General Conditions shall be applicable to all contracts entered into by and between the Owner and Contractors, except as may be altered or amended with the consent of the Owner, and/or provided for in the Special Conditions of each contract. Contractor shall be presumed to have full knowledge of these General Conditions which shall be applicable to all contracts containing these General Conditions, whether Contractor has obtained a copy

thereof or not.

32.00 SEVERABILITY

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

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

33.00 LAW OF THE STATE OF LOUISIANA

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

33.02 The Contractor agrees to pay reasonable attorney's fees and other reasonable attendant costs, in the event that it becomes necessary for the Owner to employ an attorney in order to enforce compliance with or any remedy relating to any covenants, obligations, or conditions imposed upon the Contractor by this Agreement. Attorney fees shall be based upon the prevailing hourly rate of attorney rates in the private sector. In no case shall the hourly rate be less than $175.00 per hour. All attorney fees collected shall be paid the operating budget of the Office of the Parish President.

33.03 The jurisdiction and venue provisions shall apply to all contractors, sureties, and subcontractors. The 22nd Judicial District for the Parish of St. Tammany shall be the court of exclusive jurisdiction and venue for any dispute arising from these General Conditions and/or any contract executed in conjunction with these General Conditions. All parties specifically waive any rights they have or may have for removal of any disputes to Federal Court, or transfers to different State District Court.

33.04 Contractor warrants that it has and/or had received a copy of these General Conditions at all times material hereto; Contractor further agrees that it has read and fully and completely understands each and every condition herein.

33.05 The property description will be more fully set out by an attached exhibit.

33.06 The Contractor warrants that it has the requisite authority to sign and enter this agreement.

33.07 It is specifically understood and agreed that in the event Contractor seeks contribution from the Parish or pursues its legal remedies for any alleged breach of this agreement by the Parish, then the following list of damages SHALL NOT BE RECOVERABLE BY CONTRACTOR. This list includes, but is not limited to:

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

33.08 DEFAULT AND WAIVERS

It is understood that time is of the essence. It is specifically understood between the parties

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

33.09 St. Tammany Parish Government contracts to be awarded are dependent on the available funding and/or approval by members designated and/or acknowledged by St. Tammany Parish Government. At any time St. Tammany Parish Government reserves the right to cancel the award of a contract if either or both of these factors is deficient.

33.10 It is the Parish's policy to provide a method to protest exclusion from a competition or from the award of a contract, or to challenge an alleged solicitation irregularity. It is always better to seek a resolution within the Parish system before resorting to outside agencies and/or litigation to resolve differences. All protests must be made in writing, and shall be concise and logically presented to facilitate review by the Parish. The written protest shall include:

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

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

3. Copies of relevant documents;

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

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

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

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

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

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

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

CORPORATE RESOLUTION

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

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

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

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

SECRETARY-TREASURER

_____

DATE

_____

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 Section 06.

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

    From the Insurance Requirement form:

    Waiver of Subrogation: The Provider's insurers will have no right of recovery or subrogation against the Parish of St. Tammany, it being the intention of the parties that all insurance policy(ies) so affected shall protect both parties and be the primary coverage for any and all losses covered by the below described insurance.
- **Owners Protective Liability (OPL) or (OCP)** – Certificate of Insurance for OCP names St. Tammany Parish Government as the Insured and the Certificate Holder.

- Sample of Certificate of Insurance (COI) can be found on page 2.

- Please refer to this section in the package labeled "Insurance Requirements" for limits required for this project

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

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

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

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

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

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

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

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	GENERAL LIABILITY						EACH OCCURRENCE	$
	☐ 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 AUTOS ☐ SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	☐ HIRED AUTOS ☐ NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
								$
	☐ **UMBRELLA LIAB** ☐ OCCUR						EACH OCCURRENCE	$
	☐ **EXCESS LIAB** ☐ CLAIMS-MADE						AGGREGATE	$
	☐ DED ☐ RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						☐ WC STATU-TORY LIMITS ☐ OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐ N / A **(Mandatory in NH)**						E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$

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

Project Name:
Contract #:

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

CERTIFICATE HOLDER

St. Tammany Parish Government
P.O. Box 628
Covington, LA 70434

CANCELLATION

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

AUTHORIZED REPRESENTATIVE

Bond No.:_____

CONTRACT AGREEMENT

BETWEEN PARISH AND CONTRACTOR

BY: ST. TAMMANY PARISH GOVERNMENT

WITH:

UNITED STATES OF AMERICA

STATE OF LOUISIANA

ST. TAMMANY PARISH

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

1. SCOPE OF SERVICES

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

«txtScopeSummary»

2. CONSTRUCTION DOCUMENTS

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

3. TIME FOR COMPLETION

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

4. COMPENSATION TO BE PAID TO THE CONTRACTOR

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

5. PERFORMANCE AND PAYMENT BOND

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

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

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

6. LIABILITY AND INDEMNIFICATION

A. Duty to Defend

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

B. Contractor Liability

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

C. Force Majeure

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

D. Indemnification

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

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

E. Intellectual Property Indemnification

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

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

If the use of the product, material, service, or any component thereof is enjoined for any reason or if the Contractor believes that it may be enjoined, Contractor, while ensuring appropriate migration and implementation, data integrity, and

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

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

product, material or service in other than the specified operating conditions and environment.

7. MODIFICATION OF CONTRACT TERMS

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

8. TERMINATION, CANCELLATION, AND SUSPENSION

A. Termination

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

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

2) By the Parish as a consequence of the failure of the Provider to comply with the terms, progress, or quality of the work in a satisfactory manner, proper allowances being made for circumstances beyond the control of the Provider;

3) By either party upon failure of the other party to fulfill its obligations as set forth in this Contract;

4) By the Parish with less than thirty (30) days' notice due to budgetary reductions and changes in funding priorities by the Parish;

5) In the event of the abandonment of the project by the Parish.

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

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

B. Cancellation

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

C. Suspension

Should the Parish desire to suspend the work, but not definitely terminate the Contract, the Parish shall supply the Provider with thirty (30) days' notice. The Parish will also

supply Provider thirty (30) days' notice that the work is to be reinstated and resumed in full force. Provider shall receive no additional compensation during the suspension period. The Parties may revisit the terms of this Contract during the suspension period. The suspension shall not exceed six (6) months, unless mutually agreed upon between the Parties.

D. Failure to complete or deliver within the time specified or to provide the services as specified in the bid or response will constitute a default and may cause cancellation of the contract. Where the Parish has determined the contractor to be in default. The Parish reserves the right to purchase any or all products or services covered by the contract on the open market and to charge the contractor with the cost in excess of the contract price. Until such assessed charges have been paid, no subsequent bid or response from the defaulting contractor will be considered.

E. In the event of a default and/or breach of this agreement and this matter is forwarded to legal counsel, then the prevailing party may be entitled to collect a reasonable attorney fees and all costs associated therewith whether or not litigation is initiated. Attorney fees shall be based upon the current, reasonable prevailing rate for counsel in the private

sector. The Parties agree to be responsible for such attorney fees, together for all with legal interest from date of agreement breach, plus all costs of collection.

F. Termination or cancellation of this agreement will not affect any rights or duties arising under any term or condition herein.

G. As to the filing of voluntary or involuntary bankruptcy by Provider, Provider agrees that if any execution or legal process is levied upon its interest in this Contract, or if any liens or privileges are filed against its interest, or if a petition in bankruptcy is filed against it, or if it is adjudicated bankrupt in involuntary proceedings, or if it should breach this Contract in any material respect, the Parish shall have the right, at its unilateral option, to immediately cancel and terminate this Contract. In the event that Provider is placed in any chapter of bankruptcy, voluntarily or involuntarily, or otherwise triggers any provision of the preceding sentence herein, it is understood and agreed that all materials, goods and/or services provided shall be and remain the property of the Parish. All rights of Provider as to goods, wares, products, services, materials and the like supplied to Parish shall be deemed forfeited.

9. RECORDATION OF CONTRACT

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

10. AUTHORITY TO ENTER CONTRACT

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

corporation, partnership, L.L.C., L.L.P., or any other juridical entity which authorizes the undersigned to enter and sign this Contract.

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

WITNESSES:

_____
Signature

_____
Print Name

_____
Signature

_____
Print Name

CONTRACTOR:

_____
Signature

_____
Print Name

_____
Title

_____
Date

Bond No.:_____

WITNESSES:

_____
Signature

_____
Print Name

_____
Signature

_____
Print Name

ST. TAMMANY PARISH GOVERNMENT:

_____
Michael B. Cooper
Parish President

_____
Date

APPROVED BY:

_____
Assistant District Attorney- Civil Division

_____
Date

_____
(Surety)

_____
Signature

_____
Print Name

FEMA PUBLIC ASSISTANCE

REQUIRED CONTRACT PROVISIONS

1. Equal Employment Opportunity

The regulation at 41 C.F.R. § 60-1.4(b) requires, except as otherwise provided or exempted in 41 C.F.R. Part 60, the insertion of the following contract clause:
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 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.Contract Work Hours and Safety Standards Act

For the required contract provision, the language from 29 C.F.R. § 5.5(b)(1)-(5) is provided below for ease of reference. The language provided is current as of the date of publication of the Contract Provisions Guide. However, 29 C.F.R. § 5 may be updated periodically, such that recipients and subrecipients are encouraged to reference the regulations for the most current language.

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 and interest from the date of the underpayment. 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 watchpersons and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of $32 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).

(3)*Withholding for unpaid wages and liquidated damages—*
(i)*Withholding Process*. St. Tammany Parish Government may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this paragraph (b) on this contract, 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 that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

(ii)*Priority to withheld funds*. The Department has priority to funds withheld or to be withheld in accordance with paragraph (a)(2)(i) or (b)(3)(i) of this section, or both, over claims to those funds by:

(A)A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(B)A contracting agency for its reprocurement costs;

(C)A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(D)A contractor's assignee(s);

(E)A contractor's successor(s); or

(F)A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901-3907.

(4)*Subcontracts.* The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs (b)(1) through (5) of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (5). In the event of any violations of these clauses, the prime contractor, and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

(5)*Anti-retaliation*. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

(i)Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;
(ii)Filing any complaint, initiating, or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

(iii)Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or
(iv)Informing any other person about their rights under CWHSSA or this part.

3.Clean Air Act and Federal Water Pollution Control Act

Clean Air Act.
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.*
The contractor agrees to report each violation to St. Tammany Parish Government and understands and agrees that the St. Tammany Parish Government will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

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

Federal Water Pollution Control Act
The contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. § 1251 *et seq.*
The contractor agrees to report each violation to the St. Tammany Parish Government and understands and agrees that the St. Tammany Parish Government) will, in turn, report each violation as required to assure notification to the (name of the pass-through entity, if applicable), Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
The contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with federal assistance provided by FEMA.

4.Suspension and Debarment

Suspension and Debarment
This contract is a covered transaction for purposes of 2 C.F.R. Part 180 and 2 C.F.R. Part 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 2C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

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

This certification is a material representation of fact relied upon by St. Tammany Parish Government. If it is later determined that the contractor did not comply with 2 C.F.R. Part 180, subpart C and 2 C.F.R. Part 3000, subpart C, in addition to remedies available to St. Tammany

Parish Government, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

The bidder or proposer agrees to comply with the requirements of 2 C.F.R. Part 180, subpart C and 2 C.F.R. Part 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.

5.Byrd Anti-Lobbying Amendment

Byrd Anti-Lobbying Amendment, as amended, 31 U.S.C. § 1352.
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 federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the federal agency.

6.Prohibition on Contracting for Covered Telecommunications Equipment or Services

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 FEMA Policy 405-143-1, Prohibitions on Expending FEMA Award Funds for Covered Telecommunications Equipment or Services, as used in this clause—

(b)*Prohibitions.*1)Section 889(b) of the John S. McCain National Defense Authorization Act for Fiscal Year2019, 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 the Federal Emergency Management 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, 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, 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; 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.

(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: a. Are not used as a substantial or essential component of any system; and b. Are not used as critical technology of any system. ii. Other telecommunications equipment or services that are not considered covered telecommunications equipment or services.

3)*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.

7. Domestic Preferences for Procurements

Domestic Preference for Procurements.
The Contractor should, to the greatest extent practicable and consistent with law, 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.

8. Access to Records

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

The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
The Contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.

9. DHS Seal, Logo, and Flags

St. Tammany Parish Government must obtain written permission from DHS prior to using the DHS seals, logos, crests, or reproductions of flags, or likenesses of DHS agency officials. This includes use of DHS component (e.g., FEMA, CISA, etc.) seals, logos, crests, or reproductions of flags, or likenesses of component officials.

10. Compliance with Federal Law, Regulations, and Executive Orders and Acknowledgement of Federal Funding

FEMA funding will be used in this project. Contractors will comply with all applicable federal law, regulations, executive orders, and FEMA policies, procedures, and directives.

11. No Obligation by Federal Government

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

12. 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.

13. Socioeconomic Contracting

The Contractor is encouraged to take all necessary steps identified in 2 C.F.R. § 200.321(b)(1)-(5)to ensure small businesses, minority businesses, women's business enterprises, veteran-owned businesses, and labor surplus area firms are considered when possible.

Contracting With Small and Minority Businesses, Women's Business Enterprises, and Labor Surplus Area Firms.

a) Any party to this Contract, when expending any Federal funds received under this Agreement, 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 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.

14. Providing Good, Safe Jobs to Workers

Creating Good Jobs.
Pursuant to FEMA Information Bulletin No. 520, the contractor will comply with all applicable federal labor and employment laws. To maximize cost efficiency and quality of work, the contractor commits to strong labor standards and protections for the project workforce by creating an effective plan for ensuring high-quality jobs and complying with federal labor and employment laws. The contractor acknowledges applicable minimum wage, overtime, prevailing wage, and health and safety requirements, and will incorporate Good Jobs Principles wherever appropriate and to the greatest extent practicable.

15. Buy Clean

St. Tammany Parish Government encourages the use of environmentally friendly construction practices in the performance of this Agreement. In particular, St. Tammany Parish Government encourages that the performance of this agreement include considering the use of low-carbon materials which have substantially lower levels of embodied greenhouse-gas emissions associated with all relevant stages of production, use, and disposal, as compared to estimated industry averages of similar materials or products as demonstrated by their environmental product declaration.

SECTION 01220 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY:

A. Section includes administrative and procedural requirements for unit prices.

B. Related Sections:

1. Division 01 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
2. Division 01 Section "Quality Requirements" for general testing and inspecting requirements.

1.3 DEFINITIONS:

A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES:

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

B. Unit prices are a portion of the lump sum contract. The total contract is a lump sum contract for all of the work required by the documents. Unit price items do not include all items of work required by the documents but are supplied for bidding purposes and costs shall be included in the total cost of the work for the lump sum contract.

C. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

D. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

E. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES:

A. Unit Price No. 1: 8’ Chainlink Fence

1. Description: This item shall include the complete installation of the 8’ chainlink fence per details provided in the plans and per specifications, and as directed by the Owner and A/E. Allow for 675 linear foot of 8’ Chainlink Fence at unit price per LF to be provided by the contractor
2. Unit of Measurement: Linear Foot (LF) of fence installed.

B. Unit Price No. 2: Aggregate Surface Course (4” Thick) (Parking Lot)

1. Description: This item shall include the placement of aggregate surface course in the parking lot area per the plans and specifications, and as directed by the Owner and A/E. Allow for 6250 square yard of Aggregate Surface Course (4” Thick) (Parking Lot) at unit price per SY to be provided by contractor.
2. Unit of Measurement: Square Yard (SY) of aggregate material placed.

C. Unit Price No. 3: Asphalt Path Pavement Patching

1. Description: This item shall include asphalt pavement patching of the existing walking path per the plans and specifications, and as directed by the Owner and A/E. Allow for 800 square foot of Asphalt Path Pavement Patching at unit price per SF to be provided by the contractor.
2. Unit of Measurement: Square Foot (SF) of asphalt pavement patching.

D. Unit Price No. 4: Riprap Replacement

1. Description: This item shall include the placement of riprap on the existing jetty per the plans and specifications, and as directed by the Owner and A/E. Allow for 250 cubic yards of Riprap Replacement at a unit per CY to be provided by the contractor.
2. Unit of Measurement: Cubic Yard (CY) of riprap placed.

E. Unit Price No. 5: Pathway Light Pole Foundation

1. Description: This item shall include construction of new light pole foundations in accordance with details and notes included in the plans. Allow for 6 each of Pathway Light Pole Foundation at a unit per EA to be provided by the contractor.
2. Unit of Measurement: Each (EA) foundation constructed.

END OF SECTION 01220

SECTION 02050: 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:

A. Furnish all labor, materials, equipment, and incidentals required for demolition and disposal of existing obstructions to the new work.

B. This section also includes complete or partial removal and disposal of specified existing structures, foundations, slabs, mechanical, electrical, and miscellaneous appurtenances encountered during construction operations.

C. These specifications shall 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.

D. Demolition includes: Visit the site and examine all existing conditions as to character and extent of work involved.

1.3 Rules and Regulations:

A. The Building Code of the appropriate governing body shall control the demolition, or alteration of the exiting 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.

1.4 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 and local authorities. Provide alternate routes around closed or obstructed traffic access ways.

1.5 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.

1.6 Damage: Promptly repair damage caused to adjacent facilities or property by demolition operations as directed by the A/E at no cost to the Owner.

1.7 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.

1.8 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.

1.9 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 Exterior Demolition, General:

A. Keep all through lanes and drives clean and clear at all times.

B. Conduct operations so as not to interfere with adjacent roads, streets, drives, walks, service lines, lawns, planting, and the like.

C. Backfill any trenches caused by demolition work.

3.2 Disposition of Material and Equipment:

A. Remove demolition debris as soon as practicable. Do not store or burn materials on site. Dispose of demolition material offsite and in a legal manner.

* * *

SECTION 02052: DEMOLITION OF EXISTING SEWERAGE 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:

A. Furnish all labor, materials, equipment, and incidentals required for demolition and disposal of existing sewerage structure materials and equipment.

B. Demolition includes:

1. Partial demolition, as necessary, below finished grade of all existing sewerage structures, which are to be abandoned.
2. Demolition, partial removal, and cutting of existing masonry as required for the new construction.
3. Distribution of salvageable and excess unacceptable material as specified below.
4. Off-site disposal of excess and unacceptable materials.

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 sewerage structures operation and shall diligently direct all his activities toward maintaining continuous operation of the existing sewerage structures 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 buildings, structures, 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 onsite and offsite, and to ensure minimum interference with occupied or used facilities.

B. Special attention is directed toward maintaining safe and convenient access to the existing sewerage structures by Owner's personnel and

vehicles.

C. 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.

1.11 Submittals:

A. Submit to the A/E the proposed methods and operations of demolition of the existing sewerage structures, as specified below, prior to the start of work. Include in the schedule the coordination of shutoff, capping, and continuation of utility service as required.

B. Provide a detailed sequence of demolition and removal work to ensure the uninterrupted progress of the Owner's operations.

C. Before commencing demolition work, all modifications necessary to bypass the affected sewerage structures or system segment will be completed. Actual work will not begin until the A/E has inspected the modifications.

D. The above procedures must be followed for each individual demolition operation.

E. Submit in accordance with requirements of Division 1.

PART 2: PRODUCTS (NOT USED)

PART 3: EXECUTION

3.1 Abandonment and Demolition of Existing Structures:

A. As shown on the Drawings, certain existing sewerage structures will be abandoned after the new adjacent sewerage structures are constructed and put into operation.

B. The structures shall be abandoned and demolished as follows:

1. Pump out existing structure.
2. Remove and dispose of equipment as specified in these specifications.
3. Demolish existing structure and remove to a depth of 3 feet, minimum, below finished grade.
4. Cap or plug all existing openings in the sewerage structures.
5. Fill structure, as applicable, completely with granular material.

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 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.

3.4 Salvage Schedule: None.

* * *

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 A/E.

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 A/E.

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

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 02111: CLEARING AND GRUBBING

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 clearing, grubbing, removing, and disposing of vegetation and debris within the limits of construction.

1.3 Rules and Regulations:

A. State and local code requirements shall control the disposal of trees and shrubs.

B. The Contractor's attention is directed to any Soil Erosion and Sediment Control Ordinances in force by the local governing body. The Contractor shall comply with all existing ordinances.

1.4 Protection: Protect trees and shrubs, streets, roads, adjacent property, survey markers, and other features to remain throughout the Work.

PART 2: PRODUCTS

2.1 Materials: At the Contractor's option.

PART 3: EXECUTION

3.1 Clearing:

A. Limits of clearing shall be as indicated on the Drawings or if not indicated, as directed by the A/E.

B. Remove trees, saplings, shrubs, bushes, vines, and undergrowth within the limits of clearing.

C. If shown on drawings, selectively clear certain areas. A/E, in company of Contractor, will select trees to remain in these areas. If necessary to save selected trees, modify utility lines, walk, fence, etc. slightly from positions indicated; verify all with A/E.

D. Remove stumps to a depth of 8 inches minimum below ground elevation.

E. Carefully and cleanly cut roots and branches of trees to remain, where such roots and branches obstruct new construction.

3.2 Grubbing:

A. Limits of grubbing shall coincide with the limits of clearing.

B. Remove all stumps, roots over 4 inches in diameter, and matted roots within the limits of grubbing to the following depths.
   1. Footings, 18 inches.
   2. Paving and slabs, 12 inches.
   3. Lawn Areas, 8 inches.
   4. In the case of footings, slabs, or other construction on fills, the greater depth shall apply.

3.3 Damage: Promptly repair damage caused to adjacent facilities by clearing and grubbing operations as directed by the A/E at no cost to the Owner.

3.4 Disposal: Burning of materials on the site will not be permitted. Remove material from the site daily as it accumulates.

* * *

SECTION 02220: EXCAVATING, BACKFILLING, AND COMPACTING FOR STRUCTURES AND MINOR UTILITIES AND 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 earthwork for construction of foundations for structures, paving, utilities and appurtenances, including excavation, backfilling, filling, compacting, disposal of surplus material and restoration of ground surfaces, as shown on the drawings and specified herein. Provide all necessary supplementary items for a complete installation intended by documents.

1.3 Provisions:

A. 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.

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 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 feet from tree on all sides except as approved or directed by A/E.

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 operational. 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 Materials:

1. Granular Material, Topsoil and Excavation Materials 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 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. Bedding Material Densities: Standard Test Methods for Moisture Density Relationships of Soils and Soil-Aggregate Mixtures.
3. Base Course Densities: Standard Test Methods for Laboratory Compaction Characteristics of Soil using Standard Effort (12,400 ft-lb/ft^3)

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.

B. Reference Standards:

1. American Society for Testing and Materials (ASTM):

a. ASTM D698-07, Moisture-Density Relations of Soils Using 5.5-lb. (2.49-kg) Rammer and 12-in 305-mm) Drop.

b. ASTM D 2487, Classification of Soils for Engineering Purpose.

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 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 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.

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.

2.3 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"	100	-----
1"	95 – 100	100
3/4"	----	90 - 100
1/2"	25 – 60	----
3/8"	C	20 – 55
#4	0 – 10	0 – 10
#8	0 – 5	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.

2.4 Select Backfill Material (for Utility Trenching):

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.

2.5 Base Course: Unless otherwise noted, material shall be crushed stone in accordance with LA DOTD Standard Specification, Section 1003.03.1, 2016 Edition.

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, 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 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.

B. The Contractor shall furnish and place all sheeting, bracing, and 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 etched 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 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 trench 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.

3.5 Fill Under Slabs and Paving:

A. Where fill is required to raise the subgrade for concrete placement to the elevations indicated, place and compact as specified.

B. Before depositing fill, remove all loam, vegetation and other unsuitable material from areas to receive fill. In no case shall fill be placed on a subgrade that is muddy, frozen, or that contains frost. Compact subgrade by rolling with spreading equipment uniformly over entire area.

C. Deposit fill material in horizontal layers not exceeding nine (9) inches in depth before compacting. Spread fill evenly and compact each layer by uniformly rolling, pneumatic tamping or other approved equipment over the entire area. If necessary, moisten fill or allow to dry to the correct moisture content before compaction.

D. Bring the finished compacted areas to a reasonably true and even plane at the required elevations.

E. Compact all fill to 95 percent density unless otherwise specified.

3.6 Utility Trench Backfilling:

A. As soon as practicable after the utilities have been laid, jointed, and tested (if required), backfilling shall begin and completed expeditiously. Bedding shall conform to the details on the Drawings. When laying pipe, the groove for the pipe and bell hole must be accurately shaped, and the 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 suitable for the purpose. Installation of foundation lumber and piling shall be in accordance with the Drawings.

C. Bedding compaction shall consist of the placement 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 passes over every area of the bedding. Compacted bedding shall be enclosed in a filter fabric in areas that require a granular material backfill.

D. Backfill around manholes, catch basins, area drains, and other structures shall be compacted by flooding. All backfill shall be compacted, especially under and over pipes connected to the manholes.

E. All paved surfaces adjacent to backfilling operations shall be broomed and hose-cleaned immediately after backfilling. Dust control measures shall be employed at all times.

F. Compact all bedding material to 75 percent relative density and 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 or sidewalks, 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, paving or other area which is disturbed by the trench excavation 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 to a condition at least equal to that existing before work began.

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 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 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 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.

E. Compact fills under lawns and planting areas to 95 percent density unless otherwise specified.

3.9 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.

3.10 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.

3.11 Repair: Where any existing lawn areas are damaged, rutted, or otherwise disturbed, repair to original condition.

3.12 Disposal: Burning of materials on the site will not be permitted. Remove rubbish and debris from the site as it accumulates.

3.13 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 02230: BASE COURSE

PART 1: SCOPE OF WORK

This work consists of furnishing and placing base course for the roadway and/or parking lots.

PART 2: GENERAL

All work shall be in accordance with the requirements of Section 302 of the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition.

PART 3: MATERIALS

Base Course shall be stone as per Section 302 of the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition.

SECTION 02240: AGGREGATE SURFACE COURSE

PART 1: DESCRIPTION:

All work shall be in accordance with the requirements of Section 401 of the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition, as amended.

PART 2: MATERIALS:

Material shall be in accordance with the requirements of Section 401 of the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition, as amended. Material shall be stone or reclaimed portland cement concrete.

* * *

SECTION 02315: STEEL PIPE RAILING

PART 1: GENERAL

1.1 Scope: The work covered by this section consists of furnishing all plant, equipment, labor and materials, and performing all operations in connection with the installation of a new steel pipe piling in accordance with these specifications and applicable drawings.

1.2 Measurement and Payment: No separate measurement and payment will be made for steel pipe piling as specified herein and as shown on the drawings.

A. Damaged Piles: When a pile is pulled for inspection and found to be damaged due to the contractor negligence, no payment will be made for originally furnishing and driving such a pile or for the operation of pulling it and it shall be replaced by a new pile.

B. Misaligned or Misplaced Piles: When a pile is driven but not acceptably placed or driven out of alignment and pulled at the direction of the Project Engineer, no payment will be made for either originally furnishing and driving such a pile or for the operation of pulling, if the pile is undamaged and it is acceptable to redrive at the direction of the Project Engineer

1.3 RESERVED

1.4 References: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 36 (2008) Structural Steel

1.5 Submittals: The Contractor shall submit descriptions of pile driving equipment, shop drawings, test procedures, test reports and certificates, pile driving records and other required submittals to the Project Engineer for approval as required. Submittals and associated work not satisfactory to the Project Engineer will be rejected.

A. Equipment Descriptions: Complete descriptions of pile driving equipment including hammers, extractors, protection caps and other installation appurtenances shall be submitted for approval prior to commencement of work.

B. Shop Drawings: Shop drawings for steel piling shall show complete dimensions and details of piling and shall show the driving sequence and location of piling. Shop drawings shall include details and dimensions of templates and other temporary guide structures for

installing the piling and shall provide details of the method of handling piling to prevent permanent deflection.

C. Materials Test Certificates: Material test certificates shall be submitted for each shipment and identified with specific lots prior to installing piling. Identification data should include piling type, dimensions, chemical composition, mechanical properties, section properties, heat number and mill identification mark.

D. Driving Records: Records of the pile driving operations shall be submitted to the Project Engineer daily. These records shall provide a system of identification which shows the disposition of approved piling in the work, driving equipment performance data, piling penetration rate data, piling dimensions and top and bottom elevations. Refer to Paragraph 1.6, Subparagraph A, Item No. 1 below for required information.

1.6 Quality Control:

A. General: The Contractor shall establish and maintain quality control for pile driving operations to assure compliance with contract specifications and maintain records of his quality control for all construction operations including, but not limited to, the following:

1. Driving of Steel Pipe Piling: The record shall include the pile number or identification, location, pile size (dimension), length, elevation of tip, cut-off and top of pile, the number of blows and ram drop (in inches) required for each foot of penetration throughout the entire length of the pile, and the number of blows per inch for the last 18 inches of penetration. The record shall include the type and size of the hammer, the rate of operation, the type of dimensions of driving helmet, the cap-block and pile cushion used. The location of the elevation of any obstruction or unusual occurrence encountered during driving and shall be recorded and immediately reported to the Project Engineer. The Project Engineer's directed action shall also be recorded.
2. Recording uplift and vertical tolerances after driving, pulled and driven piles, and removal and disposal of damaged piles.
3. Plumbness of piling.
4. Penetration depth.
5. Stockpiling.

B. Reporting: The original and two copies of these records and tests, as well as the records of corrective action taken, shall be furnished to the Project Engineer daily.

1.7 Quality Assurance: Requirements for material tests, workmanship and other measures for quality assurance shall be specified herein. All steel pipe piling and appurtenant materials shall be tested and certified by the manufacturer

to meet the specified chemical, mechanical and section property requirements prior to delivery to the site.

1.8 Delivery, Storage and Handling: Materials delivered to the site shall be in a new and undamaged condition and shall be accompanied by certified test reports. The manufacturer's logo and mill identification mark shall be stamped on each unspliced piling at a minimum of two locations. All piling shall be stored and handled in the manner recommended by the manufacturer to prevent permanent deflection, distortion or damage to the interlocks. Storage of piling should also facilitate the required inspection activities.

PART 2: PRODUCTS

2.1 Materials: Steel for sheet piling shall conform to the requirements of ASTM A 36. The piling shall be of the shape and sections shown on the drawings. Piling shall be beveled to facilitate welding, unless otherwise specified or directed. Lengths of piling shall be as shown on the drawings. All steel piling shall be furnished full length.

PART 3: EXECUTION

3.1 Placing: Steel pipe piling shall be driven as accurately as practicable in the correct locations, true to line both laterally and longitudinally and to the vertical or batter lines, and as indicated on the drawings. A lateral deviation from the correct location at the cut-off elevation of not more than 3 inches will be permitted. A variation in slope of not more than ¼ inch per foot of longitudinal axis will be permitted. The corrective relative position of group piling shall be maintained by the use of templates or by other approved means. Any steel pipe pile driven out of correct location shall be pulled and redriven by the Contractor at no additional cost to the Owner.

3.2 Driving: Steel pipe piling shall be driven in lengths as shown on the plans by an approved stream, air or diesel drop, single acting, double acting, or differential acting pile driving hammer. The size and capacity of the hammer shall be as recommended by the manufacturer for the pile weights and soil formations to be penetrated. No drilling or jetting will be allowed before or during driving operations without the Project Engineer's written approval. The hammer shall be operated at all times at the stream or air pressure and at the speed recommended by the manufacturer. Boiler or compressor capacity shall be sufficient to operate the hammer continuously at full rated speed. To determine ram drop, the Contractor shall attach a scale (in inches) to the pile hammer and an indicator on the pile ram. Installation of both devices shall be in such a manner that displacement of the ram will be indicated on the scale. Both the scale and the indicator shall be easily legible to observers on the ground during operations. Pile drivers shall have

firmly supported leads extending to the lowest point the hammer much reach to maintain the hammer in proper alignment at all times. Each pile shall be driven continuously and without voluntary interruption except for splicing until the required depth of penetration has been attained. Deviation from this procedure will be permitted only in case the driving is stopped by causes which could not reasonably have been anticipated. Any pile that cannot be driven to the required depth because an obstruction shall, as directed by the Project Engineer, be pulled and another pile driven adjacent thereto, be cut off and used, or be abandoned as directed by the Project Engineer. Where voids adjacent to the steel piling area are induced by pile driving or pulling operations, the Contractor shall pump out all seepage and rainwater and backfill to within 3 feet of the ground surface with a tremie-placed slurry. The slurry shall consist of one part cement, two parts bentonite, and six parts sand mixed with water to produce a slurry viscous enough to thoroughly fill the voids. The upper 3 feet of the hole shall be filled with earth. The Contractor shall make observations to detect any uplift of piling already driven and uplifted piling shall be back driven to the original penetration, at no additional cost to the Owner. The Contractor shall compile a completed and accurate record of the driven piles. The record should be submitted to the Project Engineer and include the information in subparagraph 1.6 A 1.

3.3 Damaged and Misplaced Piling: Any pile which is damaged because of internal defects or by improper handling or driving, or which is otherwise damaged by the fault of the Contractor so as to impair it for its intended use, or any pile driven out of proper location, shall be removed and replaced. All work of removal and cost of replacement shall be borne by the Contractor at no additional expense to the Owner. The Project Engineer may require the Contractor to pull certain selected piling after driving for inspection to determine the condition of the piling. Any pile pulled and found to be damaged to such extent as, in the opinion of the Project Engineer, would impair its usefulness in the completed structure, shall be removed from the site of the work and the Contractor shall furnish and drive a new pile to replace the damaged pile. Piling pulled and found to be sound and in a satisfactory condition as determined by the Project Engineer shall be redriven. Any holes which remain as a result of pulling operations, shall be filled as specified in Paragraph 3.2 above.

* * *

SECTION 02513: ASPHALTIC CONCRETE PAVING

PART 1: SCOPE OF WORK

The work done under this section includes the furnishing of all labor, materials, equipment, and services necessary to complete all asphaltic concrete paving work.

PART 2: GENERAL

All work shall be in accordance with the requirements of Section 502 of the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition, as amended.

PART 3: MATERIALS

Material shall be in accordance with the requirements of Section 502 of the Louisiana Standard Specifications for Roads and Bridges, 2016 Edition, as amended. Asphalt shall be Level A Mix. Asphalt Cement Grade AC 30 shall be used, except as otherwise specified.

* * *

SECTION 02515E: CONCRETE WALKS, DRIVES, AND INCIDENTAL 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 walks, drives and incidental 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 Section 706 entitled, "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.

2.2 All concrete shall be Portland Cement Concrete, Class M, 3,000 psi concrete at 28 days, a minimum cement content of 470 lbs. per cubic yard, and a maximum slump of 4".

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 02575: PAVEMENT REPAIR AND RESURFACING

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 roadway work 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 Sections entitled "Pavement Patching, Widening, and Joint Repair", "Aggregate Surface Course", and "Base Course", as required. Fly ash will not be allowed in the concrete mix. Material could include the following:

1. Portland Cement Concrete
2. Asphaltic Concrete
3. Aggregate Surface Course
4. Base Course
   a. Soil Cement
   b. Stone
   c. Recycled Portland Cement Concrete
   d. Cement Stabilized Sand Clay Gravel

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 per cent payment, as indicated in DOTD.

3.3 Cleaning: After completion of paving operations, clean surfaces of excess or spilled materials in a workmanlike manner.

3.4 Permit: Open cutting of street crossings may require a permit. Should a permit be required, the Contractor shall be responsible for contacting the appropriate governing agency and obtaining the required permit(s). The Contractor shall adhere to all stipulations of the permit.

* * *

SECTION 02584: PAVEMENT MARKINGS (ROADWAY AND PARKING)

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: Work Included: Furnish all necessary materials, labor and equipment for the complete installation of roadway and parking pavement markings, 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. Include, on label of containers, manufacturer's name, type of paint, manufacturer's stock number, color, instructions.

B. Submit, in accordance with requirements of General Conditions, certification or literature from manufacturer that materials furnished meet or exceed specification requirements.

1.4 Environmental Conditions: Comply with manufacturers recommendations as to environmental conditions under which markings are to be applied. Apply no markings when the ambient air temperature is below 40 degrees Fahrenheit or when there is moisture on the pavement surface.

PART 2: PRODUCTS

2.1 Traffic Paint: PPG Traffic and Zone Marking Paint. Color for all asphaltic paving shall be white and color for all concrete paving shall be yellow, unless specifically noted otherwise. Striping for handicap stalls and symbols shall be blue.

PART 3: EXECUTION

3.1 Inspection: Examine pavements for conditions that will adversely affect execution, permanence, or quality of work and which cannot be put into an acceptable condition through preparatory work as included herein. Do not proceed with surface preparation or coating application until conditions are suitable.

3.2 Surface Preparation: Strictly follow manufacturer's surface preparation recommendations for all surfaces. Clean pavement surfaces of all dirt, grease, oil, curing compound, loose or unsound layers, and any other material that would reduce the adhesion of the markings to the pavement. Clean by approved methods and maintain surfaces in clean condition until placement of markings.

3.3 Application:

A. Strictly follow markings manufacturer's application recommendations and information.

B. Application Equipment: Brush, marking machine, or spray as approved by A/E.

C. Locations: Apply markings as indicated on the Drawings.

D. Apply two coats of paint in straight lines for all parking spaces as indicated on Drawings, 4-inch width. Finished lines shall have well defined edges and be free of waviness.

3.4 Cleaning: Touch-up and restore finish where damaged. Remove spilled, splashed or splattered paint from all surfaces.

* * *

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

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 and equipment for PVC pipe and fitting for water mains, gravity sewerage systems, and storm drainage, as shown on the drawings and specified herein.

PART 2: PRODUCTS

2.1 Materials:

A. Waste water and Storm water 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.
4. 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. 4" thru 12": PVC pipe 4" and greater shall be AWWA C-900 DR18 integral bell with locked gaskets and ductile iron O.D.
2. Smaller than 4":
   a. PVC pipe shall be Schedule 40, conforming to the requirements 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. 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.

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

PART 3: EXECUTION

Reference appropriate sections elsewhere herein.

* * *

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: The entire pipeline utilized for force mains shall be subjected to a hydrostatic pressure test and a leakage test along with all pump station piping. The line may be tested in sections but testing of the completed pipeline system will be required. The line shall be tested at 75 pounds per square inch for a period of at least four (4) hours. Tests shall not be made until at least 36 hours after the last joint to be tested has been made.

B. Waterlines: The waterlines shall be tested at 100 psi. Testing of waterlines shall be done as specified herein unless required otherwise by the Local Department or Agency having jurisdiction.

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 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 02660: WATER DISTRIBUTION

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 the removal, replacement, relocation and repair of all existing waterlines, known and unknown, and installation of new waterline. Waterlines, generally, are the property of the Owner and shall be installed, removed, replaced, relocated and/or repaired by and at the expense of the Contractor.

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.

1.4 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.

1.5 Notification: 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.

PART 2: PRODUCTS

See other sections.

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 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 Laying Pipe:

A. Pipe shall be protected from lateral displacement by placing the specified pipe embedment material. Under no circumstances shall pipe be laid in water and no pipe shall be laid under unsuitable weather or trench conditions.

B. Pipe shall be laid with the bell ends facing the direction of laying except when reverse laying is specifically authorized by the A/E.

C. Alignment and grade shall be as existed in removed pipe, unless otherwise indicated on the drawings or directed by the A/E.

3.8 Connections with Existing Piping: 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.

3.9 Flanged Joints:

A. Pipe shall extend completely through screwed-on flanges. The pipe and flange face shall be finish machined in a single operation. Flange faces shall be flat and perpendicular to the pipe centerline.

B. When bolting flanged joints, care shall be taken to avoid restraint on the opposite end of the pipe or fitting which would prevent uniform gasket compression or which would cause unnecessary stress in the flanges. One flange shall be free to move in any direction while the flange bolts are being tightened. Bolts shall be tightened gradually and at a uniform rate so that gasket compression is uniform.

3.10 Valves: All valves such as gate valves, check valves, fire hydrants, butterfly valves, air release or combination air-vacuum valves or valve boxes to be relocated or replaced shall be of the same or better quality than the valve being replaced. They shall conform to AWWA standards if not specified in piped utility materials section.

3.11 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.

3.12 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. Restrained push on joints shall be used to resist thrust forces. All joints shall be watertight and free from leaks.

3.13 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.

3.14 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.

3.15 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.

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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 Fabric: Zinc-coated steel, one-piece fabric, full height. Provide 2 inch, 9 gage mesh. Zinc coated steel fabric shall be galvanized after weaving and shall conform to ASTM A-392. Galvanizing shall be 1.2 oz./sq.ft. minimum. Fabric shall have knuckled top selvage and bottom selvage.

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. 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.

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SECTION 02834: WOODEN FENCES AND GATES

PART 1: GENERAL

1.1 Related Documents: Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 Scope of Work: This Section includes the following:
A. Wood Fences: Industrial.
B. Gates: swing.

1.3 Structural Performance: Provide wooden fences and gates capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
A. Minimum Post Size and Maximum Spacing for Wind Velocity Pressure: Determine based on mesh size and pattern specified, and on the following minimum design wind pressures and according to CLFMI WLG 2445:
a. Wind Speed: 140 mph.
b. Fence Height: As indicated.
c. Line Post Group: IA, ASTM F 1043, Schedule 40 steel pipe.
d. Wind Exposure Category: B.
B. Determine minimum post size, group, and section according to ASTM F 1043 for framework up to 20 feet high, and post spacing not to exceed 10 feet.

1.4 Quality Assurance - Installer Qualifications: An experienced installer who has completed wooden fences and gates similar in material, design, and extent to those indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

1.5 Project Conditions:
A. Field Measurements: Verify layout information for wooden fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.
B. Interruption of Existing Utility Service: Do not interrupt utility services to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
1. Notify Architect no fewer than two days in advance of proposed interruption of utility services.
2. Do not proceed with interruption of utility services without Architect's written permission.

PART 2: PRODUCTS

2.1 Wooden Fence Rails and Boards:

A. General: Height indicated on Drawings.

1. Rails: 2 x 4 Western Grade No. 1 Cedar.
2. Boards: 1 x 6 Western Grade No. 1 Cedar with dog eared top corners.

2.2 Industrial Fence Framing:

A. Posts and Rails: Comply with ASTM F 1043 for framing and the following:

1. Group: IA, round steel pipe, Schedule 40.
2. Fence Height: As indicated.
3. Strength Requirement: Light industrial according to ASTM F 1043.
4. Post Diameter and Thickness: According to ASTM F 1043:
   a. Line Post: As indicated.
   b. End, Corner and Pull Post: As indicated.
   c. Swing Gate Post: According to ASTM F 900.
5. Coating for Steel Framing:
   a. Metallic Coating:
      1) Type B, zinc with organic overcoat, consisting of a minimum of 0.9 oz./sq. ft. of zinc after welding, a chromate conversion coating, and a clear, verifiable polymer film.
      2) External, Type B, zinc with organic overcoat, consisting of a minimum of 0.9 oz./sq. ft. of zinc after welding, a chromate conversion coating, and a clear, verifiable polymer film. Internal, Type D, consisting of 81 percent, not less than 0.3-mil- thick, zinc pigmented coating.
      3) Coatings: Any coating above.

2.2 Tension Wire:

A. General: Provide horizontal tension wire at the following locations:

1. Location: As indicated.

B. Metallic-Coated Steel Wire: 6-gauge, marcelled tension wire complying with ASTM A 817, ASTM A 824, and the following:

1. Metallic Coating: Type II, zinc coated (galvanized) 1, 2 oz. a square foot with the following minimum coating weight:

2.3 Industrial Swing Gates:

A. General: Comply with ASTM F 900 for single and double swing gate types.

1. Metal Pipe and Tubing: Galvanized steel. Comply with ASTM F 1043 and ASTM F 1083 for materials and protective coatings.

B. Frames and Bracing: Fabricate members from round galvanized steel tubing with outside dimension and weight according to ASTM F 900 and the following:
   1. Gate Fabric Height: As indicated.
   2. Leaf Width: As indicated.
   3. Frame Members:
      a. Tubular Steel: As indicated.

C. Frame Corner Construction:
   1. Welded or assembled with corner fittings.

D. Hardware: Latches permitting operation from both sides of gate, hinges, center gate stops and keepers for each gate leaf more than 5 feet wide. Fabricate latches with integral eye openings for padlocking; padlock accessible from both sides of gate.

2.4 Barbed Wire (If Required on Plan):

A. Barbed wire: ASTM A 121, Class 3, zinc coated steel wire double-strand, 12-1/2 gauge twisted line wire with galvanized steel, 4 point barbs spaced approximately 5" on center.
   1. Barbed wire supporting arms: Pressed steel arms with provisions for attaching 3 rows of barbed wire. Arms shall withstand 250 lb. Downward pull at the outermost end of arm without failure.
      a. Provide 45-degree, 3 strands, single arm and/or 6 strands double "V" arms as indicated on plans.
      b. Provide intermediate arms with hole for passage of top rail.

2.5 Cast-In-Place Concrete:

A. Materials: Portland cement complying with ASTM C 150, Type I aggregates complying with ASTM C 33, and potable water for ready-mixed concrete complying with ASTM C 94/C 94M. Measure, batch, and mix Project-site-mixed concrete according to ASTM C 94/C 94M.
   1. Concrete Mixes: Normal-weight concrete air entrained with not less than 3000-psi compressive strength (28 days), 3-inch slump, and 1-inch maximum size aggregate.

2.6 Polymer Finishes: Metallic-Coated Steel Tension Wire: PVC-coated wire complying with ASTM F 1664, Class 1.

PART 3: EXECUTION

3.1 Examination: Examine areas and conditions, with Installer present, for compliance with requirements for a verified survey of property lines and legal boundaries, site clearing, earthwork, pavement work, and other conditions affecting performance.

A. Do not begin installation before final grading is completed, unless otherwise permitted by Architect.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 Preparation: Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 Installation, General: Install wooden fencing to comply with ASTM F 567 and more stringent requirements specified.

A. Install fencing on established boundary lines inside property line.

3.4 Wooden Fence Installation:

A. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.

B. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.

1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.

2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.

a. Exposed Concrete: Extend 1 inch above grade; shape and smooth to shed water.

C. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 15 degrees or more.

D. Line Posts: Space line posts uniformly at 10 feet maximum o.c.

E. Install horizontal rails as shown on the Drawings. Install galvanized metal jointers at rail butt joints.

F. Install 1 x boards with aluminum nails to rails. Bottom line of fencing shall be maintained equidistance from grade. Top line of fencing shall be generally held level. All fencing boards shall be installed plumb. Significant changes in grade elevation shall be verified with A/E for future directives.

G. 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.

H. Barbed Wire: Uniformly space parallel rows of barbed wire on security side of fence. Pull wire taut and attach in clips or slots of each extension.

3.5 Gate Installation: Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach boards as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.6 Adjusting:

A. Gate: Adjust gate to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

B. Lubricate hardware and other moving parts.

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SECTION 02870: SITE FURNISHINGS

PART 1 - GENERAL

1.1 Related Documents:

A. 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 Work specified in this Section.

1.2 Summary:

A. This Section includes the following:
   1. Seating.
   2. Picnic Tables.
   3. Shelter Structure Covers.

B. Furnish all necessary materials, labor and equipment for the complete installation of site furnishings as shown on the drawings and specified herein.

C. Products furnished, but not installed under this Section, include anchor bolts to be installed in paving.

1.3 Submittals:

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

B. Samples for Initial Selection: For units with factory-applied color finishes.

C. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below. Provide all necessary supplementary items for a complete installation as intended by documents.
   1. Size: Not less than 6-inch- (152-mm-) long linear components and 4-inch- (102-mm-) square sheet components.

D. Maintenance Data: For site furnishings to include in maintenance manuals.

1.4 Quality Assurance:

A. Source Limitations: Obtain each type of site furnishing(s) through one source from a single manufacturer.

PART 2 - PRODUCTS

2.1 Materials:

A. Steel and Iron: Free of surface blemishes and complying with the following:
   1. Plates, Shapes, and Bars: ASTM A 36/A 36M.
   2. Steel Pipe: Standard-weight steel pipe complying with ASTM A 53, or electric-resistance-welded pipe complying with ASTM A 135.
   3. Tubing: Cold-formed steel tubing complying with ASTM A 500.
   4. Mechanical Tubing: Cold-rolled, electric-resistance-welded carbon or alloy steel tubing complying with ASTM A 513, or steel tubing fabricated from steel complying with ASTM A 1011/A 1011M and complying with dimensional tolerances in ASTM A 500; zinc coated internally and externally.
   5. Sheet: Commercial steel sheet complying with ASTM A 1011/A 1011M.

B. Stainless Steel: Free of surface blemishes and complying with the following:
   1. Sheet, Strip, Plate, and Flat Bars: ASTM A 666.
   2. Pipe: Schedule 40 steel pipe complying with ASTM A 312/A 312M.
   3. Tubing: ASTM A 554.

C. Anchors, Fasteners, Fittings, and Hardware: Manufacturer's standard, corrosion-resistant-coated or noncorrodible materials; commercial quality, tamperproof, vandal and theft resistant.

2.2 Benches:

A. Basis-of-Design Product: Subject to compliance with requirements, provide Wabash Valley or approved equal.
   1. Model: 6' Mounted Signature Perforated Bench

B. Frame: Powder coated steel supports.
   1. Color: As selected by A/E from manufacturer's full range of colors.

C. Seat and Back:
   1. Material:
      a. Steel, heat fused poly-vinyl coating – 3/16" thickness
   2. Seat Height: 19"
   3. Seat Surface Shape: Flat
   4. Overall Width: $72^{3/8}$"
   5. Overall Depth: $19^{5/8}$"
   6. Color: As selected by A/E from manufacturer's full range of colors.

D. Mounted: Surface mounted with vandal resistant anchors.

2.3 Picnic Tables:

A. Basis-of-Design Product: Subject to compliance with requirements, provide Wabash Valley or approved equal.
   1. Model: 8' Signature Perforated Picnic Tables

B. Frames: Powder coated steel supports.
   1. Color: As selected by A/E from manufacturer's full range of colors.

C. Seat, Frame, Table:
   1. Overall Height: $29^{1/2}$"
   2. Overall Width: 69"

D. Steel Finish: Heat fused poly-vinyl coating.

   1. Color: As selected by A/E from manufacturer's full range of colors.

2.4 Shelter Structure Cover:

A. Basis-of-Design Product: USA Shade / SunPorts or approved equal.

B. Tension Cable: Steel wire rope cable is determined based on calculated engineering loads. Standard cabling is galvanized.
   1. 0.25" (nominal) galvanized 7x19 strand core wire rope shall be used for tension loads up to 4,500 lbs.
   2. 0.375" (nominal) galvanized 7x19 strand core wire rope shall be used for tension loads up to 9,000 lbs.
   3. 0.5" (nominal) galvanized 6x19 strand core wire rope shall be used for tension loads up to 13,500 lbs.

C. Fabric Roof Systems:
   1. UV Shade Fabric:
      a. Shade fabric shall be made of a UV-stabilized, high-density polyethylene (HDPE). HDPE mesh shall be a heat-stentered, three bar Rachel- knitted, lockstitch fabric with one monofilament and two tape yarns to ensure that the material will not unravel if cut. Raw fabric rolls shall be 9.8425 feet wide.
      b. Fabric Properties:
         - Life Expectancy: minimum 8 years with continuous exposure to the sun
         - Fading: minimum fading after 5 years (3 years for Red)
         - Fabric Mass: 5.31 oz/yd² ~ 5.6 oz/yd² (180gsm ~ 190gsm)
         - Fabric Width: 9.8425 feet (3m)
         - Roll Length: 164.04 feet (50m)

- Roll Dimensions: 62.99 inches x 16.5354 inches (160cm x 42cm)
- Roll Weight: +/- 66 lbs (+/- 30kg)
- Minimum Temp: -13°F (-25°C)
- Maximum Temp: +176°F (80°C)

c. Fabric shall meet the following flame spread and fire propagation tests.
   1) ASTM E-84
   2) NFPA 701 Test Method 2

2. Stitching and Thread:
   a. All sewing seams are to be double-stitched.
   b. The thread shall be mildew-resistant sewing thread, manufactured from 100% expanded PTFE (Teflon™). Thread shall meet or exceed the following:
      1) Flexible temperature range
      2) Very low shrinkage factor
      3) Extremely high strength, durable in outdoor climates
      4) Resists flex and abrasion of fabric
      5) Unaffected by cleaning agents, acid rain, mildew, salt water, and is unaffected by most industrial pollutants
      6) Treated for prolonged exposure to the sun
      7) Rot Resistant

D. Color: As selected by A/E from manufacturer's full range of colors.

2.5 Fabrication:

A. Metal Components: Form to required shapes and sizes with true, consistent curves, lines, and angles. Separate metals from dissimilar materials to prevent electrolytic action.

B. Welded Connections: Weld connections continuously. Weld solid members with full-length, full-penetration welds and hollow members with full-circumference welds. At exposed connections, finish surfaces smooth and blended so no roughness or unevenness shows after finishing and welded surface matches contours of adjoining surfaces.

C. Pipes and Tubes: Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of handrail and railing components.

D. Exposed Surfaces: Polished, sanded, or otherwise finished; all surfaces smooth, free of burrs, barbs, splinters, and sharpness; all edges and ends rolled, rounded, or capped.

E. Factory Assembly: Assemble components in the factory to greatest extent possible to minimize field assembly. Clearly mark units for assembly in the field.

2.6 Finishes, General:

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.7 Steel and Galvanized Steel Finishes:

A. Baked-Enamel, Powder-Coat Finish: Manufacturer's standard, baked, polyester, powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.

B. PVC Finish: Manufacturer's standard, UV-light stabilized, mold-resistant, slip-resistant, matte-textured, dipped or sprayed-on, PVC-plastisol finish, with flame retardant added; complying with coating manufacturer's written instructions for pretreatment, application, and minimum dry film thickness.

PART 3 - EXECUTION

3.1 Examination:

A. Examine areas and conditions, with Installer present, for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance.
   1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 Installation, General:

A. Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Complete field assembly of site furnishings where required.

B. Unless otherwise indicated, install site furnishings after landscaping and paving have been completed.

C. Install site furnishings level, plumb, true, and securely anchored at locations indicated on Drawings.

3.3 Cleaning:

A. After completing site furnishing installation, inspect components. Remove spots, dirt, and debris. Repair damaged finishes to match original finish or replace component.

* * *

SECTION 03110: STRUCTURAL CAST-IN-PLACE 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: The Contractor shall furnish all materials, labor, and equipment to construct all concrete formwork as shown on the Drawings and as specified herein.

1.3 Reference Standards: Concrete formwork shall be in accordance with the "Building Code Requirements for Reinforced Concrete" (ACI 318) and "Recommended Practice for Concrete Formwork" (ACI 347).

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: Variation thickness of slabs and walls, minus 1/4" and plus 1/2".

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. General: Unless otherwise indicated, construct formwork for concrete surfaces with prefabricated forms, plywood, metal, metal formed plywood faced or other acceptable panel-type materials, to provide continuous, straight, smooth 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.
3. Fiberboard: Use fiberboard complying with specification LLL-B-810.

B. Form Coatings: Provide commercial formulation form-coating compounds that will not bond with, slain nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces. Form coating shall be Form Coating by Non-Crete, Debond by L & M, Pro-cote by Protex, or equal.

C. 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

3.1 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, inserts, and other features required. Use selected materials to obtain required finishes. Formwork for concrete at grade shall be of an adequate depth to be embedded a minimum of six (6) inches in undisturbed soil.

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 as 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, 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 and secure units to support pipe screeds as required.

C. 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 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 not sooner than 24 hours, provided the concrete is of sufficient strength

as not to be 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.

3.8 Site Cleaning: Remove debris from project site upon completion of work, or sooner, if directed.

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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 03250: CONCRETE ACCESSORIES

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 furnishings and installation of expansion joint fillers, joint sealer, concrete floor hardener, sealing compound 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 Product Handling: Deliver materials in manufacturer's original unopened bundles or containers with brand name and identification clearly marked thereon. Store material in packs, on platforms or other supports above ground to prevent damage, deterioration or contamination.

1.4 Submittals:

A. Submit manufacturers supporting technical literature, performance data, installation and maintenance data.
B. Submit in accordance with requirements of Division 1.

PART 2: PRODUCTS

2.1 Concrete Accessories:

A. Expansion Joint Filler: Non-extruding, resilient bituminous joint filler conforming to AASHTO M213-0-UL or ASTM D1751-04(2013)C1. Preformed strips from cane or other cellular fiber uniformly saturated with bituminous binder.
B. Joint Sealant: Hot poured asphaltic mineral filler to conform to La. DOTD, or Elastomeric sealant equal to Sonneborn, Sonolasic NP II.
C. Waterstop: PVC ribbed waterstop equal to Greenstreak type 709, serrated with center bulb.
D. Metal Keys: Heckman Building Products, Inc., Heckman No. 95, 16 gage Tongue and Groove joint, or approved equal, with both stake pin and dowel holes. Provide No. 88, 18 gages tapered channel type strive pins, 15 inches long. Provide approved type metal bar support as indicated on Drawings.
E. Pigmented Floor Hardener: LM Scofield Co. Floorcron Non-Metallic or approved equal. Color as selected by A/E from manufacturer's standard course.
F. Colored Curing and Sealing Compound: ASTM C-309-11, LM Scofield Co. Chrom-a-Seal or approved equal, color as selected by A/E.

G. Non-Colored Curing and Sealing Compound: ASTM C-309-11, LM Scofield Co. Sealed 309 or approved equal.

PART 3: EXECUTION

3.1 Expansion Joints:

A. Provide pre-molded joint filler for expansion joints abutting concrete curbs, catch basins, manholes, inlets, structures, 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, and not less than 1/2" or more than 1" below finished surface where joint sealer is indicated.
   3. Furnish joint fillers in one-piece lengths for full width being placed, where ever possible. Where more than one length is required, lace or clip joint filler sections together.
   4. Protect top edge of joint filler during concrete placement with a metal cap or other temporary material. Remove protection after concrete has been placed on both sides of joint.

B. Joint Fillers and Sealants (Installation):
   1. Clean joint surfaces immediately before installation of joint fillers and sealants. Remove dirt, insecure coatings, moisture and other substrates, which could interfere with bond of sealant.
   2. Prime or seal joint surfaces where indicated and/or where recommend by sealant manufacturer. Confine primer or sealer to areas of sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Keyways: Provide keyways minimum 1 1/2 inches deep where indicated on paving plan.

3.2 Pigmented Floor Hardener: Where shown on drawings or indicated elsewhere apply at all finished concrete as indicated. Apply 1 coat of hardener and comply strictly with manufacturer's instructions and recommendations

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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:

1. 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 3,000 psi, regular strength.

CONCRETE MIX PROPORTIONING

Type of	Compressive	Min. Pounds Cement Per Cubic Yard
Regular	3000	430
	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.

3.2 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.

F. 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.
   2. Comply with requirements of ACI 305 and 306.

C. Protection:
   1. 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.
   3. 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.

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SECTION 05120 - STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Structural-steel materials.
2. Shrinkage-resistant grout.
3. Prefabricated building columns.
4. Shear stud connectors.

1.2 DEFINITIONS

A. Structural Steel: Elements of the structural frame indicated on Drawings and as described in ANSI/AISC 303.

1.3 ACTION SUBMITTALS

A. Product Data:

1. Structural-steel materials.
2. High-strength, bolt-nut-washer assemblies.
3. Anchor rods.
4. Shop primer.
5. Galvanized-steel primer.
6. Etching cleaner.
7. Galvanized repair paint.
8. Shrinkage-resistant grout.

B. Shop Drawings: Show fabrication of structural-steel components.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
2. Include embedment Drawings.
3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical, high-strength bolted connections.

C. Welding Procedure Specifications (WPSs) and Procedure Qualification Records (PQRs): Provide in accordance with AWS D1.1/D1.1M for each welded joint whether prequalified or qualified by testing, including the following:

1. Power source (constant current or constant voltage).

2. Electrode manufacturer and trade name, for demand-critical welds.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer, fabricator.

B. Welding certificates.

C. Survey of existing conditions.

D. Source quality-control reports.

1.5 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel in accordance with AWS D1.1/D1.1M.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.

1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.

1. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging and seals containers.
2. Clean and relubricate bolts and nuts that become dry or rusty before use.
3. Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F3125/F3125M, Grade F1852 bolt assemblies and for retesting bolt assemblies after lubrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Comply with applicable provisions of the following specifications and documents:

1. ANSI/AISC 303.
2. ANSI/AISC 360.
3. RCSC's "Specification for Structural Joints Using High-Strength Bolts."

2.2 STRUCTURAL-STEEL MATERIALS

A. W-Shapes: ASTM A992/A992M.

B. Channels, Angles, M-Shapes: ASTM A572/A572M, Grade 50.

C. Channels, Angles, S-Shapes: ASTM A572/A572M, Grade 50.

D. Plate and Bar: ASTM A572/A572M, Grade 50.

E. Cold-Formed Hollow Structural Sections: A500/A500M, Grade C.

F. Steel Pipe: ASTM A53/A53M, Type E or Type S, Grade B.

G. Welding Electrodes: Comply with AWS requirements.

2.3 BOLTS AND CONNECTORS

A. High-Strength A325 Bolts, Nuts, and Washers: ASTM F3125/F3125M, **Grade A325 (Grade A325M)**, Type 1, heavy-hex steel structural bolts; **ASTM A563, Grade DH (ASTM A563M, Class 10S)**, heavy-hex carbon-steel nuts; and ASTM F436/F436M, Type 1, hardened carbon-steel washers; all with plain finish.

B. Zinc-Coated High-Strength A325 Bolts, Nuts, and Washers: ASTM F3125/F3125M, **Grade A325 (Grade A325M)**, Type 1, heavy-hex steel structural bolts; **ASTM A563, Grade DH (ASTM A563M, Class 10S)**, heavy-hex carbon-steel nuts; and ASTM F436/F436M, Type 1, hardened carbon-steel washers.

1. Finish: Hot-dip zinc coating.
2. Direct-Tension Indicators: ASTM F959/F959M, **Type 325-1 (Type 8.8-1)**, compressible-washer type with mechanically deposited zinc coating finish.

2.4 RODS

A. Unheaded Anchor Rods: ASTM F1554, Grade 55, weldable.

1. Configuration: Straight.
2. Nuts: **ASTM A563 (ASTM A563M)** heavy-hex carbon steel.
3. Plate Washers: ASTM A36/A36M carbon steel.
4. Washers: **ASTM F436 (ASTM F436M)**, Type 1, hardened carbon steel.
5. Finish: Hot-dip zinc coating.

B. Headed Anchor Rods: ASTM F1554, Grade 55, weldable, straight.

1. Nuts: **ASTM A563 (ASTM A563M)** heavy-hex carbon steel.
2. Plate Washers: ASTM A36/A36M carbon steel.
3. Washers: **ASTM F436 (ASTM F436M)**, Type 1, hardened carbon steel.
4. Finish: Hot-dip zinc coating.

2.5 PRIMER

A. Galvanized-Steel Primer:

1. Etching Cleaner: MPI#25, for galvanized steel.
2. Galvanizing Repair Paint: MPI#18, MPI#19, or SSPC-Paint 20.

2.6 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate in accordance with ANSI/AISC 303 and to ANSI/AISC 360.

1. Camber structural-steel members where indicated.
2. Fabricate beams with rolling camber up.
3. Identify high-strength structural steel in accordance with ASTM A6/A6M and maintain markings until structural-steel framing has been erected.
4. Mark and match-mark materials for field assembly.
5. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.

B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1/D1.1M.

C. Bolt Holes: Cut, drill, mechanically thermal cut, or punch standard bolt holes perpendicular to metal surfaces.

D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.

E. Cleaning: Clean and prepare steel surfaces that are to remain unpainted in accordance with SSPC-SP 1, SSPC-SP 2, SSPC-SP 3.

2.7 SHOP CONNECTIONS

A. High-Strength Bolts: Shop install high-strength bolts in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for type of bolt and type of joint specified.

1. Joint Type: Snug tightened.

2.8 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel in accordance with ASTM A123/A123M.

1. Fill vent and drain holes that are exposed in the finished Work unless they function as weep holes, by plugging with zinc solder and filing off smooth.

2.9 SOURCE QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform shop tests and inspections.

1. Allow testing agency access to places where structural-steel work is being fabricated or produced to perform tests and inspections.
2. Bolted Connections: Inspect and test shop-bolted connections in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts."
3. Welded Connections: Visually inspect shop-welded connections in accordance with AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify, with certified steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated on Drawings.

3.3 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and in accordance with ANSI/AISC 303 and ANSI/AISC 360.

B. Baseplates, Bearing Plates, and Leveling Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.

1. Set plates for structural members on wedges, shims, or setting nuts as required.
2. Weld plate washers to top of baseplate.
3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
4. Promptly pack shrinkage-resistant grout solidly between bearing surfaces and plates, so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for grouting.

C. Maintain erection tolerances of structural steel within ANSI/AISC 303.

D. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that are in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure. Slope roof framing members to slopes indicated on Drawings.
2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.

E. Splice members only where indicated.

F. Do not use thermal cutting during erection unless approved by Engineer. Finish thermally cut sections within smoothness limits in AWS D1.1/D1.1M.

G. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

3.4 FIELD CONNECTIONS

A. High-Strength Bolts: Install high-strength bolts in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for bolt and joint type specified.

1. Joint Type: Snug tightened.

B. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

1. Comply with ANSI/AISC 303 and ANSI/AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.

3.5 REPAIR

A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing, and repair galvanizing to comply with ASTM A780/A780M.

3.6 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a special inspector to perform the following special inspections:

1. Verify structural-steel materials and inspect steel frame joint details.
2. Verify weld materials and inspect welds.
3. Verify connection materials and inspect high-strength bolted connections.

B. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

1. Bolted Connections: Inspect and test bolted connections in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts."
2. Welded Connections: Visually inspect field welds in accordance with AWS D1.1/D1.1M.

    a. In addition to visual inspection, test and inspect field welds in accordance with AWS D1.1/D1.1M and inspection procedures, at testing agency's recommendation.

END OF SECTION 05120

SECTION 05501: MISCELLANEOUS METAL

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 I 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 shop fabricated ferrous metal items, galvanized and prime painted 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 Qualifications:

A. Miscellaneous metal items and their related components may or may not necessarily be described individually in the Work of this Section. Furnish and install such miscellaneous items in accordance with the intent of the Drawings and Specifications and as required to complete the Work.

B. Meet requirements and recommendations of the local building code and the applicable portions of the latest editions of the following standards:

International Building Code (IBC)
National Fire Protection Association 101 (NFPA 101)
American Society for Testing Materials (ASTM)
American Institute of Steel Construction (AISC)
American Welding Society (AWS)
American National Standards Institute (ANSI)
National Association of Architectural Metal Manufacturers (NAAMM)
Federal Specifications (FS)
Commercial Standards (CS)
Americans with Disabilities Act (ADA)
Architectural Barriers Act (ABA)

1.4 Submittals:

A. Submit shop drawings for approval of all fabricated miscellaneous items. Indicate fabrication, assembly and erection details, sizes of all members, fastenings, supports and anchors, patterns, clearances, and all necessary connection to Work of other trades. For standard manufactured items, catalog cuts may be submitted.

B. Submit specified certificates.

C. Submit in accordance with requirements of Division 1.

1.5 Product Handling: Carefully handle materials to prevent damage to surfaces, edges, ends and finish and store at the site above ground in a covered dry location. Remove damaged items that cannot be restored to like-new condition and replace at no additional cost to the Owner.

PART 2: PRODUCTS

2.1 Basic Materials:

A. Structural Shapes: ASTM A 36.
B. Steel Pipe: ASTM A 53, Schedule 40.
C. Steel Tubing: ASTM A 500, Grade A, or ASTM A 501.
D. Gray Iron Castings: ASTM A 48.
E. Stainless Steel: ASTM A 240, Type 316, No.4 Finish.
F. Extruded Aluminum: 6063-T5.
G. Aluminum Sheet and Plate: 6061-T4.
H. Bolts for Structural Steel Connections: ASTM A325 high strength bolts.
I. Welding Electrodes: Grade SAW-I for submerged arc welding and E70 Series electrodes for manual arc welding. All electrodes in accordance with ASTM A 233.
K. Pipe Bollards: Steel, ASTM A 53, Schedule 40.

2.2 Prime (Shop Paint):

A. Exterior Exposed Ferrous Metal: Tnemec Series 394 Perimeprime or prior approval equal @ 2.5-3.5 dry mils. Surfaces to be prepared in accordance with SSPC-SP3 Power Tool Cleaning. Verify primer is compatible with field applied top coats.
B. All other Ferrous Metal: Southern Coatings Heavy Duty RIP 900, Tnemec Series 88 or approved equal.

2.3 Galvanizing: Hot-dip galvanizing or zinc coatings applied to products fabricated from rolled, pressed and forged steel shapes, plates, bars and strips shall comply with ASTM A 123. Hot-dip galvanizing or zinc coatings on assembled steel products shall comply with ASTM A 386. Except for bolts and nuts, all galvanizing shall be done after fabrication. Galvanized finish shall be uniform, with no accumulations of zinc coating which would detract from appearance of painted finishes.

2.4 Galvanizing Repair Paint: Galvilite Galvanizing Repair Compound in silvery finish.

A. 95% zinc in the dry film using only Type III "ultra pure" ASTM-D-520 zinc (lead and cadmium fee).
B. Meet or exceed Federal Specification DOD-P-211035 (Galvanizing Repair Spec.) Mil-P-269115A.
C. Low VOC.
D. ISO 9001 registered.

2.5 Miscellaneous Items:

A. Supplementary Structural Steel: Furnish all supplementary structural framing incorporated in the project design and detailed on the Drawings as a part of Miscellaneous Metal Work. Coordinate with other trades.

B. Miscellaneous Lintels, Shelf Angles, Beams and Plates: Provide miscellaneous lintels and shelf angles as indicated or required. Lintels shall have six (6) inch bearing at each end unless shown otherwise.

C. Miscellaneous Fasteners: Furnish all bolts, nuts, anchor bolts, plates, anchors, tees, clamps, hangers, nails, spikes, screws, straps, toggle and expansion bolts, and other items of rough hardware of sufficient size and number to tie together the various parts of the building and secure all of its parts in place. Such miscellaneous items shall be of same material as metals they contact. Provide zinc coated fasteners for exterior use or where built into exterior wall.

