

**PORT TANK REHABILITATION
CITY OF GEORGETOWN**

**SECTION 01046
CONTROL OF WORK AND MATERIALS**

PART 1 – GENERAL (NOT APPLICABLE)

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION

3.01 HAULING, HANDLING AND STORAGE OF MATERIALS:

- A. The Contractor shall, at its own expense, handle and haul all materials furnished by it and shall remove any of its surplus materials at the completion of the work.
- B. The Contractor shall provide suitable and adequate storage for equipment and materials furnished by it that are liable to injury and shall be responsible for any loss of or damage to any equipment or materials by theft, breakage, or otherwise.
- C. All excavated materials and equipment to be incorporated in the Work shall be placed so as not to injure any part of the Work or existing facilities and so that free access can be had at all times to all parts of the Work and to all public utility installations in the vicinity of the work. Materials and equipment shall be kept neatly piled and compactly stored in such location as will cause a minimum of inconvenience to public travel and adjoining owners, tenants and occupants.
- D. The Contractor shall be responsible for all damages to the work under construction during its progress and until final completion and acceptance even though partial payments have been made under the Contract.

3.02 EASEMENTS AND ENCROACHMENTS:

- A. As indicated on the drawings, the work is located in encroachments obtained by the Owner. The Contractor has no rights outside of the encroachments unless they are obtained from the adjacent property owner(s).
- B. Contractor shall schedule work so that it will cause minimum inconvenience and nuisance to abutting property owners, over the shortest possible time.
- C. Encroachments shall be kept clean; no rubbish or discarded construction materials shall be allowed to accumulate. Storage of excess construction materials, including soil, ledge, equipment, or machinery on encroachments will not be allowed.
- D. Restoration of fences, shrubs, trees and grass shall be completed promptly following completion of the work in an encroachment(s), to minimize disruption and inconvenience to property owners.

3.03 OPEN EXCAVATIONS:

- A. All open excavations shall be adequately safeguarded by providing temporary barricades,

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- caution signs, lights and other means to prevent accidents to persons, and damage to property. The Contractor shall, at its own expense, provide suitable and safe means for completely covering all open excavations and for accommodating travel when work is not in progress.
- B. Bridges provided for access to private property during construction shall be removed when no longer required.
 - C. The length of open trench will be controlled by the particular surrounding conditions but shall always be confined to the limits prescribed by the Engineer.
 - D. If the excavation becomes a hazard, or if it excessively restricts traffic at any point, then special construction procedures shall be taken, such as limiting the length of trench and prohibiting stocking excavated material in the street.
 - E. All street excavations shall be completely closed at the end of each work day. Backfilling or use of steel plates of adequate strength to carry traffic shall be used.

3.04 MAINTENANCE OF TRAFFIC:

- A. Unless permission to close the street is received in writing from the proper authority, all excavated materials and equipment shall be placed so that vehicular and pedestrian traffic may be safely maintained at all times.
- B. The Contractor shall at its own expense provide and erect acceptable barricades, barrier fences, traffic signs, and all other traffic devices not specifically covered in a bid item, to protect the work from traffic, pedestrians, and animals. The Contractor shall provide sufficient temporary lighting such as lanterns/flashers (electric battery operated) or other approved illuminated traffic signs and devices to afford adequate protection to the traveling public, at no additional cost to the Owner.
- C. Nothing contained herein shall be construed as relieving the Contractor of any of its responsibilities for protection of persons and property under the terms of the Contract.

3.05 CARE AND PROTECTION OF PROPERTY:

The Contractor shall be responsible for the preservation of all public and private property and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be promptly restored by the Contractor, at its expense, to a condition similar or equal to that existing before the damage was done, to the satisfaction of the Engineer.

3.06 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES:

- A. All existing buildings, utilities, pipes, poles, wires fences, curbing, property line markers and other structures which the Engineer decides must be preserved in place without being temporarily or permanently relocated, shall be carefully supported and protected

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from damage by the contractor. Should such property be damaged, it shall be restored by the Contractor, at no additional cost to the Owner.

- B. The Contractor shall determine the location of all underground structures and utilities (including existing water services, drain lines, electrical lines, and sewers). Services to buildings shall be maintained, and all costs or charges resulting from damage thereto shall be paid by Contractor.
- C. When fences interfere with the Contractor's operations, it shall remove and (unless otherwise specified) promptly restore them to a condition similar or equal to that existing before removal was done, to the satisfaction of the engineer.
- D. On paved surfaces the Contractor shall not use or operate tractors, bulldozers, or other power-operated equipment with treads or wheels which are shaped so as to cut or otherwise damage such surfaces.
- E. All property damaged by the Contractor's operations shall be restored to a condition at least equal to that in which it was found immediately before work was begun. Suitable materials and methods shall be used for such restoration.
- F. Restoration of existing property and structures shall be carried out as promptly as practicable and shall not be left until the end of the construction period.

3.07 MAINTENANCE OF FLOW:

- A. The Contractor shall at its own cost, provide for the flow of sewers and drains interrupted during the progress of the work, and shall immediately cart away and dispose of all offensive matter. The entire procedure of maintaining existing flow shall be fully discussed with the Engineer well in advance of the interruption of any flow.
- B. All existing drainage facilities including, but not limited to; brooks, streams, canals, channels, ditches, culverts, catch basins and drainage piping shall be adequately safeguarded so as not to impede drainage or to cause siltation of downstream areas in any manner whatsoever. If the Contractor damages or impairs any of the aforesaid drainage facilities, it shall repair the same within the same day.
- C. At the conclusion of the work, the Contractor shall remove all silt in drainage structures caused by its operations as described in Section 01710, CLEANING UP.

3.08 REJECTED MATERIALS AND DEFECTIVE WORK:

- A. Materials furnished by the Contractor and condemned by the Engineer as unsuitable or not in conformity with the specifications shall forthwith be removed from the work by the Contractor, and shall not be made use of elsewhere in the work.
- B. Any errors, defects or omissions in the execution of the work or in the materials furnished by the Contractor, even though they may have been passed or overlooked or have appeared after the completion of the work, discovered at any time before the final

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payment is made hereunder, shall be forthwith rectified and made good by and at the expense of the Contractor and in a manner satisfactory to the Engineer.

- C. The Contractor shall reimburse the Owner for any expense, losses or damages incurred in consequence of any defect, error, omission or act of the Contractor or his employees, as determined by the Engineer, occurring previous to the final payment.

