DIVISION 1

GENERAL REQUIREMENTS

SECTION 01005

GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 SCOPE AND INTENT

A. Description

1. The work to be done consists of the furnishing of all labor, materials and equipment, and the performance of all work included in this Contract. The summary of the work is presented in Section 01010.

B. Work Included

1. The Contractor shall furnish all labor, superintendence, materials, power, light, heat, fuel, water, tools, appliances, equipment, supplies, and other means of construction necessary or proper for performing and completing the work. He shall obtain and pay for all applicable required permits. He shall perform and complete the work in the manner best calculated to promote rapid construction consistent with safety of life and property and to the satisfaction of the Engineer, and in strict accordance with the Contract Documents. The Contractor shall clean up the work and maintain it during and after construction, until accepted, and shall do all work and pay all costs incidental thereto. He shall repair or restore all structures and property that may be damaged or disturbed during performance of the work.

2. The cost of incidental work described in these General Requirements, for which there are no specific Contract Items, shall be considered as part of the general cost of doing the work and shall be included in the prices for the various Contract Items. No additional payment will be made therefor.

3. The Contractor shall provide and maintain such modern tools, and equipment as may be necessary, in the opinion of the Engineer, to perform in a satisfactory and acceptable manner all the work required by this Contract. Only equipment of established reputation and proven efficiency shall be used. The Contractor shall be solely responsible for the adequacy of his workmanship, materials and equipment, prior approval of the Engineer notwithstanding.

C. Public Utility Installations and Structures

1. Prior to construction, the Contractor shall familiarize himself with the location of all existing utilities and facilities within the Project Sites, and with the applicable provisions of the General Conditions.

2. The Contractor shall notify utility companies at least 48 hours, excluding Saturdays, Sundays, and legal holidays, prior to excavation. Utility companies shall be contacted by calling the Louisiana One Call (D.O.T.T.I.E.) at 1-800-272-3020.

3. Public utility installations and structures understood to include all poles, tracks, pipes, wires, conduits, house service connections, vaults, manholes and all other appurtenances and facilities pertaining thereto whether owned or controlled by the

Owner, other governmental bodies or privately owned by individuals, firms or corporations, used to serve the public with transportation, traffic control, gas, electricity, telephone, sewerage, drainage, water or other public or private property which may be affected by the work shall be deemed to be included hereunder.

4. The Contract Documents may contain data relative to existing public utility installations and structures above and below the ground surface. These data are not guaranteed as to their completeness or accuracy and it is the responsibility of the Contractor to make his own investigations to inform himself fully of the character, condition and extent of all such installations and structures as may be encountered and as may affect the construction operations.

5. The Contractor shall protect all public utility installations and structures from damage during the work. Access across any buried public utility installation or structure shall be made only in such locations and by means approved by the Engineer. The Contractor shall so arrange his operations as to avoid any damage to these facilities. All required protective devices and construction shall be provided by the Contractor at his expense. All existing public utilities damaged by the Contractor which are shown on the plans or have been located in the field by the utility shall be repaired by the Contractor, at his expense, as directed by the Engineer. No separate payment shall be made for such protection or repairs to public utility installations or structures.

6. Public utility installation or structures owned or controlled by the Owner or other governmental body which are shown on the plans to be removed, relocated, replaced or rebuilt by the Contractor shall be considered as a part of the general cost of doing the work and shall be included in the prices bid for the various contract items. No separate payment shall be made therefor.

7. Where public utility installations or structures owned or controlled by the Owner or other governmental body are encountered during the course of the work, and are not indicated on the Plans or in the Specifications, and when, in the opinion of the engineer, removal, relocation, replacement or rebuilding is necessary to complete the work under this Contract, such work shall be accomplished by the utility having jurisdiction, or such work may be ordered, in writing by the Engineer, for the Contractor to accomplish. If such work is accomplished by the utility having jurisdiction it will be carried out expeditiously and the Contractor shall give full cooperation to permit the utility to complete the removal, relocation, replacement or rebuilding as required. If such work is accomplished by the Contractor, it will be paid for as extra work as provided in the General Conditions.

8. The Contractor shall, at all times in performance of the work, employ approved methods and exercise reasonable care and skill so as to avoid unnecessary delay, injury, damage or destruction of public utility installations and structures; and shall, at all times in the performance of the work, avoid unnecessary interference with, or interruption of, public utility services, and shall cooperate fully with the owners thereof to that end. All Owner and other governmental utility departments and other owners of public utilities which may be affected by the work will be informed in writing by the Engineer within two weeks after the execution of the Contract or Contracts covering the work. Such notice will set out, in general, and direct attention to the responsibilities of the Owner and other governmental utility departments and other owners of public utilities for such installations and structures as may be affected by the work and will be accompanied by one set of Plans and Specifications covering the work under such Contract or Contracts.

9. The Contractor shall give written notice to Owner and other governmental utility departments and other owners of public utilities of the location of his proposed construction operations, at least forty-eight hours in advance of breaking ground in any area or on any unit of the work. This can be accomplished by making the appropriate contact with the utility companies indicated on the Drawings.

10. The maintenance, repair, removal, relocation or rebuilding of public utility installations and structures, when accomplished by the Contractor as herein provided, shall be done by methods approved by the Engineer.

1.02 PLANS AND SPECIFICATIONS

A. Plans

1. The Plans referred to in the Contract Documents bear the general project name and number as shown in the Advertisement for Bids.

2. When obtaining data and information from the Plans, figures shall be used in preference to scaled dimensions, and large scale drawings in preference to small scale drawings.

B. Copies Furnished to Contractor

1. In addition to the executed set of Contract Documents, the Owner will furnish, free of charge to the Contractor, two (2) sets of paper prints of the Plans and Specifications, the same size as the original drawings and specifications. Any additional Plans and Specifications, when requested, will be sold to the Contractor at the cost of reproduction.

2. The Contractor shall furnish each of the subcontractors, manufacturers, and material suppliers such copies of the Contract Documents as maybe required for their work.

C. Supplementary Drawings

1. When, in the opinion of the Engineer, it becomes necessary to explain more fully the work to be done or to illustrate the work further or to show any changes which may be required, drawings known as Supplementary Drawings, with specifications pertaining thereto, will be prepared by the Engineer and five (5) paper prints thereof will be given to the Contractor.

2. The Supplementary Drawings shall be binding upon the Contractor with the same force as the Plans. Where such Supplementary Drawings require either less or more than the estimated quantities of work, credit to the Owner or compensation therefor to the Contractor shall be subject to the terms of the Agreement.

D. Contractor to Check Plans and Data

1. The Contractor shall verify all dimensions, quantities and details shown on the plans, Supplementary Drawings, schedules, Specifications or other data received from the Engineer, and shall notify him of all errors, omissions, conflicts, and discrepancies and shall not relieve the Contractor of full responsibility for unsatisfactory work, faulty construction or improper operation resulting therefrom nor from rectifying such conditions at his own expense. He will not be allowed to take advantage of

any errors or omissions he discovered. All schedules are given for the convenience of the Engineer and the Contractor and are not guaranteed to be complete. The Contractor shall assume all responsibility for the making of estimates of the size, kind, and quality of materials and equipment included in work to be done under the Contract.

E. Specifications

1. The Technical Specifications consist of three (3) parts: General, Products and Execution. The General Section contains General Requirements which govern the work. Products and Execution modify and supplement these by detailed requirements for the work and shall always govern whenever there appears to be a conflict.

F. Intent

1. All work called for in the Specifications applicable to this Contract, but not shown on the plans in their present form, or vice versa, shall be of like effect as if shown or mentioned in both. Work not specified in either the Plans or in the Specifications, but involved in carrying out their intent or in the complete and proper execution of the work, is required and shall be performed by the Contractor as though it were specifically delineated or described.

2. The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, and interpretation of these Specifications shall be made upon that basis.

3. The inclusion of the Related Requirements (or work specified elsewhere) in the General part of the specifications is only for the convenience of the Contractor, and shall not be interpreted as a complete list of related Specification Sections.

1.03 MATERIALS AND EQUIPMENT

A. Manufacturer

1. The names of proposed manufacturers, material suppliers, and dealers who are to furnish materials, fixtures, equipment, appliances or other fittings shall be submitted to the Engineer for approval, in accordance with the General Conditions as early as possible, to afford proper investigation and checking. Such approval must be obtained before Shop Drawings will be checked. No manufacturer will be approved for any materials to be furnished under this Contract unless he shall be of good reputation and have a plant of ample capacity. He shall, upon the request of the Engineer, be required to submit evidence that he has manufactured a similar product to the one specified and that it has been previously used for a like purpose for a sufficient length of time to demonstrate its satisfactory performance.

2. All transactions with the manufacturers or subcontractors shall be through the Contractor, unless the Contractor requests, in writing to the Engineer and the Engineer approves that the manufacturer or subcontractor deal directly with the Engineer. Any such transactions shall not in any way release the Contractor from his full responsibility under this Contract.

3. Any two (2) or more pieces of material or equipment of the same kind, type or classification, and being used for identical types of service, shall be made by the same manufacturer.

B. Delivery

1. The Contractor shall deliver materials in ample quantities to ensure the most speedy and uninterrupted progress of the work so as to complete the work within the allotted time. The Contractor shall also coordinate deliveries in order to avoid delay in, or impediment of, the progress of the work of any related Contractor.

C. Tools and Accessories

1. The Contractor shall, unless otherwise stated in the Contract Documents, furnish with each type, kind or size of equipment, one complete set of suitably marked high grade special tools and appliances which may be needed to adjust, operate, maintain or repair the equipment. Such tools and appliances shall be furnished in approved painted steel cases, properly labeled and equipped with good grade cylinder locks and duplicate keys.

D. Spare parts shall be furnished as specified

1. Each piece of equipment shall be provided with a substantial nameplate, securely fastened in place and clearly inscribed with the manufacturer's name, year of manufacture, serial number, weight and principal rating data.

E. Installation of Equipment

1. The Contractor shall have on hand sufficient proper equipment and machinery of ample capacity to facilitate the work and to handle all emergencies normally encountered in work of this character.

2. Equipment shall be erected in a neat and workmanlike manner on the foundations at the locations and elevations shown on the Plans, unless directed otherwise by the Engineer during installation. All equipment shall be correctly aligned, leveled and adjusted for satisfactory operation and shall be installed so that proper and necessary connections can be made readily between the various units.

3. The Contractor shall furnish, install and protect all necessary anchor and attachment bolts and all other appurtenances needed for the installation of the devices included in the equipment specified. Anchor bolts shall be as approved by the Engineer and made of ample size and strength for the purpose intended. Substantial templates and working drawings for installation shall be furnished.

4. The Contractor shall, at his own expense, furnish all materials and labor for, and shall properly bed in non-shrink grout, each piece of equipment on its supporting base that rests on masonry foundations. Grout shall completely fill the space between the equipment base and the foundation. All metal surfaces coming in contact with concrete or grout shall receive two (2) coats (9 mils each coat) of coal tar epoxy equal to Kop-Coat 300M.

F. Service of Manufacturer's Engineer

1. The Contract prices for equipment shall include the cost of furnishing a competent

and experienced engineer or superintendent who shall represent the manufacturer and shall assist the Contractor, when required, to install, adjust, test and place in operation the equipment in conformity with the Contract Documents. After the equipment is placed in permanent operation by the Owner, such engineer or superintendent shall make all adjustments and tests required by the Engineer to prove that such equipment is proper and satisfactory operating condition, and shall instruct such personnel as may be designated by the Owner in the proper operation and maintenance of such equipment.

1.04 INSPECTION AND TESTING

A. General

1. The Engineer may require testing by certified personnel of certain materials to be incorporated in the Work, such as: soils density, pavement, concrete pipe and appurtenances, and welds.