2.6 Miscellaneous Fabrications:

A. Verify all measurements and take all field measurements necessary before fabrication.

B. Exposed fastenings shall be compatible materials, shall generally match in color and finish, and shall harmonize with the materials to which fastenings are applied.

C. Include materials and parts necessary to complete each item, even though such Work is not definitely shown or specified. Provide the necessary rivets, lugs and brackets so that the Work can be assembled in a neat and substantial manner. Drill or punch holes for bolts and screws. Poor matching of holes shall be cause for rejection. Conceal fastenings where practicable. Form joints exposed to weather to exclude water.

D. Painting and Protective Coating: Properly clean all ferrous metal and provide one shop coat of specified shop primer. Coat anchors that are built into masonry with asphalt paint unless specified to be galvanized. Touch-up all field welds and welds made after galvanizing with two (2) coats of specified repair paint.

E. Provide miscellaneous steel framing and supports, which are not a part of structural steel frame work, as, required to complete work. Fabricate miscellaneous units to sizes, shapes and profiles indicated or, if not indicated, of required dimensions to receive adjacent work to be retained by framing. Except as otherwise indicated, fabricate from structural steel shapes, plates, and steel bank of welded construction using mitered joints for field construction. Cut, drill and tap units to receive hardware and similar items.

2.7 Pipe Railings:

A. Comply with all codes, NAAMM, ANSI, and AISC requirements. Comply with all requirements of ADA and ANSI A117.1 "Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People", NFPA Life Safety Code 101:7.2, and Americans with Disabilities Act" (ADA). Design railings to withstand minimum 250lbs. applied in any direction to the top rail. Submit certificates of compliance. Submit shop drawings prepared and stamped by a Structural Engineer licensed to practice in the state of Louisiana certifying that all handrail systems have been designed to meet the above requirements.

B. Form railings to design indicated, 1-1/4 inch minimum and 1-1/2 inch maximum diameter Schedule 40 (galvanized exterior only) steel pipe, with all turns and easing. Use flush type fittings with full-welded connections.

C. Joints at tees and crosses may be formed by the use of flush-type fittings and welding or by notching ends of pipe to fit the contour of pipe to which it is joined and then welding without the use of fittings.

D. Set vertical pipe supports extending into concrete into built-in steel pipe sleeves; caulk joints between rail uprights and sleeves with quick-setting anchor cement.

E. Provide all required anchorage members. Close all ends of tubing and pipe. Provide floor flanges, eye bolts as indicated.

F. Dress all welds smooth.

G. Provide shop paint and touch-up as required. Leave ready for finish painting.

2.8 Insect Screens: Provide full screens with extended aluminum tubular frames, 18 x 16 aluminum mesh screen cloth, with removable screens.

2.9 Corrugated Steel Draftstops: 26 gage, galvanized steel corrugated roofing sheet, 1-1/4 inch thick corrugations.

2.10 Electrical Pole-Top Crossarms: Construct/Furnish as indicated on the Drawings, all galvanized construction. Coordinate fixture supports with fixture supplier and manufacturer. See also Division 16, Electrical, for Contractor's option which would delete these locally constructed supports.

2.11 Dugout Metal:

A. Steel: ASTM A 36, galvanized shapes and sizes as indicated on the Drawings.

B. Roof: 18 gage, galvanized steel corrugated roofing sheets, 1-1/4" corrugations.

2.12 Steel Pipe Equipment Supports and Sleeves: Provide galvanized steel pipe supports and sleeves and galvanized steel channels as indicated and required to properly support electrical equipment. Weld or bolt all

connections.

2.13 Expanded Metal: Carbon Steel Flattened 2-8 lb. per square feet, 1.33" x 5.67" diamond pattern, .285" x .160" strand size. Expanded metal for exterior use shall be galvanized.

PART 3: EXECUTION

3.1 Preparation: Take field measurements prior to preparation of shop drawings and fabrication, where possible.

3.2 Workmanship:

A. Metal surfaces shall be clean and free from mill scale, flake rust and rust pitting; well formed and finished to shape and size, with sharp lines and angles and smooth surfaces. Weld permanent connections. Welds shall be finished flush and smooth on surfaces that will be exposed after installation. Do not use screws or bolts where they can be avoided; where used, countersink heads, screw up tight, and nick threads to prevent loosening.

B. Conceal fastenings where practicable. Thickness of metal and details of assembly and supports shall give ample strength and stiffness. Form joints exposed to weather to exclude water. Provide holes and connections for the Work of other trades.

3.3 Coordination: At proper time, deliver and set in place items of metal work to be built into adjoining construction. Coordinate with other trades. Provide all required steel for connection of their Work.

3.4 Pipe Railings: Install in locations and as indicated on the Drawings. Attach to walls, floors, structure as indicated and/or required for a plumb, true, and completely rigid installation.

3.5 Cutting and Repairing: Cutting, when approved, and repairing shall be done by the trade that installed the original Work. Avoid damage to adjacent Work. Repair items in a manner that will not be obvious as a patch. Remove and replace Work that cannot be satisfactorily repaired.

3.6 Draft Stops: Weld, bolt or screw corrugated sheets to angle iron supports as required for a rigid installation. Fabricate angle iron frame for penetrations through draftstops. Seal penetrations and space between draftstop and ceilings with non-combustible compressible fibrous material. Lap sheets two full corrugations and screw.

3.7 Electrical Pole-Top Supports: Install on wooden poles as indicated on the Drawings. Supports shall be absolutely level, plumb, and true.

3.8 Pipe Equipment Supports: Place concrete in holes to depth of pot and sleeve bottoms. Set posts plumb to 1/4 inch in 10 feet. Fill holes with concrete as indicated on the Drawings. Crown surface of concrete to slope away from posts.

3.9 Dugout Installation: Coordinate dugout steel supports with chain link fence supplier and verify existing fence post spacing. Lap galvanized roofing corrugations at sides, no end laps allowed (provide in one-piece lengths). Attach to steel supports at both ends and midspan with manufacturer's standard clips, rivets, or other fasteners at approximately eight (8) inches o.c. All fasteners shall have neoprene washers and sealant or other approved means of making watertight connection.

3.10 Expanded Metal Screens: Mount expanded metal and insect screens on "in" side rabbet of double rabbeted hollow metal frame with insect screens on outside. Expanded metal will be welded to glazing stops to facilitate removing screens. Tack all loose ends to glazing stop. Touch-up welds with galvanizing repair paint. Finish paint as per specifications prior to assembly. Touch-up scratches caused by final assembly.

3.11 Cleaning: Remove soil, stain, and extraneous materials from adjacent surfaces. Remove foreign matter and clean metal work to satisfactory condition to receive finish coats. Clean exposed surfaces to a neat, uniform appearance.

3.12 Painting: Finish painting of items not factory finished is specified in the Painting Section.

* * *

SECTION 09900 - PAINTING OF STEEL PIPE PILES

PART 1: GENERAL

1.01 SUMMARY

A. Scope of Work

1. This specification covers preparation of surfaces, material performance standards and completion of painting of steel pipe piles as required as specified herein.

1.02 REFERENCES

A. Federal Test Method

1. No. 141, Abrasion, Method 6192, CS-17 Wheel; 1000 grams load
2. TT-C 550 C 4.4.5.2 and 4.4.5.3 Graffiti-resistance

B. American Society of Testing and Materials (ASTM)

1. ASTM D 4541-85; Adhesion -
2. ASTM D 3363-74; Hardness
3. ASTM B 117-73; Salt Spray (FOG)
4. ASTM D 4585; Humidity (Controlled Condensation)
5. ASTM D 3359; Method B; Adhesion
6. ASTM D 4060; Abrasion-resistance
7. ASTM D 3363; Pencil Hardness

C. Society of Protective Coatings (SSPC) Surface Preparation

1. SSPC SP-1 Solvent Clean
2. SSPC SP-3 Power Tool Clean
3. SSPC SP-6 Commercial Blast Cleaning
4. SSPC SP-10 Near-White Blast Cleaning
5. SSPC SP-11 Power Tool Clean to Bare Metal

1.03 SUBMITTALS

A. Contractor shall submit the following information

1. Product data sheets
2. Coating Schedule
3. Generic type of coating
4. Performance Data
5. Material Safety Data Sheets
6. List of five projects that have performed satisfactorily for three years in the gulf coast area.

1.04 QUALITY ASSURANCE

A. APPLICATOR AND COATING SUPPLIER QUALIFICATIONS

1. Submit a list of five similar type and size projects completed by the coating applicator within the last three years.

1.05 DELIVERY, STORAGE AND HANDLING

A. All materials, delivered to job-site, shall be in original sealed and labeled containers of the paint manufacturer.
B. Store materials in a protected area at a temperature between 35° F and 110° F
C. All coatings and paint shall be stored in enclosed structures to protect them from weather and excessive heat or cold. Flammable coatings or paint must be stored to conform with City, Parish, State and Federal safety codes for flammable coating or paint materials. At all times, coatings and paints shall be protected from freezing.

1.06 PROJECT CONDITIONS

A. Environmental Requirements
    1. Coatings shall be applied during good painting weather.
    2. Air and surface temperatures shall be within the limitations of the coating manufacturer.
    3. Surface temperature shall be at least 5° F above dew point.
    4. Relative humidity shall be below 85%.

PART 2: PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Tnemec Company; Kansas City, Missouri or approved equal

2.02 REQUIREMENTS

A. All coating utilized shall be certified "non-lead" (less than 0.06% lead by weight in the dried film) as defined in part 1303 of the consumer Product Safety Act.
B. Where zinc primer is specified, the submittal data shall include the pounds of zinc per gallon for the proposed material and verification that the zinc primer is suitable for application by brush, roller and spray.
C. The coating manufacturer shall certify that the zinc dust used in the zinc coatings meets the requirement of ASTM D 520 Type III.

2.03. PERFORMANCE REQUIREMENTS

A. Organic Zinc-Rich Primer shall have the following physical properties:

    1. Salt Fog: No rusting, blistering or delamination on plane after 20,000 hours (ASTM B 117).
    2. Adhesion: No less than 1500 psi pull (ASTM D 4541)
    3. Prohesion: No blistering or delamination of film. No more than 1/32" rust creepage at scribe after 5,000 hours. (ASTM G 85)
    4. Zinc primer shall have a minimum of 17.5 lbs of zinc dust per gallon.

B. Coal Tar Epoxy or Polyurethane Tar shall have the following physical properties:

1. Adhesion: Not less than 1150 psi pull (ASTM D 4541)
2. Salt Fog: No rusting, blistering or delamination on plane after 13,000 hours. (ASTM B 117)

PART 3: EXECUTION

3.01 APPLICATION

A. General
1. Apply coatings as per manufacturer's printed instructions and acceptable painting practices.
2. Finish coats shall be uniform in color and sheen without streaks, laps, runs, sags or missed areas.
3. Work areas shall be reasonably free of airborne dust at the time of application and while coating is drying.
4. Spot-primers are to be applied to the failed areas after surface preparations are done.
5. Prepare surfaces in accordance with coating system's specifications. Touch-up welds, burned and abraded areas with specified primer before applying next coat.

3.02 ACCEPTANCE OF WORK

A. All surface preparation shall be approved by the inspector before the primer is applied.
B. Dry film thickness shall be measured in accordance with current SSPC PA2, Dry Paint Thickness with Magnetic Gauges.
C. Request acceptance of each coat before applying next coat.
D. A non-destructive holiday detector shall be used. All identified pinholes shall be repaired in accordance with the manufacturers printed recommendations and then re-tested.
E. Correct work that is not acceptable and request a reinspection.

3.03 CLEAN UP

A. Remove and dispose of, in a legal manner, all rubbish or other unsightly material leaving the premises in pre-project condition.

3.04 INDEMNITY

A. The Contractor shall agree to indemnify the Owner from all claims and demands for damages or compensation from injuries to persons or property caused by the negligence of the Contractor in completing the requirements of this contract.

3.05 COATING SCHEDULE

A. Sheet Piling and Associated Structural Elements (Shop)

Surface Preparation:
Abrasive blast all surfaces to be coated in accordance with SSPC SP10 Near White Metal Blast Cleaning.

Coating System:		Mils Dry Film Thickness
1st Coat	Organic Zinc-rich primer (Tnemec 90G-1K97)	2.5- 3.5
2nd Coat*	Coal Tar epoxy or Polyurethane Tar (Tnemec 46H-413)	16.0-20.0

* Note: Multiple coats may be required to achieve specified film thickness.

B. Sheet Piling and Associated Structural Elements (Field Touch-Up of New Steel)

Surface Preparation:
Spot abrasive blast all failed areas in accordance with SSPC-SP10 Near White Metal Blast Cleaning. Feather-edge the remaining intact coatings with the failed areas to create a smooth transition. Uniformly and aggressively scarify a 1 foot halo around the failed area to properly degloss and profile.

Coating System:		Mils Dry Film Thickness
Spot Coat(Bare Steel)	Organic Zinc-rich primer (Tnemec 90G-1K97)	2.5- 3.5
Spot Coat (All prepared areas)	Coal Tar epoxy or Polyurethane Tar (Tnemec Series 46H-413)	16.0-20.0

* Note: Multiple coats may be required to achieve specified film thickness.

3.07 GUARANTY

A. The Contractor must guarantee for a period of five years for all exposed piles and components of the structure painted under these specifications, to the extent that the contractor will repair any defects due to faulty workmanship or materials which may appear in the structure during that period. Buried components will be inspected for proper application prior to placement of backfill.

END OF SECTION

SECTION 15001 - MECHANICAL GENERAL PROVISIONS

PART 1 - GENERAL

1.1 SUMMARY

A. The General Provisions of the Contract, including the Conditions of the Contract (General, Supplementary, and other Conditions) and Division 1 as appropriate, as well as the individual technical specifications apply to the Work specified in this Division and Section.

B. This Division utilizes "Owner's Representative" as the term to designate interchangeably the "Architect", "Owner", "Construction Manager", "Appointed Representative" or other person, firm, or individual with the authority to provide guidance, direction, assistance, or decision making capability by the Owner of Record of the Project. Refer to Division 1 for guidelines.

C. This section covers the overall general requirements of installation, coordination, submission of construction drawings, training, equipment samples, as well as conditions governing the sequencing of work, scheduling, reports, and participation of meetings with the Owner's Representative.

D. Glossary of Terms:

1. Shall: The term "shall" as used in the context of Division 15 indicates a mandatory requirement.
2. Should: The term "should" as used in the context of Division 15 indicates a recommended practice.
3. May: The term "may" as used in the context of Division 15 indicates an optional non-mandatory recommended practice.
4. Provide: The term "provide" when used in the context of the Contract Documents includes all items necessary for the proper execution and completion of the Work.
5. Deviation: The term "deviation or deviate" when used in the context of the Contract Documents includes all acts which significantly depart from the specified methodology or norm.
6. Substitution: The term "substitution" when used in the context of the Contract Documents includes the replacement of one item for another specified item whether of equal value or not.
7. Work: The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.
8. Project: The "Project" is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner or by separate contractors.

1.2 BIDDING REQUIREMENTS AND RESPONSIBILITIES

A. Prime bidder is responsible for all work, of all trades and sub-contractors bidding this project. It is the prime bidders responsibility, prior to submitting a bid to ensure that all sub-contractors have coordinated all

aspects of the work between trades, sub-contractors, etc., to the fullest extent possible.

B. Prime bidder shall ensure that all sub-contractors, suppliers, equipment vendors, etc., obtain all necessary and pertinent contract document information pertaining to their work prior to the submission of a bid. Contractor shall realize that different sub-contractors may furnish equipment, accessories, devices, etc. necessary for a complete and working installation, that require provision of services by another sub-contractor or trade.

C. Bidders of all or any portions of this section or division are required to review all contract documents including but not limited to Architectural drawings, Structural drawings, Mechanical drawings, Plumbing drawings, Electrical drawings, Special Systems drawings, etc., in order to coordinate requirements and responsibilities with and through the prime bidder.

D. Bidders of all or any portions of this section or division, by furnishing a bid on a portion of the prime contract are indicating that they have received all contract documents and coordinated services provided under their portion of the work with the prime bidder; they are indicating that they have expressed any pertinent questions (which would result from a detailed, thorough review of the entire set of contract documents) to the prime bidder in accordance with Division 1 requirements, prior to bidding.

E. It is not the intention of these contract documents to leave any issue relating to coordination between trades or sub-contractors vaguely defined. The intention is to define all issues, coordination matters, equipment requirements, sizes, routing, etc. to the satisfaction of the prime bidder, prior to receipt of bids.

F. Bidders of all or any portions of this section or division, by virtue of the submission of a bid to the prime bidder, are indicating the following:
   1. That they have reviewed the entire set of contract documents with due diligence and regard for the Owner's desire for a comprehensive and complete bid proposal.
   2. That they have expressed all concerns or questions requiring clarification on matters of coordination between trades and/or sub-contractors.
   3. That they have expressed any such concerns or questions in writing in accordance with Division 1 requirements.

1.3 COMPLIANCE WITH NATIONAL & LOCAL CODE REQUIREMENTS

A. Minimum Requirements:
   1. It should be noted that wherever reference is made to "comply with" certain codes and/or standards, it is the intent of this Division that the term "comply with" be meant as "as a minimum comply with". The Contract Documents (Specifications, Plans, Addenda, etc.) often exceed the minimum standards set by National, State, and Local Codes and Standards and the Contractor shall be governed by (as a minimum) the code, plans, or standard with the most stringent requirements.
   2. The requirements of this Division supercede the "minimum" requirements of National, State, and Local Codes such as NEC, NFPA, AGA, SMACNA, IBC, ASME, ANSI, etc., in many areas.

Where references to these Codes are made, it is understood that the requirements of these codes are meant to indicate the "minimum" requirements required by these Contract Documents and are not to infer that these "minimum" requirements eliminate or in any way diminish the requirements of individual sections of these Contract Documents.

3. Wherever compliance with these National Codes is required, it shall be taken as a minimum requirement and applicable whenever the Contract Documents are silent with respect to specific requirements or installation procedures. The Contractor shall, as a minimum, comply with the more stringent of the requirements.

1.4 WORK INCLUDED

A. The work under this Division shall include all labor, material, service charges, connection fees, licenses, taxes, appliances, equipment plant, services and administrative tasks required to complete and make operable the mechanical work shown on the Drawings and specified within the technical sections herein, including but not limited to, the following:

1. Heating, ventilating, and air conditioning (HVAC) systems, including but not limited to piping, equipment, grilles, registers, diffusers, duct work, controls, and mechanical systems insulation.
2. Roof curbs for HVAC system, intake hoods, louvers, supply fans, and relief fans furnished and set under this Division.
3. Plumbing systems and related piping insulation.
4. Fire protection systems and related equipment.
5. Excavating and backfilling for mechanical work including cutting & patching.
6. Anchor bolts, sleeves, supports and similar items to be built into concrete and masonry.
7. Preparation for testing and balancing of mechanical systems and correcting deficiencies.
8. Preparation and submission of operations and maintenance (O&M) manuals, shop drawings, product data, and samples.
9. On site training for all equipment and systems including Building Automation System controls operation, troubleshooting and restarting.
10. Commissioning of Mechanical Systems.
11. Preparation and submission of shop drawings, equipment submittals, sheet metal coordination drawings, piping (underground & above ground) coordination drawings, equipment diagrams and illustrations.
12. Procuring all necessary permits and approvals, and paying all required fees and charges in connection with the work of this Division.
13. Protection, testing, cleaning, adjustment and guarantee of the work of this Division to safely, properly and continuously operate.
14. Providing "As-Built" drawings, operating and maintenance instructions and manuals.
15. Providing identification labels, tags, charts and diagrams.

16. Guarantees and warranties.
17. Temporary Heating & Air Conditioning during construction.
18. Painting of equipment (field & factory).
19. Training of owner's operating personnel.
20. Certification of welders.

1.5 WORK NOT INCLUDED

A. The following work is typically not a part of Division 15 except where and when specifically indicated to be provided either in these sections of technical specifications or on Drawings:

1. Finish patching of all construction cut under this Division.
2. Waterproofing of roof penetrations for the work of this Division.
3. Concrete and masonry work except as specified.
4. Painting, except as specifically noted.
   a. General painting shall be provided under Division 9, unless otherwise specified for particular equipment and areas in this or other Division 15 sections. Leave exposed piping, materials, and equipment clean and free of rust, grease, dirt, etc. before and after painting.
   b. Refer to Article 3.8 of this section for further requirements with regard to painting.

1.6 LIST OF EQUIPMENT TESTING AND DEMONSTRATIONS

A. The Contractor shall prepare and submit a list of equipment specified to receive testing and/or demonstrations and shall forward same to Owner's Representative:

1. List shall contain specification reference including paragraph number where testing or demonstration is required, and date test is to be commenced.
2. Provide a minimum of seven (7) days advanced notice of testing to the Owners' Representative.

1.7 TRAINING OF OWNER'S OPERATIONS AND MAINTENANCE PERSONNEL

A. Training requirements are further defined by the individual technical specification Sections in Divisions 2 through 16. The Contractor shall provide factory authorized training sessions to instruct the Owner's maintenance and/or operating personnel as designated by the Owner or his Representative in the operation, control, trouble shooting, adjustment, and maintenance of all equipment installed by Contractor.

1. Training shall exclude travel time.
2. All training shall be performed by a factory authorized agent of the applicable manufacturer.
3. Training shall also include temperature and humidity requirements of the building including individual spaces, equipment operating parameters, equipment setpoints, "normal" operating range characteristics, "abnormal" temperature and humidity operating conditions, adjustment procedures, startup and shutdown procedures, operating limits, and pertinent operational parameters that the building's operators and maintenance personnel should be aware of when operating the building.
4. An overall "Systems Approach" to the building's training

instructions shall be utilized. Training shall be provided not only on individual parts of the building (such as chillers, boilers, rooftop A/C units, etc., as described in the following sections) but training shall also be incorporated as a system, (i.e.) - chilled water system inclusive of pumps, chillers, heat exchanger, air handlers and how each interacts with the other components.

B. Maintenance and "hands on" maintenance procedures shall be provided as the basis of instruction.

1. Provide competent training personnel to meet with and fully familiarize the owner's designated personnel with the operation, adjustment, and maintenance of products, finished equipment, and systems.
2. Videotape each training session in its entirety using DVD format. Provide two (2) copies of each recorded session to the Owner's Representative. Each DVD shall be clearly labeled and indexed as to the type of equipment video and duration.

C. Training sessions shall be scheduled in writing through the Owner's Representative, a minimum of seven (7) working days in advance and shall take place only after all systems are "FULLY" operational, Test & Balance of the system has been completed, Operation & Maintenance Manuals have been provided to the Owner, and prior to final inspection. Provide an agenda of the training schedule listing all of the topics to be covered with the request for training. For equipment or systems requiring seasonal operation, perform demonstration for that season within six months of final inspection.

1. Training time periods listed in the technical specifications are intended to be the "minimum" training hours required. Extend training to cover all subjects and questions pertinent to the equipment being described.
2. The number of training hours required and/or described in the individual technical sections are exclusive of travel and set-up time.
3. The Contractor shall provide a Sign-In Log Sheet indicating those persons present at the training session. The Log Sheet shall have as a minimum, the following information:
   a. Names of those persons present at the training session including instructor, witnesses, video personnel, trainees, and/or other observers. Each person present shall provide the name of the organization that he/she represents and the phone and fax number of that organization. Failure to provide this documentation will indicate that the training is not in compliance with the Contract Documents and will result in the requirement to re-train.
   b. The date, start time, and ending time of the training session.
   c. The section of the specifications that the training session is in compliance with.
   d. A signature block for all trainees verifying that they have received training.

1.8 SITE INVESTIGATION

A. Examine the drawings and specifications of all trades, and the site, and

from these investigations be responsible for the nature and location of work, general and local conditions, particularly those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads, etc.

1. Contractor shall contact the local municipality or local private utility company prior to commencing construction in order to coordinate and obtain all of the local requirements for the installation of the Project's utility services. Should the requirements of the local utility company differ than that required within the Contract Documents, the Contractor shall contact the Owner's Representative immediately and make him aware of the requirements.
2. Contact the local gas utility and make arrangements to provide gas service to the site.
3. Contact the local water company and make arrangements to provide domestic and/or fire water to the site.
4. Contact the local sewer company or department and make arrangements to provide sanitary sewer services to the site.
5. Coordinate all locations, inverts, and elevations of the utilities required for construction and connection.

1.9 MATERIALS AND EQUIPMENT

A. Throughout the specifications, types of equipment and/or materials may be specified or specifically referenced to by manufacturer's name and catalogue number. This material or product is specified in order to establish a standard of quality and performance. It is not the intent of theses technical specifications to limit competition. The Contractor in such cases, may at his option use any article, device, product, material, fixture, form or type of construction which in the judgement of the Owner's Representative expressed in writing is equal to that specified. In addition, the design of the system specified is based upon a specific manufacturer including but not limited to physical size, weights, performance data, electrical requirements, etc. Alternate construction methods and/or materials and products may be submitted to the Architect for approval prior to bidding for consideration. Those items, equipment, materials, and methods judged to be equal to that specified, will receive written approval. Final approval will be reserved until complete construction shop drawings are reviewed for full compliance with the contract documents.

B. Coordinate and properly relate all Work of this Division to building structure and work of all other trades.

C. Visit premises and become thoroughly familiar with existing conditions; verify all dimensions in field. Advise Owner's Representative of any discrepancies prior to Bid Date in accordance with Division 1.

D. Do not rough-in for any item or equipment "furnished by others", "furnished by owner", or noted "Not in Contract" (NIC), without first receiving rough-in information from other appropriate trades and/or Owner's Representative.

E. Installation of "NIC" equipment: Where specifically indicated on drawings or within the body of the technical specifications, the Contractor shall receive, unload, uncrate, store, set in place, and make final connections to owner supplied equipment or other equipment designated as "Not In

Contract". The Contractor shall inspect the equipment prior to installation to insure that the equipment is in good condition and not damaged in transit. Any defects, blemishes, or damages shall be immediately reported to the Owner's Representative and the condition of the damaged equipment documented. Do not proceed with installation of any equipment until requesting and receiving all pertinent rough-in or installation instructions from the equipment manufacturer or supplier.

1.10 STORAGE OF MATERIALS & EQUIPMENT

A. Provide enclosed storage and protection for all equipment and materials in accordance with requirements of Division 1. Deliver, store, and handle all products provided under this Division according to manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including vandalism and theft.

1. Schedule delivery of materials and equipment to minimize long-term storage at the site and to prevent overcrowding of construction spaces and staging areas.
2. Coordinate delivery with installation time to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, vandalism, UV deterioration, and other losses.
3. Deliver products and materials to the site in an undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
4. Inspect products upon delivery to ensure compliance with the Contract Documents and to insure that products and materials are undamaged and properly protected.
5. Store products and materials at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
6. Store heavy materials and equipment away from the Project structure in a manner that will not endanger the supporting structure.
7. Store products, equipment and materials that are subject to damage by the elements, ultra violet exposure, etc., shall be placed above ground, under cover in a weather tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by the manufacturer's instructions.
8. Materials and equipment may be stored on site only under proper protection.
9. Equipment containing electronic parts, and equipment such as variable frequency drives, control panels, motor starters, etc., shall be stored indoors in a clean dry environment.
10. Replace any equipment and materials damaged by improper handling, storage, or protection, at no additional cost to the Owner.
11. Special attention is to be paid to materials and equipment containing fiberglass insulation products or other thermal and sound absorbent material. Prevent such material from becoming

damp or wet as both thermal and sound properties are degraded when the material in question becomes wet. Such material shall be replaced if found to have been exposed to the elements.

12. Keep premises and storage areas clean in accordance with requirements of Division 1.
13. Protect all work during construction in accordance with requirements of Division 1.

1.11 SUBSTITUTIONS

A. Substitutions of material or equipment are only allowed by approval of the Owner's Representative prior to Bid Date as stipulated in Division 1.
   1. Substitute equipment, materials, etc., will not be allowed to deviate from Contract Document requirements.
   2. If accepted by the Owner's Representative, the substitution of material or equipment or method of installation shall follow normal submittal procedures with all deviations specifically noted in "Red Markings" and such deviations specifically called to the attention of the reviewer in writing.

B. Equipment Substitution: Equipment of greater or larger power, dimensions, capacities, and ratings may be furnished provided such proposed equipment and its associated changes are specifically noted to the Owner's Representative, approved in writing, and the various connecting mechanical and electrical services, circuit breakers, conduit sizes, motors, bases, and equipment spaces are increased or adjusted as required to meet the equipment proposed. No additional costs to the owner will be approved for these cost increases. The cost increases are the responsibility of the Contractor. The minimum energy ratings or efficiencies of the equipment submitted shall also meet the design and commissioning requirements. Design of the systems

1.12 MATERIAL & EQUIPMENT DEVIATIONS

A. No deviations from the specifications and drawings shall be made without the full knowledge and written consent of the Architect/Engineer. The Contractor is wholly responsible for all required changes in material and equipment from that originally specified.

B. During progress of work, existing conditions which dictate a modifications of any particular requirement shall be promptly reported for a decision or instructions from the Owner or Owner's Representative.

C. Where an item of material or equipment is proposed by the Contractor, other than that detailed on the drawings or specified within the contract documents, which indicates a deviation, relocation, modification, or redesign/adjustment of the structure, partitions, foundations, piping, electrical wiring or any other part of the mechanical or electrical layouts, such redesign, shall be provided and prepared by the Contractor without additional cost to the Owner if accepted.
   1. All requests for deviations prior to acceptance by the Owner's Representative, shall be accompanied by a revised shop drawing of the material or product being submitted including installation instructions and maintenance manuals.
   2. All deviations (mechanical, electrical, structural, etc.) from that material or product originally specified shall be indicated in "Red

Markings" to the reviewer.

3. All such deviations, additional or subsequent requirements of the deviated material or product, shall be provided with written statements alerting such deviations to the reviewer's attention.

D. Where such approved deviations require a different quantity and arrangement of equipment from that specified or shown on the drawings, the Contractor shall provide the required equipment, wiring, piping, connections, valves, and structural supports, and any other additional equipment required by the deviation, at no additional cost to the owner.

E. It is the intent of these specifications that wherever a manufacturer of a product, material, or a catalog number is specified, and the term "or approved equal" is used, the substituted item must conform in all essential respects to the specified item including operating efficiency, noise generated, and method of operation. Consideration shall not be given claims that the substituted item meets performance requirements with lesser construction. Performance as delineated in schedules and in the specifications shall be interpreted as minimum performance and must be approved by the Owner's Representative.

1.13 CONTRACT DRAWINGS AND SPECIFICATIONS

A. The contract documents (drawings, plans, addenda, sketches, and specifications) describe the general overall layout, and location of the general mechanical work of this project. Exact dimensional data, location of equipment, routing of piping, etc., is the responsibility of the Contractor as hereinafter described under "Coordination". Any item mentioned in one part shall be as binding as though mentioned in both.

B. The contract documents form a guide for a complete and operable mechanical installation. Where an item is reasonably necessary but not specifically mentioned, such as duct hangers or transitions, electrical interlocks, control and or interlock wiring, low voltage wiring, piping offsets, drains, etc., for a complete system, the contractor shall provide same.

C. The Drawings are diagrammatic and indicate the general arrangement of systems, piping, equipment and work required. Do not scale the Drawings! Exact locations of ducts, pipes, and equipment shall be governed by the coordination drawings of related trades. Consult the architectural dimensional drawings and details, and the dimensional drawings of other trades, for exact location, placement, and arrangement of equipment.

1. Symbols and diagrams are used to indicate the various items of work and the complete systems, but not necessarily have dimensional significance, neither do they necessarily delineate all related and subsidiary parts and equipment.
2. The work shall be installed complete and ready for operation in conformity with the drawings and in the specifications.
3. Coordinate the work with the requirements of the architectural and structural drawings for dimensions, locations and clearances.
4. Locations of items exposed to view shall be taken from the architectural drawings or located as directed.

D. Drawings are intended to be, and shall be used in the general layout of Work. Check reference drawings to verify spaces in which the work shall

be or is to be installed. Maintain the maximum possible headroom and space conditions. Where headroom or space conditions appear inadequate, of if structural, mechanical or electrical elements and/or interferences are present, the Owner's Representative shall be notified before proceeding with installation.

E. If directed by the Owner's Representative, make minor modifications in the layout to prevent conflict with work of other trades or for the proper execution of the work.

1.14 COORDINATION WITH OTHER TRADES

A. The overall coordination of the coordination process is the responsibility of the General Contractor. The Owner or Owner's Representative is not part of the coordination drawing process. The Owner's Representative shall provide assistance relative to the acceptability of the proposed installations.

B. Closely schedule and coordinate the work so that work shall be installed at the proper time without delaying the completion of the entire project.

C. Any and all equipment provided by or under Division 15 Sections of the specifications and requiring connection by other trades shall be thoroughly coordinated both in shop drawings phase as well as installation phase of the project. Items such as motor starters, motor control centers, interlocks between equipment, etc., which will require that other trades connect to, hook up with, or otherwise become associated with shall be thoroughly coordinated with the contractor associated with the work involved. Coordinate voltages, wire sizes, interlocks, routing, conduit, and physical dimensions of work involved.

D. Where the work shall be installed in close proximity to the work of other trades, or where there is evidence that the work shall interfere with the work of other trades, arrange space conditions to make a satisfactory adjustment. If work is installed before coordinating with other trades, make necessary changes to the work to correct the condition without additional cost.

E. Prepare complete set of drawings showing all necessary slab openings and structural supports that require structural framing. Drawings shall clearly indicate sizes and location relative to established column lines. Drawings shall be completed in sufficient time to allow for structural steel fabrication so as not to delay project schedule.

F. Shop drawing submissions are intended to be coordinated and shall demonstrate both a knowledge of the work of other trades, and shall show the locations of the work of other trades which affects the work of this Contract.

1.15 CODES AND REGULATIONS

A. Perform work specified in Division 15 in accordance with codes and standards listed below, and such standards or materials that may be specified in other sections. When the technical specifications of this Division are more stringent than the referenced code, the technical specifications shall take precedence. In the event of conflicts between the code and technical specifications, obtain guidance from the Owner's Representative.

1. NFPA 54: National Fuel and Gas Code.

2. NFPA 90A: Air Conditioning and Ventilation Systems.
3. NFPA 101: Life Safety Code.
4. NEC; National Electric Code
5. ANSI Handicapped Code - A117.1.
6. AGA: American Gas Association.
7. ANSI: American National Standards Institute.
8. ARI: American Refrigeration Institute.
9 ASHRAE: American Society of Heating Refrigeration and Air Conditioning.
10. ASME: American Society for Mechanical Engineers.
11. ASTM: American Society for Testing and Materials.
12. MSS: Manufacturer's Standardization Society of the Valve and Fitting Industry.
13. NEMA: National Electrical Manufacturers' Association.
14. NFPA: National Fire Protection Association.
15. SMACNA: Sheet Metal and Air Conditioning Contractors' National Association.
16. UL: Underwriters' Laboratories, Inc.
17. CISPI: Cast Iron Soil Pipe Institute.
18. International Building Code (IBC)
19. International Mechanical Code
20. International Fuel Gas Code
21. International Fire Code

B. Work shall be in full accord with the State Sanitary Code, local ordinances, building codes, and other applicable national, local, and state regulations.

C. Equipment shall conform to requirements and recommendations of the National bureau of Fire Underwriters and the National Fire Protection Association (NFPA).

D. Items provided under this Division shall, as a minimum, comply with the American National Standards Institute (ANSI) "Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People," ANSI A 117.1

E. In the event of a conflict between various local state and national codes or regulations and Contract Documents, notify the Owner's Representative immediately.

1.16 FEES, PERMITS, SERVICE CHARGES, CONNECTION FEES AND TAXES

A. The Contractor is responsible for obtaining and paying for all permits required for the Work of this Division. Pay all utility connection fees, service charges, connection fees or other service charges in connection therewith, including any necessary inspection fees.

B. Pay any and all taxes levied for Work of this Division, including municipal and/or state and local sales tax where applicable.

1.17 MANUFACTURER'S INSTRUCTIONS & DIRECTIONS

A. Install, maintain, and operate equipment and materials in strict accord with the manufacturer's installation and operating instructions.

1. The manufacturer's instructions shall become part of the Contract Documents and shall supplement the Drawings and Specifications.

B. Submit manufacturer's installation instructions and recommendations with shop drawings.

1.18 APPROVALS

A. Obtain all approvals in accordance with Division 1.

B. Submit to the Owner's Representative for approval, a list of manufacturers of equipment proposed for the work. The intent of the contractor to use exact of make of equipment or article specified does not relieve the Contractor of the responsibility for submitting the required equipment or article.

C. Where any specific materials, process or method of construction, or manufactured article is specified by name or by reference to catalog number of a manufacturer, or other standards, the intent is not to take precedence over the basic duty and performance specified, noted on drawings for the intended results. In all cases, verify the duty specified with the specific characteristics of the equipment offered for approval.

1.19 SUBMITTALS

A. Shop Drawing Schedule

1. The Contractor shall submit, within fifteen (15) days of the acceptance of the Contractor's construction schedule, a schedule of all proposed shop drawing submissions. No Work shall be started until approved shop drawings are received!
   a. Refer to Division 1, Section 01330 - "Submittal Procedures" for information regarding the submission of shop drawings. This should be the first submission under this Contract.
   b. Shop Drawings shall be submitted as complete systems.
      (i) Example: (Boiler, boiler pumps, hot water heating coils, hot water heating accessories, etc.)
      (ii) Example: (Chiller, chiller pumps, tower, tower pumps, chilled water coils, chilled water system accessories, etc.)
2. The schedule shall include the following information.
   a. Item to be submitted
   b. Date of submission
   c. Latest date for approval
   d. Manufacturers of the specified item.
3. Items not specifically listed as "approved equal" should be listed for consideration at this time.

B. Manufacturer's Drawings: Submit shop drawings, project data, and samples in accordance with the requirements of Division 1 and in accordance with the technical specifications of each section.

1. The General Contractor shall first review and make any corrections required and stamp and date "Approved" on the shop drawing prior to submission to the Owner's Representative.
   a. All shop drawings not reviewed by the General Contractor shall be returned without action.
   b. Failure on the part of the General Contractor to review and/or stamp the shop drawings shall not be reason or

grounds for delays.

c. Only original documents shall be submitted. Faxed copies or poor quality copies of original documents shall be returned without action.
d. Shop drawings shall consist of the following as a minimum:
e. Published ratings
f. Capacity data
g. Clearance requirements
h. Access door/panel locations and clearance requirements
i. Detailed construction drawings for fabricated or field assembled items
j. Electrical data - Differentiate clearly between factory-wired and field-wiring requirements
k. Wiring and control diagrams including ladder diagrams
l. Performance curves
m. All written installation instructions from the manufacturer
n. Manufacturer's installation drawings, and other pertinent data on all equipment listed in each section
o. Material specifications
p. Operating characteristics
q. Finishes
r. Warranty certificates
s. Should the manufacturer of any item submitted not provide sufficiently detailed installation drawings, installation instructions, or detailed written operating characteristics as described above, it shall be the responsibility of the Contractor to provide such information for review by the designer.

C. Installation/Construction/Fabrication Drawings:

1. The General Contractor is directly responsible for the overall coordination process between sub-contractors.
2. The Owner or Owner's Representative is not part of the coordination drawing process. The Owner's Representative shall provide assistance relative to the acceptability of the proposed installations.
3. Any work fabricated or installed prior to sign-off by all trades shall be removed and reinstalled in conformance with approved coordination drawings.
4. Contractor shall provide scaled, coordinated construction drawings indicating routing, location, clearance requirements, location of electrical or control components to be installed. Construction drawings shall indicate the elevation and position of all piping, ductwork, penetrations, spools, electrical disconnects/starters/vfd's and/or control panels/equipment, as well as potential interferences with other trades.
   a. Provide coordinated scale drawings of all above ground and below ground piping, equipment and other materials including interconnecting piping and ductwork.
   b. Drawings shall be coordinated with all other trades and signed off by those trades to indicate conformance with the intent of the design drawings.

c. Coordinate space requirements for equipment, piping, maintenance service, access doors/panels, ducts and ductwork, insulation, and floor or wall penetrations.

d. Include connections, anchorages and fastenings.

e. Make allowance for clearances for access to and maintenance of equipment.

f. Provide coordination drawings of all chases, shafts, or partitions indicating spacial requirements and make adjustments in the physical size of the above spacial requirements prior to installation and provide coordination with other trades.

g. Submit shop/fabrication drawings, project data, and samples in accordance with the requirements of Division 1 and in accordance with the technical specifications of each section.

h. Only original documents shall be submitted.

I. Faxed copies or poor quality copy of original documents shall be returned without action.

j. Provide scaled layouts (minimum 1/4" = 1'-0") for fan rooms, mechanical equipment rooms, closets, air handler rooms, A/C closets, water heater rooms, etc. including (where applicable):

k. Room dimensions.

l. Support column locations.

m. Locations and dimensions of equipment foundations and pads required.

n. Locations and dimensions of equipment and apparatus (with locations of temperature control panels, electrical disconnects, variable frequency drives, and starters indicated).

o. Service and coil pull areas.

p. Dimensioned floor drain locations.

q. Locations of wall mounted equipment.

r. Trench locations and sizes.

s. Sleeve locations in mechanical rooms and equipment rooms.

t. Roof layouts, showing air conditioners, air intakes, exhaust fan discharges, plumbing vents, flues, and all roof mounted equipment.

u. Fire Protection System drawings and calculations.

v. Sheet metal coordination drawings.

w. Plumbing piping (above & below ground including site) coordination drawings.

x. Sheet metal shop/fabrication drawings that have been coordinated with the Architectural, Mechanical, Electrical, Fire Protection, Civil, and Structural Drawings shall be submitted to the Owner's Representative for approval. Drawings must be returned from the Owner's Representative either with "No Exceptions Taken" or "Make Corrections Noted" prior to being used as the basis for coordination drawings.

y. Refer to Section 15891 - "Metal Ductwork" as well as Section 15910 - "Duct Accessories" for specific sheet metal shop drawing requirements.

z. After sheet metal drawings have been revised per Owner's Representative comments, reproducible copies shall be sent to the other trades in the following sequence for inclusion of their work.
   (i) Plumbing contractor
   (ii) Electrical Contractor
   (iii) Mechanical Contractor
   (iv) Sprinkler Contractor
   (v) Other Contractors required to coordinate such as Kitchen Equipment Supplier, etc.

aa. Prior to inclusion of sprinkler piping and equipment, Contractor shall submitted sprinkler plans and calculations to Owner's Representative for approval and the Rating bureau for review.

bb. After all trades have included their work on the coordination drawings and noted conflicts, all trades shall meet to resolve conflicts and agree to acceptable solutions. Each trade shall sign the coordination drawing(s). Items not covered on coordination drawings are the responsibility of the installing Contractor at no cost to the Owner.

cc. The oversight of the coordination drawing process is the responsibility of the General Contractor.

D. Brochures: Submit seven (7) copies of manufacturer's brochures including:
   1. Complete descriptions.
   2 Illustrations.
   3. Specifications data of materials, and operating rates, etc.
   4. Where items other than those proposed for use are illustrated and/or described on the same brochure pages, clearly indicate the items proposed for use.

E. Equipment of one type, such as pumps, air handlers, variable speed drives, vibration isolators, hangers, etc., shall be products of only one manufacturer to the fullest extent possible.
   1. Unless specifically so specified and shown on Drawings, the Contractor shall not be allowed the option of "mixing and matching" equipment. (*Example*: Chiller and air handling units supplied by different manufacturers.)

F. If submissions of catalog cuts of standard manufactured items indicate or show different types, options, finishes, performance requirements, or other variations, those model numbers and features which are proposed for use by the Contractor shall be clearly marked and identified to the reviewer. *Contractor shall cross out, delete, or blank out any and all information not pertinent to the specific item being submitted.* Shop drawings submitted without the above requirements shall be returned for corrections.
   1. Shop drawings are only reviewed in order to establish that the Contractor is complying with the design intent of the contract

drawings. Shop drawings are not "Approved" but rather are reviewed for general compliance with the contract documents. Shop drawings shall clearly indicate all details, sectional views, arrangements, working and erection dimensions, kinds and quality of materials and their finishes, and other information necessary for proper checking and for fabrication and installation of the items, and shall include all information required for making connections to other work.

2. Shop drawings shall be numbered consecutively, and drawings related to various units comprising a proposed assembly shall be submitted simultaneously so that units may be checked individually and as an assembly.
3. Keep on the Project site, in good condition and order, a complete up-to-date set of all submitted shop drawings. All shop drawings shall be available for review by the Owner's Representative.
4. The review and acceptance of shop drawings shall be general, and shall not be construed as permitting any departure from the Contract requirements other than those specifically brought to the Owner's Representative's attention and so agreed to with appropriate documentation in the form of change orders.
    a. If the shop drawings show any variations from Contract requirements because of standard shop practices or other reasons, such variations shall be brought to the attention of the reviewer and clearly identified on the shop drawings in order that, if acceptable, suitable action may be taken for proper adjustment in other work affected thereby.
    b. Failure to identify such variations shall not relieve the Contractor of responsibility for executing the work in accordance with the Contract even though such shop drawings have been reviewed and the work installed.
    c. Review and acceptance of the submittals shall not relieve the Contractor of responsibility for any error in quantity, details, dimensions, etc., that may exist on shop drawings nor for the furnishing of materials or work required by the Contract and not indicated on the shop drawings.
    d. Review and acceptance of the submittals shall not be construed as an approved departure from details or instructions previously furnished to or by the Owner's Representative.
    e. Review and acceptance of the submittals with a requirement for corrections and/or re-submission is an appropriate review contingent upon satisfactory re-submission within 30 days. Failure to comply within the allotted time shall result in a revocation of the contingent approval.

G. Deviations and Variations: If during the submission of shop drawings there are any deviations, substitutions, or other variations from the contract documents proposed, or if catalog descriptions are proposed, or if approved manufacturers and suppliers of equipment, materials, etc., are unable to fully comply with the contract documents, such deviations and/or variations must be clearly noted to the reviewer (in red ink) on the

submitted shop drawing or catalog cut.

1. The contractor or submitting agency shall clearly and specifically call out any and all such deviations, changes, or variations to the attention of the Owner's Representative during the submittal phase.
2. Type any and all such deviations on an 8 ½ x 11 separate sheet of paper.
3. Underlined statements or notations on standard brochures, equipment cut sheets, etc. will not be accepted.
4. The General Contractor shall note and acknowledge the receipt of such deviations by approving or disapproving the submittal.

H. Wiring And Control Diagrams

1. Provide electrical wiring diagrams and automatic control diagrams and sequences of operation. The wiring diagrams must be complete and coordinated with the equipment actually installed or proposed.
2. Provide required interlock control diagrams and prepare a statement indicating that the requirements of other trades have been transmitted and coordinated.

I. Provide composite shop drawings showing work of all related construction, when required to ensure full coordination and proper fitting of the work.

J. Provide drawings showing dimensions and locations of concrete work required for the mechanical work.

K. Samples: Generally, samples will be required except for specific items identified in individual technical specification sections. If there is doubt on the part of the Owner's Representative as to the item or unit prepared for use, a sample may be called for. In such case, the contractor shall provide the requested sample or item and shall pay for packaging and transportation both ways. Item will remain the property of the submitter/contractor and may, if approved, be incorporated into the final work. Refer to individual specification sections for the requirements of providing samples and/or mock-ups.

1. Provide color samples for all pre-finished items.
2. Provide samples and types where specifically required in individual specification sections.

L. Reports: Provide the following report data:

1. Manufacturer's certified pressure tests on vessels.
2. Manufacturer's certified performance tests on operating equipment
3. Field pipe testing reports and certificates of approval.
4. Welder's certificates and field test report.
5. Field operating test results for operating equipment.
6. Performance report on the balancing of air and water systems. Testing and balancing reports to include all tests and measurements for initial, preliminary, interim and final testing.
7. Performance report and calculations for vibration isolation equipment.
8. Manufacturer's certified reports on motorized equipment alignment and installation.

1.20 GUARANTEES AND MAINTENANCE SERVICES

A. All workmanship, installation materials and equipment shall be cared for, sustained, maintained and serviced for the guarantee period at no additional cost to the Owner.
   1. Follow manufacturer's published recommendations for maintenance and servicing.

B. Guarantee all material, equipment, and workmanship for all equipment specified under the technical sections of Division 15 in writing to be free from defects of material and workmanship for a minimum period of one (1) year from the date of final acceptance by the Owner's Representative or from the date of project substantial completion whichever occurs first. Contractor shall purchase extended warranties as may be necessary in order to provide the owner with a one year warranty.
   1. Certain equipment specified in technical sections require guarantees and warranty periods exceeding the one (1) year period specified above and these periods will be clearly identified and provided for under this section.
   2. Replace without charge any material (including refrigerant) or equipment proving defective during this period.
   3. The guarantee shall include the performance of the equipment under all conditions of load, installing any additional items of control required for proper operation and protective devices including but not limited to the replacement of any refrigerant lost.
   4. If, after the approval of final payment and prior to the expiration of one (1) 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, the Contractor shall promptly, without cost to the Owner and in accordance with Owner's written instructions, either correct such Defective Work, or if it has been rejected by the 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, the 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 the Contractor.

C. Leave entire system installed under this Contract in perfect working order, and, without additional charge, replace any work or material which develops defects within the guarantee period, including all other work damaged as a result of such defects.

D. Non-durable, expendable items such as air filter media are not subject to replacement after the date of final acceptance or beneficial occupancy.

E. Manufacturers' Warranties
   1. The equipment manufacturer shall warrant that the equipment that has been furnished is free from defects in material and workmanship. Obligations under this warranty shall be as follows:
      a. The equipment manufacturer or supplier shall provide and pay for all labor, parts, accessories, refrigerant, lubrication, materials, freight and other services to repair or replace any equipment or part thereof which, in the course of

installation, start-up and testing is found to be defective.

b. For a period of one year from date of acceptance, the Contractor (through the manufacturer) shall replace any defective equipment or part thereof:
   (i) freight costs for return of defective parts, labor for parts replacement, and replacement of lost refrigerant, are the responsibility of the installing Contractor.

c. The Contractor shall provide an additional parts, labor, and refrigerant warranty on all refrigeration compressors under the same terms as Paragraph "a", for a period of four years.

d Tank linings - guarantee (pro-rata) all internal metal surfaces against failure from corrosion, condensation, or defects in workmanship for a period of ten years.

e Performance - where equipment is specified by size, guarantee that it shall have the capacity specified in the system in which it is installed.

2. The final acceptance of the equipment shall not be made until after the Contractor has adjusted his equipment, balanced the various systems, demonstrated that it fulfills the requirements of the drawings and specifications, and a certificate of beneficial occupancy or substantial completion has been issued by the Owner's Representative, including all required certificates of inspection and approval.

1.21 PERMITS AND CERTIFICATES

A. Prior to proceeding with any installation, prepare and submit to the proper authorities, for their approval, all required working drawings. Provide all necessary notices, obtain all permits and pay all local, state, and federal (if applicable) taxes, fees and other costs in connection with the work.

B. The Contractor shall be responsible for performing all controlled inspections required by applicable Administrative Building Code.

1.22 PRE-INSTALLATION MEETINGS

A. Refer to Division 1 for the requirements of pre-installation meetings.
   1. Contract shall notify Owner's Representative with at least seven (7) days notice of the proposed meeting.
   2. Pre-Installation meetings shall be required for the following systems:
      a. Underground plumbing site work.
      b. Utility service connections (sewer, water, gas).
      c. Fire protection sprinklers.
      d. Test & Balancing

PART 2 - DOCUMENTATION

2.1 OPERATING AND MAINTENANCE MANUALS & INSTRUCTIONS

A. Furnish manufacturers operating and maintenance instructions, parts lists and sources of supply for replacements in accordance with Division 1.

B. Provide the following Master Operating & Maintenance Manual (submit in

quadruplicate):

1. Complete sets of final and corrected shop drawings, maintenance and replacement parts manuals, and operating instructions, for equipment supplied.
2. Previously submitted and marked-up shop drawings, catalogue cuts, and product data of equipment shall not be the basis of the O & M Submittal. Provide clean, original product/data sheets in binders.
    a. Faxed copies of any data, equipment, certification, tests, instructions, or any other copied or illegible literature placed in the Operation & Maintenance manuals is not allowed.
    b. Poor quality copies of equipment product and data sheets shall not be allowed and shall be returned without action by the Owner's Representative.
3. O & M Format:
    a. Bind each set within a common 1", 2", or 3" three ring binder.
        (i) Fire Protection O & M shall be provided in its own separate binder(s). Duplicate information if that information is located in other sections of the O & M.
        (ii) Plumbing O & M shall be provided in its own separate binder(s). Duplicate information if that information is located in other sections of the O & M.
        (iii) HVAC Operations & Maintenance instructions shall be provided in its own separate binder(s). Duplicate information if that information is located in other sections of the O & M.
        (iv) Building Automation System O & M shall be provided in its own separate binder(s). Duplicate information if that information is located in other sections of the O & M.
        (v) Test & Balance Report shall be in its own binder.
        (vi) Commissioning Data & Report shall be provided in its own binder.
        (vii) Warranties of each piece of equipment supplied shall be provided in its own separate binder.
        (viii) "As-Built Drawings" shall be in their own separate package or binder, full size and bound into the above referenced groupings (i.e. - Sprinkler Drawings, Ductwork Drawings, HVAC Piping Drawings, Plumbing Piping Drawings. Do not fold "As-Built" Drawings. Provide the Owner with one (1) commercial type, five (5) stick upright plan holder complete with sticks and support frame and place Drawings on stick type racks.
    b. Label & tag each binder on front and sides to identify its' contents.
    c. Index and organize each binder with a table of contents, to

permit quick and convenient reference.

d. Arrange items in each binder as separate sections (i.e. - Air Handling Units, Pumps, Boilers, Chillers, Warranties, etc.)
   (i) First sheet in each section shall have the specific equipment's name and identifier (as established by plans), the name and address of equipment vendor or supplier including phone and fax number and name of contact.
   (ii) Second sheet shall be the warranty for that particular piece of equipment including start and/or ending date and length of warranty. (Duplicate warranty information in Warranty Binder.)

e. Parts List:
   (i) Provide the manufacturer's mechanical and electrical equipment parts lists of all components of the systems listed on the equipment schedules, control diagrams and wiring diagrams of controllers.
   (ii) List shall give system number, unit number, manufacturer's model number, and manufacturer's drawing numbers.

f. Operating Instructions:
   (i) Provide step by step operating instructions for each system or piece of equipment including preparation for starting, summer operation, winter operation, shutdown and draining.

g. Maintenance Instructions:
   (i) Provide periodic maintenance instructions for each type of equipment.

h. Trouble Shooting:
   (i) Provide manufacturer's manual for troubleshooting and repair instructions.

i. Construction shop drawings:
   (i) Provide original copy of final approved or accepted shop drawing.

j. Valve charts & Schedules:
   (i) Provide 8 ½ x 11 copy of valve chart(s) of the tag numbers, location and function of each valve.

k. Control Drawings:
   (i) Provide "As-Installed" control diagrams by the control manufacturer. Format of drawings shall be no smaller than 11" x 17".
   (ii) Provide description of the sequence operation by the control manufacturer.

l. Troubleshooting:
   (i) Recommended trouble shooting procedures in the event of foreseeable mechanical system failure.

m. Wiring Diagrams:
   (i) Provide complete "As-Installed" color coded wiring diagrams of all systems and all electric motor controller connections and interlock connections of

all other mechanical equipment.

n. Test Reports: Provide copies of the following test reports:
   (i) Air Balance.
   (ii) Water Balance.
   (iii) System Performance.
   (iv) Required Pressure Tests (sewer, water, gas, air, medical gases, etc.).
   (v) Fire Protection Water Flow Tests.
   (vi) Fire Protection Contractors Material and Test Certificates.
   (vii) Generator tank or other fuel oil tank test reports.

o. Provide PDF version of O&M Manual on DVD.

2.2 PROJECT RECORD DRAWINGS

A. Provide "Record Drawings" in accordance with the General Conditions Governing all Contracts, indicating in a neat and accurate manner a complete record of all revisions of the original design of the work.

1. "As-Built or Record Drawings" shall be in their own separate package or binder, full size and bound into the above referenced groupings (i.e. - Sprinkler Drawings, Ductwork Drawings, HVAC Piping Drawings, Plumbing Piping Drawings.
2. Do not fold "As-Built" Drawings.
3. Provide the Owner with one (1) commercial type, upright plan holder, (10 stick capacity) and place Drawings on sticks.

B. Keep and Maintain Project Record Documents in accordance with requirements of Division 1. During construction period, keep accurate records of installations made under this Division, paying particular attention to major interior and exterior underground and concealed piping, ductwork, etc.
   1. Include all field changes made and provide for an accurate record, (on reproductions of the Contract drawings or on appropriate shop drawings), of all deviations between the work shown and work installed.

C. Submit for approval three (3) bound sets of the required record drawings, manuals and operating instructions.

2.3 IDENTIFICATION MARKINGS

A. General: Apply identification tags, markers, etc. after burial, field painting and/or insulation are completed.

PART 3 - EXECUTION

3.1 COORDINATION AND LAYOUT

A. Study Drawings and Specifications to insure completeness of work required.
   1. Include supplementary items normal to manufacturers' requirements or standard accepted trade practices as necessary to complete work, though not specifically indicated or specified.

B. Verify measurements and conditions in field before starting work.

C. Examine materials to which work is to be applied and notify the Owner's

Representative, in writing, of any conditions existing which are detrimental to proper and expeditious installation of work.

1. Starting of work shall be construed as acceptance of conditions.

D. Confer with other trades, install work to avoid interference with other trades, and possible necessary adjustments to conform to structural conditions and work of other trades.

E. Coordinate and set inserts and locate openings in floors and walls in new construction.

1. Locate pipes and ducts to avoid interference with other work shown on the drawings and as directed by the Owner's Representative.

2. Keep all concealed pipes and ducts within the enclosing construction provided.

3. Arrange exposed work neatly in parallel runs and parallel with walls or structure, with uniformly spaced hangers and supports, and within the spaces assigned for each kind of work.

F. Make coordinated layouts showing concrete work required for housekeeping pads, equipment bases and inertia masses which are cast in place, including the location of anchors and dowels.

1. Coordinate the scheduling and placing of the concrete to suit the mechanical work schedules.
2. Concrete housekeeping pads are to cover the full area of each piece of equipment.
3. Concrete bases are to be of dimension and heights to suit the equipment.
4. The forming and placing of concrete shall be provided under this specification section.

3.2 MAINTENANCE OF EQUIPMENT AND SYSTEM PRIOR TO FINAL ACCEPTANCE

A. Maintain all installed equipment and systems in accordance with the manufacturer's published instructions, until final acceptance by the Owner's Representative, and take such measures as necessary to insure adequate protection of all equipment and materials during delivery, storage, installation, operating and shut-down conditions.

1. This responsibility shall include all provisions required to meet the conditions incidental to the delays pending final test of systems and equipment.
2. Maintain and periodically clean all equipment until final acceptance.

B. After installation of systems has been completed, operate the system to determine the capability of the equipment and controls to conform to the requirements of the drawings and specifications prior to performance testing.

3.3 DAMAGED EQUIPMENT

A. Any and all equipment, parts, components, etc., provided under this division which is either damaged by the contractor or which is received in damaged condition during shipping, transit, handling, or during installation shall be replaced. Dented, or damaged superficial, non-structural, equipment jackets or surface casings such as, but not limited

to; water heater jackets, boiler jackets, chiller insulation jackets, etc., shall either be repaired or replaced at the option and sole discretion of the Owner's Representative. If non-structural components are repaired, the finished product shall match original equipment exactly. Structurally damaged equipment shall be replaced.

B. Any equipment which develops surface rust, either through improper storage, handling or installation, shall be refinished by grinding the affected area down to bare (white) metal, then prepared with a rust preventive primer and finished with the original manufacturer's touch-up paint to match existing color.

3.4 EQUIPMENT INSTALLATION

A. Locate and set equipment anchor bolts, dowels and aligning devices for all equipment requiring them. Coordinate requirements of concrete work with General Contractor and other trades.

1. Level the equipment and grout solid between the equipment and the surface below. Grout to be premixed grout mixed in accordance with manufacturer's specifications.

B. The field assembly, installation and alignment of equipment is to be done under field supervision provided by the manufacturer or with inspections, adjustments and approval by the manufacturer.

C. Equipment startup

1. Each manufacturer of equipment shall provide qualified "start-up" personnel to inspect and approve equipment and to supervise the operating tests of the equipment. System commissioning shall be performed in accordance with ASHRAE standards. Notify the Owner's Representative at least ten (10) days prior to equipment start-up.

D. Equipment and system test operation:

1. Note: Equipment and system test operation described herein is separate and in addition to the requirements for "Training & Demonstration" articles. Refer to individual sections for requirements regarding "Training & Demonstration".

2. Notify the Owner's Representative in advance of beginning the equipment and system test operation. All equipment testing/demonstration shall be performed in the presence of the Owner's Representative. A minimum of 10 days notice is required before equipment and system testing.

3. Each piece of equipment shall be operated in its system to provide proper functioning.

4. Perform an operating test of each complete system for twenty-four hours continuous operation as a minimum to provide coordination and proper functioning of all related systems and controls.

5. The operating criteria for each test shall be determined in advance with the Owner's Representative approval whenever seasonal conditions shall not produce a full design load on any equipment or system.

6. Certify to the Owner's Representative that all equipment is functioning properly.

7. Should the apparatus fail to meet the Contract requirements, adjust, repair or replace all defective or inoperative parts and again conduct the complete performance tests.

3.5 UNCOVERING AND CORRECTION OF WORK

A. COVERING OF WORK

1. The following portions of the work are specifically required to be reviewed by the Owner's Representative prior to being covered:
   a. All underground piping.
   b. All above ground piping in walls.
   c. All ductwork above ceilings.
   d. All specific requests by the Owner's Representative prior to that portion of the Work being covered.

3.6 CLEANING AND ADJUSTING OF SYSTEMS & EQUIPMENT

A. Blow out, clean and flush each system of piping, and equipment to thoroughly clean the systems.
   1. Clean all materials and equipment, and leave in condition ready to operate and receive succeeding finishes where required.
   2. Adjust and align all equipment interconnected with couplings or belts.
      a. Adjust valves of all types and operating equipment of all types to provide proper operation.
      b. Remove and clean elements in all steam trap bodies.
      c. Clean all strainers. Replace temporary construction screens and install new permanent screens.

B. Lubricate equipment as recommended by the manufacturer, during temporary construction use, and provide complete lubrication just prior to acceptance.

C. Permanent equipment operated during construction shall not be abused or be used in service different from its design application.
   1. Temporary disposable filters shall be used during temporary operation.
   2. All expendable media, including belts used for temporary operation and similar expendable materials shall be replaced just prior to acceptance.
   3. Packing boxes of equipment operated during construction must be replaced just prior to system acceptance, using materials and methods specified by the supplying manufacturer.

D. Equipment furnished with factory finishes where marred, scratched, or damaged shall be retouched and repainted to present a new appearance.

E. Furnish and maintain protection for all of the work whether completed or in progress.
   1. Furnish and install coverings and enclosures for equipment..

F. New and/or existing operating equipment and systems shall be clean and dust free inside and out.
   1. Concealed and unoccupied areas such as plenums, pipe and duct spaces and Equipment Rooms shall be free of rubbish and swept, vacuumed and/or wiped clean at time of acceptance.
   2. Refer to Division 15, Section 15190 - "Mechanical Identification" for requirements of marking and tagging of equipment.

3.7 PAINTING

A. General painting is typically performed by the Division 9 Contractor. Contractor shall either perform specialized painting as called for below in the following conditions or he shall advise the Contractor prior to bidding

of these requirements set forth as follows:

1. Thoroughly clean all mechanical surfaces, requiring prime painting, of rust, loose scale, oil and grease.
2. Dry all surfaces before painting.
3. Paint only under proper ambient conditions.
4. Do not paint over controls, or on equipment nameplates, factory labels or sprinkler heads.

B. Paint all mechanical equipment not otherwise specified to be painted or primed at the factory with one (1), lead free, prime coat (min 2 mil) of rust resistive/prohibitive paint.

C. Provide field painting as follows:

1. Paint all roof mounted equipment to match color of roof.
2. Paint all exposed natural gas piping located within building, exposed on roof, or exposed to the exterior.
3. Paint all exposed, un-galvanized iron work, including un-insulated ferrous piping and conduit system components, hangers, supports, equipment bases, and apparatus; Note: Prime coat with a red, rust preventative, lead-free paint. (Example but not limited to: exterior un-insulated condenser water piping.)
4. Paint all un-insulated interior and exterior ductwork and casings, exposed to view or weather, and all exposed un-galvanized surfaces of conduit and piping and of equipment prime painted at the shop. (Example: interior and exterior un-insulated galvanized smoke exhaust and supply ductwork or all un-insulated exhaust/supply ductwork located on roof.)
   a. Provide one (1) prime coat (minimum 3 mil thick) zinc chromate for galvanized surfaces.
5. Field paint inside surfaces of all duct work where ductwork is visible through registers grilles and louvers:
   a.. Paint with one (1) coat of 2 mil thick flat white or black paint to match surrounding finishes. Coordinate exact color with Owner's Representative.
6. Paint welds of all piping with rust-preventive spray paint immediately after welding.
7. Paint all fire protection piping installed in fire pump room except galvanized piping.
8. Paint all fire protection piping installed in riser closets (sprinkler risers).
9. Paint all fire protection piping located exposed in stairs or stairwells.
10. Paint all fire protection piping where so indicated in individual technical specification sections or shown on Plans.
11. Paint all vertical edges of concrete equipment pads "SAFETY - YELLOW".

D. Provide quantities (linear footage & sizes) of the following piping/equipment/duct systems to the General Contractor for painting:

1. Chilled water piping - All chilled water piping is to be painted prior to insulation being applied.
2. Condenser water supply & return pipe in Central Plant and exposed on exterior at cooling tower.
3. Interior (exposed to view) natural gas piping in central plant.

4. Interior (exposed to view) natural gas piping in building.
5. Exterior natural gas piping on roof or exposed to exterior.
6. Interior exposed fuel oil piping.
7. Ducts exposed on roof & to exterior.
8. Roof mounted equipment such as goose necks, elevator vents, fresh air intakes, exterior louvers provided by the Div. 15 Contractor.
9. Exposed gas meters.
10. Exposed water meters & backflow preventors.
11. Fire protection piping.

3.9 CONNECTIONS TO EQUIPMENT

A. Provide mechanical connections to equipment and fixtures requiring such connections which are supplied by Owner's Representative or under other divisions of these specifications.

B. Provide unions, nipples, adapters, valves, flexible connections, and other trim required for final connections for each such fixture or item of equipment, for complete operation, servicing, and maintenance.

3.10 WORKMANSHIP

A. Perform all work in a practical, neat and workmanlike manner with mechanics skilled in work, and using the best practices of the trade involved.

B. No work shall be concealed until it has been inspected and approved by the Owner's Representative.

C. Workmanship or materials not meeting the requirements of the specifications and drawings and satisfaction of the Owner's Representative shall be rejected and immediately replaced in an acceptable manner, without additional cost to the Owner's Representative.

3.11 LUBRICATION

A. All equipment furnished, installed or connected under this division, shall be inspected for proper lubrication when connected and before operation of the equipment is begun.

B. The Contractor for the work of this division shall be held responsible for any damage to equipment that is operated without having been properly lubricated or serviced.

3.12 USE OF PREMISES AND CLEANING

A. Remove and dispose of all waste materials and rubbish due to all construction operations under the Contract, except as otherwise noted, and keep the building free from rubbish and dirt caused by his and/or his Sub-Contractors' employees.

1. During the entire progress of the work, rubbish removal shall be made frequently so as to prevent any potential safety or health hazard.

B. Upon completion of the work, remove all protection, paint, putty, and other stains from all fixtures and glass and leave the premises thoroughly broom cleaned.

3.13 CUTTING, ALTERING AND PATCHING

A. Provide all cutting, chasing, drilling, altering and rough patching required

for the work of this division.

B. Do all shoring, bracing, cutting, patching, piecing out, filling in, repairing and refinishing of all present work as made necessary by the alteration and the installation of new work.

C. All holes and openings occurring in the existing floors after equipment, partitions, floors, steel work, conduits and pipes are removed or installed shall be closed up with materials similar to the adjacent work.

D. The size and location of items requiring an opening, chase or other provisions to receive it shall be given by the trade requiring same in ample time to avoid undue cutting of any new work to be installed. These provisions shall not relieve the Contractor from keeping other trades informed as to the required opening, chases, etc., nor from responsibility for the correctness thereof, nor for cutting and repairing after the new work is in place.

E. Include all cutting, repairing and patching in connection with the work that may be required to make the several parts come together properly and fit it to receive or be received by the work of other trades, on the drawings and/or specified, or reasonably implied by the drawings and specifications.

F. All repairing, patching, piecing-out, filling-in, restoring and refinishing shall be neatly done by mechanics skilled in their trade to leave same in condition satisfactory to the Owner's Representative.

G. Materials and their methods of application for patching shall as a minimum, comply with applicable requirements of the specifications.

1. Materials and workmanship not covered by the specifications and items of work exposed to view adjoining existing work to remain shall conform to similar materials and workmanship existing in or adjacent to the spaces to be altered.

G. Cutting, repairing and patching shall include all items shown on the drawings, specified in the specifications or required by the installation of new work or the removal of existing work.

H. Remove partitions, walls, suspended ceilings, etc., as necessary to perform the required alterations or new construction work.

1. Avoid damage to construction and finishes that are to remain.

I. Protect and be responsible for the existing building, facilities and improvements if any.

1. Any disturbance or damage to the work, the existing building, and improvements, or any impairments of facilities resulting from the construction operations, shall be promptly rectified, with the disturbed, damaged, or impaired work, restored, repaired or replaced at no extra cost.