3.09 SANITARY REGULATIONS:

Sanitary conveniences for the use of all persons employed on the work, properly screened from public observation, shall be provided in sufficient numbers in such manner and at such locations as may be approved. The contents shall be removed and disposed of in a satisfactory manner as the occasion requires. The Contractor shall rigorously prohibit the committing of nuisances within, on or about the work. Any employees found violating these provisions shall be discharged and not again employed on the work without the written consent of the Engineer. The sanitary conveniences specified above shall be the obligation and responsibility of the Contractor.

3.10 SITE INVESTIGATION:

The Contractor acknowledges that it has satisfied itself as to the conditions existing at the site of the work, the type of equipment required to perform this work, the quality and quantity of the materials furnished insofar as this information is reasonably ascertainable from an inspection of the site, as well as from information presented by the drawings and specifications made a part of this contract. Any failure of the Contractor to acquaint itself with available information will not relieve it from the responsibility for estimating properly the difficulty or cost of successfully performing the work. The Owner assumes no responsibility for any conclusion or interpretation made by the Contractor on the basis of the information made available by the Owner.

(END OF SECTION)

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**SECTION 01060
REGULATORY REQUIREMENTS**

The following requirements of Regulatory Agencies having an interest in this project are hereby made a part of this Contract.

- 1.1 The construction of the project, including the letting of the contracts in connection therewith, shall conform to the applicable requirements of State and local laws and ordinances to the extent that such requirements do not conflict with Federal laws and this subchapter.
- 1.2 South Carolina Sales Tax: All applicable South Carolina sales tax shall be to the account of the Contractors.
- 1.3 Use of chemicals: All chemicals used during the project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.
- 1.4 Safety and Health Regulations: The Contractor shall comply with the Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (PL 91-596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL 91-54)
- 1.5 The Contractor shall comply with Part V of the South Carolina Manual on Uniform Traffic Control Devices for Streets and Highways.
- 1.6 Inspection by Agencies: The representatives of the South Carolina Department of Health and Environmental Control, Environmental Protection Agency, Department of Natural Resources and the Corps of Engineers shall have access to the work wherever it is, in preparation or in progress, and the Contractor shall provide proper facilities for such access and inspection.

(END OF SECTION)

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SECTION 01061

PERMITS AND RIGHTS-OF-WAY

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Work Included: This section established requirements pertaining to the securing and paying for licenses, building permits, right-of-way, etc. necessary for the construction of the project.
- B. Work Not Include: Owner will obtain and provide to the Contractor, as required, copies of the following:
 - 1. South Carolina Department of Transportation Encroachment Permit for work in the State Right-of-Way
 - 2. South Carolina Department of Health and Environmental Control - Permit to Construct Water/Wastewater Facilities
- C. Office of Ocean and Coastal Resource Management Certification
- D. Related Work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - 2. Additional requirements for field engineering also may be described in other Sections of these Specifications. These include but are not limited to the following:
 - a) None

1.2 SUBMITTALS

- A. Submit to the Engineer satisfactory evidence that all necessary licenses, building permits, etc., have been secured prior to commencing the work.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION

2.1 BUSINESS LICENSE

- A. Determine licenses necessary to perform the work at project location.
- B. Obtain all necessary licenses at no permits required, whether of temporary or permanent nature.

2.2 BUILDING PERMITS

- A. Secure and pay for all building permits required, whether temporary or permanent nature.

PERMITS AND RIGHT OF WAY

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2.3 RIGHT-OF-WAY, EASEMENTS

- A. Owner will provide necessary rights-of-way or easements for construction of utility lines, roads and sidewalks whether on privately or publicly owned property
- B. The Contractor shall confine their activities to the provided rights-of way and/or easements
- C. The Owner will provide no other rights-of way and/or easements over the property.

2.4 LAND

- A. Owner will provide necessary land for construction of treatment facilities, lift stations, pump stations, parks and buildings, whether on privately or publicly owned property

(END OF SECTION)

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**SECTION 01090
REFERENCED STANDARDS**

PART 1 – GENERAL

1.1 DESCRIPTION

A. Throughout the Project Documents, reference is made to specifications and standards issued by nationally recognized professional and/or trade organizations:

1. These referenced standards are generally identified by abbreviating the name of the organization following with the specification/standard number.
2. Unless specifically indicated otherwise, all references to standards refer to the latest edition available at the time of the bidding.

1.2 ABBREVIATIONS

A. Wherever the following abbreviations are used in these Project Documents, they are to be construed the same as the respective expressions represented:

AASHTO American Association of State Highway and Transportation Officials

ACI American Concrete Institute

AISC American Institute of Steel Construction

ALS American Lumber Standards

ANSI American National Standards Institute, Inc

ASTM American Society for Testing and Materials

AWWA American Water Works Association

AWPA American Wood Preservers Association

AWS American Welding Society

IBC International Building Code

NACE National Association of Corrosion Engineers

NFPA National Fire Protection Association

NSF Formerly: National Sanitary Foundation

OSHA Occupational Safety and Health Administration

SPIB Southern Pine Inspection Bureau

SSPC Steel Structures Painting Council

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION (NOT APPLICABLE)

(END OF SECTION)

REFERENCED STANDARDS

01090-1

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**SECTION 01200
CONTRACTOR/SUBCONTRACTOR QUALIFICATION**

PART 1 – GENERAL

The following information and completed forms may be requested by the Owner of the three lowest bidders. The request will be made within five (5) days following the bid opening. Requested data to be received by the Owner within five (5) days of the request. Failure to provide the data in this section, upon request, will subject bidder to disqualification.

1.1 DESCRIPTION

- A. Information submitted will be used by the Owner to determine the competency and ability of the Contractor/Subcontractor to perform the scheduled work in a manner deemed satisfactory to the Owner. The Owner’s decision shall be final.
- B. Any Subcontractor used by the General Contractor whose portion of this project exceeds 10% of the total bid shall be required to provide the same information as the General Contractor.
- C. The Contractor/Subcontractor shall include with this section a detailed financial statement indicating the Contractor’s/Subcontractor’s financial resources. The information on that statement shall be certified by a Certified Public Accountant and shall be submitted on the Associated General Contractors of America from “Standard Questionnaires and Financial Statement for Bidders.”
- D. The Contractor/Subcontractor shall certify by attaching his signature to this Section as provided that all information contained herein is complete and all statements and answers are accurate and true. Providing misinformation, incomplete information, inaccurate information, or failure to certify the information, will subject bidder to disqualification.