2. In the event any such testing is required by the Engineer, a detailed description will be found in these Technical Specifications concerned with the specific item of Work.

3. Inspection and testing of materials will be performed by the Owner unless otherwise specified.

4. For tests specified to be made by the Contractor, the testing personnel shall make the necessary inspections and tests and the reports thereof shall be in such form as will facilitate checking to determine compliance with the Contract Documents. Five (5) copies of the reports shall be submitted and authoritative certification thereof must be furnished to the Engineer as a prerequisite for the acceptance of any material or equipment.

5. If, in the making of any test of any material or equipment, it is ascertained by the Engineer that the material or equipment does not comply with the Contract, the Contractor will be notified thereof and he will be directed to refrain from delivering said material or equipment, or to remove it promptly from the site or from the work and replace it with acceptable material, without cost to the Owner.

6. Tests of electrical and mechanical equipment and appliances shall be conducted in accordance with recognized test codes of the ANSI, ASME, or the IEEE, except as may otherwise be stated herein.

7. The Contractor shall be fully responsible for the proper operation of equipment during tests and instruction periods and shall neither have nor make any claim for damage which may occur to equipment prior to the time when the Owner formally takes over the operation thereof.

B. Costs

1. All inspection and testing of materials furnished under this Contract will be performed by the Owner or duly authorized inspection engineers or inspection bureaus without cost to the Contractor, unless otherwise expressly specified.

2. The cost of shop and field tests of equipment and of certain other tests specifically called for in the Contract Documents shall be borne by the Contractor and such

costs shall be deemed to be included in the Contract price.

3. Materials and equipment submitted by the Contractor as the equivalent to those specifically named in the Contract may be tested by the Owner for compliance. The Contractor shall reimburse the Owner for the expenditures incurred in making such tests on materials and equipment which are rejected for non-compliance.

C. Inspection of Materials

1. The Contractor shall give notice in writing to the Engineer, sufficiently in advance of his intention to commence the manufacture or preparation of materials especially manufactured or prepared for use in or as part of the permanent construction. Such notice shall contain a request for inspection, the date of commencement and the expected date of completion of the manufacture or preparation of materials. Upon receipt of such notice, the Engineer will arrange to have a representative present at such times during the manufacture as may be necessary to inspect the materials or he will notify the Contractor that the inspection will be made at a point other than the point of manufacture, or he will notify the Contractor that inspection will be waived. The Contractor must comply with these provisions before shipping any material. Such inspection shall not release the Contractor from the responsibility for furnishing materials meeting the requirements of the Contract Documents.

D. Certificate of Manufacture

1. When inspection is waived or when the Engineer so requires, the Contractor shall furnish to him authoritative evidence in the form of Certificates of Manufacture that the materials to be used in the work have been manufactured and tested in conformity with the Contract Documents. These certificates shall be notarized and shall include copies of the results of physical tests and chemical analyses, where necessary, that have been made directly on the product or on similar products of the manufacturer. The certificates shall be delivered to the Engineer prior to shipment of the materials.

E. Shop Tests of Operating Equipment

1. Each piece of equipment for which pressure, duty, capacity, rating, efficiency, performance, function or special requirements are specified shall be tested in the shop of the maker in a manner which shall conclusively prove that its characteristics comply fully with the requirements of the Contract Documents. No such equipment shall be shipped to the work until the Engineer notifies the Contractor, in writing, that the results of such tests are acceptable.

2. Five (5) copies of the manufacturer's actual test data and interpreted results thereof, accompanied by a certificate of authenticity sworn to by a responsible official of the manufacturing company, shall be forwarded to the Engineer for approval.

3. The cost of shop tests and of furnishing manufacturer's preliminary and shop test data of operating equipment shall be borne by the Contractor.

F. Preliminary Field Tests

1. As soon as conditions permit, the Contractor shall furnish all labor, materials, and instruments and shall make preliminary field tests of equipment. If the preliminary

field tests disclose any equipment furnished under this Contract which does not comply with the requirements of the Contract Documents, the Contractor shall, prior to the acceptance tests, make all changes, adjustments and replacements required. The furnishing Contractor shall assist in the preliminary field tests as applicable.

G. Final Field Tests

1. Upon completion of the work and prior to final payment, all equipment and piping installed under this Contract shall be subjected to acceptance tests as specified or required to prove compliance with the Contact Documents.

2. The Contractor shall furnish labor, fuel, energy, water and all other materials, equipment and instruments necessary for all acceptance tests, at no additional cost to the Owner. The Furnishing Supplier shall assist in the final field tests as applicable.

H. Failure of Tests

1. Any defects in the materials and equipment or their failure to meet the tests, guarantees or requirements of the Contract Documents shall be promptly corrected by the Contractor by replacements or otherwise. The decision of the Engineer as to whether or not the Contractor has fulfilled his obligations under the Contract shall be final and conclusive. If the Contractor fails to make these corrections or if the improved materials and equipment, when tested, shall again fail to meet the guarantees or specified requirements, the Owner, notwithstanding its partial payment for work, and materials and equipment, may reject the materials and equipment and may order the Contractor to remove them from the site at his own expense.

2. If the failure during testing is fully or partly due to the equipment provided by the Furnishing Supplier, as determined by the Engineer, the Furnishing Supplier shall make all requirement improvements at no cost to the Owner.

3. In case the Owner rejects any materials and equipment, then the Contractor shall replace the rejected materials and equipment within a reasonable time. If he fails to do so, the Owner may, after the expiration of a period of thirty (3) calendar days after giving him notice in writing, proceed to replace such rejected materials and equipment, and the cost thereof shall be deducted from any compensation due or which may become due the Contractor under his Contract.

4. The Owner agrees to obtain other equipment within a reasonable time and the Contractor agrees that the Owner may use the equipment furnished by him without rental or other charges until the new equipment is obtained.

I. Final Inspection

1. During such final inspections, the work shall be clean and free from water. In no case will the final estimate be prepared until the Contractor has complied with all requirements set forth and the Engineer has made his final inspection of the entire work and is satisfied that the entire work is properly and satisfactorily constructed in accordance with the requirements of the Contract Documents.

1.05 TEMPORARY STRUCTURES

A. Temporary Fences

1. If, during the course of the work, it is necessary to remove or disturb any fence or part thereof, the Contractor shall provide a suitable temporary fence at his own expenses, which shall be maintained until the permanent fence is replaced. The Engineer shall be solely responsible for the determination of the necessity for providing a temporary fence and the type of temporary fence to be used.

B. Responsibility for Temporary Structures

1. In accepting the Contract, the Contractor assumes full responsibility for the sufficiency and safety of all temporary structures or work and for any damage which may result from their failure or their improper construction, maintenance or operation and will indemnify and save harmless the Owner from all claims, suits or actions and damages or costs of every description arising by reason of failure to comply with the above provisions.

1.06 SAFETY

A. Accident Prevention

1. Precaution shall be exercised at all times for the protection of persons and property. The safety provisions of applicable laws, and existing building and construction codes shall be observed. Machinery, equipment, and other hazards shall be guarded in accordance with the safety provisions of the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America, and OSHA's Safety and Health Standards (29 CFR 1926/1910) U.S. Department of Labor, to the extent that such provisions are not in contravention of applicable law of the state of Louisiana.

B. First Aid

1. The Contractor shall keep upon the site, at each location where work is in progress, a completely equipped first aid kit and shall provide ready access thereto at all times when men are employed on the work.

1.07 LINES AND GRADES

A. Grade

1. All work under this Contract shall be constructed in accordance with the lines and grades shown on the Plans, or as given by the Owner/Engineer. The full responsibility for keeping alignment and grade shall rest upon the Contractor.

2. The Owner/Engineer will establish bench marks and base line controlling points.

B. Surveys

1. The Contractor shall furnish, maintain, and be responsible for, at his own expense, stakes and other such materials required.

C. Safeguarding Marks

1. The Contractor shall safeguard all points, stakes, grade marks, monuments and bench marks made or established on the work, bear the cost of reestablishing them if disturbed, and bear the entire expense of recertifying work improperly installed due to not maintaining or protecting or to remove without authorization such established points, stakes and marks.

2. The Contractor shall safeguard all existing and known property corners, monuments and marks adjacent to but not related to the work and, if required, shall bear the cost or reestablishing them if disturbed or destroyed.

1.08 ADJACENT STRUCTURES AND LANDSCAPING

A. Responsibility

1. The Contractor shall also be entirely responsible and liable for all damage or injury as a result of his operations to all other adjacent public and private property, structures of any kind and appurtenances thereto met with during the progress of the work. The cost of protection, replacement in their original locations and conditions or payment of damages for injuries to such adjacent public and private property and structures affected by the work, whether or not shown on the Plans, and the removal, relocation and reconstruction of such items called for on the Plans or specified shall be included in the various Contract Items and no separate payments will be made therefor. Where such public and private property, structures of any kind and appurtenances thereto are not shown on the Plans and when, in the opinion of the Engineer will interfere with the work, payment therefor will be made as provided for in the General Conditions.

2. Contractor is expressly advised that the protection of buildings, structures, tunnels, tanks, pipelines, etc. and related work adjacent and in the vicinity of his operations, wherever they may be, is solely his responsibility. Conditional inspection of buildings or structures in the immediate vicinity of the project which may reasonably be expected to be affected by the Work shall be performed by and be the responsibility of the Contractor.

3. Contractor shall, before starting operations, make an examination of the interior and exterior of the adjacent structures, buildings, facilities, etc., and record by notes, measurements, photographs, etc., conditions which might be aggravated by open excavation and construction. Repairs or replacement of all conditions disturbed by the construction shall be made to the satisfaction of the Owner and to the satisfaction of the Engineer. This does not preclude conforming to the requirements of the insurance underwriters. Copies of surveys, photographs, reports, etc., shall be given to the Engineer.

4. Prior to the beginning of any excavations the Contractor shall advise the Engineer of all buildings or structures on which he intends to perform work or which performance of the project work will affect.

B. Lawn Areas

1. Lawn areas shall be left in as good condition as before the starting of the work. Where sod is to be removed, it shall be carefully removed, and later replaced, or the area where sod has been removed shall be restored with new sod in the manner described in the Workmanship and Materials section.

C. Restoration of Fences

1. Any fence, or part thereof, that is damaged or removed during the course of the work shall be replaced or repaired by the Contractor and shall be left in as good a condition as before the starting of the work. The manner in which the fence is repaired or replaced and the materials used in such work shall be subject to the approval of the Engineer. The cost of all labor, materials, equipment, and work for the replacement or repair of any fence shall be deemed included in the appropriate Contract Item or items, or if no specific Item is provided therefor, as part of the overhead cost of the work, and no additional payment will be made therefor.

1.09 PROTECTION OF WORK AND PUBLIC

A. Barriers and Lights

1. During the prosecution of the work, the Contractor shall put up and maintain at all times such barriers and lights as will effectually prevent accidents. The Contractor shall provide suitable barricades, red lights, "danger" or "caution" or "street closed" signs and watchmen at all places where the work causes obstructions to the normal traffic or constitutes in any way a hazard to the public, in accordance with state and local requirements.

B. Smoke Prevention

1. The Contractor shall use hard coal, coke, oil or gas as fuel for equipment generating steam. A strict compliance with ordinances regulating the production and emission of smoke will be required. No open fires will be permitted.

C. Noise

1. The Contractor shall eliminate noise to as great as extent as practicable at all times. Air compressing plants shall be equipped with silencers and the exhaust of all gasoline motors or other power equipment shall be provided with mufflers. In the vicinity of hospitals and schools, special care shall be used to avoid noise or other nuisances. The Contractor shall strictly observe all local regulations and ordinances covering noise control.