J. All alterations to the existing work shall be restored to a condition satisfactory to the Owner's Representative.

K. All holes in masonry floors and walls are to be core drilled.

L. Disturbed concrete and /or cement floor areas shall be patched with approved type latex mortar.

1. When cement mortar is used for patching, the surfaces shall be depressed a minimum depth of one inch (1").

M. Reinstall all weather protection work in waterproof manner.

N. Openings in roofs:

1. Openings in roofs shall be kept properly plugged and caulked at

all times, except when being worked on, to preclude the possibility of flooding or other damage due to storms or other causes. After completion of work, openings shall be permanently sealed.

O. Temporary openings:
   1. All temporary openings cut in walls, floors or ceilings for pipe or duct work shall be closed off with non-combustible material except when mechanics are actually working at the particular opening.

3.14 CONTRACTOR REQUESTED FIELD OBSERVATIONS

A. During the course of, and at stages appropriate to the progress of construction, the Contractor or Owner's Representative may request periodic field observations of the design professionals. If the field observation is at the request of the Contractor or the Owner's Representative, the Contractor shall provide all necessary ladders, scaffolding, lifts, safety harnesses or other equipment in order for the Owner's Representative to safely and adequately perform the requested observations.
   1. Requests for observations shall be made a minimum of seven (7) days in advance of the requested date of observation.
   2. All equipment, ladders, lifts, safety nets, scaffolding, etc., shall be provided and in place for the use of the Owner's Representative.
   3. All equipment panel covers, electrical panels, or other equipment shall be opened by the Contractor for viewing by the Owner's Representative.
   4. The Contractor shall make available a mechanic or technician of that field in order to answer questions of the designer, make any and all adjustments and/or corrections and to assist the Owner's Representative.

3.15 SPARE PARTS

A. Refer to individual specification sections for exact number and requirements for each item provided under this Project.

B. In general:
   1. Provide one (1) set of spare belts at each belt driven piece of equipment.
      a. Contractor shall adjust all belts at the Request for Substantial Completion and at 45 days after Substantial Completion has been awarded.
   2. Provide one (1) set of spare pump seals at each pump.
   3. Provide one (1) set of spare keys for all lockable cabinets, control panels, access panels, etc.
   4. Replace air compressor filters at Substantial Completion.
      a. Provide one (1) set of spare air compressor filters at completion of project.
      b. Provide touch-up paints for equipment.

C. Provide spare items (batteries, motors, sprinkler heads, valve stem packing, operating keys, water treatment chemicals, lubricant, etc.) for equipment spares specifically so indicated in individual specification sections or on Drawings.

END OF SECTION 15001

SECTION 15310 - FIRE PROTECTION PIPING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Pipe, fittings, valves, covers, and connections for combination sprinkler and standpipe systems including exterior piping systems.

1.2 RELATED SECTIONS

A. Division 9, Section - "Painting": Preparation and painting of fire protection piping systems.
B. Division 2, Section - "Excavation, Filling and Grading" for further specific trenching and backfilling requirements.
C. Division 15, Section - "Mechanical General Provisions"
D. Division 15, Section 15325 - "Sprinkler Systems"

1.3 REFERENCES

A. ASTM A351, A743, A744 Stainless Steel Fittings
B. ASTM A312 Stainless Steel Pipe
C. AWWA C110 - Ductile Iron and Gray Iron Fittings.
D. AWWA C151 - Ductile Iron Pipe, Centrifugally Cast.
E. NFPA 13 - Installation of Sprinkler Systems.
F. NFPA 24 - Installation of Private Fire Service Mains and Their Appurtenances.
G. UL - Fire Resistance Directory.
H. UL 262 - Gate Valves for Fire-Protection Service.
I. UL 312 - Check Valves for Fire-Protection Service.
J. UL 405 - Fire Department Connections.

1.4 SUBMITTALS FOR REVIEW

A. Section - "Submittal Procedures": Procedures for submittals.
B. Product Data: Provide manufacturers catalogue information. Indicate valve data and ratings.
C. Shop Drawings: Indicate pipe materials used, jointing methods, supports, floor and wall penetration seals. Indicate installation, layout, weights, mounting and support details, and piping connections.

1.5 SUBMITTALS AT PROJECT CLOSEOUT

A. Section - "Closeout Submittals": Record actual locations of components and tag numbering.
B. Operation and Maintenance Data: Include installation instructions and spare parts lists.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
B. Installer Qualifications: Company specializing in performing the work of this section and shall be licensed to perform sprinkler work in the State of Louisiana.

1.7 REGULATORY REQUIREMENTS

A. Conform as a minimum to UL and FM.
B. Sprinkler Systems: As a minimum, conform work to NFPA 13.
C. Welding Materials and Procedures: Conform to ASME Code and AWS D10.9.
D. Valves: Bear UL and/or FM label or marking. Provide manufacturer's name and pressure rating marked on valve body.
E. Products Requiring Electrical Connection: Listed and classified as suitable for the purpose specified and indicated.

1.8 DELIVERY, STORAGE, AND PROTECTION

A. Refer to Division 1, Section -"Temporary Facilities & Controls": Transport, handle, store, and protect products.
B. Deliver and store valves in shipping containers, with labeling in place.
C. Provide temporary protective coating on cast iron and steel valves.
D. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.
E. Store all materials a minimum of 12" above grade when stored in exterior environment, 6" when stored on slab. Do not allow materials to contact ground. Provide end caps on all piping to prevent dirt or other construction debris from entering piping while stored.

1.9 EXTRA MATERIALS

A. Provide two sets of valve stem packings for each size and type of valve installed.

PART 2 - PRODUCTS

2.1 BACKFLOW PREVENTOR ASSEMBLY

A. Backflow Preventors:
    1. Provide Reduced Pressure Principal or Double Check Assembly as required by local governing authority and at a location approved by the Authority Having Jurisdiction.
    2. Enclose backflow assembly in a heated enclosure.
B. Heated Valve Assembly Enclosure
    1. Provide factory assembled, heated, backflow preventor assembly enclosure.
        a. Acceptable Manufacturers
            1) Hot Box
            2) Safe - T - Cover
            3) Aquashield
    2. Provide insulated valve enclosure on all above ground exposed fire protection piping. Insulate fire protection piping which is NOT located in heated valve box assembly.
    3. Insulation shall be polyisocyanurate foam sprayed in place with a minimum of 1-inch thickness average coverage.
        a. Dimensional stability shall be less than 2% linear shrinkage.
        b. Compressive strength shall be 20 psi or greater.
        c. Flame spread rating shall not exceed 25.

4. Enclosure shall be of aluminum.
5. Structural components shall be of aluminum.
6. Multi-sectional enclosures shall be fitted together with overlapping "tongue & groove" joints.
7. The enclosure shall be securely attached to a concrete base with anchor brackets installed on the interior of the enclosure, through the flange base of the enclosure itself or through a stainless steel anchor hinge.
8. Access panels shall be provided to allow access for operations and inspections without the removal of the entire enclosure.
9. Heating equipment shall be furnished by the enclosure manufacturer to maintain a temperature of 40 deg F with an outside temperature of (-) 10 deg. F.
   a. Factory assemble heater shall be ETL, UL, or CSA certified.
   b. Heating equipment shall be installed above the level of the backflow equipment.
   c. Electrical power source shall be GFI protected, with a minimum of 18" clearance from the receptacle base to the top of slab.

2.2 HEAT TRACE CABLE ASSEMBLY

A. Heat Trace Cable:
   1. Exposed exterior system piping shall be insulated in accordance with Section 15250 - "Mechanical Insulation" and heat traced.
      a. Heat trace tape shall be UL 515 Listed for fire line applications.
      b. Heat trace tape shall be installed and then insulated. Provide applicable power kits and end strips and manufacturer's listed controller.
         1) Heat Trace Manufacturers:
            a) Chromalox Incorporated SRL Cable

2.3 BURIED PIPING

A. PVC Pipe (On exterior of building) - ASTM - D2241; AWWA - C-900, Class 150-DR-18.
   1. Fittings - AWWA C110.
   2. Joints - ASTM F-477'; AWWA C-111.
   3. Mechanical Couplings - Shaped composition sealing gasket, stainless steel bolts, nuts and washers.

B. Refer to Division 2, Section - "Excavation, Filling and Grading" for further specific trenching and backfilling requirements.

2.4 ABOVE GROUND PIPING

A. General: Refer to PART 3 - Article 3.2 "PIPE APPLICATIONS" or on individual plan sheets for identification and type of piping where the below materials are used.
   1. All above ground wet system fire protection piping located within non-heated enclosures shall be insulated.

B. Stainless Steel Pipe: ASTM A53; ASTM A135; ASTM A795; Schedule 40, black and galvanized.

1. Stainless Steel Fittings: ASTM A351, A743, A744
2. Mechanical Roll Grooved Couplings (Cut grooves not acceptable): Stainless iron housing clamps to engage and lock, "C" shaped elastomeric sealing gasket, stainless steel bolts, nuts, and washers.
   a. Listed for dry or wet pipe use.
   b. Grooves shall be rolled (cut grooves not allowed).
3. Mechanical Tees are not acceptable for use.

2.5 PIPE HANGERS AND SUPPORTS

A. Conform to the General Requirements of NFPA 13 and NFPA 14 and the additional design and installation requirements as listed below:
   1. Provide hangers and vertical piping restraints within 12 inches on all sprinkler drops at end of branch where system pressure exceeds 100 psig in accordance with NFPA 13.
   2. Provide hangers within 12 inches of each turn of direction (horizontal elbow) in sprinkler piping.
   3. Powder- driven Studs are not acceptable.
   4. Prime coat all sprinkler pipe hangers where indicated in Part 3 - "Execution"
   5. Hangers for Pipe Sizes 1 to 8 Inch: Provide Stainless steel, Stainless steel, adjustable swivel, split ring hangers.
   6. Vertical Support: Steel riser clamps.
   7. Floor Support: Stainless adjustable pipe saddles, lock nut, nipple, floor flange, and concrete pier or steel support.

2.6 FIRE PROTECTION GATE VALVES

A. Up to and including 2 Inches:
   1. Manufacturers:
      a. Nibco Model T-104-O.
      b. Kennedy Model C 509
      c. Stockham Model B-133.
   2. Bronze body, bronze trim, rising stem, handwheel, solid wedge or disc, threaded ends.

2.7 BALL VALVES

A. Up to and including 2 Inches (Ball valves are not to be used over 2 inches):
   1. Manufacturers:
      a. NIBCO KG-505-W-8
      b. Victaulic Series 728
   2. Bronze two piece body, brass, full port, chrome plated bronze, or stainless steel ball, teflon seats and stuffing box ring, lever handle and balancing stops, threaded ends. 300 psi pressure rated.

2.8 BUTTERFLY VALVES

A. Cast or Ductile Iron Body:
   1. Manufacturers:
      a. Kennedy Fig. O1G
      b. Victaulic Series 705W
   2. Cast or ductile iron, chrome or nickel plated ductile iron or

aluminum bronze disc, resilient replaceable EPDM seat, wafer, lug, or grooved ends, extended neck, handwheel and gear drive and integral indicating device , and internal tamper switch rated 10 amp at 115 volt AC.

2.9 CHECK VALVES

A. Up to and including 2 Inches:
   1. Manufacturers:
      a. Nibco Model KT403W
   2. Bronze body and swing disc, rubber seat, threaded ends.

B. Over 2 Inches:
   1. Manufacturers:
      a. Nibco Model G917-W
      b. Victaulic Series 717
   2. Iron body, bronze trim, swing check with rubber disc, renewable disc and seat, flanged ends with automatic ball check. 250 psi pressure rated

2.10 DRAIN VALVES

A. Compression Stop:
   1. Manufacturers:
      a. Nibco Model T301-W
   2. Bronze with hose thread nipple and cap.

2.11 BACKFLOW PREVENTER VALVE ASSEMBLY

A. Manufacturer
   1. Apollo
      a. Apollo Valves DCDALF 4An Series with by-pass meter, bypass double check valve assembly, Butterfly Valves and tamper switches
   2. Wilkins
      a. Model 350 ASTDA with by-pass meter, bypass double check valve assembly Butterfly Valves and tamper switches

PART 3 - EXECUTION

3.1 PREPARATION

A. Ream pipe and tube ends.
   1. Remove burrs.
   2. Bevel plain end ferrous pipe.
   3. Remove scale and foreign material, from inside and outside, before assembly.
   4. Prepare piping connections to equipment with flanges or unions.

3.2 PIPE APPLICATIONS

A. Underground Pipe: Listed CL 900 DR 18 PVC pipe and ductile iron fittings, 150 lb working pressure. Refer to Division 2, Section - "Excavation, Filling and Grading" for further specific trenching and backfilling requirements.
   1. Depth of Bury:

a. Minimum 36 inches depth of bury from top of pipe to finished grade in accordance with NFPA 24.
   1) Provide pipe tape markers and # 12 copper trace wire over entire length of pipe.
b. Minimum 42 inches depth of bury under driveways, slabs, parking lots, etc., in accordance with NFPA 24.
   1) Provide pipe tape markers and # 12 copper trace wire over entire length of pipe.

B. Above Ground Pipe: Provide piping in accordance with the following schedule of systems:
1. Sprinkler pipe (dry pipe systems 1 1/4 inches and below): Schedule 40, hot dipped galvanized steel pipe with Hot dipped galvanized screwed fittings (note: electro plating not allowed)
2. Sprinkler pipe (dry pipe systems - 1 ½ thru 5 inches): Hot Dipped Galvanized Schedule 40 steel pipe with rolled grooves and hot dipped galvanized rolled grooved fittings
3. Sprinkler pipe (dry pipe systems -6 inches and larger): Hot Dipped Galvanized Schedule 10 steel pipe with rolled grooves and hot dipped galvanized rolled grooved fittings
4. Air compressor lines: Schedule 40 stainless steel pipe - screwed fittings
5. Drain lines: Schedule 40 galvanized steel pipe - screwed fittings
   * all exposed sprinkler pipe where indicated to be painted shall be properly prepared for painting

3.3 INSTALLATION

A. Heated Backflow Prevention Device enclosure shall be assembled and mounted on concrete pad in accordance with the manufacturer's published installation instructions.
   1. Enclosure shall be installed plumb, level, and square.
B. Install piping in accordance with NFPA 13 for Sprinkler Systems and NFPA 24 for service mains. Refer to Division 2, Section - "Excavation, Filling and Grading" for further specific trenching and backfilling requirements.
C. Route piping in orderly manner, plumb and parallel to building structure. Maintain gradient.
D. Install piping to conserve building space, to not interfere with use of space and other work.
E. Group piping whenever practical at common elevations.
F. Sleeve pipes passing through partitions, walls, and floors.
G. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
H. Pipe Hangers and Supports:
   1. Install in accordance with NFPA 13 except where specifically indicated in order to raise the minimum standards set by NFPA.
   2. Install hangers to provide minimum ½ inch space between finished covering and adjacent work.
   3. Place hangers within 12 inches of each horizontal elbow.
   4. Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.

5. Support vertical piping at every floor. Support riser piping independently of connected horizontal piping.
6. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
7. Prime coat exposed steel hangers and supports or provide factory primed hangers and supports. Refer to Section - "Painting". Hangers and supports located in areas not generally in view of the general public including crawl spaces, pipe shafts, and above suspended ceiling spaces are not considered exposed.

I. Electrical Service to Fire Protection Systems:
1. Except for high voltage electrical service to fire pumps, jockey pumps, and pump controllers, if electrical circuits or services are required for the operation of the fire protection system(s) at a location selected by sprinkler designer, the sprinkler contractor shall coordinate the location and placement of required electrical circuit(s) with the electrical sub-contractor. It is the responsibility of the sprinkler contractor to coordinate the number, size, type, and location of electrical circuits in the field with other trades. The fire protection contractor shall be responsible for providing and/or paying for all costs associated with providing electrical service for his equipment prior to bidding.

J. Drains:
1. Where sanitary sewer drains, storm drains, hub drains, floor drains, etc., are required for the draining of fire protection systems at a location indicated or selected by the sprinkler designer, the sprinkler contractor shall coordinate the location and placement of required drains with the plumbing sub-contractor. It is the responsibility of the sprinkler contractor to coordinate the number, type, and location of drains in field with other trades. Contractor shall be responsible for covering all costs associated with providing for and/or paying for drainage piping for his equipment prior to bidding.

K. Slope piping and arrange systems to drain at low points.
1. Use eccentric reducers to maintain top of pipe level.
Do not penetrate building structural members unless indicated.

L. Provide sleeves when penetrating building footings, floors and walls. Seal pipe and sleeve penetrations to achieve fire resistance rating equivalent to fire separation required.

M. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.

N. Die cut threaded joints with full cut standard taper pipe threads with red lead and linseed oil or other non-toxic joint compound applied to male threads only.

O. Install valves with stems upright or horizontal, not inverted. Remove protective coatings after installation.
1. Provide gate or butterfly valves for shut-off or isolating service.
2. Provide drain valves at main shut-off valves, low points of piping and apparatus.

3.4 TRAINING & DEMONSTRATION

A. Demonstration Services: Arrange and pay for a factory-authorized service representative to train Owner's maintenance personnel on the following:
   1. Procedures and schedules related to start-up and shut down, troubleshooting, servicing, preventative maintenance, and how to obtain replacement parts.
   2. Familiarization with contents of Operating and Maintenance Manuals specified in Division 1, Section - "Closeout Submittals" and Division 15, Section - "Basic Mechanical Materials & Methods."
   3. Provide Service Manuals for each sprinkler system specified.

B. Provide three (3) hours of factory authorized training and demonstration.
   1. Refer to Section - "Mechanical General Provisions" for video taping requirements.
   2. Schedule training with a minimum of seven (7) days notice to Owner's Representative.

END OF SECTION 15310

SECTION 15325 - SPRINKLER SYSTEMS

PART 1 - GENERAL

1.1 REQUIRED PRE-BID FLOW TESTS

A. Prior to submitting a bid, the Sprinkler Contractor shall perform a flow test utilizing the nearest municipal fire hydrant(s) at the Project site in order to substantiate the basis of the Contractor's design. The flow test shall be performed using gauges which have been calibrated within twelve (12) months of the flow test. The flow test shall be performed in accordance with the recommendations included in NFPA 291.
   1. The Contractor shall utilize a five (5) psig reduction/safety factor in the field flow test data (static & residual) and a ten (10) percent reduction/safety factor in the flow in GPM obtained during the flow test for the basis of design in order to calculate and/or perform a hydraulic analysis of the proposed system.

B. All flow test data shall be performed by the Contractor at no cost to Owner.
   1. Contractor shall notify the Owner's Representative a minimum of seven (7) days prior to flow tests being performed.
   2. Owner's Representative shall witness all flow tests.
   3. Provide a report to Owner's Representative stating location, time and duration of test.

1.2 SECTION INCLUDES

A. Dry-pipe sprinkler systems. Note: The utilization of glycol anti-freeze wet-pipe sprinkler systems for freeze protection is not allowed!

B. Sprinkler system design, installation, and certification including site work and insurances.

C. Fire department connections.

1.3 RELATED SECTIONS

A. Division 2, Section - "Excavation, Filling and Grading"

B. Division 15, Section - "Mechanical General Provisions"

C. Division 15, Section 15310 - "Fire Protection Piping"

1.4 REFERENCES

A. NFPA 13 - Installation of Sprinkler Systems.

B. FM - Factory Mutual Approval Guide.

C. NFPA 70 - National Electrical Code.

D. UL - Fire Resistance Directory.

E. UL 199 - Automatic Sprinklers.

F. Warnock Hersey - Certification Listings.

1.5 SYSTEM DESCRIPTION

A. The sprinkler system is to provide coverage for the entire pier and heated/insulated valve enclosure.
   1. Note: It is not the intent of this specification to design or to construct the sprinkler system in accordance with the "minimum" design criteria allowed by the applicable codes. Where indicated, certain areas, specific equipment or methods may exceed the "minimum" criteria required by applicable codes. Refer to Section -

"Mechanical General Provisions", Article 1.3 - "Compliance with National & Local Code Requirements."

2. The contractor shall refer to both plans and specifications in order to accomplish the design intent.

B. Provide a system designed in accordance with NFPA 13 for Light hazard, Ordinary hazard, Group 1, Ordinary hazard, Group 2, or other hazard classification as indicated on the various plan sheet.

C. Interface the sprinkler system with the building Fire and Smoke Alarm Systems and Smoke Evacuation systems. Coordinate electrical power requirements or control interfaces with the various sub-contractors.

D. Provide fire department connections where indicated. Coordinate thread patterns with the local fire department serving the site.

1.6 ELECTRICAL REQUIREMENTS

A. Note: It is the intent of this section that prior to bidding, the fire protection contractor shall coordinate and either provide, or pay to provide, all of the minor electrical power and control services, circuits, wiring and conduit required for the fire protection equipment.

B. It is not the intent of this section that the fire protection contractor provide or pay for the necessary electrical service to the emergency fire pump, jockey pump, controllers or associated wiring and conduit required to connect fire protection devices (such as limit switches, flow switches, tamper switches, etc.) to the fire alarm system. Other coordination issues and requirements between sub-contractors however, remain.

1.7 PLUMBING REQUIREMENTS

A. Sprinkler Drains: "Note" - Where sewer or storm drains are required for any component of the sprinkler system the sprinkler contractor shall provide such drains as required to prevent spillage of water onto or within the building. Contractor shall coordinate with other trades and pay for and/or provide at the point of discharge, all floor drains, hub drains, catch basins, etc., needed for the maintenance and draining of the sprinkler system.

1.8 SUBMITTALS FOR REVIEW

A. Refer to Division 1, Section - "Submittal Procedures": for full submittal requirements.

B. Product Data: Provide data on all system components including fire pumps (if applicable), pipes, sprinklers, valves, flow switches, pressure reducing devices, meters, and other specialties, including manufacturers catalog information. Submit performance ratings, rough-in details, weights, support requirements, and piping connections. Contractor shall submit a minimum of one (1) printed set of shop drawings, hydraulic calculations, and equipment cut sheets to the Architect/Engineer for review. Architect/Engineer will review the submittal, and if it is found to be acceptable for submittal to the State Fire Marshals office for review, the Architect/Engineer will stamp it with their shop drawing review stamp. This stamped submittal will be scanned and a "PDF" copy will be E-mailed to the contractor for electronic submittal to the State Fire Marshall for review. Contractor shall be responsible for all fees and costs as may be required for final acceptance of system(s) by all Authorities Having Jurisdiction.

C. Shop Drawings: Submittal to the State Fire Marshal shall occur after Contractor has obtained a "No Exception Taken", or "Appears to Comply" comment on the System Shop Drawings from the Architect/Engineer. No payment will be made to the contractor for any automatic sprinkler system work until submittal is forwarded to the AHJ for approval.

1. Provide State Fire Marshal "Plan Review Application" with submittal. Provide project name, project address, occupancy and owner on application. Drawings shall include "Preparer of Shop Drawings" indicated on each sheet.
2. Drawing shall be legible and drawn to a scale suitable for proper definition and clarity. In no case shall the scale be less than 1/8" = 1'- 0". Indicate partitions or small enclosures in which no sprinklers are to be installed. Provide graphic representation of the scale used on all plans.
3. The submittal shall include a list of all materials and components, to be installed on the project, by manufacturer, model number, and size. Contractor shall include quantity of each..
4. Provide the number of sprinklers on each riser per floor.
5. Provide the total number of sprinklers on each dry pipe system, pre-action system, combined dry pipe pre-action system, or deluge system.
6. Provide the approximate capacity in gallons of each dry pipe system.
7. Provide the location and electrical characteristics of all air compressors, pre-action cabinets, and any and all other components which require electrical services.
8. Provide type of fittings and joints and location of all welds and bends. The contractor shall specify on the drawing any sections to be shop welded and the type of fittings or formations to be used.
9. Indicate piping provisions for flushing.
10. Provide kind, type and location of alarm bells.
11. Provide size, location, of hose outlets, hand hose, and related equipment if used.The hydraulic reference point shown on plans shall correspond with comparable reference points on the hydraulic calculation sheets.
12. Provide full height cross section of building or schematic diagram.
13. Provide the occupancy class or each area or room identified.
14. All sprinklers shall be identified by make, type, orifice size, temperature rating, thermal sensitivity including if applicable, all existing heads affecting the submitted scope of work.
15. For large storage areas, provide the storage height, method of storage, description of commodities, etc. If the project is a specialized storage design, provide a complete design statement denoting the methodology for arriving at the project area/densities.
16. All piping shall be identified by size, type, inside diameter, and schedule.
17. Submit layout of finished ceiling areas indicating sprinkler head locations and type, fully coordinated with ceiling installation. Provide ceiling information such as heights, architectural profiles, (vaults, coffers, furrings, etc.), construction assembly, (combustible ceiling or framing, significant combustibles in ceiling cavity, etc.).

18. Provide sprinkler obstructions denoted (suspended light fixtures, duct work, fire alarm strobes, fire alarm horns, speakers, motion detectors, or other architectural items.)
19. Show all HVAC openings and all ductwork over 48" in width/height.
20. Indicate the method of maintaining the sprinkler system at or above 40 deg F. Describe all unheated applicable areas and explain the methodology of all sizes, types, locations, etc. of freeze protection devices.
21. Graphically highlight each hydraulic area (perimeter dashed lines, etc.) title each area on the plans with matching title on each calculation sheet.
22. Provide the locations and ratings of fire walls, unprotected vertical openings, and other assemblies affecting sprinkler design.
23. Provide a site plan showing location and size of city mains at street, denoting dead end or circulating or denote private supply system.
24. Provide the total area protected by each system on each floor.
25. Provide and indicate the location, type, and listing of each pipe hanger.
26. Provide the underground pipe size, length, location, type, point of connection to city main, bury depth, thrust blocks, and all appurtenances (valve types, water meters, backflow preventors, valve pits, etc.) with appropriate back-up data sheets denoting manufacturer's fire protection equipment listing and friction/pressure loss for each device.
27. Provide all hydraulic nameplate information.
28. Hydraulic reference points shall coordinate between the drawings and calculations.
29. Provide the setting for pressure reducing devices denoted.
30. Submit hydraulic calculations, building sections, site plan indicating piping layout, detailed building piping layouts, hangers and supports locations, sprinklers, components and accessories. Indicate system controls.

D. Hydraulic Calculations:
1. Verify that the water supply, test location, date (must be 4 months current) of peak demand time (or calculated adjustment) and account for test elevations at calculations. Reduce the static and residual pressures by 5 psig and calculate on this basis.
2. Verify the hazard classification (light, ordinary, special occupancy, etc.).
3. Verify the design criteria (density/sq. ft. over the hydraulic design area).
4. Verify the location of the design area calculated (most hydraulically demanding not always the most physically remote).
5. Verify the physical dimensions of the area calculated (design area shall not extend beyond the designated area served by each sprinkler). Sufficient length parallel to the branch lines or cross mains, as required.
6. Verify the densities (sprinklers flowing at or above minimum required flow rate).

7. Verify the pipe sizes, lengths, equivalent lengths of fittings, and flow paths (account for all pressure losses).
8. Verify the hose demand and provide the total quantity of water and the pressure required for hose streams both inside and outside.
9. Confirm that the system demand is at or less than the available water supply (include demand versus supply graph).
10. Sprinkler Drains: "Note" - Where drains are required for any component of the sprinkler system such as pre-action cabinets, standpipes, etc. the sprinkler contractor shall provide such drains as required to prevent spillage of water onto or within the building. Contractor shall coordinate with other trades and pay for and/or provide floor drains, hub drains, catch basins, etc. needed for the maintenance and draining of the sprinkler system.
11. Samples: Submit two samples of each style of sprinkler head specified. Submit shop drawings, product data, hydraulic calculations to Architect for submittal to the Office of State Fire Marshal. Contractor shall be responsible for all costs involved and revisions as may be required to obtain approval, submit seven (7) copies.

1.9 SUBMITTALS AT PROJECT CLOSEOUT

A. Section - Project Record Documents: Record actual locations of sprinklers and deviations of piping from drawings. Indicate drain and test locations.
B. Manufacturer's Certificate: Certify that system has been tested and meets or exceeds code requirements.
C. Operation and Maintenance Data: Include components of system, servicing requirements, record drawings, inspection data, replacement part numbers and availability, and location and numbers of service depot.
D. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.
E. Provide a copy of NFPA 25 - "Standard for Inspection, Testing, and Maintenance of Water Based Fire Protection Systems."

1.10 QUALITY ASSURANCE

A. Perform Work in accordance with NFPA 13. Maintain one copy on site.
B. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
C. Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years documented experience.
D. Design system under direct supervision of a NICET III Certified Technician experienced in design of this work and licensed in the State of Louisiana. The Fire Protection contractor shall be licensed for fire protection work in the State of Louisiana.

1.11 REGULATORY REQUIREMENTS

A. Conform to UL, FM.
B. Perform Work in accordance with NFPA 13.
C. Equipment and Components: Bear UL, FM, label or marking.

D. Products Requiring Electrical Connection: Provide products that are listed and classified by Underwriters Laboratories Inc., or other testing firm acceptable to the authority having jurisdiction as suitable for the purpose specified and indicated.

E. Fire Protection Contractor shall be licensed to perform fire protection systems design and installation in the State of Louisiana.

1.12 PRE-INSTALLATION MEETING

A. Convene one week before starting work of this section.
   1. Provide seven (7) days advanced notice to Owner's Representative.

1.13 DELIVERY, STORAGE, AND PROTECTION

A. Section - Product Requirements: Transport, handle, store, and protect products.

B. Store products in shipping containers and maintain in place until installation. Provide temporary inlet and outlet caps. Maintain caps in place until installation.

1.14 EXTRA MATERIALS

A. Provide extra sprinklers under provisions of NFPA 13.

B. Provide suitable wrenches for each sprinkler type.

C. Provide metal storage cabinet in location designated.

PART 2 - PRODUCTS

2.1 SPRINKLERS

A. Exposed Area Type:
   1. Manufacturers:
      a. Viking Microfast. Model Sin No. VK 338
      b. Tyco TY-FRB SIN No. TY 8181
      c. Reliable RA6524
   2. Type: Standard coverage Quick Response Upright type.
   3. Construction: Stainless Steel.
   4. Fusible Link: Glass bulb type temperature rated for specific area hazard.

2.2 PIPING SPECIALTIES

A. Electric Horn Strobe (Weatherproof):
   1. Manufacturers
      a. Potter Electric Model HS-24WR-WP
      b. System Sensor Model P2RHK
   2. Electrically operated red horn/strobe.

B. Fire Department Connections:
   1. Manufacturers:
      a. Potter Roemer Model 5761
      b. Guardian Model 6224
   2. Type: Free standing type brass with chrome plated finish.

3. Outlets: Two (2)-way with thread size to suit fire department hardware; threaded dust cap and chain of matching material and finish.
4. Drain: 3/4 inch automatic drip, outside.
5. Label: "Auto. Sprinkler - Fire Department Connection".

C. Supervisory Switches:
1. Manufacturers
a. Potter Electric Model OSYSU-2, PCVS
b. System Sensor. Model OSY-2, PIBV2

D. Test and Drain Valve
1. Manufacturers
a. AGF Model 1000
b. Guardian Model 9210

E. Dry Pipe Sprinkler Alarm Valve: Check type valve with divided seat ring, rubber face clapper to automatically actuate electric alarm, with tank mounted air compressor, test and drain valve.
1. Manufacturers
a. Viking Model F-1, G-4000
b. Reliable Model EX

F. Post Indicator Valve
1. Manufacturers
a. Kennedy Style 2945-A
b. Nibco Model NIP-1AJ

G. Alarm Pressure Switches:
1. Manufacturers
a. Potter Electric Model PS10-2A
b. System Sensor Model EPS10-2

H. High/Low Pressure Supervisory Switches:
1. Manufacturers
a. Potter Electric Model PS40-2A
b. System Sensor Model EPS40-2

I. Tank Mounted Air Compressors:
1. Manufacturers
a. General Air Model LT900150
b. Jenny Model K15S-30UMS

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install in accordance with NFPA 13.
B. Install equipment in accordance with manufacturers instructions.
C. Install buried shut-off valves in valve box. Provide post indicator.
D. Provide approved double detector check valve assembly at sprinkler system water source connection.
E. Locate fire department connection with sufficient clearance from walls, obstructions, or adjacent siamese connectors to allow full swing of fire department wrench handle.
F. Locate outside alarm gong on building wall as indicated.
G. Place pipe runs to minimize obstruction to other work.
H. Place piping in concealed spaces above finished ceilings.

I. Apply masking tape or paper cover to ensure concealed sprinklers, cover plates, and sprinkler escutcheons do not receive field paint finish. Remove after painting. Replace painted sprinklers.
J. Flush entire piping system of foreign matter.
K. Install guards on sprinklers where indicated.
L. Hydrostatically test entire system.
M. Require test be witnessed by Fire Marshal and Architect.

3.2 INTERFACE WITH OTHER PRODUCTS

A. Ensure required devices are installed and connected as required to fire alarm system.

3.3 TRAINING & DEMONSTRATION

A. Demonstration Services: Arrange and pay for a factory-authorized service representative to train Owner's maintenance personnel on the following:
   1. Procedures and schedules related to start-up and shut down, troubleshooting, servicing, preventative maintenance, and how to obtain replacement parts.
   2. Familiarization with contents of Operating and Maintenance Manuals specified in Division 1, Section- "Closeout Submittals" and Division 15, Section - "Basic Mechanical Requirements."
   3. Provide Service Manuals for each sprinkler system specified.

B. Provide three (3) hours of factory authorized training.
   1. Refer to Section - "Mechanical General Provisions" for video taping requirements.
   2. Provide seven (7) days advanced notice to Owner's Representative.

3.4 INSPECTIONS AND TESTS

A. All fees, etc. for the installation, inspection, or construction of the work which are required by any authority and/or agencies having jurisdiction, shall be obtained and paid for by the contractor.
B. All inspections, examination, and tests required shall be arranged and paid for by the contractor as necessary to obtain complete and final acceptance of the Fire Protection System. The contractor shall deliver certificates of all such inspections to the Architect/Engineer.
C. Maintenance Instructions to the Owners: After installation of this system is completed and before it is accepted by the owner, the sprinkler contractor shall instruct the maintenance personnel on the care and maintenance of this system. Included in these instructions shall be the following:
   1. Two (2) original copies of NFPA 25 shall be furnished to the owner's maintenance personnel.
   2. Normal conditions of the sprinkler system.
   3. Weekly test of alarm valve.
   4. Weekly test of waterflow indicator.
   5. Semi-Annual test of alarm valve and water flow indicator.
   6. Abnormal conditions and corrections.
   7. Maintenance.

D. After the above instruction has been completed, this contractor shall notify the Architect/Engineer by letter of such. This letter should state the name(s) of the individuals receiving instructions.

3.5 INSPECTIONS

A. For a period of one (1) year after acceptance, this contractor shall make two (2) inspections on the sprinkler system. One shall be six (6) months after acceptance and the other one (1) year after acceptance. This contractor shall furnish the owner with all inspection certificates and shall "Green Tag" the system in accordance with the SFM requirements. after each inspection and furnish the architect with two copies of the inspection certificate. After one year, the owner shall be responsible for arranging for inspections by a qualified sprinkler contractor.

END OF SECTION 15325

SECTION 16010 - BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 SCOPE

A. The work to be performed under these specifications shall include the furnishing of all labor, materials, equipment and services required for a complete electrical system as specified herein and as shown by the Drawings. A state of Louisiana licensed Electrical Contractor shall perform the work specified herein. The work includes but is not limited to:

1. Provide a new 277/480V, 3P, 4W electrical service.
2. Furnishing and installing underground conduits with conductors from the service entrance service rack to the pier as shown on the drawings.
3. Furnishing and installing service entrance rated disconnect switch, power panels, and disconnect switches for use at the pier.
4. Furnishing and installing lighting fixtures, receptacles, and special outlet boxes for electrical systems shown on Drawings.
5. Furnishing and installing lighting controls and control wiring.
6. Furnishing and installing electrical conduit and wiring required for connection of mechanical equipment furnished under other sections of these specifications.
7. Furnishing and installing light fixtures.
8. Furnishing and installing a new fire alarm system to include control panels, initiation and annunciation devices, conduit, and wiring along with all required programming, certification, shop drawings, and AHJ approvals.
9. Furnishing and installing a new CCTV system as shown on the Drawings and including all required startup and testing costs.
10. Installation of temporary construction power required by the General Contractor and Sub-Contractors during the construction period.

1.2 GENERAL CONDITIONS

A. The General Conditions and Supplementary General Conditions are a part of this section of these Specifications. The Contractor is cautioned to read and be thoroughly familiar with all provisions of the General Conditions. These conditions shall be complied with in every aspect. The word "shall" where used, is to be understood, as mandatory and the word "should" as advisory. "May" is used in the permissive sense.

1.3 GENERAL REQUIREMENTS

A. The Contractor is referred to all of the Drawings for building construction as well as the electrical Drawings.

B. The Contractor shall examine the site and shall verify to his own satisfaction the location of all utilities, and shall adequately inform himself as to their relation to his work before entering into a Contract and he shall base his bid on any conditions, which may be encountered during the progress of the work.

C. The Contractor shall furnish and install properly all materials, devices, equipment, supports, controls, appurtenances, etc., mentioned or required to make complete or satisfactory installations in working order

whether shown or not. All electrical equipment shall be connected in accordance with manufacturer's instructions. All work shall be executed in a workmanlike manner and shall present a neat and mechanical appearance when completed.

1.4 MINIMUM STANDARDS

A. Applicable rules of the National Electrical Code apply as a minimum standard for this contract, but do not replace or reduce any specific requirement herein.

1.5 DRAWINGS

A. Plans and detail sketches are submitted to limit, explain, and define structural conditions, specified requirements, conduit sizes, and manner of erecting work. The Contractor is cautioned to field check and verify all existing conditions before bidding, as no extra compensation will be allowed for conditions found different than represented in the construction drawings and/or specifications. Written approval of the Architect shall be obtained prior to any alterations or additions to specified work.

B. Structural or other conditions may require certain modifications from the manner of installation shown, and such deviations are permissible and shall be made as required, but specified sizes and requirements necessary for satisfactory operations shall remain unchanged.

C. The drawings and these specifications are complementary to each other and what is called for by one shall be binding as if called for by both.

D. General arrangement of work is indicated on plans. Due to the small scale of the drawings, offsets, fittings, and boxes required are not all indicated; provide fittings, boxes, etc., as needed in accordance with codes and accepted practices.

1.6 SUPERVISION

A. The Contractor shall personally or through an authorized and competent representative, constantly supervise the work from beginning to completion and final acceptance. So far as possible, he shall keep the same foreman and workmen throughout the project duration.

B. During its progress, the work shall be subject to inspection by representatives of the Architect, at which times the Contractor shall furnish required information.

C. It is not the Architect's or Engineer's duty to direct or guarantee the work of the Contractor, but to assist the Owner in obtaining a complete building in accordance with plans, specifications and addenda and to furnish engineering services in accordance with recognized practices.

1.7 PRIOR APPROVALS

A. The Contractor shall base his proposal on materials as specified herein. Any references to a specific manufacturer or trade name is made to establish a standard of quality and to define a type of product and in no way is intended to indicate a preference for a particular manufacturer. It is the intent of these specifications to allow all manufacturers of equipment, products, etc., judged equal to the specified product to bid on a competitive basis.

1.8 MEASUREMENTS

A. The Contractor shall verify all measurements and shall be responsible for the correctness of same, before ordering any materials or doing any work. No extra charge or compensation will be allowed for any differences between the actual measurements and those indicated on the drawings.

1.9 LAWS, PERMITS AND FEES

A. The entire electrical work shall comply with the rules and regulations of the City, Parish, and State, including the State Fire Marshal and State Board of Health, whether so shown on plans or not. The Contractor shall pay fees for permits, inspections, etc., and shall arrange with the inspecting authorities all required inspections.

1.10 SITE INSPECTION

A. The Contractor shall visit the site and familiarize himself with difficulties attendant to the successful execution of the work before bidding. Failure to visit the site shall not relieve the Contractor of the extent or conditions of the work required of him.

PART 2 - PRODUCTS

2.1 MATERIAL AND EQUIPMENT

A. All materials, equipment, and accessories installed under this Contract, whether approved or not, shall be new and shall conform to all rules, codes, etc., as recommended or adopted by the National Association(s) governing the manufacture, rating and testing of such materials, equipment, and accessories.

2.2 SHOP DRAWINGS

A. The Contractor shall submit to the Architect complete descriptive and dimensional data on the following items for review and approval:
   1. Panelboards
   2. Service Entrance Disconnect Switch
   3. Disconnect Switches
   4. Lighting Fixtures and Controls
   5. Fire Alarm System Panels, Initiation Devices, and Annunciation Devices
   6. Conduit, Conduit Fittings, and Conduit Ground Bushings
   7. Conductors
   8. Ground Rods/Wells
   9. Surge Protection Devices
   10. Data Equipment (Racks, patch panels, etc.)
   11. CCTV Equipment
   12. Lift Station Electrical Information

PART 3 - METHODS OF INSTALLATIONS

3.1 CONTRACTOR COORDINATION

A. The Drawings are diagrammatic in nature. Cooperate with other trades so the interferences of facilities and equipment will be avoided.

3.2 OPENINGS, CUTTING AND PATCHING

A. Cut all openings as required for the electrical work. Patching will be done

by the various crafts whose work is involved. Furnish and install all necessary sleeves, thimbles, hangers, inserts, etc., at such times and in such a manner as not to delay or interfere with the work of other Contractors. Caulk, flash or otherwise make weatherproof all penetrations through the roof and exterior walls.

B. Where conduit, cable or other items that are provided for under this contract penetrate fire rated walls or floors, the Contractor is to seal around the item to maintain the integrity of the rated system.

3.3 PAINTING

A. Painting shall be performed as described in the painting specifications. No painting will be required by the Contractor except for touch-up of factory finishes on equipment furnished under this contract.

3.4 APPLICABLE GENERAL CODES AND REGULATIONS

A. All electrical work and equipment, in whole or in part, shall conform to the applicable portions of the following specifications, codes and regulations in effect on that date of invitation for bids, and shall form a part of this specification.

1. National Electrical Code, Latest Edition as accepted by the State Fire Marshal
2. National Electrical Manufacturers Association Standards
3. National Fire Protection Association Recommended Practices
4. Local, City and State Codes and Ordinances
5. National Board of Fire Underwriter's Recommended Practices
6. Life Safety Code, 2015 Edition
7. International Building Codes

B. Equipment that has been inspected and approved by the Underwriter's Laboratory shall bear its label or appear on its list of approved apparatus.

3.5 TESTS AND INSPECTIONS

A. The Contractor shall assist in making periodic inspections or tests required by the Architect or Engineer. When requested, the Contractor shall provide the assistance of foremen and qualified craftsmen for reasonable duration of each test, etc.

3.6 SAFETY PRECAUTIONS DURING CONSTRUCTION

A. It shall be the Contractor's responsibility to furnish and install proper guards and instruction signs for prevention of accidents and to provide and maintain for the duration of construction any installations needed for safety of life and property.

3.7 HEATING AND AIR CONDITIONING SYSTEM

A. This Contractor shall be responsible for providing electrical service to all devices of the heating and air conditioning system, and is referred to the mechanical plan for the exact location of the various devices.

3.8 EQUIPMENT NAMEPLATE

A. Each item of electrical equipment installed by the Contractor shall be provided with an engraved nameplate noting the equipment's function or designation. Nameplates shall be engraved laminated plastic with black

letters on a white background. Letters shall be 1/4" high, all caps.

3.9 PANELBOARD SCHEDULES

A. The Contractor shall provide and affix typed panelboard schedules for each panelboard. Schedule will accurately list equipment served by each branch circuit, and not simply indicate “LIGHTING” or “RECEPTACLES”, etc. Schedules shall indicate rooms served and device or devices connected to the circuit.

B. Where new loads are connected to existing panels, and where loads are rearranged in existing panels as part of this project, the Contractor shall update the respective panel directory so as to provide a complete, accurate, and typewritten panel schedule. The new panel schedule shall incorporate all existing loads, including loads “existing to remain”. Provide all required testing and investigations necessary to accomplish this work.

3.10 COMPLETION

A. The Contractor shall leave all electrical equipment with proper connections, and in proper working order. He shall test the entire electrical system to show that it is properly installed. Contractor shall leave all panels and switches completely fused or complete with circuit breakers.

3.11 RECORD DRAWINGS

A. The Contractor shall furnish one (1) complete set of drawings on which any changes in the work shall be shown. These drawings must be turned over to the Architect prior to final acceptance of the work.

3.12 GUARANTEE

A. The Contractor shall guarantee to keep the entire electrical system as installed by him or his subcontractors in repair and in perfect working order for one (1) year from the date of the final Certification of Final Acceptance, and shall furnish free of cost to the Owner, all material and labor necessary to comply with the above guarantee; said guarantee shall be based upon defective material and workmanship. In any case where equipment has a factory warranty exceeding this one-year limit, the full extent of the warranty shall apply.

3.13 CLEANING

A. When all work has been finally tested, the Contractor shall clean all fixtures, equipment, conduits, ducts, and all exposed work. All cover plates and other finished products shall be thoroughly cleaned.

3.14 INSTRUCTION MANUALS

A. The Contractor shall provide three (3) operating and maintenance instruction manuals on all systems and equipment installed in the electrical work.

3.15 CONTRACTOR SPECIAL NOTE

A. The Contractor is again cautioned to refer to all parts of these Specifications and all Drawings, not just electrical sections, and the individual cross references made to other standard specifications or details describing any electrical work, which may be required under these other sections. The Contractor is cautioned to note carefully any other

sections which may reference electrical work in order for this Contractor to fully understand the wiring requirements and electrical work that is required. Any conflicts found between the electrical sections of these Specifications or Drawings shall be immediately directed to the General Contractor for clarification.

B. These Specifications and the electrical Drawings size equipment, wire, conduit, etc. based on the horsepower of motors and/or wattages of equipment as shown on the plans or specified herein. The Contractor shall install electrical raceways, conductors, fuses, safety switches, breakers, contactors, starters or any other electrical equipment with the capacities to suit the horsepower and/or wattages of the equipment actually furnished and installed. The Contractor shall not furnish or install any electrical raceways, conductors, safety switches, contactors or motor starters of sizes smaller than those shown on the Drawings or specified herein. The Contractor shall coordinate with the various sections of the Specifications and/or Drawings and with the various Sub-Contractors to provide the properly sized equipment without additional cost to the Owner.

C. The Contractor shall be required to install electrical services underground. Existing underground utilities should be disconnected. Refer to the electrical and mechanical drawings for demolition plans. However, some existing underground utilities may remain in service at the site. Contractor is cautioned to exercise extreme care when digging to not damage any existing utilities or equipment. Contractor shall be required to repair any utilities or equipment he may damage during construction.

END OF SECTION 16010

SECTION 16050 - BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. All material furnished shall be new and shall conform to all rules and codes as recommended or adopted by the National Association governing the manufacture, rating and testing of the material. All electrical equipment shall be UL listed for the intended use.

PART 2 - PRODUCTS

2.1 RACEWAYS AND FITTINGS

A. Raceways permitted on this project shall be hot dipped galvanized rigid steel conduit; electrical metallic tubing (EMT); flexible metallic tubing; liquid-tight flexible metal conduit; and rigid polyvinyl chloride (PVC) conduit. All conduits shall be new and shall bear the inspection label of the Underwriter's Laboratories, Inc.

B. Metallic conduit shall be metalized, or hot-dipped galvanized. Non-metallic conduit shall be schedule 80 PVC.

C. Fittings for conduit shall be an approved type specially designed and manufactured for their purpose. EMT fittings shall be watertight, compression type. Rigid metal conduit fittings, bushings, and other components shall be galvanized. All fittings for rigid steel or aluminum conduit shall be threaded and coupled unless specifically approved otherwise by the Engineer.

D. Where conduit connects to an outlet box, it shall have an insulated throat type connector.

2.2 EXPOSED CONDUIT

A. Exposed conduit shall be firmly supported on galvanized hangers; on brackets, hangers, or pipe straps; or by beam clamps. Conduit installed exposed shall be neatly aligned and run at right angles to the building walls or walls of the rooms in which installed. All exposed conduit shall be located to avoid all conflicts with architectural or mechanical components.

2.3 FLEXIBLE CONDUIT

A. Liquid-tight flexible metal conduit shall have a spiral wound, flexible, galvanized steel core and a tough extruded synthetic moisture-tight outer covering. All flexible conduits shall be UL listed.

2.4 GALVANIZED CONDUIT

A. Galvanized conduit furnished in accordance with these specifications shall be of mild steel piping, galvanized inside and outside, and shall conform in all respects to the American Standard Association Rigid Steel Conduit Specification C80.1-1959 and Underwriter's Laboratories Specifications.

B. The galvanized coat of zinc shall be of uniform thickness applied by the hot-dipped process to not only the inside surfaces of the conduit, but also to the threads of the conduit. It shall be further dipped in a chromic acid bath to chemically form a corrosive resistant protective coating of zinc

chromate over hot-dipped galvanized surface. Each piece of conduit shall be straight, free from blisters and other debris, cut square and taper reamed, and furnished with coupling in 10-foot length threaded each end. The interior threaded surface of each coupling shall be galvanized to insure 100% galvanic protection on all surfaces. The hot galvanized zinc chromate on the inside and outside surfaces shall be sufficiently elastic to prevent cracking or flaking when sample of finished conduit is bent 90° at a minimum temperature of 60°F, the inner edge of the bend having a radius of six (6) times the inside diameter of the conduit.

2.5 RACEWAYS

A. Lay-in duct, JIC Wireway and troughs shall be NEMA 1 for indoor application and NEMA 3R for outdoor or applications exposed to weather or water. Raceways shall be sized as noted on Drawings and shall have hinged or screw covers with captive screws. Finish shall be gray enamel. All components shall be UL listed for steel enclosed wireway or auxiliary gutter.

2.6 OUTLET AND SWITCH BOXES

A. Outlet boxes in concealed conduit systems shall be flush mounted. Boxes shall be galvanized steel of sufficient size to accommodate devices shown and shall have raised covers where required to meet requirements of NEC Article 314.

B. All boxes shall be one-piece, powder coated aluminum, of proper size and shape for conduits entering them, and shall be UL listed and NEC approved for the intended use. Boxes shall be installed so that device and/or coverplates shall be tight and plumb with building lines, have all unused openings closed with knock-out plugs, and be weatherproof for exterior locations.

C. Boxes for lighting fixtures shall be 4 inches octagon, not less than 1-1/2 inches deep, with fixtures stud fastened through from back box. Where boxes are installed in a concrete slab, boxes designed for this application shall be used.

D. Outlet boxes for receptacles, telephone, and communication use in concealed work shall be 4-inch square, not less than 1-1/2 inches deep. Outlet boxes for switches and receptacles installed in exposed conduit system shall be cast type FS or FD, number of gangs as required. Outlet boxes for telephone and communication use in exposed systems to be cast, 4 inches square, not less than 1-1/2 inches deep.

2.8 WIRE (600 VOLT AND BELOW)

A. All conductors used in the work shall be of soft drawn annealed copper having a conductivity of not less than 98% of that of pure copper. Conductors shall be standard code gauge in size, insulated and shall have insulation rated for use at 600 volts.

B. Unless noted otherwise or specified, insulation shall be type THW, THWN, or THHN for sizes up to and including No. 2 AWG. Insulation for wire sizes larger than No. 2 AWG shall be type THW, XHHW, or THHN. Lighting fixture wire shall be heat resistant type TF (150°C) with 300-volt insulation minimum. Wires shall be of the single conductor type. Sizes No.14 AWG and larger shall be stranded. No wire shall be single strand solid copper.

C. Throughout the system, all conductors shall be identified as to the phase and voltage of the system by color-coding in accordance with NEC 210.5. Color-coding shall be continuous the full length of the wire with surface printing at regular intervals on all conductors and for neutral conductors.

D. Color coding shall be as follows:

3phase, 480V System	3phase, 208V System
Phase 1-Brown	Phase 1-Black
Phase 2-Orange	Phase 2-Red
Phase 3-Yellow	Phase 3-Blue
Neutral-Gray	Neutral-White
Ground-Green	Ground-Green

1phase, 240V System
Phase 1-Black
Phase 2-Red
Neutral-White
Ground-Green

2.9 WEATHERPROOF RECEPTACLES

A. Weatherproof receptacles shall be GFCI duplex receptacles as specified under WIRING DEVICES, mounted in a powder coated aluminum conduit box and fitted with gasketed metal cover with spring.

2.10 WIRING DEVICES

A. Wiring devices shall be as listed. The color of device shall match color of outlet cover plate. It shall be the responsibility of the Contractor to provide plugs, receptacles and fittings required for any equipment furnished or installed or connected under the contract. Color as selected by the Architect.

	Leviton	P & S	Hubbell
Toggle Switches: 20A 120/277V			
Single pole	1221-I	20AC1-I	1221-I
Three-way	1223-I	20AC3-I	1223-I
Duplex Receptacle: 20A, 125V, NEMA 5-20R	5362-I	5362-I	5363-I
Ground Fault Circuit Interrupter: 20A, 125V, Feed Through, NEMA 5-20R	6899-I	2091-S	GF-5362-I

B. Quad receptacles shall be 20-amp, 125 volt rated, NEMA 5-20R, with two (2) duplex receptacles or single four-plex device.

2.11 OUTLET COVER PLATES

A. Unless otherwise specified, all outlets shall be fitted with cover plates. Cover plates shall be standard size, uniform in design and finish for switches, receptacles and other outlets requiring cover plates. Plates shall be one piece of the required number of gangs. All cover plates shall be lexan unbreakable type. Architect shall select coverplate color.

2.12 SPECIAL PURPOSE RECEPTACLE

A. Provide receptacles for special purpose devices as indicated on the plans. Refer to equipment specification for proper receptacle to be

supplied. Provide stainless steel cover plate.

2.13 FIRESTOPPING PRODUCTS

A. The Contractor shall provide and install at all fire-rated wall through-penetrations, a non-hardening, conformable firestop system. The system shall consist of a water insoluble putty and suitable damming materials (where required). The non-hardening putty shall be a two-staged intumescent and capable of expanding up to 8 times its original volume. This putty shall contain no asbestos, no fiberglass, no solvents nor corrosive mineral salts of any kind. It shall remain soft during its installed life and shall be capable of being removed and reinstalled to facilitate the addition of cables or pipes. The putty shall exhibit aggressive adhesion to all common building materials and penetrants and shall allow reasonable movement of penetrants without being displaced. The firestop system shall be tested to the time/temperature requirements of ASTM E119 and shall be tested to UL 1479 (ASTM E814) and classified for up to 3 hours.

2.14 IN GRADE OUTLET BOXES

A. Pull boxes shall be heavy duty, traffic bearing type. Boxes shall be polymer concrete and fiber reinforced polyester construction. Boxes shall be furnished complete with bottom and cover with logo. All pull boxes shall be sized 30" wide x 48" long x 36" deep. Pull boxes shall include two-piece cover with stainless steel bolts, POWER legend, and pull slots for lifting. Boxes shall be Tier 15 traffic rated. Boxes shall be factory assembled.

B. Boxes shall be Hubbell/CDR Systems Corporation Straight Wall Style (Stackable) Assembly, or Quazite Composolite "PC" Style.

PART 3 - EXECUTION

3.1 WIRING - GENERAL

A. Unless otherwise specified, all wiring shall be installed in conduit. No wire shall be smaller than No. 12 unless noted otherwise. Wiring for low voltage control may be #14 AWG. Wire for each branch circuit shall be of single size and type from the branch circuit protective device the last outlet of the circuit. BX wiring shall not be allowed.

B. Feeders, motor circuit conductors and main service entrance conductors shall run their entire length without joints or splices. Wiring for branch circuits shall run the entire length without splices, with splices and joints made only at outlets or in accessible junction boxes only when absolutely necessary and approved by the Engineer. Joints and splices in branch circuit wiring shall be made with compression type solderless connectors.

C. Connectors of the non-metallic screw on type are not acceptable. Terminations or splices for conductors No. 6 AWG and larger shall utilize bolted connecting lugs. All splices and terminations shall be insulated in an approved manner by an integral or separate cover or by taping to provide insulating value equal to that of the conductors being joined.

D. Type THW or THWN conductors may be connected directly to recessed fixtures only when the fixtures are equipped with outlet boxes listed by Underwriter's Laboratories, Inc. for use with wire having insulation rated for maximum operating temperatures of 75°C (167°F); otherwise, for

fixtures not rated for 75°C directly connection, use 125°C insulated conductors from the fixture to an outlet box placed at least one (1) foot, but not more than four (4) feet from the fixture.

E. Branch circuit home run numbers shown on the drawings shall be used as a guide for connection of circuit wiring to similarly number protective devices in branch circuit panelboards. Requests for changes in the plans shall be directed to the Architect. No changes shall be made without approval from the Architect.

F. Each circuit shall be furnished with its own neutral conductor. There shall be no sharing of neutral conductors.

G. In instances where a junction box, wireway, etc. contains three (3) or more branch circuits, the feeders shall be labeled within the junction box, wireway, etc. with circuit location, including panel name and breaker number. Labeling shall be neatly typed and affixed to each feeder. Labeling shall meet all applicable Code requirements.

H. No more than three (3) 20A/1P circuits may be installed in a single conduit. Circuits may not share grounds or neutrals. Conductors sharing raceways shall be derated per table 310.15(B)(3)(a) of the NEC.

3.2 ELECTRICAL SERVICE GROUNDING

A. Main electrical service equipment, conduit work, motors, panelboards and all other electrical equipment shall be effectively and permanently grounded. Grounding connections and conductor sizes shall be in accordance with requirements of the National Electrical Code, Article 250 and local or State ordinances.

B. Provide as part of the service grounding system an ufer ground in the building slab. The ufer ground shall be 20' long bare #4 copper wire and bonded to the main service ground lug with a grounding electrode cable of the size indicated on the drawings.

C. The building foundation steel and structural steel (if applicable) shall be connected to the service entrance ground lug with a grounding electrode cable of the size indicated on the drawings.

D. All ground lugs shall be properly torqued, as per the gear manufacturer's instructions and provide pictures of all ground connections to the architect and engineer for inspection before they are covered.

E. All grounding connections shall be mechanically made. Cadwell style connections are not permitted.

3.3 EQUIPMENT GROUNDING

A. All conduit entering panelboards shall be grounded to the panelboard by means of a grounding type locknut installed on the inside of the panelboard. Where the continuity of the metallic conduit system is interrupted by a section of non-metallic conduit, a separate grounding conductor, sized in accordance with NEC table 250.122 shall be installed in the conduit with the insulated conductors. A separate grounding conductor, as described above or as called for on the plans, shall be run in the conduit with the circuit conductors for all circuits serving multi-outlet assemblies.

B. Conduit runs shall be increased in size where necessary to accommodate the grounding conductor in addition to circuit conductors. The grounding screw on all grounding type receptacles shall be securely grounded to the outlet box using a No. 12 green insulated conductor attached to the outlet

box with lug screw.

C. The grounding screw on all grounding type receptacles shall be security grounded to the outlet box using a No. 12 green insulated conductor attached to the outlet box with lug screw. Ground screws shall be green.

D. All switch legs shall include a green ground conductor connected to the circuit ground conductor and terminated in the switch outlet box.

3.4 CONDUIT - MATERIALS AND METHODS

A. Conduit shall be installed as per NEC and NEMA regulations and the manufacturer's recommendations. Conduit shall be as follows:

B. Rigid Steel Conduit shall be used for all conduits exposed to the weather, and underground conduit except where non-metallic conduit is specified or approved. Underground and under slab runs are to be watertight. All horizontal runs of underground conduit shall utilize rigid steel elbows on vertical risers. Conduits used for receptacles and run under the building slab shall be hot dipped galvanized rigid steel and shall be 3/4" minimum size.

C. All conduits routed underground shall not be placed in building slab. Conduits larger than 1" routed under building slab shall be routed below the vapor barrier. Minimum conduit size allowed to be routed underground shall be 3/4". Conduits routed under building slab may be PVC. All conduits rising vertically out of slab or out of ground shall be type RMC to 48" above finished floor.

D. Electrical Metallic Tubing or metal clad cabling (if permitted) shall be used for all other feeders, branch circuit and communications and control wiring where rigid steel or non-metallic conduit is not specified.

E. Non-metallic conduit, minimum schedule 40 PVC, shall be permitted to be installed underground. Non-metallic conduit shall not be used in any environmental air plenum. If PVC conduit is run, a full-sized grounding conductor shall be pulled with the circuit conductors. PVC conduit shall not be run exposed. Where PVC conduit is run underground, it shall be encased in concrete or run minimum 24" below grade, or at the depth below grade shown on the drawings.

F. Flexible metal conduit or liquid-tight flexible metal conduit shall be used for the final connection of runs to motors. Flexible conduit shall be at least twelve (12) inches, but not more than 48 inches long. Where used, an external grounding conductor shall be run with conduit unless conductor is made as a part of the conduit.

G. Conduits installed underground and used for communications system wiring shall be reviewed with the communications contractor prior to installation. As an example, conduits below the vapor barrier may require moisture proof wiring to comply with the structured connectivity solution or conduits may need to be installed above the vapor barrier to maintain connectivity solution compliance. All conduit shall conform to the requirements of the data manufacturer's warranty and be accepted by the communications contractor.

3.5 CONDUIT - GENERAL

A. Fittings for rigid steel conduits shall be hot-dipped galvanized steel and shall be of a type especially designed and manufactured for their purpose. Fittings for EMT shall be die cast zinc type. Rigid conduit joints for single conduit runs shall be made with threaded fittings made tight

with at least five threads fully engaged. Fittings for rigid non-metallic conduit shall be solvent welded.

B. All conduits shall be installed concealed or as indicated or scheduled on the drawings and shall be of sufficient size to accommodate the required number of insulated conductors including equipment grounding conductor where such grounding conductor is required or specified.

C. Conduit runs shall be straight; elbows and bends shall be uniform, symmetrical and free from dents or flattening. Exposed conduit shall be firmly supported on galvanized hangers; on brackets, hangers, or pipe straps; or by beam clamps. Conduit installed exposed shall be neatly aligned and run at right angles to the building walls or walls of the rooms in which they are installed. All exposed conduit shall be located to avoid all conflicts with architectural or mechanical components.

D. Pull boxes shall be installed as required to permit proper installation of conductors and expansion fittings installed where conduit runs cross building expansion joints.

E. Conduit shall be run no closer than six (6) inches to covering of hot water or steam piping except where crossings are unavoidable. Conduit shall be kept at least one (1) inch from crossing steam and hot water piping.

F. Conduit shall be held securely in place by hangers and fasteners of appropriate design and dimensions for the particular application. Support shall be such that no strain will be transmitted to outlet box and pull box supports. Wire shall not be used, with or without spring steel fasteners, clips or clamps, for the support of any conduit. Conduit shall not be supported by or attached to duct work unless specifically allowed otherwise.

G. Hangers and other fasteners shall be supported on solid masonry with inserts or expansion sleeves and bolts, on wood with wood screws, hollow masonry with toggle bolts, on steel with machine screws or welded threaded studs. Fastenings shall be proof tested by the Contractor for secure mounting.

H. All conduits shall be cut square and reamed at the ends. The conduit system shall be complete and cleaned before any conductors are installed. Open ends of all conduits shall be capped until conductors are installed. A non-metallic fish wire shall be installed in all empty conduits. Empty conduit shall remain capped.

I. Contractor shall refer to National Electrical Code Appendix C, Conduit and Tubing Fill Tables for Conductors and Fixture Wire of the Same Size. Contractor shall refer to the appropriate table for the conduit and wire condition and shall install wiring in accordance with code requirements.

3.6 FLEXIBLE CONDUIT

A. Flexible metal conduit may be used for short final connections to equipment where permitted by governing codes. Flexible metal conduit shall be sized and supported in accordance with Article 350 of the NEC or more stringent local codes. A separate equipment-grounding conductor sized in accordance with NEC Table 250.122 shall be installed in flexible conduit unless exceptions are allowed by governing codes and if the fittings used are UL listed for the purpose.

B. Liquid-tight flexible metal conduit shall be used where flexible conduit is permitted and desired and conditions of installation, operation, or maintenance require protection from liquids, vapors, or solids and in other

hazardous locations where specifically approved. Flexible conduit for all exterior motor connections shall be liquid tight. Liquid-tight flexible conduit shall be used with terminal fittings approved for the purpose.

3.7 FIRE-RATED WALL AND FLOOR THROUGH-PENETRATIONS

A. All fire-rated walls or floors penetrated by this Contractor shall be properly sealed with fire stopping materials. All floor through-penetrations shall be fire stopped with a light-weight mortar material. Wall through-penetrations shall be fire stopped with a non-hardening putty material. Contractor shall see that all penetrations are fire stopped and seals are inspected.

3.8 SUPPORTS AND FITTINGS

A. The Contractor shall furnish and install all supports for equipment under this contract. Supports shall be spaced at intervals of eight (8) feet maximum for rigid conduit and five (5) feet maximum for EMT and as necessary to obtain rigid support. Perforated strap supports will not be permitted.

B. All conduits shall be firmly secured with pipe clamps, conduit straps, or suspension hangers as appropriate. Fasten to steel with screws in tapped holes, to wood with wood screws, and to masonry with expansion anchors. Expansion anchors shall have a minimum pull out load of 1,200 pounds and an ultimate shear load of 1,950 pounds.

C. All conduit, fixtures, and accessories shall be rigidly supported to form a firm, well-braced installation.

D. Joints shall be made tight with standard galvanized or sheradized couplings; corners turned with fittings, elbows, or long radius bends.

E. Low voltage wiring installed above accessible ceilings shall be supported on J-hooks. J-hooks installed for communications system wiring shall not be used for other low voltage system wiring (fire alarm, security, EMS controls, etc.).

3.9 WEATHERPROOF EQUIPMENT

A. All disconnect switches, starters, and other electrical equipment located on the exterior of the building or exposed to the outside shall be enclosed in a rain-tight enclosure.

B. All lighting fixtures or other devices located on an exterior wall of the building shall be mounted on a flush-mounted, cast outlet box.

3.10 MOUNTING HEIGHTS

A. Unless otherwise noted on the drawings or required by the Architect, the following mounting heights shall apply:

Receptacles	1'-6"
Panelboards	6'-0" to top
Safety Switches	5'-0" to top
Motor Control Equipment	5'-0" to top
Fire Alarm Manual Stations	4'-0"

B. Upon permission of the Architect, mounting heights may be adjusted to simplify cutting of masonry units or to facilitate furniture and cabinet arrangements. Dimensions above refer to the centerline of the device unless noted otherwise.

3.11 HOUSE KEEPING PADS

A. All floor and ground mounted electrical equipment - panels, switchboards, motor control centers, transformers, etc. shall be installed with a reinforced concrete housekeeping pad, whether shown on the drawings or not. The pad shall extend 4" above either the finished floor or final grade (as applicable), have 45-degree chamfered edges, and be constructed of 3000psi concrete. The pad shall extend 3" beyond the edge of the respective electrical equipment.

END OF SECTION 16050

SECTION 16400 - SERVICE AND DISTRIBUTION

PART 1 - GENERAL

1.1 SYSTEM VOLTAGE

A. The service from the service entrance rack shall be 277/480V, 3 phase, 4 wire and shall be stepped down to 120/208V, 3 phase, 4 wire via dry-type transformer.

1.2 TERMINATIONS

A. All wiring shall be sized based on 75°C rated conductors. All connectors shall be rated for 75°C in accordance with N.E.C. Article 110-14 requirements.

PART 2 - PRODUCTS

2.1 SAFETY SWITCHES

A. Furnish and install safety switches as shown on the Drawings. All switches shall be fused NEMA Heavy Duty Type HD and Underwriter's Laboratories listed. All switches shall have blades that are fully visible in the "OFF" position with the door open. Switches shall be dead-front construction with permanently attached arc suppressers. Lugs shall be UL listed for copper and aluminum conductor and front removable. All current carrying parts shall be plated to resist corrosion. Switches shall be quick-make, quick-break type. During operation of the switch, the movable contacts shall not be able to be restrained by the handle once the closing or the opening action of the contacts has been initiated. Switches shall have cover interlocks to prevent opening of the switch door while the switch is in the "ON" position or closing the switch with the door open. Switch shall have padlocking capabilities in the "OFF" position.

B. Safety switches shall be rated 600 volts for 480 volt service and rated 240 volts for 208 volt service. Switches shall be motor rated when used for motor loads. Switches shall be NEMA 1 enclosed for indoor applications and NEMA 3R for outdoor or wet area locations.

C. Switches used for service entrance shall be service entrance rated. Safety switches shall be furnished complete with fuses.

D. Safety switches shall be Square D Heavy Duty Class 3110 type, Eaton Heavy Duty type, or prior approved equal.

2.2 FUSES

A. All fuse holders shall be provided with dual-element, time-lag fuses as scheduled on the Drawings or as recommended by the equipment manufacturer. Fuses shall be rated 200,000 AIC. Fuses shall be Buss Fusetron, Economy Econ, or Gould Shawmut Tri-Onic for component protection and Buss Limitron, Economy Econolin, or Gould Shawmut Amp-Trap for circuit protection.

2.3 CIRCUIT BREAKER PANELBOARDS

A. Panelboards shall be sized as shown on the drawings and schedules, and shall be the bolted breaker panelboard type. Panelboards shall have copper bussing. Panelboards shall have door-in-door trim.

B. All branch breakers are to be quick-make, quick-break (over center toggle

device) with trip indication and common trip on all multiple breakers. Trip indication shall be clearly shown by breaker handle taking a position between "ON" and "OFF" position. Breakers shall be ambient compensated to carry full NEC load in 120 degree F room temperature. Panelboards shall have distributed phase busing throughout. Any two adjacent single pole breakers shall be replaceable by a two pole breaker, and any three adjacent single pole breakers shall be replaceable by a three pole breaker. All breakers shall be bolt on type.

C. Minimum interrupting capacity of breakers shall be as shown on panel schedules. No breakers shall be rated less than 10,000 RMS symmetrical amperes.

D. Branch breakers shall be numbered 1, 3, 5, etc. from top to bottom beginning at the top of the left hand column so that #1 shall be on phase A, #3 on phase B, and #5 on phase C.

E. Panelboards for 120/208 volt or 120/240 volt service shall be Square D type NQ, Eaton Pow-R-Line series, or prior approved equal. Panelboards for 480/277 volt service shall be Square D type NEHB, Eaton Pow-R-Line series, or prior approved equal.