1.2 QUALIFICATIONS

- A. Complete the following (attach additional sheets as required):
 - 1. Name: _____
 - 2. Address: _____
 - 3. City, State, Zip: _____
 - 4. Principal: _____
- B. Number of years your firm has been in business: _____
- C. List and describe a minimum of five (5) previous projects of similar size and nature completed in the last five (5) years. (Attach additional sheets, if necessary):
 - 1. _____

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- _____
- _____
- 2. _____
- _____
- _____
- 3. _____
- _____
- _____
- 4. _____
- _____
- _____
- 5. _____
- _____
- _____

D. List Owner, contact and telephone number for each of the five (5) projects referenced above. (Attach additional sheets, if necessary):

- 1. _____
- _____
- _____
- 2. _____
- _____
- _____

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3. _____

4. _____

5. _____

E. For the projects listed in Item C, list the original bid price, final construction costs, specified completion time, actual completion time and explanations for differences in costs and times as required. (Attach additional sheets, if necessary):

1. Original contract price: _____
Final construction price: _____
Specified completion time: _____
Actual completion time: _____
Explanation: _____

2. Original contract price: _____
Final construction price: _____
Specified completion time: _____

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Actual completion time: _____

Explanation: _____

3. Original contract price: _____

Final construction price: _____

Specified completion time: _____

Actual completion time: _____

Explanation: _____

4. Original contract price: _____

Final construction price: _____

Specified completion time: _____

Actual completion time: _____

Explanation: _____

5. Original contract price: _____

Final construction price: _____

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Specified completion time: _____

Actual completion time: _____

Explanation: _____

F. List the names, addresses and work of any portion of this project which will be subcontracted (more than 10% of the bid price). (Attach additional sheets, if necessary):

1. _____

2. _____

3. _____

4. _____

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5. _____

G. List equipment owned that is available for this project:

H. List equipment to be purchased, leased or rented to perform this work:

I. List superintendent(s), foreman or others in charge who will be assigned to this project. Provide resumes and qualifications (insert sheets as required):

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J. List and describe current projects, current statuses of job and estimate schedule of completion. (Attach additional sheets, if necessary):

1. _____

2. _____

3. _____

4. _____

5. _____

K. List past projects completed with Owner of project proposed in last five (5) years. (Attach additional sheets, if necessary):

1. _____

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2. _____

3. _____

4. _____

5. _____

L. List past projects bid on with Owner of project proposed in last five (5) years.
(Attach additional sheets, if necessary):

1. _____

2. _____

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3. _____

4. _____

5. _____

M. List all past projects completed with Engineer in past five (5) years (Attach additional sheets, if necessary):

1. Project Name: _____

Project Manager: (Engineer's): _____

Original contract price: _____

Final construction price: _____

Specified completion time: _____

Actual completion time: _____

Explanation: _____

2. Project Name: _____

CONTRACTOR/SUBCONTRACTOR QUALIFICATIONS

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Project Manager: (Engineer's): _____

Original contract price: _____

Final construction price: _____

Specified completion time: _____

Actual completion time: _____

Explanation: _____

3. Project Name: _____

Project Manager: (Engineer's): _____

Original contract price: _____

Final construction price: _____

Specified completion time: _____

Actual completion time: _____

Explanation: _____

4. Project Name: _____

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Project Manager: (Engineer's): _____

Original contract price: _____

Final construction price: _____

Specified completion time: _____

Actual completion time: _____

Explanation: _____

5. Project Name: _____

Project Manager: (Engineer's): _____

Original contract price: _____

Final construction price: _____

Specified completion time: _____

Actual completion time: _____

Explanation: _____

N. List all projects involving litigation, arbitration and/or mediation in past five (5) years (Attach additional sheets, if necessary):

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1. Project Name: _____

Owner: _____

Engineer: _____

Date: _____

Explanation: _____

Result: _____

2. Project Name: _____

Owner: _____

Engineer: _____

Date: _____

Explanation: _____

Result: _____

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3. Project Name: _____

Owner: _____

Engineer: _____

Date: _____

Explanation: _____

Result: _____

4. Project Name: _____

Owner: _____

Engineer: _____

Date: _____

Explanation: _____

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Result: _____

5. Project Name: _____

Owner: _____

Engineer: _____

Date: _____

Explanation: _____

Result: _____

O. Attach rate schedule for equipment, labor, overhead and profit.

P. Additional information:

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I hereby certify that as a duly authorized representative of _____
(bidder), the information provided is to the best of my knowledge accurate and that failure to
provide accurate information will result in disqualification of my bid

(Seal)

Signature

Name (Print)

Title

Date

Notary Public of _____ (State)

My commission expires: _____

(END OF SECTION)

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**SECTION 01210
PRECONSTRUCTION CONFERENCE**

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Work included: To help clarify construction contract administration procedures, the Engineer will conduct a Preconstruction Conference prior to start of the Work. Provide attendance by the designated personnel.
- B. Related work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2 QUALITY ASSURANCE

- A. For those persons designated by the Contractor, his Subcontractors, and suppliers to attend the Preconstruction Conference, provide required authority to commit the entities they represent to solutions agreed upon in the Conference.

1.3 SUBMITTALS

- A. To the maximum extent practicable, advise the Engineer at least 24 hours in advance of the Conference as to items to be added to the agenda.
- B. The Engineer will compile minutes of the Conference, and will furnish one copy of the minutes to the Contractor and required copies to the Owner. The Contractor may make and distribute such other copies as he/she wishes.

1.4 PRECONSTRUCTION CONFERENCE

- A. The Conference is not required but is recommended and will be scheduled to be held within 30 working days after the Owner has determined the low bidder and may be held prior to issuance of the Notice to Proceed when required by regulatory agencies having jurisdiction. In any event, the Conference will be held prior to actual start of the work.
- B. Attendance:
 - 1. Provide attendance by authorized representatives of the Contractor and major subcontractors. The Engineer will advise other interested parties, including the Owner, and request their attendance.
- C. Minimum agenda: Data will be distributed and discussed on:
 - 1. Organizational arrangement of Contractor's forces and personnel and those of subcontractors, materials suppliers, and the Engineer.
 - 2. Channels and procedures for communication.
 - 3. Construction schedule, including sequence of critical work.
 - 4. Contract Documents, including distribution of required copies of Drawings and revisions.