2. Except in the event of an emergency, no work shall be done between the hours of 7:00 P.M. and 7:00 A.M. If the proper and efficient prosecution of the work requires operations during the night, the written permission of the Engineer shall be obtained before starting such items of the work.

D. Access to Public Services

1. Neither the materials excavated nor the materials or plant used in the construction of the work shall be so placed as to prevent free access to all fire hydrants, valves, or manholes.

E. Dust Prevention

1. The Contractor shall prevent dust nuisance from his operations or from traffic by keeping the roads and/or construction areas sprinkled with water at all times.

1.10 CUTTING AND PATCHING

A. The Contractor shall do all cutting, fitting or patching of his portion of the work that may be required to make the several parts thereof join and coordinate in a manner satisfactory to the Engineer and in accordance with the Plans and Specifications. The work must be done by competent workmen skilled in the trade required by the restoration.

1.11 CLEANING

A. During Construction

1. During construction of the work, the Contractor shall, at all times, keep the site of the work and adjacent premises as free from material, debris and rubbish as is practicable and shall remove the same from any portion of the site if, in the opinion of the Engineer, such material, debris, or rubbish constitutes a nuisance or is objectionable.

2. The Contractor shall remove from the site all of his surplus materials and temporary structures when no further need therefore develops. Contractor shall be responsible and liable for all spillage and incur all associated costs including, but not limited to, costs related to repair and maintenance resulting from damages thereof.

B. Final Cleaning

1. At the conclusion of the work, all erection plant, tools, temporary structures and materials belonging to the Contractor shall be promptly taken away, and he shall remove and promptly dispose of all water, dirt, rubbish or any other foreign substances,

2. The Contractor shall thoroughly clean all equipment and materials installed by him and shall deliver such materials and equipment undamaged in a bright, clean, polished and new condition.

1.12 INSPECTION AUTHORITY

A. The Engineer has ultimate responsibility for contract administration and inspection for the Project. Field inspection responsibilities may be assigned to a Design Professional and/or Owner Inspector.

B. Each step of construction is subject to approval by the Engineer prior to proceeding with a subsequent step in accordance with General Conditions.

C. During the progress of the Work and up to the date of final acceptance, the Contractor shall at all times afford representatives of the Owner, the City/Parish, the State, the Department of Environmental Quality, the Department of Labor, or any other agency with jurisdiction, every reasonable, safe, and proper facility for observation of the Work done or being done at the site, and also the manufacture or preparation of materials and equipment at the place of such manufacture or preparation.

D. The Project line of authority will be presented at the Pre-Construction Meeting.

1.13 SAMPLES

A. The Contractor shall, when required, submit to the Engineer for approval, typical samples of material and appliances. The samples shall be properly identified by tags and shall be submitted sufficiently in advance of the time when they are to be incorporated into the Work so that rejections thereof will not cause delay. A letter of transmittal from the Contractor requesting approval shall accompany all such samples.

1.14 EQUIVALENT QUALITY

A. In the Contract Documents, whenever an article, material, apparatus, equipment, or process is called for by trade name or by name of a patentee, manufacturer, or dealer, or by reference to catalog of a manufacturer or dealer followed by "or equal", it shall be understood as intending to mean and specify the article, material, apparatus, equipment, or process designated, or any equal thereto in quality, finish, design, efficiency, and durability, and equally serviceable for the purposes for which it is intended.

B. Whenever material or equipment is submitted for approval as being equal to that specified, the submittal shall include sufficient information and data to demonstrate that the material or equipment conforms to the contract requirements. The decision as to whether or not such material or equipment is equal to that specified shall be made by the Engineer.

C. Upon rejection of any material or equipment submitted as the equivalent of that specifically named in the contract, the Contractor shall immediately proceed to furnish the designated material or equipment.

D. Neither the approval by the Engineer of alternate material or equipment as being equivalent to that specified, nor the furnishing of the material or equipment specified, shall in any way relieve the Contractor of responsibility for failure of the material or equipment, due to faulty design, material, or workmanship, to perform the functions required of them by the Contract Documents.

E. Items requiring "pre-approval" must be submitted to the Engineer a minimum of twenty one (21) days prior to the bid opening for consideration, and if acceptable will be incorporated by Addendum.

1.15 MISCELLANEOUS

A. Protection Against Siltation and Bank Erosion

1. The Contractor shall arrange his operations to minimize siltation and bank erosion on construction sites and on existing or proposed water courses and drainage ditches.

2. The Contractor, at his own expense, shall remove any siltation deposits and correct any erosion problems as directed by the Engineer which results from his construction operations.

B. Protection of Wetland Areas

1. The Contractor shall properly dispose of all surplus material, including spoil, in accordance with Local, State and Federal regulations. Under no circumstances shall surplus material be disposed of in wetland areas as defined by the Louisiana Department of Environmental Quality.

C. Existing Facilities

1. The work shall be so conducted to maintain existing facilities in operation insofar as is possible. Requirements and schedules of operation for maintaining existing facilities in service during construction shall be as described in these Specifications.

D. Use of Chemicals

1. All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant, or of other classification, must shown approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.

E. Cooperation With Other Contractors Forces

1. During progress of work under this Contract, it may be necessary for other contractors and persons employed by the Owner to work in or about the Site. The Owner reserves the right to put such other contractors to work and to afford such access to the Site of the Work to be performed hereunder at such times as the Owner deems proper. The Contractor shall not impede or interfere with the work of such other contractors engaged in or about the Work and shall so arrange and conduct his work that such other contractors may complete their work at the earliest date possible.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01010

SUMMARY OF WORK

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. The single construction contract system will be used for this PROJECT.

B. CONTRACTOR shall furnish all labor, permits, fees, equipment, supplies, materials, services and incidentals required to complete the WORK.

C. Mention herein or indication on the DRAWINGS of articles, operations, or methods requires that the CONTRACTOR provide each item mentioned, indicated, or necessary as an adjunct to the item, subject to qualifications noted, and perform according to conditions required.

1.02 DESCRIPTION OF WORK

A. This WORK includes furnishing all labor, materials and equipment for sanitary sewer manhole repair by plugging holes, patching, filling and break repairs as necessary to seal the area to prevent hydrostatic infiltration. A multi-component liner system shall be applied to the surface finish of manholes shown on the plans.

1.03 CONSTRUCTION LIMITS AND STORAGE

A. Refer to the DRAWINGS for the location of the PROJECT.

B. CONTRACTOR shall limit his construction activities to the right-of-way and to approved storage areas for the PROJECT.

C. Access to private property must be maintained during construction.

D. CONTRACTOR shall provide barricades, safety or warning devices, signs and warning lights required for the protection of employees, the public and property.

E. The OWNER will designate storage areas to be used for material and equipment deliveries and access.

1.04 COORDINATION OF WORK WITH OWNER AND OTHERS

A. The CONTRACTOR shall coordinate WORK and cooperate with OWNER working in the PROJECT area. Contractors shall coordinate, cooperate and schedule their work to complete all work in an efficient manner in the areas of common occupancy.

B. The CONTRACTOR shall limit his use of the premises for WORK and for storage to allow for work by other SUBCONTRACTORS, utility agencies, and OWNER operations.

C. OWNER personnel may require access to the PROJECT site. The CONTRACTOR shall coordinate all stored products or equipment under his control with the RESIDENT PROJECT REPRESENTATIVE to prevent interference with operation of the OWNER.

1.05 MEASUREMENTS AND PROJECT LAYOUT

A. The CONTRACTOR is responsible for survey and complete layout of all vertical and horizontal controls necessary to construct the PROJECT. The CONTRACTOR shall verify all field conditions, elevations and dimensions affecting the construction of the WORK and be responsible for correctness of same.

B. No extra compensation will be allowed for differences between actual elevations, dimensions or measurements indicated on DRAWINGS. Differences found shall be reported to the ENGINEER for consideration before proceeding with the WORK.

C. Contract Drawings:

1. DRAWINGS indicate the general area of construction routing and levels; CONTRACTOR shall field verify and coordinate.

2. Adjustments in dimensions, elevations, routing and connections shall be made for field coordination with other trades.

3. All field adjustments shall be subject to the ENGINEER's approval.

1.06 EASEMENTS

A. All necessary easements have been obtained by the OWNER.

1.07 WORKMANSHIP

A. Materials, methods and workmanship shall be the best obtainable within established trade standard tolerance.

B. Uniformity: The CONTRACTOR shall provide uniform quality and appearance throughout the PROJECT.

C. Stability: All members shall be rigid and shall be securely anchored in place. Members subject to vibration or wracking shall be adequately attached. Connections shall be adequate to withstand stress to which they would be subject.

D. Joints: Joints in all materials shall be true, neat and inconspicuous. Joints between materials of different kinds shall be closely fitted.

E. Surfaces: Surfaces of all materials fabricated into a single article of composition or into an assembly of units shall be uniform, true, plumb, level, properly curved or pitched as required, and free from defects and blemishes. All edges, angles and corners shall be uniform and true.

F. Finish: Exposed surfaces of materials in which natural irregularity does not contribute to desired character shall be smooth and free from blemishes of any kind.

1.08 CONSTRUCTION GUARANTEE

A. The CONTRACTOR shall guarantee all equipment, materials and workmanship incorporated in the PROJECT for a period of one year following date of FINAL ACCEPTANCE by the OWNER.

B. The CONTRACTOR shall immediately correct all deficiencies reported to him without cost to the OWNER within this guarantee period.

1.09 CODES, STANDARDS AND REGULATIONS

A. All WORK shall conform to the latest edition of the codes or regulations of the following:

1. "Standard Specifications For Roads And Bridges", Louisiana Department of Transportation And Development.
2. Louisiana Department of Health & Hospitals.
   a. State Sanitary Code
   b. Recommended Standards For Wastewater Facilities (Ten States Standard)
   c. Recommended Standards For Water Works (Ten States Standards)
3. Local Utility Service Company Requirements for electric services.
4. National Electric Code.
5. National Plumbing Code.
6. American Water Works Association Standards.
7. American Society of Testing and Materials Standards.
8. Occupational Safety And Health Administration Standards.
9. American Concrete Institute.
10. American Institute of Steel Construction.
11. American Welding Society.
12. Anti-Friction Bearing Manufacturers Association.
13. Concrete Reinforcing Steel Institute.
14. Factory Mutual Association (FM).
15. Instrument Society of America (ISA).
16. National Bureau of Standards (NBS) Voluntary PROJECT Standard (PS).
17. National Electrical Manufacturer's Association (NEMA).
18. National Fire Protection Association (NFPA).
19. Steel Structures Painting Council (SSPC).
20. Underwriters' Laboratories, Inc. (UL).
21. Occupational Safety and Health Administration Standards (OSHA).

1.10 NOTICE TO UTILITY COMPANIES AND AGENCIES

A. Notify all utility companies a minimum of 48 hours prior to excavation, or as required by the utility company.

B. Obtain permission of utility owner to excavate in the vicinity of their utility.

C. Arrange with owners and operators of respective utility systems to mark the location, and if necessary or prudent, to expose existing utilities or structures prior to construction of the facilities contained in this CONTRACT.

D. If in course of the WORK it is found necessary to repair utility systems or structures damaged by the CONTRACTOR's activities, repairs or revisions shall be made by employees of the respective utilities and agencies with all costs borne by the CONTRACTOR.

1.11 EXISTING UTILITIES

A. In general, the locations of existing underground utilities are <u>not</u> indicated on the

DRAWINGS. The OWNER does not guarantee the accuracy or completeness of the information shown on the DRAWINGS, and it is to be understood that aboveground or underground facilities not shown on the DRAWINGS may be encountered during the course of the WORK.