2.4 DRY TYPE TRANSFORMERS

A. Contractor shall install dry type transformer(s) in the size and at the location(s) as shown on the drawings. Transformers will be used to step down voltage from 480 volts to 120/208 volts. All transformers shall comply and must be tested in accordance with UL, NEMA and ANSI standards. Transformers shall be energy efficient and shall meet NEMA Standard TP-1 requirements.

B. Transformers shall have the KVA ratings shown on the drawings. Transformers shall be three phase type rated for 480 volts primary and 120/208 volt secondary as shown on the drawings. Transformers shall be self-cooled. When transformer is delivering full KVA load continuously, temperature rise shall not exceed 150 degrees C above a 40 degree C ambient with 200 degrees C temperature class insulation system. The average sound level shall not exceed NEMA standards. Transformers shall have four external type taps, two 2-1/2% FCBN and two 2-1/2% FCAN. Windings shall be copper.

C. Transformers rated larger than 112.5KVA shall be provided with Class 155 or higher insulation system and shall be completely enclosed except for ventilating openings. Transformers larger than 112.5KVA shall comply with NEC Article 450.21(B) Exception No. 2, to allow transformers to be installed inside non fire rated rooms.

D. Transformers shall be floor mounted on isolation pads. Enclosure shall be heavy gauge steel with ventilation openings protected against falling dirt and drip, and shall be shielded against actual touching of live parts. A nameplate in accordance with NEMA standards shall be permanently affixed to the enclosure.

E. Transformers shall be equal to Square D Class 7400 Dry Type, Eaton DT-3 Series, or prior approved equal.

PART 3 - EXECUTION

3.1 COORDINATION

A. Contractor shall coordinate all service and distribution work with other

crafts on the project.

3.2 TEST AND BALANCING

A. At such times as the Architect directs, the Contractor shall conduct in the Architect's presence operating tests to demonstrate the electrical systems are installed and will operate properly and in accordance with the requirements of the specifications. The Contractor shall furnish instruments and personnel required for such tests. Any work that is found to be defective, or material that are found to vary from the requirements of the drawings or specifications shall be replaced by the Contractor without additional cost of the Owner.

3.3 EQUIPMENT FUSING

A. All equipment shall be furnished complete with fuses as described herein and/or as shown on the Drawings. Contractor shall furnish one set of spare fuses for each size fuse furnished on the project. Fuses shall be delivered to Owner prior to acceptance of project.

B. Fusing for protective equipment shall be of the type specifically designed for the intended application. Fuses for service entrance rated equipment shall be Class L. Fuses for branch circuit protection shall be Class RK5 unless specified otherwise. Provide protective fuses as specifically required by the equipment manufacturer.

3.4 INSTALLATION

A. Disconnecting means shall be provided for each motor and motor controller, and shall be located within site from the controller and motor locations in accordance with National Electrical Code Article 430.102 requirements.

END OF SECTION 16400

SECTION 16401 - OVERCURRENT PROTECTIVE DEVICE SHORT-CIRCUIT STUDY

PART 1: GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes a computer-based, fault-current study to determine the minimum interrupting capacity of circuit protective devices.

1.3 DEFINITIONS

A. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

B. One-Line Diagram: A diagram which shows, by means of single lines and graphic symbols, the course of an electric circuit or system of circuits and the component devices or parts used therein.

C. Protective Device: A device that senses when an abnormal current flow exists and then removes the affected portion from the system.

D. SCCR: Short-circuit current rating.

E. Service: The conductors and equipment for delivering electric energy from the serving utility to the wiring system of the premises served.

1.4 ACTION SUBMITTALS

A. Product Data: For computer software program to be used for studies.

B. Other Action Submittals: Submit the following after the approval of system protective devices submittals. Submittals shall be in digital form.

1. Short-circuit study input data, including completed computer program input data sheets.
2. Short-circuit study and equipment evaluation report; signed, dated, and sealed by a qualified professional engineer.
   a. Submit study report for action prior to receiving final approval of the distribution equipment submittals. If formal completion of studies will cause delay in equipment manufacturing, obtain approval from Architect for preliminary submittal of sufficient study data to ensure that the selection of devices and associated characteristics is satisfactory.
   b. Revised single-line diagram, reflecting field investigation results and results of short-circuit study.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Short-Circuit Study Specialist and Field Adjusting Agency.

B. Product Certificates: For short-circuit study software, certifying compliance with IEEE 399.

1.6 QUALITY ASSURANCE

A. Studies shall use computer programs that are distributed nationally and are in wide use. Software algorithms shall comply with requirements of

standards and guides specified in this Section. Manual calculations are unacceptable.

B. Short-Circuit Study Software Developer Qualifications: An entity that owns and markets computer software used for studies, having performed successful studies of similar magnitude on electrical distribution systems using similar devices.
   1. The computer program shall be developed under the charge of a licensed professional engineer who holds IEEE Computer Society's Certified Software Development Professional certification.

C. Short-Circuit Study Specialist Qualifications: Professional engineer in charge of performing the study and documenting recommendations, licensed in the state where Project is located. All elements of the study shall be performed under the direct supervision and control of this professional engineer.

D. Field Adjusting Agency Qualifications: An independent agency, with the experience and capability to adjust overcurrent devices and to conduct the testing indicated, that is a member company of the International Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.

PART 2: PRODUCTS

2.1 COMPUTER SOFTWARE

A. Manufacturers: Subject to compliance with requirements, provide products by the following:
   1. SKM Systems Analysis, Inc.
   2. ETAP

B. Comply with IEEE 399 and IEEE 551.

C. Analytical features of fault-current-study computer software program shall have the capability to calculate "mandatory," "very desirable," and "desirable" features as listed in IEEE 399.

D. Computer software program shall be capable of plotting and diagramming time-current-characteristic curves as part of its output.

2.2 SHORT-CIRCUIT STUDY REPORT CONTENTS

A. Executive summary.

B. Study descriptions, purpose, basis, and scope. Include case descriptions, definition of terms, and guide for interpretation of the computer printout.

C. One-line diagram, showing the following:
   1. Protective device designations and ampere ratings.
   2. Cable size and lengths.
   3. Transformer kilovolt ampere (kVA) and voltage ratings.
   4. Motor and generator designations and kVA ratings.
   5. Switchgear, switchboard, motor-control center, and panelboard designations.

D. Comments and recommendations for system improvements, where needed.

E. Protective Device Evaluation:
   1. Evaluate equipment and protective devices and compare to short-circuit ratings.

2. Tabulations of circuit breaker, fuse, and other protective device ratings versus calculated short-circuit duties.
3. For 600-V overcurrent protective devices, ensure that interrupting ratings are equal to or higher than calculated 1/2-cycle symmetrical fault current.
4. For devices and equipment rated for asymmetrical fault current, apply multiplication factors listed in the standards to 1/2-cycle symmetrical fault current.
5. Verify adequacy of phase conductors at maximum three-phase bolted fault currents; verify adequacy of equipment grounding conductors and grounding electrode conductors at maximum ground-fault currents. Ensure that short-circuit withstand ratings are equal to or higher than calculated 1/2-cycle symmetrical fault current.

F. Short-Circuit Study Input Data: As described in "Power System Data" Article in the Evaluations.

G. Short-Circuit Study Output:
1. Low-Voltage Fault Report: Three-phase and unbalanced fault calculations, showing the following for each overcurrent device location:
   a. Voltage.
   b. Calculated fault-current magnitude and angle.
   c. Fault-point X/R ratio.
   d. Equivalent impedance.
2. Momentary Duty Report: Three-phase and unbalanced fault calculations, showing the following for each overcurrent device location:
   a. Voltage.
   b. Calculated symmetrical fault-current magnitude and angle.
   c. Fault-point X/R ratio.
   d. Calculated asymmetrical fault currents:
      1) Based on fault-point X/R ratio.
      2) Based on calculated symmetrical value multiplied by 1.6.
      3) Based on calculated symmetrical value multiplied by 2.7.
3. Interrupting Duty Report: Three-phase and unbalanced fault calculations, showing the following for each overcurrent device location:
   a. Voltage.
   b. Calculated symmetrical fault-current magnitude and angle.
   c. Fault-point X/R ratio.
   d. No AC Decrement (NACD) ratio.
   e. Equivalent impedance.
   f. Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on a symmetrical basis.
   g. Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on a total basis.

PART 3: EXECUTION

3.1 EXAMINATION

A. Obtain all data necessary for the conduct of the study.

1. Verify completeness of data supplied on the one-line diagram. Call any discrepancies to the attention of Engineer.
2. For equipment provided that is Work of this Project, use characteristics submitted under the provisions of action submittals and information submittals for this Project.
3. For relocated equipment and that which is existing to remain, obtain required electrical distribution system data by field investigation and surveys, conducted by qualified technicians and engineers. The qualifications of technicians and engineers shall be qualified as defined by NFPA 70E.
4. Obtain all arc flash information from the local utility in a timely manner. No extension of the contract time shall be permitted due to coordination with the local utility.

B. Gather and tabulate the following input data to support the short-circuit study. Comply with recommendations in IEEE 551 as to the amount of detail that is required to be acquired in the field. Field data gathering shall be under the direct supervision and control of the engineer in charge of performing the study, and shall be by the engineer or its representative who holds NETA ETT Level III certification or NICET Electrical Power Testing Level III certification.
1. Product Data for Project's overcurrent protective devices involved in overcurrent protective device coordination studies. Use equipment designation tags that are consistent with electrical distribution system diagrams, overcurrent protective device submittals, input and output data, and recommended device settings.
2. Obtain electrical power utility impedance at the service.
3. Power sources and ties.
4. For transformers, include kVA, primary and secondary voltages, connection type, impedance, X/R ratio, taps measured in percent, and phase shift.
5. For reactors, provide manufacturer and model designation, voltage rating, and impedance.
6. For circuit breakers and fuses, provide manufacturer and model designation. List type of breaker, type of trip, SCCR, current rating, and breaker settings.
7. Generator short-circuit current contribution data, including short-circuit reactance, rated kVA, rated voltage, and X/R ratio.
8. Busway manufacturer and model designation, current rating, impedance, lengths, and conductor material.
9. Motor horsepower and NEMA MG 1 code letter designation.
10. Cable sizes, lengths, number, conductor material and conduit material (magnetic or nonmagnetic).

3.2 SHORT-CIRCUIT STUDY

A. Perform study following the general study procedures contained in IEEE 399.
B. Calculate short-circuit currents according to IEEE 551.
C. Base study on the device characteristics supplied by device manufacturer.
D. The extent of the electrical power system to be studied is indicated on Drawings.

E. Begin short-circuit current analysis at the service, extending down to the system overcurrent protective devices as follows:
   1. To normal system low-voltage load buses where fault current is 10 kA or less.
   2. Exclude equipment rated 240-V ac or less when supplied by a single transformer rated less than 125 kVA.

F. Study electrical distribution system from normal and alternate power sources throughout electrical distribution system for Project. Study all cases of system-switching configurations and alternate operations that could result in maximum fault conditions.

G. The calculations shall include the ac fault-current decay from induction motors, synchronous motors, and asynchronous generators and shall apply to low- and medium-voltage, three-phase ac systems. The calculations shall also account for the fault-current dc decrement, to address the asymmetrical requirements of the interrupting equipment.
   1. For grounded systems, provide a bolted line-to-ground fault-current study for areas as defined for the three-phase bolted fault short-circuit study.

H. Calculate short-circuit momentary and interrupting duties for a three-phase bolted fault at each of the following:
   1. Electric utility's supply termination point.
   2. Incoming switchgear.
   3. Unit substation primary and secondary terminals.
   4. Low-voltage switchgear.
   5. Motor-control centers.
   6. Control panels.
   7. Standby generators and automatic transfer switches.
   8. Branch circuit panelboards.
   9. Disconnect switches.

3.3 ADJUSTING

A. Make minor modifications to equipment as required to accomplish compliance with short-circuit study.

3.4 DEMONSTRATION

A. Train Owner's operating and maintenance personnel in the use of study results.

END OF SECTION 16401

SECTION 16402 - OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY

PART 1: GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes computer-based, overcurrent protective device coordination studies to determine overcurrent protective devices and to determine overcurrent protective device settings for selective tripping.

1.3 DEFINITIONS

A. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.
B. One-Line Diagram: A diagram which shows, by means of single lines and graphic symbols, the course of an electric circuit or system of circuits and the component devices or parts used therein.
C. Protective Device: A device that senses when an abnormal current flow exists and then removes the affected portion from the system.
D. SCCR: Short-circuit current rating.
E. Service: The conductors and equipment for delivering electric energy from the serving utility to the wiring system of the premises served.

1.4 ACTION SUBMITTALS

A. Product Data: For computer software program to be used for studies.
B. Other Action Submittals: Submit the following after the approval of system protective devices submittals. Submittals shall be in digital form.
    1. Coordination-study input data, including completed computer program input data sheets.
    2. Study and equipment evaluation reports.
    3. Overcurrent protective device coordination study report; signed, dated, and sealed by a qualified professional engineer.
        a. Submit study report for action prior to receiving final approval of the distribution equipment submittals. If formal completion of studies will cause delay in equipment manufacturing, obtain approval from Architect for preliminary submittal of sufficient study data to ensure that the selection of devices and associated characteristics is satisfactory.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Coordination Study Specialist and Field Adjusting Agency.
B. Product Certificates: For overcurrent protective device coordination study software, certifying compliance with IEEE 399.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For the overcurrent protective devices to include in emergency, operation, and maintenance manuals.

1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
    a. The following parts from the Protective Device Coordination Study Report:
        1) One-line diagram.
        2) Protective device coordination study.
        3) Time-current coordination curves.
    b. Power system data.

1.7 QUALITY ASSURANCE

A. Studies shall use computer programs that are distributed nationally and are in wide use. Software algorithms shall comply with requirements of standards and guides specified in this Section. Manual calculations are unacceptable.

B. Coordination Study Software Developer Qualifications: An entity that owns and markets computer software used for studies, having performed successful studies of similar magnitude on electrical distribution systems using similar devices.
    1. The computer program shall be developed under the charge of a licensed professional engineer who holds IEEE Computer Society's Certified Software Development Professional certification.

C. Coordination Study Specialist Qualifications: Professional engineer in charge of performing the study and documenting recommendations, licensed in the state where Project is located. All elements of the study shall be performed under the direct supervision and control of this professional engineer.

D. Field Adjusting Agency Qualifications: An independent agency, with the experience and capability to adjust overcurrent devices and to conduct the testing indicated, that is a member company of the International Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.

PART 2: PRODUCTS

2.1 COMPUTER SOFTWARE DEVELOPERS

A. Software Developers:
    1 Manufacturers: Subject to compliance with requirements, provide products by the following:
        a. SKM Systems Analysis, Inc.
        b. ETAP

B. Comply with IEEE 242 and IEEE 399.

C. Analytical features of device coordination study computer software program shall have the capability to calculate "mandatory," "very desirable," and "desirable" features as listed in IEEE 399.

D. Computer software program shall be capable of plotting and diagramming time-current-characteristic curves as part of its output. Computer software program shall report device settings and ratings of all overcurrent protective devices and shall demonstrate selective coordination by computer-generated, time-current coordination plots.
    1. Optional Features:
        a. Arcing faults.

b. Simultaneous faults.
c. Explicit negative sequence.
d. Mutual coupling in zero sequence.

2.2 PROTECTIVE DEVICE COORDINATION STUDY REPORT CONTENTS

A. Executive summary.

B. Study descriptions, purpose, basis and scope. Include case descriptions, definition of terms and guide for interpretation of the computer printout.

C. One-line diagram, showing the following:
1. Protective device designations and ampere ratings.
2. Cable size and lengths.
3. Transformer kilovolt ampere (kVA) and voltage ratings.
4. Motor and generator designations and kVA ratings.
5. Switchgear, switchboard, motor-control center, and panelboard designations.

D. Study Input Data: As described in "Power System Data" Article.

E. Short-Circuit Study Output: As specified in "Short-Circuit Study Output" Paragraph in "Short-Circuit Study Report Contents" Article in Section 260572 "Overcurrent Protective Device Short-Circuit Study."

F. Protective Device Coordination Study:
1. Report recommended settings of protective devices, ready to be applied in the field. Use manufacturer's data sheets for recording the recommended setting of overcurrent protective devices when available.
a. Phase and Ground Relays:
1) Device tag.
2) Relay current transformer ratio and tap, time dial, and instantaneous pickup value
3) Recommendations on improved relaying systems, if applicable.
b. Circuit Breakers:
1) Adjustable pickups and time delays (long time, short time, ground).
2) Adjustable time-current characteristic.
3) Adjustable instantaneous pickup.
4) Recommendations on improved trip systems, if applicable.
c. Fuses: Show current rating, voltage, and class.

G. Time-Current Coordination Curves: Determine settings of overcurrent protective devices to achieve selective coordination. Graphically illustrate that adequate time separation exists between devices installed in series, including power utility company's upstream devices. Prepare separate sets of curves for the switching schemes and for emergency periods where the power source is local generation. Show the following information:
1. Device tag and title, one-line diagram with legend identifying the portion of the system covered.
2. Terminate device characteristic curves at a point reflecting maximum symmetrical or asymmetrical fault current to which the device is exposed.
3. Identify the device associated with each curve by manufacturer type, function, and, if applicable, tap, time delay, and instantaneous settings recommended.

4. Plot the following listed characteristic curves, as applicable:
   a. Power utility's overcurrent protective device.
   b. Medium-voltage equipment overcurrent relays.
   c. Medium- and low-voltage fuses including manufacturer's minimum melt, total clearing, tolerance, and damage bands.
   d. Low-voltage equipment circuit-breaker trip devices, including manufacturer's tolerance bands.
   e. Transformer full-load current, magnetizing inrush current, and ANSI through-fault protection curves.
   f. Cables and conductors damage curves.
   g. Ground-fault protective devices.
   h. Motor-starting characteristics and motor damage points.
   i. Generator short-circuit decrement curve and generator damage point.
   j. The largest feeder circuit breaker in each motor-control center and panelboard.
5. Series rating on equipment allows the application of two series interrupting devices for a condition where the available fault current is greater than the interrupting rating of the downstream equipment. Both devices share in the interruption of the fault and selectivity is sacrificed at high fault levels. Maintain selectivity for tripping currents caused by overloads.
6. Provide adequate time margins between device characteristics such that selective operation is achieved.
7. Comments and recommendations for system improvements.

PART 3: EXECUTION

3.1 EXAMINATION

A. Examine Project overcurrent protective device submittals for compliance with electrical distribution system coordination requirements and other conditions affecting performance. Devices to be coordinated are indicated on Drawings.
   1. Proceed with coordination study only after relevant equipment submittals have been assembled. Overcurrent protective devices that have not been submitted and approved prior to coordination study may not be used in study.

3.2 PROTECTIVE DEVICE COORDINATION STUDY

A. Comply with IEEE 242 for calculating short-circuit currents and determining coordination time intervals.
B. Comply with IEEE 399 for general study procedures.
C. The study shall be based on the device characteristics supplied by device manufacturer.
D. The extent of the electrical power system to be studied is indicated on Drawings.
E. Begin analysis at the service, extending down to the system overcurrent protective devices as follows:
   1. To normal system low-voltage load buses where fault current is 10 kA or less.

2. Exclude equipment rated 240-V ac or less when supplied by a single transformer rated less than 125 kVA.

F. Study electrical distribution system from normal and alternate power sources throughout electrical distribution system for Project. Study all cases of system-switching configurations and alternate operations that could result in maximum fault conditions.

G. Transformer Primary Overcurrent Protective Devices:
   1. Device shall not operate in response to the following:
      a. Inrush current when first energized.
      b. Self-cooled, full-load current or forced-air-cooled, full-load current, whichever is specified for that transformer.
      c. Permissible transformer overloads according to IEEE C57.96 if required by unusual loading or emergency conditions.
   2. Device settings shall protect transformers according to IEEE C57.12.00, for fault currents.

H. Motor Protection:
   1. Select protection for low-voltage motors according to IEEE 242 and NFPA 70.
   2. Select protection for motors served at voltages more than 600 V according to IEEE 620.

I. Conductor Protection: Protect cables against damage from fault currents according to ICEA P-32-382, ICEA P-45-482, and protection recommendations in IEEE 242. Demonstrate that equipment withstands the maximum short-circuit current for a time equivalent to the tripping time of the primary relay protection or total clearing time of the fuse. To determine temperatures that damage insulation, use curves from cable manufacturers or from listed standards indicating conductor size and short-circuit current.

J. Generator Protection: Select protection according to manufacturer's written recommendations and to IEEE 242.

K. The calculations shall include the ac fault-current decay from induction motors, synchronous motors, and asynchronous generators and shall apply to low- and medium-voltage, three-phase ac systems. The calculations shall also account for the fault-current dc decrement, to address the asymmetrical requirements of the interrupting equipment.
   1. For grounded systems, provide a bolted line-to-ground fault-current study for areas as defined for the three-phase bolted fault short-circuit study.

L. Calculate short-circuit momentary and interrupting duties for a three-phase bolted fault and single line-to-ground fault at each of the following:
   1. Electric utility's supply termination point.
   2. Switchgear.
   3. Unit substation primary and secondary terminals.
   4. Low-voltage switchgear.
   5. Motor-control centers.
   6. Standby generators and automatic transfer switches.
   7. Branch circuit panelboards.

M. Protective Device Evaluation:
   1. Evaluate equipment and protective devices and compare to short-circuit ratings.
   2. Adequacy of switchgear, motor-control centers, and panelboard bus bars to withstand short-circuit stresses.

3.3 LOAD-FLOW AND VOLTAGE-DROP STUDY

A. Perform a load-flow and voltage-drop study to determine the steady-state loading profile of the system. Analyze power system performance two times as follows:

1. Determine load-flow and voltage drop based on full-load currents obtained in "Power System Data" Article.
2. Determine load-flow and voltage drop based on 80 percent of the design capacity of the load buses.
3. Prepare the load-flow and voltage-drop analysis and report to show power system components that are overloaded, or might become overloaded; show bus voltages that are less than as prescribed by NFPA 70.

3.4 MOTOR-STARTING STUDY

A. Perform a motor-starting study to analyze the transient effect of the system's voltage profile during motor starting. Calculate significant motor-starting voltage profiles and analyze the effects of the motor starting on the power system stability.

B. Prepare the motor-starting study report, noting light flicker for limits proposed by IEEE 141 and voltage sags so as not to affect the operation of other utilization equipment on the system supplying the motor.

3.5 POWER SYSTEM DATA

A. Obtain all data necessary for the conduct of the overcurrent protective device study.

1. Verify completeness of data supplied in the one-line diagram on Drawings. Call discrepancies to the attention of Engineer.
2. For new equipment, use characteristics submitted under the provisions of action submittals and information submittals for this Project.
3. For existing equipment, whether or not relocated obtain required electrical distribution system data by field investigation and surveys, conducted by qualified technicians and engineers. The qualifications of technicians and engineers shall be qualified as defined by NFPA 70E.

B. Gather and tabulate the following input data to support coordination study. The list below is a guide. Comply with recommendations in IEEE 551 for the amount of detail required to be acquired in the field. Field data gathering shall be under the direct supervision and control of the engineer in charge of performing the study, and shall be by the engineer or its representative who holds NETA ETT Level III certification or NICET Electrical Power Testing Level III certification.

1. Product Data for overcurrent protective devices specified in other Sections and involved in overcurrent protective device coordination studies. Use equipment designation tags that are consistent with electrical distribution system diagrams, overcurrent protective device submittals, input and output data, and recommended device settings.
2. Electrical power utility impedance at the service.
3. Power sources and ties.
4. Short-circuit current at each system bus, three phase and line-to-ground.

5. Full-load current of all loads.
6. Voltage level at each bus.
7. For transformers, include kVA, primary and secondary voltages, connection type, impedance, X/R ratio, taps measured in percent, and phase shift.
8. For reactors, provide manufacturer and model designation, voltage rating, and impedance.
9. For circuit breakers and fuses, provide manufacturer and model designation. List type of breaker, type of trip and available range of settings, SCCR, current rating, and breaker settings.
10. Generator short-circuit current contribution data, including short-circuit reactance, rated kVA, rated voltage, and X/R ratio.
11. For relays, provide manufacturer and model designation, current transformer ratios, potential transformer ratios, and relay settings.
12. Maximum demands from service meters.
13. Busway manufacturer and model designation, current rating, impedance, lengths, and conductor material.
14. Motor horsepower and NEMA MG 1 code letter designation.
15. Low-voltage cable sizes, lengths, number, conductor material, and conduit material (magnetic or nonmagnetic).
16. Medium-voltage cable sizes, lengths, conductor material, and cable construction and metallic shield performance parameters.
17. Data sheets to supplement electrical distribution system diagram, cross-referenced with tag numbers on diagram, showing the following:
    a. Special load considerations, including starting inrush currents and frequent starting and stopping.
    b. Transformer characteristics, including primary protective device, magnetic inrush current, and overload capability.
    c. Motor full-load current, locked rotor current, service factor, starting time, type of start, and thermal-damage curve.
    d. Generator thermal-damage curve.
    e. Ratings, types, and settings of utility company's overcurrent protective devices.
    f. Special overcurrent protective device settings or types stipulated by utility company.
    g. Time-current-characteristic curves of devices indicated to be coordinated.
    h. Manufacturer, frame size, interrupting rating in amperes rms symmetrical, ampere or current sensor rating, long-time adjustment range, short-time adjustment range, and instantaneous adjustment range for circuit breakers.
    i. Manufacturer and type, ampere-tap adjustment range, time-delay adjustment range, instantaneous attachment adjustment range, and current transformer ratio for overcurrent relays.
    j. Panelboards, switchboards, motor-control center ampacity, and SCCR in amperes rms symmetrical.
    k. Identify series-rated interrupting devices for a condition where the available fault current is greater than the interrupting rating of the downstream equipment. Obtain device data details to allow verification that series

application of these devices complies with NFPA 70 and UL 489 requirements.

3.6 FIELD ADJUSTING

A. Adjust relay and protective device settings according to the recommended settings provided by the coordination study. Field adjustments shall be completed by the engineering service division of the equipment manufacturer under the Startup and Acceptance Testing contract portion.

B. Make minor modifications to equipment as required to accomplish compliance with short-circuit and protective device coordination studies.

C. Testing and adjusting shall be by a full-time employee of the Field Adjusting Agency, who holds NETA ETT Level III certification or NICET Electrical Power Testing Level III certification.

1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters. Perform NETA tests and inspections for all adjustable overcurrent protective devices.

3.7 DEMONSTRATION

A. Engage the Coordination Study Specialist to train Owner's maintenance personnel in the following:

1. Acquaint personnel in the fundamentals of operating the power system in normal and emergency modes.
2. Hand-out and explain the objectives of the coordination study, study descriptions, purpose, basis, and scope. Include case descriptions, definition of terms, and guide for interpreting the time-current coordination curves.
3. Adjust, operate, and maintain overcurrent protective device settings.

END OF SECTION 16402

SECTION 16403 - OVERCURRENT PROTECTIVE DEVICE ARC-FLASH STUDY

PART 1: GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes a computer-based, arc-flash study to determine the arc-flash hazard distance and the incident energy to which personnel could be exposed during work on or near electrical equipment.

1.3 DEFINITIONS

A. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

B. One-Line Diagram: A diagram which shows, by means of single lines and graphic symbols, the course of an electric circuit or system of circuits and the component devices or parts used therein.

C. Protective Device: A device that senses when an abnormal current flow exists and then removes the affected portion from the system.

D. SCCR: Short-circuit current rating.

E. Service: The conductors and equipment for delivering electric energy from the serving utility to the wiring system of the premises served.

1.4 ACTION SUBMITTALS

A. Product Data: For computer software program to be used for studies.

B. Other Action Submittals: Submit the following submittals after the approval of system protective devices submittals. Submittals shall be in digital form.

1. Arc-flash study input data, including completed computer program input data sheets.

2. Arc-flash study report; signed, dated, and sealed by a qualified professional engineer.

a. Submit study report for action prior to receiving final approval of the distribution equipment submittals. If formal completion of studies will cause delay in equipment manufacturing, obtain approval from Architect for preliminary submittal of sufficient study data to ensure that the selection of devices and associated characteristics is satisfactory.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Arc-Flash Study Specialist and Field Adjusting Agency.

B. Product Certificates: For arc-flash hazard analysis software, certifying compliance with IEEE 1584 and NFPA 70E.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance procedures according to requirements in NFPA 70E shall be provided in the equipment manuals.

B. Operation and Maintenance Procedures: In addition to items specified in Section 017823 "Operation and Maintenance Data," provide maintenance procedures for use by Owner's personnel that comply with requirements in NFPA 70E.

1.7 QUALITY ASSURANCE

A. Studies shall use computer programs that are distributed nationally and are in wide use. Software algorithms shall comply with requirements of standards and guides specified in this Section. Manual calculations are unacceptable.

B. Arc-Flash Study Software Developer Qualifications: An entity that owns and markets computer software used for studies, having performed successful studies of similar magnitude on electrical distribution systems using similar devices.

1. The computer program shall be developed under the charge of a licensed professional engineer who holds IEEE Computer Society's Certified Software Development Professional certification.

C. Arc-Flash Study Specialist Qualifications: Professional engineer in charge of performing the study, analyzing the arc flash, and documenting recommendations, licensed in the state where Project is located. All elements of the study shall be performed under the direct supervision and control of this professional engineer.

D. Field Adjusting Agency Qualifications: An independent agency, with the experience and capability to adjust overcurrent devices and to conduct the testing indicated, that is a member company of the International Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.

PART 2: PRODUCTS

2.1 COMPUTER SOFTWARE DEVELOPERS

A. Software Developers:

1. Manufacturers: Subject to compliance with requirements, provide products by the following:

a. SKM Systems Analysis, Inc.

b. ETAP

B. Comply with IEEE 1584 and NFPA 70E.

C. Analytical features of device coordination study computer software program shall have the capability to calculate "mandatory," "very desirable," and "desirable" features as listed in IEEE 399.

2.2 ARC-FLASH STUDY REPORT CONTENT

A. Executive summary.

B. Study descriptions, purpose, basis and scope.

C. One-line diagram, showing the following:

1. Protective device designations and ampere ratings.
2. Cable size and lengths.
3. Transformer kilovolt ampere (kVA) and voltage ratings.
4. Motor and generator designations and kVA ratings.
5. Switchgear, switchboard, motor-control center and panelboard designations.

D. Study Input Data: As described in "Power System Data" Article.
E. Short-Circuit Study Output: As specified in "Short Circuit Study Output" Paragraph in "Short-Circuit Study Report Contents" Article in Section 260572 "Overcurrent Protective Device Short-Circuit Study."
F. Protective Device Coordination Study Report Contents: As specified in "Protective Device Coordination Study Report Contents" Article in Section 260573 "Overcurrent Protective Device Coordination Study."
G. Arc-Flash Study Output:
   1. Interrupting Duty Report: Three-phase and unbalanced fault calculations, showing the following for each overcurrent device location:
      a. Voltage.
      b. Calculated symmetrical fault-current magnitude and angle.
      c. Fault-point X/R ratio.
      d. No AC Decrement (NACD) ratio.
      e. Equivalent impedance.
      f. Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on a symmetrical basis.
      g. Multiplying factors for 2-, 3-, 5-, and 8-cycle circuit breakers rated on a total basis
H. Incident Energy and Flash Protection Boundary Calculations:
   1. Arcing fault magnitude with and without required Arc Energy Reduction methods.
   2. Protective device clearing time.
   3. Duration of arc.
   4. Arc-flash boundary.
   5. Working distance.
   6. Incident energy.
   7. Hazard risk category.
   8. Recommendations for arc-flash energy reduction.
I. Fault study input data, case descriptions, and fault-current calculations including a definition of terms and guide for interpretation of the computer printout.

2.3 ARC-FLASH WARNING LABELS

A. Comply with requirements in Section 260553 "Identification for Electrical Systems." Produce a 3.5-by-5-inch thermal transfer label of high-adhesion polyester for each work location included in the analysis.
B. The label shall have an orange header with the wording, "WARNING, ARC-FLASH HAZARD," and shall include the following information taken directly from the arc-flash hazard analysis:
   1. Location designation.
   2. Nominal voltage.
   3. Flash protection boundary.
   4. Hazard risk category.
   5. Incident energy.
   6. Working distance.
   7. Engineering report number, revision number, and issue date.
C. Labels shall be machine printed, with no field-applied markings.

PART 3: EXECUTION

3.1 EXAMINATION

A. Examine Project overcurrent protective device submittals. Proceed with arc-flash study only after relevant equipment submittals have been assembled. Overcurrent protective devices that have not been submitted and approved prior to arc-flash study may not be used in study.

3.2 ARC-FLASH HAZARD ANALYSIS

A. Comply with NFPA 70E and its Annex D for hazard analysis study.

B. Preparatory Studies:

1. Protective Device Coordination Study Report Contents: As specified in "Protective Device Coordination Study Report Contents" Article in Section 16402 "Overcurrent Protective Device Coordination Study."

C. Calculate maximum and minimum contributions of fault-current size.

1. The minimum calculation shall assume that the utility contribution is at a minimum and shall assume no motor load.
2. The maximum calculation shall assume a maximum contribution from the utility and shall assume motors to be operating under full-load conditions.

D. Calculate the arc-flash protection boundary and incident energy at locations in the electrical distribution system where personnel could perform work on energized parts.

E. Include medium- and low-voltage equipment locations, except equipment rated 240-V ac or less fed from transformers less than 125 kVA.

F. Safe working distances shall be specified for calculated fault locations based on the calculated arc-flash boundary, considering incident energy of 1.2 cal/sq.cm.

G. Incident energy calculations shall consider the accumulation of energy over time when performing arc-flash calculations on buses with multiple sources. Iterative calculations shall take into account the changing current contributions, as the sources are interrupted or decremented with time. Fault contribution from motors and generators shall be decremented as follows:

1. Fault contribution from induction motors should not be considered beyond three to five cycles.
2. Fault contribution from synchronous motors and generators should be decayed to match the actual decrement of each as closely as possible (e.g., contributions from permanent magnet generators will typically decay from 10 per unit to three per unit after 10 cycles).

H. Arc-flash computation shall include both line and load side of a circuit breaker as follows:

1. When the circuit breaker is in a separate enclosure.
2. When the line terminals of the circuit breaker are separate from the work location.

I. Base arc-flash calculations on actual overcurrent protective device clearing time. Cap maximum clearing time at two seconds based on IEEE 1584, Section B.1.2.

3.3 POWER SYSTEM DATA

A. Obtain all data necessary for the conduct of the arc-flash hazard analysis.

1. Verify completeness of data supplied on the one-line diagram on Drawings and under "Preparatory Studies" Paragraph in "Arc-

Flash Hazard Analysis" Article. Call discrepancies to the attention of Engineer.

2. For new equipment, use characteristics submitted under the provisions of action submittals and information submittals for this Project.
3. For existing equipment, whether or not relocated, obtain required electrical distribution system data by field investigation and surveys, conducted by qualified technicians and engineers.

B. Electrical Survey Data: Gather and tabulate the following input data to support study. Comply with recommendations in IEEE 1584 and NFPA 70E as to the amount of detail that is required to be acquired in the field. Field data gathering shall be under the direct supervision and control of the engineer in charge of performing the study, and shall be by the engineer or its representative who holds NETA ETT Level III certification or NICET Electrical Power Testing Level III certification.

1. Product Data for overcurrent protective devices specified in other Sections and involved in overcurrent protective device coordination studies. Use equipment designation tags that are consistent with electrical distribution system diagrams, overcurrent protective device submittals, input and output data, and recommended device settings.
2. Obtain electrical power utility impedance at the service.
3. Power sources and ties.
4. Short-circuit current at each system bus, three phase and line-to-ground.
5. Full-load current of all loads.
6. Voltage level at each bus.
7. For transformers, include kVA, primary and secondary voltages, connection type, impedance, X/R ratio, taps measured in per cent, and phase shift.
8. For reactors, provide manufacturer and model designation, voltage rating and impedance.
9. For circuit breakers and fuses, provide manufacturer and model designation. List type of breaker, type of trip and available range of settings, SCCR, current rating, and breaker settings.
10. Generator short-circuit current contribution data, including short-circuit reactance, rated kVA, rated voltage, and X/R ratio.
11. For relays, provide manufacturer and model designation, current transformer ratios, potential transformer ratios, and relay settings.
12. Busway manufacturer and model designation, current rating, impedance, lengths, and conductor material.
13. Motor horsepower and NEMA MG 1 code letter designation.
14. Low-voltage cable sizes, lengths, number, conductor material and conduit material (magnetic or nonmagnetic).
15. Medium-voltage cable sizes, lengths, conductor material, and cable construction and metallic shield performance parameters.

3.4 LABELING

A. Apply one arc-flash label for 600-V ac, 480-V ac, and applicable 208-V ac panelboards and disconnects and for each of the following locations:

1. Motor-control center.
2. Low-voltage switchboard.
3. Switchgear.

4. Medium-voltage switch.
5. Control panel.

3.5 APPLICATION OF WARNING LABELS

A. Install the arc-fault warning labels under the direct supervision and control of the Arc-Flash Study Specialist.

3.6 DEMONSTRATION

A. Engage the Arc-Flash Study Specialist to train Owner's maintenance personnel in the potential arc-flash hazards associated with working on energized equipment and the significance of the arc-flash warning labels.

END OF SECTION 16403

SECTION 16410 - SURGE PROTECTION DEVICES FOR LOW-VOLTAGE ELECTRICAL POWER CIRCUITS

PART 1 - GENERAL

1.1 SCOPE

A. This section describes the materials and installation requirements for surge protective devices (SPD) for the protection of all AC electrical circuits.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section. Other sections that may relate to the work in this section include, but are not limited to, the following:
   1. Section 16050 – Basic Electrical Materials and Methods

1.3 SUBMITTALS

A. Submit shop drawings and product information for approval and final documentation in the quantities listed according to the Conditions of the Contract. Customer name, customer location, and customer order number shall identify all transmittals.
B. Submittals shall include UL 1449 3rd Edition Listing documentation verifiable by visiting www.UL.com, clicking "Certifications" link, searching using UL Category Code: VZCA.
   1. Short Circuit Current Rating (SCCR)
   2. Voltage Protection Ratings (VPRs) for all modes
   3. Maximum Continuous Operating Voltage rating (MCOV)
   4. I-nominal rating (I-n)
   5. SPD shall be Type 1 UL listed and labeled
C. Upon request, an unencapsulated but complete SPD formally known as TVSS shall be presented for visual inspection.
D. Minimum of ten (10) year warranty

1.4 RELATED STANDARDS

A. The following codes and standards shall be referenced:
   1. IEEE C62.41.1, IEEE Guide on the Surge Environment in Low-Voltage (1000 V and Less) AC Power Circuits,
   2. IEEE C62.41.2, IEEE Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and Less) AC Power Circuits,
   3. IEEE C62.45, IEEE Recommended Practice on Surge Testing for Equipment Connected to Low-Voltage (1000 V and Less) AC Power Circuits.
   4. National Electrical Code: Article 285
   5. UL 1283 - Electromagnetic Interference Filters
   6. UL 1449, Third Edition, effective September 29, 2009 – Surge Protective Devices

1.5 LISTING REQUIREMENTS

A. SPD shall bear the UL Mark and shall be Listed to most recent editions of UL 1449 and UL 1283. "Manufactured in accordance with" is not equivalent to UL listing and does not meet the intent of this specification.

B. SPD and performance parameters shall be posted at www.UL.com under Category Code: VZCA. Products or parameters without posting at UL.com shall not be approved.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Engage a firm with at least ten (10) years' experience in manufacturing transient voltage surge suppressors.
B. Manufacturer shall be ISO 9001 or 9002 certified.
C. The manufacturer of this equipment shall have produced similar electrical equipment for a minimum period of five (10) years. When requested by the Engineer, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.
D. The SPD shall be compliant with the Restriction of Hazardous Substances (RoHS) Directive 2002/95/EC.

1.7 DELIVERY, STORAGE AND HANDLING

A. Handle and store equipment in accordance with manufacturer's Installation and Maintenance Manuals. One (1) copy of this document to be provided with the equipment at time of shipment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Provide internally mounted transient voltage suppressors as described herein.
B. Manufacturer and/or manufacturer's model number listed in this Specification are used to establish general style, type, character, and quality of product desired. Similar items manufactured by manufacturers other than those listed will be considered, providing submittals are made according to Pre-Bid Approval requirements of Instructions to Bidders.
C. Where no manufacturer or model number are given, any product meeting performance or design criteria, or referenced trade association standard may be used and Pre-Bid Approval is not required.
D. Subject to compliance with the specified requirements, provide products by one of the following manufacturers:
Advanced Protection Technologies
Eaton

2.2 SURGE PROTECTIVE DEVICE FEATURES

A. SPD shall be UL 1449 labeled with 200kA Short Circuit Current Rating (SCCR). Fuse ratings shall not be considered in lieu of demonstrated withstand testing of SPD, per NEC 285.6.
B. SPD shall be UL 1449 labeled as Type 1 intended for use without need for external or supplemental overcurrent controls. Internal overcurrent and thermal overtemperature controls shall protect every suppression component of every mode, including N-G. SPDs relying upon external or supplementary installed safety disconnectors do not meet the intent of this specification.
C. SPD shall be UL 1449 labeled with 20kA I-nominal (I-n) (verifiable at UL.com) for compliance to UL 96A Lightning Protection Master Label and NFPA 780.

D. Suppression components shall be heavy duty 'large block' MOVs, each exceeding 30mm diameter.

E. Standard 7 Mode Protection paths: SPD shall provide surge current paths for all modes of protection: L-N, L-G, L-L, and N-G for Wye systems; L-L, L-G in Delta and impedance grounded Wye systems.

F. If a dedicated breaker for the SPD is not provided in the switchboard, the service entrance SPD shall include an integral UL Recognized disconnect switch. A dedicated breaker shall serve as a means of disconnect for distribution SPD's.

G. SPD shall meet or exceed the following criteria:

1. Minimum surge current capability (single pulse rated) per phase shall be:

   a. Service Entrance applications:
   Eaton Model SPD300 Series with Maximum surge current capability of 300kA per phase.
   Siemens TPS3 01 series with Maximum surge current capability of 300kA per phase.

   b. Distribution applications:
   Eaton Model SPD200 Series with Maximum surge current capability of 200kA per phase.
   Siemens TPS3 01 series with Maximum surge current capability of 200kA per phase.

   c. Branch Panel applications:
   Eaton Model SPD100 Series with Maximum surge current capability of 100kA per phase.
   Siemens TPS3 01 series with Maximum surge current capability of 100kA per phase.

2. UL 1449 Listed Voltage Protection Ratings (VPRs) shall not exceed the following:

VOLTAGE	L-N	L-G	N-G
208Y/120V	700V	700V	700V
240S/120V	700V	700V	700V
480Y/277V	1500V	1500V	1500V

H. UL 1449 Listed Maximum Continuous Operating Voltage (MCOV) (verifiable at UL.com):

System Voltage	Allowable System Voltage Fluctuation (%)	MCOV
208Y/120	25%	150V
240S/120	25%	150V
480Y/277V	20%	320V

I. SPD shall include a serviceable, replaceable module (excluding Distribution).

J. Service Entrance SPD shall have UL 1283 EMI/RFI filtering with minimum attenuation of -50dB at 100kHz.

K. SPD shall have a warranty for a period of ten (10) years, incorporating unlimited replacements of suppressor parts if they are destroyed by transients during the warranty period.

L. Service Entrance SPDs shall be equipped with the following diagnostics:

1. Visual LED diagnostics including a minimum of one green LED indicator per phase, and one red service LED.
2. Audible alarm with on/off silence function and diagnostic test function (excluding branch).

3. Form C dry contacts
4. Surge Counter
5. No other test equipment shall be required for SPD monitoring or testing before or after installation.

M. Distribution Panels and Branch Panels SPDs shall be equipped with the following diagnostics:
1. Visual LED diagnostics including a minimum of one green LED indicator per phase, and one red service LED.
2. No other test equipment shall be required for SPD monitoring or testing before or after installation.

N. Surge protection devices installed for individual equipment items shall meet or exceed the following criteria:
1. Minimum surge current capability (single pulse rated) per phase shall be:
   a. ASCO 420 series with dry contact and surge current capability shall be 50kA per phase.
2. UL 1449 Listed Voltage Protection Ratings (VPRs) shall not exceed the following:

VOLTAGE	L-N	L-G	N-G
208Y/120V	700V	1200V	600V
240S/120V	700V	1200V	600V
480Y/277V	1200V	1800V	1000V

3. UL 1449 Listed Maximum Continuous Operating Voltage (MCOV) (verifiable at UL.com):

System Voltage	Allowable System Voltage Fluctuation (%)	MCOV
208Y/120	25%	150V
240S/120	25%	150V
480Y/277V	20%	320V

4. Furnished with NEMA 4X Polycarbonate enclosure.

PART 3 - EXECUTION

3.1 INSTALLATION

A. The installation shall meet the following criteria:
1. Install per manufacturer's recommendations and contract documents.
2. Install units plumb, level and rigid without distortion
3. One primary suppressor shall be installed internal to the service entrance in accordance with manufacturer instructions.
4. Service Entrance SPD shall be installed on the line or load side of the main service disconnect.
5. Service Entrance SPD ground shall be bonded to the service entrance ground.
6. At Service Entrance or Transfer Switch, a UL approved disconnect switch shall be provided as a means of servicing disconnect if a 60A breaker is not available.
7. One SPD shall be installed internal to each designated distribution panelboard.
8. At Distribution, MCC and Branch, TVSS shall have an independent means of servicing disconnect such that the protected panel remains energized. A 60A breaker (or larger) may serve this function.

9. SPD shall be installed per manufacturer's installation instructions with lead lengths as short (less than 24") and straight as possible. Gently twist conductors together.
10. Installer may reasonably rearrange breaker locations to ensure short & straightest possible leads to SPDs.
11. Before energizing, installer shall verify service and separately derived system Neutral to Ground bonding jumpers per NEC.

3.2 ADJUSTMENTS AND CLEANING

A. Remove debris from SPD and wipe dust and dirt from all components.
B. Repaint marred and scratched surfaces with touch up paint to match original finish.

3.3 TESTING

A. Check tightness of all accessible mechanical and electrical connections to assure they are torqued to the minimum acceptable manufacture's recommendations.
B. Check all installed panels for proper grounding, fastening and alignment.

3.4 WARRANTY

A. Equipment manufacturer warrants that all goods supplied are free of non-conformities in workmanship and materials for one year from date of initial operation, but not more than eighteen months from date of shipment.

END OF SECTION 16410

SECTION 16500 - LIGHTING

PART 1 - GENERAL

1.1 LIGHTING SCHEDULE

A. The Contractor shall install lighting fixtures and accessories as shown on the drawings and/or described herein. The Contractor shall also install lamps for all fixtures.

PART 2 - PRODUCTS

2.1 LED LIGHTING

A. Lighting fixtures with LED light sources shall meet the following fixture and light source requirements:

1. LED Color Temperature – Cool White (CW), 5800K nom., CRI > 70
2. Line Voltage – Universal Voltage 120-277 volts
3. Governmental Standards – LM79 and LM80 Compliant
4. Expected Lamp Life – LED Life Rating (L_{70} B_{10}) to be 60,000 hours to 100,000 hours; Defined as time of operation (in hours) to 30% lumen depreciation (i.e. 70% lumen maintenance), derived from Luminaire in-situ temperature measurement testing (i.e. LED chip package temperature (T_S) measurement obtained with the LED chip package operating in given luminaire and in a given stabilized ambient environment) under UL1598 environments and directly correlated to LED package manufacturers IESNA LM-80-08 data. Predicted (L_{70} B_{10}) Limits (@ 25°C luminaire ambient operating environment): Greater than 60,000 hours @ 350mA Drive Current
5. Driver – Components must be fully encased in potting material for moisture resistance, and must comply with IEC and FCC standards
6. Surge Protection – Surge protection must be provided including separate sure protection built into electronic driver
7. Mechanical – Luminaire LED system components to be low copper aluminum, with high performance heat sink(s) designed specifically for LED luminaires. No active cooling features (Fans, etc.). Luminaire configuration must allow for modular upgradability and/or field repair of all electrical components (i.e. LED modules, Driver(s), etc.). Drivers and vertical light bars must be all mounted to a twist-lock tool-less assembly for ease of installation and trouble-shooting.

2.2 FIXTURES

A. Fixtures as described in the Fixture Schedule on the drawings shall be furnished by the Contractor and shall be properly installed.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Unless otherwise specified, lighting fixtures shall be permanently installed and connected to the wiring system.

B. The Contractor shall support each fixture, independently from the building structure. Ceiling framing members shall not be used to support fixtures except in specified areas where ceiling supports for this purpose have been specified elsewhere in these specifications. Each fixture shall have at least two fixture supports.

C. Flexible conduit used for fixture whips shall be at least twelve (12) inches, but not more than 48 inches long.

END OF SECTION 16500

SECTION 16700 - COMMUNICATIONS

PART 1: GENERAL

1.1 SCOPE

A. The Contractor shall furnish and install special systems and accessories as shown on the drawings and/or described herein.

B. Shop drawings shall be submitted for approval and shall include complete catalog data and other data shown to describe the equipment proposed.

1.2 COMMUNICATIONS SYSTEMS

A. Special systems specifications listed in Part 2 of this specification may be found in other specification sections as described herein. The individual specification sections shall be referenced for complete product descriptions.

PART 2: PRODUCTS

2.1 SURVEILLANCE CAMERA SYSTEM

A. The Contractor shall furnish and install a Cat 6 cable for surveillance camera system as described on the drawings. Contractor shall terminate camera station cable to surveillance camera system patch panel in the data cabinet as described on the drawings. Contractor shall complete termination of cable at camera locations. Power for surveillance camera system shall be installed at data closets as shown on drawings. Refer to specification section 16740 for Cat 6 cable description.

B. Cameras to be supplied will include fixed mount inside cameras, exterior cameras, and cameras mounted in elevators. Contractor shall provide traveler cable to be attached to the elevator travel cables for cameras mounted in elevators. Cameras and camera control cabinet shall be provided by the Contractor.

2.2 FIRE ALARM SYSTEM

A. Refer to specification section 16710 for description of the fire alarm system requirements.

2.3 DATA & TELEPHONE PLANT

A. Refer to specification section 16740 for data and telecommunications system requirements.

PART 3: EXECUTION

3.1 INSTALLATION

A. Unless otherwise specified, all special systems shall be permanently installed and connected to the wiring system. The systems must be installed according to manufacturer standards and recommendations.

B. The Contractor shall properly support each device, independently from the building structure. Ceiling framing members shall not be used to support devices except for devices specifically intended for such installation.

C. A factory-trained technician shall install the special system equipment. Coordination with the Architect and Owner shall be important for proper positioning of all special systems equipment.

3.2 CONDUIT AND WIRING

A. All special systems wiring shall be run in conduits or other type approved raceways unless specifically noted or allowed otherwise. Horizontal runs of low voltage fire alarm, telephone, data, and controls may be run without a raceway in equipment rooms and accessible ceiling spaces where allowed by code. Exterior mounted cabling shall be run in raceways. Surveillance camera wiring shall be considered data wiring.

B. Where run without raceways, cables shall be routed and grouped together utilizing U.L. approved J-hooks attached to the building structure and spaced maximum of 4'-0" in a neat, orderly arrangement. Ceilings considered accessible shall only be those with lay-in panels on T bar grids. Other types of ceilings may be considered accessible if specifically approved as such.

C. Hangers used to support wiring run without raceways shall be Caddy CAT series or B-Line BCH series J-hooks, or other hangers approved with mounting as appropriate to the location. Hangers shall be submitted for approval. Do not use wire wraps or tie straps to support cable. Provide attachment accessory suitable for the substrate the hanger is being attached to.

D. Wiring run without raceways shall be bundled together with reusable Velcro wraps (not nylon tie wraps) at least once between each 4'-0" support. Wiring must be routed on the supports as high as possible, free and clear of mechanical equipment, lighting fixtures, piping, conduits, ductwork, building structural members, and any other building items.

E. Each wiring system (fire alarm, tele-comm, surveillance camera, etc.) shall be run separate with separate hangers or raceways. Do not support from ceiling system supports, HVAC ductwork, conduit, piping, etc.

F. Where wiring run without raceways penetrates walls or ceilings, a metal conduit sleeve with bushings at each end shall be provided for the penetration. Cables shall not be run through in walls or ceilings.

G. Each cable shall be continuous, without splices or connections from the source to the connected device. Routing shall be parallel or perpendicular to building walls. Support arrangement and tension on cables shall be minimized to prevent exceeding the maximum cable bending radius.

H. Where cables transition from sections run without a raceway into sections run with a raceway, a bushing shall be installed on the entrance to the raceway (conduit, surface raceway, etc.).

I. All fire alarm wiring shall have a red colored jacket.

J. Wiring routed without raceways through accessible ceilings or other spaces used for environmental air handling (ceiling spaces used for air return, etc.) shall be listed for the use (plenum rated) and comply with NEC Section 300-22 requirements.

END OF SECTION 16700

SECTION 16710 - FIRE DETECTION AND ALARM

PART 1: GENERAL

1.1 INCLUDED IN THIS SPECIFICATION

A. Provide a complete fire alarm system per this project's plans and specifications.

1.2 REFERENCES

A. Electrical Industries Association (EIA):
   1. RS-232-D – Interface Between Data Terminal Equipment and Data Circuit-Terminating Equipment Employing Serial Binary Data Interchange
   2. RS-485 – Electrical Characteristics of Generators and Receivers for Use in Balanced Multipoint Systems

B. National Fire Protection Association (NFPA):
   1. NFPA 12 – Standard on Carbon Dioxide Extinguishing Systems.
   2. NFPA 13 – Installation of Sprinkler Systems.
   3. NFPA 15 – Standard for Water Spray Fixed Systems for Fire Protection.
   4. NFPA 16 – Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems.
   5. NFPA 16A – Standard for the Installation of Closed Head Foam-Water Sprinkler Systems.
   6. NFPA 70 – National Electrical Code (NEC).
   7. NFPA 72 – National Fire Alarm Code 2010 Edition
   8. NFPA 90A – Standard for the Installation of Air Conditioning and Ventilating Systems.
   9. NFPA 101 – Life Safety Code 2012 Edition
   10. NFPA 750 – Standard on Water Mist Fire Protection Systems.
   11. NFPA 5000 – Building Construction and Safety Code.
   12. IBC Chapters 9 & 10 2012 Edition
   13. ADAAG Americans with Disabilities Act Application Guidelines

C. Fire Alarm Control Panel Equipment: System shall comply with applicable provisions of the following UL standards and classifications:
   1. UL 864 9th Edition
   2. UOJZ, Control Units, System.
   3. SYZV Control Units, Releasing Device.
   4. UOXX, Control Unit Accessories, System.

D. The Fire Alarm Control Panel's U.L. Listed signaling types shall be:
   1. Digital alarm communicator
   2. Other Technology

1.3 SUBMITTALS

A. Equipment Submittal Brochures:
   1. Provide minimum 10 copies of submittal brochures and shop drawings.
   2. Submittal brochures shall be bound my means of 3 ring binders, binding combs or similar. Stapled brochures will be rejected.
   3. Provide one submittal brochure in color, highlighted and reserved for use by the Louisiana State Fire Marshal Plan Review Office. This copy shall become the record copy for the project.

4. Include a cover page that indicates the following minimal information:
    a. Project name and address.
    b. Engineered systems distributor's name and contact information.
    c. Installing contractor's name and contact information.
    d. The date of the equipment submittals and date of any subsequent required re-submittals. Indicate on revised submittals the original submittal date and re-submittal date.
    e. Architectural project review number assigned by the Louisiana State Fire Marshal's Office.
5. Provide a Scope of Work Narrative describing the system's basic operating premise in written word.
6. Provide a detailed Sequence of Operation Matrix Grid tailored for this project indicating the cause and effect of all fire alarm system control panels, input and output functions.
7. Include a system bill of material prepared specifically for this project. Include the make, model, description, quantity and manufacturer for every component to be installed in the project.
8. Provide manufacturer's data sheet for each component to be installed in the project. For data sheets that include multiple part numbers, options and accessories, the components included or pertinent to this project shall be highlighted in yellow.
9. Include the U.L. (Underwriters Laboratories) Certification for each component to be installed in the system. The U.L. Certification shall be placed directly behind its corresponding data sheet.
10. Manufacturers device compatibility documentation shall be included proving testing and operational compatibility between control panels and peripheral devices.
11. Separate battery calculations shall be provided for each control panel and prepared on manufacturer's official worksheets.

B. Shop Drawings
1. Shop drawings shall be prepared with the contractor's own title block which shall include:
    a. Project name and address.
    b. Contractor's name, address and phone number.
    c. Date.
    d. Drawing pages shall be numbered.
    e. Bound with spines and stapled.
    f. Floor plan scale.
    g. Louisiana State Fire Marshal architectural assigned project number.
    h. Revision number with re-submittal dates.
2. Drawings shall contain one floor per page. If a floor must be split use match lines and references that refer sheet number to match lines.
3. Floor plan shop drawings shall be prepared in AutoCAD.
4. Prepare floor plans to a 1/8" = 1'-0" scale unless directed otherwise by the architect.
5. Show all equipment, control panels, and device locations.
6. Include a distinct address for every device including panels, initiating, notification, auxiliary, and peripheral devices. All visual notification appliances shall have their candela indicated.

7. Floor plans shall include the following:
   a. Door swings.
   b. Room names and numbers.
   c. Reflected ceiling plan overlay.
   d. Ceiling heights.
   e. Fire and smoke barriers.
   f. Office furnishings when available.
8. Include a symbol schedule of devices for this project.
9. Include the necessary details and general notes for mounting heights, device placement restrictions, etc.
10. End-of-line symbols shall be shown on the floor plans.
11. Riser locations shall be indicated on the floor plan by a bold circle.
12. A detailed riser shall be provided as part of the shop drawings. The riser shall include:
   a. Control panels, power supplies, annunciators, demark cabinets, each identified with its own address and description matching the symbol schedule.
   b. Operating power requirements with breaker panel and breaker number identification.
   c. All system circuits including initiating, notification, SLC, power, control, monitor, network, audio, riser, fiber optic, phone, category cable and auxiliary circuits. Circuits shall be individually addressed indicating wire type, size, quantity and color.
   d. Provide a point to point diagram of every system device on its riser circuit using the exact device symbol as the floor plan. Provide the corresponding device address and candela rating next to each device.
   e. Provide the cumulative current draw at the end of each notification appliance circuit.
   f. Indicate location and placement of surge suppressors.
   g. Provide detail circuit diagrams for connections with systems from other trades.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name, number and manufacturer.

B. Store materials in clean, dry area indoors in accordance with manufacturer's instructions.

C. Protect materials from damage during handling and installation.

1.5 WARRANTY

A. Contractor shall warranty material and installation against defects in manufacturing and workmanship for a period of one year beginning on the date of final acceptance of the project. Warranty related service calls shall be provided at no charge during the contractor's normal working hours.

PART 2: PRODUCTS

2.1 MANUFACTURERS

A. References to manufacturer's model numbers and other information is intended to establish minimum standards of performance, function, and quality. No other manufacturers, other than those listed will be considered for use on this project.

B. The following are acceptable manufacturers and series for control panels. Substitutions shall be submitted for prior approval:
   1. Gamewell FCI Series
   2. Edwards EST3 Series

2.2 FIRE ALARM SYSTEM

A. Control panel shall be Edwards EST3 Series or Gamewell FCI Series.

2.3 CONTROL PANEL

A. System Cabinet
   1. Shall be all metal with a textured finish suitable for surface or semi-flush mounting. Cabinets containing anything non-metal are not acceptable.
   2. Front door of steel construction with lockout or dead-front inner door of steel construction to conceal internal circuitry and wiring.
   3. Cabinet shall be capable of housing 12 amp hour batteries.
   4. Cabinet shall be pre-fabricated to accept all available internal circuitry. Installations with loosely hanging internal panel components will not be accepted.

B. Main Power Supply
   1. Shall incorporate the latest power-saving switching technology using no step-down transformers.
   2. Shall provide minimum 7 amps of continuous rated output to supply all necessary power under normal and emergency conditions.
   3. Shall include an internal battery charger capable of charging up to 55 amp hour batteries while under full load.

C. Batteries
   1. Provide U.L. Listed batteries of sufficient capacity to provide power for the entire system automatically upon loss of AC power for a period of 24 hours with 15 minutes of alarm signaling at the end of the 24 hour period.
   2. Battery connectors shall be the exact size and type required for the standby battery posts or tabs.
   3. Connect batteries to the main panel with minimum 14 AWG stranded hook up wire. Red for positive and black for negative. Use fully insulated crimp style connectors.

D. Battery Cabinets
   1. Provide U.L. listed metal battery cabinet and enclosures with key lockable door for installations requiring batteries too large to be housed in control panels.
   2. Battery cabinet shall be textured painted to match the control panel it is housing the batteries for.

E. Display
   1. Main control panel shall include a color touch screen display for user interface.
   2. Display shall be capable of a minimum 200 characters.

3. The touch screen communications shall be textual RS-485 based with the capability of being mounted locally or remotely.
4. The display shall provide both audible and visual annunciation of all system events.
5. Separate LED's shall be dedicated for:
   a. AC (normal power): Green
   b. Fire: Red
   c. Hazard: Blue
   d. Supervisory: Yellow
   e. Trouble: Yellow
   f. Silenced: Yellow
6. Pre-programmed keys shall be on board for:
   a. Menu
   b. Fire Drill
   c. System Reset
7. Display shall contain a minimum 5 keys that can be custom programmed for system functions
8. The display shall be suitable to be remotely installed as a remote annunciator up to 3,000 feet away from the main CPU cabinet. The remote display shall be available with a manufacturer's custom metal cabinet suitable for surface or semi flush installation complete with a lockable see through door and textured finish matching the main control cabinet.

F. Main System CPU
1. System CPU shall incorporate a 32-bit RISC multiprocessor design on a single circuit board. An isolated watchdog circuit shall monitor the microprocessor and shall activate system trouble on the display upon any failure. The system program shall not be lost upon any loss of power. The CPU software shall support control-by-event (CBE) programming using Boolean logic including AND, OR, NOT, XOR and TIMING functions to provide complete custom programming flexibility. An auto programming option shall be available where only devices that are present on the SLC shall activate.
2. System shall be programmed via the manufacturer's proprietary field configuration program (FCP), allowing the project configuration custom programming to be uploaded and downloaded via a portable laptop computer at the project.
3. An RJ-45 Ethernet port shall be provided to accept downloaded programs from a portable computer, or provide 80-column readout of all alarms, troubles, location descriptions, time, and date. Communication shall operate at 10/100 speeds.
4. An on-board supervised RS-232C Serial Output shall be included to operate remote printers and video terminals.
5. The system CPU shall include an on-board supervised RS-485 Serial Output for connection and communication to system modules. The RS-485 port shall allow for communication with remote annunciator modules up to 3,000' from the cabinet.
6. Smoke detector alarm verification shall be a standard software option while allowing other devices such as manual stations and sprinkler flow to create immediate alarms. This feature shall be selectable for smoke sensors that are installed in environments prone to nuisance or unwanted alarms.

7. Standard software shall provide for the analog drift compensation of smoke detectors allowing each smoke detector to automatically adjust its sensitivity to accommodate changes caused by the effects of component aging or its surrounding environment including dust. Each sensor shall maintain its actual sensitivity under adverse conditions to respond to alarm conditions while ignoring factors which generally contribute to nuisance alarms. System trouble circuitry shall activate, display smoke detectors that require cleaning and maintenance.
8. System software shall automatically test each analog smoke sensor a minimum of 3 times daily. Test shall be a recognized functional test of each photocell (analog photoelectric sensors) and ionization chamber (analog ionization sensors) as required annually by NFPA 72. Failure of sensor test shall activate system trouble circuitry, display "Test Failed" indication, and identify individual device that failed.
9. The system control panel shall be capable of setting any detector or sensor into Positive Alarm Sequence mode. Positive Alarm Sequence will operate in the following manner. Any alarms received from a device will activate an alarm at the control panel but will not execute any output functions (e.g. turning on the strobes or fire horns). The operator has 30 seconds to "acknowledge" the event or the system will activate a general alarm and sound all the fire horn and strobes. If the operator does acknowledge the vent within thirty (30) seconds, the panel will start a timer for 180 seconds (3 minutes) in which time the operator must find the device in alarm and reset the device. If the operator has not performed a reset within 180 seconds or a second device reports an alarm, the system will immediately sound the general alarm.
10. The CPU display shall have the option of being configured as an additional remote annunciator. This annunciator shall be mounted in its own metal cabinet with lockable door.
11. The CPU shall maintain a 4100 event history log. The log shall be maintained upon loss of any power.
12. 24 volt D.C. power-limited 1 amp outputs shall be provided for both resettable and non-resettable power. The outputs shall be screw terminal on board the CPU board.
13. Manufacturer's standard software shall accommodate a 1 man walk test feature.

G. Signaling Line Circuits
1. Provide 1 SLC loop for this project. Projects including more than 1 floor shall include a second SLC loop. Each SLC shall be capable of being wired Class B Style 4 or Class A Style 6 and shall operate in NFPA Style 7 configuration when equipped with isolator modules.
2. Each SLC shall accommodate a maximum 159 analog sensors and 159 monitor/control devices.

H. Notification Appliance Circuits
1. The CPU shall include a minimum 4 on-board polarized NAC circuits rated at 2 amps DC each. Each NAC shall be capable of being wired Class B, Style Y or Class A, Style Z.

I. Dry Contacts

1. Form C dry contacts with a 2 amp at 30VDC resistive rating shall be included on-board the CPU for alarm, trouble and supervisory events.

J. DACT

1. Fire alarm control panel shall include a Digital Alarm Communicator Transmitter (DACT) for signaling to central station. DACT shall contain "Dialer-Runaway" feature preventing unnecessary transmissions as result of intermittent faults in system and shall be Carrier Access Code (CAC) compliant, accepting up to 20-digit central station telephone numbers. Fire department shall be consulted as to authorized central station companies serving municipality. Fire alarm system shall transmit both alarm and trouble signals, with alarm having priority over trouble signal. Contractor shall be responsible for all installation charges and Owner will be responsible for line lease charges
2. DACT shall be a U.L. listed internal component of the main control panel and shall be capable of transmitting specific detailed point by point system events to the monitoring station.
3. Systems using external standalone digital communicators will not be accepted.

K. Cellular/IP COMMUNICATOR

1. The existing Cellular/IP Communicator shall remain in service.

2.4 PRINTERS

A. A printer shall not be required for this project.

2.5 SUPPLEMENTARY NOTIFICATION APPLIANCE POWER SUPPLIES

A. The following are acceptable manufacturers and series for supplementary notification appliance circuit power supplies. No substitutions are allowed. It is the intent of this specification that all notification equipment must be available over the counter through security equipment distributor network markets
   1. APS6 of APS10 with the appropriate amp.

B. The supplementary NAC power supply shall offer up to 6.0 amps continuous regulated 24-volt power. The power supply shall include the following features:
   1. Integral Charger: Charge up to 35.0 amp-hour batteries and support 60-hour standby.
   2. 2 Input Triggers. Input trigger shall be Notification Appliance Circuit (from fire alarm control panel) or supervised addressable relay.
   3. Surface-mount back box.
   4. Ability to delay AC fail delay in accordance with applicable NFPA requirements.
   5. Power limited circuitry in accordance with applicable UL standards.
   6. Operates as sync follower or a sync generator.
   7. Shall have on-board built in sync capability for System Sensor and Wheelock brand appliances.

C. Do not exceed 75% of the power supply's available listed current. Provide the necessary quantity of power supplies to satisfy this requirement with the quantity of devices indicated on the plans.

2.6 VOICE EVACUATION PANEL

A. The existing voice evacuation panel shall remain in service.

2.7 SYSTEM PERIPHERALS

A. Every devices address shall be set by means of a rotary-decimal switch using a standard screwdriver. Devices using or requiring binary switches, handheld device programmers or addressed only through software mapping shall not be acceptable.

B. Smoke detectors
   1. Shall be fully listed and compatible with the furnished system.
   2. Each detector shall be provided with 2 status LEDs that shall flash under normal conditions and remain steady during alarm conditions.

C. Pull Stations
   1. Shall be fully listed and compatible with the furnished system, dual action, and constructed of Lexan with clearly visible operating instructions provided on cover. The word FIRE shall appear on front of stations in raised letters.
   2. Stations shall be designed so after actuation they cannot be restored except by key reset.
   3. Stations shall be keyed alike with the fire alarm control panel and NAC power supply.
   4. Surface boxes shall be available as an option from the manufacturer.
   5. Pull stations shall not utilize glass rods.

D. Duct Detectors
   1. Duct detectors shall be System Sensor DNR or DNRW Series housings.
   2. Housings and all the related accessories listed below shall be provided for the each of the following:
      a. On the ductwork of every supply branch of every HVAC air handling/rooftop unit exceeding 2,000 CFM
      b. On the ductwork of every return branch of HVAC air handling/rooftop unit exceeding 2,000 CFM. Where duct detectors cannot be practically or effectively installed on return ductwork, securely fasten the duct detector on the side of the AHU and install and secure its sampling tube across the front of the return air filter.
      c. On every shown smoke and fire/smoke damper. Where duct detectors cannot be practically installed on dampers consult with the general contractor to coordinate their installation with other trades.
   3. The housing shall include the listed addressable photoelectric smoke detector head which shall twist in and lock inside the housing.
   4. Provide System Sensor DST Series sampling tube of enough length to extend 75% of the width of the duct it is being installed in. Sampling tubes in ducts exceeding widths of 6 feet shall exceed and install across the entire width of the duct and be supported by drilling a hole in the opposite side of the ductwork.
   5. A System Sensor model RTS151KEY module shall be installed for each duct detector. Provide phenolic labels identifying the related

HVAC unit it is connected to. The RTS151KEY module shall mount in a standard single gang electrical box. Verify and coordinate location of RTS151KEY modules with architect.