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5. Processing of Shop Drawings and other data submitted to the Engineer for review.
6. Processing of field decisions and Change Orders.
7. Rules and regulations governing performance of Work.
8. Procedures for security, quality control, housekeeping, and related matters.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION (NOT APPLICABLE)

(END OF SECTION)

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SECTION 01220

PROJECT MEETINGS

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Work included: To enable orderly review during progress of the Project, and to provide for systematic discussion of problems, the Owner will conduct project meetings throughout the construction period.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - 2. The Contractor's relations with his subcontractors and materials suppliers, and discussions relative thereto, are the Contractor's responsibility and normally are not part of the project meetings content.

1.2 QUALITY ASSURANCE

- A. For those persons designated by the Contractor to attend and participate in project meetings, provide required authority to commit the Contractor to solutions agreed upon in the meetings.

1.3 SUBMITTALS

- A. Agenda items: To the maximum extent practicable, advise the Owner at least 48 hours in advance of project meetings regarding items to be added to the agenda.
- B. Minutes:
 - 1. The Owner will compile Minutes of each project meeting, and will furnish three copies to the Contractor and required copies to Engineer.
 - 2. Recipients of copies may make and distribute such other copies as they wish.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION

3.1 MEETING SCHEDULE

- A. Project meetings will be held monthly.
- B. Coordinate as necessary to establish mutually acceptable schedule for meetings.

PROJECT MEETINGS

01220-1

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3.2 MEETING LOCATION

A. The meeting will be held at the City of Georgetown – Water Utilities and Engineering Department.

2377 Anthuan Maybank Drive
Georgetown, SC 29440

3.3 PROJECT MEETINGS

A. Attendance:

1. To the maximum extent practicable, assign the same person or persons to represent the Contractor at project meetings throughout progress of the Work.
2. Subcontractors, materials suppliers, and others may be invited to attend those project meetings in which their aspect of the Work is involved.

B. Minimum agenda:

1. Review, revise as necessary, and approve Minutes of previous meetings.
2. Review Safety Plan and any incidents since last meeting.
3. Review progress of the Work since last meeting, including status of submittals for approval.
4. Identify problems that impede planned progress.
5. Develop corrective measures and procedures to regain planned schedule.
6. Complete other current business.

3.4 Revision to Minutes:

- A. Unless published Minutes are challenged in writing prior to the next regularly scheduled progress meeting, they will be accepted as properly stating the activities and decisions of the meeting.
- B. Persons challenging published Minutes shall reproduce and distribute copies of the challenged to all Minutes.
- C. Challenge to Minutes shall be settled as priority portion of “old business” at the next regularly scheduled meeting.

(END OF SECTION)

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**SECTION 01310
CONSTRUCTION SCHEDULES**

PART 1 – GENERAL

1.1 DISCRIPTION

- A. Work included: To assure adequate planning and execution of the Work so that the Work is completed within the number of calendar days allowed in the Contract, and to assist the Engineer in appraising the reasonableness of the proposed schedule and in evaluating progress of Work, prepare and maintain the schedules and reports described in this Section.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - 2. Requirements for progress schedule: General Conditions.
 - 3. Construction period: Form of Agreement
- C. Definitions: “Day”, as used throughout the Contract unless otherwise stated, means calendar day.

1.2 QUALITY ASSURANCE

- A. Employ a scheduler who is thoroughly trained and experienced in compiling construction schedule data, and in preparing and issuing periodic reports as required below.
- B. Perform data preparation, analysis, charting, and updating in accordance with standards approved by the Engineer.
- C. Reliance upon the approved schedule:
 - 1. The construction schedule as approved by the Engineer will be an integral part of the Contract and will establish interim completion dates for the various activities under the Contract.
 - 2. Should any activity not be completed within 15 days after the stated scheduled date, the Owner shall have the right to require the Contract to expedite completion of the activity by whatever means the Owner deems appropriate and necessary, without additional compensation to the Contractor.
 - 3. Should any activity be 30 days or more behind schedule, the Owner shall have the right to perform the activity or have the activity performed by whatever method the Owner deems appropriate.
 - 4. Costs incurred by the Owner and by the Engineer in connection with expediting construction activity shall be reimbursed by the Contractor.
 - 5. It is expressly understood and agreed that failure by the Owner to exercise the option either to order the Contractor to expedite and activity or to expedite the

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activity by other means shall not be considered to set a precedent for any other activities.

1.3 SUBMITTALS

- A. Comply with pertinent provisions of Section 01340.
- B. Preliminary analysis: Within 10 calendar days after the Contractor has received the Notice to Proceed, submit one reproducible copy and four prints of a preliminary construction schedule prepared in accordance with Part 3 of this Section.
- C. Construction schedule: Within 10 calendar days after the Contractor has received the Engineer's approval to revisions of a preliminary construction schedule, submit one reproducible copy and four prints of a construction schedule prepared in accordance with Part 3 of this Section.
- D. Periodic reports: On the first working day of each month following the submittal described in Paragraph 1.3.C above, submit four prints of the construction schedule updated as described in Part 3 of this Section.

PART 2 – PRODUCTS

2.1 CONSTRUCTION ANALYSIS

- A. Graphically show by bar chart the order and interdependence of all activities necessary to complete the work, and the sequence in which each activity is to be accomplished, as planned by the Contractor and his project field superintendent in coordination with all subcontractors whose work is shown on the diagram.
 - 1. Provide two line bar chart; one for planned activity and one for actual completion.
- B. Include, but do not necessarily limit indicated activities to:
 - 1. Project mobilization.
 - 2. Submittal and approval of shop drawings and samples.
 - 3. Procurement of equipment and critical materials.
 - 4. Fabrication of special material and equipment, and its installation and testing.
 - 5. Final cleanup.
 - 6. Final inspecting and testing.
 - 7. All activities by the Engineer that affect progress, required dates for completion, or both, for all and each part of the Work.

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PART 3 – EXECUTION

3.1 PRELIMINARY ANALYSIS

A. Contents:

1. Show all activities of the Contractor under this Work for the period between receipt of Notice to Proceed and submittal of construction schedule.
2. Show the Contractor's general approach to remainder of the Work.
3. Show cost of all activities scheduled for performance before submittal and approval of the construction schedule.

3.2 CONSTRUCTION SCHEDULE

- A. Provide a construction schedule incorporating all revisions from review of the preliminary analysis.

3.3 PERIODIC REPORTS

- A. Provide monthly updates of the approved construction schedule.