B. Existing aboveground utilities including, not limited to, power distribution and telephone systems, whether shown on the DRAWINGS or not, shall be maintained, relocated, rerouted, removed and restored as may be necessary in a manner satisfactory to owners and operators of the utilities and to the OWNER.

C. Existing underground utilities and appurtenance structures, whether shown on the DRAWINGS or not, shall be maintained, relocated, rerouted, removed and restored in a manner satisfactory to owners and operators of the utilities and to the OWNER.

D. Minor underground utility service lines including, but not limited to, sanitary sewer services, water services, house or yard drains, and electric or telephone services, shall be maintained, relocated, rerouted, removed and restored with the least possible interference with such services, and in no case shall the interference of such service lines be considered for extra compensation under any of the special cases listed hereinbefore.

E. The right is reserved by owners of public utilities and franchises to enter upon any street, road, right-of-way or easement for the purpose of maintaining their property and for making necessary repairs or changes caused by the WORK. Except as specifically noted, all costs thus incurred shall be incidental to the CONTRACT, and borne by the CONTRACTOR.

1.12 RESTORATION OF STRUCTURES AND SURFACES

A. General: Whenever any of the work is accomplished on or through property other than that owned by the PROJECT OWNER, before final acceptance of the WORK by the PROJECT OWNER, a written release from the adjoining property owner or proper authority citing for the owner of the property affected stating that the restoration of structures and surfaces has been satisfactorily accomplished. If in the opinion of the PROJECT OWNER the release is arbitrarily withheld, the PROJECT OWNER may, at its sole discretion, accept the portion of the WORK involved and cause final payment therefore to be made.

In addition to the requirements of any applicable utility permit, street use permit or franchise relating to this CONTRACT, the CONTRACTOR shall, as a minimum for any restoration work, conform to standard plans and specifications of the agency which controls the use of the right-of-way in which this construction WORK is performed.

B. Structures: The CONTRACTOR shall remove such existing above and below-ground structures as may be necessary for the performance of the WORK and, if required, shall rebuild the structures thus removed in as good a condition as found with minimum requirements as herein specified. He shall also repair all existing structures which may be damaged as a result of the WORK under this CONTRACT. Reconstruction shall be of the same kind of material with the same finish and in not less than the same dimensions as the original work. All concrete shall be as specified herein unless otherwise indicated. Repairs shall be made by removing and replacing the entire portions between joints or scores and not merely refinishing any damaged part. All WORK shall match the appearance of the existing improvements as nearly as possible.

C. Roads and Streets: All roads and streets in which the surface is removed, broken or damaged, or in which the ground has caved or settled due to WORK under this CONTRACT,

shall be resurfaced and brought to the original grade and crown section unless otherwise indicated. Before resurfacing material is placed, edges of pavements shall be trimmed back far enough to provide clean, solid, vertical faces. Roadways used by the CONTRACTOR for hauling materials, equipment, supplies, and the like, shall be cleaned and repaired if the condition of the roadway is damaged or otherwise affected due to the CONTRACTOR's operations.

D. Planted Areas and Other Surface Improvements: All planted areas, such as trees or lawns, and other surface improvements which are damaged by actions of the CONTRACTOR, shall be restored as nearly as possible to their original condition. The CONTRACTOR shall resod areas which have been damaged during construction.

E. Existing Stakes and Marks: All section, section subdivision, plat, U.S.C. and G.S., U.S.G.S. and other official monuments or bench marks shall be carefully preserved or replaced. In the event any such monument or marker is disturbed as a result of the CONTRACTOR's operations, the CONTRACTOR shall effect the replacement or resetting of the monument or marker in a manner satisfactory to the ENGINEER. Replaced or reset monuments shall be of acceptable type and quality, and shall be located so as to clear existing utilities or any other interferences. They shall be placed by a licensed surveyor in a manner consistent with good and recognized engineering and surveying practices.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

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SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 MEASUREMENT AND PAYMENT

A. Partial payment of BID ITEMS shall be in conformance with the GENERAL CONDITIONS. Partial payment for WORK completed, and materials on site, which will become an integral part of the finished WORK, shall be determined by the OWNER and shall be made on the basis of duly certified and approved estimates of the WORK, which, in the opinion of the OWNER, has been satisfactorily completed. It is understood that the determination by the OWNER as to whether or not a certificate or estimate for payment should be issued, or the amount of said payment, shall be based entirely upon the opinion of the OWNER. Said determination shall include without limitation the following factors:

1. All phases of the WORK being accomplished in a proper manner and being pursued in a proper sequence of operation, particularly with regard to testing, cleanup and surface restoration.

2. The observance by the CONTRACTOR of the requirement that all WORK and operations be preceded by necessary submittals and approvals.

3. On the monthly estimates, partial payment for WORK performed but not completed shall be made in accordance with GENERAL CONDITIONS.

B. The CONTRACT PRICE shall constitute full compensation for furnishing all labor, equipment and materials, as specified, and as shown on the DRAWINGS.

1.02 MANHOLE LINING TYPICAL 48" DIAMETER PER V.L.F. - Item 1

A. Measurement

Measurement of work shall be on a vertical wall height basis measured from the base of the wall to the top of the cone or any portion thereof.

B. Payment

Payment shall be based on the sealing of manhole walls and cones. Payment shall be full compensation for furnishing materials, labor and equipment, including surface preparation, sewer flow control, pressure washing and cleanup of all manhole surfaces.

1.03 MANHOLE BENCH REPAIR PER EACH – Item 2

A. Measurement

Measurement of work for payment of this item shall be an actual count (each) of the manholes which need repair of deteriorated benches. Cost for this item includes removal of loose material, cleaning, forming new benches with grout and sewer flow control.

B. Payment

Manhole Bench Repair completed and accepted, measured as provided above, will be paid for at the contract unit price per each, which price and payment shall constitute full compensation for furnishing of all materials, equipment, tools, labor and incidentals necessary to complete the item as shown on the Drawings.

1.04 RESET MANHOLE RING AND COVER PER EACH – Item 3

A. Measurement

Measurement of work for payment of this item shall be an actual count (each) of the manholes which need ring and cover reset. Cost for this item includes removal of existing ring and grout and regrouting ring and cleaning.

B. Payment

Reset Manhole Ring and Cover completed and accepted, measured as provided above, will be paid for at the contract unit price per each, which price and payment shall constitute full compensation for the furnishing of all materials, equipment, tools, labor and incidentals necessary to complete the item as shown on the Drawings.

1.05 MANHOLE STRUCTURAL REPAIR PER EACH – Item 4

A. Measurement

Measurement of work for payment of this item shall be an actual count (each) of the manholes which need structural repair of larger voids in wall. Cost for this item includes removal of loose materials, cleaning and grouting of void.

B. Payment

Manhole Structural Repair completed and accepted, measured as provided above, will be paid for at the contract unit price per each, which price and payment shall constitute full compensation for the furnishing of all materials, equipment, tools, labor and incidentals necessary to complete the item as shown on the Drawings.

1.06 TRAFFIC CONTROL AND CONSTRUCTION SIGNAGE - Item 5

A. Measurement

Traffic control and construction signage shall be measured on a lump sum basis and shall include furnishing, erecting, maintaining, and subsequent removing of temporary construction signs, barricades and related devices necessary for the protection of the public.

B. Basis of Payment

Payment for traffic control and construction signage will be made at the contract lump sum price bid and shall constitute full compensation for all labor, material, equipment and incidentals necessary to complete the items in accordance with the Plans and Specifications including, but not limited to providing sufficient signage and personnel, if required, to properly control traffic wherever impacted by construction activities. Payment for traffic control and construction signage shall be subject to the following schedule:

Percent of Total Contract Amount Earned	Allowable Percent of Lump Sum Price for Traffic Control & Construction Signage
Initial Erection	20
25	40
50	60
75	80
100	100

1.07 MOBILIZATION - Item 6

Method of Measurement: Mobilization shall be measured on a lump sum basis and shall include all preparatory work including those necessary for movement of personnel, equipment, supplies and incidentals to the project site; the establishment of offices, building and other facilities necessary for work on the project; the cost of bonds and any required insurance; and other preconstruction expenses necessary for start of the work, excluding the cost of construction materials.

Basis of Payment: Payment for mobilization will be made at the contract lump sum price bid and shall constitute full compensation for all work associated with mobilization. Payment for mobilization shall be subject to the following provisions.

Partial payments for mobilization will be made in accordance with the following schedule:

Percent of Total Contract Amount Earned	Allowable Percent of Lump Sum Price for the Item
1st Partial Estimate	25
10	50
25	75
50	100

1.08 REMOVE AND REPLACE EXISTING MANHOLE WITH 4' DIA. PRECAST MANHOLE (6' – 8' DEPTH) – Item 7

A. Measurement

Measurement of work for payment of this item shall be an actual count (each) of the existing manholes removed and replaced with a new 4' precast manhole. Cost for this item includes, bypass pumping, excavation, disconnecting and removal of existing manhole, installation of new manhole, reconnection to sewer system, fill material restoration of surface.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01040

PROJECT COORDINATION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. The CONTRACTOR shall be solely responsible for coordination of all of the WORK. The CONTRACTOR shall supervise, direct and cooperate fully with all SUBCONTRACTORS, manufacturers, fabricators, suppliers, distributors, installers, testing agencies and all others whose services, materials or equipment are required to ensure completion of the WORK within the CONTRACT TIME.

B. The CONTRACTOR shall cooperate with and coordinate his WORK with the work of any other contractor, utility service company or OWNER's employees performing additional WORK related to the PROJECT at the site.

C. The CONTRACTOR shall attend and participate in all project coordination or progress meetings and report on the progress of all WORK and compliance with schedules.

D. The CONTRACTOR shall cooperate with others doing WORK in the area or who require access to various parts of the site. Whenever there is interference between WORK under this CONTRACT with work or access by others, the ENGINEER shall decide the manner in which the WORK shall proceed. The CONTRACTOR shall cooperate in scheduling his WORK as required by the ENGINEER.

E. The CONTRACTOR shall be responsible for maintaining continued and uninterrupted operation of all facilities in the PROJECT area.

1.02 COORDINATION

A. Coordination: Coordinate construction activities included under various sections of these SPECIFICATIONS to assure efficient and orderly installation of each part of the WORK. Coordinate construction operations included under different sections of the SPECIFICATIONS that are dependent upon each other for proper installation, connection, and operation.

Where installation of one part of the WORK is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.

Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.

Make adequate provisions to accommodate items scheduled for later installation.

Prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

B. Work Site Boundary Coordination: Strict adherence to predetermined WORK site boundaries is required. Where construction activities overlap in perimeter areas, WORK shall be

coordinated to prevent activities outside of these boundaries.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction work activities to avoid conflicts and ensure orderly progress of the WORK. Such administrative activities include, but are not limited to, the following:

1. Preparation of schedules;
2. Installation and removal of temporary facilities;
3. Delivery and processing of submittals;
4. Progress meetings; and,
5. Project close-out activities.

1.03 SUBMITTALS

A. Coordination Drawings: Prepare and submit coordination drawings where close and careful coordination is required for installation of products and materials fabricated off-site by separate entities, and where limited space availability necessitates maximum utilization of space for efficient installation of different components.

1. Show the interrelationship of components shown on separate SHOP DRAWINGS.

2. Indicate required installation sequences.

3. Comply with requirements contained in Section 01340 - Shop Drawings, Product Data and Samples.

B. Staff Names: CONTRACTORS shall provide proposed organization charts, listing both home and field office personnel to be assigned to the PROJECT.