6. Provide one addressable relay module for each HVAC required function including:
   a. AHU Shutdown
   b. Smoke damper operation
   c. Smoke sequence/exhaust/pressurization operations
7. System designs incorporating hardwired, conventional relays for any mechanical functions are not allowed and will be subsequently rejected.

E. Thermal Detectors
1. Shall be listed and compatible with the furnished system.
2. Detector shall be rated at 135 degrees and shall have rate of rise element rated at 15 degrees per minute.

F. Addressable Monitor Modules
1. Where required provide addressable monitor modules to monitor normally open dry contacts from other non-addressable equipment.
2. Module shall be suitable for installation on a standard 4" square electrical box 2-1/8" deep and shall include the manufacturer's matching cover plate.
3. An LED shall be visible on the outside of the module's cover plate and shall flash under normal conditions and remain on steady when it's connected device is in alarm.
4. Modules not suitable for mounting directly onto a 4" square electrical box or those which wire with pigtail type connectors are not acceptable.

G. Supervised Addressable Output Module
1. Provide addressable supervised output module where required for the project to provide a supervised, programmed 24volt DC reverse polarity output.
2. Module shall be suitable for installation on a standard 4" square electrical box 2-1/8" deep and shall include the manufacturer's matching cover plate.
3. An LED shall be visible on the outside of the module's cover plate and shall flash under normal conditions and remain on steady when the module is activated.

H. Addressable Relay Output Module
1. Provide addressable modules suitable for installation on a standard 4" square electrical box 2-1/8" deep and shall include the manufacturer's matching cover plate.
2. The module shall provide two isolated sets of Form-C normally open and normally closed contacts
3. Contact ratings shall be rated at minimum 2.0 amps resistive or 1.0 amp inductive
4. An LED shall be visible on the outside of the module's cover plate and shall flash under normal conditions and remain on steady when the module is activated.

I. Audio Visual Notification Appliances
1. Shall be System Sensor SpectrAlert Advance Series listed for use on both wall and ceiling as indicated on the plans.

2. Provide devices white in color with red FIRE screened on device from manufacturer.
3. Audio visual devices shall be one complete assembly utilizing a speaker for audible notification for this project.
4. The device shall be suitable for mounting on standard electrical boxes using the manufacturer's universal mounting plate. The strobe device shall snap into the mounting plate and secured by one fastener.
5. The manufacturer's mounting plate shall include screw terminals to accept all field wiring.
6. Candelas shall be selectable in settings of 15, 15/75, 30, 75, 95, 110, 115, 135, 150, 177 and 185.
7. The strobe shall be listed to U.L. 1971 standards and meet all current ADAAG Guidelines.
8. The system shall utilize speakers for audible alarm notification. The speakers shall be listed to UL 1480 for Fire Protective Signaling Systems. It shall be a dual-voltage transformer speaker capable of operation at 25.0 or 70.7 nominal Vrms. The speaker shall have a frequency range of 400 to 4,000 Hz. The speaker shall be capable of mounting to a standard 4x4x2 1/8 electrical box. The speaker shall have power taps from ¼ watt to 2 watts and voltage output selectable via rotary switches. The speaker shall have a maximum sound output of 86 dB at 10 feet. Provide System Sensor Spectralert SPS Series speakers and speaker strobe devices.
9. Provide manufacturer's surface mount and weatherproof backboxes where required.

2.7 WIRE AND CABLE

A. The following are acceptable manufacturers:
   1. Windy City Wire
   2. General Cable
B. Cable shall be approved for plenum use without conduit per the NFPA 262 Flame Test
C. Cable shall be approved per NEC 800, 760; UL, CMP, FPLP UL, RoHS Complaint

PART 3: EXECUTION

3.1 EXAMINATION

A. Examine areas and surfaces to receive fire alarm system.
   1. Notify Architect of conditions that would adversely affect installation or subsequent use.
   2. Do not begin installation until unacceptable conditions are corrected.

3.2 INSTALLATION

A. Install fire alarm system in accordance with NFPA 72, NFPA 70, state and local codes, manufacturer's instructions, and as indicated on the Drawings.
B. Conceal conduit, junction boxes, and conduit supports and hangers in finished areas. Conceal or expose conduit, junction boxes, and conduit supports and hangers in unfinished areas.

C. Do not install smoke detectors before system programming and test period. If construction is ongoing during this period, take measures to protect smoke detectors from contamination and physical damage.

D. Flush-mount fire detection and alarm system devices, control panels, and remote annunciators in finished areas. Flush-mount or surface-mount fire detection and alarm system devices, control panels, and remote annunciators in unfinished areas.

E. Ensure manual stations are suitable for surface mounting or semi-flush mounting as indicated on the Drawings. Install not less than 42 inches, not more than 48 inches, above finished floor measured to operating handle.

3.3 FIELD QUALITY CONTROL

A. Manufacturer's Field Services: Provide service of competent, factory-trained technician authorized by manufacturer to technically supervise and participate during pre-testing and acceptance testing of system.

B. Testing:

1. Conduct complete visual inspection of control panel connections and test wiring for short circuits, ground faults, continuity, and insulation before energizing cables and wires.
2. Close each sprinkler system control valve and verify proper supervisory alarm at Control Panel.
3. Verify activation of flow switches.
4. Open initiating device circuits and verify that trouble signal actuates.
5. Open signaling line circuits and verify that trouble signal actuates.
6. Open and short notification appliance circuits and verify that trouble signal actuates.
7. Ground initiating device circuits and verify response of trouble signals.
8. Ground signaling line circuits and verify response of trouble signals.
9. Ground notification appliance circuits and verify response of trouble signals.
10. Check installation, supervision, and operation of intelligent smoke detectors.
11. Introduce on system each of the alarm conditions that system is required to detect. Verify proper receipt and proper processing of signal at Control Panel and correct activation of control points.
12. Consult manufacturer's manual to determine proper testing procedures when system is equipped with optional features. This is intended to address such items as verifying controls performed by individually addressed or grouped devices, sensitivity monitoring, verification functionality, and similar.

C. Acceptance Testing:

1. Before installation shall be considered completed and acceptable by AHJ, a complete test using as a minimum, the following scenarios shall be performed and witnessed by representative approved by Engineer. Monitoring company and/or fire department shall be notified before final test in accordance with local requirements.
2. Contractor's job foreman, in presence of representative of manufacturer, representative of Owner, and fire department shall

operate every installed device to verify proper operation and correct annunciation at control panel.

3. Open signaling line circuits and notification appliance circuits in at least 2 locations to verify presence of supervision.
4. When testing has been completed to satisfaction of both Contractor's job foreman and representatives of manufacturer and Owner, a notarized letter co-signed by each attesting to satisfactory completion of said testing shall be forwarded to Owner and fire department.
5. Leave fire alarm system in proper working order and, without additional expense to Owner, replace defective materials and equipment provided within 1 year (365 days) from date of final acceptance by the owner.

3.4 DEMONSTRATION

A. Provide instruction as required for operating fire alarm system.

END OF SECTION 16710

SECTION 16740 - VOICE/DATA SYSTEMS

PART 1: GENERAL

1.1 SCOPE OF WORK FOR COMMUNICATIONS SYSTEM

A. The Contractor shall furnish labor, materials, and equipment required for the installation of a communication system infrastructure to provide the maximum performance for the system components and subsystems as shown on the Drawings.

1.2 STRUCTURED SYSTEM

A. The infrastructure requires a structured cabling system from general cable forming a channel solution. A channel solution is defined as: The end-to-end transmission path, using a single vendor solution, connecting any two pieces of application-specific equipment. Equipment cables and work area cables are included in the channel. Fiber jumpers and/or data patch cords of appropriate length will be provided for all data drops, switches, and patch panels.

B. The Certified Structured Connectivity Solutions should have as a minimum:
   1. Category 6 for Data and Category 6 for voice wire.
   2. A twenty-year written warranty on material and workmanship.
   3. Work shall be inspected and approved at least two times by the wiring manufacturer's representative - (at rough-in and at final inspection).
   4. All telephone and data wiring work shall be performed by a qualified telecommunications contractor regularly employed in this field. The contracting company performing the telecommunications and data work must have been continuously in the telecommunications business for at least the past five consecutive years.

1.3 QUALITY ASSURANCE

A. All work and equipment shall conform to the appropriate portions of the following specifications, codes and regulations:
   1. Building Industry Consulting Services International (BICSI)
   2. Telecommunications Distribution Methods Manual
   3. ANSI/TIA/EIA Standards:
      a. ANSI/TIA/EIA- 568-B.1- Commercial Building Telecommunications Cabling Standard, Part 1: General Requirements.
      b. ANSI/TIA/EIA -568-B.2 - Commercial Building Telecommunications Cabling Standard, Part 2: Balanced Twisted Pair Cabling Components.
      c. ANSI/TIA/EIA - 568-B.3 - Optical Fiber Cabling Components Standards
      d. ANSI/TIA/EIA - 569A- Commercial Building Standard for Telecommunications Pathways and Spaces
      e. ANSI/TIA/EIA - 606 (A) - The Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
      f. ANSI/TIA/EIA - 607 (A) - Commercial Building Grounding and Bonding Requirements for Telecommunications

g. ANSI/TIA/EIA - 526-7 -- Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant.
h. ANSI/TIA/EIA-526-14A -- Measurement of Optical Power Loss of Installed Multimode Fiber Cable Plant.
i. ANSI/TIA/EIA-758(A) -- Customer-Owned Outside Plant Telecommunications Cabling Standard.

4. National Electric Safety Code (NESC)
5. National Fire Protection Agency (NFPA)
6. National Electrical Code (NEC)
7. Any Applicable State and Local Codes.

B. If conflict exists between applicable documents, then the more stringent requirement shall apply.

C. Maintenance Considerations - The cable and wire system shall be installed to maximize the safety, maintainability, and performance effectiveness of maintenance personnel and minimize the demands upon skills, training, and manpower. Splices/terminations shall be placed and supported with convenient accessibility so as to maximize the efficiency and ease with which it can be maintained. No cables shall be spliced unless as shown on plans or approved by the Engineer.

1.5 SHOP DRAWINGS

A. Shop drawings shall be submitted for approval and shall include complete catalog and other information shown to describe the cables, wire, and equipment proposed.

PART 2: PRODUCTS

2.1 DATA STATION CABLES

A. Data station wiring shall be Category 6 (Cat 6) communications wire and cable. Station Cable shall be four-pair, unshielded, twisted pair, inside-station cable, and shall be constructed of solid 24 gauge annealed copper. Each conductor shall be insulated with a continuous layer of fluorinated ethylene propylene (FEP). The sheath shall be all weather, flame resistant, polyvinyl chloride. Station wire shall be constructed of 4 twisted pair sharing one sheath. Cable shall have Category 6 transmission characteristics as specified by ANSI/EIA/TIA-568-B2.1.

B. Cables routed in air plenum shall have a sheath and conductor insulation constructed of material so as to be classified as type CMP as defined by the NEC 800-3(b)(3).

C. Data cable shall be BLUE.

D. Data cabling shall be:

1. General Cable GENSPEED 6500 series, or approved equal

2.2 COMMUNICATIONS OUTLETS

A. Voice and data outlets shall be a modular data communication unit. Wall mounted outlets shall be flush mounted in a double gang utility box and covered with a single gang data device plates. Complete outlet shall consist of utility box, communication assembly devices, cover plate, and jack inserts. All data outlet inserts shall be eight (8) position/eight (8) conductor, insulation displacement, open system to multi-vendor, EIA/TIA 568-B2.1, Category 6.

B. Outlet shall be furnished with 8-position, Category 6 compliant, RJ-45 modular, gig jacks. Each outlet shall consist of voice or data jack as

shown on the Drawings.

C. Cover plates shall be brushed stainless steel and jumbo size.

D. Outlets shall consist of the following items:
   1. Double gang outlet box.
   2. Plastic cover plate; Electrical Ivory color.
   3. Voice and data jack inserts, category 6 compliant: Panduit CJ688TG or approved equal.

E. Each new jack shall be color-coded. Dual jack outlets shall have the top-most, or left-most, jack colored blue and the bottom-most, or right most, jack colored red. Quad jack outlets shall have the top-left-most jack colored blue, the top-right-most jack colored red, the bottom-left-most jack colored green, and the bottom-right-most jack colored EI LABELING REQUIRED.

2.3 PATCH PANELS

A. The patch panels shall support giga-speed transmission for UTP cabling systems utilizing Category 6 performance rated cable. Terminations shall use 110-IDC (Insulating Displacement Connector) field made continuous to the 8-pin modular jack on front of panel via Printed Circuit interconnections. The panel shall mount on nineteen (19") inch rack and be fully EIA/TIA 568-B2.1 compliant. Panels will be T568B wiring. Panels shall be Panduit CPPL24WBLY or CPPL48WBLY or approved equal.

2.4 EQUIPMENT FRAMES

A. General Frame Requirements:
   1. Distribution Frames: Freestanding and wall-mounting, modular units designed for telecommunications terminal support and coordinated with dimensions of units to be supported.
   2. Module Dimension: Width compatible with 19-inch panel mounting.
   3. Panel mounting holes are to be #12-24 tapped on EIA universal spacing on both front and rear of rack.

B. Wall-Mounted Racks: Modular-type, steel construction.
   1. Vertical cable management channels, both sides.
   2. Racks are to be nominal 30" high, 19" wide, 24" deep.
   3. Rack shall have 13 rack units.
   4. The rack must be self-supporting with base suitable to floor mount.
   5. Must be equipped with a grounding lug.

C. Cable Management for Equipment Frames:
   1. Metal or plastic, with integral wire retaining fingers.
   2. Vertical cable management panels shall have front and rear channels, with covers.

D. Wall mounted racks shall be Chatsworth model 11790-725, or equal.

2.5 CROSS-CONNECT WIRE

A. Cross-connect wire, patch cables, and fiber jumpers shall be furnished and installed by Contractor. Cross-connect and patch cables must be factory certified Category 6 for voice and data wiring. The fiber jumper shall be a duplex, buffered, graded-index fiber, 50/125/900 micron, kevlar yarn over each fiber cladding, and a flame-retardant PVC jacket.

2.6 PATCH CORDS

A. Patch cords shall be provided for each data run indicated on plans. Furnish additional patch cords equal to five percent of the quantity shown. Provide cords of appropriate lengths. For wiring closets provide 5 foot patch cords, and for work station locations patch cords shall be half 10 foot and half 15 foot, appropriate for the wiring solution provided. Patch cords to be installed and dressed from wiring closet to switch. Patch cord color BLUE.

2.7 FIBER CABLES

A. Fiber optic cable installed inside the building shall be a multi-mode fiber cable as shown on the Drawings, 50/125/900 micron, breakout style, riser rated for indoor applications (CMR). Cables shall include twelve (12) strand multimode fiber as shown on the drawings. Each individually jacketed fiber shall contain kevlar strength member to allow direct termination of cable. Cable shall be UL listed and constructed in accordance with EIA/TIA 568 requirements.

B. Fiber optic cables shall meet the following requirements:
   Max. attenuation dB/Km @ 850/1300nm: 3.5/1.0
   Min. Bandwidth MHz-Km @ 850/1300: 13500/500

C. Fiber cable shall be Systimax LazrSPEED 550, or approved equal.

D. Minimum Six (6) fiber strands shall be run between locations requiring fiber. All Strands will be terminated with LC connectors. Number of strands in cable will be noted for each job.

E. Individual fiber strands shall be color coded per telecommunications industry practice.

2.8 FIBER BREAK-OUT KIT

A. Fiber break-out kits shall be used to terminate fiber into protective buffer tubes. Kit permits separation and protection of individual fiber elements. Kits shall be Corning #FAN-BT47-06 or approved equal.

2.9 FIBER SHELF

A. Fiber LIUs will be rack mountable in a 19" rack. The LIU shall be sized to accommodate the appropriate number of fiber connections. The LIU at the IDF will have one bulkhead and 1 blank. THE LIU should be Panduit part number FRME4 or approved equal). The LIU at the MDF will have a bulkhead for each IDF. The others will be blank. Fiber cables shall be routed to fiber distribution panels (Panduit FAP6WEIDLC).

B. Fiber distribution panels shall be labeled with each strand marked permanently and appropriately with the corresponding Transmit and Receive the location to which the fiber pair is going.

2.10 FIBER JUMPERS

A. Fiber optic jumper cable shall be a multi-mode, 62.5/125/900 micron, with SC connectors. Fiber connection end will be decided prior to ordering jumpers. Fiber Jumper will be provided for each cable fiber.

2.11 BUILDING PROTECTORS

A. Building protectors shall be 188 Type building cable entrance surge protection terminals that protect personnel and equipment from outside plant cable pairs terminating inside the buildings on the main distribution frames. The 188 Type Protector shall be a combination protector and terminating field with output through a 110 Type Connecting Block. The

protectors shall be modular plug-in type, with 110-in/110-out connectivity and grounding lugs as manufactured by AT&T, NTI/Cook, or approved equal.

B. Protector modules shall be plug-in type surge protector modules compatible with modular building protector terminals. The modules shall be gas tube type for the station/BMDF end and gas tube type with sneak current protection for the PBX/MDF end. The modules shall have three (3) element protection, be rated for nominal 400V breakdown, and be color coded black for standard service, and shall be as manufactured by AT&T, NTI/Cook, or approved equal.

PART 3: EXECUTION

3.1 INSTALLATION

A. Unless otherwise specified, all communications systems shall be permanently installed and connected to the wiring system. The systems must be installed according to manufacturer standards and recommendations.

B. The Contractor shall meet with the Engineer, wiring system subcontractor, wiring solution representative and the detention center's technology services representative to review wiring paths. This meeting shall also be used to coordinate the voice/data system installation with the Owner's ordering of electronic equipment required for the facility. This meeting shall also be used to prevent problems with the data wiring during installation.

C. Test results and as-built documents will be provided to the Owner's Technical Services office in both hard copy and electronic copy, furnished on a CD.

D. Wiring map/as built documents showing voice and data outlets, device numbers, room locations, and termination locations will be displayed in each wiring closet.

E. Wireless drop wiring shall be punched down on a separate punch down block at the end of the data punch down blocks. The wireless punch down block shall be a different color.

F. All fiber runs must be home runs with no splices.

G. Voice and data wiring routed above accessible ceilings shall be supported on J-hooks, and shall be loose bundled using Velcro wraps.

H. Voice and data wire bundles shall not include power wiring or wiring for other low voltage systems (fire alarm, intercom, security, etc.).

I. Cabling installed in underground or under slab conduits shall be suitable for the environment installed and shall be compliant with the structured connectivity solution.

3.2 DATA SYSTEM GENERAL REQUIREMENTS

A. All cables, wires, and equipment shall be securely and neatly installed. Inside routing shall be installed parallel and perpendicular to existing structural lines and members.

B. Each station wire shall be plainly marked at its backboard end with the room number to which it is connected and terminated on the termination blocks or patch panel.

C. Data cables shall be routed above ceilings, with cables neatly bundled. Cables must not be tie-wrapped. No more than 30 cables shall be bundled together.

D. Contractor shall maintain recommended Category 5e/Category 6e bending radius, pulling tension, and cable support requirements. Cables ties may be finger tight, however, not so tight so they distort the outer jacket of the cable.

E. Cable suspended above an open ceiling shall not rest on ceiling tiles or lighting fixtures and shall be supported from roof structure at 4' to 6' intervals.

F. Data system wiring shall be installed in accordance with NEC Article 800-5 and 6 requirements and wiring solution requirements.

3.3 FIBER CABLE INSTALLATION

A. Fiber cables shall be terminated using SC type connectors. Connectors shall be attached using hot melt, ultraviolet, epoxy, heat curable, or crimp methods.

B. All multi-mode fiber cables shall be terminated at both ends and Contractor shall coordinate termination of fibers at source end.

3.4 COMMUNICATIONS SYSTEM QUALIFICATIONS

A. The communications system installer shall be experienced in the design, fabrication and installation of communications premise distribution systems of similar size and scope to this project. Installation technicians shall be manufacturer certified.

B. The Communications Contractor must have installation and service facilities within a 100-mile radius of the project site. All qualifications, including the firm's facilities shall be available for inspection by any school board official.

3.5 CABLE/WIRE IDENTIFICATION

A. Each cable shall be clearly labeled and identified in accordance with the following:

1. Each cable pair shall be plainly marked at the backboard end on terminal blocks with printed labels. Handwrite labels shall not be permitted.
2. All outlets shall be permanently marked or labeled with printed type labels on the jack faceplate -- ID number, voice, data.
3. All cables shall be legibly and permanently numbered at each end using wrap-around/stick-on label systems or approved equal.
4. In rooms where more than one jack exists, the jacks shall be numbered sequentially using alpha-numeric numbers. Labeling in Room/Classroom shall contain:
   a. The room number of wiring closet that drop is terminated.
   b. The drop number. This number should be consecutive numbers by room, by wiring closet. Example: Room 203 with data drops 73 through 75, and voice 2 and 3 all terminated in wiring closet 117. The label in Room 203 would look like:
   R17 – D73-75 (data)
   R17 – V2 & 3 (voice)
5. Labeling in wiring closet shall contain:
   a. The room number of the room the drop is in.
   b. The drop number. This number should be the numbers by room and by wiring closet. Example: Room 203 would

have data drops 73 through 75 and voice 2 and 3 all terminated in wiring closet 17. The label in wiring closet 17 would look like:
R203 – D73-75 (data)
R203 – V2 & 3 (voice)

c. Drop numbering shall start with 1 and continue through 999 by wiring closet.

d. Layout or wire on punch down block shall be by room number. Drop numbering shall start with 1 and continue through 999 by wiring closet.

6. All conduits, except those used for individual station jacks, shall be clearly and permanently marked or labeled at both ends, indicating the location of the other end of the conduit.

B. All cable and wiring identification shall be in compliance with ANSI/TIA/EIA 606 Structured Cabling Systems standards.

3.6 DOCUMENTATION AND TESTING

A. Upon completion of construction, the Contractor shall provide "as installed" drawings showing the exact placement of all outlets, cables, conduits and connecting hardware called for in this section. This shall be given in CD form and hard copy form to the owner.

B. Data wiring shall be tested upon completion of installation. Data cables shall contain no defective pairs nor near fails and shall be tested in accordance with Channel Solution standard per TIA/EIA 568-B.

C. The test procedures shall demonstrate, at a minimum:
1. Continuity of each conductor from end-to-end -- open test.
2. Shorted conductors with other conductors -- short test.
3. Proper polarity of paired conductors from end-to-end -- reverse test (for correct tip & ring and data terminations).
4. Proper termination of wire pairs from end-to-end -- cross test (for splits and other wrong terminations).
5. Proper ground and shield bonding (for shielded cables only) -- effective ground test (for zero potential difference bonding).
6. Grounded conductors (for all cables) -- ground fault test.
7. Detection of AC or DC power on any conductor -- power fault test.
8. All data cables shall be tested per EIA/TIA 568-B2.1 Level III requirements.

D. Prior to testing of any communications cable/wire and hardware, the Contractor shall notify the Architect and Engineer, in writing, at least two (2) weeks in advance of testing. Contractor shall furnish hard copy of all test reports to the Architect for approval prior to completion and final acceptance of project.

E. The data system shall be warranted and category 6 compliance certified from the data outlet to the patch panel, and shall be channel certified.

3.7 BONDING AND GROUNDING

A. Grounding and bonding of the communications system shall be in strict accordance with TIA 607, National Electrical Code, and NFPA requirements. Grounding and bonding shown on the drawings represent a minimum requirement.

B. All communications equipment racks that are installed or labeled or in anyway a part of this contract, shall be grounded, isolated from other grounds. The protective ground connection point shall NOT be made to

electrical conduits, power distribution box grounds or neutral busses. The intent is to provide telecommunications equipment with a ground which will not be affected by any other electrical work. The ground shall be a #6 AWG solid copper conductor, green insulated ground wire which shall be grounded to the building ground or to contractor installed ground 3/4"/8', following NEC Codes.

3.8 WALK THROUGH, PUNCH LIST, DOCUMENTATION AND TESTING

A. Before completion of the job, it is the responsibility of the Contractor to request a walk through inspection by Network Administrator. A Punch list will be created and agreed upon. Upon completion of punch list items it is the responsibility of the Contractor to request a Final Inspection.

B. Upon completion of installation, the contractor shall provide a copy of "as installed" drawings showing the number of cables terminated in each room, and the location of patch panel those cables are connected to.

C. Data wiring shall be tested upon completion of installation. A hard copy of the cable test results shall be provided with the "as installed" drawings upon completion of installation.

D. Testing shall be in accordance with the following standards:
ASTM D 4566-98 Standard Test Method for Electrical Performance Properties of Insulation and Jackets for Telecommunications Wire and Cable, 1998
ANSI/TIA/EIA-568-B.2 Commercial Building Telecommunication Cabling Standard, Part 2: Balance Twisted-Pair Cabling Components, 2000.

E. Data cables shall contain no defective pairs.

F. The test procedures shall demonstrate, at a minimum, that all data cables shall be tested per to the most recent proposed EIA/TIA CAT 6 standard

G. Each fiber optic cable shall be tested after installation by the contractor for optical power attenuation. Each LC cable termination may/shall have a maximum of 0.5dB loss, and a total loss of the cable shall be a maximum of 1.0 dB.

H. The Network Specialist will be given the "as installed" drawings, test results and approve final walk through before final payment will be made.

END OF SECTION 16740

DELTA PROCESS EQUIPMENT

FISHING PIER
DUPLEX PUMP
CONTROL PANEL

PROJECT SUBMITTAL

PLEASE REVIEW THOROUGHLY. THESE DRAWINGS ARE OUR INTERPRETATION OF THE PROJECT'S REQUIREMENTS. ANY CHANGES AFTER FABRICATION WILL BE DONE AT EXTRA COST.

MAY 14, 2025

Delta Process Equipment
8275 Florida Blvd.
Denham Springs, LA 70726
(225) 665-1666 Fax (225) 665-1855

CP-7915

SOLD TO: Delta Process
Fishing Pier Duplex Pump
Control Panel

SHIP TO: Delta Process
-
-

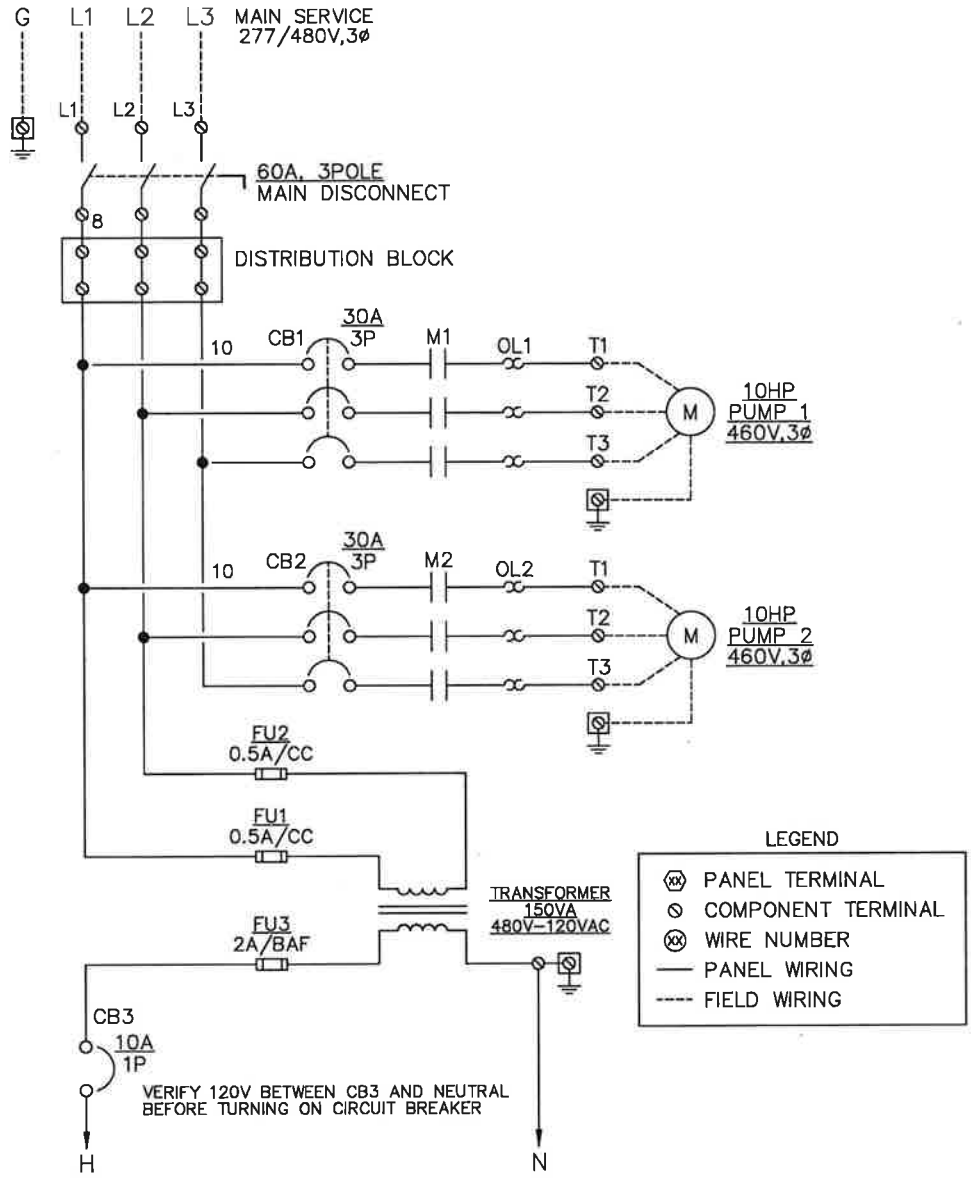
SPECIAL NOTES:

Panel Type	Duplex
Voltage	277/480
Phase/HZ	3/60
No. Motors	2
HP	10
FLA	14est.
Pump Manufacturer	Barnes
Type of Pump	-
Catalog Number	-
Capacitors	No
Control Voltage	120
Control Power Transformer VA= 150	Yes
Enclosure NEMA Rating	4X
Enclosure Material	Fiberglass
Enclosure Size	30x24x10
Inner Swing Panel	Yes
Conrol Sensor	Floats
UL508A Labeling	No
UL698A Labeling	No

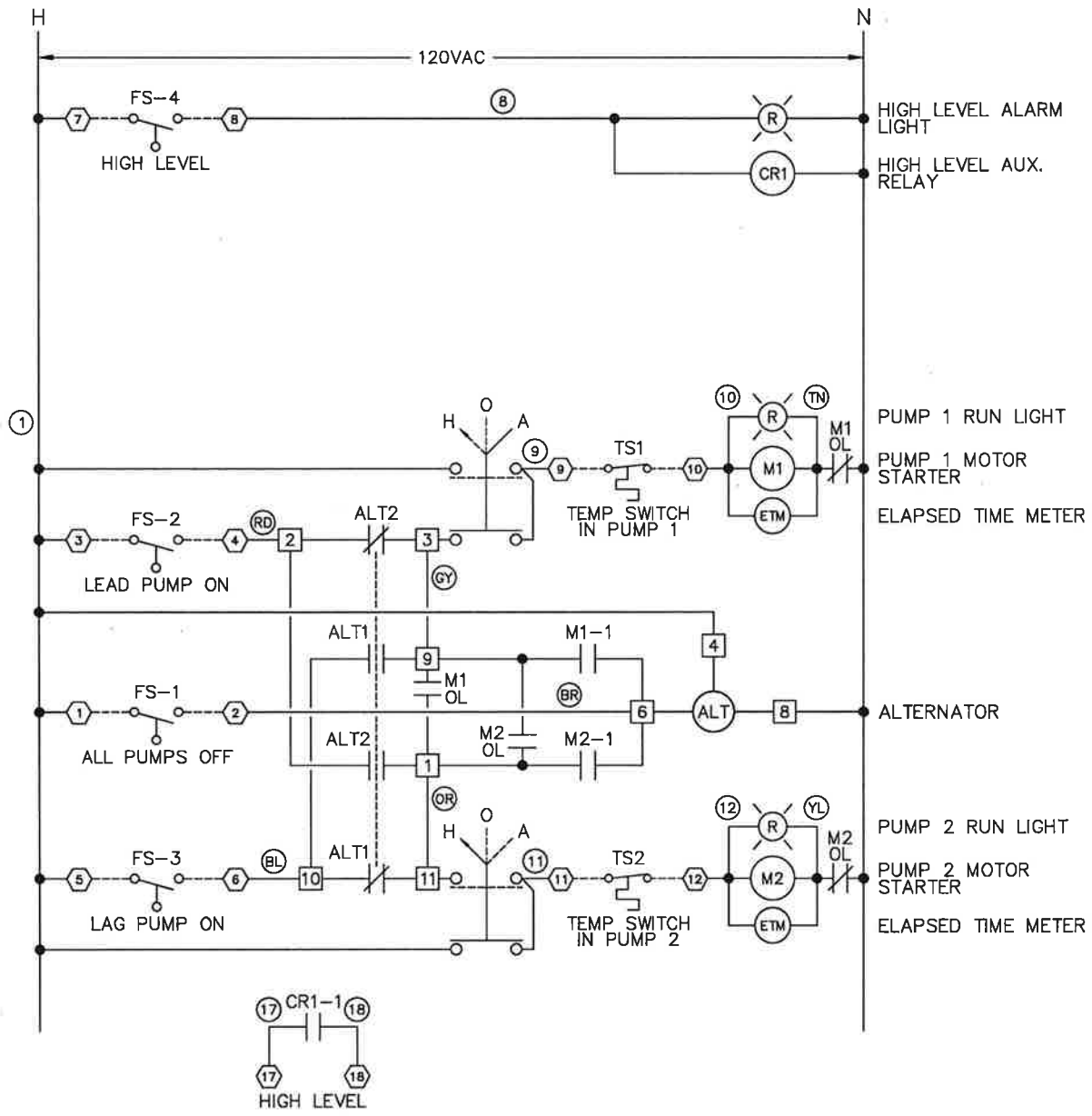
Alarm Light - Panel Door Mount	
Alarm Light - Panel Top Mount	X
Alarm Light - Remote	
Alarm Test Switch	
Alarm Silence Switch	
Alarm Acknowledge Switch	
Alternator with Lead Pump Selector Switch	X
Audible Alarm - Bell	
Audible Alarm - Horn	
Audible Alarm - Piezo	
COX™ CAMO™ System	
Cycle Counters	
Economy Version	
Elapsed Time Meter	X
Flasher	
Green Run Lights vs. Red	
Ground Fault Receptacle	
High Temp Lights	
High Temp Pump Shutdown - Auto Reset	X
High Temp Pump Shutdown - Manual Reset	
Intrinsically Safe Relays Pts.	
Lightning Arrestor	
Main Disconnect without Door Mt. Handle	X
Opti-Float® Level Dectector Pts.	
Panel Heater / Thermostat W=	
Phase Monitor	
Pole, Box, Seal	
Seal Fail Lights	X
Seal Fail Relay - Fixed	
Seal Fail Relay - Adjustable	X
Seal Fail Shutdown	
Starters - IEC	
Starters - NEMA (ABB)	X
Unpowered Alarm Circuits # 1	X

OTHER:

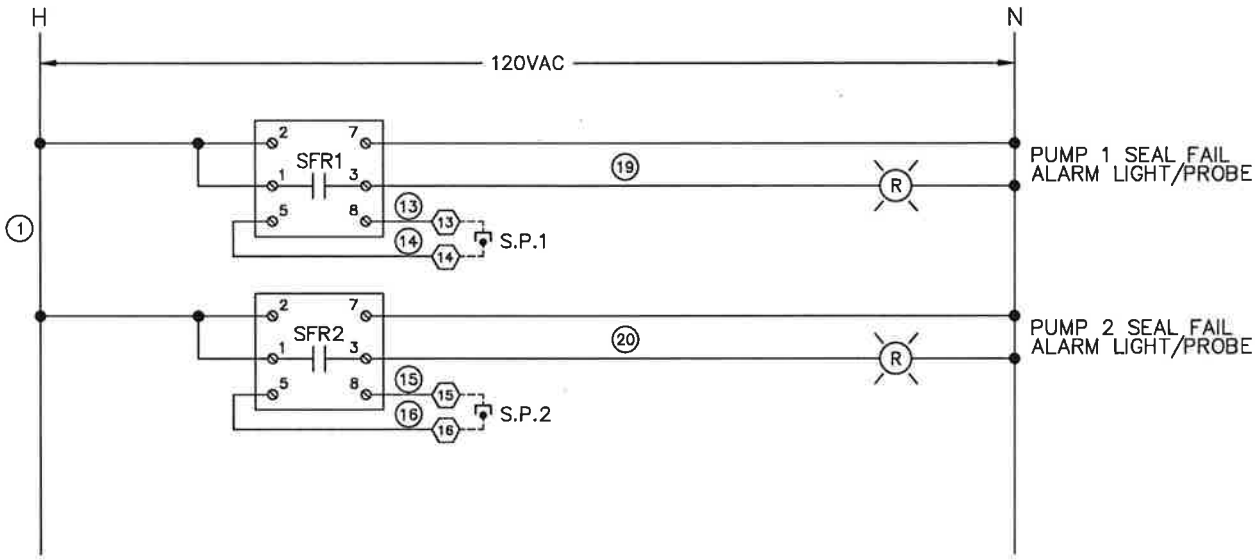
	Drawing Title							
	PANEL DESCRIPTION							
		-	-	-	-	-	-	
		REFERENCE DRAWING	NO.	REVISION - LOCATION	ECN	DATE	BY	
DATE: 05/14/25		S/N / Sales Engineer A.D.	Application Engineer A.D.	DRAWN BY: ECH	APPROVED BY:	DATE:		
	Project Title	DELTA PROCESS EQUIPMENT	8275 Florida Blvd. Denham Springs, LA 70726 Ph. (225) 665-1666 Fax (225) 665-1855		PURCHASE ORDER NUMBER			
	DUPLEX PUMP CONTROL PANEL				DRAWING NUMBER CP-7915			
					SHEET NUMBER 1			



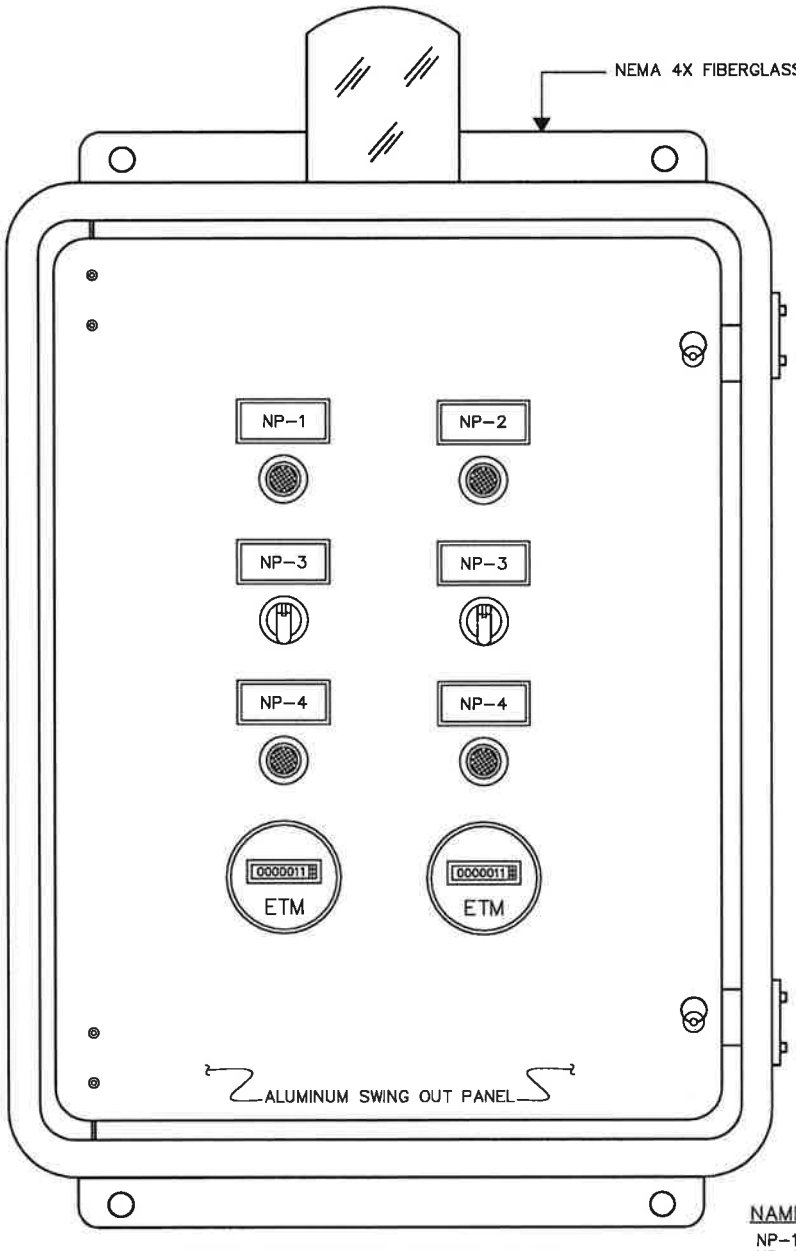
	Drawing Title: POWER DIAGRAM							
		-	-	-		-	-	-
DATE: 05/14/25		REFERENCE DRAWING	NO.	REVISION - LOCATION		ECN	DATE	BY
		S/N	Sales Engineer: A.D.	Application Engineer: A.D.	DRAWN: BY: ECH	APPROVED BY:	DATE:	
	Project Title: DUPLEX PUMP CONTROL PANEL	DELTA PROCESS EQUIPMENT		8275 Florida Blvd. Denham Springs, LA 70726 Ph. (225) 665-1666 Fax (225) 665-1855		PURCHASE ORDER NUMBER		
						DRAWING NUMBER: CP-7915		
						SHEET NUMBER: 2		



	Drawing Title: CONTROL DIAGRAM							
		-	-	-	-	-	-	
		REFERENCE DRAWING	NO.	REVISION - LOCATION	ECN	DATE	BY	
DATE: 05/14/25		S/N / Sales Engineer A.D.	Application Engineer A.D.	DRAWN BY: ECH	APPROVED BY:	DATE:		
	Project Title: DUPLEX PUMP CONTROL PANEL	DELTA PROCESS EQUIPMENT		8275 Florida Blvd. Denham Springs, LA 70726 Ph. (225) 665-1666 Fax (225) 665-1855	PURCHASE ORDER NUMBER			
					DRAWING NUMBER CP-7915			
					SHEET NUMBER 3			



	Drawing Title: CONTROL DIAGRAM							
		-	-	-		-	-	-
DATE: 05/14/25		REFERENCE DRAWING		NO.	REVISION - LOCATION	ECN	DATE	BY
		S/N	Sales Engineer A.D.	Application Engineer A.D.	DRAWN BY: ECH	APPROVED BY:	DATE:	
	Project Title: DUPLEX PUMP CONTROL PANEL	DELTA PROCESS EQUIPMENT			8275 Florida Blvd. Denham Springs, LA 70726 Ph. (225) 665-1666 Fax (225) 665-1855	PURCHASE ORDER NUMBER		
						DRAWING NUMBER CP-7915		
						SHEET NUMBER 4		



VIEW OF INNER SWING PANEL

NAMEPLATE SCHEDULE

NP-1	PUMP 1/RUN
NP-2	PUMP 2/RUN
NP-3	HAND-OFF-AUTO
NP-4	SEAL FAIL

NOTE:
SEWER GASSES WILL DESTROY COMPONENTS IN PANEL. PROPER SEALS MUST BE INSTALLED EXTERNAL TO THE PANEL TO PREVENT ENTRY OF GASSES.

	Drawing Title: ENCLOSURE							
		-	-	-	-	-	-	
		REFERENCE DRAWING	NO.	REVISION - LOCATION	ECN	DATE	BY	
DATE: 05/14/25		S/N / Sales Engineer A.D.	Application Engineer A.D.	DRAWN BY: ECH	APPROVED BY:	DATE:		
	Project Title: DUPLEX PUMP CONTROL PANEL	DELTA PROCESS EQUIPMENT		8275 Florida Blvd. Denham Springs, LA 70726 Ph. (225) 665-1666 Fax (225) 665-1855	PURCHASE ORDER NUMBER			
					DRAWING NUMBER CP-7915			
					SHEET NUMBER 5			

BILL OF MATERIALS

ITEM	QTY	MANUFACTURER	PART NO.	DESCRIPTION
1	1	ATTABOX	M3024HPL	ENCLOSURE
2	1	CMW	CAMOM3024HPL	BACKPLATE/SWING PANEL
3	1	ABB	OT63F3	DISCONNECT SWITCH
4	1	MARATHON	1323580	DISTRIBUTION BLOCK
5	1	ABB	X4150PSF1	TRANSFORMER
6	2	ABB	C3SS110B-20	HOA SWITCH
7	4	ABB	CL513R	RED LED PILOT
8	1	DIVERSIFIED	ARB-120-ADA	ALTERNATING RELAY
9	2	BUSSMANN	LPCC-1/2	FU1,2
10	1	BUSSMANN	BAF-2	FU3
11	1	CONERY	R40-XLS	ALARM LIGHT
12	2	BUSSMANN	SAMI-7N	FUSE COVER
13	1	SQUARE D	QOU110	CB3
14	2	ENM	T50B-212	ELAPSED TIME METER
15	2	ABB	XT1NU3030AFF000XXX	CB1,2
16	2	ABB	AF26N1-30-00-13	MOTOR STARTER
17	2	ABB	TF42-16	OVERLOAD RELAY
18	2	LITTLE FUSE	LLC54AA	SEAL FAIL RELAY
19	1	FINDER	55.34.8.120.0050	CR1
20	2	ABB	CA4-10	AUX. CONTACT
21				
22				
23				
24				
25				
26				
27				

Drawing Title: BILL OF MATERIALS

DATE: 05/14/25

Project Title: DUPLEX PUMP CONTROL PANEL

REFERENCE DRAWING	NO.	REVISION - LOCATION	ECN	DATE	BY
-	-	-	-	-	-

S/N	Sales Engineer	Application Engineer	DRAWN	APPROVED	
	A.D.	A.D.	BY: ECH	BY:	DATE:

DELTA PROCESS EQUIPMENT
8275 Florida Blvd.
Denham Springs, LA
70726
Ph. (225) 665-1666
Fax (225) 665-1855

PURCHASE ORDER NUMBER

DRAWING NUMBER CP-7915

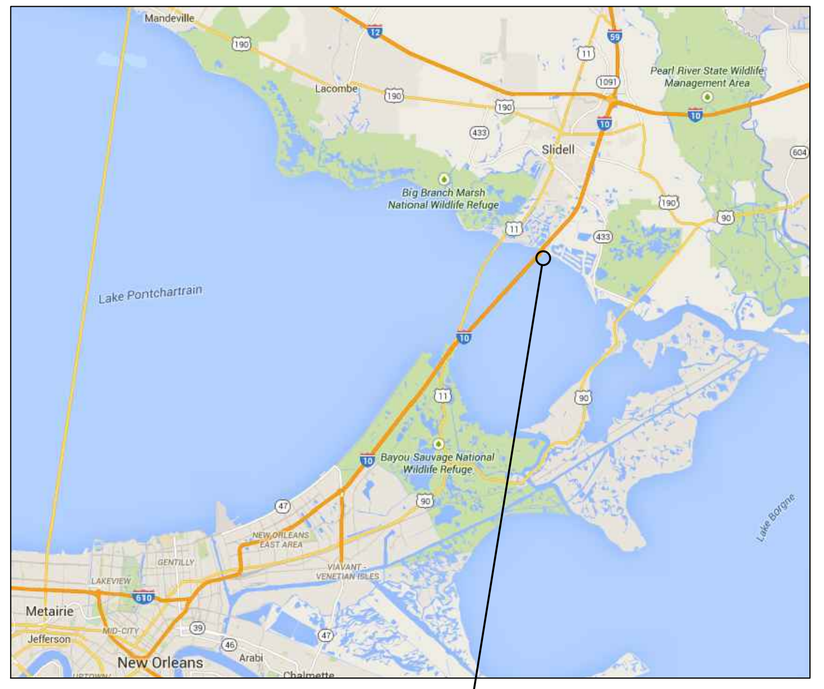
SHEET NUMBER 6

SHEET INDEX	
#	SHEET TITLE
1	TITLE SHEET
2	GENERAL NOTES AND LEGEND
3	OVERALL SITE PLAN
4	EXISTING TIMBER PIER DEMOLITION PLAN
5	STEEL PIER PLAN AND SECTION
6	STEEL PIER ELEVATION
7	JETTY SITE PLAN
8	PARKING LOT SITE PLAN
9	MISCELLANEOUS DETAILS
10	STEEL PIER FOUNDATION AND FRAMING PLANS
11–12	STEEL PIER FRAMING DETAILS
13	ELECTRICAL PLATFORM DETAILS
E1	ELECTRICAL COVER SHEET
E2	POWER PLAN
E3	ENLARGED PIER PLANS
E4	ENLARGED PIER PLANS
E5	RISER DIAGRAM
E6	ELECTRICAL DETAILS
S0.0	SPRINKLER COVER SHEET
S1.0	SPRINKLER PLAN
S2.0	SPRINKLER DETAILS

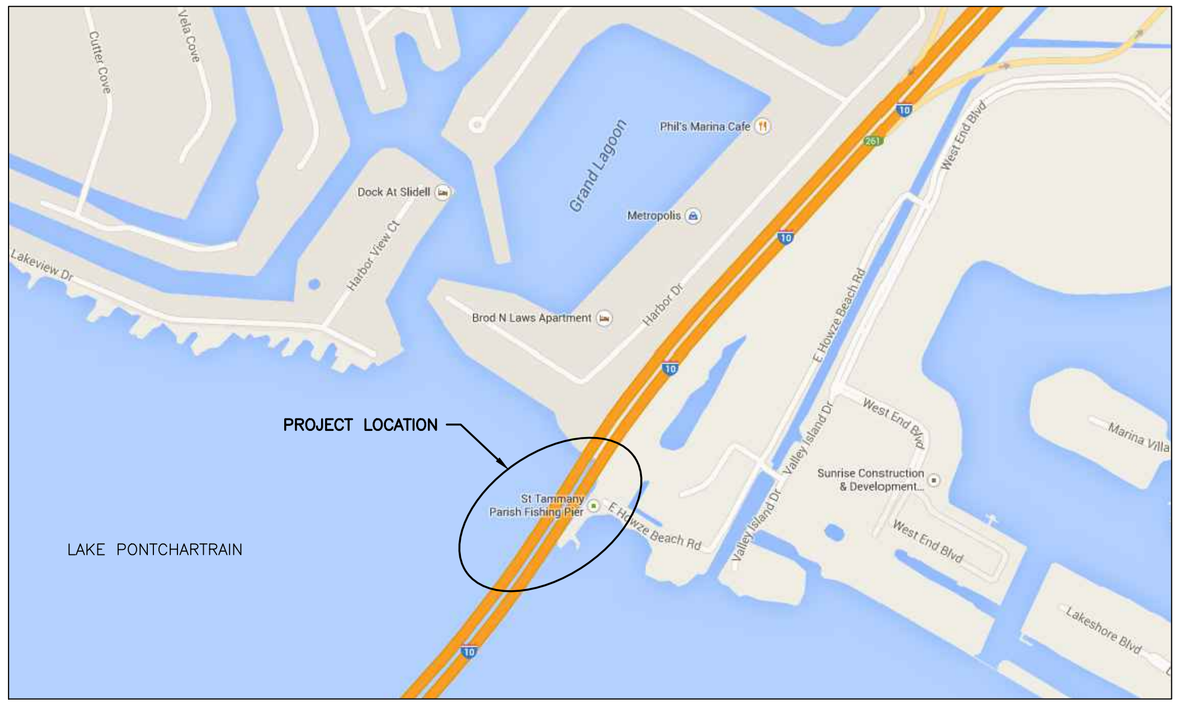
ST. TAMMANY PARISH FISHING PIER

ST. TAMMANY PARISH, LOUISIANA

BID NO. 25-20-2



VICINITY MAP



LOCATION MAP

ST. TAMMANY PARISH

MIKE COOPER - PARISH PRESIDENT

GINA HAYES - CHIEF ADMINISTRATIVE OFFICER

COUNCIL MEMBERS

RICK SMITH, DISTRICT 1 COUNCILMAN
LARRY ROLLING, DISTRICT 2 COUNCILMAN
MARTHA J. CAZAUBON, DISTRICT 3 COUNCILWOMAN
KATHY SEIDEN, DISTRICT 4 COUNCILWOMAN
PAT PHILLIPS,. DISTRICT 5 COUNCILMAN
CHERYL TANNER, DISTRICT 6 COUNCILWOMAN
JOE IMPASTATO, DISTRICT 7 COUNCILMAN
PAT BURKE, DISTRICT 8 COUNCILMAN
DAVID COUGLE, DISTRICT 9 COUNCILMAN
MAUREEN O'BRIEN, DISTRICT 10 COUNCILWOMAN
ARTHURE LAUGHLIN, DISTRICT 11 COUNCILMAN
JERRY BINDER, DISTRICT 12 COUNCILMAN
JEFF CORBIN, DISTRICT 13 COUNCILMAN
JIMMY STRICKLAND, DISTRICT 14 COUNCILMAN

project no. 20-2191a
drawn EMC
checked DHD
date 05/08/2025
revised

STATE OF LOUISIANA
ERIC M. COLMART
License No. 36250
PROFESSIONAL ENGINEER
05-08-2025
CIVIL ENGINEERING

Meyer Engineers, Ltd.
A Thompson Holdings Company
4937 Hearst Street | Suite 1B
Metairie, Louisiana 70001
504.885.9892 (o)
www.meyer-e-l.com

meyer
ENGINEERS + ARCHITECTS

Section 15

TITLE SHEET

ST. TAMMANY PARISH FISHING PIER
ST. TAMMANY PARISH, OWNER

sheet no.
1
of _____ sheets

20-2191A-01 TITLE SHEET.dwg

GENERAL NOTES

1. ALL ELEVATIONS REFER TO NAVD
2. CONTRACTOR SHALL PROTECT ADJACENT PROPERTY AND IMPROVEMENTS FROM DAMAGE AND REPLACE ANY PORTIONS DAMAGED THROUGH HIS OPERATION AT HIS OWN COST. ALL REPAIR WORK SHALL BE SUBJECT TO THE APPROVAL OF THE A/E.
3. 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.
4. PROTECT ALL EXISTING TREES, PLANTING AND LAWNS FROM DAMAGE. ALL STREET SIGNS, FENCES, SHRUBBERY, ETC. RELOCATED DURING CONSTRUCTION SHALL BE RETURNED TO THEIR ORIGINAL LOCATION AND IN ORIGINAL CONDITIONS.
5. CONTRACTOR SHALL MAKE PROVISIONS TO PROTECT EXISTING UTILITIES WHEN EXCAVATING IN THE AREA OF CONSTRUCTION SO AS NOT TO DAMAGE OR DISRUPT THESE UTILITIES. CONTRACTOR SHALL VERIFY LOCATION OF UTILITIES PRIOR TO EXCAVATION.
6. PRIOR TO DISTURBING LANDSCAPING AND/OR CUTTING OR REMOVING TREES, CONTRACTOR SHALL CONTACT ST. TAMMANY PARISH DEPARTMENT OF ENGINEERING AT 985-898-2552.
7. 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.
8. ALL GRASS AREAS AFFECTED BY CONSTRUCTION SHALL BE SEEDED AND FERTILIZED. WATER AREA IMMEDIATELY. ALL GRASS AREAS SHALL BE MAINTAINED CUT DURING CONSTRUCTION.
9. CONTRACTOR SHALL REGRADE ALL AREAS AFFECTED BY CONSTRUCTION TO PROVIDE POSITIVE DRAINAGE. WORK SHALL BE IN A WORKMAN LIKE MANNER AND IN ACCORDANCE 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.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STABILIZING THE EXISTING BASE COURSE UNDER NEW PAVEMENT BEYOND THE EXCAVATION LIMIT OF TRENCH. NO DIRECT PAYMENT SHALL BE MADE FOR ADDITIONAL GRANULAR MATERIAL OR BASE MATERIAL UNLESS OTHERWISE APPROVED BY THE A/E.
11. CONTRACTOR SHALL AT ALL TIMES CONDUCT HIS OPERATIONS AS TO INSURE THE LEAST INCONVENIENCE TO THE GENERAL PUBLIC AND ADJACENT PROPERTY OWNERS. CONTRACTOR SHALL NOT BLOCK ACCESS TO ALL OTHER AREAS NOT BEING CONSTRUCTED.
12. CONTRACTOR SHALL COORDINATE AND PAY FOR THE DE-ENERGIZING AND RE-ENERGIZING OF POWER LINES FOR CONSTRUCTION PURPOSES AS REQUIRED BY LOCAL, STATE, AND FEDERAL AGENCIES.
13. CONTRACTOR SHALL CONTACT UTILITY COMPANIES 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.
14. 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. CONTRACTOR SHALL BRACE UTILITY 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.
16. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE DIRECTLY WITH THE APPROPRIATE UTILITY COMPANIES TO HAVE THE UTILITIES RELOCATED IF NECESSARY.
17. SCOPE OF WORK: THE SCOPE OF WORK FOR THIS PROJECT CAN GENERALLY BE DESCRIBED AS FOLLOWS: STRUCTURES AND UTILITIES TO REPLACE/REPAIR A DAMAGED FISHING PIER FACILITY LEADING TO AND ON AN EXISTING BRIDGE STRUCTURE.
18. THE EXISTING SITE HAS BEEN DRAWN FROM LIMITED FIELD MEASUREMENTS, A SURVEY PROVIDED BY THE OWNER AND OBSERVATIONS. BIDDERS AND SUCCESSFUL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO SUBMITTING BID AND AGAIN PRIOR TO EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL NOT SPLIT THE SET OF CONSTRUCTION DOCUMENTS TO DISTRIBUTE TO THEIR SUBCONTRACTORS. THE DOCUMENTS PROVIDED FOR CONSTRUCTION ARE TO REMAIN A COMPLETE SET OF DOCUMENTS AND ARE TO BE USED FOR CONSTRUCTION OF THE PROJECT. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE AND PERFORM ANY WORK SHOWN ON ANY SHEET OF THE DOCUMENTS REGARDLESS OF WHERE IT IS SHOWN. IF THERE IS CONFLICTING INFORMATION IN THE DOCUMENTS THEN THE MORE STRINGENT OF THE REQUIREMENTS SHALL BE REQUIRED.
20. THE CONTRACTOR SHALL BE ALLOWED ACCESS TO THE SITE AT ALL TIMES.
21. ALL WORK MUST CONFORM TO THE REQUIREMENTS OF THE DEPARTMENTS OF INSPECTION AND CODE ENFORCEMENT, SAFETY AND PERMITS, LOUISIANA STATE FIRE MARSHAL'S OFFICES, PUBLIC UTILITIES, ACCOMPANYING PROJECT SPECIFICATIONS AND OTHER SUCH PARISH, STATE, OR FEDERAL STANDARDS THAT ARE APPLICABLE.
22. PROJECT OFFICE OR FIELD TRAILER: CONTRACTOR MAY PROVIDE A CONSTRUCTION FIELD OFFICE OR TRAILER FOR HIS USE.
23. STAGING AREA: CONTRACTOR SHALL STORE ALL HIS MATERIALS, SUPPLIES, AND EQUIPMENT IN THE STAGING AREA. CONTRACTOR SHALL PROTECT HIS STAGING AREA WITH TEMPORARY FENCING AS HE DEEMS NECESSARY AGAINST THEFT AND VANDALISM. OWNER SHALL NOT BE RESPONSIBLE FOR THEFT AND VANDALISM TO CONTRACTOR'S TRAILER OR ANY MATERIALS, SUPPLIES OR EQUIPMENT STORED ON IN THE STAGING AREA.
24. THE CONTRACTOR SHALL PROVIDE SELF-CONTAINED PORTABLE TOILET UNITS FOR USE BY HIS WORK FORCE. CONTRACTOR SHALL PROVIDE CLEAN COLD ICE WATER IN APPROVED WATER JUGS AND DRINKING CUPS FOR HIS WORK FORCE AT ALL TIMES WHEN WORK IS IN PROGRESS. ALL WORKMEN SHALL BE REQUIRED TO DISPLAY THEIR COMPANY IDENTIFICATION AT ALL TIMES WHEN THEY ARE WORKING AROUND THE BUILDING.
25. ONSITE PARKING FOR CONTRACTOR'S PERSONNEL SHALL BE PERMITTED BUT ONLY AT THE LOCATIONS APPROVED BY THE OWNER. THE CONTRACTOR SHALL NOT ALLOW ANY VEHICLES TO PARK AT ANY OTHER LOCATION ON THE PROJECT SITE.
26. DELIVERIES: VEHICLES DELIVERING MATERIALS, SUPPLIES AND EQUIPMENT FOR THE PROJECT SHALL BE ALLOWED ON THE SITE. CONTRACTOR SHALL UNLOAD MATERIALS AND EQUIPMENT IN A TIMELY MANNER AND THEN MOVE THE DELIVERY VEHICLE OFF SITE.
27. WASTE MATERIALS: DISPOSE OF REGULATED WASTE MATERIALS OFF SITE, IN A LEGAL MANNER AND IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL LAWS, CODES, ORDINANCES AND REGULATIONS. ALL OTHER WASTE MATERIALS SHALL BE DISPOSED OF IN A TRASH DUMPSTER THAT IS PROVIDED BY AND PAID FOR BY THE GENERAL CONTRACTOR. LOCATE TRASH DUMPSTER AS DIRECTED BY OWNER.
28. CONTRACTORS ARE REQUIRED TO RESEARCH LOCAL NOISE LAWS, CODES AND ORDINANCES ALLOWED AND TIMES ALLOWED.
29. OTHER PORTIONS OF THE PROJECT SITE ARE NOT TO BE DISTURBED SUCH AS PARKING LOTS, LANDSCAPE AREAS AND LAWN AREAS. DO NOT ALLOW TRASH AND CONSTRUCTION DEBRIS TO ACCUMULATE AROUND THE PROJECT SITE. REPAIR ALL DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS. TAKE ALL PRECAUTIONS NECESSARY TO PROTECT THE BUILDING AND ITS OCCUPANTS DURING THE WORK.
30. WORK HOURS: WORK HOURS FOR THIS PROJECT SHALL BE AT DURING DAYLIGHT HOURS. WORK ON THE WEEKENDS AND HOLIDAYS SHALL BE AT THE CONTRACTOR'S OPTION AND WITH WRITTEN PERMISSION FROM THE OWNER. OFF HOURS WORK SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.
31. CONTRACTOR SHALL SUBMIT A DETAILED CONSTRUCTION SCHEDULE TO THE A/E TEN (10) DAYS AFTER RECEIPT OF NOTICE OF AWARD. CONTRACTOR SHALL SUBMIT A REVISED CONSTRUCTION SCHEDULE AT THE PRE-CONSTRUCTION CONFERENCE. CONTRACTOR SHALL SUBMIT REVISED CONSTRUCTION SCHEDULES TO THE A/E MONTHLY THEREAFTER.
32. NO SMOKING. SMOKING IS NOT PERMITTED ANYWHERE ON THE SITE, INCLUDING THE CONTRACTOR'S FIELD OFFICE (TRAILER).
33. DRUGS, ALCOHOL AND FIRE ARMS ARE NOT ALLOWED ANYWHERE ON THE SITE.
34. WORKMEN SHALL AT ALL TIMES BE APPROPRIATELY DRESSED. SHIRTS AND SHOES SHALL BE WORN AT ALL TIMES. PANTS SHALL NOT BE WORN BELOW THE WAIST LINE. SHIRTS MAY NOT HAVE ANY VULGAR REFERENCES, ALCOHOLIC ADVERTISEMENTS, TOBACCO ADVERTISEMENTS OR REFERENCES TO DRUGS.
35. ALL WORKMEN ARE TO CONDUCT THEMSELVES IN A PROFESSIONAL MANNER AT ALL TIMES AND THAT ANY WORKMAN MAKING CAT CALLS OR WOLF WHISTLES WILL BE IMMEDIATELY ESCORTED OFF THE PROJECT SITE PERMANENTLY.
36. AT ANY TIME WORK IS IN PROGRESS THE CONTRACTOR SHALL HAVE A FOREMAN OR SUPERINTENDENT ON SITE DIRECTING THE WORK. THE CONTRACTOR'S FOREMAN OR SUPERINTENDENT SHALL CHECK IN DAILY WITH THE OWNER'S REPRESENTATIVE AND GIVE THE OWNER'S REPRESENTATIVE HIS MOBILE PHONE NUMBER. THE CONTRACTOR'S FOREMAN OR SUPERINTENDENT SHALL ALSO GIVE A LIST OF NAMES TO THE OWNER'S REPRESENTATIVE OF THE WORKMEN THAT WILL BE WORKING ON THE SITE THAT DAY.
37. CONTRACTOR SHALL PROVIDE TEMPORARY FENCING FOR THE DURATION OF THE PROJECT. CONSTRUCT AND MAINTAIN FENCING AND BARRICADES SUFFICIENT TO PREVENT INJURY TO PERSONS AND DAMAGE TO PROPERTY IN ACCORDANCE WITH ALL SAFETY LAWS AND REQUIREMENTS. PROVIDE FENCING TO EXCLUDE UNAUTHORIZED VISITORS FROM THE SITE. THE TYPE OF PROTECTION FENCING IS TO BE DETERMINED BY THE CONTRACTOR; HOWEVER, IT WAS NOTED THAT CAUTION TAPE OR A SINGLE CHAIN WOULD NOT BE SUFFICIENT.