1. Indicate "actual" progress for each activity on the bar chart.
2. Provide written narrative summary of revisions causing delay in the program, and an explanation of correct actions taken or proposed.

3.4 REVISIONS

- A. Make periodic revisions to the schedule to incorporate delays, early completion, etc.
- B. Make only those revisions to approved construction schedule as are approved in advance by the engineer.

(END OF SECTION)

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SECTION 01340

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Work included: Make submittals required by the Contract Documents and revise and resubmit as necessary to establish compliance with the specified requirements.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to General Conditions, Supplementary Conditions and Sections in Division 1 of these specifications.
 - 2. Individual requirements for submittals also may be described in pertinent sections of these specifications.
- C. Work not included:
 - 1. Un-required submittals will not be reviewed by the Engineer.
 - 2. The Contractor may require his subcontractors to provide drawings, setting diagrams, and similar information to help coordinate the work, but such data shall remain between the Contractor and his subcontractors and will not be reviewed by the Engineer.

1.2 QUALITY ASSURANCE

- A. Coordination of submittals:
 - 1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
 - 2. Verify that each item and the submittal for it conform in all respects with the specified requirements.
 - 3. By affixing the Contractor's signature to each submittal, certify that this coordination has been performed.
 - 4. Review and coordinate each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.
- B. Completeness of submittal:
 - 1. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes.
 - 2. Determine and verify all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

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- C. “Or equal”:
 - 1. Where the phrase “or equal” occurs in the Contract Documents, do not assume that the materials, equipment or methods will be considered as equal unless the item has been specifically so approved for this Work by the Engineer.
 - 2. The decision of the Engineer shall be final.
- D. The Engineer shall assume that no shop drawing or related submittal comprises a variation unless the Contractor advises the Engineer otherwise in writing.

1.3 SUBMITTALS

- A. Within 10 calendar days after the Contractor has received the Owner’s Notice to Proceed, submit:
 - 1. Schedule for submittals including specification section, type or submittal and submittal date.
 - 2. Construction schedule.
 - 3. Schedule of partial payment request.
- B. Make submittals of shop drawings, samples, substitution requests and other items in accordance with the provisions of this Section.

PART 2 – PRODUCTS

2.1 SHOP DRAWINGS

- A. Scale and measurements: Make shop drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the Work.
- B. Large prints (11” x 17” or larger):
 - 1. Submit shop drawings in the form of white copies.
 - 2. Blueprints will not be acceptable.
- C. Manufacturer’s literature:
 - 1. Where contents of submitted literature from manufacturers include data not pertinent to the submittal, clearly show which portions of the contents are being submitted for review.
 - 2. Cross out or strikethrough all data not pertinent to the submittal.
- D. Number of copies:
 - 1. Product data: submit the number of copies which are required to be returned, plus three copies which will be retained by the Engineer.
 - 2. Shop drawings: submit the number of copies which are required to be returned, plus four copies which will be retained by the Engineer.

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- E. Do not begin fabrication of equipment or materials prior to Engineer's approval of shop drawings.

2.2 VARIATIONS

- A. With each submittal, provide specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.
- B. Provide an explanation of why the item(s) submitted are considered to be equal to the item(s) specified.
- C. Failure to submit a written notice will result in rejection of the submittal.

2.3 SAMPLES

- A. Provide sample or samples identical to the precise article proposed to be provided. Identify as described under "Identification of submittals" below.
 - 1. Unless otherwise specified, submit samples in the quantity which is required to be returned, plus one which will be retained by the Engineer.
 - 2. By prearrangement in specific cases, a single sample may be submitted for review and, when approved, when installed in the work at a location agreed upon by the Engineer.

2.4 COLORS AND PATTERNS

- A. Unless the precise color and pattern is specifically called out in the Contract Documents, and whenever a choice of color or pattern is available to the specified products, submit accurate color and pattern charts to the Engineer for selection.

PART 3 – EXECUTION

3.1 CONTRACTOR'S REVIEW OF SUBMITTALS

- A. Before submitting a shop drawing or any related material, Contractor shall:
 - 1. Determine and verify all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto.
 - 2. Determine and verify the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the work.
 - 3. Review each such submission for conformance with the means, methods, techniques, sequences, and operations of construction, and safety precautions and programs incidental thereto, all of which are the sole responsibility of Contractor.

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4. Approve each such submission before submitting it.
 5. Stamp and sign each such submission before submitting it.
- B. Shop drawings and related materials shall be returned with comments provided that each submission has been specified and is stamped by the Contractor.
- C. Shop drawings or material not specified or which have not been approved by the Contractor shall be returned without comment.
- D. Contractor is to utilize the following stamp on all shop drawing submittals:

This shop drawing has been reviewed by (Contractor) and approved with respect to the means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incidental thereto. (Contractor) also warrants that this shop drawing complies with contract documents and comprises no variations thereto.

By:

Date:

- E. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of the General Conditions and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of the General Conditions.

3.2 IDENTIFICATION OF SUBMITTALS

- A. Consecutively number all submittals
1. When material is resubmitted for any reason, transmit under a new letter of transmittal and with a new transmittal number.
 2. On re-submittals, cite the original submittal number for reference.
- B. Accompany each submittal with a letter of transmittal showing all information required for identification and checking.
- C. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number in which the item was included.
- D. Maintain an accurate submittal log for the duration of the work, showing current status of all submittals at all times. Make the submittal log available to the Engineer for his review upon request.

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3.3 GROUPING OF SUBMITTALS

- A. Unless otherwise specified, make submittals in groups containing all associated items to assure that information is available for checking each item when it is received.
 - 1. Partial submittals may be rejected as not complying with the provisions of the Contract.
 - 2. The Contractor may be held liable for delays so occasioned.

3.4 TIMING OF SUBMITTALS

- A. Make submittals far enough in advance of scheduled dates for installation to provide time required for reviews, for securing necessary approvals, for possible revisions and re-submittals, and for placing orders and securing delivery.
- B. In scheduling, allow at least twenty (20) days for review by the Engineer following his receipt of the submittal.

3.5 RESUBMITTAL SCHEDULE

- A. For submittals marked “Revise and Re-Submit”, “Submit Specified Item”, or “Rejected”, re-submittal shall be within ten (10) days of the review data shown on the Engineer’s shop drawing review stamp.