1. Within 15 days of NOTICE TO PROCEED, submit a list of the CONTRACTOR's principal staff assignments, including the superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list their addresses and telephone numbers.

2. Post copies of the list in the PROJECT meeting rooms, the temporary field office, and at each temporary telephone.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION PROVISIONS

A. Inspection of Conditions: Require the installer of each major component to inspect both the substrate and conditions under which WORK is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

B. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in CONTRACT DOCUMENTS.

C. Inspect materials or equipment immediately upon delivery and again prior to installation.

Reject damaged and defective items.

D. Recheck measurements and dimensions before starting each installation.

E. Install each component during weather conditions and project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.

F. Coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.

3.02 CLEANING AND PROTECTION

During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at substantial completion.

Clean and maintain completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

A. Limiting Exposures: Supervise construction activities to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:

1. Excessive static or dynamic loading.
2. Excessive internal or external pressures.
3. Heavy traffic.

END OF SECTION

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SECTION 01210

PRECONSTRUCTION CONFERENCE

PART 1 - GENERAL

1.01 GENERAL

A. Date, Time and Location: Conference will be held after execution of the CONTRACT and before construction is started at the site. The ENGINEER will fix the date, time and location of the meeting.

B. The ENGINEER will prepare agenda, preside at meeting, and prepare and distribute a transcript of proceedings to all parties.

C. CONTRACTOR shall provide data required, contribute appropriate items for discussion, and be prepared to discuss all items on agenda.

1.02 REQUIRED ATTENDANCE

A. CONTRACTOR, and major SUBCONTRACTORS and equipment suppliers, at his discretion. The CONTRACTOR's superintendent shall be present at this meeting.

1.03 AGENDA

A. Agenda will include, but will not necessarily be limited to, the following:

1. Designation of responsible personnel.
2. Subcontractors' responsibilities and designated representatives.
3. Coordination with other contractors.
4. Construction schedule.
5. Contract Time.
6. Processing of Shop Drawings and distribution of Submittals.
7. Processing of field decisions, Requests for Information and Change Orders.
8. Operation and Maintenance Manuals.
9. Meetings.
10. Temporary Utilities.
11. Processing and Schedule of Payments.
12. Contractor responsibility for safety and first aid procedures.
13. Security.
14. Housekeeping.
15. Record Drawings.
16. Letter of Notice to Proceed.
17. Emergency Telephone Numbers.
18. Testing and Inspection.
19. Any other Project related items.

1.04 SCHEDULES

A. CONTRACTOR shall have the following schedules completed and ready for distribution at the PRECONSTRUCTION CONFERENCE:

1. Construction Schedule

2. Shop Drawing Schedule

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01310

CONSTRUCTION SCHEDULES

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Promptly after award of the CONTRACT, the CONTRACTOR shall prepare and submit to the ENGINEER estimated construction progress and payment schedules for the WORK, with subschedules of related activities which are essential to its progress.

B. Submit revised progress schedules periodically.

1.02 FORM OF PROGRESS SCHEDULES

A. Submit network analysis system using either critical path method, generally as outlined in Associated General Contractors of America (AGC) publication "The Use of CPM in Construction - A Manual for General Contractors" or a bar graph schedule containing sufficient information for analysis. Revised schedule showing current status of the WORK as compared to projected status shall be submitted on a regular basis as described herein.

B. Format of Listings: The chronological order of the start of each item of WORK.

C. Identification of Listings: By major SPECIFICATION section numbers.

1.03 CONTENT OF PROGRESS SCHEDULES

A. Show the complete sequence of construction by activity.

B. Activities shall identify all WORK that must be accomplished to achieve SUBSTANTIAL COMPLETION and final completion, such as WORK related to prerequisite approvals from agencies with jurisdiction over the PROJECT; work involved in the preparation, submittal, and approval of SHOP DRAWINGS and samples; work pertaining to the fabrication and delivery of materials and equipment; work associated with CONTRACTOR's installation, erection and construction activities; WORK required by the existence of underground facilities, WORK required to implement closures or cut-offs, power shutdowns, or temporary or permanent take-down of existing facilities, WORK associated with the performance of preoperational, start-up and final testing; WORK related to the tentative list of items to be completed or corrected before and subsequent to preoperational, start-up and final testing.

C. Show the dates for the beginning, and completion of, each major element of construction. Include time for SHOP DRAWING and O&M manual production, submittal, and review. Specifically list:

1. Mobilization
2. Date of Substantial Completion
3. Date of Final Completion

1.04 PROGRESS SCHEDULE SUBMITTALS

A. Detailed Schedule Submittal: Set shall consist of an initial (detailed) schedule diagram which

will show detailed activities for WORK to be performed from date of commencement of the WORK until substantial completion of the WORK, or parts thereof, and summary activities for the balance of the WORK (until final completion).

1. Within one week of the PRECONSTRUCTION CONFERENCE, CONTRACTOR shall deliver three (3) copies of the Initial Detailed Schedule. The Initial Detailed Schedule shall use the date for commencement of the WORK as the date from which all activity dates are calculated; expand, revise, and modify the preliminary progress schedule submittal; reflect CONTRACTOR's preliminary plan of operations for the performance of the WORK; and point out schedule coordination requirements with respect to work by other contractors. CONTRACTOR is responsible for ensuring that the Initial Detailed Schedule Diagram has been reviewed by CONTRACTOR's subcontractors. No application for progress payment will be processed until CONTRACTOR's schedule is reviewed and concurred as reasonable.

2. If a resubmittal is required, CONTRACTOR shall be required to respond with three (3) copies of a revised, adjusted, or modified Detailed Schedule Diagram within seven (7) days.

B. Monthly Status Report: Monthly Status Report submittal sets shall consist of "marked-up" versions of the corresponding Detailed Schedule Diagram in accordance with the requirements of this Section of the CONTRACT DOCUMENTS.

1. CONTRACTOR shall submit three (3) copies of monthly (schedule) status reports with each application for progress payment. The first such status report shall be submitted with the first application following initial submittal of the detailed schedule, and include data as of the cut-off day of the pay period. No application for progress payment will be processed until CONTRACTOR furnishes the corresponding Monthly Status Report.

2. Monthly Status Reports will be used in the processing of progress payments. The ENGINEER and CONTRACTOR will review status reports at monthly scheduled meetings, and CONTRACTOR will be required to address ENGINEER's comments on the subsequent Monthly Status Report.

3. Indicate progress of each activity to date of submission. Show changes occurring since previous submission of schedule.

   a. Major changes in scope.
   b. Activities modified since previous submission.
   c. Revised projections of progress and completion.
   d. Other identifiable changes.

1.05 ENGINEER SCHEDULE REVIEW RESPONSIBILITY

A. ENGINEER will, upon receipt and review of each schedule submittal, either indicate in writing his concurrence as noted, or return the submittal to CONTRACTOR indicating in writing reasons for refusing to concur with the submittal. In the latter case, CONTRACTOR may be required to make the necessary corrections or alterations and resubmit within the prescribed period. If CONTRACTOR fails to provide schedule submittals as required, he will be deemed not to have provided the basis upon which progress can be evaluated, which may force OWNER to refuse to make payments of the full amount requested on any pending applications for payment, or which may alternatively entitle OWNER to a set-off against the amount requested.

B. ENGINEER's review of schedule submittals shall be only for conformance with CONTRACT times, sequencing restraints, and other information given in the CONTRACT DOCUMENTS, and shall not extend beyond the limitations applicable to the review of SHOP DRAWINGS or samples set forth in the SPECIFICATIONS.

C. ENGINEER's review of schedule submittals will be predicated on stamps or approvals signed off by CONTRACTOR and CONTRACTOR's subcontractor (as that term is defined in the GENERAL CONDITIONS) performing WORK under an appropriate agreement with CONTRACTOR. CONTRACTOR's stamp of approval on schedule submittals shall constitute a representation to OWNER that CONTRACTOR has either determined or verified all data on the schedule submittal, and assumes full responsibility for doing so, and that CONTRACTOR and his subcontractor's have reviewed and coordinated the sequences shown in the schedule submittal with the requirements of the WORK under the CONTRACT DOCUMENTS.

D. ENGINEER'S review of schedule submittals shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the CONTRACT DOCUMENTS.

E. The most current approved detailed schedule will be considered the official schedule as long as it is prepared, submitted, used and kept current by CONTRACTOR in accordance with the requirements of this Section or the CONTRACT DOCUMENTS.

1.06 SUBMITTAL SCHEDULE

A. Provide a schedule of all SHOP DRAWINGS, product data, and samples as required by the SPECIFICATIONS. Schedule shall be in the form of a chronological list indicating the date of each SHOP DRAWING, product and sample. Where more than one submittal is to be made on a particular product, sample or element of work, each such submittal shall be numbered separately and a date for such submittal shall be assigned.

B. Submit schedule at or prior to the pre-construction conference.

1.07 PAYMENT SCHEDULE

A. Payment schedule shall be graphically constructed to show the job progress by month on one ordinate and the cumulative anticipated job costs shown on the other ordinate. The graph should represent the CONTRACTOR's best estimate of job expenditures per month as of commencement of WORK. Payment schedule may be integral to construction schedule. Submit within 30 days of NOTICE TO PROCEED.

B. Submit revised payment schedule as necessary to coordinate with construction schedule.

1.08 SUBMISSIONS

A. Submit the number of copies which the CONTRACTOR requires, but not more than three (3), plus three (3) copies which will be retained by the ENGINEER.

1.09 DISTRIBUTION

A. Distribute copies of the reviewed schedules to:

1. Job size file (progress and payment schedule).
2. Subcontractors (progress schedule only).
3. Other concerned parties (progress schedule only).

B. Instruct recipients to report promptly to the CONTRACTOR, in writing, any problems anticipated by the projections shown in the schedules.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01340

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART 1 - GENERAL

1.01 SHOP DRAWINGS

A. The term "SHOP DRAWINGS" as used herein shall include detailed design calculations; fabrication and installation drawings; material and parts lists; graphs; test data; operating instructions; and other items as specified or shown which shall include but not necessarily be limited to:

1. Drawings and/or catalog information and cuts.
2. Specifications, parts lists, suggested spare parts lists, and equipment drawings.
3. Complete lubrication, maintenance and operation instructions, including initial startup instructions.
4. Applicable certifications.
5. Anchor bolt templates, mounting instructions and mounting design calculations as required per the Contract Documents.
6. Required maintenance operations to allow all installed equipment to remain idle for the period of time prior to its installation.
7. Other technical, installation, and maintenance data as applicable.
8. Unloading and handling methods, and storage requirements.
9. Proposed changes to the Contract Documents noted and highlighted.
10. Paint or coating submittal showing type of paint or coating and the mils thickness of coating system used.
11. Drawings showing CONTRACTOR field verifications illustrating all field dimensions. CONTRACTOR shall field verify all dimensions and existing materials shown on the Drawings. Any modifications required to structures and/or support systems to accommodate CONTRACTOR submitted equipment and/or systems shall be at the CONTRACTOR's expense.

B. Present in a clear and thorough manner. Each fabrication drawing to have a title block in the lower right hand corner with the PROJECT name and number, OWNER's name, fabricator's and CONTRACTOR's name, fabricator's plant location, drawing number, date, and revision block.

C. Identify field dimensions; show relation to adjacent or critical features of WORK or products.

D. Provide CONTRACTOR's approval stamp on each SHOP DRAWING.

E. Minimum Sheet Size: 8 1/2 x 11 inches.

1.03 PRODUCT DATA

A. Submit only pages which are pertinent; mark each copy of standard printed data to identify pertinent products, referenced to SPECIFICATION section and article number. Show reference standards, performance characteristics, and capacities; component parts; finishes; dimensions; and required clearances.