LEGEND OF SYMBOLS (EXISTING)

BASELINE
GRAVITY SANITARY SEWER MAIN
STORM SEWER MAIN
FORCE MAIN
WATER LINE
GAS LINE
TELEPHONE LINE
ELECTRIC LINE
R.O.W.
DITCH
SEWER LINE
OVERHEAD UTILITY LINES
DRAIN CLEANOUT
SEWER CLEANOUT
POWER POLE
ANCHOR
LIGHT POLE
DOWNSPOUT
SANITARY SEWER MANHOLE
CLEANOUT
EX. LIFT STATION
EX. VALVE PIT
CATCH BASIN OR DROP INLET
STORM SEWER MANHOLE
CULVERT
DITCH

WATER VALVE
WATER METER
WATER FAUCET
FIRE HYDRANT
WATER MANHOLE
GAS VALVE
GAS METER
TELEPHONE MANHOLE
POWER POLE
LIGHT STAND
MAILBOX
TREE
PALM TREE
ROD SET
FENCE
MISCELLANEOUS SIGN
GAS VENT
TELEPHONE POST
ELEVATION
CONCRETE
ASPHALT CONCRETE
SHELL
LIMITS OF EXISTING PAVEMENT

LEGEND OF SYMBOLS (NEW)

GRAVITY SANITARY SEWER MAIN
STORM SEWER MAIN
FORCE MAIN
WATER MAIN
GAS MAIN
TELEPHONE LINE
ELECTRIC LINE
REQUIRED R.O.W.
DITCH OR SWALE
MANHOLE
CLEANOUT
NEW LIFT STATION
NEW VALVE PIT
DROP INLET
CATCH BASIN
ENLARGED CATCH BASIN
TEE INLET/RCB-35
FORCE MAIN AIR RELEASE VALVE
CULVERT
WATER VALVE

WATER METER
FIRE HYDRANT
ELECTRIC SERVICE LINE
AIR RELEASE VALVE
POWER POLE
LIGHT POLE
FLOOD LIGHT
TEE
CROSS
TAPPING SLEEVE AND VALVE
REDUCER/INCREASER
ELEVATION
REMOVE AND REPLACE SURFACE
DIESEL FUEL LINE
GAS FUEL LINE
CONCRETE
ASPHALT

38. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND COORDINATING WITH THE APPROPRIATE UTILITY COMPANY FOR THE CONSTRUCTION, CONNECTION, RELOCATION OR REMOVAL OF ANY AND ALL UTILITIES REQUIRED FOR THIS PROJECT INCLUDING BUT NOT LIMITED TO ELECTRIC POWER, WATER, SEWER, DRAINAGE, GAS, TELEPHONE, CABLE TELEVISION, SATELLITE TELEVISION, CLOSED CIRCUIT TELEVISION, INTERNET, AND ANY OTHER UTILITY REQUIRED FOR THIS PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR PAYING FOR ALL CONSTRUCTION, CONNECTION, RELOCATION OR REMOVAL COST AND ANY AND ALL PERMITS AND FEES ASSOCIATED WITH THE CONSTRUCTION, CONNECTION, RELOCATION OR REMOVAL OF ANY UTILITY REQUIRED FOR THIS PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND COORDINATING WITH THE APPROPRIATE UTILITY COMPANY FOR THE CONSTRUCTION, CONNECTION, RELOCATION AND REMOVAL OF ANY ELECTRIC POWER POLES, WATER LINES, SEWER LINES, DRAINAGE LINES, GAS LINES, TELEPHONE POLES, UTILITY POLES, TELEPHONE LINES, CABLE TELEVISION LINES, INTERNET LINES AND ANY OTHER UTILITY REQUIRED FOR THIS PROJECT.
   A. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE DIRECTLY WITH THE APPROPRIATE UTILITY COMPANIES TO HAVE THE UTILITIES RELOCATED AND/OR DISRUPTED.
   B. CONTRACTOR SHALL ADEQUATELY BRACE UTILITY POLES ADJACENT TO THE WORK. BRACING SHALL REMAIN IN PLACE AFTER BACKFILLING UNTIL COMPACTION STANDARDS HAVE BEEN MET. COMPLETE WORK PROMPTLY ONCE EXCAVATION AHS BEGUN ADJACENT TO THE POLES.
   C. CONTRACTOR SHALL CONTACT THE UTILITY COMPANIES OR DEPATMENTS LISTED BELOW PRIOR TO 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 UTILITY COMPANY:
      1) LOUISIANA ONE CALL – 811 OR (800)272-3020
      2) LOCAL ELECTRICAL COMPANY – CLECO – (800)622-6537
      3) LOCAL GAS COMPANY – ATMOS – (888)286-6700
      4) LOCAL TELEPHONE COMPANY – AT&T – (800)288-2020
      5) CABLE TELEVISION PROVIDER FOR THAT LOCATION – COX – (866)272-5777
      6) PARISH ENGINEERING DEPARTMENT – (985)898-2552
      7) DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT – (985)375-0100
40. EXISTING UTILITY LOCATIONS SHALL BE FIELD VERIFIED. CONTRACTOR SHALL MAKE PROVISIONS TO PROTECT EXISTING UTILITIES SO AS NOT TO DAMAGE OR DISRUPT THESE UTILITIES. CONTRACTOR SHALL VERIFY LOCATION OF UTILITIES PRIOR TO STARTING WORK.
41. PROPERTY LINE, RIGHTS OF WAY, AND OR SERVITUDES ARE THE LIMITS OF CONSTRUCTION, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
42. THE LOCATION OF THE PROJECT SIGN IS NOT SHOWN ON THE DRAWINGS. CONTRACTOR SHALL COORDINATE WITH THE OWNER WHERE TO LOCATED THE PROJECT SIGN.
43. FIRE EXTINGUISHERS MOUNTING HEIGHT TO COMPLY WITH ADA/ABA FORWARD REACH LIMIT. TOP OF THE FIRE EXTINGUISHER MOUNTING HEIGHT IS NOT TO EXCEED 48" ABOVE FINISHED FLOOR.
44. CAVITIES OR TRENCHES LEFT BY WORK SHALL BE BACKFILLED WITH LIKE MATERIAL AND LEVELED TO ORIGINAL CONDITIONS. AREA SHALL BE SODDED AND FERTILIZED, WATER IMMEDIATELY.
45. CONTRACTOR SHALL PROVIDE TEMPORARY PEDESTRIAN ACCESS IF CONSTRUCTION BARRICADES ARE BLOCKING THE EXISTING SIDEWALK OR ENTRANCES TO THE BUILDINGS.
46. NOISY WORK: CONTRACTOR IS ADVISED THAT THE SITE WILL BE OCCUPIED DURING CONSTRUCTION AND THAT IF MAY BE NECESSARY FOR THE OWNER TO DIRECT HIM TO STOP PERFORMING EXCESSIVELY NOISY WORK (SUCH AS GRINDING OR DRILLING) IN SOME AREAS. UPON NOTIFICATION THE CONTRACTOR SHALL IMMEDIATELY STOP THE NOISY WORK AND RELOCATE HIS WORK TO ANOTHER AREA. NO EXTRA CHARGE SHALL BE ALLOWED IF THE CONTRACTOR IS DIRECTED TO STOP WORK IN A SPECIFIC AREA.
47. ALL ROOMS WITH FLOOR DRAINS SHALL SLOPE TO THE FLOOR DRAIN AT 1/8" PER FOOT, MINIMUM.
48. ALL EXTERIOR SIDEWALKS, BALCONIES, PORCH AREAS, PATIO AREAS, ETC. SHALL SLOPE AWAY FROM THE BUILDING AT 1/8" PER FOOT, MINIMUM.
49. THE CONTRACTOR IS RESPONSIBLE FOR COMPLETELY SEALING THE EXTERIOR OF THE BUILDING AT THE LINE OF THE MOISTURE OR VAPOR MEMBRANE. THE CONTRACTOR SHALL SEAL ALL AROUND ANY AND ALL BUILDING PENETRATIONS, CUT OUTS, JOINTS, ETC. AT THE PERIMETER OF EXTERIOR WALL SO THAT NO MOISTURE CAN PENETRATE THE BUILDING. IT IS IMPERATIVE THAT THE BUILDING IS SEALED TO AVOID CONDENSATION ON THE INTERIOR OF THE BUILDING.
50. HANDRAILS AND GUARDRAILS SHALL MEET THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE (IBC), NFPA 101 AND THE ADA/ABA. THE DRAWINGS INDICATED A GENERAL SHAPE, DIMENSION, SIZE AND LOCATION OF HANDRAILS AND GUARDRAILS FOR CLARITY AND DO NOT SHOW EVERY ITEM REQUIRED FOR CONSTRUCTION OF THE GUARDRAIL. THE GENERAL CONTRACTOR IS REQUIRED TO PROVIDE AND INSTALL ALL GUARDRAILS TO MEET THE ABOVE CODES. GENERAL CONTRACTOR SHALL INDICATE ON THE SHOP DRAWINGS EXACTLY HOW THE GUARDRAILS ARE TO BE BUILT AND SHALL MEET THE ABOVE MENTIONED CODES.
51. SAFETY PRECAUTIONS AND PROGRAMS
   A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISION ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH PERFORMANCE OF THE CONTRACT.
   B. THE CONTRACTOR SHALL COMPLY WITH APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF PUBLIC AUTHORITIES BEARING ON SAFETY OF PERSONS OR PROPERTY OR THEIR PROTECTION FROM DAMAGE, INJURY OR LOSS.
   C. THE CONTRACTOR SHALL TAKE PRECAUTIONS FOR SAFETY OF, AND SHALL PROVIDE PROTECTION TO PREVENT DAMAGE, INJURY OR LOSS TO EMPLOYEES ON THE WORK AND OTHER PERSONS WHO MAY BE AFFECTED.
52. COMPLY WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS. INSPECT MATERIALS OR EQUIPMENT IMMEDIATELY UPON DELIVERY AND AGAIN PRIOR TO INSTALLATION. REJECT DAMAGED AND DEFECTIVE ITEMS.
53. PRICES QUOTED SHALL BE COMPLETE SO AS TO COVER EVERY COST, EXPENSE, FEE OR CHARGE INCURRED BY THE BIDDER IN PERFORMANCE OF THE CONTRACT, INCLUDING ALL FEDERAL, STATE, AND LOCAL TAXES. PRICES QUOTED SHALL INCLUDE ALL TRANSPORTATION, LOADING, UNLOADING, PACKING, CRATING, AND STORAGE CHARGES (AS APPLICABLE), AND SHALL BE FOB TO THE PROJECT SITE IN SLIDELL, LOUISIANA.

ABBREVIATIONS

&	AND
<	ANGLE
CL	CENTERLINE
Ø	DIAMETER OR ROUND
#	NUMBER
AC	ASBESTOS CEMENT
A.D.	AREA DRAIN
ADD.	ADDENDUM
A/E	ARCHITECT OR ENGINEER
ALT.	ALTERNATE
APPROX.	APPROXIMATE
ASPH.	ASPHALT
AVE.	AVENUE
AVG.	AVERAGE
BITUM.	BITUMINOUS
BL	BASELINE
BLDG.	BUILDING
BM	BENCH MARK
BRG.	BEARING
CPA	CONCRETE PIPE ARCH
CB	CATCH BASIN
C.D.	CAIRO DATUM
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
C.J.	CONTRACTION JOINT
CMP	CORRUGATED METAL PIPE
CMPA	CORRUGATED METAL PIPE ARCH
CO	CLEAN OUT
CONC.	CONCRETE
CONT.	CONTINUOUS
CSP	CORRUGATED STEEL PIPE
CULV.	CULVERT
DEPT.	DEPARTMENT
DI	DUCTILE IRON OR DROP INLET
DIA.	DIAMETER
DIM.	DIMENSION
DR.	DRIVE
DRWY.	DRIVEWAY
DTL.	DETAIL
E.	EAST
EA.	EACH
E.J.	EXPANSION JOINT
EL.	ELEVATION
ELEC.	ELECTRICAL
EMB.	EMBANKMENT
ENCL.	ENCLOSURE
EQUA.	EQUATION
E.W.	EACH WAY
EXIST.	EXISTING
EXP.	EXPANSION
FH	FIRE HYDRANT
F.L.	FLOW LINE
FM	FORCE MAIN
FT.	FOOT OR FEET
GA.	GAUGE
GAL.	GALLON
GPM	GALLONS PER MINUTE
GYP.	GYPSUM
H/C	HANDICAPPED
HGT.	HEIGHT
HP	HORSEPOWER
HORIZ.	HORIZONTAL
HWY.	HIGHWAY
ID	INSIDE DIAMETER (DIM.)
IN.	INCH
INT.	INTERIOR
INV.	INVERT
IR	IRON ROD
JCT.	JUNCTION
JT.	JOINT
L.	LEFT
LB.	POUND
LF	LINEAR FOOT
LS	LUMP SUM
L.S.	LIFT STATION
MAX.	MAXIMUM
MECH.	MECHANICAL
MFR.	MANUFACTURER
MFR'D.	MANUFACTURED
MH	MANHOLE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
M.S.L.	MEAN SEA LEVEL
MTL.	METAL
N.	NORTH
N/A	NOT APPLICABLE
N.D.P.	NO DIRECT PAYMENT
N.G.V.D.	NATIONAL GEODETIC VERTICAL DATUM
N.I.C.	NOT IN CONTRACT
NOM.	NOMINAL
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OD	OUTSIDE DIAMETER (DIM.)
OPP.	OPPOSITE
PC	POINT OF CULVATURE
P.C.C.P.	PORTLAND CEMENT CONCRETE PAVEMENT
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
POT	POINT OF TANGENT
P.P.	POWER POLE
PREFAB.	PREFABRICATED
PSI	POUNDS PER SQUARE INCH
PT.	POINT
PVC	POLYVINYL PIPE
QTR.	QUARTER
QTY.	QUANTITY
r	RADIUS
R.	RIGHT
RCPA	REINFORCED CONCRETE PIPE ARCH
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RD.	ROAD
REF.	REFERENCE
REINF.	REINFORCED
REQ'D.	REQUIRED
REV.	REVISION
R.O.W.	RIGHT OF WAY
RPM	REVOLUTION PER MINUTE
S.	SOUTH
SD	STORM DRAIN
SECT.	SECTION
SFM	SEWERAGE FORCE MAIN
SIM.	SIMILAR
SMH	SEWER MAN HOLE
SPEC.	SPECIFICATION(S)
SQ.	SQUARE
ST.	STREET
STA	STATION
STD.	STANDARD
STL.	STEEL
STOR.	STORAGE
S.W.	SIDEWALK
SYM.	SYMMETRICAL
SYS.	SYSTEM
TBM	TEMPORARY BENCH MARK
T.C.	TOP OF CASTING, TOP OF CURB, OR TOP OF CONCRETE
TEL.	TELEPHONE
T.O.C.	TOP OF CASTING, TOP OF CURB, OR TOP OF CONCRETE
T.O.P.	TOP OF PAVEMENT OR TOP OF PIPE
T/W	TOP OF WALL
TYP.	TYPICAL
U.G.	UNDER GROUND
VERT.	VERTICAL
VOL.	VOLUME
W	WEST
W/	WITH
W/O	WITHOUT
WT.	WEIGHT
WSE	WATER SURFACE ELEVATION
W.W.F.	WELDED WIRE FABRIC
YD.	YARD

EXISTING CONDITIONS NOTES

1. THE EXISTING FISHING PIER WAS NOT SURVEYED AND RECORD DRAWINGS WERE NOT AVAILABLE IN THE PREPARATION OF THESE PLANS. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIER CONDITIONS AND COORDINATE WITH A/E FOR POTENTIAL DESIGN MODIFICATIONS.
2. BASELINE SHOWN ON SHEETS 5, 6, & 10 IN REFERENCE TO NEW STEEL PIER FRAMING WAS NOT ESTABLISHED BY A SURVEYOR AND WAS ESTABLISHED DURING DESIGN BASED ON PRIMARY CONTROL PK NAIL SHOWN ON SHEET 7. CONTRACTOR SHALL VERIFY PIER ALIGNMENT IN FIELD AND COORDINATE WITH A/E FOR POTENTIAL MODIFICATIONS PRIOR TO CONSTRUCTION, AND PRIOR TO STEEL FRAMING AND STEEL PILE SHOP DRAWINGS SUBMITTALS.
3. RECORD DRAWINGS OF THE EXISTING JETTY DESIGN AND SECTION WERE NOT AVAILABLE IN THE PREPARATION OF THESE PLANS. BORING LOGS ARE PROVIDED IN THE SPECIFICATIONS BUT MAY NOT BE INDICATIVE OF THE EXISTING JETTY SECTION AT ALL LOCATIONS. PRE-DRILLING FOR PILE INSTALLATION WILL BE AS-NECESSARY PER THE CONTRACTOR'S MEANS AND METHODS OF CONSTRUCTION.

20-2191A-02 GENERAL NOTES.dwg

project no. 20-2191a
drawn EMC
checked DHD
date 05/08/2025
revised

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GENERAL NOTES AND LEGEND

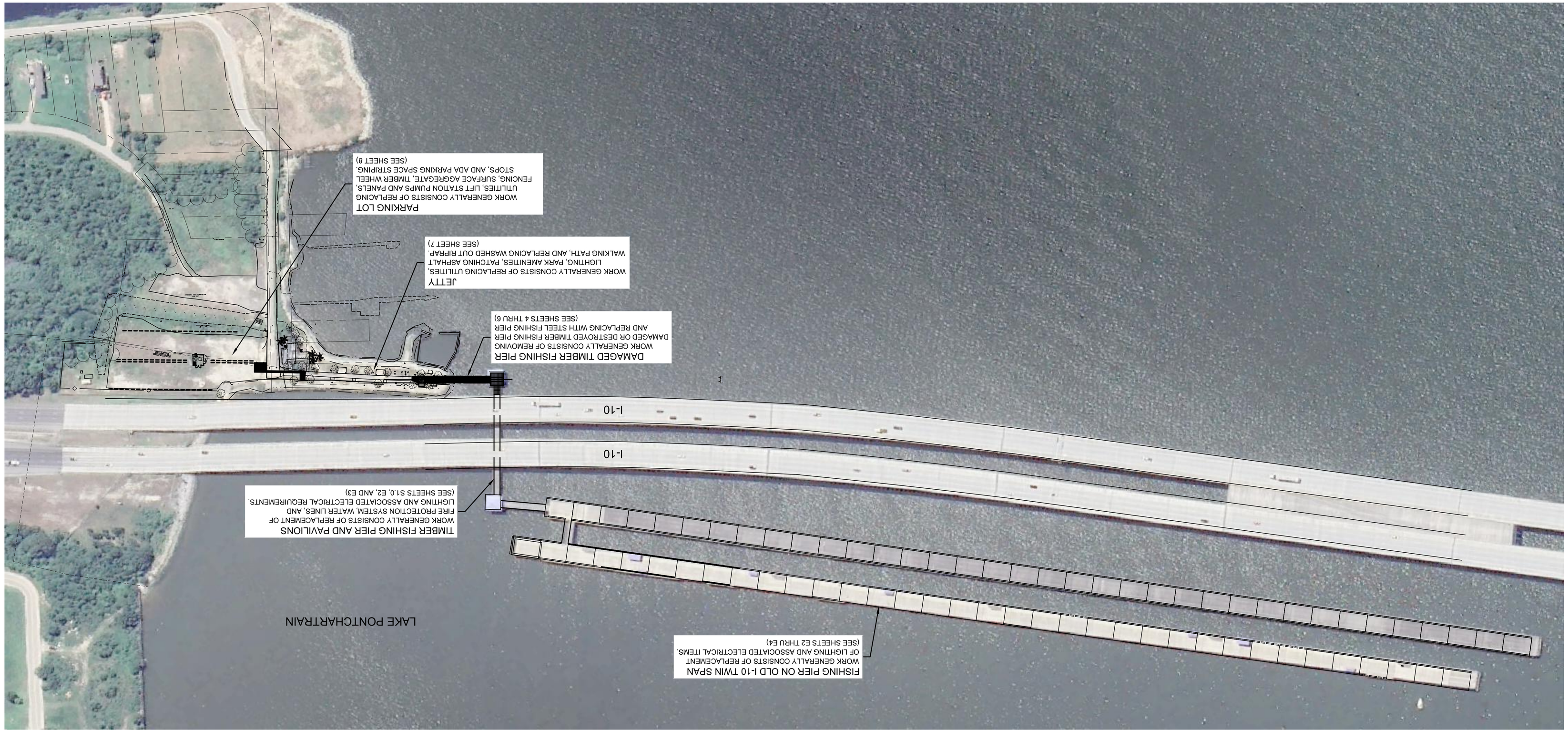
ST. TAMMANY PARISH FISHING PIER
ST. TAMMANY PARISH, OWNER

sheet no.
2
of _____ sheets

20-2191A-03 OVERALL SITE PLAN.dwg

GRAPHIC SCALE

(IN FEET)
1 inch = 120 ft.



OVERALL SITE PLAN

ST. TAMMANY PARISH FISHING PIER
ST. TAMMANY PARISH, OWNER

sheet no. **3** of ____ sheets

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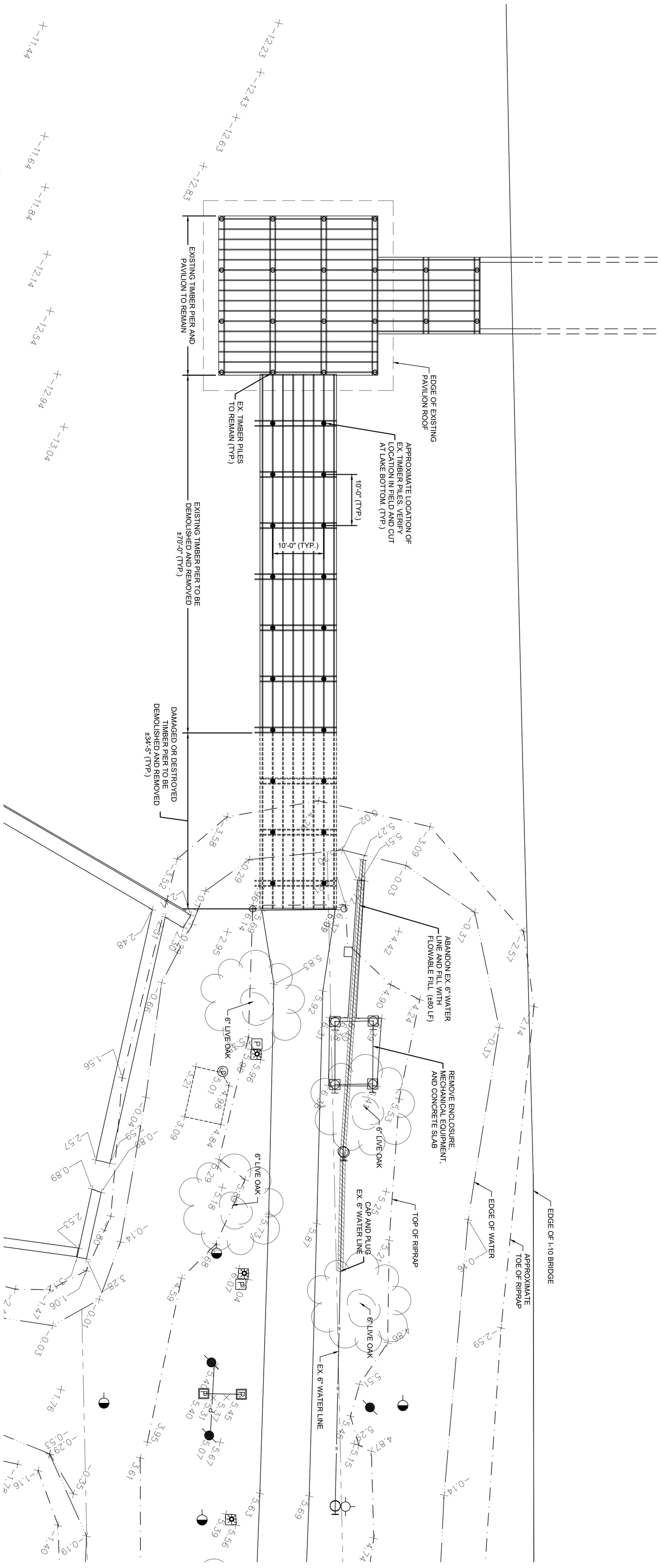
checked	DHD
date	05/08/2025
revised	



1 EXISTING TIMBER PIER DEMOLITION PLAN
4 — 1"=10'

2 TYPICAL EXISTING TIMBER PIER SECTION (TO BE DEMOLISHED AND REMOVED)
4 — N.T.S

EXISTING TIMBER PIER DEMOLITION PLAN

ST. TAMMANY PARISH FISHING PIER
ST. TAMMANY PARISH, OWNER

sheet no. 4 of ____ sheets

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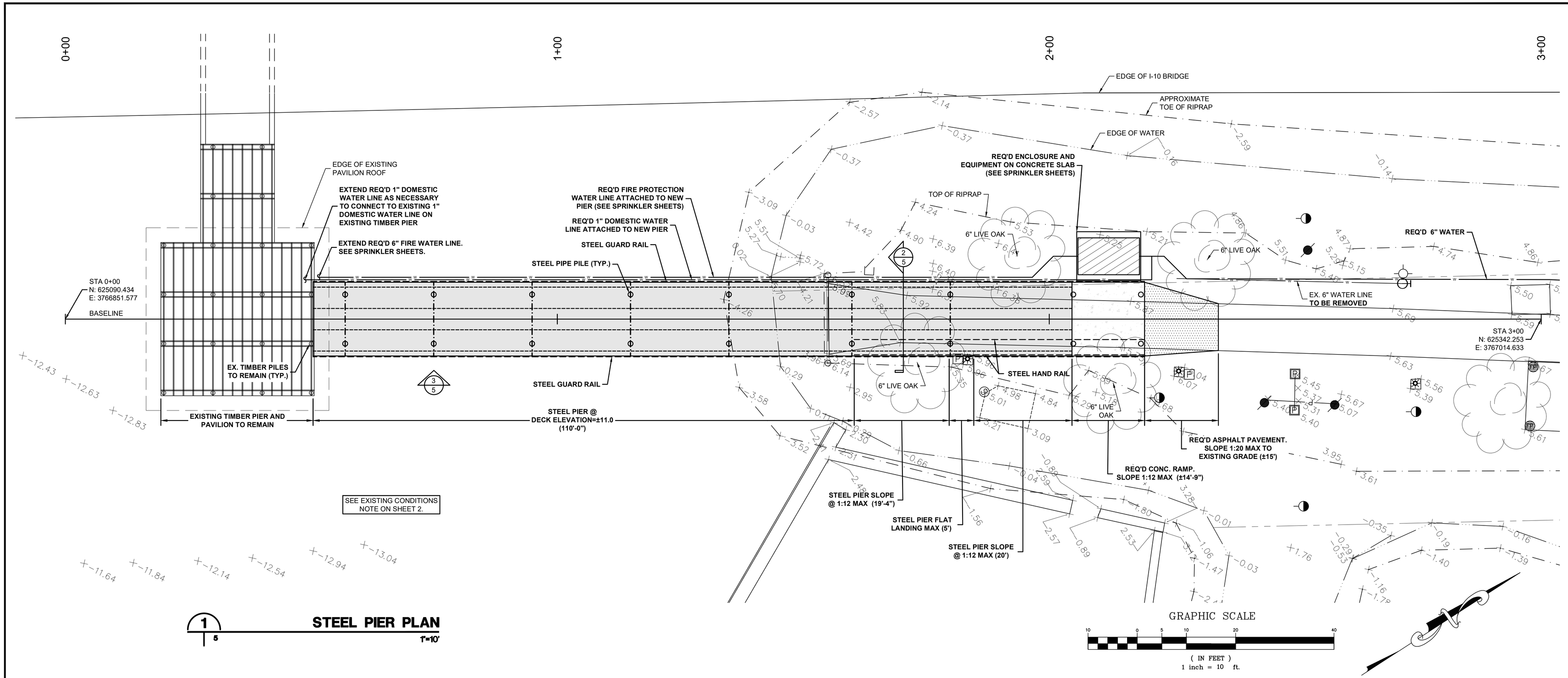
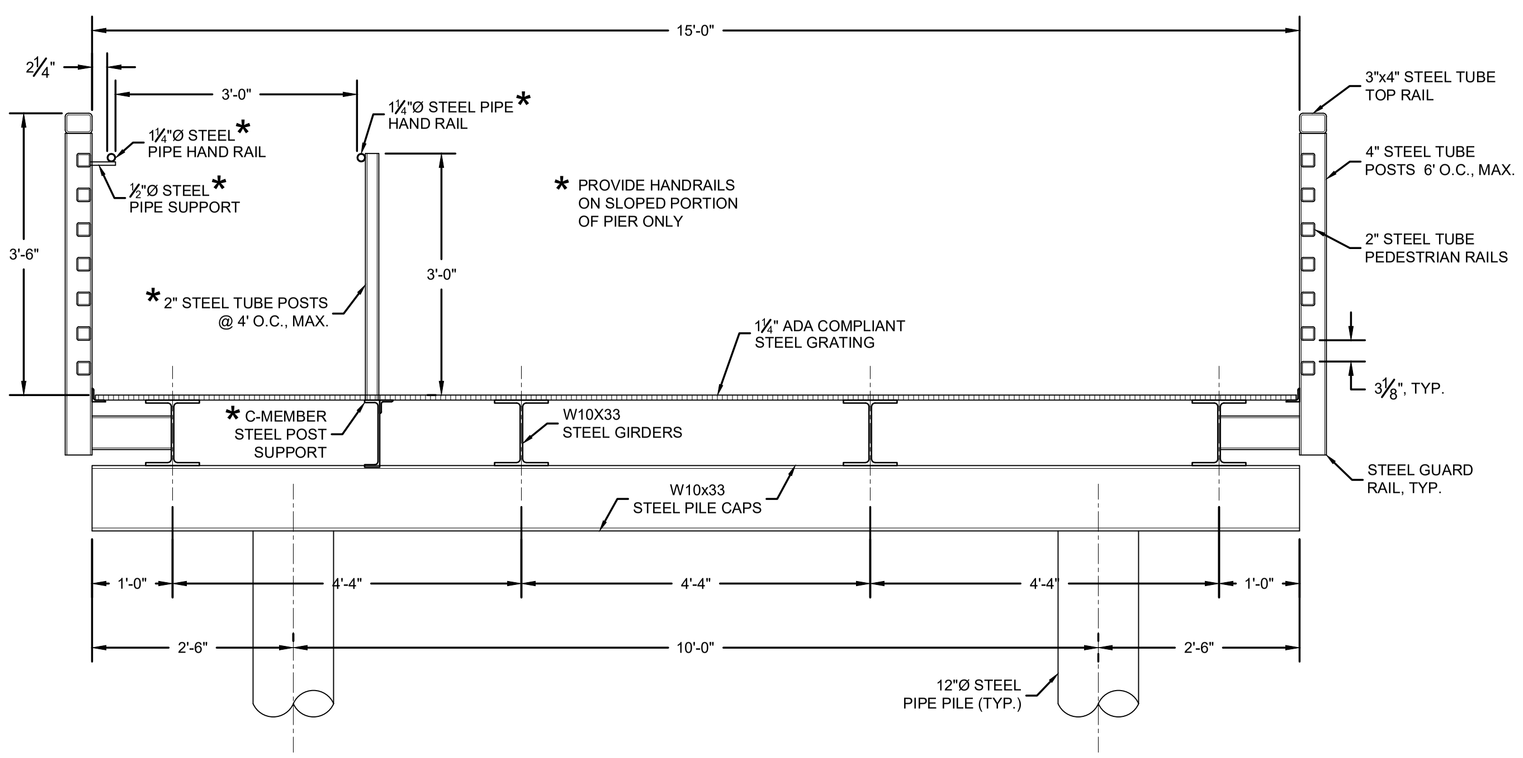
project no. 20-2191a
drawn EMC
checked DHD
date 05/08/2025
revised

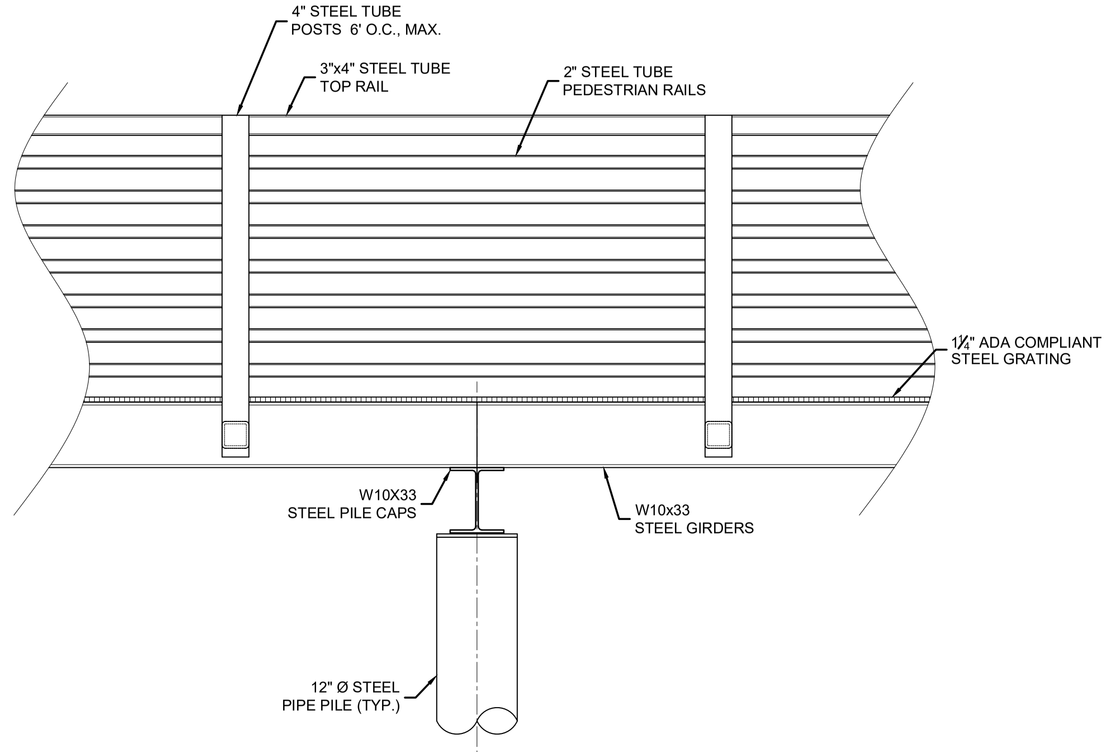
20-2191A-04 EX. PIER DEMO PLAN.dwg



1/5 STEEL PIER PLAN
1"=10'



2/5 TYPICAL STEEL PIER SECTION
N.T.S



3/5 TYPICAL STEEL PIER ELEVATION
N.T.S

20-2191A-05 NEW PIER SITE PLAN.dwg

project no. 20-2191a
drawn EMC
checked DHD
date 05/08/2025
revised

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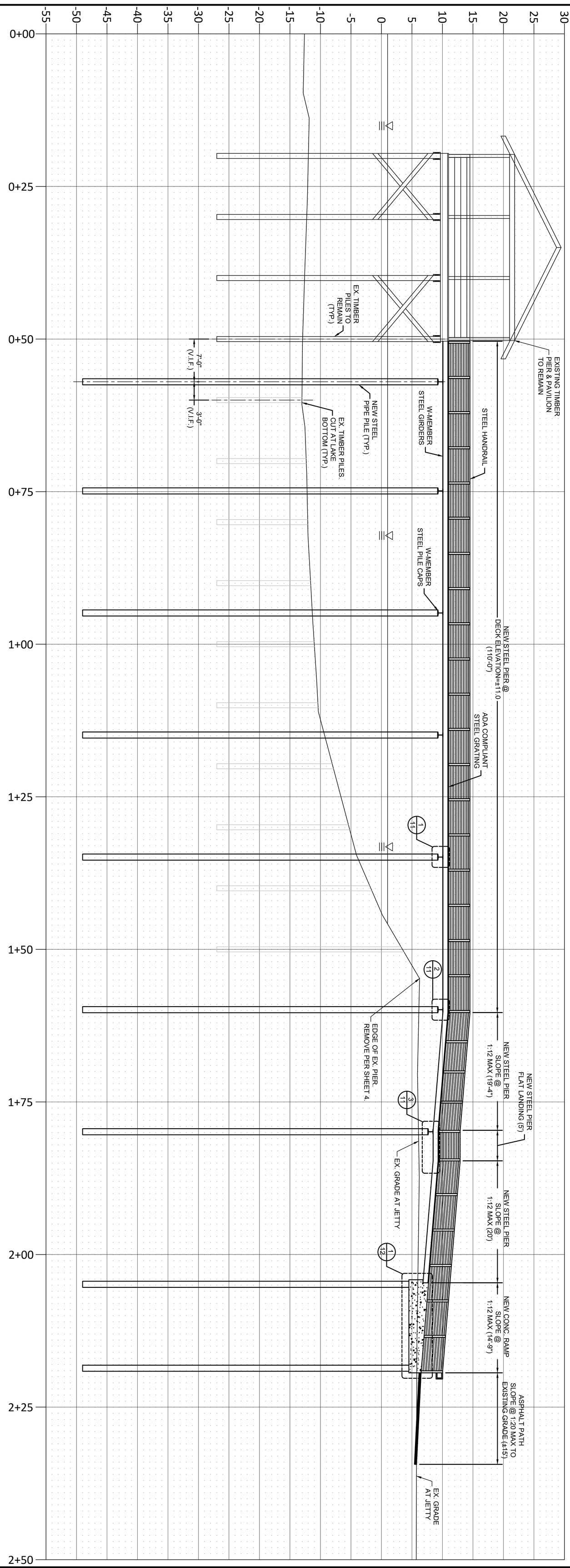
STEEL PIER PLAN AND SECTION

ST. TAMMANY PARISH FISHING PIER
ST. TAMMANY PARISH, OWNER

sheet no.
5
of _____ sheets



1 NEW STEEL PIER ELEVATION
1"=8'

20-2191A-06 NEW PIER ELEVATION.dwg

STEEL PIER ELEVATION

ST. TAMMANY PARISH FISHING PIER
ST. TAMMANY PARISH, OWNER

sheet no. 6 of ____ sheets

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checked DHD
date 05/08/2025
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REMOVE EXISTING 6" WATER LINE AND REPLACE WITH REQ'D 6" WATER LINE IN THE SAME TRENCH. VERIFY LOCATION IN FIELD.

TIE REQ'D 6" WATER LINE INTO EXISTING VALVE AND HYDRANT WITH NEW LEAD LINE

REMAINDER OF LOT 28

REMAINDER OF LOT 29

REMAINDER OF LOT 29A

LOT 30

REMAINDER OF LOT 30

REMAINDER OF LOT 31

6" LIVE OAK

8" LIVE OAK

12" PALM TREE

REMOVE EXISTING LIGHT POLE AND FOUNDATION

REMOVE EXISTING WHEEL STOPS AND SIGNS

REQ'D 92' x 4' x 6" THICK CONC. SIDEWALK

REQ'D 28' x 22.5' x 6" THICK ADA CONC. PARKING AREA

GATE

LIMITS STATE ST.

(±25')

(±85')

TIE REQ'D 6" WATER INTO EXISTING 8" WATER. VERIFY LOCATION IN FIELD.

TIE REQ'D 6" WATER LINE INTO EXISTING VALVE AND HYDRANT WITH NEW LEAD LINE.

PRIMARY CONTROL PK NAIL
N: 624,483.997
E: 3,567,262.594
ELEV: 7.02

ABANDONED PILING AREA

APPROXIMATE TOE OF RIP-RAP FROM SIDE SCAN SURVEY

SIDE SCAN SURVEY

MATCHLINE (SHEET 8)

LEGEND

1. REMOVE EXISTING CHAIN LINK FENCE AND REPLACE WITH NEW 8' CHAIN LINK FENCE (±675 LF)
2. REMOVE EXISTING 24' WIDE CHAIN LINK DOUBLE GATE REPLACE WITH NEW 8'x24' WIDE CHAIN LINK DOUBLE GATE
3. REQ'D ADA PARKING SPACE STRIPING AND SYMBOLS (BLUE)
4. REQ'D ADA PARKING SIGN
5. REQ'D BENCH ON EXISTING CONCRETE SLAB (3 EACH, VERIFY LOCATIONS WITH OWNER/AE)
6. REQ'D PICNIC TABLE ON EXISTING CONCRETE SLAB (3 EACH, VERIFY LOCATIONS WITH OWNER/AE)
7. REQ'D SHELTER STRUCTURE COVER ON EXISTING SHELTER STRUCTURE (2 EACH)
8. REQ'D PEDESTRIAN LIGHT POLE AND LIGHT FIXTURE (6 EACH). CONTRACTOR SHALL COORDINATE IN FIELD WITH PROJECT A/E TO DETERMINE WHETHER NEW LIGHT POLES CAN BE INSTALLED ON EXISTING LIGHT POLE FOUNDATIONS. IF IT IS DETERMINED THAT THE EXISTING FOUNDATIONS CAN NOT BE UTILIZED THEY WILL BE ABANDONED AND NEW FOUNDATION WILL BE CONSTRUCTED ADJACENT TO EXISTING PER DETAIL 5 / SHEET E1.
9. REQ'D PIER ENTRANCE SIGN, SIGN POLE, AND FOUNDATION
10. EXISTING BUILDING AND RAMPS TO BE REMOVED BY OTHERS
11. REQ'D ASPHALT PAVEMENT PATCHING (±90 SY). VERIFY LOCATIONS IN FIELD WITH OWNER/AE.
12. REQ'D RIPRAP REPLACEMENT (55 LB., ±250 CY). VERIFY LOCATIONS IN FIELD WITH OWNER/AE.
13. 8'x6"x6" TREATED TIMBER WHEEL STOP. PIN IN GROUND w/ (2) REBAR STAKES (80 EACH, VERIFY LOCATIONS WITH OWNER/AE)
14. REMOVE DAMAGED 6' WOOD FENCE AND REPLACE WITH NEW 6' WOOD FENCE (±100 LF), w/ 6' WIDE SINGLE GATE AND 12' WIDE DOUBLE GATE
15. REMOVE AND REPLACE (2) SUBMERSIBLE PUMPS, PUMP RISERS, AND LIFT STATION ELECTRICAL EQUIPMENT (EXISTING SEWER LIFT STATION WET WELL AND VALVE PIT TO REMAIN)
16. REQ'D ELECTRICAL EQUIPMENT PLATFORM
17. REQ'D AGGREGATE SURFACE COURSE (4" THICK) (±6,250 SY). VERIFY LIMITS IN FIELD WITH OWNER/AE.
18. REQ'D CONCRETE WHEEL STOP
19. REQ'D LIFT STATION CONTROL PANEL PLATFORM

NOTE: CONTRACTOR SHALL CLEAR AND GRUB THE JETTY AND PARKING LOT AREAS SO THAT THEY FREE OF OVERGROWTH AND DEBRIS.

GRAPHIC SCALE

15 0 7.5 15 30 60

(IN FEET)
1 inch = 15 ft.

20-2191A-07-08 JETTY & PARKING SITE PLANS.dwg

project no. 20-2191a
drawn EMC
checked DHD
date 05/08/2025
revised

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JETTY SITE PLAN

ST. TAMMANY PARISH FISHING PIER
ST. TAMMANY PARISH, OWNER

sheet no.
7
of _____ sheets

MATCHLINE (SHEET 7)

6" LIVE OAK

6' CH. LINK FNC.

(±565')

TYP.

OF LEASE BETWEEN
OF LOUISIANA AND
TAMMANY PARISH

METAL CONEX

GATE

SEWER LIFT STATION

BOUNDARY LINE

LIMITS OF JOINT USE AGREEMENT
BETWEEN THE STATE OF LOUISIANA
AND ST. TAMMANY PARISH
INSTRUMENT NO. 1826089

6' CH. LINK FNC.

4' CH. LINK FNC.

18" CMP

INVERT 2.15

INVERT 0.12

EX. TOE OF BERM

SIGNS

LEGEND

1. REMOVE EXISTING CHAIN LINK FENCE AND REPLACE WITH NEW 8' CHAIN LINK FENCE (±675 LF)
2. REMOVE EXISTING 24' WIDE CHAIN LINK DOUBLE GATE REPLACE WITH NEW 8'x24' WIDE CHAIN LINK DOUBLE GATE
3. REQ'D ADA PARKING SPACE STRIPING AND SYMBOLS (BLUE)
4. REQ'D ADA PARKING SIGN
5. REQ'D BENCH ON EXISTING CONCRETE SLAB (3 EACH, VERIFY LOCATIONS WITH OWNER/AE)
6. REQ'D PICNIC TABLE ON EXISTING CONCRETE SLAB (3 EACH, VERIFY LOCATIONS WITH OWNER/AE)
7. REQ'D SHELTER STRUCTURE COVER ON EXISTING SHELTER STRUCTURE (2 EACH)
8. REQ'D PEDESTRIAN LIGHT POLE AND LIGHT FIXTURE (6 EACH). CONTRACTOR SHALL COORDINATE IN FIELD WITH PROJECT A/E TO DETERMINE WHETHER NEW LIGHT POLES CAN BE INSTALLED ON EXISTING LIGHT POLE FOUNDATIONS. IF IT IS DETERMINED THAT THE EXISTING FOUNDATIONS CAN NOT BE UTILIZED THEY WILL BE ABANDONED AND NEW FOUNDATION WILL BE CONSTRUCTED ADJACENT TO EXISTING PER DETAIL 5 / SHEET E1.
9. REQ'D PIER ENTRANCE SIGN, SIGN POLE, AND FOUNDATION
10. EXISTING BUILDING AND RAMPS TO BE REMOVED BY OTHERS
11. REQ'D ASPHALT PAVEMENT PATCHING (±90 SY). VERIFY LOCATIONS IN FIELD WITH OWNER/AE.
12. REQ'D RIPRAP REPLACEMENT (55 LB., ±250 CY). VERIFY LOCATIONS IN FIELD WITH OWNER/AE.
13. 8'x6"x6" TREATED TIMBER WHEEL STOP. PIN IN GROUND w/ (2) REBAR STAKES (80 EACH, VERIFY LOCATIONS WITH OWNER/AE)
14. REMOVE DAMAGED 6' WOOD FENCE AND REPLACE WITH NEW 6' WOOD FENCE (±100 LF), w/ 6' WIDE SINGLE GATE AND 12' WIDE DOUBLE GATE
15. REMOVE AND REPLACE (2) SUBMERSIBLE PUMPS, PUMP RISERS, AND LIFT STATION ELECTRICAL EQUIPMENT (EXISTING SEWER LIFT STATION WET WELL AND VALVE PIT TO REMAIN)
16. REQ'D ELECTRICAL EQUIPMENT PLATFORM
17. REQ'D AGGREGATE SURFACE COURSE (4" THICK) (±6,250 SY). VERIFY LIMITS IN FIELD WITH OWNER/AE.
18. REQ'D CONCRETE WHEEL STOP
19. REQ'D LIFT STATION CONTROL PANEL PLATFORM

NOTE: CONTRACTOR SHALL CLEAR AND GRUB THE JETTY AND PARKING LOT AREAS SO THAT THEY FREE OF OVERGROWTH AND DEBRIS.

SEWER LIFT STATION NOTES:

1. CONTRACTOR SHALL FURNISH AND INSTALL PUMPS, GUIDE RAILS, AND VALVES IN EXISTING WET WELL AND VALVE PIT INCLUDING ANCHORAGE TO THE CONCRETE BOTTOM AND WET WELL WALLS AND REQUIRED BY THE MANUFACTURER.

2. ALL FASTENERS, BRACKETS, PLATES, HANGERS, ETC. (INCLUDING FLANGE BOLTS) IN THE WET WELL SHALL BE STAINLESS STEEL.

2. CONTRACTOR SHALL FIELD VERIFY WET WELL INVERT, PIPE SIZES, AND VALVE TYPES PRIOR TO CONSTRUCTION AND PRIOR TO ORDERING MATERIALS.

3. PUMPS SHALL BE (2) NON-CLOG WASTEWATER PUMPS WITH 10 HORSEPOWER, 3450 RPM MOTORS, MODEL XGVHH -10 HP AS MANUFACTURED BY BARNES, OR APPROVED EQUAL.

4. MOTORS SHALL BE SUBMERSIBLE TYPE, SUITABLE FOR 277/480V 3-PHASE. MOTORS SHALL BE NON-OVERLOADING ANYWHERE ON THE PUMP OPERATING CURVE.

4. GUIDE RAILS SHALL BE SCHEDULE 40 STAINLESS STEEL.

5. VALVES SHALL BE (2) SWING TYPE LEVER & WEIGHT OPERATED CHECK VALVES, (2) GATE VALVES, AND (1) QUICK CONNECTOR COUPLER & PLUG VALVE. GATE VALVES SHALL BE CAST IRON BODY, BRONZE MOUNTED, 125# DOUBLE BRONZE FACE DISC, NON RISING STEM. CONTRACTOR SHALL FIELD VERIFY VALVE TYPES AND CONFIGURATION PRIOR TO CONSTRUCTION.

6. DUPLEX PUMP CONTROL PANEL SHALL BE AS SHOWN IN APPENDIX A OF THE SPECIFICATIONS AS MANUFACTURES BY DELTA PROCESS EQUIPMENT, OR APPROVED EQUAL.

GRAPHIC SCALE

15 0 7.5 15 30 60

(IN FEET)
1 inch = 15 ft.

20-2191A-07-08 JETTY & PARKING SITE PLANS.dwg

project no. 20-2191a
drawn EMC
checked DHD
date 05/08/2025
revised

STATE OF LOUISIANA
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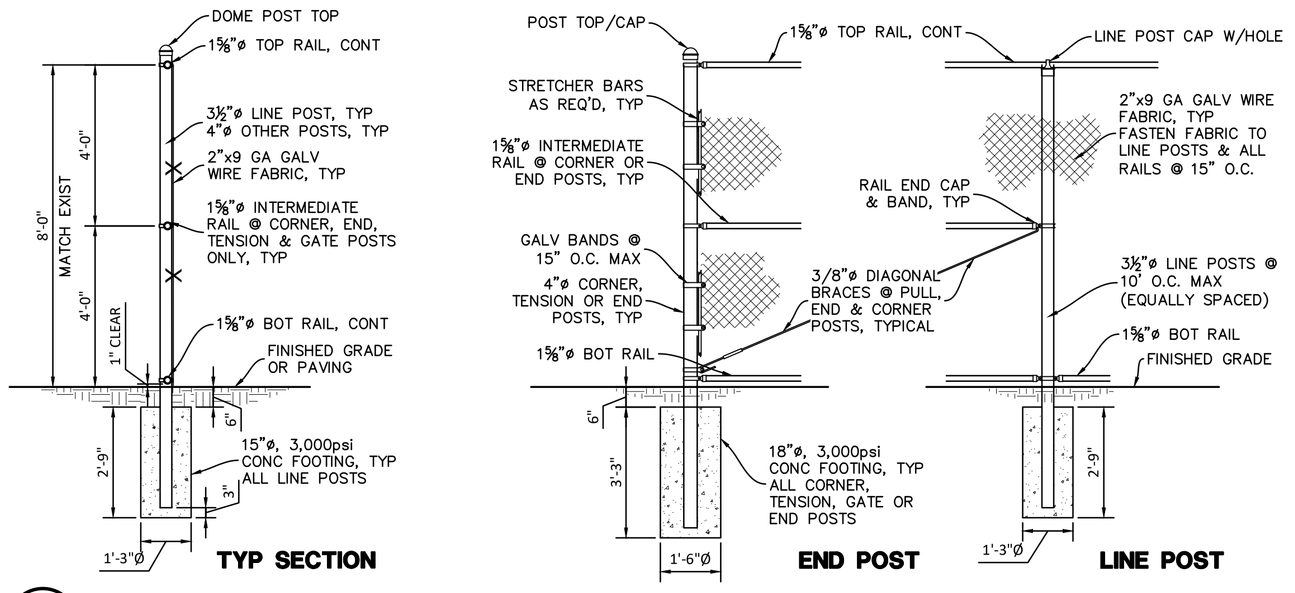
PARKING LOT SITE PLAN

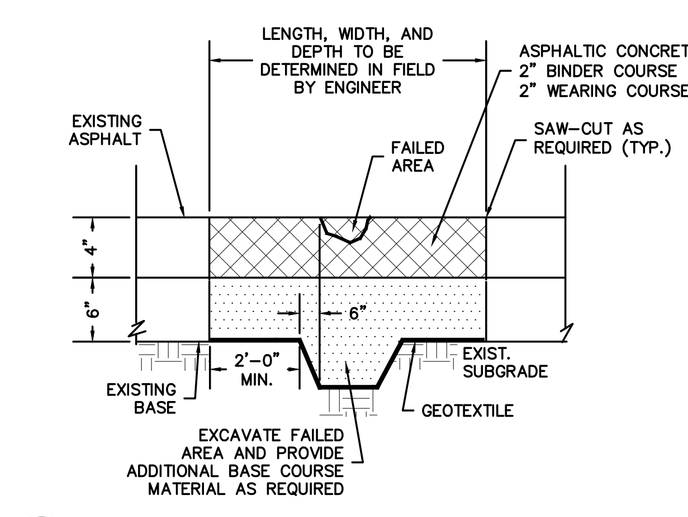
ST. TAMMANY PARISH FISHING PIER
ST. TAMMANY PARISH, OWNER

sheet no.
8
of _____ sheets



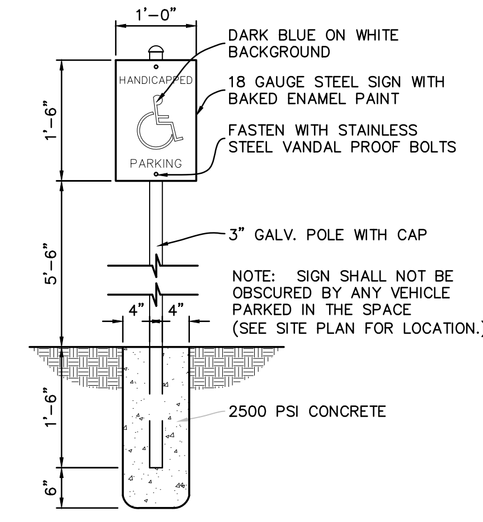
1 8' CHAIN LINK FENCE

9 02831X01SixFootChainLinkFence.dwg — 3/8"=1'-0"



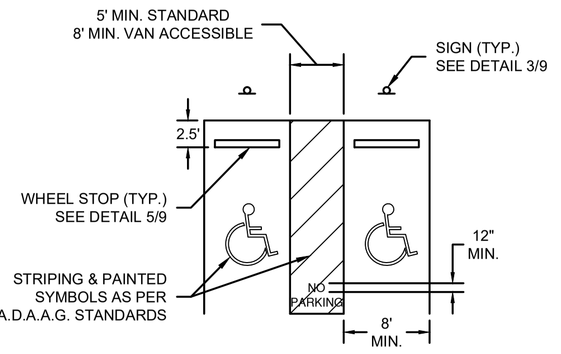
2 WOOD FENCE DETAIL

9 02834M52WoodFenceDetail.DWG — 1/2"=1'-0"



3 ADAAG PARKING SIGN

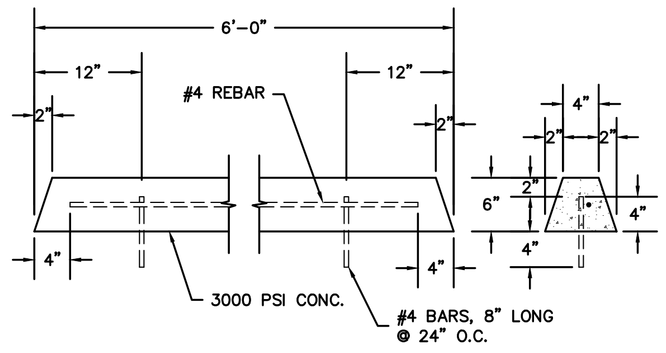
9 10420M01Typ.ADAAGParkingSign.DWG — 3/4"=1'-0"



NOTE:
1. SEE SITE PLAN FOR ACTUAL PARKING SPACE SIZES, LOCATION OF STANDARD & VAN ACCESSIBLE SPACES & ADJACENT ACCESSIBLE ROUTES
2. "NO PARKING" TEXT SHALL BE DISTINCTIVE IN COLOR (WHITE/YELLOW) AND SHALL BE SUPERIMPOSED OVER ACCESSIBLE AISLE STRIPING.

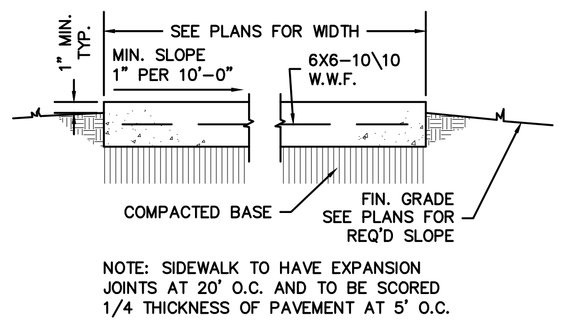
4 ADA ACCESSIBLE PARKING SPACE

9 02577M02ADAAccessibleParkingSpace.DWG — 1"=10'



5 WHEEL STOP

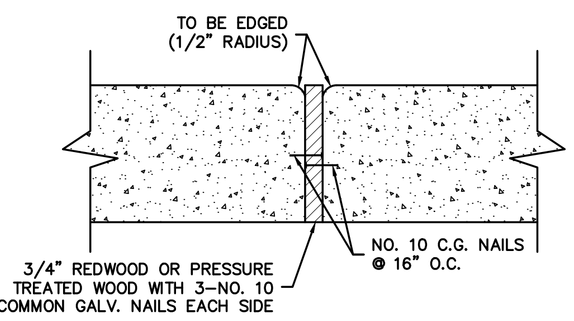
9 02526M25wheelstop.DWG — 1"=1'-0"



NOTE: SIDEWALK TO HAVE EXPANSION JOINTS AT 20' O.C. AND TO BE SCORED 1/4 THICKNESS OF PAVEMENT AT 5' O.C.

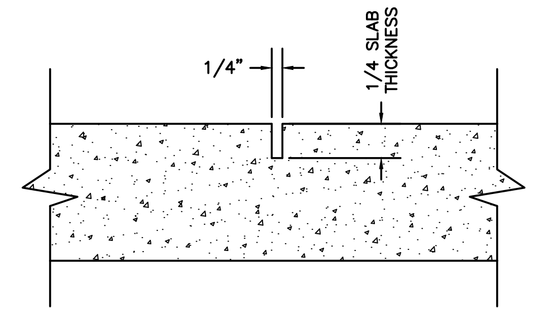
6 SIDEWALK SECTION

9 02510M93sidewalksect.DWG — N.T.S.



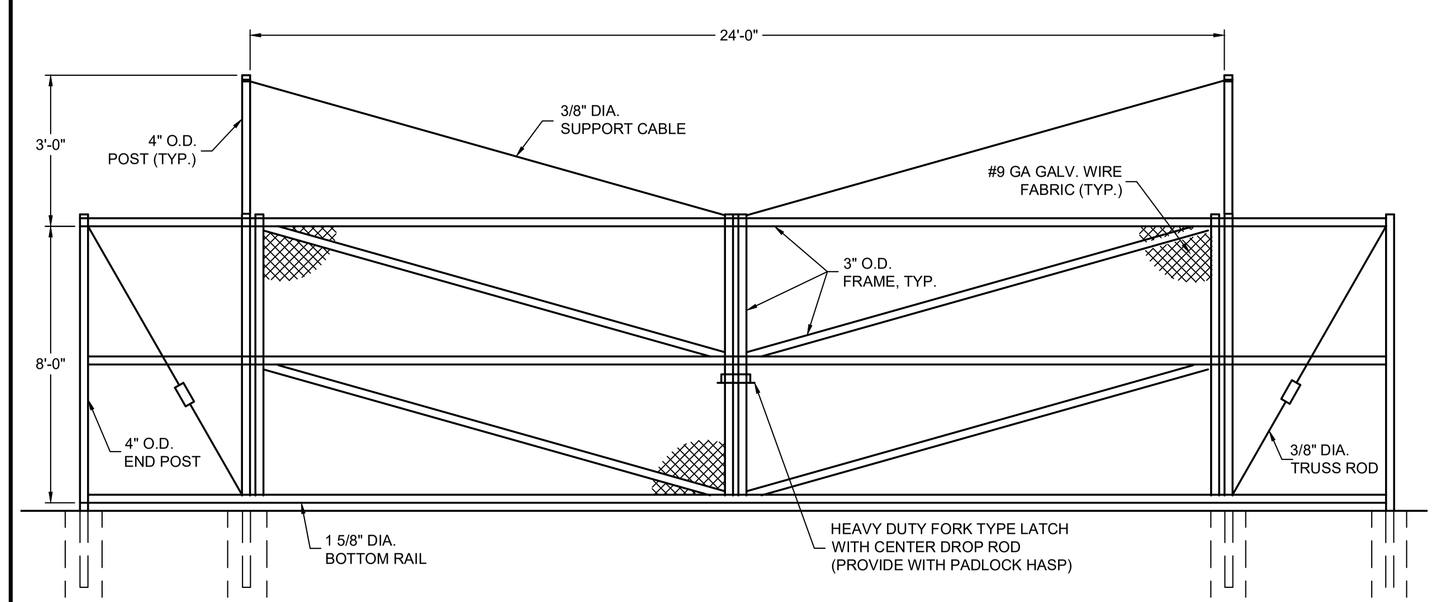
7 SIDEWALK EXPANSION JOINT

9 02510R00TypWalkExpSection.DWG — N.T.S.



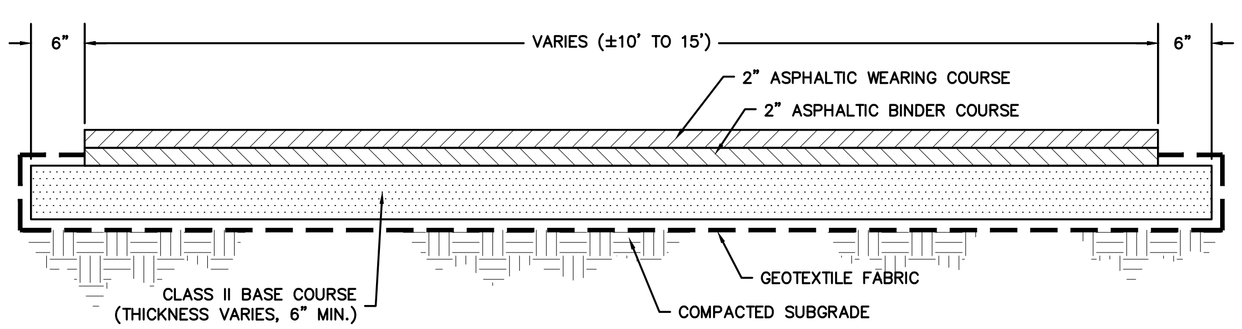
8 SIDEWALK CONTRACTION JOINT

9 02575R41.DWG — N.T.S.



9 CHAIN LINK FENCE DOUBLE GATE

9 02831X08CHAINLINKDOUBLEGATE.DWG — N.T.S.

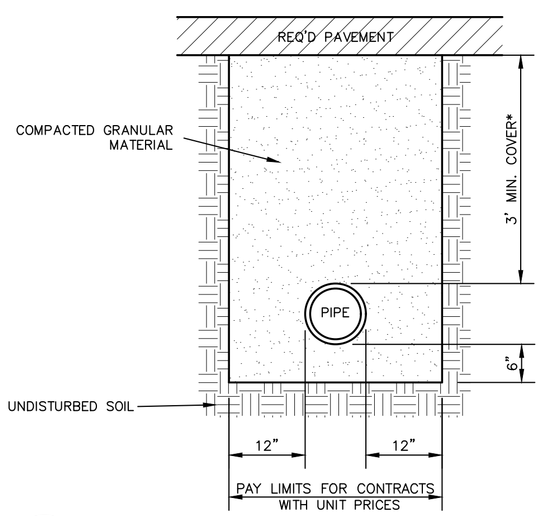


12 NEW ASPHALT PATH DETAIL

9 02550M51asphpvmtpatch.DWG — N.T.S.

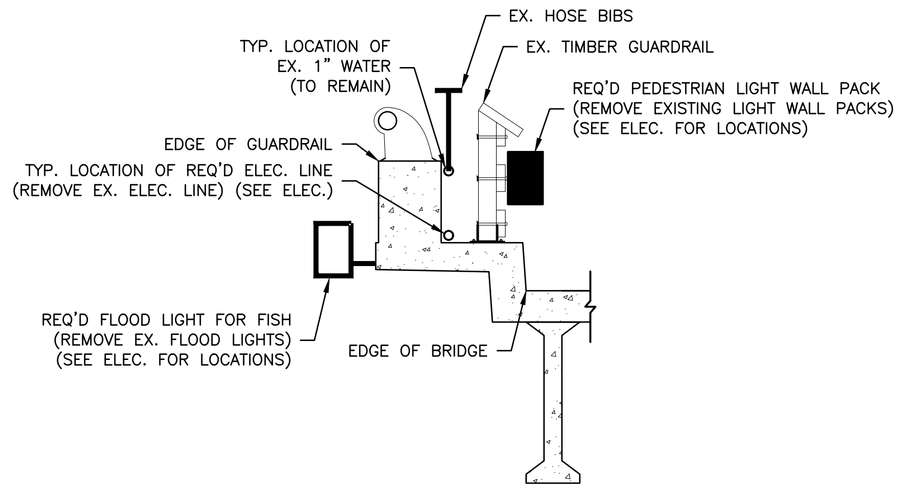
10 ASPHALT PAVEMENT PATCHING DETAIL

9 02550M51asphpvmtpatch.DWG — N.T.S.



13 PIPE INSTALLATION UNDER PAVEMENT

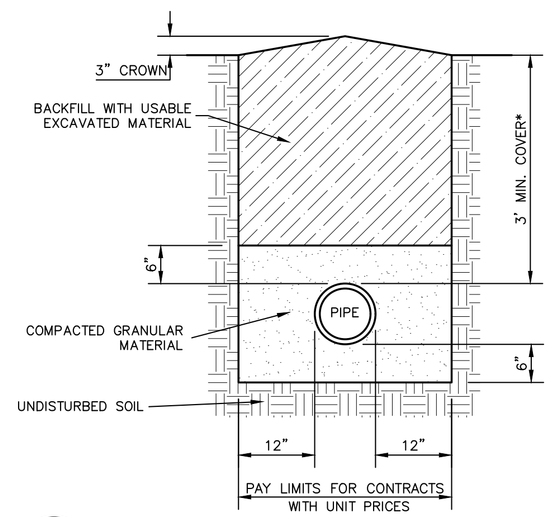
02730x20.dwg — N.T.S



NOTE: CONTRACTOR SHALL SUBMIT THEIR PROPOSED METHOD FOR CONNECTING UTILITY LINES AND LIGHTS TO BRIDGE TO A/E FOR SHOP DRAWING REVIEW.

11 SECTION THROUGH TYP. EX. GUARDRAIL

9 — 1"=2'



14 PIPE INSTALLATION UNDER NATURAL GROUND

02730x21.dwg — N.T.S

20-2191A-09 & 13 MISC DETAILS.dwg

project no. 20-2191a
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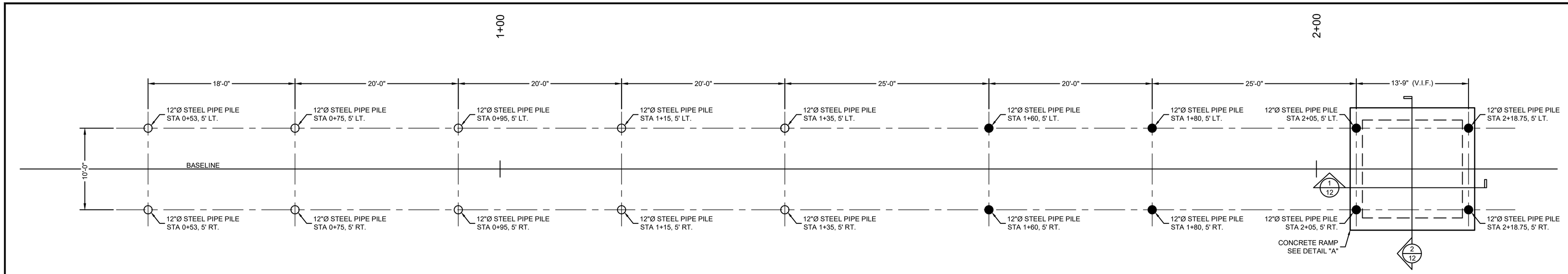
MISCELLANEOUS DETAILS

ST. TAMMANY PARISH FISHING PIER
ST. TAMMANY PARISH, OWNER

sheet no. 9 of ____ sheets



1/10 STEEL PIER FOUNDATION PLAN

1"=6'

SEE EXISTING CONDITIONS NOTE ON SHEET 2.

GENERAL FOUNDATION NOTES:

1. PILES SHALL BE 60 FOOT LONG 12" Ø STEEL PIPE PILES .
2. PILE CAPACITIES ARE AS FOLLOWS:
   COMPRESSION - 12 TON
   TENSION - 8 TON
3. ALL PILES SHALL HAVE THE SAME TIP ELEVATION.
   PILE TIP ELEVATION = -49 (VERIFY IN FIELD BASED ON VERIFIED DECK ELEVATION)
4. ALL PILE SURFACES EXPOSED TO OPEN AIR OR WATER SHALL BE COATED WITH COAL TAX EPOXY COATING.

LEGEND

○ 12"Ø STEEL PIPE PILE IN LAKE BOTTOM

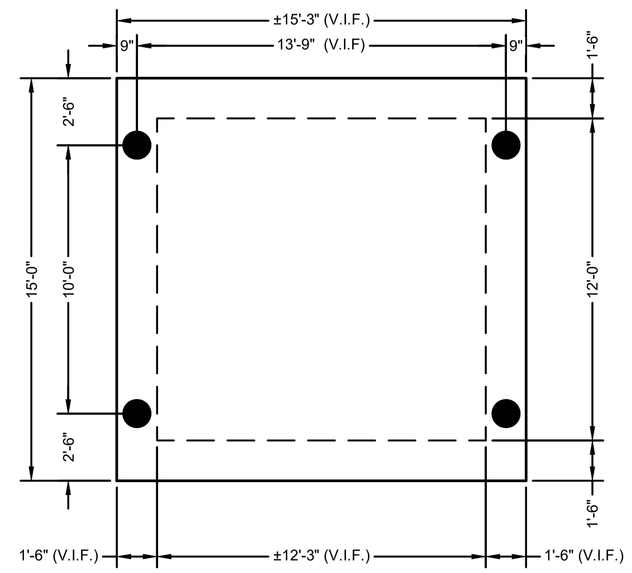
● 12"Ø STEEL PIPE PILE IN EXISTING JETTY.
PRE-DRILLING FOR PILE INSTALLATION WILL BE REQUIRED AS NECESSARY PER CONTRACTOR'S MEANS AND METHODS OF CONSTRUCTION.

STRUCTURAL STEEL NOTES:

1. FABRICATE AND ERECT ALL STRUCTURAL STEEL IN ACCORDANCE WITH AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
2. THE CONTRACTOR SHALL SUBMIT FOR THE STRUCTURAL ENGINEER'S REVIEW SHOP DRAWINGS WHICH INCLUDE ERECTION DRAWINGS, MATERIALS, CONNECTIONS, FABRICATION, AND ALL DETAILS FOR STRUCTURAL STEEL.
3. STRUCTURAL STEEL:
   ASTM A992 FOR WIDE FLANGE SHAPES
   ASTM A992 FOR STEEL CHANNELS
   ASTM A572, GR 50 FOR STEEL ANGLES
   ASTM 572, GR 50 FOR ALL PLATE STEEL
   HOLLOW STRUCTURAL SECTIONS: ASTM A500, GRADE C.
   STEEL PIPE: ASTM A53, TYPE E OR S, GRADE B.
4. WELDED CONNECTIONS: E70XX ELECTRODES, MINIMUM SIZE FILLET WELD 3/16". ALL SHOP AND FIELD WELDING SHALL BE BY A CERTIFIED WELDER AND IN ACCORDANCE WITH AMERICAN WELDING SOCIETY D1.1 SPECIFICATION.
5. HEADED ANCHOR RODS: ASTM F1554, GRADE 55, WELDABLE ANCHOR AND HEAVY HEX NUT, UNLESS INDICATED OTHERWISE.
6. ENGINEER SHALL BE CONTACTED FOR APPROVAL OF ANY FIELD MODIFICATIONS OR REPAIRS OF ANCHOR BOLTS OR RODS, AND COLUMN BASE PLATES.
7. BOLTED CONNECTIONS: ASTM F3125 GRADE A325-N BEARING TYPE IN ACCORDANCE WITH AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS". BOLTS THROUGH 4" WIDE BEAM FLANGES SHALL BE 5/8" DIAMETER. OTHER BOLTS SHALL BE 3/4" DIAMETER, UNLESS NOTED OTHERWISE. USE SNUG TIGHT BEARING CONNECTIONS FOR ALL BOLTED CONNECTIONS.
8. WHERE STEEL BEAMS ARE CONTINUOUS OVER COLUMNS, PROVIDE WEB STIFFENER PLATES EACH SIDE OF BEAM WEB, OF THICKNESS EQUAL TO BEAM FLANGE THICKNESS, LOCATED IN ALIGNMENT WITH COLUMN WEB, FLANGES OR CENTER LINE OF TUBES AND PIPE COLUMNS.
9. FABRICATE BRACING MEMBERS WITH SUFFICIENT DRAW TO PREVENT SAGGING.
10. PACK UNDER BASE PLATES WITH NON-SHRINK, NON-METALLIC, HI-STRENGTH (6,000 PSI MIN. PER ASTM C109) GROUT MEETING THE REQUIREMENTS OF ASTM 1107 AFTER SETTING AND LEVELING.
11. ALL STRUCTURAL STEEL AND OTHER EXTERIOR STEEL ELEMENTS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123 AFTER SANDBLAST CLEANING PER SSPC-SP10. USE ASTM A325 BOLTS HOT DIPPED GALVANIZED WITH GALVANIZED HARDENED WASHERS AND GALVANIZED HEAVY HEX NUTS FOR BOLTING OF GALVANIZED ITEMS.