3.6 ENGINEER’S REVIEW

- A. Review by the Engineer does not relieve the Contractor from responsibility for errors which may exist in the submitted data.
- B. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer.
- C. Engineer’s review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given to the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
- D. Engineer’s review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto.
- E. The review and approval of a separate item as such will not indicate approval of the assembly in which the items functions.
- F. Revisions:
 - 1. Make revisions required by the Engineer.
 - 2. If the Contractor considers any required revision to be a change, he/she shall so notify the Engineer as provided for in the General Conditions.
 - 3. Make only those revisions directed or approved by the Engineer.

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- G. Submittals which have been reviewed and returned to the Contractor marked “Revise and Re-submit” or “Rejected” and which are re-submitted and not in an approvable state, will not be reviewed a third time unless payment for the third and any subsequent review is by the Contractor. The engineering costs for review shall be equal to the Engineer’s charges to the Owner under the terms of the Engineering Agreement with the owner.

(END OF SECTION)

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**SECTION 01400
QUALITY REQUIREMENTS**

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Work included: Provide workforce and equipment as are required for proper completion of the Work including, but not necessarily limited to:
 - 1. All work described in the Project Manual and Plans
 - 2. Additional work mutually agreed upon by the Owner and the Contractor
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - 2. Additional requirements for quality requirements also may be described in other Sections of these Specifications. These include but are not limited to the following:
- C. Work by others:
 - 1. An inspection and testing agency, approved by the Owner, shall be retained by the Contractor to perform tests required by SCDOT as specified on plans and SCDOT Standard Specifications.
 - 2. The performance or lack of performance of such tests and inspections shall not be construed as granting relief from the requirements of these specifications or the other contract documents

1.2 QUALITY ASSURANCE

- A. The Contractor shall have a written Quality Control Program and Inspection Procedures document that shall provide details of how compliance with the requirements of these specifications and the shop and placement drawings shall be achieved.
- B. The Contractor shall use an adequate number of skilled personnel, who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specification requirements and the methods needed for the proper performance of the work of this Specification.
- C. The Contractor shall utilize equipment adequate in type, number, size and capacity to accomplish the work of this Specification in a safe and timely manner.
- D. The Owner reserves the right to make inspections at any time at the source of supply of materials, at the place of preparation of materials, and during execution of all work.

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1.3 SUBMITTALS

- A. When required, an excavation Safety Plan shall be submitted for review and approval by the Engineer no less than 5 days before the scheduled date for start of excavation operations. The plan shall indicate the systems, methods, and techniques to be used to ensure that excavation sidewalls will be properly guarded to protect personnel, and existing facilities and structures in the vicinity of the work.
- B. When required, a Water Control Plan shall be submitted for review and approval no less than 5 days before the scheduled date for the start of earthwork operations. The plan shall indicate the methods and techniques to be used for control of water (both surface runoff and ground water) during Work.

1.4 EXISTING SITE CONDITIONS

- A. Before starting work the Contractor shall thoroughly examine the site to ascertain conditions under which the work must be performed.
- B. The Contractor is responsible for familiarizing himself with the existing site conditions and be prepared to adequately care for and safeguard himself, his workers, and the Owner from damage.
- C. Existing Geotechnical Conditions if available, a copy of the report is included in the contract documents. The information contained in the report shall not be construed as a guarantee of the depth, extent, or character of materials actually present.
- D. Existing Utilities
 - 1. There now may exist in the construction area potable and non-potable water distribution systems, wastewater and stormwater collection systems, natural gas and electrical power distribution systems, telecommunication systems and other utilities.
 - 2. These utilities are both underground and overhead and their location, as shown on the plans, is approximate and is for information purposes only. In addition other utilities not shown on the plans may exist.
 - 3. The South Carolina Underground Utility Damage Prevention Act (S.C. Ann Code, 58-35-10, CT-SEQ, Supp. 1978) requires persons to ascertain the location of underground utilities, prior to excavation and demolition. The Act also requires such persons to give timely notice of intent to excavate or demolish prior to commencing such operations.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION

3.1 PRE-CONSTRUCTION EXAMINATION

- A. General

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- B. Before starting work the Contractor shall thoroughly examine the site to ascertain conditions under which the work must be performed.
- C. Existing Facilities to Remain
- D. Take measures to protect existing facilities within the work area that are not designated for removal from being damaged by the work.
- E. Survey Monuments
 - 1. Locate and protect from damage any survey monuments within the work area. Properly relocate or witness any monument that must be disturbed by the work. After completion of the work, restore monument witnesses.
- F. Immediately notify Engineer of any discrepancies between the plans and the actual site conditions, or of any obstruction that will prevent or adversely affect the contractor's ability to complete the Work.

3.2 EXISTING OR COMPLETED UTILITIES

- A. Unless shown to be removed protect active utility lines shown on the drawings or otherwise made known to the Contractor.
- B. Use care in moving machinery and equipment over existing or newly installed pipes and utilities during construction so as not to cause damage to completed work.
- C. Do not use power-driven equipment to excavate closer than 2 feet from any existing utility or structure. For work immediately adjacent to, or for excavation exposing an existing utility or other structure, use manual or light equipment excavation methods until the obstruction is cleared.
- D. Support uncovered pipes and other existing work affected by the excavation until they are properly supported by backfill.
- E. Take the necessary precautions to maintain services provided by all active utility lines in the construction area. If service is interrupted as a result of the Work, immediately restore service by repairing the damaged utility.
- F. If during construction active utility lines not shown on the drawings or otherwise made known to the Contractor are encountered or if active utility lines will interfere with the work, immediately notify the Engineer

(END OF SECTION)

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**SECTION 01500
TEMPORARY FACILITIES**

PART 1 – GENERAL

1.1 DESCRIPTION

A. Work included: Provide temporary facilities needed for the work including, but not necessarily limited to:

1. Temporary utilities such as heat, water and electricity.
2. Field office for the Contractor's personnel.
3. Sanitary facilities.

B. Related work:

1. Documents affecting work of this Section include, but are not necessarily limited to General Conditions, Supplementary Conditions and Sections in Division 1 of these specifications.
2. Permanent installation and hookup of the various utility lines are described in other Sections.

1.2 PRODUCT HANDLING

A. Maintain temporary facilities in proper and safe condition throughout progress of the work.

PART 2 – PRODUCTS

2.1 UTILITIES

A. Water:

1. Provide necessary temporary piping and water supply and, upon completion of the work, remove such temporary facilities.
2. The Owner shall provide water used in construction. The Contractor shall obtain a construction meter from the Owner.