B. Modify manufacturer's standard schematic drawings and diagrams to supplement standard

information and to provide information specifically applicable to the WORK. Delete information not applicable.

1.04 SAMPLES

A. Submit full range of manufacturer's standard finishes except when more restrictive requirements are specified, indicating colors, textures, and patterns, for ENGINEER selection.

B. Submit samples to illustrate functional characteristics of products, including parts and attachments.

C. Approved samples which may be used in the WORK are indicated in the SPECIFICATION section.

D. Label each sample with identification required for transmittal letter.

E. Provide field samples of finishes at PROJECT, at location acceptable to ENGINEER, as required by individual SPECIFICATIONS section. Install each sample complete and finished. Acceptable finishes in place may be retained in complete WORK.

1.05 MANUFACTURER'S INSTRUCTIONS

A. When required in individual SPECIFICATION sections or requested by the ENGINEER, submit manufacturer's printed instructions for delivery, storage, preparation, assembly, installation, startup, adjusting, balancing, and finishing.

B. Comply with the provisions of Section 01400 - Quality Control.

1.06 CONTRACTOR REVIEW

A. Review submittals prior to transmittal; determine and verify field measurements, field construction criteria, manufacturer's catalog numbers, and conformance of submittal with requirements of CONTRACT DOCUMENTS.

B. Coordinate submittals with requirements of WORK and of CONTRACT DOCUMENTS.

C. Provide CONTRACTOR's stamp, and sign or initial each SHOP DRAWING and product data submittal, and each sample label to certify compliance with requirements of CONTRACT DOCUMENTS. Notify ENGINEER in writing at time of submittal, of any deviations from requirements of CONTRACT DOCUMENTS.

D. Do not fabricate products or begin work which requires submittals until return of submittal with ENGINEER acceptance.

1.07 SUBMITTAL REQUIREMENTS

A. Transmit submittals in accordance with approved Progress Schedule, and in such sequence to avoid delay in the WORK.

B. Provide blank space on each submittal for ENGINEER's stamp.

C. Apply CONTRACTOR's stamp, signed or initialed, certifying to review, verification of products, field dimensions and field construction criteria, and coordination of information with requirements of WORK and CONTRACT DOCUMENTS.

D. Coordinate submittals into logical groupings to facilitate interrelation of the several items:

1. Finishes which involve ENGINEER selection of colors, textures, or patterns.
2. Associated items which require correlation for efficient function or for installation.

E. Submit number of copies of SHOP DRAWINGS CONTRACTOR requires, plus three (3) which will be retained by ENGINEER.

F. Submit number of copies of product data and manufacturer's instructions CONTRACTOR requires, plus three (3) copies which will be retained by ENGINEER.

G. Submit the number of samples specified in individual SPECIFICATION section; one (1) will be retained by ENGINEER. Reviewed samples which may be used in the WORK are indicated in the SPECIFICATION section.

H. Submit under ENGINEER-accepted transmittal form letter. Identify PROJECT by title and number. Identify WORK and product by SPECIFICATIONS section and article number.

I. Allow ten (10) calendar days for ENGINEER's review.

1.08 RESUBMITTALS

A. Make resubmittals under procedures specified for initial submittals; identify changes made since previous submittal.

1.09 DISTRIBUTION

A. Distribute reproductions of SHOP DRAWINGS, copies of product data, and samples, which bear ENGINEER stamp of approval, to job site file, record documents file, subcontractors, suppliers, and other entities requiring information.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

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SECTION 01370

SCHEDULE OF VALUES

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. CONTRACTOR shall submit to the ENGINEER a SCHEDULE OF VALUES allocated to the various portions of the WORK, within 10 days after Award of CONTRACT. Modify SCHEDULE OF VALUES as required to reflect all items of WORK in the CSI format for specifications.

B. Upon request of the ENGINEER, support the values with data which will substantiate their correctness.

C. The SCHEDULE OF VALUES, unless objected to by the ENGINEER, shall be used only as the basis for the CONTRACTOR'S Applications for Payment.

1.02 FORM AND CONTENT OF SCHEDULE OF VALUES

A. Type schedule on 8-1/2 inch by 11-inch white paper; CONTRACTOR'S standard forms and automated printout will be considered for approval by ENGINEER upon CONTRACTOR'S request. Identify schedule with:

1. Title of project and location.

2. Engineer and project number.

3. Name and address of Contractor.

4. Contract designation.

5. Date of submission.

B. Schedule shall list the installed value of the component parts of the work in sufficient detail to serve as a basis for computing value for progress payments during construction.

C. Follow the table of contents of this CONTRACT as the format for listing component items.

1. Identify each line item with the number and title of the respective major section of the SPECIFICATIONS.

D. For each major line item list subvalues of major products or operations under the item.

E. For the various portions of the WORK:

1. Each item shall include a directly proportional amount of the CONTRACTOR'S overhead and profit.

2. For items on which progress payments will be requested for stored materials, break down the values into:

a. The cost of the materials, delivered and unloaded, with taxes paid.

b. The total installed value.

3. Submit a subschedule for each separate stage of WORK specified in Section 01310.

F. The sum of all values listed in the schedule shall equal the total contract sum.

1.03 REVIEW AND RESUBMITTAL

A. After review by ENGINEER revise and resubmit schedule as required.

B. Resubmit revised schedules in same manner.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01400

QUALITY CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. WORK under this Section includes all testing required by the CONTRACT as specified herein and further specified in the technical sections.

1.02 TESTING METHODS

A. All tests shall be made in accordance with commonly recognized standards of national organizations unless alternate specific testing methods are set forth in the technical sections.

1.03 COSTS

A. The OWNER will employ and pay for an independent testing laboratory to perform all testing services as specified in the technical sections, unless otherwise specified.

Additional inspection and tests required because of defective work or ill-timed notices shall be performed at the CONTRACTOR's expense.

1.04 QUALITY ASSURANCE

A. Samples: The CONTRACTOR shall supply samples or test specimens if and when required by the SPECIFICATIONS or the ENGINEER. These samples or test specimens shall be prepared and furnished with information as to their source in such quantities and size as may be required for proper examination and tests, with all freight charges prepaid. All samples shall be submitted before shipment of materials to the site of the WORK and in ample time to permit the making of proper tests, analysis, examination, rejections and resubmissions before the time required to incorporate the materials into the WORK. No such materials shall be used in WORK until they have been accepted in writing by the ENGINEER. Samples of materials will be retained by the ENGINEER for references and comparison purposes.

B. Certification: Producers and associations which have instituted approved systems of quality control and have been approved may submit certifications of compliance in lieu of further testing. Lumber and plywood grademarks by approved associations and materials for equipment bearing Underwriter's Laboratory label require no further plan inspection and testing, unless more restrictive requirements are required, or otherwise specifically required in the SPECIFICATIONS.

1.05 TESTING LABORATORIES

A. The testing laboratories will be provided by the OWNER.

1.06 CONTRACTOR'S RESPONSIBILITY

A. Access: Furnish free access to various parts of the WORK and assist testing inspection personnel in performance of their duties at no additional cost to the OWNER.

B. Concealed Work: When directed by the ENGINEER, the CONTRACTOR shall open for inspection any part of the WORK which has been concealed. Should the CONTRACTOR refuse or neglect such a request, the OWNER may employ any other person to open up the same or do so himself. If any parts of the WORK have been concealed in violation of the ENGINEER's instructions or, if on being opened, it is found not to be in accordance with the terms of the CONTRACT DOCUMENTS, the expense of opening and recovering, whether done by the CONTRACTOR or not, shall be charged to the CONTRACTOR. If the work is found to be in accordance with the terms of the CONTRACT DOCUMENTS, the actual necessary expense of opening and recovering shall be borne by the OWNER, and if the work of opening and recovering is done by the CONTRACTOR, it shall be considered as extra work and paid for accordingly.

C. Data: Furnish samples, records, drawings, certificates, and similar data as may be required by testing and inspection personnel to assure compliance with the CONTRACT DOCUMENTS.

D. Notices: The CONTRACTOR shall notify the ENGINEER not less than 48 hours before WORK requiring inspection is started. The CONTRACTOR shall schedule portions of the WORK requiring inspection and testing, so that the ENGINEER's time on the PROJECT is continuous and as brief as possible. Provide notice to the ENGINEER 24 hours prior to concealment.

1.07 RESIDENT PROJECT REPRESENTATIVE

A. Appointment: The ENGINEER is providing RESIDENT PROJECT REPRESENTATIVE to inspect necessary portions of the WORK. Such inspection may extend to any or all parts of the WORK, and to the preparation or manufacture of materials to be used.

B. Authority of RESIDENT PROJECT REPRESENTATIVE: RESIDENT PROJECT REPRESENTATIVES are not authorized to revoke, alter, enlarge or relax the provisions of the CONTRACT DOCUMENTS, and the RESIDENT PROJECT REPRESENTATIVE is placed on the WORK to keep the ENGINEER informed as to the progress of the WORK and the manner in which it is being done. He may also call the attention of the CONTRACTOR to any deviations from the plans or SPECIFICATIONS. Failure of the RESIDENT PROJECT REPRESENTATIVE or the ENGINEER to call the attention of the CONTRACTOR to faulty WORK or deviation from the CONTRACT DOCUMENTS shall not constitute acceptance of said WORK. A RESIDENT PROJECT REPRESENTATIVE is not authorized to approve or accept any portions of the WORK or to issue instructions contrary to the CONTRACT DOCUMENTS. The RESIDENT PROJECT REPRESENTATIVE will exercise only such additional authority as may be specially delegated to him by the ENGINEER, notice of which will be given in writing to the CONTRACTOR.

C. The CONTRACTOR shall be responsible for ensuring safe working conditions per OSHA to allow inspection of all WORK by the RESIDENT PROJECT REPRESENTATIVE. This shall include providing all necessary monitoring devices and safety equipment for entering any confined spaces made part of the WORK. Payment will not be made for any part of the WORK which cannot be safely inspected by the RESIDENT PROJECT REPRESENTATIVE.

1.08 TEST REPORTS

A. The OWNER's testing laboratory will prepare logs, test reports and certificates applicable to specific tests and inspections. Reports will include description of method of test, identification of samples and portions of the WORK tested. They will state description of location of WORK, time and date of obtaining and testing samples, weather and climatic conditions, and evaluation of results of test, including recommendations for action. As a minimum, copies will be distributed by the testing lab as follows:

OWNER: 1
ENGINEER: 1

1.09 DEFECTIVE WORK

A. Remove and replace any work found defective or not complying with requirements of contract documents, at no additional cost to OWNER.

Work will be checked as it progresses, but failure to detect any defective work or materials shall not in any way prevent later rejection when such defect is discovered, nor shall it obligate the ENGINEER for final acceptance.

If test cylinders for concrete fail to meet design stresses, make core and load tests as directed.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

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SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 HOURS OF WORK

A. The CONTRACTOR shall establish his own work hours in accordance with the Construction Schedule submitted in Section 01310. No WORK shall be performed between the hours of 7:00 p.m. and 7:00 a.m., on Saturdays, Sundays or holidays unless written request is made to the ENGINEER and approved by the OWNER and ENGINEER.

1.02 PUBLIC SAFETY AND CONVENIENCE

A. The CONTRACTOR shall comply with all rules and regulations of state and local authorities regarding the closing of public traffic. No roads shall be closed to the public except by express permission of the ENGINEER. The CONTRACTOR shall conduct the WORK so as to ensure the least possible obstruction to traffic and normal commercial pursuits. He shall protect all obstructions within traveled roadways with approved signs, barricades and lights where necessary or where ordered by the ENGINEER for the safety of the public. The convenience of the general public and residents along the WORK, and the protection of persons and property is of prime importance and shall be provided for in an adequate and satisfactory manner.