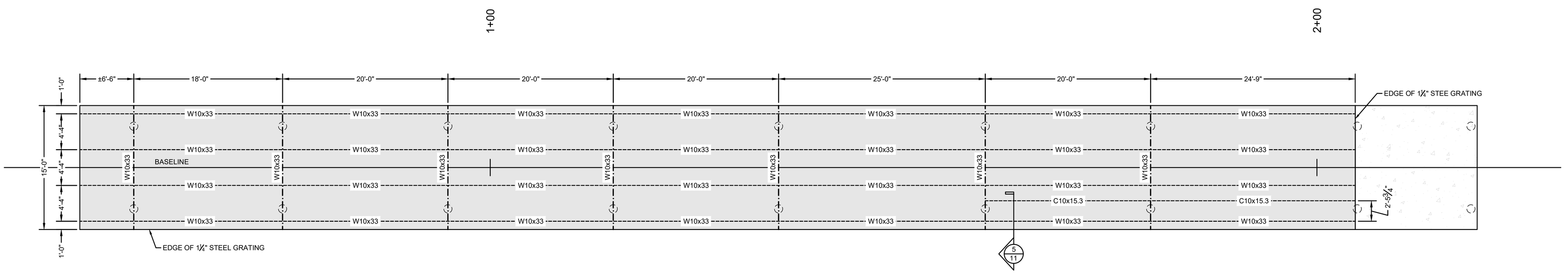
CONCRETE NOTES:

1. ALL CONCRETING OPERATIONS SHALL COMPLY WITH ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".
2. DETAIL CONCRETE REINFORCEMENT AND ACCESSORIES IN ACCORDANCE WITH ACI 315 "DETAILING MANUAL".
3. THE CONTRACTOR SHALL SUBMIT FOR THE STRUCTURAL ENGINEER'S REVIEW SHOP DRAWINGS FOR THE FOLLOWING ITEMS:
   CONCRETE MIX DESIGNS
   CONCRETE REINFORCING
4. THE PROPOSED MATERIALS AND MIX DESIGN SHALL BE FULLY DOCUMENTED AND REVIEWED BY THE OWNER'S TESTING LABORATORY. RESPONSIBILITY FOR OBTAINING THE REQUIRED CONCRETE DESIGN STRENGTH IS THE CONTRACTOR'S.
5. CONCRETE SHALL BE 4,000 PSI MINIMUM COMPRESSIVE STRENGTH.
6. REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60.
7. TIE ALL REINFORCING STEEL AND EMBEDMENT'S SECURELY IN PLACE PRIOR TO PLACING CONCRETE. PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN POSITION OF REINFORCEMENT WITHIN SPECIFIED TOLERANCES DURING ALL CONSTRUCTION ACTIVITIES. "STICKING" DOWELS INTO WET CONCRETE IS NOT PERMITTED.
8. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4 INCH CHAMFER.
9. COAT ALL SLABS WITH CURING COMPOUND WITHIN 24 HOURS OF PLACING. PRODUCT USED SHALL CONFORM WITH ASTM C309, AND SHALL BE COMPATIBLE WITH ADHERED FINISHES. A DISSIPATING FORMULATION SHALL BE USED AT CEMENTITIOUS FINISHES.
10. REINFORCING BAR PLACING ACCESSORIES SHALL BE IN ACCORDANCE WITH ACI MANUAL OF STANDARD PRACTICE. WHERE CONCRETE IS EXPOSED IN FINISHED BUILDING, PROVIDE ACCESSORIES WITH RUSTPROOF LEGS. WHERE CONCRETE IS SAND-BLASTED OR BUSHHAMMERED, PROVIDE ACCESSORIES OF STAINLESS STEEL.
11. ALL SPLICES SHALL BE CLASS "B" TENSION LAP SPLICE, UNLESS NOTED OTHERWISE.
12. FIELD BENDING OF BARS LARGER THAN #4 IS NOT PERMITTED. ALL BENDS FOR BARS LARGER THAN #4 SHALL BE SHOP MADE COLD BENDS.



DETAIL "A"

1"=4'



2/10 STEEL PIER FRAMING PLAN

1"=6'

project no. 20-2191a
drawn EMC
checked DHD
date 05/08/2025
revised

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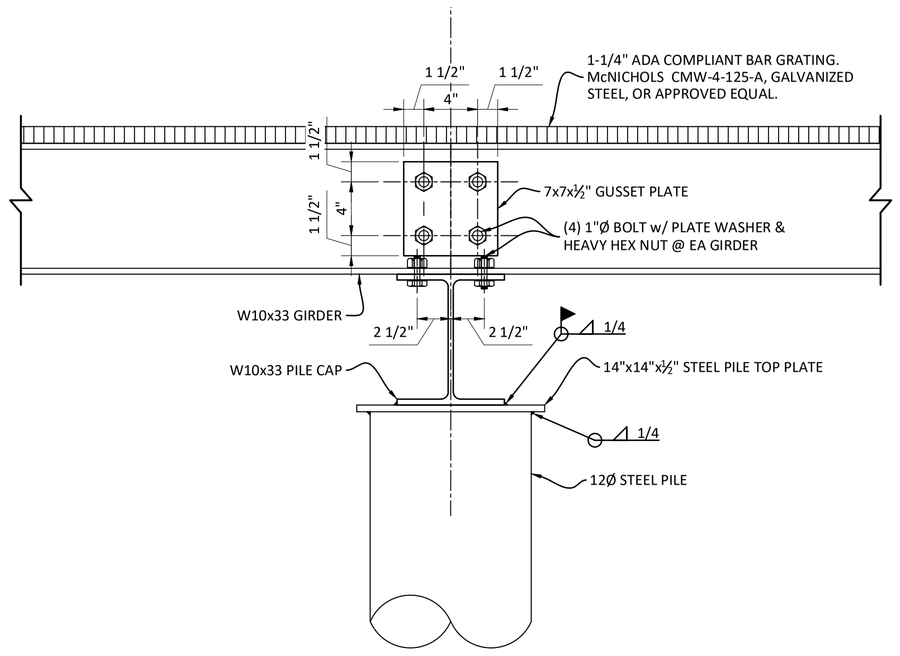
STEEL PIER FOUNDATION AND FRAMING PLAN

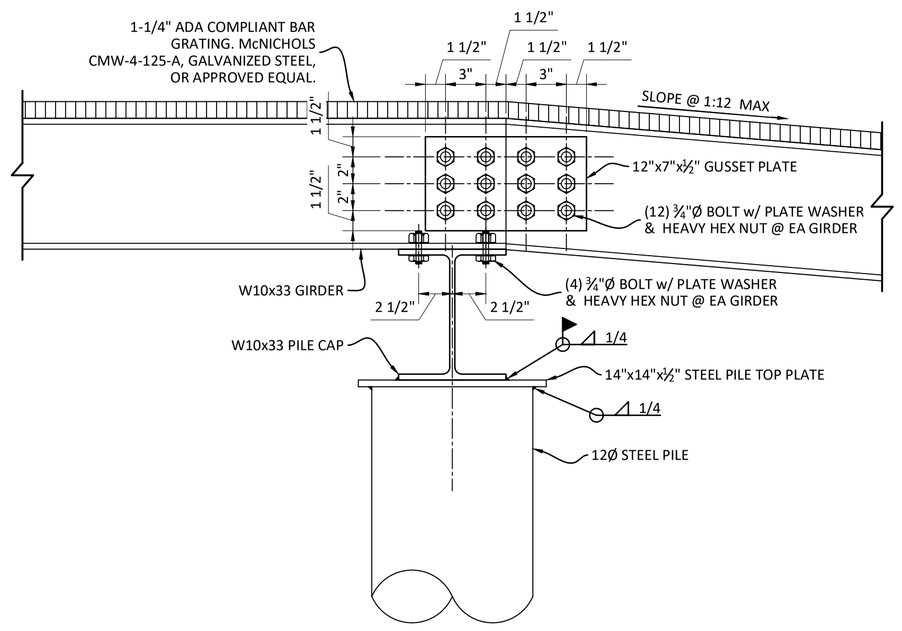
ST. TAMMANY PARISH FISHING PIER
ST. TAMMANY PARISH, OWNER

sheet no.
10
of _____ sheets

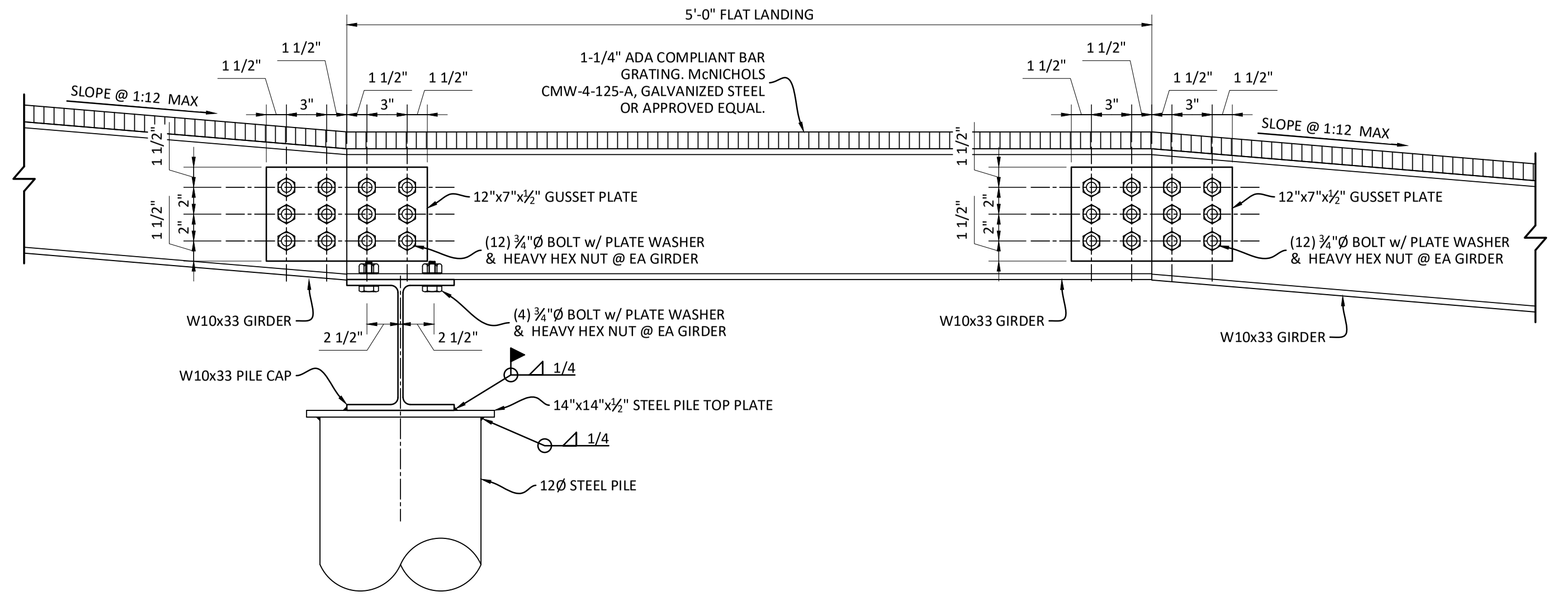
20-2191A-10 FRAMING PLAN.dwg



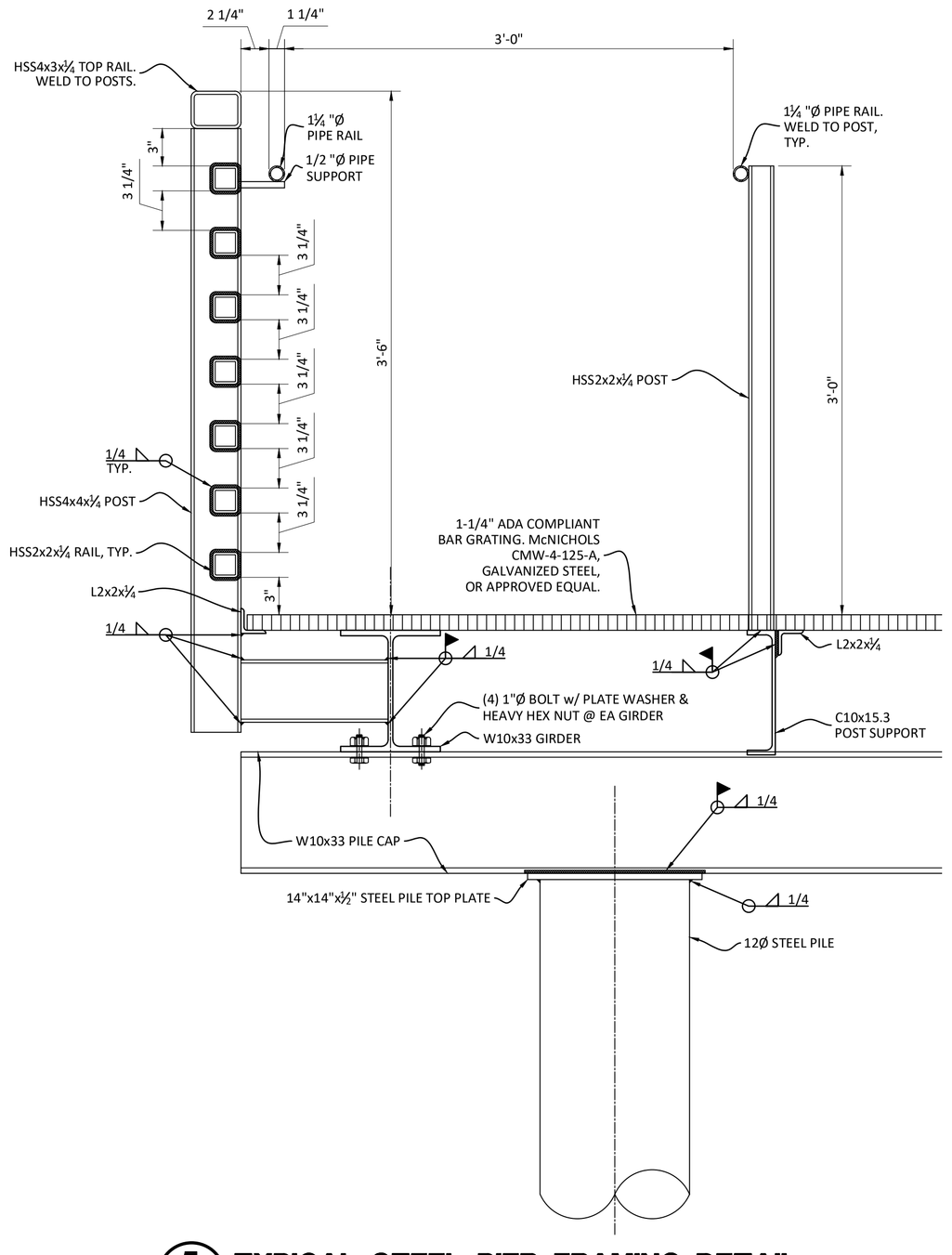
1 STEEL PIER FRAMING DETAIL
11 — 1-1/2"=1'-0"



2 STEEL PIER FRAMING DETAIL
11 — 1-1/2"=1'-0"



3 STEEL PIER FRAMING DETAIL
11 — 1-1/2"=1'-0"



5 TYPICAL STEEL PIER FRAMING DETAIL
11 — 1-1/2"=1'-0"

20-2191A-11-12 STRUCT DETAILS.dwg

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drawn EMC
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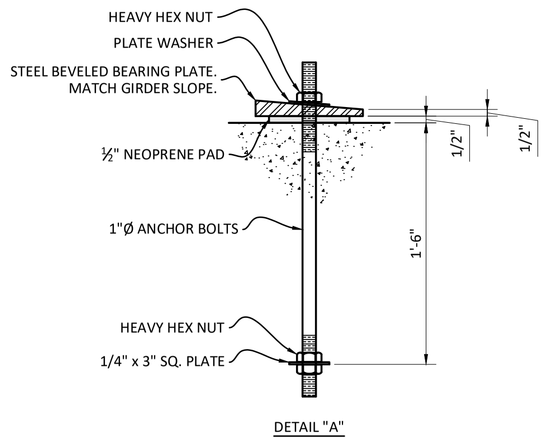
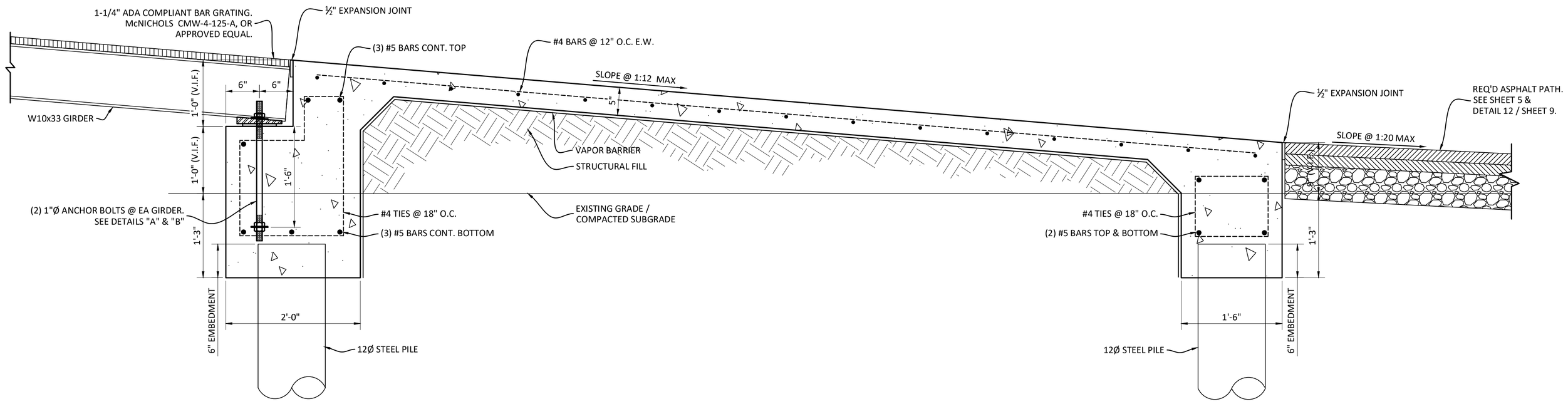
STEEL PIER FRAMING DETAILS

ST. TAMMANY PARISH FISHING PIER
ST. TAMMANY PARISH, OWNER

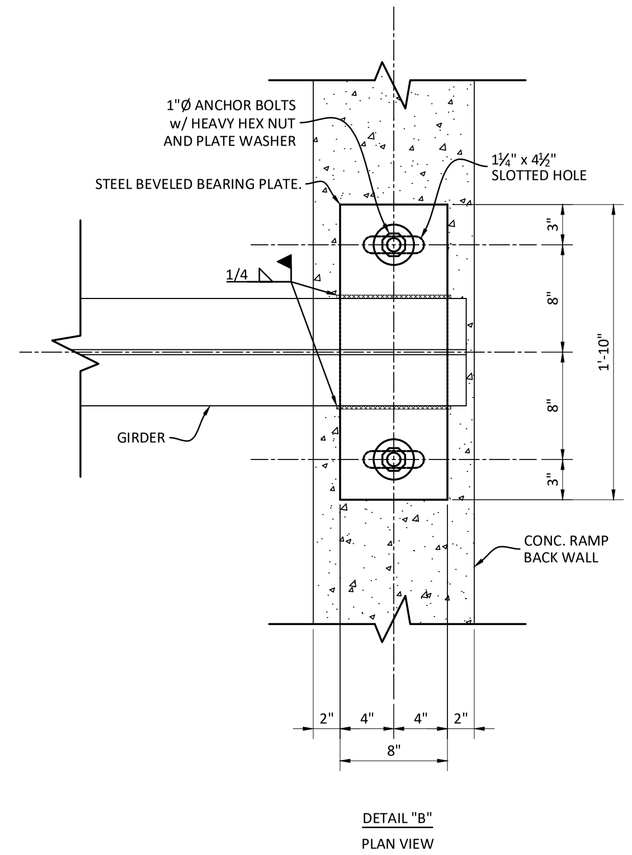
sheet no.
11
of _____ sheets



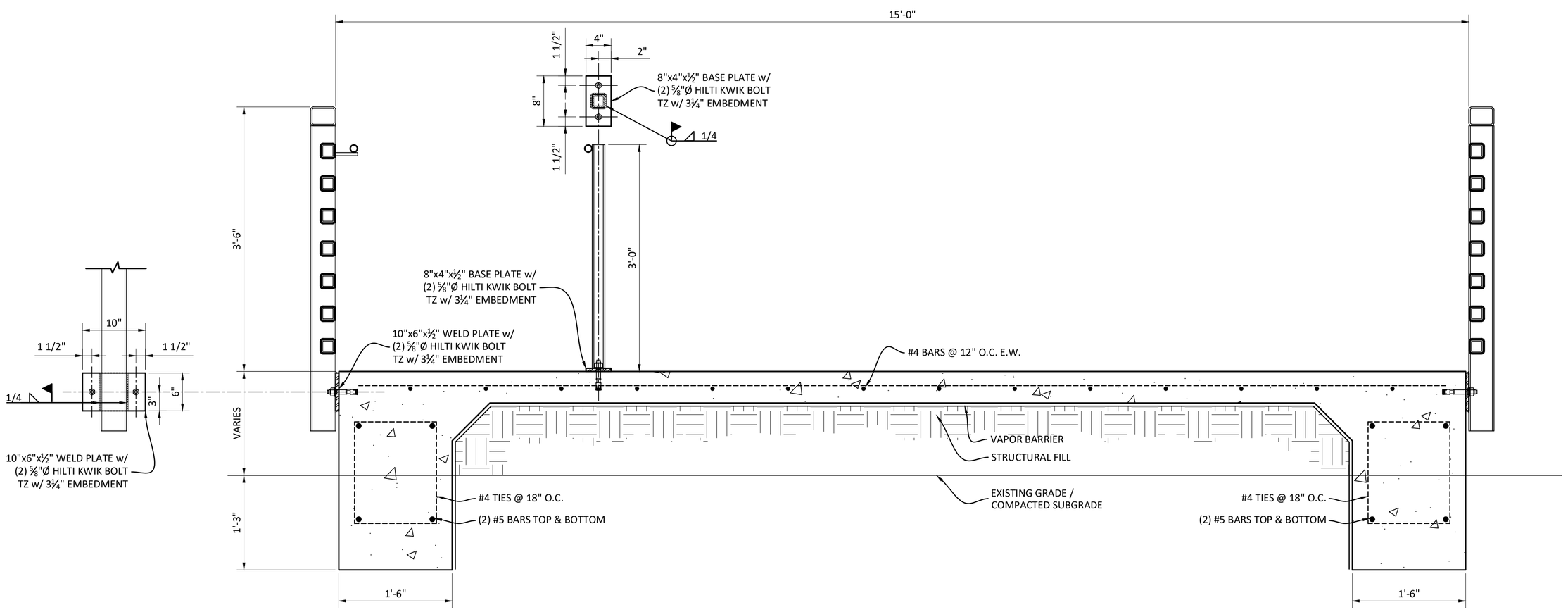
DETAIL "A"



1 STEEL PIER DETAIL @ CONCRETE END RAMP
12 — 1"=1'-0"



DETAIL "B"
PLAN VIEW



2 STEEL PIER DETAIL @ CONCRETE END RAMP
12 — 1"=1'-0"

20-2191A-11-12 STRUCT DETAILS.dwg

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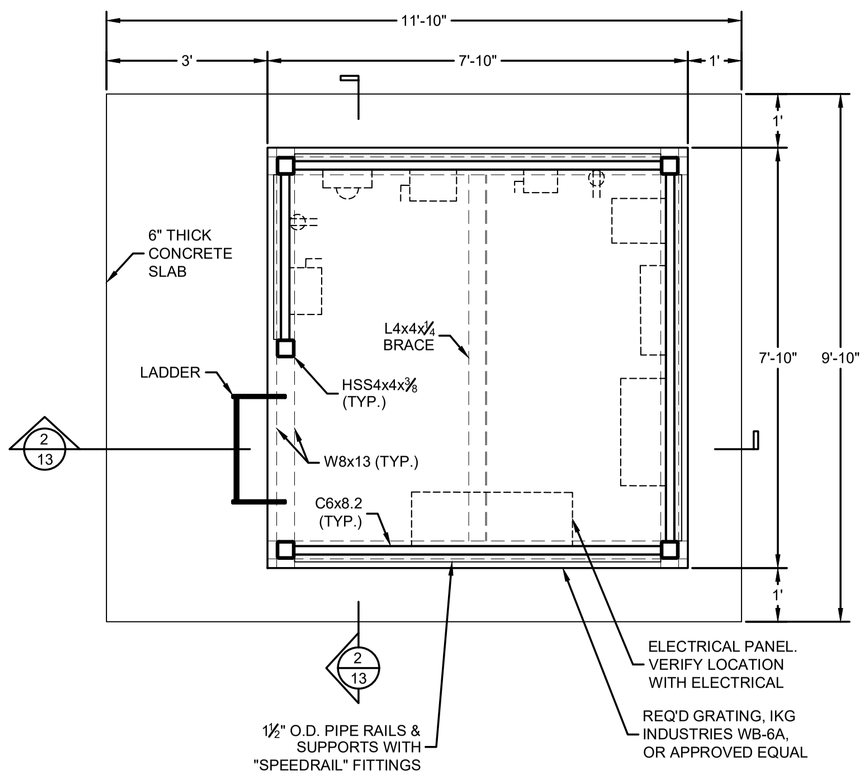
STEEL PIER FRAMING DETAILS

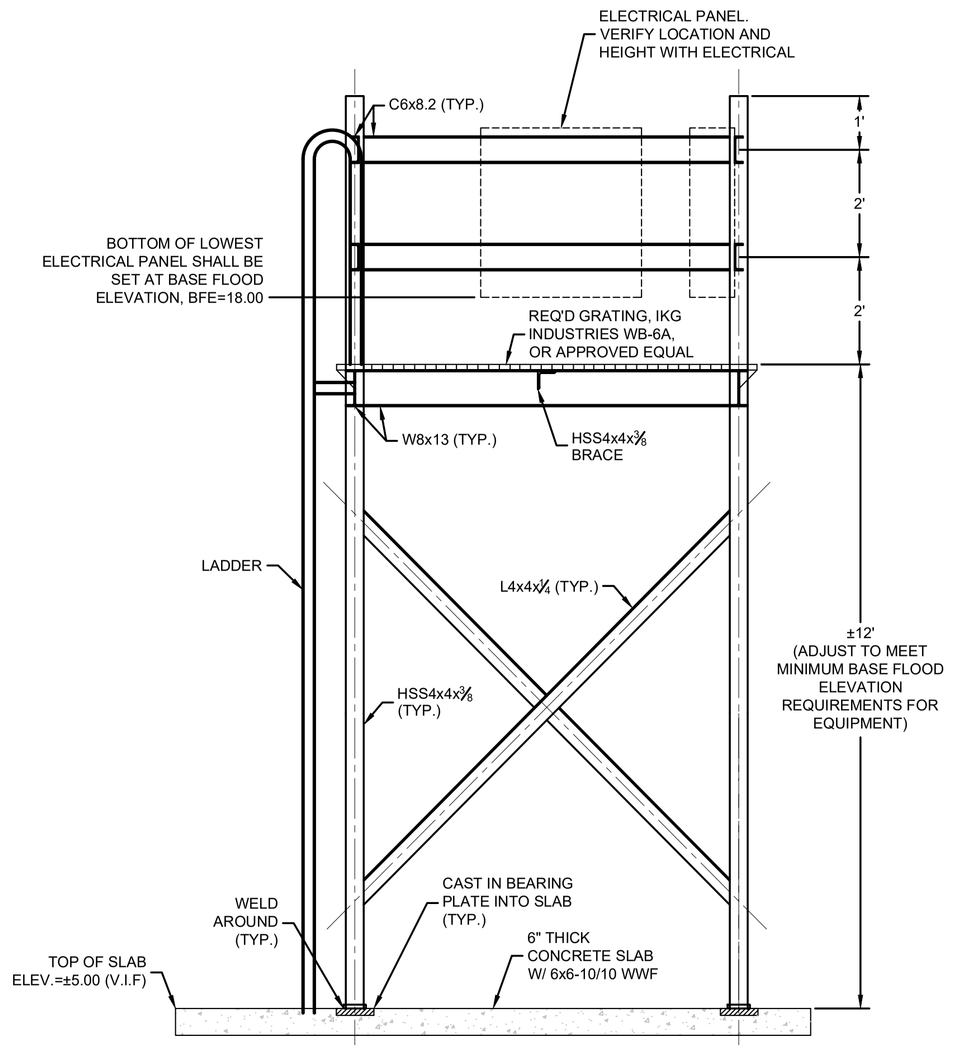
ST. TAMMANY PARISH FISHING PIER
ST. TAMMANY PARISH, OWNER

sheet no.
12
of _____ sheets

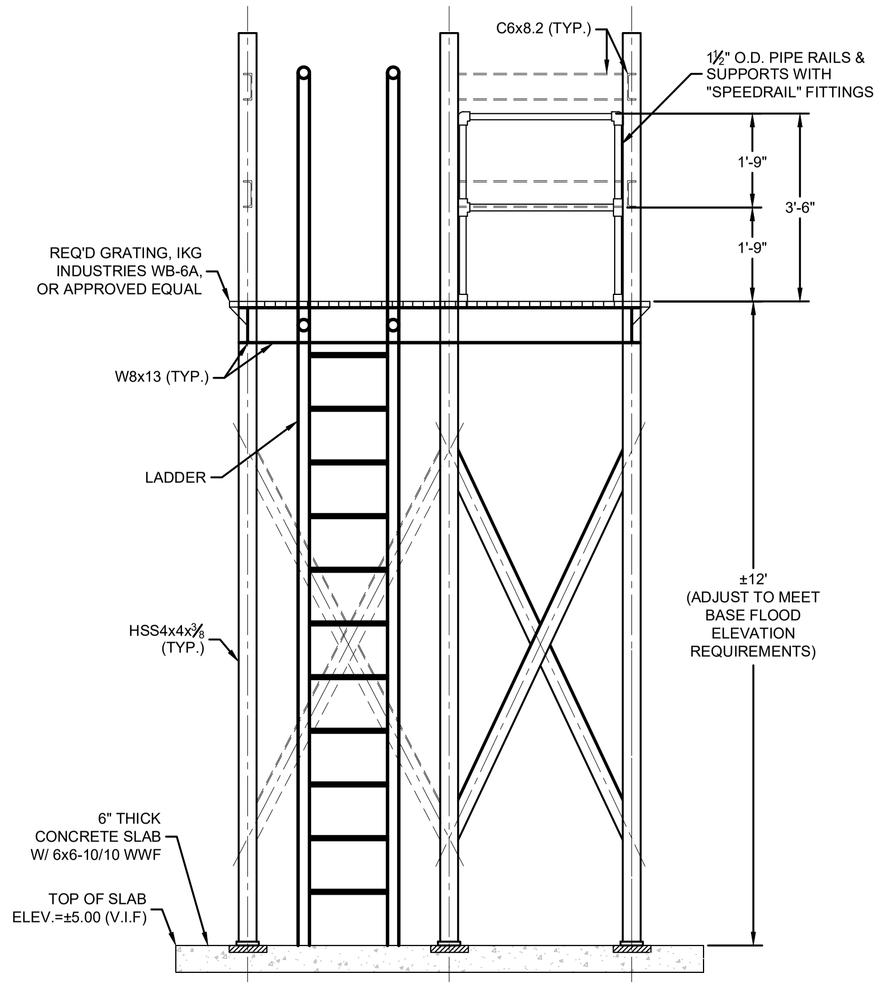
NOTE: CONTRACTOR SHALL VERIFY PLATFORM DIMENSIONS BASED ON EQUIPMENT SIZES AND CLEARANCE REQUIREMENTS PRIOR TO SUBMITTAL OF STEEL SHOP DRAWINGS OR ORDERING OF EQUIPMENT AND STEEL.



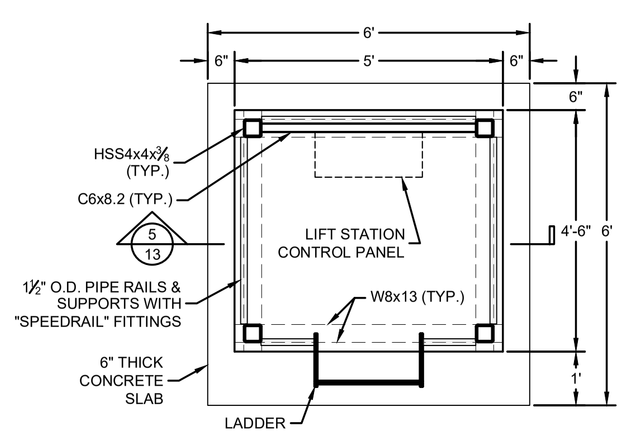
1 13 ELECTRICAL PLATFORM PLAN
1/2"=1'-0"



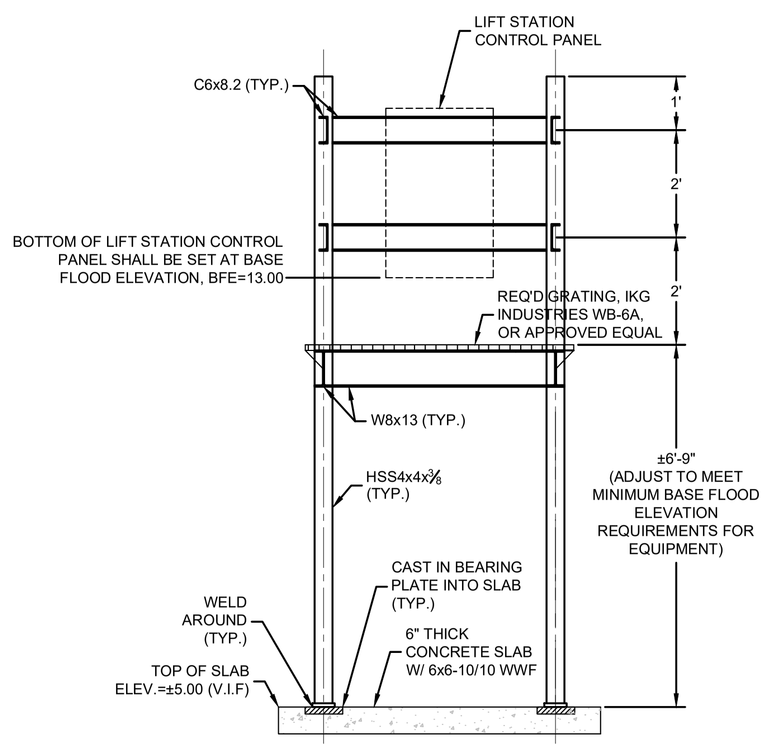
2 13 ELECTRICAL PLATFORM SECTION
1/2"=1'-0"



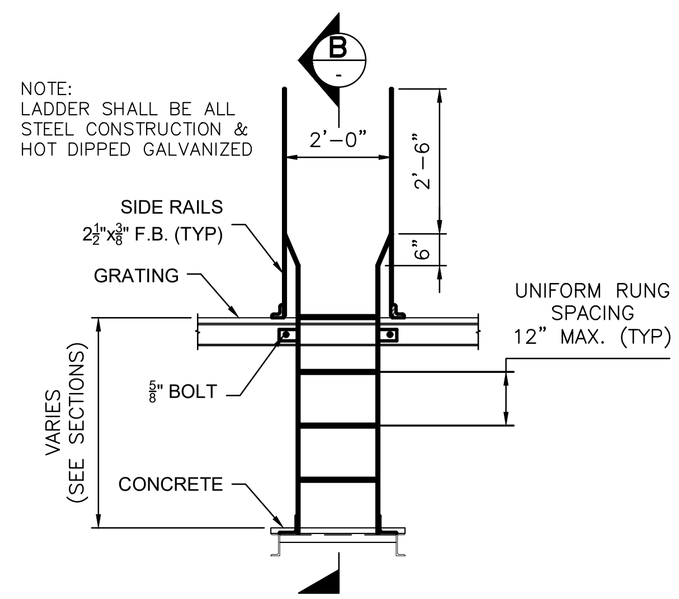
3 13 ELECTRICAL PLATFORM SECTION
1/2"=1'-0"



4 13 LIFT STATION CONTROL PANEL PLATFORM PLAN
1/2"=1'-0"

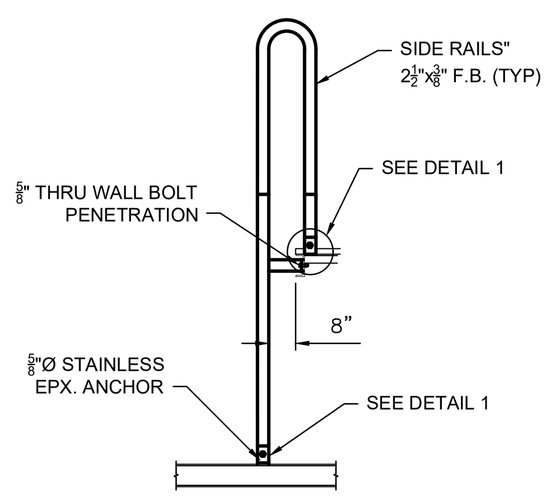


5 13 LIFT STATION CONTROL PANEL PLATFORM SECTION
1/2"=1'-0"

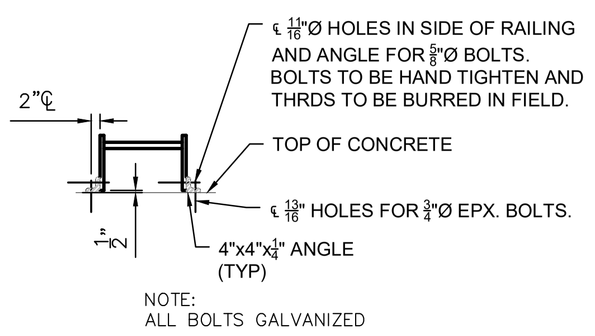


LADDER PROFILE VIEW
SCALE: NTS

6 13 ELECTRICAL PLATFORM LADDER
N.T.S.



B - SECTION
SCALE: NTS



DETAIL 1
SCALE: NTS

project no. 20-2191a
drawn EMC
checked DHD
date 05/08/2025
revised

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ELECTRICAL PLATFORM DETAILS

ST. TAMMANY PARISH FISHING PIER
ST. TAMMANY PARISH, OWNER

sheet no.
13
of ____ sheets

20-2191A-09 & 13 MISC DETAILS.dwg

ELECTRICAL SYMBOL LEGEND

(REFER TO DRAWINGS AND SPECIFICATIONS FOR FURTHER REQUIREMENTS)

GENERAL

- (1) KEYNOTE
- A-1,3 CIRCUIT TAG; PANEL AND CIRCUIT DESIGNATION AS INDICATED; E.G. PANEL "A", CIRCUIT #1,3

WIRE, CONDUIT, AND RACEWAY

- ABOVE-SLAB CONDUIT & WIRE/CABLING
- BELOW-SLAB CONDUIT & WIRE/CABLING; 3/4" MINIMUM CONDUIT SIZE UON
- HOMERUN TO PANEL; TICK MARKS INDICATED NUMBER OF WIRES

DISTRIBUTION

- PANELBOARD, SWITCHBOARD, OR OTHER DISTRIBUTION EQUIPMENT AS NOTED; INSTALL WITH SUFFICIENT WORKING SPACE AND CLEARANCES TO MEET ALL REQUIREMENTS OF NEC SECTION 110.26.
- GEN-ANNC GENERATOR REMOTE ANNUNCIATOR PANEL; PROVIDE CONDUIT/CABLING TO GENERATOR AS REQUIRED PER THE MANUFACTURER'S SPECIFICATIONS.

EQUIPMENT CONNECTIONS
(PROVIDE CONDUIT AND WIRE PER THE PANEL SCHEDULE)

- FUSED SAFETY DISCONNECT SWITCH; LOCATE WITHIN SIGHT OF THE EQUIPMENT SERVED WITH 36" MINIMUM CLEAR WORKING SPACE IN FRONT OF THE SWITCH; DO NOT MOUNT DIRECTLY TO EQUIPMENT
- J JUNCTION BOX
- M JUNCTION BOX FOR MOTORIZED DAMPER
- S M MOTOR RATED SWITCH WITH THERMAL OVERLOAD; LOCATE WITHIN SIGHT OF THE EQUIPMENT SERVED; DO NOT MOUNT DIRECTLY TO EQUIPMENT; WHEN LOCATED ABOVE CEILING, MOUNT TO STRUCTURAL MEMBER NEARBY.
- 6 ELECTRICAL MOTOR, HORSEPOWER AS NOTED

POWER DEVICES
(PROVIDE CONDUIT AND WIRE PER THE PANEL SCHEDULE)

- DUPLEX RECEPTACLE
- GFCI DUPLEX RECEPTACLE
- ABOVE-COUNTER GFCI DUPLEX RECEPTACLE; MOUNT AT 4" ABOVE COUNTER OR BACKSPLASH OR 44" (WHICHEVER IS LOWER)

TELECOMMUNICATIONS
(JACKET COLORS TO BE PER THE OWNER'S STANDARDS IF APPLICABLE)

- TELECOM TERMINAL BOARD; 0'-1" THICK AC INDOOR GRADE, FIRE RETARDANT PLYWOOD, PAINTED AS SPECIFIED BY THE ARCHITECT OR OWNER

LIGHTING
(PROVIDE CONDUIT AND WIRE PER THE PANEL SCHEDULE FOR POWER AND PER THE MANUFACTURER'S SPECIFICATIONS FOR CONTROLS)

- Aa LIGHT FIXTURE; UPPERCASE LETTER(S) INDICATE FIXTURE TYPE; LOWERCASE LETTER(S) INDICATE ASSOCIATED CONTROLS ID; SEE LIGHTING FIXTURE SCHEDULE FOR FIXTURE DESCRIPTIONS AND MOUNTING TYPES
- S SWITCH;
  SUBSCRIPT (WHEN USED):
  NONE - SINGLE POLE TOGGLE SWITCH
  3 - THREE-WAY SWITCH
  D - LINEAR SLIDE DIMMER SWITCH
  3D - THREE-WAY LINEAR SLIDE DIMMER SWITCH
  O - WALL MOUNTED OCCUPANCY SENSOR
  3O - THREE-WAY SWITCH WITH OCCUPANCY SENSOR
  a,b,c etc. - SWITCH ID

FIRE ALARM
(PROVIDE CONDUIT AND WIRE PER THE PANEL SCHEDULE FOR POWER AND CONDUIT AND CABLING PER THE MANUFACTURER'S SPECIFICATIONS)

- FACP FIRE ALARM CONTROL PANEL
- F FIRE ALARM SYSTEM PULL STATION
- FIRE ALARM SYSTEM FLOW/TAMPER SWITCH MONITORING DEVICES
- S FIRE ALARM SYSTEM SMOKE DETECTOR

SECURITY (EQUIPMENT PROVIDED BY OWNER/OTHERS)
(EQUIPMENT PROVIDED BY OTHERS)

- JUNCTION BOX FOR CEILING MOUNTED CAMERA; PROVIDE 3/4"EC WITH PULL STRING FROM THE JUNCTION BOX TO AN ACCESSIBLE LOCATION ABOVE CEILING
- JUNCTION BOX FOR WALL MOUNTED CAMERA; PROVIDE 3/4"EC WITH PULL STRING FROM THE JUNCTION BOX TO AN ACCESSIBLE LOCATION ABOVE CEILING

TYPICAL PANELBOARD PLAQUE

(INDICATE PANEL DESIGNATION)
__/__ VOLTS __ PHASE __ WIRE
__ AMPS MAIN __
FED FROM
(INDICATE FEEDER ORIGINATION I.D.)
(PANEL AND CIRCUIT NO.)

TYPICAL DISCONNECT PLAQUE

(INDICATE EQUIPMENT DESCRIPTION)
FUSED AT __ AMPERES
FED FROM
(INDICATE FEEDER ORIGINATION I.D.)
(PANEL AND CIRCUIT NO.)

SEE SPECIFICATIONS FOR MATERIALS, COLORS SIZE LETTERING, ETC.

ATTACH PLAQUES USING INDUSTRIAL GRADE DOUBLE FACE ADHESIVE.

3 DETAIL - EQUIPMENT SIGNAGE
N.T.S.

ELECTRICAL GENERAL NOTES

1. ALL ELECTRICAL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AS ADOPTED BY THE AHJ.
2. THE WORDS "PROVIDE" AND "PROVIDED" AS USED HEREIN SHALL BE UNDERSTOOD TO MEAN, "PROVIDE COMPLETE IN PLACE," THAT IS "FURNISH AND INSTALL". EQUIPMENT AND MATERIAL INDICATED TO BE PROVIDED SHALL BE NEW UNLESS OTHERWISE NOTED AND SHALL BE OF THE MOST SUITABLE GRADE FOR THE PURPOSE INTENDED.
3. ROUTE NEW CONDUIT AND WIRING CONCEALED IN WALLS AND CEILING WHERE POSSIBLE. COORDINATE INSTALLATION OF EXPOSED CONDUIT AND WIRING WITH THE ARCHITECT.
4. CONTRACTOR SHALL PROVIDE ELECTRICAL SERVICE TO NEW HVAC UNITS AS FURNISHED BY THE MECHANICAL CONTRACTOR. VERIFY THE EXACT ELECTRICAL REQUIREMENTS WITH THE REVIEWED HVAC SUBMITTALS PRIOR TO ORDERING ELECTRICAL EQUIPMENT.
5. BEFORE INSTALLATION, CONTRACTOR SHALL SUBMIT DETAILED DRAWINGS TO THE ENGINEER FOR REVIEW COVERING PROPOSED LOCATIONS, MOUNTING, AND ROUTING FOR ALL CONDUITS, SERVICES, FITTINGS, GROUND RODS, SUPPORTS, ETC.
6. CONTRACTOR IS RESPONSIBLE FOR OVER-CURRENT PROTECTIVE DEVICE SHORT CIRCUIT, COORDINATION, AND ARC-FLASH STUDIES.
7. MATERIALS AND MANUFACTURERS NOTED ON DRAWINGS ARE TO BE USED AS BASIS OF DESIGN TO ESTABLISH QUALITY AND PERFORMANCE STANDARDS AND SHALL BE PROVIDED AS SPECIFIED. SUBSTITUTIONS WILL BE CONSIDERED WHERE SUFFICIENT PRODUCT INFORMATION IS PROVIDED TO MAKE A PROPER EVALUATION. REVIEW OF A SUBSTITUTION IS AT THE SOLE DISCRETION OF THE PROFESSIONAL.
8. THE CONTRACTOR SHALL SUBMIT COPIES OF THE PRODUCT DATA, SHOP DRAWINGS, ETC. OF ALL MATERIALS NOTED ON THE DRAWINGS. ALL SUBMITTED PRODUCT DATA, SHOP DRAWINGS, ETC. SHALL BE MARKED WITH THE NAME OF THE PROJECT AND SHALL BEAR THE STAMP OF APPROVAL OF THE CONTRACTOR AS EVIDENCE THAT THE MATERIAL HAS BEEN CHECKED BY THE CONTRACTOR.
9. DRAWINGS SPECIFIC TO THIS TRADE DO NOT LIMIT THE RESPONSIBILITY OR WORK REQUIRED BY THE CONTRACT DOCUMENTS. REFER TO DRAWINGS AND SPECIFICATIONS OF OTHER TRADES FOR COMPLETE INFORMATION PRIOR TO BID.
10. WHERE CONFLICTS EXIST AMONG DRAWINGS, SPECIFICATIONS, AND EQUIPMENT SCHEDULES, THE MOST STRINGENT REQUIREMENT OR QUANTITY SHALL APPLY. NOTIFY THE ARCHITECT/ENGINEER OF ALL CONFLICTS FOR RESOLUTION OR INTERPRETATION.
11. NO EQUIPMENT SHALL BE ORDERED OR INSTALLED UNTIL THE PROJECT ENGINEER HAS RECEIVED A COPY STAMPED "NO EXCEPTIONS TAKEN." "NO EXCEPTIONS TAKEN" DOES NOT RELIEVE THE CONTRACTOR FROM CONFORMANCE WITH THE CONTRACT, EXTEND TO QUANTITIES OR DIMENSIONS, IMPLY THAT THE EQUIPMENT CAN BE INSTALLED OR OPERATE SATISFACTORILY, THAT THE EQUIPMENT CONTAINS ALL NECESSARY COMPONENTS, OR THAT IT WILL COORDINATE WITH OTHER REVIEWED ITEMS.
12. OMISSION FROM THIS SHEET OF ANY ITEM SHOWN ELSEWHERE IN THE PLANS DOES NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY FOR ANY ASSOCIATED WORK.
13. COORDINATE INSTALLATION OF NEW ITEMS AND EQUIPMENT WITH THE OWNER'S REPRESENTATIVE AND THE WORK OF OTHER TRADES. THE CONTRACTOR SHALL INCUR ALL COSTS ASSOCIATED WITH THE RELOCATION OF EQUIPMENT CONFLICTING WITH NEW WORK BY OTHER TRADES THAT HAS NOT BEEN COORDINATED.
14. COORDINATE ALL ASPECTS OF NEW SERVICE WITH UTILITY COMPANY AND INCLUDE ALL COSTS IN BID.
15. WARNING TAPE SHALL BE INSTALLED 12 TO 18 INCHES BELOW GRADE OVER ALL CONDUITS.
16. PROVIDE 1/4" MINIMUM DIAMETER PULL ROPE. PULL ROPE SHALL NOT BE NYLON STRING.
17. FOR SERVICE ENTRANCE CONDUITS, UTILIZE LONG RADIUS (36") CONDUIT BENDS.
18. ALL CONDUIT RISERS FROM UNDERGROUND SHALL HAVE RIGID METAL ELLS AND RISERS.
19. PRIOR TO CONSTRUCTION, VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES. AVOID DISTURBANCE OF EXISTING UTILITIES NOT INCLUDED IN THIS PROJECT.
20. SET SCREW CONDUIT FITTINGS SHALL NOT BE PERMITTED.

INDEX - ELECTRICAL SHEETS

LIGHTING GENERAL NOTES

1. VERIFY THE EXACT LOCATION OF ALL LIGHTING SWITCHES WITH THE ARCHITECT PRIOR TO ROUGH-IN.
2. VERIFY THE EXACT MOUNTING LOCATION FOR ANY PHOTOELECTRIC CELLS WITH THE ARCHITECT PRIOR TO ROUGH-IN. ALL PHOTOELECTRIC CELLS MUST FACE NORTH.
3. CONTRACTOR SHALL CONFIRM COMPATIBILITY OF ALL LIGHTING CONTROL DEVICES/SWITCHES/DIMMERS WITH LIGHTING FIXTURES AND BALLASTS/DRIVERS PRIOR TO SUBMITTAL.

SPECIAL SYSTEMS GENERAL NOTES

1. VERIFY EXACT LOCATION, VOLTAGE, PHASE, AMPERAGE, ETC. OF ALL MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ORDERING ELECTRICAL GEAR.
2. FOR ALL CAMERA LOCATIONS, PROVIDE ONE (1) GREEN JACKETED CAT 6 CABLE IN 3/4" CONDUIT BACK TO ASSOCIATED DATA CLOSET.
3. FOR ALL WIRELESS ACCESS POINT LOCATIONS, PROVIDE ONE (1) YELLOW JACKETED CAT 6 CABLE IN 3/4" CONDUIT BACK TO ASSOCIATED DATA CLOSET.

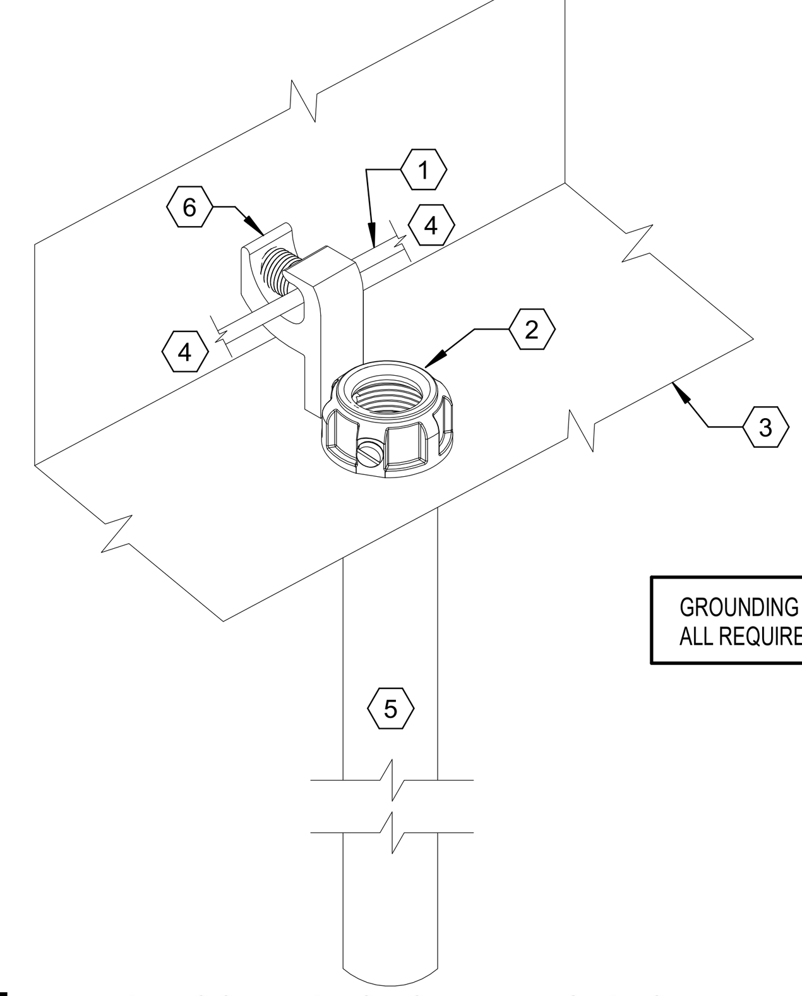
DEMOLITION GENERAL NOTES

1. THE LOCATIONS OF EXISTING CIRCUITS AND EQUIPMENT ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING ELECTRICAL DEVICES, EQUIPMENT, AND WIRING BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSE BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING PORTIONS OF THE ELECTRICAL SYSTEMS.
2. THE CONTRACTOR SHALL REMOVE SUCH EXISTING WORK AS CALLED FOR ON THE DRAWINGS OR AS REQUIRED TO CLEAR THE AREAS OF NEW CONSTRUCTION.
3. ALL EQUIPMENT REMOVED THAT IS NOT BEING REUSED SHALL REMAIN THE PROPERTY OF THE OWNER OR SHALL BE DISPOSED OF AS REQUIRED.
4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ALL EXISTING ELECTRICAL EQUIPMENT AND DATA WIRING NOT REUSED OR NOT NECESSARY FOR THE COMPLETION OF THIS PROJECT.

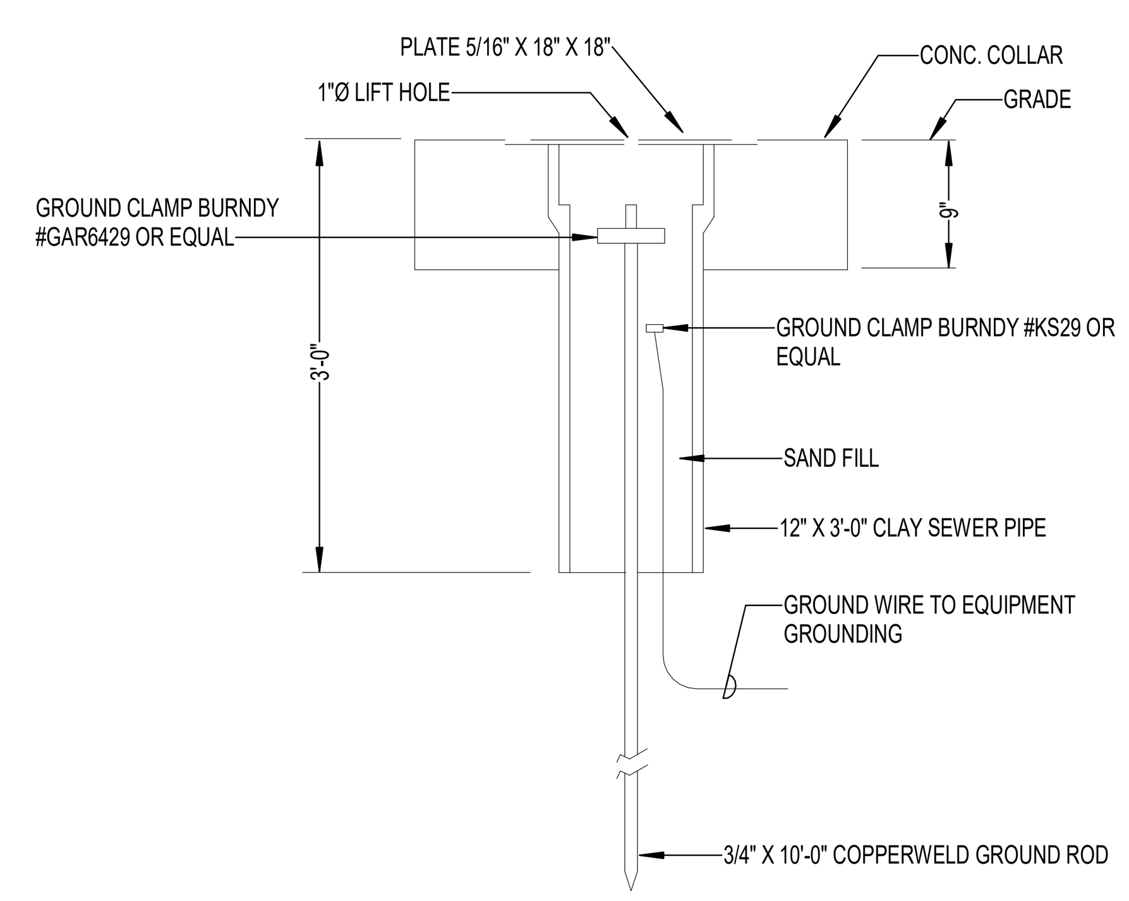
DETAIL KEYNOTES

1. SUPPLY SIDE EQUIPMENT BONDING JUMPER.
2. UL 467 LISTED GROUNDING BUSHING BY APPLETON, EATON, OR APPROVED EQUIVALENT.
3. ENCLOSURE.
4. TO ENCLOSURE GROUND BUS OR ADDITIONAL CONDUITS (AS REQUIRED).
5. INCOMING CONDUIT.
6. INTEGRAL BRACKET FOR ATTACHMENT OF BONDING JUMPER.

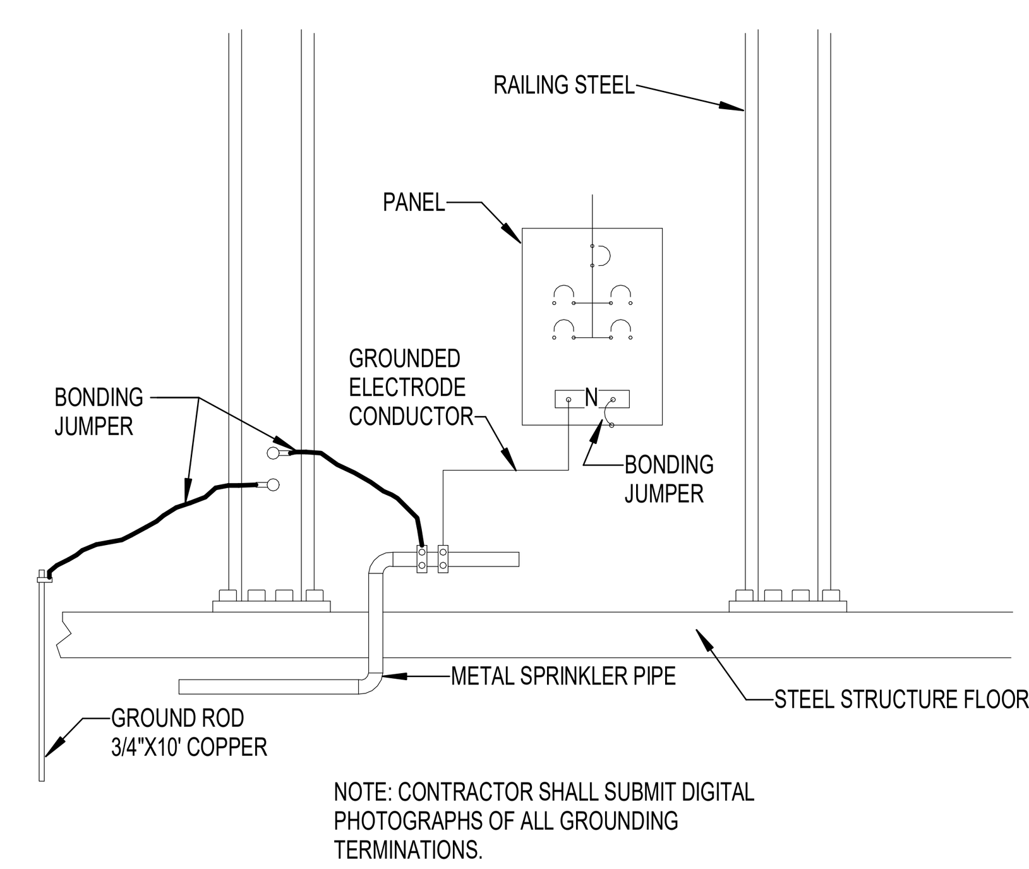
GROUNDING INSTALLATION SHALL MEET ALL REQUIREMENTS OF NEC 250.92.



1 DETAIL - CONDUIT GROUND BUSHING
N.T.S.

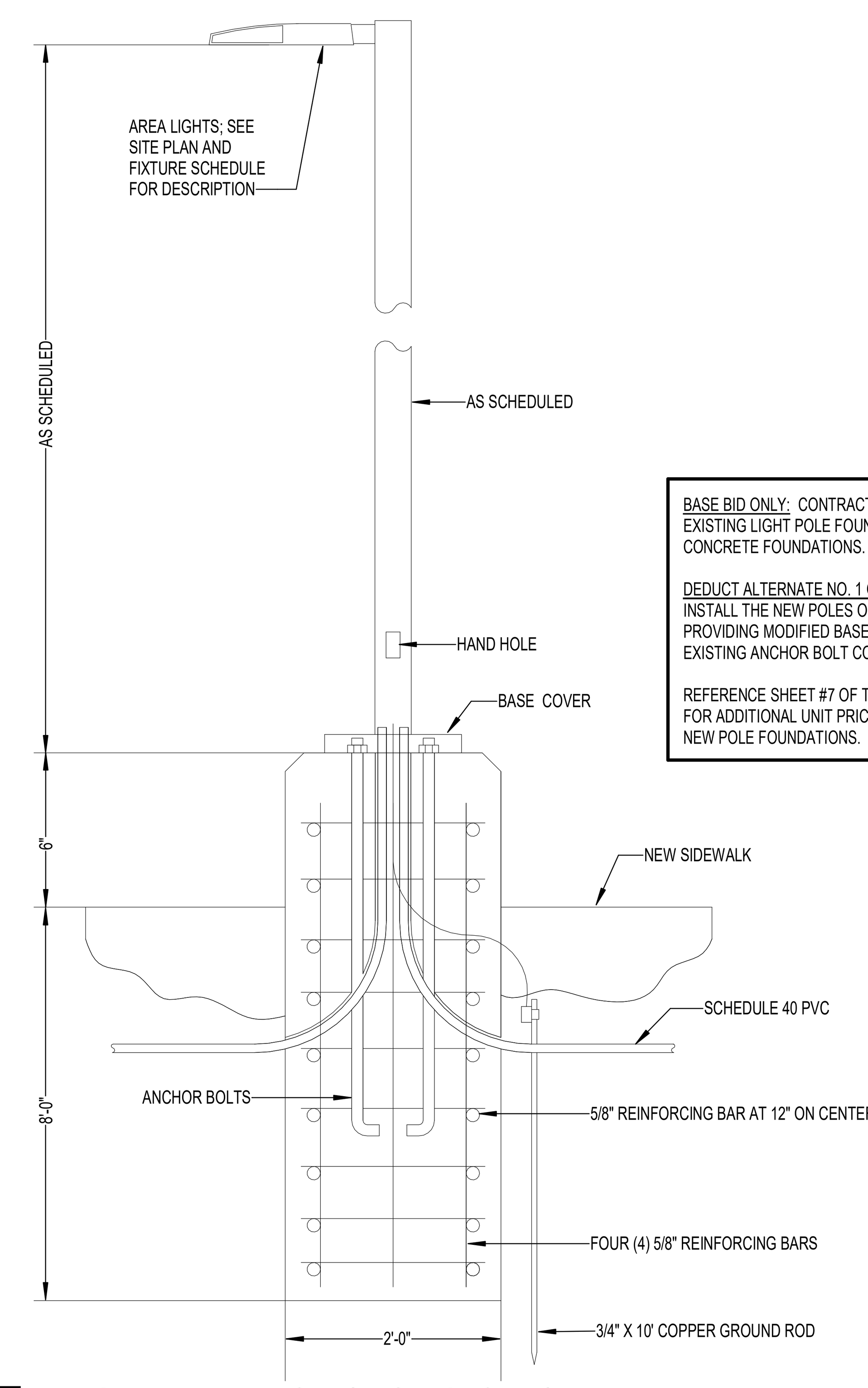


2 DETAIL - GROUNDWELL
N.T.S.



NOTE: CONTRACTOR SHALL SUBMIT DIGITAL PHOTOGRAPHS OF ALL GROUNDING TERMINATIONS.

4 DETAIL - GROUNDING TO RACK STEEL
N.T.S.



BASE BID ONLY: CONTRACTOR SHALL REMOVE THE EXISTING LIGHT POLE FOUNDATIONS AND PROVIDE NEW CONCRETE FOUNDATIONS.

DEDUCT ALTERNATE NO. 1 ONLY: CONTRACTOR MAY INSTALL THE NEW POLES ON THE EXISTING FOUNDATIONS, PROVIDING MODIFIED BASE PLATES WHICH MATCH THE EXISTING ANCHOR BOLT CONFIGURATION.

REFERENCE SHEET #7 OF THE CIVIL ENGINEER'S DRAWINGS FOR ADDITIONAL UNIT PRICING REQUIREMENTS FOR THE NEW POLE FOUNDATIONS.