B. Electricity:

1. Provide necessary temporary wiring and, upon completion of the work remove such temporary facility.
2. Provide and pay for electricity used in construction.

C. Heating: Provide and maintain heat necessary for proper conduction of operations needed in the work.

2.2 FACILITIES

A. Sanitary facilities:

TEMPORARY FACILITIES

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1. Provide temporary sanitary facilities in the quantity required for use by all personnel.
2. Maintain in a sanitary condition at all times.

B. Strictly enforce their use.

2.3 PROJECT SIGNS

A. Provide and maintain a project information sign with following information:

1. Project Name
2. Project Cost
3. Anticipated Completion date
4. Contractor
5. Engineer
6. Owner
7. Members of City Council

B. EMPLOYMENT SIGN

C. SAFETY SIGN

PART 3 – EXECUTION

3.1 MAINTENANCE AND REMOVAL

- A. Maintain temporary facilities and controls as long as needed for safe and proper completion of the work.
- B. Remove such temporary facilities and controls as rapidly as progress of the work will permit, or as directed by the Engineer.

(END OF SECTION)

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**SECTION 01640
PRODUCT HANDLING**

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Work included: Protect products scheduled for use in the work by means including, but not necessarily limited to, those described in this Section.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to General Conditions, Supplementary Conditions and Sections in Division 1 of these specifications.
 - 2. Additional procedures also may be prescribed in other Sections of these specifications.

1.2 QUALITY ASSURANCE

- A. Include within the Contractor's quality assurance program such procedures as are required to assure full protection of work and materials.

1.3 MANUFACTURE'S RECOMMENDATIONS

- A. Except as otherwise approved by the Engineer, determine and comply with manufacture's recommendations on product handling, storage and protection.

1.4 PACKAGING

- A. Deliver products to the job site in their manufacturer's original container, with labels intact and legible.
 - 1. Maintain packaged materials with seals unbroken and labels intact until time of use.
 - 2. Promptly remove damaged material and unsuitable items from the job site and promptly replace with material meeting the specified requirements, at no additional cost to the Owner.
- B. The Engineer may reject as non-complying such material and products that do not bear identification satisfactory to the Engineer as to manufacture, grade, quality and other pertinent information.

1.5 PROTECTION OF MATERIAL AND WORK

- A. General:
 - 1. Carefully and properly protect all materials of every description, both before and after being used in the Work in accordance with manufacturer's recommendations.
 - 2. Provide any enclosing or special protection from weather deemed necessary by the Engineer at no additional cost to the Owner.

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- B. Partial payments under the Contract will not relieve the Contractor from responsibility.
 - 1. When materials and work at the site that have been partially paid for are not adequately protected by the Contractor, such materials will be protected by the Owner at the expense of the Contractor and no further partial payment thereon will be made.
 - 2. Maintain finished surfaces clean, unmarred, and suitably protected until accepted by the Owner.

1.6 STORAGE

- A. Store all items of equipment, component parts, etc., in accordance with the manufacturer's recommendations or as may otherwise be necessary to prevent damage or deterioration of any sort.
- B. Electrical and control equipment:
 - 1. Store in a dry area protected from dust and humidity.
 - 2. Equipment can be protected by a weatherproof cover if shipped to the site no more than two (2) weeks prior to installation and energization.

1.7 REPAIRS AND REPLACEMENTS

- A. In the event of damage, promptly make replacements and repairs to the approval of the Engineer and at no additional cost to the Owner.
- B. Additional time required to secure replacements and to make repairs will not be considered by the Engineer to justify an extension in the contract time or completion.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION (NOT APPLICABLE)

(END OF SECTION)

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**SECTION 01700
CONTRACT CLOSEOUT**

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Work included shall be providing compliance with the requirements of the General Conditions of these Specifications for administrative procedures in closing out the project work.
- B. Related work:
 - 1. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 - 2. Other requirements for technical services are stated in other sections of these Specifications.
 - 3. Section 00620 – Contractors Affidavit.
 - 4. Section 01720 – Project Record Documents

1.2 SUBSTANTIAL COMPLETION

- A. The Contractor shall notify the Engineer that, in his/her opinion, the project is substantially complete. A written statement listing items complete shall be submitted.
- B. Upon receipt of the Contractor's notice, the Engineer shall make an observation to determine if substantial completion is provided.
- C. If, in the Engineer's opinion, the project is not substantially complete, a written notice to the Contractor shall follow outlining reasons and deficiencies in work that comprised the Engineer's decision. The Engineer's decision shall be final.

1.3 FINAL OBSERVATION

- A. The Engineer will make a final observation for the Contractor after all items noted in the substantial completion observation have been corrected. The Contractor shall notify the Engineer in writing when a final observation is needed. Incomplete and/or defective work shall be given to the Contractor by written notice.

1.4 RE-OBSERVATION

- A. Re-observation required due to failure by the Contractor to make previously noted corrections will be performed by the Engineer.
- B. Cost for such observations will be due to and payable by the Contractor at a rate equal to charges to the Owner for similar work.
- C. Re-observations will continue until the work is acceptable to the Engineer.

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1.5 COMPLETION BY CONTRACTOR

- A. When the Engineer finds the Contractor's work acceptable, the Contractor shall be given such notice and should proceed with closeout submittals.
- B. Closeout submittals shall contain at least the following:
 - 1. Project record documents.
 - 2. Equipment operation and maintenance manuals and copies of start-up reports.
 - 3. Warranties and bonds.
 - 4. Spare parts and manuals.
 - 5. Evidence of payment and release to liens per General Conditions.
 - 6. Contractors Affidavit.

1.6 FINAL PAYMENT

- A. Final payment to the Contractor will be made upon completion of previous items and others required by these specifications. A final statement shall be forwarded to the Engineer. The statement shall address:
 - 1. Previous change orders.
 - 2. Unit Prices.
 - 3. Deductions for uncorrected work.
 - 4. Deductions for liquidated damages.
 - 5. Deductions for re-testing work.
 - 6. Deductions for re-observation.
 - 7. Deductions for shop drawing review.
 - 8. Adjusted contract sum.
 - 9. Previous payments.
 - 10. Amount Due.
- B. When required, the Engineer will prepare a contract change order for adjustments not previously made.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION (NOT APPLICABLE)

(END OF SECTION)

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**SECTION 01710
CLEANING UP**

PART 1 – GENERAL

1.1 DESCRIPTION

The Contractor must employ at all times during the progress of its work adequate cleanup measures and safety precautions to prevent injuries to persons or damage to property. The Contractor shall immediately, upon request by the Engineer provide adequate material, equipment and labor to cleanup and make safe any and all areas deemed necessary by the Engineer.