Whenever the CONTRACTOR's operations create a hazardous condition, he shall furnish flagmen and guards as necessary to give adequate warning to the public of any dangerous condition encountered.

1.03 TRAFFIC CONTROL

A. All traffic control devices shall conform to the current edition of the "Manual of Uniform Traffic Control Devices."

B. The cost for all necessary traffic control by the CONTRACTOR shall be incidental to the entire PROJECT and shall be included in the CONTRACT PRICE.

1.04 CONSTRUCTION UTILITIES AND MISCELLANEOUS FACILITIES

A. General: The CONTRACTOR shall provide the temporary facilities and controls as hereinafter specified and as required by law.

B. Hoists, scaffolds, staging, storage and miscellaneous:

1. Equipment shall be provided with proper guys, bracing and other safety devices as required by local or state codes and regulations.

2. Provide suitable substantial facilities or protection for storing, immediately after delivery, materials which may be damaged by storage in the open.

C. Power: Unless otherwise specified, the CONTRACTOR shall provide all necessary power and special connections to power lines. The CONTRACTOR is responsible for removing any

temporary electrical systems installed for construction purposes.
The location of temporary power facilities shall be determined by the CONTRACTOR and approved by the utility agency and the INSPECTOR.

D. Water: Unless otherwise specified, the CONTRACTOR shall provide and pay for all necessary water and special connections to a water supply.

Where applicable, the CONTRACTOR shall provide a backflow preventer device to prevent a direct cross connection between the water supply and wastewater conveying systems.

E. Telephone: The CONTRACTOR shall provide a telephone service at the site. A radio telephone service is not acceptable as a substitute for the required telephone service. A properly operating and continually accessible cellular phone is acceptable.

F. Sanitary Facilities: The CONTRACTOR shall provide adequate toilet facilities for all workmen and OWNER's representatives employed on the WORK. The CONTRACTOR shall maintain the same in a sanitary condition from the beginning of the WORK until completion and shall then remove the facilities and disinfect the premises. All portions of the WORK shall be maintained at all times in a sanitary condition. Temporary sanitary facilities shall be removed upon the completion of the PROJECT.

G. Permanent Facilities: The CONTRACTOR is specifically prohibited from utilizing permanent facilities, such as pumps, heating and ventilation equipment, water, air and power systems, cranes and hoists in the construction of the PROJECT.

H. Parking Facilities: The CONTRACTOR shall provide adequate off-road parking facilities for the automobiles used by his construction employees and the OWNER's representatives.

I. Temporary Heating: The CONTRACTOR shall provide temporary heating, covering and enclosures as necessary to protect all WORK and material against damage by dampness and cold, and to facilitate completion of WORK. The CONTRACTOR shall supply all the fuel, equipment and material required for temporary heating.

J. Construction Signs: No commercial or advertising signs shall be allowed on the site of the WORK.

K. Fencing: Provide temporary fencing around site at all times when it appears that the WORK area could be a hazard to the public.

L. Fire Protection: Provide portable, operable fire extinguishers at the site at all times in accordance with NFPA Standard 10.

1.05 PROTECTION OF EXISTING CONSTRUCTION

A. The CONTRACTOR shall protect existing construction and finishes liable to damage through performance of the WORK.

1.06 BARRIERS

A. The CONTRACTOR shall erect and maintain guard rails or other suitable barriers where required.

1.07 WATER CONTROL

A. The CONTRACTOR shall provide all necessary pumping equipment and temporary swales as required to keep the WORK areas free from water. Water shall be discharged as directed by the ENGINEER.

1.08 FIRE PREVENTION CONTROL

A. General: The CONTRACTOR shall take all precautions necessary and required to prevent fires. Comply with requirements of local authorities having jurisdiction.

B. Fuel for cutting and heating torches shall be gas only, and shall be contained in Underwriter's Laboratory approved containers.

C. The CONTRACTOR shall provide and maintain a 20-pound capacity, dry-chemical type fire extinguisher in the immediate vicinity of the WORK when welding tools or torches of any type are in use.

D. The CONTRACTOR shall not use volatile liquids for cleaning agents or as fuels for motorized equipment or tools within building, except with the written approval of the ENGINEER.

E. Tarpaulins shall be securely anchored and flame-proofed when attached to any wood scaffolding, and when used to enclose any portion of a building above the first floor.

1.09 POLLUTION CONTROL

A. General: The CONTRACTOR's construction activities shall be performed by methods that will prevent entrance, or accidental spillage, of solid matter, contaminants, debris, and other pollutants and wastes into streams, flowing or dry watercourses, lakes, and underground water sources. Such pollutants and wastes include, but are not restricted to, refuse, garbage, cement, concrete, sanitary waste, industrial waste, radioactive substances, oil and other petroleum products, aggregate processing tailings, mineral salts, and thermal pollution.

1.10 RUBBISH REMOVAL

A. The CONTRACTOR shall clean up the debris resulting from WORK at least once a day or more often, if it interferes with the work of others or presents a fire hazard. Debris shall be closely piled where directed.

B. The CONTRACTOR shall remove and dispose of all debris when directed.

C. Waste materials including, but not restricted to, refuse, garbage, sanitary wastes, industrial wastes, and oil and other petroleum products, shall be disposed of by the CONTRACTOR. Except for burnable materials, disposal of waste materials shall be by removal from the construction area. Waste materials removed from the construction area shall be disposed of at an approved landfill.

D. The CONTRACTOR shall stockpile all waste material at the waste site in an expeditious manner. Burning of waste material will be permitted.

1.11 DISPOSAL OF MATERIAL BY BURNING

A. The CONTRACTOR shall secure the permission of the City and the necessary burning permits from the state and local authorities. All burning shall be in accordance with state and local

laws.

B. All materials to be burned shall be piled in such a manner as will cause the least fire hazards. Burning shall be thorough and complete and all charred pieces remaining after burning, except for scattered small pieces, shall be removed from the construction area and disposed of as otherwise provided in this paragraph.

C. The CONTRACTOR shall, at all times, take special precautions to prevent fire from spreading beyond the areas being burned and shall be liable for any damage caused by the CONTRACTOR's burning operations. The CONTRACTOR shall have available, at all times, suitable equipment and supplies for use in preventing and suppressing fires and shall be subject to all laws and regulations applicable for presuppression, suppression, and prevention of fires.

D. Material to be disposed of by removal from the construction area shall be removed from the area upon completion of the WORK under these CONTRACT DOCUMENTS. All materials removed shall become the property of the CONTRACTOR.

E. Materials to be disposed of by dumping shall be hauled to an approved landfill. It shall be the responsibility of the CONTRACTOR to make any necessary arrangements with private parties and with local officials pertinent to locations and regulations of such dumping. Any fees or charges required to be paid for dumping of materials shall be paid by the CONTRACTOR.

1.12 DISCONTINUANCE, CHANGES AND REMOVAL

A. The CONTRACTOR shall discontinue the temporary services herein specified when their use is no longer required or they impede progress on the WORK, all as directed. The discontinuance of any temporary service herein specified prior to the completion of any or all branches of the WORK shall not render the OWNER liable for any additional cost of the WORK entailed thereby, and the CONTRACTOR shall thereafter furnish under his contract, and at no additional cost to the OWNER, any and all temporary service required by his WORK to replace that discontinued.

B. Should a change in location of any of the temporary facilities be necessary in order to progress the WORK properly, CONTRACTOR shall remove and relocate such items as directed without additional cost to the OWNER.

C. When directed and no longer required, CONTRACTOR shall remove the temporary facilities specified herein. Material used for temporary facilities which are removed shall become the property of the CONTRACTOR and shall be removed from the site by the CONTRACTOR.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01600

MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. This Section describes material and equipment incorporated into the WORK.

1. Material and equipment shall conform to applicable SPECIFICATIONS and standards.

2. Material and equipment shall comply with size, make, type and quality specified, or as specifically approved in writing by the ENGINEER.

3. The CONTRACTOR shall provide manufactured and fabricated products conforming to the following requirements:

   a. Design, fabricate and assemble in accord with the best engineering and shop practices.

   b. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.

   c. Two or more items of the same kind shall be identical, by the same manufacturer.

   d. Products shall be suitable for service conditions.

   e. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.

4. The CONTRACTOR shall not use material or equipment for a purpose other than that for which it is designed or is specified.

1.02 MANUFACTURER'S INSTRUCTIONS

A. The CONTRACTOR shall perform WORK in accordance with manufacturer's instructions. No preparatory step or installation procedure shall be omitted unless specifically modified or exempted by CONTRACT DOCUMENTS.

1.03 TRANSPORTATION AND HANDLING

A. The CONTRACTOR shall arrange deliveries on products in accordance with construction schedules. The CONTRACTOR shall coordinate to avoid conflict with WORK and conditions at the site.

1. The CONTRACTOR shall deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.

2. Immediately on delivery, CONTRACTOR shall inspect shipments to assure compliance with requirements of CONTRACT DOCUMENTS and approved submittals,

and that products are properly protected and undamaged.

B. The CONTRACTOR shall provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

1.04 STORAGE AND PROTECTION

A. The CONTRACTOR shall store products in accordance with manufacturer's instructions, with seals and labels intact and legible.

1. The CONTRACTOR shall store products subject to damage by the elements in weathertight enclosures.

2. The CONTRACTOR shall maintain temperature and humidity within the ranges required by manufacturer's instructions.

B. Exterior Storage

1. The CONTRACTOR shall store fabricated products above the ground, on blocking or skids, to prevent soiling or staining. Products which are subject to deterioration shall be covered with impervious sheet coverings, and adequate ventilation shall be provided to avoid condensation.

2. The CONTRACTOR shall store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.

3. The CONTRACTOR shall maintain covers on equipment until the equipment is put into operation.

C. The CONTRACTOR shall arrange storage in a manner to provide easy access for inspection. Periodic inspections of stored products shall be made to assure that products are maintained under specified conditions, and free from damage or deterioration.

D. Protection After Installation

1. The CONTRACTOR shall provide substantial coverings as necessary to protect installed products from damage from traffic, weather and subsequent construction operations, and shall remove when no longer needed.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01630

PRODUCT OPTIONS AND SUBSTITUTIONS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. CONTRACTOR shall submit proposed options and product substitution data and information for review by ENGINEER on the Substitution Request Form provided herein.

1.02 PROPOSED SUBSTITUTIONS

A. Substitutions will be considered only under the following conditions:

1. Substitutions required for compliance with final interpretations of code requirements or insurance regulations.

2. Unavailability of specified products, through no fault of CONTRACTOR.

3. Subsequent information disclosed inability of specified product to perform properly or to fit in designated space.

4. Manufacturer/fabricator refusal to certify or guarantee performance of specified product as required.

5. When a substitution would be substantially beneficial to OWNER.

1.03 CONTRACTOR OPTIONS

A. Products specified by reference standards or by description only: Any product meeting those standards.

B. Products specified by naming one or more manufacturers with a substitution paragraph or an "or equal" clause: Submit a request for substitution for any manufacturer not specifically named.

C. Products specified by naming several manufacturers but without a substitution paragraph or an "or equal" clause; No options, no substitutions, allowed.

D. Products specified by naming only one manufacturer but without a substitution paragraph or an "or equal" clause: No option; no substitutions allowed.

1.04 LIMITATIONS ON SUBSTITUTIONS

A. Requests for substitutions of products will be considered only within time frame defined in Section 01600 - Material and Equipment. Submittals received after that time will not be considered. Substitutions will be considered in accordance with Paragraph 1.02A and 1.03 above.