5 DETAIL - PATHWAY POLE (BASE BID ONLY)
N.T.S.

ABBREVIATIONS

A	AMPERE(S)	CATV	CABLE TELEVISION	EF	EXHAUST FAN	FOC	FIBER OPTIC CABLE	MCB	MAIN CIRCUIT BREAKER	NO	NORMALLY OPEN	SF	SUPPLY FAN	UGS	UNDERGROUND SECONDARY
AC	ABOVE COUNTER (6" ABOVE BACKSPLASH)	CB	CIRCUIT BREAKER	EGC	EQUIPMENT GROUNDING CONDUCTOR	G, GND	GROUND	MCM/KCMIL	1,000 CIRCULAR MILS	NU	WEATHERPROOF IN-USE COVER	S/N	SOLID NEUTRAL	UH	UNIT HEATER
AF	AMPERE(S) FUSED	CKT	CIRCUIT	EMER.	EMERGENCY	GEC	GROUNDING ELECTRODE CONDUCTOR	MECH.	MECHANICAL	OH	OVERHEAD	SPD	SURGE PROTECTIVE DEVICE	UL	UNDERWRITER'S LABORATORY, INC.
AFCI	ARC FAULT CIRCUIT INTERRUPTER	CLG	CLG	EMT	ELECTRICAL METALLIC TUBING	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	MH	MANHOLE	OHE	OVERHEAD ELECTRICAL	STD	STANDARD	UON	UNLESS OTHERWISE NOTED
AFF	ABOVE FINISHED FLOOR	CORR	CORRIDOR	EQ	EQUAL	GRS	GALVANIZED RIGID STEEL	MLO	MAIN LUGS ONLY	OSP	OUTSIDE PLANT	TEL	TELEPHONE	V	VOLTS
AFG	ABOVE FINISHED GRADE	CT	CURRENT TRANSFORMER	EQUIP.	EQUIPMENT	HH	HANDHOLE	MOCP	MAXIMUM OVERCURRENT PROTECTION	UPP	UTILITY POWER POLE	TELECOM	TELECOMMUNICATIONS	VAC	VOLTS ALTERNATING CURRENT
AIC	AMP SYMMETRICAL INTERRUPTING CAPACITY RMS	CTRL	CONTROLLER	EWC	ELECTRIC WATER COOLER	HP	HORSEPOWER	MTD	MOUNTED	PB	PULL BOX	TGB	TELECOMMUNICATIONS GROUND BUS	VDC	VOLTS DIRECT CURRENT
AT	AMPERE(S) TRIP	D	TO BE DEMOLISHED	EWH	ELECTRIC WATER HEATER	KAIC	1,000 AMP SYMMETRICAL INTERRUPTING CAPACITY RMS	MTG	MOUNTING	PH	PHASE	TMGB	TELECOMMUNICATIONS MAIN GROUND BUS	VFD	VARIABLE FREQUENCY DRIVE
AWG	AMERICAN WIRE GAUGE	DISC.	DISCONNECT	EXIST.	EXISTING	KWH	1,000 WATT HOURS	NC	NORMALLY CLOSED	PNL	PANEL	TTB	TELECOM TERMINAL BOARD	WH	WATER HEATER
BG	BELOW GRADE	DIST.	DISTRIBUTION	FACP	FIRE ALARM CONTROL PANEL	KVA	1,000 VOLT AMPERES	NEC	NATIONAL ELECTRICAL CODE	PV	PHOTOVOLTAIC	TV	TELEVISION	WP	WEATHERPROOF
BLDG	BUILDING	DWG	DRAWING	FACPRA	FIRE ALARM CONTROL PANEL REMOTE ANNUNCIATOR	LAN	LOCAL AREA NETWORK	NEU	NEUTRAL	PVC	POLYVINYL CHLORIDE	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION	XFMR	TRANSFORMER
BKR	BREAKER	E	EXISTING TO REMAIN	FC	FOOTCANDLE	LC	LIGHTING CONTACTOR	NF	NON-FUSED	QTY	QUANTITY	TYP.	TYPICAL		
C	CONDUIT	EC	EMPTY CONDUIT	FCU	FAN COIL UNIT	LTG	LIGHTING	NIC	NOT IN CONTRACT	RCPT	RECEPTACLE	UG	UNDERGROUND		
CAT	CATEGORY	ECB	ENCLOSED CIRCUIT BREAKER	FLA	FULL LOAD AMPERE(S)	MCA	MINIMUM CIRCUIT AMPACITY	NL	NIGHT LIGHT	REQ'D	REQUIRED	UGP	UNDERGROUND PRIMARY		

ALL SYMBOLS, ABBREVIATIONS, AND NOTES ABOVE ARE TYPICAL AND ARE NOT NECESSARILY USED IN THESE CONSTRUCTION DOCUMENTS

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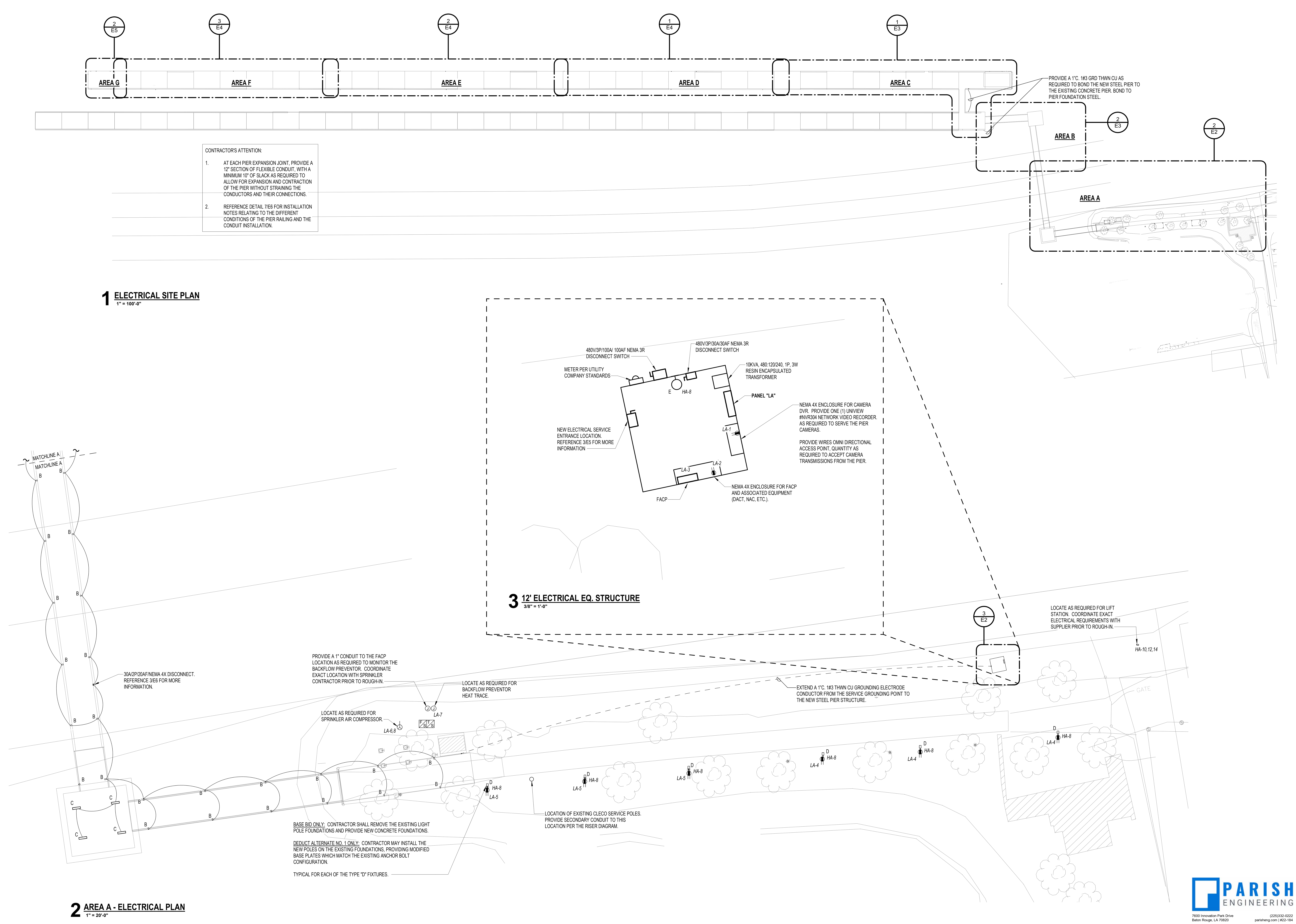
ST. TAMMANY PARISH, OWNER

ELECTRICAL COVER SHEET

sheet no.
E1
of ______ sheets



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STATE OF LOUISIANA — 5/14/2025

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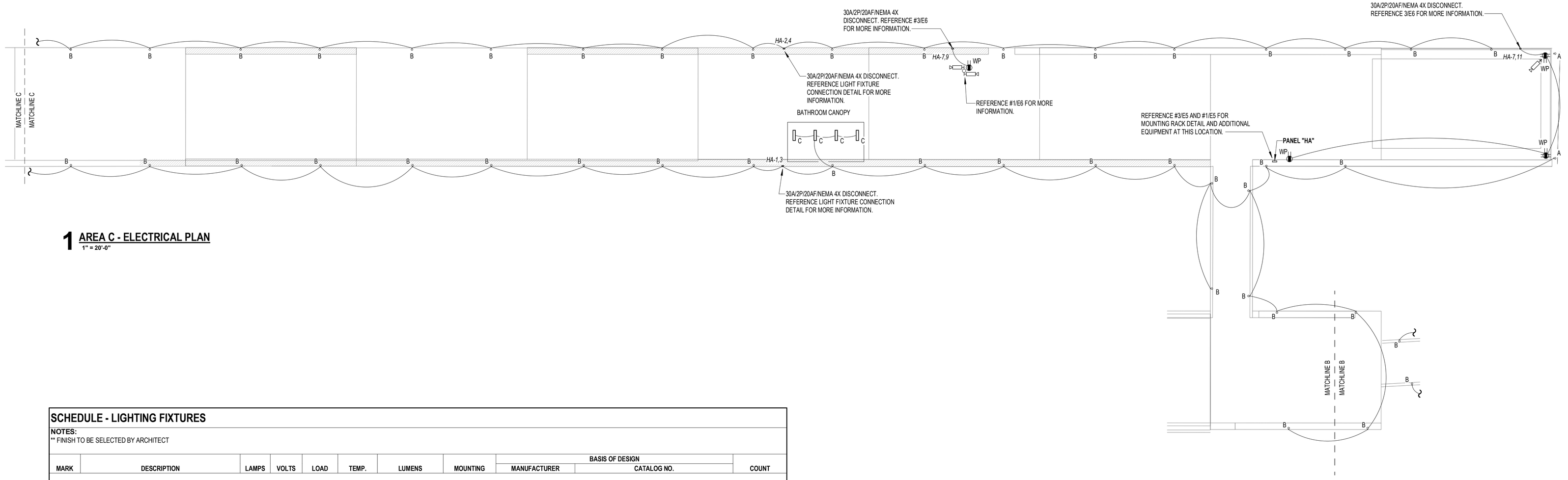
POWER PLAN
ST. TAMMANY PARISH FISHING PIER
ST. TAMMANY PARISH, OWNER

sheet no.
E2
of ______ sheets



1 **AREA C - ELECTRICAL PLAN**
1" = 20'-0"

SCHEDULE - LIGHTING FIXTURES

NOTES:
** FINISH TO BE SELECTED BY ARCHITECT

MARK	DESCRIPTION	LAMPS	VOLTS	LOAD	TEMP.	LUMENS	MOUNTING	BASIS OF DESIGN		COUNT
								MANUFACTURER	CATALOG NO.	
A	MARINE RATED, IP66 FLOOD LIGHT. AIM FIXTURE DOWN TOWARD THE WATER.	LED	480	80 VA	50K	19,500	SURFACE	SOLAS RAY LIGHTING	LQH2 077 50 PC U GR YK	14
B	MARINE RATED, IP66 WALKWAY LIGHTING FIXTURE	LED	480	43 VA	50K	6,000	SURFACE	SOLAS RAY LIGHTING	LQH1C 043 50 PC U GR QM	184
C	ENCLOSED AND GASKETED LED FIXTURE	LED	480	38 VA	50K	6,000	SURFACE	LITHONIA LIGHTING	FEM 6000LM LPAFL WD MVOLT GZ10 50K 80CRI	16
D	PEDESTRIAN SCALE POLE MOUNTED LIGHT. PROVIDE A 12' TALL SSS POLE RATED FOR 130MPH WINDS WITH A 1.3 GUST FACTOR. PROVIDE AN INTEGRAL RECEPTACLE IN THE POLE AND CONNECT AS SHOWN ON THE SITE PLAN. REFERENCE THE CIVIL ENGINEER'S PLANS FOR UNIT PRICING INFORMATION.	LED	277	120 VA	50K	13,000	POLE	LITHONIA LIGHTING	RSX1 LED P3 50K R5 MVOLT SPA XX	6
E	ROUGH SERVICE LIGHT INSTALLED ON ELEVATED RACK. SEE #6/E6 FOR INSTALLATION DETAIL	LED	277	65 VA	50K	7,000	POLE	EATON	REFERENCE DETAIL #6/E6 FOR FIXTURE PRODUCT INFORMATION	1

Branch Panel: HA

Location:
Supply From:
Mounting: SURFACE
Enclosure: NEMA-3R
Number of Sections:

Volts: 480Y/277
Phases: 3
Wires: 4

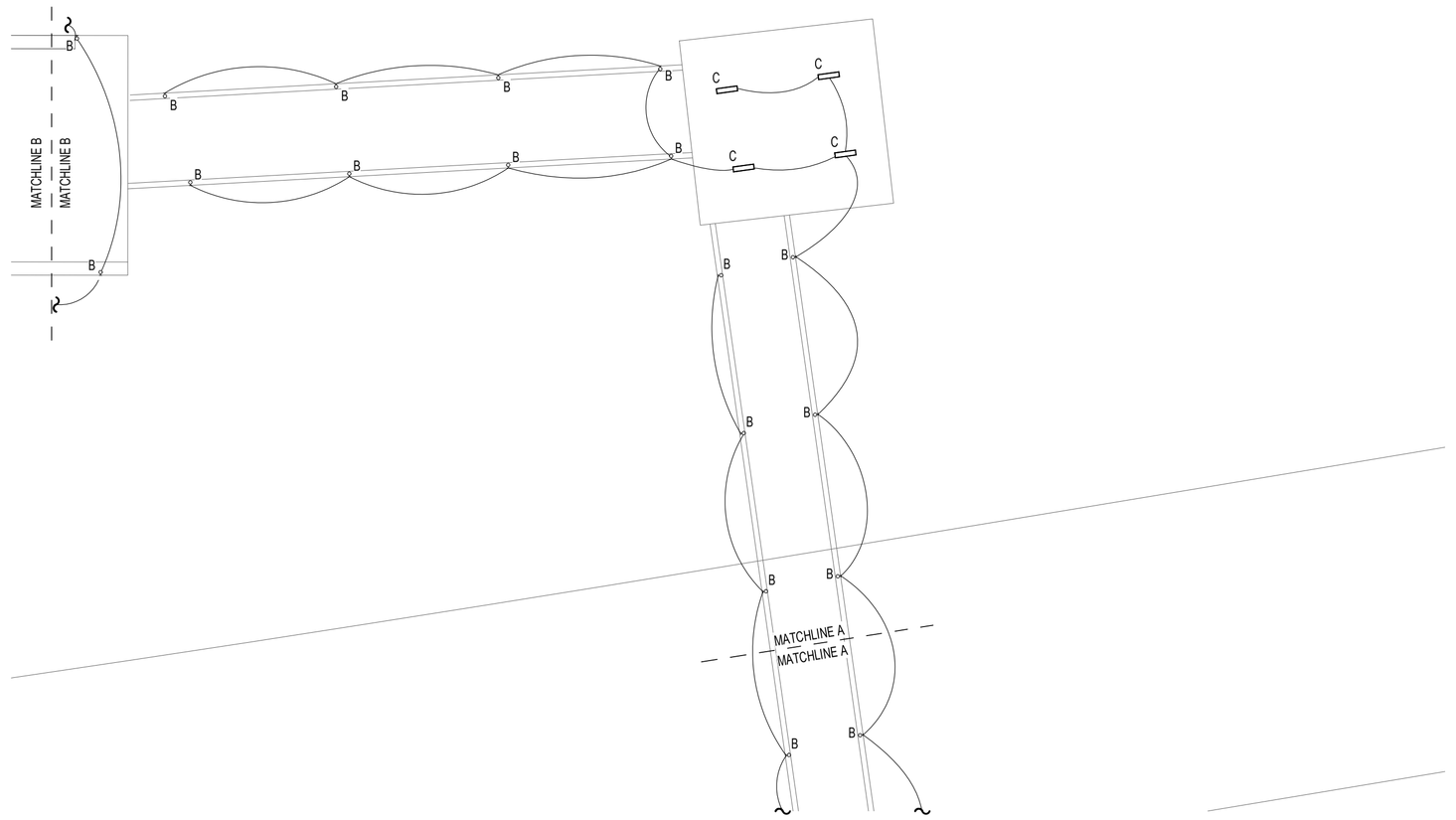
A.I.C. Rating: 18,000
Mains Rating: 100 A
MB Rating: 100 A

Panel Schedule Notes:

CKT	TRIP	POLES	WIRE	GND	CONDUIT	Circuit Description	A	B	C	Circuit Description	CONDUIT	GND	WIRE	POLES	TRIP	CKT
1							2.0 kVA	1.1 kVA								2
3	20 A	3	4#4	#4	2"	EAST SIDE PIER LIGHTS		2.0 kVA	1.1 kVA	WEST SIDE PIER LIGHTS	2"	#4	4#4	3	20 A	4
5									2.0 kVA	1.1 kVA						6
7							0.4 kVA	0.8 kVA								8
9	20 A	3	4#6	#6	2"	CAMERA RECEPTACLES		0.4 kVA	7.8 kVA	POLE LIGHTS	3/4"	#12	2#12	1	20 A	10
11									0.4 kVA	7.8 kVA	GRINDER PUMPS	1"	#10	4#6	3	50 A	12
13	20 A	1	--	--	--	SPARE	0.0 kVA	7.8 kVA								14
15	20 A	1	--	--	--	SPARE		0.0 kVA	0.0 kVA	SPARE	--	--	--	1	20 A	16
17	20 A	1	--	--	--	SPARE			0.0 kVA	0.0 kVA	SPARE	--	--	--	1	20 A	18
19	20 A	1	--	--	--	SPARE	0.0 kVA	0.0 kVA			SPARE	--	--	--	1	20 A	20
21	20 A	1	--	--	--	SPARE		0.0 kVA	0.0 kVA	SPARE	--	--	--	1	20 A	22
23	20 A	1	--	--	--	SPARE			0.0 kVA	0.0 kVA	SPARE	--	--	--	1	20 A	24
25	20 A	1	--	--	--	SPARE	0.0 kVA	0.0 kVA								26
27	20 A	1	--	--	--	SPARE		0.0 kVA	0.0 kVA	SPD	--	--	--	3	60 A	28
29	20 A	1	--	--	--	SPARE			0.0 kVA	0.0 kVA						30
							11945 VA		11228 VA		11228 VA					
							43 A		41 A		41 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Motor	23252 VA	125.00%	29065 VA		
Receptacle	1080 VA	100.00%	1080 VA	**Total Conn. Load:**	34397 VA
Power	0 VA	0.00%	0 VA	**Total Est. Demand:**	42727 VA
Lighting	10069 VA	125.00%	12586 VA	**Total Conn.:**	41 A
				Total Est. Demand:	51 A

Load Summary Notes:



2 **AREA B - ELECTRICAL PLAN**
1" = 20'-0"

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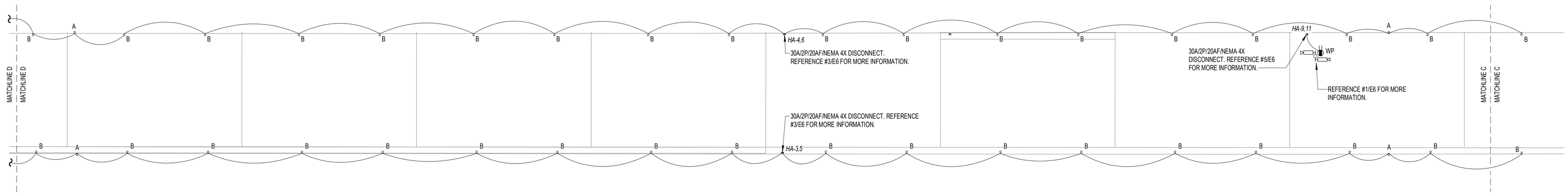
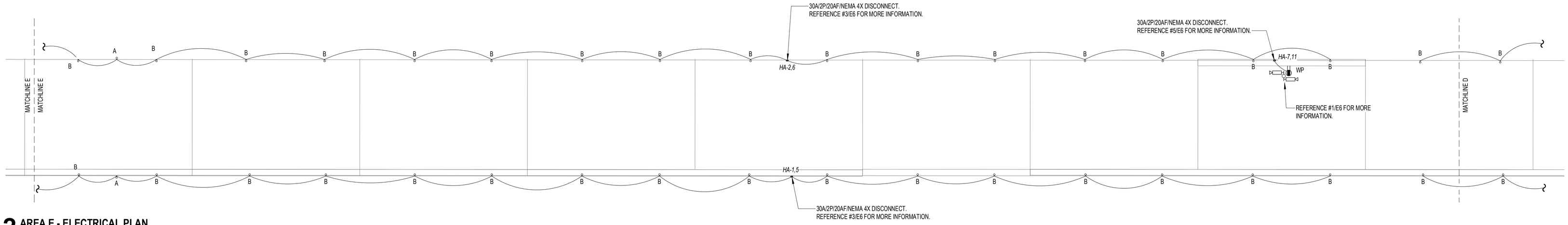
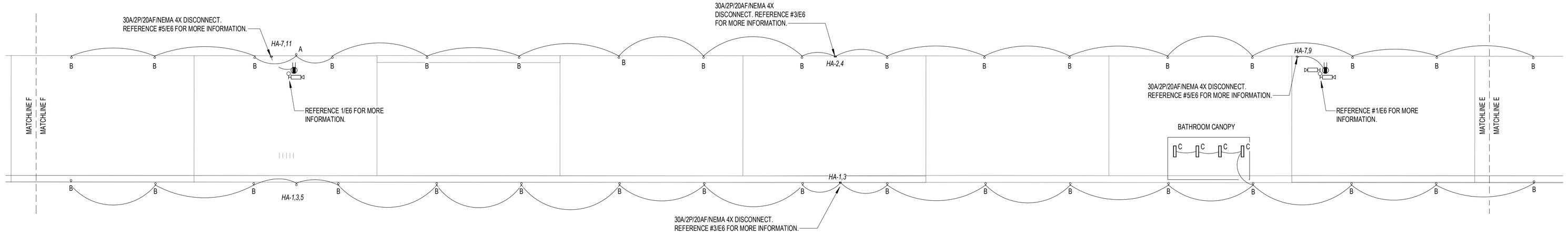


1 AREA D - ELECTRICAL PLAN
1" = 20'-0"



2 AREA E - ELECTRICAL PLAN
1" = 20'-0"



3 AREA F - ELECTRICAL PLAN
1" = 20'-0"

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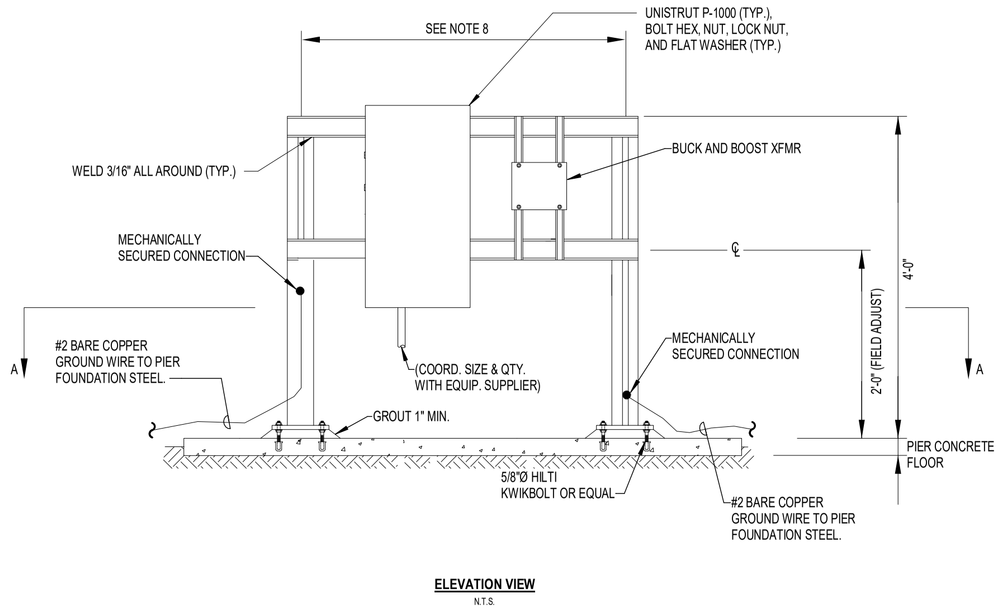
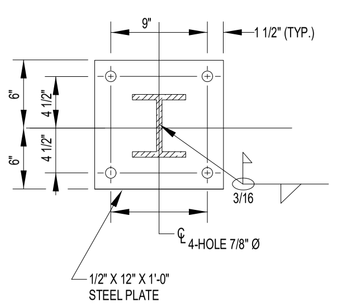
SWITCH RACK NOTES:

1. VERIFY ALL DIMENSIONS BEFORE FABRICATION.
2. REMOVE BURRS AND GRIND SHARP CORNERS AND EDGES. TOUCH UP AS REQUIRED AFTER WELDING AND DRILLING.
3. FIELD GROUT UNDER BASE PLATE.
4. ANCHOR BOLTS SHALL BE 4 INCH IN CONCRETE AND SHALL BE PROVIDED WITH HEX NUTS AND WASHERS.
5. ALL ALUMINUM SHALL BE 6061.
6. MINIMUM CONCRETE STRENGTH SHALL BE 3000 PSI.
7. MAXIMUM OF 8 FEET BETWEEN SUPPORT COLUMNS.
8. ALL UNISTRUT SHALL BE ALUMINUM TYPE.

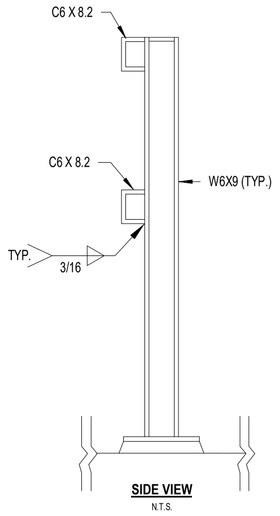


ELEVATION VIEW
N.T.S.

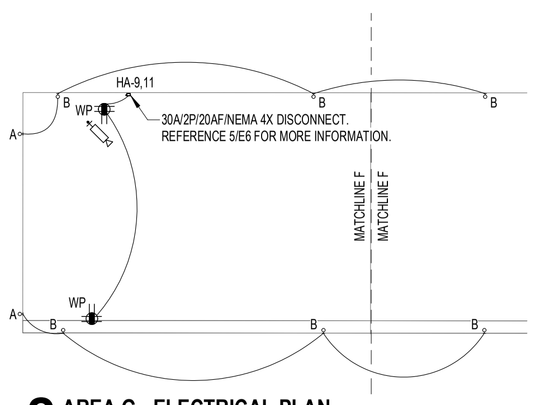
1 DETAIL - ELECTRICAL SERVICE ENTRANCE RACK
N.T.S.



BASE PLATE DETAIL
N.T.S.



SIDE VIEW
N.T.S.



2 AREA G - ELECTRICAL PLAN
1" = 20'-0"

Branch Panel: LA

Location:
Supply From:
Mounting: SURFACE
Enclosure: NEMA-1
Number of Sections:
Panel Schedule Notes:

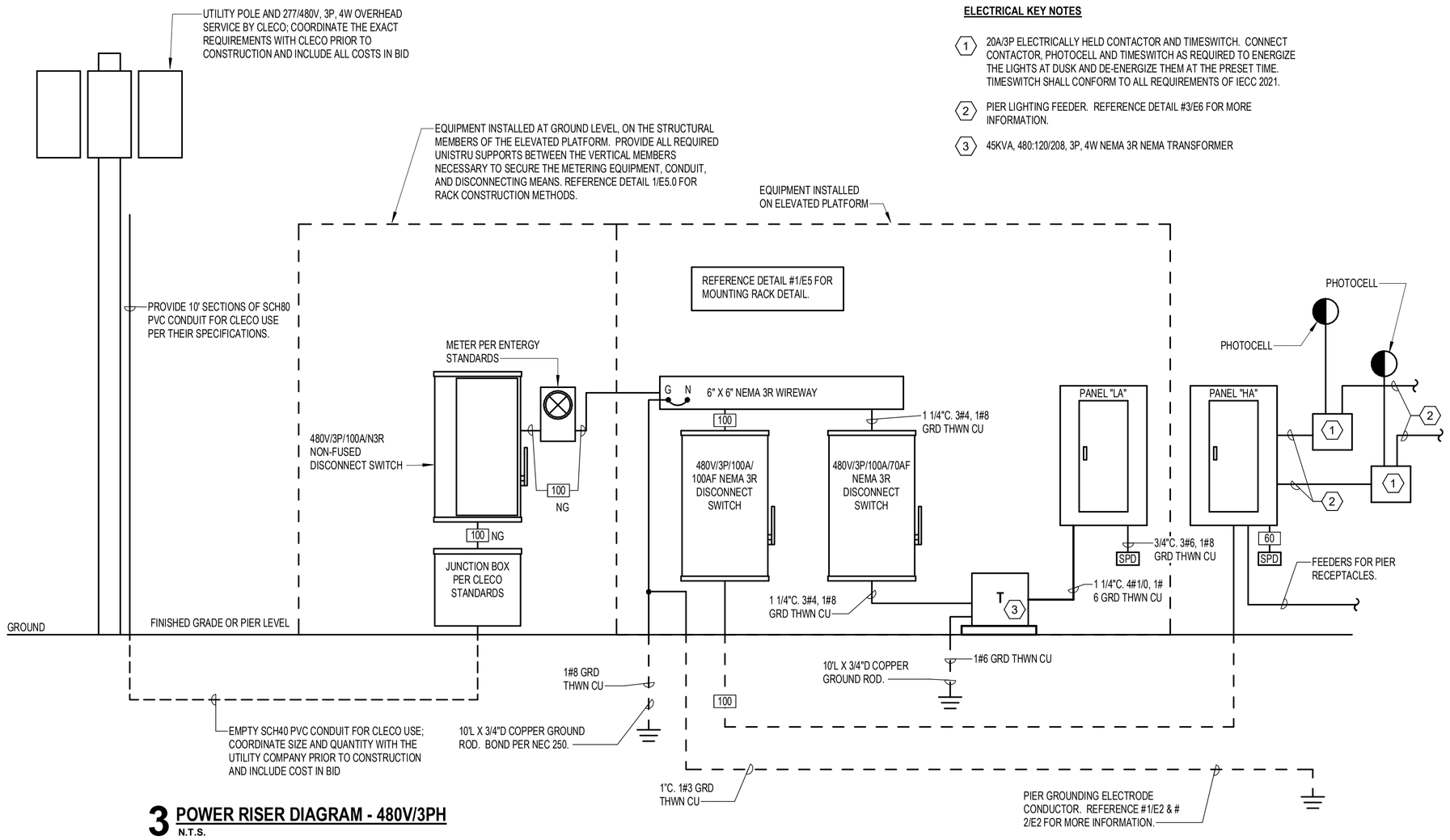
Volts: 208Y/120
Phases: 3
Wires: 4

A.I.C. Rating: 10,000
Mains Rating: 200 A
MCB Rating: 150 A

CKT	TRIP	POLES	WIRE	GND	CONDUIT	Circuit Description	A		B		C		Circuit Description	CONDUIT	GND	WIRE	POLES	TRIP	CKT
1	20 A	1	2#12	#12	3/4"	CAMERA DVR	0.2 kVA	0.2 kVA					FACP	3/4"	#12	2#12	1	20 A	2
3	20 A	1	2#12	#12	3/4"	FACP			0.5 kVA	0.5 kVA			SITE RECEPTACLES	3/4"	#12	2#12	1	20 A	4
5	20 A	1	2#12	#12	3/4"	SITE RECEPTACLES					0.5 kVA	1.5 kVA	AIR COMPRESSOR	3/4"	#10	3#10	2	30 A	6
7	20 A	1	2#10	#10	3/4"	HEAT TRACE	1.0 kVA	1.5 kVA											8
9	20 A	1	--	--	--	SPARE			0.0 kVA	0.0 kVA			SPARE	--	--	--	1	20 A	10
11	20 A	1	--	--	--	SPARE					0.0 kVA	0.0 kVA	SPARE	--	--	--	1	20 A	12
13	20 A	1	--	--	--	SPARE	0.0 kVA	0.0 kVA					SPARE	--	--	--	1	20 A	14
15	20 A	1	--	--	--	SPARE			0.0 kVA	0.0 kVA			SPARE	--	--	--	1	20 A	16
17	20 A	1	--	--	--	SPARE					0.0 kVA	0.0 kVA	SPARE	--	--	--	1	20 A	18
19	20 A	1	--	--	--	SPARE	0.0 kVA	0.0 kVA					SPARE	--	--	--	1	20 A	20
21	20 A	1	--	--	--	SPARE			0.0 kVA	0.0 kVA			SPARE	--	--	--	1	20 A	22
23	20 A	1	--	--	--	SPARE					0.0 kVA	0.0 kVA	SPARE	--	--	--	1	20 A	24
25	20 A	1	--	--	--	SPARE	0.0 kVA	0.0 kVA											26
27	20 A	1	--	--	--	SPARE			0.0 kVA	0.0 kVA			SPARE	--	--	--	3	60 A	28
29	20 A	1	--	--	--	SPARE					0.0 kVA	0.0 kVA							30
							2860 VA		1040 VA		2040 VA								
							25 A		9 A		18 A								

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Heating	1000 VA	100.00%	1000 VA		
Receptacle	1440 VA	100.00%	1440 VA	**Total Conn. Load:**	5440 VA
Miscellaneous	3000 VA	100.00%	3000 VA	**Total Est. Demand:**	5440 VA
				Total Conn.:	15 A
				Total Est. Demand:	15 A

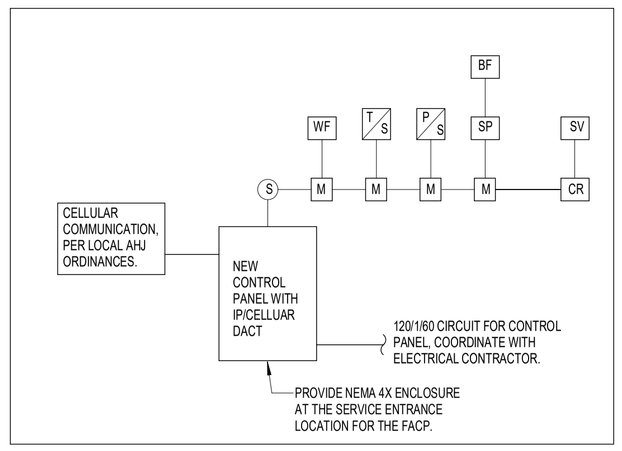
Load Summary Notes:



ELECTRICAL KEY NOTES

1. 20A/3P ELECTRICALLY HELD CONTACTOR AND TIMESWITCH. CONNECT CONTACTOR, PHOTOCELL AND TIMESWITCH AS REQUIRED TO ENERGIZE THE LIGHTS AT DUSK AND DE-ENERGIZE THEM AT THE PRESET TIME. TIMESWITCH SHALL CONFORM TO ALL REQUIREMENTS OF IECC 2021.
2. PIER LIGHTING FEEDER. REFERENCE DETAIL #3/E6 FOR MORE INFORMATION.
3. 45KVA, 480:120/208, 3P, 4W NEMA 3R NEMA TRANSFORMER

3 POWER RISER DIAGRAM - 480V/3PH
N.T.S.



4 DETAIL - SPRINKLER MONITORING
N.T.S.

SYMBOL SCHEDULE	
S	ADDRESSABLE SMOKE DETECTOR.
M	ADDRESSABLE MONITOR MODULE.
WF	WATER FLOW SWITCH.
SP	SURGE PROTECTOR.
BF	BACKFLOW PREVENTOR.
SV	SOLENOID VALVE.
CR	CONTROL RELAY.
T S	TAMPER SWITCH.
P S	PRESSURE SWITCH.

SPRINKLER RISER GENERAL NOTES

1. PROVIDE AND INSTALL AN ADDRESSABLE SPRINKLER MONITORING SYSTEM WITH IP/CELLULAR COMMUNICATOR. PANEL SHALL BE LISTED FOR BOTH PRE-ACTION AND DELUGE OPERATION.
2. PROVIDE FIRST YEAR'S MONITORING AGREEMENT OR PROGRAM SYSTEM TO OWNER'S MONITORING COMPANY.
3. INSTALLATION AND CABLE SHALL MEET NFPA AND NEC CODE FOR FIRE ALARM SYSTEMS. PROVIDE AND INSTALL SURGE PROTECTION WHERE REQUIRED BY CODE.
4. CONTRACTOR SHALL PREPARE SUBMITTAL, BATTERY CALCULATIONS, AND FEE TO STATE FIRE MARSHAL REVIEW.
5. PROVIDE NECESSARY MODULE QUANTITIES PER SPRINKLER SYSTEM.
6. PROVIDE 1" CONDUIT TO SITE BACKFLOW PREVENTER LOCATION (COORDINATE IN ADVANCE) SO AS TO PROVIDE REQUIRED MONITORING.
7. FACP SHALL BE GAMEWELL #FCI GF505 OR EQUIVALENT.

4-WIRE FEEDER SCHEDULE			
STD. FUSE OR BKR TRIP SIZE	# OF SETS	WIRE QUANTITY AND SIZE	CONDUIT SIZE (MINIMUM)
30	1	4#10 THWN, 1#10 GND	3/4"
60	1	4#6 THWN, 1#8 GND	1-1/4"
100	1	4#3 THWN, 1#8 GND	1-1/4"
125	1	4#1 THWN, 1#6 GND	1-1/2"
150	1	4#1/0 THWN, 1#6 GND	2"
200	1	4#3/0 THWN, 1#4 GND	2"
400	2	4#3/0 THWN, 1#3 GND	2-1/2"
600	2	4#350 THWN MCM, 1#1 GND	3"
800	3	4#300 THWN MCM, 1#1/0 GND	3"

NOTES:
1. ALL FEEDER SIZES LISTED MAY NOT BE SHOWN IN POWER RISER DIAGRAM.
2. ELECTRICAL CONTRACTOR TO VERIFY SIZE REQUIRED IF WIRE TYPES OTHER THAN THOSE LISTED ABOVE ARE USED.
3. REFER TO THE LATEST EDITION OF THE NEC FOR CONDUIT TYPES REQUIRED PER THEIR TABLES.
4. ALL CONDUCTORS TO BE COPPER.
5. "VD" INDICATES WIRE UPSIZED FOR VOLTAGE DROP.
6. "NG" INDICATES NO GROUND CONDUCTOR REQUIRED.

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RISER DIAGRAM
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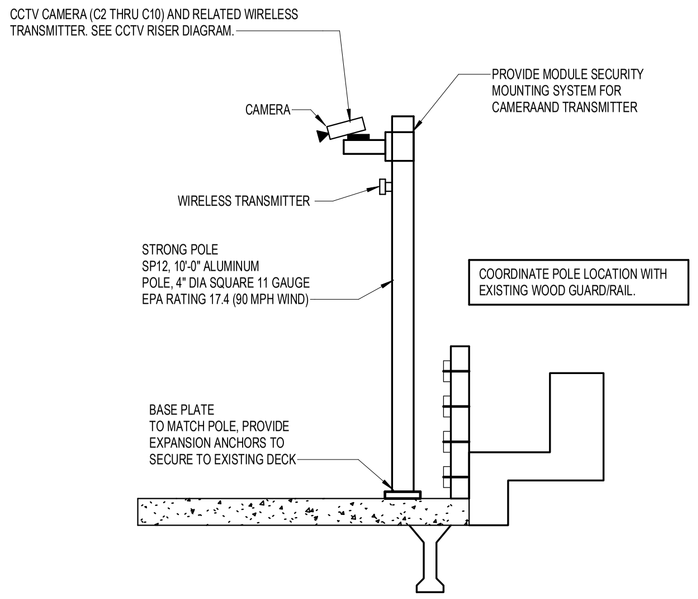
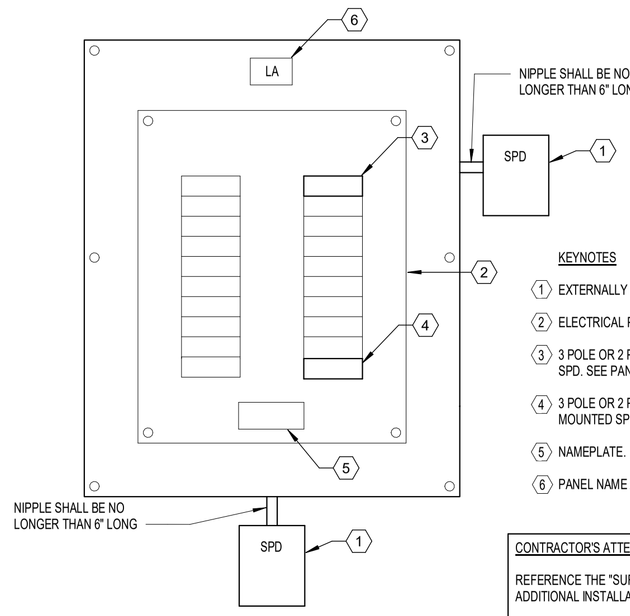


1 CCTV CAMERA (PIER) INSTALLATION
N.T.S.



KEYNOTES

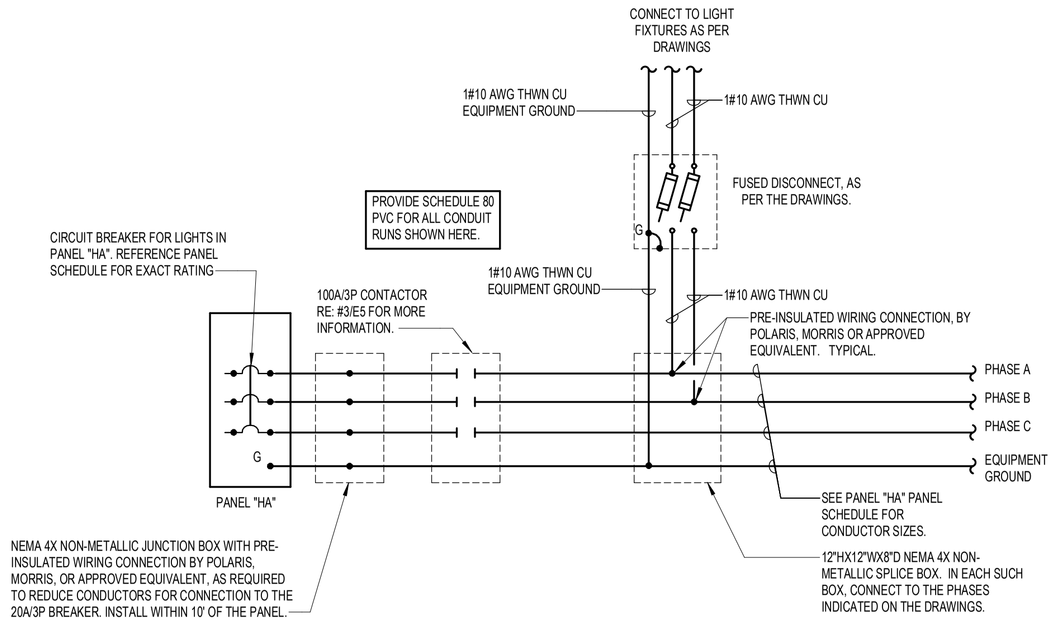
1. EXTERNALLY INSTALLED SPD.
2. ELECTRICAL PANEL.
3. 3 POLE OR 2 POLE CIRCUIT BREAKER POSITION FOR TOP MOUNTED SPD. SEE PANEL SCHEDULE.
4. 3 POLE OR 2 POLE CIRCUIT BREAKER POSITION FOR BOTTOM MOUNTED SPD. SEE PANEL SCHEDULE.
5. NAMEPLATE.
6. PANEL NAME AS PER PROJECT PANEL.

CONTRACTOR'S ATTENTION:

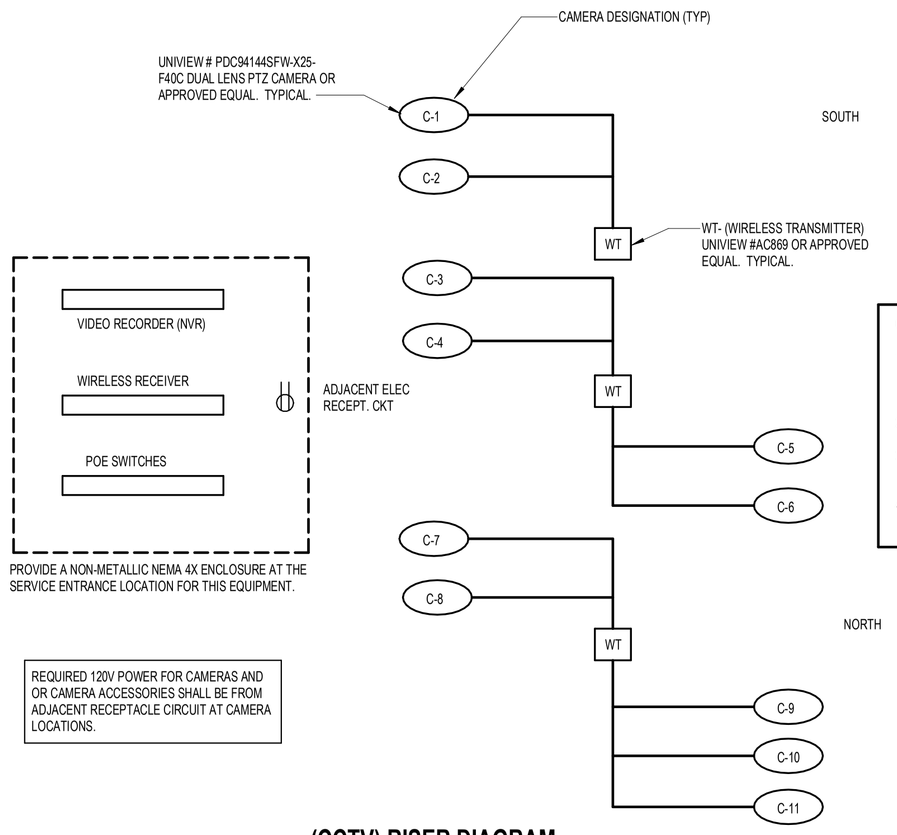
REFERENCE THE "SURGE PROTECTION DEVICE" SPECIFICATION FOR ADDITIONAL INSTALLATION REQUIREMENTS.

VERTICAL ORIENTATION

2 DETAIL - EXTERNAL SPD INSTALLATION
N.T.S.



3 DETAIL - LIGHTING TAP CONNECTION
N.T.S.

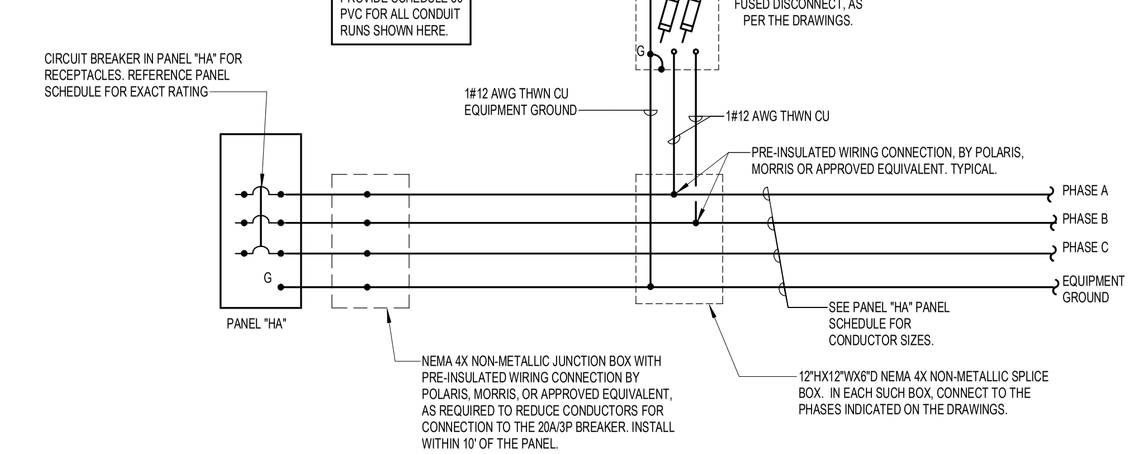


CCTV CAMERA NOTES:

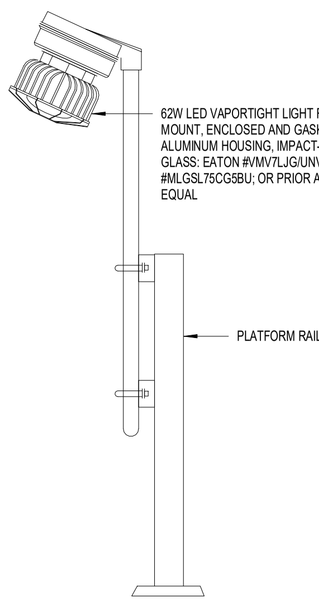
1. CONTRACTOR SHALL PROVIDE A COMPLETE AND OPERATIONAL WIRELESS CAMERA SYSTEM, TO THE SATISFACTION OF THE OWNER. CONTRACTOR SHALL COORDINATE WITH OWNER TO DETERMINE THEIR REQUIREMENTS AND PROVIDE DEVICES ACCORDINGLY.
2. CAMERAS SHALL HAVE THE FOCAL DISTANCES/RESOLUTION PER THE OWNER'S REQUIREMENTS.
3. ALL DEVICES SHALL BE RATED FOR THE ENVIRONMENT IN WHICH THEY ARE INSTALLED. PROVIDE COOLING FANS IN ANY ENCLOSURE HOLDING EQUIPMENT TO CIRCULATE AIR AND PREVENT OVERHEATING.
4. PROVIDE ADDITIONAL WIRELESS RECEIVERS/TRANSMITTERS AS NECESSARY TO TRANSMIT CAMERA SIGNAL TO THE DVR LOCATION.

(CCTV) RISER DIAGRAM
NOT TO SCALE
SEE NOTES AND MANUFACTURES EQUIPMENT LIST

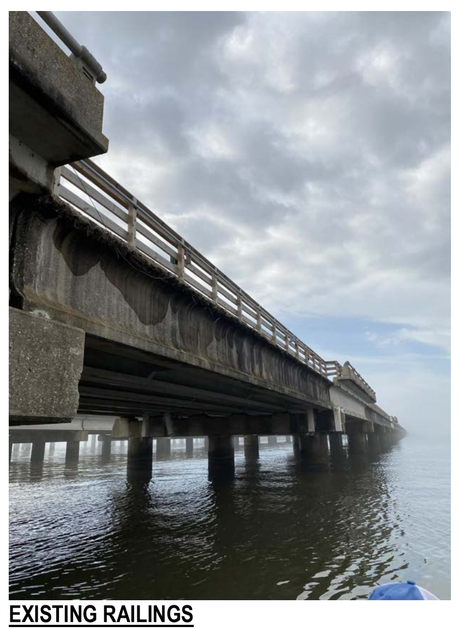
4 CCTV RISER DIAGRAM
N.T.S.



5 DETAIL - RECEPTACLE TAP CONNECTION
N.T.S.



6 DETAIL - PLATFORM LIGHT MOUNTING DETAIL
N.T.S.



7 EXISTING RAILINGS
N.T.S.

CONTRACTOR'S ATTENTION:

CONTRACTOR SHALL INSTALL THE NEW CONDUIT IN THE SAME LOCATION OF THE EXISTING CONDUIT PRESENTLY ON THE WOODEN RAILING, NOTING THAT CONDITIONS ALONG THE PIER ARE NOT CONSISTENT. PRIOR TO MAKING THE PROJECT BID, THE CONTRACTOR SHALL PLAN THE WORK ACCORDINGLY TO ACCOUNT FOR ANY EXISTING DAMAGE TO THE PIER, AS ILLUSTRATED IN THE IMAGE TO THE LEFT, AND INCLUDE ALL COSTS IN THE BIDS. AS SOON AS THE NOTIFICATION TO PROCEED IS ISSUED, THE CONTRACTOR SHALL COMPLETE A SURVEY OF THE DAMAGED AREAS AND PRESENT A PLAN FOR ACCOMPLISHING THE ELECTRICAL INSTALLATION TO THE ARCHITECT AND ENGINEER FOR CONSIDERATION.

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FIRE SPRINKLER GENERAL NOTES

1. FP SHEETS INTENDED AS CONCEPTUAL DRAWINGS AND ARE FOR INFORMATION ONLY TO SHOW POTENTIAL SYSTEM ARRANGEMENTS. THE CONTRACTOR SHALL REVIEW THE ARCHITECTURAL DRAWINGS AND FIELD VERIFY ALL INFORMATION CONTAINED ON THESE DRAWINGS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF THE SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES AND REQUIREMENTS, INCLUDING BUT NOT LIMITED TO NFPA AND ALL OTHER AUTHORITIES HAVING JURISDICTION.

2. ALL ABOVE GROUND PIPE FOR PROJECT 1-1/2" AND LESS IN DIAMETER IS TO BE SCHEDULE 40 STAINLESS STEEL AND SHALL UTILIZE CUT THREADS AND CLASS 150 STAINLESS STEEL FITTINGS. ALL PIPE GREATER THAN 1-1/2" AND LESS THAN 6" IN DIAMETER SHALL BE SCHEDULE 40 STAINLESS STEEL AND SHALL UTILIZE ROLLED GROOVES AND LISTED STAINLESS STEEL GROOVED END FITTINGS WITH RUBBER GASKETS. LISTED WELDED STAINLESS STEEL FITTINGS MAY ALSO BE UTILIZED. PIPE 6" AND GREATER IN DIAMETER SHALL BE SCHEDULE 10 STAINLESS STEEL PIPE AND SHALL USE ROLLED GROOVES AND LISTED ROLLED GROOVE STAINLESS STEEL FITTINGS WITH RUBBER GASKETS.

3. HANGERS SHALL BE STAINLESS STEEL AND THEIR INSTALLATION SHALL COMPLY WITH NFPA 13 2016 EDITION.

4. PROVIDE SPARE HEADS AND WRENCHES IN CABINET MOUNTED ADJACENT TO SPRINKLER ENTRY AS PER NFPA 13 2016 EDITION.

5. RUN SPRINKLER PIPE AS HIGH AS POSSIBLE TO AVOID CONFLICTS WITH STRUCTURE, ETC.

6. CONTRACTOR SHALL REFER TO ARCHITECTURAL FLOOR PLANS FOR PLAN LAYOUTS. PRIOR TO SUBMISSION OF SHOP DRAWINGS, REVIEW ARCHITECTURAL LAYOUTS. FURNISH HEADS AS REQUIRED BY ARCHITECTURAL SHEETS, BY NFPA 13 2016 EDITION, AND AS SHOWN ON FIRE PROTECTION PLANS FOR A COMPLETE SYSTEM FULLY COVERING WORK AREAS IDENTIFIED ON ARCHITECTURAL DRAWINGS. COORDINATE EXACT HEAD LOCATIONS WITH JOB CONDITIONS, STRUCTURAL, PIPING, CONDUIT, ETC. COORDINATE WITH OTHER DIVISION 15, 16 CONTRACTORS THROUGH GENERAL CONTRACTOR.

7. FOR DESIGN PURPOSES, THE SYSTEM DESIGNER SHALL REDUCE THE AVAILABLE FLOW IN GPM BY TEN (10) PERCENT AND THE STATIC AND RESIDUAL PRESSURES BY 5 PSI BELOW THAT OBTAINED DURING FLOW TEST. EXAMPLE, 1,000 GPM FLOW WOULD BE 900 GPM, 52 PSI STATIC IS 47 PSI FOR DESIGN PURPOSES AND 41 PSI RESIDUAL WOULD BE 36 PSI. UTILIZE ADJUSTED PRESSURES FOR HYDRAULIC DESIGN.

8. THE PIER IS TO BE FULLY SPRINKLED, INCLUDING ANY AREAS WITH CONCEALED COMBUSTIBLE CONSTRUCTION.

9. ALL PIPE, FITTINGS, VALVES, ETC. SHALL BE LISTED FOR A MINIMUM OF 175 PSI.

10. PROVIDE 24V. WEATHER PROOF ELECTRIC SPRINKLER HORN/STROBE TO INDICATE SPRINKLER FLOW. HORN/STROBE ACTIVATED BY FIRE ALARM PANEL UPON SPRINKLER FLOW.

11. PROVIDE AUXILIARY DRAINS AS REQUIRED BY NFPA 13 2016 EDITION TO DRAIN TRAPPED SECTIONS OF PIPING. EXTEND DRAINS TO EXTERIOR AND TERMINATE AT GRADE.

12. CONTRACTOR SHALL PROVIDE AND INSTALL SPRINKLER HEADS, PIPING, VALVES, HANGERS, ETC. AS REQUIRED FOR COMPLIANCE WITH NFPA 13 2016 EDITION AND REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION.

13. PROVIDE ALARM PRESSURE SWITCHES AND TAMPER SWITCHES AS REQUIRED TO ELECTRONICALLY SUPERVISE SYSTEM.

14. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PREPARATION OF FIRE PROTECTION SHOP DRAWINGS, CALCULATIONS, AND FEES AS REQUIRED FOR FINAL APPROVAL OF SYSTEM BY ALL AUTHORITIES HAVING JURISDICTION.

15. ALL DRY PIPE SYSTEMS SHALL UTILIZE SCHEDULE 40 STAINLESS STEEL PIPE AND FITTINGS AND SHALL BE LISTED FOR 175 PSI.

16. PROVIDE PROPER NUMBER OF DRY PIPE RISERS SO THAT NO DRY PIPE SYSTEM RISER EXCEEDS 750 GALLONS OF WATER CAPACITY PER RISER, PROVIDE ACCELERATOR IF VOLUME IS BETWEEN 500 AND 750 GALLONS.

17. DESIGN AND INSTALLATION OF AUTOMATIC SPRINKLER SYSTEM SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF NFPA 13 2016 EDITION.

18. EXCEPT WHERE NOTED, ALL SPRINKLER HEADS SHALL BE LISTED QUICK RESPONSE TYPE.

19. ALL SPRINKLER HEADS SHALL BE LISTED CORROSION RESISTANT STAINLESS STEEL HEADS.

project no. 20-2191a
drawn CTD
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SPRINKLER COVER SHEET

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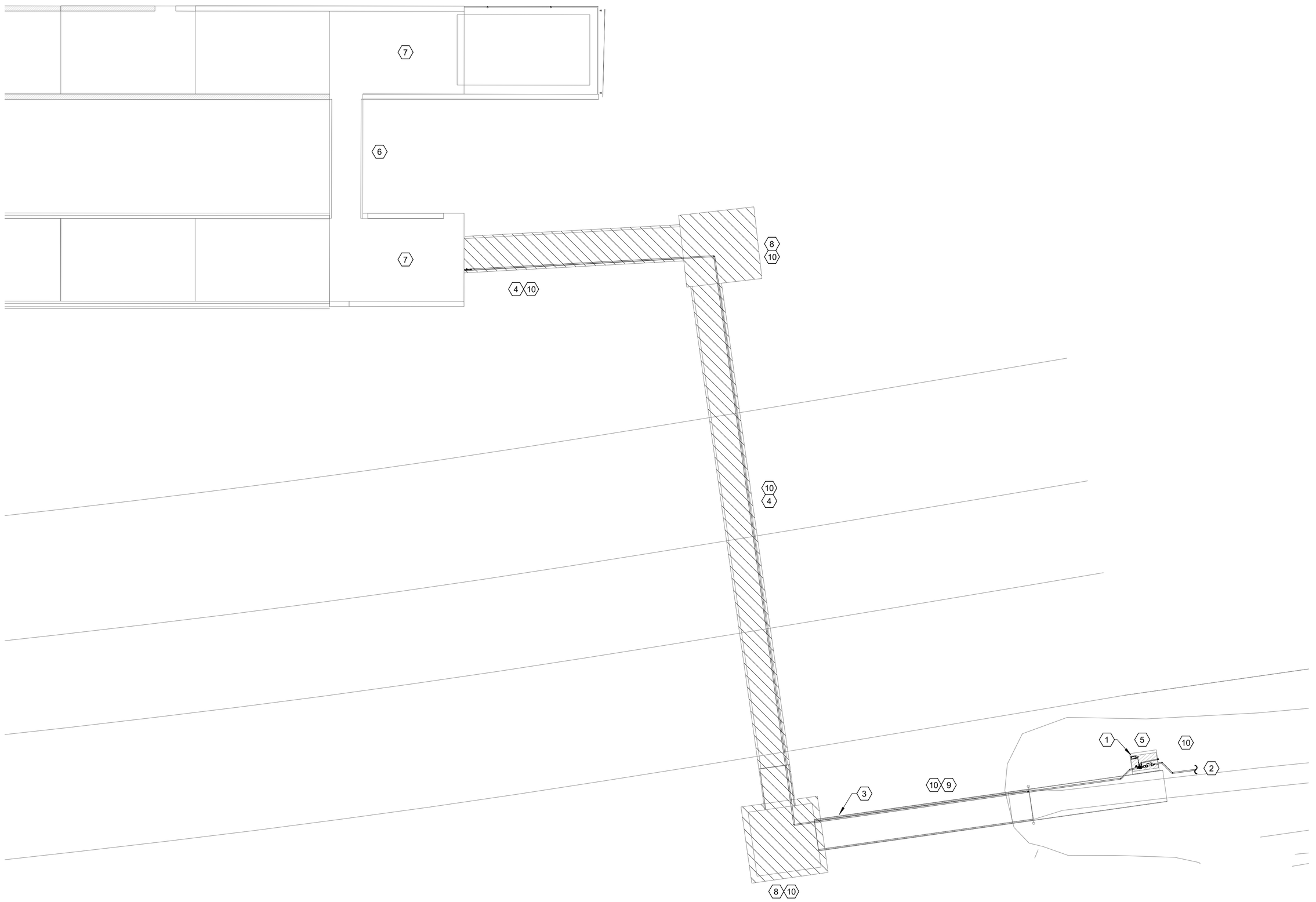

SPRINKLER KEY NOTES

1. DRY PIPE SPRINKLER VALVE WITH TANK MOUNTED AIR COMPRESSOR AND BACKFLOW PREVENTER IN HEATED ENCLOSURE. REFER TO DETAIL.
2. MINIMUM 6" FIRE LINE TO SERVE DRY PIPE SPRINKLER SYSTEM. REFER TO CIVIL FOR CONTINUATION.
3. DRY PIPE SPRINKLER MAIN.
4. WOODEN PIER AND WOODEN PAVILLION ROOFS SHALL BE FULLY PROTECTED BY DRY PIPE SPRINKLER SYSTEM.
5. PROVIDE AUTOMATIC SPRINKLER SUPERVISORY CONTROL PANEL. REFER TO ELECTRICAL FOR LOCATION ON RAISED PLATFORM. ALL CIRCUITS SHALL BE ROUTED UNDERGROUND IN CONDUIT. PROVIDE TELE/DATA CONNECTIONS AS REQUIRED. PROVIDE ONE DEDICATED 20 AMP, 120 VOLT CIRCUIT FROM NEAREST ELECTRICAL PANEL TOSERVE SUPERVISORY CONTROL PANEL.
6. THIS PORTION OF WOODEN PIER SHALL NOT BE PROTECTED.
7. CONCRETE PIER.
8. WOODEN PAVILLION.
9. STEEL PIER.
10. REMOVE ALL EXISTING SPRINKLER INSTALLATION INCLUDING, BUT NOT LIMITED TO: PIPING, VALVES, AIR COMPRESSOR, CONCRETE, HEADS, CONDUIT, HANGERS AND SUPPORTS FROM THE UNDERGROUND POINT OF CONNECTION AND THROUGHOUT THE PIER AND PAVILLIONS.

1 SPRINKLER PLAN
1" = 30'-0"

0 15' 30' 60'
0 2"
1" = 30'-0"

N

project no. 20-2191a
drawn CTD
checked LJB
date 5/8/2025
revised

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SPRINKLER PLAN

ST. TAMMANY PARISH FISHING PIER
ST. TAMMANY PARISH, OWNER

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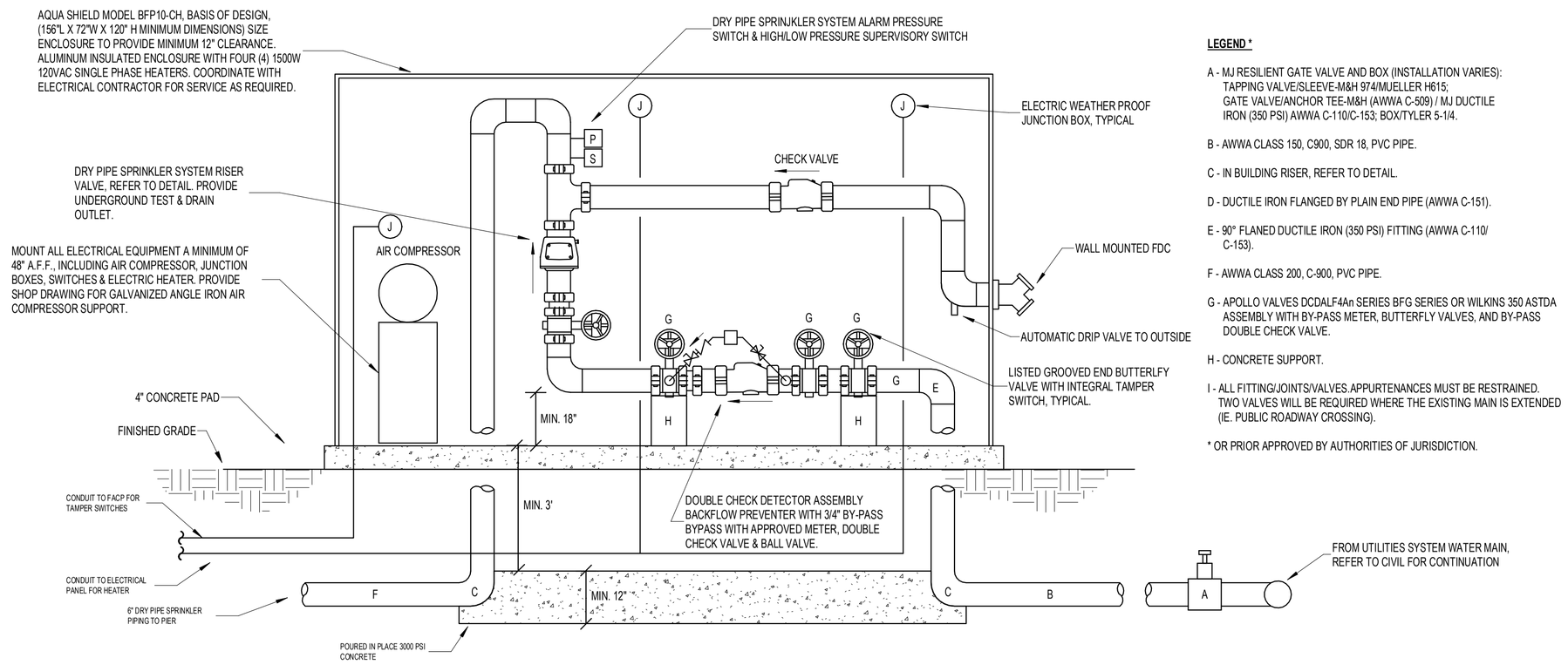


LEGEND *

A - MJ RESILIENT GATE VALVE AND BOX (INSTALLATION VARIES): TAPPING VALVE/SLEEVE-M&H 974/MUELLER H615; GATE VALVE/ANCHOR TEE-M&H (AWWA C-509) / MJ DUCTILE IRON (350 PSI) AWWA C-110/C-153; BOX/TYLER 5-1/4.

B - AWWA CLASS 150, C900, SDR 18, PVC PIPE.

C - IN BUILDING RISER, REFER TO DETAIL.

D - DUCTILE IRON FLANGED BY PLAIN END PIPE (AWWA C-151).

E - 90° FLANED DUCTILE IRON (350 PSI) FITTING (AWWA C-110/ C-153).

F - AWWA CLASS 200, C-900, PVC PIPE.

G - APOLLO VALVES DCDALF44n SERIES BFG SERIES OR WILKINS 350 ASTDA ASSEMBLY WITH BY-PASS METER, BUTTERFLY VALVES, AND BY-PASS DOUBLE CHECK VALVE.

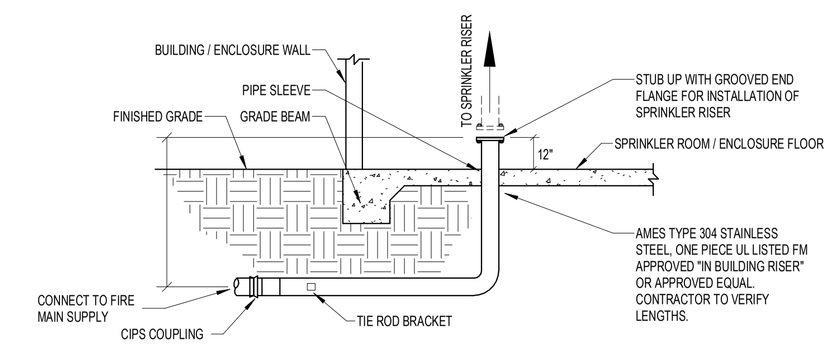
H - CONCRETE SUPPORT.

I - ALL FITTING/JOINTS/VALVES APPURTENANCES MUST BE RESTRAINED. TWO VALVES WILL BE REQUIRED WHERE THE EXISTING MAIN IS EXTENDED (IE. PUBLIC ROADWAY CROSSING).

* OR PRIOR APPROVED BY AUTHORITIES OF JURISDICTION.

GENERAL NOTES:
1. FREEZE PROTECTION PROVIDED AS REQUIRED ON ALL INSTALLATIONS AT THE DIRECTION OF THE LOUISIANA STATE FIRE MARSHALL.
2. COORDINATE LAYOUT AND INSTALLATION OF ALL COMPONENTS TO FIT WITHIN HEATED ENCLOSURE.

1 DETAIL - HOT BOX ENCLOSURE, BFP & DRY RISER VALVE
N.T.S.



2 DETAIL - IN BUILDING RISER
N.T.S.

4 DETAIL - PENDANT SPRINKLER HEAD
N.T.S.

AUTOMATIC SPRINKLER SYSTEM SUPERVISORY CONTROL PANEL LEGEND

- (H) RATE OF RISE HEAT DETECTOR
- [F] MANUAL FULL STATION
- [T] SPRINKLER TAMPER SWITCH
- [P] SPRINKLER DRY PIPE SYSTEM ALARM PRESSURE SWITCH
- [S] SPRINKLER DRY PIPE SYSTEM HIGH/LOW PRESSURE SUPERVISORY SWITCH
- FIRE ALARM HORN/STROBE MOUNT BOTTOM 80" AFF

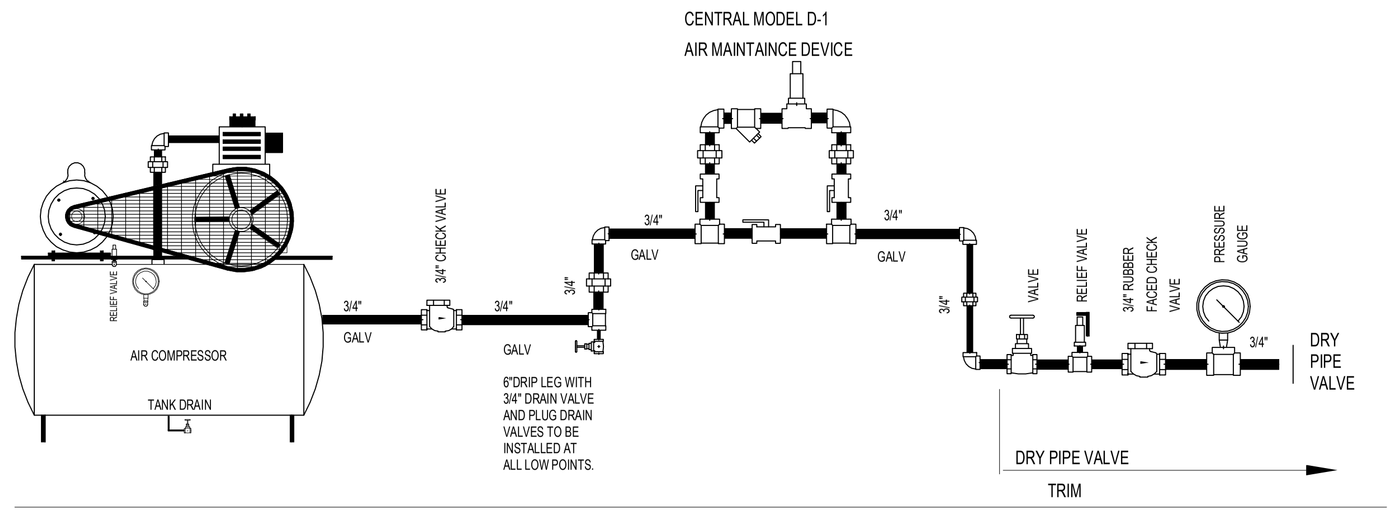
GENERAL NOTES:
1. PROVIDE SURGE PROTECTION PER NFPA 72 FOR ALL CIRCUITS ENTERING OR LEAVING BUILDING.
2. ALL CIRCUITS SHALL BE ROUTED UNDERGROUND IN CONDUIT.

5 DETAIL - FIRE ALARM/DACT
N.T.S.

6 DETAIL - PIPE HANGER (CLEVIS) NON INSULATED
1/4" = 1'-0"

GENERAL NOTES:
1. COORDINATE LAYOUT AND INSTALLATION OF ALL COMPONENTS TO FIT WITHIN HEATED ENCLOSURE.

7 DETAIL - HOT BOX SCHEMATIC
N.T.S.



8 DETAIL - AIR COMPRESSOR SETUP SCHEMATIC
N.T.S.

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