1.2 RELATED WORK

A. Section 00700 GENERAL CONDITIONS

B. Section 01046 CONTROL OF WORK AND MATERIALS

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION

3.01 CLEANUP:

A. The Contractor shall clean up all blasting media, all refuse, rubbish, scrap and surplus material, debris and unneeded construction equipment resulting from the construction operations and sweep the area. The site of the work and the adjacent areas affected thereby shall at all times present a neat, orderly and workmanlike appearance.

B. Upon written notification by the Engineer, the Contractor shall within 24 hours clean up those areas, which in the Engineer's opinion are in violation of this section and the above referenced sections of the specifications.

C. If in the opinion of the Engineer, the referenced areas are not satisfactorily cleaned up, all other work on the project shall stop until the cleanup is satisfactory.

3.02 MATERIAL OR DEBRIS IN DRAINAGE FACILITIES:

A. Where material or debris has washed or flowed into or has been placed in existing watercourses, ditches, gutters, drains, pipes, structures, such material or debris shall be entirely removed and satisfactorily disposed of during progress of the work, and the ditches, channels, drains, pipes, structures, and work shall, upon completion of the work, be left in a clean and neat condition.

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3.03 REMOVAL OF TEMPORARY BUILDINGS, STRUCTURES AND EQUIPMENT:

A. On or before completion of the work, the Contractor shall, unless otherwise specifically required or permitted in writing, tear down and remove all temporary buildings and structures it built; shall remove all temporary works, tools and machinery or other construction equipment it furnished; shall remove all rubbish from any grounds which it has occupied; shall remove silt fences and hay bales used for trapping sediment; and shall leave the roads and all parts of the property and adjacent property affected by its operations in a neat and satisfactory condition.

3.04 RESTORATION OF DAMAGED PROPERTY:

A. The Contractor shall restore or replace, when and as required, any property damaged by its work, equipment or employees, to a condition at least equal to that existing immediately prior to the beginning of operations. To this end the Contractor shall do as required all necessary highway or driveway, walk and landscaping work. Materials, equipment, and methods for such restoration shall be as approved by the Engineer.

3.05 FINAL CLEANUP:

A. Before acceptance by the Owner, the Contractor shall perform a final cleanup to bring the construction site to its original or specified condition. This cleanup shall include removing all trash and debris off of the premises. Before acceptance, the Engineer shall approve the condition of the site.

(END OF SECTION)

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**SECTION 01720
PROJECT RECORD DOCUMENTS**

PART 1 – GENERAL

1.1 DESCRIPTION

A. Work included:

1. Throughout progress of the Work, maintain an accurate record of changes in the Contract Documents, as described in Article 3.1 below.
2. Upon completion of the Work, deliver the recorded changes to the Engineer

B. Related work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. Additional requirements for field engineering also may be described in other Sections of these Specifications. These include but are not limited to the following:

1.2 QUALITY ASSURANCE

- A. Delegate the responsibility for maintenance of Record Documents to one person on the Contractor's staff as approved by the Engineer.
- B. Accuracy of records shall be such that future search for items shown on the Project Record Documents may rely reasonably on the information provided under this Section of the Work

1.3 SUBMITTALS

- A. The Engineer's approval of the current status of Project Record Documents may be a prerequisite to the Engineer's approval of requests for progress payment and request for final payment under the Contract.
- B. Prior to submitting each request for progress payment, secure the Engineer's approval of the current status of the Project Record Documents.
- C. Prior to submitting request for final payment, submit the final Project Record Documents to the Engineer and secure his approval.

1.4 PRODUCT HANDLING

- A. Maintain the job set of Record Documents completely protected from deterioration and from loss and damage until completion of the Work and transfer to the Engineer.
- B. In the event of loss of recorded data, use all means necessary to again secure the data to the Engineer's approval
 1. Such means shall include, if necessary in the opinion of the Engineer, removal and replacement of concealing materials.
 2. In such case, provide replacements to the standards originally required by the Contract Documents

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PART 2 - PRODUCTS

2.1 JOB SET DOCUMENTS

- A. Promptly following receipt of the Owner's Notice to Proceed, secure from the Engineer, at no charge to the Contractor, one complete set of all Documents comprising the Contract

PART 3 - EXECUTION

3.1 MAINTENANCE JOB SET DOCUMENTS

- A. Immediately upon receipt of the job set described in above paragraph titled "JOB SET DOCUMENTS", identify each of the Documents with the title, "RECORD DOCUMENTS- JOB SET".
- B. Preservation:
1. Considering the Contract completion time, the probable number of occasions upon which the job set must be taken out for new entries and for examination, and the conditions under which these activities will be performed, devise a suitable method for protecting the job set to the approval of the Engineer.
 2. Do not use the job set for any purpose except entry of new data and for review by the Engineer.
 3. Maintain the job set at the site of Work as that site is designated by the Engineer.
- C. Field work and making entries on Job Set Drawings:
1. Use erasable colored pencil, preferably red (not ink or indelible pencil) to delineate changes.
 2. Show by station number location of all fittings, manholes, valves, wyes locations, etc.
 3. Reference all fittings and valves at least to two aboveground items reasonably safe from being relocated and indicate such references on the drawings.
 4. Reference all pipelines from the center of the parallel roadway at least every 100 feet or where changes occur in the direction of the pipeline.
 5. Reference all bores from the center of the roadway to the beginning and end of the casing and ductile iron pipe. Depths of bury must also be provided.
 6. Reference all stream crossings and their distance from the center of the parallel roadway and the bridge or other obstruction. A profile of the stream crossing shall also be provided to show the depth of the pipeline under the stream.
 7. Field measure and reference all fittings and valves to two aboveground items reasonably safe from being relocated and indicate such references on the drawings.

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8. Show location of electrical conduit, pull boxes, etc.
 9. Gravity sewers and storm sewers
 - a) Provide survey grade state plane Geographic Information System (G.I.S.) electronic data horizontal coordinates for each structure location.
 - b) Provide ground elevation, top elevation and invert elevations for each structure.
 - c) Comply with Section 01050.1
- D. Submittals:
1. Submit “marked-up” set of drawings to the Engineer
 2. Make any necessary additions as required by the Engineer

(END OF SECTION)