B. Substitutions will not be considered when indicated on shop drawings or product data submittals without separate formal request, when requested directly by subcontractor or

supplier, or when acceptance will require substantial revision of Contract Documents.

C. Substitute products shall not be ordered or installed without written acceptance.

D. Only one request for substitution for each product will be considered. When substitution is not accepted, provide specified product.

E. ENGINEER will determine acceptability of substitutions.

1.05 REQUESTS FOR SUBSTITUTIONS.

A. Submit request for each substitution. Document each request by submitting a Substitution Request Form for review by ENGINEER.

B. Identify product by SPECIFICATIONS section and article numbers. Provide manufacturer's name and address, trade name of product, and model or catalog number.

C. Attach product data to each request form

1.06 CONTRACTOR REPRESENTATION

A. Request for substitution constitutes a representation that CONTRACTOR has investigated propose product and has determined that it is equal to or superior in all respects to specified product or that the cost reduction offered is ample justification for accepting the offered substitution.

B. CONTRACTOR will provide same warranty or bond for substitution as for specified product.

C. CONTRACTOR will coordinate installation of accepted substitute, making such changes as may be required for WORK to be complete in all respects.

D. CONTRACTOR waives claims for additional costs related to substitution which may later become apparent.

1.07 SUBMITTAL PROCEDURES

A. Submit three copies of each separate Substitution Request Form. All items must be completed or marked "no change".

B. ENGINEER will notify CONTRACTOR, in writing, of decision to accept or reject requested substitution within fifteen (15) working days.

C. For accepted products, submit shop drawings, product data and samples in accordance with Section 01340.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

SUBSTITUTION REQUEST FORM

TO:_____

PROJECT:_____

We hereby submit for your consideration the following product instead of the specified item for the above project:

Section:Paragraph: Specified Item:

_____ _____ _____

Proposed Substitution: _____

Attach complete technical data, including laboratory tests, if applicable. Include complete information on changes to Drawings and/or Specifications which proposed substitution will require for its proper installation.

Fill in blanks below:

A. Does the substitution affect dimensions shown on Drawings? _____

B. Will the undersigned pay for changes to the building design, including engineering and detailing costs caused by the requested substitution? _____

C. What affect does substitution have on construction schedule & other trades?
_____

D. State quality and performance differences between proposed substitutions and specified items.
_____

E. Cost differences between proposed substitution and specified item? (Indicate net change to contract sum) _____

F. Manufacturer's guarantees of the proposed and specified items are:
_____ Same _____ Different (explain on attachment)

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item.

Submitted By:

_____
Signature

_____
Firm

_____
Address

_____
Date _____ Telephone _____

For use by Engineer:

_____Accepted _____Accepted As Noted

_____Not Accepted _____Received Too Late

By_____

Date
_____

Remarks_____

_____

END OF SECTION

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SECTION 01641

ENVIRONMENTAL CONTROLS

PART 1 - GENERAL

1.01 GENERAL

A. The CONTRACTOR shall provide and maintain methods, equipment, and temporary construction as necessary to provide controls over environmental conditions at the construction site and adjacent areas and shall remove physical evidence of the temporary facilities at the completion of WORK.

B. The CONTRACTOR shall, at his own expense, obtain all required permits for environmental controls unless otherwise specified.

1.02 NOISE CONTROL

A. The CONTRACTOR's vehicles and equipment shall be such as to minimize noise to the greatest degree practicable. Noise levels shall conform to the latest OSHA and local agency standards.

1.03 DUST CONTROL

A. The CONTRACTOR shall be responsible for controlling objectionable dust caused by his operation of vehicles and equipment, clearing or for any reason whatever. The CONTRACTOR shall apply water or use other methods subject to the ENGINEER's approval which will keep dust in the air to a minimum.

B. Dust control measures shall be maintained at all times to the satisfaction of the ENGINEER.

1.04 PEST AND RODENT CONTROL

A. The CONTRACTOR shall provide rodent and pest control as necessary to prevent infestation of construction or storage areas. Employ methods and use materials which will not adversely affect conditions at the site or on adjoining properties.

1.05 EROSION PROTECTION

A. CONTRACTOR shall plan and execute construction and earthwork by methods to control surface drainage from cuts and fills, and from borrow and waste disposal areas, to prevent erosion and sedimentation.

1. Hold the areas of bare soil exposed at any time to a minimum.

2. Provide temporary control measures such as berms, dikes and drains.

B. CONTRACTOR shall construct fills and waste areas by selective placement to eliminate surface silts or clays which will erode.

C. CONTRACTOR shall periodically inspect earthwork to detect any evidence of the start of erosion. Apply corrective measures as required to control erosion.

1.06 PAINT AND SOLVENT CONTROL

A. CONTRACTOR shall comply with all requirements of regulatory agencies in use, storage, application, and disposal of paints and solvents, and containers for paints and solvents. All disposal shall be at an approved legal disposal site.

1.07 AIR EMISSIONS

A. CONTRACTOR shall comply with all requirements of regulatory agencies for pollutant emissions from all vehicles and equipment.

1.08 USED HYDROCARBONS

A. Used hydrocarbons shall be disposed of at an approved legal disposal site.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01700

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 RELATED REQUIREMENTS

A. Conditions of the CONTRACT: Fiscal provisions, legal submittals, and other administrative requirements.

B. Section 01500- Temporary Facilities and Controls

1.02 CLOSEOUT PROCEDURES

A. CONTRACTOR shall comply with procedures stated in GENERAL CONDITIONS of the CONTRACT for issuance of CERTIFICATE OF SUBSTANTIAL COMPLETION.

B. When CONTRACTOR considers WORK has reached final completion, CONTRACTOR shall submit written certification that CONTRACT DOCUMENTS have been reviewed, WORK has been inspected, and that WORK is complete in accordance with CONTRACT DOCUMENTS and ready for ENGINEER's inspection.

C. In addition to submittals required by the conditions of the CONTRACT, CONTRACTOR shall provide submittals required by governing authorities, and submit a final statement of accounting giving total adjusted CONTRACT SUM, previous payments, and sum remaining due.

D. If appropriate, the ENGINEER will issue a final CHANGE ORDER reflecting any approved adjustments to CONTRACT SUM not previously made by CHANGE ORDER.

1.03 FINAL CLEANING

A. CONTRACTOR shall execute prior to final inspection.

B. CONTRACTOR shall clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances; polish transparent and glossy surfaces.

C. CONTRACTOR shall clean site; sweep paved area; rake clean other surfaces.

D. CONTRACTOR shall remove waste and surplus materials, rubbish, and construction facilities from the PROJECT and from the site.

1.04 WARRANTIES AND BONDS

A. CONTRACTOR shall provide duplicate copies. Execute CONTRACTOR's submittals and assemble documents executed by subcontractors, suppliers, and anufacturers.

B. CONTRACTOR shall submit material prior to final application for payment.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

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SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. CONTRACTOR shall maintain and provide the ENGINEER with the PROJECT record documents as specified below except where otherwise specified or modified in other Divisions of the CONTRACT DOCUMENTS. Current status of RECORD DRAWINGS shall be a condition precedent to progress payments.

1.02 MAINTENANCE OF DOCUMENTS

A. A set of bluelines of the CONTRACT DRAWINGS shall be updated by the CONTRACTOR with record information and reviewed by the ENGINEER prior to each request for payment made by the CONTRACTOR.

1.03 RECORDING

A. CONTRACTOR shall keep record documents current, and updated at least monthly.

B. CONTRACTOR shall not permanently conceal any WORK until required information has been recorded.

C. Contract Drawings: CONTRACTOR shall legibly mark to record actual construction including:

1. Depths of various elements of foundation in relation to datum.
2. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
3. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
4. Field changes of dimensions and details.
5. Changes made by modification or field change.
6. Details not on original CONTRACT DRAWINGS.

D. Specifications and Addenda: CONTRACTOR shall legibly mark up each Section to record:

1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
2. Changes made by modification or field change.
3. Other matters not originally specified.

E. Shop Drawings: CONTRACTOR shall maintain as record documents and legibly annotate drawings to record changes made after review.

1.04 RECORD DRAWINGS

A. RECORD DRAWINGS shall be prepared for all the WORK included in the CONTRACT showing the actual in-place installation of the items installed under this CONTRACT. The drawings shall show the WORK in plan and sections as required for clarity with reference dimensions

and elevations for complete RECORD DRAWINGS.

B. The CONTRACT DRAWINGS may be used as a starting point in developing these drawings. Subcontractor and manufacturer drawings may be included in this drawing package. The drawing package must be fully integrated and include the necessary cross references between the drawings. The drawing package shall include interconnection and termination details to equipment furnished under this CONTRACT.

C. The RECORD DRAWINGS of the electrical work shall show one-line diagrams with all conduit and wire sizes shown of the distribution systems and the actual in-place grounding system, lighting arrangement, motor control centers, corrected wiring diagrams, equipment and conduit and cable plans.

1.05 SUBMITTAL

A. No later than 30 days after the completion of the WORK, the CONTRACTOR shall furnish three (3) blueline sets of the RECORD DRAWINGS to the ENGINEER for review and approval. The RECORD DRAWINGS will be reviewed and returned to the CONTRACTOR within 30 days. A set of reproducibles and three (3) blueline sets of the final record documents shall be submitted to the ENGINEER. The final submittal of RECORD DRAWINGS shall be made not later than 30 days after the ENGINEER returns the documents and prior to final payment.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01740

MISCELLANEOUS WORK AND CLEANUP

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. This Section includes operations which cannot be specified in detail as separate Items, but can be sufficiently described as to the kind and extent of work involved. The CONTRACTOR shall furnish all labor, materials, equipment and incidentals to complete the WORK under this Section.

B. The WORK of this Section includes, but is not limited to, the following:

1. Restoring servitudes and rights-of-way.

2. Cleaning up.

3. Incidental work.

C. All WORK shall be completed in a workmanlike manner by competent workmen in full compliance with all applicable sections of these SPECIFICATIONS.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Materials required for this Section shall be of at least the same type and quality as materials that are to be replaced or restored. Where possible, the CONTRACTOR shall reuse existing materials that are removed and then replaced, with the exception of paving.

PART 3 - EXECUTION

3.01 RESTORING OF FENCES AND GUARD RAILS

A. It may be necessary for the CONTRACTOR to remove, store and replace existing fences and guard rails during construction. Only the sections directed by the ENGINEER shall be removed. If any section of fence or guard rail is damaged due to the CONTRACTOR'S negligence, it shall be replaced with fencing or guard rail equal to or better than that damaged, and the WORK shall be satisfactory to the ENGINEER.

3.02 RESTORING SERVITUDES AND RIGHTS-OF-WAY

A. Portions of the construction occur in servitudes through private property. The CONTRACTOR shall be responsible for all damage to private property due to his operations. He shall protect from injury all walls, fences, cultivated shrubbery, pavement, underground facilities such as water pipe, or other utilities which may be encountered. If removal and replacement are required, it shall be done in a workmanlike manner so that the replacement is equivalent to that which existed prior to construction.

B. Existing lawn, pasture or other grassed surfaces damaged by construction shall be regraded

and resodded or reseeded. These areas shall be maintained until all WORK under this CONTRACT has been completed and accepted.

3.05 CLEANING UP

The CONTRACTOR shall remove all construction material, excess excavation, buildings, equipment and other debris remaining on the job as a result of construction operations and shall render the site of the WORK in a neat and orderly condition.

3.06 INCIDENTAL WORK

Perform all incidental work not otherwise specified, but obviously necessary for the proper completion of the CONTRACT as specified and as shown on the DRAWINGS.

END OF SECTION